



Full wwPDB EM Validation Report ⓘ

Mar 5, 2026 – 08:00 PM UTC

PDB ID : 5GAK / pdb_00005gak
EMDB ID : EMD-3227
Title : Yeast 60S ribosomal subunit with A-site tRNA, P-site tRNA and eIF-5A
Authors : Schmidt, C.; Becker, T.
Deposited on : 2015-12-09
Resolution : 3.88 Å(reported)

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
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

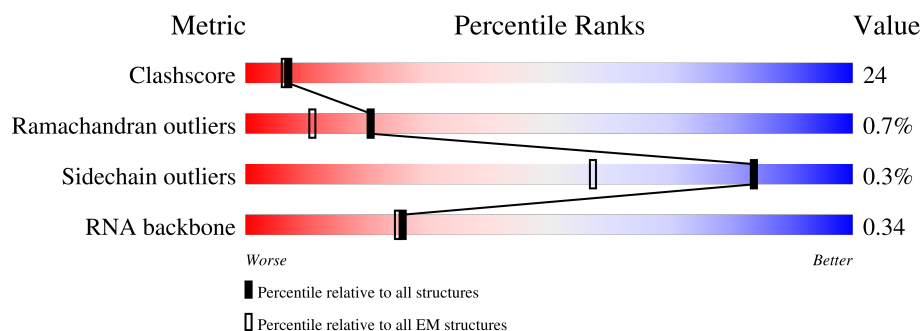
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.88 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	229148	23984
Ramachandran outliers	224038	23583
Sidechain outliers	223484	23102
RNA backbone	8273	3508

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	1	3396	70% 17% 46% 30% 7%
2	X	137	81% 57% 42% ..
3	3	121	66% 21% 55% 23%
4	Y	155	52% 44% 19% 37%
5	4	158	78% 20% 51% 30%
6	Z	142	65% 49% 35% 15%
7	A	76	86% 12% 38% 50%

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Mol	Chain	Length	Quality of chain
8	a	127	
9	B	77	
10	b	136	
11	C	106	
12	c	149	
13	D	92	
14	d	59	
15	E	254	
16	e	105	
17	F	387	
18	f	109	
19	G	362	
20	g	130	
21	H	297	
22	h	107	
23	I	176	
24	i	121	
25	J	244	
26	j	120	
27	K	256	
28	k	100	
29	L	191	
30	l	88	
31	M	174	
32	m	78	

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Mol	Chain	Length	Quality of chain
33	N	199	
34	n	51	
35	O	138	
36	o	128	
37	P	204	
38	p	25	
39	Q	199	
40	q	157	
41	R	184	
42	r	210	
43	S	186	
44	s	221	
45	T	189	
46	U	172	
47	V	160	
48	W	121	
49	z	23	

2 Entry composition

There are 50 unique types of molecules in this entry. The entry contains 128975 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 25S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	1	3165	Total	C	N	O	P	0	0
			67695	30238	12201	22091	3165		

- Molecule 2 is a protein called 60S ribosomal protein L23-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	X	136	Total	C	N	O	S	0	0
			1003	628	189	179	7		

- Molecule 3 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	3	121	Total	C	N	O	P	0	0
			2579	1152	461	845	121		

- Molecule 4 is a protein called 60S ribosomal protein L24-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	Y	98	Total	C	N	O	S	0	0
			699	443	137	118	1		

- Molecule 5 is a RNA chain called 5.8S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	4	158	Total	C	N	O	P	0	0
			3353	1500	586	1109	158		

- Molecule 6 is a protein called 60S ribosomal protein L25.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	Z	121	Total	C	N	O	S	0	0
			964	620	169	173	2		

- Molecule 7 is a RNA chain called The A-site tRNA was modeled based on an E. coli tRNA-Lys.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	A	76	Total	C	N	O	P	0	0
			1611	721	281	534	75		

- Molecule 8 is a protein called 60S ribosomal protein L26-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
8	a	126	Total	C	N	O	0	0
			993	625	192	176		

- Molecule 9 is a RNA chain called P-site tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	B	77	Total	C	N	O	P	0	0
			1644	731	290	546	77		

- Molecule 10 is a protein called 60S ribosomal protein L27-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
10	b	135	Total	C	N	O	0	0
			1092	710	202	180		

- Molecule 11 is a protein called 60S ribosomal protein L42-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	C	105	Total	C	N	O	S	0	0
			847	534	170	138	5		

- Molecule 12 is a protein called 60S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	c	148	Total	C	N	O	S	0	0
			1173	749	231	190	3		

- Molecule 13 is a protein called 60S ribosomal protein L43-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	D	91	Total	C	N	O	S	0	0
			694	429	138	121	6		

- Molecule 14 is a protein called 60S ribosomal protein L29.

Mol	Chain	Residues	Atoms				AltConf	Trace
14	d	58	Total	C	N	O	0	0
			462	289	100	73		

- Molecule 15 is a protein called 60S ribosomal protein L2-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	E	252	Total	C	N	O	S	0	0
			1914	1191	388	334	1		

- Molecule 16 is a protein called 60S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	e	97	Total	C	N	O	S	0	0
			743	479	124	139	1		

- Molecule 17 is a protein called 60S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	F	386	Total	C	N	O	S	0	0
			3075	1950	584	533	8		

- Molecule 18 is a protein called 60S ribosomal protein L31-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	f	109	Total	C	N	O	S	0	0
			876	556	167	152	1		

- Molecule 19 is a protein called 60S ribosomal protein L4-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	G	361	Total	C	N	O	S	0	0
			2748	1729	522	494	3		

- Molecule 20 is a protein called 60S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	g	127	Total	C	N	O	S	0	0
			1020	647	205	167	1		

- Molecule 21 is a protein called 60S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	H	296	Total	C	N	O	S	0	0
			2375	1501	414	458	2		

- Molecule 22 is a protein called 60S ribosomal protein L33-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	h	106	Total	C	N	O	S	0	0
			850	540	165	144	1		

- Molecule 23 is a protein called 60S ribosomal protein L6-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	I	156	Total	C	N	O	S	0	0
			1239	800	222	216	1		

- Molecule 24 is a protein called 60S ribosomal protein L34-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	i	112	Total	C	N	O	S	0	0
			880	545	179	152	4		

- Molecule 25 is a protein called 60S ribosomal protein L7-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	J	222	Total	C	N	O	S	0	0
			1784	1151	324	308	1		

- Molecule 26 is a protein called 60S ribosomal protein L35-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	j	119	Total	C	N	O	S	0	0
			969	615	186	167	1		

- Molecule 27 is a protein called 60S ribosomal protein L8-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	K	233	Total	C	N	O	S	0	0
			1804	1151	323	327	3		

- Molecule 28 is a protein called 60S ribosomal protein L36-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	k	99	Total	C	N	O	S	0	0
			771	481	156	132	2		

- Molecule 29 is a protein called 60S ribosomal protein L9-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	L	191	Total	C	N	O	S	0	0
			1518	963	274	277	4		

- Molecule 30 is a protein called 60S ribosomal protein L37-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	l	87	Total	C	N	O	S	0	0
			681	414	148	114	5		

- Molecule 31 is a protein called 60S ribosomal protein L11-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	M	169	Total	C	N	O	S	0	0
			1353	847	253	249	4		

- Molecule 32 is a protein called 60S ribosomal protein L38.

Mol	Chain	Residues	Atoms				AltConf	Trace
32	m	77	Total	C	N	O	0	0
			612	391	115	106		

- Molecule 33 is a protein called 60S ribosomal protein L13-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
33	N	193	Total	C	N	O	0	0
			1543	962	315	266		

- Molecule 34 is a protein called 60S ribosomal protein L39.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	n	50	Total	C	N	O	S	0	0
			436	272	97	65	2		

- Molecule 35 is a protein called 60S ribosomal protein L14-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	O	136	Total	C	N	O	S	0	0
			1053	675	199	177	2		

- Molecule 36 is a protein called Ubiquitin-60S ribosomal protein L40.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	o	52	Total	C	N	O	S	0	0
			417	259	86	67	5		

- Molecule 37 is a protein called 60S ribosomal protein L15-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	P	203	Total	C	N	O	S	0	0
			1720	1077	361	281	1		

- Molecule 38 is a protein called 60S ribosomal protein L41-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	p	25	Total	C	N	O	S	0	0
			233	142	63	27	1		

- Molecule 39 is a protein called 60S ribosomal protein L16-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	Q	197	Total	C	N	O	S	0	0
			1555	1003	289	262	1		

- Molecule 40 is a protein called Eukaryotic translation initiation factor 5A-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	q	154	Total	C	N	O	S	0	0
			1143	709	195	230	9		

- Molecule 41 is a protein called 60S ribosomal protein L17-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	R	183	Total	C	N	O		0	0
			1420	882	281	257			

- Molecule 42 is a protein called ribosomal protein RPL1.

Mol	Chain	Residues	Atoms				AltConf	Trace
42	r	210	Total	C	N	O	0	0
			1050	630	210	210		

- Molecule 43 is a protein called 60S ribosomal protein L18-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	S	185	Total	C	N	O	S	0	0
			1441	908	290	241	2		

- Molecule 44 is a protein called 60S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	s	220	Total	C	N	O	S	0	0
			1770	1121	335	307	7		

- Molecule 45 is a protein called 60S ribosomal protein L19-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
45	T	188	Total	C	N	O	0	0
			1521	935	326	260		

- Molecule 46 is a protein called 60S ribosomal protein L20-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	U	172	Total	C	N	O	S	0	0
			1445	930	267	244	4		

- Molecule 47 is a protein called 60S ribosomal protein L21-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	V	159	Total	C	N	O	S	0	0
			1276	805	246	221	4		

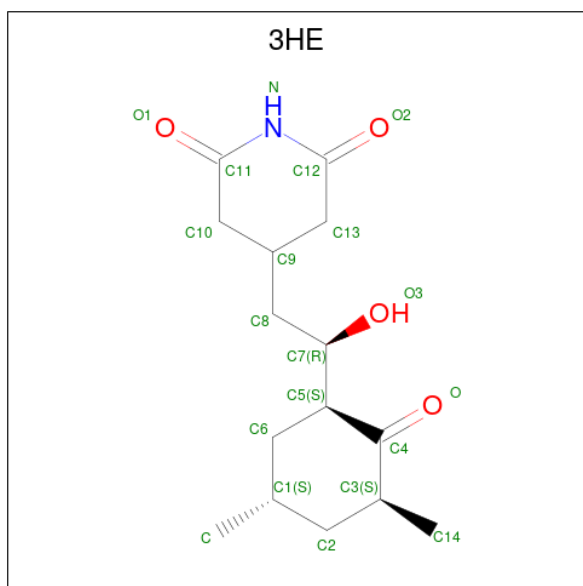
- Molecule 48 is a protein called 60S ribosomal protein L22-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
48	W	100	Total	C	N	O	0	0
			796	516	131	149		

- Molecule 49 is a protein called nascent polypeptide chain.

Mol	Chain	Residues	Atoms				AltConf	Trace
49	z	23	Total	C	N	O	0	0
			115	69	23	23		

- Molecule 50 is 4-{(2R)-2-[(1S,3S,5S)-3,5-dimethyl-2-oxocyclohexyl]-2-hydroxyethyl}piperidine-2,6-dione (CCD ID: 3HE) (formula: C₁₅H₂₃NO₄).

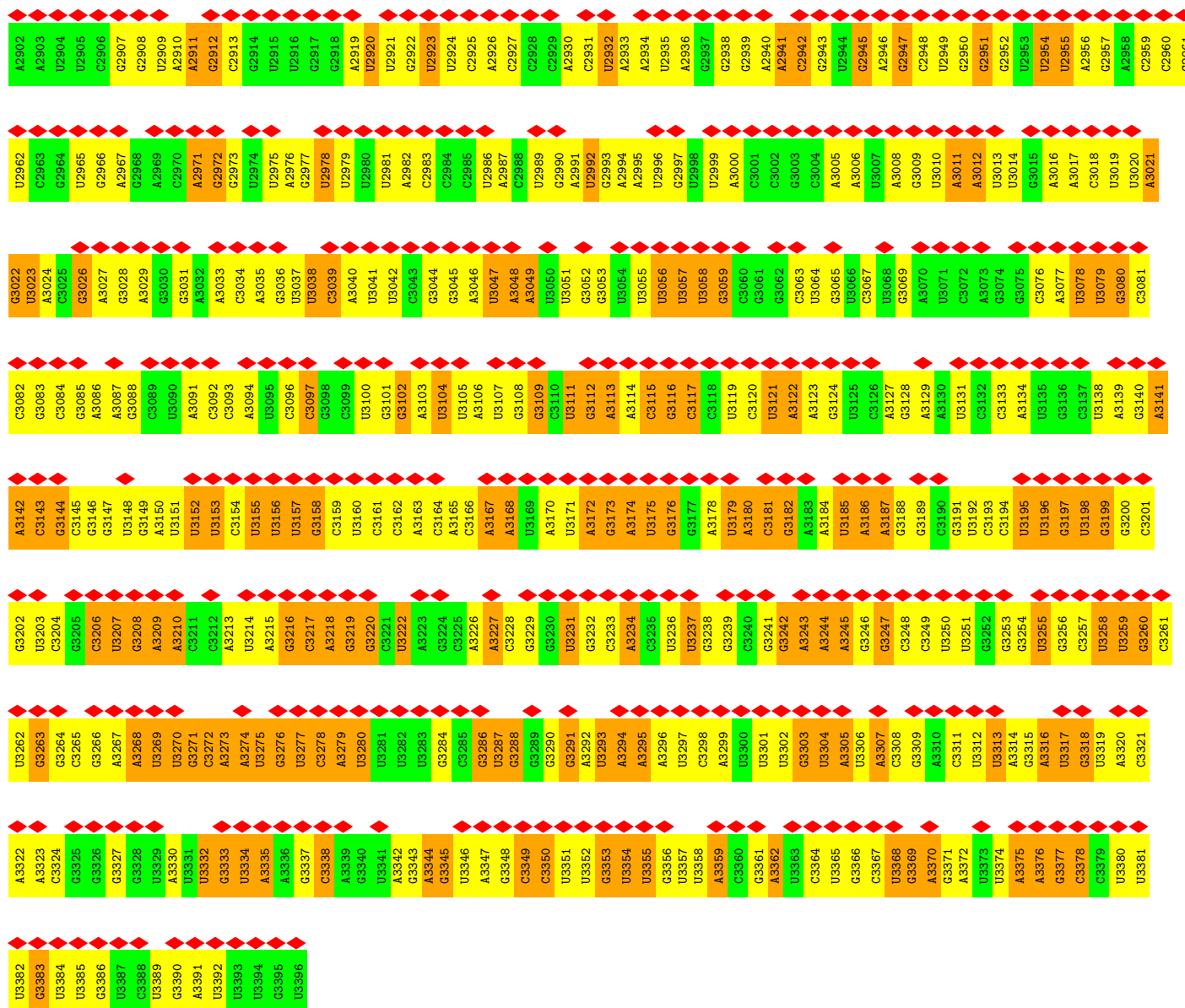


Mol	Chain	Residues	Atoms				AltConf
50	1	1	Total	C	N	O	0
			20	15	1	4	

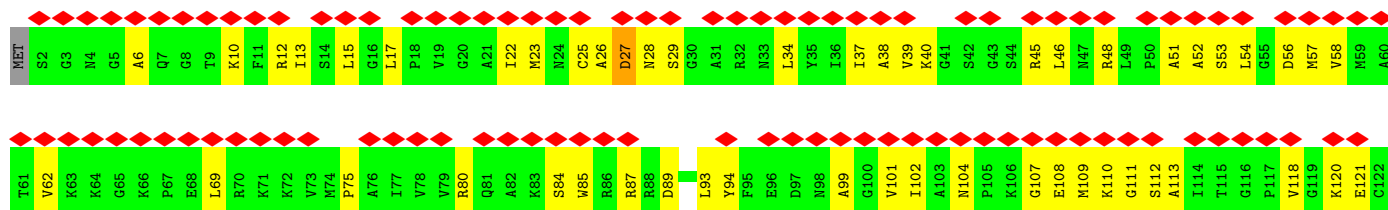
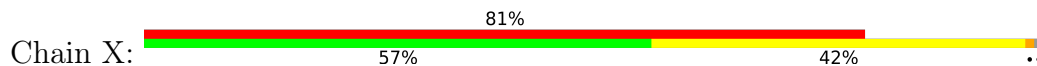
A1270	A1271	C1272	A1273	A1274	C1275	U1276	C1277	A1278	C1279	C1280	G1281	G1282	C1283	C1284	G1285	A1286	A1287	U1288	G1289	A1290	A1291	C1292	U1293	A1294	G1295	C1296	C1297	C1298	U1299	G1300	A1301	A1302	A1303	A1304	A1305	G1306	G1307	A1308	U1309	G1310	G1311	C1312	G1313	C1314	U1315	C1316	A1317	A1318	G1319	C1320	G1321	U1322	G1323	U1324	U1325	A1326	C1327	C1328	U1329
U1210	U1211	A1212	U1213	U1214	U1215	C1216	A1217	U1218	C1219	U1220	A1221	G1222	C1223	C1224	A1225	G1226	U1227	U1228	C1229	G1230	A1231	C1232	U1233	G1234	U1235	G1236	G1237	C1238	C1239	A1240	U1241	G1242	G1243	A1244	A1245	A1246	U1247	C1248	G1249	G1250	A1251	A1252	U1253	C1254	G1255	G1256	C1257	U1258	A1259	A1260	G1261	G1262	A1263	U1264	U1265	G1266	U1267	G1268	U1269
A1030	C1031	C1032	U1033	U1034	G1035	A1036	C1037	C1038	U1039	A1040	U1041	U1042	C1043	U1044	C1045	A1046	A1047	A1048	C1049	U1050	U1051	U1052	A1053	A1054	A1055	U1056	A1057	U1058	G1059	U1060	A1061	A1062	G1063	A1064	A1065	G1066	U1067	C1068	C1069	U1070	U1071	G1072	U1073	U1074	A1075	C1076	U1077	U1078	A1079	A1080	U1081	U1082	G1083	A1084	A1085	C1086	G1087	U1088	G1089
G1090	A1091	C1092	A1093	U1094	U1095	U1096	G1097	A1098	A1099	U1100	G1101	A1102	A1103	G1104	A1105	G1106	C1107	U1108	U1109	U1110	U1111	A1112	G1113	U1114	G1115	G1116	G1117	C1118	C1119	U1120	U1121	U1122	U1123	U1124	U1125	G1126	G1127	U1128	A1129	A1130	G1131	C1132	A1133	A1135	G1134	A1136	C1137	U1138	G1139	G1140	C1141	G1142	A1143	U1144	G1145	C1146	G1147	G1148	G1149
U1150	U1151	G1152	A1153	A1154	C1155	C1156	G1157	A1158	A1159	C1160	G1161	U1162	A1163	G1164	A1165	G1166	U1167	U1168	A1169	A1170	G1171	G1172	U1173	G1174	C1175	C1176	G1177	G1178	A1179	U1180	U1181	A1182	C1183	A1184	C1185	G1186	C1187	U1188	C1189	A1190	U1191	C1192	A1193	G1194	A1195	C1196	A1197	C1198	C1199	A1200	C1201	A1202	A1203	A1204	A1205	G1206	G1207	U1208	G1209
U1210	U1211	A1212	U1213	U1214	U1215	C1216	A1217	U1218	C1219	U1220	A1221	G1222	C1223	C1224	A1225	G1226	U1227	U1228	C1229	G1230	A1231	C1232	U1233	G1234	U1235	G1236	G1237	C1238	C1239	A1240	U1241	G1242	G1243	A1244	A1245	A1246	U1247	C1248	G1249	G1250	A1251	A1252	U1253	C1254	G1255	G1256	C1257	U1258	A1259	A1260	G1261	G1262	A1263	U1264	U1265	G1266	U1267	G1268	U1269
G548	U549	A550	A551	G552	U553	A554	U555	U556	A557	U558	A559	G560	C561	C562	U563	G564	U565	G566	G567	G568	A569	U570	U571	A572	C573	U574	G575	C576	C577	A578	G579	C580	U581	G582	G583	G584	A585	C586	U587	G588	A589	G590	G591	A592	C593	U594	G595	C596	G597	A598	C599	G600	U601	A602	A603	G604	U605	C606	A607
A608	G609	G610	A611	U612	G613	C614	U615	G616	C617	U618	A619	U620	A621	A622	U623	G624	U625	U626	U627	A628	U629	A630	U631	G632	G633	C634	G635	C636	C637	C638	G639	U640	C641	U642	U643	G644	A645	A646	C647	C648	A649	C650	G651	G652	A653	C654	G655	U656	A657	G658	C659	U660	G661	U662	C663	U664	A665	A666	C667
G668	U669	C670	U671	A672	U673	C674	G675	C676	A677	G678	U679	G680	U681	U682	U683	G684	G685	G686	U687	A688	U689	A690	A691	A692	C693	C694	C695	A696	A697	U698	C699	C700	G701	C702	G703	U704	A705	U706	U707	G708	A709	A710	A711	G712	U713	G714	A715	A716	C717	G718	U719	C720	G721	G722	U723	G725	G726	G727	U728
C729	C730	U731	C732	C733	C734	A735	A736	G737	A738	G739	G740	U741	G742	C743	A744	C745	A746	A747	U748	C749	G750	A751	A752	C753	G754	A755	U756	C757	C758	U759	G760	A761	U762	G763	U764	C765	U766	U767	C768	U769	A770	U771	G772	G773	G774	A775	U776	U777	U778	G779	A780	G781	U782	A783	A784	G785	A786	G787	C788
A789	U790	A791	G792	C793	U794	G795	U796	U797	G798	G799	G800	A801	C802	C803	A804	G805	A806	A807	A808	G809	A810	U811	G812	G813	U814	G815	A816	A817	C818	U819	A820	U821	G822	C823	C824	U825	G826	A827	U828	U829	A830	G831	G832	G833	U834	G835	A836	A837	G838	C839	C840	A841	G842	G845	A846	A847	A848	C849	
U850	C851	U852	G853	U854	U855	G856	A857	A858	G859	C860	C861	U862	C863	G864	U865	A866	G867	C868	G869	G870	U871	U872	C873	U874	G875	A876	C877	G878	U879	G880	C881	A882	A883	A884	U885	C886	G887	A888	U889	C890	G891	U892	C893	G894	A895	A896	U897	U898	U899	G900	G901	G902	U903	A904	U905	A906	G907	G908	G909
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A970	G971	A972	A973	G974	C975	U976	C977	U978	U979	A980	U981	C982	A983	U984	A985	U986	U987	U988	A989	U990	G991	A992	G993	G994	U995	A996	A997	A998	G999	C1000	G1001	A1002	A1003	U1004	G1005	A1006	U1007	U1008	A1009	G1010	U1011	G1012	G1013	U1014	U1015	C1016	C1017	U1018	G1019	A1020	G1021	U1022	C1023	G1024	A1025	A1026	A1027	U1028	G1029

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C	G1934	A1874	A1814	G1754	C1693	C1633	G1573	G1513	A1453	G1392	U1331
U	A1936	G1875	U1815	C1755	U1694	G1634	C1574	A1514	A1454	A1393	A1332
G	U1937	U1876	A1816	G1756	U1695	U1635	A1575	A1515	U1455	G1395	C1333
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A	G1940	A1879	U1819	A1760	C1698	A1638	C1578	U1518	U1458	U1398	U1336
G	C1941	U1880	U1820	C1761	A1699	C1639	C1579	G1519	C1459	A1399	A1337
G	U1942	U1881	U1821	C1762	G1700	G1640	A1580	G1520	A1460	G1400	C1338
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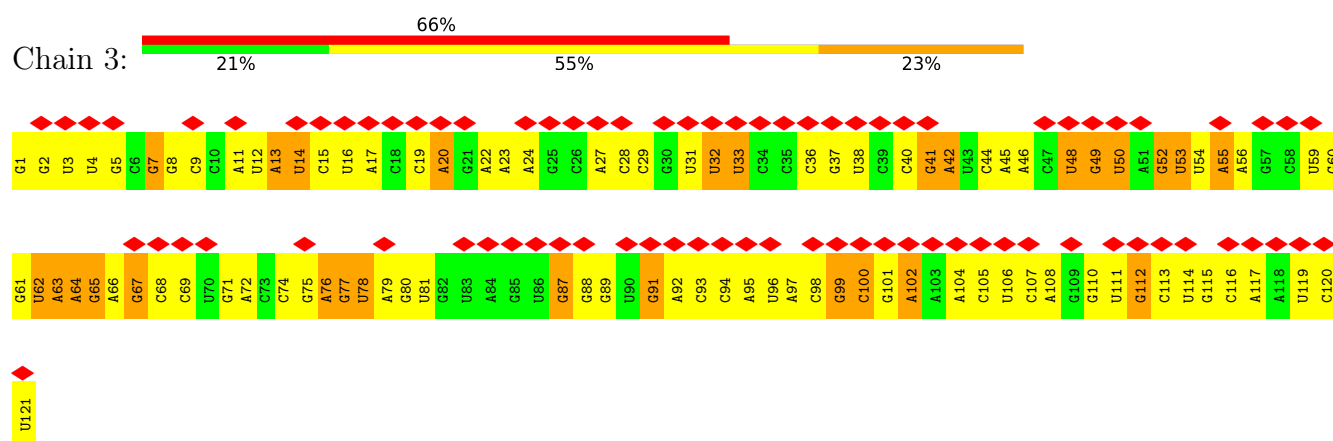




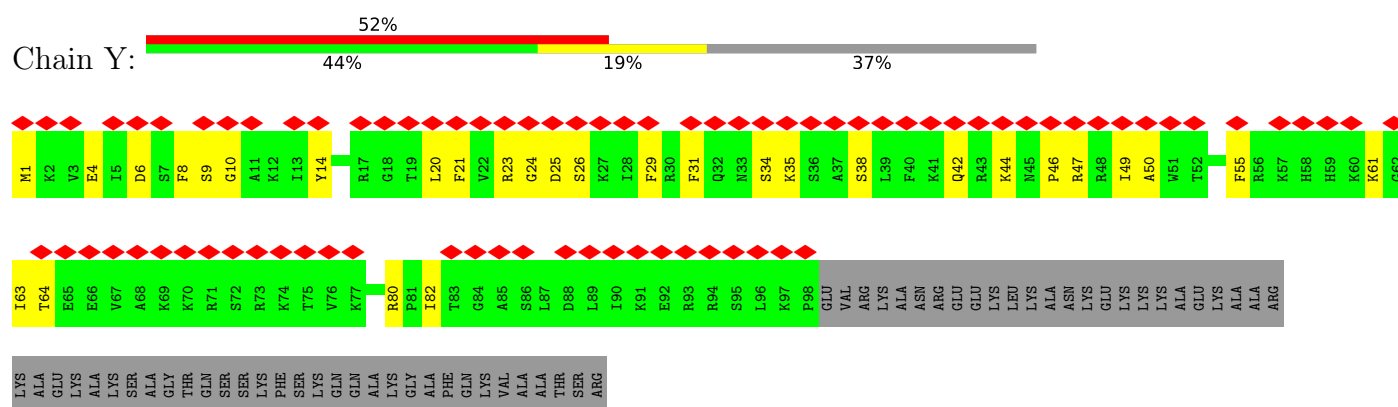
• Molecule 2: 60S ribosomal protein L23-A



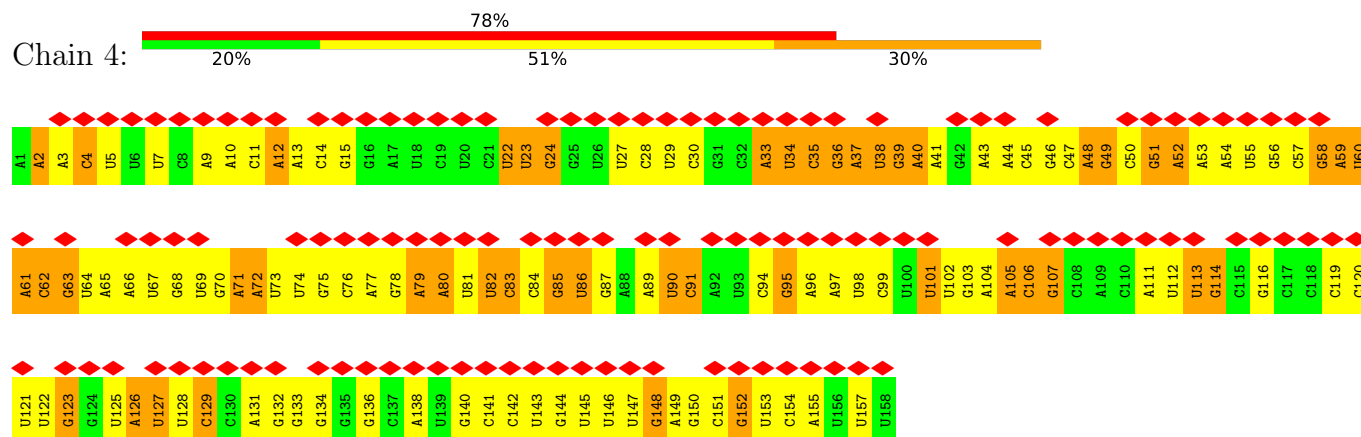
• Molecule 3: 5S rRNA



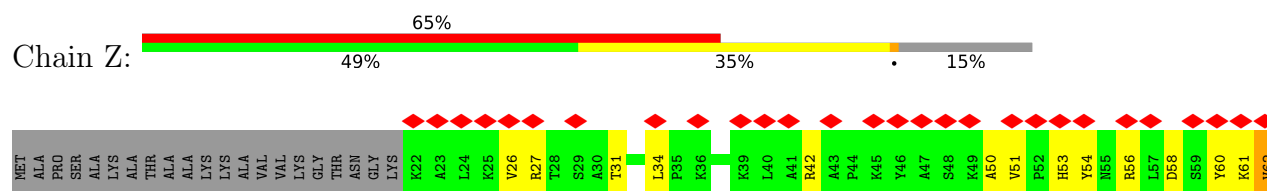
• Molecule 4: 60S ribosomal protein L24-A



• Molecule 5: 5.8S rRNA

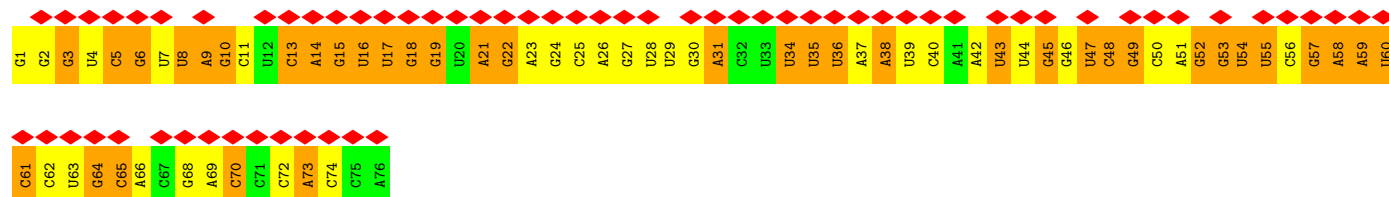
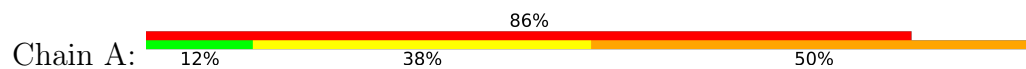


• Molecule 6: 60S ribosomal protein L25

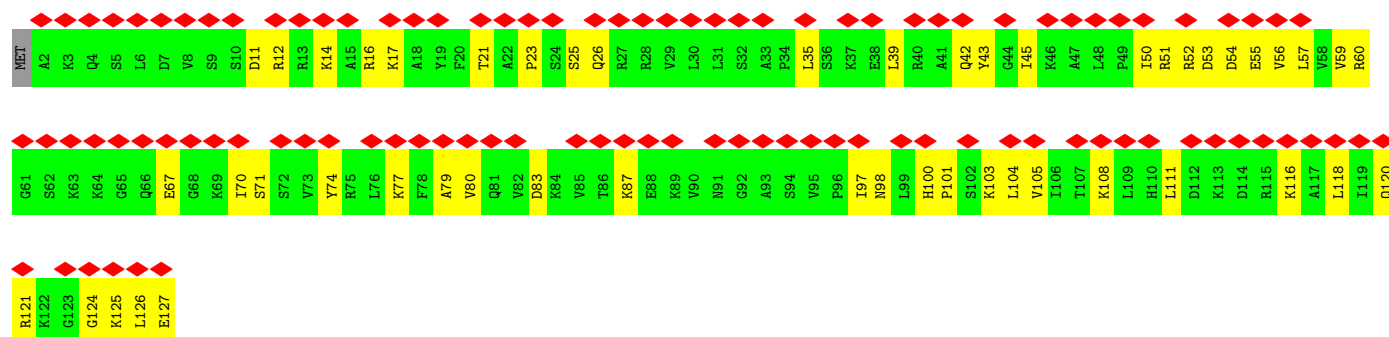
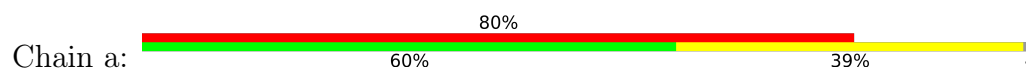




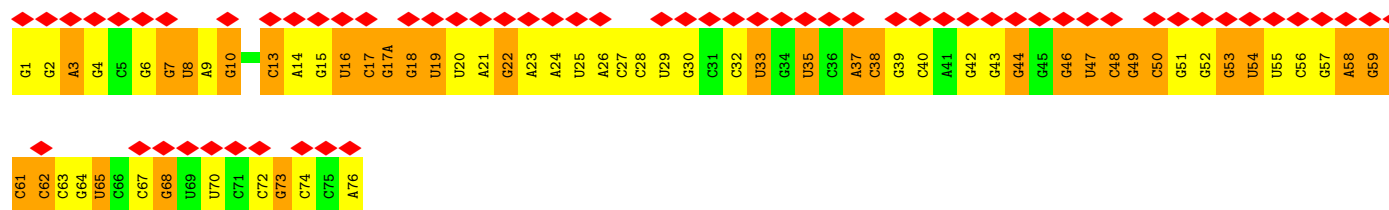
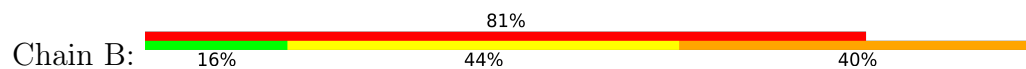
- Molecule 7: The A-site tRNA was modeled based on an *E. coli* tRNA-Lys



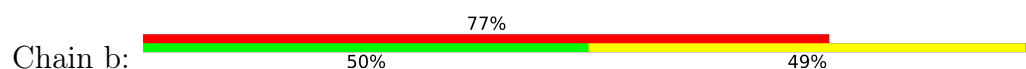
- Molecule 8: 60S ribosomal protein L26-A



- Molecule 9: P-site tRNA

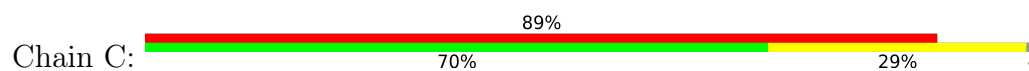


- Molecule 10: 60S ribosomal protein L27-A

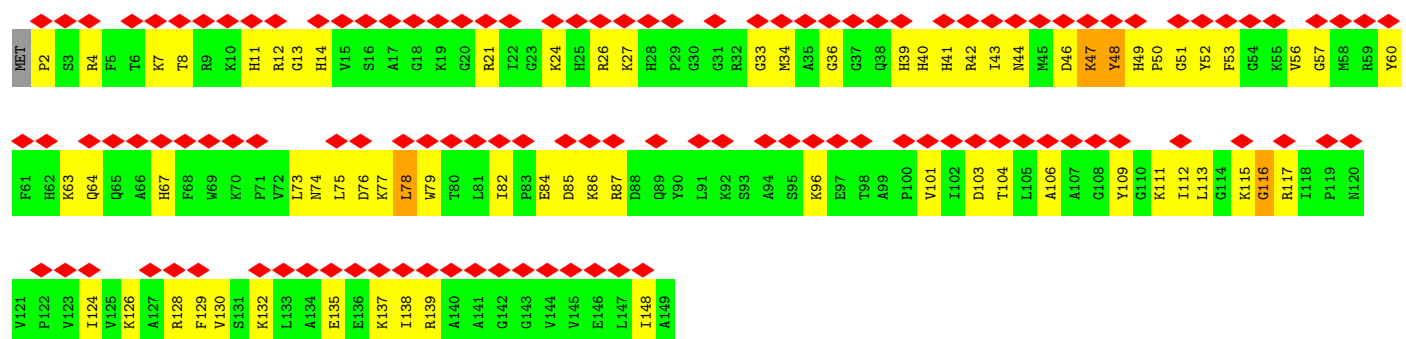
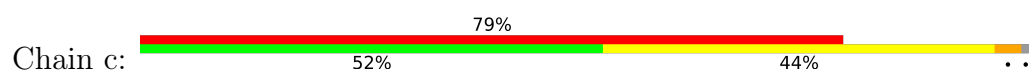




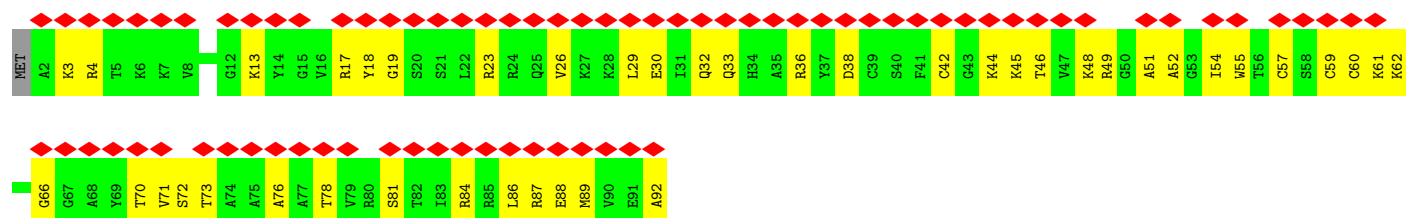
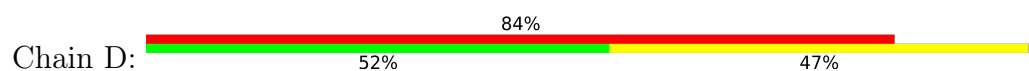
• Molecule 11: 60S ribosomal protein L42-A



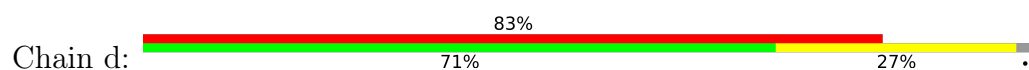
• Molecule 12: 60S ribosomal protein L28

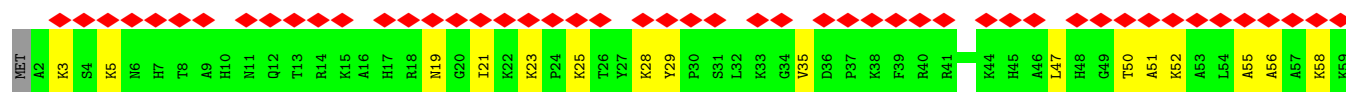


• Molecule 13: 60S ribosomal protein L43-A

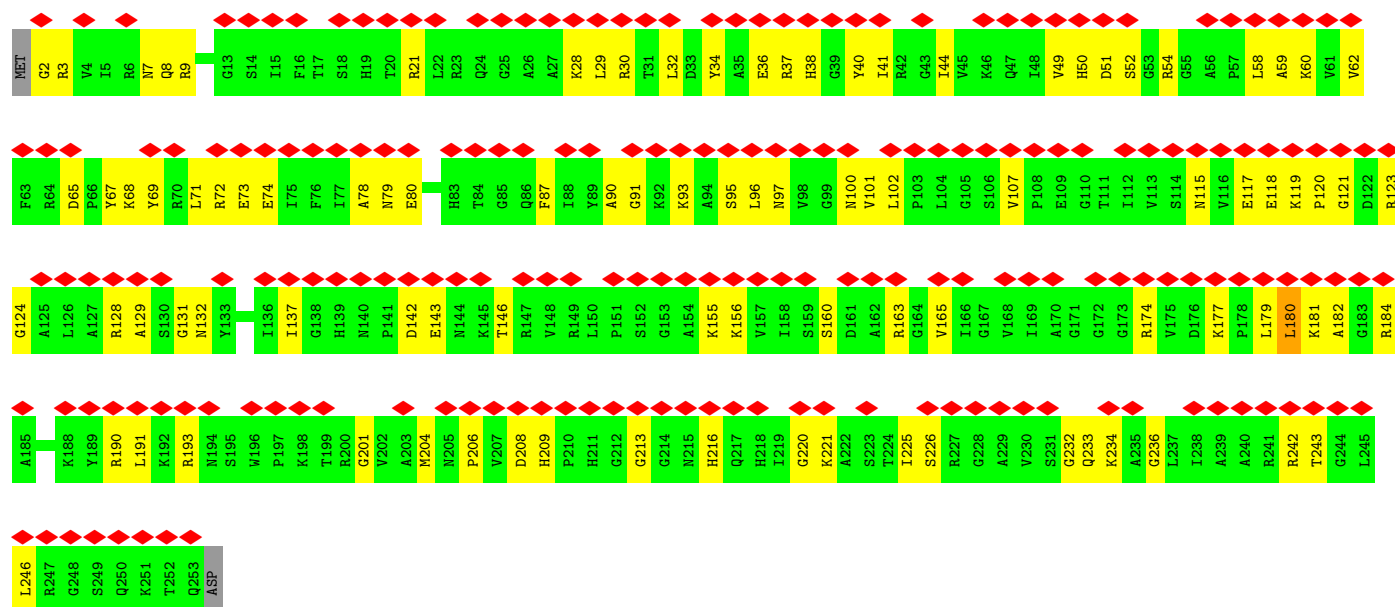
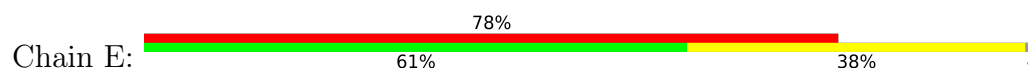


• Molecule 14: 60S ribosomal protein L29

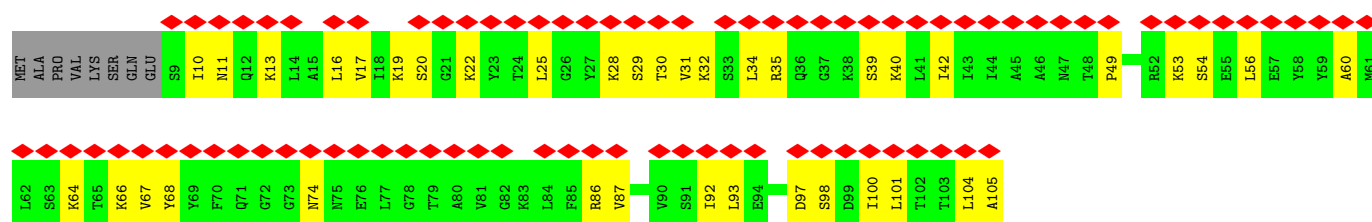
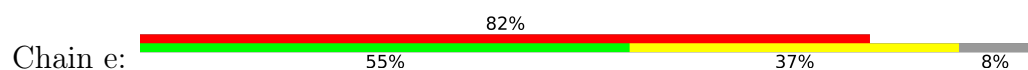




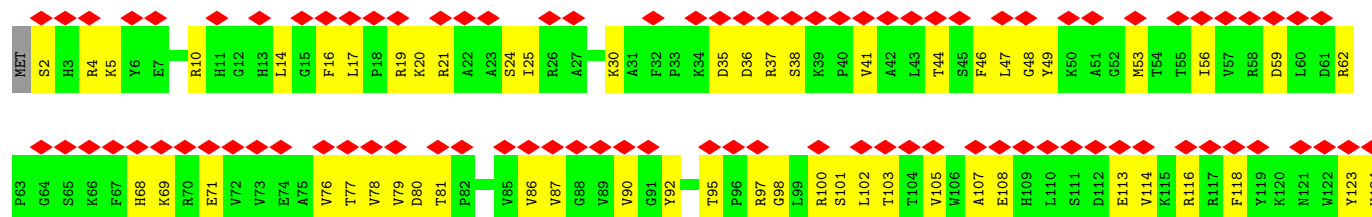
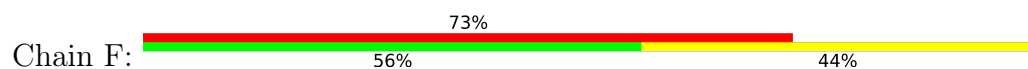
• Molecule 15: 60S ribosomal protein L2-A

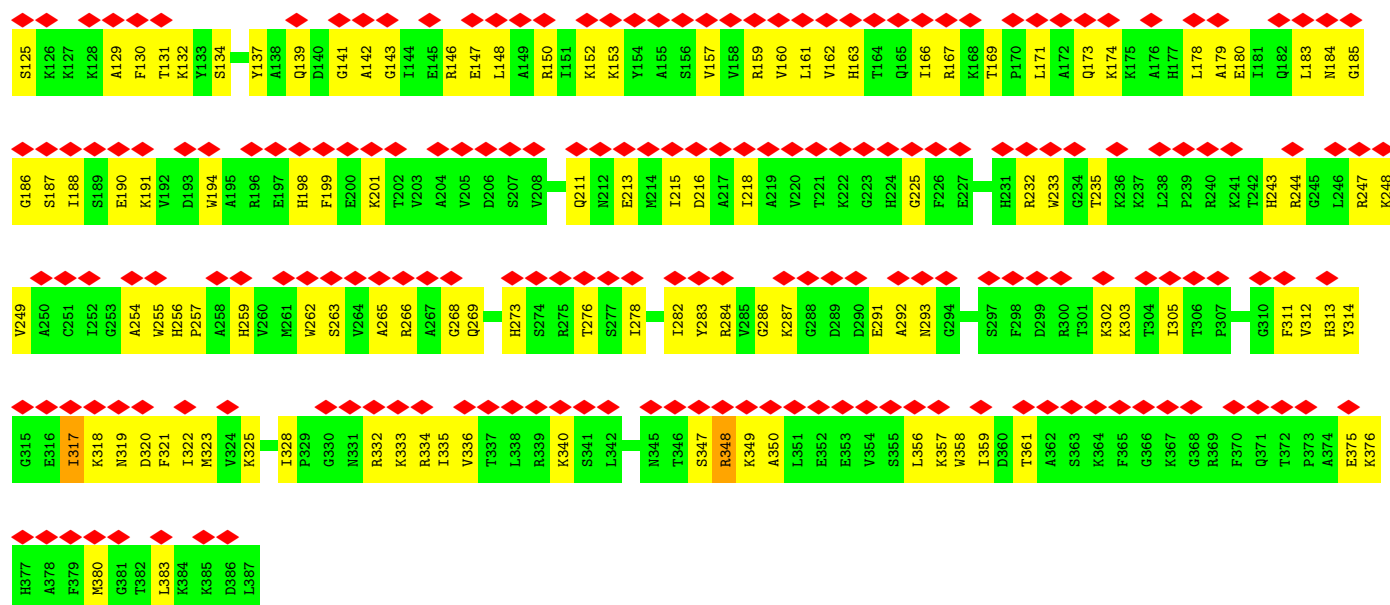


• Molecule 16: 60S ribosomal protein L30

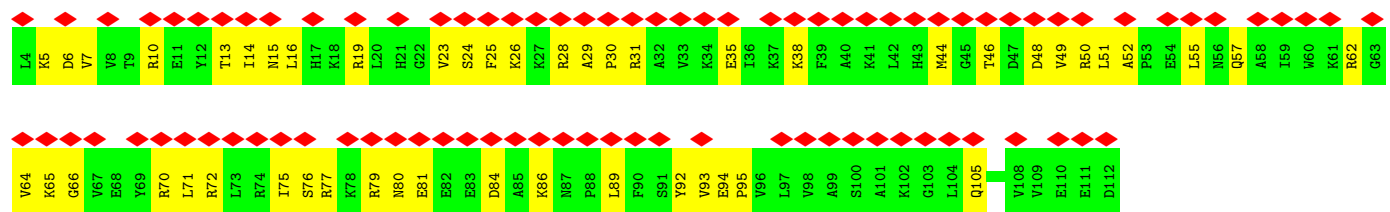
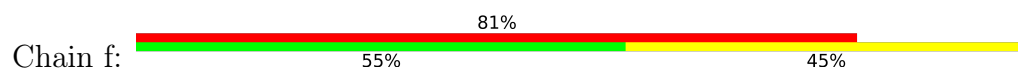


• Molecule 17: 60S ribosomal protein L3

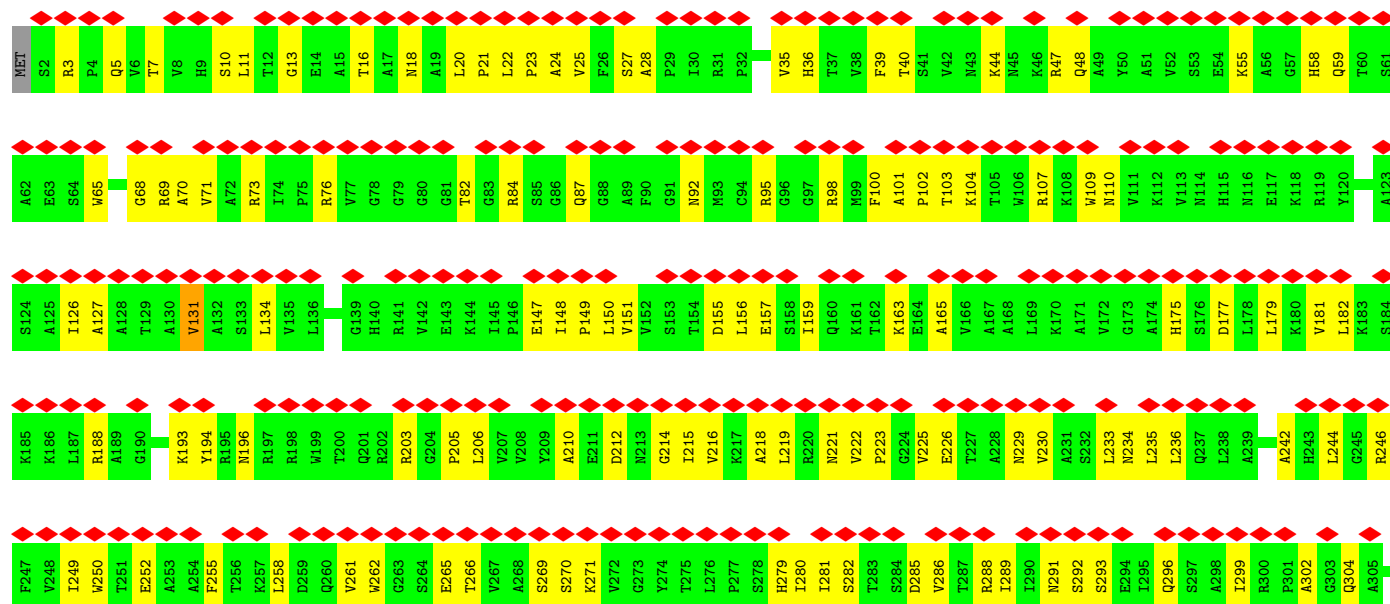
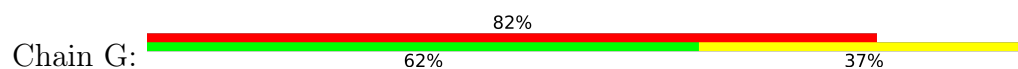




• Molecule 18: 60S ribosomal protein L31-A

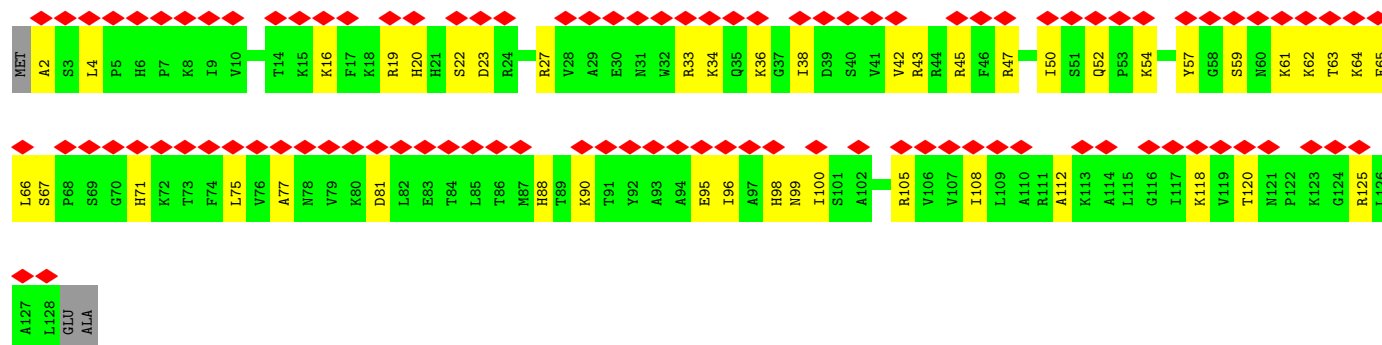
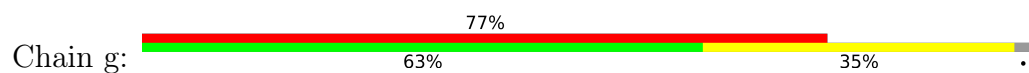


• Molecule 19: 60S ribosomal protein L4-A

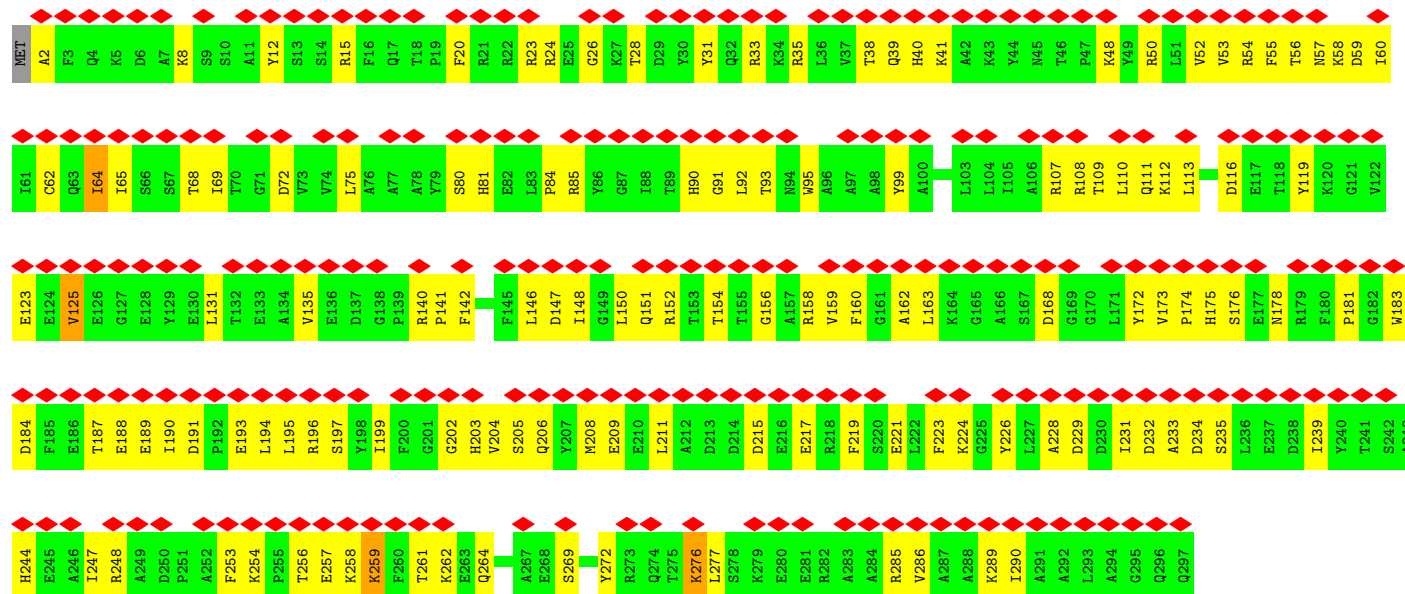
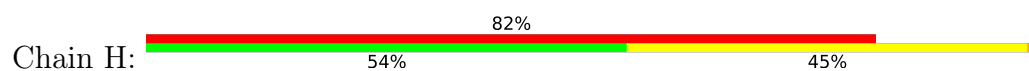




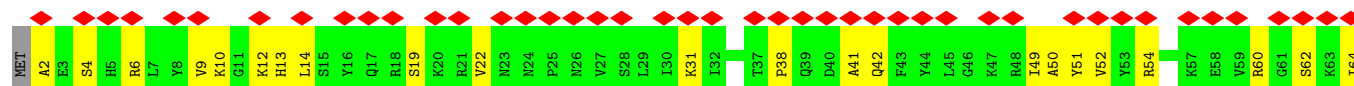
• Molecule 20: 60S ribosomal protein L32



• Molecule 21: 60S ribosomal protein L5

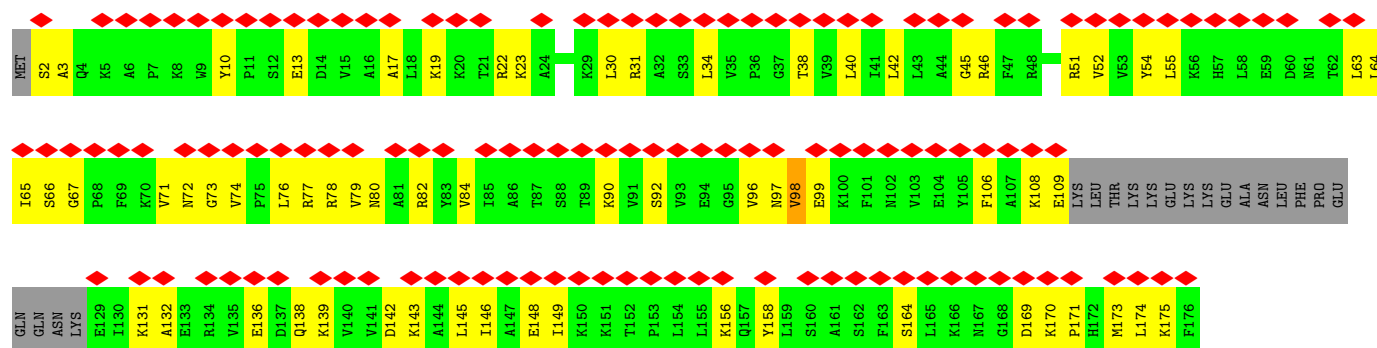
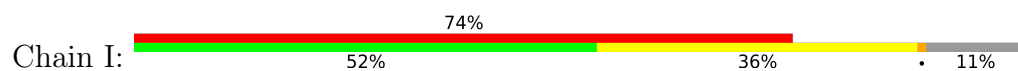


• Molecule 22: 60S ribosomal protein L33-A

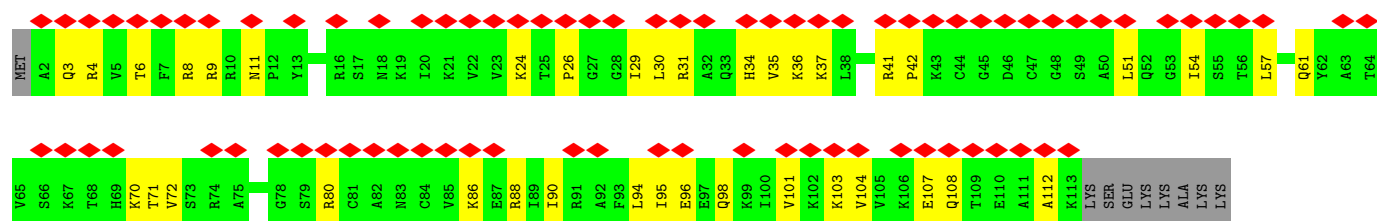




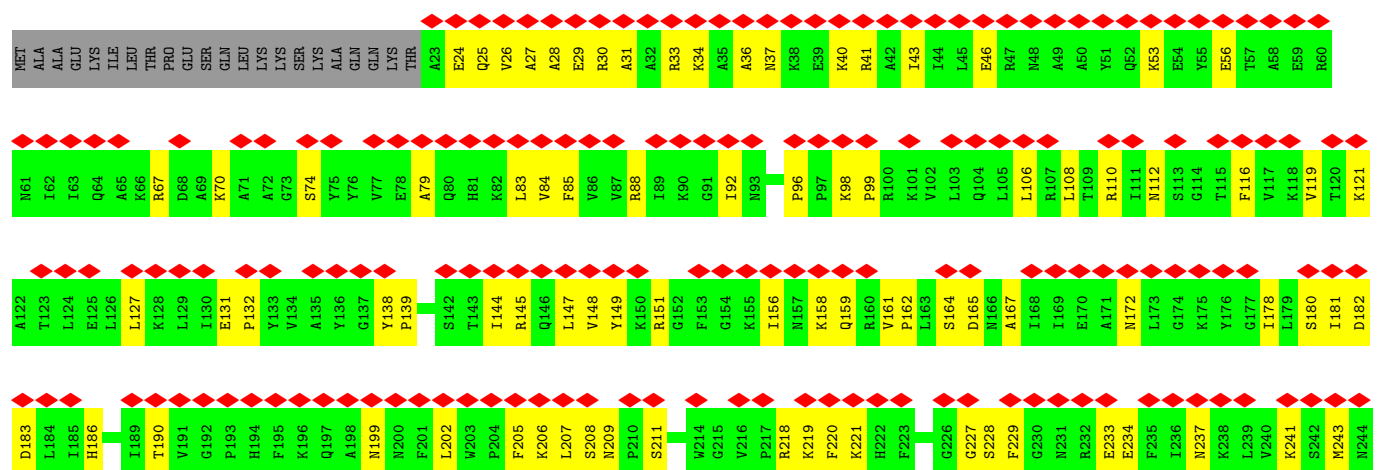
• Molecule 23: 60S ribosomal protein L6-A



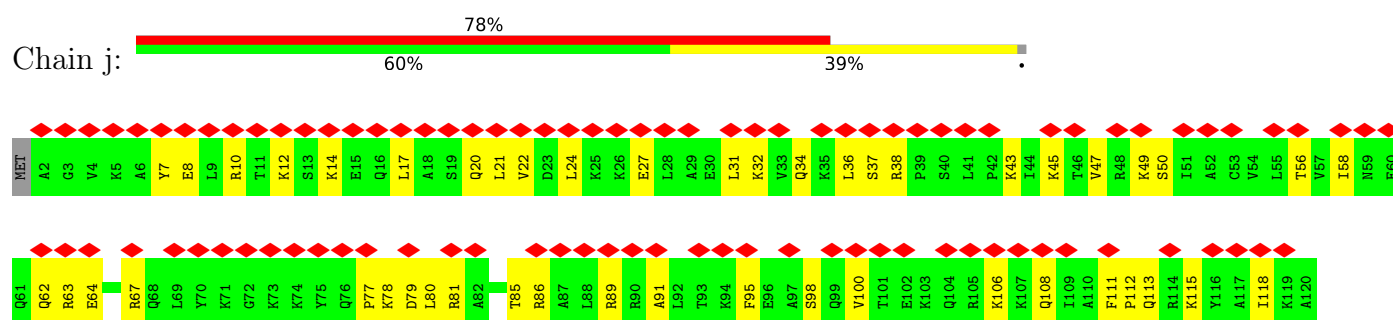
• Molecule 24: 60S ribosomal protein L34-A



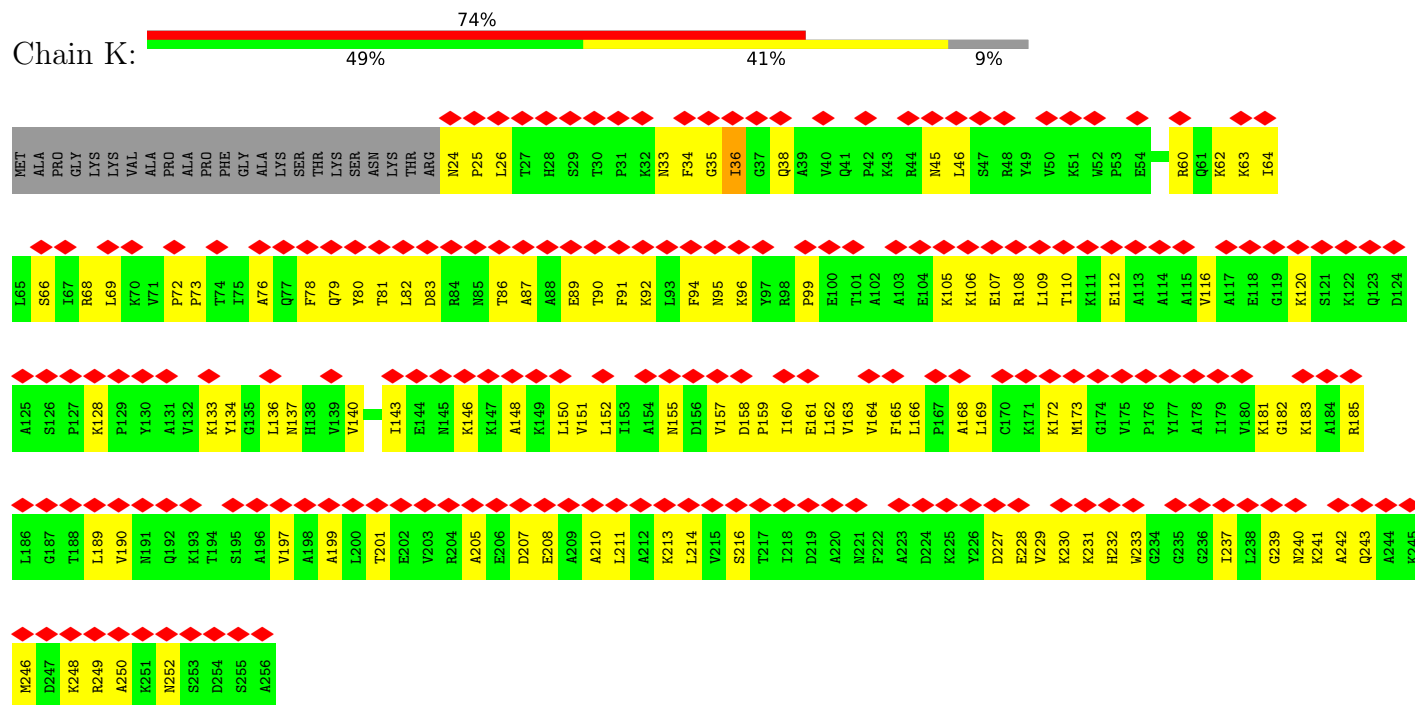
• Molecule 25: 60S ribosomal protein L7-A



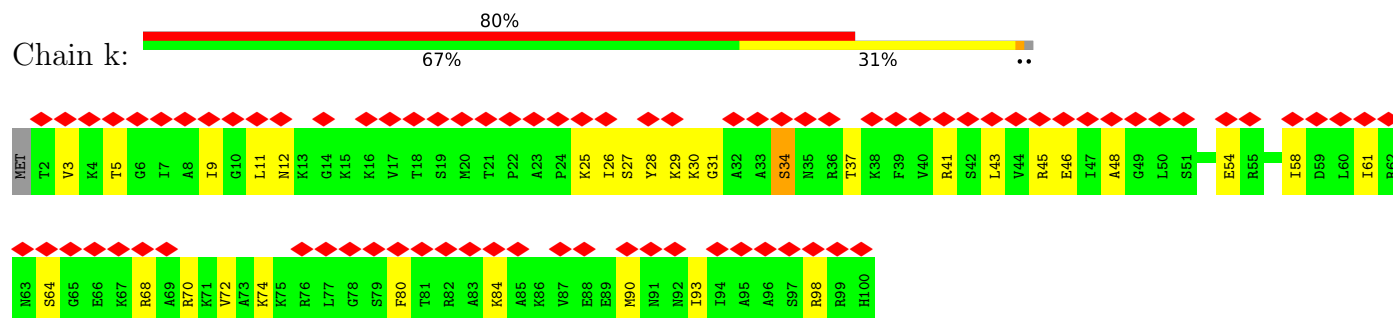
• Molecule 26: 60S ribosomal protein L35-A



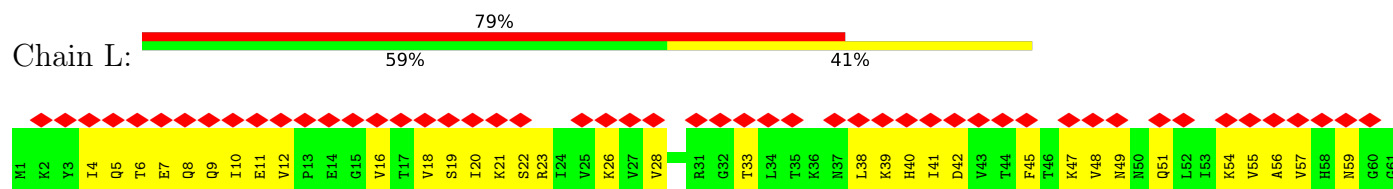
• Molecule 27: 60S ribosomal protein L8-A

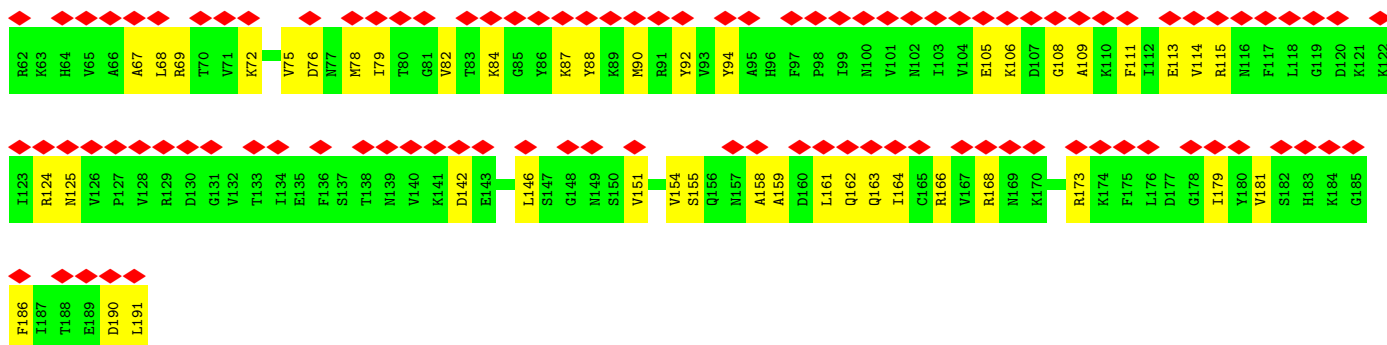


• Molecule 28: 60S ribosomal protein L36-A



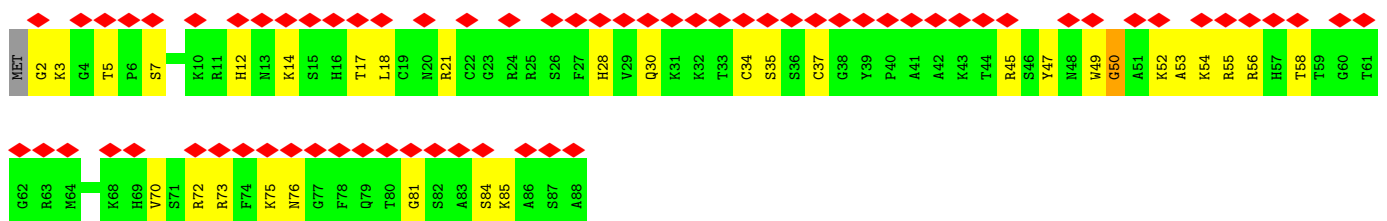
• Molecule 29: 60S ribosomal protein L9-A





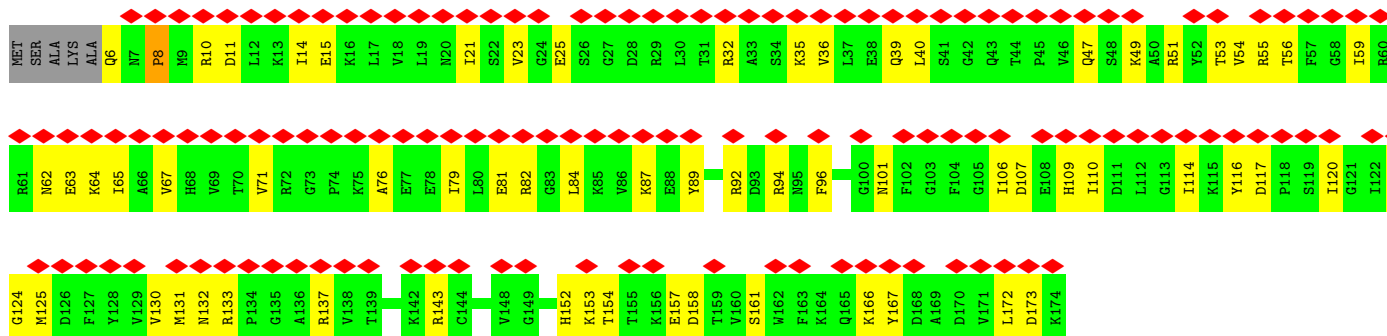
• Molecule 30: 60S ribosomal protein L37-A

Chain I:



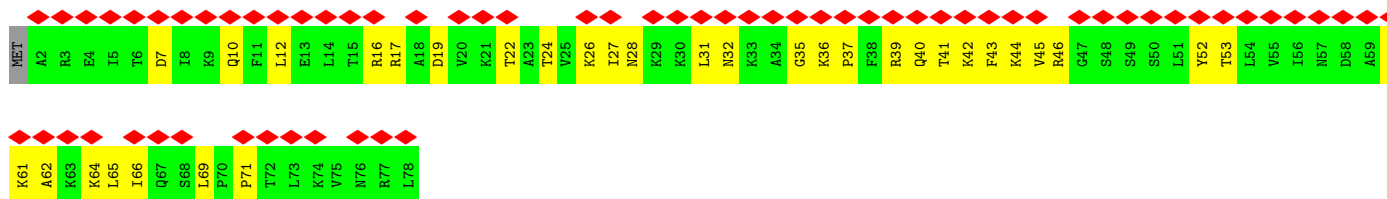
• Molecule 31: 60S ribosomal protein L11-A

Chain M:

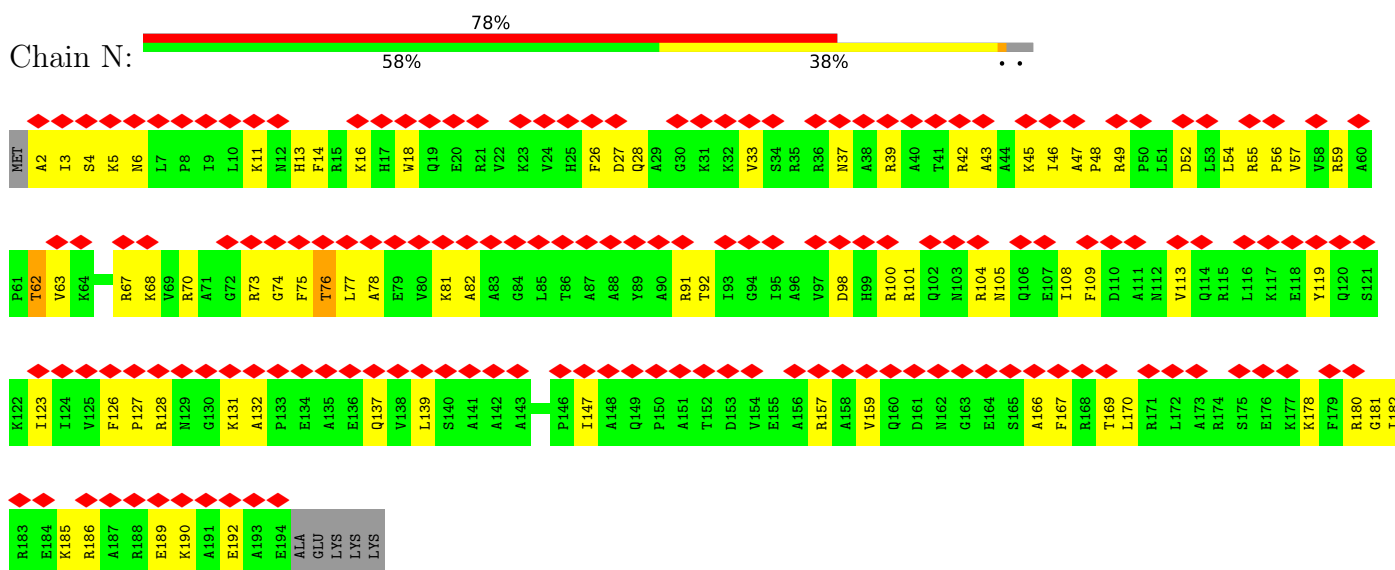


• Molecule 32: 60S ribosomal protein L38

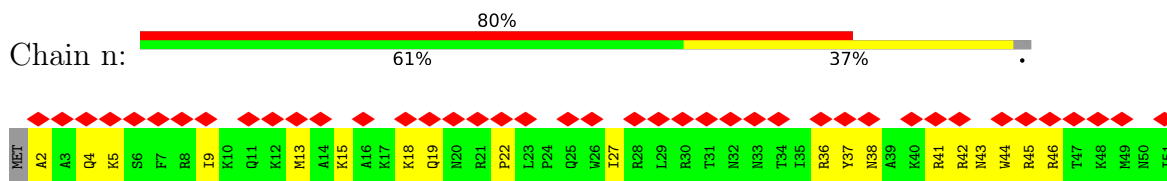
Chain m:



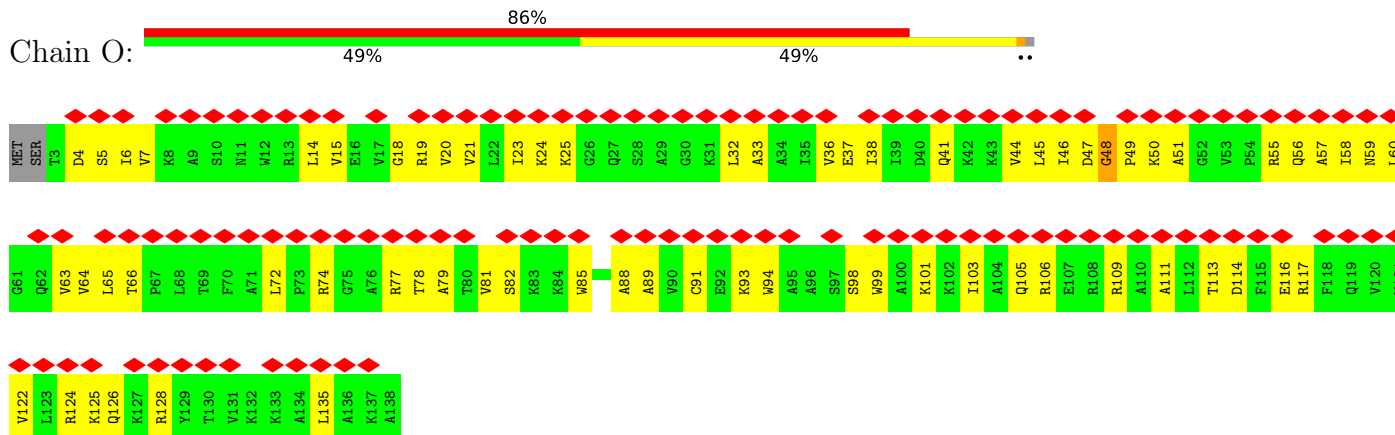
• Molecule 33: 60S ribosomal protein L13-A



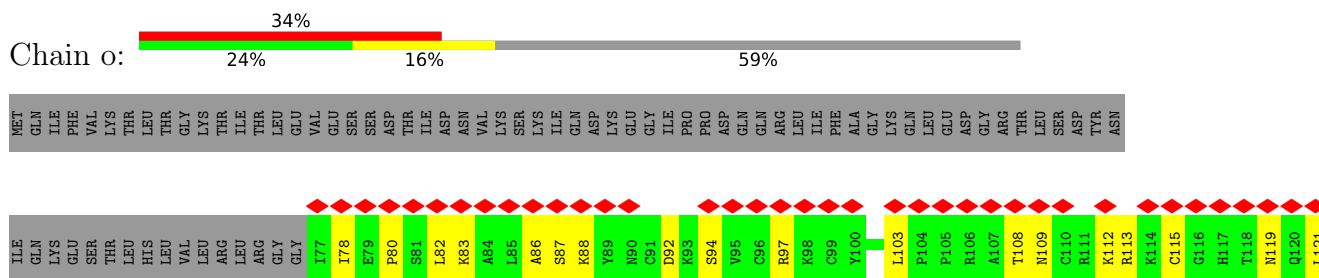
• Molecule 34: 60S ribosomal protein L39



• Molecule 35: 60S ribosomal protein L14-B

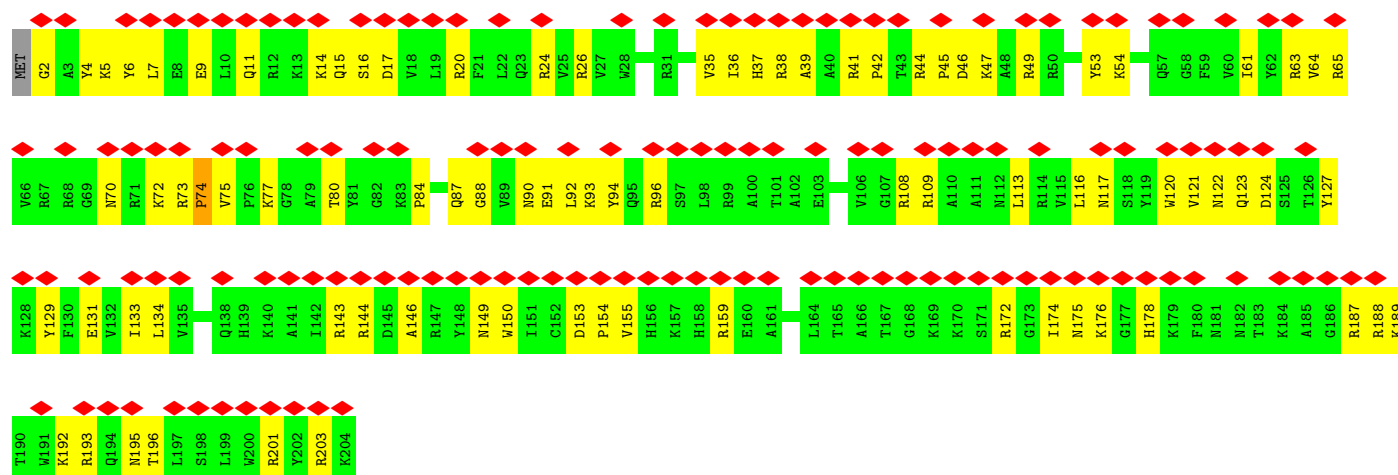


• Molecule 36: Ubiquitin-60S ribosomal protein L40

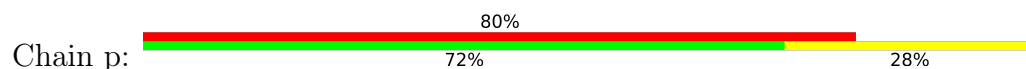




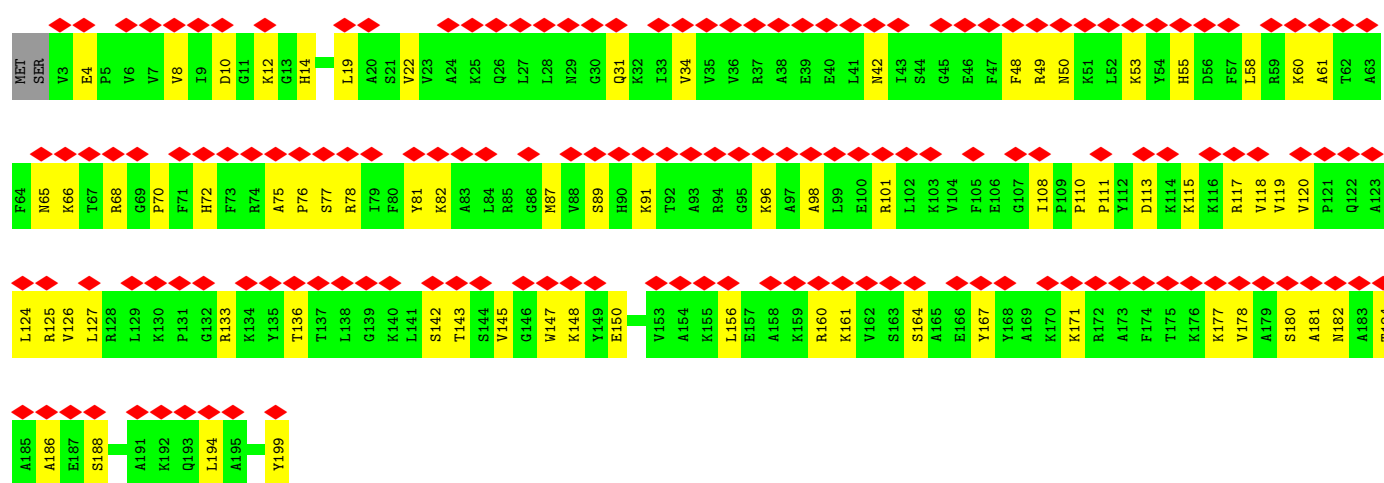
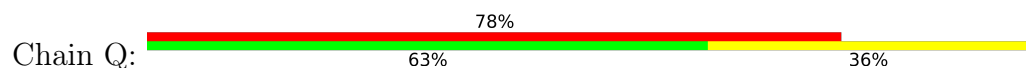
• Molecule 37: 60S ribosomal protein L15-A



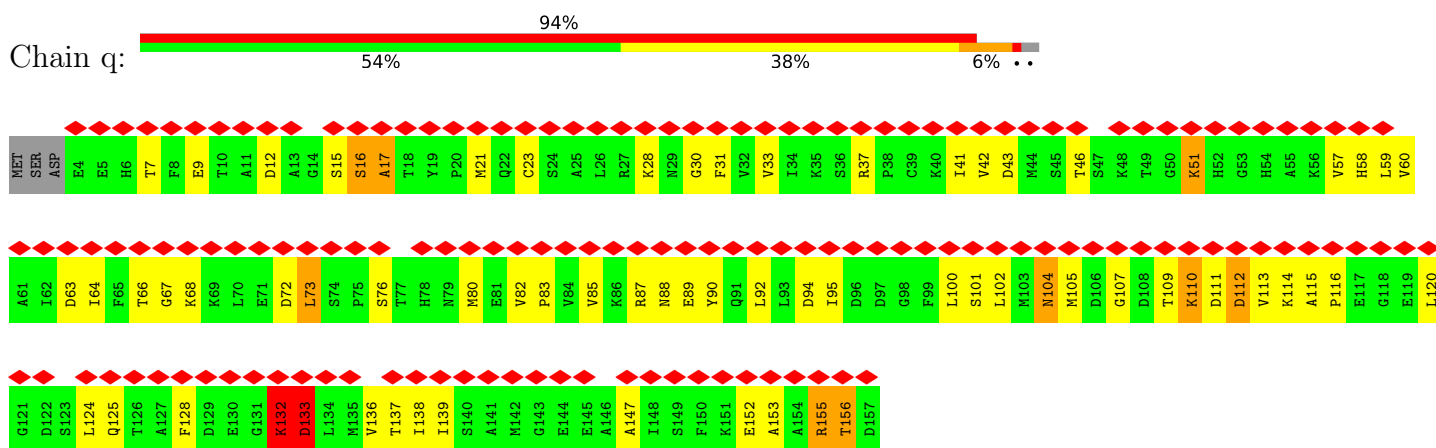
• Molecule 38: 60S ribosomal protein L41-A



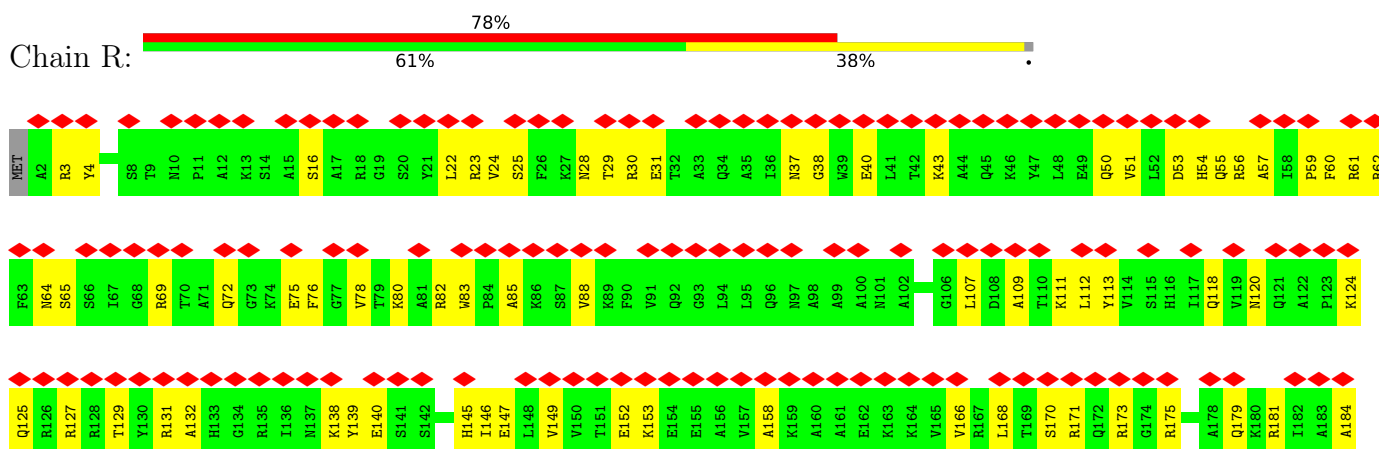
• Molecule 39: 60S ribosomal protein L16-A



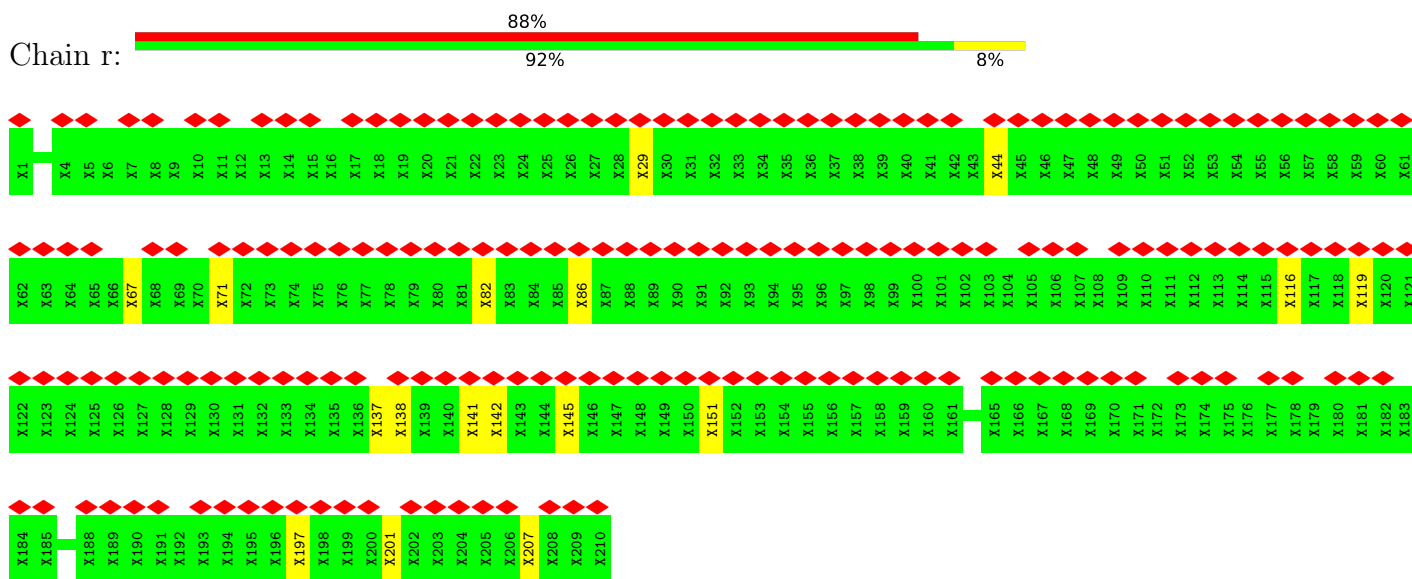
• Molecule 40: Eukaryotic translation initiation factor 5A-1



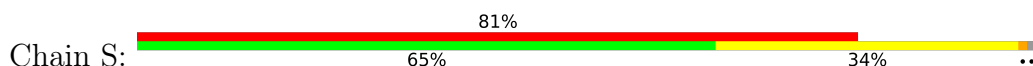
• Molecule 41: 60S ribosomal protein L17-A



• Molecule 42: ribosomal protein RPL1

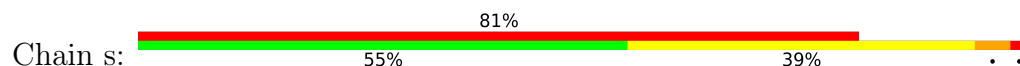


• Molecule 43: 60S ribosomal protein L18-A

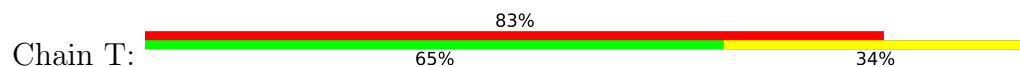


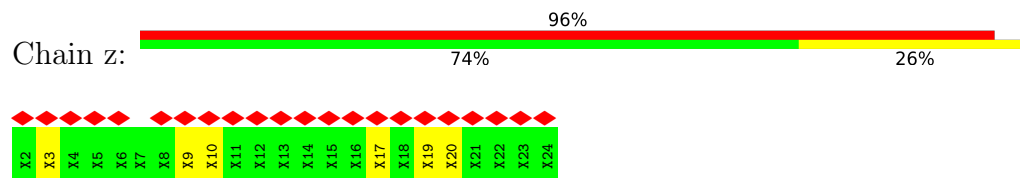


• Molecule 44: 60S ribosomal protein L10



• Molecule 45: 60S ribosomal protein L19-A





4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	62532	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING ONLY; Each Particle	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	20	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	0.404	Depositor
Minimum map value	-0.244	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.022	Depositor
Recommended contour level	0.06	Depositor
Map size ($\text{\AA}$)	401.08, 401.08, 401.08	wwPDB
Map dimensions	370, 370, 370	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	1.084, 1.084, 1.084	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: 3HE, 5CT

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	1	0.33	0/75774	0.50	2/118137 (0.0%)
2	X	0.32	0/1018	0.58	1/1369 (0.1%)
3	3	0.28	0/2883	0.43	0/4491
4	Y	0.27	0/712	0.61	0/958
5	4	0.33	0/3746	0.49	0/5832
6	Z	0.32	0/979	0.59	0/1321
7	A	0.24	0/1799	0.44	0/2801
8	a	0.31	0/1004	0.62	0/1341
9	B	0.24	0/1835	0.43	0/2858
10	b	0.28	0/1118	0.59	0/1497
11	C	0.31	0/860	0.59	0/1136
12	c	0.36	0/1204	0.66	1/1612 (0.1%)
13	D	0.34	0/701	0.67	0/934
14	d	0.37	0/473	0.50	0/629
15	E	0.36	0/1948	0.65	2/2617 (0.1%)
16	e	0.26	0/751	0.46	0/1008
17	F	0.34	0/3146	0.65	2/4228 (0.0%)
18	f	0.36	0/890	0.60	0/1196
19	G	0.33	0/2800	0.58	0/3790
20	g	0.33	0/1041	0.59	0/1394
21	H	0.26	0/2425	0.53	0/3271
22	h	0.38	0/868	0.58	0/1168
23	I	0.27	0/1260	0.51	0/1694
24	i	0.33	0/890	0.56	0/1189
25	J	0.33	0/1821	0.52	0/2451
26	j	0.28	0/978	0.57	0/1301
27	K	0.28	0/1836	0.59	0/2481
28	k	0.27	0/778	0.61	2/1034 (0.2%)
29	L	0.30	0/1539	0.64	0/2073
30	l	0.40	0/696	0.66	0/923
31	M	0.26	0/1374	0.57	1/1842 (0.1%)
32	m	0.25	0/618	0.63	0/826

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	N	0.31	0/1568	0.67	4/2106 (0.2%)
34	n	0.33	0/443	0.59	0/588
35	O	0.27	0/1068	0.58	0/1438
36	o	0.28	0/423	0.60	0/562
37	P	0.39	0/1757	0.68	2/2354 (0.1%)
38	p	0.28	0/234	0.68	0/300
39	Q	0.34	0/1585	0.59	0/2128
40	q	0.30	0/1142	0.75	1/1537 (0.1%)
41	R	0.35	0/1443	0.66	1/1944 (0.1%)
43	S	0.32	0/1465	0.57	0/1965
44	s	0.34	1/1807 (0.1%)	0.64	1/2425 (0.0%)
45	T	0.29	0/1538	0.58	0/2050
46	U	0.34	0/1481	0.66	2/1990 (0.1%)
47	V	0.32	0/1300	0.62	0/1743
48	W	0.26	0/812	0.65	0/1099
All	All	0.32	1/137831 (0.0%)	0.54	22/203631 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
17	F	0	1
25	J	0	1
27	K	0	1
30	l	0	1
35	O	0	1
39	Q	0	1
40	q	0	1
43	S	0	1
44	s	0	2
All	All	0	10

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
44	s	112	GLN	CD-OE1	5.11	1.33	1.23

All (22) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
33	N	62	THR	CB-CA-C	-7.23	106.34	115.89
46	U	13	ARG	CB-CA-C	-7.02	106.62	115.89
44	s	135	PHE	CB-CA-C	-6.91	107.57	115.79
46	U	24	LEU	CB-CA-C	-6.62	107.16	115.89
17	F	38	SER	CA-C-N	6.57	131.38	120.86
17	F	38	SER	C-N-CA	6.57	131.38	120.86
12	c	116	GLY	N-CA-C	6.39	120.09	111.72
28	k	34	SER	CB-CA-C	-6.12	108.50	115.79
15	E	91	GLY	N-CA-C	5.95	118.11	112.04
33	N	76	THR	CB-CA-C	-5.93	108.03	116.34
33	N	131	LYS	CB-CA-C	-5.88	109.81	116.63
2	X	27	ASP	N-CA-C	5.59	115.49	108.45
1	1	2283	G	C2'-C3'-O3'	5.54	117.81	109.50
41	R	158	ALA	CB-CA-C	-5.38	109.39	115.79
15	E	180	LEU	CB-CA-C	-5.20	110.16	117.23
33	N	62	THR	N-CA-C	5.17	117.71	109.02
31	M	172	LEU	CB-CA-C	-5.14	109.67	115.79
28	k	72	VAL	N-CA-C	-5.03	107.85	112.83
1	1	1144	U	C2'-C3'-O3'	5.02	117.03	109.50
37	P	74	PRO	CA-C-N	5.01	131.40	122.13
37	P	74	PRO	C-N-CA	5.01	131.40	122.13
40	q	104	ASN	N-CA-C	-5.01	103.07	110.48

There are no chirality outliers.

All (10) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
17	F	348	ARG	Peptide
25	J	108	LEU	Peptide
27	K	76	ALA	Peptide
35	O	48	GLY	Peptide
39	Q	148	LYS	Peptide
43	S	145	ASN	Peptide
30	l	50	GLY	Peptide
40	q	76	SER	Peptide
44	s	170	TRP	Peptide
44	s	171	GLY	Peptide

5.2 Too-close contacts

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen

atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	1	67695	0	34019	3120	0
2	X	1003	0	1048	44	0
3	3	2579	0	1304	114	0
4	Y	699	0	640	26	0
5	4	3353	0	1695	157	0
6	Z	964	0	1025	44	0
7	A	1611	0	816	91	0
8	a	993	0	1081	41	0
9	B	1644	0	831	76	0
10	b	1092	0	1155	64	0
11	C	847	0	918	43	0
12	c	1173	0	1215	82	0
13	D	694	0	738	44	0
14	d	462	0	491	19	0
15	E	1914	0	1981	95	0
16	e	743	0	797	33	0
17	F	3075	0	3142	154	0
18	f	876	0	912	41	0
19	G	2748	0	2859	126	0
20	g	1020	0	1090	50	0
21	H	2375	0	2325	150	0
22	h	850	0	880	41	0
23	I	1239	0	1326	72	0
24	i	880	0	945	37	0
25	J	1784	0	1862	72	0
26	j	969	0	1078	47	0
27	K	1804	0	1877	96	0
28	k	771	0	849	31	0
29	L	1518	0	1587	67	0
30	l	681	0	687	30	0
31	M	1353	0	1383	55	0
32	m	612	0	682	30	0
33	N	1543	0	1608	85	0
34	n	436	0	475	27	0
35	O	1053	0	1149	77	0
36	o	417	0	459	20	0
37	P	1720	0	1779	109	0
38	p	233	0	284	8	0
39	Q	1555	0	1659	56	0
40	q	1143	0	1108	62	0
41	R	1420	0	1437	68	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
42	r	1050	0	222	11	0
43	S	1441	0	1543	76	0
44	s	1770	0	1808	102	0
45	T	1521	0	1617	71	0
46	U	1445	0	1487	70	0
47	V	1276	0	1323	54	0
48	W	796	0	812	25	0
49	z	115	0	37	9	0
50	1	20	0	23	2	0
All	All	128975	0	92068	5238	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 24.

All (5238) 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)
1:1:2978:U:C4	49:z:17:UNK:CB	2.02	1.42
1:1:1135:A:OP2	14:d:5:LYS:NZ	1.66	1.28
40:q:132:LYS:HB3	40:q:152:GLU:OE2	1.14	1.24
1:1:520:U:OP2	25:J:70:LYS:NZ	1.71	1.24
1:1:208:C:OP2	19:G:163:LYS:NZ	1.75	1.20
9:B:74:C:OP2	44:s:108:ASP:OD1	1.66	1.14
45:T:103:ARG:NH1	45:T:124:TYR:OH	1.82	1.13
1:1:2978:U:O4	49:z:17:UNK:CB	0.82	1.11
1:1:73:C:N3	33:N:59:ARG:NH1	1.99	1.11
1:1:1382:G:OP2	19:G:188:ARG:NH1	1.84	1.11
1:1:942:U:O4	12:c:24:LYS:NZ	1.82	1.10
40:q:132:LYS:CB	40:q:152:GLU:OE2	1.91	1.09
9:B:19:U:O2'	31:M:55:ARG:NH1	1.86	1.08
1:1:1257:C:H42	1:1:1261:G:N2	1.51	1.07
1:1:3185:U:OP1	29:L:23:ARG:NH1	1.89	1.06
27:K:146:LYS:NZ	27:K:173:MET:O	1.88	1.05
17:F:142:ALA:O	17:F:146:ARG:HB2	1.54	1.05
15:E:30:ARG:HH12	15:E:41:ILE:HD13	1.17	1.05
1:1:2941:A:OP2	17:F:256:HIS:ND1	1.90	1.04
1:1:1846:C:H42	49:z:10:UNK:CB	1.70	1.04
1:1:1491:A:OP1	30:l:14:LYS:NZ	1.91	1.04
1:1:1106:G:O3'	14:d:25:LYS:NZ	1.91	1.03
1:1:1751:G:OP1	32:m:26:LYS:NZ	1.91	1.03
1:1:1385:C:HO2'	23:I:2:SER:N	1.56	1.03

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:Q:91:LYS:O	39:Q:96:LYS:NZ	1.92	1.03
1:1:2218:G:OP2	28:k:68:ARG:NH2	1.89	1.02
1:1:2548:C:OP2	15:E:93:LYS:NZ	1.92	1.02
1:1:2278:C:OP2	38:p:23:ARG:NH1	1.92	1.02
1:1:951:A:OP2	1:1:1367:G:N2	1.93	1.02
1:1:2514:U:OP2	1:1:2586:G:N2	1.92	1.01
1:1:532:A:H61	1:1:560:G:H1	1.05	1.01
1:1:284:A:OP2	11:C:41:ARG:NH1	1.94	1.01
1:1:2452:G:H21	1:1:2494:A:N6	1.56	1.01
1:1:668:G:O2'	43:S:164:ARG:NH1	1.93	1.01
1:1:2745:G:N2	1:1:2748:A:OP2	1.94	1.00
1:1:2554:A:N7	13:D:62:LYS:NZ	2.09	1.00
1:1:3206:C:H1'	46:U:155:ARG:HH12	1.20	1.00
1:1:3234:A:C2	1:1:3253:G:N1	2.29	0.99
1:1:317:A:OP2	28:k:30:LYS:NZ	1.96	0.99
1:1:3234:A:H2	1:1:3253:G:N1	1.61	0.98
1:1:394:G:N1	1:1:397:A:OP2	1.96	0.97
1:1:2283:G:O2'	1:1:2284:C:OP2	1.81	0.97
5:4:132:G:O2'	6:Z:97:LYS:NZ	1.96	0.97
1:1:80:G:OP2	37:P:193:ARG:NH1	1.97	0.97
1:1:86:G:O2'	1:1:87:U:OP2	1.81	0.97
1:1:3374:U:OP2	18:f:70:ARG:NH1	1.96	0.97
1:1:3348:G:H1	1:1:3357:U:H3	1.12	0.97
31:M:32:ARG:NH1	31:M:120:ILE:O	1.97	0.97
1:1:2955:U:OP2	1:1:2977:G:N1	1.97	0.96
1:1:149:U:P	37:P:49:ARG:HH12	1.89	0.96
1:1:92:G:O5'	11:C:46:LYS:NZ	1.99	0.96
1:1:86:G:N2	1:1:99:A:OP2	1.99	0.96
1:1:2402:A:N7	19:G:73:ARG:NH2	2.14	0.96
1:1:675:C:OP2	43:S:105:ARG:NH1	1.97	0.95
1:1:160:G:H1	1:1:261:U:H3	1.01	0.95
35:O:36:VAL:HG11	35:O:55:ARG:HH12	1.31	0.95
1:1:1712:G:N1	1:1:1731:A:OP2	1.99	0.95
1:1:353:G:O2'	1:1:354:U:OP2	1.84	0.95
1:1:1564:U:H3	1:1:1576:G:H1	1.14	0.94
1:1:3267:A:O3'	41:R:181:ARG:NH1	2.00	0.94
1:1:155:G:O2'	1:1:156:G:OP2	1.83	0.94
1:1:294:U:OP2	37:P:15:GLN:NE2	2.00	0.94
1:1:2555:G:N2	24:i:96:GLU:OE2	2.00	0.94
1:1:2655:U:OP1	11:C:98:LYS:NZ	1.99	0.94
4:Y:6:ASP:OD2	4:Y:9:SER:N	2.00	0.94

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:B:10:G:O6	9:B:25:U:C4	2.21	0.94
27:K:62:LYS:NZ	27:K:158:ASP:OD2	2.01	0.93
1:1:3366:G:OP1	4:Y:61:LYS:NZ	2.01	0.93
1:1:3206:C:H1'	46:U:155:ARG:NH1	1.83	0.93
1:1:89:A:N7	43:S:171:LYS:NZ	2.16	0.92
1:1:3222:U:H3	1:1:3263:G:H1	0.93	0.92
45:T:99:LEU:HD21	45:T:103:ARG:HE	1.35	0.92
3:3:49:G:OP2	21:H:91:GLY:N	2.02	0.92
1:1:600:G:N2	1:1:603:A:OP2	2.02	0.92
1:1:126:U:OP1	37:P:144:ARG:NH1	2.02	0.92
1:1:3232:G:H1	1:1:3255:U:H3	0.93	0.92
1:1:1355:A:O2'	1:1:1356:U:OP2	1.88	0.92
13:D:49:ARG:HH21	13:D:52:ALA:HB2	1.34	0.92
35:O:88:ALA:O	35:O:93:LYS:NZ	2.03	0.92
1:1:2452:G:N2	1:1:2494:A:H62	1.68	0.91
1:1:3047:U:O4	1:1:3094:A:N1	2.03	0.91
1:1:2557:A:H5'	10:b:135:ARG:HH11	1.35	0.91
1:1:3160:U:H3	1:1:3290:G:H1	0.93	0.91
1:1:3317:U:O2'	1:1:3318:G:OP2	1.89	0.91
28:k:11:LEU:HD11	33:N:180:ARG:HH11	1.36	0.90
1:1:1257:C:N4	1:1:1261:G:H22	1.69	0.90
1:1:708:G:N2	1:1:711:A:OP2	2.04	0.90
1:1:1231:A:H5''	1:1:1232:C:H5'	1.54	0.89
1:1:1307:G:O2'	1:1:1308:A:OP2	1.89	0.89
1:1:3214:U:O4	35:O:124:ARG:NH1	2.05	0.89
1:1:2178:A:O2'	1:1:2179:C:OP2	1.89	0.89
19:G:7:THR:N	19:G:147:GLU:OE2	2.04	0.89
42:r:44:UNK:HA	42:r:151:UNK:O	1.72	0.89
44:s:190:LYS:NZ	44:s:211:GLU:OE1	2.04	0.89
48:W:20:SER:HB3	48:W:61:THR:HA	1.55	0.89
1:1:1240:A:N6	1:1:1245:A:OP2	2.04	0.89
1:1:1213:G:H5''	46:U:137:ARG:HH12	1.36	0.89
8:a:51:ARG:NH1	8:a:53:ASP:OD2	2.04	0.89
1:1:1803:C:O3'	24:i:70:LYS:NZ	2.06	0.88
1:1:3047:U:C4	1:1:3094:A:N1	2.42	0.88
1:1:521:A:H62	1:1:571:U:H3	1.17	0.88
1:1:3192:U:H3	1:1:3200:G:H1	0.89	0.88
1:1:2452:G:N2	1:1:2494:A:N6	2.20	0.88
1:1:532:A:N6	1:1:560:G:H1	1.71	0.88
1:1:2434:U:O2'	1:1:2435:G:OP2	1.92	0.88
1:1:1564:U:O2	1:1:1576:G:N2	2.05	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1749:A:O3'	32:m:42:LYS:NZ	2.06	0.88
23:I:174:LEU:HD22	35:O:117:ARG:HH12	1.39	0.88
44:s:101:MET:SD	44:s:110:LEU:HD11	2.13	0.88
2:X:53:SER:N	2:X:56:ASP:OD2	2.06	0.87
1:1:147:U:O4	27:K:183:LYS:NZ	2.08	0.87
1:1:3269:U:O2'	1:1:3270:U:OP2	1.93	0.87
11:C:71:ARG:HH21	11:C:80:ARG:HH11	1.20	0.87
1:1:117:U:OP2	37:P:2:GLY:N	2.08	0.87
1:1:617:G:OP2	23:I:108:LYS:NZ	2.08	0.87
31:M:133:ARG:NH2	31:M:158:ASP:OD2	2.07	0.87
1:1:538:G:H1	1:1:553:U:H3	1.18	0.86
1:1:1721:U:OP2	45:T:103:ARG:HD3	1.74	0.86
1:1:3231:U:H3	1:1:3256:G:H1	1.22	0.86
1:1:2526:C:H2'	1:1:2527:G:C8	2.10	0.86
1:1:1448:U:OP2	41:R:82:ARG:NH2	2.06	0.86
1:1:3096:C:O3'	17:F:325:LYS:NZ	2.06	0.86
24:i:80:ARG:HH12	24:i:88:ARG:CZ	1.87	0.86
1:1:1078:U:N3	1:1:1081:U:OP2	2.08	0.86
1:1:3008:A:H2'	1:1:3009:G:H8	1.41	0.86
5:4:43:A:H2'	5:4:44:A:H8	1.40	0.85
1:1:1925:U:O2'	13:D:23:ARG:NH2	2.08	0.85
1:1:376:G:O2'	1:1:400:G:N2	2.09	0.85
1:1:590:G:OP1	20:g:62:LYS:NZ	2.08	0.85
1:1:1682:U:O4	48:W:90:ARG:NH1	2.08	0.85
1:1:3322:A:H2'	1:1:3323:A:H8	1.40	0.85
1:1:911:C:OP2	15:E:9:ARG:HD2	1.75	0.85
1:1:1834:U:OP1	34:n:5:LYS:NZ	2.09	0.85
17:F:53:MET:HG2	17:F:77:THR:HG22	1.57	0.85
44:s:155:ARG:NH1	44:s:162:GLN:O	2.09	0.85
1:1:1257:C:H42	1:1:1261:G:H22	1.16	0.85
33:N:16:LYS:NZ	37:P:195:ASN:OD1	2.10	0.85
1:1:371:G:N1	1:1:374:A:OP2	2.10	0.85
1:1:2162:U:OP1	15:E:234:LYS:NZ	2.08	0.85
1:1:533:A:N6	1:1:556:U:O4	2.09	0.84
1:1:1627:U:O2	1:1:1817:G:N2	2.09	0.84
32:m:12:LEU:HB3	32:m:16:ARG:HH22	1.42	0.84
1:1:906:A:H1'	1:1:909:G:H21	1.41	0.84
1:1:1863:G:N1	1:1:1866:C:OP2	2.09	0.84
1:1:170:G:H1	1:1:248:U:H3	1.22	0.84
21:H:33:ARG:HH12	21:H:50:ARG:HH22	1.24	0.84
1:1:2593:A:O2'	1:1:2594:C:OP2	1.94	0.84

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:H:33:ARG:HH12	21:H:50:ARG:NH2	1.76	0.84
21:H:123:GLU:HG2	21:H:248:ARG:HH12	1.40	0.84
1:1:1463:U:H3	1:1:1467:A:H62	1.21	0.84
1:1:3232:G:N2	1:1:3255:U:O2	2.09	0.84
22:h:12:LYS:NZ	22:h:97:SER:OG	2.09	0.83
26:j:34:GLN:HB3	26:j:38:ARG:HH12	1.43	0.83
1:1:2573:G:H2'	1:1:2574:G:H8	1.41	0.83
42:r:44:UNK:CA	42:r:151:UNK:O	2.26	0.83
1:1:608:A:O2'	19:G:326:ARG:NH1	2.10	0.83
1:1:3022:G:O2'	1:1:3023:U:OP2	1.94	0.83
1:1:1595:U:OP1	24:i:36:LYS:NZ	2.12	0.83
12:c:47:LYS:O	12:c:49:HIS:N	2.11	0.83
1:1:1820:U:O2'	1:1:1821:U:OP2	1.96	0.83
45:T:39:ASN:O	45:T:43:LYS:NZ	2.10	0.83
1:1:123:A:OP1	27:K:105:LYS:NZ	2.11	0.83
11:C:32:LYS:HG2	11:C:34:SER:H	1.42	0.83
15:E:146:THR:HG1	15:E:160:SER:HG	1.24	0.83
17:F:183:LEU:O	17:F:191:LYS:NZ	2.12	0.82
43:S:98:LYS:NZ	43:S:118:GLY:HA3	1.93	0.82
1:1:2193:U:H5'	1:1:2194:G:H5'	1.61	0.82
28:k:37:THR:HG22	37:P:5:LYS:NZ	1.94	0.82
1:1:2541:U:O2'	1:1:2542:U:OP2	1.96	0.82
11:C:15:LYS:NZ	11:C:18:ARG:NH1	2.28	0.82
1:1:602:A:H2'	1:1:603:A:C4	2.15	0.82
1:1:2154:U:H2'	1:1:2155:G:H8	1.45	0.82
1:1:3234:A:N1	1:1:3253:G:O6	2.12	0.82
17:F:213:GLU:CD	17:F:340:LYS:HZ1	1.87	0.82
5:4:152:G:O2'	27:K:63:LYS:NZ	2.12	0.82
39:Q:78:ARG:HA	39:Q:81:TYR:HB3	1.62	0.82
43:S:98:LYS:HZ2	43:S:118:GLY:HA3	1.42	0.82
48:W:59:ASP:OD2	48:W:61:THR:OG1	1.98	0.82
27:K:168:ALA:O	27:K:172:LYS:HB2	1.80	0.81
1:1:1018:G:H1	1:1:1034:U:H3	1.28	0.81
1:1:1407:A:OP1	20:g:16:LYS:NZ	2.12	0.81
20:g:34:LYS:NZ	20:g:52:GLN:HE22	1.78	0.81
35:O:37:GLU:OE2	35:O:74:ARG:NH2	2.14	0.81
1:1:2932:U:OP2	2:X:40:LYS:NZ	2.14	0.81
1:1:3041:U:OP1	2:X:12:ARG:NH1	2.13	0.81
1:1:3105:U:OP2	1:1:3128:G:N1	2.14	0.81
26:j:45:LYS:HZ3	26:j:49:LYS:HZ2	1.26	0.81
44:s:106:GLY:O	44:s:108:ASP:N	2.14	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:16:U:O2'	7:A:18:G:OP2	1.98	0.81
1:1:2898:G:N7	36:o:125:LYS:NZ	2.28	0.81
1:1:2448:G:H1	1:1:2498:U:H3	1.26	0.80
1:1:1467:A:O2'	1:1:1469:C:OP2	1.99	0.80
1:1:2180:G:OP1	15:E:174:ARG:NH2	2.15	0.80
3:3:17:A:OP1	21:H:2:ALA:N	2.14	0.80
1:1:2651:G:O2'	1:1:2760:C:N4	2.14	0.80
1:1:1884:A:OP1	18:f:31:ARG:NH2	2.14	0.80
35:O:14:LEU:H	35:O:19:ARG:NH1	1.79	0.80
1:1:2177:G:N2	15:E:118:GLU:OE2	2.14	0.80
3:3:13:A:H1'	3:3:112:G:C8	2.16	0.80
9:B:9:A:H5''	9:B:10:G:OP2	1.81	0.80
13:D:66:GLY:HA2	15:E:80:GLU:HG3	1.64	0.80
26:j:112:PRO:HG2	33:N:128:ARG:HH12	1.46	0.80
1:1:282:G:O2'	1:1:283:G:OP2	2.00	0.79
1:1:369:A:N6	1:1:404:G:O6	2.15	0.79
1:1:535:G:C2	1:1:555:U:O2	2.35	0.79
1:1:1050:U:OP2	47:V:13:TYR:OH	2.00	0.79
44:s:112:GLN:HB2	44:s:115:ARG:HB3	1.63	0.79
1:1:127:G:H2'	1:1:128:G:H8	1.47	0.79
1:1:3234:A:H2	1:1:3253:G:H1	0.82	0.79
1:1:1191:U:OP2	39:Q:49:ARG:HD3	1.81	0.79
1:1:2622:C:H42	44:s:112:GLN:HE22	1.31	0.79
1:1:2986:U:H2'	1:1:2987:A:H8	1.45	0.79
27:K:213:LYS:O	27:K:216:SER:HB3	1.83	0.79
1:1:1135:A:H5''	14:d:5:LYS:HZ1	1.47	0.79
1:1:1938:U:O2'	45:T:79:GLY:N	2.16	0.79
7:A:1:G:N1	7:A:72:C:N3	2.27	0.78
1:1:155:G:N1	1:1:265:A:OP2	2.15	0.78
1:1:1751:G:O6	32:m:44:LYS:NZ	2.16	0.78
1:1:2206:G:H1	1:1:2237:C:H42	1.31	0.78
37:P:187:ARG:HH21	37:P:188:ARG:HE	1.31	0.78
1:1:3078:U:O2'	1:1:3079:U:OP2	2.01	0.78
17:F:76:VAL:HG21	17:F:323:MET:HE3	1.65	0.78
44:s:175:LEU:HD21	44:s:183:LYS:HD2	1.65	0.78
1:1:1529:A:OP2	1:1:1592:G:N2	2.16	0.78
1:1:2837:A:O3'	44:s:153:ARG:NH1	2.15	0.78
1:1:2402:A:H62	19:G:73:ARG:HH22	1.31	0.78
12:c:47:LYS:HG3	12:c:48:TYR:HD2	1.48	0.78
1:1:2588:U:OP1	27:K:241:LYS:NZ	2.17	0.78
1:1:3273:A:OP2	23:I:77:ARG:NH2	2.17	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:F:19:ARG:HD2	17:F:232:ARG:HH21	1.49	0.78
21:H:60:ILE:HB	21:H:80:SER:HB3	1.66	0.78
1:1:1447:G:OP1	41:R:65:SER:OG	2.02	0.77
5:4:59:A:OP2	5:4:98:U:O2'	2.00	0.77
19:G:20:LEU:HD11	19:G:252:GLU:HG3	1.67	0.77
1:1:236:G:H2'	1:1:237:G:H8	1.48	0.77
1:1:521:A:N7	1:1:571:U:O4	2.17	0.77
1:1:2409:G:H4'	1:1:2410:U:OP2	1.82	0.77
9:B:54:U:H3	9:B:58:A:H62	1.33	0.77
20:g:63:THR:HA	20:g:66:LEU:HD12	1.66	0.77
48:W:98:THR:HG22	48:W:99:LYS:H	1.47	0.77
17:F:161:LEU:HB3	17:F:178:LEU:HD11	1.66	0.77
1:1:3322:A:H2'	1:1:3323:A:C8	2.20	0.77
26:j:12:LYS:NZ	26:j:20:GLN:OE1	2.17	0.77
9:B:49:G:H22	9:B:65:U:H5	1.30	0.77
12:c:47:LYS:HE2	12:c:48:TYR:CE2	2.19	0.77
1:1:1152:G:OP2	1:1:1152:G:N2	2.13	0.77
1:1:912:G:N1	15:E:208:ASP:OD2	2.12	0.77
1:1:1191:U:H3'	36:o:113:ARG:HH22	1.50	0.77
1:1:1486:G:H21	24:i:6:THR:HG22	1.49	0.77
1:1:2305:G:N2	1:1:2305:G:OP2	2.17	0.77
1:1:2442:G:H2'	1:1:2443:A:H8	1.49	0.77
1:1:2167:A:OP1	37:P:72:LYS:NZ	2.18	0.76
1:1:2424:A:OP1	37:P:90:ASN:ND2	2.18	0.76
1:1:3182:G:O3'	39:Q:161:LYS:NZ	2.17	0.76
17:F:213:GLU:OE1	17:F:340:LYS:NZ	2.17	0.76
1:1:972:A:OP1	43:S:12:ARG:NH2	2.18	0.76
23:I:54:TYR:HE1	23:I:63:LEU:HD22	1.49	0.76
1:1:1713:G:H22	1:1:1730:G:H2'	1.50	0.76
43:S:98:LYS:NZ	43:S:117:ALA:O	2.18	0.76
1:1:2174:G:OP2	15:E:193:ARG:NH1	2.17	0.76
20:g:34:LYS:HZ2	20:g:52:GLN:HE22	1.34	0.76
1:1:2607:G:OP1	15:E:233:GLN:NE2	2.17	0.76
1:1:1305:U:OP2	1:1:2939:G:N2	2.18	0.76
11:C:71:ARG:HH21	11:C:80:ARG:NH1	1.83	0.76
28:k:93:ILE:HG22	28:k:98:ARG:HH12	1.49	0.76
1:1:1846:C:N4	49:z:10:UNK:CB	2.48	0.76
21:H:123:GLU:HG2	21:H:248:ARG:NH1	2.00	0.76
47:V:18:ASP:HB2	47:V:21:LYS:HB2	1.67	0.76
1:1:1167:U:P	22:h:73:ARG:HH12	2.08	0.76
1:1:1447:G:N2	1:1:2356:A:OP2	2.19	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:216:G:OP1	8:a:16:ARG:NH1	2.19	0.76
1:1:2177:G:O2'	1:1:2178:A:OP2	2.03	0.76
1:1:2213:A:H2'	1:1:2214:A:H8	1.51	0.76
1:1:2528:G:OP1	27:K:248:LYS:NZ	2.18	0.76
5:4:38:U:O4	26:j:89:ARG:NH1	2.19	0.76
9:B:19:U:HO2'	31:M:55:ARG:HH12	1.33	0.76
1:1:520:U:O2'	1:1:521:A:OP2	2.03	0.75
1:1:881:C:O2'	1:1:1849:C:O2'	2.04	0.75
1:1:1925:U:H4'	1:1:1926:C:OP2	1.86	0.75
1:1:3019:U:O2	1:1:3035:A:N6	2.18	0.75
1:1:1898:G:O6	1:1:1899:G:N2	2.18	0.75
7:A:1:G:O6	7:A:72:C:N4	2.19	0.75
1:1:1426:C:OP2	12:c:4:ARG:NH2	2.18	0.75
1:1:1064:A:OP2	1:1:1097:G:N2	2.19	0.75
1:1:1659:U:H2'	1:1:1660:C:C6	2.21	0.75
19:G:110:ASN:HD22	37:P:201:ARG:HB3	1.51	0.75
29:L:163:GLN:O	29:L:166:ARG:NH1	2.19	0.75
1:1:809:G:N1	1:1:932:U:O4	2.20	0.75
3:3:7:G:OP1	21:H:33:ARG:NH1	2.18	0.75
1:1:1497:C:H2'	1:1:1498:A:H8	1.50	0.75
33:N:4:SER:OG	33:N:5:LYS:NZ	2.19	0.75
37:P:35:VAL:HA	37:P:65:ARG:HD3	1.69	0.75
1:1:1044:U:OP1	44:s:89:ARG:NH2	2.19	0.75
1:1:1667:A:H2'	1:1:1668:G:H8	1.52	0.75
40:q:90:TYR:CE1	40:q:104:ASN:OD1	2.39	0.75
48:W:13:LYS:NZ	48:W:71:PHE:O	2.20	0.75
1:1:170:G:N3	1:1:250:U:N3	2.34	0.75
1:1:909:G:OP2	37:P:77:LYS:NZ	2.20	0.75
1:1:525:C:OP2	35:O:77:ARG:NH2	2.17	0.74
44:s:168:LYS:HG2	44:s:169:LYS:H	1.52	0.74
1:1:2525:G:N7	15:E:67:TYR:OH	2.21	0.74
1:1:2991:A:H4'	17:F:21:ARG:HH12	1.52	0.74
3:3:79:A:H62	3:3:101:G:H21	1.35	0.74
46:U:109:ASP:OD1	46:U:113:ARG:NH1	2.19	0.74
1:1:31:C:H41	37:P:188:ARG:HH12	1.35	0.74
1:1:2442:G:H2'	1:1:2443:A:C8	2.21	0.74
1:1:3108:G:OP2	1:1:3120:C:N4	2.20	0.74
22:h:31:LYS:NZ	22:h:78:SER:O	2.19	0.74
25:J:233:GLU:OE2	46:U:38:LYS:NZ	2.20	0.74
41:R:170:SER:HA	41:R:173:ARG:NH1	2.01	0.74
1:1:540:U:H2'	1:1:541:U:H6	1.52	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3353:G:H2'	1:1:3356:G:OP2	1.88	0.74
5:4:36:G:OP2	26:j:85:THR:OG1	2.05	0.74
1:1:420:G:N2	1:1:2384:A:N7	2.34	0.74
1:1:2797:C:H4'	1:1:2798:C:OP2	1.86	0.74
45:T:142:ILE:O	45:T:146:LYS:N	2.20	0.74
1:1:2158:A:H1'	1:1:2160:G:C8	2.22	0.74
10:b:102:GLU:HG3	10:b:103:GLN:H	1.51	0.74
15:E:36:GLU:OE2	15:E:163:ARG:NH1	2.20	0.74
1:1:2157:G:O2'	15:E:156:LYS:NZ	2.20	0.74
1:1:184:U:H2'	1:1:185:C:C6	2.23	0.74
1:1:2525:G:O2'	1:1:2526:C:OP2	2.02	0.74
6:Z:50:ALA:HB2	26:j:79:ASP:OD2	1.87	0.74
1:1:431:U:OP1	22:h:65:ARG:NH1	2.20	0.73
1:1:1760:A:H61	45:T:46:LYS:HZ2	1.34	0.73
1:1:2651:G:H4'	1:1:2652:U:OP2	1.88	0.73
3:3:28:C:OP1	31:M:137:ARG:NH1	2.20	0.73
1:1:315:C:OP2	28:k:28:TYR:OH	2.04	0.73
1:1:953:G:N2	1:1:1115:G:OP1	2.20	0.73
1:1:1827:C:H2'	1:1:1828:A:C8	2.24	0.73
3:3:77:G:N2	3:3:102:A:OP2	2.21	0.73
1:1:760:G:O2'	1:1:771:A:N6	2.22	0.73
17:F:71:GLU:OE2	17:F:357:LYS:NZ	2.21	0.73
40:q:133:ASP:O	40:q:152:GLU:HG3	1.88	0.73
1:1:2294:U:N3	1:1:2297:U:OP2	2.19	0.73
1:1:3218:A:O2'	1:1:3219:G:OP2	2.06	0.73
44:s:169:LYS:HB2	44:s:176:ASP:HA	1.71	0.73
1:1:785:G:OP1	43:S:66:ARG:NH2	2.22	0.73
1:1:1257:C:N4	1:1:1261:G:N2	2.28	0.73
1:1:1729:A:H4'	1:1:1730:G:OP2	1.87	0.73
1:1:2374:C:N4	1:1:2941:A:N3	2.37	0.73
35:O:38:ILE:HG13	35:O:44:VAL:HG12	1.69	0.73
20:g:19:ARG:HB3	20:g:22:SER:HB3	1.70	0.73
25:J:92:ILE:HD11	43:S:4:ASP:HB2	1.71	0.73
1:1:269:G:H5''	37:P:14:LYS:HE2	1.70	0.73
1:1:1144:U:O2'	1:1:1145:G:OP2	2.06	0.73
1:1:2177:G:HO2'	1:1:2178:A:P	2.12	0.73
1:1:3377:G:O2'	17:F:313:HIS:NE2	2.22	0.73
1:1:695:C:H5'	19:G:271:LYS:HZ2	1.52	0.72
1:1:3268:A:P	41:R:181:ARG:HH12	2.12	0.72
1:1:109:A:O2'	1:1:110:G:O5'	2.06	0.72
1:1:2768:U:H2'	1:1:2769:A:H8	1.53	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:H:33:ARG:NH1	21:H:50:ARG:HH12	1.87	0.72
1:1:944:C:H4'	20:g:33:ARG:NH1	2.04	0.72
7:A:15:G:N2	7:A:21:A:N3	2.38	0.72
12:c:103:ASP:OD2	12:c:106:ALA:HB3	1.89	0.72
25:J:112:ASN:ND2	25:J:209:ASN:OD1	2.22	0.72
1:1:723:U:O2'	14:d:29:TYR:OH	2.07	0.72
1:1:1715:A:H1'	1:1:1717:U:OP2	1.89	0.72
1:1:3157:U:H4'	1:1:3158:G:H8	1.55	0.72
28:k:11:LEU:HD11	33:N:180:ARG:NH1	2.04	0.72
21:H:146:LEU:HD11	21:H:163:LEU:HD12	1.72	0.72
40:q:43:ASP:HB2	40:q:60:VAL:HB	1.72	0.72
1:1:1620:U:H5'	1:1:1621:A:OP2	1.90	0.72
1:1:2451:G:H1	1:1:2494:A:H61	1.35	0.72
15:E:30:ARG:NH1	15:E:41:ILE:HG21	2.05	0.72
1:1:631:U:H2'	1:1:632:G:H8	1.54	0.72
1:1:1119:C:H2'	1:1:1120:A:H8	1.55	0.72
1:1:1420:C:OP2	19:G:193:LYS:NZ	2.18	0.72
7:A:2:G:H2'	7:A:3:G:H8	1.55	0.72
10:b:21:LYS:HE3	10:b:47:GLU:HG3	1.71	0.72
17:F:313:HIS:HB2	17:F:332:ARG:HD2	1.71	0.72
1:1:556:U:H1'	1:1:557:A:C5	2.25	0.71
3:3:96:U:H2'	3:3:97:A:C8	2.24	0.71
7:A:19:G:N7	7:A:56:C:N4	2.38	0.71
9:B:43:G:H2'	9:B:44:G:C8	2.25	0.71
35:O:81:VAL:O	35:O:85:TRP:HB2	1.90	0.71
20:g:105:ARG:HE	20:g:125:ARG:HD2	1.54	0.71
22:h:86:ARG:NH1	22:h:87:ASN:OD1	2.23	0.71
37:P:73:ARG:HH21	37:P:92:LEU:HD21	1.55	0.71
1:1:519:A:N6	46:U:65:ASN:O	2.22	0.71
1:1:695:C:H5'	19:G:271:LYS:NZ	2.04	0.71
1:1:1064:A:O2'	1:1:1065:A:OP2	2.06	0.71
1:1:1159:A:H5''	25:J:92:ILE:HG21	1.73	0.71
1:1:2342:U:H2'	1:1:2343:C:H6	1.55	0.71
1:1:2447:A:H2'	1:1:2448:G:H8	1.53	0.71
1:1:2945:G:O2'	1:1:2948:C:OP2	2.06	0.71
1:1:3153:U:O2'	1:1:3155:U:OP1	2.09	0.71
1:1:3267:A:N6	23:I:71:VAL:O	2.22	0.71
31:M:47:GLN:HG2	31:M:67:VAL:HG12	1.70	0.71
3:3:27:A:P	21:H:57:ASN:HD22	2.13	0.71
5:4:81:U:H5''	5:4:82:U:H5'	1.72	0.71
5:4:152:G:HO2'	27:K:63:LYS:HZ1	1.38	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:c:39:HIS:O	12:c:42:ARG:N	2.22	0.71
27:K:148:ALA:HA	27:K:201:THR:HG22	1.71	0.71
1:1:411:U:H2'	1:1:412:G:H8	1.55	0.71
1:1:3243:A:H61	39:Q:160:ARG:HD2	1.55	0.71
1:1:1351:U:H2'	1:1:1352:A:H3'	1.71	0.71
1:1:1743:G:H2'	1:1:1744:G:H8	1.55	0.71
19:G:5:GLN:HE22	19:G:21:PRO:HG3	1.54	0.71
12:c:77:LYS:O	12:c:79:TRP:N	2.23	0.71
27:K:163:VAL:HG23	27:K:166:LEU:HD12	1.73	0.71
40:q:155:ARG:C	40:q:156:THR:HG23	2.16	0.71
44:s:101:MET:CG	44:s:110:LEU:HD11	2.20	0.71
1:1:615:U:H2'	1:1:616:G:H8	1.56	0.71
1:1:1525:G:OP2	6:Z:109:LYS:NZ	2.22	0.71
1:1:1526:U:H4'	1:1:1527:C:OP2	1.91	0.71
1:1:2154:U:H2'	1:1:2155:G:C8	2.26	0.71
17:F:37:ARG:HD2	17:F:186:GLY:HA2	1.73	0.71
21:H:64:ILE:HD13	21:H:109:THR:HG21	1.72	0.71
1:1:352:A:O2'	1:1:353:G:O5'	2.09	0.71
1:1:1206:G:OP1	44:s:152:ARG:NH1	2.23	0.71
1:1:1385:C:O2'	23:I:2:SER:N	2.23	0.71
45:T:160:GLU:HG2	45:T:164:LEU:HG	1.72	0.71
1:1:1808:G:HO2'	1:1:1809:A:H8	1.38	0.71
23:I:38:THR:OG1	23:I:90:LYS:NZ	2.23	0.71
47:V:14:MET:HE3	47:V:58:GLN:HB2	1.73	0.71
1:1:337:G:N2	5:4:27:U:O2	2.24	0.70
1:1:993:G:H5''	1:1:994:G:OP2	1.90	0.70
1:1:1078:U:O2	1:1:1082:U:N3	2.24	0.70
1:1:1666:G:H2'	1:1:1667:A:H8	1.55	0.70
1:1:1827:C:H2'	1:1:1828:A:H8	1.56	0.70
1:1:689:U:H5''	1:1:690:A:OP2	1.90	0.70
1:1:2661:G:H2'	1:1:2662:G:H8	1.56	0.70
1:1:2278:C:P	38:p:23:ARG:HH12	2.14	0.70
1:1:2439:A:H2'	1:1:2440:G:C8	2.25	0.70
1:1:2512:C:OP1	27:K:249:ARG:NH1	2.24	0.70
5:4:39:G:OP2	5:4:39:G:H8	1.74	0.70
33:N:48:PRO:HA	33:N:137:GLN:HB3	1.73	0.70
1:1:665:A:OP1	37:P:203:ARG:NH1	2.24	0.70
1:1:738:A:H2'	1:1:739:G:H8	1.56	0.70
1:1:1279:C:H2'	1:1:1280:C:C5	2.27	0.70
1:1:1342:C:H2'	1:1:1343:A:H8	1.54	0.70
1:1:2441:A:H2'	1:1:2442:G:C8	2.25	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2754:G:O2'	1:1:2755:C:OP2	2.08	0.70
13:D:19:GLY:O	13:D:23:ARG:NE	2.25	0.70
41:R:59:PRO:HG2	41:R:76:PHE:HD2	1.57	0.70
1:1:149:U:OP2	37:P:49:ARG:NH2	2.21	0.70
1:1:349:A:H4'	1:1:350:C:OP2	1.89	0.70
1:1:2392:C:H5''	1:1:2393:G:OP2	1.90	0.70
2:X:57:MET:HE3	2:X:75:PRO:HB3	1.74	0.70
17:F:37:ARG:HH12	17:F:188:ILE:HG23	1.56	0.70
40:q:111:ASP:O	40:q:112:ASP:O	2.09	0.70
1:1:1285:G:O2'	1:1:1286:A:O4'	2.08	0.70
1:1:2677:G:O6	1:1:2680:A:N7	2.23	0.70
13:D:46:THR:OG1	13:D:57:CYS:SG	2.44	0.70
19:G:84:ARG:NH1	19:G:87:GLN:OE1	2.25	0.70
21:H:183:TRP:HE3	21:H:190:ILE:HD13	1.56	0.70
33:N:181:GLY:O	33:N:185:LYS:HB2	1.92	0.70
1:1:165:A:H5'	1:1:166:C:OP2	1.91	0.70
1:1:2448:G:O6	1:1:2498:U:O4	2.10	0.70
1:1:2724:U:OP1	47:V:78:LYS:NZ	2.25	0.70
17:F:19:ARG:HB3	17:F:273:HIS:HE1	1.56	0.70
29:L:8:GLN:HB3	29:L:72:LYS:HD2	1.73	0.70
1:1:611:A:OP1	23:I:23:LYS:NZ	2.18	0.70
1:1:1667:A:H2'	1:1:1668:G:C8	2.26	0.70
1:1:2254:U:H2'	1:1:2261:G:H22	1.57	0.70
1:1:3148:U:H2'	1:1:3149:G:H8	1.55	0.70
27:K:246:MET:O	27:K:250:ALA:HB3	1.90	0.70
1:1:1330:A:OP1	22:h:19:SER:OG	2.09	0.69
25:J:110:ARG:NH2	25:J:206:LYS:HG2	2.07	0.69
1:1:860:G:H5'	13:D:17:ARG:HH12	1.57	0.69
1:1:908:G:N3	1:1:925:A:N6	2.38	0.69
1:1:1135:A:C5'	14:d:5:LYS:HZ1	2.04	0.69
1:1:2131:A:H61	13:D:18:TYR:HA	1.57	0.69
1:1:2526:C:H2'	1:1:2527:G:H8	1.53	0.69
5:4:47:C:O2'	5:4:62:C:OP2	2.06	0.69
29:L:41:ILE:HD11	29:L:67:ALA:HB1	1.74	0.69
1:1:531:G:H2'	1:1:532:A:H8	1.57	0.69
10:b:54:THR:HG22	10:b:57:HIS:CD2	2.27	0.69
1:1:51:A:H2'	1:1:52:A:H8	1.57	0.69
1:1:3005:A:C6	1:1:3140:G:C6	2.80	0.69
2:X:37:ILE:HG13	2:X:38:ALA:H	1.56	0.69
5:4:38:U:O2'	5:4:39:G:OP1	2.10	0.69
9:B:10:G:C2	9:B:26:A:HI'	2.28	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:B:47:U:H5'	9:B:48:C:H5'	1.73	0.69
13:D:49:ARG:NH2	13:D:52:ALA:HB2	2.04	0.69
1:1:2503:G:H2'	1:1:2504:U:C6	2.28	0.69
1:1:267:G:C6	1:1:319:A:N7	2.60	0.69
1:1:1015:U:O4	1:1:1035:G:N1	2.22	0.69
1:1:1119:C:H2'	1:1:1120:A:C8	2.27	0.69
1:1:1321:G:H21	46:U:112:ALA:HB2	1.58	0.69
1:1:2141:U:HO2'	1:1:2976:A:HO2'	1.35	0.69
1:1:3346:U:H3	1:1:3359:A:H61	1.39	0.69
20:g:19:ARG:NH2	20:g:33:ARG:HD2	2.08	0.69
1:1:30:G:OP1	37:P:172:ARG:NE	2.22	0.69
1:1:1245:A:H62	1:1:1272:C:H4'	1.58	0.69
1:1:1874:A:N6	45:T:20:ARG:HH12	1.90	0.69
1:1:2618:G:OP2	1:1:2618:G:H4'	1.90	0.69
1:1:2827:U:O2'	1:1:2828:G:H8	1.75	0.69
21:H:54:ARG:NH1	21:H:148:ILE:O	2.26	0.69
1:1:60:A:H2'	1:1:61:A:C8	2.28	0.69
1:1:790:U:H2'	1:1:791:A:H8	1.56	0.69
1:1:1243:G:N2	1:1:1244:A:N7	2.40	0.69
1:1:2344:U:H2'	1:1:2345:A:C8	2.28	0.69
1:1:2565:U:O2	1:1:2576:G:N2	2.24	0.69
1:1:2608:G:OP1	15:E:2:GLY:N	2.25	0.69
3:3:28:C:OP2	21:H:57:ASN:ND2	2.25	0.69
4:Y:23:ARG:NH2	4:Y:25:ASP:OD2	2.24	0.69
7:A:42:A:H2'	7:A:43:U:O4'	1.93	0.69
19:G:212:ASP:OD2	19:G:216:VAL:HG22	1.92	0.69
39:Q:108:ILE:HG21	39:Q:113:ASP:HB3	1.73	0.69
1:1:2385:G:N3	1:1:3143:C:N4	2.40	0.69
17:F:139:GLN:HG3	17:F:141:GLY:H	1.57	0.69
1:1:1810:A:H2'	1:1:1811:G:H8	1.58	0.69
1:1:2742:C:H2'	1:1:2743:A:H8	1.58	0.69
35:O:24:LYS:HE2	35:O:25:LYS:NZ	2.08	0.69
45:T:148:ASP:OD1	45:T:151:ARG:NH2	2.26	0.69
1:1:108:A:OP1	33:N:42:ARG:NH2	2.26	0.68
1:1:1580:A:OP1	15:E:68:LYS:NZ	2.25	0.68
1:1:1609:C:OP1	6:Z:125:ARG:NH2	2.25	0.68
1:1:2369:G:H2'	1:1:2370:G:C8	2.27	0.68
40:q:101:SER:HA	40:q:111:ASP:HA	1.75	0.68
22:h:52:VAL:HG22	22:h:66:VAL:HG22	1.75	0.68
37:P:45:PRO:O	37:P:49:ARG:HB2	1.93	0.68
38:p:14:LYS:HG2	38:p:17:ARG:HH21	1.58	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1009:A:H2'	1:1:1010:G:C8	2.29	0.68
1:1:2450:G:N2	1:1:2496:C:C2	2.61	0.68
1:1:2715:A:O2'	1:1:2716:U:OP1	2.11	0.68
7:A:58:A:H2'	7:A:61:C:H41	1.57	0.68
29:L:7:GLU:HA	29:L:55:VAL:O	1.92	0.68
44:s:15:PRO:HD3	44:s:127:ARG:HH12	1.58	0.68
1:1:1039:U:H2'	1:1:1040:A:C8	2.27	0.68
1:1:1463:U:H3	1:1:1467:A:N6	1.91	0.68
1:1:1783:U:H2'	1:1:1784:G:C8	2.29	0.68
3:3:76:A:O2'	3:3:77:G:O5'	2.10	0.68
17:F:56:ILE:HG21	17:F:356:LEU:HD22	1.75	0.68
19:G:71:VAL:HG22	19:G:76:ARG:HH22	1.57	0.68
19:G:261:VAL:O	19:G:270:SER:OG	2.11	0.68
34:n:37:TYR:CB	49:z:3:UNK:CB	2.71	0.68
1:1:714:G:N7	12:c:111:LYS:NZ	2.34	0.68
40:q:33:VAL:HG23	40:q:83:PRO:HD3	1.76	0.68
1:1:661:G:H3'	12:c:8:THR:HG21	1.74	0.68
1:1:1213:G:OP2	46:U:137:ARG:NH1	2.27	0.68
1:1:1474:A:O2'	18:f:57:GLN:NE2	2.26	0.68
1:1:708:G:H5'	1:1:709:A:OP2	1.93	0.68
1:1:1813:A:O2'	1:1:1817:G:N3	2.26	0.68
21:H:50:ARG:NH2	21:H:72:ASP:OD2	2.27	0.68
43:S:150:VAL:HA	43:S:153:PHE:CE2	2.29	0.68
1:1:943:U:H5	12:c:12:ARG:NH1	1.92	0.68
17:F:347:SER:H	17:F:350:ALA:HB3	1.59	0.68
1:1:1511:U:O2'	1:1:1512:U:OP1	2.12	0.68
1:1:1722:U:H5''	45:T:99:LEU:HD22	1.75	0.68
1:1:2412:G:H2'	1:1:2413:A:H8	1.59	0.68
1:1:2553:U:C4	24:i:95:ILE:HG12	2.29	0.68
1:1:2899:C:N3	29:L:173:ARG:NH1	2.42	0.68
1:1:2986:U:H2'	1:1:2987:A:C8	2.27	0.68
5:4:29:U:H5''	33:N:27:ASP:HB3	1.74	0.68
41:R:82:ARG:HG2	41:R:83:TRP:H	1.58	0.68
1:1:1150:A:N7	1:1:1151:U:N3	2.42	0.67
1:1:3276:G:O6	41:R:171:ARG:NE	2.27	0.67
1:1:3005:A:N6	1:1:3140:G:C6	2.63	0.67
1:1:3306:U:O2'	1:1:3308:C:OP2	2.11	0.67
27:K:99:PRO:HG2	27:K:190:VAL:HG23	1.76	0.67
29:L:90:MET:HG2	29:L:181:VAL:HA	1.77	0.67
41:R:54:HIS:O	41:R:72:GLN:NE2	2.25	0.67
1:1:236:G:H2'	1:1:237:G:C8	2.28	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:674:G:O6	43:S:56:LYS:NZ	2.27	0.67
5:4:101:U:OP1	6:Z:89:LYS:NZ	2.27	0.67
9:B:29:U:H2'	9:B:30:G:C8	2.29	0.67
1:1:907:G:N2	1:1:925:A:O2'	2.28	0.67
1:1:2769:A:H2'	1:1:2770:G:H8	1.59	0.67
1:1:3052:G:H2'	1:1:3053:G:H8	1.59	0.67
32:m:28:ASN:HB2	32:m:40:GLN:HB3	1.77	0.67
1:1:2451:G:C2	1:1:2452:G:H1'	2.29	0.67
1:1:3021:A:O2'	1:1:3022:G:O5'	2.12	0.67
5:4:9:A:H2'	5:4:10:A:C8	2.30	0.67
24:i:94:LEU:O	24:i:98:GLN:N	2.24	0.67
1:1:3175:U:H5''	22:h:10:LYS:HZ1	1.59	0.67
7:A:27:G:H1	7:A:43:U:H3	1.43	0.67
35:O:135:LEU:HD11	39:Q:177:LYS:HE2	1.76	0.67
1:1:598:A:OP1	25:J:41:ARG:NH1	2.28	0.67
1:1:716:A:C6	12:c:117:ARG:HD2	2.29	0.67
1:1:1117:G:O6	1:1:1142:G:N2	2.27	0.67
1:1:1566:A:N3	1:1:1573:G:N1	2.42	0.67
47:V:39:ILE:HD12	47:V:102:ARG:HH11	1.57	0.67
1:1:647:A:H2	1:1:2371:G:H21	1.43	0.67
1:1:1561:G:O6	1:1:1578:C:N4	2.27	0.67
1:1:1844:C:N4	1:1:1845:G:O6	2.27	0.67
1:1:1942:U:OP2	45:T:74:ARG:NH2	2.27	0.67
1:1:2703:A:OP2	21:H:23:ARG:NH2	2.28	0.67
1:1:62:A:H2	37:P:189:LYS:HZ3	1.42	0.67
1:1:1740:U:H1'	1:1:1741:A:H2	1.59	0.67
1:1:2589:G:H5'	1:1:2590:A:OP2	1.95	0.67
36:o:87:SER:O	36:o:92:ASP:N	2.27	0.67
37:P:11:GLN:HE21	37:P:14:LYS:HE3	1.60	0.67
1:1:1026:A:OP2	1:1:1026:A:H8	1.77	0.67
1:1:3008:A:H2'	1:1:3009:G:C8	2.28	0.67
1:1:3276:G:O2'	1:1:3277:U:O5'	2.13	0.67
3:3:94:C:H2'	3:3:95:A:H8	1.59	0.67
12:c:47:LYS:HG3	12:c:48:TYR:CD2	2.30	0.67
44:s:101:MET:HG3	44:s:110:LEU:HD11	1.77	0.67
1:1:595:G:H22	1:1:609:G:H5''	1.61	0.66
1:1:2622:C:N4	44:s:112:GLN:HE22	1.92	0.66
1:1:3234:A:N1	1:1:3253:G:C6	2.63	0.66
7:A:1:G:H2'	7:A:2:G:H8	1.60	0.66
11:C:15:LYS:HZ1	11:C:18:ARG:NH1	1.91	0.66
21:H:50:ARG:HD2	21:H:147:ASP:OD2	1.95	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:s:53:SER:HA	44:s:162:GLN:HB2	1.77	0.66
1:1:2447:A:H2'	1:1:2448:G:C8	2.31	0.66
18:f:6:ASP:HB3	18:f:77:ARG:NH2	2.10	0.66
1:1:1815:U:O2'	1:1:1816:A:O5'	2.11	0.66
1:1:2784:G:H2'	1:1:2785:A:H8	1.59	0.66
1:1:3227:A:H8	1:1:3227:A:OP2	1.77	0.66
21:H:90:HIS:NE2	21:H:229:ASP:OD2	2.28	0.66
29:L:87:LYS:HA	29:L:146:LEU:O	1.96	0.66
1:1:6:A:H61	5:4:153:U:H3	1.43	0.66
1:1:531:G:H2'	1:1:532:A:C8	2.29	0.66
1:1:540:U:H2'	1:1:541:U:C6	2.29	0.66
1:1:976:U:OP1	43:S:144:ARG:NH2	2.25	0.66
1:1:2406:C:O2'	1:1:2619:G:N2	2.29	0.66
21:H:31:TYR:CZ	21:H:35:ARG:NH1	2.63	0.66
1:1:3056:U:C6	18:f:25:PHE:HE2	2.14	0.66
1:1:3271:G:H8	1:1:3271:G:OP2	1.79	0.66
17:F:92:TYR:HE1	17:F:101:SER:HB3	1.59	0.66
24:i:80:ARG:HH12	24:i:88:ARG:NH2	1.93	0.66
26:j:91:ALA:O	37:P:143:ARG:NH2	2.19	0.66
44:s:111:GLN:C	44:s:112:GLN:HG2	2.20	0.66
1:1:1460:A:H2'	1:1:1461:A:H8	1.60	0.66
1:1:1494:U:O2'	1:1:1495:U:O5'	2.10	0.66
1:1:2168:A:N6	1:1:2170:U:O2	2.29	0.66
33:N:186:ARG:O	33:N:190:LYS:HB2	1.96	0.66
41:R:72:GLN:OE1	41:R:83:TRP:NE1	2.29	0.66
1:1:398:A:O2'	1:1:399:A:OP2	2.12	0.66
1:1:1169:A:H4'	25:J:219:LYS:HD3	1.76	0.66
1:1:1743:G:H2'	1:1:1744:G:C8	2.30	0.66
1:1:2392:C:O2'	17:F:266:ARG:NH2	2.28	0.66
5:4:131:A:H2'	5:4:132:G:H8	1.61	0.66
18:f:48:ASP:OD2	18:f:50:ARG:NH1	2.29	0.66
18:f:80:ASN:OD1	18:f:81:GLU:N	2.24	0.66
23:I:174:LEU:HD22	35:O:117:ARG:NH1	2.11	0.66
27:K:137:ASN:HD21	37:P:4:TYR:HE2	1.44	0.66
1:1:556:U:O2'	1:1:557:A:O5'	2.09	0.66
1:1:962:A:H5''	1:1:963:G:OP2	1.94	0.66
1:1:1760:A:H61	45:T:46:LYS:NZ	1.94	0.66
3:3:96:U:H2'	3:3:97:A:H8	1.60	0.66
17:F:47:LEU:HB3	17:F:335:ILE:HD11	1.76	0.66
26:j:45:LYS:HZ3	26:j:49:LYS:NZ	1.93	0.66
1:1:92:G:O2'	50:1:3401:3HE:O1	2.07	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1080:A:OP1	21:H:140:ARG:N	2.28	0.66
1:1:2768:U:H2'	1:1:2769:A:C8	2.31	0.66
2:X:104:ASN:OD1	2:X:108:GLU:N	2.29	0.66
9:B:73:G:O2'	44:s:109:ARG:HB3	1.96	0.66
18:f:55:LEU:HB2	18:f:95:PRO:HD3	1.77	0.66
1:1:671:U:OP2	43:S:57:ILE:HD12	1.96	0.66
1:1:684:G:H2'	1:1:685:G:H8	1.61	0.66
1:1:1342:C:H2'	1:1:1343:A:C8	2.31	0.66
1:1:1597:C:H2'	1:1:1598:G:C8	2.31	0.66
1:1:2683:U:H2'	1:1:2684:C:C6	2.31	0.66
1:1:3186:A:OP2	46:U:170:THR:OG1	2.14	0.66
1:1:3208:G:H1'	1:1:3210:A:C8	2.30	0.66
2:X:27:ASP:OD2	2:X:111:GLY:HA3	1.96	0.66
5:4:23:U:H5''	5:4:24:G:OP2	1.96	0.66
7:A:28:U:H2'	7:A:29:U:H6	1.60	0.66
8:a:60:ARG:HB2	8:a:103:LYS:HD2	1.78	0.66
27:K:72:PRO:HB3	37:P:17:ASP:HB3	1.78	0.66
1:1:221:A:O2'	1:1:222:A:OP1	2.13	0.65
1:1:242:C:H5'	26:j:115:LYS:HE2	1.78	0.65
1:1:1522:U:O2'	1:1:1523:U:OP1	2.14	0.65
1:1:2179:C:H4'	1:1:2180:G:OP2	1.95	0.65
21:H:55:PHE:HE2	21:H:159:VAL:HG22	1.60	0.65
1:1:677:A:O2'	1:1:678:G:OP2	2.15	0.65
1:1:1129:A:OP1	44:s:12:LYS:NZ	2.21	0.65
8:a:71:SER:HB3	8:a:83:ASP:HB2	1.77	0.65
1:1:2157:G:N2	1:1:2177:G:O2'	2.30	0.65
1:1:1794:G:H5'	1:1:1795:U:OP2	1.96	0.65
1:1:2364:G:H22	1:1:2396:G:H1'	1.62	0.65
41:R:31:GLU:OE2	41:R:60:PHE:HA	1.96	0.65
1:1:1146:C:H2'	1:1:1147:G:H8	1.61	0.65
5:4:38:U:C4	26:j:89:ARG:NH1	2.65	0.65
7:A:53:G:H8	7:A:53:G:OP2	1.80	0.65
11:C:71:ARG:NH2	11:C:80:ARG:HH11	1.94	0.65
19:G:92:ASN:HD22	19:G:100:PHE:HB2	1.61	0.65
37:P:11:GLN:HG2	37:P:44:ARG:CZ	2.27	0.65
1:1:363:G:OP2	30:l:56:ARG:NH2	2.26	0.65
1:1:1243:G:H8	1:1:1243:G:OP2	1.79	0.65
1:1:1748:G:OP2	32:m:42:LYS:NZ	2.30	0.65
1:1:1908:A:N6	1:1:1909:A:N1	2.45	0.65
1:1:2129:U:H2'	1:1:2130:G:H8	1.62	0.65
1:1:2372:A:O2'	1:1:2373:A:OP2	2.14	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3184:A:OP2	39:Q:12:LYS:NZ	2.15	0.65
3:3:119:U:H3'	21:H:258:LYS:NZ	2.10	0.65
7:A:1:G:N2	7:A:72:C:O2	2.25	0.65
11:C:15:LYS:HD2	11:C:18:ARG:HH11	1.61	0.65
15:E:65:ASP:OD2	15:E:68:LYS:N	2.29	0.65
1:1:1821:U:H5'	1:1:1822:C:OP2	1.95	0.65
1:1:2665:U:O2'	1:1:2666:C:O5'	2.14	0.65
1:1:3165:A:H2'	1:1:3166:C:C6	2.31	0.65
1:1:3369:G:N1	17:F:380:MET:HG3	2.12	0.65
3:3:79:A:N6	3:3:101:G:H21	1.94	0.65
32:m:31:LEU:HA	32:m:37:PRO:HA	1.78	0.65
43:S:131:ALA:HB1	43:S:134:GLY:HA2	1.77	0.65
1:1:116:A:O2'	1:1:117:U:OP1	2.14	0.65
1:1:784:A:O2'	43:S:92:ARG:NH1	2.30	0.65
1:1:971:G:OP1	43:S:8:LYS:NZ	2.20	0.65
1:1:1191:U:H1'	39:Q:48:PHE:CE2	2.32	0.65
1:1:1607:U:OP2	1:1:1608:C:N4	2.30	0.65
1:1:1635:G:N2	1:1:1638:A:OP2	2.29	0.65
1:1:3344:A:H4'	1:1:3345:G:OP2	1.97	0.65
5:4:133:G:OP1	6:Z:94:GLN:NE2	2.30	0.65
34:n:43:ASN:OD1	34:n:44:TRP:N	2.29	0.65
1:1:1657:C:N4	1:1:1797:A:H3'	2.12	0.65
1:1:2445:A:H2'	1:1:2446:U:C6	2.31	0.65
17:F:235:THR:HG21	17:F:249:VAL:HG22	1.79	0.65
1:1:608:A:O3'	19:G:326:ARG:NH1	2.30	0.65
1:1:1012:G:H2'	1:1:1013:G:C8	2.32	0.65
1:1:2248:C:HO2'	1:1:2272:G:HO2'	1.41	0.65
1:1:2697:A:H2'	1:1:2698:G:C8	2.32	0.65
1:1:2939:G:O5'	17:F:2:SER:N	2.30	0.65
3:3:49:G:O2'	3:3:50:U:O5'	2.12	0.65
27:K:109:LEU:HD23	27:K:112:GLU:OE2	1.97	0.65
1:1:2163:C:OP2	15:E:234:LYS:HD2	1.96	0.64
1:1:2901:G:N2	1:1:3029:A:N1	2.46	0.64
15:E:30:ARG:NH1	15:E:41:ILE:HD13	2.02	0.64
17:F:211:GLN:HE22	17:F:284:ARG:HA	1.62	0.64
35:O:125:LYS:HA	35:O:128:ARG:HG2	1.78	0.64
37:P:17:ASP:HA	37:P:20:ARG:HG2	1.77	0.64
46:U:12:ARG:HH12	46:U:15:PRO:HG2	1.62	0.64
1:1:189:G:O2'	1:1:190:U:OP1	2.15	0.64
1:1:591:G:O2'	23:I:17:ALA:O	2.11	0.64
1:1:1241:U:O2'	1:1:1242:G:O5'	2.10	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1352:A:O2'	1:1:1353:U:O5'	2.13	0.64
1:1:1647:A:H2'	1:1:1648:A:H8	1.61	0.64
1:1:1783:U:H2'	1:1:1784:G:H8	1.61	0.64
34:n:37:TYR:HB3	49:z:3:UNK:CB	2.27	0.64
40:q:132:LYS:HB3	40:q:152:GLU:CD	2.17	0.64
1:1:431:U:H2'	1:1:432:G:H8	1.62	0.64
1:1:576:C:P	25:J:241:LYS:HZ1	2.20	0.64
1:1:836:A:N6	1:1:857:G:H1'	2.11	0.64
1:1:2565:U:H3	1:1:2576:G:H1	1.44	0.64
2:X:84:SER:HA	2:X:94:TYR:HB3	1.79	0.64
37:P:53:TYR:HB2	37:P:133:ILE:HD11	1.79	0.64
43:S:82:VAL:HG22	43:S:102:ALA:HB3	1.79	0.64
45:T:103:ARG:NH1	45:T:124:TYR:CZ	2.65	0.64
13:D:86:LEU:HD22	13:D:89:MET:HE2	1.80	0.64
17:F:328:ILE:HD11	17:F:336:VAL:HG11	1.79	0.64
26:j:17:LEU:HD13	26:j:58:ILE:HG12	1.80	0.64
27:K:83:ASP:OD1	27:K:86:THR:N	2.28	0.64
35:O:46:ILE:O	35:O:55:ARG:HA	1.98	0.64
1:1:646:A:H2'	1:1:647:A:O4'	1.97	0.64
1:1:767:U:O2'	1:1:768:C:O4'	2.16	0.64
3:3:107:C:H2'	3:3:108:A:H8	1.61	0.64
37:P:174:ILE:O	37:P:175:ASN:ND2	2.30	0.64
47:V:32:LYS:NZ	47:V:98:HIS:H	1.95	0.64
1:1:197:G:N2	1:1:218:G:O2'	2.30	0.64
1:1:722:G:H1	1:1:748:U:H3	1.45	0.64
1:1:1093:A:O2'	1:1:1094:U:O4'	2.15	0.64
6:Z:131:ASP:OD2	6:Z:134:ASP:N	2.29	0.64
23:I:174:LEU:HA	35:O:117:ARG:HH22	1.62	0.64
1:1:74:G:H5''	33:N:104:ARG:HH21	1.63	0.64
1:1:608:A:H5''	1:1:609:G:OP2	1.98	0.64
1:1:1310:G:H2'	1:1:1311:G:C8	2.32	0.64
1:1:1348:U:O4'	1:1:1355:A:N6	2.31	0.64
1:1:1236:G:H1'	1:1:1245:A:H1'	1.79	0.64
1:1:1695:U:H1'	24:i:26:PRO:HG3	1.78	0.64
26:j:45:LYS:NZ	26:j:49:LYS:HZ2	1.96	0.64
40:q:46:THR:HG22	40:q:57:VAL:HG22	1.80	0.64
47:V:119:ALA:HB1	47:V:124:VAL:HA	1.77	0.64
1:1:359:U:O4'	1:1:817:A:N6	2.31	0.64
1:1:1177:G:O2'	1:1:1178:G:O5'	2.16	0.64
1:1:1702:U:H3	1:1:1743:G:H1	1.44	0.64
1:1:2213:A:H2'	1:1:2214:A:C8	2.32	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2412:G:H2'	1:1:2413:A:C8	2.33	0.64
1:1:2608:G:H2'	1:1:2609:A:H8	1.62	0.64
9:B:1:G:H2'	9:B:2:G:C8	2.33	0.64
21:H:40:HIS:CE1	47:V:69:LYS:HA	2.33	0.64
39:Q:78:ARG:O	39:Q:82:LYS:N	2.25	0.64
46:U:66:GLU:HG3	46:U:68:HIS:H	1.63	0.64
46:U:155:ARG:HD2	46:U:172:TYR:CD1	2.33	0.64
1:1:1538:G:H21	1:1:1583:A:H62	1.44	0.64
1:1:3215:A:H5''	1:1:3216:G:OP2	1.99	0.64
7:A:23:A:H2'	7:A:24:G:H8	1.62	0.64
17:F:86:VAL:HG22	17:F:162:VAL:HG12	1.80	0.64
20:g:81:ASP:OD2	23:I:2:SER:HA	1.98	0.64
41:R:111:LYS:HB3	41:R:153:LYS:HG2	1.80	0.64
47:V:32:LYS:HZ3	47:V:98:HIS:H	1.46	0.64
1:1:664:U:H2'	1:1:665:A:C8	2.32	0.63
1:1:815:G:O2'	1:1:920:A:N7	2.29	0.63
1:1:2219:A:H2'	1:1:2220:A:H8	1.61	0.63
1:1:2745:G:O2'	1:1:2747:A:N7	2.27	0.63
1:1:3084:C:O2'	1:1:3332:U:OP1	2.16	0.63
45:T:76:SER:O	45:T:81:ARG:NH1	2.30	0.63
1:1:374:A:O2'	1:1:375:A:O5'	2.10	0.63
1:1:738:A:H2'	1:1:739:G:C8	2.33	0.63
1:1:1580:A:O2'	1:1:1581:C:O5'	2.16	0.63
1:1:1724:U:H1'	1:1:1725:C:C6	2.33	0.63
1:1:3085:G:OP1	4:Y:34:SER:OG	2.16	0.63
1:1:3348:G:O6	1:1:3357:U:O4	2.15	0.63
7:A:14:A:C5	7:A:15:G:H1'	2.31	0.63
8:a:120:GLN:HA	8:a:124:GLY:HA3	1.79	0.63
27:K:248:LYS:O	27:K:252:ASN:HB2	1.98	0.63
29:L:28:VAL:HG22	29:L:33:THR:HG22	1.80	0.63
29:L:88:TYR:HE2	29:L:155:SER:HA	1.63	0.63
40:q:64:ILE:HG21	40:q:139:ILE:HD11	1.78	0.63
1:1:1861:G:H2'	1:1:1862:U:C6	2.33	0.63
1:1:2539:C:O2'	1:1:2540:A:OP2	2.16	0.63
17:F:80:ASP:OD1	17:F:81:THR:N	2.32	0.63
1:1:662:U:O4	1:1:801:A:O2'	2.15	0.63
1:1:2681:U:OP2	31:M:51:ARG:HD3	1.98	0.63
1:1:3233:C:H2'	1:1:3234:A:C8	2.33	0.63
3:3:41:G:O2'	3:3:44:C:N4	2.31	0.63
3:3:71:G:H2'	3:3:72:A:H8	1.63	0.63
9:B:54:U:O4	9:B:58:A:N7	2.31	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:n:9:ILE:HG22	34:n:13:MET:HE3	1.79	0.63
41:R:23:ARG:HH22	41:R:125:GLN:HG3	1.64	0.63
1:1:73:C:C2	33:N:59:ARG:NH1	2.67	0.63
5:4:22:U:OP1	8:a:12:ARG:NH2	2.30	0.63
19:G:203:ARG:NH2	19:G:226:GLU:OE2	2.32	0.63
28:k:37:THR:HG22	37:P:5:LYS:HZ1	1.61	0.63
29:L:23:ARG:NH2	29:L:42:ASP:OD1	2.31	0.63
1:1:767:U:O2'	1:1:768:C:O5'	2.16	0.63
1:1:803:C:H2'	1:1:804:C:H6	1.62	0.63
1:1:1339:C:H2'	1:1:1340:G:H8	1.63	0.63
1:1:1953:G:N1	1:1:2093:A:N7	2.46	0.63
1:1:2277:C:OP1	38:p:23:ARG:NH2	2.31	0.63
1:1:2775:U:OP2	33:N:178:LYS:NZ	2.31	0.63
1:1:3337:G:H2'	1:1:3338:C:C6	2.34	0.63
3:3:79:A:H62	3:3:101:G:N2	1.97	0.63
16:e:31:VAL:HG12	16:e:35:ARG:NH1	2.12	0.63
24:i:29:ILE:HD11	24:i:31:ARG:HH21	1.63	0.63
40:q:100:LEU:O	40:q:111:ASP:O	2.16	0.63
1:1:1938:U:O2'	1:1:1939:G:OP1	2.16	0.63
1:1:2796:G:C8	11:C:63:LYS:NZ	2.67	0.63
24:i:8:ARG:NH1	24:i:31:ARG:HD3	2.13	0.63
26:j:34:GLN:HB3	26:j:38:ARG:NH1	2.12	0.63
44:s:15:PRO:CD	44:s:127:ARG:HH12	2.12	0.63
1:1:607:A:H4'	1:1:608:A:OP2	1.99	0.63
1:1:926:A:H5''	1:1:927:C:OP2	1.99	0.63
1:1:3277:U:C4	41:R:175:ARG:NH1	2.67	0.63
5:4:143:U:OP1	37:P:38:ARG:NH2	2.31	0.63
8:a:11:ASP:OD1	19:G:196:ASN:ND2	2.31	0.63
22:h:107:ILE:O	23:I:31:ARG:NE	2.32	0.63
39:Q:178:VAL:O	39:Q:182:ASN:ND2	2.32	0.63
1:1:595:G:N2	1:1:609:G:O4'	2.32	0.63
1:1:737:G:H2'	1:1:738:A:H8	1.63	0.63
1:1:900:G:N3	1:1:1589:A:N6	2.46	0.63
1:1:908:G:N1	1:1:2414:G:OP1	2.31	0.63
1:1:1621:A:N7	1:1:1820:U:O4	2.32	0.63
1:1:3222:U:O2	1:1:3263:G:N2	2.24	0.63
7:A:58:A:H2'	7:A:61:C:N4	2.13	0.63
31:M:21:ILE:HD11	31:M:125:MET:HE2	1.79	0.63
1:1:81:C:H2'	1:1:82:C:C6	2.34	0.62
1:1:1606:U:O2'	1:1:1607:U:OP1	2.14	0.62
23:I:175:LYS:HD3	35:O:111:ALA:HA	1.80	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:N:47:ALA:O	33:N:49:ARG:N	2.30	0.62
48:W:73:GLY:HA2	48:W:76:LEU:HB3	1.81	0.62
1:1:1953:G:H4'	1:1:1954:G:OP2	1.97	0.62
1:1:2100:A:H5'	45:T:71:ARG:HH12	1.64	0.62
17:F:225:GLY:O	17:F:269:GLN:NE2	2.32	0.62
29:L:92:TYR:HB2	29:L:142:ASP:HB3	1.80	0.62
1:1:71:A:H61	1:1:303:G:H21	1.46	0.62
1:1:718:G:H1	1:1:750:G:H21	1.46	0.62
1:1:1024:G:O2'	1:1:1026:A:N6	2.28	0.62
1:1:1492:G:O2'	1:1:1843:C:H5''	1.99	0.62
1:1:2217:U:N3	1:1:2218:G:N7	2.46	0.62
1:1:2597:U:H2'	1:1:2598:G:H8	1.64	0.62
1:1:3162:C:H2'	1:1:3163:A:H8	1.63	0.62
9:B:10:G:O6	9:B:25:U:O4	2.17	0.62
10:b:26:VAL:HG23	10:b:27:LYS:H	1.63	0.62
19:G:10:SER:OG	19:G:13:GLY:O	2.11	0.62
1:1:70:A:H5'	12:c:64:GLN:HE22	1.64	0.62
1:1:76:G:H8	1:1:76:G:OP2	1.83	0.62
1:1:1034:U:H2'	1:1:1035:G:C8	2.34	0.62
1:1:1810:A:H2'	1:1:1811:G:C8	2.34	0.62
1:1:2601:A:H2'	1:1:2602:G:H8	1.63	0.62
3:3:63:A:H4'	3:3:64:A:OP2	1.99	0.62
7:A:1:G:H2'	7:A:2:G:C8	2.33	0.62
10:b:22:LYS:NZ	10:b:129:TRP:O	2.32	0.62
13:D:51:ALA:HB1	15:E:50:HIS:HB2	1.80	0.62
46:U:96:ASP:OD1	46:U:97:VAL:N	2.30	0.62
46:U:155:ARG:HE	46:U:157:GLN:HE21	1.45	0.62
1:1:28:C:O2'	1:1:61:A:N3	2.31	0.62
1:1:122:A:O2'	1:1:123:A:O5'	2.16	0.62
1:1:1574:C:H2'	1:1:1575:A:H8	1.64	0.62
1:1:1741:A:OP2	1:1:1742:U:OP2	2.17	0.62
1:1:1816:A:O2'	1:1:1817:G:O5'	2.17	0.62
1:1:2724:U:H4'	47:V:54:HIS:CD2	2.35	0.62
10:b:23:VAL:HG12	10:b:45:GLY:HA3	1.82	0.62
40:q:138:ILE:HG22	40:q:147:ALA:HA	1.80	0.62
44:s:109:ARG:O	44:s:110:LEU:C	2.42	0.62
5:4:94:C:H3'	30:l:72:ARG:NH1	2.15	0.62
7:A:13:C:O2'	7:A:14:A:O5'	2.16	0.62
11:C:34:SER:OG	11:C:35:LEU:N	2.33	0.62
44:s:75:MET:HE3	44:s:150:GLY:HA3	1.81	0.62
1:1:2733:A:H2'	1:1:2734:A:H8	1.65	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:4:83:C:O2'	5:4:85:G:N2	2.31	0.62
10:b:107:ARG:HB3	10:b:111:LYS:NZ	2.15	0.62
21:H:254:LYS:NZ	21:H:256:THR:HG22	2.15	0.62
40:q:109:THR:HG22	40:q:110:LYS:N	2.13	0.62
40:q:113:VAL:O	40:q:115:ALA:N	2.33	0.62
1:1:706:A:H2'	1:1:707:U:O4'	1.98	0.62
1:1:1246:G:H2'	1:1:1247:U:C6	2.35	0.62
1:1:2655:U:H1'	1:1:2656:A:C2	2.35	0.62
3:3:16:U:H2'	3:3:17:A:H8	1.65	0.62
31:M:6:GLN:O	31:M:10:ARG:NH2	2.33	0.62
33:N:67:ARG:HG3	33:N:68:LYS:HG2	1.81	0.62
1:1:1831:U:H5''	1:1:1832:C:OP2	2.00	0.62
11:C:15:LYS:CD	11:C:18:ARG:HH11	2.13	0.62
19:G:302:ALA:CB	43:S:39:ARG:HH12	2.12	0.62
23:I:54:TYR:CE1	23:I:63:LEU:HD22	2.33	0.62
29:L:12:VAL:HG13	29:L:16:VAL:HG23	1.81	0.62
1:1:801:A:P	12:c:27:LYS:HZ1	2.22	0.62
1:1:1213:G:H5''	46:U:137:ARG:NH1	2.11	0.62
1:1:1225:A:H3'	1:1:1226:G:H8	1.64	0.62
1:1:1811:G:H2'	1:1:1812:G:C8	2.34	0.62
35:O:14:LEU:H	35:O:19:ARG:HH11	1.47	0.62
41:R:51:VAL:HG11	41:R:88:VAL:HG21	1.81	0.62
1:1:989:A:H2'	1:1:990:U:C6	2.35	0.61
1:1:2155:G:H2'	1:1:2156:C:C6	2.35	0.61
1:1:2288:G:H2'	1:1:2289:U:C6	2.35	0.61
1:1:2344:U:H2'	1:1:2345:A:H8	1.64	0.61
1:1:2730:G:C6	1:1:2799:A:N6	2.67	0.61
8:a:59:VAL:HG13	8:a:60:ARG:H	1.65	0.61
39:Q:119:VAL:HG11	46:U:167:ARG:HH11	1.65	0.61
1:1:345:G:N2	1:1:349:A:OP2	2.31	0.61
1:1:1071:U:H2'	1:1:1072:G:C8	2.35	0.61
1:1:1467:A:O2'	1:1:1468:A:OP1	2.17	0.61
1:1:1702:U:O2	1:1:1743:G:N2	2.33	0.61
1:1:1814:A:H5'	1:1:1815:U:OP1	2.00	0.61
1:1:3392:U:O2'	41:R:75:GLU:OE2	2.10	0.61
19:G:299:ILE:HG21	43:S:39:ARG:HE	1.63	0.61
21:H:150:LEU:HD13	31:M:143:ARG:HG3	1.82	0.61
28:k:37:THR:HG22	37:P:5:LYS:HZ3	1.63	0.61
1:1:69:C:OP1	37:P:178:HIS:ND1	2.28	0.61
1:1:1952:G:H5'	1:1:1953:G:OP2	2.01	0.61
1:1:2129:U:H2'	1:1:2130:G:C8	2.36	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2513:U:O2'	1:1:2514:U:O5'	2.15	0.61
27:K:107:GLU:O	27:K:110:THR:OG1	2.15	0.61
37:P:116:LEU:HB3	37:P:133:ILE:HG23	1.81	0.61
44:s:129:ASP:OD1	44:s:130:ILE:N	2.33	0.61
1:1:22:G:H1'	5:4:104:A:N3	2.15	0.61
1:1:500:C:H4'	23:I:80:ASN:HD21	1.64	0.61
1:1:786:A:C8	1:1:786:A:OP2	2.53	0.61
1:1:1480:G:O2'	1:1:1481:A:O5'	2.17	0.61
1:1:2342:U:H2'	1:1:2343:C:C6	2.34	0.61
1:1:2557:A:OP1	15:E:69:TYR:OH	2.18	0.61
1:1:2655:U:O4	11:C:8:ARG:NH1	2.33	0.61
1:1:3263:G:H2'	1:1:3264:G:H8	1.66	0.61
9:B:18:G:N2	9:B:57:G:N7	2.49	0.61
11:C:15:LYS:HZ1	11:C:18:ARG:HH12	1.48	0.61
15:E:79:ASN:HD21	15:E:165:VAL:HG13	1.66	0.61
19:G:102:PRO:O	19:G:104:LYS:HG3	2.00	0.61
22:h:54:ARG:NH1	22:h:64:ILE:HD11	2.15	0.61
23:I:146:ILE:HD13	23:I:149:ILE:HD12	1.83	0.61
35:O:103:ILE:HA	35:O:106:ARG:NH1	2.15	0.61
44:s:84:PHE:HA	44:s:139:THR:HG22	1.81	0.61
44:s:155:ARG:NH2	44:s:161:GLN:O	2.34	0.61
46:U:1:MET:HE2	46:U:4:PHE:HE1	1.64	0.61
1:1:860:G:C5'	13:D:17:ARG:HH12	2.14	0.61
1:1:966:U:H2'	1:1:967:A:H8	1.64	0.61
1:1:1348:U:H4'	1:1:1349:G:OP1	2.00	0.61
1:1:2402:A:N6	19:G:73:ARG:HH22	1.99	0.61
17:F:68:HIS:CD2	17:F:69:LYS:HG3	2.34	0.61
21:H:231:ILE:HG21	21:H:239:ILE:HD11	1.81	0.61
25:J:156:ILE:HD11	25:J:172:ASN:HD21	1.65	0.61
27:K:143:ILE:HD11	27:K:151:VAL:HG21	1.82	0.61
28:k:70:ARG:HH12	28:k:84:LYS:HA	1.66	0.61
48:W:10:LYS:HE3	48:W:68:THR:HG21	1.83	0.61
1:1:1609:C:N4	1:1:1610:G:O6	2.34	0.61
1:1:2288:G:H2'	1:1:2289:U:H6	1.66	0.61
1:1:2339:C:O2'	1:1:2340:U:O4'	2.18	0.61
2:X:129:VAL:O	2:X:133:SER:OG	2.18	0.61
22:h:104:PRO:HB3	23:I:82:ARG:HD2	1.82	0.61
31:M:6:GLN:HG3	31:M:8:PRO:HD3	1.83	0.61
44:s:138:ARG:HD3	44:s:172:PHE:HB2	1.83	0.61
1:1:673:U:H2'	1:1:674:G:H8	1.66	0.61
1:1:1235:U:H4'	1:1:1236:G:H5'	1.82	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1271:A:O2'	1:1:1272:C:OP1	2.19	0.61
1:1:2537:U:H2'	1:1:2538:U:C6	2.35	0.61
1:1:2696:A:OP2	1:1:2696:A:H8	1.84	0.61
1:1:2856:G:N7	44:s:6:ARG:NH2	2.48	0.61
1:1:3195:U:H4'	1:1:3196:U:OP2	2.01	0.61
1:1:1456:A:H3'	1:1:1456:A:OP2	2.00	0.61
1:1:2105:G:H2'	1:1:2106:A:H8	1.65	0.61
1:1:2176:U:OP1	15:E:128:ARG:NH2	2.33	0.61
1:1:2401:A:N6	1:1:2872:A:N7	2.49	0.61
1:1:2769:A:O2'	11:C:80:ARG:O	2.17	0.61
9:B:61:C:H2'	9:B:62:C:H6	1.66	0.61
9:B:61:C:H2'	9:B:62:C:C6	2.35	0.61
27:K:229:VAL:HA	27:K:232:HIS:HD2	1.65	0.61
1:1:647:A:O2'	1:1:648:C:OP1	2.18	0.61
1:1:2139:A:H4'	1:1:2140:U:H5''	1.82	0.61
1:1:2174:G:P	15:E:193:ARG:HH11	2.24	0.61
41:R:82:ARG:HG2	41:R:83:TRP:N	2.15	0.61
1:1:790:U:H2'	1:1:791:A:C8	2.36	0.60
1:1:1280:C:C2	1:1:1281:G:H1'	2.36	0.60
19:G:3:ARG:NH1	19:G:24:ALA:H	1.99	0.60
44:s:11:GLN:NE2	44:s:127:ARG:HG3	2.16	0.60
1:1:85:A:O2'	1:1:86:G:O5'	2.17	0.60
1:1:121:A:N7	27:K:108:ARG:NH2	2.49	0.60
1:1:824:C:H5''	15:E:21:ARG:HD3	1.82	0.60
1:1:937:G:C6	1:1:2410:U:H5''	2.36	0.60
1:1:1874:A:C5	45:T:20:ARG:NH1	2.68	0.60
1:1:2402:A:O2'	1:1:2871:G:OP2	2.15	0.60
1:1:3040:A:H5''	2:X:12:ARG:HB2	1.82	0.60
3:3:41:G:H1'	3:3:44:C:H42	1.66	0.60
41:R:64:ASN:HB2	41:R:80:LYS:NZ	2.16	0.60
42:r:137:UNK:O	42:r:141:UNK:N	2.34	0.60
43:S:89:ASP:OD1	43:S:90:ASP:N	2.33	0.60
1:1:129:U:H2'	1:1:130:A:C8	2.35	0.60
1:1:158:G:H2'	1:1:159:A:H8	1.65	0.60
1:1:160:G:N2	1:1:261:U:O2	2.23	0.60
1:1:244:G:H2'	1:1:245:U:O4'	2.02	0.60
1:1:343:U:O2'	1:1:344:A:OP1	2.19	0.60
1:1:1002:A:H2'	1:1:1003:A:H8	1.66	0.60
12:c:101:VAL:HG21	33:N:157:ARG:HE	1.66	0.60
48:W:36:TYR:O	48:W:40:HIS:ND1	2.30	0.60
1:1:532:A:N1	1:1:560:G:N2	2.35	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1034:U:H2'	1:1:1035:G:H8	1.67	0.60
2:X:62:VAL:HG21	2:X:69:LEU:HB3	1.84	0.60
26:j:112:PRO:CG	33:N:128:ARG:HH12	2.13	0.60
30:l:34:CYS:SG	30:l:35:SER:N	2.71	0.60
1:1:1340:G:H2'	1:1:1341:U:H6	1.66	0.60
1:1:1661:G:H2'	1:1:1662:G:C8	2.37	0.60
1:1:2586:G:N7	27:K:241:LYS:HD3	2.16	0.60
1:1:3238:G:H2'	1:1:3239:G:H8	1.67	0.60
2:X:135:VAL:HG11	4:Y:26:SER:HB3	1.84	0.60
10:b:21:LYS:HD3	10:b:47:GLU:HA	1.83	0.60
20:g:118:LYS:HE3	20:g:120:THR:HG22	1.84	0.60
1:1:1253:U:O2'	1:1:1254:C:O5'	2.17	0.60
1:1:2730:G:C2	1:1:2799:A:C5	2.90	0.60
1:1:3083:G:H4'	4:Y:42:GLN:HE22	1.67	0.60
1:1:3219:G:O2'	1:1:3220:G:OP2	2.15	0.60
5:4:43:A:H2'	5:4:44:A:C8	2.29	0.60
7:A:21:A:H61	7:A:46:G:H2'	1.66	0.60
19:G:286:VAL:HG21	43:S:28:LEU:HD22	1.83	0.60
21:H:160:PHE:O	21:H:163:LEU:HB3	2.02	0.60
40:q:94:ASP:O	40:q:101:SER:OG	2.14	0.60
1:1:359:U:O4	1:1:360:G:N1	2.35	0.60
1:1:914:A:O2'	1:1:915:A:O5'	2.17	0.60
1:1:950:G:N1	1:1:1368:U:OP2	2.27	0.60
1:1:1129:A:N3	1:1:2826:U:O2'	2.35	0.60
1:1:1282:G:OP2	1:1:1284:C:N4	2.33	0.60
1:1:1446:A:O2'	1:1:1447:G:O5'	2.15	0.60
1:1:1447:G:O2'	1:1:1448:U:O5'	2.20	0.60
1:1:2225:U:H2'	1:1:2226:U:C6	2.37	0.60
1:1:3011:A:H4'	1:1:3012:A:O5'	2.01	0.60
1:1:3317:U:HO2'	1:1:3318:G:P	2.25	0.60
2:X:28:ASN:OD1	2:X:111:GLY:HA2	2.01	0.60
15:E:201:GLY:HA3	15:E:209:HIS:CD2	2.37	0.60
23:I:40:LEU:HD13	23:I:84:VAL:HG11	1.83	0.60
39:Q:142:SER:HA	39:Q:145:VAL:HG22	1.81	0.60
45:T:130:ASN:O	45:T:132:PHE:N	2.34	0.60
1:1:546:C:H5'	1:1:547:G:C5	2.36	0.60
9:B:7:G:O2'	9:B:8:U:OP1	2.18	0.60
29:L:113:GLU:OE2	29:L:115:ARG:NH2	2.35	0.60
29:L:163:GLN:HB3	29:L:166:ARG:NH1	2.16	0.60
35:O:103:ILE:HG12	35:O:106:ARG:HH22	1.65	0.60
42:r:67:UNK:O	42:r:71:UNK:N	2.34	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:368:G:N2	1:1:369:A:N3	2.50	0.60
1:1:512:U:H2'	1:1:513:G:H8	1.67	0.60
1:1:591:G:O2'	1:1:592:A:O5'	2.20	0.60
1:1:648:C:N4	1:1:2375:G:O3'	2.35	0.60
1:1:765:C:O2'	1:1:766:U:OP1	2.18	0.60
1:1:1340:G:H2'	1:1:1341:U:C6	2.37	0.60
1:1:3376:A:OP2	1:1:3378:C:OP2	2.19	0.60
21:H:156:GLY:HA2	21:H:181:PRO:HB3	1.84	0.60
37:P:122:ASN:OD1	37:P:123:GLN:N	2.35	0.60
1:1:272:G:N1	1:1:294:U:O2	2.34	0.60
1:1:2339:C:O2'	1:1:2340:U:O5'	2.20	0.60
1:1:2445:A:H2'	1:1:2446:U:H6	1.67	0.60
1:1:2615:G:H2'	1:1:2616:C:H6	1.67	0.60
1:1:2769:A:H2'	1:1:2770:G:C8	2.37	0.60
24:i:57:LEU:HB3	24:i:61:GLN:HB2	1.84	0.60
31:M:107:ASP:HA	31:M:124:GLY:HA2	1.83	0.60
40:q:88:ASN:HD22	40:q:138:ILE:HD11	1.66	0.60
1:1:1066:G:H2'	1:1:1067:U:H6	1.65	0.59
1:1:1237:G:H5'	1:1:1238:C:OP2	2.02	0.59
1:1:1621:A:H62	1:1:1820:U:H3	1.49	0.59
1:1:2144:A:O2'	1:1:2281:A:N6	2.30	0.59
1:1:2169:G:H4'	1:1:2170:U:OP2	2.01	0.59
1:1:2539:C:H4'	1:1:2540:A:O4'	2.03	0.59
1:1:2877:G:H2'	1:1:2878:G:H8	1.67	0.59
1:1:3241:G:H5''	1:1:3242:G:OP2	2.02	0.59
1:1:3304:U:OP2	1:1:3377:G:H1'	2.02	0.59
7:A:21:A:O3'	7:A:22:G:H8	1.85	0.59
27:K:106:LYS:HA	27:K:109:LEU:HD12	1.84	0.59
1:1:509:U:O2'	22:h:42:GLN:NE2	2.35	0.59
1:1:1143:A:O2'	1:1:1144:U:OP1	2.20	0.59
1:1:1491:A:N7	34:n:2:ALA:HB3	2.16	0.59
1:1:2677:G:C6	1:1:2680:A:N7	2.69	0.59
1:1:2719:U:O2'	1:1:2720:G:O4'	2.17	0.59
1:1:3216:G:O2'	1:1:3217:C:OP1	2.20	0.59
9:B:17:C:N4	9:B:17(A):G:O6	2.35	0.59
15:E:29:LEU:O	15:E:123:ARG:NE	2.28	0.59
21:H:41:LYS:NZ	47:V:30:TYR:O	2.35	0.59
1:1:155:G:N2	1:1:265:A:OP2	2.34	0.59
1:1:253:A:H2'	1:1:254:A:C8	2.37	0.59
1:1:763:G:H8	1:1:763:G:OP2	1.84	0.59
1:1:846:A:H2'	1:1:847:A:C8	2.38	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1127:G:H5''	1:1:1128:U:OP2	2.03	0.59
1:1:1213:G:C5'	46:U:137:ARG:HH12	2.13	0.59
1:1:1290:A:H2'	1:1:1291:A:C8	2.37	0.59
1:1:1417:G:O2'	1:1:1418:A:OP1	2.19	0.59
1:1:2366:C:H2'	1:1:2367:A:H8	1.66	0.59
1:1:2683:U:H2'	1:1:2684:C:H6	1.67	0.59
1:1:3192:U:O4	1:1:3200:G:O6	2.20	0.59
1:1:3376:A:H5''	1:1:3377:G:H5''	1.84	0.59
27:K:161:GLU:OE2	37:P:26:ARG:NH1	2.35	0.59
37:P:37:HIS:HE1	37:P:63:ARG:HH11	1.50	0.59
44:s:15:PRO:HG3	44:s:127:ARG:NH1	2.16	0.59
1:1:594:U:H3	19:G:304:GLN:HE22	1.49	0.59
1:1:1135:A:P	14:d:5:LYS:HZ2	2.13	0.59
1:1:1649:U:H2'	1:1:1650:G:H8	1.67	0.59
5:4:141:C:H2'	5:4:142:C:H6	1.66	0.59
31:M:49:LYS:HB3	31:M:62:ASN:HA	1.82	0.59
31:M:110:ILE:HG21	31:M:116:TYR:HD1	1.68	0.59
46:U:80:ARG:HE	47:V:156:TYR:HB2	1.66	0.59
1:1:170:G:H2'	1:1:171:G:C8	2.37	0.59
1:1:1012:G:H2'	1:1:1013:G:H8	1.67	0.59
2:X:102:ILE:HG23	2:X:110:LYS:HB3	1.84	0.59
20:g:4:LEU:HD11	23:I:13:GLU:HA	1.85	0.59
25:J:156:ILE:O	25:J:159:GLN:HB2	2.02	0.59
26:j:45:LYS:NZ	26:j:49:LYS:NZ	2.51	0.59
41:R:53:ASP:OD2	41:R:55:GLN:HB2	2.02	0.59
1:1:269:G:N2	1:1:295:A:OP2	2.35	0.59
1:1:1729:A:N6	13:D:42:CYS:HA	2.17	0.59
1:1:2747:A:H2'	1:1:2748:A:C8	2.37	0.59
1:1:3343:G:N2	1:1:3362:A:C2	2.68	0.59
13:D:36:ARG:NH1	13:D:48:LYS:HD2	2.17	0.59
15:E:36:GLU:CD	15:E:163:ARG:HH11	2.10	0.59
19:G:65:TRP:CD2	19:G:69:ARG:NH1	2.70	0.59
29:L:4:ILE:HG23	29:L:5:GLN:H	1.67	0.59
29:L:47:LYS:NZ	35:O:5:SER:HB2	2.17	0.59
44:s:170:TRP:HD1	44:s:177:ARG:HA	1.68	0.59
1:1:712:G:H2'	1:1:713:U:C6	2.38	0.59
1:1:909:G:C5'	37:P:77:LYS:HZ3	2.15	0.59
1:1:2686:A:O3'	21:H:8:LYS:NZ	2.34	0.59
5:4:53:A:OP1	34:n:19:GLN:NE2	2.36	0.59
5:4:120:C:O2	5:4:134:G:N2	2.36	0.59
11:C:15:LYS:NZ	11:C:18:ARG:HH12	2.00	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:s:41:THR:HG23	44:s:43:ASP:H	1.68	0.59
44:s:70:CYS:HG	44:s:153:ARG:HE	1.50	0.59
1:1:1464:G:N2	1:1:1467:A:OP2	2.32	0.59
1:1:3067:C:OP2	45:T:62:ARG:NH1	2.33	0.59
15:E:7:ASN:OD1	15:E:8:GLN:N	2.35	0.59
16:e:30:THR:O	16:e:34:LEU:N	2.31	0.59
27:K:73:PRO:HD3	27:K:233:TRP:CZ3	2.38	0.59
29:L:4:ILE:HB	46:U:142:GLN:HE21	1.68	0.59
30:l:50:GLY:O	30:l:53:ALA:N	2.24	0.59
1:1:1008:U:O4	1:1:1009:A:N6	2.36	0.59
1:1:1066:G:H2'	1:1:1067:U:C6	2.38	0.59
1:1:1084:A:H2'	1:1:1085:A:C8	2.37	0.59
1:1:1109:U:H4'	43:S:153:PHE:CD1	2.37	0.59
1:1:1497:C:H2'	1:1:1498:A:C8	2.36	0.59
1:1:1597:C:H2'	1:1:1598:G:H8	1.68	0.59
1:1:2287:C:O2'	1:1:2288:G:OP1	2.19	0.59
1:1:2540:A:H4'	1:1:2541:U:OP1	2.03	0.59
1:1:2656:A:OP2	11:C:97:LYS:HB3	2.03	0.59
1:1:2851:A:O2'	7:A:64:G:O2'	2.10	0.59
1:1:3272:C:O2'	1:1:3273:A:OP1	2.20	0.59
5:4:36:G:C2	26:j:86:ARG:NH1	2.70	0.59
7:A:5:C:H2'	7:A:6:G:C8	2.38	0.59
7:A:27:G:H2'	7:A:28:U:C6	2.37	0.59
15:E:117:GLU:HG2	15:E:124:GLY:H	1.68	0.59
40:q:155:ARG:O	40:q:156:THR:HG23	2.02	0.59
1:1:65:A:H4'	1:1:66:A:OP2	2.03	0.59
1:1:95:A:H5''	12:c:34:MET:HB2	1.84	0.59
1:1:415:G:H2'	1:1:416:A:H8	1.67	0.59
1:1:501:A:OP1	23:I:82:ARG:NH2	2.28	0.59
1:1:792:G:H2'	1:1:793:C:H6	1.68	0.59
1:1:1556:C:H5''	1:1:2169:G:N2	2.17	0.59
1:1:2658:G:N1	1:1:2713:U:O2	2.35	0.59
1:1:3179:U:H5''	1:1:3180:A:OP2	2.02	0.59
1:1:3244:A:C4	17:F:97:ARG:NH1	2.71	0.59
15:E:62:VAL:HG21	15:E:71:LEU:HD23	1.84	0.59
17:F:187:SER:O	17:F:190:GLU:N	2.35	0.59
21:H:33:ARG:NH1	21:H:50:ARG:NH1	2.51	0.59
35:O:18:GLY:HA2	35:O:72:LEU:HD12	1.85	0.59
40:q:23:CYS:SG	40:q:80:MET:N	2.76	0.59
1:1:21:G:H5''	1:1:22:G:OP2	2.03	0.58
1:1:859:G:O2'	13:D:13:LYS:O	2.21	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1512:U:H2'	1:1:1513:G:H8	1.68	0.58
1:1:1601:U:H5''	45:T:38:ARG:HD3	1.84	0.58
1:1:2727:A:O2'	1:1:2728:G:OP1	2.20	0.58
18:f:13:THR:HG23	18:f:72:ARG:HH11	1.68	0.58
25:J:24:GLU:HG2	25:J:25:GLN:H	1.67	0.58
28:k:58:ILE:HA	28:k:61:ILE:HD12	1.85	0.58
1:1:8:C:O2	5:4:152:G:N2	2.35	0.58
1:1:927:C:H5''	1:1:928:C:OP2	2.03	0.58
1:1:974:G:H5''	43:S:14:GLY:O	2.03	0.58
1:1:1469:C:O2'	1:1:1470:U:OP1	2.18	0.58
1:1:2532:U:N3	1:1:2533:G:N7	2.51	0.58
1:1:2611:U:H2'	1:1:2612:U:H6	1.68	0.58
1:1:2888:U:O2'	1:1:2889:C:O5'	2.19	0.58
1:1:3157:U:H4'	1:1:3158:G:C8	2.38	0.58
3:3:62:U:O3'	21:H:285:ARG:NH1	2.35	0.58
3:3:120:C:N4	21:H:262:LYS:NZ	2.51	0.58
5:4:95:G:OP2	30:l:72:ARG:NH1	2.36	0.58
7:A:2:G:H2'	7:A:3:G:C8	2.35	0.58
43:S:90:ASP:OD2	43:S:92:ARG:NE	2.32	0.58
43:S:133:LYS:H	43:S:135:GLN:NE2	2.00	0.58
1:1:254:A:H2'	1:1:255:A:C8	2.37	0.58
1:1:529:A:H2'	1:1:530:G:C8	2.37	0.58
1:1:933:A:O2'	1:1:934:G:OP1	2.20	0.58
1:1:976:U:H5'	43:S:144:ARG:NH1	2.18	0.58
1:1:1314:C:H5''	1:1:1315:U:OP2	2.03	0.58
1:1:1391:C:H4'	1:1:1392:G:OP2	2.02	0.58
1:1:2204:C:H2'	1:1:2206:G:C8	2.39	0.58
1:1:3055:U:O2	1:1:3087:A:N6	2.37	0.58
11:C:106:PHE:HD2	40:q:105:MET:SD	2.26	0.58
15:E:59:ALA:HB2	15:E:78:ALA:HB2	1.83	0.58
27:K:159:PRO:HA	37:P:26:ARG:HH22	1.68	0.58
33:N:39:ARG:O	33:N:43:ALA:HB2	2.03	0.58
37:P:117:ASN:H	37:P:133:ILE:HG22	1.67	0.58
1:1:129:U:H2'	1:1:130:A:H8	1.68	0.58
1:1:414:U:H2'	1:1:415:G:H8	1.67	0.58
1:1:535:G:N1	1:1:555:U:C2	2.71	0.58
1:1:1192:C:O2'	1:1:1193:A:OP1	2.17	0.58
1:1:1554:U:O2'	1:1:1555:U:O5'	2.17	0.58
1:1:2254:U:H2'	1:1:2261:G:N2	2.18	0.58
1:1:3039:C:OP1	17:F:62:ARG:NH1	2.35	0.58
3:3:16:U:H2'	3:3:17:A:C8	2.38	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:Y:34:SER:O	4:Y:38:SER:N	2.29	0.58
6:Z:105:VAL:HG11	6:Z:126:LEU:HD13	1.85	0.58
8:a:11:ASP:HA	19:G:196:ASN:HD21	1.69	0.58
9:B:29:U:H2'	9:B:30:G:H8	1.66	0.58
29:L:48:VAL:HG13	29:L:49:ASN:H	1.69	0.58
43:S:86:THR:HG22	43:S:105:ARG:HD2	1.84	0.58
1:1:235:A:H2'	1:1:236:G:C8	2.38	0.58
1:1:293:C:H2'	1:1:294:U:O4'	2.04	0.58
1:1:2169:G:OP2	1:1:2170:U:OP2	2.22	0.58
1:1:2843:U:O4	1:1:2898:G:N2	2.36	0.58
15:E:124:GLY:O	15:E:128:ARG:HD2	2.03	0.58
21:H:111:GLN:HA	21:H:116:ASP:HB2	1.86	0.58
23:I:52:VAL:HG23	23:I:67:GLY:HA2	1.85	0.58
42:r:44:UNK:N	42:r:151:UNK:O	2.36	0.58
42:r:82:UNK:O	42:r:86:UNK:N	2.36	0.58
1:1:36:C:O2'	1:1:934:G:N3	2.36	0.58
1:1:296:A:H3'	1:1:297:G:H21	1.67	0.58
1:1:358:G:N2	1:1:361:A:OP2	2.36	0.58
1:1:607:A:O2'	1:1:608:A:OP1	2.22	0.58
1:1:612:U:H2'	1:1:613:G:H8	1.67	0.58
1:1:623:U:O3'	22:h:86:ARG:NH2	2.36	0.58
1:1:768:C:H2'	1:1:769:G:C8	2.39	0.58
1:1:960:U:O2'	1:1:961:C:O4'	2.20	0.58
1:1:1159:A:O5'	43:S:2:GLY:N	2.36	0.58
1:1:2515:A:H5''	1:1:2516:U:OP2	2.04	0.58
1:1:2898:G:OP2	1:1:2899:C:H5''	2.04	0.58
1:1:3024:A:H62	1:1:3031:G:H21	1.50	0.58
1:1:3272:C:H4'	1:1:3273:A:OP2	2.02	0.58
11:C:15:LYS:NZ	11:C:18:ARG:HH11	2.00	0.58
40:q:63:ASP:HB2	40:q:67:GLY:H	1.68	0.58
1:1:92:G:O6	1:1:94:G:N2	2.37	0.58
1:1:661:G:OP1	12:c:12:ARG:NH2	2.20	0.58
1:1:1564:U:N3	1:1:1576:G:N1	2.35	0.58
1:1:2355:G:O2'	1:1:2356:A:O5'	2.21	0.58
1:1:2534:G:H2'	1:1:2535:A:C8	2.39	0.58
5:4:154:C:H2'	5:4:155:A:C8	2.38	0.58
7:A:37:A:N6	7:A:38:A:N1	2.52	0.58
19:G:302:ALA:HB2	43:S:39:ARG:HH12	1.68	0.58
27:K:158:ASP:O	27:K:160:ILE:N	2.36	0.58
35:O:21:VAL:N	35:O:33:ALA:O	2.33	0.58
37:P:46:ASP:OD1	37:P:47:LYS:N	2.34	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:S:145:ASN:OD1	43:S:150:VAL:HG21	2.04	0.58
1:1:200:C:O2'	1:1:201:A:OP1	2.19	0.58
1:1:2198:A:C5	1:1:2199:G:C8	2.91	0.58
1:1:2586:G:O2'	1:1:2587:U:OP1	2.20	0.58
1:1:2627:C:O2'	1:1:2628:A:OP1	2.21	0.58
1:1:2956:A:H5''	1:1:2957:G:OP2	2.04	0.58
1:1:3375:A:C2	1:1:3378:C:H5''	2.39	0.58
5:4:13:A:H2'	5:4:14:C:C6	2.39	0.58
7:A:28:U:H2'	7:A:29:U:C6	2.39	0.58
21:H:52:VAL:HG21	21:H:65:ILE:HD12	1.84	0.58
24:i:42:PRO:HG2	24:i:54:ILE:HG21	1.85	0.58
45:T:63:THR:O	45:T:67:ALA:N	2.35	0.58
1:1:979:U:O2'	1:1:980:A:O5'	2.20	0.58
1:1:1071:U:H2'	1:1:1072:G:H8	1.67	0.58
1:1:1357:G:H2'	1:1:1358:C:H6	1.69	0.58
1:1:1751:G:C8	32:m:26:LYS:HE3	2.39	0.58
1:1:1914:G:H2'	1:1:1915:A:H8	1.68	0.58
1:1:3306:U:H5''	17:F:21:ARG:HH21	1.69	0.58
5:4:97:A:OP1	26:j:63:ARG:NH2	2.36	0.58
7:A:26:A:H2'	7:A:27:G:H8	1.68	0.58
8:a:56:VAL:O	8:a:67:GLU:HB2	2.04	0.58
10:b:41:ALA:HB2	10:b:77:TYR:HE1	1.69	0.58
18:f:48:ASP:OD1	18:f:49:VAL:N	2.36	0.58
21:H:56:THR:OG1	21:H:59:ASP:HB3	2.03	0.58
1:1:532:A:H2'	1:1:533:A:C8	2.39	0.58
1:1:591:G:N2	1:1:612:U:OP1	2.34	0.58
1:1:1009:A:H2'	1:1:1010:G:H8	1.68	0.58
1:1:1666:G:H2'	1:1:1667:A:C8	2.39	0.58
1:1:2171:G:H2'	1:1:2172:A:H8	1.69	0.58
1:1:3146:G:H2'	1:1:3147:G:C8	2.39	0.58
1:1:3160:U:O4	1:1:3290:G:O6	2.21	0.58
1:1:3172:A:O2'	1:1:3173:G:O5'	2.21	0.58
17:F:332:ARG:NH1	17:F:333:LYS:HE2	2.19	0.58
44:s:152:ARG:HH21	44:s:155:ARG:HD3	1.68	0.58
1:1:988:U:H2'	1:1:989:A:H8	1.68	0.57
1:1:2417:U:H1'	1:1:2966:G:H21	1.68	0.57
1:1:3033:A:H2'	1:1:3034:C:H6	1.69	0.57
1:1:3115:C:O2	1:1:3117:C:N4	2.36	0.57
5:4:142:C:H2'	5:4:143:U:C6	2.39	0.57
7:A:29:U:N3	7:A:30:G:N7	2.52	0.57
1:1:81:C:H2'	1:1:82:C:H6	1.68	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:655:C:H2'	1:1:656:A:C8	2.39	0.57
1:1:799:G:H2'	1:1:801:A:H62	1.69	0.57
1:1:959:C:O2	1:1:2614:G:O2'	2.21	0.57
1:1:1433:A:HO2'	1:1:1434:G:P	2.26	0.57
1:1:1522:U:H4'	1:1:1523:U:OP2	2.04	0.57
1:1:1596:C:H2'	1:1:1597:C:C6	2.38	0.57
1:1:1656:A:OP2	24:i:37:LYS:NZ	2.36	0.57
1:1:1724:U:O2'	1:1:1725:C:O5'	2.21	0.57
1:1:3356:G:H2'	1:1:3357:U:O4'	2.03	0.57
5:4:55:U:O4	5:4:62:C:N3	2.37	0.57
5:4:91:C:H1'	8:a:25:SER:HB3	1.85	0.57
16:e:25:LEU:O	16:e:29:SER:OG	2.18	0.57
40:q:89:GLU:HA	40:q:137:THR:HG22	1.85	0.57
1:1:156:G:OP2	28:k:26:ILE:HG13	2.04	0.57
1:1:529:A:H2'	1:1:530:G:H8	1.70	0.57
1:1:1262:G:H2'	1:1:1264:G:H1'	1.86	0.57
1:1:1564:U:O2	1:1:1576:G:C2	2.57	0.57
1:1:1602:A:H5''	45:T:38:ARG:HG3	1.85	0.57
1:1:2138:A:C5	30:l:3:LYS:HB3	2.38	0.57
1:1:2611:U:H2'	1:1:2612:U:C6	2.39	0.57
1:1:2661:G:H2'	1:1:2662:G:C8	2.37	0.57
10:b:54:THR:HG23	10:b:56:LYS:H	1.69	0.57
27:K:62:LYS:O	27:K:66:SER:HB2	2.04	0.57
33:N:39:ARG:O	33:N:43:ALA:CB	2.52	0.57
1:1:1339:C:P	20:g:61:LYS:HZ3	2.26	0.57
1:1:1615:C:H2'	1:1:1616:U:C6	2.39	0.57
1:1:2103:U:H2'	1:1:2104:A:H8	1.68	0.57
1:1:3238:G:H2'	1:1:3239:G:C8	2.39	0.57
17:F:78:VAL:HG11	17:F:305:ILE:HD12	1.86	0.57
27:K:94:PHE:HE2	27:K:152:LEU:HD12	1.69	0.57
37:P:37:HIS:CE1	37:P:63:ARG:HH11	2.22	0.57
44:s:20:ARG:NH1	44:s:21:TYR:CZ	2.71	0.57
1:1:230:U:H5''	1:1:231:G:OP2	2.04	0.57
1:1:286:U:H2'	1:1:287:G:C8	2.39	0.57
1:1:794:U:H2'	1:1:795:G:H8	1.68	0.57
1:1:861:C:H5''	13:D:17:ARG:HH12	1.69	0.57
1:1:2169:G:O2'	1:1:2170:U:OP1	2.20	0.57
1:1:3016:A:H2'	1:1:3017:A:H8	1.69	0.57
2:X:45:ARG:NH1	2:X:46:LEU:HB3	2.20	0.57
44:s:70:CYS:SG	44:s:153:ARG:NE	2.74	0.57
45:T:134:HIS:CE1	45:T:136:ARG:HB3	2.39	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:745:C:H2'	1:1:746:A:C8	2.39	0.57
1:1:951:A:H62	1:1:1368:U:H3	1.51	0.57
1:1:3166:C:H2'	1:1:3167:A:C8	2.40	0.57
2:X:101:VAL:HB	2:X:109:MET:HE1	1.86	0.57
3:3:12:U:H5''	3:3:13:A:OP2	2.04	0.57
6:Z:107:VAL:HG12	6:Z:108:LEU:O	2.04	0.57
9:B:37:A:H5'	9:B:38:C:OP2	2.04	0.57
21:H:33:ARG:NH1	21:H:50:ARG:HH22	1.98	0.57
31:M:25:GLU:HA	31:M:63:GLU:OE2	2.03	0.57
1:1:542:G:H2'	1:1:543:C:H6	1.69	0.57
1:1:673:U:H2'	1:1:674:G:C8	2.39	0.57
1:1:803:C:H2'	1:1:804:C:C6	2.39	0.57
1:1:1562:C:H3'	1:1:1563:C:C6	2.40	0.57
1:1:1785:U:H2'	1:1:1786:G:C8	2.40	0.57
2:X:6:ALA:HB2	2:X:126:TRP:CH2	2.40	0.57
23:I:42:LEU:HD22	23:I:79:VAL:HG11	1.86	0.57
48:W:59:ASP:HB3	48:W:61:THR:H	1.69	0.57
1:1:109:A:O2'	1:1:110:G:O4'	2.22	0.57
1:1:993:G:C5	1:1:2637:A:H2	2.23	0.57
1:1:1184:A:H2'	1:1:1185:C:C6	2.40	0.57
1:1:1245:A:N6	1:1:1272:C:H4'	2.19	0.57
1:1:1529:A:P	1:1:1592:G:H22	2.27	0.57
1:1:2557:A:C5'	10:b:135:ARG:HH11	2.10	0.57
1:1:2601:A:H2'	1:1:2602:G:C8	2.39	0.57
1:1:2609:A:H2'	1:1:2610:G:H8	1.70	0.57
1:1:2618:G:N2	1:1:2645:G:OP1	2.38	0.57
13:D:87:ARG:HD3	15:E:97:ASN:HD21	1.70	0.57
27:K:159:PRO:HA	37:P:26:ARG:NH2	2.20	0.57
42:r:201:UNK:HA	42:r:207:UNK:HA	1.84	0.57
1:1:800:G:N2	1:1:801:A:N3	2.53	0.57
12:c:101:VAL:HG22	12:c:124:ILE:HB	1.86	0.57
16:e:40:LYS:HB2	16:e:101:LEU:HD22	1.86	0.57
17:F:68:HIS:CD2	17:F:69:LYS:HZ2	2.23	0.57
33:N:54:LEU:HD11	33:N:119:TYR:CG	2.39	0.57
35:O:60:LEU:HD13	46:U:152:LEU:HD11	1.87	0.57
46:U:10:ILE:HG12	46:U:26:ARG:HB3	1.86	0.57
48:W:20:SER:O	48:W:24:GLU:N	2.23	0.57
1:1:668:G:HO2'	43:S:164:ARG:HH12	1.45	0.57
1:1:1108:U:H2'	1:1:1109:U:C6	2.39	0.57
1:1:1170:A:OP1	25:J:218:ARG:HA	2.05	0.57
1:1:1184:A:H5''	35:O:59:ASN:HD22	1.70	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1288:U:H2'	1:1:1289:G:H8	1.68	0.57
1:1:1365:G:O2'	1:1:1366:A:OP1	2.23	0.57
1:1:1460:A:H2'	1:1:1461:A:C8	2.39	0.57
1:1:2094:C:H2'	1:1:2095:G:H8	1.70	0.57
8:a:11:ASP:HA	19:G:196:ASN:ND2	2.19	0.57
16:e:60:ALA:O	16:e:64:LYS:N	2.37	0.57
20:g:108:ILE:O	20:g:112:ALA:N	2.37	0.57
21:H:202:GLY:O	21:H:205:SER:OG	2.16	0.57
25:J:132:PRO:HA	25:J:229:PHE:CD1	2.39	0.57
43:S:4:ASP:OD1	43:S:5:HIS:N	2.37	0.57
1:1:1260:A:H1'	1:1:1280:C:O4'	2.05	0.56
1:1:1479:U:O4	1:1:1480:G:C2	2.58	0.56
1:1:1841:A:H1'	1:1:1848:G:H1'	1.87	0.56
1:1:1842:A:O2'	1:1:1843:C:OP1	2.19	0.56
1:1:1917:C:H2'	1:1:1918:C:C6	2.40	0.56
1:1:3164:C:H2'	1:1:3165:A:C8	2.40	0.56
17:F:105:VAL:HG11	17:F:148:LEU:HD11	1.86	0.56
19:G:58:HIS:NE2	19:G:98:ARG:HD3	2.20	0.56
19:G:150:LEU:HD22	19:G:249:ILE:HG12	1.87	0.56
26:j:17:LEU:HA	26:j:20:GLN:HB3	1.86	0.56
35:O:105:GLN:NE2	35:O:109:ARG:HH21	2.02	0.56
44:s:207:ASN:HA	44:s:210:ARG:NH1	2.19	0.56
1:1:400:G:O2'	1:1:401:U:O5'	2.21	0.56
1:1:879:U:H4'	41:R:132:ALA:HB3	1.85	0.56
1:1:1253:U:H3	1:1:1264:G:P	2.28	0.56
1:1:1372:C:OP2	12:c:7:LYS:HE2	2.05	0.56
1:1:1471:U:H2'	1:1:1472:U:C6	2.40	0.56
1:1:1481:A:O2'	1:1:1482:A:OP2	2.21	0.56
1:1:1808:G:O2'	1:1:1809:A:O5'	2.23	0.56
1:1:2245:C:O2'	15:E:220:GLY:O	2.20	0.56
1:1:2553:U:H5''	1:1:2554:A:OP2	2.05	0.56
1:1:3264:G:H2'	1:1:3265:C:C6	2.40	0.56
27:K:162:LEU:HD23	37:P:7:LEU:HD21	1.86	0.56
31:M:54:VAL:HG12	31:M:56:THR:H	1.69	0.56
37:P:74:PRO:O	37:P:75:VAL:HG22	2.05	0.56
1:1:351:A:N6	34:n:37:TYR:O	2.36	0.56
1:1:528:U:H2'	1:1:529:A:C8	2.40	0.56
1:1:727:G:H4'	1:1:978:G:OP2	2.06	0.56
1:1:873:C:H3'	1:1:874:U:H4'	1.87	0.56
1:1:884:A:C6	1:1:2139:A:H1'	2.39	0.56
1:1:1111:U:P	33:N:5:LYS:HD2	2.45	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1357:G:H2'	1:1:1358:C:C6	2.41	0.56
1:1:2174:G:H4'	1:1:2175:U:O5'	2.05	0.56
1:1:2294:U:H2'	1:1:2296:A:OP2	2.05	0.56
1:1:2584:G:O2'	27:K:240:ASN:ND2	2.39	0.56
1:1:2890:A:H61	1:1:2913:C:H42	1.53	0.56
1:1:3175:U:H5''	22:h:10:LYS:NZ	2.20	0.56
3:3:4:U:H2'	3:3:5:G:C8	2.41	0.56
5:4:52:A:H62	34:n:27:ILE:HD13	1.71	0.56
6:Z:105:VAL:HG21	6:Z:135:ILE:HD12	1.86	0.56
19:G:110:ASN:ND2	37:P:201:ARG:HE	2.03	0.56
21:H:33:ARG:HH11	21:H:50:ARG:HH12	1.53	0.56
23:I:30:LEU:HB3	23:I:34:LEU:HD12	1.87	0.56
27:K:246:MET:O	27:K:250:ALA:CB	2.53	0.56
34:n:5:LYS:HD2	34:n:13:MET:HE1	1.87	0.56
35:O:59:ASN:OD1	35:O:60:LEU:N	2.38	0.56
1:1:246:U:H2'	1:1:247:C:C5	2.40	0.56
1:1:1402:C:H2'	1:1:1403:C:C6	2.40	0.56
1:1:1566:A:C2	1:1:1567:U:H1'	2.41	0.56
1:1:1938:U:H1'	45:T:78:TYR:HB2	1.87	0.56
1:1:2572:C:O2'	10:b:61:LYS:NZ	2.38	0.56
7:A:23:A:H2'	7:A:24:G:C8	2.40	0.56
12:c:111:LYS:HE2	12:c:113:LEU:HD21	1.85	0.56
16:e:74:ASN:ND2	16:e:86:ARG:HD3	2.20	0.56
27:K:78:PHE:O	27:K:79:GLN:HG2	2.05	0.56
40:q:21:MET:HE2	40:q:82:VAL:HG21	1.87	0.56
1:1:999:G:H2'	1:1:1000:C:C6	2.41	0.56
1:1:1246:G:H1'	1:1:1265:U:OP2	2.05	0.56
1:1:1808:G:O2'	1:1:1809:A:H8	1.89	0.56
1:1:1874:A:N7	45:T:20:ARG:NH1	2.53	0.56
1:1:2742:C:H2'	1:1:2743:A:C8	2.39	0.56
1:1:2799:A:H1'	12:c:42:ARG:HH12	1.71	0.56
1:1:2848:G:H2'	1:1:2849:C:O4'	2.05	0.56
1:1:3334:U:O2'	1:1:3335:A:O5'	2.20	0.56
3:3:45:A:OP1	21:H:151:GLN:NE2	2.38	0.56
5:4:11:C:H5''	5:4:12:A:OP2	2.06	0.56
17:F:318:LYS:O	17:F:319:ASN:ND2	2.39	0.56
27:K:116:VAL:HA	27:K:120:LYS:HA	1.88	0.56
33:N:43:ALA:HB1	33:N:139:LEU:HD22	1.88	0.56
34:n:22:PRO:HG3	34:n:41:ARG:NH1	2.21	0.56
1:1:157:A:H2'	1:1:158:G:O4'	2.06	0.56
1:1:784:A:O2'	1:1:785:G:O5'	2.24	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:880:G:OP2	41:R:131:ARG:NE	2.34	0.56
1:1:1127:G:N2	1:1:1130:A:OP2	2.39	0.56
1:1:1135:A:H5''	14:d:5:LYS:NZ	2.20	0.56
1:1:1566:A:N1	1:1:1567:U:H1'	2.21	0.56
1:1:1899:G:C4	1:1:2334:U:H5	2.23	0.56
1:1:1928:G:OP2	1:1:1928:G:H8	1.87	0.56
1:1:2280:A:N6	1:1:2282:U:O2	2.38	0.56
1:1:3176:G:OP2	22:h:6:ARG:HB2	2.05	0.56
1:1:3258:U:O2'	1:1:3260:G:OP1	2.19	0.56
5:4:95:G:O2'	30:l:81:GLY:N	2.35	0.56
14:d:52:LYS:O	14:d:56:ALA:N	2.38	0.56
17:F:102:LEU:HD12	17:F:103:THR:N	2.21	0.56
23:I:139:LYS:HB3	23:I:143:LYS:HE3	1.87	0.56
29:L:11:GLU:HA	29:L:51:GLN:O	2.06	0.56
39:Q:58:LEU:HA	39:Q:72:HIS:CD2	2.41	0.56
44:s:47:LEU:HD21	44:s:144:LYS:HD3	1.86	0.56
44:s:110:LEU:O	44:s:111:GLN:CB	2.53	0.56
1:1:286:U:H2'	1:1:287:G:H8	1.70	0.56
1:1:1027:A:N6	1:1:1029:G:N3	2.53	0.56
1:1:1288:U:H2'	1:1:1289:G:C8	2.40	0.56
1:1:2307:G:O2'	1:1:2308:C:OP1	2.20	0.56
1:1:2345:A:OP1	18:f:24:SER:OG	2.22	0.56
1:1:2451:G:N1	1:1:2452:G:H1'	2.21	0.56
1:1:2991:A:H4'	17:F:21:ARG:NH1	2.19	0.56
35:O:36:VAL:HG11	35:O:55:ARG:NH1	2.13	0.56
37:P:113:LEU:HD23	37:P:134:LEU:HB3	1.87	0.56
1:1:9:U:O2	5:4:150:G:N2	2.38	0.56
1:1:1914:G:H2'	1:1:1915:A:C8	2.40	0.56
1:1:2737:C:OP1	47:V:70:SER:OG	2.24	0.56
1:1:3163:A:H2'	1:1:3164:C:H6	1.70	0.56
2:X:80:ARG:HB2	2:X:99:ALA:HB3	1.87	0.56
3:3:13:A:O5'	3:3:111:U:O2'	2.22	0.56
15:E:49:VAL:HG11	15:E:60:LYS:NZ	2.20	0.56
21:H:110:LEU:HG	21:H:116:ASP:HA	1.87	0.56
31:M:92:ARG:HB3	31:M:173:ASP:OD2	2.06	0.56
1:1:570:A:H2'	1:1:571:U:C6	2.41	0.56
1:1:608:A:C5	23:I:22:ARG:NH1	2.73	0.56
1:1:795:G:H2'	1:1:796:U:H6	1.71	0.56
1:1:1456:A:H4'	1:1:1457:U:O5'	2.06	0.56
1:1:1636:U:H4'	10:b:74:VAL:O	2.06	0.56
1:1:2541:U:H4'	1:1:2542:U:O5'	2.05	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2656:A:O2'	1:1:2657:A:OP1	2.24	0.56
3:3:120:C:H5	21:H:258:LYS:HZ1	1.51	0.56
5:4:59:A:H2'	6:Z:61:LYS:NZ	2.21	0.56
26:j:78:LYS:HG2	26:j:81:ARG:HE	1.70	0.56
39:Q:178:VAL:HG12	39:Q:182:ASN:HD21	1.71	0.56
45:T:130:ASN:C	45:T:132:PHE:H	2.13	0.56
1:1:49:A:C2	37:P:187:ARG:NH1	2.73	0.56
1:1:172:G:O6	1:1:246:U:O2	2.24	0.56
1:1:297:G:C6	28:k:41:ARG:NH1	2.73	0.56
1:1:547:G:H2'	1:1:548:G:C8	2.40	0.56
1:1:909:G:H5'	37:P:77:LYS:HZ3	1.70	0.56
1:1:1235:U:O2'	1:1:1236:G:O5'	2.19	0.56
1:1:1321:G:N2	46:U:112:ALA:HB2	2.20	0.56
1:1:1749:A:H5''	32:m:44:LYS:HZ1	1.70	0.56
1:1:1753:G:H2'	1:1:1754:G:H8	1.70	0.56
1:1:1900:A:H61	1:1:1908:A:H61	1.53	0.56
1:1:2158:A:N7	1:1:2177:G:N2	2.54	0.56
1:1:2705:A:O2'	1:1:2706:G:OP1	2.21	0.56
1:1:3115:C:O2'	1:1:3116:G:OP1	2.20	0.56
3:3:106:U:H2'	3:3:107:C:C6	2.41	0.56
16:e:39:SER:HA	16:e:93:LEU:HA	1.87	0.56
21:H:33:ARG:HH12	21:H:50:ARG:CZ	2.19	0.56
41:R:170:SER:HA	41:R:173:ARG:HH11	1.70	0.56
43:S:83:VAL:HG22	43:S:140:LEU:HB2	1.87	0.56
1:1:1078:U:C4	1:1:1081:U:OP2	2.59	0.55
1:1:1281:G:N3	1:1:1282:G:N7	2.54	0.55
1:1:1355:A:HO2'	1:1:1356:U:P	2.26	0.55
1:1:1737:U:H2'	1:1:1738:C:C6	2.41	0.55
1:1:1866:C:O2'	1:1:1867:A:OP1	2.23	0.55
1:1:1932:A:C8	1:1:1933:A:C8	2.94	0.55
1:1:2643:A:OP2	47:V:3:LYS:HE3	2.05	0.55
1:1:2688:U:O2'	1:1:2689:A:O5'	2.17	0.55
1:1:2789:U:O4	1:1:2790:A:N6	2.39	0.55
1:1:3330:A:OP2	17:F:376:LYS:NZ	2.29	0.55
32:m:32:ASN:N	32:m:36:LYS:O	2.26	0.55
46:U:96:ASP:OD2	46:U:102:ALA:HA	2.06	0.55
1:1:330:G:H2'	1:1:331:G:H8	1.71	0.55
1:1:852:U:H2'	1:1:853:G:H8	1.72	0.55
1:1:965:A:H2'	1:1:966:U:O4'	2.06	0.55
1:1:1095:U:N3	47:V:127:GLN:OE1	2.24	0.55
1:1:1289:G:H2'	1:1:1290:A:H8	1.72	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1411:C:OP1	20:g:98:HIS:N	2.34	0.55
1:1:1650:G:H2'	1:1:1651:U:C6	2.41	0.55
1:1:3275:U:O2'	1:1:3276:G:OP1	2.25	0.55
4:Y:23:ARG:HG2	4:Y:24:GLY:H	1.70	0.55
17:F:131:THR:O	17:F:134:SER:N	2.38	0.55
29:L:8:GLN:HG2	29:L:68:LEU:HD21	1.87	0.55
1:1:190:U:O2'	1:1:191:U:OP2	2.17	0.55
1:1:1231:A:H1'	1:1:1261:G:H1'	1.89	0.55
1:1:1246:G:O2'	1:1:1265:U:OP1	2.20	0.55
1:1:1265:U:N3	1:1:1277:C:N3	2.54	0.55
1:1:2817:A:H4'	1:1:2818:U:OP2	2.07	0.55
1:1:3287:U:H5'	1:1:3288:G:OP2	2.06	0.55
23:I:72:ASN:OD1	23:I:74:VAL:N	2.34	0.55
44:s:213:PRO:HA	44:s:216:PHE:CZ	2.41	0.55
1:1:20:A:H8	1:1:20:A:OP2	1.90	0.55
1:1:127:G:H2'	1:1:128:G:C8	2.36	0.55
1:1:235:A:H2'	1:1:236:G:H8	1.71	0.55
1:1:1214:U:OP2	46:U:137:ARG:NH2	2.39	0.55
1:1:1563:C:H2'	1:1:1564:U:C6	2.42	0.55
12:c:77:LYS:C	12:c:79:TRP:H	2.13	0.55
1:1:515:C:H2'	1:1:516:A:H8	1.70	0.55
1:1:1481:A:H2	24:i:4:ARG:HD3	1.71	0.55
1:1:1749:A:O2'	1:1:1750:A:O5'	2.20	0.55
1:1:2749:G:OP2	1:1:2749:G:H8	1.90	0.55
1:1:3321:C:H2'	1:1:3322:A:H8	1.72	0.55
7:A:15:G:H2'	7:A:16:U:C4	2.41	0.55
13:D:29:LEU:O	13:D:32:GLN:N	2.40	0.55
26:j:14:LYS:HA	26:j:17:LEU:HD12	1.88	0.55
31:M:133:ARG:NH1	31:M:153:LYS:O	2.39	0.55
1:1:542:G:H2'	1:1:543:C:C6	2.41	0.55
1:1:718:G:H5''	1:1:719:U:OP2	2.07	0.55
1:1:874:U:N3	1:1:2978:U:OP1	2.37	0.55
1:1:952:A:H4'	1:1:968:G:H22	1.71	0.55
1:1:1149:G:H21	1:1:1199:C:N4	2.05	0.55
1:1:2535:A:H2'	1:1:2536:A:O4'	2.07	0.55
1:1:3005:A:HO2'	1:1:3006:A:H8	1.53	0.55
12:c:51:GLY:HA2	43:S:176:ARG:O	2.06	0.55
17:F:293:ASN:HB2	17:F:305:ILE:H	1.71	0.55
39:Q:61:ALA:HA	39:Q:70:PRO:HD2	1.88	0.55
1:1:933:A:N3	19:G:98:ARG:NH2	2.54	0.55
1:1:1244:A:O2'	1:1:1245:A:H5''	2.07	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1269:U:C2	1:1:1271:A:OP2	2.59	0.55
1:1:1569:U:H5''	1:1:1570:U:H6	1.72	0.55
1:1:2846:U:C6	36:o:97:ARG:NH1	2.75	0.55
1:1:2900:A:C6	1:1:2901:G:C6	2.94	0.55
1:1:3153:U:OP2	1:1:3153:U:H6	1.90	0.55
5:4:126:A:O2'	5:4:127:U:OP1	2.25	0.55
40:q:16:SER:O	40:q:17:ALA:HB2	2.06	0.55
41:R:28:ASN:O	41:R:31:GLU:N	2.39	0.55
48:W:94:ARG:HB3	48:W:96:VAL:HG23	1.88	0.55
1:1:62:A:H2	37:P:189:LYS:NZ	2.05	0.55
1:1:230:U:H3'	1:1:231:G:H5''	1.88	0.55
1:1:269:G:OP1	37:P:44:ARG:NH1	2.36	0.55
1:1:374:A:HO2'	1:1:375:A:C5'	2.18	0.55
1:1:528:U:O2	1:1:564:G:O6	2.25	0.55
1:1:817:A:O2'	1:1:818:C:OP1	2.23	0.55
1:1:2112:U:H4'	1:1:2113:A:OP2	2.05	0.55
1:1:2266:U:H2'	1:1:2267:C:C6	2.41	0.55
1:1:3140:G:O2'	1:1:3141:A:O4'	2.24	0.55
1:1:3215:A:C5	1:1:3259:U:H1'	2.42	0.55
1:1:3293:U:OP1	17:F:132:LYS:NZ	2.37	0.55
2:X:17:LEU:HB2	2:X:52:ALA:HB3	1.88	0.55
4:Y:6:ASP:OD1	4:Y:31:PHE:HA	2.07	0.55
5:4:44:A:H2'	5:4:45:C:C6	2.42	0.55
5:4:141:C:H5'	37:P:109:ARG:HH12	1.71	0.55
10:b:124:ALA:O	10:b:126:LYS:N	2.32	0.55
19:G:156:LEU:HG	19:G:159:ILE:HD12	1.88	0.55
1:1:89:A:P	43:S:170:ARG:HH22	2.28	0.55
1:1:594:U:C4	19:G:308:LYS:HE2	2.42	0.55
1:1:1647:A:N6	1:1:1808:G:H1'	2.20	0.55
1:1:1649:U:H2'	1:1:1650:G:C8	2.42	0.55
1:1:1714:A:C6	1:1:1728:G:C2	2.94	0.55
1:1:1772:U:H5''	1:1:1773:C:H5'	1.89	0.55
1:1:1929:G:H3'	1:1:1930:A:H8	1.71	0.55
1:1:2687:G:H5'	21:H:8:LYS:NZ	2.22	0.55
1:1:3192:U:O2	1:1:3200:G:N2	2.30	0.55
9:B:17(A):G:O2'	9:B:18:G:OP1	2.22	0.55
20:g:34:LYS:NZ	20:g:52:GLN:NE2	2.53	0.55
1:1:583:G:H4'	22:h:106:ASN:HD21	1.72	0.55
1:1:780:A:H4'	1:1:781:G:OP2	2.07	0.55
1:1:988:U:H2'	1:1:989:A:C8	2.42	0.55
1:1:1268:G:N2	1:1:1272:C:OP2	2.40	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1362:G:H5''	1:1:1363:A:OP2	2.07	0.55
1:1:1730:G:O6	16:e:29:SER:N	2.39	0.55
1:1:2227:C:H5''	1:1:2228:A:OP2	2.07	0.55
1:1:2298:U:C5	1:1:2921:U:H1'	2.42	0.55
1:1:2843:U:OP2	1:1:2844:C:H5	1.89	0.55
1:1:2898:G:OP1	29:L:173:ARG:NH2	2.40	0.55
1:1:2919:A:N6	1:1:2920:U:O4	2.40	0.55
1:1:3153:U:OP2	1:1:3153:U:H3'	2.06	0.55
3:3:94:C:H2'	3:3:95:A:C8	2.41	0.55
16:e:31:VAL:HG12	16:e:35:ARG:HH12	1.71	0.55
17:F:95:THR:OG1	17:F:98:GLY:O	2.25	0.55
19:G:177:ASP:OD2	19:G:205:PRO:HD3	2.07	0.55
19:G:289:ILE:HD13	43:S:125:ASP:HB2	1.89	0.55
25:J:24:GLU:HG2	25:J:25:GLN:N	2.22	0.55
25:J:220:PHE:O	25:J:229:PHE:HE2	1.90	0.55
31:M:166:LYS:HE2	31:M:167:TYR:CE2	2.42	0.55
40:q:111:ASP:O	40:q:112:ASP:C	2.50	0.55
1:1:691:A:H62	19:G:48:GLN:HG2	1.71	0.54
1:1:1434:G:O2'	1:1:1435:A:OP1	2.24	0.54
1:1:1532:C:O2'	1:1:1799:A:N3	2.41	0.54
1:1:1659:U:H2'	1:1:1660:C:H6	1.69	0.54
1:1:2941:A:H5''	1:1:2943:G:H4'	1.89	0.54
5:4:64:U:C2	5:4:65:A:C8	2.95	0.54
6:Z:98:ALA:O	6:Z:102:LEU:N	2.27	0.54
7:A:60:U:OP2	7:A:61:C:OP2	2.25	0.54
17:F:247:ARG:O	17:F:248:LYS:HG3	2.06	0.54
19:G:22:LEU:HD23	19:G:255:PHE:HZ	1.73	0.54
27:K:168:ALA:O	27:K:172:LYS:CB	2.54	0.54
27:K:210:ALA:O	27:K:213:LYS:HB3	2.06	0.54
38:p:3:ALA:HA	38:p:6:ARG:HB3	1.88	0.54
41:R:166:VAL:HG22	41:R:168:LEU:H	1.70	0.54
43:S:151:ARG:HH21	43:S:152:HIS:CE1	2.25	0.54
1:1:288:C:H2'	1:1:289:A:H8	1.73	0.54
1:1:655:C:H2'	1:1:656:A:H8	1.72	0.54
1:1:968:G:H5''	1:1:969:C:OP2	2.07	0.54
1:1:1293:U:H2'	1:1:1294:A:O4'	2.07	0.54
1:1:1834:U:H4'	1:1:1835:A:OP2	2.06	0.54
1:1:2101:C:H2'	1:1:2102:U:H6	1.73	0.54
1:1:2861:U:OP2	1:1:2861:U:H6	1.90	0.54
1:1:2898:G:C5	36:o:125:LYS:NZ	2.73	0.54
9:B:54:U:H5'	9:B:55:U:OP2	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:b:103:GLN:O	10:b:106:GLN:N	2.38	0.54
13:D:33:GLN:HE21	13:D:49:ARG:NH1	2.05	0.54
17:F:142:ALA:O	17:F:146:ARG:CB	2.44	0.54
17:F:211:GLN:NE2	17:F:283:TYR:O	2.38	0.54
18:f:79:ARG:HA	18:f:89:LEU:HA	1.90	0.54
35:O:32:LEU:HD21	35:O:94:TRP:CE2	2.42	0.54
45:T:39:ASN:OD1	45:T:42:ARG:NH2	2.40	0.54
1:1:71:A:OP1	12:c:67:HIS:NE2	2.40	0.54
1:1:92:G:P	11:C:46:LYS:NZ	2.80	0.54
1:1:123:A:P	27:K:105:LYS:NZ	2.80	0.54
1:1:183:G:H2'	1:1:184:U:C6	2.42	0.54
1:1:1186:G:O3'	46:U:113:ARG:NH2	2.40	0.54
1:1:1538:G:N2	1:1:1583:A:H62	2.05	0.54
1:1:1750:A:O2'	1:1:1751:G:O5'	2.24	0.54
1:1:2225:U:H4'	11:C:36:PHE:HZ	1.72	0.54
1:1:2403:G:C2	1:1:2405:C:C4	2.94	0.54
1:1:2451:G:H1	1:1:2494:A:N6	2.05	0.54
1:1:2609:A:H2'	1:1:2610:G:C8	2.43	0.54
1:1:2950:G:H5''	1:1:2951:G:OP1	2.07	0.54
1:1:3036:G:H2'	1:1:3037:U:C6	2.43	0.54
1:1:3121:U:O2'	1:1:3122:A:O5'	2.22	0.54
1:1:3206:C:OP2	35:O:99:TRP:HZ3	1.90	0.54
11:C:103:ALA:HB2	31:M:62:ASN:O	2.08	0.54
21:H:211:LEU:HB3	21:H:219:PHE:HB2	1.88	0.54
21:H:254:LYS:HZ1	21:H:256:THR:HG22	1.73	0.54
39:Q:76:PRO:HD3	39:Q:147:TRP:CD2	2.43	0.54
1:1:111:C:P	33:N:91:ARG:HH12	2.29	0.54
1:1:160:G:O6	1:1:261:U:O4	2.24	0.54
1:1:301:G:C6	1:1:302:U:C4	2.96	0.54
1:1:1308:A:H61	1:1:2367:A:H2	1.54	0.54
1:1:1463:U:N3	1:1:1467:A:N6	2.47	0.54
1:1:1615:C:H2'	1:1:1616:U:H6	1.72	0.54
1:1:2543:U:H5''	1:1:2544:U:OP2	2.08	0.54
1:1:2771:U:O4	1:1:2773:C:N4	2.41	0.54
1:1:3271:G:H1	23:I:109:GLU:HG2	1.72	0.54
17:F:35:ASP:OD2	17:F:184:ASN:HA	2.07	0.54
1:1:275:U:H2'	1:1:276:U:C6	2.43	0.54
1:1:343:U:H4'	1:1:344:A:OP2	2.08	0.54
1:1:1253:U:O2'	1:1:1254:C:O4'	2.26	0.54
1:1:1319:G:H2'	1:1:1320:C:C6	2.43	0.54
1:1:2761:G:H22	1:1:2798:C:H4'	1.73	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2836:C:H4'	44:s:156:TYR:CD2	2.43	0.54
1:1:3152:U:H1'	1:1:3294:A:C8	2.42	0.54
5:4:10:A:H2'	5:4:11:C:C6	2.42	0.54
7:A:53:G:N2	7:A:62:C:N3	2.55	0.54
8:a:118:LEU:HD12	8:a:121:ARG:HH11	1.71	0.54
12:c:111:LYS:HG3	12:c:129:PHE:HB2	1.89	0.54
17:F:166:ILE:HD11	17:F:171:LEU:HD12	1.89	0.54
31:M:117:ASP:HB3	31:M:120:ILE:HD12	1.88	0.54
41:R:50:GLN:OE1	41:R:56:ARG:HD3	2.08	0.54
1:1:307:A:H2'	1:1:308:A:C8	2.42	0.54
1:1:951:A:N7	1:1:1368:U:O4	2.41	0.54
1:1:1447:G:HO2'	1:1:1448:U:P	2.30	0.54
1:1:1709:C:H5''	10:b:15:ARG:HH12	1.72	0.54
1:1:1727:G:H2'	1:1:1728:G:H21	1.73	0.54
1:1:2656:A:C8	1:1:2658:G:C8	2.96	0.54
1:1:2760:C:C4	11:C:63:LYS:HE3	2.42	0.54
1:1:3208:G:H4'	1:1:3209:A:O5'	2.06	0.54
5:4:113:U:O2'	5:4:114:G:OP2	2.22	0.54
5:4:119:C:H2'	5:4:120:C:C6	2.42	0.54
17:F:256:HIS:HA	17:F:257:PRO:C	2.32	0.54
19:G:82:THR:HG23	19:G:84:ARG:HB3	1.89	0.54
25:J:88:ARG:HD3	25:J:110:ARG:O	2.08	0.54
25:J:178:ILE:HA	25:J:183:ASP:HB3	1.89	0.54
40:q:109:THR:O	40:q:110:LYS:HB2	2.07	0.54
41:R:22:LEU:HD12	41:R:146:ILE:HD12	1.88	0.54
47:V:157:GLU:HG2	47:V:159:PHE:H	1.71	0.54
1:1:251:G:O2'	1:1:252:U:O5'	2.20	0.54
1:1:267:G:C6	1:1:319:A:C5	2.96	0.54
1:1:512:U:H2'	1:1:513:G:C8	2.42	0.54
1:1:1159:A:H5''	25:J:92:ILE:CG2	2.37	0.54
1:1:1786:G:H2'	1:1:1787:A:C8	2.43	0.54
1:1:2526:C:H5''	15:E:37:ARG:HH12	1.72	0.54
1:1:2736:A:H1'	47:V:90:ASN:HD22	1.71	0.54
1:1:3195:U:O2'	1:1:3196:U:OP1	2.24	0.54
1:1:3263:G:H2'	1:1:3264:G:C8	2.43	0.54
21:H:131:LEU:HD23	21:H:172:TYR:CE1	2.42	0.54
40:q:94:ASP:HA	40:q:128:PHE:CZ	2.43	0.54
43:S:148:GLU:OE2	43:S:151:ARG:NH2	2.41	0.54
1:1:121:A:O2'	1:1:122:A:OP1	2.24	0.54
1:1:592:A:H5'	23:I:19:LYS:HG2	1.90	0.54
1:1:989:A:H2'	1:1:990:U:H6	1.72	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1031:C:H2'	1:1:1032:C:H6	1.73	0.54
1:1:1100:U:H2'	1:1:1101:G:C8	2.43	0.54
1:1:1720:U:OP2	45:T:110:ARG:NH2	2.38	0.54
1:1:2402:A:H62	19:G:73:ARG:NH2	2.03	0.54
1:1:2992:U:H1'	41:R:69:ARG:NH1	2.23	0.54
13:D:78:THR:O	13:D:81:SER:OG	2.18	0.54
25:J:110:ARG:HH21	25:J:206:LYS:HG2	1.73	0.54
32:m:12:LEU:HB3	32:m:16:ARG:NH2	2.18	0.54
44:s:20:ARG:NH1	44:s:21:TYR:OH	2.41	0.54
47:V:94:GLU:N	47:V:94:GLU:OE1	2.39	0.54
1:1:129:U:H3	1:1:139:G:H1	1.53	0.54
1:1:608:A:C4	23:I:22:ARG:NH1	2.76	0.54
1:1:984:G:O2'	1:1:985:U:OP1	2.20	0.54
1:1:1132:C:H2'	1:1:1133:A:H8	1.73	0.54
1:1:1213:G:P	46:U:137:ARG:HH12	2.30	0.54
1:1:1339:C:H2'	1:1:1340:G:C8	2.42	0.54
1:1:1418:A:O2'	1:1:1419:A:OP1	2.25	0.54
1:1:1544:G:O6	1:1:1550:C:N4	2.41	0.54
1:1:1807:G:H5''	1:1:1808:G:OP2	2.08	0.54
1:1:2335:G:N2	1:1:2339:C:O2	2.37	0.54
1:1:3027:A:H2'	1:1:3028:G:O4'	2.08	0.54
5:4:39:G:H5'	5:4:40:A:OP1	2.07	0.54
7:A:53:G:H1	7:A:62:C:H42	1.56	0.54
8:a:39:LEU:HA	8:a:42:GLN:HB3	1.90	0.54
23:I:170:LYS:HB2	23:I:173:MET:HB2	1.89	0.54
31:M:133:ARG:HH12	31:M:154:THR:HA	1.71	0.54
43:S:185:LYS:HG2	43:S:186:VAL:HG23	1.89	0.54
1:1:595:G:H2'	1:1:596:C:C6	2.43	0.54
1:1:726:G:OP2	1:1:726:G:H8	1.92	0.54
1:1:816:A:O2'	1:1:819:U:O4	2.17	0.54
1:1:861:C:H5''	13:D:17:ARG:NH1	2.23	0.54
1:1:1090:G:H2'	1:1:1091:A:H8	1.72	0.54
1:1:1560:G:H2'	1:1:1561:G:O4'	2.07	0.54
1:1:2573:G:H2'	1:1:2574:G:C8	2.32	0.54
1:1:2696:A:N6	1:1:2697:A:N1	2.55	0.54
1:1:3292:A:O2'	1:1:3293:U:O5'	2.23	0.54
1:1:3375:A:O2'	1:1:3376:A:O4'	2.26	0.54
6:Z:105:VAL:HG13	6:Z:130:TYR:CD2	2.43	0.54
12:c:104:THR:OG1	12:c:126:LYS:O	2.16	0.54
17:F:79:VAL:HG13	17:F:322:ILE:HB	1.90	0.54
19:G:110:ASN:HD21	37:P:201:ARG:HE	1.54	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:G:292:SER:OG	19:G:293:SER:N	2.41	0.54
25:J:83:LEU:HD21	25:J:116:PHE:CD1	2.43	0.54
1:1:538:G:O6	1:1:553:U:O4	2.26	0.53
1:1:613:G:H2'	1:1:614:C:C6	2.43	0.53
1:1:987:U:H2'	1:1:988:U:C6	2.43	0.53
1:1:1268:G:H2'	1:1:1269:U:C6	2.43	0.53
1:1:1372:C:H2'	1:1:1373:A:H8	1.73	0.53
1:1:1455:U:H5''	1:1:1456:A:OP2	2.08	0.53
1:1:1680:G:H2'	1:1:1681:U:C6	2.43	0.53
1:1:2221:G:N2	1:1:2223:A:H3'	2.23	0.53
1:1:2493:U:H1'	1:1:2494:A:N7	2.22	0.53
1:1:2726:C:O2'	1:1:2727:A:H8	1.91	0.53
1:1:2882:U:H2'	1:1:2883:U:H6	1.73	0.53
5:4:60:U:O2	26:j:56:THR:OG1	2.26	0.53
17:F:19:ARG:HB3	17:F:273:HIS:CE1	2.42	0.53
18:f:13:THR:CG2	18:f:72:ARG:HH11	2.19	0.53
18:f:75:ILE:HG12	18:f:93:VAL:HG22	1.88	0.53
19:G:151:VAL:HG22	19:G:250:TRP:HB2	1.90	0.53
29:L:57:VAL:HG23	29:L:68:LEU:HD12	1.90	0.53
29:L:151:VAL:O	29:L:155:SER:OG	2.20	0.53
1:1:160:G:N1	1:1:261:U:N3	2.36	0.53
1:1:229:G:H2'	1:1:230:U:O4'	2.08	0.53
1:1:249:U:O2'	1:1:250:U:O5'	2.24	0.53
1:1:297:G:O6	28:k:41:ARG:NH2	2.40	0.53
1:1:324:A:H2'	1:1:325:A:C8	2.43	0.53
1:1:792:G:H2'	1:1:793:C:C6	2.44	0.53
1:1:1408:G:H2'	1:1:1409:G:C8	2.44	0.53
1:1:1709:C:H4'	10:b:15:ARG:HH12	1.73	0.53
1:1:1749:A:H5''	32:m:44:LYS:NZ	2.22	0.53
1:1:1830:G:H5''	6:Z:92:LYS:HD2	1.89	0.53
1:1:2130:G:H2'	1:1:2131:A:H4'	1.90	0.53
1:1:2551:U:O2'	1:1:2552:C:O5'	2.16	0.53
3:3:54:U:H4'	3:3:55:A:H8	1.73	0.53
4:Y:14:TYR:OH	17:F:375:GLU:OE2	2.25	0.53
5:4:34:U:O2'	5:4:35:C:OP2	2.26	0.53
5:4:44:A:H2'	5:4:45:C:H6	1.73	0.53
7:A:24:G:H2'	7:A:25:C:C6	2.43	0.53
8:a:111:LEU:HD23	8:a:116:LYS:HG2	1.90	0.53
17:F:37:ARG:HH12	17:F:188:ILE:CG2	2.21	0.53
25:J:186:HIS:O	25:J:190:THR:OG1	2.27	0.53
46:U:80:ARG:HB2	46:U:124:LEU:HD11	1.89	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:V:43:LYS:HA	47:V:58:GLN:HE22	1.74	0.53
1:1:337:G:O2'	1:1:338:A:OP1	2.25	0.53
1:1:976:U:H5'	43:S:144:ARG:HH12	1.73	0.53
1:1:1604:G:H4'	1:1:1835:A:H4'	1.90	0.53
1:1:1611:G:H2'	1:1:1612:A:H8	1.73	0.53
1:1:2502:A:N1	1:1:2503:G:C5	2.76	0.53
1:1:2656:A:N7	1:1:2658:G:C8	2.76	0.53
1:1:3292:A:H2'	1:1:3293:U:C6	2.43	0.53
5:4:48:A:O2'	5:4:49:G:OP1	2.24	0.53
6:Z:64:GLU:HB3	26:j:32:LYS:HZ2	1.73	0.53
21:H:163:LEU:HD21	21:H:175:HIS:CG	2.42	0.53
23:I:51:ARG:NH1	23:I:158:TYR:CE1	2.77	0.53
33:N:78:ALA:O	33:N:82:ALA:HB2	2.08	0.53
40:q:59:LEU:HB2	40:q:72:ASP:OD1	2.08	0.53
44:s:111:GLN:O	44:s:112:GLN:HG2	2.07	0.53
1:1:253:A:H2'	1:1:254:A:H8	1.73	0.53
1:1:383:G:N2	1:1:385:A:H3'	2.23	0.53
1:1:1213:G:H2'	1:1:1214:U:C6	2.44	0.53
1:1:1468:A:C5	1:1:1469:C:N3	2.76	0.53
1:1:2435:G:H4'	37:P:24:ARG:HH22	1.73	0.53
1:1:2613:U:O2'	1:1:2805:G:OP2	2.11	0.53
1:1:2991:A:P	17:F:20:LYS:HB2	2.48	0.53
5:4:94:C:H3'	30:l:72:ARG:HH11	1.73	0.53
17:F:92:TYR:HB2	17:F:157:VAL:HG23	1.90	0.53
20:g:105:ARG:NE	20:g:125:ARG:HD2	2.23	0.53
21:H:55:PHE:CE2	21:H:159:VAL:HG22	2.42	0.53
27:K:155:ASN:OD1	27:K:182:GLY:N	2.29	0.53
35:O:103:ILE:HG12	35:O:106:ARG:NH2	2.24	0.53
41:R:30:ARG:NH2	41:R:62:ARG:NH1	2.56	0.53
43:S:23:ASN:O	43:S:27:LYS:HG3	2.08	0.53
1:1:27:C:O2'	1:1:327:A:O2'	2.24	0.53
1:1:509:U:O2	1:1:583:G:C2	2.61	0.53
1:1:1336:U:H2'	1:1:1337:A:H8	1.72	0.53
1:1:2659:G:H2'	1:1:2660:G:C8	2.44	0.53
1:1:3141:A:O2'	1:1:3142:A:OP1	2.27	0.53
1:1:3162:C:H2'	1:1:3163:A:C8	2.41	0.53
1:1:3216:G:H22	1:1:3258:U:H5''	1.74	0.53
1:1:3315:G:OP1	17:F:116:ARG:NH1	2.41	0.53
5:4:71:A:N6	5:4:87:G:H1'	2.23	0.53
6:Z:67:ILE:HD13	6:Z:115:ARG:HH21	1.73	0.53
7:A:61:C:N3	7:A:62:C:N4	2.56	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:g:19:ARG:HG2	20:g:20:HIS:N	2.22	0.53
27:K:78:PHE:C	27:K:80:TYR:H	2.16	0.53
41:R:168:LEU:O	41:R:173:ARG:NH2	2.42	0.53
44:s:87:ARG:NH1	44:s:172:PHE:CZ	2.77	0.53
48:W:97:SER:OG	48:W:98:THR:N	2.34	0.53
1:1:49:A:C4	37:P:187:ARG:NH1	2.77	0.53
1:1:65:A:O2'	33:N:100:ARG:NH2	2.41	0.53
1:1:170:G:H2'	1:1:171:G:H8	1.73	0.53
1:1:288:C:H2'	1:1:289:A:C8	2.44	0.53
1:1:821:U:H2'	1:1:822:G:H8	1.72	0.53
1:1:1604:G:H5''	1:1:1605:A:OP2	2.09	0.53
1:1:1770:G:H5'	1:1:1771:C:OP2	2.09	0.53
1:1:2349:U:O4	1:1:2350:C:N4	2.42	0.53
1:1:2888:U:H4'	1:1:2889:C:OP1	2.07	0.53
1:1:3210:A:H5'	35:O:109:ARG:HH12	1.73	0.53
5:4:79:A:H4'	26:j:43:LYS:NZ	2.23	0.53
17:F:56:ILE:HD12	17:F:359:ILE:HG12	1.90	0.53
17:F:92:TYR:CE1	17:F:101:SER:HB3	2.42	0.53
17:F:92:TYR:HE2	17:F:159:ARG:HD2	1.74	0.53
32:m:32:ASN:O	32:m:35:GLY:N	2.42	0.53
47:V:39:ILE:HD12	47:V:102:ARG:HD3	1.90	0.53
1:1:210:U:O2'	1:1:229:G:O2'	2.23	0.53
1:1:1795:U:C4	13:D:51:ALA:HA	2.44	0.53
1:1:2499:U:H2'	1:1:2500:A:C8	2.43	0.53
1:1:2557:A:H4'	1:1:2558:U:OP2	2.08	0.53
1:1:2732:G:H4'	1:1:2760:C:H4'	1.90	0.53
1:1:2860:U:O2'	1:1:2861:U:H5'	2.09	0.53
1:1:3383:G:H3'	1:1:3383:G:OP2	2.08	0.53
3:3:32:U:O2'	3:3:33:U:O5'	2.26	0.53
6:Z:132:ALA:HA	6:Z:135:ILE:HG22	1.90	0.53
7:A:29:U:C2	7:A:30:G:C8	2.96	0.53
9:B:17(A):G:H21	40:q:87:ARG:NE	2.07	0.53
9:B:62:C:H2'	9:B:63:C:C6	2.44	0.53
19:G:281:ILE:HA	43:S:125:ASP:OD2	2.09	0.53
21:H:15:ARG:HA	47:V:20:ARG:HD3	1.91	0.53
24:i:80:ARG:NH1	24:i:88:ARG:CZ	2.67	0.53
29:L:5:GLN:HA	29:L:57:VAL:O	2.08	0.53
29:L:90:MET:HE2	29:L:179:ILE:HG22	1.90	0.53
41:R:31:GLU:CD	41:R:60:PHE:HA	2.34	0.53
1:1:525:C:OP1	35:O:79:ALA:N	2.39	0.53
1:1:692:A:OP1	37:P:201:ARG:NH2	2.41	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:966:U:H2'	1:1:967:A:C8	2.43	0.53
1:1:1132:C:H2'	1:1:1133:A:C8	2.43	0.53
1:1:1193:A:H2'	1:1:1194:G:C8	2.43	0.53
1:1:3215:A:C6	1:1:3259:U:H1'	2.44	0.53
1:1:3294:A:H2'	1:1:3295:A:O4'	2.09	0.53
9:B:18:G:H5'	9:B:19:U:OP2	2.08	0.53
9:B:28:C:H2'	9:B:29:U:H6	1.73	0.53
10:b:23:VAL:HB	10:b:43:VAL:HB	1.91	0.53
11:C:15:LYS:HZ2	11:C:18:ARG:NH1	2.03	0.53
19:G:181:VAL:HG12	19:G:182:LEU:HD12	1.90	0.53
22:h:67:MET:HE1	22:h:90:PRO:HD3	1.89	0.53
23:I:142:ASP:O	23:I:146:ILE:HG12	2.08	0.53
24:i:3:GLN:HE22	24:i:29:ILE:HA	1.74	0.53
29:L:18:VAL:O	35:O:5:SER:HA	2.08	0.53
1:1:221:A:H2'	1:1:223:U:OP2	2.09	0.53
1:1:887:G:O6	1:1:888:A:N6	2.42	0.53
1:1:1266:G:OP2	1:1:1266:G:C8	2.62	0.53
1:1:1695:U:O2'	1:1:1696:A:O5'	2.27	0.53
1:1:2179:C:N4	15:E:131:GLY:O	2.42	0.53
1:1:2882:U:O2'	17:F:263:SER:OG	2.26	0.53
1:1:2930:A:H2'	1:1:2931:C:H6	1.73	0.53
5:4:46:G:H5''	34:n:18:LYS:NZ	2.24	0.53
9:B:7:G:H2'	9:B:49:G:H8	1.74	0.53
9:B:23:A:H2'	9:B:24:A:C8	2.43	0.53
11:C:38:GLN:HG3	11:C:42:ARG:NH1	2.24	0.53
15:E:41:ILE:HG22	15:E:90:ALA:HB3	1.91	0.53
20:g:90:LYS:N	23:I:13:GLU:OE2	2.41	0.53
28:k:9:ILE:HD11	33:N:170:LEU:HD22	1.91	0.53
32:m:69:LEU:O	32:m:71:PRO:HD3	2.09	0.53
41:R:59:PRO:HG2	41:R:76:PHE:CD2	2.41	0.53
1:1:685:G:H2'	1:1:686:G:H8	1.74	0.53
1:1:1322:U:H5''	1:1:1323:G:OP2	2.09	0.53
1:1:1498:A:H2'	1:1:1499:C:C6	2.43	0.53
1:1:1599:G:N2	1:1:1609:C:O2	2.42	0.53
1:1:1893:A:H2'	1:1:1894:U:C6	2.44	0.53
1:1:2286:U:O2'	1:1:2287:C:O5'	2.21	0.53
1:1:3047:U:C5	1:1:3048:A:C5	2.96	0.53
1:1:3391:A:O2'	41:R:50:GLN:NE2	2.42	0.53
3:3:60:G:H2'	3:3:61:G:H8	1.72	0.53
29:L:84:LYS:HB3	29:L:186:PHE:HB3	1.90	0.53
41:R:60:PHE:CE2	41:R:82:ARG:HB3	2.43	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:799:G:N3	1:1:801:A:N6	2.57	0.52
1:1:907:G:O2'	1:1:908:G:O5'	2.22	0.52
1:1:943:U:O2'	1:1:944:C:OP1	2.27	0.52
1:1:1072:G:H2'	1:1:1073:U:C6	2.44	0.52
1:1:1481:A:H2	24:i:4:ARG:CD	2.22	0.52
1:1:1826:C:H2'	1:1:1827:C:C6	2.43	0.52
1:1:1900:A:N6	1:1:1906:G:N3	2.57	0.52
1:1:2115:G:H5''	1:1:2116:G:OP2	2.08	0.52
1:1:2926:A:H2'	1:1:2927:C:C6	2.44	0.52
1:1:3165:A:H2'	1:1:3166:C:H6	1.73	0.52
10:b:29:HIS:HB2	10:b:40:HIS:CE1	2.44	0.52
15:E:242:ARG:NH1	15:E:246:LEU:HD23	2.25	0.52
17:F:213:GLU:OE2	17:F:340:LYS:HE3	2.09	0.52
21:H:60:ILE:HD11	21:H:93:THR:HA	1.90	0.52
27:K:166:LEU:HD23	27:K:169:LEU:HD12	1.92	0.52
29:L:21:LYS:O	29:L:22:SER:OG	2.27	0.52
44:s:141:ASP:OD1	44:s:142:SER:N	2.42	0.52
44:s:209:ILE:HA	44:s:216:PHE:CE2	2.44	0.52
48:W:54:VAL:HG12	48:W:67:SER:HB2	1.91	0.52
1:1:45:A:H2'	1:1:46:U:O4'	2.08	0.52
1:1:717:C:H3'	1:1:718:G:C8	2.45	0.52
1:1:1486:G:H3'	1:1:1487:G:H5''	1.90	0.52
1:1:1587:A:C6	1:1:1590:G:C4	2.97	0.52
1:1:1652:G:H2'	1:1:1653:G:H8	1.73	0.52
1:1:1807:G:C6	1:1:1808:G:N2	2.77	0.52
1:1:2330:C:H2'	1:1:2331:C:H6	1.73	0.52
1:1:2441:A:H2'	1:1:2442:G:H8	1.75	0.52
1:1:3159:C:H2'	1:1:3160:U:C6	2.44	0.52
3:3:27:A:OP2	21:H:57:ASN:HB2	2.08	0.52
3:3:64:A:OP2	21:H:289:LYS:NZ	2.42	0.52
5:4:98:U:H5''	5:4:99:C:OP2	2.10	0.52
6:Z:51:VAL:HG21	26:j:62:GLN:HB3	1.91	0.52
7:A:46:G:H5'	7:A:47:U:OP1	2.09	0.52
7:A:58:A:OP2	7:A:58:A:C8	2.62	0.52
11:C:23:HIS:HA	11:C:73:GLU:O	2.09	0.52
12:c:56:VAL:HG23	12:c:57:GLY:H	1.74	0.52
20:g:47:ARG:NH2	22:h:22:VAL:HG22	2.24	0.52
25:J:30:ARG:O	25:J:34:LYS:HB2	2.08	0.52
37:P:153:ASP:OD2	37:P:155:VAL:HG22	2.10	0.52
1:1:51:A:H2'	1:1:52:A:C8	2.43	0.52
1:1:405:U:H5''	1:1:406:G:OP2	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:678:G:H2'	1:1:679:U:C6	2.44	0.52
1:1:710:A:H2'	1:1:711:A:C8	2.44	0.52
1:1:1072:G:H2'	1:1:1073:U:H6	1.75	0.52
1:1:1100:U:H2'	1:1:1101:G:H8	1.74	0.52
1:1:1607:U:O2'	1:1:1608:C:OP1	2.19	0.52
1:1:1621:A:N6	1:1:1820:U:H3	2.07	0.52
1:1:2232:A:H2'	1:1:2233:A:C8	2.44	0.52
1:1:2418:G:C2	40:q:73:LEU:HD11	2.43	0.52
1:1:2975:U:H2'	1:1:2976:A:H8	1.73	0.52
5:4:40:A:H2'	5:4:41:A:H8	1.74	0.52
5:4:142:C:H2'	5:4:143:U:H6	1.74	0.52
13:D:84:ARG:HH11	13:D:87:ARG:NH2	2.07	0.52
18:f:84:ASP:OD1	18:f:84:ASP:N	2.41	0.52
19:G:269:SER:O	19:G:270:SER:OG	2.25	0.52
27:K:91:PHE:CZ	27:K:185:ARG:NH1	2.77	0.52
32:m:62:ALA:O	32:m:66:ILE:N	2.27	0.52
35:O:24:LYS:NZ	35:O:64:VAL:HB	2.25	0.52
35:O:98:SER:HA	35:O:101:LYS:HD2	1.91	0.52
40:q:28:LYS:HE3	40:q:42:VAL:HA	1.91	0.52
1:1:66:A:O2'	37:P:176:LYS:HD2	2.09	0.52
1:1:241:G:H2'	1:1:242:C:H6	1.74	0.52
1:1:347:G:H2'	1:1:348:A:C8	2.44	0.52
1:1:433:A:H2'	1:1:434:U:C6	2.44	0.52
1:1:535:G:H4'	1:1:536:U:OP1	2.07	0.52
1:1:625:G:H2'	1:1:626:U:C6	2.44	0.52
1:1:1182:A:H2'	1:1:1183:C:H6	1.75	0.52
1:1:1767:C:H2'	1:1:1768:U:C6	2.44	0.52
1:1:2173:U:N3	1:1:2174:G:O6	2.43	0.52
1:1:2512:C:H5''	27:K:249:ARG:NH2	2.25	0.52
1:1:2531:C:H5	1:1:2547:A:H61	1.57	0.52
1:1:2534:G:H2'	1:1:2535:A:H8	1.74	0.52
1:1:2881:C:H2'	1:1:2882:U:C6	2.44	0.52
1:1:3173:G:N1	22:h:96:ALA:HB2	2.24	0.52
1:1:3249:C:H2'	1:1:3250:U:O4'	2.09	0.52
1:1:3298:C:C2	1:1:3299:A:C8	2.97	0.52
1:1:3303:G:O2'	1:1:3304:U:O5'	2.15	0.52
1:1:3346:U:H3	1:1:3359:A:N6	2.06	0.52
3:3:66:A:C2	3:3:67:G:H1'	2.45	0.52
6:Z:60:TYR:HE2	26:j:22:VAL:HG13	1.75	0.52
9:B:63:C:H2'	9:B:64:G:H8	1.75	0.52
10:b:81:LEU:HD11	24:i:90:ILE:HD13	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:D:55:TRP:NE1	13:D:70:THR:O	2.42	0.52
17:F:169:THR:HG22	17:F:171:LEU:H	1.74	0.52
17:F:305:ILE:HD11	17:F:317:ILE:HG21	1.91	0.52
21:H:68:THR:HG22	21:H:69:ILE:N	2.24	0.52
36:o:108:THR:O	36:o:109:ASN:ND2	2.43	0.52
37:P:94:TYR:CZ	37:P:96:ARG:HB2	2.44	0.52
39:Q:178:VAL:HA	39:Q:181:ALA:HB3	1.92	0.52
44:s:45:PHE:HB3	44:s:138:ARG:O	2.09	0.52
46:U:90:MET:HE1	46:U:114:HIS:CD2	2.44	0.52
1:1:14:U:O2'	6:Z:42:ARG:NE	2.37	0.52
1:1:338:A:O2'	1:1:339:C:OP1	2.22	0.52
1:1:347:G:C2	1:1:348:A:C5	2.98	0.52
1:1:737:G:H2'	1:1:738:A:C8	2.44	0.52
1:1:941:G:H1'	1:1:1435:A:H1'	1.91	0.52
1:1:1070:U:H2'	1:1:1071:U:C6	2.45	0.52
1:1:1221:A:H5''	1:1:1222:G:O4'	2.10	0.52
1:1:2659:G:H2'	1:1:2660:G:H8	1.75	0.52
1:1:2911:A:H4'	1:1:2912:G:O5'	2.08	0.52
1:1:3152:U:C2	1:1:3294:A:C6	2.97	0.52
1:1:3163:A:H2'	1:1:3164:C:C6	2.44	0.52
1:1:3237:U:H2'	1:1:3238:G:C8	2.44	0.52
1:1:3349:C:H2'	1:1:3350:C:C6	2.45	0.52
7:A:26:A:H2'	7:A:27:G:C8	2.44	0.52
10:b:24:VAL:HG11	10:b:87:LEU:HD23	1.92	0.52
19:G:181:VAL:O	19:G:182:LEU:HB2	2.09	0.52
26:j:34:GLN:O	26:j:38:ARG:NH1	2.43	0.52
44:s:135:PHE:O	44:s:136:SER:OG	2.23	0.52
1:1:217:U:O2'	8:a:103:LYS:NZ	2.34	0.52
1:1:1709:C:C5'	10:b:15:ARG:HH12	2.22	0.52
1:1:1900:A:O2'	1:1:1901:A:OP2	2.22	0.52
1:1:1948:G:H2'	1:1:1949:G:H8	1.75	0.52
1:1:2513:U:O2'	1:1:2514:U:H3'	2.10	0.52
1:1:2702:A:O2'	1:1:2703:A:O5'	2.19	0.52
3:3:119:U:H3'	21:H:258:LYS:HZ3	1.73	0.52
8:a:57:LEU:N	8:a:105:VAL:O	2.35	0.52
16:e:53:LYS:O	16:e:56:LEU:N	2.42	0.52
30:l:12:HIS:ND1	30:l:12:HIS:O	2.42	0.52
39:Q:194:LEU:O	39:Q:199:TYR:N	2.42	0.52
43:S:165:ILE:HD13	43:S:168:THR:HG22	1.91	0.52
1:1:1179:A:O2'	1:1:1327:C:O2'	2.24	0.52
1:1:1559:A:H3'	1:1:1559:A:OP2	2.09	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1737:U:H2'	1:1:1738:C:H6	1.74	0.52
1:1:2295:A:N6	1:1:2296:A:N1	2.57	0.52
1:1:2439:A:C8	1:1:2439:A:OP2	2.63	0.52
1:1:3005:A:O2'	1:1:3006:A:H8	1.91	0.52
1:1:3200:G:H2'	1:1:3201:C:C6	2.44	0.52
1:1:3241:G:OP1	17:F:153:LYS:NZ	2.43	0.52
19:G:203:ARG:HB3	19:G:246:ARG:HH12	1.75	0.52
19:G:285:ASP:OD2	19:G:288:ARG:HB2	2.10	0.52
27:K:90:THR:HA	27:K:214:LEU:HD21	1.92	0.52
29:L:4:ILE:HD13	46:U:148:LEU:HD11	1.92	0.52
45:T:4:LEU:HD11	45:T:29:THR:OG1	2.09	0.52
1:1:172:G:O6	1:1:247:C:N4	2.43	0.52
1:1:520:U:N3	19:G:347:THR:O	2.43	0.52
1:1:855:U:H4'	45:T:95:TRP:CD1	2.45	0.52
1:1:1003:A:H1'	21:H:15:ARG:CZ	2.39	0.52
1:1:1464:G:N1	1:1:1467:A:OP2	2.39	0.52
1:1:1634:G:H2'	1:1:1635:G:H8	1.75	0.52
1:1:2139:A:H4'	1:1:2140:U:C5'	2.39	0.52
1:1:2218:G:H2'	1:1:2219:A:H8	1.75	0.52
1:1:2330:C:H2'	1:1:2331:C:C6	2.45	0.52
1:1:2522:G:OP2	1:1:2522:G:H4'	2.08	0.52
1:1:2571:U:O2'	1:1:2572:C:O5'	2.21	0.52
1:1:3141:A:H4'	1:1:3142:A:OP2	2.08	0.52
1:1:3333:G:O2'	1:1:3334:U:O5'	2.26	0.52
7:A:4:U:H2'	7:A:5:C:O4'	2.10	0.52
35:O:77:ARG:O	35:O:81:VAL:HG23	2.09	0.52
39:Q:42:ASN:OD1	39:Q:125:ARG:HD2	2.10	0.52
40:q:116:PRO:HB3	40:q:147:ALA:HB3	1.91	0.52
46:U:43:TYR:HE2	46:U:122:HIS:HE1	1.57	0.52
1:1:266:A:C5	28:k:30:LYS:HG3	2.45	0.52
1:1:1213:G:P	46:U:137:ARG:NH1	2.82	0.52
1:1:1804:A:H2'	1:1:1805:C:C6	2.44	0.52
1:1:2339:C:OP1	2:X:48:ARG:NH1	2.42	0.52
1:1:2347:U:H3'	1:1:2348:A:C8	2.45	0.52
1:1:3266:G:H2'	1:1:3267:A:C8	2.44	0.52
3:3:4:U:H2'	3:3:5:G:H8	1.73	0.52
3:3:87:G:H2'	3:3:88:G:H8	1.74	0.52
5:4:33:A:O2'	5:4:34:U:O5'	2.22	0.52
14:d:35:VAL:HA	47:V:66:ASN:CG	2.35	0.52
33:N:33:VAL:O	33:N:37:ASN:ND2	2.43	0.52
1:1:132:C:N3	1:1:137:G:N1	2.58	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:147:U:N3	37:P:41:ARG:NH1	2.58	0.52
1:1:196:G:N2	1:1:219:A:H61	2.07	0.52
1:1:272:G:H2'	1:1:273:A:H8	1.75	0.52
1:1:2157:G:H22	1:1:2177:G:HO2'	1.58	0.52
1:1:3056:U:O2'	1:1:3058:U:OP2	2.27	0.52
1:1:3067:C:P	45:T:62:ARG:HH11	2.33	0.52
1:1:3083:G:H2'	1:1:3084:C:C6	2.45	0.52
1:1:3378:C:O5'	17:F:313:HIS:NE2	2.43	0.52
2:X:37:ILE:HG13	2:X:38:ALA:N	2.22	0.52
3:3:78:U:OP1	46:U:47:LYS:NZ	2.43	0.52
5:4:62:C:H4'	5:4:63:G:O5'	2.09	0.52
5:4:66:A:H5'	26:j:10:ARG:NH2	2.24	0.52
11:C:102:GLN:OE1	31:M:49:LYS:NZ	2.22	0.52
12:c:48:TYR:CD1	33:N:6:ASN:HB2	2.45	0.52
15:E:65:ASP:HB2	15:E:72:ARG:HE	1.74	0.52
37:P:116:LEU:HG	37:P:117:ASN:HD22	1.75	0.52
1:1:353:G:O2'	1:1:364:G:N1	2.42	0.51
1:1:591:G:H1'	23:I:19:LYS:HG3	1.91	0.51
1:1:810:A:H2'	1:1:811:U:H6	1.75	0.51
1:1:1064:A:H1'	1:1:1066:G:C8	2.45	0.51
1:1:2380:U:H2'	1:1:2381:G:O4'	2.10	0.51
1:1:2585:G:O6	27:K:60:ARG:NH2	2.41	0.51
5:4:67:U:C2	5:4:68:G:C8	2.99	0.51
12:c:48:TYR:HD1	33:N:6:ASN:HB2	1.75	0.51
13:D:72:SER:HA	15:E:80:GLU:OE2	2.11	0.51
17:F:14:LEU:HD22	17:F:262:TRP:CZ3	2.44	0.51
19:G:229:ASN:OD1	19:G:230:VAL:N	2.43	0.51
19:G:258:LEU:HD12	19:G:262:TRP:HD1	1.75	0.51
21:H:183:TRP:CE3	21:H:190:ILE:HD13	2.42	0.51
44:s:110:LEU:C	44:s:110:LEU:HD13	2.34	0.51
1:1:103:G:N2	1:1:104:G:C2	2.78	0.51
1:1:156:G:O2'	1:1:157:A:OP1	2.27	0.51
1:1:921:A:H4'	1:1:922:U:OP2	2.10	0.51
1:1:1453:A:N1	1:1:1850:A:H1'	2.26	0.51
1:1:1942:U:OP2	1:1:1942:U:H6	1.92	0.51
1:1:2426:U:H2'	1:1:2427:U:C6	2.44	0.51
1:1:3164:C:H2'	1:1:3165:A:H8	1.75	0.51
3:3:48:U:H5''	21:H:91:GLY:HA3	1.92	0.51
11:C:102:GLN:HE22	31:M:64:LYS:HE2	1.76	0.51
19:G:215:ILE:HD12	19:G:218:ALA:HB3	1.92	0.51
26:j:111:PHE:HB3	33:N:92:THR:HG21	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:149:U:P	37:P:49:ARG:NH1	2.71	0.51
1:1:380:U:H2'	1:1:381:U:O4'	2.09	0.51
1:1:425:G:H5'	20:g:23:ASP:OD2	2.10	0.51
1:1:981:U:H2'	1:1:982:C:O4'	2.11	0.51
1:1:1407:A:P	20:g:16:LYS:NZ	2.83	0.51
1:1:1484:U:O2'	1:1:1485:G:OP1	2.23	0.51
1:1:1611:G:H2'	1:1:1612:A:C8	2.45	0.51
1:1:2367:A:H2'	1:1:2368:A:C8	2.46	0.51
1:1:3021:A:H1'	1:1:3023:U:C5	2.45	0.51
1:1:3111:U:O2'	29:L:151:VAL:HG11	2.09	0.51
1:1:3278:C:H5''	1:1:3279:A:OP2	2.10	0.51
1:1:3317:U:H4'	1:1:3318:G:O5'	2.10	0.51
2:X:25:CYS:SG	2:X:29:SER:OG	2.64	0.51
46:U:124:LEU:HA	47:V:153:PRO:HG2	1.92	0.51
1:1:269:G:H5'	37:P:120:TRP:CE3	2.45	0.51
1:1:1000:C:C4	1:1:1045:C:C4	2.98	0.51
1:1:1279:C:H2'	1:1:1280:C:H5	1.74	0.51
1:1:1720:U:P	45:T:110:ARG:HH22	2.34	0.51
1:1:1926:C:O2'	1:1:1927:G:O5'	2.25	0.51
1:1:2401:A:H5''	19:G:70:ALA:HB2	1.91	0.51
1:1:2587:U:H2'	1:1:2588:U:H6	1.75	0.51
1:1:2959:C:H2'	1:1:2960:C:C6	2.46	0.51
1:1:3207:U:O4	46:U:160:THR:N	2.38	0.51
1:1:3243:A:C4	39:Q:156:LEU:HD13	2.45	0.51
5:4:90:U:O2'	5:4:91:C:OP1	2.20	0.51
6:Z:53:HIS:ND1	6:Z:54:TYR:O	2.38	0.51
19:G:291:ASN:HA	19:G:296:GLN:HE21	1.75	0.51
39:Q:14:HIS:CD2	39:Q:19:LEU:HD13	2.44	0.51
44:s:179:GLU:OE2	44:s:183:LYS:HE2	2.11	0.51
48:W:22:PRO:HB2	48:W:28:PHE:HB3	1.92	0.51
1:1:299:G:C8	28:k:31:GLY:HA3	2.45	0.51
1:1:501:A:H2'	1:1:502:U:C6	2.46	0.51
1:1:659:G:C2	1:1:1432:C:N4	2.78	0.51
1:1:745:C:H2'	1:1:746:A:H8	1.75	0.51
1:1:1443:G:OP1	41:R:124:LYS:NZ	2.31	0.51
1:1:1471:U:H5''	45:T:5:ARG:HD3	1.93	0.51
1:1:1915:A:H2'	1:1:1916:U:C6	2.46	0.51
1:1:2147:A:C5	1:1:2148:U:N3	2.78	0.51
1:1:3244:A:O2'	1:1:3245:A:OP1	2.27	0.51
1:1:3275:U:O4'	22:h:66:VAL:HG21	2.11	0.51
1:1:3303:G:HO2'	1:1:3304:U:P	2.34	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:3:36:C:H2'	3:3:37:G:C8	2.46	0.51
21:H:53:VAL:HG11	21:H:159:VAL:HG13	1.93	0.51
21:H:285:ARG:O	21:H:289:LYS:HB2	2.09	0.51
24:i:71:THR:HG22	24:i:72:VAL:O	2.10	0.51
29:L:20:ILE:HB	35:O:7:VAL:HG22	1.92	0.51
31:M:166:LYS:HE2	31:M:167:TYR:HE2	1.76	0.51
1:1:645:A:N6	1:1:649:A:C5	2.79	0.51
1:1:1188:U:OP1	1:1:1210:U:O2'	2.26	0.51
1:1:1341:U:H2'	1:1:1342:C:H6	1.75	0.51
1:1:1556:C:O2'	1:1:1557:A:OP1	2.27	0.51
1:1:1635:G:OP1	10:b:107:ARG:NH2	2.35	0.51
1:1:2370:G:N2	1:1:2378:C:O2	2.44	0.51
1:1:2816:G:O6	1:1:2869:U:N3	2.44	0.51
10:b:127:ASN:HB3	10:b:130:PHE:HB3	1.92	0.51
12:c:124:ILE:HD11	33:N:159:VAL:HA	1.91	0.51
13:D:88:GLU:O	13:D:92:ALA:N	2.43	0.51
33:N:27:ASP:OD1	33:N:28:GLN:N	2.39	0.51
1:1:330:G:H3'	1:1:330:G:OP2	2.10	0.51
1:1:576:C:P	25:J:241:LYS:NZ	2.84	0.51
1:1:617:G:P	23:I:108:LYS:HZ1	2.32	0.51
1:1:619:A:H5''	1:1:620:U:OP1	2.09	0.51
1:1:1235:U:O2	1:1:1263:A:N7	2.43	0.51
1:1:1908:A:N7	1:1:1909:A:C5	2.79	0.51
1:1:2498:U:C4	1:1:2499:U:C4	2.99	0.51
1:1:3175:U:HO2'	1:1:3176:G:P	2.33	0.51
5:4:105:A:O2'	5:4:106:C:O5'	2.26	0.51
10:b:5:LEU:HD11	16:e:35:ARG:HD2	1.93	0.51
12:c:47:LYS:C	12:c:49:HIS:H	2.12	0.51
21:H:208:MET:HG2	21:H:223:PHE:CE2	2.46	0.51
27:K:69:LEU:HD21	37:P:24:ARG:HD2	1.93	0.51
1:1:13:A:H5'	1:1:14:U:OP2	2.09	0.51
1:1:544:C:O2'	1:1:547:G:N2	2.35	0.51
1:1:1018:G:H2'	1:1:1019:G:C8	2.44	0.51
1:1:1023:C:H2'	1:1:1024:G:H8	1.75	0.51
1:1:1064:A:H4'	1:1:1065:A:O5'	2.10	0.51
1:1:1117:G:C6	1:1:1142:G:N2	2.79	0.51
1:1:1462:A:H2'	1:1:1463:U:C6	2.46	0.51
1:1:1557:A:O2'	1:1:1558:A:OP1	2.25	0.51
3:3:80:G:H2'	3:3:81:U:C6	2.46	0.51
4:Y:1:MET:HE1	17:F:358:TRP:CD1	2.45	0.51
9:B:62:C:H2'	9:B:63:C:H6	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:F:62:ARG:H	17:F:68:HIS:HD1	1.59	0.51
25:J:43:ILE:HA	25:J:46:GLU:OE2	2.11	0.51
25:J:85:PHE:HB2	25:J:139:PRO:HG3	1.92	0.51
27:K:160:ILE:O	27:K:164:VAL:HG13	2.10	0.51
28:k:54:GLU:HG2	28:k:90:MET:HE3	1.93	0.51
1:1:122:A:C2	1:1:149:U:C2	2.98	0.51
1:1:895:A:C6	1:1:897:U:C4	2.99	0.51
1:1:952:A:H4'	1:1:968:G:N2	2.25	0.51
1:1:1079:A:H5'	21:H:142:PHE:HA	1.93	0.51
1:1:1729:A:C6	16:e:49:PRO:HD3	2.45	0.51
1:1:1900:A:O2'	1:1:1902:G:N7	2.44	0.51
1:1:2512:C:H5''	27:K:249:ARG:HH22	1.75	0.51
1:1:3258:U:O2'	1:1:3259:U:O5'	2.28	0.51
8:a:118:LEU:HD12	8:a:121:ARG:NH1	2.26	0.51
10:b:90:GLU:HA	10:b:93:LYS:HB2	1.92	0.51
15:E:40:TYR:HA	15:E:90:ALA:O	2.11	0.51
17:F:59:ASP:OD1	17:F:357:LYS:HE3	2.11	0.51
26:j:118:ILE:HG12	33:N:123:ILE:HG22	1.92	0.51
41:R:30:ARG:HH21	41:R:62:ARG:HH12	1.57	0.51
41:R:37:ASN:OD1	41:R:38:GLY:N	2.44	0.51
1:1:66:A:N6	1:1:68:C:C2	2.79	0.51
1:1:211:A:H4'	1:1:212:G:OP2	2.11	0.51
1:1:763:G:C6	1:1:769:G:N2	2.79	0.51
1:1:929:A:O2'	30:l:49:TRP:O	2.26	0.51
1:1:1023:C:H2'	1:1:1024:G:C8	2.46	0.51
1:1:1055:A:H2'	1:1:1056:U:O4'	2.10	0.51
1:1:1485:G:C2	24:i:4:ARG:NH1	2.78	0.51
1:1:2676:A:O2'	1:1:2677:G:O5'	2.23	0.51
1:1:2777:G:C4	12:c:60:TYR:HE1	2.29	0.51
1:1:3056:U:H4'	1:1:3057:U:OP1	2.11	0.51
1:1:3081:C:H2'	1:1:3082:C:H6	1.76	0.51
1:1:3278:C:C2	1:1:3278:C:OP2	2.63	0.51
5:4:128:U:H5''	5:4:129:C:OP2	2.11	0.51
10:b:14:VAL:HG21	24:i:86:LYS:HG3	1.92	0.51
17:F:44:THR:O	17:F:340:LYS:HG2	2.11	0.51
17:F:143:GLY:O	17:F:147:GLU:HG2	2.11	0.51
17:F:161:LEU:HA	17:F:179:ALA:O	2.11	0.51
31:M:23:VAL:HG12	31:M:25:GLU:H	1.76	0.51
40:q:109:THR:CG2	40:q:110:LYS:N	2.73	0.51
1:1:149:U:OP1	37:P:49:ARG:NH1	2.44	0.50
1:1:150:A:H3'	1:1:151:A:H8	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:360:G:H21	1:1:815:G:H1'	1.76	0.50
1:1:397:A:H1'	1:1:399:A:C8	2.46	0.50
1:1:890:C:H2'	1:1:891:G:H8	1.76	0.50
1:1:996:A:C4	1:1:1054:A:N6	2.79	0.50
1:1:1220:U:H5''	1:1:1286:A:N6	2.25	0.50
1:1:1307:G:O4'	39:Q:60:LYS:NZ	2.44	0.50
1:1:1479:U:OP2	1:1:1480:G:N7	2.43	0.50
1:1:1663:C:H2'	1:1:1664:G:H8	1.75	0.50
1:1:1678:G:H2'	1:1:1679:A:H8	1.76	0.50
1:1:2531:C:H3'	1:1:2532:U:H6	1.75	0.50
1:1:2803:A:O2'	1:1:2804:A:OP1	2.25	0.50
1:1:2846:U:C2	36:o:97:ARG:NH1	2.70	0.50
3:3:71:G:H2'	3:3:72:A:C8	2.45	0.50
5:4:33:A:H4'	5:4:34:U:OP1	2.10	0.50
5:4:48:A:H2'	5:4:51:G:H22	1.75	0.50
5:4:89:A:C6	5:4:91:C:N4	2.79	0.50
8:a:17:LYS:O	8:a:21:THR:OG1	2.19	0.50
20:g:64:LYS:HG2	20:g:65:PHE:CD2	2.46	0.50
21:H:215:ASP:OD2	21:H:217:GLU:HG2	2.11	0.50
23:I:92:SER:HB3	23:I:148:GLU:OE2	2.10	0.50
29:L:190:ASP:OD1	29:L:191:LEU:N	2.41	0.50
35:O:14:LEU:N	35:O:19:ARG:HH11	2.09	0.50
43:S:150:VAL:HA	43:S:153:PHE:CD2	2.46	0.50
44:s:28:SER:HB2	44:s:124:LEU:HD12	1.93	0.50
46:U:24:LEU:O	46:U:25:PHE:CG	2.64	0.50
1:1:107:A:H2'	1:1:108:A:O4'	2.11	0.50
1:1:300:G:C2	1:1:301:G:C8	2.99	0.50
1:1:786:A:O2'	1:1:787:G:C8	2.64	0.50
1:1:860:G:H5'	1:1:861:C:C5'	2.41	0.50
1:1:1162:U:H4'	20:g:57:TYR:CE1	2.45	0.50
1:1:1184:A:H5''	35:O:59:ASN:ND2	2.26	0.50
1:1:1211:U:H2'	1:1:1212:A:H8	1.75	0.50
1:1:1752:A:OP2	1:1:1753:G:OP2	2.30	0.50
1:1:2538:U:O2'	1:1:2539:C:OP1	2.26	0.50
1:1:2574:G:C2	1:1:2575:G:C5	2.99	0.50
1:1:2615:G:H2'	1:1:2616:C:C6	2.46	0.50
9:B:26:A:H61	9:B:44:G:H1	1.57	0.50
10:b:50:PRO:HD3	10:b:68:ILE:HG12	1.92	0.50
19:G:281:ILE:HG13	43:S:125:ASP:OD2	2.11	0.50
25:J:127:LEU:O	25:J:131:GLU:HG3	2.11	0.50
27:K:146:LYS:NZ	27:K:173:MET:C	2.68	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:240:U:O2'	1:1:241:G:O5'	2.25	0.50
1:1:426:G:H5'	20:g:50:ILE:HG22	1.92	0.50
1:1:911:C:N4	15:E:3:ARG:HD3	2.26	0.50
1:1:1491:A:H2'	1:1:1492:G:O4'	2.12	0.50
1:1:1602:A:C6	1:1:1603:A:N1	2.79	0.50
1:1:1744:G:H2'	1:1:1745:C:C6	2.46	0.50
1:1:2178:A:OP1	15:E:132:ASN:ND2	2.44	0.50
1:1:2557:A:O2'	1:1:2558:U:OP1	2.28	0.50
1:1:2687:G:P	21:H:8:LYS:NZ	2.84	0.50
1:1:3277:U:O4	41:R:175:ARG:NH1	2.44	0.50
9:B:63:C:H2'	9:B:64:G:C8	2.47	0.50
27:K:205:ALA:HA	27:K:208:GLU:HB2	1.93	0.50
28:k:5:THR:HG23	28:k:12:ASN:HB2	1.93	0.50
30:l:54:LYS:O	30:l:58:THR:HG23	2.10	0.50
31:M:92:ARG:NH2	31:M:94:ARG:NH1	2.59	0.50
46:U:94:ILE:HD11	46:U:106:LEU:HD12	1.94	0.50
46:U:132:THR:C	46:U:134:ASP:H	2.20	0.50
1:1:148:G:O6	27:K:137:ASN:HB2	2.11	0.50
1:1:155:G:HO2'	1:1:156:G:P	2.32	0.50
1:1:597:G:H2'	1:1:598:A:H8	1.76	0.50
1:1:810:A:H2'	1:1:811:U:C6	2.47	0.50
1:1:841:A:H5''	1:1:842:G:OP2	2.12	0.50
1:1:877:C:H2'	1:1:878:G:O4'	2.11	0.50
1:1:963:G:OP2	1:1:963:G:H8	1.94	0.50
1:1:1135:A:P	14:d:5:LYS:NZ	2.77	0.50
1:1:1396:C:H2'	1:1:1397:C:C6	2.46	0.50
1:1:1455:U:H2'	18:f:26:LYS:NZ	2.27	0.50
1:1:1494:U:OP2	34:n:42:ARG:NH2	2.39	0.50
1:1:2142:A:H4'	1:1:2143:A:O5'	2.11	0.50
1:1:2210:G:N2	1:1:2236:G:H1'	2.26	0.50
1:1:2345:A:H2'	1:1:2346:C:C6	2.46	0.50
1:1:2366:C:H2'	1:1:2367:A:C8	2.46	0.50
1:1:2677:G:C2	1:1:2679:A:H2	2.29	0.50
1:1:3270:U:H4'	1:1:3271:G:OP2	2.11	0.50
1:1:3303:G:H2'	1:1:3305:A:N7	2.27	0.50
3:3:60:G:H2'	3:3:61:G:C8	2.46	0.50
3:3:80:G:H2'	3:3:81:U:H6	1.76	0.50
5:4:89:A:H5''	5:4:90:U:OP2	2.10	0.50
7:A:15:G:H4'	7:A:16:U:OP2	2.11	0.50
17:F:216:ASP:OD1	17:F:278:ILE:HA	2.11	0.50
19:G:159:ILE:HG21	19:G:165:ALA:HB2	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:H:178:ASN:HA	21:H:183:TRP:CD2	2.45	0.50
24:i:35:VAL:HG12	24:i:36:LYS:O	2.11	0.50
25:J:149:TYR:OH	25:J:182:ASP:OD1	2.28	0.50
33:N:78:ALA:O	33:N:82:ALA:CB	2.60	0.50
35:O:14:LEU:N	35:O:19:ARG:NH1	2.55	0.50
44:s:138:ARG:NH1	44:s:172:PHE:CD1	2.80	0.50
46:U:138:GLN:O	46:U:142:GLN:N	2.44	0.50
1:1:158:G:N3	1:1:159:A:C8	2.79	0.50
1:1:433:A:H2'	1:1:434:U:H6	1.77	0.50
1:1:617:G:P	23:I:108:LYS:NZ	2.84	0.50
1:1:861:C:OP2	1:1:862:U:OP2	2.29	0.50
1:1:1068:C:H2'	1:1:1069:C:H6	1.75	0.50
1:1:1864:A:N7	1:1:1865:A:C5	2.80	0.50
1:1:2703:A:C5	21:H:23:ARG:NH1	2.80	0.50
1:1:2941:A:O2'	1:1:2942:C:OP2	2.25	0.50
1:1:3337:G:H2'	1:1:3338:C:H6	1.75	0.50
5:4:28:C:H2'	5:4:29:U:C6	2.47	0.50
24:i:9:ARG:HG3	24:i:34:HIS:CD2	2.45	0.50
24:i:86:LYS:O	24:i:90:ILE:HG12	2.12	0.50
27:K:239:GLY:O	27:K:243:GLN:N	2.40	0.50
38:p:3:ALA:O	38:p:7:LYS:N	2.44	0.50
1:1:67:A:N6	1:1:271:C:O2'	2.45	0.50
1:1:173:G:H2'	1:1:174:C:C6	2.47	0.50
1:1:193:C:H2'	1:1:194:U:C6	2.47	0.50
1:1:668:G:H2'	1:1:669:U:H6	1.76	0.50
1:1:962:A:H1'	1:1:2817:A:C6	2.47	0.50
1:1:997:A:H2'	1:1:998:A:H8	1.76	0.50
1:1:1455:U:O2	1:1:3078:U:H1'	2.11	0.50
1:1:1496:C:OP2	1:1:1497:C:OP2	2.30	0.50
1:1:1523:U:O2'	1:1:1524:A:OP1	2.27	0.50
1:1:1700:G:H2'	1:1:1701:C:C6	2.46	0.50
1:1:2501:U:O2'	1:1:2502:A:OP1	2.24	0.50
1:1:3193:C:H2'	1:1:3194:C:C6	2.45	0.50
10:b:3:LYS:O	10:b:6:LYS:HG3	2.11	0.50
12:c:36:GLY:HA3	12:c:40:HIS:CE1	2.47	0.50
17:F:215:ILE:HG12	17:F:282:ILE:HG13	1.94	0.50
18:f:13:THR:HG22	18:f:72:ARG:HD2	1.93	0.50
18:f:62:ARG:HB2	18:f:66:GLY:O	2.12	0.50
47:V:18:ASP:CB	47:V:21:LYS:HB2	2.39	0.50
1:1:267:G:H4'	1:1:268:A:OP1	2.10	0.50
1:1:341:G:C6	19:G:194:TYR:HE1	2.29	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:517:G:OP1	25:J:67:ARG:NH2	2.43	0.50
1:1:860:G:H5'	1:1:861:C:H5''	1.93	0.50
1:1:975:C:OP2	43:S:15:HIS:HA	2.12	0.50
1:1:1341:U:H2'	1:1:1342:C:C6	2.47	0.50
1:1:1761:C:OP2	1:1:1761:C:H6	1.93	0.50
1:1:2628:A:H5'	1:1:2629:U:OP2	2.11	0.50
1:1:2726:C:O2'	1:1:2727:A:H3'	2.11	0.50
1:1:3091:A:N7	1:1:3094:A:C5	2.80	0.50
1:1:3243:A:H5''	1:1:3244:A:OP2	2.11	0.50
2:X:104:ASN:OD1	2:X:107:GLY:N	2.45	0.50
3:3:22:A:C4	21:H:272:TYR:CZ	3.00	0.50
5:4:2:A:N6	5:4:3:A:N1	2.60	0.50
9:B:3:A:H2'	9:B:4:G:C8	2.46	0.50
17:F:81:THR:OG1	17:F:322:ILE:HG12	2.12	0.50
38:p:1:MET:HG3	38:p:6:ARG:HD2	1.94	0.50
40:q:90:TYR:CE1	40:q:104:ASN:CG	2.89	0.50
1:1:353:G:O6	30:l:55:ARG:NH1	2.45	0.50
1:1:695:C:C5'	19:G:271:LYS:HZ2	2.24	0.50
1:1:1079:A:H1'	21:H:113:LEU:HD23	1.94	0.50
1:1:1180:A:OP1	22:h:77:ASN:N	2.45	0.50
1:1:1333:C:C2	1:1:1334:U:C5	2.99	0.50
1:1:1638:A:N1	1:1:1736:G:O2'	2.41	0.50
1:1:1741:A:H2'	1:1:1742:U:O4'	2.11	0.50
1:1:2754:G:HO2'	1:1:2755:C:P	2.33	0.50
2:X:87:ARG:NE	2:X:121:GLU:OE2	2.42	0.50
5:4:14:C:H5''	5:4:15:G:OP2	2.12	0.50
5:4:94:C:H5''	30:l:76:ASN:HD21	1.76	0.50
9:B:2:G:H5''	9:B:3:A:OP2	2.11	0.50
10:b:45:GLY:O	10:b:71:PHE:N	2.42	0.50
13:D:33:GLN:HG3	13:D:49:ARG:HD3	1.92	0.50
15:E:117:GLU:OE1	15:E:120:PRO:HA	2.12	0.50
25:J:98:LYS:HB3	25:J:99:PRO:HD3	1.94	0.50
27:K:160:ILE:HG22	27:K:164:VAL:HG13	1.93	0.50
31:M:157:GLU:O	31:M:161:SER:CB	2.60	0.50
35:O:91:CYS:O	35:O:94:TRP:N	2.44	0.50
39:Q:75:ALA:HA	39:Q:147:TRP:CD1	2.47	0.50
40:q:156:THR:OG1	40:q:156:THR:O	2.30	0.50
1:1:119:U:H4'	1:1:120:G:O5'	2.12	0.50
1:1:860:G:O6	15:E:182:ALA:N	2.34	0.50
1:1:1520:G:H21	1:1:1603:A:H2	1.58	0.50
1:1:1539:A:N7	1:1:1583:A:N6	2.59	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1574:C:H2'	1:1:1575:A:C8	2.45	0.50
1:1:1716:U:O2'	1:1:1717:U:OP1	2.28	0.50
1:1:1793:C:N4	15:E:179:LEU:HB2	2.27	0.50
1:1:2540:A:O2'	1:1:2541:U:H5''	2.12	0.50
1:1:3160:U:H2'	1:1:3161:C:C6	2.47	0.50
3:3:96:U:H1'	46:U:119:ARG:HD2	1.93	0.50
15:E:30:ARG:HG3	15:E:74:GLU:OE2	2.12	0.50
20:g:75:LEU:HD23	20:g:95:GLU:HB3	1.93	0.50
20:g:96:ILE:HG21	20:g:105:ARG:NH1	2.27	0.50
21:H:108:ARG:NH1	21:H:253:PHE:HD1	2.10	0.50
23:I:71:VAL:HG22	23:I:156:LYS:NZ	2.27	0.50
32:m:28:ASN:HD21	32:m:42:LYS:HE3	1.77	0.50
40:q:31:PHE:O	40:q:82:VAL:HG13	2.12	0.50
43:S:125:ASP:OD1	43:S:126:GLN:N	2.45	0.50
44:s:62:GLU:O	44:s:66:ALA:N	2.31	0.50
1:1:684:G:H2'	1:1:685:G:C8	2.43	0.49
1:1:1085:A:H2'	1:1:1086:C:O4'	2.12	0.49
1:1:1373:A:H2'	1:1:1374:G:H8	1.77	0.49
1:1:2656:A:C6	1:1:2658:G:C5	3.00	0.49
1:1:2924:U:OP2	1:1:2925:C:H5	1.95	0.49
1:1:2960:C:H2'	1:1:2961:G:C8	2.47	0.49
1:1:2991:A:O2'	1:1:3309:G:N7	2.45	0.49
1:1:3038:U:H5''	1:1:3039:C:OP2	2.12	0.49
1:1:3188:G:H2'	1:1:3189:G:H8	1.75	0.49
1:1:3344:A:N7	1:1:3362:A:N6	2.59	0.49
7:A:61:C:H2'	7:A:62:C:C6	2.47	0.49
26:j:79:ASP:OD1	26:j:80:LEU:N	2.42	0.49
27:K:62:LYS:O	27:K:66:SER:CB	2.59	0.49
35:O:24:LYS:HZ2	35:O:64:VAL:HB	1.76	0.49
35:O:32:LEU:HD11	35:O:94:TRP:CD1	2.47	0.49
35:O:47:ASP:OD2	35:O:78:THR:HG23	2.12	0.49
39:Q:167:TYR:OH	39:Q:171:LYS:HD2	2.12	0.49
41:R:30:ARG:HH21	41:R:62:ARG:NH1	2.10	0.49
44:s:95:VAL:HG12	44:s:96:LEU:H	1.76	0.49
1:1:212:G:N2	1:1:222:A:N3	2.59	0.49
1:1:508:U:OP1	25:J:211:SER:OG	2.23	0.49
1:1:666:A:H5''	1:1:667:C:OP2	2.12	0.49
1:1:1222:G:N2	1:1:1285:G:H2'	2.27	0.49
1:1:1427:U:C5'	19:G:44:LYS:HZ1	2.25	0.49
1:1:1471:U:H2'	1:1:1472:U:H6	1.77	0.49
1:1:1852:G:H2'	1:1:1853:U:C6	2.46	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2111:G:O2'	4:Y:44:LYS:HD2	2.11	0.49
1:1:2427:U:H2'	1:1:2428:U:C6	2.46	0.49
1:1:2452:G:C2	1:1:2494:A:N6	2.80	0.49
1:1:2939:G:H2'	1:1:2940:A:O4'	2.12	0.49
1:1:2993:G:C6	1:1:3142:A:C5	3.00	0.49
3:3:93:C:H2'	3:3:94:C:H6	1.77	0.49
12:c:46:ASP:O	12:c:47:LYS:HG2	2.12	0.49
13:D:73:THR:HG23	13:D:76:ALA:H	1.76	0.49
15:E:137:ILE:HD11	15:E:155:LYS:HD3	1.93	0.49
19:G:35:VAL:HG21	19:G:244:LEU:HD21	1.94	0.49
19:G:234:ASN:HD21	19:G:236:LEU:HD12	1.76	0.49
33:N:48:PRO:CA	33:N:137:GLN:HB3	2.42	0.49
33:N:127:PRO:HD2	33:N:132:ALA:HB2	1.93	0.49
36:o:80:PRO:HA	36:o:83:LYS:HB3	1.93	0.49
1:1:690:A:OP2	1:1:690:A:C8	2.65	0.49
1:1:839:C:H2'	1:1:840:C:H6	1.78	0.49
1:1:1097:G:H1'	47:V:128:LEU:HD11	1.93	0.49
1:1:2155:G:H2'	1:1:2156:C:H6	1.75	0.49
1:1:2677:G:O6	1:1:2680:A:C5	2.65	0.49
1:1:3314:A:H2'	1:1:3315:G:C8	2.47	0.49
3:3:49:G:N7	21:H:58:LYS:HG3	2.27	0.49
5:4:104:A:OP2	5:4:105:A:H3'	2.12	0.49
12:c:75:LEU:HD23	12:c:78:LEU:HD13	1.94	0.49
18:f:46:THR:OG1	18:f:89:LEU:O	2.23	0.49
21:H:119:TYR:CE1	21:H:135:VAL:HG23	2.46	0.49
43:S:178:ARG:O	43:S:185:LYS:HG3	2.12	0.49
44:s:95:VAL:HG12	44:s:96:LEU:N	2.27	0.49
44:s:109:ARG:C	44:s:109:ARG:CD	2.85	0.49
1:1:848:A:H5''	1:1:849:C:OP2	2.12	0.49
1:1:1194:G:H8	1:1:1194:G:O5'	1.95	0.49
1:1:1220:U:H1'	1:1:1222:G:N2	2.27	0.49
1:1:1392:G:C2	1:1:1417:G:C6	3.00	0.49
1:1:2372:A:H4'	1:1:2373:A:OP2	2.12	0.49
1:1:2819:A:H5''	1:1:2866:U:C5	2.48	0.49
1:1:2824:G:H2'	1:1:2825:C:C6	2.46	0.49
1:1:3133:C:H2'	1:1:3134:A:O4'	2.13	0.49
1:1:3203:U:H2'	1:1:3204:C:C6	2.48	0.49
1:1:3270:U:O2'	1:1:3271:G:OP1	2.29	0.49
1:1:3371:G:C5	1:1:3372:A:N7	2.80	0.49
5:4:40:A:H2'	5:4:41:A:C8	2.48	0.49
17:F:255:TRP:CD1	17:F:256:HIS:CE1	3.01	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:O:60:LEU:HA	35:O:63:VAL:HG12	1.93	0.49
1:1:330:G:H2'	1:1:331:G:C8	2.47	0.49
1:1:589:A:H62	1:1:610:G:C2'	2.26	0.49
1:1:1363:A:H5''	1:1:1364:C:OP2	2.12	0.49
1:1:1507:G:H8	41:R:129:THR:HG22	1.76	0.49
1:1:1647:A:C6	1:1:1809:A:C8	3.00	0.49
1:1:1811:G:H2'	1:1:1812:G:H8	1.74	0.49
1:1:1874:A:H62	45:T:20:ARG:HH12	1.57	0.49
1:1:1899:G:N3	1:1:2334:U:H5	2.11	0.49
1:1:2744:U:H2'	1:1:2745:G:C8	2.48	0.49
1:1:3268:A:H2	23:I:138:GLN:HG2	1.76	0.49
9:B:37:A:H3'	9:B:38:C:H6	1.76	0.49
17:F:76:VAL:HG12	17:F:325:LYS:HA	1.95	0.49
19:G:131:VAL:HB	19:G:134:LEU:HD12	1.93	0.49
27:K:90:THR:HG21	27:K:152:LEU:HD11	1.95	0.49
31:M:133:ARG:NH1	31:M:154:THR:HA	2.28	0.49
32:m:32:ASN:OD1	32:m:36:LYS:N	2.42	0.49
33:N:76:THR:HA	33:N:98:ASP:O	2.12	0.49
37:P:63:ARG:NH2	37:P:131:GLU:OE2	2.43	0.49
37:P:117:ASN:H	37:P:133:ILE:CG2	2.25	0.49
44:s:151:LEU:O	44:s:154:ALA:N	2.45	0.49
1:1:14:U:O2'	1:1:15:C:OP1	2.29	0.49
1:1:415:G:H2'	1:1:416:A:C8	2.47	0.49
1:1:969:C:OP1	14:d:19:ASN:ND2	2.45	0.49
1:1:983:A:O2'	1:1:984:G:OP1	2.27	0.49
1:1:1304:A:O2'	1:1:1305:U:OP2	2.30	0.49
1:1:1489:A:C2	1:1:1854:C:C2	3.00	0.49
1:1:1635:G:P	10:b:107:ARG:HH12	2.36	0.49
1:1:1817:G:H2'	1:1:1818:U:O4'	2.12	0.49
1:1:2105:G:H2'	1:1:2106:A:C8	2.46	0.49
1:1:2175:U:H5''	1:1:2176:U:OP2	2.13	0.49
1:1:2439:A:H2'	1:1:2440:G:H8	1.73	0.49
1:1:2587:U:H2'	1:1:2588:U:C6	2.47	0.49
1:1:3127:A:H2'	1:1:3128:G:O4'	2.12	0.49
1:1:3167:A:OP2	1:1:3167:A:H8	1.96	0.49
1:1:3197:G:C6	1:1:3199:G:C5	3.00	0.49
15:E:142:ASP:O	15:E:143:GLU:HG2	2.12	0.49
16:e:17:VAL:HG21	16:e:100:ILE:HD13	1.95	0.49
23:I:72:ASN:OD1	23:I:73:GLY:N	2.45	0.49
27:K:68:ARG:HD3	27:K:237:ILE:O	2.12	0.49
36:o:97:ARG:NE	36:o:122:ARG:HB3	2.28	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:P:45:PRO:O	37:P:49:ARG:CB	2.60	0.49
41:R:60:PHE:HE2	41:R:82:ARG:HB3	1.78	0.49
45:T:106:LEU:HB3	45:T:120:TYR:HE1	1.77	0.49
1:1:72:C:H1'	33:N:62:THR:HA	1.95	0.49
1:1:409:A:HO2'	1:1:654:C:HO2'	1.54	0.49
1:1:589:A:N7	1:1:610:G:C4	2.81	0.49
1:1:1096:U:O2'	1:1:1097:G:O5'	2.23	0.49
1:1:1842:A:H4'	1:1:1843:C:OP2	2.08	0.49
1:1:1864:A:OP1	45:T:82:LYS:N	2.42	0.49
1:1:2684:C:H2'	1:1:2685:C:H6	1.77	0.49
1:1:2725:U:O2'	1:1:2726:C:OP1	2.25	0.49
3:3:54:U:H4'	3:3:55:A:C8	2.47	0.49
9:B:14:A:C5	9:B:22:G:C6	3.00	0.49
15:E:204:MET:SD	15:E:209:HIS:HB2	2.53	0.49
17:F:130:PHE:O	17:F:134:SER:N	2.46	0.49
29:L:9:GLN:HG2	29:L:54:LYS:HG2	1.95	0.49
46:U:38:LYS:O	46:U:41:TYR:HB3	2.13	0.49
1:1:538:G:H2'	1:1:539:C:H6	1.78	0.49
1:1:760:G:C2	1:1:770:G:C5	3.01	0.49
1:1:911:C:H41	15:E:3:ARG:HD3	1.77	0.49
1:1:1303:A:O2'	1:1:1304:A:O5'	2.30	0.49
1:1:2660:G:H2'	1:1:2661:G:H8	1.78	0.49
1:1:2965:U:O2'	15:E:221:LYS:NZ	2.32	0.49
1:1:3113:A:O3'	29:L:69:ARG:HG2	2.12	0.49
1:1:3141:A:N6	1:1:3144:G:N3	2.61	0.49
2:X:12:ARG:HH22	2:X:15:LEU:HD11	1.78	0.49
3:3:92:A:C5	3:3:93:C:H1'	2.48	0.49
12:c:112:ILE:HB	12:c:130:VAL:HG12	1.95	0.49
13:D:59:CYS:C	13:D:61:LYS:H	2.21	0.49
19:G:339:LEU:HA	19:G:342:LYS:HB2	1.95	0.49
23:I:138:GLN:HE21	23:I:142:ASP:CG	2.21	0.49
25:J:234:GLU:O	25:J:237:ASN:ND2	2.39	0.49
34:n:43:ASN:HD22	34:n:46:ARG:NH1	2.11	0.49
39:Q:49:ARG:O	39:Q:53:LYS:N	2.42	0.49
40:q:90:TYR:CD1	40:q:104:ASN:OD1	2.65	0.49
1:1:88:A:C2	1:1:99:A:C6	3.01	0.49
1:1:150:A:C4	1:1:151:A:C8	3.01	0.49
1:1:155:G:C2	1:1:265:A:OP2	2.66	0.49
1:1:345:G:N1	1:1:349:A:OP2	2.43	0.49
1:1:385:A:H2'	1:1:386:A:C8	2.48	0.49
1:1:426:G:H2'	1:1:427:C:C6	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:578:A:H2'	19:G:334:PHE:HD2	1.78	0.49
1:1:600:G:N3	1:1:602:A:OP2	2.46	0.49
1:1:700:C:H2'	1:1:701:G:H8	1.76	0.49
1:1:1105:A:H2'	1:1:1106:G:C8	2.48	0.49
1:1:1582:C:H4'	1:1:1583:A:H5'	1.94	0.49
1:1:1862:U:H2'	1:1:1863:G:O4'	2.12	0.49
1:1:3188:G:H2'	1:1:3189:G:C8	2.47	0.49
5:4:53:A:H2'	5:4:54:A:H8	1.77	0.49
9:B:18:G:C8	9:B:18:G:OP2	2.65	0.49
10:b:25:ILE:HA	10:b:43:VAL:HG12	1.94	0.49
17:F:10:ARG:NH1	17:F:14:LEU:HG	2.28	0.49
17:F:16:PHE:O	17:F:17:LEU:HD12	2.13	0.49
32:m:41:THR:HG21	32:m:62:ALA:HB2	1.93	0.49
33:N:42:ARG:O	33:N:46:ILE:HG12	2.12	0.49
44:s:37:LYS:HE2	44:s:39:LYS:HB2	1.94	0.49
44:s:155:ARG:HH22	44:s:163:LYS:HA	1.76	0.49
45:T:102:LEU:HD22	45:T:138:LEU:HD13	1.95	0.49
1:1:231:G:H2'	1:1:232:G:O4'	2.12	0.49
1:1:241:G:H2'	1:1:242:C:C6	2.47	0.49
1:1:350:C:N4	1:1:367:A:N7	2.61	0.49
1:1:740:G:H2'	1:1:741:U:C6	2.48	0.49
1:1:1189:C:C5	39:Q:133:ARG:NH1	2.81	0.49
1:1:1287:A:H2'	1:1:1288:U:C6	2.47	0.49
1:1:2221:G:H21	1:1:2223:A:H8	1.59	0.49
1:1:2279:A:C2	1:1:2283:G:N1	2.81	0.49
1:1:2569:A:H4'	1:1:2573:G:H22	1.78	0.49
1:1:3380:U:H2'	1:1:3381:U:C6	2.48	0.49
3:3:55:A:H5'	31:M:6:GLN:NE2	2.28	0.49
3:3:89:G:N2	3:3:91:G:H3'	2.28	0.49
9:B:7:G:H2'	9:B:49:G:C8	2.48	0.49
9:B:29:U:C2	9:B:30:G:N7	2.81	0.49
12:c:60:TYR:HE2	12:c:63:LYS:HG3	1.76	0.49
17:F:114:VAL:HG11	17:F:163:HIS:CD2	2.48	0.49
21:H:224:LYS:O	21:H:228:ALA:CB	2.61	0.49
37:P:121:VAL:HG22	37:P:129:TYR:O	2.12	0.49
1:1:80:G:P	37:P:193:ARG:NH1	2.86	0.48
1:1:89:A:H2'	1:1:90:C:H6	1.77	0.48
1:1:285:A:H5''	1:1:286:U:OP2	2.13	0.48
1:1:503:C:C2	1:1:504:A:C8	3.01	0.48
1:1:506:U:H2'	1:1:507:U:O4'	2.13	0.48
1:1:677:A:N1	1:1:703:G:O2'	2.46	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1095:U:H4'	1:1:1096:U:OP1	2.13	0.48
1:1:1269:U:N1	1:1:1271:A:OP2	2.46	0.48
1:1:2631:U:OP1	1:1:2757:U:O2'	2.29	0.48
1:1:2691:A:N6	1:1:2702:A:H62	2.11	0.48
1:1:2737:C:C2	1:1:2738:A:C8	3.01	0.48
1:1:2908:G:C2	1:1:2909:U:C4	3.01	0.48
2:X:87:ARG:HB2	2:X:89:ASP:OD1	2.12	0.48
8:a:23:PRO:HD2	8:a:26:GLN:OE1	2.13	0.48
12:c:135:GLU:OE1	33:N:166:ALA:HB3	2.13	0.48
17:F:68:HIS:CD2	17:F:69:LYS:NZ	2.80	0.48
19:G:39:PHE:CD2	19:G:242:ALA:HB2	2.48	0.48
25:J:202:LEU:HD13	25:J:205:PHE:HZ	1.77	0.48
26:j:21:LEU:O	26:j:24:LEU:N	2.46	0.48
31:M:87:LYS:HD3	31:M:106:ILE:HG22	1.94	0.48
35:O:50:LYS:HD3	35:O:85:TRP:CD1	2.48	0.48
35:O:50:LYS:HD3	35:O:85:TRP:NE1	2.28	0.48
44:s:110:LEU:C	44:s:110:LEU:CD1	2.86	0.48
45:T:172:ARG:O	45:T:176:ARG:N	2.42	0.48
47:V:14:MET:HE1	47:V:55:LYS:HA	1.95	0.48
1:1:92:G:C6	1:1:94:G:N2	2.81	0.48
1:1:548:G:H2'	1:1:549:U:O4'	2.13	0.48
1:1:1189:C:O2'	1:1:1190:A:O5'	2.25	0.48
1:1:1318:A:H4'	1:1:1319:G:OP2	2.13	0.48
1:1:1781:C:H2'	1:1:1782:U:C6	2.48	0.48
1:1:1893:A:H2'	1:1:1894:U:H6	1.78	0.48
1:1:2154:U:C2	1:1:2155:G:N7	2.81	0.48
1:1:2434:U:H4'	1:1:2435:G:O5'	2.13	0.48
1:1:2445:A:O2'	1:1:2446:U:O5'	2.24	0.48
1:1:3196:U:H1'	1:1:3197:G:C6	2.47	0.48
17:F:80:ASP:OD2	17:F:314:TYR:OH	2.25	0.48
17:F:286:GLY:HA3	17:F:321:PHE:CE2	2.48	0.48
29:L:45:PHE:CD1	29:L:55:VAL:HG12	2.48	0.48
29:L:161:LEU:O	29:L:164:ILE:HG22	2.13	0.48
34:n:38:ASN:HB3	34:n:41:ARG:HG2	1.95	0.48
39:Q:113:ASP:O	39:Q:117:ARG:NH1	2.46	0.48
40:q:132:LYS:HD2	40:q:132:LYS:HA	1.57	0.48
41:R:24:VAL:HG11	41:R:29:THR:HG23	1.95	0.48
1:1:794:U:H2'	1:1:795:G:C8	2.47	0.48
1:1:862:U:H2'	1:1:863:C:C6	2.49	0.48
1:1:934:G:H5''	1:1:935:U:OP2	2.13	0.48
1:1:975:C:H2'	1:1:976:U:C6	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1226:G:H5'	1:1:3117:C:H1'	1.95	0.48
1:1:1311:G:H2'	1:1:1312:C:C6	2.48	0.48
1:1:2398:A:H5''	1:1:2399:A:OP2	2.12	0.48
1:1:2409:G:HO2'	1:1:2410:U:P	2.37	0.48
1:1:2576:G:H2'	1:1:2577:C:C6	2.48	0.48
1:1:2877:G:N1	1:1:2951:G:O6	2.46	0.48
1:1:2884:C:H1'	1:1:2939:G:H22	1.77	0.48
1:1:2886:U:O2'	1:1:2887:A:H3'	2.13	0.48
1:1:3247:G:H2'	1:1:3248:C:H6	1.78	0.48
1:1:3256:G:H2'	1:1:3257:C:H6	1.78	0.48
16:e:16:LEU:HD23	16:e:98:SER:HB2	1.95	0.48
17:F:303:LYS:HD2	17:F:361:THR:HG21	1.95	0.48
19:G:3:ARG:HH11	19:G:22:LEU:C	2.20	0.48
20:g:67:SER:N	20:g:71:HIS:O	2.36	0.48
21:H:244:HIS:HA	21:H:247:ILE:HD12	1.95	0.48
32:m:45:VAL:HG23	32:m:52:TYR:HB2	1.95	0.48
39:Q:143:THR:OG1	39:Q:150:GLU:OE1	2.13	0.48
44:s:162:GLN:OE1	44:s:162:GLN:N	2.44	0.48
1:1:35:A:H2'	1:1:36:C:H6	1.79	0.48
1:1:149:U:H5'	37:P:54:LYS:HE3	1.95	0.48
1:1:247:C:H2'	1:1:248:U:C6	2.49	0.48
1:1:614:C:H2'	1:1:615:U:C6	2.49	0.48
1:1:631:U:H2'	1:1:632:G:C8	2.43	0.48
1:1:690:A:H5''	1:1:691:A:OP1	2.11	0.48
1:1:1429:G:O2'	1:1:1430:U:OP1	2.29	0.48
1:1:1456:A:C8	18:f:26:LYS:HD2	2.49	0.48
1:1:1900:A:O2'	1:1:1901:A:P	2.72	0.48
1:1:2101:C:OP2	45:T:71:ARG:NH1	2.46	0.48
1:1:2313:A:O2'	1:1:2314:U:O5'	2.30	0.48
1:1:2383:C:N4	1:1:2384:A:N1	2.61	0.48
1:1:2635:A:H5''	1:1:2636:A:OP1	2.13	0.48
1:1:2727:A:C2	12:c:43:ILE:HG23	2.49	0.48
1:1:2862:U:O2'	44:s:103:SER:O	2.32	0.48
1:1:2999:U:H2'	1:1:3000:A:C8	2.48	0.48
1:1:3016:A:H2'	1:1:3017:A:C8	2.48	0.48
1:1:3045:G:H2'	1:1:3046:A:H8	1.78	0.48
1:1:3371:G:H2'	1:1:3372:A:H8	1.79	0.48
6:Z:132:ALA:O	6:Z:135:ILE:HG22	2.14	0.48
7:A:61:C:C4	7:A:62:C:N4	2.82	0.48
8:a:42:GLN:HE21	8:a:127:GLU:HA	1.79	0.48
8:a:80:VAL:HG11	8:a:104:LEU:HD11	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:b:84:ARG:NH1	10:b:85:TYR:OH	2.46	0.48
21:H:80:SER:HB2	21:H:92:LEU:HD13	1.95	0.48
25:J:121:LYS:HB2	47:V:133:ALA:HB3	1.94	0.48
45:T:100:ARG:O	45:T:104:ARG:NE	2.47	0.48
1:1:31:C:H4'	37:P:96:ARG:HG3	1.96	0.48
1:1:46:U:C5	1:1:47:C:C4	3.01	0.48
1:1:68:C:N4	1:1:314:U:O2'	2.45	0.48
1:1:87:U:OP2	33:N:11:LYS:NZ	2.35	0.48
1:1:156:G:H5'	28:k:25:LYS:NZ	2.29	0.48
1:1:503:C:H2'	1:1:504:A:C8	2.48	0.48
1:1:600:G:HO2'	1:1:602:A:H62	1.57	0.48
1:1:804:C:OP1	19:G:98:ARG:NH2	2.45	0.48
1:1:1281:G:C2	1:1:1282:G:N7	2.81	0.48
1:1:1443:G:H2'	1:1:1444:G:H8	1.79	0.48
1:1:1569:U:H3'	1:1:1570:U:H5'	1.96	0.48
1:1:1720:U:OP1	45:T:110:ARG:NH1	2.38	0.48
1:1:2251:G:C4	1:1:2252:A:C8	3.01	0.48
1:1:2368:A:N6	1:1:2369:G:O6	2.46	0.48
1:1:3017:A:H2'	1:1:3018:C:H6	1.77	0.48
1:1:3208:G:C8	46:U:166:LYS:NZ	2.81	0.48
1:1:3383:G:H21	18:f:105:GLN:NE2	2.11	0.48
2:X:22:ILE:HG23	2:X:34:LEU:O	2.14	0.48
10:b:84:ARG:NH1	10:b:85:TYR:CZ	2.81	0.48
21:H:196:ARG:HD2	21:H:199:ILE:HD12	1.96	0.48
26:j:100:VAL:HG11	26:j:108:GLN:NE2	2.29	0.48
31:M:157:GLU:O	31:M:161:SER:HB3	2.14	0.48
36:o:112:LYS:HB2	36:o:115:CYS:SG	2.53	0.48
1:1:98:G:OP1	33:N:16:LYS:NZ	2.45	0.48
1:1:187:A:N7	1:1:188:U:C4	2.81	0.48
1:1:657:A:H2'	1:1:658:G:H8	1.79	0.48
1:1:1095:U:H4'	1:1:1096:U:H5''	1.96	0.48
1:1:1248:C:OP1	1:1:1249:G:H8	1.96	0.48
1:1:1326:A:H2'	1:1:1327:C:O4'	2.12	0.48
1:1:1421:G:C2	1:1:1422:G:N7	2.81	0.48
1:1:1750:A:P	32:m:42:LYS:HZ2	2.35	0.48
1:1:1861:G:H2'	1:1:1862:U:H6	1.78	0.48
1:1:2148:U:O2'	15:E:182:ALA:HB2	2.14	0.48
1:1:2270:A:H2'	1:1:2271:A:O4'	2.13	0.48
1:1:2287:C:O4'	1:1:2298:U:H1'	2.14	0.48
1:1:2402:A:O2'	1:1:2403:G:O5'	2.32	0.48
1:1:3020:U:N3	1:1:3021:A:N7	2.61	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3303:G:H4'	1:1:3304:U:OP1	2.13	0.48
12:c:44:ASN:ND2	33:N:3:ILE:HG22	2.28	0.48
17:F:380:MET:SD	17:F:383:LEU:HD21	2.54	0.48
19:G:101:ALA:O	19:G:103:THR:N	2.47	0.48
21:H:289:LYS:HD2	44:s:205:LEU:HD23	1.96	0.48
25:J:24:GLU:HG3	25:J:28:ALA:HB3	1.96	0.48
25:J:159:GLN:O	25:J:161:VAL:HG23	2.14	0.48
30:l:54:LYS:C	30:l:58:THR:HG23	2.39	0.48
33:N:42:ARG:HE	33:N:46:ILE:HD11	1.78	0.48
37:P:192:LYS:O	37:P:196:THR:OG1	2.18	0.48
41:R:56:ARG:HH11	41:R:76:PHE:HZ	1.59	0.48
44:s:207:ASN:O	44:s:211:GLU:HG2	2.14	0.48
48:W:93:ILE:HG21	48:W:105:LEU:HD23	1.96	0.48
1:1:210:U:O2'	1:1:211:A:OP1	2.32	0.48
1:1:366:A:OP1	19:G:95:ARG:NH2	2.36	0.48
1:1:594:U:H5''	1:1:595:G:OP2	2.13	0.48
1:1:837:A:OP2	13:D:4:ARG:NH2	2.46	0.48
1:1:1053:A:O2'	1:1:1054:A:O5'	2.30	0.48
1:1:1463:U:C2	1:1:1467:A:N6	2.81	0.48
1:1:1485:G:H2'	1:1:1486:G:H8	1.78	0.48
1:1:1681:U:O2'	1:1:3069:G:N7	2.43	0.48
1:1:1831:U:OP1	6:Z:92:LYS:HG3	2.13	0.48
1:1:1840:U:H4'	1:1:1841:A:O5'	2.14	0.48
1:1:2513:U:H4'	1:1:2514:U:OP1	2.13	0.48
1:1:2780:A:C4	1:1:2781:U:H5	2.31	0.48
4:Y:47:ARG:O	4:Y:55:PHE:HD1	1.97	0.48
5:4:53:A:C4	5:4:54:A:C8	3.02	0.48
5:4:140:G:H2'	5:4:141:C:C6	2.48	0.48
14:d:28:LYS:HD2	14:d:29:TYR:H	1.78	0.48
21:H:257:GLU:HG3	21:H:259:LYS:H	1.79	0.48
36:o:119:ASN:O	36:o:121:LEU:HG	2.14	0.48
37:P:36:ILE:HG12	37:P:64:VAL:HG23	1.96	0.48
40:q:104:ASN:HB2	40:q:107:GLY:O	2.13	0.48
44:s:101:MET:CE	44:s:110:LEU:HD11	2.44	0.48
1:1:590:G:N1	1:1:611:A:H5'	2.29	0.48
1:1:692:A:C8	1:1:693:A:C8	3.01	0.48
1:1:849:C:H2'	1:1:850:U:H6	1.78	0.48
1:1:920:A:H5''	1:1:921:A:OP1	2.13	0.48
1:1:1602:A:H4'	45:T:10:LEU:HD21	1.96	0.48
1:1:2183:A:O2'	15:E:236:GLY:O	2.27	0.48
1:1:2731:U:C2	1:1:2732:G:C8	3.02	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2747:A:OP1	21:H:176:SER:OG	2.27	0.48
1:1:2799:A:H1'	12:c:42:ARG:NH1	2.29	0.48
1:1:2946:A:H2'	1:1:2982:A:H62	1.78	0.48
1:1:3187:A:OP2	29:L:23:ARG:HG3	2.13	0.48
3:3:22:A:H2'	3:3:23:A:C8	2.49	0.48
15:E:8:GLN:HE21	15:E:232:GLY:CA	2.26	0.48
26:j:7:TYR:CE1	26:j:8:GLU:HG3	2.49	0.48
29:L:163:GLN:HB3	29:L:166:ARG:HH11	1.79	0.48
31:M:11:ASP:O	31:M:133:ARG:HG2	2.14	0.48
35:O:15:VAL:HG22	46:U:150:PHE:O	2.13	0.48
40:q:112:ASP:OD1	40:q:113:VAL:HG13	2.12	0.48
45:T:40:ALA:HA	45:T:43:LYS:NZ	2.28	0.48
1:1:559:A:N6	1:1:560:G:N3	2.61	0.48
1:1:612:U:H2'	1:1:613:G:C8	2.48	0.48
1:1:882:A:O2'	30:l:5:THR:HG21	2.14	0.48
1:1:953:G:O2'	1:1:1115:G:H4'	2.14	0.48
1:1:1063:G:C6	1:1:1097:G:C5	3.01	0.48
1:1:1153:A:H5''	1:1:1154:A:OP2	2.13	0.48
1:1:1447:G:N7	41:R:25:SER:OG	2.42	0.48
1:1:1477:A:H2'	1:1:1478:C:C6	2.49	0.48
1:1:1544:G:H21	1:1:2167:A:H2	1.61	0.48
1:1:1634:G:H2'	1:1:1635:G:C8	2.48	0.48
1:1:1686:U:H5''	48:W:42:LYS:HE3	1.96	0.48
1:1:1887:A:H5'	1:1:1888:U:OP2	2.13	0.48
1:1:1949:G:H2'	1:1:1950:U:C6	2.49	0.48
1:1:2513:U:HO2'	1:1:2514:U:P	2.37	0.48
1:1:2730:G:C5	1:1:2731:U:C5	3.02	0.48
1:1:3012:A:H2'	1:1:3013:U:C6	2.48	0.48
1:1:3375:A:O2'	1:1:3376:A:O5'	2.30	0.48
9:B:15:G:H3'	9:B:16:U:O4'	2.14	0.48
19:G:329:PRO:HB3	25:J:41:ARG:NH2	2.28	0.48
21:H:109:THR:HA	21:H:112:LYS:HG2	1.95	0.48
21:H:208:MET:HB3	21:H:219:PHE:HE1	1.79	0.48
25:J:83:LEU:HD21	25:J:116:PHE:HD1	1.79	0.48
32:m:43:PHE:O	32:m:53:THR:HA	2.14	0.48
34:n:37:TYR:HB2	49:z:3:UNK:CB	2.44	0.48
35:O:44:VAL:O	35:O:57:ALA:HA	2.14	0.48
45:T:99:LEU:HD21	45:T:103:ARG:NE	2.17	0.48
1:1:605:U:H5''	1:1:606:C:OP2	2.14	0.48
1:1:705:A:O2'	1:1:706:A:C8	2.67	0.48
1:1:974:G:H2'	1:1:975:C:C6	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1062:A:O2'	1:1:1098:A:OP1	2.28	0.48
1:1:1162:U:H5'	20:g:54:LYS:HE3	1.96	0.48
1:1:1237:G:H1'	1:1:1263:A:N6	2.29	0.48
1:1:2094:C:H2'	1:1:2095:G:C8	2.49	0.48
1:1:2280:A:C6	1:1:2282:U:N3	2.82	0.48
1:1:2356:A:H2'	1:1:2357:A:H8	1.79	0.48
1:1:2972:G:P	1:1:2973:G:OP2	2.72	0.48
1:1:2981:U:O2'	1:1:2982:A:H5'	2.14	0.48
1:1:3052:G:C4	1:1:3053:G:C8	3.01	0.48
1:1:3160:U:H2'	1:1:3161:C:H6	1.79	0.48
1:1:3216:G:N2	1:1:3258:U:H5''	2.29	0.48
1:1:3277:U:O2'	22:h:64:ILE:HD12	2.14	0.48
1:1:3303:G:HO2'	1:1:3304:U:C5'	2.22	0.48
3:3:7:G:H2'	3:3:8:G:H8	1.78	0.48
5:4:49:G:C6	5:4:50:C:C4	3.02	0.48
6:Z:105:VAL:HG12	6:Z:126:LEU:HD22	1.96	0.48
8:a:87:LYS:HB2	8:a:97:ILE:HD11	1.96	0.48
9:B:22:G:H2'	9:B:23:A:H8	1.79	0.48
11:C:14:GLY:C	11:C:16:THR:H	2.21	0.48
13:D:26:VAL:HG21	15:E:180:LEU:HD11	1.96	0.48
15:E:190:ARG:HG3	15:E:191:LEU:HD12	1.95	0.48
17:F:262:TRP:CD1	17:F:262:TRP:H	2.30	0.48
18:f:15:ASN:O	18:f:19:ARG:NH1	2.46	0.48
21:H:152:ARG:HG2	21:H:154:THR:HG23	1.96	0.48
33:N:46:ILE:HG23	33:N:49:ARG:NH1	2.28	0.48
44:s:169:LYS:HA	44:s:177:ARG:N	2.28	0.48
46:U:77:VAL:HG12	46:U:79:VAL:HG23	1.95	0.48
1:1:267:G:N1	1:1:319:A:C5	2.81	0.47
1:1:708:G:C2	1:1:711:A:OP2	2.66	0.47
1:1:879:U:HO2'	1:1:880:G:P	2.36	0.47
1:1:972:A:H2'	1:1:973:A:H8	1.79	0.47
1:1:1131:G:O2'	1:1:1132:C:OP1	2.30	0.47
1:1:1171:G:C4	1:1:1172:G:C8	3.02	0.47
1:1:1212:A:O2'	46:U:92:LYS:NZ	2.46	0.47
1:1:1212:A:O3'	46:U:92:LYS:NZ	2.47	0.47
1:1:1220:U:H1'	1:1:1222:G:C2	2.48	0.47
1:1:1221:A:H3'	1:1:1222:G:H5'	1.96	0.47
1:1:1235:U:H4'	1:1:1236:G:C5'	2.43	0.47
1:1:1275:C:H2'	1:1:1276:U:H6	1.79	0.47
1:1:1506:A:H1'	1:1:1848:G:O6	2.14	0.47
1:1:1718:G:OP2	45:T:121:HIS:HD2	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2273:G:O2'	1:1:2274:U:O5'	2.31	0.47
1:1:2365:C:O2'	39:Q:68:ARG:NH2	2.47	0.47
1:1:2657:A:O2'	1:1:2658:G:OP1	2.29	0.47
1:1:3176:G:C6	1:1:3213:A:C2	3.02	0.47
3:3:119:U:H3'	21:H:258:LYS:HZ2	1.77	0.47
5:4:89:A:C6	5:4:91:C:C4	3.01	0.47
7:A:14:A:C4	7:A:15:G:H1'	2.49	0.47
9:B:32:C:O2	9:B:39:G:N2	2.46	0.47
10:b:26:VAL:HG23	10:b:27:LYS:N	2.28	0.47
16:e:16:LEU:O	16:e:20:SER:OG	2.21	0.47
24:i:3:GLN:NE2	24:i:29:ILE:HA	2.29	0.47
25:J:110:ARG:CZ	25:J:206:LYS:NZ	2.77	0.47
27:K:228:GLU:HA	27:K:231:LYS:HE2	1.96	0.47
44:s:180:TYR:CZ	44:s:184:ARG:HD3	2.48	0.47
45:T:17:VAL:HG21	45:T:52:LYS:HG3	1.96	0.47
45:T:134:HIS:CE1	45:T:137:ALA:H	2.32	0.47
1:1:97:U:OP2	33:N:13:HIS:CD2	2.67	0.47
1:1:178:U:H2'	1:1:179:C:C6	2.49	0.47
1:1:335:G:OP2	8:a:14:LYS:HD3	2.14	0.47
1:1:510:G:C6	1:1:582:G:C6	3.02	0.47
1:1:553:U:H3'	1:1:554:A:H8	1.79	0.47
1:1:565:U:H2'	1:1:566:G:O4'	2.13	0.47
1:1:749:C:H2'	1:1:750:G:O4'	2.13	0.47
1:1:811:U:H2'	1:1:812:G:C8	2.50	0.47
1:1:1169:A:C6	1:1:1330:A:C5	3.02	0.47
1:1:1225:A:H5'	1:1:1226:G:OP2	2.13	0.47
1:1:1311:G:H8	1:1:1311:G:O5'	1.97	0.47
1:1:1321:G:H2'	1:1:1322:U:O4'	2.14	0.47
1:1:2570:U:H4'	1:1:2571:U:H3'	1.96	0.47
1:1:2703:A:C4	21:H:23:ARG:NH1	2.81	0.47
1:1:2933:A:N6	1:1:2934:A:N1	2.61	0.47
1:1:3048:A:H4'	1:1:3049:A:O5'	2.14	0.47
1:1:3159:C:H2'	1:1:3160:U:H6	1.78	0.47
16:e:42:ILE:HG13	16:e:67:VAL:HG13	1.96	0.47
25:J:116:PHE:O	25:J:199:ASN:ND2	2.47	0.47
29:L:12:VAL:O	29:L:51:GLN:HG3	2.14	0.47
39:Q:4:GLU:O	39:Q:31:GLN:NE2	2.46	0.47
45:T:17:VAL:HG11	45:T:21:LYS:HB2	1.96	0.47
46:U:33:ASN:OD1	46:U:36:ILE:N	2.43	0.47
1:1:34:A:C2	1:1:35:A:C4	3.03	0.47
1:1:253:A:O2'	1:1:254:A:H5'	2.13	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:972:A:H2'	1:1:973:A:C8	2.49	0.47
1:1:1120:A:H2'	1:1:1121:U:C6	2.49	0.47
1:1:1485:G:H2'	1:1:1486:G:C8	2.50	0.47
1:1:1489:A:H2'	1:1:1490:A:O4'	2.14	0.47
1:1:1564:U:C2	1:1:1576:G:N1	2.76	0.47
1:1:1613:A:OP1	32:m:46:ARG:NH1	2.47	0.47
1:1:2381:G:C5	1:1:2382:G:N7	2.82	0.47
1:1:2948:C:H2'	1:1:2949:U:O4'	2.14	0.47
1:1:3152:U:H3'	1:1:3153:U:H5'	1.95	0.47
8:a:100:HIS:CG	8:a:101:PRO:HD2	2.50	0.47
15:E:28:LYS:HB3	15:E:123:ARG:NE	2.29	0.47
21:H:209:GLU:OE2	21:H:233:ALA:HB3	2.14	0.47
23:I:40:LEU:HD11	23:I:54:TYR:HB2	1.97	0.47
29:L:94:TYR:HE2	29:L:142:ASP:OD2	1.96	0.47
35:O:122:VAL:O	35:O:126:GLN:HG2	2.14	0.47
36:o:83:LYS:O	36:o:86:ALA:N	2.41	0.47
45:T:141:HIS:O	45:T:141:HIS:ND1	2.47	0.47
1:1:532:A:H2'	1:1:533:A:H8	1.77	0.47
1:1:604:G:H2'	1:1:605:U:O4'	2.14	0.47
1:1:720:A:H4'	1:1:721:G:H5'	1.94	0.47
1:1:974:G:H2'	1:1:975:C:H6	1.80	0.47
1:1:1106:G:C3'	14:d:25:LYS:HZ1	2.21	0.47
1:1:1609:C:H2'	1:1:1610:G:C8	2.50	0.47
1:1:1704:A:N3	1:1:1741:A:N6	2.63	0.47
1:1:2409:G:O2'	1:1:2410:U:OP1	2.32	0.47
1:1:2762:A:C2	1:1:2763:U:C4	3.02	0.47
1:1:2991:A:H2	41:R:69:ARG:HH22	1.61	0.47
1:1:3047:U:O4	1:1:3094:A:C6	2.67	0.47
7:A:26:A:N3	7:A:27:G:C8	2.82	0.47
15:E:51:ASP:OD2	15:E:54:ARG:NE	2.44	0.47
15:E:115:ASN:HB3	15:E:165:VAL:HG12	1.96	0.47
18:f:10:ARG:HH11	18:f:44:MET:HE1	1.79	0.47
19:G:92:ASN:ND2	19:G:100:PHE:HB2	2.27	0.47
21:H:276:LYS:O	21:H:277:LEU:HB2	2.13	0.47
41:R:83:TRP:O	41:R:85:ALA:N	2.46	0.47
47:V:65:TYR:CD2	47:V:75:ILE:HG23	2.49	0.47
48:W:13:LYS:O	48:W:66:VAL:HG13	2.13	0.47
1:1:120:G:C5	27:K:128:LYS:HG3	2.49	0.47
1:1:122:A:N7	1:1:146:U:N3	2.63	0.47
1:1:221:A:C5	1:1:224:C:C4	3.02	0.47
1:1:323:A:N6	1:1:324:A:C6	2.82	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:515:C:H2'	1:1:516:A:C8	2.50	0.47
1:1:799:G:C2	1:1:801:A:C6	3.03	0.47
1:1:1042:U:O2'	1:1:1043:C:H5'	2.13	0.47
1:1:1348:U:H5''	43:S:38:ARG:HH22	1.80	0.47
1:1:1472:U:C2	1:1:1473:G:C8	3.02	0.47
1:1:1545:A:H2	1:1:1548:C:OP2	1.97	0.47
1:1:1562:C:N4	1:1:1578:C:H42	2.12	0.47
1:1:2156:C:O2'	1:1:2157:G:H5'	2.13	0.47
1:1:2232:A:O2'	1:1:2428:U:O2'	2.32	0.47
1:1:2263:C:C2	1:1:2264:U:C5	3.03	0.47
1:1:2614:G:C2	1:1:2797:C:H1'	2.49	0.47
12:c:13:GLY:O	20:g:36:LYS:NZ	2.41	0.47
12:c:39:HIS:O	12:c:41:HIS:N	2.48	0.47
12:c:52:TYR:HD2	12:c:53:PHE:CE1	2.31	0.47
19:G:212:ASP:CG	19:G:215:ILE:HG22	2.40	0.47
22:h:4:SER:O	23:I:164:SER:OG	2.15	0.47
24:i:41:ARG:NH2	24:i:51:LEU:O	2.47	0.47
27:K:24:ASN:HB3	27:K:25:PRO:HD3	1.95	0.47
27:K:72:PRO:HA	27:K:233:TRP:CZ3	2.49	0.47
40:q:42:VAL:HG13	40:q:43:ASP:H	1.79	0.47
44:s:168:LYS:O	44:s:169:LYS:HG2	2.14	0.47
46:U:146:LYS:HE2	46:U:147:ASP:OD2	2.13	0.47
47:V:17:ARG:NH1	47:V:45:ASN:ND2	2.63	0.47
48:W:39:ASP:OD1	48:W:40:HIS:ND1	2.48	0.47
1:1:431:U:H2'	1:1:432:G:C8	2.48	0.47
1:1:815:G:N2	1:1:920:A:OP2	2.34	0.47
1:1:1592:G:O2'	1:1:1593:A:OP1	2.30	0.47
1:1:1652:G:H2'	1:1:1653:G:C8	2.49	0.47
1:1:1718:G:H2'	1:1:1719:G:H8	1.80	0.47
1:1:1924:U:N3	1:1:1926:C:O2	2.47	0.47
1:1:1925:U:O2	13:D:19:GLY:HA2	2.15	0.47
1:1:2401:A:H4'	19:G:68:GLY:O	2.14	0.47
1:1:2879:C:H2'	1:1:2880:U:O4'	2.14	0.47
1:1:3020:U:H5''	1:1:3021:A:OP2	2.14	0.47
1:1:3064:U:H2'	1:1:3065:G:H8	1.79	0.47
1:1:3231:U:H2'	1:1:3232:G:H8	1.79	0.47
1:1:3236:U:H2'	1:1:3237:U:H6	1.80	0.47
3:3:104:A:H2'	3:3:105:C:O4'	2.15	0.47
6:Z:115:ARG:HD2	6:Z:119:THR:OG1	2.14	0.47
9:B:48:C:H2'	9:B:59:G:H1'	1.95	0.47
9:B:56:C:O2	31:M:53:THR:OG1	2.29	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:F:123:TYR:CE1	17:F:124:LYS:HG3	2.49	0.47
39:Q:98:ALA:HA	39:Q:101:ARG:NH1	2.29	0.47
1:1:67:A:C6	1:1:317:A:C2	3.03	0.47
1:1:167:U:H2'	1:1:168:U:C6	2.49	0.47
1:1:316:U:O2'	1:1:317:A:O5'	2.33	0.47
1:1:338:A:C8	19:G:47:ARG:HG2	2.50	0.47
1:1:520:U:O4	19:G:347:THR:OG1	2.17	0.47
1:1:546:C:H5'	1:1:547:G:N7	2.30	0.47
1:1:716:A:C2	12:c:117:ARG:NH1	2.82	0.47
1:1:717:C:H5'	1:1:718:G:OP2	2.15	0.47
1:1:763:G:C2	1:1:764:U:H1'	2.50	0.47
1:1:971:G:P	43:S:8:LYS:HZ2	2.32	0.47
1:1:1281:G:H2'	1:1:1282:G:C8	2.49	0.47
1:1:1336:U:H2'	1:1:1337:A:C8	2.50	0.47
1:1:1524:A:C2	1:1:1527:C:C5	3.02	0.47
1:1:1588:A:H5'	1:1:1589:A:OP1	2.15	0.47
1:1:1656:A:H4'	1:1:1657:C:O4'	2.15	0.47
1:1:1661:G:C6	1:1:1789:G:C6	3.03	0.47
1:1:1765:U:H2'	1:1:1766:G:O4'	2.14	0.47
1:1:1867:A:H2'	1:1:1868:G:O4'	2.15	0.47
1:1:2219:A:H2'	1:1:2220:A:C8	2.46	0.47
1:1:2244:A:H2'	1:1:2245:C:C6	2.49	0.47
1:1:2713:U:H4'	1:1:2714:G:OP1	2.13	0.47
1:1:2731:U:H2'	1:1:2732:G:H8	1.80	0.47
1:1:2817:A:OP2	1:1:2868:U:OP2	2.32	0.47
1:1:2900:A:N1	1:1:3026:G:O2'	2.46	0.47
1:1:3013:U:H2'	1:1:3014:U:C6	2.50	0.47
1:1:3033:A:H2'	1:1:3034:C:C6	2.49	0.47
1:1:3270:U:C4	23:I:46:ARG:HG2	2.50	0.47
1:1:3343:G:C4	1:1:3361:G:N2	2.82	0.47
3:3:12:U:O2'	3:3:111:U:O4'	2.31	0.47
4:Y:1:MET:HE1	17:F:358:TRP:CG	2.50	0.47
5:4:152:G:OP1	27:K:60:ARG:NH2	2.39	0.47
7:A:13:C:H4'	7:A:14:A:OP1	2.15	0.47
8:a:74:TYR:HE2	8:a:77:LYS:HG3	1.80	0.47
9:B:14:A:C6	9:B:22:G:C6	3.02	0.47
10:b:76:ASN:OD1	10:b:77:TYR:N	2.48	0.47
15:E:95:SER:O	15:E:100:ASN:ND2	2.48	0.47
17:F:24:SER:OG	17:F:25:ILE:N	2.48	0.47
17:F:103:THR:HG21	17:F:150:ARG:HD2	1.96	0.47
17:F:218:ILE:HG12	17:F:276:THR:HG23	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:F:243:HIS:CD2	17:F:244:ARG:HG3	2.49	0.47
18:f:52:ALA:HB2	18:f:94:GLU:HG2	1.96	0.47
27:K:33:ASN:CG	27:K:38:GLN:HE21	2.22	0.47
31:M:94:ARG:C	31:M:96:PHE:H	2.22	0.47
31:M:101:ASN:ND2	31:M:130:VAL:HG23	2.30	0.47
33:N:55:ARG:NH1	33:N:73:ARG:O	2.45	0.47
33:N:57:VAL:HG22	33:N:147:ILE:HD12	1.97	0.47
35:O:48:GLY:O	35:O:51:ALA:N	2.34	0.47
35:O:101:LYS:O	35:O:105:GLN:HB2	2.15	0.47
36:o:78:ILE:O	36:o:82:LEU:HB2	2.14	0.47
41:R:61:ARG:HE	41:R:78:VAL:HG21	1.80	0.47
44:s:32:ILE:HG22	44:s:34:ASP:O	2.15	0.47
45:T:172:ARG:O	45:T:176:ARG:HG2	2.15	0.47
46:U:81:TYR:CZ	46:U:90:MET:HE3	2.50	0.47
1:1:61:A:C6	1:1:62:A:C6	3.03	0.47
1:1:118:U:N3	1:1:122:A:OP2	2.46	0.47
1:1:265:A:H5''	1:1:266:A:OP2	2.15	0.47
1:1:1276:U:H3'	1:1:1277:C:H6	1.79	0.47
1:1:1658:G:H2'	1:1:1659:U:C6	2.49	0.47
1:1:1660:C:C2	1:1:1661:G:C8	3.02	0.47
1:1:1874:A:C6	45:T:20:ARG:NH1	2.82	0.47
1:1:1875:G:H2'	1:1:1876:U:C6	2.49	0.47
1:1:2196:C:N4	1:1:2242:A:N7	2.63	0.47
1:1:2262:A:OP2	1:1:2263:C:N4	2.46	0.47
1:1:2285:C:C4	1:1:2286:U:C4	3.03	0.47
1:1:2828:G:O2'	1:1:2829:U:OP1	2.31	0.47
1:1:3214:U:O3'	22:h:2:ALA:N	2.48	0.47
1:1:3272:C:OP2	23:I:78:ARG:NH2	2.48	0.47
1:1:3324:C:P	18:f:19:ARG:HH22	2.38	0.47
3:3:68:C:H2'	3:3:69:C:C6	2.49	0.47
12:c:85:ASP:OD1	12:c:86:LYS:N	2.47	0.47
15:E:206:PRO:HG3	15:E:213:GLY:HA3	1.96	0.47
17:F:194:TRP:CE2	17:F:198:HIS:CE1	3.03	0.47
30:l:70:VAL:O	30:l:73:ARG:N	2.48	0.47
37:P:80:THR:OG1	37:P:87:GLN:HG3	2.15	0.47
41:R:166:VAL:HG21	41:R:168:LEU:HD23	1.96	0.47
43:S:86:THR:CG2	43:S:105:ARG:HD2	2.44	0.47
44:s:169:LYS:HA	44:s:177:ARG:HB2	1.96	0.47
48:W:23:THR:C	48:W:26:GLY:H	2.23	0.47
1:1:64:G:C6	1:1:322:U:C5	3.03	0.47
1:1:165:A:H3'	1:1:166:C:H5''	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:349:A:C2	5:4:24:G:C5	3.03	0.47
1:1:799:G:C5	1:1:801:A:C5	3.03	0.47
1:1:986:U:H2'	1:1:987:U:C6	2.50	0.47
1:1:1068:C:H2'	1:1:1069:C:C6	2.50	0.47
1:1:1428:A:O2'	1:1:1429:G:OP1	2.24	0.47
1:1:1512:U:H2'	1:1:1513:G:C8	2.49	0.47
1:1:1933:A:H5''	1:1:1934:G:OP2	2.15	0.47
1:1:2263:C:H2'	1:1:2264:U:C6	2.50	0.47
1:1:2273:G:HO2'	1:1:2274:U:P	2.38	0.47
1:1:2294:U:O2'	1:1:2296:A:N7	2.41	0.47
1:1:2409:G:O3'	1:1:2410:U:H4'	2.15	0.47
1:1:2447:A:C2	1:1:2448:G:C5	3.03	0.47
1:1:2590:A:H3'	1:1:2591:A:H8	1.80	0.47
1:1:2753:G:N2	1:1:2754:G:N3	2.63	0.47
1:1:3174:A:OP1	22:h:97:SER:OG	2.26	0.47
1:1:3188:G:C2	1:1:3189:G:C5	3.03	0.47
1:1:3216:G:H4'	1:1:3217:C:OP2	2.15	0.47
4:Y:6:ASP:HB3	4:Y:10:GLY:N	2.30	0.47
5:4:28:C:H2'	5:4:29:U:H6	1.78	0.47
5:4:60:U:O2'	5:4:61:A:OP1	2.32	0.47
7:A:8:U:O2'	7:A:48:C:H1'	2.14	0.47
8:a:35:LEU:HD12	8:a:45:ILE:HG23	1.96	0.47
10:b:81:LEU:HD21	24:i:90:ILE:HD12	1.97	0.47
10:b:87:LEU:HD11	10:b:121:ARG:NH1	2.30	0.47
21:H:55:PHE:CD1	21:H:60:ILE:HG12	2.50	0.47
27:K:34:PHE:O	27:K:36:ILE:N	2.47	0.47
1:1:299:G:H1	1:1:316:U:H3	1.63	0.47
1:1:677:A:H4'	1:1:678:G:O5'	2.15	0.47
1:1:908:G:O2'	1:1:925:A:N6	2.48	0.47
1:1:962:A:O2'	1:1:2817:A:N6	2.48	0.47
1:1:1405:U:OP2	20:g:59:SER:OG	2.32	0.47
1:1:1582:C:H5''	1:1:1583:A:OP1	2.14	0.47
1:1:2283:G:O2'	1:1:2284:C:P	2.72	0.47
1:1:2678:A:C2'	1:1:2679:A:H5'	2.45	0.47
1:1:2742:C:C2	1:1:2743:A:N7	2.83	0.47
1:1:2962:U:O4	15:E:216:HIS:NE2	2.38	0.47
1:1:2989:U:C4	1:1:2990:G:N7	2.83	0.47
1:1:3009:G:C6	1:1:3010:U:C4	3.03	0.47
1:1:3297:U:O4	17:F:124:LYS:NZ	2.48	0.47
2:X:10:LYS:NZ	2:X:56:ASP:OD1	2.48	0.47
3:3:120:C:N4	21:H:262:LYS:HZ2	2.12	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:4:153:U:H2'	5:4:154:C:C6	2.50	0.47
12:c:74:ASN:HA	12:c:113:LEU:O	2.14	0.47
19:G:23:PRO:C	19:G:25:VAL:H	2.22	0.47
19:G:326:ARG:HG3	19:G:327:LEU:HD12	1.96	0.47
20:g:77:ALA:HB2	23:I:3:ALA:HB2	1.96	0.47
31:M:71:VAL:HG12	31:M:76:ALA:HB2	1.96	0.47
32:m:61:LYS:O	32:m:65:LEU:N	2.44	0.47
39:Q:65:ASN:OD1	39:Q:66:LYS:N	2.48	0.47
44:s:211:GLU:C	44:s:213:PRO:HD3	2.40	0.47
1:1:76:G:H2'	33:N:100:ARG:HD2	1.96	0.46
1:1:239:G:H4'	1:1:240:U:OP1	2.15	0.46
1:1:438:A:H2'	1:1:438:A:N3	2.30	0.46
1:1:677:A:O2'	1:1:678:G:O4'	2.21	0.46
1:1:1005:G:H5'	1:1:1006:A:OP2	2.15	0.46
1:1:1282:G:C6	1:1:1283:C:C5	3.03	0.46
1:1:1645:U:H5'	1:1:1646:G:OP2	2.15	0.46
1:1:1799:A:C2	1:1:1800:A:C4	3.03	0.46
1:1:1823:A:H2'	1:1:1824:U:C6	2.50	0.46
1:1:2772:C:H5'	1:1:2773:C:OP1	2.14	0.46
1:1:2799:A:O2'	12:c:42:ARG:NH1	2.48	0.46
1:1:3139:A:O2'	17:F:20:LYS:HE3	2.16	0.46
1:1:3198:U:H1'	29:L:21:LYS:HB3	1.97	0.46
2:X:94:TYR:CE1	4:Y:21:PHE:HD1	2.33	0.46
5:4:141:C:H2'	5:4:142:C:C6	2.49	0.46
6:Z:75:LYS:O	6:Z:79:GLY:N	2.48	0.46
6:Z:108:LEU:HG	6:Z:127:THR:HG22	1.96	0.46
21:H:191:ASP:OD2	21:H:194:LEU:HB2	2.15	0.46
26:j:31:LEU:O	26:j:34:GLN:N	2.47	0.46
33:N:27:ASP:CG	33:N:28:GLN:H	2.22	0.46
44:s:112:GLN:HE21	44:s:115:ARG:NH1	2.13	0.46
1:1:44:U:OP1	37:P:84:PRO:HG2	2.15	0.46
1:1:61:A:H2'	1:1:62:A:C8	2.50	0.46
1:1:71:A:H61	1:1:303:G:N2	2.13	0.46
1:1:134:U:C6	1:1:134:U:OP2	2.68	0.46
1:1:286:U:C2	1:1:287:G:C8	3.04	0.46
1:1:296:A:H2'	1:1:297:G:N3	2.31	0.46
1:1:300:G:N3	1:1:301:G:C8	2.83	0.46
1:1:429:U:H2'	1:1:430:U:C6	2.49	0.46
1:1:533:A:O2'	1:1:534:U:OP1	2.28	0.46
1:1:650:C:H2'	1:1:651:G:C8	2.51	0.46
1:1:845:G:N2	1:1:848:A:OP2	2.42	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:981:U:OP2	1:1:981:U:H6	1.98	0.46
1:1:1278:A:OP2	1:1:1279:C:C5	2.68	0.46
1:1:1482:A:OP2	1:1:1858:A:C5	2.68	0.46
1:1:1714:A:C4	1:1:1731:A:C6	3.03	0.46
1:1:1774:C:H2'	1:1:1775:G:O4'	2.16	0.46
1:1:1935:G:H2'	1:1:1936:A:O4'	2.15	0.46
1:1:2131:A:H2'	1:1:2132:C:O4'	2.15	0.46
1:1:2166:A:H8	1:1:2166:A:OP1	1.98	0.46
1:1:2263:C:H2'	1:1:2264:U:H6	1.80	0.46
1:1:2532:U:C2	1:1:2533:G:C8	3.03	0.46
1:1:2651:G:C5	1:1:2796:G:N2	2.83	0.46
1:1:3121:U:O2'	1:1:3123:A:OP2	2.32	0.46
1:1:3181:C:O2'	39:Q:164:SER:OG	2.31	0.46
1:1:3231:U:O2	1:1:3256:G:N2	2.37	0.46
1:1:3332:U:OP1	4:Y:35:LYS:HD2	2.14	0.46
7:A:55:U:H2'	7:A:57:G:N7	2.29	0.46
8:a:118:LEU:HA	8:a:121:ARG:HH11	1.79	0.46
22:h:38:PRO:HA	22:h:41:ALA:HB3	1.96	0.46
25:J:53:LYS:HA	25:J:56:GLU:HG2	1.96	0.46
25:J:208:SER:OG	25:J:209:ASN:N	2.47	0.46
25:J:219:LYS:O	25:J:228:SER:N	2.48	0.46
27:K:89:GLU:OE2	27:K:213:LYS:NZ	2.48	0.46
29:L:38:LEU:O	29:L:41:ILE:HG22	2.16	0.46
35:O:4:ASP:O	35:O:6:ILE:HG12	2.14	0.46
37:P:116:LEU:HA	37:P:159:ARG:NH1	2.30	0.46
45:T:37:SER:O	45:T:41:ILE:HG12	2.15	0.46
1:1:69:C:H2'	1:1:70:A:O4'	2.16	0.46
1:1:213:A:H61	1:1:227:G:H2'	1.80	0.46
1:1:519:A:H61	46:U:65:ASN:C	2.22	0.46
1:1:645:A:C6	1:1:649:A:C5	3.04	0.46
1:1:655:C:OP2	20:g:27:ARG:HD3	2.14	0.46
1:1:730:C:H2'	1:1:731:U:C6	2.51	0.46
1:1:1104:G:H4'	1:1:1104:G:OP2	2.15	0.46
1:1:1262:G:H2'	1:1:1264:G:C1'	2.44	0.46
1:1:1415:U:H5''	1:1:1416:C:OP2	2.14	0.46
1:1:1421:G:C2	1:1:1422:G:C8	3.04	0.46
1:1:1439:U:H5''	19:G:87:GLN:HG2	1.96	0.46
1:1:2575:G:H2'	1:1:2576:G:C8	2.50	0.46
1:1:2868:U:H2'	1:1:2869:U:C6	2.50	0.46
1:1:2992:U:H1'	41:R:69:ARG:HH12	1.79	0.46
1:1:3034:C:H4'	29:L:168:ARG:NH2	2.30	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3347:A:C6	1:1:3359:A:C6	3.04	0.46
2:X:26:ALA:HB3	2:X:101:VAL:HG12	1.96	0.46
5:4:4:C:H5''	5:4:5:U:OP2	2.15	0.46
7:A:21:A:N6	7:A:46:G:H2'	2.29	0.46
10:b:41:ALA:HB2	10:b:77:TYR:CE1	2.50	0.46
12:c:14:HIS:CG	20:g:36:LYS:HE2	2.51	0.46
15:E:49:VAL:HG11	15:E:60:LYS:HZ1	1.79	0.46
15:E:101:VAL:C	15:E:102:LEU:HD12	2.40	0.46
27:K:105:LYS:O	27:K:109:LEU:HG	2.15	0.46
1:1:27:C:HO2'	1:1:327:A:HO2'	1.51	0.46
1:1:35:A:OP2	1:1:48:A:N6	2.47	0.46
1:1:210:U:HO2'	1:1:229:G:HO2'	1.63	0.46
1:1:238:A:H2'	1:1:239:G:O4'	2.15	0.46
1:1:361:A:N3	1:1:814:U:H1'	2.30	0.46
1:1:509:U:C2	1:1:583:G:N1	2.84	0.46
1:1:539:C:H2'	1:1:540:U:C6	2.49	0.46
1:1:905:U:O2'	1:1:910:G:H4'	2.16	0.46
1:1:964:G:O2'	12:c:41:HIS:NE2	2.38	0.46
1:1:1088:U:H2'	1:1:1089:G:H8	1.80	0.46
1:1:1470:U:C2	1:1:1471:U:C5	3.03	0.46
1:1:1678:G:H2'	1:1:1679:A:C8	2.51	0.46
1:1:1902:G:N1	1:1:1903:U:O2	2.49	0.46
1:1:2198:A:C6	1:1:2199:G:C8	3.04	0.46
1:1:2364:G:O2'	1:1:2365:C:OP1	2.30	0.46
1:1:2435:G:H4'	37:P:24:ARG:HH12	1.80	0.46
1:1:2530:G:H3'	1:1:2531:C:H5''	1.97	0.46
1:1:2655:U:H2'	11:C:5:PRO:HG3	1.97	0.46
1:1:2941:A:P	17:F:255:TRP:HB3	2.56	0.46
1:1:3005:A:C5	1:1:3140:G:N1	2.83	0.46
1:1:3100:U:H2'	1:1:3101:G:H8	1.81	0.46
1:1:3275:U:N3	1:1:3277:U:H1'	2.30	0.46
1:1:3318:G:H2'	1:1:3320:A:C8	2.51	0.46
3:3:62:U:H4'	21:H:285:ARG:HH12	1.80	0.46
5:4:22:U:O2'	5:4:23:U:OP1	2.32	0.46
12:c:84:GLU:HG2	12:c:87:ARG:NH2	2.31	0.46
16:e:10:ILE:HG23	16:e:11:ASN:H	1.80	0.46
22:h:50:ALA:HB2	22:h:68:TRP:CZ3	2.50	0.46
23:I:52:VAL:HG21	23:I:65:ILE:HD13	1.97	0.46
33:N:76:THR:HG22	33:N:101:ARG:HG3	1.97	0.46
40:q:7:THR:O	40:q:9:GLU:N	2.46	0.46
1:1:10:C:N3	5:4:149:A:H2	2.14	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:129:U:C2	1:1:130:A:N7	2.84	0.46
1:1:625:G:H2'	1:1:626:U:H6	1.80	0.46
1:1:944:C:H4'	20:g:33:ARG:HH11	1.80	0.46
1:1:1258:U:H5'	1:1:1259:A:OP2	2.15	0.46
1:1:1372:C:H2'	1:1:1373:A:C8	2.50	0.46
1:1:1874:A:OP2	45:T:20:ARG:HD3	2.15	0.46
1:1:1949:G:H5''	45:T:104:ARG:HH12	1.80	0.46
1:1:2198:A:N6	1:1:2270:A:N1	2.63	0.46
1:1:2412:G:C2	1:1:2413:A:C4	3.04	0.46
1:1:2494:A:OP2	1:1:2495:C:OP2	2.33	0.46
1:1:3005:A:O2'	1:1:3006:A:O4'	2.33	0.46
1:1:3293:U:P	17:F:132:LYS:HZ1	2.38	0.46
7:A:7:U:C2	7:A:66:A:N6	2.83	0.46
9:B:1:G:H2'	9:B:2:G:H8	1.79	0.46
9:B:52:G:H2'	9:B:53:G:C8	2.49	0.46
13:D:36:ARG:HG2	13:D:45:LYS:HG2	1.98	0.46
18:f:13:THR:HA	18:f:71:LEU:O	2.15	0.46
20:g:19:ARG:HH21	20:g:33:ARG:HD2	1.79	0.46
27:K:89:GLU:HA	27:K:92:LYS:HD3	1.96	0.46
27:K:155:ASN:OD1	27:K:155:ASN:N	2.45	0.46
31:M:59:ILE:HG21	31:M:65:ILE:HD12	1.97	0.46
41:R:24:VAL:HG12	41:R:25:SER:N	2.30	0.46
1:1:220:G:H4'	1:1:221:A:OP2	2.15	0.46
1:1:1017:C:H4'	1:1:1018:G:OP2	2.15	0.46
1:1:1018:G:C6	1:1:1035:G:C2	3.04	0.46
1:1:1709:C:C4'	10:b:15:ARG:HH12	2.28	0.46
1:1:2494:A:H5''	1:1:2495:C:OP2	2.15	0.46
1:1:2516:U:H2'	1:1:2517:U:H6	1.81	0.46
1:1:2588:U:H2'	1:1:2589:G:O4'	2.15	0.46
1:1:2779:A:H3'	1:1:2779:A:OP2	2.15	0.46
1:1:3148:U:H2'	1:1:3149:G:C8	2.43	0.46
1:1:3275:U:O4	22:h:62:SER:OG	2.30	0.46
3:3:61:G:H2'	3:3:62:U:C6	2.51	0.46
7:A:1:G:O6	7:A:73:A:N6	2.49	0.46
19:G:265:GLU:HG2	19:G:266:THR:N	2.31	0.46
19:G:311:HIS:ND1	19:G:311:HIS:O	2.48	0.46
21:H:123:GLU:O	21:H:125:VAL:HG23	2.15	0.46
23:I:171:PRO:HA	23:I:174:LEU:HD12	1.98	0.46
25:J:36:ALA:O	25:J:40:LYS:HG3	2.15	0.46
29:L:19:SER:HA	35:O:5:SER:O	2.15	0.46
29:L:109:ALA:HB3	29:L:111:PHE:CE2	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:m:7:ASP:HB3	32:m:10:GLN:HB3	1.98	0.46
35:O:113:THR:HG23	35:O:116:GLU:H	1.80	0.46
43:S:133:LYS:H	43:S:135:GLN:HE22	1.63	0.46
1:1:169:U:H4'	1:1:170:G:OP1	2.15	0.46
1:1:236:G:C4	1:1:237:G:C8	3.03	0.46
1:1:586:C:H2'	1:1:587:U:C6	2.50	0.46
1:1:876:A:H4'	1:1:1890:U:H4'	1.97	0.46
1:1:922:U:O2	1:1:922:U:H2'	2.14	0.46
1:1:1253:U:H4'	1:1:1254:C:OP1	2.16	0.46
1:1:1376:C:C2	1:1:1377:G:C8	3.04	0.46
1:1:1453:A:C4	1:1:1454:A:C8	3.03	0.46
1:1:1609:C:H2'	1:1:1610:G:H8	1.81	0.46
1:1:1710:C:H2'	1:1:1711:C:C6	2.51	0.46
1:1:1714:A:C2	1:1:1731:A:C4	3.03	0.46
1:1:2103:U:H2'	1:1:2104:A:C8	2.50	0.46
1:1:2225:U:H4'	11:C:36:PHE:CZ	2.49	0.46
1:1:2712:U:H5'	1:1:2713:U:OP2	2.16	0.46
1:1:3334:U:H1'	1:1:3370:A:C2	2.50	0.46
3:3:7:G:N1	3:3:115:G:C5	2.84	0.46
3:3:46:A:P	21:H:158:ARG:NH1	2.89	0.46
7:A:10:G:C2	7:A:26:A:H1'	2.51	0.46
12:c:73:LEU:HD22	12:c:109:TYR:CD2	2.51	0.46
21:H:38:THR:HG22	47:V:30:TYR:HB3	1.98	0.46
34:n:43:ASN:OD1	34:n:45:ARG:N	2.46	0.46
43:S:44:PHE:CD2	43:S:134:GLY:HA3	2.50	0.46
43:S:158:HIS:CE1	43:S:186:VAL:HG21	2.50	0.46
44:s:111:GLN:C	44:s:112:GLN:CG	2.86	0.46
1:1:199:A:H2	1:1:220:G:H22	1.64	0.46
1:1:374:A:O2'	1:1:376:G:H5''	2.16	0.46
1:1:402:A:P	34:n:36:ARG:NH1	2.89	0.46
1:1:656:A:H2'	1:1:657:A:C8	2.50	0.46
1:1:696:C:H2'	1:1:697:A:C8	2.51	0.46
1:1:754:G:H2'	1:1:755:A:H8	1.81	0.46
1:1:798:G:O2'	33:N:14:PHE:HB2	2.16	0.46
1:1:851:C:H2'	1:1:852:U:C6	2.51	0.46
1:1:958:C:O2	1:1:960:U:H5'	2.15	0.46
1:1:1174:G:N2	39:Q:87:MET:HE2	2.30	0.46
1:1:1404:G:C6	1:1:1408:G:C6	3.04	0.46
1:1:1567:U:H3'	1:1:1568:U:O4'	2.15	0.46
1:1:1724:U:O4	45:T:125:LYS:NZ	2.49	0.46
1:1:1753:G:H2'	1:1:1754:G:C8	2.49	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1872:C:H2'	1:1:1873:U:H6	1.80	0.46
1:1:1900:A:C6	1:1:1906:G:C4	3.04	0.46
1:1:2111:G:H4'	1:1:2112:U:OP2	2.16	0.46
1:1:2203:U:H2'	1:1:2204:C:C6	2.51	0.46
1:1:2575:G:H2'	1:1:2576:G:H8	1.78	0.46
1:1:2687:G:OP1	21:H:8:LYS:NZ	2.47	0.46
1:1:2777:G:C6	12:c:60:TYR:HD1	2.34	0.46
1:1:2947:G:OP2	1:1:2947:G:H4'	2.15	0.46
3:3:3:U:H2'	3:3:4:U:H6	1.81	0.46
5:4:76:C:H2'	5:4:77:A:C8	2.50	0.46
7:A:3:G:H1	7:A:69:A:N6	2.13	0.46
8:a:43:TYR:CD1	8:a:126:LEU:HA	2.51	0.46
12:c:33:GLY:O	33:N:2:ALA:HB1	2.16	0.46
37:P:146:ALA:HA	37:P:149:ASN:ND2	2.30	0.46
39:Q:124:LEU:HB3	39:Q:126:VAL:HG12	1.97	0.46
39:Q:126:VAL:HG13	39:Q:127:LEU:HG	1.98	0.46
44:s:155:ARG:HH12	44:s:163:LYS:HA	1.81	0.46
47:V:71:SER:HA	47:V:93:VAL:HG13	1.96	0.46
1:1:49:A:C5	37:P:187:ARG:NH1	2.82	0.46
1:1:130:A:C6	1:1:139:G:C6	3.04	0.46
1:1:158:G:C2	1:1:159:A:C8	3.04	0.46
1:1:280:U:O2	1:1:286:U:C2	2.69	0.46
1:1:519:A:O2'	1:1:520:U:OP1	2.29	0.46
1:1:690:A:H5'	1:1:692:A:C5	2.51	0.46
1:1:839:C:H2'	1:1:840:C:C6	2.51	0.46
1:1:1231:A:N7	1:1:1276:U:OP2	2.49	0.46
1:1:1456:A:C5	18:f:64:VAL:HG11	2.51	0.46
1:1:1560:G:H21	1:1:1581:C:N4	2.13	0.46
1:1:1845:G:H22	1:1:1849:C:H2'	1.80	0.46
1:1:1847:A:C6	1:1:1849:C:H1'	2.51	0.46
1:1:2393:G:O6	1:1:2982:A:C4	2.69	0.46
1:1:2531:C:H3'	1:1:2532:U:C6	2.51	0.46
1:1:2599:U:H5''	37:P:70:ASN:CG	2.41	0.46
1:1:2668:U:H2'	1:1:2669:G:C8	2.50	0.46
1:1:2675:C:N3	1:1:2676:A:N6	2.64	0.46
1:1:2819:A:C2	1:1:2820:A:C4	3.04	0.46
1:1:2877:G:H2'	1:1:2878:G:C8	2.48	0.46
1:1:2882:U:H2'	1:1:2883:U:C6	2.51	0.46
1:1:3273:A:C6	1:1:3274:A:C2	3.04	0.46
1:1:3286:G:H2'	1:1:3287:U:O4'	2.15	0.46
1:1:3290:G:C6	1:1:3291:G:C6	3.03	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:4:51:G:O2'	5:4:52:A:O5'	2.33	0.46
12:c:96:LYS:HD2	33:N:159:VAL:HB	1.97	0.46
25:J:79:ALA:HB2	47:V:138:SER:N	2.31	0.46
29:L:79:ILE:O	29:L:82:VAL:HG12	2.15	0.46
32:m:60:GLY:O	32:m:64:LYS:HD3	2.15	0.46
40:q:7:THR:C	40:q:9:GLU:H	2.24	0.46
44:s:49:VAL:HB	44:s:137:VAL:HG22	1.97	0.46
1:1:211:A:H5''	19:G:221:ASN:ND2	2.31	0.46
1:1:370:U:O2	1:1:370:U:H2'	2.15	0.46
1:1:425:G:H2'	1:1:426:G:H8	1.81	0.46
1:1:509:U:C2	1:1:583:G:C2	3.04	0.46
1:1:811:U:H2'	1:1:812:G:H8	1.81	0.46
1:1:1186:G:H2'	1:1:1187:C:C6	2.51	0.46
1:1:1197:A:H5''	1:1:1198:C:OP2	2.16	0.46
1:1:1472:U:H2'	1:1:1473:G:O4'	2.16	0.46
1:1:1538:G:H21	1:1:1583:A:N6	2.11	0.46
1:1:1716:U:O2'	1:1:1717:U:P	2.73	0.46
1:1:1848:G:H4'	1:1:1849:C:OP2	2.11	0.46
1:1:2101:C:H2'	1:1:2102:U:C6	2.51	0.46
1:1:2249:G:H2'	1:1:2250:G:O4'	2.15	0.46
1:1:2363:A:H2'	1:1:2364:G:O4'	2.16	0.46
1:1:2437:G:C6	1:1:2511:A:C6	3.04	0.46
1:1:2946:A:C4	1:1:2982:A:C6	3.04	0.46
1:1:3198:U:HO2'	1:1:3199:G:P	2.38	0.46
1:1:3375:A:N3	1:1:3375:A:H2'	2.31	0.46
2:X:29:SER:HB2	2:X:69:LEU:HD21	1.98	0.46
5:4:67:U:H2'	5:4:68:G:H8	1.80	0.46
5:4:129:C:OP2	5:4:129:C:C6	2.69	0.46
10:b:53:VAL:HG11	27:K:26:LEU:HD12	1.98	0.46
12:c:75:LEU:HD21	12:c:138:ILE:HD11	1.97	0.46
19:G:110:ASN:ND2	37:P:201:ARG:HB3	2.26	0.46
19:G:270:SER:OG	19:G:271:LYS:N	2.48	0.46
20:g:20:HIS:CG	20:g:42:VAL:HG21	2.51	0.46
21:H:159:VAL:O	21:H:162:ALA:N	2.49	0.46
35:O:114:ASP:O	35:O:117:ARG:HB2	2.16	0.46
37:P:149:ASN:OD1	37:P:150:TRP:N	2.49	0.46
45:T:23:TRP:CH2	45:T:25:ASP:HB3	2.51	0.46
1:1:282:G:O2'	1:1:286:U:OP1	2.34	0.45
1:1:302:U:H2'	1:1:303:G:C8	2.51	0.45
1:1:513:G:C4	1:1:514:G:C8	3.04	0.45
1:1:562:C:H2'	1:1:563:U:C6	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:823:C:H2'	1:1:824:C:C6	2.51	0.45
1:1:1054:A:C6	1:1:1055:A:C6	3.04	0.45
1:1:1455:U:H2'	18:f:26:LYS:HZ1	1.81	0.45
1:1:1587:A:N6	1:1:1590:G:C2	2.84	0.45
1:1:1614:C:H2'	1:1:1615:C:H6	1.80	0.45
1:1:1655:G:C6	1:1:1656:A:N6	2.84	0.45
1:1:1655:G:N2	1:1:1801:U:O4	2.48	0.45
1:1:1727:G:OP1	13:D:44:LYS:NZ	2.28	0.45
1:1:1754:G:H2'	1:1:1755:C:C6	2.50	0.45
1:1:2284:C:C5	1:1:2285:C:C4	3.04	0.45
1:1:2291:A:H2'	1:1:2292:U:C6	2.51	0.45
1:1:2586:G:O6	27:K:242:ALA:N	2.35	0.45
1:1:2680:A:O2'	1:1:2681:U:OP1	2.30	0.45
1:1:3156:U:O2'	1:1:3157:U:OP1	2.31	0.45
1:1:3275:U:HO2'	1:1:3276:G:P	2.39	0.45
1:1:3366:G:C6	1:1:3367:C:N4	2.85	0.45
2:X:118:VAL:O	2:X:137:VAL:N	2.40	0.45
3:3:120:C:H41	21:H:262:LYS:HZ2	1.63	0.45
5:4:38:U:O4	26:j:89:ARG:HD2	2.16	0.45
5:4:81:U:C5'	5:4:82:U:H5'	2.42	0.45
6:Z:111:ASN:O	6:Z:123:TYR:N	2.49	0.45
7:A:69:A:H2'	7:A:70:C:O4'	2.14	0.45
15:E:36:GLU:CD	15:E:163:ARG:NH1	2.71	0.45
15:E:96:LEU:O	15:E:97:ASN:ND2	2.49	0.45
16:e:25:LEU:HD22	16:e:87:VAL:HG21	1.98	0.45
17:F:216:ASP:OD2	17:F:278:ILE:HG22	2.16	0.45
35:O:20:VAL:O	35:O:66:THR:OG1	2.30	0.45
35:O:45:LEU:HD21	35:O:55:ARG:HH11	1.80	0.45
37:P:117:ASN:O	37:P:133:ILE:HG22	2.16	0.45
37:P:121:VAL:HG23	37:P:122:ASN:N	2.31	0.45
39:Q:181:ALA:O	39:Q:184:THR:HG22	2.15	0.45
46:U:43:TYR:CE2	46:U:122:HIS:HE1	2.33	0.45
1:1:431:U:C2	1:1:432:G:C8	3.04	0.45
1:1:521:A:N6	1:1:571:U:H3	1.99	0.45
1:1:677:A:C4	1:1:786:A:C2	3.03	0.45
1:1:1136:A:H2'	1:1:1137:C:C6	2.51	0.45
1:1:1203:A:N6	1:1:1300:G:H2'	2.31	0.45
1:1:1233:G:C2	1:1:1234:G:C8	3.04	0.45
1:1:1238:C:O2	1:1:1238:C:H2'	2.15	0.45
1:1:1617:G:H2'	1:1:1618:G:C8	2.51	0.45
1:1:1784:G:H2'	1:1:1785:U:O4'	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1789:G:H2'	1:1:1790:G:C8	2.51	0.45
1:1:1803:C:H2'	1:1:1804:A:C8	2.51	0.45
1:1:2137:U:OP2	1:1:2142:A:N6	2.50	0.45
1:1:2258:U:H2'	1:1:2259:A:O4'	2.17	0.45
1:1:2703:A:C6	21:H:23:ARG:NH1	2.84	0.45
1:1:2859:U:O2'	1:1:2860:U:O5'	2.21	0.45
1:1:2954:U:HO2'	1:1:2955:U:P	2.37	0.45
1:1:3051:U:C2	1:1:3052:G:C8	3.04	0.45
2:X:93:LEU:HA	4:Y:20:LEU:O	2.16	0.45
5:4:71:A:O2'	5:4:72:A:O5'	2.22	0.45
6:Z:26:VAL:HA	27:K:45:ASN:OD1	2.16	0.45
7:A:3:G:C2	7:A:4:U:C2	3.05	0.45
9:B:13:C:N3	9:B:23:A:N6	2.64	0.45
10:b:14:VAL:HG12	10:b:79:HIS:O	2.16	0.45
21:H:187:THR:OG1	21:H:188:GLU:N	2.49	0.45
21:H:217:GLU:O	21:H:221:GLU:HG3	2.15	0.45
25:J:96:PRO:HB2	25:J:99:PRO:HD2	1.98	0.45
27:K:208:GLU:O	27:K:211:LEU:HB3	2.16	0.45
37:P:39:ALA:HB2	37:P:63:ARG:NH1	2.32	0.45
37:P:116:LEU:HB3	37:P:133:ILE:CG2	2.46	0.45
39:Q:50:ASN:HA	39:Q:53:LYS:HB2	1.98	0.45
1:1:222:A:H2'	1:1:223:U:O4'	2.16	0.45
1:1:559:A:N6	1:1:560:G:C2	2.84	0.45
1:1:1176:C:O2'	39:Q:89:SER:HB2	2.16	0.45
1:1:1246:G:O4'	1:1:1264:G:H3'	2.15	0.45
1:1:1249:G:H2'	1:1:1250:G:O4'	2.17	0.45
1:1:1385:C:N4	1:1:1387:G:N7	2.63	0.45
1:1:1493:G:H5''	1:1:1494:U:OP1	2.16	0.45
1:1:1571:A:H61	1:1:1573:G:H1'	1.80	0.45
1:1:1902:G:C6	1:1:1903:U:C2	3.04	0.45
1:1:1908:A:N6	1:1:1909:A:C6	2.85	0.45
1:1:2158:A:N7	1:1:2177:G:C2	2.85	0.45
1:1:2850:G:H3'	1:1:2850:G:OP2	2.15	0.45
1:1:3354:U:H5''	1:1:3355:U:H5'	1.98	0.45
2:X:39:VAL:HG22	2:X:58:VAL:HG12	1.97	0.45
2:X:54:LEU:HD22	2:X:85:TRP:CH2	2.52	0.45
3:3:119:U:O4	21:H:262:LYS:NZ	2.49	0.45
5:4:114:G:OP2	5:4:114:G:H8	1.99	0.45
5:4:142:C:OP1	37:P:38:ARG:NH1	2.49	0.45
5:4:145:U:H2'	5:4:146:U:C6	2.52	0.45
17:F:4:ARG:O	17:F:5:LYS:HB3	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:F:194:TRP:O	17:F:198:HIS:ND1	2.33	0.45
19:G:23:PRO:O	19:G:25:VAL:N	2.49	0.45
23:I:66:SER:HB3	23:I:76:LEU:HD23	1.99	0.45
27:K:140:VAL:HG22	27:K:166:LEU:HD21	1.98	0.45
35:O:47:ASP:OD2	35:O:49:PRO:HD3	2.16	0.45
39:Q:8:VAL:O	39:Q:118:VAL:HG22	2.15	0.45
43:S:98:LYS:HZ3	43:S:118:GLY:HA3	1.78	0.45
44:s:49:VAL:HB	44:s:137:VAL:CG2	2.46	0.45
44:s:190:LYS:HD2	44:s:211:GLU:O	2.16	0.45
45:T:105:LEU:CD1	45:T:135:LYS:HG3	2.46	0.45
46:U:9:VAL:HG22	46:U:61:ILE:HD13	1.99	0.45
48:W:54:VAL:HA	48:W:66:VAL:O	2.15	0.45
1:1:86:G:C4	33:N:13:HIS:HE1	2.34	0.45
1:1:198:A:N6	1:1:219:A:N7	2.64	0.45
1:1:553:U:H3'	1:1:554:A:C8	2.51	0.45
1:1:691:A:H62	19:G:48:GLN:CG	2.28	0.45
1:1:706:A:C6	1:1:714:G:C2	3.04	0.45
1:1:737:G:C2	1:1:738:A:C5	3.04	0.45
1:1:1072:G:C6	1:1:1087:G:C6	3.05	0.45
1:1:1109:U:C4	1:1:1110:U:C4	3.05	0.45
1:1:1182:A:H2'	1:1:1183:C:C6	2.51	0.45
1:1:1246:G:H5'	1:1:1263:A:H4'	1.99	0.45
1:1:1599:G:H2'	1:1:1600:U:O4'	2.17	0.45
1:1:1909:A:N6	1:1:1910:A:N1	2.64	0.45
1:1:2207:A:C5	1:1:2208:A:H8	2.34	0.45
1:1:2356:A:C5	1:1:2357:A:N7	2.85	0.45
1:1:2409:G:C2	1:1:2813:A:C2	3.05	0.45
1:1:3044:G:H2'	1:1:3045:G:C8	2.51	0.45
1:1:3044:G:H2'	1:1:3045:G:H8	1.81	0.45
3:3:27:A:P	21:H:57:ASN:H	2.39	0.45
5:4:29:U:H2'	5:4:30:C:H6	1.81	0.45
7:A:6:G:N1	7:A:66:A:N6	2.63	0.45
7:A:58:A:H4'	7:A:59:A:OP1	2.17	0.45
15:E:60:LYS:HB3	15:E:73:GLU:OE2	2.16	0.45
25:J:164:SER:OG	25:J:165:ASP:N	2.48	0.45
44:s:101:MET:HE2	44:s:110:LEU:HD11	1.99	0.45
44:s:158:PHE:HB2	44:s:162:GLN:HE22	1.81	0.45
1:1:199:A:C4	1:1:201:A:C8	3.04	0.45
1:1:407:A:N3	1:1:407:A:H2'	2.32	0.45
1:1:503:C:H2'	1:1:504:A:H8	1.79	0.45
1:1:650:C:H2'	1:1:651:G:H8	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:937:G:H5''	1:1:938:C:OP2	2.16	0.45
1:1:962:A:O2'	1:1:2817:A:N1	2.40	0.45
1:1:1090:G:H2'	1:1:1091:A:C8	2.52	0.45
1:1:1157:G:O2'	1:1:1169:A:N3	2.46	0.45
1:1:1233:G:C2	1:1:1256:G:C5	3.05	0.45
1:1:1244:A:C2	1:1:1248:C:OP2	2.69	0.45
1:1:1469:C:HO2'	1:1:1470:U:P	2.36	0.45
1:1:2440:G:C2	1:1:2441:A:N7	2.85	0.45
1:1:2498:U:H2'	1:1:2499:U:O4'	2.17	0.45
1:1:2526:C:C5'	15:E:37:ARG:NH1	2.80	0.45
1:1:3087:A:H5''	1:1:3088:G:OP2	2.17	0.45
1:1:3269:U:HO2'	1:1:3270:U:P	2.34	0.45
1:1:3318:G:C6	1:1:3320:A:C6	3.05	0.45
7:A:19:G:H2'	7:A:19:G:N3	2.32	0.45
12:c:40:HIS:CD2	12:c:41:HIS:CD2	3.05	0.45
15:E:28:LYS:HB3	15:E:123:ARG:CZ	2.46	0.45
16:e:13:LYS:O	16:e:17:VAL:HG23	2.17	0.45
19:G:282:SER:N	43:S:125:ASP:OD2	2.42	0.45
21:H:55:PHE:CE1	21:H:60:ILE:HG12	2.52	0.45
28:k:27:SER:C	28:k:29:LYS:H	2.24	0.45
33:N:28:GLN:OE1	37:P:201:ARG:HD3	2.17	0.45
34:n:22:PRO:HG3	34:n:41:ARG:HH12	1.82	0.45
35:O:36:VAL:HG21	35:O:55:ARG:NH1	2.32	0.45
35:O:82:SER:O	35:O:85:TRP:HB3	2.16	0.45
1:1:40:A:N7	1:1:937:G:C5	2.84	0.45
1:1:59:G:O2'	1:1:60:A:O5'	2.18	0.45
1:1:68:C:H2'	1:1:69:C:H6	1.82	0.45
1:1:148:G:O2'	1:1:149:U:H6	2.00	0.45
1:1:291:C:H2'	1:1:292:U:H6	1.81	0.45
1:1:343:U:HO2'	1:1:344:A:P	2.40	0.45
1:1:364:G:OP2	30:l:52:LYS:HE3	2.16	0.45
1:1:646:A:C2	1:1:2375:G:C2	3.05	0.45
1:1:782:U:H2'	1:1:783:A:O4'	2.17	0.45
1:1:971:G:H2'	1:1:972:A:H8	1.82	0.45
1:1:1078:U:C2	1:1:1081:U:OP2	2.70	0.45
1:1:1223:A:H5'	1:1:1224:C:OP2	2.17	0.45
1:1:1266:G:OP2	1:1:1266:G:H8	1.99	0.45
1:1:1302:A:H1'	1:1:2887:A:C2	2.52	0.45
1:1:1421:G:H2'	1:1:1422:G:H8	1.81	0.45
1:1:1498:A:OP1	45:T:6:THR:OG1	2.32	0.45
1:1:1759:C:H3'	1:1:1760:A:H5''	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1793:C:H5''	1:1:1794:G:OP1	2.17	0.45
1:1:1846:C:O2'	1:1:1847:A:OP1	2.31	0.45
1:1:2278:C:P	38:p:23:ARG:NH1	2.81	0.45
1:1:2590:A:C4	1:1:2591:A:C8	3.05	0.45
1:1:2632:G:O6	1:1:2647:A:N6	2.50	0.45
1:1:2685:C:H2'	1:1:2686:A:H8	1.82	0.45
1:1:2841:G:H2'	1:1:2844:C:H42	1.82	0.45
1:1:2941:A:C2'	1:1:2942:C:OP2	2.65	0.45
1:1:3138:U:OP2	17:F:30:LYS:HG3	2.16	0.45
1:1:3247:G:H2'	1:1:3248:C:C6	2.52	0.45
1:1:3304:U:OP2	17:F:332:ARG:NH2	2.48	0.45
3:3:3:U:H2'	3:3:4:U:C6	2.52	0.45
8:a:125:LYS:O	8:a:126:LEU:HG	2.17	0.45
9:B:28:C:C2	9:B:43:G:C2	3.05	0.45
9:B:58:A:C6	9:B:61:C:C2	3.05	0.45
10:b:30:ASP:HA	10:b:77:TYR:HE2	1.82	0.45
15:E:51:ASP:OD1	15:E:52:SER:N	2.49	0.45
17:F:232:ARG:HH12	17:F:268:GLY:HA3	1.81	0.45
19:G:222:VAL:HG13	19:G:225:VAL:HB	1.99	0.45
23:I:55:LEU:HB3	23:I:98:VAL:HG11	1.98	0.45
28:k:43:LEU:O	28:k:46:GLU:HG2	2.16	0.45
29:L:4:ILE:O	29:L:59:ASN:N	2.36	0.45
30:l:47:TYR:HB3	30:l:49:TRP:CD1	2.52	0.45
44:s:62:GLU:HA	44:s:65:GLU:HB3	1.99	0.45
1:1:201:A:H2'	1:1:202:G:H8	1.82	0.45
1:1:558:U:H4'	1:1:559:A:OP2	2.16	0.45
1:1:568:G:H2'	1:1:569:A:O4'	2.16	0.45
1:1:740:G:C2	1:1:741:U:C2	3.04	0.45
1:1:1018:G:N2	1:1:1034:U:O2	2.40	0.45
1:1:1712:G:H5''	1:1:1713:G:OP2	2.17	0.45
1:1:2116:G:O2'	1:1:2117:A:OP1	2.27	0.45
1:1:2206:G:C2	1:1:2238:G:C2	3.05	0.45
1:1:2243:A:C4	1:1:2313:A:N7	2.85	0.45
1:1:2376:G:H5''	1:1:2377:G:OP2	2.17	0.45
1:1:2500:A:O2'	1:1:2501:U:OP1	2.31	0.45
1:1:2954:U:H4'	1:1:2955:U:C5'	2.47	0.45
1:1:3222:U:O4	1:1:3263:G:O6	2.34	0.45
1:1:3248:C:H2'	1:1:3249:C:O4'	2.16	0.45
1:1:3321:C:H2'	1:1:3322:A:C8	2.51	0.45
3:3:1:G:C2	3:3:2:G:C8	3.05	0.45
6:Z:136:ALA:HA	6:Z:139:ILE:HG22	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:b:33:SER:OG	10:b:34:LYS:N	2.49	0.45
10:b:98:THR:HA	10:b:101:PHE:CD2	2.52	0.45
12:c:21:ARG:HH12	20:g:38:ILE:HG23	1.81	0.45
12:c:76:ASP:OD2	12:c:115:LYS:HB3	2.17	0.45
15:E:44:ILE:HG22	15:E:87:PHE:CD1	2.52	0.45
21:H:224:LYS:O	21:H:228:ALA:HB2	2.17	0.45
23:I:169:ASP:HB3	23:I:174:LEU:HD21	1.97	0.45
25:J:147:LEU:O	25:J:151:ARG:N	2.48	0.45
35:O:48:GLY:O	35:O:50:LYS:N	2.50	0.45
37:P:153:ASP:OD1	37:P:154:PRO:HD2	2.17	0.45
39:Q:22:VAL:HG21	39:Q:120:VAL:HG11	1.99	0.45
39:Q:178:VAL:HG12	39:Q:182:ASN:ND2	2.30	0.45
1:1:86:G:O2'	1:1:87:U:P	2.75	0.45
1:1:203:G:H2'	1:1:204:A:C8	2.52	0.45
1:1:390:G:C5	1:1:391:A:C8	3.05	0.45
1:1:551:A:N6	1:1:552:G:O6	2.50	0.45
1:1:579:G:H2'	1:1:580:C:C6	2.52	0.45
1:1:600:G:O2'	1:1:602:A:N6	2.33	0.45
1:1:646:A:C2	1:1:2375:G:N1	2.85	0.45
1:1:750:G:C2	1:1:751:A:C8	3.04	0.45
1:1:976:U:P	43:S:144:ARG:HH22	2.37	0.45
1:1:1051:U:H5'	1:1:1052:U:OP2	2.17	0.45
1:1:1338:C:H2'	1:1:1339:C:H6	1.82	0.45
1:1:1561:G:H2'	1:1:1562:C:O4'	2.17	0.45
1:1:1657:C:N4	1:1:1798:A:OP2	2.50	0.45
1:1:1675:G:N2	1:1:1773:C:C4	2.85	0.45
1:1:1764:U:OP1	45:T:43:LYS:HD2	2.17	0.45
1:1:1776:G:H2'	1:1:1777:U:C6	2.52	0.45
1:1:2187:G:O2'	1:1:2188:A:H5'	2.17	0.45
1:1:2294:U:H1'	1:1:2297:U:H5	1.81	0.45
1:1:2353:G:H2'	1:1:2354:C:C6	2.52	0.45
1:1:2614:G:H5'	1:1:2615:G:OP2	2.17	0.45
1:1:2883:U:H2'	1:1:2884:C:C6	2.52	0.45
1:1:2900:A:H2'	1:1:2901:G:C8	2.51	0.45
2:X:23:MET:CG	2:X:34:LEU:HB2	2.47	0.45
7:A:18:G:H5'	7:A:60:U:O2'	2.17	0.45
7:A:52:G:N1	7:A:53:G:C6	2.85	0.45
9:B:17(A):G:C2'	40:q:87:ARG:HH12	2.30	0.45
18:f:14:ILE:HG12	18:f:16:LEU:HD12	1.99	0.45
22:h:9:VAL:HG21	23:I:171:PRO:HG2	1.97	0.45
27:K:105:LYS:HA	27:K:108:ARG:HG2	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:o:97:ARG:HE	36:o:122:ARG:HB3	1.81	0.45
42:r:116:UNK:O	42:r:119:UNK:N	2.50	0.45
1:1:11:A:C2	5:4:148:G:C2	3.05	0.45
1:1:89:A:H2'	1:1:90:C:C6	2.52	0.45
1:1:353:G:O2'	1:1:354:U:P	2.75	0.45
1:1:801:A:H4'	1:1:802:C:O5'	2.16	0.45
1:1:832:G:C2	1:1:863:C:C2	3.05	0.45
1:1:1349:G:H2'	1:1:1349:G:N3	2.32	0.45
1:1:1433:A:H1'	20:g:27:ARG:CZ	2.46	0.45
1:1:1459:C:H2'	1:1:1460:A:C8	2.51	0.45
1:1:2146:C:H2'	1:1:2147:A:O4'	2.17	0.45
1:1:2408:U:H2'	1:1:2409:G:O4'	2.17	0.45
1:1:2437:G:C5	1:1:2438:A:C8	3.05	0.45
1:1:2694:A:H2'	1:1:2695:A:C8	2.52	0.45
1:1:3184:A:H5''	1:1:3185:U:OP2	2.17	0.45
16:e:66:LYS:HD2	16:e:105:ALA:OXT	2.16	0.45
17:F:49:TYR:C	17:F:79:VAL:HG23	2.41	0.45
17:F:232:ARG:NH1	17:F:268:GLY:CA	2.80	0.45
19:G:157:GLU:OE2	19:G:210:ALA:HB3	2.16	0.45
25:J:92:ILE:HD11	43:S:4:ASP:CB	2.44	0.45
25:J:221:LYS:C	25:J:227:GLY:HA3	2.42	0.45
29:L:113:GLU:OE2	29:L:115:ARG:CZ	2.65	0.45
32:m:27:ILE:HD12	32:m:39:ARG:HE	1.82	0.45
35:O:55:ARG:NH2	35:O:77:ARG:HA	2.31	0.45
43:S:3:ILE:H	43:S:3:ILE:HD12	1.82	0.45
1:1:278:U:OP2	11:C:49:GLY:HA3	2.17	0.45
1:1:401:U:O2'	1:1:402:A:OP2	2.27	0.45
1:1:409:A:OP2	1:1:410:U:O4	2.35	0.45
1:1:534:U:O4	35:O:74:ARG:NH2	2.49	0.45
1:1:1135:A:H2'	1:1:1136:A:H8	1.80	0.45
1:1:1412:G:C2	1:1:1413:G:C8	3.05	0.45
1:1:1919:G:C2	1:1:1934:G:C6	3.05	0.45
1:1:2100:A:H5'	45:T:71:ARG:NH1	2.29	0.45
1:1:2136:C:N4	1:1:2142:A:H1'	2.32	0.45
1:1:2761:G:O6	1:1:2795:U:H5''	2.17	0.45
1:1:3055:U:H5''	1:1:3056:U:OP1	2.16	0.45
1:1:3175:U:OP1	22:h:10:LYS:NZ	2.33	0.45
1:1:3302:U:N3	1:1:3303:G:C5	2.85	0.45
9:B:67:C:O2'	9:B:68:G:H5'	2.16	0.45
10:b:11:ALA:N	10:b:23:VAL:O	2.47	0.45
19:G:214:GLY:O	19:G:218:ALA:N	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:H:107:ARG:NH1	21:H:110:LEU:HD23	2.32	0.45
21:H:232:ASP:OD1	21:H:235:SER:OG	2.21	0.45
25:J:148:VAL:HG12	25:J:181:ILE:HD11	1.99	0.45
31:M:32:ARG:O	31:M:36:VAL:HG23	2.17	0.45
39:Q:55:HIS:HA	39:Q:58:LEU:HB3	1.98	0.45
39:Q:110:PRO:HB2	39:Q:111:PRO:HD3	1.99	0.45
41:R:118:GLN:NE2	41:R:147:GLU:OE2	2.49	0.45
44:s:75:MET:HE1	44:s:147:VAL:HA	1.99	0.45
47:V:32:LYS:HZ3	47:V:97:LYS:HA	1.82	0.45
1:1:93:C:H4'	1:1:94:G:O5'	2.16	0.44
1:1:197:G:C6	1:1:198:A:C6	3.06	0.44
1:1:199:A:HO2'	1:1:200:C:C5'	2.28	0.44
1:1:341:G:N2	5:4:24:G:O6	2.50	0.44
1:1:662:U:H2'	1:1:663:C:C6	2.52	0.44
1:1:784:A:H5'	43:S:69:ARG:HH21	1.81	0.44
1:1:1281:G:H2'	1:1:1282:G:N7	2.32	0.44
1:1:1462:A:H2'	1:1:1463:U:H6	1.82	0.44
1:1:1469:C:C2	1:1:1509:A:H2	2.34	0.44
1:1:1661:G:H5''	1:1:1662:G:OP2	2.18	0.44
1:1:1793:C:H41	15:E:179:LEU:HB2	1.82	0.44
1:1:2119:A:H62	1:1:2120:A:H2	1.65	0.44
1:1:2196:C:C4	1:1:2242:A:N7	2.85	0.44
1:1:2206:G:N3	1:1:2238:G:N2	2.65	0.44
1:1:2508:U:H2'	1:1:2509:U:O4'	2.18	0.44
1:1:3311:C:H2'	1:1:3312:U:H6	1.82	0.44
3:3:27:A:O5'	21:H:57:ASN:ND2	2.43	0.44
3:3:78:U:C2	3:3:79:A:C8	3.06	0.44
5:4:143:U:C2	5:4:144:G:C8	3.04	0.44
10:b:10:VAL:O	10:b:83:THR:HG22	2.18	0.44
14:d:28:LYS:HG3	14:d:29:TYR:CD2	2.52	0.44
16:e:16:LEU:HD21	16:e:97:ASP:HB3	1.99	0.44
28:k:45:ARG:NH2	28:k:90:MET:HE1	2.33	0.44
35:O:81:VAL:O	35:O:85:TRP:CB	2.63	0.44
43:S:90:ASP:OD2	43:S:92:ARG:NH1	2.47	0.44
44:s:109:ARG:H	44:s:109:ARG:HD2	1.81	0.44
44:s:169:LYS:HA	44:s:177:ARG:H	1.81	0.44
1:1:349:A:O2'	1:1:350:C:OP1	2.33	0.44
1:1:658:G:C6	1:1:659:G:C6	3.06	0.44
1:1:1303:A:O2'	1:1:1304:A:O4'	2.31	0.44
1:1:1427:U:H5'	19:G:44:LYS:NZ	2.31	0.44
1:1:1503:A:H2'	1:1:1503:A:N3	2.32	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2523:A:C6	1:1:2587:U:C5	3.05	0.44
1:1:2966:G:C6	1:1:2967:A:C6	3.06	0.44
1:1:2975:U:H2'	1:1:2976:A:C8	2.51	0.44
1:1:3147:G:H2'	1:1:3148:U:C6	2.52	0.44
1:1:3305:A:OP1	17:F:334:ARG:NH2	2.51	0.44
5:4:40:A:C6	5:4:104:A:C2	3.05	0.44
5:4:56:G:C2	5:4:62:C:C2	3.05	0.44
12:c:8:THR:HA	12:c:11:HIS:HB2	1.99	0.44
15:E:121:GLY:O	15:E:123:ARG:HG3	2.17	0.44
17:F:199:PHE:O	17:F:201:LYS:HG2	2.16	0.44
20:g:34:LYS:HZ3	20:g:52:GLN:HE22	1.64	0.44
23:I:132:ALA:O	23:I:136:GLU:HG2	2.17	0.44
27:K:158:ASP:O	27:K:160:ILE:HG13	2.17	0.44
29:L:186:PHE:HB2	29:L:191:LEU:O	2.16	0.44
40:q:58:HIS:ND1	40:q:72:ASP:O	2.50	0.44
45:T:173:ARG:HA	45:T:176:ARG:HB2	2.00	0.44
48:W:32:SER:O	48:W:36:TYR:N	2.46	0.44
1:1:234:G:C2	1:1:235:A:C8	3.04	0.44
1:1:915:A:H5''	1:1:916:G:OP2	2.16	0.44
1:1:957:C:H2'	1:1:958:C:H6	1.82	0.44
1:1:1002:A:H2'	1:1:1003:A:C8	2.50	0.44
1:1:1669:C:OP1	24:i:24:LYS:HD2	2.16	0.44
1:1:1900:A:N6	1:1:1906:G:C2	2.86	0.44
1:1:1944:U:C2	1:1:1945:A:C8	3.06	0.44
1:1:1948:G:N3	1:1:1949:G:C8	2.85	0.44
1:1:2677:G:H5''	1:1:2678:A:OP2	2.16	0.44
1:1:2736:A:H1'	47:V:90:ASN:ND2	2.32	0.44
4:Y:8:PHE:CE1	4:Y:46:PRO:HG3	2.53	0.44
5:4:106:C:H5''	5:4:107:G:OP1	2.18	0.44
5:4:134:G:H5''	6:Z:56:ARG:NH1	2.31	0.44
7:A:3:G:C8	7:A:3:G:OP2	2.70	0.44
9:B:60:U:OP2	9:B:61:C:H5	2.00	0.44
15:E:44:ILE:HG22	15:E:87:PHE:CE1	2.52	0.44
29:L:146:LEU:HD22	29:L:158:ALA:HB2	2.00	0.44
31:M:36:VAL:O	31:M:40:LEU:HB2	2.17	0.44
31:M:109:HIS:CD2	31:M:123:PHE:H	2.36	0.44
33:N:167:PHE:O	33:N:170:LEU:N	2.49	0.44
40:q:152:GLU:HG2	40:q:153:ALA:O	2.17	0.44
1:1:269:G:O2'	1:1:270:U:P	2.76	0.44
1:1:312:C:H2'	1:1:313:A:C8	2.52	0.44
1:1:342:A:N6	1:1:368:G:C4	2.86	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:388:G:H2'	1:1:389:A:C8	2.51	0.44
1:1:429:U:H2'	1:1:430:U:H6	1.82	0.44
1:1:716:A:OP2	12:c:137:LYS:NZ	2.46	0.44
1:1:860:G:C5	15:E:181:LYS:HB2	2.52	0.44
1:1:1231:A:H62	1:1:1276:U:P	2.41	0.44
1:1:1456:A:H8	18:f:26:LYS:HD2	1.83	0.44
1:1:1895:A:C6	1:1:2335:G:N7	2.85	0.44
1:1:2375:G:O6	1:1:2378:C:C2	2.70	0.44
1:1:3114:A:N1	1:1:3115:C:N4	2.65	0.44
1:1:3152:U:H1'	1:1:3294:A:C4	2.53	0.44
2:X:112:SER:OG	2:X:113:ALA:N	2.50	0.44
3:3:76:A:HO2'	3:3:77:G:P	2.39	0.44
5:4:150:G:OP1	6:Z:27:ARG:NH2	2.50	0.44
6:Z:77:GLU:HA	6:Z:133:LEU:HD12	2.00	0.44
9:B:33:U:N3	9:B:35:U:H5''	2.32	0.44
10:b:72:ILE:HD12	10:b:101:PHE:HE1	1.81	0.44
13:D:70:THR:OG1	13:D:71:VAL:N	2.51	0.44
18:f:86:LYS:N	18:f:86:LYS:HD2	2.32	0.44
19:G:126:ILE:HD11	19:G:233:LEU:HD13	2.00	0.44
24:i:103:LYS:O	24:i:107:GLU:N	2.48	0.44
28:k:64:SER:OG	28:k:68:ARG:HD3	2.17	0.44
41:R:30:ARG:NH1	41:R:31:GLU:OE1	2.50	0.44
43:S:122:ILE:HG23	43:S:126:GLN:HB2	1.99	0.44
47:V:119:ALA:O	47:V:122:GLN:N	2.48	0.44
1:1:55:G:C6	1:1:56:G:N7	2.85	0.44
1:1:198:A:H5''	1:1:199:A:OP2	2.18	0.44
1:1:211:A:O2'	1:1:212:G:P	2.76	0.44
1:1:219:A:O2'	1:1:1390:A:N6	2.50	0.44
1:1:995:U:C2	1:1:2637:A:C8	3.04	0.44
1:1:1062:A:H1'	47:V:130:ARG:HH22	1.83	0.44
1:1:1307:G:H4'	1:1:1308:A:O5'	2.18	0.44
1:1:1365:G:H4'	1:1:1366:A:OP2	2.17	0.44
1:1:1470:U:H2'	1:1:1471:U:C6	2.52	0.44
1:1:2761:G:N2	1:1:2798:C:H4'	2.32	0.44
1:1:3108:G:H2'	1:1:3109:G:O4'	2.16	0.44
1:1:3152:U:H1'	1:1:3294:A:N9	2.33	0.44
1:1:3295:A:OP2	17:F:125:SER:HB2	2.17	0.44
7:A:8:U:O2	7:A:15:G:N1	2.51	0.44
7:A:38:A:C8	7:A:39:U:C5	3.05	0.44
9:B:51:G:C6	9:B:52:G:C5	3.06	0.44
12:c:79:TRP:CE3	12:c:82:ILE:HD12	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:c:128:ARG:NH1	33:N:63:VAL:HG13	2.33	0.44
14:d:47:LEU:HA	14:d:50:THR:HG22	1.99	0.44
19:G:206:LEU:HB2	19:G:246:ARG:HH21	1.83	0.44
30:l:2:GLY:O	30:l:7:SER:HB3	2.17	0.44
41:R:16:SER:HB3	41:R:149:VAL:HG22	1.99	0.44
41:R:107:LEU:HB3	41:R:152:GLU:OE2	2.16	0.44
41:R:138:LYS:HD2	41:R:140:GLU:OE2	2.17	0.44
1:1:49:A:C6	37:P:187:ARG:NH1	2.83	0.44
1:1:60:A:H2'	1:1:61:A:H8	1.82	0.44
1:1:189:G:HO2'	1:1:190:U:P	2.40	0.44
1:1:211:A:C6	1:1:229:G:N2	2.85	0.44
1:1:400:G:H4'	1:1:401:U:OP1	2.17	0.44
1:1:836:A:C4	1:1:837:A:C8	3.06	0.44
1:1:836:A:OP1	13:D:4:ARG:HB3	2.17	0.44
1:1:839:C:N4	13:D:4:ARG:HH12	2.16	0.44
1:1:918:C:H2'	1:1:919:U:H6	1.83	0.44
1:1:923:C:O2'	1:1:924:G:H5''	2.18	0.44
1:1:971:G:H2'	1:1:972:A:C8	2.52	0.44
1:1:991:G:C6	1:1:1059:G:C6	3.05	0.44
1:1:1035:G:C6	1:1:1036:A:N7	2.86	0.44
1:1:1103:A:O2'	1:1:1104:G:OP1	2.26	0.44
1:1:1331:U:O2'	1:1:1332:A:OP1	2.32	0.44
1:1:1573:G:H2'	1:1:1574:C:O4'	2.18	0.44
1:1:1897:G:H2'	1:1:1898:G:O4'	2.17	0.44
1:1:2113:A:H2'	1:1:2114:C:O4'	2.17	0.44
1:1:2356:A:C4	1:1:2357:A:C8	3.06	0.44
1:1:2403:G:O2'	1:1:2404:A:P	2.75	0.44
1:1:2544:U:C4	1:1:2545:C:C4	3.05	0.44
1:1:2556:C:H2'	1:1:2557:A:C8	2.53	0.44
1:1:2687:G:P	21:H:8:LYS:HZ2	2.40	0.44
3:3:77:G:O2'	3:3:78:U:P	2.75	0.44
3:3:100:C:N4	3:3:101:G:C6	2.85	0.44
5:4:44:A:C4	5:4:45:C:C5	3.05	0.44
5:4:53:A:H2'	5:4:54:A:C8	2.53	0.44
8:a:42:GLN:NE2	8:a:127:GLU:HA	2.32	0.44
25:J:207:LEU:HB3	25:J:243:MET:HE2	2.00	0.44
33:N:46:ILE:CG2	33:N:49:ARG:HB2	2.47	0.44
33:N:56:PRO:HB3	33:N:75:PHE:CD1	2.52	0.44
40:q:51:5CT:H10	40:q:51:5CT:H3	1.58	0.44
44:s:62:GLU:OE1	44:s:62:GLU:N	2.36	0.44
46:U:42:TRP:CH2	46:U:56:GLY:HA3	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:76:G:OP2	1:1:76:G:C8	2.67	0.44
1:1:226:C:H2'	1:1:227:G:O4'	2.17	0.44
1:1:620:U:C4	1:1:622:A:C6	3.06	0.44
1:1:659:G:H8	1:1:659:G:O5'	2.01	0.44
1:1:1030:A:H2'	1:1:1031:C:C6	2.52	0.44
1:1:1228:C:H5''	1:1:1229:G:OP2	2.18	0.44
1:1:1378:U:H2'	1:1:1379:G:H8	1.83	0.44
1:1:1427:U:H5''	19:G:44:LYS:HZ1	1.83	0.44
1:1:1483:G:O2'	1:1:1484:U:P	2.76	0.44
1:1:1723:A:N1	1:1:1788:C:O2'	2.46	0.44
1:1:2494:A:C2	1:1:2495:C:H1'	2.53	0.44
1:1:2546:C:C4	1:1:2547:A:C8	3.05	0.44
1:1:2554:A:C5	13:D:62:LYS:NZ	2.78	0.44
1:1:2846:U:C5	36:o:97:ARG:NH1	2.86	0.44
1:1:3102:G:C2	1:1:3103:A:C5	3.06	0.44
1:1:3261:C:H2'	1:1:3262:U:C6	2.53	0.44
1:1:3279:A:C6	1:1:3280:U:C4	3.06	0.44
1:1:3306:U:H2'	1:1:3307:A:H5''	2.00	0.44
2:X:23:MET:HG3	2:X:34:LEU:HB2	1.98	0.44
7:A:35:U:H5'	7:A:36:U:OP2	2.17	0.44
15:E:34:TYR:CE1	15:E:38:HIS:CD2	3.06	0.44
19:G:212:ASP:OD1	19:G:215:ILE:HG22	2.17	0.44
19:G:318:LEU:HD21	25:J:145:ARG:HH12	1.82	0.44
25:J:74:SER:HB3	47:V:141:VAL:O	2.18	0.44
26:j:47:VAL:O	26:j:50:SER:HB2	2.17	0.44
29:L:6:THR:O	29:L:56:ALA:HA	2.18	0.44
29:L:40:HIS:CE1	29:L:41:ILE:HB	2.52	0.44
39:Q:76:PRO:HD3	39:Q:147:TRP:CE2	2.52	0.44
48:W:79:LEU:O	48:W:83:TYR:N	2.50	0.44
1:1:88:A:C2	1:1:99:A:N1	2.86	0.44
1:1:198:A:C6	1:1:219:A:C5	3.06	0.44
1:1:202:G:C5	1:1:203:G:C8	3.06	0.44
1:1:301:G:C5	1:1:302:U:C5	3.05	0.44
1:1:347:G:H2'	1:1:348:A:H8	1.80	0.44
1:1:505:G:OP1	19:G:320:ASN:HB2	2.18	0.44
1:1:812:G:C2	1:1:929:A:C2	3.06	0.44
1:1:1080:A:OP2	21:H:140:ARG:HB2	2.17	0.44
1:1:1140:G:C6	1:1:1141:C:N4	2.86	0.44
1:1:1240:A:P	1:1:1241:U:OP2	2.76	0.44
1:1:1453:A:C6	1:1:1454:A:C5	3.06	0.44
1:1:1508:C:H2'	1:1:1509:A:O4'	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1558:A:O2'	6:Z:34:LEU:N	2.51	0.44
1:1:1616:U:H2'	1:1:1617:G:C8	2.53	0.44
1:1:1661:G:C2	1:1:1662:G:C5	3.06	0.44
1:1:2125:A:H5''	1:1:2126:A:OP2	2.18	0.44
1:1:2221:G:H21	1:1:2223:A:H3'	1.82	0.44
1:1:2923:U:H2'	1:1:2924:U:H6	1.82	0.44
1:1:3029:A:O5'	1:1:3029:A:H8	2.01	0.44
1:1:3234:A:OP2	1:1:3234:A:H8	2.01	0.44
1:1:3244:A:H4'	1:1:3245:A:OP2	2.16	0.44
1:1:3317:U:H4'	1:1:3318:G:O4'	2.16	0.44
1:1:3353:G:O2'	1:1:3356:G:H5'	2.17	0.44
8:a:111:LEU:HD23	8:a:116:LYS:NZ	2.33	0.44
21:H:203:HIS:O	21:H:206:GLN:HB3	2.18	0.44
23:I:96:VAL:HG12	23:I:98:VAL:HG23	1.99	0.44
23:I:170:LYS:O	23:I:174:LEU:N	2.48	0.44
31:M:15:GLU:OE1	31:M:132:ASN:ND2	2.49	0.44
33:N:18:TRP:CD1	33:N:18:TRP:H	2.36	0.44
33:N:98:ASP:OD1	33:N:100:ARG:HG2	2.18	0.44
34:n:9:ILE:O	34:n:13:MET:HG3	2.17	0.44
36:o:94:SER:O	36:o:103:LEU:N	2.51	0.44
41:R:31:GLU:HG2	41:R:60:PHE:CD1	2.53	0.44
42:r:29:UNK:HA	42:r:197:UNK:O	2.17	0.44
46:U:46:GLN:HE21	46:U:52:LYS:HB2	1.82	0.44
1:1:215:G:H2'	1:1:216:G:H8	1.83	0.44
1:1:438:A:OP1	20:g:118:LYS:NZ	2.43	0.44
1:1:571:U:H2'	1:1:572:A:H8	1.83	0.44
1:1:597:G:N3	1:1:598:A:C8	2.86	0.44
1:1:668:G:H2'	1:1:669:U:C6	2.52	0.44
1:1:701:G:H2'	1:1:702:C:C6	2.52	0.44
1:1:1203:A:H61	1:1:1300:G:H2'	1.83	0.44
1:1:1242:G:H2'	1:1:1243:G:C8	2.53	0.44
1:1:1317:A:O2'	1:1:1318:A:H3'	2.17	0.44
1:1:1421:G:N3	1:1:1422:G:C8	2.86	0.44
1:1:1471:U:C2	1:1:1472:U:C5	3.06	0.44
1:1:1846:C:N3	49:z:9:UNK:O	2.51	0.44
1:1:2418:G:N2	40:q:73:LEU:HD11	2.33	0.44
1:1:2723:U:H5'	47:V:88:ARG:O	2.18	0.44
1:1:2842:U:H5''	1:1:2844:C:H41	1.82	0.44
1:1:3037:U:OP1	17:F:348:ARG:HD3	2.18	0.44
1:1:3268:A:C8	1:1:3268:A:OP2	2.71	0.44
5:4:58:G:H4'	5:4:59:A:OP1	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:53:G:H5'	44:s:69:ILE:HG12	2.00	0.44
10:b:42:LEU:HD23	10:b:96:VAL:HG12	2.00	0.44
19:G:27:SER:O	19:G:279:HIS:HE1	2.01	0.44
27:K:150:LEU:O	27:K:199:ALA:HA	2.18	0.44
33:N:77:LEU:O	33:N:81:LYS:N	2.35	0.44
40:q:66:THR:HG22	40:q:68:LYS:HG2	1.99	0.44
1:1:48:A:H5''	1:1:49:A:OP1	2.17	0.43
1:1:58:G:H4'	37:P:155:VAL:HG12	1.99	0.43
1:1:72:C:N4	1:1:74:G:C8	2.86	0.43
1:1:120:G:H4'	1:1:121:A:O5'	2.18	0.43
1:1:359:U:C2	1:1:920:A:N6	2.86	0.43
1:1:405:U:H5	1:1:406:G:C5	2.35	0.43
1:1:616:G:C2	1:1:617:G:C5	3.06	0.43
1:1:859:G:C6	1:1:861:C:C4	3.05	0.43
1:1:932:U:O2'	1:1:933:A:O5'	2.26	0.43
1:1:1233:G:H2'	1:1:1233:G:N3	2.33	0.43
1:1:1504:A:C5	1:1:1505:C:C5	3.05	0.43
1:1:1517:G:C6	1:1:1518:U:C4	3.06	0.43
1:1:1829:G:H5''	1:1:1830:G:H5'	2.00	0.43
1:1:1894:U:H2'	1:1:1895:A:C8	2.52	0.43
1:1:2100:A:H3'	1:1:2101:C:C6	2.53	0.43
1:1:2127:U:H2'	1:1:2128:C:H6	1.82	0.43
1:1:2493:U:H2'	1:1:2495:C:C5	2.53	0.43
1:1:2766:U:H2'	1:1:2767:U:C6	2.52	0.43
1:1:2784:G:C5	1:1:2785:A:N7	2.85	0.43
1:1:2930:A:H2'	1:1:2931:C:C6	2.51	0.43
1:1:3077:A:N6	1:1:3080:G:C5	2.86	0.43
1:1:3236:U:H2'	1:1:3237:U:C6	2.53	0.43
1:1:3344:A:H5''	1:1:3345:G:O5'	2.17	0.43
5:4:63:G:O6	5:4:97:A:N1	2.51	0.43
5:4:154:C:H2'	5:4:155:A:H8	1.78	0.43
7:A:30:G:H2'	7:A:31:A:H8	1.83	0.43
9:B:6:G:H2'	9:B:7:G:C8	2.53	0.43
12:c:135:GLU:OE2	12:c:139:ARG:NH2	2.36	0.43
15:E:32:LEU:HA	15:E:36:GLU:OE1	2.18	0.43
18:f:5:LYS:O	18:f:7:VAL:HG23	2.18	0.43
20:g:34:LYS:HZ2	20:g:52:GLN:NE2	2.08	0.43
22:h:51:TYR:HA	22:h:98:VAL:HG23	1.99	0.43
33:N:189:GLU:O	33:N:192:GLU:HG2	2.18	0.43
35:O:20:VAL:HG13	35:O:66:THR:OG1	2.18	0.43
37:P:11:GLN:HG2	37:P:44:ARG:NH2	2.33	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:Q:78:ARG:O	39:Q:81:TYR:N	2.50	0.43
46:U:12:ARG:O	46:U:13:ARG:HB2	2.18	0.43
46:U:40:ARG:NH1	46:U:43:TYR:CD2	2.85	0.43
46:U:90:MET:HE1	46:U:114:HIS:CG	2.53	0.43
1:1:73:C:O2'	1:1:74:G:OP1	2.26	0.43
1:1:521:A:C6	1:1:572:A:C6	3.07	0.43
1:1:585:A:H2'	1:1:586:C:C6	2.53	0.43
1:1:648:C:C5	1:1:2375:G:H4'	2.52	0.43
1:1:761:A:N6	1:1:771:A:C8	2.86	0.43
1:1:796:U:C2	1:1:797:U:C5	3.06	0.43
1:1:880:G:C4	1:1:882:A:N7	2.87	0.43
1:1:884:A:H5''	1:1:885:U:OP1	2.18	0.43
1:1:916:G:H21	15:E:3:ARG:HH21	1.65	0.43
1:1:1095:U:O2	47:V:127:GLN:HA	2.18	0.43
1:1:1104:G:H2'	1:1:1104:G:N3	2.33	0.43
1:1:1490:A:N7	1:1:1491:A:C5	2.86	0.43
1:1:1534:A:H62	1:1:1535:A:N6	2.17	0.43
1:1:1659:U:C2	1:1:1660:C:C5	3.06	0.43
1:1:2111:G:O2'	1:1:2112:U:OP1	2.29	0.43
1:1:2366:C:H4'	17:F:259:HIS:CE1	2.54	0.43
1:1:2374:C:N4	1:1:2941:A:C4	2.86	0.43
1:1:2946:A:H5''	1:1:2947:G:H5'	2.00	0.43
1:1:3017:A:H2'	1:1:3018:C:C6	2.52	0.43
3:3:19:C:C2	3:3:20:A:C8	3.06	0.43
7:A:39:U:H2'	7:A:40:C:C6	2.53	0.43
8:a:59:VAL:HG13	8:a:60:ARG:N	2.30	0.43
10:b:32:GLY:HA2	10:b:40:HIS:HD1	1.83	0.43
11:C:2:VAL:N	11:C:90:HIS:O	2.52	0.43
13:D:46:THR:HG21	13:D:59:CYS:SG	2.58	0.43
21:H:90:HIS:HB2	21:H:226:TYR:CE1	2.53	0.43
21:H:108:ARG:NH1	21:H:253:PHE:CD1	2.86	0.43
25:J:221:LYS:O	25:J:227:GLY:HA3	2.18	0.43
31:M:36:VAL:O	31:M:40:LEU:CB	2.66	0.43
37:P:37:HIS:HE1	37:P:63:ARG:NH1	2.16	0.43
44:s:170:TRP:CD1	44:s:177:ARG:HG3	2.53	0.43
47:V:17:ARG:HH12	47:V:45:ASN:ND2	2.17	0.43
47:V:88:ARG:C	47:V:89:LEU:HD12	2.43	0.43
48:W:21:SER:HA	48:W:24:GLU:OE2	2.18	0.43
1:1:595:G:H1	1:1:609:G:H5''	1.83	0.43
1:1:611:A:O2'	1:1:612:U:O5'	2.36	0.43
1:1:647:A:HO2'	1:1:648:C:P	2.39	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:802:C:H2'	1:1:803:C:C6	2.53	0.43
1:1:866:A:C8	1:1:867:G:C8	3.06	0.43
1:1:1144:U:O2'	1:1:1145:G:P	2.76	0.43
1:1:1180:A:C4	1:1:1182:A:C8	3.06	0.43
1:1:1236:G:O2'	1:1:1245:A:H1'	2.17	0.43
1:1:1707:A:H5''	1:1:1708:C:OP2	2.18	0.43
1:1:2221:G:N2	1:1:2224:A:OP2	2.51	0.43
1:1:2226:U:H2'	1:1:2227:C:O4'	2.18	0.43
1:1:2435:G:H4'	37:P:24:ARG:NH2	2.33	0.43
1:1:2874:G:O6	1:1:2945:G:H2'	2.18	0.43
1:1:2885:C:H2'	1:1:2886:U:O4'	2.19	0.43
1:1:3052:G:H21	1:1:3093:C:N4	2.16	0.43
1:1:3342:A:H2'	1:1:3343:G:O4'	2.19	0.43
1:1:3384:U:H2'	1:1:3385:U:O4'	2.19	0.43
3:3:98:C:H3'	3:3:99:G:H5''	2.00	0.43
7:A:43:U:H2'	7:A:44:U:O4'	2.18	0.43
8:a:56:VAL:HB	8:a:70:ILE:HD11	2.00	0.43
16:e:16:LEU:HD12	16:e:19:LYS:NZ	2.34	0.43
22:h:60:ARG:NH1	41:R:171:ARG:NH2	2.66	0.43
23:I:78:ARG:NH1	23:I:106:PHE:HB2	2.33	0.43
29:L:113:GLU:HG3	29:L:125:ASN:HD21	1.84	0.43
44:s:112:GLN:HG3	44:s:115:ARG:HD2	1.99	0.43
1:1:500:C:H2'	1:1:501:A:H8	1.83	0.43
1:1:810:A:C4	1:1:811:U:C5	3.06	0.43
1:1:967:A:C4	1:1:968:G:C8	3.06	0.43
1:1:995:U:N3	1:1:2637:A:N7	2.66	0.43
1:1:1387:G:C8	1:1:1387:G:OP2	2.72	0.43
1:1:1493:G:HO2'	1:1:1494:U:H5	1.63	0.43
1:1:1674:G:N1	1:1:1774:C:N3	2.66	0.43
1:1:1951:C:H5'	1:1:1952:G:OP2	2.19	0.43
1:1:2656:A:HO2'	1:1:2657:A:P	2.42	0.43
1:1:2667:A:C4	1:1:2690:G:C2	3.07	0.43
1:1:2812:C:H2'	1:1:2813:A:C8	2.54	0.43
1:1:3035:A:C4	1:1:3036:G:C8	3.07	0.43
1:1:3345:G:H2'	1:1:3346:U:C6	2.54	0.43
2:X:136:VAL:HG12	2:X:137:VAL:HG23	1.99	0.43
4:Y:80:ARG:O	4:Y:82:ILE:N	2.51	0.43
5:4:37:A:H5''	5:4:38:U:O5'	2.19	0.43
9:B:33:U:C2	9:B:35:U:H5''	2.53	0.43
13:D:30:GLU:HA	13:D:33:GLN:HB3	2.00	0.43
14:d:51:ALA:O	14:d:55:ALA:N	2.51	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:F:108:GLU:HA	17:F:137:TYR:CE2	2.53	0.43
21:H:64:ILE:HG22	21:H:75:LEU:HB3	1.99	0.43
21:H:95:TRP:CD1	21:H:158:ARG:HA	2.54	0.43
23:I:131:LYS:HD2	23:I:132:ALA:H	1.83	0.43
25:J:26:VAL:HG23	25:J:27:ALA:H	1.83	0.43
29:L:88:TYR:CD2	29:L:154:VAL:HG12	2.53	0.43
29:L:105:GLU:HG3	29:L:108:GLY:HA2	2.01	0.43
40:q:95:ILE:HG13	40:q:95:ILE:O	2.18	0.43
1:1:130:A:H2'	1:1:131:C:C6	2.53	0.43
1:1:164:A:H2'	1:1:165:A:O4'	2.17	0.43
1:1:256:G:H2'	1:1:257:U:C6	2.53	0.43
1:1:287:G:C6	1:1:288:C:C4	3.07	0.43
1:1:867:G:N1	1:1:893:C:O2	2.52	0.43
1:1:916:G:N2	15:E:3:ARG:HH21	2.17	0.43
1:1:964:G:N1	1:1:965:A:C6	2.86	0.43
1:1:1213:G:H2'	1:1:1214:U:H6	1.84	0.43
1:1:1560:G:N1	1:1:1580:A:C6	2.86	0.43
1:1:1766:G:H2'	1:1:1767:C:H6	1.82	0.43
1:1:1850:A:H4'	1:1:1851:G:OP2	2.17	0.43
1:1:2099:A:C6	1:1:2100:A:C6	3.06	0.43
1:1:2248:C:O2'	1:1:2272:G:O2'	2.17	0.43
1:1:2659:G:N1	1:1:2712:U:O2	2.51	0.43
1:1:2731:U:H2'	1:1:2732:G:C8	2.53	0.43
1:1:2816:G:N3	1:1:2870:C:N4	2.66	0.43
1:1:3008:A:N6	1:1:3139:A:N6	2.65	0.43
1:1:3213:A:H5''	35:O:128:ARG:HH12	1.84	0.43
10:b:4:PHE:CE1	16:e:35:ARG:HG2	2.53	0.43
10:b:106:GLN:HA	10:b:109:GLU:HG2	2.01	0.43
11:C:34:SER:HG	11:C:35:LEU:H	1.64	0.43
11:C:35:LEU:C	11:C:37:ALA:H	2.27	0.43
16:e:68:TYR:CD1	16:e:104:LEU:HD11	2.54	0.43
17:F:292:ALA:HB2	17:F:302:LYS:NZ	2.33	0.43
19:G:219:LEU:O	19:G:222:VAL:HG12	2.18	0.43
31:M:39:GLN:HE22	31:M:120:ILE:HD13	1.83	0.43
39:Q:180:SER:O	39:Q:184:THR:N	2.52	0.43
46:U:43:TYR:HE2	46:U:122:HIS:CE1	2.35	0.43
1:1:171:G:C6	1:1:172:G:N7	2.87	0.43
1:1:766:U:O2'	1:1:767:U:O5'	2.21	0.43
1:1:795:G:H2'	1:1:796:U:C6	2.52	0.43
1:1:852:U:H2'	1:1:853:G:C8	2.53	0.43
1:1:909:G:P	37:P:77:LYS:NZ	2.92	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:943:U:C5	12:c:12:ARG:NH1	2.80	0.43
1:1:1143:A:H4'	1:1:1144:U:OP2	2.19	0.43
1:1:1223:A:H2'	1:1:1223:A:N3	2.34	0.43
1:1:1254:C:N4	1:1:1263:A:OP1	2.51	0.43
1:1:1261:G:H4'	1:1:1278:A:H61	1.84	0.43
1:1:1388:U:H1'	20:g:99:ASN:ND2	2.33	0.43
1:1:1922:A:H2'	1:1:1923:C:O4'	2.18	0.43
1:1:2207:A:C4	1:1:2208:A:H8	2.37	0.43
1:1:2244:A:H8	15:E:243:THR:HG21	1.82	0.43
1:1:2325:G:H2'	1:1:2326:A:H8	1.83	0.43
1:1:2367:A:C4	1:1:2381:G:N2	2.87	0.43
1:1:2534:G:C2	1:1:2535:A:C5	3.07	0.43
1:1:3298:C:H2'	1:1:3299:A:H8	1.83	0.43
5:4:75:G:H2'	5:4:76:C:C6	2.54	0.43
5:4:103:G:C6	5:4:105:A:N6	2.87	0.43
7:A:5:C:C2	7:A:6:G:N7	2.86	0.43
7:A:17:U:H5'	7:A:18:G:OP2	2.18	0.43
14:d:58:LYS:HD2	14:d:58:LYS:HA	1.77	0.43
16:e:17:VAL:HG11	16:e:92:ILE:HD12	2.00	0.43
17:F:19:ARG:HD2	17:F:232:ARG:NH2	2.26	0.43
22:h:75:HIS:HB2	22:h:82:ARG:HG3	2.01	0.43
28:k:48:ALA:HB1	37:P:16:SER:CB	2.49	0.43
47:V:30:TYR:HE1	47:V:94:GLU:OE2	2.01	0.43
47:V:56:PHE:CZ	47:V:60:LYS:NZ	2.85	0.43
1:1:357:A:C6	1:1:363:G:N1	2.86	0.43
1:1:936:A:H5''	12:c:27:LYS:HB2	2.01	0.43
1:1:1069:C:C4	1:1:1070:U:C4	3.07	0.43
1:1:1348:U:O4	43:S:31:LYS:HG3	2.19	0.43
1:1:1429:G:H4'	1:1:1430:U:OP2	2.16	0.43
1:1:1630:U:C2	1:1:1813:A:H8	2.37	0.43
1:1:1925:U:C4'	1:1:1926:C:OP2	2.63	0.43
1:1:2291:A:C6	1:1:2302:G:C6	3.06	0.43
1:1:2907:G:H2'	1:1:2908:G:H8	1.83	0.43
1:1:3100:U:H2'	1:1:3101:G:C8	2.54	0.43
1:1:3106:A:H62	1:1:3128:G:H21	1.67	0.43
1:1:3161:C:H2'	1:1:3162:C:H6	1.83	0.43
1:1:3218:A:H5''	1:1:3219:G:O4'	2.18	0.43
1:1:3219:G:O2'	1:1:3220:G:P	2.77	0.43
2:X:120:LYS:HD3	2:X:137:VAL:HG22	2.00	0.43
5:4:106:C:H4'	5:4:107:G:O5'	2.17	0.43
7:A:27:G:H2'	7:A:28:U:H6	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:B:17(A):G:H2'	40:q:87:ARG:HH12	1.84	0.43
16:e:16:LEU:HA	16:e:19:LYS:HE3	2.00	0.43
17:F:312:VAL:HG12	17:F:313:HIS:ND1	2.33	0.43
17:F:313:HIS:CB	17:F:332:ARG:HD2	2.45	0.43
21:H:23:ARG:C	21:H:26:GLY:H	2.27	0.43
21:H:58:LYS:C	21:H:93:THR:HG21	2.44	0.43
21:H:195:LEU:O	21:H:199:ILE:HG13	2.18	0.43
29:L:75:VAL:HA	29:L:78:MET:HE2	2.01	0.43
31:M:49:LYS:HA	31:M:64:LYS:HA	2.00	0.43
37:P:6:TYR:O	37:P:9:GLU:N	2.49	0.43
37:P:42:PRO:HG3	37:P:61:ILE:HG13	2.01	0.43
46:U:110:MET:HE3	46:U:110:MET:HB3	1.90	0.43
1:1:49:A:N7	37:P:187:ARG:HD2	2.34	0.43
1:1:84:U:H3	1:1:85:A:H62	1.65	0.43
1:1:87:U:OP1	43:S:172:PHE:HZ	2.02	0.43
1:1:196:G:H21	1:1:219:A:H61	1.66	0.43
1:1:241:G:O4'	33:N:45:LYS:NZ	2.51	0.43
1:1:677:A:O2'	1:1:678:G:P	2.76	0.43
1:1:851:C:OP2	13:D:3:LYS:HE2	2.18	0.43
1:1:1222:G:H22	1:1:1285:G:H2'	1.84	0.43
1:1:1266:G:N2	1:1:1276:U:C6	2.87	0.43
1:1:1443:G:H2'	1:1:1444:G:C8	2.53	0.43
1:1:1456:A:O2'	1:1:1457:U:O4'	2.22	0.43
1:1:1695:U:HO2'	1:1:1696:A:P	2.42	0.43
1:1:1731:A:C6	1:1:1732:U:C4	3.07	0.43
1:1:2951:G:N2	1:1:2952:G:H1'	2.34	0.43
3:3:7:G:OP2	21:H:28:THR:HG23	2.18	0.43
4:Y:6:ASP:HB3	4:Y:10:GLY:H	1.84	0.43
5:4:75:G:H2'	5:4:76:C:H6	1.84	0.43
5:4:85:G:O2'	5:4:86:U:OP1	2.31	0.43
7:A:22:G:C6	7:A:23:A:C6	3.07	0.43
17:F:311:PHE:HB2	17:F:314:TYR:HB3	2.00	0.43
18:f:24:SER:O	18:f:28:ARG:HG3	2.19	0.43
19:G:311:HIS:CE1	25:J:162:PRO:HG3	2.53	0.43
20:g:2:ALA:HB3	20:g:90:LYS:HD2	2.01	0.43
21:H:107:ARG:HH11	21:H:110:LEU:HD23	1.82	0.43
29:L:47:LYS:HZ1	35:O:5:SER:HB2	1.83	0.43
30:l:17:THR:HG22	30:l:18:LEU:N	2.34	0.43
41:R:120:ASN:OD1	41:R:145:HIS:HB2	2.18	0.43
1:1:152:U:OP1	26:j:106:LYS:NZ	2.21	0.43
1:1:349:A:C2	5:4:24:G:C4	3.07	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:371:G:C5	1:1:373:A:OP2	2.72	0.43
1:1:500:C:H2'	1:1:501:A:C8	2.54	0.43
1:1:824:C:C2	1:1:902:G:N2	2.87	0.43
1:1:827:A:C2	1:1:828:A:C8	3.06	0.43
1:1:875:G:C4	1:1:887:G:N2	2.87	0.43
1:1:1147:G:OP1	20:g:47:ARG:NH1	2.52	0.43
1:1:1423:C:C2	1:1:1424:C:C5	3.06	0.43
1:1:1433:A:H4'	1:1:1434:G:OP1	2.19	0.43
1:1:1610:G:C6	1:1:1611:G:C6	3.06	0.43
1:1:1733:G:C2	1:1:1734:G:C4	3.07	0.43
1:1:2228:A:H2'	1:1:2229:A:C8	2.54	0.43
1:1:2363:A:N3	1:1:2376:G:C2	2.87	0.43
1:1:2429:G:H2'	1:1:2430:A:H8	1.84	0.43
1:1:2531:C:O2	1:1:2531:C:H2'	2.19	0.43
1:1:2678:A:H2'	1:1:2679:A:H5'	2.01	0.43
1:1:3097:C:P	17:F:325:LYS:HZ2	2.42	0.43
1:1:3106:A:H62	1:1:3128:G:N2	2.17	0.43
3:3:64:A:H5'	3:3:65:G:H5''	2.01	0.43
8:a:42:GLN:O	8:a:125:LYS:HE3	2.19	0.43
17:F:46:PHE:CE2	17:F:81:THR:HG23	2.54	0.43
19:G:148:ILE:HA	19:G:149:PRO:C	2.43	0.43
21:H:257:GLU:C	21:H:259:LYS:H	2.25	0.43
21:H:261:THR:OG1	21:H:264:GLN:OE1	2.18	0.43
23:I:55:LEU:HD22	23:I:98:VAL:HG11	2.01	0.43
35:O:45:LEU:HD12	35:O:56:GLN:O	2.19	0.43
45:T:100:ARG:O	45:T:104:ARG:HG2	2.18	0.43
45:T:134:HIS:HE1	45:T:136:ARG:HB3	1.79	0.43
46:U:81:TYR:CE2	46:U:90:MET:HE3	2.54	0.43
1:1:183:G:H2'	1:1:184:U:H6	1.84	0.43
1:1:225:C:H2'	1:1:226:C:C6	2.53	0.43
1:1:597:G:OP1	25:J:41:ARG:HD2	2.19	0.43
1:1:716:A:C4	1:1:720:A:C8	3.07	0.43
1:1:1131:G:C2	1:1:2373:A:C4	3.07	0.43
1:1:1359:C:H2'	1:1:1360:C:C6	2.54	0.43
1:1:1539:A:C2	1:1:1540:U:C2	3.07	0.43
1:1:1683:A:C5	1:1:1684:U:C5	3.06	0.43
1:1:1710:C:H2'	1:1:1711:C:H6	1.84	0.43
1:1:2247:G:N2	1:1:2248:C:O2	2.52	0.43
1:1:2355:G:HO2'	1:1:2356:A:P	2.42	0.43
1:1:2368:A:C6	1:1:2369:G:C6	3.07	0.43
1:1:2554:A:O2'	1:1:2555:G:OP1	2.32	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2576:G:C4	1:1:2577:C:C5	3.07	0.43
1:1:3256:G:H2'	1:1:3257:C:C6	2.54	0.43
1:1:3364:C:H2'	1:1:3365:U:C6	2.54	0.43
3:3:59:U:C2	3:3:60:G:C8	3.07	0.43
4:Y:23:ARG:NH1	4:Y:29:PHE:HZ	2.17	0.43
7:A:27:G:C2	7:A:28:U:C4	3.07	0.43
7:A:49:G:O6	7:A:65:C:H2'	2.19	0.43
12:c:50:PRO:HG2	43:S:178:ARG:NH1	2.34	0.43
16:e:22:LYS:HE3	16:e:93:LEU:HD11	2.01	0.43
21:H:194:LEU:O	21:H:197:SER:HB3	2.17	0.43
22:h:49:ILE:N	22:h:69:GLY:O	2.44	0.43
25:J:138:TYR:CE2	25:J:233:GLU:HG2	2.53	0.43
35:O:105:GLN:O	35:O:109:ARG:HG3	2.19	0.43
44:s:59:LEU:HD12	44:s:128:VAL:HG21	2.01	0.43
1:1:531:G:O2'	1:1:532:A:O4'	2.25	0.42
1:1:625:G:C2	1:1:626:U:C2	3.07	0.42
1:1:674:G:H2'	1:1:675:C:C6	2.54	0.42
1:1:678:G:C6	1:1:703:G:C2	3.07	0.42
1:1:993:G:C4	1:1:2637:A:H2	2.36	0.42
1:1:1028:U:O2	31:M:94:ARG:NH2	2.52	0.42
1:1:1115:G:H5''	1:1:1116:G:H5''	2.01	0.42
1:1:1449:A:H5''	1:1:1450:G:OP2	2.19	0.42
1:1:1481:A:N7	1:1:1859:A:C5	2.87	0.42
1:1:1646:G:C2	1:1:1808:G:C2	3.07	0.42
1:1:1914:G:O2'	45:T:82:LYS:O	2.36	0.42
1:1:2429:G:C2	1:1:2430:A:C5	3.06	0.42
1:1:2529:A:C2	1:1:2530:G:H1'	2.54	0.42
1:1:2552:C:N4	16:e:54:SER:OG	2.51	0.42
1:1:2577:C:C4	1:1:2578:U:C4	3.06	0.42
1:1:2794:G:O2'	1:1:2795:U:O5'	2.29	0.42
1:1:3104:U:H5''	1:1:3128:G:O6	2.20	0.42
1:1:3121:U:H1'	1:1:3122:A:C8	2.54	0.42
1:1:3243:A:N6	39:Q:160:ARG:HD2	2.28	0.42
1:1:3267:A:H4'	41:R:181:ARG:HH11	1.83	0.42
1:1:3304:U:O2'	17:F:334:ARG:NH2	2.52	0.42
1:1:3353:G:N1	1:1:3356:G:C2	2.87	0.42
3:3:77:G:O2'	3:3:78:U:OP2	2.33	0.42
3:3:119:U:C6	21:H:258:LYS:NZ	2.87	0.42
5:4:73:U:C4	5:4:74:U:C4	3.07	0.42
9:B:15:G:N2	9:B:48:C:O2	2.41	0.42
10:b:25:ILE:HG23	10:b:41:ALA:HB1	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:D:57:CYS:SG	13:D:60:CYS:HB3	2.59	0.42
17:F:262:TRP:HE1	39:Q:66:LYS:NZ	2.17	0.42
21:H:20:PHE:O	21:H:24:ARG:HG3	2.19	0.42
21:H:234:ASP:OD1	21:H:235:SER:N	2.51	0.42
22:h:49:ILE:HG12	22:h:100:ILE:HG13	2.00	0.42
27:K:81:THR:OG1	27:K:82:LEU:N	2.52	0.42
33:N:109:PHE:O	33:N:113:VAL:HG23	2.19	0.42
40:q:30:GLY:O	40:q:41:ILE:HD12	2.19	0.42
41:R:179:GLN:O	41:R:184:ALA:N	2.52	0.42
43:S:29:LEU:HD23	43:S:29:LEU:HA	1.82	0.42
1:1:10:C:C2	5:4:149:A:H2	2.38	0.42
1:1:60:A:C2	1:1:61:A:C5	3.07	0.42
1:1:109:A:H4'	1:1:110:G:OP1	2.19	0.42
1:1:212:G:C2	1:1:222:A:C4	3.07	0.42
1:1:254:A:H2'	1:1:255:A:H8	1.80	0.42
1:1:299:G:H2'	1:1:300:G:C8	2.54	0.42
1:1:374:A:N7	1:1:376:G:C5	2.87	0.42
1:1:510:G:O6	1:1:581:U:O4	2.37	0.42
1:1:597:G:C2	1:1:598:A:C8	3.07	0.42
1:1:801:A:O5'	12:c:27:LYS:NZ	2.52	0.42
1:1:1035:G:C6	1:1:1036:A:C5	3.06	0.42
1:1:1185:C:H2'	1:1:1186:G:O4'	2.19	0.42
1:1:1359:C:H2'	1:1:1360:C:H6	1.84	0.42
1:1:1560:G:C6	1:1:1580:A:N1	2.87	0.42
1:1:1652:G:C4	1:1:1653:G:C8	3.07	0.42
1:1:1730:G:O2'	1:1:1731:A:H8	2.02	0.42
1:1:1740:U:H1'	1:1:1741:A:C2	2.48	0.42
1:1:1748:G:C6	1:1:1749:A:N6	2.86	0.42
1:1:1913:A:N6	1:1:2120:A:C6	2.86	0.42
1:1:1913:A:N6	1:1:2120:A:N1	2.67	0.42
1:1:1940:G:H21	1:1:3362:A:H8	1.67	0.42
1:1:2177:G:O2'	1:1:2178:A:P	2.69	0.42
1:1:2208:A:O2'	1:1:2209:U:OP1	2.28	0.42
1:1:2273:G:N2	1:1:2311:G:H2'	2.34	0.42
1:1:2506:U:H2'	1:1:2507:C:O4'	2.19	0.42
1:1:2525:G:HO2'	1:1:2526:C:P	2.30	0.42
1:1:2760:C:N4	11:C:63:LYS:HE3	2.34	0.42
1:1:2861:U:OP2	1:1:2861:U:C6	2.70	0.42
1:1:3047:U:C5	1:1:3094:A:C2	3.08	0.42
1:1:3121:U:O2'	1:1:3122:A:H3'	2.19	0.42
1:1:3250:U:H2'	1:1:3251:U:C6	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3347:A:N6	1:1:3357:U:O4	2.52	0.42
2:X:15:LEU:HD22	2:X:51:ALA:HB1	2.00	0.42
3:3:115:G:H2'	3:3:116:C:H6	1.84	0.42
6:Z:58:ASP:O	6:Z:62:VAL:HG23	2.17	0.42
6:Z:79:GLY:O	6:Z:81:ILE:HG13	2.18	0.42
6:Z:85:GLN:NE2	6:Z:119:THR:HB	2.33	0.42
15:E:51:ASP:HB2	15:E:58:LEU:HG	2.00	0.42
17:F:48:GLY:O	17:F:335:ILE:HD12	2.19	0.42
18:f:23:VAL:HG11	18:f:31:ARG:HD3	2.02	0.42
19:G:28:ALA:HB3	19:G:127:ALA:HB2	2.01	0.42
19:G:338:LYS:O	19:G:339:LEU:HB2	2.19	0.42
21:H:184:ASP:OD2	21:H:189:GLU:HB2	2.19	0.42
25:J:165:ASP:OD2	25:J:167:ALA:HB3	2.19	0.42
26:j:36:LEU:HD12	26:j:37:SER:N	2.34	0.42
27:K:96:LYS:HD2	27:K:207:ASP:OD2	2.19	0.42
29:L:114:VAL:HB	29:L:124:ARG:HB2	2.01	0.42
37:P:124:ASP:OD1	37:P:127:TYR:N	2.50	0.42
41:R:57:ALA:HB2	41:R:83:TRP:NE1	2.34	0.42
42:r:141:UNK:O	42:r:145:UNK:N	2.52	0.42
1:1:87:U:C5	1:1:98:G:N2	2.88	0.42
1:1:147:U:H1'	27:K:162:LEU:HD11	2.00	0.42
1:1:405:U:C5	1:1:406:G:C4	3.08	0.42
1:1:537:A:C4	1:1:538:G:C8	3.07	0.42
1:1:646:A:C6	1:1:647:A:C2	3.08	0.42
1:1:1013:G:N2	1:1:1038:C:C2	2.88	0.42
1:1:1500:G:C6	1:1:1517:G:C6	3.08	0.42
1:1:1525:G:H2'	1:1:1525:G:N3	2.33	0.42
1:1:2287:C:C1'	1:1:2298:U:H1'	2.49	0.42
1:1:2568:C:N3	1:1:2574:G:C6	2.87	0.42
1:1:2772:C:OP1	1:1:2773:C:H5'	2.20	0.42
1:1:2854:U:P	44:s:2:ARG:HH21	2.42	0.42
1:1:2878:G:C6	1:1:2879:C:N4	2.87	0.42
1:1:3150:A:H5'	17:F:130:PHE:H	1.84	0.42
5:4:43:A:N3	5:4:44:A:C8	2.87	0.42
6:Z:96:LYS:HB2	6:Z:110:VAL:HG21	2.00	0.42
9:B:58:A:H4'	9:B:59:G:OP1	2.17	0.42
17:F:41:VAL:HG22	17:F:185:GLY:HA3	2.01	0.42
17:F:148:LEU:O	17:F:152:LYS:HG3	2.20	0.42
21:H:39:GLN:HA	21:H:48:LYS:HE2	2.00	0.42
23:I:77:ARG:NH1	23:I:79:VAL:HG22	2.34	0.42
45:T:38:ARG:O	45:T:41:ILE:N	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:T:55:VAL:HG12	45:T:56:THR:O	2.18	0.42
48:W:15:PHE:O	48:W:64:THR:HA	2.20	0.42
1:1:146:U:C4	27:K:134:TYR:HE1	2.36	0.42
1:1:517:G:H5''	1:1:518:G:N2	2.34	0.42
1:1:607:A:HO2'	1:1:608:A:P	2.42	0.42
1:1:771:A:H2'	1:1:772:U:O4'	2.18	0.42
1:1:880:G:C2	1:1:882:A:N6	2.88	0.42
1:1:983:A:HO2'	1:1:984:G:P	2.42	0.42
1:1:997:A:C4	1:1:998:A:C8	3.08	0.42
1:1:1031:C:H2'	1:1:1032:C:C6	2.52	0.42
1:1:1150:A:N7	1:1:1151:U:C2	2.87	0.42
1:1:1203:A:H2'	1:1:1204:A:H8	1.84	0.42
1:1:1211:U:H2'	1:1:1212:A:C8	2.52	0.42
1:1:1438:U:H2'	1:1:1439:U:C6	2.55	0.42
1:1:1481:A:C2'	1:1:1482:A:OP2	2.67	0.42
1:1:1616:U:H2'	1:1:1617:G:H8	1.84	0.42
1:1:1895:A:H5'	1:1:1896:A:OP1	2.20	0.42
1:1:2732:G:H2'	1:1:2733:A:C8	2.54	0.42
1:1:2768:U:C2	1:1:2769:A:C8	3.08	0.42
1:1:2794:G:O2'	1:1:2795:U:O4'	2.37	0.42
1:1:2941:A:N7	17:F:255:TRP:CE2	2.86	0.42
1:1:3052:G:C2	1:1:3091:A:C2	3.07	0.42
1:1:3201:C:H2'	1:1:3202:G:H8	1.84	0.42
1:1:3386:G:OP1	18:f:10:ARG:NH2	2.44	0.42
3:3:74:C:N4	3:3:75:G:C6	2.87	0.42
6:Z:67:ILE:HD12	6:Z:83:VAL:HG12	2.01	0.42
7:A:54:U:OP1	44:s:72:ASN:ND2	2.52	0.42
10:b:6:LYS:O	10:b:9:LYS:HG2	2.19	0.42
16:e:10:ILE:HG23	16:e:11:ASN:N	2.34	0.42
25:J:132:PRO:HA	25:J:229:PHE:CG	2.54	0.42
35:O:19:ARG:HG2	35:O:65:LEU:HD22	2.01	0.42
40:q:42:VAL:HG13	40:q:43:ASP:N	2.35	0.42
43:S:32:LEU:O	43:S:35:PHE:N	2.47	0.42
43:S:71:LEU:HD23	43:S:71:LEU:HA	1.82	0.42
1:1:51:A:C5	1:1:52:A:N7	2.88	0.42
1:1:519:A:O5'	1:1:520:U:OP2	2.38	0.42
1:1:1309:U:H5''	1:1:1311:G:P	2.59	0.42
1:1:1535:A:H62	1:1:1586:G:H21	1.67	0.42
1:1:1673:G:N2	1:1:1775:G:H1'	2.34	0.42
1:1:1775:G:C2	1:1:1776:G:C8	3.08	0.42
1:1:1915:A:H2'	1:1:1916:U:C5	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1925:U:C4	1:1:2320:A:C6	3.07	0.42
1:1:1939:G:C8	1:1:2114:C:C2	3.07	0.42
1:1:1948:G:C2	1:1:1949:G:C8	3.07	0.42
1:1:2158:A:H2	1:1:2174:G:N2	2.17	0.42
1:1:2222:A:C6	1:1:2223:A:N1	2.87	0.42
1:1:2343:C:H2'	1:1:2344:U:H6	1.84	0.42
1:1:2385:G:O2'	1:1:2386:A:O5'	2.25	0.42
1:1:2390:A:H2'	1:1:2391:G:O4'	2.19	0.42
1:1:2704:A:C5	1:1:2706:G:N7	2.87	0.42
1:1:2813:A:H5''	1:1:2814:G:OP2	2.19	0.42
1:1:3081:C:H2'	1:1:3082:C:C6	2.53	0.42
1:1:3268:A:H3'	1:1:3268:A:OP1	2.19	0.42
3:3:120:C:H5	21:H:258:LYS:NZ	2.15	0.42
5:4:104:A:OP1	30:I:21:ARG:NH2	2.52	0.42
7:A:10:G:P	7:A:11:C:OP2	2.78	0.42
9:B:14:A:C6	9:B:15:G:C4	3.08	0.42
18:f:13:THR:HG23	18:f:72:ARG:NH1	2.34	0.42
21:H:68:THR:HG22	21:H:69:ILE:H	1.83	0.42
23:I:38:THR:HA	23:I:90:LYS:HG2	2.00	0.42
23:I:71:VAL:HG22	23:I:156:LYS:HZ1	1.84	0.42
24:i:3:GLN:NE2	24:i:29:ILE:HG22	2.34	0.42
25:J:27:ALA:O	25:J:31:ALA:N	2.46	0.42
25:J:37:ASN:O	25:J:40:LYS:HB2	2.19	0.42
27:K:91:PHE:O	27:K:95:ASN:HB2	2.19	0.42
27:K:165:PHE:HE2	37:P:7:LEU:HD12	1.83	0.42
33:N:182:ILE:HA	33:N:185:LYS:HB3	2.01	0.42
1:1:535:G:C2	1:1:555:U:C2	3.04	0.42
1:1:546:C:OP2	1:1:547:G:N1	2.52	0.42
1:1:715:A:O2'	1:1:716:A:OP1	2.30	0.42
1:1:763:G:C6	1:1:764:U:C2	3.08	0.42
1:1:771:A:H8	1:1:771:A:O5'	2.03	0.42
1:1:891:G:C6	1:1:892:U:C4	3.07	0.42
1:1:908:G:H1'	1:1:925:A:N7	2.34	0.42
1:1:943:U:H5	12:c:12:ARG:CZ	2.32	0.42
1:1:1013:G:C2	1:1:1014:U:O2	2.73	0.42
1:1:1026:A:OP2	1:1:1026:A:C8	2.67	0.42
1:1:1105:A:H2'	1:1:1106:G:H8	1.82	0.42
1:1:1174:G:C5	1:1:1318:A:N3	2.87	0.42
1:1:1174:G:C6	1:1:1175:C:N4	2.88	0.42
1:1:1209:G:H2'	1:1:1210:U:O4'	2.19	0.42
1:1:1236:G:C2	1:1:1244:A:OP2	2.73	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1360:C:H2'	1:1:1361:U:C6	2.55	0.42
1:1:1525:G:C8	1:1:1829:G:C5	3.07	0.42
1:1:1633:C:P	10:b:69:LYS:NZ	2.92	0.42
1:1:1640:G:H2'	1:1:1641:U:C6	2.55	0.42
1:1:1662:G:N2	1:1:1722:U:O4	2.41	0.42
1:1:1749:A:C4	1:1:1750:A:C6	3.07	0.42
1:1:2167:A:N6	1:1:2168:A:N1	2.67	0.42
1:1:2218:G:H2'	1:1:2219:A:C8	2.54	0.42
1:1:2663:G:H5'	21:H:152:ARG:HE	1.84	0.42
1:1:3253:G:N3	1:1:3254:G:C8	2.87	0.42
1:1:3316:A:H5'	1:1:3317:U:OP1	2.19	0.42
3:3:115:G:H2'	3:3:116:C:C6	2.55	0.42
9:B:6:G:C6	9:B:68:G:C6	3.08	0.42
12:c:56:VAL:HG23	12:c:57:GLY:N	2.33	0.42
12:c:135:GLU:CD	33:N:166:ALA:HB3	2.45	0.42
19:G:36:HIS:O	19:G:40:THR:HG23	2.20	0.42
21:H:244:HIS:O	21:H:247:ILE:HB	2.20	0.42
25:J:29:GLU:O	25:J:33:ARG:HB3	2.20	0.42
25:J:158:LYS:HG2	25:J:159:GLN:H	1.85	0.42
29:L:19:SER:HB2	29:L:26:LYS:HB3	2.01	0.42
29:L:106:LYS:HB3	29:L:111:PHE:CD2	2.54	0.42
35:O:89:ALA:O	35:O:93:LYS:HG3	2.19	0.42
42:r:138:UNK:O	42:r:142:UNK:N	2.53	0.42
1:1:75:G:O3'	33:N:70:ARG:NH2	2.52	0.42
1:1:589:A:N6	1:1:610:G:O2'	2.53	0.42
1:1:924:G:C2'	1:1:925:A:OP2	2.68	0.42
1:1:1095:U:H3	47:V:127:GLN:CD	2.21	0.42
1:1:1151:U:H5''	1:1:1152:G:OP2	2.20	0.42
1:1:1469:C:H4'	1:1:1470:U:OP2	2.19	0.42
1:1:1481:A:C2	24:i:4:ARG:HD3	2.52	0.42
1:1:1551:C:O2'	1:1:2170:U:O2'	2.37	0.42
1:1:1588:A:N3	34:n:4:GLN:NE2	2.67	0.42
1:1:1689:U:H2'	1:1:1690:C:H6	1.85	0.42
1:1:1754:G:H2'	1:1:1755:C:H6	1.83	0.42
1:1:1767:C:H2'	1:1:1768:U:H6	1.83	0.42
1:1:1919:G:H1'	1:1:1934:G:N2	2.35	0.42
1:1:2732:G:H2'	1:1:2733:A:H8	1.84	0.42
1:1:3063:C:H2'	1:1:3064:U:H6	1.85	0.42
1:1:3083:G:H2'	1:1:3084:C:H6	1.84	0.42
1:1:3121:U:HO2'	1:1:3122:A:H3'	1.84	0.42
3:3:15:C:H2'	3:3:16:U:H6	1.83	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:3:66:A:C5	3:3:67:G:C8	3.08	0.42
5:4:65:A:H2'	5:4:66:A:H8	1.85	0.42
5:4:67:U:H4'	30:l:84:SER:O	2.19	0.42
5:4:133:G:P	6:Z:94:GLN:HE21	2.42	0.42
7:A:30:G:H2'	7:A:31:A:C8	2.54	0.42
15:E:129:ALA:HB3	15:E:132:ASN:HD22	1.85	0.42
17:F:116:ARG:HD2	17:F:174:LYS:O	2.20	0.42
26:j:64:GLU:HA	26:j:67:ARG:HD2	2.02	0.42
26:j:95:PHE:O	26:j:98:SER:OG	2.26	0.42
27:K:64:ILE:O	27:K:68:ARG:HG2	2.19	0.42
29:L:75:VAL:HA	29:L:78:MET:CE	2.49	0.42
33:N:56:PRO:HG3	33:N:74:GLY:O	2.19	0.42
39:Q:77:SER:OG	39:Q:78:ARG:N	2.51	0.42
47:V:107:GLU:HA	47:V:110:LYS:HB2	2.01	0.42
1:1:4:U:H2'	1:1:5:G:C8	2.54	0.42
1:1:92:G:P	11:C:46:LYS:HZ2	2.42	0.42
1:1:290:G:H2'	1:1:291:C:C6	2.54	0.42
1:1:295:A:N3	1:1:296:A:C8	2.88	0.42
1:1:422:A:H3'	1:1:423:A:C8	2.55	0.42
1:1:544:C:HO2'	1:1:548:G:N2	2.17	0.42
1:1:609:G:OP2	19:G:315:LYS:HD2	2.20	0.42
1:1:615:U:H2'	1:1:616:G:C8	2.45	0.42
1:1:675:C:OP2	43:S:105:ARG:CZ	2.64	0.42
1:1:1213:G:H5''	46:U:137:ARG:HH22	1.84	0.42
1:1:1449:A:N7	1:1:1450:G:C4	2.88	0.42
1:1:1595:U:O2'	1:1:1596:C:O5'	2.37	0.42
1:1:1657:C:H42	1:1:1797:A:H3'	1.85	0.42
1:1:1658:G:O4'	1:1:1796:G:H2'	2.19	0.42
1:1:1672:U:H2'	1:1:1673:G:H8	1.85	0.42
1:1:1810:A:C2	1:1:1811:G:C5	3.06	0.42
1:1:1847:A:N6	1:1:1849:C:H1'	2.35	0.42
1:1:2341:A:H2'	1:1:2342:U:O4'	2.20	0.42
1:1:2527:G:H2'	1:1:2528:G:O4'	2.20	0.42
1:1:2674:A:C2	31:M:124:GLY:HA3	2.55	0.42
1:1:2886:U:C4	1:1:2911:A:C6	3.07	0.42
1:1:3064:U:O4	1:1:3080:G:N1	2.53	0.42
1:1:3216:G:N3	1:1:3259:U:C4	2.88	0.42
1:1:3368:U:H5''	1:1:3369:G:OP1	2.18	0.42
3:3:40:C:C4	3:3:42:A:N6	2.88	0.42
3:3:93:C:H2'	3:3:94:C:C6	2.55	0.42
5:4:34:U:C2'	5:4:35:C:OP2	2.67	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:58:A:O2'	7:A:59:A:O5'	2.34	0.42
8:a:51:ARG:NH1	8:a:53:ASP:CG	2.75	0.42
10:b:3:LYS:HD2	16:e:35:ARG:O	2.20	0.42
12:c:39:HIS:O	12:c:40:HIS:C	2.63	0.42
15:E:65:ASP:OD2	15:E:68:LYS:HB3	2.20	0.42
17:F:36:ASP:OD1	17:F:37:ARG:N	2.53	0.42
24:i:3:GLN:OE1	24:i:30:LEU:N	2.42	0.42
24:i:108:GLN:O	24:i:112:ALA:N	2.50	0.42
25:J:26:VAL:HG23	25:J:27:ALA:N	2.35	0.42
26:j:78:LYS:HA	26:j:81:ARG:HG3	2.01	0.42
44:s:101:MET:HG2	44:s:102:LEU:H	1.85	0.42
46:U:7:TYR:CD1	46:U:61:ILE:HD11	2.55	0.42
1:1:86:G:C4	33:N:13:HIS:CE1	3.07	0.42
1:1:234:G:C2	1:1:235:A:N7	2.88	0.42
1:1:944:C:C4	1:1:1431:G:O6	2.73	0.42
1:1:1179:A:HO2'	1:1:1327:C:HO2'	1.53	0.42
1:1:1191:U:H3'	36:o:113:ARG:NH2	2.26	0.42
1:1:1258:U:H2'	1:1:1260:A:H5''	2.01	0.42
1:1:1280:C:C4	1:1:1281:G:C8	3.07	0.42
1:1:1392:G:C2	1:1:1417:G:C5	3.07	0.42
1:1:1500:G:H2'	1:1:1501:U:O4'	2.20	0.42
1:1:1543:G:OP1	37:P:35:VAL:HG23	2.20	0.42
1:1:1766:G:H2'	1:1:1767:C:C6	2.54	0.42
1:1:2259:A:H2'	1:1:2260:U:O4'	2.19	0.42
1:1:2362:C:H2'	1:1:2363:A:O4'	2.20	0.42
1:1:2522:G:N3	1:1:2522:G:H3'	2.34	0.42
1:1:2794:G:N2	50:1:3401:3HE:H5	2.35	0.42
1:1:3024:A:H62	1:1:3031:G:N2	2.15	0.42
1:1:3105:U:OP2	1:1:3128:G:C6	2.73	0.42
1:1:3320:A:C6	1:1:3321:C:C4	3.07	0.42
5:4:60:U:H4'	5:4:61:A:OP2	2.17	0.42
5:4:143:U:H2'	5:4:144:G:O4'	2.20	0.42
12:c:132:LYS:HB2	33:N:167:PHE:CE2	2.54	0.42
17:F:76:VAL:HG11	17:F:283:TYR:HD2	1.85	0.42
17:F:287:LYS:HA	17:F:320:ASP:HA	2.01	0.42
19:G:25:VAL:HG21	19:G:262:TRP:HB2	2.01	0.42
20:g:88:HIS:NE2	23:I:10:TYR:HB3	2.35	0.42
21:H:131:LEU:HD21	21:H:174:PRO:HA	2.01	0.42
21:H:286:VAL:O	21:H:290:ILE:HG12	2.19	0.42
25:J:84:VAL:HG13	25:J:119:VAL:CG2	2.50	0.42
25:J:110:ARG:HD3	43:S:3:ILE:HG13	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:M:79:ILE:HA	31:M:82:ARG:HG2	2.01	0.42
41:R:3:ARG:O	41:R:4:TYR:CG	2.73	0.42
44:s:48:CYS:HA	44:s:138:ARG:HA	2.01	0.42
1:1:172:G:C2	1:1:173:G:C8	3.08	0.42
1:1:272:G:H2'	1:1:273:A:C8	2.54	0.42
1:1:396:A:C6	1:1:399:A:C5	3.07	0.42
1:1:571:U:H2'	1:1:572:A:C8	2.55	0.42
1:1:602:A:OP2	1:1:602:A:C8	2.73	0.42
1:1:752:C:C2	1:1:753:C:C5	3.08	0.42
1:1:941:G:C6	1:1:942:U:N3	2.88	0.42
1:1:986:U:H2'	1:1:987:U:H6	1.84	0.42
1:1:1109:U:H4'	43:S:153:PHE:CE1	2.55	0.42
1:1:1389:G:C2	1:1:1419:A:C6	3.08	0.42
1:1:1417:G:HO2'	1:1:1418:A:P	2.42	0.42
1:1:1589:A:H4'	24:i:11:ASN:ND2	2.34	0.42
1:1:1699:A:H2'	1:1:1700:G:H8	1.85	0.42
1:1:1889:G:OP1	17:F:247:ARG:N	2.49	0.42
1:1:1915:A:H5''	45:T:84:THR:HG22	2.01	0.42
1:1:2542:U:N3	1:1:2543:U:C4	2.88	0.42
1:1:2647:A:C6	1:1:2648:G:N7	2.88	0.42
1:1:2660:G:H2'	1:1:2661:G:C8	2.55	0.42
1:1:2966:G:O6	1:1:2967:A:N6	2.52	0.42
1:1:3036:G:H2'	1:1:3037:U:H6	1.85	0.42
1:1:3173:G:C6	22:h:96:ALA:HB2	2.55	0.42
1:1:3226:A:N1	1:1:3260:G:C6	2.88	0.42
1:1:3333:G:HO2'	1:1:3334:U:P	2.42	0.42
2:X:85:TRP:CZ2	2:X:93:LEU:HD11	2.55	0.42
3:3:55:A:H2'	3:3:56:A:H8	1.85	0.42
5:4:62:C:H5''	5:4:63:G:OP1	2.20	0.42
5:4:78:G:H2'	5:4:79:A:O4'	2.20	0.42
5:4:79:A:H3'	5:4:80:A:H5''	2.01	0.42
7:A:30:G:C4	7:A:31:A:C8	3.08	0.42
15:E:177:LYS:HE2	15:E:184:ARG:HH12	1.85	0.42
16:e:28:LYS:O	16:e:32:LYS:HG3	2.20	0.42
22:h:73:ARG:HD3	22:h:82:ARG:HH11	1.85	0.42
27:K:140:VAL:HG11	37:P:6:TYR:HE2	1.85	0.42
30:l:37:CYS:C	30:l:45:ARG:HG2	2.45	0.42
33:N:166:ALA:O	33:N:169:THR:N	2.50	0.42
35:O:46:ILE:HD13	35:O:58:ILE:HG21	2.02	0.42
40:q:124:LEU:HD11	40:q:136:VAL:HG21	2.00	0.42
46:U:46:GLN:HG2	46:U:52:LYS:HB3	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:V:158:THR:O	47:V:160:ILE:N	2.53	0.42
1:1:141:C:H2'	1:1:142:C:C6	2.55	0.41
1:1:181:U:O2'	30:1:75:LYS:NZ	2.53	0.41
1:1:522:A:C2	1:1:523:A:H1'	2.55	0.41
1:1:625:G:C6	1:1:626:U:C4	3.08	0.41
1:1:708:G:C2	1:1:712:G:C6	3.08	0.41
1:1:800:G:H2'	1:1:800:G:N3	2.33	0.41
1:1:875:G:C2	1:1:887:G:C2	3.08	0.41
1:1:937:G:OP2	1:1:938:C:C5	2.72	0.41
1:1:939:U:OP2	12:c:26:ARG:NH1	2.48	0.41
1:1:1254:C:O2	1:1:1263:A:N6	2.53	0.41
1:1:1307:G:O2'	1:1:1308:A:P	2.77	0.41
1:1:1539:A:C8	1:1:1583:A:N6	2.88	0.41
1:1:1562:C:H3'	1:1:1563:C:C5	2.54	0.41
1:1:1634:G:C4	1:1:1640:G:N2	2.88	0.41
1:1:2159:U:OP2	15:E:119:LYS:NZ	2.50	0.41
1:1:2514:U:O2'	1:1:2515:A:P	2.78	0.41
1:1:2697:A:H2'	1:1:2698:G:H8	1.81	0.41
1:1:2718:U:C4	1:1:2719:U:C4	3.08	0.41
1:1:2725:U:HO2'	1:1:2726:C:P	2.40	0.41
1:1:2753:G:C2	1:1:2754:G:C4	3.08	0.41
1:1:2971:A:H3'	1:1:2972:G:C5'	2.50	0.41
1:1:3201:C:H2'	1:1:3202:G:C8	2.54	0.41
1:1:3219:G:H4'	1:1:3220:G:H5'	2.01	0.41
1:1:3231:U:H2'	1:1:3232:G:C8	2.55	0.41
1:1:3377:G:H4'	1:1:3378:C:OP1	2.18	0.41
2:X:39:VAL:HG21	2:X:51:ALA:O	2.20	0.41
5:4:122:U:H2'	5:4:123:G:C8	2.55	0.41
6:Z:135:ILE:O	6:Z:139:ILE:HG22	2.20	0.41
7:A:15:G:O2'	7:A:16:U:OP1	2.32	0.41
7:A:25:C:C4	7:A:26:A:N7	2.87	0.41
9:B:9:A:C4	9:B:46:G:C2	3.08	0.41
11:C:15:LYS:CE	11:C:18:ARG:HH11	2.33	0.41
17:F:118:PHE:HE2	17:F:130:PHE:CZ	2.38	0.41
21:H:52:VAL:O	21:H:62:CYS:HA	2.20	0.41
25:J:106:LEU:HA	25:J:106:LEU:HD23	1.83	0.41
26:j:27:GLU:HG3	26:j:31:LEU:HD13	2.01	0.41
27:K:240:ASN:OD1	27:K:241:LYS:N	2.52	0.41
31:M:21:ILE:HB	31:M:67:VAL:HG23	2.02	0.41
32:m:62:ALA:O	32:m:65:LEU:N	2.52	0.41
35:O:23:ILE:HD11	35:O:46:ILE:HD12	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:T:161:ALA:HA	45:T:164:LEU:HD12	2.02	0.41
46:U:13:ARG:CZ	46:U:51:VAL:HG11	2.50	0.41
1:1:173:G:N1	1:1:246:U:H1'	2.35	0.41
1:1:184:U:H2'	1:1:185:C:H6	1.77	0.41
1:1:187:A:N3	1:1:211:A:C6	2.87	0.41
1:1:211:A:C5	1:1:229:G:N2	2.88	0.41
1:1:598:A:H2'	1:1:599:C:C6	2.55	0.41
1:1:735:A:H2'	1:1:736:A:C8	2.54	0.41
1:1:801:A:OP1	12:c:27:LYS:NZ	2.43	0.41
1:1:848:A:H8	1:1:848:A:O5'	2.03	0.41
1:1:884:A:OP2	30:l:5:THR:N	2.40	0.41
1:1:1449:A:C2	1:1:2356:A:C4	3.08	0.41
1:1:1522:U:O2	1:1:1835:A:H8	2.03	0.41
1:1:1607:U:O2	1:1:1607:U:H2'	2.19	0.41
1:1:1656:A:H1'	1:1:1657:C:C4	2.55	0.41
1:1:1664:G:C4	1:1:1786:G:N2	2.88	0.41
1:1:1695:U:O2'	1:1:1696:A:P	2.78	0.41
1:1:1757:A:H2'	1:1:1758:G:C8	2.55	0.41
1:1:2205:U:OP2	1:1:2206:G:OP2	2.39	0.41
1:1:2232:A:C6	1:1:2233:A:C6	3.08	0.41
1:1:2249:G:C8	1:1:2272:G:C5	3.08	0.41
1:1:2288:G:C4	1:1:2289:U:C5	3.08	0.41
1:1:2609:A:C2	1:1:2610:G:C5	3.08	0.41
1:1:2853:A:H2'	1:1:2854:U:O4'	2.20	0.41
1:1:3078:U:HO2'	1:1:3079:U:P	2.33	0.41
1:1:3213:A:C5'	35:O:128:ARG:HH12	2.33	0.41
1:1:3273:A:OP2	23:I:77:ARG:CZ	2.67	0.41
3:3:120:C:N4	21:H:262:LYS:HZ1	2.18	0.41
12:c:116:GLY:HA2	12:c:137:LYS:HD3	2.02	0.41
13:D:38:ASP:HA	13:D:45:LYS:HA	2.02	0.41
15:E:30:ARG:HH12	15:E:41:ILE:HG21	1.79	0.41
16:e:32:LYS:HA	16:e:35:ARG:NH2	2.35	0.41
17:F:143:GLY:O	17:F:146:ARG:HB3	2.20	0.41
25:J:116:PHE:CE1	25:J:144:ILE:HG12	2.55	0.41
28:k:45:ARG:HH22	28:k:54:GLU:CD	2.27	0.41
44:s:189:VAL:HG13	44:s:196:VAL:HG11	2.03	0.41
1:1:131:C:H2'	1:1:132:C:C6	2.55	0.41
1:1:260:C:H2'	1:1:261:U:C6	2.55	0.41
1:1:519:A:N6	46:U:65:ASN:H	2.17	0.41
1:1:760:G:N1	1:1:770:G:N7	2.68	0.41
1:1:767:U:H4'	1:1:768:C:OP1	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:797:U:H2'	1:1:798:G:C8	2.55	0.41
1:1:1241:U:O2'	1:1:1242:G:H3'	2.19	0.41
1:1:1418:A:O2'	1:1:1419:A:P	2.79	0.41
1:1:1707:A:C6	1:1:1708:C:C4	3.08	0.41
1:1:2122:G:C2	1:1:2123:G:C4	3.08	0.41
1:1:2198:A:N6	1:1:2270:A:C2	2.88	0.41
1:1:2523:A:OP2	6:Z:31:THR:OG1	2.32	0.41
1:1:2622:C:N4	44:s:112:GLN:NE2	2.64	0.41
1:1:2715:A:H2	1:1:2753:G:C6	2.38	0.41
1:1:2784:G:C4	1:1:2785:A:C8	3.09	0.41
1:1:3022:G:N2	1:1:3031:G:H2'	2.36	0.41
1:1:3039:C:P	17:F:62:ARG:HH11	2.42	0.41
1:1:3141:A:C6	1:1:3144:G:C4	3.09	0.41
1:1:3167:A:C2	1:1:3168:A:C4	3.08	0.41
1:1:3273:A:H4'	23:I:45:GLY:H	1.84	0.41
3:3:69:C:C2	3:3:110:G:N2	2.89	0.41
3:3:77:G:C2'	3:3:78:U:OP2	2.67	0.41
9:B:15:G:H2'	9:B:59:G:H22	1.84	0.41
21:H:85:ARG:NE	21:H:254:LYS:HD3	2.35	0.41
21:H:123:GLU:HA	21:H:248:ARG:HH12	1.85	0.41
21:H:187:THR:HG23	21:H:189:GLU:HG3	2.02	0.41
25:J:151:ARG:NH1	25:J:206:LYS:O	2.53	0.41
27:K:82:LEU:HD11	27:K:86:THR:HB	2.02	0.41
27:K:155:ASN:ND2	27:K:181:LYS:HA	2.34	0.41
29:L:22:SER:HB2	29:L:39:LYS:NZ	2.35	0.41
41:R:127:ARG:HB2	41:R:139:TYR:O	2.19	0.41
1:1:22:G:N2	1:1:23:A:H1'	2.36	0.41
1:1:119:U:O3'	27:K:133:LYS:NZ	2.43	0.41
1:1:394:G:H5''	1:1:395:A:OP2	2.20	0.41
1:1:546:C:OP2	1:1:547:G:C2	2.72	0.41
1:1:845:G:N2	1:1:847:A:H3'	2.35	0.41
1:1:1374:G:H2'	1:1:1375:G:O4'	2.21	0.41
1:1:1427:U:C5'	19:G:44:LYS:NZ	2.84	0.41
1:1:2218:G:C2	1:1:2219:A:C5	3.09	0.41
1:1:2240:G:C2	1:1:2241:U:C2	3.08	0.41
1:1:2662:G:C2	1:1:2663:G:C5	3.08	0.41
1:1:2943:G:O2'	17:F:254:ALA:HB1	2.20	0.41
1:1:3087:A:C8	1:1:3088:G:N7	2.87	0.41
1:1:3142:A:OP2	1:1:3142:A:H4'	2.20	0.41
1:1:3195:U:HO2'	1:1:3196:U:P	2.43	0.41
5:4:48:A:HO2'	5:4:49:G:P	2.42	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:4:104:A:C8	5:4:105:A:C8	3.08	0.41
7:A:62:C:H2'	7:A:63:U:C6	2.55	0.41
13:D:51:ALA:HB3	13:D:54:ILE:HD12	2.03	0.41
19:G:55:LYS:HD2	19:G:59:GLN:HE21	1.85	0.41
23:I:55:LEU:HB2	23:I:64:LEU:O	2.20	0.41
27:K:162:LEU:HA	37:P:7:LEU:HD11	2.02	0.41
31:M:84:LEU:HD21	31:M:89:TYR:HA	2.01	0.41
37:P:91:GLU:O	37:P:93:LYS:HG3	2.21	0.41
37:P:187:ARG:NH2	37:P:188:ARG:HH21	2.17	0.41
40:q:102:LEU:HD23	40:q:113:VAL:HG21	2.02	0.41
40:q:113:VAL:C	40:q:115:ALA:H	2.28	0.41
43:S:66:ARG:NH2	43:S:143:PRO:HD3	2.35	0.41
46:U:12:ARG:NH2	47:V:139:ARG:NH1	2.69	0.41
47:V:63:VAL:O	47:V:74:VAL:HA	2.20	0.41
1:1:266:A:C4	28:k:30:LYS:HE3	2.55	0.41
1:1:397:A:C6	1:1:400:G:C5	3.08	0.41
1:1:430:U:H2'	1:1:431:U:H6	1.85	0.41
1:1:535:G:N2	1:1:555:U:O2	2.53	0.41
1:1:591:G:C1'	23:I:19:LYS:HG3	2.50	0.41
1:1:879:U:O2'	41:R:131:ARG:HB3	2.20	0.41
1:1:1112:A:OP2	33:N:5:LYS:HD3	2.20	0.41
1:1:1187:C:H2'	1:1:1188:U:C6	2.56	0.41
1:1:1192:C:N4	1:1:1302:A:OP2	2.53	0.41
1:1:1243:G:O2'	1:1:1270:A:N6	2.54	0.41
1:1:1290:A:H2'	1:1:1291:A:H8	1.81	0.41
1:1:1310:G:C2	1:1:1311:G:C5	3.09	0.41
1:1:1481:A:H2	24:i:4:ARG:NE	2.19	0.41
1:1:1588:A:C6	34:n:4:GLN:HG2	2.55	0.41
1:1:2335:G:H22	1:1:2339:C:H2'	1.85	0.41
1:1:2370:G:H2'	1:1:2371:G:C8	2.56	0.41
1:1:2372:A:O2'	1:1:2373:A:P	2.78	0.41
1:1:2385:G:H8	1:1:2385:G:OP2	2.04	0.41
1:1:2440:G:H8	1:1:2440:G:OP2	2.04	0.41
1:1:2713:U:O2'	1:1:2714:G:H5''	2.20	0.41
1:1:2909:U:H2'	1:1:2910:A:O4'	2.21	0.41
1:1:2941:A:OP2	17:F:255:TRP:HB3	2.20	0.41
1:1:3146:G:H4'	17:F:100:ARG:HD2	2.03	0.41
1:1:3254:G:C4	1:1:3255:U:C5	3.08	0.41
1:1:3271:G:H5''	1:1:3272:C:OP1	2.20	0.41
5:4:77:A:H2'	5:4:78:G:O4'	2.21	0.41
5:4:79:A:O3'	26:j:43:LYS:NZ	2.48	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:4:129:C:OP2	5:4:129:C:H6	2.02	0.41
9:B:72:C:H5''	9:B:73:G:OP2	2.20	0.41
12:c:14:HIS:CD2	20:g:36:LYS:HE2	2.55	0.41
17:F:292:ALA:HB2	17:F:302:LYS:HG2	2.03	0.41
18:f:35:GLU:O	18:f:38:LYS:N	2.53	0.41
20:g:100:ILE:O	20:g:125:ARG:NH1	2.53	0.41
21:H:193:GLU:O	21:H:196:ARG:HB3	2.20	0.41
26:j:113:GLN:NE2	33:N:92:THR:O	2.53	0.41
27:K:136:LEU:HA	27:K:197:VAL:HG21	2.02	0.41
29:L:186:PHE:HB2	29:L:191:LEU:C	2.46	0.41
33:N:105:ASN:ND2	33:N:108:ILE:HG12	2.35	0.41
40:q:95:ILE:HD11	40:q:125:GLN:HE22	1.85	0.41
44:s:67:ALA:O	44:s:71:ALA:N	2.47	0.41
1:1:155:G:O2'	28:k:26:ILE:HG13	2.21	0.41
1:1:331:G:H2'	1:1:332:C:C6	2.55	0.41
1:1:359:U:C1'	1:1:817:A:H62	2.34	0.41
1:1:402:A:P	34:n:36:ARG:HH12	2.44	0.41
1:1:594:U:C5	19:G:308:LYS:HE2	2.56	0.41
1:1:598:A:C6	1:1:599:C:N4	2.89	0.41
1:1:636:C:O4'	1:1:2378:C:H5'	2.21	0.41
1:1:651:G:C6	1:1:652:G:C6	3.08	0.41
1:1:728:G:H2'	1:1:729:C:O4'	2.20	0.41
1:1:1431:G:O2'	1:1:1432:C:OP1	2.29	0.41
1:1:1479:U:H5''	1:1:1480:G:OP2	2.20	0.41
1:1:1530:U:O2	1:1:1530:U:H2'	2.19	0.41
1:1:1566:A:N3	1:1:1573:G:C6	2.88	0.41
1:1:1591:G:C6	1:1:1592:G:C4	3.08	0.41
1:1:1602:A:N6	1:1:1603:A:N1	2.68	0.41
1:1:1908:A:H62	1:1:1909:A:N6	2.19	0.41
1:1:2111:G:N3	4:Y:49:ILE:HD12	2.36	0.41
1:1:2115:G:H8	1:1:2115:G:O5'	2.03	0.41
1:1:2279:A:C5	1:1:2288:G:N7	2.88	0.41
1:1:2385:G:C2	1:1:3143:C:C4	3.09	0.41
1:1:2451:G:H5'	1:1:2452:G:OP2	2.20	0.41
1:1:2655:U:O2'	1:1:2713:U:O4	2.33	0.41
1:1:2777:G:C6	12:c:60:TYR:CD1	3.08	0.41
1:1:3097:C:P	17:F:325:LYS:NZ	2.93	0.41
1:1:3178:A:N3	39:Q:115:LYS:HG2	2.35	0.41
1:1:3348:G:O6	1:1:3357:U:C4	2.73	0.41
3:3:13:A:H5''	3:3:14:U:H5	1.85	0.41
7:A:9:A:C6	7:A:45:G:C6	3.09	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:E:52:SER:HB3	15:E:191:LEU:HD23	2.02	0.41
20:g:43:ARG:O	20:g:45:ARG:HG3	2.19	0.41
27:K:227:ASP:O	27:K:230:LYS:HB3	2.20	0.41
29:L:10:ILE:HG12	29:L:76:ASP:OD1	2.20	0.41
30:l:50:GLY:O	30:l:52:LYS:N	2.54	0.41
40:q:92:LEU:HD12	40:q:101:SER:O	2.20	0.41
1:1:11:A:N3	5:4:148:G:N2	2.69	0.41
1:1:160:G:H2'	1:1:161:G:C8	2.56	0.41
1:1:312:C:H2'	1:1:313:A:H8	1.86	0.41
1:1:333:G:N2	1:1:334:A:C4	2.89	0.41
1:1:674:G:C6	1:1:789:A:N1	2.88	0.41
1:1:836:A:C8	1:1:858:A:C2	3.09	0.41
1:1:904:A:N6	1:1:905:U:O4	2.54	0.41
1:1:999:G:H1'	1:1:1002:A:H62	1.86	0.41
1:1:1307:G:H3'	1:1:1307:G:OP2	2.21	0.41
1:1:1346:G:H2'	1:1:1347:U:C6	2.55	0.41
1:1:1449:A:N3	1:1:2356:A:C6	2.88	0.41
1:1:1564:U:O5'	1:1:1564:U:H6	2.03	0.41
1:1:1566:A:H1'	1:1:1573:G:H1	1.85	0.41
1:1:1848:G:O2'	1:1:1849:C:OP1	2.34	0.41
1:1:1860:G:C5	1:1:1861:G:N7	2.88	0.41
1:1:1917:C:H2'	1:1:1918:C:O4'	2.19	0.41
1:1:2181:C:H2'	1:1:2182:A:C8	2.56	0.41
1:1:2207:A:OP2	1:1:2207:A:H2	2.03	0.41
1:1:2618:G:OP1	14:d:3:LYS:HD2	2.21	0.41
1:1:2717:U:H2'	1:1:2718:U:H6	1.86	0.41
1:1:2726:C:HO2'	1:1:2727:A:P	2.44	0.41
1:1:2728:G:N7	47:V:87:LYS:NZ	2.63	0.41
1:1:3152:U:O2'	1:1:3153:U:OP1	2.30	0.41
3:3:38:U:H2'	3:3:40:C:H5	1.86	0.41
3:3:61:G:H5''	21:H:276:LYS:HA	2.02	0.41
4:Y:50:ALA:HA	4:Y:55:PHE:CD2	2.56	0.41
8:a:55:GLU:OE1	8:a:108:LYS:HB2	2.21	0.41
17:F:302:LYS:HE3	17:F:302:LYS:HB3	1.87	0.41
17:F:347:SER:C	17:F:349:LYS:H	2.29	0.41
21:H:173:VAL:O	21:H:175:HIS:ND1	2.34	0.41
27:K:46:LEU:HA	27:K:46:LEU:HD23	1.86	0.41
39:Q:186:ALA:C	39:Q:188:SER:H	2.29	0.41
40:q:33:VAL:HA	40:q:37:ARG:O	2.21	0.41
44:s:21:TYR:C	44:s:23:ARG:H	2.28	0.41
46:U:12:ARG:HH21	47:V:139:ARG:NH1	2.18	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:315:C:C4	1:1:316:U:C4	3.08	0.41
1:1:355:A:N3	1:1:365:A:C6	2.89	0.41
1:1:537:A:H3'	1:1:538:G:H8	1.86	0.41
1:1:725:G:O6	1:1:746:A:N6	2.54	0.41
1:1:827:A:N3	1:1:828:A:C8	2.89	0.41
1:1:933:A:C2	19:G:98:ARG:NH1	2.89	0.41
1:1:1146:C:H2'	1:1:1147:G:C8	2.47	0.41
1:1:1260:A:C5	1:1:1261:G:N7	2.89	0.41
1:1:1427:U:OP2	12:c:2:PRO:HD2	2.20	0.41
1:1:1472:U:H2'	1:1:1473:G:C8	2.55	0.41
1:1:1496:C:P	1:1:1514:G:H5''	2.61	0.41
1:1:1571:A:H61	1:1:1573:G:C1'	2.33	0.41
1:1:1621:A:H2'	1:1:1622:U:C6	2.56	0.41
1:1:1632:A:N1	1:1:1644:C:C4	2.88	0.41
1:1:1847:A:N6	1:1:1849:C:O2	2.54	0.41
1:1:1881:A:C2	1:1:1882:G:C8	3.09	0.41
1:1:2174:G:N3	1:1:2176:U:N3	2.69	0.41
1:1:2345:A:C6	1:1:2346:C:N4	2.88	0.41
1:1:2685:C:C2	1:1:2686:A:C8	3.08	0.41
1:1:2731:U:O2'	1:1:2732:G:H5'	2.21	0.41
1:1:2931:C:H2'	1:1:2932:U:O4'	2.20	0.41
1:1:2961:G:N1	1:1:2972:G:C6	2.89	0.41
1:1:3107:U:O4	1:1:3128:G:N2	2.54	0.41
1:1:3111:U:H2'	1:1:3112:G:H5'	2.02	0.41
5:4:65:A:C4	5:4:66:A:C8	3.08	0.41
7:A:9:A:O5'	7:A:10:G:OP2	2.38	0.41
9:B:26:A:C4	9:B:27:C:C5	3.08	0.41
11:C:38:GLN:HE21	11:C:42:ARG:HB2	1.85	0.41
18:f:29:ALA:HB3	18:f:30:PRO:HD3	2.03	0.41
18:f:51:LEU:HD23	18:f:93:VAL:HB	2.03	0.41
32:m:17:ARG:HE	32:m:19:ASP:CG	2.26	0.41
35:O:14:LEU:O	35:O:19:ARG:NH1	2.47	0.41
40:q:31:PHE:CE2	40:q:85:VAL:HG21	2.56	0.41
41:R:40:GLU:HA	41:R:113:TYR:HA	2.03	0.41
47:V:76:ILE:O	47:V:86:GLU:HA	2.21	0.41
1:1:40:A:N7	1:1:937:G:C4	2.89	0.41
1:1:72:C:O2'	33:N:62:THR:O	2.38	0.41
1:1:137:G:C2	1:1:138:U:C2	3.09	0.41
1:1:155:G:H22	1:1:265:A:P	2.44	0.41
1:1:191:U:H2'	1:1:192:C:C6	2.56	0.41
1:1:193:C:H2'	1:1:194:U:H6	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:198:A:N1	1:1:219:A:C4	2.89	0.41
1:1:245:U:H2'	1:1:246:U:O4'	2.21	0.41
1:1:252:U:H5'	1:1:253:A:H5'	2.02	0.41
1:1:338:A:N7	19:G:47:ARG:HG2	2.35	0.41
1:1:365:A:C6	1:1:366:A:C5	3.09	0.41
1:1:390:G:C2	1:1:391:A:H1'	2.56	0.41
1:1:402:A:OP2	34:n:36:ARG:NH2	2.54	0.41
1:1:422:A:H3'	1:1:423:A:H8	1.86	0.41
1:1:517:G:H3'	1:1:518:G:N2	2.36	0.41
1:1:519:A:H61	46:U:65:ASN:H	1.69	0.41
1:1:519:A:H4'	1:1:520:U:OP2	2.19	0.41
1:1:561:C:H2'	1:1:562:C:H6	1.85	0.41
1:1:564:G:H2'	1:1:564:G:N3	2.36	0.41
1:1:572:A:C5	1:1:573:C:C5	3.09	0.41
1:1:584:G:H5''	1:1:585:A:OP2	2.20	0.41
1:1:645:A:C2	1:1:2372:A:C2	3.08	0.41
1:1:797:U:H2'	1:1:798:G:H8	1.86	0.41
1:1:829:U:O4	1:1:894:G:N2	2.54	0.41
1:1:983:A:H61	1:1:1099:A:N6	2.18	0.41
1:1:1021:G:C2	1:1:1032:C:C2	3.09	0.41
1:1:1083:G:H2'	1:1:1084:A:C8	2.56	0.41
1:1:1089:G:H2'	1:1:1090:G:C8	2.56	0.41
1:1:1210:U:H2'	1:1:1211:U:C6	2.55	0.41
1:1:1404:G:C2	1:1:1408:G:C2	3.09	0.41
1:1:1422:G:C4	1:1:1423:C:C5	3.08	0.41
1:1:1470:U:H2'	1:1:1471:U:H6	1.85	0.41
1:1:1490:A:C8	1:1:1491:A:C8	3.09	0.41
1:1:1632:A:H2'	1:1:1633:C:C6	2.56	0.41
1:1:1653:G:H2'	1:1:1654:A:C8	2.56	0.41
1:1:1680:G:C2	1:1:1689:U:C2	3.09	0.41
1:1:1682:U:C6	48:W:85:LYS:HG2	2.55	0.41
1:1:1693:C:O2'	1:1:1772:U:O2'	2.37	0.41
1:1:1917:C:H2'	1:1:1918:C:H6	1.85	0.41
1:1:2238:G:C6	1:1:2239:G:N7	2.88	0.41
1:1:2280:A:O5'	1:1:2281:A:OP2	2.39	0.41
1:1:2403:G:O2'	1:1:2404:A:O5'	2.35	0.41
1:1:2602:G:C4	1:1:2603:G:C8	3.08	0.41
1:1:2837:A:C5	1:1:2850:G:C2	3.09	0.41
1:1:2842:U:C4	1:1:2843:U:C4	3.09	0.41
1:1:3023:U:C4	1:1:3031:G:N2	2.89	0.41
1:1:3023:U:H2'	1:1:3024:A:C8	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3036:G:C6	1:1:3037:U:C4	3.09	0.41
1:1:3185:U:O2'	1:1:3186:A:OP2	2.30	0.41
1:1:3234:A:C8	1:1:3234:A:OP2	2.74	0.41
1:1:3313:U:OP1	17:F:173:GLN:NE2	2.54	0.41
1:1:3355:U:C4	1:1:3357:U:OP2	2.74	0.41
3:3:12:U:H5''	3:3:13:A:P	2.61	0.41
3:3:32:U:H4'	3:3:33:U:OP1	2.21	0.41
3:3:52:G:O2'	3:3:53:U:OP1	2.35	0.41
3:3:116:C:C2	3:3:117:A:C8	3.09	0.41
5:4:67:U:OP1	30:l:85:LYS:HE2	2.21	0.41
6:Z:68:THR:CG2	6:Z:141:TYR:HB2	2.51	0.41
8:a:79:ALA:HB1	8:a:98:ASN:HB3	2.03	0.41
9:B:44:G:H8	9:B:44:G:OP2	2.04	0.41
10:b:30:ASP:HA	10:b:77:TYR:CE2	2.56	0.41
15:E:96:LEU:HD12	15:E:107:VAL:HG12	2.02	0.41
17:F:129:ALA:O	17:F:130:PHE:HB2	2.21	0.41
18:f:76:SER:O	18:f:92:TYR:N	2.52	0.41
19:G:109:TRP:CD1	33:N:26:PHE:CE1	3.09	0.41
19:G:175:HIS:CE1	19:G:179:LEU:HD11	2.56	0.41
19:G:222:VAL:HA	19:G:223:PRO:HD3	1.90	0.41
19:G:280:ILE:HD11	43:S:25:TYR:C	2.46	0.41
19:G:315:LYS:HD3	19:G:320:ASN:ND2	2.36	0.41
21:H:81:HIS:O	21:H:84:PRO:HD2	2.21	0.41
21:H:119:TYR:CE2	21:H:141:PRO:HA	2.56	0.41
21:H:204:VAL:O	21:H:208:MET:HG3	2.20	0.41
23:I:64:LEU:HD21	23:I:76:LEU:HD22	2.03	0.41
24:i:101:VAL:HA	24:i:104:VAL:HG12	2.03	0.41
26:j:112:PRO:HG2	33:N:128:ARG:NH1	2.24	0.41
28:k:74:LYS:HD3	28:k:80:PHE:HB2	2.03	0.41
29:L:159:ALA:O	29:L:162:GLN:HB3	2.21	0.41
31:M:35:LYS:O	31:M:39:GLN:HG2	2.21	0.41
31:M:81:GLU:HG3	31:M:167:TYR:HE1	1.86	0.41
36:o:88:LYS:HA	36:o:92:ASP:HB2	2.03	0.41
39:Q:8:VAL:HG22	39:Q:34:VAL:CG1	2.51	0.41
39:Q:10:ASP:HB2	39:Q:117:ARG:HB3	2.03	0.41
43:S:80:THR:OG1	43:S:137:THR:HG22	2.21	0.41
46:U:93:GLU:HB2	46:U:140:VAL:HG21	2.03	0.41
49:z:19:UNK:O	49:z:20:UNK:CB	2.68	0.41
1:1:204:A:H5''	1:1:205:C:OP2	2.21	0.41
1:1:358:G:C5	1:1:360:G:OP2	2.74	0.41
1:1:498:A:C2	1:1:616:G:C5	3.09	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:645:A:N6	1:1:649:A:C4	2.89	0.41
1:1:887:G:C6	1:1:888:A:C6	3.09	0.41
1:1:909:G:C6	1:1:910:G:C5	3.08	0.41
1:1:963:G:OP2	1:1:963:G:C8	2.73	0.41
1:1:983:A:H4'	1:1:984:G:OP2	2.20	0.41
1:1:997:A:H2'	1:1:998:A:C8	2.55	0.41
1:1:1103:A:OP2	1:1:1104:G:OP2	2.39	0.41
1:1:1337:A:H2'	1:1:1338:C:C6	2.55	0.41
1:1:1535:A:H62	1:1:1586:G:N2	2.19	0.41
1:1:1547:G:H5''	37:P:108:ARG:NH2	2.35	0.41
1:1:1581:C:OP2	1:1:1582:C:N4	2.54	0.41
1:1:1584:U:C4	1:1:1585:C:C5	3.09	0.41
1:1:1636:U:H2'	1:1:1637:A:O4'	2.21	0.41
1:1:1912:U:N3	1:1:2122:G:OP2	2.54	0.41
1:1:2117:A:C5	1:1:2118:C:C4	3.09	0.41
1:1:2202:C:H5''	15:E:226:SER:HB2	2.03	0.41
1:1:2291:A:N6	1:1:2302:G:O6	2.54	0.41
1:1:2412:G:C4	1:1:2811:A:C2	3.09	0.41
1:1:2439:A:OP2	1:1:2439:A:H8	2.01	0.41
1:1:2445:A:N1	1:1:2502:A:C6	2.89	0.41
1:1:3101:G:C4	1:1:3102:G:C8	3.09	0.41
1:1:3301:U:H2'	1:1:3302:U:H6	1.86	0.41
3:3:1:G:N2	21:H:269:SER:OG	2.54	0.41
5:4:45:C:C2	5:4:46:G:C8	3.09	0.41
6:Z:67:ILE:HD13	6:Z:115:ARG:NH2	2.37	0.41
7:A:2:G:N3	7:A:3:G:C8	2.89	0.41
7:A:22:G:C6	7:A:23:A:C5	3.09	0.41
7:A:61:C:OP2	7:A:61:C:H6	2.04	0.41
9:B:54:U:H3'	9:B:55:U:H6	1.86	0.41
10:b:32:GLY:HA2	10:b:40:HIS:ND1	2.36	0.41
10:b:107:ARG:HB3	10:b:111:LYS:HZ1	1.85	0.41
12:c:60:TYR:CE2	12:c:63:LYS:HG3	2.55	0.41
12:c:126:LYS:HE2	12:c:148:ILE:HD13	2.02	0.41
17:F:87:VAL:O	17:F:107:ALA:N	2.53	0.41
21:H:90:HIS:HE2	21:H:229:ASP:CG	2.27	0.41
21:H:99:TYR:OH	21:H:168:ASP:OD2	2.36	0.41
22:h:50:ALA:HB2	22:h:68:TRP:CE3	2.56	0.41
29:L:59:ASN:OD1	35:O:41:GLN:NE2	2.54	0.41
32:m:22:THR:OG1	32:m:46:ARG:HB3	2.21	0.41
33:N:46:ILE:O	33:N:47:ALA:HB3	2.21	0.41
39:Q:42:ASN:HA	39:Q:136:THR:O	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:q:92:LEU:HA	40:q:102:LEU:HD13	2.03	0.41
41:R:64:ASN:HB2	41:R:80:LYS:CE	2.51	0.41
44:s:175:LEU:HD13	44:s:198:PHE:CE1	2.55	0.41
1:1:60:A:C6	1:1:327:A:C4	3.09	0.40
1:1:74:G:C2	1:1:75:G:C4	3.09	0.40
1:1:143:G:H2'	1:1:144:A:O4'	2.21	0.40
1:1:202:G:C4	1:1:203:G:C8	3.08	0.40
1:1:510:G:H1	1:1:581:U:H3	1.69	0.40
1:1:586:C:H2'	1:1:587:U:H6	1.85	0.40
1:1:590:G:C6	1:1:591:G:C2	3.10	0.40
1:1:678:G:H2'	1:1:679:U:H6	1.85	0.40
1:1:739:G:H2'	1:1:740:G:C8	2.55	0.40
1:1:769:G:C6	1:1:770:G:C6	3.10	0.40
1:1:1235:U:HO2'	1:1:1236:G:C5'	2.31	0.40
1:1:1280:C:H3'	1:1:1281:G:C4'	2.51	0.40
1:1:1289:G:H2'	1:1:1290:A:C8	2.53	0.40
1:1:1492:G:N7	34:n:2:ALA:HB1	2.36	0.40
1:1:1599:G:C2	1:1:1609:C:O2	2.75	0.40
1:1:1899:G:H2'	1:1:2334:U:O4	2.22	0.40
1:1:2145:A:C2	1:1:2146:C:C2	3.09	0.40
1:1:2370:G:H2'	1:1:2371:G:H8	1.86	0.40
1:1:2537:U:O2'	1:1:2538:U:OP1	2.37	0.40
1:1:2574:G:H2'	1:1:2575:G:C8	2.55	0.40
1:1:2708:C:H2'	1:1:2709:C:C6	2.56	0.40
1:1:3076:C:P	18:f:65:LYS:HE2	2.61	0.40
1:1:3173:G:O6	22:h:93:THR:HG22	2.21	0.40
3:3:37:G:N1	3:3:41:G:C2	2.89	0.40
9:B:10:G:N1	9:B:25:U:N3	2.68	0.40
9:B:53:G:C8	9:B:53:G:OP2	2.74	0.40
10:b:14:VAL:HG13	10:b:15:ARG:N	2.36	0.40
10:b:32:GLY:HA2	10:b:40:HIS:CE1	2.56	0.40
11:C:43:TYR:O	11:C:46:LYS:N	2.50	0.40
20:g:23:ASP:N	20:g:23:ASP:OD1	2.53	0.40
27:K:87:ALA:O	27:K:91:PHE:HD2	2.04	0.40
30:l:35:SER:O	30:l:45:ARG:NH1	2.53	0.40
34:n:15:LYS:HE3	34:n:19:GLN:NE2	2.36	0.40
41:R:109:ALA:HA	41:R:112:LEU:HD13	2.03	0.40
46:U:4:PHE:HE2	46:U:104:GLU:OE1	2.03	0.40
1:1:20:A:OP2	1:1:20:A:C8	2.70	0.40
1:1:148:G:C8	1:1:148:G:OP2	2.75	0.40
1:1:176:G:H3'	1:1:177:U:H6	1.87	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:931:C:C2	1:1:932:U:C5	3.09	0.40
1:1:934:G:N1	1:1:935:U:O2	2.54	0.40
1:1:1011:A:N6	1:1:1012:G:O6	2.54	0.40
1:1:1013:G:N2	1:1:1038:C:O2	2.54	0.40
1:1:1236:G:N1	1:1:1244:A:OP2	2.55	0.40
1:1:1526:U:HO2'	1:1:1527:C:P	2.43	0.40
1:1:1658:G:C5	1:1:1659:U:C4	3.09	0.40
1:1:1729:A:O2'	1:1:1730:G:P	2.79	0.40
1:1:2108:C:C4	1:1:2109:U:C4	3.09	0.40
1:1:2151:C:H2'	1:1:2152:A:O4'	2.20	0.40
1:1:2254:U:C2	1:1:2261:G:C2	3.09	0.40
1:1:2778:G:O6	1:1:2779:A:N6	2.54	0.40
1:1:2876:C:C2	1:1:2952:G:N2	2.89	0.40
1:1:2951:G:H21	1:1:2952:G:H1'	1.85	0.40
1:1:2994:A:H2'	1:1:2995:A:O4'	2.21	0.40
1:1:3058:U:H5'	1:1:3059:G:OP1	2.22	0.40
1:1:3208:G:H5'	1:1:3209:A:OP1	2.21	0.40
1:1:3273:A:H2'	1:1:3274:A:O4'	2.22	0.40
3:3:15:C:H2'	3:3:16:U:C6	2.56	0.40
4:Y:4:GLU:OE1	4:Y:4:GLU:N	2.52	0.40
5:4:68:G:H2'	5:4:69:U:H6	1.86	0.40
5:4:72:A:C8	8:a:52:ARG:NH2	2.89	0.40
7:A:61:C:OP2	7:A:61:C:C6	2.74	0.40
8:a:39:LEU:HD22	8:a:43:TYR:HE2	1.85	0.40
15:E:34:TYR:HA	15:E:37:ARG:HG2	2.02	0.40
16:e:66:LYS:HB3	16:e:105:ALA:O	2.20	0.40
17:F:160:VAL:O	17:F:180:GLU:HA	2.20	0.40
19:G:103:THR:HB	19:G:107:ARG:HH21	1.86	0.40
19:G:234:ASN:OD1	19:G:235:LEU:N	2.54	0.40
23:I:97:ASN:O	23:I:99:GLU:HG3	2.21	0.40
26:j:77:PRO:HB2	26:j:79:ASP:OD1	2.21	0.40
30:l:28:HIS:HE1	30:l:30:GLN:HB2	1.86	0.40
41:R:55:GLN:O	41:R:72:GLN:NE2	2.54	0.40
45:T:21:LYS:HE3	45:T:55:VAL:HA	2.02	0.40
45:T:106:LEU:HB3	45:T:120:TYR:CE1	2.56	0.40
1:1:127:G:C4	1:1:128:G:C8	3.10	0.40
1:1:156:G:H4'	1:1:157:A:OP2	2.17	0.40
1:1:169:U:O4	1:1:251:G:N2	2.54	0.40
1:1:282:G:H2'	1:1:286:U:C6	2.56	0.40
1:1:549:U:H2'	1:1:550:A:C8	2.57	0.40
1:1:712:G:H2'	1:1:713:U:H6	1.85	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:841:A:C6	1:1:853:G:C6	3.09	0.40
1:1:971:G:P	43:S:8:LYS:NZ	2.93	0.40
1:1:1055:A:H2	3:3:81:U:H4'	1.85	0.40
1:1:1500:G:N1	1:1:1501:U:O2	2.55	0.40
1:1:1517:G:H2'	1:1:1518:U:C6	2.57	0.40
1:1:1622:U:H2'	1:1:1623:G:C8	2.55	0.40
1:1:1833:G:H5''	1:1:1834:U:OP2	2.21	0.40
1:1:2100:A:H5'	1:1:2101:C:OP2	2.20	0.40
1:1:2315:G:H2'	1:1:2316:G:H8	1.86	0.40
1:1:2433:U:H3'	1:1:2434:U:H3'	2.03	0.40
1:1:2728:G:O5'	47:V:83:ARG:NH2	2.54	0.40
1:1:3055:U:O2'	1:1:3057:U:OP2	2.37	0.40
3:3:61:G:OP1	21:H:276:LYS:HG2	2.20	0.40
3:3:113:C:C4	3:3:114:U:C4	3.09	0.40
5:4:49:G:C6	5:4:77:A:N1	2.89	0.40
5:4:71:A:N6	5:4:87:G:O2'	2.55	0.40
9:B:2:G:H2'	9:B:3:A:C8	2.55	0.40
11:C:50:PHE:CE2	37:P:88:GLY:HA3	2.57	0.40
15:E:44:ILE:O	15:E:44:ILE:HG13	2.21	0.40
17:F:113:GLU:OE2	17:F:167:ARG:HG2	2.21	0.40
17:F:291:GLU:HG3	17:F:302:LYS:HZ1	1.86	0.40
19:G:11:LEU:HD11	19:G:155:ASP:HB2	2.04	0.40
19:G:22:LEU:HA	19:G:23:PRO:HD3	1.89	0.40
19:G:71:VAL:CG2	19:G:76:ARG:HH22	2.31	0.40
22:h:13:HIS:ND1	22:h:93:THR:O	2.55	0.40
27:K:189:LEU:HD12	27:K:190:VAL:N	2.37	0.40
28:k:70:ARG:NH1	28:k:84:LYS:HA	2.34	0.40
33:N:54:LEU:HD11	33:N:119:TYR:CB	2.51	0.40
44:s:54:ASN:ND2	44:s:161:GLN:HE21	2.19	0.40
1:1:20:A:C2	5:4:140:G:C2	3.09	0.40
1:1:30:G:C2	1:1:55:G:C2	3.10	0.40
1:1:96:G:C6	1:1:97:U:C4	3.09	0.40
1:1:206:G:H2'	1:1:207:U:C6	2.57	0.40
1:1:665:A:H2'	1:1:666:A:O4'	2.22	0.40
1:1:674:G:P	43:S:105:ARG:NH2	2.95	0.40
1:1:760:G:N1	1:1:770:G:C5	2.90	0.40
1:1:820:A:H2'	1:1:821:U:C6	2.56	0.40
1:1:910:G:C6	1:1:911:C:N3	2.89	0.40
1:1:1223:A:H1'	1:1:1286:A:N1	2.36	0.40
1:1:1391:C:O2'	1:1:1392:G:OP1	2.28	0.40
1:1:1560:G:C6	1:1:1561:G:C6	3.10	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1656:A:H1'	1:1:1657:C:C5	2.56	0.40
1:1:1733:G:H2'	1:1:1734:G:C8	2.56	0.40
1:1:1840:U:H5'	1:1:1841:A:OP1	2.21	0.40
1:1:1877:U:H5''	1:1:1878:G:O4'	2.21	0.40
1:1:2095:G:H2'	1:1:2096:A:H8	1.86	0.40
1:1:2122:G:H2'	1:1:2123:G:O4'	2.22	0.40
1:1:2147:A:N7	1:1:2148:U:N3	2.70	0.40
1:1:2406:C:HO2'	1:1:2619:G:N2	2.19	0.40
1:1:2448:G:O6	1:1:2498:U:C4	2.73	0.40
1:1:2528:G:C4	1:1:2529:A:C8	3.10	0.40
1:1:2817:A:O2'	1:1:2818:U:P	2.80	0.40
1:1:2896:A:H5'	36:o:124:LYS:NZ	2.36	0.40
1:1:2923:U:H2'	1:1:2924:U:C6	2.56	0.40
1:1:3121:U:O4	1:1:3124:G:C6	2.74	0.40
1:1:3161:C:H2'	1:1:3162:C:C6	2.57	0.40
1:1:3354:U:C5'	1:1:3355:U:H5'	2.51	0.40
1:1:3369:G:O2'	1:1:3370:A:H8	2.04	0.40
3:3:79:A:C6	3:3:102:A:C8	3.10	0.40
4:Y:63:ILE:C	4:Y:64:THR:HG1	2.29	0.40
5:4:2:A:N6	5:4:3:A:C6	2.90	0.40
7:A:14:A:C6	7:A:22:G:C5	3.10	0.40
8:a:50:ILE:HD12	8:a:54:ASP:OD2	2.21	0.40
9:B:50:C:H2'	9:B:51:G:C8	2.56	0.40
10:b:36:HIS:O	10:b:38:PHE:N	2.52	0.40
14:d:23:LYS:HD2	14:d:23:LYS:HA	1.82	0.40
17:F:81:THR:O	17:F:320:ASP:HB2	2.21	0.40
17:F:233:TRP:CD1	17:F:265:ALA:HB1	2.57	0.40
21:H:178:ASN:HA	21:H:183:TRP:CG	2.56	0.40
22:h:13:HIS:CD2	22:h:14:LEU:H	2.40	0.40
31:M:109:HIS:HD2	31:M:123:PHE:H	1.70	0.40
33:N:56:PRO:HG3	33:N:74:GLY:C	2.46	0.40
33:N:126:PHE:CD1	33:N:132:ALA:HB1	2.56	0.40
44:s:170:TRP:CD1	44:s:177:ARG:HA	2.51	0.40
47:V:18:ASP:OD2	47:V:21:LYS:HD2	2.21	0.40
1:1:3:U:H1'	5:4:157:U:H3	1.86	0.40
1:1:9:U:H2'	1:1:10:C:C6	2.57	0.40
1:1:11:A:C2	1:1:12:A:C5	3.10	0.40
1:1:59:G:H1	1:1:330:G:H1	1.69	0.40
1:1:76:G:H4'	1:1:77:A:OP1	2.21	0.40
1:1:196:G:H21	1:1:219:A:N6	2.19	0.40
1:1:264:G:OP1	28:k:34:SER:HB2	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:359:U:N3	1:1:920:A:C6	2.90	0.40
1:1:611:A:H1'	23:I:23:LYS:HE2	2.02	0.40
1:1:641:C:H42	1:1:645:A:H62	1.70	0.40
1:1:647:A:O2'	1:1:648:C:P	2.79	0.40
1:1:935:U:H5''	1:1:936:A:OP2	2.22	0.40
1:1:1340:G:C4	1:1:1341:U:C5	3.09	0.40
1:1:1493:G:C4	34:n:13:MET:HE2	2.57	0.40
1:1:1561:G:C6	1:1:1562:C:C4	3.09	0.40
1:1:1561:G:C2	1:1:1562:C:C2	3.09	0.40
1:1:1565:G:N3	1:1:1565:G:H2'	2.36	0.40
1:1:1604:G:C6	1:1:1605:A:C6	3.10	0.40
1:1:1665:C:H2'	1:1:1666:G:C8	2.56	0.40
1:1:1709:C:H2'	1:1:1710:C:C6	2.57	0.40
1:1:1918:C:H2'	1:1:1919:G:C8	2.56	0.40
1:1:2122:G:C6	1:1:2332:A:N1	2.90	0.40
1:1:2140:U:OP1	1:1:2141:U:OP2	2.39	0.40
1:1:2222:A:N6	1:1:2223:A:N1	2.69	0.40
1:1:2515:A:C6	1:1:2516:U:C2	3.09	0.40
1:1:2590:A:C5	1:1:2591:A:C5	3.08	0.40
1:1:2608:G:N3	1:1:2609:A:C8	2.89	0.40
1:1:2688:U:H5''	21:H:12:TYR:HE1	1.87	0.40
1:1:2762:A:C6	1:1:2800:G:C8	3.09	0.40
1:1:2765:C:O3'	11:C:39:GLY:HA3	2.21	0.40
1:1:2846:U:C4	36:o:97:ARG:NH1	2.89	0.40
2:X:13:ILE:CD1	2:X:54:LEU:HB3	2.51	0.40
3:3:68:C:H2'	3:3:69:C:H6	1.85	0.40
3:3:116:C:H2'	3:3:117:A:H8	1.86	0.40
5:4:71:A:H4'	5:4:72:A:OP1	2.21	0.40
5:4:81:U:H5'	5:4:82:U:H6	1.86	0.40
5:4:142:C:C2	5:4:143:U:C5	3.09	0.40
7:A:22:G:C2	7:A:23:A:C4	3.10	0.40
7:A:34:U:H5''	7:A:35:U:OP2	2.21	0.40
9:B:24:A:C5	9:B:25:U:C4	3.09	0.40
9:B:37:A:H8	9:B:38:C:C5	2.39	0.40
10:b:23:VAL:HG12	10:b:45:GLY:CA	2.50	0.40
19:G:16:THR:HG22	19:G:18:ASN:H	1.86	0.40
21:H:223:PHE:HB3	21:H:226:TYR:HD2	1.87	0.40
23:I:145:LEU:O	23:I:149:ILE:HG13	2.22	0.40
25:J:180:SER:O	25:J:183:ASP:HB2	2.21	0.40
31:M:10:ARG:HG3	31:M:152:HIS:HE1	1.87	0.40
31:M:14:ILE:HG12	31:M:131:MET:SD	2.61	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:m:24:THR:CG2	32:m:44:LYS:HB2	2.51	0.40
33:N:52:ASP:OD1	33:N:52:ASP:N	2.54	0.40
41:R:43:LYS:HE3	41:R:43:LYS:HB3	1.92	0.40
44:s:128:VAL:HG11	44:s:134:ILE:HD11	2.04	0.40
44:s:143:ASN:OD1	44:s:146:VAL:HB	2.22	0.40
45:T:23:TRP:HB3	45:T:51:VAL:HG22	2.03	0.40
47:V:126:VAL:HG23	47:V:127:GLN:N	2.37	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	X	134/137 (98%)	130 (97%)	4 (3%)	0	100	100
4	Y	96/155 (62%)	86 (90%)	10 (10%)	0	100	100
6	Z	119/142 (84%)	111 (93%)	7 (6%)	1 (1%)	16	50
8	a	124/127 (98%)	109 (88%)	15 (12%)	0	100	100
10	b	133/136 (98%)	120 (90%)	12 (9%)	1 (1%)	16	50
11	C	103/106 (97%)	88 (85%)	15 (15%)	0	100	100
12	c	146/149 (98%)	128 (88%)	15 (10%)	3 (2%)	5	32
13	D	89/92 (97%)	79 (89%)	10 (11%)	0	100	100
14	d	56/59 (95%)	48 (86%)	7 (12%)	1 (2%)	6	34
15	E	250/254 (98%)	230 (92%)	20 (8%)	0	100	100
16	e	95/105 (90%)	88 (93%)	7 (7%)	0	100	100
17	F	384/387 (99%)	358 (93%)	25 (6%)	1 (0%)	36	69
18	f	107/109 (98%)	99 (92%)	8 (8%)	0	100	100
19	G	359/362 (99%)	319 (89%)	38 (11%)	2 (1%)	21	55

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
20	g	125/130 (96%)	115 (92%)	10 (8%)	0	100	100
21	H	294/297 (99%)	260 (88%)	31 (10%)	3 (1%)	12	45
22	h	104/107 (97%)	100 (96%)	4 (4%)	0	100	100
23	I	152/176 (86%)	145 (95%)	6 (4%)	1 (1%)	18	52
24	i	110/121 (91%)	106 (96%)	4 (4%)	0	100	100
25	J	220/244 (90%)	202 (92%)	18 (8%)	0	100	100
26	j	117/120 (98%)	103 (88%)	14 (12%)	0	100	100
27	K	231/256 (90%)	205 (89%)	23 (10%)	3 (1%)	9	40
28	k	97/100 (97%)	80 (82%)	16 (16%)	1 (1%)	12	45
29	L	189/191 (99%)	169 (89%)	20 (11%)	0	100	100
30	l	85/88 (97%)	74 (87%)	11 (13%)	0	100	100
31	M	167/174 (96%)	145 (87%)	20 (12%)	2 (1%)	10	41
32	m	75/78 (96%)	69 (92%)	6 (8%)	0	100	100
33	N	191/199 (96%)	171 (90%)	20 (10%)	0	100	100
34	n	48/51 (94%)	45 (94%)	3 (6%)	0	100	100
35	O	134/138 (97%)	119 (89%)	15 (11%)	0	100	100
36	o	50/128 (39%)	46 (92%)	4 (8%)	0	100	100
37	P	201/204 (98%)	176 (88%)	25 (12%)	0	100	100
38	p	23/25 (92%)	22 (96%)	1 (4%)	0	100	100
39	Q	195/199 (98%)	179 (92%)	16 (8%)	0	100	100
40	q	151/157 (96%)	127 (84%)	14 (9%)	10 (7%)	1	15
41	R	181/184 (98%)	166 (92%)	15 (8%)	0	100	100
43	S	183/186 (98%)	169 (92%)	14 (8%)	0	100	100
44	s	218/221 (99%)	180 (83%)	29 (13%)	9 (4%)	2	21
45	T	186/189 (98%)	169 (91%)	16 (9%)	1 (0%)	24	59
46	U	170/172 (99%)	151 (89%)	18 (11%)	1 (1%)	21	55
47	V	157/160 (98%)	150 (96%)	6 (4%)	1 (1%)	21	55
48	W	98/121 (81%)	86 (88%)	11 (11%)	1 (1%)	12	45
All	All	6347/6736 (94%)	5722 (90%)	583 (9%)	42 (1%)	20	52

All (42) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
12	c	48	TYR
23	I	98	VAL
40	q	110	LYS
40	q	112	ASP
40	q	133	ASP
44	s	102	LEU
44	s	104	CYS
44	s	107	ALA
44	s	111	GLN
12	c	47	LYS
12	c	78	LEU
40	q	15	SER
40	q	132	LYS
40	q	156	THR
44	s	110	LEU
10	b	125	GLY
40	q	16	SER
40	q	17	ALA
40	q	114	LYS
44	s	103	SER
44	s	108	ASP
45	T	131	ALA
47	V	124	VAL
21	H	259	LYS
21	H	276	LYS
44	s	136	SER
40	q	12	ASP
46	U	130	GLU
27	K	36	ILE
27	K	35	GLY
27	K	157	VAL
31	M	114	ILE
44	s	106	GLY
19	G	317	PRO
19	G	131	VAL
28	k	3	VAL
31	M	8	PRO
6	Z	62	VAL
14	d	21	ILE
17	F	317	ILE
21	H	125	VAL
48	W	11	ILE

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	X	104/105 (99%)	104 (100%)	0	100	100
4	Y	57/129 (44%)	57 (100%)	0	100	100
6	Z	104/118 (88%)	104 (100%)	0	100	100
8	a	109/110 (99%)	109 (100%)	0	100	100
10	b	115/116 (99%)	115 (100%)	0	100	100
11	C	90/91 (99%)	90 (100%)	0	100	100
12	c	118/119 (99%)	118 (100%)	0	100	100
13	D	71/72 (99%)	71 (100%)	0	100	100
14	d	46/47 (98%)	46 (100%)	0	100	100
15	E	193/196 (98%)	192 (100%)	1 (0%)	81	81
16	e	81/88 (92%)	81 (100%)	0	100	100
17	F	320/323 (99%)	319 (100%)	1 (0%)	86	85
18	f	92/96 (96%)	92 (100%)	0	100	100
19	G	288/289 (100%)	288 (100%)	0	100	100
20	g	109/111 (98%)	109 (100%)	0	100	100
21	H	244/245 (100%)	243 (100%)	1 (0%)	84	83
22	h	90/91 (99%)	90 (100%)	0	100	100
23	I	134/153 (88%)	134 (100%)	0	100	100
24	i	95/103 (92%)	95 (100%)	0	100	100
25	J	186/205 (91%)	186 (100%)	0	100	100
26	j	104/105 (99%)	104 (100%)	0	100	100
27	K	187/208 (90%)	187 (100%)	0	100	100
28	k	81/82 (99%)	81 (100%)	0	100	100
29	L	171/171 (100%)	171 (100%)	0	100	100
30	l	70/71 (99%)	70 (100%)	0	100	100
31	M	147/150 (98%)	147 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
32	m	68/69 (99%)	68 (100%)	0	100	100
33	N	154/159 (97%)	154 (100%)	0	100	100
34	n	45/46 (98%)	45 (100%)	0	100	100
35	O	107/109 (98%)	107 (100%)	0	100	100
36	o	47/116 (40%)	47 (100%)	0	100	100
37	P	175/176 (99%)	175 (100%)	0	100	100
38	p	23/23 (100%)	23 (100%)	0	100	100
39	Q	160/162 (99%)	160 (100%)	0	100	100
40	q	118/132 (89%)	113 (96%)	5 (4%)	26	50
41	R	140/146 (96%)	140 (100%)	0	100	100
43	S	150/151 (99%)	150 (100%)	0	100	100
44	s	184/187 (98%)	178 (97%)	6 (3%)	33	56
45	T	153/154 (99%)	153 (100%)	0	100	100
46	U	156/156 (100%)	156 (100%)	0	100	100
47	V	136/137 (99%)	136 (100%)	0	100	100
48	W	87/107 (81%)	87 (100%)	0	100	100
All	All	5309/5624 (94%)	5295 (100%)	14 (0%)	84	85

All (14) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
15	E	225	ILE
17	F	90	VAL
21	H	64	ILE
40	q	73	LEU
40	q	120	LEU
40	q	132	LYS
40	q	133	ASP
40	q	155	ARG
44	s	102	LEU
44	s	103	SER
44	s	104	CYS
44	s	108	ASP
44	s	109	ARG
44	s	110	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (113) such sidechains are listed below:

Mol	Chain	Res	Type
2	X	98	ASN
2	X	132	ASN
4	Y	32	GLN
4	Y	45	ASN
8	a	4	GLN
8	a	42	GLN
8	a	110	HIS
8	a	120	GLN
10	b	29	HIS
10	b	40	HIS
10	b	57	HIS
11	C	22	GLN
11	C	27	GLN
11	C	47	GLN
11	C	53	GLN
11	C	59	HIS
12	c	14	HIS
12	c	39	HIS
12	c	40	HIS
12	c	64	GLN
13	D	33	GLN
13	D	34	HIS
14	d	7	HIS
14	d	42	ASN
15	E	38	HIS
15	E	79	ASN
15	E	97	ASN
15	E	100	ASN
15	E	115	ASN
15	E	132	ASN
15	E	139	HIS
15	E	194	ASN
15	E	209	HIS
17	F	11	HIS
17	F	109	HIS
17	F	173	GLN
17	F	177	HIS
17	F	243	HIS
17	F	269	GLN
17	F	319	ASN
18	f	17	HIS

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Mol	Chain	Res	Type
18	f	21	HIS
18	f	57	GLN
18	f	105	GLN
19	G	5	GLN
19	G	59	GLN
19	G	110	ASN
19	G	114	ASN
19	G	116	ASN
19	G	175	HIS
19	G	279	HIS
19	G	296	GLN
19	G	304	GLN
20	g	35	GLN
20	g	49	ASN
20	g	52	GLN
21	H	40	HIS
21	H	57	ASN
22	h	42	GLN
22	h	106	ASN
26	j	108	GLN
27	K	38	GLN
27	K	77	GLN
27	K	138	HIS
27	K	232	HIS
29	L	58	HIS
29	L	125	ASN
29	L	139	ASN
29	L	163	GLN
30	l	69	HIS
30	l	76	ASN
31	M	39	GLN
31	M	68	HIS
31	M	152	HIS
32	m	28	ASN
32	m	40	GLN
32	m	67	GLN
33	N	103	ASN
34	n	4	GLN
34	n	50	ASN
35	O	41	GLN
35	O	105	GLN
36	o	109	ASN

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Mol	Chain	Res	Type
37	P	11	GLN
37	P	87	GLN
37	P	95	GLN
37	P	156	HIS
37	P	175	ASN
39	Q	31	GLN
39	Q	55	HIS
39	Q	182	ASN
40	q	52	HIS
40	q	125	GLN
41	R	54	HIS
43	S	73	GLN
43	S	152	HIS
43	S	158	HIS
44	s	58	GLN
44	s	94	HIS
44	s	112	GLN
44	s	122	HIS
44	s	161	GLN
45	T	121	HIS
46	U	46	GLN
46	U	68	HIS
46	U	88	HIS
46	U	122	HIS
46	U	142	GLN
46	U	157	GLN
47	V	5	HIS
47	V	131	GLN
48	W	87	ASN
48	W	88	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	1	3162/3396 (93%)	1117 (35%)	336 (10%)
3	3	120/121 (99%)	30 (25%)	7 (5%)
5	4	157/158 (99%)	58 (36%)	20 (12%)
7	A	75/76 (98%)	40 (53%)	7 (9%)
9	B	76/77 (98%)	35 (46%)	6 (7%)
All	All	3590/3828 (93%)	1280 (35%)	376 (10%)

All (1280) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	1	6	A
1	1	11	A
1	1	13	A
1	1	14	U
1	1	15	C
1	1	20	A
1	1	25	U
1	1	26	A
1	1	27	C
1	1	30	G
1	1	40	A
1	1	41	G
1	1	44	U
1	1	48	A
1	1	49	A
1	1	59	G
1	1	60	A
1	1	66	A
1	1	67	A
1	1	71	A
1	1	72	C
1	1	74	G
1	1	75	G
1	1	76	G
1	1	77	A
1	1	78	U
1	1	85	A
1	1	86	G
1	1	87	U
1	1	92	G
1	1	93	C
1	1	94	G
1	1	99	A
1	1	110	G
1	1	116	A
1	1	117	U
1	1	118	U
1	1	119	U
1	1	120	G
1	1	121	A
1	1	122	A
1	1	123	A
1	1	133	U

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Mol	Chain	Res	Type
1	1	134	U
1	1	136	G
1	1	143	G
1	1	146	U
1	1	147	U
1	1	148	G
1	1	149	U
1	1	156	G
1	1	157	A
1	1	161	G
1	1	164	A
1	1	165	A
1	1	166	C
1	1	170	G
1	1	174	C
1	1	176	G
1	1	177	U
1	1	178	U
1	1	187	A
1	1	189	G
1	1	190	U
1	1	191	U
1	1	192	C
1	1	197	G
1	1	198	A
1	1	200	C
1	1	201	A
1	1	204	A
1	1	206	G
1	1	210	U
1	1	211	A
1	1	212	G
1	1	213	A
1	1	218	G
1	1	219	A
1	1	220	G
1	1	221	A
1	1	222	A
1	1	224	C
1	1	228	U
1	1	230	U
1	1	231	G

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Mol	Chain	Res	Type
1	1	238	A
1	1	240	U
1	1	241	G
1	1	244	G
1	1	250	U
1	1	251	G
1	1	252	U
1	1	254	A
1	1	268	A
1	1	269	G
1	1	270	U
1	1	281	G
1	1	283	G
1	1	284	A
1	1	286	U
1	1	295	A
1	1	297	G
1	1	298	U
1	1	304	G
1	1	305	U
1	1	306	A
1	1	317	A
1	1	323	A
1	1	326	U
1	1	329	U
1	1	330	G
1	1	334	A
1	1	338	A
1	1	339	C
1	1	342	A
1	1	343	U
1	1	344	A
1	1	349	A
1	1	350	C
1	1	351	A
1	1	352	A
1	1	353	G
1	1	354	U
1	1	375	A
1	1	376	G
1	1	385	A
1	1	390	G

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Mol	Chain	Res	Type
1	1	395	A
1	1	398	A
1	1	399	A
1	1	400	G
1	1	401	U
1	1	402	A
1	1	403	C
1	1	404	G
1	1	406	G
1	1	407	A
1	1	421	G
1	1	422	A
1	1	429	U
1	1	437	G
1	1	439	C
1	1	495	G
1	1	503	C
1	1	507	U
1	1	510	G
1	1	518	G
1	1	519	A
1	1	520	U
1	1	521	A
1	1	525	C
1	1	532	A
1	1	533	A
1	1	534	U
1	1	535	G
1	1	536	U
1	1	541	U
1	1	546	C
1	1	547	G
1	1	548	G
1	1	552	G
1	1	555	U
1	1	556	U
1	1	557	A
1	1	558	U
1	1	559	A
1	1	560	G
1	1	566	G
1	1	568	G

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Mol	Chain	Res	Type
1	1	569	A
1	1	579	G
1	1	581	U
1	1	582	G
1	1	584	G
1	1	588	G
1	1	589	A
1	1	592	A
1	1	597	G
1	1	601	U
1	1	602	A
1	1	605	U
1	1	606	C
1	1	608	A
1	1	609	G
1	1	610	G
1	1	611	A
1	1	620	U
1	1	621	A
1	1	622	A
1	1	628	A
1	1	636	C
1	1	637	C
1	1	643	U
1	1	645	A
1	1	646	A
1	1	647	A
1	1	648	C
1	1	649	A
1	1	660	A
1	1	661	G
1	1	662	U
1	1	666	A
1	1	667	C
1	1	678	G
1	1	681	U
1	1	683	U
1	1	684	G
1	1	689	U
1	1	690	A
1	1	691	A
1	1	692	A

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Mol	Chain	Res	Type
1	1	698	U
1	1	705	A
1	1	706	A
1	1	707	U
1	1	708	G
1	1	709	A
1	1	712	G
1	1	714	G
1	1	715	A
1	1	716	A
1	1	717	C
1	1	719	U
1	1	720	A
1	1	721	G
1	1	727	G
1	1	728	G
1	1	735	A
1	1	742	G
1	1	748	U
1	1	750	G
1	1	760	G
1	1	761	A
1	1	764	U
1	1	765	C
1	1	766	U
1	1	767	U
1	1	768	C
1	1	770	G
1	1	773	G
1	1	774	G
1	1	776	U
1	1	777	U
1	1	781	G
1	1	784	A
1	1	785	G
1	1	786	A
1	1	787	G
1	1	799	G
1	1	800	G
1	1	801	A
1	1	802	C
1	1	806	A

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Mol	Chain	Res	Type
1	1	808	A
1	1	815	G
1	1	816	A
1	1	817	A
1	1	818	C
1	1	825	U
1	1	826	G
1	1	830	A
1	1	836	A
1	1	841	A
1	1	842	G
1	1	849	C
1	1	854	G
1	1	859	G
1	1	860	G
1	1	861	C
1	1	869	G
1	1	871	U
1	1	874	U
1	1	879	U
1	1	880	G
1	1	884	A
1	1	888	A
1	1	894	G
1	1	895	A
1	1	905	U
1	1	908	G
1	1	910	G
1	1	914	A
1	1	915	A
1	1	916	G
1	1	917	A
1	1	922	U
1	1	925	A
1	1	926	A
1	1	927	C
1	1	931	C
1	1	932	U
1	1	933	A
1	1	934	G
1	1	936	A
1	1	937	G

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Mol	Chain	Res	Type
1	1	938	C
1	1	940	G
1	1	941	G
1	1	943	U
1	1	944	C
1	1	951	A
1	1	953	G
1	1	954	U
1	1	959	C
1	1	960	U
1	1	961	C
1	1	962	A
1	1	963	G
1	1	968	G
1	1	974	G
1	1	978	G
1	1	979	U
1	1	980	A
1	1	981	U
1	1	982	C
1	1	984	G
1	1	985	U
1	1	986	U
1	1	995	U
1	1	1001	G
1	1	1002	A
1	1	1006	A
1	1	1013	G
1	1	1015	U
1	1	1016	C
1	1	1017	C
1	1	1018	G
1	1	1020	G
1	1	1021	G
1	1	1025	A
1	1	1026	A
1	1	1029	G
1	1	1030	A
1	1	1036	A
1	1	1037	C
1	1	1038	C
1	1	1047	A

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Mol	Chain	Res	Type
1	1	1049	C
1	1	1054	A
1	1	1063	G
1	1	1064	A
1	1	1065	A
1	1	1066	G
1	1	1076	C
1	1	1080	A
1	1	1081	U
1	1	1086	C
1	1	1093	A
1	1	1095	U
1	1	1096	U
1	1	1097	G
1	1	1098	A
1	1	1103	A
1	1	1104	G
1	1	1105	A
1	1	1112	A
1	1	1114	U
1	1	1117	G
1	1	1127	G
1	1	1128	U
1	1	1131	G
1	1	1132	C
1	1	1138	U
1	1	1142	G
1	1	1143	A
1	1	1144	U
1	1	1145	G
1	1	1151	U
1	1	1153	A
1	1	1154	A
1	1	1155	C
1	1	1158	A
1	1	1159	A
1	1	1160	C
1	1	1174	G
1	1	1177	G
1	1	1178	G
1	1	1180	A
1	1	1181	U

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Mol	Chain	Res	Type
1	1	1182	A
1	1	1185	C
1	1	1186	G
1	1	1190	A
1	1	1191	U
1	1	1192	C
1	1	1193	A
1	1	1196	C
1	1	1197	A
1	1	1199	C
1	1	1200	A
1	1	1201	C
1	1	1202	A
1	1	1208	U
1	1	1217	A
1	1	1220	U
1	1	1221	A
1	1	1228	C
1	1	1229	G
1	1	1233	G
1	1	1234	G
1	1	1235	U
1	1	1236	G
1	1	1237	G
1	1	1238	C
1	1	1239	C
1	1	1241	U
1	1	1242	G
1	1	1243	G
1	1	1245	A
1	1	1246	G
1	1	1247	U
1	1	1248	C
1	1	1249	G
1	1	1251	A
1	1	1252	A
1	1	1253	U
1	1	1254	C
1	1	1260	A
1	1	1262	G
1	1	1263	A
1	1	1265	U

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Mol	Chain	Res	Type
1	1	1266	G
1	1	1269	U
1	1	1270	A
1	1	1271	A
1	1	1272	C
1	1	1274	A
1	1	1277	C
1	1	1278	A
1	1	1279	C
1	1	1280	C
1	1	1281	G
1	1	1286	A
1	1	1292	C
1	1	1293	U
1	1	1301	A
1	1	1302	A
1	1	1303	A
1	1	1305	U
1	1	1307	G
1	1	1308	A
1	1	1313	G
1	1	1315	U
1	1	1316	C
1	1	1317	A
1	1	1319	G
1	1	1323	G
1	1	1325	U
1	1	1330	A
1	1	1331	U
1	1	1332	A
1	1	1345	G
1	1	1349	G
1	1	1351	U
1	1	1352	A
1	1	1353	U
1	1	1354	G
1	1	1355	A
1	1	1356	U
1	1	1357	G
1	1	1362	G
1	1	1363	A
1	1	1364	C

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Mol	Chain	Res	Type
1	1	1366	A
1	1	1375	G
1	1	1380	G
1	1	1386	A
1	1	1387	G
1	1	1390	A
1	1	1391	C
1	1	1392	G
1	1	1393	A
1	1	1395	G
1	1	1399	A
1	1	1400	G
1	1	1407	A
1	1	1408	G
1	1	1409	G
1	1	1414	G
1	1	1418	A
1	1	1419	A
1	1	1428	A
1	1	1429	G
1	1	1430	U
1	1	1431	G
1	1	1432	C
1	1	1433	A
1	1	1434	G
1	1	1435	A
1	1	1436	U
1	1	1437	C
1	1	1443	G
1	1	1446	A
1	1	1447	G
1	1	1448	U
1	1	1449	A
1	1	1450	G
1	1	1455	U
1	1	1456	A
1	1	1457	U
1	1	1458	U
1	1	1464	G
1	1	1467	A
1	1	1468	A
1	1	1470	U

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Mol	Chain	Res	Type
1	1	1473	G
1	1	1475	A
1	1	1481	A
1	1	1482	A
1	1	1483	G
1	1	1484	U
1	1	1485	G
1	1	1486	G
1	1	1487	G
1	1	1490	A
1	1	1492	G
1	1	1493	G
1	1	1494	U
1	1	1495	U
1	1	1496	C
1	1	1503	A
1	1	1504	A
1	1	1507	G
1	1	1508	C
1	1	1512	U
1	1	1514	G
1	1	1515	A
1	1	1522	U
1	1	1523	U
1	1	1524	A
1	1	1525	G
1	1	1526	U
1	1	1527	C
1	1	1533	U
1	1	1536	G
1	1	1537	A
1	1	1539	A
1	1	1540	U
1	1	1542	G
1	1	1549	U
1	1	1554	U
1	1	1555	U
1	1	1556	C
1	1	1557	A
1	1	1558	A
1	1	1559	A
1	1	1560	G

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Mol	Chain	Res	Type
1	1	1561	G
1	1	1562	C
1	1	1563	C
1	1	1565	G
1	1	1567	U
1	1	1568	U
1	1	1569	U
1	1	1570	U
1	1	1571	A
1	1	1572	U
1	1	1573	G
1	1	1575	A
1	1	1578	C
1	1	1580	A
1	1	1581	C
1	1	1582	C
1	1	1583	A
1	1	1588	A
1	1	1589	A
1	1	1593	A
1	1	1595	U
1	1	1603	A
1	1	1605	A
1	1	1607	U
1	1	1608	C
1	1	1613	A
1	1	1620	U
1	1	1621	A
1	1	1623	G
1	1	1628	C
1	1	1629	U
1	1	1630	U
1	1	1642	A
1	1	1643	A
1	1	1645	U
1	1	1646	G
1	1	1656	A
1	1	1657	C
1	1	1662	G
1	1	1677	G
1	1	1683	A
1	1	1696	A

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Mol	Chain	Res	Type
1	1	1707	A
1	1	1708	C
1	1	1712	G
1	1	1713	G
1	1	1715	A
1	1	1716	U
1	1	1717	U
1	1	1724	U
1	1	1725	C
1	1	1729	A
1	1	1730	G
1	1	1731	A
1	1	1741	A
1	1	1749	A
1	1	1750	A
1	1	1751	G
1	1	1752	A
1	1	1758	G
1	1	1760	A
1	1	1762	C
1	1	1763	U
1	1	1765	U
1	1	1766	G
1	1	1769	G
1	1	1770	G
1	1	1771	C
1	1	1775	G
1	1	1779	C
1	1	1780	G
1	1	1785	U
1	1	1794	G
1	1	1795	U
1	1	1796	G
1	1	1797	A
1	1	1798	A
1	1	1809	A
1	1	1812	G
1	1	1813	A
1	1	1814	A
1	1	1815	U
1	1	1816	A
1	1	1817	G

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Mol	Chain	Res	Type
1	1	1818	U
1	1	1819	U
1	1	1820	U
1	1	1821	U
1	1	1822	C
1	1	1831	U
1	1	1835	A
1	1	1839	A
1	1	1840	U
1	1	1841	A
1	1	1843	C
1	1	1845	G
1	1	1846	C
1	1	1847	A
1	1	1848	G
1	1	1849	C
1	1	1850	A
1	1	1851	G
1	1	1858	A
1	1	1864	A
1	1	1866	C
1	1	1867	A
1	1	1869	C
1	1	1871	U
1	1	1874	A
1	1	1880	U
1	1	1885	U
1	1	1886	A
1	1	1892	G
1	1	1893	A
1	1	1895	A
1	1	1897	G
1	1	1900	A
1	1	1901	A
1	1	1906	G
1	1	1907	C
1	1	1912	U
1	1	1913	A
1	1	1914	G
1	1	1926	C
1	1	1927	G
1	1	1930	A

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Mol	Chain	Res	Type
1	1	1931	U
1	1	1932	A
1	1	1933	A
1	1	1935	G
1	1	1939	G
1	1	1942	U
1	1	1948	G
1	1	1952	G
1	1	1953	G
1	1	1954	G
1	1	2100	A
1	1	2101	C
1	1	2102	U
1	1	2105	G
1	1	2107	A
1	1	2111	G
1	1	2112	U
1	1	2113	A
1	1	2114	C
1	1	2115	G
1	1	2116	G
1	1	2117	A
1	1	2121	G
1	1	2122	G
1	1	2125	A
1	1	2126	A
1	1	2131	A
1	1	2138	A
1	1	2140	U
1	1	2143	A
1	1	2144	A
1	1	2145	A
1	1	2149	A
1	1	2158	A
1	1	2159	U
1	1	2160	G
1	1	2163	C
1	1	2166	A
1	1	2169	G
1	1	2170	U
1	1	2174	G
1	1	2175	U

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Mol	Chain	Res	Type
1	1	2176	U
1	1	2178	A
1	1	2179	C
1	1	2180	G
1	1	2184	U
1	1	2186	U
1	1	2187	G
1	1	2188	A
1	1	2194	G
1	1	2197	C
1	1	2198	A
1	1	2201	G
1	1	2204	C
1	1	2205	U
1	1	2206	G
1	1	2209	U
1	1	2225	U
1	1	2228	A
1	1	2231	C
1	1	2232	A
1	1	2243	A
1	1	2244	A
1	1	2249	G
1	1	2253	G
1	1	2256	A
1	1	2257	C
1	1	2258	U
1	1	2260	U
1	1	2263	C
1	1	2272	G
1	1	2274	U
1	1	2276	G
1	1	2281	A
1	1	2282	U
1	1	2283	G
1	1	2284	C
1	1	2285	C
1	1	2286	U
1	1	2287	C
1	1	2288	G
1	1	2298	U
1	1	2299	A

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Mol	Chain	Res	Type
1	1	2306	C
1	1	2307	G
1	1	2308	C
1	1	2309	A
1	1	2310	U
1	1	2313	A
1	1	2314	U
1	1	2315	G
1	1	2319	U
1	1	2324	A
1	1	2332	A
1	1	2334	U
1	1	2336	U
1	1	2339	C
1	1	2340	U
1	1	2343	C
1	1	2356	A
1	1	2359	C
1	1	2365	C
1	1	2373	A
1	1	2374	C
1	1	2375	G
1	1	2376	G
1	1	2377	G
1	1	2378	C
1	1	2385	G
1	1	2386	A
1	1	2387	A
1	1	2388	U
1	1	2393	G
1	1	2397	A
1	1	2402	A
1	1	2403	G
1	1	2404	A
1	1	2410	U
1	1	2411	U
1	1	2418	G
1	1	2419	A
1	1	2434	U
1	1	2435	G
1	1	2437	G
1	1	2438	A

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Mol	Chain	Res	Type
1	1	2439	A
1	1	2440	G
1	1	2444	C
1	1	2446	U
1	1	2451	G
1	1	2452	G
1	1	2493	U
1	1	2494	A
1	1	2495	C
1	1	2496	C
1	1	2497	U
1	1	2498	U
1	1	2501	U
1	1	2502	A
1	1	2503	G
1	1	2507	C
1	1	2514	U
1	1	2515	A
1	1	2521	U
1	1	2522	G
1	1	2523	A
1	1	2524	A
1	1	2526	C
1	1	2530	G
1	1	2531	C
1	1	2538	U
1	1	2539	C
1	1	2540	A
1	1	2541	U
1	1	2542	U
1	1	2544	U
1	1	2545	C
1	1	2546	C
1	1	2547	A
1	1	2548	C
1	1	2549	G
1	1	2550	U
1	1	2552	C
1	1	2553	U
1	1	2554	A
1	1	2555	G
1	1	2558	U

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Mol	Chain	Res	Type
1	1	2560	C
1	1	2570	U
1	1	2571	U
1	1	2572	C
1	1	2577	C
1	1	2579	G
1	1	2580	A
1	1	2581	U
1	1	2585	G
1	1	2587	U
1	1	2589	G
1	1	2590	A
1	1	2593	A
1	1	2594	C
1	1	2606	G
1	1	2607	G
1	1	2612	U
1	1	2614	G
1	1	2618	G
1	1	2619	G
1	1	2620	G
1	1	2626	A
1	1	2628	A
1	1	2629	U
1	1	2630	C
1	1	2635	A
1	1	2636	A
1	1	2652	U
1	1	2656	A
1	1	2657	A
1	1	2658	G
1	1	2666	C
1	1	2674	A
1	1	2676	A
1	1	2677	G
1	1	2678	A
1	1	2679	A
1	1	2680	A
1	1	2681	U
1	1	2689	A
1	1	2690	G
1	1	2691	A

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Mol	Chain	Res	Type
1	1	2694	A
1	1	2696	A
1	1	2703	A
1	1	2706	G
1	1	2713	U
1	1	2714	G
1	1	2715	A
1	1	2716	U
1	1	2725	U
1	1	2726	C
1	1	2727	A
1	1	2728	G
1	1	2729	U
1	1	2730	G
1	1	2732	G
1	1	2737	C
1	1	2740	A
1	1	2747	A
1	1	2752	U
1	1	2753	G
1	1	2755	C
1	1	2760	C
1	1	2762	A
1	1	2772	C
1	1	2773	C
1	1	2775	U
1	1	2777	G
1	1	2778	G
1	1	2779	A
1	1	2781	U
1	1	2797	C
1	1	2798	C
1	1	2800	G
1	1	2801	A
1	1	2802	A
1	1	2804	A
1	1	2809	C
1	1	2810	C
1	1	2814	G
1	1	2816	G
1	1	2817	A
1	1	2818	U

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Mol	Chain	Res	Type
1	1	2819	A
1	1	2825	C
1	1	2827	U
1	1	2829	U
1	1	2830	G
1	1	2835	U
1	1	2842	U
1	1	2845	A
1	1	2847	A
1	1	2850	G
1	1	2851	A
1	1	2853	A
1	1	2860	U
1	1	2867	C
1	1	2869	U
1	1	2870	C
1	1	2871	G
1	1	2872	A
1	1	2873	U
1	1	2874	G
1	1	2882	U
1	1	2886	U
1	1	2887	A
1	1	2888	U
1	1	2889	C
1	1	2894	C
1	1	2896	A
1	1	2898	G
1	1	2911	A
1	1	2912	G
1	1	2920	U
1	1	2922	G
1	1	2923	U
1	1	2932	U
1	1	2935	U
1	1	2936	A
1	1	2938	G
1	1	2941	A
1	1	2942	C
1	1	2945	G
1	1	2947	G
1	1	2951	G

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Mol	Chain	Res	Type
1	1	2954	U
1	1	2955	U
1	1	2971	A
1	1	2972	G
1	1	2978	U
1	1	2979	U
1	1	2983	C
1	1	2992	U
1	1	2996	U
1	1	2997	G
1	1	3011	A
1	1	3012	A
1	1	3022	G
1	1	3023	U
1	1	3026	G
1	1	3038	U
1	1	3039	C
1	1	3042	U
1	1	3047	U
1	1	3049	A
1	1	3057	U
1	1	3058	U
1	1	3059	G
1	1	3078	U
1	1	3079	U
1	1	3080	G
1	1	3086	A
1	1	3092	C
1	1	3097	C
1	1	3102	G
1	1	3104	U
1	1	3109	G
1	1	3111	U
1	1	3112	G
1	1	3113	A
1	1	3115	C
1	1	3116	G
1	1	3117	C
1	1	3119	U
1	1	3122	A
1	1	3129	A
1	1	3131	U

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Mol	Chain	Res	Type
1	1	3142	A
1	1	3143	C
1	1	3144	G
1	1	3145	C
1	1	3151	U
1	1	3152	U
1	1	3153	U
1	1	3154	C
1	1	3155	U
1	1	3156	U
1	1	3157	U
1	1	3158	G
1	1	3167	A
1	1	3168	A
1	1	3170	A
1	1	3172	A
1	1	3173	G
1	1	3174	A
1	1	3176	G
1	1	3180	A
1	1	3181	C
1	1	3182	G
1	1	3185	U
1	1	3186	A
1	1	3187	A
1	1	3191	G
1	1	3196	U
1	1	3197	G
1	1	3199	G
1	1	3206	C
1	1	3207	U
1	1	3208	G
1	1	3209	A
1	1	3210	A
1	1	3217	C
1	1	3218	A
1	1	3219	G
1	1	3220	G
1	1	3222	U
1	1	3227	A
1	1	3229	G
1	1	3231	U

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Mol	Chain	Res	Type
1	1	3234	A
1	1	3237	U
1	1	3242	G
1	1	3243	A
1	1	3244	A
1	1	3245	A
1	1	3247	G
1	1	3255	U
1	1	3259	U
1	1	3260	G
1	1	3263	G
1	1	3268	A
1	1	3269	U
1	1	3270	U
1	1	3271	G
1	1	3272	C
1	1	3273	A
1	1	3274	A
1	1	3275	U
1	1	3276	G
1	1	3277	U
1	1	3278	C
1	1	3279	A
1	1	3280	U
1	1	3284	G
1	1	3286	G
1	1	3287	U
1	1	3288	G
1	1	3291	G
1	1	3293	U
1	1	3294	A
1	1	3295	A
1	1	3296	A
1	1	3304	U
1	1	3305	A
1	1	3307	A
1	1	3313	U
1	1	3316	A
1	1	3317	U
1	1	3318	G
1	1	3319	U
1	1	3327	G

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Mol	Chain	Res	Type
1	1	3332	U
1	1	3334	U
1	1	3335	A
1	1	3338	C
1	1	3344	A
1	1	3345	G
1	1	3349	C
1	1	3351	U
1	1	3352	U
1	1	3354	U
1	1	3355	U
1	1	3358	U
1	1	3359	A
1	1	3362	A
1	1	3368	U
1	1	3369	G
1	1	3370	A
1	1	3375	A
1	1	3376	A
1	1	3378	C
1	1	3382	U
1	1	3383	G
1	1	3389	U
1	1	3390	G
3	3	7	G
3	3	9	C
3	3	11	A
3	3	13	A
3	3	14	U
3	3	20	A
3	3	24	A
3	3	29	C
3	3	31	U
3	3	33	U
3	3	41	G
3	3	42	A
3	3	48	U
3	3	49	G
3	3	50	U
3	3	53	U
3	3	55	A
3	3	62	U

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Mol	Chain	Res	Type
3	3	64	A
3	3	65	G
3	3	67	G
3	3	77	G
3	3	78	U
3	3	87	G
3	3	91	G
3	3	99	G
3	3	100	C
3	3	102	A
3	3	112	G
3	3	121	U
5	4	2	A
5	4	4	C
5	4	7	U
5	4	12	A
5	4	22	U
5	4	23	U
5	4	24	G
5	4	33	A
5	4	34	U
5	4	35	C
5	4	36	G
5	4	38	U
5	4	39	G
5	4	40	A
5	4	49	G
5	4	51	G
5	4	52	A
5	4	57	C
5	4	58	G
5	4	59	A
5	4	60	U
5	4	61	A
5	4	63	G
5	4	71	A
5	4	72	A
5	4	79	A
5	4	80	A
5	4	82	U
5	4	83	C
5	4	84	C

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Mol	Chain	Res	Type
5	4	85	G
5	4	86	U
5	4	90	U
5	4	91	C
5	4	95	G
5	4	96	A
5	4	101	U
5	4	102	U
5	4	105	A
5	4	106	C
5	4	107	G
5	4	111	A
5	4	112	U
5	4	113	U
5	4	114	G
5	4	116	G
5	4	121	U
5	4	123	G
5	4	125	U
5	4	126	A
5	4	127	U
5	4	129	C
5	4	136	G
5	4	138	A
5	4	147	U
5	4	148	G
5	4	151	C
5	4	152	G
7	A	3	G
7	A	5	C
7	A	6	G
7	A	8	U
7	A	9	A
7	A	10	G
7	A	14	A
7	A	15	G
7	A	16	U
7	A	17	U
7	A	18	G
7	A	19	G
7	A	21	A
7	A	22	G

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Mol	Chain	Res	Type
7	A	31	A
7	A	34	U
7	A	35	U
7	A	36	U
7	A	38	A
7	A	43	U
7	A	45	G
7	A	47	U
7	A	48	C
7	A	49	G
7	A	50	C
7	A	51	A
7	A	52	G
7	A	53	G
7	A	55	U
7	A	57	G
7	A	58	A
7	A	59	A
7	A	60	U
7	A	61	C
7	A	64	G
7	A	65	C
7	A	68	G
7	A	70	C
7	A	73	A
7	A	74	C
9	B	3	A
9	B	8	U
9	B	10	G
9	B	13	C
9	B	16	U
9	B	17	C
9	B	17(A)	G
9	B	18	G
9	B	19	U
9	B	20	U
9	B	21	A
9	B	22	G
9	B	33	U
9	B	35	U
9	B	37	A
9	B	38	C

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Mol	Chain	Res	Type
9	B	40	C
9	B	42	G
9	B	44	G
9	B	46	G
9	B	47	U
9	B	48	C
9	B	49	G
9	B	50	C
9	B	53	G
9	B	54	U
9	B	58	A
9	B	59	G
9	B	61	C
9	B	62	C
9	B	65	U
9	B	68	G
9	B	70	U
9	B	73	G
9	B	76	A

All (376) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	1	13	A
1	1	14	U
1	1	21	G
1	1	43	A
1	1	48	A
1	1	59	G
1	1	65	A
1	1	73	C
1	1	76	G
1	1	85	A
1	1	86	G
1	1	93	C
1	1	109	A
1	1	116	A
1	1	119	U
1	1	120	G
1	1	121	A
1	1	122	A
1	1	147	U

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Mol	Chain	Res	Type
1	1	148	G
1	1	155	G
1	1	156	G
1	1	169	U
1	1	189	G
1	1	199	A
1	1	200	C
1	1	210	U
1	1	211	A
1	1	220	G
1	1	221	A
1	1	239	G
1	1	240	U
1	1	249	U
1	1	251	G
1	1	267	G
1	1	269	G
1	1	282	G
1	1	285	A
1	1	316	U
1	1	337	G
1	1	338	A
1	1	341	G
1	1	343	U
1	1	349	A
1	1	350	C
1	1	352	A
1	1	353	G
1	1	374	A
1	1	398	A
1	1	400	G
1	1	401	U
1	1	406	G
1	1	420	G
1	1	494	G
1	1	518	G
1	1	519	A
1	1	520	U
1	1	533	A
1	1	534	U
1	1	535	G
1	1	547	G

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Mol	Chain	Res	Type
1	1	556	U
1	1	558	U
1	1	591	G
1	1	607	A
1	1	619	A
1	1	621	A
1	1	636	C
1	1	647	A
1	1	677	A
1	1	705	A
1	1	715	A
1	1	716	A
1	1	764	U
1	1	765	C
1	1	766	U
1	1	767	U
1	1	780	A
1	1	784	A
1	1	786	A
1	1	801	A
1	1	817	A
1	1	835	G
1	1	870	G
1	1	873	C
1	1	907	G
1	1	914	A
1	1	916	G
1	1	921	A
1	1	924	G
1	1	932	U
1	1	933	A
1	1	937	G
1	1	943	U
1	1	961	C
1	1	979	U
1	1	983	A
1	1	984	G
1	1	994	G
1	1	1001	G
1	1	1017	C
1	1	1053	A
1	1	1064	A

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Mol	Chain	Res	Type
1	1	1075	A
1	1	1094	U
1	1	1095	U
1	1	1096	U
1	1	1103	A
1	1	1116	G
1	1	1131	G
1	1	1143	A
1	1	1144	U
1	1	1177	G
1	1	1189	C
1	1	1192	C
1	1	1199	C
1	1	1235	U
1	1	1236	G
1	1	1241	U
1	1	1253	U
1	1	1271	A
1	1	1301	A
1	1	1307	G
1	1	1318	A
1	1	1329	U
1	1	1331	U
1	1	1348	U
1	1	1352	A
1	1	1355	A
1	1	1365	G
1	1	1391	C
1	1	1392	G
1	1	1417	G
1	1	1418	A
1	1	1428	A
1	1	1429	G
1	1	1431	G
1	1	1432	C
1	1	1433	A
1	1	1446	A
1	1	1447	G
1	1	1456	A
1	1	1467	A
1	1	1469	C
1	1	1480	G

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Mol	Chain	Res	Type
1	1	1481	A
1	1	1482	A
1	1	1483	G
1	1	1484	U
1	1	1493	G
1	1	1494	U
1	1	1502	C
1	1	1507	G
1	1	1511	U
1	1	1514	G
1	1	1522	U
1	1	1523	U
1	1	1524	A
1	1	1526	U
1	1	1554	U
1	1	1556	C
1	1	1557	A
1	1	1559	A
1	1	1562	C
1	1	1568	U
1	1	1580	A
1	1	1592	G
1	1	1606	U
1	1	1607	U
1	1	1642	A
1	1	1656	A
1	1	1695	U
1	1	1714	A
1	1	1715	A
1	1	1716	U
1	1	1724	U
1	1	1728	G
1	1	1729	A
1	1	1730	G
1	1	1740	U
1	1	1749	A
1	1	1750	A
1	1	1751	G
1	1	1778	G
1	1	1808	G
1	1	1815	U
1	1	1816	A

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Mol	Chain	Res	Type
1	1	1820	U
1	1	1834	U
1	1	1840	U
1	1	1842	A
1	1	1846	C
1	1	1848	G
1	1	1850	A
1	1	1866	C
1	1	1900	A
1	1	1925	U
1	1	1926	C
1	1	1930	A
1	1	1938	U
1	1	1953	G
1	1	2101	C
1	1	2111	G
1	1	2112	U
1	1	2116	G
1	1	2139	A
1	1	2142	A
1	1	2157	G
1	1	2158	A
1	1	2169	G
1	1	2174	G
1	1	2177	G
1	1	2178	A
1	1	2179	C
1	1	2197	C
1	1	2208	A
1	1	2273	G
1	1	2283	G
1	1	2286	U
1	1	2287	C
1	1	2307	G
1	1	2309	A
1	1	2313	A
1	1	2323	G
1	1	2335	G
1	1	2339	C
1	1	2355	G
1	1	2364	G
1	1	2372	A

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Mol	Chain	Res	Type
1	1	2385	G
1	1	2402	A
1	1	2403	G
1	1	2409	G
1	1	2418	G
1	1	2434	U
1	1	2445	A
1	1	2493	U
1	1	2495	C
1	1	2500	A
1	1	2501	U
1	1	2513	U
1	1	2514	U
1	1	2525	G
1	1	2537	U
1	1	2538	U
1	1	2539	C
1	1	2540	A
1	1	2541	U
1	1	2547	A
1	1	2549	G
1	1	2551	U
1	1	2554	A
1	1	2557	A
1	1	2571	U
1	1	2580	A
1	1	2586	G
1	1	2593	A
1	1	2606	G
1	1	2625	C
1	1	2627	C
1	1	2635	A
1	1	2651	G
1	1	2655	U
1	1	2656	A
1	1	2657	A
1	1	2665	U
1	1	2676	A
1	1	2680	A
1	1	2688	U
1	1	2702	A
1	1	2705	A

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Mol	Chain	Res	Type
1	1	2713	U
1	1	2714	G
1	1	2715	A
1	1	2725	U
1	1	2726	C
1	1	2727	A
1	1	2728	G
1	1	2754	G
1	1	2772	C
1	1	2797	C
1	1	2803	A
1	1	2808	A
1	1	2817	A
1	1	2818	U
1	1	2828	G
1	1	2850	G
1	1	2859	U
1	1	2887	A
1	1	2888	U
1	1	2911	A
1	1	2935	U
1	1	2941	A
1	1	2954	U
1	1	3011	A
1	1	3021	A
1	1	3022	G
1	1	3048	A
1	1	3056	U
1	1	3078	U
1	1	3115	C
1	1	3121	U
1	1	3141	A
1	1	3152	U
1	1	3154	C
1	1	3156	U
1	1	3171	U
1	1	3172	A
1	1	3175	U
1	1	3179	U
1	1	3186	A
1	1	3195	U
1	1	3198	U

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Mol	Chain	Res	Type
1	1	3208	G
1	1	3216	G
1	1	3218	A
1	1	3219	G
1	1	3228	C
1	1	3244	A
1	1	3246	G
1	1	3258	U
1	1	3268	A
1	1	3269	U
1	1	3270	U
1	1	3272	C
1	1	3275	U
1	1	3276	G
1	1	3303	G
1	1	3317	U
1	1	3333	G
1	1	3334	U
1	1	3344	A
1	1	3350	C
1	1	3353	G
1	1	3375	A
1	1	3377	G
3	3	32	U
3	3	41	G
3	3	49	G
3	3	52	G
3	3	63	A
3	3	76	A
3	3	77	G
5	4	22	U
5	4	33	A
5	4	34	U
5	4	37	A
5	4	38	U
5	4	39	G
5	4	48	A
5	4	51	G
5	4	58	G
5	4	60	U
5	4	62	C
5	4	70	G

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Mol	Chain	Res	Type
5	4	71	A
5	4	85	G
5	4	90	U
5	4	95	G
5	4	105	A
5	4	106	C
5	4	113	U
5	4	126	A
7	A	9	A
7	A	13	C
7	A	15	G
7	A	17	U
7	A	51	A
7	A	54	U
7	A	58	A
9	B	7	G
9	B	16	U
9	B	17(A)	G
9	B	18	G
9	B	58	A
9	B	60	U

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

1 non-standard protein/DNA/RNA residue is modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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 $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
40	5CT	q	51	40	13,14,15	0.33	0	8,15,17	1.21	2 (25%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
40	5CT	q	51	40	-	7/13/14/16	-

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
40	q	51	5CT	C1-NZ-CE	-2.36	108.23	113.38
40	q	51	5CT	C4-C3-C2	-2.05	109.16	113.47

There are no chirality outliers.

All (7) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
40	q	51	5CT	O-C-CA-CB
40	q	51	5CT	C2-C1-NZ-CE
40	q	51	5CT	C2-C3-C4-N1
40	q	51	5CT	CD-CE-NZ-C1
40	q	51	5CT	C-CA-CB-CG
40	q	51	5CT	CG-CD-CE-NZ
40	q	51	5CT	NZ-C1-C2-C3

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
40	q	51	5CT	1	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

1 ligand is modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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 $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
50	3HE	1	3401	-	21,21,21	0.90	1 (4%)	23,30,30	0.75	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
50	3HE	1	3401	-	-	3/8/36/36	0/2/2/2

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
50	1	3401	3HE	C5-C7	3.43	1.58	1.53

There are no bond angle outliers.

There are no chirality outliers.

All (3) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
50	1	3401	3HE	C7-C8-C9-C13
50	1	3401	3HE	C7-C8-C9-C10
50	1	3401	3HE	O3-C7-C8-C9

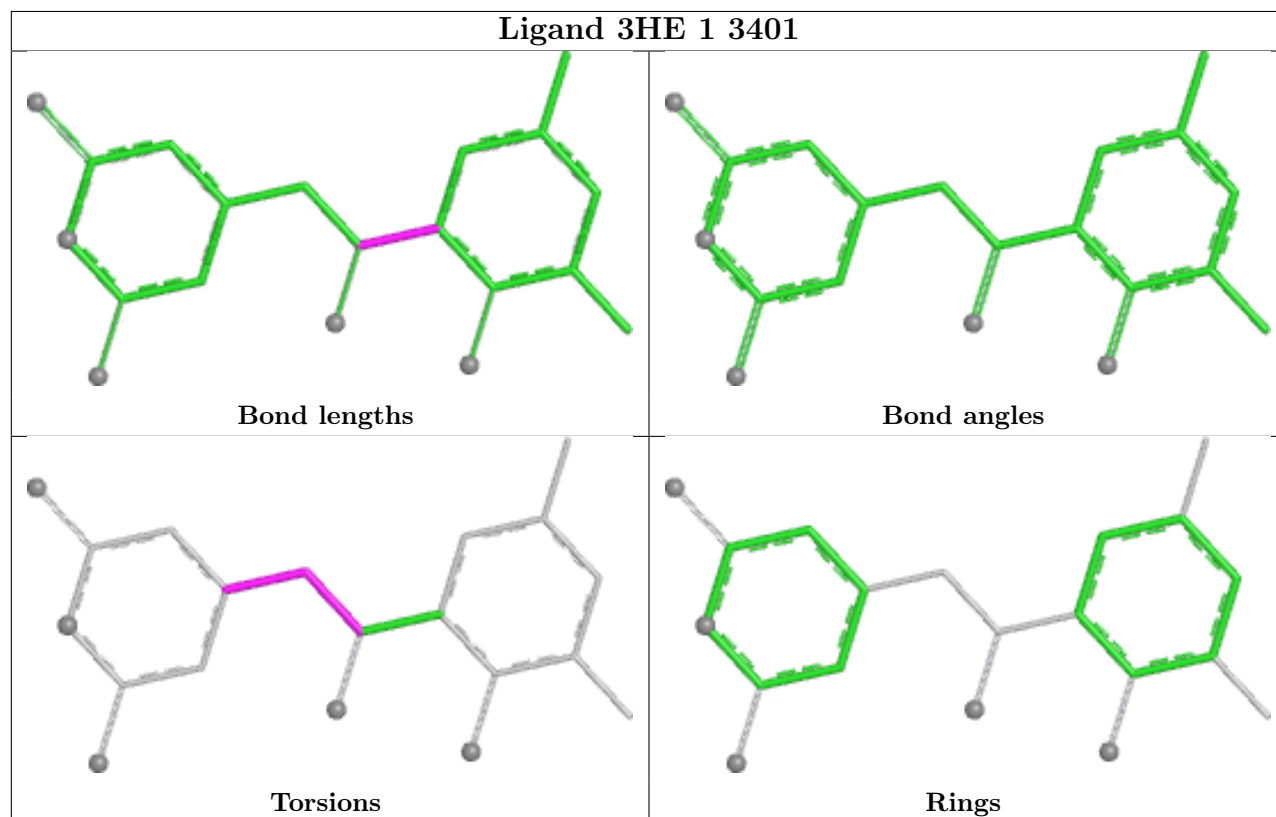
There are no ring outliers.

1 monomer is involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
50	1	3401	3HE	2	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring

in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



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.

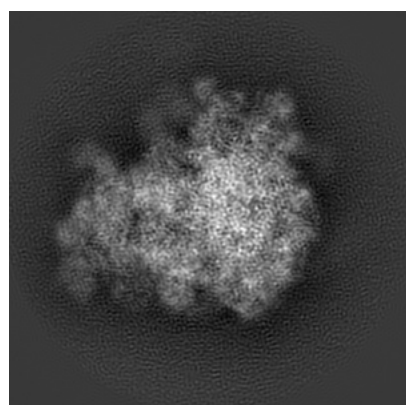
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-3227. These allow visual inspection of the internal detail of the map and identification of artifacts.

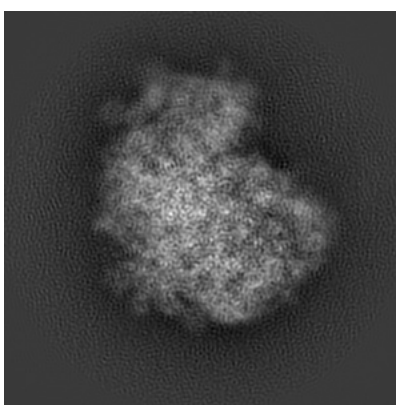
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

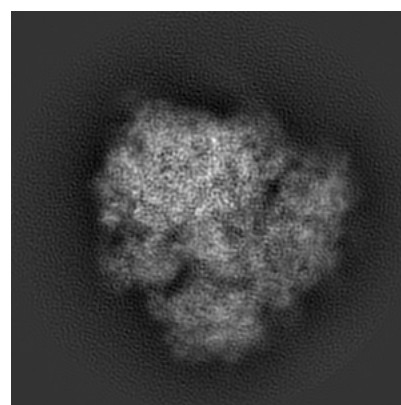
6.1.1 Primary map



X



Y

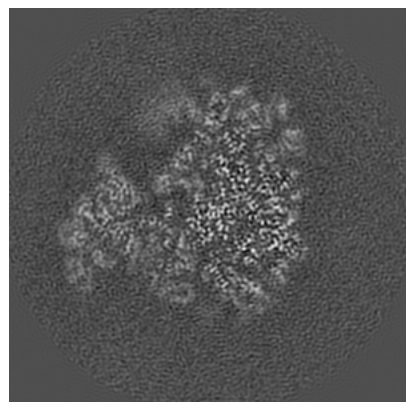


Z

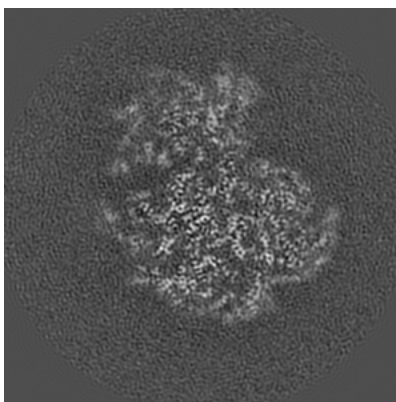
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

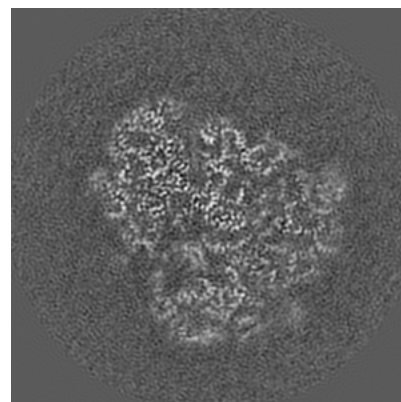
6.2.1 Primary map



X Index: 185



Y Index: 185

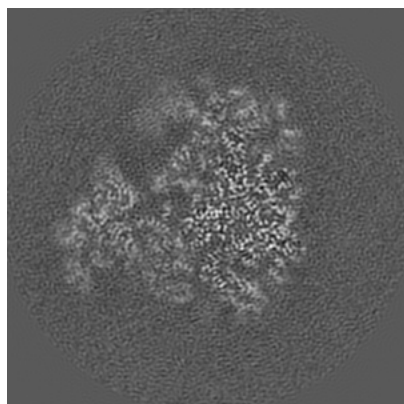


Z Index: 185

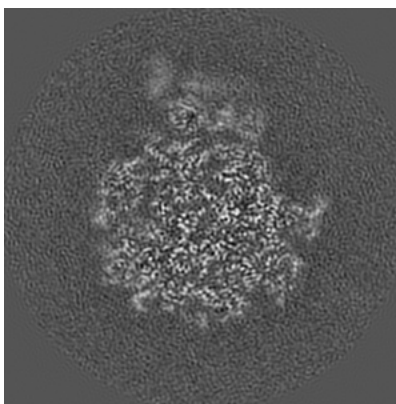
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

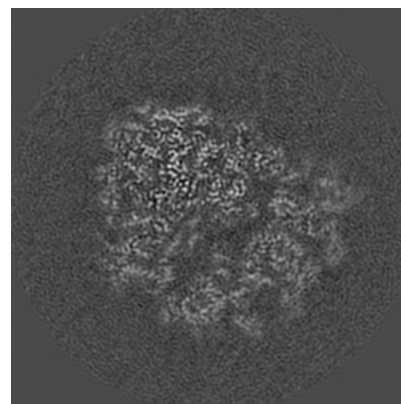
6.3.1 Primary map



X Index: 184



Y Index: 216

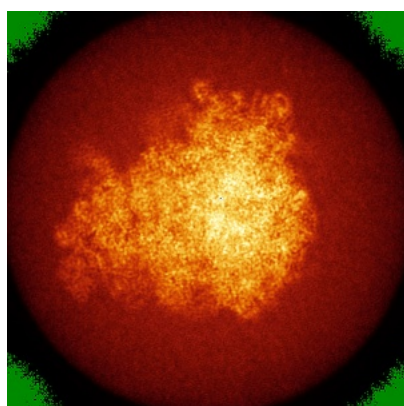


Z Index: 198

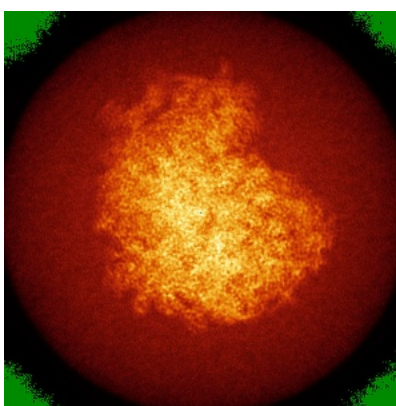
The images above show the largest variance slices of the map in three orthogonal directions.

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

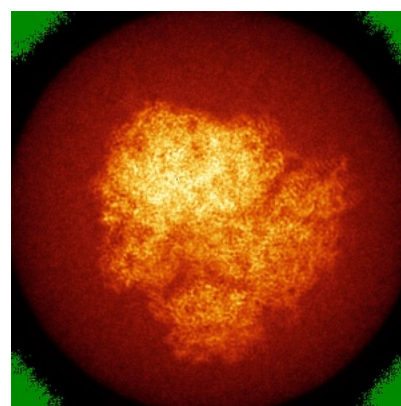
6.4.1 Primary map



X



Y

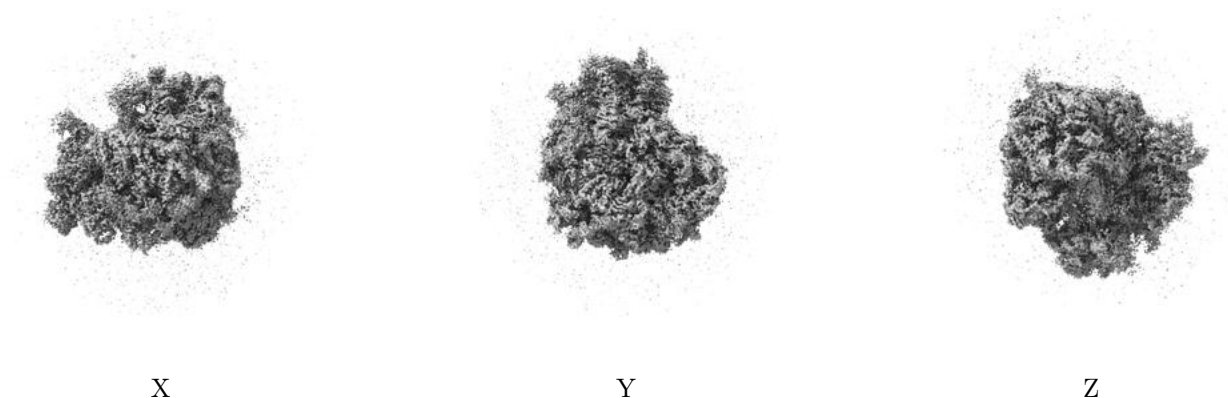


Z

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 0.06. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

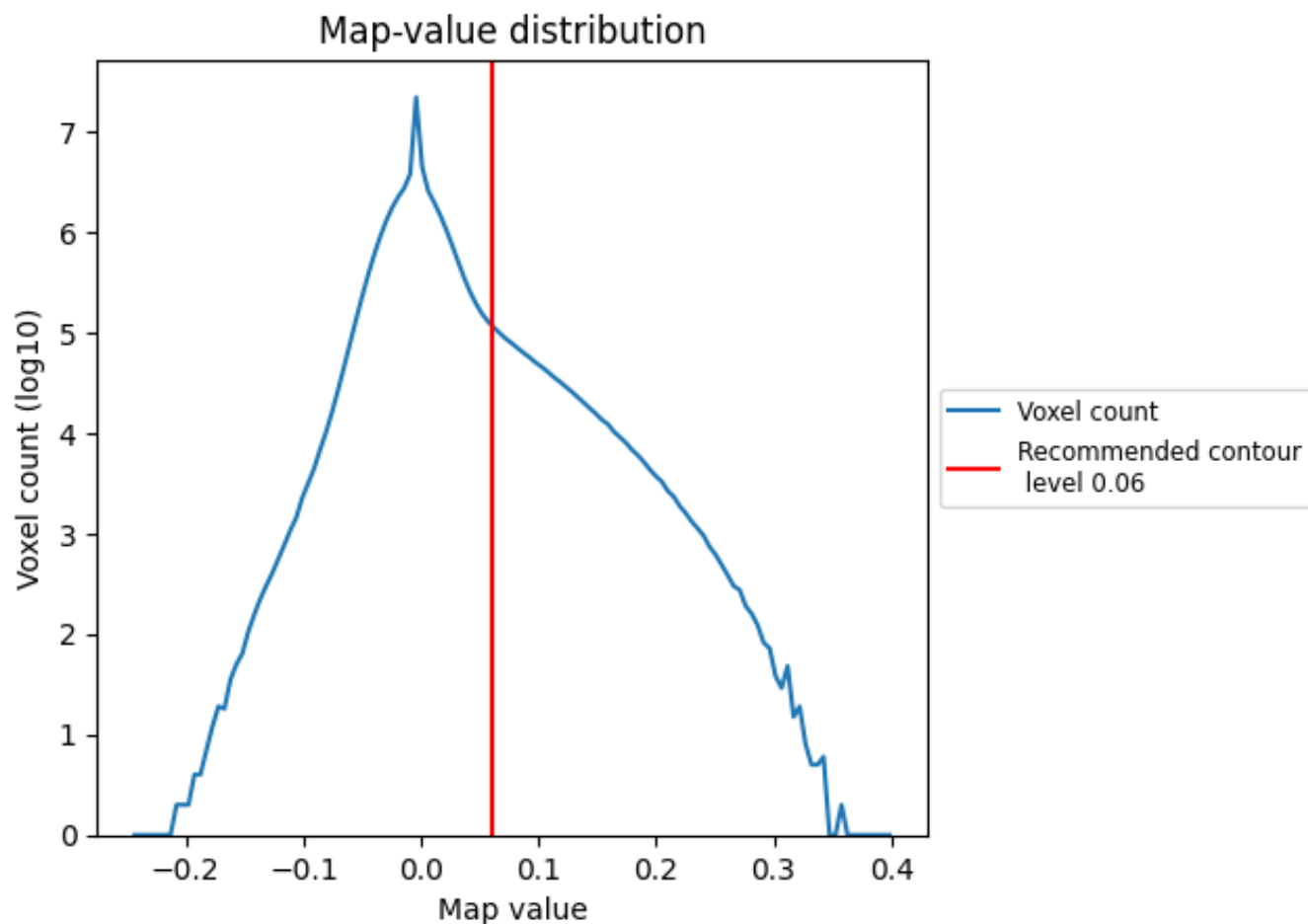
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

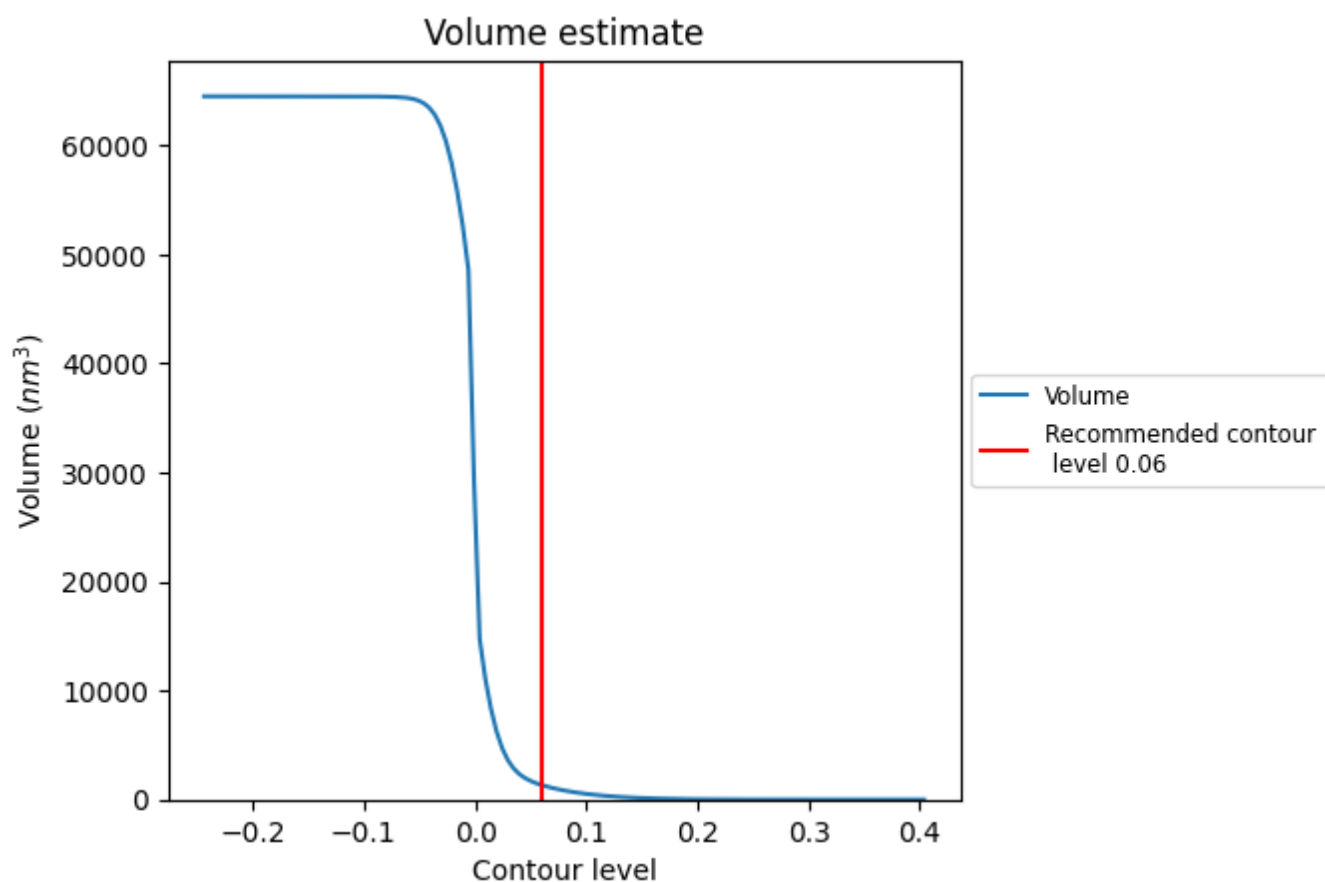
This section contains the results of statistical analysis of the map.

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.

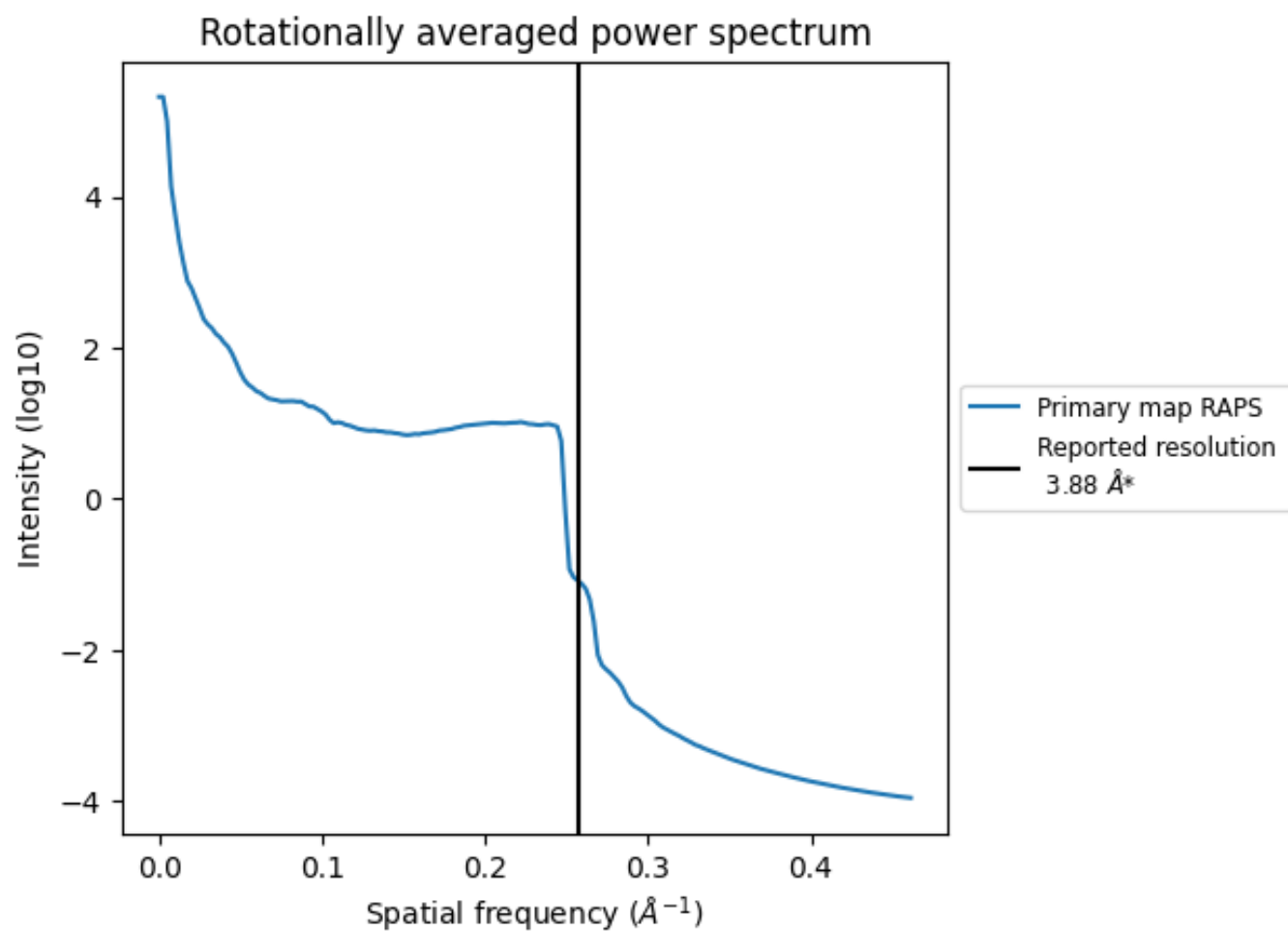
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1328 nm³; this corresponds to an approximate mass of 1199 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 0.258 Å⁻¹

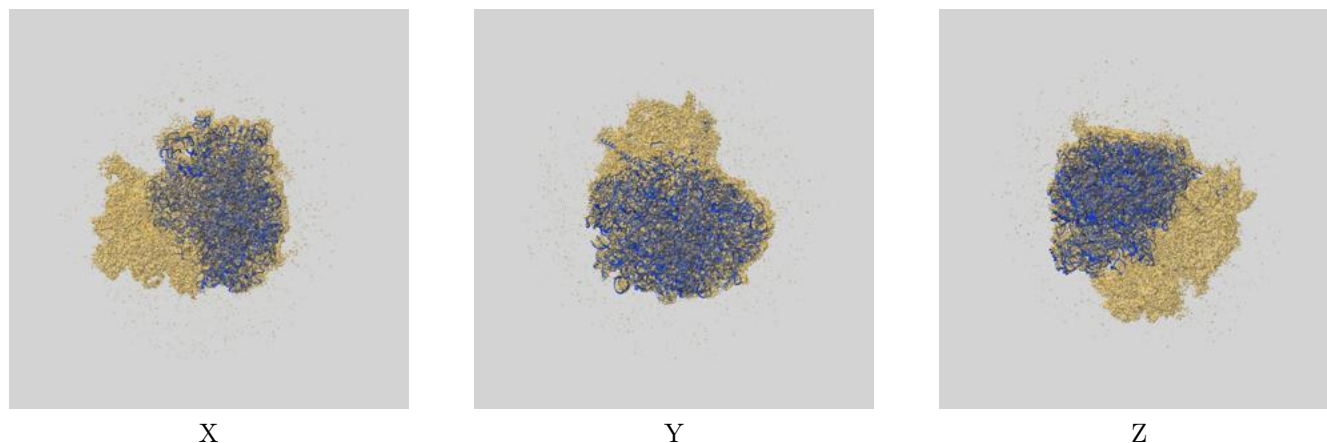
8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

9 Map-model fit [i](#)

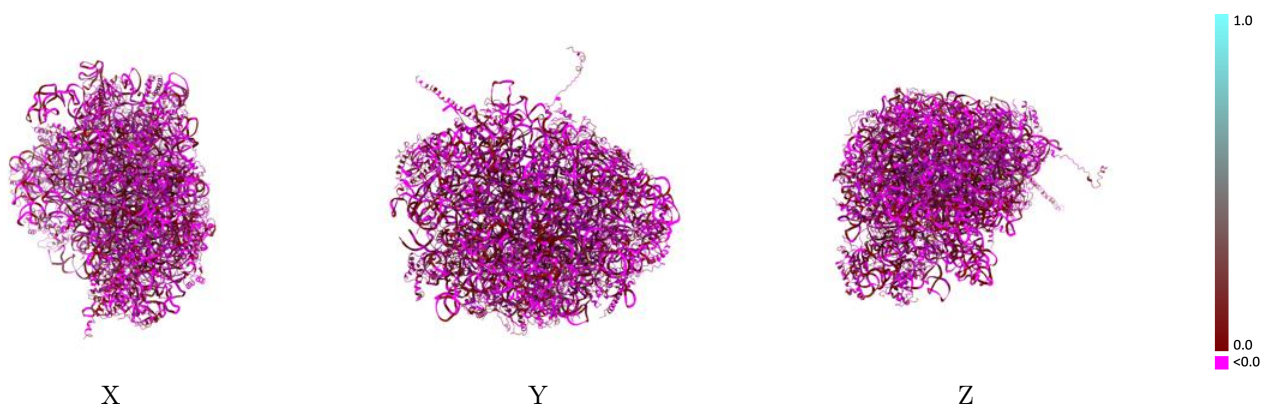
This section contains information regarding the fit between EMDB map EMD-3227 and PDB model 5GAK. Per-residue inclusion information can be found in section [3](#) on page [13](#).

9.1 Map-model overlay [i](#)



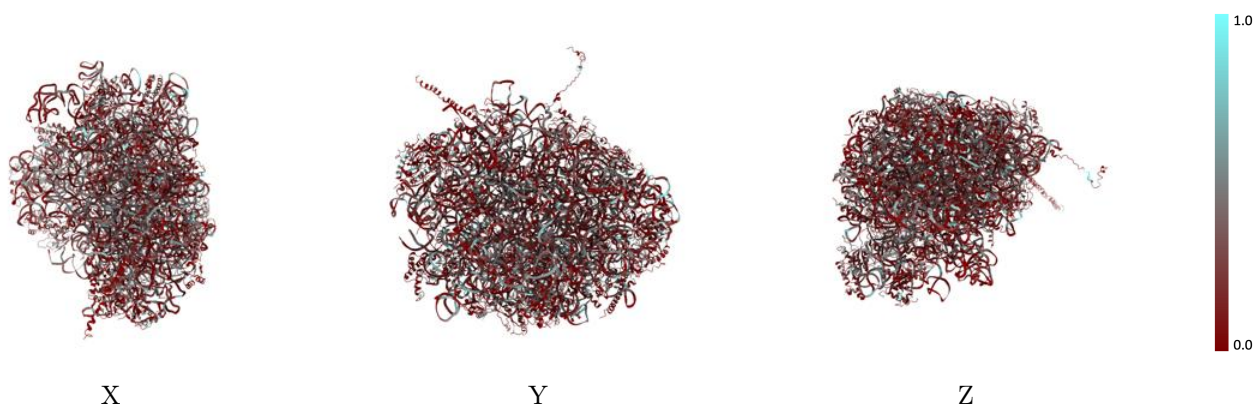
The images above show the 3D surface view of the map at the recommended contour level 0.06 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



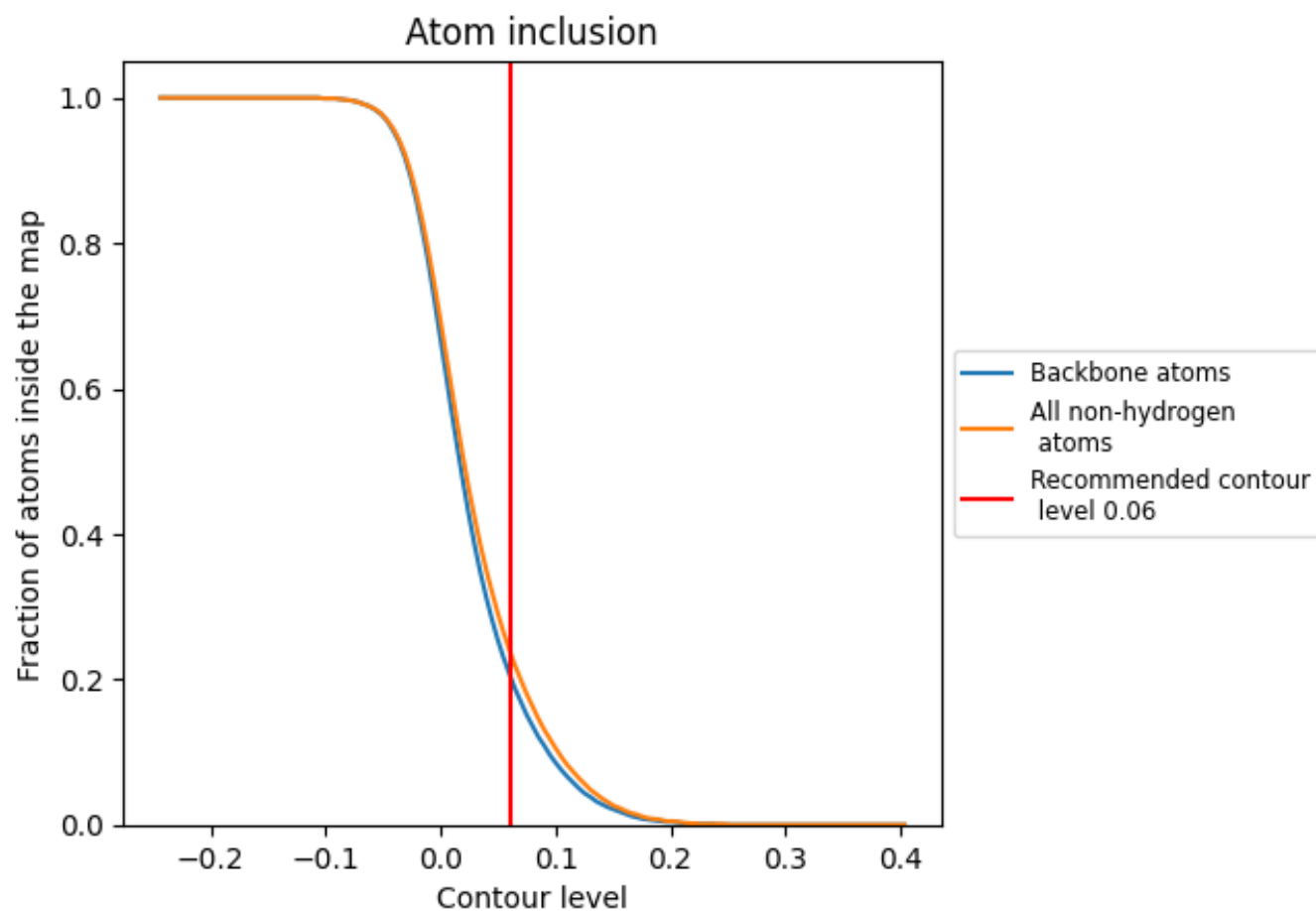
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.06).

9.4 Atom inclusion [i](#)



At the recommended contour level, 21% of all backbone atoms, 24% 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 (0.06) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.2400	 -0.0120
1	 0.2670	 -0.0130
3	 0.3180	 -0.0210
4	 0.2430	 -0.0250
A	 0.1680	 -0.0150
B	 0.2310	 0.0010
C	 0.1280	 -0.0020
D	 0.1460	 -0.0120
E	 0.2090	 0.0100
F	 0.2590	 -0.0090
G	 0.2020	 -0.0280
H	 0.2010	 0.0080
I	 0.1980	 -0.0340
J	 0.1910	 -0.0280
K	 0.1750	 0.0320
L	 0.2110	 -0.0230
M	 0.1910	 0.0130
N	 0.2140	 0.0110
O	 0.1550	 -0.0430
P	 0.2680	 0.0110
Q	 0.2360	 -0.0320
R	 0.2340	 -0.0260
S	 0.2140	 -0.0210
T	 0.1870	 -0.0350
U	 0.1950	 -0.0200
V	 0.1790	 -0.0200
W	 0.2200	 -0.0260
X	 0.1650	 -0.0310
Y	 0.1980	 0.0080
Z	 0.2210	 -0.0080
a	 0.2010	 -0.0390
b	 0.2180	 0.0030
c	 0.2090	 -0.0130
d	 0.1640	 -0.0330
e	 0.1350	 -0.0040



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Chain	Atom inclusion	Q-score
f	 0.2130	 -0.0140
g	 0.2300	 -0.0230
h	 0.2750	 -0.0160
i	 0.2640	 0.0200
j	 0.2110	 0.0010
k	 0.1680	 0.0600
l	 0.2180	 -0.0270
m	 0.1520	 -0.0310
n	 0.1900	 -0.0230
o	 0.1840	 0.0130
p	 0.1930	 -0.0010
q	 0.1040	 0.0100
r	 0.1510	 -0.0060
s	 0.1900	 -0.0110
z	 0.0700	 -0.0450