Full wwPDB EM Validation Report ⓘ

Jun 25, 2025 – 05:57 pm BST

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:

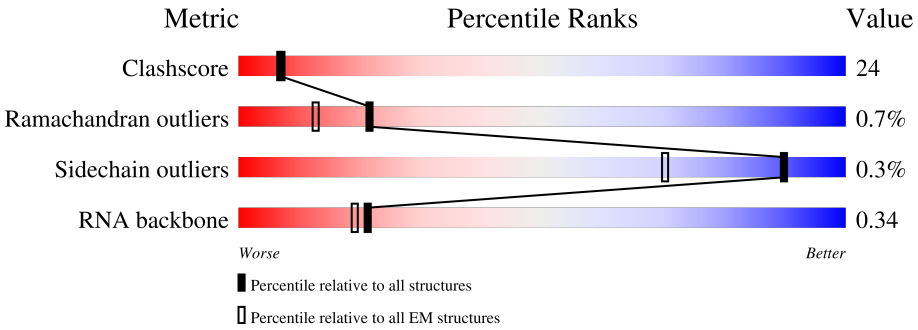
EMDB validation analysis	:	0.0.1.dev118
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4-5-2 with Phenix2.0rc1
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.44

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.88 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	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415
RNA backbone	6643	2191

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=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	80% 60% 39%
9	B	77	81% 16% 44% 40%
10	b	136	77% 50% 49%
11	C	106	89% 70% 29%
12	c	149	79% 52% 44%
13	D	92	84% 52% 47%
14	d	59	83% 71% 27%
15	E	254	78% 61% 38%
16	e	105	82% 55% 37% 8%
17	F	387	73% 56% 44%
18	f	109	81% 55% 45%
19	G	362	82% 62% 37%
20	g	130	77% 63% 35%
21	H	297	82% 54% 45%
22	h	107	71% 59% 40%
23	I	176	74% 52% 36% 11%
24	i	121	66% 61% 31% 7%
25	J	244	73% 57% 34% 9%
26	j	120	78% 60% 39%
27	K	256	74% 49% 41% 9%
28	k	100	80% 67% 31%
29	L	191	79% 59% 41%
30	l	88	77% 63% 35%
31	M	174	79% 59% 37%
32	m	78	85% 55% 44%

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Mol	Chain	Length	Quality of chain
33	N	199	78% 58% 38%
34	n	51	80% 61% 37%
35	O	138	86% 49% 49%
36	o	128	34% 24% 16% 59%
37	P	204	71% 57% 42%
38	p	25	80% 72% 28%
39	Q	199	78% 63% 36%
40	q	157	94% 54% 38% 6%
41	R	184	78% 61% 38%
42	r	210	88% 92% 8%
43	S	186	81% 65% 34%
44	s	221	81% 55% 39%
45	T	189	83% 65% 34%
46	U	172	83% 61% 38%
47	V	160	84% 64% 35%
48	W	121	61% 52% 31% 17%
49	z	23	96% 74% 26%

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
			Total	C	N	O	P		
1	1	3165	67695	30238	12201	22091	3165	0	0

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

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

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

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

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

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

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

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

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

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

- 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 462	C 289	N 100	O 73	0	0

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

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

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

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

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

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

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

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

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

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

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

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

- 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		

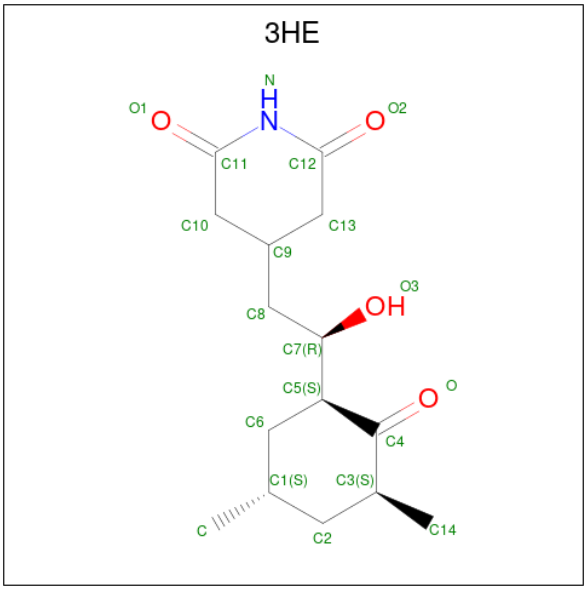
- Molecule 48 is a protein called 60S ribosomal protein L22-A.

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: $C_{15}H_{23}NO_4$).



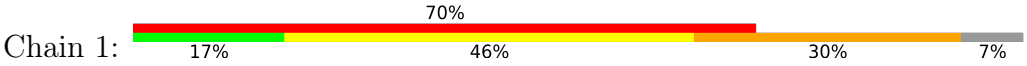
Mol	Chain	Residues	Atoms				AltConf
50	1	1	Total	C	N	O	0
			20	15	1	4	

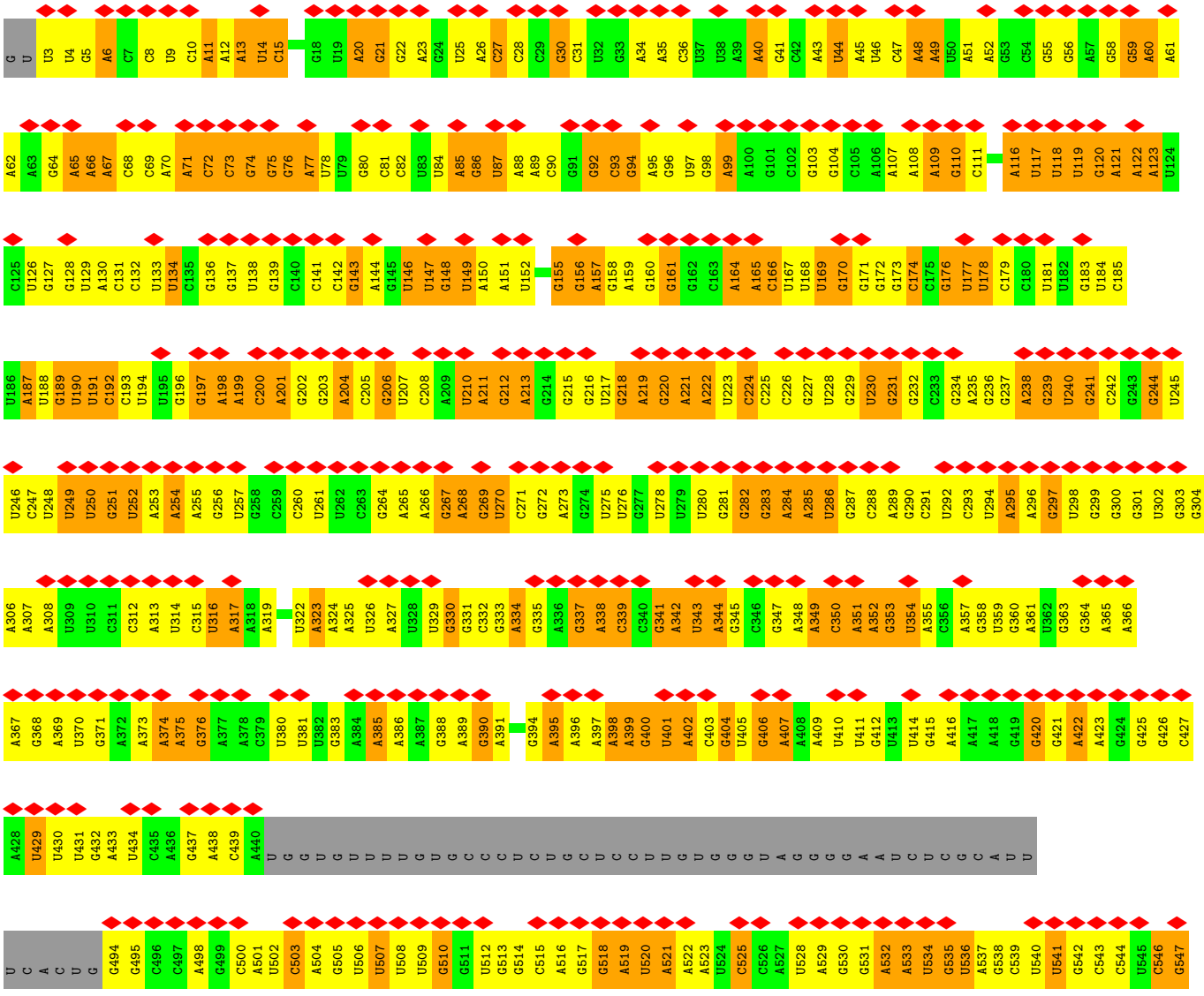
3 Residue-property plots (i)

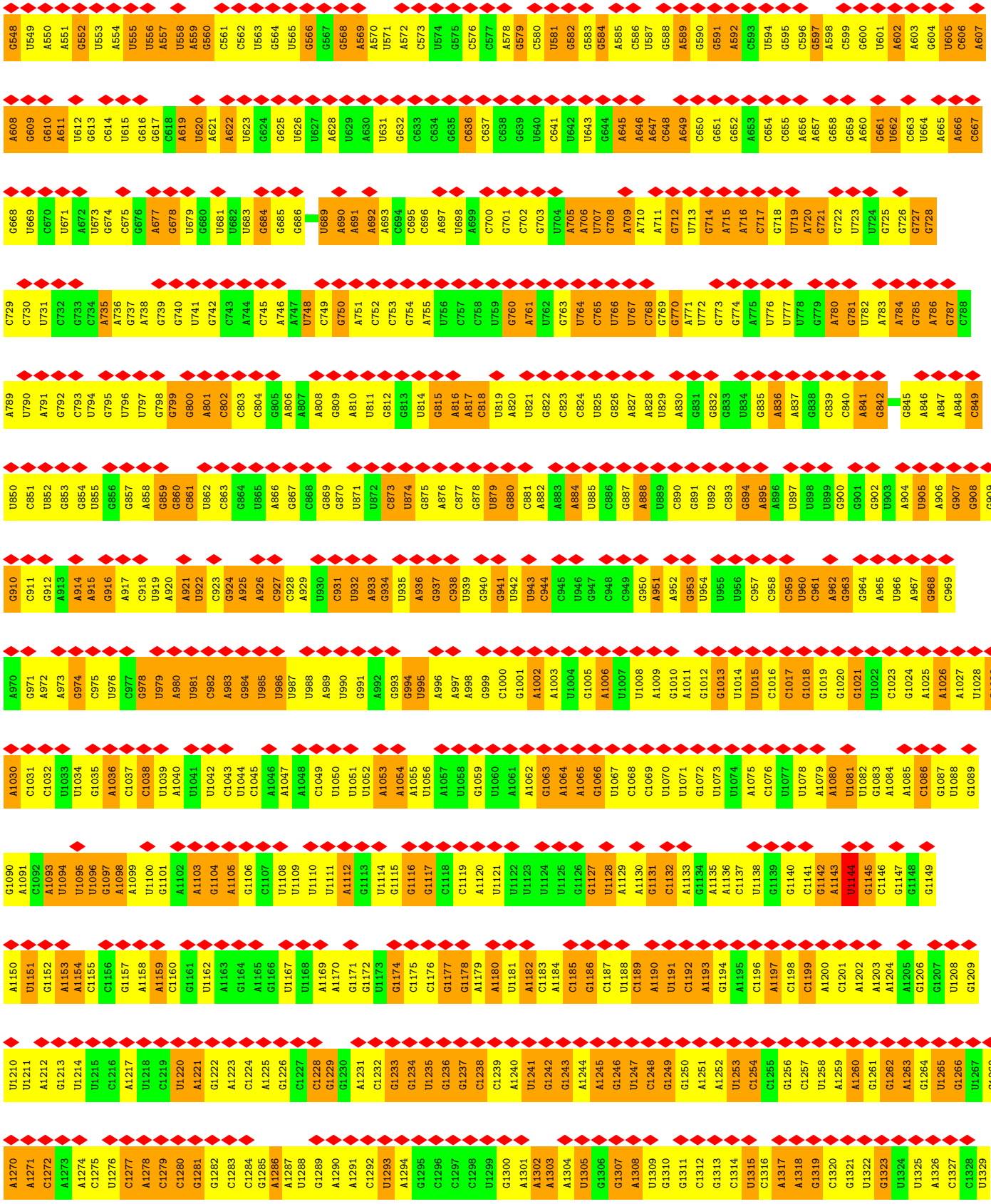
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion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

- Molecule 1: 25S rRNA

Chain 1:



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A608 G609 G610 A611 U612 G613 C614 U615 G616 G617 C618 A619 U620 A621 A622 U623 G624 G625 U626 U627 A628 U629 A630 U631 G632 C633 C634 G635 C636 C637 C638 G639 U640 C641 U642 U643 G644 A645 A646 A647 C648 A649 C650 G651 G652 A653 C654 C655 A656 A657 G658 G659 A660 G661 U662 C663 U664 A665 A666 C667
G668 U669 C670 U671 A672 U673 G674 C675 G676 A677 G678 U679 G680 U681 U682 U683 G684 G685 G686 U689 A690 A691 A692 A693 C694 C695 C696 A697 U698 A699 C700 G701 C702 G703 U704 A705 A706 U707 G708 A709 A710 A711 G712 U713 G714 A715 A716 C717 G718 U719 A720 G721 G722 U723 U724 G725 G726 G727 G728
C729 C730 U731 C732 G733 C734 A735 A736 G737 A738 G739 G740 U741 G742 C743 A744 C745 A746 A747 U748 C749 G750 A751 C752 C753 G754 A755 U756 C757 C758 U759 G760 A761 U762 G763 U764 C765 U766 U767 C768 G769 G770 A771 U772 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 C804 G805 A806 A807 A808 G809 A810 U811 G812 G813 U814 G815 A816 A817 C818 U819 A820 U821 G822 G823 C824 U825 G826 A827 A828 U829 A830 G831 G832 G833 U834 G835 A836 A837 G838 C839 C840 A841 G842 G845 A846 A847 A848 C849
U850 C851 U852 G853 G854 U855 G856 G857 A858 G859 G860 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
G910 C911 G912 A913 A914 A915 G916 A917 C918 U919 A920 A921 U922 C923 G924 A925 A926 C927 C928 A929 U930 C931 U932 A933 G934 U935 A936 G937 C938 U939 G940 G941 U942 U943 C944 C945 U946 G947 C948 C949 U950 A951 A952 G953 U954 U955 U956 C957 C958 C959 U960 C961 A962 G963 G964 A965 U966 A967 G968 C969
A970 G971 A972 A973 G974 C975 U976 C977 G978 U979 A980 U981 C982 A983 G984 U985 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 A1011 G1012 G1013 U1014 U1015 C1016 C1017 G1018 G1019 G1020 G1021 U1022 C1023 G1024 A1025 A1026 A1027 U1028 G1029
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 A1120 U1121 U1122 U1123 U1124 U1125 G1126 G1127 U1128 A1129 A1130 G1131 C1132 A1133 G1134 A1135 A1136 C1137 U1138 G1139 G1140 C1141 G1142 A1143 U1144 G1145 C1146 G1147 G1148 G1149
A1150 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 A1180 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 G1213 U1214 U1215 C1216 A1217 U1218 C1219 U1220 A1221 G1222 A1223 C1224 A1225 G1226 C1227 C1228 G1229 G1230 A1231 C1232 G1233 G1234 U1235 G1236 G1237 C1238 C1239 A1240 U1241 G1242 G1243 A1244 A1245 G1246 U1247 C1248 G1249 G1250 A1251 A1252 U1253 C1254 C1255 G1256 C1257 U1258 A1259 A1260 G1261 G1262 A1263 G1264 U1265 G1266 U1267 G1268 U1269
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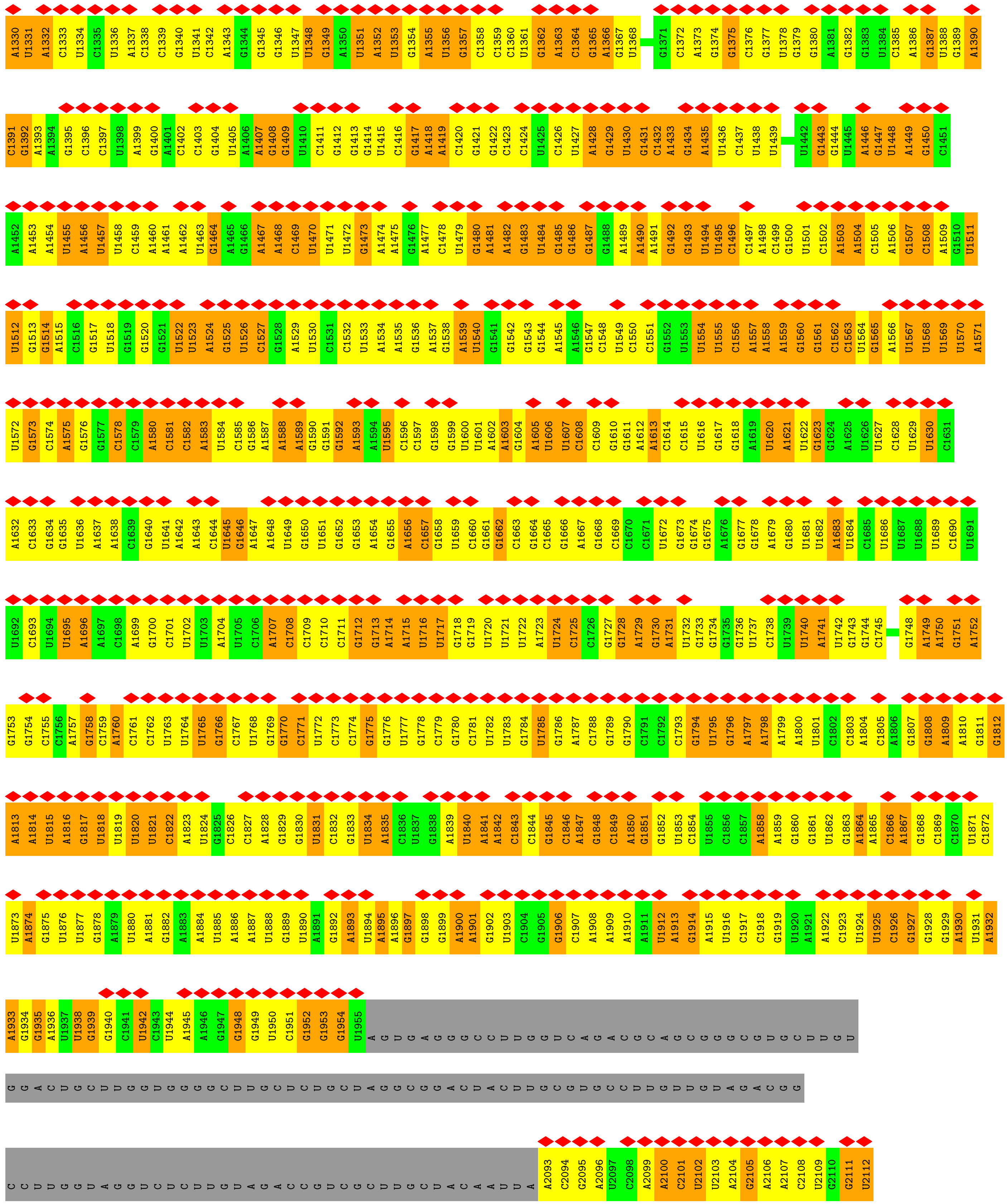
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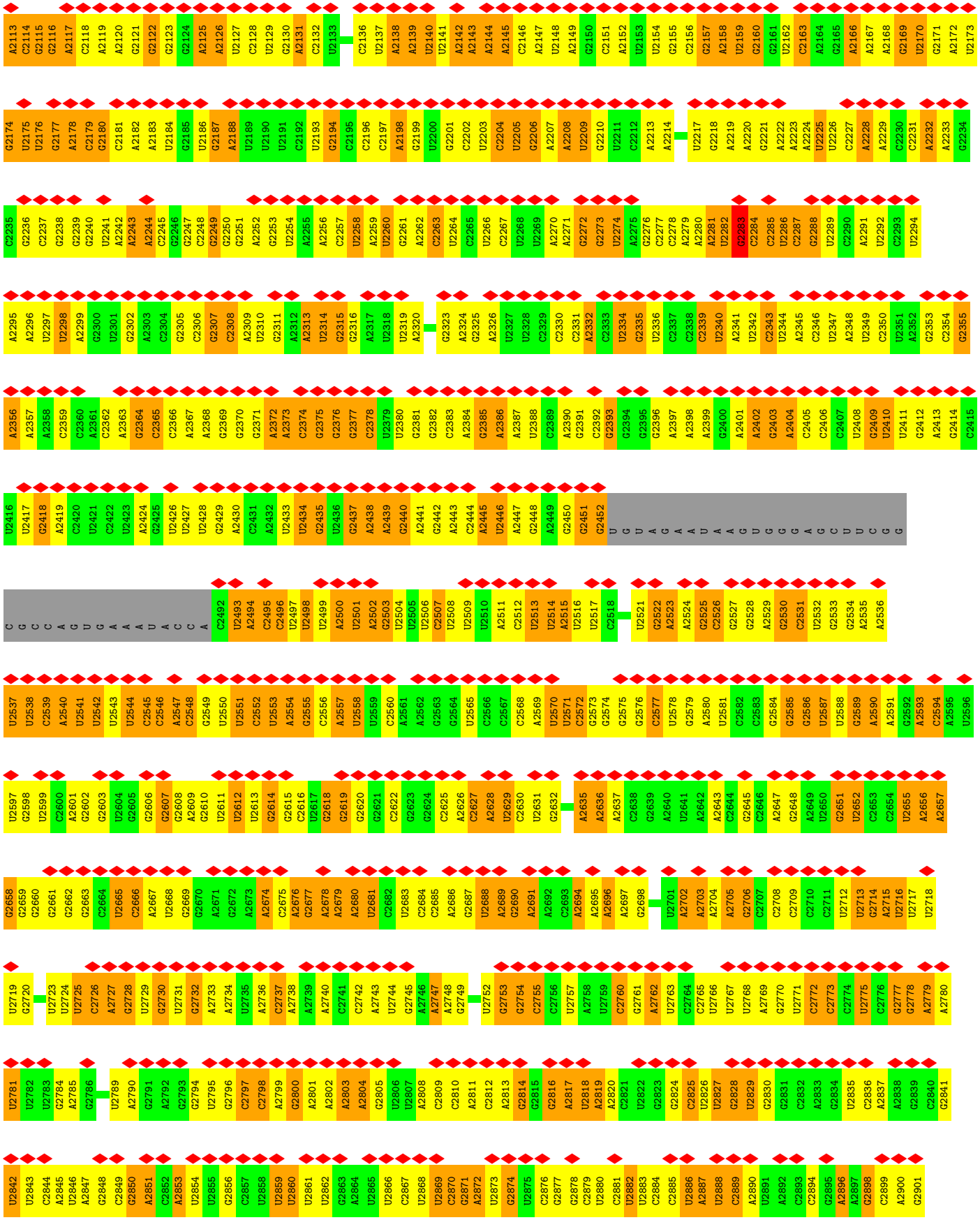
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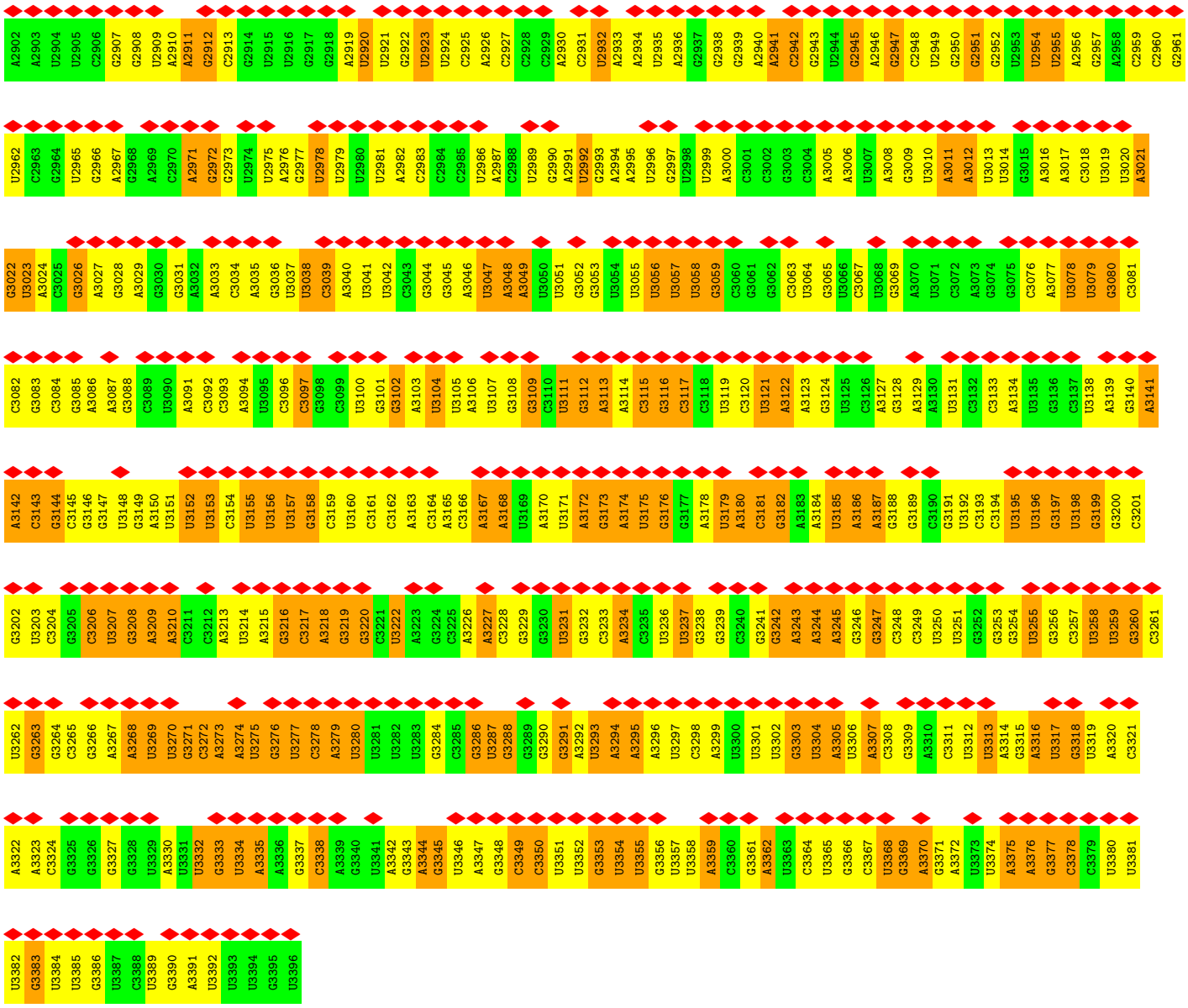
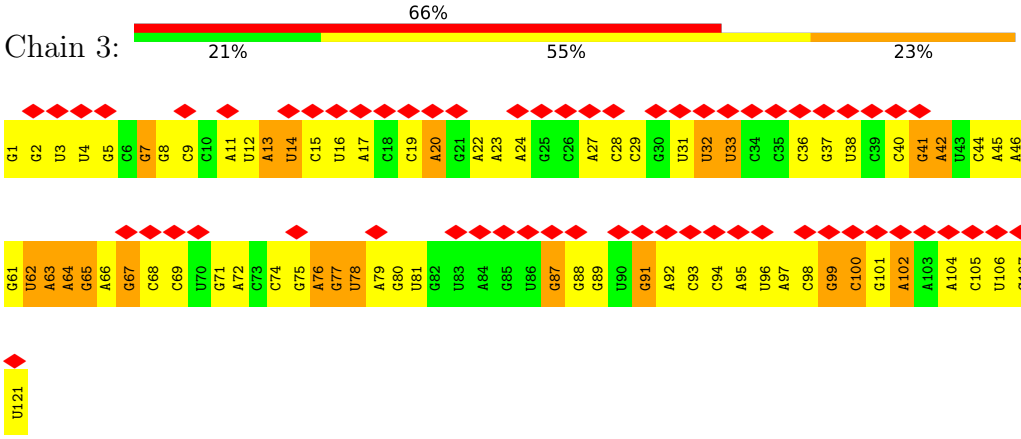


- Molecule 2: 60S ribosomal protein L23-A

Chain X:

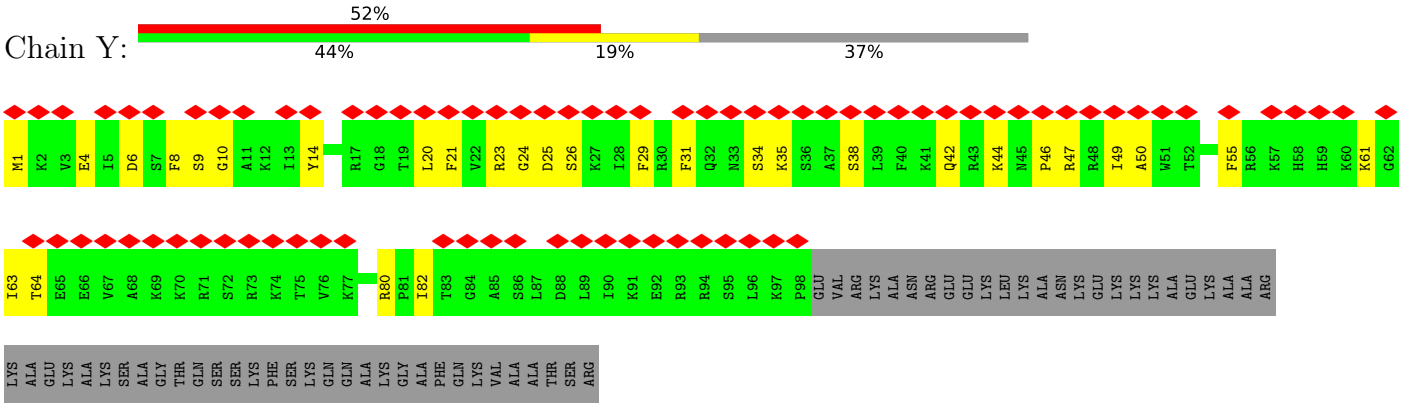
- Molecule 3: 5S rRNA

Chain 3:



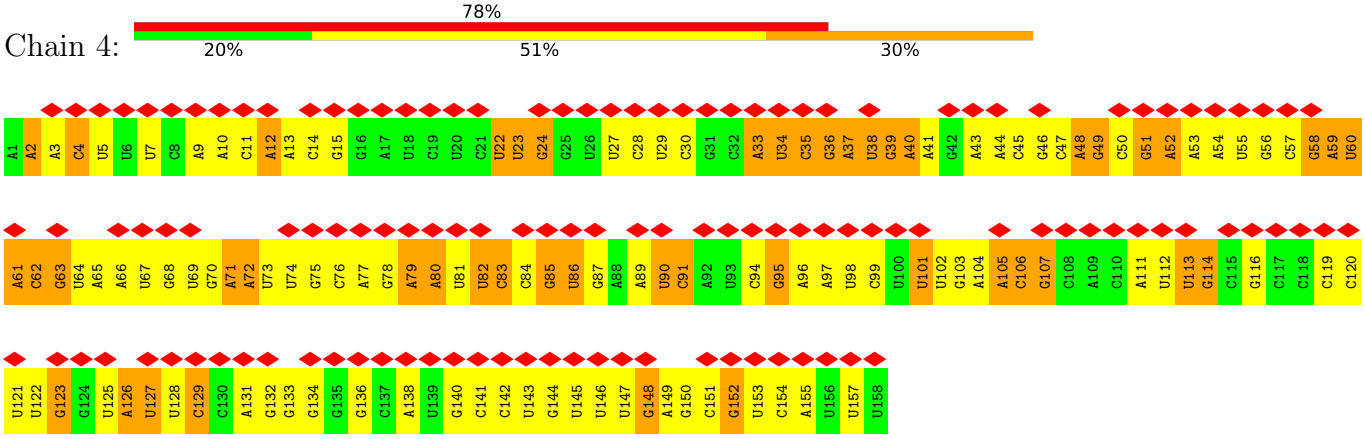
• Molecule 4: 60S ribosomal protein L24-A

Chain Y:



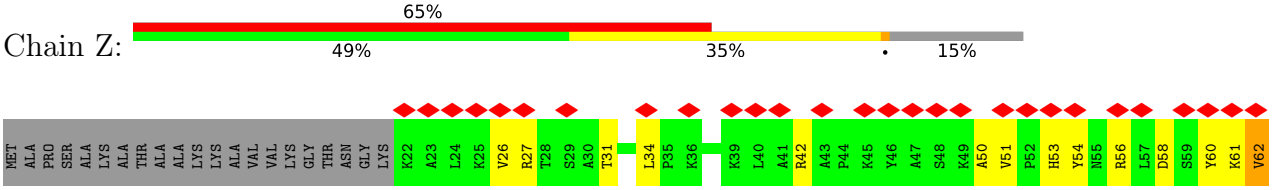
• Molecule 5: 5.8S rRNA

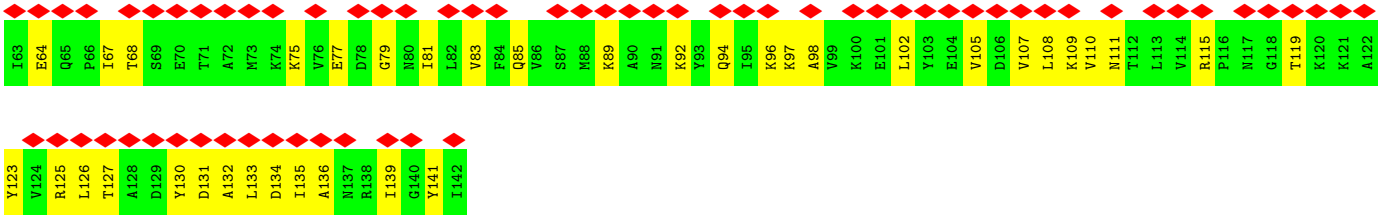
Chain 4:



• Molecule 6: 60S ribosomal protein L25

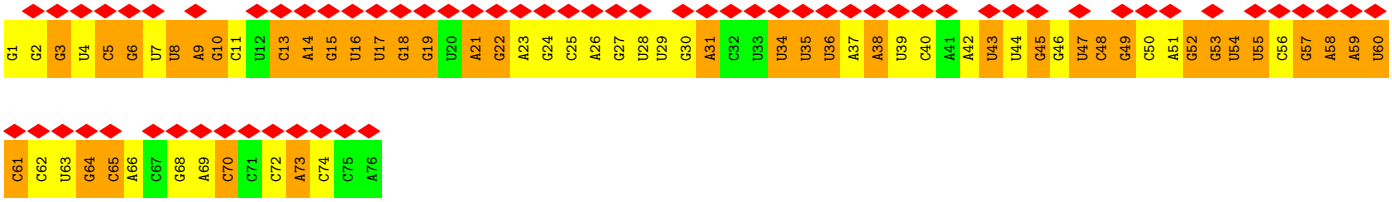
Chain Z:





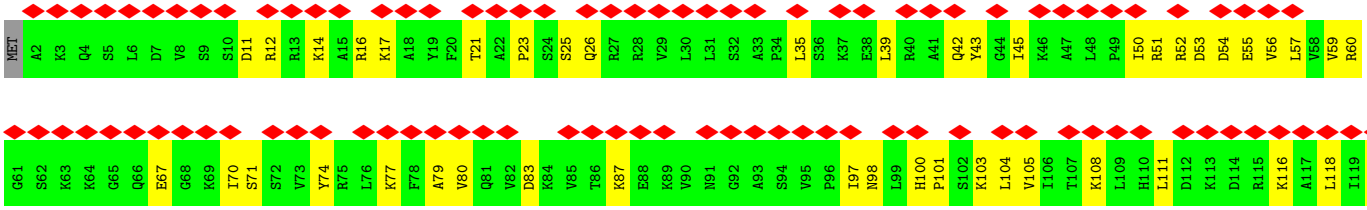
• Molecule 7: The A-site tRNA was modeled based on an E. coli tRNA-Lys

Chain A:



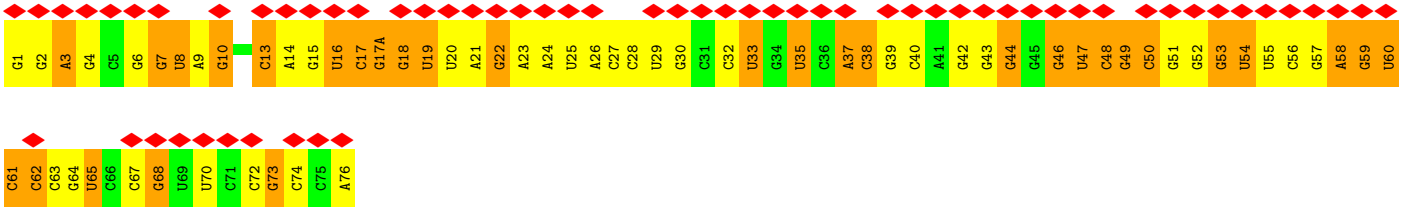
• Molecule 8: 60S ribosomal protein L26-A

Chain a:



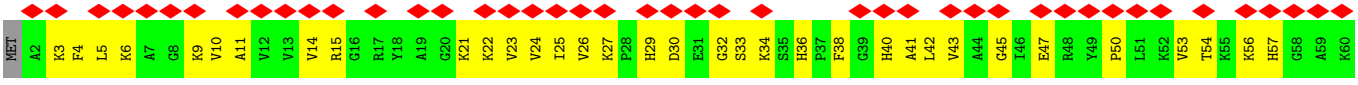
• Molecule 9: P-site tRNA

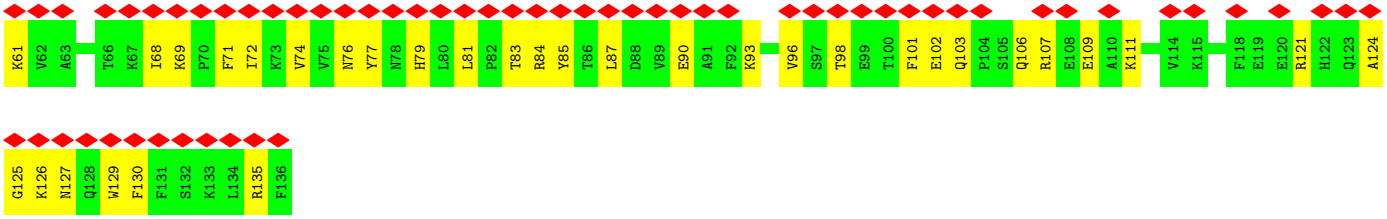
Chain B:



• Molecule 10: 60S ribosomal protein L27-A

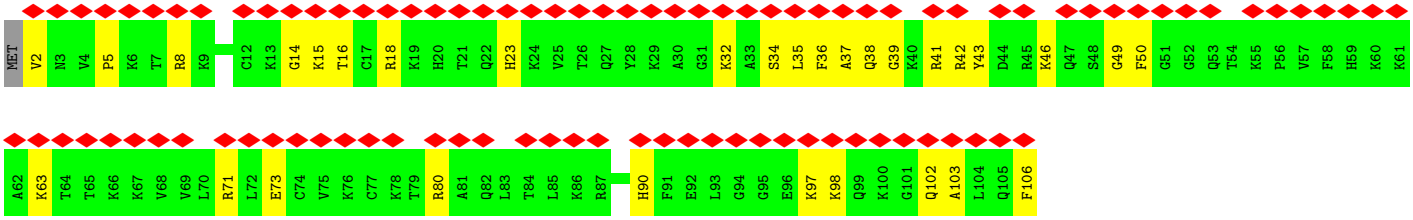
Chain b:





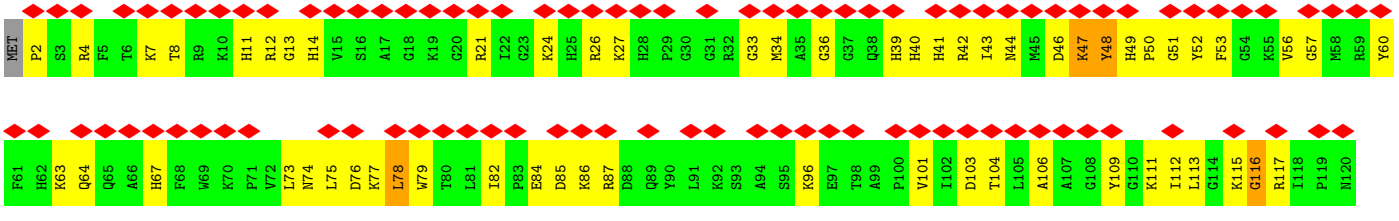
• Molecule 11: 60S ribosomal protein L42-A

Chain C:



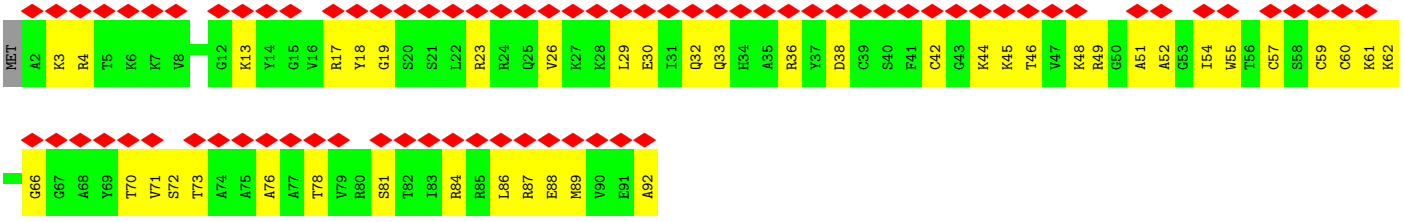
• Molecule 12: 60S ribosomal protein L28

Chain c:



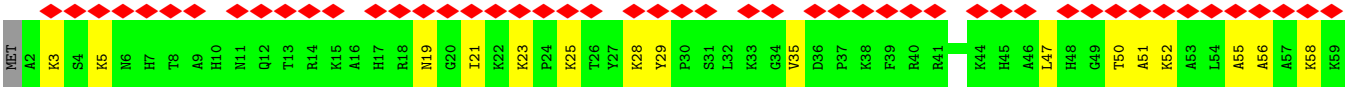
• Molecule 13: 60S ribosomal protein L43-A

Chain D:



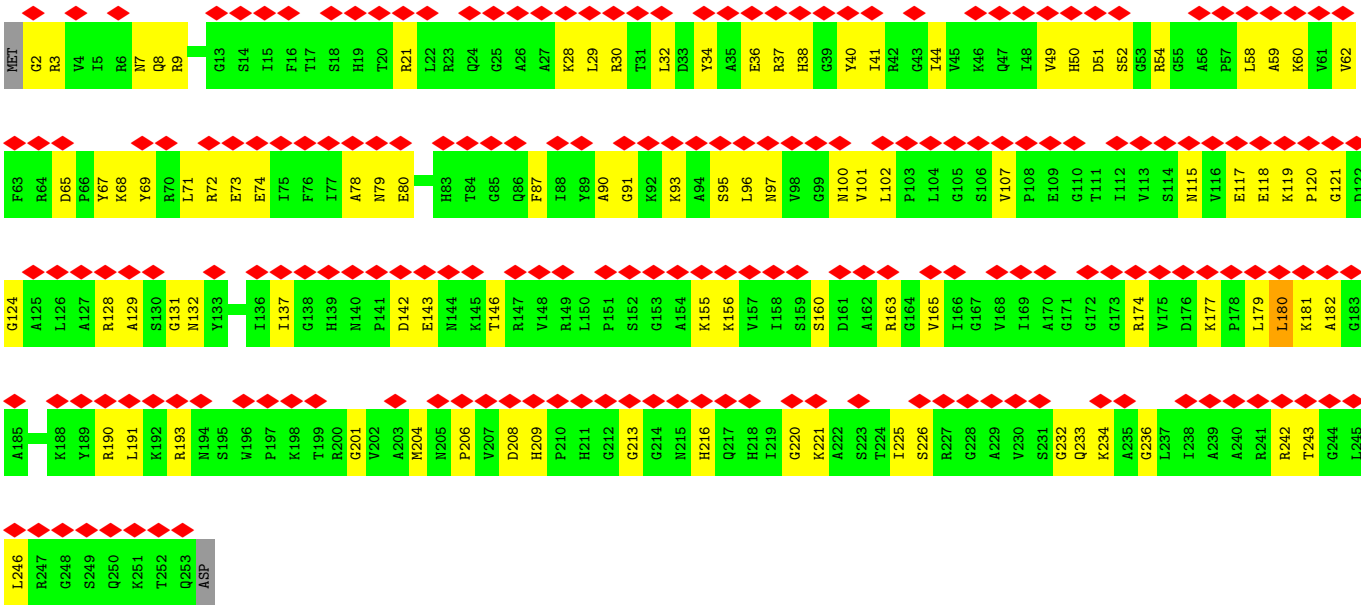
• Molecule 14: 60S ribosomal protein L29

Chain d:



• Molecule 15: 60S ribosomal protein L2-A

Chain E:



• Molecule 16: 60S ribosomal protein L30

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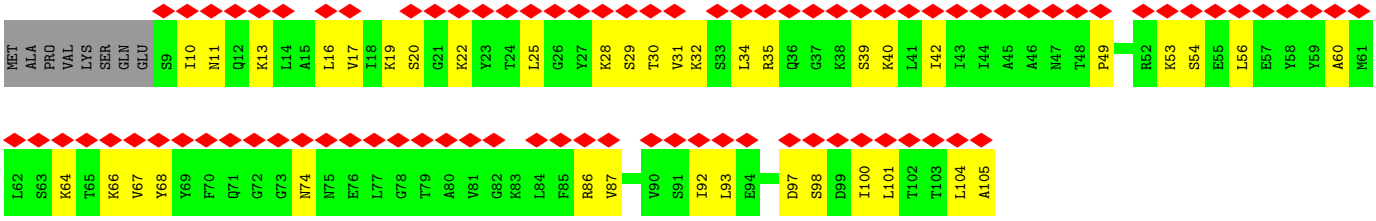
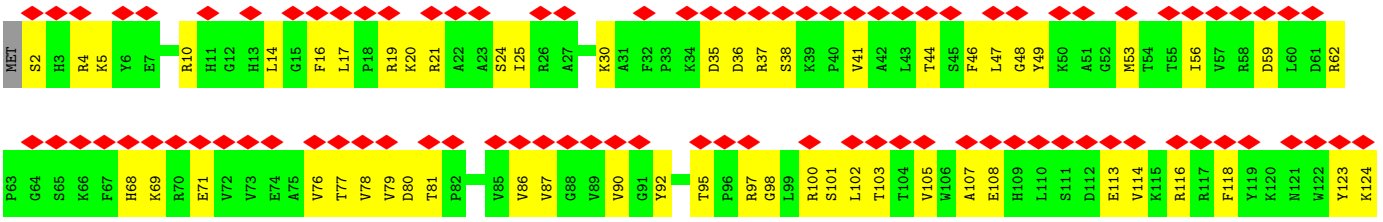


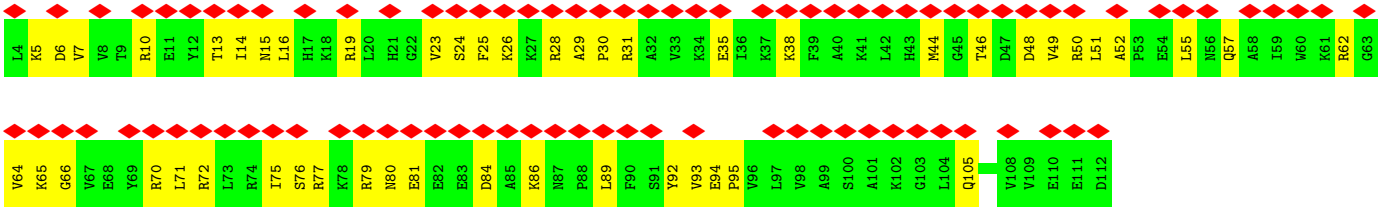
• Molecule 17: 60S ribosomal protein L3

Chain F:



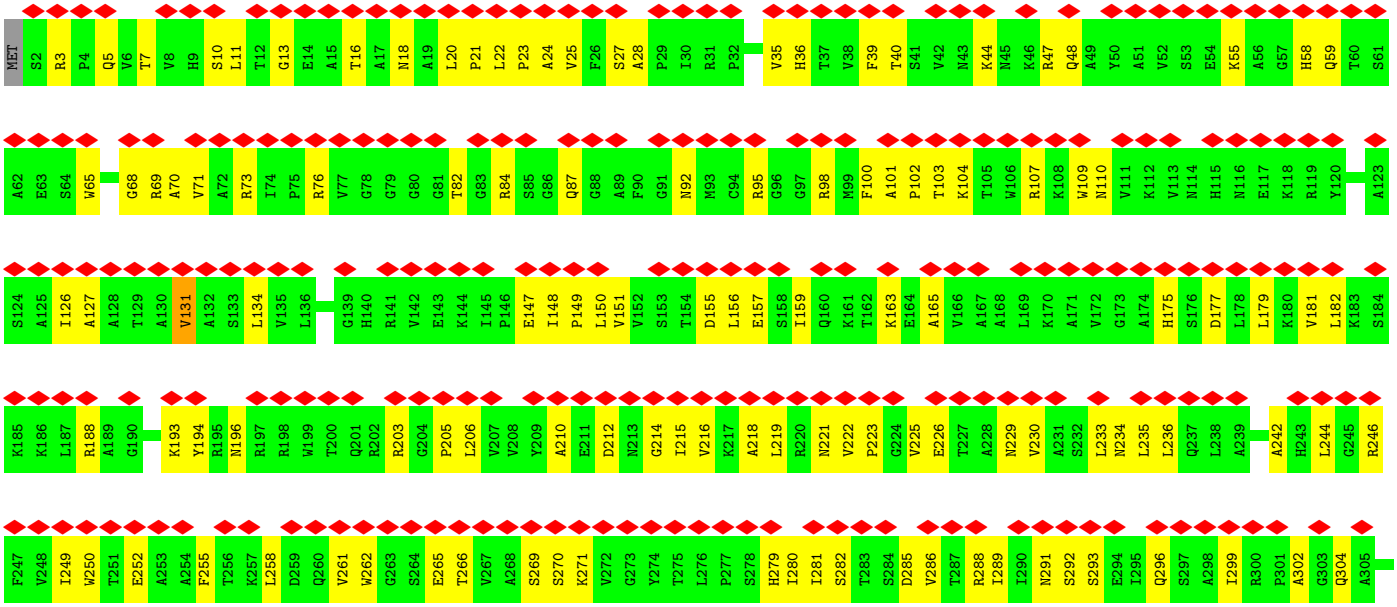
• Molecule 18: 60S ribosomal protein L31-A

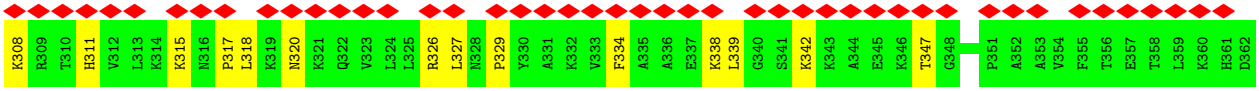
Chain f:



• Molecule 19: 60S ribosomal protein L4-A

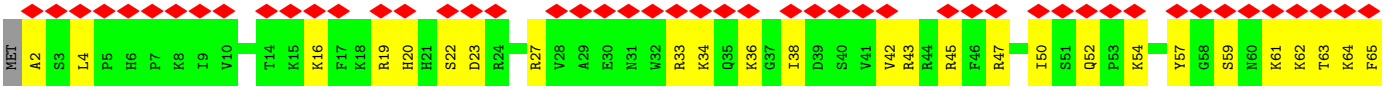
Chain G:

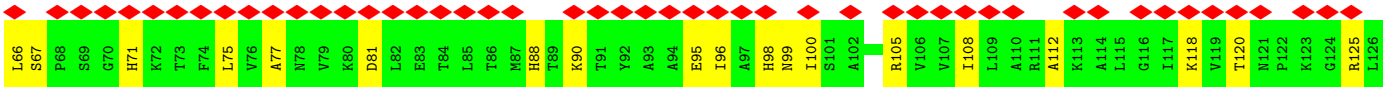




• Molecule 20: 60S ribosomal protein L32

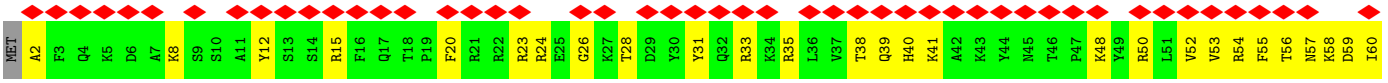
Chain g:

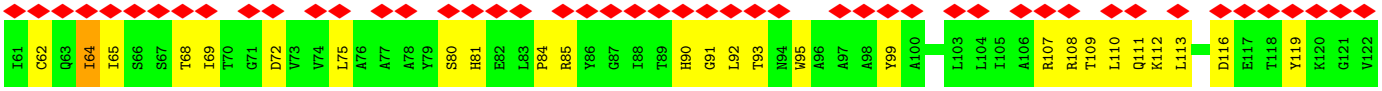


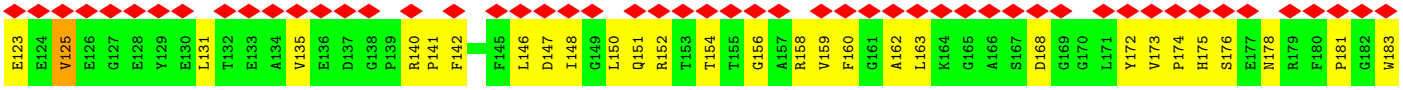


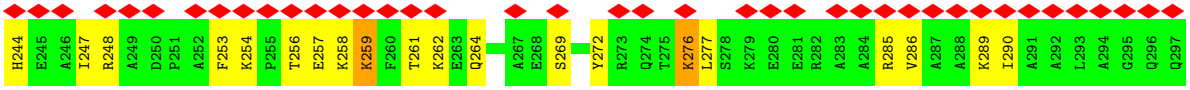
• Molecule 21: 60S ribosomal protein L5

Chain H:



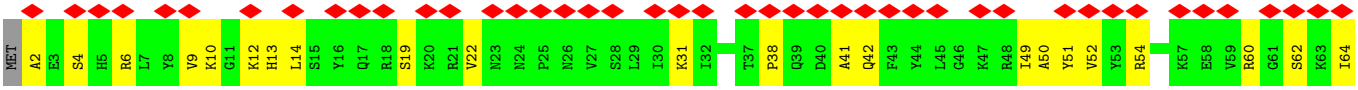


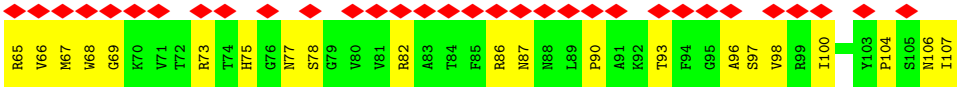




• Molecule 22: 60S ribosomal protein L33-A

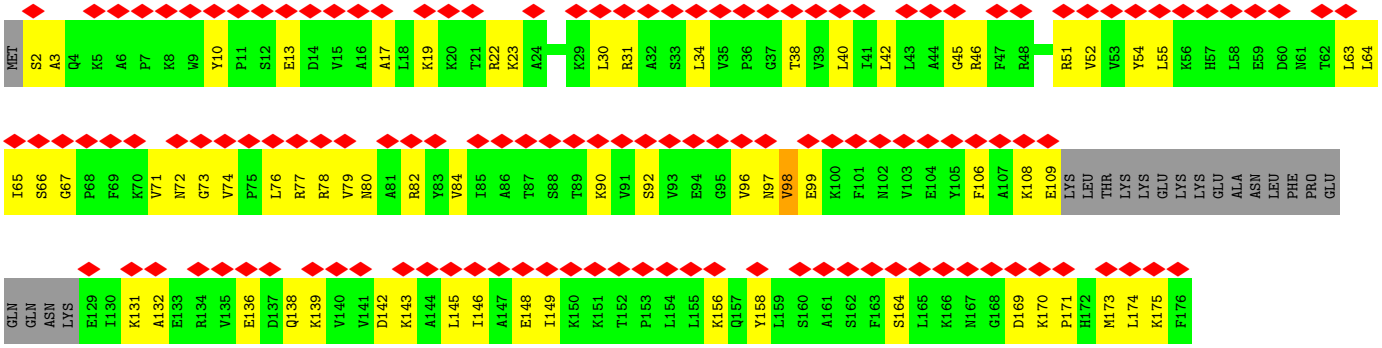
Chain h:





• Molecule 23: 60S ribosomal protein L6-A

Chain I:

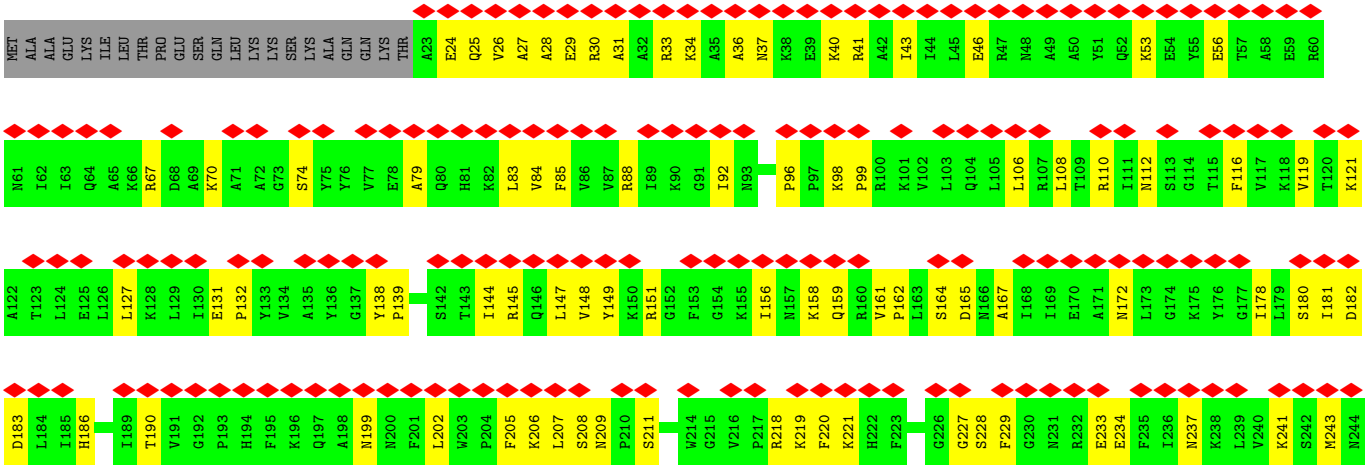


• Molecule 24: 60S ribosomal protein L34-A

Chain i:

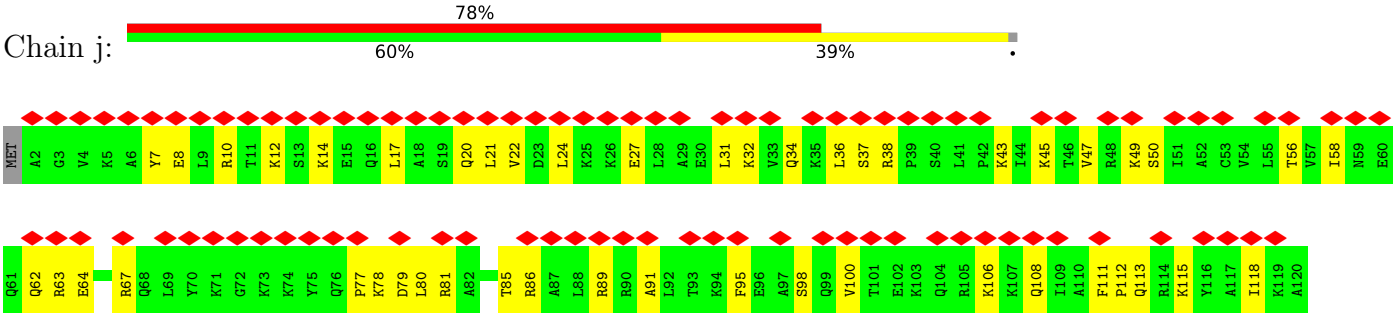
• Molecule 25: 60S ribosomal protein L7-A

Chain J:



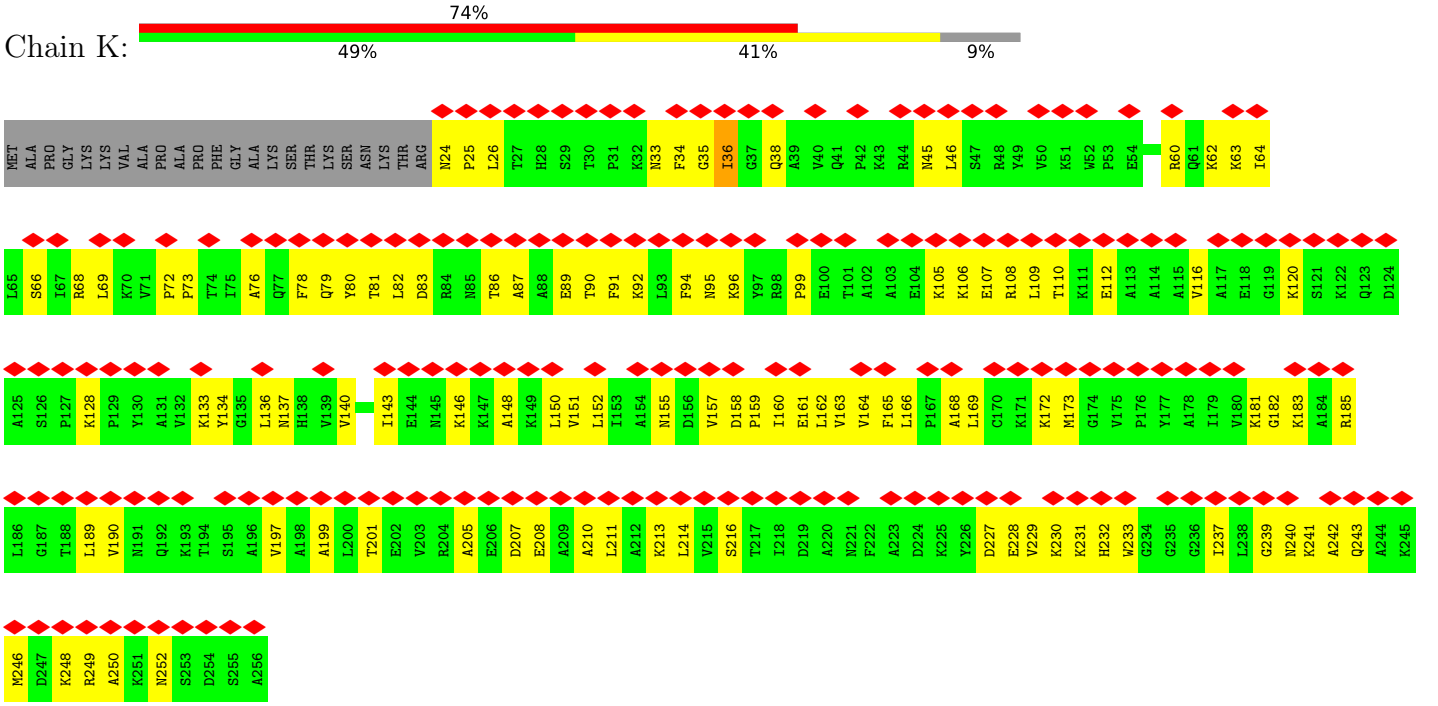
• Molecule 26: 60S ribosomal protein L35-A

Chain j:



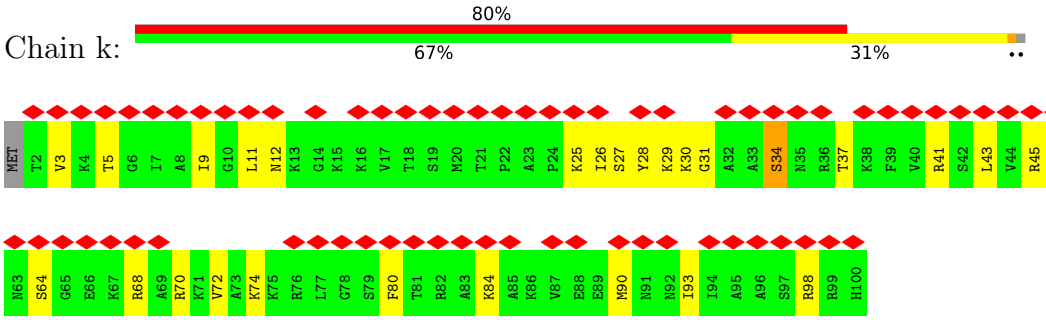
• Molecule 27: 60S ribosomal protein L8-A

Chain K:



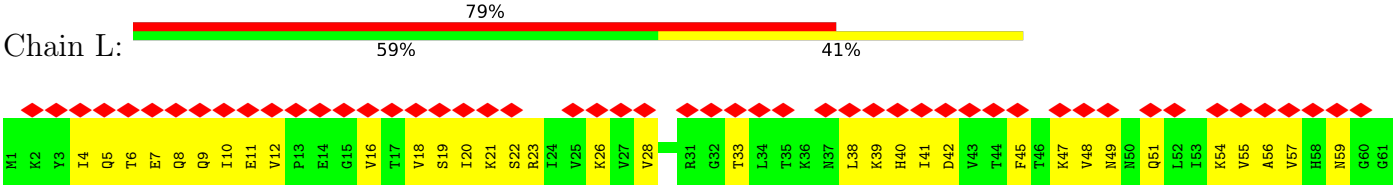
• Molecule 28: 60S ribosomal protein L36-A

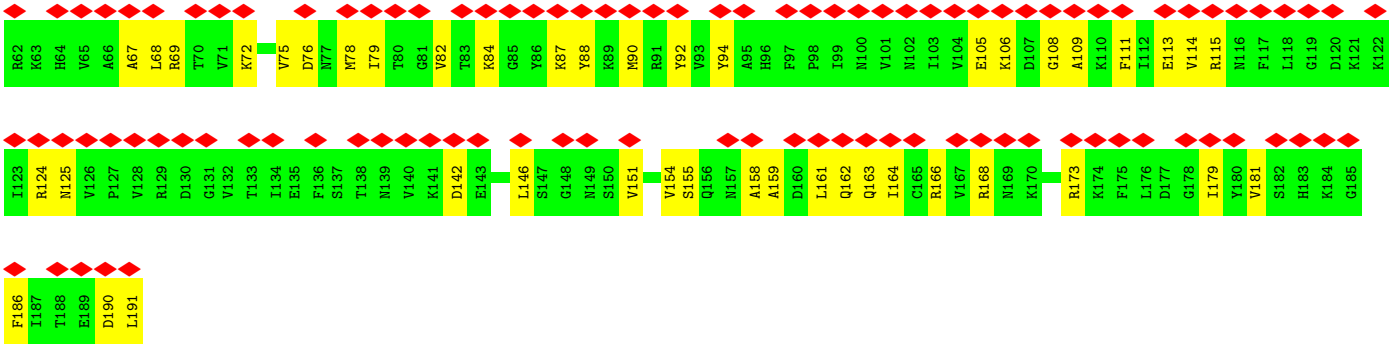
Chain k:



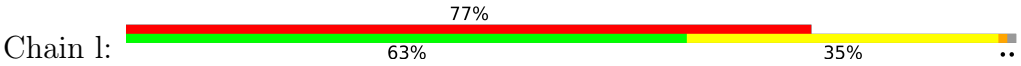
• Molecule 29: 60S ribosomal protein L9-A

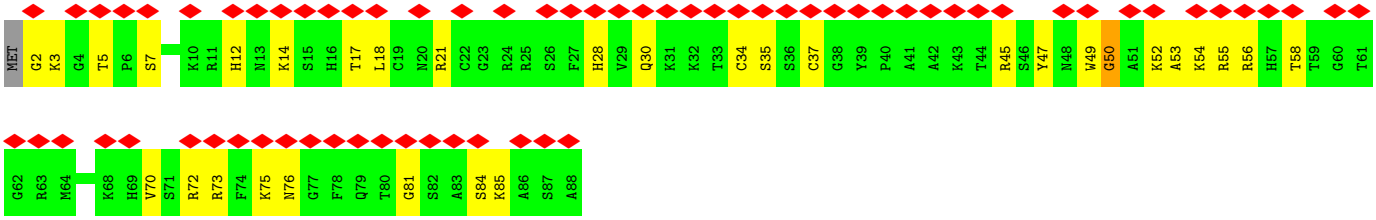
Chain L:



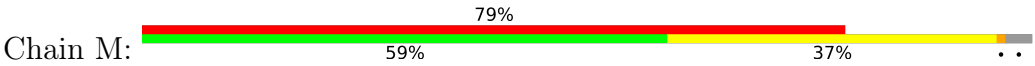


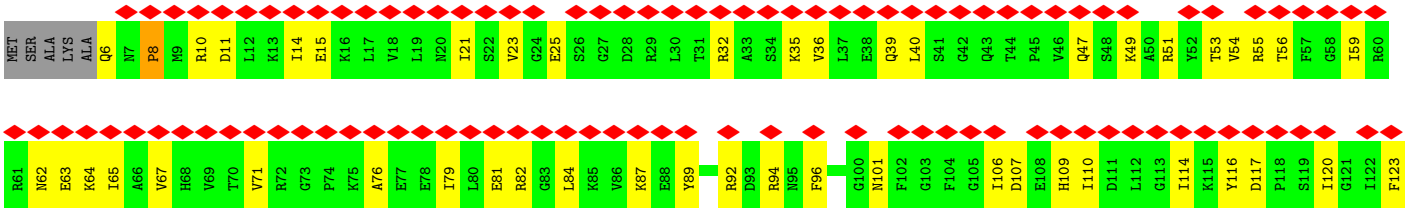
• Molecule 30: 60S ribosomal protein L37-A

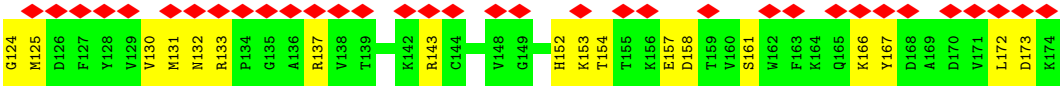




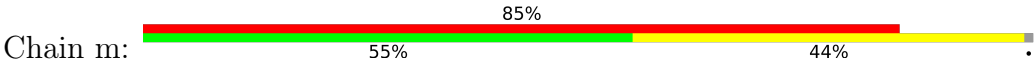
• Molecule 31: 60S ribosomal protein L11-A

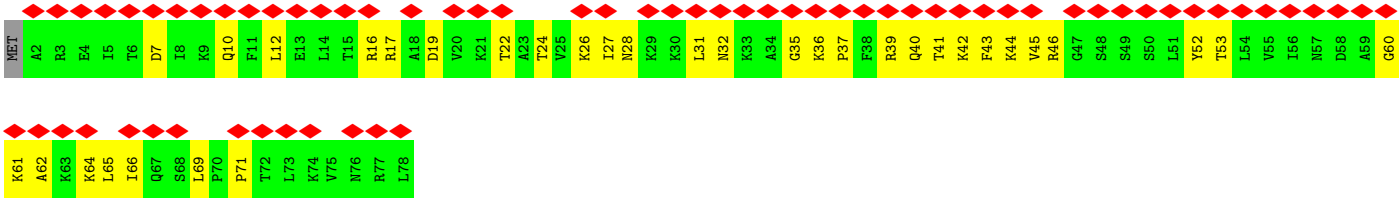




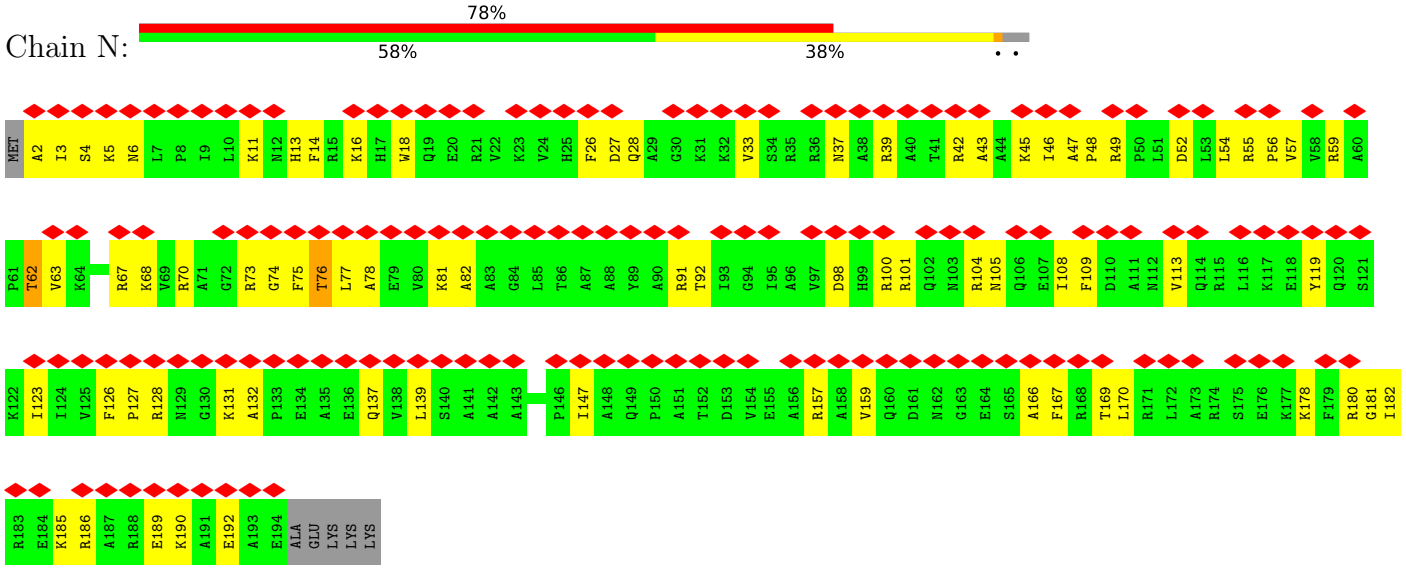


• Molecule 32: 60S ribosomal protein L38

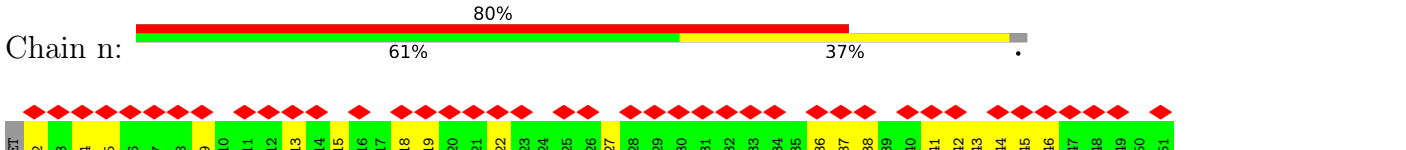




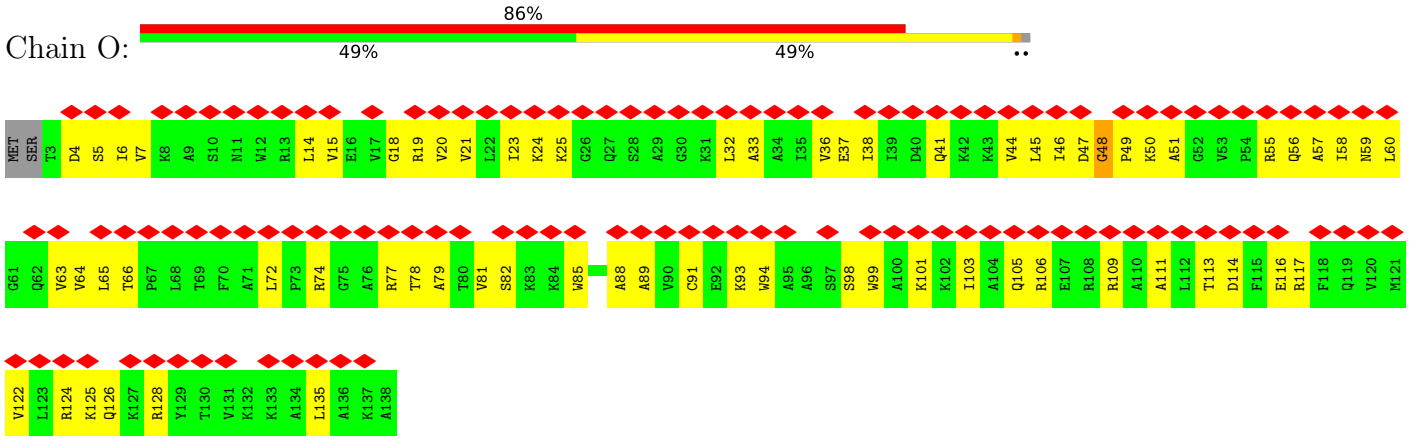
• Molecule 33: 60S ribosomal protein L13-A



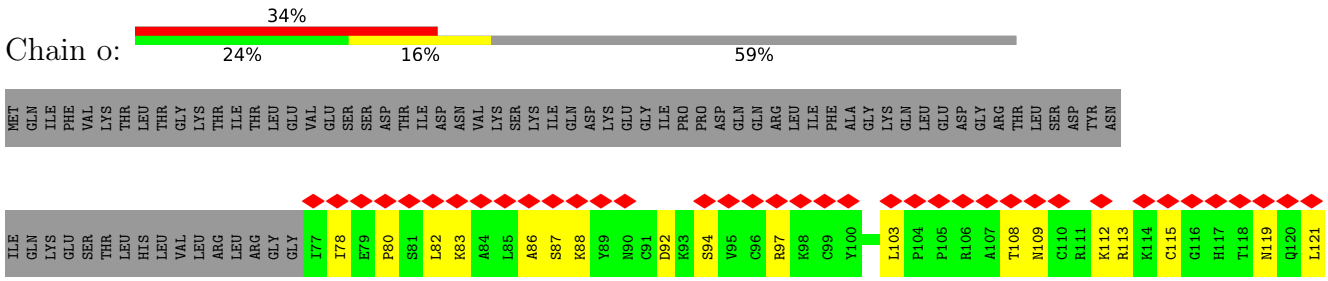
• Molecule 34: 60S ribosomal protein L39

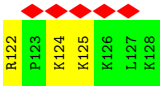


• Molecule 35: 60S ribosomal protein L14-B



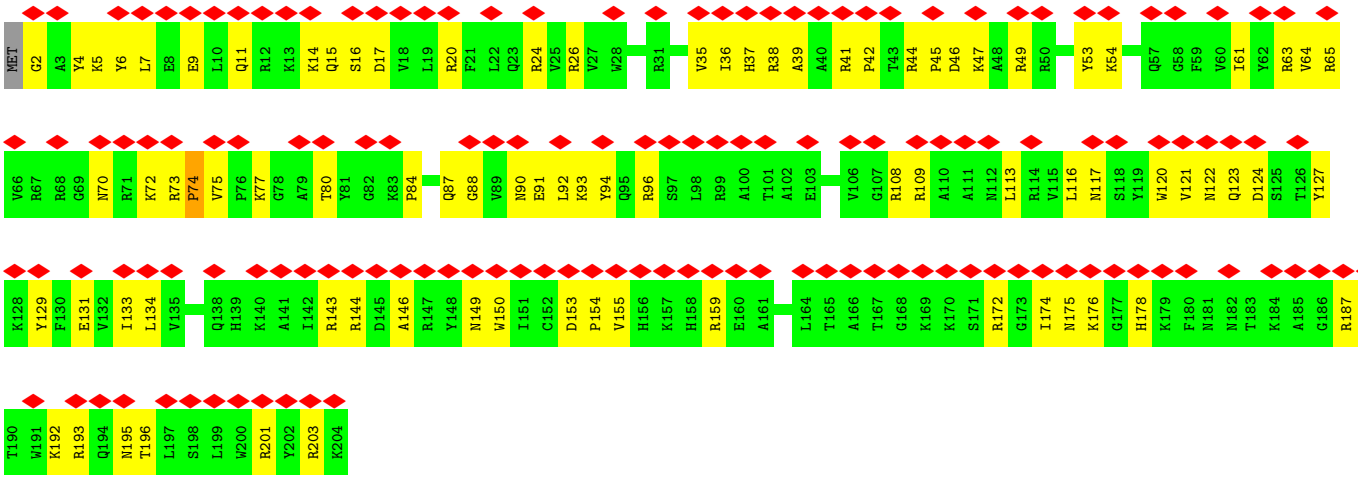
• Molecule 36: Ubiquitin-60S ribosomal protein L40





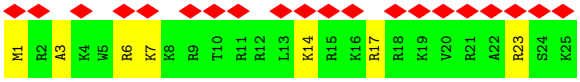
• Molecule 37: 60S ribosomal protein L15-A

Chain P:



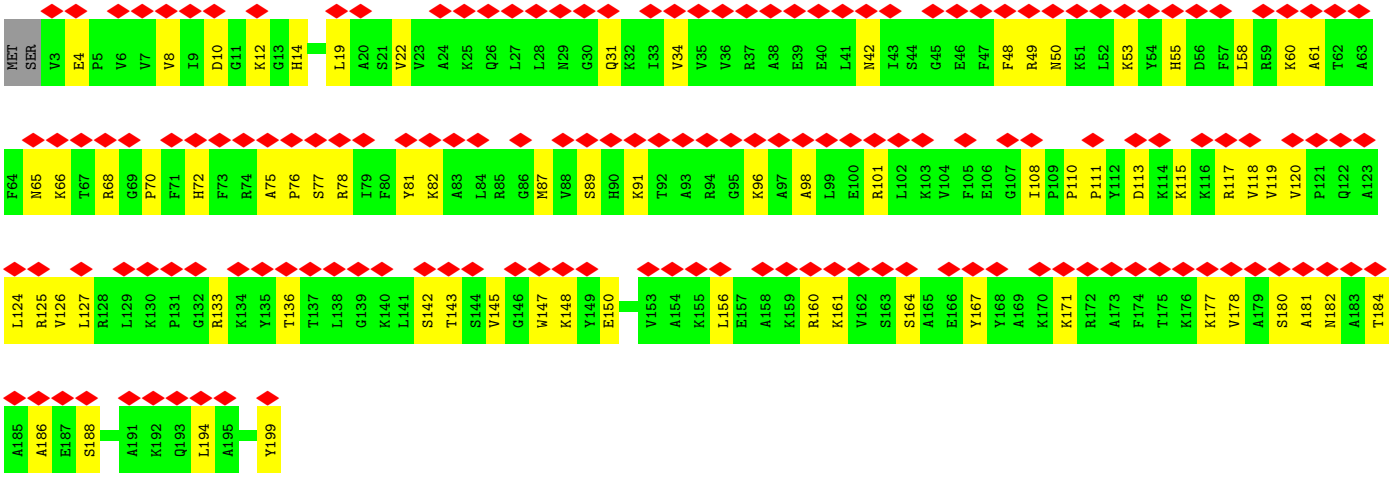
• Molecule 38: 60S ribosomal protein L41-A

Chain p:



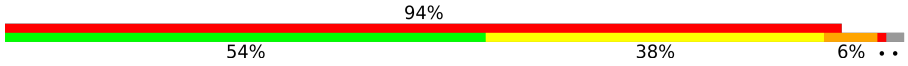
• Molecule 39: 60S ribosomal protein L16-A

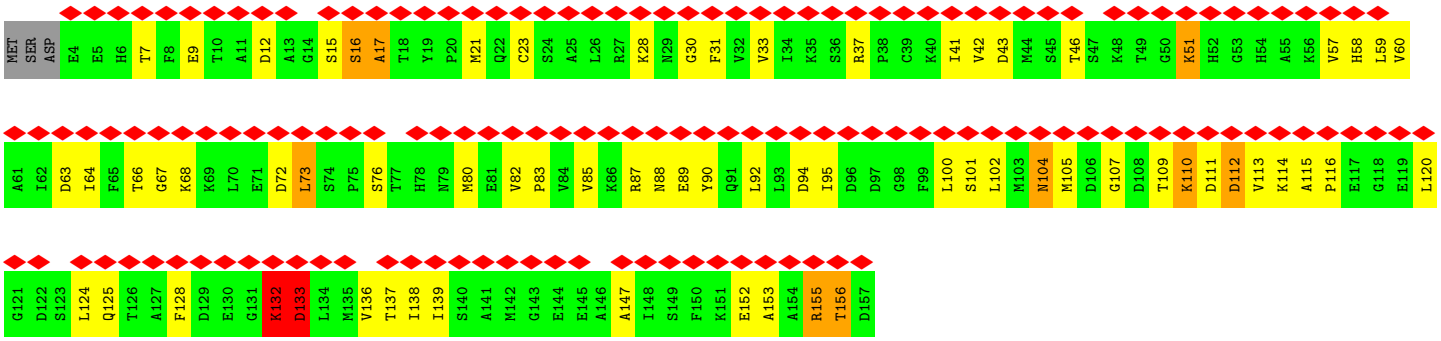
Chain Q:



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

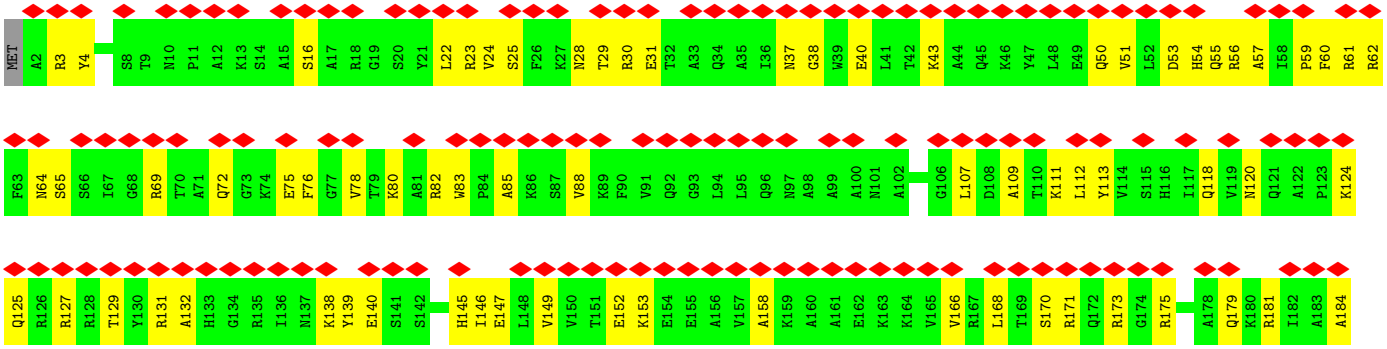
Chain q:





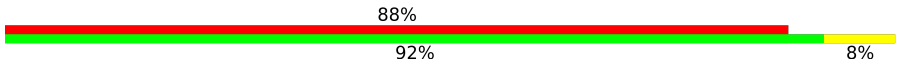
• Molecule 41: 60S ribosomal protein L17-A

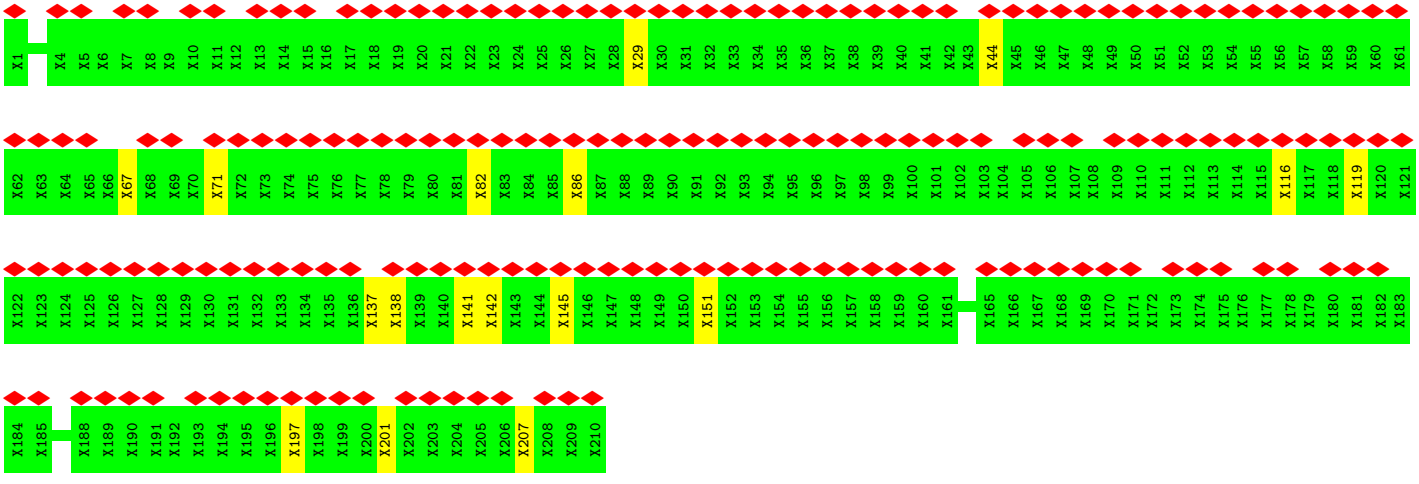
Chain R:



• Molecule 42: ribosomal protein RPL1

Chain r:



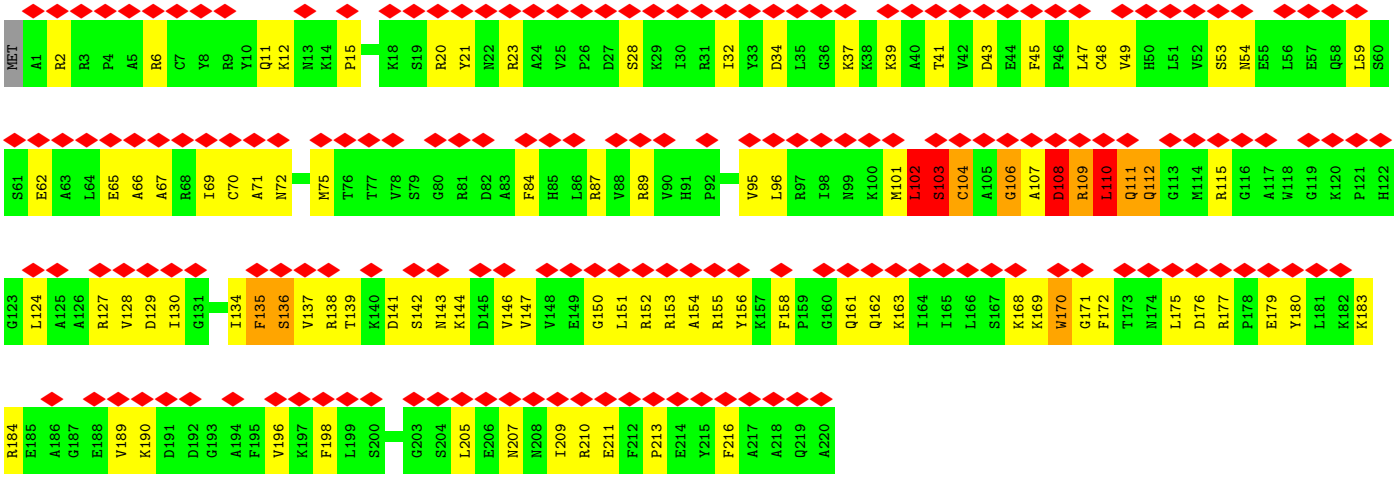


• Molecule 43: 60S ribosomal protein L18-A

Chain S:

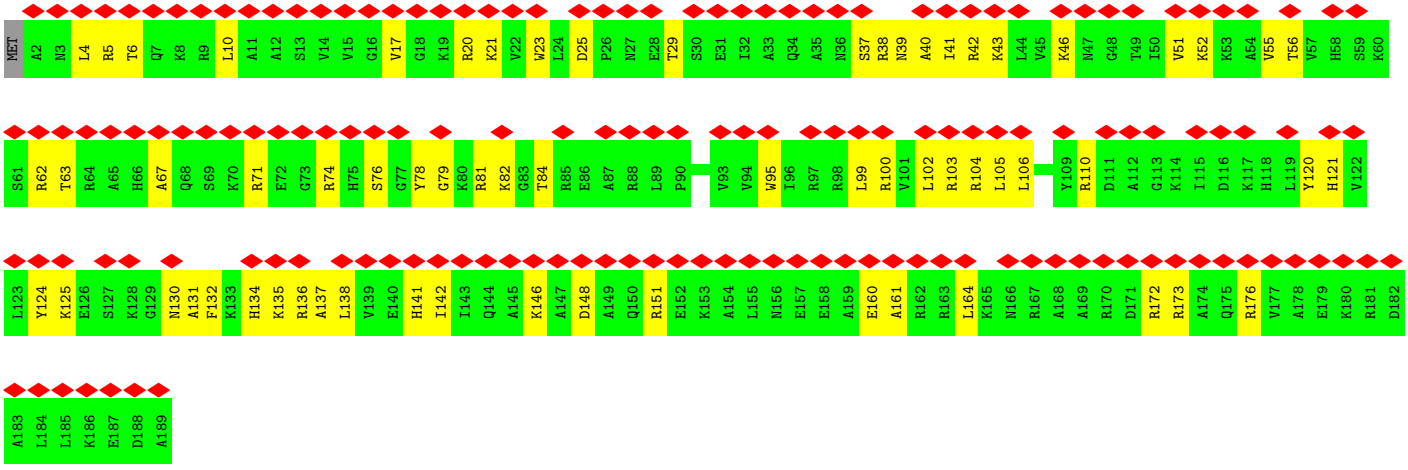
• Molecule 44: 60S ribosomal protein L10

Chain s:



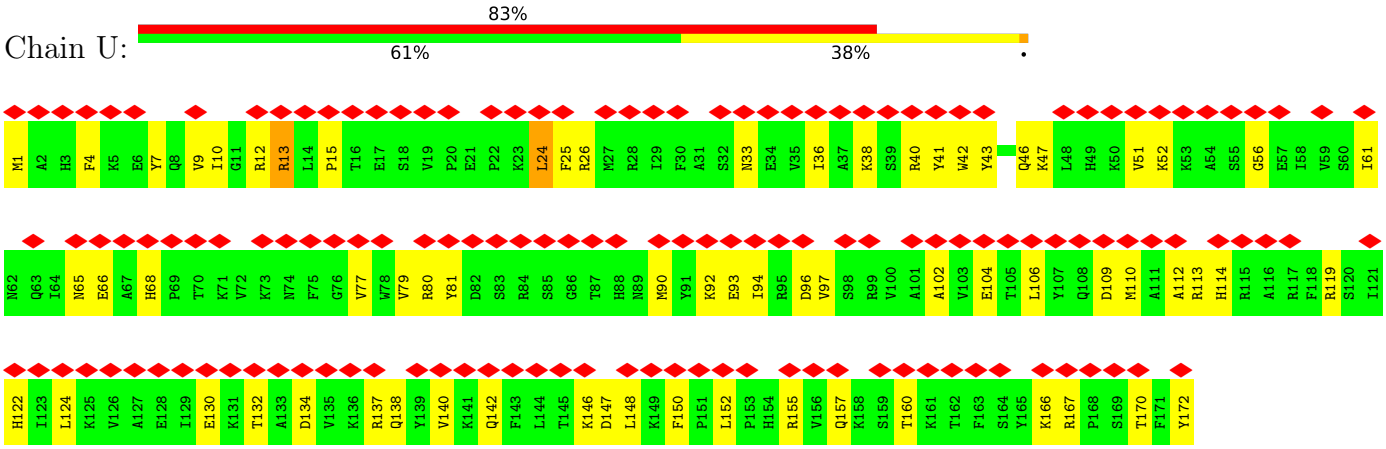
• Molecule 45: 60S ribosomal protein L19-A

Chain T:



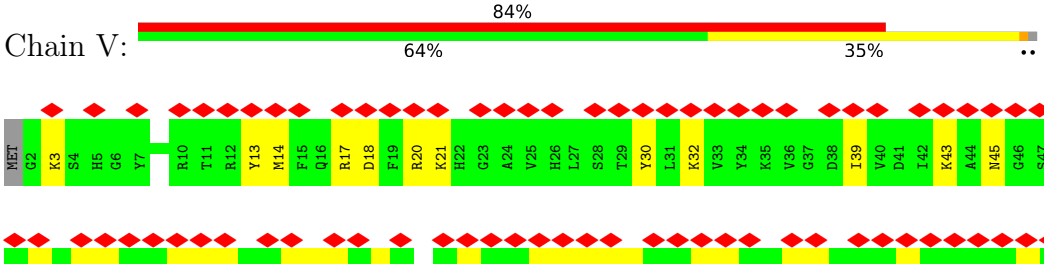
• Molecule 46: 60S ribosomal protein L20-A

Chain U:



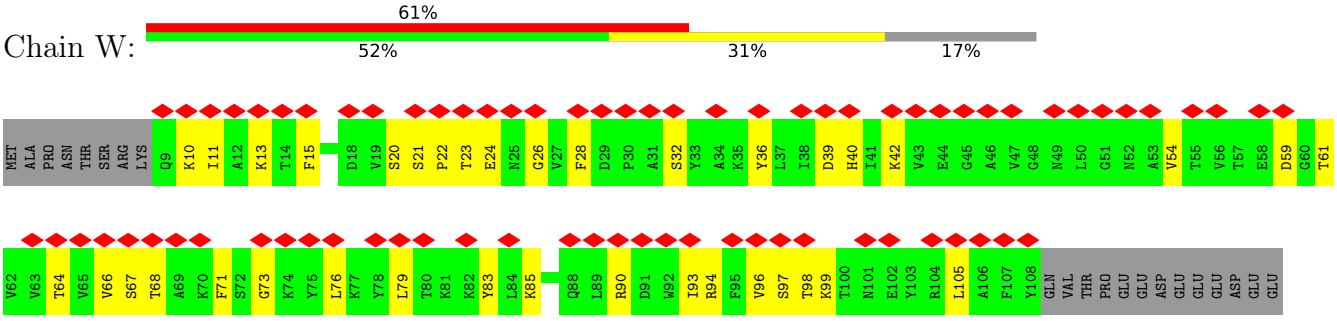
• Molecule 47: 60S ribosomal protein L21-A

Chain V:



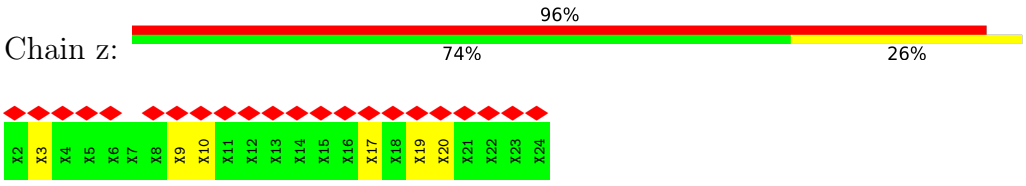
• Molecule 48: 60S ribosomal protein L22-A

Chain W:



• Molecule 49: nascent polypeptide chain

Chain z:



4 Experimental information (i)

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 ($e^-/Å^2$)	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 (Å)	401.08, 401.08, 401.08	wwPDB
Map dimensions	370, 370, 370	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	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(^{o})	Ideal(^{o})
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 (i)

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

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	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:H1'	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:l: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:l: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 51
8	a	124/127 (98%)	109 (88%)	15 (12%)	0	100 100
10	b	133/136 (98%)	120 (90%)	12 (9%)	1 (1%)	16 51
11	C	103/106 (97%)	88 (85%)	15 (15%)	0	100 100
12	c	146/149 (98%)	128 (88%)	15 (10%)	3 (2%)	5 33
13	D	89/92 (97%)	79 (89%)	10 (11%)	0	100 100
14	d	56/59 (95%)	48 (86%)	7 (12%)	1 (2%)	7 35
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%)	37 70
18	f	107/109 (98%)	99 (92%)	8 (8%)	0	100 100
19	G	359/362 (99%)	319 (89%)	38 (11%)	2 (1%)	22 56

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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%)	13	46
22	h	104/107 (97%)	100 (96%)	4 (4%)	0	100	100
23	I	152/176 (86%)	145 (95%)	6 (4%)	1 (1%)	19	54
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%)	10	41
28	k	97/100 (97%)	80 (82%)	16 (16%)	1 (1%)	13	46
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%)	11	43
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	22
45	T	186/189 (98%)	169 (91%)	16 (9%)	1 (0%)	25	60
46	U	170/172 (99%)	151 (89%)	18 (11%)	1 (1%)	22	56
47	V	157/160 (98%)	150 (96%)	6 (4%)	1 (1%)	22	56
48	W	98/121 (81%)	86 (88%)	11 (11%)	1 (1%)	13	46
All	All	6347/6736 (94%)	5722 (90%)	583 (9%)	42 (1%)	21	54

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 (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
2	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%)	86 90
16	e	81/88 (92%)	81 (100%)	0	100 100
17	F	320/323 (99%)	319 (100%)	1 (0%)	91 92
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%)	89 92
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%)	25 49
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%)	90 92

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 (i)

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 (i)

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	0.35	0	9,15,17	1.21	2 (22%)

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	-	5/13/14/16	-

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
40	q	51	5CT	C1-NZ-CE	-2.32	108.23	113.42
40	q	51	5CT	C4-C3-C2	-2.05	109.16	113.47

There are no chirality outliers.

All (5) torsion outliers are listed below:

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

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	0.87	1 (4%)	19,30,30	0.76	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	3.30	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-C10
50	1	3401	3HE	C7-C8-C9-C13
50	1	3401	3HE	O3-C7-C8-C9

There are no ring outliers.

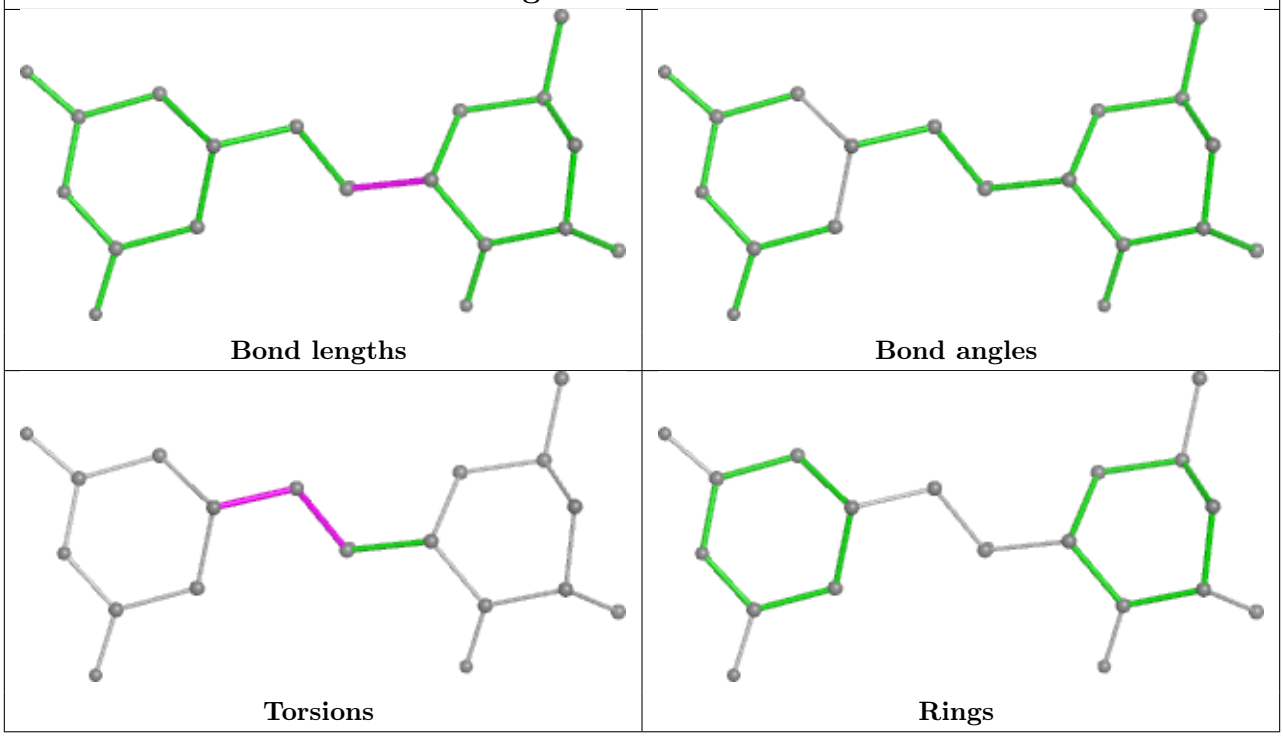
1 monomer is involved in 2 short contacts:

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 then 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.

Ligand 3HE 1 3401



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.

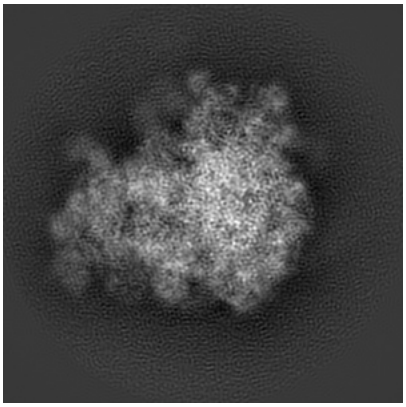
6 Map visualisation

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.

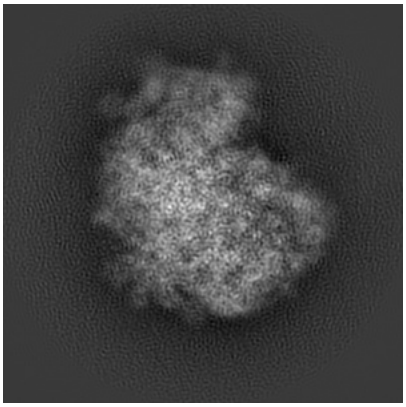
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

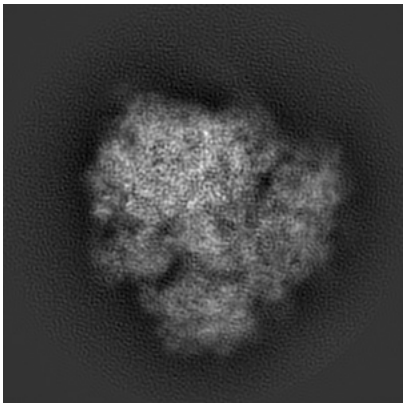
6.1.1 Primary map



X



Y

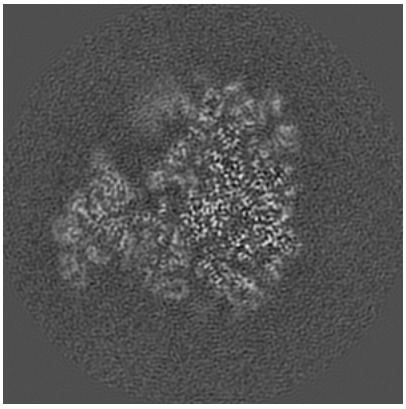


Z

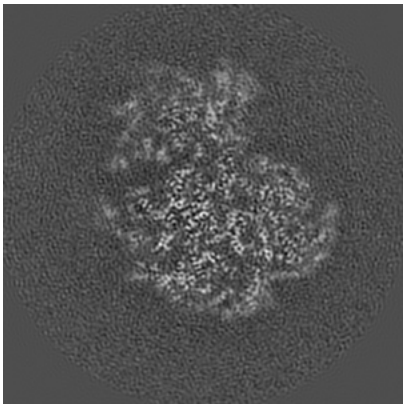
The images above show the map projected in three orthogonal directions.

6.2 Central slices

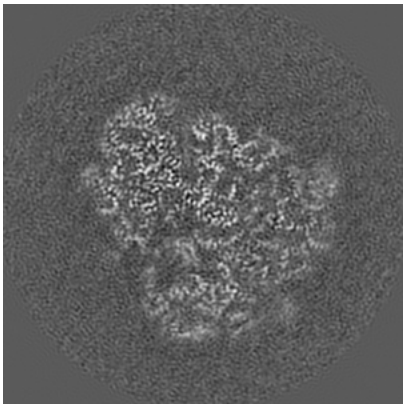
6.2.1 Primary map



X Index: 185



Y Index: 185

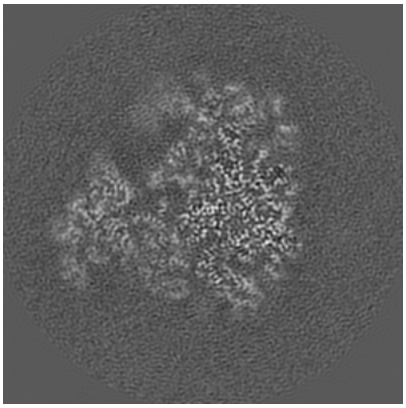


Z Index: 185

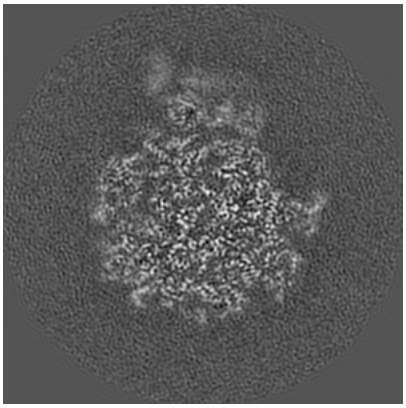
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

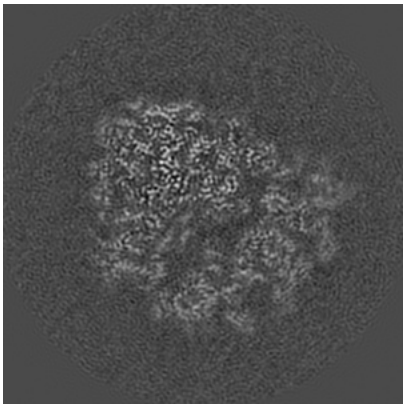
6.3.1 Primary map



X Index: 184



Y Index: 216

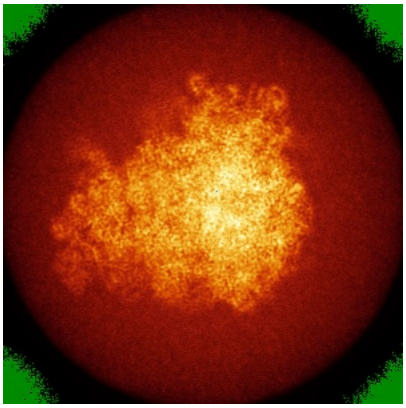


Z Index: 198

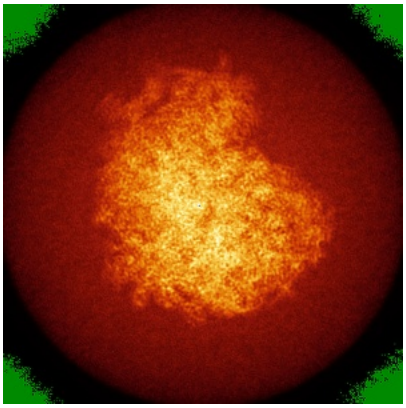
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) (i)

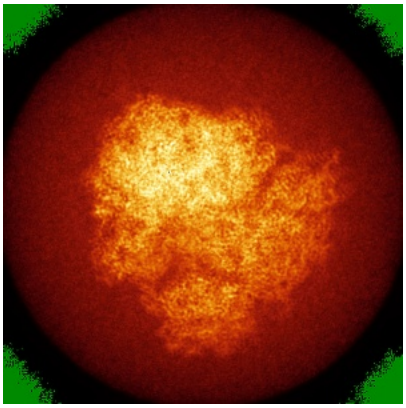
6.4.1 Primary map



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

X Y Z

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.

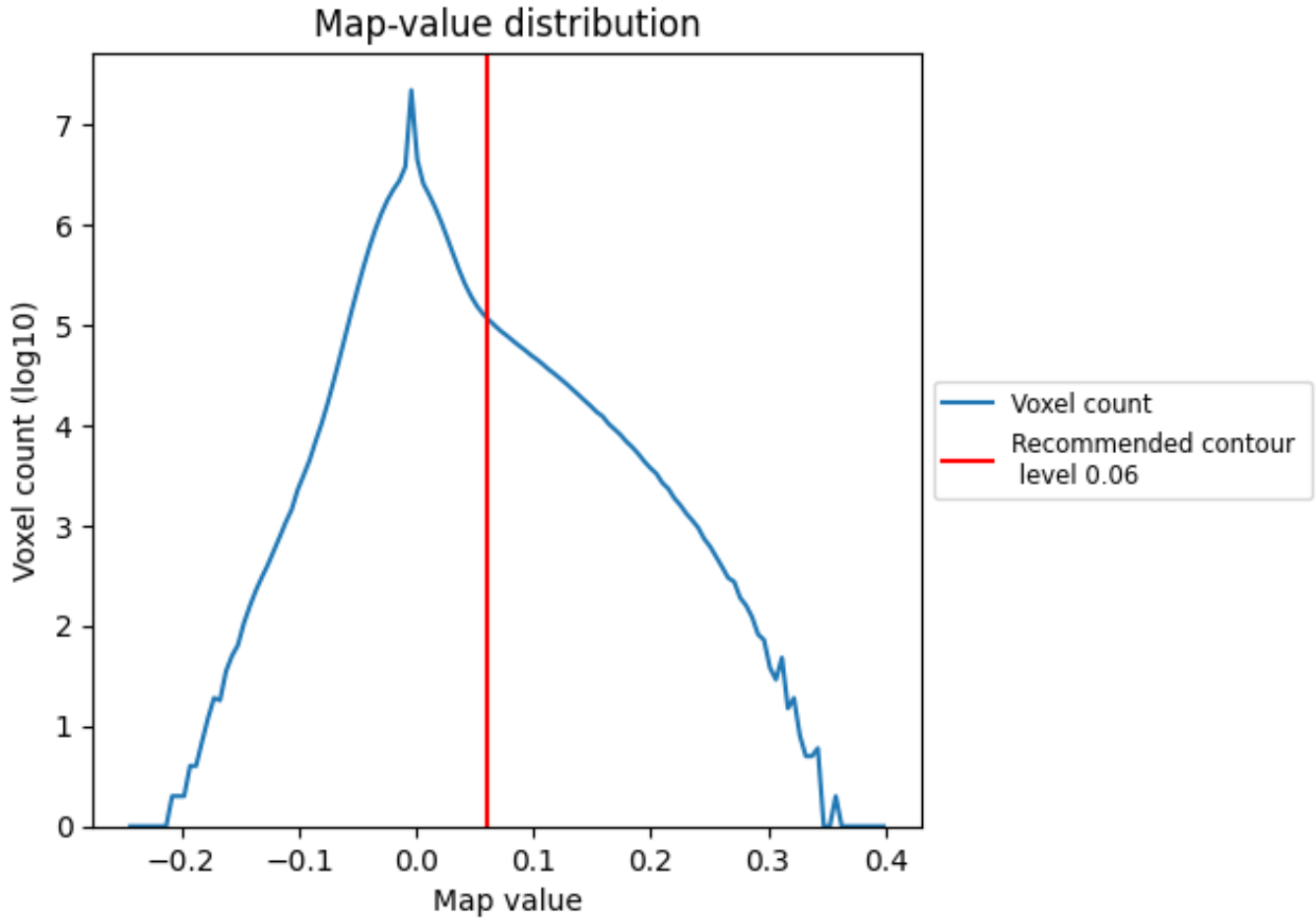
6.6 Mask visualisation (i)

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

7 Map analysis

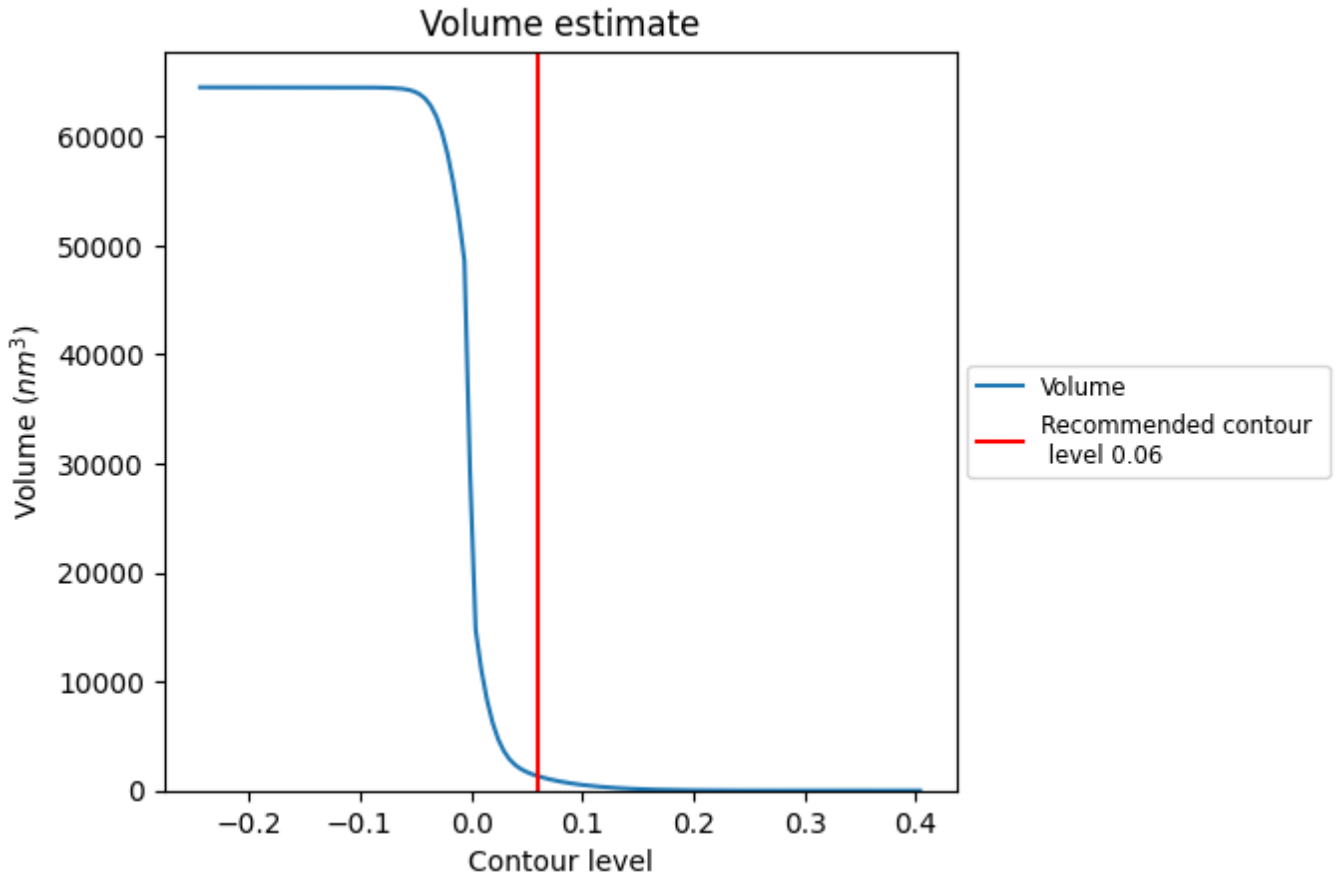
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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.

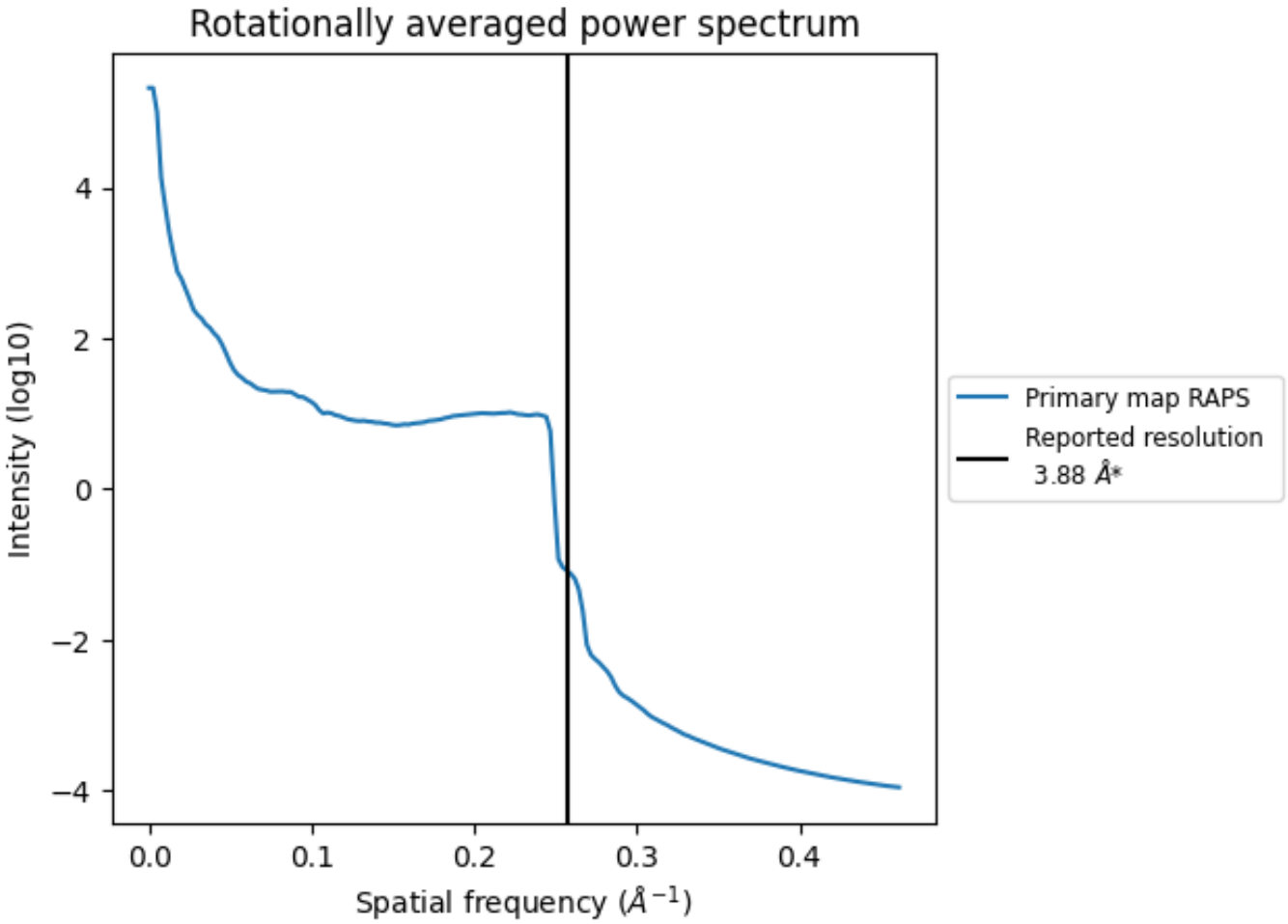
7.2 Volume estimate



The volume at the recommended contour level is 1328 nm^3; 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 (i)



*Reported resolution corresponds to spatial frequency of 0.258 Å^{-1}

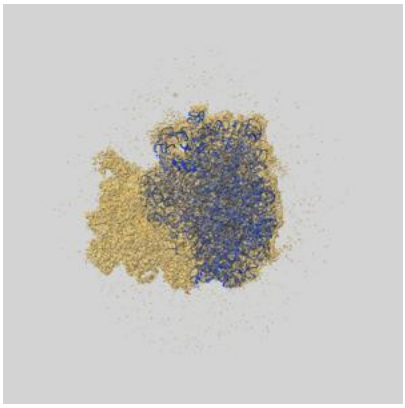
8 Fourier-Shell correlation (i)

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

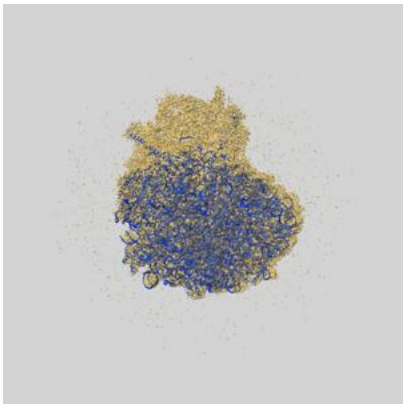
9 Map-model fit

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.

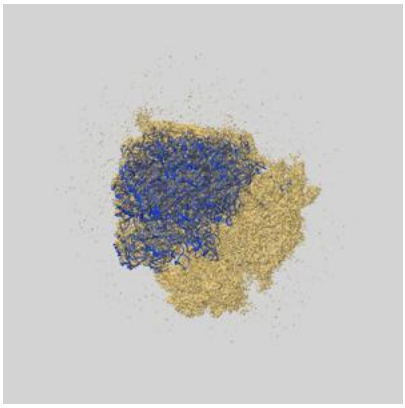
9.1 Map-model overlay



X



Y



Z

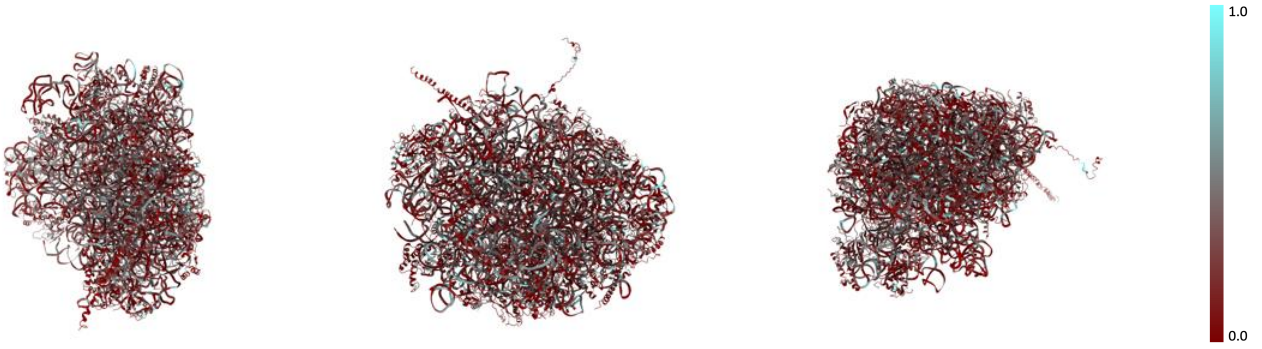
The images above show the 3D surface view of the map at the recommended contour level 0.06 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model

X Y Z

The images above show the model with each residue coloured according 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.

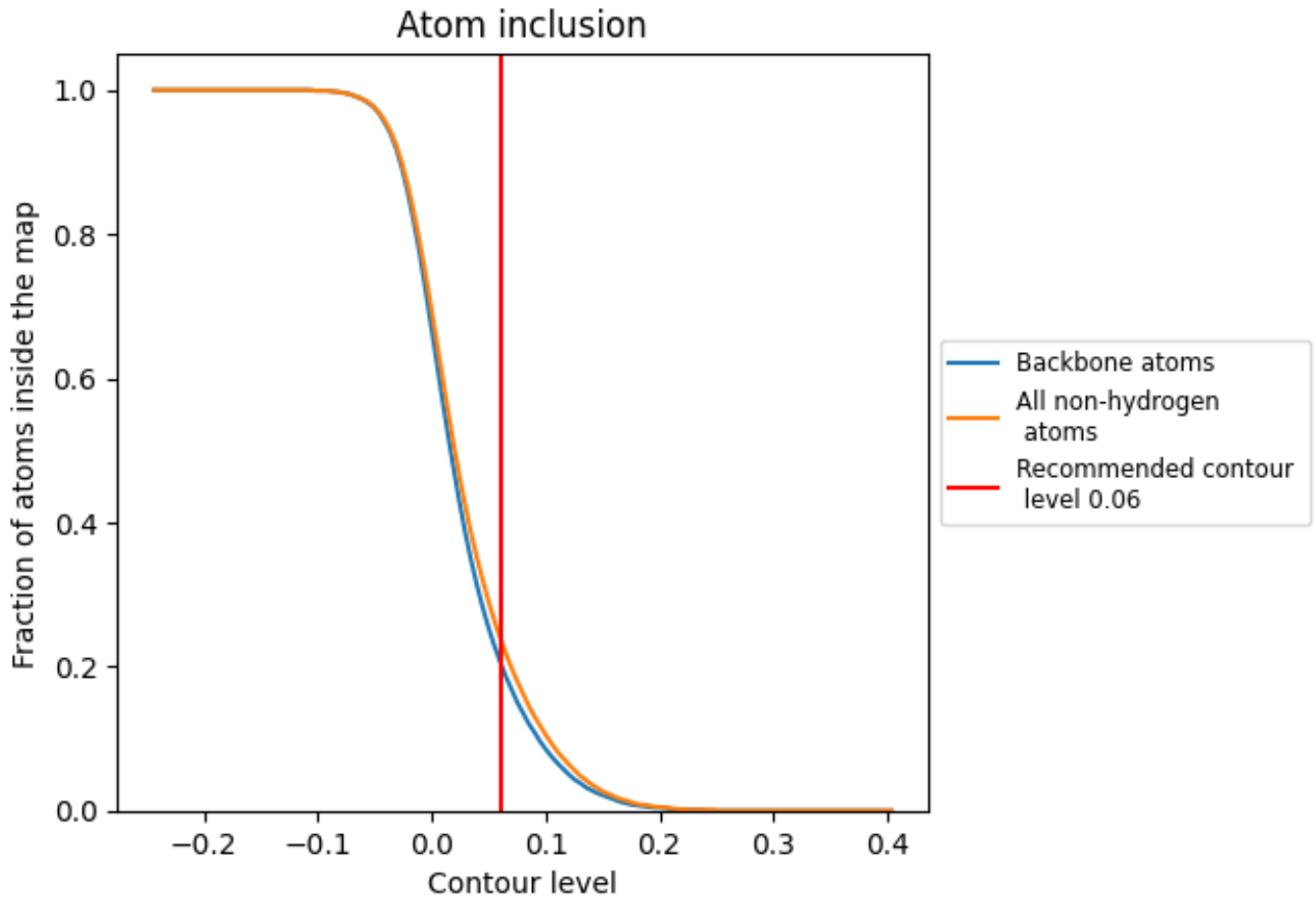
9.3 Atom inclusion mapped to coordinate model



X Y Z

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