



Full wwPDB EM Validation Report ⓘ

Mar 4, 2026 – 06:30 PM UTC

PDB ID : 7PAQ / pdb_00007paq
EMDB ID : EMD-13280
Title : 70S ribosome with EF-G, A/P- and P/E-site tRNAs in Mycoplasma pneumoniae cells
Authors : Xue, L.; Lenz, S.; Rappsilber, J.; Mahamid, J.
Deposited on : 2021-07-30
Resolution : 8.90 Å (reported)
Based on initial models : 4V7D, 7OOC, 4V7C, 7OOD

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

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

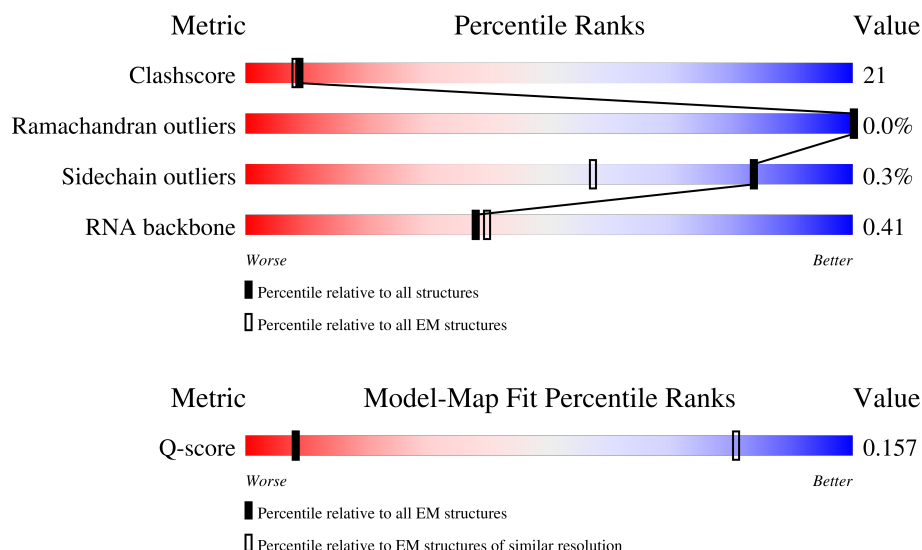
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 8.90 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	258 (8.40 - 9.40)

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

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

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Mol	Chain	Length	Quality of chain
4	9	688	
5	A	294	
6	B	273	
7	C	205	
8	D	219	
9	E	215	
10	F	155	
11	G	142	
12	H	132	
13	I	108	
14	J	121	
15	K	139	
16	L	124	
17	M	61	
18	N	86	
19	O	94	
20	P	85	
21	Q	104	
22	R	87	
23	S	87	
24	T	60	
25	W	122	
26	a	287	
27	b	287	
28	c	212	

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Mol	Chain	Length	Quality of chain
29	d	180	
30	e	184	
31	f	149	
32	g	161	
33	h	137	
34	i	146	
35	j	122	
36	k	151	
37	l	139	
38	m	124	
39	n	116	
40	o	119	
41	p	127	
42	q	100	
43	r	159	
44	s	237	
45	t	111	
46	u	104	
47	v	65	
48	w	111	
49	x	97	
50	y	57	
51	z	53	
52	3	2907	
53	4	108	

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Mol	Chain	Length	Quality of chain
54	5	1520	20%61%17%
55	7	76	14%30%50%20%
55	8	76	33%49%18%

2 Entry composition

There are 55 unique types of molecules in this entry. The entry contains 151980 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	0	47	Total	C	N	O	S	0	0
			380	236	81	61	2		

- Molecule 2 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	1	59	Total	C	N	O	S	0	0
			477	300	99	77	1		

- Molecule 3 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	2	37	Total	C	N	O	S	0	0
			304	189	65	46	4		

- Molecule 4 is a protein called Elongation factor G.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	9	682	Total	C	N	O	S	0	0
			5326	3369	911	1021	25		

- Molecule 5 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	A	240	Total	C	N	O	S	0	0
			1921	1226	334	352	9		

- Molecule 6 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	B	215	Total	C	N	O	S	0	0
			1698	1073	313	307	5		

- Molecule 7 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	C	203	Total	C	N	O	S	0	0
			1660	1051	314	290	5		

- Molecule 8 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	D	153	Total	C	N	O	S	0	0
			1173	742	226	202	3		

- Molecule 9 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	E	167	Total	C	N	O	S	0	0
			1362	857	240	263	2		

- Molecule 10 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	F	154	Total	C	N	O	S	0	0
			1246	785	239	216	6		

- Molecule 11 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	G	141	Total	C	N	O	S	0	0
			1110	723	193	192	2		

- Molecule 12 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	H	128	Total	C	N	O	S	0	0
			1028	655	191	181	1		

- Molecule 13 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	I	101	Total	C	N	O	S	0	0
			809	523	142	143	1		

- Molecule 14 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	J	114	Total	C	N	O	S	0	0
			829	514	153	156	6		

- Molecule 15 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	K	136	Total	C	N	O	S	0	0
			1076	680	213	181	2		

- Molecule 16 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	L	118	Total	C	N	O	S	0	0
			951	594	191	166			

- Molecule 17 is a protein called 30S ribosomal protein S14 type Z.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	M	60	Total	C	N	O	S	0	0
			474	302	96	72	4		

- Molecule 18 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	N	83	Total	C	N	O	S	0	0
			673	428	125	120			

- Molecule 19 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	O	80	Total	C	N	O	S	0	0
			646	414	119	111	2		

- Molecule 20 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	P	83	Total	C	N	O	S	0	0
			675	425	135	115			

- Molecule 21 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	Q	65	Total	C	N	O	S	0	0
			535	342	103	86	4		

- Molecule 22 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	R	84	Total	C	N	O	S	0	0
			682	435	127	118	2		

- Molecule 23 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	S	77	Total	C	N	O		0	0
			629	383	135	111			

- Molecule 24 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	T	53	Total	C	N	O	S	0	0
			471	295	103	72	1		

- Molecule 25 is a protein called 50S ribosomal protein L7/L12.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	W	69	Total	C	N	O	S	0	0
			534	342	87	103	2		

- Molecule 26 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	a	285	Total	C	N	O	S	0	0
			2225	1385	437	397	6		

- Molecule 27 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	b	229	Total	C	N	O	S	0	0
			1762	1119	318	318	7		

- Molecule 28 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	c	210	Total	C	N	O	S	0	0
			1644	1047	297	297	3		

- Molecule 29 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	d	175	Total	C	N	O	S	0	0
			1388	893	245	246	4		

- Molecule 30 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	e	176	Total	C	N	O	S	0	0
			1396	899	247	250			

- Molecule 31 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	f	145	Total	C	N	O	S	0	0
			1160	746	204	207	3		

- Molecule 32 is a protein called 50S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	g	126	Total	C	N	O	S	0	0
			960	612	167	178	3		

- Molecule 33 is a protein called 50S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	h	128	Total	C	N	O	S	0	0
			959	616	160	177	6		

- Molecule 34 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	i	144	Total	C	N	O	S	0	0
			1164	737	213	209	5		

- Molecule 35 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	j	122	Total	C	N	O	S	0	0
			944	595	178	167	4		

- Molecule 36 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	k	148	Total	C	N	O		0	0
			1153	731	226	196			

- Molecule 37 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	l	136	Total	C	N	O	S	0	0
			1079	694	196	182	7		

- Molecule 38 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	m	119	Total	C	N	O	S	0	0
			958	609	175	171	3		

- Molecule 39 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	n	112	Total	C	N	O	S	0	0
			889	557	175	155	2		

- Molecule 40 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	o	115	Total	C	N	O	S	0	0
			938	592	180	165	1		

- Molecule 41 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	p	114	Total	C	N	O	S	0	0
			947	603	188	154	2		

- Molecule 42 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	q	99	Total	C	N	O	S	0	0
			811	525	148	134	4		

- Molecule 43 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	r	139	Total	C	N	O	S	0	0
			1068	663	207	191	7		

- Molecule 44 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	s	92	Total	C	N	O	S	0	0
			720	475	122	122	1		

- Molecule 45 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	t	111	Total	C	N	O	S	0	0
			872	550	166	153	3		

- Molecule 46 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	u	86	Total	C	N	O	S	0	0
			657	409	130	117	1		

- Molecule 47 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	v	63	Total	C	N	O	S	0	0
			513	317	108	87	1		

- Molecule 48 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	w	100	Total	C	N	O		0	0
			818	517	153	148			

- Molecule 49 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	x	44	Total	C	N	O	S	0	0
			344	221	55	64	4		

- Molecule 50 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	y	56	Total	C	N	O	S	0	0
			452	274	98	75	5		

- Molecule 51 is a protein called 50S ribosomal protein L33 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	z	50	Total	C	N	O	S	0	0
			408	255	81	68	4		

- Molecule 52 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	3	2878	Total	C	N	O	P	0	0
			61664	27558	11236	19995	2875		

- Molecule 53 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	4	105	Total	C	N	O	P	0	0
			2239	1003	409	724	103		

- Molecule 54 is a RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	5	1493	Total	C	N	O	P	0	0
			31943	14279	5792	10382	1490		

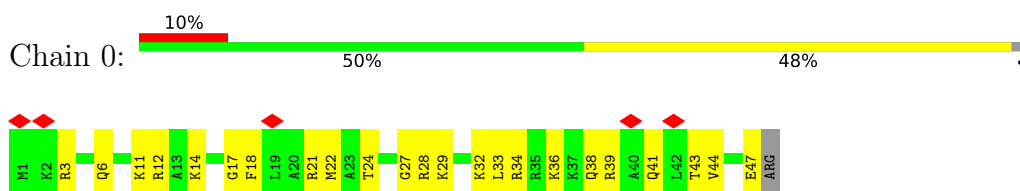
- Molecule 55 is a RNA chain called tRNA-Phe.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	7	76	Total	C	N	O	P	0	0
			1618	723	289	531	75		
55	8	76	Total	C	N	O	P	0	0
			1618	723	289	531	75		

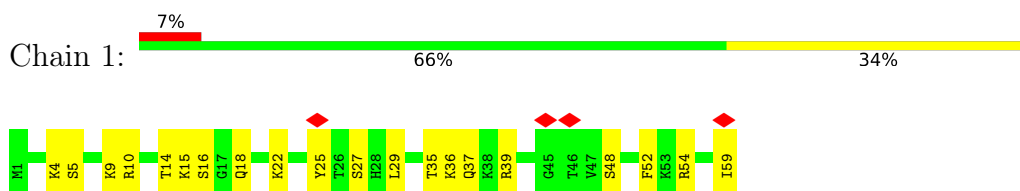
3 Residue-property plots

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

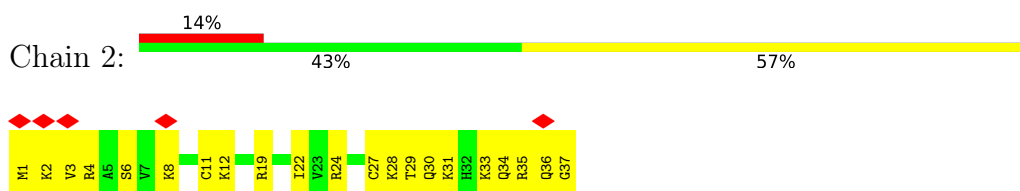
- Molecule 1: 50S ribosomal protein L34



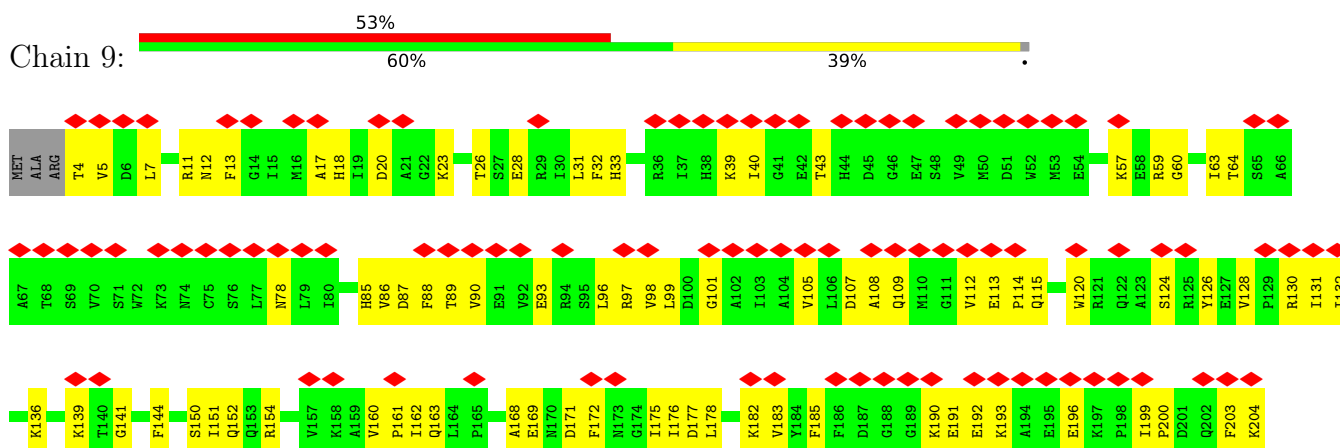
- Molecule 2: 50S ribosomal protein L35

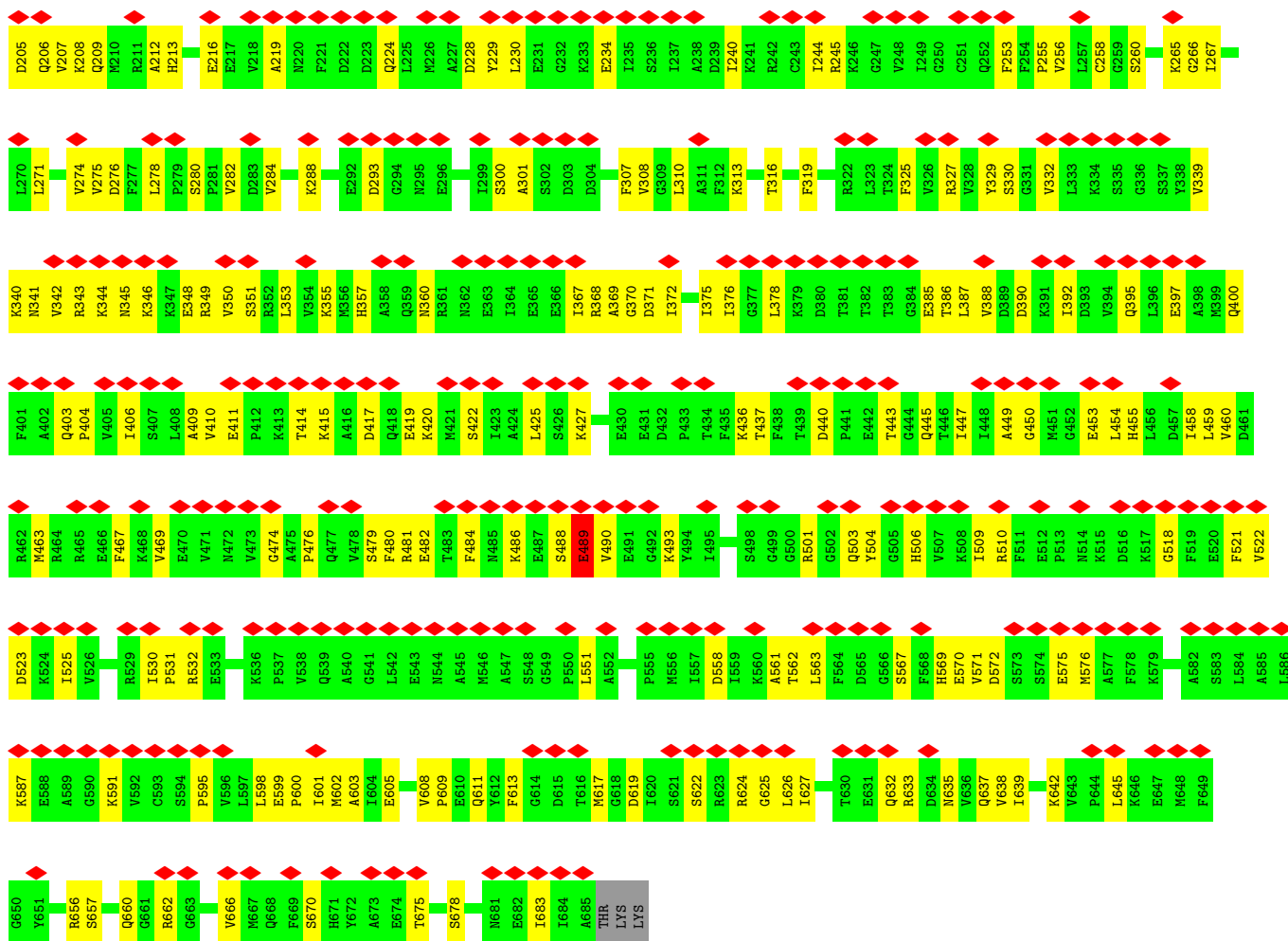


- Molecule 3: 50S ribosomal protein L36

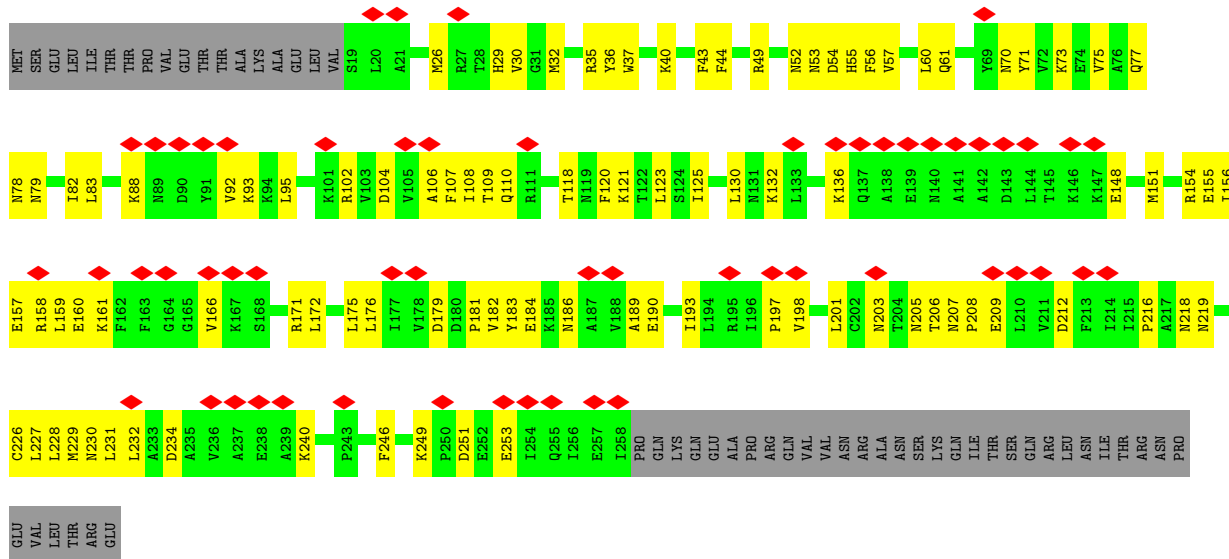


- Molecule 4: Elongation factor G

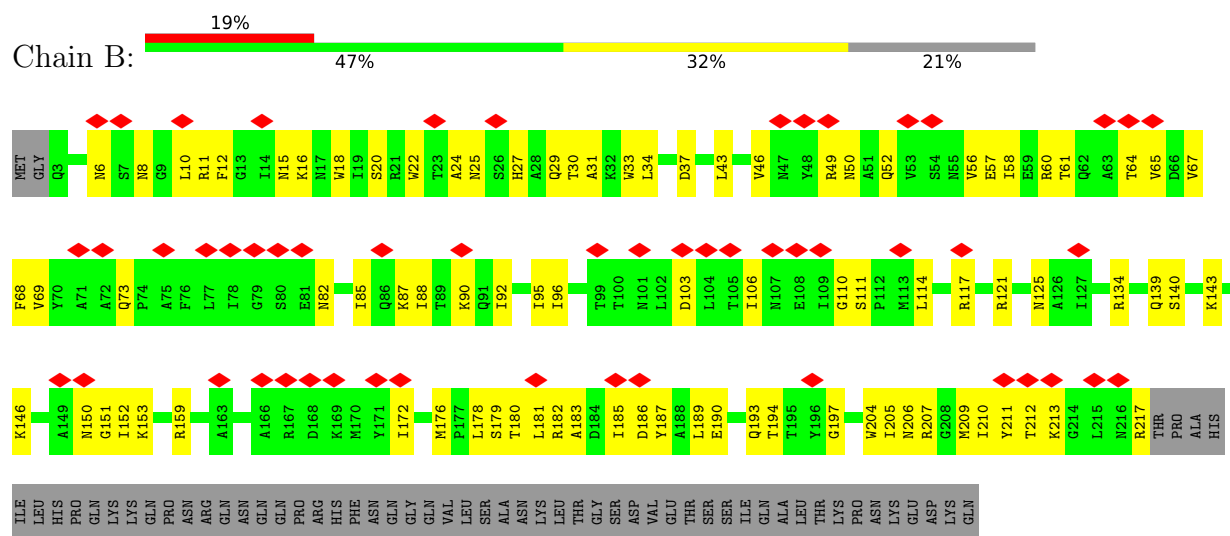




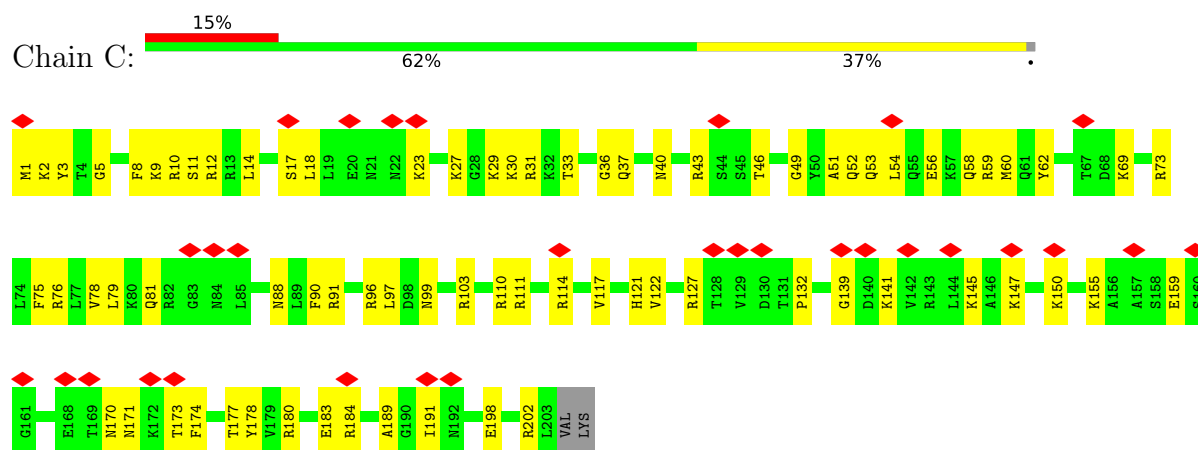
• Molecule 5: 30S ribosomal protein S2



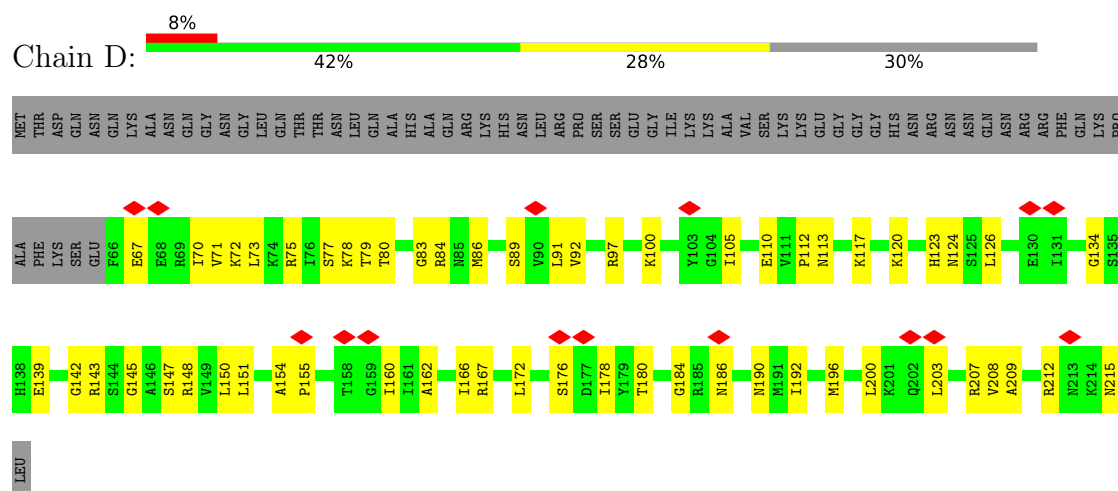
- Molecule 6: 30S ribosomal protein S3



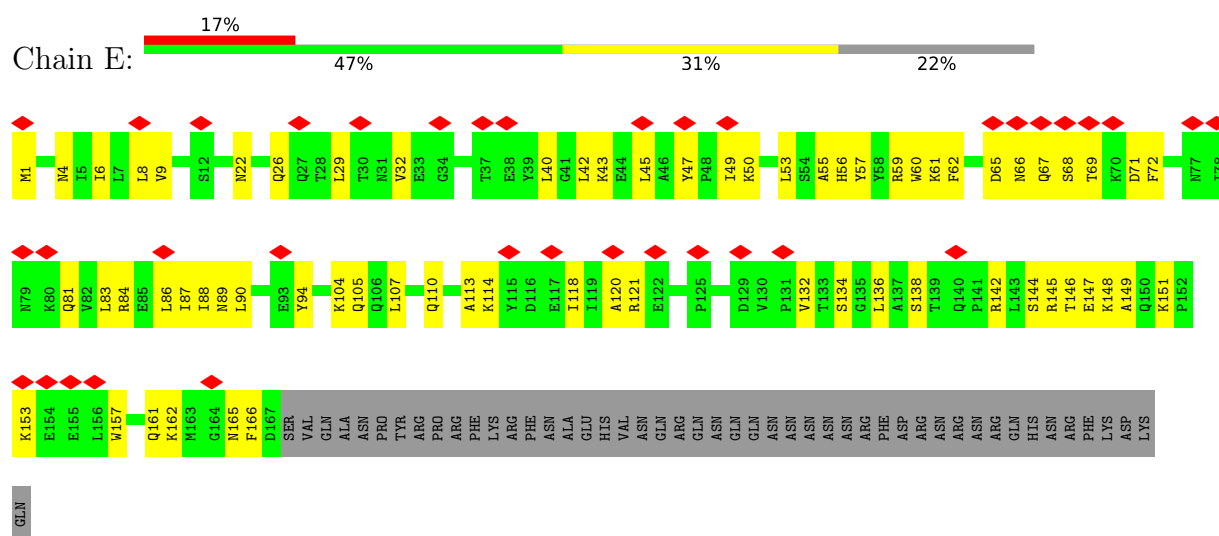
- Molecule 7: 30S ribosomal protein S4



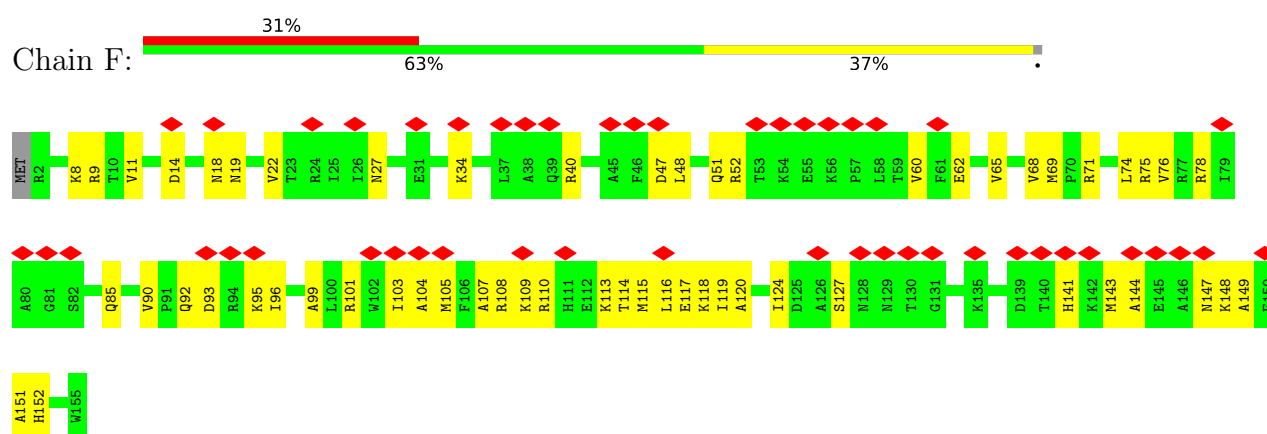
- Molecule 8: 30S ribosomal protein S5



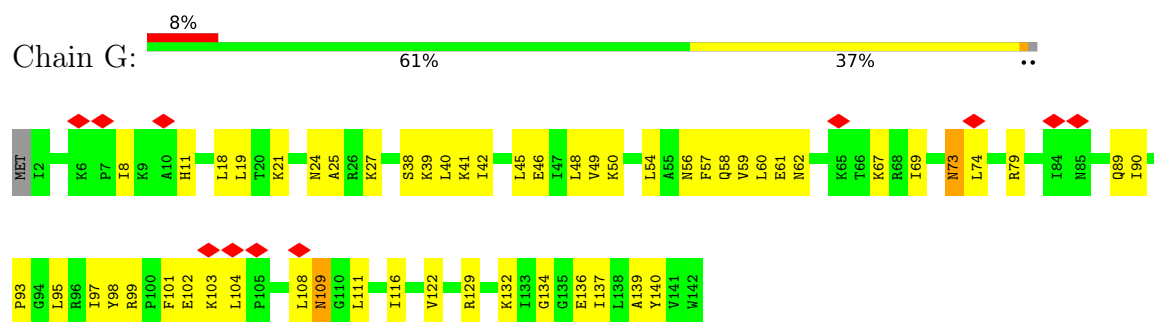
- Molecule 9: 30S ribosomal protein S6



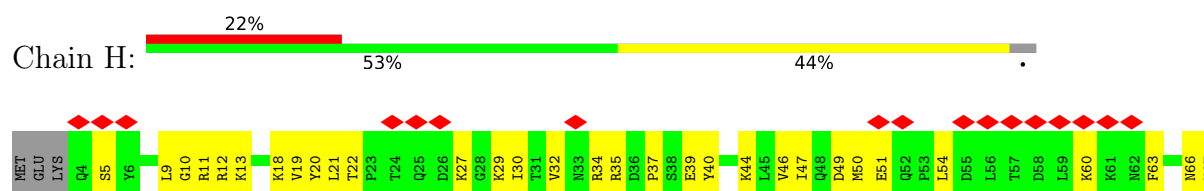
- Molecule 10: 30S ribosomal protein S7

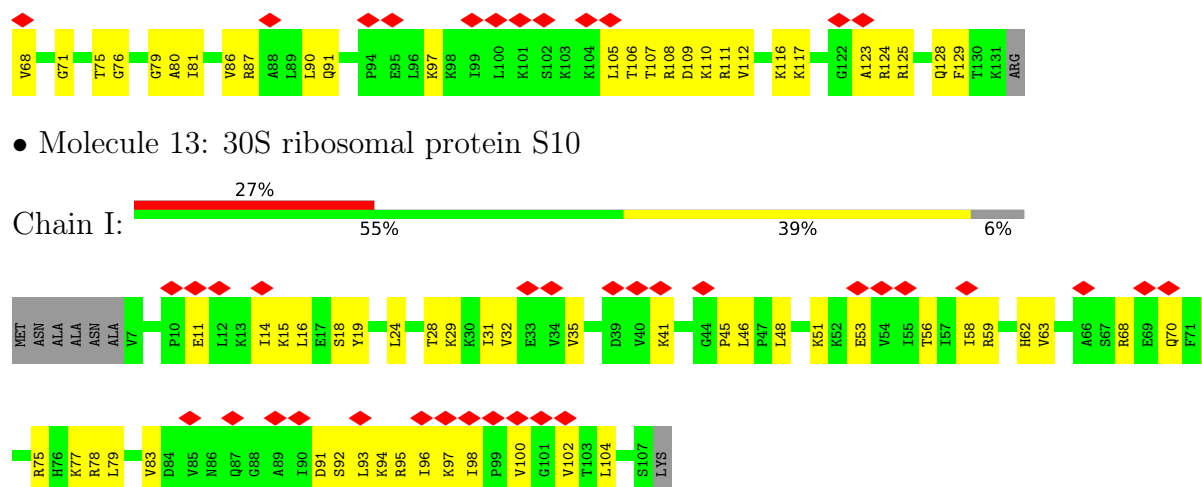


- Molecule 11: 30S ribosomal protein S8



- Molecule 12: 30S ribosomal protein S9

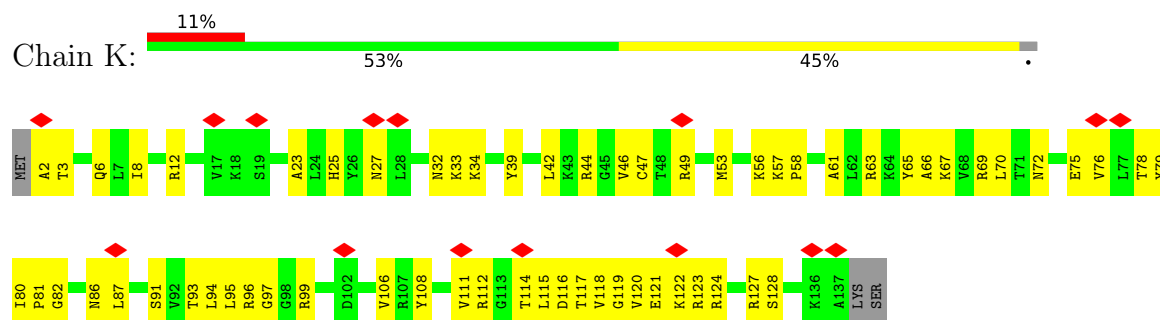




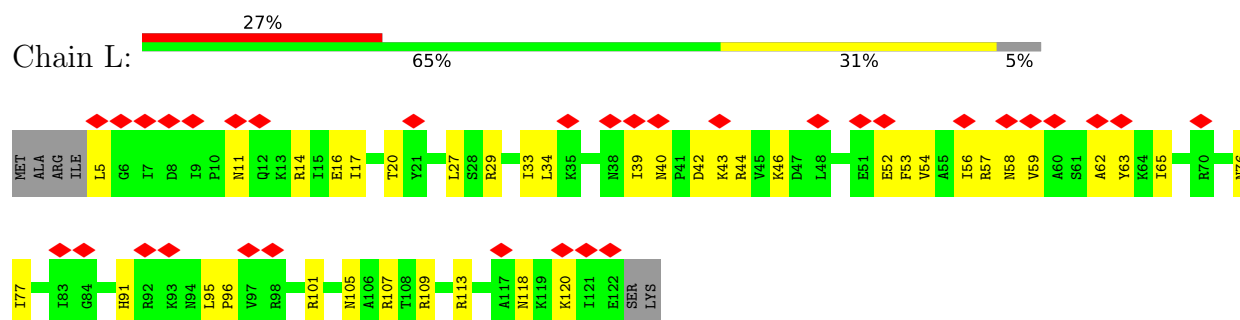
• Molecule 14: 30S ribosomal protein S11



• Molecule 15: 30S ribosomal protein S12



• Molecule 16: 30S ribosomal protein S13



• Molecule 17: 30S ribosomal protein S14 type Z



• Molecule 18: 30S ribosomal protein S15



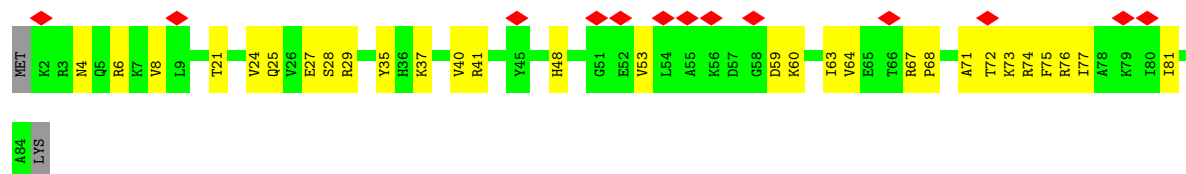
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• Molecule 19: 30S ribosomal protein S16

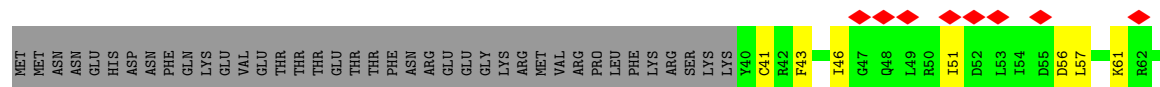
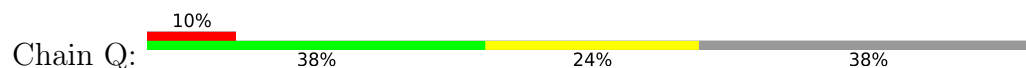


LYS, PRO, VAL, ALA, LYS, SER, LYS

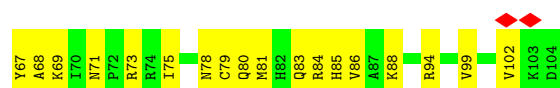
• Molecule 20: 30S ribosomal protein S17

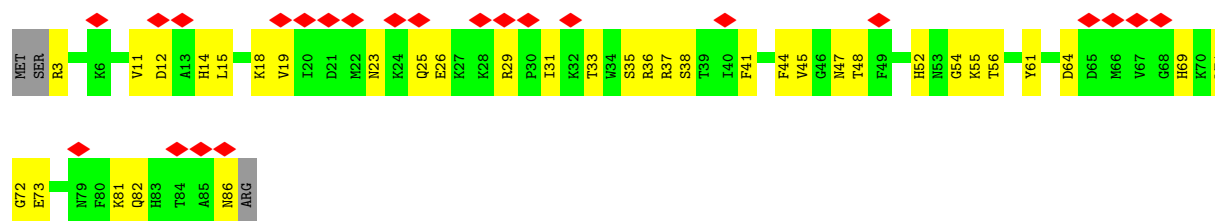


• Molecule 21: 30S ribosomal protein S18

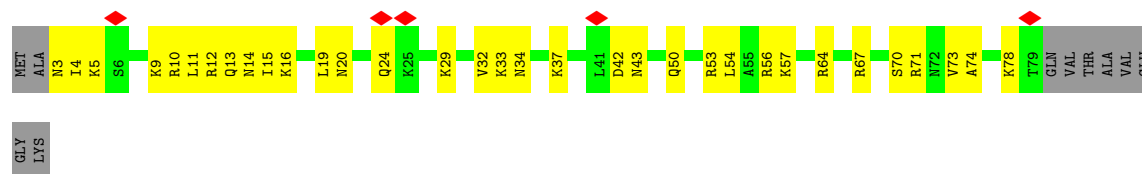


• Molecule 22: 30S ribosomal protein S19





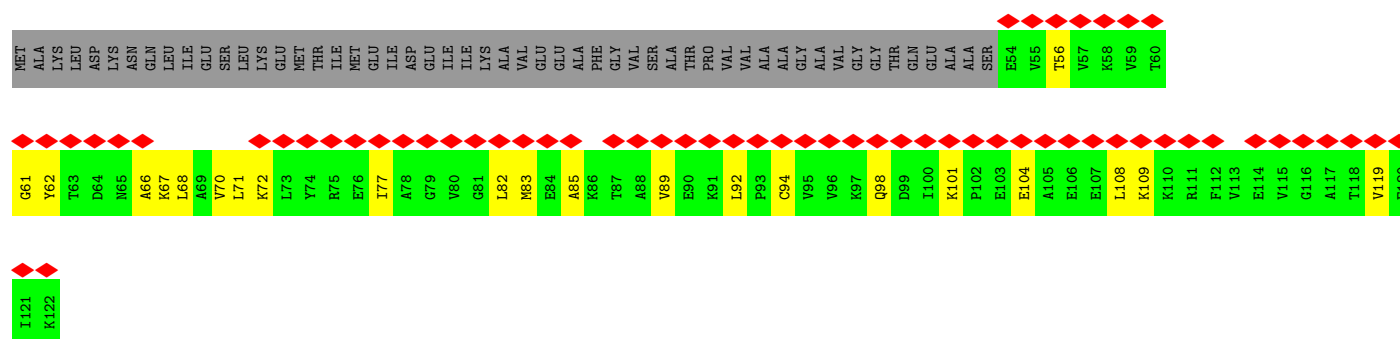
- Molecule 23: 30S ribosomal protein S20



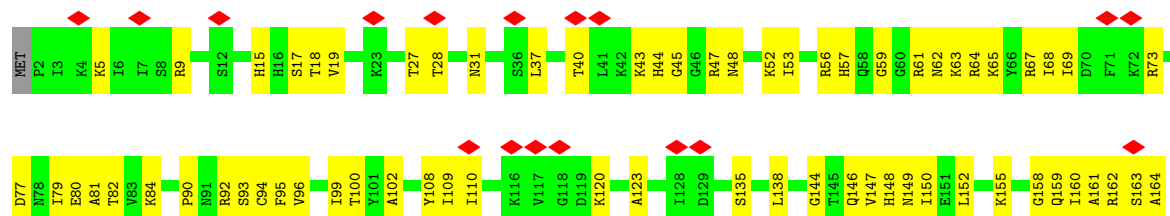
- Molecule 24: 30S ribosomal protein S21

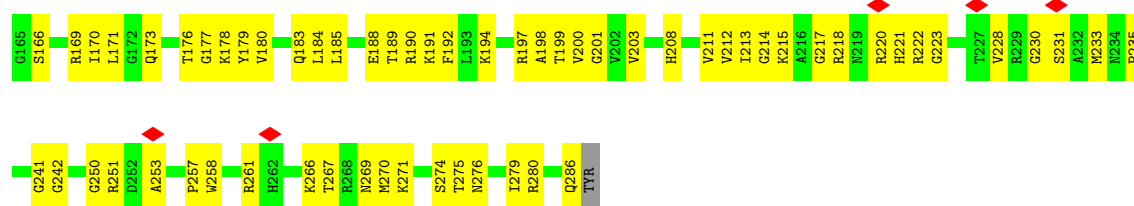


- Molecule 25: 50S ribosomal protein L7/L12

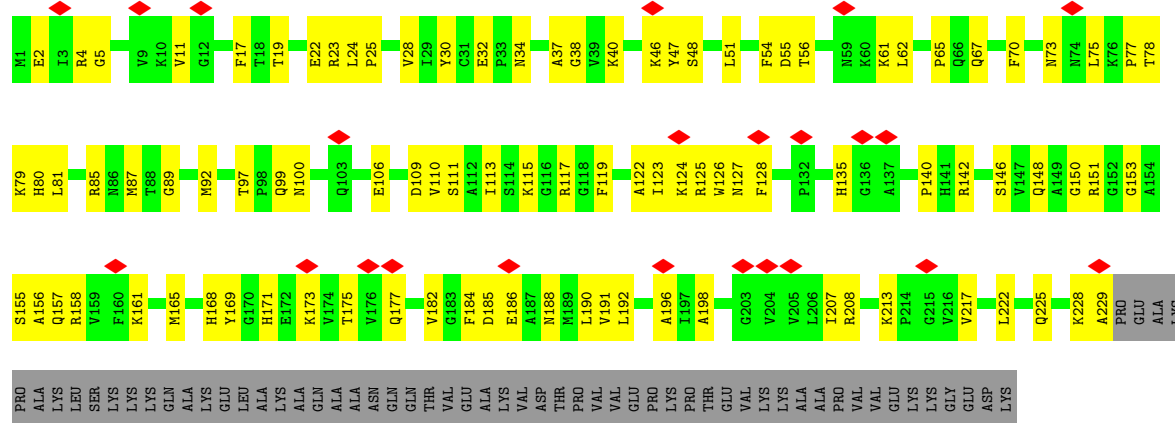


- Molecule 26: 50S ribosomal protein L2

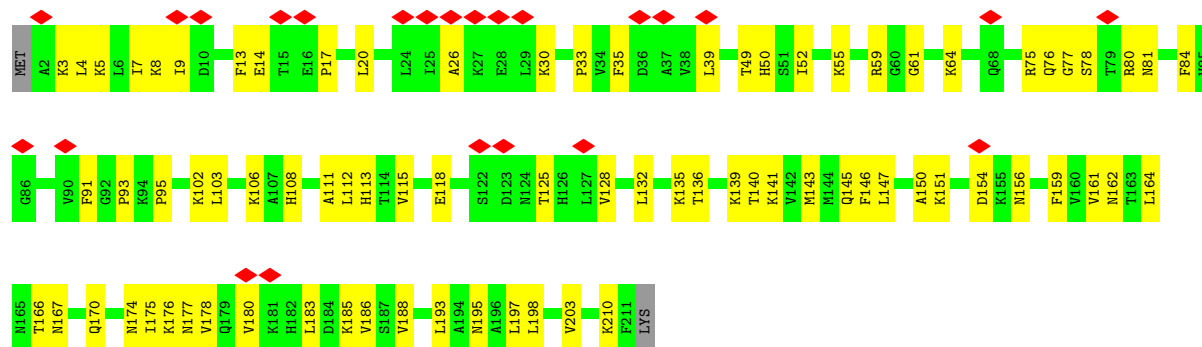




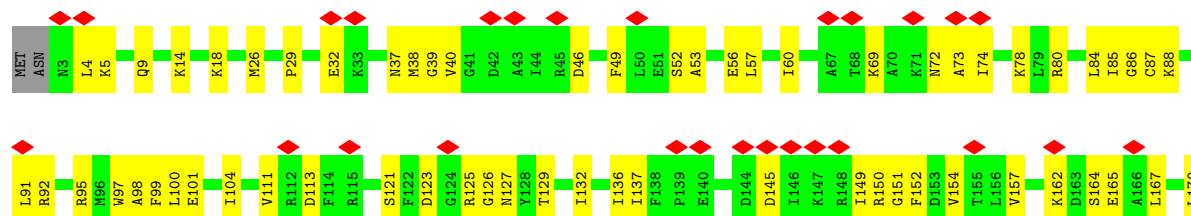
• Molecule 27: 50S ribosomal protein L3



• Molecule 28: 50S ribosomal protein L4

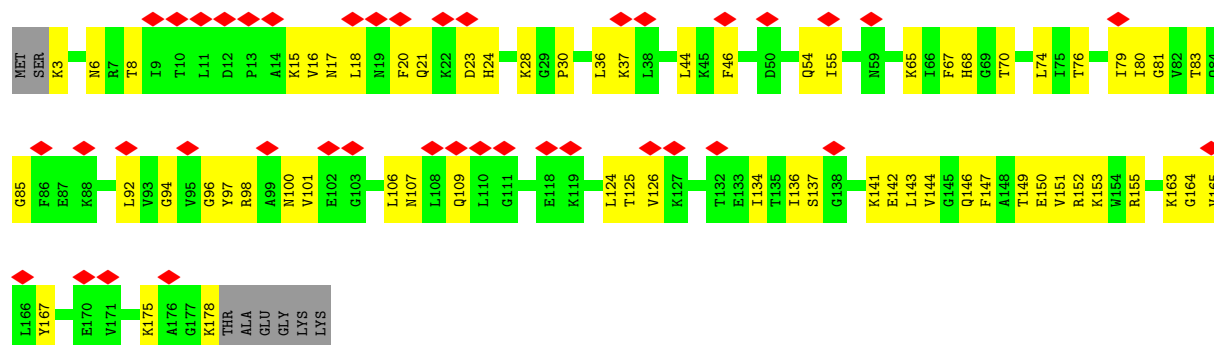


• Molecule 29: 50S ribosomal protein L5

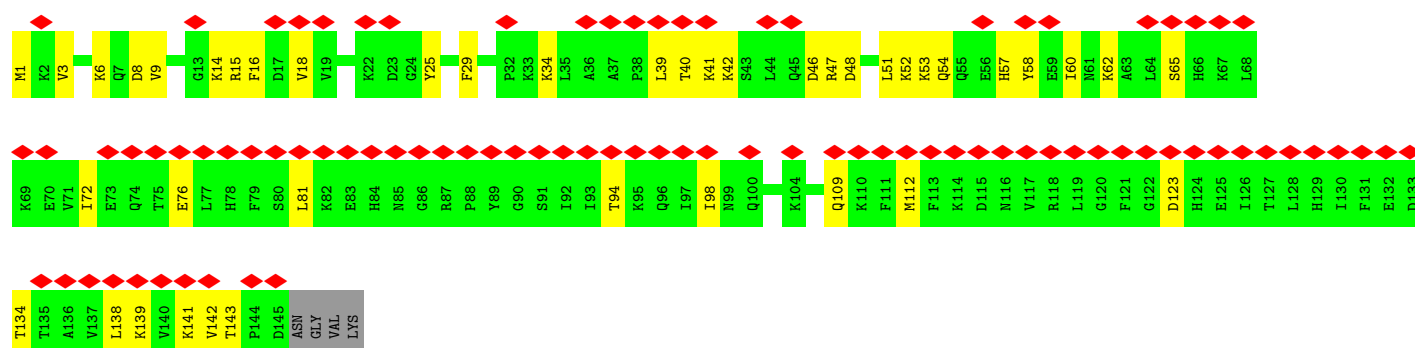




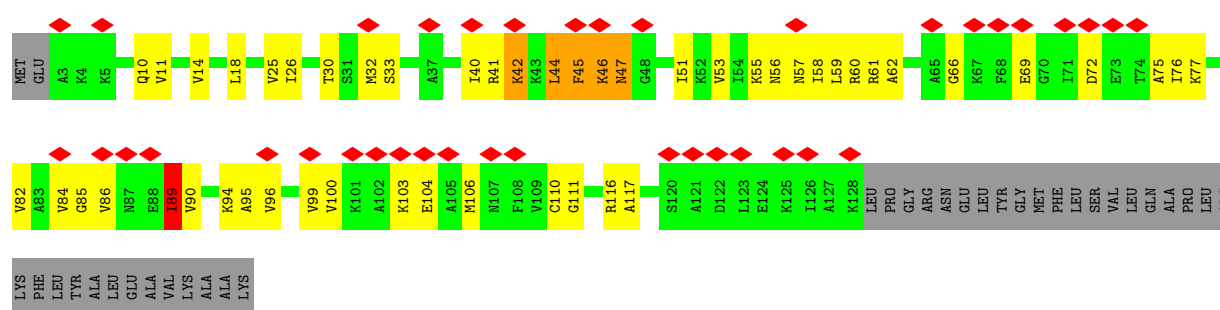
- Molecule 30: 50S ribosomal protein L6



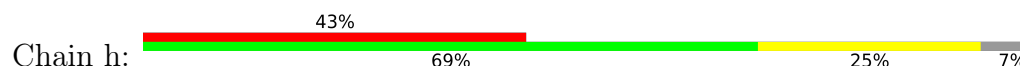
- Molecule 31: 50S ribosomal protein L9

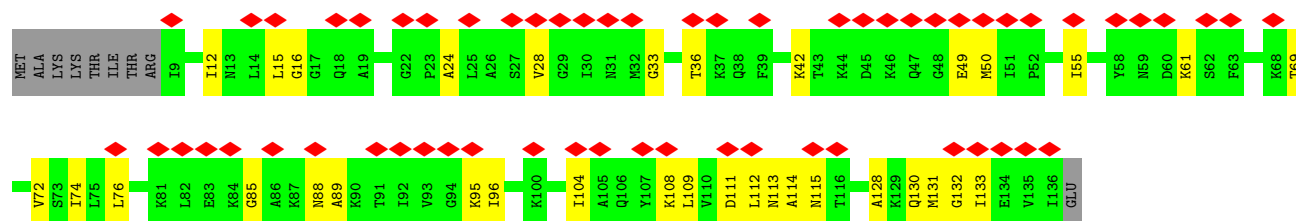


- Molecule 32: 50S ribosomal protein L10

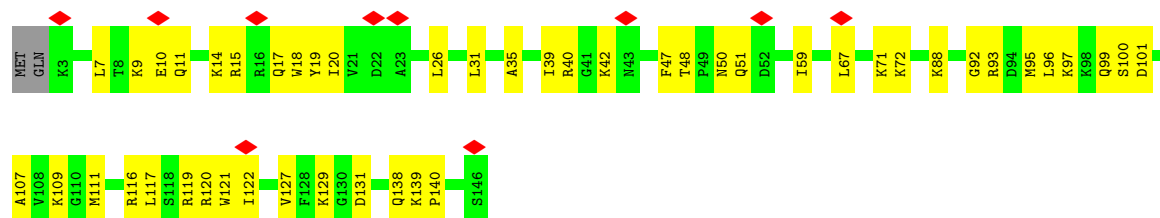


- Molecule 33: 50S ribosomal protein L11

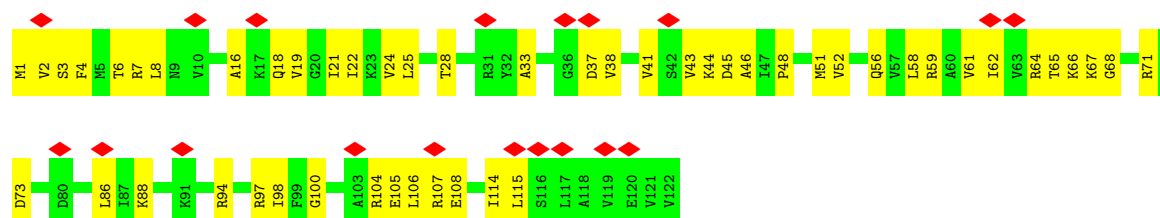




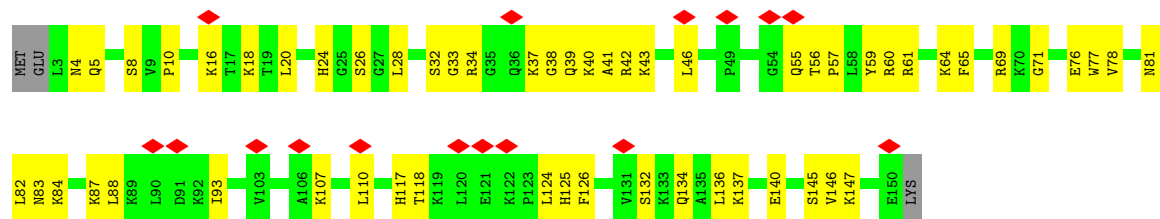
• Molecule 34: 50S ribosomal protein L13



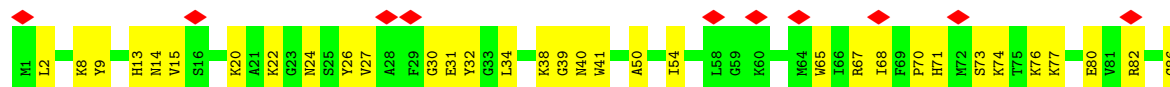
• Molecule 35: 50S ribosomal protein L14



• Molecule 36: 50S ribosomal protein L15

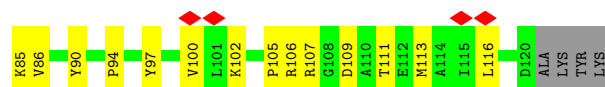


• Molecule 37: 50S ribosomal protein L16





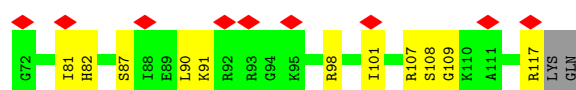
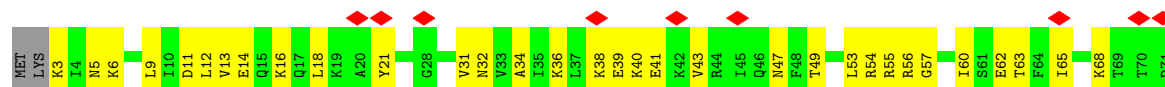
- Molecule 38: 50S ribosomal protein L17



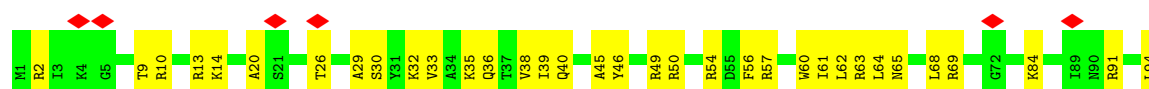
- Molecule 39: 50S ribosomal protein L18



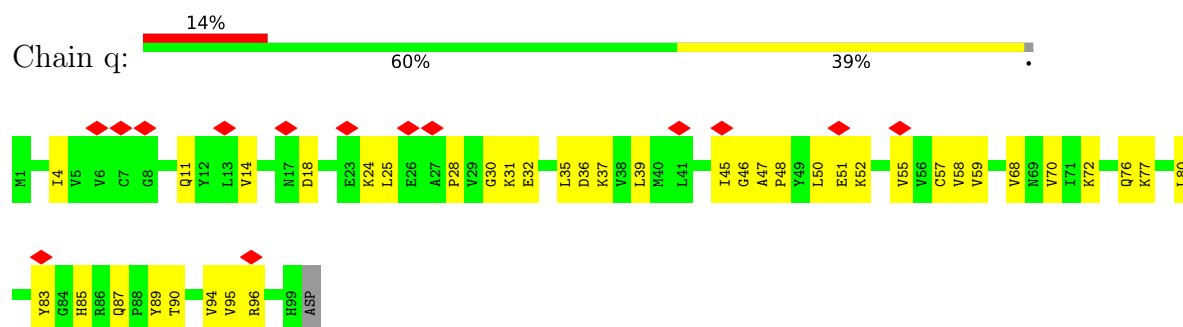
- Molecule 40: 50S ribosomal protein L19



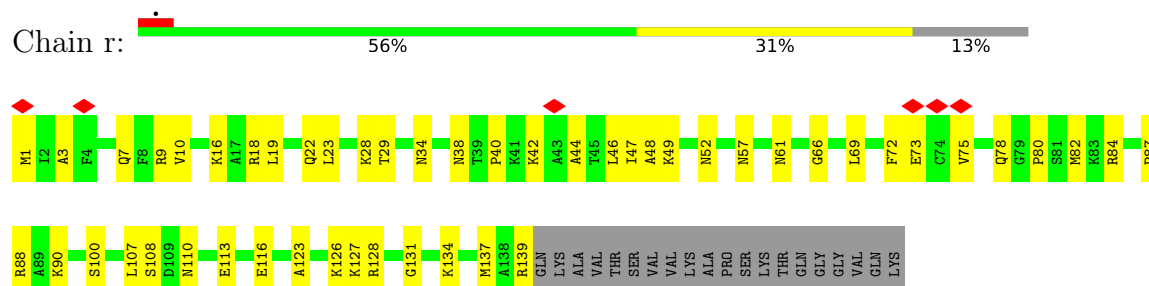
- Molecule 41: 50S ribosomal protein L20



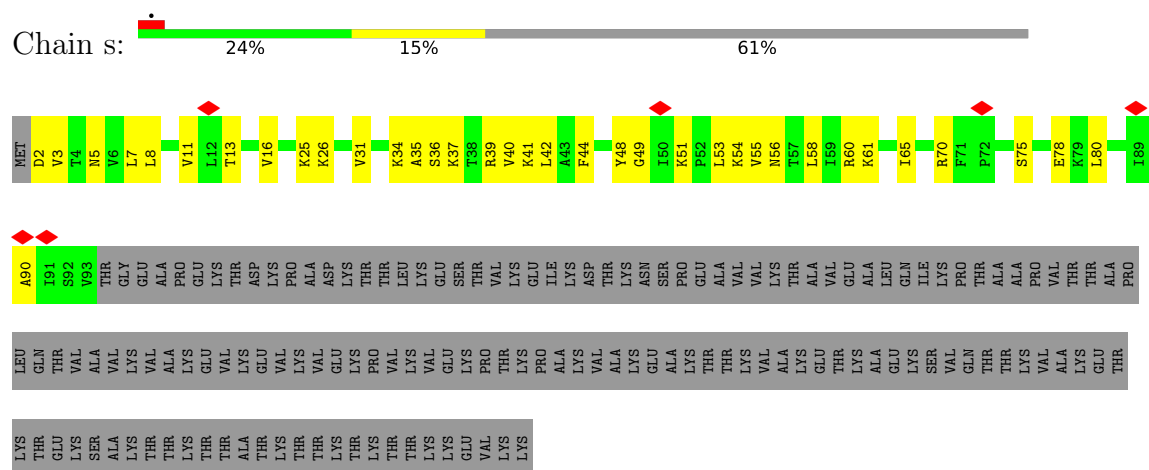
- Molecule 42: 50S ribosomal protein L21



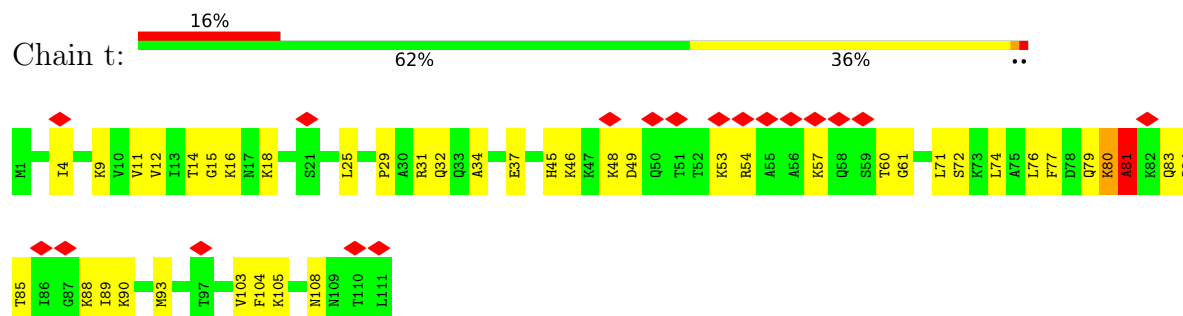
- Molecule 43: 50S ribosomal protein L22



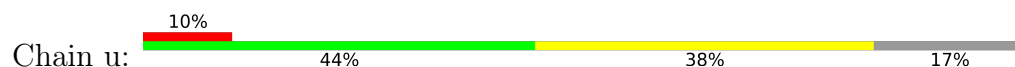
- Molecule 44: 50S ribosomal protein L23

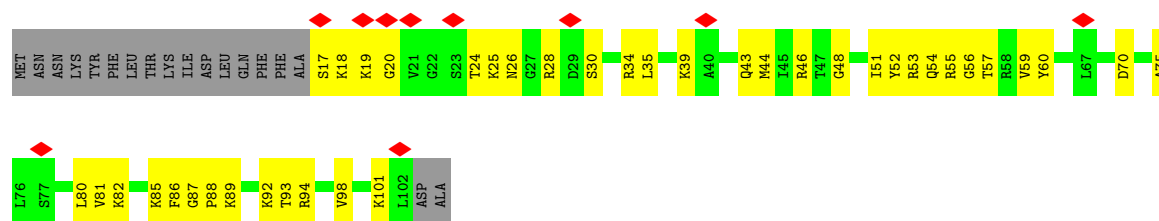


- Molecule 45: 50S ribosomal protein L24



- Molecule 46: 50S ribosomal protein L27

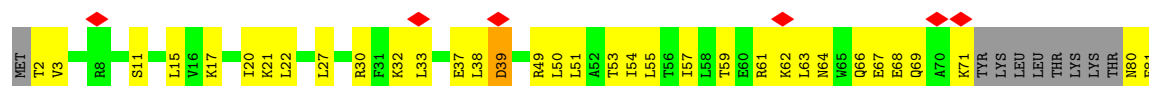




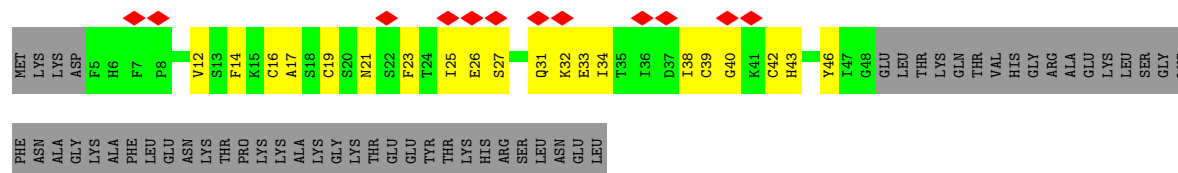
- Molecule 47: 50S ribosomal protein L28



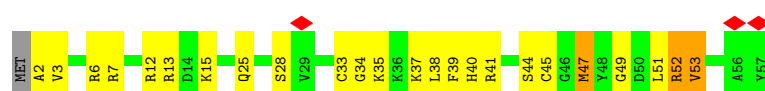
- Molecule 48: 50S ribosomal protein L29



- Molecule 49: 50S ribosomal protein L31



- Molecule 50: 50S ribosomal protein L32

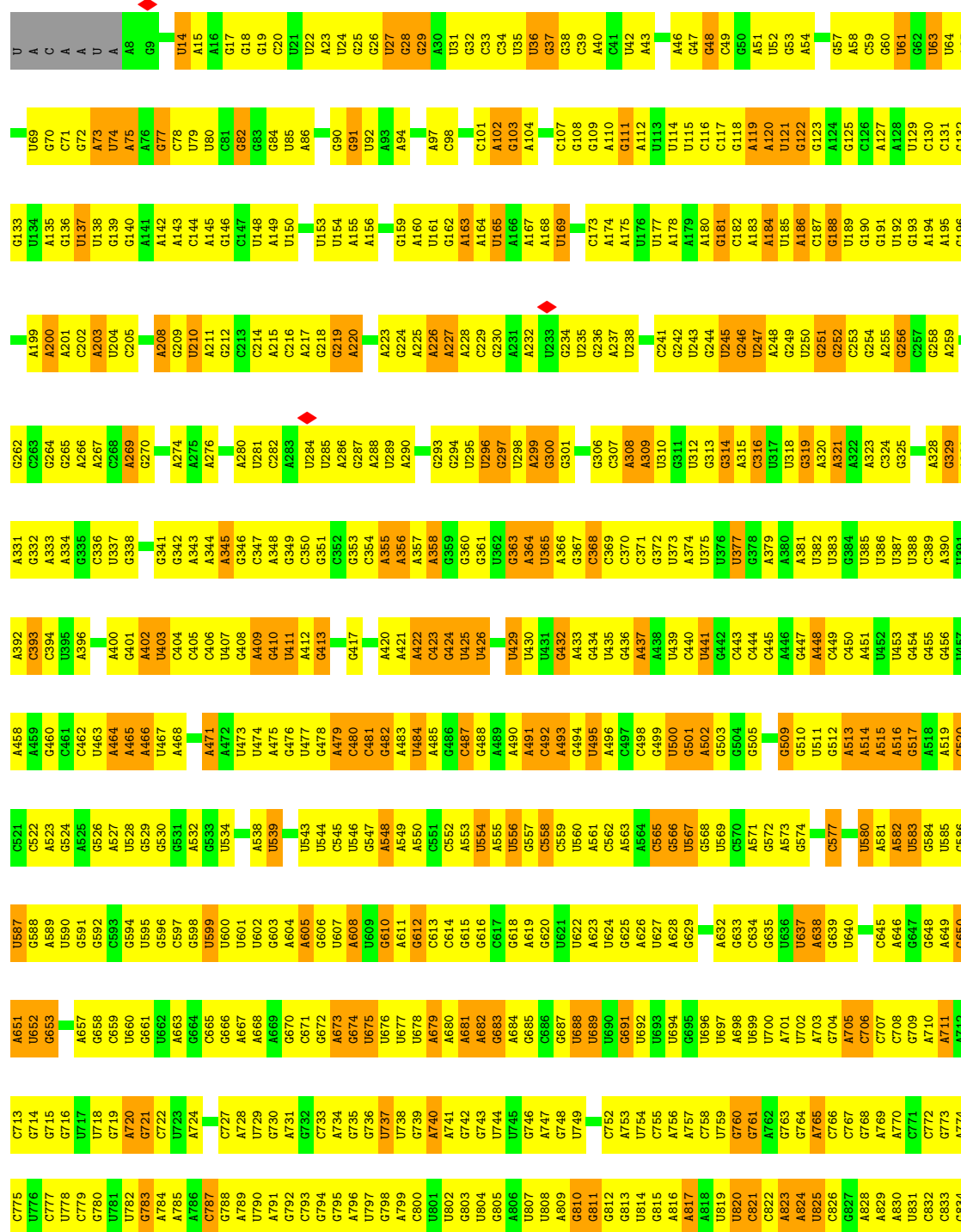
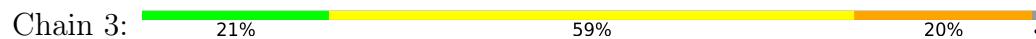


- Molecule 51: 50S ribosomal protein L33 1



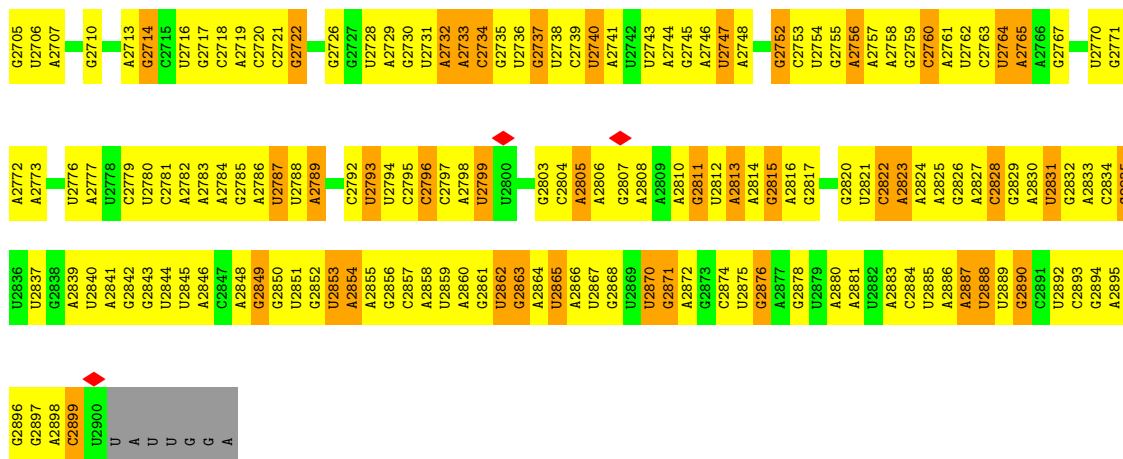


• Molecule 52: 23S ribosomal RNA



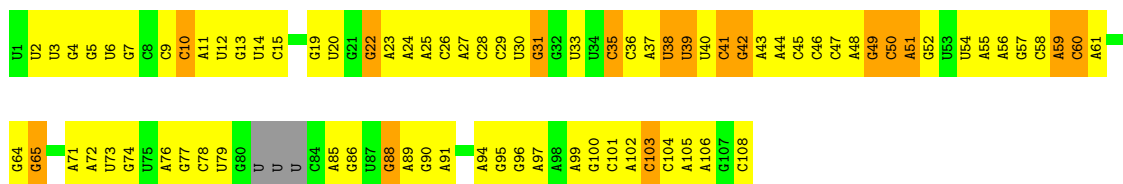
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WORLDWIDE
PDB
PROTEIN DATA BANK



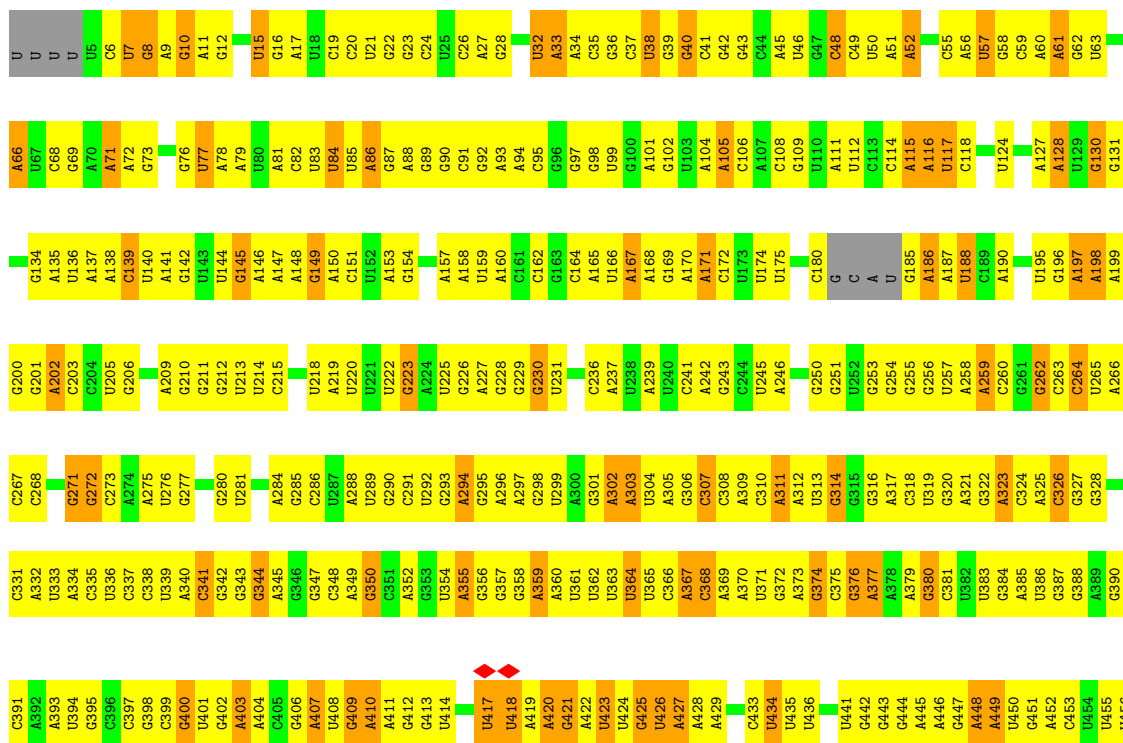
• Molecule 53: 5S ribosomal RNA

Chain 4: 22% 60% 15%

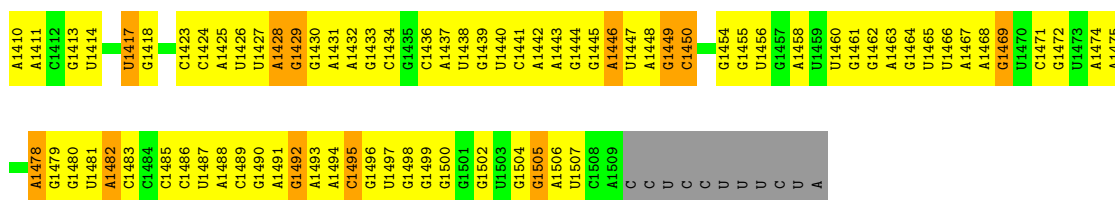


• Molecule 54: 16S ribosomal RNA

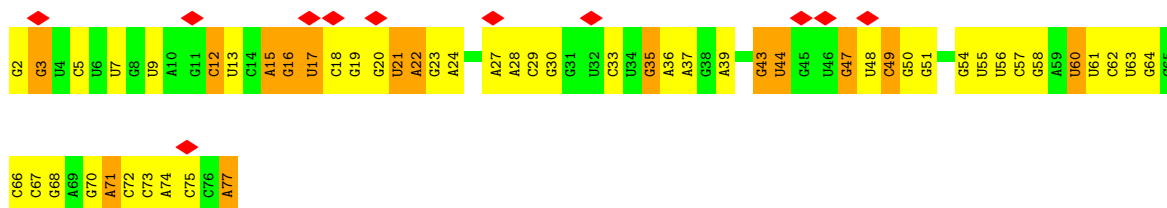
Chain 5: 20% 61% 17%



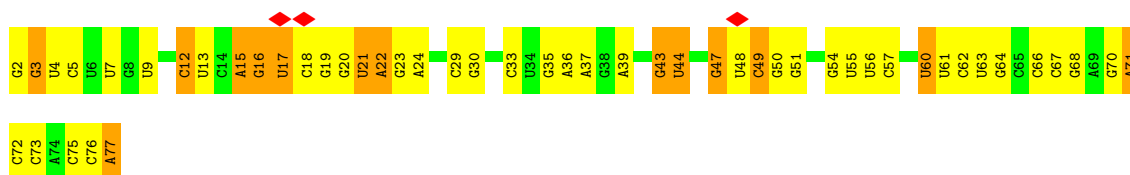
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C1103	C1104	C1105	C1106	C1107	C1108	C1109	C1110	C1111	C1112	C1113	C1114	C1115	C1116	C1117	C1118	C1119	C1120	C1121	C1122	C1123	C1124	C1125	C1126	C1127	C1128	C1129	C1130	C1131	C1132	C1133	C1134	C1135	C1136	C1137	C1138	C1139	C1140	C1141	C1142	C1143	C1144	C1145	C1146	C1147	C1148	C1149	C1150	C1151	C1152	C1153	C1154	C1155	C1156	C1157	C1158	C1159	C1160	C1161	C1162	C1163							
G1038	G1039	G1040	G1041	G1042	G1043	G1044	G1045	G1046	G1047	G1048	G1049	G1050	G1051	G1052	G1053	G1054	G1055	G1056	G1057	G1058	G1059	G1060	G1061	G1062	G1063	G1064	G1065	G1066	G1067	G1068	G1069	G1070	G1071	G1072	G1073	G1074	G1075	G1076	G1077	G1078	G1079	G1080	G1081	G1082	G1083	G1084	G1085	G1086	G1087	G1088	G1089	G1090	G1091	G1092	G1093	G1094	G1095	G1096	G1097	G1098	G1099	G1100	G1101				
U905	U906	U907	U908	U909	U910	U911	U912	U913	U914	U915	U916	U917	U918	U919	U920	U921	U922	U923	U924	U925	U926	U927	U928	U929	U930	U931	U932	U933	U934	U935	U936	U937	U938	U939	U940	U941	U942	U943	U944	U945	U946	U947	U948	U949	U950	U951	U952	U953	U954	U955	U956	U957	U958	U959	U960	U961	U962	U963	U964	U965	U966	U967	U968	U969	U970		
G837	G838	G839	G840	G841	G842	G843	G844	G845	G846	G847	G848	G849	G850	G851	G852	G853	G854	G855	G856	G857	G858	G859	G860	G861	G862	G863	G864	G865	G866	G867	G868	G869	G870	G871	G872	G873	G874	G875	G876	G877	G878	G879	G880	G881	G882	G883	G884	G885	G886	G887	G888	G889	G890	G891	G892	G893	G894	G895	G896	G897	G898	G899	G900	G901	G902	G903	G904
U706	U707	U708	U709	U710	U711	U712	U713	U714	U715	U716	U717	U718	U719	U720	U721	U722	U723	U724	U725	U726	U727	U728	U729	U730	U731	U732	U733	U734	U735	U736	U737	U738	U739	U740	U741	U742	U743	U744	U745	U746	U747	U748	U749	U750	U751	U752	U753	U754	U755	U756	U757	U758	U759	U760	U761	U762	U763	U764	U765	U766	U767	U768	U769				
G770	G771	G772	G773	G774	G775	G776	G777	G778	G779	G780	G781	G782	G783	G784	G785	G786	G787	G788	G789	G790	G791	G792	G793	G794	G795	G796	G797	G798	G799	G800	G801	G802	G803	G804	G805	G806	G807	G808	G809	G810	G811	G812	G813	G814	G815	G816	G817	G818	G819	G820	G821	G822	G823	G824	G825	G826	G827	G828	G829	G830	G831	G832	G833	G834	G835	G836	
U641	U642	U643	U644	U645	U646	U647	U648	U649	U650	U651	U652	U653	U654	U655	U656	U657	U658	U659	U660	U661	U662	U663	U664	U665	U666	U667	U668	U669	U670	U671	U672	U673	U674	U675	U676	U677	U678	U679	U680	U681	U682	U683	U684	U685	U686	U687	U688	U689	U690	U691	U692	U693	U694	U695	U696	U697	U698	U699	U700	U701	U702	U703	U704	U705			
C580	C581	C582	C583	C584	C585	C586	C587	C588	C589	C590	C591	C592	C593	C594	C595	C596	C597	C598	C599	C600	C601	C602	C603	C604	C605	C606	C607	C608	C609	C610	C611	C612	C613	C614	C615	C616	C617	C618	C619	C620	C621	C622	C623	C624	C625	C626	C627	C628	C629	C630	C631	C632	C633	C634	C635	C636	C637	C638	C639	C640							
A518	A519	A520	A521	A522	A523	A524	A525	A526	A527	A528	A529	A530	A531	A532	A533	A534	A535	A536	A537	A538	A539	A540	A541	A542	A543	A544	A545	A546	A547	A548	A549	A550	A551	A552	A553	A554	A555	A556	A557	A558	A559	A560	A561	A562	A563	A564	A565	A566	A567	A568	A569	A570	A571	A572	A573	A574	A575	A576	A577	A578	A579						
G457	G458	G459	G460	G461	G462	G463	G464	G465	G466	G467	G468	G469	G470	G471	G472	G473	G474	G475	G476	G477	G478	G479	G480	G481	G482	G483	G484	G485	G486	G487	G488	G489	G490	G491	G492	G493	G494	G495	G496	G497	G498	G499	G500	G501	G502	G503	G504	G505	G506	G507	G508	G509	G510	G511	G512	G513	G514	G515	G516	G517	G518						



- Molecule 55: tRNA-Phe



- Molecule 55: tRNA-Phe



4 Experimental information

Property	Value	Source
EM reconstruction method	SUBTOMOGRAM AVERAGING	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of subtomograms used	1479	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	3.2	Depositor
Minimum defocus (nm)	1500	Depositor
Maximum defocus (nm)	3750	Depositor
Magnification	81000	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	1.530	Depositor
Minimum map value	-0.551	Depositor
Average map value	0.027	Depositor
Map value standard deviation	0.125	Depositor
Recommended contour level	0.45	Depositor
Map size (Å)	435.328, 435.328, 435.328	wwPDB
Map dimensions	256, 256, 256	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.7005, 1.7005, 1.7005	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	0	0.16	0/383	0.42	0/504
2	1	0.18	0/484	0.45	0/637
3	2	0.13	0/306	0.37	0/401
4	9	0.16	0/5419	0.47	2/7307 (0.0%)
5	A	0.15	0/1954	0.40	0/2642
6	B	0.14	0/1721	0.41	0/2323
7	C	0.14	0/1691	0.40	0/2267
8	D	0.13	0/1188	0.37	0/1593
9	E	0.15	0/1384	0.40	0/1867
10	F	0.16	0/1266	0.41	0/1700
11	G	0.15	0/1126	0.42	0/1517
12	H	0.14	0/1044	0.44	0/1395
13	I	0.15	0/820	0.44	0/1103
14	J	0.15	0/844	0.43	0/1136
15	K	0.27	0/1094	0.59	1/1468 (0.1%)
16	L	0.16	0/962	0.43	0/1289
17	M	0.14	0/483	0.40	0/643
18	N	0.13	0/679	0.39	0/907
19	O	0.14	0/659	0.37	0/885
20	P	0.15	0/684	0.41	0/913
21	Q	0.13	0/545	0.42	0/730
22	R	0.18	0/698	0.49	0/936
23	S	0.14	0/631	0.39	0/838
24	T	0.13	0/475	0.40	0/621
25	W	0.12	0/538	0.33	0/722
26	a	0.16	0/2267	0.44	0/3044
27	b	0.14	0/1795	0.38	0/2412
28	c	0.14	0/1671	0.40	0/2246
29	d	0.14	0/1409	0.40	0/1894
30	e	0.16	0/1420	0.40	0/1912
31	f	0.15	0/1183	0.46	1/1587 (0.1%)
32	g	0.42	0/969	0.71	2/1295 (0.2%)
33	h	0.16	0/968	0.43	0/1298
34	i	0.14	0/1186	0.41	0/1592

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
35	j	0.15	0/953	0.40	0/1275
36	k	0.14	0/1170	0.43	0/1559
37	l	0.15	0/1104	0.45	0/1481
38	m	0.14	0/973	0.36	0/1309
39	n	0.15	0/897	0.45	0/1198
40	o	0.15	0/948	0.45	0/1262
41	p	0.14	0/961	0.38	0/1278
42	q	0.18	0/828	0.45	0/1111
43	r	0.14	0/1077	0.42	0/1441
44	s	0.15	0/732	0.48	0/988
45	t	0.18	0/879	0.49	1/1165 (0.1%)
46	u	0.15	0/665	0.42	0/884
47	v	0.23	0/519	0.54	0/695
48	w	0.16	0/826	0.46	0/1104
49	x	0.13	0/353	0.39	0/474
50	y	0.38	0/457	0.65	0/601
51	z	0.15	0/412	0.38	0/547
52	3	0.11	0/69073	0.28	5/107710 (0.0%)
53	4	0.10	0/2505	0.27	0/3902
54	5	0.10	0/35768	0.24	0/55764
55	7	0.12	0/1808	0.31	0/2817
55	8	0.12	0/1808	0.31	0/2817
All	All	0.13	0/164662	0.33	12/245006 (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
4	9	0	2
11	G	0	1
45	t	0	2
All	All	0	5

There are no bond length outliers.

All (12) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
52	3	1033	A	OP1-P-OP2	-13.39	79.43	119.60
52	3	1033	A	O5'-P-OP2	-11.35	73.95	108.00
52	3	1032	A	OP1-P-O3'	-10.94	75.18	108.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
52	3	1032	A	OP2-P-O3'	9.07	135.22	108.00
52	3	1033	A	O5'-P-OP1	7.92	131.76	108.00
31	f	3	VAL	N-CA-C	-6.10	107.91	113.71
32	g	45	PHE	CA-C-O	-5.88	115.32	121.55
45	t	81	ALA	N-CA-C	-5.63	98.81	110.80
15	K	116	ASP	N-CA-C	-5.33	105.95	113.20
4	9	489	GLU	CA-C-N	5.12	131.19	121.97
4	9	489	GLU	C-N-CA	5.12	131.19	121.97
32	g	89	ILE	N-CA-C	-5.10	107.78	112.83

There are no chirality outliers.

All (5) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
4	9	488	SER	Peptide
4	9	489	GLU	Peptide
11	G	109	ASN	Peptide
45	t	80	LYS	Peptide
45	t	81	ALA	Peptide

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	0	380	0	429	21	0
2	1	477	0	530	19	0
3	2	304	0	350	20	0
4	9	5326	0	5343	214	0
5	A	1921	0	1973	71	0
6	B	1698	0	1768	77	0
7	C	1660	0	1719	59	0
8	D	1173	0	1267	45	0
9	E	1362	0	1377	63	0
10	F	1246	0	1308	51	0
11	G	1110	0	1226	50	0
12	H	1028	0	1094	54	0
13	I	809	0	894	35	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
14	J	829	0	855	33	0
15	K	1076	0	1170	52	0
16	L	951	0	1014	29	0
17	M	474	0	509	27	0
18	N	673	0	730	22	0
19	O	646	0	677	23	0
20	P	675	0	728	30	0
21	Q	535	0	562	24	0
22	R	682	0	691	33	0
23	S	629	0	681	32	0
24	T	471	0	522	15	0
25	W	534	0	572	14	0
26	a	2225	0	2301	107	0
27	b	1762	0	1808	88	0
28	c	1644	0	1731	68	0
29	d	1388	0	1469	49	0
30	e	1396	0	1481	48	0
31	f	1160	0	1172	27	0
32	g	960	0	1014	39	0
33	h	959	0	1039	23	0
34	i	1164	0	1192	38	0
35	j	944	0	1019	49	0
36	k	1153	0	1256	56	0
37	l	1079	0	1134	50	0
38	m	958	0	1011	40	0
39	n	889	0	952	42	0
40	o	938	0	1008	34	0
41	p	947	0	1028	41	0
42	q	811	0	858	28	0
43	r	1068	0	1150	50	0
44	s	720	0	803	29	0
45	t	872	0	972	43	0
46	u	657	0	695	33	0
47	v	513	0	560	49	0
48	w	818	0	870	28	0
49	x	344	0	333	17	0
50	y	452	0	472	25	0
51	z	408	0	440	21	0
52	3	61664	0	30954	2184	0
53	4	2239	0	1137	66	0
54	5	31943	0	16058	1208	0
55	7	1618	0	821	46	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
55	8	1618	0	821	45	0
All	All	151980	0	105548	5122	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 21.

All (5122) 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)
54:5:627:U:N3	54:5:628:A:N6	1.89	1.21
38:m:2:SER:N	52:3:1692:A:HO2'	1.47	1.13
52:3:341:G:N2	52:3:364:A:H61	1.44	1.13
54:5:1001:A:H62	54:5:1019:G:N2	1.47	1.11
52:3:2483:C:H42	52:3:2537:G:N2	1.51	1.07
54:5:660:A:H2	54:5:739:G:N1	1.52	1.07
52:3:341:G:H21	52:3:364:A:N6	1.51	1.05
54:5:660:A:C2	54:5:739:G:N1	2.24	1.05
54:5:136:U:H3	54:5:157:A:H62	1.04	1.04
52:3:2483:C:N4	52:3:2537:G:H22	1.53	1.03
52:3:243:U:H3	52:3:262:G:H1	1.05	1.01
52:3:1932:C:N4	52:3:1936:G:H22	1.58	1.01
54:5:1001:A:N6	54:5:1019:G:H21	1.57	1.01
52:3:1932:C:H42	52:3:1936:G:N2	1.58	1.00
29:d:132:ILE:O	29:d:151:GLY:HA3	1.59	1.00
52:3:1803:U:H3	52:3:1830:G:H1	1.06	0.99
52:3:61:U:H3	52:3:70:G:H1	1.04	0.99
52:3:14:U:H3	52:3:561:A:H62	1.05	0.98
54:5:880:G:H1	54:5:905:U:H3	1.06	0.98
54:5:826:G:H1	54:5:851:U:H3	1.03	0.98
52:3:1067:A:H2	52:3:1157:G:H1	1.03	0.98
52:3:193:G:H1	52:3:209:G:HO2'	1.05	0.98
54:5:1331:A:H61	54:5:1340:G:H1	1.13	0.97
54:5:290:G:H1	54:5:299:U:H3	1.07	0.97
54:5:1388:A:H2	54:5:1462:G:H1	0.97	0.96
52:3:1385:U:H3	52:3:1402:G:H1	1.12	0.96
54:5:603:U:H3	54:5:630:G:H1	0.96	0.96
54:5:253:G:H1	54:5:265:U:H3	1.11	0.95
54:5:1001:A:H62	54:5:1019:G:H21	0.99	0.94
54:5:612:G:H1	54:5:624:U:H3	1.14	0.94
54:5:1394:G:H1	54:5:1456:U:H3	0.98	0.94
52:3:413:G:H1	52:3:435:U:H3	0.96	0.93

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:900:G:N2	52:3:903:A:H61	1.67	0.92
52:3:1070:U:H3	52:3:1155:G:H1	0.99	0.92
52:3:1244:A:N6	52:3:1265:G:N3	2.17	0.92
54:5:1138:U:H3	54:5:1149:G:H1	1.09	0.91
45:t:81:ALA:HB3	45:t:83:GLN:H	1.36	0.91
52:3:1914:G:H1	52:3:1930:U:H3	1.06	0.91
52:3:250:U:H3	52:3:256:G:H1	0.91	0.91
52:3:569:U:H3	52:3:592:G:H1	0.95	0.90
52:3:1246:U:H3	52:3:1263:G:H1	1.12	0.90
52:3:2106:G:H22	52:3:2198:G:H1	1.20	0.90
17:M:14:PRO:HB3	17:M:19:ARG:HB2	1.54	0.89
54:5:573:G:H4'	54:5:574:C:H5''	1.55	0.89
54:5:1217:G:H1	54:5:1269:U:H3	1.16	0.89
54:5:763:A:N6	54:5:810:U:C2	2.41	0.88
52:3:80:U:H3	52:3:109:G:H1	1.21	0.88
54:5:334:A:H2	54:5:347:G:H1	1.17	0.88
45:t:80:LYS:O	45:t:83:GLN:HB3	1.73	0.87
26:a:179:TYR:HA	26:a:192:PHE:O	1.75	0.87
54:5:1001:A:N6	54:5:1019:G:N2	2.19	0.86
54:5:242:A:C5	54:5:277:G:C2	2.63	0.86
52:3:2299:U:H3	52:3:2349:G:H1	0.91	0.86
54:5:600:G:H1	54:5:633:U:H3	0.89	0.86
43:r:128:ARG:HH22	52:3:1249:A:H1'	1.41	0.85
52:3:2303:U:H3	52:3:2345:G:H1	0.87	0.85
54:5:599:G:H1	54:5:634:U:H3	0.91	0.85
52:3:1494:U:H3	52:3:1550:G:H1	1.23	0.85
52:3:2059:G:H1	52:3:2625:U:H3	0.87	0.85
11:G:116:ILE:HG12	11:G:137:ILE:HG12	1.58	0.85
54:5:1002:A:N6	54:5:1019:G:C4	2.45	0.85
4:9:656:ARG:HG2	52:3:2668:A:H61	1.39	0.85
52:3:989:G:H1	52:3:1000:U:H3	1.24	0.85
52:3:2536:U:H3	52:3:2543:G:H1	1.23	0.84
37:l:15:VAL:HB	37:l:41:TRP:HE1	1.43	0.84
52:3:325:G:H1	52:3:383:U:H3	1.23	0.84
26:a:110:ILE:HD11	26:a:203:VAL:HG12	1.57	0.83
52:3:247:U:C2	52:3:259:A:N7	2.46	0.83
52:3:2149:U:H3	52:3:2156:G:H1	0.88	0.83
52:3:1849:G:H1	52:3:1905:U:H3	1.26	0.83
30:e:24:HIS:HA	30:e:36:LEU:O	1.76	0.83
54:5:627:U:C4	54:5:628:A:N6	2.38	0.83
52:3:2645:U:H3	52:3:2784:A:H62	1.27	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:g:56:ASN:HB2	32:g:75:ALA:HB1	1.59	0.82
52:3:1244:A:H62	52:3:1265:G:N2	1.75	0.82
8:D:139:GLU:HB3	11:G:108:LEU:HD11	1.62	0.82
4:9:319:PHE:O	54:5:56:A:N6	2.12	0.82
52:3:2570:U:O2	52:3:2574:A:N7	2.12	0.82
36:k:117:HIS:HB2	52:3:673:A:H5''	1.62	0.82
52:3:2534:G:H1	52:3:2545:U:H3	1.27	0.81
54:5:245:U:H3	54:5:271:G:H1	1.23	0.81
52:3:716:G:H1	52:3:831:U:H3	0.86	0.81
52:3:1932:C:H42	52:3:1936:G:H22	0.85	0.81
55:8:23:G:N7	55:8:47:G:N2	2.29	0.81
54:5:372:G:H1	54:5:383:U:H3	1.27	0.81
54:5:591:A:H2'	54:5:592:A:C8	2.16	0.81
52:3:2088:U:H3	52:3:2247:G:H1	1.27	0.80
55:7:23:G:N7	55:7:47:G:N2	2.29	0.80
54:5:318:C:H42	54:5:325:A:H62	1.24	0.80
54:5:1049:G:H1	54:5:1174:U:H3	0.82	0.80
12:H:20:TYR:HB2	12:H:66:ASN:HB3	1.63	0.80
26:a:56:ARG:HH22	26:a:257:PRO:HD2	1.47	0.80
4:9:406:ILE:HB	4:9:450:GLY:O	1.82	0.80
15:K:61:ALA:HB2	54:5:527:G:H1	1.47	0.79
52:3:1631:A:H5''	52:3:1632:C:H5'	1.64	0.79
22:R:41:PHE:H	22:R:44:PHE:HB2	1.46	0.79
52:3:1245:G:H1	52:3:1264:U:H3	1.30	0.79
39:n:34:LYS:HD2	39:n:101:ARG:HH11	1.47	0.79
52:3:1435:A:H61	52:3:1629:U:H3	1.29	0.79
8:D:139:GLU:HA	8:D:151:LEU:O	1.82	0.78
24:T:23:LEU:HD12	24:T:26:ARG:HH22	1.48	0.78
23:S:67:ARG:HD2	23:S:71:ARG:HH11	1.45	0.78
52:3:2291:U:O2	52:3:2333:G:O6	2.01	0.78
52:3:652:U:H2'	52:3:653:G:H8	1.49	0.78
35:j:64:ARG:HH21	35:j:100:GLY:HA3	1.45	0.78
47:v:21:SER:HB3	55:8:76:C:C4	2.19	0.78
27:b:151:ARG:HD2	52:3:2583:U:H5'	1.62	0.78
52:3:577:C:O2	52:3:584:G:N2	2.13	0.78
52:3:2521:A:H2'	52:3:2522:U:C6	2.19	0.78
36:k:107:LYS:HD2	52:3:264:G:H5'	1.64	0.78
52:3:1027:U:H3	52:3:1198:G:H1	0.82	0.78
54:5:365:U:H3	54:5:388:G:H1	1.32	0.78
10:F:101:ARG:NH1	54:5:1350:A:O2'	2.17	0.78
52:3:900:G:H21	52:3:903:A:H61	1.30	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:H:116:LYS:HA	12:H:123:ALA:HB2	1.67	0.77
52:3:2317:A:H61	55:7:57:C:H1'	1.49	0.77
52:3:2405:G:H1	52:3:2427:U:H3	1.30	0.77
52:3:2756:A:N7	52:3:2762:U:O2	2.16	0.77
12:H:129:PHE:HB3	54:5:1316:C:H4'	1.67	0.77
52:3:1940:G:H1	52:3:1974:U:H3	1.31	0.77
54:5:940:G:N2	54:5:1308:G:O2'	2.17	0.77
6:B:56:VAL:HG12	6:B:69:VAL:HG23	1.67	0.77
7:C:36:GLY:H	54:5:423:U:H4'	1.49	0.77
10:F:74:LEU:HD11	10:F:85:GLN:HB3	1.65	0.77
52:3:17:G:H1	52:3:560:U:H3	1.31	0.77
3:2:24:ARG:HG3	3:2:35:ARG:HB3	1.65	0.77
1:0:22:MET:SD	1:0:28:ARG:NH1	2.58	0.77
15:K:124:ARG:O	15:K:127:ARG:NH2	2.18	0.76
54:5:616:C:H5'	54:5:617:U:H5''	1.66	0.76
52:3:1067:A:C2	52:3:1157:G:N1	2.51	0.76
9:E:151:LYS:O	11:G:56:ASN:ND2	2.17	0.76
37:l:77:LYS:HD2	52:3:992:G:H5''	1.67	0.76
54:5:136:U:O4	54:5:157:A:N7	2.19	0.76
52:3:900:G:H21	52:3:903:A:N6	1.83	0.75
52:3:1527:U:H2'	52:3:1528:G:H8	1.48	0.75
5:A:73:LYS:O	5:A:77:GLN:NE2	2.19	0.75
26:a:148:HIS:ND1	26:a:201:GLY:O	2.18	0.75
41:p:29:ALA:HB1	52:3:550:A:H5''	1.68	0.75
52:3:329:G:H1	52:3:377:U:H3	0.84	0.75
52:3:633:G:H1	52:3:692:U:H3	1.31	0.75
52:3:2299:U:H2'	52:3:2300:A:C8	2.21	0.75
4:9:626:LEU:HD22	4:9:642:LYS:HB2	1.68	0.75
52:3:2797:C:O2	52:3:2895:A:O2'	2.04	0.75
27:b:5:GLY:HA2	27:b:207:ILE:O	1.86	0.75
52:3:300:G:H2'	52:3:301:G:H8	1.52	0.75
7:C:111:ARG:HG3	54:5:403:A:H5''	1.68	0.75
38:m:20:GLN:NE2	52:3:1305:G:N3	2.35	0.75
43:r:44:ALA:HA	43:r:47:ILE:HG12	1.68	0.75
52:3:411:U:C2	52:3:437:A:N7	2.54	0.75
52:3:1071:G:H1	52:3:1154:U:H3	0.82	0.75
54:5:63:U:H3	54:5:90:G:H1	1.35	0.75
12:H:5:SER:HA	12:H:21:LEU:O	1.85	0.75
52:3:869:U:H2'	52:3:870:A:H8	1.52	0.75
42:q:76:GLN:HE22	52:3:605:A:H5'	1.52	0.74
52:3:1858:U:OP1	55:8:4:U:O2'	2.05	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:499:U:O2'	54:5:547:C:O2'	2.03	0.74
16:L:77:ILE:HG12	16:L:91:HIS:HE1	1.51	0.74
54:5:661:G:HO2'	54:5:722:G:HO2'	1.35	0.74
54:5:679:U:H2'	54:5:680:G:H8	1.51	0.74
52:3:843:G:H2'	52:3:844:G:C8	2.22	0.74
12:H:106:THR:HG23	12:H:107:THR:HG23	1.68	0.74
30:e:155:ARG:HD2	30:e:164:GLY:HA2	1.70	0.74
52:3:629:G:H1	52:3:696:U:H3	1.32	0.74
52:3:1345:G:H2'	52:3:1346:G:C8	2.22	0.74
52:3:2317:A:N1	55:7:57:C:O2'	2.18	0.74
42:q:83:TYR:HH	52:3:1199:A:HO2'	1.31	0.74
35:j:58:LEU:HD23	35:j:86:LEU:HD11	1.70	0.74
52:3:219:G:H1'	52:3:220:A:H4'	1.70	0.74
47:v:20:HIS:HA	55:8:76:C:H5''	1.69	0.74
54:5:1011:A:HO2'	54:5:1193:U:HO2'	1.27	0.73
52:3:1076:U:O2	52:3:1149:G:N2	2.20	0.73
52:3:2058:G:N2	52:3:2059:G:O6	2.21	0.73
54:5:1244:A:O2'	54:5:1299:C:O2	2.07	0.73
6:B:114:LEU:HB3	6:B:207:ARG:HG2	1.71	0.73
52:3:133:G:H1	52:3:150:U:H3	1.34	0.73
54:5:1392:A:O2'	54:5:1458:A:N6	2.21	0.73
38:m:36:LYS:HG3	52:3:1685:G:H4'	1.69	0.73
52:3:77:G:H1	52:3:112:A:H61	1.35	0.73
52:3:1328:A:OP2	52:3:1661:A:N6	2.21	0.73
52:3:1672:C:O2	52:3:2706:U:O2'	2.06	0.73
54:5:57:U:H2'	54:5:58:G:C8	2.24	0.73
54:5:71:A:H2'	54:5:72:A:H8	1.53	0.73
54:5:1110:C:H2'	54:5:1111:G:H8	1.53	0.73
54:5:1388:A:C2	54:5:1462:G:N1	2.49	0.73
52:3:1902:C:H2'	52:3:1903:A:H8	1.53	0.73
54:5:544:A:H4'	54:5:546:G:H4'	1.70	0.73
54:5:1333:C:O2'	54:5:1335:G:N7	2.21	0.73
52:3:297:G:H1	52:3:440:C:HO2'	1.34	0.73
52:3:2552:G:H1'	52:3:2654:U:H4'	1.71	0.73
54:5:627:U:C2	54:5:628:A:N6	2.56	0.73
54:5:627:U:H3	54:5:628:A:N6	1.85	0.73
54:5:1388:A:N1	54:5:1462:G:O6	2.21	0.73
52:3:2098:U:O2	52:3:2236:G:O6	2.06	0.73
43:r:88:ARG:NH2	52:3:784:A:OP2	2.22	0.73
47:v:17:ASN:ND2	52:3:2241:A:OP1	2.22	0.73
52:3:2828:C:OP2	52:3:2829:G:N2	2.22	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:331:C:H2'	54:5:332:A:H8	1.54	0.73
54:5:1378:C:O2	54:5:1474:A:N6	2.20	0.73
23:S:10:ARG:NH1	54:5:92:G:N7	2.36	0.73
52:3:453:U:H2'	52:3:454:G:H8	1.54	0.73
18:N:5:LYS:NZ	54:5:656:U:OP1	2.21	0.72
30:e:152:ARG:NH1	30:e:167:TYR:OH	2.21	0.72
52:3:2135:C:H2'	52:3:2136:A:C8	2.23	0.72
52:3:2175:U:O2	52:3:2179:A:N7	2.22	0.72
6:B:186:ASP:OD2	6:B:207:ARG:NH2	2.22	0.72
41:p:91:ARG:HB3	41:p:94:LEU:HB2	1.69	0.72
7:C:31:ARG:NH1	54:5:409:G:N7	2.36	0.72
44:s:70:ARG:HH12	52:3:492:C:H2'	1.53	0.72
52:3:2124:A:N6	52:3:2170:A:OP2	2.22	0.72
52:3:2703:U:O2	52:3:2722:G:O6	2.07	0.72
54:5:818:A:H2'	54:5:819:G:H8	1.55	0.72
38:m:50:THR:HG21	52:3:2844:U:H5''	1.71	0.72
52:3:85:U:O4	52:3:103:G:O2'	2.06	0.72
52:3:2524:U:H2'	52:3:2525:C:C6	2.25	0.72
52:3:1670:U:H2'	52:3:1671:C:C6	2.24	0.72
54:5:1447:U:H2'	54:5:1448:A:C8	2.23	0.72
54:5:1487:U:H3	54:5:1498:G:H1	1.36	0.72
20:P:4:ASN:HD21	54:5:180:C:H1'	1.55	0.72
28:c:174:ASN:ND2	52:3:354:C:O2	2.23	0.72
49:x:16:CYS:HB3	49:x:21:ASN:H	1.54	0.72
52:3:2653:G:OP2	52:3:2653:G:N2	2.23	0.72
42:q:70:VAL:HG23	42:q:83:TYR:HB3	1.70	0.72
54:5:27:A:N6	54:5:556:G:N3	2.38	0.72
37:l:14:ASN:O	37:l:15:VAL:HG23	1.90	0.72
52:3:107:C:O2	52:3:328:A:O2'	2.07	0.72
54:5:1225:A:H2'	54:5:1226:A:C8	2.24	0.72
48:w:67:GLU:HG3	48:w:68:GLU:H	1.55	0.72
52:3:85:U:O2	52:3:104:A:N7	2.22	0.72
52:3:1067:A:H2	52:3:1157:G:N1	1.84	0.72
52:3:1665:G:N2	52:3:1668:G:OP2	2.23	0.72
4:9:168:ALA:H	4:9:171:ASP:HB2	1.55	0.71
4:9:307:PHE:HA	4:9:330:SER:O	1.89	0.71
4:9:627:ILE:HD12	52:3:1130:A:H5'	1.71	0.71
21:Q:43:PHE:HA	21:Q:46:ILE:HG22	1.71	0.71
54:5:710:G:H21	54:5:774:A:H1'	1.54	0.71
54:5:1388:A:H2	54:5:1462:G:N1	1.80	0.71
16:L:107:ARG:NH2	54:5:1204:A:OP2	2.23	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:o:36:LYS:NZ	40:o:87:SER:OG	2.23	0.71
52:3:411:U:O2	52:3:437:A:N7	2.22	0.71
54:5:1116:U:O2	54:5:1117:U:O2'	2.07	0.71
52:3:308:A:H2'	52:3:309:A:H5''	1.70	0.71
52:3:2088:U:O4	52:3:2247:G:O6	2.07	0.71
39:n:26:ASN:O	39:n:88:ASN:ND2	2.24	0.71
40:o:54:ARG:NH1	52:3:2693:U:OP1	2.23	0.71
52:3:2071:C:O4'	55:7:77:A:H2'	1.91	0.71
54:5:136:U:H3	54:5:157:A:N6	1.85	0.71
49:x:43:HIS:HB3	49:x:46:TYR:HB2	1.73	0.71
52:3:1556:U:H3	52:3:1574:G:H1	1.36	0.71
54:5:1000:A:O2'	54:5:1030:G:OP1	2.08	0.71
52:3:138:U:H2'	52:3:139:G:C8	2.25	0.71
54:5:305:A:H2'	54:5:306:G:H8	1.56	0.71
52:3:227:A:H2'	52:3:456:G:H21	1.54	0.71
1:0:41:GLN:NE2	52:3:501:G:OP2	2.24	0.71
9:E:142:ARG:HH22	11:G:69:ILE:HD13	1.55	0.71
28:c:140:THR:H	52:3:355:A:H5''	1.56	0.71
52:3:2092:U:O2	52:3:2242:G:O6	2.09	0.71
52:3:2664:U:O2	52:3:2673:A:N7	2.24	0.71
54:5:308:C:H2'	54:5:309:A:H8	1.55	0.71
52:3:1067:A:N1	52:3:1157:G:O6	2.24	0.71
52:3:1244:A:N6	52:3:1265:G:C2	2.58	0.71
52:3:2865:U:H2'	52:3:2866:A:H8	1.56	0.71
54:5:708:A:H2'	54:5:709:A:H8	1.56	0.71
54:5:1331:A:N6	54:5:1340:G:H1	1.86	0.71
4:9:609:PRO:HB2	4:9:611:GLN:HE21	1.55	0.70
54:5:660:A:H2	54:5:739:G:H1	0.76	0.70
27:b:127:ASN:ND2	52:3:2686:C:OP2	2.24	0.70
52:3:2359:G:N2	52:3:2374:A:C8	2.60	0.70
52:3:2603:G:N2	52:3:2606:A:OP2	2.22	0.70
54:5:762:G:N2	54:5:809:G:O2'	2.23	0.70
26:a:261:ARG:NH2	52:3:1849:G:O2'	2.24	0.70
27:b:124:LYS:HE2	52:3:2005:G:H5''	1.73	0.70
54:5:833:G:H1	54:5:844:U:H3	1.36	0.70
52:3:2328:A:O2'	52:3:2331:G:O6	2.08	0.70
54:5:1055:G:H5'	54:5:1057:C:H5'	1.74	0.70
55:8:43:G:H2'	55:8:44:U:H5''	1.73	0.70
6:B:121:ARG:NH2	6:B:190:GLU:OE2	2.24	0.70
52:3:709:G:H1	52:3:841:C:H42	1.39	0.70
52:3:1085:A:N6	52:3:1144:C:O2	2.24	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:2175:U:N3	52:3:2179:A:C8	2.56	0.70
54:5:834:G:H2'	54:5:835:G:C8	2.25	0.70
52:3:577:C:N3	52:3:584:G:N1	2.31	0.70
52:3:774:A:N3	52:3:775:C:N4	2.39	0.70
52:3:833:C:H2'	52:3:834:G:C8	2.26	0.70
52:3:2299:U:H2'	52:3:2300:A:H8	1.56	0.70
9:E:146:THR:HA	11:G:60:LEU:HD22	1.73	0.70
52:3:915:A:OP2	52:3:936:G:N2	2.25	0.70
54:5:134:G:H1	54:5:160:A:H61	1.40	0.70
12:H:47:ILE:HG13	12:H:50:MET:HE2	1.74	0.70
31:f:54:GLN:HA	31:f:57:HIS:CE1	2.26	0.70
46:u:51:ILE:HD11	46:u:75:ALA:HB2	1.74	0.70
52:3:491:A:H2	52:3:509:G:H5'	1.56	0.70
52:3:603:G:O4'	52:3:1019:A:N6	2.25	0.70
52:3:1077:G:H1	52:3:1148:U:H3	1.39	0.70
54:5:629:U:H3'	54:5:630:G:H8	1.57	0.70
14:J:65:LYS:HA	14:J:68:LYS:HD2	1.74	0.70
31:f:1:MET:HE3	31:f:29:PHE:HB3	1.73	0.70
45:t:72:SER:OG	52:3:369:C:O2	2.10	0.70
47:v:21:SER:OG	47:v:22:LYS:N	2.25	0.70
54:5:35:C:H2'	54:5:36:G:H8	1.54	0.70
4:9:501:ARG:NH2	4:9:571:VAL:O	2.25	0.69
55:7:43:G:H2'	55:7:44:U:H5''	1.73	0.69
38:m:57:PHE:HA	38:m:60:ARG:HD3	1.72	0.69
52:3:2700:C:O2	52:3:2851:U:O2'	2.10	0.69
54:5:931:C:H2'	54:5:932:A:H8	1.58	0.69
54:5:1136:G:O6	54:5:1157:G:O6	2.10	0.69
52:3:467:U:H2'	52:3:468:A:H8	1.56	0.69
52:3:703:A:H2'	52:3:705:A:H62	1.57	0.69
52:3:1928:G:H2'	52:3:1929:G:H8	1.56	0.69
54:5:1075:G:H1'	54:5:1094:C:H41	1.57	0.69
15:K:57:LYS:NZ	54:5:1466:U:OP1	2.24	0.69
52:3:220:A:N7	52:3:467:U:O2	2.26	0.69
52:3:2483:C:H42	52:3:2537:G:H22	0.79	0.69
30:e:101:VAL:HG22	30:e:106:LEU:HG	1.75	0.69
34:i:10:GLU:HG3	34:i:48:THR:HG21	1.75	0.69
41:p:50:ARG:NH2	52:3:1028:C:OP1	2.25	0.69
14:J:115:LYS:HG2	54:5:775:G:H21	1.57	0.69
52:3:1363:C:H2'	52:3:1364:A:H8	1.58	0.69
52:3:2266:C:O2'	52:3:2435:C:OP2	2.10	0.69
55:8:16:G:N2	55:8:60:U:O2	2.26	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:f:65:SER:HB2	31:f:134:THR:HG21	1.75	0.69
38:m:107:ARG:NH2	52:3:1316:U:OP2	2.26	0.69
52:3:1806:G:N1	52:3:1826:A:OP2	2.24	0.69
54:5:1225:A:H2'	54:5:1226:A:H8	1.56	0.69
4:9:341:ASN:O	4:9:345:ASN:N	2.26	0.69
27:b:119:PHE:O	52:3:1688:A:O2'	2.11	0.69
37:l:27:VAL:O	37:l:134:ARG:NH2	2.25	0.69
37:l:39:GLY:CA	37:l:97:VAL:O	2.41	0.69
52:3:246:G:HO2'	52:3:258:G:H1	1.39	0.69
52:3:247:U:N3	52:3:259:A:C8	2.60	0.69
52:3:1306:G:H2'	52:3:1307:G:H8	1.56	0.69
52:3:2299:U:O2'	52:3:2382:A:N3	2.25	0.69
52:3:2451:C:H2'	52:3:2452:G:H8	1.57	0.69
54:5:499:U:HO2'	54:5:547:C:HO2'	1.37	0.69
54:5:1505:G:H2'	54:5:1506:A:H8	1.57	0.69
52:3:2093:U:H2'	52:3:2094:A:C8	2.27	0.69
52:3:2638:G:OP2	52:3:2899:C:N4	2.25	0.69
54:5:354:U:H2'	54:5:355:A:H8	1.57	0.69
54:5:445:A:H8	54:5:483:U:H3	1.39	0.69
10:F:104:ALA:HB1	10:F:108:ARG:HH21	1.58	0.69
28:c:81:ASN:H	28:c:84:PHE:HB3	1.58	0.69
9:E:107:LEU:HD22	21:Q:46:ILE:HD12	1.75	0.68
52:3:224:G:H21	52:3:465:A:H62	1.39	0.68
54:5:660:A:N1	54:5:739:G:O6	2.26	0.68
54:5:815:G:O2'	54:5:817:U:OP2	2.10	0.68
54:5:1329:G:H2'	54:5:1330:A:H8	1.58	0.68
52:3:1076:U:H3	52:3:1149:G:H1	1.38	0.68
54:5:1405:U:H3	54:5:1445:G:H1	1.41	0.68
20:P:8:VAL:HG22	20:P:64:VAL:HG12	1.75	0.68
27:b:161:LYS:HD2	52:3:2627:U:H5''	1.75	0.68
46:u:48:GLY:O	52:3:2361:G:N2	2.24	0.68
52:3:1587:U:H2'	52:3:1588:A:C5	2.28	0.68
52:3:2053:G:O6	52:3:2630:U:O2	2.10	0.68
52:3:2175:U:H3	52:3:2179:A:H8	1.36	0.68
4:9:656:ARG:HH11	52:3:2669:G:H21	1.42	0.68
52:3:72:G:O2'	52:3:114:U:O2'	2.12	0.68
54:5:144:U:O2	54:5:149:G:N2	2.23	0.68
55:7:16:G:N2	55:7:60:U:O2	2.26	0.68
52:3:1007:C:O2'	52:3:1019:A:N3	2.26	0.68
52:3:2305:C:H3'	52:3:2326:G:H22	1.59	0.68
54:5:434:U:O2	54:5:493:A:N7	2.26	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:v:27:ARG:NH1	47:v:28:LYS:O	2.25	0.68
52:3:1084:C:H42	52:3:2759:G:H1	1.40	0.68
12:H:71:GLY:HA2	54:5:1225:A:H4'	1.74	0.68
15:K:86:ASN:HB2	15:K:118:VAL:HG23	1.75	0.68
18:N:67:LEU:HD21	18:N:74:ALA:HB3	1.75	0.68
39:n:8:ARG:HH12	53:4:5:G:H5''	1.59	0.68
52:3:1085:A:N6	52:3:1144:C:C2	2.61	0.68
31:f:57:HIS:HA	31:f:60:ILE:HG12	1.76	0.68
47:v:4:LYS:HD3	47:v:9:LEU:HD12	1.76	0.68
20:P:53:VAL:HG21	20:P:77:ILE:HG23	1.76	0.68
35:j:66:LYS:NZ	52:3:1699:A:OP1	2.26	0.68
49:x:19:CYS:HB2	49:x:42:CYS:HB2	1.76	0.68
52:3:802:U:H2'	52:3:803:G:H8	1.57	0.68
52:3:1754:U:H2'	52:3:1755:A:C8	2.29	0.68
52:3:2146:A:H2'	52:3:2147:G:C8	2.28	0.68
54:5:512:U:H2'	54:5:513:G:C8	2.29	0.68
15:K:81:PRO:O	15:K:112:ARG:NH1	2.27	0.68
43:r:1:MET:N	43:r:113:GLU:OE1	2.27	0.68
52:3:1876:G:O2'	52:3:1879:A:N6	2.26	0.68
52:3:2015:C:H2'	52:3:2016:G:H8	1.58	0.68
5:A:32:MET:HB3	5:A:54:ASP:HB2	1.74	0.67
52:3:1327:G:H1	52:3:1673:U:H3'	1.60	0.67
54:5:369:A:O2'	54:5:448:A:N7	2.25	0.67
54:5:709:A:H2'	54:5:710:G:C8	2.28	0.67
28:c:49:THR:HG21	52:3:478:G:H1'	1.76	0.67
29:d:29:PRO:HG3	29:d:165:GLU:HB3	1.75	0.67
43:r:88:ARG:O	52:3:1648:A:N6	2.27	0.67
52:3:449:C:O2'	52:3:1887:U:O2	2.12	0.67
52:3:2303:U:O2	52:3:2345:G:N2	2.22	0.67
26:a:235:PRO:HB2	52:3:2081:U:H5'	1.76	0.67
41:p:10:ARG:NH2	52:3:548:A:N3	2.42	0.67
52:3:159:G:H2'	52:3:160:A:C8	2.29	0.67
52:3:2483:C:N3	52:3:2537:G:N1	2.41	0.67
12:H:44:LYS:HE2	54:5:1265:U:H5''	1.77	0.67
14:J:34:VAL:O	54:5:681:U:O2'	2.12	0.67
24:T:46:ARG:HH22	54:5:719:G:H3'	1.58	0.67
43:r:78:GLN:NE2	52:3:1292:A:OP1	2.28	0.67
54:5:680:G:H1	54:5:704:U:H3	1.42	0.67
12:H:35:ARG:HD3	12:H:40:TYR:HD2	1.59	0.67
43:r:49:LYS:NZ	52:3:527:A:N1	2.42	0.67
47:v:32:ASN:OD1	47:v:34:GLN:NE2	2.26	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:O:2:ARG:NH1	19:O:5:ARG:O	2.27	0.67
25:W:101:LYS:HE2	25:W:104:GLU:HG3	1.76	0.67
52:3:247:U:O2	52:3:259:A:N7	2.28	0.67
54:5:320:G:N2	54:5:323:A:OP2	2.27	0.67
54:5:710:G:H2'	54:5:711:G:C8	2.30	0.67
54:5:1213:A:H2	54:5:1216:G:H21	1.40	0.67
6:B:8:ASN:HA	6:B:16:LYS:HG3	1.76	0.67
6:B:152:ILE:HG22	6:B:205:ILE:HA	1.77	0.67
52:3:437:A:H61	52:3:458:A:H61	1.41	0.67
33:h:72:VAL:HG11	33:h:104:ILE:HG12	1.77	0.67
52:3:1641:A:N6	52:3:1657:G:OP2	2.28	0.67
12:H:9:LEU:HD13	54:5:1124:U:H4'	1.77	0.67
16:L:113:ARG:NH1	54:5:942:G:OP2	2.28	0.67
21:Q:78:ASN:HD22	21:Q:83:GLN:HA	1.59	0.67
31:f:42:LYS:HA	31:f:46:ASP:HB2	1.77	0.67
52:3:1902:C:H2'	52:3:1903:A:C8	2.30	0.67
54:5:711:G:H2'	54:5:712:A:C8	2.30	0.67
54:5:1323:A:H1'	54:5:1349:A:N6	2.10	0.67
54:5:1328:C:H2'	54:5:1329:G:H8	1.60	0.67
8:D:79:THR:HG22	54:5:917:G:H1'	1.75	0.66
39:n:26:ASN:HD22	39:n:88:ASN:HD21	1.43	0.66
42:q:4:ILE:HB	42:q:39:LEU:HB3	1.76	0.66
52:3:1582:G:H2'	52:3:1583:G:C8	2.31	0.66
52:3:2700:C:O2'	52:3:2851:U:O2	2.11	0.66
54:5:928:G:H3'	54:5:930:A:H62	1.60	0.66
52:3:1790:U:O2	52:3:2615:G:N2	2.27	0.66
6:B:183:ALA:HA	6:B:209:MET:HG2	1.78	0.66
52:3:742:G:H1	52:3:759:U:H3	0.73	0.66
52:3:2124:A:O2'	52:3:2126:A:OP1	2.13	0.66
52:3:2502:G:H2'	52:3:2503:G:H8	1.59	0.66
5:A:82:ILE:HG22	5:A:175:LEU:HB3	1.77	0.66
30:e:16:VAL:HA	30:e:28:LYS:O	1.95	0.66
52:3:276:A:O2'	52:3:405:C:O2	2.10	0.66
52:3:420:A:H62	52:3:425:U:H3	1.42	0.66
52:3:2645:U:O4	52:3:2784:A:N7	2.28	0.66
54:5:1068:G:N2	54:5:1071:A:OP2	2.28	0.66
3:2:33:LYS:NZ	52:3:2534:G:O2'	2.24	0.66
31:f:47:ARG:HH12	31:f:51:LEU:HD13	1.61	0.66
53:4:104:C:H2'	53:4:105:A:C8	2.30	0.66
27:b:99:GLN:HE22	27:b:186:GLU:HB3	1.60	0.66
40:o:6:LYS:HD3	52:3:2880:A:H4'	1.78	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:410:G:N2	52:3:437:A:OP2	2.28	0.66
27:b:225:GLN:O	27:b:228:LYS:NZ	2.29	0.66
10:F:9:ARG:NH1	54:5:1320:A:N7	2.43	0.66
16:L:95:LEU:HD12	16:L:96:PRO:HD2	1.78	0.66
47:v:2:ALA:N	52:3:1392:G:N7	2.44	0.66
52:3:1244:A:H62	52:3:1265:G:H21	1.44	0.66
52:3:1755:A:H2'	52:3:1756:A:H8	1.61	0.66
52:3:2310:C:O2	52:3:2322:G:N2	2.18	0.66
4:9:20:ASP:OD1	4:9:109:GLN:NE2	2.29	0.66
5:A:108:ILE:HG22	5:A:110:GLN:H	1.60	0.66
52:3:990:G:H2'	52:3:991:G:H8	1.61	0.66
54:5:831:C:H2'	54:5:832:G:C8	2.31	0.66
14:J:46:LYS:NZ	54:5:688:G:O6	2.24	0.66
52:3:680:A:H2'	52:3:682:A:H8	1.61	0.66
32:g:103:LYS:HG2	32:g:106:MET:HG3	1.78	0.65
52:3:343:A:N6	52:3:1240:U:O2'	2.29	0.65
52:3:2306:A:N6	52:3:2326:G:O2'	2.28	0.65
52:3:2589:G:N2	52:3:2589:G:OP2	2.27	0.65
54:5:206:G:N2	54:5:209:A:OP2	2.28	0.65
54:5:294:A:H2'	54:5:295:G:C8	2.30	0.65
9:E:32:VAL:HG12	9:E:62:PHE:HE2	1.61	0.65
26:a:5:LYS:NZ	26:a:15:HIS:O	2.28	0.65
27:b:65:PRO:HG3	52:3:2795:C:H1'	1.78	0.65
27:b:155:SER:OG	52:3:2039:G:N2	2.29	0.65
30:e:94:GLY:HA2	30:e:163:LYS:HG2	1.77	0.65
54:5:135:A:H61	54:5:157:A:H3'	1.62	0.65
4:9:126:TYR:OH	4:9:400:GLN:NE2	2.28	0.65
10:F:47:ASP:O	10:F:51:GLN:NE2	2.29	0.65
30:e:100:ASN:OD1	30:e:107:ASN:ND2	2.30	0.65
52:3:1061:A:H2'	52:3:1062:A:H8	1.61	0.65
23:S:10:ARG:O	23:S:14:ASN:ND2	2.30	0.65
38:m:71:ASN:ND2	52:3:1320:C:O2'	2.27	0.65
48:w:37:GLU:O	48:w:38:LEU:HD23	1.95	0.65
52:3:274:A:OP2	52:3:294:G:N1	2.19	0.65
52:3:2310:C:N3	52:3:2322:G:N1	2.36	0.65
52:3:2861:G:O2'	52:3:2863:G:N7	2.27	0.65
54:5:947:U:OP1	54:5:967:C:N4	2.25	0.65
7:C:139:GLY:N	7:C:178:TYR:O	2.27	0.65
7:C:180:ARG:NH2	7:C:183:GLU:OE2	2.29	0.65
11:G:132:LYS:NZ	54:5:598:U:O3'	2.29	0.65
13:I:75:ARG:NH1	54:5:1229:A:OP1	2.28	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:841:C:O2'	52:3:2453:G:O2'	2.12	0.65
52:3:2297:G:H1	52:3:2351:U:H3	1.44	0.65
52:3:2517:A:N6	52:3:2588:U:O4	2.30	0.65
52:3:2796:C:O2'	52:3:2812:U:O2	2.14	0.65
54:5:892:G:N2	54:5:895:A:OP2	2.28	0.65
9:E:32:VAL:HG22	9:E:65:ASP:H	1.60	0.65
16:L:20:THR:HG22	16:L:27:LEU:HA	1.76	0.65
23:S:33:LYS:HG3	23:S:37:LYS:HE3	1.77	0.65
30:e:175:LYS:NZ	52:3:2537:G:OP2	2.29	0.65
37:l:89:ASN:ND2	55:7:3:G:OP1	2.30	0.65
40:o:34:ALA:HB3	40:o:87:SER:HB2	1.78	0.65
47:v:16:ASN:HB3	55:8:77:A:C8	2.31	0.65
4:9:627:ILE:O	52:3:1104:A:N6	2.29	0.65
11:G:98:TYR:OH	54:5:595:G:N2	2.26	0.65
15:K:112:ARG:HB3	15:K:119:GLY:HA2	1.78	0.65
26:a:48:ASN:ND2	52:3:1813:C:O2	2.30	0.65
29:d:170:LEU:HD13	29:d:175:LEU:HD23	1.78	0.65
31:f:141:LYS:NZ	31:f:143:THR:OG1	2.29	0.65
39:n:99:HIS:NE2	53:4:35:C:O2	2.30	0.65
43:r:69:LEU:HA	43:r:108:SER:O	1.97	0.65
52:3:101:C:H5''	52:3:102:A:H2'	1.77	0.65
47:v:25:THR:HG22	47:v:26:ARG:H	1.60	0.65
52:3:2146:A:H2'	52:3:2147:G:H8	1.62	0.65
54:5:71:A:H2'	54:5:72:A:C8	2.32	0.65
54:5:400:G:O2'	54:5:496:A:N6	2.30	0.65
19:O:52:TRP:HA	19:O:55:LYS:HE2	1.78	0.65
27:b:123:ILE:HG13	27:b:142:ARG:HE	1.62	0.65
52:3:812:G:H2'	52:3:813:G:H8	1.62	0.65
52:3:2812:U:O2'	52:3:2814:A:N7	2.29	0.65
54:5:169:G:N2	54:5:219:A:O2'	2.30	0.65
35:j:104:ARG:NH1	40:o:39:GLU:OE2	2.30	0.65
52:3:1027:U:O4	52:3:1198:G:O6	2.14	0.65
52:3:2235:A:H2'	52:3:2236:G:C8	2.32	0.65
54:5:33:A:H2'	54:5:34:A:C8	2.32	0.65
54:5:242:A:C4	54:5:277:G:N2	2.64	0.65
15:K:12:ARG:HH11	54:5:561:A:H3'	1.60	0.64
26:a:43:LYS:HD3	26:a:61:ARG:HB2	1.79	0.64
52:3:499:G:N2	52:3:502:A:OP2	2.30	0.64
6:B:181:LEU:HD11	54:5:1163:A:H2	1.62	0.64
7:C:96:ARG:HB2	7:C:99:ASN:HD22	1.62	0.64
8:D:91:LEU:HD13	8:D:105:ILE:HB	1.79	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:l:34:LEU:HD21	37:l:118:LEU:HD22	1.79	0.64
41:p:102:PRO:O	41:p:104:LYS:NZ	2.27	0.64
52:3:585:U:H2'	52:3:586:G:H8	1.60	0.64
52:3:984:C:O2	52:3:1020:G:O2'	2.15	0.64
52:3:1876:G:N2	52:3:1879:A:OP2	2.29	0.64
52:3:2764:U:H4'	52:3:2765:A:OP1	1.97	0.64
55:7:12:C:H2'	55:7:13:U:C6	2.33	0.64
55:8:67:C:H2'	55:8:68:G:H8	1.62	0.64
4:9:98:VAL:O	4:9:327:ARG:NH1	2.30	0.64
6:B:11:ARG:NH1	6:B:180:THR:O	2.30	0.64
19:O:19:ARG:NH2	54:5:225:U:O2'	2.26	0.64
36:k:125:HIS:ND1	36:k:145:SER:OG	2.29	0.64
52:3:14:U:O4	52:3:561:A:N7	2.30	0.64
52:3:780:G:N2	52:3:787:C:O2	2.30	0.64
52:3:2510:G:H5''	52:3:2511:A:H5''	1.80	0.64
53:4:31:G:O6	53:4:48:A:N6	2.31	0.64
55:8:12:C:H2'	55:8:13:U:C6	2.33	0.64
15:K:128:SER:OG	54:5:548:G:N3	2.30	0.64
16:L:43:LYS:HD2	54:5:1269:U:H4'	1.79	0.64
26:a:267:THR:OG1	52:3:1804:A:O2'	2.11	0.64
33:h:112:LEU:HG	33:h:114:ALA:H	1.62	0.64
39:n:89:VAL:HG23	39:n:116:PHE:HB3	1.79	0.64
41:p:2:ARG:NH2	52:3:482:G:OP1	2.30	0.64
52:3:674:G:H2'	52:3:675:U:C6	2.33	0.64
52:3:729:U:H3	52:3:803:G:H1	1.46	0.64
52:3:1976:A:O2'	52:3:1979:G:N3	2.31	0.64
52:3:2105:G:H2'	52:3:2106:G:H8	1.62	0.64
54:5:579:G:N2	54:5:756:A:OP2	2.24	0.64
17:M:26:ARG:NH1	17:M:43:CYS:SG	2.71	0.64
27:b:140:PRO:HG2	52:3:2587:U:H5'	1.79	0.64
32:g:85:GLY:HA3	32:g:89:ILE:HG13	1.80	0.64
46:u:88:PRO:HA	53:4:10:C:H3'	1.78	0.64
52:3:243:U:O2	52:3:262:G:N2	2.28	0.64
52:3:332:G:N2	52:3:375:U:O4	2.31	0.64
52:3:733:C:O2'	52:3:769:A:N6	2.30	0.64
52:3:2135:C:H2'	52:3:2136:A:H8	1.61	0.64
54:5:763:A:N6	54:5:810:U:N3	2.45	0.64
54:5:1112:U:O2	54:5:1128:G:N2	2.29	0.64
26:a:79:ILE:HD11	26:a:102:ALA:HB3	1.80	0.64
27:b:56:THR:HA	27:b:78:THR:HA	1.78	0.64
52:3:47:G:H5''	52:3:48:G:H5'	1.80	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1852:G:H2'	52:3:1853:G:C8	2.32	0.64
54:5:661:G:N2	54:5:723:C:O2'	2.31	0.64
54:5:944:A:O2'	54:5:1338:A:OP2	2.14	0.64
55:7:19:G:OP2	55:7:61:U:O2'	2.15	0.64
55:7:67:C:H2'	55:7:68:G:H8	1.62	0.64
6:B:182:ARG:HD3	6:B:210:ILE:H	1.62	0.64
12:H:51:GLU:HB3	12:H:54:LEU:HD12	1.80	0.64
38:m:2:SER:N	52:3:1692:A:O2'	2.27	0.64
52:3:556:U:H2'	52:3:557:G:H8	1.60	0.64
52:3:2718:C:H2'	52:3:2719:A:C8	2.33	0.64
54:5:1120:A:H5''	54:5:1121:U:H5'	1.78	0.64
43:r:110:ASN:ND2	43:r:116:GLU:OE2	2.30	0.64
47:v:2:ALA:HB1	47:v:4:LYS:HZ3	1.63	0.64
52:3:897:A:O2'	53:4:77:G:O3'	2.15	0.64
52:3:2849:G:N1	52:3:2875:U:N3	2.46	0.64
54:5:621:C:H2'	54:5:622:A:H8	1.63	0.64
54:5:662:G:H1'	54:5:730:G:H5'	1.80	0.64
54:5:882:U:O2'	54:5:1463:A:O2'	2.15	0.64
54:5:1237:G:H1	54:5:1248:U:H3	1.44	0.64
54:5:1471:C:H1'	54:5:1492:G:H22	1.62	0.64
55:8:19:G:OP2	55:8:61:U:O2'	2.15	0.64
26:a:73:ARG:HH21	26:a:123:ALA:HB2	1.63	0.64
36:k:40:LYS:HG3	52:3:867:G:H5''	1.80	0.64
44:s:44:PHE:O	44:s:48:TYR:HB2	1.97	0.64
52:3:164:A:N6	52:3:169:U:O2	2.30	0.64
52:3:667:A:H1'	52:3:2424:C:H5''	1.78	0.64
54:5:251:G:O6	54:5:262:G:O6	2.15	0.64
5:A:36:TYR:O	5:A:205:ASN:ND2	2.30	0.64
6:B:11:ARG:HG3	6:B:16:LYS:HG2	1.78	0.64
48:w:11:SER:HB3	48:w:15:LEU:HD12	1.81	0.64
52:3:455:G:H2'	52:3:456:G:C8	2.33	0.64
52:3:665:C:O2'	52:3:675:U:O2	2.13	0.64
52:3:1363:C:H2'	52:3:1364:A:C8	2.33	0.64
52:3:1914:G:O6	52:3:1930:U:O4	2.16	0.64
54:5:316:G:H2'	54:5:317:A:C8	2.32	0.64
54:5:407:A:H61	54:5:427:A:H62	1.45	0.64
54:5:709:A:H2'	54:5:710:G:H8	1.62	0.64
54:5:1407:A:O2'	54:5:1442:A:N1	2.32	0.64
4:9:274:VAL:HA	4:9:278:LEU:HD23	1.80	0.63
4:9:490:VAL:HG22	4:9:509:ILE:O	1.98	0.63
10:F:115:MET:HA	10:F:118:LYS:HE3	1.80	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:J:21:ASN:OD1	14:J:50:LYS:NZ	2.30	0.63
47:v:18:ARG:HD2	55:8:76:C:C5	2.32	0.63
52:3:974:C:H2'	52:3:975:G:C8	2.32	0.63
52:3:1725:G:O6	52:3:1731:G:N2	2.31	0.63
52:3:2007:U:H2'	52:3:2008:A:H8	1.61	0.63
53:4:31:G:N2	53:4:33:U:O4	2.29	0.63
54:5:372:G:H2'	54:5:373:A:H8	1.64	0.63
45:t:88:LYS:HB3	45:t:105:LYS:HG2	1.78	0.63
52:3:267:A:HO2'	52:3:465:A:HO2'	1.40	0.63
52:3:300:G:H2'	52:3:301:G:C8	2.33	0.63
43:r:87:PRO:HB3	52:3:1648:A:C5	2.33	0.63
46:u:55:ARG:HH21	52:3:2395:U:H4'	1.63	0.63
52:3:811:G:H21	52:3:811:G:P	2.22	0.63
54:5:169:G:H21	54:5:220:U:H5'	1.62	0.63
54:5:394:U:H2'	54:5:395:G:H8	1.63	0.63
25:W:109:LYS:HG2	25:W:119:VAL:HG13	1.81	0.63
26:a:159:GLN:HA	26:a:162:ARG:HH21	1.63	0.63
29:d:4:LEU:H	49:x:25:ILE:HD12	1.64	0.63
52:3:849:C:O2'	52:3:1255:G:N2	2.32	0.63
52:3:1350:A:N1	52:3:1361:U:O2'	2.31	0.63
54:5:50:U:O2	54:5:357:G:N2	2.32	0.63
54:5:1045:C:N3	55:7:35:G:O2'	2.31	0.63
13:I:46:LEU:HD13	13:I:79:LEU:HD23	1.79	0.63
51:z:8:ARG:HB2	51:z:51:LYS:HA	1.80	0.63
52:3:640:U:O2	52:3:658:G:O6	2.17	0.63
52:3:679:A:N6	52:3:2378:G:O4'	2.32	0.63
52:3:2823:A:O2'	52:3:2825:A:N7	2.27	0.63
54:5:421:G:H2'	54:5:422:A:C8	2.34	0.63
13:I:59:ARG:O	17:M:45:ARG:NH2	2.32	0.63
15:K:47:CYS:HB3	15:K:87:LEU:HD12	1.81	0.63
19:O:64:ARG:HD3	19:O:73:TRP:HZ2	1.64	0.63
37:l:26:TYR:O	37:l:67:ARG:NH1	2.31	0.63
40:o:9:LEU:HA	40:o:12:LEU:HB3	1.80	0.63
52:3:420:A:N7	52:3:425:U:O4	2.31	0.63
52:3:572:G:N2	52:3:588:G:O2'	2.29	0.63
52:3:1653:C:H2'	52:3:1654:G:C8	2.34	0.63
52:3:1923:A:OP2	52:3:1925:A:N6	2.30	0.63
52:3:2476:A:OP2	52:3:2484:A:N6	2.31	0.63
54:5:331:C:H2'	54:5:332:A:C8	2.33	0.63
4:9:132:ILE:HD12	4:9:256:VAL:HG22	1.81	0.63
36:k:42:ARG:NH2	52:3:842:U:OP2	2.31	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:566:G:OP1	52:3:594:G:N2	2.31	0.63
52:3:1306:G:H2'	52:3:1307:G:C8	2.34	0.63
52:3:1960:A:O2'	52:3:2567:C:O2	2.16	0.63
21:Q:51:ILE:HG13	21:Q:86:VAL:HG23	1.81	0.63
51:z:38:CYS:O	51:z:42:ARG:N	2.32	0.63
52:3:269:A:N6	52:3:463:U:O2'	2.32	0.63
52:3:707:C:H2'	52:3:708:C:C6	2.33	0.63
52:3:966:U:H2'	52:3:967:U:C6	2.33	0.63
52:3:1121:A:O2'	52:3:1122:G:N7	2.32	0.63
52:3:1837:C:H2'	52:3:1838:A:C8	2.34	0.63
52:3:2053:G:O6	52:3:2630:U:C2	2.52	0.63
54:5:370:A:O2'	54:5:448:A:OP2	2.15	0.63
5:A:53:ASN:O	5:A:55:HIS:ND1	2.31	0.63
26:a:190:ARG:NH1	26:a:274:SER:OG	2.30	0.63
34:i:26:LEU:HD13	34:i:31:LEU:HD13	1.81	0.63
43:r:57:ASN:HD21	52:3:529:G:H21	1.46	0.63
49:x:31:GLN:HB3	49:x:34:ILE:HD11	1.81	0.63
52:3:125:G:OP1	52:3:1404:C:O2'	2.17	0.63
54:5:316:G:H2'	54:5:317:A:H8	1.64	0.63
9:E:118:ILE:HG23	9:E:120:ALA:H	1.64	0.62
52:3:1495:A:H2'	52:3:1496:A:H8	1.64	0.62
52:3:1503:A:OP2	52:3:1540:G:N2	2.30	0.62
52:3:2455:G:H21	52:3:2457:U:H3'	1.64	0.62
54:5:1389:U:O2	54:5:1461:G:O6	2.17	0.62
29:d:132:ILE:O	29:d:151:GLY:CA	2.43	0.62
30:e:141:LYS:HB3	52:3:2754:U:H4'	1.80	0.62
50:y:6:ARG:HD2	52:3:2024:C:H4'	1.80	0.62
52:3:488:G:H21	52:3:493:A:H1'	1.63	0.62
52:3:509:G:H2'	52:3:510:G:C8	2.34	0.62
52:3:2820:G:N3	52:3:2887:A:O2'	2.27	0.62
53:4:42:G:N2	53:4:45:C:N3	2.38	0.62
54:5:169:G:H1	54:5:196:G:H22	1.48	0.62
54:5:304:U:H2'	54:5:305:A:H8	1.63	0.62
54:5:1062:C:H2'	54:5:1063:G:H8	1.63	0.62
54:5:1396:U:H3	54:5:1454:G:H1	1.47	0.62
54:5:1447:U:H2'	54:5:1448:A:H8	1.61	0.62
11:G:8:ILE:HD12	11:G:21:LYS:HZ2	1.63	0.62
27:b:146:SER:OG	52:3:2519:U:N3	2.26	0.62
35:j:2:VAL:HG21	35:j:33:ALA:HB3	1.81	0.62
45:t:9:LYS:HB3	45:t:77:PHE:HB3	1.80	0.62
52:3:512:G:N2	52:3:515:A:O4'	2.33	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1837:C:H2'	52:3:1838:A:H8	1.64	0.62
52:3:1886:C:H2'	52:3:1887:U:C6	2.33	0.62
54:5:711:G:H2'	54:5:712:A:H8	1.64	0.62
21:Q:94:ARG:HG3	21:Q:99:VAL:HG13	1.81	0.62
33:h:95:LYS:NZ	33:h:96:ILE:O	2.31	0.62
52:3:490:A:OP1	52:3:491:A:N6	2.31	0.62
52:3:604:A:O2'	52:3:606:G:OP2	2.17	0.62
52:3:899:A:H2'	52:3:900:G:C8	2.34	0.62
52:3:1387:A:OP2	52:3:1399:G:N2	2.33	0.62
52:3:1686:U:H3'	52:3:1687:G:C8	2.35	0.62
52:3:1790:U:H1'	52:3:2615:G:H21	1.63	0.62
52:3:2522:U:H2'	52:3:2523:C:H6	1.64	0.62
2:1:39:ARG:HD2	52:3:2358:U:H5''	1.82	0.62
2:1:54:ARG:NH1	52:3:868:C:O2'	2.32	0.62
13:I:46:LEU:HB3	13:I:79:LEU:HB3	1.80	0.62
19:O:55:LYS:O	54:5:223:G:N2	2.32	0.62
27:b:32:GLU:OE2	27:b:34:ASN:ND2	2.31	0.62
35:j:4:PHE:HB3	52:3:1703:A:H1'	1.80	0.62
36:k:8:SER:O	52:3:1273:U:O2'	2.18	0.62
38:m:105:PRO:HB2	43:r:40:PRO:HG3	1.81	0.62
54:5:448:A:N6	54:5:478:G:OP2	2.25	0.62
54:5:1044:G:H4'	54:5:1045:C:H5'	1.81	0.62
54:5:1225:A:H2	54:5:1345:G:H1'	1.63	0.62
54:5:1316:C:H2'	54:5:1317:A:C8	2.34	0.62
9:E:145:ARG:HH22	9:E:147:GLU:HB3	1.65	0.62
19:O:13:ILE:HG22	19:O:30:ILE:HB	1.80	0.62
52:3:602:U:H2'	52:3:1019:A:H61	1.63	0.62
52:3:2220:A:O2'	52:3:2222:C:N4	2.32	0.62
2:1:36:LYS:NZ	52:3:2359:G:O6	2.31	0.62
7:C:99:ASN:OD1	7:C:110:ARG:NH1	2.32	0.62
16:L:16:GLU:O	16:L:20:THR:HG23	1.99	0.62
36:k:88:LEU:HD22	52:3:637:U:H2'	1.82	0.62
43:r:16:LYS:NZ	52:3:2018:U:OP2	2.33	0.62
52:3:2074:G:H3'	52:3:2075:U:H4'	1.81	0.62
52:3:2159:U:H2'	52:3:2160:U:C6	2.34	0.62
54:5:688:G:H4'	54:5:794:C:H4'	1.82	0.62
54:5:708:A:H2'	54:5:709:A:C8	2.34	0.62
27:b:135:HIS:NE2	52:3:1705:U:O2	2.33	0.62
28:c:185:LYS:O	52:3:650:G:N2	2.33	0.62
46:u:85:LYS:NZ	46:u:93:THR:OG1	2.30	0.62
52:3:1244:A:N6	52:3:1265:G:N2	2.46	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:9:124:SER:OG	4:9:130:ARG:NH2	2.33	0.62
5:A:109:THR:OG1	5:A:161:LYS:O	2.17	0.62
6:B:10:LEU:HD11	54:5:1164:U:H4'	1.82	0.62
8:D:180:THR:O	54:5:8:G:O2'	2.18	0.62
9:E:113:ALA:HA	9:E:121:ARG:HH12	1.64	0.62
26:a:44:HIS:NE2	52:3:1823:U:OP2	2.33	0.62
26:a:135:SER:OG	26:a:197:ARG:NH2	2.32	0.62
33:h:88:ASN:HA	52:3:1111:C:H1'	1.82	0.62
52:3:450:C:H2'	52:3:451:A:H8	1.64	0.62
52:3:2175:U:C2	52:3:2179:A:N7	2.68	0.62
5:A:106:ALA:HB1	5:A:166:VAL:HG22	1.82	0.62
7:C:76:ARG:HA	7:C:79:LEU:HD12	1.80	0.62
17:M:24:CYS:HB2	17:M:39:VAL:HA	1.80	0.62
37:l:39:GLY:HA2	37:l:97:VAL:O	2.00	0.62
52:3:312:U:H2'	52:3:313:G:C8	2.34	0.62
52:3:625:G:H2'	52:3:626:A:C8	2.35	0.62
52:3:905:U:H3	52:3:946:A:H61	1.46	0.62
52:3:1261:U:H2'	52:3:1262:G:H8	1.64	0.62
52:3:2451:C:H2'	52:3:2452:G:C8	2.35	0.62
54:5:87:G:H2'	54:5:88:A:H8	1.64	0.62
54:5:779:A:H62	54:5:797:G:H21	1.47	0.62
54:5:1009:G:N2	54:5:1012:A:OP2	2.33	0.62
54:5:1046:A:N6	54:5:1175:C:O2	2.33	0.62
4:9:656:ARG:O	52:3:2668:A:N6	2.32	0.61
51:z:24:ASN:ND2	52:3:2293:C:OP2	2.33	0.61
52:3:914:G:H22	52:3:936:G:H2'	1.63	0.61
52:3:2004:G:H2'	52:3:2005:G:C8	2.34	0.61
52:3:59:C:H2'	52:3:60:G:C8	2.35	0.61
52:3:230:G:H1	52:3:455:G:H1'	1.65	0.61
52:3:2828:C:H3'	52:3:2829:G:H21	1.65	0.61
54:5:305:A:H2'	54:5:306:G:C8	2.35	0.61
54:5:946:G:O2'	54:5:965:C:O2'	2.18	0.61
54:5:1222:U:O2	54:5:1264:G:O6	2.17	0.61
54:5:1359:C:H2'	54:5:1360:G:H8	1.64	0.61
54:5:1359:C:H2'	54:5:1360:G:C8	2.35	0.61
3:2:4:ARG:NE	52:3:2474:C:OP1	2.34	0.61
29:d:39:GLY:O	52:3:2315:G:N1	2.33	0.61
31:f:25:TYR:O	52:3:2100:G:O2'	2.18	0.61
45:t:49:ASP:HB2	45:t:60:THR:HG22	1.81	0.61
51:z:10:GLY:HA2	51:z:18:ASN:HB2	1.82	0.61
52:3:118:G:OP2	52:3:120:A:O2'	2.12	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:195:A:O2'	52:3:713:C:O2	2.18	0.61
52:3:2465:U:H3	52:3:2502:G:H1	1.46	0.61
52:3:2698:U:OP1	52:3:2876:G:N2	2.31	0.61
26:a:270:MET:HA	26:a:275:THR:HG21	1.82	0.61
36:k:20:LEU:HG	36:k:32:SER:HB2	1.82	0.61
46:u:39:LYS:HB3	46:u:43:GLN:HE22	1.65	0.61
52:3:2274:A:OP1	52:3:2281:A:N6	2.34	0.61
52:3:2867:U:H2'	52:3:2868:G:C8	2.35	0.61
54:5:1446:A:H2'	54:5:1447:U:C6	2.35	0.61
4:9:31:LEU:HD11	4:9:40:ILE:HG21	1.80	0.61
11:G:102:GLU:HG2	11:G:103:LYS:HD3	1.81	0.61
18:N:52:GLY:O	18:N:56:LYS:HG2	2.01	0.61
47:v:53:ARG:NH2	52:3:434:G:N7	2.47	0.61
52:3:107:C:H2'	52:3:108:G:C8	2.36	0.61
52:3:1473:C:O2	52:3:1580:G:N2	2.33	0.61
52:3:1746:U:H3	52:3:1753:G:H1	1.46	0.61
52:3:1999:G:N2	52:3:2003:C:O2	2.33	0.61
54:5:331:C:O2'	54:5:1408:A:N3	2.32	0.61
54:5:334:A:N1	54:5:347:G:O6	2.33	0.61
54:5:1049:G:O6	54:5:1174:U:O4	2.19	0.61
8:D:80:THR:OG1	8:D:83:GLY:O	2.18	0.61
26:a:43:LYS:HD2	52:3:727:C:H5''	1.81	0.61
43:r:82:MET:SD	43:r:84:ARG:NH2	2.73	0.61
52:3:780:G:O2'	52:3:783:G:O2'	2.18	0.61
52:3:1335:A:OP2	52:3:1640:G:N2	2.33	0.61
52:3:1451:A:H2'	52:3:1452:G:H8	1.64	0.61
52:3:2439:U:O2	52:3:2441:A:N6	2.33	0.61
4:9:216:GLU:HG3	25:W:82:LEU:HD23	1.82	0.61
27:b:208:ARG:HH12	52:3:2780:U:H5''	1.65	0.61
33:h:33:GLY:HA2	33:h:36:THR:HG22	1.81	0.61
52:3:59:C:H2'	52:3:60:G:H8	1.65	0.61
52:3:1071:G:O6	52:3:1154:U:O4	2.19	0.61
54:5:945:U:H3	54:5:1206:G:H1	1.48	0.61
54:5:955:U:H4'	54:5:956:U:H5''	1.83	0.61
54:5:1230:G:H2'	54:5:1233:G:H21	1.64	0.61
4:9:7:LEU:HD23	4:9:282:VAL:HB	1.82	0.61
4:9:332:VAL:HG22	4:9:368:ARG:HA	1.81	0.61
8:D:143:ARG:NH2	54:5:857:U:OP1	2.33	0.61
22:R:18:LYS:HG3	22:R:33:THR:HB	1.83	0.61
23:S:34:ASN:HA	23:S:37:LYS:HD2	1.82	0.61
25:W:56:THR:HG23	25:W:98:GLN:HB2	1.83	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:a:183:GLN:NE2	26:a:184:LEU:O	2.33	0.61
37:l:65:TRP:HB2	37:l:105:GLU:HG3	1.82	0.61
39:n:69:ASN:N	53:4:48:A:OP1	2.33	0.61
46:u:86:PHE:CE1	46:u:94:ARG:HG3	2.36	0.61
52:3:173:C:H2'	52:3:174:A:H8	1.66	0.61
52:3:1028:C:H2'	52:3:1029:A:C8	2.36	0.61
52:3:2119:A:N7	55:8:57:C:N4	2.48	0.61
52:3:2840:U:H2'	52:3:2841:A:C8	2.36	0.61
54:5:852:G:H1	54:5:863:A:H3'	1.65	0.61
1:0:11:LYS:HA	1:0:14:LYS:HD2	1.83	0.61
11:G:11:HIS:NE2	54:5:821:U:O2	2.33	0.61
24:T:38:LYS:NZ	54:5:1500:G:OP1	2.31	0.61
26:a:69:ILE:HG23	26:a:109:ILE:HA	1.83	0.61
36:k:125:HIS:HD1	36:k:145:SER:HG	1.47	0.61
47:v:24:ILE:HD13	52:3:205:C:OP1	2.01	0.61
52:3:159:G:H2'	52:3:160:A:H8	1.66	0.61
52:3:247:U:O2	52:3:259:A:C5	2.54	0.61
52:3:2105:G:H2'	52:3:2106:G:C8	2.35	0.61
52:3:2308:U:H2'	52:3:2309:A:H8	1.66	0.61
54:5:365:U:O2	54:5:388:G:N2	2.32	0.61
54:5:472:G:H2'	54:5:473:A:H8	1.65	0.61
54:5:824:U:H2'	54:5:864:U:H3	1.65	0.61
10:F:143:MET:O	10:F:147:ASN:ND2	2.29	0.61
26:a:27:THR:HG22	26:a:28:THR:HG23	1.82	0.61
35:j:106:LEU:HD11	35:j:115:LEU:HD21	1.83	0.61
36:k:24:HIS:ND1	52:3:846:U:OP1	2.33	0.61
52:3:165:U:O2'	52:3:168:A:N6	2.33	0.61
52:3:498:C:N4	52:3:499:G:O6	2.34	0.61
52:3:2031:C:H2'	52:3:2032:G:H8	1.66	0.61
52:3:2104:A:H2'	52:3:2105:G:C8	2.35	0.61
52:3:2223:C:H2'	52:3:2224:A:H8	1.65	0.61
52:3:2425:C:H2'	52:3:2426:A:H8	1.66	0.61
52:3:2505:A:H4'	52:3:2506:C:H5'	1.82	0.61
54:5:710:G:H2'	54:5:711:G:H8	1.66	0.61
8:D:142:GLY:O	8:D:148:ARG:HA	2.01	0.60
28:c:7:ILE:HA	28:c:13:PHE:HA	1.83	0.60
32:g:44:LEU:HD22	32:g:51:ILE:HG23	1.83	0.60
34:i:116:ARG:HD2	52:3:590:U:H5''	1.83	0.60
52:3:145:A:H2'	52:3:146:G:H8	1.65	0.60
52:3:163:A:N3	52:3:2216:U:O2'	2.28	0.60
52:3:761:G:H3'	52:3:1460:G:H4'	1.82	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1305:G:H2'	52:3:1306:G:C8	2.36	0.60
52:3:1327:G:O2'	52:3:1674:A:N6	2.34	0.60
52:3:2383:G:N2	52:3:2386:A:OP2	2.26	0.60
52:3:2516:G:H1	52:3:2588:U:H3	0.75	0.60
54:5:1246:A:H2'	54:5:1247:G:C8	2.36	0.60
54:5:1487:U:H2'	54:5:1488:A:H8	1.66	0.60
6:B:110:GLY:O	6:B:207:ARG:NH1	2.34	0.60
26:a:61:ARG:HG3	26:a:223:GLY:HA3	1.82	0.60
33:h:89:ALA:HA	33:h:132:GLY:HA2	1.83	0.60
39:n:34:LYS:HD3	39:n:102:ILE:HD11	1.82	0.60
48:w:67:GLU:HG2	48:w:71:LYS:HB2	1.84	0.60
52:3:625:G:H2'	52:3:626:A:H8	1.66	0.60
52:3:1679:U:H4'	52:3:1680:A:H5'	1.83	0.60
52:3:1867:G:H2'	52:3:1868:A:C8	2.37	0.60
52:3:2054:C:H2'	52:3:2055:A:C8	2.36	0.60
52:3:2381:G:H2'	52:3:2382:A:H8	1.66	0.60
52:3:2407:G:H2'	52:3:2408:G:C8	2.36	0.60
52:3:2502:G:H2'	52:3:2503:G:C8	2.36	0.60
53:4:3:U:H2'	53:4:4:G:H8	1.67	0.60
54:5:1288:C:H2'	54:5:1289:U:H6	1.65	0.60
20:P:28:SER:OG	20:P:41:ARG:NH1	2.34	0.60
26:a:37:LEU:HA	26:a:68:ILE:HD12	1.82	0.60
26:a:188:GLU:HA	26:a:280:ARG:O	2.01	0.60
32:g:53:VAL:HB	52:3:1119:A:C6	2.37	0.60
50:y:38:LEU:HB3	50:y:41:ARG:HG3	1.83	0.60
52:3:2299:U:O2	52:3:2382:A:O2'	2.19	0.60
52:3:2420:A:H2'	52:3:2421:U:O4'	2.00	0.60
52:3:2521:A:H2'	52:3:2522:U:H6	1.66	0.60
52:3:2716:U:H2'	52:3:2717:G:H8	1.65	0.60
54:5:818:A:H2'	54:5:819:G:C8	2.36	0.60
4:9:551:LEU:HB3	4:9:683:ILE:HG21	1.82	0.60
34:i:120:ARG:NH1	52:3:562:C:O2'	2.34	0.60
52:3:1414:C:H2'	52:3:1415:A:C8	2.36	0.60
52:3:2425:C:H2'	52:3:2426:A:C8	2.36	0.60
54:5:590:G:H2'	54:5:591:A:C8	2.35	0.60
54:5:732:A:H2'	54:5:733:A:H8	1.66	0.60
54:5:733:A:H2'	54:5:734:A:H8	1.67	0.60
4:9:224:GLN:NE2	4:9:228:ASP:OD2	2.35	0.60
6:B:117:ARG:NH2	6:B:190:GLU:OE1	2.35	0.60
26:a:40:THR:OG1	26:a:65:LYS:NZ	2.35	0.60
37:l:82:ARG:NH1	52:3:2259:G:OP1	2.34	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:546:U:H3'	52:3:547:G:C8	2.36	0.60
54:5:318:C:N4	54:5:325:A:H62	1.96	0.60
54:5:1133:A:N7	54:5:1155:A:N6	2.49	0.60
4:9:313:LYS:HB2	4:9:325:PHE:HB2	1.84	0.60
26:a:47:ARG:HA	26:a:53:ILE:HA	1.83	0.60
28:c:33:PRO:HB2	28:c:111:ALA:HB2	1.83	0.60
30:e:46:PHE:HA	30:e:55:ILE:HG22	1.84	0.60
54:5:128:A:O2'	54:5:198:A:N1	2.35	0.60
54:5:1164:U:H3'	54:5:1165:G:H8	1.66	0.60
15:K:44:ARG:NH1	54:5:358:G:OP1	2.34	0.60
27:b:40:LYS:O	27:b:48:SER:HA	2.01	0.60
48:w:2:THR:OG1	48:w:3:VAL:N	2.34	0.60
52:3:738:U:O2	52:3:763:G:O6	2.19	0.60
52:3:897:A:N3	53:4:77:G:O2'	2.35	0.60
52:3:1428:U:H2'	52:3:1429:G:C8	2.35	0.60
54:5:149:G:H2'	54:5:150:A:C8	2.37	0.60
54:5:1215:U:H3'	54:5:1216:G:H8	1.66	0.60
4:9:112:VAL:HG23	4:9:114:PRO:HD3	1.83	0.60
15:K:87:LEU:HD11	15:K:93:THR:HG22	1.83	0.60
30:e:141:LYS:NZ	52:3:2755:G:OP1	2.28	0.60
45:t:16:LYS:NZ	52:3:342:G:O2'	2.34	0.60
52:3:984:C:H2'	52:3:985:A:C8	2.37	0.60
54:5:1389:U:H2'	54:5:1390:G:H8	1.66	0.60
54:5:1413:G:H1	54:5:1438:U:H3	1.47	0.60
3:2:31:LYS:HZ3	52:3:2486:A:H5'	1.67	0.60
4:9:144:PHE:HE2	4:9:161:PRO:HB3	1.67	0.60
9:E:110:GLN:O	9:E:114:LYS:N	2.35	0.60
27:b:56:THR:O	40:o:3:LYS:NZ	2.32	0.60
27:b:142:ARG:NH2	52:3:2005:G:OP1	2.33	0.60
52:3:2259:G:O2'	52:3:2457:U:O2	2.20	0.60
54:5:1098:C:H2'	54:5:1099:G:H8	1.67	0.60
54:5:1212:C:O2'	54:5:1274:G:N2	2.33	0.60
35:j:21:ILE:HA	35:j:41:VAL:HG12	1.84	0.60
43:r:128:ARG:HH21	52:3:580:U:H5'	1.67	0.60
50:y:2:ALA:N	52:3:2585:A:N3	2.50	0.60
52:3:63:U:H3	52:3:97:A:H1'	1.67	0.60
52:3:484:U:H3'	52:3:485:A:H8	1.67	0.60
52:3:697:U:H2'	52:3:698:A:H8	1.66	0.60
52:3:1578:A:C5	52:3:1579:G:H1'	2.37	0.60
52:3:2745:G:H2'	52:3:2746:A:H8	1.66	0.60
54:5:945:U:H2'	54:5:946:G:H8	1.67	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:2:11:CYS:SG	3:2:12:LYS:N	2.75	0.59
52:3:652:U:H2'	52:3:653:G:C8	2.35	0.59
52:3:2307:G:O6	52:3:2325:U:O2	2.20	0.59
53:4:60:C:H2'	53:4:61:A:H8	1.67	0.59
54:5:354:U:H2'	54:5:355:A:C8	2.37	0.59
54:5:831:C:H2'	54:5:832:G:H8	1.67	0.59
11:G:24:ASN:ND2	54:5:823:C:O2	2.35	0.59
13:I:16:LEU:HD21	13:I:28:THR:HG22	1.84	0.59
22:R:25:GLN:O	22:R:26:GLU:HG2	2.02	0.59
27:b:61:LYS:NZ	52:3:2835:G:OP1	2.28	0.59
28:c:141:LYS:NZ	52:3:353:G:OP1	2.33	0.59
41:p:46:TYR:OH	41:p:50:ARG:NH2	2.35	0.59
44:s:2:ASP:HA	52:3:146:G:H4'	1.83	0.59
45:t:81:ALA:CB	45:t:83:GLN:H	2.11	0.59
52:3:746:G:H2'	52:3:747:A:H8	1.67	0.59
54:5:641:U:H2'	54:5:642:A:H8	1.67	0.59
9:E:145:ARG:NH1	11:G:61:GLU:OE2	2.35	0.59
26:a:222:ARG:NH1	52:3:1829:U:OP1	2.34	0.59
28:c:4:LEU:HB2	28:c:20:LEU:HD11	1.84	0.59
31:f:18:VAL:HG11	31:f:42:LYS:HG3	1.83	0.59
37:l:15:VAL:HB	37:l:41:TRP:NE1	2.17	0.59
38:m:111:THR:OG1	38:m:113:MET:SD	2.60	0.59
52:3:1554:A:N6	52:3:1576:G:O2'	2.35	0.59
52:3:1755:A:H2'	52:3:1756:A:C8	2.38	0.59
52:3:2323:U:H2'	52:3:2324:A:C8	2.37	0.59
52:3:2816:A:H2'	52:3:2817:G:H8	1.66	0.59
53:4:22:G:N1	53:4:57:G:O6	2.35	0.59
53:4:74:G:H1	53:4:91:A:N6	2.01	0.59
53:4:95:G:H2'	53:4:96:G:C8	2.38	0.59
54:5:334:A:H2	54:5:347:G:N1	1.95	0.59
54:5:572:A:O2'	54:5:876:C:O2	2.19	0.59
54:5:603:U:O4	54:5:630:G:O6	2.20	0.59
54:5:1055:G:N2	54:5:1165:G:O2'	2.35	0.59
54:5:1237:G:N2	54:5:1248:U:O2	2.31	0.59
54:5:1505:G:H2'	54:5:1506:A:C8	2.36	0.59
11:G:18:LEU:HD22	11:G:41:LYS:HE2	1.83	0.59
28:c:183:LEU:HD22	28:c:203:VAL:HG12	1.83	0.59
30:e:106:LEU:HD11	30:e:126:VAL:HG21	1.84	0.59
52:3:1055:A:N3	52:3:1056:A:N6	2.49	0.59
52:3:2253:U:H5''	52:3:2254:G:H5'	1.82	0.59
52:3:2404:G:H2'	52:3:2405:G:H8	1.68	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:311:A:HO2'	54:5:326:C:HO2'	1.51	0.59
54:5:688:G:H22	54:5:692:A:H3'	1.66	0.59
14:J:10:SER:HA	14:J:72:MET:HA	1.84	0.59
47:v:21:SER:OG	52:3:2086:U:H4'	2.03	0.59
52:3:1436:C:H2'	52:3:1437:A:H8	1.66	0.59
52:3:2031:C:H2'	52:3:2032:G:C8	2.37	0.59
52:3:2224:A:H2'	52:3:2225:G:H8	1.67	0.59
5:A:93:LYS:HE3	5:A:109:THR:HB	1.85	0.59
7:C:159:GLU:HA	7:C:171:ASN:HB3	1.83	0.59
27:b:24:LEU:HD12	27:b:25:PRO:HD2	1.85	0.59
42:q:39:LEU:HA	42:q:50:LEU:HD23	1.84	0.59
44:s:3:VAL:HG13	44:s:5:ASN:H	1.68	0.59
51:z:42:ARG:HH11	52:3:679:A:H62	1.51	0.59
52:3:1442:G:H2'	52:3:1443:A:C8	2.38	0.59
52:3:2359:G:H22	52:3:2373:G:H2'	1.66	0.59
54:5:334:A:C2	54:5:347:G:N1	2.61	0.59
54:5:631:C:H2'	54:5:632:A:H8	1.68	0.59
54:5:1487:U:H2'	54:5:1488:A:C8	2.38	0.59
4:9:11:ARG:NH1	4:9:278:LEU:O	2.35	0.59
4:9:150:SER:OG	4:9:154:ARG:NH2	2.34	0.59
26:a:82:THR:OG1	26:a:120:LYS:NZ	2.33	0.59
28:c:30:LYS:HE2	52:3:633:G:H5''	1.83	0.59
44:s:60:ARG:NH2	52:3:1367:G:N7	2.50	0.59
52:3:585:U:H2'	52:3:586:G:C8	2.37	0.59
52:3:2460:C:H2'	52:3:2461:A:H8	1.68	0.59
54:5:210:G:H2'	54:5:211:G:H8	1.66	0.59
4:9:190:LYS:HG2	4:9:192:GLU:HG2	1.85	0.59
8:D:208:VAL:HB	8:D:212:ARG:HD3	1.85	0.59
13:I:58:ILE:HA	13:I:68:ARG:HG2	1.84	0.59
40:o:62:GLU:HB2	40:o:81:ILE:HD11	1.84	0.59
52:3:47:G:H2'	52:3:184:A:N6	2.18	0.59
52:3:1727:U:O4	52:3:1983:U:O2'	2.21	0.59
52:3:1834:U:H5'	52:3:1978:U:H5''	1.84	0.59
52:3:2850:G:H2'	52:3:2851:U:H6	1.68	0.59
54:5:646:A:H2'	54:5:647:U:C6	2.38	0.59
54:5:1328:C:H2'	54:5:1329:G:C8	2.37	0.59
4:9:525:ILE:HG13	4:9:530:ILE:HG22	1.84	0.59
11:G:93:PRO:HB2	54:5:872:C:H5'	1.85	0.59
26:a:64:ARG:HG2	26:a:90:PRO:HB2	1.84	0.59
41:p:45:ALA:O	41:p:49:ARG:HG3	2.03	0.59
52:3:182:C:H2'	52:3:183:A:O4'	2.03	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:276:A:N6	52:3:293:G:N3	2.51	0.59
52:3:421:A:N6	52:3:424:G:OP2	2.31	0.59
52:3:1441:A:H2'	52:3:1442:G:C8	2.38	0.59
53:4:58:C:H2'	53:4:59:A:C8	2.37	0.59
54:5:316:G:O2'	54:5:1410:A:O2'	2.19	0.59
54:5:943:C:H2'	54:5:944:A:C8	2.38	0.59
54:5:1384:A:H2'	54:5:1385:A:H8	1.68	0.59
55:7:63:U:H2'	55:7:64:G:H8	1.68	0.59
55:8:29:C:H2'	55:8:30:G:H8	1.68	0.59
6:B:178:LEU:N	54:5:1099:G:OP1	2.36	0.59
13:I:92:SER:HA	13:I:95:ARG:HH22	1.68	0.59
20:P:25:GLN:HE21	20:P:27:GLU:HG3	1.68	0.59
23:S:12:ARG:O	23:S:16:LYS:NZ	2.36	0.59
29:d:9:GLN:O	29:d:14:LYS:NZ	2.28	0.59
52:3:2865:U:H2'	52:3:2866:A:C8	2.38	0.59
54:5:1043:U:O2'	54:5:1046:A:OP1	2.13	0.59
4:9:339:VAL:HG23	4:9:348:GLU:HB2	1.85	0.58
4:9:489:GLU:HG2	4:9:509:ILE:O	2.02	0.58
11:G:39:LYS:NZ	54:5:589:U:OP2	2.36	0.58
18:N:29:LEU:HB3	18:N:60:ARG:HH21	1.68	0.58
32:g:77:LYS:HE3	52:3:1143:U:H4'	1.83	0.58
40:o:11:ASP:HA	40:o:14:GLU:HB3	1.85	0.58
43:r:78:GLN:OE1	52:3:26:G:N2	2.35	0.58
47:v:32:ASN:HB2	52:3:433:A:H5''	1.85	0.58
52:3:224:G:N1	52:3:464:A:OP2	2.35	0.58
52:3:225:A:OP2	52:3:462:C:N4	2.36	0.58
52:3:580:U:OP1	52:3:1249:A:O2'	2.17	0.58
52:3:1014:G:H2'	52:3:1015:G:C8	2.38	0.58
52:3:1028:C:H2'	52:3:1029:A:H8	1.68	0.58
52:3:1114:C:H2'	52:3:1115:G:C8	2.38	0.58
52:3:1340:U:O2	52:3:1367:G:N2	2.35	0.58
52:3:2599:C:N4	52:3:2600:G:O6	2.36	0.58
12:H:44:LYS:NZ	54:5:1266:U:OP1	2.36	0.58
20:P:4:ASN:ND2	54:5:180:C:O2	2.36	0.58
26:a:37:LEU:HD12	26:a:108:TYR:HD2	1.68	0.58
52:3:844:G:H1'	52:3:1284:A:H1'	1.84	0.58
52:3:2684:G:H2'	52:3:2685:A:C8	2.38	0.58
54:5:372:G:H2'	54:5:373:A:C8	2.37	0.58
54:5:864:U:H4'	54:5:865:U:H3'	1.85	0.58
54:5:1279:G:O2'	54:5:1306:A:N6	2.36	0.58
55:7:29:C:H2'	55:7:30:G:H8	1.68	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:29:LEU:HD11	52:3:2428:C:H3'	1.85	0.58
4:9:479:SER:HB3	4:9:481:ARG:CZ	2.33	0.58
34:i:88:LYS:NZ	52:3:2776:U:OP1	2.28	0.58
52:3:1227:C:H2'	52:3:1228:G:C8	2.37	0.58
52:3:1683:G:H2'	52:3:1684:A:H8	1.68	0.58
52:3:1925:A:O2'	52:3:1927:C:N4	2.36	0.58
52:3:2584:G:H5'	52:3:2586:G:C8	2.38	0.58
54:5:242:A:C5	54:5:277:G:N2	2.71	0.58
54:5:368:C:N4	54:5:384:G:OP2	2.30	0.58
55:7:70:G:H2'	55:7:71:A:C8	2.38	0.58
55:8:63:U:H2'	55:8:64:G:H8	1.68	0.58
4:9:245:ARG:NH2	4:9:276:ASP:O	2.37	0.58
4:9:482:GLU:HG2	4:9:551:LEU:HD12	1.85	0.58
11:G:90:ILE:H	11:G:139:ALA:HA	1.68	0.58
27:b:5:GLY:CA	27:b:207:ILE:O	2.52	0.58
36:k:10:PRO:HD3	52:3:1274:A:H5'	1.85	0.58
52:3:881:A:N6	52:3:968:U:O2'	2.35	0.58
52:3:1054:U:OP1	52:3:1070:U:O2'	2.14	0.58
52:3:1072:A:H2'	52:3:1073:A:H8	1.68	0.58
54:5:1258:U:H2'	54:5:1259:G:C8	2.38	0.58
54:5:1380:G:N2	54:5:1493:A:N3	2.51	0.58
54:5:1410:A:H2'	54:5:1411:A:C8	2.39	0.58
5:A:83:LEU:H	5:A:176:LEU:HA	1.66	0.58
10:F:144:ALA:HB1	10:F:148:LYS:HE2	1.86	0.58
29:d:92:ARG:NH1	53:4:41:C:O2	2.37	0.58
33:h:130:GLN:O	52:3:1097:G:N2	2.36	0.58
34:i:117:LEU:O	34:i:121:TRP:N	2.35	0.58
52:3:53:G:N1	52:3:121:U:O2'	2.34	0.58
52:3:226:A:H61	52:3:236:G:H1'	1.68	0.58
52:3:341:G:H21	52:3:364:A:H61	0.70	0.58
52:3:1227:C:H2'	52:3:1228:G:H8	1.69	0.58
52:3:1229:U:H2'	52:3:1230:U:C6	2.38	0.58
52:3:1919:A:H1'	54:5:1469:G:H21	1.67	0.58
52:3:2059:G:O6	52:3:2625:U:O4	2.21	0.58
52:3:2499:U:H5''	52:3:2578:A:H5'	1.84	0.58
54:5:164:C:H2'	54:5:165:A:H8	1.68	0.58
54:5:228:G:H21	54:5:259:A:H2	1.51	0.58
54:5:1329:G:H2'	54:5:1330:A:C8	2.39	0.58
11:G:99:ARG:NH1	11:G:103:LYS:O	2.33	0.58
12:H:110:LYS:HB3	54:5:1108:A:H5'	1.85	0.58
27:b:117:ARG:NH2	52:3:2732:A:OP1	2.37	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:d:57:LEU:HA	29:d:60:ILE:HG22	1.85	0.58
37:l:13:HIS:CE1	52:3:990:G:H4'	2.39	0.58
41:p:94:LEU:O	41:p:98:ALA:N	2.37	0.58
46:u:26:ASN:HB2	52:3:2286:A:H5''	1.85	0.58
47:v:14:TYR:HE2	52:3:192:U:H5''	1.69	0.58
52:3:755:C:H2'	52:3:756:A:C8	2.39	0.58
52:3:772:C:H2'	52:3:773:G:C8	2.37	0.58
52:3:1244:A:N6	52:3:1265:G:H21	2.01	0.58
52:3:1288:C:H2'	52:3:1289:G:C8	2.39	0.58
52:3:2154:A:H2'	52:3:2155:G:H8	1.69	0.58
54:5:58:G:H2'	54:5:59:C:C6	2.38	0.58
54:5:637:A:H2'	54:5:638:A:C8	2.38	0.58
54:5:747:C:H2'	54:5:748:U:C6	2.38	0.58
54:5:941:A:H2'	54:5:942:G:C8	2.39	0.58
18:N:45:LYS:HB2	54:5:665:G:H4'	1.86	0.58
37:l:13:HIS:N	52:3:947:A:H62	2.02	0.58
48:w:17:LYS:HE2	48:w:21:LYS:HE2	1.85	0.58
52:3:333:A:N1	52:3:356:A:O2'	2.32	0.58
52:3:742:G:N2	52:3:759:U:O2	2.35	0.58
52:3:865:A:N1	52:3:2453:G:O2'	2.36	0.58
52:3:1100:U:O2	52:3:1108:A:N6	2.36	0.58
52:3:2127:G:H2'	52:3:2128:G:O4'	2.03	0.58
55:8:70:G:H2'	55:8:71:A:C8	2.38	0.58
2:1:10:ARG:NH1	36:k:59:TYR:O	2.36	0.58
4:9:343:ARG:HE	4:9:385:GLU:HG2	1.69	0.58
11:G:8:ILE:HD12	11:G:21:LYS:NZ	2.18	0.58
45:t:18:LYS:NZ	52:3:344:A:OP2	2.37	0.58
52:3:965:U:H2'	52:3:966:U:C6	2.39	0.58
52:3:1331:G:H2'	52:3:1332:A:H8	1.68	0.58
54:5:1003:G:O6	54:5:1018:U:O4	2.22	0.58
30:e:107:ASN:HD22	30:e:109:GLN:HE22	1.50	0.58
43:r:18:ARG:NH2	52:3:554:U:OP1	2.37	0.58
47:v:53:ARG:HH12	52:3:435:U:H5	1.52	0.58
52:3:601:U:H2'	52:3:603:G:N7	2.18	0.58
52:3:989:G:N2	52:3:1000:U:O2	2.32	0.58
54:5:1109:U:H2'	54:5:1110:C:C6	2.39	0.58
6:B:178:LEU:HD12	54:5:1166:A:H4'	1.85	0.58
9:E:161:GLN:OE1	11:G:79:ARG:NH1	2.36	0.58
29:d:132:ILE:HG23	29:d:152:PHE:H	1.67	0.58
35:j:71:ARG:NH2	35:j:105:GLU:OE2	2.36	0.58
52:3:138:U:H2'	52:3:139:G:H8	1.69	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:325:G:O6	52:3:383:U:O4	2.21	0.58
52:3:878:A:N6	52:3:969:A:OP2	2.37	0.58
52:3:900:G:N2	52:3:903:A:N6	2.42	0.58
52:3:1113:U:H5'	52:3:1114:C:O4'	2.03	0.58
52:3:2366:A:H2'	52:3:2367:C:C6	2.39	0.58
53:4:60:C:H2'	53:4:61:A:C8	2.39	0.58
54:5:1320:A:N6	54:5:1350:A:N7	2.52	0.58
6:B:159:ARG:HH11	54:5:1046:A:H1'	1.69	0.57
10:F:75:ARG:NH1	54:5:1353:C:N3	2.51	0.57
27:b:62:LEU:HD22	27:b:77:PRO:HB3	1.86	0.57
42:q:89:TYR:OH	52:3:583:U:OP1	2.21	0.57
54:5:649:U:O4	54:5:749:G:O2'	2.17	0.57
6:B:11:ARG:HB2	6:B:15:ASN:HB3	1.86	0.57
6:B:150:ASN:HB3	6:B:206:ASN:HB3	1.87	0.57
8:D:186:ASN:ND2	54:5:12:G:OP2	2.37	0.57
41:p:91:ARG:NH1	52:3:1032:A:O2'	2.37	0.57
52:3:1379:C:O2'	52:3:1605:A:N3	2.36	0.57
52:3:2141:A:H61	52:3:2164:G:H1'	1.69	0.57
54:5:369:A:H61	54:5:387:G:H1'	1.68	0.57
54:5:445:A:N7	54:5:483:U:O2	2.37	0.57
54:5:503:G:H5'	54:5:532:U:H2'	1.85	0.57
5:A:226:CYS:O	5:A:230:ASN:ND2	2.38	0.57
22:R:29:ARG:HD2	22:R:48:THR:HG23	1.86	0.57
32:g:33:SER:HA	52:3:1090:G:H4'	1.86	0.57
52:3:17:G:O6	52:3:560:U:O4	2.22	0.57
52:3:522:C:H2'	52:3:523:A:C8	2.39	0.57
52:3:793:C:H2'	52:3:794:G:C8	2.40	0.57
52:3:1833:G:O2'	52:3:1978:U:OP2	2.21	0.57
52:3:2154:A:H2'	52:3:2155:G:C8	2.39	0.57
54:5:373:A:H2'	54:5:374:G:C8	2.39	0.57
54:5:621:C:H2'	54:5:622:A:C8	2.39	0.57
54:5:712:A:H2'	54:5:713:A:C8	2.39	0.57
12:H:97:LYS:NZ	54:5:1153:G:OP2	2.36	0.57
43:r:78:GLN:CD	52:3:26:G:H21	2.12	0.57
52:3:411:U:N3	52:3:437:A:C8	2.72	0.57
52:3:567:U:OP1	52:3:594:G:N2	2.34	0.57
52:3:603:G:H1	52:3:2507:C:P	2.27	0.57
52:3:1142:G:H2'	52:3:1143:U:C6	2.38	0.57
52:3:1962:U:H2'	52:3:2560:U:H1'	1.85	0.57
52:3:2561:G:C8	52:3:2591:G:H1'	2.38	0.57
52:3:2787:U:H4'	52:3:2788:U:H3'	1.84	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:2849:G:O6	52:3:2875:U:O4	2.22	0.57
54:5:73:G:N1	54:5:83:U:O4	2.37	0.57
54:5:762:G:H22	54:5:809:G:HO2'	1.49	0.57
54:5:1344:C:H2'	54:5:1345:G:H8	1.69	0.57
54:5:1449:G:O2'	54:5:1450:C:O4'	2.21	0.57
22:R:19:VAL:O	22:R:23:ASN:HB2	2.03	0.57
29:d:38:MET:HB3	29:d:87:CYS:H	1.70	0.57
52:3:2115:A:OP1	52:3:2157:A:O2'	2.18	0.57
54:5:37:C:O2'	54:5:499:U:OP1	2.21	0.57
54:5:242:A:C6	54:5:277:G:N3	2.73	0.57
54:5:536:U:H2'	54:5:537:A:C8	2.40	0.57
54:5:600:G:O6	54:5:633:U:O4	2.22	0.57
4:9:319:PHE:HB3	54:5:56:A:N7	2.19	0.57
52:3:410:G:H4'	52:3:411:U:O5'	2.05	0.57
52:3:513:A:H2'	52:3:514:A:C8	2.39	0.57
52:3:2145:A:N6	52:3:2161:G:O6	2.38	0.57
52:3:2760:C:H3'	52:3:2761:A:C8	2.40	0.57
54:5:679:U:H2'	54:5:680:G:C8	2.37	0.57
54:5:1287:G:H2'	54:5:1288:C:C6	2.39	0.57
4:9:625:GLY:O	4:9:626:LEU:HD12	2.04	0.57
5:A:182:VAL:HG13	5:A:206:THR:HG22	1.87	0.57
8:D:77:SER:HB2	8:D:86:MET:HE2	1.86	0.57
9:E:71:ASP:OD1	9:E:72:PHE:N	2.37	0.57
10:F:114:THR:HB	10:F:117:GLU:HG2	1.87	0.57
26:a:17:SER:HB2	26:a:214:GLY:HA3	1.86	0.57
31:f:8:ASP:HA	31:f:15:ARG:HA	1.87	0.57
35:j:38:VAL:HG22	35:j:61:VAL:HG22	1.86	0.57
52:3:740:A:H2'	52:3:741:A:C8	2.40	0.57
52:3:1016:A:C6	52:3:1171:G:H4'	2.39	0.57
20:P:74:ARG:NH2	54:5:231:U:OP1	2.38	0.57
22:R:48:THR:HG22	22:R:61:TYR:HB2	1.87	0.57
27:b:23:ARG:NH2	52:3:2737:G:OP1	2.38	0.57
32:g:56:ASN:CG	52:3:1142:G:H5''	2.29	0.57
52:3:569:U:O4	52:3:592:G:O6	2.22	0.57
52:3:1414:C:H2'	52:3:1415:A:H8	1.70	0.57
52:3:2036:G:N1	52:3:2040:A:OP2	2.27	0.57
54:5:412:G:H2'	54:5:413:G:H8	1.69	0.57
54:5:1182:C:H2'	54:5:1183:C:H6	1.69	0.57
55:7:7:U:H3	55:7:68:G:H1	1.53	0.57
6:B:12:PHE:HA	6:B:16:LYS:HB2	1.86	0.57
52:3:599:U:H2'	52:3:600:U:C6	2.39	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1115:G:H2'	52:3:1116:U:H6	1.70	0.57
52:3:1129:U:N3	52:3:1132:C:OP2	2.34	0.57
52:3:1323:A:H2'	52:3:1324:A:C8	2.40	0.57
52:3:2158:C:H2'	52:3:2159:U:C6	2.40	0.57
52:3:2299:U:O4	52:3:2349:G:O6	2.22	0.57
52:3:2339:G:O2'	52:3:2344:A:N6	2.37	0.57
52:3:2640:A:H2'	52:3:2641:A:C8	2.40	0.57
52:3:2867:U:H2'	52:3:2868:G:H8	1.70	0.57
54:5:98:G:H21	54:5:349:A:H2'	1.69	0.57
54:5:108:C:H2'	54:5:109:G:C8	2.40	0.57
54:5:742:C:N3	54:5:743:A:N6	2.53	0.57
4:9:633:ARG:HD3	4:9:638:VAL:HB	1.86	0.57
11:G:101:PHE:HE1	11:G:129:ARG:HA	1.70	0.57
14:J:48:SER:OG	54:5:692:A:OP1	2.19	0.57
27:b:190:LEU:HD13	40:o:9:LEU:HD22	1.85	0.57
36:k:82:LEU:HD23	36:k:118:THR:H	1.70	0.57
52:3:848:U:HO2'	52:3:1255:G:HO2'	1.48	0.57
52:3:1460:G:N2	52:3:1596:U:O2	2.38	0.57
52:3:2100:G:N7	52:3:2233:A:H2'	2.19	0.57
52:3:2235:A:H2'	52:3:2236:G:H8	1.69	0.57
52:3:2528:C:H2'	52:3:2529:C:H6	1.70	0.57
52:3:2747:U:O2	52:3:2772:A:N7	2.38	0.57
54:5:145:G:N2	54:5:147:A:O5'	2.38	0.57
54:5:480:C:H5''	54:5:481:U:H5''	1.86	0.57
54:5:503:G:H2'	54:5:504:A:C8	2.40	0.57
54:5:989:A:N6	54:5:1190:G:O2'	2.38	0.57
4:9:341:ASN:ND2	4:9:385:GLU:OE1	2.37	0.56
37:l:31:GLU:N	37:l:106:VAL:O	2.27	0.56
41:p:107:LEU:O	41:p:111:LYS:HB2	2.05	0.56
42:q:28:PRO:HG2	42:q:31:LYS:HG3	1.87	0.56
52:3:77:G:H1	52:3:112:A:N6	2.02	0.56
52:3:1394:A:H3'	52:3:1395:A:H8	1.69	0.56
52:3:1512:A:H2'	52:3:1513:A:C8	2.39	0.56
52:3:2126:A:N6	52:3:2176:G:O2'	2.31	0.56
52:3:2640:A:H2'	52:3:2641:A:H8	1.69	0.56
54:5:606:A:H3'	54:5:607:A:H8	1.69	0.56
54:5:770:G:H2'	54:5:771:G:H8	1.69	0.56
4:9:96:LEU:HD23	4:9:99:LEU:HD21	1.86	0.56
8:D:160:ILE:HG13	8:D:178:ILE:H	1.70	0.56
26:a:147:VAL:HG12	26:a:150:ILE:HD11	1.87	0.56
41:p:9:THR:O	41:p:13:ARG:HG2	2.04	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:500:U:N3	52:3:823:A:C6	2.73	0.56
52:3:1932:C:N3	52:3:1936:G:N1	2.38	0.56
52:3:2234:C:H3'	52:3:2235:A:H8	1.70	0.56
52:3:2310:C:H2'	52:3:2311:G:C8	2.40	0.56
54:5:92:G:OP1	54:5:321:A:N6	2.37	0.56
54:5:1314:A:O2'	54:5:1315:U:O4'	2.23	0.56
7:C:46:THR:OG1	54:5:508:A:OP2	2.23	0.56
12:H:18:LYS:HB2	12:H:68:VAL:HG22	1.87	0.56
17:M:5:SER:OG	54:5:1191:U:H5''	2.06	0.56
21:Q:79:CYS:SG	21:Q:80:GLN:N	2.76	0.56
22:R:36:ARG:NH1	22:R:52:HIS:O	2.37	0.56
23:S:74:ALA:O	23:S:78:LYS:NZ	2.38	0.56
28:c:55:LYS:NZ	52:3:708:C:H5''	2.20	0.56
33:h:109:LEU:O	33:h:115:ASN:ND2	2.38	0.56
34:i:17:GLN:OE1	34:i:19:TYR:OH	2.23	0.56
52:3:334:A:H2'	52:3:368:C:H1'	1.85	0.56
52:3:343:A:N3	52:3:363:G:O2'	2.39	0.56
52:3:453:U:H2'	52:3:454:G:C8	2.39	0.56
52:3:1451:A:H2'	52:3:1452:G:C8	2.40	0.56
52:3:2056:A:H61	52:3:2627:U:H3	1.54	0.56
52:3:2760:C:H3'	52:3:2761:A:H8	1.70	0.56
52:3:2810:A:N7	52:3:2811:G:N2	2.54	0.56
54:5:555:G:N3	54:5:555:G:H2'	2.21	0.56
54:5:610:C:H2'	54:5:611:A:C8	2.40	0.56
54:5:704:U:H2'	54:5:705:A:C8	2.39	0.56
54:5:1246:A:H2'	54:5:1247:G:H8	1.69	0.56
54:5:1461:G:H2'	54:5:1462:G:C8	2.40	0.56
55:8:7:U:H3	55:8:68:G:H1	1.53	0.56
55:8:9:U:H4'	55:8:49:C:H4'	1.87	0.56
4:9:489:GLU:O	4:9:490:VAL:HG13	2.05	0.56
16:L:101:ARG:NH1	54:5:946:G:OP2	2.38	0.56
26:a:18:THR:H	26:a:212:VAL:HB	1.69	0.56
26:a:152:LEU:HD11	26:a:160:ILE:HG12	1.86	0.56
32:g:55:LYS:HG2	52:3:1141:U:H5''	1.88	0.56
52:3:1082:A:O2'	52:3:1146:A:N6	2.38	0.56
52:3:2093:U:H2'	52:3:2094:A:H8	1.71	0.56
52:3:2863:G:O2'	52:3:2864:A:O4'	2.24	0.56
54:5:1109:U:H2'	54:5:1110:C:H6	1.71	0.56
54:5:1210:U:O2'	54:5:1279:G:OP1	2.24	0.56
6:B:193:GLN:NE2	54:5:1181:G:OP1	2.39	0.56
10:F:110:ARG:HB2	10:F:118:LYS:HB2	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:a:173:GLN:O	54:5:678:A:O2'	2.23	0.56
52:3:1229:U:H2'	52:3:1230:U:H6	1.69	0.56
52:3:2032:G:H2'	52:3:2033:G:H8	1.71	0.56
54:5:598:U:H3	54:5:635:G:H1	1.53	0.56
54:5:691:A:H2'	54:5:692:A:C4	2.41	0.56
7:C:73:ARG:NH2	54:5:397:C:O3'	2.39	0.56
11:G:95:LEU:HD13	20:P:37:LYS:HD3	1.86	0.56
27:b:153:GLY:O	27:b:157:GLN:NE2	2.38	0.56
52:3:379:A:O2'	52:3:381:A:N6	2.35	0.56
52:3:678:U:N3	52:3:681:A:OP2	2.38	0.56
52:3:1158:C:H2'	52:3:1159:C:C6	2.41	0.56
52:3:1387:A:H3'	52:3:1388:G:H8	1.70	0.56
52:3:1676:G:H2'	52:3:1677:G:C8	2.40	0.56
54:5:242:A:N7	54:5:277:G:C2	2.73	0.56
54:5:356:G:H2'	54:5:357:G:H8	1.70	0.56
54:5:514:U:H2'	54:5:517:C:H42	1.71	0.56
54:5:627:U:H3	54:5:628:A:H61	1.48	0.56
54:5:1402:U:O2	54:5:1449:G:N2	2.38	0.56
26:a:93:SER:OG	26:a:163:SER:O	2.21	0.56
28:c:136:THR:O	28:c:167:ASN:ND2	2.39	0.56
44:s:51:LYS:HB3	48:w:87:TRP:HE1	1.71	0.56
47:v:18:ARG:HD3	55:8:77:A:C5	2.41	0.56
52:3:1848:U:C2	52:3:1849:G:C8	2.93	0.56
52:3:2156:G:H2'	52:3:2157:A:C8	2.41	0.56
52:3:2781:C:H2'	52:3:2782:A:C8	2.40	0.56
14:J:8:ASN:N	14:J:70:MET:O	2.38	0.56
15:K:32:ASN:HB3	15:K:34:LYS:HZ1	1.70	0.56
22:R:15:LEU:HD21	22:R:71:LEU:HD22	1.87	0.56
23:S:4:ILE:HD11	54:5:92:G:N2	2.20	0.56
26:a:171:LEU:HD11	26:a:183:GLN:HB2	1.88	0.56
44:s:53:LEU:HG	44:s:54:LYS:HG3	1.88	0.56
52:3:615:G:H2'	52:3:616:G:H8	1.70	0.56
52:3:683:G:H2'	52:3:684:A:C8	2.41	0.56
52:3:812:G:H2'	52:3:813:G:C8	2.41	0.56
52:3:1253:G:H1	52:3:1256:A:P	2.29	0.56
52:3:2421:U:H2'	52:3:2422:G:C8	2.41	0.56
52:3:2764:U:H1'	52:3:2765:A:H5''	1.87	0.56
54:5:786:U:N3	54:5:789:A:OP2	2.29	0.56
54:5:1323:A:H1'	54:5:1349:A:H62	1.69	0.56
1:0:3:ARG:CZ	52:3:1646:G:H21	2.19	0.56
4:9:316:THR:HB	4:9:427:LYS:HD2	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:9:493:LYS:HD2	55:7:29:C:O3'	2.05	0.56
4:9:619:ASP:O	4:9:622:SER:OG	2.21	0.56
7:C:10:ARG:HH11	7:C:62:TYR:HE2	1.53	0.56
8:D:78:LYS:NZ	54:5:1073:A:OP1	2.35	0.56
31:f:39:LEU:O	31:f:40:THR:OG1	2.23	0.56
32:g:11:VAL:HG21	32:g:61:ARG:HD3	1.88	0.56
37:l:32:TYR:HB3	37:l:118:LEU:HD11	1.87	0.56
40:o:56:ARG:NH2	52:3:2693:U:OP2	2.38	0.56
52:3:828:A:H2	52:3:2079:G:H4'	1.71	0.56
52:3:2743:U:H2'	52:3:2744:A:C8	2.40	0.56
54:5:289:U:H2'	54:5:290:G:H8	1.71	0.56
54:5:590:G:N1	54:5:644:U:N3	2.53	0.56
4:9:518:GLY:HA2	4:9:558:ASP:HA	1.88	0.56
5:A:35:ARG:NH1	5:A:52:ASN:O	2.39	0.56
5:A:198:VAL:HG23	5:A:212:ASP:H	1.71	0.56
6:B:43:LEU:HA	6:B:46:VAL:HG12	1.88	0.56
27:b:2:GLU:OE2	27:b:4:ARG:NH1	2.39	0.56
27:b:198:ALA:HA	52:3:2688:C:H5'	1.87	0.56
40:o:32:ASN:HB2	40:o:91:LYS:HD3	1.88	0.56
52:3:820:U:H2'	52:3:821:C:C6	2.41	0.56
52:3:874:U:H2'	52:3:875:G:C8	2.41	0.56
52:3:1260:U:H2'	52:3:1261:U:C6	2.41	0.56
52:3:2852:G:O2'	52:3:2871:G:N2	2.39	0.56
54:5:557:A:H5'	54:5:559:U:H2'	1.87	0.56
54:5:612:G:O6	54:5:624:U:O4	2.22	0.56
54:5:779:A:OP1	54:5:1496:G:N2	2.26	0.56
54:5:1279:G:H2'	54:5:1305:G:N2	2.21	0.56
4:9:657:SER:HA	52:3:2668:A:H62	1.71	0.55
9:E:32:VAL:HG12	9:E:62:PHE:CE2	2.41	0.55
18:N:66:TYR:O	18:N:70:ASN:ND2	2.38	0.55
26:a:279:ILE:HA	26:a:286:GLN:HA	1.86	0.55
27:b:38:GLY:HA2	27:b:92:MET:HG3	1.88	0.55
28:c:159:PHE:CE1	28:c:198:LEU:HD12	2.41	0.55
34:i:7:LEU:HG	52:3:1031:U:H3	1.71	0.55
37:l:129:TRP:CD1	37:l:129:TRP:H	2.22	0.55
52:3:500:U:O2'	52:3:501:G:OP1	2.21	0.55
52:3:742:G:O6	52:3:759:U:O4	2.24	0.55
52:3:2337:U:H2'	52:3:2338:G:H8	1.71	0.55
54:5:200:G:H2'	54:5:201:G:H8	1.71	0.55
54:5:399:C:H2'	54:5:400:G:H8	1.70	0.55
55:7:9:U:H4'	55:7:49:C:H4'	1.87	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:9:162:ILE:HG12	4:9:256:VAL:H	1.70	0.55
4:9:213:HIS:O	4:9:216:GLU:HG2	2.06	0.55
9:E:144:SER:HA	11:G:62:ASN:HA	1.88	0.55
19:O:76:PHE:O	19:O:79:SER:OG	2.23	0.55
26:a:178:LYS:HZ2	26:a:194:LYS:HG2	1.72	0.55
36:k:56:THR:OG1	52:3:2436:G:O2'	2.19	0.55
39:n:39:ILE:HD11	39:n:101:ARG:HD3	1.88	0.55
52:3:409:A:N6	52:3:439:U:O4	2.31	0.55
52:3:491:A:C2	52:3:509:G:H5'	2.38	0.55
52:3:700:U:H2'	52:3:701:A:C8	2.41	0.55
52:3:990:G:H2'	52:3:991:G:C8	2.39	0.55
52:3:1008:A:H5''	52:3:1009:A:H5''	1.87	0.55
54:5:210:G:H2'	54:5:211:G:C8	2.41	0.55
54:5:213:U:OP1	54:5:461:G:N2	2.39	0.55
54:5:631:C:H2'	54:5:632:A:C8	2.41	0.55
54:5:763:A:N7	54:5:810:U:O4	2.38	0.55
54:5:1219:C:H2'	54:5:1220:A:C8	2.42	0.55
1:0:24:THR:HG23	1:0:27:GLY:H	1.72	0.55
7:C:11:SER:HB3	7:C:23:LYS:HE2	1.88	0.55
7:C:69:LYS:HE3	54:5:544:A:H5''	1.88	0.55
14:J:63:VAL:HA	14:J:66:THR:HG22	1.88	0.55
52:3:116:C:H2'	52:3:117:C:H6	1.70	0.55
52:3:330:A:H2'	52:3:331:A:C8	2.40	0.55
52:3:955:A:N3	53:4:78:C:O2'	2.36	0.55
52:3:1455:A:N6	52:3:1605:A:OP2	2.27	0.55
52:3:1531:C:H2'	52:3:1532:A:O4'	2.07	0.55
52:3:1798:A:N6	52:3:1835:G:H1'	2.20	0.55
54:5:654:U:H2'	54:5:655:G:H8	1.71	0.55
54:5:1293:A:C8	54:5:1297:G:C5	2.95	0.55
12:H:128:GLN:NE2	54:5:1207:U:OP1	2.39	0.55
19:O:62:THR:HG21	54:5:371:U:H5''	1.89	0.55
28:c:59:ARG:O	28:c:80:ARG:NH1	2.38	0.55
52:3:155:A:N1	52:3:178:A:N6	2.55	0.55
52:3:411:U:O2	52:3:437:A:C5	2.59	0.55
52:3:684:A:H2'	52:3:685:G:C8	2.40	0.55
52:3:959:C:H2'	52:3:960:A:C8	2.41	0.55
52:3:2594:C:H3'	52:3:2616:G:H22	1.71	0.55
54:5:61:A:OP2	54:5:383:U:O2'	2.19	0.55
54:5:318:C:H2'	54:5:319:U:C6	2.41	0.55
54:5:511:A:H2'	54:5:512:U:C6	2.42	0.55
54:5:663:G:H5'	54:5:723:C:H1'	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:906:C:H2'	54:5:907:A:C8	2.42	0.55
54:5:1154:A:H2'	54:5:1155:A:C8	2.42	0.55
54:5:1261:A:H2'	54:5:1262:A:C8	2.42	0.55
54:5:1317:A:H2'	54:5:1318:C:C6	2.41	0.55
4:9:639:ILE:HG12	52:3:1130:A:N1	2.21	0.55
27:b:122:ALA:HA	27:b:125:ARG:HB3	1.88	0.55
27:b:150:GLY:HA3	27:b:156:ALA:H	1.71	0.55
52:3:135:A:H2'	52:3:136:G:H8	1.70	0.55
52:3:672:G:H4'	52:3:674:G:H4'	1.89	0.55
52:3:1310:U:O4	52:3:1314:A:N7	2.38	0.55
52:3:1354:U:HO2'	52:3:2017:G:HO2'	1.55	0.55
52:3:2141:A:N6	52:3:2164:G:H1'	2.21	0.55
52:3:2781:C:H2'	52:3:2782:A:H8	1.72	0.55
54:5:714:C:H2'	54:5:731:A:H8	1.71	0.55
54:5:1062:C:H2'	54:5:1063:G:C8	2.41	0.55
4:9:86:VAL:HB	4:9:454:LEU:HD22	1.87	0.55
4:9:97:ARG:HD2	4:9:397:GLU:HG2	1.89	0.55
6:B:6:ASN:ND2	17:M:49:TYR:O	2.39	0.55
22:R:81:LYS:HG3	22:R:82:GLN:H	1.70	0.55
42:q:47:ALA:HB3	42:q:48:PRO:HD3	1.88	0.55
43:r:3:ALA:HB3	43:r:107:LEU:HB2	1.88	0.55
43:r:116:GLU:N	43:r:116:GLU:OE1	2.40	0.55
52:3:241:C:H2'	52:3:242:G:C8	2.41	0.55
52:3:1353:G:OP2	52:3:1650:A:O2'	2.22	0.55
52:3:1546:U:H3'	52:3:1547:G:C8	2.42	0.55
52:3:1604:A:H2'	52:3:1605:A:H8	1.71	0.55
52:3:2533:A:H2'	52:3:2534:G:H8	1.71	0.55
53:4:4:G:O6	53:4:105:A:N6	2.39	0.55
54:5:981:U:H2'	54:5:982:A:H8	1.72	0.55
55:8:63:U:H2'	55:8:64:G:C8	2.42	0.55
5:A:181:PRO:HD2	5:A:206:THR:HG21	1.89	0.55
6:B:12:PHE:CZ	17:M:51:GLY:HA2	2.42	0.55
13:I:93:LEU:HA	13:I:96:ILE:HG12	1.88	0.55
15:K:99:ARG:NH1	54:5:906:C:OP1	2.40	0.55
19:O:33:LEU:HD13	19:O:42:CYS:HB3	1.89	0.55
27:b:55:ASP:OD1	27:b:80:HIS:ND1	2.40	0.55
52:3:698:A:H2'	52:3:699:U:C6	2.41	0.55
52:3:1120:A:H2'	52:3:1121:A:C4	2.42	0.55
52:3:1536:C:H2'	52:3:1537:A:C8	2.42	0.55
52:3:1572:U:H2'	52:3:1573:A:H8	1.72	0.55
52:3:2755:G:N1	52:3:2764:U:OP1	2.29	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:550:U:H2'	54:5:551:A:C8	2.42	0.55
54:5:789:A:H1'	54:5:791:A:N7	2.22	0.55
54:5:1417:U:H2'	54:5:1418:G:H8	1.71	0.55
4:9:178:LEU:HD12	4:9:207:VAL:HG13	1.88	0.55
14:J:117:PRO:O	24:T:35:HIS:N	2.35	0.55
21:Q:78:ASN:HB2	21:Q:83:GLN:HB2	1.87	0.55
25:W:85:ALA:O	25:W:89:VAL:HG23	2.07	0.55
39:n:49:ASN:ND2	53:4:7:G:N3	2.55	0.55
40:o:18:LEU:HA	40:o:82:HIS:CE1	2.41	0.55
52:3:177:U:H2'	52:3:178:A:C8	2.41	0.55
52:3:2713:A:O2'	52:3:2856:G:OP1	2.23	0.55
54:5:32:U:H5''	54:5:302:A:C8	2.41	0.55
54:5:91:C:O2'	54:5:375:C:H5''	2.06	0.55
4:9:613:PHE:CD2	4:9:617:MET:HE1	2.42	0.55
28:c:93:PRO:HG3	52:3:1278:G:C5	2.42	0.55
30:e:81:GLY:HA2	30:e:85:GLY:HA2	1.89	0.55
39:n:91:PHE:HB2	39:n:116:PHE:HD2	1.71	0.55
48:w:49:ARG:O	48:w:53:THR:HG23	2.06	0.55
52:3:421:A:N6	52:3:423:C:H2'	2.22	0.55
52:3:755:C:H2'	52:3:756:A:H8	1.72	0.55
52:3:1296:G:N2	52:3:1297:U:O4	2.32	0.55
52:3:1868:A:H2'	52:3:1869:G:H8	1.71	0.55
52:3:2071:C:H2'	52:3:2072:C:C6	2.41	0.55
52:3:2224:A:H2'	52:3:2225:G:C8	2.42	0.55
52:3:2811:G:H4'	52:3:2812:U:H5''	1.89	0.55
54:5:22:G:H21	54:5:908:A:H62	1.54	0.55
54:5:293:G:H4'	54:5:555:G:H1'	1.89	0.55
54:5:434:U:C2	54:5:493:A:N7	2.75	0.55
54:5:732:A:H2'	54:5:733:A:C8	2.41	0.55
54:5:1205:C:H2'	54:5:1206:G:H8	1.71	0.55
55:8:2:G:H2'	55:8:3:G:C8	2.42	0.55
13:I:18:SER:HB2	13:I:102:VAL:HA	1.88	0.55
22:R:69:HIS:HB3	22:R:73:GLU:HB3	1.89	0.55
22:R:86:ASN:ND2	55:7:43:G:OP1	2.40	0.55
28:c:115:VAL:HA	28:c:118:GLU:HG2	1.89	0.55
41:p:35:LYS:HB2	52:3:1282:G:N2	2.23	0.55
50:y:34:GLY:O	50:y:44:SER:OG	2.19	0.55
52:3:2003:C:H5	52:3:2734:C:H5''	1.72	0.55
54:5:77:U:H3'	54:5:78:A:H8	1.72	0.55
54:5:941:A:H2'	54:5:942:G:H8	1.71	0.55
54:5:1151:A:H2'	54:5:1152:G:C8	2.42	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:1478:A:N6	54:5:1507:U:O2'	2.40	0.55
4:9:602:MET:HE3	4:9:645:LEU:HD22	1.88	0.54
28:c:128:VAL:HA	28:c:132:LEU:HD21	1.87	0.54
34:i:20:ILE:HG13	34:i:140:PRO:HB2	1.89	0.54
50:y:35:LYS:HD3	50:y:44:SER:HB3	1.88	0.54
52:3:144:C:N4	52:3:145:A:N6	2.54	0.54
52:3:331:A:H2'	52:3:332:G:O4'	2.07	0.54
52:3:756:A:H2'	52:3:757:A:C8	2.42	0.54
52:3:841:C:O2	52:3:2452:G:O2'	2.24	0.54
52:3:2032:G:H2'	52:3:2033:G:C8	2.42	0.54
52:3:2037:A:N3	52:3:2507:C:H4'	2.22	0.54
52:3:2845:U:H2'	52:3:2846:A:H8	1.71	0.54
52:3:2849:G:H2'	52:3:2850:G:C8	2.42	0.54
4:9:481:ARG:H	4:9:481:ARG:HD2	1.71	0.54
20:P:68:PRO:HG3	20:P:74:ARG:HG3	1.89	0.54
45:t:61:GLY:O	52:3:519:A:O2'	2.25	0.54
52:3:195:A:H2'	52:3:196:G:C8	2.42	0.54
52:3:749:U:H1'	52:3:752:C:H5	1.71	0.54
52:3:1070:U:H2'	52:3:1071:G:H8	1.73	0.54
52:3:1089:A:H2'	52:3:1090:G:C8	2.41	0.54
52:3:1164:A:O2'	52:3:2523:C:O2	2.23	0.54
52:3:1309:G:N1	52:3:1318:U:N3	2.55	0.54
52:3:1491:G:N2	52:3:1578:A:O2'	2.40	0.54
52:3:2209:U:H2'	52:3:2210:G:C8	2.42	0.54
52:3:2272:C:H2'	52:3:2273:U:O4'	2.06	0.54
52:3:2405:G:N2	52:3:2427:U:O2	2.31	0.54
52:3:2548:G:O2'	52:3:2748:A:N3	2.34	0.54
52:3:2812:U:H5'	52:3:2895:A:C5	2.42	0.54
54:5:441:U:H2'	54:5:442:G:C8	2.43	0.54
54:5:1041:G:O2'	54:5:1189:U:O2	2.24	0.54
54:5:1179:A:H2'	54:5:1180:U:O4'	2.08	0.54
54:5:1475:A:H5''	54:5:1483:C:H5''	1.89	0.54
55:7:2:G:H2'	55:7:3:G:C8	2.42	0.54
55:7:63:U:H2'	55:7:64:G:C8	2.42	0.54
26:a:177:GLY:O	26:a:194:LYS:NZ	2.37	0.54
37:l:109:ILE:HG13	37:l:110:PRO:HD2	1.88	0.54
52:3:224:G:H21	52:3:465:A:N6	2.06	0.54
52:3:1497:A:N6	52:3:1547:G:N3	2.55	0.54
52:3:2099:U:OP1	52:3:2207:A:O2'	2.23	0.54
52:3:2308:U:H2'	52:3:2309:A:C8	2.41	0.54
52:3:2341:G:H4'	52:3:2342:U:O5'	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:1089:C:H2'	54:5:1090:G:C8	2.42	0.54
7:C:202:ARG:O	54:5:28:G:O2'	2.25	0.54
21:Q:80:GLN:HG2	54:5:831:C:H4'	1.89	0.54
27:b:37:ALA:O	27:b:73:ASN:ND2	2.40	0.54
28:c:64:LYS:HB2	28:c:77:GLY:HA2	1.89	0.54
29:d:32:GLU:HB2	29:d:157:VAL:HG13	1.90	0.54
37:l:39:GLY:HA3	37:l:97:VAL:O	2.06	0.54
41:p:36:GLN:O	41:p:40:GLN:HG2	2.07	0.54
52:3:2259:G:C8	52:3:2458:A:H5'	2.42	0.54
54:5:212:G:O2'	54:5:465:A:N6	2.41	0.54
54:5:460:A:N6	54:5:462:G:H22	2.04	0.54
54:5:1065:G:N2	54:5:1074:U:O2	2.40	0.54
10:F:105:MET:O	10:F:109:LYS:NZ	2.41	0.54
12:H:35:ARG:HE	12:H:39:GLU:HG3	1.72	0.54
19:O:15:ALA:HB2	19:O:30:ILE:HD11	1.90	0.54
29:d:101:GLU:HG2	49:x:25:ILE:HG21	1.89	0.54
30:e:44:LEU:HD11	30:e:68:HIS:HB2	1.89	0.54
52:3:519:A:OP2	52:3:520:C:N4	2.24	0.54
52:3:1270:C:H2'	52:3:1271:A:H8	1.72	0.54
52:3:1318:U:H2'	52:3:1319:C:C6	2.43	0.54
52:3:1667:G:H2'	52:3:1669:A:H8	1.73	0.54
52:3:2057:C:H2'	52:3:2058:G:C8	2.43	0.54
52:3:2436:G:H4'	52:3:2437:G:C4	2.43	0.54
52:3:2759:G:OP1	52:3:2759:G:N2	2.40	0.54
54:5:512:U:H2'	54:5:513:G:H8	1.71	0.54
54:5:1286:G:H2'	54:5:1287:G:C8	2.42	0.54
5:A:95:LEU:HB3	5:A:229:MET:SD	2.47	0.54
14:J:105:GLU:O	14:J:106:LYS:NZ	2.40	0.54
33:h:28:VAL:HG21	33:h:55:ILE:HD12	1.88	0.54
36:k:93:ILE:HD12	36:k:93:ILE:H	1.73	0.54
37:l:133:LYS:HG2	37:l:134:ARG:H	1.73	0.54
51:z:5:ARG:HE	51:z:26:LYS:HE2	1.72	0.54
52:3:1025:G:H4'	52:3:1192:U:H4'	1.90	0.54
52:3:1230:U:H2'	52:3:1231:G:C8	2.43	0.54
52:3:1245:G:N2	52:3:1264:U:O2	2.37	0.54
52:3:1352:G:O2'	52:3:1355:C:N4	2.41	0.54
52:3:1919:A:OP2	52:3:1925:A:N6	2.40	0.54
52:3:1969:C:O2'	52:3:1971:G:OP1	2.25	0.54
52:3:2845:U:H2'	52:3:2846:A:C8	2.42	0.54
54:5:1001:A:C5	54:5:1019:G:N2	2.76	0.54
4:9:23:LYS:NZ	4:9:85:HIS:O	2.36	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:9:176:ILE:HG23	4:9:182:LYS:HB2	1.90	0.54
12:H:46:VAL:HA	12:H:49:ASP:OD2	2.08	0.54
22:R:81:LYS:HG3	22:R:82:GLN:N	2.22	0.54
23:S:56:ARG:HH12	54:5:218:U:H4'	1.73	0.54
26:a:159:GLN:HA	26:a:162:ARG:NH2	2.23	0.54
49:x:39:CYS:SG	49:x:40:GLY:N	2.80	0.54
50:y:40:HIS:NE2	52:3:2887:A:H4'	2.22	0.54
52:3:14:U:H3	52:3:561:A:N6	1.89	0.54
52:3:250:U:O4	52:3:256:G:O6	2.25	0.54
52:3:559:C:H2'	52:3:560:U:C6	2.42	0.54
52:3:1104:A:OP1	52:3:1131:A:O2'	2.26	0.54
52:3:1261:U:H2'	52:3:1262:G:C8	2.42	0.54
52:3:1956:G:H2'	52:3:1957:G:H8	1.73	0.54
52:3:2495:A:H2'	52:3:2496:G:C8	2.42	0.54
54:5:546:G:H2'	54:5:547:C:C6	2.43	0.54
54:5:660:A:H2	54:5:739:G:C2	2.22	0.54
54:5:783:G:H2'	54:5:784:A:C8	2.43	0.54
54:5:811:A:OP2	54:5:813:A:N6	2.36	0.54
54:5:1410:A:H2'	54:5:1411:A:H8	1.73	0.54
55:8:67:C:H2'	55:8:68:G:C8	2.42	0.54
10:F:34:LYS:HE3	54:5:1346:G:H22	1.72	0.54
28:c:35:PHE:HE1	36:k:8:SER:HB2	1.73	0.54
30:e:8:THR:OG1	52:3:1145:G:OP1	2.25	0.54
33:h:128:ALA:HA	33:h:131:MET:HB3	1.90	0.54
38:m:105:PRO:HG2	43:r:40:PRO:HD3	1.89	0.54
52:3:632:A:H2'	52:3:633:G:H8	1.72	0.54
52:3:854:A:H3'	52:3:1009:A:H61	1.73	0.54
52:3:1544:G:H2'	52:3:1545:A:H8	1.72	0.54
52:3:2183:U:O4	52:3:2184:A:N6	2.40	0.54
52:3:2664:U:H2'	52:3:2665:A:H8	1.72	0.54
52:3:2799:U:O2	52:3:2896:G:N2	2.41	0.54
54:5:1267:G:H2'	54:5:1268:G:H8	1.73	0.54
5:A:179:ASP:HA	5:A:201:LEU:HD12	1.89	0.54
7:C:49:GLY:O	7:C:52:GLN:HG2	2.06	0.54
10:F:115:MET:HG2	54:5:1215:U:H5	1.73	0.54
43:r:69:LEU:HD22	43:r:107:LEU:HB3	1.90	0.54
47:v:7:LEU:HD21	47:v:54:THR:HG21	1.90	0.54
52:3:675:U:N3	52:3:685:G:N1	2.56	0.54
52:3:1386:G:N1	52:3:1400:U:OP2	2.34	0.54
52:3:1499:C:H2'	52:3:1500:A:C8	2.43	0.54
52:3:1938:U:H2'	52:3:1939:A:H8	1.73	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:2077:A:H2'	52:3:2078:A:H8	1.73	0.54
52:3:2321:C:H2'	52:3:2322:G:C8	2.42	0.54
52:3:2376:C:H2'	52:3:2377:A:C8	2.43	0.54
54:5:157:A:H2'	54:5:158:A:C8	2.42	0.54
54:5:941:A:O2'	54:5:1307:A:N3	2.38	0.54
54:5:1463:A:H2'	54:5:1464:G:C8	2.43	0.54
29:d:73:ALA:HB1	29:d:80:ARG:HA	1.90	0.54
35:j:25:LEU:HD22	35:j:59:ARG:HD2	1.89	0.54
36:k:43:LYS:HD3	52:3:707:C:H5	1.72	0.54
36:k:78:VAL:HB	36:k:110:LEU:HD23	1.89	0.54
38:m:35:LEU:HD22	38:m:102:LYS:HE2	1.90	0.54
48:w:80:ASN:OD1	48:w:81:GLU:N	2.40	0.54
52:3:606:G:O2'	52:3:608:A:OP1	2.26	0.54
52:3:720:A:H1'	52:3:724:A:H61	1.72	0.54
52:3:1036:A:H2'	52:3:1037:A:C8	2.42	0.54
52:3:2829:G:N2	52:3:2829:G:OP2	2.41	0.54
54:5:344:G:H2'	54:5:345:A:H8	1.73	0.54
2:1:48:SER:O	2:1:52:PHE:N	2.35	0.53
4:9:260:SER:HB3	4:9:265:LYS:HG3	1.90	0.53
4:9:357:HIS:ND1	4:9:360:ASN:OD1	2.39	0.53
15:K:69:ARG:NH2	15:K:72:ASN:O	2.40	0.53
27:b:19:THR:OG1	27:b:222:LEU:O	2.22	0.53
33:h:12:ILE:HD13	33:h:24:ALA:HB3	1.89	0.53
52:3:200:A:H61	52:3:866:G:H21	1.55	0.53
52:3:1288:C:H2'	52:3:1289:G:H8	1.73	0.53
52:3:1460:G:H1	52:3:1595:C:H42	1.56	0.53
52:3:1943:A:C8	52:3:1952:G:C8	2.96	0.53
52:3:2531:C:H2'	52:3:2532:G:H8	1.73	0.53
52:3:2582:G:H2'	52:3:2583:U:O4'	2.08	0.53
52:3:2745:G:H2'	52:3:2746:A:C8	2.43	0.53
53:4:14:U:H2'	53:4:15:C:C6	2.43	0.53
54:5:362:U:O2'	54:5:390:G:N2	2.40	0.53
54:5:1413:G:N2	54:5:1438:U:O2	2.40	0.53
4:9:89:THR:OG1	4:9:400:GLN:OE1	2.26	0.53
4:9:486:LYS:HB3	4:9:510:ARG:HH12	1.73	0.53
24:T:16:LYS:HG3	24:T:20:ARG:HH21	1.73	0.53
27:b:115:LYS:NZ	52:3:2731:U:OP1	2.41	0.53
44:s:51:LYS:HB3	48:w:87:TRP:NE1	2.24	0.53
52:3:608:A:O2'	52:3:2509:C:OP1	2.20	0.53
52:3:700:U:H2'	52:3:701:A:H8	1.73	0.53
52:3:1604:A:H2'	52:3:1605:A:C8	2.43	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1633:C:H2'	52:3:1634:A:H8	1.74	0.53
52:3:1747:G:H22	52:3:1751:A:H3'	1.72	0.53
52:3:1954:C:H2'	52:3:1955:G:C8	2.44	0.53
52:3:2422:G:C2	52:3:2423:G:C8	2.96	0.53
54:5:354:U:O2'	54:5:355:A:H5'	2.08	0.53
54:5:673:A:H2'	54:5:674:U:C6	2.43	0.53
54:5:1115:G:O2'	54:5:1116:U:H6	1.91	0.53
54:5:1279:G:H2'	54:5:1305:G:H21	1.73	0.53
4:9:160:VAL:HG13	4:9:253:PHE:CD1	2.44	0.53
18:N:51:ARG:NH1	54:5:577:G:O2'	2.42	0.53
24:T:37:ARG:HB2	24:T:40:MET:HG3	1.91	0.53
25:W:104:GLU:O	25:W:108:LEU:HG	2.08	0.53
26:a:149:ASN:HB3	26:a:199:THR:HB	1.89	0.53
52:3:47:G:N3	52:3:471:A:N6	2.57	0.53
52:3:1428:U:H2'	52:3:1429:G:H8	1.73	0.53
54:5:410:A:H5'	54:5:425:G:H22	1.73	0.53
54:5:483:U:H2'	54:5:484:A:H8	1.74	0.53
54:5:578:C:H2'	54:5:579:G:O4'	2.07	0.53
54:5:660:A:N1	54:5:739:G:C6	2.75	0.53
54:5:673:A:H2'	54:5:674:U:H6	1.74	0.53
54:5:783:G:H2'	54:5:784:A:H8	1.73	0.53
54:5:1010:A:H2'	54:5:1011:A:O4'	2.08	0.53
9:E:45:LEU:HD21	9:E:55:ALA:HB3	1.91	0.53
9:E:83:LEU:O	9:E:84:ARG:NH2	2.42	0.53
15:K:66:ALA:HB2	15:K:80:ILE:HD11	1.89	0.53
23:S:64:ARG:NH2	54:5:257:U:OP2	2.42	0.53
27:b:4:ARG:HH12	27:b:89:GLY:H	1.56	0.53
45:t:34:ALA:HB2	45:t:71:LEU:HD21	1.90	0.53
52:3:173:C:H2'	52:3:174:A:C8	2.43	0.53
52:3:241:C:H2'	52:3:242:G:H8	1.74	0.53
52:3:2226:U:H2'	52:3:2227:U:C6	2.43	0.53
52:3:2596:A:N1	52:3:2615:G:C6	2.77	0.53
52:3:2720:C:OP1	52:3:2722:G:O2'	2.23	0.53
54:5:664:A:H2'	54:5:665:G:C8	2.42	0.53
27:b:157:GLN:HG2	52:3:2060:G:H4'	1.89	0.53
28:c:106:LYS:NZ	52:3:639:G:OP1	2.36	0.53
28:c:145:GLN:OE1	52:3:354:C:N4	2.40	0.53
38:m:22:VAL:HA	38:m:25:VAL:HG12	1.91	0.53
52:3:329:G:N2	52:3:377:U:O2	2.28	0.53
52:3:349:G:H2'	52:3:350:C:C6	2.44	0.53
52:3:746:G:H2'	52:3:747:A:C8	2.43	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1075:G:H2'	52:3:1076:U:O4'	2.09	0.53
52:3:1777:G:H2'	52:3:1778:G:H8	1.73	0.53
52:3:1932:C:O2	52:3:1936:G:O6	2.26	0.53
52:3:2392:U:H5''	52:3:2394:A:OP1	2.08	0.53
54:5:108:C:OP1	54:5:307:C:O2'	2.26	0.53
54:5:304:U:H2'	54:5:305:A:C8	2.43	0.53
54:5:1408:A:N6	54:5:1442:A:O2'	2.41	0.53
1:0:12:ARG:NH2	1:0:47:GLU:OE1	2.42	0.53
4:9:344:LYS:HZ2	4:9:346:LYS:HB2	1.73	0.53
8:D:120:LYS:O	8:D:123:HIS:ND1	2.41	0.53
11:G:104:LEU:HD13	11:G:116:ILE:HD13	1.91	0.53
19:O:5:ARG:HB3	19:O:8:TYR:HB3	1.90	0.53
30:e:125:THR:OG1	30:e:137:SER:OG	2.26	0.53
43:r:9:ARG:HG3	43:r:80:PRO:HD2	1.90	0.53
47:v:22:LYS:HG2	52:3:2441:A:H61	1.74	0.53
52:3:501:G:H2'	52:3:502:A:C4	2.44	0.53
52:3:1120:A:H2'	52:3:1121:A:N3	2.23	0.53
52:3:1194:U:H2'	52:3:1195:A:H8	1.73	0.53
52:3:1196:U:H2'	52:3:1197:G:C8	2.44	0.53
52:3:1444:C:H4'	52:3:1620:A:H61	1.74	0.53
52:3:1446:G:H1'	52:3:1614:G:C6	2.44	0.53
52:3:2522:U:H2'	52:3:2523:C:C6	2.43	0.53
54:5:51:A:N6	54:5:356:G:O2'	2.42	0.53
54:5:1072:G:H2'	54:5:1073:A:C8	2.44	0.53
13:I:19:TYR:HA	13:I:75:ARG:HA	1.91	0.53
26:a:9:ARG:HH22	52:3:739:G:H5'	1.74	0.53
26:a:19:VAL:HA	26:a:211:VAL:HG12	1.90	0.53
32:g:41:ARG:HG2	52:3:1117:U:H4'	1.89	0.53
41:p:62:LEU:HD13	52:3:1045:A:H5''	1.89	0.53
48:w:57:ILE:HG22	48:w:61:ARG:HE	1.73	0.53
52:3:389:C:H2'	52:3:390:A:C8	2.43	0.53
52:3:683:G:H2'	52:3:684:A:H8	1.73	0.53
52:3:1348:C:O2'	52:3:1358:C:N4	2.33	0.53
52:3:1758:C:O2'	52:3:2865:U:H4'	2.08	0.53
52:3:1804:A:H2'	52:3:1805:U:C6	2.44	0.53
54:5:352:A:N3	54:5:364:U:O2'	2.35	0.53
54:5:369:A:H1'	54:5:478:G:N3	2.24	0.53
54:5:625:U:H2'	54:5:626:G:C8	2.43	0.53
54:5:1366:U:H2'	54:5:1367:G:C8	2.44	0.53
10:F:113:LYS:HB2	54:5:1272:C:C4	2.44	0.53
12:H:116:LYS:C	12:H:117:LYS:HD3	2.34	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:j:16:ALA:HA	35:j:46:ALA:HA	1.90	0.53
51:z:37:PHE:HE1	52:3:2379:G:H1'	1.73	0.53
52:3:410:G:N2	52:3:411:U:O4	2.37	0.53
52:3:766:C:H2'	52:3:767:C:H6	1.74	0.53
52:3:1460:G:H2'	52:3:1461:A:C8	2.44	0.53
52:3:1521:A:H2'	52:3:1523:C:C5	2.44	0.53
52:3:2424:C:H2'	52:3:2425:C:C6	2.43	0.53
52:3:2840:U:H2'	52:3:2841:A:H8	1.74	0.53
53:4:59:A:O2'	53:4:60:C:OP1	2.25	0.53
53:4:71:A:H2'	53:4:72:A:H8	1.74	0.53
54:5:498:G:H2'	54:5:499:U:O4'	2.09	0.53
54:5:1297:G:H2'	54:5:1298:U:C6	2.44	0.53
54:5:1344:C:H2'	54:5:1345:G:C8	2.43	0.53
54:5:1444:G:H2'	54:5:1445:G:H8	1.74	0.53
7:C:97:LEU:HD23	7:C:132:PRO:HA	1.90	0.53
9:E:148:LYS:HE3	11:G:59:VAL:HG12	1.89	0.53
27:b:4:ARG:HH11	27:b:87:MET:HG3	1.73	0.53
34:i:42:LYS:O	41:p:69:ARG:NH1	2.37	0.53
34:i:93:ARG:O	34:i:97:LYS:HG2	2.09	0.53
40:o:40:LYS:O	40:o:41:GLU:HG3	2.09	0.53
52:3:1070:U:H2'	52:3:1071:G:C8	2.44	0.53
52:3:1201:A:H2'	52:3:1202:A:C8	2.44	0.53
52:3:1301:G:O2'	52:3:1652:A:N6	2.29	0.53
52:3:2803:G:OP2	52:3:2806:A:N6	2.42	0.53
52:3:2850:G:H2'	52:3:2851:U:C6	2.43	0.53
54:5:460:A:H2'	54:5:461:G:C8	2.44	0.53
54:5:553:C:H2'	54:5:554:C:C6	2.44	0.53
54:5:601:U:H2'	54:5:602:G:C8	2.44	0.53
54:5:664:A:H2'	54:5:665:G:H8	1.74	0.53
54:5:980:C:H2'	54:5:981:U:H6	1.73	0.53
12:H:125:ARG:NH2	54:5:1317:A:N3	2.46	0.53
15:K:8:ILE:HD13	20:P:35:TYR:HD2	1.73	0.53
28:c:35:PHE:O	28:c:39:LEU:HD23	2.09	0.53
52:3:22:U:H2'	52:3:23:A:C8	2.44	0.53
52:3:220:A:N7	52:3:467:U:C2	2.77	0.53
52:3:1944:A:N6	52:3:1946:U:O2'	2.42	0.53
52:3:2130:A:H2'	52:3:2131:G:C8	2.43	0.53
52:3:2335:A:H2'	52:3:2336:A:C8	2.44	0.53
54:5:567:C:H1'	54:5:572:A:H2'	1.90	0.53
54:5:1001:A:C5	54:5:1002:A:C8	2.96	0.53
54:5:1406:U:H3	54:5:1444:G:H1	1.55	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:38:GLN:HB3	52:3:494:G:H5''	1.89	0.52
4:9:12:ASN:ND2	4:9:370:GLY:O	2.42	0.52
4:9:161:PRO:HA	4:9:256:VAL:HB	1.91	0.52
12:H:111:ARG:HG2	54:5:1321:G:C8	2.44	0.52
13:I:72:GLU:O	17:M:57:LYS:N	2.40	0.52
19:O:37:LEU:HG	19:O:39:GLU:HG3	1.90	0.52
26:a:63:LYS:HE3	52:3:1602:G:H4'	1.91	0.52
29:d:121:SER:OG	29:d:129:THR:O	2.21	0.52
52:3:369:C:H2'	52:3:370:C:C6	2.43	0.52
52:3:874:U:H2'	52:3:875:G:H8	1.71	0.52
52:3:2070:C:O2	55:7:77:A:H1'	2.08	0.52
52:3:2223:C:H2'	52:3:2224:A:C8	2.43	0.52
52:3:2473:C:H2'	52:3:2474:C:H6	1.74	0.52
54:5:60:A:H1'	54:5:350:G:C2	2.44	0.52
54:5:218:U:H2'	54:5:219:A:C8	2.43	0.52
54:5:737:U:H2'	54:5:738:A:C8	2.43	0.52
54:5:905:U:H2'	54:5:906:C:C6	2.44	0.52
54:5:936:G:H1	54:5:1316:C:H42	1.57	0.52
26:a:218:ARG:NH1	52:3:1600:A:OP1	2.43	0.52
27:b:106:GLU:HA	27:b:217:VAL:HA	1.91	0.52
32:g:56:ASN:OD1	32:g:57:ASN:N	2.42	0.52
34:i:109:LYS:HD3	34:i:122:ILE:HD13	1.90	0.52
36:k:69:ARG:HH12	52:3:2413:G:H5'	1.74	0.52
43:r:66:GLY:HA2	43:r:69:LEU:HD12	1.89	0.52
45:t:90:LYS:HG3	45:t:105:LYS:HB3	1.91	0.52
52:3:137:U:H3	52:3:146:G:H1	1.55	0.52
52:3:347:C:H2'	52:3:348:A:C8	2.43	0.52
52:3:354:C:O2'	52:3:356:A:OP2	2.23	0.52
52:3:1384:C:H2'	52:3:1385:U:H6	1.74	0.52
52:3:1751:A:H2'	52:3:1752:A:C8	2.44	0.52
52:3:1817:A:H3'	52:3:1818:G:H8	1.73	0.52
54:5:22:G:H2'	54:5:23:G:C8	2.44	0.52
54:5:376:G:N2	54:5:379:A:OP2	2.35	0.52
54:5:725:A:H2'	54:5:726:A:C8	2.43	0.52
54:5:861:A:O2'	54:5:867:A:N1	2.31	0.52
54:5:891:C:N4	54:5:892:G:O6	2.43	0.52
55:7:29:C:H2'	55:7:30:G:C8	2.44	0.52
55:8:29:C:H2'	55:8:30:G:C8	2.43	0.52
4:9:420:LYS:HG3	4:9:469:VAL:HG13	1.90	0.52
6:B:58:ILE:HD12	6:B:67:VAL:HG12	1.91	0.52
9:E:153:LYS:N	11:G:56:ASN:HD21	2.07	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:G:134:GLY:N	54:5:597:C:O2'	2.36	0.52
14:J:77:LEU:HB2	14:J:100:ILE:HD12	1.90	0.52
20:P:76:ARG:HH12	54:5:185:G:H21	1.57	0.52
25:W:68:LEU:O	25:W:72:LYS:HG2	2.09	0.52
27:b:123:ILE:HA	27:b:128:PHE:HB2	1.92	0.52
30:e:80:ILE:O	30:e:85:GLY:N	2.33	0.52
32:g:41:ARG:NH2	32:g:41:ARG:O	2.42	0.52
34:i:120:ARG:NH1	52:3:2787:U:O2	2.41	0.52
36:k:34:ARG:HG2	36:k:41:ALA:HA	1.92	0.52
38:m:20:GLN:HB2	38:m:68:LEU:HD12	1.90	0.52
40:o:55:ARG:HE	40:o:62:GLU:HB3	1.74	0.52
46:u:35:LEU:HB2	46:u:53:ARG:HB2	1.91	0.52
52:3:768:G:N2	52:3:769:A:N7	2.56	0.52
54:5:136:U:H2'	54:5:137:A:H8	1.75	0.52
54:5:170:A:H2'	54:5:171:A:C8	2.45	0.52
54:5:295:G:H2'	54:5:296:A:C8	2.44	0.52
54:5:1046:A:N7	54:5:1175:C:N3	2.57	0.52
54:5:1069:U:O4	54:5:1070:G:N2	2.42	0.52
20:P:72:THR:OG1	54:5:250:G:OP1	2.27	0.52
32:g:40:ILE:HD12	32:g:99:VAL:HG21	1.91	0.52
33:h:15:LEU:HA	33:h:50:MET:HA	1.91	0.52
34:i:138:GLN:N	34:i:138:GLN:OE1	2.43	0.52
40:o:14:GLU:HG3	40:o:60:ILE:HB	1.90	0.52
52:3:252:G:C4	52:3:2439:U:H4'	2.44	0.52
52:3:475:A:H2'	52:3:476:G:C8	2.44	0.52
52:3:515:A:O2'	52:3:516:A:OP2	2.25	0.52
52:3:600:U:H2'	52:3:601:U:C6	2.44	0.52
52:3:610:G:H2'	52:3:611:A:C8	2.44	0.52
52:3:1230:U:H2'	52:3:1231:G:H8	1.75	0.52
52:3:1630:A:H2'	52:3:1631:A:C8	2.43	0.52
52:3:2337:U:H2'	52:3:2338:G:C8	2.44	0.52
52:3:2424:C:H2'	52:3:2425:C:O4'	2.09	0.52
52:3:2885:U:H2'	52:3:2886:A:C8	2.44	0.52
54:5:245:U:O4	54:5:271:G:O6	2.27	0.52
54:5:873:U:H2'	54:5:874:C:C6	2.44	0.52
4:9:191:GLU:HG2	4:9:266:GLY:H	1.74	0.52
4:9:414:THR:HB	4:9:417:ASP:HB2	1.92	0.52
8:D:67:GLU:HG3	8:D:97:ARG:HE	1.73	0.52
13:I:14:ILE:HD11	13:I:104:LEU:HB2	1.90	0.52
14:J:64:ALA:O	14:J:68:LYS:HG3	2.10	0.52
19:O:80:LYS:HE3	54:5:124:U:H5''	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:Q:73:ARG:NH1	21:Q:79:CYS:O	2.43	0.52
23:S:67:ARG:O	23:S:71:ARG:HG3	2.10	0.52
28:c:39:LEU:HD11	52:3:1275:C:H4'	1.91	0.52
31:f:48:ASP:O	31:f:52:LYS:HG2	2.09	0.52
42:q:45:ILE:HA	42:q:50:LEU:HD21	1.91	0.52
51:z:38:CYS:O	51:z:42:ARG:HA	2.10	0.52
52:3:129:U:H2'	52:3:130:C:C6	2.44	0.52
52:3:524:G:N2	52:3:526:G:H3'	2.25	0.52
52:3:848:U:O2'	52:3:1255:G:O2'	2.23	0.52
52:3:1114:C:H2'	52:3:1115:G:H8	1.74	0.52
52:3:1520:A:H2'	52:3:1521:A:C8	2.45	0.52
52:3:2063:G:H2'	52:3:2064:G:H8	1.74	0.52
52:3:2367:C:H2'	52:3:2368:A:O4'	2.10	0.52
53:4:29:C:O2'	53:4:51:A:N1	2.42	0.52
54:5:413:G:H1	54:5:423:U:H3	1.53	0.52
54:5:659:U:H4'	54:5:833:G:H4'	1.91	0.52
54:5:1261:A:H2'	54:5:1262:A:H8	1.75	0.52
54:5:1448:A:H2'	54:5:1449:G:C8	2.44	0.52
55:8:33:C:C4	55:8:39:A:N6	2.78	0.52
1:0:21:ARG:HG3	1:0:43:THR:HG22	1.91	0.52
4:9:230:LEU:HD13	25:W:67:LYS:HG2	1.92	0.52
47:v:18:ARG:HH12	47:v:23:THR:C	2.18	0.52
48:w:55:LEU:O	48:w:59:THR:HG23	2.09	0.52
51:z:38:CYS:O	51:z:42:ARG:CA	2.57	0.52
52:3:108:G:H2'	52:3:109:G:H8	1.75	0.52
52:3:2149:U:O2	52:3:2156:G:N2	2.38	0.52
52:3:2609:C:H2'	52:3:2611:G:C8	2.45	0.52
54:5:82:C:H2'	54:5:83:U:C5	2.45	0.52
54:5:289:U:H2'	54:5:290:G:C8	2.45	0.52
54:5:356:G:H2'	54:5:357:G:C8	2.45	0.52
54:5:368:C:O2	54:5:385:A:N6	2.43	0.52
2:1:37:GLN:NE2	52:3:2371:U:OP2	2.43	0.52
5:A:130:LEU:HD12	5:A:159:LEU:HD13	1.91	0.52
10:F:40:ARG:HG2	12:H:44:LYS:NZ	2.24	0.52
12:H:87:ARG:O	12:H:91:GLN:HG2	2.10	0.52
19:O:2:ARG:HE	19:O:9:PRO:HA	1.75	0.52
22:R:29:ARG:HA	22:R:47:ASN:HB2	1.92	0.52
22:R:55:LYS:HB2	54:5:953:A:C2	2.45	0.52
32:g:18:LEU:HD23	32:g:66:GLY:HA3	1.92	0.52
37:l:86:GLY:HA2	52:3:2284:G:H5'	1.91	0.52
45:t:76:LEU:HD22	45:t:104:PHE:HZ	1.75	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:500:U:HO2'	52:3:501:G:P	2.32	0.52
52:3:697:U:H2'	52:3:698:A:C8	2.44	0.52
52:3:1233:A:N6	52:3:1274:A:N1	2.58	0.52
52:3:1310:U:H3	52:3:1314:A:H62	1.58	0.52
52:3:2636:U:H5''	52:3:2637:A:O4'	2.09	0.52
54:5:35:C:H2'	54:5:36:G:C8	2.40	0.52
54:5:421:G:H2'	54:5:422:A:H8	1.74	0.52
54:5:1051:U:H2'	54:5:1052:G:H8	1.74	0.52
4:9:522:VAL:HB	4:9:562:THR:HG22	1.92	0.52
7:C:1:MET:HG3	7:C:3:TYR:H	1.74	0.52
15:K:6:GLN:NE2	54:5:874:C:OP2	2.41	0.52
35:j:3:SER:HB3	52:3:1700:G:N3	2.25	0.52
36:k:136:LEU:O	36:k:140:GLU:HG2	2.10	0.52
45:t:31:ARG:HA	45:t:31:ARG:NH2	2.25	0.52
52:3:977:A:O2'	52:3:1221:G:O3'	2.27	0.52
52:3:2517:A:H2'	52:3:2518:C:H6	1.74	0.52
52:3:2695:U:H3	52:3:2730:G:H1	1.56	0.52
54:5:507:A:H8	54:5:542:G:H5'	1.74	0.52
54:5:884:G:N2	54:5:901:A:O5'	2.39	0.52
54:5:1286:G:H2'	54:5:1287:G:H8	1.75	0.52
6:B:46:VAL:O	6:B:49:ARG:NH2	2.41	0.52
25:W:71:LEU:HA	25:W:89:VAL:HG21	1.91	0.52
29:d:26:MET:HE1	53:4:52:G:H21	1.75	0.52
46:u:19:LYS:HA	52:3:2261:G:H1	1.74	0.52
52:3:24:U:H2'	52:3:25:G:C8	2.45	0.52
52:3:558:C:H2'	52:3:559:C:C6	2.45	0.52
52:3:858:A:H2'	52:3:859:G:H8	1.75	0.52
52:3:995:A:H2'	52:3:996:A:C8	2.45	0.52
52:3:1057:G:O2'	52:3:1059:G:O6	2.24	0.52
52:3:1339:U:H4'	52:3:1340:U:H5'	1.92	0.52
52:3:1418:U:H3	52:3:1423:A:H62	1.56	0.52
52:3:2380:U:H2'	52:3:2381:G:C8	2.45	0.52
52:3:2655:U:H2'	52:3:2656:G:H8	1.75	0.52
54:5:945:U:H2'	54:5:946:G:C8	2.45	0.52
54:5:1101:A:H4'	54:5:1158:A:C2	2.45	0.52
4:9:349:ARG:HH21	54:5:365:U:H4'	1.75	0.52
9:E:149:ALA:HA	11:G:58:GLN:HG3	1.91	0.52
10:F:40:ARG:HG2	12:H:44:LYS:HZ1	1.73	0.52
13:I:56:THR:OG1	54:5:1342:C:O3'	2.27	0.52
15:K:96:ARG:NH2	54:5:549:U:O2	2.35	0.52
29:d:150:ARG:NH1	52:3:2315:G:O6	2.36	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:r:87:PRO:HB3	52:3:1648:A:C4	2.45	0.52
45:t:4:ILE:HD13	45:t:71:LEU:HD13	1.92	0.52
45:t:46:LYS:HE3	45:t:60:THR:HB	1.92	0.52
46:u:30:SER:HB2	52:3:2271:C:H41	1.74	0.52
52:3:194:A:N6	52:3:211:A:H1'	2.25	0.52
52:3:341:G:N2	52:3:343:A:H3'	2.25	0.52
52:3:988:G:H2'	52:3:989:G:O4'	2.09	0.52
52:3:2173:G:H3'	52:3:2174:G:H8	1.75	0.52
54:5:344:G:H2'	54:5:345:A:C8	2.45	0.52
54:5:648:C:N4	54:5:750:A:OP2	2.43	0.52
54:5:752:G:H2'	54:5:753:C:C6	2.45	0.52
55:7:22:A:O4'	55:7:49:C:N4	2.43	0.52
3:2:11:CYS:SG	3:2:28:LYS:NZ	2.76	0.51
4:9:209:GLN:O	4:9:212:ALA:HB3	2.09	0.51
4:9:504:TYR:CD1	4:9:569:HIS:HB2	2.45	0.51
9:E:89:ASN:ND2	54:5:735:C:OP1	2.43	0.51
10:F:76:VAL:HG22	10:F:85:GLN:HG3	1.91	0.51
11:G:38:SER:O	11:G:42:ILE:HG12	2.10	0.51
15:K:32:ASN:OD1	15:K:33:LYS:N	2.43	0.51
38:m:26:LEU:HD11	38:m:82:LEU:HB2	1.91	0.51
52:3:683:G:H21	52:3:2359:G:P	2.34	0.51
52:3:1106:G:H1'	52:3:1124:G:C5	2.45	0.51
52:3:1446:G:H2'	52:3:1612:U:C5	2.45	0.51
52:3:1530:G:H2'	52:3:1531:C:C6	2.45	0.51
52:3:1724:A:H61	52:3:1731:G:H2'	1.75	0.51
52:3:2013:C:O2'	52:3:2827:A:N3	2.40	0.51
52:3:2180:U:H3'	52:3:2181:A:H8	1.74	0.51
53:4:4:G:H2'	53:4:5:G:C8	2.45	0.51
54:5:76:G:O2'	54:5:79:A:N6	2.43	0.51
54:5:195:U:H2'	54:5:196:G:C8	2.45	0.51
54:5:893:C:H3'	54:5:894:A:C8	2.44	0.51
54:5:1417:U:H2'	54:5:1418:G:C8	2.45	0.51
55:8:22:A:O4'	55:8:49:C:N4	2.43	0.51
5:A:230:ASN:ND2	5:A:253:GLU:OE1	2.43	0.51
12:H:34:ARG:NH2	54:5:1121:U:O5'	2.42	0.51
28:c:55:LYS:HZ2	52:3:708:C:H5''	1.75	0.51
28:c:76:GLN:OE1	28:c:81:ASN:ND2	2.42	0.51
52:3:220:A:H8	52:3:467:U:H3	1.51	0.51
52:3:247:U:H2'	52:3:248:A:C8	2.45	0.51
52:3:627:U:H2'	52:3:628:A:C8	2.45	0.51
52:3:2213:A:H2'	52:3:2214:A:C8	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:2567:C:H2'	52:3:2568:G:H8	1.75	0.51
52:3:2849:G:O6	52:3:2875:U:C4	2.63	0.51
54:5:211:G:H2'	54:5:212:G:H8	1.76	0.51
54:5:340:A:OP2	54:5:341:C:N4	2.44	0.51
54:5:473:A:H2'	54:5:474:G:H8	1.74	0.51
4:9:288:LYS:HZ2	4:9:300:SER:HB2	1.76	0.51
4:9:341:ASN:O	4:9:345:ASN:CA	2.59	0.51
15:K:115:LEU:C	15:K:117:THR:H	2.18	0.51
42:q:36:ASP:OD1	42:q:37:LYS:N	2.42	0.51
52:3:189:U:H2'	52:3:190:G:C8	2.44	0.51
52:3:651:A:H2'	52:3:652:U:O4'	2.10	0.51
52:3:822:C:H3'	52:3:826:C:H41	1.74	0.51
52:3:887:A:H61	52:3:963:U:H3	1.59	0.51
52:3:890:U:H2'	52:3:891:G:C8	2.45	0.51
52:3:1317:C:H2'	52:3:1318:U:C6	2.45	0.51
52:3:1801:U:H2'	52:3:1802:C:C6	2.46	0.51
52:3:1943:A:N3	52:3:1947:U:N3	2.58	0.51
52:3:2613:U:H2'	52:3:2614:U:C6	2.44	0.51
54:5:563:U:OP2	54:5:564:G:O2'	2.27	0.51
54:5:930:A:O2'	54:5:1358:U:O2	2.27	0.51
3:2:27:CYS:SG	3:2:28:LYS:N	2.83	0.51
15:K:3:THR:OG1	54:5:874:C:OP2	2.25	0.51
23:S:20:ASN:O	23:S:24:GLN:HG2	2.10	0.51
23:S:53:ARG:NH2	54:5:164:C:OP2	2.38	0.51
29:d:100:LEU:O	29:d:104:ILE:HG12	2.10	0.51
36:k:57:PRO:HG2	36:k:60:ARG:HB2	1.93	0.51
44:s:42:LEU:HD22	52:3:145:A:O2'	2.10	0.51
48:w:17:LYS:O	48:w:21:LYS:HG2	2.11	0.51
52:3:142:A:H2'	52:3:143:A:C8	2.45	0.51
52:3:329:G:O6	52:3:377:U:O4	2.28	0.51
52:3:562:C:N4	52:3:2785:G:O2'	2.44	0.51
52:3:766:C:H2'	52:3:767:C:C6	2.45	0.51
52:3:778:U:H2'	52:3:779:C:H6	1.74	0.51
52:3:783:G:N2	52:3:785:A:C6	2.79	0.51
52:3:1072:A:H2'	52:3:1073:A:C8	2.46	0.51
52:3:2015:C:H2'	52:3:2016:G:C8	2.43	0.51
52:3:2559:C:H2'	52:3:2560:U:C6	2.46	0.51
54:5:52:A:N1	54:5:101:A:N6	2.58	0.51
54:5:255:G:H2'	54:5:256:G:H8	1.75	0.51
54:5:1112:U:H3	54:5:1128:G:H1	1.57	0.51
54:5:1149:G:H2'	54:5:1150:G:H8	1.74	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:1388:A:N1	54:5:1462:G:C6	2.78	0.51
54:5:1427:U:H4'	54:5:1428:A:H5'	1.91	0.51
4:9:454:LEU:HD21	52:3:2670:A:H5'	1.92	0.51
5:A:83:LEU:HD11	5:A:108:ILE:HG13	1.92	0.51
7:C:14:LEU:HB3	7:C:59:ARG:HG2	1.93	0.51
35:j:8:LEU:N	35:j:18:GLN:HE22	2.08	0.51
45:t:89:ILE:HA	45:t:104:PHE:HA	1.93	0.51
46:u:30:SER:HB2	52:3:2271:C:N4	2.25	0.51
46:u:81:VAL:O	46:u:82:LYS:HE2	2.11	0.51
52:3:2080:C:H2'	52:3:2081:U:H6	1.75	0.51
52:3:2563:U:H2'	52:3:2564:C:H5'	1.92	0.51
52:3:2602:C:N4	52:3:2603:G:O6	2.43	0.51
52:3:2853:U:N3	52:3:2871:G:OP2	2.41	0.51
54:5:1001:A:C6	54:5:1019:G:N2	2.78	0.51
54:5:1193:U:H2'	54:5:1194:A:H8	1.74	0.51
55:7:33:C:C4	55:7:39:A:N6	2.78	0.51
4:9:267:ILE:O	4:9:271:LEU:HG	2.11	0.51
7:C:198:GLU:O	54:5:9:A:N6	2.42	0.51
9:E:4:ASN:HA	9:E:60:TRP:O	2.11	0.51
12:H:11:ARG:NH2	54:5:1109:U:OP2	2.43	0.51
27:b:109:ASP:HB3	27:b:177:GLN:HA	1.92	0.51
27:b:146:SER:N	52:3:2519:U:O2	2.43	0.51
32:g:62:ALA:O	32:g:66:GLY:N	2.44	0.51
35:j:28:THR:OG1	52:3:2574:A:N6	2.44	0.51
36:k:60:ARG:NH1	52:3:253:C:OP1	2.37	0.51
36:k:83:ASN:HD21	52:3:673:A:H62	1.58	0.51
52:3:192:U:H2'	52:3:193:G:O4'	2.10	0.51
52:3:224:G:N2	52:3:465:A:H62	2.07	0.51
52:3:587:U:H2'	52:3:588:G:C8	2.46	0.51
52:3:633:G:H2'	52:3:634:C:C6	2.46	0.51
52:3:713:C:H2'	52:3:714:G:C8	2.46	0.51
52:3:984:C:H2'	52:3:985:A:H8	1.74	0.51
52:3:1294:G:H2'	52:3:2022:A:H61	1.76	0.51
52:3:1623:U:H2'	52:3:1624:A:C8	2.45	0.51
54:5:1489:C:H2'	54:5:1490:G:C8	2.46	0.51
55:8:66:C:H2'	55:8:67:C:C6	2.46	0.51
3:2:2:LYS:HB2	3:2:34:GLN:HG2	1.92	0.51
4:9:101:GLY:HA3	4:9:278:LEU:HD12	1.92	0.51
4:9:120:TRP:CH2	4:9:132:ILE:HG12	2.45	0.51
6:B:57:GLU:N	6:B:68:PHE:O	2.39	0.51
7:C:141:LYS:HD2	7:C:177:THR:HB	1.91	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:b:61:LYS:HZ2	52:3:2834:C:H5''	1.75	0.51
37:l:114:MET:O	37:l:118:LEU:HG	2.11	0.51
52:3:688:U:H4'	52:3:689:U:OP2	2.11	0.51
52:3:1450:G:N1	52:3:1611:C:N3	2.59	0.51
52:3:1506:U:H5''	52:3:1595:C:H5'	1.93	0.51
52:3:2002:U:H3'	52:3:2003:C:H2'	1.92	0.51
52:3:2652:U:H3'	52:3:2653:G:H21	1.75	0.51
52:3:2736:U:O2'	52:3:2737:G:H8	1.93	0.51
54:5:42:G:H2'	54:5:43:G:H8	1.75	0.51
54:5:663:G:H2'	54:5:664:A:C8	2.45	0.51
54:5:1446:A:H2'	54:5:1447:U:H6	1.74	0.51
55:7:66:C:H2'	55:7:67:C:C6	2.46	0.51
12:H:30:ILE:HG23	12:H:37:PRO:HG3	1.92	0.51
22:R:36:ARG:HG3	54:5:1195:G:O3'	2.10	0.51
52:3:499:G:H21	52:3:501:G:H8	1.57	0.51
52:3:1730:C:H2'	52:3:1731:G:O4'	2.10	0.51
52:3:2080:C:H2'	52:3:2081:U:C6	2.46	0.51
52:3:2327:U:H4'	52:3:2328:A:H5'	1.93	0.51
54:5:39:G:N1	54:5:393:A:OP1	2.31	0.51
54:5:427:A:H2'	54:5:428:A:H5'	1.92	0.51
54:5:826:G:N2	54:5:851:U:O2	2.34	0.51
55:7:67:C:H2'	55:7:68:G:C8	2.42	0.51
4:9:386:THR:OG1	4:9:395:GLN:O	2.28	0.51
4:9:656:ARG:HG2	52:3:2668:A:N6	2.18	0.51
7:C:170:ASN:HB2	7:C:173:THR:HG22	1.92	0.51
14:J:49:ARG:O	14:J:52:THR:OG1	2.21	0.51
15:K:49:ARG:O	15:K:67:LYS:N	2.44	0.51
15:K:56:LYS:HG3	15:K:58:PRO:HD2	1.92	0.51
28:c:193:LEU:HG	36:k:5:GLN:HE22	1.75	0.51
29:d:5:LYS:HB2	29:d:97:TRP:CD1	2.46	0.51
36:k:28:LEU:HD12	36:k:32:SER:HA	1.93	0.51
45:t:93:MET:HG3	45:t:103:VAL:HB	1.91	0.51
48:w:63:LEU:HD12	48:w:64:ASN:H	1.76	0.51
51:z:16:GLU:OE1	51:z:16:GLU:N	2.44	0.51
52:3:1884:A:H2'	52:3:1885:G:C8	2.45	0.51
52:3:2085:C:H2'	52:3:2086:U:O4'	2.11	0.51
52:3:2104:A:H2'	52:3:2105:G:H8	1.76	0.51
52:3:2737:G:H2'	52:3:2738:U:C6	2.46	0.51
54:5:318:C:H42	54:5:325:A:N6	2.01	0.51
54:5:561:A:HO2'	54:5:564:G:HO2'	1.57	0.51
54:5:568:G:H2'	54:5:569:U:C6	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:1361:G:H2'	54:5:1362:G:H8	1.75	0.51
2:1:14:THR:HB	2:1:18:GLN:HB3	1.93	0.51
4:9:353:LEU:HD23	4:9:375:ILE:HG23	1.93	0.51
6:B:61:THR:OG1	13:I:100:VAL:O	2.27	0.51
7:C:2:LYS:HG3	7:C:3:TYR:CD2	2.46	0.51
20:P:4:ASN:HB2	20:P:6:ARG:HH12	1.75	0.51
28:c:75:ARG:NH1	52:3:709:G:O2'	2.44	0.51
52:3:57:G:H2'	52:3:58:A:H8	1.76	0.51
52:3:704:G:OP1	52:3:704:G:N2	2.43	0.51
52:3:982:G:H2'	52:3:983:A:C8	2.46	0.51
52:3:1527:U:H2'	52:3:1528:G:C8	2.37	0.51
52:3:2006:C:H5''	52:3:2731:U:O2'	2.11	0.51
52:3:2822:C:N3	52:3:2833:A:N6	2.59	0.51
54:5:167:A:H61	54:5:197:A:H5'	1.76	0.51
54:5:1043:U:O2	54:5:1181:G:N2	2.44	0.51
54:5:1389:U:H2'	54:5:1390:G:C8	2.46	0.51
14:J:121:ARG:NH2	54:5:1498:G:OP1	2.44	0.50
23:S:3:ASN:N	54:5:60:A:N7	2.59	0.50
26:a:84:LYS:HZ3	26:a:100:THR:HB	1.76	0.50
29:d:72:ASN:HB3	29:d:74:ILE:HD11	1.93	0.50
33:h:49:GLU:HG3	33:h:74:ILE:HG21	1.93	0.50
51:z:45:VAL:O	51:z:47:HIS:ND1	2.37	0.50
52:3:296:U:O2	52:3:300:G:O2'	2.22	0.50
52:3:720:A:H5'	52:3:809:A:N6	2.26	0.50
52:3:1480:A:O2'	52:3:1485:A:N6	2.44	0.50
52:3:1504:G:N2	52:3:1591:C:O2'	2.34	0.50
52:3:1692:A:H2'	52:3:1693:U:C6	2.45	0.50
52:3:1702:A:H61	52:3:1710:A:H61	1.58	0.50
52:3:1883:A:H3'	52:3:1884:A:H8	1.75	0.50
52:3:1951:A:H61	52:3:2565:G:HO2'	1.56	0.50
52:3:2706:U:O4	52:3:2707:A:N6	2.43	0.50
52:3:2849:G:N1	52:3:2875:U:C2	2.80	0.50
54:5:470:U:H2'	54:5:471:A:C8	2.46	0.50
55:7:16:G:N2	55:7:49:C:O2	2.44	0.50
4:9:57:LYS:NZ	52:3:2671:G:OP1	2.44	0.50
18:N:39:HIS:NE2	18:N:46:ASP:OD2	2.33	0.50
30:e:65:LYS:NZ	52:3:2757:A:O3'	2.44	0.50
38:m:18:VAL:HG13	38:m:41:THR:HG22	1.94	0.50
40:o:107:ARG:HH12	52:3:1761:C:H4'	1.75	0.50
41:p:35:LYS:HB2	52:3:1282:G:H22	1.77	0.50
43:r:18:ARG:O	43:r:22:GLN:HG2	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:v:25:THR:N	55:8:77:A:C2	2.80	0.50
52:3:210:U:C2	52:3:211:A:C8	2.99	0.50
52:3:1068:U:H3	52:3:2758:A:H61	1.57	0.50
52:3:1346:G:H2'	52:3:1347:A:H8	1.77	0.50
52:3:1671:C:H2'	52:3:1672:C:C6	2.46	0.50
54:5:56:A:H2'	54:5:56:A:N3	2.27	0.50
54:5:296:A:H2	54:5:563:U:H3	1.59	0.50
54:5:678:A:H2'	54:5:679:U:C6	2.46	0.50
54:5:922:G:OP1	54:5:1480:G:N2	2.37	0.50
54:5:1072:G:H2'	54:5:1073:A:H8	1.76	0.50
54:5:1406:U:O2	54:5:1444:G:N2	2.38	0.50
55:8:16:G:O2'	55:8:17:U:OP1	2.25	0.50
4:9:139:LYS:NZ	52:3:2662:A:H5'	2.26	0.50
13:I:24:LEU:O	13:I:28:THR:HG23	2.11	0.50
21:Q:81:MET:HG3	21:Q:84:ARG:HE	1.76	0.50
24:T:23:LEU:HD12	24:T:26:ARG:NH2	2.22	0.50
31:f:9:VAL:HG22	31:f:14:LYS:H	1.76	0.50
35:j:18:GLN:HB3	35:j:45:ASP:HB3	1.93	0.50
46:u:87:GLY:HA3	46:u:92:LYS:HG3	1.93	0.50
52:3:720:A:N6	52:3:813:G:H1'	2.26	0.50
52:3:895:G:H4'	52:3:896:U:H5'	1.93	0.50
52:3:1001:C:H2'	52:3:1002:A:C8	2.46	0.50
52:3:1192:U:H2'	52:3:1193:U:C6	2.45	0.50
52:3:1899:C:H2'	52:3:1900:C:H6	1.76	0.50
52:3:2728:U:C2	52:3:2729:A:C8	2.99	0.50
54:5:87:G:O2'	54:5:137:A:H2'	2.11	0.50
54:5:510:U:O4	54:5:511:A:N6	2.44	0.50
54:5:1241:G:C2	54:5:1243:A:H8	2.30	0.50
5:A:83:LEU:HG	5:A:107:PHE:HA	1.92	0.50
5:A:158:ARG:NH1	54:5:1089:C:OP2	2.45	0.50
6:B:30:THR:HA	6:B:33:TRP:HB2	1.93	0.50
9:E:132:VAL:HG12	9:E:134:SER:H	1.76	0.50
21:Q:88:LYS:NZ	54:5:732:A:OP1	2.42	0.50
26:a:271:LYS:NZ	52:3:2235:A:OP2	2.45	0.50
28:c:154:ASP:OD1	28:c:154:ASP:N	2.45	0.50
32:g:53:VAL:HG21	52:3:1120:A:N6	2.26	0.50
34:i:14:LYS:O	34:i:15:ARG:NH1	2.43	0.50
35:j:88:LYS:HB3	35:j:94:ARG:HG2	1.93	0.50
47:v:25:THR:N	55:8:77:A:H2	2.09	0.50
52:3:161:U:H2'	52:3:162:G:O4'	2.11	0.50
52:3:195:A:OP2	52:3:208:A:N6	2.41	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:763:G:O2'	52:3:765:A:O4'	2.29	0.50
52:3:1450:G:O2'	52:3:1517:G:N2	2.45	0.50
52:3:1476:C:H2'	52:3:1477:A:C8	2.46	0.50
52:3:2291:U:O4	52:3:2292:A:N6	2.44	0.50
54:5:442:G:H2'	54:5:443:G:H8	1.76	0.50
54:5:763:A:N7	54:5:810:U:C4	2.80	0.50
54:5:870:A:H2'	54:5:871:U:C6	2.46	0.50
54:5:1003:G:O2'	54:5:1004:U:H5'	2.10	0.50
9:E:107:LEU:HD13	21:Q:46:ILE:HB	1.93	0.50
21:Q:73:ARG:NH1	21:Q:80:GLN:OE1	2.41	0.50
25:W:62:TYR:OH	25:W:94:CYS:SG	2.69	0.50
28:c:115:VAL:HG21	28:c:188:VAL:HG23	1.94	0.50
30:e:3:LYS:HD2	52:3:2757:A:OP1	2.11	0.50
39:n:37:ASN:OD1	39:n:63:LYS:NZ	2.40	0.50
39:n:61:LYS:NZ	39:n:62:LEU:O	2.34	0.50
43:r:61:ASN:ND2	52:3:530:G:N3	2.59	0.50
43:r:90:LYS:HG2	52:3:783:G:O6	2.10	0.50
47:v:19:SER:O	55:8:76:C:H6	1.95	0.50
50:y:3:VAL:HG21	52:3:2064:G:H1'	1.93	0.50
52:3:674:G:O2'	52:3:675:U:H5'	2.12	0.50
52:3:730:G:H2'	52:3:731:A:C8	2.46	0.50
52:3:1507:G:O2'	52:3:1508:G:OP1	2.25	0.50
52:3:1868:A:H2'	52:3:1869:G:C8	2.46	0.50
52:3:2234:C:H3'	52:3:2235:A:C8	2.46	0.50
52:3:2601:U:H2'	52:3:2602:C:C6	2.47	0.50
54:5:11:A:H2'	54:5:12:G:C8	2.47	0.50
54:5:1224:C:N4	54:5:1262:A:OP2	2.33	0.50
4:9:245:ARG:NH2	4:9:278:LEU:O	2.45	0.50
4:9:301:ALA:HB1	4:9:330:SER:HB2	1.93	0.50
4:9:308:VAL:HG12	4:9:330:SER:HB3	1.92	0.50
4:9:436:LYS:HG3	4:9:449:ALA:HB3	1.94	0.50
4:9:611:GLN:HG3	4:9:662:ARG:HH22	1.76	0.50
8:D:84:ARG:NH2	54:5:16:G:O2'	2.44	0.50
11:G:48:LEU:HD23	11:G:54:LEU:HD22	1.93	0.50
17:M:2:ALA:N	54:5:1039:G:O3'	2.45	0.50
17:M:61:TRP:HD1	54:5:1162:G:HO2'	1.60	0.50
28:c:103:LEU:HG	28:c:108:HIS:HB2	1.93	0.50
30:e:15:LYS:HG3	30:e:30:PRO:HD3	1.92	0.50
34:i:100:SER:H	34:i:129:LYS:HD2	1.76	0.50
36:k:77:TRP:HA	36:k:110:LEU:HG	1.94	0.50
40:o:39:GLU:C	40:o:41:GLU:H	2.19	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:48:G:H2'	52:3:49:C:O4'	2.12	0.50
52:3:790:U:H2'	52:3:791:A:C8	2.46	0.50
52:3:2064:G:OP2	52:3:2066:A:N6	2.44	0.50
52:3:2157:A:H2'	52:3:2158:C:C6	2.46	0.50
52:3:2861:G:N2	52:3:2864:A:OP2	2.45	0.50
54:5:1039:G:H2'	54:5:1041:G:C8	2.47	0.50
4:9:200:PRO:HG2	4:9:203:PHE:HD2	1.77	0.50
4:9:570:GLU:HG3	4:9:571:VAL:H	1.76	0.50
7:C:11:SER:HB2	7:C:23:LYS:HG3	1.94	0.50
12:H:75:THR:HB	54:5:1347:U:H5''	1.92	0.50
28:c:50:HIS:CE1	28:c:95:PRO:HA	2.47	0.50
28:c:102:LYS:NZ	52:3:694:U:O5'	2.44	0.50
29:d:38:MET:HG3	29:d:86:GLY:HA2	1.93	0.50
41:p:63:ARG:NE	41:p:96:GLU:OE2	2.34	0.50
41:p:65:ASN:HA	41:p:68:LEU:HD12	1.93	0.50
50:y:47:MET:HB2	50:y:52:ARG:HA	1.94	0.50
52:3:107:C:H2'	52:3:108:G:H8	1.77	0.50
52:3:1227:C:H1'	52:3:1256:A:H2'	1.93	0.50
52:3:1692:A:H2'	52:3:1693:U:H6	1.74	0.50
52:3:1697:C:O2'	52:3:2694:A:H4'	2.12	0.50
52:3:1698:A:H61	52:3:2003:C:N4	2.10	0.50
52:3:1862:A:H2'	52:3:1863:G:C8	2.47	0.50
52:3:2055:A:H2'	52:3:2056:A:O4'	2.12	0.50
52:3:2700:C:H2'	52:3:2701:A:O4'	2.12	0.50
53:4:5:G:H2'	53:4:6:U:O4'	2.11	0.50
54:5:187:A:H2'	54:5:188:U:C6	2.47	0.50
54:5:1385:A:H2'	54:5:1386:C:C6	2.47	0.50
55:8:16:G:N2	55:8:49:C:O2	2.44	0.50
2:1:15:LYS:O	2:1:16:SER:OG	2.26	0.50
5:A:227:LEU:O	5:A:231:LEU:HG	2.12	0.50
7:C:33:THR:HG23	7:C:43:ARG:HH22	1.76	0.50
23:S:9:LYS:HA	23:S:12:ARG:HH11	1.76	0.50
26:a:217:GLY:O	26:a:221:HIS:ND1	2.45	0.50
28:c:61:GLY:N	52:3:505:G:OP2	2.43	0.50
30:e:96:GLY:HA2	30:e:98:ARG:HH22	1.77	0.50
36:k:125:HIS:CE1	36:k:145:SER:HG	2.30	0.50
39:n:110:ARG:HG3	39:n:116:PHE:CE1	2.47	0.50
41:p:61:ILE:HD13	52:3:1188:C:H5''	1.94	0.50
52:3:31:U:C2	52:3:32:G:C8	2.99	0.50
52:3:117:C:H2'	52:3:118:G:O4'	2.11	0.50
52:3:214:C:H2'	52:3:215:A:C8	2.47	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:306:G:H2'	52:3:307:C:H6	1.75	0.50
52:3:345:A:N6	52:3:363:G:OP1	2.44	0.50
52:3:597:C:H2'	52:3:598:G:C8	2.46	0.50
52:3:858:A:H2'	52:3:859:G:C8	2.47	0.50
54:5:242:A:N6	54:5:277:G:C4	2.79	0.50
54:5:358:G:N2	54:5:361:U:OP2	2.39	0.50
54:5:748:U:H2'	54:5:749:G:O4'	2.11	0.50
54:5:891:C:H2'	54:5:892:G:C8	2.47	0.50
54:5:1131:A:H2'	54:5:1132:G:O4'	2.12	0.50
54:5:1436:C:H2'	54:5:1437:A:C8	2.46	0.50
1:0:34:ARG:NH1	52:3:503:G:OP2	2.44	0.50
4:9:107:ASP:HB3	4:9:113:GLU:HG2	1.94	0.50
4:9:327:ARG:HB2	4:9:372:ILE:HG22	1.94	0.50
10:F:107:ALA:HB1	10:F:119:ILE:HG13	1.93	0.50
15:K:78:THR:HA	15:K:106:VAL:HG13	1.93	0.50
16:L:14:ARG:HB2	16:L:17:ILE:HG13	1.94	0.50
23:S:5:LYS:HB2	54:5:62:G:H5''	1.94	0.50
23:S:56:ARG:HH22	54:5:218:U:H4'	1.77	0.50
39:n:63:LYS:HE3	53:4:49:G:H5''	1.94	0.50
46:u:52:TYR:HE2	46:u:54:GLN:HB3	1.77	0.50
52:3:39:C:H2'	52:3:40:A:C8	2.47	0.50
52:3:488:G:N2	52:3:493:A:H1'	2.27	0.50
52:3:767:C:H2'	52:3:768:G:O4'	2.11	0.50
52:3:852:C:H2'	52:3:853:G:O4'	2.11	0.50
52:3:968:U:H1'	52:3:969:A:C8	2.47	0.50
52:3:1436:C:H2'	52:3:1437:A:C8	2.46	0.50
52:3:1536:C:H2'	52:3:1537:A:H8	1.77	0.50
52:3:1759:C:H2'	52:3:1760:G:C8	2.47	0.50
52:3:2302:C:H2'	52:3:2303:U:H6	1.76	0.50
52:3:2753:C:H2'	52:3:2754:U:C6	2.47	0.50
53:4:76:A:H2'	53:4:77:G:O4'	2.12	0.50
54:5:134:G:H1	54:5:160:A:N6	2.06	0.50
54:5:549:U:H2'	54:5:550:U:C6	2.47	0.50
54:5:1207:U:H2'	54:5:1208:G:C8	2.46	0.50
54:5:1384:A:H2'	54:5:1385:A:C8	2.46	0.50
54:5:1495:C:H2'	54:5:1496:G:H8	1.77	0.50
7:C:54:LEU:O	7:C:58:GLN:HG2	2.12	0.49
9:E:8:LEU:HB2	9:E:84:ARG:HB2	1.93	0.49
9:E:40:LEU:HB2	9:E:57:TYR:HB2	1.93	0.49
12:H:13:LYS:NZ	54:5:1348:G:N7	2.55	0.49
27:b:168:HIS:CE1	27:b:171:HIS:HB3	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:f:47:ARG:HH22	31:f:51:LEU:HB2	1.77	0.49
38:m:2:SER:OG	38:m:3:TYR:N	2.45	0.49
38:m:82:LEU:HD12	38:m:86:VAL:HB	1.94	0.49
39:n:45:ASP:HB2	39:n:52:LEU:HD11	1.94	0.49
45:t:90:LYS:NZ	45:t:108:ASN:OD1	2.44	0.49
52:3:638:A:H2'	52:3:639:G:C8	2.47	0.49
52:3:1615:G:H2'	52:3:1616:G:C8	2.47	0.49
52:3:1846:A:C4	52:3:1847:G:C8	3.00	0.49
52:3:2071:C:H2'	52:3:2072:C:H6	1.77	0.49
52:3:2381:G:H2'	52:3:2382:A:C8	2.44	0.49
52:3:2668:A:O2'	52:3:2669:G:O5'	2.28	0.49
54:5:781:A:H2'	54:5:782:G:H8	1.77	0.49
54:5:1074:U:OP1	54:5:1076:U:O2'	2.29	0.49
54:5:1282:U:H2'	54:5:1283:G:H8	1.77	0.49
54:5:1363:U:H2'	54:5:1364:C:C6	2.47	0.49
4:9:183:VAL:HA	4:9:196:GLU:HA	1.94	0.49
5:A:37:TRP:CD1	5:A:37:TRP:H	2.29	0.49
29:d:125:ARG:O	29:d:127:ASN:ND2	2.45	0.49
35:j:7:ARG:HB2	35:j:18:GLN:NE2	2.27	0.49
38:m:60:ARG:HG2	38:m:83:PHE:CE2	2.47	0.49
44:s:7:LEU:HA	44:s:31:VAL:HG12	1.95	0.49
52:3:334:A:H1'	52:3:353:G:H1'	1.94	0.49
52:3:938:A:H2'	52:3:939:U:C6	2.48	0.49
52:3:1048:A:O2'	52:3:1049:U:O5'	2.28	0.49
52:3:1067:A:N1	52:3:1157:G:C6	2.80	0.49
52:3:1324:A:OP1	52:3:2717:G:O2'	2.27	0.49
52:3:1931:C:H2'	52:3:1932:C:C6	2.47	0.49
53:4:56:A:C2	53:4:57:G:C8	3.00	0.49
54:5:26:C:H2'	54:5:27:A:C8	2.46	0.49
54:5:140:U:H2'	54:5:141:A:H8	1.76	0.49
54:5:214:U:H2'	54:5:215:C:C6	2.47	0.49
54:5:672:A:H61	54:5:712:A:H61	1.59	0.49
54:5:1051:U:H2'	54:5:1052:G:C8	2.46	0.49
54:5:1323:A:H2'	54:5:1324:A:O4'	2.12	0.49
6:B:18:TRP:HZ2	17:M:57:LYS:HE3	1.77	0.49
16:L:113:ARG:NE	54:5:941:A:OP1	2.30	0.49
17:M:6:LEU:O	17:M:21:TYR:OH	2.30	0.49
35:j:21:ILE:HD11	35:j:24:VAL:HG22	1.95	0.49
41:p:35:LYS:O	41:p:39:ILE:HG12	2.12	0.49
52:3:476:G:H2'	52:3:477:U:H6	1.78	0.49
52:3:663:A:O2'	52:3:672:G:N2	2.46	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1079:U:H4'	52:3:1083:A:H5'	1.93	0.49
52:3:1232:U:H2'	52:3:1233:A:C8	2.47	0.49
52:3:2695:U:H2'	52:3:2696:G:O4'	2.13	0.49
52:3:2705:G:H2'	52:3:2706:U:C6	2.47	0.49
54:5:515:G:N1	54:5:531:A:OP2	2.36	0.49
54:5:557:A:H5''	54:5:558:U:H3'	1.93	0.49
54:5:821:U:H2'	54:5:822:A:C8	2.47	0.49
1:0:32:LYS:O	1:0:36:LYS:HG2	2.13	0.49
4:9:415:LYS:HZ2	15:K:46:VAL:HG22	1.77	0.49
22:R:36:ARG:HE	22:R:72:GLY:HA3	1.77	0.49
36:k:81:ASN:HB3	36:k:84:LYS:HB3	1.94	0.49
39:n:12:HIS:CE1	39:n:95:GLY:H	2.31	0.49
40:o:14:GLU:OE2	40:o:60:ILE:N	2.45	0.49
52:3:538:A:H4'	52:3:539:U:H5'	1.94	0.49
52:3:670:G:H2'	52:3:671:C:C6	2.47	0.49
52:3:1231:G:H2'	52:3:1232:U:C6	2.46	0.49
52:3:1317:C:H2'	52:3:1318:U:H6	1.77	0.49
52:3:1461:A:H2'	52:3:1462:A:C8	2.47	0.49
52:3:1463:G:H2'	52:3:1464:G:C8	2.47	0.49
52:3:2099:U:N3	52:3:2207:A:H2	2.11	0.49
52:3:2278:G:H3'	52:3:2279:G:H8	1.77	0.49
54:5:153:A:H2'	54:5:154:G:C8	2.47	0.49
54:5:242:A:C8	54:5:277:G:N2	2.80	0.49
54:5:586:G:O6	54:5:587:A:N6	2.45	0.49
54:5:707:G:H2'	54:5:708:A:C8	2.47	0.49
54:5:950:C:H2'	54:5:951:U:C6	2.46	0.49
54:5:973:A:C8	54:5:974:C:H5	2.30	0.49
54:5:1037:A:H2'	54:5:1038:G:O4'	2.12	0.49
54:5:1217:G:O6	54:5:1269:U:O4	2.30	0.49
7:C:9:LYS:NZ	54:5:540:U:OP1	2.40	0.49
10:F:101:ARG:NH1	54:5:934:G:H4'	2.27	0.49
16:L:5:LEU:HD13	16:L:57:ARG:HG3	1.94	0.49
29:d:88:LYS:NZ	52:3:2320:U:O2'	2.29	0.49
30:e:124:LEU:HD21	30:e:143:LEU:HB2	1.94	0.49
34:i:35:ALA:O	34:i:39:ILE:HG12	2.13	0.49
37:l:20:LYS:NZ	53:4:76:A:H5''	2.28	0.49
40:o:54:ARG:HB3	40:o:65:ILE:HD13	1.94	0.49
52:3:696:U:H2'	52:3:697:U:C6	2.47	0.49
53:4:94:A:H3'	53:4:95:G:H8	1.78	0.49
54:5:146:A:N6	54:5:340:A:O2'	2.46	0.49
54:5:490:U:H2'	54:5:491:U:C6	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:717:C:OP2	54:5:718:A:O2'	2.26	0.49
54:5:851:U:H2'	54:5:852:G:O4'	2.11	0.49
7:C:37:GLN:NE2	54:5:510:U:O2	2.45	0.49
8:D:134:GLY:O	8:D:176:SER:OG	2.26	0.49
10:F:65:VAL:HA	10:F:68:VAL:HG12	1.94	0.49
16:L:56:ILE:HA	16:L:59:VAL:HG22	1.95	0.49
22:R:19:VAL:O	22:R:23:ASN:CB	2.61	0.49
28:c:175:ILE:HB	28:c:178:VAL:HG22	1.94	0.49
32:g:55:LYS:HB2	32:g:58:ILE:HG22	1.94	0.49
34:i:131:ASP:N	34:i:131:ASP:OD1	2.45	0.49
39:n:101:ARG:NH2	53:4:48:A:OP2	2.34	0.49
43:r:123:ALA:O	43:r:127:LYS:HG2	2.12	0.49
47:v:30:ASN:HB2	52:3:2238:G:H4'	1.93	0.49
52:3:116:C:H2'	52:3:117:C:C6	2.47	0.49
52:3:851:U:H2'	52:3:852:C:C6	2.47	0.49
52:3:1020:G:N2	52:3:1020:G:OP2	2.46	0.49
52:3:1638:C:H2'	52:3:1639:C:C6	2.47	0.49
52:3:1638:C:H2'	52:3:1639:C:H6	1.77	0.49
52:3:1683:G:H2'	52:3:1684:A:C8	2.47	0.49
52:3:1696:C:O2'	52:3:2695:U:OP1	2.31	0.49
52:3:1787:A:H3'	52:3:1788:A:H2'	1.94	0.49
52:3:2473:C:H2'	52:3:2474:C:C6	2.47	0.49
54:5:147:A:H2'	54:5:148:A:O4'	2.12	0.49
54:5:397:C:H1'	54:5:620:A:N3	2.27	0.49
54:5:441:U:H2'	54:5:442:G:H8	1.77	0.49
54:5:871:U:H2'	54:5:872:C:C6	2.47	0.49
54:5:887:C:C2	54:5:888:A:C8	3.01	0.49
54:5:1387:U:H2'	54:5:1388:A:C8	2.48	0.49
4:9:532:ARG:NE	54:5:1184:C:OP1	2.37	0.49
8:D:70:ILE:HG22	8:D:92:VAL:HG12	1.94	0.49
11:G:19:LEU:HD13	11:G:89:GLN:HG2	1.94	0.49
27:b:62:LEU:HD23	27:b:67:GLN:HB3	1.95	0.49
34:i:116:ARG:HG2	34:i:119:ARG:HH21	1.77	0.49
36:k:16:LYS:O	52:3:697:U:O2'	2.20	0.49
52:3:130:C:H2'	52:3:131:C:C6	2.48	0.49
52:3:364:A:H1'	52:3:1240:U:C4	2.47	0.49
52:3:487:C:N4	52:3:490:A:OP2	2.32	0.49
52:3:619:A:O2'	52:3:706:C:O2	2.28	0.49
52:3:627:U:H2'	52:3:628:A:H8	1.78	0.49
52:3:684:A:H2'	52:3:685:G:H8	1.77	0.49
52:3:711:A:O2'	52:3:2450:C:O2	2.27	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1901:C:H2'	52:3:1902:C:C6	2.46	0.49
52:3:1956:G:H2'	52:3:1957:G:C8	2.48	0.49
52:3:2054:C:O2'	52:3:2827:A:N1	2.41	0.49
52:3:2190:G:H2'	52:3:2191:G:C8	2.47	0.49
53:4:38:U:H3'	53:4:39:U:H4'	1.94	0.49
54:5:403:A:H2'	54:5:404:A:C8	2.48	0.49
54:5:733:A:H2'	54:5:734:A:C8	2.46	0.49
54:5:737:U:H2'	54:5:738:A:H8	1.78	0.49
54:5:951:U:H3	54:5:955:U:H3	1.59	0.49
54:5:1126:U:H1'	54:5:1255:A:N1	2.27	0.49
54:5:1128:G:H2'	54:5:1129:C:C6	2.48	0.49
54:5:1219:C:H2'	54:5:1220:A:H8	1.78	0.49
54:5:1463:A:H2'	54:5:1464:G:H8	1.77	0.49
4:9:463:MET:HA	4:9:467:PHE:HD1	1.77	0.49
5:A:154:ARG:O	5:A:157:GLU:HG2	2.12	0.49
21:Q:56:ASP:OD1	21:Q:56:ASP:N	2.46	0.49
24:T:37:ARG:NH1	54:5:1502:G:N7	2.61	0.49
35:j:65:THR:HG22	35:j:67:LYS:H	1.78	0.49
41:p:56:PHE:HB3	41:p:60:TRP:CZ2	2.48	0.49
48:w:22:LEU:HB2	48:w:51:LEU:HD21	1.94	0.49
52:3:218:G:H2'	52:3:219:G:C8	2.47	0.49
52:3:622:U:H2'	52:3:623:A:C8	2.47	0.49
52:3:783:G:N2	52:3:785:A:N1	2.60	0.49
52:3:1696:C:H1'	52:3:2695:U:H5''	1.95	0.49
52:3:1777:G:H2'	52:3:1778:G:C8	2.48	0.49
52:3:1777:G:O6	52:3:1990:C:N4	2.46	0.49
52:3:1947:U:H1'	52:3:1949:C:N4	2.27	0.49
52:3:2147:G:H2'	52:3:2148:U:C6	2.47	0.49
52:3:2826:G:HO2'	52:3:2829:G:H22	1.60	0.49
54:5:102:G:N2	54:5:309:A:O2'	2.45	0.49
54:5:417:U:H3'	54:5:418:U:H5'	1.93	0.49
54:5:599:G:O6	54:5:634:U:O4	2.30	0.49
54:5:1138:U:H2'	54:5:1139:A:C8	2.47	0.49
54:5:1383:A:N7	54:5:1469:G:N1	2.60	0.49
5:A:95:LEU:HD22	5:A:229:MET:HE1	1.93	0.49
6:B:210:ILE:HG21	6:B:217:ARG:HD2	1.95	0.49
7:C:29:LYS:HD3	7:C:30:LYS:H	1.78	0.49
7:C:150:LYS:O	7:C:155:LYS:NZ	2.45	0.49
10:F:9:ARG:HH21	10:F:11:VAL:HG12	1.77	0.49
10:F:60:VAL:O	10:F:127:SER:OG	2.31	0.49
14:J:28:SER:OG	14:J:34:VAL:HA	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:k:38:GLY:HA2	52:3:866:G:H5''	1.95	0.49
52:3:84:G:N2	52:3:104:A:OP2	2.46	0.49
52:3:1048:A:H2'	52:3:1049:U:C6	2.47	0.49
52:3:1691:U:H2'	52:3:1692:A:H8	1.78	0.49
52:3:1945:A:N6	52:3:2598:C:O2'	2.44	0.49
52:3:2130:A:H2'	52:3:2131:G:H8	1.78	0.49
52:3:2533:A:H2'	52:3:2534:G:C8	2.47	0.49
52:3:2793:U:H2'	52:3:2794:U:C6	2.48	0.49
54:5:174:U:H2'	54:5:175:U:C6	2.48	0.49
54:5:412:G:H2'	54:5:413:G:C8	2.48	0.49
54:5:1244:A:H1'	54:5:1286:G:H21	1.78	0.49
3:2:29:THR:HG22	3:2:31:LYS:H	1.78	0.49
5:A:120:PHE:HB2	5:A:172:LEU:HD21	1.95	0.49
6:B:179:SER:N	54:5:1099:G:OP1	2.44	0.49
11:G:73:ASN:HD22	11:G:73:ASN:N	2.11	0.49
11:G:104:LEU:HD11	11:G:134:GLY:HA2	1.95	0.49
28:c:136:THR:HG23	28:c:143:MET:SD	2.53	0.49
35:j:8:LEU:H	35:j:18:GLN:HE22	1.60	0.49
47:v:5:ASP:OD1	47:v:5:ASP:N	2.46	0.49
52:3:337:U:H2'	52:3:338:G:C8	2.47	0.49
52:3:716:G:O6	52:3:831:U:O4	2.31	0.49
52:3:971:U:H2'	52:3:972:C:C6	2.47	0.49
52:3:1465:U:H4'	52:3:1541:A:H2	1.78	0.49
52:3:1633:C:H2'	52:3:1634:A:C8	2.48	0.49
52:3:2126:A:H2	52:3:2176:G:H21	1.61	0.49
52:3:2134:G:H2'	52:3:2135:C:C6	2.47	0.49
53:4:14:U:H2'	53:4:15:C:H6	1.78	0.49
5:A:57:VAL:O	5:A:61:GLN:HB2	2.13	0.48
6:B:95:ILE:HG13	6:B:96:ILE:HG22	1.94	0.48
7:C:121:HIS:HE1	54:5:434:U:H4'	1.77	0.48
8:D:73:LEU:HA	8:D:89:SER:O	2.12	0.48
39:n:75:GLN:HB2	39:n:112:ARG:HH21	1.78	0.48
39:n:79:ASP:HA	39:n:82:VAL:HG22	1.95	0.48
52:3:131:C:H4'	52:3:1377:A:H4'	1.95	0.48
52:3:145:A:H2'	52:3:146:G:C8	2.47	0.48
52:3:373:U:H2'	52:3:374:A:H8	1.78	0.48
52:3:623:A:H2'	52:3:624:U:C6	2.48	0.48
52:3:706:C:H2'	52:3:707:C:C6	2.47	0.48
52:3:840:G:C6	52:3:2075:U:H5''	2.47	0.48
52:3:1641:A:N6	52:3:1656:A:OP2	2.46	0.48
52:3:1747:G:H1	52:3:1751:A:H5''	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1853:G:N2	52:3:1854:A:N1	2.61	0.48
52:3:1975:G:OP1	52:3:2600:G:H5''	2.12	0.48
52:3:2295:A:C5	52:3:2297:G:C8	3.01	0.48
52:3:2596:A:N1	52:3:2615:G:N1	2.61	0.48
52:3:2634:C:H2'	52:3:2635:G:C8	2.48	0.48
52:3:2796:C:H2'	52:3:2797:C:C6	2.47	0.48
54:5:473:A:H2'	54:5:474:G:C8	2.48	0.48
54:5:606:A:C2	54:5:607:A:H1'	2.48	0.48
54:5:707:G:H2'	54:5:708:A:H8	1.78	0.48
3:2:30:GLN:HB3	52:3:2535:C:H5''	1.95	0.48
5:A:132:LYS:O	5:A:136:LYS:HG2	2.13	0.48
7:C:202:ARG:NH1	54:5:28:G:H5''	2.28	0.48
9:E:105:GLN:H	9:E:105:GLN:CD	2.21	0.48
17:M:60:SER:HB3	54:5:1105:C:H1'	1.96	0.48
26:a:183:GLN:OE1	26:a:189:THR:OG1	2.30	0.48
27:b:85:ARG:CZ	52:3:2645:U:H5''	2.43	0.48
35:j:108:GLU:OE1	35:j:108:GLU:N	2.37	0.48
38:m:63:VAL:HA	38:m:66:TRP:HD1	1.78	0.48
45:t:11:VAL:HG13	45:t:77:PHE:HB2	1.94	0.48
45:t:79:GLN:HG2	45:t:84:GLN:HG2	1.94	0.48
52:3:411:U:H2'	52:3:412:A:C8	2.47	0.48
52:3:522:C:H2'	52:3:523:A:H8	1.77	0.48
52:3:597:C:H2'	52:3:598:G:H8	1.77	0.48
52:3:807:U:H2'	52:3:808:U:C6	2.47	0.48
52:3:868:C:H2'	52:3:869:U:C6	2.47	0.48
52:3:1019:A:H2'	52:3:1020:G:C4	2.47	0.48
52:3:1231:G:H2'	52:3:1232:U:H6	1.78	0.48
52:3:1384:C:H2'	52:3:1385:U:C6	2.47	0.48
52:3:2218:U:C2	52:3:2220:A:H2'	2.48	0.48
54:5:141:A:H2'	54:5:142:G:H8	1.78	0.48
54:5:442:G:H2'	54:5:443:G:C8	2.47	0.48
54:5:1490:G:H2'	54:5:1491:A:C8	2.48	0.48
2:1:54:ARG:HH11	52:3:869:U:H5'	1.78	0.48
6:B:121:ARG:HH11	6:B:125:ASN:ND2	2.11	0.48
7:C:8:PHE:HB2	54:5:426:U:H5'	1.95	0.48
23:S:11:LEU:O	23:S:15:ILE:HG12	2.12	0.48
27:b:168:HIS:HE1	27:b:171:HIS:HB3	1.79	0.48
31:f:6:LYS:HB2	31:f:34:LYS:HA	1.95	0.48
46:u:24:THR:OG1	46:u:25:LYS:N	2.45	0.48
47:v:14:TYR:CE2	52:3:192:U:H5''	2.48	0.48
52:3:1121:A:H1'	52:3:1138:A:H61	1.77	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1123:A:H2'	52:3:1123:A:N3	2.28	0.48
52:3:2179:A:H1'	52:3:2180:U:C6	2.47	0.48
52:3:2402:C:H2'	52:3:2403:C:O4'	2.14	0.48
54:5:366:C:H2'	54:5:367:A:C8	2.48	0.48
54:5:576:A:O2'	54:5:725:A:O2'	2.30	0.48
54:5:590:G:N2	54:5:644:U:O2	2.47	0.48
1:0:3:ARG:HH21	52:3:1654:G:H1'	1.77	0.48
4:9:410:VAL:HA	4:9:474:GLY:HA3	1.95	0.48
4:9:609:PRO:O	4:9:611:GLN:NE2	2.47	0.48
6:B:111:SER:OG	6:B:207:ARG:NH1	2.46	0.48
7:C:5:GLY:H	7:C:111:ARG:HH12	1.61	0.48
10:F:99:ALA:O	10:F:103:ILE:HG12	2.13	0.48
18:N:6:ASN:O	18:N:10:LYS:HG2	2.14	0.48
37:l:20:LYS:HZ1	53:4:76:A:H5''	1.79	0.48
43:r:19:LEU:O	43:r:23:LEU:HG	2.13	0.48
47:v:17:ASN:ND2	52:3:417:G:H4'	2.28	0.48
52:3:824:A:H61	52:3:1648:A:P	2.35	0.48
52:3:832:C:H2'	52:3:833:C:C6	2.48	0.48
52:3:1200:U:O2	52:3:1215:G:O6	2.31	0.48
52:3:1447:A:O2'	52:3:1448:U:H5''	2.14	0.48
52:3:2304:U:N3	52:3:2342:U:O4'	2.46	0.48
52:3:2477:A:H2'	52:3:2478:G:O4'	2.14	0.48
54:5:501:A:H2'	54:5:502:C:C6	2.49	0.48
54:5:753:C:H2'	54:5:754:U:O4'	2.12	0.48
54:5:976:U:H2'	54:5:977:U:C5	2.49	0.48
54:5:1220:A:H2'	54:5:1221:A:C8	2.48	0.48
54:5:1327:G:H2'	54:5:1328:C:C6	2.48	0.48
55:7:16:G:O2'	55:7:17:U:OP1	2.25	0.48
11:G:25:ALA:HB1	11:G:74:LEU:HD11	1.94	0.48
14:J:13:ILE:HG12	14:J:76:LYS:HB2	1.94	0.48
43:r:57:ASN:OD1	43:r:61:ASN:ND2	2.46	0.48
49:x:16:CYS:SG	49:x:17:ALA:N	2.86	0.48
52:3:137:U:O2	52:3:146:G:N2	2.41	0.48
52:3:429:U:H2'	52:3:430:U:C6	2.49	0.48
52:3:848:U:H2'	52:3:849:C:C6	2.49	0.48
52:3:1070:U:O4	52:3:1155:G:O6	2.31	0.48
52:3:2644:U:H2'	52:3:2645:U:C6	2.48	0.48
54:5:171:A:H2'	54:5:172:C:C6	2.49	0.48
54:5:445:A:N7	54:5:483:U:C2	2.81	0.48
54:5:456:U:O2	54:5:472:G:N2	2.47	0.48
54:5:1282:U:H3	54:5:1303:A:H2	1.59	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:9:4:THR:HG22	4:9:5:VAL:HG13	1.95	0.48
4:9:172:PHE:HE1	4:9:175:ILE:HG12	1.78	0.48
9:E:42:LEU:HB2	9:E:56:HIS:CE1	2.49	0.48
26:a:45:GLY:H	26:a:61:ARG:HH12	1.61	0.48
28:c:162:ASN:HD22	28:c:183:LEU:HD23	1.78	0.48
34:i:119:ARG:HH22	52:3:563:A:H3'	1.79	0.48
36:k:24:HIS:HB2	52:3:846:U:H5''	1.94	0.48
40:o:31:VAL:HG12	40:o:90:LEU:HA	1.96	0.48
44:s:58:LEU:HD11	44:s:80:LEU:HD12	1.94	0.48
45:t:12:VAL:HG22	45:t:74:LEU:HD22	1.96	0.48
52:3:111:G:H2'	52:3:112:A:C8	2.49	0.48
52:3:187:C:H1'	52:3:468:A:C2	2.48	0.48
52:3:280:A:H2'	52:3:281:U:C6	2.49	0.48
52:3:1463:G:H2'	52:3:1464:G:H8	1.77	0.48
52:3:1853:G:H2'	52:3:1854:A:C8	2.49	0.48
52:3:2098:U:O2	52:3:2236:G:C6	2.67	0.48
52:3:2460:C:H2'	52:3:2461:A:C8	2.47	0.48
52:3:2572:A:C6	52:3:2655:U:H4'	2.49	0.48
52:3:2581:C:OP1	52:3:2582:G:H5''	2.13	0.48
54:5:166:U:H2'	54:5:167:A:O4'	2.14	0.48
54:5:305:A:H1'	54:5:606:A:C2	2.48	0.48
54:5:1193:U:H2'	54:5:1194:A:C8	2.47	0.48
54:5:1363:U:H2'	54:5:1364:C:H6	1.77	0.48
1:0:39:ARG:HD3	52:3:505:G:H1	1.79	0.48
4:9:33:HIS:CE1	4:9:190:LYS:HA	2.48	0.48
5:A:246:PHE:HE1	5:A:251:ASP:HB3	1.78	0.48
9:E:1:MET:HB2	9:E:90:LEU:HG	1.96	0.48
12:H:76:GLY:N	54:5:1347:U:OP1	2.45	0.48
15:K:2:ALA:HB2	54:5:876:C:H41	1.79	0.48
18:N:33:ILE:HG13	18:N:60:ARG:HH12	1.79	0.48
20:P:29:ARG:HB3	20:P:40:VAL:HG12	1.96	0.48
20:P:60:LYS:HG3	20:P:81:ILE:HB	1.95	0.48
29:d:46:ASP:HA	29:d:49:PHE:HB3	1.95	0.48
30:e:147:PHE:O	30:e:151:VAL:HG23	2.14	0.48
37:l:80:GLU:HB3	52:3:2502:G:H4'	1.95	0.48
51:z:35:ASN:ND2	52:3:2352:U:OP1	2.47	0.48
52:3:804:U:H2'	52:3:805:G:C8	2.48	0.48
52:3:833:C:H2'	52:3:834:G:H8	1.78	0.48
52:3:1548:A:H4'	52:3:1550:G:H1'	1.96	0.48
52:3:1686:U:H3	52:3:2012:A:H61	1.62	0.48
52:3:1995:G:H2'	52:3:1996:A:H8	1.79	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:2816:A:H2'	52:3:2817:G:C8	2.48	0.48
52:3:2831:U:H2'	52:3:2832:G:C8	2.48	0.48
53:4:73:U:H2'	53:4:74:G:C8	2.48	0.48
53:4:76:A:OP2	53:4:88:G:N2	2.47	0.48
54:5:835:G:H2'	54:5:836:C:C6	2.47	0.48
54:5:846:G:H2'	54:5:847:G:H8	1.78	0.48
4:9:162:ILE:O	4:9:178:LEU:HB2	2.14	0.48
4:9:509:ILE:HG22	4:9:563:LEU:HD13	1.95	0.48
5:A:26:MET:HG3	5:A:29:HIS:CG	2.49	0.48
6:B:87:LYS:O	6:B:90:LYS:HG2	2.14	0.48
16:L:54:VAL:HA	16:L:57:ARG:HB2	1.95	0.48
16:L:120:LYS:HE3	54:5:1203:A:H2	1.78	0.48
28:c:26:ALA:HB2	28:c:113:HIS:CE1	2.48	0.48
40:o:108:SER:OG	40:o:109:GLY:N	2.47	0.48
41:p:32:LYS:HA	52:3:1282:G:H21	1.79	0.48
43:r:131:GLY:HA2	43:r:134:LYS:HG2	1.95	0.48
44:s:7:LEU:HD21	48:w:27:LEU:HD21	1.95	0.48
52:3:1162:A:O2'	52:3:2526:A:OP1	2.26	0.48
52:3:1246:U:O2	52:3:1263:G:N2	2.41	0.48
52:3:1587:U:H2'	52:3:1588:A:C4	2.49	0.48
52:3:1802:C:H2'	52:3:1803:U:H6	1.79	0.48
52:3:1805:U:O2'	52:3:1809:A:N3	2.32	0.48
52:3:2117:G:N2	52:3:2188:U:O2	2.46	0.48
52:3:2388:C:H2'	52:3:2389:A:C8	2.49	0.48
52:3:2516:G:N2	52:3:2588:U:O2	2.45	0.48
52:3:2861:G:H2'	52:3:2862:U:H3'	1.96	0.48
54:5:97:G:H2'	54:5:98:G:C8	2.49	0.48
54:5:337:C:H2'	54:5:338:C:C6	2.48	0.48
54:5:460:A:H2'	54:5:461:G:H8	1.78	0.48
54:5:1225:A:C2	54:5:1345:G:H1'	2.47	0.48
4:9:18:HIS:CD2	4:9:115:GLN:HB2	2.48	0.48
5:A:79:ASN:O	5:A:171:ARG:NH2	2.47	0.48
5:A:203:ASN:ND2	5:A:219:ASN:OD1	2.47	0.48
14:J:62:LYS:O	14:J:65:LYS:HG3	2.14	0.48
28:c:132:LEU:O	28:c:136:THR:N	2.38	0.48
30:e:17:ASN:OD1	30:e:28:LYS:HB3	2.14	0.48
34:i:139:LYS:O	34:i:139:LYS:HD2	2.14	0.48
41:p:109:VAL:O	41:p:113:LYS:NZ	2.46	0.48
52:3:190:G:H2'	52:3:191:G:H8	1.79	0.48
52:3:699:U:H2'	52:3:700:U:O4'	2.13	0.48
52:3:775:C:H5'	52:3:1791:A:H2'	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1009:A:O3'	52:3:1218:G:O2'	2.32	0.48
52:3:1271:A:H2'	52:3:1272:A:H8	1.78	0.48
52:3:1356:G:H4'	52:3:1357:U:H5	1.79	0.48
52:3:1849:G:O6	52:3:1905:U:O4	2.32	0.48
52:3:1986:C:H2'	52:3:1987:C:C6	2.48	0.48
52:3:2043:C:H2'	52:3:2044:C:C6	2.48	0.48
53:4:96:G:H2'	53:4:97:A:O4'	2.13	0.48
54:5:41:C:H2'	54:5:42:G:C8	2.49	0.48
54:5:48:C:O4'	54:5:361:U:N3	2.47	0.48
54:5:1217:G:N2	54:5:1269:U:O2	2.43	0.48
5:A:53:ASN:HB2	5:A:55:HIS:HE1	1.79	0.48
16:L:96:PRO:HD3	16:L:109:ARG:HB2	1.95	0.48
26:a:138:LEU:HD13	26:a:180:VAL:HG21	1.94	0.48
27:b:73:ASN:HB3	27:b:75:LEU:HG	1.95	0.48
38:m:58:ASN:O	38:m:62:GLN:HG2	2.13	0.48
41:p:91:ARG:NE	41:p:91:ARG:HA	2.28	0.48
46:u:101:LYS:HD2	46:u:101:LYS:O	2.13	0.48
52:3:248:A:H2'	52:3:249:G:O4'	2.14	0.48
52:3:341:G:N2	52:3:364:A:N6	2.30	0.48
52:3:381:A:H2'	52:3:382:U:C6	2.49	0.48
52:3:610:G:O3'	52:3:1285:U:O2'	2.32	0.48
52:3:615:G:H2'	52:3:616:G:C8	2.49	0.48
52:3:635:G:N2	52:3:691:G:C2	2.82	0.48
52:3:863:U:H4'	52:3:866:G:N1	2.29	0.48
52:3:1277:A:O2'	52:3:1279:U:H5'	2.14	0.48
52:3:1596:U:H2'	52:3:1597:U:C6	2.49	0.48
52:3:1803:U:H2'	52:3:1804:A:C8	2.49	0.48
52:3:2123:A:H3'	52:3:2124:A:C8	2.49	0.48
52:3:2169:G:H5''	52:3:2170:A:H3'	1.95	0.48
54:5:137:A:H3'	54:5:138:A:H8	1.79	0.48
54:5:165:A:H2'	54:5:166:U:C6	2.48	0.48
54:5:386:U:H2'	54:5:387:G:C8	2.48	0.48
54:5:889:U:C2	54:5:890:U:C5	3.02	0.48
4:9:603:ALA:N	4:9:670:SER:OG	2.47	0.47
7:C:202:ARG:HH12	54:5:28:G:H5''	1.79	0.47
12:H:19:VAL:HG22	12:H:67:VAL:HG22	1.95	0.47
17:M:18:VAL:HG21	54:5:1292:A:N6	2.29	0.47
20:P:4:ASN:HB3	54:5:115:A:C5	2.49	0.47
27:b:148:GLN:HA	52:3:2059:G:H4'	1.96	0.47
34:i:40:ARG:CZ	52:3:1043:C:H5''	2.44	0.47
42:q:57:CYS:HA	42:q:94:VAL:HA	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:y:6:ARG:HH22	52:3:2026:A:H8	1.60	0.47
52:3:387:U:H2'	52:3:388:U:H6	1.79	0.47
52:3:413:G:O6	52:3:435:U:O4	2.32	0.47
52:3:573:A:H2'	52:3:574:G:O4'	2.14	0.47
52:3:727:C:H2'	52:3:728:A:C8	2.48	0.47
52:3:1172:G:H2'	52:3:1173:G:C8	2.49	0.47
52:3:1246:U:O4	52:3:1263:G:O6	2.32	0.47
52:3:1820:U:O2'	52:3:1821:G:OP1	2.30	0.47
52:3:2316:G:H5''	52:3:2318:A:OP2	2.14	0.47
52:3:2607:G:H2'	52:3:2608:A:C8	2.49	0.47
52:3:2799:U:N3	52:3:2896:G:N1	2.62	0.47
53:4:30:U:C2	53:4:49:G:N2	2.82	0.47
54:5:206:G:O2'	54:5:209:A:N6	2.47	0.47
54:5:656:U:H2'	54:5:657:G:C8	2.49	0.47
54:5:913:A:H2'	54:5:914:A:C8	2.49	0.47
7:C:78:VAL:HA	7:C:81:GLN:HE22	1.77	0.47
9:E:49:ILE:HG23	9:E:50:LYS:H	1.79	0.47
10:F:14:ASP:HB2	10:F:18:ASN:H	1.79	0.47
10:F:148:LYS:O	10:F:152:HIS:N	2.45	0.47
12:H:66:ASN:ND2	54:5:1122:U:OP1	2.45	0.47
22:R:14:HIS:NE2	22:R:35:SER:HB3	2.29	0.47
23:S:71:ARG:HD3	54:5:255:G:P	2.55	0.47
32:g:96:VAL:O	32:g:100:VAL:HG23	2.14	0.47
39:n:36:LEU:HD22	53:4:29:C:H41	1.79	0.47
42:q:32:GLU:HG2	42:q:58:VAL:HG12	1.96	0.47
42:q:95:VAL:HG13	42:q:96:ARG:H	1.77	0.47
45:t:46:LYS:HD2	45:t:48:LYS:HG3	1.96	0.47
47:v:29:TRP:HB3	52:3:2239:U:H5''	1.95	0.47
52:3:474:U:H2'	52:3:475:A:C8	2.50	0.47
52:3:549:A:N3	52:3:614:C:O2'	2.43	0.47
52:3:604:A:N1	52:3:2507:C:O2'	2.47	0.47
52:3:937:A:H3'	52:3:938:A:C8	2.50	0.47
52:3:1050:A:N1	52:3:1183:A:N6	2.62	0.47
52:3:1427:C:H2'	52:3:1428:U:C6	2.49	0.47
52:3:1870:G:H2'	52:3:1871:U:H6	1.79	0.47
52:3:2091:C:H2'	52:3:2092:U:O4'	2.14	0.47
54:5:483:U:H2'	54:5:484:A:C8	2.48	0.47
54:5:576:A:H2'	54:5:577:G:C8	2.49	0.47
54:5:731:A:H2'	54:5:732:A:C8	2.48	0.47
54:5:743:A:H2'	54:5:744:U:O4'	2.14	0.47
54:5:859:A:H2'	54:5:860:C:C6	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:1250:A:N6	54:5:1257:C:O2'	2.46	0.47
55:8:7:U:O2	55:8:68:G:N2	2.35	0.47
4:9:293:ASP:OD1	4:9:293:ASP:N	2.46	0.47
5:A:249:LYS:HG3	5:A:251:ASP:H	1.79	0.47
8:D:71:VAL:HG11	8:D:192:ILE:HD11	1.94	0.47
10:F:27:ASN:O	54:5:1349:A:O2'	2.32	0.47
24:T:21:VAL:O	24:T:25:ILE:HG12	2.14	0.47
26:a:56:ARG:O	26:a:57:HIS:ND1	2.47	0.47
27:b:97:THR:OG1	27:b:100:ASN:OD1	2.31	0.47
29:d:52:SER:OG	29:d:145:ASP:OD2	2.19	0.47
30:e:142:GLU:OE2	52:3:2767:G:N2	2.34	0.47
31:f:62:LYS:NZ	31:f:134:THR:OG1	2.45	0.47
35:j:64:ARG:NH2	35:j:100:GLY:HA3	2.23	0.47
47:v:33:LEU:HB3	47:v:49:LEU:HD12	1.96	0.47
48:w:32:LYS:HB2	48:w:38:LEU:HD13	1.96	0.47
52:3:467:U:H2'	52:3:468:A:C8	2.42	0.47
52:3:499:G:O2'	52:3:501:G:O6	2.32	0.47
52:3:556:U:H2'	52:3:557:G:C8	2.46	0.47
52:3:604:A:OP2	52:3:2037:A:N6	2.45	0.47
52:3:659:C:H2'	52:3:660:U:C6	2.50	0.47
52:3:674:G:H2'	52:3:675:U:H6	1.77	0.47
52:3:778:U:H2'	52:3:779:C:C6	2.49	0.47
52:3:1521:A:N3	52:3:1611:C:O2'	2.39	0.47
52:3:1693:U:C2	52:3:1694:A:C8	3.01	0.47
52:3:2072:C:H2'	52:3:2073:C:C6	2.49	0.47
52:3:2127:G:C5	52:3:2187:C:N4	2.83	0.47
52:3:2469:A:H2'	52:3:2470:C:C6	2.49	0.47
52:3:2794:U:H2'	52:3:2795:C:C6	2.49	0.47
54:5:373:A:H2'	54:5:374:G:H8	1.77	0.47
54:5:511:A:H2'	54:5:512:U:H6	1.80	0.47
54:5:830:U:H2'	54:5:831:C:C6	2.49	0.47
54:5:1003:G:O6	54:5:1018:U:C4	2.67	0.47
54:5:1207:U:H2'	54:5:1208:G:H8	1.77	0.47
4:9:86:VAL:HG22	4:9:115:GLN:HG3	1.97	0.47
5:A:120:PHE:HD1	5:A:123:LEU:HD12	1.78	0.47
23:S:56:ARG:NH1	54:5:218:U:H4'	2.30	0.47
28:c:140:THR:N	52:3:355:A:OP2	2.47	0.47
30:e:76:THR:O	30:e:80:ILE:HG12	2.14	0.47
34:i:11:GLN:HG3	52:3:573:A:O3'	2.14	0.47
45:t:32:GLN:HA	45:t:71:LEU:HD12	1.97	0.47
47:v:25:THR:HG22	47:v:26:ARG:N	2.28	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:18:G:H2'	52:3:19:G:C8	2.49	0.47
52:3:433:A:H2'	52:3:434:G:H8	1.79	0.47
52:3:476:G:H2'	52:3:477:U:C6	2.50	0.47
52:3:864:A:N6	52:3:2255:A:O2'	2.47	0.47
52:3:871:G:H2'	52:3:872:C:O4'	2.15	0.47
52:3:1061:A:H2'	52:3:1062:A:C8	2.45	0.47
52:3:1394:A:H3'	52:3:1395:A:C8	2.49	0.47
52:3:1639:C:H2'	52:3:1640:G:O4'	2.14	0.47
52:3:2538:A:OP2	52:3:2543:G:N2	2.47	0.47
52:3:2701:A:H2'	52:3:2702:G:C8	2.49	0.47
54:5:150:A:H2'	54:5:151:C:C6	2.49	0.47
54:5:423:U:H2'	54:5:424:U:O4'	2.15	0.47
54:5:1226:A:H2'	54:5:1227:A:O4'	2.14	0.47
54:5:1341:U:H2'	54:5:1342:C:C6	2.49	0.47
3:2:4:ARG:NH1	52:3:2475:C:OP2	2.47	0.47
4:9:425:LEU:HB3	4:9:437:THR:HG21	1.97	0.47
6:B:50:ASN:O	6:B:73:GLN:NE2	2.47	0.47
6:B:193:GLN:NE2	6:B:194:THR:O	2.48	0.47
9:E:67:GLN:NE2	54:5:735:C:O3'	2.41	0.47
11:G:109:ASN:HB3	11:G:111:LEU:HG	1.96	0.47
17:M:6:LEU:HD13	17:M:23:ARG:HH12	1.80	0.47
21:Q:57:LEU:O	21:Q:61:LYS:HG3	2.13	0.47
27:b:161:LYS:HA	52:3:2627:U:H5''	1.96	0.47
38:m:25:VAL:O	38:m:29:GLY:N	2.47	0.47
41:p:91:ARG:NH2	52:3:1032:A:O3'	2.47	0.47
49:x:25:ILE:HG23	49:x:26:GLU:H	1.79	0.47
52:3:153:U:H2'	52:3:154:U:H6	1.79	0.47
52:3:205:C:O2'	52:3:424:G:O6	2.25	0.47
52:3:443:C:H2'	52:3:444:C:C6	2.49	0.47
52:3:678:U:H1'	52:3:682:A:H62	1.80	0.47
52:3:2112:A:H2'	52:3:2113:U:C6	2.50	0.47
52:3:2513:G:P	52:3:2580:A:H61	2.37	0.47
52:3:2523:C:H2'	52:3:2524:U:C6	2.50	0.47
52:3:2805:A:H5'	52:3:2806:A:C8	2.50	0.47
52:3:2892:U:H2'	52:3:2893:C:C6	2.49	0.47
54:5:698:U:H5''	54:5:699:A:H3'	1.96	0.47
54:5:1065:G:H2'	54:5:1066:U:C6	2.50	0.47
4:9:388:VAL:HG21	4:9:392:ILE:H	1.79	0.47
5:A:44:PHE:HB3	5:A:216:PRO:HG3	1.96	0.47
10:F:147:ASN:O	10:F:151:ALA:N	2.46	0.47
11:G:46:GLU:O	11:G:50:LYS:HG2	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:K:23:ALA:HB1	15:K:70:LEU:HD11	1.97	0.47
26:a:166:SER:HA	26:a:185:LEU:HD23	1.95	0.47
27:b:111:SER:HB3	27:b:173:LYS:HD3	1.96	0.47
36:k:145:SER:OG	36:k:147:LYS:NZ	2.45	0.47
50:y:28:SER:HA	52:3:2890:G:O2'	2.13	0.47
50:y:28:SER:HB2	50:y:37:LYS:HG3	1.97	0.47
51:z:7:THR:HG21	51:z:23:LYS:HE2	1.97	0.47
52:3:572:G:N2	52:3:590:U:O4	2.48	0.47
52:3:618:G:H3'	52:3:1281:A:H61	1.79	0.47
52:3:645:C:N4	52:3:646:A:H62	2.12	0.47
52:3:982:G:H2'	52:3:983:A:H8	1.79	0.47
52:3:1253:G:N2	52:3:1256:A:OP2	2.38	0.47
52:3:1470:C:H2'	52:3:1471:A:C8	2.50	0.47
52:3:2050:G:OP1	52:3:2785:G:O2'	2.30	0.47
52:3:2063:G:H2'	52:3:2064:G:C8	2.50	0.47
52:3:2430:C:H2'	52:3:2432:C:C6	2.49	0.47
52:3:2825:A:H2'	52:3:2826:G:O4'	2.15	0.47
53:4:85:A:O2'	53:4:86:G:O4'	2.28	0.47
54:5:242:A:C6	54:5:277:G:C2	3.03	0.47
54:5:317:A:H4'	54:5:1411:A:H5'	1.96	0.47
54:5:611:A:H2'	54:5:612:G:H8	1.79	0.47
1:0:18:PHE:HA	1:0:43:THR:HG21	1.97	0.47
6:B:25:ASN:ND2	6:B:29:GLN:OE1	2.48	0.47
9:E:45:LEU:N	9:E:53:LEU:O	2.47	0.47
10:F:149:ALA:HB1	14:J:53:PRO:HG2	1.96	0.47
11:G:61:GLU:HB2	11:G:67:LYS:O	2.14	0.47
12:H:13:LYS:HA	12:H:112:VAL:HG22	1.96	0.47
18:N:33:ILE:HG13	18:N:60:ARG:HH22	1.80	0.47
23:S:15:ILE:O	23:S:19:LEU:HG	2.14	0.47
26:a:59:GLY:HA2	26:a:61:ARG:HH11	1.79	0.47
27:b:51:LEU:HD11	27:b:81:LEU:HB3	1.97	0.47
29:d:129:THR:OG1	52:3:2311:G:O2'	2.27	0.47
30:e:79:ILE:O	30:e:83:THR:HG22	2.15	0.47
35:j:19:VAL:HG23	35:j:43:VAL:HA	1.96	0.47
35:j:104:ARG:HG2	35:j:107:ARG:HE	1.78	0.47
40:o:117:ARG:HH12	54:5:1417:U:H4'	1.80	0.47
43:r:123:ALA:HA	43:r:126:LYS:HE2	1.97	0.47
48:w:69:GLN:N	48:w:69:GLN:OE1	2.47	0.47
49:x:38:ILE:HG13	49:x:42:CYS:HB3	1.96	0.47
50:y:33:CYS:HB3	50:y:45:CYS:HB2	1.81	0.47
51:z:9:LEU:O	51:z:18:ASN:N	2.44	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:137:U:H2'	52:3:138:U:C6	2.50	0.47
52:3:192:U:H3	52:3:212:G:H1	1.63	0.47
52:3:411:U:H2'	52:3:412:A:H8	1.79	0.47
52:3:501:G:H2'	52:3:502:A:C8	2.50	0.47
52:3:554:U:H2'	52:3:555:A:C8	2.49	0.47
52:3:628:A:H2'	52:3:629:G:H8	1.79	0.47
52:3:758:C:H2'	52:3:759:U:H6	1.79	0.47
52:3:1470:C:H2'	52:3:1471:A:H8	1.80	0.47
52:3:1673:U:O2'	52:3:2707:A:H4'	2.14	0.47
52:3:1702:A:N6	52:3:1710:A:H61	2.13	0.47
52:3:1714:U:H2'	52:3:1715:A:C4	2.50	0.47
52:3:1995:G:H2'	52:3:1996:A:C8	2.50	0.47
52:3:2471:U:H2'	52:3:2472:G:C8	2.49	0.47
53:4:103:C:H2'	53:4:104:C:C6	2.49	0.47
54:5:168:A:H3'	54:5:169:G:H8	1.79	0.47
54:5:186:A:H2'	54:5:187:A:C4	2.49	0.47
54:5:214:U:H2'	54:5:215:C:H6	1.79	0.47
54:5:265:U:O4	54:5:266:A:N6	2.48	0.47
54:5:626:G:H2'	54:5:627:U:O4'	2.15	0.47
54:5:688:G:H2'	54:5:689:U:C6	2.49	0.47
54:5:909:A:O2'	54:5:911:G:O4'	2.31	0.47
54:5:1105:C:H2'	54:5:1106:U:C6	2.50	0.47
54:5:1288:C:H2'	54:5:1289:U:C6	2.48	0.47
54:5:1360:G:H2'	54:5:1361:G:H8	1.80	0.47
3:2:37:GLY:C	52:3:1066:G:H21	2.23	0.47
4:9:88:PHE:CD2	4:9:90:VAL:HG22	2.50	0.47
4:9:177:ASP:OD1	4:9:178:LEU:N	2.48	0.47
4:9:212:ALA:O	4:9:229:TYR:OH	2.24	0.47
4:9:340:LYS:HZ3	4:9:342:VAL:HA	1.80	0.47
4:9:355:LYS:NZ	4:9:372:ILE:O	2.44	0.47
6:B:60:ARG:HB3	6:B:64:THR:O	2.15	0.47
6:B:69:VAL:HG13	6:B:106:ILE:HD13	1.97	0.47
7:C:60:MET:HB2	7:C:191:ILE:HG21	1.95	0.47
8:D:147:SER:HA	8:D:184:GLY:HA3	1.97	0.47
9:E:40:LEU:HD11	9:E:59:ARG:HB2	1.97	0.47
9:E:43:LYS:HB3	9:E:57:TYR:CE2	2.50	0.47
14:J:113:GLY:HA2	54:5:712:A:H2	1.79	0.47
15:K:112:ARG:HG2	15:K:118:VAL:O	2.15	0.47
26:a:269:ASN:HD21	26:a:271:LYS:HB2	1.78	0.47
36:k:56:THR:O	36:k:61:ARG:NE	2.48	0.47
43:r:1:MET:HE3	43:r:3:ALA:H	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:v:23:THR:HG22	47:v:24:ILE:H	1.79	0.47
52:3:479:A:N3	52:3:1232:U:H1'	2.30	0.47
52:3:919:C:H2'	52:3:920:G:C8	2.50	0.47
52:3:2167:G:H2'	52:3:2168:C:C6	2.49	0.47
52:3:2170:A:N3	52:3:2180:U:O2'	2.40	0.47
52:3:2197:U:H2'	52:3:2198:G:C8	2.50	0.47
52:3:2696:G:OP1	52:3:2721:C:N4	2.38	0.47
52:3:2700:C:H5''	52:3:2874:C:O2'	2.14	0.47
54:5:16:G:H2'	54:5:17:A:C8	2.50	0.47
54:5:78:A:H2'	54:5:79:A:C8	2.50	0.47
54:5:229:G:H2'	54:5:230:G:H8	1.80	0.47
54:5:811:A:N6	54:5:813:A:N3	2.63	0.47
54:5:1321:G:N2	54:5:1349:A:OP2	2.39	0.47
3:2:3:VAL:HG13	3:2:36:GLN:HE21	1.80	0.47
4:9:484:PHE:HB3	4:9:595:PRO:HB3	1.96	0.47
11:G:49:VAL:HG22	11:G:54:LEU:HB3	1.95	0.47
15:K:127:ARG:O	54:5:36:G:O2'	2.30	0.47
18:N:56:LYS:NZ	54:5:739:G:OP1	2.29	0.47
26:a:90:PRO:HB3	52:3:1601:A:H2'	1.97	0.47
26:a:99:ILE:HD13	26:a:109:ILE:HD13	1.96	0.47
31:f:81:LEU:HD11	31:f:142:VAL:HG12	1.96	0.47
37:l:126:PRO:HD3	52:3:2493:G:H4'	1.97	0.47
41:p:91:ARG:HH22	52:3:1033:A:H5'	1.79	0.47
52:3:153:U:H2'	52:3:154:U:C6	2.50	0.47
52:3:363:G:C2	52:3:513:A:C2	3.03	0.47
52:3:562:C:N4	52:3:2787:U:OP2	2.39	0.47
52:3:1042:C:H2'	52:3:1043:C:C6	2.50	0.47
52:3:1063:A:H2'	52:3:1064:A:C8	2.50	0.47
52:3:1116:U:H2'	52:3:1117:U:C6	2.50	0.47
52:3:1331:G:H2'	52:3:1332:A:C8	2.49	0.47
52:3:1349:C:H3'	52:3:1350:A:H8	1.80	0.47
52:3:1545:A:H2'	52:3:1546:U:C6	2.50	0.47
52:3:2155:G:H2'	52:3:2156:G:O4'	2.15	0.47
54:5:169:G:H22	54:5:196:G:H22	1.62	0.47
54:5:446:A:OP1	54:5:449:A:N6	2.41	0.47
54:5:518:A:H61	54:5:527:G:H1'	1.80	0.47
54:5:1003:G:N1	54:5:1018:U:N3	2.63	0.47
54:5:1321:G:N2	54:5:1322:U:O4	2.42	0.47
10:F:62:GLU:HA	10:F:65:VAL:HG12	1.97	0.47
16:L:40:ASN:ND2	16:L:42:ASP:OD1	2.42	0.47
26:a:191:LYS:NZ	26:a:276:ASN:O	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:d:98:ALA:HB2	49:x:26:GLU:HB3	1.97	0.47
31:f:76:GLU:HB3	31:f:139:LYS:HE2	1.97	0.47
33:h:72:VAL:O	33:h:76:LEU:N	2.48	0.47
38:m:100:VAL:HG22	38:m:116:LEU:HB2	1.97	0.47
40:o:16:LYS:H	40:o:16:LYS:HD2	1.78	0.47
52:3:225:A:H61	52:3:464:A:H62	1.62	0.47
52:3:1011:A:H62	52:3:1024:A:H2	1.62	0.47
52:3:1385:U:H2'	52:3:1386:G:O4'	2.15	0.47
52:3:1760:G:H21	52:3:1762:A:H8	1.63	0.47
52:3:2048:U:H2'	52:3:2049:A:C8	2.49	0.47
54:5:69:G:H1'	54:5:157:A:N3	2.30	0.47
54:5:94:A:H5'	54:5:95:C:C5	2.49	0.47
54:5:693:A:H2	54:5:783:G:H21	1.63	0.47
54:5:1115:G:HO2'	54:5:1116:U:H6	1.61	0.47
54:5:1283:G:H2'	54:5:1284:A:H8	1.80	0.47
4:9:60:GLY:HA2	4:9:63:ILE:HG22	1.96	0.46
28:c:195:ASN:OD1	36:k:4:ASN:ND2	2.41	0.46
43:r:38:ASN:ND2	50:y:38:LEU:HB2	2.30	0.46
47:v:22:LYS:HA	55:8:76:C:O2	2.15	0.46
50:y:2:ALA:HA	52:3:2622:A:C4	2.50	0.46
52:3:122:G:H2'	52:3:123:G:C8	2.49	0.46
52:3:255:A:C5	52:3:256:G:H1'	2.50	0.46
52:3:660:U:O2'	52:3:692:U:H5''	2.15	0.46
52:3:1056:A:C8	52:3:1058:U:H1'	2.50	0.46
52:3:1115:G:H2'	52:3:1116:U:C6	2.50	0.46
52:3:1603:A:H2'	52:3:1604:A:C8	2.51	0.46
52:3:1871:U:H2'	52:3:1872:U:O4'	2.15	0.46
52:3:2331:G:H21	52:3:2345:G:C1'	2.28	0.46
52:3:2572:A:H2'	52:3:2573:A:C8	2.50	0.46
52:3:2704:U:H2'	52:3:2705:G:C8	2.49	0.46
52:3:2799:U:O2	52:3:2896:G:C2	2.68	0.46
55:7:9:U:O2'	55:7:22:A:N1	2.46	0.46
4:9:280:SER:O	4:9:284:VAL:HG12	2.16	0.46
4:9:506:HIS:HB3	4:9:567:SER:OG	2.15	0.46
16:L:105:ASN:ND2	54:5:944:A:OP2	2.48	0.46
19:O:52:TRP:NE1	19:O:57:ALA:O	2.49	0.46
20:P:73:LYS:HB2	20:P:73:LYS:HE3	1.71	0.46
22:R:11:VAL:HG21	22:R:44:PHE:HE1	1.80	0.46
25:W:61:GLY:HA2	25:W:92:LEU:HG	1.98	0.46
26:a:65:LYS:O	26:a:67:ARG:NH2	2.48	0.46
28:c:150:ALA:O	28:c:151:LYS:HG2	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:k:43:LYS:HD3	52:3:707:C:C5	2.50	0.46
37:l:9:TYR:OH	52:3:2285:G:N2	2.49	0.46
45:t:83:GLN:OE1	45:t:85:THR:HG23	2.15	0.46
47:v:52:THR:O	47:v:56:ARG:HG3	2.15	0.46
50:y:47:MET:HG2	50:y:49:GLY:H	1.80	0.46
52:3:358:A:N6	52:3:373:U:O4'	2.49	0.46
52:3:386:U:H2'	52:3:387:U:C6	2.50	0.46
52:3:676:U:H2'	52:3:677:U:C6	2.50	0.46
52:3:679:A:N1	52:3:2377:A:O2'	2.48	0.46
52:3:822:C:H3'	52:3:826:C:N4	2.29	0.46
52:3:1091:G:H5''	52:3:1092:A:O4'	2.15	0.46
52:3:1092:A:N7	52:3:1121:A:H2'	2.30	0.46
52:3:1193:U:H2'	52:3:1194:U:O4'	2.15	0.46
52:3:2156:G:C2	52:3:2157:A:C5	3.03	0.46
52:3:2281:A:O2'	52:3:2282:A:O4'	2.24	0.46
52:3:2517:A:H2'	52:3:2518:C:C6	2.50	0.46
52:3:2541:C:H2'	52:3:2542:A:O4'	2.15	0.46
52:3:2654:U:H5	52:3:2740:U:H1'	1.80	0.46
52:3:2684:G:H2'	52:3:2685:A:H8	1.80	0.46
54:5:61:A:N1	54:5:374:G:H1'	2.29	0.46
54:5:140:U:H2'	54:5:141:A:C8	2.51	0.46
54:5:257:U:C2	54:5:259:A:H5''	2.50	0.46
54:5:1390:G:H2'	54:5:1391:A:H8	1.79	0.46
55:8:21:U:H5	55:8:60:U:H3	1.63	0.46
6:B:88:ILE:O	6:B:92:ILE:HG12	2.15	0.46
7:C:117:VAL:HG22	7:C:122:VAL:HG21	1.96	0.46
12:H:87:ARG:O	12:H:90:LEU:HG	2.15	0.46
27:b:22:GLU:HA	35:j:73:ASP:HA	1.95	0.46
29:d:136:ILE:HG23	29:d:149:ILE:HG12	1.97	0.46
35:j:19:VAL:HA	35:j:44:LYS:H	1.80	0.46
38:m:60:ARG:HG2	38:m:83:PHE:CZ	2.50	0.46
42:q:72:LYS:O	42:q:80:LEU:HA	2.16	0.46
44:s:65:ILE:HG21	44:s:75:SER:HB3	1.98	0.46
52:3:57:G:H2'	52:3:58:A:C8	2.49	0.46
52:3:915:A:N6	52:3:936:G:O2'	2.49	0.46
52:3:1063:A:N6	52:3:1160:G:H2'	2.30	0.46
52:3:1453:U:H2'	52:3:1454:G:O4'	2.16	0.46
52:3:1558:A:OP2	52:3:1570:A:N6	2.48	0.46
52:3:2118:U:O2'	52:3:2119:A:H5''	2.16	0.46
52:3:2190:G:C6	52:3:2191:G:C6	3.03	0.46
54:5:94:A:C8	54:5:322:G:H2'	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:425:G:H5'	54:5:427:A:H1'	1.96	0.46
54:5:624:U:H2'	54:5:625:U:C6	2.50	0.46
54:5:670:G:H2'	54:5:671:G:C8	2.50	0.46
54:5:721:G:H2'	54:5:722:G:H8	1.81	0.46
54:5:1302:C:C2	54:5:1303:A:C8	3.04	0.46
54:5:1394:G:O6	54:5:1456:U:O4	2.33	0.46
55:7:21:U:H5	55:7:60:U:H3	1.63	0.46
55:8:50:G:H2'	55:8:51:G:H8	1.80	0.46
4:9:454:LEU:O	4:9:458:ILE:HG12	2.16	0.46
4:9:503:GLN:NE2	4:9:576:MET:HB2	2.31	0.46
5:A:70:ASN:O	5:A:73:LYS:HG2	2.15	0.46
5:A:71:TYR:O	5:A:75:VAL:HG23	2.15	0.46
6:B:134:ARG:HH22	8:D:112:PRO:HG2	1.81	0.46
16:L:58:ASN:O	16:L:62:ALA:N	2.48	0.46
18:N:9:ILE:O	18:N:13:GLN:HB2	2.14	0.46
30:e:6:ASN:O	30:e:54:GLN:NE2	2.41	0.46
34:i:59:ILE:HB	34:i:127:VAL:HG23	1.97	0.46
35:j:51:MET:HG3	35:j:52:VAL:HG13	1.96	0.46
37:l:50:ALA:O	37:l:54:ILE:HG13	2.15	0.46
39:n:2:LYS:O	39:n:4:ARG:NH1	2.48	0.46
40:o:63:THR:HG21	52:3:2691:C:O3'	2.15	0.46
45:t:29:PRO:O	45:t:32:GLN:NE2	2.49	0.46
51:z:32:LEU:H	51:z:49:GLU:HG3	1.79	0.46
52:3:229:C:N4	52:3:230:G:C2	2.83	0.46
52:3:549:A:H2'	52:3:550:A:C8	2.51	0.46
52:3:646:A:N6	52:3:653:G:O6	2.49	0.46
52:3:1183:A:H2'	52:3:1184:U:C6	2.51	0.46
52:3:1326:C:N4	52:3:1677:G:H1	2.13	0.46
52:3:2259:G:H2'	52:3:2260:G:H8	1.80	0.46
52:3:2270:U:O2'	52:3:2336:A:N3	2.44	0.46
52:3:2388:C:H2'	52:3:2389:A:H8	1.81	0.46
52:3:2754:U:H2'	52:3:2755:G:O4'	2.15	0.46
53:4:43:A:H3'	53:4:44:A:H8	1.81	0.46
54:5:66:A:O2'	54:5:377:A:N7	2.46	0.46
54:5:973:A:N6	54:5:1290:G:O2'	2.48	0.46
54:5:1011:A:O2'	54:5:1193:U:O2'	2.09	0.46
54:5:1141:U:O2'	54:5:1142:G:H8	1.98	0.46
1:0:6:GLN:O	52:3:721:G:N2	2.43	0.46
6:B:139:GLN:O	6:B:143:LYS:HG2	2.15	0.46
6:B:153:LYS:HB2	6:B:176:MET:HG2	1.97	0.46
18:N:20:GLY:O	18:N:25:GLN:NE2	2.46	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:S:53:ARG:HH22	54:5:164:C:H5	1.64	0.46
28:c:125:THR:HG22	28:c:197:LEU:HD21	1.96	0.46
29:d:113:ASP:OD1	29:d:113:ASP:N	2.48	0.46
39:n:34:LYS:HD2	39:n:101:ARG:HD2	1.97	0.46
40:o:32:ASN:CG	40:o:49:THR:HG22	2.41	0.46
42:q:68:VAL:HG12	42:q:70:VAL:HG13	1.97	0.46
45:t:81:ALA:HB3	45:t:83:GLN:N	2.17	0.46
52:3:155:A:H2'	52:3:156:A:H8	1.79	0.46
52:3:529:G:H2'	52:3:530:G:H8	1.81	0.46
52:3:1008:A:OP2	52:3:1009:A:H2'	2.16	0.46
52:3:1112:A:H2'	52:3:1113:U:H5'	1.98	0.46
52:3:1346:G:H2'	52:3:1347:A:C8	2.50	0.46
52:3:1860:A:H2'	52:3:1861:A:C8	2.51	0.46
52:3:1883:A:H3'	52:3:1884:A:C8	2.50	0.46
52:3:1942:G:N2	52:3:1971:G:O4'	2.48	0.46
52:3:2006:C:H2'	52:3:2007:U:C6	2.51	0.46
52:3:2072:C:H2'	52:3:2073:C:H6	1.80	0.46
52:3:2339:G:H2'	52:3:2340:U:C6	2.50	0.46
52:3:2506:C:O2'	52:3:2507:C:OP1	2.25	0.46
53:4:64:G:O2'	53:4:97:A:N6	2.49	0.46
54:5:117:U:H2'	54:5:118:C:C6	2.51	0.46
54:5:683:G:O6	54:5:700:G:O2'	2.22	0.46
54:5:713:A:H2'	54:5:714:C:C6	2.51	0.46
54:5:948:U:H2'	54:5:949:G:H8	1.81	0.46
54:5:1397:G:H2'	54:5:1398:G:H8	1.81	0.46
54:5:1497:U:H2'	54:5:1498:G:H8	1.80	0.46
4:9:17:ALA:HB3	4:9:23:LYS:HA	1.97	0.46
6:B:60:ARG:HG2	6:B:65:VAL:HA	1.98	0.46
7:C:5:GLY:H	7:C:111:ARG:NH1	2.14	0.46
7:C:184:ARG:HH12	7:C:189:ALA:HA	1.80	0.46
8:D:139:GLU:O	11:G:108:LEU:HD21	2.16	0.46
10:F:92:GLN:O	10:F:96:ILE:HG12	2.16	0.46
13:I:11:GLU:HA	13:I:83:VAL:HA	1.96	0.46
18:N:59:LYS:O	18:N:63:LEU:HG	2.15	0.46
19:O:22:ARG:O	19:O:23:ASP:HB3	2.16	0.46
26:a:77:ASP:OD2	26:a:197:ARG:NH1	2.48	0.46
27:b:46:LYS:HA	27:b:46:LYS:HD3	1.83	0.46
34:i:92:GLY:O	34:i:96:LEU:HG	2.16	0.46
35:j:3:SER:HB2	52:3:1700:G:H21	1.81	0.46
44:s:56:ASN:HB3	52:3:1369:U:H1'	1.96	0.46
44:s:61:LYS:HD3	44:s:61:LYS:N	2.31	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:u:70:ASP:OD1	52:3:2394:A:O2'	2.33	0.46
52:3:47:G:H2'	52:3:184:A:H62	1.81	0.46
52:3:879:U:N3	52:3:968:U:O2'	2.49	0.46
52:3:1116:U:C2	52:3:1117:U:C5	3.04	0.46
52:3:1507:G:O2'	52:3:1508:G:P	2.73	0.46
52:3:1665:G:H22	52:3:1667:G:H3'	1.80	0.46
52:3:1931:C:H2'	52:3:1932:C:H6	1.81	0.46
52:3:1990:C:H4'	52:3:2614:U:H4'	1.97	0.46
52:3:2133:A:N3	52:3:2171:A:O2'	2.48	0.46
52:3:2255:A:H2'	52:3:2256:C:H6	1.81	0.46
52:3:2664:U:C2	52:3:2673:A:N7	2.83	0.46
52:3:2700:C:H1'	52:3:2851:U:H1'	1.98	0.46
54:5:23:G:O2'	54:5:907:A:N1	2.44	0.46
54:5:889:U:H2'	54:5:890:U:H6	1.80	0.46
54:5:1049:G:N2	54:5:1174:U:O2	2.36	0.46
54:5:1211:A:H2'	54:5:1212:C:C6	2.50	0.46
55:7:50:G:H2'	55:7:51:G:H8	1.80	0.46
2:1:27:SER:OG	52:3:2401:U:O5'	2.27	0.46
4:9:60:GLY:O	4:9:64:THR:HG23	2.16	0.46
4:9:409:ALA:HB3	4:9:476:PRO:HA	1.96	0.46
4:9:415:LYS:NZ	15:K:46:VAL:HG22	2.31	0.46
4:9:600:PRO:HB2	4:9:602:MET:HE2	1.98	0.46
7:C:127:ARG:CZ	54:5:617:U:H4'	2.45	0.46
12:H:44:LYS:O	12:H:47:ILE:HG22	2.16	0.46
16:L:118:ASN:HB2	16:L:120:LYS:NZ	2.30	0.46
21:Q:41:CYS:HB2	21:Q:78:ASN:HA	1.98	0.46
30:e:21:GLN:HB2	30:e:24:HIS:O	2.15	0.46
32:g:100:VAL:HG13	32:g:106:MET:HB2	1.97	0.46
32:g:110:CYS:SG	32:g:111:GLY:N	2.85	0.46
34:i:116:ARG:NH2	52:3:591:G:OP2	2.49	0.46
39:n:26:ASN:O	39:n:26:ASN:ND2	2.48	0.46
47:v:17:ASN:N	55:8:77:A:N7	2.63	0.46
52:3:17:G:N1	52:3:560:U:N3	2.47	0.46
52:3:28:G:H1'	52:3:549:A:N6	2.30	0.46
52:3:48:G:OP1	52:3:219:G:H5''	2.15	0.46
52:3:454:G:C2	52:3:455:G:C5	3.04	0.46
52:3:454:G:H2'	52:3:455:G:H8	1.80	0.46
52:3:710:A:N6	52:3:839:A:H1'	2.31	0.46
52:3:834:G:H3'	52:3:835:U:H2'	1.97	0.46
52:3:1041:C:H2'	52:3:1042:C:C6	2.50	0.46
52:3:1138:A:OP2	52:3:1139:C:N4	2.34	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1686:U:H3	52:3:2012:A:N6	2.14	0.46
52:3:1830:G:H2'	52:3:1831:G:C8	2.51	0.46
52:3:2126:A:H61	52:3:2176:G:HO2'	1.59	0.46
52:3:2458:A:N3	55:7:77:A:H5'	2.30	0.46
52:3:2832:G:H2'	52:3:2833:A:H8	1.79	0.46
54:5:297:A:H2'	54:5:298:G:H8	1.81	0.46
54:5:947:U:O2'	54:5:964:A:N1	2.47	0.46
54:5:1431:A:H2'	54:5:1432:A:C8	2.50	0.46
55:8:23:G:N7	55:8:47:G:C2	2.84	0.46
4:9:78:ASN:ND2	4:9:371:ASP:OD2	2.49	0.46
4:9:87:ASP:HB2	4:9:115:GLN:HB3	1.97	0.46
4:9:96:LEU:HB3	4:9:128:VAL:HG21	1.98	0.46
5:A:175:LEU:HG	5:A:176:LEU:H	1.81	0.46
13:I:97:LYS:HD3	13:I:98:ILE:O	2.16	0.46
18:N:73:GLU:HA	18:N:76:ARG:HG2	1.96	0.46
23:S:67:ARG:HH12	54:5:259:A:P	2.38	0.46
25:W:77:ILE:HD12	25:W:108:LEU:HD22	1.97	0.46
28:c:75:ARG:H	28:c:75:ARG:HD2	1.80	0.46
31:f:58:TYR:O	31:f:62:LYS:HG2	2.16	0.46
38:m:63:VAL:HA	38:m:66:TRP:CD1	2.51	0.46
40:o:38:LYS:HG2	40:o:43:VAL:HG22	1.97	0.46
42:q:68:VAL:HB	42:q:85:HIS:O	2.16	0.46
47:v:10:ARG:NH1	52:3:432:G:OP2	2.48	0.46
52:3:590:U:H2'	52:3:591:G:H8	1.81	0.46
52:3:674:G:C6	52:3:687:G:C5	3.03	0.46
52:3:1228:G:H2'	52:3:1229:U:C6	2.51	0.46
52:3:1445:U:H2'	52:3:1446:G:O4'	2.15	0.46
52:3:1809:A:H2'	52:3:1810:A:C8	2.51	0.46
52:3:2148:U:H2'	52:3:2149:U:C6	2.50	0.46
52:3:2201:G:H2'	52:3:2202:U:H5''	1.97	0.46
52:3:2409:U:O2	52:3:2423:G:O6	2.33	0.46
52:3:2481:U:OP1	52:3:2483:C:N4	2.49	0.46
52:3:2607:G:H2'	52:3:2608:A:H8	1.81	0.46
54:5:21:U:H2'	54:5:22:G:O4'	2.16	0.46
54:5:333:U:C2	54:5:334:A:C8	3.04	0.46
54:5:760:U:H2'	54:5:761:U:C6	2.51	0.46
54:5:899:U:H2'	54:5:900:G:O4'	2.16	0.46
54:5:1044:G:H4'	54:5:1045:C:C5'	2.44	0.46
54:5:1497:U:H2'	54:5:1498:G:C8	2.51	0.46
4:9:93:GLU:OE1	4:9:126:TYR:OH	2.32	0.46
5:A:157:GLU:O	5:A:161:LYS:HG3	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:C:60:MET:HE2	7:C:90:PHE:CE1	2.51	0.46
9:E:104:LYS:H	9:E:104:LYS:HD2	1.80	0.46
12:H:9:LEU:HD21	12:H:11:ARG:HH11	1.81	0.46
13:I:58:ILE:HB	17:M:41:ARG:HD2	1.96	0.46
14:J:87:ASP:O	14:J:91:ARG:HG2	2.15	0.46
26:a:81:ALA:HB1	26:a:99:ILE:HB	1.97	0.46
26:a:92:ARG:HG2	52:3:1825:U:OP1	2.15	0.46
27:b:125:ARG:HG2	27:b:126:TRP:CE2	2.51	0.46
38:m:109:ASP:HB3	52:3:1683:G:H21	1.81	0.46
38:m:109:ASP:OD2	52:3:1683:G:O2'	2.25	0.46
39:n:75:GLN:O	39:n:78:ALA:HB3	2.16	0.46
41:p:54:ARG:NE	52:3:1191:A:OP1	2.39	0.46
44:s:37:LYS:NZ	44:s:55:VAL:O	2.39	0.46
48:w:37:GLU:C	48:w:39:ASP:H	2.23	0.46
52:3:385:U:H2'	52:3:386:U:H6	1.81	0.46
52:3:1125:U:H2'	52:3:1126:G:C8	2.51	0.46
52:3:1756:A:H2'	52:3:1757:G:C8	2.51	0.46
52:3:1778:G:H2'	52:3:1779:G:C8	2.51	0.46
52:3:1973:U:O2	52:3:2600:G:O2'	2.27	0.46
52:3:1991:U:H2'	52:3:1992:C:C6	2.51	0.46
52:3:2058:G:H2'	52:3:2622:A:H61	1.81	0.46
52:3:2200:U:H2'	52:3:2201:G:H8	1.81	0.46
52:3:2330:A:H2'	52:3:2331:G:C8	2.51	0.46
54:5:211:G:H2'	54:5:212:G:C8	2.51	0.46
54:5:317:A:H2'	54:5:318:C:H6	1.81	0.46
54:5:433:C:O2'	54:5:434:U:H5'	2.15	0.46
54:5:742:C:OP1	54:5:845:C:O2'	2.22	0.46
54:5:786:U:H1'	54:5:789:A:C8	2.51	0.46
54:5:932:A:H1'	54:5:1354:G:C2	2.50	0.46
54:5:1471:C:O2'	54:5:1492:G:N1	2.37	0.46
4:9:120:TRP:HH2	4:9:132:ILE:HG12	1.80	0.46
4:9:420:LYS:HE3	4:9:469:VAL:HG13	1.98	0.46
4:9:576:MET:HE2	54:5:517:C:H1'	1.98	0.46
14:J:114:CYS:SG	54:5:674:U:H1'	2.56	0.46
15:K:42:LEU:HA	15:K:95:LEU:O	2.16	0.46
24:T:17:LYS:O	24:T:21:VAL:HG23	2.15	0.46
40:o:53:LEU:HD13	40:o:101:ILE:HG13	1.97	0.46
52:3:202:C:O2'	52:3:203:A:H5'	2.16	0.46
52:3:235:U:H2'	52:3:236:G:O4'	2.16	0.46
52:3:307:C:H2'	52:3:308:A:O4'	2.16	0.46
52:3:420:A:N6	52:3:425:U:H3	2.12	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:824:A:N6	52:3:1648:A:OP2	2.49	0.46
52:3:1158:C:H2'	52:3:1159:C:H6	1.81	0.46
52:3:1341:U:H2'	52:3:1644:A:C2	2.51	0.46
52:3:1525:G:H2'	52:3:1526:U:C6	2.51	0.46
52:3:1702:A:H1'	52:3:1704:C:H41	1.81	0.46
52:3:2306:A:H3'	52:3:2307:G:H8	1.81	0.46
52:3:2820:G:H2'	52:3:2821:U:H6	1.81	0.46
54:5:79:A:H8	54:5:79:A:O5'	1.99	0.46
54:5:420:A:H5''	54:5:421:G:C8	2.51	0.46
54:5:1178:C:H2'	54:5:1179:A:C8	2.51	0.46
54:5:1220:A:H2'	54:5:1221:A:H8	1.79	0.46
4:9:415:LYS:HZ1	15:K:91:SER:C	2.24	0.45
5:A:88:LYS:HB2	5:A:92:VAL:HG22	1.98	0.45
6:B:151:GLY:O	6:B:176:MET:HE2	2.16	0.45
27:b:51:LEU:HD13	52:3:2643:A:H4'	1.98	0.45
28:c:81:ASN:HD22	28:c:84:PHE:HB2	1.81	0.45
30:e:178:LYS:HB2	30:e:178:LYS:HE3	1.80	0.45
35:j:18:GLN:NE2	35:j:19:VAL:O	2.49	0.45
35:j:65:THR:HG22	35:j:68:GLY:H	1.82	0.45
38:m:106:ARG:HG2	38:m:109:ASP:H	1.82	0.45
47:v:18:ARG:HG2	55:8:77:A:C8	2.51	0.45
52:3:74:U:H3	52:3:112:A:H2	1.63	0.45
52:3:122:G:H2'	52:3:123:G:H8	1.79	0.45
52:3:246:G:N2	52:3:247:U:O4	2.47	0.45
52:3:534:U:O4	52:3:538:A:N7	2.49	0.45
52:3:667:A:H2'	52:3:668:A:O4'	2.15	0.45
52:3:841:C:OP1	52:3:866:G:H5'	2.16	0.45
52:3:975:G:H2'	52:3:976:C:C6	2.52	0.45
52:3:1061:A:OP1	52:3:1169:A:O2'	2.25	0.45
52:3:1310:U:H3	52:3:1314:A:N6	2.13	0.45
52:3:1487:U:H2'	52:3:1488:U:C6	2.51	0.45
52:3:2297:G:C4	52:3:2298:G:C8	3.04	0.45
52:3:2347:G:H2'	52:3:2348:U:C6	2.51	0.45
52:3:2531:C:H2'	52:3:2532:G:C8	2.51	0.45
52:3:2699:C:H2'	52:3:2700:C:H6	1.81	0.45
53:4:94:A:H3'	53:4:95:G:C8	2.50	0.45
54:5:297:A:H2'	54:5:298:G:C8	2.51	0.45
54:5:676:U:H2'	54:5:677:C:C6	2.50	0.45
54:5:983:G:H1'	54:5:1010:A:N6	2.31	0.45
54:5:1388:A:H2'	54:5:1389:U:O4'	2.16	0.45
55:7:16:G:N2	55:7:49:C:C2	2.84	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:7:23:G:N7	55:7:47:G:C2	2.84	0.45
5:A:118:THR:HG21	54:5:1065:G:O2'	2.16	0.45
7:C:103:ARG:HA	7:C:103:ARG:HD3	1.83	0.45
10:F:78:ARG:HD2	54:5:1357:C:H4'	1.98	0.45
10:F:120:ALA:O	10:F:124:ILE:HG12	2.16	0.45
14:J:45:PHE:O	14:J:50:LYS:N	2.44	0.45
17:M:8:VAL:O	17:M:11:THR:OG1	2.32	0.45
21:Q:71:ASN:HB3	21:Q:75:ILE:HB	1.98	0.45
25:W:66:ALA:O	25:W:70:VAL:HG22	2.16	0.45
32:g:95:ALA:O	32:g:99:VAL:HG23	2.15	0.45
37:l:30:GLY:N	37:l:105:GLU:OE1	2.38	0.45
39:n:12:HIS:ND1	39:n:94:GLY:HA3	2.31	0.45
52:3:142:A:O2'	52:3:143:A:O4'	2.33	0.45
52:3:400:A:H2'	52:3:401:G:C8	2.51	0.45
52:3:1002:A:H2'	52:3:1003:U:O4'	2.16	0.45
52:3:1100:U:H2'	52:3:1101:U:C2	2.50	0.45
52:3:1713:U:N3	52:3:1996:A:H2	2.14	0.45
52:3:1802:C:H2'	52:3:1803:U:C6	2.51	0.45
52:3:2645:U:H3	52:3:2784:A:N6	2.06	0.45
52:3:2799:U:H3'	52:3:2896:G:N2	2.31	0.45
54:5:144:U:H3	54:5:149:G:H1	1.64	0.45
54:5:398:G:H2'	54:5:399:C:O4'	2.16	0.45
54:5:677:C:H2'	54:5:678:A:C8	2.51	0.45
54:5:947:U:H2'	54:5:948:U:C6	2.51	0.45
54:5:1431:A:H2'	54:5:1432:A:H8	1.80	0.45
54:5:1441:C:H2'	54:5:1442:A:O4'	2.15	0.45
5:A:186:ASN:O	5:A:190:GLU:HG3	2.16	0.45
14:J:63:VAL:O	14:J:67:VAL:HG23	2.17	0.45
14:J:93:PHE:HB3	14:J:98:LEU:HD22	1.97	0.45
15:K:61:ALA:HB3	15:K:63:ARG:NE	2.31	0.45
15:K:94:LEU:HB2	15:K:115:LEU:HD12	1.98	0.45
26:a:176:THR:HG23	26:a:178:LYS:HB3	1.98	0.45
26:a:258:TRP:CZ2	52:3:1812:C:H4'	2.51	0.45
27:b:146:SER:HB3	52:3:2583:U:O2	2.16	0.45
30:e:136:ILE:HG22	30:e:144:VAL:HG23	1.99	0.45
30:e:146:GLN:O	30:e:150:GLU:HG3	2.16	0.45
37:l:73:SER:OG	37:l:92:PHE:O	2.28	0.45
44:s:60:ARG:HB2	44:s:78:GLU:HG2	1.98	0.45
46:u:44:MET:HB3	46:u:46:ARG:HH12	1.81	0.45
52:3:491:A:H3'	52:3:492:C:H5''	1.97	0.45
52:3:759:U:H3'	52:3:760:G:H8	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1047:A:C6	52:3:1048:A:N6	2.84	0.45
52:3:1246:U:H2'	52:3:1247:C:C6	2.52	0.45
52:3:1354:U:O2'	52:3:2017:G:O2'	2.25	0.45
52:3:1529:U:H2'	52:3:1530:G:H8	1.82	0.45
52:3:1671:C:H5'	52:3:1767:A:O2'	2.16	0.45
52:3:2038:A:O2'	52:3:2462:G:N2	2.50	0.45
52:3:2317:A:N6	55:7:57:C:H1'	2.22	0.45
52:3:2823:A:OP2	52:3:2823:A:H8	1.99	0.45
54:5:10:G:H2'	54:5:11:A:C8	2.52	0.45
54:5:84:U:H2'	54:5:85:U:C6	2.52	0.45
54:5:87:G:H2'	54:5:88:A:C8	2.49	0.45
54:5:446:A:H3'	54:5:447:G:C8	2.51	0.45
54:5:587:A:H2'	54:5:588:U:C6	2.51	0.45
54:5:1105:C:H2'	54:5:1106:U:H6	1.82	0.45
54:5:1290:G:N1	54:5:1293:A:OP2	2.49	0.45
4:9:480:PHE:HA	4:9:598:LEU:O	2.16	0.45
4:9:569:HIS:CG	4:9:570:GLU:H	2.34	0.45
4:9:601:ILE:O	4:9:670:SER:HB2	2.17	0.45
6:B:197:GLY:HA2	54:5:1181:G:H5'	1.99	0.45
7:C:10:ARG:NH2	54:5:541:C:OP1	2.50	0.45
9:E:136:LEU:HA	54:5:835:G:H21	1.82	0.45
26:a:9:ARG:HD2	26:a:9:ARG:O	2.16	0.45
29:d:91:LEU:HD12	29:d:95:ARG:HB3	1.99	0.45
31:f:16:PHE:HZ	31:f:53:LYS:HD3	1.80	0.45
32:g:25:VAL:HG22	32:g:89:ILE:HD11	1.98	0.45
45:t:76:LEU:HD22	45:t:104:PHE:CZ	2.52	0.45
52:3:513:A:H2'	52:3:514:A:N7	2.31	0.45
52:3:601:U:N3	52:3:604:A:OP2	2.40	0.45
52:3:1860:A:N3	52:3:2241:A:O2'	2.39	0.45
52:3:1990:C:H2'	52:3:1991:U:O4'	2.16	0.45
52:3:2062:C:H2'	52:3:2512:U:H4'	1.98	0.45
52:3:2681:G:H2'	52:3:2682:A:C8	2.52	0.45
52:3:2828:C:H2'	52:3:2829:G:O4'	2.16	0.45
54:5:7:U:H4'	54:5:294:A:H1'	1.99	0.45
54:5:118:C:H42	54:5:226:G:H1	1.62	0.45
54:5:169:G:H1	54:5:196:G:H1	1.64	0.45
54:5:213:U:H2'	54:5:214:U:H6	1.82	0.45
54:5:462:G:H2'	54:5:463:U:C6	2.52	0.45
54:5:462:G:N2	54:5:467:G:O6	2.49	0.45
55:8:16:G:N2	55:8:49:C:C2	2.84	0.45
2:1:36:LYS:HG2	2:1:39:ARG:NH2	2.31	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:9:453:GLU:HG3	4:9:454:LEU:H	1.82	0.45
8:D:137:TYR:OH	8:D:203:LEU:O	2.16	0.45
20:P:71:ALA:HB2	54:5:262:G:H3'	1.98	0.45
28:c:3:LYS:HB3	28:c:17:PRO:HB2	1.99	0.45
39:n:32:VAL:HG22	39:n:41:VAL:HG12	1.98	0.45
41:p:14:LYS:HE2	52:3:1247:C:OP1	2.17	0.45
52:3:1077:G:N2	52:3:1148:U:O2	2.48	0.45
52:3:1398:C:H2'	52:3:1399:G:O4'	2.17	0.45
52:3:1459:A:H61	52:3:1596:U:H3	1.65	0.45
52:3:1797:C:N4	52:3:1835:G:O2'	2.50	0.45
52:3:2056:A:N6	52:3:2627:U:H3	2.13	0.45
52:3:2088:U:C4	52:3:2247:G:O6	2.68	0.45
52:3:2145:A:H2'	52:3:2146:A:H8	1.82	0.45
52:3:2659:U:H2'	52:3:2660:C:C6	2.51	0.45
52:3:2756:A:N7	52:3:2762:U:C2	2.82	0.45
54:5:236:C:H2'	54:5:237:A:C8	2.51	0.45
54:5:536:U:H2'	54:5:537:A:H8	1.80	0.45
54:5:577:G:H2'	54:5:578:C:H6	1.82	0.45
54:5:1012:A:C5	54:5:1013:C:H1'	2.52	0.45
54:5:1204:A:H2'	54:5:1205:C:C6	2.52	0.45
54:5:1351:U:H2'	54:5:1352:A:C8	2.51	0.45
3:2:36:GLN:OE1	52:3:1160:G:H5'	2.17	0.45
4:9:633:ARG:O	4:9:635:ASN:N	2.37	0.45
5:A:156:ILE:O	5:A:160:GLU:HG2	2.17	0.45
5:A:228:LEU:O	5:A:232:LEU:HG	2.16	0.45
8:D:73:LEU:HB2	8:D:75:ARG:HH12	1.82	0.45
10:F:90:VAL:HG13	10:F:95:LYS:HG3	1.97	0.45
12:H:86:VAL:HG11	12:H:105:LEU:HD13	1.98	0.45
14:J:48:SER:OG	54:5:691:A:H5''	2.17	0.45
17:M:4:LYS:O	17:M:8:VAL:HG23	2.17	0.45
26:a:160:ILE:HD12	52:3:1806:G:N3	2.32	0.45
26:a:161:ALA:N	52:3:1825:U:O2'	2.49	0.45
29:d:91:LEU:H	29:d:91:LEU:HD23	1.81	0.45
37:l:30:GLY:HA2	37:l:107:ALA:HB2	1.99	0.45
39:n:14:ARG:O	39:n:17:LYS:HG3	2.17	0.45
44:s:37:LYS:O	44:s:41:LYS:HE2	2.15	0.45
52:3:701:A:H2'	52:3:702:U:C6	2.51	0.45
52:3:1037:A:H3'	52:3:1038:G:H8	1.81	0.45
52:3:1917:G:C2	52:3:1928:G:C2	3.05	0.45
52:3:2495:A:H2'	52:3:2496:G:H8	1.81	0.45
52:3:2567:C:H2'	52:3:2568:G:C8	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:130:G:H2'	54:5:131:G:C8	2.51	0.45
54:5:577:G:H2'	54:5:578:C:C6	2.52	0.45
54:5:605:A:H2'	54:5:606:A:O4'	2.17	0.45
54:5:803:C:H2'	54:5:804:A:C8	2.51	0.45
54:5:978:A:O2'	54:5:1041:G:OP2	2.26	0.45
54:5:1327:G:H2'	54:5:1328:C:H6	1.82	0.45
3:2:19:ARG:O	3:2:22:ILE:HB	2.17	0.45
4:9:310:LEU:HD23	4:9:329:TYR:HE2	1.82	0.45
5:A:212:ASP:CG	9:E:162:LYS:HB2	2.42	0.45
13:I:31:ILE:O	13:I:35:VAL:HG12	2.16	0.45
16:L:11:ASN:HA	16:L:46:LYS:HG2	1.99	0.45
26:a:93:SER:O	26:a:208:HIS:NE2	2.49	0.45
27:b:47:TYR:OH	52:3:2644:U:O2'	2.34	0.45
28:c:91:PHE:CE1	52:3:706:C:H4'	2.51	0.45
32:g:41:ARG:HB2	32:g:51:ILE:HD11	1.97	0.45
39:n:26:ASN:ND2	39:n:86:LEU:HD12	2.31	0.45
42:q:25:LEU:HD22	52:3:1197:G:H5'	1.98	0.45
42:q:30:GLY:H	42:q:59:VAL:HB	1.82	0.45
52:3:180:A:H8	52:3:181:G:H8	1.65	0.45
52:3:495:U:H2'	52:3:496:A:H8	1.82	0.45
52:3:890:U:H2'	52:3:891:G:H8	1.82	0.45
52:3:1301:G:H5''	52:3:1682:C:OP1	2.16	0.45
52:3:1311:G:H1'	52:3:1357:U:O2	2.16	0.45
52:3:1375:G:C6	52:3:1634:A:N6	2.85	0.45
52:3:1457:A:H2'	52:3:1458:A:C8	2.52	0.45
52:3:1704:C:H2'	52:3:1705:U:O4'	2.17	0.45
52:3:1874:G:H2'	52:3:1875:C:C6	2.52	0.45
52:3:2111:U:H5''	52:3:2112:A:C8	2.52	0.45
52:3:2162:U:H2'	52:3:2163:U:C6	2.51	0.45
54:5:375:C:H2'	54:5:376:G:O4'	2.17	0.45
54:5:580:C:H41	54:5:755:U:H2'	1.80	0.45
54:5:858:A:H4'	54:5:1069:U:O4	2.16	0.45
54:5:947:U:P	54:5:967:C:H41	2.39	0.45
54:5:973:A:C6	54:5:1292:A:C5	3.04	0.45
54:5:1495:C:H2'	54:5:1496:G:C8	2.52	0.45
3:2:1:MET:HB2	3:2:35:ARG:HE	1.81	0.45
4:9:481:ARG:HD2	4:9:481:ARG:N	2.30	0.45
4:9:575:GLU:HG3	54:5:529:U:O4	2.16	0.45
5:A:78:ASN:ND2	9:E:166:PHE:O	2.50	0.45
5:A:151:MET:O	5:A:155:GLU:HG3	2.17	0.45
6:B:27:HIS:HB2	17:M:36:HIS:O	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:H:32:VAL:O	12:H:35:ARG:HG2	2.17	0.45
26:a:56:ARG:NH2	26:a:257:PRO:HD2	2.25	0.45
26:a:147:VAL:HA	26:a:200:VAL:HA	1.99	0.45
26:a:266:LYS:HD2	52:3:1804:A:H5''	1.99	0.45
28:c:9:ILE:HB	28:c:135:LYS:HD3	1.97	0.45
30:e:30:PRO:HG2	30:e:83:THR:HA	1.99	0.45
35:j:8:LEU:O	35:j:18:GLN:NE2	2.49	0.45
36:k:37:LYS:HE3	52:3:981:A:H8	1.82	0.45
38:m:94:PRO:O	52:3:2843:G:N2	2.42	0.45
46:u:17:SER:N	55:7:74:A:HO2'	2.15	0.45
48:w:50:LEU:O	48:w:54:ILE:HG13	2.16	0.45
51:z:44:VAL:HG23	52:3:2379:G:O2'	2.17	0.45
52:3:224:G:H1'	52:3:238:U:H1'	1.98	0.45
52:3:370:C:H2'	52:3:371:C:C6	2.52	0.45
52:3:421:A:H5''	52:3:423:C:OP2	2.17	0.45
52:3:462:C:H2'	52:3:463:U:C6	2.52	0.45
52:3:1474:C:H2'	52:3:1475:C:C6	2.52	0.45
52:3:1724:A:H61	52:3:1731:G:C2'	2.30	0.45
52:3:1819:G:H2'	52:3:1820:U:C6	2.51	0.45
52:3:2191:G:H2'	52:3:2192:U:C6	2.52	0.45
52:3:2647:A:H2'	52:3:2648:A:O4'	2.17	0.45
52:3:2657:C:H2'	52:3:2658:U:C6	2.51	0.45
53:4:64:G:H4'	53:4:65:G:H5'	1.99	0.45
54:5:104:A:H4'	54:5:105:A:C8	2.51	0.45
54:5:1429:G:H2'	54:5:1430:G:H8	1.80	0.45
10:F:148:LYS:HA	10:F:151:ALA:HB3	1.97	0.45
26:a:52:LYS:HD2	52:3:1813:C:O2'	2.17	0.45
26:a:250:GLY:HA2	52:3:2604:U:O2'	2.17	0.45
26:a:253:ALA:HB1	26:a:261:ARG:HG3	1.98	0.45
37:l:73:SER:OG	37:l:74:LYS:N	2.50	0.45
37:l:124:LYS:O	52:3:2492:G:O2'	2.35	0.45
38:m:44:ARG:HA	38:m:47:LYS:HD2	1.98	0.45
47:v:23:THR:HG22	47:v:24:ILE:N	2.32	0.45
52:3:364:A:O2'	52:3:365:U:H2'	2.17	0.45
52:3:450:C:O2'	52:3:1871:U:O2	2.35	0.45
52:3:734:A:H2'	52:3:735:G:O4'	2.17	0.45
52:3:1005:G:N2	52:3:1021:C:OP1	2.50	0.45
52:3:1838:A:H2'	52:3:1839:C:C6	2.52	0.45
52:3:2058:G:H2'	52:3:2622:A:N6	2.31	0.45
52:3:2202:U:H2'	52:3:2203:U:H6	1.81	0.45
52:3:2208:U:O4	52:3:2232:G:N2	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:2870:U:H1'	52:3:2872:A:H1'	1.99	0.45
53:4:59:A:HO2'	53:4:60:C:P	2.40	0.45
54:5:57:U:H2'	54:5:58:G:N7	2.32	0.45
54:5:111:A:H2'	54:5:112:U:O4'	2.17	0.45
54:5:230:G:H2'	54:5:231:U:C6	2.52	0.45
54:5:1289:U:H2'	54:5:1290:G:O4'	2.17	0.45
54:5:1347:U:H2'	54:5:1348:G:O4'	2.17	0.45
4:9:26:THR:HG21	4:9:105:VAL:HG21	1.98	0.45
4:9:344:LYS:NZ	4:9:346:LYS:HB2	2.32	0.45
8:D:100:LYS:HD3	8:D:126:LEU:HB3	1.98	0.45
22:R:18:LYS:HB3	22:R:31:ILE:HB	1.98	0.45
26:a:233:MET:O	26:a:242:GLY:N	2.40	0.45
27:b:70:PHE:O	27:b:75:LEU:N	2.39	0.45
28:c:52:ILE:HB	28:c:93:PRO:HG2	1.98	0.45
30:e:92:LEU:HD13	30:e:165:VAL:HG22	1.98	0.45
38:m:85:LYS:HE3	38:m:85:LYS:HB3	1.86	0.45
52:3:71:C:O2	52:3:75:A:O2'	2.28	0.45
52:3:360:G:H2'	52:3:361:G:C8	2.52	0.45
52:3:1940:G:O6	52:3:1974:U:O4	2.35	0.45
52:3:2108:C:N3	52:3:2109:A:N6	2.65	0.45
52:3:2176:G:N1	52:3:2179:A:OP2	2.50	0.45
52:3:2304:U:O2	52:3:2343:A:N7	2.50	0.45
52:3:2703:U:O2	52:3:2722:G:C6	2.69	0.45
52:3:2887:A:H5'	52:3:2888:U:H5'	1.99	0.45
54:5:24:C:OP2	54:5:559:U:N3	2.47	0.45
54:5:213:U:H2'	54:5:214:U:C6	2.52	0.45
54:5:310:C:H2'	54:5:311:A:O4'	2.17	0.45
54:5:590:G:N1	54:5:645:A:N7	2.65	0.45
54:5:918:A:O2'	54:5:1373:A:H2'	2.17	0.45
54:5:1065:G:H1	54:5:1074:U:H3	1.63	0.45
54:5:1098:C:N4	54:5:1099:G:O6	2.50	0.45
54:5:1433:G:H2'	54:5:1434:C:C6	2.52	0.45
4:9:199:ILE:HB	4:9:204:LYS:HD3	1.99	0.44
5:A:43:PHE:HZ	9:E:157:TRP:HA	1.82	0.44
9:E:66:ASN:HD21	54:5:736:U:P	2.41	0.44
9:E:151:LYS:NZ	11:G:54:LEU:O	2.49	0.44
10:F:48:LEU:O	10:F:52:ARG:HG2	2.17	0.44
12:H:10:GLY:HA3	12:H:80:ALA:O	2.17	0.44
13:I:41:LYS:HA	13:I:41:LYS:HD2	1.87	0.44
22:R:48:THR:HA	22:R:61:TYR:HA	1.99	0.44
27:b:109:ASP:OD1	27:b:208:ARG:HG3	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:g:47:ASN:HD22	32:g:47:ASN:HA	1.57	0.44
52:3:499:G:H2'	52:3:500:U:H3'	1.99	0.44
52:3:524:G:H22	52:3:526:G:H3'	1.81	0.44
52:3:730:G:H2'	52:3:731:A:H8	1.82	0.44
52:3:748:G:N2	52:3:754:U:O4	2.50	0.44
52:3:2334:U:H3	52:3:2397:G:H1	1.63	0.44
52:3:2571:U:H2'	52:3:2573:A:OP2	2.17	0.44
52:3:2656:G:H2'	52:3:2657:C:C6	2.52	0.44
52:3:2736:U:HO2'	52:3:2737:G:H8	1.58	0.44
54:5:34:A:H2'	54:5:35:C:O4'	2.17	0.44
54:5:267:C:H2'	54:5:268:C:C6	2.51	0.44
54:5:951:U:H2'	54:5:952:U:C6	2.52	0.44
54:5:1110:C:H2'	54:5:1111:G:C8	2.43	0.44
54:5:1185:C:H2'	54:5:1186:U:O4'	2.17	0.44
2:1:10:ARG:HD2	36:k:64:LYS:HA	1.98	0.44
4:9:132:ILE:HB	4:9:256:VAL:HA	1.98	0.44
6:B:180:THR:HA	54:5:1103:C:H42	1.82	0.44
7:C:51:ALA:HB2	54:5:507:A:H5''	1.97	0.44
11:G:11:HIS:HB2	54:5:822:A:H1'	1.99	0.44
18:N:33:ILE:HD11	18:N:56:LYS:HB2	1.99	0.44
29:d:162:LYS:NZ	29:d:165:GLU:HG2	2.32	0.44
44:s:48:TYR:HB3	44:s:49:GLY:H	1.59	0.44
46:u:88:PRO:C	46:u:89:LYS:HD2	2.42	0.44
47:v:44:LYS:HD2	52:3:2225:G:H4'	1.99	0.44
49:x:12:VAL:HB	49:x:33:GLU:H	1.83	0.44
52:3:27:U:H2'	52:3:28:G:C4	2.53	0.44
52:3:251:G:OP2	52:3:253:C:N4	2.50	0.44
52:3:665:C:H1'	52:3:675:U:H1'	2.00	0.44
52:3:710:A:H1'	52:3:2451:C:O2'	2.18	0.44
52:3:1050:A:H2'	52:3:1051:U:C6	2.52	0.44
52:3:1262:G:H2'	52:3:1263:G:H8	1.82	0.44
52:3:1305:G:H2'	52:3:1306:G:H8	1.81	0.44
52:3:1546:U:H3'	52:3:1547:G:H8	1.81	0.44
52:3:1859:U:O2	52:3:1897:A:N6	2.49	0.44
52:3:1951:A:N6	52:3:2565:G:HO2'	2.16	0.44
52:3:2152:C:N3	52:3:2154:A:O2'	2.50	0.44
52:3:2267:G:H2'	52:3:2268:C:C6	2.53	0.44
52:3:2322:G:H2'	52:3:2323:U:C6	2.53	0.44
54:5:433:C:H2'	54:5:434:U:C6	2.52	0.44
54:5:501:A:H2'	54:5:502:C:H6	1.83	0.44
54:5:706:U:H2'	54:5:707:G:H8	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:930:A:H2'	54:5:931:C:C6	2.53	0.44
1:0:29:LYS:O	1:0:33:LEU:HG	2.17	0.44
2:1:4:LYS:HD3	2:1:4:LYS:HA	1.74	0.44
2:1:5:SER:O	2:1:9:LYS:HG3	2.17	0.44
4:9:403:GLN:HA	4:9:404:PRO:HD3	1.85	0.44
4:9:493:LYS:HZ3	55:7:29:C:H4'	1.81	0.44
7:C:12:ARG:NH1	54:5:423:U:O5'	2.51	0.44
16:L:77:ILE:HG12	16:L:91:HIS:CE1	2.41	0.44
23:S:3:ASN:HA	54:5:327:G:N2	2.33	0.44
32:g:59:LEU:HG	32:g:82:VAL:HG21	2.00	0.44
44:s:8:LEU:O	48:w:30:ARG:HD3	2.17	0.44
52:3:729:U:H1'	52:3:1407:U:O2	2.17	0.44
52:3:948:A:N3	52:3:2272:C:H1'	2.32	0.44
52:3:1342:C:OP1	52:3:1644:A:N6	2.51	0.44
52:3:1951:A:N6	52:3:2565:G:O2'	2.40	0.44
52:3:2300:A:H2'	52:3:2301:C:C6	2.53	0.44
52:3:2306:A:OP2	52:3:2326:G:N2	2.50	0.44
52:3:2472:G:H2'	52:3:2473:C:H6	1.83	0.44
52:3:2514:U:OP2	52:3:2584:G:N2	2.38	0.44
52:3:2643:A:H2'	52:3:2644:U:O4'	2.17	0.44
52:3:2859:U:C2	52:3:2860:A:C8	3.05	0.44
53:4:59:A:H2'	53:4:60:C:C6	2.53	0.44
54:5:21:U:H1'	54:5:570:A:C4	2.51	0.44
54:5:371:U:H2'	54:5:372:G:C8	2.51	0.44
54:5:581:A:H3'	54:5:582:G:H8	1.82	0.44
54:5:593:A:H2'	54:5:638:A:N6	2.32	0.44
54:5:982:A:H2'	54:5:983:G:H8	1.81	0.44
54:5:1233:G:H2'	54:5:1234:C:C6	2.52	0.44
54:5:1436:C:H2'	54:5:1437:A:H8	1.82	0.44
3:2:6:SER:HG	3:2:8:LYS:HZ3	1.58	0.44
4:9:443:THR:HG23	4:9:445:GLN:H	1.83	0.44
11:G:45:LEU:O	11:G:49:VAL:HG23	2.17	0.44
22:R:54:GLY:O	54:5:981:U:H1'	2.17	0.44
27:b:185:ASP:OD2	27:b:188:ASN:ND2	2.38	0.44
30:e:141:LYS:HA	30:e:144:VAL:HG12	1.98	0.44
37:l:22:LYS:HG2	52:3:900:G:OP2	2.17	0.44
38:m:107:ARG:NH2	52:3:1316:U:O2	2.50	0.44
44:s:36:SER:O	44:s:40:VAL:HG23	2.18	0.44
52:3:386:U:H2'	52:3:387:U:H6	1.81	0.44
52:3:389:C:H2'	52:3:390:A:H8	1.81	0.44
52:3:450:C:H2'	52:3:451:A:C8	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:455:G:C6	52:3:456:G:C6	3.05	0.44
52:3:477:U:H2'	52:3:478:G:O4'	2.18	0.44
52:3:546:U:H2'	52:3:547:G:O4'	2.17	0.44
52:3:612:G:H2'	52:3:613:C:C6	2.52	0.44
52:3:1289:G:H2'	52:3:1290:G:C8	2.52	0.44
52:3:1443:A:H2'	52:3:1444:C:H3'	1.99	0.44
52:3:1539:U:H2'	52:3:1540:G:C8	2.52	0.44
52:3:1734:A:H3'	52:3:1735:A:H8	1.82	0.44
52:3:2004:G:N1	52:3:2005:G:C6	2.85	0.44
52:3:2039:G:OP2	52:3:2462:G:O2'	2.29	0.44
52:3:2301:C:H2'	52:3:2302:C:C6	2.53	0.44
52:3:2655:U:H2'	52:3:2656:G:C8	2.52	0.44
52:3:2799:U:P	52:3:2896:G:H21	2.39	0.44
52:3:2820:G:H2'	52:3:2821:U:C6	2.52	0.44
54:5:10:G:H2'	54:5:11:A:H8	1.83	0.44
54:5:371:U:H2'	54:5:372:G:H8	1.82	0.44
54:5:825:A:H2'	54:5:826:G:O4'	2.17	0.44
4:9:216:GLU:HB3	4:9:229:TYR:CZ	2.53	0.44
4:9:240:ILE:O	4:9:244:ILE:HG12	2.18	0.44
4:9:523:ASP:OD1	4:9:525:ILE:HG12	2.17	0.44
12:H:29:LYS:HA	12:H:60:LYS:HZ1	1.83	0.44
26:a:178:LYS:NZ	26:a:194:LYS:HG2	2.32	0.44
27:b:148:GLN:HE22	52:3:2060:G:P	2.41	0.44
28:c:159:PHE:HB2	28:c:180:VAL:HG13	2.00	0.44
34:i:9:LYS:HD3	34:i:50:ASN:OD1	2.17	0.44
36:k:39:GLN:H	52:3:867:G:P	2.41	0.44
37:l:82:ARG:HH11	46:u:18:LYS:HD3	1.83	0.44
40:o:47:ASN:O	40:o:68:LYS:NZ	2.50	0.44
40:o:57:GLY:HA3	40:o:62:GLU:HA	2.00	0.44
41:p:57:ARG:NH2	52:3:1034:A:OP2	2.51	0.44
44:s:34:LYS:HE2	52:3:129:U:H5''	1.98	0.44
52:3:129:U:H2'	52:3:130:C:H6	1.83	0.44
52:3:740:A:H2'	52:3:741:A:H8	1.81	0.44
52:3:1114:C:N4	52:3:1123:A:OP2	2.36	0.44
52:3:1187:C:H2'	52:3:1188:C:C6	2.53	0.44
52:3:2421:U:H2'	52:3:2422:G:H8	1.82	0.44
52:3:2747:U:H3'	52:3:2771:G:H1	1.82	0.44
52:3:2799:U:H3'	52:3:2896:G:H22	1.82	0.44
54:5:87:G:O2'	54:5:137:A:N3	2.42	0.44
54:5:127:A:H4'	54:5:168:A:H1'	1.98	0.44
54:5:335:C:H2'	54:5:336:U:C6	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:417:U:O4	54:5:512:U:H5'	2.18	0.44
54:5:445:A:C8	54:5:483:U:N3	2.63	0.44
54:5:503:G:H4'	54:5:532:U:C2	2.52	0.44
54:5:648:C:H2'	54:5:649:U:C6	2.53	0.44
54:5:677:C:H2'	54:5:678:A:H8	1.83	0.44
54:5:692:A:H2'	54:5:693:A:O4'	2.17	0.44
54:5:716:C:OP2	54:5:717:C:N4	2.46	0.44
54:5:851:U:H3'	54:5:852:G:H8	1.81	0.44
54:5:943:C:O2'	54:5:1339:U:O4	2.25	0.44
54:5:1074:U:H2'	54:5:1093:A:N7	2.31	0.44
1:0:3:ARG:NH2	52:3:1654:G:H1'	2.33	0.44
1:0:34:ARG:NH2	1:0:41:GLN:OE1	2.49	0.44
4:9:460:VAL:HA	4:9:463:MET:HG3	1.99	0.44
7:C:17:SER:OG	7:C:18:LEU:N	2.50	0.44
12:H:34:ARG:HG3	54:5:1121:U:C4	2.53	0.44
14:J:82:THR:HA	14:J:86:LYS:HZ2	1.82	0.44
15:K:44:ARG:HB2	15:K:93:THR:O	2.18	0.44
15:K:49:ARG:HG2	15:K:65:TYR:HE2	1.83	0.44
16:L:76:ASN:OD1	54:5:1283:G:O2'	2.32	0.44
24:T:36:LEU:HD21	24:T:41:ARG:HG3	2.00	0.44
28:c:143:MET:O	28:c:147:LEU:HG	2.17	0.44
30:e:67:PHE:HA	30:e:70:THR:HG22	2.00	0.44
41:p:84:LYS:NZ	52:3:1185:U:O3'	2.51	0.44
43:r:57:ASN:HD21	52:3:529:G:N2	2.13	0.44
49:x:16:CYS:HB2	49:x:39:CYS:HB2	1.98	0.44
52:3:140:G:N1	52:3:143:A:OP2	2.43	0.44
52:3:306:G:H2'	52:3:307:C:C6	2.52	0.44
52:3:385:U:H2'	52:3:386:U:C6	2.53	0.44
52:3:952:U:O2	53:4:90:G:H4'	2.17	0.44
52:3:961:U:H2'	52:3:962:U:C6	2.53	0.44
52:3:1199:A:H2'	52:3:1200:U:O4'	2.18	0.44
52:3:1446:G:H1'	52:3:1614:G:O6	2.17	0.44
52:3:1538:U:H2'	52:3:1539:U:C6	2.52	0.44
52:3:1550:G:H2'	52:3:1551:U:C6	2.53	0.44
52:3:1779:G:N2	52:3:1781:C:H5''	2.32	0.44
52:3:2171:A:H2'	52:3:2172:A:O4'	2.18	0.44
52:3:2623:U:H2'	52:3:2624:C:H6	1.83	0.44
52:3:2645:U:H2'	52:3:2646:G:O4'	2.18	0.44
52:3:2826:G:O2'	52:3:2828:C:OP2	2.25	0.44
54:5:52:A:N7	54:5:99:U:O2'	2.39	0.44
54:5:92:G:N1	54:5:93:A:H1'	2.33	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:98:G:H1'	54:5:350:G:H5'	2.00	0.44
54:5:148:A:H3'	54:5:149:G:O4'	2.18	0.44
54:5:331:C:C2	54:5:332:A:C8	3.05	0.44
54:5:394:U:H2'	54:5:395:G:C8	2.49	0.44
54:5:500:G:H2'	54:5:501:A:C8	2.52	0.44
54:5:678:A:H2'	54:5:679:U:H6	1.83	0.44
54:5:759:C:H2'	54:5:760:U:C6	2.52	0.44
54:5:889:U:H2'	54:5:890:U:C6	2.53	0.44
4:9:141:GLY:N	4:9:169:GLU:OE1	2.38	0.44
4:9:144:PHE:CE2	4:9:161:PRO:HB3	2.49	0.44
4:9:350:VAL:HG22	4:9:378:LEU:HD11	2.00	0.44
12:H:107:THR:HG22	54:5:1155:A:OP1	2.17	0.44
17:M:14:PRO:HB2	17:M:16:PHE:O	2.18	0.44
21:Q:81:MET:HG2	21:Q:85:HIS:CD2	2.52	0.44
22:R:81:LYS:HZ2	54:5:1200:G:H21	1.64	0.44
23:S:54:LEU:HA	23:S:57:LYS:HD2	1.98	0.44
23:S:56:ARG:NH2	54:5:218:U:H4'	2.32	0.44
24:T:37:ARG:O	24:T:41:ARG:N	2.46	0.44
26:a:213:ILE:HB	52:3:1798:A:H4'	2.00	0.44
28:c:78:SER:N	52:3:709:G:OP1	2.51	0.44
37:l:13:HIS:CG	52:3:990:G:H5''	2.53	0.44
41:p:10:ARG:HH11	52:3:615:G:H5''	1.82	0.44
43:r:28:LYS:HG3	43:r:29:THR:H	1.83	0.44
48:w:53:THR:HG22	52:3:78:C:O3'	2.18	0.44
52:3:109:G:H2'	52:3:110:A:H8	1.82	0.44
52:3:182:C:H3'	52:3:183:A:C8	2.53	0.44
52:3:388:U:H2'	52:3:389:C:C6	2.52	0.44
52:3:639:G:H2'	52:3:640:U:O4'	2.18	0.44
52:3:741:A:H2'	52:3:742:G:O4'	2.17	0.44
52:3:1038:G:H2'	52:3:1039:G:C8	2.53	0.44
52:3:1287:C:H2'	52:3:1288:C:C6	2.52	0.44
52:3:1512:A:H2'	52:3:1513:A:H8	1.83	0.44
52:3:2078:A:H2'	52:3:2079:G:C8	2.53	0.44
52:3:2413:G:H1'	52:3:2420:A:N6	2.33	0.44
52:3:2656:G:H2'	52:3:2657:C:H6	1.83	0.44
52:3:2815:G:H2'	52:3:2816:A:C8	2.53	0.44
54:5:721:G:H2'	54:5:722:G:C8	2.53	0.44
54:5:1307:A:H2'	54:5:1308:G:O4'	2.18	0.44
3:2:36:GLN:HG3	3:2:37:GLY:H	1.82	0.44
6:B:12:PHE:HE1	6:B:18:TRP:HA	1.83	0.44
8:D:209:ALA:HA	8:D:215:ASN:HA	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:J:28:SER:HA	14:J:35:LEU:HG	2.00	0.44
16:L:44:ARG:HB2	54:5:1270:C:OP1	2.18	0.44
18:N:18:ASP:HA	54:5:747:C:H4'	2.00	0.44
26:a:94:CYS:SG	26:a:95:PHE:N	2.88	0.44
31:f:16:PHE:HE2	31:f:53:LYS:HB3	1.82	0.44
35:j:1:MET:HG3	35:j:2:VAL:H	1.82	0.44
35:j:46:ALA:HB1	35:j:52:VAL:HG23	2.00	0.44
39:n:91:PHE:HE2	39:n:93:THR:HB	1.82	0.44
43:r:42:LYS:HB2	52:3:2017:G:H5''	2.00	0.44
45:t:48:LYS:HD2	45:t:53:LYS:CE	2.48	0.44
52:3:387:U:H2'	52:3:388:U:C6	2.53	0.44
52:3:675:U:H2'	52:3:676:U:C6	2.53	0.44
52:3:947:A:H1'	52:3:2272:C:O2'	2.17	0.44
52:3:1077:G:H2'	52:3:1078:C:H6	1.83	0.44
52:3:1558:A:OP2	52:3:1571:G:N2	2.51	0.44
52:3:1758:C:H2'	52:3:1759:C:C6	2.53	0.44
52:3:1938:U:H2'	52:3:1939:A:C8	2.53	0.44
52:3:2200:U:H2'	52:3:2201:G:C8	2.53	0.44
52:3:2652:U:H3'	52:3:2653:G:N2	2.33	0.44
52:3:2770:U:H2'	52:3:2771:G:O4'	2.18	0.44
52:3:2893:C:H2'	52:3:2894:G:O4'	2.17	0.44
54:5:337:C:H2'	54:5:338:C:H6	1.83	0.44
54:5:380:G:H2'	54:5:381:C:C6	2.53	0.44
54:5:614:U:H2'	54:5:615:G:C8	2.53	0.44
54:5:742:C:H5''	54:5:845:C:O2'	2.18	0.44
54:5:1138:U:O2	54:5:1149:G:N2	2.33	0.44
54:5:1489:C:H2'	54:5:1490:G:H8	1.82	0.44
3:2:19:ARG:HB2	3:2:24:ARG:HH11	1.83	0.44
6:B:176:MET:SD	6:B:185:ILE:HD13	2.58	0.44
6:B:210:ILE:HD12	6:B:213:LYS:HG2	2.00	0.44
13:I:91:ASP:HA	13:I:94:LYS:HG2	2.00	0.44
20:P:29:ARG:HH22	54:5:595:G:H1'	1.83	0.44
29:d:132:ILE:CG2	29:d:152:PHE:H	2.31	0.44
40:o:5:ASN:O	40:o:6:LYS:NZ	2.49	0.44
47:v:47:ARG:NH1	52:3:2208:U:OP2	2.51	0.44
52:3:154:U:H2'	52:3:155:A:C8	2.53	0.44
52:3:246:G:N2	52:3:259:A:O5'	2.49	0.44
52:3:393:C:H2'	52:3:394:C:H6	1.83	0.44
52:3:481:C:H5'	52:3:1278:G:C6	2.53	0.44
52:3:1623:U:H2'	52:3:1624:A:H8	1.83	0.44
52:3:1816:A:H2'	52:3:1817:A:C8	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1842:G:H1'	52:3:1938:U:H1'	1.98	0.44
52:3:1958:U:H1'	52:3:1961:A:C8	2.53	0.44
52:3:2134:G:H2'	52:3:2135:C:H6	1.80	0.44
54:5:42:G:H2'	54:5:43:G:C8	2.51	0.44
54:5:167:A:N1	54:5:197:A:H5'	2.32	0.44
54:5:680:G:C6	54:5:681:U:C4	3.06	0.44
54:5:983:G:H2'	54:5:984:A:C8	2.53	0.44
54:5:1210:U:H2'	54:5:1211:A:O4'	2.18	0.44
55:7:7:U:O2	55:7:68:G:N2	2.35	0.44
4:9:348:GLU:HB3	4:9:378:LEU:HG	2.00	0.43
4:9:481:ARG:H	4:9:481:ARG:CD	2.31	0.43
15:K:120:VAL:HB	15:K:123:ARG:HB2	2.00	0.43
20:P:29:ARG:NH1	54:5:594:A:N3	2.65	0.43
23:S:42:ASP:OD1	23:S:43:ASN:N	2.51	0.43
26:a:155:LYS:HD3	26:a:155:LYS:N	2.32	0.43
27:b:117:ARG:HG3	27:b:169:TYR:HD2	1.83	0.43
30:e:98:ARG:HG2	30:e:109:GLN:HB2	2.00	0.43
32:g:94:LYS:HE3	32:g:94:LYS:HB3	1.86	0.43
37:l:8:LYS:HG2	37:l:9:TYR:CD2	2.53	0.43
46:u:20:GLY:HA3	52:3:2263:G:C4	2.53	0.43
46:u:44:MET:N	46:u:44:MET:SD	2.91	0.43
47:v:30:ASN:O	52:3:2238:G:O2'	2.32	0.43
49:x:12:VAL:HG11	49:x:32:LYS:HA	2.00	0.43
51:z:43:LYS:NZ	51:z:44:VAL:O	2.48	0.43
52:3:42:U:H2'	52:3:43:A:C8	2.53	0.43
52:3:252:G:H5'	52:3:254:G:C5	2.53	0.43
52:3:451:A:C6	52:3:2417:G:C6	3.05	0.43
52:3:967:U:H2'	52:3:968:U:C2	2.52	0.43
52:3:1550:G:H2'	52:3:1551:U:H6	1.82	0.43
52:3:1590:U:C4	52:3:1591:C:N4	2.86	0.43
52:3:1843:C:H2'	52:3:1844:C:C6	2.52	0.43
52:3:2059:G:N2	52:3:2625:U:O2	2.39	0.43
52:3:2237:U:H2'	52:3:2238:G:H8	1.82	0.43
52:3:2629:G:H2'	52:3:2630:U:O4'	2.18	0.43
52:3:2681:G:H2'	52:3:2682:A:H8	1.83	0.43
53:4:4:G:H4'	53:4:26:C:O4'	2.18	0.43
53:4:101:C:C2	53:4:102:A:C8	3.06	0.43
54:5:1152:G:H2'	54:5:1153:G:O4'	2.18	0.43
54:5:1351:U:H2'	54:5:1352:A:H8	1.83	0.43
2:1:35:THR:O	2:1:39:ARG:HG2	2.18	0.43
4:9:341:ASN:O	4:9:345:ASN:HA	2.17	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:9:605:GLU:HB2	4:9:666:VAL:HG12	1.98	0.43
4:9:660:GLN:HA	52:3:2668:A:C5	2.53	0.43
5:A:71:TYR:HE2	9:E:165:ASN:HA	1.83	0.43
9:E:104:LYS:HG3	21:Q:46:ILE:HD11	2.00	0.43
10:F:107:ALA:HB1	10:F:119:ILE:HA	2.00	0.43
12:H:12:ARG:HD3	12:H:79:GLY:HA3	2.00	0.43
24:T:38:LYS:HG3	24:T:41:ARG:HH11	1.83	0.43
27:b:150:GLY:HA3	27:b:156:ALA:N	2.33	0.43
29:d:69:LYS:HA	29:d:84:LEU:HA	1.98	0.43
36:k:28:LEU:HD13	52:3:1221:G:OP2	2.17	0.43
45:t:53:LYS:NZ	45:t:57:LYS:O	2.50	0.43
52:3:709:G:H1	52:3:841:C:N4	2.12	0.43
52:3:1167:U:H2'	52:3:1168:A:C8	2.54	0.43
52:3:1800:C:H2'	52:3:1801:U:C6	2.53	0.43
52:3:1874:G:H2'	52:3:1875:C:H6	1.83	0.43
52:3:2001:C:H2'	52:3:2002:U:C6	2.53	0.43
52:3:2021:A:H2'	52:3:2022:A:C8	2.54	0.43
52:3:2079:G:H2'	52:3:2080:C:C6	2.53	0.43
54:5:428:A:C4	54:5:429:A:C8	3.07	0.43
54:5:600:G:N2	54:5:633:U:O2	2.34	0.43
54:5:672:A:N6	54:5:712:A:H61	2.15	0.43
54:5:824:U:H2'	54:5:864:U:N3	2.31	0.43
54:5:1055:G:O6	54:5:1168:G:N1	2.50	0.43
54:5:1109:U:C2	54:5:1154:A:C6	3.05	0.43
54:5:1356:U:H2'	54:5:1357:C:O4'	2.18	0.43
55:7:70:G:H2'	55:7:71:A:H8	1.82	0.43
4:9:17:ALA:HB2	4:9:105:VAL:HB	1.99	0.43
4:9:319:PHE:HB3	54:5:56:A:C5	2.54	0.43
4:9:624:ARG:NH1	4:9:678:SER:OG	2.49	0.43
5:A:44:PHE:HD1	5:A:60:LEU:HD21	1.84	0.43
6:B:187:TYR:HB2	6:B:204:TRP:CD1	2.52	0.43
8:D:155:PRO:HG3	54:5:6:C:H5	1.83	0.43
9:E:22:ASN:O	9:E:26:GLN:HG2	2.18	0.43
9:E:29:LEU:HB3	9:E:32:VAL:HB	2.00	0.43
10:F:69:MET:O	10:F:71:ARG:NH2	2.51	0.43
14:J:22:ASN:ND2	54:5:686:C:O3'	2.50	0.43
15:K:2:ALA:N	54:5:875:G:O6	2.52	0.43
16:L:29:ARG:NE	54:5:1302:C:O2'	2.50	0.43
26:a:146:GLN:O	26:a:201:GLY:N	2.33	0.43
26:a:228:VAL:HG11	52:3:817:A:H2'	2.01	0.43
29:d:162:LYS:HZ2	29:d:165:GLU:N	2.16	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:j:7:ARG:HH22	52:3:1701:G:H3'	1.84	0.43
36:k:126:PHE:HB2	36:k:146:VAL:HG23	2.00	0.43
39:n:18:LYS:O	39:n:22:THR:HG22	2.19	0.43
42:q:95:VAL:HG13	42:q:96:ARG:N	2.33	0.43
45:t:90:LYS:HB2	45:t:90:LYS:HE2	1.85	0.43
52:3:599:U:H4'	52:3:844:G:OP1	2.18	0.43
52:3:665:C:H2'	52:3:666:G:C8	2.54	0.43
52:3:1118:U:O2'	52:3:1120:A:N7	2.47	0.43
52:3:1337:G:N2	52:3:1642:G:H22	2.15	0.43
52:3:1583:G:O2'	52:3:1584:U:OP1	2.36	0.43
52:3:1642:G:O2'	52:3:1645:C:N4	2.51	0.43
54:5:767:U:H2'	54:5:768:G:H8	1.82	0.43
54:5:779:A:H62	54:5:797:G:N2	2.14	0.43
54:5:916:U:H2'	54:5:917:G:C8	2.53	0.43
54:5:973:A:C4	54:5:1293:A:C2	3.06	0.43
54:5:1214:A:H1'	54:5:1216:G:C5	2.53	0.43
55:8:36:A:H2'	55:8:37:A:O4'	2.18	0.43
4:9:367:ILE:HG23	4:9:371:ASP:HB3	1.98	0.43
6:B:172:ILE:HD11	6:B:176:MET:HB3	2.01	0.43
15:K:69:ARG:HG3	15:K:75:GLU:HG2	2.01	0.43
19:O:67:PHE:HB3	19:O:72:LEU:HB3	1.99	0.43
30:e:18:LEU:HD12	30:e:20:PHE:CE1	2.53	0.43
34:i:72:LYS:HA	34:i:92:GLY:HA3	1.99	0.43
35:j:18:GLN:HE21	35:j:44:LYS:HD3	1.83	0.43
41:p:91:ARG:HB2	42:q:11:GLN:OE1	2.18	0.43
42:q:72:LYS:HD3	52:3:1218:G:OP1	2.18	0.43
43:r:7:GLN:NE2	43:r:10:VAL:HG13	2.34	0.43
43:r:131:GLY:HA2	43:r:134:LYS:HE3	2.01	0.43
45:t:81:ALA:C	45:t:83:GLN:N	2.77	0.43
46:u:52:TYR:CE2	46:u:54:GLN:HB3	2.53	0.43
50:y:47:MET:HB3	50:y:47:MET:HE3	1.76	0.43
52:3:29:G:O2'	52:3:547:G:N2	2.51	0.43
52:3:35:U:O2	52:3:509:G:C2	2.71	0.43
52:3:109:G:H2'	52:3:110:A:C8	2.53	0.43
52:3:482:G:H21	52:3:490:A:H2	1.65	0.43
52:3:528:U:H2'	52:3:529:G:C8	2.53	0.43
52:3:1016:A:H1'	52:3:2044:C:O2'	2.18	0.43
52:3:1026:A:O2'	52:3:1028:C:OP1	2.36	0.43
52:3:1269:C:H2'	52:3:1270:C:C6	2.52	0.43
52:3:2018:U:H2'	52:3:2019:G:O4'	2.17	0.43
52:3:2096:U:H2'	52:3:2097:A:C8	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:2170:A:H5'	52:3:2180:U:C4	2.53	0.43
52:3:2292:A:H2'	52:3:2293:C:C6	2.54	0.43
52:3:2596:A:C6	52:3:2615:G:N1	2.87	0.43
52:3:2743:U:H2'	52:3:2744:A:H8	1.82	0.43
54:5:38:U:H2'	54:5:39:G:O4'	2.18	0.43
54:5:43:G:N2	54:5:620:A:N3	2.66	0.43
54:5:264:C:H2'	54:5:265:U:C6	2.54	0.43
54:5:369:A:H5''	54:5:477:U:O2'	2.19	0.43
54:5:590:G:N1	54:5:644:U:C2	2.86	0.43
54:5:608:G:H2'	54:5:609:G:H8	1.83	0.43
54:5:734:A:H2'	54:5:735:C:H6	1.83	0.43
54:5:770:G:H2'	54:5:771:G:C8	2.51	0.43
54:5:1287:G:H1	54:5:1298:U:H3	1.65	0.43
54:5:1289:U:H3'	54:5:1290:G:C8	2.54	0.43
54:5:1390:G:H2'	54:5:1391:A:C8	2.53	0.43
54:5:1454:G:H2'	54:5:1455:G:C8	2.52	0.43
3:2:36:GLN:OE1	52:3:1159:C:O2'	2.32	0.43
4:9:570:GLU:O	4:9:572:ASP:N	2.51	0.43
11:G:97:ILE:O	11:G:136:GLU:HG3	2.18	0.43
12:H:12:ARG:HA	12:H:108:ARG:NH1	2.33	0.43
12:H:54:LEU:HD22	12:H:60:LYS:HB2	2.01	0.43
13:I:46:LEU:HD11	54:5:1116:U:C6	2.54	0.43
14:J:48:SER:HB2	14:J:49:ARG:NH2	2.33	0.43
16:L:33:ILE:HG13	16:L:63:TYR:CE2	2.53	0.43
16:L:65:ILE:HD12	16:L:65:ILE:H	1.84	0.43
20:P:75:PHE:CZ	54:5:231:U:H4'	2.53	0.43
30:e:65:LYS:HB3	30:e:65:LYS:HE2	1.62	0.43
30:e:70:THR:O	30:e:74:LEU:HG	2.18	0.43
30:e:126:VAL:HB	30:e:134:ILE:HD11	2.01	0.43
36:k:26:SER:O	36:k:26:SER:OG	2.37	0.43
41:p:20:ALA:HB2	41:p:38:VAL:HG23	2.01	0.43
43:r:9:ARG:HG2	43:r:100:SER:OG	2.18	0.43
46:u:54:GLN:OE1	46:u:59:VAL:N	2.49	0.43
50:y:12:ARG:HA	50:y:15:LYS:HE2	1.99	0.43
52:3:220:A:C8	52:3:467:U:N3	2.76	0.43
52:3:299:A:H2'	52:3:300:G:O4'	2.19	0.43
52:3:371:C:H2'	52:3:372:G:O4'	2.18	0.43
52:3:1047:A:N6	52:3:1186:A:C6	2.86	0.43
52:3:1136:U:H2'	52:3:1137:C:C6	2.54	0.43
52:3:1177:A:O2'	52:3:1178:A:H3'	2.18	0.43
52:3:1941:C:H2'	52:3:1942:G:H8	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1989:U:H2'	52:3:1990:C:C6	2.54	0.43
52:3:2007:U:H2'	52:3:2008:A:C8	2.47	0.43
52:3:2064:G:H3'	52:3:2065:A:H8	1.83	0.43
52:3:2128:G:H2'	52:3:2129:U:C6	2.54	0.43
52:3:2205:U:O2	52:3:2206:A:O2'	2.33	0.43
52:3:2231:A:H3'	52:3:2232:G:H8	1.83	0.43
52:3:2246:G:H2'	52:3:2246:G:N3	2.33	0.43
52:3:2299:U:H1'	52:3:2382:A:H1'	1.99	0.43
52:3:2633:C:H2'	52:3:2634:C:C6	2.53	0.43
52:3:2652:U:H2'	52:3:2653:G:O4'	2.18	0.43
54:5:22:G:N2	54:5:908:A:H62	2.16	0.43
54:5:228:G:O2'	54:5:259:A:N6	2.51	0.43
54:5:242:A:N7	54:5:277:G:N1	2.66	0.43
54:5:459:C:H2'	54:5:460:A:C8	2.53	0.43
54:5:734:A:H2'	54:5:735:C:C6	2.54	0.43
54:5:953:A:O2'	54:5:954:A:O4'	2.29	0.43
4:9:368:ARG:HD3	4:9:369:ALA:N	2.33	0.43
4:9:486:LYS:HB3	4:9:510:ARG:NH1	2.32	0.43
8:D:72:LYS:NZ	8:D:73:LEU:O	2.44	0.43
8:D:190:ASN:HD21	54:5:1069:U:H3	1.67	0.43
9:E:89:ASN:OD1	54:5:734:A:H5''	2.19	0.43
22:R:3:ARG:O	54:5:1288:C:N4	2.52	0.43
26:a:69:ILE:HD11	26:a:96:VAL:HG12	2.01	0.43
29:d:40:VAL:H	29:d:85:ILE:HB	1.83	0.43
30:e:3:LYS:HE2	30:e:65:LYS:HG2	2.00	0.43
41:p:57:ARG:HA	41:p:60:TRP:CE3	2.53	0.43
45:t:53:LYS:HG2	45:t:54:ARG:H	1.84	0.43
52:3:215:A:H2'	52:3:216:C:C6	2.54	0.43
52:3:571:A:H2'	52:3:572:G:O4'	2.19	0.43
52:3:598:G:N1	52:3:610:G:C6	2.86	0.43
52:3:736:G:H2'	52:3:737:U:O4'	2.18	0.43
52:3:777:C:H2'	52:3:778:U:C6	2.53	0.43
52:3:829:A:C4	52:3:830:A:C8	3.07	0.43
52:3:849:C:H42	52:3:1224:G:H1	1.65	0.43
52:3:1934:A:H2'	52:3:1935:A:C8	2.53	0.43
52:3:1960:A:H1'	52:3:2557:G:H21	1.84	0.43
52:3:2797:C:H2'	52:3:2798:A:H8	1.83	0.43
52:3:2812:U:OP1	52:3:2894:G:H3'	2.19	0.43
52:3:2852:G:HO2'	52:3:2871:G:N2	2.15	0.43
54:5:85:U:H4'	54:5:86:A:OP1	2.17	0.43
54:5:1047:U:N3	54:5:1180:U:O2	2.51	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:1397:G:H2'	54:5:1398:G:C8	2.54	0.43
8:D:208:VAL:HG21	8:D:217:ASN:HA	2.01	0.43
9:E:86:LEU:HD23	9:E:87:ILE:N	2.33	0.43
11:G:98:TYR:CD1	54:5:596:U:H4'	2.54	0.43
11:G:101:PHE:CE1	11:G:132:LYS:HA	2.54	0.43
18:N:71:ASP:OD1	18:N:72:LEU:N	2.51	0.43
22:R:52:HIS:ND1	22:R:56:THR:O	2.42	0.43
27:b:208:ARG:NH1	52:3:2780:U:H5''	2.32	0.43
34:i:107:ALA:O	34:i:111:MET:HG3	2.19	0.43
36:k:34:ARG:NH1	36:k:42:ARG:O	2.36	0.43
37:l:73:SER:HB2	37:l:93:TRP:CE3	2.54	0.43
38:m:10:THR:O	38:m:14:ARG:HG3	2.18	0.43
39:n:28:VAL:HB	39:n:44:TRP:O	2.18	0.43
52:3:47:G:N2	52:3:184:A:C2	2.83	0.43
52:3:69:U:H2'	52:3:70:G:C8	2.54	0.43
52:3:119:A:H1'	52:3:181:G:H1'	2.00	0.43
52:3:323:A:H2'	52:3:324:C:C6	2.53	0.43
52:3:393:C:H2'	52:3:394:C:C6	2.54	0.43
52:3:563:A:O2'	52:3:565:C:N4	2.51	0.43
52:3:889:G:H2'	52:3:890:U:C6	2.53	0.43
52:3:1095:U:O4'	52:3:1097:G:H5'	2.19	0.43
52:3:1294:G:N2	52:3:2023:U:O4	2.52	0.43
52:3:1446:G:O2'	52:3:1613:A:N6	2.32	0.43
52:3:1449:G:N2	52:3:1612:U:O2	2.51	0.43
52:3:1609:U:H2'	52:3:1610:U:O4'	2.18	0.43
52:3:1722:U:O2'	52:3:1734:A:N7	2.39	0.43
52:3:2376:C:H2'	52:3:2377:A:H8	1.80	0.43
54:5:60:A:OP1	54:5:383:U:H5'	2.19	0.43
54:5:93:A:H5''	54:5:94:A:H2	1.83	0.43
54:5:169:G:H2'	54:5:170:A:H8	1.84	0.43
54:5:229:G:H2'	54:5:230:G:C8	2.53	0.43
54:5:491:U:H2'	54:5:492:G:O4'	2.19	0.43
54:5:671:G:H2'	54:5:672:A:C8	2.54	0.43
54:5:820:A:N1	54:5:872:C:N4	2.66	0.43
54:5:890:U:C2	54:5:891:C:C5	3.06	0.43
54:5:1043:U:H2'	54:5:1175:C:C4	2.54	0.43
54:5:1142:G:H1'	54:5:1145:A:N6	2.33	0.43
54:5:1209:C:H2'	54:5:1210:U:C6	2.53	0.43
4:9:131:ILE:HG23	4:9:255:PRO:HG2	2.00	0.43
5:A:182:VAL:C	5:A:184:GLU:H	2.26	0.43
7:C:145:LYS:O	7:C:147:LYS:N	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:D:139:GLU:HG3	8:D:150:LEU:HD11	1.99	0.43
9:E:68:SER:O	9:E:68:SER:OG	2.34	0.43
12:H:27:LYS:HG3	12:H:60:LYS:O	2.19	0.43
19:O:15:ALA:N	19:O:28:ALA:O	2.45	0.43
27:b:196:ALA:HB1	52:3:2688:C:H1'	2.00	0.43
28:c:8:LYS:HG2	28:c:14:GLU:CD	2.44	0.43
28:c:175:ILE:HG22	28:c:177:ASN:H	1.83	0.43
28:c:183:LEU:O	28:c:186:VAL:HG22	2.19	0.43
32:g:60:ARG:HD3	32:g:75:ALA:HB3	2.00	0.43
33:h:42:LYS:HB3	33:h:42:LYS:HE2	1.74	0.43
34:i:48:THR:OG1	34:i:51:GLN:HB2	2.19	0.43
43:r:88:ARG:HH22	52:3:784:A:H5''	1.83	0.43
50:y:47:MET:HG2	50:y:49:GLY:N	2.34	0.43
51:z:2:ALA:N	52:3:2291:U:OP1	2.52	0.43
52:3:33:C:H2'	52:3:34:C:C6	2.54	0.43
52:3:186:A:N1	52:3:219:G:O6	2.52	0.43
52:3:223:A:H2'	52:3:224:G:C8	2.54	0.43
52:3:734:A:O2'	52:3:1668:G:N7	2.50	0.43
52:3:835:U:H4'	52:3:836:G:H3'	2.01	0.43
52:3:891:G:H2'	52:3:892:G:C8	2.54	0.43
52:3:1006:U:H2'	52:3:1007:C:C6	2.54	0.43
52:3:1054:U:O2'	52:3:1056:A:N7	2.52	0.43
52:3:1340:U:O2'	52:3:1342:C:N4	2.51	0.43
52:3:1371:G:N3	52:3:1371:G:H2'	2.34	0.43
52:3:1725:G:H2'	52:3:1726:U:O4'	2.19	0.43
52:3:1820:U:HO2'	52:3:1821:G:P	2.40	0.43
52:3:2366:A:H2'	52:3:2367:C:H6	1.83	0.43
52:3:2584:G:N2	52:3:2584:G:OP1	2.52	0.43
52:3:2733:A:C4	52:3:2735:G:N7	2.87	0.43
54:5:663:G:H2'	54:5:664:A:H8	1.82	0.43
54:5:710:G:N2	54:5:774:A:O2'	2.52	0.43
54:5:904:C:H2'	54:5:905:U:H6	1.83	0.43
54:5:936:G:H2'	54:5:937:G:O4'	2.19	0.43
54:5:948:U:H2'	54:5:949:G:C8	2.54	0.43
54:5:1088:C:O2'	54:5:1144:A:N3	2.49	0.43
54:5:1175:C:O2	54:5:1181:G:C6	2.72	0.43
54:5:1444:G:H2'	54:5:1445:G:C8	2.53	0.43
55:7:36:A:H2'	55:7:37:A:O4'	2.18	0.43
4:9:216:GLU:HA	4:9:219:ALA:HB3	2.01	0.43
5:A:207:ASN:ND2	5:A:209:GLU:OE2	2.52	0.43
6:B:181:LEU:HD11	54:5:1163:A:C2	2.50	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:B:211:TYR:CD2	6:B:212:THR:HG22	2.53	0.43
13:I:28:THR:HG21	13:I:78:ARG:HG2	2.01	0.43
14:J:78:PHE:HB3	14:J:106:LYS:HG3	2.00	0.43
22:R:47:ASN:ND2	22:R:48:THR:O	2.52	0.43
26:a:110:ILE:HD13	26:a:148:HIS:CD2	2.54	0.43
27:b:17:PHE:HA	27:b:23:ARG:HA	2.00	0.43
28:c:156:ASN:ND2	28:c:176:LYS:O	2.52	0.43
37:l:38:LYS:HE2	37:l:40:ASN:ND2	2.34	0.43
38:m:73:PHE:HB3	38:m:78:LEU:HB2	2.00	0.43
40:o:98:ARG:HG2	52:3:2852:G:H5''	2.01	0.43
43:r:137:MET:HE3	43:r:139:ARG:HH22	1.84	0.43
45:t:89:ILE:HD13	45:t:104:PHE:HA	2.00	0.43
46:u:56:GLY:CA	52:3:2338:G:H21	2.32	0.43
51:z:21:THR:OG1	52:3:2294:A:N6	2.51	0.43
52:3:246:G:H22	52:3:259:A:P	2.41	0.43
52:3:258:G:H4'	52:3:422:A:H4'	1.99	0.43
52:3:597:C:O2'	52:3:1283:A:N1	2.49	0.43
52:3:1114:C:C2	52:3:1115:G:N7	2.87	0.43
52:3:1174:G:H21	52:3:1178:A:H2	1.66	0.43
52:3:1838:A:N6	52:3:1982:G:O6	2.51	0.43
52:3:1930:U:C2	52:3:1931:C:C5	3.07	0.43
52:3:2053:G:C6	52:3:2630:U:O2	2.72	0.43
52:3:2399:G:O6	52:3:2433:A:H8	2.01	0.43
52:3:2612:G:H2'	52:3:2613:U:H6	1.83	0.43
54:5:82:C:H2'	54:5:83:U:C6	2.54	0.43
54:5:472:G:H2'	54:5:473:A:C8	2.49	0.43
54:5:982:A:H2'	54:5:983:G:C8	2.54	0.43
54:5:1126:U:O4	54:5:1127:A:N6	2.52	0.43
54:5:1278:G:N2	54:5:1308:G:C6	2.87	0.43
54:5:1298:U:H5''	54:5:1337:U:H6	1.84	0.43
4:9:32:PHE:O	4:9:190:LYS:NZ	2.51	0.43
4:9:216:GLU:OE2	25:W:83:MET:HG3	2.19	0.43
7:C:29:LYS:HB3	7:C:31:ARG:NH1	2.33	0.43
7:C:141:LYS:HB3	7:C:141:LYS:HE3	1.79	0.43
27:b:148:GLN:NE2	52:3:2060:G:OP1	2.52	0.43
29:d:37:ASN:ND2	52:3:2321:C:H1'	2.34	0.43
31:f:25:TYR:H	52:3:2100:G:H4'	1.82	0.43
32:g:56:ASN:HB3	52:3:1142:G:H5''	2.01	0.43
33:h:61:LYS:HA	33:h:61:LYS:HD2	1.71	0.43
50:y:38:LEU:HD23	50:y:39:PHE:N	2.34	0.43
52:3:35:U:C2	52:3:509:G:C2	3.07	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:86:A:N6	52:3:101:C:O4'	2.52	0.43
52:3:218:G:N3	52:3:220:A:O2'	2.49	0.43
52:3:267:A:H1'	52:3:466:A:N3	2.33	0.43
52:3:534:U:H3	52:3:538:A:H62	1.66	0.43
52:3:1287:C:H2'	52:3:1288:C:H6	1.84	0.43
52:3:1375:G:C6	52:3:1376:G:N7	2.86	0.43
52:3:1415:A:H2'	52:3:1416:G:C8	2.53	0.43
52:3:1494:U:O2	52:3:1550:G:N2	2.45	0.43
52:3:2202:U:H2'	52:3:2203:U:C6	2.53	0.43
52:3:2300:A:H2'	52:3:2301:C:H6	1.84	0.43
52:3:2378:G:H2'	52:3:2379:G:O4'	2.19	0.43
52:3:2472:G:H2'	52:3:2473:C:C6	2.54	0.43
52:3:2738:U:H2'	52:3:2739:C:C6	2.54	0.43
54:5:288:A:C5	54:5:289:U:H1'	2.54	0.43
54:5:580:C:C2	54:5:581:A:C8	3.06	0.43
54:5:991:A:C2	54:5:1037:A:H4'	2.53	0.43
4:9:307:PHE:H	4:9:390:ASP:HB2	1.84	0.42
8:D:160:ILE:HD13	8:D:167:ARG:HD3	2.01	0.42
9:E:4:ASN:HB2	9:E:88:ILE:HB	2.02	0.42
20:P:48:HIS:HB3	20:P:73:LYS:HD2	2.00	0.42
20:P:67:ARG:HH21	54:5:116:A:H5'	1.83	0.42
23:S:70:SER:HA	23:S:73:VAL:HG22	2.01	0.42
26:a:94:CYS:SG	26:a:203:VAL:HB	2.58	0.42
26:a:150:ILE:C	26:a:158:GLY:HA2	2.44	0.42
26:a:251:ARG:HH22	52:3:2246:G:H3'	1.83	0.42
28:c:128:VAL:HB	28:c:132:LEU:HD11	2.01	0.42
31:f:94:THR:O	31:f:98:ILE:HG12	2.19	0.42
32:g:45:PHE:O	32:g:46:LYS:HB2	2.18	0.42
35:j:98:ILE:HG13	35:j:114:ILE:HG23	1.99	0.42
36:k:71:GLY:HA2	52:3:249:G:O5'	2.19	0.42
37:l:24:ASN:OD1	52:3:943:A:O2'	2.26	0.42
41:p:30:SER:HB3	41:p:33:VAL:HG12	2.01	0.42
45:t:18:LYS:H	45:t:18:LYS:HG2	1.62	0.42
52:3:46:A:H2	52:3:471:A:H61	1.67	0.42
52:3:110:A:H2'	52:3:111:G:O4'	2.18	0.42
52:3:440:C:H5''	52:3:441:U:C2	2.53	0.42
52:3:614:C:H2'	52:3:615:G:C8	2.54	0.42
52:3:632:A:H2'	52:3:633:G:C8	2.52	0.42
52:3:788:G:H2'	52:3:789:A:C8	2.54	0.42
52:3:861:U:H5''	52:3:2437:G:P	2.59	0.42
52:3:1117:U:H2'	52:3:1118:U:O4'	2.18	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1264:U:H3'	52:3:1265:G:H8	1.84	0.42
52:3:1718:C:H2'	52:3:1719:C:C6	2.54	0.42
52:3:2553:G:H21	52:3:2573:A:H2	1.67	0.42
52:3:2624:C:H2'	52:3:2625:U:H6	1.84	0.42
52:3:2717:G:H2'	52:3:2718:C:C6	2.54	0.42
52:3:2756:A:H5''	52:3:2761:A:N6	2.34	0.42
53:4:27:A:O2'	53:4:56:A:N1	2.44	0.42
54:5:15:U:H5''	54:5:16:G:OP2	2.19	0.42
54:5:130:G:H2'	54:5:131:G:H8	1.83	0.42
54:5:141:A:H2'	54:5:142:G:C8	2.54	0.42
54:5:582:G:H2'	54:5:583:G:H8	1.84	0.42
54:5:586:G:C6	54:5:587:A:N6	2.87	0.42
54:5:760:U:H2'	54:5:761:U:H6	1.84	0.42
54:5:939:G:O2'	54:5:1313:A:N6	2.51	0.42
4:9:521:PHE:HA	4:9:561:ALA:O	2.19	0.42
4:9:608:VAL:O	4:9:637:GLN:HG2	2.20	0.42
9:E:47:TYR:OH	21:Q:94:ARG:O	2.36	0.42
18:N:34:LYS:HE3	18:N:34:LYS:HB3	1.91	0.42
29:d:14:LYS:O	29:d:18:LYS:HG2	2.19	0.42
31:f:72:ILE:HG12	31:f:138:LEU:HD23	2.01	0.42
35:j:58:LEU:HD21	35:j:94:ARG:HH21	1.84	0.42
41:p:105:PHE:O	41:p:109:VAL:HG23	2.19	0.42
50:y:7:ARG:NH2	52:3:612:G:O2'	2.52	0.42
52:3:82:G:C2	52:3:108:G:C2	3.08	0.42
52:3:174:A:H2'	52:3:175:A:H8	1.84	0.42
52:3:500:U:H1'	52:3:721:G:O6	2.18	0.42
52:3:567:U:H4'	52:3:568:G:C8	2.53	0.42
52:3:733:C:H5''	52:3:734:A:H5'	2.00	0.42
52:3:788:G:H2'	52:3:789:A:H8	1.84	0.42
52:3:1233:A:C5	52:3:1234:U:C4	3.08	0.42
52:3:1996:A:H2'	52:3:1997:C:O4'	2.19	0.42
52:3:2068:G:H4'	52:3:2069:A:H5'	2.01	0.42
52:3:2372:C:H2'	52:3:2373:G:O4'	2.18	0.42
54:5:292:U:H2'	54:5:293:G:C8	2.54	0.42
54:5:590:G:O6	54:5:644:U:C4	2.72	0.42
54:5:766:G:OP1	54:5:800:G:O2'	2.31	0.42
54:5:882:U:H3'	54:5:883:A:H8	1.84	0.42
54:5:920:G:C6	54:5:922:G:C6	3.07	0.42
54:5:1098:C:H2'	54:5:1099:G:C8	2.51	0.42
54:5:1390:G:N2	54:5:1460:U:O2	2.51	0.42
2:1:22:LYS:HE2	36:k:65:PHE:CE1	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:9:531:PRO:HA	54:5:1184:C:H5'	2.01	0.42
6:B:143:LYS:HA	6:B:146:LYS:HE3	2.01	0.42
9:E:22:ASN:HB3	9:E:60:TRP:HZ2	1.83	0.42
9:E:29:LEU:H	9:E:29:LEU:HD12	1.84	0.42
10:F:115:MET:HG2	54:5:1215:U:C5	2.52	0.42
13:I:48:LEU:HD13	13:I:77:LYS:HG2	2.01	0.42
13:I:62:HIS:ND1	54:5:1173:A:O2'	2.51	0.42
26:a:80:GLU:HB3	26:a:120:LYS:HE3	2.01	0.42
26:a:228:VAL:HG22	52:3:1796:A:H5'	2.01	0.42
27:b:213:LYS:HA	27:b:213:LYS:HD2	1.80	0.42
32:g:10:GLN:O	32:g:14:VAL:HG23	2.19	0.42
32:g:60:ARG:HD2	32:g:72:ASP:HA	2.00	0.42
33:h:108:LYS:HA	33:h:111:ASP:HB3	2.01	0.42
34:i:67:LEU:HD23	34:i:71:LYS:HB2	2.01	0.42
34:i:95:MET:O	34:i:99:GLN:N	2.51	0.42
39:n:78:ALA:HA	39:n:81:LEU:HD12	2.01	0.42
43:r:48:ALA:O	43:r:52:ASN:ND2	2.53	0.42
46:u:34:ARG:HG3	52:3:2279:G:H5'	2.00	0.42
52:3:444:C:H2'	52:3:445:C:C6	2.54	0.42
52:3:772:C:H2'	52:3:773:G:H8	1.82	0.42
52:3:1053:C:H2'	52:3:1054:U:C6	2.54	0.42
52:3:1327:G:N2	52:3:1674:A:OP2	2.50	0.42
52:3:1754:U:H2'	52:3:1755:A:H8	1.77	0.42
52:3:1830:G:H2'	52:3:1831:G:H8	1.84	0.42
52:3:2115:A:C6	52:3:2190:G:O6	2.72	0.42
52:3:2548:G:H2'	52:3:2549:A:O4'	2.19	0.42
54:5:81:A:H2'	54:5:82:C:C6	2.54	0.42
54:5:85:U:H1'	54:5:86:A:N7	2.34	0.42
54:5:577:G:H1'	54:5:725:A:N3	2.35	0.42
54:5:683:G:O2'	54:5:700:G:N2	2.51	0.42
54:5:922:G:H4'	54:5:1478:A:C8	2.55	0.42
54:5:1003:G:H2'	54:5:1004:U:C6	2.53	0.42
54:5:1150:G:C4	54:5:1151:A:C8	3.07	0.42
54:5:1227:A:H2'	54:5:1228:C:O4'	2.19	0.42
54:5:1472:G:N2	54:5:1494:A:H1'	2.34	0.42
10:F:144:ALA:O	10:F:148:LYS:HB2	2.19	0.42
11:G:132:LYS:HZ1	54:5:599:G:P	2.42	0.42
13:I:59:ARG:HE	13:I:68:ARG:C	2.27	0.42
15:K:53:MET:HG2	15:K:65:TYR:CD1	2.54	0.42
16:L:53:PHE:O	16:L:57:ARG:N	2.48	0.42
24:T:46:ARG:NH2	54:5:720:U:OP2	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:g:42:LYS:HB3	33:h:113:ASN:O	2.18	0.42
35:j:97:ARG:HH22	54:5:335:C:H5	1.68	0.42
52:3:102:A:H3'	52:3:103:G:H8	1.84	0.42
52:3:188:G:C6	52:3:217:A:N6	2.88	0.42
52:3:406:C:H2'	52:3:407:U:C6	2.54	0.42
52:3:454:G:H2'	52:3:455:G:C8	2.54	0.42
52:3:513:A:H4'	52:3:514:A:OP1	2.18	0.42
52:3:1257:G:OP1	52:3:1280:G:N2	2.49	0.42
52:3:1913:G:H2'	52:3:1914:G:O4'	2.19	0.42
52:3:2011:G:C2	52:3:2012:A:H1'	2.54	0.42
52:3:2516:G:O6	52:3:2588:U:O4	2.37	0.42
53:4:74:G:H1	53:4:91:A:H61	1.66	0.42
54:5:111:A:H4'	54:5:632:A:H1'	2.01	0.42
54:5:397:C:H2'	54:5:398:G:C8	2.55	0.42
54:5:917:G:H2'	54:5:918:A:C8	2.54	0.42
54:5:1250:A:H3'	54:5:1251:G:H8	1.84	0.42
54:5:1282:U:H2'	54:5:1283:G:C8	2.55	0.42
54:5:1402:U:H2'	54:5:1403:A:C8	2.54	0.42
54:5:1432:A:H2'	54:5:1433:G:C8	2.53	0.42
54:5:1440:U:H2'	54:5:1441:C:C6	2.55	0.42
55:8:9:U:O2'	55:8:22:A:N1	2.46	0.42
55:8:70:G:H2'	55:8:71:A:H8	1.82	0.42
8:D:73:LEU:HG	8:D:75:ARG:HH22	1.85	0.42
9:E:104:LYS:O	9:E:107:LEU:HB3	2.20	0.42
21:Q:102:VAL:HG22	54:5:715:A:C6	2.55	0.42
22:R:37:ARG:HB3	54:5:1294:U:O4	2.19	0.42
26:a:15:HIS:CD2	26:a:215:LYS:HB3	2.54	0.42
27:b:165:MET:HE2	27:b:165:MET:HB3	1.86	0.42
33:h:15:LEU:HG	33:h:16:GLY:H	1.83	0.42
34:i:59:ILE:HD12	34:i:127:VAL:HB	2.01	0.42
36:k:5:GLN:H	36:k:5:GLN:HG2	1.65	0.42
36:k:134:GLN:O	36:k:137:LYS:HG3	2.19	0.42
49:x:12:VAL:HG22	49:x:27:SER:OG	2.19	0.42
52:3:35:U:C2	52:3:509:G:N1	2.87	0.42
52:3:320:A:H2'	52:3:321:A:C8	2.54	0.42
52:3:500:U:O4	52:3:823:A:C4	2.73	0.42
52:3:552:C:C2	52:3:553:A:C8	3.07	0.42
52:3:1225:A:H2'	52:3:1226:G:O4'	2.19	0.42
52:3:1480:A:N1	52:3:1487:U:H1'	2.34	0.42
52:3:2394:A:H2'	52:3:2395:U:C6	2.55	0.42
52:3:2523:C:C2	52:3:2524:U:C5	3.07	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:4:56:A:N3	53:4:56:A:H2'	2.33	0.42
54:5:265:U:H2'	54:5:266:A:C8	2.55	0.42
54:5:334:A:N1	54:5:347:G:C6	2.88	0.42
54:5:553:C:O2'	54:5:554:C:O4'	2.36	0.42
54:5:599:G:C6	54:5:635:G:C6	3.08	0.42
54:5:643:U:H2'	54:5:644:U:C6	2.54	0.42
54:5:1498:G:H2'	54:5:1499:G:H8	1.85	0.42
55:7:16:G:H2'	55:7:16:G:N3	2.35	0.42
5:A:104:ASP:OD1	5:A:104:ASP:N	2.53	0.42
6:B:6:ASN:HD21	6:B:8:ASN:HB2	1.83	0.42
6:B:20:SER:HB3	6:B:22:TRP:CD1	2.55	0.42
6:B:24:ALA:HB2	6:B:33:TRP:CH2	2.55	0.42
6:B:31:ALA:O	6:B:34:LEU:HG	2.19	0.42
6:B:140:SER:HA	6:B:143:LYS:HE3	2.02	0.42
8:D:113:ASN:O	8:D:117:LYS:HG3	2.20	0.42
9:E:59:ARG:HE	9:E:61:LYS:HD3	1.84	0.42
20:P:59:ASP:OD2	20:P:60:LYS:N	2.52	0.42
29:d:78:LYS:HE2	29:d:78:LYS:HB2	1.92	0.42
31:f:41:LYS:NZ	52:3:286:A:H5''	2.34	0.42
34:i:50:ASN:HA	34:i:117:LEU:HD11	2.01	0.42
35:j:6:THR:HG23	52:3:1700:G:O3'	2.20	0.42
38:m:14:ARG:NH1	52:3:2009:U:OP1	2.45	0.42
39:n:37:ASN:HD22	53:4:50:C:H5	1.67	0.42
52:3:17:G:N2	52:3:560:U:O2	2.47	0.42
52:3:104:A:N3	52:3:104:A:H2'	2.34	0.42
52:3:314:G:O6	52:3:393:C:N4	2.46	0.42
52:3:547:G:O2'	52:3:548:A:OP2	2.37	0.42
52:3:557:G:C2'	52:3:558:C:H5'	2.50	0.42
52:3:743:G:N1	52:3:759:U:C4	2.88	0.42
52:3:759:U:H3'	52:3:760:G:C8	2.55	0.42
52:3:831:U:H2'	52:3:832:C:C6	2.55	0.42
52:3:895:G:N2	52:3:953:G:H2'	2.33	0.42
52:3:929:G:H2'	52:3:930:C:C6	2.55	0.42
52:3:931:G:H2'	52:3:932:U:H4'	2.01	0.42
52:3:1406:A:H61	52:3:1603:A:H61	1.66	0.42
52:3:1445:U:H2'	52:3:1446:G:C8	2.55	0.42
52:3:1472:C:H2'	52:3:1473:C:O4'	2.19	0.42
52:3:1575:C:H2'	52:3:1576:G:O4'	2.20	0.42
52:3:1675:A:C4	52:3:1676:G:C8	3.07	0.42
52:3:2156:G:H2'	52:3:2157:A:H8	1.82	0.42
52:3:2469:A:H2'	52:3:2470:C:H6	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:2546:U:H2'	52:3:2547:C:C6	2.54	0.42
53:4:36:C:H2'	53:4:37:A:C8	2.53	0.42
54:5:280:G:H2'	54:5:281:U:C6	2.55	0.42
54:5:490:U:H2'	54:5:491:U:H6	1.85	0.42
54:5:500:G:O5'	54:5:500:G:H8	2.02	0.42
54:5:846:G:H2'	54:5:847:G:C8	2.54	0.42
54:5:1231:U:O2'	54:5:1253:A:N6	2.53	0.42
4:9:163:GLN:HG2	4:9:175:ILE:HG22	2.00	0.42
4:9:455:HIS:O	4:9:459:LEU:HG	2.19	0.42
5:A:43:PHE:CZ	9:E:157:TRP:HA	2.54	0.42
7:C:75:PHE:CZ	7:C:79:LEU:HD11	2.55	0.42
15:K:79:TYR:O	15:K:81:PRO:HD3	2.20	0.42
19:O:21:LYS:NZ	19:O:22:ARG:O	2.41	0.42
22:R:29:ARG:HB3	22:R:48:THR:HG23	2.02	0.42
27:b:110:VAL:HG22	27:b:207:ILE:HG12	2.01	0.42
32:g:76:ILE:HD12	32:g:76:ILE:HA	1.92	0.42
33:h:128:ALA:HB1	33:h:133:ILE:HG23	2.02	0.42
35:j:114:ILE:H	35:j:114:ILE:HD12	1.84	0.42
36:k:46:LEU:HD22	52:3:700:U:H5''	2.01	0.42
37:l:68:ILE:HG21	37:l:103:MET:HG3	2.02	0.42
39:n:84:LEU:O	39:n:85:LYS:HG2	2.20	0.42
46:u:25:LYS:HG3	46:u:26:ASN:H	1.83	0.42
47:v:16:ASN:O	52:3:417:G:O2'	2.35	0.42
51:z:37:PHE:CE2	51:z:42:ARG:HD2	2.55	0.42
52:3:402:A:O2'	52:3:403:U:H4'	2.19	0.42
52:3:618:G:H1'	52:3:1284:A:H61	1.85	0.42
52:3:758:C:H2'	52:3:759:U:C6	2.55	0.42
52:3:822:C:H5''	52:3:823:A:H5'	2.01	0.42
52:3:907:A:H3'	52:3:908:A:H8	1.84	0.42
52:3:1086:G:H4'	52:3:2760:C:O2'	2.19	0.42
52:3:1473:C:C2	52:3:1580:G:N2	2.88	0.42
52:3:1885:G:H2'	52:3:1886:C:C6	2.54	0.42
52:3:1896:A:N3	52:3:2093:U:O2'	2.52	0.42
52:3:2551:G:H2'	52:3:2552:G:C8	2.54	0.42
54:5:138:A:C2'	54:5:139:C:H5'	2.49	0.42
54:5:538:G:H2'	54:5:539:G:C8	2.55	0.42
54:5:571:A:H2'	54:5:877:C:H4'	2.00	0.42
54:5:749:G:H1'	54:5:751:C:H41	1.85	0.42
54:5:1030:G:H2'	54:5:1031:A:C8	2.55	0.42
54:5:1386:C:H2'	54:5:1387:U:C6	2.54	0.42
5:A:182:VAL:O	5:A:183:TYR:HB3	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:E:136:LEU:HG	9:E:138:SER:H	1.84	0.42
10:F:71:ARG:HG3	10:F:141:HIS:HB2	2.02	0.42
15:K:82:GLY:N	54:5:520:C:OP1	2.53	0.42
16:L:34:LEU:HA	16:L:39:ILE:HB	2.00	0.42
26:a:228:VAL:HG13	52:3:1795:C:O3'	2.20	0.42
29:d:111:VAL:HG22	29:d:137:ILE:HG12	2.00	0.42
31:f:109:GLN:HB2	31:f:112:MET:HE2	2.02	0.42
33:h:69:THR:HB	33:h:111:ASP:HB2	2.02	0.42
35:j:52:VAL:HB	35:j:56:GLN:NE2	2.35	0.42
39:n:110:ARG:HH21	39:n:116:PHE:C	2.27	0.42
44:s:13:THR:HG22	52:3:1366:G:H5''	2.02	0.42
44:s:35:ALA:HA	44:s:39:ARG:NH2	2.35	0.42
45:t:14:THR:HG22	45:t:15:GLY:H	1.85	0.42
45:t:25:LEU:HD21	45:t:37:GLU:HB2	2.02	0.42
50:y:25:GLN:HB3	50:y:38:LEU:HD11	2.02	0.42
52:3:167:A:H2'	52:3:168:A:O4'	2.19	0.42
52:3:243:U:O4	52:3:262:G:O6	2.38	0.42
52:3:557:G:H2'	52:3:558:C:H5'	2.02	0.42
52:3:719:G:N2	52:3:810:G:N7	2.53	0.42
52:3:764:G:H8	52:3:799:A:H5''	1.85	0.42
52:3:799:A:N7	52:3:1783:G:H1'	2.35	0.42
52:3:1099:C:H2'	52:3:1100:U:C6	2.55	0.42
52:3:1270:C:H2'	52:3:1271:A:C8	2.54	0.42
52:3:1345:G:H2'	52:3:1346:G:H8	1.78	0.42
52:3:1349:C:H3'	52:3:1350:A:C8	2.55	0.42
52:3:1928:G:H2'	52:3:1929:G:C8	2.45	0.42
52:3:2041:C:H2'	52:3:2042:A:C8	2.54	0.42
52:3:2718:C:H2'	52:3:2719:A:H8	1.82	0.42
54:5:601:U:H2'	54:5:602:G:H8	1.83	0.42
54:5:632:A:H2'	54:5:633:U:C6	2.55	0.42
54:5:748:U:H3'	54:5:749:G:C8	2.55	0.42
54:5:901:A:C4	54:5:902:A:C8	3.08	0.42
54:5:1324:A:H2'	54:5:1325:U:O4'	2.20	0.42
54:5:1363:U:C2	54:5:1364:C:C5	3.07	0.42
1:0:29:LYS:HA	1:0:32:LYS:NZ	2.35	0.42
4:9:351:SER:HB2	4:9:376:ILE:O	2.20	0.42
5:A:40:LYS:HB2	5:A:208:PRO:HD2	2.02	0.42
12:H:34:ARG:HH22	54:5:1121:U:P	2.42	0.42
16:L:52:GLU:O	16:L:56:ILE:N	2.37	0.42
22:R:15:LEU:HD11	22:R:35:SER:OG	2.20	0.42
22:R:33:THR:HG23	22:R:33:THR:O	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:R:37:ARG:NH2	54:5:1292:A:H1'	2.34	0.42
26:a:62:ASN:HB2	52:3:1601:A:OP1	2.19	0.42
26:a:144:GLY:H	26:a:170:ILE:HB	1.83	0.42
28:c:5:LYS:HA	28:c:5:LYS:HD2	1.84	0.42
28:c:146:PHE:O	28:c:150:ALA:N	2.46	0.42
29:d:126:GLY:O	29:d:157:VAL:HG23	2.20	0.42
35:j:4:PHE:HE1	35:j:22:ILE:O	2.03	0.42
39:n:11:ARG:NH1	39:n:95:GLY:O	2.52	0.42
46:u:80:LEU:HB2	46:u:98:VAL:HG23	2.02	0.42
47:v:22:LYS:O	47:v:23:THR:OG1	2.36	0.42
52:3:29:G:N1	52:3:547:G:O2'	2.51	0.42
52:3:135:A:H2'	52:3:136:G:C8	2.52	0.42
52:3:201:A:N6	52:3:2439:U:O5'	2.53	0.42
52:3:250:U:O2	52:3:256:G:N2	2.39	0.42
52:3:341:G:N1	52:3:344:A:OP2	2.48	0.42
52:3:759:U:H2'	52:3:760:G:O4'	2.20	0.42
52:3:1020:G:H5''	52:3:1021:C:H5	1.85	0.42
52:3:1505:G:H1	52:3:1538:U:H3	1.67	0.42
52:3:1538:U:H2'	52:3:1539:U:H6	1.85	0.42
52:3:1855:A:H2'	52:3:1856:G:O4'	2.20	0.42
52:3:2795:C:H2'	52:3:2796:C:C6	2.54	0.42
52:3:2854:A:H2'	52:3:2855:A:C8	2.55	0.42
54:5:26:C:H2'	54:5:27:A:H8	1.84	0.42
54:5:253:G:O6	54:5:265:U:O4	2.37	0.42
54:5:704:U:O2'	54:5:705:A:H5'	2.20	0.42
54:5:710:G:C2	54:5:711:G:C5	3.08	0.42
54:5:939:G:N1	54:5:1312:G:OP2	2.49	0.42
54:5:1482:A:H2'	54:5:1483:C:O4'	2.20	0.42
4:9:126:TYR:HB2	4:9:128:VAL:HG23	2.01	0.42
5:A:29:HIS:ND1	5:A:30:VAL:HG13	2.35	0.42
5:A:32:MET:SD	5:A:218:ASN:ND2	2.90	0.42
7:C:56:GLU:HB3	7:C:191:ILE:HG23	2.00	0.42
7:C:99:ASN:HA	7:C:110:ARG:HE	1.85	0.42
9:E:90:LEU:HD22	9:E:94:TYR:HB3	2.01	0.42
11:G:73:ASN:N	11:G:73:ASN:ND2	2.68	0.42
17:M:61:TRP:CD1	54:5:1162:G:HO2'	2.38	0.42
27:b:30:TYR:HA	27:b:190:LEU:HD12	2.02	0.42
28:c:59:ARG:NH2	52:3:487:C:O2'	2.53	0.42
28:c:166:THR:O	28:c:170:GLN:HG3	2.20	0.42
37:l:22:LYS:HG3	52:3:899:A:OP2	2.19	0.42
39:n:27:ARG:HH12	39:n:115:ASN:ND2	2.18	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:p:2:ARG:H	52:3:481:C:H5''	1.85	0.42
42:q:51:GLU:O	42:q:52:LYS:HG2	2.20	0.42
45:t:80:LYS:HB2	45:t:80:LYS:HE2	1.88	0.42
48:w:67:GLU:HG3	48:w:68:GLU:N	2.30	0.42
52:3:752:C:H3'	52:3:753:A:H8	1.85	0.42
52:3:889:G:H2'	52:3:890:U:H6	1.85	0.42
52:3:1073:A:H2'	52:3:1074:A:C8	2.55	0.42
52:3:1688:A:C4	52:3:1689:A:C8	3.08	0.42
52:3:1738:G:H2'	52:3:1739:G:H8	1.85	0.42
52:3:1948:C:H3'	52:3:1949:C:C5	2.55	0.42
52:3:2848:A:C6	52:3:2878:G:C6	3.08	0.42
53:4:4:G:H2'	53:4:5:G:H8	1.85	0.42
54:5:46:U:H5''	54:5:303:A:H1'	2.00	0.42
54:5:93:A:H5''	54:5:94:A:C2	2.54	0.42
54:5:99:U:H1'	54:5:349:A:H1'	2.01	0.42
54:5:872:C:H2'	54:5:873:U:C6	2.55	0.42
54:5:995:U:H2'	54:5:996:U:C6	2.54	0.42
54:5:1239:U:H2'	54:5:1240:U:C6	2.55	0.42
55:8:15:A:C4	55:8:16:G:H1'	2.55	0.42
4:9:13:PHE:CZ	4:9:278:LEU:HB3	2.54	0.41
5:A:49:ARG:HA	5:A:49:ARG:HD3	1.94	0.41
6:B:103:ASP:N	6:B:103:ASP:OD1	2.52	0.41
7:C:114:ARG:NH1	54:5:399:C:O5'	2.52	0.41
8:D:120:LYS:HE3	8:D:124:ASN:OD1	2.20	0.41
10:F:113:LYS:HG3	10:F:114:THR:H	1.85	0.41
11:G:49:VAL:HG21	11:G:57:PHE:CD1	2.54	0.41
13:I:53:GLU:OE1	13:I:75:ARG:NH2	2.53	0.41
26:a:57:HIS:CE1	52:3:1830:G:H5''	2.55	0.41
27:b:113:ILE:HA	27:b:173:LYS:HA	2.00	0.41
28:c:139:LYS:HE3	28:c:139:LYS:HB3	1.86	0.41
32:g:103:LYS:HG3	32:g:104:GLU:N	2.35	0.41
35:j:48:PRO:HG3	54:5:1397:G:H5'	2.02	0.41
42:q:24:LYS:HB3	42:q:90:THR:OG1	2.20	0.41
43:r:137:MET:HB3	43:r:139:ARG:HH12	1.85	0.41
48:w:95:LYS:HB3	48:w:95:LYS:HE3	1.94	0.41
52:3:192:U:H1'	52:3:1393:A:N6	2.35	0.41
52:3:671:C:H2'	52:3:672:G:C8	2.55	0.41
52:3:816:A:H2'	52:3:1784:U:H1'	2.01	0.41
52:3:1248:A:H2'	52:3:1249:A:C8	2.54	0.41
52:3:1493:A:H2'	52:3:1494:U:O4'	2.20	0.41
52:3:1665:G:N2	52:3:1667:G:H3'	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1881:C:H2'	52:3:1882:G:O4'	2.19	0.41
52:3:2128:G:H2'	52:3:2129:U:H6	1.85	0.41
52:3:2497:U:H2'	52:3:2498:G:C4	2.55	0.41
52:3:2500:U:H2'	52:3:2501:U:C6	2.54	0.41
54:5:59:C:N4	54:5:350:G:O6	2.52	0.41
54:5:551:A:H2'	54:5:552:U:C6	2.55	0.41
54:5:684:A:H2	54:5:701:A:C5	2.37	0.41
54:5:697:G:H4'	54:5:701:A:H1'	2.01	0.41
54:5:738:A:H2'	54:5:739:G:O4'	2.20	0.41
54:5:950:C:H2'	54:5:951:U:H6	1.84	0.41
54:5:1287:G:H2'	54:5:1288:C:H6	1.83	0.41
54:5:1445:G:H2'	54:5:1446:A:H8	1.85	0.41
55:8:16:G:H2'	55:8:16:G:N3	2.35	0.41
4:9:28:GLU:OE2	4:9:59:ARG:NH1	2.53	0.41
4:9:39:LYS:O	4:9:360:ASN:ND2	2.51	0.41
4:9:151:ILE:HG13	4:9:152:GLN:N	2.35	0.41
4:9:271:LEU:O	4:9:275:VAL:HG23	2.20	0.41
5:A:102:ARG:NH1	5:A:234:ASP:OD1	2.51	0.41
5:A:121:LYS:O	5:A:125:ILE:HG12	2.19	0.41
6:B:12:PHE:CZ	6:B:18:TRP:HD1	2.37	0.41
6:B:87:LYS:HB3	6:B:87:LYS:HE2	1.74	0.41
6:B:182:ARG:NE	6:B:210:ILE:O	2.53	0.41
7:C:40:ASN:OD1	54:5:422:A:O2'	2.37	0.41
9:E:9:VAL:HA	9:E:81:GLN:O	2.20	0.41
10:F:19:ASN:ND2	10:F:22:VAL:HG23	2.35	0.41
12:H:22:THR:O	12:H:63:PHE:HA	2.21	0.41
18:N:59:LYS:O	18:N:62:ARG:HG2	2.20	0.41
20:P:24:VAL:HG21	20:P:63:ILE:HD11	2.01	0.41
26:a:251:ARG:NH1	52:3:2247:G:OP1	2.49	0.41
27:b:11:VAL:HG23	27:b:28:VAL:HG13	2.01	0.41
27:b:151:ARG:HB3	52:3:2580:A:C8	2.55	0.41
29:d:123:ASP:OD2	29:d:127:ASN:ND2	2.52	0.41
34:i:47:PHE:H	41:p:63:ARG:HD2	1.84	0.41
38:m:60:ARG:HA	38:m:63:VAL:HG22	2.01	0.41
44:s:34:LYS:CE	52:3:129:U:H5''	2.50	0.41
50:y:13:ARG:NH2	52:3:1293:U:O3'	2.53	0.41
52:3:51:A:N6	52:3:180:A:N7	2.68	0.41
52:3:70:G:H2'	52:3:71:C:C6	2.55	0.41
52:3:180:A:H8	52:3:181:G:C8	2.37	0.41
52:3:355:A:C6	52:3:375:U:H4'	2.55	0.41
52:3:448:A:N6	52:3:2420:A:H1'	2.34	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:854:A:H5''	52:3:1009:A:N1	2.35	0.41
52:3:863:U:H4'	52:3:866:G:C6	2.55	0.41
52:3:915:A:O4'	52:3:937:A:N6	2.53	0.41
52:3:1427:C:C2	52:3:1428:U:C5	3.08	0.41
52:3:1498:U:H2'	52:3:1499:C:C6	2.55	0.41
52:3:1586:U:H2'	52:3:1587:U:C6	2.55	0.41
52:3:1622:C:H2'	52:3:1623:U:C6	2.56	0.41
52:3:1953:U:H3	52:3:1967:U:H3	1.68	0.41
52:3:2208:U:H2'	52:3:2209:U:C6	2.55	0.41
52:3:2303:U:O4	52:3:2345:G:O6	2.39	0.41
52:3:2419:A:H2'	52:3:2420:A:C8	2.55	0.41
52:3:2423:G:H2'	52:3:2424:C:H5'	2.02	0.41
52:3:2663:G:O2'	52:3:2672:G:O6	2.24	0.41
52:3:2706:U:H2'	52:3:2707:A:C8	2.55	0.41
52:3:2815:G:H2'	52:3:2816:A:H8	1.86	0.41
54:5:202:A:H2'	54:5:203:C:C6	2.56	0.41
54:5:226:G:H2'	54:5:227:A:H8	1.86	0.41
54:5:582:G:H2'	54:5:583:G:C8	2.56	0.41
54:5:936:G:C2	54:5:937:G:H1'	2.55	0.41
54:5:958:G:C2	54:5:968:G:C2	3.08	0.41
54:5:964:A:H2'	54:5:965:C:O4'	2.19	0.41
54:5:1106:U:H2'	54:5:1107:U:C6	2.55	0.41
54:5:1127:A:O2'	54:5:1128:G:H8	2.03	0.41
1:0:17:GLY:HA2	1:0:44:VAL:HG22	2.02	0.41
4:9:274:VAL:O	4:9:278:LEU:HB2	2.20	0.41
7:C:27:LYS:HD2	54:5:426:U:C6	2.54	0.41
12:H:124:ARG:HD2	54:5:1318:C:H5''	2.02	0.41
14:J:76:LYS:HD2	14:J:76:LYS:N	2.35	0.41
19:O:73:TRP:O	19:O:77:VAL:HG13	2.21	0.41
22:R:45:VAL:HG21	22:R:64:ASP:HA	2.01	0.41
27:b:79:LYS:HD2	27:b:80:HIS:CE1	2.55	0.41
28:c:59:ARG:NH1	52:3:488:G:N7	2.68	0.41
28:c:112:LEU:O	28:c:115:VAL:HG12	2.20	0.41
30:e:97:TYR:CZ	30:e:163:LYS:HE2	2.56	0.41
34:i:96:LEU:HA	34:i:100:SER:OG	2.20	0.41
36:k:33:GLY:HA2	52:3:1221:G:H5'	2.01	0.41
37:l:38:LYS:HE2	37:l:40:ASN:HD21	1.85	0.41
37:l:87:LYS:HE3	52:3:991:G:H5''	2.02	0.41
42:q:85:HIS:HE2	42:q:87:GLN:HB2	1.84	0.41
44:s:26:LYS:HE2	44:s:26:LYS:HB2	1.80	0.41
52:3:72:G:N2	52:3:73:A:N1	2.62	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:190:G:H2'	52:3:191:G:C8	2.55	0.41
52:3:670:G:H2'	52:3:671:C:H6	1.85	0.41
52:3:823:A:H5''	52:3:825:U:C5	2.54	0.41
52:3:1020:G:H5''	52:3:1021:C:C5	2.55	0.41
52:3:1172:G:H2'	52:3:1173:G:H8	1.85	0.41
52:3:1462:A:H61	52:3:1592:A:H61	1.68	0.41
52:3:1556:U:H2'	52:3:1557:G:C8	2.55	0.41
52:3:1721:G:H2'	52:3:1722:U:C6	2.55	0.41
52:3:1799:A:H2'	52:3:1800:C:H6	1.85	0.41
52:3:1879:A:H2'	52:3:1880:G:O4'	2.20	0.41
52:3:2401:U:H2'	52:3:2402:C:C6	2.56	0.41
52:3:2857:C:H2'	52:3:2858:A:C8	2.55	0.41
53:4:44:A:H2'	53:4:45:C:C6	2.55	0.41
53:4:85:A:H2'	53:4:86:G:C8	2.55	0.41
54:5:399:C:N4	54:5:545:A:OP1	2.53	0.41
54:5:451:G:H2'	54:5:452:A:C8	2.55	0.41
54:5:484:A:H2'	54:5:485:C:O4'	2.20	0.41
54:5:616:C:H2'	54:5:616:C:O2	2.19	0.41
54:5:692:A:N1	54:5:784:A:O2'	2.47	0.41
54:5:806:A:H2'	54:5:807:C:O4'	2.20	0.41
54:5:940:G:H22	54:5:1211:A:H2	1.67	0.41
54:5:1160:G:H2'	54:5:1161:G:O4'	2.20	0.41
54:5:1409:A:H61	54:5:1442:A:H1'	1.85	0.41
4:9:193:LYS:HD2	4:9:193:LYS:HA	1.95	0.41
4:9:339:VAL:HG21	4:9:378:LEU:HD21	2.03	0.41
4:9:440:ASP:HB2	4:9:447:ILE:HD11	2.03	0.41
6:B:18:TRP:CD1	17:M:54:PRO:HA	2.56	0.41
6:B:189:LEU:HD21	54:5:1049:G:H4'	2.02	0.41
9:E:43:LYS:HB3	9:E:57:TYR:HE2	1.83	0.41
10:F:148:LYS:HA	10:F:148:LYS:HD3	1.76	0.41
20:P:75:PHE:CE1	54:5:231:U:H4'	2.56	0.41
26:a:31:ASN:HD21	52:3:1601:A:H1'	1.85	0.41
27:b:175:THR:HG21	27:b:208:ARG:NH1	2.36	0.41
28:c:102:LYS:HG2	52:3:694:U:H4'	2.03	0.41
28:c:195:ASN:ND2	52:3:1235:U:OP1	2.52	0.41
32:g:69:GLU:H	32:g:69:GLU:HG2	1.70	0.41
32:g:99:VAL:O	32:g:103:LYS:N	2.48	0.41
35:j:38:VAL:HG12	35:j:59:ARG:HG2	2.03	0.41
38:m:9:LYS:HE2	38:m:9:LYS:HB2	1.82	0.41
40:o:9:LEU:O	40:o:13:VAL:HG22	2.20	0.41
52:3:54:A:OP2	52:3:118:G:N1	2.41	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:582:A:H3'	52:3:582:A:N3	2.36	0.41
52:3:598:G:H2'	52:3:599:U:H5'	2.02	0.41
52:3:613:C:H2'	52:3:614:C:C6	2.55	0.41
52:3:720:A:C2	52:3:822:C:H1'	2.56	0.41
52:3:795:G:H2'	52:3:796:A:O4'	2.20	0.41
52:3:1101:U:H3	52:3:1104:A:H2'	1.85	0.41
52:3:1328:A:P	52:3:1661:A:H62	2.38	0.41
52:3:1653:C:H2'	52:3:1654:G:H8	1.83	0.41
52:3:1821:G:OP2	52:3:1822:A:H3'	2.21	0.41
52:3:2064:G:C2'	52:3:2065:A:H5'	2.50	0.41
52:3:2291:U:N3	52:3:2292:A:N7	2.68	0.41
52:3:2332:U:H3	52:3:2340:U:H3	1.68	0.41
52:3:2418:G:H2'	52:3:2419:A:O4'	2.21	0.41
52:3:2568:G:H2'	52:3:2569:A:C8	2.56	0.41
52:3:2841:A:H2'	52:3:2842:G:H8	1.85	0.41
53:4:45:C:H2'	53:4:46:C:O4'	2.20	0.41
54:5:253:G:H2'	54:5:254:G:C8	2.55	0.41
54:5:332:A:C4	54:5:333:U:C5	3.08	0.41
54:5:796:A:H3'	54:5:797:G:H8	1.86	0.41
54:5:802:C:H2'	54:5:803:C:C6	2.55	0.41
54:5:1086:U:H4'	54:5:1101:A:N3	2.36	0.41
54:5:1396:U:O2	54:5:1454:G:N2	2.44	0.41
1:0:41:GLN:HE22	52:3:499:G:H1	1.69	0.41
4:9:17:ALA:O	4:9:23:LYS:HD3	2.19	0.41
8:D:196:MET:O	8:D:200:LEU:HG	2.21	0.41
10:F:8:LYS:NZ	10:F:93:ASP:HB2	2.36	0.41
13:I:15:LYS:NZ	54:5:1254:A:H5''	2.36	0.41
26:a:215:LYS:NZ	52:3:764:G:O4'	2.47	0.41
27:b:184:PHE:HD1	27:b:191:VAL:HG23	1.85	0.41
28:c:210:LYS:HA	28:c:210:LYS:HD2	1.82	0.41
29:d:4:LEU:HB3	29:d:97:TRP:HB3	2.02	0.41
29:d:53:ALA:HA	29:d:56:GLU:HG2	2.03	0.41
29:d:99:PHE:HZ	29:d:154:VAL:HG11	1.85	0.41
29:d:162:LYS:HZ3	29:d:164:SER:HB3	1.84	0.41
30:e:23:ASP:O	30:e:37:LYS:HD2	2.20	0.41
36:k:18:LYS:HB3	36:k:18:LYS:HE2	1.78	0.41
36:k:124:LEU:HB2	36:k:126:PHE:HE1	1.85	0.41
37:l:2:LEU:HB2	37:l:70:PRO:HG2	2.01	0.41
37:l:71:HIS:CE1	52:3:945:U:H1'	2.56	0.41
38:m:18:VAL:O	38:m:22:VAL:HG13	2.21	0.41
43:r:10:VAL:HG11	43:r:46:LEU:HD13	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:t:88:LYS:NZ	52:3:368:C:O2'	2.46	0.41
47:v:39:LYS:HB2	47:v:39:LYS:HE2	1.93	0.41
52:3:245:U:O3'	52:3:246:G:H4'	2.21	0.41
52:3:411:U:OP2	52:3:436:G:N1	2.53	0.41
52:3:480:C:H2'	52:3:481:C:C5	2.56	0.41
52:3:1156:C:H2'	52:3:1157:G:O4'	2.20	0.41
52:3:1284:A:H5''	52:3:1285:U:H5''	2.02	0.41
52:3:1292:A:H61	52:3:2024:C:H42	1.68	0.41
52:3:1297:U:O4	52:3:1298:A:N6	2.54	0.41
52:3:1433:U:H2'	52:3:1434:U:C6	2.55	0.41
52:3:1446:G:H8	52:3:1446:G:O5'	2.03	0.41
52:3:1508:G:H22	52:3:1532:A:H1'	1.85	0.41
52:3:1772:G:H2'	52:3:1773:A:H8	1.85	0.41
52:3:2048:U:H2'	52:3:2049:A:H8	1.85	0.41
52:3:2073:C:H2'	52:3:2074:G:C8	2.56	0.41
52:3:2560:U:H2'	52:3:2562:U:H5	1.86	0.41
52:3:2713:A:H3'	52:3:2714:G:H8	1.86	0.41
52:3:2792:C:H2'	52:3:2793:U:C6	2.55	0.41
52:3:2832:G:H2'	52:3:2833:A:C8	2.55	0.41
52:3:2844:U:H2'	52:3:2845:U:C6	2.56	0.41
52:3:2854:A:H2'	52:3:2855:A:H8	1.84	0.41
53:4:19:G:H2'	53:4:20:U:C6	2.56	0.41
54:5:42:G:C2	54:5:398:G:C2	3.09	0.41
54:5:443:G:H2'	54:5:444:G:O4'	2.21	0.41
54:5:516:C:H5'	54:5:528:G:O4'	2.20	0.41
54:5:714:C:H3'	54:5:731:A:OP2	2.21	0.41
54:5:920:G:H2'	54:5:922:G:C8	2.56	0.41
54:5:1120:A:H5'	54:5:1122:U:O4'	2.20	0.41
55:7:27:A:C6	55:7:28:A:C4	3.09	0.41
4:9:204:LYS:HG3	4:9:208:LYS:NZ	2.35	0.41
6:B:18:TRP:CG	17:M:54:PRO:HA	2.56	0.41
7:C:49:GLY:O	7:C:53:GLN:HG3	2.19	0.41
8:D:120:LYS:HA	8:D:123:HIS:HD1	1.86	0.41
9:E:86:LEU:HD21	54:5:733:A:H4'	2.02	0.41
10:F:115:MET:O	10:F:118:LYS:HG2	2.19	0.41
19:O:20:VAL:HG11	19:O:25:LYS:HB3	2.03	0.41
20:P:60:LYS:H	20:P:60:LYS:HG2	1.62	0.41
23:S:13:GLN:HG3	54:5:89:G:P	2.60	0.41
36:k:87:LYS:HG3	52:3:637:U:OP2	2.20	0.41
36:k:132:SER:O	36:k:136:LEU:N	2.48	0.41
37:l:71:HIS:ND1	52:3:945:U:H1'	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:l:103:MET:N	37:l:103:MET:SD	2.93	0.41
38:m:90:TYR:HB3	38:m:97:TYR:CD2	2.55	0.41
47:v:14:TYR:CD1	47:v:28:LYS:HB2	2.56	0.41
48:w:62:LYS:HZ3	48:w:66:GLN:C	2.29	0.41
49:x:25:ILE:HG23	49:x:26:GLU:N	2.35	0.41
52:3:217:A:C6	52:3:218:G:C6	3.09	0.41
52:3:224:G:H1	52:3:463:U:H3'	1.86	0.41
52:3:243:U:H2'	52:3:244:G:O4'	2.21	0.41
52:3:1586:U:H2'	52:3:1587:U:C5	2.56	0.41
52:3:1775:G:H2'	52:3:1776:G:C8	2.55	0.41
52:3:2143:G:O6	52:3:2163:U:N3	2.53	0.41
52:3:2255:A:H2'	52:3:2256:C:C6	2.55	0.41
52:3:2646:G:H22	52:3:2783:A:H2'	1.85	0.41
52:3:2821:U:O2	52:3:2840:U:H1'	2.20	0.41
54:5:202:A:H2'	54:5:203:C:H6	1.85	0.41
54:5:503:G:HO2'	54:5:532:U:H3	1.65	0.41
54:5:712:A:H2'	54:5:713:A:H8	1.85	0.41
54:5:876:C:H2'	54:5:877:C:C6	2.55	0.41
54:5:904:C:H2'	54:5:905:U:C6	2.55	0.41
54:5:1001:A:N7	54:5:1002:A:C8	2.88	0.41
54:5:1016:A:H2'	54:5:1017:A:C8	2.55	0.41
54:5:1082:U:OP1	54:5:1146:A:O2'	2.38	0.41
54:5:1290:G:H1'	54:5:1334:A:C2	2.56	0.41
54:5:1303:A:H2'	54:5:1304:U:H6	1.86	0.41
54:5:1424:C:H2'	54:5:1425:A:O4'	2.20	0.41
54:5:1485:C:H2'	54:5:1486:C:C6	2.55	0.41
1:0:39:ARG:HD2	1:0:39:ARG:HA	1.89	0.41
2:1:4:LYS:HB2	2:1:59:ILE:HD13	2.02	0.41
4:9:599:GLU:HG2	4:9:675:THR:HG22	2.02	0.41
7:C:155:LYS:HA	7:C:174:PHE:HZ	1.84	0.41
12:H:9:LEU:H	12:H:87:ARG:HD2	1.85	0.41
15:K:112:ARG:HG3	15:K:117:THR:HB	2.03	0.41
17:M:32:ALA:HB2	54:5:969:A:H5''	2.02	0.41
17:M:48:ALA:HA	17:M:53:ILE:HD13	2.03	0.41
26:a:220:ARG:NH1	52:3:799:A:N3	2.69	0.41
30:e:150:GLU:HA	30:e:153:LYS:HD3	2.02	0.41
36:k:26:SER:OG	52:3:848:U:OP2	2.34	0.41
37:l:67:ARG:HD3	37:l:105:GLU:OE2	2.21	0.41
41:p:26:THR:HG23	41:p:29:ALA:HB3	2.03	0.41
45:t:90:LYS:HZ1	45:t:103:VAL:HG12	1.85	0.41
52:3:14:U:O2	52:3:14:U:H2'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:209:G:H1'	52:3:210:U:H5	1.85	0.41
52:3:455:G:C6	52:3:456:G:O6	2.74	0.41
52:3:1107:C:H5'	52:3:1124:G:OP2	2.21	0.41
52:3:1186:A:C6	52:3:1187:C:C4	3.09	0.41
52:3:1426:C:C2	52:3:1427:C:C5	3.08	0.41
52:3:1439:U:H2'	52:3:1440:U:C6	2.56	0.41
52:3:1500:A:H2'	52:3:1501:U:O4'	2.21	0.41
52:3:1507:G:HO2'	52:3:1508:G:P	2.42	0.41
52:3:1652:A:O2'	52:3:1653:C:O5'	2.36	0.41
52:3:1696:C:H2'	52:3:1697:C:C6	2.55	0.41
52:3:1873:A:C6	52:3:1883:A:N7	2.89	0.41
52:3:2055:A:C5	52:3:2056:A:C8	3.09	0.41
52:3:2130:A:N6	52:3:2184:A:H61	2.18	0.41
52:3:2140:G:H1'	52:3:2165:A:N6	2.36	0.41
52:3:2267:G:H2'	52:3:2268:C:H6	1.84	0.41
52:3:2336:A:H2'	52:3:2337:U:C6	2.56	0.41
52:3:2532:G:H2'	52:3:2533:A:O4'	2.21	0.41
52:3:2591:G:H2'	52:3:2592:U:O4'	2.21	0.41
52:3:2825:A:O2'	52:3:2830:A:N1	2.49	0.41
54:5:39:G:H1'	54:5:393:A:N6	2.35	0.41
54:5:60:A:OP1	54:5:61:A:H5''	2.20	0.41
54:5:296:A:C5	54:5:297:A:H1'	2.56	0.41
54:5:359:A:H2'	54:5:360:A:C8	2.55	0.41
2:1:25:TYR:HA	52:3:2400:A:H5''	2.02	0.41
4:9:632:GLN:HA	4:9:637:GLN:HA	2.03	0.41
9:E:69:THR:HA	9:E:72:PHE:HB3	2.02	0.41
12:H:50:MET:HB2	12:H:81:ILE:HD11	2.02	0.41
12:H:108:ARG:NH2	12:H:109:ASP:OD1	2.53	0.41
13:I:62:HIS:CG	13:I:63:VAL:H	2.39	0.41
15:K:25:HIS:CE1	54:5:551:A:H4'	2.55	0.41
27:b:182:VAL:HB	27:b:192:LEU:HB2	2.02	0.41
29:d:162:LYS:NZ	29:d:164:SER:HB3	2.36	0.41
34:i:101:ASP:HB2	34:i:127:VAL:HG13	2.02	0.41
35:j:19:VAL:HG22	35:j:41:VAL:HB	2.03	0.41
36:k:55:GLN:NE2	52:3:860:C:O2	2.34	0.41
39:n:97:LYS:HZ2	39:n:97:LYS:HG2	1.78	0.41
47:v:18:ARG:CZ	55:8:76:C:C2	3.04	0.41
52:3:19:G:H2'	52:3:20:C:H6	1.85	0.41
52:3:155:A:C6	52:3:178:A:N6	2.89	0.41
52:3:714:G:H2'	52:3:715:G:C8	2.56	0.41
52:3:814:U:H2'	52:3:815:G:C8	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:891:G:N1	52:3:960:A:N1	2.69	0.41
52:3:1065:G:C6	52:3:1160:G:N2	2.88	0.41
52:3:1237:G:H2'	52:3:1238:A:O4'	2.20	0.41
52:3:1388:G:C5	52:3:1389:G:C8	3.08	0.41
52:3:1798:A:H61	52:3:1835:G:H1'	1.83	0.41
52:3:1832:G:H2'	52:3:1833:G:O4'	2.21	0.41
52:3:2238:G:H2'	52:3:2239:U:C6	2.55	0.41
52:3:2278:G:H2'	52:3:2279:G:O4'	2.21	0.41
52:3:2693:U:H2'	52:3:2694:A:C8	2.55	0.41
52:3:2729:A:C4	52:3:2730:G:C8	3.09	0.41
52:3:2842:G:C4	52:3:2843:G:C8	3.08	0.41
54:5:40:G:C5	54:5:400:G:C6	3.08	0.41
54:5:55:C:OP1	54:5:347:G:H1'	2.21	0.41
54:5:206:G:C2	54:5:210:G:C6	3.09	0.41
54:5:211:G:C4	54:5:212:G:C8	3.09	0.41
54:5:213:U:H5''	54:5:461:G:H22	1.86	0.41
54:5:399:C:H2'	54:5:400:G:C8	2.51	0.41
54:5:1088:C:H2'	54:5:1089:C:C6	2.55	0.41
54:5:1166:A:H2'	54:5:1167:C:C6	2.56	0.41
54:5:1194:A:H2'	54:5:1195:G:H8	1.86	0.41
4:9:39:LYS:NZ	4:9:355:LYS:HD2	2.36	0.41
4:9:205:ASP:OD1	4:9:206:GLN:N	2.53	0.41
4:9:234:GLU:CD	4:9:234:GLU:H	2.28	0.41
4:9:344:LYS:NZ	4:9:348:GLU:HG2	2.36	0.41
5:A:30:VAL:HG12	5:A:56:PHE:HD2	1.85	0.41
6:B:181:LEU:HD23	6:B:181:LEU:HA	1.92	0.41
6:B:182:ARG:NH2	6:B:209:MET:HB3	2.36	0.41
6:B:182:ARG:HH21	6:B:209:MET:HB3	1.86	0.41
7:C:88:ASN:OD1	7:C:91:ARG:NH1	2.54	0.41
8:D:97:ARG:HG2	8:D:172:LEU:HD23	2.03	0.41
8:D:145:GLY:HA2	54:5:858:A:H5'	2.03	0.41
8:D:207:ARG:HA	8:D:207:ARG:NH2	2.36	0.41
12:H:21:LEU:HG	12:H:63:PHE:HB3	2.02	0.41
13:I:45:PRO:HB2	13:I:78:ARG:HH21	1.86	0.41
15:K:76:VAL:HG11	15:K:108:TYR:CE2	2.55	0.41
18:N:54:TYR:HA	18:N:57:VAL:HG12	2.01	0.41
19:O:61:ASP:O	19:O:64:ARG:HG2	2.21	0.41
26:a:84:LYS:NZ	26:a:100:THR:HB	2.35	0.41
26:a:120:LYS:HE3	26:a:120:LYS:HB3	1.92	0.41
26:a:135:SER:HA	26:a:198:ALA:O	2.21	0.41
26:a:230:GLY:O	26:a:231:SER:OG	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:b:61:LYS:NZ	52:3:2834:C:H5''	2.36	0.41
27:b:123:ILE:HB	27:b:142:ARG:HH21	1.85	0.41
30:e:97:TYR:HA	30:e:109:GLN:O	2.21	0.41
30:e:149:THR:HG21	52:3:2753:C:H5'	2.02	0.41
32:g:85:GLY:HA3	32:g:89:ILE:CG1	2.49	0.41
35:j:37:ASP:O	35:j:62:ILE:HG22	2.21	0.41
44:s:11:VAL:O	44:s:16:VAL:HG21	2.20	0.41
44:s:56:ASN:OD1	52:3:1369:U:O2'	2.39	0.41
46:u:56:GLY:N	52:3:2338:G:H21	2.19	0.41
47:v:8:THR:HG23	47:v:10:ARG:HE	1.86	0.41
48:w:30:ARG:HA	48:w:33:LEU:HG	2.02	0.41
52:3:47:G:C2	52:3:184:A:N1	2.89	0.41
52:3:199:A:H2'	52:3:202:C:N4	2.36	0.41
52:3:200:A:H61	52:3:866:G:N2	2.18	0.41
52:3:316:C:O2'	52:3:392:A:N1	2.47	0.41
52:3:433:A:H2'	52:3:434:G:C8	2.56	0.41
52:3:465:A:H2'	52:3:466:A:C5	2.56	0.41
52:3:500:U:O2'	52:3:501:G:P	2.79	0.41
52:3:633:G:N2	52:3:692:U:O2	2.40	0.41
52:3:718:U:H2'	52:3:719:G:C8	2.56	0.41
52:3:720:A:H2	52:3:822:C:H1'	1.86	0.41
52:3:842:U:C2	52:3:843:G:C8	3.08	0.41
52:3:887:A:C6	52:3:964:A:C6	3.08	0.41
52:3:932:U:H4'	52:3:933:A:OP2	2.20	0.41
52:3:964:A:H2'	52:3:965:U:C6	2.56	0.41
52:3:998:C:H2'	52:3:999:U:O4'	2.21	0.41
52:3:1008:A:OP2	52:3:1008:A:H8	2.04	0.41
52:3:1048:A:H4'	52:3:1049:U:OP1	2.20	0.41
52:3:1264:U:H2'	52:3:1265:G:O4'	2.21	0.41
52:3:1336:A:H2'	52:3:1337:G:O4'	2.21	0.41
52:3:1702:A:H5'	52:3:1703:A:N7	2.35	0.41
52:3:1766:A:O2'	52:3:2719:A:H2'	2.20	0.41
52:3:1890:U:C2	52:3:1891:A:C8	3.09	0.41
52:3:2006:C:H1'	52:3:2695:U:H1'	2.02	0.41
52:3:2250:G:H2'	52:3:2251:U:O4'	2.21	0.41
52:3:2323:U:H2'	52:3:2324:A:H8	1.84	0.41
52:3:2670:A:H2'	52:3:2671:G:O4'	2.20	0.41
52:3:2676:G:H2'	52:3:2677:A:H8	1.85	0.41
52:3:2677:A:H2'	52:3:2678:A:H8	1.86	0.41
52:3:2731:U:C2	52:3:2732:A:C8	3.09	0.41
54:5:60:A:H2'	54:5:327:G:N2	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:146:A:H8	54:5:146:A:P	2.43	0.41
54:5:205:U:H2'	54:5:206:G:C8	2.55	0.41
54:5:205:U:H2'	54:5:206:G:H8	1.86	0.41
54:5:228:G:H2'	54:5:229:G:C8	2.56	0.41
54:5:314:G:O2'	54:5:1443:A:O3'	2.37	0.41
54:5:406:G:C6	54:5:426:U:H1'	2.55	0.41
54:5:413:G:H2'	54:5:414:U:C6	2.56	0.41
54:5:478:G:H21	54:5:479:A:N6	2.19	0.41
54:5:714:C:O2'	54:5:731:A:O4'	2.28	0.41
54:5:715:A:H3'	54:5:716:C:C6	2.55	0.41
54:5:888:A:C5	54:5:889:U:C5	3.08	0.41
54:5:1048:G:H2'	54:5:1049:G:O4'	2.21	0.41
54:5:1140:A:C2'	54:5:1141:U:H5'	2.51	0.41
54:5:1142:G:H2'	54:5:1144:A:OP2	2.21	0.41
54:5:1294:U:H2'	54:5:1295:U:C6	2.56	0.41
54:5:1300:C:H2'	54:5:1301:U:C6	2.56	0.41
54:5:1320:A:H4'	54:5:1321:G:H4'	2.02	0.41
54:5:1391:A:H2'	54:5:1392:A:O4'	2.21	0.41
54:5:1492:G:H2'	54:5:1493:A:C8	2.55	0.41
55:7:15:A:C4	55:7:16:G:H1'	2.55	0.41
55:7:55:U:H2'	55:7:56:U:O4'	2.21	0.41
55:8:55:U:H2'	55:8:56:U:O4'	2.21	0.41
4:9:411:GLU:HG3	4:9:445:GLN:HG2	2.02	0.41
4:9:587:LYS:HE3	4:9:587:LYS:HB3	1.90	0.41
8:D:162:ALA:HB1	8:D:166:ILE:HB	2.03	0.41
10:F:19:ASN:HD22	10:F:22:VAL:HG23	1.86	0.41
19:O:64:ARG:HD3	19:O:73:TRP:CZ2	2.49	0.41
21:Q:68:ALA:O	54:5:715:A:N6	2.54	0.41
23:S:3:ASN:HB2	54:5:60:A:N6	2.35	0.41
26:a:164:ALA:HB3	52:3:1827:U:O2'	2.21	0.41
26:a:233:MET:HB2	26:a:241:GLY:HA3	2.02	0.41
29:d:150:ARG:HB2	52:3:2313:U:O2	2.20	0.41
34:i:18:TRP:CD1	34:i:138:GLN:HB3	2.56	0.41
35:j:104:ARG:HB3	35:j:107:ARG:HH21	1.85	0.41
36:k:76:GLU:HG3	36:k:110:LEU:HD11	2.03	0.41
39:n:75:GLN:HB2	39:n:112:ARG:NH2	2.35	0.41
42:q:77:LYS:NZ	52:3:1009:A:OP2	2.37	0.41
43:r:34:ASN:HB3	50:y:35:LYS:HG2	2.03	0.41
43:r:38:ASN:HD22	50:y:38:LEU:HD12	1.86	0.41
44:s:25:LYS:HB3	44:s:90:ALA:HB2	2.03	0.41
47:v:3:LYS:HB3	47:v:3:LYS:HE2	1.84	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:71:C:H4'	52:3:77:G:C8	2.56	0.41
52:3:265:G:O6	52:3:266:A:N6	2.51	0.41
52:3:318:U:H2'	52:3:319:G:C8	2.56	0.41
52:3:511:U:O2	52:3:515:A:N7	2.54	0.41
52:3:1010:G:HO2'	52:3:1011:A:P	2.43	0.41
52:3:1519:A:N7	52:3:1520:A:N6	2.69	0.41
52:3:1524:C:H2'	52:3:1525:G:O4'	2.20	0.41
52:3:1669:A:H2	52:3:1768:G:H21	1.69	0.41
52:3:1884:A:H2'	52:3:1885:G:N7	2.36	0.41
52:3:2092:U:O2	52:3:2242:G:C6	2.73	0.41
52:3:2126:A:OP2	52:3:2170:A:N6	2.53	0.41
52:3:2331:G:H2'	52:3:2332:U:C6	2.56	0.41
52:3:2851:U:H2'	52:3:2852:G:O4'	2.21	0.41
54:5:616:C:O2	54:5:620:A:N6	2.54	0.41
54:5:916:U:H2'	54:5:917:G:H8	1.85	0.41
54:5:1226:A:H61	54:5:1328:C:H1'	1.86	0.41
54:5:1376:G:H2'	54:5:1377:C:O4'	2.20	0.41
4:9:144:PHE:CD1	4:9:258:CYS:HB3	2.56	0.40
4:9:175:ILE:HD12	4:9:185:PHE:HZ	1.85	0.40
4:9:409:ALA:H	4:9:476:PRO:HG3	1.85	0.40
4:9:587:LYS:O	4:9:591:LYS:HG2	2.20	0.40
5:A:148:GLU:O	5:A:151:MET:HG3	2.21	0.40
5:A:240:LYS:HB3	5:A:240:LYS:HE3	1.88	0.40
8:D:136:ILE:HB	8:D:178:ILE:HG12	2.03	0.40
9:E:6:ILE:HD11	9:E:59:ARG:HD2	2.03	0.40
11:G:137:ILE:HG21	11:G:140:TYR:CE1	2.56	0.40
15:K:114:THR:O	15:K:115:LEU:HG	2.21	0.40
23:S:29:LYS:HA	23:S:32:VAL:HG22	2.02	0.40
23:S:50:GLN:O	23:S:54:LEU:HG	2.21	0.40
26:a:43:LYS:NZ	26:a:61:ARG:O	2.52	0.40
26:a:169:ARG:HA	26:a:169:ARG:HD2	1.91	0.40
27:b:229:ALA:HB3	40:o:21:TYR:CD1	2.55	0.40
33:h:85:GLY:HA3	52:3:1098:G:O3'	2.21	0.40
41:p:64:LEU:HD12	41:p:99:ILE:HD11	2.03	0.40
46:u:28:ARG:HG2	52:3:2286:A:H62	1.86	0.40
49:x:14:PHE:N	49:x:23:PHE:O	2.46	0.40
52:3:26:G:C6	52:3:27:U:C2	3.10	0.40
52:3:36:U:O2'	52:3:37:G:O4'	2.39	0.40
52:3:683:G:C6	52:3:684:A:C6	3.09	0.40
52:3:1362:C:C4	52:3:1363:C:N4	2.89	0.40
52:3:1480:A:O2'	52:3:2710:G:O6	2.31	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1595:C:H2'	52:3:1596:U:O4'	2.21	0.40
52:3:1703:A:H5''	52:3:2558:G:OP1	2.20	0.40
52:3:1738:G:H2'	52:3:1739:G:C8	2.55	0.40
52:3:1799:A:H2'	52:3:1800:C:C6	2.56	0.40
52:3:2224:A:C2	52:3:2225:G:C5	3.09	0.40
52:3:2237:U:H2'	52:3:2238:G:C8	2.56	0.40
52:3:2627:U:H2'	52:3:2628:U:C6	2.57	0.40
52:3:2635:G:H21	52:3:2789:A:H2	1.68	0.40
54:5:98:G:H2'	54:5:99:U:C6	2.56	0.40
54:5:272:G:H2'	54:5:273:C:C6	2.56	0.40
54:5:313:U:P	54:5:349:A:H61	2.44	0.40
54:5:339:U:C2	54:5:343:G:N1	2.90	0.40
54:5:661:G:H5''	54:5:662:G:OP2	2.22	0.40
54:5:724:G:H2'	54:5:726:A:OP2	2.20	0.40
54:5:1251:G:H2'	54:5:1252:C:O4'	2.22	0.40
54:5:1364:C:H2'	54:5:1365:U:H6	1.85	0.40
55:7:56:U:H2'	55:7:58:G:OP2	2.21	0.40
4:9:32:PHE:CZ	4:9:43:THR:HA	2.57	0.40
4:9:88:PHE:HD2	4:9:90:VAL:HG22	1.85	0.40
4:9:339:VAL:HG23	4:9:387:LEU:HD12	2.03	0.40
6:B:52:GLN:HB2	6:B:73:GLN:HG2	2.03	0.40
8:D:154:ALA:HB3	8:D:178:ILE:HD12	2.04	0.40
12:H:54:LEU:HD11	12:H:60:LYS:HD3	2.03	0.40
15:K:76:VAL:HG11	15:K:108:TYR:HE2	1.87	0.40
20:P:4:ASN:HB2	20:P:6:ARG:NH1	2.36	0.40
22:R:12:ASP:H	22:R:38:SER:HB3	1.86	0.40
24:T:16:LYS:HG3	24:T:20:ARG:NH2	2.35	0.40
26:a:185:LEU:O	52:3:1826:A:O2'	2.26	0.40
27:b:34:ASN:HD22	27:b:54:PHE:HB3	1.85	0.40
27:b:158:ARG:NH2	52:3:2031:C:O3'	2.55	0.40
31:f:123:ASP:HB2	31:f:141:LYS:HD2	2.03	0.40
39:n:64:ASN:HD21	39:n:101:ARG:CZ	2.34	0.40
46:u:57:THR:HB	46:u:60:TYR:CE2	2.57	0.40
48:w:84:VAL:HG22	48:w:88:LYS:HE2	2.04	0.40
52:3:139:G:C6	52:3:145:A:N1	2.89	0.40
52:3:392:A:N3	52:3:392:A:H2'	2.36	0.40
52:3:449:C:H2'	52:3:450:C:C6	2.56	0.40
52:3:628:A:H2'	52:3:629:G:C8	2.56	0.40
52:3:743:G:H2'	52:3:744:U:C6	2.57	0.40
52:3:1047:A:N6	52:3:1186:A:C5	2.89	0.40
52:3:1106:G:N7	52:3:1107:C:N4	2.69	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1866:G:N1	52:3:1891:A:N7	2.68	0.40
52:3:2003:C:C5	52:3:2734:C:H5''	2.53	0.40
52:3:2054:C:H2'	52:3:2055:A:H8	1.83	0.40
52:3:2175:U:N3	52:3:2179:A:H8	2.08	0.40
52:3:2244:U:H2'	52:3:2245:G:O4'	2.21	0.40
52:3:2631:G:H2'	52:3:2632:C:C6	2.56	0.40
52:3:2752:G:H2'	52:3:2753:C:C6	2.56	0.40
52:3:2779:C:H2'	52:3:2780:U:C6	2.57	0.40
53:4:24:A:H2'	53:4:25:A:O4'	2.21	0.40
54:5:56:A:C5	54:5:57:U:C4	3.10	0.40
54:5:445:A:H3'	54:5:446:A:H8	1.86	0.40
4:9:86:VAL:HG13	4:9:87:ASP:H	1.84	0.40
5:A:189:ALA:O	5:A:193:ILE:HG12	2.21	0.40
6:B:37:ASP:OD2	6:B:60:ARG:NH1	2.54	0.40
10:F:48:LEU:HD23	10:F:48:LEU:HA	1.91	0.40
10:F:114:THR:HG22	10:F:116:LEU:H	1.86	0.40
10:F:115:MET:HA	10:F:118:LYS:HG2	2.02	0.40
10:F:148:LYS:HD3	10:F:151:ALA:HB3	2.02	0.40
11:G:27:LYS:NZ	54:5:868:G:N3	2.70	0.40
13:I:62:HIS:CE1	54:5:1174:U:H5'	2.56	0.40
13:I:70:GLN:HG3	17:M:59:ALA:CB	2.52	0.40
15:K:27:ASN:HA	15:K:72:ASN:ND2	2.37	0.40
15:K:97:GLY:C	54:5:550:U:H4'	2.46	0.40
15:K:111:VAL:C	15:K:112:ARG:HD3	2.47	0.40
27:b:165:MET:HE1	52:3:2056:A:H2	1.86	0.40
38:m:36:LYS:O	38:m:39:LYS:HG3	2.21	0.40
39:n:2:LYS:HE2	39:n:7:GLN:HE21	1.86	0.40
42:q:35:LEU:HB3	42:q:55:VAL:HG23	2.04	0.40
45:t:72:SER:OG	52:3:361:G:N2	2.55	0.40
45:t:80:LYS:O	45:t:83:GLN:CB	2.58	0.40
50:y:35:LYS:HB3	50:y:44:SER:CB	2.51	0.40
52:3:17:G:H2'	52:3:18:G:C8	2.57	0.40
52:3:78:C:H2'	52:3:79:U:H6	1.87	0.40
52:3:289:U:H2'	52:3:290:A:C8	2.56	0.40
52:3:509:G:C6	52:3:510:G:C6	3.10	0.40
52:3:811:G:OP2	52:3:811:G:N2	2.53	0.40
52:3:887:A:C6	52:3:964:A:N6	2.89	0.40
52:3:1393:A:H3'	52:3:1394:A:H8	1.86	0.40
52:3:1814:G:N2	52:3:1817:A:OP2	2.45	0.40
52:3:1828:A:H2'	52:3:1829:U:C6	2.57	0.40
52:3:2084:A:H2'	52:3:2085:C:C6	2.57	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:2124:A:H61	52:3:2174:G:H22	1.70	0.40
52:3:2298:G:C4	52:3:2299:U:C5	3.09	0.40
52:3:2375:A:H2'	52:3:2376:C:C6	2.57	0.40
52:3:2461:A:H2'	52:3:2462:G:C8	2.57	0.40
54:5:332:A:H2'	54:5:333:U:H6	1.86	0.40
54:5:715:A:H5''	54:5:716:C:C5	2.56	0.40
54:5:886:A:H2'	54:5:887:C:C6	2.56	0.40
54:5:1033:U:H2'	54:5:1034:G:C8	2.56	0.40
54:5:1153:G:N2	54:5:1156:G:OP2	2.55	0.40
54:5:1413:G:H2'	54:5:1414:U:C6	2.56	0.40
5:A:56:PHE:CD1	5:A:216:PRO:HB2	2.56	0.40
5:A:197:PRO:HB3	9:E:162:LYS:HE2	2.03	0.40
5:A:229:MET:HE2	5:A:229:MET:HB3	1.96	0.40
6:B:134:ARG:NE	8:D:110:GLU:OE1	2.47	0.40
11:G:40:LEU:HD11	11:G:122:VAL:HG13	2.03	0.40
13:I:29:LYS:HA	13:I:32:VAL:HG12	2.03	0.40
13:I:62:HIS:HD1	54:5:1173:A:HO2'	1.68	0.40
14:J:121:ARG:HH11	54:5:1497:U:H5''	1.86	0.40
17:M:24:CYS:SG	17:M:25:GLN:N	2.94	0.40
20:P:76:ARG:HH12	54:5:185:G:N2	2.19	0.40
21:Q:67:TYR:HB2	21:Q:69:LYS:HE2	2.02	0.40
28:c:161:VAL:HG22	28:c:164:LEU:H	1.86	0.40
29:d:167:LEU:O	29:d:170:LEU:HG	2.22	0.40
32:g:116:ARG:NH2	32:g:117:ALA:O	2.54	0.40
37:l:76:LYS:HA	37:l:76:LYS:HD2	1.86	0.40
42:q:14:VAL:HG13	42:q:18:ASP:HB2	2.04	0.40
52:3:425:U:H4'	52:3:426:U:OP2	2.16	0.40
52:3:511:U:H5''	52:3:545:C:H5'	2.03	0.40
52:3:511:U:H2'	52:3:512:G:C8	2.57	0.40
52:3:770:A:N6	52:3:796:A:O2'	2.50	0.40
52:3:1179:G:H2'	52:3:1180:U:O4'	2.21	0.40
52:3:1362:C:N4	52:3:1363:C:N4	2.69	0.40
52:3:1635:G:H2'	52:3:1636:U:C6	2.56	0.40
52:3:1809:A:H2'	52:3:1810:A:H8	1.86	0.40
52:3:1943:A:N7	52:3:1950:U:C4	2.89	0.40
52:3:2000:U:C2	52:3:2001:C:C5	3.09	0.40
52:3:2068:G:H5'	52:3:2510:G:H5'	2.03	0.40
52:3:2112:A:O2'	52:3:2113:U:H5'	2.22	0.40
52:3:2576:A:H2'	52:3:2577:G:H8	1.86	0.40
52:3:2664:U:H2'	52:3:2665:A:C8	2.54	0.40
52:3:2812:U:HI'	52:3:2813:A:H8	1.87	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:2849:G:C6	52:3:2875:U:N3	2.90	0.40
52:3:2857:C:H2'	52:3:2858:A:H8	1.86	0.40
53:4:78:C:H3'	53:4:79:U:O2	2.21	0.40
54:5:20:C:H2'	54:5:21:U:H6	1.86	0.40
54:5:94:A:H62	54:5:320:G:H21	1.68	0.40
54:5:457:A:H2'	54:5:458:G:C8	2.56	0.40
54:5:486:C:H2'	54:5:487:A:C8	2.57	0.40
54:5:588:U:H3	54:5:647:U:H3	1.69	0.40
54:5:1214:A:H62	54:5:1273:A:N6	2.19	0.40
54:5:1223:A:H2'	54:5:1224:C:C6	2.56	0.40
54:5:1364:C:H2'	54:5:1365:U:C6	2.56	0.40
54:5:1479:G:OP1	54:5:1482:A:H4'	2.21	0.40
55:7:21:U:H2'	55:7:22:A:H4'	2.04	0.40
4:9:108:ALA:HB3	4:9:136:LYS:HB2	2.02	0.40
4:9:136:LYS:HA	4:9:136:LYS:HD3	1.89	0.40
4:9:419:GLU:O	4:9:422:SER:OG	2.29	0.40
5:A:88:LYS:HB2	5:A:92:VAL:CG2	2.52	0.40
6:B:82:ASN:HB3	6:B:85:ILE:HG22	2.04	0.40
13:I:51:LYS:HB3	13:I:75:ARG:NH1	2.36	0.40
15:K:39:TYR:HB2	54:5:551:A:O2'	2.21	0.40
15:K:61:ALA:HA	54:5:517:C:H5''	2.04	0.40
20:P:21:THR:HG21	54:5:250:G:H5''	2.04	0.40
21:Q:51:ILE:HG21	21:Q:86:VAL:HG22	2.04	0.40
33:h:72:VAL:O	33:h:72:VAL:HG12	2.21	0.40
35:j:44:LYS:HB3	35:j:44:LYS:HE2	1.77	0.40
42:q:45:ILE:HG22	42:q:46:GLY:O	2.21	0.40
43:r:72:PHE:C	43:r:73:GLU:HG2	2.47	0.40
43:r:75:VAL:HG23	52:3:553:A:O2'	2.21	0.40
45:t:45:HIS:HB2	52:3:517:G:OP2	2.22	0.40
48:w:17:LYS:O	48:w:20:ILE:HG12	2.22	0.40
51:z:23:LYS:HA	52:3:2294:A:C2	2.57	0.40
52:3:91:G:H2'	52:3:92:U:C6	2.57	0.40
52:3:585:U:C2	52:3:586:G:C8	3.10	0.40
52:3:1343:C:H2'	52:3:1344:U:C6	2.57	0.40
52:3:1691:U:H2'	52:3:1692:A:C8	2.57	0.40
52:3:1812:C:H2'	52:3:1813:C:C6	2.57	0.40
52:3:1955:G:H2'	52:3:1956:G:H8	1.86	0.40
52:3:2145:A:H2'	52:3:2146:A:C8	2.57	0.40
52:3:2603:G:N2	52:3:2605:G:H8	2.19	0.40
52:3:2696:G:N1	52:3:2728:U:OP2	2.40	0.40
53:4:41:C:H2'	53:4:43:A:C8	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:422:A:H2'	54:5:423:U:C6	2.57	0.40
54:5:491:U:H2'	54:5:492:G:C8	2.56	0.40
54:5:740:G:H2'	54:5:741:C:H6	1.87	0.40
54:5:1075:G:H2'	54:5:1076:U:C6	2.56	0.40
54:5:1127:A:O2'	54:5:1128:G:H5''	2.22	0.40
54:5:1266:U:H2'	54:5:1267:G:C8	2.56	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	
1	0	45/48 (94%)	42 (93%)	3 (7%)	0	100	100
2	1	57/59 (97%)	48 (84%)	9 (16%)	0	100	100
3	2	35/37 (95%)	32 (91%)	3 (9%)	0	100	100
4	9	680/688 (99%)	630 (93%)	50 (7%)	0	100	100
5	A	238/294 (81%)	218 (92%)	20 (8%)	0	100	100
6	B	213/273 (78%)	193 (91%)	20 (9%)	0	100	100
7	C	201/205 (98%)	190 (94%)	11 (6%)	0	100	100
8	D	151/219 (69%)	145 (96%)	6 (4%)	0	100	100
9	E	165/215 (77%)	147 (89%)	18 (11%)	0	100	100
10	F	152/155 (98%)	147 (97%)	5 (3%)	0	100	100
11	G	139/142 (98%)	124 (89%)	15 (11%)	0	100	100
12	H	126/132 (96%)	111 (88%)	15 (12%)	0	100	100
13	I	99/108 (92%)	92 (93%)	7 (7%)	0	100	100
14	J	112/121 (93%)	107 (96%)	5 (4%)	0	100	100
15	K	134/139 (96%)	113 (84%)	21 (16%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
16	L	116/124 (94%)	106 (91%)	10 (9%)	0	100	100
17	M	58/61 (95%)	55 (95%)	3 (5%)	0	100	100
18	N	81/86 (94%)	80 (99%)	1 (1%)	0	100	100
19	O	78/94 (83%)	74 (95%)	4 (5%)	0	100	100
20	P	81/85 (95%)	78 (96%)	3 (4%)	0	100	100
21	Q	63/104 (61%)	57 (90%)	6 (10%)	0	100	100
22	R	82/87 (94%)	71 (87%)	11 (13%)	0	100	100
23	S	75/87 (86%)	74 (99%)	1 (1%)	0	100	100
24	T	51/60 (85%)	50 (98%)	1 (2%)	0	100	100
25	W	67/122 (55%)	65 (97%)	2 (3%)	0	100	100
26	a	283/287 (99%)	245 (87%)	38 (13%)	0	100	100
27	b	227/287 (79%)	211 (93%)	16 (7%)	0	100	100
28	c	208/212 (98%)	199 (96%)	9 (4%)	0	100	100
29	d	173/180 (96%)	159 (92%)	14 (8%)	0	100	100
30	e	174/184 (95%)	163 (94%)	11 (6%)	0	100	100
31	f	143/149 (96%)	134 (94%)	9 (6%)	0	100	100
32	g	124/161 (77%)	115 (93%)	9 (7%)	0	100	100
33	h	126/137 (92%)	116 (92%)	10 (8%)	0	100	100
34	i	142/146 (97%)	135 (95%)	7 (5%)	0	100	100
35	j	120/122 (98%)	117 (98%)	3 (2%)	0	100	100
36	k	146/151 (97%)	135 (92%)	11 (8%)	0	100	100
37	l	134/139 (96%)	129 (96%)	5 (4%)	0	100	100
38	m	117/124 (94%)	112 (96%)	5 (4%)	0	100	100
39	n	108/116 (93%)	99 (92%)	9 (8%)	0	100	100
40	o	113/119 (95%)	107 (95%)	6 (5%)	0	100	100
41	p	112/127 (88%)	110 (98%)	2 (2%)	0	100	100
42	q	97/100 (97%)	83 (86%)	14 (14%)	0	100	100
43	r	137/159 (86%)	125 (91%)	12 (9%)	0	100	100
44	s	90/237 (38%)	79 (88%)	11 (12%)	0	100	100
45	t	109/111 (98%)	95 (87%)	13 (12%)	1 (1%)	14	51
46	u	84/104 (81%)	81 (96%)	3 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
47	v	61/65 (94%)	55 (90%)	6 (10%)	0	100	100
48	w	96/111 (86%)	87 (91%)	8 (8%)	1 (1%)	12	49
49	x	42/97 (43%)	40 (95%)	2 (5%)	0	100	100
50	y	54/57 (95%)	48 (89%)	5 (9%)	1 (2%)	6	32
51	z	48/53 (91%)	45 (94%)	3 (6%)	0	100	100
All	All	6567/7480 (88%)	6073 (92%)	491 (8%)	3 (0%)	100	100

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
45	t	81	ALA
50	y	53	VAL
48	w	39	ASP

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	0	40/41 (98%)	40 (100%)	0	100	100
2	1	51/51 (100%)	51 (100%)	0	100	100
3	2	35/35 (100%)	35 (100%)	0	100	100
4	9	579/584 (99%)	579 (100%)	0	100	100
5	A	212/262 (81%)	212 (100%)	0	100	100
6	B	180/232 (78%)	180 (100%)	0	100	100
7	C	181/183 (99%)	181 (100%)	0	100	100
8	D	123/178 (69%)	123 (100%)	0	100	100
9	E	150/196 (76%)	150 (100%)	0	100	100
10	F	131/132 (99%)	131 (100%)	0	100	100
11	G	123/124 (99%)	122 (99%)	1 (1%)	73	80
12	H	111/115 (96%)	111 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
13	I	95/99 (96%)	95 (100%)	0	100	100
14	J	91/97 (94%)	91 (100%)	0	100	100
15	K	117/120 (98%)	115 (98%)	2 (2%)	53	69
16	L	100/105 (95%)	100 (100%)	0	100	100
17	M	47/48 (98%)	47 (100%)	0	100	100
18	N	76/78 (97%)	76 (100%)	0	100	100
19	O	69/82 (84%)	69 (100%)	0	100	100
20	P	73/75 (97%)	73 (100%)	0	100	100
21	Q	56/94 (60%)	56 (100%)	0	100	100
22	R	74/77 (96%)	74 (100%)	0	100	100
23	S	70/77 (91%)	70 (100%)	0	100	100
24	T	49/56 (88%)	49 (100%)	0	100	100
25	W	58/98 (59%)	58 (100%)	0	100	100
26	a	241/243 (99%)	241 (100%)	0	100	100
27	b	186/233 (80%)	186 (100%)	0	100	100
28	c	182/184 (99%)	182 (100%)	0	100	100
29	d	150/154 (97%)	150 (100%)	0	100	100
30	e	153/159 (96%)	153 (100%)	0	100	100
31	f	123/134 (92%)	123 (100%)	0	100	100
32	g	101/129 (78%)	90 (89%)	11 (11%)	6	21
33	h	102/110 (93%)	102 (100%)	0	100	100
34	i	126/128 (98%)	126 (100%)	0	100	100
35	j	103/103 (100%)	103 (100%)	0	100	100
36	k	123/126 (98%)	123 (100%)	0	100	100
37	l	113/115 (98%)	113 (100%)	0	100	100
38	m	105/109 (96%)	105 (100%)	0	100	100
39	n	96/99 (97%)	96 (100%)	0	100	100
40	o	101/105 (96%)	101 (100%)	0	100	100
41	p	100/108 (93%)	100 (100%)	0	100	100
42	q	90/91 (99%)	90 (100%)	0	100	100
43	r	116/132 (88%)	116 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
44	s	82/208 (39%)	82 (100%)	0	100	100
45	t	96/96 (100%)	96 (100%)	0	100	100
46	u	69/85 (81%)	69 (100%)	0	100	100
47	v	58/60 (97%)	58 (100%)	0	100	100
48	w	87/98 (89%)	87 (100%)	0	100	100
49	x	41/86 (48%)	41 (100%)	0	100	100
50	y	48/49 (98%)	44 (92%)	4 (8%)	10	30
51	z	47/50 (94%)	47 (100%)	0	100	100
All	All	5730/6433 (89%)	5712 (100%)	18 (0%)	84	86

All (18) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
11	G	73	ASN
15	K	121	GLU
15	K	122	LYS
32	g	26	ILE
32	g	30	THR
32	g	32	MET
32	g	42	LYS
32	g	44	LEU
32	g	46	LYS
32	g	47	ASN
32	g	84	VAL
32	g	86	VAL
32	g	89	ILE
32	g	90	VAL
50	y	47	MET
50	y	51	LEU
50	y	52	ARG
50	y	53	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (81) such sidechains are listed below:

Mol	Chain	Res	Type
4	9	18	HIS
4	9	38	HIS
4	9	115	GLN

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Mol	Chain	Res	Type
4	9	206	GLN
4	9	403	GLN
4	9	445	GLN
4	9	472	ASN
4	9	477	GLN
4	9	611	GLN
4	9	632	GLN
4	9	637	GLN
4	9	660	GLN
5	A	77	GLN
5	A	230	ASN
6	B	50	ASN
6	B	73	GLN
6	B	125	ASN
6	B	193	GLN
7	C	53	GLN
7	C	115	GLN
7	C	118	ASN
7	C	171	ASN
8	D	85	ASN
9	E	2	GLN
10	F	19	ASN
11	G	24	ASN
11	G	56	ASN
11	G	78	GLN
12	H	128	GLN
14	J	112	ASN
15	K	29	ASN
17	M	10	GLN
17	M	25	GLN
18	N	35	GLN
18	N	43	ASN
19	O	54	ASN
20	P	36	HIS
20	P	42	HIS
23	S	50	GLN
24	T	50	GLN
26	a	62	ASN
26	a	238	HIS
27	b	34	ASN
27	b	95	GLN
27	b	168	HIS

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Mol	Chain	Res	Type
27	b	177	GLN
28	c	130	GLN
28	c	134	ASN
28	c	162	ASN
28	c	167	ASN
29	d	135	GLN
30	e	19	ASN
30	e	21	GLN
30	e	107	ASN
31	f	57	HIS
31	f	78	HIS
32	g	47	ASN
32	g	119	ASN
33	h	113	ASN
34	i	43	ASN
34	i	61	ASN
34	i	79	HIS
35	j	9	ASN
35	j	18	GLN
35	j	56	GLN
35	j	112	ASN
36	k	36	GLN
36	k	102	GLN
37	l	89	ASN
39	n	12	HIS
39	n	26	ASN
40	o	47	ASN
41	p	36	GLN
42	q	76	GLN
43	r	7	GLN
43	r	22	GLN
43	r	132	GLN
45	t	40	ASN
46	u	43	GLN
49	x	10	GLN
50	y	25	GLN

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
52	3	2875/2907 (98%)	826 (28%)	28 (0%)

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Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
53	4	103/108 (95%)	31 (30%)	2 (1%)
54	5	1490/1520 (98%)	387 (25%)	1 (0%)
55	7	75/76 (98%)	25 (33%)	1 (1%)
55	8	75/76 (98%)	25 (33%)	1 (1%)
All	All	4618/4687 (98%)	1294 (28%)	33 (0%)

All (1294) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
52	3	14	U
52	3	15	A
52	3	27	U
52	3	28	G
52	3	29	G
52	3	36	U
52	3	37	G
52	3	38	G
52	3	48	G
52	3	52	U
52	3	61	U
52	3	63	U
52	3	64	U
52	3	65	A
52	3	73	A
52	3	74	U
52	3	75	A
52	3	77	G
52	3	82	G
52	3	90	G
52	3	91	G
52	3	94	A
52	3	98	C
52	3	102	A
52	3	103	G
52	3	111	G
52	3	115	U
52	3	119	A
52	3	120	A
52	3	121	U
52	3	122	G
52	3	127	A
52	3	132	G

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Mol	Chain	Res	Type
52	3	137	U
52	3	148	U
52	3	149	A
52	3	163	A
52	3	165	U
52	3	169	U
52	3	181	G
52	3	184	A
52	3	185	U
52	3	186	A
52	3	188	G
52	3	200	A
52	3	203	A
52	3	204	U
52	3	208	A
52	3	210	U
52	3	219	G
52	3	220	A
52	3	226	A
52	3	227	A
52	3	228	A
52	3	232	A
52	3	234	G
52	3	237	A
52	3	245	U
52	3	246	G
52	3	247	U
52	3	251	G
52	3	252	G
52	3	256	G
52	3	269	A
52	3	270	G
52	3	282	C
52	3	284	U
52	3	285	U
52	3	287	G
52	3	288	A
52	3	295	U
52	3	296	U
52	3	297	G
52	3	298	U
52	3	299	A

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Mol	Chain	Res	Type
52	3	300	G
52	3	308	A
52	3	309	A
52	3	310	U
52	3	314	G
52	3	315	A
52	3	316	C
52	3	319	G
52	3	321	A
52	3	329	G
52	3	336	C
52	3	345	A
52	3	346	G
52	3	351	G
52	3	355	A
52	3	356	A
52	3	357	A
52	3	358	A
52	3	363	G
52	3	364	A
52	3	365	U
52	3	366	A
52	3	367	G
52	3	368	C
52	3	377	U
52	3	393	C
52	3	396	A
52	3	402	A
52	3	403	U
52	3	404	C
52	3	408	G
52	3	409	A
52	3	411	U
52	3	413	G
52	3	422	A
52	3	423	C
52	3	424	G
52	3	425	U
52	3	426	U
52	3	429	U
52	3	432	G
52	3	437	A

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Mol	Chain	Res	Type
52	3	441	U
52	3	447	G
52	3	448	A
52	3	460	G
52	3	464	A
52	3	465	A
52	3	466	A
52	3	471	A
52	3	473	U
52	3	479	A
52	3	480	C
52	3	481	C
52	3	482	G
52	3	483	A
52	3	484	U
52	3	487	C
52	3	491	A
52	3	492	C
52	3	493	A
52	3	495	U
52	3	500	U
52	3	501	G
52	3	502	A
52	3	509	G
52	3	513	A
52	3	514	A
52	3	515	A
52	3	516	A
52	3	517	G
52	3	520	C
52	3	532	A
52	3	539	U
52	3	543	U
52	3	544	U
52	3	548	A
52	3	554	U
52	3	556	U
52	3	558	C
52	3	565	C
52	3	566	G
52	3	567	U
52	3	577	C

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Mol	Chain	Res	Type
52	3	580	U
52	3	581	A
52	3	582	A
52	3	583	U
52	3	587	U
52	3	589	A
52	3	595	U
52	3	596	G
52	3	599	U
52	3	605	A
52	3	607	U
52	3	608	A
52	3	610	G
52	3	612	G
52	3	620	G
52	3	637	U
52	3	638	A
52	3	648	G
52	3	649	A
52	3	650	G
52	3	651	A
52	3	652	U
52	3	653	G
52	3	657	A
52	3	661	G
52	3	673	A
52	3	674	G
52	3	675	U
52	3	679	A
52	3	681	A
52	3	682	A
52	3	683	G
52	3	688	U
52	3	689	U
52	3	691	G
52	3	705	A
52	3	706	C
52	3	711	A
52	3	720	A
52	3	721	G
52	3	722	C
52	3	737	U

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Mol	Chain	Res	Type
52	3	740	A
52	3	760	G
52	3	761	G
52	3	765	A
52	3	782	U
52	3	783	G
52	3	787	C
52	3	792	G
52	3	797	U
52	3	798	G
52	3	800	C
52	3	810	G
52	3	811	G
52	3	817	A
52	3	819	U
52	3	820	U
52	3	821	C
52	3	823	A
52	3	824	A
52	3	825	U
52	3	840	G
52	3	842	U
52	3	847	C
52	3	850	G
52	3	854	A
52	3	862	U
52	3	863	U
52	3	865	A
52	3	868	C
52	3	873	G
52	3	879	U
52	3	880	C
52	3	881	A
52	3	882	C
52	3	883	A
52	3	892	G
52	3	894	G
52	3	895	G
52	3	896	U
52	3	900	G
52	3	902	U
52	3	903	A

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Mol	Chain	Res	Type
52	3	906	G
52	3	914	G
52	3	917	G
52	3	932	U
52	3	933	A
52	3	936	G
52	3	944	U
52	3	947	A
52	3	948	A
52	3	949	C
52	3	952	U
52	3	953	G
52	3	968	U
52	3	971	U
52	3	973	U
52	3	977	A
52	3	978	G
52	3	981	A
52	3	982	G
52	3	984	C
52	3	989	G
52	3	991	G
52	3	995	A
52	3	997	G
52	3	1001	C
52	3	1005	G
52	3	1008	A
52	3	1009	A
52	3	1010	G
52	3	1014	G
52	3	1016	A
52	3	1018	G
52	3	1019	A
52	3	1021	C
52	3	1022	C
52	3	1024	A
52	3	1026	A
52	3	1027	U
52	3	1031	U
52	3	1032	A
52	3	1035	U
52	3	1041	C

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Mol	Chain	Res	Type
52	3	1046	A
52	3	1049	U
52	3	1055	A
52	3	1056	A
52	3	1057	G
52	3	1061	A
52	3	1062	A
52	3	1068	U
52	3	1075	G
52	3	1080	A
52	3	1081	A
52	3	1082	A
52	3	1085	A
52	3	1093	U
52	3	1095	U
52	3	1096	U
52	3	1101	U
52	3	1103	G
52	3	1104	A
52	3	1105	A
52	3	1107	C
52	3	1108	A
52	3	1111	C
52	3	1113	U
52	3	1115	G
52	3	1122	G
52	3	1123	A
52	3	1124	G
52	3	1125	U
52	3	1132	C
52	3	1140	U
52	3	1145	G
52	3	1147	G
52	3	1151	U
52	3	1157	G
52	3	1158	C
52	3	1163	G
52	3	1165	U
52	3	1166	G
52	3	1167	U
52	3	1168	A
52	3	1170	C

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Mol	Chain	Res	Type
52	3	1171	G
52	3	1177	A
52	3	1178	A
52	3	1179	G
52	3	1186	A
52	3	1191	A
52	3	1196	U
52	3	1203	G
52	3	1208	A
52	3	1209	U
52	3	1210	A
52	3	1215	G
52	3	1217	G
52	3	1218	G
52	3	1221	G
52	3	1226	G
52	3	1229	U
52	3	1234	U
52	3	1235	U
52	3	1236	G
52	3	1238	A
52	3	1240	U
52	3	1241	U
52	3	1242	G
52	3	1250	A
52	3	1251	G
52	3	1253	G
52	3	1255	G
52	3	1256	A
52	3	1257	G
52	3	1260	U
52	3	1266	G
52	3	1268	U
52	3	1278	G
52	3	1279	U
52	3	1281	A
52	3	1283	A
52	3	1286	G
52	3	1287	C
52	3	1292	A
52	3	1297	U
52	3	1298	A

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Mol	Chain	Res	Type
52	3	1302	C
52	3	1308	A
52	3	1314	A
52	3	1315	A
52	3	1317	C
52	3	1322	A
52	3	1323	A
52	3	1326	C
52	3	1328	A
52	3	1329	U
52	3	1333	C
52	3	1340	U
52	3	1341	U
52	3	1342	C
52	3	1349	C
52	3	1351	G
52	3	1353	G
52	3	1354	U
52	3	1356	G
52	3	1359	C
52	3	1360	U
52	3	1369	U
52	3	1370	A
52	3	1372	U
52	3	1373	C
52	3	1380	U
52	3	1393	A
52	3	1406	A
52	3	1407	U
52	3	1412	A
52	3	1413	A
52	3	1420	A
52	3	1424	U
52	3	1426	C
52	3	1435	A
52	3	1436	C
52	3	1444	C
52	3	1445	U
52	3	1447	A
52	3	1448	U
52	3	1455	A
52	3	1456	C

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Mol	Chain	Res	Type
52	3	1457	A
52	3	1463	G
52	3	1466	U
52	3	1479	A
52	3	1480	A
52	3	1481	U
52	3	1482	U
52	3	1483	G
52	3	1485	A
52	3	1486	U
52	3	1487	U
52	3	1495	A
52	3	1502	A
52	3	1508	G
52	3	1510	A
52	3	1520	A
52	3	1523	C
52	3	1528	G
52	3	1532	A
52	3	1533	U
52	3	1534	A
52	3	1541	A
52	3	1542	G
52	3	1543	U
52	3	1546	U
52	3	1548	A
52	3	1549	U
52	3	1550	G
52	3	1557	G
52	3	1558	A
52	3	1559	A
52	3	1571	G
52	3	1572	U
52	3	1579	G
52	3	1580	G
52	3	1582	G
52	3	1584	U
52	3	1585	A
52	3	1586	U
52	3	1587	U
52	3	1588	A
52	3	1589	A

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Mol	Chain	Res	Type
52	3	1592	A
52	3	1594	G
52	3	1600	A
52	3	1603	A
52	3	1612	U
52	3	1615	G
52	3	1618	U
52	3	1619	A
52	3	1625	G
52	3	1637	A
52	3	1642	G
52	3	1643	A
52	3	1644	A
52	3	1645	C
52	3	1648	A
52	3	1650	A
52	3	1652	A
52	3	1653	C
52	3	1655	U
52	3	1656	A
52	3	1660	A
52	3	1668	G
52	3	1679	U
52	3	1680	A
52	3	1681	G
52	3	1682	C
52	3	1685	G
52	3	1687	G
52	3	1688	A
52	3	1692	A
52	3	1694	A
52	3	1695	G
52	3	1698	A
52	3	1700	G
52	3	1708	G
52	3	1713	U
52	3	1714	U
52	3	1715	A
52	3	1716	A
52	3	1720	C
52	3	1727	U
52	3	1728	A

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Mol	Chain	Res	Type
52	3	1733	G
52	3	1737	G
52	3	1748	U
52	3	1751	A
52	3	1752	A
52	3	1758	C
52	3	1761	C
52	3	1762	A
52	3	1764	U
52	3	1765	G
52	3	1766	A
52	3	1768	G
52	3	1769	A
52	3	1770	A
52	3	1771	C
52	3	1780	A
52	3	1784	U
52	3	1787	A
52	3	1788	A
52	3	1789	C
52	3	1790	U
52	3	1793	A
52	3	1807	C
52	3	1808	C
52	3	1815	U
52	3	1821	G
52	3	1822	A
52	3	1823	U
52	3	1824	G
52	3	1826	A
52	3	1827	U
52	3	1836	A
52	3	1840	C
52	3	1842	G
52	3	1858	U
52	3	1865	A
52	3	1873	A
52	3	1876	G
52	3	1884	A
52	3	1888	U
52	3	1889	U
52	3	1890	U

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Mol	Chain	Res	Type
52	3	1891	A
52	3	1892	A
52	3	1906	G
52	3	1907	A
52	3	1908	A
52	3	1910	G
52	3	1913	G
52	3	1914	G
52	3	1920	A
52	3	1921	C
52	3	1922	U
52	3	1930	U
52	3	1934	A
52	3	1936	G
52	3	1937	G
52	3	1938	U
52	3	1943	A
52	3	1946	U
52	3	1947	U
52	3	1951	A
52	3	1952	G
52	3	1955	G
52	3	1962	U
52	3	1963	U
52	3	1971	G
52	3	1974	U
52	3	1977	A
52	3	1978	U
52	3	1979	G
52	3	1982	G
52	3	1984	A
52	3	1998	U
52	3	2000	U
52	3	2001	C
52	3	2003	C
52	3	2004	G
52	3	2009	U
52	3	2010	A
52	3	2013	C
52	3	2020	A
52	3	2025	C
52	3	2028	G

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Mol	Chain	Res	Type
52	3	2029	U
52	3	2037	A
52	3	2038	A
52	3	2039	G
52	3	2040	A
52	3	2041	C
52	3	2050	G
52	3	2053	G
52	3	2055	A
52	3	2056	A
52	3	2057	C
52	3	2059	G
52	3	2062	C
52	3	2063	G
52	3	2065	A
52	3	2067	A
52	3	2068	G
52	3	2069	A
52	3	2070	C
52	3	2071	C
52	3	2075	U
52	3	2076	G
52	3	2084	A
52	3	2087	G
52	3	2099	U
52	3	2101	A
52	3	2106	G
52	3	2107	A
52	3	2110	U
52	3	2111	U
52	3	2112	A
52	3	2113	U
52	3	2114	C
52	3	2117	G
52	3	2123	A
52	3	2124	A
52	3	2125	U
52	3	2126	A
52	3	2127	G
52	3	2133	A
52	3	2136	A
52	3	2137	A

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Mol	Chain	Res	Type
52	3	2138	U
52	3	2139	C
52	3	2140	G
52	3	2144	C
52	3	2145	A
52	3	2152	C
52	3	2153	U
52	3	2154	A
52	3	2157	A
52	3	2166	U
52	3	2171	A
52	3	2180	U
52	3	2184	A
52	3	2186	C
52	3	2187	C
52	3	2189	U
52	3	2192	U
52	3	2193	U
52	3	2195	U
52	3	2196	G
52	3	2198	G
52	3	2200	U
52	3	2201	G
52	3	2202	U
52	3	2205	U
52	3	2206	A
52	3	2212	U
52	3	2219	U
52	3	2221	U
52	3	2222	C
52	3	2231	A
52	3	2233	A
52	3	2235	A
52	3	2242	G
52	3	2246	G
52	3	2247	G
52	3	2275	A
52	3	2276	A
52	3	2277	A
52	3	2281	A
52	3	2291	U
52	3	2294	A

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Mol	Chain	Res	Type
52	3	2295	A
52	3	2299	U
52	3	2305	C
52	3	2312	G
52	3	2313	U
52	3	2316	G
52	3	2317	A
52	3	2319	A
52	3	2322	G
52	3	2330	A
52	3	2333	G
52	3	2336	A
52	3	2341	G
52	3	2342	U
52	3	2343	A
52	3	2345	G
52	3	2355	C
52	3	2358	U
52	3	2359	G
52	3	2365	U
52	3	2380	U
52	3	2387	U
52	3	2391	G
52	3	2393	C
52	3	2402	C
52	3	2410	C
52	3	2414	U
52	3	2415	A
52	3	2416	U
52	3	2424	C
52	3	2430	C
52	3	2431	U
52	3	2433	A
52	3	2434	A
52	3	2436	G
52	3	2438	A
52	3	2439	U
52	3	2442	A
52	3	2443	A
52	3	2449	U
52	3	2450	C
52	3	2455	G

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Mol	Chain	Res	Type
52	3	2457	U
52	3	2477	A
52	3	2481	U
52	3	2484	A
52	3	2485	U
52	3	2486	A
52	3	2492	G
52	3	2495	A
52	3	2497	U
52	3	2498	G
52	3	2499	U
52	3	2505	A
52	3	2506	C
52	3	2507	C
52	3	2509	C
52	3	2510	G
52	3	2511	A
52	3	2512	U
52	3	2513	G
52	3	2514	U
52	3	2517	A
52	3	2521	A
52	3	2524	U
52	3	2526	A
52	3	2528	C
52	3	2538	A
52	3	2539	A
52	3	2543	G
52	3	2561	G
52	3	2571	U
52	3	2573	A
52	3	2574	A
52	3	2575	G
52	3	2577	G
52	3	2581	C
52	3	2582	G
52	3	2584	G
52	3	2586	G
52	3	2594	C
52	3	2596	A
52	3	2597	A
52	3	2602	C

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Mol	Chain	Res	Type
52	3	2605	G
52	3	2607	G
52	3	2610	A
52	3	2611	G
52	3	2615	G
52	3	2619	C
52	3	2621	U
52	3	2631	G
52	3	2635	G
52	3	2637	A
52	3	2638	G
52	3	2642	G
52	3	2644	U
52	3	2647	A
52	3	2654	U
52	3	2662	A
52	3	2664	U
52	3	2668	A
52	3	2669	G
52	3	2681	G
52	3	2689	C
52	3	2690	U
52	3	2697	C
52	3	2714	G
52	3	2722	G
52	3	2726	G
52	3	2732	A
52	3	2733	A
52	3	2734	C
52	3	2737	G
52	3	2740	U
52	3	2741	A
52	3	2747	U
52	3	2752	G
52	3	2756	A
52	3	2760	C
52	3	2763	C
52	3	2765	A
52	3	2773	A
52	3	2777	A
52	3	2786	A
52	3	2787	U

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Mol	Chain	Res	Type
52	3	2789	A
52	3	2793	U
52	3	2796	C
52	3	2799	U
52	3	2804	C
52	3	2805	A
52	3	2807	G
52	3	2808	A
52	3	2811	G
52	3	2813	A
52	3	2815	G
52	3	2822	C
52	3	2823	A
52	3	2824	A
52	3	2828	C
52	3	2831	U
52	3	2835	G
52	3	2837	U
52	3	2839	A
52	3	2849	G
52	3	2853	U
52	3	2854	A
52	3	2863	G
52	3	2865	U
52	3	2870	U
52	3	2871	G
52	3	2876	G
52	3	2881	A
52	3	2883	A
52	3	2884	C
52	3	2887	A
52	3	2888	U
52	3	2889	U
52	3	2890	G
52	3	2897	G
52	3	2898	A
52	3	2899	C
53	4	2	U
53	4	9	C
53	4	10	C
53	4	11	A
53	4	12	U

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Mol	Chain	Res	Type
53	4	13	G
53	4	22	G
53	4	23	A
53	4	28	C
53	4	31	G
53	4	35	C
53	4	38	U
53	4	39	U
53	4	40	U
53	4	41	C
53	4	42	G
53	4	47	C
53	4	49	G
53	4	50	C
53	4	51	A
53	4	54	U
53	4	55	A
53	4	60	C
53	4	65	G
53	4	88	G
53	4	89	A
53	4	99	A
53	4	100	G
53	4	103	C
53	4	106	A
53	4	108	C
54	5	7	U
54	5	8	G
54	5	10	G
54	5	15	U
54	5	19	C
54	5	32	U
54	5	33	A
54	5	38	U
54	5	40	G
54	5	45	A
54	5	48	C
54	5	49	C
54	5	52	A
54	5	57	U
54	5	61	A
54	5	66	A

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Mol	Chain	Res	Type
54	5	68	C
54	5	71	A
54	5	77	U
54	5	84	U
54	5	86	A
54	5	105	A
54	5	106	C
54	5	114	C
54	5	115	A
54	5	116	A
54	5	117	U
54	5	128	A
54	5	130	G
54	5	139	C
54	5	145	G
54	5	149	G
54	5	159	U
54	5	162	C
54	5	167	A
54	5	171	A
54	5	186	A
54	5	188	U
54	5	190	A
54	5	197	A
54	5	198	A
54	5	199	A
54	5	202	A
54	5	222	U
54	5	223	G
54	5	230	G
54	5	239	A
54	5	241	C
54	5	243	G
54	5	246	A
54	5	258	A
54	5	259	A
54	5	260	C
54	5	262	G
54	5	263	C
54	5	264	C
54	5	271	G
54	5	272	G

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Mol	Chain	Res	Type
54	5	275	A
54	5	276	U
54	5	284	A
54	5	285	G
54	5	286	C
54	5	291	C
54	5	294	A
54	5	301	G
54	5	302	A
54	5	303	A
54	5	307	C
54	5	311	A
54	5	312	A
54	5	314	G
54	5	323	A
54	5	324	C
54	5	326	C
54	5	328	G
54	5	341	C
54	5	342	G
54	5	344	G
54	5	348	C
54	5	350	G
54	5	355	A
54	5	359	A
54	5	363	U
54	5	364	U
54	5	367	A
54	5	368	C
54	5	374	G
54	5	376	G
54	5	377	A
54	5	380	G
54	5	391	C
54	5	400	G
54	5	401	U
54	5	402	G
54	5	403	A
54	5	407	A
54	5	408	U
54	5	409	G
54	5	410	A

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Mol	Chain	Res	Type
54	5	411	A
54	5	417	U
54	5	418	U
54	5	419	A
54	5	420	A
54	5	421	G
54	5	423	U
54	5	425	G
54	5	426	U
54	5	427	A
54	5	434	U
54	5	435	U
54	5	436	U
54	5	448	A
54	5	449	A
54	5	450	U
54	5	453	C
54	5	455	U
54	5	464	A
54	5	465	A
54	5	468	G
54	5	469	C
54	5	471	A
54	5	473	A
54	5	476	U
54	5	477	U
54	5	478	G
54	5	480	C
54	5	481	U
54	5	482	G
54	5	483	U
54	5	488	U
54	5	489	U
54	5	493	A
54	5	494	A
54	5	495	U
54	5	500	G
54	5	503	G
54	5	507	A
54	5	508	A
54	5	509	C
54	5	515	G

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Mol	Chain	Res	Type
54	5	516	C
54	5	517	C
54	5	519	G
54	5	521	A
54	5	525	G
54	5	526	C
54	5	530	A
54	5	531	A
54	5	534	C
54	5	545	A
54	5	548	G
54	5	549	U
54	5	553	C
54	5	556	G
54	5	558	U
54	5	560	U
54	5	565	G
54	5	570	A
54	5	573	G
54	5	574	C
54	5	575	A
54	5	586	G
54	5	590	G
54	5	594	A
54	5	595	G
54	5	599	G
54	5	608	G
54	5	616	C
54	5	618	U
54	5	619	A
54	5	628	A
54	5	629	U
54	5	637	A
54	5	639	A
54	5	641	U
54	5	646	A
54	5	647	U
54	5	648	C
54	5	650	A
54	5	653	G
54	5	656	U
54	5	661	G

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Mol	Chain	Res	Type
54	5	662	G
54	5	668	U
54	5	678	A
54	5	684	A
54	5	692	A
54	5	699	A
54	5	701	A
54	5	705	A
54	5	710	G
54	5	712	A
54	5	715	A
54	5	719	G
54	5	720	U
54	5	721	G
54	5	724	G
54	5	731	A
54	5	745	U
54	5	752	G
54	5	756	A
54	5	774	A
54	5	775	G
54	5	784	A
54	5	791	A
54	5	794	C
54	5	796	A
54	5	807	C
54	5	812	A
54	5	813	A
54	5	814	C
54	5	815	G
54	5	817	U
54	5	818	A
54	5	825	A
54	5	829	G
54	5	833	G
54	5	835	G
54	5	838	A
54	5	849	A
54	5	861	A
54	5	864	U
54	5	870	A
54	5	877	C

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Mol	Chain	Res	Type
54	5	878	U
54	5	879	G
54	5	883	A
54	5	895	A
54	5	896	G
54	5	908	A
54	5	911	G
54	5	920	G
54	5	922	G
54	5	928	G
54	5	929	C
54	5	930	A
54	5	938	U
54	5	940	G
54	5	941	A
54	5	953	A
54	5	955	U
54	5	961	G
54	5	964	A
54	5	966	A
54	5	970	A
54	5	971	A
54	5	972	A
54	5	977	U
54	5	980	C
54	5	984	A
54	5	987	U
54	5	988	G
54	5	997	G
54	5	1003	G
54	5	1004	U
54	5	1013	C
54	5	1014	A
54	5	1016	A
54	5	1040	U
54	5	1044	G
54	5	1045	C
54	5	1046	A
54	5	1047	U
54	5	1056	U
54	5	1058	A
54	5	1061	U

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Mol	Chain	Res	Type
54	5	1069	U
54	5	1070	G
54	5	1071	A
54	5	1075	G
54	5	1077	U
54	5	1082	U
54	5	1083	A
54	5	1085	G
54	5	1086	U
54	5	1089	C
54	5	1092	A
54	5	1096	A
54	5	1100	C
54	5	1101	A
54	5	1104	C
54	5	1108	A
54	5	1112	U
54	5	1113	U
54	5	1115	G
54	5	1117	U
54	5	1118	A
54	5	1119	C
54	5	1120	A
54	5	1121	U
54	5	1122	U
54	5	1123	G
54	5	1134	C
54	5	1135	U
54	5	1141	U
54	5	1142	G
54	5	1154	A
54	5	1158	A
54	5	1159	A
54	5	1162	G
54	5	1165	G
54	5	1168	G
54	5	1169	U
54	5	1171	A
54	5	1172	A
54	5	1175	C
54	5	1176	A
54	5	1181	G

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Mol	Chain	Res	Type
54	5	1187	U
54	5	1188	A
54	5	1199	U
54	5	1200	G
54	5	1201	C
54	5	1202	A
54	5	1203	A
54	5	1204	A
54	5	1206	G
54	5	1208	G
54	5	1209	C
54	5	1211	A
54	5	1213	A
54	5	1215	U
54	5	1231	U
54	5	1232	C
54	5	1233	G
54	5	1241	G
54	5	1242	U
54	5	1243	A
54	5	1244	A
54	5	1246	A
54	5	1254	A
54	5	1255	A
54	5	1257	C
54	5	1260	U
54	5	1261	A
54	5	1271	U
54	5	1276	U
54	5	1279	G
54	5	1292	A
54	5	1296	C
54	5	1297	G
54	5	1310	C
54	5	1312	G
54	5	1313	A
54	5	1314	A
54	5	1316	C
54	5	1319	U
54	5	1322	U
54	5	1330	A
54	5	1331	A

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Mol	Chain	Res	Type
54	5	1333	C
54	5	1335	G
54	5	1338	A
54	5	1343	G
54	5	1353	C
54	5	1354	G
54	5	1356	U
54	5	1364	C
54	5	1369	A
54	5	1375	C
54	5	1381	U
54	5	1397	G
54	5	1400	A
54	5	1404	U
54	5	1405	U
54	5	1417	U
54	5	1423	C
54	5	1426	U
54	5	1428	A
54	5	1429	G
54	5	1439	G
54	5	1446	A
54	5	1449	G
54	5	1450	C
54	5	1465	U
54	5	1467	A
54	5	1468	A
54	5	1469	G
54	5	1478	A
54	5	1481	U
54	5	1482	A
54	5	1492	G
54	5	1495	C
54	5	1504	G
54	5	1505	G
55	7	3	G
55	7	5	C
55	7	12	C
55	7	15	A
55	7	16	G
55	7	17	U
55	7	18	C

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Mol	Chain	Res	Type
55	7	20	G
55	7	21	U
55	7	22	A
55	7	24	A
55	7	35	G
55	7	43	G
55	7	44	U
55	7	47	G
55	7	48	U
55	7	49	C
55	7	54	G
55	7	60	U
55	7	62	C
55	7	71	A
55	7	72	C
55	7	73	C
55	7	75	C
55	7	77	A
55	8	3	G
55	8	5	C
55	8	12	C
55	8	15	A
55	8	16	G
55	8	17	U
55	8	18	C
55	8	20	G
55	8	21	U
55	8	22	A
55	8	24	A
55	8	35	G
55	8	43	G
55	8	44	U
55	8	47	G
55	8	48	U
55	8	49	C
55	8	54	G
55	8	60	U
55	8	62	C
55	8	71	A
55	8	72	C
55	8	73	C
55	8	75	C

Continued on next page...

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Mol	Chain	Res	Type
55	8	77	A

All (33) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
52	3	295	U
52	3	296	U
52	3	315	A
52	3	410	G
52	3	425	U
52	3	500	U
52	3	513	A
52	3	688	U
52	3	881	A
52	3	901	C
52	3	1048	A
52	3	1104	A
52	3	1209	U
52	3	1507	G
52	3	1583	G
52	3	1587	U
52	3	1588	A
52	3	1820	U
52	3	2165	A
52	3	2341	G
52	3	2342	U
52	3	2506	C
52	3	2511	A
52	3	2604	U
52	3	2668	A
52	3	2764	U
52	3	2823	A
52	3	2862	U
53	4	54	U
53	4	59	A
54	5	1242	U
55	7	16	G
55	8	16	G

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

There are no non-standard protein/DNA/RNA residues in this entry.

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

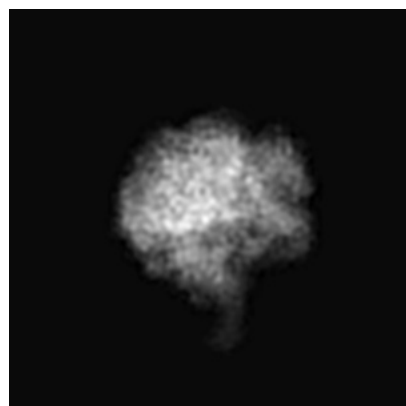
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-13280. These allow visual inspection of the internal detail of the map and identification of artifacts.

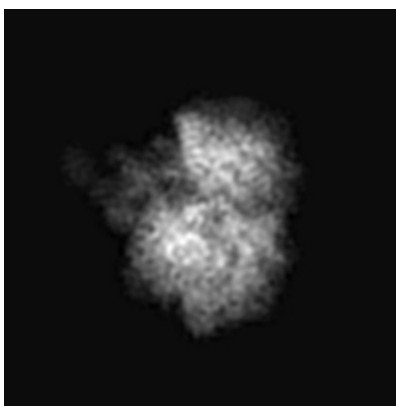
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

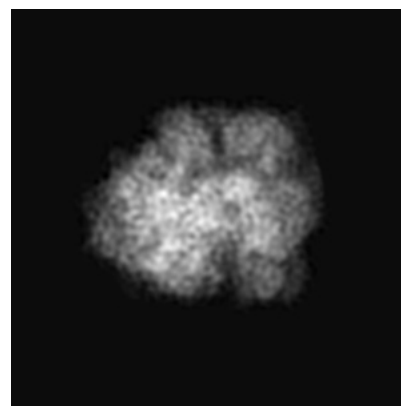
6.1.1 Primary map



X

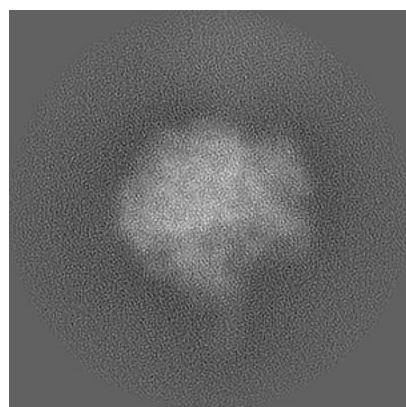


Y

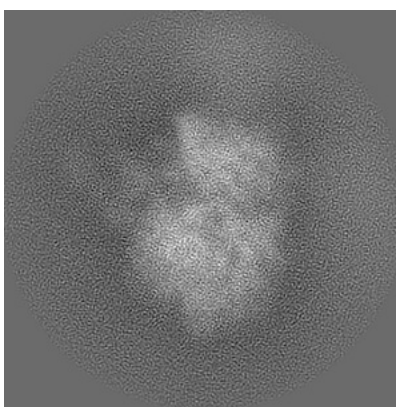


Z

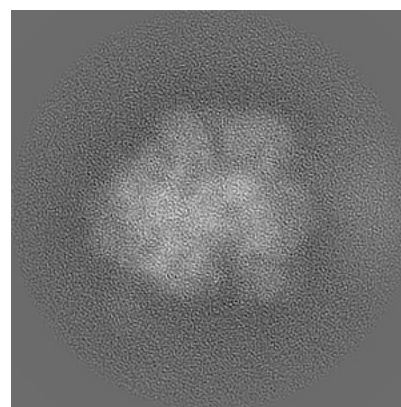
6.1.2 Raw map



X



Y

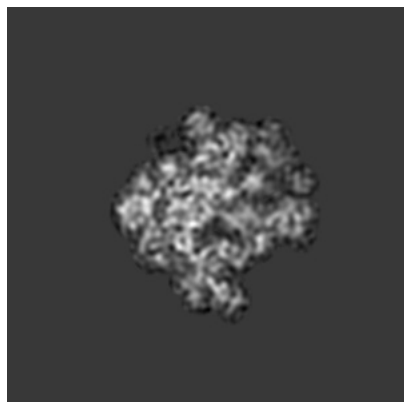


Z

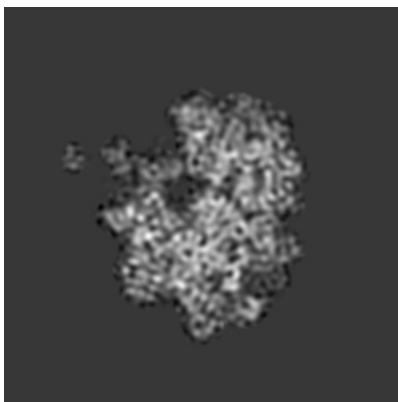
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

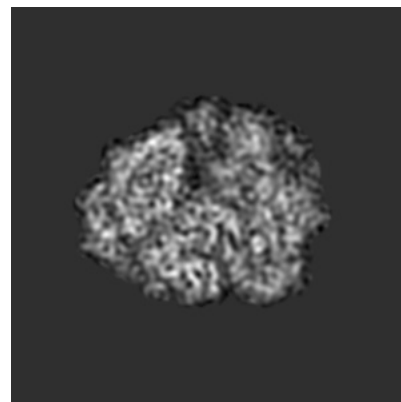
6.2.1 Primary map



X Index: 128

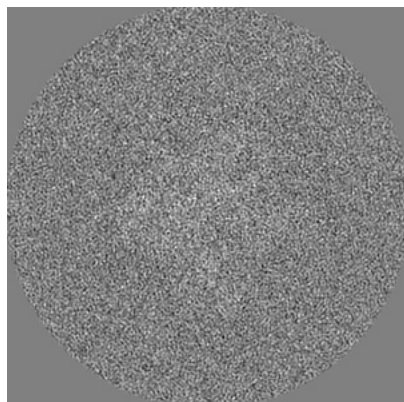


Y Index: 128

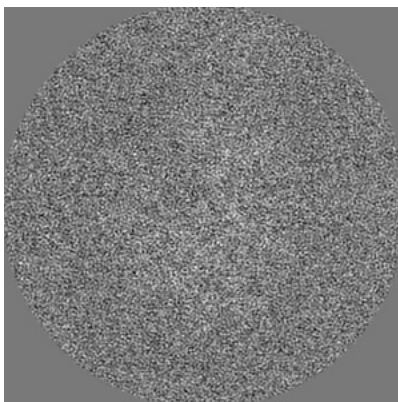


Z Index: 128

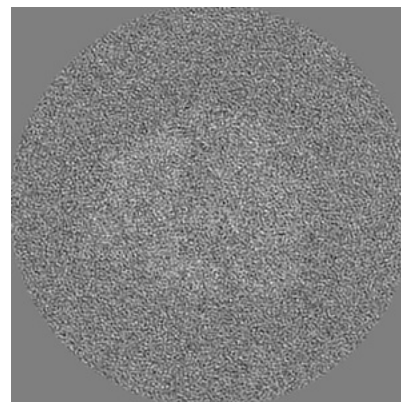
6.2.2 Raw map



X Index: 128



Y Index: 128

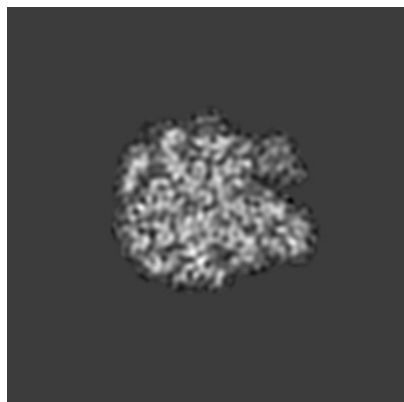


Z Index: 128

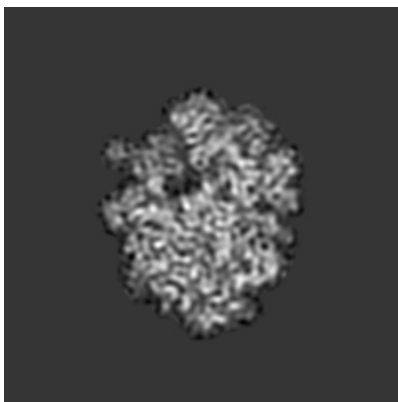
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

6.3.1 Primary map



X Index: 104

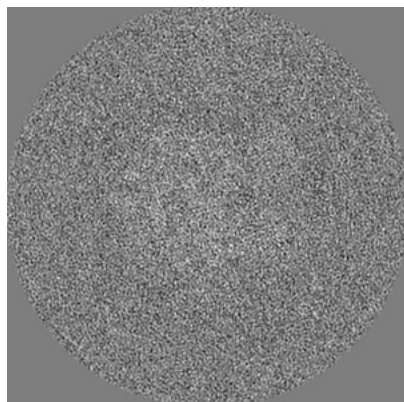


Y Index: 119

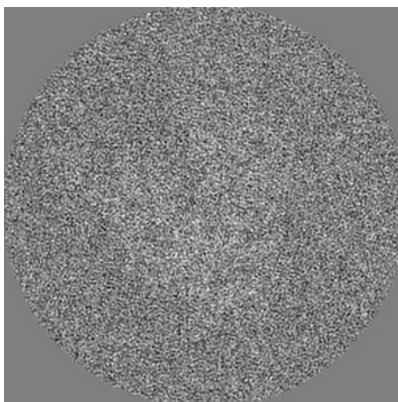


Z Index: 121

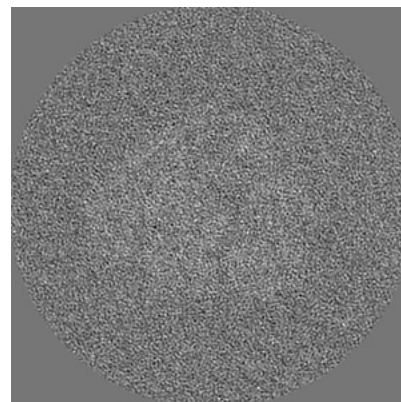
6.3.2 Raw map



X Index: 118



Y Index: 136



Z Index: 125

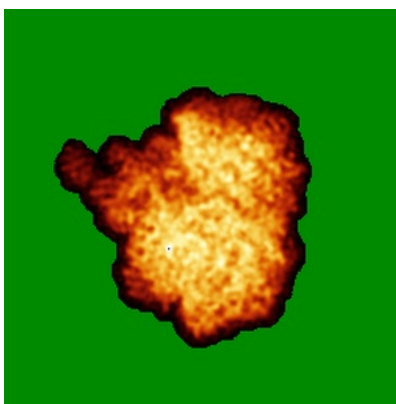
The images above show the largest variance slices of the map in three orthogonal directions.

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

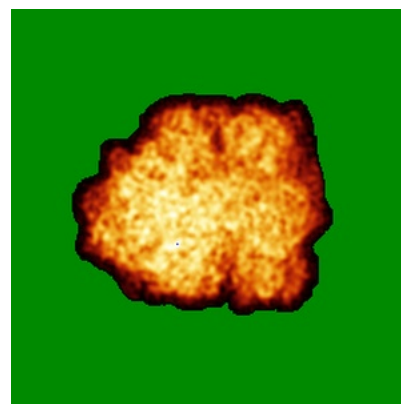
6.4.1 Primary map



X

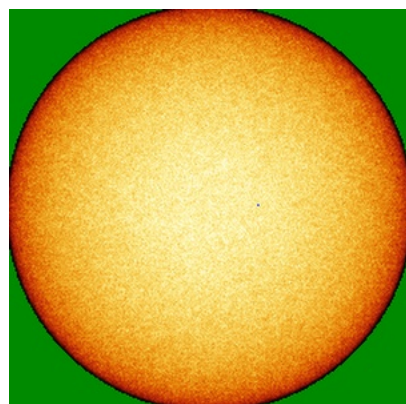


Y

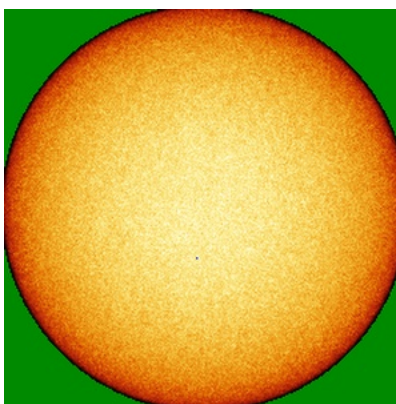


Z

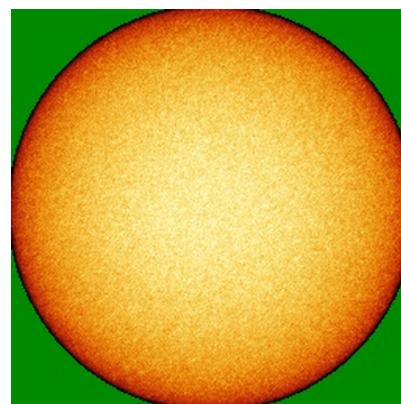
6.4.2 Raw map



X



Y



Z

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

6.5 Orthogonal surface views [i](#)

This section was not generated.

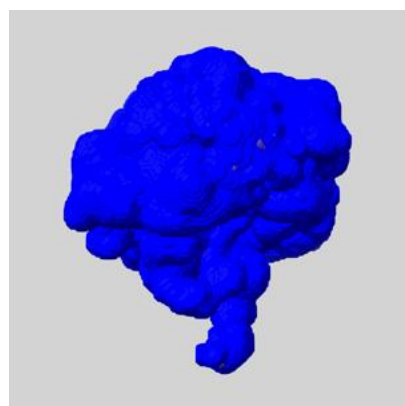
6.6 Mask visualisation [i](#)

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

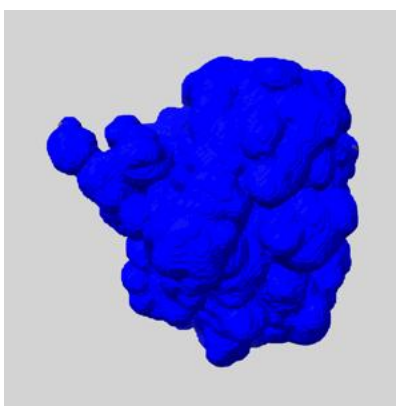
A mask typically either:

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

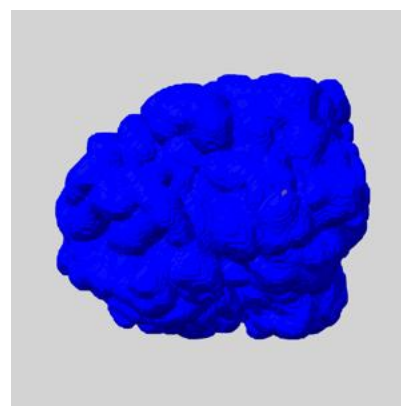
6.6.1 emd_13280_msk_1.map [i](#)



X



Y

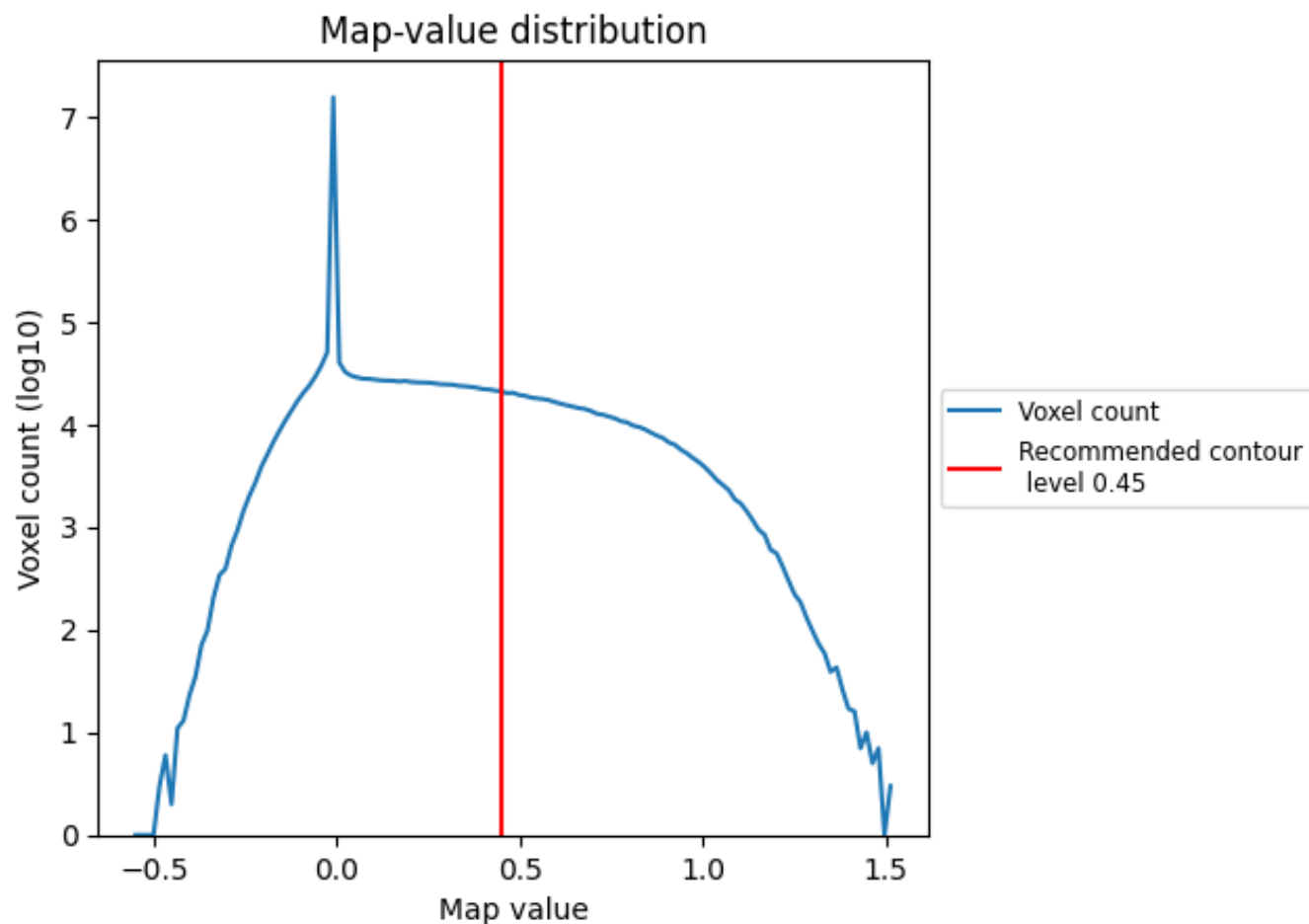


Z

7 Map analysis [i](#)

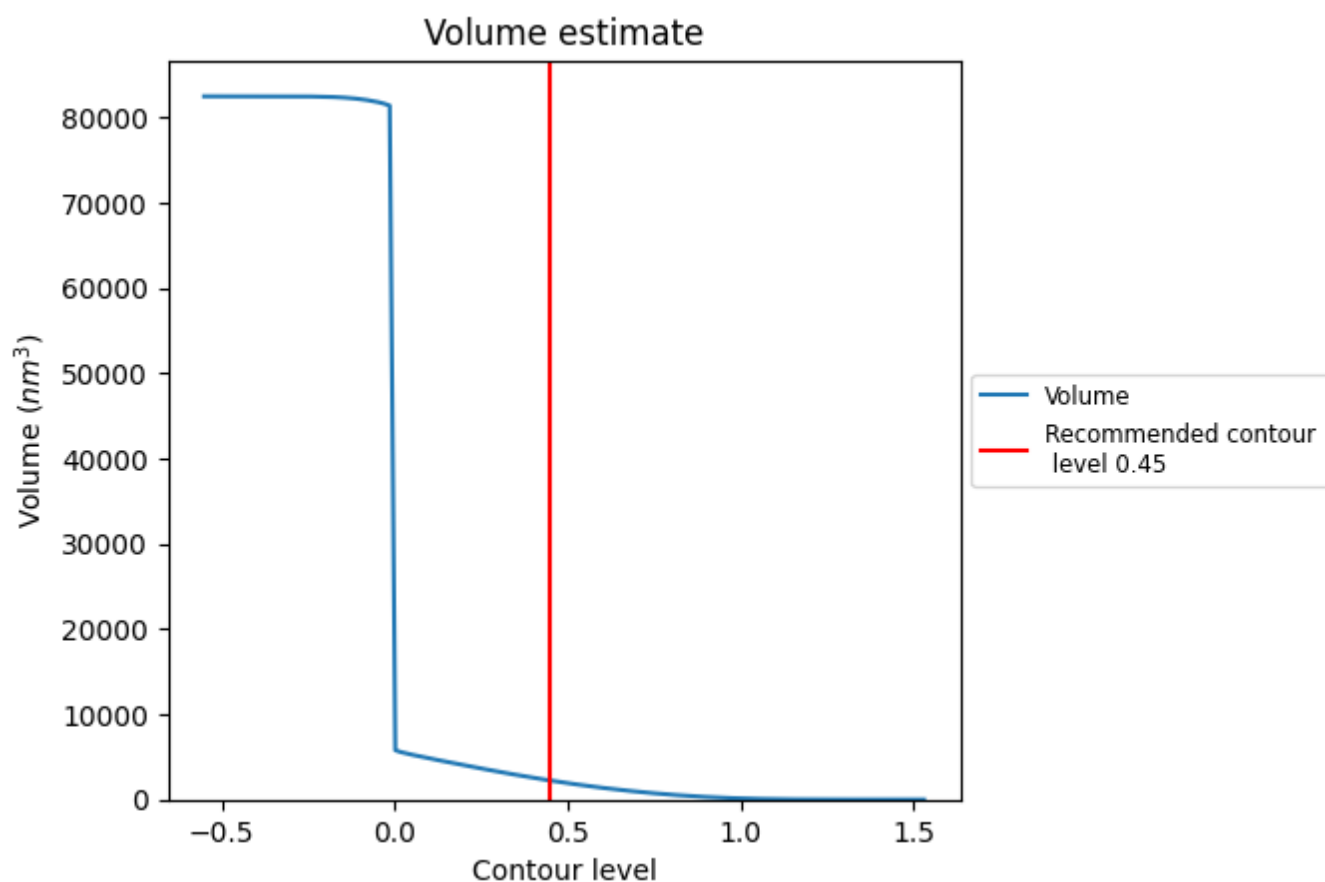
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

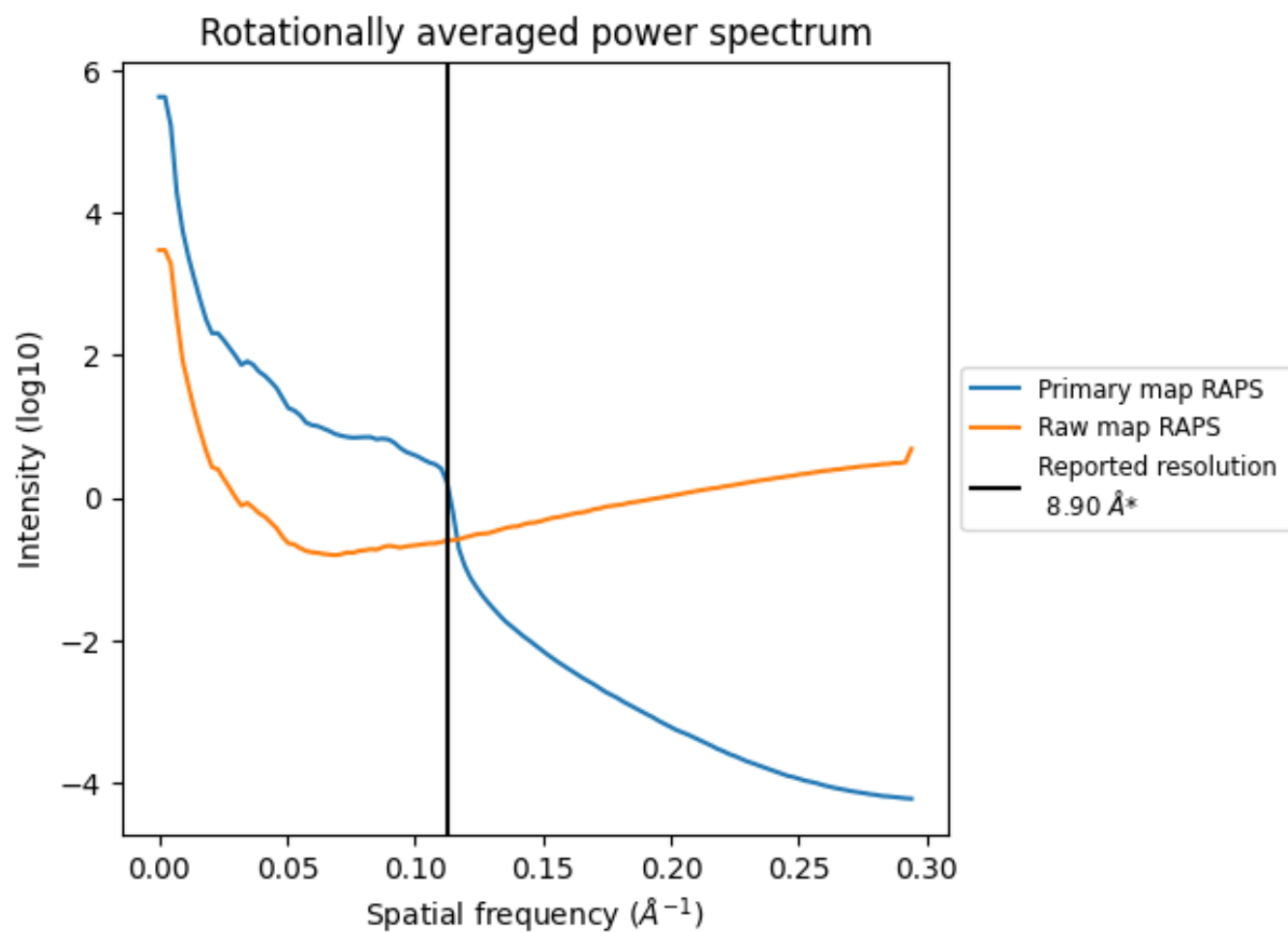
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 2232 nm^3 ; this corresponds to an approximate mass of 2016 kDa.

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

7.3 Rotationally averaged power spectrum ⓘ

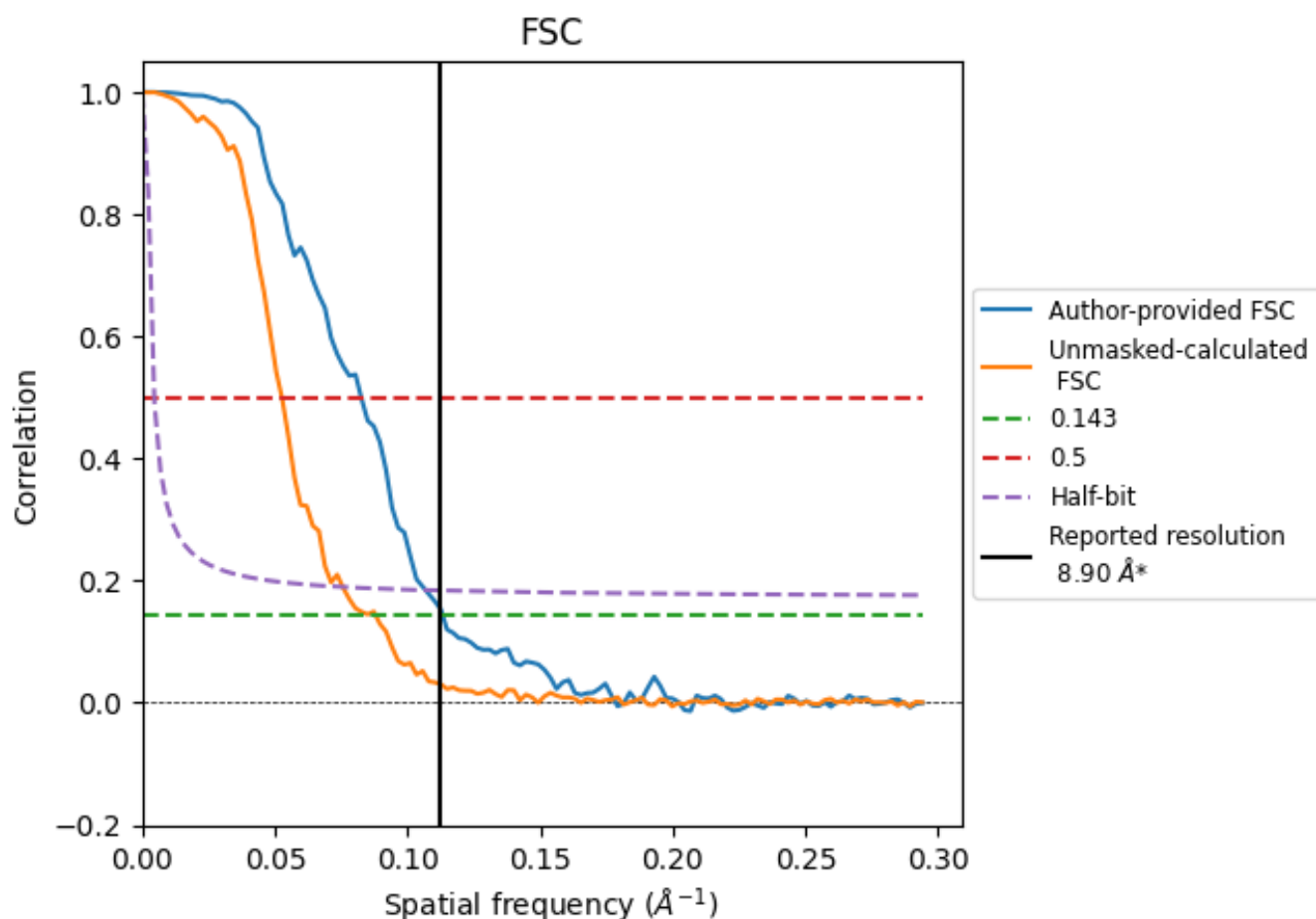


*Reported resolution corresponds to spatial frequency of 0.112 $\text{\AA}^{-1}$

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.112 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

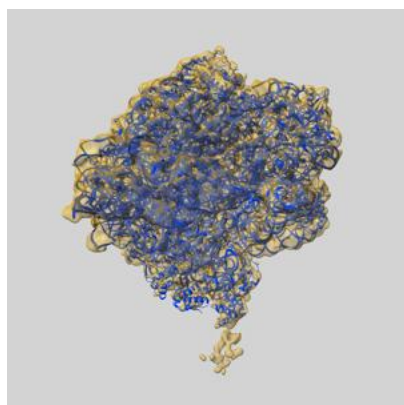
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	8.90	-	-
Author-provided FSC curve	8.83	12.12	9.36
Unmasked-calculated*	11.36	18.98	13.23

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 11.36 differs from the reported value 8.9 by more than 10 %

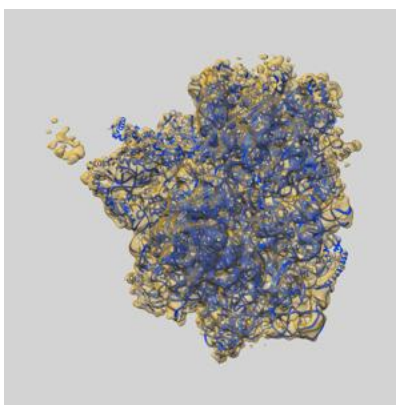
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-13280 and PDB model 7PAQ. Per-residue inclusion information can be found in section 3 on page 14.

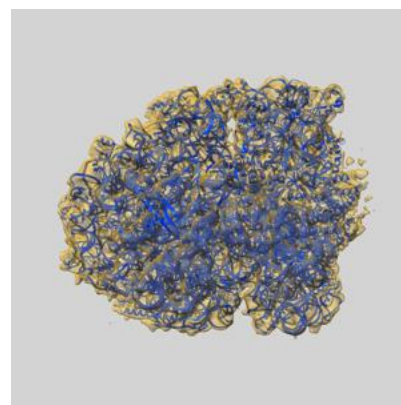
9.1 Map-model overlay [i](#)



X



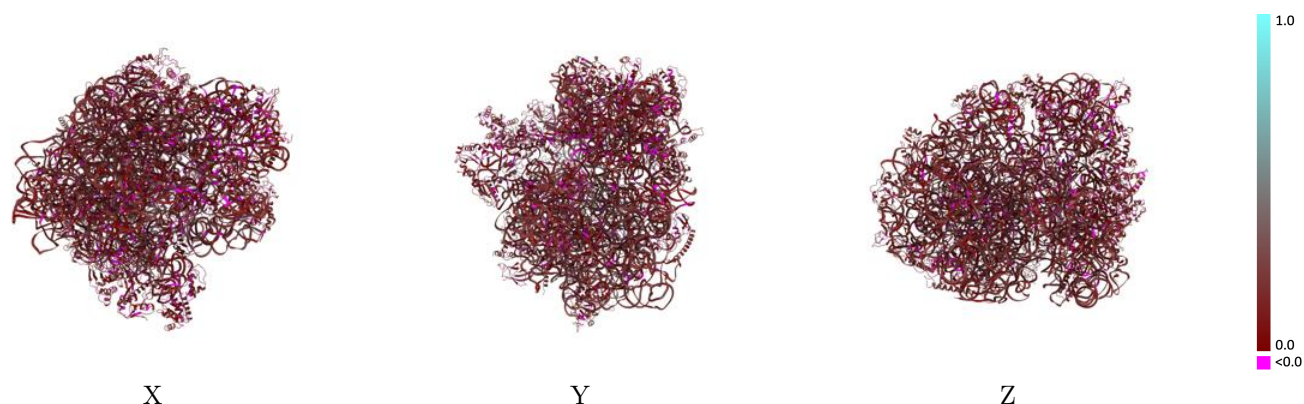
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.45 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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

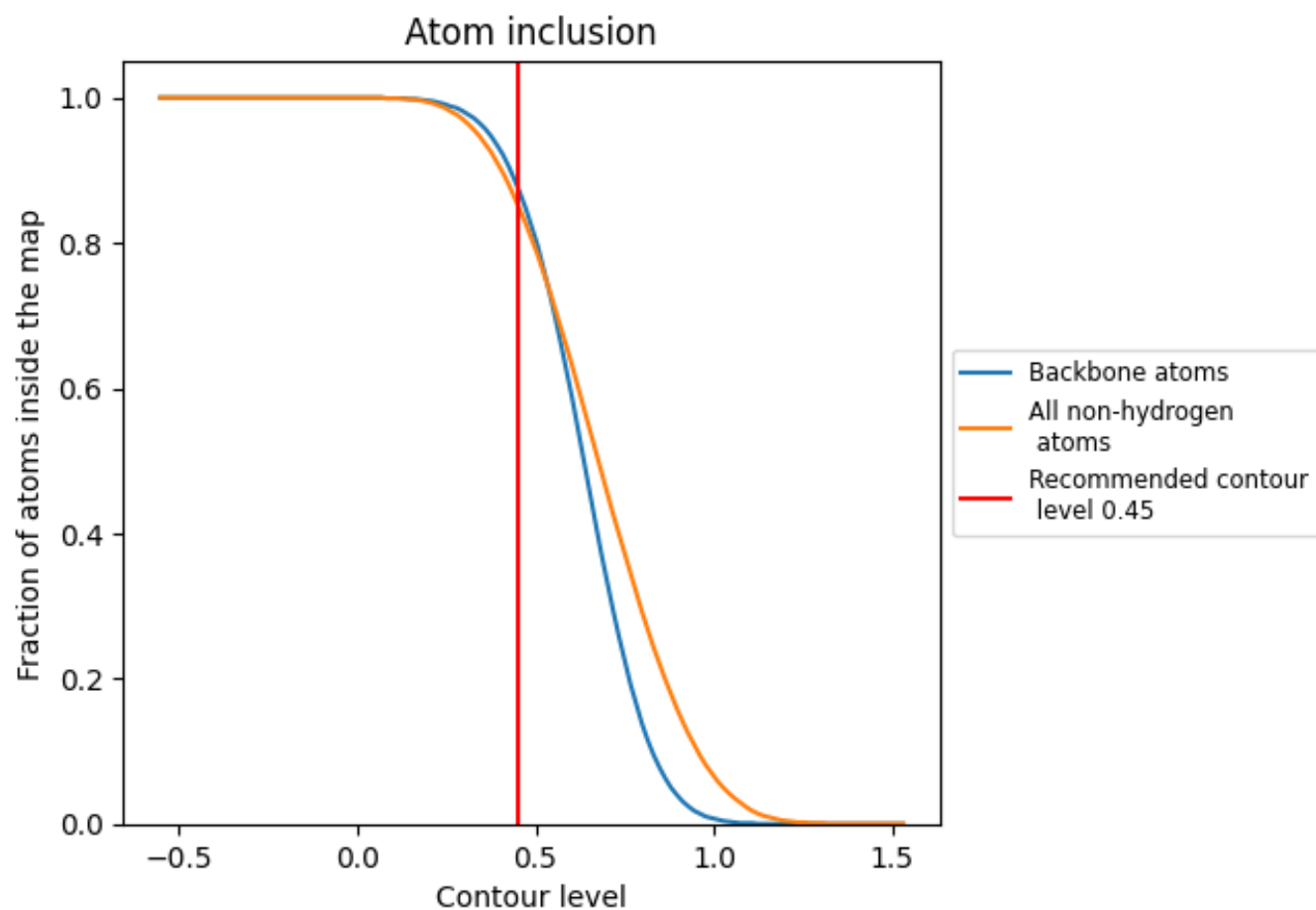


The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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

This section was not generated.

9.4 Atom inclusion [i](#)



At the recommended contour level, 88% of all backbone atoms, 85% 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 (0.45) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8530	 0.1570
0	 0.7780	 0.1250
1	 0.7720	 0.1190
2	 0.7670	 0.1010
3	 0.9620	 0.1720
4	 0.9740	 0.1830
5	 0.9560	 0.1660
7	 0.7210	 0.1000
8	 0.9180	 0.1630
9	 0.3870	 0.1310
A	 0.6140	 0.1520
B	 0.6360	 0.1370
C	 0.7230	 0.1250
D	 0.7090	 0.1260
E	 0.6450	 0.1560
F	 0.5860	 0.1220
G	 0.7160	 0.1490
H	 0.6650	 0.1120
I	 0.6150	 0.1030
J	 0.6660	 0.1340
K	 0.7260	 0.1480
L	 0.5900	 0.1010
M	 0.7060	 0.0620
N	 0.7190	 0.1570
O	 0.7960	 0.1540
P	 0.7090	 0.1360
Q	 0.7040	 0.1270
R	 0.6630	 0.0920
S	 0.7740	 0.1490
T	 0.7080	 0.1570
W	 0.1140	 0.1060
a	 0.7850	 0.1190
b	 0.7240	 0.1210
c	 0.7270	 0.1530
d	 0.6920	 0.1440



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Chain	Atom inclusion	Q-score
e	 0.6580	 0.1410
f	 0.3120	 0.1430
g	 0.5850	 0.1270
h	 0.4740	 0.1320
i	 0.7550	 0.1460
j	 0.6730	 0.1370
k	 0.7550	 0.1270
l	 0.7510	 0.1220
m	 0.7640	 0.1380
n	 0.7830	 0.1490
o	 0.7100	 0.1490
p	 0.7990	 0.1320
q	 0.7560	 0.1500
r	 0.8050	 0.1560
s	 0.7690	 0.1490
t	 0.6500	 0.1390
u	 0.7770	 0.1090
v	 0.7250	 0.1080
w	 0.7640	 0.1860
x	 0.6120	 0.1390
y	 0.8300	 0.1250
z	 0.8620	 0.1350