



Full wwPDB EM Validation Report ⓘ

Mar 8, 2026 – 07:26 AM UTC

PDB ID : 7PAJ / pdb_00007paj
EMDB ID : EMD-13274
Title : 70S ribosome with EF-Tu-tRNA, P- and E-site tRNAs in Mycoplasma pneumoniae cells
Authors : Xue, L.; Lenz, S.; Rappsilber, J.; Mahamid, J.
Deposited on : 2021-07-30
Resolution : 7.30 Å(reported)
Based on initial models : 4V7C, 7OOC, 7OOD, 4V5L

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

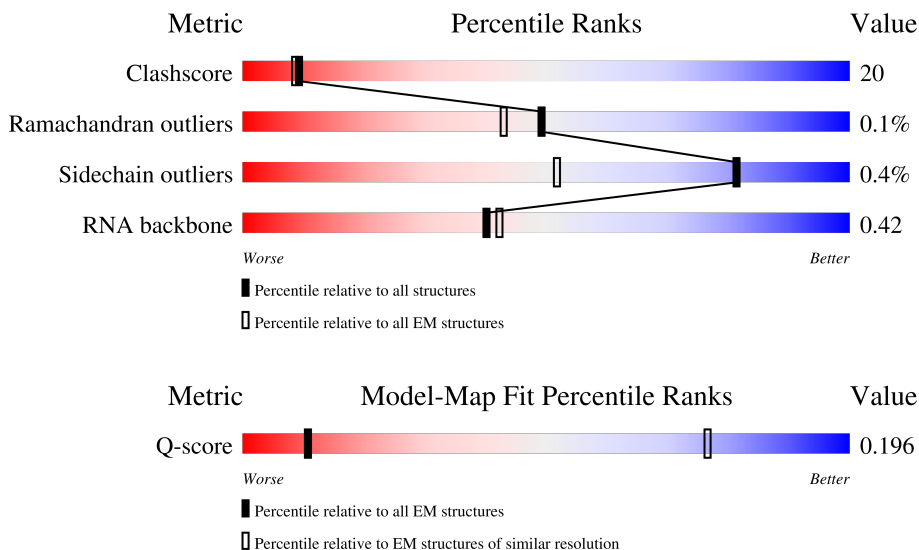
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 7.30 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	436 (6.80 - 7.80)

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	394	
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	a	287	
26	b	287	
27	c	212	
28	d	180	

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Mol	Chain	Length	Quality of chain
29	e	184	
30	f	149	
31	g	161	
32	h	137	
33	i	146	
34	j	122	
35	k	151	
36	l	139	
37	m	124	
38	n	116	
39	o	119	
40	p	127	
41	q	100	
42	r	159	
43	s	237	
44	t	111	
45	u	104	
46	v	65	
47	w	111	
48	x	97	
49	y	57	
50	z	53	
51	3	2907	
52	4	108	
53	5	1520	

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Mol	Chain	Length	Quality of chain
54	6	76	25%29%58%13%
54	7	76	32%54%14%
54	8	76	36%29%57%14%

2 Entry composition

There are 54 unique types of molecules in this entry. The entry contains 150759 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 Tu.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	9	393	Total	C	N	O	S	0	0
			3021	1892	533	583	13		

- 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		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		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		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 L2.

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

- Molecule 26 is a protein called 50S ribosomal protein L3.

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

- Molecule 27 is a protein called 50S ribosomal protein L4.

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

- Molecule 28 is a protein called 50S ribosomal protein L5.

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

- Molecule 29 is a protein called 50S ribosomal protein L6.

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

- Molecule 30 is a protein called 50S ribosomal protein L9.

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

- Molecule 31 is a protein called 50S ribosomal protein L10.

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

- Molecule 32 is a protein called 50S ribosomal protein L11.

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

- Molecule 33 is a protein called 50S ribosomal protein L13.

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

- Molecule 34 is a protein called 50S ribosomal protein L14.

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

- Molecule 35 is a protein called 50S ribosomal protein L15.

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

- Molecule 36 is a protein called 50S ribosomal protein L16.

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

- Molecule 37 is a protein called 50S ribosomal protein L17.

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

- Molecule 38 is a protein called 50S ribosomal protein L18.

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

- Molecule 39 is a protein called 50S ribosomal protein L19.

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

- Molecule 40 is a protein called 50S ribosomal protein L20.

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

- Molecule 41 is a protein called 50S ribosomal protein L21.

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

- Molecule 42 is a protein called 50S ribosomal protein L22.

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

- Molecule 43 is a protein called 50S ribosomal protein L23.

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

- Molecule 44 is a protein called 50S ribosomal protein L24.

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

- Molecule 45 is a protein called 50S ribosomal protein L27.

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

- Molecule 46 is a protein called 50S ribosomal protein L28.

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

- Molecule 47 is a protein called 50S ribosomal protein L29.

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

- Molecule 48 is a protein called 50S ribosomal protein L31.

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

- Molecule 49 is a protein called 50S ribosomal protein L32.

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

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

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

- Molecule 51 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	3	2878	Total	C	N	O	P	0	0
			61664	27558	11236	19995	2875		

- Molecule 52 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	4	105	Total	C	N	O	P	0	0
			2239	1003	409	724	103		

- Molecule 53 is a RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	5	1493	Total	C	N	O	P	0	0
			31943	14279	5792	10382	1490		

- Molecule 54 is a RNA chain called tRNA-Phe.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	6	76	Total	C	N	O	P	0	0
			1618	723	289	531	75		
54	7	76	Total	C	N	O	P	0	0
			1618	723	289	531	75		
54	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.

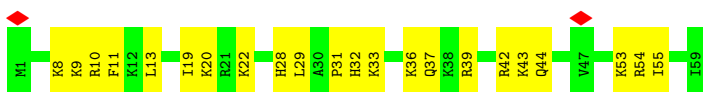
- Molecule 1: 50S ribosomal protein L34

Chain 0: 



- Molecule 2: 50S ribosomal protein L35

Chain 1: 



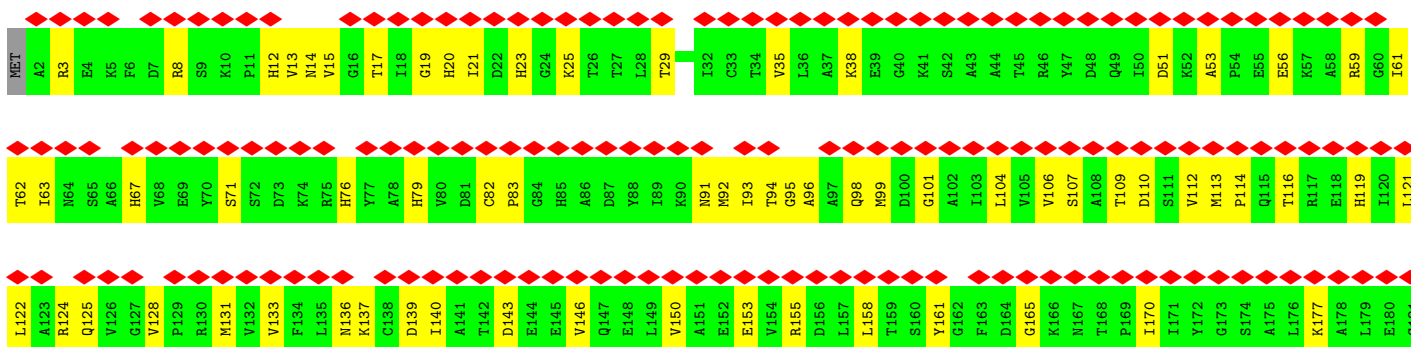
- Molecule 3: 50S ribosomal protein L36

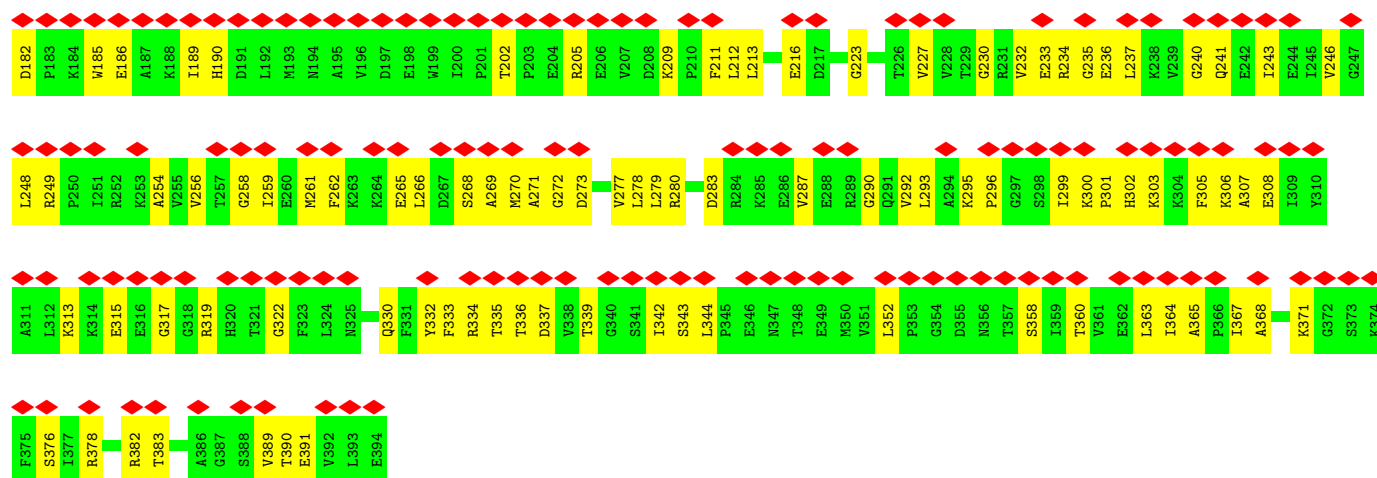
Chain 2: 



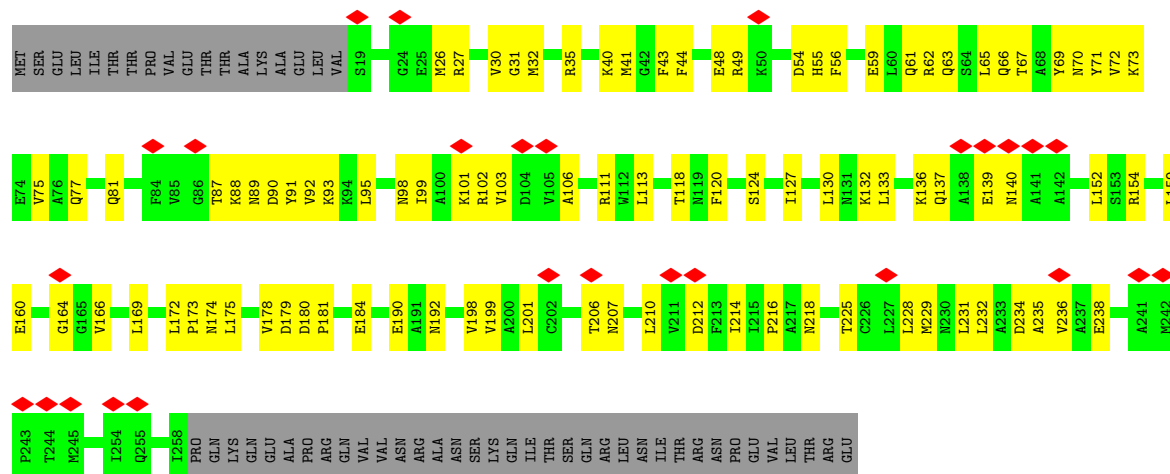
- Molecule 4: Elongation factor Tu

Chain 9: 

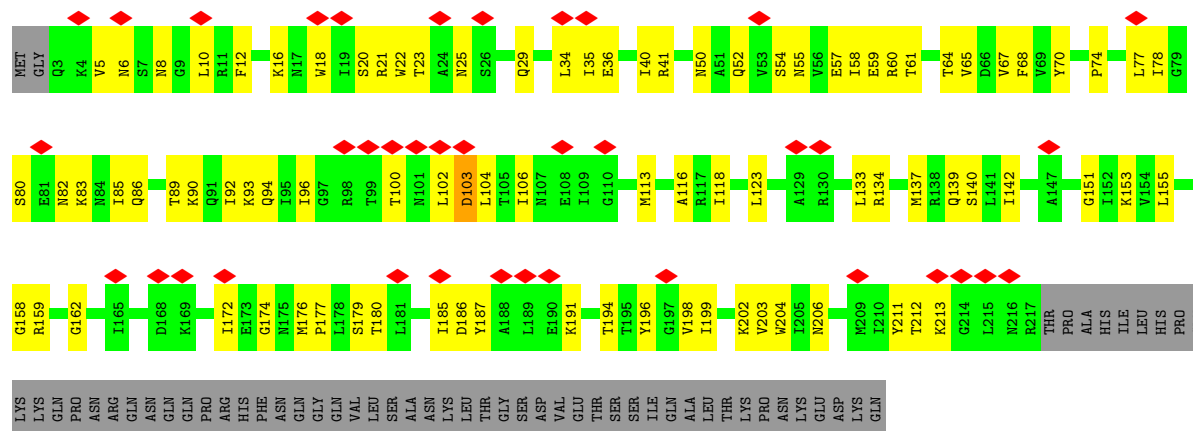




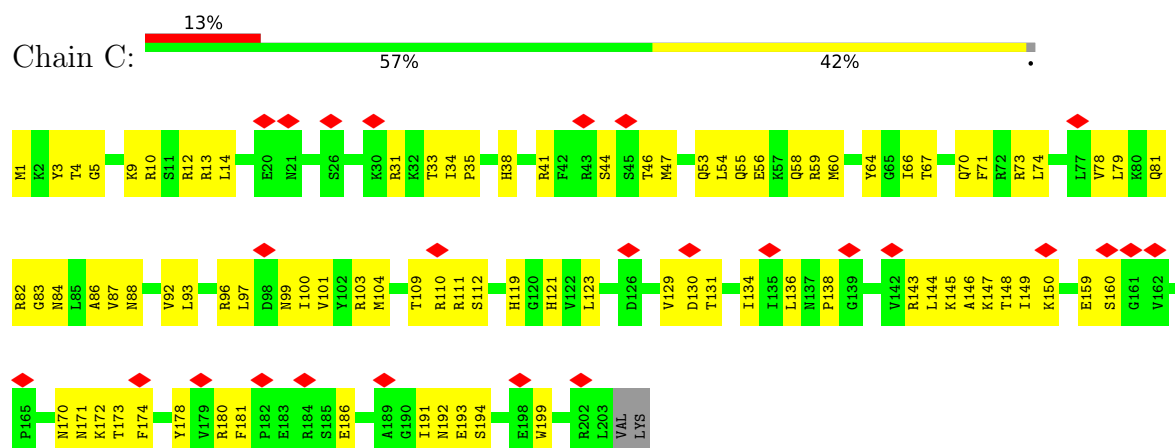
• Molecule 5: 30S ribosomal protein S2



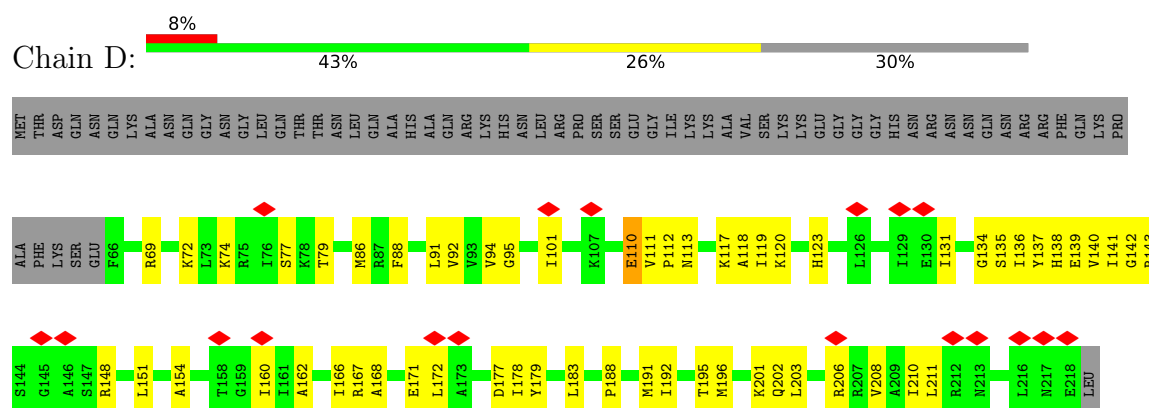
• Molecule 6: 30S ribosomal protein S3



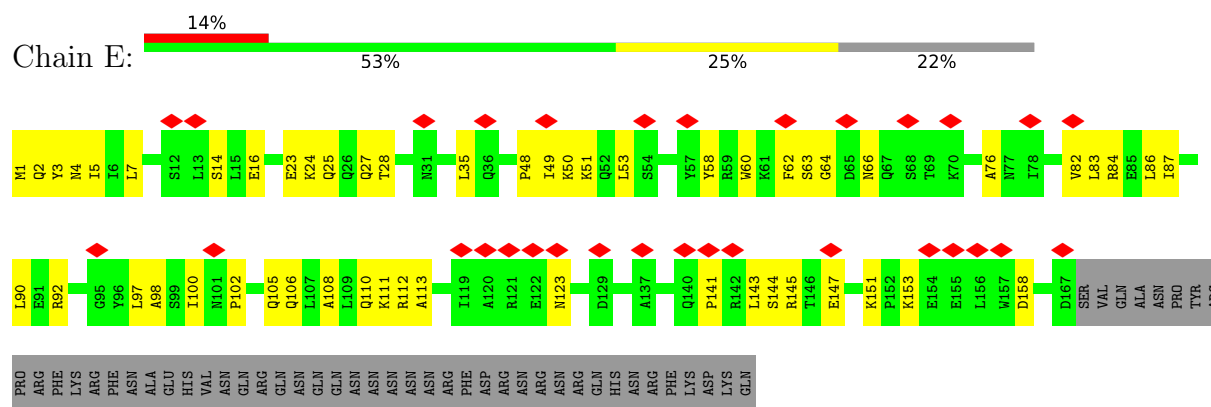
- Molecule 7: 30S ribosomal protein S4



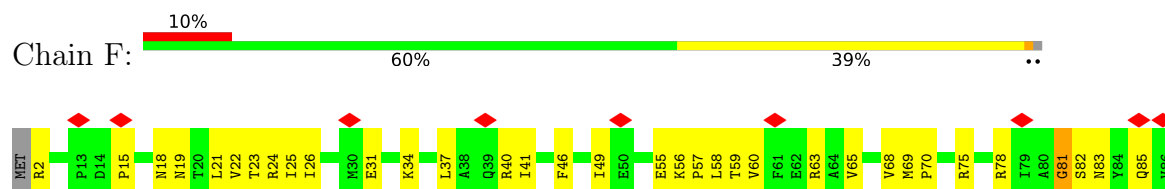
- Molecule 8: 30S ribosomal protein S5



- Molecule 9: 30S ribosomal protein S6



- Molecule 10: 30S ribosomal protein S7

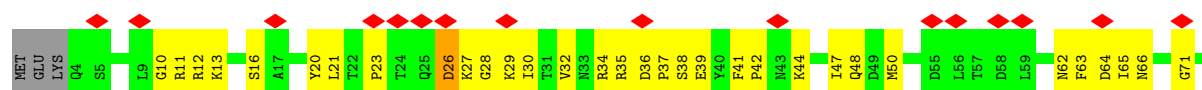




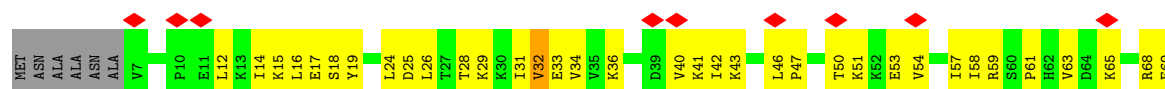
- Molecule 11: 30S ribosomal protein S8



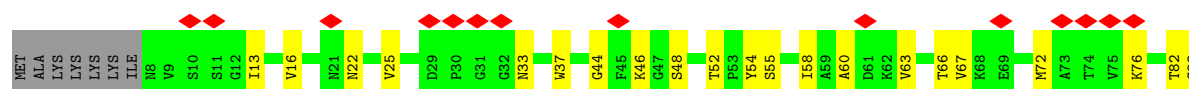
- Molecule 12: 30S ribosomal protein S9



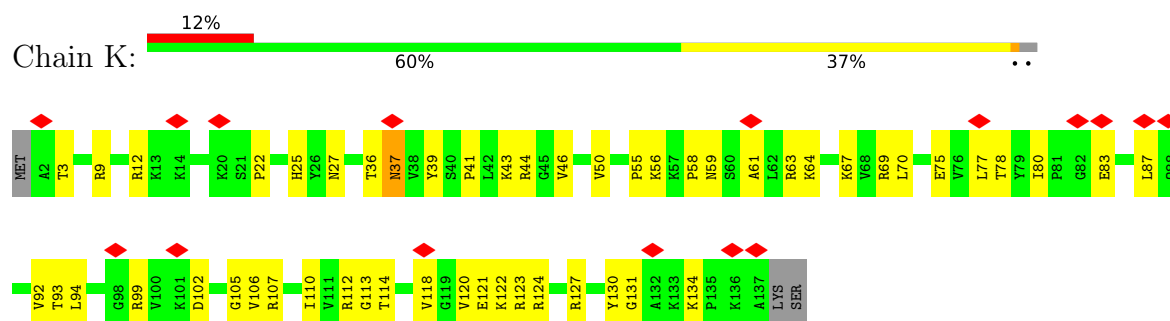
- Molecule 13: 30S ribosomal protein S10



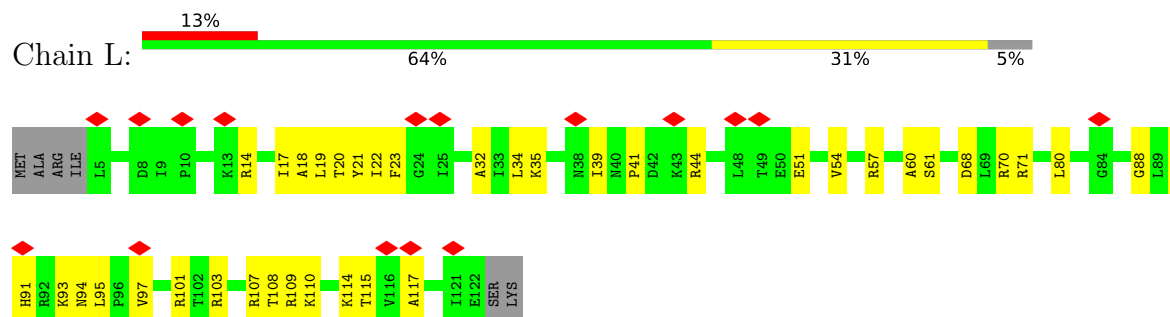
- Molecule 14: 30S ribosomal protein S11



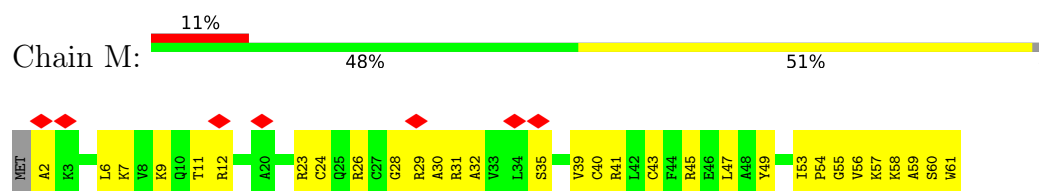
- Molecule 15: 30S ribosomal protein S12



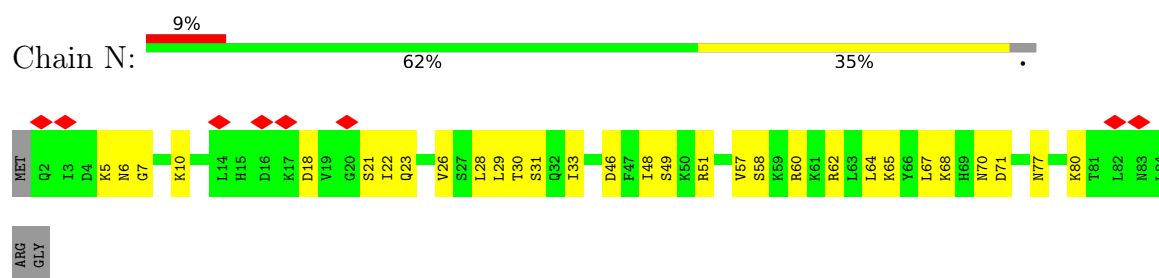
- Molecule 16: 30S ribosomal protein S13



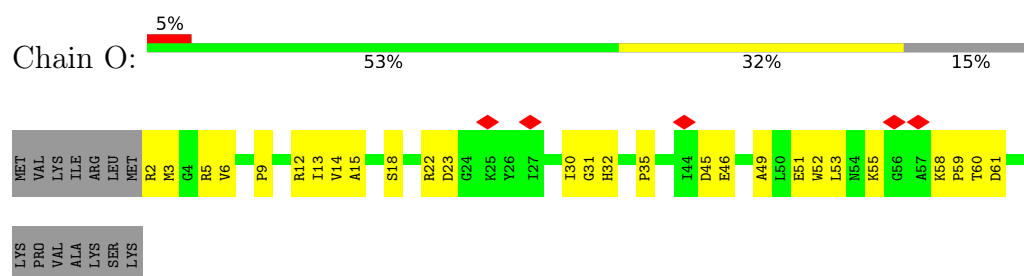
- Molecule 17: 30S ribosomal protein S14 type Z



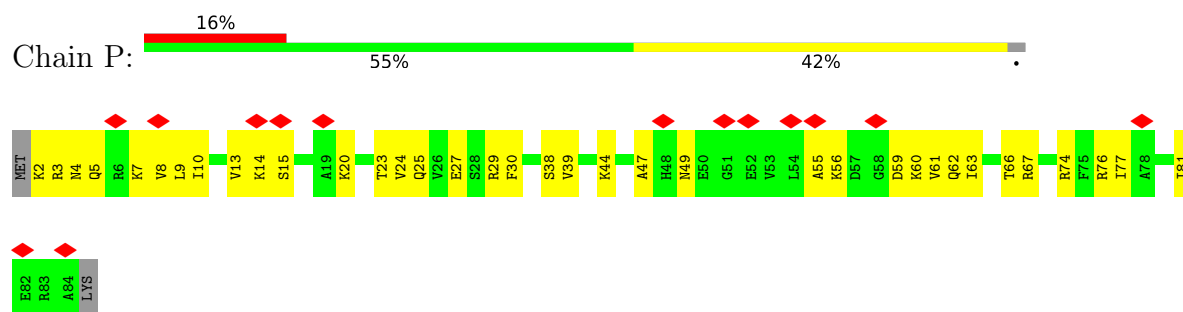
- Molecule 18: 30S ribosomal protein S15



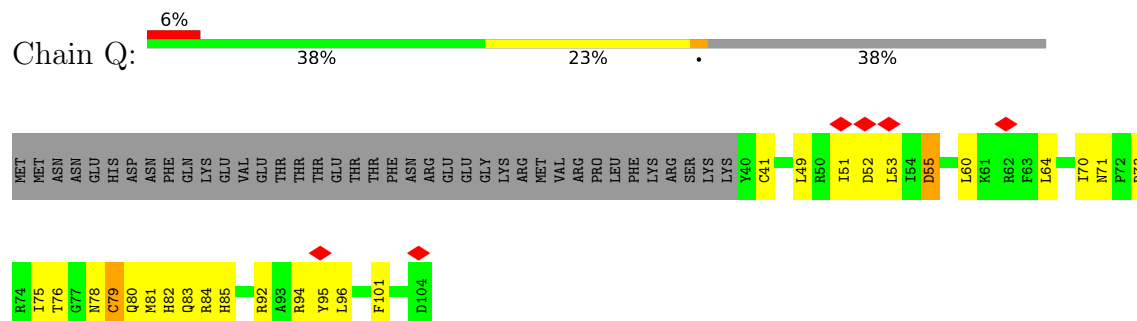
- Molecule 19: 30S ribosomal protein S16



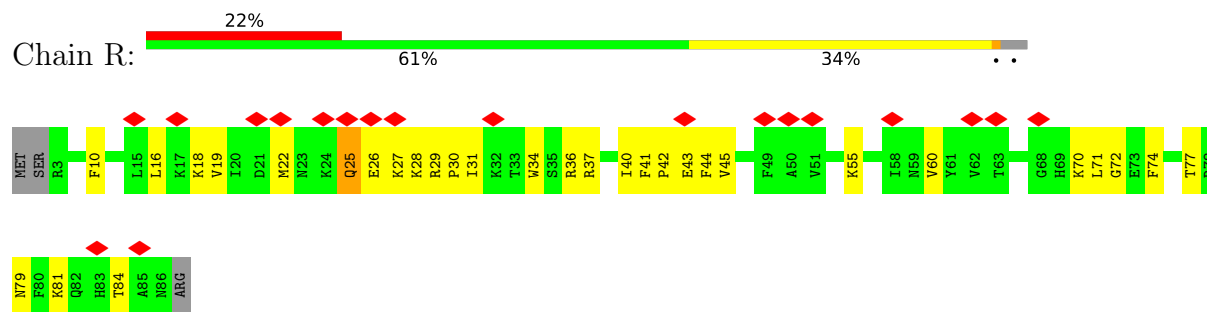
- Molecule 20: 30S ribosomal protein S17



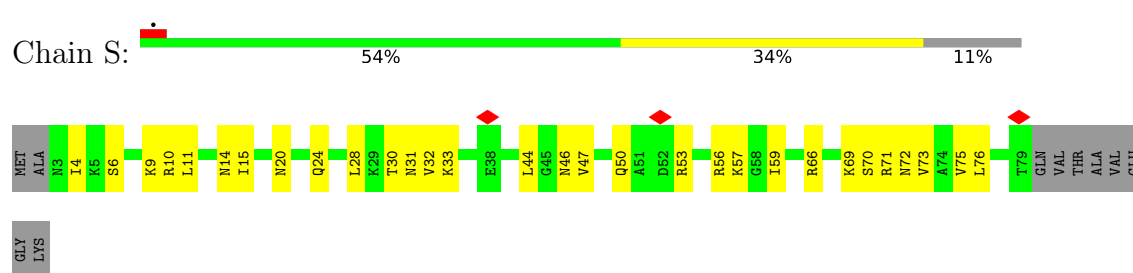
- Molecule 21: 30S ribosomal protein S18



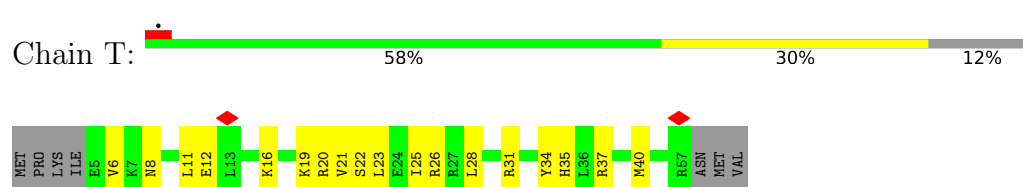
- Molecule 22: 30S ribosomal protein S19



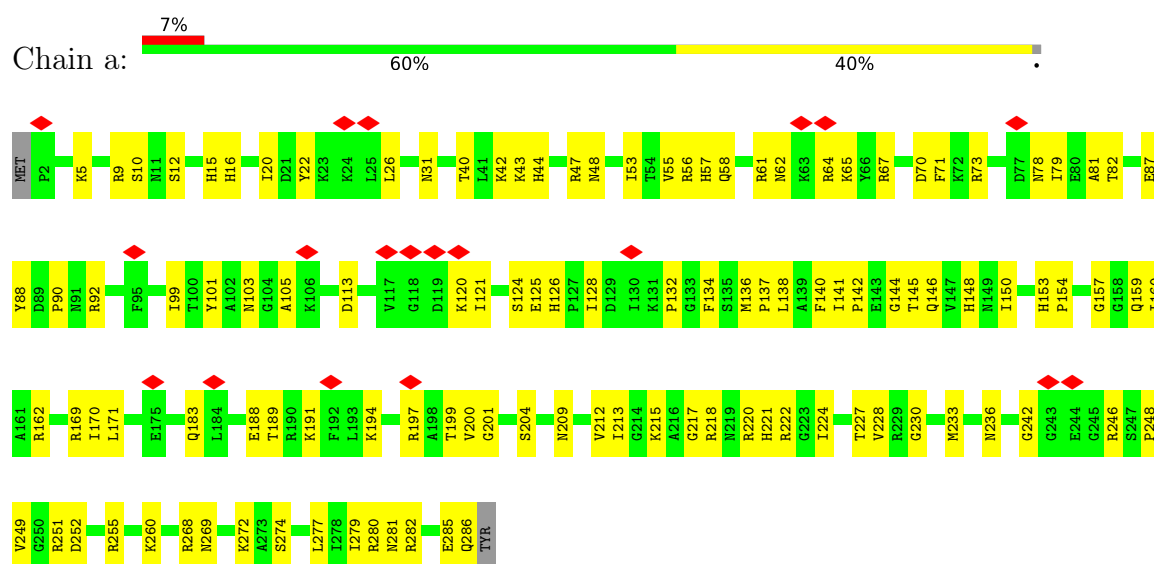
- Molecule 23: 30S ribosomal protein S20



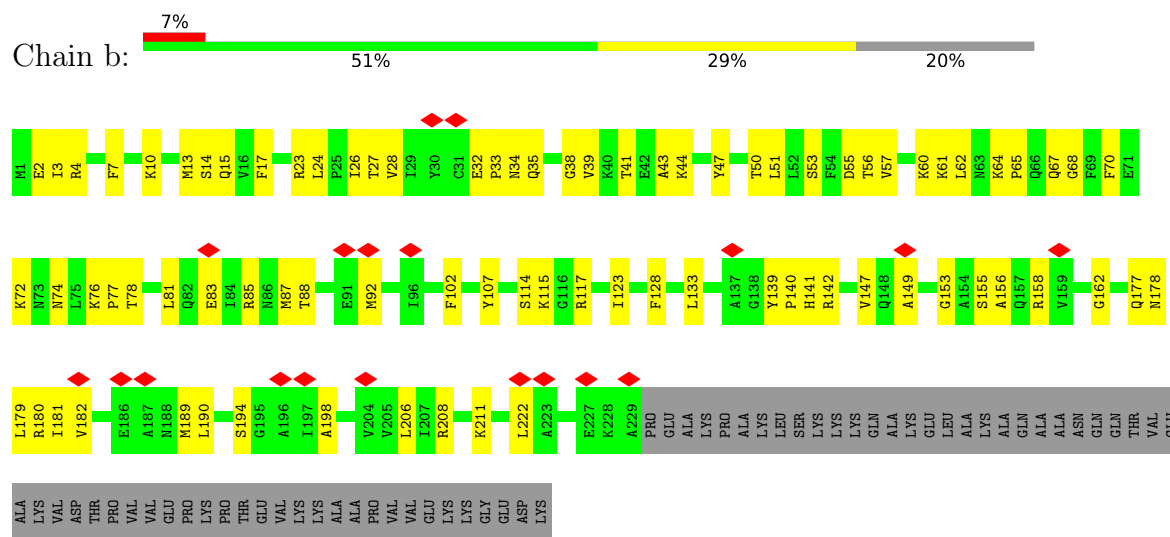
- Molecule 24: 30S ribosomal protein S21



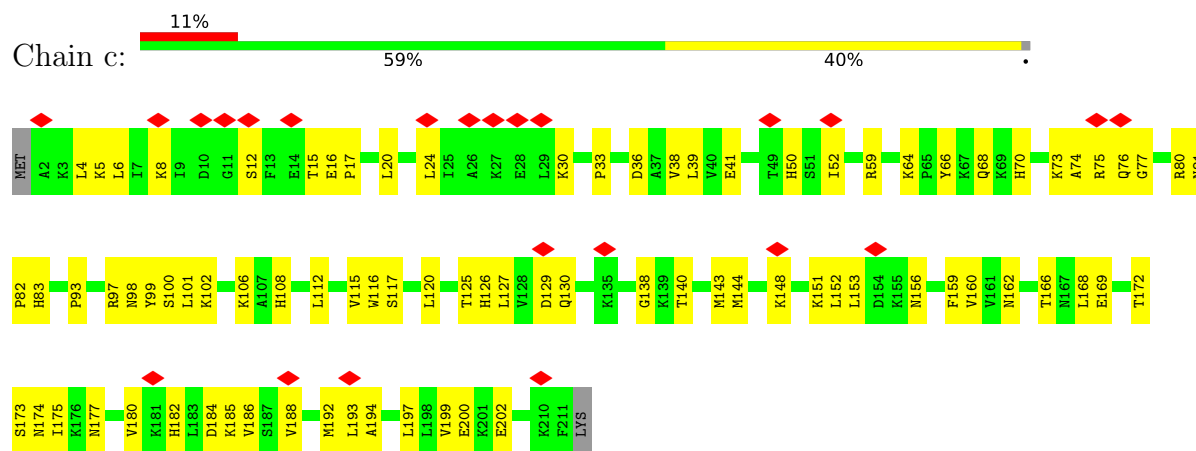
- Molecule 25: 50S ribosomal protein L2



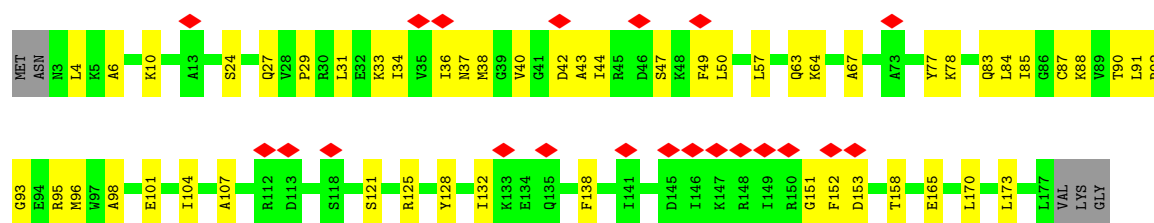
• Molecule 26: 50S ribosomal protein L3



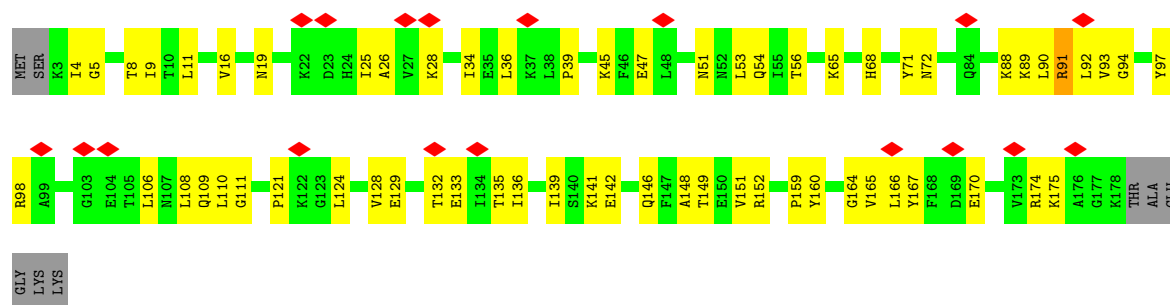
• Molecule 27: 50S ribosomal protein L4



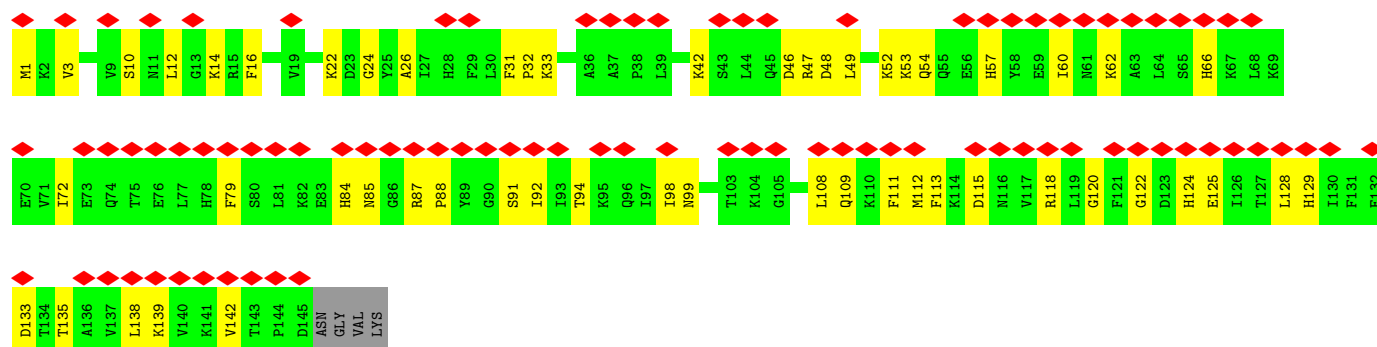
• Molecule 28: 50S ribosomal protein L5



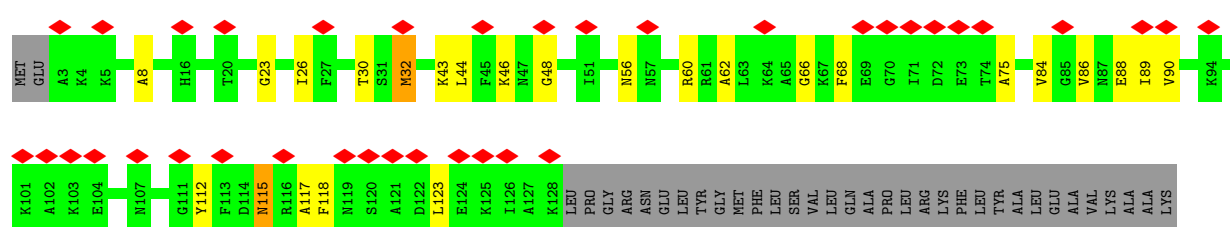
• Molecule 29: 50S ribosomal protein L6



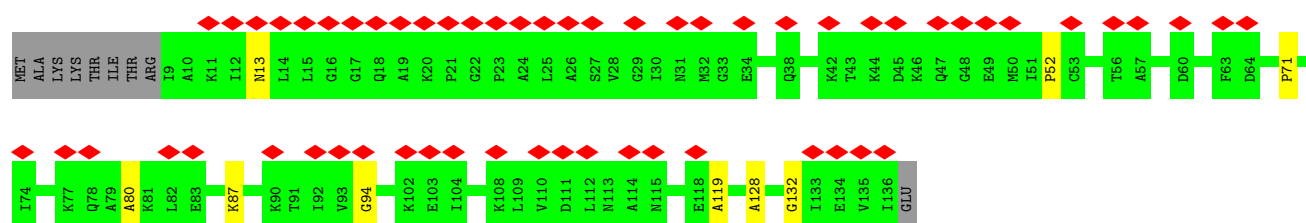
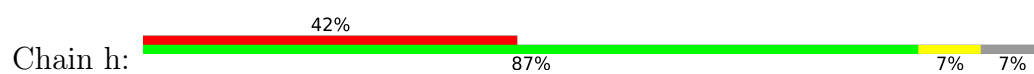
• Molecule 30: 50S ribosomal protein L9



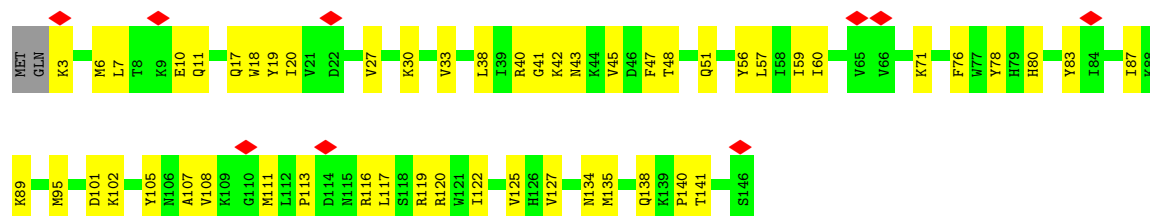
• Molecule 31: 50S ribosomal protein L10



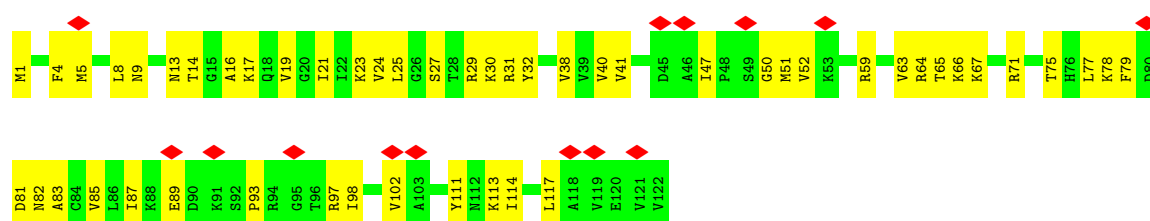
• Molecule 32: 50S ribosomal protein L11



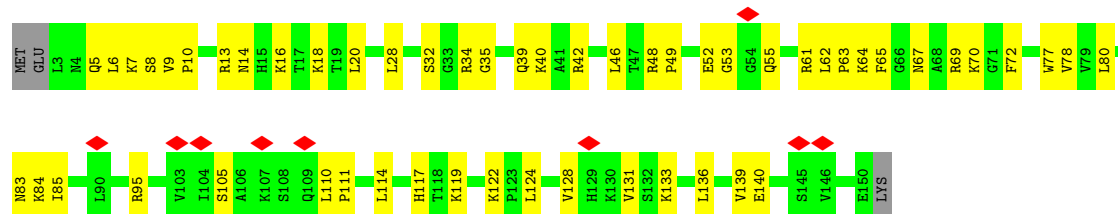
• Molecule 33: 50S ribosomal protein L13



• Molecule 34: 50S ribosomal protein L14

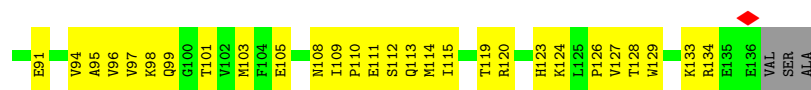


• Molecule 35: 50S ribosomal protein L15



• Molecule 36: 50S ribosomal protein L16





- Molecule 37: 50S ribosomal protein L17

Chain m: 53% 43%



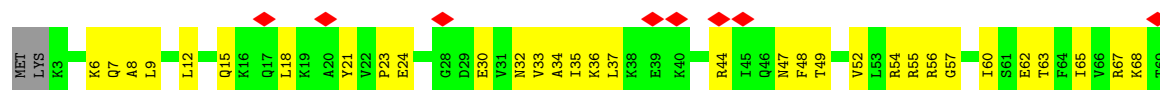
- Molecule 38: 50S ribosomal protein L18

Chain n: 8% 61% 35%



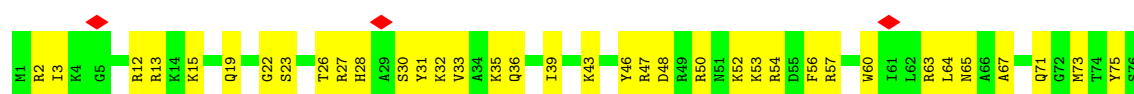
- Molecule 39: 50S ribosomal protein L19

Chain o: 10% 53% 44%

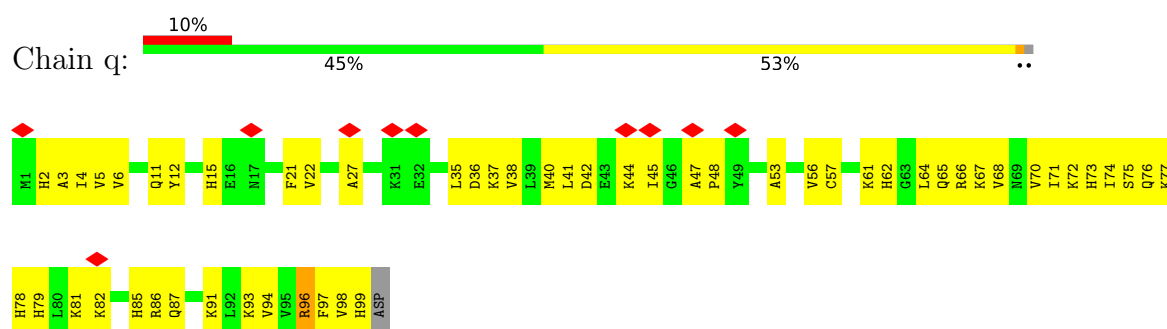


- Molecule 40: 50S ribosomal protein L20

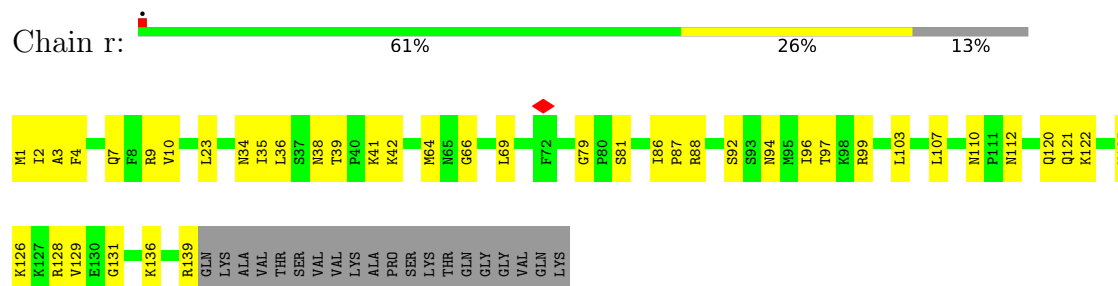
Chain p: 48% 42% 10%



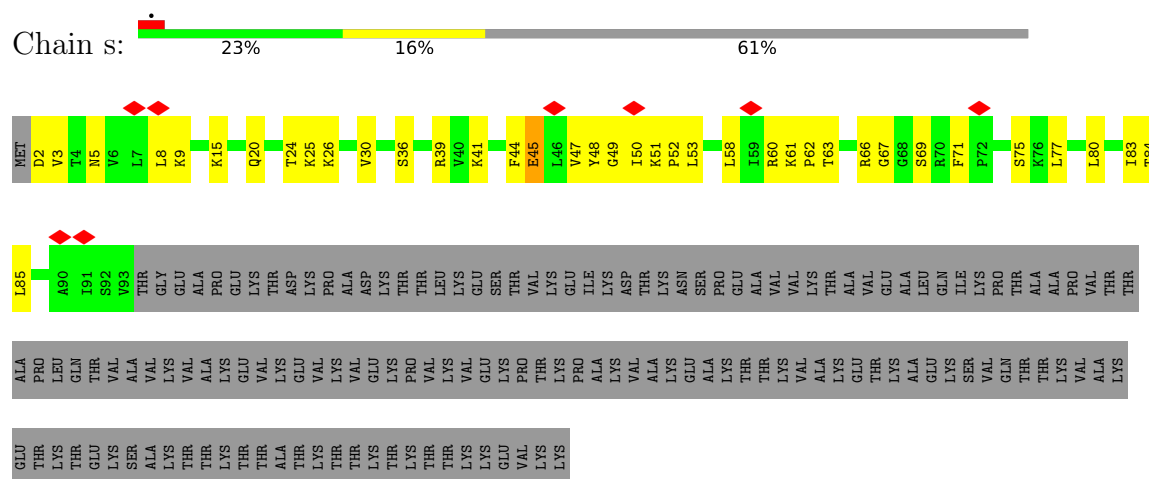
- Molecule 41: 50S ribosomal protein L21



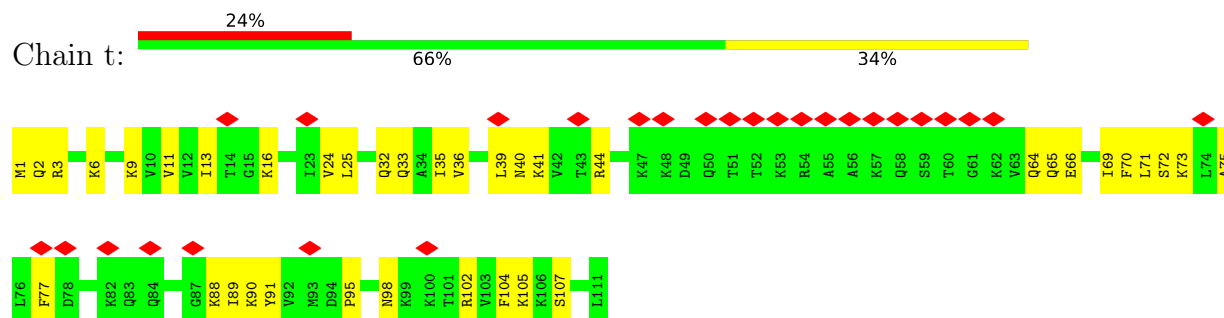
- Molecule 42: 50S ribosomal protein L22



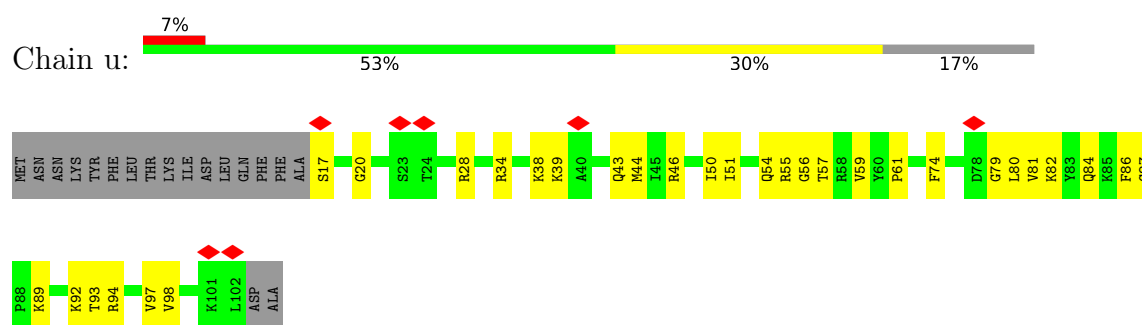
- Molecule 43: 50S ribosomal protein L23



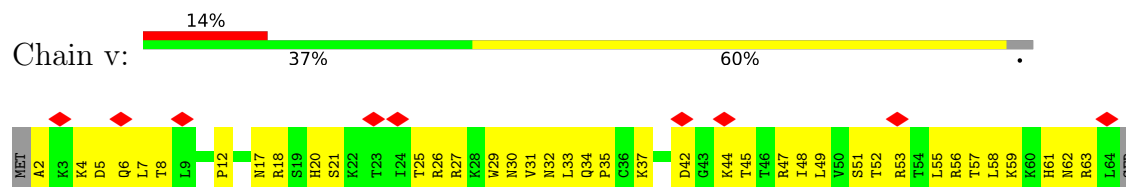
- Molecule 44: 50S ribosomal protein L24



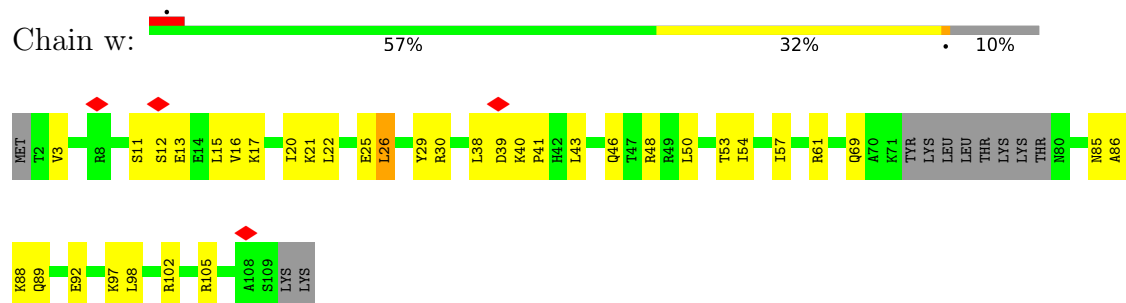
- Molecule 45: 50S ribosomal protein L27



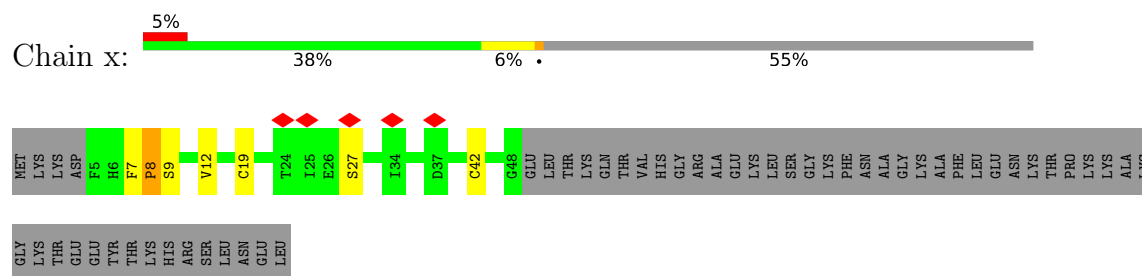
- Molecule 46: 50S ribosomal protein L28



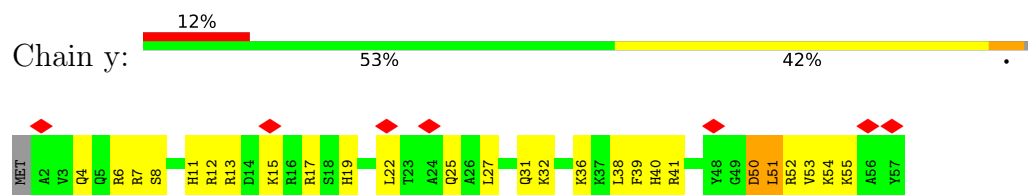
- Molecule 47: 50S ribosomal protein L29



- Molecule 48: 50S ribosomal protein L31

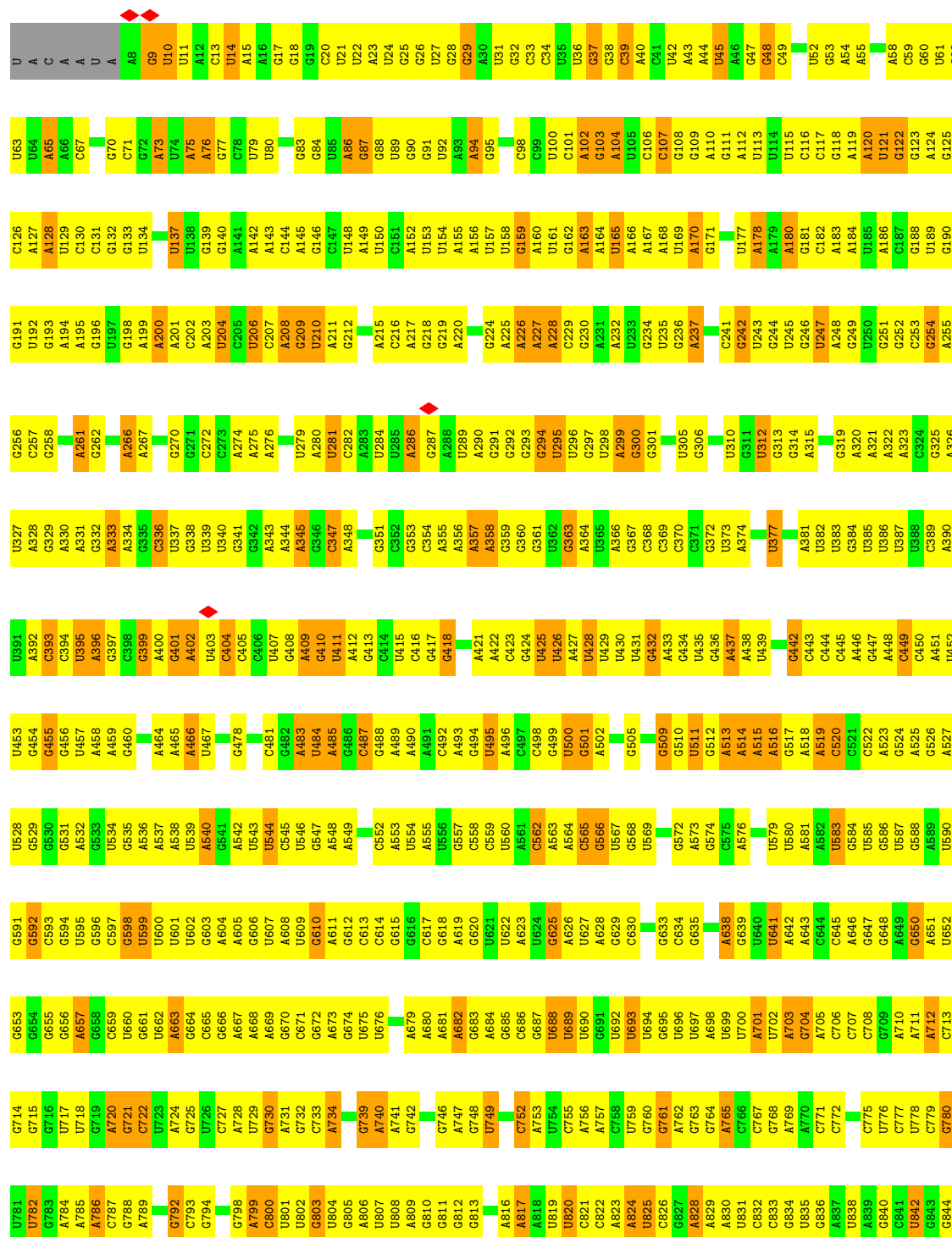


- Molecule 49: 50S ribosomal protein L32



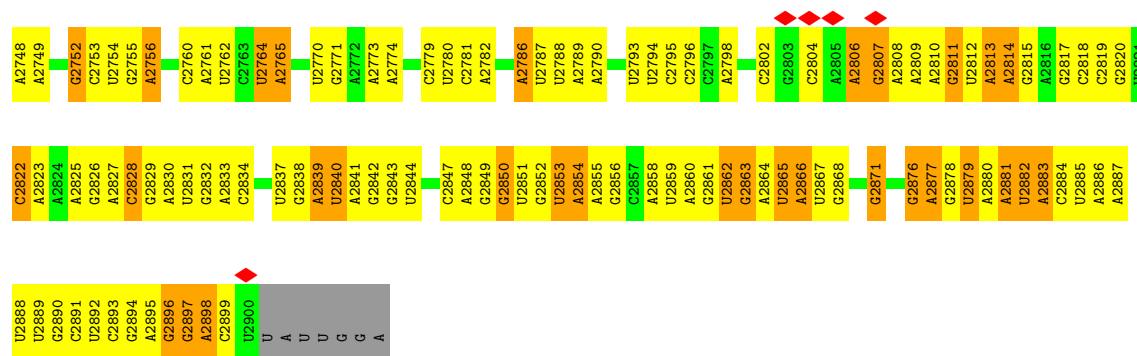
- Molecule 50: 50S ribosomal protein L33 1





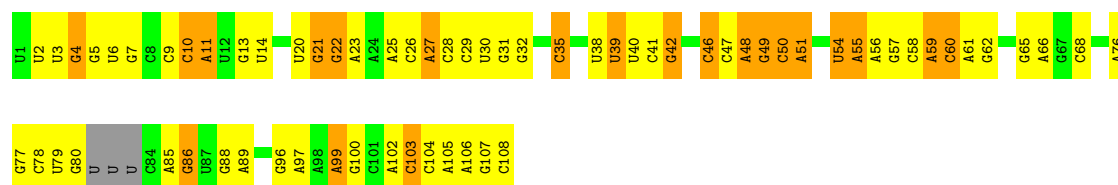






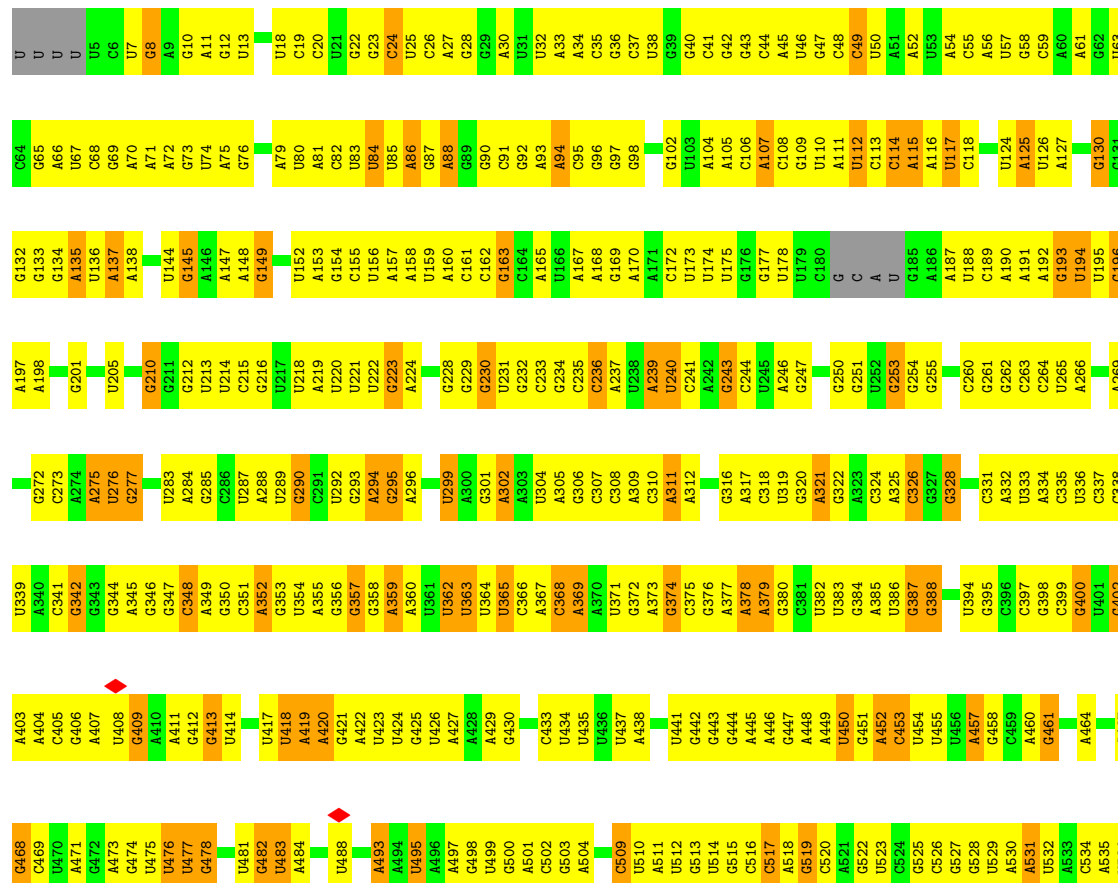
• Molecule 52: 5S ribosomal RNA

Chain 4: 35% 43% 19% .



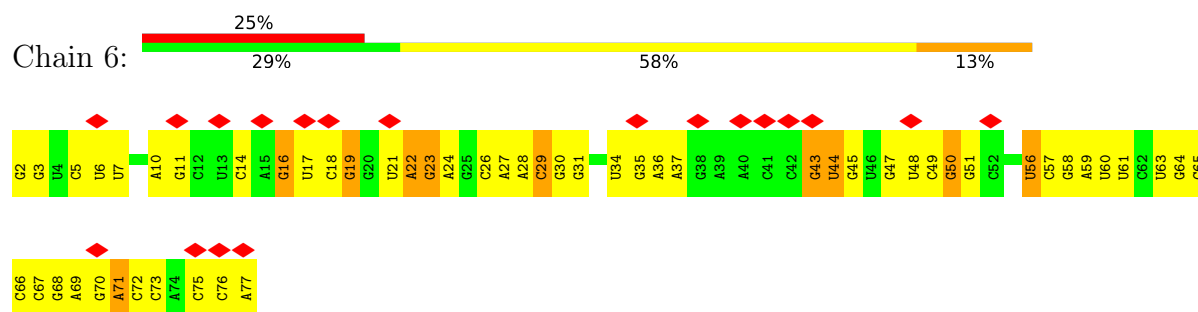
• Molecule 53: 16S ribosomal RNA

Chain 5: 26% 57% 15% .

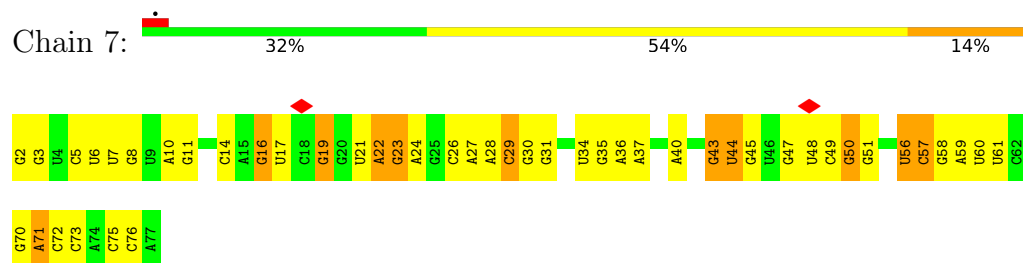


A1474	A1408	U1339	A1204	A1140	A1071	G1008	A941	A870	C805	A731	G665	G599	A537
A1477	A1409	G1340	C1205	U1141	G1072	G1009	G942	U871	A806	A732	U666	G600	G538
A1478	A1410	G1343	G1206	G1142	U1073	A1010	C943	C872	C807	A733	U667	U601	U539
G1479	G1413	G1344	G1209	C1143	U1074	A1011	A944	U873	C808	A734	G602	G602	U540
G1480	G1414	G1345	C1210	A1144	G1075	A1012	U945	C874	G809	C735	U669	U603	C541
U1481	G1415	G1346	A1211	A1145	U1076	C1013	G946	U875	U810	U736	G670	U604	G542
A1482	U1416	G1347	A1212	A1146	U1077	A1014	U947	C876	A811	U737	G671	A605	C543
C1483	U1417	G1348	C1213	U1147	U1081	U1015	U948	C877	A812	A738	A606	A606	A544
C1484	G1418	U1281	A1214	U1148	U1082	A1016	G949	C878	A813	A672	A607	A607	A545
C1485	U1282	G1283	C1215	A1149	U1083	C1017	C950	G879	C814	U674	G608	G608	A546
C1486	U1283	G1284	U1215	G1150	A1084	U1018	U951	G880	G815	U675	G609	C547	C547
C1487	G1216	G1216	G1216	A1151	A1085	G1019	U952	G881	A816	U745	C610	C610	G548
C1352	G1217	G1217	G1217	G1152	U1086	G	U953	U882	U817	A746	A611	A611	U549
C1353	G1218	G1218	G1218	G1153	U1087	A	A954	A883	A818	C747	U550	U550	U550
G1354	G1219	G1219	A1220	G1154	C1087	G	U955	G884	G819	A673	A608	A608	A551
U1355	G1220	G1220	A1221	A1155	C1088	G	U956	U885	A820	U674	G609	G609	A546
U1356	G1221	G1221	A1222	A1156	C1089	U	G	A886	A821	U675	G610	G610	C547
C1357	G1222	G1222	A1223	G1156	U1090	U	G	C887	A822	A750	C611	C611	C547
U1358	G1223	G1223	C1224	G1157	G1091	A	G611	A888	G823	G752	U617	U617	C554
C1359	C1291	C1291	A1225	A1158	C1092	A	U963	U824	A825	C753	U618	U618	G555
G1360	A1292	A1292	A1226	A1159	A1093	A	U964	A826	G826	U754	A619	A619	G556
A1493	U1293	U1293	A1227	G1160	C1094	C1028	U965	C891	A827	G755	A620	A620	A557
C1495	U1294	U1294	C1228	G1161	C1095	G1029	A966	C892	G827	U756	C621	C621	U558
G1496	U1295	U1295	A1229	G1162	G1099	G1030	C967	C893	A828	A756	A622	A622	U559
U1497	G1296	G1296	G1230	G1163	G1099	U1033	G968	A894	G829	U760	G623	G623	U560
C1436	U1297	U1297	G1231	G1164	G1099	U1033	A969	A895	U830	U761	U624	U624	A561
A1437	U1298	U1298	G1232	G1165	G1099	U1033	A970	G896	C831	U762	U625	U625	U562
U1438	C1299	C1299	G1233	G1166	A1102	A1037	A971	A897	G832	A763	A628	A628	U563
U1439	U1304	U1304	C1234	G1167	C1103	G1038	A972	U905	G833	G764	U629	U629	G564
G1502	G1305	G1305	C1235	A1168	C1104	U1039	A973	U906	A834	A765	G630	G630	G565
U1503	A1306	A1306	G1237	C1170	U1106	U1040	A974	A908	G835	G766	C631	C631	G566
G1504	G1307	G1307	G1238	A1171	U1107	G1041	C975	A909	C836	U767	A632	A632	C567
G1505	A1307	A1307	G1239	A1172	U1108	G1042	C976	C910	C837	U768	G633	G633	G568
A1506	C1308	C1308	G1240	C1172	U1109	U1043	C977	G911	A838	G773	U634	U634	U569
U1507	G1309	G1309	U1242	A1173	C1110	G1044	A978	G912	C840	A774	A637	A637	A570
C1508	U1312	U1312	A1243	C1174	G1111	U1045	A979	G913	C841	G775	A638	A638	A571
C	A1313	A1313	A1244	U1175	U1112	A1046	C979	A914	C842	C776	A639	A639	G573
C	A1314	A1314	A1245	C1176	U1113	U1047	C980	A915	C843	A777	C640	C640	C574
U	A1315	A1315	A1246	A1177	A1114	G1048	U981	U916	U844	A778	U643	U643	A575
U	C1316	C1316	G1247	A1178	G1115	G1049	A982	G917	G847	G707	U644	U644	A576
C	A1317	A1317	U1248	U1180	U1116	U1050	G983	A918	U848	A708	A645	A645	G577
C	U1318	U1318	A1250	C1181	U1117	U1051	A984	C919	G849	A709	A646	A646	C578
U	U1319	U1319	G1251	C1182	U1118	U1052	C985	G920	A849	G710	A647	A647	G579
U	A1320	A1320	C1252	C1184	C1119	U1053	U986	G921	G850	A711	C648	C648	C580
C	G1321	G1321	A1253	U1187	G1120	G1054	U987	G922	U851	A712	U649	U649	A581
U	U1322	U1322	A1254	A1188	U1121	G1055	G988	G923	A852	A713	A650	A650	G582
U	A1325	A1325	A1255	U1189	G1122	C1057	A989	G924	A853	C714	G653	G653	C584
G1384	U1326	U1326	U1258	U1190	U1123	A1058	U996	G927	G854	A715	U654	U654	G585
C1395	G1327	G1327	G1259	C1192	G1124	G1059	U997	G928	G855	G716	G655	G655	G586
U1396	C1328	C1328	U1260	U1193	A1127	C1060	G998	C929	A856	A717	U656	U656	A587
G1397	G1329	G1329	A1261	A1194	G1128	U1061	G999	A930	G857	C718	G657	G657	G590
U1398	A1262	A1262	G1196	G1195	C1129	C1062	A1000	A931	A863	G721	G658	G658	A591
U1399	G1197	G1197	U1266	G1197	A1133	U1063	A1001	A932	A864	G722	U659	U659	A592
A1400	U1267	U1267	A1401	U1199	C1134	G1065	A1002	A933	U865	C723	A660	A660	A593
U1402	G1268	G1268	U1199	U1199	U1135	U1066	G1003	U935	U866	G724	G661	G661	A594
A1403	C1332	C1332	U1269	G1200	G1136	C1067	U1004	G936	A867	A725	G662	G662	G595
G1404	U1270	U1270	C1270	C1201	C1137	U1068	U1005	G937	A868	A726	G663	G663	A596
U1470	C1471	C1471	A1202	A1203	A1139	G1070	U1007	G940	U869	A804	A664	A664	U598

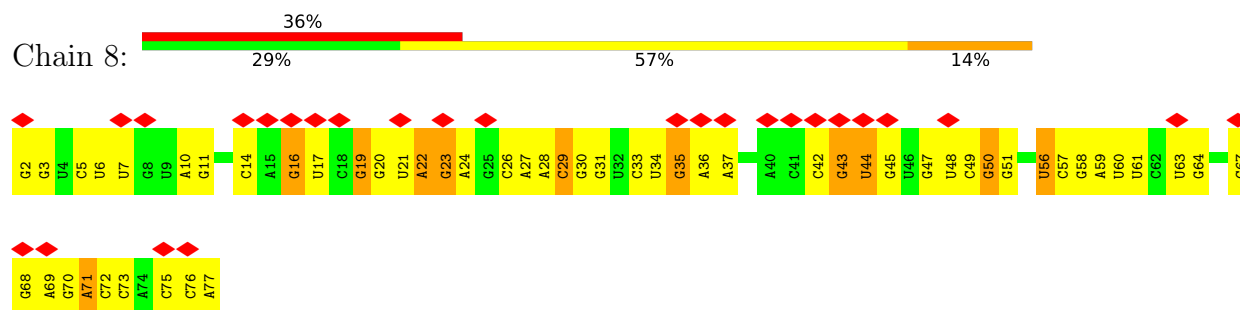
• Molecule 54: tRNA-Phe



• Molecule 54: tRNA-Phe



• Molecule 54: tRNA-Phe



4 Experimental information

Property	Value	Source
EM reconstruction method	SUBTOMOGRAM AVERAGING	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of subtomograms used	4634	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	1.676	Depositor
Minimum map value	-0.632	Depositor
Average map value	0.025	Depositor
Map value standard deviation	0.127	Depositor
Recommended contour level	0.47	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 [i](#)

5.1 Standard geometry [i](#)

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	0	0.18	0/383	0.43	0/504
2	1	0.14	0/484	0.47	0/637
3	2	0.22	0/306	0.67	0/401
4	9	0.19	0/3071	0.48	0/4147
5	A	0.18	0/1954	0.51	0/2642
6	B	0.17	0/1721	0.51	0/2323
7	C	0.17	0/1691	0.48	0/2267
8	D	0.15	0/1188	0.47	2/1593 (0.1%)
9	E	0.18	0/1384	0.49	0/1867
10	F	0.17	0/1266	0.52	0/1700
11	G	0.17	0/1126	0.52	1/1517 (0.1%)
12	H	0.19	0/1044	0.52	0/1395
13	I	0.23	0/820	0.72	2/1103 (0.2%)
14	J	0.16	0/844	0.45	0/1136
15	K	0.29	0/1094	0.61	0/1468
16	L	0.15	0/962	0.48	0/1289
17	M	0.25	0/483	0.53	0/643
18	N	0.17	0/679	0.47	0/907
19	O	0.16	0/659	0.48	0/885
20	P	0.18	0/684	0.48	0/913
21	Q	0.21	0/545	0.62	1/730 (0.1%)
22	R	0.18	0/698	0.57	0/936
23	S	0.20	0/631	0.51	0/838
24	T	0.20	0/475	0.56	0/621
25	a	0.17	0/2267	0.46	0/3044
26	b	0.15	0/1795	0.44	0/2412
27	c	0.14	0/1671	0.43	0/2246
28	d	0.17	0/1409	0.47	0/1894
29	e	0.24	0/1420	0.54	1/1912 (0.1%)
30	f	0.18	0/1183	0.50	1/1587 (0.1%)
31	g	0.50	0/969	0.87	1/1295 (0.1%)
32	h	0.14	0/968	0.46	0/1298
33	i	0.16	0/1186	0.46	0/1592
34	j	0.17	0/953	0.49	0/1275

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
35	k	0.17	0/1170	0.48	0/1559
36	l	0.18	0/1104	0.52	0/1481
37	m	0.16	0/973	0.50	0/1309
38	n	0.18	0/897	0.54	0/1198
39	o	0.16	0/948	0.46	0/1262
40	p	0.15	0/961	0.47	0/1278
41	q	0.19	0/828	0.64	2/1111 (0.2%)
42	r	0.20	0/1077	0.57	0/1441
43	s	0.19	0/732	0.56	1/988 (0.1%)
44	t	0.15	0/879	0.44	0/1165
45	u	0.15	0/665	0.46	0/884
46	v	0.32	0/519	0.63	0/695
47	w	0.18	0/826	0.55	1/1104 (0.1%)
48	x	0.17	0/353	0.46	1/474 (0.2%)
49	y	0.35	0/457	0.76	0/601
50	z	0.14	0/412	0.44	0/547
51	3	0.10	0/69073	0.26	0/107710
52	4	0.10	0/2505	0.26	0/3902
53	5	0.10	0/35768	0.24	0/55764
54	6	0.11	0/1808	0.31	0/2817
54	7	0.11	0/1808	0.31	0/2817
54	8	0.11	0/1808	0.31	0/2817
All	All	0.14	0/163584	0.35	14/243941 (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
11	G	0	1
12	H	0	1
22	R	0	1
All	All	0	3

There are no bond length outliers.

All (14) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
13	I	32	VAL	CA-C-N	-6.45	109.65	121.52
13	I	32	VAL	C-N-CA	-6.45	109.65	121.52
30	f	3	VAL	N-CA-C	-6.24	106.65	112.83

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
29	e	91	ARG	CG-CD-NE	5.86	124.89	112.00
43	s	45	GLU	CA-CB-CG	5.76	125.62	114.10
21	Q	55	ASP	N-CA-C	-5.66	107.62	114.75
48	x	8	PRO	CA-N-CD	-5.62	104.13	112.00
47	w	26	LEU	CA-CB-CG	5.50	135.54	116.30
41	q	96	ARG	CA-C-N	5.46	131.97	121.54
41	q	96	ARG	C-N-CA	5.46	131.97	121.54
11	G	109	ASN	N-CA-C	-5.34	106.25	114.16
31	g	23	GLY	CA-C-O	-5.32	116.80	121.58
8	D	110	GLU	CA-C-N	5.11	124.42	120.33
8	D	110	GLU	C-N-CA	5.11	124.42	120.33

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
11	G	108	LEU	Peptide
12	H	26	ASP	Peptide
22	R	25	GLN	Peptide

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	0	380	0	429	21	0
2	1	477	0	530	24	0
3	2	304	0	350	13	0
4	9	3021	0	3050	131	0
5	A	1921	0	1973	74	0
6	B	1698	0	1768	69	0
7	C	1660	0	1719	72	0
8	D	1173	0	1267	48	0
9	E	1362	0	1377	54	0
10	F	1246	0	1308	56	0
11	G	1110	0	1226	50	0
12	H	1028	0	1094	47	0
13	I	809	0	894	57	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
14	J	829	0	855	32	0
15	K	1076	0	1170	47	0
16	L	951	0	1014	33	0
17	M	474	0	509	34	0
18	N	673	0	730	25	0
19	O	646	0	677	26	0
20	P	675	0	728	29	0
21	Q	535	0	562	26	0
22	R	682	0	691	32	0
23	S	629	0	681	27	0
24	T	471	0	522	25	0
25	a	2225	0	2301	99	0
26	b	1762	0	1808	70	0
27	c	1644	0	1731	67	0
28	d	1388	0	1469	43	0
29	e	1396	0	1481	51	0
30	f	1160	0	1172	47	0
31	g	960	0	1014	7	0
32	h	959	0	1039	7	0
33	i	1164	0	1192	47	0
34	j	944	0	1019	44	0
35	k	1153	0	1256	46	0
36	l	1079	0	1134	57	0
37	m	958	0	1011	40	0
38	n	889	0	952	33	0
39	o	938	0	1008	46	0
40	p	947	0	1028	59	0
41	q	811	0	858	50	0
42	r	1068	0	1150	32	0
43	s	720	0	803	30	0
44	t	872	0	972	31	0
45	u	657	0	695	28	0
46	v	513	0	560	41	0
47	w	818	0	870	30	0
48	x	344	0	333	3	0
49	y	452	0	472	29	0
50	z	408	0	440	15	0
51	3	61664	0	30954	2049	0
52	4	2239	0	1137	57	0
53	5	31943	0	16058	1061	0
54	6	1618	0	821	38	0
54	7	1618	0	821	38	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
54	8	1618	0	821	40	0
All	All	150759	0	103504	4828	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 20.

All (4828) 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)
51:3:1310:U:C2	51:3:1314:A:N6	2.06	1.24
45:u:79:GLY:HA3	45:u:98:VAL:O	1.51	1.10
51:3:2483:C:N4	51:3:2537:G:H22	1.51	1.08
53:5:61:A:H62	53:5:95:C:N4	1.54	1.04
29:e:16:VAL:HA	29:e:28:LYS:O	1.59	1.03
53:5:136:U:H3	53:5:157:A:N6	1.57	1.02
2:1:10:ARG:HH12	35:k:64:LYS:HA	1.24	1.02
33:i:3:LYS:N	41:q:12:TYR:HH	1.57	1.02
53:5:13:U:H3	53:5:23:G:H1	1.09	1.01
53:5:1406:U:H3	53:5:1444:G:H1	1.05	1.00
51:3:133:G:H1	51:3:150:U:H3	1.08	1.00
51:3:1932:C:H42	51:3:1936:G:H22	1.08	1.00
51:3:2483:C:H42	51:3:2537:G:N2	1.57	1.00
51:3:2360:A:H62	51:3:2373:G:H21	1.06	0.99
53:5:253:G:H1	53:5:265:U:H3	1.00	0.98
51:3:729:U:H3	51:3:803:G:H1	1.08	0.98
53:5:61:A:N6	53:5:95:C:H42	1.60	0.97
51:3:2149:U:H3	51:3:2156:G:H1	0.97	0.97
51:3:192:U:H3	51:3:212:G:H1	1.13	0.96
51:3:61:U:H3	51:3:70:G:H1	1.13	0.96
53:5:1388:A:H2	53:5:1462:G:H1	1.06	0.96
53:5:599:G:H1	53:5:634:U:H3	1.04	0.96
53:5:460:A:N6	53:5:467:G:H1	1.63	0.95
51:3:418:G:H1	51:3:430:U:H3	1.12	0.95
51:3:2483:C:H42	51:3:2537:G:H22	1.07	0.94
53:5:460:A:H61	53:5:467:G:H1	1.08	0.94
53:5:63:U:H3	53:5:90:G:H1	1.12	0.93
53:5:1065:G:H1	53:5:1074:U:H3	0.98	0.93
51:3:1070:U:H3	51:3:1155:G:H1	1.16	0.93
53:5:1077:U:H3	53:5:1090:G:H1	1.09	0.93
51:3:2534:G:H1	51:3:2545:U:H3	1.02	0.93
51:3:1785:U:H3	51:3:1792:A:H62	1.16	0.93

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1112:U:H3	53:5:1128:G:H1	0.93	0.93
46:v:32:ASN:HB2	51:3:433:A:H5''	1.50	0.92
53:5:1237:G:H1	53:5:1248:U:H3	1.10	0.91
51:3:1200:U:H3	51:3:1215:G:H1	1.03	0.91
51:3:1803:U:H3	51:3:1830:G:H1	1.13	0.91
51:3:675:U:H3	51:3:685:G:H1	1.11	0.91
51:3:569:U:H3	51:3:592:G:H1	1.12	0.90
51:3:1509:U:H3	51:3:1530:G:H1	0.95	0.90
53:5:612:G:H1	53:5:624:U:H3	1.10	0.90
51:3:633:G:H1	51:3:692:U:H3	0.91	0.89
8:D:142:GLY:O	8:D:148:ARG:HA	1.73	0.89
53:5:880:G:H1	53:5:905:U:H3	0.93	0.88
51:3:1310:U:N3	51:3:1314:A:C6	2.42	0.88
53:5:762:G:H1	53:5:809:G:HO2'	1.18	0.87
53:5:1106:U:H3	53:5:1160:G:H1	1.22	0.87
43:s:60:ARG:O	43:s:77:LEU:HA	1.73	0.87
43:s:2:ASP:N	51:3:146:G:HO2'	1.73	0.87
51:3:1385:U:H3	51:3:1402:G:H1	1.21	0.87
51:3:742:G:H1	51:3:759:U:H3	1.19	0.87
51:3:1310:U:C2	51:3:1314:A:C6	2.62	0.87
51:3:1772:G:H1	51:3:1994:U:H3	1.14	0.87
51:3:2092:U:H3	51:3:2242:G:H1	1.20	0.87
53:5:137:A:C8	53:5:156:U:N3	2.42	0.86
51:3:1474:C:O2	51:3:1491:G:N2	2.07	0.86
53:5:1396:U:H3	53:5:1454:G:H1	1.19	0.86
53:5:134:G:H1	53:5:160:A:H61	1.19	0.86
51:3:1932:C:H42	51:3:1936:G:N2	1.74	0.85
51:3:1310:U:N3	51:3:1314:A:N6	2.24	0.85
51:3:1494:U:H3	51:3:1550:G:H1	1.17	0.85
51:3:2299:U:H3	51:3:2349:G:H1	1.25	0.85
51:3:80:U:H3	51:3:109:G:H1	0.86	0.85
4:9:17:THR:HG22	4:9:79:HIS:HE1	1.42	0.84
51:3:2360:A:H62	51:3:2373:G:N2	1.75	0.84
5:A:181:PRO:HG2	5:A:206:THR:HG21	1.58	0.84
51:3:629:G:H1	51:3:696:U:H3	0.85	0.84
20:P:25:GLN:HE22	20:P:27:GLU:HG2	1.42	0.84
51:3:325:G:H1	51:3:383:U:H3	1.25	0.84
53:5:290:G:H1	53:5:299:U:H3	1.22	0.84
53:5:365:U:H3	53:5:388:G:H1	0.87	0.84
12:H:116:LYS:HG2	12:H:123:ALA:HB2	1.59	0.83
51:3:986:G:H1	51:3:1003:U:H3	0.86	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:w:26:LEU:HG	47:w:30:ARG:HH12	1.42	0.83
30:f:16:PHE:O	30:f:54:GLN:NE2	2.11	0.83
51:3:144:C:H2'	51:3:145:A:H8	1.42	0.83
51:3:2465:U:H3	51:3:2502:G:H1	1.24	0.83
51:3:2106:G:H22	51:3:2198:G:H1	1.27	0.83
51:3:1932:C:N4	51:3:1936:G:H22	1.77	0.83
53:5:1331:A:H61	53:5:1340:G:H1	1.26	0.83
51:3:329:G:H1	51:3:377:U:H3	0.85	0.82
53:5:1325:U:H3	53:5:1346:G:H1	1.24	0.82
13:I:14:ILE:HG23	13:I:80:MET:HB2	1.60	0.82
51:3:2360:A:N6	51:3:2373:G:H21	1.78	0.81
51:3:1940:G:H1	51:3:1974:U:H3	1.29	0.81
54:6:19:G:H1	54:6:56:U:HO2'	1.28	0.81
4:9:21:ILE:HD12	4:9:61:ILE:HD12	1.60	0.81
51:3:137:U:H3	51:3:146:G:H1	1.25	0.81
51:3:869:U:H2'	51:3:870:A:H8	1.45	0.81
6:B:57:GLU:O	6:B:67:VAL:HA	1.81	0.81
30:f:98:ILE:HD11	30:f:113:PHE:HE2	1.46	0.81
10:F:83:ASN:ND2	54:8:33:C:O2'	2.14	0.81
20:P:5:GLN:HB2	53:5:113:C:H5'	1.63	0.80
27:c:192:MET:SD	35:k:5:GLN:NE2	2.54	0.80
51:3:1245:G:O6	51:3:1265:G:N2	2.13	0.80
15:K:56:LYS:HG3	15:K:58:PRO:HD2	1.62	0.80
51:3:1617:U:H5''	51:3:1618:U:H5'	1.63	0.80
51:3:1777:G:H1	51:3:1989:U:H3	1.27	0.80
51:3:514:A:N7	51:3:516:A:N6	2.29	0.80
48:x:19:CYS:HB2	48:x:42:CYS:HB2	1.62	0.80
51:3:2072:C:HO2'	51:3:2457:U:H3	1.30	0.80
20:P:29:ARG:HE	20:P:38:SER:HB3	1.45	0.80
36:l:111:GLU:HA	36:l:114:MET:HE2	1.64	0.80
53:5:372:G:H1	53:5:383:U:H3	1.30	0.80
51:3:14:U:H3	51:3:2634:C:HO2'	0.81	0.79
53:5:600:G:H1	53:5:633:U:H3	1.27	0.79
34:j:9:ASN:ND2	34:j:81:ASP:OD2	2.16	0.79
53:5:136:U:H3	53:5:157:A:H62	0.84	0.79
51:3:1027:U:H3	51:3:1198:G:H1	0.82	0.79
38:n:99:HIS:NE2	52:4:35:C:O2	2.16	0.79
51:3:1871:U:H3	51:3:1885:G:H1	1.29	0.78
34:j:1:MET:HE1	34:j:32:TYR:HD2	1.48	0.78
53:5:660:A:H61	53:5:739:G:H1	1.31	0.78
51:3:2480:G:OP1	54:6:18:C:N4	2.16	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:A:32:MET:HE3	5:A:56:PHE:HE2	1.48	0.78
35:k:114:LEU:HB2	35:k:128:VAL:HG11	1.66	0.78
53:5:137:A:N7	53:5:156:U:C2	2.52	0.78
51:3:1306:G:H2'	51:3:1307:G:H8	1.49	0.78
53:5:1388:A:N1	53:5:1462:G:O6	2.17	0.78
29:e:141:LYS:HE2	51:3:2754:U:H5''	1.63	0.77
13:I:70:GLN:HE21	17:M:59:ALA:HA	1.48	0.77
5:A:41:MET:HA	5:A:44:PHE:HB2	1.67	0.77
5:A:214:ILE:HG22	5:A:216:PRO:HD3	1.67	0.77
51:3:1514:U:H3	51:3:1525:G:H1	1.32	0.77
22:R:19:VAL:HG21	22:R:44:PHE:HE1	1.49	0.77
51:3:431:U:O2'	51:3:432:G:N7	2.17	0.77
51:3:17:G:H1	51:3:560:U:H3	1.33	0.77
53:5:317:A:N1	53:5:328:G:O6	2.18	0.77
51:3:901:C:N4	51:3:946:A:N7	2.33	0.77
22:R:25:GLN:HG2	22:R:26:GLU:H	1.50	0.77
29:e:89:LYS:HG3	29:e:135:THR:HG22	1.66	0.77
43:s:15:LYS:HD2	51:3:1367:G:H5''	1.67	0.76
4:9:211:PHE:HD2	4:9:295:LYS:HB2	1.48	0.76
51:3:1316:U:H5	51:3:1354:U:H3	1.33	0.76
53:5:644:U:H2'	53:5:645:A:H8	1.50	0.76
43:s:61:LYS:NZ	51:3:1635:G:OP1	2.17	0.76
25:a:71:PHE:HA	25:a:73:ARG:HH11	1.50	0.76
51:3:2879:U:H2'	51:3:2880:A:H8	1.50	0.76
53:5:1413:G:H1	53:5:1438:U:H3	1.32	0.76
51:3:562:C:N4	51:3:2787:U:OP2	2.18	0.76
54:8:19:G:H1	54:8:56:U:HO2'	1.32	0.76
15:K:99:ARG:HH12	53:5:25:U:H4'	1.50	0.75
26:b:133:LEU:HD22	26:b:141:HIS:HB2	1.68	0.75
53:5:169:G:H21	53:5:220:U:H5'	1.51	0.75
39:o:49:THR:HG22	39:o:68:LYS:HE3	1.68	0.75
35:k:13:ARG:NH1	51:3:1275:C:OP1	2.19	0.75
51:3:915:A:N6	51:3:936:G:O2'	2.19	0.75
2:1:28:HIS:ND1	51:3:2401:U:OP2	2.19	0.75
51:3:2667:G:H2'	51:3:2668:A:H3'	1.69	0.75
53:5:134:G:H1	53:5:160:A:N6	1.83	0.75
53:5:483:U:H2'	53:5:484:A:H8	1.51	0.75
53:5:661:G:H1	53:5:738:A:H61	1.34	0.75
18:N:58:SER:HB2	53:5:579:G:H5'	1.68	0.75
25:a:56:ARG:NH2	51:3:1832:G:OP2	2.17	0.75
1:0:32:LYS:NZ	51:3:182:C:O3'	2.19	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:201:G:H1	53:5:214:U:H3	1.33	0.75
53:5:580:C:O2	53:5:756:A:N6	2.20	0.74
53:5:503:G:H5'	53:5:532:U:H2'	1.67	0.74
7:C:149:ILE:HD12	7:C:174:PHE:HD2	1.53	0.74
5:A:102:ARG:HD2	5:A:103:VAL:HG23	1.70	0.74
51:3:433:A:O2'	51:3:2238:G:N2	2.21	0.74
51:3:1071:G:H1	51:3:1154:U:H3	0.79	0.74
11:G:21:LYS:NZ	11:G:34:THR:O	2.21	0.74
53:5:833:G:H1	53:5:844:U:H3	0.78	0.74
23:S:44:LEU:HD22	23:S:76:LEU:HD11	1.68	0.74
4:9:261:MET:HG2	4:9:266:LEU:HD21	1.70	0.73
51:3:243:U:O2	51:3:262:G:O6	2.06	0.73
54:7:19:G:H1	54:7:56:U:HO2'	1.34	0.73
6:B:34:LEU:HD21	17:M:47:LEU:HD21	1.71	0.73
36:l:50:ALA:HA	36:l:124:LYS:HE3	1.70	0.73
53:5:305:A:H2'	53:5:306:G:H8	1.51	0.73
51:3:1661:A:H2'	51:3:1662:G:H8	1.53	0.73
4:9:98:GLN:NE2	4:9:99:MET:SD	2.62	0.73
45:u:87:GLY:H	52:4:10:C:H5'	1.54	0.73
53:5:136:U:O4	53:5:157:A:N7	2.22	0.73
53:5:1379:C:O2	53:5:1494:A:O2'	2.07	0.73
53:5:354:U:H2'	53:5:355:A:H8	1.54	0.73
36:l:62:GLY:HA2	36:l:108:ASN:HB3	1.71	0.73
52:4:3:U:OP1	52:4:59:A:O2'	2.07	0.73
15:K:64:LYS:NZ	53:5:519:G:OP2	2.21	0.73
51:3:2421:U:H2'	51:3:2422:G:H8	1.54	0.73
53:5:716:C:OP2	53:5:717:C:N4	2.22	0.73
54:7:2:G:H2'	54:7:3:G:C8	2.24	0.73
54:8:2:G:H2'	54:8:3:G:C8	2.24	0.73
23:S:31:ASN:HB3	23:S:47:VAL:HG22	1.71	0.72
45:u:82:LYS:HZ1	45:u:98:VAL:HG22	1.52	0.72
51:3:1508:G:C6	51:3:1532:A:N1	2.57	0.72
51:3:1999:G:N2	51:3:2003:C:O2	2.23	0.72
53:5:353:G:H5''	53:5:363:U:H5''	1.71	0.72
53:5:576:A:O2'	53:5:725:A:N3	2.21	0.72
12:H:23:PRO:HB3	12:H:62:ASN:HB3	1.70	0.72
35:k:20:LEU:HD23	35:k:32:SER:HB3	1.70	0.72
43:s:26:LYS:HA	43:s:83:ILE:O	1.90	0.72
52:4:6:U:H2'	52:4:7:G:H8	1.54	0.72
54:6:2:G:H2'	54:6:3:G:C8	2.24	0.72
5:A:133:LEU:O	5:A:137:GLN:NE2	2.22	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:F:143:MET:O	10:F:147:ASN:ND2	2.22	0.72
28:d:132:ILE:O	28:d:151:GLY:HA3	1.90	0.72
30:f:46:ASP:HA	30:f:49:LEU:HB3	1.71	0.72
34:j:29:ARG:O	34:j:31:ARG:NH1	2.22	0.72
46:v:47:ARG:NH2	51:3:2209:U:OP1	2.22	0.72
54:7:29:C:H2'	54:7:30:G:H8	1.54	0.72
53:5:144:U:O2	53:5:149:G:O6	2.07	0.72
9:E:112:ARG:HH11	9:E:123:ASN:HB2	1.54	0.72
10:F:92:GLN:HA	10:F:95:LYS:HD3	1.71	0.72
11:G:99:ARG:HE	11:G:103:LYS:HB3	1.53	0.72
28:d:42:ASP:O	28:d:47:SER:OG	2.07	0.72
46:v:17:ASN:HB2	46:v:25:THR:HB	1.71	0.72
51:3:1529:U:H2'	51:3:1530:G:H8	1.54	0.72
53:5:407:A:H62	53:5:409:G:H21	1.36	0.72
6:B:133:LEU:HB3	6:B:137:MET:HE1	1.72	0.72
10:F:101:ARG:NH1	53:5:934:G:OP1	2.23	0.72
21:Q:80:GLN:HG3	21:Q:84:ARG:HH11	1.54	0.72
25:a:31:ASN:ND2	25:a:88:TYR:OH	2.22	0.72
40:p:94:LEU:HD11	41:q:4:ILE:HG12	1.71	0.72
51:3:1414:C:H2'	51:3:1415:A:H8	1.55	0.72
51:3:1919:A:H62	51:3:1924:U:H3	1.38	0.72
9:E:23:GLU:OE2	9:E:27:GLN:NE2	2.22	0.72
27:c:70:HIS:HA	51:3:2066:A:H4'	1.72	0.72
47:w:26:LEU:HA	47:w:29:TYR:HD2	1.54	0.72
51:3:499:G:H2'	51:3:500:U:H3'	1.71	0.72
51:3:1063:A:H61	51:3:1160:G:H2'	1.55	0.72
51:3:1994:U:H2'	51:3:1995:G:H8	1.53	0.72
51:3:2806:A:H2'	51:3:2807:G:H4'	1.70	0.72
53:5:631:C:H2'	53:5:632:A:H8	1.55	0.72
11:G:47:ILE:HD13	11:G:122:VAL:HB	1.70	0.72
26:b:198:ALA:HA	51:3:2688:C:H5'	1.72	0.72
38:n:10:LEU:HA	38:n:13:LYS:HG2	1.71	0.72
4:9:243:ILE:HD12	4:9:293:LEU:HD11	1.72	0.72
51:3:2308:U:H2'	51:3:2309:A:H8	1.55	0.72
8:D:137:TYR:OH	8:D:203:LEU:O	2.08	0.71
12:H:12:ARG:NH2	12:H:111:ARG:O	2.23	0.71
51:3:2828:C:H3'	51:3:2829:G:H21	1.55	0.71
53:5:942:G:H1	53:5:1209:C:H42	1.37	0.71
21:Q:92:ARG:NH1	53:5:733:A:OP1	2.22	0.71
47:w:102:ARG:NH1	51:3:1626:C:OP1	2.23	0.71
51:3:2414:U:OP1	51:3:2419:A:N6	2.21	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:C:123:LEU:HD23	7:C:143:ARG:HH22	1.54	0.71
33:i:108:VAL:HG13	33:i:122:ILE:HD11	1.73	0.71
45:u:61:PRO:O	45:u:94:ARG:NH2	2.23	0.71
53:5:402:G:N7	53:5:493:A:O2'	2.21	0.71
53:5:534:C:H2'	53:5:535:A:H8	1.55	0.71
54:6:29:C:H2'	54:6:30:G:H8	1.54	0.71
4:9:107:SER:HB3	4:9:110:ASP:HB2	1.71	0.71
51:3:1334:U:O2	51:3:1656:A:N6	2.21	0.71
53:5:683:G:O2'	53:5:700:G:N2	2.23	0.71
9:E:144:SER:HB3	11:G:60:LEU:HD21	1.72	0.71
36:l:109:ILE:HG13	36:l:110:PRO:HD2	1.72	0.71
51:3:1807:C:N4	51:3:1824:G:N2	2.39	0.71
51:3:874:U:H2'	51:3:875:G:H8	1.54	0.71
51:3:1337:G:H21	51:3:1645:C:H5'	1.56	0.71
34:j:16:ALA:HB2	34:j:52:VAL:HG21	1.72	0.71
53:5:460:A:N6	53:5:467:G:N1	2.31	0.71
51:3:1027:U:O4	51:3:1198:G:O6	2.09	0.71
53:5:91:C:H2'	53:5:92:G:H8	1.55	0.71
9:E:145:ARG:HA	11:G:2:ILE:HG12	1.73	0.71
51:3:1956:G:H2'	51:3:1957:G:C8	2.25	0.71
51:3:2716:U:H2'	51:3:2717:G:H8	1.55	0.71
53:5:28:G:N2	53:5:292:U:O3'	2.24	0.70
53:5:550:U:H2'	53:5:551:A:H8	1.56	0.70
51:3:2789:A:H5''	51:3:2790:A:H5'	1.73	0.70
15:K:113:GLY:HA3	15:K:131:GLY:HA3	1.73	0.70
51:3:1508:G:C6	51:3:1532:A:C2	2.79	0.70
16:L:68:ASP:OD1	16:L:71:ARG:NH2	2.24	0.70
28:d:31:LEU:HA	28:d:158:THR:HA	1.73	0.70
51:3:137:U:O2	51:3:146:G:N2	2.20	0.70
51:3:2820:G:N3	51:3:2887:A:O2'	2.24	0.70
4:9:333:PHE:O	4:9:335:THR:N	2.18	0.70
51:3:13:C:H3'	51:3:14:U:H4'	1.73	0.70
53:5:137:A:N7	53:5:156:U:O2	2.25	0.70
53:5:671:G:H2'	53:5:672:A:H8	1.56	0.70
2:1:9:LYS:NZ	51:3:253:C:O2	2.25	0.70
47:w:16:VAL:HG11	47:w:69:GLN:HE22	1.57	0.70
25:a:47:ARG:NH2	51:3:725:G:O2'	2.24	0.70
35:k:67:ASN:ND2	51:3:249:G:OP1	2.25	0.70
54:8:29:C:H2'	54:8:30:G:H8	1.54	0.70
39:o:54:ARG:NH1	51:3:2692:U:OP1	2.25	0.70
4:9:14:ASN:ND2	4:9:98:GLN:OE1	2.25	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2348:U:H2'	51:3:2349:G:H8	1.56	0.70
51:3:2655:U:O2	51:3:2681:G:O6	2.10	0.70
26:b:26:ILE:HD12	26:b:182:VAL:HG21	1.74	0.70
48:x:12:VAL:HB	48:x:27:SER:HB2	1.74	0.70
53:5:788:G:H22	53:5:1472:G:H5'	1.57	0.70
28:d:24:SER:HB2	28:d:27:GLN:HG3	1.73	0.69
42:r:92:SER:O	51:3:1648:A:N6	2.25	0.69
51:3:2482:U:OP2	51:3:2483:C:N4	2.23	0.69
53:5:368:C:N4	53:5:385:A:N7	2.40	0.69
51:3:2451:C:H2'	51:3:2452:G:H8	1.57	0.69
20:P:61:VAL:HB	20:P:77:ILE:HD11	1.74	0.69
29:e:93:VAL:HG13	29:e:164:GLY:H	1.57	0.69
44:t:32:GLN:HG3	44:t:71:LEU:HD12	1.74	0.69
49:y:6:ARG:NH2	51:3:2026:A:H3'	2.08	0.69
4:9:243:ILE:HD11	4:9:279:LEU:HD11	1.75	0.69
25:a:222:ARG:NH2	51:3:1601:A:OP2	2.26	0.69
51:3:1414:C:H2'	51:3:1415:A:C8	2.27	0.69
53:5:365:U:O2	53:5:388:G:N2	2.20	0.69
23:S:10:ARG:NH1	53:5:92:G:O6	2.25	0.69
51:3:2291:U:O2	51:3:2333:G:O6	2.11	0.69
12:H:47:ILE:HA	12:H:50:MET:HE3	1.74	0.68
15:K:69:ARG:HD3	15:K:70:LEU:O	1.93	0.68
20:P:44:LYS:NZ	53:5:273:C:OP1	2.25	0.68
51:3:2115:A:O3'	51:3:2156:G:N2	2.24	0.68
51:3:2223:C:H2'	51:3:2224:A:H8	1.56	0.68
16:L:93:LYS:HG3	16:L:95:LEU:HD13	1.76	0.68
42:r:1:MET:HE2	42:r:69:LEU:HD11	1.74	0.68
51:3:610:G:H2'	51:3:611:A:C8	2.28	0.68
51:3:1171:G:O2'	51:3:2045:C:O2'	2.11	0.68
27:c:80:ARG:NH1	51:3:505:G:OP1	2.26	0.68
46:v:33:LEU:HD12	46:v:49:LEU:HG	1.73	0.68
52:4:28:C:O2'	52:4:55:A:N1	2.26	0.68
53:5:662:G:H1'	53:5:730:G:H5'	1.75	0.68
54:7:19:G:N1	54:7:56:U:O2'	2.23	0.68
27:c:175:ILE:HG22	27:c:177:ASN:H	1.57	0.68
51:3:511:U:H5''	51:3:545:C:H5'	1.76	0.68
51:3:2853:U:H4'	51:3:2854:A:H5''	1.75	0.68
51:3:2879:U:H2'	51:3:2880:A:C8	2.27	0.68
53:5:1501:G:H2'	53:5:1502:G:C8	2.27	0.68
37:m:19:ARG:NH1	37:m:65:LYS:O	2.27	0.68
51:3:1806:G:N2	51:3:1826:A:OP2	2.27	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:80:U:O2	51:3:109:G:N2	2.23	0.68
51:3:554:U:H2'	51:3:555:A:C8	2.29	0.68
51:3:1670:U:H1'	51:3:1768:G:H21	1.58	0.68
22:R:36:ARG:HA	22:R:71:LEU:HD23	1.74	0.68
35:k:78:VAL:HB	35:k:110:LEU:HD23	1.74	0.68
51:3:585:U:H2'	51:3:586:G:H8	1.57	0.68
12:H:128:GLN:NE2	12:H:129:PHE:O	2.27	0.68
41:q:4:ILE:HD13	41:q:40:MET:HB3	1.75	0.68
51:3:67:C:O2'	51:3:492:C:N3	2.22	0.68
51:3:1706:C:H4'	51:3:2561:G:H4'	1.76	0.68
51:3:408:G:OP2	51:3:459:A:N6	2.27	0.68
51:3:1335:A:N7	51:3:1656:A:N6	2.41	0.68
25:a:188:GLU:HG2	25:a:281:ASN:HA	1.75	0.67
40:p:80:ASN:ND2	51:3:1186:A:O3'	2.27	0.67
41:q:71:ILE:HG13	41:q:82:LYS:HG3	1.76	0.67
51:3:892:G:H2'	51:3:893:A:H8	1.58	0.67
51:3:2077:A:H2'	51:3:2078:A:H8	1.59	0.67
53:5:98:G:N3	53:5:349:A:O2'	2.26	0.67
12:H:130:THR:HG21	53:5:1206:G:H5''	1.75	0.67
53:5:1384:A:H2'	53:5:1385:A:C8	2.29	0.67
49:y:13:ARG:NH2	51:3:553:A:OP1	2.25	0.67
51:3:1672:C:O2	51:3:2706:U:O2'	2.12	0.67
51:3:2806:A:H62	51:3:2807:G:H21	1.42	0.67
53:5:1289:U:H2'	53:5:1290:G:C8	2.30	0.67
1:0:24:THR:HG23	1:0:27:GLY:H	1.59	0.67
4:9:319:ARG:NH1	4:9:322:GLY:O	2.28	0.67
12:H:97:LYS:NZ	53:5:1152:G:OP1	2.27	0.67
53:5:660:A:N6	53:5:739:G:H1	1.92	0.67
53:5:1037:A:H3'	53:5:1038:G:H8	1.59	0.67
51:3:1370:A:O2'	51:3:1372:U:OP1	2.13	0.67
51:3:2483:C:N4	51:3:2537:G:N2	2.24	0.67
53:5:1250:A:H3'	53:5:1251:G:H8	1.60	0.67
8:D:143:ARG:NH1	53:5:858:A:OP2	2.27	0.67
29:e:94:GLY:HA3	29:e:97:TYR:HD2	1.60	0.67
51:3:2700:C:O2	51:3:2851:U:O2'	2.11	0.67
53:5:1429:G:H2'	53:5:1430:G:H8	1.57	0.67
5:A:88:LYS:O	5:A:93:LYS:NZ	2.28	0.67
51:3:683:G:H2'	51:3:684:A:C8	2.30	0.67
51:3:1162:A:O2'	51:3:2526:A:OP1	2.12	0.67
51:3:2321:C:H2'	51:3:2322:G:H8	1.58	0.67
51:3:2609:C:H2'	51:3:2611:G:H8	1.58	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:407:A:H61	53:5:427:A:H62	1.42	0.67
4:9:91:ASN:O	4:9:94:THR:HB	1.94	0.67
9:E:7:LEU:HD11	9:E:60:TRP:HD1	1.60	0.67
51:3:1937:G:HO2'	51:3:1975:G:H1	1.41	0.67
51:3:2115:A:H5'	51:3:2157:A:H1'	1.76	0.67
51:3:990:G:N2	51:3:999:U:O2	2.26	0.67
53:5:290:G:OP1	53:5:608:G:O2'	2.13	0.67
53:5:661:G:H1	53:5:738:A:N6	1.92	0.67
53:5:937:G:H1	53:5:1315:U:H3	1.43	0.67
10:F:18:ASN:OD1	10:F:19:ASN:N	2.27	0.66
21:Q:73:ARG:NH1	21:Q:78:ASN:O	2.27	0.66
25:a:138:LEU:HD22	25:a:194:LYS:HA	1.77	0.66
51:3:602:U:O2'	51:3:1019:A:N1	2.25	0.66
51:3:1925:A:N3	51:3:1926:A:N6	2.43	0.66
4:9:17:THR:HG22	4:9:79:HIS:CE1	2.29	0.66
51:3:622:U:H2'	51:3:623:A:H8	1.60	0.66
51:3:710:A:N7	51:3:838:U:O4	2.28	0.66
9:E:66:ASN:HB2	53:5:735:C:H5''	1.77	0.66
22:R:41:PHE:CG	22:R:42:PRO:HD2	2.30	0.66
46:v:35:PRO:HB2	46:v:47:ARG:HD2	1.76	0.66
51:3:512:G:N2	51:3:515:A:O4'	2.29	0.66
51:3:2353:G:H4'	51:3:2354:A:H3'	1.77	0.66
4:9:186:GLU:O	4:9:190:HIS:ND1	2.24	0.66
15:K:44:ARG:NH2	53:5:359:A:OP2	2.27	0.66
30:f:53:LYS:HG2	30:f:57:HIS:CE1	2.31	0.66
5:A:73:LYS:O	5:A:77:GLN:NE2	2.28	0.66
13:I:51:LYS:HZ3	13:I:53:GLU:HB3	1.59	0.66
42:r:2:ILE:HG13	42:r:3:ALA:H	1.60	0.66
51:3:906:G:H1	51:3:945:U:H3	1.43	0.66
51:3:1418:U:O4	51:3:1423:A:N7	2.28	0.66
51:3:2123:A:OP1	51:3:2124:A:N6	2.28	0.66
14:J:82:THR:HG21	24:T:26:ARG:HG3	1.78	0.66
15:K:37:ASN:O	15:K:37:ASN:ND2	2.29	0.66
16:L:94:ASN:ND2	16:L:109:ARG:O	2.28	0.66
51:3:2274:A:N6	51:3:2281:A:OP2	2.28	0.66
53:5:65:G:N1	53:5:69:G:O6	2.20	0.66
53:5:922:G:O2'	53:5:1478:A:N7	2.27	0.66
4:9:93:ILE:HA	4:9:96:ALA:HB3	1.78	0.66
6:B:6:ASN:HD21	6:B:8:ASN:HB3	1.61	0.66
21:Q:80:GLN:HG3	21:Q:84:ARG:NH1	2.10	0.66
51:3:2104:A:H2'	51:3:2105:G:C8	2.31	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2298:G:N2	51:3:2351:U:O2	2.29	0.66
13:I:46:LEU:HD13	13:I:79:LEU:HD12	1.77	0.66
37:m:94:PRO:O	51:3:2843:G:N2	2.29	0.66
51:3:2534:G:N2	51:3:2545:U:O2	2.24	0.66
51:3:2764:U:H1'	51:3:2765:A:H5''	1.77	0.66
53:5:69:G:N2	53:5:137:A:C2	2.64	0.66
53:5:885:U:H2'	53:5:886:A:H8	1.60	0.66
53:5:1153:G:N2	53:5:1156:G:OP2	2.28	0.66
54:6:2:G:H2'	54:6:3:G:H8	1.61	0.66
5:A:61:GLN:NE2	5:A:216:PRO:O	2.29	0.66
25:a:246:ARG:NH2	51:3:1794:A:OP1	2.29	0.66
51:3:2483:C:N3	51:3:2537:G:N1	2.36	0.66
51:3:2499:U:O4	51:3:2526:A:N6	2.29	0.66
8:D:154:ALA:HB3	8:D:177:ASP:HB2	1.78	0.66
51:3:755:C:H2'	51:3:756:A:H8	1.61	0.66
45:u:50:ILE:HA	45:u:74:PHE:HA	1.78	0.65
51:3:1011:A:O2'	51:3:1191:A:N6	2.29	0.65
51:3:2696:G:OP1	51:3:2721:C:N4	2.29	0.65
4:9:223:GLY:O	53:5:353:G:O2'	2.13	0.65
7:C:146:ALA:HA	7:C:149:ILE:HG12	1.78	0.65
35:k:39:GLN:OE1	51:3:866:G:O2'	2.14	0.65
53:5:1487:U:H3	53:5:1498:G:H1	1.44	0.65
51:3:900:G:N3	51:3:951:C:N4	2.44	0.65
51:3:1815:U:O2'	51:3:1816:A:O4'	2.14	0.65
51:3:2812:U:O2'	51:3:2814:A:N7	2.29	0.65
7:C:31:ARG:NH1	53:5:423:U:OP1	2.29	0.65
13:I:14:ILE:HD11	13:I:104:LEU:HB3	1.78	0.65
26:b:107:TYR:HA	26:b:180:ARG:HH11	1.60	0.65
53:5:63:U:O2'	53:5:375:C:O2	2.13	0.65
53:5:1150:G:H2'	53:5:1151:A:H8	1.61	0.65
15:K:46:VAL:HG22	15:K:92:VAL:HB	1.79	0.65
46:v:47:ARG:HH22	51:3:2209:U:P	2.19	0.65
51:3:2058:G:N2	51:3:2059:G:O6	2.29	0.65
53:5:579:G:N2	53:5:756:A:OP2	2.26	0.65
19:O:12:ARG:HA	19:O:32:HIS:HA	1.79	0.65
51:3:511:U:O2	51:3:515:A:N7	2.30	0.65
51:3:565:C:N3	51:3:2028:G:O2'	2.30	0.65
53:5:178:U:O2	53:5:188:U:N3	2.28	0.65
53:5:1471:C:H2'	53:5:1472:G:C8	2.32	0.65
51:3:54:A:OP2	51:3:118:G:N1	2.29	0.65
7:C:70:GLN:HA	7:C:73:ARG:HG2	1.79	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:204:U:H3	51:3:254:G:H1	1.45	0.65
51:3:1374:U:H1'	51:3:1635:G:H22	1.61	0.65
51:3:2266:C:O2'	51:3:2435:C:OP2	2.15	0.65
53:5:22:G:H2'	53:5:23:G:H8	1.60	0.65
15:K:55:PRO:HG3	15:K:61:ALA:H	1.62	0.65
15:K:59:ASN:ND2	15:K:102:ASP:OD1	2.27	0.65
27:c:52:ILE:HB	27:c:93:PRO:HD2	1.77	0.65
37:m:60:ARG:HH11	37:m:79:MET:HE1	1.62	0.65
51:3:2025:C:H2'	51:3:2026:A:H8	1.62	0.65
51:3:2035:U:H2'	51:3:2036:G:C8	2.32	0.65
53:5:1007:U:H2'	53:5:1008:G:C8	2.32	0.65
27:c:98:ASN:ND2	27:c:100:SER:O	2.31	0.64
47:w:57:ILE:O	47:w:61:ARG:NH1	2.29	0.64
51:3:648:G:O2'	51:3:650:G:OP2	2.15	0.64
51:3:1725:G:O6	51:3:1731:G:N2	2.30	0.64
53:5:599:G:N2	53:5:634:U:O2	2.24	0.64
53:5:1226:A:N3	53:5:1344:C:O2'	2.28	0.64
37:m:30:LYS:HA	37:m:116:LEU:O	1.97	0.64
52:4:3:U:H2'	52:4:4:G:H8	1.63	0.64
5:A:192:ASN:ND2	5:A:210:LEU:O	2.31	0.64
13:I:79:LEU:O	13:I:80:MET:HE2	1.97	0.64
32:h:87:LYS:O	51:3:1097:G:N2	2.30	0.64
51:3:2604:U:O2'	51:3:2605:G:O5'	2.15	0.64
53:5:680:G:H1	53:5:704:U:H3	1.45	0.64
53:5:892:G:N2	53:5:895:A:OP2	2.29	0.64
6:B:54:SER:HA	6:B:118:ILE:HD11	1.80	0.64
14:J:116:PRO:HD2	24:T:35:HIS:HD2	1.61	0.64
25:a:65:LYS:O	25:a:67:ARG:NH2	2.30	0.64
36:l:76:LYS:HB3	36:l:91:GLU:HG3	1.79	0.64
51:3:1867:G:H3'	51:3:1868:A:H8	1.61	0.64
53:5:36:G:O6	53:5:547:C:N4	2.17	0.64
1:0:41:GLN:HG2	1:0:47:GLU:HA	1.79	0.64
8:D:141:ILE:HD11	8:D:148:ARG:HB3	1.80	0.64
14:J:119:ARG:HH12	14:J:121:ARG:HB3	1.61	0.64
42:r:81:SER:OG	42:r:97:THR:OG1	2.16	0.64
47:w:17:LYS:HA	47:w:20:ILE:HG12	1.80	0.64
51:3:608:A:H5'	51:3:2508:U:H5''	1.78	0.64
51:3:2031:C:H2'	51:3:2032:G:C8	2.32	0.64
51:3:2155:G:H2'	51:3:2156:G:H8	1.63	0.64
51:3:2497:U:H2'	51:3:2498:G:C8	2.32	0.64
53:5:554:C:H2'	53:5:555:G:H8	1.62	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1113:U:H2'	53:5:1114:A:C8	2.32	0.64
54:8:2:G:H2'	54:8:3:G:H8	1.61	0.64
25:a:282:ARG:NH2	51:3:1805:U:OP2	2.30	0.64
30:f:62:LYS:O	30:f:66:HIS:ND1	2.24	0.64
35:k:122:LYS:HB3	35:k:124:LEU:HD23	1.78	0.64
51:3:1418:U:N3	51:3:1423:A:N6	2.45	0.64
51:3:2736:U:HO2'	51:3:2737:G:H8	1.44	0.64
53:5:503:G:H2'	53:5:504:A:C8	2.33	0.64
4:9:104:LEU:HB3	4:9:133:VAL:HA	1.78	0.64
4:9:290:GLY:O	4:9:336:THR:OG1	2.15	0.64
10:F:78:ARG:NH1	53:5:1357:C:O2'	2.30	0.64
12:H:35:ARG:HH11	12:H:39:GLU:HG3	1.62	0.64
25:a:189:THR:HB	25:a:279:ILE:HB	1.80	0.64
26:b:38:GLY:HA2	26:b:92:MET:HE1	1.79	0.64
29:e:142:GLU:O	29:e:146:GLN:NE2	2.30	0.64
35:k:55:GLN:OE1	51:3:860:C:O2'	2.15	0.64
51:3:1306:G:H2'	51:3:1307:G:C8	2.32	0.64
53:5:91:C:H2'	53:5:92:G:C8	2.32	0.64
53:5:765:A:N3	53:5:1487:U:O2'	2.30	0.64
53:5:1139:A:H2'	53:5:1140:A:H8	1.63	0.64
53:5:1402:U:O2	53:5:1449:G:N2	2.29	0.64
17:M:24:CYS:HA	17:M:39:VAL:HA	1.79	0.64
28:d:85:ILE:HD11	51:3:2320:U:H5'	1.78	0.64
35:k:55:GLN:NE2	51:3:2436:G:N3	2.42	0.64
44:t:95:PRO:HB2	44:t:98:ASN:HB3	1.78	0.64
53:5:1403:A:H2'	53:5:1404:U:C6	2.33	0.64
54:8:19:G:N1	54:8:56:U:O2'	2.23	0.64
2:1:10:ARG:NH2	35:k:62:LEU:O	2.31	0.64
18:N:48:ILE:HD13	53:5:663:G:H21	1.63	0.64
25:a:148:HIS:ND1	25:a:201:GLY:O	2.30	0.64
33:i:117:LEU:HD21	51:3:590:U:H4'	1.80	0.64
45:u:82:LYS:NZ	45:u:98:VAL:HG22	2.12	0.64
53:5:319:U:H2'	53:5:320:G:C8	2.33	0.64
53:5:680:G:O6	53:5:705:A:N6	2.31	0.64
53:5:1141:U:HO2'	53:5:1142:G:H8	1.45	0.64
1:0:12:ARG:NH2	51:3:501:G:OP1	2.31	0.64
12:H:20:TYR:HB2	12:H:66:ASN:HB3	1.80	0.64
40:p:46:TYR:OH	40:p:50:ARG:NH2	2.30	0.64
51:3:2195:U:H2'	51:3:2196:G:H8	1.63	0.64
53:5:1331:A:N6	53:5:1340:G:H1	1.94	0.64
17:M:47:LEU:HG	17:M:53:ILE:HD11	1.80	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1270:C:H2'	51:3:1271:A:H8	1.61	0.63
51:3:1619:A:H2'	51:3:1620:A:C8	2.32	0.63
51:3:1649:C:OP2	51:3:1651:C:N4	2.31	0.63
51:3:1137:C:H2'	51:3:1138:A:H8	1.63	0.63
51:3:1392:G:N2	51:3:1395:A:OP2	2.31	0.63
51:3:1509:U:O2	51:3:1530:G:N2	2.31	0.63
51:3:2819:C:H2'	51:3:2820:G:H8	1.63	0.63
10:F:56:LYS:HD3	10:F:57:PRO:HD2	1.78	0.63
25:a:125:GLU:OE2	25:a:197:ARG:NH1	2.31	0.63
35:k:133:LYS:NZ	51:3:672:G:OP1	2.30	0.63
53:5:945:U:H2'	53:5:946:G:H8	1.62	0.63
53:5:1384:A:H2'	53:5:1385:A:H8	1.63	0.63
9:E:147:GLU:HB3	11:G:59:VAL:HG13	1.79	0.63
29:e:97:TYR:HD1	29:e:110:LEU:HA	1.63	0.63
29:e:167:TYR:HD1	29:e:170:GLU:HB2	1.63	0.63
45:u:39:LYS:HE2	45:u:43:GLN:HB2	1.80	0.63
51:3:2160:U:H2'	51:3:2161:G:H8	1.63	0.63
53:5:708:A:H2'	53:5:709:A:C8	2.33	0.63
3:2:4:ARG:NH1	51:3:2475:C:OP2	2.32	0.63
8:D:139:GLU:HA	8:D:151:LEU:O	1.99	0.63
12:H:21:LEU:HD22	12:H:63:PHE:HB3	1.80	0.63
44:t:72:SER:OG	51:3:369:C:O2	2.12	0.63
51:3:2273:U:H3'	51:3:2274:A:H2'	1.81	0.63
53:5:576:A:H2'	53:5:577:G:H8	1.63	0.63
6:B:25:ASN:HD21	6:B:29:GLN:HE22	1.45	0.63
37:m:109:ASP:OD1	51:3:2016:G:N2	2.31	0.63
51:3:1766:A:N6	51:3:2704:U:O2'	2.31	0.63
51:3:2054:C:H2'	51:3:2055:A:H8	1.63	0.63
51:3:2631:G:O5'	51:3:2830:A:O2'	2.16	0.63
18:N:30:THR:HA	18:N:33:ILE:HD12	1.80	0.63
20:P:9:LEU:HB2	20:P:63:ILE:HG22	1.81	0.63
25:a:64:ARG:NH1	25:a:90:PRO:O	2.32	0.63
27:c:140:THR:O	27:c:144:MET:N	2.30	0.63
51:3:1485:A:H2	51:3:2710:G:H22	1.47	0.63
51:3:1801:U:H3	51:3:1832:G:H1	1.46	0.63
6:B:36:GLU:HB3	6:B:60:ARG:HH12	1.62	0.63
25:a:157:GLY:O	25:a:159:GLN:NE2	2.32	0.63
25:a:230:GLY:HA2	25:a:233:MET:HE1	1.79	0.63
40:p:57:ARG:NH2	51:3:1034:A:OP2	2.31	0.63
44:t:9:LYS:HB3	44:t:77:PHE:HB3	1.81	0.63
51:3:2348:U:H2'	51:3:2349:G:C8	2.34	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:G:62:ASN:HB2	11:G:67:LYS:HB2	1.80	0.63
19:O:60:THR:HG21	53:5:372:G:H5''	1.80	0.63
39:o:47:ASN:O	39:o:68:LYS:NZ	2.32	0.63
43:s:36:SER:HB3	43:s:39:ARG:HG3	1.79	0.63
46:v:2:ALA:HA	51:3:1392:G:H3'	1.81	0.63
51:3:2480:G:N2	51:3:2487:U:O4	2.32	0.63
5:A:69:TYR:CE1	5:A:235:ALA:HA	2.34	0.62
7:C:38:HIS:NE2	53:5:509:C:O2	2.32	0.62
26:b:155:SER:OG	51:3:2039:G:N2	2.32	0.62
36:l:48:GLU:HA	36:l:51:ARG:HG2	1.81	0.62
51:3:87:G:H2'	51:3:88:G:C8	2.34	0.62
51:3:2376:C:H2'	51:3:2377:A:H8	1.64	0.62
53:5:114:C:H5'	53:5:115:A:H5'	1.81	0.62
16:L:108:THR:HB	53:5:942:G:H5''	1.80	0.62
27:c:101:LEU:HD22	51:3:695:G:H5''	1.82	0.62
51:3:1093:U:O2	51:3:1115:G:N2	2.28	0.62
53:5:732:A:H2'	53:5:733:A:H8	1.64	0.62
54:7:2:G:H2'	54:7:3:G:H8	1.61	0.62
6:B:187:TYR:HE1	6:B:202:LYS:HB2	1.64	0.62
7:C:100:ILE:HD11	7:C:136:LEU:HD22	1.81	0.62
51:3:144:C:H2'	51:3:145:A:C8	2.30	0.62
52:4:58:C:H2'	52:4:59:A:C8	2.35	0.62
53:5:169:G:N2	53:5:219:A:O2'	2.32	0.62
53:5:536:U:H2'	53:5:537:A:H8	1.63	0.62
53:5:552:U:H2'	53:5:553:C:C6	2.35	0.62
53:5:1009:G:H21	53:5:1012:A:H2	1.46	0.62
40:p:3:ILE:HG12	51:3:1230:U:H1'	1.82	0.62
51:3:455:G:H2'	51:3:456:G:C8	2.34	0.62
51:3:1372:U:H1'	51:3:1412:A:H2'	1.80	0.62
51:3:2149:U:O4	51:3:2156:G:O6	2.17	0.62
53:5:670:G:H2'	53:5:671:G:C8	2.35	0.62
53:5:1154:A:H2'	53:5:1155:A:C8	2.34	0.62
53:5:1405:U:H2'	53:5:1406:U:H6	1.63	0.62
25:a:56:ARG:O	25:a:58:GLN:NE2	2.33	0.62
51:3:217:A:H2'	51:3:218:G:C8	2.35	0.62
51:3:782:U:H3	51:3:2021:A:H1'	1.64	0.62
51:3:1197:G:H2'	51:3:1198:G:H8	1.62	0.62
51:3:1536:C:H2'	51:3:1537:A:C8	2.34	0.62
51:3:1807:C:H42	51:3:1824:G:N2	1.96	0.62
10:F:101:ARG:HH12	53:5:934:G:H4'	1.64	0.62
25:a:215:LYS:NZ	51:3:764:G:OP1	2.33	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:j:98:ILE:HD12	34:j:117:LEU:HB2	1.82	0.62
51:3:163:A:N7	51:3:169:U:O4	2.33	0.62
51:3:1619:A:H2'	51:3:1620:A:H8	1.65	0.62
53:5:1062:C:H2'	53:5:1063:G:H8	1.65	0.62
54:6:19:G:N1	54:6:56:U:O2'	2.23	0.62
4:9:25:LYS:NZ	4:9:82:CYS:SG	2.67	0.62
26:b:114:SER:OG	26:b:117:ARG:NH1	2.31	0.62
51:3:680:A:H2'	51:3:682:A:C8	2.33	0.62
51:3:2700:C:H2'	51:3:2701:A:H8	1.65	0.62
53:5:265:U:H2'	53:5:266:A:H8	1.64	0.62
53:5:536:U:H2'	53:5:537:A:C8	2.35	0.62
53:5:1416:U:H3	53:5:1435:G:H1	1.48	0.62
4:9:51:ASP:HB3	4:9:56:GLU:HB3	1.82	0.62
7:C:1:MET:HB2	53:5:544:A:C6	2.35	0.62
11:G:19:LEU:HD22	11:G:87:VAL:HG11	1.80	0.62
45:u:86:PHE:O	45:u:92:LYS:HB2	2.00	0.62
51:3:1428:U:H2'	51:3:1429:G:C8	2.35	0.62
51:3:2068:G:O2'	51:3:2070:C:OP2	2.17	0.62
53:5:606:A:H3'	53:5:607:A:H8	1.64	0.62
53:5:830:U:H3	53:5:847:G:H1	1.48	0.62
53:5:1055:G:H1'	53:5:1165:G:H21	1.64	0.62
53:5:1287:G:H2'	53:5:1288:C:C6	2.34	0.62
22:R:40:ILE:HA	22:R:44:PHE:HD2	1.64	0.62
36:l:2:LEU:O	36:l:3:GLN:NE2	2.32	0.62
46:v:56:ARG:NH2	51:3:436:G:OP2	2.32	0.62
51:3:618:G:H3'	51:3:1281:A:H61	1.63	0.62
51:3:2536:U:H3	51:3:2543:G:H1	1.48	0.62
53:5:565:G:H2'	53:5:566:G:O4'	2.00	0.62
53:5:1381:U:O4	53:5:1471:C:N4	2.32	0.62
53:5:1402:U:H2'	53:5:1403:A:C8	2.35	0.62
51:3:1786:U:OP2	51:3:1791:A:N6	2.23	0.62
51:3:2807:G:O6	51:3:2896:G:N2	2.33	0.62
51:3:2831:U:H2'	51:3:2832:G:C8	2.35	0.62
13:I:14:ILE:HD13	13:I:106:PHE:HB3	1.80	0.61
42:r:69:LEU:HD12	42:r:107:LEU:HB3	1.82	0.61
51:3:1103:G:H4'	51:3:1105:A:H62	1.65	0.61
51:3:1262:G:H2'	51:3:1263:G:C8	2.35	0.61
52:4:22:G:O2'	52:4:25:A:N6	2.33	0.61
53:5:1215:U:H5''	53:5:1216:G:C8	2.35	0.61
11:G:92:LYS:HD2	11:G:95:LEU:HD12	1.81	0.61
20:P:10:ILE:HB	20:P:60:LYS:HZ1	1.65	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:t:16:LYS:HG3	51:3:363:G:H1	1.65	0.61
44:t:88:LYS:NZ	51:3:369:C:OP2	2.33	0.61
45:u:54:GLN:HE22	45:u:57:THR:HA	1.63	0.61
46:v:37:LYS:HE3	46:v:45:THR:HG22	1.82	0.61
46:v:61:HIS:HB3	46:v:63:ARG:HE	1.65	0.61
51:3:1317:C:OP1	51:3:1681:G:N1	2.30	0.61
51:3:2025:C:H2'	51:3:2026:A:C8	2.34	0.61
4:9:122:LEU:HD11	4:9:378:ARG:HH21	1.65	0.61
8:D:72:LYS:HB3	8:D:91:LEU:HB2	1.82	0.61
19:O:2:ARG:NH1	53:5:388:G:OP1	2.29	0.61
33:i:3:LYS:N	41:q:12:TYR:OH	2.31	0.61
41:q:44:LYS:HE3	41:q:53:ALA:HB2	1.82	0.61
46:v:4:LYS:HG3	46:v:5:ASP:O	2.00	0.61
51:3:1000:U:O2'	51:3:2281:A:N3	2.29	0.61
51:3:2829:G:N2	51:3:2829:G:OP2	2.33	0.61
51:3:2867:U:H2'	51:3:2868:G:C8	2.35	0.61
53:5:70:A:H2'	53:5:71:A:H8	1.64	0.61
53:5:169:G:O2'	53:5:220:U:O2'	2.16	0.61
10:F:57:PRO:HA	10:F:60:VAL:HG22	1.82	0.61
21:Q:71:ASN:HB3	21:Q:75:ILE:HB	1.82	0.61
25:a:150:ILE:HB	25:a:160:ILE:HB	1.81	0.61
33:i:102:LYS:NZ	51:3:2788:U:O4	2.33	0.61
36:l:1:MET:SD	36:l:3:GLN:NE2	2.73	0.61
51:3:992:G:O2'	51:3:995:A:N6	2.33	0.61
51:3:1392:G:N2	51:3:1394:A:OP2	2.32	0.61
51:3:1692:A:H2'	51:3:1693:U:H6	1.65	0.61
53:5:70:A:H2'	53:5:71:A:C8	2.35	0.61
5:A:89:ASN:OD1	5:A:90:ASP:N	2.30	0.61
13:I:61:PRO:O	53:5:968:G:O2'	2.17	0.61
19:O:15:ALA:HA	19:O:59:PRO:HG3	1.83	0.61
25:a:128:ILE:HG12	25:a:136:MET:HE2	1.83	0.61
51:3:2141:A:N6	51:3:2164:G:O2'	2.34	0.61
53:5:1051:U:H2'	53:5:1052:G:C8	2.35	0.61
25:a:79:ILE:HD13	25:a:103:ASN:HD22	1.66	0.61
29:e:92:LEU:HB3	29:e:132:THR:HA	1.82	0.61
41:q:5:VAL:HG23	41:q:38:VAL:HG12	1.82	0.61
51:3:1488:U:O2'	51:3:2710:G:O2'	2.14	0.61
51:3:1803:U:H2'	51:3:1804:A:C8	2.36	0.61
53:5:61:A:H62	53:5:95:C:H42	0.74	0.61
53:5:896:G:H2'	53:5:897:A:H8	1.65	0.61
53:5:1083:A:OP1	53:5:1158:A:N6	2.34	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:M:41:ARG:NH1	53:5:968:G:O3'	2.34	0.61
51:3:61:U:O4	51:3:70:G:O6	2.19	0.61
51:3:733:C:H4'	51:3:769:A:H61	1.66	0.61
51:3:1370:A:N6	51:3:1636:U:O2	2.33	0.61
53:5:265:U:H2'	53:5:266:A:C8	2.36	0.61
6:B:18:TRP:CD1	13:I:19:TYR:HH	2.19	0.61
10:F:110:ARG:HH22	10:F:122:GLU:HB2	1.66	0.61
39:o:54:ARG:HB3	39:o:100:TYR:CD1	2.35	0.61
51:3:697:U:H2'	51:3:698:A:C8	2.36	0.61
51:3:1119:A:N3	51:3:1140:U:O2'	2.33	0.61
51:3:2552:G:H5'	51:3:2653:G:H21	1.65	0.61
51:3:2667:G:N2	51:3:2670:A:OP2	2.31	0.61
53:5:874:C:N4	53:5:875:G:O6	2.34	0.61
53:5:1417:U:H2'	53:5:1418:G:H8	1.66	0.61
4:9:259:ILE:O	4:9:266:LEU:N	2.27	0.61
8:D:208:VAL:HA	8:D:211:LEU:HG	1.82	0.61
11:G:49:VAL:HG21	11:G:57:PHE:CD1	2.36	0.61
26:b:50:THR:OG1	26:b:87:MET:O	2.19	0.61
27:c:156:ASN:HB3	27:c:194:ALA:HA	1.81	0.61
35:k:46:LEU:HG	51:3:700:U:H5''	1.83	0.61
37:m:73:PHE:HB3	37:m:78:LEU:HB3	1.82	0.61
42:r:96:ILE:HD12	51:3:2020:A:H4'	1.81	0.61
51:3:1868:A:H2'	51:3:1869:G:H8	1.66	0.61
51:3:2057:C:H2'	51:3:2058:G:C8	2.36	0.61
52:4:58:C:H2'	52:4:59:A:H8	1.66	0.61
53:5:1144:A:H8	53:5:1145:A:C8	2.19	0.61
53:5:1230:G:H3'	53:5:1254:A:H61	1.66	0.61
14:J:22:ASN:ND2	53:5:686:C:OP1	2.33	0.61
33:i:111:MET:HE2	51:3:1173:G:H21	1.66	0.61
51:3:659:C:H2'	51:3:660:U:C6	2.36	0.61
51:3:1868:A:H2'	51:3:1869:G:C8	2.36	0.61
51:3:2038:A:N3	51:3:2463:G:O2'	2.31	0.61
52:4:60:C:H2'	52:4:61:A:H8	1.64	0.61
53:5:1086:U:OP1	53:5:1099:G:N1	2.21	0.61
4:9:248:LEU:O	4:9:249:ARG:NH2	2.34	0.60
7:C:97:LEU:HA	7:C:100:ILE:HD12	1.83	0.60
19:O:55:LYS:O	53:5:223:G:N2	2.34	0.60
28:d:33:LYS:NZ	28:d:34:ILE:O	2.34	0.60
51:3:1379:C:O2'	51:3:1605:A:O2'	2.19	0.60
51:3:2826:G:O2'	51:3:2828:C:OP2	2.17	0.60
53:5:1110:C:H2'	53:5:1111:G:H8	1.64	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:9:237:LEU:HB3	4:9:269:ALA:HB3	1.84	0.60
9:E:106:GLN:HG2	53:5:838:A:H4'	1.83	0.60
10:F:22:VAL:HA	10:F:25:ILE:HD12	1.83	0.60
37:m:88:PRO:O	37:m:92:LYS:NZ	2.34	0.60
51:3:86:A:N6	51:3:101:C:O4'	2.33	0.60
51:3:450:C:H2'	51:3:451:A:H8	1.66	0.60
51:3:1480:A:N6	51:3:1487:U:O2	2.34	0.60
51:3:1638:C:O2'	51:3:1644:A:N6	2.35	0.60
51:3:1954:C:H2'	51:3:1955:G:C8	2.36	0.60
5:A:70:ASN:HA	5:A:73:LYS:HD2	1.83	0.60
19:O:13:ILE:HG22	19:O:30:ILE:HB	1.83	0.60
26:b:123:ILE:HA	26:b:128:PHE:HB2	1.83	0.60
38:n:34:LYS:NZ	52:4:46:C:O5'	2.34	0.60
41:q:75:SER:OG	51:3:598:G:OP2	2.17	0.60
51:3:1807:C:N3	51:3:1824:G:N1	2.48	0.60
53:5:1193:U:H2'	53:5:1194:A:C8	2.36	0.60
53:5:1334:A:H3'	53:5:1335:G:H8	1.66	0.60
4:9:15:VAL:HA	4:9:101:GLY:O	2.01	0.60
8:D:136:ILE:HG23	8:D:202:GLN:HE22	1.66	0.60
22:R:10:PHE:CG	53:5:1292:A:H4'	2.36	0.60
26:b:10:LYS:NZ	26:b:198:ALA:O	2.34	0.60
51:3:892:G:H2'	51:3:893:A:C8	2.35	0.60
51:3:1801:U:O2	51:3:1832:G:N2	2.30	0.60
51:3:2567:C:H2'	51:3:2568:G:H8	1.66	0.60
14:J:63:VAL:HA	14:J:66:THR:HG22	1.83	0.60
49:y:4:GLN:HB3	51:3:2623:U:C2	2.36	0.60
51:3:161:U:H3	51:3:171:G:H1	1.49	0.60
51:3:629:G:O6	51:3:696:U:O4	2.20	0.60
51:3:688:U:H5''	51:3:689:U:H4'	1.84	0.60
51:3:1582:G:H2'	51:3:1583:G:C8	2.35	0.60
51:3:1849:G:O6	51:3:1905:U:O2	2.18	0.60
53:5:316:G:H2'	53:5:317:A:C8	2.36	0.60
7:C:138:PRO:HA	7:C:178:TYR:HD2	1.66	0.60
11:G:67:LYS:NZ	53:5:650:A:O5'	2.33	0.60
13:I:46:LEU:HB3	13:I:79:LEU:HB2	1.82	0.60
26:b:64:LYS:HD3	51:3:2814:A:H5'	1.82	0.60
30:f:53:LYS:HG2	30:f:57:HIS:HE1	1.66	0.60
33:i:59:ILE:HB	33:i:127:VAL:HG12	1.83	0.60
33:i:95:MET:HE2	33:i:95:MET:HA	1.83	0.60
45:u:20:GLY:O	54:7:2:G:O2'	2.10	0.60
51:3:1767:A:H2'	51:3:1768:G:C4	2.35	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2694:A:H2'	51:3:2695:U:H6	1.67	0.60
53:5:71:A:H2'	53:5:72:A:C8	2.36	0.60
53:5:1178:C:H2'	53:5:1179:A:C8	2.37	0.60
3:2:8:LYS:HD3	51:3:2485:U:H3	1.65	0.60
14:J:116:PRO:HD2	24:T:35:HIS:CD2	2.37	0.60
22:R:37:ARG:HD2	53:5:1292:A:H1'	1.82	0.60
29:e:146:GLN:OE1	51:3:2753:C:H1'	2.00	0.60
50:z:43:LYS:NZ	50:z:44:VAL:O	2.35	0.60
51:3:122:G:H5''	51:3:152:A:H5'	1.83	0.60
4:9:259:ILE:HG13	4:9:266:LEU:HB2	1.81	0.60
18:N:6:ASN:OD1	18:N:7:GLY:N	2.34	0.60
36:l:30:GLY:HA3	36:l:105:GLU:HB2	1.83	0.60
51:3:139:G:O6	51:3:145:A:N6	2.35	0.60
51:3:1118:U:O2'	51:3:1120:A:N7	2.35	0.60
51:3:2380:U:H2'	51:3:2381:G:C8	2.37	0.60
51:3:2880:A:H2'	51:3:2881:A:C8	2.36	0.60
52:4:21:G:H2'	52:4:22:G:C8	2.36	0.60
25:a:126:HIS:HB2	30:f:87:ARG:HH21	1.66	0.60
45:u:39:LYS:HB3	45:u:51:ILE:HG23	1.84	0.60
51:3:2039:G:OP2	51:3:2462:G:O2'	2.17	0.60
53:5:102:G:N2	53:5:309:A:O2'	2.33	0.60
53:5:1012:A:H5''	53:5:1013:C:H5	1.67	0.60
53:5:1505:G:H2'	53:5:1506:A:C8	2.36	0.60
5:A:30:VAL:HG12	5:A:56:PHE:H	1.67	0.60
12:H:82:ARG:HA	12:H:85:ILE:HG12	1.83	0.60
41:q:93:LYS:NZ	41:q:94:VAL:O	2.30	0.60
51:3:764:G:H2'	51:3:1782:U:H1'	1.84	0.60
51:3:2077:A:H2'	51:3:2078:A:C8	2.35	0.60
52:4:104:C:H2'	52:4:105:A:H8	1.67	0.60
9:E:2:GLN:HG3	9:E:90:LEU:HB2	1.84	0.59
32:h:87:LYS:HA	51:3:1097:G:H21	1.67	0.59
33:i:57:LEU:HB2	33:i:125:VAL:HG22	1.84	0.59
51:3:1544:G:H2'	51:3:1545:A:C8	2.37	0.59
51:3:1610:U:H2'	51:3:1611:C:H6	1.66	0.59
51:3:2838:G:C2	51:3:2887:A:N6	2.70	0.59
53:5:807:C:O2'	53:5:894:A:N6	2.34	0.59
54:8:16:G:H22	54:8:49:C:H42	1.50	0.59
5:A:59:GLU:O	5:A:63:GLN:NE2	2.34	0.59
5:A:178:VAL:O	5:A:201:LEU:N	2.30	0.59
27:c:138:GLY:HA3	51:3:355:A:H5'	1.84	0.59
33:i:71:LYS:NZ	51:3:1057:G:O6	2.29	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:j:4:PHE:HB2	51:3:1703:A:H8	1.67	0.59
51:3:955:A:H61	51:3:2276:A:H5'	1.67	0.59
51:3:1346:G:H2'	51:3:1347:A:C8	2.37	0.59
51:3:1671:C:H2'	51:3:1672:C:C6	2.37	0.59
51:3:2088:U:H2'	51:3:2089:A:H8	1.67	0.59
51:3:2380:U:H2'	51:3:2381:G:H8	1.66	0.59
4:9:227:VAL:HG22	4:9:278:LEU:HB2	1.84	0.59
9:E:49:ILE:HG23	9:E:50:LYS:H	1.67	0.59
12:H:34:ARG:NH1	53:5:1121:U:O5'	2.35	0.59
36:l:126:PRO:HD3	51:3:2493:G:H4'	1.83	0.59
51:3:802:U:H2'	51:3:803:G:H8	1.68	0.59
51:3:2212:U:H2'	51:3:2213:A:C8	2.37	0.59
51:3:2607:G:H2'	51:3:2608:A:H8	1.67	0.59
53:5:229:G:H2'	53:5:230:G:C8	2.37	0.59
53:5:581:A:N6	53:5:755:U:O2'	2.35	0.59
53:5:1115:G:N2	53:5:1116:U:O4	2.35	0.59
53:5:1330:A:H2'	53:5:1331:A:C8	2.36	0.59
11:G:132:LYS:NZ	53:5:599:G:OP1	2.32	0.59
15:K:124:ARG:O	15:K:127:ARG:NH1	2.33	0.59
27:c:144:MET:HE1	51:3:357:A:H62	1.67	0.59
39:o:60:ILE:O	39:o:80:GLN:NE2	2.35	0.59
51:3:1873:A:N6	51:3:1882:G:O2'	2.36	0.59
51:3:1951:A:H61	51:3:2565:G:H1'	1.66	0.59
51:3:2105:G:H2'	51:3:2106:G:C8	2.36	0.59
53:5:133:G:H2'	53:5:134:G:C8	2.37	0.59
13:I:73:LYS:NZ	17:M:54:PRO:O	2.26	0.59
27:c:129:ASP:OD1	27:c:130:GLN:N	2.35	0.59
35:k:136:LEU:O	35:k:139:VAL:HG12	2.03	0.59
37:m:79:MET:O	37:m:82:LEU:HB3	2.02	0.59
44:t:13:ILE:HD11	44:t:75:ALA:HB2	1.84	0.59
53:5:580:C:H41	53:5:755:U:H2'	1.66	0.59
53:5:833:G:O6	53:5:844:U:O4	2.20	0.59
54:7:16:G:H22	54:7:49:C:H42	1.50	0.59
2:1:20:LYS:NZ	51:3:667:A:OP2	2.36	0.59
13:I:91:ASP:O	13:I:95:ARG:NH2	2.35	0.59
49:y:40:HIS:CD2	51:3:2820:G:H4'	2.37	0.59
51:3:409:A:H61	51:3:437:A:H3'	1.67	0.59
51:3:518:A:O2'	51:3:532:A:N1	2.34	0.59
51:3:762:A:H2'	51:3:763:G:C8	2.37	0.59
51:3:1536:C:H2'	51:3:1537:A:H8	1.66	0.59
51:3:1661:A:H2'	51:3:1662:G:C8	2.35	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:655:G:O6	53:5:744:U:C2	2.56	0.59
53:5:657:G:H2'	53:5:658:G:H8	1.67	0.59
53:5:855:G:O2'	53:5:868:G:O2'	2.21	0.59
53:5:1388:A:C2	53:5:1462:G:N1	2.60	0.59
14:J:119:ARG:HG3	24:T:34:TYR:HB2	1.84	0.59
19:O:5:ARG:NH1	53:5:43:G:O2'	2.35	0.59
25:a:268:ARG:NH1	25:a:269:ASN:O	2.36	0.59
30:f:53:LYS:O	30:f:57:HIS:ND1	2.33	0.59
36:l:20:LYS:NZ	52:4:76:A:OP1	2.34	0.59
51:3:1020:G:H5''	51:3:1021:C:H5	1.66	0.59
51:3:1201:A:H2'	51:3:1202:A:H8	1.66	0.59
51:3:1437:A:H2'	51:3:1438:G:C8	2.37	0.59
31:g:62:ALA:O	31:g:66:GLY:N	2.35	0.59
33:i:107:ALA:O	51:3:1173:G:O2'	2.21	0.59
51:3:169:U:H3'	51:3:170:A:H8	1.67	0.59
51:3:990:G:H1	51:3:999:U:H3	0.74	0.59
51:3:2308:U:H2'	51:3:2309:A:C8	2.36	0.59
54:6:16:G:H22	54:6:49:C:H42	1.50	0.59
4:9:339:THR:HG21	54:6:66:C:H4'	1.84	0.59
12:H:10:GLY:O	12:H:16:SER:HA	2.02	0.59
28:d:151:GLY:N	51:3:2313:U:O2	2.32	0.59
51:3:513:A:N6	51:3:536:A:OP1	2.36	0.59
51:3:622:U:H2'	51:3:623:A:C8	2.38	0.59
51:3:1711:A:H2'	51:3:1712:A:H8	1.67	0.59
51:3:1845:C:H4'	51:3:1846:A:H5'	1.84	0.59
51:3:1937:G:O2'	51:3:1975:G:N1	2.33	0.59
51:3:2652:U:O2'	51:3:2653:G:O4'	2.18	0.59
51:3:2813:A:OP2	51:3:2894:G:N2	2.35	0.59
53:5:1397:G:H2'	53:5:1398:G:C8	2.37	0.59
2:1:37:GLN:NE2	51:3:2371:U:OP1	2.36	0.59
38:n:3:THR:O	38:n:4:ARG:HG3	2.03	0.59
51:3:1665:G:H22	51:3:1667:G:H3'	1.68	0.59
51:3:1793:A:O2'	51:3:1945:A:N6	2.35	0.59
51:3:2321:C:H2'	51:3:2322:G:C8	2.38	0.59
51:3:2376:C:H2'	51:3:2377:A:C8	2.38	0.59
51:3:2551:G:H2'	51:3:2552:G:C8	2.38	0.59
53:5:104:A:OP2	53:5:284:A:N6	2.35	0.59
53:5:1483:C:H2'	53:5:1484:C:C6	2.37	0.59
6:B:116:ALA:HB1	6:B:203:VAL:HG13	1.85	0.58
10:F:143:MET:SD	54:8:42:C:O2'	2.61	0.58
15:K:39:TYR:O	53:5:551:A:O2'	2.21	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:l:34:LEU:HD11	36:l:129:TRP:HB2	1.85	0.58
37:m:50:THR:HG21	51:3:2844:U:H5''	1.84	0.58
51:3:1254:U:H2'	51:3:1255:G:C5	2.37	0.58
51:3:1686:U:H3'	51:3:1687:G:H8	1.68	0.58
51:3:1885:G:H2'	51:3:1886:C:C6	2.37	0.58
53:5:1178:C:H2'	53:5:1179:A:H8	1.68	0.58
10:F:40:ARG:NH2	53:5:1266:U:OP2	2.36	0.58
25:a:56:ARG:HG3	25:a:57:HIS:ND1	2.18	0.58
28:d:125:ARG:NH2	51:3:2323:U:O2	2.35	0.58
51:3:549:A:N3	51:3:614:C:O2'	2.36	0.58
51:3:2151:G:O2'	51:3:2154:A:N1	2.36	0.58
51:3:2332:U:O2'	51:3:2393:C:N4	2.28	0.58
53:5:22:G:H21	53:5:908:A:H62	1.49	0.58
53:5:1261:A:H2'	53:5:1262:A:C8	2.37	0.58
10:F:18:ASN:ND2	10:F:19:ASN:OD1	2.36	0.58
22:R:81:LYS:NZ	22:R:84:THR:O	2.36	0.58
51:3:1265:G:H2'	51:3:1266:G:C4	2.37	0.58
51:3:1837:C:H2'	51:3:1838:A:H8	1.68	0.58
51:3:2561:G:H2'	51:3:2562:U:O4'	2.02	0.58
53:5:1016:A:O2'	53:5:1017:A:O4'	2.15	0.58
53:5:1436:C:H2'	53:5:1437:A:H8	1.68	0.58
8:D:94:VAL:O	8:D:101:ILE:HA	2.03	0.58
17:M:12:ARG:NH1	53:5:1192:C:OP1	2.33	0.58
37:m:85:LYS:HG3	37:m:86:VAL:HG13	1.85	0.58
41:q:65:GLN:HB2	41:q:87:GLN:H	1.68	0.58
46:v:26:ARG:NH2	51:3:194:A:OP2	2.37	0.58
51:3:500:U:H2'	51:3:501:G:C5	2.37	0.58
51:3:569:U:O4	51:3:592:G:O6	2.21	0.58
53:5:352:A:H3'	53:5:353:G:H8	1.69	0.58
18:N:5:LYS:HG3	18:N:28:LEU:HD21	1.84	0.58
29:e:98:ARG:HG3	29:e:109:GLN:HB3	1.85	0.58
38:n:81:LEU:HG	38:n:86:LEU:HD12	1.85	0.58
51:3:686:C:N4	51:3:687:G:O6	2.36	0.58
51:3:937:A:H3'	51:3:938:A:H8	1.68	0.58
51:3:1032:A:H2'	51:3:1033:A:C8	2.39	0.58
51:3:1310:U:N3	51:3:1314:A:C5	2.72	0.58
51:3:1934:A:H2'	51:3:1935:A:C8	2.39	0.58
51:3:2292:A:N6	51:3:2392:U:O4	2.35	0.58
51:3:2840:U:H2'	51:3:2841:A:C8	2.38	0.58
53:5:586:G:H2'	53:5:587:A:H8	1.68	0.58
5:A:88:LYS:HD2	5:A:92:VAL:HG21	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:C:130:ASP:OD1	53:5:617:U:N3	2.37	0.58
10:F:110:ARG:HB3	10:F:118:LYS:HE3	1.85	0.58
13:I:86:ASN:OD1	13:I:87:GLN:N	2.35	0.58
16:L:110:LYS:O	16:L:114:LYS:NZ	2.37	0.58
39:o:7:GLN:HB2	51:3:2879:U:H4'	1.85	0.58
44:t:91:TYR:HE1	44:t:102:ARG:HG2	1.68	0.58
46:v:12:PRO:HB3	46:v:30:ASN:HA	1.84	0.58
49:y:12:ARG:NH1	51:3:2029:U:OP2	2.36	0.58
51:3:1820:U:O2'	51:3:1821:G:OP1	2.20	0.58
51:3:2054:C:H2'	51:3:2055:A:C8	2.38	0.58
51:3:2609:C:H2'	51:3:2611:G:C8	2.37	0.58
53:5:376:G:N2	53:5:379:A:OP2	2.36	0.58
54:7:69:A:H2'	54:7:70:G:H8	1.68	0.58
4:9:333:PHE:C	4:9:335:THR:H	2.10	0.58
15:K:134:LYS:HZ1	53:5:38:U:H4'	1.67	0.58
17:M:45:ARG:O	17:M:49:TYR:HD1	1.86	0.58
25:a:81:ALA:HB1	25:a:99:ILE:HB	1.85	0.58
25:a:146:GLN:O	25:a:201:GLY:N	2.32	0.58
25:a:217:GLY:HA2	51:3:799:A:H5''	1.85	0.58
35:k:69:ARG:HG2	35:k:72:PHE:HB2	1.86	0.58
46:v:56:ARG:HA	46:v:59:LYS:HE2	1.86	0.58
51:3:755:C:H2'	51:3:756:A:C8	2.37	0.58
51:3:2078:A:H2'	51:3:2079:G:C8	2.38	0.58
53:5:561:A:O2'	53:5:564:G:O3'	2.22	0.58
3:2:1:MET:HE2	3:2:35:ARG:HB2	1.86	0.58
8:D:160:ILE:O	8:D:167:ARG:NH2	2.36	0.58
34:j:59:ARG:HH12	34:j:89:GLU:HB2	1.68	0.58
51:3:454:G:H2'	51:3:455:G:H8	1.68	0.58
51:3:868:C:H2'	51:3:869:U:C6	2.39	0.58
51:3:2062:C:H41	51:3:2508:U:H5'	1.68	0.58
53:5:331:C:H2'	53:5:332:A:C8	2.39	0.58
8:D:138:HIS:HD2	11:G:108:LEU:HD23	1.69	0.58
19:O:2:ARG:HD2	19:O:9:PRO:HA	1.85	0.58
22:R:19:VAL:HA	22:R:22:MET:HG2	1.84	0.58
33:i:47:PHE:O	40:p:63:ARG:NH1	2.37	0.58
37:m:36:LYS:HD3	51:3:1685:G:H4'	1.85	0.58
51:3:487:C:N4	51:3:490:A:OP2	2.30	0.58
51:3:1200:U:H2'	51:3:1201:A:H8	1.68	0.58
51:3:2123:A:H5'	51:3:2124:A:N7	2.18	0.58
53:5:167:A:O2'	53:5:169:G:O6	2.21	0.58
53:5:460:A:C6	53:5:461:G:C6	2.92	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1041:G:H2'	53:5:1042:G:C8	2.39	0.58
53:5:1044:G:N7	53:5:1175:C:H5''	2.18	0.58
7:C:144:LEU:O	7:C:148:THR:OG1	2.20	0.58
8:D:110:GLU:OE1	8:D:112:PRO:HD2	2.03	0.58
34:j:66:LYS:HE2	51:3:1699:A:H5''	1.86	0.58
42:r:42:LYS:HB2	51:3:2017:G:H5''	1.86	0.58
51:3:329:G:O6	51:3:377:U:O4	2.22	0.58
51:3:701:A:H2'	51:3:702:U:C6	2.39	0.58
51:3:1803:U:H2'	51:3:1804:A:H8	1.68	0.58
51:3:2698:U:OP1	51:3:2876:G:N1	2.37	0.58
53:5:590:G:H1	53:5:644:U:H3	1.50	0.58
53:5:1116:U:OP2	53:5:1118:A:N6	2.37	0.58
4:9:259:ILE:HB	4:9:266:LEU:HD12	1.85	0.57
7:C:9:LYS:HD3	53:5:425:G:H5''	1.85	0.57
24:T:37:ARG:NH2	53:5:1501:G:OP2	2.31	0.57
36:l:11:LYS:O	51:3:948:A:N6	2.37	0.57
40:p:65:ASN:ND2	51:3:1047:A:OP2	2.34	0.57
51:3:1906:G:H1'	51:3:1908:A:H8	1.69	0.57
51:3:2447:A:H61	51:3:2593:U:H5'	1.69	0.57
53:5:1133:A:N7	53:5:1155:A:N6	2.52	0.57
53:5:1306:A:H2'	53:5:1307:A:C8	2.39	0.57
54:8:69:A:H2'	54:8:70:G:H8	1.69	0.57
4:9:93:ILE:HG21	4:9:332:TYR:CZ	2.38	0.57
12:H:107:THR:HA	53:5:1154:A:H5''	1.86	0.57
51:3:1730:C:H2'	51:3:1731:G:O4'	2.04	0.57
53:5:13:U:O4	53:5:23:G:O6	2.22	0.57
53:5:612:G:N2	53:5:624:U:O2	2.31	0.57
53:5:1250:A:H3'	53:5:1251:G:C8	2.39	0.57
53:5:1376:G:O6	53:5:1479:G:N2	2.37	0.57
1:0:12:ARG:HG3	1:0:16:HIS:HD2	1.67	0.57
6:B:191:LYS:HB2	6:B:198:VAL:HG13	1.87	0.57
9:E:14:SER:OG	9:E:16:GLU:OE2	2.21	0.57
19:O:67:PHE:HB3	19:O:72:LEU:HB3	1.86	0.57
23:S:56:ARG:HH12	53:5:218:U:H4'	1.68	0.57
34:j:64:ARG:HB3	34:j:83:ALA:N	2.19	0.57
39:o:37:LEU:HB2	39:o:44:ARG:HB2	1.85	0.57
51:3:206:U:H2'	51:3:207:C:C2	2.39	0.57
51:3:1374:U:N3	51:3:1375:G:N7	2.52	0.57
51:3:1588:A:H2'	51:3:1589:A:C8	2.38	0.57
51:3:2547:C:H2'	51:3:2548:G:H8	1.68	0.57
51:3:2634:C:H2'	51:3:2635:G:C8	2.39	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1043:U:O2	53:5:1181:G:O6	2.23	0.57
15:K:3:THR:OG1	53:5:874:C:OP2	2.19	0.57
20:P:2:LYS:NZ	20:P:3:ARG:O	2.38	0.57
20:P:7:LYS:NZ	53:5:633:U:OP1	2.35	0.57
28:d:98:ALA:O	28:d:101:GLU:HG3	2.05	0.57
51:3:244:G:O2'	51:3:261:A:N6	2.37	0.57
51:3:251:G:H1'	51:3:255:A:H61	1.68	0.57
53:5:763:A:N7	53:5:810:U:O4	2.38	0.57
5:A:102:ARG:HH22	5:A:236:VAL:HG23	1.69	0.57
12:H:11:ARG:NH1	53:5:1109:U:OP2	2.37	0.57
21:Q:101:PHE:O	53:5:715:A:N6	2.36	0.57
27:c:160:VAL:HG23	27:c:200:GLU:HG2	1.86	0.57
46:v:53:ARG:NH2	51:3:432:G:OP2	2.37	0.57
51:3:1437:A:H2'	51:3:1438:G:H8	1.69	0.57
51:3:2195:U:H2'	51:3:2196:G:C8	2.38	0.57
51:3:2705:G:H2'	51:3:2706:U:C6	2.38	0.57
53:5:671:G:H2'	53:5:672:A:C8	2.38	0.57
53:5:732:A:H2'	53:5:733:A:C8	2.40	0.57
54:6:69:A:H2'	54:6:70:G:H8	1.68	0.57
6:B:50:ASN:O	6:B:52:GLN:NE2	2.38	0.57
7:C:147:LYS:HG2	7:C:150:LYS:HE3	1.84	0.57
10:F:87:PRO:HG2	10:F:151:ALA:HB2	1.87	0.57
17:M:29:ARG:NH2	53:5:969:A:OP2	2.38	0.57
51:3:330:A:H2'	51:3:331:A:H8	1.69	0.57
51:3:1235:U:N3	51:3:1236:G:N7	2.51	0.57
51:3:2223:C:H2'	51:3:2224:A:C8	2.38	0.57
51:3:2700:C:H1'	51:3:2851:U:H1'	1.85	0.57
51:3:2753:C:H2'	51:3:2754:U:C6	2.39	0.57
4:9:128:VAL:HG12	4:9:131:MET:HB3	1.87	0.57
4:9:136:ASN:OD1	4:9:137:LYS:N	2.36	0.57
5:A:31:GLY:O	5:A:32:MET:HE2	2.04	0.57
16:L:117:ALA:HB2	54:7:29:C:H4'	1.87	0.57
25:a:81:ALA:O	25:a:120:LYS:NZ	2.33	0.57
37:m:65:LYS:HE2	51:3:2715:C:H4'	1.84	0.57
38:n:49:ASN:OD1	52:4:7:G:O2'	2.23	0.57
39:o:107:ARG:HH12	51:3:1761:C:H4'	1.70	0.57
51:3:849:C:H2'	51:3:850:G:H8	1.68	0.57
51:3:1445:U:H2'	51:3:1446:G:O4'	2.05	0.57
51:3:1723:A:OP2	51:3:1732:A:N6	2.37	0.57
51:3:1906:G:O2'	51:3:1908:A:O5'	2.22	0.57
51:3:2100:G:H2'	51:3:2101:A:C8	2.40	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2156:G:H2'	51:3:2157:A:C8	2.39	0.57
51:3:2447:A:O2'	51:3:2608:A:OP1	2.18	0.57
10:F:69:MET:SD	10:F:95:LYS:HE2	2.45	0.57
19:O:2:ARG:HH12	19:O:6:VAL:HA	1.70	0.57
28:d:63:GLN:HG3	52:4:41:C:H5'	1.86	0.57
42:r:128:ARG:NH1	51:3:1248:A:N3	2.53	0.57
43:s:2:ASP:N	51:3:146:G:O2'	2.37	0.57
49:y:32:LYS:NZ	49:y:50:ASP:HB2	2.19	0.57
51:3:793:C:H2'	51:3:794:G:C8	2.40	0.57
51:3:1444:C:O2	51:3:1616:G:N2	2.38	0.57
51:3:1630:A:H2'	51:3:1631:A:C8	2.40	0.57
53:5:56:A:OP2	53:5:348:C:N4	2.38	0.57
53:5:76:G:N2	53:5:79:A:OP2	2.20	0.57
53:5:239:A:H62	53:5:277:G:H1'	1.69	0.57
53:5:372:G:H2'	53:5:373:A:C8	2.39	0.57
53:5:499:U:O2	53:5:542:G:O6	2.23	0.57
53:5:1331:A:N1	53:5:1340:G:N2	2.49	0.57
54:7:29:C:H2'	54:7:30:G:C8	2.38	0.57
15:K:27:ASN:HB3	15:K:36:THR:HB	1.85	0.57
20:P:20:LYS:HE3	53:5:251:G:H5''	1.86	0.57
51:3:227:A:H2'	51:3:456:G:H21	1.70	0.57
51:3:330:A:H2'	51:3:331:A:C8	2.39	0.57
51:3:2701:A:H2'	51:3:2702:G:C8	2.40	0.57
53:5:1266:U:H2'	53:5:1267:G:H8	1.70	0.57
53:5:1429:G:H2'	53:5:1430:G:C8	2.40	0.57
7:C:66:ILE:HD11	7:C:96:ARG:HE	1.69	0.57
7:C:83:GLY:HA3	7:C:88:ASN:HD21	1.69	0.57
7:C:101:VAL:HA	7:C:104:MET:HG2	1.85	0.57
51:3:1201:A:H2'	51:3:1202:A:C8	2.40	0.57
51:3:2865:U:H2'	51:3:2866:A:H8	1.70	0.57
53:5:373:A:H2'	53:5:374:G:H8	1.70	0.57
53:5:631:C:H2'	53:5:632:A:C8	2.36	0.57
53:5:656:U:H2'	53:5:657:G:C8	2.40	0.57
53:5:885:U:H2'	53:5:886:A:C8	2.40	0.57
3:2:7:VAL:HG21	51:3:1067:A:H5'	1.87	0.56
4:9:332:TYR:HB2	4:9:376:SER:HB3	1.86	0.56
22:R:81:LYS:NZ	53:5:950:C:O2'	2.33	0.56
28:d:6:ALA:O	28:d:10:LYS:HB2	2.05	0.56
34:j:25:LEU:HB2	34:j:40:VAL:HG23	1.87	0.56
42:r:2:ILE:HG13	42:r:3:ALA:N	2.19	0.56
51:3:333:A:N1	51:3:356:A:O2'	2.36	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:563:A:H62	51:3:2049:A:H3'	1.70	0.56
51:3:1197:G:H2'	51:3:1198:G:C8	2.40	0.56
51:3:1701:G:O2'	51:3:1998:U:O4	2.23	0.56
51:3:2104:A:H2'	51:3:2105:G:H8	1.68	0.56
51:3:2177:G:H1	54:8:20:G:H22	1.51	0.56
53:5:698:U:OP1	53:5:699:A:O2'	2.18	0.56
53:5:1211:A:H2'	53:5:1212:C:C6	2.40	0.56
7:C:103:ARG:NH1	7:C:186:GLU:O	2.37	0.56
14:J:16:VAL:HG22	14:J:25:VAL:HG12	1.87	0.56
15:K:78:THR:HG23	15:K:110:ILE:HD11	1.87	0.56
18:N:70:ASN:OD1	18:N:71:ASP:N	2.39	0.56
51:3:155:A:H2'	51:3:156:A:H8	1.70	0.56
51:3:746:G:H2'	51:3:747:A:H8	1.71	0.56
51:3:1670:U:O2'	51:3:1767:A:N3	2.36	0.56
51:3:1937:G:N2	51:3:1976:A:O5'	2.37	0.56
53:5:1138:U:H3	53:5:1149:G:H1	1.52	0.56
2:1:42:ARG:HE	2:1:43:LYS:HZ3	1.53	0.56
5:A:106:ALA:HB1	5:A:166:VAL:HG12	1.88	0.56
5:A:137:GLN:HA	5:A:140:ASN:HB2	1.88	0.56
6:B:102:LEU:HD22	6:B:104:LEU:HD22	1.85	0.56
7:C:143:ARG:HH11	7:C:145:LYS:HA	1.69	0.56
9:E:151:LYS:O	11:G:56:ASN:ND2	2.38	0.56
11:G:118:THR:OG1	11:G:119:SER:N	2.39	0.56
27:c:4:LEU:HD11	27:c:126:HIS:HA	1.87	0.56
29:e:91:ARG:NE	29:e:133:GLU:OE1	2.37	0.56
35:k:39:GLN:OE1	51:3:200:A:N6	2.38	0.56
36:l:20:LYS:HA	36:l:99:GLN:HB3	1.87	0.56
36:l:80:GLU:OE2	45:u:17:SER:N	2.39	0.56
38:n:76:ASP:OD1	38:n:77:ILE:N	2.38	0.56
40:p:106:ASN:HA	40:p:109:VAL:HG22	1.87	0.56
41:q:74:ILE:H	41:q:79:HIS:HB3	1.70	0.56
42:r:34:ASN:O	42:r:38:ASN:ND2	2.38	0.56
46:v:57:THR:O	46:v:61:HIS:ND1	2.38	0.56
49:y:51:LEU:HB3	49:y:53:VAL:HG13	1.87	0.56
51:3:425:U:H4'	51:3:426:U:OP2	2.05	0.56
51:3:587:U:H2'	51:3:588:G:O4'	2.05	0.56
51:3:984:C:H2'	51:3:985:A:C8	2.41	0.56
51:3:1071:G:O6	51:3:1154:U:O4	2.23	0.56
51:3:1310:U:O2	51:3:1314:A:C6	2.59	0.56
51:3:1418:U:C2	51:3:1423:A:N6	2.73	0.56
51:3:1968:C:H5''	53:5:1460:U:H5'	1.86	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1994:U:H2'	51:3:1995:G:C8	2.37	0.56
53:5:457:A:H2'	53:5:458:G:C8	2.40	0.56
53:5:1057:C:H2'	53:5:1058:A:C4	2.40	0.56
53:5:1329:G:H2'	53:5:1330:A:C8	2.41	0.56
4:9:212:LEU:HD22	4:9:233:GLU:HB3	1.88	0.56
12:H:42:PRO:HB2	12:H:44:LYS:HD3	1.86	0.56
35:k:114:LEU:HB3	35:k:131:VAL:HG23	1.88	0.56
40:p:2:ARG:HH12	51:3:485:A:H4'	1.71	0.56
51:3:133:G:N2	51:3:150:U:O2	2.29	0.56
51:3:526:G:H2'	51:3:527:A:C8	2.41	0.56
51:3:1416:G:H2'	51:3:1417:G:C8	2.41	0.56
51:3:1778:G:H2'	51:3:1779:G:H8	1.71	0.56
51:3:2652:U:H2'	51:3:2653:G:C4	2.40	0.56
51:3:2735:G:H2'	51:3:2736:U:C6	2.40	0.56
53:5:254:G:H2'	53:5:255:G:H8	1.71	0.56
8:D:192:ILE:O	8:D:196:MET:HG2	2.06	0.56
15:K:99:ARG:NH1	53:5:522:G:O2'	2.37	0.56
22:R:16:LEU:HA	22:R:19:VAL:HG22	1.86	0.56
25:a:171:LEU:HD11	25:a:183:GLN:HB2	1.87	0.56
51:3:10:U:H2'	51:3:11:U:C6	2.40	0.56
51:3:196:G:H4'	51:3:712:A:H2	1.70	0.56
51:3:495:U:H2'	51:3:496:A:H8	1.71	0.56
51:3:1617:U:H1'	51:3:1619:A:C6	2.40	0.56
51:3:1778:G:H2'	51:3:1779:G:C8	2.40	0.56
51:3:1816:A:H2'	51:3:1817:A:H8	1.70	0.56
53:5:22:G:H2'	53:5:23:G:C8	2.40	0.56
53:5:205:U:H3	53:5:210:G:H1	1.53	0.56
53:5:720:U:H4'	53:5:721:G:H5''	1.86	0.56
25:a:78:ASN:HB2	30:f:84:HIS:CD2	2.40	0.56
33:i:20:ILE:HG12	33:i:140:PRO:HB2	1.87	0.56
36:l:16:SER:OG	36:l:18:GLU:OE1	2.24	0.56
40:p:60:TRP:CE2	40:p:93:VAL:HB	2.41	0.56
51:3:410:G:N2	51:3:411:U:O4	2.38	0.56
51:3:1429:G:O2'	51:3:1548:A:OP2	2.24	0.56
51:3:2210:G:O2'	51:3:2212:U:OP2	2.22	0.56
51:3:2407:G:H2'	51:3:2408:G:C8	2.40	0.56
53:5:7:U:O2'	53:5:294:A:N3	2.37	0.56
53:5:58:G:H2'	53:5:59:C:C6	2.41	0.56
53:5:576:A:H2'	53:5:577:G:C8	2.41	0.56
53:5:1059:G:OP1	53:5:1362:G:O2'	2.24	0.56
5:A:67:THR:HA	5:A:70:ASN:HD21	1.71	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:E:92:ARG:HE	21:Q:92:ARG:HH22	1.54	0.56
13:I:29:LYS:O	13:I:32:VAL:HG12	2.06	0.56
33:i:76:PHE:HB3	33:i:89:LYS:HG3	1.87	0.56
43:s:20:GLN:O	43:s:25:LYS:NZ	2.38	0.56
46:v:29:TRP:HB3	51:3:432:G:H1'	1.88	0.56
51:3:1587:U:H2'	51:3:1588:A:C8	2.41	0.56
51:3:2130:A:H2'	51:3:2131:G:H8	1.71	0.56
53:5:253:G:O6	53:5:265:U:O4	2.24	0.56
46:v:26:ARG:NH1	51:3:193:G:OP2	2.38	0.56
51:3:1409:G:H2'	51:3:1410:A:C8	2.40	0.56
51:3:1596:U:H2'	51:3:1597:U:C6	2.41	0.56
51:3:2254:G:H2'	51:3:2255:A:C8	2.41	0.56
53:5:445:A:C8	53:5:483:U:N3	2.62	0.56
53:5:706:U:H2'	53:5:707:G:C8	2.41	0.56
54:8:36:A:H2'	54:8:37:A:H8	1.71	0.56
9:E:84:ARG:HH22	53:5:670:G:H5'	1.71	0.56
13:I:17:GLU:HB3	13:I:75:ARG:NH2	2.21	0.56
15:K:61:ALA:HB2	53:5:527:G:H1	1.71	0.56
25:a:78:ASN:O	30:f:85:ASN:ND2	2.38	0.56
41:q:76:GLN:HA	51:3:598:G:H5'	1.88	0.56
51:3:513:A:H2'	51:3:514:A:C4	2.41	0.56
51:3:1054:U:H2'	51:3:1055:A:C5	2.41	0.56
51:3:1514:U:O4	51:3:1525:G:O6	2.23	0.56
51:3:1866:G:H22	51:3:1891:A:H2'	1.70	0.56
51:3:1916:C:H2'	51:3:1917:G:C8	2.41	0.56
51:3:2695:U:H3	51:3:2730:G:H1	1.54	0.56
53:5:474:G:H2'	53:5:475:U:C6	2.41	0.56
53:5:748:U:H2'	53:5:749:G:O4'	2.06	0.56
4:9:223:GLY:HA3	53:5:56:A:N7	2.21	0.56
7:C:60:MET:HE2	7:C:191:ILE:HG23	1.88	0.56
15:K:112:ARG:HB3	15:K:130:TYR:HA	1.87	0.56
26:b:198:ALA:HB2	51:3:2687:A:H4'	1.88	0.56
51:3:1394:A:O2'	51:3:1395:A:O4'	2.22	0.56
51:3:2876:G:H2'	51:3:2877:A:C8	2.41	0.56
53:5:63:U:O2	53:5:375:C:O2'	2.23	0.56
53:5:305:A:H2'	53:5:306:G:C8	2.38	0.56
53:5:366:C:H2'	53:5:367:A:C8	2.41	0.56
4:9:109:THR:HG21	4:9:140:ILE:HB	1.88	0.55
25:a:55:VAL:HG13	25:a:58:GLN:HE21	1.71	0.55
41:q:27:ALA:O	41:q:62:HIS:NE2	2.34	0.55
47:w:11:SER:HA	47:w:15:LEU:HG	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:752:C:H3'	51:3:753:A:H8	1.70	0.55
51:3:2440:A:N6	54:8:77:A:O2'	2.39	0.55
51:3:2683:G:H1	51:3:2740:U:H3	1.54	0.55
51:3:2700:C:O2'	51:3:2851:U:O2	2.22	0.55
53:5:662:G:O6	53:5:721:G:O6	2.23	0.55
53:5:980:C:H2'	53:5:981:U:C6	2.41	0.55
6:B:90:LYS:O	6:B:94:GLN:N	2.33	0.55
9:E:35:LEU:HD13	9:E:60:TRP:CE3	2.41	0.55
12:H:71:GLY:HA2	53:5:1225:A:H4'	1.88	0.55
25:a:42:LYS:NZ	25:a:43:LYS:O	2.40	0.55
32:h:80:ALA:HB1	32:h:94:GLY:HA3	1.88	0.55
40:p:60:TRP:O	40:p:64:LEU:HG	2.06	0.55
51:3:1932:C:N3	51:3:1936:G:N1	2.50	0.55
51:3:2451:C:H2'	51:3:2452:G:C8	2.39	0.55
52:4:99:A:H2'	52:4:100:G:C8	2.42	0.55
53:5:97:G:H21	53:5:350:G:H5'	1.72	0.55
53:5:1345:G:H2'	53:5:1346:G:H8	1.71	0.55
4:9:182:ASP:HB2	4:9:185:TRP:HD1	1.72	0.55
4:9:211:PHE:HZ	4:9:241:GLN:HG2	1.71	0.55
37:m:106:ARG:NH1	37:m:109:ASP:OD2	2.38	0.55
38:n:57:SER:HA	38:n:61:LYS:HB3	1.89	0.55
41:q:68:VAL:HG12	41:q:85:HIS:HB3	1.88	0.55
51:3:322:A:H2'	51:3:323:A:C8	2.42	0.55
51:3:1016:A:H2'	51:3:1017:A:C8	2.40	0.55
51:3:1062:A:H2'	51:3:1063:A:H8	1.72	0.55
51:3:2421:U:H2'	51:3:2422:G:C8	2.40	0.55
53:5:308:C:H2'	53:5:309:A:H8	1.71	0.55
53:5:556:G:OP2	53:5:557:A:O2'	2.21	0.55
53:5:1110:C:H2'	53:5:1111:G:C8	2.40	0.55
53:5:1156:G:H4'	53:5:1157:G:H5'	1.88	0.55
54:7:36:A:H2'	54:7:37:A:H8	1.71	0.55
12:H:37:PRO:O	12:H:41:PHE:N	2.39	0.55
25:a:217:GLY:O	25:a:221:HIS:ND1	2.40	0.55
47:w:85:ASN:HA	47:w:88:LYS:HE2	1.86	0.55
51:3:650:G:H2'	51:3:651:A:C8	2.42	0.55
51:3:1460:G:H2'	51:3:1461:A:C8	2.41	0.55
51:3:2137:A:O2'	51:3:2165:A:N6	2.40	0.55
51:3:2644:U:H2'	51:3:2645:U:C6	2.42	0.55
51:3:2690:U:H2'	51:3:2691:C:H6	1.70	0.55
53:5:403:A:H2'	53:5:404:A:H8	1.72	0.55
53:5:831:C:H2'	53:5:832:G:H8	1.72	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:D:79:THR:O	53:5:916:U:O2'	2.20	0.55
9:E:76:ALA:HB1	9:E:82:VAL:HG11	1.89	0.55
11:G:90:ILE:HG22	11:G:97:ILE:HG21	1.89	0.55
42:r:66:GLY:H	42:r:69:LEU:HD23	1.72	0.55
43:s:62:PRO:HD3	43:s:77:LEU:HB2	1.88	0.55
51:3:418:G:N2	51:3:430:U:O2	2.33	0.55
51:3:442:G:N2	51:3:457:U:O2	2.40	0.55
53:5:412:G:H2'	53:5:413:G:C8	2.41	0.55
53:5:604:U:H5''	53:5:605:A:H5''	1.89	0.55
53:5:1017:A:O2'	53:5:1018:U:O4'	2.22	0.55
1:0:3:ARG:HE	51:3:1646:G:H21	1.55	0.55
11:G:89:GLN:NE2	53:5:871:U:OP1	2.39	0.55
12:H:112:VAL:H	53:5:1321:G:H5''	1.71	0.55
14:J:67:VAL:HB	14:J:72:MET:HG3	1.87	0.55
14:J:115:LYS:HE2	24:T:35:HIS:CE1	2.41	0.55
16:L:34:LEU:HD21	16:L:41:PRO:HD3	1.87	0.55
44:t:32:GLN:O	44:t:33:GLN:NE2	2.40	0.55
51:3:272:C:N4	51:3:295:U:O2'	2.40	0.55
51:3:2036:G:N1	51:3:2040:A:OP2	2.28	0.55
51:3:2262:C:H2'	51:3:2263:G:H8	1.72	0.55
53:5:720:U:O2'	53:5:849:A:O2'	2.23	0.55
53:5:849:A:OP2	53:5:865:U:N3	2.36	0.55
25:a:40:THR:HA	25:a:65:LYS:HA	1.88	0.55
27:c:30:LYS:HD3	27:c:33:PRO:HG2	1.88	0.55
29:e:34:ILE:HD11	29:e:139:ILE:HG21	1.88	0.55
51:3:118:G:OP2	51:3:120:A:O2'	2.18	0.55
51:3:410:G:H4'	51:3:411:U:O5'	2.06	0.55
53:5:351:C:H2'	53:5:352:A:O4'	2.06	0.55
53:5:424:U:OP2	53:5:425:G:O2'	2.24	0.55
53:5:537:A:H2'	53:5:538:G:H8	1.72	0.55
53:5:973:A:O2'	53:5:1296:C:N3	2.33	0.55
53:5:1248:U:H2'	53:5:1249:G:O4'	2.07	0.55
6:B:153:LYS:HD3	6:B:172:ILE:HD13	1.89	0.55
18:N:51:ARG:HD2	53:5:725:A:H62	1.71	0.55
25:a:138:LEU:HA	25:a:141:ILE:HD12	1.89	0.55
29:e:94:GLY:HA3	29:e:97:TYR:CD2	2.42	0.55
36:l:41:TRP:CD1	36:l:96:VAL:HG22	2.42	0.55
50:z:24:ASN:ND2	51:3:2293:C:OP1	2.40	0.55
51:3:130:C:H2'	51:3:131:C:C6	2.42	0.55
51:3:1445:U:H3	51:3:1615:G:H1	1.55	0.55
51:3:1447:A:H61	51:3:1519:A:H61	1.54	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1916:C:H2'	51:3:1917:G:H8	1.71	0.55
51:3:2695:U:H2'	51:3:2696:G:O4'	2.07	0.55
53:5:35:C:H2'	53:5:36:G:H8	1.72	0.55
2:1:8:LYS:NZ	51:3:247:U:OP1	2.40	0.55
6:B:90:LYS:HA	6:B:93:LYS:HB3	1.89	0.55
7:C:86:ALA:HB1	7:C:193:GLU:HG3	1.87	0.55
10:F:75:ARG:N	10:F:85:GLN:OE1	2.40	0.55
18:N:28:LEU:O	18:N:31:SER:OG	2.17	0.55
33:i:20:ILE:HG23	33:i:60:ILE:HD13	1.89	0.55
51:3:192:U:H4'	51:3:1393:A:N6	2.22	0.55
51:3:1979:G:H2'	51:3:1980:G:H8	1.72	0.55
51:3:2465:U:O4	51:3:2502:G:O6	2.25	0.55
51:3:2663:G:N2	51:3:2673:A:O5'	2.37	0.55
53:5:369:A:H61	53:5:387:G:H1'	1.72	0.55
53:5:403:A:H2'	53:5:404:A:C8	2.41	0.55
53:5:445:A:H8	53:5:483:U:H3	1.43	0.55
53:5:655:G:O6	53:5:744:U:O2	2.25	0.55
53:5:813:A:H5'	53:5:814:C:H5''	1.88	0.55
54:7:67:C:H2'	54:7:68:G:H8	1.72	0.55
54:8:29:C:H2'	54:8:30:G:C8	2.38	0.55
15:K:43:LYS:NZ	53:5:358:G:H4'	2.22	0.55
26:b:17:PHE:HZ	39:o:80:GLN:HG2	1.72	0.55
28:d:78:LYS:HA	54:7:57:C:N3	2.22	0.55
45:u:89:LYS:NZ	51:3:952:U:O3'	2.40	0.55
51:3:741:A:H2'	51:3:742:G:O4'	2.07	0.55
51:3:1070:U:H2'	51:3:1071:G:C8	2.41	0.55
51:3:2088:U:H3	51:3:2247:G:H1	1.55	0.55
51:3:2268:C:H2'	51:3:2269:C:C6	2.42	0.55
53:5:191:A:H2'	53:5:192:A:H8	1.72	0.55
54:6:29:C:H2'	54:6:30:G:C8	2.38	0.55
54:6:36:A:H2'	54:6:37:A:C8	2.42	0.55
25:a:144:GLY:H	25:a:170:ILE:HB	1.72	0.54
25:a:159:GLN:HB3	51:3:1825:U:C4	2.43	0.54
27:c:4:LEU:HB2	27:c:20:LEU:HD11	1.89	0.54
44:t:41:LYS:HG3	44:t:64:GLN:HB3	1.89	0.54
51:3:217:A:H2'	51:3:218:G:H8	1.71	0.54
51:3:720:A:OP2	51:3:809:A:N6	2.40	0.54
51:3:2339:G:H21	51:3:2344:A:H2	1.53	0.54
54:6:36:A:H2'	54:6:37:A:H8	1.71	0.54
10:F:131:GLY:HA2	10:F:134:ILE:HB	1.89	0.54
11:G:107:VAL:C	11:G:110:GLY:H	2.15	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:v:2:ALA:N	51:3:1392:G:OP2	2.41	0.54
49:y:32:LYS:HZ3	49:y:50:ASP:HB2	1.72	0.54
51:3:498:C:N4	51:3:499:G:O6	2.41	0.54
51:3:674:G:H2'	51:3:675:U:H6	1.72	0.54
51:3:1370:A:N7	51:3:1636:U:N3	2.55	0.54
51:3:2413:G:O2'	51:3:2419:A:N6	2.40	0.54
53:5:132:G:H2'	53:5:133:G:H8	1.73	0.54
53:5:989:A:N6	53:5:1038:G:O2'	2.39	0.54
54:6:67:C:H2'	54:6:68:G:H8	1.72	0.54
5:A:92:VAL:HA	5:A:95:LEU:HD12	1.88	0.54
16:L:14:ARG:HG2	16:L:44:ARG:H	1.73	0.54
24:T:11:LEU:HG	24:T:12:GLU:HG2	1.88	0.54
26:b:7:PHE:CE1	26:b:206:LEU:HD13	2.42	0.54
29:e:9:ILE:HB	29:e:53:LEU:HB3	1.89	0.54
41:q:41:LEU:HD12	41:q:42:ASP:N	2.22	0.54
51:3:358:A:N6	51:3:373:U:O4'	2.40	0.54
51:3:546:U:H3'	51:3:547:G:C8	2.42	0.54
51:3:1497:A:H2'	51:3:1498:U:C6	2.41	0.54
51:3:2165:A:H4'	51:3:2166:U:H5'	1.88	0.54
51:3:2754:U:H2'	51:3:2755:G:O4'	2.06	0.54
53:5:305:A:O2'	53:5:605:A:N1	2.39	0.54
53:5:460:A:H2'	53:5:461:G:C8	2.42	0.54
53:5:1151:A:H2'	53:5:1152:G:C8	2.42	0.54
54:8:67:C:H2'	54:8:68:G:H8	1.72	0.54
2:1:10:ARG:NH1	35:k:63:PRO:O	2.41	0.54
4:9:83:PRO:HD2	4:9:92:MET:HB2	1.90	0.54
13:I:18:SER:OG	13:I:24:LEU:HB2	2.08	0.54
13:I:59:ARG:NE	53:5:1052:G:OP1	2.40	0.54
33:i:48:THR:HB	33:i:51:GLN:HB2	1.89	0.54
51:3:125:G:OP1	51:3:1404:C:O2'	2.26	0.54
51:3:322:A:H2'	51:3:323:A:H8	1.71	0.54
51:3:593:C:H2'	51:3:594:G:H8	1.73	0.54
51:3:829:A:H2'	51:3:830:A:C8	2.42	0.54
51:3:910:G:H2'	51:3:911:U:C6	2.43	0.54
51:3:955:A:H62	51:3:2276:A:H8	1.56	0.54
51:3:1298:A:H2'	51:3:1299:A:O4'	2.08	0.54
51:3:1543:U:H2'	51:3:1544:G:C8	2.42	0.54
51:3:1653:C:H2'	51:3:1654:G:C8	2.43	0.54
53:5:537:A:H2'	53:5:538:G:C8	2.42	0.54
54:8:36:A:H2'	54:8:37:A:C8	2.42	0.54
4:9:307:ALA:HA	4:9:390:THR:HB	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:253:C:OP2	51:3:2402:C:O2'	2.26	0.54
51:3:1656:A:H2'	51:3:1657:G:O4'	2.07	0.54
51:3:2099:U:H4'	51:3:2100:G:H5''	1.88	0.54
51:3:2151:G:H4'	51:3:2152:C:C5	2.43	0.54
51:3:2876:G:O2'	51:3:2877:A:H5'	2.08	0.54
53:5:275:A:H5''	53:5:276:U:H3'	1.89	0.54
53:5:834:G:H2'	53:5:835:G:C8	2.42	0.54
53:5:1077:U:O2	53:5:1090:G:N2	2.35	0.54
20:P:56:LYS:N	20:P:59:ASP:OD2	2.32	0.54
24:T:31:ARG:NH2	53:5:715:A:O2'	2.40	0.54
33:i:56:TYR:OH	51:3:9:G:O2'	2.24	0.54
35:k:8:SER:O	51:3:1273:U:O2'	2.26	0.54
41:q:79:HIS:CD2	51:3:1218:G:H5''	2.43	0.54
42:r:86:ILE:HD12	42:r:87:PRO:HD2	1.89	0.54
51:3:603:G:H1'	51:3:1019:A:N6	2.23	0.54
51:3:1295:A:H61	51:3:2020:A:H3'	1.73	0.54
51:3:2115:A:OP1	51:3:2157:A:O2'	2.24	0.54
53:5:657:G:H2'	53:5:658:G:C8	2.43	0.54
53:5:836:C:H2'	53:5:837:G:O4'	2.07	0.54
16:L:115:THR:OG1	53:5:1204:A:OP1	2.23	0.54
36:l:56:LYS:NZ	51:3:2477:A:O3'	2.41	0.54
45:u:43:GLN:HG2	51:3:960:A:H4'	1.90	0.54
51:3:127:A:H2'	51:3:128:A:C4	2.43	0.54
51:3:2551:G:H21	51:3:2654:U:H5''	1.72	0.54
52:4:31:G:O6	52:4:48:A:N6	2.41	0.54
53:5:8:G:N3	53:5:294:A:N6	2.56	0.54
53:5:68:C:H2'	53:5:69:G:C8	2.43	0.54
53:5:331:C:H2'	53:5:332:A:H8	1.71	0.54
53:5:1261:A:H2'	53:5:1262:A:H8	1.72	0.54
4:9:301:PRO:HA	4:9:368:ALA:HA	1.90	0.54
9:E:2:GLN:OE1	9:E:4:ASN:ND2	2.41	0.54
9:E:84:ARG:HH12	53:5:670:G:H4'	1.73	0.54
9:E:100:ILE:HD13	21:Q:49:LEU:HD13	1.89	0.54
25:a:10:SER:HA	51:3:763:G:H21	1.73	0.54
25:a:142:PRO:HG2	25:a:145:THR:HG21	1.89	0.54
27:c:74:ALA:HB3	27:c:76:GLN:HE21	1.72	0.54
43:s:51:LYS:HB3	47:w:87:TRP:CE2	2.43	0.54
51:3:1117:U:H2'	51:3:1118:U:O4'	2.06	0.54
51:3:1295:A:H4'	51:3:1296:G:H5'	1.90	0.54
51:3:1508:G:OP2	51:3:1508:G:H4'	2.00	0.54
51:3:1914:G:O6	51:3:1930:U:O2	2.26	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1979:G:H2'	51:3:1980:G:C8	2.43	0.54
53:5:879:G:H2'	53:5:880:G:H8	1.72	0.54
53:5:1150:G:H2'	53:5:1151:A:C8	2.42	0.54
53:5:1316:C:H2'	53:5:1317:A:C8	2.43	0.54
54:6:50:G:H2'	54:6:51:G:C8	2.43	0.54
2:1:29:LEU:O	2:1:33:LYS:NZ	2.38	0.54
7:C:13:ARG:NE	53:5:541:C:OP1	2.41	0.54
40:p:106:ASN:OD1	40:p:107:LEU:N	2.41	0.54
51:3:1237:G:H2'	51:3:1238:A:C8	2.42	0.54
51:3:1237:G:H2'	51:3:1238:A:H8	1.72	0.54
51:3:2004:G:H2'	51:3:2005:G:C8	2.43	0.54
51:3:2339:G:O2'	51:3:2344:A:N6	2.36	0.54
51:3:2382:A:H2'	51:3:2383:G:C8	2.42	0.54
51:3:2516:G:H2'	51:3:2517:A:H8	1.72	0.54
51:3:2736:U:O2'	51:3:2737:G:H8	1.90	0.54
54:7:36:A:H2'	54:7:37:A:C8	2.42	0.54
5:A:175:LEU:HD11	5:A:199:VAL:HG22	1.90	0.54
14:J:44:GLY:O	14:J:46:LYS:NZ	2.40	0.54
25:a:136:MET:HE3	25:a:140:PHE:HZ	1.73	0.54
51:3:1670:U:H2'	51:3:1671:C:C6	2.43	0.54
51:3:2006:C:H5''	51:3:2731:U:O2'	2.08	0.54
51:3:2347:G:H2'	51:3:2348:U:H6	1.73	0.54
51:3:2540:G:N2	51:3:2671:G:O2'	2.41	0.54
52:4:4:G:O6	52:4:105:A:N6	2.41	0.54
53:5:1004:U:H2'	53:5:1005:U:C6	2.43	0.54
54:7:14:C:N3	54:7:24:A:N6	2.56	0.54
14:J:86:LYS:HZ3	24:T:22:SER:HB2	1.73	0.53
19:O:59:PRO:O	19:O:64:ARG:NH2	2.41	0.53
22:R:25:GLN:HG2	22:R:26:GLU:N	2.19	0.53
33:i:45:VAL:O	40:p:100:LYS:NZ	2.40	0.53
34:j:78:LYS:HB3	39:o:76:GLU:HG2	1.89	0.53
51:3:786:A:N7	51:3:824:A:N6	2.56	0.53
51:3:1310:U:O2	51:3:1314:A:N6	2.36	0.53
51:3:2071:C:H2'	51:3:2072:C:C6	2.44	0.53
51:3:2374:A:H3'	51:3:2375:A:H8	1.73	0.53
51:3:2694:A:H2'	51:3:2695:U:C6	2.43	0.53
51:3:2847:C:H2'	51:3:2848:A:H8	1.73	0.53
52:4:104:C:H2'	52:4:105:A:C8	2.42	0.53
53:5:169:G:H1	53:5:196:G:H22	1.55	0.53
53:5:780:U:H2'	53:5:781:A:H8	1.73	0.53
54:8:14:C:N3	54:8:24:A:N6	2.56	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:44:GLN:HE22	35:k:65:PHE:HE1	1.57	0.53
4:9:363:LEU:HG	4:9:365:ALA:H	1.72	0.53
8:D:69:ARG:HH11	8:D:172:LEU:HB2	1.72	0.53
13:I:72:GLU:HB3	17:M:57:LYS:HE3	1.90	0.53
15:K:12:ARG:NH2	53:5:562:U:OP2	2.41	0.53
25:a:246:ARG:HH21	51:3:1794:A:H5''	1.73	0.53
35:k:35:GLY:N	51:3:1221:G:OP1	2.41	0.53
37:m:53:LYS:HE3	37:m:91:GLU:HA	1.88	0.53
51:3:517:G:O2'	51:3:542:A:N1	2.37	0.53
51:3:1572:U:H2'	51:3:1573:A:C8	2.42	0.53
51:3:1807:C:N4	51:3:1824:G:H22	2.07	0.53
51:3:2756:A:N7	51:3:2762:U:O2	2.40	0.53
51:3:2828:C:OP2	51:3:2829:G:N2	2.41	0.53
51:3:2852:G:O2'	51:3:2871:G:N2	2.42	0.53
53:5:289:U:H5'	53:5:608:G:H1'	1.90	0.53
53:5:615:G:H2'	53:5:616:C:C6	2.43	0.53
53:5:1390:G:H1	53:5:1460:U:H3	1.55	0.53
54:8:50:G:H2'	54:8:51:G:C8	2.43	0.53
21:Q:81:MET:O	21:Q:84:ARG:HG2	2.08	0.53
23:S:11:LEU:O	23:S:15:ILE:HG12	2.09	0.53
28:d:64:LYS:HB3	52:4:40:U:H4'	1.90	0.53
34:j:81:ASP:CG	34:j:82:ASN:H	2.16	0.53
36:l:41:TRP:HB3	36:l:94:VAL:HG21	1.91	0.53
50:z:5:ARG:HH22	50:z:25:VAL:HG22	1.71	0.53
51:3:279:U:H2'	51:3:280:A:C8	2.43	0.53
51:3:638:A:N1	51:3:661:G:N1	2.55	0.53
51:3:982:G:H2'	51:3:983:A:H8	1.73	0.53
51:3:2197:U:H3'	51:3:2198:G:H8	1.73	0.53
51:3:2676:G:H2'	51:3:2677:A:H8	1.73	0.53
53:5:133:G:H2'	53:5:134:G:H8	1.73	0.53
53:5:977:U:H5'	53:5:978:A:C8	2.44	0.53
53:5:1329:G:H2'	53:5:1330:A:H8	1.74	0.53
54:6:14:C:N3	54:6:24:A:N6	2.56	0.53
54:7:50:G:H2'	54:7:51:G:C8	2.43	0.53
2:1:9:LYS:NZ	51:3:251:G:O6	2.40	0.53
17:M:29:ARG:NH2	17:M:31:ARG:O	2.41	0.53
26:b:107:TYR:HA	26:b:180:ARG:NH1	2.23	0.53
29:e:90:LEU:HD12	29:e:166:LEU:O	2.08	0.53
44:t:1:MET:O	44:t:91:TYR:OH	2.23	0.53
51:3:353:G:H2'	51:3:354:C:C6	2.44	0.53
51:3:915:A:OP2	51:3:936:G:N2	2.38	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1010:G:O5'	51:3:1217:G:N2	2.36	0.53
51:3:1248:A:H2'	51:3:1249:A:C8	2.44	0.53
51:3:1893:C:H2'	51:3:1894:U:H6	1.74	0.53
51:3:2213:A:H2'	51:3:2214:A:C8	2.44	0.53
1:0:3:ARG:NH2	51:3:1647:A:N3	2.56	0.53
5:A:48:GLU:O	5:A:49:ARG:NH2	2.42	0.53
9:E:108:ALA:O	9:E:111:LYS:HB2	2.08	0.53
14:J:83:GLY:O	24:T:26:ARG:NH1	2.41	0.53
30:f:98:ILE:HD11	30:f:113:PHE:CE2	2.36	0.53
37:m:82:LEU:HD12	37:m:86:VAL:HG23	1.90	0.53
51:3:54:A:N1	51:3:182:C:H1'	2.23	0.53
51:3:140:G:O2'	51:3:142:A:N6	2.35	0.53
51:3:251:G:OP2	51:3:253:C:N4	2.42	0.53
51:3:740:A:OP2	51:3:761:G:N2	2.40	0.53
51:3:1063:A:N6	51:3:1160:G:H2'	2.23	0.53
51:3:1327:G:H1	51:3:1673:U:H3'	1.74	0.53
51:3:1809:A:H2'	51:3:1810:A:C8	2.44	0.53
51:3:1818:G:H2'	51:3:1819:G:C8	2.43	0.53
51:3:2863:G:H2'	51:3:2864:A:C8	2.43	0.53
53:5:778:A:H62	53:5:798:U:H3	1.56	0.53
54:6:11:G:C6	54:6:27:A:N6	2.77	0.53
54:7:11:G:C6	54:7:27:A:N6	2.77	0.53
1:0:16:HIS:NE2	51:3:721:G:O6	2.40	0.53
2:1:32:HIS:ND1	51:3:2399:G:OP2	2.34	0.53
5:A:99:ILE:HD11	5:A:229:MET:HG3	1.90	0.53
7:C:73:ARG:NH1	53:5:619:A:O3'	2.32	0.53
34:j:21:ILE:HA	34:j:41:VAL:HG12	1.90	0.53
34:j:77:LEU:HD13	39:o:77:LYS:HD2	1.90	0.53
36:l:109:ILE:HG23	36:l:113:GLN:HB3	1.90	0.53
47:w:38:LEU:HD23	47:w:41:PRO:HA	1.90	0.53
51:3:261:A:H3'	51:3:262:G:H8	1.74	0.53
51:3:281:U:H2'	51:3:282:C:C6	2.44	0.53
51:3:1071:G:N2	51:3:1154:U:O2	2.28	0.53
51:3:1147:G:H2'	51:3:1148:U:O4'	2.09	0.53
51:3:1554:A:N6	51:3:1576:G:O2'	2.42	0.53
51:3:1820:U:HO2'	51:3:1821:G:P	2.32	0.53
53:5:711:G:H21	53:5:774:A:H1'	1.73	0.53
53:5:1405:U:H2'	53:5:1406:U:C6	2.43	0.53
6:B:211:TYR:O	6:B:212:THR:OG1	2.22	0.53
8:D:177:ASP:N	8:D:177:ASP:OD1	2.42	0.53
17:M:2:ALA:N	53:5:1039:G:O3'	2.41	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:S:4:ILE:HG22	23:S:6:SER:H	1.74	0.53
25:a:44:HIS:NE2	51:3:1823:U:OP2	2.41	0.53
25:a:228:VAL:HA	51:3:1796:A:H5''	1.90	0.53
34:j:13:ASN:HB3	34:j:97:ARG:H	1.73	0.53
34:j:30:LYS:O	34:j:31:ARG:HG2	2.09	0.53
36:l:82:ARG:NH1	51:3:2504:C:OP1	2.41	0.53
37:m:82:LEU:HA	37:m:86:VAL:HG22	1.90	0.53
51:3:86:A:H2	51:3:104:A:N7	2.07	0.53
51:3:158:U:H2'	51:3:159:G:C8	2.43	0.53
51:3:831:U:H2'	51:3:832:C:C6	2.43	0.53
51:3:874:U:H2'	51:3:875:G:C8	2.40	0.53
51:3:961:U:H2'	51:3:962:U:C5	2.43	0.53
51:3:1001:C:H2'	51:3:1002:A:C8	2.44	0.53
51:3:1125:U:H2'	51:3:1126:G:O4'	2.09	0.53
51:3:2683:G:H2'	51:3:2684:G:C8	2.44	0.53
51:3:2850:G:H2'	51:3:2851:U:H6	1.74	0.53
53:5:90:G:H2'	53:5:91:C:C6	2.44	0.53
53:5:747:C:H2'	53:5:748:U:C6	2.43	0.53
53:5:818:A:H2'	53:5:819:G:C8	2.43	0.53
53:5:1007:U:H2'	53:5:1008:G:H8	1.70	0.53
13:I:69:GLU:OE1	17:M:49:TYR:OH	2.27	0.53
19:O:9:PRO:HB2	19:O:35:PRO:HG2	1.91	0.53
24:T:19:LYS:O	24:T:22:SER:OG	2.22	0.53
26:b:2:GLU:O	26:b:4:ARG:NH2	2.42	0.53
29:e:151:VAL:HG12	29:e:165:VAL:HG11	1.90	0.53
45:u:56:GLY:HA2	51:3:2338:G:H21	1.73	0.53
51:3:488:G:N2	51:3:493:A:H1'	2.23	0.53
51:3:568:G:H2'	51:3:569:U:C6	2.44	0.53
51:3:710:A:H2'	51:3:711:A:C8	2.44	0.53
51:3:894:G:N3	51:3:2276:A:H2'	2.23	0.53
51:3:1026:A:C6	51:3:1217:G:H1'	2.44	0.53
51:3:1635:G:H2'	51:3:1636:U:C6	2.43	0.53
51:3:1987:C:H3'	51:3:1988:A:H5''	1.90	0.53
51:3:2330:A:H2'	51:3:2331:G:H8	1.74	0.53
51:3:2832:G:H2'	51:3:2833:A:H8	1.73	0.53
52:4:65:G:H2'	52:4:66:A:H8	1.73	0.53
53:5:603:U:H3	53:5:630:G:H1	1.55	0.53
54:8:11:G:C6	54:8:27:A:N6	2.77	0.53
54:8:43:G:H3'	54:8:44:U:H5''	1.91	0.53
12:H:13:LYS:HA	12:H:112:VAL:HG23	1.90	0.53
15:K:105:GLY:O	15:K:107:ARG:NH2	2.42	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:a:12:SER:HB2	51:3:765:A:H5''	1.91	0.53
26:b:7:PHE:HE1	26:b:206:LEU:HD13	1.73	0.53
38:n:36:LEU:HD12	52:4:27:A:H5'	1.90	0.53
42:r:126:LYS:O	42:r:129:VAL:N	2.42	0.53
46:v:51:SER:O	46:v:55:LEU:N	2.40	0.53
51:3:788:G:H2'	51:3:789:A:H8	1.73	0.53
51:3:816:A:H5''	51:3:817:A:N7	2.23	0.53
51:3:2072:C:O2'	51:3:2457:U:N3	2.29	0.53
53:5:457:A:H2'	53:5:458:G:H8	1.74	0.53
53:5:1112:U:O4	53:5:1128:G:O6	2.26	0.53
53:5:1312:G:H2'	53:5:1313:A:C4	2.44	0.53
53:5:1408:A:N6	53:5:1442:A:O2'	2.41	0.53
4:9:232:VAL:O	4:9:272:GLY:N	2.40	0.53
6:B:92:ILE:HG22	6:B:96:ILE:HG12	1.90	0.53
7:C:100:ILE:HG22	7:C:104:MET:HE3	1.91	0.53
13:I:50:THR:HG23	53:5:1127:A:H5''	1.90	0.53
36:l:37:THR:HG1	36:l:128:THR:HG1	1.56	0.53
51:3:161:U:H2'	51:3:162:G:O4'	2.09	0.53
51:3:495:U:H2'	51:3:496:A:C8	2.44	0.53
51:3:1070:U:H2'	51:3:1071:G:H8	1.73	0.53
51:3:1588:A:O2'	51:3:1589:A:OP1	2.25	0.53
51:3:1869:G:H2'	51:3:1870:G:C8	2.44	0.53
51:3:2635:G:H2'	51:3:2636:U:C6	2.44	0.53
52:4:54:U:H4'	52:4:55:A:O5'	2.08	0.53
53:5:570:A:N7	53:5:571:A:N6	2.57	0.53
54:6:43:G:H3'	54:6:44:U:H5''	1.91	0.53
3:2:29:THR:HG22	3:2:31:LYS:H	1.74	0.52
10:F:68:VAL:HG11	10:F:103:ILE:HD11	1.89	0.52
38:n:3:THR:C	38:n:5:THR:H	2.16	0.52
40:p:80:ASN:OD1	51:3:1186:A:O2'	2.26	0.52
43:s:3:VAL:HG13	43:s:5:ASN:H	1.74	0.52
51:3:558:C:H2'	51:3:559:C:C6	2.44	0.52
51:3:599:U:H2'	51:3:600:U:C2	2.43	0.52
51:3:645:C:H2'	51:3:646:A:C8	2.44	0.52
51:3:675:U:O4	51:3:685:G:O6	2.28	0.52
51:3:1127:C:H2'	51:3:1128:G:O4'	2.08	0.52
51:3:1528:G:H2'	51:3:1529:U:C6	2.44	0.52
51:3:1851:U:H2'	51:3:1852:G:H8	1.75	0.52
51:3:2093:U:H2'	51:3:2094:A:C8	2.44	0.52
53:5:295:G:O2'	53:5:296:A:O4'	2.23	0.52
53:5:549:U:H2'	53:5:550:U:C6	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:621:C:H2'	53:5:622:A:C8	2.44	0.52
53:5:778:A:N7	53:5:798:U:O4	2.42	0.52
53:5:831:C:H2'	53:5:832:G:C8	2.44	0.52
53:5:1416:U:O4	53:5:1435:G:O6	2.26	0.52
53:5:1478:A:N7	53:5:1506:A:O2'	2.41	0.52
4:9:3:ARG:HB2	4:9:265:GLU:HG3	1.92	0.52
9:E:97:LEU:HG	9:E:98:ALA:H	1.74	0.52
12:H:79:GLY:HA2	12:H:82:ARG:HE	1.73	0.52
14:J:52:THR:O	14:J:55:SER:OG	2.25	0.52
35:k:83:ASN:OD1	35:k:84:LYS:N	2.42	0.52
42:r:88:ARG:NE	42:r:94:ASN:OD1	2.42	0.52
51:3:116:C:H2'	51:3:117:C:C6	2.44	0.52
51:3:163:A:N6	51:3:169:U:C2	2.78	0.52
51:3:812:G:H2'	51:3:813:G:H8	1.74	0.52
51:3:932:U:O2'	51:3:934:C:N4	2.43	0.52
51:3:1734:A:H3'	51:3:1735:A:H8	1.74	0.52
51:3:1749:A:H2'	51:3:1750:A:H8	1.74	0.52
51:3:1754:U:H2'	51:3:1755:A:C8	2.44	0.52
51:3:2106:G:N2	51:3:2198:G:H1	2.04	0.52
51:3:2130:A:H2'	51:3:2131:G:C8	2.43	0.52
51:3:2840:U:H2'	51:3:2841:A:H8	1.74	0.52
4:9:125:GLN:HG3	4:9:383:THR:HG21	1.90	0.52
25:a:71:PHE:HA	25:a:73:ARG:NH1	2.21	0.52
26:b:115:LYS:HG3	26:b:117:ARG:HE	1.74	0.52
29:e:111:GLY:O	51:3:2674:C:N4	2.36	0.52
31:g:8:ALA:HB2	51:3:1081:A:H61	1.74	0.52
51:3:590:U:H2'	51:3:591:G:C8	2.44	0.52
51:3:722:C:H42	51:3:822:C:H4'	1.74	0.52
51:3:1121:A:O2'	51:3:1122:G:N7	2.41	0.52
51:3:2740:U:H5''	51:3:2741:A:C8	2.44	0.52
3:2:5:ALA:N	51:3:2474:C:OP1	2.37	0.52
25:a:12:SER:O	51:3:764:G:N2	2.43	0.52
26:b:28:VAL:HG13	26:b:190:LEU:HD21	1.91	0.52
27:c:83:HIS:HD2	51:3:1286:G:H21	1.56	0.52
30:f:12:LEU:HB3	30:f:14:LYS:HZ1	1.75	0.52
36:l:123:HIS:CG	51:3:2475:C:H4'	2.43	0.52
45:u:81:VAL:C	45:u:82:LYS:HD3	2.34	0.52
51:3:1784:U:H2'	51:3:1785:U:H6	1.75	0.52
4:9:330:GLN:HA	4:9:339:THR:HA	1.92	0.52
8:D:69:ARG:NH1	8:D:168:ALA:O	2.42	0.52
9:E:141:PRO:HA	11:G:5:THR:HA	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:F:56:LYS:O	10:F:59:THR:OG1	2.20	0.52
12:H:30:ILE:HD12	12:H:65:ILE:HG13	1.91	0.52
13:I:18:SER:HB3	13:I:102:VAL:HG22	1.92	0.52
17:M:9:LYS:HA	17:M:12:ARG:HE	1.74	0.52
20:P:2:LYS:HE2	53:5:115:A:C4	2.44	0.52
25:a:213:ILE:HD12	51:3:1798:A:H5''	1.91	0.52
34:j:17:LYS:HZ1	34:j:47:ILE:H	1.56	0.52
36:l:54:ILE:O	36:l:58:LEU:N	2.42	0.52
51:3:227:A:N1	51:3:443:C:O2'	2.38	0.52
51:3:639:G:H21	51:3:693:U:H5''	1.74	0.52
51:3:642:A:OP2	51:3:655:G:N1	2.39	0.52
51:3:995:A:N1	51:3:2503:G:H1'	2.24	0.52
51:3:1686:U:H3'	51:3:1687:G:C8	2.44	0.52
51:3:2534:G:O6	51:3:2545:U:O4	2.28	0.52
53:5:214:U:H2'	53:5:215:C:C6	2.45	0.52
53:5:321:A:H2'	53:5:322:G:C8	2.45	0.52
16:L:32:ALA:HA	16:L:35:LYS:HG2	1.91	0.52
25:a:233:MET:O	25:a:242:GLY:N	2.42	0.52
33:i:78:TYR:HB3	33:i:87:ILE:HG23	1.90	0.52
41:q:57:CYS:HA	41:q:94:VAL:HA	1.91	0.52
43:s:66:ARG:NH1	51:3:65:A:N3	2.57	0.52
44:t:91:TYR:CE1	44:t:102:ARG:HG2	2.45	0.52
45:u:84:GLN:HG2	45:u:94:ARG:HB3	1.92	0.52
50:z:9:LEU:HG	50:z:49:GLU:HA	1.91	0.52
53:5:26:C:H2'	53:5:27:A:C8	2.45	0.52
53:5:71:A:H2'	53:5:72:A:H8	1.74	0.52
53:5:855:G:H21	53:5:868:G:H5'	1.74	0.52
54:6:67:C:H2'	54:6:68:G:C8	2.45	0.52
3:2:10:ILE:HD12	3:2:32:HIS:HA	1.91	0.52
26:b:211:LYS:NZ	51:3:2779:C:OP1	2.32	0.52
27:c:102:LYS:NZ	51:3:694:U:O5'	2.38	0.52
38:n:50:ILE:HD12	38:n:52:LEU:HD21	1.91	0.52
43:s:52:PRO:HA	43:s:85:LEU:HD23	1.91	0.52
45:u:80:LEU:O	45:u:82:LYS:NZ	2.42	0.52
47:w:48:ARG:NH2	51:3:63:U:OP2	2.43	0.52
51:3:1001:C:H2'	51:3:1002:A:H8	1.73	0.52
51:3:1645:C:H2'	51:3:1646:G:C8	2.45	0.52
51:3:1837:C:H2'	51:3:1838:A:C8	2.45	0.52
51:3:2147:G:H2'	51:3:2148:U:C5	2.45	0.52
51:3:2867:U:H2'	51:3:2868:G:H8	1.73	0.52
53:5:413:G:H2'	53:5:414:U:C6	2.45	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1490:G:H2'	53:5:1491:A:C8	2.44	0.52
54:6:30:G:H2'	54:6:31:G:H8	1.75	0.52
18:N:29:LEU:HD22	18:N:60:ARG:HB3	1.91	0.52
21:Q:73:ARG:NH1	21:Q:79:CYS:O	2.42	0.52
28:d:88:LYS:HE2	51:3:2321:C:H5'	1.92	0.52
36:l:37:THR:OG1	36:l:128:THR:OG1	2.23	0.52
40:p:60:TRP:CD2	40:p:93:VAL:HB	2.44	0.52
51:3:210:U:C2	51:3:211:A:C8	2.98	0.52
51:3:1385:U:O4	51:3:1402:G:O6	2.28	0.52
51:3:2718:C:H2'	51:3:2719:A:C8	2.44	0.52
51:3:2860:A:H2'	51:3:2861:G:C8	2.45	0.52
53:5:228:G:H2'	53:5:229:G:H8	1.75	0.52
53:5:517:C:H2'	53:5:518:A:O4'	2.10	0.52
1:0:3:ARG:HE	51:3:1646:G:N2	2.07	0.52
7:C:13:ARG:HG3	7:C:35:PRO:HD2	1.92	0.52
7:C:192:ASN:OD1	7:C:193:GLU:N	2.42	0.52
9:E:1:MET:HB2	9:E:90:LEU:HB3	1.92	0.52
26:b:70:PHE:O	26:b:74:ASN:N	2.42	0.52
37:m:75:VAL:HA	37:m:78:LEU:HG	1.92	0.52
41:q:5:VAL:HG21	41:q:35:LEU:HD23	1.92	0.52
51:3:359:G:H2'	51:3:360:G:H8	1.75	0.52
51:3:1531:C:H2'	51:3:1532:A:O4'	2.10	0.52
51:3:2097:A:N6	51:3:2238:G:O6	2.43	0.52
53:5:136:U:N3	53:5:157:A:N6	2.30	0.52
53:5:283:U:H2'	53:5:284:A:H8	1.74	0.52
53:5:445:A:N7	53:5:483:U:O2	2.43	0.52
53:5:688:G:H22	53:5:692:A:H3'	1.75	0.52
54:7:30:G:H2'	54:7:31:G:H8	1.75	0.52
54:8:30:G:H2'	54:8:31:G:H8	1.75	0.52
7:C:119:HIS:ND1	53:5:434:U:O2'	2.43	0.52
13:I:47:PRO:HB3	53:5:1127:A:O4'	2.10	0.52
21:Q:84:ARG:NH2	53:5:661:G:OP1	2.38	0.52
22:R:55:LYS:HB2	53:5:953:A:N1	2.25	0.52
26:b:147:VAL:N	51:3:2059:G:OP1	2.32	0.52
28:d:36:ILE:HD11	28:d:152:PHE:HB3	1.92	0.52
36:l:10:ARG:HD3	36:l:10:ARG:N	2.25	0.52
40:p:13:ARG:NH2	51:3:1282:G:OP2	2.43	0.52
40:p:73:MET:HE3	40:p:77:VAL:HG11	1.90	0.52
51:3:412:A:C4	51:3:437:A:N6	2.78	0.52
51:3:1103:G:H2'	51:3:1130:A:H2	1.75	0.52
51:3:1344:U:H2'	51:3:1345:G:C8	2.45	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1676:G:H2'	51:3:1677:G:C8	2.45	0.52
51:3:2286:A:H2'	51:3:2287:G:H5''	1.92	0.52
51:3:2701:A:H2'	51:3:2702:G:H8	1.73	0.52
51:3:2843:G:O6	51:3:2882:U:O2	2.28	0.52
53:5:598:U:H2'	53:5:599:G:H8	1.75	0.52
53:5:762:G:N1	53:5:809:G:O2'	2.30	0.52
53:5:1215:U:H3'	53:5:1216:G:H8	1.75	0.52
53:5:1328:C:H2'	53:5:1329:G:H8	1.73	0.52
4:9:259:ILE:HG22	4:9:277:VAL:HG22	1.91	0.51
5:A:113:LEU:O	53:5:1093:A:O2'	2.27	0.51
25:a:212:VAL:O	25:a:218:ARG:NH1	2.43	0.51
27:c:64:LYS:HG2	27:c:77:GLY:HA2	1.92	0.51
29:e:9:ILE:O	29:e:53:LEU:N	2.42	0.51
29:e:19:ASN:HB2	29:e:26:ALA:HB3	1.92	0.51
44:t:3:ARG:CZ	51:3:370:C:H5''	2.40	0.51
44:t:41:LYS:NZ	44:t:66:GLU:OE2	2.36	0.51
51:3:154:U:H2'	51:3:155:A:H8	1.75	0.51
51:3:177:U:H2'	51:3:178:A:C8	2.45	0.51
51:3:345:A:N6	51:3:363:G:OP1	2.42	0.51
51:3:401:G:O2'	51:3:402:A:O4'	2.27	0.51
51:3:1236:G:H2'	51:3:1237:G:H8	1.75	0.51
51:3:2478:G:H2'	51:3:2479:A:H8	1.75	0.51
51:3:2704:U:H2'	51:3:2705:G:C8	2.45	0.51
52:4:59:A:H2'	52:4:60:C:H6	1.75	0.51
53:5:663:G:H5'	53:5:723:C:H1'	1.92	0.51
53:5:710:G:H2'	53:5:711:G:C8	2.44	0.51
53:5:1141:U:O2'	53:5:1142:G:H8	1.93	0.51
54:7:43:G:H3'	54:7:44:U:H5''	1.91	0.51
54:7:67:C:H2'	54:7:68:G:C8	2.45	0.51
6:B:80:SER:O	6:B:83:LYS:HB2	2.10	0.51
8:D:69:ARG:HH12	8:D:171:GLU:HB2	1.76	0.51
8:D:95:GLY:HA3	8:D:172:LEU:HG	1.91	0.51
9:E:97:LEU:HD11	53:5:658:G:H5''	1.92	0.51
25:a:26:LEU:HD11	25:a:87:GLU:HA	1.92	0.51
47:w:22:LEU:O	47:w:26:LEU:HB2	2.10	0.51
51:3:965:U:H2'	51:3:966:U:C6	2.45	0.51
51:3:2045:C:N4	51:3:2046:G:O6	2.42	0.51
51:3:2607:G:H2'	51:3:2608:A:C8	2.45	0.51
51:3:2794:U:H2'	51:3:2795:C:C6	2.45	0.51
53:5:448:A:N6	53:5:478:G:H5'	2.26	0.51
53:5:619:A:H3'	53:5:620:A:H8	1.76	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:648:C:H2'	53:5:649:U:C6	2.46	0.51
53:5:669:U:H2'	53:5:670:G:H8	1.74	0.51
53:5:1225:A:H2'	53:5:1226:A:C8	2.45	0.51
53:5:1436:C:H2'	53:5:1437:A:C8	2.45	0.51
54:8:67:C:H2'	54:8:68:G:C8	2.45	0.51
1:0:28:ARG:O	1:0:32:LYS:HG2	2.11	0.51
4:9:213:LEU:HD12	4:9:232:VAL:HG22	1.91	0.51
6:B:186:ASP:OD1	6:B:187:TYR:N	2.43	0.51
16:L:17:ILE:O	16:L:20:THR:OG1	2.28	0.51
51:3:275:A:H61	51:3:294:G:H1'	1.75	0.51
51:3:458:A:H3'	51:3:459:A:H8	1.75	0.51
51:3:639:G:N2	51:3:660:U:H3	2.07	0.51
51:3:694:U:H2'	51:3:695:G:C8	2.44	0.51
51:3:714:G:H2'	51:3:715:G:C8	2.46	0.51
53:5:67:U:H4'	53:5:159:U:C4	2.45	0.51
53:5:132:G:H2'	53:5:133:G:C8	2.45	0.51
53:5:402:G:H2'	53:5:403:A:C8	2.46	0.51
53:5:985:C:H2'	53:5:986:U:C6	2.46	0.51
53:5:1168:G:H8	53:5:1168:G:OP2	1.93	0.51
4:9:246:VAL:HB	4:9:292:VAL:HG13	1.92	0.51
9:E:25:GLN:O	9:E:28:THR:OG1	2.25	0.51
9:E:112:ARG:NH1	9:E:123:ASN:HB2	2.23	0.51
18:N:29:LEU:O	18:N:33:ILE:HG13	2.10	0.51
21:Q:53:LEU:HD21	21:Q:92:ARG:HD2	1.91	0.51
21:Q:60:LEU:O	21:Q:64:LEU:N	2.43	0.51
23:S:30:THR:OG1	53:5:1432:A:OP1	2.22	0.51
39:o:93:ARG:HH22	39:o:116:GLU:HB3	1.76	0.51
50:z:25:VAL:HG23	50:z:26:LYS:HD3	1.93	0.51
51:3:747:A:H2'	51:3:748:G:O4'	2.10	0.51
51:3:1061:A:H2'	51:3:1062:A:C8	2.46	0.51
51:3:1097:G:H2'	51:3:1098:G:C8	2.46	0.51
51:3:1860:A:O2'	51:3:2242:G:O5'	2.28	0.51
51:3:1954:C:H2'	51:3:1955:G:H8	1.74	0.51
51:3:2522:U:H2'	51:3:2523:C:H6	1.76	0.51
51:3:2831:U:H2'	51:3:2832:G:H8	1.73	0.51
52:4:60:C:H2'	52:4:61:A:C8	2.43	0.51
53:5:13:U:O2	53:5:23:G:N2	2.35	0.51
53:5:308:C:H2'	53:5:309:A:C8	2.46	0.51
53:5:499:U:H2'	53:5:500:G:C8	2.46	0.51
53:5:706:U:H2'	53:5:707:G:H8	1.75	0.51
53:5:1291:C:H3'	53:5:1292:A:H8	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:B:12:PHE:HD1	6:B:16:LYS:HE2	1.75	0.51
50:z:2:ALA:N	51:3:2430:C:OP1	2.44	0.51
51:3:680:A:H2'	51:3:682:A:N7	2.26	0.51
51:3:869:U:H2'	51:3:870:A:C8	2.36	0.51
51:3:1084:C:H2'	51:3:1085:A:H8	1.75	0.51
51:3:1865:A:H2'	51:3:1866:G:C8	2.45	0.51
51:3:2013:C:O2'	51:3:2827:A:N3	2.44	0.51
51:3:2324:A:H2'	51:3:2325:U:O4'	2.10	0.51
53:5:44:C:H2'	53:5:45:A:H8	1.76	0.51
53:5:482:G:O2'	53:5:483:U:OP1	2.25	0.51
53:5:582:G:H2'	53:5:583:G:C8	2.46	0.51
53:5:617:U:H2'	53:5:618:U:C6	2.45	0.51
53:5:840:C:H2'	53:5:841:C:O4'	2.10	0.51
53:5:1448:A:O2'	53:5:1449:G:O4'	2.19	0.51
6:B:77:LEU:HD23	6:B:85:ILE:HG22	1.91	0.51
9:E:102:PRO:O	9:E:105:GLN:NE2	2.43	0.51
10:F:70:PRO:O	10:F:95:LYS:HE3	2.11	0.51
20:P:20:LYS:O	20:P:49:ASN:N	2.33	0.51
22:R:55:LYS:O	53:5:981:U:O2'	2.27	0.51
30:f:99:ASN:OD1	51:3:165:U:H5'	2.10	0.51
42:r:1:MET:HE1	42:r:64:MET:HE3	1.92	0.51
43:s:58:LEU:HD11	43:s:80:LEU:HD12	1.93	0.51
51:3:31:U:H2'	51:3:32:G:H8	1.75	0.51
51:3:958:C:H2'	51:3:959:C:H6	1.75	0.51
51:3:990:G:O6	51:3:999:U:O4	2.29	0.51
51:3:1020:G:H5''	51:3:1021:C:C5	2.46	0.51
51:3:1712:A:H1'	51:3:1998:U:H1'	1.92	0.51
51:3:1903:A:H2'	51:3:1904:G:H8	1.76	0.51
51:3:2127:G:O6	51:3:2187:C:N4	2.43	0.51
51:3:2752:G:H2'	51:3:2753:C:C6	2.45	0.51
51:3:2752:G:H2'	51:3:2753:C:H6	1.75	0.51
53:5:46:U:H2'	53:5:47:G:H8	1.75	0.51
53:5:412:G:H2'	53:5:413:G:H8	1.76	0.51
53:5:877:C:O2'	53:5:878:U:O4'	2.26	0.51
53:5:1113:U:H2'	53:5:1114:A:H8	1.75	0.51
4:9:209:LYS:HD3	4:9:234:ARG:HB2	1.93	0.51
4:9:216:GLU:HG2	4:9:230:GLY:HA2	1.93	0.51
6:B:93:LYS:HA	6:B:96:ILE:HB	1.92	0.51
29:e:5:GLY:O	29:e:68:HIS:NE2	2.25	0.51
35:k:77:TRP:CD2	35:k:111:PRO:HB2	2.46	0.51
39:o:93:ARG:NH2	39:o:116:GLU:HB3	2.26	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:r:126:LYS:O	42:r:129:VAL:HG22	2.10	0.51
51:3:164:A:H2'	51:3:165:U:C5	2.46	0.51
51:3:207:C:P	51:3:208:A:H2'	2.50	0.51
51:3:454:G:H2'	51:3:455:G:C8	2.45	0.51
51:3:1065:G:C6	51:3:1160:G:N2	2.79	0.51
51:3:1507:G:O2'	51:3:1508:G:OP1	2.24	0.51
51:3:1866:G:O6	51:3:1891:A:C5	2.64	0.51
51:3:1881:C:H2'	51:3:1882:G:O4'	2.10	0.51
51:3:2094:A:H2'	51:3:2095:A:C8	2.46	0.51
53:5:135:A:O2'	53:5:1421:A:N1	2.42	0.51
53:5:283:U:H2'	53:5:284:A:C8	2.46	0.51
53:5:483:U:H2'	53:5:484:A:C8	2.41	0.51
53:5:1385:A:H2'	53:5:1386:C:H6	1.76	0.51
53:5:1385:A:H2'	53:5:1386:C:C6	2.46	0.51
13:I:17:GLU:HB3	13:I:75:ARG:HH22	1.75	0.51
15:K:94:LEU:HD21	53:5:359:A:H5'	1.92	0.51
25:a:132:PRO:HA	25:a:200:VAL:HG13	1.93	0.51
39:o:56:ARG:NH1	51:3:2691:C:OP1	2.44	0.51
46:v:17:ASN:O	46:v:18:ARG:HD3	2.11	0.51
51:3:200:A:N6	51:3:866:G:O2'	2.44	0.51
51:3:995:A:H2'	51:3:996:A:C8	2.46	0.51
51:3:1381:A:OP2	51:3:1405:G:N1	2.27	0.51
51:3:1903:A:H2'	51:3:1904:G:C8	2.46	0.51
51:3:2078:A:H2'	51:3:2079:G:H8	1.74	0.51
51:3:2100:G:H2'	51:3:2101:A:H8	1.74	0.51
53:5:687:G:H2'	53:5:688:G:C8	2.46	0.51
53:5:1225:A:H2	53:5:1345:G:H1'	1.76	0.51
53:5:1380:G:N3	53:5:1493:A:O2'	2.43	0.51
53:5:1402:U:H3	53:5:1449:G:H1	1.58	0.51
53:5:1482:A:H2'	53:5:1483:C:C6	2.46	0.51
6:B:159:ARG:HB3	6:B:162:GLY:O	2.11	0.51
24:T:37:ARG:HD2	53:5:1500:G:H3'	1.92	0.51
24:T:37:ARG:HG2	53:5:1500:G:OP2	2.11	0.51
30:f:91:SER:HG	30:f:92:ILE:H	1.59	0.51
36:l:10:ARG:HD3	36:l:10:ARG:H	1.75	0.51
36:l:18:GLU:O	36:l:98:LYS:NZ	2.40	0.51
51:3:154:U:H2'	51:3:155:A:C8	2.46	0.51
51:3:756:A:H2'	51:3:757:A:C8	2.46	0.51
51:3:855:A:H5'	51:3:872:C:O2'	2.11	0.51
51:3:1589:A:H2'	51:3:1590:U:C6	2.46	0.51
51:3:1702:A:H1'	51:3:1704:C:N4	2.26	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1866:G:O6	51:3:1891:A:C6	2.63	0.51
51:3:2156:G:H2'	51:3:2157:A:H8	1.76	0.51
51:3:2861:G:N2	51:3:2864:A:OP2	2.31	0.51
53:5:30:A:H2	53:5:553:C:H42	1.59	0.51
53:5:543:C:O2'	53:5:547:C:H5''	2.11	0.51
53:5:557:A:H4'	53:5:558:U:H3'	1.93	0.51
53:5:1413:G:N2	53:5:1438:U:O2	2.36	0.51
6:B:6:ASN:HD22	17:M:49:TYR:HB3	1.76	0.51
7:C:159:GLU:HG2	7:C:160:SER:N	2.26	0.51
22:R:25:GLN:HE21	22:R:28:LYS:HG2	1.76	0.51
25:a:224:ILE:H	25:a:224:ILE:HD12	1.75	0.51
26:b:123:ILE:HG13	26:b:142:ARG:HG3	1.92	0.51
27:c:6:LEU:HD11	27:c:129:ASP:HB2	1.93	0.51
33:i:3:LYS:N	41:q:22:VAL:HA	2.26	0.51
36:l:4:PRO:HB3	51:3:907:A:H4'	1.92	0.51
36:l:32:TYR:HE1	36:l:133:LYS:HG3	1.76	0.51
41:q:74:ILE:HB	41:q:79:HIS:HB3	1.94	0.51
51:3:291:G:C2	51:3:292:G:N7	2.79	0.51
51:3:962:U:H2'	51:3:963:U:C6	2.46	0.51
51:3:2121:A:H3'	51:3:2122:G:H8	1.76	0.51
51:3:2169:G:H4'	51:3:2170:A:H3'	1.93	0.51
51:3:2561:G:C2	51:3:2591:G:H1'	2.46	0.51
53:5:369:A:N1	53:5:387:G:H1'	2.26	0.51
53:5:821:U:H2'	53:5:822:A:C8	2.46	0.51
53:5:1377:C:H2'	53:5:1378:C:O4'	2.11	0.51
53:5:1432:A:H2'	53:5:1433:G:H8	1.76	0.51
53:5:1506:A:H2'	53:5:1507:U:C6	2.46	0.51
54:7:10:A:N6	54:7:24:A:N7	2.59	0.51
11:G:49:VAL:HG21	11:G:57:PHE:HD1	1.76	0.50
12:H:12:ARG:NH2	12:H:13:LYS:HE2	2.25	0.50
13:I:58:ILE:HG21	13:I:65:LYS:HG3	1.92	0.50
18:N:64:LEU:O	18:N:68:LYS:HG2	2.11	0.50
22:R:27:LYS:NZ	22:R:45:VAL:O	2.41	0.50
25:a:153:HIS:CD2	25:a:154:PRO:HD2	2.46	0.50
26:b:68:GLY:O	26:b:72:LYS:HB3	2.11	0.50
29:e:129:GLU:OE2	29:e:135:THR:HG23	2.11	0.50
40:p:36:GLN:NE2	51:3:1282:G:H22	2.08	0.50
44:t:36:VAL:HG11	44:t:39:LEU:HD12	1.93	0.50
51:3:111:G:H2'	51:3:112:A:H8	1.76	0.50
51:3:153:U:H2'	51:3:154:U:C6	2.45	0.50
51:3:531:G:H3'	51:3:532:A:H8	1.75	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1340:U:O2	51:3:1367:G:N2	2.44	0.50
51:3:1599:C:O2'	51:3:1601:A:N7	2.40	0.50
51:3:2217:G:H3'	51:3:2218:U:H2'	1.93	0.50
51:3:2259:G:O2'	51:3:2457:U:O2	2.29	0.50
51:3:2828:C:H3'	51:3:2829:G:N2	2.24	0.50
53:5:69:G:C2	53:5:137:A:N1	2.79	0.50
53:5:134:G:H2'	53:5:135:A:C8	2.46	0.50
53:5:373:A:H2'	53:5:374:G:C8	2.46	0.50
53:5:476:U:H5'	53:5:477:U:OP1	2.11	0.50
53:5:711:G:H2'	53:5:712:A:C8	2.46	0.50
53:5:1011:A:N3	53:5:1193:U:O2'	2.43	0.50
53:5:1334:A:H3'	53:5:1335:G:C8	2.46	0.50
53:5:1403:A:H2'	53:5:1404:U:H6	1.75	0.50
53:5:1453:C:H2'	53:5:1454:G:H8	1.77	0.50
2:1:19:ILE:HG21	2:1:55:ILE:HD13	1.93	0.50
5:A:35:ARG:HG2	5:A:35:ARG:HH11	1.75	0.50
17:M:23:ARG:HG3	17:M:30:ALA:HB2	1.92	0.50
18:N:57:VAL:HA	18:N:60:ARG:HG2	1.93	0.50
33:i:45:VAL:HG12	40:p:67:ALA:HB2	1.93	0.50
40:p:54:ARG:HD3	51:3:1190:A:H5''	1.93	0.50
44:t:6:LYS:NZ	44:t:25:LEU:O	2.35	0.50
51:3:614:C:H2'	51:3:615:G:H8	1.75	0.50
51:3:713:C:H2'	51:3:714:G:C8	2.45	0.50
51:3:2568:G:H2'	51:3:2569:A:C8	2.47	0.50
53:5:55:C:O2	53:5:354:U:N3	2.43	0.50
53:5:763:A:N6	53:5:810:U:C2	2.79	0.50
53:5:1012:A:H5''	53:5:1013:C:C5	2.46	0.50
53:5:1044:G:N2	53:5:1049:G:O6	2.44	0.50
53:5:1225:A:C2	53:5:1345:G:H1'	2.46	0.50
54:6:44:U:H4'	54:6:44:U:OP1	2.11	0.50
12:H:86:VAL:O	12:H:90:LEU:HD23	2.11	0.50
26:b:57:VAL:O	26:b:77:PRO:HB2	2.11	0.50
38:n:99:HIS:HD2	52:4:46:C:H4'	1.76	0.50
39:o:32:ASN:HB2	39:o:91:LYS:HD3	1.93	0.50
39:o:54:ARG:NH2	39:o:63:THR:O	2.45	0.50
40:p:27:ARG:HH12	51:3:566:G:H4'	1.75	0.50
45:u:55:ARG:NH1	51:3:2394:A:O2'	2.44	0.50
51:3:604:A:H61	51:3:2508:U:P	2.34	0.50
51:3:1331:G:H2'	51:3:1332:A:H8	1.76	0.50
51:3:1497:A:H2'	51:3:1498:U:H6	1.77	0.50
51:3:1691:U:H2'	51:3:1692:A:H8	1.77	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2159:U:H2'	51:3:2160:U:C6	2.46	0.50
52:4:4:G:H2'	52:4:5:G:C8	2.46	0.50
53:5:108:C:OP1	53:5:307:C:O2'	2.29	0.50
53:5:1229:A:H2'	53:5:1230:G:C8	2.45	0.50
53:5:1463:A:H2'	53:5:1464:G:C8	2.46	0.50
54:7:44:U:OP1	54:7:44:U:H4'	2.11	0.50
1:0:18:PHE:HE1	1:0:31:LEU:HD11	1.77	0.50
5:A:228:LEU:HA	5:A:231:LEU:HD12	1.94	0.50
7:C:129:VAL:HG21	7:C:134:ILE:HG13	1.93	0.50
11:G:107:VAL:H	11:G:110:GLY:HA2	1.76	0.50
29:e:148:ALA:O	29:e:152:ARG:HG2	2.11	0.50
29:e:159:PRO:O	29:e:174:ARG:NH2	2.45	0.50
33:i:105:TYR:CE2	33:i:122:ILE:HG13	2.45	0.50
43:s:58:LEU:HB3	51:3:1369:U:H4'	1.94	0.50
51:3:199:A:H2'	51:3:202:C:H41	1.77	0.50
51:3:822:C:H3'	51:3:826:C:H41	1.76	0.50
51:3:842:U:H1'	51:3:2453:G:H5'	1.93	0.50
51:3:1020:G:N2	51:3:1020:G:OP2	2.45	0.50
51:3:1489:G:H2'	51:3:1490:G:C8	2.47	0.50
51:3:2002:U:O2'	51:3:2003:C:OP1	2.27	0.50
51:3:2330:A:H2'	51:3:2331:G:C8	2.46	0.50
51:3:2547:C:H2'	51:3:2548:G:C8	2.46	0.50
51:3:2739:C:H2'	51:3:2740:U:C6	2.46	0.50
52:4:6:U:H2'	52:4:7:G:C8	2.41	0.50
53:5:451:G:H2'	53:5:452:A:C8	2.46	0.50
53:5:1183:C:H2'	53:5:1184:C:C6	2.46	0.50
53:5:1388:A:N1	53:5:1462:G:C6	2.80	0.50
5:A:99:ILE:HG23	5:A:102:ARG:HH11	1.75	0.50
14:J:13:ILE:HG13	14:J:76:LYS:HE2	1.92	0.50
20:P:2:LYS:NZ	20:P:4:ASN:HB3	2.26	0.50
27:c:38:VAL:O	27:c:41:GLU:HB2	2.11	0.50
27:c:185:LYS:HA	51:3:651:A:H61	1.77	0.50
35:k:95:ARG:HH22	35:k:110:LEU:H	1.60	0.50
38:n:99:HIS:CD2	52:4:46:C:H4'	2.46	0.50
46:v:5:ASP:HB3	46:v:33:LEU:CD1	2.42	0.50
49:y:17:ARG:NE	51:3:1296:G:OP2	2.44	0.50
51:3:266:A:C2	51:3:466:A:H1'	2.46	0.50
51:3:853:G:H21	51:3:1220:A:H62	1.60	0.50
51:3:1099:C:N4	51:3:1105:A:OP1	2.45	0.50
51:3:1293:U:H3'	51:3:1294:G:C8	2.47	0.50
51:3:1357:U:OP2	51:3:1358:C:N4	2.40	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1743:U:O2'	51:3:2863:G:N3	2.43	0.50
51:3:2699:C:H5'	51:3:2876:G:N7	2.26	0.50
51:3:2706:U:O4	51:3:2707:A:N6	2.45	0.50
53:5:1051:U:H2'	53:5:1052:G:H8	1.76	0.50
4:9:71:SER:HB2	4:9:76:HIS:HD1	1.76	0.50
15:K:94:LEU:HD12	15:K:114:THR:HG21	1.93	0.50
17:M:60:SER:OG	53:5:1162:G:N2	2.44	0.50
27:c:148:LYS:HB3	27:c:153:LEU:HD21	1.93	0.50
34:j:64:ARG:HG3	34:j:81:ASP:O	2.11	0.50
47:w:98:LEU:O	47:w:102:ARG:HG3	2.12	0.50
51:3:142:A:H2'	51:3:143:A:C8	2.47	0.50
51:3:450:C:H2'	51:3:451:A:C8	2.46	0.50
51:3:500:U:H2'	51:3:501:G:C4	2.47	0.50
51:3:779:C:H2'	51:3:780:G:C8	2.47	0.50
51:3:854:A:OP2	51:3:1218:G:N2	2.44	0.50
51:3:977:A:H2'	51:3:978:G:C8	2.47	0.50
51:3:1166:G:O6	51:3:2031:C:O2'	2.22	0.50
51:3:1396:A:H2'	51:3:1397:G:H8	1.76	0.50
51:3:1416:G:H2'	51:3:1417:G:H8	1.75	0.50
51:3:1710:A:H2	51:3:2000:U:H5'	1.77	0.50
51:3:1869:G:N2	51:3:1887:U:O2	2.45	0.50
51:3:2270:U:H2'	51:3:2271:C:C6	2.46	0.50
51:3:2394:A:H2'	51:3:2395:U:C6	2.47	0.50
53:5:452:A:H3'	53:5:453:C:H6	1.77	0.50
53:5:688:G:HO2'	53:5:794:C:HO2'	1.53	0.50
1:0:34:ARG:HA	1:0:37:LYS:HD3	1.93	0.50
4:9:303:LYS:NZ	4:9:364:ILE:O	2.45	0.50
9:E:7:LEU:HB2	9:E:58:TYR:HB2	1.94	0.50
17:M:35:SER:OG	53:5:1332:U:OP1	2.22	0.50
19:O:45:ASP:OD1	19:O:46:GLU:N	2.44	0.50
26:b:4:ARG:HB3	26:b:102:PHE:HE1	1.76	0.50
35:k:80:LEU:HB3	35:k:85:ILE:HD11	1.94	0.50
39:o:62:GLU:N	39:o:80:GLN:HE22	2.09	0.50
42:r:23:LEU:HD11	49:y:22:LEU:HB3	1.92	0.50
45:u:59:VAL:HG22	45:u:93:THR:HB	1.94	0.50
51:3:107:C:H2'	51:3:108:G:C8	2.47	0.50
51:3:712:A:H61	51:3:835:U:H3	1.59	0.50
51:3:909:U:H2'	51:3:910:G:C8	2.46	0.50
51:3:986:G:O6	51:3:1003:U:O4	2.30	0.50
51:3:1509:U:H2'	51:3:1510:A:C8	2.47	0.50
51:3:2126:A:N6	51:3:2178:A:N7	2.60	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2268:C:H2'	51:3:2269:C:H6	1.77	0.50
51:3:2307:G:O6	51:3:2325:U:O2	2.29	0.50
51:3:2716:U:H2'	51:3:2717:G:C8	2.42	0.50
53:5:168:A:H3'	53:5:169:G:H8	1.77	0.50
53:5:230:G:H2'	53:5:231:U:C6	2.47	0.50
53:5:394:U:H2'	53:5:395:G:H8	1.77	0.50
53:5:674:U:H3	53:5:711:G:H22	1.59	0.50
53:5:675:U:H3	53:5:710:G:H22	1.58	0.50
53:5:707:G:H2'	53:5:708:A:H8	1.76	0.50
53:5:833:G:N2	53:5:844:U:O2	2.29	0.50
53:5:1274:G:N2	53:5:1275:U:O4	2.44	0.50
1:0:31:LEU:HD12	1:0:42:LEU:HD11	1.93	0.50
6:B:59:GLU:HB3	13:I:100:VAL:HG11	1.93	0.50
9:E:23:GLU:CD	9:E:27:GLN:HE22	2.19	0.50
11:G:23:ASN:HA	11:G:26:ARG:NE	2.27	0.50
13:I:16:LEU:HD13	13:I:104:LEU:HG	1.93	0.50
14:J:119:ARG:HH22	14:J:121:ARG:HD3	1.77	0.50
18:N:22:ILE:HG12	18:N:67:LEU:HD21	1.94	0.50
24:T:25:ILE:HD13	24:T:28:LEU:HD21	1.93	0.50
25:a:65:LYS:NZ	51:3:1603:A:H5'	2.27	0.50
34:j:1:MET:HA	34:j:1:MET:HE3	1.92	0.50
46:v:30:ASN:O	51:3:2238:G:O2'	2.24	0.50
51:3:899:A:H2'	51:3:900:G:C8	2.47	0.50
51:3:1051:U:H2'	51:3:1052:A:C8	2.47	0.50
51:3:1149:G:H2'	51:3:1150:U:C6	2.47	0.50
51:3:1861:A:H4'	51:3:2241:A:H4'	1.93	0.50
51:3:2603:G:N2	51:3:2606:A:OP2	2.33	0.50
51:3:2865:U:H2'	51:3:2866:A:C8	2.46	0.50
53:5:767:U:H1'	53:5:894:A:H2	1.75	0.50
54:6:10:A:N6	54:6:24:A:N7	2.59	0.50
4:9:92:MET:O	4:9:96:ALA:N	2.40	0.50
4:9:205:ARG:HA	4:9:270:MET:CE	2.41	0.50
5:A:81:GLN:HB3	5:A:173:PRO:HA	1.93	0.50
13:I:25:ASP:OD1	13:I:26:LEU:N	2.45	0.50
15:K:12:ARG:HD2	53:5:560:U:H1'	1.94	0.50
15:K:55:PRO:HB3	15:K:63:ARG:HE	1.76	0.50
30:f:111:PHE:HE1	51:3:2206:A:H5'	1.77	0.50
37:m:103:LEU:HD11	37:m:115:ILE:HB	1.93	0.50
41:q:78:HIS:NE2	51:3:599:U:OP1	2.45	0.50
43:s:9:LYS:NZ	47:w:30:ARG:O	2.44	0.50
47:w:53:THR:O	47:w:57:ILE:HG12	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:337:U:H2'	51:3:338:G:C8	2.47	0.50
51:3:740:A:C2	51:3:762:A:H1'	2.47	0.50
51:3:921:C:O2	51:3:929:G:N1	2.45	0.50
51:3:945:U:H2'	51:3:946:A:C8	2.47	0.50
51:3:1010:G:O4'	51:3:1026:A:N6	2.44	0.50
51:3:1408:G:O2'	51:3:1603:A:N6	2.45	0.50
51:3:1474:C:H2'	51:3:1475:C:C6	2.46	0.50
51:3:1757:G:H2'	51:3:1758:C:C6	2.47	0.50
51:3:2347:G:H2'	51:3:2348:U:C6	2.47	0.50
51:3:2384:A:H2'	51:3:2385:A:O4'	2.12	0.50
51:3:2478:G:H2'	51:3:2479:A:C8	2.46	0.50
51:3:2802:C:H5''	51:3:2806:A:H61	1.77	0.50
53:5:32:U:O2'	53:5:49:C:N4	2.44	0.50
53:5:161:C:H2'	53:5:162:C:C6	2.46	0.50
53:5:678:A:H2'	53:5:679:U:C6	2.47	0.50
53:5:1175:C:OP1	53:5:1176:A:O2'	2.23	0.50
6:B:12:PHE:HD1	6:B:16:LYS:HB2	1.76	0.49
51:3:155:A:H2'	51:3:156:A:C8	2.46	0.49
51:3:418:G:O6	51:3:430:U:O4	2.30	0.49
51:3:487:C:O2	51:3:489:A:N6	2.45	0.49
51:3:869:U:O2'	51:3:2366:A:H1'	2.11	0.49
51:3:1103:G:O2'	51:3:1105:A:N6	2.45	0.49
51:3:1422:U:H5''	51:3:1637:A:H4'	1.94	0.49
51:3:2623:U:H2'	51:3:2624:C:C6	2.47	0.49
51:3:2745:G:H2'	51:3:2746:A:C8	2.47	0.49
53:5:590:G:C6	53:5:645:A:C6	2.99	0.49
53:5:643:U:H2'	53:5:644:U:C6	2.47	0.49
53:5:945:U:H2'	53:5:946:G:C8	2.45	0.49
7:C:99:ASN:ND2	7:C:110:ARG:HE	2.11	0.49
23:S:11:LEU:HA	23:S:14:ASN:ND2	2.26	0.49
46:v:42:ASP:HB3	46:v:44:LYS:NZ	2.27	0.49
47:w:50:LEU:O	47:w:54:ILE:HG12	2.12	0.49
51:3:548:A:H2'	51:3:549:A:C8	2.47	0.49
51:3:1337:G:C6	51:3:1338:G:C6	3.00	0.49
51:3:2174:G:H2'	51:3:2175:U:C6	2.47	0.49
51:3:2287:G:H2'	51:3:2288:G:O4'	2.12	0.49
53:5:82:C:H2'	53:5:83:U:C6	2.47	0.49
53:5:413:G:N2	53:5:423:U:O2	2.44	0.49
53:5:563:U:H3'	53:5:564:G:H2'	1.94	0.49
9:E:49:ILE:HD11	9:E:84:ARG:HH11	1.78	0.49
16:L:80:LEU:HG	16:L:88:GLY:HA2	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:L:103:ARG:HG2	53:5:1201:C:C5	2.47	0.49
26:b:41:THR:HG22	26:b:43:ALA:H	1.75	0.49
27:c:193:LEU:HA	35:k:5:GLN:HE22	1.77	0.49
28:d:121:SER:HB3	28:d:128:TYR:CE1	2.48	0.49
33:i:116:ARG:HE	51:3:564:A:P	2.35	0.49
34:j:23:LYS:HB3	34:j:40:VAL:HB	1.94	0.49
34:j:85:VAL:HG23	34:j:87:ILE:HD11	1.95	0.49
40:p:2:ARG:H	51:3:481:C:H5''	1.77	0.49
43:s:47:VAL:HG23	43:s:48:TYR:CD1	2.47	0.49
46:v:21:SER:OG	54:8:77:A:N6	2.44	0.49
51:3:159:G:H2'	51:3:160:A:C8	2.47	0.49
51:3:395:U:H2'	51:3:396:A:C5	2.47	0.49
51:3:452:U:H3	51:3:2415:A:H61	1.60	0.49
51:3:519:A:OP2	51:3:520:C:N4	2.43	0.49
51:3:674:G:H2'	51:3:675:U:C6	2.47	0.49
51:3:832:C:H2'	51:3:833:C:C6	2.48	0.49
51:3:1140:U:H2'	51:3:1141:U:C6	2.48	0.49
51:3:1200:U:H2'	51:3:1201:A:C8	2.46	0.49
51:3:1517:G:H5''	51:3:1518:C:H5''	1.94	0.49
51:3:2484:A:H2'	51:3:2485:U:O4'	2.12	0.49
51:3:2530:U:H2'	51:3:2531:C:H5'	1.93	0.49
51:3:2684:G:H2'	51:3:2685:A:H8	1.76	0.49
51:3:2700:C:H2'	51:3:2701:A:C8	2.46	0.49
52:4:65:G:H2'	52:4:66:A:C8	2.47	0.49
53:5:1146:A:H2'	53:5:1147:U:C6	2.47	0.49
53:5:1266:U:H2'	53:5:1267:G:C8	2.46	0.49
16:L:18:ALA:HA	16:L:21:TYR:HD1	1.77	0.49
17:M:57:LYS:HD2	17:M:58:LYS:O	2.12	0.49
21:Q:78:ASN:OD1	21:Q:83:GLN:HB2	2.12	0.49
30:f:32:PRO:HG2	30:f:33:LYS:HZ2	1.78	0.49
33:i:40:ARG:NH1	51:3:1043:C:H5'	2.27	0.49
44:t:3:ARG:HG2	44:t:89:ILE:HD11	1.95	0.49
51:3:47:G:H5''	51:3:48:G:H5'	1.95	0.49
51:3:248:A:H62	51:3:258:G:H21	1.60	0.49
51:3:275:A:N6	51:3:294:G:H1'	2.28	0.49
51:3:704:G:N3	51:3:704:G:H2'	2.27	0.49
51:3:1499:C:H2'	51:3:1500:A:C8	2.47	0.49
51:3:1691:U:H2'	51:3:1692:A:C8	2.48	0.49
51:3:1692:A:H2'	51:3:1693:U:C6	2.46	0.49
51:3:2640:A:H2'	51:3:2641:A:C8	2.46	0.49
51:3:2729:A:H2'	51:3:2730:G:O4'	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:372:G:H2'	53:5:373:A:H8	1.76	0.49
53:5:503:G:H2'	53:5:504:A:H8	1.77	0.49
53:5:661:G:N2	53:5:738:A:N1	2.57	0.49
53:5:1446:A:H2'	53:5:1447:U:C6	2.48	0.49
4:9:352:LEU:HD23	4:9:352:LEU:H	1.78	0.49
14:J:48:SER:N	53:5:692:A:OP1	2.29	0.49
14:J:103:ILE:HG22	24:T:8:ASN:HB2	1.93	0.49
16:L:107:ARG:NH1	53:5:941:A:OP1	2.45	0.49
30:f:26:ALA:HA	51:3:2100:G:H4'	1.92	0.49
33:i:116:ARG:HB2	51:3:591:G:OP1	2.13	0.49
36:l:54:ILE:HA	36:l:57:CYS:SG	2.53	0.49
51:3:535:G:N2	51:3:537:A:H3'	2.28	0.49
51:3:590:U:H2'	51:3:591:G:H8	1.76	0.49
51:3:607:U:H1'	51:3:2062:C:C6	2.47	0.49
51:3:671:C:H2'	51:3:672:G:H8	1.77	0.49
51:3:2248:C:H2'	51:3:2249:A:C8	2.46	0.49
51:3:2420:A:H2'	51:3:2421:U:O4'	2.11	0.49
51:3:2725:G:H2'	51:3:2726:G:O4'	2.13	0.49
53:5:43:G:H1'	53:5:619:A:H61	1.78	0.49
53:5:254:G:H2'	53:5:255:G:C8	2.47	0.49
53:5:445:A:N7	53:5:483:U:C2	2.81	0.49
9:E:7:LEU:HD11	9:E:60:TRP:CD1	2.45	0.49
12:H:36:ASP:O	12:H:39:GLU:HG2	2.11	0.49
19:O:61:ASP:HA	19:O:64:ARG:HD3	1.95	0.49
28:d:63:GLN:NE2	28:d:90:THR:O	2.34	0.49
40:p:22:GLY:HA2	51:3:20:C:O3'	2.12	0.49
49:y:19:HIS:NE2	51:3:2052:C:O2'	2.28	0.49
51:3:163:A:N6	51:3:169:U:N3	2.60	0.49
51:3:692:U:H2'	51:3:693:U:C6	2.47	0.49
51:3:702:U:H2'	51:3:703:A:O4'	2.13	0.49
51:3:1300:C:H5''	51:3:1301:G:H5'	1.95	0.49
51:3:1816:A:H2'	51:3:1817:A:C8	2.46	0.49
51:3:2477:A:H2'	51:3:2478:G:O4'	2.13	0.49
51:3:2760:C:H3'	51:3:2761:A:C8	2.46	0.49
51:3:2892:U:H2'	51:3:2893:C:C6	2.47	0.49
53:5:46:U:H2'	53:5:47:G:C8	2.48	0.49
53:5:442:G:H2'	53:5:443:G:H8	1.77	0.49
53:5:663:G:H2'	53:5:664:A:H8	1.77	0.49
53:5:1062:C:H2'	53:5:1063:G:C8	2.46	0.49
4:9:283:ASP:O	4:9:287:VAL:HG12	2.13	0.49
5:A:43:PHE:HE2	9:E:158:ASP:H	1.61	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:J:33:ASN:HB2	53:5:681:U:H1'	1.95	0.49
14:J:83:GLY:H	14:J:86:LYS:HD2	1.77	0.49
15:K:67:LYS:HG3	15:K:75:GLU:OE1	2.12	0.49
16:L:34:LEU:HG	16:L:39:ILE:HB	1.94	0.49
25:a:92:ARG:NH2	51:3:1824:G:OP1	2.45	0.49
26:b:149:ALA:O	26:b:156:ALA:HB3	2.12	0.49
42:r:120:GLN:NE2	42:r:121:GLN:HG3	2.28	0.49
43:s:44:PHE:CZ	43:s:50:ILE:HG13	2.48	0.49
44:t:90:LYS:HD3	44:t:105:LYS:HG2	1.93	0.49
46:v:5:ASP:HB3	46:v:33:LEU:HD11	1.95	0.49
46:v:42:ASP:HB3	46:v:44:LYS:HZ3	1.78	0.49
51:3:679:A:N1	51:3:2377:A:O2'	2.39	0.49
51:3:896:U:H2'	51:3:897:A:H8	1.77	0.49
51:3:1221:G:H2'	51:3:1222:A:C8	2.47	0.49
51:3:1780:A:H2'	51:3:1781:C:O4'	2.12	0.49
51:3:1856:G:H2'	51:3:1857:G:C8	2.48	0.49
51:3:2071:C:H2'	51:3:2072:C:H6	1.77	0.49
51:3:2096:U:H3	51:3:2097:A:H62	1.61	0.49
51:3:2213:A:H2'	51:3:2214:A:H8	1.77	0.49
51:3:2465:U:N3	51:3:2503:G:O6	2.45	0.49
53:5:243:G:H2'	53:5:244:C:C6	2.48	0.49
53:5:803:C:H2'	53:5:804:A:C8	2.48	0.49
54:7:63:U:H2'	54:7:64:G:H8	1.78	0.49
54:8:44:U:H4'	54:8:44:U:OP1	2.11	0.49
54:8:63:U:H2'	54:8:64:G:H8	1.78	0.49
4:9:59:ARG:HD3	4:9:63:ILE:HD11	1.94	0.49
4:9:332:TYR:CE1	4:9:337:ASP:HB3	2.48	0.49
5:A:40:LYS:HZ3	5:A:207:ASN:HA	1.78	0.49
8:D:135:SER:OG	8:D:177:ASP:OD1	2.22	0.49
10:F:2:ARG:HG2	53:5:927:C:C5	2.47	0.49
16:L:101:ARG:HD2	53:5:945:U:OP2	2.13	0.49
28:d:101:GLU:HA	28:d:104:ILE:HG12	1.94	0.49
30:f:109:GLN:HE21	30:f:112:MET:HE3	1.78	0.49
34:j:75:THR:HB	39:o:78:ASN:O	2.13	0.49
42:r:125:VAL:O	42:r:129:VAL:HG13	2.12	0.49
44:t:2:GLN:CD	44:t:2:GLN:H	2.20	0.49
51:3:26:G:O6	51:3:552:C:N4	2.46	0.49
51:3:568:G:H2'	51:3:569:U:H6	1.77	0.49
51:3:664:G:H2'	51:3:665:C:C6	2.48	0.49
51:3:746:G:H2'	51:3:747:A:C8	2.47	0.49
51:3:1674:A:C4	51:3:1675:A:C8	3.00	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1838:A:H2'	51:3:1839:C:C6	2.47	0.49
51:3:2102:U:H2'	51:3:2103:C:C6	2.47	0.49
53:5:147:A:H2'	53:5:148:A:C4	2.48	0.49
53:5:317:A:H2	53:5:328:G:H1	1.56	0.49
53:5:337:C:H2'	53:5:338:C:H6	1.78	0.49
53:5:733:A:H2'	53:5:734:A:C8	2.47	0.49
53:5:1133:A:H4'	53:5:1134:C:O4'	2.12	0.49
54:6:63:U:H2'	54:6:64:G:H8	1.78	0.49
1:0:32:LYS:O	1:0:36:LYS:HG2	2.13	0.49
2:1:13:LEU:HA	2:1:19:ILE:HD12	1.94	0.49
5:A:113:LEU:HB3	53:5:1094:C:H5''	1.95	0.49
35:k:70:LYS:HE3	51:3:249:G:H5'	1.95	0.49
40:p:65:ASN:HD22	51:3:1046:A:H5''	1.78	0.49
51:3:247:U:H2'	51:3:248:A:C8	2.48	0.49
51:3:1110:C:H2'	51:3:1111:C:C6	2.48	0.49
51:3:1236:G:H2'	51:3:1237:G:C8	2.47	0.49
51:3:1866:G:H2'	51:3:1867:G:H8	1.78	0.49
51:3:2264:G:H2'	51:3:2265:U:C6	2.48	0.49
51:3:2467:A:H2'	51:3:2468:U:O4'	2.12	0.49
52:4:39:U:OP1	52:4:41:C:N4	2.37	0.49
53:5:451:G:H2'	53:5:452:A:H8	1.77	0.49
53:5:764:A:O2'	53:5:1499:G:O2'	2.28	0.49
4:9:67:HIS:HB3	4:9:262:PHE:CE1	2.48	0.49
6:B:23:THR:HG21	13:I:103:THR:HB	1.95	0.49
11:G:64:SER:HG	11:G:66:THR:HG1	1.59	0.49
11:G:90:ILE:HG12	11:G:139:ALA:HA	1.94	0.49
15:K:9:ARG:NH1	53:5:875:G:OP2	2.43	0.49
15:K:50:VAL:HG21	15:K:87:LEU:HD11	1.94	0.49
26:b:3:ILE:HD11	26:b:208:ARG:HB2	1.93	0.49
39:o:95:LYS:H	39:o:113:LYS:HB3	1.77	0.49
51:3:251:G:H1'	51:3:255:A:N6	2.28	0.49
51:3:1122:G:H2'	51:3:1124:G:H1'	1.95	0.49
51:3:1507:G:O2'	51:3:1508:G:P	2.71	0.49
51:3:1558:A:OP2	51:3:1570:A:N6	2.35	0.49
51:3:1869:G:H2'	51:3:1870:G:H8	1.78	0.49
51:3:2093:U:H2'	51:3:2094:A:H8	1.78	0.49
51:3:2115:A:O2'	51:3:2149:U:O2	2.31	0.49
51:3:2349:G:C5	51:3:2350:C:N4	2.81	0.49
11:G:10:ALA:HB2	11:G:36:ILE:HG13	1.93	0.48
11:G:34:THR:HB	11:G:71:THR:HG22	1.94	0.48
17:M:40:CYS:O	17:M:43:CYS:HB3	2.12	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:R:25:GLN:HE21	22:R:28:LYS:CG	2.26	0.48
23:S:44:LEU:CD2	23:S:76:LEU:HD11	2.42	0.48
29:e:98:ARG:HE	29:e:109:GLN:HB2	1.77	0.48
51:3:37:G:H1'	51:3:490:A:C4	2.48	0.48
51:3:199:A:H2'	51:3:202:C:N4	2.28	0.48
51:3:234:G:H2'	51:3:235:U:C6	2.47	0.48
51:3:720:A:O2'	51:3:808:U:O4	2.28	0.48
51:3:756:A:H2'	51:3:757:A:H8	1.76	0.48
51:3:800:C:H2'	51:3:801:U:C6	2.48	0.48
51:3:1028:C:H2'	51:3:1029:A:C8	2.48	0.48
51:3:1270:C:H2'	51:3:1271:A:C8	2.47	0.48
51:3:1702:A:H5'	51:3:1703:A:N7	2.28	0.48
51:3:2088:U:H2'	51:3:2089:A:C8	2.46	0.48
53:5:44:C:H2'	53:5:45:A:C8	2.48	0.48
53:5:234:G:H2'	53:5:235:C:C6	2.48	0.48
53:5:514:U:N3	53:5:531:A:N7	2.61	0.48
53:5:976:U:H2'	53:5:977:U:C5	2.48	0.48
5:A:133:LEU:HD13	5:A:152:LEU:HD11	1.95	0.48
7:C:112:SER:HB3	53:5:404:A:H5'	1.93	0.48
15:K:80:ILE:HG23	15:K:110:ILE:HD13	1.94	0.48
17:M:24:CYS:HB3	17:M:28:GLY:O	2.12	0.48
22:R:18:LYS:NZ	53:5:1010:A:OP2	2.42	0.48
25:a:57:HIS:CG	25:a:227:THR:HB	2.48	0.48
25:a:113:ASP:HB3	25:a:204:SER:HA	1.95	0.48
29:e:36:LEU:HD21	29:e:71:TYR:HE1	1.78	0.48
36:l:109:ILE:HG22	36:l:114:MET:SD	2.54	0.48
38:n:8:ARG:HB2	38:n:95:GLY:O	2.12	0.48
40:p:80:ASN:HD21	51:3:1187:C:H5'	1.79	0.48
41:q:6:VAL:HG22	41:q:11:GLN:HG2	1.96	0.48
51:3:73:A:OP1	51:3:113:U:O2'	2.25	0.48
51:3:190:G:O6	51:3:215:A:N6	2.46	0.48
51:3:274:A:H62	51:3:295:U:H3	1.60	0.48
51:3:793:C:H2'	51:3:794:G:H8	1.77	0.48
51:3:860:C:H4'	51:3:2436:G:C6	2.48	0.48
51:3:866:G:H2'	51:3:867:G:H8	1.78	0.48
51:3:1019:A:H2'	51:3:1020:G:C4	2.48	0.48
51:3:1094:G:H3'	51:3:1095:U:H2'	1.94	0.48
51:3:1262:G:H2'	51:3:1263:G:H8	1.79	0.48
51:3:1396:A:H2'	51:3:1397:G:C8	2.48	0.48
51:3:1460:G:N2	51:3:1596:U:O2	2.46	0.48
51:3:1496:A:H61	51:3:1547:G:H1'	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1603:A:H2'	51:3:1604:A:C8	2.48	0.48
51:3:1867:G:H3'	51:3:1868:A:C8	2.44	0.48
51:3:2298:G:H2'	51:3:2299:U:C6	2.48	0.48
51:3:2476:A:H2'	51:3:2484:A:C2	2.47	0.48
51:3:2561:G:H21	51:3:2590:G:N2	2.11	0.48
51:3:2684:G:H2'	51:3:2685:A:C8	2.48	0.48
7:C:170:ASN:O	7:C:174:PHE:N	2.46	0.48
7:C:172:LYS:HG3	7:C:173:THR:HG23	1.95	0.48
15:K:113:GLY:HA2	15:K:118:VAL:HA	1.94	0.48
24:T:21:VAL:O	24:T:25:ILE:HG12	2.13	0.48
25:a:146:GLN:OE1	25:a:169:ARG:NH2	2.45	0.48
27:c:173:SER:OG	51:3:356:A:OP1	2.21	0.48
40:p:75:TYR:HE2	51:3:1188:C:H5'	1.78	0.48
51:3:614:C:H2'	51:3:615:G:C8	2.48	0.48
51:3:997:G:H22	51:3:2037:A:P	2.36	0.48
51:3:1164:A:N1	51:3:2577:G:O2'	2.45	0.48
51:3:1350:A:H61	51:3:1361:U:H1'	1.79	0.48
51:3:1508:G:O6	51:3:1532:A:N1	2.45	0.48
51:3:1712:A:N3	51:3:1997:C:O2'	2.43	0.48
51:3:1754:U:H2'	51:3:1755:A:H8	1.77	0.48
51:3:1954:C:HO2'	53:5:1458:A:HO2'	1.60	0.48
51:3:2063:G:H2'	51:3:2064:G:C8	2.49	0.48
51:3:2214:A:H2'	51:3:2215:C:H6	1.79	0.48
51:3:2644:U:H2'	51:3:2645:U:H6	1.77	0.48
52:4:46:C:H2'	52:4:47:C:C6	2.49	0.48
53:5:876:C:O2'	53:5:877:C:O5'	2.24	0.48
53:5:982:A:H2'	53:5:983:G:H8	1.79	0.48
53:5:1498:G:H2'	53:5:1499:G:H8	1.78	0.48
3:2:11:CYS:SG	3:2:12:LYS:N	2.86	0.48
9:E:50:LYS:C	9:E:51:LYS:HD3	2.39	0.48
11:G:54:LEU:HD23	11:G:54:LEU:H	1.78	0.48
27:c:76:GLN:NE2	51:3:1286:G:O2'	2.46	0.48
28:d:36:ILE:HG21	28:d:57:LEU:HD11	1.95	0.48
28:d:92:ARG:NH2	52:4:41:C:O2	2.36	0.48
38:n:35:SER:OG	38:n:38:HIS:O	2.23	0.48
40:p:12:ARG:NH2	51:3:1257:G:OP2	2.46	0.48
40:p:47:ARG:HH12	51:3:594:G:H5'	1.78	0.48
51:3:438:A:H2'	51:3:439:U:C6	2.47	0.48
51:3:593:C:H2'	51:3:594:G:C8	2.47	0.48
51:3:941:C:H2'	51:3:942:A:C8	2.48	0.48
51:3:1307:G:H2'	51:3:1308:A:C8	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1456:C:H41	51:3:1603:A:H3'	1.78	0.48
51:3:1906:G:H1'	51:3:1908:A:C8	2.48	0.48
51:3:2032:G:H2'	51:3:2033:G:C8	2.48	0.48
51:3:2418:G:H3'	51:3:2419:A:H8	1.79	0.48
51:3:2469:A:H1'	51:3:2500:U:C4	2.48	0.48
51:3:2896:G:H4'	51:3:2897:G:N2	2.27	0.48
53:5:372:G:N2	53:5:383:U:O2	2.31	0.48
53:5:693:A:N3	53:5:783:G:O2'	2.42	0.48
53:5:1067:C:N4	53:5:1068:G:O6	2.47	0.48
53:5:1499:G:H2'	53:5:1500:G:C8	2.48	0.48
1:0:34:ARG:O	1:0:38:GLN:N	2.44	0.48
6:B:151:GLY:HA3	6:B:174:GLY:HA3	1.95	0.48
6:B:155:LEU:HD23	6:B:202:LYS:HD2	1.94	0.48
7:C:81:GLN:HE22	7:C:88:ASN:HD22	1.61	0.48
21:Q:78:ASN:HB2	21:Q:82:HIS:HB2	1.95	0.48
30:f:72:ILE:HG12	30:f:138:LEU:HD23	1.95	0.48
49:y:39:PHE:CD2	51:3:2819:C:H1'	2.49	0.48
51:3:633:G:O6	51:3:692:U:O4	2.32	0.48
51:3:1196:U:H2'	51:3:1197:G:C8	2.48	0.48
51:3:2094:A:H2'	51:3:2095:A:H8	1.79	0.48
51:3:2313:U:H2'	51:3:2314:U:C6	2.48	0.48
53:5:317:A:H2'	53:5:318:C:H6	1.79	0.48
53:5:566:G:H2'	53:5:567:C:C6	2.49	0.48
54:7:70:G:H2'	54:7:71:A:C8	2.49	0.48
4:9:232:VAL:HB	4:9:271:ALA:HA	1.95	0.48
6:B:41:ARG:HH21	6:B:58:ILE:HG13	1.78	0.48
8:D:119:ILE:HG23	8:D:123:HIS:CE1	2.49	0.48
8:D:138:HIS:CD2	11:G:108:LEU:HD23	2.48	0.48
16:L:94:ASN:OD1	16:L:109:ARG:NE	2.39	0.48
26:b:51:LEU:HD11	26:b:81:LEU:HB3	1.94	0.48
29:e:25:ILE:HB	29:e:36:LEU:HB3	1.95	0.48
36:l:31:GLU:O	36:l:134:ARG:HG3	2.13	0.48
41:q:2:HIS:HB3	41:q:15:HIS:CD2	2.48	0.48
51:3:1573:A:H2'	51:3:1574:G:O4'	2.14	0.48
51:3:1587:U:H2'	51:3:1588:A:H8	1.77	0.48
51:3:1665:G:N2	51:3:1667:G:H3'	2.28	0.48
51:3:1890:U:O2'	51:3:1891:A:H5''	2.14	0.48
51:3:2270:U:H2'	51:3:2271:C:H6	1.78	0.48
51:3:2274:A:H4'	51:3:2275:A:C2	2.48	0.48
51:3:2522:U:H2'	51:3:2523:C:C6	2.48	0.48
53:5:36:G:N1	53:5:547:C:N3	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:137:A:H3'	53:5:138:A:H8	1.78	0.48
53:5:338:C:H2'	53:5:339:U:O4'	2.14	0.48
53:5:603:U:O2	53:5:630:G:N2	2.46	0.48
53:5:858:A:O2'	53:5:1069:U:O4	2.25	0.48
53:5:1012:A:O2'	53:5:1192:C:O2'	2.31	0.48
54:8:70:G:H2'	54:8:71:A:C8	2.49	0.48
2:1:22:LYS:HD2	35:k:63:PRO:HG2	1.95	0.48
4:9:237:LEU:HG	4:9:259:ILE:HG21	1.96	0.48
4:9:243:ILE:HB	4:9:293:LEU:HD21	1.96	0.48
12:H:110:LYS:NZ	53:5:1321:G:OP2	2.31	0.48
33:i:120:ARG:NH1	51:3:563:A:OP1	2.47	0.48
40:p:32:LYS:HD2	51:3:1282:G:H5'	1.94	0.48
41:q:67:LYS:HA	41:q:85:HIS:O	2.13	0.48
51:3:852:C:O2'	51:3:874:U:OP1	2.31	0.48
51:3:860:C:H2'	51:3:861:U:O4'	2.14	0.48
51:3:985:A:H2'	51:3:986:G:H8	1.79	0.48
51:3:998:C:H2'	51:3:999:U:C6	2.48	0.48
51:3:1621:U:H2'	51:3:1622:C:C6	2.48	0.48
51:3:1710:A:C2	51:3:2000:U:H5'	2.49	0.48
51:3:1834:U:H5'	51:3:1978:U:H4'	1.96	0.48
51:3:2236:G:H2'	51:3:2237:U:C6	2.48	0.48
51:3:2413:G:H1'	51:3:2420:A:H61	1.79	0.48
51:3:2678:A:H2'	51:3:2679:G:C8	2.49	0.48
53:5:236:C:H2'	53:5:237:A:C8	2.49	0.48
53:5:675:U:H2'	53:5:676:U:C6	2.49	0.48
15:K:127:ARG:HD2	53:5:499:U:OP1	2.14	0.48
18:N:62:ARG:O	18:N:65:LYS:HG2	2.13	0.48
27:c:24:LEU:HD21	27:c:116:TRP:HB3	1.96	0.48
29:e:124:LEU:HD11	29:e:136:ILE:HG22	1.96	0.48
35:k:136:LEU:O	35:k:140:GLU:OE1	2.32	0.48
39:o:32:ASN:HA	39:o:49:THR:HA	1.94	0.48
45:u:28:ARG:NH2	51:3:2265:U:O3'	2.47	0.48
51:3:17:G:H2'	51:3:18:G:H8	1.78	0.48
51:3:20:C:O2'	51:3:587:U:H5''	2.13	0.48
51:3:122:G:H2'	51:3:123:G:C8	2.48	0.48
51:3:329:G:N2	51:3:377:U:O2	2.31	0.48
51:3:347:C:H2'	51:3:348:A:C8	2.49	0.48
51:3:353:G:C2	51:3:367:G:C2	3.01	0.48
51:3:494:G:HO2'	51:3:505:G:H1	1.62	0.48
51:3:675:U:H2'	51:3:676:U:C6	2.49	0.48
51:3:694:U:H2'	51:3:695:G:H8	1.77	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1307:G:H2'	51:3:1308:A:H8	1.77	0.48
51:3:1483:G:H2'	51:3:1484:G:H8	1.78	0.48
51:3:1757:G:H2'	51:3:1758:C:H6	1.79	0.48
51:3:1845:C:N3	51:3:1908:A:N6	2.62	0.48
51:3:2654:U:H2'	51:3:2655:U:O4'	2.14	0.48
51:3:2817:G:H2'	51:3:2818:C:H6	1.79	0.48
53:5:126:U:H2'	53:5:127:A:C8	2.49	0.48
53:5:411:A:H3'	53:5:412:G:H8	1.79	0.48
53:5:444:G:O6	53:5:482:G:H1'	2.14	0.48
53:5:590:G:H2'	53:5:591:A:C8	2.48	0.48
53:5:679:U:H2'	53:5:680:G:H8	1.78	0.48
53:5:1138:U:N3	53:5:1139:A:N7	2.62	0.48
54:7:22:A:H62	54:7:47:G:H1'	1.79	0.48
54:7:26:C:H2'	54:7:27:A:C8	2.49	0.48
54:8:26:C:H2'	54:8:27:A:C8	2.49	0.48
4:9:104:LEU:HB2	4:9:131:MET:HE1	1.96	0.48
4:9:236:GLU:OE2	4:9:268:SER:OG	2.26	0.48
5:A:26:MET:HE2	5:A:26:MET:HA	1.95	0.48
5:A:61:GLN:OE1	5:A:216:PRO:HG2	2.14	0.48
6:B:153:LYS:HB2	6:B:176:MET:HG3	1.96	0.48
43:s:41:LYS:HB2	43:s:52:PRO:HG3	1.95	0.48
44:t:11:VAL:HG13	44:t:77:PHE:HB2	1.96	0.48
51:3:603:G:H1	51:3:2507:C:P	2.37	0.48
51:3:727:C:H2'	51:3:728:A:C8	2.49	0.48
51:3:1474:C:O2'	51:3:1475:C:H5'	2.14	0.48
51:3:1502:A:O2'	51:3:1541:A:N6	2.47	0.48
51:3:1798:A:C2	51:3:1836:A:H4'	2.48	0.48
51:3:1878:A:H3'	51:3:1879:A:H8	1.79	0.48
51:3:2417:G:H2'	51:3:2418:G:O4'	2.13	0.48
53:5:19:C:H2'	53:5:20:C:C6	2.49	0.48
53:5:264:C:H2'	53:5:265:U:C6	2.49	0.48
53:5:826:G:H1	53:5:851:U:H3	1.62	0.48
53:5:1330:A:H2'	53:5:1331:A:H8	1.79	0.48
53:5:1389:U:H2'	53:5:1390:G:H8	1.77	0.48
9:E:3:TYR:HD1	9:E:63:SER:HA	1.78	0.48
26:b:24:LEU:HB3	26:b:26:ILE:HD11	1.96	0.48
27:c:36:ASP:HA	27:c:39:LEU:HG	1.94	0.48
38:n:5:THR:O	38:n:8:ARG:NH2	2.45	0.48
40:p:36:GLN:HE22	51:3:596:G:H21	1.62	0.48
40:p:97:LEU:HA	40:p:100:LYS:HG2	1.95	0.48
51:3:198:G:C2	51:3:206:U:O2	2.67	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:386:U:H2'	51:3:387:U:C6	2.49	0.48
51:3:509:G:H2'	51:3:510:G:C8	2.48	0.48
51:3:1129:U:N3	51:3:1132:C:OP2	2.32	0.48
51:3:1510:A:N6	51:3:1530:G:O6	2.45	0.48
51:3:1595:C:H2'	51:3:1596:U:C6	2.49	0.48
52:4:20:U:H2'	52:4:21:G:C8	2.49	0.48
53:5:514:U:O2	53:5:531:A:N6	2.40	0.48
53:5:590:G:O6	53:5:645:A:N6	2.47	0.48
53:5:610:C:H2'	53:5:611:A:C8	2.48	0.48
53:5:669:U:H2'	53:5:670:G:C8	2.48	0.48
53:5:1488:A:H2'	53:5:1489:C:C6	2.49	0.48
54:6:26:C:H2'	54:6:27:A:C8	2.49	0.48
54:8:10:A:N6	54:8:24:A:N7	2.59	0.48
5:A:98:ASN:HA	5:A:101:LYS:HG2	1.95	0.47
5:A:201:LEU:HG	5:A:228:LEU:HD13	1.96	0.47
6:B:134:ARG:NH2	8:D:111:VAL:H	2.12	0.47
8:D:188:PRO:O	8:D:192:ILE:HG12	2.14	0.47
13:I:31:ILE:HA	13:I:34:VAL:HG22	1.96	0.47
16:L:95:LEU:HG	16:L:110:LYS:HE3	1.95	0.47
27:c:144:MET:SD	51:3:354:C:N4	2.87	0.47
33:i:38:LEU:HD22	33:i:57:LEU:HD21	1.96	0.47
39:o:6:LYS:HA	51:3:2880:A:H5'	1.96	0.47
49:y:38:LEU:HG	49:y:41:ARG:HG3	1.96	0.47
50:z:23:LYS:HZ3	50:z:25:VAL:HA	1.79	0.47
51:3:574:G:H1	51:3:587:U:H3	1.61	0.47
51:3:619:A:O2'	51:3:707:C:O4'	2.31	0.47
51:3:714:G:H2'	51:3:715:G:H8	1.78	0.47
51:3:1253:G:H2'	51:3:1255:G:OP2	2.14	0.47
51:3:2291:U:C6	51:3:2397:G:H2'	2.48	0.47
51:3:2472:G:H2'	51:3:2473:C:C6	2.48	0.47
54:6:23:G:H2'	54:6:24:A:H8	1.79	0.47
2:1:29:LEU:HG	2:1:31:PRO:HD2	1.95	0.47
3:2:31:LYS:HG3	3:2:32:HIS:HD2	1.78	0.47
4:9:20:HIS:CD2	4:9:21:ILE:H	2.32	0.47
4:9:121:LEU:HD21	4:9:317:GLY:HA3	1.96	0.47
12:H:113:LYS:NZ	53:5:1347:U:O4	2.42	0.47
16:L:103:ARG:HH12	53:5:1198:C:H5''	1.79	0.47
34:j:65:THR:O	34:j:79:PHE:HB2	2.14	0.47
39:o:30:GLU:OE1	39:o:115:LYS:NZ	2.46	0.47
40:p:46:TYR:HH	40:p:50:ARG:HH21	1.60	0.47
44:t:44:ARG:NH2	51:3:516:A:OP2	2.46	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:433:A:HO2'	51:3:2238:G:H21	1.61	0.47
51:3:522:C:H2'	51:3:523:A:C8	2.49	0.47
51:3:645:C:H2'	51:3:646:A:H8	1.79	0.47
51:3:801:U:H2'	51:3:802:U:O4'	2.14	0.47
51:3:853:G:N1	51:3:1219:U:OP2	2.32	0.47
51:3:1654:G:H2'	51:3:1655:U:C6	2.49	0.47
51:3:1758:C:H2'	51:3:1759:C:C6	2.49	0.47
51:3:1809:A:H2'	51:3:1810:A:H8	1.78	0.47
51:3:2084:A:H2'	51:3:2085:C:C6	2.50	0.47
53:5:24:C:H2'	53:5:25:U:H6	1.79	0.47
53:5:290:G:N2	53:5:299:U:O2	2.35	0.47
53:5:877:C:H2'	53:5:878:U:C6	2.48	0.47
53:5:1013:C:H2'	53:5:1014:A:C8	2.49	0.47
53:5:1068:G:N2	53:5:1071:A:OP2	2.38	0.47
53:5:1271:U:H1'	53:5:1272:C:N3	2.29	0.47
53:5:1498:G:H2'	53:5:1499:G:C8	2.49	0.47
10:F:18:ASN:HD22	10:F:58:LEU:HD23	1.79	0.47
12:H:115:ARG:HG3	17:M:61:TRP:CD2	2.49	0.47
13:I:12:LEU:HB2	13:I:82:LEU:HB2	1.96	0.47
20:P:66:THR:HG21	20:P:76:ARG:HB3	1.95	0.47
24:T:37:ARG:HG3	24:T:40:MET:HE2	1.96	0.47
25:a:285:GLU:HG3	25:a:286:GLN:HG2	1.97	0.47
27:c:74:ALA:HB2	51:3:1286:G:H4'	1.96	0.47
40:p:81:LEU:HD21	40:p:112:VAL:O	2.14	0.47
51:3:522:C:H2'	51:3:523:A:H8	1.79	0.47
51:3:759:U:H2'	51:3:760:G:O4'	2.14	0.47
51:3:805:G:H2'	51:3:806:A:C8	2.49	0.47
51:3:1140:U:H2'	51:3:1141:U:H6	1.79	0.47
51:3:1261:U:H2'	51:3:1262:G:C8	2.49	0.47
51:3:1470:C:H2'	51:3:1471:A:H8	1.78	0.47
51:3:1583:G:O2'	51:3:1584:U:OP1	2.31	0.47
51:3:2171:A:H5'	51:3:2181:A:C8	2.49	0.47
51:3:2333:G:N2	51:3:2334:U:O4'	2.47	0.47
51:3:2646:G:H1'	51:3:2786:A:N6	2.30	0.47
51:3:2897:G:H4'	51:3:2898:A:H5'	1.97	0.47
53:5:287:U:H2'	53:5:288:A:C8	2.49	0.47
53:5:402:G:H2'	53:5:403:A:H8	1.79	0.47
53:5:649:U:O4	53:5:749:G:O2'	2.25	0.47
53:5:1422:A:O2'	53:5:1423:C:H5'	2.13	0.47
4:9:8:ARG:NH1	4:9:71:SER:OG	2.48	0.47
11:G:11:HIS:CD2	11:G:12:PHE:H	2.32	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:G:40:LEU:HD21	53:5:640:C:H5'	1.95	0.47
18:N:33:ILE:HD11	18:N:60:ARG:HD3	1.96	0.47
19:O:13:ILE:N	19:O:31:GLY:O	2.46	0.47
26:b:139:TYR:CD2	26:b:140:PRO:HD3	2.49	0.47
27:c:166:THR:HA	27:c:169:GLU:HG2	1.95	0.47
28:d:37:ASN:O	28:d:38:MET:HE2	2.14	0.47
28:d:93:GLY:O	28:d:96:MET:HG3	2.14	0.47
34:j:14:THR:OG1	34:j:51:MET:SD	2.72	0.47
37:m:100:VAL:HG22	37:m:116:LEU:HD13	1.96	0.47
41:q:61:LYS:HG3	41:q:91:LYS:HB3	1.96	0.47
49:y:11:HIS:HB3	49:y:15:LYS:HE3	1.96	0.47
51:3:442:G:H2'	51:3:443:C:C6	2.48	0.47
51:3:883:A:H61	51:3:967:U:H3	1.62	0.47
51:3:1037:A:H2'	51:3:1038:G:O4'	2.15	0.47
51:3:1070:U:O4	51:3:1155:G:O6	2.32	0.47
51:3:1354:U:O2'	51:3:2017:G:O2'	2.22	0.47
51:3:1848:U:C2	51:3:1849:G:C8	3.02	0.47
51:3:2378:G:H2'	51:3:2379:G:C8	2.48	0.47
51:3:2585:A:O4'	51:3:2620:C:N4	2.47	0.47
52:4:61:A:H2'	52:4:62:G:C8	2.50	0.47
53:5:752:G:H2'	53:5:753:C:C6	2.49	0.47
53:5:1376:G:H2'	53:5:1377:C:C6	2.49	0.47
6:B:35:ILE:HD13	17:M:26:ARG:CZ	2.45	0.47
9:E:2:GLN:H	9:E:90:LEU:HB2	1.79	0.47
10:F:34:LYS:NZ	10:F:37:LEU:HB2	2.29	0.47
10:F:41:ILE:HG13	10:F:115:MET:HE2	1.96	0.47
10:F:56:LYS:HG3	10:F:58:LEU:H	1.79	0.47
10:F:94:ARG:NH2	10:F:98:LEU:HD11	2.29	0.47
16:L:103:ARG:HG2	53:5:1201:C:H5	1.79	0.47
21:Q:92:ARG:O	21:Q:96:LEU:N	2.44	0.47
22:R:19:VAL:HG21	22:R:44:PHE:CE1	2.39	0.47
29:e:160:TYR:CZ	51:3:2539:A:H5'	2.49	0.47
30:f:122:GLY:HA2	30:f:142:VAL:O	2.14	0.47
37:m:97:TYR:O	37:m:99:ARG:NH1	2.48	0.47
43:s:51:LYS:HB3	47:w:87:TRP:NE1	2.29	0.47
50:z:12:ASN:O	50:z:15:ARG:NH2	2.47	0.47
51:3:562:C:O2'	51:3:563:A:OP2	2.30	0.47
51:3:1116:U:H2'	51:3:1117:U:C5	2.49	0.47
51:3:1385:U:H2'	51:3:1386:G:O4'	2.14	0.47
51:3:1511:C:H2'	51:3:1512:A:C8	2.50	0.47
51:3:2031:C:H2'	51:3:2032:G:H8	1.77	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2266:C:O2'	51:3:2434:A:H4'	2.14	0.47
51:3:2350:C:H2'	51:3:2351:U:C6	2.48	0.47
51:3:2436:G:H4'	51:3:2437:G:C4	2.49	0.47
51:3:2806:A:N6	51:3:2807:G:H21	2.10	0.47
52:4:99:A:H2'	52:4:100:G:H8	1.80	0.47
53:5:359:A:H2'	53:5:360:A:C8	2.49	0.47
53:5:1438:U:H2'	53:5:1439:G:H8	1.79	0.47
54:8:10:A:H2	54:8:45:G:H1	1.63	0.47
5:A:59:GLU:HA	5:A:62:ARG:HD3	1.95	0.47
5:A:72:VAL:HG21	5:A:235:ALA:HB1	1.96	0.47
5:A:154:ARG:HH22	53:5:1145:A:H5'	1.78	0.47
24:T:19:LYS:O	24:T:23:LEU:HG	2.15	0.47
26:b:32:GLU:O	26:b:34:ASN:ND2	2.47	0.47
28:d:40:VAL:HG11	28:d:50:LEU:HD11	1.96	0.47
32:h:71:PRO:HB2	51:3:1095:U:OP2	2.13	0.47
39:o:67:ARG:NH1	39:o:68:LYS:O	2.47	0.47
44:t:65:GLN:HG2	44:t:66:GLU:H	1.80	0.47
47:w:39:ASP:O	47:w:40:LYS:NZ	2.35	0.47
51:3:412:A:C2	51:3:413:G:H1'	2.50	0.47
51:3:428:U:H2'	51:3:429:U:H6	1.78	0.47
51:3:682:A:C4	51:3:683:G:C8	3.03	0.47
51:3:784:A:H4'	51:3:1301:G:H1'	1.96	0.47
51:3:937:A:H3'	51:3:938:A:C8	2.49	0.47
51:3:1727:U:H5'	51:3:1728:A:C8	2.49	0.47
51:3:1818:G:H2'	51:3:1819:G:H8	1.77	0.47
51:3:2560:U:N3	51:3:2562:U:H5''	2.30	0.47
51:3:2635:G:H21	51:3:2789:A:H2	1.61	0.47
52:4:20:U:O2'	52:4:21:G:H5'	2.13	0.47
53:5:319:U:H2'	53:5:320:G:H8	1.80	0.47
53:5:569:U:H5'	53:5:816:A:C8	2.49	0.47
53:5:582:G:H1	53:5:754:U:H3	1.60	0.47
53:5:586:G:H2'	53:5:587:A:C8	2.48	0.47
53:5:943:C:H2'	53:5:944:A:C8	2.49	0.47
53:5:1109:U:C2	53:5:1154:A:C6	3.03	0.47
53:5:1187:U:H4'	53:5:1188:A:N7	2.29	0.47
53:5:1258:U:H2'	53:5:1259:G:C8	2.50	0.47
53:5:1502:G:H2'	53:5:1503:U:C6	2.50	0.47
4:9:93:ILE:HD12	4:9:96:ALA:HB3	1.96	0.47
4:9:205:ARG:HA	4:9:270:MET:HE2	1.97	0.47
4:9:243:ILE:HA	4:9:296:PRO:HD3	1.97	0.47
4:9:371:LYS:HE2	4:9:391:GLU:HA	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:B:40:ILE:HG12	6:B:92:ILE:HG23	1.96	0.47
7:C:84:ASN:HB3	7:C:87:VAL:HG12	1.96	0.47
7:C:123:LEU:HD23	7:C:143:ARG:NH2	2.27	0.47
7:C:180:ARG:NH2	7:C:181:PHE:O	2.48	0.47
9:E:49:ILE:HG23	9:E:50:LYS:N	2.30	0.47
10:F:21:LEU:O	10:F:25:ILE:HG13	2.15	0.47
10:F:55:GLU:OE1	10:F:63:ARG:NH1	2.47	0.47
11:G:67:LYS:HA	53:5:650:A:N6	2.30	0.47
15:K:44:ARG:HG2	53:5:359:A:OP1	2.15	0.47
26:b:65:PRO:HB3	51:3:2795:C:H1'	1.96	0.47
28:d:29:PRO:HD3	28:d:165:GLU:HB3	1.97	0.47
28:d:38:MET:HB2	28:d:87:CYS:N	2.30	0.47
29:e:65:LYS:HE2	29:e:65:LYS:HB3	1.79	0.47
35:k:105:SER:HB2	51:3:657:A:OP2	2.14	0.47
38:n:11:ARG:HA	38:n:14:ARG:NE	2.30	0.47
51:3:122:G:H2'	51:3:123:G:H8	1.79	0.47
51:3:443:C:H2'	51:3:444:C:C6	2.50	0.47
51:3:804:U:H2'	51:3:805:G:C8	2.50	0.47
51:3:1014:G:O6	51:3:1022:C:N4	2.48	0.47
51:3:1193:U:H2'	51:3:1194:U:C6	2.50	0.47
51:3:1287:C:H2'	51:3:1288:C:C6	2.50	0.47
51:3:1379:C:H4'	51:3:1606:A:H4'	1.97	0.47
51:3:1572:U:H2'	51:3:1573:A:H8	1.80	0.47
51:3:1633:C:H2'	51:3:1634:A:C8	2.50	0.47
51:3:1676:G:H2'	51:3:1677:G:H8	1.79	0.47
51:3:2032:G:H2'	51:3:2033:G:H8	1.79	0.47
51:3:2516:G:H2'	51:3:2517:A:C8	2.49	0.47
51:3:2561:G:H21	51:3:2590:G:H21	1.62	0.47
51:3:2737:G:H2'	51:3:2738:U:C6	2.49	0.47
51:3:2793:U:H2'	51:3:2794:U:C6	2.50	0.47
51:3:2850:G:H2'	51:3:2851:U:C6	2.48	0.47
53:5:74:U:H2'	53:5:75:A:C8	2.49	0.47
53:5:93:A:H3'	53:5:94:A:H2	1.79	0.47
53:5:124:U:O4	53:5:125:A:N6	2.48	0.47
53:5:232:G:H2'	53:5:233:C:C6	2.50	0.47
53:5:317:A:N1	53:5:328:G:C6	2.82	0.47
53:5:335:C:H2'	53:5:336:U:C6	2.50	0.47
53:5:674:U:O2	53:5:774:A:O2'	2.32	0.47
53:5:677:C:H2'	53:5:678:A:H8	1.80	0.47
53:5:912:G:H2'	53:5:913:A:C8	2.49	0.47
54:6:70:G:H2'	54:6:71:A:C8	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:7:23:G:H2'	54:7:24:A:H8	1.79	0.47
54:8:23:G:H2'	54:8:24:A:H8	1.79	0.47
6:B:5:VAL:HB	6:B:10:LEU:HD21	1.97	0.47
7:C:3:TYR:OH	53:5:400:G:H5''	2.14	0.47
10:F:63:ARG:CZ	10:F:127:SER:HB2	2.44	0.47
18:N:62:ARG:HE	53:5:752:G:P	2.38	0.47
36:l:28:ALA:C	36:l:134:ARG:HH12	2.23	0.47
36:l:39:GLY:HA2	36:l:97:VAL:O	2.15	0.47
37:m:18:VAL:HA	37:m:21:GLN:CD	2.39	0.47
40:p:50:ARG:HD3	40:p:54:ARG:NH2	2.29	0.47
40:p:60:TRP:HA	40:p:96:GLU:OE2	2.14	0.47
44:t:3:ARG:NH1	51:3:370:C:OP1	2.48	0.47
49:y:27:LEU:HA	49:y:38:LEU:HA	1.97	0.47
51:3:355:A:O2'	51:3:374:A:N3	2.38	0.47
51:3:785:A:H4'	51:3:1651:C:O2	2.15	0.47
51:3:1095:U:O4	51:3:1123:A:N6	2.47	0.47
51:3:1464:G:H2'	51:3:1465:U:C6	2.50	0.47
51:3:2552:G:H2'	51:3:2553:G:C8	2.50	0.47
51:3:2572:A:N1	51:3:2655:U:H4'	2.29	0.47
51:3:2851:U:H2'	51:3:2852:G:O4'	2.14	0.47
53:5:1133:A:N6	53:5:1153:G:H1'	2.29	0.47
53:5:1149:G:H2'	53:5:1150:G:H8	1.80	0.47
53:5:1409:A:H2'	53:5:1410:A:C8	2.49	0.47
53:5:1448:A:H2'	53:5:1449:G:C8	2.50	0.47
4:9:38:LYS:HB2	4:9:38:LYS:HE3	1.71	0.47
4:9:95:GLY:HA2	4:9:98:GLN:HE21	1.80	0.47
6:B:85:ILE:HG13	6:B:86:GLN:N	2.30	0.47
8:D:117:LYS:HA	8:D:120:LYS:HD3	1.96	0.47
11:G:37:ALA:HB3	11:G:68:ARG:HB3	1.96	0.47
13:I:40:VAL:HG22	13:I:41:LYS:H	1.80	0.47
20:P:30:PHE:CE1	20:P:39:VAL:HG13	2.50	0.47
28:d:67:ALA:HB3	28:d:84:LEU:HD12	1.96	0.47
30:f:79:PHE:HB2	30:f:142:VAL:HG12	1.97	0.47
33:i:134:ASN:OD1	33:i:135:MET:N	2.48	0.47
39:o:24:GLU:HA	39:o:55:ARG:HH22	1.78	0.47
50:z:11:CYS:HB3	50:z:16:GLU:OE1	2.15	0.47
51:3:14:U:N3	51:3:2634:C:O2'	2.29	0.47
51:3:33:C:H2'	51:3:34:C:C6	2.50	0.47
51:3:36:U:H3'	51:3:37:G:H8	1.80	0.47
51:3:94:A:H8	51:3:95:G:C8	2.33	0.47
51:3:123:G:H2'	51:3:124:A:C8	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:297:G:C4	51:3:299:A:H1'	2.50	0.47
51:3:389:C:H2'	51:3:390:A:C8	2.50	0.47
51:3:410:G:N2	51:3:436:G:H2'	2.30	0.47
51:3:830:A:H2'	51:3:831:U:O4'	2.15	0.47
51:3:866:G:H2'	51:3:867:G:C8	2.49	0.47
51:3:993:A:H3'	51:3:994:U:H5''	1.97	0.47
51:3:1105:A:O2'	51:3:1132:C:H4'	2.15	0.47
51:3:1451:A:H2'	51:3:1452:G:C8	2.50	0.47
51:3:2662:A:H61	51:3:2674:C:H5	1.63	0.47
53:5:240:U:O4	53:5:887:C:N3	2.47	0.47
53:5:1477:A:H5'	53:5:1479:G:N7	2.30	0.47
4:9:121:LEU:HD23	4:9:382:ARG:NH2	2.30	0.47
4:9:240:GLY:H	4:9:256:VAL:HG23	1.80	0.47
4:9:254:ALA:HB1	4:9:279:LEU:HD12	1.96	0.47
27:c:59:ARG:NH1	51:3:488:G:N7	2.63	0.47
30:f:1:MET:HE3	30:f:24:GLY:H	1.79	0.47
33:i:113:PRO:HD3	51:3:1043:C:H4'	1.97	0.47
42:r:7:GLN:HB3	42:r:103:LEU:H	1.80	0.47
51:3:334:A:H2'	51:3:368:C:H1'	1.97	0.47
51:3:513:A:O2'	51:3:514:A:O4'	2.33	0.47
51:3:1355:C:H2'	51:3:1356:G:O4'	2.15	0.47
51:3:1436:C:H2'	51:3:1437:A:C8	2.50	0.47
51:3:1489:G:H2'	51:3:1490:G:H8	1.78	0.47
51:3:2472:G:H2'	51:3:2473:C:H6	1.79	0.47
51:3:2601:U:H3	51:3:2608:A:H61	1.62	0.47
53:5:23:G:H1'	53:5:908:A:N6	2.29	0.47
53:5:337:C:H2'	53:5:338:C:C6	2.50	0.47
53:5:418:U:O2'	53:5:419:A:N3	2.48	0.47
5:A:178:VAL:HG11	5:A:181:PRO:HB3	1.97	0.46
9:E:143:LEU:HB3	11:G:63:LYS:HZ1	1.80	0.46
17:M:41:ARG:HH11	53:5:969:A:P	2.38	0.46
21:Q:70:ILE:HD12	53:5:717:C:H1'	1.97	0.46
26:b:60:LYS:HG3	26:b:61:LYS:HG3	1.96	0.46
26:b:62:LEU:HD23	26:b:67:GLN:HB3	1.97	0.46
30:f:125:GLU:HB3	30:f:139:LYS:HZ3	1.81	0.46
36:l:10:ARG:HH21	51:3:2285:G:H2'	1.79	0.46
37:m:61:ARG:HA	37:m:64:LYS:HE2	1.96	0.46
46:v:27:ARG:HB3	46:v:29:TRP:CZ3	2.49	0.46
51:3:89:U:H5''	51:3:90:G:H5''	1.97	0.46
51:3:534:U:H3'	51:3:535:G:C8	2.50	0.46
51:3:608:A:H2'	51:3:609:U:C6	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1785:U:O4	51:3:1792:A:N7	2.48	0.46
51:3:1842:G:H2'	51:3:1843:C:C6	2.50	0.46
51:3:2117:G:H5''	51:3:2125:U:C2	2.50	0.46
51:3:2180:U:O2'	51:3:2181:A:H5'	2.16	0.46
53:5:309:A:H2'	53:5:310:C:C6	2.50	0.46
53:5:773:G:O2'	53:5:775:G:O6	2.33	0.46
53:5:1281:U:O2'	53:5:1282:U:O4'	2.32	0.46
53:5:1304:U:H2'	53:5:1305:G:O4'	2.14	0.46
54:8:22:A:H62	54:8:47:G:H1'	1.79	0.46
4:9:8:ARG:HH11	4:9:76:HIS:HB2	1.80	0.46
4:9:305:PHE:CD1	4:9:389:VAL:HG13	2.50	0.46
9:E:35:LEU:HD23	9:E:62:PHE:HD1	1.81	0.46
25:a:153:HIS:CE1	51:3:2212:U:H1'	2.50	0.46
28:d:57:LEU:HD23	28:d:87:CYS:SG	2.55	0.46
30:f:57:HIS:HA	30:f:60:ILE:HG12	1.96	0.46
36:l:10:ARG:HG2	36:l:11:LYS:N	2.30	0.46
36:l:82:ARG:NH2	51:3:2505:A:N7	2.62	0.46
38:n:89:VAL:HG22	38:n:114:LEU:HD12	1.97	0.46
42:r:36:LEU:HA	42:r:39:THR:HG22	1.96	0.46
51:3:535:G:H22	51:3:537:A:H3'	1.81	0.46
51:3:567:U:O4	51:3:2028:G:H5'	2.14	0.46
51:3:912:A:H2'	51:3:913:U:C6	2.50	0.46
51:3:1095:U:O4'	51:3:1097:G:H5'	2.16	0.46
51:3:1498:U:H2'	51:3:1499:C:C6	2.50	0.46
51:3:1590:U:H2'	51:3:1591:C:C6	2.51	0.46
51:3:1766:A:N7	51:3:2704:U:H1'	2.30	0.46
51:3:2021:A:H2'	51:3:2022:A:C4	2.50	0.46
51:3:2110:U:O2	51:3:2194:G:N2	2.41	0.46
53:5:94:A:H3'	53:5:95:C:H6	1.80	0.46
53:5:438:A:H1'	53:5:495:U:C2	2.50	0.46
53:5:542:G:H2'	53:5:543:C:C6	2.50	0.46
53:5:621:C:H2'	53:5:622:A:H8	1.80	0.46
53:5:673:A:H2'	53:5:674:U:C6	2.51	0.46
53:5:951:U:H2'	53:5:952:U:C6	2.51	0.46
53:5:1262:A:N1	53:5:1346:G:H1'	2.30	0.46
53:5:1415:G:H2'	53:5:1416:U:O4'	2.15	0.46
54:6:22:A:H62	54:6:47:G:H1'	1.79	0.46
4:9:342:ILE:HG22	4:9:344:LEU:HD12	1.97	0.46
6:B:12:PHE:CD1	6:B:16:LYS:HB2	2.50	0.46
6:B:211:TYR:C	6:B:213:LYS:H	2.23	0.46
7:C:14:LEU:HD13	7:C:59:ARG:HA	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:F:21:LEU:HD21	10:F:96:ILE:HD12	1.97	0.46
10:F:115:MET:HA	10:F:118:LYS:HB2	1.98	0.46
19:O:55:LYS:HD3	53:5:224:A:H4'	1.96	0.46
29:e:167:TYR:CD1	29:e:170:GLU:HB2	2.49	0.46
30:f:129:HIS:HA	30:f:135:THR:HG21	1.97	0.46
36:l:112:SER:HA	36:l:115:ILE:HG12	1.97	0.46
39:o:33:VAL:HG13	39:o:35:ILE:HD11	1.96	0.46
43:s:24:THR:HG23	43:s:26:LYS:HG3	1.96	0.46
43:s:45:GLU:O	43:s:49:GLY:N	2.44	0.46
51:3:116:C:H2'	51:3:117:C:H6	1.78	0.46
51:3:153:U:H2'	51:3:154:U:H6	1.79	0.46
51:3:290:A:C6	51:3:291:G:N7	2.83	0.46
51:3:851:U:H2'	51:3:852:C:C6	2.51	0.46
51:3:890:U:H2'	51:3:891:G:C8	2.50	0.46
51:3:1008:A:C8	51:3:1009:A:H2'	2.50	0.46
51:3:1067:A:N1	51:3:1157:G:O6	2.49	0.46
51:3:1221:G:H2'	51:3:1222:A:H8	1.81	0.46
51:3:2647:A:H2'	51:3:2648:A:O4'	2.15	0.46
51:3:2676:G:H2'	51:3:2677:A:C8	2.51	0.46
51:3:2822:C:H2'	51:3:2823:A:C8	2.50	0.46
52:4:32:G:O2'	52:4:42:G:N7	2.48	0.46
53:5:69:G:H1	53:5:86:A:H61	1.64	0.46
53:5:69:G:H2'	53:5:70:A:C8	2.50	0.46
53:5:161:C:H2'	53:5:162:C:H6	1.80	0.46
53:5:660:A:N1	53:5:739:G:N2	2.57	0.46
53:5:763:A:H2'	53:5:764:A:O4'	2.15	0.46
54:6:10:A:H2	54:6:45:G:H1	1.63	0.46
54:7:40:A:H1'	54:8:35:G:H22	1.79	0.46
8:D:77:SER:HB2	8:D:86:MET:HG3	1.97	0.46
11:G:118:THR:HB	11:G:133:ILE:HG22	1.97	0.46
23:S:72:ASN:O	23:S:75:VAL:HG12	2.16	0.46
25:a:82:THR:OG1	25:a:120:LYS:NZ	2.41	0.46
25:a:213:ILE:HB	51:3:1798:A:H4'	1.96	0.46
27:c:15:THR:HG23	27:c:16:GLU:HG2	1.97	0.46
34:j:8:LEU:HD23	34:j:19:VAL:O	2.15	0.46
38:n:19:ILE:O	38:n:23:ASN:ND2	2.48	0.46
41:q:73:HIS:HE1	41:q:75:SER:HB2	1.80	0.46
43:s:63:THR:O	43:s:75:SER:N	2.41	0.46
51:3:306:G:C6	51:3:399:G:C6	3.03	0.46
51:3:383:U:H2'	51:3:384:G:H8	1.79	0.46
51:3:392:A:N3	51:3:392:A:H2'	2.31	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:973:U:H2'	51:3:974:C:C6	2.50	0.46
51:3:990:G:H2'	51:3:991:G:C8	2.51	0.46
51:3:1167:U:H2'	51:3:1168:A:C8	2.50	0.46
51:3:1317:C:H2'	51:3:1318:U:C6	2.50	0.46
51:3:1583:G:HO2'	51:3:1584:U:P	2.39	0.46
51:3:1784:U:H2'	51:3:1785:U:C6	2.50	0.46
51:3:2002:U:H3'	51:3:2003:C:H2'	1.96	0.46
51:3:2636:U:O2'	51:3:2790:A:OP1	2.30	0.46
51:3:2687:A:H2'	51:3:2688:C:C6	2.51	0.46
53:5:556:G:H3'	53:5:557:A:H2'	1.97	0.46
53:5:680:G:H2'	53:5:681:U:C6	2.50	0.46
53:5:744:U:H4'	53:5:745:U:C5	2.50	0.46
53:5:1193:U:H2'	53:5:1194:A:H8	1.77	0.46
4:9:261:MET:HG2	4:9:266:LEU:CD2	2.43	0.46
6:B:12:PHE:CD1	6:B:16:LYS:HE2	2.50	0.46
7:C:171:ASN:HA	7:C:174:PHE:HD1	1.80	0.46
27:c:5:LYS:HB3	27:c:17:PRO:HB3	1.96	0.46
27:c:8:LYS:HE2	27:c:12:SER:HB3	1.97	0.46
27:c:159:PHE:HE2	27:c:172:THR:HG21	1.81	0.46
29:e:45:LYS:HG2	29:e:56:THR:O	2.15	0.46
51:3:107:C:H2'	51:3:108:G:H8	1.81	0.46
51:3:148:U:H2'	51:3:149:A:C8	2.51	0.46
51:3:274:A:N7	51:3:295:U:O4	2.48	0.46
51:3:860:C:H4'	51:3:2436:G:C5	2.51	0.46
51:3:984:C:H2'	51:3:985:A:H8	1.78	0.46
51:3:998:C:H2'	51:3:999:U:H6	1.79	0.46
51:3:1187:C:H2'	51:3:1188:C:H6	1.81	0.46
51:3:2379:G:H2'	51:3:2380:U:O4'	2.16	0.46
53:5:288:A:H3'	53:5:289:U:H6	1.80	0.46
53:5:353:G:OP1	53:5:362:U:O2'	2.32	0.46
53:5:421:G:H2'	53:5:422:A:C8	2.50	0.46
53:5:446:A:H3'	53:5:447:G:H8	1.81	0.46
53:5:747:C:C2	53:5:748:U:C5	3.04	0.46
53:5:1139:A:C6	53:5:1149:G:C6	3.03	0.46
53:5:1200:G:O2'	53:5:1201:C:O5'	2.28	0.46
53:5:1445:G:H2'	53:5:1446:A:C8	2.50	0.46
4:9:21:ILE:HB	4:9:61:ILE:HB	1.96	0.46
4:9:306:LYS:HA	4:9:360:THR:HA	1.98	0.46
6:B:180:THR:HA	53:5:1103:C:N3	2.30	0.46
8:D:92:VAL:HG12	8:D:118:ALA:HB1	1.96	0.46
8:D:120:LYS:NZ	53:5:1064:U:OP1	2.48	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:a:260:LYS:NZ	51:3:1811:A:O3'	2.44	0.46
29:e:121:PRO:HG2	29:e:124:LEU:HB3	1.98	0.46
34:j:64:ARG:HD2	34:j:79:PHE:CD2	2.50	0.46
43:s:53:LEU:HB2	43:s:84:THR:O	2.16	0.46
47:w:21:LYS:O	47:w:25:GLU:HG2	2.16	0.46
51:3:897:A:H3'	51:3:898:A:H8	1.81	0.46
51:3:1343:C:H2'	51:3:1344:U:C6	2.51	0.46
51:3:1499:C:H2'	51:3:1500:A:H8	1.81	0.46
51:3:2018:U:H2'	51:3:2019:G:O4'	2.16	0.46
51:3:2706:U:H2'	51:3:2707:A:C8	2.51	0.46
52:4:26:C:H3'	52:4:27:A:H5''	1.98	0.46
53:5:680:G:N2	53:5:704:U:O2	2.37	0.46
54:7:10:A:H2	54:7:45:G:H1	1.62	0.46
3:2:18:LYS:NZ	3:2:21:GLN:HA	2.30	0.46
4:9:308:GLU:HG2	4:9:358:SER:OG	2.16	0.46
10:F:23:THR:HA	10:F:26:ILE:HD12	1.97	0.46
11:G:13:ASP:OD1	11:G:16:ALA:HB3	2.16	0.46
13:I:77:LYS:HB2	13:I:77:LYS:HE3	1.60	0.46
25:a:162:ARG:NE	51:3:1825:U:OP2	2.48	0.46
28:d:87:CYS:C	28:d:88:LYS:HD2	2.41	0.46
40:p:26:THR:HG21	51:3:2026:A:O3'	2.16	0.46
51:3:320:A:H2'	51:3:321:A:C8	2.50	0.46
51:3:661:G:H2'	51:3:662:U:C6	2.50	0.46
51:3:675:U:H2'	51:3:676:U:H6	1.80	0.46
51:3:1095:U:H6	51:3:1095:U:OP1	1.99	0.46
51:3:2387:U:H2'	51:3:2388:C:C6	2.51	0.46
51:3:2681:G:H2'	51:3:2682:A:C8	2.51	0.46
52:4:103:C:H2'	52:4:104:C:C6	2.51	0.46
53:5:1245:A:O2'	53:5:1287:G:O2'	2.19	0.46
9:E:5:ILE:HB	9:E:60:TRP:HB2	1.98	0.46
11:G:60:LEU:HD22	11:G:69:ILE:HG12	1.97	0.46
13:I:43:LYS:HD2	13:I:81:ILE:HB	1.96	0.46
16:L:114:LYS:HE2	53:5:1202:A:O3'	2.16	0.46
22:R:34:TRP:NE1	53:5:1010:A:OP1	2.48	0.46
25:a:65:LYS:HZ1	51:3:1603:A:H5'	1.81	0.46
35:k:52:GLU:OE2	35:k:61:ARG:NH2	2.49	0.46
37:m:35:LEU:HD13	37:m:102:LYS:HD3	1.97	0.46
45:u:38:LYS:N	45:u:51:ILE:O	2.49	0.46
46:v:31:VAL:HB	46:v:33:LEU:HD23	1.97	0.46
51:3:91:G:H2'	51:3:92:U:C6	2.51	0.46
51:3:117:C:H2'	51:3:118:G:O4'	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:401:G:O2'	51:3:402:A:OP1	2.30	0.46
51:3:453:U:H2'	51:3:454:G:C8	2.51	0.46
51:3:629:G:H2'	51:3:630:C:C6	2.51	0.46
51:3:844:G:H1'	51:3:1284:A:H1'	1.98	0.46
51:3:891:G:H1	51:3:959:C:H42	1.63	0.46
51:3:998:C:O2'	51:3:2505:A:OP1	2.32	0.46
51:3:1062:A:H2'	51:3:1063:A:C8	2.50	0.46
51:3:1109:G:H2'	51:3:1110:C:C6	2.51	0.46
51:3:1187:C:H2'	51:3:1188:C:C6	2.51	0.46
51:3:1810:A:H2'	51:3:1811:A:O4'	2.16	0.46
51:3:2106:G:N2	51:3:2198:G:H22	2.14	0.46
51:3:2122:G:H4'	51:3:2175:U:H1'	1.98	0.46
51:3:2146:A:H2'	51:3:2147:G:O4'	2.16	0.46
51:3:2364:A:H2'	51:3:2365:U:O4'	2.15	0.46
51:3:2552:G:H1'	51:3:2654:U:H4'	1.98	0.46
51:3:2631:G:H2'	51:3:2632:C:C6	2.51	0.46
51:3:2640:A:O2'	51:3:2641:A:H5'	2.16	0.46
51:3:2645:U:H2'	51:3:2646:G:O4'	2.15	0.46
51:3:2744:A:H2'	51:3:2745:G:C8	2.50	0.46
51:3:2839:A:H62	51:3:2883:A:P	2.38	0.46
53:5:556:G:H2'	53:5:557:A:C2	2.51	0.46
53:5:571:A:H2'	53:5:572:A:C4	2.51	0.46
53:5:1277:C:H2'	53:5:1278:G:C8	2.51	0.46
53:5:1281:U:H2'	53:5:1282:U:C6	2.51	0.46
53:5:1404:U:H2'	53:5:1405:U:C6	2.50	0.46
5:A:27:ARG:HD3	5:A:27:ARG:H	1.81	0.46
5:A:32:MET:HE1	5:A:218:ASN:CG	2.41	0.46
21:Q:51:ILE:HB	21:Q:85:HIS:HB3	1.96	0.46
25:a:215:LYS:HD3	51:3:764:G:C5	2.50	0.46
26:b:178:ASN:HA	26:b:180:ARG:HH12	1.80	0.46
29:e:4:ILE:HG21	51:3:2756:A:H4'	1.97	0.46
29:e:90:LEU:HD11	29:e:165:VAL:HG12	1.98	0.46
30:f:1:MET:HE3	30:f:24:GLY:N	2.30	0.46
30:f:133:ASP:OD1	30:f:133:ASP:N	2.49	0.46
35:k:53:GLY:HA3	51:3:867:G:H21	1.81	0.46
36:l:36:ALA:HB2	36:l:103:MET:HE1	1.97	0.46
37:m:20:GLN:HE22	51:3:1306:G:H1'	1.79	0.46
37:m:106:ARG:HD2	37:m:109:ASP:HB2	1.97	0.46
39:o:57:GLY:HA3	39:o:62:GLU:HA	1.97	0.46
51:3:563:A:H2'	51:3:2049:A:N1	2.31	0.46
51:3:665:C:H5''	51:3:686:C:O2'	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:956:U:H2'	51:3:957:G:O4'	2.16	0.46
51:3:1755:A:H2'	51:3:1756:A:H8	1.81	0.46
51:3:1798:A:H3'	51:3:1799:A:H8	1.80	0.46
51:3:1931:C:H2'	51:3:1932:C:C6	2.51	0.46
51:3:1989:U:H2'	51:3:1990:C:C6	2.51	0.46
51:3:2746:A:H2'	51:3:2747:U:O4'	2.16	0.46
53:5:294:A:O2'	53:5:295:G:H5'	2.16	0.46
53:5:747:C:H2'	53:5:748:U:H6	1.80	0.46
53:5:891:C:H2'	53:5:892:G:C8	2.51	0.46
53:5:921:G:H21	53:5:1480:G:H2'	1.81	0.46
1:0:7:PRO:HA	51:3:721:G:H21	1.81	0.46
6:B:139:GLN:HA	6:B:142:ILE:HG12	1.98	0.46
7:C:54:LEU:O	7:C:58:GLN:HG2	2.16	0.46
10:F:94:ARG:NH1	53:5:933:A:O3'	2.49	0.46
26:b:14:SER:O	26:b:26:ILE:N	2.35	0.46
27:c:24:LEU:O	27:c:117:SER:OG	2.28	0.46
29:e:8:THR:HB	29:e:54:GLN:HE21	1.81	0.46
30:f:115:ASP:HB3	30:f:128:LEU:HD13	1.98	0.46
51:3:483:A:H4'	51:3:484:U:H5''	1.98	0.46
51:3:525:A:H2'	51:3:526:G:C8	2.51	0.46
51:3:666:G:N2	51:3:668:A:H3'	2.31	0.46
51:3:1220:A:H3'	51:3:1221:G:H8	1.81	0.46
53:5:69:G:N2	53:5:86:A:N1	2.61	0.46
53:5:116:A:O2'	53:5:117:U:O5'	2.33	0.46
53:5:366:C:H2'	53:5:367:A:H8	1.78	0.46
53:5:655:G:C2'	53:5:656:U:H5'	2.45	0.46
53:5:843:C:H2'	53:5:844:U:C6	2.50	0.46
53:5:843:C:H2'	53:5:844:U:H6	1.80	0.46
53:5:1002:A:H3'	53:5:1003:G:H8	1.81	0.46
53:5:1194:A:H2'	53:5:1195:G:C8	2.51	0.46
53:5:1432:A:H2'	53:5:1433:G:C8	2.51	0.46
6:B:57:GLU:HB2	6:B:68:PHE:HB2	1.97	0.45
7:C:111:ARG:HG2	53:5:403:A:H5''	1.97	0.45
8:D:160:ILE:HG23	8:D:178:ILE:HG22	1.99	0.45
10:F:37:LEU:O	10:F:41:ILE:HG12	2.16	0.45
12:H:113:LYS:HE3	53:5:1346:G:N7	2.31	0.45
18:N:46:ASP:O	18:N:49:SER:OG	2.30	0.45
25:a:20:ILE:HB	25:a:22:TYR:CE1	2.51	0.45
25:a:213:ILE:HG23	25:a:218:ARG:HB3	1.98	0.45
27:c:81:ASN:OD1	27:c:82:PRO:HD2	2.16	0.45
35:k:34:ARG:N	51:3:1221:G:OP1	2.49	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:p:43:LYS:HD3	41:q:73:HIS:NE2	2.32	0.45
50:z:23:LYS:HZ3	50:z:25:VAL:HG12	1.82	0.45
51:3:159:G:H2'	51:3:160:A:H8	1.80	0.45
51:3:417:G:C2	51:3:432:G:C6	3.03	0.45
51:3:579:U:H3	51:3:584:G:H1'	1.80	0.45
51:3:580:U:OP1	51:3:1249:A:O2'	2.34	0.45
51:3:812:G:H2'	51:3:813:G:C8	2.50	0.45
51:3:1294:G:N3	51:3:2022:A:N6	2.59	0.45
51:3:1613:A:C4	51:3:1614:G:C8	3.04	0.45
51:3:1616:G:H2'	51:3:1617:U:C6	2.51	0.45
51:3:1932:C:O2	51:3:1936:G:O6	2.33	0.45
51:3:1950:U:O4'	51:3:1952:G:H5''	2.16	0.45
51:3:2433:A:H4'	51:3:2434:A:H5''	1.98	0.45
52:4:59:A:H2'	52:4:60:C:C6	2.51	0.45
53:5:134:G:N2	53:5:160:A:N1	2.55	0.45
53:5:429:A:C4	53:5:430:G:C8	3.04	0.45
53:5:663:G:H2'	53:5:664:A:C8	2.51	0.45
53:5:1283:G:H2'	53:5:1284:A:H8	1.80	0.45
54:6:16:G:N2	54:6:49:C:H42	2.14	0.45
3:2:17:ILE:HG13	3:2:24:ARG:HB2	1.97	0.45
21:Q:81:MET:O	21:Q:85:HIS:ND1	2.39	0.45
26:b:162:GLY:HA3	33:i:83:TYR:CE2	2.51	0.45
51:3:671:C:H2'	51:3:672:G:C8	2.51	0.45
51:3:1200:U:O4	51:3:1215:G:O6	2.33	0.45
51:3:1451:A:H2'	51:3:1452:G:H8	1.80	0.45
51:3:1461:A:H2'	51:3:1462:A:C8	2.51	0.45
51:3:1662:G:H2'	51:3:1663:G:H8	1.81	0.45
51:3:1675:A:C5	51:3:1676:G:C5	3.04	0.45
51:3:1709:C:H2'	51:3:1710:A:O4'	2.16	0.45
51:3:2299:U:O4	51:3:2349:G:O6	2.34	0.45
51:3:2575:G:H2'	51:3:2576:A:C8	2.50	0.45
53:5:19:C:H2'	53:5:20:C:H6	1.81	0.45
53:5:80:U:H2'	53:5:81:A:C8	2.51	0.45
53:5:191:A:H2'	53:5:192:A:C8	2.49	0.45
53:5:219:A:H2'	53:5:220:U:C6	2.51	0.45
53:5:602:G:H2'	53:5:603:U:C6	2.51	0.45
53:5:886:A:H2'	53:5:887:C:C6	2.51	0.45
53:5:1228:C:H2'	53:5:1229:A:C8	2.51	0.45
53:5:1291:C:H3'	53:5:1292:A:C8	2.50	0.45
53:5:1488:A:N6	53:5:1498:G:O6	2.49	0.45
4:9:53:ALA:O	4:9:56:GLU:HB2	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:A:201:LEU:HD21	5:A:232:LEU:HD11	1.96	0.45
8:D:138:HIS:HB2	11:G:108:LEU:HB3	1.97	0.45
19:O:52:TRP:HE3	19:O:55:LYS:HD2	1.80	0.45
22:R:41:PHE:CD1	22:R:42:PRO:HD2	2.51	0.45
25:a:249:VAL:HG11	51:3:1909:C:H5'	1.99	0.45
26:b:13:MET:HA	26:b:27:THR:HA	1.97	0.45
26:b:64:LYS:HA	26:b:67:GLN:NE2	2.31	0.45
28:d:40:VAL:HG12	28:d:85:ILE:HB	1.97	0.45
40:p:90:ASN:OD1	40:p:94:LEU:HD22	2.16	0.45
41:q:64:LEU:HB3	41:q:86:ARG:HE	1.81	0.45
51:3:428:U:H2'	51:3:429:U:C6	2.52	0.45
51:3:528:U:H2'	51:3:529:G:C8	2.51	0.45
51:3:959:C:H2'	51:3:960:A:C8	2.51	0.45
51:3:1677:G:H2'	51:3:1678:U:C6	2.52	0.45
52:4:85:A:H2'	52:4:86:G:C8	2.51	0.45
53:5:145:G:N2	53:5:148:A:OP2	2.45	0.45
53:5:213:U:H2'	53:5:214:U:C6	2.51	0.45
53:5:433:C:H2'	53:5:434:U:C6	2.51	0.45
53:5:442:G:H2'	53:5:443:G:C8	2.51	0.45
53:5:1226:A:H2'	53:5:1227:A:O4'	2.15	0.45
5:A:118:THR:N	5:A:190:GLU:OE2	2.50	0.45
11:G:117:SER:HA	11:G:121:GLY:O	2.16	0.45
36:l:83:MET:HE3	51:3:991:G:H21	1.81	0.45
40:p:56:PHE:HB3	40:p:60:TRP:CZ2	2.51	0.45
46:v:17:ASN:OD1	46:v:27:ARG:HB2	2.16	0.45
51:3:62:G:H5'	51:3:76:A:H2	1.80	0.45
51:3:646:A:N6	51:3:647:G:O6	2.50	0.45
51:3:961:U:H2'	51:3:962:U:C6	2.51	0.45
51:3:1473:C:C2	51:3:1580:G:N2	2.84	0.45
51:3:1960:A:H2	51:3:2557:G:N3	2.15	0.45
51:3:2051:G:H2'	51:3:2052:C:O4'	2.16	0.45
51:3:2099:U:N3	51:3:2234:C:OP2	2.49	0.45
51:3:2812:U:H1'	51:3:2813:A:H2'	1.99	0.45
52:4:28:C:H1'	52:4:55:A:H61	1.81	0.45
53:5:212:G:H2'	53:5:213:U:H6	1.82	0.45
53:5:1295:U:H2'	53:5:1296:C:C5	2.51	0.45
4:9:139:ASP:HB3	4:9:177:LYS:HD2	1.98	0.45
8:D:74:LYS:O	8:D:88:PHE:HB2	2.17	0.45
9:E:113:ALA:HA	9:E:123:ASN:HB3	1.98	0.45
10:F:31:GLU:OE2	10:F:108:ARG:NH2	2.50	0.45
14:J:54:TYR:O	14:J:58:ILE:HG12	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:K:41:PRO:HA	53:5:551:A:H1'	1.99	0.45
19:O:51:GLU:O	19:O:55:LYS:HG2	2.17	0.45
23:S:56:ARG:NH2	53:5:218:U:O3'	2.49	0.45
25:a:153:HIS:ND1	51:3:2212:U:H1'	2.31	0.45
25:a:280:ARG:HG2	25:a:285:GLU:HA	1.98	0.45
27:c:112:LEU:O	27:c:116:TRP:HD1	2.00	0.45
38:n:27:ARG:HB3	38:n:89:VAL:HA	1.98	0.45
43:s:53:LEU:HD23	47:w:87:TRP:CZ3	2.52	0.45
46:v:7:LEU:HG	46:v:8:THR:HG23	1.99	0.45
46:v:34:GLN:OE1	46:v:34:GLN:N	2.50	0.45
51:3:17:G:H2'	51:3:18:G:C8	2.52	0.45
51:3:139:G:H2'	51:3:140:G:C8	2.52	0.45
51:3:294:G:H8	51:3:294:G:OP2	2.00	0.45
51:3:641:U:O2	51:3:657:A:N7	2.49	0.45
51:3:713:C:H2'	51:3:714:G:H8	1.81	0.45
51:3:1186:A:H2'	51:3:1187:C:C6	2.52	0.45
51:3:1253:G:N2	51:3:1256:A:OP2	2.29	0.45
51:3:1418:U:H3	51:3:1423:A:N6	2.11	0.45
51:3:1446:G:HO2'	51:3:1613:A:H62	1.60	0.45
51:3:1447:A:N6	51:3:1519:A:H61	2.14	0.45
51:3:2197:U:H2'	51:3:2198:G:C8	2.52	0.45
51:3:2214:A:H2'	51:3:2215:C:C6	2.52	0.45
51:3:2855:A:H3'	51:3:2856:G:H8	1.82	0.45
53:5:584:C:O2'	53:5:872:C:H4'	2.17	0.45
53:5:891:C:H2'	53:5:892:G:H8	1.80	0.45
53:5:942:G:H2'	53:5:943:C:C6	2.51	0.45
53:5:1127:A:O2'	53:5:1128:G:H5''	2.16	0.45
2:1:39:ARG:NH2	51:3:2359:G:O6	2.46	0.45
3:2:2:LYS:HZ1	51:3:2486:A:P	2.40	0.45
4:9:92:MET:HE2	4:9:119:HIS:ND1	2.31	0.45
4:9:104:LEU:HG	4:9:106:VAL:HG13	1.98	0.45
4:9:209:LYS:O	4:9:235:GLY:HA2	2.16	0.45
5:A:49:ARG:HG3	5:A:55:HIS:HB2	1.99	0.45
19:O:3:MET:HE3	19:O:22:ARG:NH2	2.31	0.45
23:S:53:ARG:NE	53:5:196:G:O3'	2.49	0.45
25:a:5:LYS:NZ	25:a:16:HIS:O	2.35	0.45
25:a:272:LYS:NZ	51:3:1809:A:O3'	2.44	0.45
28:d:91:LEU:HA	28:d:95:ARG:HH21	1.82	0.45
29:e:91:ARG:HB2	29:e:166:LEU:HB3	1.99	0.45
34:j:87:ILE:HA	34:j:93:PRO:HA	1.98	0.45
44:t:16:LYS:HE3	51:3:363:G:H22	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:z:36:LYS:HA	50:z:36:LYS:HD2	1.83	0.45
51:3:517:G:H1	51:3:544:U:H3	1.65	0.45
51:3:627:U:H2'	51:3:628:A:C8	2.51	0.45
51:3:652:U:H2'	51:3:653:G:C8	2.51	0.45
51:3:703:A:N6	51:3:705:A:O2'	2.49	0.45
51:3:1141:U:H2'	51:3:1142:G:H8	1.80	0.45
51:3:1507:G:HO2'	51:3:1508:G:P	2.40	0.45
51:3:1522:U:OP2	51:3:1523:C:N4	2.32	0.45
51:3:1647:A:H3'	51:3:1651:C:H42	1.82	0.45
51:3:1814:G:N2	51:3:1816:A:H3'	2.32	0.45
51:3:1851:U:H2'	51:3:1852:G:C8	2.51	0.45
51:3:2436:G:H4'	51:3:2437:G:C5	2.52	0.45
51:3:2599:C:H2'	51:3:2600:G:C8	2.52	0.45
51:3:2710:G:H2'	51:3:2710:G:N3	2.32	0.45
53:5:152:U:H2'	53:5:153:A:C8	2.51	0.45
53:5:243:G:H2'	53:5:244:C:H6	1.82	0.45
53:5:763:A:N6	53:5:810:U:N3	2.58	0.45
1:0:12:ARG:HG3	1:0:16:HIS:CD2	2.50	0.45
4:9:158:LEU:HD23	4:9:165:GLY:HA2	1.99	0.45
4:9:258:GLY:O	4:9:277:VAL:HA	2.17	0.45
5:A:111:ARG:CZ	5:A:184:GLU:HA	2.46	0.45
6:B:18:TRP:O	6:B:21:ARG:NE	2.49	0.45
10:F:18:ASN:CG	10:F:19:ASN:N	2.75	0.45
13:I:73:LYS:HD3	17:M:55:GLY:O	2.17	0.45
16:L:23:PHE:HB3	16:L:70:ARG:HE	1.81	0.45
26:b:139:TYR:CG	26:b:140:PRO:HD3	2.52	0.45
27:c:125:THR:HA	27:c:197:LEU:O	2.17	0.45
29:e:97:TYR:CD1	29:e:110:LEU:HA	2.47	0.45
34:j:19:VAL:HG22	34:j:41:VAL:HB	1.97	0.45
34:j:63:VAL:HG21	34:j:102:VAL:HG23	1.99	0.45
36:l:9:TYR:OH	51:3:949:C:OP1	2.24	0.45
40:p:67:ALA:O	40:p:71:GLN:HG2	2.16	0.45
42:r:35:ILE:HD11	49:y:25:GLN:H	1.82	0.45
43:s:8:LEU:HB2	43:s:30:VAL:HG13	1.99	0.45
49:y:6:ARG:HH22	51:3:2026:A:H3'	1.81	0.45
51:3:201:A:N6	51:3:2438:A:H2'	2.32	0.45
51:3:255:A:H8	51:3:255:A:O5'	1.99	0.45
51:3:669:A:O2'	51:3:2412:A:OP1	2.35	0.45
51:3:802:U:O2'	51:3:803:G:H5'	2.17	0.45
51:3:1275:C:H2'	51:3:1276:A:C8	2.51	0.45
51:3:1588:A:HO2'	51:3:1589:A:P	2.38	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2179:A:H1'	51:3:2180:U:C6	2.52	0.45
51:3:2405:G:H2'	51:3:2406:U:C6	2.52	0.45
51:3:2469:A:H2'	51:3:2470:C:C6	2.51	0.45
51:3:2602:C:H2'	51:3:2603:G:C8	2.52	0.45
51:3:2696:G:N1	51:3:2728:U:OP2	2.34	0.45
51:3:2748:A:OP2	51:3:2771:G:N1	2.34	0.45
51:3:2893:C:H2'	51:3:2894:G:O4'	2.17	0.45
53:5:334:A:H2'	53:5:335:C:C6	2.52	0.45
53:5:1061:U:H2'	53:5:1062:C:C6	2.52	0.45
53:5:1083:A:H2'	53:5:1084:A:C8	2.52	0.45
53:5:1297:G:H2'	53:5:1298:U:C6	2.52	0.45
53:5:1417:U:H3	53:5:1435:G:H22	1.62	0.45
53:5:1423:C:H2'	53:5:1424:C:C6	2.52	0.45
53:5:1483:C:H2'	53:5:1484:C:O4'	2.17	0.45
4:9:124:ARG:HG2	4:9:161:TYR:HB3	1.99	0.45
9:E:143:LEU:HB3	11:G:63:LYS:HE2	1.98	0.45
10:F:93:ASP:OD1	10:F:93:ASP:N	2.49	0.45
12:H:96:LEU:O	12:H:100:LEU:HG	2.17	0.45
13:I:41:LYS:HG3	13:I:41:LYS:O	2.17	0.45
25:a:121:ILE:HA	25:a:134:PHE:HE1	1.82	0.45
27:c:127:LEU:HD12	27:c:199:VAL:O	2.17	0.45
40:p:78:PHE:HE1	40:p:112:VAL:HG11	1.82	0.45
41:q:66:ARG:N	51:3:583:U:O4	2.50	0.45
45:u:34:ARG:HB2	51:3:2364:A:H4'	1.99	0.45
51:3:513:A:O2'	51:3:514:A:OP1	2.30	0.45
51:3:566:G:OP1	51:3:594:G:N2	2.50	0.45
51:3:625:G:H2'	51:3:626:A:H8	1.81	0.45
51:3:1702:A:H5'	51:3:1703:A:C8	2.52	0.45
51:3:1815:U:H2'	51:3:1816:A:C8	2.52	0.45
51:3:1991:U:H2'	51:3:1992:C:H6	1.82	0.45
51:3:2117:G:H5'	51:3:2152:C:N4	2.32	0.45
51:3:2407:G:H2'	51:3:2408:G:H8	1.79	0.45
51:3:2528:C:H2'	51:3:2529:C:H6	1.82	0.45
53:5:452:A:H2'	53:5:452:A:N3	2.32	0.45
53:5:500:G:H2'	53:5:501:A:C8	2.52	0.45
53:5:578:C:H2'	53:5:579:G:O4'	2.17	0.45
53:5:853:A:H2'	53:5:854:A:O4'	2.15	0.45
53:5:1134:C:C4	53:5:1136:G:C8	3.04	0.45
53:5:1226:A:H2'	53:5:1227:A:C8	2.51	0.45
7:C:12:ARG:HB3	7:C:35:PRO:HD3	1.99	0.45
10:F:15:PRO:HG2	12:H:48:GLN:HG3	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:I:29:LYS:O	13:I:33:GLU:OE1	2.35	0.45
15:K:134:LYS:NZ	53:5:38:U:H4'	2.30	0.45
22:R:41:PHE:O	22:R:44:PHE:N	2.38	0.45
25:a:274:SER:HA	25:a:277:LEU:HB2	1.99	0.45
30:f:94:THR:O	30:f:98:ILE:HG12	2.17	0.45
33:i:101:ASP:OD1	33:i:101:ASP:N	2.48	0.45
34:j:111:TYR:HB3	34:j:114:ILE:HD13	1.99	0.45
41:q:96:ARG:HG2	41:q:97:PHE:H	1.82	0.45
51:3:121:U:H5''	51:3:123:G:OP2	2.17	0.45
51:3:158:U:H2'	51:3:159:G:H8	1.81	0.45
51:3:228:A:H2'	51:3:229:C:O4'	2.16	0.45
51:3:910:G:O2'	51:3:911:U:H5'	2.16	0.45
51:3:914:G:H1'	51:3:937:A:N6	2.31	0.45
51:3:1269:C:H2'	51:3:1270:C:C6	2.52	0.45
51:3:1292:A:H61	51:3:2024:C:N4	2.14	0.45
51:3:2084:A:H2'	51:3:2085:C:H6	1.82	0.45
51:3:2190:G:N1	51:3:2191:G:O6	2.50	0.45
53:5:25:U:H2'	53:5:26:C:C6	2.51	0.45
53:5:107:A:H61	53:5:235:C:N4	2.14	0.45
53:5:125:A:H2'	53:5:126:U:C6	2.52	0.45
53:5:1066:U:H2'	53:5:1067:C:C6	2.52	0.45
53:5:1086:U:H2'	53:5:1087:C:C6	2.51	0.45
53:5:1112:U:O2	53:5:1128:G:N2	2.39	0.45
53:5:1351:U:H2'	53:5:1352:A:C8	2.52	0.45
53:5:1417:U:H3	53:5:1435:G:N2	2.14	0.45
9:E:144:SER:CB	11:G:60:LEU:HD21	2.43	0.45
12:H:124:ARG:NH2	53:5:1322:U:H4'	2.32	0.45
16:L:103:ARG:HE	53:5:1199:U:H5''	1.82	0.45
21:Q:52:ASP:OD2	21:Q:55:ASP:HB2	2.17	0.45
30:f:10:SER:HB3	30:f:14:LYS:NZ	2.32	0.45
39:o:6:LYS:C	39:o:8:ALA:H	2.25	0.45
40:p:30:SER:OG	40:p:33:VAL:HB	2.16	0.45
41:q:79:HIS:CE1	41:q:81:LYS:HD3	2.52	0.45
51:3:554:U:H2'	51:3:555:A:H8	1.81	0.45
51:3:999:U:O2'	51:3:2258:G:O6	2.33	0.45
51:3:1050:A:H2'	51:3:1051:U:C6	2.52	0.45
51:3:1116:U:H2'	51:3:1117:U:C6	2.51	0.45
51:3:1235:U:O4	51:3:1271:A:N6	2.33	0.45
51:3:1305:G:H2'	51:3:1306:G:C8	2.52	0.45
51:3:1523:C:H2'	51:3:1524:C:H6	1.82	0.45
51:3:1575:C:H2'	51:3:1576:G:O4'	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2551:G:H2'	51:3:2552:G:H8	1.82	0.45
51:3:2737:G:H2'	51:3:2738:U:H6	1.81	0.45
51:3:2764:U:H4'	51:3:2765:A:OP1	2.17	0.45
53:5:663:G:H1	53:5:737:U:H3	1.64	0.45
53:5:763:A:N3	53:5:1500:G:O2'	2.42	0.45
53:5:1012:A:OP2	53:5:1013:C:N4	2.50	0.45
53:5:1114:A:N6	53:5:1127:A:H61	2.15	0.45
54:6:69:A:H2'	54:6:70:G:C8	2.50	0.45
8:D:138:HIS:HE1	8:D:202:GLN:HE21	1.65	0.44
26:b:15:GLN:OE1	26:b:23:ARG:HD2	2.18	0.44
26:b:76:LYS:HE2	26:b:76:LYS:HB2	1.88	0.44
27:c:83:HIS:CD2	51:3:1286:G:H21	2.33	0.44
30:f:42:LYS:HE3	30:f:47:ARG:NH1	2.32	0.44
34:j:23:LYS:NZ	51:3:2570:U:O2'	2.41	0.44
36:l:98:LYS:H	36:l:101:THR:HG21	1.82	0.44
47:w:105:ARG:NH2	51:3:1431:A:O5'	2.49	0.44
49:y:7:ARG:HG3	51:3:1292:A:H2	1.82	0.44
51:3:25:G:C6	51:3:553:A:C6	3.06	0.44
51:3:61:U:O2	51:3:70:G:N2	2.44	0.44
51:3:127:A:O2'	51:3:128:A:O4'	2.29	0.44
51:3:216:C:H2'	51:3:217:A:C8	2.52	0.44
51:3:226:A:N7	51:3:236:G:N2	2.65	0.44
51:3:229:C:H2'	51:3:230:G:O4'	2.17	0.44
51:3:243:U:O2	51:3:262:G:C6	2.70	0.44
51:3:493:A:H4'	51:3:494:G:H4'	1.99	0.44
51:3:664:G:H2'	51:3:665:C:H6	1.81	0.44
51:3:710:A:H62	51:3:838:U:H3	1.64	0.44
51:3:915:A:C4	51:3:937:A:H1'	2.52	0.44
51:3:1078:C:H2'	51:3:1079:U:C6	2.52	0.44
51:3:1254:U:H2'	51:3:1255:G:C4	2.52	0.44
51:3:1441:A:H2'	51:3:1442:G:H8	1.82	0.44
51:3:1474:C:H2'	51:3:1475:C:H6	1.81	0.44
51:3:1959:A:N3	51:3:2568:G:O2'	2.45	0.44
51:3:2111:U:O2	51:3:2194:G:N1	2.50	0.44
51:3:2339:G:H2'	51:3:2340:U:C6	2.51	0.44
51:3:2350:C:O2'	51:3:2351:U:O5'	2.30	0.44
51:3:2495:A:H2'	51:3:2496:G:C8	2.52	0.44
53:5:34:A:O2'	53:5:359:A:H1'	2.16	0.44
53:5:264:C:H2'	53:5:265:U:H6	1.82	0.44
53:5:345:A:H2'	53:5:346:G:C8	2.52	0.44
53:5:731:A:H2'	53:5:732:A:H8	1.80	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:909:A:O2'	53:5:911:G:H5''	2.17	0.44
53:5:1279:G:N3	53:5:1305:G:N2	2.65	0.44
53:5:1491:A:H2'	53:5:1493:A:OP2	2.17	0.44
54:7:8:G:O2'	54:7:50:G:OP2	2.28	0.44
23:S:24:GLN:O	23:S:28:LEU:HD23	2.17	0.44
23:S:71:ARG:NH1	53:5:254:G:OP1	2.50	0.44
26:b:39:VAL:HB	26:b:88:THR:HG23	1.98	0.44
30:f:1:MET:HE1	30:f:22:LYS:HA	2.00	0.44
37:m:106:ARG:HG2	37:m:108:GLY:H	1.82	0.44
51:3:189:U:H2'	51:3:190:G:C8	2.52	0.44
51:3:312:U:H2'	51:3:313:G:O4'	2.17	0.44
51:3:512:G:H21	51:3:516:A:H62	1.65	0.44
51:3:710:A:N6	51:3:838:U:N3	2.64	0.44
51:3:767:C:H2'	51:3:768:G:O4'	2.17	0.44
51:3:771:C:H2'	51:3:772:C:C6	2.53	0.44
51:3:990:G:H2'	51:3:991:G:H8	1.82	0.44
51:3:1032:A:H2'	51:3:1033:A:H8	1.79	0.44
51:3:1036:A:OP2	51:3:1189:G:N1	2.38	0.44
51:3:1093:U:H3	51:3:1115:G:H1	1.64	0.44
51:3:1384:C:H2'	51:3:1385:U:C6	2.52	0.44
51:3:2070:C:H42	51:3:2458:A:H61	1.64	0.44
51:3:2422:G:C2	51:3:2423:G:C8	3.06	0.44
51:3:2541:C:H2'	51:3:2542:A:C8	2.52	0.44
53:5:339:U:O2'	53:5:342:G:O6	2.27	0.44
53:5:365:U:H2'	53:5:366:C:C6	2.53	0.44
53:5:378:A:O2'	53:5:379:A:O4'	2.24	0.44
53:5:498:G:H2'	53:5:499:U:O4'	2.16	0.44
53:5:510:U:H2'	53:5:511:A:H8	1.82	0.44
53:5:573:G:H4'	53:5:574:C:H5''	1.99	0.44
53:5:776:C:H2'	53:5:777:A:O4'	2.16	0.44
53:5:880:G:O6	53:5:905:U:O4	2.35	0.44
53:5:1108:A:C5	53:5:1154:A:H2	2.35	0.44
6:B:194:THR:HG23	6:B:196:TYR:H	1.82	0.44
9:E:24:LYS:HA	9:E:27:GLN:OE1	2.17	0.44
9:E:48:PRO:HG3	9:E:53:LEU:HD21	1.98	0.44
25:a:251:ARG:HH12	51:3:2083:U:P	2.41	0.44
26:b:83:GLU:OE2	51:3:2643:A:O2'	2.27	0.44
28:d:29:PRO:HG3	28:d:165:GLU:O	2.18	0.44
33:i:80:HIS:ND1	33:i:87:ILE:HG12	2.32	0.44
36:l:115:ILE:O	36:l:119:THR:HG23	2.17	0.44
38:n:79:ASP:HA	38:n:82:VAL:HG22	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:q:72:LYS:HE2	41:q:72:LYS:HA	1.99	0.44
41:q:73:HIS:CE1	41:q:75:SER:HB2	2.52	0.44
44:t:105:LYS:NZ	51:3:333:A:O5'	2.50	0.44
45:u:81:VAL:O	45:u:82:LYS:HD3	2.16	0.44
51:3:129:U:H2'	51:3:130:C:C6	2.53	0.44
51:3:192:U:H2'	51:3:193:G:O4'	2.18	0.44
51:3:400:A:H2'	51:3:401:G:C8	2.52	0.44
51:3:456:G:H2'	51:3:457:U:C6	2.53	0.44
51:3:608:A:OP2	51:3:2062:C:N4	2.49	0.44
51:3:696:U:H2'	51:3:697:U:C6	2.53	0.44
51:3:748:G:H2'	51:3:749:U:C6	2.52	0.44
51:3:848:U:H2'	51:3:849:C:H6	1.83	0.44
51:3:1141:U:C2	51:3:1142:G:C8	3.05	0.44
51:3:1384:C:H2'	51:3:1385:U:H6	1.83	0.44
51:3:1428:U:H2'	51:3:1429:G:H8	1.80	0.44
51:3:1504:G:H2'	51:3:1505:G:H8	1.82	0.44
51:3:1661:A:C2	51:3:1674:A:C8	3.06	0.44
51:3:1703:A:H4'	51:3:2557:G:H5'	1.99	0.44
51:3:1844:C:O2'	51:3:1934:A:H1'	2.17	0.44
51:3:2299:U:OP1	51:3:2388:C:O2'	2.36	0.44
51:3:2643:A:H2'	51:3:2644:U:O4'	2.18	0.44
51:3:2825:A:H2'	51:3:2826:G:O4'	2.18	0.44
53:5:214:U:H2'	53:5:215:C:H6	1.82	0.44
53:5:289:U:H2'	53:5:290:G:H8	1.81	0.44
53:5:305:A:H1'	53:5:606:A:N1	2.32	0.44
53:5:679:U:N3	53:5:680:G:N7	2.66	0.44
53:5:1298:U:H2'	53:5:1299:C:C6	2.52	0.44
53:5:1374:C:O2	53:5:1477:A:N6	2.50	0.44
53:5:1374:C:H4'	53:5:1375:C:H3'	1.99	0.44
53:5:1386:C:H2'	53:5:1387:U:C6	2.52	0.44
53:5:1485:C:H2'	53:5:1486:C:C6	2.52	0.44
54:7:16:G:N2	54:7:49:C:H42	2.14	0.44
9:E:92:ARG:HD3	21:Q:92:ARG:HH12	1.81	0.44
15:K:80:ILE:CG2	15:K:110:ILE:HD13	2.48	0.44
26:b:33:PRO:HA	26:b:189:MET:HE1	1.99	0.44
51:3:23:A:OP1	51:3:1248:A:H4'	2.18	0.44
51:3:300:G:H2'	51:3:301:G:C8	2.53	0.44
51:3:513:A:OP1	51:3:536:A:N6	2.37	0.44
51:3:1112:A:H2'	51:3:1112:A:N3	2.31	0.44
51:3:1288:C:H2'	51:3:1289:G:C8	2.52	0.44
51:3:1749:A:H2'	51:3:1750:A:C8	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2156:G:C2	51:3:2157:A:C5	3.06	0.44
51:3:2332:U:H3'	51:3:2333:G:H5'	1.99	0.44
51:3:2533:A:H2'	51:3:2534:G:H8	1.82	0.44
51:3:2560:U:C2	51:3:2562:U:H5''	2.53	0.44
51:3:2568:G:H2'	51:3:2569:A:H8	1.82	0.44
53:5:83:U:H2'	53:5:84:U:C6	2.53	0.44
53:5:304:U:H2'	53:5:305:A:C8	2.52	0.44
53:5:806:A:H2'	53:5:807:C:O4'	2.17	0.44
53:5:1087:C:H2'	53:5:1088:C:C6	2.53	0.44
53:5:1397:G:H2'	53:5:1398:G:H8	1.83	0.44
4:9:106:VAL:O	4:9:136:ASN:N	2.50	0.44
6:B:85:ILE:O	6:B:89:THR:OG1	2.34	0.44
7:C:64:TYR:CE2	7:C:93:LEU:HB3	2.53	0.44
7:C:145:LYS:O	7:C:147:LYS:N	2.51	0.44
13:I:96:ILE:HG13	13:I:97:LYS:N	2.33	0.44
17:M:6:LEU:HD23	17:M:23:ARG:HH12	1.81	0.44
23:S:9:LYS:NZ	53:5:87:G:H3'	2.32	0.44
26:b:181:ILE:H	26:b:181:ILE:HD12	1.83	0.44
33:i:20:ILE:N	33:i:141:THR:O	2.48	0.44
33:i:119:ARG:HG3	33:i:120:ARG:HD3	2.00	0.44
37:m:6:LYS:HE2	37:m:8:GLY:HA2	2.00	0.44
41:q:3:ALA:HA	41:q:41:LEU:HA	2.00	0.44
42:r:99:ARG:NH1	51:3:2020:A:OP1	2.44	0.44
47:w:41:PRO:HB2	51:3:63:U:C2	2.53	0.44
49:y:7:ARG:NH1	49:y:8:SER:O	2.49	0.44
51:3:23:A:H2'	51:3:24:U:C6	2.52	0.44
51:3:71:C:O2	51:3:75:A:O2'	2.29	0.44
51:3:193:G:H1	51:3:209:G:HO2'	1.63	0.44
51:3:1109:G:H2'	51:3:1110:C:H6	1.82	0.44
51:3:1456:C:O2'	51:3:1603:A:OP2	2.27	0.44
51:3:2391:G:H2'	51:3:2392:U:C6	2.52	0.44
51:3:2452:G:C2	51:3:2453:G:C5	3.05	0.44
51:3:2521:A:H2'	51:3:2522:U:C6	2.52	0.44
53:5:117:U:H2'	53:5:118:C:C6	2.53	0.44
53:5:218:U:C2	53:5:219:A:C8	3.06	0.44
53:5:228:G:H2'	53:5:229:G:C8	2.52	0.44
53:5:337:C:OP1	54:6:77:A:N6	2.50	0.44
53:5:948:U:C2	53:5:949:G:C8	3.05	0.44
53:5:1489:C:H2'	53:5:1490:G:C8	2.53	0.44
54:8:69:A:H2'	54:8:70:G:C8	2.50	0.44
4:9:227:VAL:HA	4:9:278:LEU:HA	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:D:148:ARG:HB2	8:D:183:LEU:HB2	1.99	0.44
11:G:48:LEU:HD23	11:G:54:LEU:HD22	1.98	0.44
12:H:74:PHE:O	12:H:78:ALA:N	2.45	0.44
16:L:115:THR:HG23	53:5:1204:A:H5'	1.98	0.44
20:P:10:ILE:HB	20:P:60:LYS:NZ	2.32	0.44
26:b:23:ARG:NH2	51:3:2690:U:O2	2.49	0.44
34:j:1:MET:HE1	34:j:32:TYR:CD2	2.39	0.44
34:j:27:SER:HA	51:3:2571:U:H5'	2.00	0.44
39:o:36:LYS:HB2	39:o:85:ASN:HB3	2.00	0.44
40:p:48:ASP:O	40:p:52:LYS:HG2	2.18	0.44
41:q:47:ALA:HB3	41:q:48:PRO:HD3	1.99	0.44
41:q:76:GLN:H	51:3:598:G:P	2.40	0.44
51:3:106:C:C2	51:3:107:C:C5	3.06	0.44
51:3:241:C:H2'	51:3:242:G:C8	2.52	0.44
51:3:359:G:H2'	51:3:360:G:C8	2.50	0.44
51:3:851:U:H2'	51:3:852:C:H6	1.83	0.44
51:3:892:G:C2	51:3:893:A:C5	3.05	0.44
51:3:1311:G:N2	51:3:1313:G:H3'	2.33	0.44
51:3:1339:U:H4'	51:3:1340:U:OP1	2.18	0.44
51:3:1351:G:H2'	51:3:1352:G:C8	2.52	0.44
51:3:1450:G:H2'	51:3:1451:A:H8	1.83	0.44
51:3:1457:A:H2'	51:3:1458:A:C8	2.52	0.44
51:3:1919:A:OP2	51:3:1925:A:N6	2.39	0.44
51:3:2599:C:H2'	51:3:2600:G:H8	1.83	0.44
51:3:2739:C:O2'	51:3:2740:U:H5'	2.18	0.44
51:3:2744:A:H2'	51:3:2745:G:H8	1.80	0.44
51:3:2781:C:H2'	51:3:2782:A:C8	2.52	0.44
53:5:975:C:H3'	53:5:976:U:C5	2.53	0.44
53:5:1233:G:H2'	53:5:1234:C:C6	2.52	0.44
4:9:3:ARG:HA	4:9:3:ARG:HD2	1.81	0.44
4:9:83:PRO:HG2	4:9:91:ASN:HB3	2.00	0.44
5:A:99:ILE:HG23	5:A:102:ARG:NH1	2.33	0.44
5:A:130:LEU:HB2	5:A:159:LEU:HD23	1.99	0.44
7:C:4:THR:HB	7:C:10:ARG:NE	2.33	0.44
7:C:121:HIS:HA	7:C:145:LYS:HD2	2.00	0.44
13:I:24:LEU:O	13:I:28:THR:HG23	2.18	0.44
23:S:46:ASN:O	23:S:50:GLN:OE1	2.35	0.44
27:c:108:HIS:O	27:c:112:LEU:HG	2.17	0.44
30:f:32:PRO:HG2	30:f:33:LYS:NZ	2.32	0.44
35:k:35:GLY:HA3	51:3:978:G:H4'	1.99	0.44
36:l:83:MET:HB2	51:3:2258:G:H2'	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:m:79:MET:SD	37:m:80:ASP:N	2.91	0.44
38:n:103:ALA:O	38:n:107:GLU:OE1	2.35	0.44
44:t:40:ASN:HD22	44:t:69:ILE:HD11	1.82	0.44
51:3:206:U:H2'	51:3:207:C:N1	2.33	0.44
51:3:343:A:O4'	51:3:363:G:N2	2.51	0.44
51:3:614:C:C2	51:3:615:G:C8	3.05	0.44
51:3:855:A:OP2	51:3:1009:A:N6	2.45	0.44
51:3:1248:A:H2'	51:3:1249:A:H8	1.82	0.44
51:3:1458:A:H2'	51:3:1459:A:C8	2.52	0.44
51:3:1741:G:C5	51:3:1763:G:C6	3.05	0.44
51:3:1848:U:H2'	51:3:1849:G:H8	1.82	0.44
51:3:2231:A:H3'	51:3:2232:G:H8	1.83	0.44
51:3:2353:G:H1'	51:3:2390:G:H5'	1.99	0.44
51:3:2387:U:H2'	51:3:2388:C:H6	1.83	0.44
51:3:2473:C:H2'	51:3:2474:C:H6	1.83	0.44
53:5:500:G:C6	53:5:542:G:C6	3.06	0.44
53:5:1010:A:H2'	53:5:1011:A:C8	2.52	0.44
54:6:26:C:H2'	54:6:27:A:H8	1.83	0.44
5:A:87:THR:HG21	5:A:111:ARG:HA	1.99	0.44
5:A:179:ASP:OD1	5:A:180:ASP:N	2.51	0.44
6:B:55:ASN:OD1	6:B:70:TYR:HB2	2.18	0.44
7:C:171:ASN:HA	7:C:174:PHE:CD1	2.52	0.44
14:J:102:GLU:HA	24:T:8:ASN:HB3	1.99	0.44
17:M:32:ALA:HB2	53:5:969:A:H5''	1.99	0.44
20:P:47:ALA:HB1	20:P:76:ARG:HA	2.00	0.44
22:R:29:ARG:HB2	22:R:30:PRO:HD3	1.99	0.44
27:c:97:ARG:HB2	27:c:99:TYR:CE2	2.53	0.44
39:o:9:LEU:HD13	39:o:12:LEU:HD22	1.99	0.44
46:v:4:LYS:O	46:v:49:LEU:HD23	2.18	0.44
51:3:191:G:H2'	51:3:192:U:O4'	2.18	0.44
51:3:282:C:H2'	51:3:286:A:H62	1.83	0.44
51:3:730:G:H2'	51:3:731:A:H8	1.82	0.44
51:3:941:C:H2'	51:3:942:A:H8	1.82	0.44
51:3:1183:A:H2'	51:3:1184:U:C6	2.53	0.44
51:3:1477:A:H2'	51:3:1478:U:O4'	2.18	0.44
51:3:2302:C:H2'	51:3:2303:U:C6	2.53	0.44
53:5:294:A:N1	53:5:295:G:N2	2.66	0.44
53:5:375:C:H2'	53:5:376:G:C8	2.52	0.44
53:5:528:G:N2	53:5:528:G:OP2	2.51	0.44
53:5:995:U:H2'	53:5:996:U:O4'	2.16	0.44
53:5:1282:U:H2'	53:5:1283:G:C8	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:C:47:MET:N	7:C:47:MET:SD	2.91	0.44
12:H:97:LYS:HZ3	53:5:1152:G:H5''	1.83	0.44
24:T:20:ARG:HA	24:T:23:LEU:HD12	1.99	0.44
25:a:9:ARG:HD3	51:3:740:A:H4'	2.00	0.44
25:a:148:HIS:N	25:a:199:THR:O	2.41	0.44
38:n:15:ILE:O	38:n:19:ILE:HD12	2.18	0.44
39:o:52:VAL:HA	39:o:65:ILE:O	2.18	0.44
40:p:31:TYR:CZ	40:p:35:LYS:HD2	2.53	0.44
51:3:167:A:H2'	51:3:168:A:C8	2.53	0.44
51:3:198:G:H2'	51:3:199:A:O4'	2.17	0.44
51:3:429:U:H2'	51:3:430:U:C6	2.53	0.44
51:3:434:G:H5''	51:3:2097:A:O4'	2.18	0.44
51:3:489:A:N3	51:3:493:A:O2'	2.51	0.44
51:3:612:G:H5'	51:3:2024:C:H3'	1.99	0.44
51:3:618:G:N1	51:3:1283:A:OP2	2.34	0.44
51:3:803:G:H2'	51:3:804:U:C6	2.52	0.44
51:3:1082:A:H2'	51:3:1145:G:H1	1.83	0.44
51:3:1139:C:H2'	51:3:1140:U:H6	1.83	0.44
51:3:1463:G:H2'	51:3:1464:G:C8	2.52	0.44
51:3:1913:G:OP2	51:3:1937:G:H8	2.01	0.44
51:3:2122:G:N1	51:3:2124:A:O2'	2.51	0.44
51:3:2405:G:H2'	51:3:2406:U:H6	1.82	0.44
51:3:2594:C:OP2	51:3:2616:G:N1	2.51	0.44
51:3:2832:G:H2'	51:3:2833:A:C8	2.52	0.44
53:5:37:C:H2'	53:5:38:U:O4'	2.18	0.44
53:5:450:U:H2'	53:5:451:G:O4'	2.18	0.44
53:5:812:A:H4'	53:5:814:C:H2'	2.00	0.44
53:5:1081:U:H2'	53:5:1082:U:C6	2.53	0.44
4:9:13:VAL:HG22	4:9:202:THR:HG22	2.00	0.43
12:H:30:ILE:HG12	12:H:37:PRO:HG3	2.00	0.43
12:H:128:GLN:HG2	53:5:1316:C:O4'	2.18	0.43
20:P:7:LYS:HD3	20:P:7:LYS:HA	1.58	0.43
24:T:20:ARG:O	24:T:23:LEU:HB2	2.18	0.43
26:b:4:ARG:HB3	26:b:102:PHE:CE1	2.54	0.43
27:c:83:HIS:O	51:3:1286:G:N2	2.50	0.43
33:i:45:VAL:HB	40:p:99:ILE:HG21	2.00	0.43
35:k:40:LYS:HG3	35:k:46:LEU:H	1.83	0.43
40:p:105:PHE:HA	40:p:108:ILE:HD13	2.00	0.43
45:u:54:GLN:NE2	45:u:57:THR:HA	2.31	0.43
49:y:54:LYS:HD3	49:y:55:LYS:O	2.18	0.43
51:3:1427:C:H2'	51:3:1428:U:C6	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1676:G:C2	51:3:1677:G:C5	3.06	0.43
51:3:2217:G:N1	51:3:2224:A:C6	2.86	0.43
51:3:2473:C:H2'	51:3:2474:C:C6	2.53	0.43
51:3:2635:G:O2'	51:3:2636:U:O5'	2.27	0.43
53:5:95:C:H2'	53:5:96:G:O4'	2.18	0.43
53:5:135:A:H2'	53:5:136:U:H6	1.83	0.43
53:5:157:A:O2'	53:5:158:A:O4'	2.28	0.43
53:5:173:U:H3	53:5:192:A:H61	1.66	0.43
53:5:723:C:H2'	53:5:724:G:C8	2.53	0.43
53:5:1002:A:H3'	53:5:1003:G:C8	2.53	0.43
53:5:1009:G:N2	53:5:1011:A:H3'	2.33	0.43
3:2:18:LYS:HZ2	3:2:21:GLN:HA	1.83	0.43
4:9:139:ASP:OD1	4:9:139:ASP:N	2.51	0.43
4:9:302:HIS:N	4:9:367:ILE:O	2.44	0.43
4:9:313:LYS:HD2	4:9:313:LYS:HA	1.78	0.43
5:A:32:MET:HE3	5:A:56:PHE:CE2	2.39	0.43
6:B:6:ASN:ND2	6:B:8:ASN:HB3	2.29	0.43
6:B:159:ARG:H	6:B:199:ILE:HD12	1.82	0.43
7:C:41:ARG:NH1	7:C:44:SER:OG	2.44	0.43
10:F:21:LEU:HA	10:F:24:ARG:HD3	2.00	0.43
12:H:36:ASP:OD2	12:H:38:SER:OG	2.32	0.43
12:H:120:LEU:HD13	12:H:124:ARG:HA	2.00	0.43
23:S:66:ARG:NH1	53:5:172:C:OP1	2.46	0.43
26:b:139:TYR:O	51:3:1691:U:H5''	2.19	0.43
30:f:98:ILE:HD12	30:f:108:LEU:HB2	2.00	0.43
34:j:113:LYS:HE2	34:j:113:LYS:HB2	1.83	0.43
36:l:61:THR:O	36:l:108:ASN:ND2	2.51	0.43
37:m:41:THR:O	37:m:45:LEU:HD23	2.19	0.43
38:n:38:HIS:HB2	38:n:57:SER:OG	2.18	0.43
42:r:7:GLN:NE2	42:r:10:VAL:HB	2.33	0.43
46:v:51:SER:O	46:v:55:LEU:HG	2.17	0.43
49:y:6:ARG:HH21	51:3:2026:A:H3'	1.82	0.43
50:z:40:ARG:HH22	51:3:2409:U:C5'	2.31	0.43
51:3:31:U:H2'	51:3:32:G:C8	2.53	0.43
51:3:152:A:H61	51:3:180:A:H2	1.66	0.43
51:3:192:U:H3'	51:3:193:G:H8	1.82	0.43
51:3:1008:A:H5''	51:3:1009:A:H5''	1.99	0.43
51:3:1297:U:H2'	51:3:1298:A:H8	1.82	0.43
51:3:1431:A:H2'	51:3:1432:C:C6	2.53	0.43
51:3:1696:C:H2'	51:3:1697:C:C6	2.52	0.43
51:3:2080:C:H2'	51:3:2081:U:C6	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2253:U:H5''	51:3:2254:G:H5'	1.99	0.43
51:3:2651:G:C5	51:3:2652:U:N3	2.86	0.43
51:3:2795:C:H2'	51:3:2796:C:C6	2.53	0.43
51:3:2848:A:H2'	51:3:2849:G:H8	1.82	0.43
53:5:54:A:H2'	53:5:55:C:O4'	2.17	0.43
53:5:167:A:O2'	53:5:196:G:O6	2.36	0.43
53:5:534:C:H2'	53:5:535:A:C8	2.45	0.43
53:5:974:C:O2	53:5:974:C:H2'	2.18	0.43
53:5:1223:A:H2'	53:5:1224:C:C6	2.53	0.43
4:9:261:MET:HE3	4:9:266:LEU:HD11	2.00	0.43
6:B:179:SER:OG	53:5:1102:A:N6	2.51	0.43
12:H:28:GLY:O	12:H:29:LYS:HB2	2.18	0.43
13:I:42:ILE:HG23	13:I:82:LEU:HG	2.00	0.43
14:J:121:ARG:HH12	53:5:1497:U:H5''	1.83	0.43
34:j:17:LYS:NZ	34:j:47:ILE:HG23	2.33	0.43
44:t:72:SER:O	51:3:369:C:O2'	2.32	0.43
51:3:361:G:N1	51:3:370:C:N3	2.65	0.43
51:3:558:C:H2'	51:3:559:C:H6	1.82	0.43
51:3:740:A:H2'	51:3:741:A:O4'	2.18	0.43
51:3:982:G:H2'	51:3:983:A:C8	2.50	0.43
51:3:1192:U:H2'	51:3:1193:U:C6	2.54	0.43
51:3:1420:A:H2'	51:3:1421:A:C8	2.53	0.43
51:3:1543:U:H2'	51:3:1544:G:H8	1.82	0.43
51:3:1715:A:H4'	51:3:1770:A:C8	2.54	0.43
51:3:2200:U:H2'	51:3:2201:G:C8	2.54	0.43
53:5:137:A:C8	53:5:138:A:C8	3.06	0.43
53:5:580:C:N3	53:5:756:A:N7	2.66	0.43
53:5:718:A:H4'	53:5:719:G:O4'	2.19	0.43
53:5:919:C:H2'	53:5:920:G:C8	2.53	0.43
53:5:1059:G:C2'	53:5:1060:C:H5'	2.48	0.43
53:5:1081:U:H4'	53:5:1146:A:O2'	2.19	0.43
53:5:1287:G:H2'	53:5:1288:C:H6	1.80	0.43
4:9:113:MET:HB3	4:9:114:PRO:HD2	1.99	0.43
5:A:65:LEU:HD21	5:A:231:LEU:HD22	2.01	0.43
5:A:67:THR:HA	5:A:70:ASN:ND2	2.32	0.43
5:A:132:LYS:HB3	5:A:136:LYS:NZ	2.33	0.43
6:B:78:ILE:HG23	6:B:82:ASN:OD1	2.19	0.43
6:B:158:GLY:HA3	6:B:199:ILE:HG23	2.01	0.43
8:D:143:ARG:HA	8:D:148:ARG:HG3	2.01	0.43
10:F:113:LYS:HE3	53:5:1272:C:C2	2.53	0.43
16:L:57:ARG:O	16:L:61:SER:N	2.47	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:N:77:ASN:O	18:N:80:LYS:HG2	2.19	0.43
40:p:50:ARG:NH1	51:3:1191:A:O4'	2.51	0.43
41:q:21:PHE:HE1	41:q:91:LYS:HD3	1.84	0.43
44:t:24:VAL:HA	44:t:35:ILE:O	2.18	0.43
47:w:26:LEU:HG	47:w:30:ARG:NH1	2.20	0.43
49:y:36:LYS:HE3	49:y:36:LYS:HB3	1.88	0.43
51:3:199:A:H3'	51:3:200:A:H4'	1.99	0.43
51:3:215:A:H2'	51:3:216:C:C6	2.53	0.43
51:3:906:G:O6	51:3:946:A:N6	2.52	0.43
51:3:934:C:H2'	51:3:935:U:H6	1.84	0.43
51:3:1046:A:H1'	51:3:1188:C:H1'	2.01	0.43
51:3:1308:A:H2'	51:3:1309:G:C8	2.53	0.43
51:3:1919:A:N7	51:3:1924:U:O4	2.52	0.43
51:3:2023:U:H2'	51:3:2024:C:C6	2.54	0.43
51:3:2160:U:H2'	51:3:2161:G:C8	2.48	0.43
51:3:2244:U:H2'	51:3:2245:G:O4'	2.19	0.43
51:3:2255:A:H2'	51:3:2256:C:C6	2.52	0.43
51:3:2583:U:O2'	51:3:2586:G:N7	2.47	0.43
51:3:2673:A:H2'	51:3:2674:C:C6	2.53	0.43
53:5:338:C:OP1	54:6:77:A:H3'	2.18	0.43
53:5:356:G:H2'	53:5:357:G:C8	2.53	0.43
53:5:881:G:H2'	53:5:882:U:O4'	2.19	0.43
53:5:1127:A:O2'	53:5:1128:G:H8	2.00	0.43
53:5:1220:A:H2'	53:5:1221:A:C8	2.53	0.43
53:5:1279:G:H1'	53:5:1305:G:H22	1.84	0.43
54:6:63:U:H2'	54:6:64:G:C8	2.54	0.43
54:7:16:G:H22	54:7:49:C:N4	2.17	0.43
4:9:25:LYS:O	4:9:29:THR:HG23	2.18	0.43
4:9:155:ARG:CZ	4:9:170:ILE:HD12	2.49	0.43
4:9:382:ARG:HE	4:9:383:THR:H	1.67	0.43
6:B:61:THR:O	6:B:64:THR:HG22	2.18	0.43
8:D:206:ARG:O	8:D:210:ILE:HG12	2.19	0.43
15:K:83:GLU:HA	53:5:519:G:OP1	2.18	0.43
19:O:22:ARG:HD3	19:O:23:ASP:N	2.34	0.43
25:a:65:LYS:HD3	51:3:1603:A:H4'	2.00	0.43
26:b:41:THR:HB	26:b:44:LYS:HB3	2.00	0.43
27:c:64:LYS:HE3	27:c:64:LYS:HB3	1.83	0.43
27:c:143:MET:HE2	27:c:143:MET:HA	2.00	0.43
28:d:43:ALA:HB2	28:d:49:PHE:H	1.82	0.43
31:g:56:ASN:HB2	31:g:75:ALA:O	2.17	0.43
37:m:34:THR:HG22	37:m:36:LYS:H	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:o:100:TYR:CE2	51:3:2726:G:H4'	2.54	0.43
51:3:157:U:H2'	51:3:158:U:C6	2.53	0.43
51:3:257:C:H2'	51:3:258:G:C8	2.54	0.43
51:3:360:G:H2'	51:3:361:G:C8	2.53	0.43
51:3:392:A:H3'	51:3:393:C:H6	1.84	0.43
51:3:682:A:H2'	51:3:683:G:H8	1.84	0.43
51:3:802:U:H2'	51:3:803:G:C8	2.49	0.43
51:3:1010:G:O2'	51:3:1011:A:OP2	2.37	0.43
51:3:2096:U:H2'	51:3:2097:A:C8	2.54	0.43
51:3:2388:C:H2'	51:3:2389:A:C8	2.54	0.43
51:3:2693:U:H2'	51:3:2694:A:C8	2.54	0.43
51:3:2738:U:H2'	51:3:2739:C:C6	2.53	0.43
51:3:2760:C:H3'	51:3:2761:A:H8	1.83	0.43
51:3:2787:U:H5'	51:3:2789:A:O4'	2.19	0.43
53:5:355:A:C4	53:5:356:G:C8	3.06	0.43
53:5:435:U:O2'	53:5:437:U:O4	2.31	0.43
53:5:914:A:H2'	53:5:915:U:H6	1.83	0.43
53:5:1093:A:H2'	53:5:1094:C:C6	2.53	0.43
54:7:26:C:H2'	54:7:27:A:H8	1.83	0.43
1:0:32:LYS:HE3	1:0:35:ARG:HD3	2.00	0.43
4:9:71:SER:HB2	4:9:76:HIS:ND1	2.33	0.43
7:C:74:LEU:O	7:C:78:VAL:HG23	2.18	0.43
26:b:72:LYS:NZ	51:3:2794:U:H5''	2.32	0.43
30:f:10:SER:HB3	30:f:14:LYS:HZ2	1.83	0.43
33:i:19:TYR:HD2	33:i:57:LEU:HD23	1.84	0.43
39:o:60:ILE:HA	39:o:82:HIS:CD2	2.54	0.43
41:q:56:VAL:HG13	41:q:98:VAL:HB	2.00	0.43
45:u:80:LEU:O	45:u:97:VAL:HA	2.19	0.43
51:3:876:A:H2'	51:3:877:G:C8	2.54	0.43
51:3:959:C:C2	51:3:960:A:C8	3.06	0.43
51:3:1037:A:H3'	51:3:1038:G:H8	1.83	0.43
51:3:1158:C:H2'	51:3:1159:C:C6	2.54	0.43
51:3:1292:A:H61	51:3:2024:C:H42	1.66	0.43
51:3:1394:A:H2'	51:3:1395:A:C8	2.54	0.43
51:3:1508:G:O6	51:3:1532:A:C6	2.71	0.43
51:3:1523:C:H2'	51:3:1524:C:C6	2.53	0.43
51:3:1755:A:H2'	51:3:1756:A:C8	2.54	0.43
51:3:2385:A:H2'	51:3:2386:A:C4	2.53	0.43
51:3:2663:G:H22	51:3:2673:A:P	2.42	0.43
52:4:29:C:O2'	52:4:51:A:N1	2.50	0.43
53:5:22:G:H21	53:5:908:A:N6	2.14	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:24:C:H2'	53:5:25:U:C6	2.54	0.43
53:5:42:G:H2'	53:5:43:G:H8	1.82	0.43
53:5:136:U:C2	53:5:157:A:N6	2.85	0.43
53:5:512:U:C2	53:5:513:G:C8	3.07	0.43
53:5:666:U:H2'	53:5:667:U:C6	2.54	0.43
53:5:879:G:H2'	53:5:880:G:C8	2.53	0.43
53:5:914:A:H2'	53:5:915:U:C6	2.54	0.43
53:5:947:U:H2'	53:5:948:U:H6	1.84	0.43
53:5:1507:U:OP2	53:5:1508:C:N4	2.35	0.43
54:7:69:A:H2'	54:7:70:G:C8	2.50	0.43
4:9:35:VAL:HG21	4:9:189:ILE:HG21	2.00	0.43
4:9:313:LYS:HG3	4:9:315:GLU:HG3	2.00	0.43
6:B:187:TYR:HB2	6:B:204:TRP:CD1	2.54	0.43
7:C:86:ALA:CB	7:C:193:GLU:HG3	2.48	0.43
7:C:194:SER:HB2	8:D:167:ARG:HH12	1.83	0.43
9:E:86:LEU:HD22	21:Q:95:TYR:HD1	1.84	0.43
11:G:44:ILE:HA	11:G:47:ILE:HG12	2.01	0.43
13:I:63:VAL:HA	53:5:967:C:O2'	2.19	0.43
20:P:15:SER:OG	20:P:23:THR:OG1	2.34	0.43
29:e:39:PRO:HD3	29:e:71:TYR:OH	2.19	0.43
31:g:118:PHE:HB3	31:g:123:LEU:HB2	2.00	0.43
32:h:119:ALA:HB1	51:3:1116:U:O2'	2.19	0.43
33:i:10:GLU:O	33:i:51:GLN:HG3	2.19	0.43
36:l:36:ALA:HB1	36:l:127:VAL:HG11	2.00	0.43
39:o:80:GLN:OE1	39:o:81:ILE:N	2.51	0.43
40:p:35:LYS:O	40:p:39:ILE:HG12	2.18	0.43
49:y:27:LEU:HD13	49:y:38:LEU:HA	2.00	0.43
51:3:101:C:H4'	51:3:102:A:H5'	1.99	0.43
51:3:140:G:N2	51:3:143:A:OP2	2.47	0.43
51:3:393:C:H2'	51:3:394:C:C6	2.54	0.43
51:3:450:C:H1'	51:3:1871:U:H1'	2.01	0.43
51:3:483:A:N1	51:3:490:A:O2'	2.43	0.43
51:3:612:G:O2'	51:3:2026:A:OP1	2.31	0.43
51:3:662:U:OP1	51:3:663:A:H5''	2.19	0.43
51:3:740:A:H2'	51:3:741:A:C8	2.54	0.43
51:3:1033:A:H2'	51:3:1034:A:C8	2.54	0.43
51:3:1318:U:H2'	51:3:1319:C:C6	2.53	0.43
51:3:1335:A:C8	51:3:1656:A:N6	2.85	0.43
51:3:1456:C:N4	51:3:1603:A:H3'	2.33	0.43
51:3:2215:C:H2'	51:3:2216:U:C6	2.54	0.43
51:3:2681:G:H2'	51:3:2682:A:H8	1.82	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:56:A:H2'	53:5:57:U:O4'	2.18	0.43
53:5:334:A:H2'	53:5:335:C:H6	1.82	0.43
53:5:382:U:H2'	53:5:383:U:C6	2.54	0.43
53:5:387:G:H2'	53:5:388:G:O4'	2.18	0.43
53:5:1241:G:HO2'	53:5:1243:A:H62	1.65	0.43
53:5:1495:C:H2'	53:5:1496:G:C8	2.54	0.43
4:9:299:ILE:HD12	4:9:299:ILE:HA	1.90	0.43
4:9:330:GLN:NE2	54:6:65:C:O2'	2.50	0.43
7:C:31:ARG:HG3	7:C:33:THR:H	1.84	0.43
18:N:60:ARG:O	18:N:64:LEU:HG	2.19	0.43
22:R:79:ASN:OD1	53:5:952:U:O2'	2.33	0.43
25:a:15:HIS:HD2	25:a:215:LYS:HE2	1.84	0.43
25:a:236:ASN:OD1	51:3:828:A:N6	2.52	0.43
26:b:47:TYR:HB2	26:b:85:ARG:HH21	1.84	0.43
26:b:53:SER:HB3	26:b:78:THR:OG1	2.19	0.43
40:p:23:SER:HB3	40:p:28:HIS:HB3	2.01	0.43
42:r:136:LYS:O	42:r:139:ARG:NH2	2.51	0.43
51:3:44:A:C6	51:3:45:U:C4	3.07	0.43
51:3:143:A:H1'	51:3:1436:C:H4'	2.01	0.43
51:3:437:A:H2'	51:3:438:A:C8	2.54	0.43
51:3:1067:A:H2	51:3:1157:G:H1	1.66	0.43
51:3:1296:G:O2'	51:3:2019:G:O6	2.35	0.43
51:3:1516:G:C6	51:3:1525:G:C2	3.07	0.43
51:3:2009:U:H2'	51:3:2010:A:H8	1.84	0.43
51:3:2633:C:H2'	51:3:2634:C:C6	2.54	0.43
51:3:2704:U:C4	51:3:2722:G:C6	3.06	0.43
52:4:22:G:H8	52:4:22:G:OP2	2.01	0.43
53:5:111:A:H2'	53:5:112:U:O4'	2.19	0.43
53:5:420:A:C5	53:5:421:G:H1'	2.54	0.43
53:5:460:A:N6	53:5:468:G:C4	2.87	0.43
53:5:931:C:H2'	53:5:932:A:O4'	2.19	0.43
53:5:1215:U:H5''	53:5:1216:G:N7	2.34	0.43
53:5:1298:U:H2'	53:5:1299:C:H6	1.84	0.43
54:8:16:G:N2	54:8:49:C:H42	2.14	0.43
4:9:292:VAL:HG22	4:9:293:LEU:H	1.84	0.43
4:9:299:ILE:C	4:9:300:LYS:HD3	2.43	0.43
5:A:160:GLU:OE2	5:A:164:GLY:HA2	2.18	0.43
6:B:36:GLU:OE2	6:B:96:ILE:HD13	2.19	0.43
6:B:177:PRO:HB2	6:B:180:THR:HG23	2.00	0.43
10:F:102:TRP:CD2	10:F:136:LYS:HD3	2.53	0.43
12:H:117:LYS:H	12:H:123:ALA:CB	2.32	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:I:15:LYS:HG2	13:I:17:GLU:OE2	2.19	0.43
14:J:13:ILE:HG13	14:J:76:LYS:HB2	2.00	0.43
21:Q:71:ASN:HB2	21:Q:76:THR:HG23	2.01	0.43
26:b:85:ARG:CZ	51:3:2645:U:H5''	2.49	0.43
26:b:222:LEU:H	26:b:222:LEU:HD23	1.83	0.43
29:e:106:LEU:HD13	29:e:108:LEU:HD13	2.01	0.43
29:e:160:TYR:CE2	51:3:2539:A:H5'	2.54	0.43
37:m:63:VAL:O	37:m:67:LEU:HG	2.19	0.43
39:o:36:LYS:HE2	39:o:85:ASN:HA	2.00	0.43
51:3:157:U:H2'	51:3:158:U:H6	1.84	0.43
51:3:305:U:H3	51:3:399:G:H1	1.67	0.43
51:3:445:C:H2'	51:3:446:A:C8	2.54	0.43
51:3:572:G:N2	51:3:590:U:O4	2.52	0.43
51:3:730:G:H2'	51:3:731:A:C8	2.54	0.43
51:3:1710:A:H2'	51:3:1711:A:O4'	2.18	0.43
51:3:1801:U:H2'	51:3:1802:C:C6	2.54	0.43
51:3:2062:C:N4	51:3:2508:U:H5'	2.33	0.43
51:3:2248:C:H2'	51:3:2249:A:H8	1.83	0.43
51:3:2333:G:H2'	51:3:2333:G:N3	2.33	0.43
51:3:2454:G:N2	51:3:2509:C:H41	2.16	0.43
51:3:2465:U:H2'	51:3:2466:G:C8	2.53	0.43
51:3:2483:C:O2'	51:3:2485:U:OP2	2.27	0.43
51:3:2496:G:H2'	51:3:2497:U:C6	2.53	0.43
51:3:2753:C:H2'	51:3:2754:U:H6	1.82	0.43
51:3:2811:G:H4'	51:3:2812:U:H5''	2.01	0.43
51:3:2819:C:C2	51:3:2820:G:C8	3.07	0.43
52:4:56:A:H2'	52:4:57:G:H8	1.84	0.43
53:5:74:U:H2'	53:5:75:A:H8	1.84	0.43
53:5:333:U:H2'	53:5:334:A:C8	2.54	0.43
53:5:862:C:H2'	53:5:863:A:O4'	2.19	0.43
54:7:28:A:H2'	54:7:29:C:H5	1.83	0.43
6:B:102:LEU:HB3	6:B:103:ASP:H	1.64	0.43
7:C:5:GLY:H	7:C:111:ARG:HH12	1.67	0.43
7:C:56:GLU:HG2	7:C:60:MET:HE3	2.00	0.43
9:E:110:GLN:O	9:E:113:ALA:HB3	2.19	0.43
10:F:65:VAL:HA	10:F:68:VAL:HG12	2.01	0.43
10:F:102:TRP:HA	10:F:105:MET:HG3	2.00	0.43
11:G:67:LYS:HA	53:5:650:A:C6	2.53	0.43
12:H:26:ASP:O	12:H:28:GLY:N	2.52	0.43
12:H:109:ASP:OD2	12:H:111:ARG:HD3	2.19	0.43
15:K:43:LYS:HZ1	53:5:358:G:H4'	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:a:61:ARG:HD2	25:a:62:ASN:N	2.34	0.43
27:c:97:ARG:HG2	51:3:622:U:H4'	2.00	0.43
29:e:45:LYS:HG3	29:e:47:GLU:OE1	2.19	0.43
29:e:92:LEU:O	29:e:132:THR:OG1	2.26	0.43
30:f:125:GLU:HB3	30:f:139:LYS:NZ	2.32	0.43
34:j:24:VAL:HG21	34:j:31:ARG:HA	2.01	0.43
36:l:82:ARG:NH1	51:3:2258:G:O2'	2.52	0.43
39:o:92:ARG:HB3	39:o:115:LYS:HD2	2.00	0.43
43:s:53:LEU:HD23	47:w:87:TRP:CH2	2.54	0.43
46:v:61:HIS:HB3	46:v:63:ARG:NE	2.34	0.43
47:w:12:SER:OG	47:w:13:GLU:OE2	2.28	0.43
49:y:6:ARG:HH22	51:3:2027:G:H5''	1.84	0.43
49:y:31:GLN:HG2	49:y:32:LYS:N	2.34	0.43
51:3:360:G:H2'	51:3:361:G:H8	1.84	0.43
51:3:777:C:H2'	51:3:778:U:H6	1.84	0.43
51:3:1391:U:O2'	51:3:1816:A:N3	2.49	0.43
51:3:1440:U:H2'	51:3:1441:A:C8	2.54	0.43
51:3:1453:U:H2'	51:3:1454:G:C8	2.54	0.43
51:3:1457:A:C5	51:3:1602:G:C6	3.07	0.43
51:3:1919:A:O2'	53:5:1469:G:O2'	2.30	0.43
51:3:1980:G:H2'	51:3:1981:U:C6	2.53	0.43
51:3:2107:A:H2'	51:3:2108:C:C6	2.54	0.43
51:3:2229:C:H2'	51:3:2230:A:C8	2.54	0.43
51:3:2578:A:H2'	51:3:2579:U:C6	2.54	0.43
51:3:2862:U:O2'	51:3:2863:G:OP1	2.31	0.43
52:4:11:A:H1'	52:4:13:G:H2'	2.01	0.43
53:5:135:A:H2'	53:5:136:U:C6	2.54	0.43
53:5:193:G:H2'	53:5:194:U:C6	2.54	0.43
53:5:212:G:H2'	53:5:213:U:C6	2.53	0.43
53:5:318:C:H2'	53:5:319:U:C6	2.54	0.43
53:5:580:C:C2	53:5:581:A:C8	3.07	0.43
53:5:1052:G:O6	53:5:1172:A:N6	2.52	0.43
4:9:23:HIS:NE2	4:9:110:ASP:O	2.52	0.42
4:9:248:LEU:HD13	4:9:365:ALA:HB1	2.01	0.42
7:C:67:THR:O	7:C:71:PHE:N	2.44	0.42
11:G:131:LYS:O	11:G:133:ILE:HG12	2.19	0.42
13:I:28:THR:HA	13:I:31:ILE:HG22	2.00	0.42
15:K:123:ARG:HD2	15:K:123:ARG:HA	1.78	0.42
18:N:18:ASP:OD1	18:N:18:ASP:N	2.51	0.42
18:N:23:GLN:HA	18:N:26:VAL:HG22	2.01	0.42
19:O:53:LEU:HA	19:O:58:LYS:HE3	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:a:42:LYS:HE2	25:a:42:LYS:HB2	1.83	0.42
25:a:137:PRO:HA	25:a:197:ARG:HA	2.01	0.42
25:a:220:ARG:NH2	51:3:799:A:N3	2.67	0.42
26:b:10:LYS:HB3	26:b:10:LYS:HE2	1.79	0.42
27:c:73:LYS:HE3	51:3:1287:C:OP1	2.19	0.42
27:c:174:ASN:HB3	27:c:175:ILE:HD12	2.00	0.42
34:j:47:ILE:HG13	34:j:50:GLY:H	1.84	0.42
36:l:126:PRO:HB3	51:3:2493:G:O3'	2.19	0.42
37:m:16:MET:HA	37:m:16:MET:HE2	2.01	0.42
42:r:41:LYS:HA	42:r:41:LYS:HD3	1.67	0.42
42:r:128:ARG:O	51:3:1261:U:O2'	2.36	0.42
43:s:69:SER:C	43:s:71:PHE:H	2.27	0.42
51:3:739:G:H1'	51:3:762:A:N6	2.34	0.42
51:3:834:G:H3'	51:3:835:U:H2'	2.01	0.42
51:3:1135:C:H2'	51:3:1136:U:C6	2.53	0.42
51:3:1219:U:H2'	51:3:1220:A:O4'	2.18	0.42
51:3:1612:U:O2	51:3:1612:U:H2'	2.19	0.42
51:3:1704:C:H2'	51:3:1705:U:O4'	2.18	0.42
51:3:1838:A:N6	51:3:1982:G:O6	2.52	0.42
51:3:2119:A:H2'	51:3:2120:G:O4'	2.18	0.42
51:3:2413:G:O2'	51:3:2414:U:OP1	2.34	0.42
51:3:2528:C:H2'	51:3:2529:C:C6	2.54	0.42
51:3:2552:G:H1'	51:3:2654:U:H5'	2.01	0.42
53:5:511:A:H2'	53:5:512:U:C6	2.54	0.42
53:5:725:A:H2'	53:5:726:A:C8	2.54	0.42
53:5:1214:A:H61	53:5:1270:C:H2'	1.84	0.42
53:5:1283:G:H2'	53:5:1284:A:C8	2.54	0.42
6:B:65:VAL:HG12	6:B:100:THR:HG22	2.01	0.42
7:C:96:ARG:O	7:C:100:ILE:HG13	2.19	0.42
11:G:107:VAL:HG13	11:G:140:TYR:HD2	1.84	0.42
13:I:36:LYS:HE2	13:I:42:ILE:HB	2.00	0.42
15:K:37:ASN:C	15:K:37:ASN:HD22	2.18	0.42
15:K:93:THR:HG22	15:K:94:LEU:N	2.34	0.42
22:R:41:PHE:HD2	22:R:43:GLU:OE1	2.02	0.42
28:d:33:LYS:HE2	28:d:92:ARG:CZ	2.50	0.42
42:r:110:ASN:C	42:r:112:ASN:H	2.26	0.42
46:v:6:GLN:OE1	46:v:48:ILE:HG13	2.19	0.42
49:y:12:ARG:HH22	51:3:2028:G:H4'	1.84	0.42
49:y:51:LEU:C	49:y:53:VAL:H	2.27	0.42
51:3:49:C:O2'	51:3:54:A:O2'	2.32	0.42
51:3:54:A:H2'	51:3:55:A:O4'	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:824:A:H5'	51:3:825:U:C6	2.54	0.42
51:3:914:G:N2	51:3:937:A:OP2	2.52	0.42
51:3:1351:G:H2'	51:3:1352:G:H8	1.84	0.42
51:3:1446:G:O2'	51:3:1613:A:N6	2.34	0.42
51:3:1724:A:H61	51:3:1731:G:C2'	2.32	0.42
51:3:1832:G:H2'	51:3:1833:G:C8	2.55	0.42
51:3:1989:U:H2'	51:3:1990:C:H6	1.83	0.42
51:3:2477:A:C6	51:3:2490:A:C8	3.07	0.42
51:3:2479:A:H2'	51:3:2480:G:O4'	2.19	0.42
51:3:2513:G:H2'	51:3:2584:G:O6	2.19	0.42
51:3:2516:G:H1	51:3:2588:U:H3	1.67	0.42
53:5:117:U:H2'	53:5:118:C:H6	1.85	0.42
53:5:162:C:H2'	53:5:163:G:N3	2.35	0.42
53:5:293:G:C3'	53:5:294:A:H5''	2.48	0.42
53:5:591:A:H2'	53:5:592:A:C8	2.54	0.42
53:5:675:U:H2'	53:5:676:U:H6	1.83	0.42
53:5:709:A:H2'	53:5:710:G:C4	2.54	0.42
53:5:887:C:H2'	53:5:888:A:C8	2.54	0.42
53:5:944:A:O2'	53:5:966:A:N6	2.52	0.42
53:5:1359:C:H2'	53:5:1360:G:C8	2.53	0.42
54:8:28:A:H2'	54:8:29:C:H5	1.83	0.42
2:1:10:ARG:HG3	2:1:11:PHE:CE1	2.53	0.42
5:A:124:SER:HA	5:A:127:ILE:HG12	2.00	0.42
16:L:90:ARG:HD3	16:L:97:VAL:HA	2.00	0.42
19:O:52:TRP:CE3	19:O:55:LYS:HD2	2.53	0.42
24:T:16:LYS:HG3	24:T:20:ARG:HH21	1.84	0.42
25:a:191:LYS:HE2	25:a:277:LEU:HA	2.01	0.42
26:b:177:GLN:N	26:b:177:GLN:OE1	2.52	0.42
31:g:48:GLY:C	31:g:86:VAL:HB	2.44	0.42
33:i:40:ARG:HH21	33:i:42:LYS:HD2	1.83	0.42
41:q:77:LYS:HD3	51:3:1009:A:H5'	1.99	0.42
51:3:33:C:H2'	51:3:34:C:H6	1.84	0.42
51:3:326:A:H2'	51:3:327:U:C6	2.54	0.42
51:3:341:G:N2	51:3:343:A:H3'	2.34	0.42
51:3:451:A:H2'	51:3:452:U:C6	2.55	0.42
51:3:959:C:H2'	51:3:960:A:H8	1.84	0.42
51:3:1097:G:H8	51:3:1097:G:O5'	2.02	0.42
51:3:1108:A:H3'	51:3:1109:G:H8	1.83	0.42
51:3:1112:A:N1	51:3:1123:A:H2'	2.34	0.42
51:3:1231:G:H2'	51:3:1232:U:C6	2.54	0.42
51:3:1396:A:C2	51:3:1397:G:C5	3.08	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1410:A:H2'	51:3:1411:C:C6	2.54	0.42
51:3:1470:C:H2'	51:3:1471:A:C8	2.54	0.42
51:3:1488:U:H4'	51:3:2711:C:H5'	2.01	0.42
51:3:1747:G:H5'	51:3:1748:U:OP2	2.19	0.42
51:3:2295:A:N1	51:3:2352:U:N3	2.67	0.42
51:3:2409:U:H5''	51:3:2410:C:OP1	2.19	0.42
51:3:2539:A:N3	51:3:2539:A:H2'	2.34	0.42
51:3:2565:G:H2'	51:3:2566:C:C6	2.55	0.42
51:3:2640:A:H2'	51:3:2641:A:H8	1.83	0.42
51:3:2703:U:O2	51:3:2722:G:O6	2.37	0.42
51:3:2726:G:H3'	51:3:2727:G:H8	1.83	0.42
51:3:2748:A:H2'	51:3:2749:A:C8	2.54	0.42
51:3:2843:G:O6	51:3:2882:U:C2	2.71	0.42
53:5:25:U:H2'	53:5:26:C:H6	1.82	0.42
53:5:707:G:H2'	53:5:708:A:C8	2.53	0.42
53:5:975:C:H3'	53:5:976:U:C6	2.54	0.42
54:6:28:A:H2'	54:6:29:C:H5	1.83	0.42
5:A:228:LEU:O	5:A:232:LEU:HG	2.18	0.42
10:F:19:ASN:O	10:F:22:VAL:N	2.42	0.42
10:F:135:LYS:HB2	10:F:135:LYS:HE3	1.81	0.42
12:H:115:ARG:HG3	17:M:61:TRP:CE2	2.55	0.42
23:S:33:LYS:HE2	23:S:33:LYS:HB3	1.90	0.42
27:c:182:HIS:ND1	27:c:184:ASP:OD1	2.51	0.42
28:d:44:ILE:HG23	28:d:77:TYR:HB3	2.01	0.42
28:d:83:GLN:O	28:d:85:ILE:HG23	2.20	0.42
29:e:160:TYR:CZ	29:e:175:LYS:HE3	2.55	0.42
34:j:64:ARG:HH12	39:o:75:ILE:HG22	1.84	0.42
38:n:8:ARG:NH2	38:n:9:ARG:HG3	2.34	0.42
40:p:15:LYS:O	40:p:19:GLN:HG2	2.19	0.42
45:u:46:ARG:HH11	51:3:2362:A:P	2.42	0.42
46:v:20:HIS:NE2	51:3:2087:G:OP1	2.52	0.42
51:3:83:G:H2'	51:3:84:G:O4'	2.19	0.42
51:3:292:G:C6	51:3:293:G:C6	3.08	0.42
51:3:386:U:H2'	51:3:387:U:H6	1.85	0.42
51:3:698:A:H2'	51:3:699:U:C6	2.55	0.42
51:3:1036:A:H2'	51:3:1037:A:C8	2.54	0.42
51:3:1244:A:H4'	51:3:1269:C:H4'	2.00	0.42
51:3:1276:A:H2'	51:3:1277:A:O4'	2.19	0.42
51:3:1297:U:H2'	51:3:1298:A:C8	2.54	0.42
51:3:1363:C:H2'	51:3:1364:A:C8	2.55	0.42
51:3:1433:U:H2'	51:3:1434:U:C6	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1439:U:H2'	51:3:1440:U:C6	2.54	0.42
51:3:1510:A:C6	51:3:1530:G:C6	3.07	0.42
51:3:2054:C:O2'	51:3:2055:A:H5'	2.20	0.42
51:3:2150:C:H2'	51:3:2151:G:O4'	2.20	0.42
51:3:2494:C:H2'	51:3:2495:A:C8	2.54	0.42
51:3:2515:C:H2'	51:3:2516:G:O4'	2.20	0.42
53:5:32:U:H5'	53:5:302:A:C8	2.55	0.42
53:5:59:C:N4	53:5:350:G:H1	2.17	0.42
53:5:397:C:H2'	53:5:398:G:H8	1.84	0.42
53:5:441:U:H2'	53:5:442:G:C8	2.54	0.42
53:5:1387:U:H2'	53:5:1388:A:C8	2.55	0.42
53:5:1406:U:H2'	53:5:1407:A:O4'	2.19	0.42
53:5:1482:A:C6	53:5:1505:G:C6	3.07	0.42
54:8:63:U:H2'	54:8:64:G:C8	2.53	0.42
1:0:9:LYS:HZ3	51:3:1337:G:H5''	1.84	0.42
4:9:25:LYS:HE2	4:9:62:THR:HG21	2.01	0.42
9:E:153:LYS:N	11:G:56:ASN:HD21	2.17	0.42
10:F:46:PHE:HA	10:F:49:ILE:HD12	2.01	0.42
12:H:21:LEU:HD23	12:H:64:ASP:O	2.20	0.42
12:H:100:LEU:HD22	12:H:105:LEU:HD21	2.01	0.42
13:I:50:THR:HB	13:I:76:HIS:HA	2.01	0.42
17:M:7:LYS:O	17:M:11:THR:HG23	2.19	0.42
25:a:101:TYR:HB2	25:a:105:ALA:HB3	2.01	0.42
29:e:11:LEU:HB3	29:e:51:ASN:HA	2.01	0.42
35:k:6:LEU:HD22	51:3:1235:U:O2'	2.20	0.42
36:l:69:PHE:HB3	36:l:71:HIS:CE1	2.55	0.42
42:r:122:LYS:HA	42:r:125:VAL:HG22	2.01	0.42
51:3:86:A:C5	51:3:103:G:N2	2.87	0.42
51:3:152:A:H2'	51:3:153:U:C6	2.54	0.42
51:3:381:A:H2'	51:3:382:U:C6	2.54	0.42
51:3:415:U:H2'	51:3:416:C:C6	2.54	0.42
51:3:739:G:H1'	51:3:762:A:H61	1.83	0.42
51:3:1338:G:H2'	51:3:1339:U:C6	2.54	0.42
51:3:1767:A:H8	51:3:1767:A:OP2	2.03	0.42
51:3:1807:C:C4	51:3:1824:G:N2	2.86	0.42
51:3:2291:U:H6	51:3:2397:G:H2'	1.83	0.42
51:3:2494:C:H2'	51:3:2495:A:H8	1.85	0.42
52:4:49:G:H2'	52:4:50:C:C6	2.54	0.42
53:5:8:G:C4	53:5:294:A:N1	2.87	0.42
53:5:66:A:H2'	53:5:378:A:N1	2.34	0.42
53:5:104:A:H4'	53:5:105:A:C8	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:189:C:H2'	53:5:190:A:C8	2.54	0.42
53:5:310:C:H2'	53:5:311:A:C8	2.54	0.42
53:5:386:U:H2'	53:5:387:G:C8	2.54	0.42
53:5:1086:U:H2'	53:5:1087:C:H6	1.84	0.42
53:5:1212:C:H3'	53:5:1213:A:H5'	2.00	0.42
53:5:1417:U:H2'	53:5:1418:G:C8	2.52	0.42
1:0:26:SER:OG	51:3:718:U:OP1	2.37	0.42
2:1:53:LYS:NZ	51:3:869:U:H5''	2.35	0.42
5:A:120:PHE:CZ	5:A:172:LEU:HD13	2.54	0.42
7:C:9:LYS:NZ	53:5:424:U:H5''	2.35	0.42
10:F:21:LEU:HD23	10:F:24:ARG:HD3	2.02	0.42
20:P:67:ARG:H	20:P:67:ARG:HG2	1.61	0.42
22:R:60:VAL:HG21	22:R:74:PHE:HB3	2.01	0.42
24:T:6:VAL:O	24:T:6:VAL:HG13	2.19	0.42
25:a:70:ASP:OD2	25:a:71:PHE:N	2.53	0.42
28:d:37:ASN:HB2	28:d:88:LYS:HE3	2.01	0.42
30:f:120:GLY:HA3	30:f:124:HIS:CE1	2.55	0.42
35:k:9:VAL:HA	35:k:10:PRO:HD3	1.90	0.42
41:q:40:MET:HB2	41:q:45:ILE:HD13	2.01	0.42
51:3:59:C:H2'	51:3:60:G:C8	2.55	0.42
51:3:86:A:C5	51:3:103:G:C2	3.08	0.42
51:3:241:C:H2'	51:3:242:G:H8	1.85	0.42
51:3:513:A:H2'	51:3:514:A:N9	2.35	0.42
51:3:717:U:H2'	51:3:718:U:C6	2.55	0.42
51:3:1229:U:H2'	51:3:1230:U:C6	2.55	0.42
51:3:1624:A:H2'	51:3:1625:G:H8	1.83	0.42
51:3:1716:A:H2'	51:3:1717:C:H6	1.85	0.42
51:3:2348:U:C2	51:3:2349:G:N7	2.88	0.42
53:5:961:G:H2'	53:5:962:G:C8	2.54	0.42
53:5:1059:G:N7	53:5:1085:G:H2'	2.33	0.42
53:5:1321:G:N2	53:5:1348:G:H2'	2.35	0.42
53:5:1355:U:O2	53:5:1357:C:N4	2.53	0.42
2:1:54:ARG:NH2	51:3:869:U:OP1	2.52	0.42
5:A:69:TYR:HE1	5:A:235:ALA:HA	1.85	0.42
6:B:102:LEU:O	6:B:103:ASP:HB2	2.20	0.42
13:I:71:PHE:HB3	17:M:56:VAL:HB	2.00	0.42
14:J:86:LYS:NZ	24:T:22:SER:HB2	2.35	0.42
14:J:113:GLY:C	53:5:713:A:H1'	2.45	0.42
23:S:53:ARG:HH21	53:5:196:G:H5''	1.85	0.42
26:b:179:LEU:HD11	51:3:2737:G:O2'	2.20	0.42
35:k:6:LEU:HD12	35:k:7:LYS:HG2	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:l:54:ILE:HD11	36:l:64:MET:HE2	2.01	0.42
39:o:21:TYR:CD2	39:o:23:PRO:HG3	2.55	0.42
40:p:93:VAL:O	40:p:96:GLU:HB2	2.20	0.42
42:r:9:ARG:CZ	42:r:79:GLY:HA3	2.50	0.42
50:z:36:LYS:HB2	50:z:47:HIS:CG	2.55	0.42
51:3:192:U:H3'	51:3:193:G:C8	2.54	0.42
51:3:442:G:N1	51:3:457:U:N3	2.67	0.42
51:3:515:A:H2	51:3:538:A:H61	1.68	0.42
51:3:634:C:H2'	51:3:635:G:O4'	2.19	0.42
51:3:771:C:H2'	51:3:772:C:H6	1.85	0.42
51:3:972:C:H2'	51:3:973:U:C6	2.54	0.42
51:3:1199:A:H2'	51:3:1200:U:H6	1.85	0.42
51:3:1335:A:C6	51:3:1336:A:N7	2.88	0.42
51:3:1361:U:H2'	51:3:1362:C:C6	2.55	0.42
51:3:1467:U:H1'	51:3:1588:A:C2	2.55	0.42
51:3:1776:G:O2'	51:3:1965:C:OP1	2.38	0.42
51:3:1843:C:H2'	51:3:1844:C:C6	2.54	0.42
51:3:2377:A:H2'	51:3:2378:G:C8	2.54	0.42
51:3:2601:U:H2'	51:3:2602:C:C6	2.54	0.42
51:3:2605:G:O2'	51:3:2606:A:O4'	2.29	0.42
52:4:96:G:H2'	52:4:97:A:C8	2.55	0.42
53:5:18:U:H2'	53:5:19:C:C6	2.55	0.42
53:5:35:C:H2'	53:5:36:G:C8	2.53	0.42
53:5:590:G:H2'	53:5:591:A:H8	1.83	0.42
53:5:869:U:C2	53:5:870:A:C8	3.07	0.42
53:5:981:U:H2'	53:5:982:A:O4'	2.19	0.42
53:5:1012:A:H3'	53:5:1013:C:H6	1.85	0.42
5:A:32:MET:HB2	5:A:54:ASP:HB2	2.01	0.42
5:A:169:LEU:HD23	5:A:169:LEU:H	1.85	0.42
6:B:12:PHE:HB2	6:B:16:LYS:HE2	2.01	0.42
7:C:109:THR:O	7:C:112:SER:OG	2.32	0.42
10:F:81:GLY:O	10:F:82:SER:C	2.62	0.42
10:F:142:LYS:O	54:8:42:C:H4'	2.20	0.42
18:N:10:LYS:HA	18:N:10:LYS:HD2	1.82	0.42
22:R:70:LYS:HG3	53:5:1294:U:C5	2.55	0.42
25:a:251:ARG:NH1	51:3:2082:U:H5''	2.35	0.42
30:f:31:PHE:HA	30:f:111:PHE:CE2	2.55	0.42
32:h:13:ASN:HA	32:h:52:PRO:HA	2.02	0.42
33:i:27:VAL:HB	33:i:30:LYS:NZ	2.34	0.42
51:3:195:A:H2'	51:3:196:G:C8	2.54	0.42
51:3:1264:U:C4	51:3:1265:G:C5	3.08	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1414:C:O2'	51:3:1495:A:N3	2.50	0.42
51:3:1845:C:N4	51:3:1905:U:H2'	2.35	0.42
51:3:2300:A:C6	51:3:2349:G:O6	2.73	0.42
51:3:2469:A:H2'	51:3:2470:C:H6	1.83	0.42
52:4:2:U:C2	52:4:107:G:N2	2.88	0.42
52:4:2:U:H3	52:4:106:A:H61	1.66	0.42
53:5:658:G:H2'	53:5:659:U:O4'	2.20	0.42
53:5:731:A:H2'	53:5:732:A:C8	2.55	0.42
53:5:887:C:C2	53:5:888:A:C8	3.07	0.42
53:5:1075:G:H5'	53:5:1093:A:H5''	2.02	0.42
53:5:1128:G:H2'	53:5:1129:C:C6	2.55	0.42
2:1:36:LYS:O	2:1:39:ARG:HG2	2.20	0.42
4:9:19:GLY:HA2	4:9:116:THR:HG23	2.01	0.42
4:9:143:ASP:HB3	4:9:146:VAL:HB	2.02	0.42
7:C:33:THR:OG1	7:C:34:ILE:N	2.47	0.42
11:G:116:ILE:HG22	11:G:118:THR:HG22	2.02	0.42
14:J:113:GLY:HA2	53:5:713:A:H1'	2.02	0.42
18:N:23:GLN:O	18:N:26:VAL:HG22	2.19	0.42
20:P:13:VAL:HG11	20:P:55:ALA:HB1	2.01	0.42
26:b:153:GLY:HA3	51:3:2040:A:H5''	2.02	0.42
37:m:81:HIS:NE2	37:m:85:LYS:HD2	2.34	0.42
38:n:44:TRP:NE1	38:n:51:VAL:HG22	2.35	0.42
41:q:4:ILE:HA	41:q:12:TYR:O	2.20	0.42
41:q:36:ASP:OD1	41:q:37:LYS:N	2.53	0.42
42:r:2:ILE:HD12	42:r:4:PHE:CE1	2.54	0.42
51:3:293:G:O2'	51:3:294:G:O5'	2.33	0.42
51:3:907:A:H2'	51:3:908:A:C8	2.55	0.42
51:3:1158:C:H2'	51:3:1159:C:H6	1.85	0.42
51:3:1415:A:C6	51:3:1429:G:N1	2.88	0.42
51:3:1860:A:H2'	51:3:1861:A:O4'	2.20	0.42
51:3:2058:G:H8	51:3:2058:G:OP2	2.03	0.42
51:3:2305:C:H2'	51:3:2306:A:H8	1.85	0.42
51:3:2604:U:HO2'	51:3:2605:G:P	2.42	0.42
51:3:2675:C:H2'	51:3:2676:G:O4'	2.20	0.42
51:3:2726:G:H2'	51:3:2727:G:O4'	2.19	0.42
51:3:2843:G:H2'	51:3:2844:U:C6	2.55	0.42
53:5:1366:U:H2'	53:5:1367:G:C8	2.55	0.42
1:0:9:LYS:HZ3	51:3:1337:G:C5'	2.33	0.42
5:A:198:VAL:H	5:A:212:ASP:HB2	1.85	0.42
10:F:110:ARG:NH1	10:F:122:GLU:OE1	2.45	0.42
13:I:58:ILE:HG22	13:I:68:ARG:HB3	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:M:9:LYS:HE2	17:M:9:LYS:HB2	1.90	0.42
17:M:35:SER:HB3	53:5:1333:C:OP2	2.20	0.42
19:O:14:VAL:HA	19:O:30:ILE:HG12	2.01	0.42
19:O:18:SER:OG	53:5:373:A:O3'	2.35	0.42
23:S:20:ASN:O	23:S:24:GLN:HG2	2.20	0.42
25:a:124:SER:HB3	25:a:136:MET:HE1	2.02	0.42
26:b:139:TYR:HA	51:3:1692:A:OP1	2.20	0.42
27:c:188:VAL:O	27:c:192:MET:HG3	2.20	0.42
28:d:107:ALA:HB2	28:d:138:PHE:CE1	2.54	0.42
29:e:129:GLU:OE2	29:e:133:GLU:HG3	2.20	0.42
33:i:18:TRP:HB2	33:i:140:PRO:HA	2.01	0.42
37:m:90:TYR:OH	37:m:119:THR:N	2.53	0.42
50:z:7:THR:O	50:z:20:LEU:HG	2.19	0.42
51:3:21:U:H2'	51:3:22:U:C6	2.55	0.42
51:3:339:U:H2'	51:3:340:U:C6	2.55	0.42
51:3:426:U:O2'	51:3:427:A:H8	2.02	0.42
51:3:625:G:H2'	51:3:626:A:C8	2.55	0.42
51:3:710:A:N6	51:3:838:U:H3	2.17	0.42
51:3:734:A:H62	51:3:768:G:H21	1.67	0.42
51:3:849:C:H2'	51:3:850:G:C8	2.50	0.42
51:3:861:U:H5''	51:3:2437:G:OP2	2.19	0.42
51:3:955:A:N6	51:3:2276:A:H5'	2.34	0.42
51:3:1039:G:H2'	51:3:1040:U:C6	2.55	0.42
51:3:1301:G:N1	51:3:1649:C:N3	2.50	0.42
51:3:1442:G:H2'	51:3:1443:A:O4'	2.20	0.42
51:3:1530:G:C6	51:3:1531:C:C4	3.07	0.42
51:3:1802:C:H2'	51:3:1803:U:H6	1.85	0.42
51:3:1843:C:H2'	51:3:1844:C:H6	1.84	0.42
51:3:2649:G:H2'	51:3:2650:A:C8	2.55	0.42
51:3:2891:C:H2'	51:3:2892:U:C6	2.54	0.42
53:5:311:A:C5	53:5:326:C:H5''	2.55	0.42
53:5:501:A:H2'	53:5:502:C:C6	2.55	0.42
53:5:760:U:H2'	53:5:761:U:C6	2.55	0.42
53:5:818:A:H2'	53:5:819:G:H8	1.84	0.42
53:5:1213:A:H5'	53:5:1310:C:H41	1.85	0.42
53:5:1220:A:C6	53:5:1267:G:C6	3.08	0.42
53:5:1225:A:N7	53:5:1261:A:C8	2.88	0.42
53:5:1448:A:C5	53:5:1449:G:C6	3.08	0.42
54:7:63:U:H2'	54:7:64:G:C8	2.54	0.42
4:9:150:VAL:HA	4:9:153:GLU:HG2	2.01	0.41
10:F:108:ARG:HE	10:F:108:ARG:HB3	1.69	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:P:13:VAL:HA	20:P:24:VAL:HG23	2.02	0.41
27:c:182:HIS:O	27:c:186:VAL:HG13	2.20	0.41
37:m:31:ILE:HG22	37:m:33:THR:HG23	2.02	0.41
37:m:91:GLU:HG2	37:m:92:LYS:NZ	2.35	0.41
39:o:67:ARG:NH2	39:o:74:PRO:HB3	2.35	0.41
51:3:163:A:N7	51:3:169:U:C4	2.87	0.41
51:3:336:C:H2'	51:3:337:U:C6	2.55	0.41
51:3:513:A:H2'	51:3:514:A:C8	2.55	0.41
51:3:642:A:H2'	51:3:643:A:O4'	2.20	0.41
51:3:992:G:O6	51:3:994:U:O2'	2.36	0.41
51:3:1176:U:H4'	51:3:1177:A:O4'	2.19	0.41
51:3:1219:U:C2	51:3:1220:A:C8	3.07	0.41
51:3:1427:C:C2	51:3:1428:U:C5	3.08	0.41
51:3:1525:G:H2'	51:3:1526:U:C6	2.55	0.41
51:3:1991:U:H2'	51:3:1992:C:C6	2.55	0.41
51:3:2200:U:H2'	51:3:2201:G:H8	1.84	0.41
51:3:2302:C:H2'	51:3:2303:U:H6	1.85	0.41
53:5:593:A:H2'	53:5:638:A:H61	1.85	0.41
53:5:677:C:H2'	53:5:678:A:C8	2.54	0.41
53:5:887:C:H2'	53:5:888:A:H8	1.85	0.41
53:5:1111:G:H2'	53:5:1112:U:H6	1.85	0.41
4:9:107:SER:OG	4:9:137:LYS:HB2	2.20	0.41
8:D:140:VAL:HB	8:D:151:LEU:HD11	2.02	0.41
13:I:51:LYS:HE2	53:5:1229:A:OP1	2.20	0.41
30:f:32:PRO:HD2	30:f:111:PHE:CE2	2.55	0.41
33:i:17:GLN:HB2	33:i:19:TYR:CZ	2.54	0.41
34:j:71:ARG:HB3	34:j:75:THR:O	2.21	0.41
36:l:120:ARG:NH2	51:3:2477:A:OP1	2.44	0.41
37:m:22:VAL:HA	37:m:25:VAL:HG12	2.02	0.41
39:o:91:LYS:O	39:o:92:ARG:HG3	2.19	0.41
40:p:32:LYS:O	40:p:36:GLN:HG3	2.20	0.41
40:p:108:ILE:O	40:p:112:VAL:HG13	2.20	0.41
47:w:43:LEU:HA	47:w:46:GLN:OE1	2.19	0.41
49:y:7:ARG:HD3	49:y:8:SER:O	2.20	0.41
51:3:169:U:H3'	51:3:170:A:C8	2.52	0.41
51:3:200:A:H61	51:3:866:G:H1'	1.85	0.41
51:3:331:A:H2'	51:3:332:G:O4'	2.20	0.41
51:3:1135:C:H2'	51:3:1136:U:H6	1.85	0.41
51:3:1335:A:C6	51:3:1336:A:C8	3.08	0.41
51:3:1718:C:H2'	51:3:1719:C:C6	2.55	0.41
51:3:1814:G:H22	51:3:1816:A:H3'	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2009:U:H2'	51:3:2010:A:C8	2.55	0.41
51:3:2034:G:H2'	51:3:2035:U:C6	2.55	0.41
51:3:2055:A:C6	51:3:2056:A:C5	3.08	0.41
51:3:2105:G:H2'	51:3:2106:G:H8	1.84	0.41
51:3:2212:U:H2'	51:3:2213:A:H8	1.81	0.41
51:3:2358:U:H2'	51:3:2359:G:O4'	2.20	0.41
53:5:54:A:N1	53:5:355:A:C6	2.88	0.41
53:5:73:G:N1	53:5:83:U:O4	2.53	0.41
53:5:821:U:H2'	53:5:822:A:H8	1.85	0.41
53:5:847:G:H2'	53:5:848:U:C6	2.55	0.41
5:A:91:TYR:O	5:A:95:LEU:HG	2.20	0.41
6:B:123:LEU:HD21	6:B:140:SER:HB3	2.01	0.41
7:C:79:LEU:O	7:C:82:ARG:NH1	2.45	0.41
14:J:112:ASN:ND2	53:5:715:A:H4'	2.35	0.41
22:R:36:ARG:HH12	22:R:77:THR:HG21	1.85	0.41
23:S:28:LEU:O	23:S:32:VAL:HG23	2.21	0.41
29:e:68:HIS:CE1	29:e:72:ASN:HD21	2.39	0.41
33:i:117:LEU:HD11	51:3:590:U:O2'	2.19	0.41
34:j:64:ARG:HB3	34:j:83:ALA:H	1.83	0.41
37:m:74:ASP:OD1	37:m:75:VAL:N	2.54	0.41
38:n:10:LEU:HG	38:n:14:ARG:HH11	1.84	0.41
39:o:6:LYS:HA	51:3:2880:A:C5'	2.51	0.41
40:p:52:LYS:HD2	40:p:56:PHE:CZ	2.56	0.41
51:3:80:U:O4	51:3:109:G:O6	2.38	0.41
51:3:289:U:H2'	51:3:290:A:C8	2.55	0.41
51:3:535:G:H1'	51:3:540:A:H61	1.86	0.41
51:3:1114:C:C2	51:3:1115:G:C8	3.08	0.41
51:3:1345:G:H2'	51:3:1346:G:H8	1.85	0.41
51:3:1389:G:H2'	51:3:1390:C:C6	2.54	0.41
51:3:1632:C:H2'	51:3:1633:C:C6	2.56	0.41
51:3:2055:A:C6	51:3:2629:G:N1	2.88	0.41
51:3:2201:G:C6	51:3:2202:U:C5	3.08	0.41
53:5:109:G:H2'	53:5:110:U:C6	2.56	0.41
53:5:144:U:O2	53:5:149:G:C6	2.74	0.41
53:5:221:U:H2'	53:5:222:U:C6	2.55	0.41
53:5:546:G:H2'	53:5:547:C:C6	2.56	0.41
53:5:550:U:H2'	53:5:551:A:C8	2.46	0.41
53:5:644:U:H2'	53:5:645:A:C8	2.41	0.41
53:5:822:A:H2'	53:5:823:C:C6	2.55	0.41
53:5:945:U:H3	53:5:1206:G:H1	1.67	0.41
53:5:1195:G:H2'	53:5:1196:G:C8	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1352:A:H4'	53:5:1353:C:C5	2.55	0.41
9:E:49:ILE:HG21	9:E:83:LEU:HD23	2.02	0.41
13:I:91:ASP:OD2	13:I:95:ARG:NH2	2.46	0.41
13:I:99:PRO:HG2	13:I:102:VAL:HG23	2.02	0.41
16:L:103:ARG:NH1	53:5:1198:C:H5''	2.36	0.41
19:O:51:GLU:HB3	19:O:55:LYS:HZ3	1.86	0.41
20:P:14:LYS:HA	20:P:14:LYS:HD2	1.77	0.41
20:P:74:ARG:NH1	53:5:230:G:H5''	2.35	0.41
25:a:248:PRO:HB3	51:3:1978:U:C2	2.56	0.41
26:b:158:ARG:NH2	51:3:1165:U:O2	2.52	0.41
27:c:64:LYS:HE3	27:c:66:TYR:O	2.20	0.41
27:c:140:THR:O	27:c:144:MET:HG3	2.20	0.41
27:c:168:LEU:HD13	27:c:180:VAL:HG21	2.03	0.41
33:i:41:GLY:C	33:i:43:ASN:H	2.28	0.41
34:j:5:MET:O	34:j:5:MET:HG2	2.21	0.41
38:n:11:ARG:O	38:n:14:ARG:HG2	2.21	0.41
39:o:97:ARG:NH2	51:3:2853:U:OP1	2.53	0.41
40:p:107:LEU:HD13	41:q:40:MET:HE1	2.02	0.41
42:r:131:GLY:C	51:3:1261:U:H4'	2.46	0.41
51:3:415:U:H2'	51:3:416:C:H6	1.84	0.41
51:3:898:A:C6	51:3:899:A:C6	3.09	0.41
51:3:1010:G:C4'	51:3:1026:A:H61	2.33	0.41
51:3:1141:U:H2'	51:3:1142:G:C8	2.55	0.41
51:3:1298:A:N6	51:3:2019:G:O2'	2.53	0.41
51:3:1394:A:OP2	51:3:1394:A:H3'	2.20	0.41
51:3:1841:U:H5''	51:3:1842:G:H5''	2.03	0.41
51:3:1953:U:H2'	51:3:1954:C:C6	2.55	0.41
51:3:2059:G:H1	51:3:2625:U:H3	1.67	0.41
51:3:2111:U:C2	51:3:2194:G:C2	3.08	0.41
51:3:2224:A:H2'	51:3:2225:G:C8	2.55	0.41
51:3:2515:C:C2	51:3:2516:G:C8	3.07	0.41
51:3:2572:A:H61	51:3:2655:U:H4'	1.84	0.41
51:3:2657:C:H2'	51:3:2658:U:H6	1.86	0.41
53:5:41:C:H2'	53:5:42:G:C8	2.55	0.41
53:5:566:G:O2'	53:5:567:C:H5'	2.20	0.41
53:5:582:G:H2'	53:5:583:G:H8	1.83	0.41
53:5:598:U:H2'	53:5:599:G:C8	2.52	0.41
53:5:600:G:H2'	53:5:601:U:C6	2.55	0.41
53:5:610:C:H2'	53:5:611:A:H8	1.85	0.41
53:5:692:A:H2'	53:5:693:A:O4'	2.20	0.41
53:5:1001:A:H4'	53:5:1030:G:P	2.61	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1114:A:N6	53:5:1127:A:N6	2.68	0.41
53:5:1441:C:H2'	53:5:1442:A:O4'	2.20	0.41
54:6:16:G:H22	54:6:49:C:N4	2.17	0.41
5:A:225:THR:O	5:A:228:LEU:HG	2.19	0.41
6:B:134:ARG:HH22	8:D:111:VAL:HG23	1.84	0.41
6:B:185:ILE:HG12	6:B:206:ASN:HA	2.02	0.41
8:D:131:ILE:HG22	8:D:134:GLY:H	1.85	0.41
9:E:5:ILE:HA	9:E:87:ILE:HD12	2.03	0.41
13:I:41:LYS:HB3	13:I:84:ASP:OD2	2.21	0.41
13:I:57:ILE:HG21	17:M:45:ARG:HB2	2.02	0.41
21:Q:41:CYS:HB2	21:Q:78:ASN:HA	2.01	0.41
21:Q:94:ARG:HD3	21:Q:101:PHE:HA	2.02	0.41
22:R:22:MET:HE1	22:R:31:ILE:HG21	2.02	0.41
22:R:36:ARG:HB3	22:R:72:GLY:H	1.86	0.41
25:a:281:ASN:OD1	25:a:281:ASN:N	2.54	0.41
26:b:32:GLU:HG2	26:b:55:ASP:H	1.84	0.41
27:c:106:LYS:HD3	51:3:634:C:H4'	2.02	0.41
27:c:117:SER:O	27:c:120:LEU:HG	2.20	0.41
28:d:38:MET:HB2	28:d:87:CYS:H	1.84	0.41
33:i:30:LYS:HA	33:i:33:VAL:HG22	2.02	0.41
34:j:25:LEU:HD23	34:j:38:VAL:HG22	2.02	0.41
40:p:36:GLN:HE22	51:3:596:G:N2	2.19	0.41
40:p:80:ASN:ND2	51:3:1187:C:H5'	2.36	0.41
41:q:21:PHE:CE1	41:q:91:LYS:HD3	2.55	0.41
45:u:44:MET:N	45:u:44:MET:SD	2.92	0.41
51:3:225:A:O4'	51:3:237:A:O2'	2.28	0.41
51:3:373:U:H2'	51:3:374:A:H8	1.85	0.41
51:3:682:A:H2'	51:3:683:G:C8	2.56	0.41
51:3:707:C:H2'	51:3:708:C:C6	2.54	0.41
51:3:867:G:H2'	51:3:868:C:C6	2.55	0.41
51:3:1104:A:C4	51:3:1108:A:C8	3.08	0.41
51:3:1724:A:H2'	51:3:1725:G:C8	2.55	0.41
51:3:1867:G:N3	51:3:1867:G:H2'	2.35	0.41
51:3:2654:U:O5'	51:3:2654:U:H6	2.02	0.41
51:3:2828:C:H2'	51:3:2829:G:O4'	2.20	0.41
51:3:2848:A:H2'	51:3:2849:G:C8	2.56	0.41
53:5:110:U:H2'	53:5:111:A:C8	2.56	0.41
53:5:215:C:C2	53:5:216:G:C8	3.09	0.41
53:5:510:U:H2'	53:5:511:A:C8	2.55	0.41
53:5:664:A:H2'	53:5:665:G:H8	1.85	0.41
53:5:944:A:O2'	53:5:1338:A:OP2	2.39	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1220:A:H2'	53:5:1221:A:H8	1.86	0.41
4:9:23:HIS:O	4:9:136:ASN:ND2	2.53	0.41
5:A:136:LYS:HA	5:A:139:GLU:HG2	2.01	0.41
7:C:53:GLN:HB3	7:C:199:TRP:HB2	2.03	0.41
13:I:59:ARG:O	17:M:45:ARG:NH2	2.54	0.41
16:L:51:GLU:O	16:L:54:VAL:HG22	2.21	0.41
20:P:5:GLN:N	20:P:5:GLN:OE1	2.54	0.41
27:c:112:LEU:HA	27:c:115:VAL:HG12	2.03	0.41
28:d:125:ARG:NE	51:3:2323:U:O2'	2.49	0.41
29:e:149:THR:HG21	51:3:2752:G:O2'	2.20	0.41
30:f:32:PRO:HD2	30:f:111:PHE:CD2	2.56	0.41
31:g:112:TYR:HB3	31:g:115:ASN:HA	2.02	0.41
33:i:6:MET:HE3	33:i:7:LEU:HD23	2.01	0.41
39:o:34:ALA:HB3	39:o:87:SER:HB2	2.02	0.41
41:q:41:LEU:HD12	41:q:42:ASP:H	1.83	0.41
43:s:45:GLU:OE2	43:s:52:PRO:HD2	2.20	0.41
51:3:90:G:H2'	51:3:91:G:H8	1.85	0.41
51:3:224:G:N1	51:3:464:A:OP2	2.40	0.41
51:3:341:G:N1	51:3:344:A:OP2	2.31	0.41
51:3:613:C:H2'	51:3:614:C:H6	1.86	0.41
51:3:724:A:N6	51:3:725:G:O6	2.54	0.41
51:3:732:G:H2'	51:3:733:C:C6	2.56	0.41
51:3:1016:A:N3	51:3:2044:C:O2'	2.48	0.41
51:3:1588:A:O2'	51:3:1589:A:P	2.78	0.41
51:3:1672:C:H4'	51:3:2717:G:N2	2.36	0.41
51:3:1828:A:H2'	51:3:1829:U:C6	2.55	0.41
51:3:2711:C:C2	51:3:2712:C:C5	3.09	0.41
52:4:3:U:H2'	52:4:4:G:C8	2.48	0.41
52:4:5:G:OP1	52:4:26:C:O2'	2.39	0.41
53:5:547:C:H2'	53:5:548:G:O4'	2.21	0.41
53:5:602:G:H2'	53:5:603:U:H6	1.85	0.41
53:5:980:C:H2'	53:5:981:U:H6	1.84	0.41
54:8:6:U:H2'	54:8:7:U:C6	2.56	0.41
6:B:20:SER:HA	6:B:58:ILE:HB	2.02	0.41
7:C:10:ARG:O	7:C:14:LEU:N	2.37	0.41
7:C:12:ARG:NH1	53:5:409:G:O6	2.42	0.41
7:C:56:GLU:OE2	7:C:192:ASN:N	2.34	0.41
9:E:3:TYR:HE1	9:E:64:GLY:H	1.69	0.41
15:K:22:PRO:HA	15:K:25:HIS:CD2	2.56	0.41
15:K:102:ASP:OD2	53:5:520:C:N4	2.53	0.41
16:L:57:ARG:HA	16:L:60:ALA:HB3	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:N:51:ARG:NH1	53:5:725:A:OP1	2.40	0.41
26:b:85:ARG:HH22	51:3:2646:G:P	2.44	0.41
32:h:128:ALA:O	32:h:132:GLY:N	2.36	0.41
36:l:41:TRP:NE1	36:l:96:VAL:HG22	2.35	0.41
40:p:52:LYS:HG3	40:p:53:LYS:N	2.36	0.41
41:q:98:VAL:O	41:q:99:HIS:ND1	2.53	0.41
47:w:97:LYS:NZ	51:3:1429:G:OP1	2.51	0.41
51:3:131:C:H4'	51:3:1377:A:H4'	2.02	0.41
51:3:216:C:H2'	51:3:217:A:N9	2.36	0.41
51:3:412:A:C6	51:3:413:G:C4	3.09	0.41
51:3:434:G:H2'	51:3:435:U:C6	2.56	0.41
51:3:465:A:H5''	51:3:466:A:OP1	2.20	0.41
51:3:777:C:H2'	51:3:778:U:C6	2.56	0.41
51:3:975:G:H2'	51:3:976:C:C6	2.55	0.41
51:3:985:A:N6	51:3:1005:G:O6	2.54	0.41
51:3:1044:C:H1'	51:3:1045:A:N7	2.35	0.41
51:3:1084:C:H2'	51:3:1085:A:C8	2.55	0.41
51:3:1195:A:H2'	51:3:1196:U:C6	2.56	0.41
51:3:1333:C:H2'	51:3:1334:U:O4'	2.20	0.41
51:3:1441:A:H2'	51:3:1442:G:C8	2.56	0.41
51:3:1815:U:O2'	51:3:1816:A:O5'	2.35	0.41
51:3:2140:G:H1'	51:3:2165:A:H61	1.85	0.41
51:3:2399:G:N1	51:3:2433:A:OP1	2.46	0.41
51:3:2495:A:H2'	51:3:2496:G:H8	1.86	0.41
51:3:2602:C:H2'	51:3:2603:G:H8	1.85	0.41
51:3:2859:U:O4	51:3:2860:A:N6	2.53	0.41
51:3:2885:U:H2'	51:3:2886:A:C8	2.56	0.41
53:5:36:G:C6	53:5:548:G:C6	3.08	0.41
53:5:94:A:N6	53:5:322:G:O6	2.54	0.41
53:5:317:A:H2'	53:5:318:C:C6	2.54	0.41
53:5:514:U:H2'	53:5:515:G:O4'	2.20	0.41
53:5:565:G:N1	53:5:878:U:O4	2.54	0.41
53:5:664:A:H2'	53:5:665:G:C8	2.55	0.41
53:5:884:G:H1'	53:5:885:U:H5	1.85	0.41
53:5:1120:A:H5''	53:5:1121:U:H5'	2.02	0.41
53:5:1379:C:H2'	53:5:1380:G:C8	2.56	0.41
54:7:6:U:H2'	54:7:7:U:C6	2.56	0.41
4:9:122:LEU:HD21	4:9:378:ARG:CZ	2.50	0.41
4:9:280:ARG:NE	53:5:363:U:H4'	2.36	0.41
8:D:79:THR:OG1	53:5:916:U:O2	2.38	0.41
8:D:162:ALA:HB3	8:D:167:ARG:HB2	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:E:108:ALA:HA	9:E:111:LYS:HG2	2.02	0.41
11:G:41:LYS:HA	11:G:44:ILE:HG12	2.03	0.41
15:K:77:LEU:HD23	15:K:106:VAL:HG22	2.03	0.41
20:P:77:ILE:HG23	20:P:77:ILE:O	2.21	0.41
25:a:159:GLN:HA	25:a:162:ARG:HD3	2.02	0.41
25:a:252:ASP:OD2	25:a:255:ARG:NH1	2.50	0.41
26:b:180:ARG:O	26:b:194:SER:N	2.37	0.41
28:d:170:LEU:O	28:d:173:LEU:HB3	2.21	0.41
30:f:108:LEU:HD13	30:f:113:PHE:HZ	1.85	0.41
33:i:11:GLN:NE2	51:3:572:G:O3'	2.54	0.41
35:k:117:HIS:O	35:k:119:LYS:NZ	2.46	0.41
38:n:109:ALA:O	38:n:114:LEU:HB2	2.21	0.41
39:o:33:VAL:HG12	39:o:48:PHE:O	2.21	0.41
40:p:36:GLN:HE21	51:3:1282:G:H1	1.67	0.41
46:v:52:THR:HA	46:v:55:LEU:HD12	2.02	0.41
51:3:42:U:H2'	51:3:43:A:H8	1.84	0.41
51:3:610:G:H4'	51:3:1285:U:H4'	2.01	0.41
51:3:617:C:C2	51:3:618:G:C8	3.08	0.41
51:3:792:G:N3	51:3:792:G:H2'	2.36	0.41
51:3:901:C:N3	51:3:946:A:N6	2.68	0.41
51:3:1294:G:N1	51:3:2021:A:OP2	2.54	0.41
51:3:1491:G:H2'	51:3:1492:G:C8	2.56	0.41
51:3:1582:G:H2'	51:3:1583:G:H8	1.80	0.41
51:3:1702:A:H62	51:3:1998:U:H3	1.69	0.41
51:3:1830:G:H2'	51:3:1831:G:C8	2.55	0.41
51:3:2300:A:C6	51:3:2301:C:C4	3.09	0.41
51:3:2812:U:H4'	51:3:2813:A:C8	2.55	0.41
53:5:87:G:N3	53:5:137:A:H2	2.18	0.41
53:5:213:U:H2'	53:5:214:U:H6	1.86	0.41
53:5:385:A:H3'	53:5:386:U:H6	1.86	0.41
53:5:763:A:N6	53:5:810:U:H3	2.19	0.41
53:5:936:G:H2'	53:5:937:G:O4'	2.21	0.41
53:5:1133:A:H61	53:5:1153:G:H1'	1.85	0.41
53:5:1156:G:H1'	53:5:1157:G:C8	2.56	0.41
53:5:1321:G:O2'	53:5:1348:G:N1	2.43	0.41
53:5:1406:U:O4	53:5:1407:A:N6	2.54	0.41
4:9:223:GLY:HA3	53:5:56:A:C5	2.55	0.41
5:A:35:ARG:NH1	5:A:35:ARG:O	2.53	0.41
5:A:71:TYR:O	5:A:75:VAL:HG23	2.20	0.41
5:A:81:GLN:O	5:A:174:ASN:N	2.54	0.41
5:A:136:LYS:O	5:A:140:ASN:N	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:B:20:SER:HB2	6:B:22:TRP:NE1	2.36	0.41
7:C:149:ILE:HD12	7:C:174:PHE:CD2	2.44	0.41
8:D:191:MET:O	8:D:195:THR:HG23	2.21	0.41
9:E:84:ARG:HD2	21:Q:95:TYR:CE1	2.55	0.41
14:J:118:LYS:N	53:5:777:A:OP1	2.53	0.41
22:R:55:LYS:HA	53:5:981:U:H1'	2.03	0.41
23:S:70:SER:HA	23:S:73:VAL:HG12	2.02	0.41
27:c:75:ARG:NH1	51:3:2067:A:N7	2.69	0.41
27:c:159:PHE:HB2	27:c:180:VAL:HG23	2.03	0.41
28:d:91:LEU:HD23	28:d:91:LEU:H	1.85	0.41
30:f:31:PHE:HA	30:f:111:PHE:HE2	1.86	0.41
30:f:48:ASP:HB2	30:f:52:LYS:NZ	2.35	0.41
35:k:14:ASN:HD21	51:3:1275:C:P	2.44	0.41
36:l:65:TRP:HB2	36:l:105:GLU:CG	2.51	0.41
36:l:70:PRO:HA	36:l:95:ALA:HB2	2.01	0.41
41:q:36:ASP:OD1	41:q:37:LYS:HG3	2.21	0.41
47:w:88:LYS:O	47:w:92:GLU:OE1	2.38	0.41
51:3:28:G:H2'	51:3:29:G:C4	2.56	0.41
51:3:366:A:O2'	51:3:368:C:OP2	2.35	0.41
51:3:523:A:H2'	51:3:524:G:C8	2.56	0.41
51:3:806:A:H1'	51:3:1382:A:H2	1.85	0.41
51:3:958:C:H2'	51:3:959:C:C6	2.54	0.41
51:3:1003:U:H2'	51:3:1004:U:C6	2.56	0.41
51:3:1051:U:H2'	51:3:1052:A:H8	1.84	0.41
51:3:1126:G:H2'	51:3:1127:C:H6	1.85	0.41
51:3:1318:U:H2'	51:3:1319:C:H6	1.86	0.41
51:3:1623:U:H2'	51:3:1624:A:C8	2.56	0.41
51:3:1845:C:N4	51:3:1908:A:N7	2.69	0.41
51:3:1849:G:C6	51:3:1905:U:O2	2.74	0.41
51:3:1856:G:H2'	51:3:1857:G:H8	1.86	0.41
51:3:2129:U:H2'	51:3:2130:A:C8	2.56	0.41
51:3:2147:G:H2'	51:3:2148:U:C6	2.56	0.41
51:3:2277:A:C4	51:3:2278:G:C8	3.08	0.41
51:3:2403:C:H2'	51:3:2404:G:C8	2.56	0.41
51:3:2447:A:C2	51:3:2594:C:H5''	2.56	0.41
51:3:2571:U:O2	51:3:2573:A:H8	2.04	0.41
51:3:2677:A:H2'	51:3:2678:A:C8	2.56	0.41
51:3:2713:A:H2'	51:3:2714:G:O4'	2.20	0.41
52:4:57:G:C5	52:4:58:C:C6	3.09	0.41
53:5:130:G:C6	53:5:165:A:N6	2.88	0.41
53:5:376:G:N1	53:5:380:G:O6	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:405:C:H2'	53:5:406:G:O4'	2.21	0.41
53:5:454:U:H2'	53:5:455:U:C6	2.56	0.41
53:5:593:A:N6	53:5:638:A:O2'	2.53	0.41
53:5:655:G:C6	53:5:746:A:C6	3.08	0.41
53:5:717:C:H2'	53:5:718:A:N7	2.36	0.41
53:5:802:C:H2'	53:5:803:C:C6	2.56	0.41
53:5:974:C:C4	53:5:975:C:C5	3.09	0.41
53:5:1052:G:C6	53:5:1053:U:C4	3.08	0.41
53:5:1058:A:N3	53:5:1059:G:H1'	2.35	0.41
53:5:1065:G:H2'	53:5:1066:U:C6	2.55	0.41
53:5:1267:G:H2'	53:5:1268:G:H8	1.85	0.41
53:5:1347:U:H2'	53:5:1348:G:O4'	2.21	0.41
53:5:1453:C:H2'	53:5:1454:G:C8	2.55	0.41
54:6:6:U:H2'	54:6:7:U:C6	2.56	0.41
54:8:26:C:H2'	54:8:27:A:H8	1.83	0.41
2:1:53:LYS:HB3	2:1:53:LYS:HE2	1.76	0.41
4:9:343:SER:OG	4:9:360:THR:O	2.31	0.41
6:B:74:PRO:O	6:B:78:ILE:HG12	2.21	0.41
7:C:88:ASN:O	7:C:92:VAL:HG23	2.22	0.41
11:G:85:ASN:HB2	11:G:142:TRP:HD1	1.85	0.41
15:K:93:THR:HG22	15:K:94:LEU:H	1.85	0.41
16:L:91:HIS:HB2	16:L:97:VAL:HG11	2.03	0.41
26:b:178:ASN:HD22	51:3:2739:C:P	2.44	0.41
27:c:151:LYS:O	27:c:152:LEU:HD22	2.21	0.41
29:e:88:LYS:NZ	29:e:89:LYS:O	2.54	0.41
30:f:12:LEU:HB3	30:f:14:LYS:NZ	2.34	0.41
30:f:87:ARG:HA	30:f:88:PRO:HD3	1.93	0.41
35:k:16:LYS:HE3	35:k:18:LYS:HE3	2.03	0.41
38:n:98:TYR:CG	51:3:2384:A:N6	2.88	0.41
44:t:41:LYS:HD2	44:t:41:LYS:HA	1.97	0.41
46:v:58:LEU:O	46:v:62:ASN:N	2.54	0.41
49:y:40:HIS:HE1	51:3:2887:A:H4'	1.86	0.41
51:3:123:G:H2'	51:3:124:A:H8	1.86	0.41
51:3:124:A:H3'	51:3:125:G:H8	1.86	0.41
51:3:404:C:H2'	51:3:405:C:C6	2.56	0.41
51:3:487:C:H5'	51:3:488:G:OP2	2.21	0.41
51:3:512:G:N2	51:3:516:A:H62	2.19	0.41
51:3:776:U:H2'	51:3:777:C:H6	1.85	0.41
51:3:890:U:H2'	51:3:891:G:H8	1.86	0.41
51:3:1161:A:H4'	51:3:1162:A:H5''	2.03	0.41
51:3:1197:G:O2'	51:3:1198:G:H5'	2.22	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1290:G:H2'	51:3:1291:C:C6	2.56	0.41
51:3:1846:A:C5	51:3:1847:G:C8	3.09	0.41
51:3:1939:A:H2'	51:3:1940:G:O4'	2.21	0.41
53:5:42:G:H2'	53:5:43:G:C8	2.56	0.41
53:5:87:G:H2'	53:5:88:A:H8	1.86	0.41
53:5:126:U:H2'	53:5:127:A:H8	1.86	0.41
53:5:292:U:C4	53:5:293:G:C5	3.08	0.41
53:5:829:G:C6	53:5:849:A:C6	3.08	0.41
53:5:1261:A:H2	53:5:1327:G:H1'	1.86	0.41
53:5:1488:A:H2'	53:5:1489:C:H6	1.84	0.41
54:6:28:A:H2'	54:6:29:C:C5	2.56	0.41
4:9:51:ASP:CB	4:9:56:GLU:HB3	2.50	0.40
4:9:112:VAL:HG13	4:9:116:THR:HB	2.02	0.40
5:A:63:GLN:O	5:A:66:GLN:HG3	2.21	0.40
5:A:234:ASP:O	5:A:238:GLU:HG3	2.22	0.40
7:C:147:LYS:O	7:C:150:LYS:HG2	2.21	0.40
8:D:162:ALA:HB1	8:D:166:ILE:HG13	2.02	0.40
9:E:49:ILE:HD11	9:E:84:ARG:NH1	2.36	0.40
15:K:46:VAL:HA	15:K:92:VAL:HA	2.03	0.40
15:K:99:ARG:NH1	53:5:523:U:H5'	2.36	0.40
16:L:103:ARG:NE	53:5:1200:G:OP1	2.52	0.40
23:S:59:ILE:H	23:S:59:ILE:HG13	1.73	0.40
23:S:72:ASN:O	23:S:76:LEU:HG	2.21	0.40
27:c:68:GLN:OE1	51:3:710:A:O2'	2.33	0.40
28:d:4:LEU:HD22	28:d:101:GLU:HB3	2.02	0.40
28:d:36:ILE:HD12	28:d:153:ASP:O	2.21	0.40
29:e:174:ARG:HD2	29:e:174:ARG:HA	1.95	0.40
35:k:42:ARG:NH2	51:3:842:U:OP2	2.54	0.40
36:l:65:TRP:HB2	36:l:105:GLU:HG3	2.01	0.40
37:m:28:TYR:OH	37:m:71:ASN:OD1	2.40	0.40
39:o:15:GLN:HA	39:o:18:LEU:HD21	2.03	0.40
39:o:54:ARG:NH2	39:o:63:THR:OG1	2.46	0.40
41:q:41:LEU:HD23	41:q:53:ALA:HB1	2.03	0.40
43:s:67:GLY:HA3	51:3:1363:C:P	2.61	0.40
50:z:5:ARG:NH2	50:z:24:ASN:OD1	2.53	0.40
51:3:199:A:N6	51:3:202:C:OP2	2.54	0.40
51:3:611:A:OP1	51:3:1285:U:O2'	2.38	0.40
51:3:898:A:H2'	51:3:899:A:C8	2.56	0.40
51:3:1028:C:H2'	51:3:1029:A:H8	1.85	0.40
51:3:1160:G:OP2	51:3:1161:A:O2'	2.35	0.40
51:3:1426:C:H2'	51:3:1427:C:C6	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2073:C:H2'	51:3:2074:G:C8	2.56	0.40
51:3:2120:G:C2	51:3:2121:A:H1'	2.56	0.40
51:3:2229:C:H2'	51:3:2230:A:H8	1.86	0.40
51:3:2313:U:O2'	51:3:2314:U:O4'	2.29	0.40
51:3:2770:U:H2'	51:3:2771:G:O4'	2.21	0.40
53:5:82:C:H2'	53:5:83:U:C5	2.56	0.40
53:5:84:U:H2'	53:5:85:U:C6	2.57	0.40
53:5:169:G:H2'	53:5:170:A:O4'	2.21	0.40
53:5:260:C:H2'	53:5:261:G:O4'	2.20	0.40
53:5:365:U:O4	53:5:388:G:O6	2.39	0.40
53:5:539:G:H2'	53:5:540:U:O4'	2.21	0.40
53:5:622:A:H2'	53:5:623:G:C8	2.56	0.40
53:5:918:A:H2'	53:5:919:C:C6	2.56	0.40
53:5:1183:C:H2'	53:5:1184:C:H6	1.86	0.40
53:5:1243:A:O2'	53:5:1244:A:O4'	2.19	0.40
53:5:1416:U:H2'	53:5:1417:U:C2	2.55	0.40
54:7:28:A:H2'	54:7:29:C:C5	2.56	0.40
54:8:28:A:H2'	54:8:29:C:C5	2.56	0.40
4:9:121:LEU:O	4:9:125:GLN:HG2	2.20	0.40
7:C:111:ARG:NE	53:5:403:A:OP1	2.54	0.40
10:F:102:TRP:HH2	10:F:140:THR:HG21	1.87	0.40
10:F:142:LYS:NZ	54:8:43:G:H4'	2.36	0.40
13:I:17:GLU:HB2	13:I:103:THR:HG22	2.03	0.40
13:I:94:LYS:HA	13:I:94:LYS:HD2	1.93	0.40
19:O:49:ALA:HA	19:O:52:TRP:CD1	2.56	0.40
23:S:56:ARG:HG2	23:S:57:LYS:HD3	2.03	0.40
25:a:48:ASN:ND2	51:3:1819:G:N3	2.66	0.40
26:b:56:THR:HA	26:b:78:THR:HA	2.03	0.40
26:b:61:LYS:NZ	51:3:2834:C:H5''	2.35	0.40
27:c:50:HIS:HB2	27:c:93:PRO:HB2	2.02	0.40
27:c:162:ASN:HD22	27:c:202:GLU:HG3	1.85	0.40
35:k:48:ARG:HA	35:k:49:PRO:HD2	1.95	0.40
38:n:12:HIS:HA	38:n:15:ILE:HG22	2.03	0.40
38:n:18:LYS:O	38:n:22:THR:OG1	2.29	0.40
39:o:48:PHE:HE1	39:o:75:ILE:HD12	1.85	0.40
41:q:65:GLN:N	41:q:87:GLN:O	2.50	0.40
41:q:70:VAL:HG22	41:q:72:LYS:HG2	2.03	0.40
51:3:26:G:H2'	51:3:27:U:H6	1.86	0.40
51:3:864:A:N6	51:3:2255:A:O2'	2.50	0.40
51:3:931:G:H2'	51:3:932:U:H4'	2.02	0.40
51:3:1721:G:H2'	51:3:1722:U:C6	2.55	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2507:C:H2'	51:3:2507:C:O2	2.21	0.40
51:3:2651:G:C2	51:3:2780:U:C2	3.09	0.40
51:3:2842:G:H2'	51:3:2843:G:H8	1.87	0.40
53:5:174:U:H2'	53:5:175:U:H6	1.86	0.40
53:5:407:A:H61	53:5:427:A:N6	2.15	0.40
53:5:577:G:H5'	53:5:725:A:H1'	2.04	0.40
53:5:754:U:H2'	53:5:755:U:O4'	2.21	0.40
53:5:780:U:H2'	53:5:781:A:C8	2.55	0.40
53:5:882:U:H3'	53:5:883:A:H8	1.86	0.40
53:5:1109:U:H2'	53:5:1110:C:C6	2.57	0.40
53:5:1227:A:H2'	53:5:1228:C:H6	1.87	0.40
53:5:1337:U:H4'	53:5:1338:A:H5'	2.03	0.40
4:9:12:HIS:ND1	4:9:273:ASP:OD1	2.54	0.40
4:9:23:HIS:ND1	4:9:106:VAL:HA	2.37	0.40
4:9:211:PHE:CD2	4:9:295:LYS:HB2	2.40	0.40
7:C:46:THR:O	7:C:46:THR:HG22	2.21	0.40
8:D:140:VAL:HG13	8:D:201:LYS:HD2	2.04	0.40
10:F:136:LYS:O	10:F:140:THR:HG23	2.22	0.40
12:H:32:VAL:N	12:H:35:ARG:O	2.52	0.40
13:I:54:VAL:HG13	13:I:70:GLN:OE1	2.21	0.40
14:J:37:TRP:HH2	53:5:685:G:H4'	1.86	0.40
20:P:60:LYS:HG3	20:P:81:ILE:HB	2.04	0.40
22:R:22:MET:HB2	22:R:25:GLN:HE22	1.86	0.40
23:S:66:ARG:O	23:S:69:LYS:HG2	2.22	0.40
25:a:47:ARG:HA	25:a:53:ILE:HA	2.02	0.40
25:a:126:HIS:HB2	30:f:87:ARG:NH2	2.36	0.40
26:b:35:GLN:CD	26:b:76:LYS:HZ1	2.29	0.40
27:c:68:GLN:NE2	51:3:2451:C:O3'	2.55	0.40
30:f:91:SER:OG	30:f:118:ARG:O	2.36	0.40
35:k:6:LEU:HB3	51:3:1235:U:H1'	2.03	0.40
36:l:50:ALA:O	36:l:54:ILE:HG12	2.21	0.40
46:v:63:ARG:HD3	46:v:63:ARG:HA	1.76	0.40
47:w:86:ALA:O	47:w:89:GLN:HG3	2.20	0.40
48:x:7:PHE:O	48:x:9:SER:N	2.54	0.40
51:3:39:C:H2'	51:3:40:A:C8	2.56	0.40
51:3:519:A:N7	51:3:532:A:H2	2.19	0.40
51:3:862:U:H5'	51:3:863:U:OP1	2.21	0.40
51:3:954:A:H3'	51:3:955:A:H8	1.86	0.40
51:3:1329:U:O2'	51:3:1330:U:H5''	2.22	0.40
51:3:1715:A:HO2'	51:3:1716:A:H8	1.66	0.40
51:3:1842:G:H2'	51:3:1843:C:H6	1.85	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1984:A:C4	51:3:1985:A:C8	3.09	0.40
51:3:2004:G:C6	51:3:2005:G:C6	3.09	0.40
51:3:2424:C:H2'	51:3:2425:C:C6	2.56	0.40
51:3:2624:C:H2'	51:3:2625:U:C6	2.57	0.40
51:3:2838:G:H2'	51:3:2883:A:H61	1.87	0.40
52:4:11:A:N1	52:4:68:C:H4'	2.37	0.40
53:5:715:A:H5'	53:5:716:C:OP2	2.20	0.40
53:5:1055:G:C4	53:5:1057:C:N3	2.89	0.40
53:5:1390:G:H2'	53:5:1391:A:C8	2.57	0.40
53:5:1443:A:H3'	53:5:1444:G:H8	1.86	0.40
53:5:1485:C:H2'	53:5:1486:C:H6	1.86	0.40
2:1:32:HIS:HB3	51:3:2398:U:H5''	2.03	0.40
6:B:102:LEU:HA	6:B:102:LEU:HD23	1.77	0.40
6:B:113:MET:SD	6:B:113:MET:N	2.94	0.40
8:D:110:GLU:OE2	8:D:113:ASN:HB2	2.21	0.40
8:D:151:LEU:HA	8:D:179:TYR:O	2.22	0.40
12:H:116:LYS:HE3	53:5:1343:G:H5''	2.02	0.40
13:I:17:GLU:O	13:I:102:VAL:HA	2.21	0.40
13:I:90:ILE:H	13:I:90:ILE:HD12	1.85	0.40
14:J:60:ALA:HA	14:J:63:VAL:HG22	2.04	0.40
14:J:119:ARG:NH1	14:J:121:ARG:HB3	2.33	0.40
18:N:18:ASP:HB2	18:N:21:SER:HB2	2.03	0.40
23:S:53:ARG:O	23:S:56:ARG:HB3	2.21	0.40
24:T:37:ARG:HD3	53:5:1500:G:C8	2.57	0.40
33:i:138:GLN:OE1	33:i:138:GLN:N	2.54	0.40
34:j:67:LYS:HA	34:j:67:LYS:HD2	1.93	0.40
37:m:64:LYS:HA	37:m:67:LEU:HG	2.02	0.40
38:n:98:TYR:HE2	38:n:103:ALA:HA	1.86	0.40
44:t:70:PHE:HD1	44:t:73:LYS:HE3	1.86	0.40
46:v:2:ALA:N	51:3:1392:G:C8	2.89	0.40
47:w:3:VAL:HG21	51:3:79:U:H5''	2.03	0.40
51:3:86:A:OP2	51:3:103:G:N2	2.49	0.40
51:3:434:G:H2'	51:3:435:U:H6	1.86	0.40
51:3:452:U:H3	51:3:2415:A:N6	2.19	0.40
51:3:611:A:C8	51:3:2025:C:H5'	2.56	0.40
51:3:746:G:N1	51:3:756:A:C6	2.90	0.40
51:3:1323:A:H2'	51:3:1324:A:C8	2.57	0.40
51:3:1473:C:H2'	51:3:1474:C:H6	1.87	0.40
51:3:1853:G:H2'	51:3:1854:A:C8	2.56	0.40
51:3:1974:U:H2'	51:3:1975:G:O4'	2.21	0.40
51:3:2847:C:H2'	51:3:2848:A:C8	2.55	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:4:31:G:H2'	52:4:32:G:C8	2.56	0.40
53:5:11:A:H2'	53:5:12:G:C8	2.57	0.40
53:5:177:G:H2'	53:5:178:U:C6	2.57	0.40
53:5:1110:C:C2	53:5:1111:G:C8	3.09	0.40
53:5:1138:U:O2	53:5:1149:G:N2	2.53	0.40
53:5:1246:A:H2'	53:5:1247:G:C8	2.56	0.40
53:5:1499:G:H2'	53:5:1500:G:H8	1.86	0.40
6:B:78:ILE:HD11	6:B:106:ILE:HG21	2.04	0.40
7:C:131:THR:HA	53:5:399:C:H5''	2.03	0.40
8:D:143:ARG:HG2	8:D:148:ARG:HD2	2.04	0.40
11:G:89:GLN:HE22	53:5:871:U:P	2.45	0.40
16:L:19:LEU:O	16:L:22:ILE:HG12	2.21	0.40
20:P:8:VAL:HG22	20:P:62:GLN:NE2	2.37	0.40
25:a:209:ASN:HB2	51:3:1827:U:C2	2.57	0.40
29:e:128:VAL:O	29:e:128:VAL:HG13	2.22	0.40
31:g:60:ARG:HB2	31:g:75:ALA:HB1	2.04	0.40
34:j:51:MET:SD	34:j:52:VAL:HG13	2.61	0.40
35:k:28:LEU:HA	35:k:32:SER:HA	2.04	0.40
44:t:104:PHE:HB3	44:t:107:SER:O	2.22	0.40
51:3:142:A:O2'	51:3:143:A:O4'	2.23	0.40
51:3:266:A:H2'	51:3:267:A:C8	2.56	0.40
51:3:336:C:H2'	51:3:337:U:H6	1.86	0.40
51:3:385:U:H2'	51:3:386:U:C6	2.57	0.40
51:3:449:C:H2'	51:3:450:C:C6	2.57	0.40
51:3:509:G:H2'	51:3:510:G:H8	1.86	0.40
51:3:665:C:H2'	51:3:666:G:C8	2.57	0.40
51:3:820:U:H2'	51:3:821:C:O4'	2.22	0.40
51:3:1697:C:O2'	51:3:2694:A:H4'	2.20	0.40
51:3:2054:C:C2	51:3:2055:A:N7	2.90	0.40
51:3:2181:A:H2'	51:3:2181:A:N3	2.37	0.40
51:3:2339:G:N2	51:3:2393:C:C4	2.89	0.40
51:3:2671:G:H2'	51:3:2672:G:O4'	2.22	0.40
53:5:7:U:H4'	53:5:294:A:H1'	2.03	0.40
53:5:154:G:H2'	53:5:155:C:C6	2.57	0.40
53:5:570:A:O2'	53:5:911:G:O2'	2.35	0.40
53:5:908:A:H2'	53:5:909:A:C8	2.57	0.40
53:5:998:G:H4'	53:5:999:C:H5'	2.04	0.40
53:5:1017:A:H2'	53:5:1018:U:C6	2.57	0.40
53:5:1227:A:H2'	53:5:1228:C:C6	2.57	0.40
53:5:1380:G:H21	53:5:1493:A:H1'	1.86	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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%)	43 (96%)	2 (4%)	0	100	100
2	1	57/59 (97%)	51 (90%)	6 (10%)	0	100	100
3	2	35/37 (95%)	33 (94%)	2 (6%)	0	100	100
4	9	391/394 (99%)	367 (94%)	23 (6%)	1 (0%)	36	72
5	A	238/294 (81%)	223 (94%)	15 (6%)	0	100	100
6	B	213/273 (78%)	192 (90%)	20 (9%)	1 (0%)	24	63
7	C	201/205 (98%)	180 (90%)	21 (10%)	0	100	100
8	D	151/219 (69%)	144 (95%)	7 (5%)	0	100	100
9	E	165/215 (77%)	147 (89%)	18 (11%)	0	100	100
10	F	152/155 (98%)	136 (90%)	15 (10%)	1 (1%)	18	56
11	G	139/142 (98%)	122 (88%)	17 (12%)	0	100	100
12	H	126/132 (96%)	102 (81%)	23 (18%)	1 (1%)	16	54
13	I	99/108 (92%)	91 (92%)	8 (8%)	0	100	100
14	J	112/121 (93%)	107 (96%)	5 (4%)	0	100	100
15	K	134/139 (96%)	120 (90%)	14 (10%)	0	100	100
16	L	116/124 (94%)	100 (86%)	16 (14%)	0	100	100
17	M	58/61 (95%)	53 (91%)	5 (9%)	0	100	100
18	N	81/86 (94%)	81 (100%)	0	0	100	100
19	O	78/94 (83%)	73 (94%)	5 (6%)	0	100	100
20	P	81/85 (95%)	77 (95%)	4 (5%)	0	100	100
21	Q	63/104 (61%)	55 (87%)	7 (11%)	1 (2%)	7	38
22	R	82/87 (94%)	71 (87%)	11 (13%)	0	100	100
23	S	75/87 (86%)	75 (100%)	0	0	100	100
24	T	51/60 (85%)	49 (96%)	2 (4%)	0	100	100
25	a	283/287 (99%)	256 (90%)	27 (10%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
26	b	227/287 (79%)	209 (92%)	18 (8%)	0	100	100
27	c	208/212 (98%)	197 (95%)	11 (5%)	0	100	100
28	d	173/180 (96%)	160 (92%)	13 (8%)	0	100	100
29	e	174/184 (95%)	160 (92%)	14 (8%)	0	100	100
30	f	143/149 (96%)	130 (91%)	13 (9%)	0	100	100
31	g	124/161 (77%)	115 (93%)	7 (6%)	2 (2%)	7	38
32	h	126/137 (92%)	106 (84%)	20 (16%)	0	100	100
33	i	142/146 (97%)	133 (94%)	9 (6%)	0	100	100
34	j	120/122 (98%)	115 (96%)	5 (4%)	0	100	100
35	k	146/151 (97%)	139 (95%)	7 (5%)	0	100	100
36	l	134/139 (96%)	129 (96%)	5 (4%)	0	100	100
37	m	117/124 (94%)	111 (95%)	6 (5%)	0	100	100
38	n	108/116 (93%)	98 (91%)	10 (9%)	0	100	100
39	o	113/119 (95%)	104 (92%)	9 (8%)	0	100	100
40	p	112/127 (88%)	109 (97%)	3 (3%)	0	100	100
41	q	97/100 (97%)	79 (81%)	18 (19%)	0	100	100
42	r	137/159 (86%)	126 (92%)	11 (8%)	0	100	100
43	s	90/237 (38%)	81 (90%)	9 (10%)	0	100	100
44	t	109/111 (98%)	100 (92%)	9 (8%)	0	100	100
45	u	84/104 (81%)	79 (94%)	5 (6%)	0	100	100
46	v	61/65 (94%)	57 (93%)	4 (7%)	0	100	100
47	w	96/111 (86%)	90 (94%)	6 (6%)	0	100	100
48	x	42/97 (43%)	35 (83%)	6 (14%)	1 (2%)	4	27
49	y	54/57 (95%)	49 (91%)	5 (9%)	0	100	100
50	z	48/53 (91%)	45 (94%)	3 (6%)	0	100	100
All	All	6211/7064 (88%)	5704 (92%)	499 (8%)	8 (0%)	49	83

All (8) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
4	9	334	ARG
6	B	103	ASP
31	g	32	MET

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Mol	Chain	Res	Type
12	H	27	LYS
21	Q	79	CYS
31	g	117	ALA
48	x	8	PRO
10	F	81	GLY

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	324/325 (100%)	324 (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%)	180 (99%)	1 (1%)	78	83
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%)	123 (100%)	0	100	100
12	H	111/115 (96%)	111 (100%)	0	100	100
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%)	113 (97%)	4 (3%)	32	54
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

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
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	a	241/243 (99%)	241 (100%)	0	100	100
26	b	186/233 (80%)	186 (100%)	0	100	100
27	c	182/184 (99%)	182 (100%)	0	100	100
28	d	150/154 (97%)	150 (100%)	0	100	100
29	e	153/159 (96%)	153 (100%)	0	100	100
30	f	123/134 (92%)	123 (100%)	0	100	100
31	g	101/129 (78%)	89 (88%)	12 (12%)	5	18
32	h	102/110 (93%)	102 (100%)	0	100	100
33	i	126/128 (98%)	126 (100%)	0	100	100
34	j	103/103 (100%)	103 (100%)	0	100	100
35	k	123/126 (98%)	123 (100%)	0	100	100
36	l	113/115 (98%)	113 (100%)	0	100	100
37	m	105/109 (96%)	105 (100%)	0	100	100
38	n	96/99 (97%)	96 (100%)	0	100	100
39	o	101/105 (96%)	101 (100%)	0	100	100
40	p	100/108 (93%)	100 (100%)	0	100	100
41	q	90/91 (99%)	90 (100%)	0	100	100
42	r	116/132 (88%)	116 (100%)	0	100	100
43	s	82/208 (39%)	82 (100%)	0	100	100
44	t	96/96 (100%)	96 (100%)	0	100	100
45	u	69/85 (81%)	69 (100%)	0	100	100
46	v	58/60 (97%)	58 (100%)	0	100	100
47	w	87/98 (89%)	87 (100%)	0	100	100
48	x	41/86 (48%)	41 (100%)	0	100	100
49	y	48/49 (98%)	45 (94%)	3 (6%)	16	37
50	z	47/50 (94%)	47 (100%)	0	100	100
All	All	5417/6076 (89%)	5397 (100%)	20 (0%)	81	84

All (20) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
7	C	55	GLN
15	K	37	ASN
15	K	120	VAL
15	K	121	GLU
15	K	122	LYS
31	g	26	ILE
31	g	30	THR
31	g	32	MET
31	g	43	LYS
31	g	44	LEU
31	g	46	LYS
31	g	68	PHE
31	g	84	VAL
31	g	88	GLU
31	g	89	ILE
31	g	90	VAL
31	g	115	ASN
49	y	50	ASP
49	y	51	LEU
49	y	52	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (87) such sidechains are listed below:

Mol	Chain	Res	Type
2	1	44	GLN
3	2	36	GLN
4	9	14	ASN
4	9	76	HIS
4	9	79	HIS
4	9	98	GLN
4	9	125	GLN
4	9	302	HIS
5	A	38	ASN
5	A	70	ASN
5	A	77	GLN
5	A	137	GLN
5	A	207	ASN
5	A	221	GLN
6	B	6	ASN
6	B	25	ASN
6	B	47	ASN

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Mol	Chain	Res	Type
7	C	37	GLN
7	C	55	GLN
7	C	81	GLN
7	C	84	ASN
7	C	88	ASN
7	C	125	ASN
8	D	138	HIS
8	D	182	ASN
8	D	202	GLN
9	E	26	GLN
9	E	106	GLN
10	F	147	ASN
11	G	56	ASN
11	G	89	GLN
12	H	33	ASN
13	I	70	GLN
15	K	32	ASN
15	K	37	ASN
15	K	88	GLN
16	L	91	HIS
18	N	2	GLN
20	P	25	GLN
23	S	46	ASN
23	S	77	ASN
24	T	35	HIS
25	a	31	ASN
25	a	58	GLN
25	a	103	ASN
25	a	126	HIS
26	b	86	ASN
26	b	99	GLN
27	c	47	GLN
27	c	76	GLN
27	c	83	HIS
27	c	130	GLN
27	c	162	ASN
29	e	6	ASN
29	e	72	ASN
29	e	77	ASN
30	f	54	GLN
30	f	55	GLN
30	f	100	GLN

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Mol	Chain	Res	Type
30	f	109	GLN
33	i	11	GLN
33	i	17	GLN
33	i	43	ASN
33	i	61	ASN
35	k	129	HIS
35	k	134	GLN
36	l	14	ASN
36	l	113	GLN
37	m	59	ASN
38	n	23	ASN
38	n	37	ASN
39	o	47	ASN
40	p	19	GLN
40	p	36	GLN
40	p	86	ASN
42	r	15	GLN
42	r	52	ASN
42	r	121	GLN
43	s	19	ASN
43	s	56	ASN
44	t	79	GLN
45	u	54	GLN
45	u	90	GLN
46	v	16	ASN
47	w	35	HIS
47	w	90	HIS
49	y	40	HIS

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
51	3	2875/2907 (98%)	806 (28%)	31 (1%)
52	4	103/108 (95%)	33 (32%)	3 (2%)
53	5	1490/1520 (98%)	354 (23%)	3 (0%)
54	6	75/76 (98%)	23 (30%)	2 (2%)
54	7	75/76 (98%)	23 (30%)	2 (2%)
54	8	75/76 (98%)	23 (30%)	2 (2%)
All	All	4693/4763 (98%)	1262 (26%)	43 (0%)

All (1262) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
51	3	9	G
51	3	10	U
51	3	14	U
51	3	15	A
51	3	29	G
51	3	37	G
51	3	38	G
51	3	39	C
51	3	45	U
51	3	48	G
51	3	52	U
51	3	53	G
51	3	58	A
51	3	65	A
51	3	73	A
51	3	75	A
51	3	76	A
51	3	77	G
51	3	86	A
51	3	87	G
51	3	94	A
51	3	98	C
51	3	100	U
51	3	102	A
51	3	103	G
51	3	104	A
51	3	107	C
51	3	110	A
51	3	115	U
51	3	119	A
51	3	120	A
51	3	121	U
51	3	122	G
51	3	126	C
51	3	128	A
51	3	132	G
51	3	134	U
51	3	137	U
51	3	159	G
51	3	163	A
51	3	165	U
51	3	166	A
51	3	170	A

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Mol	Chain	Res	Type
51	3	178	A
51	3	180	A
51	3	181	G
51	3	183	A
51	3	184	A
51	3	186	A
51	3	188	G
51	3	200	A
51	3	203	A
51	3	204	U
51	3	206	U
51	3	208	A
51	3	209	G
51	3	210	U
51	3	219	G
51	3	220	A
51	3	226	A
51	3	227	A
51	3	228	A
51	3	232	A
51	3	237	A
51	3	242	G
51	3	245	U
51	3	246	G
51	3	247	U
51	3	252	G
51	3	254	G
51	3	256	G
51	3	261	A
51	3	266	A
51	3	270	G
51	3	276	A
51	3	281	U
51	3	284	U
51	3	286	A
51	3	287	G
51	3	294	G
51	3	295	U
51	3	296	U
51	3	298	U
51	3	299	A
51	3	300	G

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Mol	Chain	Res	Type
51	3	310	U
51	3	312	U
51	3	314	G
51	3	315	A
51	3	319	G
51	3	328	A
51	3	333	A
51	3	336	C
51	3	345	A
51	3	347	C
51	3	351	G
51	3	357	A
51	3	358	A
51	3	363	G
51	3	364	A
51	3	372	G
51	3	377	U
51	3	393	C
51	3	395	U
51	3	396	A
51	3	397	G
51	3	399	G
51	3	401	G
51	3	402	A
51	3	403	U
51	3	404	C
51	3	407	U
51	3	409	A
51	3	410	G
51	3	411	U
51	3	418	G
51	3	421	A
51	3	422	A
51	3	424	G
51	3	425	U
51	3	426	U
51	3	428	U
51	3	432	G
51	3	437	A
51	3	442	G
51	3	447	G
51	3	448	A

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Mol	Chain	Res	Type
51	3	449	C
51	3	455	G
51	3	460	G
51	3	466	A
51	3	467	U
51	3	478	G
51	3	483	A
51	3	484	U
51	3	485	A
51	3	487	C
51	3	495	U
51	3	500	U
51	3	501	G
51	3	502	A
51	3	509	G
51	3	511	U
51	3	514	A
51	3	515	A
51	3	516	A
51	3	519	A
51	3	520	C
51	3	539	U
51	3	540	A
51	3	543	U
51	3	544	U
51	3	557	G
51	3	562	C
51	3	565	C
51	3	566	G
51	3	573	A
51	3	576	A
51	3	581	A
51	3	583	U
51	3	592	G
51	3	595	U
51	3	597	C
51	3	598	G
51	3	599	U
51	3	601	U
51	3	605	A
51	3	606	G
51	3	610	G

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Mol	Chain	Res	Type
51	3	620	G
51	3	625	G
51	3	638	A
51	3	641	U
51	3	650	G
51	3	656	G
51	3	657	A
51	3	663	A
51	3	670	G
51	3	673	A
51	3	681	A
51	3	682	A
51	3	689	U
51	3	690	U
51	3	693	U
51	3	701	A
51	3	703	A
51	3	704	G
51	3	706	C
51	3	712	A
51	3	720	A
51	3	721	G
51	3	722	C
51	3	730	G
51	3	734	A
51	3	739	G
51	3	740	A
51	3	749	U
51	3	752	C
51	3	761	G
51	3	765	A
51	3	775	C
51	3	780	G
51	3	782	U
51	3	786	A
51	3	787	C
51	3	792	G
51	3	798	G
51	3	799	A
51	3	800	C
51	3	803	G
51	3	807	U

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Mol	Chain	Res	Type
51	3	810	G
51	3	811	G
51	3	817	A
51	3	819	U
51	3	820	U
51	3	823	A
51	3	824	A
51	3	825	U
51	3	828	A
51	3	836	G
51	3	840	G
51	3	842	U
51	3	847	C
51	3	854	A
51	3	856	A
51	3	862	U
51	3	863	U
51	3	868	C
51	3	873	G
51	3	875	G
51	3	881	A
51	3	882	C
51	3	883	A
51	3	885	A
51	3	894	G
51	3	902	U
51	3	907	A
51	3	911	U
51	3	914	G
51	3	917	G
51	3	921	C
51	3	929	G
51	3	930	C
51	3	932	U
51	3	936	G
51	3	937	A
51	3	938	A
51	3	943	A
51	3	944	U
51	3	947	A
51	3	949	C
51	3	951	C

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Mol	Chain	Res	Type
51	3	952	U
51	3	953	G
51	3	968	U
51	3	981	A
51	3	982	G
51	3	987	U
51	3	990	G
51	3	993	A
51	3	994	U
51	3	995	A
51	3	997	G
51	3	1001	C
51	3	1009	A
51	3	1010	G
51	3	1016	A
51	3	1018	G
51	3	1019	A
51	3	1021	C
51	3	1024	A
51	3	1027	U
51	3	1032	A
51	3	1043	C
51	3	1045	A
51	3	1049	U
51	3	1052	A
51	3	1055	A
51	3	1058	U
51	3	1061	A
51	3	1068	U
51	3	1075	G
51	3	1081	A
51	3	1082	A
51	3	1093	U
51	3	1096	U
51	3	1101	U
51	3	1104	A
51	3	1105	A
51	3	1107	C
51	3	1111	C
51	3	1113	U
51	3	1117	U
51	3	1123	A

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Mol	Chain	Res	Type
51	3	1124	G
51	3	1125	U
51	3	1132	C
51	3	1134	G
51	3	1147	G
51	3	1151	U
51	3	1154	U
51	3	1157	G
51	3	1163	G
51	3	1167	U
51	3	1168	A
51	3	1170	C
51	3	1171	G
51	3	1174	G
51	3	1176	U
51	3	1177	A
51	3	1178	A
51	3	1186	A
51	3	1191	A
51	3	1193	U
51	3	1196	U
51	3	1198	G
51	3	1202	A
51	3	1204	A
51	3	1207	U
51	3	1208	A
51	3	1209	U
51	3	1210	A
51	3	1212	C
51	3	1217	G
51	3	1224	G
51	3	1232	U
51	3	1234	U
51	3	1235	U
51	3	1236	G
51	3	1240	U
51	3	1241	U
51	3	1242	G
51	3	1245	G
51	3	1248	A
51	3	1250	A
51	3	1251	G

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Mol	Chain	Res	Type
51	3	1253	G
51	3	1255	G
51	3	1256	A
51	3	1257	G
51	3	1259	A
51	3	1266	G
51	3	1268	U
51	3	1278	G
51	3	1281	A
51	3	1282	G
51	3	1283	A
51	3	1285	U
51	3	1286	G
51	3	1292	A
51	3	1296	G
51	3	1297	U
51	3	1298	A
51	3	1301	G
51	3	1303	U
51	3	1304	U
51	3	1314	A
51	3	1317	C
51	3	1328	A
51	3	1329	U
51	3	1330	U
51	3	1338	G
51	3	1339	U
51	3	1342	C
51	3	1344	U
51	3	1347	A
51	3	1348	C
51	3	1349	C
51	3	1353	G
51	3	1357	U
51	3	1358	C
51	3	1360	U
51	3	1369	U
51	3	1370	A
51	3	1371	G
51	3	1378	C
51	3	1393	A
51	3	1394	A

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Mol	Chain	Res	Type
51	3	1396	A
51	3	1402	G
51	3	1406	A
51	3	1407	U
51	3	1412	A
51	3	1414	C
51	3	1420	A
51	3	1422	U
51	3	1423	A
51	3	1426	C
51	3	1431	A
51	3	1434	U
51	3	1435	A
51	3	1439	U
51	3	1444	C
51	3	1445	U
51	3	1447	A
51	3	1448	U
51	3	1456	C
51	3	1463	G
51	3	1465	U
51	3	1467	U
51	3	1475	C
51	3	1479	A
51	3	1480	A
51	3	1481	U
51	3	1482	U
51	3	1483	G
51	3	1485	A
51	3	1487	U
51	3	1493	A
51	3	1497	A
51	3	1507	G
51	3	1508	G
51	3	1510	A
51	3	1515	A
51	3	1518	C
51	3	1520	A
51	3	1532	A
51	3	1534	A
51	3	1537	A
51	3	1541	A

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Mol	Chain	Res	Type
51	3	1546	U
51	3	1550	G
51	3	1557	G
51	3	1558	A
51	3	1571	G
51	3	1572	U
51	3	1580	G
51	3	1582	G
51	3	1584	U
51	3	1585	A
51	3	1588	A
51	3	1589	A
51	3	1600	A
51	3	1603	A
51	3	1612	U
51	3	1615	G
51	3	1616	G
51	3	1618	U
51	3	1619	A
51	3	1628	G
51	3	1637	A
51	3	1640	G
51	3	1641	A
51	3	1642	G
51	3	1643	A
51	3	1644	A
51	3	1646	G
51	3	1647	A
51	3	1650	A
51	3	1651	C
51	3	1656	A
51	3	1661	A
51	3	1668	G
51	3	1679	U
51	3	1680	A
51	3	1681	G
51	3	1682	C
51	3	1690	C
51	3	1694	A
51	3	1695	G
51	3	1698	A
51	3	1701	G

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Mol	Chain	Res	Type
51	3	1702	A
51	3	1703	A
51	3	1706	C
51	3	1708	G
51	3	1709	C
51	3	1715	A
51	3	1716	A
51	3	1719	C
51	3	1727	U
51	3	1732	A
51	3	1733	G
51	3	1737	G
51	3	1748	U
51	3	1751	A
51	3	1752	A
51	3	1761	C
51	3	1762	A
51	3	1763	G
51	3	1764	U
51	3	1766	A
51	3	1767	A
51	3	1768	G
51	3	1769	A
51	3	1770	A
51	3	1771	C
51	3	1780	A
51	3	1783	G
51	3	1784	U
51	3	1788	A
51	3	1789	C
51	3	1791	A
51	3	1807	C
51	3	1808	C
51	3	1809	A
51	3	1815	U
51	3	1816	A
51	3	1821	G
51	3	1823	U
51	3	1827	U
51	3	1836	A
51	3	1839	C
51	3	1842	G

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Mol	Chain	Res	Type
51	3	1851	U
51	3	1855	A
51	3	1865	A
51	3	1868	A
51	3	1873	A
51	3	1886	C
51	3	1890	U
51	3	1891	A
51	3	1896	A
51	3	1906	G
51	3	1907	A
51	3	1909	C
51	3	1910	G
51	3	1913	G
51	3	1914	G
51	3	1920	A
51	3	1927	C
51	3	1934	A
51	3	1936	G
51	3	1937	G
51	3	1938	U
51	3	1944	A
51	3	1945	A
51	3	1951	A
51	3	1952	G
51	3	1958	U
51	3	1962	U
51	3	1965	C
51	3	1966	G
51	3	1972	C
51	3	1973	U
51	3	1974	U
51	3	1977	A
51	3	1979	G
51	3	1989	U
51	3	1992	C
51	3	1998	U
51	3	1999	G
51	3	2000	U
51	3	2002	U
51	3	2003	C
51	3	2004	G

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Mol	Chain	Res	Type
51	3	2009	U
51	3	2010	A
51	3	2020	A
51	3	2029	U
51	3	2030	A
51	3	2033	G
51	3	2035	U
51	3	2036	G
51	3	2037	A
51	3	2038	A
51	3	2040	A
51	3	2041	C
51	3	2046	G
51	3	2050	G
51	3	2055	A
51	3	2057	C
51	3	2062	C
51	3	2063	G
51	3	2067	A
51	3	2068	G
51	3	2069	A
51	3	2070	C
51	3	2076	G
51	3	2081	U
51	3	2083	U
51	3	2084	A
51	3	2087	G
51	3	2095	A
51	3	2097	A
51	3	2100	G
51	3	2101	A
51	3	2106	G
51	3	2107	A
51	3	2110	U
51	3	2111	U
51	3	2112	A
51	3	2114	C
51	3	2116	U
51	3	2117	G
51	3	2118	U
51	3	2123	A
51	3	2124	A

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Mol	Chain	Res	Type
51	3	2126	A
51	3	2127	G
51	3	2139	C
51	3	2140	G
51	3	2152	C
51	3	2155	G
51	3	2164	G
51	3	2165	A
51	3	2171	A
51	3	2173	G
51	3	2177	G
51	3	2179	A
51	3	2180	U
51	3	2193	U
51	3	2195	U
51	3	2197	U
51	3	2198	G
51	3	2199	C
51	3	2200	U
51	3	2201	G
51	3	2202	U
51	3	2203	U
51	3	2206	A
51	3	2212	U
51	3	2219	U
51	3	2220	A
51	3	2222	C
51	3	2231	A
51	3	2233	A
51	3	2244	U
51	3	2246	G
51	3	2247	G
51	3	2251	U
51	3	2252	U
51	3	2254	G
51	3	2257	U
51	3	2262	C
51	3	2267	G
51	3	2276	A
51	3	2277	A
51	3	2278	G
51	3	2286	A

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Mol	Chain	Res	Type
51	3	2287	G
51	3	2291	U
51	3	2293	C
51	3	2294	A
51	3	2295	A
51	3	2297	G
51	3	2305	C
51	3	2312	G
51	3	2313	U
51	3	2316	G
51	3	2317	A
51	3	2328	A
51	3	2330	A
51	3	2333	G
51	3	2334	U
51	3	2335	A
51	3	2341	G
51	3	2342	U
51	3	2343	A
51	3	2344	A
51	3	2350	C
51	3	2351	U
51	3	2353	G
51	3	2355	C
51	3	2358	U
51	3	2362	A
51	3	2375	A
51	3	2380	U
51	3	2381	G
51	3	2391	G
51	3	2393	C
51	3	2410	C
51	3	2411	C
51	3	2414	U
51	3	2418	G
51	3	2423	G
51	3	2431	U
51	3	2433	A
51	3	2436	G
51	3	2437	G
51	3	2438	A
51	3	2439	U

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Mol	Chain	Res	Type
51	3	2440	A
51	3	2442	A
51	3	2443	A
51	3	2449	U
51	3	2455	G
51	3	2456	A
51	3	2457	U
51	3	2459	A
51	3	2461	A
51	3	2477	A
51	3	2481	U
51	3	2483	C
51	3	2484	A
51	3	2486	A
51	3	2488	C
51	3	2491	C
51	3	2492	G
51	3	2497	U
51	3	2499	U
51	3	2502	G
51	3	2503	G
51	3	2505	A
51	3	2506	C
51	3	2507	C
51	3	2508	U
51	3	2509	C
51	3	2511	A
51	3	2513	G
51	3	2515	C
51	3	2521	A
51	3	2526	A
51	3	2528	C
51	3	2538	A
51	3	2543	G
51	3	2561	G
51	3	2562	U
51	3	2569	A
51	3	2571	U
51	3	2572	A
51	3	2574	A
51	3	2575	G
51	3	2576	A

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Mol	Chain	Res	Type
51	3	2578	A
51	3	2580	A
51	3	2581	C
51	3	2584	G
51	3	2589	G
51	3	2600	G
51	3	2604	U
51	3	2605	G
51	3	2609	C
51	3	2610	A
51	3	2615	G
51	3	2618	C
51	3	2619	C
51	3	2621	U
51	3	2624	C
51	3	2631	G
51	3	2636	U
51	3	2637	A
51	3	2641	A
51	3	2644	U
51	3	2647	A
51	3	2649	G
51	3	2652	U
51	3	2654	U
51	3	2664	U
51	3	2668	A
51	3	2669	G
51	3	2681	G
51	3	2683	G
51	3	2690	U
51	3	2693	U
51	3	2697	C
51	3	2698	U
51	3	2715	C
51	3	2721	C
51	3	2728	U
51	3	2732	A
51	3	2734	C
51	3	2735	G
51	3	2737	G
51	3	2739	C
51	3	2740	U

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Mol	Chain	Res	Type
51	3	2741	A
51	3	2747	U
51	3	2752	G
51	3	2756	A
51	3	2764	U
51	3	2765	A
51	3	2773	A
51	3	2774	A
51	3	2786	A
51	3	2798	A
51	3	2804	C
51	3	2806	A
51	3	2807	G
51	3	2808	A
51	3	2809	A
51	3	2810	A
51	3	2811	G
51	3	2813	A
51	3	2814	A
51	3	2815	G
51	3	2822	C
51	3	2828	C
51	3	2837	U
51	3	2839	A
51	3	2840	U
51	3	2850	G
51	3	2853	U
51	3	2854	A
51	3	2858	A
51	3	2863	G
51	3	2865	U
51	3	2866	A
51	3	2871	G
51	3	2876	G
51	3	2877	A
51	3	2878	G
51	3	2879	U
51	3	2881	A
51	3	2882	U
51	3	2883	A
51	3	2884	C
51	3	2888	U

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Mol	Chain	Res	Type
51	3	2889	U
51	3	2890	G
51	3	2895	A
51	3	2896	G
51	3	2897	G
51	3	2898	A
51	3	2899	C
52	4	4	G
52	4	9	C
52	4	10	C
52	4	11	A
52	4	14	U
52	4	21	G
52	4	22	G
52	4	23	A
52	4	27	A
52	4	30	U
52	4	35	C
52	4	38	U
52	4	39	U
52	4	42	G
52	4	46	C
52	4	48	A
52	4	49	G
52	4	50	C
52	4	51	A
52	4	55	A
52	4	59	A
52	4	60	C
52	4	77	G
52	4	78	C
52	4	79	U
52	4	80	G
52	4	86	G
52	4	88	G
52	4	89	A
52	4	99	A
52	4	102	A
52	4	103	C
52	4	108	C
53	5	8	G
53	5	10	G

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Mol	Chain	Res	Type
53	5	24	C
53	5	33	A
53	5	40	G
53	5	48	C
53	5	49	C
53	5	50	U
53	5	52	A
53	5	84	U
53	5	86	A
53	5	88	A
53	5	94	A
53	5	106	C
53	5	107	A
53	5	112	U
53	5	114	C
53	5	115	A
53	5	117	U
53	5	125	A
53	5	130	G
53	5	135	A
53	5	137	A
53	5	145	G
53	5	149	G
53	5	163	G
53	5	187	A
53	5	193	G
53	5	194	U
53	5	195	U
53	5	197	A
53	5	198	A
53	5	210	G
53	5	223	G
53	5	230	G
53	5	236	C
53	5	239	A
53	5	240	U
53	5	241	C
53	5	243	G
53	5	246	A
53	5	247	G
53	5	250	G
53	5	253	G

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Mol	Chain	Res	Type
53	5	262	G
53	5	263	C
53	5	269	A
53	5	272	G
53	5	275	A
53	5	276	U
53	5	277	G
53	5	285	G
53	5	290	G
53	5	294	A
53	5	295	G
53	5	299	U
53	5	301	G
53	5	302	A
53	5	311	A
53	5	312	A
53	5	321	A
53	5	324	C
53	5	325	A
53	5	326	C
53	5	328	G
53	5	341	C
53	5	342	G
53	5	344	G
53	5	347	G
53	5	348	C
53	5	352	A
53	5	357	G
53	5	359	A
53	5	362	U
53	5	363	U
53	5	364	U
53	5	365	U
53	5	368	C
53	5	369	A
53	5	371	U
53	5	374	G
53	5	377	A
53	5	378	A
53	5	379	A
53	5	384	G
53	5	387	G

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Mol	Chain	Res	Type
53	5	388	G
53	5	400	G
53	5	402	G
53	5	408	U
53	5	409	G
53	5	413	G
53	5	417	U
53	5	418	U
53	5	419	A
53	5	420	A
53	5	426	U
53	5	449	A
53	5	450	U
53	5	452	A
53	5	453	C
53	5	457	A
53	5	461	G
53	5	464	A
53	5	468	G
53	5	469	C
53	5	471	A
53	5	473	A
53	5	476	U
53	5	477	U
53	5	478	G
53	5	481	U
53	5	482	G
53	5	483	U
53	5	488	U
53	5	493	A
53	5	495	U
53	5	497	A
53	5	509	C
53	5	516	C
53	5	517	C
53	5	519	G
53	5	525	G
53	5	526	C
53	5	529	U
53	5	530	A
53	5	531	A
53	5	537	A

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Mol	Chain	Res	Type
53	5	543	C
53	5	545	A
53	5	550	U
53	5	557	A
53	5	558	U
53	5	560	U
53	5	562	U
53	5	564	G
53	5	569	U
53	5	570	A
53	5	571	A
53	5	573	G
53	5	574	C
53	5	575	A
53	5	586	G
53	5	594	A
53	5	595	G
53	5	605	A
53	5	617	U
53	5	628	A
53	5	632	A
53	5	637	A
53	5	646	A
53	5	650	A
53	5	653	G
53	5	656	U
53	5	662	G
53	5	672	A
53	5	683	G
53	5	684	A
53	5	690	G
53	5	694	U
53	5	698	U
53	5	699	A
53	5	709	A
53	5	711	G
53	5	715	A
53	5	718	A
53	5	719	G
53	5	720	U
53	5	721	G
53	5	731	A

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Mol	Chain	Res	Type
53	5	734	A
53	5	745	U
53	5	750	A
53	5	752	G
53	5	756	A
53	5	763	A
53	5	774	A
53	5	784	A
53	5	787	A
53	5	788	G
53	5	790	U
53	5	791	A
53	5	801	U
53	5	802	C
53	5	803	C
53	5	813	A
53	5	814	C
53	5	815	G
53	5	817	U
53	5	818	A
53	5	820	A
53	5	825	A
53	5	829	G
53	5	838	A
53	5	866	A
53	5	867	A
53	5	870	A
53	5	877	C
53	5	881	G
53	5	883	A
53	5	885	U
53	5	895	A
53	5	908	A
53	5	910	C
53	5	911	G
53	5	917	G
53	5	918	A
53	5	921	G
53	5	922	G
53	5	923	G
53	5	929	C
53	5	930	A

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Mol	Chain	Res	Type
53	5	933	A
53	5	934	G
53	5	937	G
53	5	940	G
53	5	941	A
53	5	953	A
53	5	955	U
53	5	956	U
53	5	964	A
53	5	966	A
53	5	970	A
53	5	971	A
53	5	972	A
53	5	975	C
53	5	976	U
53	5	987	U
53	5	988	G
53	5	989	A
53	5	997	G
53	5	1000	A
53	5	1002	A
53	5	1003	G
53	5	1006	A
53	5	1013	C
53	5	1014	A
53	5	1015	U
53	5	1016	A
53	5	1019	G
53	5	1030	G
53	5	1033	U
53	5	1037	A
53	5	1039	G
53	5	1041	G
53	5	1042	G
53	5	1044	G
53	5	1045	C
53	5	1047	U
53	5	1056	U
53	5	1057	C
53	5	1058	A
53	5	1060	C
53	5	1070	G

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Mol	Chain	Res	Type
53	5	1073	A
53	5	1075	G
53	5	1077	U
53	5	1083	A
53	5	1085	G
53	5	1086	U
53	5	1089	C
53	5	1092	A
53	5	1094	C
53	5	1103	C
53	5	1104	C
53	5	1112	U
53	5	1113	U
53	5	1118	A
53	5	1120	A
53	5	1122	U
53	5	1123	G
53	5	1124	U
53	5	1129	C
53	5	1133	A
53	5	1134	C
53	5	1135	U
53	5	1141	U
53	5	1142	G
53	5	1154	A
53	5	1156	G
53	5	1159	A
53	5	1168	G
53	5	1169	U
53	5	1171	A
53	5	1172	A
53	5	1173	A
53	5	1175	C
53	5	1187	U
53	5	1188	A
53	5	1189	U
53	5	1199	U
53	5	1200	G
53	5	1201	C
53	5	1211	A
53	5	1215	U
53	5	1216	G

Continued on next page...

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Mol	Chain	Res	Type
53	5	1233	G
53	5	1235	C
53	5	1243	A
53	5	1245	A
53	5	1253	A
53	5	1255	A
53	5	1260	U
53	5	1261	A
53	5	1270	C
53	5	1272	C
53	5	1276	U
53	5	1279	G
53	5	1291	C
53	5	1294	U
53	5	1296	C
53	5	1297	G
53	5	1306	A
53	5	1310	C
53	5	1313	A
53	5	1315	U
53	5	1316	C
53	5	1319	U
53	5	1335	G
53	5	1343	G
53	5	1353	C
53	5	1354	G
53	5	1356	U
53	5	1366	U
53	5	1369	A
53	5	1374	C
53	5	1375	C
53	5	1381	U
53	5	1394	G
53	5	1400	A
53	5	1403	A
53	5	1404	U
53	5	1408	A
53	5	1417	U
53	5	1423	C
53	5	1429	G
53	5	1431	A
53	5	1439	G

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Mol	Chain	Res	Type
53	5	1451	A
53	5	1457	G
53	5	1462	G
53	5	1465	U
53	5	1466	U
53	5	1467	A
53	5	1468	A
53	5	1474	A
53	5	1478	A
53	5	1480	G
53	5	1481	U
53	5	1482	A
53	5	1495	C
53	5	1504	G
53	5	1505	G
53	5	1508	C
54	6	5	C
54	6	17	U
54	6	19	G
54	6	21	U
54	6	22	A
54	6	23	G
54	6	29	C
54	6	34	U
54	6	35	G
54	6	43	G
54	6	44	U
54	6	48	U
54	6	50	G
54	6	56	U
54	6	57	C
54	6	58	G
54	6	59	A
54	6	61	U
54	6	71	A
54	6	72	C
54	6	73	C
54	6	75	C
54	6	76	C
54	7	5	C
54	7	17	U
54	7	19	G

Continued on next page...

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Mol	Chain	Res	Type
54	7	21	U
54	7	22	A
54	7	23	G
54	7	29	C
54	7	34	U
54	7	35	G
54	7	43	G
54	7	44	U
54	7	48	U
54	7	50	G
54	7	56	U
54	7	57	C
54	7	58	G
54	7	59	A
54	7	61	U
54	7	71	A
54	7	72	C
54	7	73	C
54	7	75	C
54	7	76	C
54	8	5	C
54	8	17	U
54	8	19	G
54	8	21	U
54	8	22	A
54	8	23	G
54	8	29	C
54	8	34	U
54	8	35	G
54	8	43	G
54	8	44	U
54	8	48	U
54	8	50	G
54	8	56	U
54	8	57	C
54	8	58	G
54	8	59	A
54	8	61	U
54	8	71	A
54	8	72	C
54	8	73	C
54	8	75	C

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Mol	Chain	Res	Type
54	8	76	C

All (43) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
51	3	409	A
51	3	410	G
51	3	423	C
51	3	425	U
51	3	466	A
51	3	500	U
51	3	513	A
51	3	688	U
51	3	862	U
51	3	881	A
51	3	952	U
51	3	1017	A
51	3	1048	A
51	3	1209	U
51	3	1297	U
51	3	1481	U
51	3	1507	G
51	3	1583	G
51	3	1587	U
51	3	1588	A
51	3	1820	U
51	3	2002	U
51	3	2126	A
51	3	2164	G
51	3	2341	G
51	3	2504	C
51	3	2604	U
51	3	2668	A
51	3	2764	U
51	3	2862	U
51	3	2897	G
52	4	10	C
52	4	54	U
52	4	59	A
53	5	196	G
53	5	419	A
53	5	1123	G

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Mol	Chain	Res	Type
54	6	16	G
54	6	60	U
54	7	16	G
54	7	60	U
54	8	16	G
54	8	60	U

5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

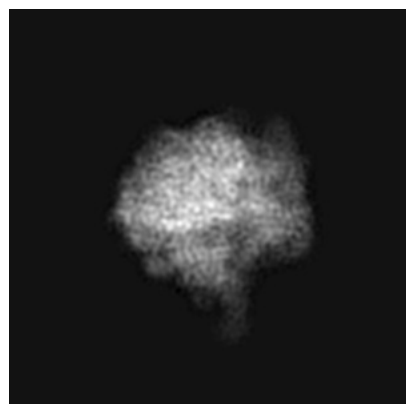
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-13274. These allow visual inspection of the internal detail of the map and identification of artifacts.

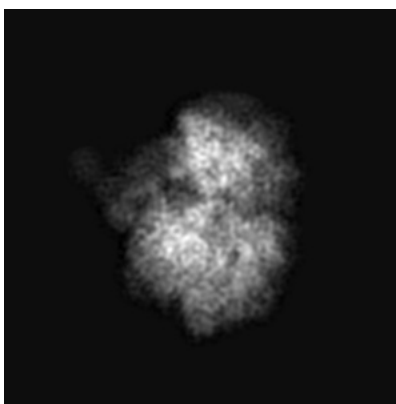
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

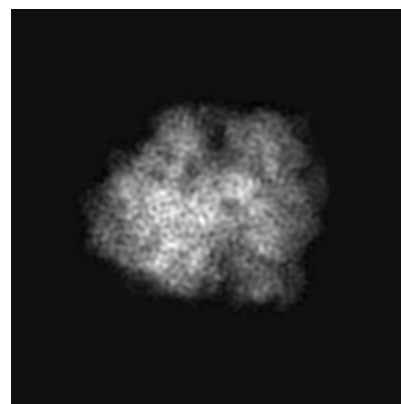
6.1.1 Primary map



X

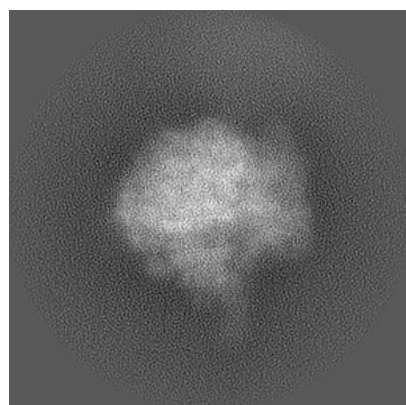


Y

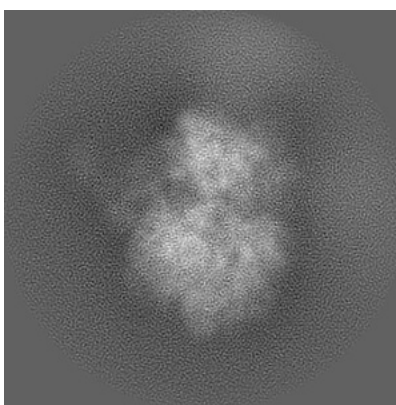


Z

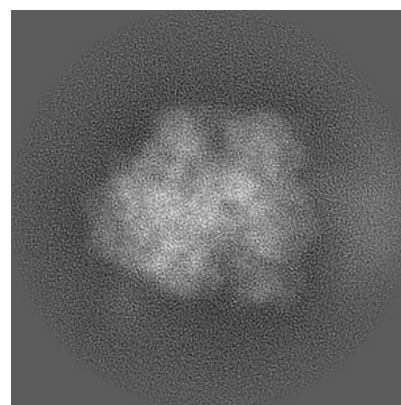
6.1.2 Raw map



X



Y

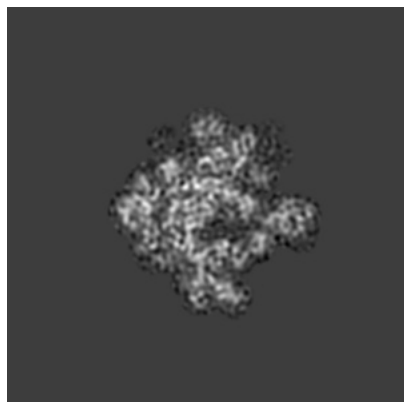


Z

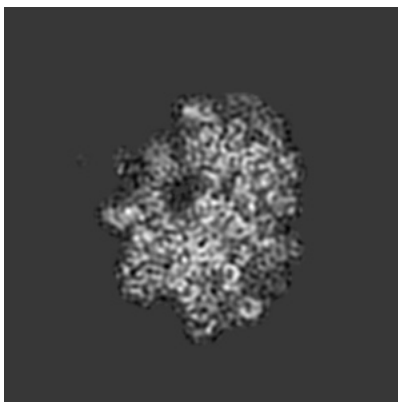
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

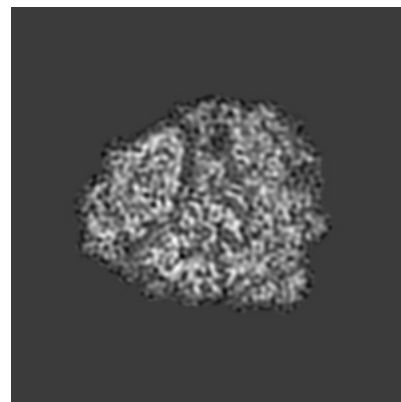
6.2.1 Primary map



X Index: 128

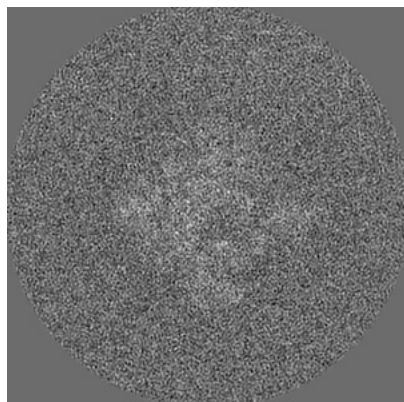


Y Index: 128

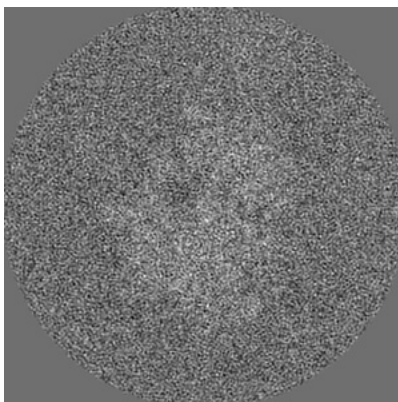


Z Index: 128

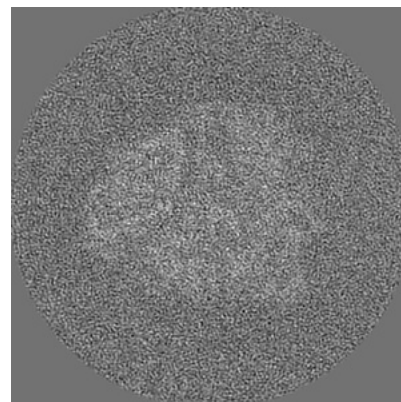
6.2.2 Raw map



X Index: 128



Y Index: 128

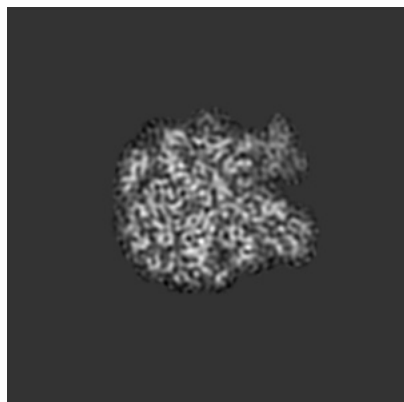


Z Index: 128

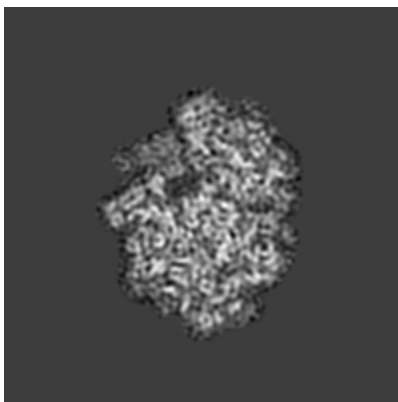
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

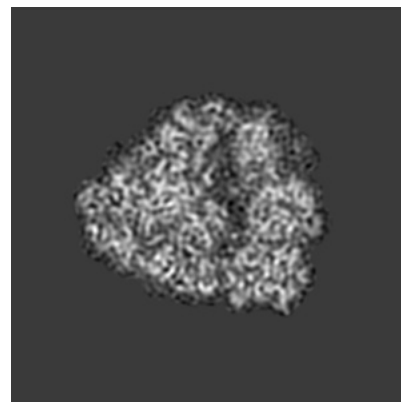
6.3.1 Primary map



X Index: 103

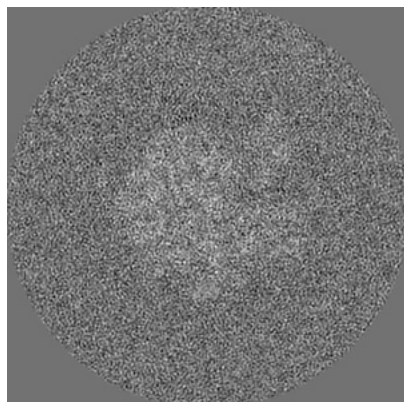


Y Index: 120

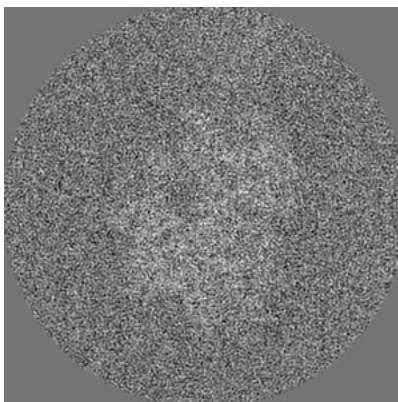


Z Index: 123

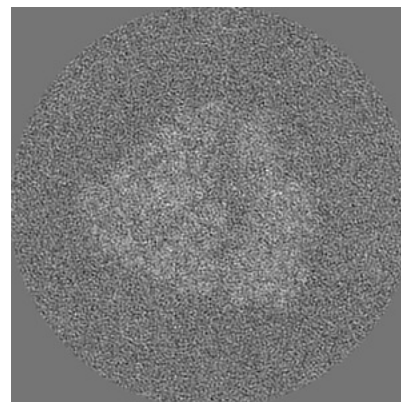
6.3.2 Raw map



X Index: 117



Y Index: 130

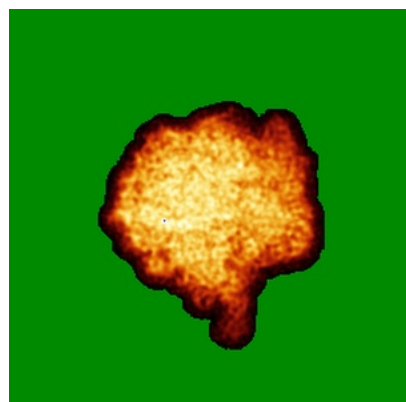


Z Index: 123

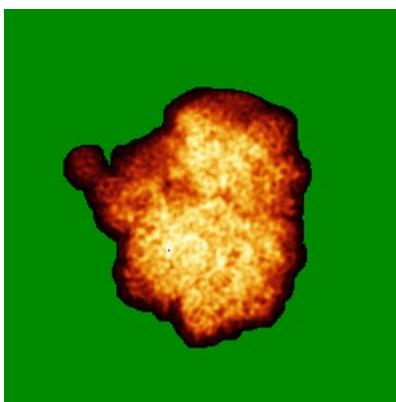
The images above show the largest variance slices of the map in three orthogonal directions.

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

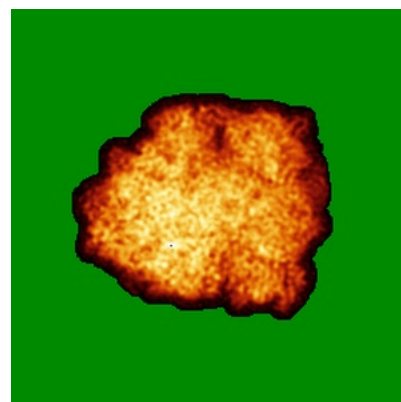
6.4.1 Primary map



X

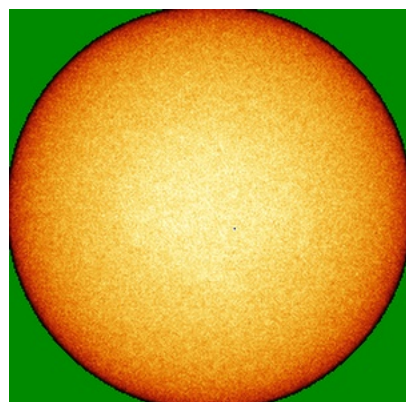


Y

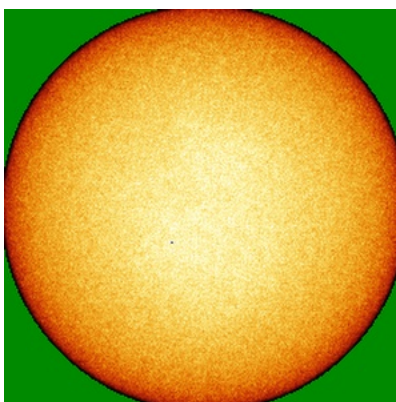


Z

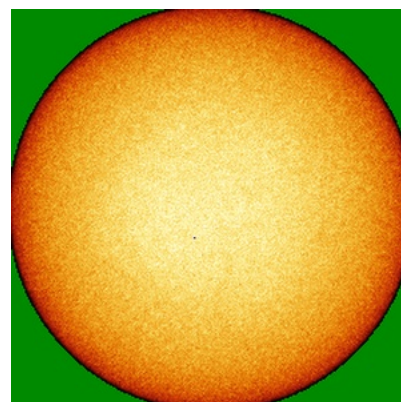
6.4.2 Raw map



X



Y



Z

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

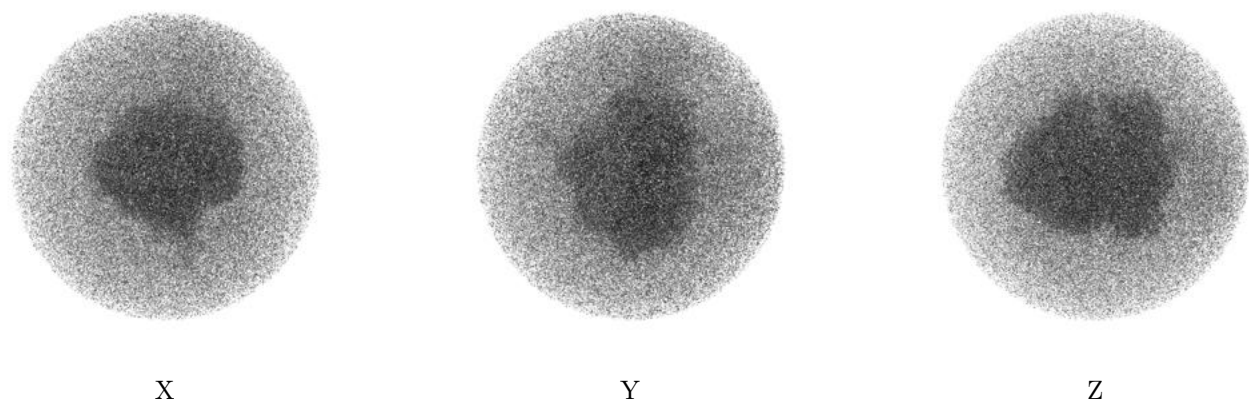
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.47. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

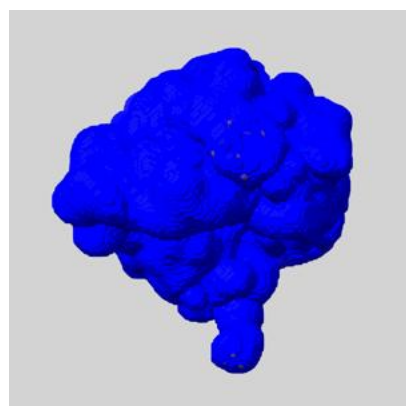
6.6 Mask visualisation [i](#)

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

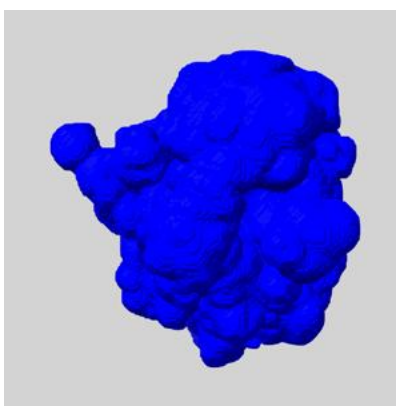
A mask typically either:

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

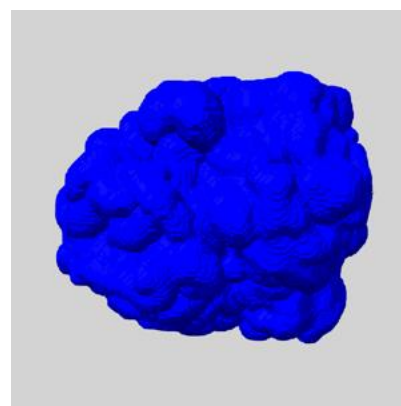
6.6.1 emd_13274_msk_1.map [i](#)



X



Y

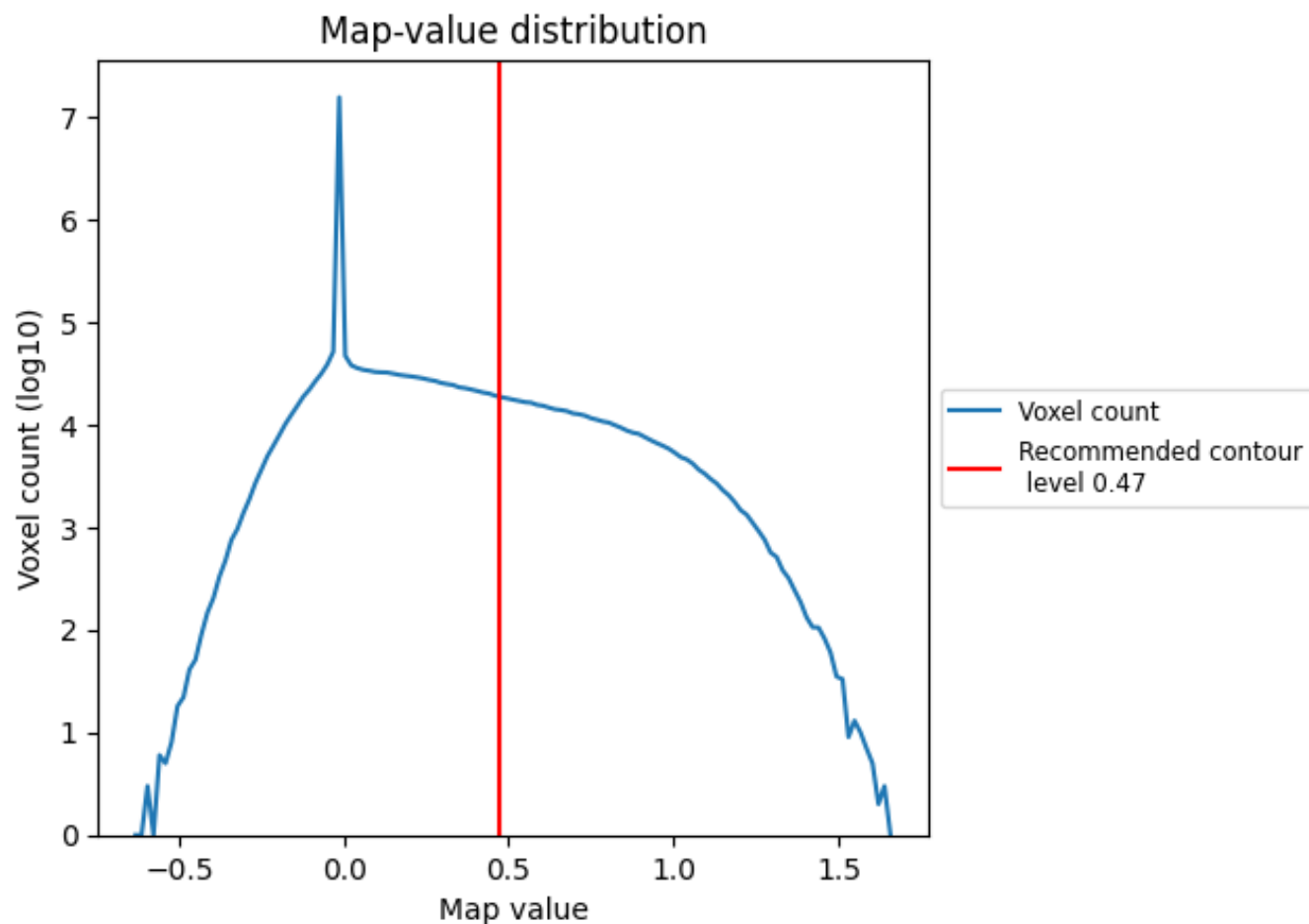


Z

7 Map analysis [i](#)

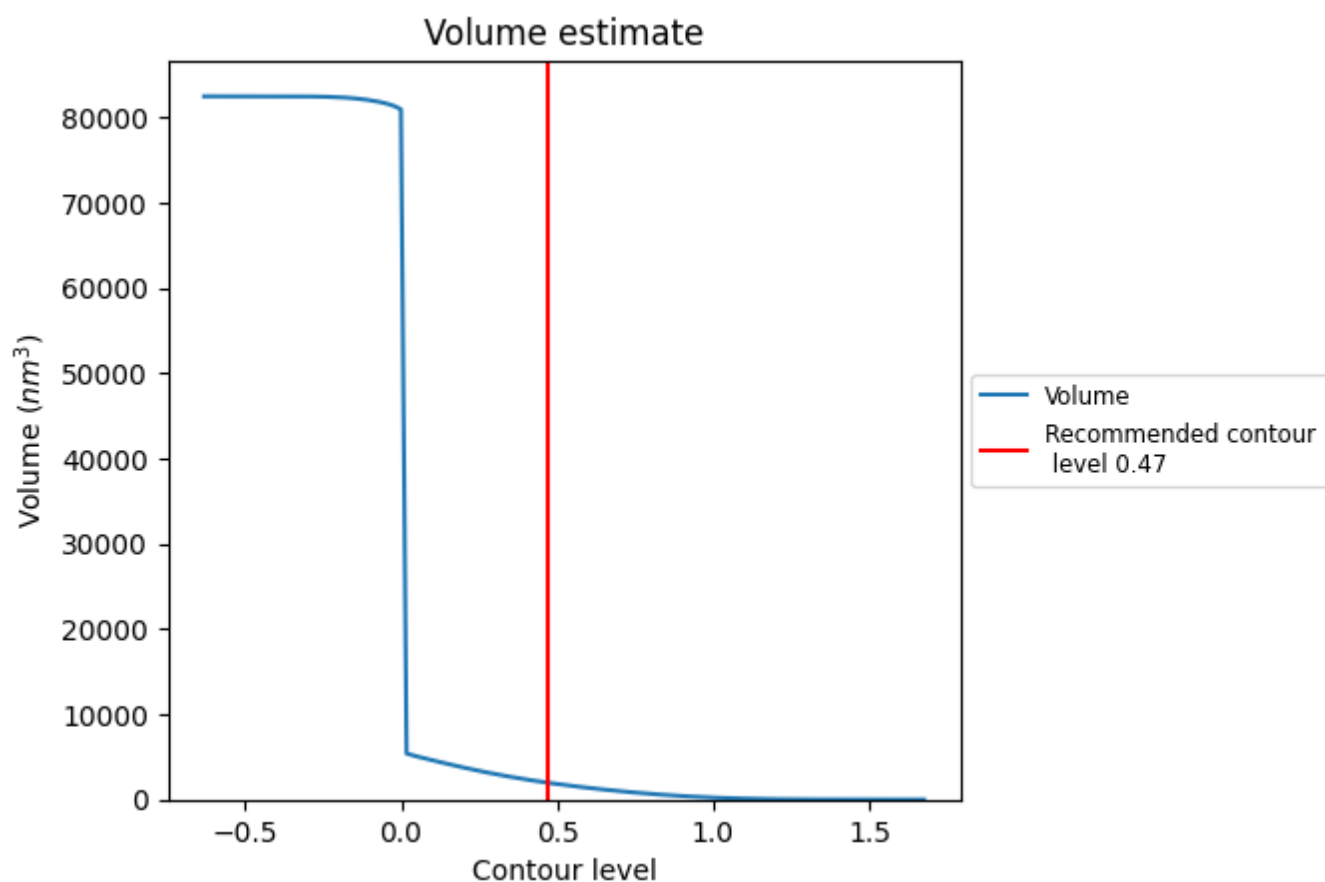
This section contains the results of statistical analysis of the map.

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.

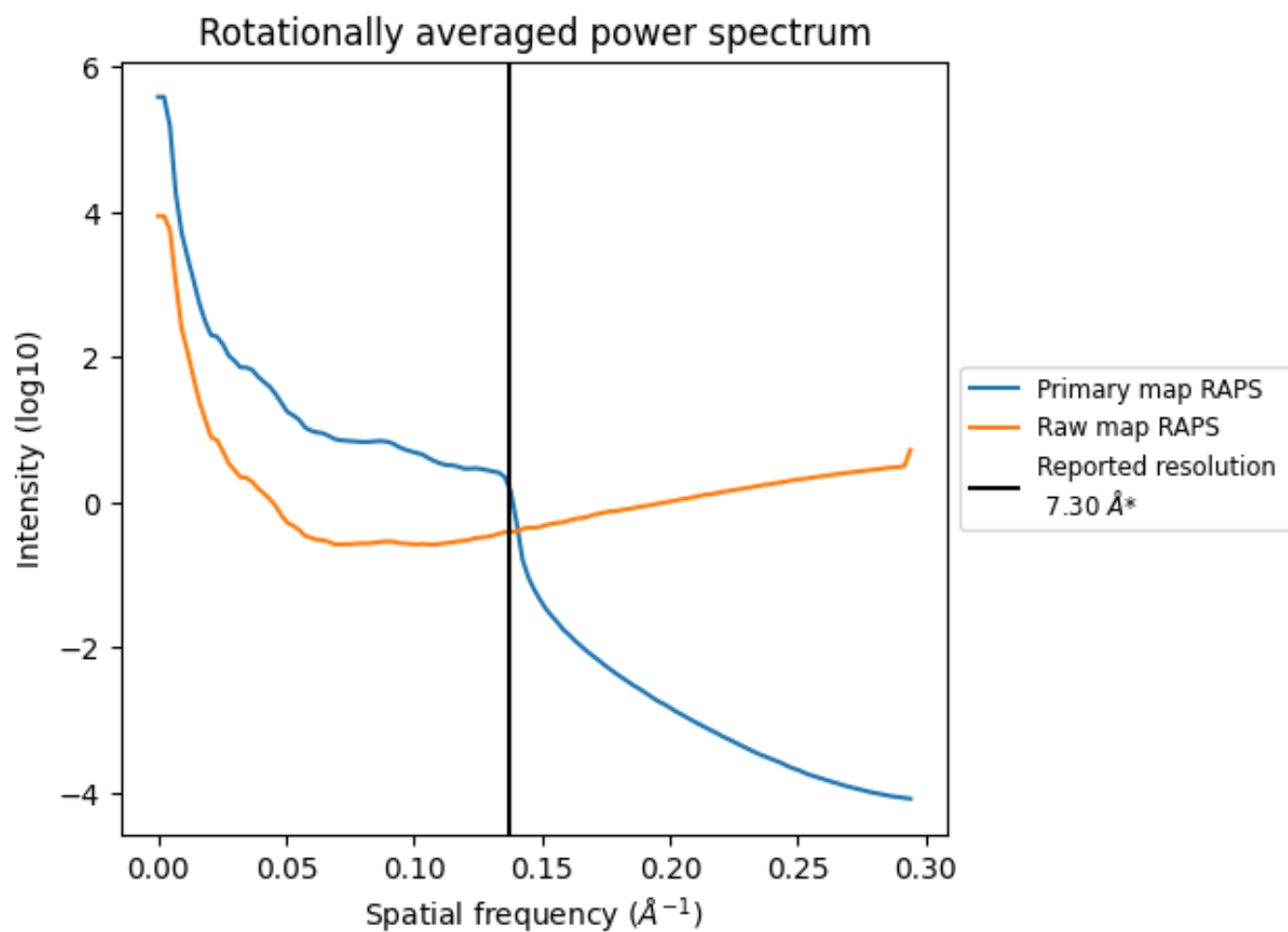
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1977 nm³; this corresponds to an approximate mass of 1786 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 ⓘ

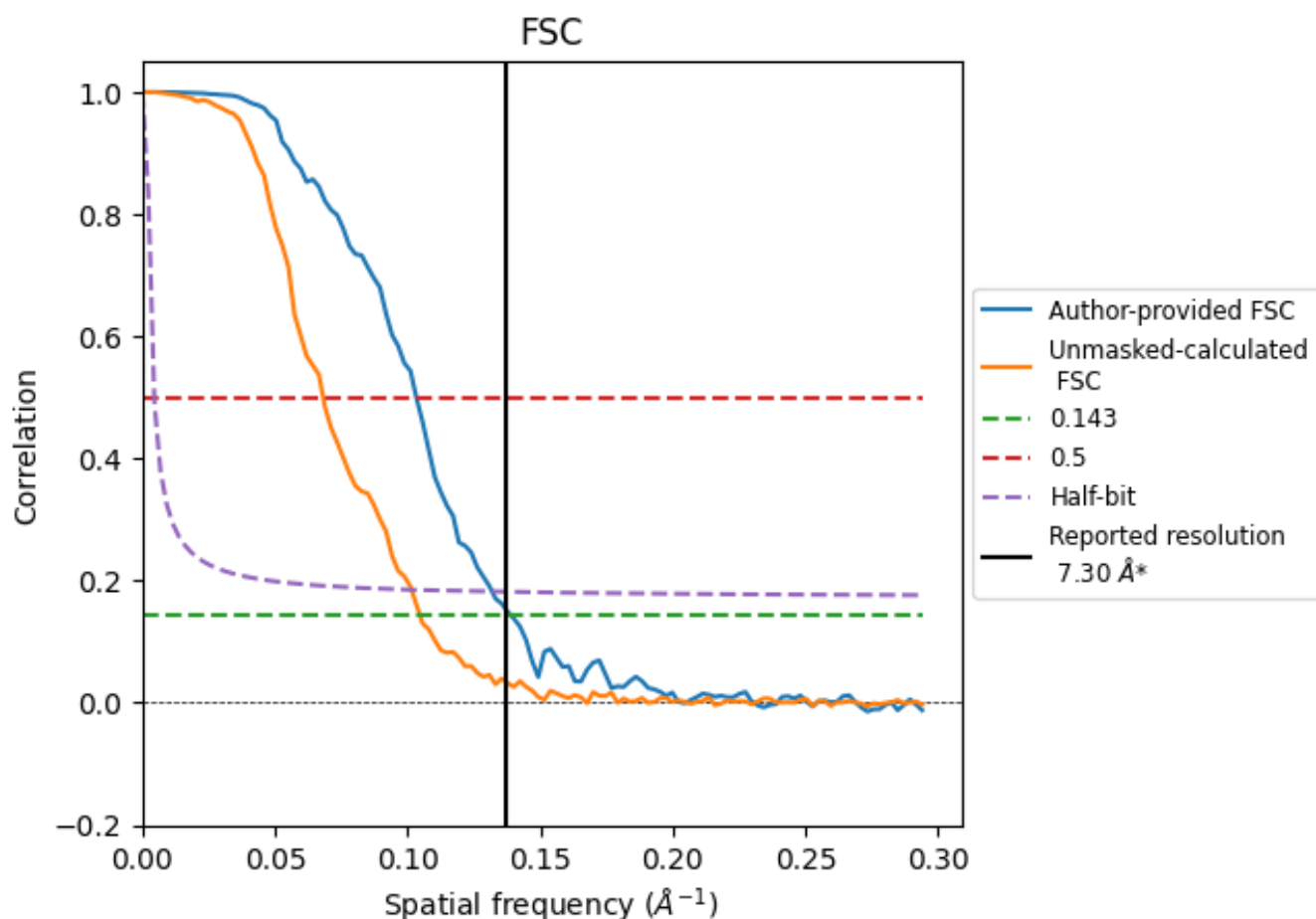


*Reported resolution corresponds to spatial frequency of 0.137 $\text{\AA}^{-1}$

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 0.137 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

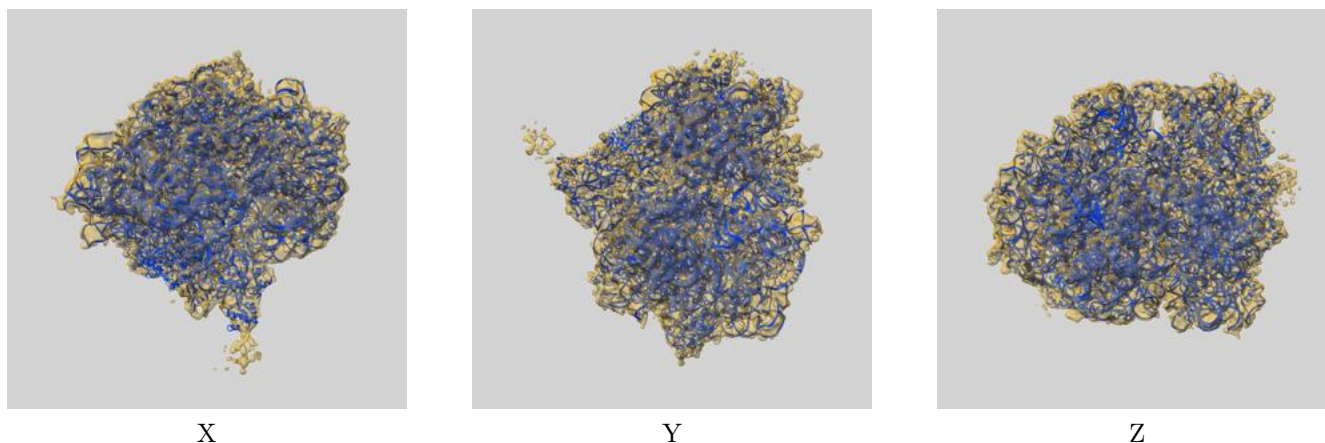
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	7.30	-	-
Author-provided FSC curve	7.19	9.68	7.58
Unmasked-calculated*	9.55	14.66	9.85

*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 9.55 differs from the reported value 7.3 by more than 10 %

9 Map-model fit [i](#)

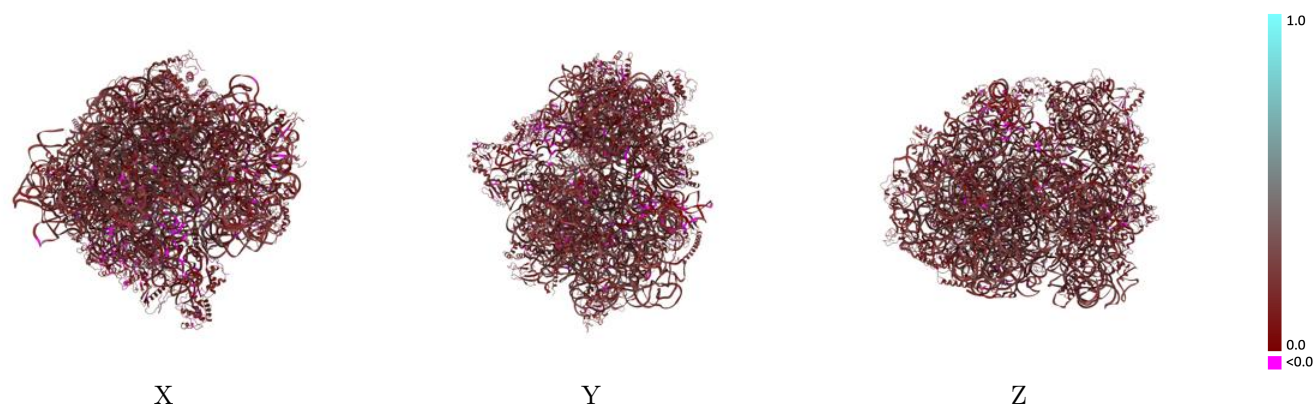
This section contains information regarding the fit between EMDB map EMD-13274 and PDB model 7PAJ. Per-residue inclusion information can be found in section [3](#) on page [14](#).

9.1 Map-model overlay [i](#)



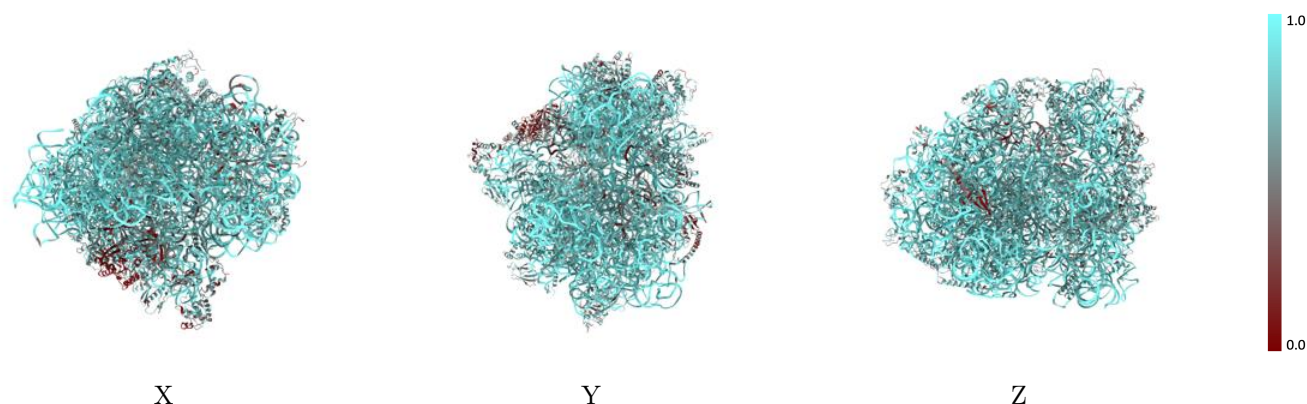
The images above show the 3D surface view of the map at the recommended contour level 0.47 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



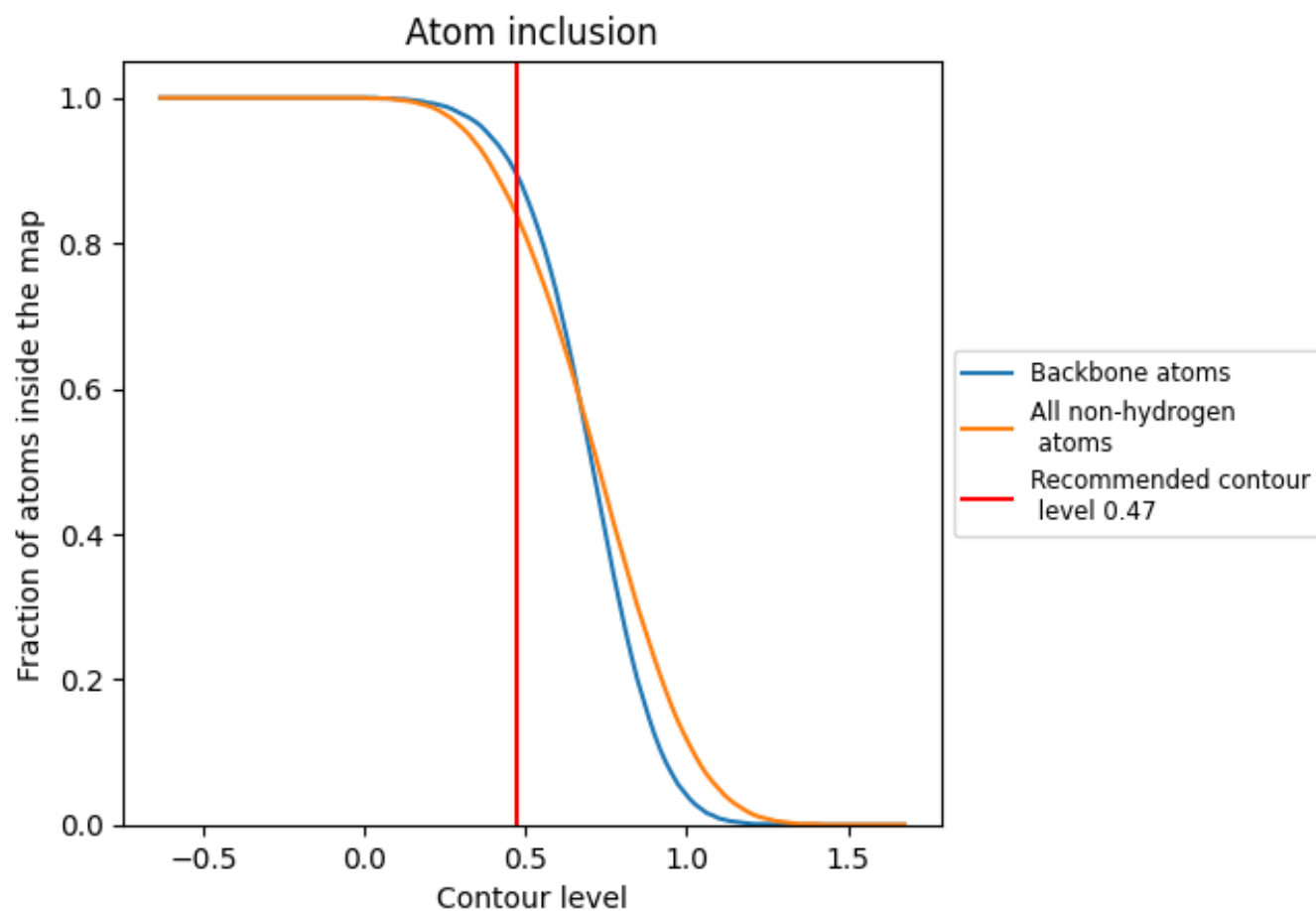
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.47).

9.4 Atom inclusion [i](#)



At the recommended contour level, 90% of all backbone atoms, 84% 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 (0.47) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8420	 0.1960
0	 0.7780	 0.1690
1	 0.7550	 0.1730
2	 0.7600	 0.1510
3	 0.9510	 0.2120
4	 0.9550	 0.2220
5	 0.9510	 0.2100
6	 0.5970	 0.0750
7	 0.8870	 0.1850
8	 0.4920	 0.0950
9	 0.1920	 0.1340
A	 0.6510	 0.1940
B	 0.6340	 0.1810
C	 0.6620	 0.1730
D	 0.6780	 0.1840
E	 0.6230	 0.2000
F	 0.6470	 0.1790
G	 0.6710	 0.1730
H	 0.6600	 0.1570
I	 0.6150	 0.1580
J	 0.6930	 0.1750
K	 0.6990	 0.1740
L	 0.6560	 0.1730
M	 0.6610	 0.1520
N	 0.6800	 0.1880
O	 0.7410	 0.1650
P	 0.6740	 0.1740
Q	 0.7210	 0.1780
R	 0.6540	 0.1550
S	 0.7620	 0.1860
T	 0.6940	 0.1860
a	 0.7350	 0.1660
b	 0.7110	 0.1740
c	 0.6980	 0.1860
d	 0.6830	 0.1660



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Chain	Atom inclusion	Q-score
e	 0.6810	 0.1940
f	 0.3300	 0.1680
g	 0.5540	 0.1750
h	 0.4260	 0.1440
i	 0.7600	 0.1900
j	 0.6620	 0.1870
k	 0.7420	 0.1890
l	 0.7710	 0.1920
m	 0.7580	 0.1820
n	 0.7070	 0.1700
o	 0.6660	 0.1910
p	 0.7560	 0.1650
q	 0.6670	 0.1810
r	 0.7480	 0.1800
s	 0.7090	 0.1870
t	 0.5920	 0.1810
u	 0.7530	 0.1680
v	 0.7290	 0.1510
w	 0.7180	 0.1990
x	 0.6620	 0.1810
y	 0.7010	 0.1700
z	 0.7030	 0.1750