



Full wwPDB EM Validation Report ⓘ

Mar 14, 2026 – 12:28 AM UTC

PDB ID : 7PAR / pdb_00007par
EMDB ID : EMD-13281
Title : 70S ribosome with EF-G, ap/P- and pe/E-site tRNAs in Mycoplasma pneumoniae cells
Authors : Xue, L.; Lenz, S.; Rappsilber, J.; Mahamid, J.
Deposited on : 2021-07-30
Resolution : 8.20 Å (reported)
Based on initial models : 4V7C, 7OOD, 7OOC, 4V7D

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

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

A user guide is available at

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

The types of validation reports are described at

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

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

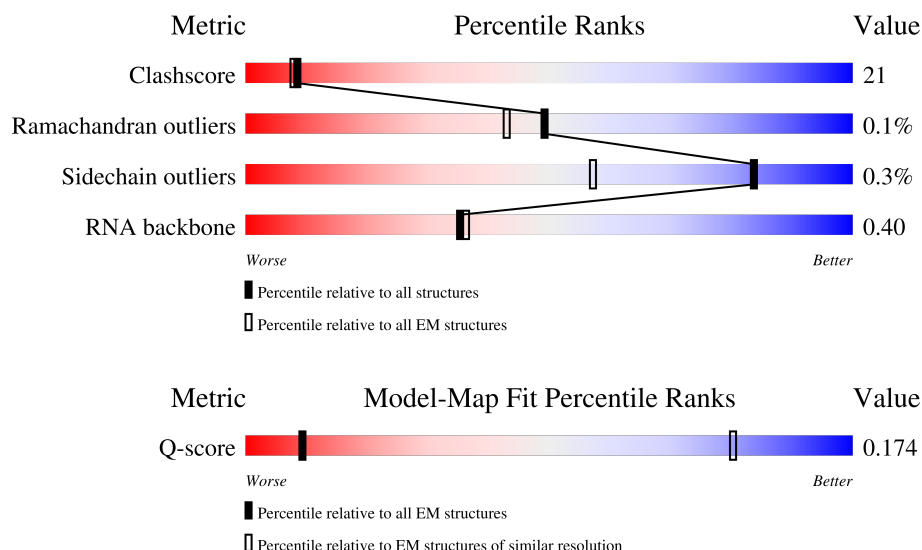
EMDB validation analysis : 0.0.1.dev132
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh &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

1 Overall quality at a glance

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

The reported resolution of this entry is 8.20 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	337 (7.70 - 8.70)

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

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

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

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

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Mol	Chain	Length	Quality of chain
54	5	1520	
55	7	76	
55	8	76	

2 Entry composition

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

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

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

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

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

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

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

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

- Molecule 4 is a protein called Elongation factor G.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

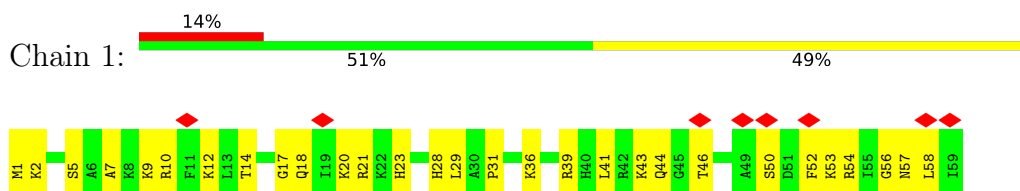
3 Residue-property plots [i](#)

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

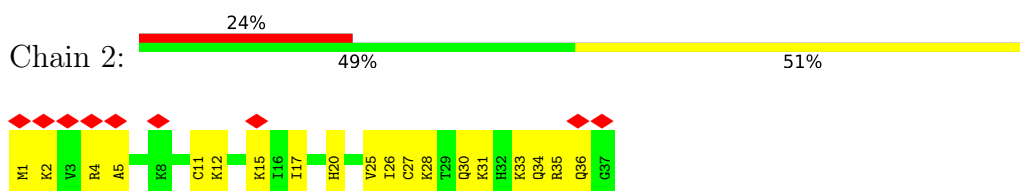
- Molecule 1: 50S ribosomal protein L34



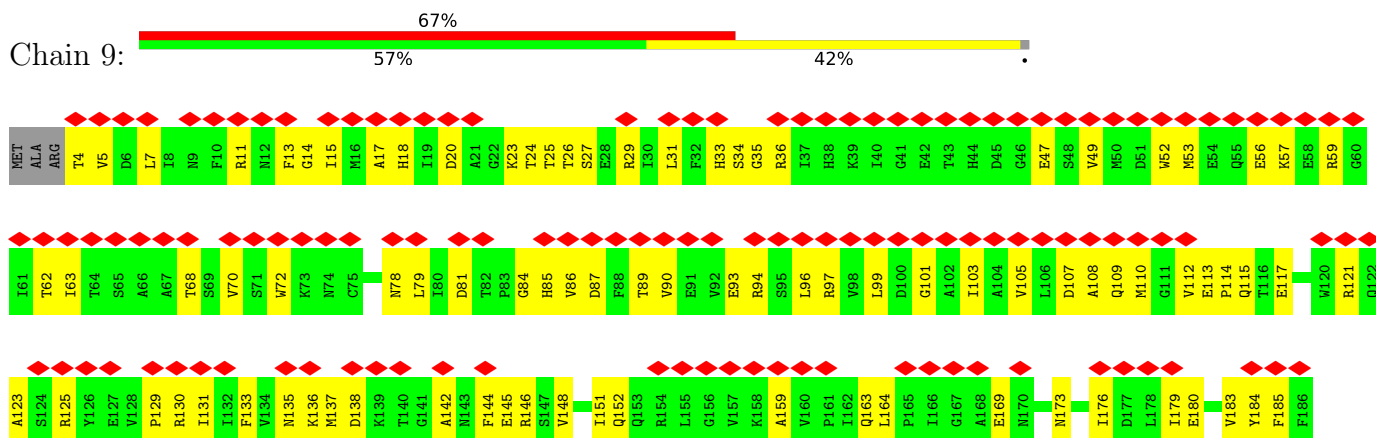
- Molecule 2: 50S ribosomal protein L35



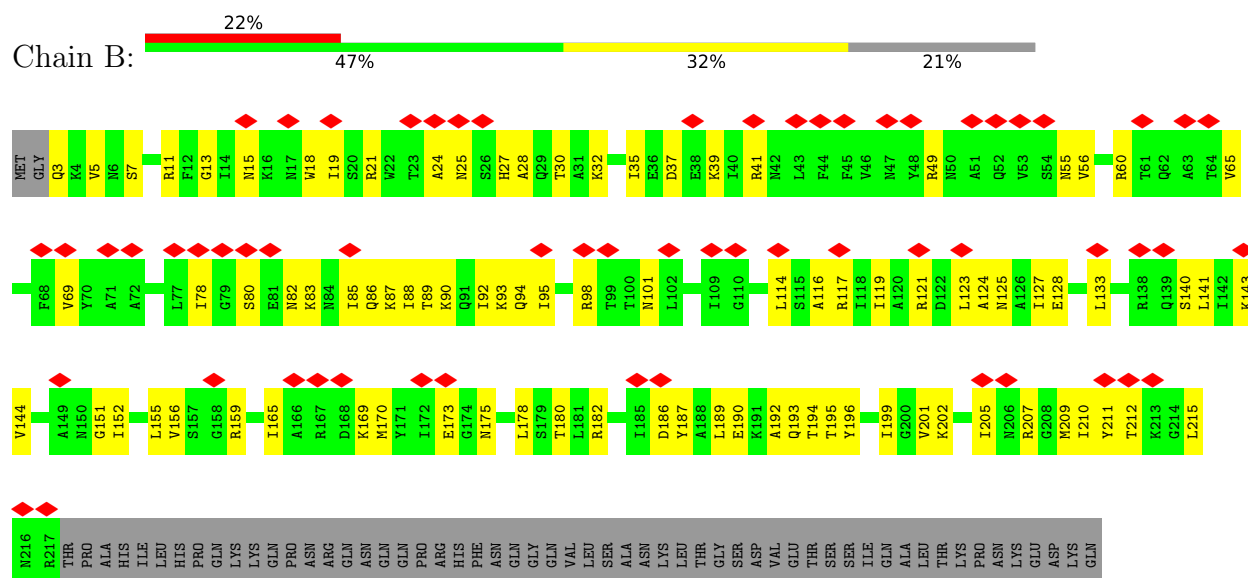
- Molecule 3: 50S ribosomal protein L36



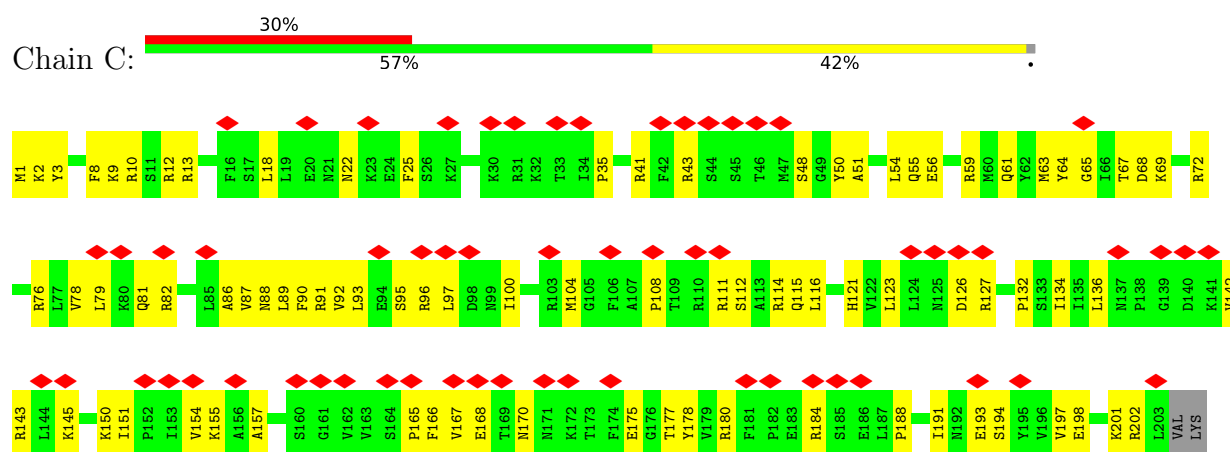
- Molecule 4: Elongation factor G



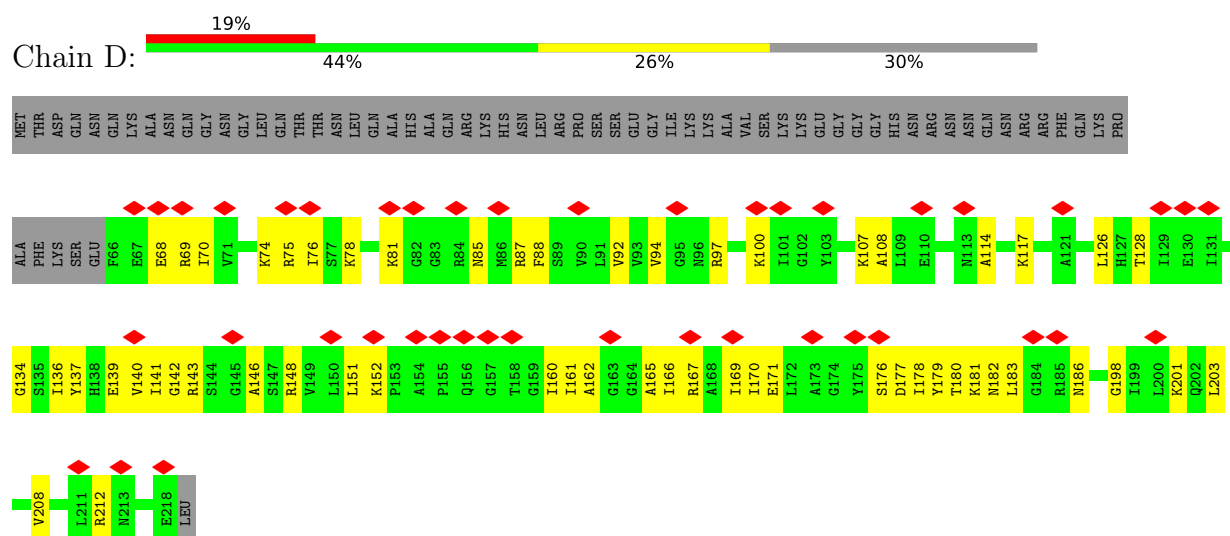
• Molecule 6: 30S ribosomal protein S3



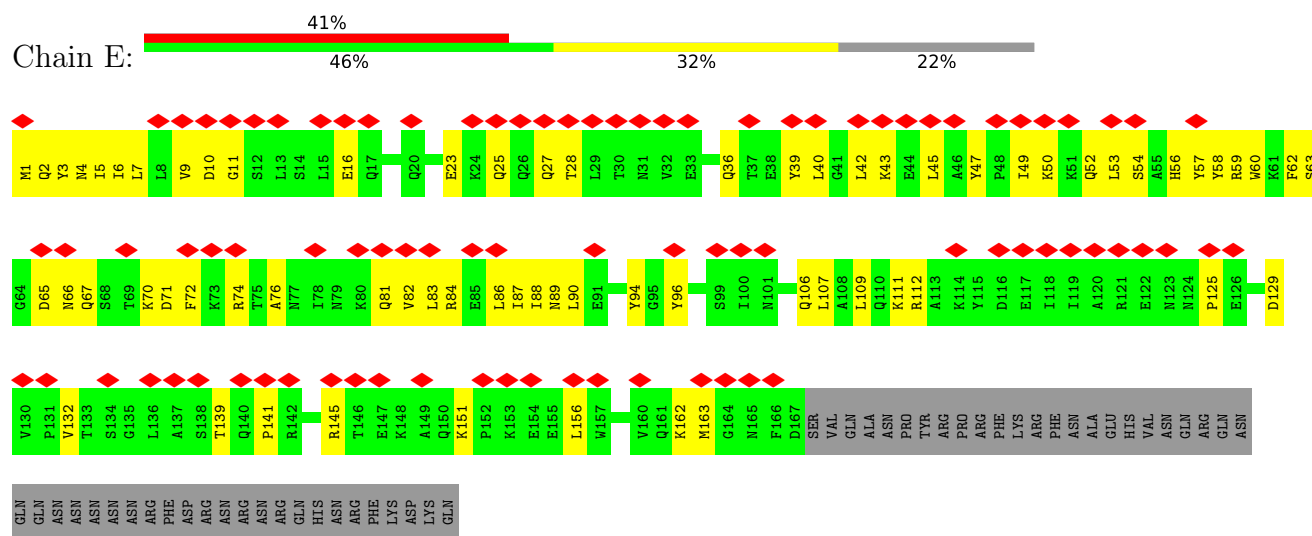
• Molecule 7: 30S ribosomal protein S4



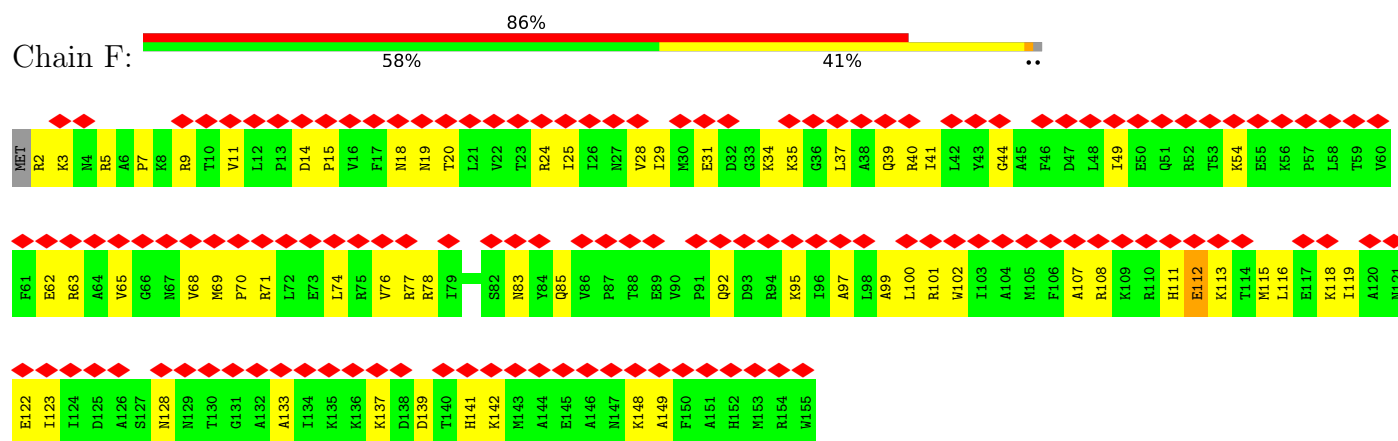
• Molecule 8: 30S ribosomal protein S5



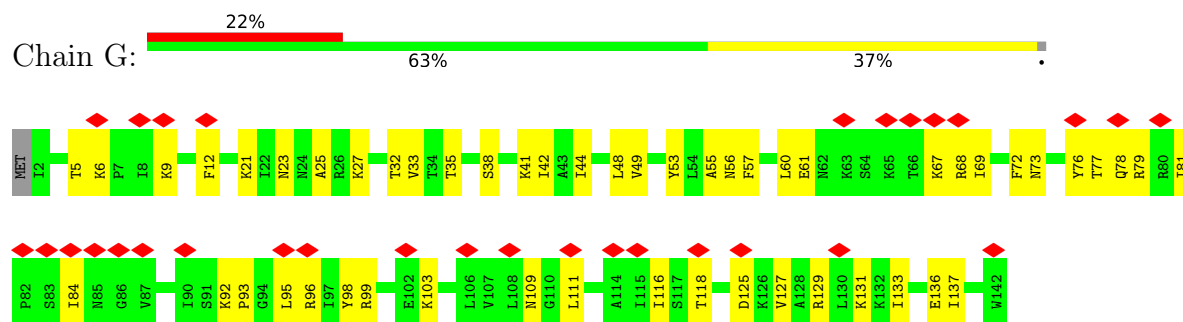
- Molecule 9: 30S ribosomal protein S6



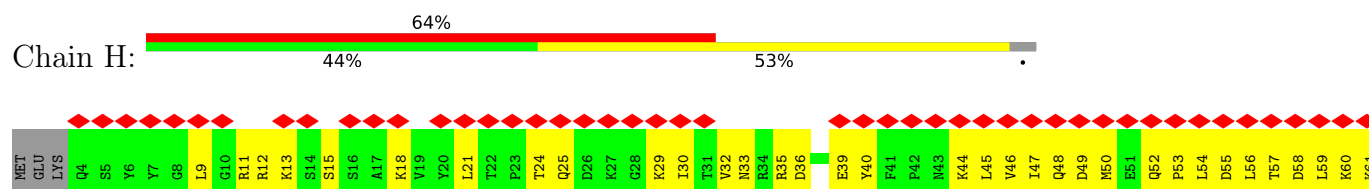
- Molecule 10: 30S ribosomal protein S7

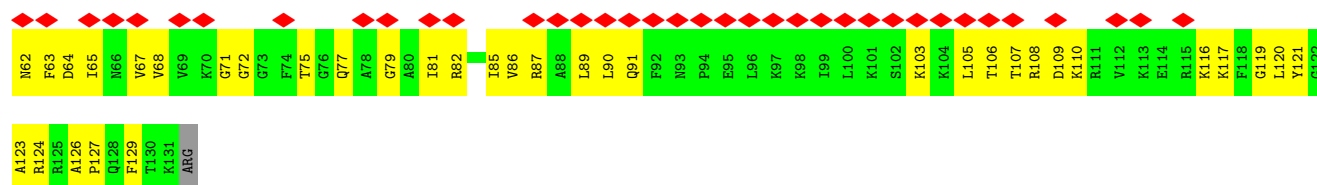


- Molecule 11: 30S ribosomal protein S8

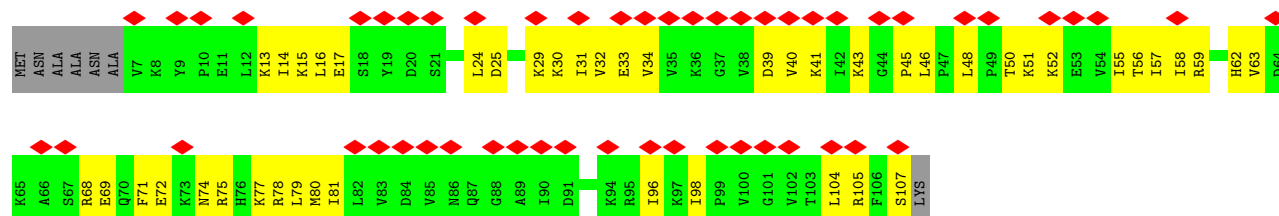


- Molecule 12: 30S ribosomal protein S9

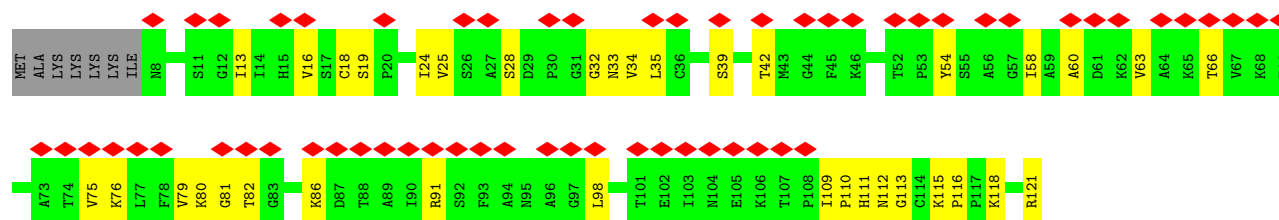




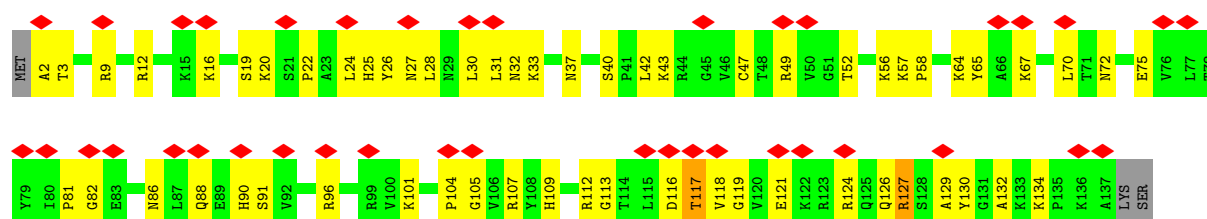
• Molecule 13: 30S ribosomal protein S10



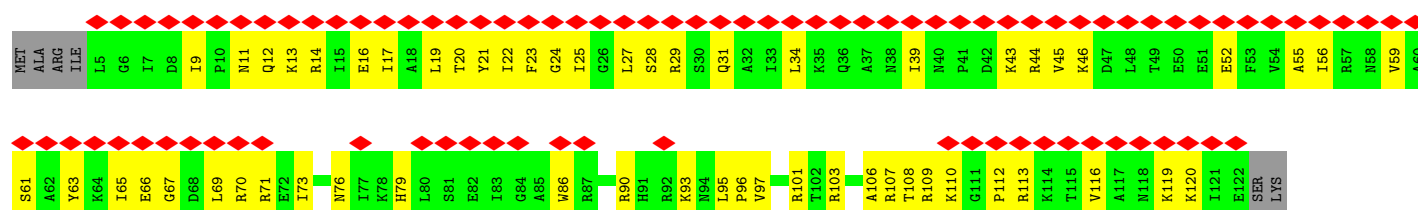
• Molecule 14: 30S ribosomal protein S11



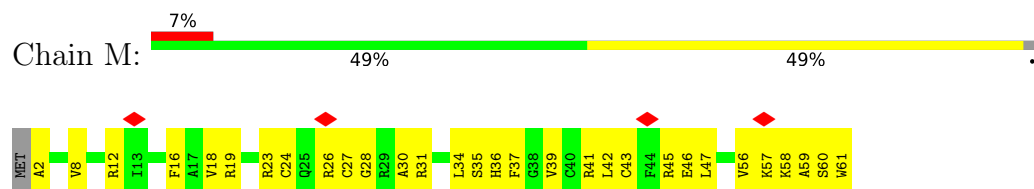
• Molecule 15: 30S ribosomal protein S12



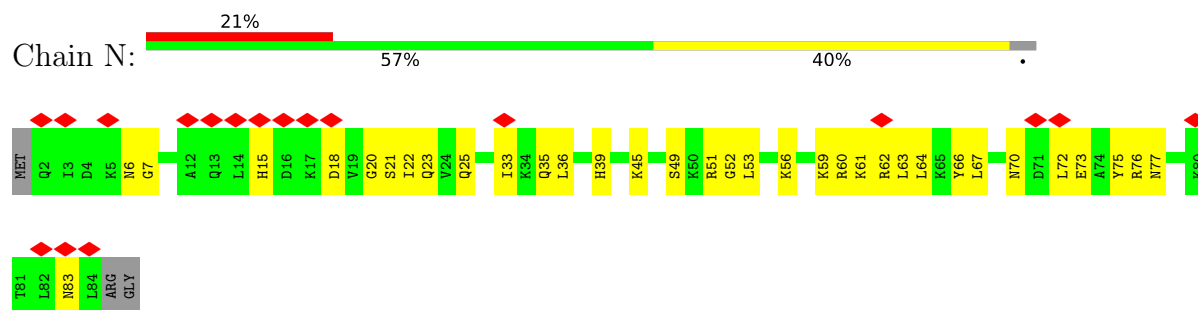
• Molecule 16: 30S ribosomal protein S13



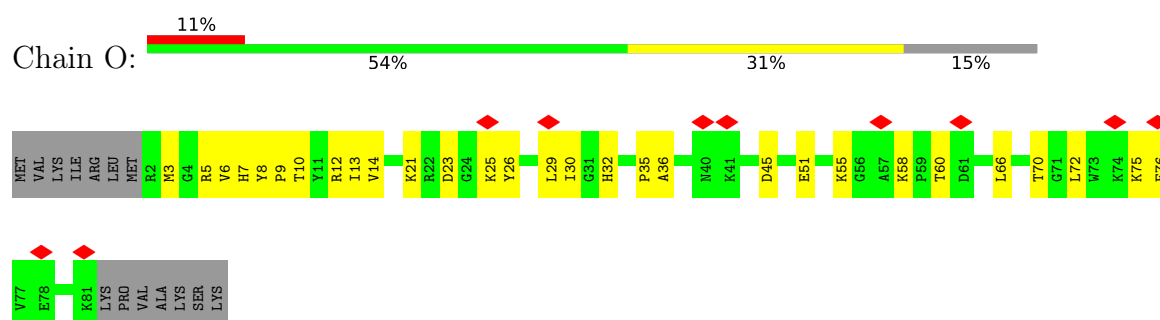
- Molecule 17: 30S ribosomal protein S14 type Z



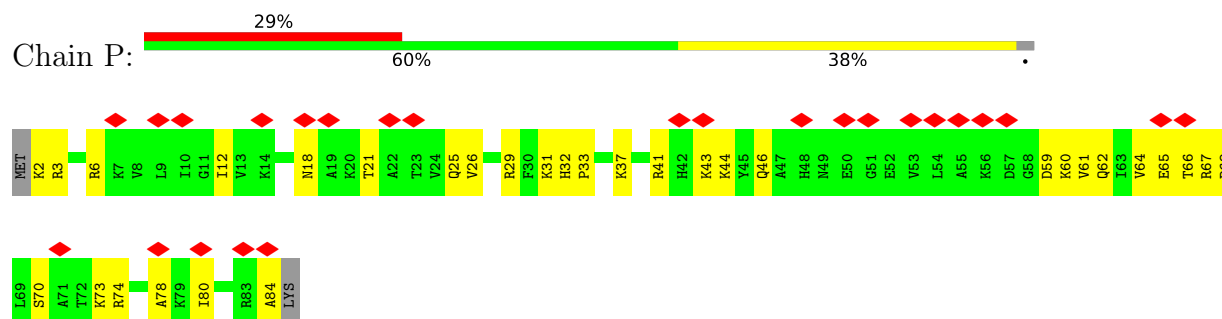
- Molecule 18: 30S ribosomal protein S15



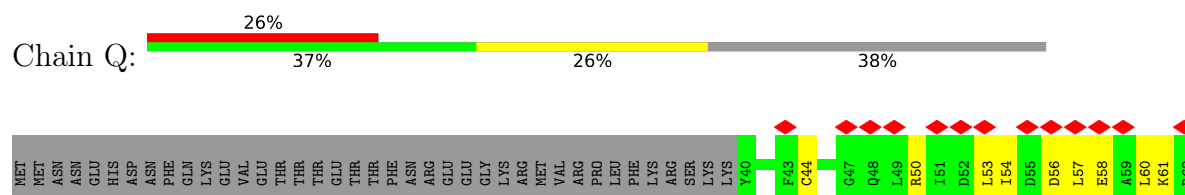
- Molecule 19: 30S ribosomal protein S16

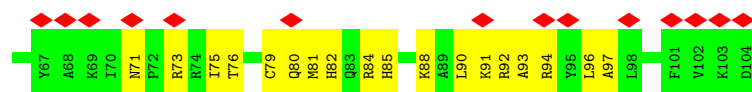


- Molecule 20: 30S ribosomal protein S17

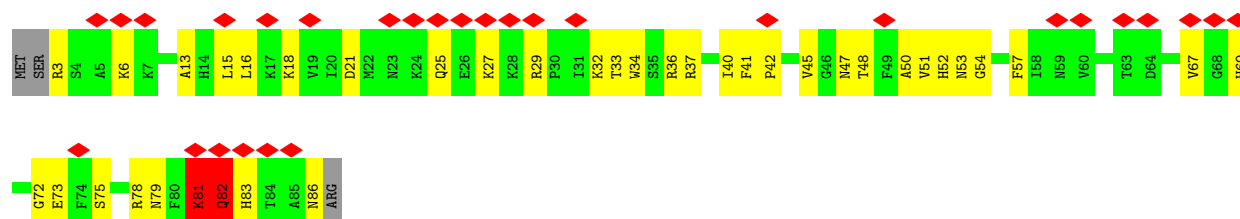


- Molecule 21: 30S ribosomal protein S18

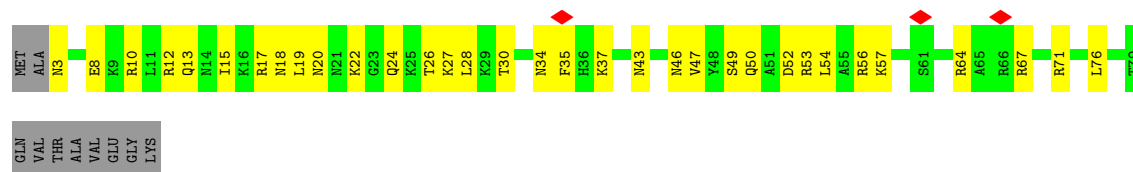




- Molecule 22: 30S ribosomal protein S19



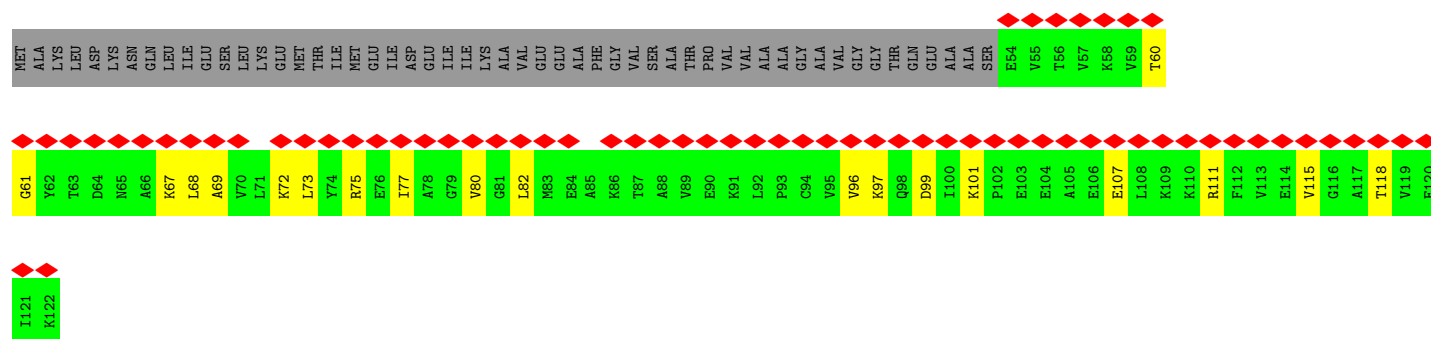
- Molecule 23: 30S ribosomal protein S20



- Molecule 24: 30S ribosomal protein S21

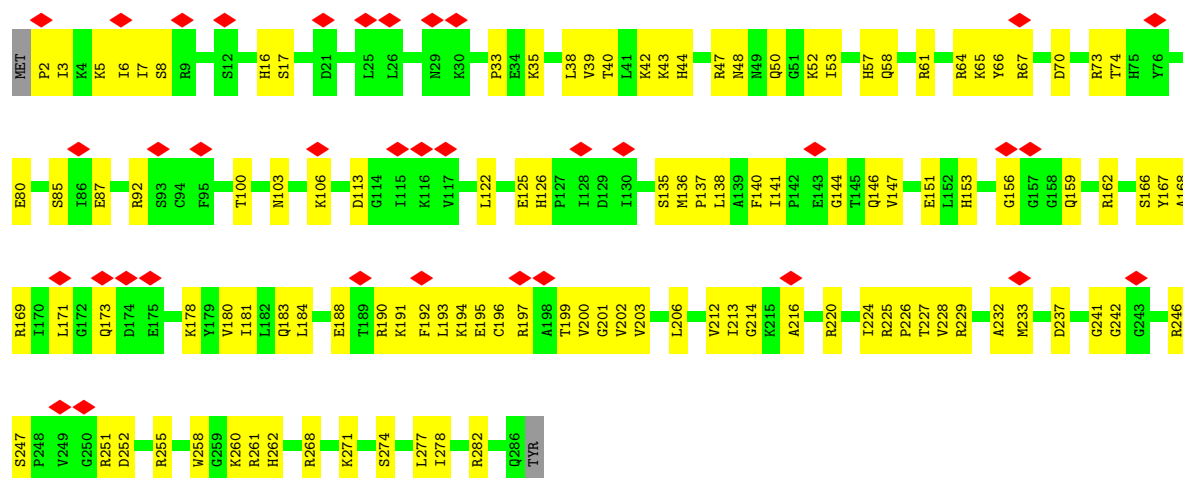


- Molecule 25: 50S ribosomal protein L7/L12

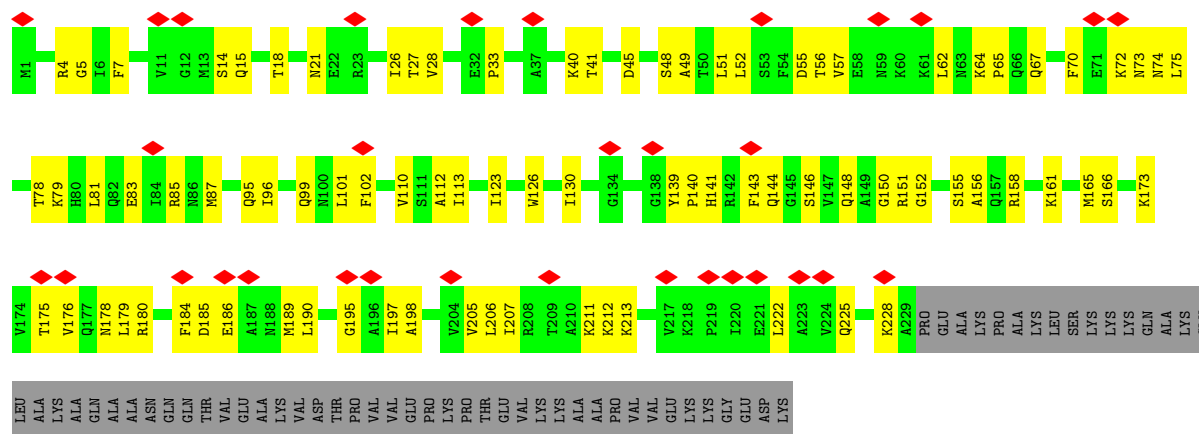


- Molecule 26: 50S ribosomal protein L2

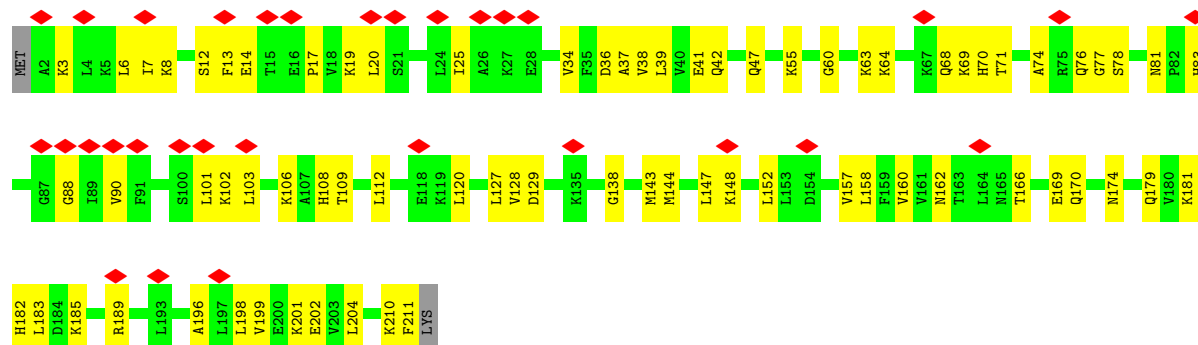




• Molecule 27: 50S ribosomal protein L3

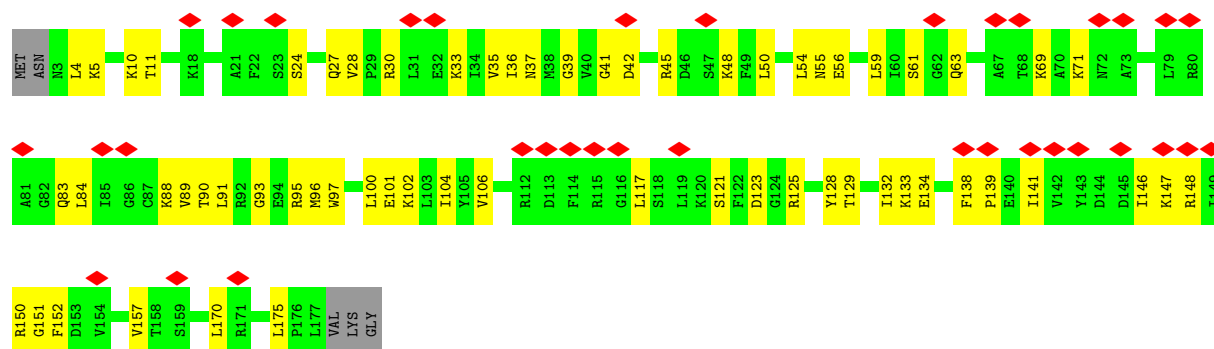


• Molecule 28: 50S ribosomal protein L4

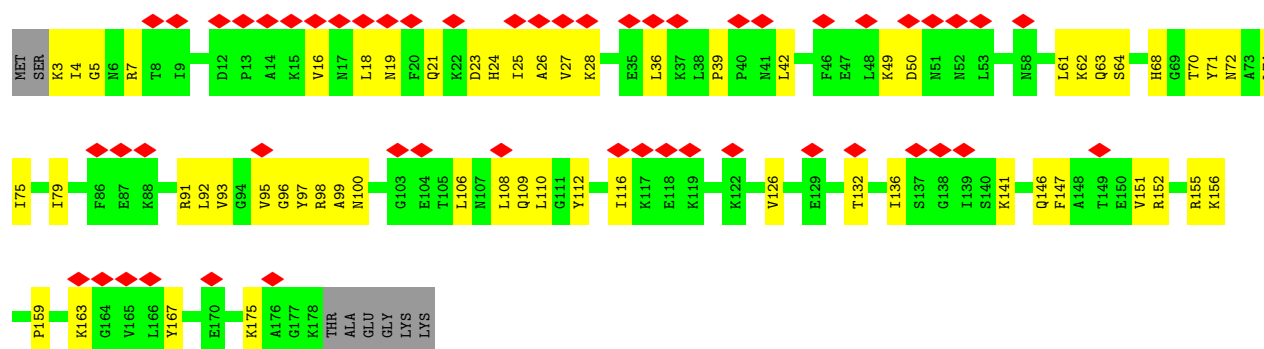


• Molecule 29: 50S ribosomal protein L5

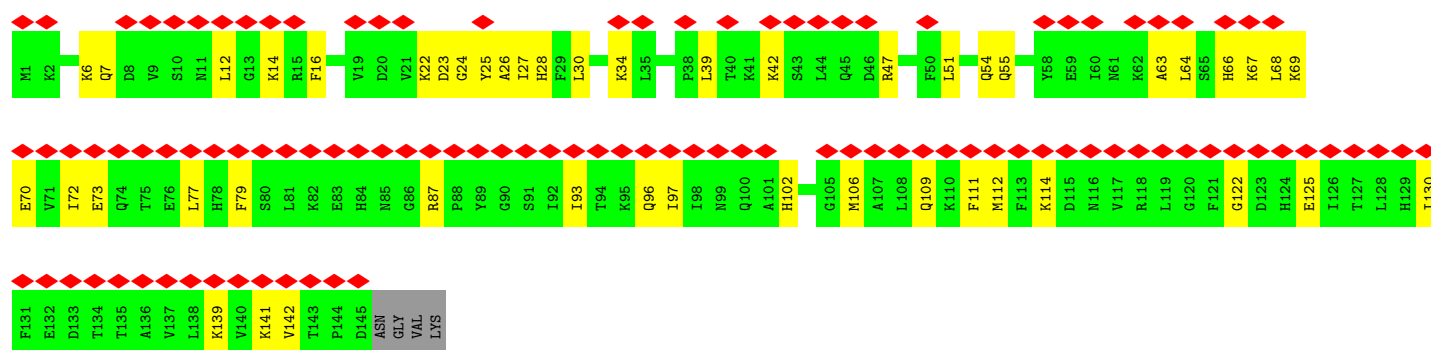




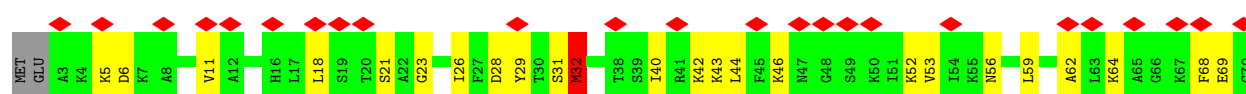
• Molecule 30: 50S ribosomal protein L6

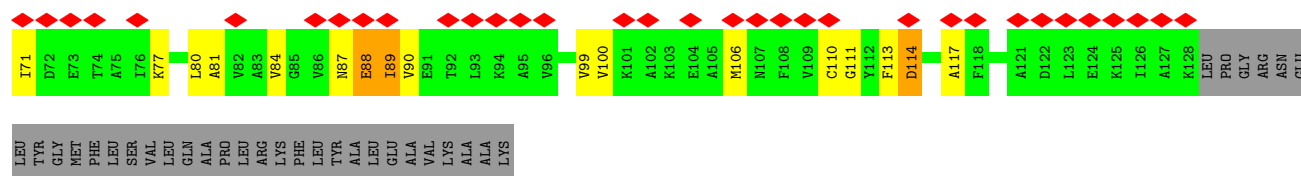


• Molecule 31: 50S ribosomal protein L9

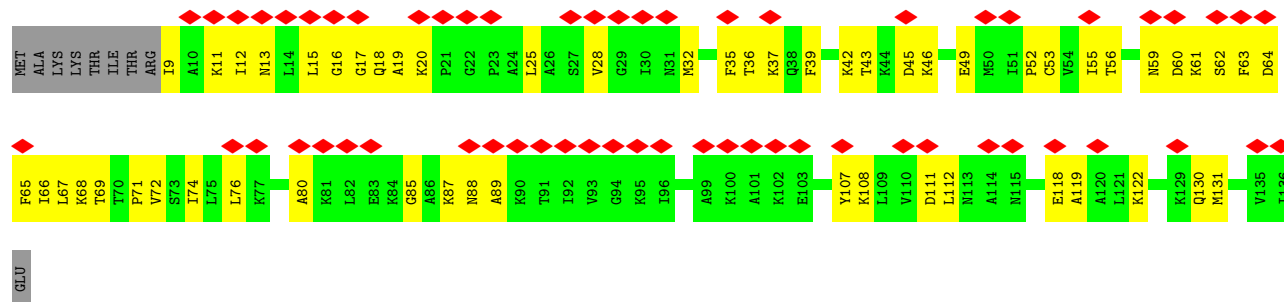
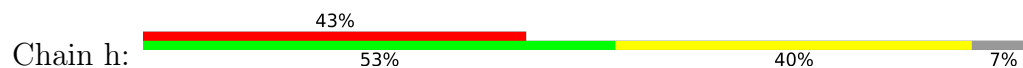


• Molecule 32: 50S ribosomal protein L10

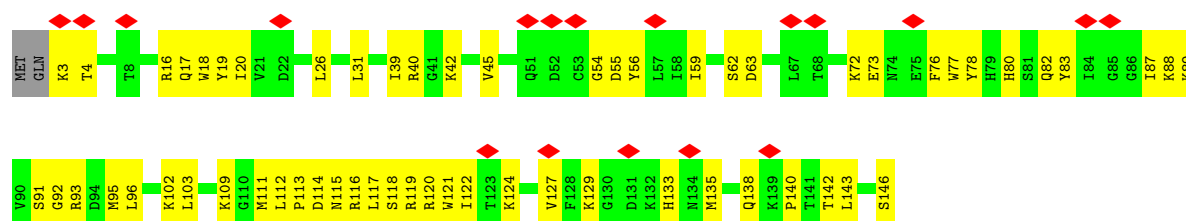




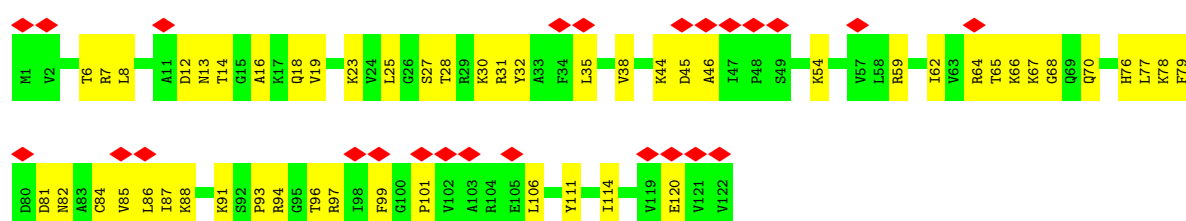
• Molecule 33: 50S ribosomal protein L11



• Molecule 34: 50S ribosomal protein L13

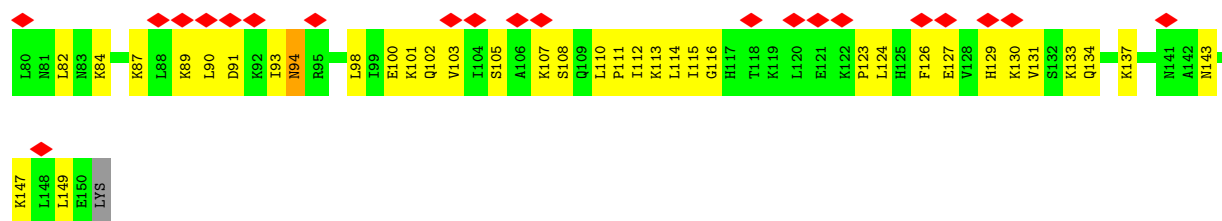


• Molecule 35: 50S ribosomal protein L14

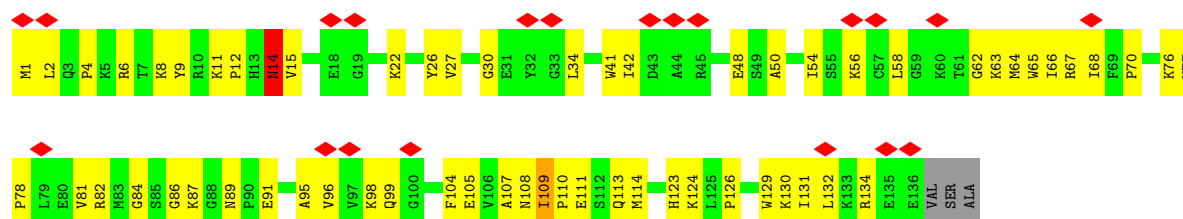


• Molecule 36: 50S ribosomal protein L15





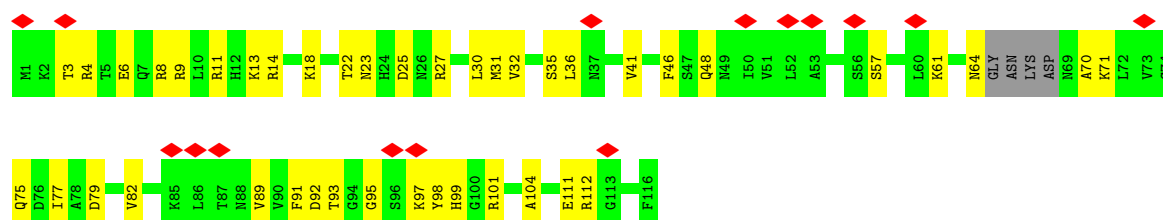
• Molecule 37: 50S ribosomal protein L16



• Molecule 38: 50S ribosomal protein L17



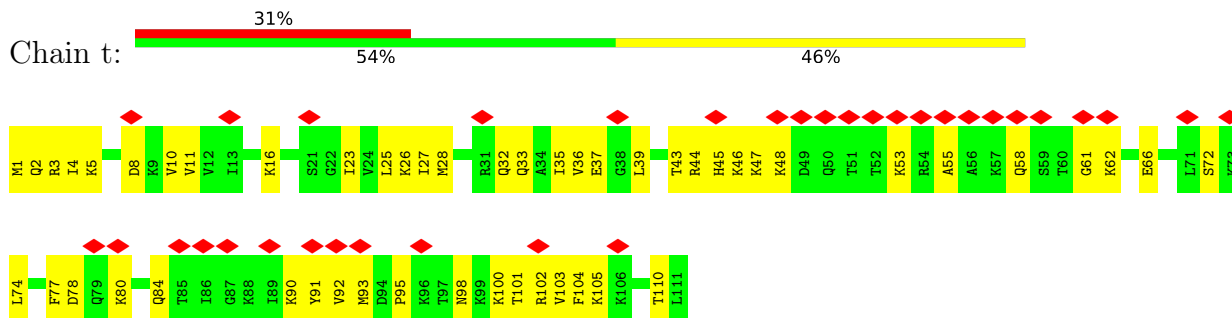
• Molecule 39: 50S ribosomal protein L18



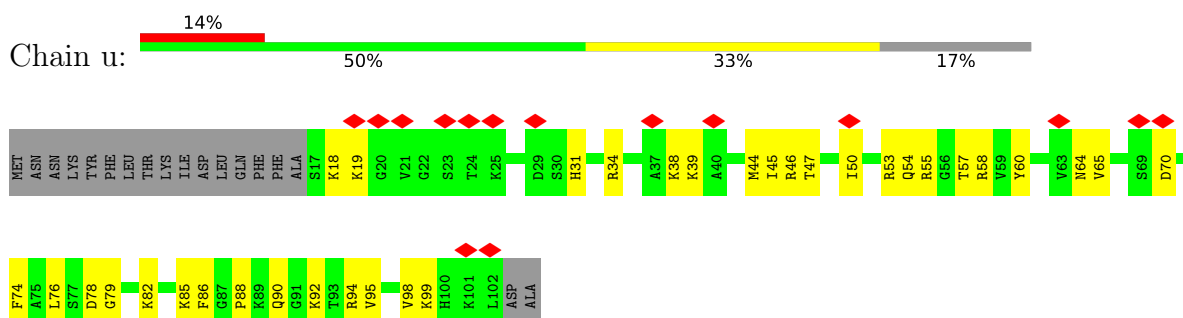
• Molecule 40: 50S ribosomal protein L19



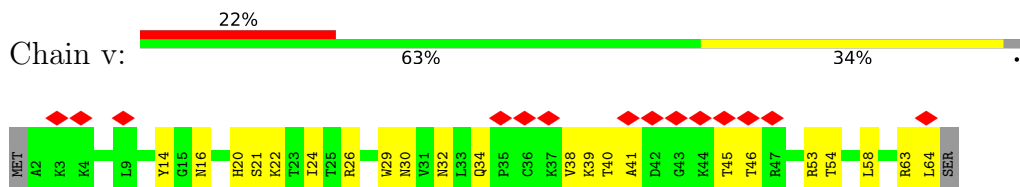
- Molecule 45: 50S ribosomal protein L24



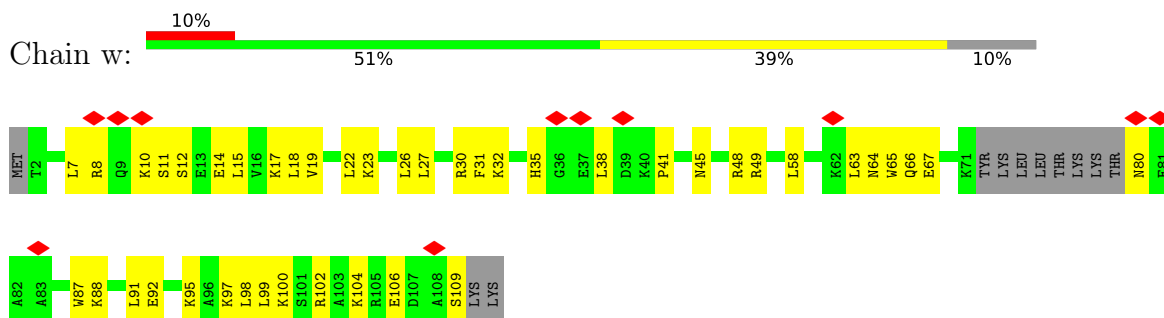
- Molecule 46: 50S ribosomal protein L27



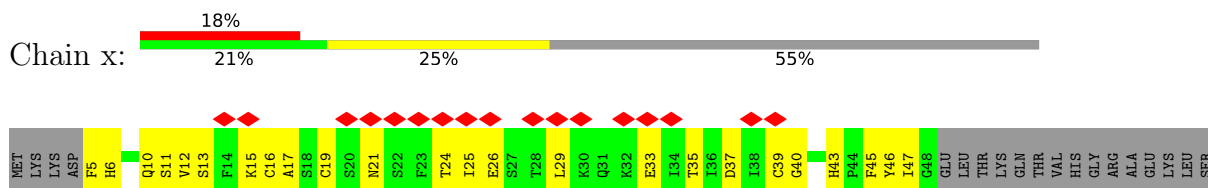
- Molecule 47: 50S ribosomal protein L28



- Molecule 48: 50S ribosomal protein L29

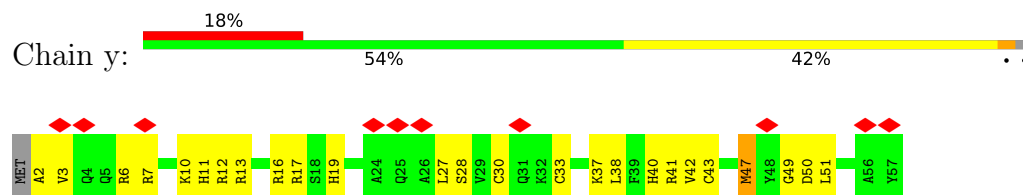


- Molecule 49: 50S ribosomal protein L31

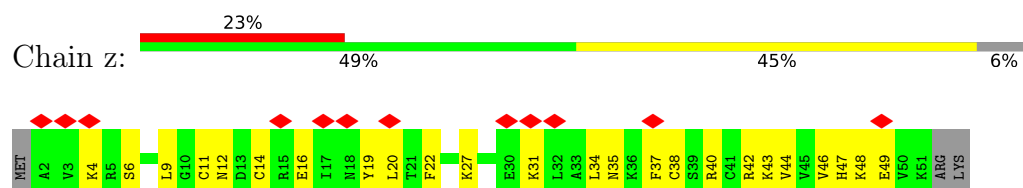


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ALA
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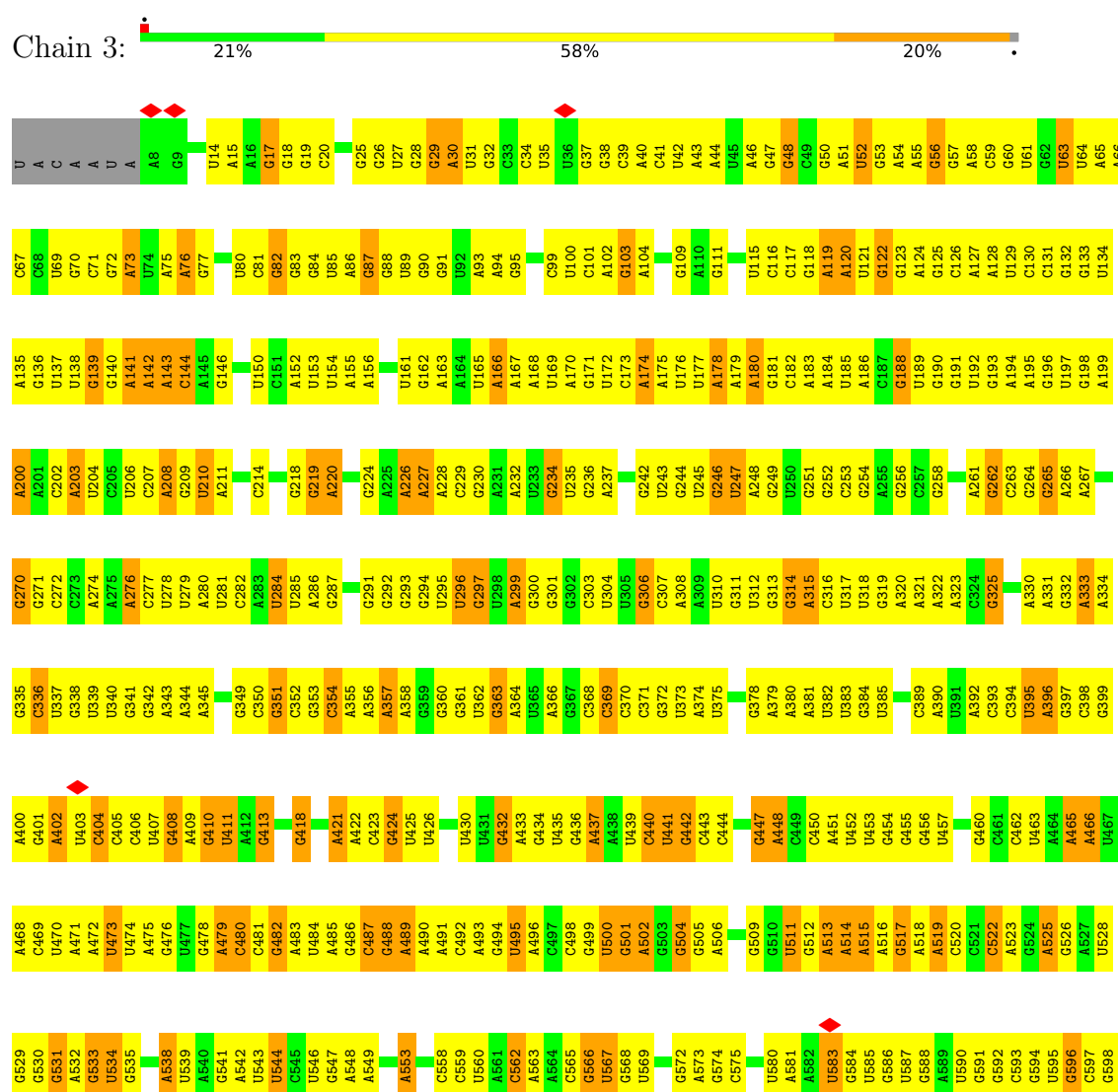
• Molecule 50: 50S ribosomal protein L32



• Molecule 51: 50S ribosomal protein L33 1

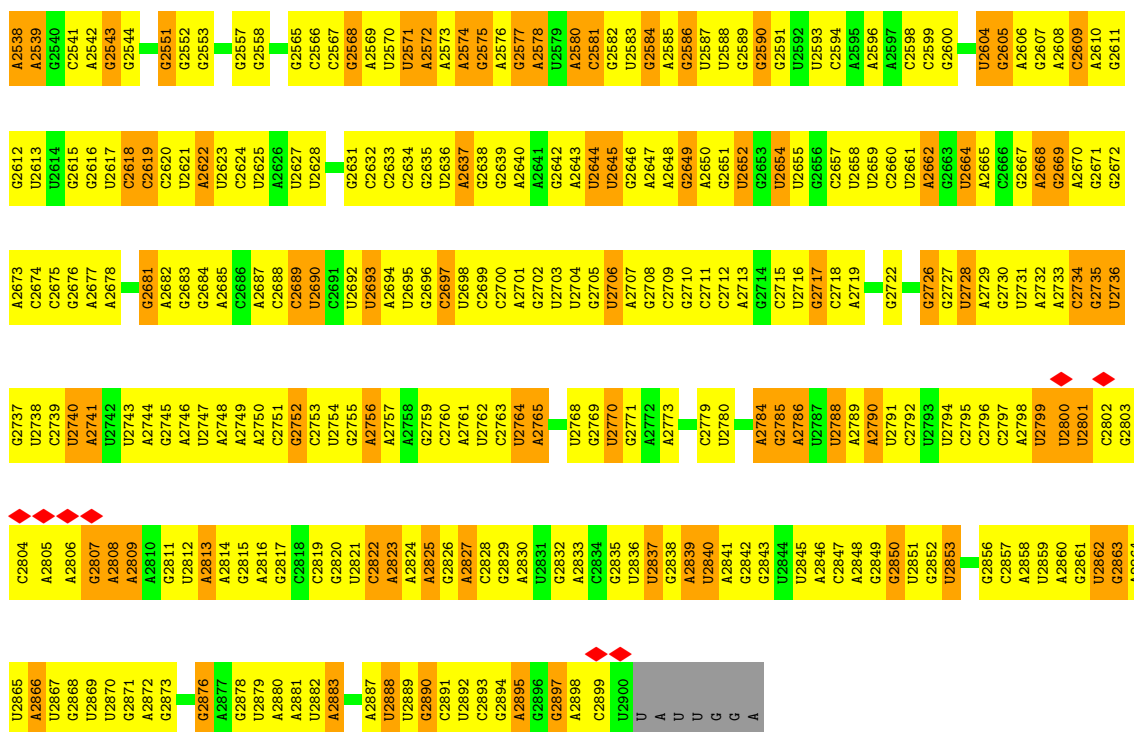


• Molecule 52: 23S ribosomal RNA

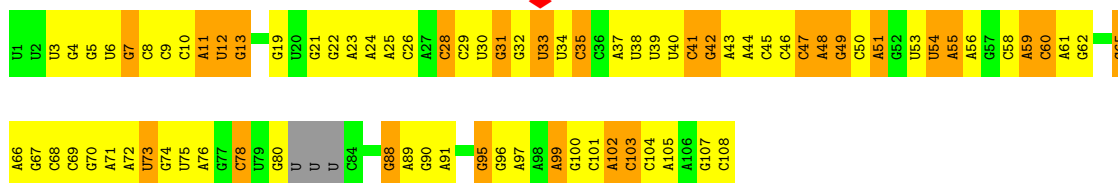


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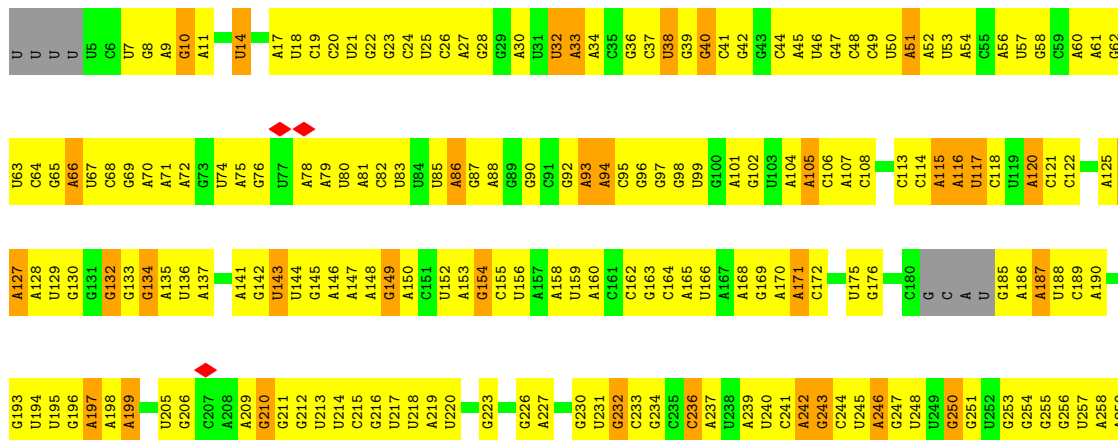
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C2529	G2397	U2260	C2199	U2260	G2137	U2075	C2015	G1885	G1819	A1756	G1690	A1619
U2530	U2398	G2261	U2200	U2261	U2138	G2076	U1950	G1886	U1820	G1757	U1691	A1620
G2533	C2399	G2262	G2201	U2262	U2139	A2077	G2017	U1887	G1821	C1758	A1692	G1692
U2534	U2399	U2263	U2202	U2263	G2140	A2078	U2018	U1888	A1822	C1759	U1693	A1630
G2534	A2400	C2268	U2203	U2264	G2141	G2079	G2019	U1889	U1823	G1760	A1694	A1631
U2535	U2401	U2269	C2204	U2265	A2141	G2080	A2020	U1890	G1824	C1761	G1695	C1632
G2536	C2403	U2270	U2205	U2266	U2142	U2081	A2021	A1891	U1825	A1762	C1696	C1633
U2537	U2403	G2272	A2206	U2267	G2143						C1697	A1634



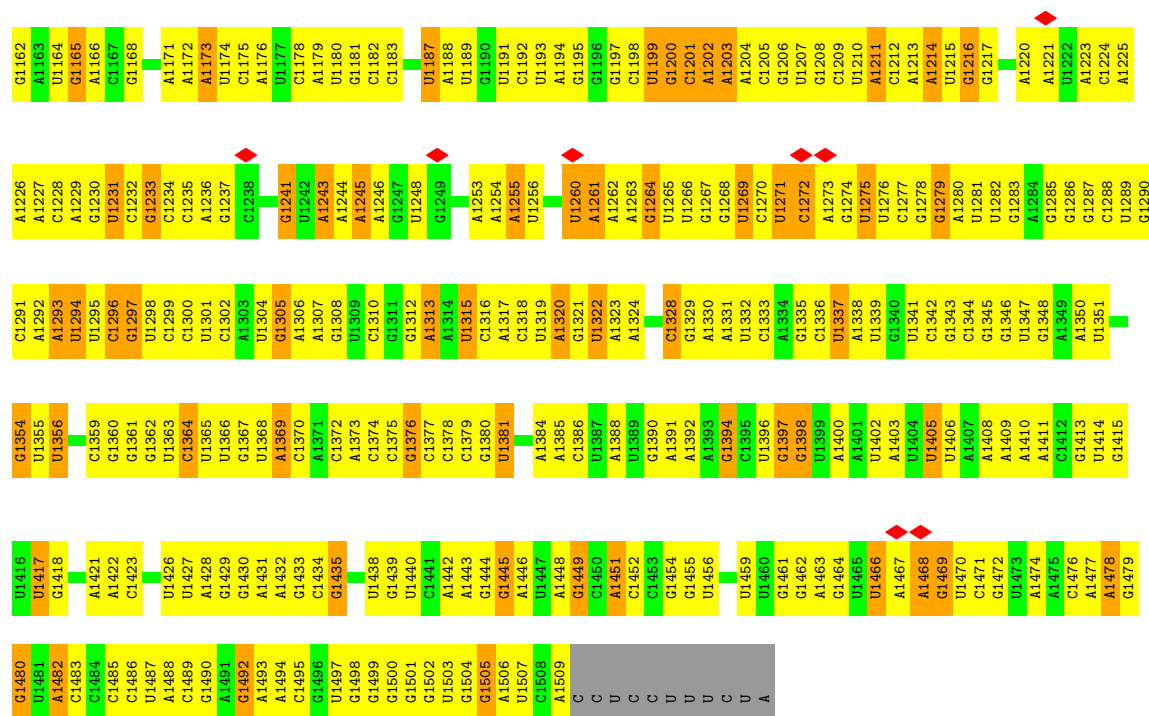
• Molecule 53: 5S ribosomal RNA



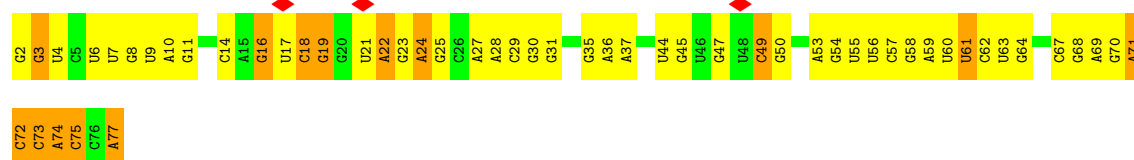
• Molecule 54: 16S ribosomal RNA



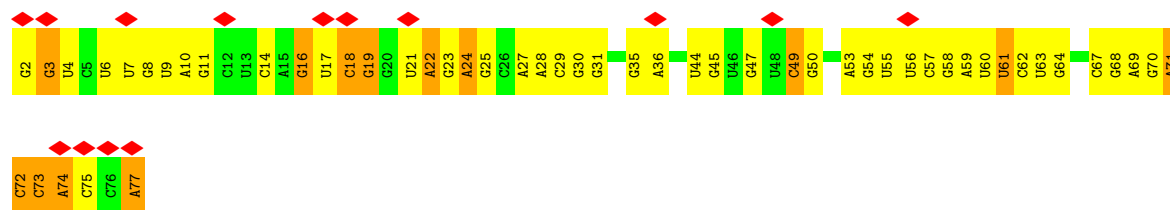
G1097	C1036	A972	G911	U844	C776	G651	G582	G519	G458	A393	G328	C280
C1098	A1037	A973	G912	U847	A777	A852	G583	C520	G461	A394	C329	G261
G1099	G1038	C974	A913	G848	A778	U853	G584	A521	G462	U394	C330	G262
A1102	G1039	C975	A914	U848	A779	U854	G585	G522	C463	G395	C331	C263
G1103	U1040	U976	U915	A849	C717	G655	G586	U523	U464	C396	A332	C264
C1104	G1041	U977	U916	G850	A718	G658	A587	C524	A464	C397	U333	U265
U1043	G1042	A778	U917	U851	A719	U859	G590	G525	A465	G398	A334	A266
C1105	U1043	C979	A918	U854	G719	A860	A591	G526	U466	C399	A335	C267
U1106	G1044	C980	G919	G855	U720	A861	A592	G527	U467	G400	C336	C268
U1107	C1045	U981	G920	U856	A784	G661	A593	G528	U468	U401	C337	A269
A1108	A1046	A982	G921	U857	G721	G662	A594	A531	C469	G402	C338	A270
C1109	U1047	G983	G922	A858	G722	G663	A595	A532	U470	A403	U339	G271
U1110	G1048	A984	G923	A859	C723	G664	G596	A533	U471	A404	U340	G272
G1111	U1050	G985	U924	C860	A791	A864	U598	A534	G472	C405	C341	C273
U1112	U1051	U986	C927	A861	C792	G665	C597	C534	A473	G406	G342	A274
U1113	U1052	U987	G928	A862	C793	U666	C598	A535	A474	G407	G343	A275
A1114	G1053	G988	C929	A863	C794	U667	G599	U536	U475	U408	G344	U276
G1115	U1054	A989	A930	U864	U795	G670	G600	A537	U476	G409	A345	G277
U1116	C1054	C990	C931	U865	A796	G671	G601	G538	U477	A410	G346	A278
A1117	G1055	A991	A932	A866	C797	A672	A611	G539	G478	C347	C347	G285
U1118	U1056	U995	A933	A867	U798	A673	A612	U540	A479	U416	C348	C286
C1119	C1057	U996	G934	C861	A799	U674	A607	C541	C480	A349	A349	U287
U1120	A1058	G997	G935	A862	C802	U675	G608	G542	U481	C351	A288	U288
U1121	G1059	G998	G936	U871	C803	U676	G609	C543	G482	U418	C352	U289
U1122	C1062	C999	G937	C872	A804	C677	A610	A544	U483	A419	A352	U290
G1123	U1063	A1000	U938	U873	C805	A678	A611	A545	U484	A420	G353	C290
U1124	G1064	A1001	G939	C874	A806	U679	G612	G546	C485	G421	U354	C291
C1125	U1065	U996	G940	A870	G809	U681	C616	C547	C486	A422	A355	U292
U1066	G1066	G997	A941	U878	U745	G682	U617	G548	A487	U423	G357	C293
U1067	U1067	U1004	G942	U879	A746	G683	U618	U550	U488	U424	G358	A294
A1127	C1068	U1005	C943	G879	A747	G684	A519	A551	U489	G425	A359	A297
G1128	U1069	A1006	A944	G880	U750	G685	A620	U552	U490	A426	A360	G298
A1133	G1070	U1007	U945	G881	U751	G686	C621	C553	U491	A427	U299	U299
C1134	U1071	G1008	G946	U882	G752	C886	G622	C554	A428	A361	A300	A300
U1135	G1072	U1009	U947	U883	U753	G687	G623	G555	A429	U363	G301	G301
G1136	A1073	A1010	U948	G884	C751	G688	G624	G556	U493	U364	A302	A302
U1137	U1074	G949	A820	U885	U752	U689	U625	A557	U495	U365	A303	A303
U1138	G1075	C950	U821	U886	G753	A691	G626	U558	A496	C432	U366	U366
A1139	U1076	C1013	A822	C887	U754	A692	U627	U559	A497	U434	A367	U367
U1077	U1077	U1013	C823	U888	U755	U694	A628	U560	G498	C368	G306	G306
U1141	U1078	A1014	U824	U889	U756	U695	U629	A561	U499	A369	A370	C308
G1142	G1079	U1015	A953	C891	U757	G696	G630	U562	G500	U371	A309	A309
C1143	U1080	A1016	G826	G892	G757	C897	C631	U563	C501	G372	C310	C310
U1081	U1081	G1019	C827	A895	U760	U698	A632	G564	C502	G443	A311	A311
A1144	A1082	G	U828	G896	U761	U699	U633	G568	C503	G444	G374	G374
A1145	A1083	A	U829	U897	G762	A699	U634	U569	C505	A445	C375	C375
A1146	A1084	C	U830	A897	A763	G700	A638	A570	U506	A446	G376	G376
U1147	G1085	G	C831	U897	A764	U701	A639	A571	A507	G447	A377	A377
U1148	U1086	U	G832	G900	A765	A702	C640	A572	A508	A448	A378	A378
C1087	C1087	U	G833	A901	G766	U703	U641	C574	C509	U449	G380	G380
C1088	U1088	A	G834	A902	G767	U704	A642	A575	U510	A450	A321	A321
C1089	A1089	A	G835	A903	G768	A705	U643	A576	U512	G451	G322	G322
G1090	C965	A	C836	C904	U769	U706	U644	A577	G513	A452	A323	A323
C1091	U966	G1028	G837	U905	G770	G707	U645	A578	U514	C453	C324	C324
G1152	A1091	G1029	A838	U906	G771	A708	A646	C578	G515	U454	A325	A325
A1092	A1092	G1030	U839	A907	G772	A709	U649	G579	C516	U455	G387	G387
A1093	C1094	A1031	C841	A908	G773	A710	A650	C580	C517	U456	A388	A388
G1156	G1156	G	C910	C910	A774	G711						
G1157	G1157				A775	A712						
A1158	A1158											
A1159	G1095											
G1160	U1033											
G1161	A1096											



• Molecule 55: tRNA-Phe



• Molecule 55: tRNA-Phe



4 Experimental information

Property	Value	Source
EM reconstruction method	SUBTOMOGRAM AVERAGING	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of subtomograms used	3324	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	1.470	Depositor
Minimum map value	-0.452	Depositor
Average map value	0.026	Depositor
Map value standard deviation	0.123	Depositor
Recommended contour level	0.5	Depositor
Map size (Å)	435.328, 435.328, 435.328	wwPDB
Map dimensions	256, 256, 256	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.7005, 1.7005, 1.7005	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	0	0.14	0/383	0.45	0/504
2	1	0.16	0/484	0.49	0/637
3	2	0.14	0/306	0.39	0/401
4	9	0.17	0/5419	0.48	1/7307 (0.0%)
5	A	0.14	0/1954	0.39	0/2642
6	B	0.15	0/1721	0.45	0/2323
7	C	0.17	0/1691	0.45	0/2267
8	D	0.15	0/1188	0.44	0/1593
9	E	0.16	0/1384	0.42	0/1867
10	F	0.21	0/1266	0.51	0/1700
11	G	0.17	0/1126	0.49	0/1517
12	H	0.15	0/1044	0.49	0/1395
13	I	0.14	0/820	0.44	0/1103
14	J	0.14	0/844	0.42	0/1136
15	K	0.29	0/1094	0.60	1/1468 (0.1%)
16	L	0.16	0/962	0.41	0/1289
17	M	0.17	0/483	0.48	0/643
18	N	0.14	0/679	0.41	0/907
19	O	0.15	0/659	0.47	0/885
20	P	0.15	0/684	0.44	0/913
21	Q	0.15	0/545	0.52	0/730
22	R	0.16	0/698	0.53	0/936
23	S	0.16	0/631	0.43	0/838
24	T	0.13	0/475	0.38	0/621
25	W	0.14	0/538	0.42	0/722
26	a	0.15	0/2267	0.44	0/3044
27	b	0.16	0/1795	0.46	0/2412
28	c	0.14	0/1671	0.44	0/2246
29	d	0.15	0/1409	0.43	0/1894
30	e	0.17	0/1420	0.44	0/1912
31	f	0.15	0/1183	0.44	0/1587
32	g	0.41	0/969	0.68	0/1295
33	h	0.13	0/968	0.38	0/1298
34	i	0.14	0/1186	0.45	0/1592

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
35	j	0.16	0/953	0.45	0/1275
36	k	0.15	0/1170	0.41	0/1559
37	l	0.18	0/1104	0.53	0/1481
38	m	0.16	0/973	0.48	0/1309
39	n	0.16	0/897	0.43	0/1198
40	o	0.15	0/948	0.45	0/1262
41	p	0.17	0/961	0.47	0/1278
42	q	0.17	0/828	0.46	0/1111
43	r	0.15	0/1077	0.46	0/1441
44	s	0.18	0/732	0.53	0/988
45	t	0.15	0/879	0.40	0/1165
46	u	0.15	0/665	0.45	0/884
47	v	0.19	0/519	0.53	0/695
48	w	0.13	0/826	0.41	0/1104
49	x	0.15	0/353	0.44	0/474
50	y	0.35	0/457	0.64	0/601
51	z	0.15	0/412	0.40	0/547
52	3	0.11	0/69073	0.27	0/107710
53	4	0.11	0/2505	0.28	0/3902
54	5	0.10	0/35768	0.25	0/55764
55	7	0.12	0/1808	0.35	0/2817
55	8	0.12	0/1808	0.35	0/2817
All	All	0.13	0/164662	0.34	2/245006 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
4	9	0	2
10	F	0	1
12	H	0	1
15	K	0	2
22	R	0	2
32	g	0	1
37	l	0	1
All	All	0	10

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	9	480	PHE	N-CA-C	5.90	115.64	107.73
15	K	119	GLY	CA-C-O	-5.07	117.83	122.24

There are no chirality outliers.

All (10) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
4	9	295	ASN	Peptide
4	9	297	VAL	Peptide
10	F	112	GLU	Peptide
12	H	62	ASN	Peptide
15	K	126	GLN	Peptide
15	K	127	ARG	Peptide
22	R	81	LYS	Peptide
22	R	82	GLN	Peptide
32	g	114	ASP	Peptide
37	l	14	ASN	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	26	0
2	1	477	0	530	32	0
3	2	304	0	350	17	0
4	9	5326	0	5343	233	0
5	A	1921	0	1973	71	0
6	B	1698	0	1768	65	0
7	C	1660	0	1719	73	0
8	D	1173	0	1267	52	0
9	E	1362	0	1377	68	0
10	F	1246	0	1308	59	0
11	G	1110	0	1226	42	0
12	H	1028	0	1094	62	0
13	I	809	0	894	44	0
14	J	829	0	855	34	0
15	K	1076	0	1170	46	0
16	L	951	0	1014	47	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
17	M	474	0	509	36	0
18	N	673	0	730	27	0
19	O	646	0	677	24	0
20	P	675	0	728	28	0
21	Q	535	0	562	24	0
22	R	682	0	691	34	0
23	S	629	0	681	30	0
24	T	471	0	522	22	0
25	W	534	0	572	19	0
26	a	2225	0	2301	96	0
27	b	1762	0	1808	76	0
28	c	1644	0	1731	63	0
29	d	1388	0	1469	51	0
30	e	1396	0	1481	41	0
31	f	1160	0	1172	39	0
32	g	960	0	1014	23	0
33	h	959	0	1039	40	0
34	i	1164	0	1192	59	0
35	j	944	0	1019	45	0
36	k	1153	0	1256	63	0
37	l	1079	0	1134	50	0
38	m	958	0	1011	35	0
39	n	889	0	952	33	0
40	o	938	0	1008	49	0
41	p	947	0	1028	46	0
42	q	811	0	858	44	0
43	r	1068	0	1150	54	0
44	s	720	0	803	33	0
45	t	872	0	972	48	0
46	u	657	0	695	34	0
47	v	513	0	560	20	0
48	w	818	0	870	32	0
49	x	344	0	333	20	0
50	y	452	0	472	26	0
51	z	408	0	440	17	0
52	3	61664	0	30954	2216	0
53	4	2239	0	1137	69	0
54	5	31943	0	16058	1209	0
55	7	1618	0	821	43	0
55	8	1618	0	821	41	0
All	All	151980	0	105548	5230	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including

hydrogen atoms). The all-atom clashscore for this structure is 21.

All (5230) 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)
52:3:1243:A:N6	52:3:1265:G:H21	1.29	1.28
52:3:1243:A:H62	52:3:1265:G:N2	1.38	1.22
4:9:500:GLY:H	54:5:1469:G:H5"	1.02	1.10
30:e:16:VAL:HA	30:e:28:LYS:O	1.52	1.07
52:3:1807:C:H42	52:3:1824:G:N2	1.55	1.04
54:5:1136:G:H1	54:5:1151:A:N6	1.54	1.03
54:5:671:G:H1	54:5:713:A:N6	1.55	1.03
34:i:3:LYS:N	42:q:12:TYR:HH	1.55	1.02
52:3:1807:C:N4	52:3:1824:G:H22	1.57	1.01
52:3:725:G:H1	52:3:807:U:H3	1.05	0.98
52:3:1801:U:H3	52:3:1832:G:H1	1.10	0.97
52:3:418:G:H1	52:3:430:U:H3	1.04	0.97
54:5:1138:U:H3	54:5:1149:G:H1	1.01	0.96
54:5:1065:G:H1	54:5:1074:U:H3	0.98	0.96
52:3:1746:U:H3	52:3:1753:G:H1	1.14	0.96
54:5:134:G:H1	54:5:160:A:H61	0.97	0.95
54:5:599:G:H1	54:5:634:U:H3	1.07	0.95
52:3:1310:U:H3	52:3:1314:A:N6	1.63	0.95
52:3:80:U:H3	52:3:109:G:H1	0.95	0.94
52:3:1702:A:H62	52:3:1998:U:H3	1.15	0.94
54:5:663:G:H1	54:5:737:U:H3	1.16	0.93
52:3:730:G:H1	52:3:802:U:H3	1.12	0.93
52:3:986:G:H1	52:3:1003:U:H3	0.96	0.93
54:5:600:G:H1	54:5:633:U:H3	1.04	0.93
54:5:880:G:H1	54:5:905:U:H3	0.97	0.92
52:3:17:G:H1	52:3:560:U:H3	1.15	0.92
52:3:1514:U:H3	52:3:1525:G:H1	1.18	0.92
29:d:132:ILE:O	29:d:151:GLY:HA3	1.70	0.92
52:3:569:U:H3	52:3:592:G:H1	1.05	0.92
54:5:1237:G:H1	54:5:1248:U:H3	1.12	0.92
52:3:989:G:H1	52:3:1000:U:H3	1.08	0.91
54:5:1388:A:H2	54:5:1462:G:H1	1.14	0.91
52:3:133:G:H1	52:3:150:U:H3	1.16	0.90
54:5:671:G:H1	54:5:713:A:H61	0.90	0.90
52:3:1070:U:H3	52:3:1155:G:H1	0.93	0.89
52:3:2299:U:H3	52:3:2349:G:H1	0.90	0.89
54:5:253:G:H1	54:5:265:U:H3	1.19	0.89
52:3:534:U:H3	52:3:538:A:N6	1.71	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:9:500:GLY:N	54:5:1469:G:H5''	1.87	0.88
54:5:609:G:H1	54:5:628:A:H2	1.16	0.88
52:3:1501:U:H3	52:3:1542:G:H1	1.16	0.88
52:3:1494:U:H3	52:3:1550:G:H1	0.88	0.88
53:4:58:C:H2'	53:4:59:A:H8	1.38	0.87
4:9:274:VAL:HA	4:9:278:LEU:HD23	1.55	0.87
37:l:110:PRO:HA	37:l:114:MET:HE3	1.57	0.87
52:3:2734:C:HO2'	52:3:2735:G:H8	1.22	0.86
52:3:629:G:H1	52:3:696:U:H3	1.18	0.86
52:3:413:G:H1	52:3:435:U:H3	1.21	0.85
5:A:131:ASN:OD1	5:A:170:LYS:NZ	2.10	0.85
40:o:37:LEU:O	40:o:43:VAL:HA	1.76	0.85
54:5:1330:A:H2'	54:5:1331:A:H8	1.41	0.85
54:5:1487:U:H3	54:5:1498:G:H1	1.21	0.85
52:3:2645:U:H3	52:3:2784:A:H62	1.24	0.84
54:5:134:G:H1	54:5:160:A:N6	1.73	0.84
52:3:1841:U:H5''	52:3:1842:G:H5'	1.57	0.84
54:5:833:G:H1	54:5:844:U:H3	1.25	0.84
30:e:108:LEU:HB3	30:e:110:LEU:HD23	1.59	0.84
36:k:18:LYS:HB2	52:3:698:A:H5''	1.59	0.83
54:5:885:U:O2	54:5:901:A:N7	2.12	0.83
52:3:2303:U:H3	52:3:2345:G:H1	0.86	0.83
52:3:2059:G:H1	52:3:2625:U:H3	1.26	0.82
54:5:612:G:H1	54:5:624:U:H3	1.21	0.82
52:3:1385:U:H3	52:3:1402:G:H1	1.27	0.82
4:9:494:TYR:HD1	4:9:584:LEU:HD11	1.44	0.82
54:5:1112:U:H3	54:5:1128:G:H1	1.26	0.81
52:3:918:G:H1	52:3:932:U:HO2'	1.23	0.81
54:5:169:G:H21	54:5:220:U:H5'	1.43	0.81
10:F:101:ARG:NH1	54:5:1350:A:O2'	2.13	0.81
52:3:2116:U:OP1	52:3:2156:G:N2	2.14	0.81
52:3:1803:U:H3	52:3:1830:G:H1	0.83	0.81
8:D:160:ILE:HB	8:D:177:ASP:HA	1.63	0.80
28:c:77:GLY:H	52:3:709:G:H5''	1.46	0.80
46:u:79:GLY:HA3	46:u:98:VAL:O	1.82	0.80
35:j:13:ASN:ND2	54:5:335:C:OP1	2.15	0.80
29:d:36:ILE:HD11	29:d:152:PHE:HB3	1.63	0.80
52:3:2474:C:C4	52:3:2475:C:N4	2.49	0.80
54:5:709:A:H2'	54:5:710:G:C8	2.17	0.80
10:F:112:GLU:HB2	10:F:118:LYS:HB3	1.62	0.79
52:3:1252:C:O2	52:3:1257:G:N2	2.16	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:134:G:H21	54:5:1422:A:H2	1.30	0.79
27:b:40:LYS:O	27:b:48:SER:HA	1.82	0.79
52:3:2695:U:H3	52:3:2730:G:H1	1.28	0.79
52:3:2589:G:H22	52:3:2618:C:H2'	1.47	0.79
54:5:826:G:H1	54:5:851:U:H3	1.27	0.79
52:3:534:U:H3	52:3:538:A:H62	0.86	0.78
4:9:33:HIS:HB3	4:9:271:LEU:HD11	1.65	0.78
52:3:1994:U:H2'	52:3:1995:G:H8	1.47	0.78
54:5:1293:A:C2	54:5:1335:G:N2	2.51	0.78
34:i:59:ILE:HD12	34:i:127:VAL:HG22	1.64	0.78
49:x:39:CYS:SG	49:x:40:GLY:N	2.57	0.78
54:5:1501:G:H2'	54:5:1502:G:C8	2.19	0.78
21:Q:92:ARG:HH11	54:5:733:A:H5''	1.48	0.78
29:d:106:VAL:HG11	29:d:139:PRO:HD3	1.64	0.78
52:3:276:A:N7	52:3:293:G:N2	2.32	0.78
54:5:1406:U:H3	54:5:1444:G:H1	0.84	0.78
45:t:72:SER:OG	52:3:369:C:O2	2.03	0.78
52:3:990:G:H1	52:3:999:U:H3	0.82	0.78
52:3:2092:U:H3	52:3:2242:G:H1	1.31	0.77
52:3:1310:U:H3	52:3:1314:A:H62	0.84	0.77
54:5:1278:G:N2	54:5:1308:G:O6	2.17	0.77
45:t:36:VAL:HG21	45:t:39:LEU:HD12	1.64	0.77
52:3:733:C:O2'	52:3:769:A:N6	2.18	0.77
54:5:514:U:O2	54:5:531:A:N7	2.18	0.77
52:3:1067:A:H2	52:3:1157:G:H1	1.33	0.77
52:3:1940:G:H1	52:3:1974:U:H3	1.30	0.77
13:I:59:ARG:HD2	13:I:69:GLU:HB3	1.66	0.77
54:5:956:U:O4	54:5:969:A:N6	2.17	0.77
52:3:2308:U:H2'	52:3:2309:A:H8	1.50	0.77
40:o:54:ARG:HH21	40:o:55:ARG:H	1.32	0.77
54:5:609:G:N1	54:5:628:A:H2	1.82	0.77
54:5:824:U:H2'	54:5:864:U:H3	1.46	0.76
5:A:127:ILE:HD12	5:A:170:LYS:HD2	1.68	0.76
52:3:2589:G:N2	52:3:2589:G:OP2	2.19	0.76
52:3:47:G:H5''	52:3:48:G:H5'	1.66	0.76
52:3:1807:C:N3	52:3:1824:G:N1	2.32	0.76
41:p:47:ARG:NH2	52:3:593:C:O2	2.19	0.76
52:3:28:G:H21	52:3:549:A:H62	1.34	0.76
52:3:2108:C:N4	52:3:2109:A:N6	2.33	0.76
26:a:42:LYS:NZ	52:3:1382:A:O3'	2.19	0.76
35:j:78:LYS:HB3	40:o:76:GLU:HB2	1.66	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:d:63:GLN:HB2	53:4:41:C:H5'	1.67	0.76
25:W:60:THR:HG22	25:W:61:GLY:H	1.50	0.76
54:5:609:G:N1	54:5:628:A:C2	2.53	0.76
8:D:142:GLY:O	8:D:148:ARG:HA	1.86	0.75
52:3:1095:U:H4'	52:3:1096:U:H3'	1.68	0.75
54:5:312:A:H4'	54:5:349:A:H61	1.51	0.75
29:d:35:VAL:HG11	52:3:2322:G:H5'	1.68	0.75
54:5:492:G:N2	54:5:495:U:O4	2.19	0.75
52:3:355:A:O2'	52:3:374:A:N3	2.17	0.75
54:5:70:A:H2'	54:5:71:A:H8	1.51	0.75
10:F:40:ARG:NH2	54:5:1265:U:OP1	2.18	0.75
52:3:1902:C:H2'	52:3:1903:A:H8	1.51	0.75
52:3:1310:U:O4	52:3:1314:A:N7	2.19	0.75
28:c:103:LEU:HD21	28:c:108:HIS:HB2	1.66	0.75
54:5:1136:G:H1	54:5:1151:A:H61	0.79	0.75
52:3:343:A:N3	52:3:363:G:O2'	2.19	0.75
52:3:1176:U:O2	52:3:1177:A:N6	2.20	0.75
54:5:834:G:H2'	54:5:835:G:C8	2.22	0.75
54:5:1115:G:N2	54:5:1116:U:O4	2.20	0.75
52:3:139:G:H2'	52:3:140:G:C8	2.21	0.75
52:3:227:A:O2'	52:3:456:G:N3	2.20	0.74
54:5:704:U:H2'	54:5:705:A:H8	1.51	0.74
27:b:5:GLY:CA	27:b:207:ILE:O	2.35	0.74
54:5:770:G:H2'	54:5:771:G:C8	2.22	0.74
54:5:1266:U:H2'	54:5:1267:G:H8	1.52	0.74
37:l:107:ALA:HA	37:l:114:MET:HE2	1.68	0.74
8:D:186:ASN:ND2	54:5:11:A:OP2	2.18	0.74
46:u:31:HIS:NE2	52:3:2268:C:OP1	2.19	0.74
42:q:72:LYS:O	42:q:80:LEU:HA	1.87	0.74
52:3:306:G:N2	52:3:398:C:O2	2.18	0.74
31:f:93:ILE:HG21	52:3:2228:U:H4'	1.67	0.74
52:3:2729:A:H4'	52:3:2878:G:H5'	1.68	0.74
4:9:624:ARG:HD3	4:9:644:PRO:HG2	1.69	0.74
23:S:53:ARG:NH2	54:5:164:C:OP2	2.18	0.74
45:t:1:MET:N	52:3:85:U:OP1	2.20	0.74
52:3:1505:G:H1	52:3:1538:U:H3	1.35	0.74
52:3:2305:C:H3'	52:3:2326:G:H22	1.53	0.74
55:7:56:U:H2'	55:7:57:C:H2'	1.70	0.74
35:j:23:LYS:NZ	52:3:2569:A:N3	2.34	0.74
54:5:920:G:H1'	54:5:1477:A:H1'	1.69	0.74
55:8:56:U:H2'	55:8:57:C:H2'	1.70	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:L:119:LYS:NZ	16:L:120:LYS:O	2.21	0.74
23:S:10:ARG:NH1	54:5:92:G:N7	2.35	0.74
2:1:10:ARG:NH2	52:3:2401:U:O2'	2.21	0.73
26:a:147:VAL:HG22	26:a:200:VAL:HG12	1.68	0.73
4:9:17:ALA:HA	4:9:105:VAL:HB	1.68	0.73
10:F:18:ASN:O	10:F:19:ASN:ND2	2.21	0.73
54:5:41:C:H2'	54:5:42:G:H8	1.53	0.73
12:H:24:THR:HG22	12:H:25:GLN:H	1.52	0.73
54:5:1261:A:H2'	54:5:1262:A:C8	2.22	0.73
52:3:514:A:N1	52:3:535:G:O2'	2.22	0.73
52:3:1122:G:O6	52:3:1124:G:N2	2.20	0.73
52:3:1166:G:HO2'	52:3:2032:G:HO2'	1.32	0.73
54:5:580:C:O2	54:5:756:A:N6	2.21	0.73
1:0:11:LYS:NZ	1:0:15:THR:OG1	2.20	0.73
44:s:66:ARG:NH2	52:3:65:A:O2'	2.21	0.73
54:5:544:A:H4'	54:5:546:G:H4'	1.68	0.73
54:5:1133:A:N6	54:5:1153:G:C4	2.56	0.73
10:F:14:ASP:HB2	10:F:18:ASN:H	1.53	0.73
9:E:125:PRO:O	54:5:839:U:N3	2.21	0.73
17:M:61:TRP:HB2	54:5:1161:G:H21	1.54	0.73
34:i:87:ILE:HD11	52:3:1166:G:H4'	1.71	0.73
52:3:1884:A:H2'	52:3:1885:G:H8	1.54	0.73
52:3:1912:C:H4'	52:3:1936:G:H8	1.53	0.73
52:3:2400:A:N6	52:3:2432:C:O2	2.22	0.73
18:N:35:GLN:NE2	54:5:737:U:OP1	2.21	0.73
52:3:499:G:N2	52:3:502:A:OP2	2.20	0.73
52:3:580:U:OP1	52:3:1249:A:O2'	2.06	0.73
52:3:1727:U:O4	52:3:1983:U:O2'	2.06	0.73
54:5:1106:U:H3	54:5:1160:G:H1	1.36	0.73
17:M:31:ARG:HB3	54:5:969:A:H5'	1.69	0.72
52:3:31:U:H2'	52:3:32:G:H8	1.53	0.72
52:3:1303:U:H3	52:3:1680:A:H5'	1.53	0.72
54:5:97:G:H21	54:5:350:G:H5'	1.53	0.72
54:5:609:G:O6	54:5:628:A:N1	2.22	0.72
14:J:118:LYS:HB3	54:5:777:A:H5''	1.70	0.72
52:3:474:U:H2'	52:3:475:A:H8	1.54	0.72
52:3:2567:C:H2'	52:3:2568:G:H8	1.53	0.72
52:3:2058:G:N2	52:3:2059:G:O6	2.22	0.72
54:5:641:U:H2'	54:5:642:A:H8	1.54	0.72
43:r:78:GLN:OE1	52:3:26:G:N2	2.22	0.72
8:D:139:GLU:HA	8:D:151:LEU:O	1.90	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:195:A:O2'	52:3:713:C:O2	2.07	0.72
9:E:4:ASN:ND2	9:E:60:TRP:O	2.21	0.72
52:3:881:A:N7	52:3:968:U:N3	2.36	0.72
3:2:11:CYS:SG	3:2:12:LYS:N	2.62	0.72
5:A:95:LEU:HB3	5:A:229:MET:HG2	1.72	0.72
52:3:2823:A:O2'	52:3:2825:A:N7	2.23	0.72
54:5:1293:A:H2	54:5:1335:G:N2	1.87	0.72
29:d:133:LYS:NZ	52:3:2313:U:O2'	2.21	0.72
43:r:42:LYS:HB2	52:3:2017:G:H5''	1.70	0.72
52:3:2155:G:H2'	52:3:2156:G:H8	1.54	0.72
52:3:2207:A:N1	52:3:2234:C:N4	2.37	0.72
54:5:621:C:H2'	54:5:622:A:H8	1.55	0.72
54:5:1043:U:O2	54:5:1181:G:O6	2.07	0.72
13:I:58:ILE:HG23	17:M:41:ARG:HH11	1.55	0.71
52:3:2104:A:H2'	52:3:2105:G:C8	2.26	0.71
13:I:59:ARG:O	17:M:45:ARG:NH2	2.23	0.71
37:l:82:ARG:NH1	52:3:2259:G:N7	2.38	0.71
52:3:200:A:OP1	52:3:202:C:N4	2.23	0.71
52:3:1063:A:H2'	52:3:1064:A:H8	1.55	0.71
52:3:2135:C:H2'	52:3:2136:A:H8	1.55	0.71
52:3:1942:G:N2	52:3:1971:G:OP1	2.23	0.71
7:C:126:ASP:OD1	7:C:143:ARG:NH1	2.23	0.71
12:H:123:ALA:N	54:5:1323:A:OP1	2.22	0.71
52:3:517:G:H1	52:3:544:U:H3	1.37	0.71
52:3:1239:G:O2'	52:3:1267:A:N1	2.24	0.71
26:a:113:ASP:HB2	26:a:202:VAL:HG23	1.72	0.71
29:d:71:LYS:NZ	52:3:2306:A:OP1	2.23	0.71
43:r:97:THR:HG23	43:r:99:ARG:HH12	1.56	0.71
52:3:2151:G:O2'	52:3:2154:A:N1	2.23	0.71
52:3:2820:G:N3	52:3:2887:A:O2'	2.23	0.71
8:D:68:GLU:HG3	8:D:94:VAL:HG22	1.72	0.71
22:R:79:ASN:ND2	54:5:952:U:O2'	2.23	0.71
26:a:229:ARG:NH2	52:3:1834:U:OP2	2.24	0.71
52:3:534:U:O4	52:3:538:A:N7	2.24	0.71
52:3:2306:A:N6	52:3:2326:G:O2'	2.24	0.71
13:I:55:ILE:HB	13:I:71:PHE:HB2	1.72	0.71
15:K:67:LYS:HD2	15:K:75:GLU:HG3	1.73	0.71
54:5:674:U:O2	54:5:774:A:O2'	2.07	0.71
4:9:501:ARG:O	54:5:1469:G:H5'	1.91	0.70
10:F:148:LYS:HB3	14:J:91:ARG:HD2	1.71	0.70
53:4:42:G:N2	53:4:45:C:N3	2.34	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:63:U:H3	54:5:90:G:H1	1.39	0.70
27:b:211:LYS:HD2	52:3:2779:C:H5''	1.73	0.70
30:e:99:ALA:HB1	30:e:106:LEU:HD11	1.73	0.70
52:3:1864:A:O2'	52:3:1865:A:N7	2.22	0.70
52:3:1027:U:O4	52:3:1198:G:O6	2.09	0.70
52:3:1807:C:N4	52:3:1824:G:N2	2.23	0.70
43:r:61:ASN:ND2	52:3:530:G:O2'	2.25	0.70
52:3:2117:G:O2'	52:3:2127:G:OP2	2.09	0.70
54:5:376:G:N2	54:5:379:A:OP2	2.25	0.70
4:9:93:GLU:OE1	4:9:97:ARG:NH1	2.24	0.70
9:E:4:ASN:HB3	9:E:88:ILE:HB	1.72	0.70
52:3:498:C:N4	52:3:499:G:O6	2.24	0.70
54:5:709:A:H2'	54:5:710:G:H8	1.53	0.70
5:A:158:ARG:HA	5:A:161:LYS:HD3	1.71	0.70
26:a:65:LYS:O	26:a:67:ARG:NH2	2.24	0.70
41:p:91:ARG:HD3	52:3:1032:A:H4'	1.74	0.70
52:3:2021:A:H2'	52:3:2022:A:C4	2.27	0.70
54:5:368:C:O2	54:5:385:A:N6	2.24	0.70
54:5:896:G:H2'	54:5:897:A:H8	1.55	0.70
43:r:77:ASN:OD1	52:3:25:G:N2	2.24	0.70
52:3:1239:G:H4'	52:3:1242:G:H4'	1.72	0.70
54:5:671:G:H2'	54:5:672:A:H8	1.56	0.70
52:3:1071:G:H1	52:3:1154:U:H3	0.78	0.70
52:3:2145:A:H61	52:3:2160:U:H3	1.38	0.70
46:u:86:PHE:O	46:u:92:LYS:HB2	1.90	0.70
52:3:1182:U:H2'	52:3:1183:A:C8	2.27	0.70
52:3:1437:A:H2'	52:3:1438:G:H8	1.57	0.70
52:3:2310:C:H2'	52:3:2311:G:C8	2.26	0.70
54:5:401:U:H5''	54:5:493:A:H2	1.56	0.70
54:5:580:C:N3	54:5:756:A:N7	2.40	0.70
55:8:9:U:O2'	55:8:22:A:N1	2.25	0.70
7:C:88:ASN:HA	7:C:91:ARG:HE	1.57	0.69
18:N:45:LYS:HB3	54:5:665:G:H4'	1.75	0.69
54:5:1245:A:H2'	54:5:1246:A:H8	1.57	0.69
52:3:1252:C:N3	52:3:1257:G:N1	2.35	0.69
54:5:1005:U:H3	54:5:1016:A:H61	1.40	0.69
55:7:27:A:N1	55:7:45:G:N2	2.40	0.69
52:3:196:G:H5'	52:3:713:C:H1'	1.75	0.69
52:3:643:A:H62	52:3:655:G:N2	1.91	0.69
45:t:78:ASP:HB3	45:t:84:GLN:HB3	1.73	0.69
52:3:1787:A:H5'	52:3:1788:A:H3'	1.73	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:704:U:H2'	54:5:705:A:C8	2.27	0.69
54:5:1402:U:H3	54:5:1449:G:H1	1.37	0.69
26:a:169:ARG:HB2	26:a:183:GLN:HB3	1.75	0.69
29:d:37:ASN:ND2	52:3:2320:U:O2'	2.26	0.69
36:k:73:LEU:HD21	52:3:248:A:H4'	1.74	0.69
11:G:125:ASP:HB2	11:G:129:ARG:HH22	1.58	0.69
52:3:1200:U:H3	52:3:1215:G:H1	1.40	0.69
52:3:1243:A:N6	52:3:1265:G:N2	2.13	0.69
52:3:1392:G:N2	52:3:1395:A:OP2	2.24	0.69
52:3:2808:A:O2'	52:3:2809:A:O5'	2.11	0.69
9:E:106:GLN:HG2	54:5:838:A:H4'	1.75	0.69
42:q:34:GLN:HE22	42:q:56:VAL:HG22	1.57	0.69
44:s:65:ILE:HG13	44:s:66:ARG:HD2	1.74	0.69
52:3:2036:G:N1	52:3:2040:A:OP2	2.20	0.69
53:4:58:C:H2'	53:4:59:A:C8	2.24	0.69
4:9:129:PRO:HG2	4:9:279:PRO:HG3	1.75	0.69
12:H:58:ASP:HB2	12:H:61:LYS:HD3	1.74	0.69
12:H:117:LYS:H	12:H:120:LEU:HD12	1.58	0.69
26:a:173:GLN:HA	26:a:180:VAL:HA	1.73	0.69
26:a:226:PRO:HB3	52:3:1797:C:H5'	1.74	0.69
32:g:23:GLY:HA3	32:g:89:ILE:HG21	1.73	0.69
52:3:30:A:H2'	52:3:31:U:C6	2.28	0.69
52:3:2274:A:N6	52:3:2281:A:OP2	2.25	0.69
54:5:1009:G:N2	54:5:1012:A:OP2	2.25	0.69
4:9:29:ARG:O	4:9:33:HIS:ND1	2.26	0.69
4:9:629:GLY:N	52:3:1102:A:O5'	2.22	0.69
7:C:9:LYS:NZ	54:5:540:U:OP1	2.20	0.69
27:b:161:LYS:HA	52:3:2627:U:H5''	1.75	0.69
55:8:27:A:N1	55:8:45:G:N2	2.40	0.69
7:C:1:MET:HB2	54:5:544:A:C6	2.29	0.69
9:E:151:LYS:O	11:G:56:ASN:ND2	2.26	0.69
37:l:130:LYS:HE2	37:l:132:LEU:HD21	1.74	0.69
40:o:59:GLY:O	40:o:82:HIS:NE2	2.25	0.69
50:y:12:ARG:HH12	52:3:2052:C:H5''	1.57	0.69
52:3:934:C:H2'	52:3:935:U:C6	2.28	0.69
14:J:82:THR:HG21	24:T:29:ALA:HB2	1.75	0.68
52:3:2664:U:O2	52:3:2673:A:N7	2.25	0.68
18:N:35:GLN:HE22	54:5:737:U:H5''	1.57	0.68
31:f:27:ILE:O	31:f:34:LYS:NZ	2.25	0.68
33:h:69:THR:HG1	33:h:107:TYR:HH	1.40	0.68
35:j:64:ARG:NH2	35:j:99:PHE:O	2.27	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:m:106:ARG:HH21	38:m:109:ASP:HB2	1.58	0.68
46:u:65:VAL:HG21	46:u:95:VAL:HG23	1.76	0.68
6:B:133:LEU:HD21	6:B:169:LYS:HG2	1.75	0.68
8:D:69:ARG:HH12	8:D:171:GLU:HB2	1.58	0.68
8:D:141:ILE:HD11	8:D:148:ARG:HB3	1.75	0.68
27:b:56:THR:HA	27:b:78:THR:HA	1.73	0.68
52:3:140:G:O2'	52:3:142:A:N6	2.26	0.68
52:3:2861:G:N2	52:3:2864:A:OP2	2.22	0.68
54:5:288:A:OP2	54:5:301:G:N2	2.20	0.68
5:A:27:ARG:NH1	5:A:226:CYS:SG	2.66	0.68
36:k:44:SER:HB3	52:3:705:A:H5''	1.76	0.68
52:3:998:C:O2'	52:3:2505:A:OP1	2.12	0.68
54:5:1079:G:H2'	54:5:1080:G:C8	2.27	0.68
54:5:1205:C:H2'	54:5:1206:G:H8	1.58	0.68
11:G:98:TYR:OH	54:5:595:G:N2	2.27	0.68
23:S:13:GLN:NE2	54:5:90:G:OP2	2.25	0.68
29:d:125:ARG:NH2	52:3:2323:U:O2	2.26	0.68
34:i:3:LYS:HG3	52:3:1030:U:H4'	1.76	0.68
52:3:373:U:H2'	52:3:374:A:H8	1.57	0.68
8:D:137:TYR:OH	8:D:203:LEU:O	2.10	0.68
26:a:61:ARG:HB3	26:a:64:ARG:HH12	1.56	0.68
49:x:13:SER:HA	49:x:24:THR:HA	1.75	0.68
28:c:185:LYS:HD2	52:3:651:A:H61	1.57	0.68
45:t:105:LYS:HE2	52:3:333:A:H5''	1.76	0.68
50:y:11:HIS:NE2	52:3:2028:G:OP1	2.21	0.68
52:3:1487:U:O2'	52:3:2710:G:N2	2.25	0.68
8:D:181:LYS:NZ	8:D:182:ASN:O	2.27	0.68
36:k:84:LYS:HA	36:k:87:LYS:HZ3	1.58	0.68
52:3:880:C:N3	52:3:968:U:O2'	2.27	0.68
52:3:1093:U:H3	52:3:1115:G:H1	1.42	0.68
54:5:354:U:H2'	54:5:355:A:H8	1.59	0.68
54:5:673:A:N1	54:5:711:G:O6	2.27	0.68
4:9:524:LYS:HB2	4:9:564:PHE:HA	1.76	0.68
16:L:90:ARG:HD2	16:L:95:LEU:HD21	1.75	0.68
52:3:782:U:H3	52:3:2021:A:H1'	1.59	0.68
53:4:104:C:H2'	53:4:105:A:H8	1.59	0.68
54:5:1245:A:H2'	54:5:1246:A:C8	2.29	0.68
1:0:35:ARG:NH1	52:3:56:G:O2'	2.27	0.68
9:E:96:TYR:OH	54:5:658:G:OP1	2.12	0.68
12:H:106:THR:HG23	12:H:107:THR:HG23	1.76	0.68
26:a:190:ARG:HD2	26:a:278:ILE:HD13	1.76	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:243:U:O2	52:3:262:G:N2	2.25	0.68
52:3:500:U:N3	52:3:823:A:C6	2.61	0.68
52:3:2852:G:H1'	52:3:2872:A:H61	1.59	0.68
54:5:590:G:H1	54:5:644:U:H3	1.40	0.68
7:C:78:VAL:HG21	7:C:89:LEU:HD12	1.76	0.67
11:G:99:ARG:NH1	11:G:103:LYS:O	2.28	0.67
41:p:23:SER:HG	41:p:28:HIS:HD1	1.42	0.67
52:3:1906:G:O2'	52:3:1908:A:OP2	2.12	0.67
11:G:68:ARG:O	54:5:650:A:N6	2.25	0.67
39:n:79:ASP:HA	39:n:82:VAL:HG22	1.76	0.67
54:5:366:C:H2'	54:5:367:A:C8	2.29	0.67
4:9:503:GLN:NE2	4:9:574:SER:OG	2.27	0.67
7:C:165:PRO:HB2	7:C:180:ARG:HH11	1.59	0.67
29:d:35:VAL:HG23	29:d:90:THR:HG22	1.76	0.67
31:f:125:GLU:OE1	31:f:139:LYS:NZ	2.27	0.67
35:j:27:SER:HA	52:3:2571:U:H5'	1.76	0.67
39:n:23:ASN:ND2	39:n:25:ASP:OD2	2.27	0.67
52:3:177:U:H2'	52:3:178:A:C8	2.29	0.67
52:3:566:G:OP1	52:3:594:G:N2	2.27	0.67
52:3:1446:G:O2'	52:3:1613:A:N6	2.28	0.67
52:3:2571:U:N3	52:3:2574:A:OP2	2.21	0.67
54:5:885:U:N3	54:5:901:A:C8	2.62	0.67
54:5:885:U:C2	54:5:901:A:N7	2.61	0.67
4:9:267:ILE:HA	4:9:270:LEU:HD12	1.75	0.67
7:C:167:VAL:HG12	7:C:178:TYR:HA	1.76	0.67
26:a:237:ASP:OD2	52:3:815:G:N1	2.27	0.67
30:e:18:LEU:HD22	30:e:27:VAL:HG22	1.75	0.67
30:e:108:LEU:HB2	30:e:116:ILE:HB	1.76	0.67
6:B:11:ARG:NH1	6:B:180:THR:O	2.27	0.67
38:m:19:ARG:NH1	38:m:65:LYS:O	2.27	0.67
54:5:1124:U:OP2	54:5:1125:C:N4	2.28	0.67
54:5:1136:G:N2	54:5:1151:A:N1	2.34	0.67
5:A:27:ARG:NH1	5:A:255:GLN:O	2.28	0.67
52:3:1640:G:H5'	52:3:1641:A:H5''	1.76	0.67
54:5:1316:C:H2'	54:5:1317:A:H8	1.60	0.67
4:9:308:VAL:HG22	4:9:330:SER:HB3	1.75	0.67
52:3:2146:A:H2'	52:3:2147:G:C8	2.30	0.67
53:4:6:U:H2'	53:4:7:G:H8	1.59	0.67
54:5:1135:U:O4'	54:5:1157:G:N2	2.28	0.67
33:h:19:ALA:HB3	33:h:36:THR:HA	1.77	0.67
52:3:1414:C:H2'	52:3:1415:A:C8	2.30	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:8:SER:OG	52:3:721:G:N2	2.28	0.67
4:9:179:ILE:HG13	4:9:180:GLU:HG2	1.77	0.67
23:S:67:ARG:NH1	54:5:259:A:OP1	2.28	0.67
4:9:34:SER:HB2	4:9:70:VAL:HG21	1.77	0.67
8:D:87:ARG:HH12	54:5:1072:G:H5''	1.60	0.67
28:c:185:LYS:O	52:3:650:G:N2	2.28	0.67
52:3:454:G:H2'	52:3:455:G:H8	1.60	0.67
54:5:694:U:O2	54:5:782:G:N2	2.28	0.67
55:7:9:U:O2'	55:7:22:A:N1	2.25	0.67
8:D:162:ALA:HB3	8:D:167:ARG:HG3	1.77	0.66
13:I:13:LYS:H	13:I:107:SER:HB3	1.59	0.66
26:a:57:HIS:HB3	26:a:227:THR:HB	1.75	0.66
28:c:138:GLY:HA2	28:c:170:GLN:HG3	1.76	0.66
44:s:70:ARG:NH1	52:3:492:C:O2'	2.28	0.66
54:5:40:G:N7	54:5:400:G:N2	2.42	0.66
54:5:108:C:OP1	54:5:307:C:O2'	2.13	0.66
1:0:24:THR:HG23	1:0:27:GLY:H	1.58	0.66
6:B:182:ARG:HH22	6:B:209:MET:HG2	1.60	0.66
27:b:225:GLN:HG2	40:o:19:LYS:HA	1.77	0.66
52:3:470:U:O2'	52:3:472:A:N6	2.27	0.66
27:b:150:GLY:HA3	27:b:156:ALA:HB3	1.77	0.66
40:o:96:VAL:HG12	40:o:98:ARG:H	1.60	0.66
44:s:60:ARG:NH1	52:3:1367:G:OP2	2.29	0.66
48:w:67:GLU:OE2	52:3:146:G:N2	2.25	0.66
54:5:779:A:H62	54:5:797:G:H21	1.43	0.66
52:3:855:A:H1'	52:3:979:U:H1'	1.78	0.66
52:3:2078:A:H2'	52:3:2079:G:C8	2.30	0.66
35:j:87:ILE:HA	35:j:93:PRO:HA	1.78	0.66
52:3:122:G:H4'	52:3:152:A:H5'	1.77	0.66
52:3:2826:G:O2'	52:3:2828:C:OP2	2.12	0.66
4:9:26:THR:OG1	4:9:135:ASN:ND2	2.27	0.66
4:9:495:ILE:HG12	4:9:504:TYR:HD1	1.59	0.66
52:3:920:G:N2	52:3:931:G:O6	2.29	0.66
52:3:1670:U:H2'	52:3:1671:C:C6	2.31	0.66
52:3:2145:A:N6	52:3:2161:G:O6	2.28	0.66
17:M:34:LEU:HA	54:5:1332:U:H5''	1.76	0.66
52:3:140:G:H21	52:3:143:A:N6	1.93	0.66
52:3:890:U:H2'	52:3:891:G:H8	1.61	0.66
54:5:1384:A:H2'	54:5:1385:A:C8	2.31	0.66
54:5:1388:A:N1	54:5:1462:G:O6	2.28	0.66
37:l:14:ASN:O	37:l:15:VAL:HG23	1.96	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1902:C:H2'	52:3:1903:A:C8	2.29	0.66
29:d:123:ASP:O	29:d:125:ARG:NH1	2.29	0.66
52:3:648:G:OP1	52:3:648:G:N2	2.29	0.66
10:F:107:ALA:HB1	10:F:119:ILE:HG22	1.78	0.66
13:I:56:THR:HG22	13:I:68:ARG:HD2	1.78	0.66
27:b:5:GLY:HA2	27:b:207:ILE:O	1.96	0.66
29:d:69:LYS:HA	29:d:84:LEU:HA	1.76	0.66
44:s:35:ALA:HA	44:s:39:ARG:HH22	1.61	0.66
52:3:1067:A:N1	52:3:1157:G:O6	2.29	0.66
52:3:2223:C:H2'	52:3:2224:A:H8	1.61	0.66
12:H:108:ARG:HD3	12:H:110:LYS:H	1.59	0.65
26:a:252:ASP:O	26:a:255:ARG:NH2	2.28	0.65
49:x:16:CYS:SG	49:x:17:ALA:N	2.69	0.65
52:3:1764:U:H2'	52:3:1768:G:H1	1.60	0.65
52:3:1919:A:H62	52:3:1924:U:H3	1.43	0.65
53:4:60:C:H2'	53:4:61:A:C8	2.30	0.65
54:5:1274:G:H4'	54:5:1275:U:H5'	1.78	0.65
4:9:18:HIS:HE1	4:9:115:GLN:H	1.42	0.65
23:S:67:ARG:NH2	54:5:257:U:OP2	2.28	0.65
26:a:171:LEU:HD11	26:a:183:GLN:HB2	1.78	0.65
54:5:936:G:H1	54:5:1316:C:H42	1.43	0.65
54:5:1241:G:O2'	54:5:1243:A:N6	2.29	0.65
54:5:1376:G:O6	54:5:1479:G:N2	2.30	0.65
9:E:42:LEU:HA	9:E:56:HIS:HA	1.79	0.65
14:J:111:HIS:H	54:5:672:A:H2	1.44	0.65
15:K:25:HIS:HE1	54:5:551:A:H4'	1.60	0.65
20:P:21:THR:OG1	20:P:73:LYS:NZ	2.30	0.65
36:k:42:ARG:NH2	52:3:841:C:OP2	2.30	0.65
39:n:57:SER:HA	39:n:61:LYS:HB3	1.78	0.65
52:3:680:A:H2'	52:3:682:A:C8	2.31	0.65
52:3:1082:A:O2'	52:3:1146:A:N6	2.29	0.65
52:3:1495:A:OP2	52:3:1548:A:N6	2.28	0.65
53:4:60:C:H2'	53:4:61:A:H8	1.60	0.65
54:5:453:C:O2'	54:5:454:U:O4'	2.14	0.65
4:9:295:ASN:OD1	4:9:296:GLU:N	2.29	0.65
35:j:35:LEU:HD21	35:j:68:GLY:HA2	1.77	0.65
40:o:26:SER:HB3	40:o:93:ARG:HH11	1.60	0.65
52:3:2565:G:H2'	52:3:2566:C:C6	2.32	0.65
52:3:2716:U:H2'	52:3:2717:G:H8	1.61	0.65
54:5:945:U:H3	54:5:1206:G:H1	1.44	0.65
54:5:1217:G:H1'	54:5:1277:C:H5''	1.78	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:1237:G:N2	54:5:1248:U:O2	2.23	0.65
54:5:1266:U:H2'	54:5:1267:G:C8	2.31	0.65
4:9:496:LYS:O	4:9:503:GLN:HB2	1.97	0.65
9:E:49:ILE:HG23	9:E:50:LYS:H	1.61	0.65
12:H:11:ARG:NH2	54:5:1108:A:OP1	2.29	0.65
52:3:1509:U:H2'	52:3:1510:A:C8	2.32	0.65
52:3:1619:A:H2'	52:3:1620:A:H8	1.60	0.65
52:3:2654:U:OP1	52:3:2773:A:O2'	2.13	0.65
53:4:3:U:OP1	53:4:59:A:O2'	2.14	0.65
54:5:66:A:HO2'	54:5:378:A:H61	1.42	0.65
54:5:662:G:O6	54:5:721:G:O6	2.14	0.65
55:7:16:G:H22	55:7:49:C:H42	1.45	0.65
4:9:570:GLU:HG3	55:7:37:A:H5'	1.78	0.65
26:a:92:ARG:NH2	52:3:1824:G:OP1	2.30	0.65
52:3:89:U:H5''	52:3:90:G:H5''	1.78	0.65
52:3:173:C:H2'	52:3:174:A:H8	1.61	0.65
52:3:410:G:N2	52:3:437:A:OP2	2.24	0.65
52:3:622:U:H2'	52:3:623:A:C8	2.32	0.65
4:9:68:THR:HB	4:9:79:LEU:O	1.96	0.65
26:a:220:ARG:HH21	26:a:225:ARG:HG2	1.62	0.65
45:t:93:MET:SD	45:t:101:THR:OG1	2.54	0.65
52:3:667:A:N6	52:3:2424:C:H1'	2.12	0.65
52:3:904:C:N3	52:3:949:C:O2'	2.29	0.65
20:P:70:SER:O	20:P:74:ARG:NH2	2.25	0.65
31:f:47:ARG:HH12	31:f:51:LEU:HD13	1.60	0.65
34:i:40:ARG:HH12	52:3:1043:C:H5'	1.60	0.65
52:3:714:G:H2'	52:3:715:G:C8	2.32	0.65
54:5:1329:G:H2'	54:5:1330:A:H8	1.60	0.65
55:8:7:U:H3	55:8:68:G:H1	1.45	0.65
22:R:29:ARG:HD2	22:R:48:THR:HG23	1.78	0.65
26:a:144:GLY:HA2	26:a:169:ARG:HH12	1.62	0.65
31:f:79:PHE:HB2	31:f:142:VAL:HG12	1.79	0.65
40:o:58:LYS:HD3	52:3:2849:G:H5'	1.79	0.65
52:3:1408:G:O2'	52:3:1603:A:N6	2.29	0.65
54:5:711:G:H2'	54:5:712:A:C8	2.31	0.65
54:5:961:G:OP1	54:5:963:U:O2'	2.14	0.65
10:F:78:ARG:NH2	54:5:1356:U:O2	2.30	0.65
49:x:10:GLN:HB2	49:x:29:LEU:HD22	1.78	0.65
51:z:19:TYR:OH	51:z:37:PHE:O	2.14	0.65
52:3:189:U:H2'	52:3:190:G:H8	1.60	0.65
52:3:270:G:H2'	52:3:271:G:O4'	1.96	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:713:C:H2'	52:3:714:G:C8	2.32	0.65
52:3:1415:A:H2'	52:3:1416:G:H8	1.62	0.65
7:C:123:LEU:HD23	7:C:143:ARG:HB2	1.79	0.64
14:J:16:VAL:HG22	14:J:25:VAL:HG12	1.79	0.64
17:M:19:ARG:NH2	54:5:1194:A:OP2	2.30	0.64
23:S:3:ASN:ND2	23:S:8:GLU:OE2	2.27	0.64
52:3:1201:A:H2'	52:3:1202:A:C8	2.32	0.64
52:3:1507:G:O2'	52:3:1508:G:OP1	2.12	0.64
4:9:291:GLY:H	4:9:296:GLU:HG3	1.62	0.64
52:3:1976:A:O2'	52:3:1979:G:N3	2.27	0.64
52:3:2376:C:H2'	52:3:2377:A:H8	1.63	0.64
54:5:660:A:N6	54:5:739:G:N1	2.45	0.64
10:F:107:ALA:HA	10:F:122:GLU:HG3	1.80	0.64
26:a:138:LEU:HD13	26:a:180:VAL:HG11	1.78	0.64
33:h:119:ALA:HB1	52:3:1116:U:H4'	1.80	0.64
35:j:6:THR:OG1	52:3:1700:G:O2'	2.14	0.64
44:s:26:LYS:HD3	44:s:84:THR:HG22	1.78	0.64
52:3:299:A:N6	52:3:440:C:H2'	2.12	0.64
54:5:320:G:N2	54:5:323:A:OP2	2.18	0.64
54:5:350:G:N2	54:5:384:G:O2'	2.26	0.64
54:5:688:G:H22	54:5:692:A:H3'	1.62	0.64
54:5:1406:U:O2	54:5:1444:G:N2	2.23	0.64
3:2:5:ALA:H	52:3:2474:C:H5'	1.62	0.64
10:F:101:ARG:NH1	54:5:934:G:H4'	2.13	0.64
34:i:117:LEU:HD11	52:3:590:U:H4'	1.78	0.64
52:3:1334:U:H2'	52:3:1335:A:C8	2.31	0.64
52:3:2073:C:H2'	52:3:2074:G:C8	2.31	0.64
52:3:2825:A:H2	52:3:2830:A:H61	1.46	0.64
54:5:599:G:N2	54:5:634:U:O2	2.29	0.64
12:H:12:ARG:HD3	12:H:79:GLY:HA3	1.80	0.64
23:S:34:ASN:HA	23:S:37:LYS:HE2	1.78	0.64
52:3:1814:G:H2'	52:3:1815:U:H2'	1.79	0.64
52:3:2175:U:C2	52:3:2179:A:N7	2.65	0.64
52:3:2259:G:N1	55:7:75:C:O2'	2.29	0.64
52:3:2348:U:H2'	52:3:2349:G:H8	1.63	0.64
54:5:213:U:OP1	54:5:461:G:N2	2.30	0.64
4:9:136:LYS:HA	4:9:260:SER:HA	1.80	0.64
4:9:393:ASP:O	4:9:395:GLN:NE2	2.30	0.64
21:Q:58:GLU:HA	21:Q:61:LYS:HE3	1.79	0.64
26:a:7:ILE:O	52:3:740:A:O2'	2.14	0.64
26:a:47:ARG:HG2	26:a:53:ILE:HG13	1.80	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:o:32:ASN:HB3	40:o:89:GLU:HB2	1.79	0.64
41:p:105:PHE:HA	41:p:108:ILE:HD12	1.79	0.64
52:3:2335:A:H3'	52:3:2336:A:H8	1.62	0.64
54:5:937:G:H1	54:5:1315:U:H3	1.44	0.64
32:g:23:GLY:HA2	32:g:114:ASP:H	1.62	0.64
52:3:1858:U:H3	52:3:1898:G:H1	1.46	0.64
54:5:394:U:H2'	54:5:395:G:H8	1.61	0.64
54:5:694:U:H3'	54:5:695:G:H8	1.62	0.64
54:5:1260:U:H3'	54:5:1261:A:H4'	1.79	0.64
55:7:27:A:N6	55:7:45:G:N1	2.45	0.64
4:9:628:GLU:H	52:3:1102:A:H4'	1.62	0.64
7:C:79:LEU:O	7:C:82:ARG:NH1	2.31	0.64
52:3:399:G:O6	52:3:400:A:N6	2.30	0.64
52:3:2291:U:O2	52:3:2333:G:O6	2.16	0.64
54:5:290:G:OP1	54:5:608:G:O2'	2.13	0.64
54:5:1051:U:H2'	54:5:1052:G:H8	1.62	0.64
26:a:184:LEU:HD21	26:a:192:PHE:HE2	1.63	0.64
28:c:202:GLU:OE1	28:c:202:GLU:N	2.30	0.64
52:3:533:G:H2'	52:3:534:U:C6	2.32	0.64
52:3:1661:A:H2'	52:3:1662:G:H8	1.63	0.64
42:q:39:LEU:HD12	42:q:50:LEU:HG	1.80	0.64
52:3:421:A:N6	52:3:424:G:OP2	2.30	0.64
52:3:1016:A:N6	52:3:1171:G:OP2	2.31	0.64
54:5:442:G:H2'	54:5:443:G:H8	1.63	0.64
55:7:7:U:H3	55:7:68:G:H1	1.45	0.64
55:8:16:G:H22	55:8:49:C:H42	1.45	0.64
4:9:105:VAL:HG13	4:9:135:ASN:HB2	1.78	0.63
5:A:66:GLN:HE21	5:A:70:ASN:HD22	1.46	0.63
28:c:6:LEU:HD13	28:c:127:LEU:HG	1.80	0.63
43:r:116:GLU:HA	43:r:119:LYS:HD2	1.80	0.63
52:3:1054:U:OP1	52:3:1070:U:O2'	2.14	0.63
52:3:1315:A:N6	52:3:1683:G:O2'	2.31	0.63
52:3:1473:C:O2	52:3:1580:G:N1	2.31	0.63
52:3:2521:A:H2'	52:3:2522:U:C6	2.33	0.63
55:8:27:A:N6	55:8:45:G:N1	2.45	0.63
4:9:458:ILE:O	4:9:462:ARG:HG2	1.98	0.63
13:I:43:LYS:HE2	13:I:46:LEU:HD22	1.81	0.63
20:P:74:ARG:HG2	54:5:230:G:H4'	1.79	0.63
28:c:157:VAL:HG22	28:c:196:ALA:HB3	1.79	0.63
32:g:11:VAL:HG13	32:g:62:ALA:HA	1.79	0.63
41:p:12:ARG:NH2	52:3:1281:A:OP1	2.31	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:t:5:LYS:HB3	45:t:102:ARG:HH22	1.62	0.63
46:u:18:LYS:NZ	52:3:2260:G:O6	2.31	0.63
52:3:189:U:H2'	52:3:190:G:C8	2.33	0.63
52:3:725:G:N2	52:3:807:U:O2	2.23	0.63
52:3:1414:C:O2'	52:3:1495:A:N3	2.31	0.63
52:3:1818:G:H2'	52:3:1819:G:H8	1.63	0.63
54:5:206:G:N2	54:5:209:A:OP2	2.31	0.63
54:5:335:C:O2	54:5:347:G:N2	2.31	0.63
4:9:18:HIS:CD2	4:9:107:ASP:HB2	2.33	0.63
7:C:97:LEU:HD12	7:C:132:PRO:HA	1.80	0.63
38:m:9:LYS:NZ	52:3:1686:U:OP2	2.31	0.63
52:3:597:C:H2'	52:3:598:G:C8	2.33	0.63
52:3:1683:G:H2'	52:3:1684:A:H8	1.63	0.63
54:5:929:C:O2	54:5:932:A:N6	2.30	0.63
54:5:978:A:N1	54:5:1197:G:N2	2.45	0.63
7:C:166:PHE:HA	7:C:180:ARG:HG2	1.79	0.63
16:L:96:PRO:HG2	16:L:106:ALA:HB1	1.80	0.63
52:3:897:A:H3'	52:3:898:A:H8	1.63	0.63
52:3:1786:U:C4	52:3:1791:A:C6	2.86	0.63
54:5:972:A:O2'	54:5:977:U:O4	2.15	0.63
4:9:17:ALA:HB3	4:9:23:LYS:HG3	1.80	0.63
12:H:44:LYS:HB2	12:H:46:VAL:HG12	1.81	0.63
19:O:5:ARG:HD2	54:5:44:C:H4'	1.80	0.63
29:d:41:GLY:O	52:3:2319:A:N6	2.32	0.63
4:9:90:VAL:HG21	4:9:434:THR:HG21	1.80	0.63
4:9:556:MET:HE1	4:9:595:PRO:HB3	1.81	0.63
41:p:68:LEU:HD13	41:p:75:TYR:HA	1.81	0.63
52:3:740:A:H2'	52:3:741:A:H8	1.63	0.63
5:A:222:PRO:HA	5:A:225:THR:HG22	1.81	0.63
12:H:65:ILE:HG21	12:H:85:ILE:HD11	1.78	0.63
22:R:36:ARG:HB3	22:R:72:GLY:HA3	1.80	0.63
35:j:91:LYS:HD2	35:j:111:TYR:H	1.63	0.63
44:s:13:THR:H	44:s:16:VAL:HB	1.64	0.63
52:3:314:G:N2	52:3:394:C:O2	2.31	0.63
52:3:549:A:N3	52:3:614:C:O2'	2.29	0.63
52:3:1837:C:H2'	52:3:1838:A:H8	1.64	0.63
54:5:145:G:O2'	54:5:147:A:N6	2.31	0.63
54:5:591:A:H2'	54:5:592:A:C8	2.34	0.63
2:1:21:ARG:O	2:1:44:GLN:NE2	2.32	0.63
18:N:52:GLY:O	18:N:56:LYS:HG2	1.98	0.63
52:3:1585:A:N6	52:3:1749:A:O2'	2.32	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:912:G:H2'	54:5:913:A:C8	2.34	0.63
55:7:22:A:H62	55:7:47:G:H1'	1.62	0.63
7:C:48:SER:H	7:C:51:ALA:HB3	1.64	0.63
36:k:69:ARG:HG2	36:k:72:PHE:HB2	1.79	0.63
52:3:1934:A:H2'	52:3:1935:A:C8	2.33	0.63
53:4:73:U:H2'	53:4:74:G:C4	2.34	0.63
54:5:682:G:H2'	54:5:683:G:C8	2.34	0.63
7:C:67:THR:OG1	54:5:544:A:OP1	2.16	0.62
10:F:74:LEU:HD12	10:F:85:GLN:HB3	1.82	0.62
26:a:191:LYS:HE3	26:a:277:LEU:HA	1.81	0.62
52:3:931:G:H2'	52:3:932:U:H4'	1.79	0.62
52:3:1309:G:H2'	52:3:1310:U:C6	2.34	0.62
52:3:2829:G:N2	52:3:2829:G:OP2	2.32	0.62
55:8:23:G:H2'	55:8:24:A:H8	1.64	0.62
9:E:71:ASP:OD1	9:E:74:ARG:NH2	2.32	0.62
17:M:45:ARG:NH1	54:5:1050:U:O3'	2.29	0.62
26:a:146:GLN:O	26:a:201:GLY:N	2.29	0.62
36:k:134:GLN:HA	36:k:137:LYS:HE2	1.79	0.62
52:3:219:G:H1'	52:3:220:A:H4'	1.80	0.62
52:3:2100:G:H2'	52:3:2101:A:C8	2.34	0.62
54:5:818:A:H2'	54:5:819:G:H8	1.62	0.62
54:5:1280:A:N6	54:5:1304:U:O2	2.32	0.62
4:9:213:HIS:O	4:9:217:GLU:N	2.30	0.62
28:c:68:GLN:HG2	52:3:2451:C:H5''	1.81	0.62
28:c:127:LEU:HD11	28:c:201:LYS:HA	1.80	0.62
28:c:162:ASN:HD21	28:c:183:LEU:HB3	1.63	0.62
41:p:9:THR:O	41:p:13:ARG:HG2	1.99	0.62
52:3:1981:U:H2'	52:3:1982:G:C8	2.34	0.62
54:5:134:G:N2	54:5:160:A:N1	2.39	0.62
54:5:687:G:H21	54:5:694:U:H5	1.47	0.62
54:5:778:A:N7	54:5:798:U:O2	2.32	0.62
54:5:975:C:H5''	54:5:976:U:H5	1.64	0.62
54:5:1413:G:N1	54:5:1439:G:O6	2.32	0.62
55:7:23:G:H2'	55:7:24:A:H8	1.64	0.62
6:B:211:TYR:HD1	6:B:212:THR:HG23	1.62	0.62
27:b:33:PRO:HB2	27:b:95:GLN:HE21	1.64	0.62
52:3:454:G:H2'	52:3:455:G:C8	2.35	0.62
52:3:2068:G:H1'	52:3:2069:A:H2'	1.79	0.62
54:5:621:C:H2'	54:5:622:A:C8	2.35	0.62
54:5:684:A:H62	54:5:700:G:H21	1.46	0.62
7:C:123:LEU:HB2	7:C:145:LYS:HZ3	1.64	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:R:21:ASP:O	22:R:25:GLN:NE2	2.31	0.62
38:m:20:GLN:NE2	52:3:1305:G:N3	2.44	0.62
40:o:25:PHE:HE1	40:o:52:VAL:HG11	1.63	0.62
52:3:501:G:O2'	52:3:502:A:O4'	2.15	0.62
52:3:1610:U:H2'	52:3:1611:C:C6	2.35	0.62
52:3:1754:U:H2'	52:3:1755:A:C8	2.35	0.62
52:3:2175:U:N3	52:3:2179:A:C8	2.67	0.62
54:5:732:A:H2'	54:5:733:A:H8	1.62	0.62
4:9:322:ARG:NH1	4:9:381:THR:O	2.33	0.62
6:B:155:LEU:HD13	6:B:170:MET:HB2	1.81	0.62
8:D:143:ARG:NH2	54:5:858:A:OP2	2.29	0.62
10:F:3:LYS:NZ	54:5:1319:U:O4	2.32	0.62
16:L:107:ARG:HE	16:L:113:ARG:HH11	1.47	0.62
20:P:41:ARG:HH22	54:5:233:C:H5''	1.64	0.62
23:S:56:ARG:NH1	54:5:218:U:O2'	2.32	0.62
29:d:132:ILE:HG13	29:d:134:GLU:H	1.63	0.62
41:p:48:ASP:OD2	52:3:569:U:O2'	2.15	0.62
44:s:7:LEU:O	48:w:30:ARG:NH2	2.32	0.62
50:y:16:ARG:NH2	52:3:1295:A:OP2	2.33	0.62
52:3:433:A:O2'	52:3:2238:G:N2	2.27	0.62
52:3:947:A:N3	52:3:2272:C:O2'	2.30	0.62
52:3:1335:A:N6	52:3:1641:A:OP1	2.32	0.62
54:5:661:G:H1	54:5:738:A:H61	1.46	0.62
54:5:1055:G:O3'	54:5:1165:G:N2	2.32	0.62
54:5:1230:G:O2'	54:5:1233:G:N3	2.28	0.62
55:8:22:A:H62	55:8:47:G:H1'	1.63	0.62
27:b:21:ASN:OD1	40:o:85:ASN:ND2	2.33	0.62
36:k:70:LYS:HE2	52:3:249:G:H5'	1.80	0.62
37:l:14:ASN:HB3	52:3:994:U:H5'	1.82	0.62
52:3:688:U:H5''	52:3:689:U:H4'	1.82	0.62
52:3:1841:U:O2'	52:3:1977:A:O5'	2.17	0.62
52:3:1949:C:OP2	52:3:1950:U:O2'	2.18	0.62
52:3:2764:U:H4'	52:3:2765:A:OP1	1.99	0.62
54:5:612:G:O6	54:5:624:U:O4	2.16	0.62
9:E:139:THR:HG23	9:E:141:PRO:HD3	1.81	0.62
12:H:56:LEU:HD12	12:H:57:THR:HG23	1.80	0.62
31:f:7:GLN:H	31:f:16:PHE:HD1	1.47	0.62
33:h:53:CYS:HB3	33:h:65:PHE:HE1	1.63	0.62
40:o:44:ARG:NH2	40:o:45:ILE:O	2.33	0.62
40:o:54:ARG:NH2	40:o:55:ARG:O	2.33	0.62
52:3:812:G:H2'	52:3:813:G:H8	1.65	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1026:A:H5''	52:3:1192:U:H5''	1.82	0.62
52:3:2414:U:OP1	52:3:2419:A:N6	2.33	0.62
52:3:2752:G:N2	52:3:2768:U:O2	2.33	0.62
54:5:136:U:H2'	54:5:137:A:H8	1.65	0.62
4:9:239:ASP:OD1	4:9:242:ARG:NH1	2.33	0.62
8:D:78:LYS:HB3	8:D:85:ASN:HB2	1.81	0.62
48:w:63:LEU:O	48:w:66:GLN:NE2	2.33	0.62
52:3:71:C:O2	52:3:75:A:O2'	2.18	0.62
52:3:1212:C:H2'	52:3:1213:U:C6	2.34	0.62
52:3:1846:A:H2'	52:3:1847:G:H8	1.65	0.62
52:3:2533:A:H2'	52:3:2534:G:H8	1.64	0.62
54:5:941:A:H2'	54:5:942:G:H8	1.64	0.62
4:9:11:ARG:NH1	4:9:278:LEU:O	2.33	0.62
9:E:7:LEU:HD23	9:E:60:TRP:HE1	1.65	0.62
19:O:7:HIS:NE2	54:5:389:A:OP1	2.31	0.62
52:3:2175:U:O2	52:3:2179:A:N7	2.33	0.62
52:3:2308:U:H2'	52:3:2309:A:C8	2.33	0.62
16:L:14:ARG:HG3	54:5:1276:U:H3	1.65	0.61
41:p:50:ARG:NH2	52:3:1028:C:OP1	2.31	0.61
49:x:15:LYS:HE3	49:x:35:THR:HB	1.81	0.61
52:3:18:G:H2'	52:3:19:G:C8	2.35	0.61
52:3:194:A:H2	52:3:714:G:H21	1.47	0.61
52:3:1123:A:H4'	52:3:1124:G:H8	1.64	0.61
52:3:2822:C:H2'	52:3:2823:A:C8	2.35	0.61
52:3:2862:U:O2'	52:3:2863:G:OP1	2.16	0.61
54:5:1241:G:N1	54:5:1245:A:N6	2.48	0.61
54:5:1300:C:H2'	54:5:1301:U:C6	2.34	0.61
4:9:112:VAL:HG13	4:9:114:PRO:HD3	1.82	0.61
4:9:640:LYS:HB3	52:3:1102:A:C4	2.35	0.61
33:h:56:THR:O	33:h:61:LYS:NZ	2.29	0.61
52:3:1105:A:H3'	52:3:1106:G:H3'	1.82	0.61
52:3:1609:U:H2'	52:3:1610:U:C6	2.35	0.61
54:5:499:U:H2'	54:5:500:G:C8	2.35	0.61
4:9:27:SER:O	4:9:31:LEU:HG	2.01	0.61
7:C:194:SER:O	7:C:198:GLU:HG2	2.00	0.61
27:b:5:GLY:HA3	27:b:207:ILE:O	2.00	0.61
52:3:1777:G:H2'	52:3:1778:G:H8	1.65	0.61
52:3:1941:C:H4'	52:3:1981:U:H4'	1.82	0.61
26:a:153:HIS:CE1	26:a:156:GLY:HA3	2.34	0.61
52:3:494:G:HO2'	52:3:505:G:H1	1.48	0.61
52:3:1514:U:O4	52:3:1525:G:O6	2.18	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1702:A:N7	52:3:1998:U:O4	2.34	0.61
54:5:1226:A:H2'	54:5:1227:A:H8	1.66	0.61
29:d:56:GLU:HB2	29:d:141:ILE:HG12	1.83	0.61
36:k:53:GLY:O	52:3:866:G:N2	2.32	0.61
52:3:54:A:OP2	52:3:118:G:N1	2.33	0.61
52:3:142:A:HO2'	52:3:1436:C:HO2'	1.48	0.61
52:3:1543:U:H2'	52:3:1544:G:H8	1.64	0.61
54:5:660:A:N6	54:5:739:G:H1	1.99	0.61
13:I:25:ASP:O	13:I:29:LYS:HG2	2.01	0.61
19:O:21:LYS:HD2	54:5:96:G:H5''	1.83	0.61
22:R:13:ALA:HA	22:R:16:LEU:HB3	1.83	0.61
23:S:35:PHE:HZ	23:S:76:LEU:HD12	1.65	0.61
24:T:43:ARG:NH1	54:5:1505:G:N7	2.48	0.61
26:a:85:SER:OG	26:a:87:GLU:OE2	2.18	0.61
39:n:64:ASN:HA	39:n:70:ALA:HB3	1.82	0.61
51:z:14:CYS:O	51:z:40:ARG:NH1	2.33	0.61
52:3:963:U:H2'	52:3:964:A:H8	1.65	0.61
52:3:1803:U:H2'	52:3:1804:A:C8	2.36	0.61
54:5:34:A:O2'	54:5:359:A:N3	2.30	0.61
54:5:831:C:H2'	54:5:832:G:C8	2.35	0.61
54:5:1228:C:H2'	54:5:1229:A:C8	2.35	0.61
4:9:548:SER:O	4:9:587:LYS:NZ	2.34	0.61
4:9:549:GLY:H	4:9:553:GLY:HA2	1.65	0.61
7:C:3:TYR:HE1	7:C:111:ARG:HG3	1.65	0.61
14:J:121:ARG:HH11	54:5:1497:U:H5''	1.65	0.61
27:b:110:VAL:HG11	27:b:197:ILE:HD12	1.82	0.61
29:d:101:GLU:HG2	49:x:25:ILE:HD13	1.82	0.61
51:z:38:CYS:O	51:z:42:ARG:N	2.34	0.61
54:5:265:U:H2'	54:5:266:A:C8	2.36	0.61
54:5:671:G:H2'	54:5:672:A:C8	2.36	0.61
5:A:193:ILE:O	5:A:195:ARG:NH1	2.33	0.61
9:E:49:ILE:HD13	9:E:83:LEU:HD23	1.81	0.61
21:Q:71:ASN:HB2	21:Q:76:THR:HG23	1.81	0.61
22:R:33:THR:OG1	22:R:50:ALA:O	2.18	0.61
26:a:33:PRO:HB2	26:a:38:LEU:HD11	1.82	0.61
36:k:114:LEU:HB3	36:k:131:VAL:HA	1.82	0.61
42:q:61:LYS:HG2	42:q:91:LYS:HB3	1.82	0.61
48:w:58:LEU:HD21	48:w:64:ASN:HA	1.83	0.61
52:3:474:U:H2'	52:3:475:A:C8	2.35	0.61
52:3:1861:A:H4'	52:3:2241:A:H4'	1.81	0.61
54:5:60:A:H5''	54:5:61:A:H5''	1.82	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:5:SER:OG	52:3:256:G:O6	2.17	0.61
12:H:33:ASN:HD21	12:H:68:VAL:HA	1.65	0.61
22:R:34:TRP:CD1	54:5:1194:A:HO2'	2.19	0.61
36:k:24:HIS:HE1	36:k:30:LYS:HD3	1.66	0.61
41:p:30:SER:OG	52:3:614:C:OP1	2.19	0.61
52:3:300:G:H2'	52:3:301:G:C8	2.35	0.61
52:3:611:A:C4	52:3:2025:C:H5'	2.35	0.61
52:3:1262:G:H2'	52:3:1263:G:H8	1.64	0.61
52:3:2156:G:H2'	52:3:2157:A:C8	2.36	0.61
52:3:2324:A:H2'	52:3:2325:U:O4'	2.00	0.61
54:5:194:U:H2'	54:5:195:U:C6	2.36	0.61
54:5:1104:C:H2'	54:5:1105:C:C6	2.35	0.61
4:9:72:TRP:HD1	4:9:275:VAL:HG21	1.66	0.61
4:9:660:GLN:NE2	52:3:2668:A:OP1	2.34	0.61
8:D:76:ILE:HG22	54:5:17:A:H4'	1.82	0.61
15:K:2:ALA:N	54:5:875:G:O6	2.33	0.61
52:3:50:G:N2	52:3:180:A:N7	2.47	0.61
52:3:666:G:N2	52:3:669:A:OP2	2.25	0.61
52:3:1772:G:H1	52:3:1994:U:H3	1.47	0.61
54:5:631:C:H2'	54:5:632:A:H8	1.66	0.61
54:5:812:A:O2'	54:5:1501:G:N3	2.33	0.61
54:5:1209:C:O2'	54:5:1339:U:O2	2.17	0.61
54:5:1244:A:C8	54:5:1245:A:H1'	2.36	0.61
54:5:1361:G:H2'	54:5:1362:G:C8	2.35	0.61
4:9:85:HIS:HD1	4:9:86:VAL:HG22	1.67	0.60
52:3:641:U:H2'	52:3:642:A:H8	1.66	0.60
52:3:902:U:N3	52:3:940:A:OP2	2.29	0.60
52:3:1336:A:H61	52:3:1642:G:H1	1.48	0.60
52:3:2400:A:N6	52:3:2432:C:C2	2.69	0.60
52:3:2631:G:OP1	52:3:2830:A:O2'	2.18	0.60
54:5:114:C:N4	54:5:117:U:O4	2.34	0.60
54:5:831:C:H2'	54:5:832:G:H8	1.65	0.60
54:5:892:G:N2	54:5:895:A:OP2	2.33	0.60
4:9:305:ALA:HA	4:9:331:GLY:HA2	1.81	0.60
20:P:46:GLN:NE2	54:5:250:G:OP1	2.34	0.60
44:s:41:LYS:NZ	52:3:1631:A:OP1	2.32	0.60
45:t:11:VAL:HG13	45:t:77:PHE:HB2	1.82	0.60
52:3:341:G:N1	52:3:344:A:OP2	2.33	0.60
54:5:18:U:O2'	54:5:1070:G:N3	2.34	0.60
54:5:368:C:N4	54:5:384:G:OP2	2.34	0.60
54:5:708:A:H2'	54:5:709:A:H8	1.64	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:710:G:H2'	54:5:711:G:C8	2.37	0.60
20:P:62:GLN:HG3	20:P:78:ALA:HB3	1.83	0.60
26:a:48:ASN:HB3	26:a:50:GLN:HG2	1.82	0.60
28:c:174:ASN:ND2	52:3:354:C:O2	2.32	0.60
37:l:34:LEU:HD11	37:l:129:TRP:HB2	1.83	0.60
45:t:25:LEU:HB2	45:t:37:GLU:HG3	1.83	0.60
52:3:1121:A:O2'	52:3:1122:G:N7	2.33	0.60
52:3:1852:G:H2'	52:3:1853:G:C8	2.35	0.60
52:3:2840:U:H2'	52:3:2841:A:H8	1.66	0.60
54:5:712:A:H2'	54:5:713:A:C8	2.36	0.60
54:5:1058:A:H2'	54:5:1084:A:H4'	1.83	0.60
54:5:1287:G:H1	54:5:1298:U:H3	1.47	0.60
54:5:1288:C:H2'	54:5:1289:U:H6	1.66	0.60
54:5:1498:G:H2'	54:5:1499:G:H8	1.66	0.60
5:A:99:ILE:HG13	5:A:229:MET:HE2	1.81	0.60
8:D:78:LYS:HE3	54:5:916:U:H4'	1.83	0.60
22:R:81:LYS:HG3	22:R:82:GLN:H	1.65	0.60
28:c:102:LYS:HG2	52:3:694:U:H4'	1.83	0.60
43:r:128:ARG:NH1	52:3:1248:A:N3	2.49	0.60
47:v:30:ASN:O	52:3:432:G:O2'	2.18	0.60
47:v:32:ASN:HB2	52:3:433:A:H5''	1.82	0.60
49:x:46:TYR:HD2	49:x:47:ILE:HG22	1.66	0.60
52:3:28:G:N2	52:3:549:A:H62	1.97	0.60
52:3:742:G:H1	52:3:759:U:H3	1.50	0.60
52:3:1106:G:N2	52:3:1124:G:H2'	2.16	0.60
52:3:1158:C:H2'	52:3:1159:C:C6	2.35	0.60
54:5:26:C:H2'	54:5:27:A:H8	1.66	0.60
54:5:1321:G:N2	54:5:1322:U:O4	2.27	0.60
18:N:18:ASP:HA	54:5:747:C:H4'	1.84	0.60
29:d:121:SER:OG	29:d:129:THR:O	2.20	0.60
42:q:76:GLN:N	52:3:598:G:OP2	2.35	0.60
52:3:2484:A:O2'	52:3:2488:C:N4	2.34	0.60
4:9:138:ASP:HA	4:9:169:GLU:HA	1.82	0.60
43:r:80:PRO:HD3	52:3:27:U:H4'	1.82	0.60
45:t:32:GLN:O	45:t:33:GLN:NE2	2.34	0.60
47:v:38:VAL:HG12	47:v:46:THR:HB	1.82	0.60
52:3:1475:C:O2'	52:3:1577:A:N3	2.33	0.60
52:3:2376:C:H2'	52:3:2377:A:C8	2.35	0.60
5:A:214:ILE:HG22	5:A:216:PRO:HD3	1.81	0.60
5:A:222:PRO:HG2	5:A:223:GLN:HE21	1.67	0.60
14:J:113:GLY:HA2	54:5:713:A:H1'	1.83	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:O:10:THR:HG21	54:5:623:G:H4'	1.83	0.60
26:a:181:ILE:HG12	26:a:191:LYS:HG2	1.84	0.60
37:l:6:ARG:H	52:3:907:A:H5''	1.66	0.60
38:m:19:ARG:HD2	38:m:66:TRP:HA	1.83	0.60
51:z:34:LEU:HD13	52:3:2352:U:H2'	1.83	0.60
52:3:2645:U:O4	52:3:2784:A:N7	2.35	0.60
52:3:2706:U:H2'	52:3:2707:A:C8	2.37	0.60
53:4:4:G:O6	53:4:105:A:N6	2.35	0.60
54:5:107:A:H2'	54:5:108:C:C6	2.35	0.60
54:5:169:G:N2	54:5:219:A:O2'	2.35	0.60
4:9:144:PHE:HE1	4:9:258:CYS:HB3	1.67	0.60
6:B:3:GLN:NE2	54:5:1052:G:N7	2.50	0.60
13:I:96:ILE:HB	13:I:98:ILE:HG23	1.84	0.60
35:j:7:ARG:NH2	52:3:1701:G:O5'	2.35	0.60
36:k:64:LYS:NZ	52:3:253:C:O2'	2.35	0.60
37:l:124:LYS:O	52:3:2492:G:O2'	2.18	0.60
52:3:874:U:H3	52:3:975:G:H1	1.50	0.60
52:3:1790:U:H3	52:3:2615:G:H21	1.49	0.60
54:5:66:A:HO2'	54:5:378:A:N6	1.99	0.60
6:B:24:ALA:HB3	6:B:30:THR:HG22	1.83	0.60
12:H:71:GLY:HA2	54:5:1225:A:H4'	1.82	0.60
12:H:103:LYS:HG2	12:H:105:LEU:HD21	1.84	0.60
52:3:1116:U:H2'	52:3:1117:U:C6	2.37	0.60
52:3:1556:U:H3	52:3:1574:G:H1	1.48	0.60
53:4:37:A:O2'	53:4:44:A:N1	2.34	0.60
54:5:265:U:H2'	54:5:266:A:H8	1.67	0.60
54:5:643:U:H2'	54:5:644:U:C6	2.37	0.60
9:E:1:MET:HG3	9:E:90:LEU:HB2	1.84	0.60
52:3:138:U:H2'	52:3:139:G:C8	2.36	0.60
52:3:279:U:H2'	52:3:280:A:H8	1.67	0.60
52:3:1297:U:H3	52:3:2021:A:H61	1.48	0.60
52:3:2752:G:N1	52:3:2768:U:N3	2.50	0.60
53:4:31:G:H2'	53:4:32:G:C8	2.37	0.60
26:a:5:LYS:HE2	26:a:16:HIS:HA	1.82	0.59
28:c:78:SER:O	28:c:81:ASN:ND2	2.35	0.59
32:g:53:VAL:HG22	32:g:81:ALA:HA	1.83	0.59
39:n:4:ARG:HG3	53:4:44:A:H5''	1.82	0.59
40:o:49:THR:OG1	40:o:91:LYS:NZ	2.35	0.59
50:y:38:LEU:HG	50:y:41:ARG:HG3	1.84	0.59
9:E:86:LEU:HB2	21:Q:96:LEU:HD21	1.84	0.59
16:L:109:ARG:NH2	54:5:1282:U:OP1	2.35	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:p:96:GLU:HA	41:p:99:ILE:HD12	1.83	0.59
42:q:64:LEU:HA	42:q:88:PRO:HA	1.85	0.59
4:9:59:ARG:HA	4:9:62:THR:HG22	1.84	0.59
20:P:18:ASN:HB2	20:P:21:THR:HB	1.84	0.59
36:k:46:LEU:HD21	52:3:700:U:H5''	1.84	0.59
52:3:548:A:H2'	52:3:549:A:H8	1.65	0.59
52:3:874:U:H2'	52:3:875:G:C8	2.36	0.59
52:3:1837:C:H2'	52:3:1838:A:C8	2.37	0.59
52:3:1937:G:O2'	52:3:1975:G:O6	2.18	0.59
52:3:2624:C:H2'	52:3:2625:U:H6	1.67	0.59
26:a:47:ARG:HH12	52:3:726:U:H4'	1.67	0.59
34:i:20:ILE:HD11	34:i:140:PRO:HG2	1.83	0.59
36:k:6:LEU:HD12	36:k:7:LYS:HB2	1.83	0.59
52:3:1061:A:OP1	52:3:1169:A:O2'	2.20	0.59
52:3:1119:A:N3	52:3:1140:U:O2'	2.31	0.59
52:3:1201:A:H2'	52:3:1202:A:H8	1.67	0.59
54:5:308:C:H2'	54:5:309:A:H8	1.68	0.59
4:9:341:ASN:O	4:9:345:ASN:N	2.35	0.59
14:J:81:GLY:O	14:J:86:LYS:NZ	2.32	0.59
22:R:78:ARG:NH2	54:5:1199:U:O2'	2.36	0.59
25:W:68:LEU:O	25:W:72:LYS:HG2	2.03	0.59
33:h:130:GLN:HE21	52:3:1097:G:H21	1.48	0.59
36:k:76:GLU:HB2	36:k:110:LEU:HD11	1.85	0.59
42:q:89:TYR:OH	52:3:583:U:OP1	2.19	0.59
51:z:35:ASN:HB2	51:z:44:VAL:HG12	1.84	0.59
51:z:35:ASN:HA	51:z:46:VAL:HA	1.84	0.59
52:3:585:U:H2'	52:3:586:G:H8	1.68	0.59
54:5:929:C:O2'	54:5:1318:C:OP2	2.16	0.59
54:5:1379:C:O2	54:5:1494:A:O2'	2.21	0.59
2:1:28:HIS:NE2	52:3:2429:G:N7	2.49	0.59
4:9:11:ARG:HH12	4:9:245:ARG:HH22	1.49	0.59
6:B:186:ASP:OD2	6:B:207:ARG:NH2	2.36	0.59
8:D:146:ALA:HB3	54:5:20:C:H5''	1.84	0.59
21:Q:73:ARG:NE	21:Q:79:CYS:O	2.35	0.59
52:3:441:U:H3'	52:3:442:G:H8	1.67	0.59
52:3:853:G:N1	52:3:1219:U:OP2	2.27	0.59
54:5:152:U:H2'	54:5:153:A:C8	2.38	0.59
54:5:448:A:N6	54:5:478:G:OP2	2.20	0.59
54:5:1300:C:H2'	54:5:1301:U:H6	1.65	0.59
29:d:170:LEU:HD13	29:d:175:LEU:HD23	1.84	0.59
52:3:1000:U:O2'	52:3:2281:A:N3	2.30	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1077:G:N1	52:3:1148:U:N3	2.51	0.59
52:3:2140:G:O2'	52:3:2141:A:O4'	2.20	0.59
52:3:2154:A:H2'	52:3:2155:G:C8	2.38	0.59
52:3:2880:A:H2'	52:3:2881:A:C8	2.37	0.59
54:5:663:G:N2	54:5:737:U:O2	2.29	0.59
54:5:1298:U:H2'	54:5:1299:C:C6	2.38	0.59
54:5:1330:A:H2'	54:5:1331:A:C8	2.30	0.59
5:A:160:GLU:HA	5:A:164:GLY:HA3	1.84	0.59
7:C:50:TYR:CZ	7:C:54:LEU:HD11	2.38	0.59
27:b:178:ASN:O	27:b:180:ARG:NH2	2.35	0.59
29:d:45:ARG:NH1	29:d:83:GLN:HB3	2.18	0.59
46:u:54:GLN:O	46:u:55:ARG:NH1	2.33	0.59
48:w:91:LEU:O	48:w:95:LYS:HG2	2.03	0.59
52:3:740:A:H2'	52:3:741:A:C8	2.38	0.59
52:3:2093:U:H2'	52:3:2094:A:C8	2.38	0.59
52:3:2474:C:N4	52:3:2475:C:N4	2.51	0.59
54:5:69:G:H2'	54:5:70:A:O4'	2.03	0.59
54:5:590:G:H2'	54:5:591:A:C8	2.38	0.59
4:9:289:ALA:HA	4:9:397:GLU:HB2	1.85	0.59
19:O:30:ILE:HD12	19:O:45:ASP:HB3	1.85	0.59
23:S:13:GLN:O	23:S:17:ARG:HG2	2.02	0.59
39:n:101:ARG:HE	53:4:47:C:H5''	1.68	0.59
52:3:142:A:O2'	52:3:1436:C:O2'	2.17	0.59
52:3:610:G:H4'	52:3:1285:U:H4'	1.85	0.59
52:3:984:C:H2'	52:3:985:A:C8	2.38	0.59
52:3:1645:C:H2'	52:3:1646:G:H8	1.68	0.59
52:3:1849:G:O6	52:3:1905:U:O2	2.21	0.59
52:3:2248:C:H2'	52:3:2249:A:C8	2.38	0.59
54:5:663:G:H5'	54:5:723:C:H1'	1.85	0.59
4:9:633:ARG:HB3	4:9:636:VAL:HG23	1.83	0.59
26:a:113:ASP:N	26:a:202:VAL:O	2.32	0.59
30:e:61:LEU:O	30:e:64:SER:OG	2.19	0.59
35:j:106:LEU:HB2	35:j:111:TYR:HD2	1.67	0.59
43:r:36:LEU:HD21	43:r:47:ILE:HG13	1.84	0.59
52:3:400:A:H2'	52:3:401:G:C8	2.38	0.59
52:3:1137:C:H2'	52:3:1138:A:H8	1.67	0.59
52:3:1884:A:H2'	52:3:1885:G:C8	2.38	0.59
52:3:2094:A:H2'	52:3:2095:A:C8	2.38	0.59
54:5:1012:A:O2'	54:5:1192:C:O2'	2.21	0.59
6:B:144:VAL:HG11	6:B:152:ILE:HG21	1.84	0.58
18:N:6:ASN:OD1	18:N:7:GLY:N	2.36	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:R:18:LYS:NZ	22:R:32:LYS:O	2.35	0.58
37:l:126:PRO:HB3	52:3:2494:C:H5'	1.83	0.58
38:m:67:LEU:HD12	38:m:75:VAL:HG23	1.85	0.58
51:z:6:SER:HA	51:z:22:PHE:HA	1.84	0.58
52:3:142:A:H2'	52:3:143:A:C4	2.38	0.58
52:3:632:A:H2'	52:3:633:G:H8	1.68	0.58
52:3:1208:A:H2'	52:3:1209:U:H4'	1.85	0.58
54:5:132:G:H2'	54:5:133:G:C8	2.38	0.58
54:5:677:C:H2'	54:5:678:A:C8	2.37	0.58
55:8:8:G:O2'	55:8:50:G:O4'	2.21	0.58
21:Q:81:MET:HG2	21:Q:85:HIS:HE1	1.68	0.58
35:j:13:ASN:ND2	35:j:96:THR:OG1	2.29	0.58
43:r:18:ARG:HG2	43:r:22:GLN:HE22	1.68	0.58
52:3:1083:A:OP2	52:3:1145:G:N2	2.29	0.58
52:3:1327:G:O2'	52:3:1674:A:N6	2.36	0.58
52:3:1912:C:H4'	52:3:1936:G:C8	2.37	0.58
52:3:2054:C:O2'	52:3:2827:A:N1	2.32	0.58
52:3:2406:U:H2'	52:3:2407:G:C8	2.37	0.58
52:3:2796:C:O2'	52:3:2812:U:O2	2.20	0.58
54:5:916:U:H2'	54:5:917:G:C8	2.38	0.58
54:5:933:A:N3	54:5:1351:U:O2'	2.28	0.58
54:5:1214:A:H61	54:5:1270:C:H2'	1.68	0.58
5:A:35:ARG:HH11	54:5:827:C:H5''	1.67	0.58
7:C:69:LYS:NZ	54:5:398:G:N7	2.51	0.58
26:a:35:LYS:NZ	52:3:1454:G:N7	2.49	0.58
43:r:86:ILE:HG22	43:r:96:ILE:HD11	1.85	0.58
45:t:48:LYS:HD3	45:t:55:ALA:HB2	1.85	0.58
47:v:29:TRP:HB3	52:3:432:G:H1'	1.83	0.58
52:3:1200:U:O2	52:3:1215:G:N2	2.32	0.58
52:3:1257:G:OP1	52:3:1280:G:N2	2.35	0.58
52:3:2007:U:H2'	52:3:2008:A:H8	1.67	0.58
52:3:2104:A:H2'	52:3:2105:G:H8	1.67	0.58
52:3:2112:A:H61	52:3:2192:U:H2'	1.68	0.58
52:3:2304:U:O2'	52:3:2342:U:OP1	2.22	0.58
52:3:2697:C:OP2	52:3:2699:C:N4	2.36	0.58
52:3:2812:U:H1'	52:3:2813:A:H2'	1.85	0.58
53:4:42:G:N3	53:4:45:C:N4	2.46	0.58
54:5:536:U:H2'	54:5:537:A:H8	1.67	0.58
15:K:82:GLY:N	54:5:520:C:OP1	2.35	0.58
36:k:34:ARG:NH1	36:k:41:ALA:O	2.37	0.58
43:r:99:ARG:NE	52:3:1296:G:O6	2.35	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:w:88:LYS:O	48:w:92:GLU:HG2	2.03	0.58
52:3:66:A:N6	52:3:93:A:H61	2.02	0.58
52:3:899:A:H2'	52:3:900:G:C8	2.38	0.58
52:3:1415:A:H2'	52:3:1416:G:C8	2.38	0.58
52:3:1896:A:H1'	52:3:2094:A:H4'	1.85	0.58
54:5:372:G:H2'	54:5:373:A:H8	1.68	0.58
54:5:490:U:H2'	54:5:491:U:C6	2.38	0.58
54:5:677:C:H2'	54:5:678:A:H8	1.67	0.58
54:5:947:U:O2'	54:5:964:A:N1	2.35	0.58
54:5:1409:A:H2'	54:5:1410:A:C8	2.37	0.58
4:9:25:THR:O	4:9:29:ARG:HG2	2.04	0.58
6:B:56:VAL:HG12	6:B:69:VAL:HG22	1.86	0.58
12:H:71:GLY:O	12:H:77:GLN:NE2	2.36	0.58
28:c:182:HIS:HB3	28:c:185:LYS:HG2	1.84	0.58
35:j:111:TYR:HB3	35:j:114:ILE:HD13	1.83	0.58
52:3:513:A:H2'	52:3:514:A:C8	2.38	0.58
52:3:707:C:H2'	52:3:708:C:C6	2.38	0.58
52:3:1397:G:H21	52:3:1817:A:H2	1.52	0.58
52:3:1446:G:N2	52:3:1613:A:OP2	2.36	0.58
52:3:2867:U:H2'	52:3:2868:G:C8	2.39	0.58
54:5:680:G:H1	54:5:704:U:H3	1.52	0.58
54:5:1244:A:H8	54:5:1245:A:H1'	1.68	0.58
26:a:5:LYS:NZ	26:a:6:ILE:O	2.36	0.58
30:e:112:TYR:HD1	30:e:116:ILE:HD11	1.68	0.58
36:k:24:HIS:NE2	52:3:846:U:OP1	2.37	0.58
52:3:1243:A:H62	52:3:1265:G:H21	0.64	0.58
52:3:1715:A:O2'	52:3:1769:A:O2'	2.14	0.58
54:5:185:G:O2'	54:5:186:A:O4'	2.16	0.58
54:5:372:G:H2'	54:5:373:A:C8	2.39	0.58
54:5:401:U:H5''	54:5:493:A:C2	2.36	0.58
54:5:779:A:H62	54:5:797:G:N2	2.01	0.58
5:A:98:ASN:HA	5:A:101:LYS:HE2	1.83	0.58
7:C:100:ILE:HG13	7:C:136:LEU:HG	1.85	0.58
16:L:23:PHE:HB3	16:L:66:GLU:HB2	1.84	0.58
26:a:135:SER:OG	26:a:197:ARG:NH2	2.36	0.58
29:d:10:LYS:HG3	29:d:11:THR:HG23	1.83	0.58
45:t:90:LYS:HE3	45:t:105:LYS:HA	1.85	0.58
52:3:1999:G:N2	52:3:2003:C:O2	2.37	0.58
52:3:2078:A:H2'	52:3:2079:G:H8	1.67	0.58
54:5:317:A:N6	54:5:324:C:O2'	2.35	0.58
54:5:1226:A:H2'	54:5:1227:A:C8	2.38	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:1293:A:C8	54:5:1297:G:C5	2.91	0.58
54:5:1298:U:H2'	54:5:1299:C:H6	1.68	0.58
12:H:30:ILE:HB	12:H:60:LYS:HE2	1.86	0.58
26:a:147:VAL:HA	26:a:200:VAL:HA	1.85	0.58
42:q:57:CYS:SG	42:q:92:LEU:HD13	2.44	0.58
52:3:2840:U:H2'	52:3:2841:A:C8	2.39	0.58
54:5:571:A:N3	54:5:877:C:O2'	2.30	0.58
54:5:1241:G:N2	54:5:1244:A:OP2	2.33	0.58
5:A:28:THR:O	5:A:224:SER:OG	2.21	0.58
20:P:6:ARG:HB3	54:5:113:C:H4'	1.86	0.58
45:t:80:LYS:HE3	45:t:110:THR:H	1.68	0.58
52:3:874:U:H2'	52:3:875:G:H8	1.68	0.58
52:3:2099:U:N3	52:3:2234:C:OP2	2.33	0.58
52:3:2797:C:N4	52:3:2798:A:N6	2.51	0.58
54:5:522:G:H2'	54:5:523:U:C6	2.38	0.58
54:5:1059:G:H5'	54:5:1363:U:H5'	1.86	0.58
15:K:12:ARG:HH22	54:5:561:A:H3'	1.69	0.58
38:m:26:LEU:HD21	38:m:78:LEU:HB3	1.86	0.58
42:q:87:GLN:OE1	52:3:1197:G:N2	2.37	0.58
43:r:88:ARG:HH22	52:3:2020:A:H2	1.51	0.58
52:3:1246:U:H3	52:3:1263:G:H1	1.52	0.58
52:3:1526:U:H2'	52:3:1527:U:C6	2.39	0.58
52:3:1820:U:O2'	52:3:1821:G:OP1	2.22	0.58
52:3:2117:G:OP1	52:3:2125:U:N3	2.37	0.58
54:5:1051:U:H2'	54:5:1052:G:C8	2.39	0.58
3:2:15:LYS:HG3	3:2:26:ILE:HG13	1.86	0.57
23:S:20:ASN:O	23:S:24:GLN:HG2	2.03	0.57
26:a:213:ILE:HD12	52:3:1798:A:H5''	1.84	0.57
33:h:12:ILE:HD13	33:h:25:LEU:HD21	1.86	0.57
41:p:36:GLN:OE1	52:3:596:G:N2	2.28	0.57
52:3:17:G:O6	52:3:560:U:O4	2.22	0.57
52:3:1604:A:H2'	52:3:1605:A:C8	2.39	0.57
52:3:1696:C:O2'	52:3:2695:U:H5''	2.04	0.57
52:3:2223:C:H2'	52:3:2224:A:C8	2.37	0.57
52:3:2695:U:O2	52:3:2730:G:N2	2.33	0.57
54:5:1297:G:H2'	54:5:1298:U:O4'	2.04	0.57
54:5:1478:A:N6	54:5:1507:U:O2	2.36	0.57
3:2:2:LYS:HB2	3:2:34:GLN:HG2	1.87	0.57
4:9:353:LEU:HD23	4:9:375:ILE:HG12	1.85	0.57
10:F:2:ARG:HD2	54:5:1355:U:H2'	1.85	0.57
35:j:25:LEU:HD22	35:j:59:ARG:HE	1.69	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:n:4:ARG:NH1	53:4:45:C:OP1	2.37	0.57
39:n:18:LYS:O	39:n:22:THR:OG1	2.17	0.57
52:3:2380:U:H2'	52:3:2381:G:H8	1.68	0.57
54:5:168:A:H3'	54:5:169:G:H8	1.68	0.57
54:5:1079:G:H2'	54:5:1080:G:H8	1.69	0.57
54:5:1125:C:H2'	54:5:1126:U:C6	2.39	0.57
54:5:1245:A:O2'	54:5:1287:G:O2'	2.21	0.57
54:5:1298:U:H5''	54:5:1337:U:H6	1.68	0.57
54:5:1492:G:H2'	54:5:1493:A:C8	2.39	0.57
55:8:29:C:H2'	55:8:30:G:H8	1.69	0.57
1:0:34:ARG:NH2	1:0:41:GLN:O	2.29	0.57
6:B:7:SER:HB2	6:B:178:LEU:HG	1.85	0.57
7:C:64:TYR:HE2	7:C:93:LEU:HD13	1.68	0.57
20:P:29:ARG:NE	54:5:595:G:H4'	2.20	0.57
26:a:232:ALA:O	52:3:817:A:O2'	2.21	0.57
43:r:29:THR:HB	43:r:69:LEU:HB2	1.87	0.57
52:3:276:A:H61	52:3:294:G:H1'	1.69	0.57
52:3:528:U:H2'	52:3:529:G:C8	2.40	0.57
52:3:713:C:H2'	52:3:714:G:H8	1.69	0.57
52:3:858:A:H2'	52:3:859:G:C8	2.39	0.57
52:3:1063:A:H2'	52:3:1064:A:C8	2.39	0.57
52:3:1237:G:H2'	52:3:1238:A:H8	1.68	0.57
52:3:1645:C:H2'	52:3:1646:G:C8	2.39	0.57
52:3:1793:A:O2'	52:3:1945:A:N6	2.36	0.57
52:3:2068:G:N7	52:3:2509:C:O2'	2.35	0.57
54:5:409:G:H1'	54:5:425:G:H21	1.69	0.57
55:7:8:G:O2'	55:7:50:G:O4'	2.21	0.57
4:9:420:LYS:HE3	4:9:469:VAL:HG13	1.85	0.57
4:9:583:SER:O	4:9:587:LYS:HG2	2.03	0.57
9:E:2:GLN:HA	9:E:63:SER:HA	1.86	0.57
10:F:63:ARG:NH1	10:F:128:ASN:OD1	2.38	0.57
13:I:72:GLU:HB2	17:M:59:ALA:HA	1.85	0.57
31:f:68:LEU:O	31:f:72:ILE:HG12	2.04	0.57
33:h:15:LEU:HG	33:h:17:GLY:H	1.69	0.57
33:h:74:ILE:HD11	33:h:85:GLY:HA3	1.86	0.57
33:h:87:LYS:HD2	52:3:1098:G:H21	1.69	0.57
36:k:59:TYR:OH	52:3:254:G:O3'	2.22	0.57
38:m:65:LYS:HE2	52:3:2715:C:H4'	1.87	0.57
52:3:517:G:O6	52:3:544:U:O4	2.21	0.57
52:3:2100:G:H2'	52:3:2101:A:H8	1.69	0.57
52:3:2599:C:H2'	52:3:2600:G:C8	2.39	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:2800:U:O2'	52:3:2801:U:OP1	2.21	0.57
54:5:24:C:H2'	54:5:25:U:C6	2.40	0.57
54:5:1463:A:H2'	54:5:1464:G:C8	2.40	0.57
4:9:342:VAL:HB	4:9:394:VAL:HG22	1.85	0.57
6:B:3:GLN:O	54:5:1165:G:O2'	2.20	0.57
11:G:92:LYS:HB2	11:G:95:LEU:HB3	1.85	0.57
17:M:23:ARG:HG2	17:M:30:ALA:HA	1.86	0.57
22:R:3:ARG:O	54:5:1288:C:N4	2.37	0.57
26:a:126:HIS:CD2	31:f:87:ARG:HG2	2.38	0.57
28:c:42:GLN:OE1	28:c:189:ARG:NH1	2.37	0.57
40:o:63:THR:HG22	40:o:80:GLN:HA	1.87	0.57
52:3:202:C:H4'	52:3:2251:U:H4'	1.86	0.57
52:3:755:C:H2'	52:3:756:A:H8	1.68	0.57
52:3:1237:G:H2'	52:3:1238:A:C8	2.39	0.57
52:3:1409:G:H2'	52:3:1410:A:H8	1.69	0.57
53:4:76:A:N6	53:4:88:G:O2'	2.37	0.57
53:4:104:C:H2'	53:4:105:A:C8	2.40	0.57
54:5:1439:G:C6	54:5:1440:U:O4	2.57	0.57
13:I:68:ARG:NH1	54:5:1341:U:O2'	2.38	0.57
27:b:96:ILE:HG23	27:b:101:LEU:HD11	1.86	0.57
28:c:147:LEU:HA	28:c:152:LEU:HD12	1.87	0.57
33:h:59:ASN:OD1	33:h:60:ASP:N	2.33	0.57
47:v:63:ARG:NE	47:v:64:LEU:H	2.02	0.57
52:3:339:U:H2'	52:3:340:U:C6	2.40	0.57
52:3:2117:G:OP1	52:3:2152:C:N4	2.38	0.57
53:4:11:A:N1	53:4:67:G:O2'	2.31	0.57
54:5:832:G:H2'	54:5:833:G:H8	1.69	0.57
2:1:54:ARG:NH1	52:3:869:U:OP1	2.37	0.57
4:9:89:THR:OG1	4:9:401:PHE:O	2.23	0.57
5:A:38:ASN:ND2	5:A:206:THR:O	2.33	0.57
7:C:76:ARG:HD3	7:C:79:LEU:HD12	1.86	0.57
12:H:49:ASP:HA	12:H:52:GLN:HG2	1.87	0.57
18:N:66:TYR:O	18:N:70:ASN:ND2	2.38	0.57
23:S:56:ARG:NH1	54:5:197:A:O2'	2.38	0.57
34:i:80:HIS:HD2	34:i:87:ILE:HG13	1.69	0.57
40:o:23:PRO:HG3	40:o:88:ILE:HG21	1.85	0.57
52:3:246:G:HO2'	52:3:258:G:H1	1.53	0.57
52:3:450:C:O3'	52:3:1885:G:N2	2.31	0.57
52:3:610:G:H2'	52:3:611:A:C8	2.40	0.57
52:3:1027:U:H3	52:3:1198:G:H1	0.75	0.57
52:3:2213:A:H2'	52:3:2214:A:C8	2.39	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:4:12:U:H2'	53:4:13:G:H21	1.69	0.57
54:5:503:G:H2'	54:5:504:A:C8	2.40	0.57
54:5:609:G:C6	54:5:628:A:N1	2.73	0.57
54:5:1083:A:OP1	54:5:1158:A:N6	2.36	0.57
54:5:1487:U:H2'	54:5:1488:A:C8	2.38	0.57
6:B:192:ALA:HB3	6:B:199:ILE:HB	1.87	0.57
19:O:5:ARG:HB2	19:O:8:TYR:HB3	1.86	0.57
28:c:144:MET:HE2	52:3:357:A:H61	1.70	0.57
47:v:22:LYS:HB3	52:3:204:U:H5'	1.85	0.57
52:3:606:G:N2	52:3:2038:A:OP1	2.36	0.57
52:3:1334:U:H2'	52:3:1335:A:H8	1.69	0.57
52:3:1818:G:H2'	52:3:1819:G:C8	2.40	0.57
52:3:2072:C:H2'	52:3:2073:C:C6	2.39	0.57
54:5:299:U:H4'	54:5:553:C:H4'	1.86	0.57
54:5:433:C:H2'	54:5:434:U:C6	2.40	0.57
54:5:503:G:H2'	54:5:504:A:H8	1.70	0.57
54:5:945:U:H2'	54:5:946:G:H8	1.69	0.57
5:A:28:THR:HB	5:A:223:GLN:HB2	1.86	0.57
9:E:9:VAL:HG22	9:E:56:HIS:H	1.70	0.57
35:j:7:ARG:HG3	35:j:44:LYS:HD3	1.86	0.57
35:j:18:GLN:HB3	35:j:45:ASP:HB3	1.86	0.57
43:r:87:PRO:HB3	52:3:1648:A:H62	1.70	0.57
52:3:206:U:OP2	52:3:207:C:N4	2.36	0.57
52:3:296:U:O2	52:3:300:G:O2'	2.16	0.57
52:3:1311:G:H21	52:3:1357:U:H3	1.53	0.57
52:3:2631:G:H2'	52:3:2632:C:C6	2.39	0.57
54:5:132:G:H2'	54:5:133:G:H8	1.69	0.57
54:5:400:G:O2'	54:5:496:A:N6	2.38	0.57
54:5:441:U:H2'	54:5:442:G:C8	2.40	0.57
54:5:1263:A:H2'	54:5:1264:G:H5'	1.86	0.57
4:9:4:THR:HG21	4:9:7:LEU:HD13	1.86	0.57
4:9:94:ARG:HD3	4:9:312:PHE:HD2	1.69	0.57
17:M:26:ARG:NH1	17:M:46:GLU:OE2	2.35	0.57
30:e:93:VAL:HG13	30:e:163:LYS:HA	1.86	0.57
45:t:26:LYS:NZ	45:t:27:ILE:O	2.35	0.57
52:3:609:U:H5''	52:3:2510:G:H2'	1.86	0.57
52:3:627:U:H2'	52:3:628:A:C8	2.40	0.57
52:3:634:C:H2'	52:3:635:G:O4'	2.04	0.57
52:3:1334:U:O2	52:3:1656:A:N6	2.25	0.57
52:3:1337:G:H1	52:3:1639:C:H42	1.53	0.57
52:3:1634:A:H2'	52:3:1635:G:C8	2.40	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:2096:U:O2	52:3:2238:G:O6	2.22	0.57
54:5:880:G:O6	54:5:905:U:O4	2.23	0.57
54:5:1116:U:O2'	54:5:1117:U:H3'	2.05	0.57
4:9:609:PRO:HA	4:9:636:VAL:HG12	1.86	0.56
7:C:151:ILE:O	7:C:155:LYS:NZ	2.37	0.56
28:c:166:THR:HA	28:c:169:GLU:HB3	1.87	0.56
34:i:113:PRO:HA	52:3:1043:C:O3'	2.05	0.56
43:r:128:ARG:O	52:3:1261:U:O2'	2.23	0.56
52:3:440:C:H1'	52:3:442:G:C4	2.39	0.56
52:3:567:U:OP1	52:3:594:G:N2	2.35	0.56
54:5:245:U:O2	54:5:271:G:O6	2.22	0.56
54:5:430:G:H2'	54:5:431:U:C6	2.40	0.56
54:5:586:G:H2'	54:5:587:A:H8	1.69	0.56
54:5:1413:G:N2	54:5:1438:U:O2	2.37	0.56
4:9:18:HIS:HD2	4:9:107:ASP:HB2	1.70	0.56
7:C:184:ARG:NH2	7:C:188:PRO:O	2.30	0.56
9:E:50:LYS:HE2	9:E:83:LEU:HA	1.86	0.56
19:O:12:ARG:NH2	54:5:606:A:O2'	2.37	0.56
46:u:46:ARG:NH1	52:3:2362:A:OP1	2.38	0.56
51:z:9:LEU:HB2	51:z:19:TYR:HB2	1.87	0.56
52:3:763:G:O2'	52:3:765:A:O4'	2.22	0.56
52:3:829:A:H2'	52:3:830:A:C8	2.40	0.56
52:3:1777:G:H2'	52:3:1778:G:C8	2.40	0.56
52:3:2701:A:H2'	52:3:2702:G:C8	2.40	0.56
54:5:21:U:O3'	54:5:571:A:N6	2.38	0.56
54:5:1366:U:H2'	54:5:1367:G:H8	1.69	0.56
2:1:10:ARG:HH21	52:3:2402:C:H5'	1.68	0.56
3:2:1:MET:HE3	3:2:35:ARG:HB2	1.87	0.56
5:A:159:LEU:O	5:A:164:GLY:N	2.38	0.56
17:M:31:ARG:NH2	54:5:977:U:OP1	2.38	0.56
26:a:40:THR:HA	26:a:65:LYS:HG2	1.87	0.56
27:b:72:LYS:NZ	52:3:2794:U:OP1	2.38	0.56
29:d:33:LYS:HE3	29:d:157:VAL:HG21	1.87	0.56
33:h:18:GLN:HG2	33:h:20:LYS:H	1.70	0.56
34:i:135:MET:HA	34:i:138:GLN:HG2	1.87	0.56
35:j:25:LEU:HB3	35:j:38:VAL:HG13	1.87	0.56
45:t:43:THR:HG1	52:3:534:U:HO2'	1.50	0.56
52:3:274:A:OP2	52:3:294:G:N1	2.38	0.56
52:3:300:G:H2'	52:3:301:G:H8	1.69	0.56
52:3:307:C:H2'	52:3:308:A:H8	1.70	0.56
52:3:334:A:H1'	52:3:353:G:H1'	1.86	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:404:C:H2'	52:3:405:C:C6	2.41	0.56
52:3:406:C:H2'	52:3:407:U:C6	2.40	0.56
52:3:1611:C:H2'	52:3:1612:U:C2	2.39	0.56
52:3:1630:A:H2'	52:3:1631:A:C8	2.41	0.56
52:3:1994:U:H2'	52:3:1995:G:C8	2.35	0.56
52:3:2696:G:H1'	52:3:2729:A:H61	1.68	0.56
54:5:70:A:H2'	54:5:71:A:C8	2.37	0.56
54:5:536:U:H2'	54:5:537:A:C8	2.40	0.56
54:5:694:U:H3'	54:5:695:G:C8	2.39	0.56
54:5:968:G:OP2	54:5:969:A:O2'	2.22	0.56
54:5:1150:G:H2'	54:5:1151:A:H8	1.70	0.56
55:7:29:C:H2'	55:7:30:G:H8	1.69	0.56
4:9:629:GLY:N	52:3:1101:U:H3'	2.21	0.56
6:B:3:GLN:N	54:5:1052:G:OP2	2.37	0.56
26:a:147:VAL:O	26:a:168:ALA:N	2.39	0.56
37:l:11:LYS:HD3	37:l:87:LYS:HD2	1.87	0.56
39:n:97:LYS:NZ	39:n:98:TYR:O	2.38	0.56
43:r:1:MET:N	43:r:64:MET:SD	2.78	0.56
44:s:32:ASN:HD21	44:s:34:LYS:HB2	1.71	0.56
52:3:299:A:H2'	52:3:300:G:C8	2.40	0.56
52:3:567:U:H4'	52:3:568:G:C8	2.39	0.56
52:3:1187:C:H2'	52:3:1188:C:H6	1.69	0.56
52:3:1217:G:H2'	52:3:1218:G:O4'	2.05	0.56
52:3:1914:G:O6	52:3:1931:C:N4	2.38	0.56
54:5:393:A:N7	54:5:545:A:O2'	2.38	0.56
5:A:38:ASN:HB3	5:A:41:MET:HB2	1.88	0.56
38:m:103:LEU:HD23	50:y:42:VAL:HG11	1.86	0.56
52:3:279:U:H2'	52:3:280:A:C8	2.41	0.56
52:3:849:C:H2'	52:3:850:G:H8	1.68	0.56
52:3:1834:U:OP1	52:3:1978:U:O2'	2.23	0.56
52:3:2528:C:H2'	52:3:2529:C:C6	2.41	0.56
52:3:2825:A:H2'	52:3:2826:G:O4'	2.06	0.56
54:5:591:A:H2'	54:5:592:A:H8	1.70	0.56
4:9:52:TRP:HD1	4:9:53:MET:H	1.54	0.56
4:9:506:HIS:HD2	4:9:567:SER:HB3	1.70	0.56
4:9:657:SER:HA	52:3:2668:A:H62	1.70	0.56
5:A:218:ASN:HD22	5:A:221:GLN:HB2	1.69	0.56
6:B:7:SER:OG	6:B:11:ARG:NH2	2.39	0.56
7:C:18:LEU:HD11	7:C:63:MET:HA	1.86	0.56
7:C:61:GLN:O	7:C:65:GLY:N	2.35	0.56
10:F:149:ALA:HB2	14:J:91:ARG:HG2	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:a:271:LYS:HE3	52:3:2235:A:H5''	1.87	0.56
30:e:39:PRO:HB2	30:e:42:LEU:HD21	1.87	0.56
40:o:54:ARG:NH1	52:3:2851:U:OP2	2.39	0.56
41:p:49:ARG:HD2	52:3:1029:A:H5''	1.88	0.56
52:3:1070:U:O4	52:3:1155:G:O6	2.23	0.56
52:3:1440:U:H2'	52:3:1441:A:C8	2.41	0.56
52:3:1544:G:H2'	52:3:1545:A:C8	2.40	0.56
52:3:1671:C:H2'	52:3:1672:C:C6	2.40	0.56
53:4:95:G:H2'	53:4:96:G:C8	2.41	0.56
54:5:14:U:H1'	54:5:908:A:H5''	1.86	0.56
54:5:40:G:H2'	54:5:41:C:O4'	2.06	0.56
54:5:737:U:H2'	54:5:738:A:H8	1.70	0.56
54:5:1178:C:H2'	54:5:1179:A:H8	1.71	0.56
12:H:67:VAL:HG21	12:H:81:ILE:HG22	1.87	0.56
19:O:9:PRO:HD2	19:O:36:ALA:HB2	1.88	0.56
29:d:71:LYS:N	52:3:2320:U:OP1	2.38	0.56
30:e:98:ARG:NH1	30:e:109:GLN:OE1	2.39	0.56
32:g:64:LYS:HG3	32:g:71:ILE:HG13	1.88	0.56
45:t:53:LYS:NZ	45:t:58:GLN:OE1	2.32	0.56
52:3:340:U:H2'	52:3:341:G:O4'	2.06	0.56
52:3:421:A:N6	52:3:423:C:H2'	2.20	0.56
52:3:1227:C:H2'	52:3:1228:G:H8	1.71	0.56
52:3:1456:C:N4	52:3:1604:A:OP2	2.27	0.56
52:3:2031:C:H2'	52:3:2032:G:C8	2.41	0.56
54:5:939:G:N2	54:5:1313:A:OP2	2.38	0.56
4:9:107:ASP:HB3	4:9:113:GLU:HB3	1.87	0.56
11:G:116:ILE:HB	11:G:118:THR:HG23	1.88	0.56
26:a:229:ARG:NH2	52:3:1835:G:N7	2.54	0.56
29:d:133:LYS:HZ3	52:3:2313:U:HO2'	1.50	0.56
52:3:1300:C:H42	52:3:2017:G:H1	1.53	0.56
52:3:1476:C:H2'	52:3:1477:A:C8	2.41	0.56
52:3:1544:G:H2'	52:3:1545:A:H8	1.69	0.56
52:3:1706:C:H2'	52:3:1707:U:C6	2.41	0.56
52:3:1755:A:H2'	52:3:1756:A:H8	1.71	0.56
52:3:2366:A:H2'	52:3:2367:C:C6	2.41	0.56
54:5:330:C:H2'	54:5:331:C:C6	2.41	0.56
54:5:1279:G:N1	54:5:1305:G:O2'	2.38	0.56
4:9:301:ALA:HB1	4:9:330:SER:HB2	1.87	0.56
14:J:111:HIS:HB2	54:5:713:A:H2	1.71	0.56
26:a:153:HIS:CE1	52:3:2212:U:H4'	2.41	0.56
29:d:42:ASP:HA	52:3:2319:A:H61	1.71	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:i:45:VAL:HG11	41:p:99:ILE:HG21	1.88	0.56
38:m:36:LYS:HD2	52:3:1685:G:H4'	1.88	0.56
52:3:25:G:H2'	52:3:26:G:H8	1.71	0.56
52:3:601:U:N3	52:3:604:A:OP2	2.30	0.56
52:3:622:U:H2'	52:3:623:A:H8	1.71	0.56
52:3:812:G:H2'	52:3:813:G:C8	2.41	0.56
52:3:1723:A:OP2	52:3:1732:A:N6	2.35	0.56
52:3:1725:G:O6	52:3:1731:G:N2	2.38	0.56
52:3:2330:A:H2'	52:3:2331:G:C8	2.41	0.56
52:3:2731:U:O4	52:3:2732:A:N6	2.38	0.56
54:5:92:G:C6	54:5:93:A:H1'	2.40	0.56
54:5:427:A:H2'	54:5:428:A:H5'	1.87	0.56
54:5:554:C:H2'	54:5:555:G:H8	1.70	0.56
54:5:891:C:H2'	54:5:892:G:H8	1.69	0.56
4:9:213:HIS:HE1	25:W:82:LEU:HB2	1.70	0.56
5:A:180:ASP:HB3	5:A:183:TYR:HB3	1.87	0.56
7:C:13:ARG:NH1	7:C:35:PRO:O	2.38	0.56
8:D:212:ARG:HD2	11:G:53:TYR:HE1	1.71	0.56
26:a:17:SER:OG	26:a:212:VAL:O	2.20	0.56
37:l:126:PRO:HD3	52:3:2493:G:H4'	1.88	0.56
38:m:49:ILE:O	38:m:53:LYS:HG3	2.06	0.56
41:p:30:SER:HB3	41:p:33:VAL:HG22	1.86	0.56
48:w:18:LEU:O	48:w:22:LEU:HG	2.06	0.56
52:3:369:C:H2'	52:3:370:C:C6	2.41	0.56
52:3:2048:U:H2'	52:3:2049:A:H8	1.71	0.56
52:3:2190:G:H2'	52:3:2191:G:C8	2.41	0.56
52:3:2378:G:H2'	52:3:2379:G:O4'	2.05	0.56
54:5:10:G:H2'	54:5:11:A:C8	2.41	0.56
54:5:708:A:H2'	54:5:709:A:C8	2.41	0.56
4:9:4:THR:HB	4:9:369:ALA:HB3	1.88	0.55
8:D:166:ILE:O	8:D:170:ILE:HG12	2.05	0.55
12:H:119:GLY:N	54:5:1342:C:OP1	2.39	0.55
52:3:370:C:H2'	52:3:371:C:C6	2.42	0.55
52:3:1162:A:H2'	52:3:2526:A:C2	2.41	0.55
52:3:1180:U:H2'	52:3:1181:A:H8	1.70	0.55
52:3:2738:U:H2'	52:3:2739:C:C6	2.42	0.55
54:5:199:A:N1	54:5:216:G:O2'	2.36	0.55
54:5:576:A:H2'	54:5:577:G:C8	2.41	0.55
54:5:1279:G:H21	54:5:1307:A:H62	1.55	0.55
4:9:29:ARG:HD2	4:9:264:ASN:HD21	1.71	0.55
52:3:54:A:OP2	52:3:120:A:N6	2.34	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:82:G:H2'	52:3:83:G:H8	1.71	0.55
52:3:197:U:H2'	52:3:198:G:C8	2.42	0.55
52:3:450:C:H2'	52:3:451:A:C8	2.41	0.55
52:3:982:G:H2'	52:3:983:A:H8	1.71	0.55
52:3:1261:U:H2'	52:3:1262:G:H8	1.70	0.55
52:3:1312:A:H2'	52:3:1313:G:C8	2.41	0.55
52:3:1494:U:O4	52:3:1550:G:O6	2.25	0.55
52:3:1871:U:OP1	52:3:2418:G:O2'	2.25	0.55
52:3:1912:C:H2'	52:3:1937:G:H5'	1.87	0.55
52:3:2446:U:O2'	52:3:2448:C:OP1	2.24	0.55
54:5:1316:C:H2'	54:5:1317:A:C8	2.40	0.55
54:5:1385:A:H2'	54:5:1386:C:C6	2.41	0.55
6:B:124:ALA:O	6:B:128:GLU:HG2	2.06	0.55
8:D:81:LYS:HD3	54:5:1373:A:H2'	1.88	0.55
9:E:3:TYR:OH	54:5:735:C:OP1	2.20	0.55
11:G:67:LYS:HG2	54:5:650:A:C5	2.41	0.55
18:N:20:GLY:O	18:N:25:GLN:NE2	2.39	0.55
30:e:147:PHE:O	30:e:151:VAL:HG23	2.05	0.55
43:r:97:THR:O	43:r:99:ARG:NH1	2.39	0.55
52:3:360:G:H2'	52:3:361:G:C8	2.42	0.55
52:3:562:C:H41	52:3:2785:G:H4'	1.71	0.55
52:3:640:U:O2	52:3:658:G:O6	2.24	0.55
52:3:1077:G:O6	52:3:1148:U:O4	2.23	0.55
52:3:2299:U:O4	52:3:2349:G:O6	2.24	0.55
54:5:660:A:N1	54:5:739:G:N2	2.55	0.55
4:9:230:LEU:HD21	25:W:67:LYS:HG2	1.88	0.55
4:9:627:ILE:HG13	52:3:1101:U:H5'	1.88	0.55
11:G:48:LEU:HD12	11:G:53:TYR:HD2	1.71	0.55
18:N:62:ARG:NH1	54:5:580:C:OP1	2.38	0.55
40:o:56:ARG:NH2	52:3:2728:U:OP1	2.39	0.55
52:3:174:A:H2'	52:3:175:A:H8	1.71	0.55
52:3:320:A:H2'	52:3:321:A:C8	2.40	0.55
52:3:1073:A:H2'	52:3:1074:A:C8	2.40	0.55
52:3:1379:C:H2'	52:3:1380:U:C6	2.41	0.55
54:5:454:U:H2'	54:5:455:U:H6	1.72	0.55
54:5:592:A:N1	54:5:642:A:N6	2.44	0.55
54:5:725:A:H2'	54:5:726:A:C8	2.42	0.55
54:5:838:A:O2'	54:5:839:U:O4'	2.21	0.55
12:H:126:ALA:O	54:5:1317:A:O2'	2.24	0.55
14:J:25:VAL:HG21	14:J:60:ALA:HA	1.89	0.55
44:s:7:LEU:HD11	44:s:43:ALA:HB1	1.87	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:t:43:THR:OG1	52:3:534:U:O2'	2.20	0.55
52:3:675:U:N3	52:3:685:G:N1	2.47	0.55
52:3:1354:U:O2'	52:3:2017:G:O2'	2.03	0.55
52:3:2055:A:H2'	52:3:2056:A:C8	2.41	0.55
52:3:2814:A:H2'	52:3:2815:G:O4'	2.07	0.55
54:5:74:U:H2'	54:5:75:A:H8	1.70	0.55
54:5:1118:A:H2'	54:5:1119:C:O4'	2.06	0.55
54:5:1279:G:H2'	54:5:1305:G:H21	1.70	0.55
6:B:87:LYS:HA	6:B:90:LYS:HE2	1.88	0.55
26:a:151:GLU:HG3	26:a:196:CYS:HB3	1.89	0.55
27:b:148:GLN:HG2	52:3:2583:U:H4'	1.88	0.55
28:c:3:LYS:HB3	28:c:17:PRO:HB2	1.89	0.55
36:k:112:ILE:H	36:k:129:HIS:HB2	1.72	0.55
39:n:30:LEU:HD11	39:n:89:VAL:HG21	1.88	0.55
41:p:47:ARG:NH1	41:p:48:ASP:OD1	2.40	0.55
52:3:87:G:H2'	52:3:88:G:C8	2.42	0.55
52:3:141:A:H2'	52:3:142:A:C4	2.40	0.55
52:3:306:G:H2'	52:3:307:C:H6	1.72	0.55
52:3:320:A:H2'	52:3:321:A:H8	1.71	0.55
52:3:898:A:H2'	52:3:899:A:C8	2.42	0.55
52:3:1803:U:H2'	52:3:1804:A:H8	1.70	0.55
52:3:1954:C:H2'	52:3:1955:G:C8	2.42	0.55
4:9:499:GLY:N	54:5:1469:G:O4'	2.34	0.55
14:J:116:PRO:HB3	24:T:32:HIS:HA	1.89	0.55
22:R:40:ILE:HG13	22:R:67:VAL:HA	1.87	0.55
26:a:193:LEU:H	26:a:193:LEU:HD12	1.72	0.55
36:k:54:GLY:O	52:3:861:U:O2'	2.24	0.55
52:3:2213:A:H2'	52:3:2214:A:H8	1.72	0.55
52:3:2664:U:N3	52:3:2673:A:C8	2.73	0.55
54:5:25:U:O2'	54:5:522:G:O2'	2.18	0.55
54:5:1198:C:OP2	54:5:1296:C:N4	2.39	0.55
54:5:1498:G:H2'	54:5:1499:G:C8	2.41	0.55
8:D:198:GLY:HA2	8:D:201:LYS:HG2	1.89	0.55
37:l:76:LYS:NZ	37:l:77:LYS:O	2.39	0.55
52:3:1409:G:H2'	52:3:1410:A:C8	2.42	0.55
52:3:1508:G:OP2	52:3:1508:G:H4'	1.98	0.55
52:3:1572:U:H2'	52:3:1573:A:C8	2.42	0.55
52:3:1667:G:H2'	52:3:1669:A:H8	1.71	0.55
52:3:1698:A:H61	52:3:2003:C:H42	1.52	0.55
54:5:95:C:H3'	54:5:96:G:H8	1.72	0.55
54:5:1359:C:H2'	54:5:1360:G:C8	2.42	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:12:ARG:HB2	52:3:721:G:H1	1.72	0.55
4:9:151:ILE:HD12	4:9:159:ALA:HB3	1.89	0.55
9:E:9:VAL:HG21	9:E:56:HIS:HD2	1.72	0.55
13:I:40:VAL:HG13	13:I:41:LYS:HG2	1.88	0.55
13:I:48:LEU:HD11	13:I:79:LEU:HB2	1.89	0.55
19:O:60:THR:HB	54:5:372:G:H5''	1.88	0.55
24:T:37:ARG:HB2	24:T:40:MET:HG3	1.88	0.55
27:b:161:LYS:HG3	34:i:83:TYR:CE2	2.42	0.55
28:c:109:THR:HB	28:c:211:PHE:HE2	1.71	0.55
52:3:325:G:O6	52:3:383:U:O2	2.25	0.55
52:3:917:G:H2'	52:3:918:G:H8	1.71	0.55
52:3:1008:A:C8	52:3:1009:A:H2'	2.42	0.55
52:3:2025:C:H2'	52:3:2026:A:H8	1.71	0.55
52:3:2248:C:H2'	52:3:2249:A:H8	1.72	0.55
52:3:2695:U:H2'	52:3:2696:G:O4'	2.07	0.55
54:5:546:G:H2'	54:5:547:C:C6	2.42	0.55
54:5:1285:G:H2'	54:5:1286:G:H8	1.72	0.55
2:1:31:PRO:HG3	51:z:20:LEU:HD21	1.88	0.55
4:9:510:ARG:HB3	4:9:562:THR:HB	1.87	0.55
10:F:78:ARG:HE	10:F:83:ASN:HA	1.71	0.55
16:L:44:ARG:NE	54:5:1271:U:OP2	2.40	0.55
31:f:111:PHE:O	31:f:114:LYS:NZ	2.40	0.55
40:o:54:ARG:HD3	40:o:100:TYR:HA	1.89	0.55
52:3:29:G:O2'	52:3:30:A:N7	2.35	0.55
52:3:229:C:H3'	52:3:230:G:H8	1.72	0.55
52:3:473:U:H2'	52:3:474:U:C6	2.42	0.55
52:3:675:U:O2	52:3:685:G:N2	2.39	0.55
52:3:2262:C:H2'	52:3:2263:G:H8	1.71	0.55
52:3:2599:C:H2'	52:3:2600:G:H8	1.71	0.55
52:3:2636:U:H5''	52:3:2637:A:H8	1.72	0.55
53:4:75:U:H2'	53:4:76:A:H8	1.71	0.55
54:5:631:C:H2'	54:5:632:A:C8	2.42	0.55
54:5:1502:G:H2'	54:5:1503:U:C6	2.41	0.55
4:9:123:ALA:HB1	4:9:130:ARG:HD2	1.89	0.54
4:9:525:ILE:HG13	4:9:530:ILE:HB	1.88	0.54
4:9:576:MET:HA	4:9:579:LYS:HE2	1.88	0.54
7:C:2:LYS:NZ	54:5:545:A:OP1	2.40	0.54
7:C:8:PHE:HB2	54:5:426:U:H5'	1.87	0.54
26:a:17:SER:HB2	26:a:214:GLY:HA3	1.89	0.54
37:l:50:ALA:O	37:l:54:ILE:HG13	2.07	0.54
38:m:106:ARG:HG2	38:m:108:GLY:H	1.72	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:v:20:HIS:CG	47:v:21:SER:H	2.26	0.54
52:3:51:A:O4'	52:3:119:A:N6	2.40	0.54
52:3:235:U:H2'	52:3:236:G:O4'	2.07	0.54
52:3:337:U:H2'	52:3:338:G:C8	2.42	0.54
52:3:453:U:H2'	52:3:454:G:C8	2.41	0.54
52:3:811:G:C8	52:3:2249:A:H5''	2.42	0.54
52:3:1806:G:O5'	52:3:1826:A:N6	2.40	0.54
52:3:2094:A:H2'	52:3:2095:A:H8	1.72	0.54
52:3:2589:G:H8	52:3:2590:G:O6	1.90	0.54
54:5:1409:A:H2'	54:5:1410:A:H8	1.73	0.54
2:1:10:ARG:NH2	52:3:2402:C:H5'	2.22	0.54
17:M:60:SER:OG	54:5:1162:G:N2	2.40	0.54
38:m:44:ARG:O	38:m:48:LEU:HG	2.06	0.54
52:3:125:G:OP1	52:3:1404:C:O2'	2.24	0.54
52:3:173:C:H2'	52:3:174:A:C8	2.42	0.54
52:3:306:G:H2'	52:3:307:C:C6	2.41	0.54
52:3:333:A:N1	52:3:356:A:O2'	2.38	0.54
52:3:383:U:H2'	52:3:384:G:C8	2.42	0.54
52:3:604:A:H1'	52:3:606:G:C8	2.43	0.54
52:3:811:G:H8	52:3:2249:A:H5''	1.72	0.54
52:3:1534:A:H1'	52:3:1535:A:C8	2.42	0.54
52:3:2202:U:H2'	52:3:2203:U:H6	1.72	0.54
54:5:649:U:O4	54:5:749:G:O2'	2.21	0.54
54:5:1069:U:H2'	54:5:1070:G:C4	2.43	0.54
4:9:108:ALA:HB1	4:9:142:ALA:HB2	1.89	0.54
4:9:656:ARG:HG3	4:9:661:GLY:HA2	1.88	0.54
52:3:443:C:H2'	52:3:444:C:C6	2.43	0.54
52:3:1122:G:O2'	52:3:1125:U:OP1	2.22	0.54
52:3:1485:A:N1	52:3:2711:C:N4	2.56	0.54
54:5:133:G:H2'	54:5:134:G:C8	2.42	0.54
54:5:998:G:H22	54:5:1028:C:H42	1.53	0.54
54:5:1011:A:N3	54:5:1193:U:O2'	2.40	0.54
4:9:352:ARG:HB2	4:9:376:ILE:HG12	1.89	0.54
5:A:82:ILE:HG13	5:A:105:VAL:HG13	1.87	0.54
12:H:108:ARG:HD2	54:5:1108:A:H4'	1.88	0.54
12:H:121:TYR:CZ	12:H:127:PRO:HG3	2.43	0.54
18:N:63:LEU:O	18:N:67:LEU:HG	2.08	0.54
21:Q:79:CYS:SG	21:Q:80:GLN:N	2.81	0.54
43:r:33:GLN:HG2	43:r:51:LEU:HD21	1.88	0.54
52:3:71:C:H2'	52:3:72:G:C8	2.42	0.54
52:3:573:A:H2'	52:3:574:G:O4'	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:734:A:H2'	52:3:735:G:O4'	2.07	0.54
54:5:97:G:H22	54:5:311:A:H2	1.55	0.54
54:5:610:C:H2'	54:5:611:A:C8	2.42	0.54
54:5:920:G:H4'	54:5:1480:G:H22	1.72	0.54
54:5:1489:C:H2'	54:5:1490:G:H8	1.73	0.54
55:8:18:C:O3'	55:8:61:U:O2'	2.26	0.54
4:9:18:HIS:CE1	4:9:115:GLN:H	2.25	0.54
4:9:20:ASP:HB2	52:3:2669:G:H5''	1.89	0.54
4:9:24:THR:OG1	4:9:56:GLU:O	2.17	0.54
9:E:11:GLY:H	9:E:52:GLN:HG2	1.72	0.54
13:I:59:ARG:NH1	54:5:1051:U:OP1	2.41	0.54
36:k:123:PRO:HB3	36:k:143:ASN:HB2	1.90	0.54
52:3:1440:U:H2'	52:3:1441:A:H8	1.70	0.54
52:3:1460:G:H2'	52:3:1461:A:C8	2.43	0.54
52:3:1957:G:H2'	52:3:1961:A:H62	1.73	0.54
52:3:2400:A:N7	52:3:2432:C:N3	2.56	0.54
54:5:68:C:H2'	54:5:69:G:C8	2.42	0.54
54:5:231:U:H2'	54:5:232:G:C8	2.42	0.54
54:5:593:A:H2'	54:5:638:A:H61	1.71	0.54
6:B:117:ARG:NH2	6:B:190:GLU:OE2	2.36	0.54
14:J:115:LYS:HB2	54:5:775:G:H21	1.73	0.54
52:3:1591:C:OP2	52:3:1592:A:O2'	2.18	0.54
52:3:2150:C:O2	52:3:2155:G:N2	2.41	0.54
52:3:2382:A:H2'	52:3:2383:G:C8	2.42	0.54
52:3:2760:C:H3'	52:3:2761:A:H8	1.72	0.54
54:5:593:A:N6	54:5:638:A:O2'	2.40	0.54
54:5:644:U:H2'	54:5:645:A:H8	1.73	0.54
54:5:826:G:N2	54:5:851:U:O2	2.30	0.54
54:5:1139:A:H2'	54:5:1140:A:H8	1.72	0.54
54:5:1381:U:H3	54:5:1492:G:H21	1.56	0.54
55:7:18:C:O3'	55:7:61:U:O2'	2.26	0.54
4:9:13:PHE:HA	4:9:101:GLY:O	2.07	0.54
11:G:38:SER:HB3	11:G:41:LYS:HG3	1.89	0.54
11:G:109:ASN:HB3	11:G:111:LEU:HG	1.88	0.54
31:f:23:ASP:H	31:f:28:HIS:CE1	2.26	0.54
33:h:52:PRO:HD3	33:h:71:PRO:HD3	1.89	0.54
34:i:77:TRP:NE1	52:3:1174:G:OP1	2.33	0.54
34:i:77:TRP:O	34:i:89:LYS:HA	2.07	0.54
41:p:12:ARG:NH1	52:3:1281:A:H5''	2.23	0.54
52:3:61:U:H3	52:3:70:G:H1	1.56	0.54
52:3:131:C:H4'	52:3:1377:A:H4'	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:234:G:H2'	52:3:235:U:C6	2.42	0.54
52:3:512:G:H1'	52:3:516:A:N6	2.23	0.54
52:3:606:G:O6	52:3:2036:G:O2'	2.25	0.54
52:3:1385:U:H2'	52:3:1386:G:O4'	2.08	0.54
52:3:2074:G:O2'	52:3:2076:G:O4'	2.21	0.54
52:3:2202:U:H2'	52:3:2203:U:C6	2.42	0.54
52:3:2299:U:H2'	52:3:2300:A:C8	2.42	0.54
54:5:1385:A:H2'	54:5:1386:C:H6	1.73	0.54
27:b:28:VAL:HG13	27:b:190:LEU:HD21	1.90	0.54
52:3:57:G:H2'	52:3:58:A:C8	2.43	0.54
52:3:358:A:N6	52:3:373:U:O4'	2.40	0.54
52:3:663:A:O2'	52:3:672:G:N2	2.37	0.54
52:3:2064:G:H2'	52:3:2065:A:H8	1.71	0.54
54:5:837:G:O2'	54:5:839:U:OP2	2.26	0.54
54:5:1417:U:H2'	54:5:1418:G:C8	2.43	0.54
6:B:92:ILE:HA	6:B:95:ILE:HG22	1.90	0.54
23:S:49:SER:O	23:S:53:ARG:HG2	2.07	0.54
35:j:65:THR:HA	35:j:82:ASN:HA	1.89	0.54
52:3:703:A:H2'	52:3:705:A:H62	1.73	0.54
52:3:1543:U:H2'	52:3:1544:G:C8	2.42	0.54
52:3:1677:G:H2'	52:3:1678:U:C6	2.43	0.54
52:3:2039:G:OP2	52:3:2462:G:O2'	2.25	0.54
54:5:664:A:H2'	54:5:665:G:C8	2.43	0.54
54:5:762:G:N1	54:5:809:G:O2'	2.33	0.54
54:5:830:U:H2'	54:5:831:C:C6	2.42	0.54
13:I:43:LYS:HE3	13:I:81:ILE:HB	1.90	0.54
14:J:39:SER:HB2	14:J:42:THR:HG23	1.90	0.54
27:b:73:ASN:HB3	27:b:75:LEU:HG	1.89	0.54
45:t:1:MET:HB2	45:t:100:LYS:HE3	1.90	0.54
48:w:26:LEU:O	48:w:30:ARG:HG3	2.08	0.54
52:3:1284:A:H5''	52:3:1285:U:H5''	1.90	0.54
52:3:1956:G:H2'	52:3:1957:G:C8	2.43	0.54
52:3:2229:C:H2'	52:3:2230:A:C8	2.43	0.54
52:3:2609:C:H2'	52:3:2611:G:C8	2.43	0.54
54:5:684:A:H62	54:5:700:G:N2	2.06	0.54
54:5:1075:G:H1'	54:5:1094:C:H41	1.72	0.54
54:5:1148:U:OP2	54:5:1157:G:O2'	2.25	0.54
54:5:1287:G:H2'	54:5:1288:C:C6	2.42	0.54
10:F:15:PRO:O	12:H:52:GLN:NE2	2.42	0.53
15:K:40:SER:OG	54:5:359:A:N6	2.41	0.53
18:N:39:HIS:ND1	54:5:736:U:O2'	2.41	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:R:41:PHE:CD2	22:R:42:PRO:HD2	2.43	0.53
27:b:146:SER:N	52:3:2519:U:O2	2.36	0.53
31:f:66:HIS:ND1	31:f:70:GLU:OE2	2.37	0.53
52:3:117:C:H2'	52:3:118:G:O4'	2.08	0.53
52:3:1230:U:H2'	52:3:1231:G:C8	2.43	0.53
52:3:1531:C:H2'	52:3:1532:A:O4'	2.09	0.53
53:4:59:A:O2'	53:4:60:C:OP1	2.26	0.53
54:5:80:U:H2'	54:5:81:A:C8	2.43	0.53
54:5:394:U:H2'	54:5:395:G:C8	2.42	0.53
54:5:1085:G:O2'	54:5:1099:G:N1	2.41	0.53
1:0:6:GLN:O	52:3:721:G:N2	2.41	0.53
4:9:500:GLY:H	54:5:1469:G:C5'	1.96	0.53
10:F:70:PRO:O	10:F:95:LYS:NZ	2.39	0.53
18:N:73:GLU:O	18:N:77:ASN:N	2.39	0.53
22:R:36:ARG:NH2	22:R:72:GLY:O	2.32	0.53
26:a:44:HIS:H	26:a:61:ARG:HH12	1.55	0.53
29:d:90:THR:OG1	53:4:41:C:N3	2.40	0.53
52:3:947:A:O2'	52:3:948:A:O4'	2.20	0.53
52:3:1260:U:H2'	52:3:1261:U:C6	2.43	0.53
54:5:590:G:O6	54:5:644:U:O4	2.27	0.53
54:5:1216:G:H2'	54:5:1217:G:C8	2.43	0.53
54:5:1225:A:H2'	54:5:1226:A:C8	2.43	0.53
4:9:103:ILE:HD11	4:9:133:PHE:HB3	1.89	0.53
30:e:21:GLN:NE2	30:e:24:HIS:O	2.41	0.53
34:i:112:LEU:O	52:3:1043:C:O2'	2.25	0.53
43:r:7:GLN:NE2	43:r:10:VAL:HG13	2.23	0.53
52:3:635:G:H1'	52:3:691:G:N2	2.24	0.53
52:3:720:A:O2'	52:3:808:U:O4	2.20	0.53
52:3:731:A:H2'	52:3:732:G:C8	2.43	0.53
52:3:2436:G:H4'	52:3:2437:G:C4	2.42	0.53
1:0:3:ARG:HE	52:3:1646:G:H21	1.55	0.53
6:B:25:ASN:HD21	6:B:28:ALA:HB3	1.73	0.53
12:H:21:LEU:HB3	12:H:63:PHE:CD2	2.43	0.53
34:i:19:TYR:HD1	34:i:143:LEU:HD22	1.73	0.53
45:t:3:ARG:NH1	45:t:74:LEU:O	2.41	0.53
52:3:38:G:H4'	52:3:487:C:C4	2.44	0.53
52:3:700:U:H2'	52:3:701:A:H8	1.74	0.53
52:3:1530:G:H2'	52:3:1531:C:C6	2.42	0.53
54:5:33:A:H2'	54:5:34:A:H8	1.73	0.53
54:5:219:A:H2'	54:5:220:U:C6	2.44	0.53
54:5:242:A:N6	54:5:275:A:O4'	2.42	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:1231:U:H5	54:5:1253:A:H5''	1.73	0.53
54:5:1287:G:H2'	54:5:1288:C:H6	1.73	0.53
14:J:13:ILE:HG12	14:J:76:LYS:HB2	1.91	0.53
27:b:21:ASN:HD22	40:o:84:PRO:HG2	1.73	0.53
31:f:12:LEU:O	31:f:14:LYS:NZ	2.42	0.53
39:n:11:ARG:HA	39:n:14:ARG:NE	2.23	0.53
47:v:26:ARG:NH2	52:3:193:G:OP2	2.42	0.53
48:w:98:LEU:HD11	48:w:102:ARG:HH21	1.74	0.53
52:3:199:A:H2'	52:3:202:C:N4	2.23	0.53
52:3:322:A:H2'	52:3:323:A:C8	2.43	0.53
52:3:1100:U:H2'	52:3:1101:U:C5	2.43	0.53
52:3:1738:G:H2'	52:3:1739:G:C8	2.44	0.53
52:3:2120:G:H22	52:3:2176:G:H4'	1.74	0.53
52:3:2140:G:O2'	52:3:2141:A:O5'	2.26	0.53
52:3:2661:U:H3	52:3:2675:C:H42	1.56	0.53
54:5:1402:U:H2'	54:5:1403:A:C8	2.44	0.53
55:8:2:G:H2'	55:8:3:G:C8	2.43	0.53
4:9:94:ARG:NH2	4:9:383:THR:OG1	2.41	0.53
8:D:87:ARG:HE	8:D:107:LYS:HD3	1.72	0.53
17:M:18:VAL:HG11	54:5:1292:A:N6	2.24	0.53
27:b:51:LEU:HA	27:b:83:GLU:HA	1.90	0.53
30:e:141:LYS:HD3	52:3:2754:U:H5''	1.91	0.53
52:3:558:C:OP1	52:3:575:C:O2'	2.27	0.53
52:3:1010:G:O2'	52:3:1011:A:OP2	2.25	0.53
52:3:1483:G:O2'	52:3:2857:C:OP1	2.27	0.53
52:3:2892:U:H2'	52:3:2893:C:C6	2.43	0.53
53:4:48:A:O2'	53:4:49:G:O5'	2.25	0.53
54:5:991:A:N6	54:5:1037:A:O2'	2.42	0.53
54:5:1241:G:N1	54:5:1245:A:C6	2.77	0.53
4:9:656:ARG:HG2	52:3:2668:A:H61	1.73	0.53
5:A:112:TRP:NE1	5:A:190:GLU:OE2	2.41	0.53
19:O:58:LYS:NZ	54:5:122:C:O2'	2.42	0.53
22:R:83:HIS:ND1	22:R:83:HIS:O	2.40	0.53
29:d:28:VAL:O	29:d:30:ARG:NH2	2.35	0.53
52:3:1106:G:C2	52:3:1124:G:H2'	2.44	0.53
52:3:1292:A:H61	52:3:2024:C:H42	1.57	0.53
52:3:1661:A:C2	52:3:1674:A:C8	2.97	0.53
52:3:1663:G:H21	52:3:2706:U:H5''	1.73	0.53
52:3:2380:U:H2'	52:3:2381:G:C8	2.43	0.53
52:3:2436:G:O2'	52:3:2437:G:N7	2.38	0.53
52:3:2557:G:H2'	52:3:2558:G:H8	1.74	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:2872:A:H2'	52:3:2873:G:H8	1.74	0.53
54:5:361:U:H5''	54:5:362:U:H5'	1.90	0.53
54:5:1161:G:H2'	54:5:1162:G:C8	2.43	0.53
54:5:1175:C:H4'	54:5:1178:C:H41	1.74	0.53
2:1:21:ARG:NH2	2:1:46:THR:O	2.42	0.53
4:9:460:VAL:O	4:9:464:ARG:HG2	2.09	0.53
11:G:93:PRO:HG2	54:5:871:U:H4'	1.91	0.53
24:T:13:LEU:O	24:T:17:LYS:HG2	2.09	0.53
33:h:55:ILE:HD12	33:h:65:PHE:HB2	1.90	0.53
39:n:9:ARG:O	39:n:13:LYS:HG3	2.09	0.53
52:3:204:U:H3	52:3:254:G:H1	1.57	0.53
52:3:679:A:N1	52:3:2377:A:O2'	2.39	0.53
52:3:1054:U:O2'	52:3:1056:A:N7	2.42	0.53
52:3:1708:G:N3	52:3:1710:A:N6	2.57	0.53
54:5:550:U:H2'	54:5:551:A:C8	2.43	0.53
54:5:1267:G:H2'	54:5:1268:G:C8	2.44	0.53
5:A:151:MET:O	5:A:155:GLU:HG2	2.09	0.53
7:C:97:LEU:HD21	7:C:134:ILE:HB	1.91	0.53
9:E:94:TYR:HA	21:Q:50:ARG:HG3	1.90	0.53
26:a:136:MET:HE1	26:a:140:PHE:HB2	1.91	0.53
27:b:148:GLN:HA	52:3:2059:G:H5''	1.91	0.53
36:k:52:GLU:HG2	36:k:55:GLN:HB2	1.91	0.53
43:r:92:SER:O	52:3:1648:A:N6	2.42	0.53
47:v:29:TRP:NE1	52:3:2240:U:OP1	2.42	0.53
52:3:1524:C:H2'	52:3:1525:G:H8	1.74	0.53
52:3:1689:A:H2'	52:3:1690:C:O4'	2.08	0.53
52:3:1816:A:H2'	52:3:1817:A:C8	2.44	0.53
52:3:2047:U:H2'	52:3:2048:U:C6	2.44	0.53
52:3:2255:A:H61	52:3:2265:U:H3	1.57	0.53
54:5:770:G:C6	54:5:771:G:C6	2.97	0.53
54:5:1216:G:H2'	54:5:1217:G:H8	1.73	0.53
54:5:1397:G:H2'	54:5:1398:G:C8	2.44	0.53
55:7:2:G:H2'	55:7:3:G:C8	2.43	0.53
4:9:366:GLU:O	4:9:368:ARG:NH1	2.42	0.53
7:C:114:ARG:HG3	7:C:132:PRO:HG3	1.91	0.53
13:I:13:LYS:HZ1	54:5:1254:A:H5''	1.74	0.53
27:b:85:ARG:HH11	52:3:2645:U:H5''	1.74	0.53
39:n:41:VAL:HG21	39:n:77:ILE:HG21	1.90	0.53
43:r:97:THR:HG23	43:r:99:ARG:NH1	2.21	0.53
52:3:352:C:H2'	52:3:353:G:C8	2.42	0.53
52:3:989:G:H2'	52:3:990:G:H8	1.74	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1754:U:H2'	52:3:1755:A:H8	1.71	0.53
52:3:2513:G:O2'	52:3:2514:U:O5'	2.26	0.53
52:3:2689:C:H1'	52:3:2690:U:H5	1.73	0.53
54:5:8:G:N3	54:5:294:A:N6	2.57	0.53
54:5:670:G:H2'	54:5:671:G:C8	2.44	0.53
54:5:878:U:H4'	54:5:879:G:H5''	1.91	0.53
54:5:885:U:H2'	54:5:886:A:H8	1.73	0.53
55:8:19:G:H5'	55:8:59:A:H2	1.74	0.53
4:9:678:SER:O	4:9:682:GLU:HG3	2.09	0.52
16:L:52:GLU:O	16:L:56:ILE:HG12	2.09	0.52
28:c:74:ALA:HB1	28:c:76:GLN:HE21	1.74	0.52
31:f:109:GLN:H	31:f:112:MET:HE2	1.74	0.52
33:h:88:ASN:OD1	33:h:89:ALA:N	2.42	0.52
35:j:59:ARG:HH12	52:3:2570:U:P	2.31	0.52
36:k:74:LYS:NZ	52:3:670:G:O6	2.42	0.52
36:k:113:LYS:HD2	36:k:130:LYS:HD3	1.91	0.52
44:s:27:TYR:HE2	44:s:85:LEU:HD11	1.74	0.52
52:3:453:U:H2'	52:3:454:G:H8	1.74	0.52
52:3:1136:U:H2'	52:3:1137:C:H6	1.74	0.52
52:3:1344:U:H2'	52:3:1345:G:H8	1.74	0.52
52:3:1848:U:C2	52:3:1849:G:C8	2.97	0.52
52:3:1867:G:H2'	52:3:1868:A:C8	2.45	0.52
52:3:1900:C:H2'	52:3:1901:C:H5'	1.91	0.52
52:3:1917:G:H2'	52:3:1918:U:C6	2.44	0.52
52:3:2567:C:H2'	52:3:2568:G:C8	2.39	0.52
52:3:2756:A:H2'	52:3:2757:A:O4'	2.09	0.52
54:5:196:G:H2'	54:5:197:A:H5''	1.92	0.52
54:5:500:G:H2'	54:5:501:A:C8	2.44	0.52
54:5:818:A:H2'	54:5:819:G:C8	2.44	0.52
54:5:1225:A:H2	54:5:1345:G:H1'	1.74	0.52
54:5:1241:G:C2	54:5:1245:A:C6	2.97	0.52
55:7:63:U:H2'	55:7:64:G:C8	2.44	0.52
3:2:25:VAL:HB	3:2:34:GLN:HB2	1.91	0.52
4:9:602:MET:HG3	4:9:645:LEU:HD13	1.91	0.52
5:A:156:ILE:O	5:A:160:GLU:HG3	2.09	0.52
29:d:5:LYS:HB2	29:d:97:TRP:CD1	2.44	0.52
33:h:16:GLY:N	33:h:49:GLU:O	2.40	0.52
35:j:67:LYS:NZ	52:3:1698:A:N3	2.55	0.52
46:u:50:ILE:HG22	46:u:74:PHE:HB3	1.91	0.52
52:3:142:A:O2'	52:3:143:A:O4'	2.26	0.52
52:3:1463:G:H2'	52:3:1464:G:C8	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:2664:U:C2	52:3:2673:A:N7	2.77	0.52
52:3:2734:C:O2'	52:3:2735:G:H8	1.88	0.52
54:5:369:A:H61	54:5:387:G:H1'	1.73	0.52
54:5:1081:U:H2'	54:5:1082:U:C6	2.43	0.52
17:M:34:LEU:HD13	17:M:37:PHE:HD2	1.73	0.52
20:P:59:ASP:OD1	20:P:84:ALA:N	2.43	0.52
26:a:73:ARG:NH1	26:a:199:THR:OG1	2.41	0.52
37:l:109:ILE:HG22	37:l:113:GLN:HB3	1.92	0.52
41:p:95:SER:O	41:p:99:ILE:HG13	2.09	0.52
46:u:54:GLN:NE2	46:u:58:ARG:H	2.07	0.52
52:3:27:U:H2'	52:3:28:G:O4'	2.10	0.52
52:3:30:A:C2	52:3:548:A:C8	2.98	0.52
52:3:66:A:H61	52:3:93:A:H61	1.57	0.52
52:3:161:U:H3	52:3:171:G:H1	1.56	0.52
52:3:179:A:O2'	52:3:180:A:O4'	2.28	0.52
52:3:896:U:H2'	52:3:897:A:H8	1.74	0.52
52:3:988:G:O6	52:3:1002:A:N6	2.43	0.52
52:3:1047:A:O2'	52:3:1048:A:H5''	2.09	0.52
52:3:1943:A:N3	52:3:1947:U:N3	2.58	0.52
52:3:2521:A:H2'	52:3:2522:U:H6	1.72	0.52
54:5:22:G:H2'	54:5:23:G:H8	1.74	0.52
54:5:505:C:OP2	54:5:506:U:O2'	2.24	0.52
54:5:1379:C:H2'	54:5:1380:G:C8	2.44	0.52
2:1:43:LYS:NZ	52:3:2358:U:OP2	2.42	0.52
5:A:76:ALA:HB3	5:A:239:ALA:HB1	1.92	0.52
12:H:108:ARG:HD3	12:H:110:LYS:N	2.25	0.52
26:a:247:SER:OG	52:3:2606:A:OP1	2.21	0.52
42:q:6:VAL:HG23	42:q:37:LYS:HB2	1.92	0.52
43:r:9:ARG:O	43:r:9:ARG:HD3	2.09	0.52
43:r:28:LYS:NZ	43:r:67:ASP:O	2.41	0.52
43:r:57:ASN:OD1	52:3:529:G:N2	2.42	0.52
44:s:37:LYS:NZ	44:s:55:VAL:O	2.36	0.52
52:3:30:A:H61	52:3:547:G:H1'	1.74	0.52
52:3:618:G:H3'	52:3:1281:A:H61	1.74	0.52
52:3:2552:G:H2'	52:3:2553:G:C8	2.44	0.52
54:5:366:C:H2'	54:5:367:A:H8	1.75	0.52
14:J:110:PRO:O	24:T:31:ARG:NH2	2.42	0.52
31:f:24:GLY:O	31:f:28:HIS:ND1	2.42	0.52
34:i:88:LYS:HE2	52:3:2648:A:H5''	1.91	0.52
39:n:4:ARG:HG2	39:n:4:ARG:HH11	1.75	0.52
40:o:29:ASP:HB3	40:o:93:ARG:HA	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:p:54:ARG:NE	52:3:1191:A:OP1	2.42	0.52
50:y:19:HIS:NE2	52:3:2052:C:O2'	2.28	0.52
52:3:714:G:H2'	52:3:715:G:H8	1.73	0.52
52:3:824:A:H1'	52:3:1788:A:N1	2.25	0.52
52:3:1683:G:H2'	52:3:1684:A:C8	2.44	0.52
52:3:1700:G:H3'	52:3:1701:G:H8	1.75	0.52
52:3:2073:C:H2'	52:3:2074:G:H8	1.72	0.52
54:5:945:U:H2'	54:5:946:G:C8	2.44	0.52
55:8:16:G:H22	55:8:49:C:N4	2.08	0.52
4:9:327:ARG:HG2	4:9:372:ILE:HG22	1.91	0.52
10:F:118:LYS:O	10:F:122:GLU:HG2	2.10	0.52
26:a:233:MET:O	26:a:241:GLY:HA3	2.09	0.52
30:e:49:LYS:HE3	30:e:50:ASP:H	1.74	0.52
34:i:83:TYR:HD1	52:3:2650:A:H5''	1.75	0.52
52:3:1777:G:O6	52:3:1990:C:N4	2.42	0.52
52:3:2530:U:H3	52:3:2551:G:H1	1.58	0.52
52:3:2698:U:OP2	52:3:2876:G:N2	2.42	0.52
52:3:2704:U:H2'	52:3:2705:G:C8	2.44	0.52
53:4:22:G:N7	53:4:54:U:O2'	2.38	0.52
54:5:242:A:N1	54:5:274:A:O2'	2.42	0.52
54:5:560:U:H4'	54:5:561:A:C2	2.45	0.52
54:5:1417:U:H2'	54:5:1418:G:H8	1.74	0.52
4:9:109:GLN:HG2	4:9:110:MET:SD	2.50	0.52
5:A:130:LEU:HG	5:A:159:LEU:HD13	1.92	0.52
6:B:18:TRP:O	6:B:21:ARG:NH2	2.36	0.52
9:E:10:ASP:HB2	9:E:81:GLN:HA	1.90	0.52
15:K:19:SER:OG	54:5:552:U:OP1	2.27	0.52
19:O:72:LEU:O	19:O:76:PHE:N	2.43	0.52
21:Q:82:HIS:HA	21:Q:85:HIS:HD1	1.75	0.52
23:S:8:GLU:HB2	23:S:12:ARG:HH11	1.74	0.52
29:d:41:GLY:H	29:d:150:ARG:NH2	2.08	0.52
33:h:9:ILE:N	52:3:1134:G:OP1	2.43	0.52
33:h:76:LEU:O	33:h:80:ALA:N	2.43	0.52
34:i:120:ARG:NH1	52:3:562:C:O2'	2.40	0.52
34:i:121:TRP:HA	34:i:124:LYS:HG3	1.91	0.52
42:q:64:LEU:HB2	42:q:86:ARG:HH21	1.75	0.52
43:r:34:ASN:OD1	43:r:35:ILE:N	2.43	0.52
45:t:4:ILE:HG12	45:t:27:ILE:HG21	1.92	0.52
52:3:119:A:H5'	52:3:120:A:H8	1.74	0.52
52:3:162:G:H22	52:3:169:U:H3'	1.74	0.52
52:3:771:C:H2'	52:3:772:C:C6	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:982:G:H2'	52:3:983:A:C8	2.44	0.52
52:3:1071:G:O6	52:3:1154:U:O4	2.28	0.52
52:3:2268:C:H2'	52:3:2269:C:H6	1.75	0.52
52:3:2463:G:H2'	52:3:2464:C:H6	1.74	0.52
54:5:108:C:H5''	54:5:307:C:H1'	1.91	0.52
54:5:908:A:H2'	54:5:909:A:C8	2.44	0.52
54:5:922:G:OP1	54:5:1480:G:N2	2.31	0.52
54:5:1113:U:H2'	54:5:1114:A:C8	2.45	0.52
54:5:1241:G:C6	54:5:1245:A:N6	2.78	0.52
54:5:1363:U:H2'	54:5:1364:C:H6	1.75	0.52
17:M:26:ARG:NH1	17:M:27:CYS:SG	2.83	0.52
20:P:25:GLN:HE22	20:P:43:LYS:H	1.58	0.52
27:b:49:ALA:HB2	27:b:85:ARG:HD2	1.92	0.52
30:e:152:ARG:HD2	30:e:167:TYR:HE2	1.75	0.52
42:q:77:LYS:HG2	52:3:1219:U:H4'	1.92	0.52
43:r:85:THR:OG1	43:r:93:SER:OG	2.22	0.52
45:t:91:TYR:N	52:3:332:G:OP1	2.42	0.52
46:u:60:TYR:OH	52:3:2340:U:H5'	2.09	0.52
52:3:59:C:H2'	52:3:60:G:C8	2.45	0.52
52:3:80:U:O2	52:3:109:G:N2	2.28	0.52
52:3:123:G:H2'	52:3:124:A:H8	1.73	0.52
52:3:990:G:N2	52:3:999:U:O2	2.30	0.52
52:3:1504:G:H2'	52:3:1505:G:C8	2.45	0.52
52:3:1654:G:H2'	52:3:1655:U:O4'	2.10	0.52
52:3:1845:C:N4	52:3:1906:G:N7	2.57	0.52
52:3:2000:U:H2'	52:3:2001:C:O4'	2.10	0.52
52:3:2740:U:H5''	52:3:2741:A:O4'	2.10	0.52
54:5:94:A:C8	54:5:322:G:H2'	2.45	0.52
54:5:1112:U:O2	54:5:1128:G:N2	2.39	0.52
1:0:18:PHE:HD2	1:0:43:THR:HG21	1.75	0.52
8:D:165:ALA:O	8:D:169:ILE:HG13	2.09	0.52
8:D:181:LYS:HG2	54:5:8:G:H21	1.75	0.52
13:I:52:LYS:HA	13:I:74:ASN:HA	1.91	0.52
30:e:97:TYR:HA	30:e:109:GLN:O	2.10	0.52
34:i:119:ARG:NH2	52:3:563:A:O5'	2.40	0.52
36:k:33:GLY:N	52:3:1221:G:OP1	2.38	0.52
45:t:93:MET:HE3	45:t:103:VAL:HB	1.90	0.52
52:3:559:C:H2'	52:3:560:U:C6	2.45	0.52
52:3:1071:G:N2	52:3:1154:U:O2	2.26	0.52
52:3:1247:C:H2'	52:3:1248:A:H8	1.75	0.52
52:3:1504:G:H2'	52:3:1505:G:H8	1.73	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1572:U:H2'	52:3:1573:A:H8	1.75	0.52
52:3:2158:C:H2'	52:3:2159:U:C6	2.45	0.52
54:5:76:G:N2	54:5:78:A:H3'	2.25	0.52
54:5:350:G:H21	54:5:384:G:HO2'	1.53	0.52
54:5:754:U:O2'	54:5:873:U:O2	2.27	0.52
54:5:891:C:H2'	54:5:892:G:C8	2.45	0.52
5:A:65:LEU:HD21	5:A:231:LEU:HD23	1.90	0.52
6:B:116:ALA:HB2	6:B:205:ILE:HG13	1.91	0.52
10:F:113:LYS:HB2	54:5:1272:C:N3	2.24	0.52
10:F:119:ILE:O	10:F:123:ILE:HG12	2.09	0.52
12:H:59:LEU:C	12:H:61:LYS:H	2.17	0.52
16:L:76:ASN:HA	16:L:79:HIS:CE1	2.44	0.52
18:N:72:LEU:O	18:N:75:TYR:HB3	2.09	0.52
27:b:198:ALA:HA	52:3:2688:C:H5'	1.92	0.52
37:l:56:LYS:HG2	52:3:2477:A:H4'	1.91	0.52
41:p:91:ARG:HG3	42:q:11:GLN:HB2	1.92	0.52
46:u:54:GLN:HE22	46:u:58:ARG:H	1.57	0.52
47:v:21:SER:HB2	52:3:2086:U:H4'	1.92	0.52
52:3:26:G:H2'	52:3:27:U:C6	2.45	0.52
52:3:1463:G:N1	52:3:1464:G:O6	2.42	0.52
52:3:2332:U:H3	52:3:2340:U:H3	1.57	0.52
52:3:2893:C:H2'	52:3:2894:G:O4'	2.10	0.52
54:5:39:G:N2	54:5:393:A:O5'	2.40	0.52
54:5:326:C:H3'	54:5:327:G:H8	1.75	0.52
54:5:688:G:H4'	54:5:794:C:H4'	1.92	0.52
54:5:763:A:H2'	54:5:764:A:O4'	2.09	0.52
55:8:63:U:H2'	55:8:64:G:C8	2.44	0.52
4:9:419:GLU:O	4:9:423:ILE:HG12	2.09	0.51
6:B:187:TYR:HE1	6:B:202:LYS:HB2	1.75	0.51
29:d:27:GLN:HG3	53:4:55:A:H1'	1.91	0.51
52:3:234:G:H2'	52:3:235:U:H6	1.75	0.51
52:3:2401:U:H2'	52:3:2402:C:C6	2.45	0.51
54:5:74:U:H2'	54:5:75:A:C8	2.44	0.51
54:5:417:U:OP1	54:5:419:A:N6	2.43	0.51
54:5:510:U:H2'	54:5:511:A:H8	1.74	0.51
55:8:16:G:N2	55:8:49:C:H42	2.07	0.51
2:1:39:ARG:NH2	52:3:2359:G:N7	2.57	0.51
6:B:156:VAL:HG22	6:B:201:VAL:HG23	1.91	0.51
9:E:3:TYR:HB2	9:E:62:PHE:HB3	1.91	0.51
14:J:33:ASN:HA	54:5:681:U:H1'	1.92	0.51
30:e:3:LYS:HG2	30:e:4:ILE:H	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:e:91:ARG:HH22	30:e:132:THR:HB	1.73	0.51
32:g:77:LYS:HA	52:3:1143:U:H5'	1.90	0.51
41:p:105:PHE:O	41:p:109:VAL:HG23	2.10	0.51
42:q:84:GLY:H	52:3:1254:U:H4'	1.73	0.51
52:3:627:U:H2'	52:3:628:A:H8	1.75	0.51
52:3:909:U:H2'	52:3:910:G:C8	2.45	0.51
52:3:2054:C:H2'	52:3:2055:A:C8	2.45	0.51
54:5:747:C:H2'	54:5:748:U:C6	2.45	0.51
54:5:1204:A:H2'	54:5:1205:C:C6	2.45	0.51
54:5:1329:G:H2'	54:5:1330:A:C8	2.42	0.51
54:5:1487:U:H2'	54:5:1488:A:H8	1.74	0.51
54:5:1489:C:H2'	54:5:1490:G:C8	2.45	0.51
3:2:30:GLN:O	3:2:33:LYS:NZ	2.40	0.51
4:9:498:SER:N	54:5:1469:G:O5'	2.43	0.51
4:9:572:ASP:OD2	55:7:37:A:O2'	2.28	0.51
5:A:117:LEU:HB3	5:A:190:GLU:HB3	1.92	0.51
27:b:57:VAL:HG11	27:b:79:LYS:HE2	1.93	0.51
27:b:126:TRP:HE1	27:b:165:MET:C	2.18	0.51
28:c:90:VAL:HG13	52:3:836:G:H1	1.75	0.51
34:i:115:ASN:OD1	34:i:116:ARG:N	2.43	0.51
36:k:10:PRO:HD3	52:3:1274:A:H5'	1.92	0.51
36:k:115:ILE:HD11	52:3:672:G:C5	2.44	0.51
37:l:111:GLU:HA	37:l:114:MET:HB2	1.91	0.51
46:u:47:THR:N	46:u:78:ASP:OD1	2.43	0.51
52:3:322:A:H2'	52:3:323:A:H8	1.76	0.51
52:3:1028:C:H2'	52:3:1029:A:C8	2.45	0.51
52:3:1474:C:H2'	52:3:1475:C:C6	2.46	0.51
52:3:1846:A:H2'	52:3:1847:G:C8	2.45	0.51
52:3:2180:U:H3'	52:3:2181:A:H8	1.75	0.51
52:3:2607:G:H2'	52:3:2608:A:H8	1.75	0.51
52:3:2645:U:H3'	52:3:2646:G:C8	2.45	0.51
54:5:1390:G:H2'	54:5:1391:A:H8	1.75	0.51
55:7:19:G:H5'	55:7:59:A:H2	1.74	0.51
10:F:34:LYS:HE2	54:5:1347:U:H1'	1.93	0.51
15:K:30:LEU:O	15:K:31:LEU:HG	2.11	0.51
27:b:139:TYR:HB2	27:b:140:PRO:HD3	1.92	0.51
27:b:212:LYS:NZ	52:3:2739:C:H4'	2.26	0.51
31:f:26:ALA:HB1	52:3:2101:A:H5'	1.93	0.51
33:h:118:GLU:O	33:h:122:LYS:HG3	2.11	0.51
39:n:9:ARG:NH2	53:4:5:G:O3'	2.43	0.51
52:3:1473:C:H1'	52:3:1580:G:H22	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1960:A:HO2'	52:3:2567:C:HO2'	1.55	0.51
52:3:2670:A:H3'	52:3:2671:G:H8	1.75	0.51
54:5:415:C:H2'	54:5:416:U:O4'	2.09	0.51
54:5:518:A:H2	54:5:531:A:H61	1.59	0.51
54:5:576:A:H2'	54:5:577:G:H8	1.75	0.51
54:5:973:A:H4'	54:5:1296:C:O2	2.10	0.51
54:5:1462:G:H2'	54:5:1463:A:C8	2.45	0.51
55:7:14:C:N3	55:7:24:A:N6	2.59	0.51
4:9:480:PHE:HE2	4:9:683:ILE:HG13	1.74	0.51
4:9:627:ILE:HB	52:3:1102:A:P	2.50	0.51
4:9:630:THR:HG23	52:3:1103:G:N3	2.25	0.51
8:D:76:ILE:HG12	8:D:88:PHE:HA	1.91	0.51
13:I:50:THR:HG23	54:5:1127:A:H5''	1.92	0.51
17:M:23:ARG:HH11	17:M:28:GLY:HA2	1.76	0.51
27:b:41:THR:N	27:b:45:ASP:OD2	2.43	0.51
27:b:178:ASN:OD1	27:b:213:LYS:NZ	2.43	0.51
31:f:63:ALA:O	31:f:67:LYS:HG3	2.09	0.51
52:3:202:C:O2'	52:3:203:A:H5'	2.10	0.51
52:3:569:U:O4	52:3:592:G:O6	2.29	0.51
52:3:638:A:N6	52:3:639:G:O6	2.44	0.51
52:3:684:A:H2'	52:3:685:G:C8	2.46	0.51
52:3:764:G:H5'	52:3:765:A:H5''	1.91	0.51
52:3:998:C:H2'	52:3:999:U:C6	2.45	0.51
52:3:1063:A:OP2	52:3:1161:A:N6	2.44	0.51
52:3:2744:A:H2'	52:3:2745:G:H8	1.74	0.51
54:5:233:C:H2'	54:5:234:G:H8	1.75	0.51
54:5:243:G:H2'	54:5:244:C:C6	2.45	0.51
54:5:882:U:H3'	54:5:883:A:H8	1.75	0.51
54:5:1178:C:H2'	54:5:1179:A:C8	2.45	0.51
4:9:230:LEU:HD11	25:W:67:LYS:HE3	1.93	0.51
6:B:114:LEU:HB2	6:B:207:ARG:HG2	1.92	0.51
24:T:16:LYS:O	24:T:20:ARG:HG3	2.11	0.51
29:d:48:LYS:HD2	29:d:147:LYS:H	1.75	0.51
30:e:5:GLY:O	30:e:68:HIS:NE2	2.44	0.51
31:f:122:GLY:H	31:f:142:VAL:HG23	1.74	0.51
34:i:62:SER:H	34:i:129:LYS:HA	1.76	0.51
40:o:60:ILE:HA	40:o:82:HIS:CD2	2.46	0.51
42:q:23:GLU:OE2	42:q:87:GLN:NE2	2.43	0.51
46:u:57:THR:HG21	52:3:2344:A:H61	1.75	0.51
52:3:219:G:H21	52:3:468:A:H61	1.59	0.51
52:3:243:U:H3	52:3:262:G:H1	1.59	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:504:G:H3'	52:3:505:G:H8	1.76	0.51
52:3:997:G:OP1	52:3:2465:U:H5'	2.10	0.51
52:3:1319:C:H2'	52:3:1320:C:C6	2.45	0.51
52:3:1946:U:H3	52:3:1974:U:HO2'	1.58	0.51
52:3:2183:U:O4	52:3:2184:A:N6	2.43	0.51
52:3:2249:A:H2'	52:3:2250:G:C8	2.46	0.51
52:3:2552:G:H1'	52:3:2654:U:H4'	1.92	0.51
52:3:2696:G:N1	52:3:2728:U:OP2	2.27	0.51
52:3:2701:A:H2'	52:3:2702:G:H8	1.76	0.51
54:5:254:G:H2'	54:5:255:G:H8	1.75	0.51
54:5:1012:A:C5	54:5:1013:C:H1'	2.45	0.51
54:5:1322:U:H2'	54:5:1323:A:H8	1.75	0.51
55:8:14:C:N3	55:8:24:A:N6	2.59	0.51
4:9:63:ILE:O	4:9:359:GLN:NE2	2.43	0.51
14:J:75:VAL:HG11	14:J:98:LEU:HD21	1.93	0.51
15:K:3:THR:OG1	54:5:874:C:OP2	2.29	0.51
22:R:53:ASN:ND2	54:5:953:A:N1	2.58	0.51
26:a:50:GLN:OE1	52:3:1813:C:O2'	2.22	0.51
26:a:190:ARG:NH1	26:a:277:LEU:HB2	2.25	0.51
27:b:64:LYS:HA	27:b:67:GLN:CD	2.35	0.51
36:k:55:GLN:NE2	52:3:868:C:O2	2.43	0.51
38:m:76:ASP:OD1	38:m:77:GLN:N	2.43	0.51
42:q:73:HIS:HB2	42:q:80:LEU:HD13	1.92	0.51
43:r:99:ARG:NH2	52:3:2020:A:OP2	2.44	0.51
52:3:643:A:N6	52:3:655:G:H21	2.09	0.51
52:3:755:C:H2'	52:3:756:A:C8	2.45	0.51
52:3:963:U:H2'	52:3:964:A:C8	2.45	0.51
52:3:1247:C:H2'	52:3:1248:A:C8	2.46	0.51
52:3:1381:A:H2'	52:3:1382:A:C8	2.46	0.51
52:3:1449:G:H2'	52:3:1450:G:C8	2.45	0.51
52:3:1838:A:H2'	52:3:1839:C:C6	2.46	0.51
52:3:2372:C:H2'	52:3:2373:G:O4'	2.11	0.51
52:3:2596:A:N6	52:3:2615:G:O6	2.44	0.51
52:3:2693:U:H2'	52:3:2694:A:C8	2.46	0.51
52:3:2764:U:H1'	52:3:2765:A:H5''	1.92	0.51
52:3:2848:A:H2'	52:3:2849:G:C8	2.46	0.51
54:5:305:A:H2'	54:5:306:G:H8	1.76	0.51
54:5:356:G:H2'	54:5:357:G:C8	2.45	0.51
54:5:783:G:H2'	54:5:784:A:H5''	1.91	0.51
54:5:1002:A:H3'	54:5:1003:G:H8	1.75	0.51
3:2:2:LYS:O	3:2:35:ARG:N	2.44	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:9:213:HIS:CE1	25:W:82:LEU:HB2	2.46	0.51
6:B:119:ILE:O	6:B:123:LEU:HD23	2.11	0.51
10:F:11:VAL:HG23	10:F:20:THR:HG23	1.93	0.51
15:K:56:LYS:HD3	15:K:104:PRO:HG3	1.93	0.51
51:z:12:ASN:HA	51:z:48:LYS:HE2	1.92	0.51
52:3:432:G:H2'	52:3:433:A:H8	1.75	0.51
52:3:643:A:H62	52:3:655:G:H21	1.59	0.51
52:3:674:G:O2'	52:3:675:U:H5'	2.11	0.51
52:3:988:G:H2'	52:3:989:G:O4'	2.10	0.51
52:3:989:G:O6	52:3:1000:U:O4	2.29	0.51
52:3:1919:A:N7	52:3:1924:U:O4	2.44	0.51
52:3:1960:A:O2'	52:3:2567:C:O2'	2.24	0.51
52:3:2170:A:N3	52:3:2180:U:O2'	2.44	0.51
52:3:2171:A:H2'	52:3:2172:A:O4'	2.11	0.51
52:3:2210:G:O2'	52:3:2212:U:OP2	2.24	0.51
52:3:2306:A:H3'	52:3:2307:G:H8	1.76	0.51
54:5:861:A:O2'	54:5:867:A:N1	2.31	0.51
55:7:16:G:N2	55:7:49:C:H42	2.07	0.51
4:9:466:GLU:OE1	4:9:466:GLU:N	2.44	0.51
12:H:108:ARG:HE	54:5:1108:A:H5''	1.76	0.51
27:b:65:PRO:HG3	52:3:2795:C:H1'	1.92	0.51
42:q:41:LEU:HD21	42:q:55:VAL:HG12	1.93	0.51
52:3:168:A:H2'	52:3:169:U:O4'	2.11	0.51
52:3:297:G:N2	52:3:440:C:O2'	2.26	0.51
52:3:515:A:H4'	52:3:516:A:H5'	1.92	0.51
52:3:675:U:H2'	52:3:676:U:C6	2.46	0.51
52:3:1613:A:H3'	52:3:1614:G:H8	1.76	0.51
52:3:1815:U:O2'	52:3:1816:A:H8	1.94	0.51
52:3:1868:A:H2'	52:3:1869:G:H8	1.75	0.51
52:3:2743:U:H2'	52:3:2744:A:C8	2.46	0.51
54:5:1288:C:H2'	54:5:1289:U:C6	2.45	0.51
55:7:30:G:H2'	55:7:31:G:H8	1.76	0.51
6:B:15:ASN:HA	6:B:215:LEU:HA	1.92	0.51
7:C:123:LEU:HB2	7:C:145:LYS:NZ	2.26	0.51
8:D:161:ILE:O	8:D:180:THR:OG1	2.24	0.51
12:H:52:GLN:HB3	12:H:103:LYS:NZ	2.26	0.51
23:S:24:GLN:OE1	23:S:27:LYS:NZ	2.44	0.51
25:W:69:ALA:O	25:W:73:LEU:HG	2.10	0.51
26:a:166:SER:H	26:a:203:VAL:HB	1.75	0.51
34:i:120:ARG:NH1	52:3:562:C:O3'	2.45	0.51
52:3:730:G:H2'	52:3:731:A:C8	2.45	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1326:C:H2'	52:3:1327:G:O4'	2.11	0.51
52:3:1335:A:H2'	52:3:1336:A:H8	1.75	0.51
52:3:1422:U:H5'	52:3:1637:A:H4'	1.91	0.51
52:3:2089:A:H3'	52:3:2090:G:H8	1.76	0.51
54:5:951:U:H2'	54:5:952:U:O4'	2.11	0.51
54:5:975:C:O2	54:5:975:C:H2'	2.10	0.51
54:5:1062:C:H2'	54:5:1063:G:H8	1.76	0.51
55:8:30:G:H2'	55:8:31:G:H8	1.76	0.51
5:A:45:ILE:HD11	5:A:57:VAL:H	1.76	0.50
7:C:127:ARG:HD3	54:5:617:U:H5''	1.93	0.50
10:F:76:VAL:HB	10:F:78:ARG:HH12	1.75	0.50
39:n:75:GLN:HB3	39:n:112:ARG:HE	1.76	0.50
41:p:57:ARG:O	41:p:61:ILE:HG12	2.10	0.50
52:3:176:U:H2'	52:3:177:U:C6	2.46	0.50
52:3:707:C:H2'	52:3:708:C:H6	1.75	0.50
52:3:1242:G:N2	52:3:1266:G:O2'	2.45	0.50
52:3:1283:A:H5'	52:3:1284:A:H8	1.76	0.50
52:3:1363:C:H2'	52:3:1364:A:C8	2.46	0.50
52:3:1704:C:H2'	52:3:1705:U:O4'	2.11	0.50
52:3:2387:U:H2'	52:3:2388:C:C6	2.46	0.50
54:5:319:U:H2'	54:5:320:G:O4'	2.11	0.50
54:5:608:G:H2'	54:5:609:G:C8	2.46	0.50
54:5:1298:U:H5''	54:5:1337:U:C6	2.45	0.50
54:5:1370:C:H4'	54:5:1377:C:H1'	1.92	0.50
4:9:314:VAL:HG21	4:9:322:ARG:HE	1.75	0.50
9:E:156:LEU:HD21	11:G:76:TYR:H	1.76	0.50
10:F:24:ARG:NH1	54:5:1351:U:OP1	2.44	0.50
22:R:27:LYS:NZ	22:R:45:VAL:O	2.43	0.50
23:S:22:LYS:HE3	54:5:1433:G:H5''	1.93	0.50
23:S:30:THR:OG1	54:5:1432:A:OP1	2.28	0.50
33:h:43:THR:OG1	33:h:46:LYS:O	2.29	0.50
38:m:54:VAL:HB	38:m:59:ASN:ND2	2.26	0.50
43:r:82:MET:HB2	43:r:98:LYS:HB2	1.93	0.50
48:w:15:LEU:O	48:w:19:VAL:HG23	2.11	0.50
52:3:769:A:H3'	52:3:770:A:H8	1.76	0.50
52:3:1211:U:H2'	52:3:1212:C:C6	2.46	0.50
52:3:1853:G:N2	52:3:1854:A:N1	2.60	0.50
52:3:2604:U:O2'	52:3:2605:G:OP1	2.25	0.50
52:3:2797:C:O2'	52:3:2895:A:N3	2.44	0.50
54:5:45:A:H2'	54:5:46:U:O4'	2.11	0.50
54:5:63:U:O2'	54:5:375:C:O2	2.28	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:257:U:N3	54:5:260:C:OP2	2.38	0.50
54:5:1139:A:H2'	54:5:1140:A:C8	2.46	0.50
4:9:210:MET:O	4:9:214:LEU:N	2.43	0.50
5:A:127:ILE:HB	5:A:170:LYS:HE2	1.94	0.50
6:B:159:ARG:HG2	6:B:165:ILE:HD11	1.93	0.50
9:E:45:LEU:HG	9:E:54:SER:HA	1.94	0.50
12:H:108:ARG:NE	54:5:1108:A:H5''	2.26	0.50
19:O:13:ILE:H	19:O:32:HIS:HA	1.76	0.50
22:R:27:LYS:HE3	22:R:47:ASN:HB3	1.94	0.50
27:b:4:ARG:HB3	27:b:102:PHE:HE1	1.76	0.50
27:b:139:TYR:OH	52:3:781:U:OP2	2.30	0.50
28:c:71:THR:O	52:3:1285:U:N3	2.43	0.50
29:d:55:ASN:O	29:d:59:LEU:HG	2.11	0.50
34:i:112:LEU:HD11	34:i:122:ILE:HB	1.92	0.50
36:k:8:SER:O	52:3:1273:U:O2'	2.25	0.50
36:k:100:GLU:O	36:k:102:GLN:NE2	2.43	0.50
40:o:32:ASN:O	40:o:89:GLU:N	2.35	0.50
46:u:57:THR:H	52:3:2338:G:H21	1.59	0.50
46:u:82:LYS:NZ	52:3:891:G:O2'	2.39	0.50
48:w:97:LYS:HD3	48:w:100:LYS:HE2	1.93	0.50
52:3:603:G:O4'	52:3:1019:A:N6	2.44	0.50
52:3:1007:C:H1'	52:3:1019:A:H2	1.77	0.50
52:3:2054:C:H2'	52:3:2055:A:H8	1.77	0.50
52:3:2212:U:H2'	52:3:2213:A:C8	2.46	0.50
52:3:2852:G:O2'	52:3:2871:G:N1	2.45	0.50
53:4:5:G:H2'	53:4:6:U:O4'	2.11	0.50
54:5:134:G:H2'	54:5:135:A:C8	2.46	0.50
54:5:305:A:H2'	54:5:306:G:C8	2.46	0.50
54:5:598:U:H2'	54:5:599:G:H8	1.76	0.50
54:5:671:G:N1	54:5:713:A:N6	2.29	0.50
54:5:1098:C:C2	54:5:1099:G:C8	2.99	0.50
54:5:1445:G:H2'	54:5:1446:A:C8	2.45	0.50
4:9:15:ILE:HD12	4:9:81:ASP:HB2	1.93	0.50
4:9:205:ASP:OD1	4:9:205:ASP:N	2.44	0.50
16:L:66:GLU:O	16:L:70:ARG:HG3	2.11	0.50
52:3:774:A:H1'	52:3:775:C:H5	1.77	0.50
52:3:1182:U:H2'	52:3:1183:A:H8	1.71	0.50
52:3:1416:G:H2'	52:3:1417:G:C8	2.46	0.50
52:3:1667:G:H2'	52:3:1669:A:C8	2.46	0.50
52:3:2267:G:H2'	52:3:2268:C:C6	2.47	0.50
52:3:2348:U:H2'	52:3:2349:G:C8	2.45	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:2745:G:H2'	52:3:2746:A:C8	2.47	0.50
52:3:2760:C:H3'	52:3:2761:A:C8	2.46	0.50
52:3:2849:G:H2'	52:3:2850:G:H8	1.76	0.50
54:5:108:C:N4	54:5:234:G:O6	2.44	0.50
54:5:554:C:H2'	54:5:555:G:C8	2.46	0.50
54:5:687:G:H2'	54:5:688:G:C8	2.46	0.50
54:5:832:G:H2'	54:5:833:G:C8	2.47	0.50
54:5:1055:G:O6	54:5:1168:G:N1	2.45	0.50
4:9:319:PHE:HB3	54:5:56:A:H1'	1.93	0.50
10:F:111:HIS:NE2	54:5:1272:C:H5''	2.25	0.50
15:K:101:LYS:NZ	54:5:524:C:OP1	2.41	0.50
16:L:34:LEU:HD22	16:L:39:ILE:HB	1.93	0.50
30:e:112:TYR:H	30:e:155:ARG:HH22	1.57	0.50
32:g:110:CYS:SG	32:g:111:GLY:N	2.85	0.50
34:i:63:ASP:OD1	34:i:63:ASP:N	2.45	0.50
43:r:57:ASN:HD21	52:3:529:G:H21	1.59	0.50
52:3:291:G:H2'	52:3:292:G:C8	2.46	0.50
52:3:1450:G:H2'	52:3:1451:A:H8	1.76	0.50
52:3:2880:A:N1	52:3:2881:A:N6	2.60	0.50
54:5:612:G:N2	54:5:624:U:O2	2.38	0.50
54:5:687:G:H1'	54:5:695:G:N2	2.27	0.50
54:5:1402:U:O2	54:5:1449:G:N2	2.38	0.50
4:9:353:LEU:HD13	4:9:367:ILE:HG12	1.91	0.50
4:9:532:ARG:HA	4:9:535:ILE:HG12	1.94	0.50
11:G:98:TYR:CE1	11:G:136:GLU:HB2	2.46	0.50
15:K:96:ARG:NH1	54:5:550:U:OP1	2.45	0.50
30:e:112:TYR:H	30:e:155:ARG:NH2	2.09	0.50
36:k:26:SER:O	52:3:849:C:N4	2.45	0.50
37:l:12:PRO:C	52:3:947:A:H62	2.19	0.50
37:l:54:ILE:O	37:l:58:LEU:HB2	2.11	0.50
45:t:100:LYS:NZ	52:3:330:A:H5''	2.27	0.50
46:u:39:LYS:HD2	46:u:45:ILE:HG12	1.94	0.50
49:x:13:SER:OG	49:x:33:GLU:OE1	2.20	0.50
51:z:31:LYS:HE3	51:z:49:GLU:H	1.76	0.50
52:3:875:G:O6	52:3:876:A:N6	2.45	0.50
52:3:990:G:O6	52:3:999:U:O4	2.29	0.50
52:3:2237:U:H2'	52:3:2238:G:H8	1.75	0.50
52:3:2565:G:H2'	52:3:2566:C:H6	1.73	0.50
52:3:2770:U:H2'	52:3:2771:G:C8	2.47	0.50
52:3:2865:U:H2'	52:3:2866:A:C8	2.47	0.50
54:5:312:A:H4'	54:5:349:A:N6	2.23	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:884:G:H1'	54:5:885:U:H5	1.76	0.50
54:5:1501:G:H2'	54:5:1502:G:H8	1.74	0.50
55:7:16:G:H22	55:7:49:C:N4	2.08	0.50
4:9:183:VAL:HG11	4:9:269:LEU:HD11	1.94	0.50
5:A:225:THR:HA	5:A:228:LEU:HD12	1.94	0.50
9:E:67:GLN:O	9:E:70:LYS:NZ	2.39	0.50
26:a:180:VAL:HB	26:a:194:LYS:HB3	1.93	0.50
33:h:12:ILE:HG21	33:h:25:LEU:HD21	1.92	0.50
35:j:66:LYS:HE2	52:3:1699:A:H5''	1.92	0.50
43:r:69:LEU:HB3	43:r:107:LEU:HD11	1.93	0.50
52:3:192:U:H2'	52:3:193:G:O4'	2.11	0.50
52:3:197:U:H2'	52:3:198:G:H8	1.75	0.50
52:3:646:A:N6	52:3:653:G:O6	2.45	0.50
52:3:1416:G:H2'	52:3:1417:G:H8	1.77	0.50
52:3:2033:G:H2'	52:3:2034:G:H8	1.77	0.50
52:3:2229:C:H2'	52:3:2230:A:H8	1.77	0.50
52:3:2598:C:H2'	52:3:2599:C:H6	1.77	0.50
52:3:2644:U:H2'	52:3:2645:U:C6	2.46	0.50
52:3:2662:A:N6	52:3:2674:C:H41	2.09	0.50
54:5:1040:U:H4'	54:5:1041:G:H5''	1.93	0.50
54:5:1087:C:H2'	54:5:1088:C:C6	2.47	0.50
54:5:1147:U:H2'	54:5:1148:U:C6	2.47	0.50
54:5:1150:G:H2'	54:5:1151:A:C8	2.46	0.50
54:5:1225:A:C2	54:5:1345:G:H1'	2.47	0.50
1:0:7:PRO:HG3	52:3:1645:C:O2'	2.12	0.50
7:C:108:PRO:HD3	7:C:157:ALA:HB2	1.92	0.50
9:E:45:LEU:HD13	9:E:49:ILE:HG21	1.92	0.50
14:J:54:TYR:O	14:J:58:ILE:HG12	2.12	0.50
23:S:15:ILE:O	23:S:19:LEU:HG	2.12	0.50
27:b:55:ASP:HB3	27:b:79:LYS:HB3	1.94	0.50
27:b:141:HIS:NE2	52:3:1692:A:OP2	2.44	0.50
40:o:28:GLY:H	40:o:52:VAL:HB	1.77	0.50
40:o:34:ALA:HB1	40:o:45:ILE:HG23	1.93	0.50
50:y:10:LYS:HA	50:y:13:ARG:NH2	2.27	0.50
52:3:20:C:O2'	52:3:587:U:H5''	2.12	0.50
52:3:136:G:H2'	52:3:137:U:O4'	2.11	0.50
52:3:548:A:H2'	52:3:549:A:C8	2.46	0.50
52:3:580:U:H5	52:3:1249:A:H2'	1.76	0.50
52:3:975:G:H2'	52:3:976:C:C6	2.46	0.50
52:3:1311:G:N2	52:3:1314:A:OP2	2.40	0.50
52:3:1429:G:H2'	52:3:1430:U:C6	2.47	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1546:U:H3'	52:3:1547:G:C8	2.47	0.50
52:3:1589:A:H2'	52:3:1590:U:C6	2.47	0.50
52:3:2017:G:H2'	52:3:2018:U:C6	2.47	0.50
54:5:781:A:H2'	54:5:782:G:C8	2.47	0.50
54:5:796:A:H2'	54:5:797:G:O4'	2.12	0.50
55:8:63:U:H2'	55:8:64:G:H8	1.77	0.50
4:9:85:HIS:C	4:9:87:ASP:H	2.20	0.50
4:9:351:SER:HB3	4:9:376:ILE:HG13	1.94	0.50
5:A:158:ARG:NH1	54:5:1095:G:OP1	2.45	0.50
10:F:28:VAL:HG11	10:F:100:LEU:HB3	1.92	0.50
21:Q:92:ARG:NH1	54:5:733:A:H5''	2.24	0.50
26:a:262:HIS:CE1	52:3:1831:G:H21	2.30	0.50
52:3:643:A:N6	52:3:655:G:N2	2.60	0.50
52:3:683:G:N3	52:3:2358:U:O2'	2.42	0.50
52:3:772:C:N4	52:3:773:G:O6	2.45	0.50
52:3:2032:G:H2'	52:3:2033:G:C8	2.47	0.50
52:3:2045:C:N4	52:3:2046:G:O6	2.44	0.50
52:3:2815:G:O6	52:3:2894:G:N2	2.45	0.50
53:4:103:C:H2'	53:4:104:C:H6	1.76	0.50
54:5:32:U:H3'	54:5:33:A:H4'	1.94	0.50
54:5:45:A:H61	54:5:394:U:H3	1.59	0.50
54:5:329:C:H2'	54:5:330:C:C6	2.46	0.50
54:5:1065:G:O2'	54:5:1092:A:N6	2.42	0.50
54:5:1462:G:H2'	54:5:1463:A:H8	1.77	0.50
1:0:39:ARG:NH2	52:3:504:G:O6	2.45	0.49
4:9:31:LEU:O	4:9:35:GLY:N	2.45	0.49
4:9:295:ASN:O	4:9:296:GLU:HG2	2.12	0.49
6:B:202:LYS:NZ	54:5:1049:G:OP1	2.42	0.49
7:C:151:ILE:HB	7:C:154:VAL:HG12	1.93	0.49
8:D:166:ILE:H	8:D:166:ILE:HD12	1.77	0.49
9:E:162:LYS:HD3	9:E:163:MET:HG2	1.94	0.49
18:N:33:ILE:HD11	18:N:56:LYS:HB2	1.94	0.49
19:O:3:MET:N	19:O:3:MET:SD	2.85	0.49
26:a:47:ARG:NH2	52:3:725:G:O2'	2.44	0.49
32:g:56:ASN:HB3	52:3:1142:G:H5''	1.94	0.49
38:m:56:ASN:OD1	38:m:57:PHE:N	2.44	0.49
50:y:3:VAL:HG11	52:3:2064:G:H1'	1.94	0.49
52:3:119:A:H5'	52:3:120:A:C8	2.47	0.49
52:3:481:C:H2'	52:3:482:G:O4'	2.12	0.49
52:3:880:C:O2'	52:3:881:A:O5'	2.28	0.49
52:3:1077:G:O6	52:3:1148:U:C4	2.65	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1588:A:H2'	52:3:1589:A:C8	2.47	0.49
52:3:1809:A:P	52:3:1822:A:H61	2.35	0.49
52:3:1831:G:H2'	52:3:1832:G:H8	1.77	0.49
52:3:2079:G:H2'	52:3:2080:C:C6	2.47	0.49
53:4:21:G:H2'	53:4:22:G:C8	2.47	0.49
54:5:171:A:H2'	54:5:172:C:C6	2.47	0.49
54:5:430:G:H2'	54:5:431:U:H6	1.77	0.49
54:5:573:G:H4'	54:5:574:C:H5''	1.94	0.49
54:5:733:A:H2'	54:5:734:A:C8	2.47	0.49
54:5:760:U:H2'	54:5:761:U:C6	2.46	0.49
54:5:966:A:O5'	54:5:1206:G:N2	2.43	0.49
54:5:1211:A:H2'	54:5:1212:C:C6	2.47	0.49
4:9:36:ARG:NH2	4:9:191:GLU:O	2.45	0.49
9:E:36:GLN:OE1	9:E:36:GLN:N	2.45	0.49
12:H:35:ARG:HD3	12:H:40:TYR:HD2	1.77	0.49
12:H:86:VAL:HA	12:H:89:LEU:HD12	1.93	0.49
21:Q:56:ASP:N	21:Q:56:ASP:OD1	2.44	0.49
27:b:161:LYS:HD3	52:3:2627:U:OP1	2.13	0.49
33:h:52:PRO:HG2	33:h:68:LYS:HB3	1.94	0.49
49:x:13:SER:HB3	49:x:33:GLU:H	1.76	0.49
52:3:499:G:N2	52:3:501:G:H8	2.10	0.49
52:3:892:G:H2'	52:3:893:A:C8	2.46	0.49
52:3:1344:U:H2'	52:3:1345:G:C8	2.47	0.49
52:3:1511:C:H2'	52:3:1512:A:C8	2.47	0.49
52:3:2406:U:H2'	52:3:2407:G:H8	1.76	0.49
52:3:2539:A:C2	52:3:2667:G:H1'	2.47	0.49
52:3:2846:A:H2'	52:3:2847:C:H6	1.77	0.49
54:5:1233:G:H2'	54:5:1234:C:C6	2.47	0.49
54:5:1363:U:H2'	54:5:1364:C:C6	2.48	0.49
6:B:182:ARG:HH12	6:B:209:MET:HE2	1.76	0.49
7:C:170:ASN:ND2	7:C:175:GLU:OE1	2.39	0.49
11:G:38:SER:O	11:G:42:ILE:HG12	2.12	0.49
14:J:18:CYS:SG	14:J:19:SER:N	2.84	0.49
21:Q:81:MET:HG2	21:Q:85:HIS:CE1	2.47	0.49
28:c:37:ALA:O	28:c:41:GLU:HG2	2.13	0.49
28:c:101:LEU:HG	52:3:695:G:H5''	1.94	0.49
29:d:96:MET:O	29:d:100:LEU:HG	2.12	0.49
33:h:45:ASP:OD1	33:h:45:ASP:N	2.45	0.49
43:r:88:ARG:NH2	52:3:2621:U:O4	2.45	0.49
48:w:14:GLU:HA	48:w:17:LYS:HE2	1.95	0.49
51:z:43:LYS:NZ	51:z:44:VAL:O	2.46	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:34:C:H2'	52:3:35:U:C6	2.47	0.49
52:3:190:G:H2'	52:3:191:G:H8	1.77	0.49
52:3:224:G:H1	52:3:463:U:H3'	1.76	0.49
52:3:790:U:H2'	52:3:791:A:H8	1.77	0.49
52:3:792:G:H2'	52:3:793:C:H5'	1.94	0.49
52:3:1807:C:O2	52:3:1824:G:O6	2.31	0.49
52:3:1845:C:O2'	52:3:1905:U:O4	2.21	0.49
52:3:2650:A:H2'	52:3:2651:G:C8	2.47	0.49
54:5:655:G:O6	54:5:744:U:C4	2.65	0.49
54:5:781:A:H2'	54:5:782:G:H8	1.78	0.49
54:5:834:G:H2'	54:5:835:G:H8	1.77	0.49
55:7:7:U:H2'	55:7:8:G:C8	2.48	0.49
4:9:33:HIS:HA	4:9:36:ARG:HG3	1.95	0.49
5:A:224:SER:O	5:A:228:LEU:HG	2.13	0.49
9:E:42:LEU:HB2	9:E:56:HIS:CE1	2.47	0.49
11:G:32:THR:HA	11:G:73:ASN:HA	1.93	0.49
12:H:9:LEU:HD12	54:5:1124:U:H4'	1.95	0.49
13:I:14:ILE:HG23	13:I:80:MET:HB2	1.93	0.49
13:I:31:ILE:HA	13:I:34:VAL:HG12	1.93	0.49
14:J:112:ASN:HA	24:T:32:HIS:CE1	2.47	0.49
15:K:113:GLY:H	15:K:117:THR:HB	1.76	0.49
16:L:110:LYS:NZ	54:5:1202:A:OP2	2.36	0.49
17:M:42:LEU:O	17:M:45:ARG:HB3	2.12	0.49
18:N:21:SER:OG	18:N:22:ILE:N	2.46	0.49
21:Q:57:LEU:HD12	21:Q:60:LEU:HD12	1.95	0.49
41:p:53:LYS:HA	52:3:1031:U:H5'	1.93	0.49
42:q:76:GLN:H	52:3:598:G:P	2.36	0.49
44:s:86:PRO:HG3	48:w:87:TRP:CE2	2.47	0.49
47:v:53:ARG:NH1	52:3:434:G:OP2	2.45	0.49
50:y:17:ARG:NE	52:3:1296:G:OP2	2.45	0.49
52:3:58:A:H2'	52:3:59:C:O4'	2.12	0.49
52:3:771:C:H2'	52:3:772:C:H6	1.77	0.49
52:3:793:C:H2'	52:3:794:G:C8	2.47	0.49
52:3:935:U:H2'	52:3:936:G:C8	2.47	0.49
52:3:1744:U:H2'	52:3:1745:A:C8	2.48	0.49
52:3:2231:A:H3'	52:3:2232:G:H8	1.77	0.49
52:3:2752:G:H2'	52:3:2753:C:C6	2.47	0.49
52:3:2828:C:H3'	52:3:2829:G:H21	1.77	0.49
54:5:371:U:H2'	54:5:372:G:H8	1.77	0.49
54:5:465:A:H2'	54:5:466:U:C6	2.47	0.49
54:5:1270:C:H4'	54:5:1276:U:C4	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:9:117:GLU:O	4:9:121:ARG:HG3	2.13	0.49
4:9:424:ALA:HB2	4:9:469:VAL:HG21	1.93	0.49
7:C:201:LYS:NZ	54:5:9:A:N7	2.61	0.49
12:H:32:VAL:HG13	12:H:67:VAL:HG13	1.94	0.49
26:a:103:ASN:O	52:3:1525:G:N2	2.44	0.49
26:a:242:GLY:HA3	52:3:2606:A:H5'	1.93	0.49
50:y:27:LEU:HD21	52:3:2891:C:H1'	1.94	0.49
52:3:418:G:N2	52:3:430:U:O2	2.37	0.49
52:3:1357:U:OP2	52:3:1358:C:N4	2.45	0.49
52:3:1546:U:H3'	52:3:1547:G:H8	1.78	0.49
52:3:1698:A:H61	52:3:2003:C:N4	2.10	0.49
52:3:2353:G:H1'	52:3:2389:A:H2'	1.95	0.49
52:3:2587:U:H2'	52:3:2588:U:C6	2.48	0.49
54:5:586:G:H2'	54:5:587:A:C8	2.46	0.49
54:5:1002:A:C2	54:5:1003:G:H1'	2.47	0.49
11:G:131:LYS:HG2	11:G:133:ILE:HG12	1.93	0.49
12:H:86:VAL:O	12:H:90:LEU:HG	2.13	0.49
12:H:116:LYS:N	54:5:1344:C:OP2	2.46	0.49
19:O:14:VAL:HB	19:O:29:LEU:HD12	1.94	0.49
25:W:96:VAL:HG23	25:W:97:LYS:H	1.77	0.49
39:n:4:ARG:NH1	39:n:4:ARG:O	2.46	0.49
52:3:57:G:H2'	52:3:58:A:H8	1.77	0.49
52:3:525:A:C2	52:3:1312:A:C2	3.01	0.49
52:3:683:G:N2	52:3:2358:U:O3'	2.45	0.49
52:3:811:G:OP2	52:3:811:G:N2	2.43	0.49
52:3:852:C:H2'	52:3:853:G:O4'	2.12	0.49
52:3:2153:U:O2	52:3:2154:A:N6	2.45	0.49
52:3:2798:A:N1	52:3:2897:G:O6	2.45	0.49
54:5:39:G:H22	54:5:393:A:P	2.35	0.49
54:5:143:U:H2'	54:5:144:U:C6	2.48	0.49
54:5:752:G:H2'	54:5:753:C:C6	2.47	0.49
54:5:1146:A:H2'	54:5:1147:U:C6	2.47	0.49
8:D:134:GLY:O	8:D:176:SER:N	2.45	0.49
9:E:109:LEU:HB3	54:5:838:A:C2	2.47	0.49
13:I:63:VAL:HG12	54:5:968:G:H1'	1.94	0.49
19:O:12:ARG:HA	19:O:32:HIS:HA	1.94	0.49
20:P:64:VAL:HG22	20:P:78:ALA:HB2	1.94	0.49
26:a:125:GLU:HA	26:a:137:PRO:HD3	1.93	0.49
28:c:78:SER:OG	28:c:81:ASN:OD1	2.26	0.49
32:g:21:SER:O	32:g:21:SER:OG	2.30	0.49
33:h:11:LYS:HZ1	33:h:13:ASN:HB2	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:p:32:LYS:NZ	52:3:614:C:OP2	2.37	0.49
41:p:91:ARG:HA	41:p:91:ARG:CZ	2.43	0.49
46:u:64:ASN:HA	46:u:76:LEU:HD23	1.95	0.49
52:3:65:A:H3'	52:3:66:A:C8	2.46	0.49
52:3:379:A:O2'	52:3:381:A:N6	2.44	0.49
52:3:988:G:C6	52:3:1002:A:C6	3.01	0.49
52:3:1507:G:H1'	52:3:1508:G:OP2	2.13	0.49
52:3:1656:A:H2'	52:3:1657:G:O4'	2.13	0.49
52:3:1730:C:H2'	52:3:1731:G:O4'	2.11	0.49
52:3:1826:A:H4'	52:3:1828:A:C8	2.47	0.49
52:3:2514:U:OP2	52:3:2584:G:N1	2.33	0.49
52:3:2728:U:O2	52:3:2728:U:H2'	2.11	0.49
54:5:71:A:H2'	54:5:72:A:C8	2.48	0.49
54:5:163:G:OP2	54:5:163:G:N2	2.40	0.49
54:5:765:A:H5'	54:5:1499:G:H1'	1.95	0.49
54:5:917:G:H2'	54:5:918:A:C8	2.48	0.49
54:5:1159:A:H2'	54:5:1160:G:H8	1.77	0.49
4:9:496:LYS:HB3	52:3:1920:A:C8	2.46	0.49
19:O:72:LEU:HA	19:O:75:LYS:HG2	1.94	0.49
21:Q:44:CYS:HB2	21:Q:82:HIS:CE1	2.48	0.49
42:q:75:SER:OG	42:q:76:GLN:OE1	2.25	0.49
46:u:44:MET:N	46:u:44:MET:SD	2.86	0.49
52:3:384:G:H2'	52:3:385:U:C6	2.48	0.49
52:3:696:U:H2'	52:3:697:U:C6	2.48	0.49
52:3:995:A:H61	52:3:2503:G:H1'	1.77	0.49
52:3:1288:C:H2'	52:3:1289:G:C8	2.46	0.49
52:3:2147:G:N2	52:3:2159:U:O2	2.46	0.49
54:5:287:U:H2'	54:5:288:A:C8	2.47	0.49
54:5:557:A:H4'	54:5:558:U:H3'	1.94	0.49
54:5:585:G:N1	54:5:751:C:OP2	2.39	0.49
54:5:913:A:H2'	54:5:914:A:C4	2.48	0.49
54:5:1388:A:C2	54:5:1462:G:N1	2.67	0.49
4:9:423:ILE:O	4:9:427:LYS:HG2	2.13	0.49
8:D:137:TYR:HE2	11:G:111:LEU:HD11	1.78	0.49
19:O:6:VAL:N	54:5:45:A:OP2	2.43	0.49
37:l:2:LEU:HB2	37:l:70:PRO:HG2	1.95	0.49
43:r:9:ARG:HG3	43:r:80:PRO:HD2	1.95	0.49
52:3:130:C:H5''	52:3:1633:C:O2'	2.13	0.49
52:3:900:G:H2'	52:3:901:C:C6	2.48	0.49
52:3:1348:C:C5	52:3:1357:U:H5''	2.47	0.49
52:3:1441:A:H2'	52:3:1442:G:C8	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:2264:G:H2'	52:3:2265:U:O4'	2.11	0.49
52:3:2301:C:H2'	52:3:2302:C:H6	1.78	0.49
54:5:162:C:H2'	54:5:163:G:N3	2.28	0.49
54:5:1397:G:H2'	54:5:1398:G:H8	1.78	0.49
55:7:10:A:N6	55:7:25:G:O6	2.45	0.49
1:0:34:ARG:NH1	52:3:502:A:OP1	2.46	0.49
4:9:628:GLU:N	52:3:1102:A:H4'	2.28	0.49
5:A:91:TYR:CE1	5:A:226:CYS:HB3	2.48	0.49
5:A:228:LEU:O	5:A:232:LEU:HG	2.13	0.49
17:M:43:CYS:O	17:M:47:LEU:HG	2.13	0.49
26:a:268:ARG:NH2	26:a:274:SER:OG	2.46	0.49
37:l:84:GLY:HA3	52:3:2258:G:C2	2.48	0.49
38:m:103:LEU:H	38:m:114:ALA:HA	1.77	0.49
52:3:196:G:H4'	52:3:712:A:C2	2.46	0.49
52:3:410:G:N2	52:3:436:G:H2'	2.28	0.49
52:3:546:U:H3'	52:3:547:G:C8	2.47	0.49
52:3:558:C:H5''	52:3:575:C:O2'	2.13	0.49
52:3:705:A:H4'	52:3:706:C:H5'	1.95	0.49
52:3:1912:C:H3'	52:3:1937:G:C8	2.47	0.49
52:3:2303:U:O4	52:3:2345:G:O6	2.31	0.49
52:3:2353:G:O2'	52:3:2389:A:N3	2.42	0.49
54:5:1173:A:H2'	54:5:1174:U:C6	2.48	0.49
54:5:1197:G:OP2	54:5:1296:C:N4	2.45	0.49
3:2:4:ARG:HA	52:3:2474:C:OP1	2.13	0.48
6:B:94:GLN:OE1	6:B:98:ARG:NE	2.41	0.48
7:C:115:GLN:NE2	7:C:116:LEU:HD22	2.28	0.48
8:D:70:ILE:HG22	8:D:92:VAL:HG23	1.95	0.48
10:F:25:ILE:HD13	10:F:100:LEU:HG	1.95	0.48
15:K:134:LYS:HB2	54:5:38:U:H5'	1.94	0.48
26:a:206:LEU:HA	52:3:1827:U:H3	1.78	0.48
33:h:39:PHE:HD1	33:h:42:LYS:HE2	1.76	0.48
52:3:82:G:H2'	52:3:83:G:C8	2.48	0.48
52:3:194:A:O2'	52:3:714:G:O2'	2.25	0.48
52:3:730:G:H2'	52:3:731:A:H8	1.78	0.48
52:3:849:C:H2'	52:3:850:G:C8	2.47	0.48
52:3:2527:U:H5'	52:3:2575:G:N2	2.28	0.48
52:3:2566:C:H2'	52:3:2567:C:C6	2.48	0.48
52:3:2664:U:H2'	52:3:2665:A:H8	1.77	0.48
53:4:28:C:H3'	53:4:29:C:H6	1.78	0.48
54:5:250:G:H2'	54:5:251:G:H8	1.77	0.48
54:5:359:A:H2'	54:5:360:A:C8	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:7:63:U:H2'	55:7:64:G:H8	1.77	0.48
55:8:7:U:H2'	55:8:8:G:C8	2.48	0.48
55:8:10:A:N6	55:8:25:G:O6	2.45	0.48
4:9:529:ARG:H	4:9:529:ARG:HD2	1.78	0.48
9:E:87:ILE:O	54:5:734:A:H5'	2.14	0.48
9:E:129:ASP:OD1	9:E:129:ASP:N	2.46	0.48
11:G:127:VAL:O	11:G:131:LYS:N	2.40	0.48
14:J:24:ILE:HG21	54:5:703:A:H4'	1.96	0.48
22:R:52:HIS:CD2	22:R:54:GLY:H	2.31	0.48
26:a:228:VAL:HG21	52:3:817:A:C8	2.48	0.48
28:c:34:VAL:O	28:c:38:VAL:HG23	2.13	0.48
29:d:69:LYS:HB3	29:d:84:LEU:HD12	1.94	0.48
29:d:129:THR:HG21	52:3:2311:G:H21	1.77	0.48
42:q:87:GLN:NE2	42:q:88:PRO:HD2	2.29	0.48
52:3:169:U:H2'	52:3:170:A:C8	2.48	0.48
52:3:332:G:N2	52:3:375:U:O4	2.46	0.48
52:3:756:A:H2'	52:3:757:A:C8	2.48	0.48
52:3:1125:U:H2'	52:3:1126:G:C8	2.48	0.48
52:3:1493:A:C8	52:3:1579:G:H2'	2.48	0.48
52:3:1501:U:O4	52:3:1542:G:O6	2.31	0.48
52:3:1813:C:N4	52:3:1814:G:O6	2.47	0.48
52:3:2025:C:H2'	52:3:2026:A:C8	2.47	0.48
52:3:2169:G:H4'	52:3:2170:A:H3'	1.95	0.48
52:3:2322:G:H2'	52:3:2323:U:C6	2.48	0.48
52:3:2729:A:H2'	52:3:2730:G:O4'	2.13	0.48
52:3:2849:G:H2'	52:3:2850:G:C8	2.47	0.48
54:5:922:G:H22	54:5:1365:U:H3	1.61	0.48
54:5:1179:A:H2'	54:5:1180:U:O4'	2.13	0.48
54:5:1223:A:N6	54:5:1262:A:OP2	2.47	0.48
4:9:480:PHE:CE2	4:9:683:ILE:HG13	2.48	0.48
8:D:161:ILE:HA	8:D:167:ARG:HH11	1.78	0.48
13:I:14:ILE:HD11	13:I:104:LEU:HD12	1.95	0.48
15:K:47:CYS:SG	15:K:91:SER:OG	2.65	0.48
16:L:43:LYS:HG2	54:5:1269:U:H5''	1.94	0.48
27:b:62:LEU:HD23	27:b:67:GLN:HB3	1.96	0.48
28:c:3:LYS:HD3	28:c:17:PRO:HB2	1.94	0.48
28:c:6:LEU:HB3	28:c:14:GLU:HB2	1.95	0.48
28:c:127:LEU:HA	28:c:199:VAL:HG13	1.95	0.48
34:i:20:ILE:HD12	34:i:142:THR:HB	1.94	0.48
34:i:133:HIS:HB2	34:i:135:MET:HE2	1.95	0.48
36:k:31:THR:HB	36:k:34:ARG:HB2	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:m:85:LYS:O	38:m:89:LYS:NZ	2.45	0.48
38:m:94:PRO:O	52:3:2843:G:N2	2.38	0.48
50:y:7:ARG:NH2	52:3:612:G:O2'	2.47	0.48
50:y:13:ARG:HH11	52:3:1293:U:H4'	1.77	0.48
52:3:226:A:H62	52:3:236:G:H1'	1.77	0.48
52:3:394:C:H2'	52:3:395:U:C2	2.49	0.48
52:3:1262:G:H2'	52:3:1263:G:C8	2.46	0.48
52:3:1538:U:H2'	52:3:1539:U:O4'	2.13	0.48
52:3:1775:G:H2'	52:3:1776:G:C8	2.48	0.48
52:3:2020:A:N6	52:3:2021:A:N1	2.61	0.48
52:3:2176:G:N1	52:3:2179:A:OP2	2.47	0.48
52:3:2890:G:H2'	52:3:2891:C:C6	2.48	0.48
52:3:2891:C:H2'	52:3:2892:U:H6	1.78	0.48
54:5:107:A:O2'	54:5:108:C:O4'	2.27	0.48
54:5:214:U:H2'	54:5:215:C:C6	2.48	0.48
54:5:803:C:H2'	54:5:804:A:C8	2.49	0.48
54:5:1050:U:H2'	54:5:1051:U:C6	2.48	0.48
54:5:1426:U:O2'	54:5:1428:A:O4'	2.31	0.48
5:A:23:LEU:HD21	5:A:58:LEU:HD13	1.95	0.48
10:F:71:ARG:HB2	10:F:141:HIS:CE1	2.48	0.48
14:J:32:GLY:HA3	54:5:705:A:H1'	1.95	0.48
21:Q:53:LEU:HG	21:Q:54:ILE:HD13	1.94	0.48
43:r:9:ARG:HG2	43:r:100:SER:OG	2.13	0.48
52:3:567:U:H4'	52:3:568:G:H8	1.76	0.48
52:3:945:U:H2'	52:3:946:A:C8	2.47	0.48
52:3:1310:U:H2'	52:3:1311:G:C8	2.49	0.48
52:3:1827:U:H5'	52:3:1828:A:C8	2.48	0.48
52:3:1834:U:H2'	52:3:1835:G:O4'	2.13	0.48
52:3:2135:C:H2'	52:3:2136:A:C8	2.42	0.48
52:3:2750:A:H2'	52:3:2751:C:C6	2.49	0.48
54:5:63:U:H1'	54:5:375:C:H1'	1.95	0.48
2:1:39:ARG:HH12	52:3:2358:U:H6	1.60	0.48
6:B:151:GLY:HA3	6:B:175:ASN:O	2.13	0.48
9:E:76:ALA:HB1	9:E:82:VAL:HG21	1.96	0.48
52:3:321:A:H2'	52:3:322:A:C8	2.49	0.48
52:3:410:G:H4'	52:3:411:U:O5'	2.13	0.48
52:3:1089:A:H2'	52:3:1090:G:C8	2.49	0.48
52:3:1150:U:HO2'	52:3:1151:U:H6	1.61	0.48
52:3:1192:U:H2'	52:3:1193:U:C6	2.49	0.48
52:3:1293:U:H3'	52:3:1294:G:C8	2.48	0.48
52:3:1870:G:H4'	52:3:2419:A:H4'	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:2642:G:H2'	52:3:2643:A:C8	2.49	0.48
54:5:491:U:H2'	54:5:492:G:C8	2.48	0.48
54:5:823:C:H2'	54:5:824:U:C6	2.49	0.48
54:5:1380:G:H1'	54:5:1494:A:H4'	1.94	0.48
1:0:9:LYS:NZ	52:3:1338:G:OP2	2.37	0.48
3:2:27:CYS:SG	3:2:28:LYS:N	2.86	0.48
4:9:47:GLU:HG3	4:9:190:LYS:HB3	1.94	0.48
4:9:78:ASN:HB3	4:9:372:ILE:HD13	1.94	0.48
14:J:28:SER:HB2	14:J:34:VAL:HA	1.96	0.48
18:N:67:LEU:HA	18:N:70:ASN:HD21	1.79	0.48
27:b:70:PHE:O	27:b:74:ASN:N	2.46	0.48
27:b:161:LYS:HG3	34:i:83:TYR:HE2	1.78	0.48
29:d:24:SER:HA	53:4:53:U:H4'	1.96	0.48
33:h:72:VAL:HG23	33:h:108:LYS:HZ3	1.78	0.48
35:j:18:GLN:HG3	35:j:44:LYS:HB2	1.95	0.48
36:k:93:ILE:HB	36:k:126:PHE:HA	1.95	0.48
37:l:8:LYS:HG2	37:l:9:TYR:HD2	1.78	0.48
40:o:41:GLU:HG3	40:o:42:LYS:H	1.78	0.48
45:t:45:HIS:N	52:3:517:G:OP2	2.34	0.48
48:w:106:GLU:O	48:w:109:SER:OG	2.30	0.48
52:3:174:A:H2'	52:3:175:A:C8	2.49	0.48
52:3:307:C:H2'	52:3:308:A:C8	2.47	0.48
52:3:371:C:H2'	52:3:372:G:O4'	2.14	0.48
52:3:392:A:N3	52:3:392:A:H2'	2.29	0.48
52:3:1382:A:H3'	52:3:1383:G:H8	1.78	0.48
52:3:1845:C:H42	52:3:1905:U:H2'	1.79	0.48
52:3:2093:U:H2'	52:3:2094:A:H8	1.77	0.48
52:3:2115:A:H2'	52:3:2116:U:H5'	1.95	0.48
53:4:11:A:H4'	53:4:13:G:C8	2.49	0.48
54:5:37:C:H2'	54:5:38:U:O4'	2.13	0.48
54:5:126:U:H2'	54:5:127:A:C8	2.48	0.48
54:5:168:A:H3'	54:5:169:G:C8	2.49	0.48
54:5:356:G:C6	54:5:357:G:C6	3.01	0.48
54:5:377:A:H3'	54:5:378:A:C8	2.49	0.48
54:5:922:G:H4'	54:5:1478:A:C8	2.48	0.48
54:5:1377:C:H2'	54:5:1378:C:O4'	2.13	0.48
5:A:38:ASN:N	5:A:204:THR:O	2.40	0.48
8:D:100:LYS:HA	8:D:128:THR:HA	1.96	0.48
8:D:152:LYS:HD2	54:5:8:G:O6	2.14	0.48
10:F:37:LEU:O	10:F:41:ILE:HG12	2.14	0.48
12:H:29:LYS:H	12:H:64:ASP:HA	1.79	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:H:29:LYS:HG2	12:H:30:ILE:H	1.79	0.48
16:L:103:ARG:NE	54:5:1200:G:OP2	2.39	0.48
25:W:60:THR:HB	25:W:118:THR:HB	1.95	0.48
26:a:125:GLU:HG2	26:a:197:ARG:HD2	1.95	0.48
27:b:33:PRO:O	27:b:95:GLN:NE2	2.47	0.48
28:c:185:LYS:HA	52:3:651:A:N1	2.29	0.48
40:o:78:ASN:OD1	40:o:79:PHE:N	2.46	0.48
52:3:210:U:C2	52:3:211:A:C8	3.02	0.48
52:3:697:U:H2'	52:3:698:A:H8	1.78	0.48
52:3:1638:C:H2'	52:3:1639:C:C6	2.49	0.48
52:3:1662:G:H2'	52:3:1663:G:C8	2.49	0.48
52:3:1755:A:H2'	52:3:1756:A:C8	2.48	0.48
52:3:1816:A:O2'	52:3:1817:A:O4'	2.28	0.48
52:3:2748:A:N6	52:3:2771:G:O2'	2.46	0.48
54:5:92:G:O2'	54:5:374:G:O2'	2.32	0.48
54:5:175:U:H2'	54:5:176:G:H8	1.79	0.48
54:5:958:G:H2'	54:5:959:A:C8	2.48	0.48
54:5:1077:U:H2'	54:5:1078:G:H8	1.78	0.48
54:5:1138:U:O2	54:5:1149:G:N2	2.33	0.48
54:5:1142:G:N2	54:5:1145:A:OP2	2.35	0.48
4:9:340:LYS:HZ2	4:9:347:LYS:HE2	1.78	0.48
4:9:497:GLN:HB2	54:5:1469:G:C5'	2.44	0.48
7:C:115:GLN:HG2	54:5:403:A:H4'	1.95	0.48
9:E:49:ILE:O	54:5:671:G:H5'	2.13	0.48
15:K:27:ASN:HB3	15:K:37:ASN:HA	1.96	0.48
23:S:24:GLN:O	23:S:27:LYS:HG2	2.14	0.48
23:S:71:ARG:NH1	54:5:256:G:O6	2.47	0.48
25:W:75:ARG:NH1	25:W:80:VAL:O	2.37	0.48
29:d:102:LYS:HB3	29:d:138:PHE:CE1	2.49	0.48
32:g:40:ILE:HD12	32:g:99:VAL:HG11	1.94	0.48
36:k:147:LYS:HE3	36:k:149:LEU:HD23	1.96	0.48
52:3:190:G:H2'	52:3:191:G:C8	2.48	0.48
52:3:829:A:H2'	52:3:830:A:H8	1.78	0.48
52:3:1466:U:H3'	52:3:1467:U:H5''	1.95	0.48
52:3:1674:A:C2	52:3:1675:A:C8	3.02	0.48
52:3:1759:C:H2'	52:3:1760:G:C8	2.49	0.48
52:3:2306:A:OP2	52:3:2326:G:N2	2.47	0.48
52:3:2397:G:H5''	52:3:2398:U:H5'	1.96	0.48
52:3:2533:A:H2'	52:3:2534:G:C8	2.46	0.48
54:5:253:G:O6	54:5:266:A:N6	2.46	0.48
54:5:400:G:O6	54:5:497:A:N6	2.46	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:505:C:H3'	54:5:506:U:H2'	1.95	0.48
8:D:167:ARG:O	8:D:171:GLU:HG3	2.13	0.48
13:I:57:ILE:HG23	17:M:41:ARG:HB3	1.96	0.48
18:N:36:LEU:HD23	18:N:53:LEU:HB2	1.96	0.48
26:a:44:HIS:H	26:a:61:ARG:NH1	2.12	0.48
26:a:50:GLN:HG3	26:a:52:LYS:H	1.79	0.48
28:c:6:LEU:O	28:c:14:GLU:N	2.35	0.48
29:d:132:ILE:O	29:d:151:GLY:CA	2.52	0.48
32:g:59:LEU:HD23	32:g:80:LEU:HD13	1.96	0.48
48:w:32:LYS:HB3	48:w:38:LEU:HA	1.96	0.48
52:3:25:G:H2'	52:3:26:G:C8	2.49	0.48
52:3:66:A:H2'	52:3:67:C:C6	2.49	0.48
52:3:321:A:H2'	52:3:322:A:H8	1.78	0.48
52:3:513:A:O2'	52:3:514:A:OP1	2.30	0.48
52:3:984:C:H2'	52:3:985:A:H8	1.79	0.48
52:3:1073:A:H2'	52:3:1074:A:H8	1.78	0.48
52:3:1363:C:H2'	52:3:1364:A:H8	1.77	0.48
52:3:1449:G:H2'	52:3:1450:G:H8	1.78	0.48
52:3:1786:U:N3	52:3:1791:A:C6	2.81	0.48
52:3:1832:G:H2'	52:3:1833:G:H8	1.79	0.48
52:3:2798:A:N1	52:3:2897:G:C6	2.82	0.48
54:5:556:G:C8	54:5:557:A:H2'	2.49	0.48
6:B:141:LEU:HD13	6:B:173:GLU:HG3	1.95	0.48
15:K:32:ASN:OD1	15:K:33:LYS:N	2.46	0.48
15:K:112:ARG:HB3	15:K:130:TYR:HA	1.96	0.48
17:M:35:SER:N	54:5:1332:U:OP1	2.46	0.48
28:c:144:MET:O	28:c:148:LYS:HG2	2.14	0.48
31:f:16:PHE:CZ	31:f:54:GLN:HG3	2.49	0.48
32:g:29:TYR:HB3	32:g:106:MET:HG3	1.96	0.48
38:m:12:ALA:O	38:m:16:MET:HG2	2.13	0.48
40:o:19:LYS:HG3	40:o:22:VAL:H	1.78	0.48
49:x:16:CYS:HB3	49:x:21:ASN:H	1.79	0.48
52:3:299:A:H62	52:3:440:C:H2'	1.77	0.48
52:3:802:U:H2'	52:3:803:G:C8	2.49	0.48
52:3:1070:U:H2'	52:3:1071:G:C8	2.49	0.48
52:3:1288:C:H2'	52:3:1289:G:H8	1.79	0.48
52:3:1453:U:H3	52:3:1607:G:H1	1.62	0.48
52:3:1674:A:N3	52:3:1674:A:H2'	2.29	0.48
52:3:1785:U:C2	52:3:1791:A:H2	2.31	0.48
52:3:1943:A:C8	52:3:1952:G:C8	3.02	0.48
54:5:288:A:O2'	54:5:607:A:N1	2.31	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:542:G:H2'	54:5:543:C:C6	2.49	0.48
54:5:671:G:N2	54:5:713:A:N1	2.57	0.48
54:5:1127:A:O2'	54:5:1128:G:H8	1.96	0.48
4:9:624:ARG:HB2	4:9:647:GLU:HG3	1.95	0.47
6:B:90:LYS:O	6:B:94:GLN:HG2	2.14	0.47
12:H:87:ARG:NH2	54:5:1109:U:O3'	2.39	0.47
18:N:49:SER:HG	54:5:737:U:HO2'	1.57	0.47
29:d:117:LEU:HD13	52:3:2312:G:H5'	1.96	0.47
34:i:114:ASP:OD1	34:i:114:ASP:N	2.47	0.47
35:j:30:LYS:HD3	52:3:2682:A:H4'	1.96	0.47
36:k:33:GLY:HA2	52:3:1221:G:H5''	1.95	0.47
49:x:19:CYS:HB3	49:x:39:CYS:HB3	1.96	0.47
52:3:802:U:H2'	52:3:803:G:H8	1.78	0.47
52:3:1778:G:H2'	52:3:1779:G:C8	2.49	0.47
52:3:2129:U:H2'	52:3:2130:A:C8	2.49	0.47
52:3:2267:G:H2'	52:3:2268:C:H6	1.78	0.47
52:3:2581:C:OP1	52:3:2582:G:H5''	2.14	0.47
52:3:2684:G:H2'	52:3:2685:A:C8	2.49	0.47
52:3:2709:C:P	52:3:2710:G:H5''	2.54	0.47
54:5:66:A:O2'	54:5:378:A:N6	2.31	0.47
54:5:230:G:H2'	54:5:231:U:C6	2.49	0.47
54:5:273:C:H2'	54:5:274:A:H8	1.78	0.47
54:5:444:G:N1	54:5:483:U:OP2	2.47	0.47
54:5:510:U:H2'	54:5:511:A:C8	2.49	0.47
54:5:717:C:H2'	54:5:718:A:N7	2.29	0.47
4:9:455:HIS:CE1	4:9:459:LEU:HD11	2.49	0.47
4:9:497:GLN:HG3	54:5:1469:G:O3'	2.14	0.47
7:C:3:TYR:CZ	7:C:114:ARG:HD3	2.50	0.47
7:C:112:SER:HB3	54:5:404:A:H5'	1.96	0.47
7:C:194:SER:O	7:C:197:VAL:HG12	2.13	0.47
12:H:18:LYS:HG3	54:5:1124:U:H1'	1.95	0.47
15:K:127:ARG:HG2	15:K:132:ALA:O	2.15	0.47
24:T:49:ALA:HA	24:T:52:LYS:HE2	1.96	0.47
30:e:7:ARG:O	30:e:72:ASN:ND2	2.42	0.47
42:q:78:HIS:NE2	52:3:599:U:OP1	2.38	0.47
48:w:95:LYS:O	48:w:99:LEU:HG	2.14	0.47
52:3:482:G:H1'	52:3:485:A:H2	1.78	0.47
52:3:598:G:O4'	52:3:1283:A:N6	2.47	0.47
52:3:766:C:H2'	52:3:767:C:H6	1.79	0.47
52:3:978:G:C2'	52:3:979:U:H5'	2.44	0.47
52:3:1004:U:H2'	52:3:1005:G:C8	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1200:U:H2'	52:3:1201:A:H8	1.77	0.47
52:3:1675:A:H2'	52:3:1676:G:O4'	2.13	0.47
52:3:1756:A:H2'	52:3:1757:G:C8	2.49	0.47
52:3:2572:A:C6	52:3:2655:U:H4'	2.49	0.47
53:4:47:C:N4	53:4:48:A:H62	2.12	0.47
54:5:96:G:H2'	54:5:97:G:C8	2.49	0.47
54:5:165:A:H2'	54:5:166:U:C6	2.48	0.47
54:5:370:A:O2'	54:5:448:A:OP2	2.32	0.47
54:5:784:A:H61	54:5:792:C:H5	1.60	0.47
54:5:1236:A:H3'	54:5:1237:G:H8	1.79	0.47
54:5:1306:A:H3'	54:5:1307:A:H8	1.79	0.47
54:5:1469:G:H2'	54:5:1470:U:H6	1.78	0.47
55:7:59:A:H1'	55:7:61:U:OP2	2.15	0.47
3:2:4:ARG:HE	52:3:2474:C:H5''	1.77	0.47
14:J:110:PRO:HD2	24:T:28:LEU:HD22	1.96	0.47
16:L:24:GLY:HA3	16:L:69:LEU:HD21	1.95	0.47
17:M:26:ARG:NH2	17:M:43:CYS:SG	2.87	0.47
19:O:51:GLU:O	19:O:55:LYS:NZ	2.47	0.47
25:W:99:ASP:O	33:h:62:SER:OG	2.32	0.47
34:i:83:TYR:CD1	52:3:2650:A:H5''	2.49	0.47
45:t:28:MET:HE1	45:t:35:ILE:HG12	1.96	0.47
52:3:127:A:H2'	52:3:128:A:C8	2.49	0.47
52:3:499:G:H21	52:3:501:G:H8	1.63	0.47
52:3:698:A:H2'	52:3:699:U:C6	2.49	0.47
52:3:1717:C:H2'	52:3:1718:C:C6	2.50	0.47
52:3:2303:U:H2'	52:3:2304:U:C6	2.49	0.47
52:3:2374:A:H3'	52:3:2375:A:H8	1.80	0.47
52:3:2624:C:H2'	52:3:2625:U:C6	2.48	0.47
52:3:2677:A:H2'	52:3:2678:A:C8	2.49	0.47
54:5:333:U:H2'	54:5:334:A:C8	2.49	0.47
54:5:428:A:C4	54:5:429:A:C8	3.02	0.47
54:5:682:G:O2'	54:5:683:G:O4'	2.20	0.47
3:2:20:HIS:H	52:3:2764:U:H3'	1.79	0.47
4:9:307:PHE:HA	4:9:330:SER:O	2.15	0.47
8:D:74:LYS:O	8:D:88:PHE:HB2	2.14	0.47
14:J:115:LYS:O	54:5:775:G:O2'	2.32	0.47
16:L:76:ASN:HA	16:L:79:HIS:ND1	2.29	0.47
16:L:101:ARG:HD2	54:5:945:U:OP2	2.14	0.47
30:e:159:PRO:HB2	30:e:175:LYS:HG3	1.96	0.47
34:i:119:ARG:HG2	34:i:120:ARG:HD3	1.96	0.47
36:k:124:LEU:HB2	36:k:126:PHE:HE1	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:u:86:PHE:CE1	46:u:94:ARG:HG3	2.50	0.47
47:v:14:TYR:CE2	52:3:192:U:H5''	2.50	0.47
52:3:512:G:H1'	52:3:516:A:H61	1.78	0.47
52:3:601:U:H2'	52:3:603:G:N7	2.29	0.47
52:3:740:A:C2	52:3:762:A:H1'	2.50	0.47
52:3:1199:A:H2'	52:3:1200:U:C6	2.48	0.47
52:3:1294:G:OP2	52:3:1295:A:O2'	2.26	0.47
52:3:1321:C:H2'	52:3:1322:A:O4'	2.14	0.47
52:3:1433:U:H2'	52:3:1434:U:C6	2.49	0.47
52:3:1492:G:O3'	52:3:1579:G:O2'	2.32	0.47
52:3:1849:G:C6	52:3:1905:U:O2	2.67	0.47
52:3:1952:G:H2'	52:3:1953:U:H6	1.79	0.47
52:3:2195:U:O4	52:3:2196:G:O6	2.32	0.47
52:3:2424:C:H2'	52:3:2425:C:C6	2.49	0.47
54:5:170:A:H2'	54:5:171:A:C8	2.49	0.47
54:5:246:A:H1'	54:5:248:U:C4	2.49	0.47
54:5:764:A:O2'	54:5:1499:G:N3	2.46	0.47
6:B:18:TRP:HE1	17:M:56:VAL:H	1.62	0.47
6:B:65:VAL:O	6:B:101:ASN:ND2	2.48	0.47
12:H:53:PRO:HG3	12:H:105:LEU:HD13	1.96	0.47
30:e:126:VAL:HG12	30:e:136:ILE:HG12	1.95	0.47
40:o:33:VAL:HG11	40:o:79:PHE:CE2	2.50	0.47
52:3:383:U:H2'	52:3:384:G:H8	1.79	0.47
52:3:1213:U:H2'	52:3:1214:U:C6	2.49	0.47
52:3:1231:G:H2'	52:3:1232:U:H6	1.80	0.47
52:3:1746:U:H2'	52:3:1747:G:O4'	2.15	0.47
52:3:2189:U:H2'	52:3:2190:G:C8	2.49	0.47
52:3:2508:U:O2'	52:3:2512:U:OP1	2.32	0.47
52:3:2536:U:O2'	52:3:2538:A:OP1	2.26	0.47
52:3:2607:G:H2'	52:3:2608:A:C8	2.48	0.47
54:5:168:A:N6	54:5:219:A:N3	2.62	0.47
54:5:672:A:H3'	54:5:673:A:H8	1.79	0.47
54:5:1133:A:N1	54:5:1153:G:C2	2.82	0.47
54:5:1414:U:H2'	54:5:1415:G:C8	2.50	0.47
4:9:494:TYR:CZ	4:9:496:LYS:HD2	2.49	0.47
5:A:59:GLU:H	5:A:59:GLU:CD	2.22	0.47
7:C:41:ARG:HE	7:C:43:ARG:HG3	1.80	0.47
16:L:55:ALA:O	16:L:59:VAL:HG23	2.14	0.47
19:O:14:VAL:HG21	19:O:26:TYR:CD2	2.49	0.47
25:W:77:ILE:HD13	25:W:96:VAL:HB	1.97	0.47
28:c:158:LEU:HD12	28:c:179:GLN:HG2	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:d:121:SER:HB3	29:d:128:TYR:CZ	2.49	0.47
34:i:72:LYS:HA	34:i:92:GLY:HA3	1.97	0.47
35:j:16:ALA:HA	35:j:46:ALA:HA	1.97	0.47
40:o:39:GLU:C	40:o:41:GLU:H	2.21	0.47
41:p:75:TYR:HE1	52:3:1188:C:H5'	1.79	0.47
44:s:50:ILE:HG13	44:s:91:ILE:HD13	1.95	0.47
52:3:790:U:H2'	52:3:791:A:C8	2.49	0.47
52:3:1389:G:H2'	52:3:1390:C:C6	2.49	0.47
52:3:1529:U:C2	52:3:1530:G:C8	3.02	0.47
52:3:1578:A:H2'	52:3:1579:G:O4'	2.14	0.47
52:3:1641:A:H5'	52:3:1642:G:C5	2.49	0.47
52:3:1690:C:H2'	52:3:1691:U:H6	1.80	0.47
52:3:2059:G:O6	52:3:2625:U:O4	2.32	0.47
52:3:2259:G:C2	52:3:2260:G:C8	3.02	0.47
52:3:2488:C:H2'	52:3:2489:G:O4'	2.15	0.47
52:3:2853:U:N3	52:3:2871:G:O4'	2.46	0.47
54:5:65:G:H4'	54:5:66:A:H3'	1.95	0.47
54:5:335:C:H2'	54:5:336:U:C6	2.50	0.47
54:5:409:G:O3'	54:5:425:G:N2	2.44	0.47
54:5:423:U:H2'	54:5:424:U:C6	2.50	0.47
54:5:973:A:N7	54:5:1335:G:N2	2.58	0.47
54:5:1244:A:O2'	54:5:1299:C:O2	2.29	0.47
54:5:1265:U:H2'	54:5:1266:U:H6	1.79	0.47
54:5:1434:C:H2'	54:5:1435:G:H5'	1.96	0.47
54:5:1439:G:C6	54:5:1440:U:C4	3.02	0.47
4:9:631:GLU:OE2	4:9:633:ARG:NH1	2.47	0.47
9:E:5:ILE:HB	9:E:60:TRP:CD1	2.49	0.47
9:E:53:LEU:HD23	9:E:53:LEU:H	1.79	0.47
12:H:29:LYS:HG2	12:H:30:ILE:N	2.29	0.47
16:L:86:TRP:CZ2	54:5:1295:U:H4'	2.49	0.47
16:L:101:ARG:NH2	54:5:945:U:OP2	2.47	0.47
20:P:43:LYS:NZ	54:5:232:G:O3'	2.47	0.47
26:a:39:VAL:HG13	26:a:66:TYR:HB3	1.96	0.47
27:b:155:SER:OG	52:3:2039:G:N2	2.47	0.47
29:d:91:LEU:HD12	29:d:95:ARG:HB3	1.96	0.47
31:f:30:LEU:HD23	52:3:2206:A:H1'	1.96	0.47
34:i:80:HIS:CD2	34:i:87:ILE:HG13	2.50	0.47
34:i:112:LEU:HD13	34:i:118:SER:HB2	1.96	0.47
37:l:64:MET:HB2	37:l:104:PHE:CZ	2.49	0.47
37:l:67:ARG:HD2	37:l:67:ARG:HA	1.70	0.47
37:l:78:PRO:HB3	46:u:19:LYS:HE2	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:u:85:LYS:HA	46:u:85:LYS:HD3	1.74	0.47
52:3:86:A:H2	52:3:104:A:C5	2.32	0.47
52:3:123:G:H2'	52:3:124:A:C8	2.50	0.47
52:3:140:G:N2	52:3:143:A:N6	2.60	0.47
52:3:496:A:H1'	52:3:506:A:N6	2.29	0.47
52:3:670:G:H2'	52:3:671:C:C6	2.49	0.47
52:3:955:A:N3	53:4:78:C:O2'	2.45	0.47
52:3:1084:C:H41	52:3:1145:G:N2	2.13	0.47
52:3:1137:C:C2	52:3:1138:A:C8	3.02	0.47
52:3:1296:G:N1	52:3:2020:A:OP2	2.40	0.47
52:3:1336:A:N6	52:3:1640:G:O2'	2.48	0.47
52:3:1422:U:H2'	52:3:1423:A:C4	2.50	0.47
52:3:1481:U:N3	52:3:1484:G:OP2	2.48	0.47
52:3:1521:A:N3	52:3:1611:C:O2'	2.39	0.47
52:3:1550:G:H2'	52:3:1551:U:H6	1.80	0.47
52:3:1790:U:H1'	52:3:2616:G:H4'	1.96	0.47
52:3:1803:U:O4	52:3:1830:G:O6	2.32	0.47
52:3:1860:A:N6	52:3:1895:G:O2'	2.47	0.47
52:3:1945:A:O2'	52:3:2612:G:N2	2.47	0.47
52:3:2021:A:H2'	52:3:2022:A:C5	2.50	0.47
52:3:2623:U:H2'	52:3:2624:C:C6	2.49	0.47
52:3:2700:C:H2'	52:3:2701:A:C8	2.50	0.47
54:5:26:C:H2'	54:5:27:A:C8	2.48	0.47
54:5:57:U:H2'	54:5:58:G:C8	2.50	0.47
54:5:154:G:H2'	54:5:155:C:C6	2.50	0.47
54:5:233:C:H2'	54:5:234:G:C8	2.49	0.47
54:5:456:U:C2	54:5:457:A:N7	2.82	0.47
54:5:606:A:H3'	54:5:607:A:H8	1.79	0.47
54:5:981:U:H2'	54:5:982:A:H8	1.80	0.47
55:8:30:G:H2'	55:8:31:G:C8	2.50	0.47
7:C:86:ALA:HB1	7:C:193:GLU:HB2	1.97	0.47
13:I:29:LYS:HA	13:I:32:VAL:HG22	1.97	0.47
17:M:31:ARG:NH1	54:5:969:A:N7	2.63	0.47
37:l:124:LYS:NZ	52:3:2491:C:O2	2.47	0.47
45:t:8:ASP:OD1	45:t:8:ASP:N	2.48	0.47
45:t:90:LYS:HE3	45:t:105:LYS:HG2	1.96	0.47
49:x:43:HIS:CD2	49:x:45:PHE:HB3	2.50	0.47
52:3:898:A:O3'	53:4:76:A:O2'	2.27	0.47
52:3:1244:A:H4'	52:3:1269:C:H4'	1.97	0.47
52:3:1298:A:OP2	52:3:2012:A:H5''	2.15	0.47
52:3:1954:C:H2'	52:3:1955:G:H8	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:2420:A:H2'	52:3:2421:U:O4'	2.15	0.47
54:5:53:U:H2'	54:5:54:A:C8	2.50	0.47
54:5:76:G:H22	54:5:78:A:H3'	1.79	0.47
54:5:152:U:H2'	54:5:153:A:H8	1.79	0.47
54:5:582:G:H2'	54:5:583:G:C8	2.50	0.47
54:5:1223:A:C6	54:5:1264:G:C5	3.03	0.47
54:5:1485:C:H2'	54:5:1486:C:C6	2.49	0.47
4:9:263:LYS:HD3	4:9:263:LYS:HA	1.79	0.47
6:B:41:ARG:HH21	6:B:56:VAL:HG23	1.79	0.47
9:E:4:ASN:O	9:E:87:ILE:HA	2.15	0.47
14:J:112:ASN:HD21	54:5:714:C:H4'	1.80	0.47
27:b:165:MET:HG2	27:b:166:SER:N	2.30	0.47
35:j:28:THR:OG1	52:3:2574:A:N6	2.43	0.47
35:j:101:PRO:HA	35:j:120:GLU:HG3	1.97	0.47
43:r:116:GLU:O	43:r:120:GLN:HG2	2.14	0.47
44:s:37:LYS:HD2	52:3:1632:C:H5''	1.97	0.47
44:s:44:PHE:O	44:s:47:VAL:HG12	2.14	0.47
52:3:366:A:O2'	52:3:368:C:OP2	2.26	0.47
52:3:1300:C:N4	52:3:2017:G:H1	2.13	0.47
52:3:2363:C:H3'	52:3:2364:A:C8	2.49	0.47
52:3:2415:A:H2'	52:3:2416:U:C6	2.49	0.47
52:3:2530:U:N3	52:3:2773:A:N7	2.63	0.47
53:4:61:A:H2'	53:4:62:G:C8	2.50	0.47
54:5:393:A:O2'	54:5:395:G:OP2	2.29	0.47
54:5:710:G:H2'	54:5:711:G:H8	1.77	0.47
54:5:779:A:N6	54:5:797:G:H21	2.10	0.47
54:5:887:C:H2'	54:5:888:A:H8	1.79	0.47
54:5:966:A:P	54:5:1206:G:H21	2.38	0.47
55:7:22:A:N6	55:7:47:G:H1'	2.29	0.47
55:7:30:G:H2'	55:7:31:G:C8	2.50	0.47
2:1:2:LYS:HG2	52:3:246:G:C8	2.50	0.47
4:9:455:HIS:O	4:9:459:LEU:HG	2.15	0.47
4:9:612:TYR:CZ	4:9:659:SER:HA	2.50	0.47
5:A:123:LEU:O	5:A:127:ILE:HG12	2.15	0.47
8:D:180:THR:O	54:5:8:G:O2'	2.32	0.47
22:R:36:ARG:HD2	22:R:51:VAL:HB	1.97	0.47
27:b:212:LYS:HD2	52:3:2741:A:C6	2.50	0.47
30:e:95:VAL:HG23	30:e:96:GLY:H	1.80	0.47
47:v:63:ARG:HE	47:v:64:LEU:H	1.62	0.47
52:3:271:G:H2'	52:3:272:C:C6	2.49	0.47
52:3:278:U:H3	52:3:291:G:H1	1.62	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:500:U:O2'	52:3:501:G:OP1	2.32	0.47
52:3:531:G:H3'	52:3:532:A:H8	1.80	0.47
52:3:720:A:H5''	52:3:722:C:H41	1.79	0.47
52:3:1230:U:H2'	52:3:1231:G:H8	1.80	0.47
52:3:1322:A:C4	52:3:1323:A:C8	3.03	0.47
52:3:1848:U:H2'	52:3:1849:G:H8	1.79	0.47
52:3:2111:U:O2	52:3:2194:G:N2	2.47	0.47
52:3:2134:G:H2'	52:3:2135:C:O4'	2.15	0.47
52:3:2137:A:O2'	52:3:2165:A:N6	2.39	0.47
52:3:2468:U:C2	52:3:2469:A:C8	3.03	0.47
52:3:2744:A:H2'	52:3:2745:G:C8	2.50	0.47
54:5:7:U:H4'	54:5:294:A:O4'	2.14	0.47
54:5:85:U:O2'	54:5:86:A:N7	2.38	0.47
54:5:803:C:H2'	54:5:804:A:H8	1.79	0.47
54:5:911:G:N3	54:5:911:G:H2'	2.30	0.47
54:5:1305:G:H8	54:5:1305:G:OP2	1.98	0.47
4:9:142:ALA:HA	4:9:146:ARG:HH11	1.80	0.46
4:9:215:VAL:HG12	4:9:240:ILE:HG21	1.97	0.46
4:9:406:ILE:HD13	4:9:652:ALA:HB3	1.96	0.46
4:9:436:LYS:HG3	4:9:449:ALA:HB2	1.97	0.46
4:9:495:ILE:HG12	4:9:504:TYR:CD1	2.46	0.46
5:A:161:LYS:NZ	54:5:1089:C:OP1	2.26	0.46
6:B:140:SER:HA	6:B:143:LYS:HZ2	1.80	0.46
7:C:22:ASN:HA	7:C:25:PHE:HB3	1.96	0.46
9:E:3:TYR:N	9:E:62:PHE:O	2.30	0.46
9:E:10:ASP:OD1	9:E:52:GLN:NE2	2.45	0.46
24:T:44:GLU:O	24:T:48:ILE:HG12	2.14	0.46
28:c:19:LYS:NZ	28:c:20:LEU:O	2.48	0.46
34:i:40:ARG:NH1	52:3:1043:C:H5'	2.30	0.46
34:i:76:PHE:CZ	34:i:91:SER:HB3	2.50	0.46
35:j:81:ASP:N	35:j:81:ASP:OD1	2.47	0.46
37:l:1:MET:HG2	37:l:48:GLU:HG3	1.97	0.46
42:q:19:THR:HG22	42:q:93:LYS:HB3	1.97	0.46
48:w:41:PRO:HG2	52:3:63:U:C4	2.51	0.46
52:3:774:A:N3	52:3:775:C:N4	2.58	0.46
52:3:2018:U:H2'	52:3:2019:G:O4'	2.16	0.46
52:3:2109:A:N1	52:3:2196:G:C6	2.83	0.46
52:3:2172:A:H8	52:3:2172:A:OP2	1.97	0.46
52:3:2386:A:C5	52:3:2387:U:H1'	2.50	0.46
52:3:2872:A:H2'	52:3:2873:G:C8	2.50	0.46
54:5:102:G:N2	54:5:309:A:N3	2.54	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:170:A:N1	54:5:196:G:N2	2.62	0.46
54:5:461:G:H2'	54:5:462:G:O4'	2.15	0.46
1:0:29:LYS:O	1:0:33:LEU:HG	2.16	0.46
10:F:39:GLN:HG3	12:H:45:LEU:HD23	1.98	0.46
18:N:51:ARG:HD2	54:5:725:A:C6	2.50	0.46
29:d:151:GLY:H	52:3:2313:U:H3	1.63	0.46
30:e:92:LEU:HD11	30:e:97:TYR:HB3	1.97	0.46
37:l:58:LEU:HD11	37:l:62:GLY:HA3	1.98	0.46
52:3:188:G:H2'	52:3:189:U:C6	2.51	0.46
52:3:480:C:H2'	52:3:481:C:C6	2.50	0.46
52:3:739:G:O2'	52:3:761:G:N2	2.43	0.46
52:3:748:G:H22	52:3:752:C:H5''	1.80	0.46
52:3:1113:U:H4'	52:3:1123:A:H2	1.80	0.46
52:3:1139:C:H2'	52:3:1140:U:C6	2.50	0.46
52:3:1159:C:H2'	52:3:1160:G:C8	2.50	0.46
52:3:1232:U:H2'	52:3:1233:A:C8	2.50	0.46
52:3:1986:C:H2'	52:3:1987:C:C6	2.51	0.46
52:3:2017:G:H2'	52:3:2018:U:H6	1.79	0.46
52:3:2643:A:H2'	52:3:2644:U:O4'	2.16	0.46
52:3:2891:C:H2'	52:3:2892:U:C6	2.50	0.46
54:5:60:A:N6	54:5:327:G:O2'	2.48	0.46
54:5:870:A:H2'	54:5:871:U:C6	2.50	0.46
54:5:1277:C:H2'	54:5:1278:G:O4'	2.15	0.46
54:5:1454:G:H2'	54:5:1455:G:H8	1.80	0.46
55:7:16:G:N1	55:7:60:U:O2	2.49	0.46
55:8:22:A:N6	55:8:47:G:H1'	2.29	0.46
2:1:1:MET:O	52:3:246:G:H5''	2.15	0.46
3:2:35:ARG:NH1	52:3:2749:A:H5''	2.31	0.46
4:9:417:ASP:OD2	4:9:471:VAL:HG22	2.16	0.46
4:9:628:GLU:HB2	52:3:1102:A:O2'	2.15	0.46
5:A:95:LEU:O	5:A:99:ILE:HG12	2.15	0.46
5:A:201:LEU:HD22	5:A:228:LEU:HD13	1.96	0.46
11:G:116:ILE:HG22	11:G:137:ILE:HA	1.97	0.46
12:H:21:LEU:HB3	12:H:63:PHE:HD2	1.81	0.46
15:K:124:ARG:HD2	15:K:124:ARG:N	2.30	0.46
35:j:78:LYS:N	40:o:76:GLU:O	2.44	0.46
39:n:8:ARG:HG3	39:n:95:GLY:HA3	1.97	0.46
44:s:24:THR:HB	44:s:26:LYS:HE3	1.96	0.46
44:s:54:LYS:HG2	44:s:55:VAL:N	2.30	0.46
47:v:39:LYS:HA	47:v:45:THR:HA	1.97	0.46
49:x:12:VAL:H	49:x:26:GLU:HA	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:z:11:CYS:H	51:z:16:GLU:H	1.61	0.46
52:3:86:A:N7	52:3:101:C:H1'	2.31	0.46
52:3:246:G:O2'	52:3:258:G:N1	2.48	0.46
52:3:489:A:H1'	52:3:493:A:O2'	2.15	0.46
52:3:612:G:H5''	52:3:2025:C:OP2	2.15	0.46
52:3:667:A:C6	52:3:2424:C:H1'	2.51	0.46
52:3:761:G:H1'	52:3:762:A:C8	2.49	0.46
52:3:807:U:H2'	52:3:808:U:C6	2.50	0.46
52:3:863:U:H4'	52:3:866:G:C6	2.51	0.46
52:3:1451:A:H2'	52:3:1452:G:C8	2.51	0.46
52:3:1889:U:O2'	52:3:1890:U:O4'	2.24	0.46
52:3:2300:A:H2'	52:3:2301:C:C6	2.51	0.46
52:3:2575:G:H2'	52:3:2576:A:C8	2.50	0.46
54:5:537:A:H2'	54:5:538:G:C8	2.49	0.46
54:5:578:C:H3'	54:5:579:G:H8	1.81	0.46
54:5:596:U:H2'	54:5:597:C:C6	2.50	0.46
54:5:600:G:O6	54:5:633:U:O4	2.33	0.46
54:5:973:A:C5	54:5:1293:A:C2	3.04	0.46
54:5:1225:A:N7	54:5:1261:A:C8	2.83	0.46
54:5:1228:C:H2'	54:5:1229:A:H8	1.80	0.46
5:A:126:SER:HA	5:A:129:LYS:HE2	1.98	0.46
5:A:169:LEU:HD23	5:A:169:LEU:H	1.78	0.46
27:b:176:VAL:HG22	27:b:179:LEU:HD11	1.97	0.46
28:c:69:LYS:HE2	52:3:2068:G:H5''	1.97	0.46
33:h:32:MET:HA	33:h:35:PHE:CZ	2.51	0.46
41:p:51:ASN:OD1	41:p:54:ARG:NH2	2.48	0.46
43:r:116:GLU:OE1	43:r:116:GLU:N	2.49	0.46
52:3:66:A:H2'	52:3:67:C:H6	1.80	0.46
52:3:166:A:H2'	52:3:167:A:O4'	2.16	0.46
52:3:177:U:H2'	52:3:178:A:H8	1.77	0.46
52:3:303:C:H2'	52:3:304:U:C6	2.50	0.46
52:3:331:A:H3'	52:3:332:G:H8	1.80	0.46
52:3:827:G:H4'	52:3:828:A:O4'	2.16	0.46
52:3:976:C:H2'	52:3:977:A:O4'	2.16	0.46
52:3:1261:U:H2'	52:3:1262:G:C8	2.49	0.46
52:3:2033:G:H2'	52:3:2034:G:C8	2.50	0.46
52:3:2284:G:H2'	52:3:2285:G:H8	1.81	0.46
54:5:259:A:H2'	54:5:260:C:C6	2.50	0.46
54:5:260:C:H2'	54:5:261:G:O4'	2.13	0.46
54:5:371:U:H2'	54:5:372:G:C8	2.50	0.46
54:5:797:G:H2'	54:5:798:U:C6	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:1043:U:O4	54:5:1175:C:O2'	2.32	0.46
54:5:1220:A:H2'	54:5:1221:A:C8	2.50	0.46
55:8:16:G:N1	55:8:60:U:O2	2.49	0.46
1:0:26:SER:HA	1:0:29:LYS:HE3	1.96	0.46
4:9:511:PHE:CE2	4:9:559:ILE:HG21	2.50	0.46
7:C:88:ASN:O	7:C:92:VAL:HG23	2.15	0.46
9:E:25:GLN:O	9:E:28:THR:HG22	2.15	0.46
31:f:102:HIS:HB3	52:3:166:A:N7	2.31	0.46
37:l:26:TYR:O	37:l:67:ARG:NH2	2.49	0.46
37:l:65:TRP:HB2	37:l:105:GLU:HG3	1.98	0.46
39:n:27:ARG:NH2	39:n:89:VAL:O	2.41	0.46
40:o:33:VAL:HB	40:o:88:ILE:HD12	1.96	0.46
40:o:36:LYS:HE2	40:o:85:ASN:HA	1.96	0.46
43:r:18:ARG:CZ	52:3:553:A:H4'	2.45	0.46
50:y:13:ARG:O	50:y:16:ARG:HG2	2.16	0.46
52:3:122:G:H2'	52:3:123:G:C8	2.49	0.46
52:3:525:A:H2'	52:3:526:G:C8	2.51	0.46
52:3:952:U:H3'	52:3:953:G:C8	2.51	0.46
52:3:1084:C:H41	52:3:1145:G:H21	1.64	0.46
52:3:1101:U:H1'	52:3:1108:A:H61	1.79	0.46
52:3:1114:C:H2'	52:3:1115:G:C8	2.50	0.46
52:3:1257:G:H2'	52:3:1258:C:C6	2.50	0.46
52:3:1306:G:H2'	52:3:1307:G:H8	1.79	0.46
52:3:1361:U:H2'	52:3:1362:C:C6	2.50	0.46
52:3:1507:G:O2'	52:3:1508:G:P	2.73	0.46
52:3:1582:G:H2'	52:3:1583:G:C8	2.50	0.46
52:3:1752:A:C2	52:3:1753:G:H1'	2.50	0.46
52:3:2156:G:H2'	52:3:2157:A:H8	1.79	0.46
52:3:2190:G:H2'	52:3:2191:G:H8	1.80	0.46
52:3:2598:C:H2'	52:3:2599:C:C6	2.50	0.46
52:3:2619:C:H2'	52:3:2620:C:C6	2.51	0.46
54:5:254:G:H2'	54:5:255:G:C8	2.50	0.46
54:5:408:U:H4'	54:5:409:G:H5'	1.97	0.46
54:5:514:U:C2	54:5:531:A:N7	2.83	0.46
54:5:761:U:H2'	54:5:762:G:O4'	2.16	0.46
54:5:1077:U:H2'	54:5:1078:G:C8	2.50	0.46
54:5:1243:A:O2'	54:5:1244:A:O4'	2.30	0.46
54:5:1364:C:H2'	54:5:1365:U:C6	2.51	0.46
54:5:1451:A:H2'	54:5:1452:C:C6	2.50	0.46
2:1:9:LYS:HB3	36:k:64:LYS:HG3	1.96	0.46
5:A:45:ILE:HG13	5:A:57:VAL:HG12	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:B:27:HIS:CG	17:M:36:HIS:HB3	2.51	0.46
7:C:95:SER:OG	7:C:136:LEU:N	2.47	0.46
7:C:112:SER:O	7:C:116:LEU:HD23	2.16	0.46
10:F:35:LYS:O	10:F:39:GLN:HB2	2.15	0.46
12:H:52:GLN:HB3	12:H:103:LYS:HZ3	1.81	0.46
12:H:117:LYS:NZ	54:5:1162:G:H5'	2.30	0.46
24:T:17:LYS:O	24:T:21:VAL:HG23	2.16	0.46
36:k:105:SER:O	36:k:108:SER:OG	2.26	0.46
39:n:4:ARG:HH12	39:n:8:ARG:HH22	1.62	0.46
41:p:47:ARG:HH21	52:3:568:G:N2	2.14	0.46
46:u:38:LYS:NZ	52:3:2364:A:H5'	2.31	0.46
52:3:116:C:H2'	52:3:117:C:H6	1.81	0.46
52:3:251:G:H1'	52:3:256:G:N2	2.31	0.46
52:3:697:U:H2'	52:3:698:A:C8	2.50	0.46
52:3:701:A:H2'	52:3:702:U:C6	2.50	0.46
52:3:978:G:H2'	52:3:979:U:H5'	1.97	0.46
52:3:1019:A:H3'	52:3:1020:G:C2	2.50	0.46
52:3:1088:A:H2'	52:3:1089:A:O4'	2.16	0.46
52:3:1290:G:H2'	52:3:1291:C:C6	2.50	0.46
52:3:1461:A:H2'	52:3:1462:A:C8	2.50	0.46
52:3:2098:U:H3'	52:3:2099:U:H2'	1.98	0.46
52:3:2297:G:H2'	52:3:2298:G:C8	2.51	0.46
52:3:2645:U:H2'	52:3:2646:G:O4'	2.15	0.46
54:5:337:C:H2'	54:5:338:C:H6	1.80	0.46
54:5:485:C:H2'	54:5:486:C:C6	2.50	0.46
54:5:575:A:H2'	54:5:576:A:C8	2.51	0.46
5:A:91:TYR:HE1	5:A:226:CYS:HB3	1.80	0.46
7:C:68:ASP:O	7:C:72:ARG:HG3	2.16	0.46
14:J:112:ASN:OD1	54:5:713:A:O2'	2.25	0.46
20:P:2:LYS:HD2	54:5:115:A:C8	2.51	0.46
26:a:216:ALA:O	26:a:220:ARG:HG3	2.16	0.46
28:c:55:LYS:HG3	28:c:88:GLY:HA2	1.98	0.46
36:k:115:ILE:HD11	52:3:672:G:C6	2.51	0.46
38:m:22:VAL:HA	38:m:25:VAL:HG12	1.98	0.46
52:3:69:U:H2'	52:3:70:G:H8	1.81	0.46
52:3:855:A:H4'	52:3:871:G:H22	1.80	0.46
52:3:1032:A:H2'	52:3:1033:A:C8	2.51	0.46
52:3:1371:G:N3	52:3:1371:G:H2'	2.31	0.46
52:3:1687:G:OP2	52:3:2826:G:N2	2.49	0.46
52:3:1719:C:H2'	52:3:1720:C:C1'	2.46	0.46
52:3:1736:G:C6	52:3:1737:G:C6	3.03	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1906:G:N2	52:3:1910:G:N7	2.63	0.46
52:3:2031:C:H2'	52:3:2032:G:H8	1.80	0.46
52:3:2080:C:H2'	52:3:2081:U:C6	2.51	0.46
52:3:2195:U:C4	52:3:2196:G:O6	2.69	0.46
54:5:1055:G:H1'	54:5:1165:G:H21	1.80	0.46
2:1:10:ARG:HH22	52:3:2401:U:HO2'	1.61	0.46
7:C:10:ARG:NH1	54:5:541:C:OP1	2.42	0.46
7:C:56:GLU:HB3	7:C:191:ILE:HD12	1.98	0.46
27:b:143:PHE:HE2	52:3:2586:G:H1'	1.81	0.46
27:b:148:GLN:OE1	52:3:2059:G:H4'	2.15	0.46
32:g:18:LEU:HD21	32:g:68:PHE:HB2	1.98	0.46
36:k:57:PRO:O	36:k:61:ARG:HG3	2.16	0.46
42:q:19:THR:HB	42:q:91:LYS:HD3	1.97	0.46
45:t:36:VAL:HG11	45:t:39:LEU:HB2	1.97	0.46
50:y:2:ALA:HA	52:3:2622:A:C4	2.51	0.46
52:3:282:C:N4	52:3:284:U:O4'	2.49	0.46
52:3:680:A:H2'	52:3:682:A:H8	1.79	0.46
52:3:986:G:O6	52:3:1003:U:O4	2.33	0.46
52:3:1006:U:H2'	52:3:1007:C:C6	2.51	0.46
52:3:1462:A:O2'	52:3:1463:G:O5'	2.33	0.46
52:3:1584:U:O2'	52:3:1586:U:O4	2.28	0.46
52:3:2185:C:H2'	52:3:2186:C:C6	2.50	0.46
52:3:2321:C:H2'	52:3:2322:G:C8	2.50	0.46
52:3:2703:U:O2	52:3:2722:G:O6	2.34	0.46
54:5:92:G:HO2'	54:5:374:G:HO2'	1.63	0.46
54:5:673:A:H2	54:5:711:G:H1	1.63	0.46
54:5:885:U:H2'	54:5:886:A:C8	2.51	0.46
54:5:955:U:H2'	54:5:1200:G:O6	2.15	0.46
54:5:991:A:N1	54:5:1037:A:H4'	2.31	0.46
54:5:1001:A:H5'	54:5:1030:G:H4'	1.98	0.46
4:9:96:LEU:HD11	4:9:123:ALA:HA	1.97	0.46
8:D:151:LEU:HD13	8:D:180:THR:HG22	1.98	0.46
8:D:203:LEU:HD23	8:D:203:LEU:H	1.81	0.46
9:E:7:LEU:HD11	9:E:25:GLN:HG3	1.96	0.46
10:F:92:GLN:HA	10:F:95:LYS:HB2	1.98	0.46
11:G:41:LYS:HA	11:G:44:ILE:HG12	1.97	0.46
12:H:82:ARG:NH1	12:H:105:LEU:O	2.49	0.46
16:L:69:LEU:O	16:L:73:ILE:HG12	2.16	0.46
17:M:45:ARG:NH2	54:5:1050:U:O2'	2.26	0.46
17:M:61:TRP:HB2	54:5:1161:G:N2	2.27	0.46
36:k:133:LYS:O	36:k:137:LYS:HG3	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:l:86:GLY:HA2	52:3:2284:G:H5'	1.97	0.46
46:u:60:TYR:OH	52:3:2339:G:O2'	2.25	0.46
52:3:246:G:N2	52:3:247:U:O4	2.49	0.46
52:3:280:A:H2'	52:3:281:U:C6	2.50	0.46
52:3:956:U:C2	52:3:957:G:C8	3.04	0.46
52:3:1057:G:O2'	52:3:1059:G:O6	2.24	0.46
52:3:1252:C:H2'	52:3:1253:G:O4'	2.16	0.46
52:3:1485:A:H4'	52:3:1486:U:C5	2.51	0.46
52:3:1766:A:H2'	52:3:1767:A:C8	2.51	0.46
52:3:2179:A:H1'	52:3:2180:U:C5	2.51	0.46
52:3:2702:G:H2'	52:3:2703:U:O4'	2.16	0.46
52:3:2839:A:H62	52:3:2882:U:H3'	1.81	0.46
54:5:86:A:H2'	54:5:87:G:O4'	2.16	0.46
54:5:118:C:H4'	54:5:258:A:H1'	1.98	0.46
54:5:141:A:H2'	54:5:142:G:H8	1.80	0.46
54:5:333:U:O4	54:5:334:A:N6	2.49	0.46
54:5:483:U:H2'	54:5:484:A:C8	2.50	0.46
54:5:513:G:H2'	54:5:514:U:O4'	2.15	0.46
54:5:630:G:H2'	54:5:631:C:H6	1.80	0.46
54:5:975:C:H3'	54:5:976:U:C6	2.51	0.46
54:5:1328:C:H2'	54:5:1329:G:H8	1.81	0.46
54:5:1396:U:O2	54:5:1455:G:C6	2.69	0.46
55:7:35:G:N3	55:7:35:G:H2'	2.30	0.46
1:0:27:GLY:O	1:0:31:LEU:HG	2.16	0.46
2:1:12:LYS:O	2:1:20:LYS:N	2.38	0.46
4:9:425:LEU:HD11	4:9:437:THR:HG21	1.97	0.46
7:C:96:ARG:HH12	7:C:114:ARG:NH2	2.14	0.46
15:K:30:LEU:HD22	54:5:51:A:N6	2.31	0.46
15:K:81:PRO:HG3	15:K:109:HIS:HB3	1.97	0.46
28:c:64:LYS:HD2	52:3:710:A:OP1	2.16	0.46
28:c:127:LEU:HD13	28:c:204:LEU:HD21	1.97	0.46
34:i:117:LEU:HB2	34:i:121:TRP:CH2	2.51	0.46
42:q:74:ILE:HG21	42:q:77:LYS:HD2	1.98	0.46
45:t:2:GLN:O	45:t:102:ARG:NH1	2.48	0.46
52:3:43:A:N6	52:3:44:A:N6	2.64	0.46
52:3:99:C:H2'	52:3:100:U:C6	2.51	0.46
52:3:349:G:H2'	52:3:350:C:C6	2.50	0.46
52:3:1211:U:O2'	52:3:1212:C:OP1	2.30	0.46
52:3:1436:C:H2'	52:3:1437:A:C8	2.51	0.46
52:3:1516:G:H2'	52:3:1517:G:C8	2.51	0.46
52:3:1698:A:N6	52:3:2003:C:H42	2.11	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:2580:A:OP1	52:3:2582:G:O2'	2.28	0.46
52:3:2709:C:O5'	52:3:2710:G:H5''	2.15	0.46
54:5:21:U:O2'	54:5:571:A:N7	2.49	0.46
54:5:454:U:H2'	54:5:455:U:C6	2.51	0.46
54:5:995:U:H1'	54:5:1032:G:H1	1.81	0.46
55:8:59:A:H1'	55:8:61:U:OP2	2.15	0.46
5:A:84:PHE:HA	5:A:177:ILE:HG12	1.97	0.45
8:D:87:ARG:NH1	54:5:1072:G:H5''	2.28	0.45
9:E:84:ARG:NH2	54:5:670:G:H4'	2.31	0.45
16:L:11:ASN:HB3	16:L:12:GLN:OE1	2.15	0.45
21:Q:88:LYS:O	21:Q:92:ARG:HG3	2.17	0.45
36:k:30:LYS:HG3	36:k:31:THR:HG23	1.98	0.45
38:m:4:ILE:HD11	52:3:1652:A:C4	2.51	0.45
40:o:35:ILE:HB	40:o:46:GLN:HB3	1.98	0.45
46:u:70:ASP:HA	52:3:2394:A:H4'	1.97	0.45
52:3:196:G:H4'	52:3:712:A:H2	1.82	0.45
52:3:465:A:H2'	52:3:466:A:C4	2.51	0.45
52:3:1435:A:H2'	52:3:1436:C:C6	2.51	0.45
52:3:1806:G:N1	52:3:1826:A:OP2	2.44	0.45
53:4:55:A:C4	53:4:56:A:C8	3.04	0.45
54:5:22:G:H2'	54:5:23:G:C8	2.50	0.45
54:5:264:C:H2'	54:5:265:U:C6	2.51	0.45
54:5:398:G:H2'	54:5:399:C:C6	2.50	0.45
54:5:432:U:H2'	54:5:433:C:C6	2.51	0.45
54:5:1198:C:H5''	54:5:1199:U:H5''	1.96	0.45
4:9:7:LEU:O	4:9:280:SER:OG	2.33	0.45
4:9:482:GLU:HG3	4:9:554:TYR:HB2	1.99	0.45
5:A:73:LYS:O	5:A:77:GLN:HG2	2.17	0.45
5:A:81:GLN:HB2	5:A:173:PRO:HA	1.99	0.45
7:C:87:VAL:O	7:C:91:ARG:HG3	2.16	0.45
8:D:160:ILE:HG13	8:D:178:ILE:HG22	1.98	0.45
10:F:62:GLU:HA	10:F:65:VAL:HG22	1.99	0.45
16:L:29:ARG:NH1	16:L:63:TYR:O	2.49	0.45
22:R:86:ASN:ND2	54:5:950:C:OP1	2.49	0.45
28:c:143:MET:O	28:c:147:LEU:HG	2.15	0.45
34:i:111:MET:SD	52:3:1173:G:N2	2.79	0.45
40:o:67:ARG:NH2	40:o:107:ARG:O	2.48	0.45
46:u:85:LYS:HB3	46:u:90:GLN:HB3	1.98	0.45
52:3:739:G:O2'	52:3:740:A:OP2	2.33	0.45
52:3:1043:C:H3'	52:3:1044:C:H6	1.81	0.45
52:3:1350:A:N1	52:3:1361:U:O2'	2.43	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1444:C:N3	52:3:1616:G:N1	2.64	0.45
52:3:1723:A:H2'	52:3:1724:A:C8	2.51	0.45
52:3:1913:G:C8	52:3:1936:G:H2'	2.52	0.45
52:3:2122:G:O2'	52:3:2175:U:O2	2.34	0.45
52:3:2648:A:H3'	52:3:2649:G:H5''	1.98	0.45
52:3:2718:C:H2'	52:3:2719:A:C8	2.51	0.45
52:3:2892:U:H2'	52:3:2893:C:H6	1.80	0.45
54:5:116:A:O2'	54:5:117:U:O5'	2.32	0.45
54:5:130:G:C6	54:5:165:A:N6	2.84	0.45
54:5:504:A:H2'	54:5:505:C:C6	2.51	0.45
54:5:981:U:H2'	54:5:982:A:C8	2.52	0.45
2:1:23:HIS:HD1	2:1:41:LEU:HA	1.81	0.45
4:9:131:ILE:HD13	4:9:278:LEU:HD21	1.97	0.45
9:E:2:GLN:O	9:E:89:ASN:ND2	2.50	0.45
9:E:7:LEU:HD23	9:E:60:TRP:NE1	2.28	0.45
9:E:109:LEU:HB3	54:5:838:A:N3	2.31	0.45
24:T:28:LEU:HD21	54:5:715:A:H1'	1.98	0.45
34:i:72:LYS:HG2	34:i:96:LEU:HD11	1.98	0.45
38:m:18:VAL:O	38:m:22:VAL:HG13	2.16	0.45
45:t:92:VAL:HB	52:3:331:A:O3'	2.17	0.45
50:y:7:ARG:HB3	52:3:1293:U:H1'	1.98	0.45
52:3:103:G:H4'	52:3:104:A:H5'	1.97	0.45
52:3:262:G:H2'	52:3:263:C:C6	2.51	0.45
52:3:494:G:H1'	52:3:495:U:H5	1.82	0.45
52:3:528:U:H2'	52:3:529:G:H8	1.80	0.45
52:3:573:A:N6	52:3:588:G:H1'	2.31	0.45
52:3:645:C:N4	52:3:646:A:H62	2.14	0.45
52:3:688:U:H5''	52:3:689:U:C4'	2.45	0.45
52:3:721:G:H2'	52:3:823:A:N1	2.31	0.45
52:3:1123:A:H4'	52:3:1124:G:C8	2.49	0.45
52:3:2100:G:N7	52:3:2233:A:H2'	2.31	0.45
52:3:2404:G:H2'	52:3:2405:G:H8	1.81	0.45
52:3:2455:G:H22	52:3:2459:A:H62	1.65	0.45
52:3:2572:A:H2'	52:3:2573:A:C8	2.50	0.45
52:3:2659:U:H2'	52:3:2660:C:C6	2.51	0.45
52:3:2683:G:H2'	52:3:2684:G:C8	2.51	0.45
52:3:2868:G:H2'	52:3:2869:U:O4'	2.17	0.45
54:5:316:G:H2'	54:5:317:A:C8	2.52	0.45
54:5:400:G:H2'	54:5:401:U:C6	2.51	0.45
54:5:651:G:H3'	54:5:652:A:H8	1.80	0.45
54:5:967:C:H2'	54:5:968:G:C8	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:1008:G:H2'	54:5:1009:G:C8	2.52	0.45
54:5:1090:G:H2'	54:5:1091:C:O4'	2.16	0.45
54:5:1455:G:H2'	54:5:1456:U:O4'	2.16	0.45
55:7:27:A:N6	55:7:45:G:H1	2.14	0.45
55:8:68:G:H2'	55:8:69:A:C8	2.52	0.45
55:8:72:C:H2'	55:8:73:C:C6	2.51	0.45
2:1:18:GLN:NE2	52:3:687:G:OP1	2.50	0.45
2:1:31:PRO:HB3	51:z:22:PHE:CE2	2.50	0.45
8:D:182:ASN:OD1	8:D:183:LEU:N	2.50	0.45
8:D:208:VAL:HG21	11:G:111:LEU:HD22	1.98	0.45
10:F:5:ARG:HD2	10:F:7:PRO:HG3	1.98	0.45
12:H:18:LYS:O	12:H:67:VAL:HA	2.15	0.45
13:I:57:ILE:O	13:I:69:GLU:HG3	2.17	0.45
14:J:80:LYS:NZ	54:5:705:A:OP1	2.49	0.45
20:P:61:VAL:HG12	20:P:80:ILE:HG23	1.98	0.45
26:a:58:GLN:HA	26:a:224:ILE:HA	1.97	0.45
28:c:129:ASP:HA	28:c:201:LYS:HB2	1.98	0.45
29:d:4:LEU:HD22	29:d:101:GLU:HB3	1.97	0.45
34:i:39:ILE:O	34:i:54:GLY:HA3	2.17	0.45
43:r:134:LYS:HE3	43:r:134:LYS:HB3	1.75	0.45
48:w:45:ASN:O	48:w:49:ARG:HG2	2.15	0.45
52:3:170:A:C2	52:3:171:G:H1'	2.51	0.45
52:3:337:U:H2'	52:3:338:G:H8	1.80	0.45
52:3:628:A:H2'	52:3:629:G:H8	1.82	0.45
52:3:1269:C:H2'	52:3:1270:C:C6	2.51	0.45
52:3:1389:G:H2'	52:3:1390:C:H6	1.81	0.45
52:3:1867:G:N2	52:3:1890:U:O2	2.50	0.45
52:3:1982:G:H2'	52:3:1983:U:O4'	2.17	0.45
52:3:2748:A:H2'	52:3:2749:A:C8	2.52	0.45
54:5:21:U:H2'	54:5:22:G:O4'	2.17	0.45
54:5:337:C:H2'	54:5:338:C:C6	2.52	0.45
55:8:62:C:H2'	55:8:63:U:H6	1.82	0.45
9:E:65:ASP:OD1	9:E:66:ASN:N	2.49	0.45
11:G:96:ARG:O	20:P:37:LYS:NZ	2.41	0.45
23:S:18:ASN:OD1	54:5:319:U:H5'	2.16	0.45
26:a:246:ARG:HG3	52:3:1979:G:OP1	2.17	0.45
28:c:60:GLY:HA2	52:3:504:G:OP1	2.16	0.45
32:g:56:ASN:N	52:3:1142:G:OP1	2.33	0.45
33:h:39:PHE:O	33:h:43:THR:HG22	2.16	0.45
35:j:44:LYS:HE2	35:j:44:LYS:HB3	1.74	0.45
36:k:82:LEU:HB2	36:k:116:GLY:HA3	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:p:94:LEU:HD22	42:q:11:GLN:HB3	1.99	0.45
48:w:48:ARG:NH2	52:3:75:A:H3'	2.32	0.45
52:3:59:C:H2'	52:3:60:G:H8	1.81	0.45
52:3:672:G:H4'	52:3:674:G:H4'	1.99	0.45
52:3:712:A:H2'	52:3:712:A:N3	2.32	0.45
52:3:741:A:H2'	52:3:742:G:O4'	2.16	0.45
52:3:1077:G:H2'	52:3:1078:C:C6	2.52	0.45
52:3:2297:G:H2'	52:3:2298:G:H8	1.82	0.45
54:5:387:G:H2'	54:5:388:G:O4'	2.17	0.45
54:5:442:G:H2'	54:5:443:G:C8	2.46	0.45
54:5:688:G:N2	54:5:692:A:H3'	2.28	0.45
54:5:934:G:H2'	54:5:935:U:C6	2.51	0.45
54:5:1366:U:H2'	54:5:1367:G:C8	2.51	0.45
55:7:29:C:H2'	55:7:30:G:C8	2.50	0.45
1:0:29:LYS:HA	1:0:32:LYS:HG2	1.97	0.45
4:9:5:VAL:HG12	4:9:368:ARG:HG2	1.99	0.45
5:A:84:PHE:O	5:A:107:PHE:HA	2.16	0.45
10:F:2:ARG:HH22	54:5:926:C:P	2.38	0.45
10:F:71:ARG:HD3	10:F:95:LYS:HZ3	1.82	0.45
11:G:23:ASN:O	11:G:27:LYS:HG3	2.17	0.45
15:K:9:ARG:HH12	54:5:581:A:H2	1.64	0.45
31:f:96:GLN:HE22	31:f:97:ILE:HG23	1.82	0.45
41:p:61:ILE:HD12	41:p:75:TYR:OH	2.16	0.45
43:r:98:LYS:HB3	43:r:98:LYS:HE2	1.69	0.45
44:s:2:ASP:O	48:w:65:TRP:NE1	2.49	0.45
52:3:170:A:H3'	52:3:171:G:H8	1.82	0.45
52:3:632:A:H2'	52:3:633:G:C8	2.49	0.45
52:3:766:C:H2'	52:3:767:C:C6	2.51	0.45
52:3:960:A:H2'	52:3:961:U:O4'	2.17	0.45
52:3:1511:C:H2'	52:3:1512:A:H8	1.82	0.45
52:3:1993:U:H2'	52:3:1994:U:C6	2.52	0.45
52:3:2071:C:H2'	52:3:2072:C:C6	2.52	0.45
52:3:2097:A:H2'	52:3:2098:U:O4'	2.16	0.45
52:3:2786:A:N3	52:3:2788:U:N3	2.63	0.45
54:5:8:G:C4	54:5:294:A:N1	2.84	0.45
54:5:175:U:H2'	54:5:176:G:C8	2.52	0.45
54:5:318:C:C2	54:5:328:G:N2	2.85	0.45
54:5:456:U:H2'	54:5:457:A:H8	1.81	0.45
54:5:644:U:H2'	54:5:645:A:C8	2.51	0.45
1:0:29:LYS:O	1:0:32:LYS:HG2	2.17	0.45
9:E:70:LYS:HE2	9:E:74:ARG:HH12	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:F:102:TRP:HE3	10:F:133:ALA:HB1	1.81	0.45
12:H:32:VAL:O	12:H:35:ARG:HG2	2.16	0.45
16:L:16:GLU:HG3	16:L:31:GLN:NE2	2.31	0.45
20:P:25:GLN:NE2	20:P:26:VAL:O	2.49	0.45
28:c:106:LYS:NZ	52:3:640:U:OP2	2.39	0.45
31:f:112:MET:HB3	31:f:130:ILE:HD12	1.97	0.45
34:i:42:LYS:HE2	41:p:62:LEU:HD21	1.99	0.45
37:l:81:VAL:HB	46:u:19:LYS:HG3	1.97	0.45
37:l:99:GLN:OE1	37:l:99:GLN:N	2.43	0.45
42:q:68:VAL:HG12	42:q:70:VAL:HG13	1.99	0.45
44:s:76:LYS:HZ1	52:3:60:G:C5'	2.29	0.45
50:y:40:HIS:NE2	52:3:2887:A:H4'	2.32	0.45
52:3:598:G:C6	52:3:610:G:N1	2.84	0.45
52:3:1186:A:H2'	52:3:1187:C:O4'	2.16	0.45
52:3:1409:G:C2	52:3:1410:A:C5	3.05	0.45
52:3:1442:G:H2'	52:3:1443:A:C8	2.52	0.45
52:3:1448:U:O2'	52:3:1449:G:H5'	2.16	0.45
52:3:2463:G:H2'	52:3:2464:C:C6	2.51	0.45
52:3:2605:G:H2'	52:3:2606:A:C8	2.52	0.45
52:3:2735:G:O2'	52:3:2736:U:H5'	2.17	0.45
52:3:2820:G:H2'	52:3:2821:U:C6	2.52	0.45
53:4:4:G:H2'	53:4:5:G:C8	2.52	0.45
53:4:71:A:H2'	53:4:72:A:C8	2.51	0.45
54:5:134:G:H2'	54:5:135:A:H8	1.82	0.45
54:5:582:G:H1	54:5:754:U:H3	1.65	0.45
54:5:770:G:O6	54:5:804:A:N6	2.50	0.45
54:5:830:U:H2'	54:5:831:C:H6	1.82	0.45
54:5:884:G:N2	54:5:885:U:O4	2.39	0.45
54:5:1320:A:H4'	54:5:1321:G:H4'	1.99	0.45
55:7:72:C:H2'	55:7:73:C:C6	2.51	0.45
4:9:568:PHE:HA	4:9:578:PHE:HZ	1.81	0.45
5:A:38:ASN:HD21	5:A:40:LYS:HG2	1.82	0.45
10:F:139:ASP:HA	10:F:142:LYS:HE2	1.99	0.45
11:G:60:LEU:HB2	11:G:69:ILE:HG13	1.99	0.45
13:I:68:ARG:HH21	17:M:41:ARG:HH12	1.65	0.45
15:K:134:LYS:HD2	54:5:498:G:H5''	1.99	0.45
16:L:9:ILE:HB	16:L:46:LYS:HE3	1.98	0.45
16:L:90:ARG:HB3	16:L:97:VAL:HG22	1.98	0.45
16:L:116:VAL:HG22	54:5:1203:A:H4'	1.99	0.45
21:Q:84:ARG:HG2	21:Q:88:LYS:HE2	1.99	0.45
23:S:52:ASP:OD2	54:5:195:U:O2'	2.28	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:b:102:PHE:HB2	27:b:184:PHE:HZ	1.82	0.45
28:c:160:VAL:HB	28:c:183:LEU:HB2	1.99	0.45
32:g:32:MET:HE2	32:g:32:MET:HB2	1.65	0.45
34:i:18:TRP:HB2	34:i:140:PRO:HA	1.99	0.45
39:n:3:THR:H	39:n:6:GLU:HG2	1.82	0.45
39:n:27:ARG:HD3	39:n:89:VAL:C	2.42	0.45
52:3:39:C:H2'	52:3:40:A:C8	2.52	0.45
52:3:55:A:H3'	52:3:56:G:H8	1.82	0.45
52:3:716:G:H2'	52:3:717:U:C6	2.52	0.45
52:3:739:G:HO2'	52:3:740:A:P	2.40	0.45
52:3:835:U:H4'	52:3:836:G:H3'	1.98	0.45
52:3:919:C:H2'	52:3:920:G:C8	2.52	0.45
52:3:1003:U:H2'	52:3:1004:U:C6	2.51	0.45
52:3:1690:C:H2'	52:3:1691:U:C6	2.51	0.45
52:3:1820:U:HO2'	52:3:1821:G:P	2.38	0.45
52:3:1858:U:C2'	52:3:1859:U:H5'	2.47	0.45
52:3:2328:A:O2'	52:3:2341:G:N2	2.50	0.45
52:3:2524:U:H2'	52:3:2525:C:C6	2.51	0.45
52:3:2797:C:N4	52:3:2798:A:C6	2.85	0.45
54:5:23:G:H4'	54:5:879:G:C8	2.51	0.45
54:5:830:U:H3	54:5:847:G:H1	1.64	0.45
54:5:947:U:P	54:5:967:C:H41	2.39	0.45
54:5:1067:C:H2'	54:5:1068:G:C8	2.52	0.45
55:7:62:C:H2'	55:7:63:U:H6	1.82	0.45
4:9:87:ASP:OD2	4:9:115:GLN:HB3	2.17	0.45
4:9:145:GLU:HA	4:9:148:VAL:HG22	1.99	0.45
4:9:525:ILE:HD12	4:9:529:ARG:HB2	1.99	0.45
5:A:53:ASN:O	5:A:55:HIS:ND1	2.50	0.45
6:B:80:SER:O	6:B:83:LYS:HG2	2.16	0.45
6:B:121:ARG:HH11	6:B:125:ASN:ND2	2.14	0.45
7:C:78:VAL:O	7:C:81:GLN:NE2	2.49	0.45
8:D:97:ARG:HG2	8:D:171:GLU:O	2.17	0.45
12:H:47:ILE:HA	12:H:50:MET:HE3	1.99	0.45
14:J:28:SER:HA	14:J:35:LEU:HG	1.98	0.45
15:K:134:LYS:HD3	54:5:38:U:H4'	1.99	0.45
17:M:58:LYS:HE3	17:M:58:LYS:HB3	1.67	0.45
23:S:28:LEU:HD13	23:S:50:GLN:HG2	1.99	0.45
23:S:57:LYS:HD3	23:S:57:LYS:N	2.32	0.45
30:e:70:THR:O	30:e:74:LEU:HG	2.17	0.45
30:e:71:TYR:O	30:e:75:ILE:HG12	2.17	0.45
34:i:78:TYR:CD1	34:i:89:LYS:HG3	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:k:68:ALA:HB2	52:3:667:A:N3	2.31	0.45
39:n:9:ARG:HD3	39:n:9:ARG:HA	1.82	0.45
40:o:34:ALA:O	40:o:87:SER:OG	2.32	0.45
49:x:25:ILE:HG23	49:x:26:GLU:H	1.80	0.45
52:3:700:U:H2'	52:3:701:A:C8	2.52	0.45
52:3:720:A:H61	52:3:813:G:H1'	1.81	0.45
52:3:810:G:N2	52:3:829:A:O5'	2.50	0.45
52:3:1262:G:N3	52:3:1263:G:C8	2.85	0.45
52:3:2129:U:H2'	52:3:2130:A:H8	1.82	0.45
53:4:43:A:C4	53:4:44:A:C8	3.05	0.45
54:5:499:U:H3	54:5:542:G:H1	1.64	0.45
54:5:673:A:H2'	54:5:674:U:C6	2.51	0.45
54:5:721:G:H2'	54:5:722:G:C8	2.52	0.45
54:5:884:G:O2'	54:5:900:G:O6	2.32	0.45
54:5:1009:G:H21	54:5:1012:A:H2	1.64	0.45
54:5:1469:G:H2'	54:5:1470:U:C6	2.51	0.45
55:8:35:G:H2'	55:8:35:G:N3	2.30	0.45
2:1:53:LYS:NZ	52:3:976:C:OP2	2.50	0.45
4:9:195:GLU:HB3	4:9:197:LYS:HE3	1.99	0.45
4:9:629:GLY:H	52:3:1102:A:P	2.38	0.45
7:C:150:LYS:HD2	54:5:434:U:H5''	1.99	0.45
9:E:16:GLU:OE1	9:E:16:GLU:N	2.42	0.45
12:H:75:THR:HB	54:5:1347:U:H5''	1.98	0.45
25:W:107:GLU:O	25:W:111:ARG:HG3	2.17	0.45
26:a:260:LYS:NZ	52:3:1812:C:OP1	2.49	0.45
34:i:18:TRP:HA	34:i:56:TYR:HB2	1.98	0.45
43:r:18:ARG:HA	43:r:21:CYS:HB3	1.99	0.45
43:r:21:CYS:O	43:r:25:VAL:HG23	2.16	0.45
44:s:66:ARG:HG3	52:3:66:A:H4'	1.99	0.45
50:y:37:LYS:HB3	50:y:43:CYS:HB3	1.98	0.45
52:3:456:G:H2'	52:3:457:U:C6	2.51	0.45
52:3:591:G:H2'	52:3:592:G:C8	2.51	0.45
52:3:591:G:H2'	52:3:592:G:H8	1.81	0.45
52:3:612:G:H2'	52:3:613:C:C6	2.52	0.45
52:3:860:C:H4'	52:3:2436:G:C5	2.52	0.45
52:3:1179:G:C2	52:3:1180:U:C5	3.04	0.45
52:3:1420:A:H2'	52:3:1421:A:C4	2.52	0.45
52:3:1855:A:C4	52:3:1856:G:C8	3.05	0.45
52:3:1930:U:H2'	52:3:1931:C:C6	2.51	0.45
52:3:2179:A:H1'	52:3:2180:U:C6	2.52	0.45
52:3:2393:C:H2'	52:3:2394:A:C8	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:4:69:C:H2'	53:4:70:G:O4'	2.17	0.45
54:5:30:A:O2'	54:5:291:C:O2'	2.32	0.45
54:5:46:U:H2'	54:5:47:G:O4'	2.17	0.45
54:5:60:A:H1'	54:5:350:G:N2	2.31	0.45
54:5:593:A:N3	54:5:594:A:N6	2.64	0.45
54:5:777:A:N6	54:5:798:U:OP2	2.31	0.45
54:5:871:U:H2'	54:5:872:C:C6	2.52	0.45
54:5:1058:A:H1'	54:5:1059:G:C8	2.52	0.45
55:7:68:G:H2'	55:7:69:A:C8	2.52	0.45
55:8:69:A:H2'	55:8:70:G:C8	2.52	0.45
4:9:137:MET:H	4:9:260:SER:HB2	1.81	0.44
6:B:37:ASP:HB3	6:B:60:ARG:HH11	1.82	0.44
15:K:2:ALA:HB2	54:5:876:C:H41	1.83	0.44
26:a:74:THR:HG22	26:a:197:ARG:HH11	1.82	0.44
26:a:183:GLN:OE1	26:a:188:GLU:N	2.50	0.44
32:g:100:VAL:HG22	32:g:106:MET:HB3	1.99	0.44
41:p:57:ARG:NH2	52:3:1034:A:OP2	2.50	0.44
51:z:9:LEU:HD12	51:z:47:HIS:HB3	1.99	0.44
52:3:72:G:N2	52:3:73:A:N1	2.55	0.44
52:3:615:G:H2'	52:3:616:G:H8	1.82	0.44
52:3:1027:U:H2'	52:3:1028:C:C6	2.52	0.44
52:3:1051:U:C2	52:3:1052:A:C8	3.04	0.44
52:3:1284:A:C4	52:3:1286:G:H1'	2.52	0.44
52:3:1536:C:H2'	52:3:1537:A:O4'	2.17	0.44
52:3:1661:A:H2'	52:3:1662:G:C8	2.48	0.44
52:3:1716:A:OP2	52:3:1733:G:N2	2.50	0.44
52:3:1937:G:H22	52:3:1976:A:P	2.40	0.44
52:3:1951:A:H5'	52:3:1962:U:H1'	1.99	0.44
52:3:2306:A:H8	52:3:2326:G:H21	1.64	0.44
52:3:2845:U:H2'	52:3:2846:A:C8	2.52	0.44
54:5:654:U:H2'	54:5:655:G:C8	2.52	0.44
4:9:587:LYS:O	4:9:591:LYS:HG3	2.17	0.44
6:B:117:ARG:NH2	6:B:189:LEU:O	2.49	0.44
9:E:23:GLU:OE1	9:E:27:GLN:NE2	2.50	0.44
11:G:55:ALA:HB3	11:G:73:ASN:HB3	1.98	0.44
16:L:19:LEU:O	16:L:22:ILE:HG12	2.17	0.44
19:O:66:LEU:O	19:O:70:THR:HG23	2.17	0.44
37:l:41:TRP:CD1	37:l:96:VAL:HG13	2.52	0.44
38:m:30:LYS:HB2	38:m:115:ILE:HD11	1.99	0.44
40:o:44:ARG:HH11	54:5:342:G:HO2'	1.61	0.44
52:3:116:C:H2'	52:3:117:C:C6	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:210:U:H2'	52:3:211:A:H8	1.83	0.44
52:3:389:C:H2'	52:3:390:A:C8	2.52	0.44
52:3:451:A:H2'	52:3:452:U:O4'	2.16	0.44
52:3:499:G:O2'	52:3:501:G:O6	2.35	0.44
52:3:702:U:H2'	52:3:703:A:O4'	2.17	0.44
52:3:903:A:H4'	52:3:904:C:OP1	2.17	0.44
52:3:920:G:H2'	52:3:921:C:C6	2.52	0.44
52:3:962:U:H2'	52:3:963:U:C6	2.51	0.44
52:3:1133:A:H3'	52:3:1134:G:H8	1.82	0.44
52:3:1841:U:O2	52:3:1979:G:N1	2.50	0.44
52:3:1932:C:H2'	52:3:1933:U:C6	2.52	0.44
52:3:2268:C:H2'	52:3:2269:C:C6	2.52	0.44
52:3:2541:C:H2'	52:3:2542:A:O4'	2.17	0.44
52:3:2577:G:H2'	52:3:2578:A:C8	2.52	0.44
54:5:407:A:H61	54:5:427:A:H62	1.65	0.44
54:5:446:A:H2'	54:5:447:G:O4'	2.16	0.44
54:5:453:C:H2'	54:5:454:U:C6	2.52	0.44
54:5:555:G:H2'	54:5:556:G:O4'	2.18	0.44
54:5:558:U:H4'	54:5:559:U:H3'	1.98	0.44
54:5:598:U:H2'	54:5:599:G:C8	2.52	0.44
54:5:1477:A:H5'	54:5:1479:G:N7	2.31	0.44
3:2:31:LYS:HG2	52:3:2536:U:H5'	1.99	0.44
4:9:342:VAL:HG21	4:9:393:ASP:HA	1.99	0.44
4:9:504:TYR:O	4:9:573:SER:HA	2.17	0.44
5:A:34:LYS:HG2	5:A:53:ASN:HA	1.99	0.44
10:F:97:ALA:HB1	10:F:101:ARG:NH2	2.32	0.44
20:P:26:VAL:CG2	20:P:43:LYS:HB3	2.47	0.44
31:f:106:MET:HE2	31:f:106:MET:HB3	1.88	0.44
39:n:9:ARG:HH22	53:4:5:G:H5''	1.81	0.44
52:3:69:U:H1'	52:3:90:G:N2	2.32	0.44
52:3:331:A:H2'	52:3:332:G:O4'	2.17	0.44
52:3:861:U:H5''	52:3:2437:G:P	2.57	0.44
52:3:933:A:H4'	52:3:934:C:O5'	2.17	0.44
52:3:1195:A:H2'	52:3:1196:U:C6	2.53	0.44
52:3:1307:G:H2'	52:3:1308:A:H8	1.82	0.44
52:3:1364:A:H2'	52:3:1365:G:C8	2.51	0.44
52:3:1980:G:H2'	52:3:1981:U:C6	2.52	0.44
52:3:2642:G:H2'	52:3:2643:A:H8	1.81	0.44
52:3:2693:U:H2'	52:3:2694:A:H8	1.81	0.44
52:3:2798:A:H5''	52:3:2799:U:C5	2.52	0.44
54:5:79:A:H8	54:5:79:A:O5'	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:433:C:H2'	54:5:434:U:H6	1.82	0.44
54:5:871:U:H2'	54:5:872:C:H6	1.83	0.44
54:5:974:C:H2'	54:5:974:C:O2	2.17	0.44
54:5:1159:A:H2'	54:5:1160:G:C8	2.52	0.44
4:9:452:GLY:H	4:9:455:HIS:HB3	1.82	0.44
4:9:497:GLN:N	52:3:1920:A:N7	2.65	0.44
4:9:628:GLU:HA	52:3:1101:U:H5''	1.99	0.44
10:F:31:GLU:OE2	10:F:108:ARG:NH2	2.50	0.44
10:F:71:ARG:HB2	10:F:141:HIS:HE1	1.81	0.44
11:G:9:LYS:HG3	54:5:822:A:H5''	1.98	0.44
11:G:49:VAL:HG21	11:G:57:PHE:CD1	2.52	0.44
13:I:50:THR:HG22	13:I:77:LYS:H	1.83	0.44
22:R:15:LEU:HD21	22:R:33:THR:HB	1.99	0.44
30:e:152:ARG:HG2	30:e:156:LYS:HG2	1.99	0.44
40:o:32:ASN:HA	40:o:49:THR:HA	1.98	0.44
52:3:40:A:H2'	52:3:41:C:C6	2.53	0.44
52:3:265:G:H2'	52:3:266:A:H8	1.81	0.44
52:3:618:G:H21	52:3:1284:A:H62	1.65	0.44
52:3:668:A:H2'	52:3:669:A:C4	2.52	0.44
52:3:866:G:H2'	52:3:867:G:H8	1.82	0.44
52:3:947:A:H1'	52:3:2272:C:O2'	2.18	0.44
52:3:957:G:H21	52:3:2277:A:H8	1.66	0.44
52:3:1545:A:H2'	52:3:1546:U:C6	2.53	0.44
52:3:1670:U:H4'	52:3:1768:G:H4'	1.99	0.44
52:3:1699:A:H2'	52:3:1700:G:H8	1.82	0.44
52:3:1714:U:H2'	52:3:1715:A:O4'	2.18	0.44
52:3:2323:U:H2'	52:3:2324:A:C8	2.52	0.44
54:5:169:G:H2'	54:5:170:A:C8	2.53	0.44
54:5:827:C:H2'	54:5:828:U:C6	2.52	0.44
54:5:854:A:H2'	54:5:855:G:O4'	2.17	0.44
2:1:7:ALA:C	2:1:9:LYS:H	2.26	0.44
4:9:96:LEU:HA	4:9:99:LEU:HG	2.00	0.44
7:C:55:GLN:O	7:C:59:ARG:HG2	2.16	0.44
8:D:108:ALA:HB3	8:D:114:ALA:HB2	2.00	0.44
18:N:15:HIS:HB2	18:N:18:ASP:CG	2.43	0.44
24:T:35:HIS:NE2	54:5:1500:G:OP1	2.45	0.44
28:c:210:LYS:HE3	28:c:210:LYS:HB3	1.79	0.44
30:e:61:LEU:HG	30:e:63:GLN:H	1.83	0.44
30:e:62:LYS:HE3	52:3:1070:U:H5''	1.99	0.44
34:i:17:GLN:N	34:i:55:ASP:OD1	2.50	0.44
39:n:46:PHE:C	39:n:48:GLN:H	2.24	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:q:7:CYS:HB3	42:q:12:TYR:HE2	1.82	0.44
52:3:143:A:N7	52:3:144:C:O2	2.50	0.44
52:3:351:G:H2'	52:3:352:C:C6	2.53	0.44
52:3:395:U:H2'	52:3:396:A:C5	2.52	0.44
52:3:860:C:H4'	52:3:2436:G:N7	2.32	0.44
52:3:1307:G:H2'	52:3:1308:A:C8	2.52	0.44
52:3:1476:C:H2'	52:3:1477:A:H8	1.83	0.44
52:3:1577:A:H2'	52:3:1578:A:C8	2.53	0.44
52:3:1662:G:H2'	52:3:1663:G:H8	1.80	0.44
52:3:1698:A:C8	52:3:2734:C:C4	3.06	0.44
52:3:1917:G:H2'	52:3:1918:U:H6	1.83	0.44
52:3:2689:C:N4	52:3:2733:A:N7	2.66	0.44
52:3:2791:U:H2'	52:3:2792:C:C6	2.52	0.44
54:5:94:A:H62	54:5:320:G:H21	1.66	0.44
54:5:331:C:H2'	54:5:332:A:C8	2.53	0.44
54:5:457:A:H2'	54:5:458:G:O4'	2.18	0.44
54:5:500:G:H2'	54:5:501:A:H8	1.83	0.44
54:5:516:C:O2	54:5:527:G:H2'	2.17	0.44
54:5:616:C:H2'	54:5:616:C:O2	2.17	0.44
54:5:858:A:H2'	54:5:859:A:C8	2.52	0.44
54:5:1109:U:H2'	54:5:1110:C:C6	2.51	0.44
54:5:1136:G:O6	54:5:1157:G:O6	2.34	0.44
54:5:1332:U:H2'	54:5:1333:C:O4'	2.18	0.44
54:5:1471:C:H1'	54:5:1492:G:H22	1.82	0.44
2:1:14:THR:OG1	2:1:17:GLY:O	2.29	0.44
2:1:57:ASN:OD1	2:1:58:LEU:N	2.51	0.44
4:9:52:TRP:CD1	4:9:53:MET:H	2.35	0.44
4:9:85:HIS:ND1	4:9:86:VAL:HG22	2.32	0.44
4:9:340:LYS:NZ	4:9:347:LYS:HE2	2.32	0.44
4:9:508:LYS:HD2	4:9:565:ASP:HB2	2.00	0.44
10:F:137:LYS:HE3	10:F:137:LYS:HB3	1.89	0.44
11:G:53:TYR:O	11:G:84:ILE:HD11	2.18	0.44
12:H:71:GLY:N	54:5:1225:A:OP1	2.50	0.44
13:I:78:ARG:NH2	54:5:1127:A:H1'	2.33	0.44
23:S:64:ARG:HG3	23:S:64:ARG:HH21	1.82	0.44
27:b:64:LYS:HA	27:b:67:GLN:NE2	2.33	0.44
27:b:228:LYS:HG2	40:o:21:TYR:HB2	1.98	0.44
28:c:128:VAL:HG11	28:c:198:LEU:HB3	2.00	0.44
34:i:42:LYS:NZ	41:p:62:LEU:HD11	2.33	0.44
34:i:80:HIS:NE2	34:i:83:TYR:O	2.50	0.44
37:l:62:GLY:HA2	37:l:108:ASN:O	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:o:30:GLU:HG2	40:o:91:LYS:HE3	1.98	0.44
52:3:482:G:H1'	52:3:485:A:C2	2.53	0.44
52:3:518:A:H1'	52:3:541:G:C6	2.53	0.44
52:3:611:A:H2'	52:3:2025:C:H5''	1.99	0.44
52:3:961:U:H2'	52:3:962:U:C6	2.52	0.44
52:3:1016:A:C2	52:3:1171:G:H4'	2.53	0.44
52:3:1333:C:H2'	52:3:1334:U:C6	2.53	0.44
52:3:1675:A:C5	52:3:1676:G:C5	3.06	0.44
52:3:1743:U:O2'	52:3:2863:G:H1'	2.18	0.44
52:3:1760:G:H2'	52:3:1761:C:H3'	1.99	0.44
52:3:1766:A:O2'	52:3:2722:G:O2'	2.19	0.44
52:3:1797:C:H2'	52:3:1798:A:C8	2.52	0.44
52:3:1911:G:H21	52:3:1935:A:H2	1.63	0.44
52:3:2082:U:O4'	52:3:2605:G:N2	2.50	0.44
52:3:2325:U:H2'	52:3:2326:G:C8	2.52	0.44
52:3:2812:U:O2'	52:3:2894:G:N2	2.50	0.44
52:3:2879:U:H2'	52:3:2880:A:C8	2.53	0.44
54:5:821:U:H2'	54:5:822:A:C8	2.52	0.44
54:5:963:U:OP1	54:5:1053:U:H4'	2.17	0.44
54:5:1056:U:P	54:5:1165:G:H22	2.40	0.44
54:5:1115:G:HO2'	54:5:1116:U:H6	1.64	0.44
54:5:1230:G:H3'	54:5:1254:A:H61	1.83	0.44
54:5:1394:G:O6	54:5:1456:U:O2	2.36	0.44
55:7:70:G:H2'	55:7:71:A:C8	2.53	0.44
2:1:14:THR:OG1	2:1:18:GLN:HB2	2.18	0.44
4:9:404:PRO:HB2	4:9:449:ALA:HB1	1.99	0.44
4:9:496:LYS:HB3	52:3:1920:A:N7	2.33	0.44
6:B:194:THR:HG23	6:B:196:TYR:H	1.83	0.44
15:K:30:LEU:C	15:K:32:ASN:H	2.26	0.44
28:c:25:ILE:HG13	28:c:120:LEU:HD23	2.00	0.44
43:r:57:ASN:ND2	52:3:529:G:H21	2.16	0.44
48:w:10:LYS:HZ2	48:w:12:SER:HB3	1.81	0.44
52:3:338:G:H2'	52:3:339:U:C6	2.53	0.44
52:3:432:G:H2'	52:3:433:A:C8	2.51	0.44
52:3:587:U:H2'	52:3:588:G:O4'	2.18	0.44
52:3:756:A:H2'	52:3:757:A:H8	1.81	0.44
52:3:1046:A:H1'	52:3:1188:C:H1'	1.98	0.44
52:3:1306:G:H2'	52:3:1307:G:C8	2.52	0.44
52:3:1520:A:H2'	52:3:1521:A:C8	2.53	0.44
52:3:2400:A:N7	52:3:2432:C:C4	2.86	0.44
53:4:103:C:H2'	53:4:104:C:C6	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:340:A:H8	54:5:340:A:OP1	2.01	0.44
54:5:456:U:H2'	54:5:457:A:C8	2.53	0.44
54:5:947:U:OP1	54:5:967:C:N4	2.46	0.44
54:5:1330:A:N3	54:5:1331:A:C8	2.85	0.44
2:1:52:PHE:O	2:1:56:GLY:N	2.47	0.44
4:9:317:ASP:HB2	4:9:323:LEU:HD11	1.99	0.44
4:9:414:THR:H	4:9:417:ASP:HB3	1.83	0.44
5:A:172:LEU:HD12	5:A:173:PRO:HD2	2.00	0.44
7:C:111:ARG:HE	54:5:403:A:C5'	2.30	0.44
8:D:117:LYS:HZ1	54:5:1063:G:H5''	1.83	0.44
9:E:40:LEU:HD11	9:E:59:ARG:HB2	1.99	0.44
14:J:63:VAL:HA	14:J:66:THR:HG22	2.00	0.44
16:L:17:ILE:O	16:L:20:THR:OG1	2.30	0.44
19:O:25:LYS:HD3	54:5:605:A:C4	2.53	0.44
27:b:7:PHE:CE2	27:b:206:LEU:HD13	2.53	0.44
28:c:70:HIS:HA	52:3:2066:A:H4'	1.99	0.44
34:i:95:MET:SD	34:i:103:LEU:HD22	2.58	0.44
41:p:94:LEU:HD23	42:q:4:ILE:HG12	2.00	0.44
45:t:44:ARG:HD3	52:3:516:A:OP2	2.18	0.44
46:u:34:ARG:HG2	52:3:2364:A:H4'	1.98	0.44
52:3:196:G:H2'	52:3:197:U:O4'	2.16	0.44
52:3:214:C:H4'	52:3:1395:A:H1'	2.00	0.44
52:3:317:U:H2'	52:3:318:U:C6	2.53	0.44
52:3:731:A:H2'	52:3:732:G:H8	1.81	0.44
52:3:935:U:H2'	52:3:936:G:O4'	2.16	0.44
52:3:1033:A:H2'	52:3:1034:A:C8	2.53	0.44
52:3:1100:U:H2'	52:3:1101:U:C6	2.53	0.44
52:3:1322:A:H3'	52:3:1323:A:H8	1.82	0.44
52:3:1390:C:H2'	52:3:1391:U:H6	1.82	0.44
52:3:1446:G:H2'	52:3:1612:U:O4	2.17	0.44
52:3:1529:U:H2'	52:3:1530:G:H8	1.83	0.44
52:3:1549:U:H3'	52:3:1550:G:H8	1.83	0.44
52:3:1641:A:N6	52:3:1656:A:OP2	2.49	0.44
52:3:1702:A:H5'	52:3:1703:A:C8	2.53	0.44
52:3:1894:U:H2'	52:3:1895:G:O4'	2.18	0.44
52:3:1901:C:N4	52:3:1902:C:N4	2.65	0.44
52:3:2079:G:H2'	52:3:2080:C:H6	1.83	0.44
52:3:2108:C:N4	52:3:2109:A:H62	2.13	0.44
52:3:2149:U:H3	52:3:2156:G:H1	1.66	0.44
52:3:2639:G:H2'	52:3:2640:A:C8	2.53	0.44
52:3:2755:G:H1	52:3:2762:U:H2'	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:2832:G:H2'	52:3:2833:A:H8	1.82	0.44
52:3:2846:A:H2'	52:3:2847:C:C6	2.53	0.44
54:5:310:C:H2'	54:5:311:A:C8	2.53	0.44
54:5:473:A:H2'	54:5:474:G:C2	2.53	0.44
54:5:517:C:N4	54:5:527:G:O2'	2.47	0.44
54:5:616:C:H5''	54:5:618:U:OP1	2.17	0.44
54:5:711:G:H2'	54:5:712:A:H8	1.76	0.44
54:5:753:C:H2'	54:5:754:U:C6	2.53	0.44
54:5:973:A:C5	54:5:974:C:H5	2.36	0.44
54:5:1197:G:H2'	54:5:1198:C:C6	2.53	0.44
54:5:1359:C:H2'	54:5:1360:G:H8	1.81	0.44
4:9:152:GLN:HE22	4:9:159:ALA:H	1.66	0.44
10:F:34:LYS:HE3	10:F:34:LYS:HB2	1.66	0.44
22:R:34:TRP:CD1	22:R:34:TRP:O	2.71	0.44
28:c:36:ASP:HA	28:c:39:LEU:HD12	1.99	0.44
35:j:14:THR:HG21	35:j:86:LEU:HD23	1.99	0.44
36:k:35:GLY:H	52:3:978:G:H5''	1.83	0.44
36:k:94:ASN:O	36:k:98:LEU:HG	2.18	0.44
41:p:2:ARG:HH12	52:3:485:A:H4'	1.82	0.44
44:s:61:LYS:O	44:s:63:THR:HG23	2.18	0.44
48:w:11:SER:HA	48:w:15:LEU:HD11	2.00	0.44
50:y:28:SER:HB2	50:y:37:LYS:HG3	2.00	0.44
52:3:46:A:H2'	52:3:47:G:C8	2.53	0.44
52:3:71:C:H2'	52:3:72:G:H8	1.82	0.44
52:3:134:U:H2'	52:3:135:A:C8	2.52	0.44
52:3:175:A:H2'	52:3:176:U:C6	2.52	0.44
52:3:262:G:H2'	52:3:263:C:H6	1.82	0.44
52:3:341:G:N2	52:3:343:A:H3'	2.33	0.44
52:3:667:A:OP1	52:3:668:A:N6	2.50	0.44
52:3:710:A:N3	52:3:2451:C:O2'	2.40	0.44
52:3:917:G:H2'	52:3:918:G:C8	2.51	0.44
52:3:1336:A:H3'	52:3:1337:G:H8	1.83	0.44
52:3:1439:U:H2'	52:3:1440:U:C6	2.52	0.44
52:3:1873:A:H3'	52:3:1874:G:H8	1.83	0.44
52:3:2200:U:H3'	52:3:2201:G:H8	1.83	0.44
53:4:24:A:H2'	53:4:25:A:O4'	2.18	0.44
54:5:92:G:N1	54:5:93:A:H1'	2.33	0.44
54:5:169:G:H1	54:5:196:G:H22	1.65	0.44
54:5:170:A:N6	54:5:196:G:H1	2.16	0.44
54:5:210:G:H2'	54:5:211:G:H8	1.83	0.44
54:5:336:U:H2'	54:5:337:C:C6	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:515:G:H4'	54:5:517:C:C2	2.53	0.44
54:5:1133:A:N1	54:5:1156:G:C5	2.86	0.44
54:5:1285:G:H2'	54:5:1286:G:C8	2.53	0.44
55:7:11:G:C6	55:7:27:A:C5	3.06	0.44
4:9:185:PHE:HB2	4:9:265:LYS:HD3	2.00	0.43
13:I:16:LEU:HG	13:I:24:LEU:HD11	1.99	0.43
16:L:27:LEU:O	16:L:31:GLN:HG2	2.18	0.43
16:L:112:PRO:HB3	54:5:1307:A:H4'	2.00	0.43
27:b:112:ALA:HB2	27:b:205:VAL:HG23	1.99	0.43
29:d:63:GLN:NE2	29:d:89:VAL:HG13	2.33	0.43
35:j:97:ARG:NH2	54:5:334:A:O5'	2.50	0.43
44:s:23:GLU:O	44:s:25:LYS:HG2	2.18	0.43
44:s:41:LYS:HE2	44:s:41:LYS:HB3	1.82	0.43
45:t:10:VAL:HG21	45:t:74:LEU:HB3	2.00	0.43
52:3:658:G:H2'	52:3:659:C:C6	2.52	0.43
52:3:833:C:H2'	52:3:834:G:C8	2.53	0.43
52:3:858:A:H2'	52:3:859:G:H8	1.81	0.43
52:3:889:G:H2'	52:3:890:U:C6	2.52	0.43
52:3:1128:G:N2	52:3:1134:G:O6	2.51	0.43
52:3:2261:G:H2'	52:3:2262:C:O4'	2.17	0.43
52:3:2306:A:N6	52:3:2326:G:HO2'	2.15	0.43
52:3:2310:C:H2'	52:3:2311:G:H8	1.77	0.43
52:3:2405:G:H2'	52:3:2406:U:C6	2.52	0.43
52:3:2534:G:H2'	52:3:2535:C:H6	1.83	0.43
52:3:2635:G:N2	52:3:2785:G:O5'	2.46	0.43
52:3:2794:U:H2'	52:3:2795:C:C6	2.53	0.43
54:5:113:C:H2'	54:5:114:C:O4'	2.17	0.43
54:5:405:C:H2'	54:5:406:G:O4'	2.18	0.43
54:5:683:G:H22	54:5:700:G:H1'	1.83	0.43
54:5:909:A:H2'	54:5:911:G:H8	1.83	0.43
54:5:948:U:C2	54:5:949:G:C8	3.05	0.43
54:5:961:G:H2'	54:5:961:G:N3	2.33	0.43
54:5:986:U:O2'	54:5:1187:U:O4'	2.30	0.43
4:9:49:VAL:HG11	4:9:63:ILE:HD11	2.00	0.43
4:9:131:ILE:HG21	4:9:278:LEU:HD21	2.00	0.43
5:A:83:LEU:N	5:A:175:LEU:O	2.47	0.43
8:D:117:LYS:NZ	54:5:1063:G:H5''	2.34	0.43
8:D:136:ILE:HG22	8:D:178:ILE:HD11	1.98	0.43
8:D:181:LYS:HA	8:D:181:LYS:HD2	1.87	0.43
9:E:107:LEU:O	9:E:111:LYS:HG2	2.18	0.43
11:G:35:THR:HG22	11:G:72:PHE:HE1	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:G:92:LYS:N	11:G:95:LEU:O	2.51	0.43
15:K:22:PRO:HB2	15:K:26:TYR:CZ	2.53	0.43
16:L:67:GLY:O	16:L:71:ARG:HG3	2.18	0.43
20:P:3:ARG:HB3	54:5:115:A:H61	1.84	0.43
21:Q:60:LEU:HD22	21:Q:90:LEU:HG	1.99	0.43
24:T:37:ARG:O	24:T:41:ARG:N	2.47	0.43
27:b:51:LEU:HD21	27:b:81:LEU:HD22	2.00	0.43
27:b:152:GLY:HA2	52:3:2580:A:H62	1.83	0.43
35:j:12:ASP:HB3	35:j:85:VAL:HG23	1.99	0.43
36:k:34:ARG:NH2	52:3:620:G:H1	2.16	0.43
36:k:64:LYS:HE3	36:k:64:LYS:HB2	1.82	0.43
37:l:4:PRO:HB3	52:3:907:A:H4'	1.99	0.43
47:v:20:HIS:CG	47:v:21:SER:N	2.83	0.43
52:3:69:U:C2	52:3:70:G:C8	3.05	0.43
52:3:99:C:H2'	52:3:100:U:H6	1.83	0.43
52:3:244:G:O2'	52:3:261:A:N6	2.48	0.43
52:3:450:C:O2'	52:3:1871:U:O2	2.36	0.43
52:3:1079:U:C2	52:3:1147:G:N1	2.86	0.43
52:3:1599:C:O2'	52:3:1600:A:O5'	2.36	0.43
52:3:1921:C:H6	54:5:1384:A:H4'	1.82	0.43
52:3:2055:A:N1	52:3:2056:A:N6	2.66	0.43
52:3:2336:A:O2'	52:3:2337:U:H5'	2.17	0.43
52:3:2392:U:H5''	52:3:2394:A:OP1	2.17	0.43
52:3:2439:U:N3	52:3:2442:A:OP2	2.44	0.43
54:5:60:A:H1'	54:5:350:G:C2	2.53	0.43
54:5:334:A:H2'	54:5:335:C:H6	1.83	0.43
54:5:448:A:H1'	54:5:450:U:C4	2.53	0.43
54:5:590:G:H2'	54:5:591:A:H8	1.83	0.43
54:5:1133:A:C6	54:5:1156:G:C6	3.06	0.43
54:5:1223:A:H2'	54:5:1224:C:C6	2.53	0.43
4:9:164:LEU:HB2	4:9:176:ILE:HB	2.00	0.43
4:9:414:THR:HG22	4:9:416:ALA:H	1.84	0.43
4:9:496:LYS:NZ	52:3:1920:A:H5'	2.33	0.43
7:C:168:GLU:HG2	7:C:177:THR:HB	2.01	0.43
12:H:87:ARG:O	12:H:91:GLN:HG2	2.19	0.43
12:H:120:LEU:HD22	12:H:124:ARG:HA	2.00	0.43
15:K:113:GLY:H	15:K:117:THR:CB	2.30	0.43
26:a:178:LYS:HG3	26:a:195:GLU:OE1	2.19	0.43
28:c:63:LYS:HE2	52:3:831:U:H5''	1.99	0.43
36:k:34:ARG:NH2	52:3:620:G:H22	2.17	0.43
43:r:77:ASN:HB3	52:3:26:G:H1'	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:t:78:ASP:HA	45:t:104:PHE:CZ	2.52	0.43
52:3:73:A:H5''	52:3:75:A:C8	2.53	0.43
52:3:81:C:H2'	52:3:82:G:C8	2.53	0.43
52:3:282:C:C4	52:3:284:U:H5'	2.53	0.43
52:3:767:C:H2'	52:3:768:G:O4'	2.17	0.43
52:3:788:G:H2'	52:3:789:A:C8	2.53	0.43
52:3:816:A:H5''	52:3:817:A:N7	2.33	0.43
52:3:821:C:H2'	52:3:822:C:C6	2.53	0.43
52:3:937:A:H2'	52:3:938:A:O4'	2.18	0.43
52:3:1177:A:C5	52:3:1179:G:C8	3.06	0.43
52:3:1269:C:H2'	52:3:1270:C:H6	1.83	0.43
52:3:1292:A:C6	52:3:1293:U:C4	3.07	0.43
52:3:1297:U:O2'	52:3:1298:A:OP1	2.34	0.43
52:3:1299:A:H2'	52:3:1300:C:C6	2.52	0.43
52:3:1706:C:O2'	52:3:1707:U:OP1	2.31	0.43
52:3:1809:A:H2'	52:3:1810:A:C8	2.53	0.43
52:3:2828:C:O5'	52:3:2829:G:N2	2.51	0.43
52:3:2851:U:H2'	52:3:2852:G:O4'	2.18	0.43
54:5:335:C:H2'	54:5:336:U:H6	1.82	0.43
54:5:474:G:O2'	54:5:475:U:O4'	2.19	0.43
54:5:1230:G:O2'	54:5:1232:C:OP1	2.36	0.43
54:5:1432:A:H2'	54:5:1433:G:H8	1.83	0.43
55:7:69:A:H2'	55:7:70:G:C8	2.52	0.43
6:B:39:LYS:HB2	6:B:95:ILE:HD11	2.00	0.43
6:B:155:LEU:HD23	6:B:202:LYS:HE2	2.00	0.43
7:C:111:ARG:HE	54:5:403:A:H5''	1.83	0.43
10:F:54:LYS:HA	10:F:54:LYS:HD2	1.72	0.43
13:I:45:PRO:HB2	13:I:78:ARG:NH1	2.33	0.43
16:L:107:ARG:H	16:L:107:ARG:HD3	1.84	0.43
24:T:51:LYS:HE2	54:5:1509:A:C6	2.54	0.43
26:a:42:LYS:HE2	26:a:43:LYS:O	2.19	0.43
29:d:61:SER:O	49:x:6:HIS:NE2	2.52	0.43
37:l:30:GLY:HA2	37:l:65:TRP:CZ3	2.52	0.43
37:l:86:GLY:N	52:3:2284:G:OP2	2.51	0.43
52:3:343:A:N6	52:3:1240:U:O2'	2.52	0.43
52:3:662:U:H5''	52:3:663:A:O5'	2.19	0.43
52:3:684:A:H2'	52:3:685:G:H8	1.83	0.43
52:3:840:G:OP2	52:3:841:C:N4	2.45	0.43
52:3:1050:A:C6	52:3:1183:A:N6	2.87	0.43
52:3:2092:U:H2'	52:3:2093:U:H6	1.84	0.43
52:3:2218:U:H3	52:3:2220:A:HO2'	1.63	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:2224:A:H2'	52:3:2225:G:H8	1.82	0.43
52:3:2274:A:H4'	52:3:2275:A:N3	2.33	0.43
52:3:2477:A:H2'	52:3:2478:G:O4'	2.17	0.43
52:3:2522:U:H2'	52:3:2523:C:C6	2.53	0.43
52:3:2795:C:H2'	52:3:2796:C:C6	2.53	0.43
52:3:2819:C:C2	52:3:2820:G:C8	3.06	0.43
53:4:22:G:O2'	53:4:24:A:N6	2.49	0.43
54:5:40:G:C5	54:5:400:G:N2	2.86	0.43
54:5:120:A:H5''	54:5:122:C:H41	1.82	0.43
54:5:135:A:H2	54:5:158:A:H62	1.66	0.43
54:5:193:G:H2'	54:5:194:U:C6	2.54	0.43
54:5:1297:G:O2'	54:5:1336:C:O2	2.35	0.43
55:7:62:C:H2'	55:7:63:U:C6	2.54	0.43
55:8:62:C:H2'	55:8:63:U:C6	2.54	0.43
4:9:233:LYS:HD2	4:9:233:LYS:HA	1.81	0.43
14:J:109:ILE:HG12	54:5:715:A:C2	2.53	0.43
15:K:27:ASN:H	15:K:37:ASN:HA	1.82	0.43
15:K:96:ARG:HH21	15:K:109:HIS:CE1	2.36	0.43
18:N:59:LYS:HA	18:N:62:ARG:HD2	2.01	0.43
27:b:99:GLN:NE2	27:b:186:GLU:HB3	2.33	0.43
29:d:146:ILE:HG12	29:d:148:ARG:H	1.83	0.43
30:e:4:ILE:HG23	30:e:7:ARG:HD2	1.99	0.43
30:e:146:GLN:CD	52:3:2752:G:H21	2.26	0.43
33:h:32:MET:O	33:h:36:THR:OG1	2.24	0.43
36:k:90:LEU:HD22	36:k:101:LYS:HE3	2.00	0.43
41:p:65:ASN:O	41:p:69:ARG:HG2	2.18	0.43
48:w:7:LEU:HB2	48:w:8:ARG:NH1	2.34	0.43
52:3:354:C:H4'	52:3:356:A:C8	2.54	0.43
52:3:450:C:O2'	52:3:1871:U:H1'	2.18	0.43
52:3:1136:U:H2'	52:3:1137:C:C6	2.52	0.43
52:3:1462:A:O2'	52:3:1463:G:O4'	2.37	0.43
52:3:1550:G:H2'	52:3:1551:U:C6	2.53	0.43
52:3:1657:G:H2'	52:3:1658:U:O4'	2.18	0.43
52:3:1734:A:C2	52:3:1773:A:H5''	2.54	0.43
52:3:2015:C:H2'	52:3:2016:G:H8	1.83	0.43
52:3:2377:A:H2'	52:3:2378:G:C8	2.54	0.43
54:5:407:A:N6	54:5:427:A:H62	2.17	0.43
54:5:421:G:H2'	54:5:422:A:C8	2.54	0.43
54:5:470:U:H2'	54:5:471:A:C8	2.53	0.43
54:5:612:G:N1	54:5:624:U:N3	2.39	0.43
54:5:705:A:H2'	54:5:706:U:C6	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:915:U:H1'	54:5:1071:A:H2'	2.00	0.43
54:5:1096:A:H2'	54:5:1097:G:H8	1.84	0.43
54:5:1265:U:H2'	54:5:1266:U:C6	2.53	0.43
54:5:1268:G:H2'	54:5:1269:U:C6	2.54	0.43
55:8:70:G:H2'	55:8:71:A:C8	2.53	0.43
5:A:84:PHE:CD2	5:A:229:MET:HE1	2.54	0.43
6:B:13:GLY:HA3	17:M:57:LYS:HG2	2.00	0.43
7:C:97:LEU:HD11	7:C:134:ILE:HG12	2.01	0.43
9:E:47:TYR:OH	21:Q:94:ARG:O	2.23	0.43
13:I:16:LEU:HD21	13:I:78:ARG:HB2	1.99	0.43
22:R:69:HIS:ND1	22:R:73:GLU:OE1	2.51	0.43
26:a:70:ASP:OD2	26:a:70:ASP:N	2.51	0.43
26:a:137:PRO:O	26:a:141:ILE:HG13	2.19	0.43
27:b:158:ARG:NE	52:3:2032:G:OP1	2.52	0.43
27:b:185:ASP:O	27:b:189:MET:N	2.51	0.43
30:e:19:ASN:OD1	30:e:26:ALA:HB3	2.18	0.43
35:j:88:LYS:NZ	35:j:94:ARG:HA	2.34	0.43
37:l:66:ILE:HG22	37:l:68:ILE:H	1.83	0.43
40:o:54:ARG:HA	40:o:54:ARG:HD2	1.65	0.43
42:q:47:ALA:HB3	42:q:48:PRO:HD3	1.99	0.43
44:s:36:SER:O	44:s:40:VAL:HG23	2.18	0.43
45:t:23:ILE:O	45:t:37:GLU:N	2.40	0.43
52:3:382:U:H2'	52:3:383:U:O4'	2.19	0.43
52:3:633:G:H2'	52:3:634:C:C6	2.54	0.43
52:3:675:U:O4	52:3:685:G:O6	2.36	0.43
52:3:775:C:H5''	52:3:1791:A:O5'	2.19	0.43
52:3:893:A:N6	52:3:958:C:N3	2.66	0.43
52:3:897:A:H3'	52:3:898:A:C8	2.49	0.43
52:3:1010:G:OP1	52:3:1218:G:O2'	2.22	0.43
52:3:1023:C:O2'	52:3:1036:A:N3	2.46	0.43
52:3:1406:A:O2'	52:3:1408:G:N7	2.34	0.43
52:3:1699:A:H2'	52:3:1700:G:C8	2.53	0.43
52:3:2337:U:H2'	52:3:2338:G:C8	2.54	0.43
52:3:2416:U:H2'	52:3:2417:G:H8	1.84	0.43
52:3:2529:C:H2'	52:3:2530:U:C6	2.54	0.43
52:3:2657:C:H2'	52:3:2658:U:C6	2.54	0.43
52:3:2670:A:H8	52:3:2671:G:C8	2.36	0.43
52:3:2752:G:N1	52:3:2768:U:C2	2.87	0.43
53:4:6:U:H3	53:4:102:A:H61	1.65	0.43
54:5:141:A:H2'	54:5:142:G:C8	2.54	0.43
54:5:211:G:O2'	54:5:464:A:N6	2.48	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:514:U:O2	54:5:531:A:C5	2.70	0.43
54:5:827:C:H2'	54:5:828:U:H6	1.84	0.43
54:5:941:A:H2'	54:5:942:G:C8	2.49	0.43
54:5:944:A:H2'	54:5:945:U:C6	2.54	0.43
54:5:1390:G:H2'	54:5:1391:A:C8	2.52	0.43
55:8:11:G:C6	55:8:27:A:C5	3.06	0.43
2:1:50:SER:OG	52:3:870:A:OP1	2.37	0.43
5:A:122:THR:HA	5:A:125:ILE:HG12	2.01	0.43
5:A:132:LYS:O	5:A:135:GLU:HG2	2.19	0.43
7:C:50:TYR:CE2	54:5:506:U:H4'	2.53	0.43
7:C:142:VAL:C	7:C:143:ARG:HD3	2.44	0.43
9:E:5:ILE:HB	9:E:60:TRP:HD1	1.84	0.43
13:I:62:HIS:CG	13:I:63:VAL:H	2.37	0.43
16:L:16:GLU:O	16:L:20:THR:HG23	2.18	0.43
16:L:39:ILE:HD11	16:L:56:ILE:HD11	2.00	0.43
26:a:7:ILE:HB	52:3:741:A:H4'	2.00	0.43
34:i:77:TRP:HE1	52:3:1174:G:P	2.42	0.43
37:l:22:LYS:H	37:l:98:LYS:HZ2	1.66	0.43
49:x:43:HIS:NE2	49:x:45:PHE:HB3	2.33	0.43
52:3:172:U:H2'	52:3:173:C:H6	1.84	0.43
52:3:209:G:H1'	52:3:210:U:H5	1.84	0.43
52:3:1244:A:N6	52:3:1265:G:C2	2.87	0.43
52:3:1472:C:H2'	52:3:1473:C:O4'	2.18	0.43
52:3:1641:A:H5'	52:3:1642:G:N7	2.33	0.43
52:3:1714:U:H3'	52:3:1715:A:H8	1.83	0.43
52:3:2651:G:C2	52:3:2652:U:O4	2.72	0.43
52:3:2836:U:H3'	52:3:2837:U:C6	2.54	0.43
54:5:189:C:H2'	54:5:190:A:H8	1.83	0.43
54:5:1265:U:C2	54:5:1266:U:C5	3.07	0.43
3:2:1:MET:HB2	3:2:33:LYS:HE2	2.00	0.43
4:9:338:TYR:CE1	4:9:349:ARG:HB2	2.54	0.43
4:9:634:ASP:OD2	4:9:634:ASP:N	2.52	0.43
7:C:114:ARG:NH2	7:C:132:PRO:HG2	2.34	0.43
10:F:2:ARG:HB2	54:5:1355:U:C5	2.53	0.43
10:F:68:VAL:HG13	10:F:99:ALA:HB1	2.00	0.43
18:N:76:ARG:HA	18:N:76:ARG:NE	2.34	0.43
20:P:68:PRO:HB3	20:P:74:ARG:NH2	2.33	0.43
24:T:43:ARG:HH22	54:5:1503:U:H5	1.67	0.43
27:b:14:SER:C	27:b:26:ILE:HB	2.44	0.43
27:b:18:THR:HA	27:b:222:LEU:HA	2.01	0.43
31:f:42:LYS:HZ3	31:f:47:ARG:HA	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:k:77:TRP:CD2	36:k:130:LYS:HD2	2.54	0.43
38:m:103:LEU:HD11	38:m:115:ILE:HB	2.01	0.43
44:s:53:LEU:HB2	48:w:87:TRP:HH2	1.83	0.43
45:t:43:THR:HB	45:t:62:LYS:HZ3	1.83	0.43
45:t:72:SER:HB3	52:3:362:U:H1'	2.00	0.43
52:3:155:A:N1	52:3:178:A:N6	2.66	0.43
52:3:194:A:H3'	52:3:208:A:H61	1.84	0.43
52:3:336:C:H2'	52:3:337:U:C6	2.54	0.43
52:3:435:U:H2'	52:3:436:G:O4'	2.18	0.43
52:3:572:G:N1	52:3:588:G:N3	2.67	0.43
52:3:590:U:H2'	52:3:591:G:H8	1.83	0.43
52:3:631:A:H2'	52:3:632:A:H8	1.84	0.43
52:3:1327:G:H1	52:3:1673:U:H3'	1.83	0.43
52:3:1802:C:H2'	52:3:1803:U:C6	2.54	0.43
52:3:2014:U:H2'	52:3:2015:C:C6	2.54	0.43
52:3:2106:G:N2	52:3:2198:G:H22	2.17	0.43
52:3:2174:G:H2'	52:3:2175:U:C6	2.54	0.43
52:3:2407:G:H2'	52:3:2408:G:C8	2.54	0.43
54:5:336:U:H2'	54:5:337:C:H6	1.84	0.43
54:5:735:C:H2'	54:5:736:U:C6	2.54	0.43
54:5:905:U:H2'	54:5:906:C:C6	2.53	0.43
54:5:929:C:O2	54:5:933:A:N6	2.51	0.43
54:5:989:A:N7	54:5:1191:U:H4'	2.34	0.43
54:5:1138:U:H2'	54:5:1139:A:C8	2.54	0.43
54:5:1260:U:N3	54:5:1262:A:H5'	2.34	0.43
55:7:69:A:H2'	55:7:70:G:H8	1.84	0.43
6:B:49:ARG:HD2	6:B:121:ARG:HD3	2.01	0.43
12:H:48:GLN:NE2	12:H:52:GLN:OE1	2.45	0.43
12:H:129:PHE:HB3	54:5:1316:C:O3'	2.18	0.43
20:P:12:ILE:HD13	20:P:60:LYS:HB3	2.00	0.43
23:S:12:ARG:HD2	54:5:88:A:OP1	2.18	0.43
29:d:132:ILE:HG23	29:d:152:PHE:H	1.84	0.43
31:f:6:LYS:HG2	31:f:7:GLN:HB3	2.00	0.43
31:f:51:LEU:O	31:f:55:GLN:HG2	2.18	0.43
35:j:25:LEU:HD12	35:j:25:LEU:HA	1.93	0.43
39:n:35:SER:HB3	53:4:26:C:OP1	2.19	0.43
39:n:91:PHE:CZ	39:n:93:THR:HB	2.54	0.43
43:r:102:ASN:HD21	52:3:27:U:H5'	1.84	0.43
44:s:86:PRO:HG3	48:w:87:TRP:NE1	2.33	0.43
46:u:79:GLY:CA	46:u:98:VAL:O	2.60	0.43
49:x:5:PHE:HB3	49:x:6:HIS:H	1.74	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1210:A:OP2	52:3:1210:A:H8	2.02	0.43
52:3:1231:G:H2'	52:3:1232:U:C6	2.54	0.43
52:3:1335:A:N6	52:3:1640:G:H2'	2.34	0.43
52:3:1384:C:H2'	52:3:1385:U:H6	1.84	0.43
52:3:1766:A:N1	52:3:2705:G:H1'	2.33	0.43
52:3:2405:G:H2'	52:3:2406:U:H6	1.83	0.43
52:3:2490:A:H2'	52:3:2491:C:O4'	2.18	0.43
54:5:71:A:H2'	54:5:72:A:H8	1.84	0.43
54:5:81:A:H2'	54:5:82:C:O4'	2.19	0.43
54:5:543:C:H2'	54:5:544:A:H8	1.84	0.43
54:5:606:A:H2'	54:5:607:A:O4'	2.19	0.43
54:5:683:G:N2	54:5:700:G:H1'	2.34	0.43
54:5:822:A:H2'	54:5:823:C:H6	1.84	0.43
54:5:932:A:H2'	54:5:933:A:H8	1.84	0.43
54:5:1008:G:O6	54:5:1014:A:N6	2.51	0.43
54:5:1246:A:H5'	54:5:1288:C:H5''	2.01	0.43
54:5:1323:A:H3'	54:5:1324:A:H8	1.83	0.43
4:9:125:ARG:NH2	4:9:399:MET:HG3	2.34	0.43
4:9:340:LYS:HG3	4:9:391:LYS:HA	2.00	0.43
6:B:117:ARG:HH22	6:B:189:LEU:H	1.67	0.43
6:B:193:GLN:NE2	54:5:1180:U:H4'	2.34	0.43
7:C:90:PHE:HA	7:C:93:LEU:HG	2.00	0.43
10:F:35:LYS:O	10:F:39:GLN:CB	2.67	0.43
12:H:15:SER:HB2	12:H:72:GLY:HA3	2.00	0.43
13:I:46:LEU:HD11	54:5:1116:U:C5	2.54	0.43
15:K:16:LYS:HA	15:K:16:LYS:HD2	1.86	0.43
19:O:35:PRO:O	54:5:447:G:H4'	2.19	0.43
22:R:52:HIS:O	54:5:1195:G:O2'	2.36	0.43
27:b:113:ILE:HG12	27:b:173:LYS:HZ3	1.84	0.43
37:l:34:LEU:HD13	37:l:131:ILE:HD13	2.01	0.43
40:o:101:ILE:HG22	40:o:103:TYR:CZ	2.54	0.43
43:r:13:SER:HB3	43:r:16:LYS:HB2	2.01	0.43
45:t:47:LYS:NZ	52:3:518:A:O5'	2.51	0.43
45:t:95:PRO:HG2	45:t:98:ASN:HB3	2.01	0.43
49:x:17:ALA:HB3	49:x:37:ASP:HA	2.00	0.43
52:3:236:G:N2	52:3:456:G:H5'	2.33	0.43
52:3:263:C:H2'	52:3:264:G:H8	1.84	0.43
52:3:356:A:H5'	52:3:374:A:H1'	2.01	0.43
52:3:465:A:OP2	52:3:465:A:H8	2.02	0.43
52:3:629:G:O6	52:3:696:U:O4	2.37	0.43
52:3:674:G:H2'	52:3:675:U:C6	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1246:U:H2'	52:3:1247:C:C6	2.54	0.43
52:3:1890:U:O2'	52:3:1891:A:O5'	2.25	0.43
52:3:2838:G:O6	52:3:2883:A:O2'	2.24	0.43
54:5:388:G:H1'	54:5:479:A:H2	1.84	0.43
54:5:622:A:H2'	54:5:623:G:C8	2.54	0.43
54:5:737:U:H2'	54:5:738:A:C8	2.51	0.43
54:5:821:U:H2'	54:5:822:A:H8	1.82	0.43
54:5:862:C:H2'	54:5:863:A:O4'	2.19	0.43
54:5:1346:G:H2'	54:5:1347:U:H6	1.84	0.43
5:A:91:TYR:CZ	5:A:222:PRO:HB2	2.54	0.42
10:F:44:GLY:HA3	10:F:116:LEU:HD12	2.01	0.42
20:P:67:ARG:NH1	54:5:261:G:OP1	2.52	0.42
22:R:36:ARG:NE	22:R:75:SER:OG	2.52	0.42
22:R:81:LYS:HB2	54:5:1201:C:H4'	2.00	0.42
27:b:144:GLN:OE1	27:b:144:GLN:N	2.46	0.42
27:b:151:ARG:HB3	52:3:2580:A:OP2	2.19	0.42
27:b:186:GLU:H	27:b:186:GLU:CD	2.26	0.42
28:c:64:LYS:HE3	28:c:64:LYS:HB3	1.87	0.42
31:f:72:ILE:HG13	31:f:73:GLU:HG3	2.00	0.42
33:h:28:VAL:HG12	33:h:61:LYS:HG2	2.01	0.42
42:q:51:GLU:O	42:q:52:LYS:HG3	2.18	0.42
52:3:130:C:H2'	52:3:131:C:C6	2.54	0.42
52:3:218:G:H2'	52:3:219:G:C8	2.54	0.42
52:3:263:C:H2'	52:3:264:G:C8	2.54	0.42
52:3:342:G:H2'	52:3:343:A:O4'	2.18	0.42
52:3:494:G:O2'	52:3:505:G:N1	2.39	0.42
52:3:500:U:H3	52:3:823:A:N6	2.14	0.42
52:3:563:A:N7	52:3:2050:G:H4'	2.33	0.42
52:3:625:G:H2'	52:3:626:A:H8	1.83	0.42
52:3:659:C:H2'	52:3:660:U:C6	2.54	0.42
52:3:951:C:H2'	52:3:952:U:O4'	2.19	0.42
52:3:977:A:O2'	52:3:1221:G:O3'	2.28	0.42
52:3:1019:A:OP1	52:3:1020:G:N2	2.51	0.42
52:3:1120:A:O2'	52:3:1139:C:O2	2.36	0.42
52:3:1342:C:H2'	52:3:1343:C:C6	2.55	0.42
52:3:1723:A:H2'	52:3:1724:A:H8	1.83	0.42
52:3:1842:G:H2'	52:3:1843:C:C6	2.53	0.42
52:3:1991:U:H2'	52:3:1992:C:C6	2.54	0.42
52:3:2057:C:H3'	52:3:2057:C:OP2	2.19	0.42
52:3:2060:G:H2'	52:3:2061:A:C8	2.53	0.42
52:3:2272:C:H2'	52:3:2273:U:O4'	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:2301:C:H2'	52:3:2302:C:C6	2.54	0.42
52:3:2455:G:H1	52:3:2459:A:N6	2.17	0.42
52:3:2645:U:H3'	52:3:2646:G:H8	1.84	0.42
52:3:2692:U:H2'	52:3:2693:U:O4'	2.19	0.42
52:3:2728:U:H5''	52:3:2729:A:OP2	2.19	0.42
54:5:239:A:H62	54:5:277:G:H1'	1.84	0.42
54:5:535:A:H2'	54:5:536:U:H6	1.84	0.42
54:5:1305:G:H4'	54:5:1306:A:H5'	2.01	0.42
1:0:38:GLN:O	52:3:494:G:H3'	2.18	0.42
3:2:17:ILE:HD13	3:2:26:ILE:HD13	2.00	0.42
4:9:184:TYR:HB3	4:9:195:GLU:HB2	2.00	0.42
4:9:323:LEU:HD23	4:9:376:ILE:HG22	2.00	0.42
10:F:25:ILE:O	10:F:29:ILE:HG12	2.20	0.42
11:G:79:ARG:HH11	11:G:81:ILE:HG21	1.85	0.42
15:K:42:LEU:O	15:K:43:LYS:HD3	2.19	0.42
16:L:61:SER:HA	16:L:65:ILE:CG1	2.49	0.42
18:N:60:ARG:O	18:N:64:LEU:HG	2.19	0.42
30:e:75:ILE:O	30:e:79:ILE:HG12	2.19	0.42
31:f:25:TYR:HE2	52:3:2207:A:O2'	2.02	0.42
36:k:30:LYS:HD2	52:3:845:U:C5	2.54	0.42
36:k:110:LEU:HD23	36:k:111:PRO:O	2.19	0.42
39:n:36:LEU:HD23	39:n:36:LEU:HA	1.86	0.42
40:o:100:TYR:CE2	52:3:2726:G:H4'	2.54	0.42
41:p:89:ILE:O	42:q:11:GLN:NE2	2.52	0.42
42:q:60:GLU:OE2	42:q:93:LYS:HG2	2.19	0.42
43:r:70:TYR:OH	43:r:110:ASN:O	2.37	0.42
46:u:88:PRO:HA	53:4:11:A:OP1	2.20	0.42
50:y:19:HIS:CE1	52:3:2053:G:H4'	2.54	0.42
52:3:152:A:H2'	52:3:153:U:C6	2.54	0.42
52:3:532:A:H2'	52:3:533:G:C8	2.55	0.42
52:3:622:U:O2'	52:3:623:A:H5'	2.17	0.42
52:3:1116:U:H2'	52:3:1117:U:H6	1.84	0.42
52:3:1176:U:H1'	52:3:1177:A:C6	2.54	0.42
52:3:1501:U:H2'	52:3:1502:A:O4'	2.19	0.42
52:3:1700:G:C2'	52:3:1701:G:H5'	2.49	0.42
52:3:1784:U:H2'	52:3:1785:U:C6	2.54	0.42
52:3:2400:A:C8	52:3:2432:C:N4	2.86	0.42
53:4:107:G:H2'	53:4:108:C:O4'	2.19	0.42
54:5:236:C:H2'	54:5:237:A:C8	2.53	0.42
54:5:243:G:H2'	54:5:244:C:H6	1.84	0.42
54:5:318:C:H2'	54:5:319:U:C6	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:550:U:H2'	54:5:551:A:H8	1.84	0.42
54:5:579:G:O2'	54:5:757:G:O6	2.29	0.42
54:5:671:G:C6	54:5:713:A:N6	2.83	0.42
54:5:776:C:H2'	54:5:777:A:O4'	2.19	0.42
54:5:1454:G:H2'	54:5:1455:G:C8	2.53	0.42
55:8:29:C:H2'	55:8:30:G:C8	2.51	0.42
1:0:31:LEU:HA	1:0:34:ARG:HD3	2.01	0.42
2:1:12:LYS:HD3	2:1:12:LYS:HA	1.76	0.42
4:9:13:PHE:O	4:9:79:LEU:HA	2.20	0.42
7:C:3:TYR:CE1	7:C:111:ARG:HG3	2.50	0.42
9:E:89:ASN:CG	9:E:90:LEU:H	2.26	0.42
9:E:141:PRO:HA	11:G:5:THR:HG23	2.01	0.42
9:E:145:ARG:HG2	11:G:61:GLU:O	2.20	0.42
10:F:9:ARG:HD3	54:5:1320:A:C5	2.53	0.42
10:F:115:MET:HA	10:F:118:LYS:HE2	2.00	0.42
15:K:20:LYS:HA	15:K:20:LYS:HD3	1.87	0.42
19:O:55:LYS:C	54:5:223:G:H21	2.28	0.42
20:P:32:HIS:CG	20:P:33:PRO:HD2	2.54	0.42
24:T:37:ARG:HD2	54:5:1500:G:H3'	2.01	0.42
31:f:69:LYS:HE3	31:f:69:LYS:HB3	1.84	0.42
35:j:62:ILE:HA	35:j:84:CYS:HA	2.00	0.42
37:l:63:LYS:HB3	37:l:63:LYS:HE2	1.85	0.42
40:o:106:GLU:OE1	40:o:106:GLU:N	2.52	0.42
42:q:87:GLN:HE21	42:q:88:PRO:HD2	1.84	0.42
44:s:71:PHE:HB2	52:3:67:C:H4'	2.01	0.42
50:y:47:MET:HE2	50:y:47:MET:HB2	1.72	0.42
52:3:93:A:H8	52:3:93:A:OP1	2.02	0.42
52:3:485:A:H2'	52:3:486:G:C8	2.54	0.42
52:3:866:G:H2'	52:3:867:G:C8	2.54	0.42
52:3:993:A:N1	52:3:2466:G:H4'	2.33	0.42
52:3:1460:G:H2'	52:3:1461:A:H8	1.83	0.42
52:3:2391:G:H2'	52:3:2392:U:C6	2.55	0.42
52:3:2521:A:C6	52:3:2582:G:C6	3.08	0.42
52:3:2835:G:H2'	52:3:2888:U:OP2	2.19	0.42
54:5:33:A:H2'	54:5:34:A:C8	2.53	0.42
54:5:146:A:H2'	54:5:147:A:C4	2.54	0.42
54:5:187:A:H2'	54:5:188:U:C6	2.54	0.42
54:5:212:G:H2'	54:5:213:U:H6	1.84	0.42
54:5:316:G:O2'	54:5:1410:A:H1'	2.20	0.42
54:5:339:U:C2	54:5:343:G:N1	2.88	0.42
54:5:920:G:H5''	54:5:921:G:N2	2.34	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:949:G:H2'	54:5:950:C:O4'	2.19	0.42
54:5:952:U:HO2'	54:5:953:A:H8	1.61	0.42
54:5:979:C:H2'	54:5:980:C:C6	2.54	0.42
54:5:1133:A:C6	54:5:1153:G:N3	2.87	0.42
4:9:289:ALA:O	4:9:297:VAL:HG11	2.19	0.42
4:9:532:ARG:HA	4:9:532:ARG:HD3	1.78	0.42
5:A:40:LYS:NZ	5:A:209:GLU:OE1	2.41	0.42
5:A:61:GLN:HE22	5:A:215:ILE:HG23	1.83	0.42
6:B:32:LYS:O	6:B:35:ILE:HG22	2.19	0.42
9:E:84:ARG:HG3	21:Q:96:LEU:HA	2.02	0.42
13:I:43:LYS:HZ3	13:I:46:LEU:HB2	1.85	0.42
15:K:52:THR:HG22	15:K:64:LYS:HA	2.01	0.42
15:K:86:ASN:HD22	15:K:117:THR:HA	1.84	0.42
15:K:124:ARG:NH2	54:5:537:A:OP1	2.52	0.42
16:L:28:SER:OG	54:5:1302:C:H5''	2.19	0.42
22:R:50:ALA:HB1	22:R:57:PHE:HB3	2.00	0.42
23:S:43:ASN:O	23:S:47:VAL:HG23	2.19	0.42
26:a:146:GLN:HG3	26:a:167:TYR:CD2	2.55	0.42
28:c:158:LEU:HD21	28:c:181:LYS:HB2	2.00	0.42
28:c:198:LEU:HD23	28:c:198:LEU:HA	1.91	0.42
43:r:51:LEU:O	43:r:55:ILE:HG12	2.20	0.42
51:z:4:LYS:NZ	52:3:2429:G:OP1	2.53	0.42
52:3:1039:G:H2'	52:3:1040:U:C6	2.54	0.42
52:3:1100:U:O2	52:3:1104:A:H8	2.01	0.42
52:3:1117:U:H2'	52:3:1118:U:O4'	2.20	0.42
52:3:1292:A:H61	52:3:2024:C:N4	2.16	0.42
52:3:1377:A:H3'	52:3:1378:C:C5'	2.48	0.42
52:3:1413:A:H1'	52:3:1414:C:C6	2.54	0.42
52:3:1481:U:O2	52:3:1482:U:O2'	2.28	0.42
52:3:1896:A:H2'	52:3:1897:A:O4'	2.19	0.42
52:3:1924:U:H2'	52:3:1925:A:O4'	2.18	0.42
52:3:2114:C:C2	52:3:2115:A:C8	3.07	0.42
52:3:2421:U:H2'	52:3:2422:G:C8	2.55	0.42
52:3:2534:G:H2'	52:3:2535:C:C6	2.55	0.42
52:3:2557:G:H2'	52:3:2558:G:C8	2.54	0.42
52:3:2581:C:H5''	52:3:2582:G:H5''	2.00	0.42
53:4:6:U:H2'	53:4:7:G:C8	2.48	0.42
54:5:94:A:C6	54:5:322:G:C6	3.08	0.42
54:5:205:U:H2'	54:5:206:G:C8	2.54	0.42
54:5:379:A:C8	54:5:380:G:C8	3.07	0.42
54:5:822:A:N6	54:5:870:A:C6	2.88	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:1207:U:H2'	54:5:1208:G:H8	1.85	0.42
4:9:26:THR:HG21	4:9:105:VAL:HG21	2.01	0.42
4:9:216:GLU:CD	25:W:82:LEU:HB3	2.45	0.42
4:9:237:ILE:HG22	4:9:241:LYS:HE3	2.00	0.42
4:9:631:GLU:OE1	52:3:1102:A:N6	2.52	0.42
7:C:121:HIS:HE1	54:5:434:U:H4'	1.85	0.42
12:H:54:LEU:HB3	12:H:60:LYS:H	1.84	0.42
13:I:51:LYS:NZ	54:5:1229:A:N7	2.53	0.42
16:L:11:ASN:HA	16:L:46:LYS:HD2	2.01	0.42
22:R:6:LYS:HE3	22:R:6:LYS:HB2	1.75	0.42
25:W:101:LYS:HD2	33:h:63:PHE:CZ	2.55	0.42
30:e:25:ILE:HB	30:e:36:LEU:HB2	2.00	0.42
31:f:39:LEU:HA	31:f:42:LYS:HB2	2.02	0.42
33:h:74:ILE:HD13	52:3:1098:G:H5'	2.01	0.42
34:i:73:GLU:HG3	34:i:93:ARG:HD2	2.01	0.42
38:m:10:THR:O	38:m:14:ARG:HG3	2.19	0.42
38:m:14:ARG:HH22	52:3:2009:U:P	2.41	0.42
45:t:100:LYS:HZ3	52:3:330:A:H5''	1.83	0.42
50:y:6:ARG:HA	52:3:2024:C:H1'	2.02	0.42
52:3:188:G:H2'	52:3:189:U:H6	1.84	0.42
52:3:196:G:O6	52:3:207:C:H1'	2.18	0.42
52:3:218:G:N2	52:3:220:A:N3	2.66	0.42
52:3:405:C:H2'	52:3:406:C:C6	2.54	0.42
52:3:558:C:H2'	52:3:559:C:C6	2.54	0.42
52:3:818:A:H2'	52:3:819:U:H4'	2.02	0.42
52:3:1232:U:H2'	52:3:1233:A:H8	1.84	0.42
52:3:1305:G:H2'	52:3:1306:G:C8	2.55	0.42
52:3:1354:U:C2'	52:3:1355:C:H5'	2.49	0.42
52:3:1921:C:O2	52:3:1921:C:H2'	2.18	0.42
52:3:2098:U:OP2	52:3:2099:U:O2'	2.28	0.42
52:3:2207:A:H2'	52:3:2208:U:O4'	2.20	0.42
52:3:2802:C:N4	52:3:2807:G:O3'	2.52	0.42
52:3:2881:A:H2'	52:3:2882:U:O4'	2.19	0.42
53:4:7:G:C5	53:4:102:A:C6	3.08	0.42
54:5:232:G:H2'	54:5:233:C:C6	2.54	0.42
54:5:242:A:C2	54:5:278:A:C5	3.07	0.42
54:5:250:G:H2'	54:5:251:G:C8	2.53	0.42
54:5:432:U:H2'	54:5:433:C:H6	1.83	0.42
54:5:478:G:O2'	54:5:480:C:N4	2.52	0.42
54:5:570:A:O2'	54:5:571:A:H8	2.02	0.42
54:5:590:G:C6	54:5:645:A:C6	3.07	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:822:A:H2'	54:5:823:C:C6	2.54	0.42
54:5:943:C:H2'	54:5:944:A:C8	2.54	0.42
4:9:375:ILE:HG21	4:9:378:LEU:HD13	2.02	0.42
4:9:469:VAL:HG12	4:9:471:VAL:HG23	2.00	0.42
4:9:514:ASN:CG	4:9:517:LYS:HB2	2.45	0.42
5:A:49:ARG:HG3	5:A:51:HIS:H	1.85	0.42
6:B:140:SER:HA	6:B:143:LYS:NZ	2.33	0.42
7:C:88:ASN:HA	7:C:91:ARG:NE	2.29	0.42
9:E:47:TYR:HE1	21:Q:97:ALA:HA	1.84	0.42
14:J:18:CYS:HB3	14:J:86:LYS:HE3	2.02	0.42
30:e:21:GLN:C	30:e:23:ASP:H	2.27	0.42
31:f:6:LYS:H	31:f:34:LYS:HG3	1.85	0.42
31:f:22:LYS:HB3	31:f:22:LYS:HE3	1.84	0.42
33:h:42:LYS:HE3	33:h:67:LEU:HD22	2.01	0.42
34:i:109:LYS:O	34:i:112:LEU:HB2	2.18	0.42
35:j:30:LYS:O	35:j:32:TYR:N	2.53	0.42
35:j:59:ARG:NH1	52:3:2570:U:OP1	2.43	0.42
35:j:65:THR:O	35:j:79:PHE:HB2	2.19	0.42
36:k:107:LYS:HE2	52:3:263:C:H5''	2.02	0.42
37:l:65:TRP:HE3	37:l:105:GLU:HG3	1.84	0.42
41:p:47:ARG:HH22	52:3:592:G:N2	2.16	0.42
48:w:48:ARG:NH2	52:3:76:A:OP1	2.52	0.42
52:3:51:A:OP1	52:3:52:U:O2'	2.26	0.42
52:3:155:A:H2'	52:3:156:A:C8	2.54	0.42
52:3:586:G:C6	52:3:587:U:C4	3.08	0.42
52:3:1036:A:H2'	52:3:1037:A:C8	2.55	0.42
52:3:1180:U:C2	52:3:1181:A:N7	2.87	0.42
52:3:2502:G:C2	52:3:2503:G:C5	3.08	0.42
52:3:2759:G:H21	52:3:2759:G:P	2.43	0.42
54:5:63:U:H2'	54:5:64:C:C6	2.55	0.42
54:5:169:G:H2'	54:5:170:A:H8	1.84	0.42
54:5:189:C:H2'	54:5:190:A:C8	2.55	0.42
54:5:264:C:H2'	54:5:265:U:H6	1.84	0.42
54:5:466:U:H2'	54:5:467:G:O4'	2.18	0.42
54:5:903:A:H2'	54:5:904:C:O4'	2.20	0.42
54:5:974:C:O2	54:5:975:C:H6	2.03	0.42
54:5:1212:C:H3'	54:5:1213:A:H5'	2.00	0.42
55:8:69:A:H2'	55:8:70:G:H8	1.84	0.42
4:9:57:LYS:HB2	4:9:84:GLY:HA3	2.01	0.42
4:9:552:ALA:HB3	4:9:554:TYR:CE2	2.54	0.42
4:9:606:VAL:HG12	4:9:665:TYR:HB3	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:A:50:LYS:HD2	5:A:50:LYS:HA	1.83	0.42
7:C:12:ARG:NH2	54:5:423:U:OP1	2.53	0.42
14:J:79:VAL:HG11	24:T:18:PHE:HZ	1.83	0.42
16:L:12:GLN:HA	16:L:45:VAL:HA	2.01	0.42
16:L:103:ARG:NH1	54:5:1200:G:N7	2.68	0.42
22:R:29:ARG:HB3	22:R:48:THR:OG1	2.20	0.42
25:W:97:LYS:HD3	25:W:97:LYS:HA	1.87	0.42
26:a:227:THR:O	52:3:1796:A:H5'	2.19	0.42
28:c:47:GLN:N	52:3:479:A:OP1	2.52	0.42
29:d:88:LYS:HB2	29:d:88:LYS:HE2	1.92	0.42
30:e:97:TYR:CG	30:e:110:LEU:HD13	2.55	0.42
33:h:19:ALA:HB2	33:h:39:PHE:CD2	2.55	0.42
35:j:70:GLN:HA	35:j:76:HIS:HB2	2.00	0.42
35:j:76:HIS:NE2	35:j:78:LYS:HD3	2.34	0.42
36:k:89:LYS:HZ1	36:k:91:ASP:CG	2.28	0.42
44:s:38:THR:O	44:s:41:LYS:HG2	2.20	0.42
45:t:43:THR:HA	45:t:62:LYS:HD3	2.02	0.42
47:v:54:THR:O	47:v:58:LEU:HD13	2.20	0.42
48:w:31:PHE:O	48:w:35:HIS:ND1	2.49	0.42
48:w:104:LYS:HZ1	52:3:1547:G:P	2.42	0.42
52:3:723:U:H2'	52:3:724:A:H8	1.84	0.42
52:3:820:U:H2'	52:3:821:C:C6	2.55	0.42
52:3:995:A:H2'	52:3:996:A:C8	2.55	0.42
52:3:1298:A:H2'	52:3:1299:A:C8	2.54	0.42
52:3:1701:G:N1	52:3:1999:G:OP2	2.52	0.42
52:3:1714:U:H3'	52:3:1715:A:C8	2.55	0.42
52:3:1785:U:H2'	52:3:1791:A:N1	2.35	0.42
52:3:1801:U:O2	52:3:1832:G:N2	2.35	0.42
52:3:1889:U:H2'	52:3:1890:U:C6	2.55	0.42
52:3:1910:G:H2'	52:3:1911:G:C8	2.54	0.42
52:3:2790:A:H2'	52:3:2791:U:C6	2.54	0.42
54:5:63:U:H2'	54:5:64:C:H6	1.84	0.42
54:5:307:C:H2'	54:5:308:C:C6	2.55	0.42
54:5:1004:U:H2'	54:5:1005:U:C6	2.55	0.42
54:5:1047:U:H2'	54:5:1048:G:H8	1.85	0.42
54:5:1241:G:H21	54:5:1243:A:H8	1.67	0.42
54:5:1322:U:H2'	54:5:1323:A:C8	2.53	0.42
54:5:1369:A:C5	54:5:1476:C:H4'	2.55	0.42
54:5:1430:G:C4	54:5:1431:A:C8	3.07	0.42
4:9:354:VAL:HG13	4:9:374:ALA:HB3	2.01	0.42
6:B:19:ILE:HD11	6:B:55:ASN:HB2	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:B:182:ARG:HD2	6:B:210:ILE:O	2.20	0.42
11:G:77:THR:HG22	11:G:78:GLN:N	2.35	0.42
12:H:109:ASP:O	12:H:110:LYS:HG2	2.19	0.42
13:I:17:GLU:HB3	13:I:77:LYS:HG2	2.01	0.42
13:I:59:ARG:HH11	17:M:45:ARG:HH11	1.68	0.42
25:W:60:THR:HG22	25:W:61:GLY:N	2.27	0.42
26:a:40:THR:N	26:a:65:LYS:HZ2	2.17	0.42
39:n:31:MET:HA	39:n:92:ASP:OD2	2.19	0.42
43:r:28:LYS:HE3	43:r:28:LYS:HB3	1.71	0.42
43:r:99:ARG:NH2	52:3:1295:A:H2	2.17	0.42
52:3:849:C:O2'	52:3:850:G:H5'	2.19	0.42
52:3:1187:C:H2'	52:3:1188:C:C6	2.51	0.42
52:3:1264:U:H2'	52:3:1265:G:C8	2.55	0.42
52:3:1599:C:O2'	52:3:1601:A:N7	2.51	0.42
52:3:1605:A:H2'	52:3:1606:A:C8	2.54	0.42
52:3:1768:G:H2'	52:3:1769:A:C5	2.55	0.42
52:3:1890:U:O2'	52:3:1891:A:O4'	2.37	0.42
52:3:2092:U:H2'	52:3:2093:U:C6	2.55	0.42
52:3:2671:G:H2'	52:3:2672:G:O4'	2.20	0.42
52:3:2687:A:H2'	52:3:2688:C:C6	2.55	0.42
54:5:226:G:H2'	54:5:227:A:C8	2.55	0.42
55:8:22:A:O4'	55:8:49:C:N4	2.53	0.42
4:9:173:ASN:HB3	4:9:184:TYR:CZ	2.55	0.42
4:9:443:THR:HB	4:9:477:GLN:HB3	2.01	0.42
15:K:127:ARG:N	15:K:129:ALA:O	2.42	0.42
16:L:93:LYS:HE3	16:L:93:LYS:HB2	1.72	0.42
17:M:16:PHE:HB2	17:M:19:ARG:HG3	2.02	0.42
27:b:7:PHE:HE1	27:b:52:LEU:HB2	1.84	0.42
39:n:71:LYS:HD3	39:n:104:ALA:HB1	2.02	0.42
41:p:57:ARG:NE	52:3:1033:A:OP2	2.53	0.42
42:q:79:HIS:CE1	52:3:1218:G:H5''	2.55	0.42
46:u:60:TYR:HH	52:3:2340:U:H5'	1.85	0.42
46:u:92:LYS:HE2	46:u:92:LYS:HB3	1.85	0.42
47:v:16:ASN:HB3	47:v:24:ILE:HD11	2.01	0.42
50:y:16:ARG:HH22	52:3:1294:G:H5''	1.85	0.42
52:3:471:A:H2'	52:3:472:A:O4'	2.20	0.42
52:3:1020:G:H2'	52:3:1020:G:N3	2.34	0.42
52:3:1575:C:H2'	52:3:1576:G:O4'	2.18	0.42
52:3:1708:G:O2'	52:3:1710:A:N7	2.50	0.42
52:3:1775:G:H2'	52:3:1776:G:H8	1.84	0.42
52:3:1833:G:H2'	52:3:1834:U:H6	1.83	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1923:A:H2'	52:3:1924:U:H6	1.85	0.42
52:3:2048:U:H2'	52:3:2049:A:C8	2.54	0.42
52:3:2115:A:C2'	52:3:2116:U:H5'	2.50	0.42
52:3:2150:C:H2'	52:3:2151:G:O4'	2.20	0.42
52:3:2377:A:H2'	52:3:2378:G:H8	1.85	0.42
52:3:2523:C:H2'	52:3:2524:U:C6	2.54	0.42
52:3:2689:C:H1'	52:3:2690:U:C5	2.53	0.42
52:3:2707:A:H2'	52:3:2708:G:O4'	2.20	0.42
54:5:96:G:H2'	54:5:97:G:H8	1.84	0.42
54:5:1049:G:H1	54:5:1174:U:H3	1.68	0.42
55:8:6:U:H2'	55:8:7:U:C6	2.55	0.42
2:1:29:LEU:HD23	2:1:29:LEU:HA	1.86	0.42
4:9:57:LYS:HD3	4:9:85:HIS:N	2.35	0.42
4:9:482:GLU:OE1	4:9:554:TYR:N	2.53	0.42
10:F:65:VAL:O	10:F:69:MET:HG2	2.19	0.42
21:Q:71:ASN:HB3	21:Q:75:ILE:HB	2.01	0.42
32:g:52:LYS:HD2	52:3:1119:A:OP1	2.20	0.42
40:o:9:LEU:HD13	40:o:12:LEU:HD13	2.01	0.42
40:o:37:LEU:HD11	40:o:46:GLN:HB2	2.01	0.42
43:r:19:LEU:HD23	43:r:19:LEU:HA	1.95	0.42
50:y:30:CYS:HB3	50:y:33:CYS:HB3	2.02	0.42
52:3:139:G:C6	52:3:140:G:C6	3.07	0.42
52:3:593:C:H2'	52:3:594:G:C8	2.54	0.42
52:3:1158:C:H2'	52:3:1159:C:O4'	2.20	0.42
52:3:1801:U:H2'	52:3:1802:C:C6	2.55	0.42
52:3:1913:G:H8	52:3:1936:G:H2'	1.83	0.42
52:3:2035:U:H2'	52:3:2036:G:C8	2.54	0.42
52:3:2267:G:C8	52:3:2435:C:C4	3.08	0.42
52:3:2335:A:H3'	52:3:2336:A:C8	2.50	0.42
52:3:2347:G:H2'	52:3:2348:U:C6	2.55	0.42
52:3:2454:G:C6	52:3:2509:C:H2'	2.55	0.42
52:3:2582:G:H2'	52:3:2583:U:O4'	2.20	0.42
52:3:2631:G:H2'	52:3:2632:C:H6	1.84	0.42
52:3:2705:G:H2'	52:3:2706:U:O4'	2.19	0.42
52:3:2790:A:H2'	52:3:2791:U:H6	1.84	0.42
54:5:231:U:H2'	54:5:232:G:H8	1.85	0.42
54:5:570:A:H4'	54:5:911:G:O2'	2.19	0.42
54:5:599:G:H2'	54:5:600:G:H8	1.85	0.42
54:5:688:G:H1'	54:5:693:A:H62	1.85	0.42
54:5:767:U:N3	54:5:768:G:N7	2.67	0.42
54:5:1136:G:C5	54:5:1156:G:C6	3.08	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:5:1268:G:O2'	54:5:1269:U:H5'	2.20	0.42
54:5:1346:G:H2'	54:5:1347:U:C6	2.55	0.42
54:5:1368:U:O3'	54:5:1369:A:H2'	2.20	0.42
54:5:1443:A:H2'	54:5:1444:G:O4'	2.20	0.42
1:0:6:GLN:OE1	52:3:721:G:O2'	2.27	0.41
4:9:494:TYR:CD1	4:9:584:LEU:HD11	2.36	0.41
5:A:111:ARG:NH2	54:5:1090:G:OP1	2.50	0.41
6:B:85:ILE:HA	6:B:88:ILE:HG22	2.02	0.41
7:C:202:ARG:O	54:5:28:G:O2'	2.33	0.41
11:G:21:LYS:HZ3	54:5:823:C:H4'	1.85	0.41
15:K:127:ARG:NH2	54:5:499:U:OP1	2.53	0.41
16:L:112:PRO:O	16:L:113:ARG:HG2	2.20	0.41
18:N:67:LEU:HA	18:N:70:ASN:ND2	2.35	0.41
31:f:24:GLY:H	31:f:28:HIS:CE1	2.38	0.41
36:k:90:LEU:HD12	36:k:90:LEU:HA	1.85	0.41
52:3:20:C:N4	52:3:558:C:H42	2.18	0.41
52:3:335:G:C6	52:3:351:G:C5	3.07	0.41
52:3:401:G:O2'	52:3:402:A:O4'	2.38	0.41
52:3:749:U:H1'	52:3:752:C:H5	1.84	0.41
52:3:822:C:H5''	52:3:823:A:H5'	2.02	0.41
52:3:861:U:H2'	52:3:863:U:H5'	2.01	0.41
52:3:870:A:H2'	52:3:871:G:H8	1.85	0.41
52:3:1659:C:H2'	52:3:1660:A:O4'	2.20	0.41
52:3:2201:G:N3	52:3:2201:G:H2'	2.34	0.41
52:3:2419:A:H2'	52:3:2420:A:C8	2.54	0.41
52:3:2633:C:H2'	52:3:2634:C:O4'	2.20	0.41
52:3:2657:C:H2'	52:3:2658:U:H6	1.85	0.41
52:3:2849:G:O2'	52:3:2850:G:H5'	2.20	0.41
53:4:99:A:H2'	53:4:100:G:O4'	2.20	0.41
54:5:672:A:H2'	54:5:673:A:O4'	2.19	0.41
54:5:828:U:H2'	54:5:829:G:O4'	2.20	0.41
54:5:1058:A:H8	54:5:1084:A:H4'	1.85	0.41
54:5:1262:A:N1	54:5:1346:G:H1'	2.35	0.41
54:5:1413:G:C2	54:5:1439:G:C6	3.07	0.41
55:8:74:A:H5'	55:8:77:A:N1	2.35	0.41
2:1:12:LYS:HB2	2:1:20:LYS:HB3	2.01	0.41
4:9:14:GLY:HA3	4:9:99:LEU:HD22	2.01	0.41
7:C:22:ASN:HD22	7:C:25:PHE:HD2	1.68	0.41
7:C:100:ILE:O	7:C:104:MET:N	2.52	0.41
9:E:72:PHE:HE2	9:E:87:ILE:HD11	1.85	0.41
10:F:49:ILE:HD11	10:F:123:ILE:HD12	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:H:36:ASP:O	12:H:39:GLU:HG2	2.20	0.41
15:K:127:ARG:HD2	15:K:127:ARG:O	2.20	0.41
19:O:23:ASP:N	19:O:26:TYR:OH	2.52	0.41
25:W:73:LEU:HD21	25:W:115:VAL:HG21	2.02	0.41
26:a:261:ARG:HA	26:a:261:ARG:NH2	2.34	0.41
27:b:161:LYS:NZ	52:3:2628:U:OP2	2.53	0.41
32:g:28:ASP:HA	32:g:81:ALA:HB3	2.02	0.41
32:g:69:GLU:OE2	32:g:117:ALA:HB2	2.20	0.41
33:h:76:LEU:HD21	33:h:131:MET:HG2	2.02	0.41
35:j:8:LEU:HD23	35:j:19:VAL:O	2.20	0.41
35:j:67:LYS:HD2	35:j:67:LYS:HA	1.82	0.41
43:r:13:SER:HA	43:r:99:ARG:HB3	2.01	0.41
46:u:53:ARG:NH2	52:3:2363:C:O2	2.53	0.41
48:w:32:LYS:HB2	48:w:38:LEU:HD13	2.01	0.41
52:3:60:G:H2'	52:3:61:U:C6	2.55	0.41
52:3:334:A:H2'	52:3:368:C:H1'	2.01	0.41
52:3:393:C:H2'	52:3:394:C:C6	2.56	0.41
52:3:522:C:H2'	52:3:523:A:C8	2.54	0.41
52:3:885:A:H2'	52:3:886:U:C6	2.55	0.41
52:3:1062:A:O2'	52:3:1063:A:O4'	2.36	0.41
52:3:1079:U:O2	52:3:1147:G:C2	2.74	0.41
52:3:1084:C:C2	52:3:1085:A:C8	3.08	0.41
52:3:1615:G:H2'	52:3:1616:G:C8	2.55	0.41
52:3:1828:A:H2'	52:3:1829:U:C6	2.55	0.41
52:3:1833:G:H2'	52:3:1834:U:C6	2.55	0.41
52:3:1929:G:H2'	52:3:1930:U:C6	2.54	0.41
52:3:2473:C:H2'	52:3:2474:C:C6	2.56	0.41
52:3:2502:G:H2'	52:3:2503:G:C8	2.55	0.41
52:3:2567:C:O2'	52:3:2568:G:H5'	2.20	0.41
52:3:2816:A:H2'	52:3:2817:G:H8	1.85	0.41
54:5:42:G:C5	54:5:398:G:C2	3.08	0.41
54:5:126:U:H2'	54:5:127:A:H8	1.84	0.41
54:5:244:C:H2'	54:5:245:U:O4'	2.20	0.41
54:5:535:A:H2'	54:5:536:U:C6	2.55	0.41
54:5:866:A:O2'	54:5:867:A:H3'	2.19	0.41
54:5:958:G:H2'	54:5:959:A:H8	1.85	0.41
54:5:1043:U:O2	54:5:1181:G:C6	2.73	0.41
54:5:1136:G:C6	54:5:1137:C:C4	3.08	0.41
54:5:1267:G:H2'	54:5:1268:G:H8	1.83	0.41
54:5:1405:U:H2'	54:5:1406:U:C6	2.56	0.41
4:9:610:GLU:OE2	52:3:1130:A:N6	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:9:633:ARG:CZ	4:9:638:VAL:HG21	2.50	0.41
7:C:67:THR:HG1	54:5:544:A:P	2.41	0.41
8:D:152:LYS:HB3	8:D:179:TYR:HB2	2.03	0.41
9:E:132:VAL:HG21	54:5:841:C:O2	2.21	0.41
13:I:74:ASN:OD1	13:I:75:ARG:N	2.52	0.41
17:M:8:VAL:HG13	17:M:12:ARG:HH12	1.85	0.41
23:S:28:LEU:HD22	23:S:54:LEU:HD12	2.02	0.41
26:a:43:LYS:HA	26:a:61:ARG:HH22	1.85	0.41
28:c:77:GLY:N	52:3:709:G:H5''	2.25	0.41
29:d:39:GLY:O	29:d:150:ARG:NH1	2.54	0.41
34:i:102:LYS:HA	34:i:102:LYS:HD2	1.89	0.41
34:i:112:LEU:CD2	34:i:113:PRO:HD2	2.51	0.41
39:n:99:HIS:NE2	53:4:35:C:O2	2.52	0.41
42:q:82:LYS:N	52:3:849:C:OP1	2.53	0.41
44:s:17:TYR:O	44:s:21:MET:HG3	2.19	0.41
49:x:13:SER:HB2	49:x:24:THR:HG23	2.02	0.41
51:z:27:LYS:HE2	52:3:2293:C:H5''	2.01	0.41
52:3:89:U:H5''	52:3:90:G:C5'	2.46	0.41
52:3:267:A:O2'	52:3:465:A:O2'	2.30	0.41
52:3:501:G:H2'	52:3:502:A:C8	2.55	0.41
52:3:516:A:H2	52:3:535:G:H21	1.67	0.41
52:3:598:G:C6	52:3:599:U:C4	3.08	0.41
52:3:738:U:O2	52:3:763:G:O6	2.38	0.41
52:3:928:G:H2'	52:3:929:G:C8	2.55	0.41
52:3:1154:U:H2'	52:3:1155:G:C8	2.55	0.41
52:3:1447:A:O2'	52:3:1448:U:H5''	2.20	0.41
52:3:1480:A:H3'	52:3:1481:U:H5''	2.01	0.41
52:3:1702:A:H1'	52:3:1704:C:N4	2.36	0.41
52:3:1920:A:O3'	52:3:1921:C:H4'	2.20	0.41
52:3:2032:G:H2'	52:3:2033:G:H8	1.85	0.41
52:3:2299:U:O2'	52:3:2382:A:H1'	2.19	0.41
52:3:2543:G:H2'	52:3:2544:G:C8	2.54	0.41
54:5:226:G:H2'	54:5:227:A:H8	1.85	0.41
54:5:1182:C:H2'	54:5:1183:C:C6	2.55	0.41
54:5:1224:C:N4	54:5:1262:A:OP2	2.52	0.41
54:5:1280:A:H2'	54:5:1281:U:O4'	2.20	0.41
7:C:95:SER:O	7:C:136:LEU:HD23	2.19	0.41
13:I:30:LYS:O	13:I:33:GLU:HG3	2.20	0.41
18:N:59:LYS:O	18:N:63:LEU:HG	2.20	0.41
26:a:80:GLU:HG2	26:a:122:LEU:HB2	2.01	0.41
27:b:72:LYS:HD3	52:3:2794:U:H5''	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:g:87:ASN:HB3	32:g:88:GLU:H	1.76	0.41
34:i:82:GLN:HG2	34:i:83:TYR:CD2	2.55	0.41
38:m:43:LYS:HE2	52:3:2842:G:H4'	2.02	0.41
42:q:2:HIS:HB3	42:q:15:HIS:ND1	2.36	0.41
42:q:6:VAL:CG2	42:q:37:LYS:HB2	2.50	0.41
44:s:49:GLY:O	48:w:80:ASN:ND2	2.53	0.41
45:t:16:LYS:HD3	52:3:343:A:H5'	2.02	0.41
46:u:19:LYS:HD2	46:u:19:LYS:HA	1.87	0.41
52:3:206:U:H2'	52:3:207:C:O4'	2.19	0.41
52:3:380:A:H3'	52:3:381:A:H8	1.85	0.41
52:3:413:G:N2	52:3:435:U:O2	2.44	0.41
52:3:597:C:H2'	52:3:598:G:H8	1.82	0.41
52:3:613:C:H2'	52:3:614:C:C6	2.55	0.41
52:3:703:A:H2'	52:3:705:A:N6	2.34	0.41
52:3:853:G:O2'	52:3:873:G:O2'	2.27	0.41
52:3:1156:C:H2'	52:3:1157:G:O4'	2.20	0.41
52:3:1229:U:H2'	52:3:1230:U:C6	2.55	0.41
52:3:1512:A:H2'	52:3:1513:A:C8	2.56	0.41
52:3:1917:G:C6	52:3:1928:G:C6	3.08	0.41
52:3:2300:A:H2'	52:3:2301:C:H6	1.85	0.41
52:3:2418:G:H2'	52:3:2419:A:C8	2.56	0.41
52:3:2651:G:N1	52:3:2652:U:O4	2.52	0.41
52:3:2712:C:C2	52:3:2713:A:C8	3.09	0.41
52:3:2835:G:N2	52:3:2887:A:O2'	2.52	0.41
53:4:29:C:H2'	53:4:51:A:H61	1.84	0.41
54:5:82:C:H2'	54:5:83:U:C6	2.55	0.41
54:5:250:G:O6	54:5:269:A:N6	2.53	0.41
54:5:293:G:O6	54:5:297:A:N6	2.53	0.41
54:5:334:A:H2'	54:5:335:C:C6	2.55	0.41
54:5:367:A:H2'	54:5:368:C:O4'	2.19	0.41
54:5:450:U:H2'	54:5:451:G:C8	2.55	0.41
54:5:593:A:H2'	54:5:638:A:N6	2.36	0.41
54:5:666:U:H2'	54:5:667:U:C6	2.54	0.41
54:5:771:G:C6	54:5:772:G:N2	2.89	0.41
54:5:986:U:H1'	54:5:988:G:C8	2.55	0.41
54:5:1133:A:H4'	54:5:1134:C:OP1	2.20	0.41
3:2:35:ARG:HG2	3:2:36:GLN:HG2	2.02	0.41
4:9:99:LEU:HD13	4:9:101:GLY:C	2.46	0.41
5:A:125:ILE:O	5:A:129:LYS:HG3	2.21	0.41
6:B:82:ASN:HB3	6:B:85:ILE:HG22	2.01	0.41
10:F:35:LYS:HE2	54:5:1348:G:H5''	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:I:59:ARG:NH1	17:M:45:ARG:HH11	2.17	0.41
20:P:6:ARG:NH1	20:P:65:GLU:O	2.52	0.41
23:S:26:THR:HG21	54:5:1433:G:OP1	2.20	0.41
27:b:195:GLY:HA2	52:3:2737:G:H1'	2.02	0.41
28:c:7:ILE:HA	28:c:13:PHE:HD1	1.85	0.41
37:l:27:VAL:HG13	37:l:134:ARG:HG3	2.03	0.41
45:t:44:ARG:HE	45:t:46:LYS:HA	1.84	0.41
52:3:297:G:H22	52:3:440:C:HO2'	1.61	0.41
52:3:308:A:N6	52:3:397:G:O6	2.54	0.41
52:3:894:G:N3	52:3:2276:A:H2'	2.35	0.41
52:3:906:G:C2	52:3:907:A:C8	3.08	0.41
52:3:1063:A:H61	52:3:1160:G:H2'	1.86	0.41
52:3:1422:U:C5'	52:3:1637:A:H4'	2.50	0.41
52:3:2051:G:H2'	52:3:2052:C:O4'	2.20	0.41
52:3:2274:A:H1'	52:3:2280:U:O4	2.19	0.41
52:3:2553:G:N3	52:3:2573:A:H2	2.19	0.41
54:5:147:A:H2'	54:5:148:A:C4	2.54	0.41
54:5:216:G:H2'	54:5:217:U:H6	1.85	0.41
54:5:396:C:H2'	54:5:397:C:C6	2.56	0.41
54:5:400:G:H2'	54:5:401:U:N1	2.35	0.41
54:5:502:C:H1'	54:5:508:A:H2'	2.02	0.41
54:5:933:A:H2'	54:5:934:G:O4'	2.20	0.41
54:5:1145:A:H2'	54:5:1146:A:O4'	2.21	0.41
54:5:1289:U:H2'	54:5:1290:G:O4'	2.21	0.41
54:5:1354:G:H2'	54:5:1355:U:C6	2.56	0.41
2:1:54:ARG:HA	2:1:57:ASN:ND2	2.36	0.41
4:9:241:LYS:HB3	4:9:277:PHE:HE1	1.84	0.41
4:9:512:GLU:O	4:9:560:LYS:N	2.46	0.41
6:B:124:ALA:HA	6:B:127:ILE:HG22	2.03	0.41
8:D:75:ARG:HA	8:D:88:PHE:HB2	2.02	0.41
8:D:94:VAL:HG12	8:D:126:LEU:HD21	2.01	0.41
15:K:88:GLN:C	15:K:90:HIS:H	2.28	0.41
22:R:37:ARG:NE	54:5:1294:U:O4	2.54	0.41
28:c:8:LYS:HE3	28:c:12:SER:OG	2.21	0.41
32:g:68:PHE:CE2	32:g:111:GLY:HA2	2.56	0.41
33:h:61:LYS:NZ	33:h:64:ASP:HB2	2.35	0.41
35:j:30:LYS:O	35:j:31:ARG:HG2	2.21	0.41
36:k:17:THR:HG1	52:3:698:A:P	2.42	0.41
37:l:42:ILE:HG13	37:l:95:ALA:HB3	2.02	0.41
38:m:55:ASP:OD2	38:m:60:ARG:NH2	2.39	0.41
41:p:68:LEU:HD21	41:p:78:PHE:CD2	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:p:106:ASN:O	41:p:110:GLN:OE1	2.39	0.41
42:q:38:VAL:HG11	42:q:55:VAL:HG13	2.02	0.41
48:w:32:LYS:HA	48:w:35:HIS:HD1	1.86	0.41
52:3:682:A:H2'	52:3:683:G:H8	1.85	0.41
52:3:726:U:H2'	52:3:727:C:C6	2.55	0.41
52:3:1390:C:H2'	52:3:1391:U:C6	2.55	0.41
52:3:1527:U:H2'	52:3:1528:G:C8	2.55	0.41
52:3:2006:C:H2'	52:3:2007:U:C6	2.56	0.41
52:3:2226:U:H2'	52:3:2227:U:C6	2.55	0.41
52:3:2859:U:H2'	52:3:2860:A:C8	2.55	0.41
53:4:55:A:C5	53:4:56:A:C8	3.08	0.41
54:5:512:U:H2'	54:5:513:G:H8	1.85	0.41
54:5:675:U:H2'	54:5:676:U:C6	2.55	0.41
54:5:1156:G:H1'	54:5:1157:G:C4	2.55	0.41
54:5:1194:A:H2'	54:5:1195:G:H8	1.85	0.41
54:5:1413:G:H2'	54:5:1414:U:C6	2.55	0.41
54:5:1438:U:H2'	54:5:1439:G:N7	2.36	0.41
55:8:27:A:N6	55:8:45:G:H1	2.14	0.41
55:8:67:C:H2'	55:8:68:G:H8	1.86	0.41
1:0:9:LYS:HB3	1:0:9:LYS:HE3	1.88	0.41
5:A:67:THR:HA	5:A:70:ASN:ND2	2.36	0.41
6:B:195:THR:O	54:5:1181:G:O2'	2.27	0.41
9:E:43:LYS:HG3	9:E:57:TYR:HB2	2.01	0.41
10:F:77:ARG:HA	54:5:1356:U:C2	2.56	0.41
13:I:13:LYS:HE2	13:I:15:LYS:HB2	2.03	0.41
21:Q:93:ALA:O	21:Q:97:ALA:N	2.53	0.41
23:S:43:ASN:HA	23:S:46:ASN:HB2	2.03	0.41
29:d:100:LEU:O	29:d:104:ILE:HG23	2.20	0.41
33:h:66:ILE:HD12	33:h:66:ILE:HA	2.00	0.41
36:k:67:ASN:ND2	36:k:69:ARG:O	2.51	0.41
36:k:133:LYS:HE2	52:3:672:G:OP1	2.20	0.41
37:l:123:HIS:ND1	52:3:2475:C:H4'	2.35	0.41
39:n:111:GLU:HG3	39:n:112:ARG:CZ	2.51	0.41
40:o:98:ARG:HH21	52:3:1760:G:H4'	1.86	0.41
41:p:23:SER:O	52:3:20:C:H5''	2.21	0.41
41:p:32:LYS:HG2	52:3:1282:G:N3	2.34	0.41
52:3:67:C:O2'	52:3:492:C:N3	2.43	0.41
52:3:230:G:H4'	52:3:261:A:H4'	2.01	0.41
52:3:338:G:H2'	52:3:339:U:H6	1.86	0.41
52:3:407:U:H5''	52:3:408:G:H5'	2.02	0.41
52:3:686:C:H2'	52:3:687:G:C8	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:716:G:H2'	52:3:717:U:H6	1.85	0.41
52:3:729:U:H3	52:3:803:G:H1	1.68	0.41
52:3:745:U:H2'	52:3:746:G:H8	1.85	0.41
52:3:976:C:O2'	52:3:1222:A:H5''	2.21	0.41
52:3:1087:C:H2'	52:3:1088:A:C8	2.56	0.41
52:3:1130:A:H8	52:3:1131:A:C5	2.38	0.41
52:3:1426:C:H2'	52:3:1427:C:C6	2.56	0.41
52:3:1634:A:H2'	52:3:1635:G:H8	1.84	0.41
52:3:1870:G:H2'	52:3:1871:U:C6	2.56	0.41
52:3:2169:G:N2	52:3:2172:A:H2'	2.36	0.41
52:3:2256:C:H3'	52:3:2257:U:C6	2.55	0.41
52:3:2379:G:H2'	52:3:2380:U:C6	2.55	0.41
52:3:2462:G:C4	52:3:2463:G:C8	3.09	0.41
52:3:2856:G:H2'	52:3:2857:C:H6	1.86	0.41
53:4:8:C:H2'	53:4:9:C:O4'	2.20	0.41
53:4:31:G:H2'	53:4:32:G:H8	1.85	0.41
54:5:938:U:H2'	54:5:939:G:C8	2.55	0.41
54:5:955:U:H4'	54:5:956:U:H5''	2.02	0.41
54:5:957:C:H2'	54:5:958:G:C8	2.55	0.41
54:5:973:A:C5	54:5:1293:A:H2	2.38	0.41
54:5:1293:A:O2'	54:5:1297:G:N7	2.52	0.41
54:5:1432:A:H2'	54:5:1433:G:C8	2.56	0.41
6:B:93:LYS:HB2	6:B:93:LYS:HE2	1.89	0.41
7:C:64:TYR:CE2	7:C:93:LEU:HD13	2.53	0.41
12:H:13:LYS:HD2	54:5:1347:U:OP2	2.21	0.41
16:L:13:LYS:NZ	16:L:21:TYR:OH	2.54	0.41
16:L:24:GLY:O	16:L:25:ILE:HD13	2.21	0.41
21:Q:91:LYS:HD3	54:5:732:A:H5'	2.02	0.41
26:a:2:PRO:HB2	26:a:3:ILE:H	1.67	0.41
26:a:159:GLN:HA	26:a:162:ARG:HH11	1.85	0.41
34:i:26:LEU:HB3	34:i:31:LEU:HD23	2.02	0.41
36:k:98:LEU:HB3	36:k:103:VAL:HB	2.03	0.41
37:l:14:ASN:ND2	52:3:992:G:N7	2.69	0.41
38:m:2:SER:OG	38:m:3:TYR:N	2.53	0.41
39:n:32:VAL:HG12	39:n:41:VAL:HG12	2.03	0.41
47:v:14:TYR:CD2	52:3:192:U:H5''	2.55	0.41
47:v:34:GLN:HG2	52:3:2098:U:O2'	2.21	0.41
50:y:7:ARG:HD3	52:3:1292:A:H2	1.85	0.41
50:y:40:HIS:H	52:3:2888:U:H5	1.69	0.41
52:3:48:G:OP1	52:3:219:G:H5''	2.20	0.41
52:3:154:U:H2'	52:3:155:A:C8	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:314:G:O2'	52:3:315:A:H2'	2.21	0.41
52:3:357:A:OP2	52:3:358:A:H8	2.04	0.41
52:3:444:C:C2	52:3:456:G:N2	2.88	0.41
52:3:625:G:O6	52:3:701:A:N6	2.53	0.41
52:3:628:A:H2'	52:3:629:G:C8	2.56	0.41
52:3:800:C:H2'	52:3:801:U:C6	2.55	0.41
52:3:849:C:H5'	52:3:1255:G:H1'	2.03	0.41
52:3:894:G:O2'	52:3:2276:A:N3	2.54	0.41
52:3:1180:U:H2'	52:3:1181:A:C8	2.52	0.41
52:3:1247:C:N4	52:3:1248:A:H62	2.19	0.41
52:3:1848:U:H2'	52:3:1849:G:C8	2.54	0.41
52:3:1856:G:C2	52:3:1857:G:N7	2.89	0.41
52:3:1931:C:H2'	52:3:1932:C:C6	2.56	0.41
52:3:2495:A:H2'	52:3:2496:G:C8	2.56	0.41
52:3:2670:A:H3'	52:3:2671:G:C8	2.53	0.41
52:3:2815:G:H2'	52:3:2816:A:C8	2.56	0.41
53:4:67:G:H1	53:4:97:A:H2	1.67	0.41
54:5:452:A:N6	54:5:474:G:C6	2.89	0.41
54:5:561:A:O2'	54:5:564:G:O3'	2.39	0.41
54:5:625:U:H2'	54:5:626:G:C8	2.56	0.41
54:5:1209:C:H2'	54:5:1210:U:C6	2.56	0.41
54:5:1231:U:H2'	54:5:1253:A:C5	2.55	0.41
55:7:6:U:H2'	55:7:7:U:C6	2.55	0.41
4:9:103:ILE:CD1	4:9:131:ILE:HG13	2.51	0.41
4:9:260:SER:HB3	4:9:263:LYS:HB2	2.01	0.41
4:9:305:ALA:H	4:9:306:PRO:HD3	1.86	0.41
4:9:310:LEU:HA	4:9:386:THR:HA	2.03	0.41
4:9:546:MET:HG3	4:9:586:LEU:HD11	2.02	0.41
5:A:61:GLN:NE2	5:A:65:LEU:HB2	2.36	0.41
5:A:117:LEU:N	5:A:190:GLU:OE1	2.34	0.41
6:B:5:VAL:HG11	54:5:1164:U:H5''	2.02	0.41
6:B:78:ILE:HG13	6:B:85:ILE:HD12	2.02	0.41
6:B:87:LYS:O	6:B:90:LYS:HG2	2.21	0.41
11:G:6:LYS:HD2	11:G:6:LYS:HA	1.80	0.41
13:I:39:ASP:OD1	13:I:40:VAL:N	2.52	0.41
13:I:63:VAL:HG11	54:5:967:C:O2	2.21	0.41
17:M:2:ALA:N	54:5:1041:G:OP1	2.54	0.41
17:M:24:CYS:HB2	17:M:39:VAL:HA	2.03	0.41
26:a:74:THR:HG22	26:a:197:ARG:NH1	2.35	0.41
26:a:258:TRP:CZ2	52:3:1812:C:H4'	2.56	0.41
27:b:123:ILE:HG13	27:b:130:ILE:HD11	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:b:175:THR:HB	52:3:2780:U:H4'	2.02	0.41
27:b:225:GLN:NE2	40:o:82:HIS:O	2.54	0.41
31:f:6:LYS:N	31:f:34:LYS:HG3	2.35	0.41
31:f:64:LEU:HA	31:f:67:LYS:HD2	2.02	0.41
32:g:5:LYS:HD2	32:g:6:ASP:N	2.36	0.41
32:g:89:ILE:HG23	32:g:113:PHE:CD1	2.56	0.41
36:k:37:LYS:HD2	52:3:842:U:OP2	2.21	0.41
36:k:87:LYS:HE2	36:k:87:LYS:HB2	1.85	0.41
38:m:43:LYS:O	38:m:47:LYS:HG3	2.20	0.41
38:m:62:GLN:O	38:m:66:TRP:NE1	2.54	0.41
38:m:102:LYS:O	50:y:42:VAL:HG13	2.20	0.41
43:r:12:ILE:H	43:r:100:SER:HA	1.86	0.41
43:r:115:GLN:CD	43:r:115:GLN:H	2.29	0.41
48:w:23:LYS:O	48:w:27:LEU:HD13	2.21	0.41
52:3:173:C:C2	52:3:174:A:N7	2.89	0.41
52:3:191:G:H2'	52:3:192:U:C6	2.55	0.41
52:3:306:G:C5	52:3:399:G:C6	3.09	0.41
52:3:334:A:O2'	52:3:352:C:O2	2.36	0.41
52:3:617:C:H2'	52:3:618:G:O4'	2.21	0.41
52:3:694:U:H2'	52:3:695:G:C8	2.56	0.41
52:3:723:U:H2'	52:3:724:A:C8	2.56	0.41
52:3:773:G:H2'	52:3:774:A:O4'	2.20	0.41
52:3:816:A:H5''	52:3:817:A:C8	2.56	0.41
52:3:890:U:H2'	52:3:891:G:C8	2.47	0.41
52:3:891:G:C6	52:3:960:A:C6	3.09	0.41
52:3:1228:G:H2'	52:3:1229:U:C6	2.56	0.41
52:3:1343:C:H2'	52:3:1344:U:C6	2.56	0.41
52:3:1520:A:H2	52:3:1612:U:O2	2.04	0.41
52:3:1535:A:C8	52:3:1536:C:C5	3.08	0.41
52:3:1670:U:O4'	52:3:1768:G:O2'	2.34	0.41
52:3:1700:G:H2'	52:3:1701:G:H5'	2.03	0.41
52:3:1887:U:H2'	52:3:1888:U:C6	2.56	0.41
52:3:1911:G:H2'	52:3:1912:C:O4'	2.20	0.41
52:3:1937:G:N2	52:3:1976:A:O5'	2.54	0.41
52:3:1945:A:H1'	52:3:2613:U:H1'	2.03	0.41
52:3:1968:C:H5'	54:5:1459:U:O2'	2.21	0.41
52:3:2141:A:OP2	52:3:2164:G:N2	2.53	0.41
52:3:2336:A:H2'	52:3:2337:U:C6	2.56	0.41
52:3:2357:G:O6	52:3:2377:A:N6	2.54	0.41
52:3:2727:G:N2	52:3:2876:G:H1	2.19	0.41
52:3:2754:U:O4	52:3:2764:U:H5	2.04	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:4:61:A:H2'	53:4:62:G:H8	1.85	0.41
54:5:94:A:H62	54:5:320:G:N2	2.19	0.41
54:5:172:C:N4	54:5:193:G:O6	2.54	0.41
54:5:275:A:H5'	54:5:276:U:H3'	2.03	0.41
54:5:351:C:H1'	54:5:384:G:H1'	2.03	0.41
54:5:447:G:H5''	54:5:448:A:H3'	2.02	0.41
54:5:491:U:H2'	54:5:492:G:O4'	2.20	0.41
54:5:568:G:H2'	54:5:569:U:C6	2.56	0.41
54:5:655:G:N1	54:5:746:A:C6	2.89	0.41
54:5:960:C:OP1	54:5:1173:A:H5''	2.20	0.41
54:5:989:A:H2'	54:5:990:C:O4'	2.21	0.41
54:5:1050:U:H2'	54:5:1051:U:H6	1.86	0.41
54:5:1065:G:O6	54:5:1074:U:O4	2.39	0.41
54:5:1089:C:N4	54:5:1090:G:O6	2.53	0.41
54:5:1192:C:H2'	54:5:1193:U:C6	2.56	0.41
54:5:1264:G:C2	54:5:1265:U:C6	3.09	0.41
54:5:1333:C:H2'	54:5:1335:G:OP2	2.20	0.41
54:5:1466:U:H2'	54:5:1468:A:H62	1.86	0.41
55:7:22:A:O4'	55:7:49:C:N4	2.53	0.41
55:7:74:A:H5'	55:7:77:A:N1	2.35	0.41
1:0:3:ARG:HE	52:3:1646:G:N2	2.18	0.41
4:9:240:ILE:O	4:9:244:ILE:HG13	2.20	0.41
15:K:28:LEU:HD21	15:K:72:ASN:HB3	2.02	0.41
15:K:49:ARG:HH11	15:K:65:TYR:HE2	1.69	0.41
20:P:31:LYS:HD3	20:P:31:LYS:HA	1.83	0.41
20:P:32:HIS:HB3	20:P:37:LYS:H	1.86	0.41
22:R:79:ASN:O	54:5:1200:G:N2	2.54	0.41
22:R:81:LYS:HG3	22:R:82:GLN:N	2.33	0.41
31:f:77:LEU:HD23	31:f:77:LEU:HA	1.88	0.41
31:f:96:GLN:NE2	31:f:97:ILE:HG23	2.36	0.41
31:f:141:LYS:HA	31:f:141:LYS:HD2	1.86	0.41
34:i:3:LYS:HG2	34:i:4:THR:HG23	2.03	0.41
35:j:54:LYS:HE3	35:j:54:LYS:HB2	1.82	0.41
35:j:77:LEU:HD11	40:o:75:ILE:HG23	2.03	0.41
36:k:127:GLU:HB3	36:k:149:LEU:HD11	2.02	0.41
41:p:14:LYS:NZ	52:3:1247:C:OP1	2.38	0.41
41:p:35:LYS:O	41:p:39:ILE:HG12	2.20	0.41
42:q:2:HIS:HA	42:q:15:HIS:HA	2.02	0.41
42:q:85:HIS:NE2	52:3:1028:C:O2	2.54	0.41
52:3:60:G:O2'	52:3:75:A:N1	2.42	0.41
52:3:127:A:O2'	52:3:128:A:O4'	2.38	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:592:G:H2'	52:3:593:C:C6	2.56	0.41
52:3:877:G:H2'	52:3:878:A:H8	1.86	0.41
52:3:1284:A:N3	52:3:1284:A:H2'	2.35	0.41
52:3:1454:G:H3'	52:3:1455:A:H2'	2.03	0.41
52:3:1527:U:C2	52:3:1528:G:C8	3.08	0.41
52:3:1597:U:H2'	52:3:1598:U:H6	1.86	0.41
52:3:1693:U:C2	52:3:1694:A:C8	3.09	0.41
52:3:1858:U:O2'	52:3:1859:U:H5'	2.21	0.41
52:3:2043:C:H2'	52:3:2044:C:C6	2.56	0.41
52:3:2819:C:H2'	52:3:2820:G:H8	1.86	0.41
52:3:2863:G:H2'	52:3:2864:A:C8	2.56	0.41
53:4:5:G:O6	53:4:104:C:N4	2.54	0.41
54:5:231:U:O2'	54:5:232:G:H5'	2.21	0.41
54:5:445:A:H2'	54:5:446:A:C8	2.56	0.41
54:5:1503:U:O2'	54:5:1505:G:H2'	2.21	0.41
4:9:133:PHE:CE1	4:9:270:LEU:HD11	2.56	0.40
4:9:163:GLN:OE1	4:9:269:LEU:HD13	2.20	0.40
4:9:218:VAL:HB	4:9:243:CYS:HB3	2.03	0.40
4:9:281:PRO:HA	4:9:284:VAL:HG22	2.02	0.40
4:9:484:PHE:CE1	4:9:559:ILE:HG12	2.55	0.40
4:9:507:VAL:HG13	4:9:578:PHE:HD1	1.86	0.40
9:E:39:TYR:HB2	9:E:58:TYR:CD2	2.56	0.40
9:E:112:ARG:O	9:E:112:ARG:NH1	2.55	0.40
10:F:65:VAL:HA	10:F:68:VAL:HG12	2.01	0.40
11:G:25:ALA:HB2	11:G:33:VAL:HG21	2.04	0.40
11:G:92:LYS:HE3	11:G:92:LYS:HB3	1.91	0.40
15:K:24:LEU:HD23	15:K:70:LEU:HD11	2.02	0.40
17:M:36:HIS:NE2	54:5:1331:A:H5''	2.35	0.40
18:N:23:GLN:H	18:N:23:GLN:CD	2.29	0.40
18:N:61:LYS:HE3	18:N:83:ASN:HD21	1.86	0.40
24:T:52:LYS:HB2	24:T:52:LYS:HE3	1.71	0.40
25:W:107:GLU:CD	33:h:37:LYS:HZ1	2.29	0.40
28:c:174:ASN:HD22	52:3:354:C:H1'	1.84	0.40
29:d:93:GLY:O	29:d:96:MET:HB3	2.21	0.40
30:e:98:ARG:HH12	30:e:100:ASN:ND2	2.19	0.40
34:i:16:ARG:HB2	34:i:56:TYR:CZ	2.55	0.40
38:m:59:ASN:O	38:m:63:VAL:HG23	2.21	0.40
52:3:90:G:N1	52:3:91:G:O6	2.55	0.40
52:3:251:G:H22	52:3:254:G:H3'	1.86	0.40
52:3:452:U:H2'	52:3:453:U:C6	2.55	0.40
52:3:511:U:H2'	52:3:512:G:O4'	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:612:G:H4'	52:3:2024:C:H2'	2.02	0.40
52:3:720:A:N6	52:3:809:A:O4'	2.53	0.40
52:3:776:U:H2'	52:3:777:C:H6	1.86	0.40
52:3:871:G:H2'	52:3:872:C:O4'	2.21	0.40
52:3:1336:A:H3'	52:3:1337:G:C8	2.57	0.40
52:3:1444:C:O2'	52:3:1445:U:O5'	2.36	0.40
52:3:1470:C:H2'	52:3:1471:A:H8	1.86	0.40
52:3:1662:G:O2'	52:3:1663:G:H5'	2.21	0.40
52:3:2034:G:H2'	52:3:2035:U:O4'	2.21	0.40
52:3:2046:G:N1	52:3:2047:U:C4	2.89	0.40
52:3:2053:G:H2'	52:3:2054:C:C6	2.56	0.40
52:3:2538:A:OP2	52:3:2543:G:N2	2.54	0.40
53:4:4:G:H2'	53:4:5:G:H8	1.86	0.40
53:4:4:G:C6	53:4:105:A:C6	3.09	0.40
53:4:65:G:H2'	53:4:66:A:C8	2.56	0.40
53:4:90:G:H2'	53:4:91:A:C8	2.56	0.40
54:5:352:A:C2	54:5:364:U:H1'	2.56	0.40
54:5:443:G:C2'	54:5:444:G:H5'	2.51	0.40
54:5:778:A:OP1	54:5:1497:U:O2'	2.39	0.40
54:5:901:A:C4	54:5:902:A:C8	3.09	0.40
54:5:916:U:H2'	54:5:917:G:N7	2.35	0.40
54:5:1434:C:C2'	54:5:1435:G:H5'	2.51	0.40
54:5:1482:A:H2'	54:5:1483:C:C6	2.56	0.40
1:0:8:SER:OG	1:0:11:LYS:HB3	2.21	0.40
6:B:210:ILE:O	6:B:210:ILE:HG23	2.21	0.40
9:E:109:LEU:HD23	54:5:838:A:C5	2.56	0.40
10:F:28:VAL:HG21	10:F:100:LEU:HB3	2.03	0.40
12:H:48:GLN:NE2	12:H:55:ASP:OD2	2.54	0.40
12:H:116:LYS:HE2	54:5:1344:C:H5	1.84	0.40
20:P:44:LYS:HB2	20:P:44:LYS:HE2	1.80	0.40
22:R:34:TRP:O	22:R:34:TRP:HD1	2.04	0.40
24:T:10:ASP:OD2	24:T:13:LEU:N	2.46	0.40
26:a:8:SER:O	52:3:762:A:H2	2.04	0.40
27:b:14:SER:OG	27:b:15:GLN:N	2.55	0.40
27:b:27:THR:HG21	27:b:197:ILE:HG12	2.04	0.40
28:c:78:SER:N	52:3:709:G:OP1	2.35	0.40
31:f:6:LYS:HB3	31:f:34:LYS:HA	2.03	0.40
37:l:77:LYS:HB2	52:3:992:G:H4'	2.03	0.40
37:l:89:ASN:O	37:l:91:GLU:HG2	2.21	0.40
47:v:40:THR:OG1	47:v:41:ALA:N	2.54	0.40
52:3:142:A:N3	52:3:1437:A:H1'	2.36	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:546:U:H2'	52:3:547:G:O4'	2.20	0.40
52:3:683:G:H2'	52:3:684:A:H8	1.87	0.40
52:3:752:C:H3'	52:3:753:A:H8	1.87	0.40
52:3:1104:A:C2	52:3:1131:A:H4'	2.56	0.40
52:3:1380:U:H2'	52:3:1381:A:H8	1.86	0.40
52:3:1389:G:O2'	52:3:2223:C:O2'	2.36	0.40
52:3:1474:C:H2'	52:3:1475:C:H6	1.85	0.40
52:3:1878:A:H2'	52:3:1879:A:O4'	2.22	0.40
52:3:2155:G:H2'	52:3:2156:G:C8	2.44	0.40
52:3:2227:U:H2'	52:3:2228:U:H6	1.86	0.40
52:3:2401:U:H2'	52:3:2402:C:H6	1.85	0.40
52:3:2754:U:O4	52:3:2763:C:H4'	2.21	0.40
53:4:68:C:H2'	53:4:69:C:C6	2.57	0.40
54:5:36:G:C6	54:5:548:G:C6	3.09	0.40
54:5:114:C:O2'	54:5:116:A:N7	2.53	0.40
54:5:149:G:C4	54:5:150:A:C8	3.09	0.40
54:5:206:G:O2'	54:5:209:A:N6	2.54	0.40
54:5:429:A:C4	54:5:430:G:C8	3.09	0.40
54:5:515:G:O2'	54:5:528:G:H4'	2.20	0.40
54:5:577:G:H1'	54:5:725:A:C2	2.57	0.40
54:5:675:U:H2'	54:5:676:U:H6	1.87	0.40
54:5:1032:G:H2'	54:5:1033:U:O4'	2.21	0.40
54:5:1117:U:O2'	54:5:1255:A:H2'	2.19	0.40
54:5:1161:G:C6	54:5:1162:G:C6	3.09	0.40
54:5:1293:A:C8	54:5:1297:G:C6	3.10	0.40
54:5:1461:G:H2'	54:5:1462:G:H8	1.86	0.40
1:0:5:TYR:HD2	52:3:1646:G:H4'	1.86	0.40
1:0:34:ARG:HE	1:0:42:LEU:HA	1.86	0.40
2:1:36:LYS:HE3	2:1:36:LYS:HB2	1.91	0.40
8:D:212:ARG:NH1	11:G:53:TYR:OH	2.54	0.40
9:E:9:VAL:HA	9:E:81:GLN:HG3	2.02	0.40
15:K:105:GLY:O	15:K:107:ARG:NH2	2.53	0.40
20:P:66:THR:OG1	54:5:116:A:OP1	2.38	0.40
26:a:242:GLY:O	26:a:247:SER:HB2	2.21	0.40
26:a:282:ARG:NH1	52:3:1826:A:N1	2.69	0.40
28:c:83:HIS:O	52:3:1286:G:N2	2.54	0.40
30:e:3:LYS:HA	52:3:2759:G:C5	2.57	0.40
34:i:143:LEU:HD21	34:i:146:SER:HB3	2.01	0.40
42:q:14:VAL:HG21	42:q:20:PHE:CE1	2.57	0.40
45:t:1:MET:N	52:3:85:U:H4'	2.37	0.40
45:t:2:GLN:HG3	45:t:3:ARG:N	2.36	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:t:61:GLY:N	52:3:519:A:O2'	2.46	0.40
46:u:99:LYS:HB3	46:u:99:LYS:HE2	1.96	0.40
52:3:122:G:H2'	52:3:123:G:H8	1.86	0.40
52:3:336:C:H2'	52:3:337:U:H6	1.85	0.40
52:3:393:C:H2'	52:3:394:C:N1	2.37	0.40
52:3:488:G:N2	52:3:493:A:O2'	2.55	0.40
52:3:630:C:H2'	52:3:631:A:C8	2.56	0.40
52:3:841:C:H2'	52:3:842:U:H5''	2.03	0.40
52:3:1181:A:C6	52:3:1182:U:C4	3.09	0.40
52:3:1303:U:OP2	52:3:1680:A:H2'	2.21	0.40
52:3:1316:U:H5''	52:3:1317:C:H5	1.85	0.40
52:3:1672:C:O3'	52:3:2717:G:N2	2.53	0.40
52:3:1802:C:H2'	52:3:1803:U:H6	1.86	0.40
52:3:1828:A:H2'	52:3:1829:U:H6	1.87	0.40
52:3:2335:A:C2	52:3:2336:A:H1'	2.56	0.40
52:3:2381:G:C2'	52:3:2382:A:H5'	2.51	0.40
52:3:2675:C:H2'	52:3:2676:G:C8	2.57	0.40
52:3:2858:A:H2'	52:3:2859:U:C6	2.57	0.40
54:5:36:G:H2'	54:5:37:C:C6	2.56	0.40
54:5:402:G:H2'	54:5:403:A:C8	2.56	0.40
54:5:537:A:H2'	54:5:538:G:H8	1.86	0.40
54:5:608:G:H2'	54:5:609:G:H8	1.86	0.40
54:5:979:C:H2'	54:5:980:C:H6	1.86	0.40
54:5:1138:U:O4	54:5:1149:G:O6	2.39	0.40
55:8:71:A:O2'	55:8:72:C:OP1	2.31	0.40
4:9:263:LYS:HB3	4:9:265:LYS:NZ	2.36	0.40
4:9:504:TYR:CE2	4:9:569:HIS:HB2	2.57	0.40
4:9:601:ILE:HD13	4:9:644:PRO:HA	2.04	0.40
5:A:116:THR:N	5:A:190:GLU:OE1	2.50	0.40
6:B:182:ARG:O	6:B:182:ARG:NH2	2.54	0.40
13:I:105:ARG:HD3	13:I:105:ARG:HA	1.70	0.40
24:T:37:ARG:NH2	54:5:1501:G:OP2	2.47	0.40
26:a:100:THR:HG23	26:a:106:LYS:HG2	2.02	0.40
26:a:153:HIS:HE1	26:a:156:GLY:HA3	1.83	0.40
26:a:190:ARG:HH12	26:a:274:SER:HB2	1.85	0.40
26:a:251:ARG:HB3	26:a:255:ARG:CZ	2.51	0.40
27:b:4:ARG:HE	27:b:87:MET:HE3	1.86	0.40
29:d:50:LEU:O	29:d:54:LEU:HG	2.21	0.40
41:p:31:TYR:HD2	41:p:32:LYS:HD3	1.87	0.40
42:q:79:HIS:NE2	52:3:1218:G:H5''	2.37	0.40
44:s:46:LEU:HD23	44:s:46:LEU:HA	1.91	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:180:A:H8	52:3:181:G:C8	2.38	0.40
52:3:1057:G:H1'	52:3:1058:U:H5	1.86	0.40
52:3:1067:A:N1	52:3:1157:G:C6	2.90	0.40
52:3:1298:A:C4	52:3:2020:A:N6	2.89	0.40
52:3:1556:U:H3	52:3:1574:G:H22	1.70	0.40
52:3:1756:A:H2'	52:3:1757:G:H8	1.86	0.40
52:3:1815:U:O2'	52:3:1816:A:C8	2.73	0.40
52:3:2074:G:H3'	52:3:2075:U:H4'	2.04	0.40
52:3:2274:A:N6	52:3:2282:A:H62	2.20	0.40
52:3:2297:G:H1	52:3:2351:U:H3	1.68	0.40
52:3:2519:U:H2'	52:3:2520:C:C6	2.57	0.40
52:3:2681:G:H2'	52:3:2682:A:H8	1.85	0.40
53:4:33:U:H2'	53:4:34:U:C6	2.57	0.40
54:5:104:A:H4'	54:5:105:A:C8	2.56	0.40
54:5:455:U:C4	54:5:456:U:C5	3.09	0.40
54:5:503:G:C2	54:5:504:A:C5	3.10	0.40
54:5:927:C:H2'	54:5:928:G:C8	2.57	0.40
54:5:944:A:O2'	54:5:945:U:H5'	2.21	0.40
6:B:86:GLN:HA	6:B:89:THR:HG22	2.04	0.40
8:D:140:VAL:HG12	8:D:151:LEU:HB2	2.03	0.40
9:E:6:ILE:HG13	9:E:86:LEU:HB3	2.03	0.40
9:E:56:HIS:HB3	9:E:58:TYR:CZ	2.57	0.40
10:F:108:ARG:HB3	10:F:115:MET:HE1	2.02	0.40
11:G:12:PHE:CE2	11:G:93:PRO:HB3	2.56	0.40
15:K:57:LYS:N	15:K:58:PRO:HD2	2.37	0.40
16:L:107:ARG:HG2	16:L:107:ARG:O	2.22	0.40
16:L:108:THR:OG1	54:5:1306:A:H8	2.04	0.40
27:b:70:PHE:HE1	27:b:81:LEU:HD11	1.86	0.40
28:c:108:HIS:CE1	28:c:112:LEU:HD11	2.57	0.40
28:c:162:ASN:ND2	28:c:183:LEU:HB3	2.35	0.40
30:e:110:LEU:HB3	30:e:155:ARG:NE	2.36	0.40
33:h:111:ASP:HB3	33:h:112:LEU:HG	2.03	0.40
37:l:87:LYS:HE2	52:3:991:G:H5''	2.04	0.40
38:m:9:LYS:HB3	38:m:14:ARG:HH21	1.87	0.40
42:q:37:LYS:H	42:q:37:LYS:HG2	1.72	0.40
43:r:106:LYS:HE2	43:r:106:LYS:HB2	1.89	0.40
45:t:26:LYS:HA	45:t:26:LYS:HD2	1.95	0.40
45:t:36:VAL:O	45:t:66:GLU:HG3	2.22	0.40
45:t:46:LYS:HB2	45:t:46:LYS:HE3	1.82	0.40
49:x:11:SER:HA	49:x:26:GLU:HA	2.04	0.40
52:3:83:G:H3'	52:3:84:G:H8	1.86	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:133:G:N2	52:3:150:U:O2	2.36	0.40
52:3:410:G:H1'	52:3:411:U:OP2	2.21	0.40
52:3:447:G:H4'	52:3:448:A:H5'	2.03	0.40
52:3:730:G:C6	52:3:803:G:C6	3.10	0.40
52:3:1032:A:H2'	52:3:1033:A:H8	1.86	0.40
52:3:1319:C:H2'	52:3:1320:C:H6	1.85	0.40
52:3:1473:C:H2'	52:3:1474:C:H6	1.87	0.40
52:3:1509:U:H2'	52:3:1510:A:H8	1.83	0.40
52:3:1523:C:H2'	52:3:1524:C:C6	2.56	0.40
52:3:1539:U:H2'	52:3:1540:G:C8	2.56	0.40
52:3:1855:A:H3'	52:3:1856:G:H8	1.86	0.40
52:3:2013:C:H2'	52:3:2014:U:C6	2.57	0.40
52:3:2044:C:H2'	52:3:2045:C:C6	2.57	0.40
52:3:2114:C:O2	52:3:2191:G:N1	2.54	0.40
52:3:2739:C:O2'	52:3:2740:U:H5'	2.22	0.40
52:3:2847:C:C2	52:3:2848:A:C8	3.09	0.40
54:5:98:G:H2'	54:5:99:U:C6	2.56	0.40
54:5:336:U:C2	54:5:346:G:N2	2.90	0.40
54:5:661:G:N3	54:5:723:C:H4'	2.37	0.40
54:5:826:G:H2'	54:5:827:C:H6	1.85	0.40
54:5:955:U:H1'	54:5:1197:G:O2'	2.21	0.40
54:5:1052:G:H2'	54:5:1053:U:O4'	2.21	0.40
54:5:1203:A:H2'	54:5:1204:A:C8	2.56	0.40
54:5:1244:A:H3'	54:5:1245:A:O4'	2.22	0.40
54:5:1391:A:H2'	54:5:1392:A:C8	2.56	0.40
55:7:67:C:H2'	55:7:68:G:H8	1.86	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	0	45/48 (94%)	42 (93%)	3 (7%)	0	100	100
2	1	57/59 (97%)	49 (86%)	8 (14%)	0	100	100
3	2	35/37 (95%)	34 (97%)	1 (3%)	0	100	100
4	9	680/688 (99%)	628 (92%)	52 (8%)	0	100	100
5	A	238/294 (81%)	222 (93%)	16 (7%)	0	100	100
6	B	213/273 (78%)	196 (92%)	17 (8%)	0	100	100
7	C	201/205 (98%)	185 (92%)	16 (8%)	0	100	100
8	D	151/219 (69%)	137 (91%)	14 (9%)	0	100	100
9	E	165/215 (77%)	145 (88%)	20 (12%)	0	100	100
10	F	152/155 (98%)	140 (92%)	12 (8%)	0	100	100
11	G	139/142 (98%)	121 (87%)	18 (13%)	0	100	100
12	H	126/132 (96%)	113 (90%)	13 (10%)	0	100	100
13	I	99/108 (92%)	91 (92%)	8 (8%)	0	100	100
14	J	112/121 (93%)	106 (95%)	6 (5%)	0	100	100
15	K	134/139 (96%)	114 (85%)	20 (15%)	0	100	100
16	L	116/124 (94%)	106 (91%)	10 (9%)	0	100	100
17	M	58/61 (95%)	54 (93%)	4 (7%)	0	100	100
18	N	81/86 (94%)	79 (98%)	2 (2%)	0	100	100
19	O	78/94 (83%)	72 (92%)	6 (8%)	0	100	100
20	P	81/85 (95%)	76 (94%)	5 (6%)	0	100	100
21	Q	63/104 (61%)	54 (86%)	9 (14%)	0	100	100
22	R	82/87 (94%)	74 (90%)	6 (7%)	2 (2%)	4	27
23	S	75/87 (86%)	74 (99%)	1 (1%)	0	100	100
24	T	51/60 (85%)	49 (96%)	2 (4%)	0	100	100
25	W	67/122 (55%)	63 (94%)	4 (6%)	0	100	100
26	a	283/287 (99%)	268 (95%)	15 (5%)	0	100	100
27	b	227/287 (79%)	215 (95%)	12 (5%)	0	100	100
28	c	208/212 (98%)	193 (93%)	15 (7%)	0	100	100
29	d	173/180 (96%)	160 (92%)	13 (8%)	0	100	100
30	e	174/184 (95%)	162 (93%)	12 (7%)	0	100	100
31	f	143/149 (96%)	129 (90%)	14 (10%)	0	100	100
32	g	124/161 (77%)	111 (90%)	12 (10%)	1 (1%)	16	54

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
33	h	126/137 (92%)	118 (94%)	8 (6%)	0	100	100
34	i	142/146 (97%)	134 (94%)	8 (6%)	0	100	100
35	j	120/122 (98%)	115 (96%)	5 (4%)	0	100	100
36	k	146/151 (97%)	136 (93%)	10 (7%)	0	100	100
37	l	134/139 (96%)	120 (90%)	12 (9%)	2 (2%)	8	40
38	m	117/124 (94%)	112 (96%)	5 (4%)	0	100	100
39	n	108/116 (93%)	96 (89%)	12 (11%)	0	100	100
40	o	113/119 (95%)	104 (92%)	9 (8%)	0	100	100
41	p	112/127 (88%)	111 (99%)	1 (1%)	0	100	100
42	q	97/100 (97%)	89 (92%)	8 (8%)	0	100	100
43	r	137/159 (86%)	128 (93%)	9 (7%)	0	100	100
44	s	90/237 (38%)	76 (84%)	14 (16%)	0	100	100
45	t	109/111 (98%)	101 (93%)	8 (7%)	0	100	100
46	u	84/104 (81%)	82 (98%)	2 (2%)	0	100	100
47	v	61/65 (94%)	59 (97%)	2 (3%)	0	100	100
48	w	96/111 (86%)	91 (95%)	5 (5%)	0	100	100
49	x	42/97 (43%)	31 (74%)	11 (26%)	0	100	100
50	y	54/57 (95%)	52 (96%)	1 (2%)	1 (2%)	6	32
51	z	48/53 (91%)	45 (94%)	3 (6%)	0	100	100
All	All	6567/7480 (88%)	6062 (92%)	499 (8%)	6 (0%)	49	83

All (6) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
22	R	81	LYS
22	R	82	GLN
32	g	32	MET
50	y	49	GLY
37	l	14	ASN
37	l	109	ILE

5.3.2 Protein sidechains ⓘ

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

entries.

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	0	40/41 (98%)	40 (100%)	0	100	100
2	1	51/51 (100%)	51 (100%)	0	100	100
3	2	35/35 (100%)	35 (100%)	0	100	100
4	9	579/584 (99%)	579 (100%)	0	100	100
5	A	212/262 (81%)	212 (100%)	0	100	100
6	B	180/232 (78%)	180 (100%)	0	100	100
7	C	181/183 (99%)	181 (100%)	0	100	100
8	D	123/178 (69%)	123 (100%)	0	100	100
9	E	150/196 (76%)	150 (100%)	0	100	100
10	F	131/132 (99%)	131 (100%)	0	100	100
11	G	123/124 (99%)	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
21	Q	56/94 (60%)	56 (100%)	0	100	100
22	R	74/77 (96%)	74 (100%)	0	100	100
23	S	70/77 (91%)	70 (100%)	0	100	100
24	T	49/56 (88%)	49 (100%)	0	100	100
25	W	58/98 (59%)	58 (100%)	0	100	100
26	a	241/243 (99%)	241 (100%)	0	100	100
27	b	186/233 (80%)	186 (100%)	0	100	100
28	c	182/184 (99%)	182 (100%)	0	100	100
29	d	150/154 (97%)	150 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
30	e	153/159 (96%)	153 (100%)	0	100	100
31	f	123/134 (92%)	123 (100%)	0	100	100
32	g	101/129 (78%)	90 (89%)	11 (11%)	6	21
33	h	102/110 (93%)	102 (100%)	0	100	100
34	i	126/128 (98%)	126 (100%)	0	100	100
35	j	103/103 (100%)	103 (100%)	0	100	100
36	k	123/126 (98%)	122 (99%)	1 (1%)	73	80
37	l	113/115 (98%)	113 (100%)	0	100	100
38	m	105/109 (96%)	105 (100%)	0	100	100
39	n	96/99 (97%)	96 (100%)	0	100	100
40	o	101/105 (96%)	101 (100%)	0	100	100
41	p	100/108 (93%)	100 (100%)	0	100	100
42	q	90/91 (99%)	90 (100%)	0	100	100
43	r	116/132 (88%)	116 (100%)	0	100	100
44	s	82/208 (39%)	82 (100%)	0	100	100
45	t	96/96 (100%)	96 (100%)	0	100	100
46	u	69/85 (81%)	69 (100%)	0	100	100
47	v	58/60 (97%)	58 (100%)	0	100	100
48	w	87/98 (89%)	87 (100%)	0	100	100
49	x	41/86 (48%)	41 (100%)	0	100	100
50	y	48/49 (98%)	45 (94%)	3 (6%)	16	37
51	z	47/50 (94%)	47 (100%)	0	100	100
All	All	5730/6433 (89%)	5711 (100%)	19 (0%)	84	86

All (19) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
15	K	116	ASP
15	K	117	THR
15	K	118	VAL
15	K	121	GLU
32	g	26	ILE
32	g	31	SER
32	g	32	MET

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Mol	Chain	Res	Type
32	g	42	LYS
32	g	43	LYS
32	g	44	LEU
32	g	46	LYS
32	g	84	VAL
32	g	88	GLU
32	g	89	ILE
32	g	90	VAL
36	k	94	ASN
50	y	47	MET
50	y	50	ASP
50	y	51	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (99) such sidechains are listed below:

Mol	Chain	Res	Type
4	9	18	HIS
4	9	135	ASN
4	9	173	ASN
4	9	252	GLN
4	9	264	ASN
4	9	286	GLN
4	9	395	GLN
4	9	455	HIS
4	9	503	GLN
4	9	506	HIS
4	9	668	GLN
5	A	53	ASN
5	A	61	GLN
5	A	66	GLN
5	A	81	GLN
5	A	221	GLN
6	B	17	ASN
6	B	25	ASN
7	C	21	ASN
7	C	22	ASN
7	C	115	GLN
7	C	171	ASN
9	E	4	ASN
9	E	19	ASN
9	E	56	HIS
9	E	66	ASN

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Mol	Chain	Res	Type
9	E	89	ASN
10	F	4	ASN
10	F	19	ASN
10	F	51	GLN
12	H	33	ASN
13	I	70	GLN
14	J	21	ASN
14	J	33	ASN
15	K	88	GLN
18	N	35	GLN
18	N	70	ASN
20	P	4	ASN
20	P	25	GLN
20	P	36	HIS
20	P	42	HIS
21	Q	80	GLN
22	R	14	HIS
22	R	23	ASN
22	R	59	ASN
22	R	79	ASN
23	S	31	ASN
23	S	46	ASN
23	S	50	GLN
23	S	63	ASN
24	T	32	HIS
26	a	29	ASN
26	a	58	GLN
26	a	126	HIS
26	a	148	HIS
26	a	153	HIS
26	a	240	HIS
27	b	80	HIS
27	b	86	ASN
27	b	95	GLN
27	b	127	ASN
27	b	157	GLN
28	c	130	GLN
28	c	165	ASN
28	c	167	ASN
28	c	177	ASN
28	c	179	GLN
29	d	27	GLN

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Mol	Chain	Res	Type
30	e	51	ASN
31	f	55	GLN
31	f	61	ASN
31	f	84	HIS
32	g	47	ASN
32	g	87	ASN
33	h	130	GLN
35	j	9	ASN
35	j	13	ASN
36	k	24	HIS
36	k	39	GLN
36	k	94	ASN
36	k	129	HIS
36	k	141	ASN
37	l	14	ASN
37	l	113	GLN
38	m	59	ASN
38	m	62	GLN
39	n	49	ASN
42	q	34	GLN
43	r	7	GLN
43	r	61	ASN
43	r	112	ASN
43	r	132	GLN
45	t	33	GLN
45	t	65	GLN
45	t	79	GLN
47	v	34	GLN
47	v	62	ASN
50	y	25	GLN
50	y	31	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
52	3	2875/2907 (98%)	844 (29%)	36 (1%)
53	4	103/108 (95%)	38 (36%)	3 (2%)
54	5	1490/1520 (98%)	392 (26%)	4 (0%)
55	7	75/76 (98%)	23 (30%)	3 (4%)
55	8	75/76 (98%)	23 (30%)	3 (4%)
All	All	4618/4687 (98%)	1320 (28%)	49 (1%)

All (1320) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
52	3	14	U
52	3	15	A
52	3	17	G
52	3	29	G
52	3	30	A
52	3	37	G
52	3	42	U
52	3	48	G
52	3	52	U
52	3	53	G
52	3	56	G
52	3	63	U
52	3	64	U
52	3	73	A
52	3	76	A
52	3	77	G
52	3	82	G
52	3	87	G
52	3	94	A
52	3	95	G
52	3	102	A
52	3	103	G
52	3	111	G
52	3	115	U
52	3	119	A
52	3	120	A
52	3	121	U
52	3	122	G
52	3	126	C
52	3	129	U
52	3	132	G
52	3	139	G
52	3	141	A
52	3	142	A
52	3	143	A
52	3	144	C
52	3	163	A
52	3	165	U
52	3	166	A
52	3	174	A
52	3	178	A
52	3	180	A

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Mol	Chain	Res	Type
52	3	182	C
52	3	183	A
52	3	184	A
52	3	185	U
52	3	186	A
52	3	188	G
52	3	200	A
52	3	203	A
52	3	208	A
52	3	210	U
52	3	219	G
52	3	220	A
52	3	226	A
52	3	227	A
52	3	228	A
52	3	232	A
52	3	234	G
52	3	237	A
52	3	242	G
52	3	245	U
52	3	246	G
52	3	247	U
52	3	252	G
52	3	262	G
52	3	265	G
52	3	270	G
52	3	276	A
52	3	277	C
52	3	284	U
52	3	285	U
52	3	286	A
52	3	287	G
52	3	295	U
52	3	296	U
52	3	297	G
52	3	299	A
52	3	306	G
52	3	310	U
52	3	311	G
52	3	312	U
52	3	313	G
52	3	314	G

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Mol	Chain	Res	Type
52	3	315	A
52	3	316	C
52	3	319	G
52	3	325	G
52	3	333	A
52	3	336	C
52	3	345	A
52	3	351	G
52	3	354	C
52	3	357	A
52	3	363	G
52	3	364	A
52	3	369	C
52	3	378	G
52	3	395	U
52	3	396	A
52	3	402	A
52	3	403	U
52	3	404	C
52	3	408	G
52	3	409	A
52	3	410	G
52	3	411	U
52	3	413	G
52	3	418	G
52	3	421	A
52	3	422	A
52	3	424	G
52	3	425	U
52	3	426	U
52	3	432	G
52	3	437	A
52	3	439	U
52	3	440	C
52	3	441	U
52	3	442	G
52	3	447	G
52	3	448	A
52	3	460	G
52	3	462	C
52	3	465	A
52	3	466	A

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Mol	Chain	Res	Type
52	3	469	C
52	3	473	U
52	3	476	G
52	3	478	G
52	3	479	A
52	3	480	C
52	3	482	G
52	3	483	A
52	3	484	U
52	3	487	C
52	3	488	G
52	3	489	A
52	3	490	A
52	3	491	A
52	3	495	U
52	3	501	G
52	3	502	A
52	3	504	G
52	3	509	G
52	3	511	U
52	3	514	A
52	3	515	A
52	3	517	G
52	3	519	A
52	3	520	C
52	3	522	C
52	3	525	A
52	3	531	G
52	3	533	G
52	3	534	U
52	3	538	A
52	3	539	U
52	3	542	A
52	3	543	U
52	3	544	U
52	3	553	A
52	3	562	C
52	3	565	C
52	3	566	G
52	3	567	U
52	3	581	A
52	3	583	U

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Mol	Chain	Res	Type
52	3	584	G
52	3	595	U
52	3	596	G
52	3	601	U
52	3	605	A
52	3	606	G
52	3	607	U
52	3	608	A
52	3	610	G
52	3	620	G
52	3	623	A
52	3	638	A
52	3	639	G
52	3	644	C
52	3	646	A
52	3	648	G
52	3	653	G
52	3	654	G
52	3	656	G
52	3	657	A
52	3	663	A
52	3	667	A
52	3	673	A
52	3	675	U
52	3	681	A
52	3	682	A
52	3	683	G
52	3	689	U
52	3	690	U
52	3	691	G
52	3	704	G
52	3	705	A
52	3	706	C
52	3	710	A
52	3	712	A
52	3	718	U
52	3	721	G
52	3	722	C
52	3	725	G
52	3	728	A
52	3	730	G
52	3	739	G

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Mol	Chain	Res	Type
52	3	740	A
52	3	752	C
52	3	761	G
52	3	763	G
52	3	765	A
52	3	775	C
52	3	782	U
52	3	792	G
52	3	797	U
52	3	799	A
52	3	810	G
52	3	811	G
52	3	817	A
52	3	819	U
52	3	820	U
52	3	823	A
52	3	824	A
52	3	825	U
52	3	827	G
52	3	828	A
52	3	829	A
52	3	835	U
52	3	840	G
52	3	841	C
52	3	842	U
52	3	847	C
52	3	850	G
52	3	854	A
52	3	862	U
52	3	863	U
52	3	865	A
52	3	866	G
52	3	870	A
52	3	873	G
52	3	881	A
52	3	882	C
52	3	883	A
52	3	884	A
52	3	894	G
52	3	902	U
52	3	904	C
52	3	906	G

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Mol	Chain	Res	Type
52	3	907	A
52	3	914	G
52	3	917	G
52	3	918	G
52	3	930	C
52	3	931	G
52	3	932	U
52	3	933	A
52	3	934	C
52	3	941	C
52	3	944	U
52	3	947	A
52	3	949	C
52	3	951	C
52	3	953	G
52	3	968	U
52	3	971	U
52	3	977	A
52	3	979	U
52	3	982	G
52	3	989	G
52	3	990	G
52	3	992	G
52	3	993	A
52	3	995	A
52	3	999	U
52	3	1001	C
52	3	1008	A
52	3	1009	A
52	3	1011	A
52	3	1013	G
52	3	1016	A
52	3	1019	A
52	3	1020	G
52	3	1021	C
52	3	1025	G
52	3	1026	A
52	3	1027	U
52	3	1032	A
52	3	1035	U
52	3	1045	A
52	3	1048	A

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Mol	Chain	Res	Type
52	3	1049	U
52	3	1055	A
52	3	1061	A
52	3	1068	U
52	3	1075	G
52	3	1080	A
52	3	1081	A
52	3	1082	A
52	3	1088	A
52	3	1089	A
52	3	1095	U
52	3	1099	C
52	3	1100	U
52	3	1101	U
52	3	1102	A
52	3	1103	G
52	3	1104	A
52	3	1105	A
52	3	1106	G
52	3	1107	C
52	3	1109	G
52	3	1112	A
52	3	1113	U
52	3	1115	G
52	3	1116	U
52	3	1119	A
52	3	1121	A
52	3	1123	A
52	3	1125	U
52	3	1129	U
52	3	1130	A
52	3	1131	A
52	3	1132	C
52	3	1147	G
52	3	1151	U
52	3	1154	U
52	3	1157	G
52	3	1158	C
52	3	1165	U
52	3	1167	U
52	3	1168	A
52	3	1170	C

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Mol	Chain	Res	Type
52	3	1171	G
52	3	1176	U
52	3	1177	A
52	3	1178	A
52	3	1186	A
52	3	1191	A
52	3	1202	A
52	3	1203	G
52	3	1204	A
52	3	1208	A
52	3	1209	U
52	3	1210	A
52	3	1212	C
52	3	1215	G
52	3	1216	U
52	3	1217	G
52	3	1234	U
52	3	1235	U
52	3	1236	G
52	3	1242	G
52	3	1251	G
52	3	1253	G
52	3	1254	U
52	3	1257	G
52	3	1259	A
52	3	1265	G
52	3	1268	U
52	3	1274	A
52	3	1279	U
52	3	1281	A
52	3	1282	G
52	3	1283	A
52	3	1284	A
52	3	1285	U
52	3	1286	G
52	3	1292	A
52	3	1295	A
52	3	1297	U
52	3	1298	A
52	3	1301	G
52	3	1312	A
52	3	1314	A

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Mol	Chain	Res	Type
52	3	1315	A
52	3	1316	U
52	3	1322	A
52	3	1324	A
52	3	1328	A
52	3	1329	U
52	3	1340	U
52	3	1342	C
52	3	1343	C
52	3	1353	G
52	3	1355	C
52	3	1360	U
52	3	1361	U
52	3	1369	U
52	3	1370	A
52	3	1371	G
52	3	1372	U
52	3	1373	C
52	3	1378	C
52	3	1380	U
52	3	1388	G
52	3	1393	A
52	3	1396	A
52	3	1403	G
52	3	1406	A
52	3	1407	U
52	3	1408	G
52	3	1412	A
52	3	1413	A
52	3	1415	A
52	3	1419	U
52	3	1423	A
52	3	1424	U
52	3	1425	U
52	3	1431	A
52	3	1435	A
52	3	1436	C
52	3	1439	U
52	3	1444	C
52	3	1445	U
52	3	1448	U
52	3	1449	G

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Mol	Chain	Res	Type
52	3	1456	C
52	3	1457	A
52	3	1463	G
52	3	1465	U
52	3	1466	U
52	3	1467	U
52	3	1479	A
52	3	1480	A
52	3	1481	U
52	3	1482	U
52	3	1483	G
52	3	1486	U
52	3	1487	U
52	3	1489	G
52	3	1493	A
52	3	1494	U
52	3	1502	A
52	3	1506	U
52	3	1507	G
52	3	1508	G
52	3	1510	A
52	3	1513	A
52	3	1514	U
52	3	1523	C
52	3	1532	A
52	3	1533	U
52	3	1534	A
52	3	1537	A
52	3	1541	A
52	3	1546	U
52	3	1548	A
52	3	1550	G
52	3	1554	A
52	3	1555	G
52	3	1558	A
52	3	1559	A
52	3	1571	G
52	3	1580	G
52	3	1584	U
52	3	1585	A
52	3	1587	U
52	3	1588	A

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Mol	Chain	Res	Type
52	3	1589	A
52	3	1594	G
52	3	1600	A
52	3	1601	A
52	3	1612	U
52	3	1615	G
52	3	1616	G
52	3	1618	U
52	3	1619	A
52	3	1637	A
52	3	1642	G
52	3	1643	A
52	3	1644	A
52	3	1648	A
52	3	1651	C
52	3	1652	A
52	3	1654	G
52	3	1656	A
52	3	1661	A
52	3	1663	G
52	3	1668	G
52	3	1674	A
52	3	1679	U
52	3	1680	A
52	3	1681	G
52	3	1682	C
52	3	1683	G
52	3	1687	G
52	3	1688	A
52	3	1694	A
52	3	1695	G
52	3	1698	A
52	3	1699	A
52	3	1701	G
52	3	1702	A
52	3	1703	A
52	3	1706	C
52	3	1707	U
52	3	1708	G
52	3	1709	C
52	3	1720	C
52	3	1727	U

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Mol	Chain	Res	Type
52	3	1728	A
52	3	1734	A
52	3	1737	G
52	3	1748	U
52	3	1749	A
52	3	1751	A
52	3	1752	A
52	3	1754	U
52	3	1758	C
52	3	1762	A
52	3	1763	G
52	3	1764	U
52	3	1765	G
52	3	1766	A
52	3	1769	A
52	3	1770	A
52	3	1771	C
52	3	1780	A
52	3	1784	U
52	3	1787	A
52	3	1788	A
52	3	1789	C
52	3	1791	A
52	3	1794	A
52	3	1807	C
52	3	1816	A
52	3	1821	G
52	3	1822	A
52	3	1823	U
52	3	1824	G
52	3	1827	U
52	3	1836	A
52	3	1842	G
52	3	1850	C
52	3	1859	U
52	3	1865	A
52	3	1872	U
52	3	1873	A
52	3	1889	U
52	3	1890	U
52	3	1891	A
52	3	1903	A

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Mol	Chain	Res	Type
52	3	1907	A
52	3	1908	A
52	3	1910	G
52	3	1913	G
52	3	1920	A
52	3	1921	C
52	3	1934	A
52	3	1936	G
52	3	1937	G
52	3	1944	A
52	3	1945	A
52	3	1946	U
52	3	1947	U
52	3	1950	U
52	3	1952	G
52	3	1958	U
52	3	1962	U
52	3	1970	C
52	3	1971	G
52	3	1972	C
52	3	1974	U
52	3	1977	A
52	3	1978	U
52	3	1979	G
52	3	1984	A
52	3	1988	A
52	3	1990	C
52	3	1998	U
52	3	1999	G
52	3	2009	U
52	3	2010	A
52	3	2020	A
52	3	2025	C
52	3	2028	G
52	3	2030	A
52	3	2037	A
52	3	2038	A
52	3	2040	A
52	3	2041	C
52	3	2043	C
52	3	2050	G
52	3	2055	A

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Mol	Chain	Res	Type
52	3	2056	A
52	3	2057	C
52	3	2058	G
52	3	2059	G
52	3	2060	G
52	3	2061	A
52	3	2062	C
52	3	2063	G
52	3	2067	A
52	3	2068	G
52	3	2069	A
52	3	2070	C
52	3	2075	U
52	3	2076	G
52	3	2084	A
52	3	2087	G
52	3	2100	G
52	3	2106	G
52	3	2107	A
52	3	2109	A
52	3	2110	U
52	3	2111	U
52	3	2112	A
52	3	2114	C
52	3	2116	U
52	3	2119	A
52	3	2123	A
52	3	2126	A
52	3	2127	G
52	3	2133	A
52	3	2138	U
52	3	2139	C
52	3	2140	G
52	3	2141	A
52	3	2143	G
52	3	2152	C
52	3	2153	U
52	3	2154	A
52	3	2161	G
52	3	2164	G
52	3	2166	U
52	3	2170	A

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Mol	Chain	Res	Type
52	3	2171	A
52	3	2172	A
52	3	2173	G
52	3	2176	G
52	3	2180	U
52	3	2187	C
52	3	2189	U
52	3	2193	U
52	3	2194	G
52	3	2195	U
52	3	2196	G
52	3	2198	G
52	3	2199	C
52	3	2200	U
52	3	2202	U
52	3	2204	C
52	3	2206	A
52	3	2207	A
52	3	2211	G
52	3	2212	U
52	3	2219	U
52	3	2220	A
52	3	2221	U
52	3	2222	C
52	3	2231	A
52	3	2232	G
52	3	2233	A
52	3	2246	G
52	3	2247	G
52	3	2254	G
52	3	2258	G
52	3	2274	A
52	3	2275	A
52	3	2276	A
52	3	2277	A
52	3	2283	C
52	3	2286	A
52	3	2291	U
52	3	2293	C
52	3	2295	A
52	3	2296	A
52	3	2305	C

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Mol	Chain	Res	Type
52	3	2312	G
52	3	2313	U
52	3	2316	G
52	3	2317	A
52	3	2319	A
52	3	2327	U
52	3	2329	G
52	3	2330	A
52	3	2333	G
52	3	2334	U
52	3	2335	A
52	3	2337	U
52	3	2341	G
52	3	2342	U
52	3	2343	A
52	3	2345	G
52	3	2354	A
52	3	2355	C
52	3	2358	U
52	3	2362	A
52	3	2363	C
52	3	2377	A
52	3	2380	U
52	3	2382	A
52	3	2391	G
52	3	2393	C
52	3	2400	A
52	3	2410	C
52	3	2411	C
52	3	2414	U
52	3	2415	A
52	3	2417	G
52	3	2418	G
52	3	2428	C
52	3	2431	U
52	3	2432	C
52	3	2433	A
52	3	2436	G
52	3	2437	G
52	3	2438	A
52	3	2439	U
52	3	2441	A

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Mol	Chain	Res	Type
52	3	2443	A
52	3	2449	U
52	3	2452	G
52	3	2453	G
52	3	2456	A
52	3	2457	U
52	3	2458	A
52	3	2468	U
52	3	2475	C
52	3	2476	A
52	3	2477	A
52	3	2483	C
52	3	2486	A
52	3	2488	C
52	3	2492	G
52	3	2495	A
52	3	2497	U
52	3	2498	G
52	3	2499	U
52	3	2502	G
52	3	2503	G
52	3	2505	A
52	3	2507	C
52	3	2509	C
52	3	2510	G
52	3	2511	A
52	3	2512	U
52	3	2513	G
52	3	2514	U
52	3	2521	A
52	3	2526	A
52	3	2528	C
52	3	2537	G
52	3	2538	A
52	3	2539	A
52	3	2543	G
52	3	2551	G
52	3	2568	G
52	3	2571	U
52	3	2572	A
52	3	2574	A
52	3	2575	G

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Mol	Chain	Res	Type
52	3	2577	G
52	3	2578	A
52	3	2580	A
52	3	2581	C
52	3	2584	G
52	3	2585	A
52	3	2586	G
52	3	2590	G
52	3	2591	G
52	3	2593	U
52	3	2594	C
52	3	2604	U
52	3	2605	G
52	3	2609	C
52	3	2610	A
52	3	2617	U
52	3	2618	C
52	3	2619	C
52	3	2622	A
52	3	2637	A
52	3	2638	G
52	3	2644	U
52	3	2645	U
52	3	2647	A
52	3	2649	G
52	3	2652	U
52	3	2654	U
52	3	2662	A
52	3	2664	U
52	3	2668	A
52	3	2669	G
52	3	2681	G
52	3	2689	C
52	3	2690	U
52	3	2693	U
52	3	2697	C
52	3	2706	U
52	3	2717	G
52	3	2726	G
52	3	2728	U
52	3	2734	C
52	3	2735	G

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Mol	Chain	Res	Type
52	3	2736	U
52	3	2740	U
52	3	2741	A
52	3	2747	U
52	3	2752	G
52	3	2756	A
52	3	2765	A
52	3	2769	G
52	3	2770	U
52	3	2784	A
52	3	2785	G
52	3	2786	A
52	3	2788	U
52	3	2789	A
52	3	2790	A
52	3	2799	U
52	3	2801	U
52	3	2803	G
52	3	2804	C
52	3	2805	A
52	3	2806	A
52	3	2807	G
52	3	2808	A
52	3	2809	A
52	3	2811	G
52	3	2813	A
52	3	2822	C
52	3	2824	A
52	3	2825	A
52	3	2827	A
52	3	2837	U
52	3	2839	A
52	3	2840	U
52	3	2850	G
52	3	2853	U
52	3	2863	G
52	3	2866	A
52	3	2870	U
52	3	2876	G
52	3	2883	A
52	3	2888	U
52	3	2890	G

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Mol	Chain	Res	Type
52	3	2895	A
52	3	2897	G
52	3	2898	A
52	3	2899	C
53	4	7	G
53	4	10	C
53	4	11	A
53	4	12	U
53	4	13	G
53	4	19	G
53	4	23	A
53	4	28	C
53	4	30	U
53	4	31	G
53	4	33	U
53	4	35	C
53	4	38	U
53	4	39	U
53	4	40	U
53	4	41	C
53	4	42	G
53	4	46	C
53	4	47	C
53	4	48	A
53	4	49	G
53	4	50	C
53	4	51	A
53	4	54	U
53	4	55	A
53	4	59	A
53	4	60	C
53	4	65	G
53	4	73	U
53	4	78	C
53	4	80	G
53	4	88	G
53	4	89	A
53	4	95	G
53	4	99	A
53	4	101	C
53	4	102	A
53	4	103	C

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Mol	Chain	Res	Type
54	5	10	G
54	5	14	U
54	5	19	C
54	5	32	U
54	5	33	A
54	5	38	U
54	5	40	G
54	5	48	C
54	5	49	C
54	5	50	U
54	5	51	A
54	5	52	A
54	5	62	G
54	5	66	A
54	5	67	U
54	5	86	A
54	5	93	A
54	5	94	A
54	5	101	A
54	5	105	A
54	5	106	C
54	5	115	A
54	5	116	A
54	5	117	U
54	5	120	A
54	5	121	C
54	5	125	A
54	5	126	U
54	5	127	A
54	5	128	A
54	5	129	U
54	5	132	G
54	5	134	G
54	5	143	U
54	5	149	G
54	5	154	G
54	5	156	U
54	5	159	U
54	5	171	A
54	5	187	A
54	5	197	A
54	5	198	A

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Mol	Chain	Res	Type
54	5	199	A
54	5	210	G
54	5	232	G
54	5	236	C
54	5	240	U
54	5	241	C
54	5	242	A
54	5	243	G
54	5	246	A
54	5	247	G
54	5	250	G
54	5	260	C
54	5	262	G
54	5	267	C
54	5	269	A
54	5	274	A
54	5	276	U
54	5	285	G
54	5	288	A
54	5	301	G
54	5	302	A
54	5	303	A
54	5	307	C
54	5	312	A
54	5	317	A
54	5	318	C
54	5	323	A
54	5	324	C
54	5	325	A
54	5	326	C
54	5	328	G
54	5	332	A
54	5	334	A
54	5	340	A
54	5	341	C
54	5	342	G
54	5	345	A
54	5	348	C
54	5	350	G
54	5	352	A
54	5	359	A
54	5	363	U

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Mol	Chain	Res	Type
54	5	365	U
54	5	368	C
54	5	371	U
54	5	373	A
54	5	375	C
54	5	377	A
54	5	385	A
54	5	388	G
54	5	400	G
54	5	402	G
54	5	408	U
54	5	409	G
54	5	410	A
54	5	417	U
54	5	418	U
54	5	419	A
54	5	420	A
54	5	423	U
54	5	426	U
54	5	435	U
54	5	440	U
54	5	444	G
54	5	449	A
54	5	450	U
54	5	452	A
54	5	453	C
54	5	464	A
54	5	468	G
54	5	471	A
54	5	474	G
54	5	476	U
54	5	477	U
54	5	478	G
54	5	481	U
54	5	482	G
54	5	483	U
54	5	488	U
54	5	489	U
54	5	493	A
54	5	494	A
54	5	506	U
54	5	507	A

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Mol	Chain	Res	Type
54	5	509	C
54	5	510	U
54	5	515	G
54	5	516	C
54	5	519	G
54	5	522	G
54	5	525	G
54	5	531	A
54	5	532	U
54	5	533	A
54	5	534	C
54	5	543	C
54	5	545	A
54	5	557	A
54	5	558	U
54	5	559	U
54	5	560	U
54	5	562	U
54	5	568	G
54	5	569	U
54	5	570	A
54	5	571	A
54	5	573	G
54	5	574	C
54	5	575	A
54	5	585	G
54	5	586	G
54	5	593	A
54	5	594	A
54	5	595	G
54	5	610	C
54	5	616	C
54	5	617	U
54	5	620	A
54	5	628	A
54	5	629	U
54	5	638	A
54	5	639	A
54	5	640	C
54	5	646	A
54	5	650	A
54	5	652	A

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Mol	Chain	Res	Type
54	5	653	G
54	5	659	U
54	5	662	G
54	5	680	G
54	5	682	G
54	5	683	G
54	5	684	A
54	5	690	G
54	5	691	A
54	5	694	U
54	5	697	G
54	5	699	A
54	5	700	G
54	5	701	A
54	5	715	A
54	5	716	C
54	5	718	A
54	5	719	G
54	5	720	U
54	5	721	G
54	5	724	G
54	5	728	G
54	5	731	A
54	5	742	C
54	5	745	U
54	5	746	A
54	5	749	G
54	5	752	G
54	5	771	G
54	5	774	A
54	5	775	G
54	5	784	A
54	5	787	A
54	5	790	U
54	5	791	A
54	5	796	A
54	5	802	C
54	5	806	A
54	5	809	G
54	5	813	A
54	5	814	C
54	5	815	G

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Mol	Chain	Res	Type
54	5	818	A
54	5	820	A
54	5	822	A
54	5	825	A
54	5	829	G
54	5	830	U
54	5	849	A
54	5	865	U
54	5	870	A
54	5	878	U
54	5	879	G
54	5	882	U
54	5	883	A
54	5	885	U
54	5	896	G
54	5	908	A
54	5	910	C
54	5	911	G
54	5	912	G
54	5	921	G
54	5	922	G
54	5	923	G
54	5	929	C
54	5	930	A
54	5	938	U
54	5	940	G
54	5	945	U
54	5	953	A
54	5	955	U
54	5	961	G
54	5	962	G
54	5	964	A
54	5	966	A
54	5	970	A
54	5	971	A
54	5	972	A
54	5	976	U
54	5	977	U
54	5	984	A
54	5	986	U
54	5	987	U
54	5	988	G

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Mol	Chain	Res	Type
54	5	989	A
54	5	996	U
54	5	997	G
54	5	999	C
54	5	1001	A
54	5	1004	U
54	5	1006	A
54	5	1014	A
54	5	1030	G
54	5	1036	C
54	5	1037	A
54	5	1039	G
54	5	1041	G
54	5	1044	G
54	5	1045	C
54	5	1056	U
54	5	1058	A
54	5	1066	U
54	5	1071	A
54	5	1072	G
54	5	1073	A
54	5	1077	U
54	5	1082	U
54	5	1083	A
54	5	1085	G
54	5	1086	U
54	5	1092	A
54	5	1102	A
54	5	1108	A
54	5	1113	U
54	5	1115	G
54	5	1116	U
54	5	1117	U
54	5	1118	A
54	5	1119	C
54	5	1121	U
54	5	1122	U
54	5	1123	G
54	5	1124	U
54	5	1125	C
54	5	1126	U
54	5	1128	G

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Mol	Chain	Res	Type
54	5	1134	C
54	5	1135	U
54	5	1142	G
54	5	1144	A
54	5	1159	A
54	5	1165	G
54	5	1166	A
54	5	1171	A
54	5	1172	A
54	5	1173	A
54	5	1176	A
54	5	1187	U
54	5	1188	A
54	5	1189	U
54	5	1199	U
54	5	1200	G
54	5	1201	C
54	5	1202	A
54	5	1203	A
54	5	1211	A
54	5	1214	A
54	5	1215	U
54	5	1216	G
54	5	1231	U
54	5	1233	G
54	5	1235	C
54	5	1241	G
54	5	1243	A
54	5	1245	A
54	5	1255	A
54	5	1256	U
54	5	1260	U
54	5	1261	A
54	5	1264	G
54	5	1269	U
54	5	1271	U
54	5	1272	C
54	5	1273	A
54	5	1275	U
54	5	1279	G
54	5	1283	G
54	5	1291	C

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Mol	Chain	Res	Type
54	5	1293	A
54	5	1294	U
54	5	1296	C
54	5	1297	G
54	5	1305	G
54	5	1310	C
54	5	1312	G
54	5	1313	A
54	5	1315	U
54	5	1320	A
54	5	1322	U
54	5	1328	C
54	5	1337	U
54	5	1338	A
54	5	1343	G
54	5	1354	G
54	5	1356	U
54	5	1364	C
54	5	1369	A
54	5	1372	C
54	5	1374	C
54	5	1375	C
54	5	1376	G
54	5	1381	U
54	5	1394	G
54	5	1397	G
54	5	1398	G
54	5	1400	A
54	5	1405	U
54	5	1408	A
54	5	1411	A
54	5	1417	U
54	5	1421	A
54	5	1423	C
54	5	1427	U
54	5	1429	G
54	5	1435	G
54	5	1442	A
54	5	1445	G
54	5	1448	A
54	5	1449	G
54	5	1451	A

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Mol	Chain	Res	Type
54	5	1466	U
54	5	1467	A
54	5	1468	A
54	5	1469	G
54	5	1472	G
54	5	1474	A
54	5	1478	A
54	5	1480	G
54	5	1482	A
54	5	1492	G
54	5	1495	C
54	5	1504	G
54	5	1505	G
54	5	1506	A
55	7	3	G
55	7	4	U
55	7	17	U
55	7	18	C
55	7	19	G
55	7	21	U
55	7	22	A
55	7	24	A
55	7	28	A
55	7	36	A
55	7	44	U
55	7	49	C
55	7	53	A
55	7	54	G
55	7	55	U
55	7	58	G
55	7	61	U
55	7	71	A
55	7	72	C
55	7	73	C
55	7	74	A
55	7	75	C
55	7	77	A
55	8	3	G
55	8	4	U
55	8	17	U
55	8	18	C
55	8	19	G

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Mol	Chain	Res	Type
55	8	21	U
55	8	22	A
55	8	24	A
55	8	28	A
55	8	36	A
55	8	44	U
55	8	49	C
55	8	53	A
55	8	54	G
55	8	55	U
55	8	58	G
55	8	61	U
55	8	71	A
55	8	72	C
55	8	73	C
55	8	74	A
55	8	75	C
55	8	77	A

All (49) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
52	3	184	A
52	3	296	U
52	3	410	G
52	3	425	U
52	3	500	U
52	3	513	A
52	3	662	U
52	3	688	U
52	3	880	C
52	3	881	A
52	3	903	A
52	3	933	A
52	3	952	U
52	3	1048	A
52	3	1209	U
52	3	1211	U
52	3	1297	U
52	3	1507	G
52	3	1583	G
52	3	1588	A

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Mol	Chain	Res	Type
52	3	1618	U
52	3	1706	C
52	3	1820	U
52	3	2140	G
52	3	2504	C
52	3	2506	C
52	3	2513	G
52	3	2604	U
52	3	2668	A
52	3	2764	U
52	3	2800	U
52	3	2808	A
52	3	2823	A
52	3	2862	U
52	3	2889	U
52	3	2897	G
53	4	50	C
53	4	54	U
53	4	59	A
54	5	384	G
54	5	473	A
54	5	482	G
54	5	1133	A
55	7	16	G
55	7	71	A
55	7	74	A
55	8	16	G
55	8	71	A
55	8	74	A

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.

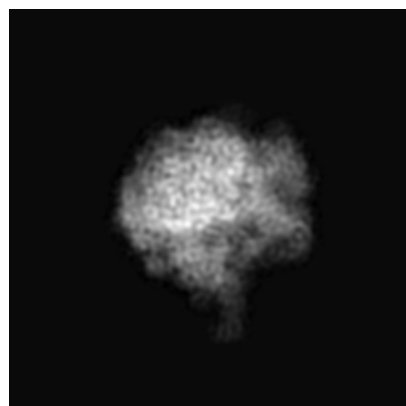
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-13281. These allow visual inspection of the internal detail of the map and identification of artifacts.

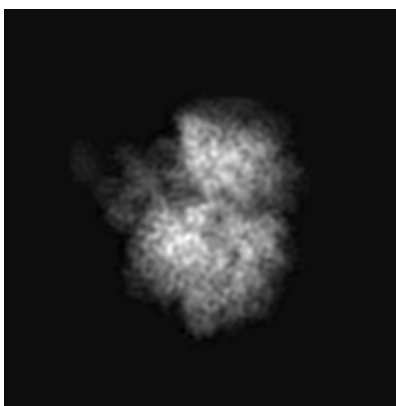
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

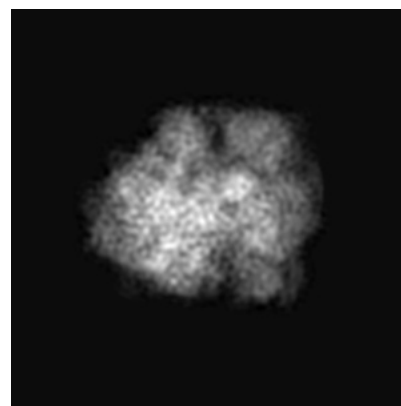
6.1.1 Primary map



X

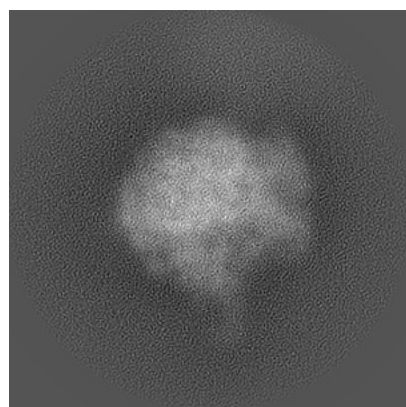


Y

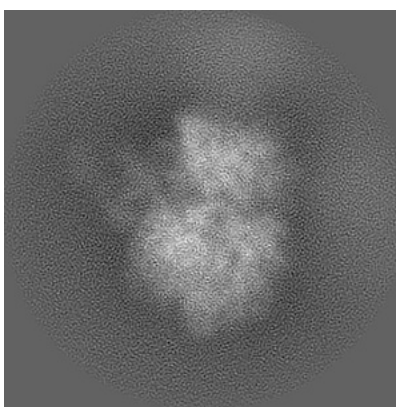


Z

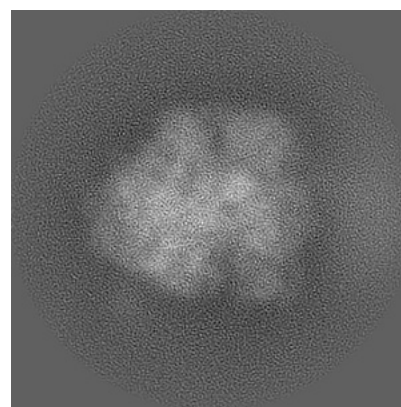
6.1.2 Raw map



X



Y

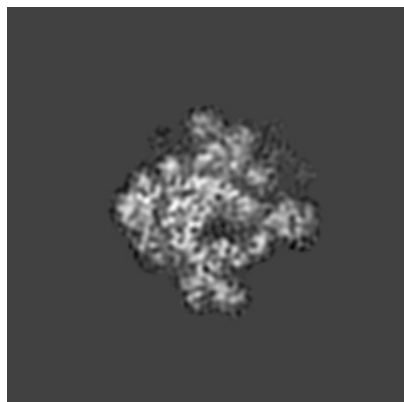


Z

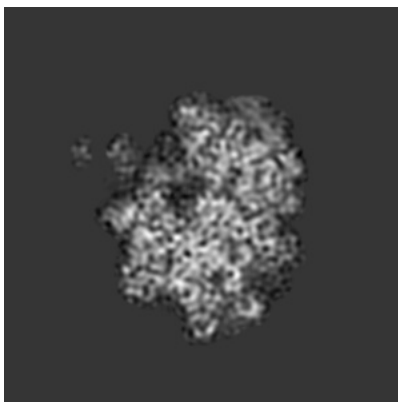
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

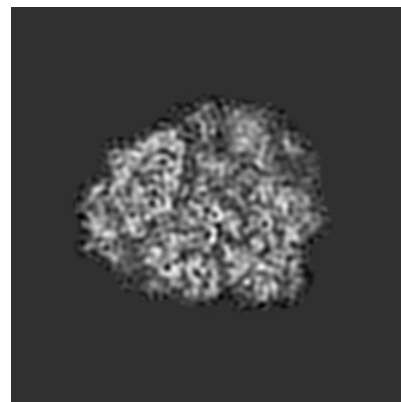
6.2.1 Primary map



X Index: 128

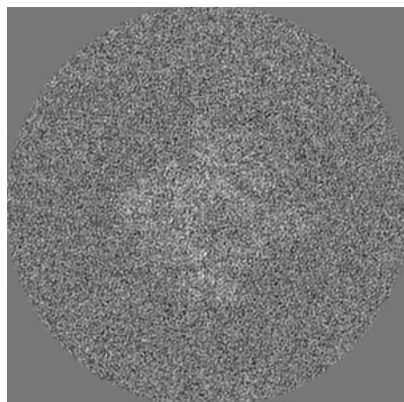


Y Index: 128

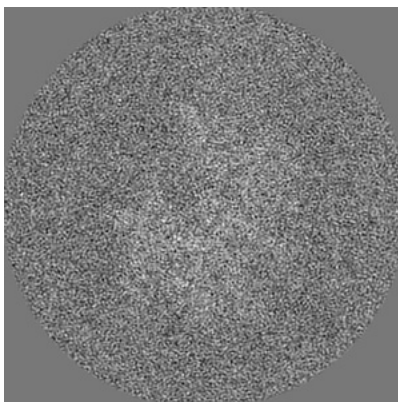


Z Index: 128

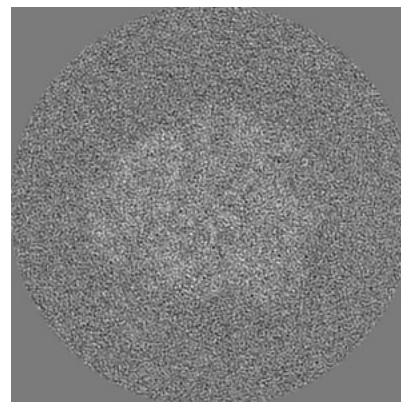
6.2.2 Raw map



X Index: 128



Y Index: 128

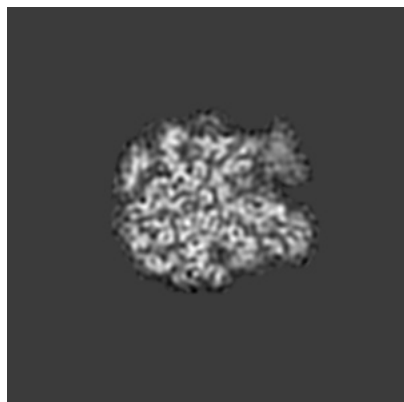


Z Index: 128

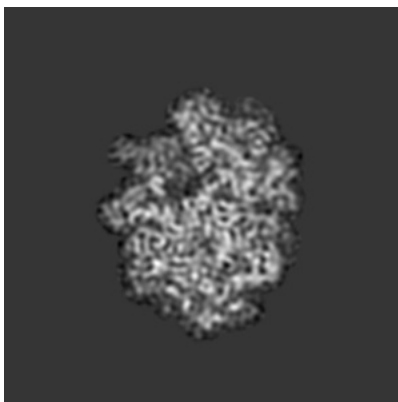
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

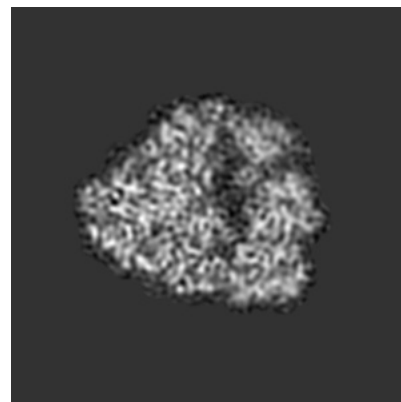
6.3.1 Primary map



X Index: 104

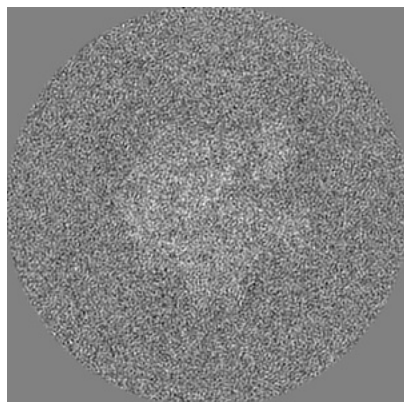


Y Index: 120

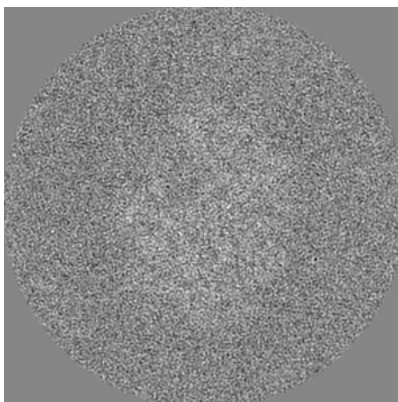


Z Index: 122

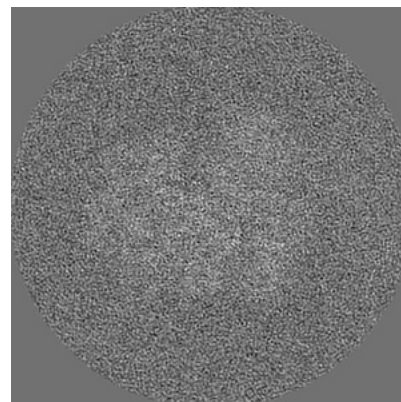
6.3.2 Raw map



X Index: 120



Y Index: 122

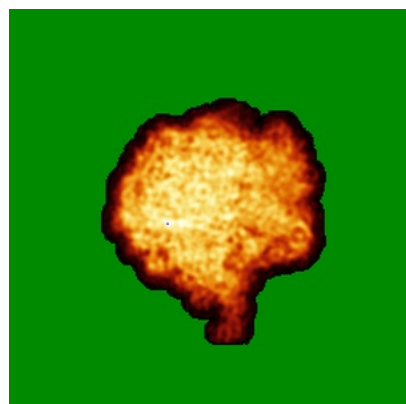


Z Index: 133

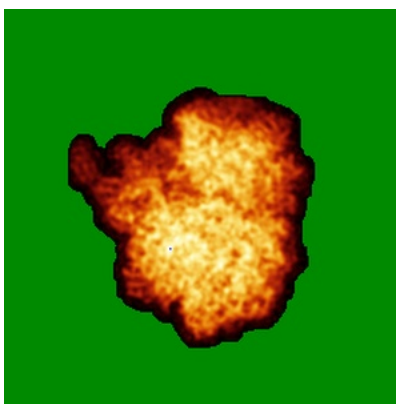
The images above show the largest variance slices of the map in three orthogonal directions.

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

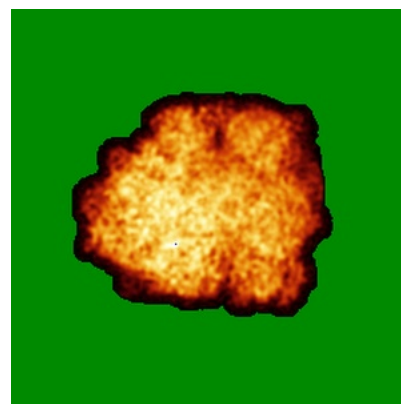
6.4.1 Primary map



X

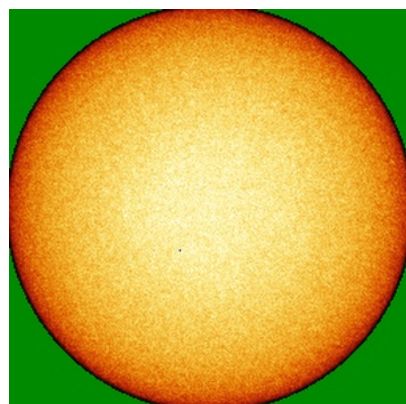


Y

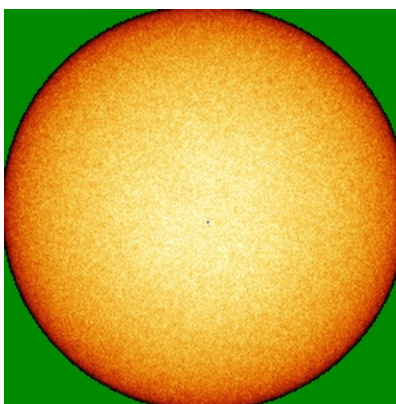


Z

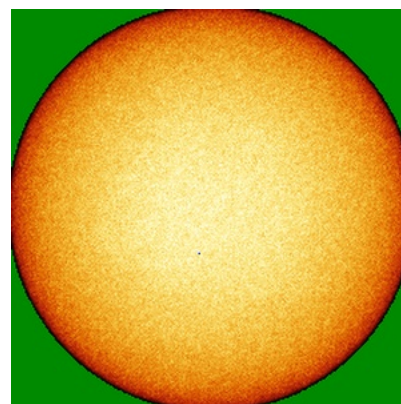
6.4.2 Raw map



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.

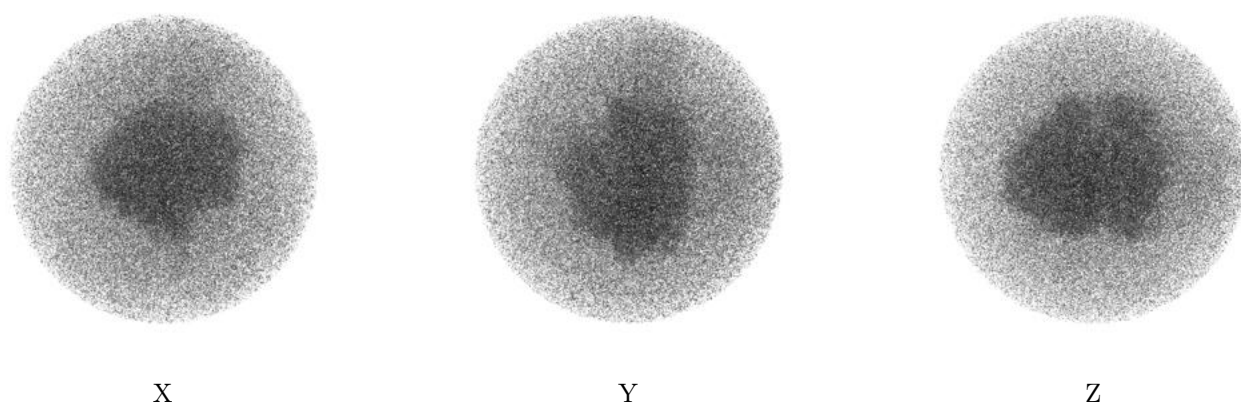
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.5. 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.

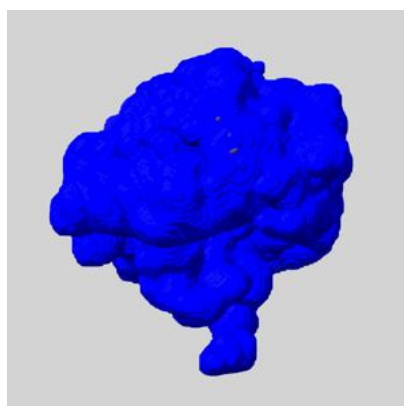
6.6 Mask visualisation [i](#)

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

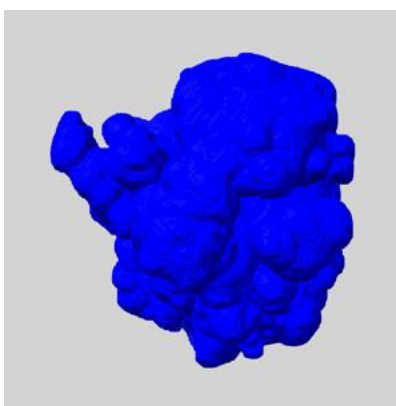
A mask typically either:

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

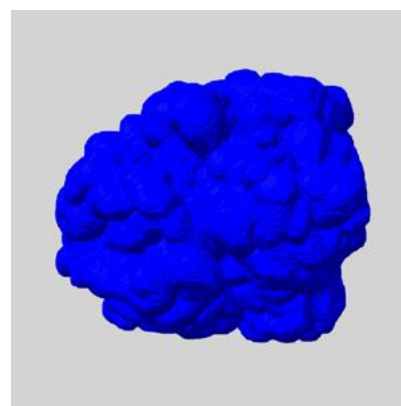
6.6.1 emd_13281_msk_1.map [i](#)



X



Y

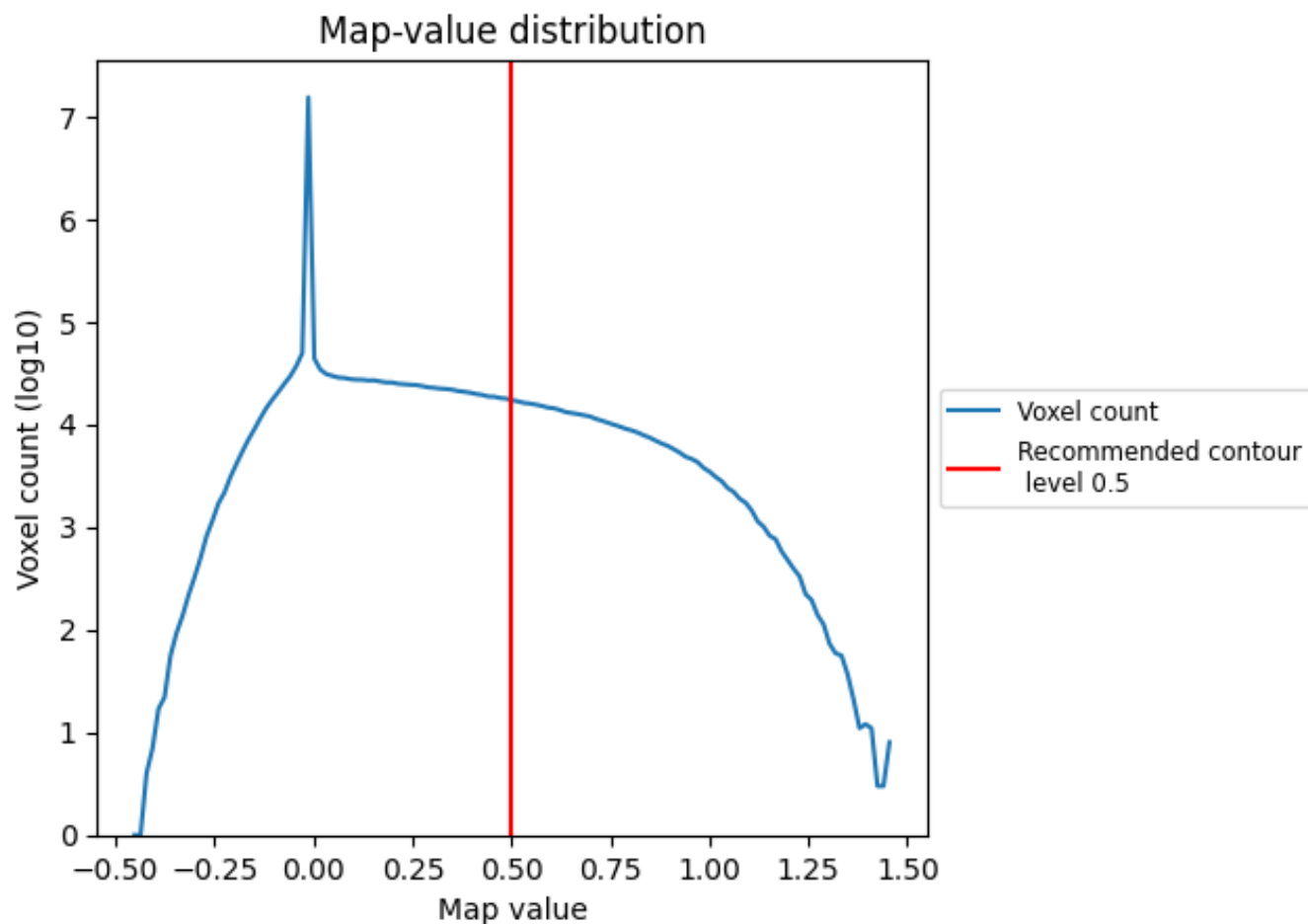


Z

7 Map analysis [i](#)

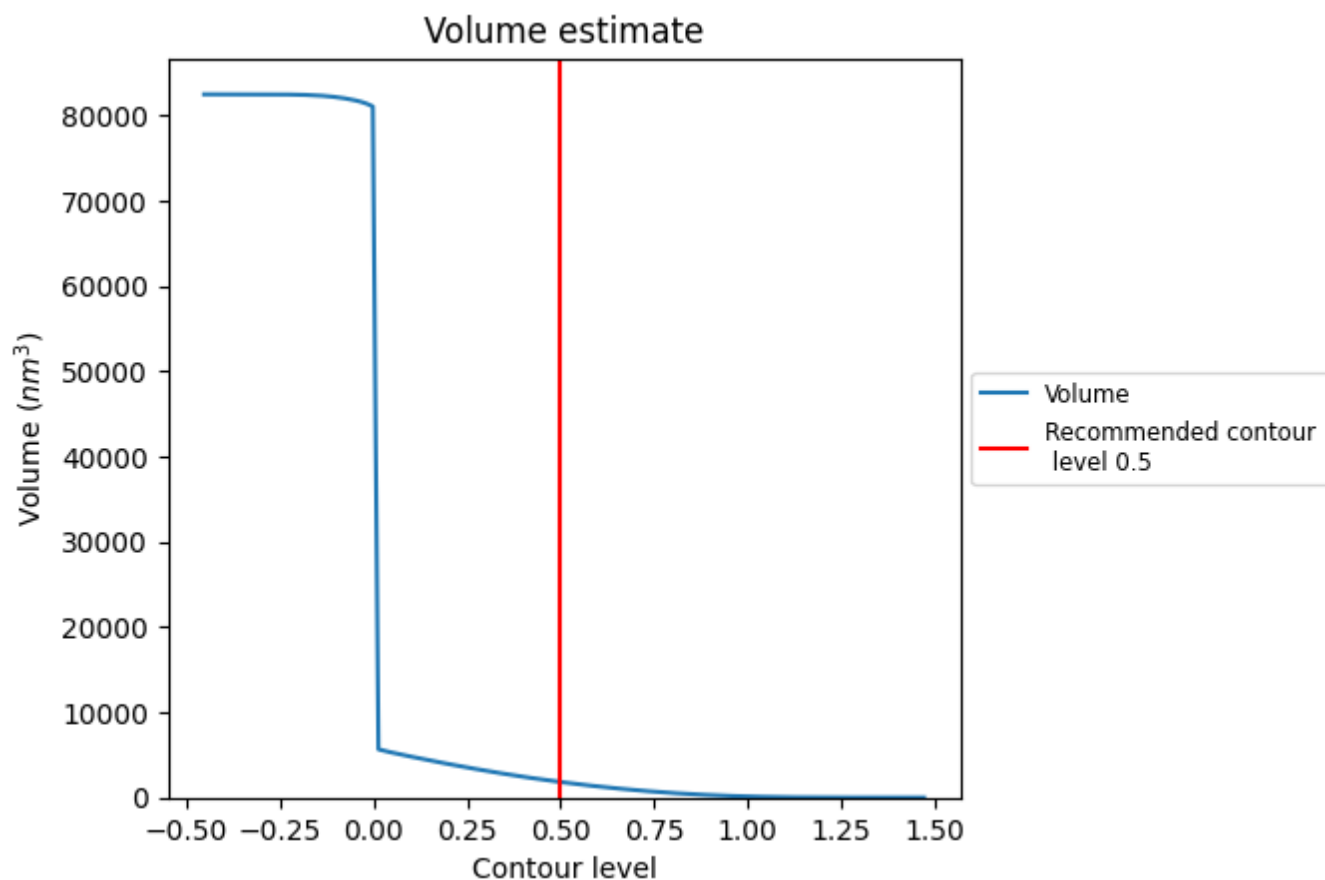
This section contains the results of statistical analysis of the map.

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.

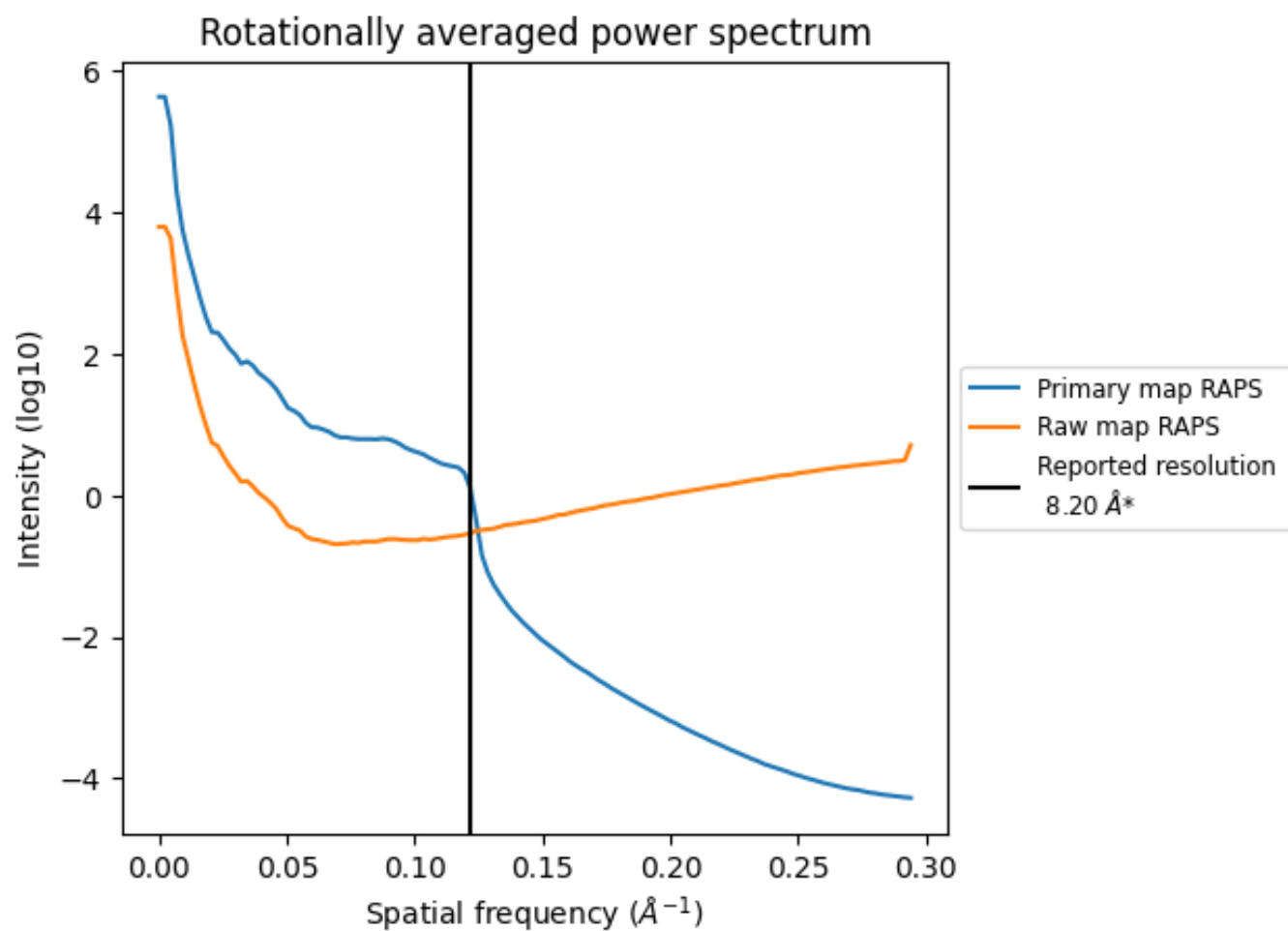
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1826 nm^3 ; this corresponds to an approximate mass of 1649 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 ⓘ

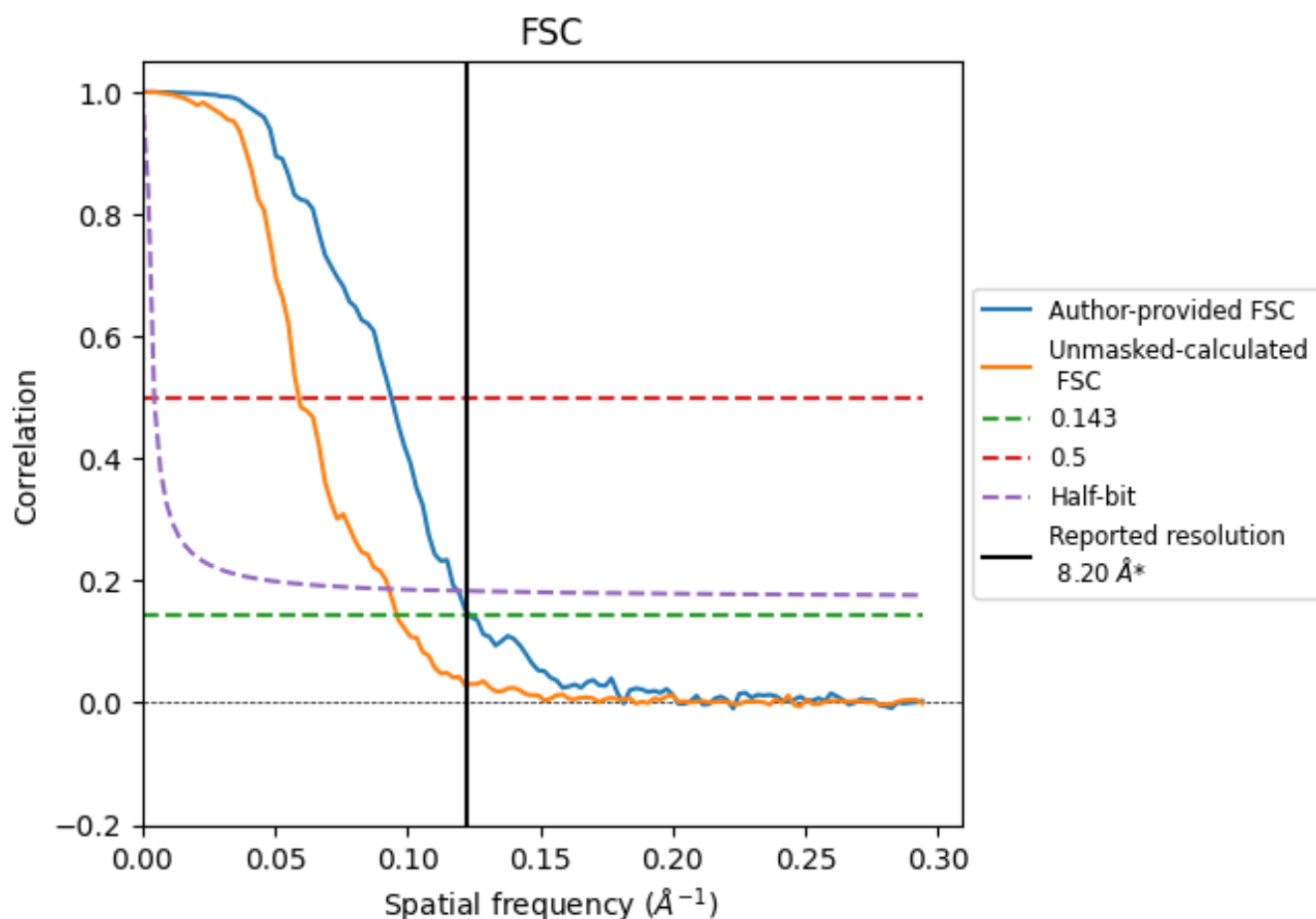


*Reported resolution corresponds to spatial frequency of 0.122 $\text{\AA}^{-1}$

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 0.122 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

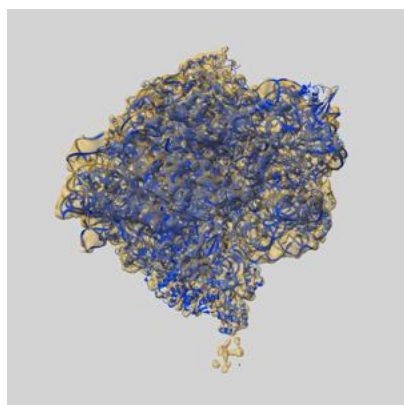
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	8.20	-	-
Author-provided FSC curve	8.10	10.65	8.40
Unmasked-calculated*	10.42	16.95	10.75

*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 10.42 differs from the reported value 8.2 by more than 10 %

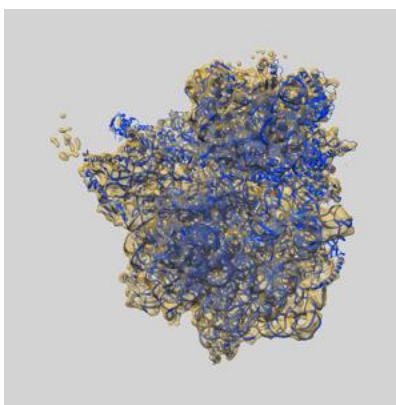
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-13281 and PDB model 7PAR. Per-residue inclusion information can be found in section [3](#) on page [14](#).

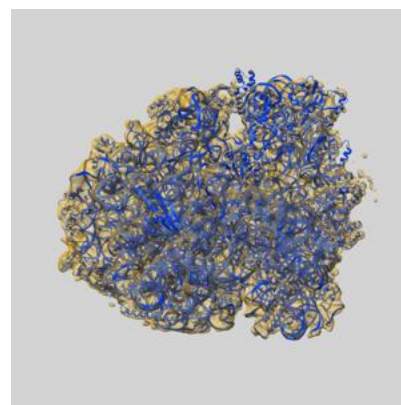
9.1 Map-model overlay [i](#)



X



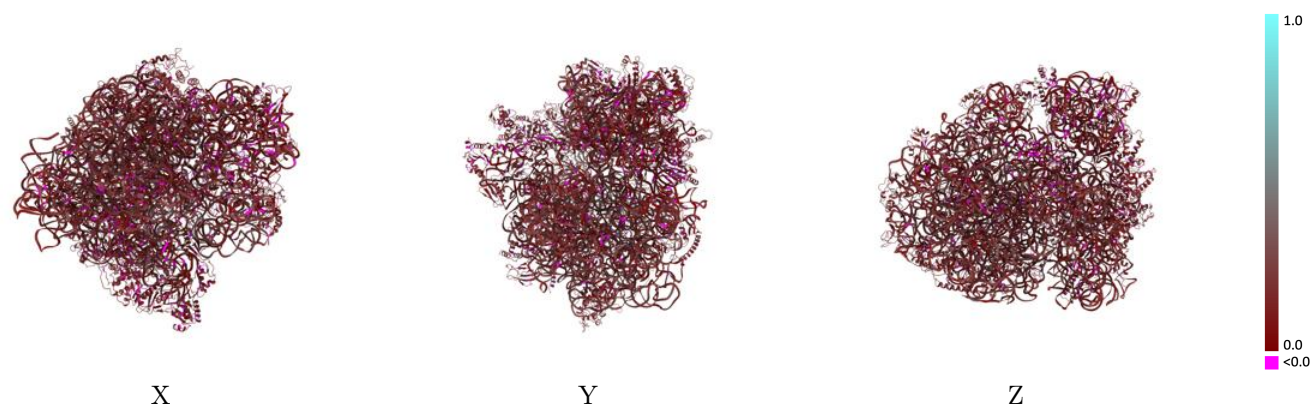
Y



Z

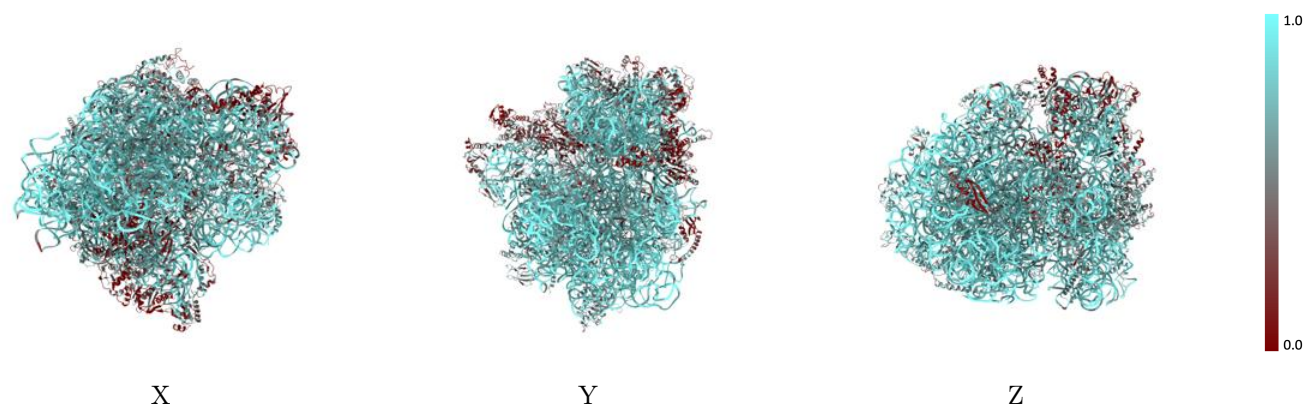
The images above show the 3D surface view of the map at the recommended contour level 0.5 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



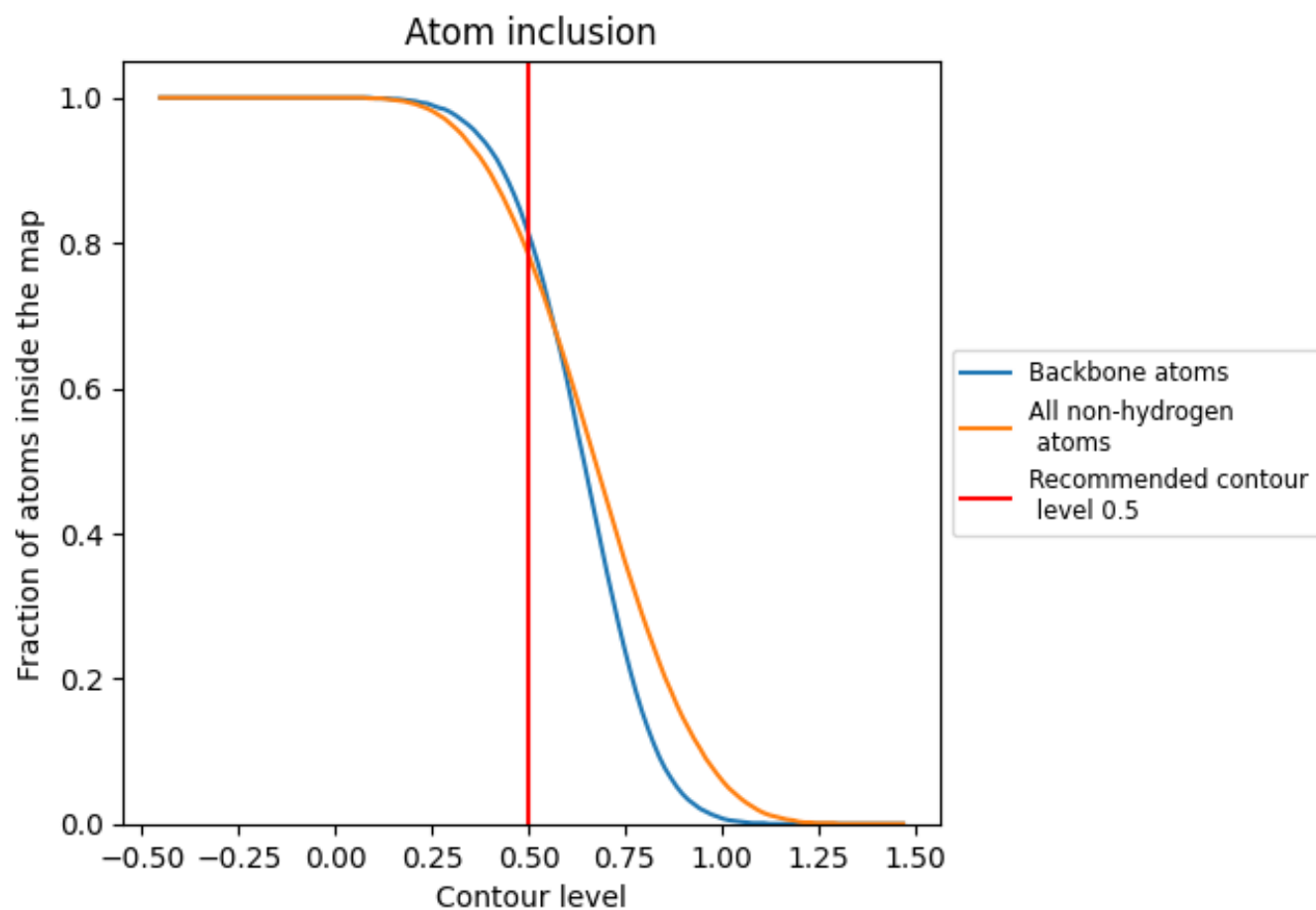
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.5).

9.4 Atom inclusion [i](#)



At the recommended contour level, 81% of all backbone atoms, 78% 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 (0.5) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7850	 0.1740
0	 0.7510	 0.1490
1	 0.7100	 0.1560
2	 0.6150	 0.1280
3	 0.9390	 0.1920
4	 0.9390	 0.1940
5	 0.8980	 0.1750
7	 0.8500	 0.1720
8	 0.6720	 0.1280
9	 0.2760	 0.1460
A	 0.4860	 0.1740
B	 0.5510	 0.1620
C	 0.5660	 0.1500
D	 0.5660	 0.1560
E	 0.3950	 0.1580
F	 0.1320	 0.1380
G	 0.5630	 0.1500
H	 0.3030	 0.1210
I	 0.4390	 0.1390
J	 0.4030	 0.1040
K	 0.5730	 0.1570
L	 0.2310	 0.1350
M	 0.7470	 0.1130
N	 0.6060	 0.1710
O	 0.7080	 0.1660
P	 0.5950	 0.1440
Q	 0.5250	 0.1320
R	 0.5400	 0.1240
S	 0.6850	 0.1650
T	 0.5360	 0.1690
W	 0.0470	 0.1360
a	 0.6830	 0.1460
b	 0.6330	 0.1510
c	 0.6540	 0.1660
d	 0.6130	 0.1600



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Chain	Atom inclusion	Q-score
e	 0.5420	 0.1710
f	 0.2320	 0.1580
g	 0.4480	 0.1460
h	 0.4330	 0.1560
i	 0.6660	 0.1640
j	 0.5510	 0.1670
k	 0.6910	 0.1610
l	 0.6730	 0.1550
m	 0.6740	 0.1570
n	 0.6600	 0.1590
o	 0.6320	 0.1850
p	 0.7000	 0.1420
q	 0.6470	 0.1610
r	 0.6900	 0.1610
s	 0.6330	 0.1670
t	 0.5490	 0.1470
u	 0.6580	 0.1380
v	 0.6480	 0.1260
w	 0.6450	 0.1860
x	 0.5160	 0.1510
y	 0.6570	 0.1430
z	 0.6120	 0.1600