



Full wwPDB EM Validation Report ⓘ

Mar 8, 2026 – 10:21 AM UTC

PDB ID : 7PIP / pdb_00007pip
EMDB ID : EMD-13446
Title : 70S ribosome with EF-Tu-tRNA and P-site tRNA in pseudouridimycin-treated Mycoplasma pneumoniae cells
Authors : Xue, L.; Lenz, S.; Rappsilber, J.; Mahamid, J.
Deposited on : 2021-08-23
Resolution : 9.30 Å (reported)
Based on initial models : 4V5L, 4V7C, 7OOD, 7OOC

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

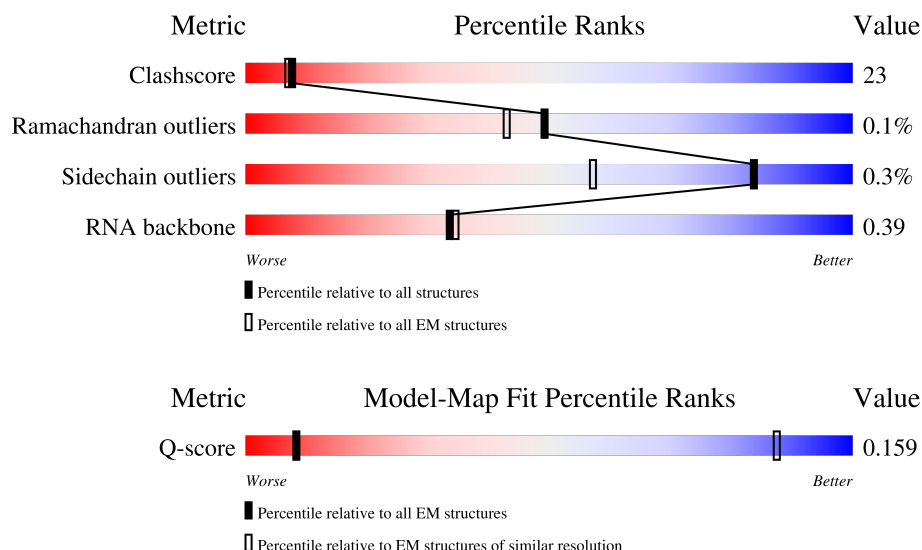
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 9.30 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	228 (8.80 - 9.80)

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

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

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Mol	Chain	Length	Quality of chain
4	9	394	
5	A	294	
6	B	273	
7	C	205	
8	D	219	
9	E	215	
10	F	155	
11	G	142	
12	H	132	
13	I	108	
14	J	121	
15	K	139	
16	L	124	
17	M	61	
18	N	86	
19	O	94	
20	P	85	
21	Q	104	
22	R	87	
23	S	87	
24	T	60	
25	a	287	
26	b	287	
27	c	212	
28	d	180	

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

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Mol	Chain	Length	Quality of chain
54	6	76	8% 26% 45% 29%
54	7	76	12% 28% 45% 28%

2 Entry composition

There are 54 unique types of molecules in this entry. The entry contains 149091 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

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

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

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

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

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

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

- Molecule 4 is a protein called Elongation factor Tu.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
16	L	118	Total	C	N	O	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 L2.

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

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

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

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

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

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

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

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

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

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
31	g	121	Total	C	N	O	S	0	0
			910	580	158	169	3		

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

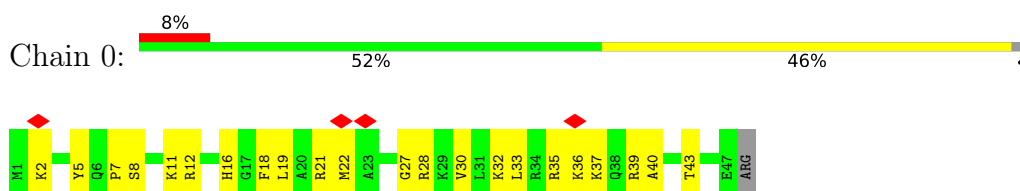
- Molecule 54 is a RNA chain called tRNA-Phe.

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

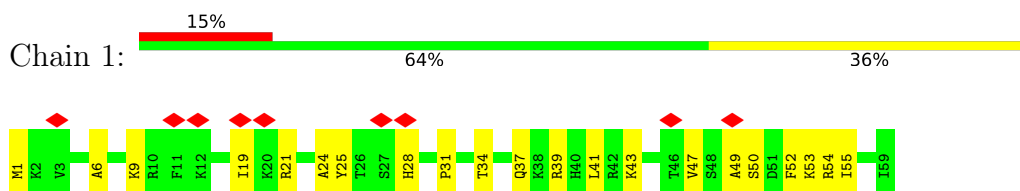
3 Residue-property plots [i](#)

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.

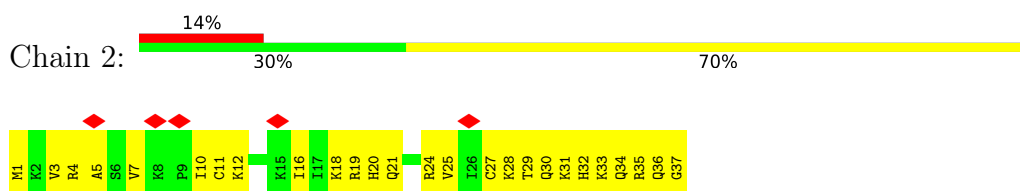
- Molecule 1: 50S ribosomal protein L34



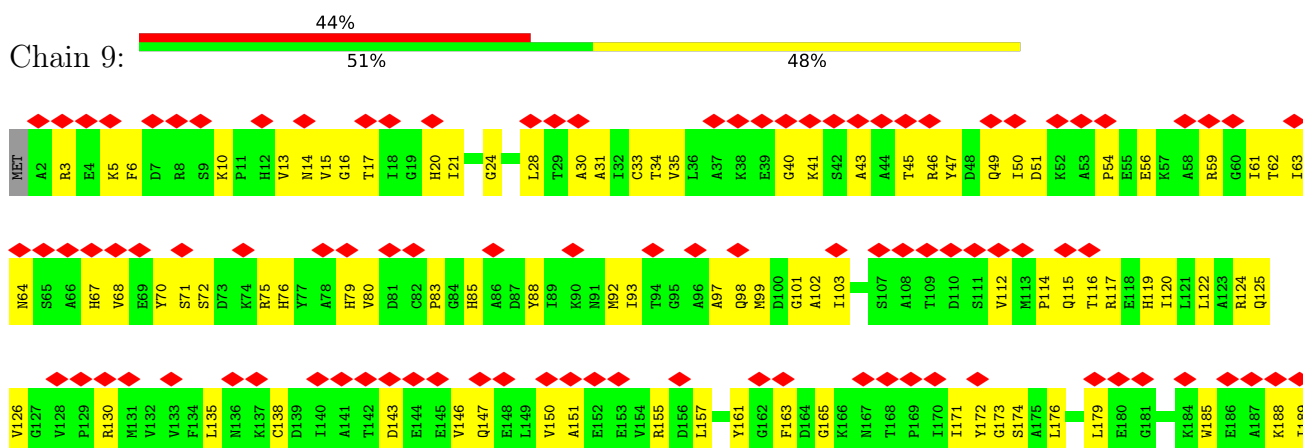
- Molecule 2: 50S ribosomal protein L35

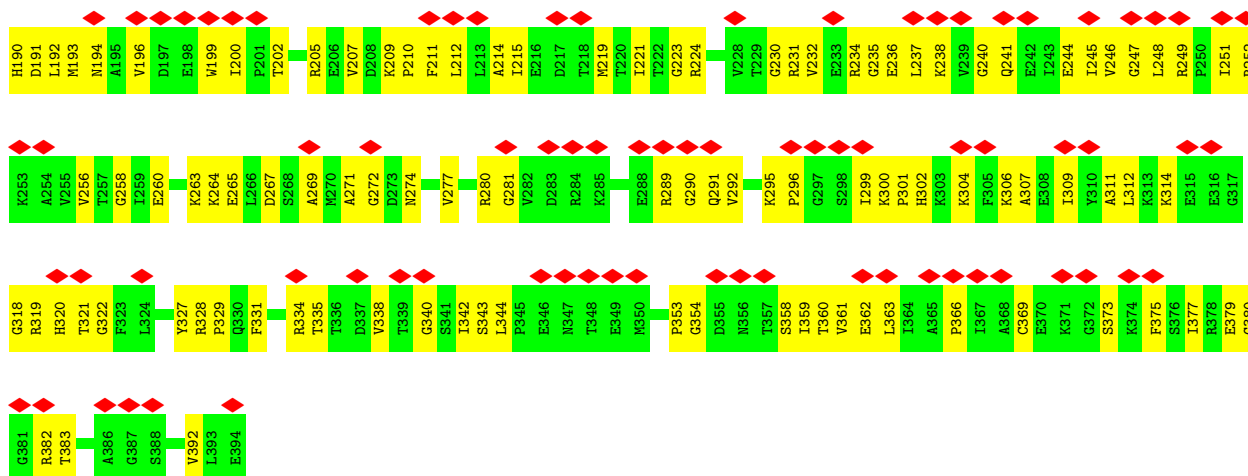


- Molecule 3: 50S ribosomal protein L36

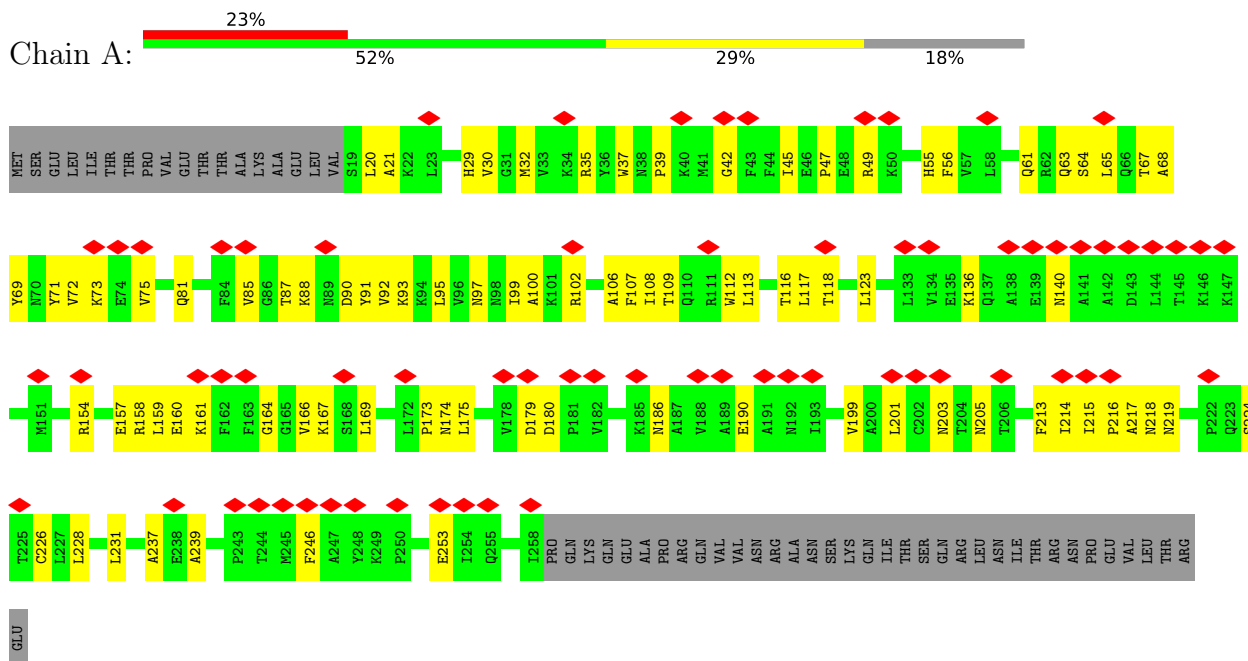


- Molecule 4: Elongation factor Tu

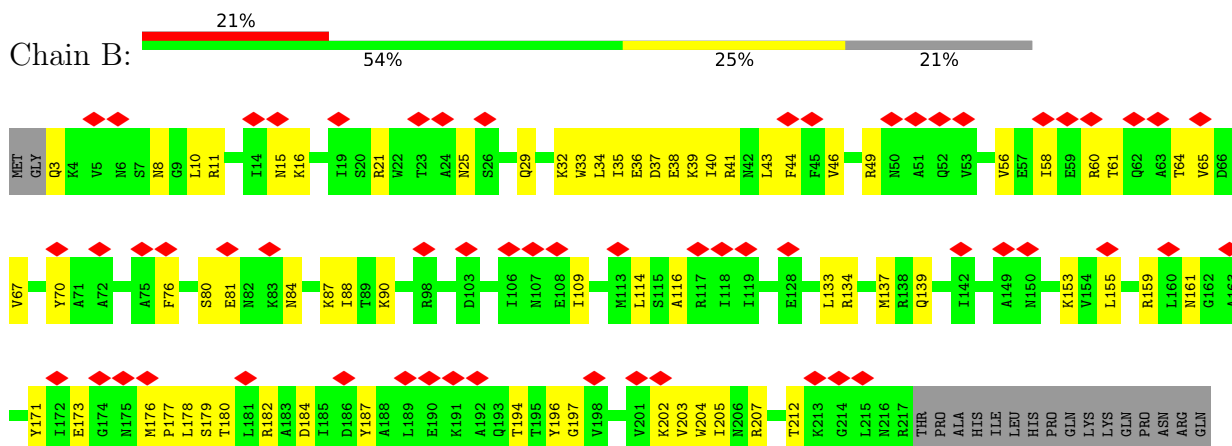




• Molecule 5: 30S ribosomal protein S2



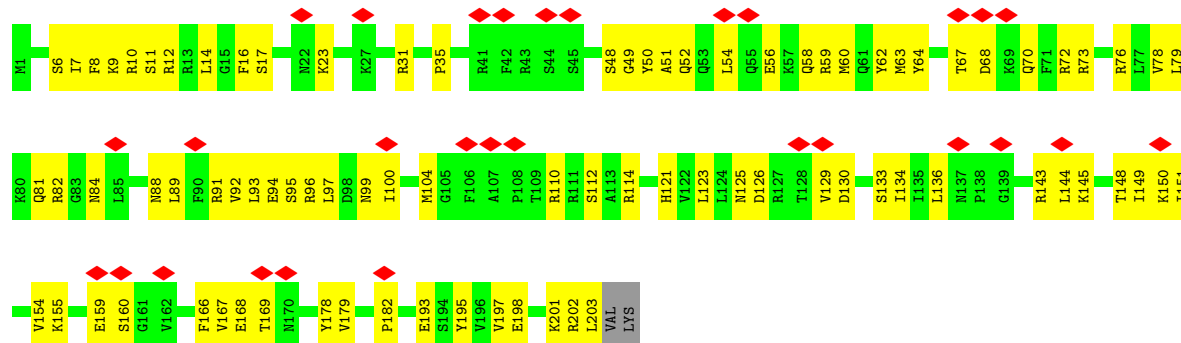
• Molecule 6: 30S ribosomal protein S3



ASN GLN GLN PRO ARG HIS PHE ASN GLN GLN VAL LEU SER ALA ASN LYS THR GLY SER ASP VAL GLU THR SER SER ILE GLN ALA LEU THR LYS ASN ASP GLN

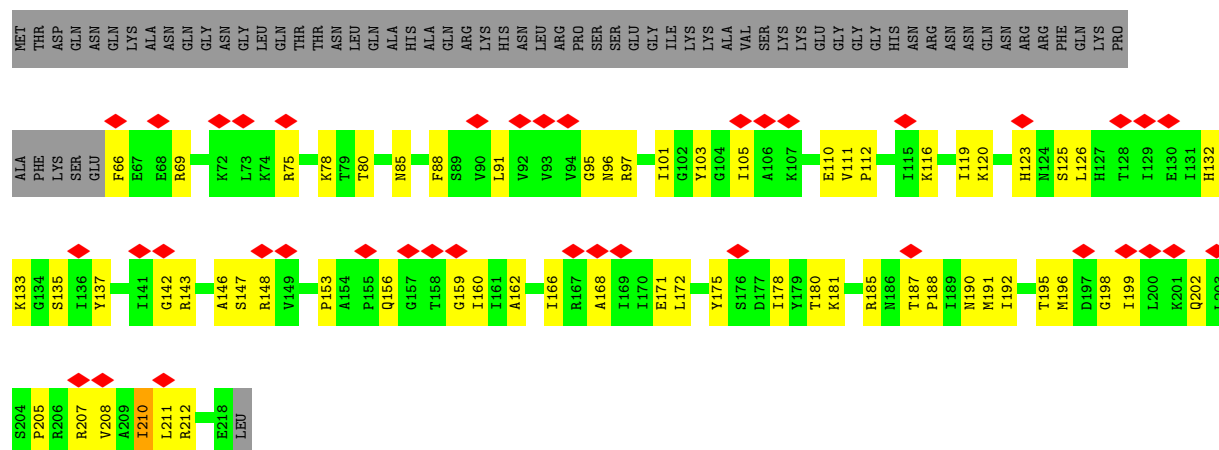
• Molecule 7: 30S ribosomal protein S4

Chain C: 14% 57% 42%



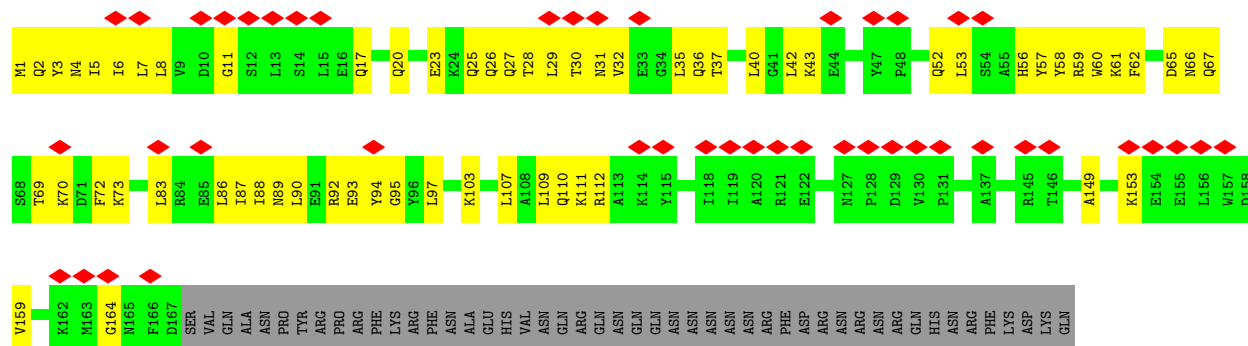
• Molecule 8: 30S ribosomal protein S5

Chain D: 18% 42% 28% 30%

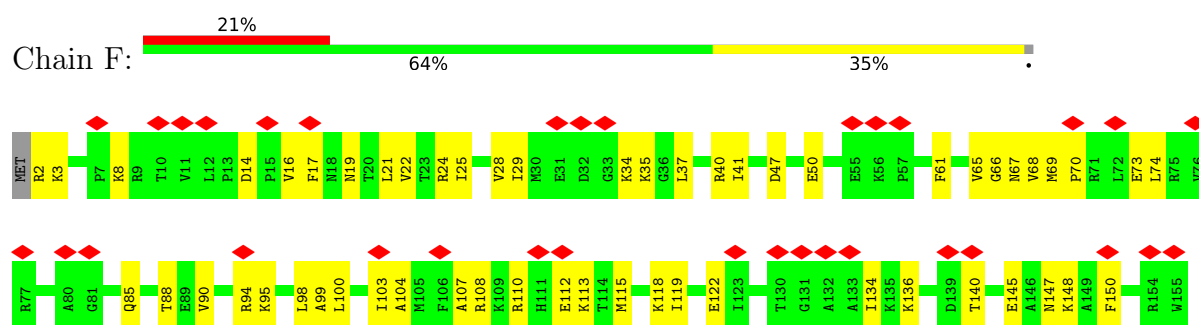


• Molecule 9: 30S ribosomal protein S6

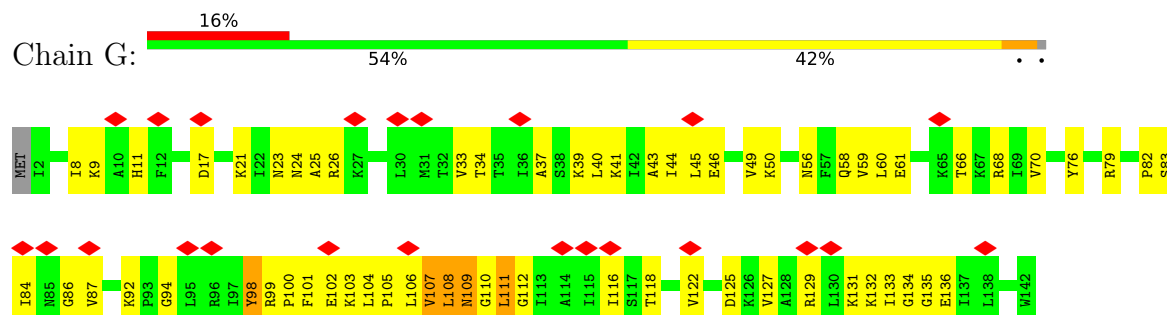
Chain E: 21% 48% 29% 22%



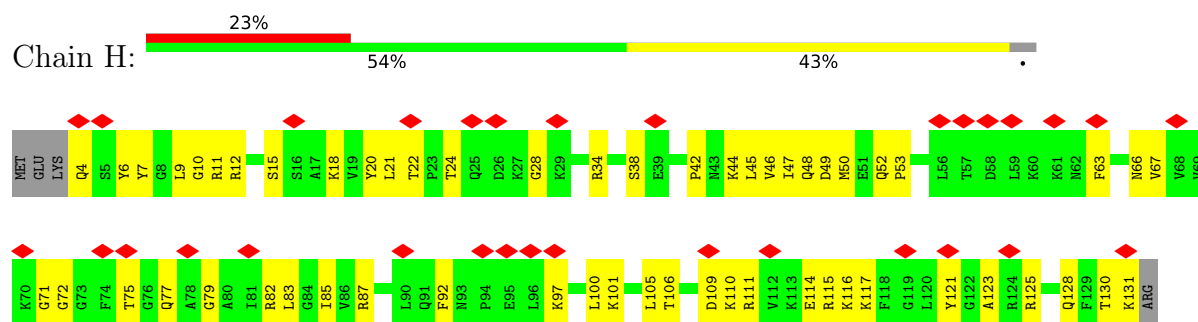
• Molecule 10: 30S ribosomal protein S7



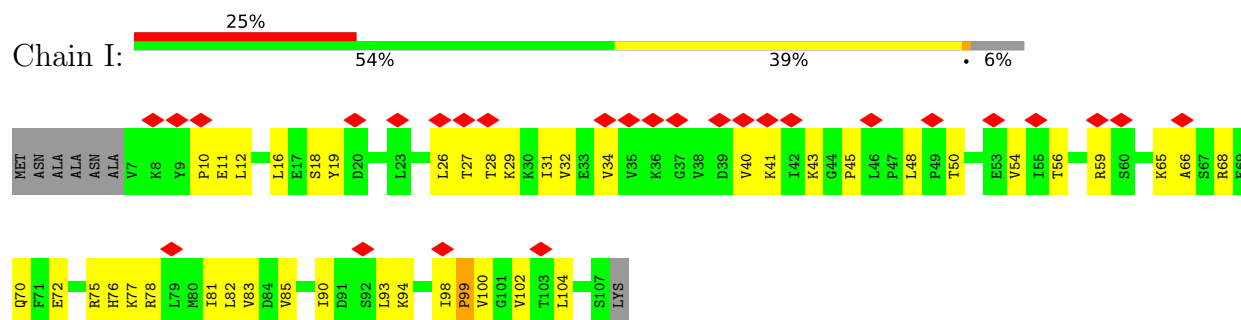
- Molecule 11: 30S ribosomal protein S8



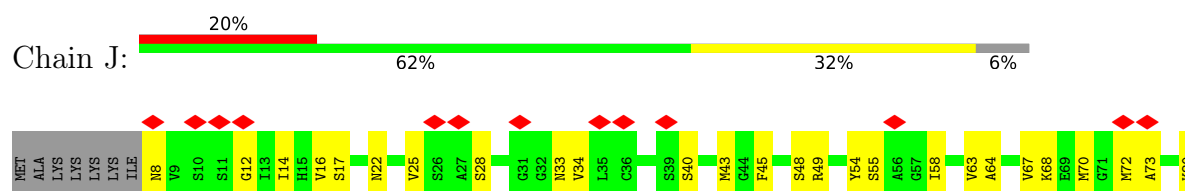
- Molecule 12: 30S ribosomal protein S9

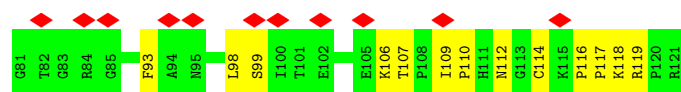


- Molecule 13: 30S ribosomal protein S10

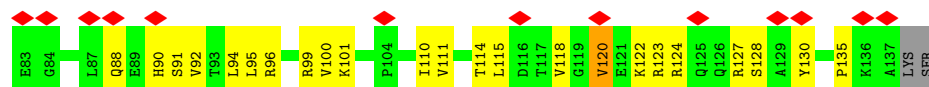
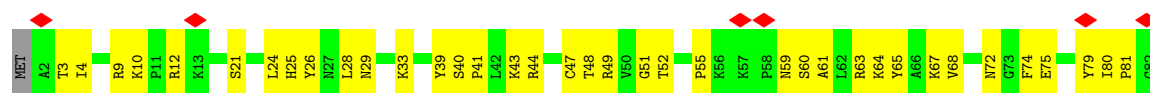


- Molecule 14: 30S ribosomal protein S11

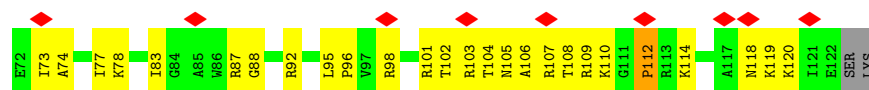
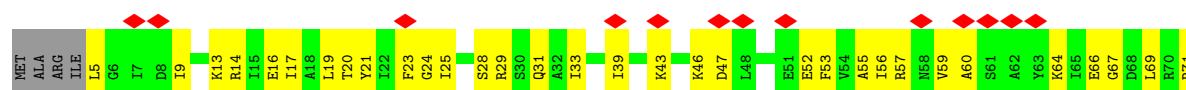




- Molecule 15: 30S ribosomal protein S12



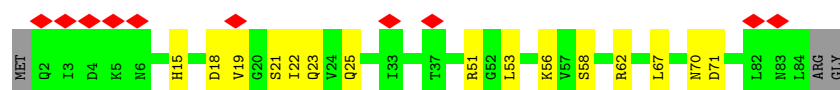
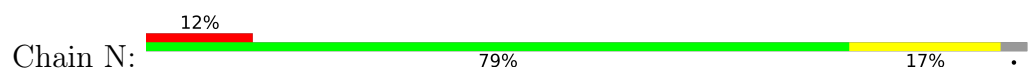
- Molecule 16: 30S ribosomal protein S13



- Molecule 17: 30S ribosomal protein S14 type Z

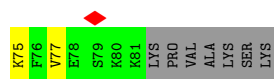


- Molecule 18: 30S ribosomal protein S15

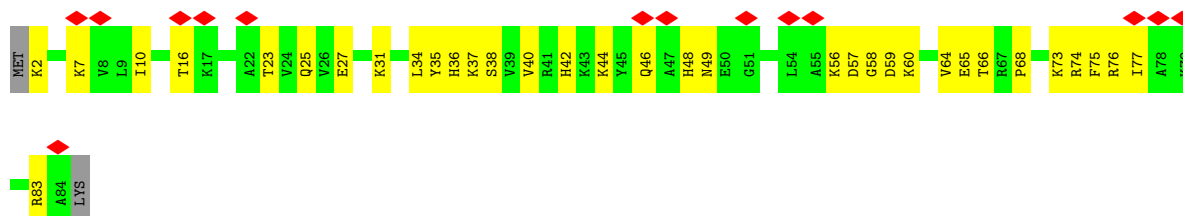


- Molecule 19: 30S ribosomal protein S16

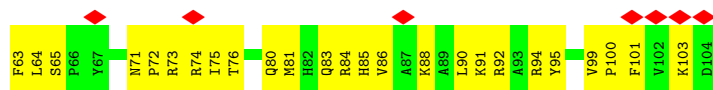
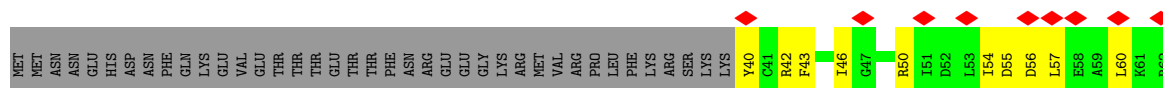
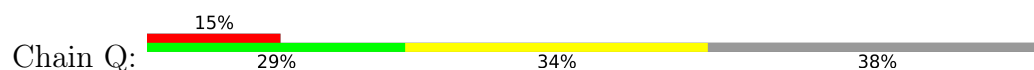




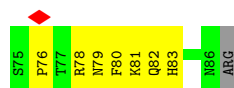
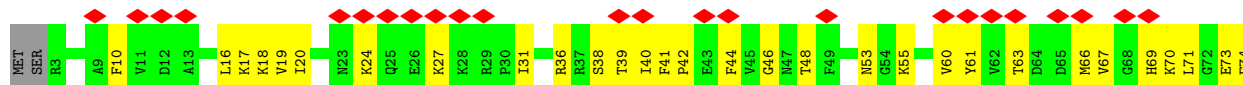
- Molecule 20: 30S ribosomal protein S17



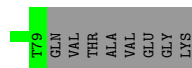
- Molecule 21: 30S ribosomal protein S18



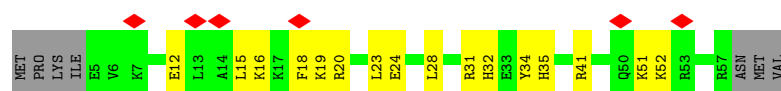
- Molecule 22: 30S ribosomal protein S19



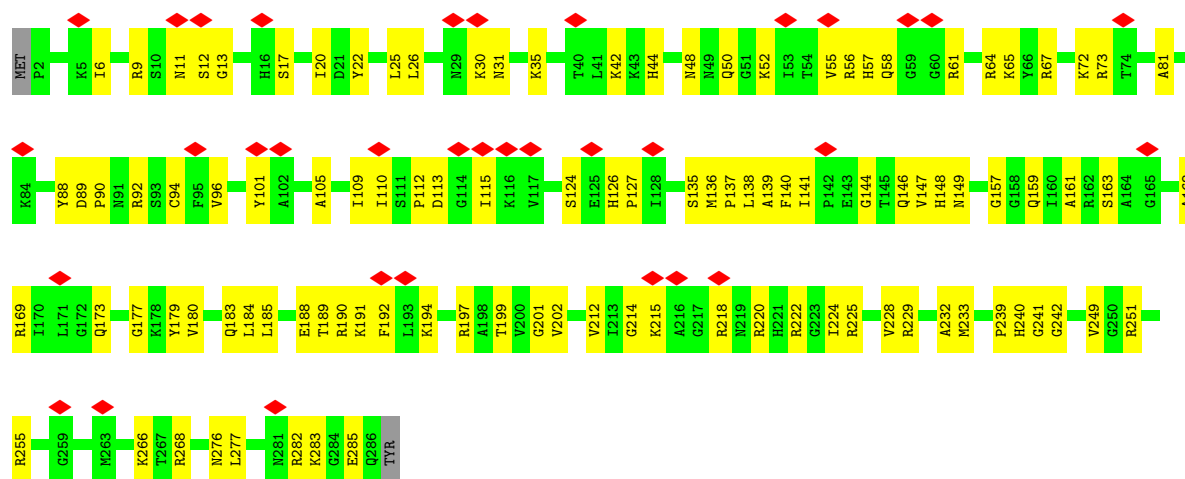
- Molecule 23: 30S ribosomal protein S20



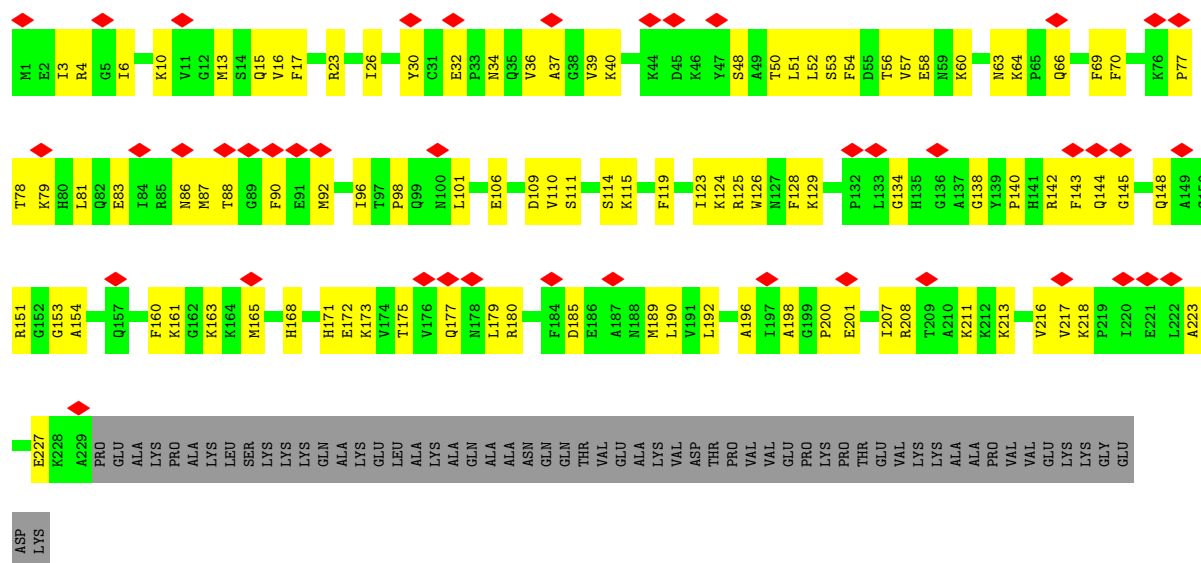
- Molecule 24: 30S ribosomal protein S21



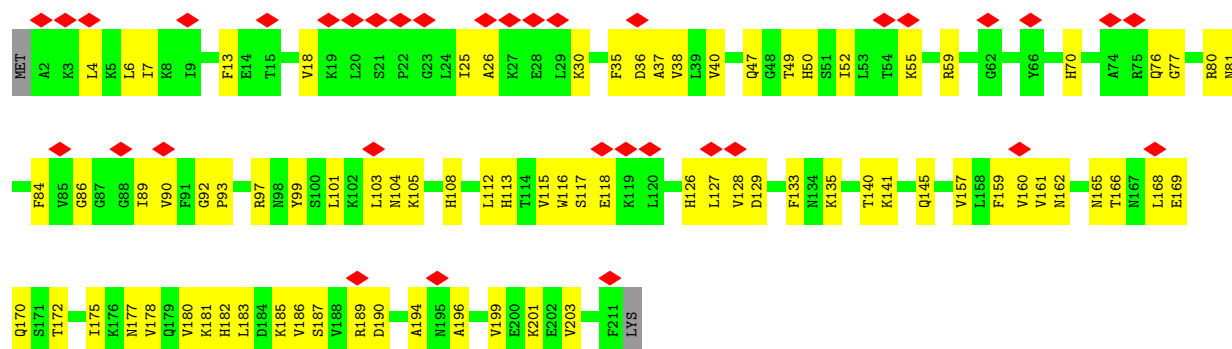
Chain a: 12% 62% 26%



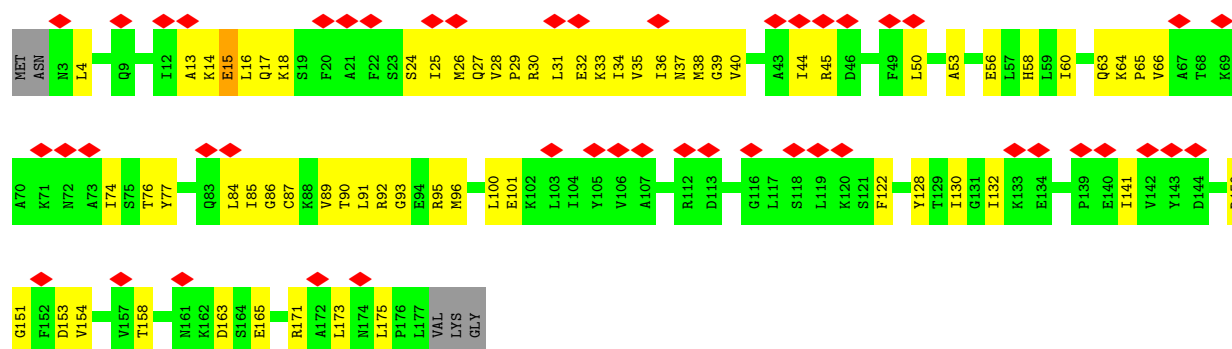
Chain b:



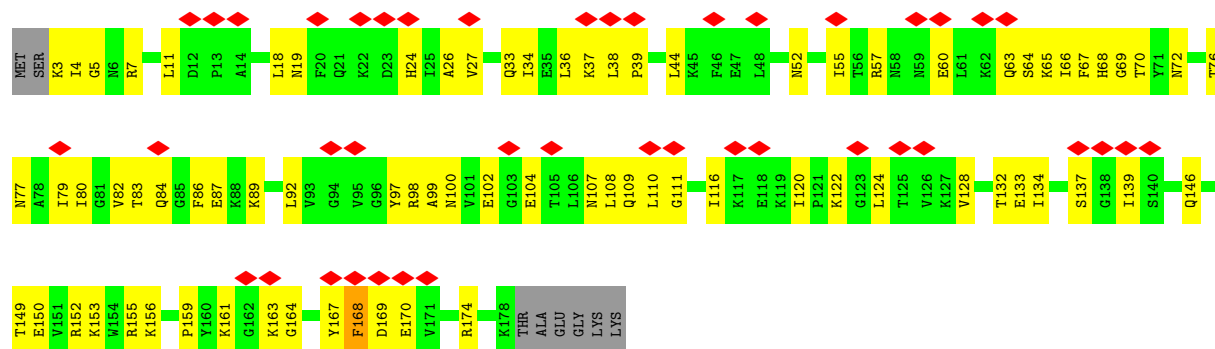
Chain c:



• Molecule 28: 50S ribosomal protein L5

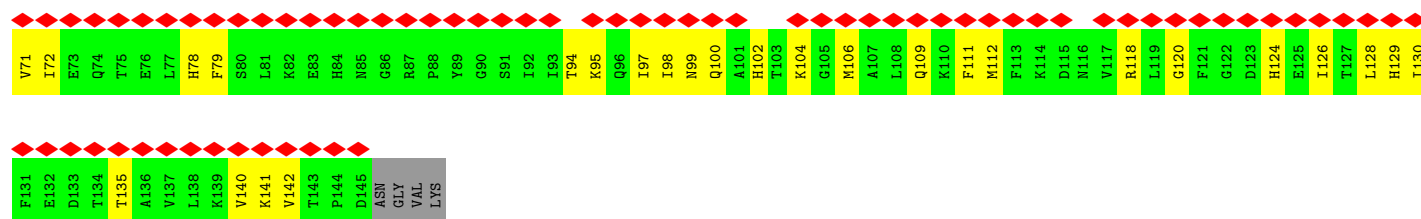


• Molecule 29: 50S ribosomal protein L6

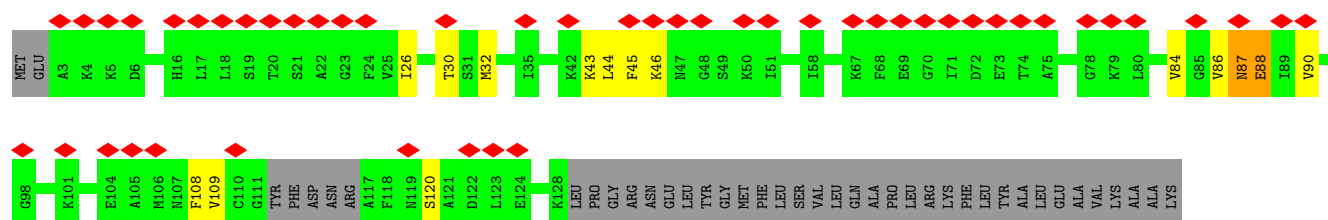


• Molecule 30: 50S ribosomal protein L9

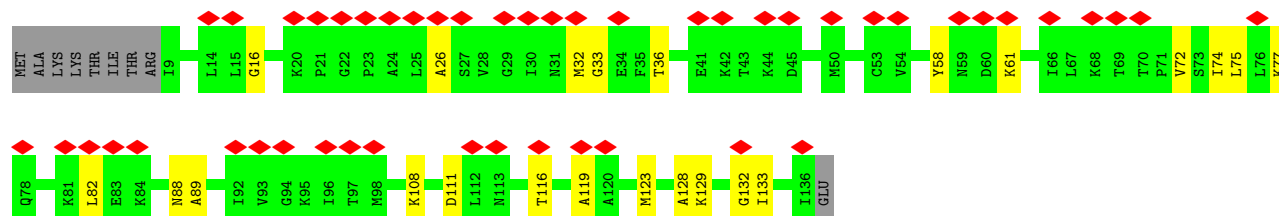
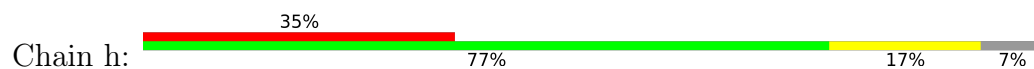




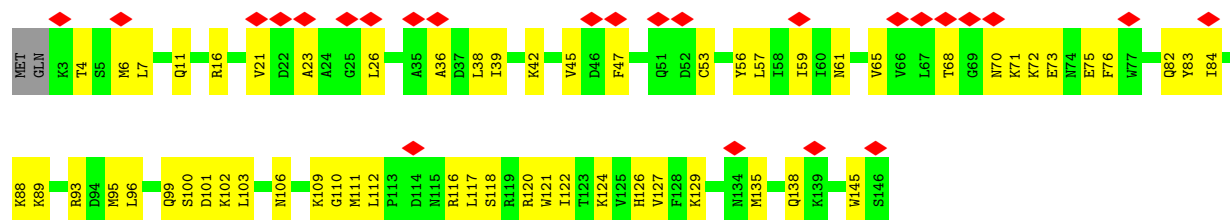
• Molecule 31: 50S ribosomal protein L10



• Molecule 32: 50S ribosomal protein L11

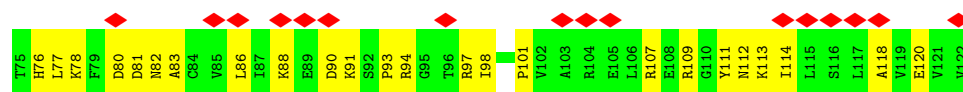


• Molecule 33: 50S ribosomal protein L13

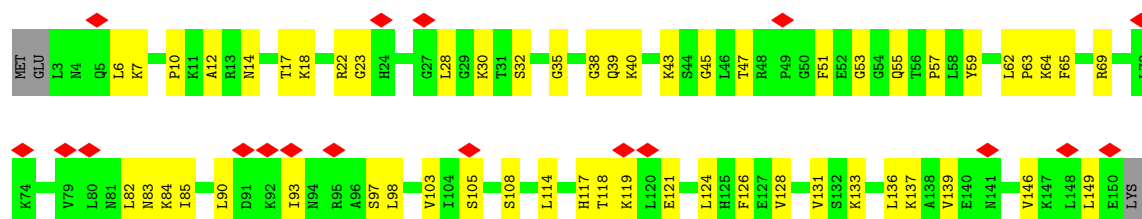


• Molecule 34: 50S ribosomal protein L14

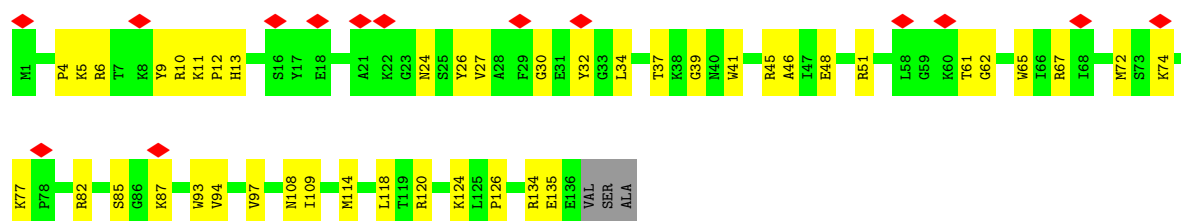




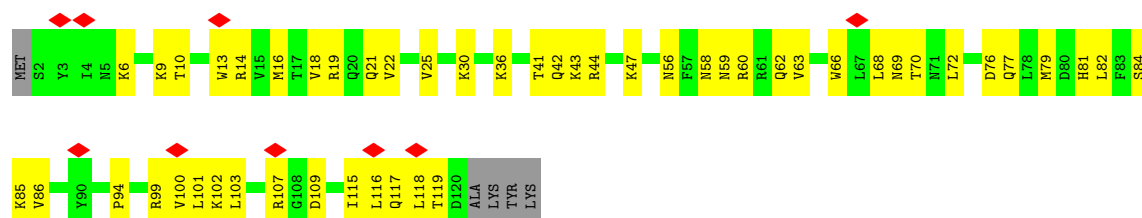
• Molecule 35: 50S ribosomal protein L15



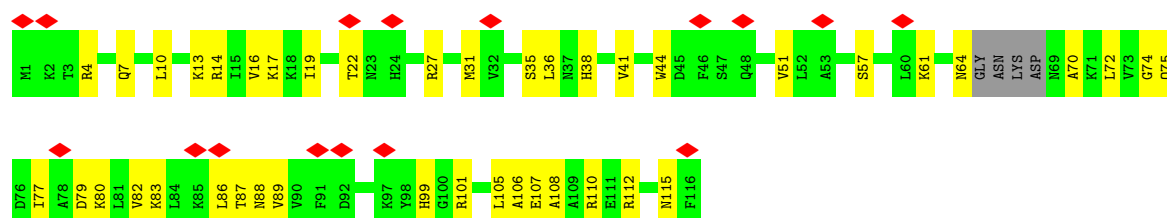
• Molecule 36: 50S ribosomal protein L16



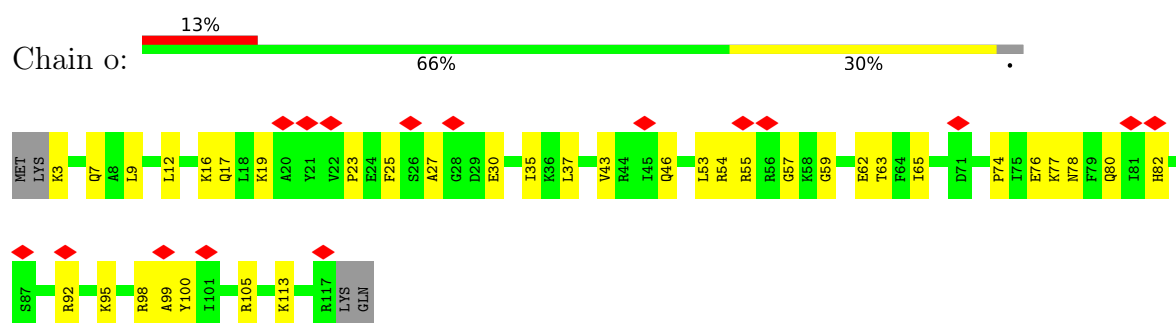
• Molecule 37: 50S ribosomal protein L17



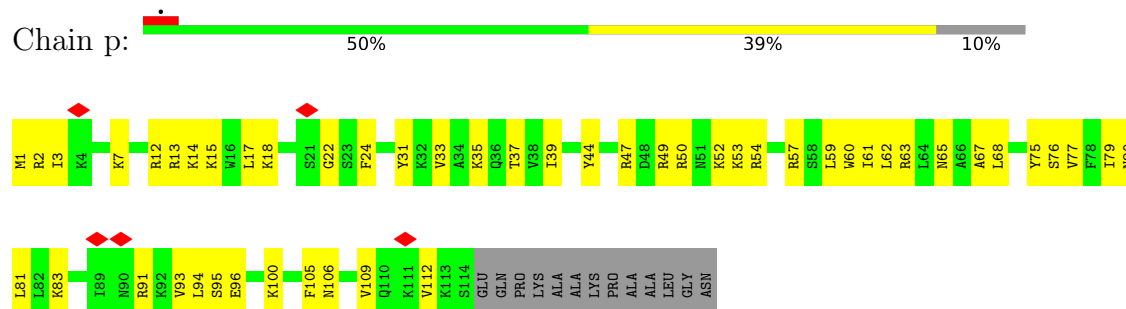
• Molecule 38: 50S ribosomal protein L18



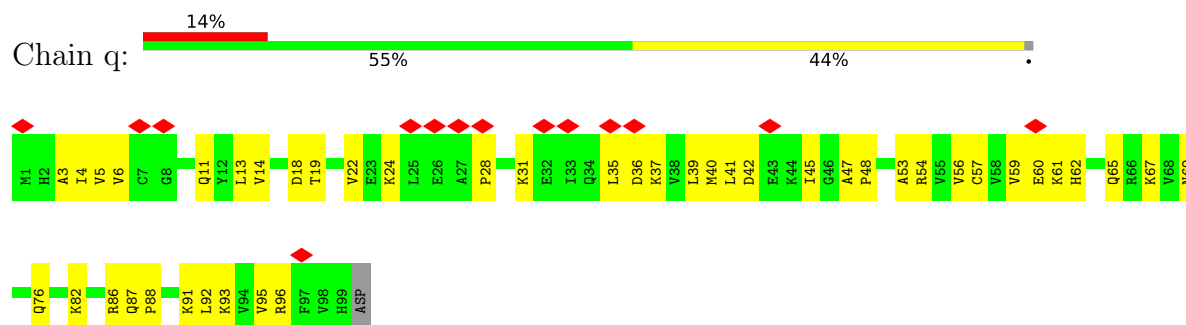
• Molecule 39: 50S ribosomal protein L19



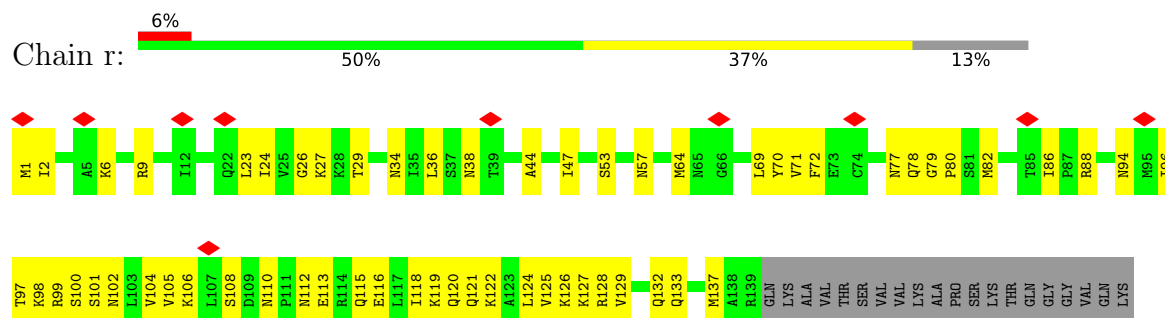
• Molecule 40: 50S ribosomal protein L20



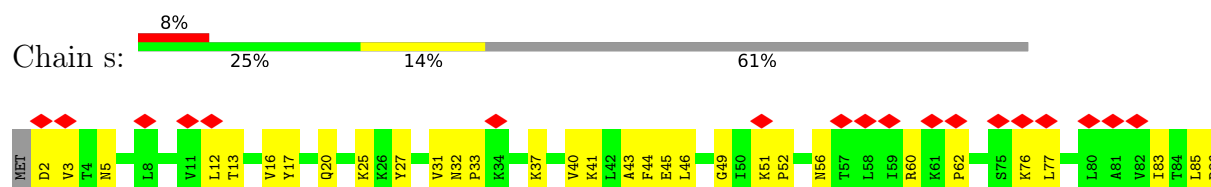
• Molecule 41: 50S ribosomal protein L21

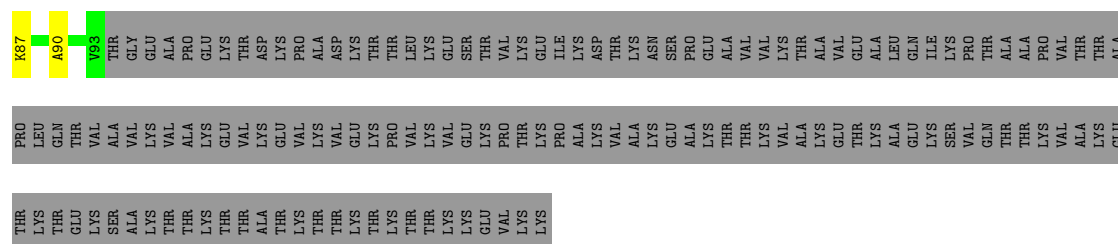


• Molecule 42: 50S ribosomal protein L22

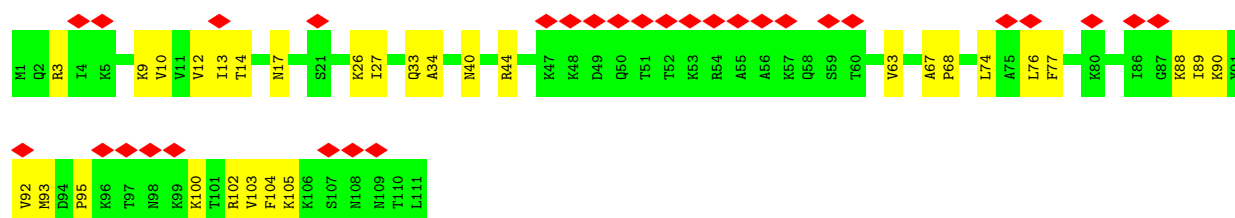
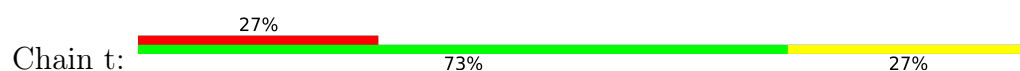


• Molecule 43: 50S ribosomal protein L23

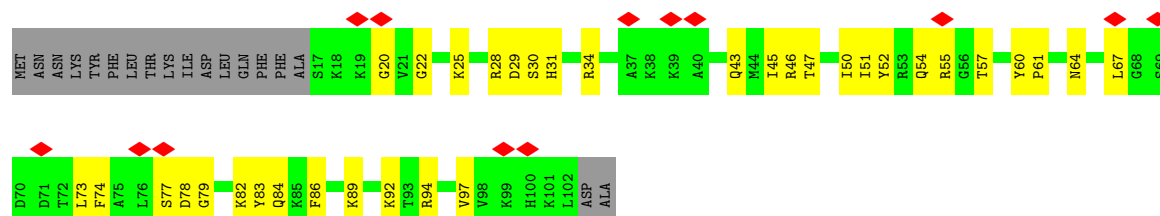




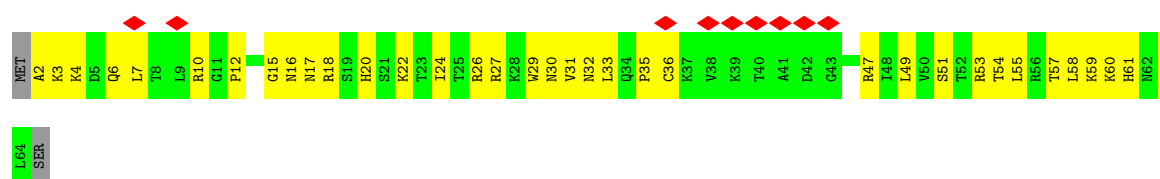
• Molecule 44: 50S ribosomal protein L24



• Molecule 45: 50S ribosomal protein L27

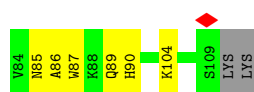


• Molecule 46: 50S ribosomal protein L28

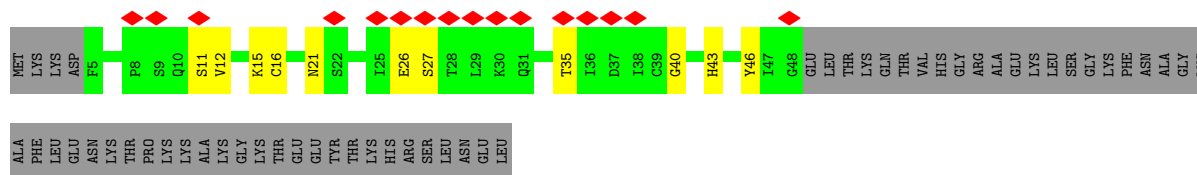
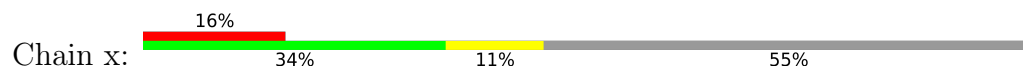


• Molecule 47: 50S ribosomal protein L29

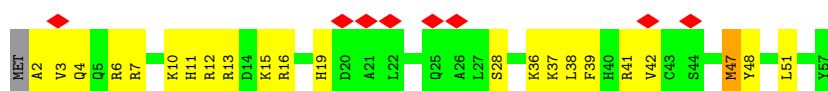




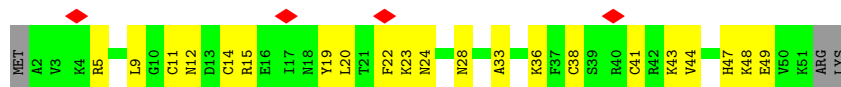
- Molecule 48: 50S ribosomal protein L31



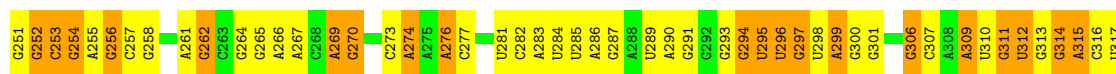
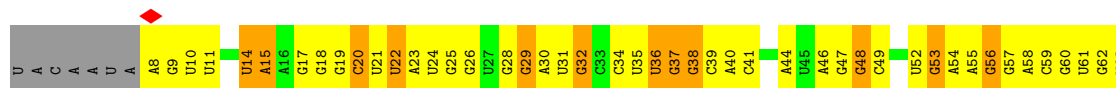
- Molecule 49: 50S ribosomal protein L32



- Molecule 50: 50S ribosomal protein L33 1

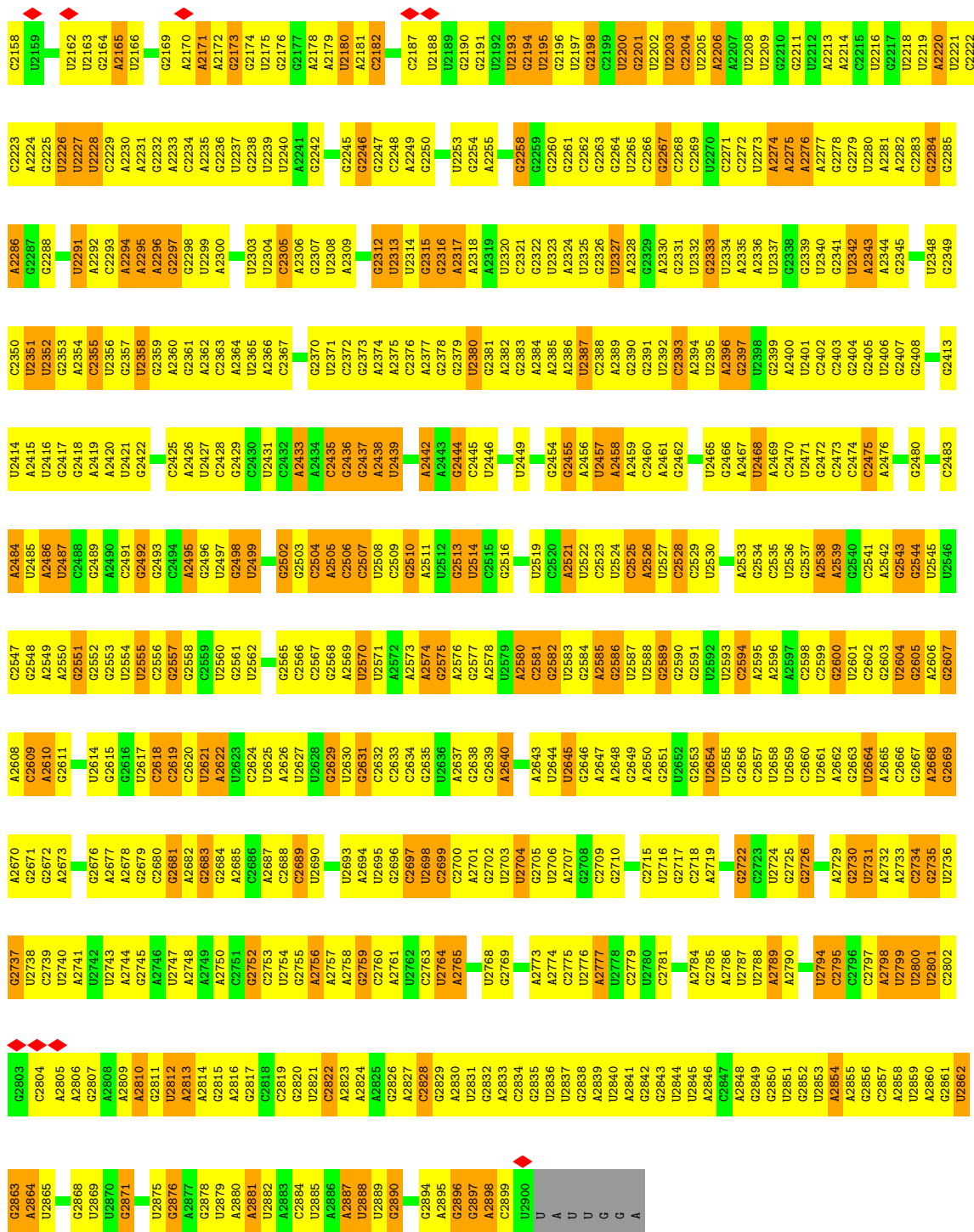


- Molecule 51: 23S ribosomal RNA



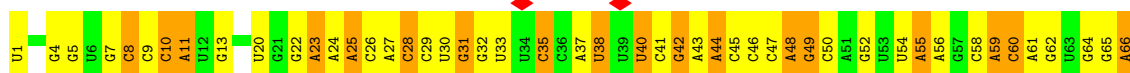
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G1203	C1137	G1014	A948	A857	A824	G758	U696	U636	G574	U511	C445	A381	G319
A1204	A1138	G1015	G949	A888	U825	U759	U697	U637	C575	G512	A446	U382	A320
		G1016	U950	G889	C826	G760	A698	A638		A513	G447	U383	A321
A1208	U1141	G1017	G951	U890	G827	G761	U699	G639	U579	A514	A448	U384	A322
U1209	G1142	G1018	U952	G891	A828	A762	U700	U640	U580	A515	C449	U385	A323
A1210	U1143	A1019	G953	G892	A829	G763	A701	U641	A681	A516	C450	U386	C324
A1081	G1144	G1020	A954	A893	A830	G764	U702	A642	A582	A517	A451	U387	G325
A1212	A1145	C1021	G955	G894	U831	A765	G703	A643	U583	A518	A452	U388	A326
U1213	A1146	G1022	U956	G895	C832	G766	A705	G644	G584	A519	U453	U327	A389
U1214	G1147	C1023	G957	U896	C832	G767	A706	C645	U585	C520	G454	A390	A328
G1215	A1085	G1024	G958	A897	U835	G768	C706	A646	U586	C521	G455	U391	G329
U1216	U1148	A1025	C959	A898	U836	A769	C707	G647	U587	G522	G456	A330	A330
U1217	U1150	G1026	A960	A899	A837	A770	C708	G648	G588	A523	U457	A331	A331
U1218	U1151	U1027	U961	G900	U838	C771	G709	A649	A589	G524	A458	A396	G332
U1219	G1091	C1028	U962	C901	U839	C772	A710	G650	U590	A525	A459	G397	A333
A1220	U1092	A1029	U963	U902	G840	G773	A711	A651	G591	G526	G460	C398	A334
G1221	A964	U1030	A964	A903	C841	A774	A712	U652	G592	A527	C461	G399	G335
A1222	U1155	G1031	C904	C904	U842	C775	G713	G653	C593	U528	C462	A400	C336
		A1032	U905	U905	C843	G776	G714	G654	G594	G529	U463	G401	U337
C1223	U1095	A1033	G906	G906	G844	C777	G715	G655	U595	G530	A464	A402	G338
G1224	U1096	U1034	U970	A908	U845			G656	G596	G531	A465	U403	U339
A1225	G1097	U1035	C974	A908	U846	G780	U718	A657	C597	A532	A466	C404	U340
G1226	A1161	A1036	G975	U909	C847	U781	G719	G658	G598	G533		C405	U341
C1227	A1162	A1037	G976	G910		U782	A720	G659	U599	U534	A471		G342
U1228	G1163	G1038	C977	U911	U851	G783	G721	U660	U600	G535		A406	A343
A1164	U1165	U1039	A977		C852		C722	G661	U601	A536	A475	U407	A344
U1229	U1098	G1040	G978	G914	C853	G788	U723	U662	U602	A537	G476	A408	A345
G1230	U1099	C1041		A915	A854	U789	C724	A663	G603	A538	U477	A409	
G1231	A1105	A1042	G982	U916	A855	U790	G725	G664	A604	U539	C480	U411	A348
A1233	G1106	C1043	A983	G917	A856	A791	U726	G665	A605	A540	C481		G349
U1234	C1107	A1044	G984	G918	U857	G792	C727	G666	G606	G541	G482		C350
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G1239	G1173	A1047	U987	C921	U860	G795	G730	G670	G610	C545	A485	A419	A355
	G1174	A1048	G988	C922	U861	U797	A731	G671	A611		C487	A420	A356
	G1175	U1049	G989		U862	G732	C732	G672	G612	A548	G488	A421	A357
U1242	U1176	A1050	G990	A	U863	A799	C733	A673	C613	A549	A489	C423	A358
A1243	A1177	U1051	G991	C	A864	C800	A734	G674	C614	A550	A490	G424	G359
A1244	U1178	A1052	G992	U	A865	U801	G735	U675	G615		A491	U425	G360
U1245	G1115	C1053	A993	C	G866	U802	G736	U676	G616	A553	C492	U426	G361
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C1247	U1117	A1055	A995		C868	U804	U738	U678	G618	U556	G494	U428	G363
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A1250	U1184	U1058	C998	C330	C871	U807	A741	A680	U621	C589	A496	G432	C368
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A1256	G1126	U1063	G936	A937	A877	G813	U749	G687	U627	C565	G502	G437	G373
U1257	U1127	A1064	A938	U938	A878		A750	U688	G628	G566	G503	A438	U374
C1258	G1128	G1065	U939	A816	U879	A816	A751	U689	G629	U567	G504	A374	A374
U1259	U1129		U940	A817	C880	A817	G752	U690	A631	U568	G505	A438	U375
U1260	A1130	U1068	A940	A818	C881	A818	A753	G691	A632	C570	A566	C440	U376
U1261	A1131	G1069	C941	U819	C882	U819	U754	G692	A633	G571	A507	U441	U377
G1262	G1132	U1070	A942	U820	C883	U820	C755	U693	A634	A571	A508	G442	G378
A1199	A1133	G1071	U943	C821	A884	C821		U694	G633		G509	A379	
G1263	U1200	A1072	U944	C822	A885	C822	A756	U694	C634				
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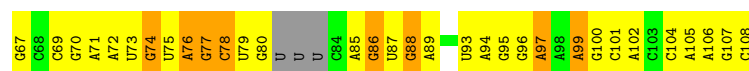
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A2119	A2055	U1958	U1926	U1858	A1792			U1593		A1471	G1409	C1348	C1287
G2120	A2056	C1997	C1927	U1859	A1793		U1655	G1594	A1534	C1472	A1410	G1349	C1288
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U2126	C2062	U2001	U1933	G1866	A1798	G1732	A1661	A1600	G1540	U1478	G1293	U1357	U1294
G2127	G2063	G2003	A1934	G1867	U1803	G1733	G1662	G1601	A1541	A1479	G1294	C1358	A1295
A2128	A2064	G2004	A1935	A1868	A1804	G1734	G1663	G1602	G1542	A1480	A1418	C1359	G1296
U2129	G2065	G2005	G1936	G1869	U1805	A1735		A1603	U1543	U1481	A1419	U1360	U1297
G2130	A2066	C2006	G1937	G1870	G1806	G1736	A1669	A1604	G1544	U1482	A1420	U1361	A1298
A2131	G2067	U2007	U1938	U1871	A1807	G1737	U1670	A1605	U1545	G1483	U1421	C1362	A1299
C2132	G2068	A2008	A1939	U1872	C1808	G1738	C1671	G1606	U1546	G1484	U1422	C1363	C1300
A2133	U2069	U2009	G1940	A1873	A1809	G1739	C1672	C1608	A1548	U1486	U1424	A1364	G1301
G2134	A1941	C1941	C1941			U1740	U1673	U1609	U1549	U1487	U1425	G1365	C1302
A2135	G1942	G1942	G1942	A1878	C1813		A1674	U1610	G1550	U1488	C1426	U1303	U1303
C2136	A1943	A1943	A1943	A1879	G1814	U1746	A1675	U1611	U1551	U1489	U1427	G1367	U1304
U2137	C2071	C2071	C2071	G1880	U1815	G1747	G1676	U1612	C1552	G1490	U1428	U1368	G1305
A2138	G2072	G2011	G1942	C1881	A1816	U1748	G1677	G1613	G1553	G1491	G1429	U1369	G1306
C2139	C2073	G2012	A1943	G1882	A1817		U1678	G1614	A1554	G1492	U1430	G1370	G1307
G2140	U2074	C2015	A1944	A1883	G1818	A1751		G1615	U1555	A1493	A1431	G1371	A1308
A2141	G2075	G2016	U1950	A1884	G1819	A1752	G1681	G1616	U1556	U1494	U1434	G1372	G1309
U2142	U2076	U2017	A1951	G1885	U1820	G1753	C1682	U1617	U1557	A1495	A1435	A1314	A1315
G2143	A2077	G1952	G1952	C1886	G1821	U1754	G1683	U1618	A1558	A1496	A1436	G1375	A1316
U2144	C2080	U1953	C1954	U1887	A1822	A1755	A1684	A1619	U	U1498	A1437	G1376	A1317
A2145	U2081	U1954	G1955	U1888	G1823	A1756	G1685	U1620	G	U1499	G1438	A1377	U1318
U2146	U2082	G1956	U1889	U1890	G1824	G1757	U1686	U1621	A	A1500	U1439	C1378	U1319
C2147	G1957	U1890	A1891	U1825	U1825		G1687	C1622	U	U1501	U1440	C1379	A1320
A2148	A2084	C2024	A1892	U1826	A1827	G1761	A1688	U1623	G	A1502	A1441	G1383	C1321
U2149	C2085	C2025	C1893	U1827	U1828	A1762	A1689	U1624	A	U1503	U1442	U1385	A1322
G2150	G2086	U1962	U1894	U1829	U1829	G1763	C1690	G1625	U	A1504	G1443	U1386	A1323
C2151	U2087	G1963	G1895	G1830	G1764	U1756	A1691	C1626	G	U1505	A1444	A1387	C1324
U2092	U2088	G1964	G1896	G1831	G1766	A1766	U1693	U1627	U	G1506	U1445	U1388	A1325
A2146		C1965	A1896	G1832	A1767		A1694	G1628	A	U1507	G1446	U1389	A1326
U2152	U2092	C2031	G1898	G1833	G1768	G1768	G1695	U1629		U1508	U1447	A1387	
U2153	U2093	G2032	U1894	U1834	A1769	A1769	C1696	A1630	A1570	U1509	A1448	A1387	
A2154	A2094	G1971	C1902	G1835	A1770	A1770	C1697	A1631	G1571	U1509	U1448	A1387	
G2155	G2095	G2033	A1903	A1836	C1771		A1698	C1632	U1572	A1510	G1449	G1388	



• Molecule 52: 5S ribosomal RNA

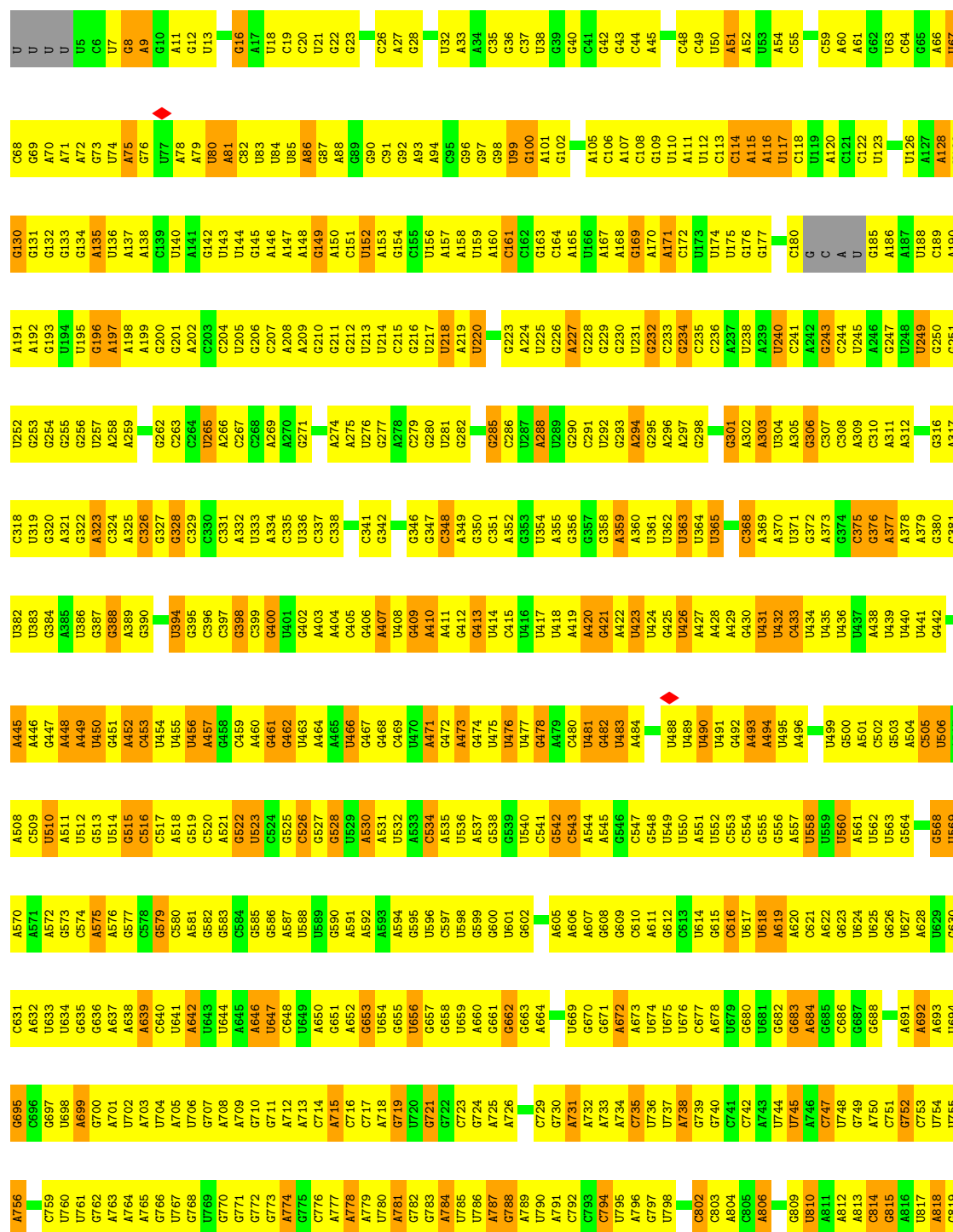
Chain 4: 23% 50% 24%



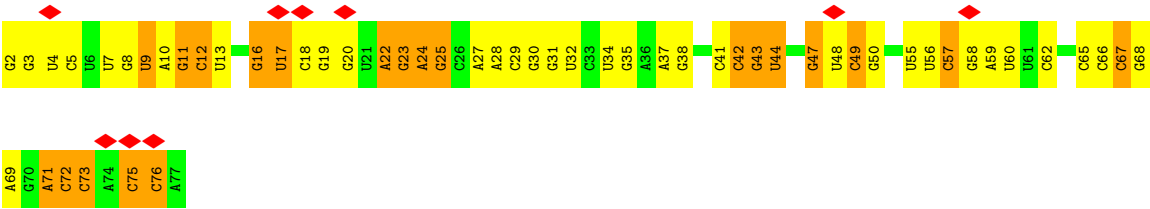


• Molecule 53: 16S ribosomal RNA

Chain 5: 18% 61% 19%



U1076	U1015	U951	U885	A820
G1080	U1016	U952	A886	U821
G1081	A1017	A953	A887	A822
G1082	U1018	A954	A888	C823
A1083	U1019	U955	C823	U824
A1084	G	U956	C823	A825
U1085	A	C957	C826	G826
U1086	G	G958	C827	C827
U1087	G	A959	U828	U828
U1088	U	C960	A897	U829
U1089	U	G961	A898	C829
U1090	U	G962	A899	U830
U1091	A	U963	G900	C831
A1092	A	U964	A901	G832
A1093	C1028	C965	A902	G833
C1094	C1029	A966	U905	G834
G1095	G1030	C967	C906	G835
C1096	A1031	G968	A907	A838
C1097	U1032	A969	A908	U844
C1098	U1033	A970	A909	U845
C1099	G1034	A971	C910	G846
C1100	A1035	A972	G911	G847
C1101	C1036	A973	G912	U848
C1102	A1037	C974	A913	A849
C1103	U1038	U977	A914	U850
C1104	G1039	A978	U915	G850
C1105	U1040	C979	U916	U851
C1106	G1041	A980	G917	G852
C1107	U1109	C980	A918	C853
C1108	U1110	U981	C919	A854
C1109	U1111	A982	G920	G855
C1110	U1112	G983	G921	U856
C1111	U1113	A984	G922	U857
C1112	G1048	C985	G923	A858
C1113	U1051	U986	A924	A859
C1114	G1052	U987	C925	C860
C1115	U1053	G988	C926	A861
C1116	U1054	A989	C927	C862
C1117	C1054	C990	G928	A863
C1118	G1055	A991	C929	U864
C1119	U1056	U992	A930	U865
C1120	U1057	C993	C931	A866
C1121	A1058	U997	A932	A867
C1122	G1059	G998	A933	G868
C1123	C1060	C999	A934	U869
C1124	U1061	A1000	G937	A870
C1125	C1062	U1001	U938	C872
C1126	G1063	A1002	G939	U873
C1127	U1064	U1003	G940	C874
C1128	U1065	U1004	A941	G875
C1129	U1066	U1005	G942	C876
C1130	C1067	A1006	C943	C877
C1131	G1068	U1007	A944	U878
C1132	U1069	G1008	U945	C879
C1133	G1070	G1009	G850	G880
C1134	A1071	A1010	G851	C881
C1135	G1072	A1011	U852	U882
C1136	A1073	U1074	A883	G884
C1137	U1201	A1202	A1012	
C1138	A1203	A1204	G1075	
C1139	U1205	G1206		
C1140	G1207	G1208		
C1141	U1209	U1210		
C1142	A1211	C1212		
C1143	G1213	G1214		
C1144	U1215	U1216		
C1145	G1217	G1218		
C1146	U1219	C1220		
C1147	A1221	G1222		
C1148	G1223	U1224		
C1149	U1225	A1226		
C1150	C1227	U1228		
C1151	G1229	G1230		
C1152	U1231	C1232		
C1153	G1233	U1234		
C1154	U1235	A1236		
C1155	G1237	U1240		
C1156	U1241	U1242		
C1157	A1243	U1244		
C1158	U1245	A1246		
C1159	G1247	U1248		
C1160	U1249	A1250		
C1161	G1251	C1252		
C1162	A1253	U1254		
C1163	U1255	U1256		
C1164	C1257	U1258		
C1165	U1259	G1260		
C1166	G1261	A1262		
C1167	U1263	A1264		
C1168	G1265	U1266		
C1169	U1267	C1268		
C1170	G1269	U1300		
C1171	U1270	C1301		
C1172	A1271	U1302		
C1173	U1272	C1303		
C1174	G1273	U1304		
C1175	U1274	G1305		
C1176	A1275	U1306		
C1177	U1276	C1307		
C1178	G1277	U1308		
C1179	U1278	U1309		
C1180	A1279	G1312		
C1181	U1280	A1313		
C1182	C1281	U1314		
C1183	G1282	C1315		
C1184	U1283	U1316		
C1185	A1284	C1317		
C1186	U1285	U1318		
C1187	G1286	U1319		
C1188	U1287	A1320		
C1189	C1287	G1321		
C1190	U1288	U1322		
C1191	G1289	A1323		
C1192	U1290	A1324		
C1193	A1291	U1325		
C1194	U1292	C1326		
C1195	G1293	U1327		
C1196	U1294	C1328		
C1197	C1295	U1330		
C1198	U1296	C1331		
C1199	G1297	U1332		
C1200	U1298	C1333		
C1201	C1299	U1334		
C1202	U1300	G1335		
C1203	A1291	C1336		
C1204	U1302	U1337		
C1205	G1303	A1338		
C1206	U1304	U1339		
C1207	G1305	G1340		
C1208	U1306	U1341		
C1209	C1307	C1342		
C1210	U1308	G1343		
C1211	G1309	U1344		
C1212	A1310	G1345		
C1213	U1311	U1346		
C1214	C1312	U1347		
C1215	G1313	G1348		
C1216	U1314	A1349		
C1217	C1315	U1350		
C1218	U1316	C1351		
C1219	G1317	U1352		
C1220	U1318	C1353		
C1221	C1319	U1354		
C1222	A1320	G1355		
C1223	G1321	U1356		
C1224	U1322	C1357		
C1225	A1323	U1358		
C1226	G1324	C1359		
C1227	U1325	G1360		
C1228	A1326	U1361		
C1229	U1327	C1362		
C1230	G1328	U1363		
C1231	A1329	C1364		
C1232	U1330	U1365		
C1233	C1331	U1366		
C1234	G1332	U1367		
C1235	U1333	U1368		
C1236	A1334	A1369		
C1237	G1335	C1370		
C1238	U1336	U1371		
C1239	C1337	C1372		
C1240	U1338	A1373		
C1241	G1339	C1374		
C1242	A1340	U1375		
C1243	U1341	C1376		
C1244	G1342	U1377		
C1245	A1343	C1378		
C1246	U1344	U1379		
C1247	C1345	G1380		
C1248	G1346	U1381		
C1249	U1347	C1382		
C1250	A1348	A1383		
C1251	G1349	U1384		
C1252	U1350	G1445		
C1253	C1351	C		
C1254	U1352	C		
C1255	A1353	U		
C1256	G1354	C		
C1257	U1355	C		
C1258	C1356	C		
C1259	U1357	C		
C1260	A1358	C		
C1261	G1359	C		
C1262	U1360	C		
C1263	C1361	C		
C1264	U1362	C		
C1265	A1363	C		
C1266	G1364	C		
C1267	U1365	C		
C1268	C1366	C		
C1269	U1367	C		
C1270	A1368	C		
C1271	G1369	C		
C1272	U1370	C		
C1273	C1371	C		
C1274	A1372	C		
C1275	G1373	C		
C1276	U1374	C		
C1277	C1375	C		
C1278	A1376	C		
C1279	U1377	C		
C1280	G1378	C		
C1281	C1379	C		
C1282	U1380	C		
C1283	A1381	C		
C1284	C1382	C		
C1285	U1383	C		
C1286	A1384	C		
C1287	G1385	C		
C1288	U1386	C		
C1289	C1387	C		
C1290	A1388	C		
C1291	G1389	C		
C1292	U1390	C		
C1293	C1391	C		
C1294	A1392	C		
C1295	G1393	C		
C1296	U1394	C		
C1297	C1395	C		
C1298	A1396	C		
C1299	U1397	C		
C1300	G1398	C		
C1301	A1399	C		
C1302	U1400	C		
C1303	C1401	C		
C1304	G1402	C		
C1305	U1403	C		
C1306	A1404	C		
C1307	C1405	C		
C1308	U1406	C		
C1309	G1407	C		
C1310	A1408	C		
C1311	U1409	C		
C1312	C1410	C		
C1313	G1411	C		
C1314	U1412	C		
C1315	C1413	C		
C1316	A1414	C		
C1317	U1415	C		
C1318	G1416	C		
C1319	C1417	C		
C1320	U1418	C		
C1321	G1419	C		
C1322	A1420	C		
C1323	U1421	C		
C1324	C1422	C		
C1325	G1423	C		
C1326	U1424	C		
C1327	A1425	C		
C1328	C1426	C		
C1329	U1427	C		
C1330	G1428	C		
C1331	A1429	C		
C1332	U1430	C		
C1333	C1431	C		
C1334	G1432	C		
C1335	U1433	C		
C1336	A1434	C		
C1337	C1435	C		
C1338	U1436	C		
C1339	G1437	C		
C1340	A1438	C		
C1341	U1439	C		
C1342	C1440	C		
C1343	G1441	C		
C1344	U1442	C		
C1345	A1443	C		
C1346	C1444	C		
C1347	U1445	C		
C1348	G1446	C		
C1349	A1447	C		
C1350	U1448	C		
C1351	C1449	C		
C1352	G1450	C		
C1353	U1451	C		
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C1356	U1454	C		
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C1359	U1457	C		
C1360	C1458	C		
C1361	U1459	C		
C1362	G1460	C		
C1363	A1461	C		
C1364	U1462	C		
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C1366	U1464	C		
C1367	G1465	C		
C1368	A1466	C		
C1369	U1467	C		
C1370	C1468	C		
C1371	G1469	C		
C1372	U1470	C		
C1373	A1471	C		
C1374	C1472	C		
C1375	U1473	C		
C1376	G1474	C		
C1377	A1475	C		
C1378	U1476	C		
C1379	C1477	C		
C1380	U1478	C		
C1381	G1479	C		
C1382	A1480	C		



4 Experimental information

Property	Value	Source
EM reconstruction method	SUBTOMOGRAM AVERAGING	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of subtomograms used	1128	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	1.595	Depositor
Minimum map value	-0.633	Depositor
Average map value	0.020	Depositor
Map value standard deviation	0.113	Depositor
Recommended contour level	0.39	Depositor
Map size (Å)	435.328, 435.328, 435.328	wwPDB
Map dimensions	256, 256, 256	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.7005, 1.7005, 1.7005	Depositor

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	0	0.18	0/383	0.48	0/504
2	1	0.15	0/484	0.44	0/637
3	2	0.15	0/306	0.47	0/401
4	9	0.16	0/3071	0.50	2/4147 (0.0%)
5	A	0.16	0/1954	0.46	2/2642 (0.1%)
6	B	0.17	0/1721	0.48	0/2323
7	C	0.17	0/1691	0.49	0/2267
8	D	0.18	0/1188	0.55	2/1593 (0.1%)
9	E	0.17	0/1384	0.49	0/1867
10	F	0.20	0/1266	0.54	0/1700
11	G	0.28	0/1126	0.71	5/1517 (0.3%)
12	H	0.16	0/1044	0.44	0/1395
13	I	0.28	0/820	0.67	2/1103 (0.2%)
14	J	0.18	0/844	0.45	0/1136
15	K	0.29	0/1094	0.59	0/1468
16	L	0.22	0/962	0.53	0/1289
17	M	0.22	0/483	0.42	0/643
18	N	0.16	0/679	0.44	0/907
19	O	0.18	0/659	0.52	0/885
20	P	0.15	0/684	0.43	0/913
21	Q	0.19	0/545	0.64	1/730 (0.1%)
22	R	0.19	0/698	0.60	0/936
23	S	0.12	0/631	0.37	0/838
24	T	0.21	0/475	0.64	0/621
25	a	0.15	0/2267	0.42	0/3044
26	b	0.20	0/1795	0.55	0/2412
27	c	0.15	0/1671	0.45	0/2246
28	d	0.21	0/1409	0.53	1/1894 (0.1%)
29	e	0.21	0/1420	0.54	2/1912 (0.1%)
30	f	0.19	0/1183	0.54	0/1587
31	g	0.44	0/916	0.80	0/1222
32	h	0.19	0/968	0.57	2/1298 (0.2%)
33	i	0.15	0/1186	0.50	0/1592
34	j	0.16	0/953	0.48	0/1275

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
35	k	0.16	0/1170	0.43	0/1559
36	l	0.23	0/1104	0.55	0/1481
37	m	0.16	0/973	0.48	0/1309
38	n	0.17	0/897	0.53	0/1198
39	o	0.16	0/948	0.49	0/1262
40	p	0.16	0/961	0.48	0/1278
41	q	0.19	0/828	0.55	0/1111
42	r	0.16	0/1077	0.45	0/1441
43	s	0.15	0/732	0.46	0/988
44	t	0.16	0/879	0.51	0/1165
45	u	0.16	0/665	0.50	0/884
46	v	0.23	0/519	0.58	0/695
47	w	0.15	0/826	0.43	0/1104
48	x	0.28	0/353	0.51	0/474
49	y	0.33	0/457	0.59	0/601
50	z	0.19	0/412	0.52	0/547
51	3	0.10	0/69073	0.26	0/107710
52	4	0.12	0/2505	0.31	0/3902
53	5	0.10	0/35768	0.25	0/55764
54	6	0.11	0/1808	0.31	0/2817
54	7	0.11	0/1808	0.31	0/2817
All	All	0.14	0/161723	0.35	19/241051 (0.0%)

There are no bond length outliers.

All (19) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
13	I	99	PRO	CA-N-CD	-9.14	99.21	112.00
11	G	111	LEU	CA-C-N	-8.93	113.91	122.66
11	G	111	LEU	C-N-CA	-8.93	113.91	122.66
4	9	299	ILE	CA-C-N	7.27	130.81	120.49
4	9	299	ILE	C-N-CA	7.27	130.81	120.49
11	G	98	TYR	CA-C-N	-6.07	109.37	122.67
11	G	98	TYR	C-N-CA	-6.07	109.37	122.67
32	h	74	ILE	N-CA-C	-5.83	106.59	113.42
29	e	168	PHE	CA-C-N	5.65	132.33	121.54
29	e	168	PHE	C-N-CA	5.65	132.33	121.54
21	Q	55	ASP	N-CA-C	-5.62	107.67	114.75
5	A	68	ALA	CA-C-N	5.50	127.92	120.44
5	A	68	ALA	C-N-CA	5.50	127.92	120.44
8	D	210	ILE	CA-C-N	-5.35	113.78	122.65
8	D	210	ILE	C-N-CA	-5.35	113.78	122.65

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
32	h	16	GLY	N-CA-C	-5.29	107.04	115.66
13	I	99	PRO	N-CD-CG	-5.13	95.50	103.20
11	G	111	LEU	N-CA-C	-5.10	105.22	111.75
28	d	15	GLU	CB-CG-CD	5.09	121.25	112.60

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	0	380	0	429	23	0
2	1	477	0	530	25	0
3	2	304	0	350	25	0
4	9	3021	0	3050	147	0
5	A	1921	0	1973	62	0
6	B	1698	0	1768	56	0
7	C	1660	0	1719	75	0
8	D	1173	0	1267	47	0
9	E	1362	0	1377	56	0
10	F	1246	0	1308	50	0
11	G	1110	0	1226	64	0
12	H	1028	0	1094	58	0
13	I	809	0	894	40	0
14	J	829	0	855	36	0
15	K	1076	0	1170	54	0
16	L	951	0	1014	61	0
17	M	474	0	509	24	0
18	N	673	0	730	14	0
19	O	646	0	677	35	0
20	P	675	0	728	24	0
21	Q	535	0	562	29	0
22	R	682	0	691	35	0
23	S	629	0	681	35	0
24	T	471	0	522	21	0
25	a	2225	0	2301	92	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
26	b	1762	0	1808	100	0
27	c	1644	0	1731	68	0
28	d	1388	0	1469	68	0
29	e	1396	0	1481	62	0
30	f	1160	0	1172	43	0
31	g	910	0	972	3	0
32	h	959	0	1039	13	0
33	i	1164	0	1192	53	0
34	j	944	0	1019	55	0
35	k	1153	0	1256	52	0
36	l	1079	0	1134	44	0
37	m	958	0	1011	49	0
38	n	889	0	952	30	0
39	o	938	0	1008	30	0
40	p	947	0	1028	56	0
41	q	811	0	858	33	0
42	r	1068	0	1150	57	0
43	s	720	0	803	31	0
44	t	872	0	972	24	0
45	u	657	0	695	36	0
46	v	513	0	560	42	0
47	w	818	0	870	32	0
48	x	344	0	333	6	0
49	y	452	0	472	31	0
50	z	408	0	440	24	0
51	3	61664	0	30954	2311	0
52	4	2239	0	1137	69	0
53	5	31943	0	16058	1254	0
54	6	1618	0	821	55	0
54	7	1618	0	821	49	0
All	All	149091	0	102641	5329	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 23.

All (5329) 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)
53:5:134:G:H1	53:5:160:A:N6	1.55	1.04
51:3:633:G:H1	51:3:692:U:H3	1.07	1.00
53:5:650:A:HO2'	53:5:651:G:H8	1.05	1.00

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:b:40:LYS:O	26:b:48:SER:HA	1.61	1.00
53:5:1133:A:H61	53:5:1153:G:N2	1.60	0.98
51:3:2483:C:H42	51:3:2537:G:N2	1.60	0.98
51:3:1803:U:H3	51:3:1830:G:H1	1.02	0.97
51:3:2536:U:H3	51:3:2543:G:H1	1.08	0.97
53:5:134:G:H1	53:5:160:A:H61	1.00	0.97
51:3:900:G:N2	51:3:903:A:H61	1.61	0.96
53:5:1388:A:H2	53:5:1462:G:N1	1.62	0.96
53:5:1222:U:H3	53:5:1264:G:H1	1.11	0.96
51:3:1807:C:H42	51:3:1824:G:N2	1.64	0.96
51:3:2695:U:H3	51:3:2730:G:H1	0.97	0.95
53:5:661:G:H1	53:5:738:A:N6	1.62	0.95
51:3:742:G:H1	51:3:759:U:H3	1.09	0.95
53:5:1112:U:H3	53:5:1128:G:H1	1.14	0.95
51:3:900:G:H21	51:3:903:A:N6	1.64	0.95
53:5:318:C:H42	53:5:325:A:H62	1.07	0.95
51:3:325:G:H1	51:3:383:U:H3	1.13	0.94
51:3:1228:G:H1	51:3:1279:U:H3	1.08	0.94
43:s:2:ASP:N	51:3:146:G:HO2'	1.66	0.94
53:5:1388:A:C2	53:5:1462:G:N1	2.35	0.94
51:3:1514:U:H3	51:3:1525:G:H1	1.16	0.94
51:3:2843:G:H1	51:3:2882:U:H3	1.09	0.94
51:3:2299:U:H3	51:3:2349:G:H1	1.09	0.93
51:3:2516:G:H1	51:3:2588:U:H3	1.01	0.93
53:5:661:G:H1	53:5:738:A:H61	0.99	0.93
51:3:1093:U:H3	51:3:1115:G:H1	0.95	0.93
53:5:590:G:H1	53:5:644:U:H3	1.07	0.92
51:3:1940:G:H1	51:3:1974:U:H3	1.17	0.92
53:5:1413:G:H1	53:5:1438:U:H3	1.08	0.92
53:5:410:A:H62	53:5:427:A:H2	1.19	0.91
54:6:10:A:H62	54:6:24:A:H62	1.16	0.91
51:3:1807:C:N4	51:3:1824:G:H22	1.68	0.91
51:3:569:U:H3	51:3:592:G:H1	0.92	0.91
54:7:10:A:H62	54:7:24:A:H62	1.16	0.90
51:3:2113:U:H3	51:3:2191:G:H1	1.15	0.90
51:3:418:G:H1	51:3:430:U:H3	0.96	0.90
51:3:133:G:H1	51:3:150:U:H3	1.16	0.89
51:3:2483:C:H42	51:3:2537:G:H22	1.13	0.89
51:3:2483:C:N4	51:3:2537:G:H22	1.71	0.89
53:5:599:G:H1	53:5:634:U:H3	1.17	0.89
51:3:730:G:H1	51:3:802:U:H3	1.18	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:949:G:H21	53:5:1202:A:H62	1.20	0.87
41:q:24:LYS:HD2	41:q:88:PRO:HB2	1.56	0.87
53:5:671:G:H1	53:5:713:A:H61	1.19	0.86
53:5:410:A:N7	53:5:427:A:N1	2.22	0.86
51:3:1715:A:HO2'	51:3:1769:A:HO2'	1.19	0.86
51:3:900:G:H21	51:3:903:A:H61	0.89	0.86
51:3:625:G:H1	51:3:700:U:H3	1.16	0.85
14:J:33:ASN:HA	53:5:680:G:H21	1.40	0.85
26:b:3:ILE:H	26:b:87:MET:HE1	1.39	0.85
51:3:990:G:H1	51:3:999:U:H3	0.85	0.85
53:5:1295:U:H3'	53:5:1296:C:H2'	1.56	0.85
53:5:410:A:N6	53:5:427:A:H2	1.74	0.85
53:5:1487:U:H3	53:5:1498:G:H1	1.22	0.85
51:3:1128:G:H21	51:3:1133:A:H62	1.18	0.84
51:3:243:U:H3	51:3:262:G:H1	1.25	0.84
53:5:410:A:N6	53:5:427:A:C2	2.45	0.84
51:3:1869:G:H1	51:3:1887:U:H3	1.21	0.84
53:5:833:G:H1	53:5:844:U:H3	0.86	0.84
51:3:499:G:H2'	51:3:500:U:H3'	1.60	0.83
16:L:95:LEU:HD12	16:L:96:PRO:HD2	1.61	0.83
53:5:1406:U:H3	53:5:1444:G:H1	1.23	0.83
25:a:67:ARG:NH1	25:a:89:ASP:OD1	2.11	0.83
51:3:1204:A:N6	51:3:1212:C:N4	2.26	0.83
53:5:245:U:H3	53:5:271:G:H1	1.19	0.83
53:5:460:A:N1	53:5:467:G:O6	2.11	0.83
52:4:1:U:H3	52:4:107:G:H1	1.27	0.83
6:B:46:VAL:O	6:B:49:ARG:NH2	2.12	0.83
28:d:40:VAL:HG21	28:d:50:LEU:HD11	1.61	0.83
51:3:1807:C:N4	51:3:1824:G:N2	2.25	0.83
51:3:1702:A:N3	51:3:1704:C:N4	2.27	0.82
21:Q:81:MET:HE3	21:Q:85:HIS:CE1	2.15	0.82
37:m:99:ARG:HB2	37:m:117:GLN:HE21	1.44	0.82
53:5:253:G:H1	53:5:265:U:H3	0.88	0.82
51:3:629:G:H1	51:3:696:U:H3	0.86	0.82
53:5:762:G:H1	53:5:809:G:HO2'	1.27	0.82
27:c:112:LEU:HG	27:c:116:TRP:CZ3	2.14	0.82
51:3:605:A:H61	51:3:2036:G:H21	1.23	0.82
53:5:412:G:H1	53:5:424:U:H3	1.25	0.81
51:3:1337:G:H21	51:3:1645:C:H5'	1.45	0.81
51:3:1204:A:H61	51:3:1212:C:N4	1.78	0.81
25:a:64:ARG:HH22	25:a:222:ARG:HA	1.45	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2096:U:H3	51:3:2238:G:H1	1.28	0.80
51:3:2334:U:H3	51:3:2397:G:H22	1.29	0.80
51:3:2465:U:H3	51:3:2502:G:H1	0.83	0.80
4:9:5:LYS:NZ	4:9:267:ASP:OD1	2.15	0.80
5:A:32:MET:HE1	5:A:219:ASN:H	1.47	0.80
29:e:19:ASN:HB2	29:e:26:ALA:HB3	1.64	0.80
51:3:989:G:H1	51:3:1000:U:H3	1.30	0.80
35:k:55:GLN:NE2	51:3:860:C:O2	2.15	0.79
34:j:58:LEU:HD23	34:j:59:ARG:H	1.47	0.79
9:E:4:ASN:HA	9:E:60:TRP:O	1.83	0.79
29:e:167:TYR:HB3	29:e:170:GLU:HB3	1.64	0.79
51:3:1807:C:N3	51:3:1824:G:N1	2.30	0.79
51:3:675:U:H3	51:3:685:G:H1	1.28	0.78
53:5:1133:A:N6	53:5:1153:G:H21	1.82	0.78
54:7:23:G:N7	54:7:47:G:N2	2.32	0.78
51:3:1331:G:H5'	51:3:1676:G:H21	1.48	0.78
36:l:124:LYS:HA	51:3:2492:G:H21	1.48	0.78
51:3:47:G:H5''	51:3:48:G:H5'	1.65	0.78
53:5:365:U:H3	53:5:388:G:H1	0.83	0.78
29:e:92:LEU:HB3	29:e:132:THR:HA	1.66	0.78
54:6:23:G:N7	54:6:47:G:N2	2.32	0.78
53:5:824:U:H2'	53:5:864:U:H3	1.49	0.78
49:y:15:LYS:HE2	51:3:2052:C:H5''	1.64	0.78
12:H:21:LEU:HB3	12:H:63:PHE:HD2	1.49	0.78
51:3:892:G:H2'	51:3:893:A:H8	1.47	0.77
51:3:1294:G:N2	51:3:2023:U:O4	2.18	0.77
51:3:1814:G:H2'	51:3:1815:U:H2'	1.65	0.77
51:3:1204:A:N6	51:3:1212:C:H42	1.82	0.77
16:L:108:THR:HG21	53:5:1281:U:H5'	1.66	0.77
4:9:13:VAL:HG23	4:9:75:ARG:HE	1.49	0.77
36:l:82:ARG:NH2	51:3:2258:G:O2'	2.14	0.77
52:4:70:G:O2'	52:4:94:A:N6	2.18	0.77
34:j:88:LYS:HD3	34:j:94:ARG:HG3	1.66	0.77
53:5:1133:A:H61	53:5:1153:G:H21	1.29	0.77
53:5:1475:A:H5''	53:5:1483:C:H5''	1.65	0.77
19:O:48:VAL:O	19:O:52:TRP:HB2	1.85	0.77
51:3:601:U:O2	51:3:2037:A:N6	2.18	0.77
36:l:39:GLY:HA2	36:l:97:VAL:O	1.85	0.76
51:3:1111:C:H2'	51:3:1112:A:H8	1.50	0.76
53:5:711:G:H2'	53:5:712:A:C8	2.20	0.76
51:3:89:U:H5''	51:3:90:G:H5''	1.67	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:276:A:HO2'	51:3:405:C:HO2'	1.33	0.76
51:3:719:G:N2	51:3:810:G:N7	2.30	0.76
53:5:129:U:H5'	53:5:130:G:H5'	1.67	0.76
28:d:132:ILE:O	28:d:151:GLY:HA3	1.86	0.76
53:5:885:U:O2	53:5:901:A:N7	2.18	0.76
25:a:65:LYS:O	25:a:67:ARG:NH2	2.17	0.76
51:3:992:G:O2'	51:3:995:A:N6	2.18	0.76
33:i:59:ILE:HD13	33:i:127:VAL:HG22	1.67	0.76
51:3:485:A:H61	51:3:490:A:H62	1.33	0.76
51:3:700:U:H2'	51:3:701:A:H8	1.49	0.76
3:2:30:GLN:NE2	51:3:2535:C:OP1	2.19	0.76
20:P:27:GLU:HG3	20:P:40:VAL:HG21	1.66	0.76
53:5:304:U:H2'	53:5:305:A:H8	1.51	0.76
6:B:37:ASP:HA	6:B:40:ILE:HD12	1.65	0.76
24:T:31:ARG:HH22	53:5:716:C:H5'	1.50	0.76
51:3:2828:C:H3'	51:3:2829:G:H21	1.50	0.76
51:3:2405:G:H1	51:3:2427:U:H3	1.31	0.75
51:3:2689:C:O2	51:3:2733:A:N6	2.17	0.75
12:H:20:TYR:HB2	12:H:66:ASN:HB3	1.68	0.75
13:I:18:SER:HB3	13:I:102:VAL:HG13	1.68	0.75
51:3:1311:G:H21	51:3:1357:U:H3	1.30	0.75
53:5:1241:G:N2	53:5:1244:A:OP2	2.18	0.75
53:5:1405:U:H3	53:5:1445:G:H1	1.32	0.75
35:k:14:ASN:ND2	51:3:1275:C:OP1	2.18	0.75
36:l:82:ARG:HH21	51:3:2258:G:HO2'	1.33	0.75
41:q:95:VAL:HG12	41:q:96:ARG:HG2	1.66	0.75
51:3:2253:U:H5''	51:3:2254:G:H5'	1.66	0.75
53:5:580:C:O2	53:5:756:A:N6	2.18	0.75
51:3:1128:G:N2	51:3:1133:A:H62	1.83	0.75
8:D:143:ARG:HH22	8:D:146:ALA:H	1.31	0.75
16:L:25:ILE:HG12	16:L:66:GLU:HG2	1.67	0.75
7:C:48:SER:H	7:C:51:ALA:HB3	1.52	0.75
51:3:200:A:H61	51:3:866:G:H21	1.35	0.75
51:3:343:A:N3	51:3:363:G:O2'	2.19	0.75
51:3:2307:G:H1	51:3:2325:U:H3	1.32	0.75
1:0:19:LEU:HB2	51:3:126:C:H5''	1.69	0.74
7:C:104:MET:HE3	7:C:169:THR:HB	1.69	0.74
51:3:1071:G:H1	51:3:1154:U:H3	1.34	0.74
51:3:144:C:H2'	51:3:145:A:H8	1.52	0.74
4:9:15:VAL:HA	4:9:101:GLY:O	1.86	0.74
53:5:672:A:H61	53:5:712:A:H61	1.33	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:C:121:HIS:HB3	7:C:148:THR:HG21	1.70	0.74
34:j:35:LEU:HD23	34:j:69:GLN:HE22	1.52	0.74
53:5:716:C:OP2	53:5:717:C:N4	2.20	0.74
16:L:105:ASN:ND2	53:5:944:A:N7	2.35	0.74
53:5:407:A:N6	53:5:426:U:C2	2.55	0.74
51:3:1176:U:O2	51:3:1177:A:N6	2.21	0.74
51:3:1261:U:H2'	51:3:1262:G:H8	1.51	0.74
53:5:134:G:N2	53:5:160:A:N1	2.34	0.74
51:3:165:U:O2	51:3:167:A:N6	2.19	0.74
53:5:1046:A:N6	53:5:1175:C:O2	2.19	0.74
14:J:8:ASN:N	14:J:70:MET:O	2.21	0.74
33:i:70:ASN:ND2	51:3:1057:G:OP2	2.21	0.74
51:3:618:G:H3'	51:3:1281:A:H61	1.53	0.74
53:5:600:G:H1	53:5:633:U:H3	1.35	0.74
51:3:1076:U:H3	51:3:1149:G:H1	1.36	0.73
23:S:44:LEU:HD22	23:S:76:LEU:HD13	1.69	0.73
53:5:1065:G:H1	53:5:1074:U:H3	0.79	0.73
53:5:1394:G:H1	53:5:1456:U:H3	1.35	0.73
4:9:334:ARG:HG2	4:9:375:PHE:HE1	1.54	0.73
6:B:37:ASP:HB2	6:B:58:ILE:HD13	1.70	0.73
15:K:21:SER:HB3	15:K:24:LEU:HD13	1.70	0.73
26:b:163:LYS:HE2	26:b:165:MET:HE1	1.69	0.73
37:m:16:MET:SD	51:3:1323:A:O2'	2.46	0.73
44:t:33:GLN:HB3	44:t:68:PRO:HB2	1.69	0.73
51:3:1228:G:N2	51:3:1279:U:O2	2.18	0.73
51:3:1093:U:O2	51:3:1115:G:N2	2.16	0.73
51:3:2291:U:O2	51:3:2333:G:O6	2.06	0.73
12:H:128:GLN:HB2	53:5:1207:U:H5''	1.70	0.73
53:5:142:G:H2'	53:5:143:U:C6	2.24	0.73
26:b:123:ILE:HG13	26:b:128:PHE:HB2	1.70	0.73
40:p:81:LEU:HB3	40:p:112:VAL:HG21	1.71	0.73
51:3:904:C:H42	51:3:949:C:H1'	1.53	0.73
51:3:1686:U:O2'	51:3:2826:G:N2	2.21	0.73
53:5:1388:A:H2	53:5:1462:G:H1	0.81	0.73
42:r:72:PHE:HB3	42:r:106:LYS:HB3	1.71	0.73
42:r:108:SER:HB2	42:r:113:GLU:HG3	1.71	0.73
51:3:18:G:H2'	51:3:19:G:C8	2.23	0.73
53:5:662:G:O6	53:5:721:G:O6	2.05	0.73
14:J:43:MET:HE3	14:J:58:ILE:HD11	1.70	0.72
14:J:80:LYS:NZ	14:J:106:LYS:O	2.19	0.72
30:f:6:LYS:HB3	30:f:7:GLN:HG3	1.70	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1446:G:O2'	51:3:1613:A:N6	2.18	0.72
53:5:802:C:N4	53:5:803:C:N4	2.37	0.72
6:B:182:ARG:NH2	6:B:212:THR:OG1	2.21	0.72
28:d:17:GLN:HE22	28:d:25:ILE:HG12	1.54	0.72
36:l:77:LYS:HB2	51:3:992:G:H5''	1.71	0.72
37:m:94:PRO:O	51:3:2843:G:N2	2.21	0.72
46:v:18:ARG:HH21	46:v:24:ILE:HA	1.54	0.72
51:3:1137:C:H2'	51:3:1138:A:H8	1.53	0.72
53:5:1113:U:O4	53:5:1114:A:N6	2.23	0.72
11:G:59:VAL:HG22	11:G:68:ARG:HD2	1.70	0.72
51:3:1588:A:H2'	51:3:1589:A:C8	2.24	0.72
51:3:2143:G:H1	51:3:2162:U:H3	0.79	0.72
4:9:98:GLN:NE2	4:9:274:ASN:OD1	2.22	0.72
6:B:10:LEU:HD13	17:M:58:LYS:HG3	1.72	0.72
51:3:1243:A:H2'	51:3:1244:A:H8	1.53	0.72
25:a:56:ARG:O	25:a:57:HIS:ND1	2.23	0.72
34:j:76:HIS:HB3	39:o:78:ASN:HB3	1.72	0.72
51:3:2797:C:O2'	51:3:2895:A:N3	2.22	0.72
53:5:1068:G:N2	53:5:1071:A:OP2	2.22	0.72
6:B:155:LEU:HD13	6:B:204:TRP:HZ3	1.55	0.72
26:b:142:ARG:NH2	51:3:2005:G:OP1	2.22	0.72
11:G:104:LEU:HD12	11:G:129:ARG:HH12	1.54	0.72
12:H:49:ASP:HA	12:H:52:GLN:HE22	1.53	0.72
51:3:421:A:N6	51:3:424:G:OP2	2.23	0.72
51:3:932:U:O2'	51:3:934:C:N4	2.22	0.72
51:3:1128:G:H21	51:3:1133:A:N6	1.88	0.72
51:3:2070:C:O2	51:3:2458:A:N6	2.18	0.72
7:C:17:SER:HA	7:C:23:LYS:HB3	1.71	0.71
26:b:32:GLU:OE2	26:b:34:ASN:ND2	2.23	0.71
45:u:29:ASP:OD2	51:3:2272:C:N4	2.19	0.71
51:3:2304:U:N3	51:3:2343:A:N6	2.38	0.71
12:H:21:LEU:HB3	12:H:63:PHE:CD2	2.24	0.71
19:O:58:LYS:NZ	53:5:122:C:O2'	2.23	0.71
12:H:71:GLY:O	12:H:77:GLN:NE2	2.23	0.71
44:t:90:LYS:HG3	44:t:105:LYS:HG2	1.71	0.71
51:3:2125:U:OP2	51:3:2154:A:O2'	2.09	0.71
51:3:2689:C:N3	51:3:2733:A:N7	2.38	0.71
52:4:58:C:H2'	52:4:59:A:C8	2.25	0.71
53:5:1382:C:H2'	53:5:1383:A:H8	1.55	0.71
40:p:76:SER:O	40:p:80:ASN:ND2	2.24	0.71
51:3:1687:G:H21	51:3:2012:A:H62	1.36	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2297:G:H2'	51:3:2298:G:H8	1.55	0.71
20:P:73:LYS:NZ	53:5:251:G:OP1	2.24	0.71
51:3:1708:G:H21	51:3:1711:A:H61	1.37	0.71
53:5:1388:A:N1	53:5:1462:G:O6	2.23	0.71
5:A:214:ILE:HG22	5:A:216:PRO:HD3	1.70	0.71
25:a:6:ILE:HD12	25:a:17:SER:HB3	1.72	0.71
53:5:579:G:N2	53:5:756:A:OP2	2.23	0.71
4:9:190:HIS:O	4:9:194:ASN:ND2	2.23	0.71
11:G:41:LYS:HA	11:G:44:ILE:HG12	1.71	0.71
20:P:25:GLN:NE2	20:P:27:GLU:OE1	2.23	0.71
51:3:144:C:H2'	51:3:145:A:C8	2.25	0.71
53:5:169:G:N2	53:5:219:A:O2'	2.24	0.71
53:5:1329:G:H2'	53:5:1330:A:H8	1.55	0.71
46:v:10:ARG:HH12	46:v:31:VAL:HB	1.55	0.71
49:y:10:LYS:HG3	49:y:13:ARG:HH11	1.55	0.71
51:3:1494:U:H3	51:3:1550:G:H1	1.39	0.71
36:l:9:TYR:OH	51:3:2285:G:O2'	2.09	0.71
51:3:2299:U:O2'	51:3:2382:A:N3	2.24	0.71
51:3:131:C:H5''	51:3:1376:G:H21	1.55	0.71
51:3:1790:U:H3	51:3:2596:A:H1'	1.56	0.71
53:5:671:G:H2'	53:5:672:A:H8	1.56	0.70
42:r:88:ARG:O	51:3:1648:A:N6	2.24	0.70
14:J:45:PHE:HD1	14:J:49:ARG:HB3	1.56	0.70
51:3:1867:G:H2'	51:3:1868:A:C8	2.25	0.70
51:3:2752:G:H1	51:3:2768:U:H3	1.38	0.70
53:5:1330:A:H2'	53:5:1331:A:H8	1.57	0.70
4:9:92:MET:HG3	4:9:119:HIS:HD2	1.56	0.70
27:c:112:LEU:HG	27:c:116:TRP:HZ3	1.53	0.70
51:3:1778:G:H21	51:3:1793:A:H5''	1.56	0.70
53:5:281:U:H2'	53:5:282:G:C8	2.27	0.70
29:e:167:TYR:H	29:e:170:GLU:HG2	1.56	0.70
51:3:2534:G:H1	51:3:2545:U:H3	1.40	0.70
53:5:238:U:O2	53:5:280:G:O6	2.10	0.70
15:K:9:ARG:HG3	15:K:10:LYS:HG2	1.73	0.70
51:3:334:A:O2'	51:3:352:C:O2	2.08	0.70
51:3:1257:G:OP1	51:3:1280:G:N2	2.25	0.70
51:3:2031:C:H2'	51:3:2032:G:H8	1.56	0.70
17:M:6:LEU:HB3	17:M:23:ARG:HH12	1.56	0.70
51:3:162:G:H22	51:3:169:U:H3'	1.57	0.70
53:5:22:G:H1'	53:5:909:A:H61	1.56	0.70
4:9:14:ASN:ND2	4:9:98:GLN:O	2.25	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:n:4:ARG:HA	38:n:7:GLN:HB3	1.74	0.70
51:3:818:A:H2'	51:3:819:U:H4'	1.73	0.70
53:5:473:A:H2'	53:5:474:G:C8	2.27	0.70
53:5:641:U:H2'	53:5:642:A:H8	1.56	0.70
4:9:382:ARG:NH2	54:6:53:A:O2'	2.26	0.69
14:J:28:SER:HB3	14:J:34:VAL:HG12	1.74	0.69
51:3:1979:G:H2'	51:3:1980:G:H8	1.56	0.69
16:L:24:GLY:O	16:L:29:ARG:NH2	2.25	0.69
51:3:729:U:H3	51:3:803:G:H1	1.38	0.69
51:3:1386:G:O2'	51:3:1401:A:N6	2.25	0.69
53:5:279:C:H2'	53:5:280:G:H8	1.57	0.69
53:5:1225:A:H2'	53:5:1226:A:C8	2.28	0.69
4:9:130:ARG:HB2	4:9:199:TRP:HB3	1.75	0.69
51:3:906:G:H1	51:3:945:U:H3	1.40	0.69
53:5:885:U:C2	53:5:901:A:N7	2.60	0.69
5:A:180:ASP:OD1	5:A:203:ASN:ND2	2.24	0.69
10:F:115:MET:HA	10:F:118:LYS:HG2	1.75	0.69
16:L:24:GLY:HA3	16:L:66:GLU:HB3	1.73	0.69
26:b:168:HIS:NE2	51:3:2826:G:OP1	2.25	0.69
34:j:80:ASP:HB2	39:o:74:PRO:HG2	1.74	0.69
51:3:614:C:H2'	51:3:615:G:H8	1.57	0.69
53:5:659:U:H3	53:5:740:G:H1	1.40	0.69
46:v:51:SER:HB2	46:v:54:THR:OG1	1.93	0.69
51:3:1102:A:H1'	54:6:57:C:H1'	1.73	0.69
53:5:70:A:H2'	53:5:71:A:H8	1.58	0.69
7:C:78:VAL:HG21	7:C:89:LEU:HD13	1.75	0.69
19:O:51:GLU:HA	19:O:54:ASN:HB2	1.74	0.69
23:S:53:ARG:NH2	53:5:164:C:OP2	2.26	0.69
51:3:1387:A:OP2	51:3:1399:G:N2	2.26	0.69
51:3:2589:G:N2	51:3:2589:G:OP2	2.25	0.69
53:5:85:U:O2'	53:5:86:A:N7	2.25	0.69
4:9:319:ARG:HH12	54:6:53:A:H4'	1.58	0.69
5:A:154:ARG:NH1	53:5:1088:C:OP1	2.26	0.69
10:F:70:PRO:HG2	10:F:90:VAL:HG11	1.74	0.69
11:G:66:THR:O	53:5:650:A:N6	2.26	0.69
23:S:31:ASN:HB3	23:S:47:VAL:HG22	1.75	0.69
26:b:144:GLN:OE1	51:3:2057:C:O2'	2.10	0.69
27:c:181:LYS:NZ	27:c:190:ASP:OD2	2.23	0.69
33:i:11:GLN:NE2	51:3:573:A:O3'	2.25	0.69
51:3:1475:C:O2'	51:3:1577:A:N3	2.25	0.69
53:5:452:A:H61	53:5:476:U:H3	1.39	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1037:A:H3'	53:5:1038:G:H8	1.57	0.69
51:3:2035:U:O2	51:3:2040:A:N7	2.26	0.69
2:1:50:SER:O	2:1:54:ARG:NH2	2.26	0.69
40:p:18:LYS:NZ	51:3:1249:A:OP2	2.24	0.69
51:3:61:U:H3	51:3:70:G:H1	1.40	0.69
51:3:1738:G:H2'	51:3:1739:G:C8	2.28	0.69
51:3:1932:C:O2	51:3:1936:G:N2	2.24	0.69
51:3:2376:C:H2'	51:3:2377:A:C8	2.28	0.69
53:5:1002:A:OP2	53:5:1019:G:N2	2.23	0.69
11:G:26:ARG:HB3	11:G:84:ILE:HD11	1.74	0.68
2:1:28:HIS:HE1	51:3:2428:C:H3'	1.58	0.68
51:3:442:G:O6	51:3:457:U:C4	2.46	0.68
51:3:892:G:H2'	51:3:893:A:C8	2.27	0.68
51:3:2835:G:H5'	51:3:2836:U:H5'	1.72	0.68
53:5:318:C:N4	53:5:325:A:H62	1.87	0.68
53:5:920:G:O2'	53:5:922:G:OP1	2.11	0.68
7:C:150:LYS:NZ	53:5:434:U:OP1	2.26	0.68
8:D:181:LYS:HG2	53:5:8:G:H21	1.58	0.68
23:S:5:LYS:NZ	53:5:63:U:OP2	2.25	0.68
53:5:1136:G:O6	53:5:1157:G:O6	2.10	0.68
15:K:28:LEU:HD13	15:K:33:LYS:HB3	1.75	0.68
19:O:33:LEU:HD13	19:O:42:CYS:HB2	1.74	0.68
26:b:196:ALA:HB1	51:3:2688:C:H1'	1.75	0.68
51:3:665:C:H1'	51:3:675:U:H1'	1.75	0.68
7:C:133:SER:OG	53:5:618:U:O2	2.10	0.68
10:F:3:LYS:HG2	53:5:930:A:H62	1.59	0.68
41:q:19:THR:HB	41:q:91:LYS:HE2	1.74	0.68
51:3:1012:G:H21	51:3:1190:A:H1'	1.58	0.68
51:3:2819:C:H2'	51:3:2820:G:H8	1.58	0.68
53:5:520:C:H1'	53:5:534:C:H5''	1.74	0.68
53:5:677:C:H2'	53:5:678:A:H8	1.58	0.68
53:5:1321:G:HO2'	53:5:1348:G:H1	1.40	0.68
25:a:17:SER:HB2	25:a:214:GLY:HA3	1.74	0.68
26:b:64:LYS:HD3	51:3:2814:A:H5''	1.76	0.68
51:3:1954:C:H2'	51:3:1955:G:H8	1.58	0.68
37:m:36:LYS:NZ	51:3:1685:G:O2'	2.26	0.68
53:5:1379:C:O2	53:5:1494:A:O2'	2.11	0.68
19:O:30:ILE:HD12	19:O:48:VAL:HG21	1.76	0.68
26:b:148:GLN:HB3	51:3:2582:G:H21	1.59	0.68
40:p:49:ARG:HA	40:p:52:LYS:HE3	1.75	0.68
51:3:274:A:H62	51:3:295:U:H3	1.40	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:C:100:ILE:O	7:C:104:MET:HG2	1.93	0.68
8:D:80:THR:O	53:5:1373:A:N6	2.27	0.68
28:d:39:GLY:O	51:3:2315:G:N1	2.19	0.68
28:d:64:LYS:HB3	52:4:40:U:H4'	1.75	0.68
29:e:149:THR:HG22	29:e:152:ARG:HE	1.59	0.68
43:s:85:LEU:HD12	43:s:86:PRO:HD2	1.75	0.68
51:3:720:A:O2'	51:3:808:U:O4	2.11	0.68
53:5:688:G:H4'	53:5:794:C:H4'	1.74	0.68
53:5:1114:A:H2'	53:5:1115:G:C8	2.29	0.68
34:j:11:ALA:HB2	34:j:83:ALA:HB1	1.76	0.67
51:3:1011:A:H2'	51:3:1012:G:H8	1.59	0.67
4:9:114:PRO:HB3	4:9:117:ARG:HH21	1.58	0.67
46:v:10:ARG:HH21	46:v:51:SER:CB	2.07	0.67
51:3:1054:U:O2'	51:3:1056:A:N7	2.26	0.67
54:6:13:U:N3	54:6:25:G:N1	2.43	0.67
3:2:30:GLN:HG2	51:3:2535:C:H5''	1.75	0.67
26:b:69:PHE:CZ	51:3:2794:U:H1'	2.29	0.67
51:3:556:U:H2'	51:3:557:G:H8	1.58	0.67
53:5:254:G:H2'	53:5:255:G:H8	1.59	0.67
54:6:30:G:H2'	54:6:31:G:H8	1.59	0.67
13:I:16:LEU:HD13	13:I:104:LEU:HB3	1.75	0.67
34:j:6:THR:OG1	51:3:1700:G:O2'	2.12	0.67
51:3:2887:A:H5'	51:3:2888:U:H5'	1.76	0.67
12:H:24:THR:HG21	12:H:28:GLY:HA2	1.76	0.67
20:P:68:PRO:HB3	20:P:74:ARG:HG2	1.75	0.67
51:3:1350:A:N1	51:3:1361:U:O2'	2.27	0.67
9:E:32:VAL:HG11	9:E:65:ASP:H	1.59	0.67
45:u:34:ARG:HA	51:3:2279:G:H5'	1.76	0.67
53:5:770:G:O6	53:5:771:G:O6	2.12	0.67
53:5:1413:G:N2	53:5:1438:U:O2	2.25	0.67
10:F:94:ARG:NH2	10:F:98:LEU:HD22	2.10	0.67
29:e:98:ARG:HH21	29:e:109:GLN:HG2	1.58	0.67
51:3:703:A:H2'	51:3:705:A:H62	1.59	0.67
51:3:1954:C:H2'	51:3:1955:G:C8	2.30	0.67
51:3:2304:U:C2	51:3:2343:A:N6	2.63	0.67
52:4:28:C:H1'	52:4:55:A:H61	1.60	0.67
35:k:18:LYS:HB2	51:3:698:A:H5''	1.77	0.67
54:7:10:A:H62	54:7:24:A:N6	1.91	0.67
25:a:26:LEU:HD21	25:a:88:TYR:HB3	1.77	0.67
51:3:142:A:H2'	51:3:143:A:C8	2.30	0.67
1:0:8:SER:HA	51:3:1337:G:H5''	1.77	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:2:5:ALA:HB3	51:3:2474:C:H5'	1.77	0.67
13:I:99:PRO:O	13:I:99:PRO:HD2	1.95	0.67
15:K:59:ASN:HB3	53:5:526:C:H41	1.59	0.67
41:q:47:ALA:HB3	41:q:48:PRO:HD3	1.77	0.67
51:3:1588:A:H2'	51:3:1589:A:H8	1.58	0.67
51:3:2393:C:H2'	51:3:2394:A:C8	2.30	0.67
53:5:376:G:N2	53:5:379:A:OP2	2.26	0.67
5:A:106:ALA:HB1	5:A:166:VAL:HG12	1.76	0.66
23:S:66:ARG:NH2	53:5:171:A:O2'	2.28	0.66
53:5:144:U:H3	53:5:149:G:H1	1.43	0.66
53:5:403:A:H2'	53:5:404:A:C8	2.30	0.66
4:9:246:VAL:HG23	4:9:251:ILE:HD12	1.77	0.66
26:b:66:GLN:HA	26:b:69:PHE:HD2	1.60	0.66
51:3:2353:G:H4'	51:3:2354:A:H3'	1.77	0.66
51:3:2700:C:O2	51:3:2851:U:O2'	2.13	0.66
53:5:100:G:H21	53:5:102:G:H1	1.43	0.66
53:5:1313:A:OP2	53:5:1314:A:N6	2.28	0.66
6:B:11:ARG:HB2	6:B:15:ASN:HB2	1.78	0.66
9:E:110:GLN:NE2	53:5:838:A:N3	2.42	0.66
45:u:28:ARG:O	51:3:2286:A:N6	2.29	0.66
51:3:2353:G:H1'	51:3:2390:G:H5'	1.78	0.66
53:5:354:U:H2'	53:5:355:A:H8	1.60	0.66
54:7:30:G:H2'	54:7:31:G:H8	1.59	0.66
7:C:11:SER:HA	7:C:16:PHE:HB3	1.78	0.66
25:a:57:HIS:HD2	25:a:224:ILE:HG23	1.59	0.66
29:e:89:LYS:HE2	29:e:133:GLU:HG3	1.78	0.66
36:l:24:ASN:HA	36:l:67:ARG:HH11	1.60	0.66
40:p:91:ARG:HD2	40:p:94:LEU:HD13	1.76	0.66
42:r:2:ILE:HG23	42:r:106:LYS:HG3	1.77	0.66
51:3:861:U:H3	51:3:866:G:H1	1.41	0.66
51:3:1020:G:N2	51:3:1020:G:OP2	2.27	0.66
51:3:1727:U:OP2	51:3:1728:A:N6	2.29	0.66
51:3:2054:C:H2'	51:3:2055:A:C8	2.30	0.66
53:5:671:G:H1	53:5:713:A:N6	1.92	0.66
7:C:93:LEU:O	7:C:96:ARG:NH2	2.28	0.66
9:E:153:LYS:HB2	11:G:56:ASN:HB2	1.77	0.66
24:T:12:GLU:HG2	24:T:15:LEU:HD21	1.76	0.66
26:b:160:PHE:O	26:b:163:LYS:NZ	2.29	0.66
27:c:76:GLN:NE2	51:3:708:C:O2'	2.28	0.66
33:i:120:ARG:NH1	51:3:563:A:OP2	2.28	0.66
51:3:191:G:N2	51:3:1393:A:H61	1.93	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1619:A:H2'	51:3:1620:A:H8	1.61	0.66
51:3:2534:G:N2	51:3:2545:U:O2	2.28	0.66
10:F:145:GLU:O	10:F:148:LYS:NZ	2.23	0.66
16:L:56:ILE:HA	16:L:59:VAL:HG12	1.77	0.66
21:Q:60:LEU:HB3	21:Q:90:LEU:HD21	1.78	0.66
51:3:549:A:H2'	51:3:550:A:H8	1.61	0.66
51:3:812:G:H2'	51:3:813:G:H8	1.60	0.66
51:3:1672:C:O2	51:3:2706:U:O2'	2.13	0.66
53:5:737:U:H2'	53:5:738:A:H8	1.61	0.66
53:5:1261:A:H2'	53:5:1262:A:C8	2.30	0.66
33:i:112:LEU:HD11	33:i:122:ILE:HB	1.78	0.66
51:3:632:A:H2'	51:3:633:G:H8	1.61	0.66
51:3:1354:U:O2'	51:3:2017:G:O2'	2.12	0.66
51:3:1414:C:H2'	51:3:1415:A:C8	2.30	0.66
51:3:1746:U:H3	51:3:1753:G:H1	1.44	0.66
53:5:195:U:H2'	53:5:196:G:H8	1.61	0.66
10:F:110:ARG:NH1	10:F:122:GLU:OE1	2.29	0.66
25:a:251:ARG:NH1	51:3:2083:U:OP1	2.29	0.66
36:l:72:MET:HG3	36:l:94:VAL:HG13	1.78	0.66
51:3:334:A:H2'	51:3:368:C:H1'	1.78	0.66
51:3:498:C:N4	51:3:499:G:O6	2.29	0.66
51:3:1306:G:H2'	51:3:1307:G:H8	1.61	0.66
53:5:503:G:H2'	53:5:504:A:C8	2.31	0.66
12:H:12:ARG:HG2	12:H:79:GLY:HA3	1.78	0.66
26:b:223:ALA:O	39:o:17:GLN:NE2	2.29	0.66
33:i:71:LYS:NZ	51:3:1176:U:OP2	2.28	0.66
51:3:513:A:N6	51:3:536:A:OP1	2.25	0.66
51:3:1070:U:H2'	51:3:1071:G:H8	1.59	0.66
51:3:2551:G:H21	51:3:2654:U:H5''	1.61	0.66
53:5:1279:G:N2	53:5:1305:G:O2'	2.27	0.66
10:F:110:ARG:HB3	10:F:118:LYS:HD3	1.78	0.65
45:u:82:LYS:NZ	51:3:891:G:O2'	2.29	0.65
53:5:35:C:H2'	53:5:36:G:H8	1.61	0.65
53:5:192:A:H2'	53:5:193:G:H8	1.61	0.65
53:5:834:G:H2'	53:5:835:G:C8	2.31	0.65
11:G:132:LYS:NZ	53:5:599:G:OP1	2.27	0.65
21:Q:40:TYR:O	21:Q:42:ARG:NH1	2.29	0.65
36:l:30:GLY:O	36:l:134:ARG:NH1	2.29	0.65
51:3:191:G:H21	51:3:1393:A:H61	1.44	0.65
53:5:778:A:N7	53:5:798:U:O2	2.29	0.65
12:H:4:GLN:N	12:H:6:TYR:HH	1.94	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:c:49:THR:OG1	51:3:480:C:OP2	2.14	0.65
35:k:38:GLY:HA2	51:3:866:G:H5''	1.79	0.65
43:s:12:LEU:HD12	43:s:17:TYR:HE1	1.61	0.65
51:3:2062:C:N4	51:3:2508:U:O2'	2.29	0.65
51:3:2655:U:O2	51:3:2681:G:O6	2.13	0.65
18:N:62:ARG:NH1	53:5:755:U:O4	2.29	0.65
51:3:2305:C:H2'	51:3:2306:A:H8	1.59	0.65
51:3:2416:U:H2'	51:3:2417:G:H8	1.61	0.65
53:5:1115:G:N2	53:5:1116:U:O4	2.28	0.65
54:7:13:U:N3	54:7:25:G:N1	2.43	0.65
2:1:1:MET:HE3	51:3:701:A:H1'	1.77	0.65
4:9:185:TRP:HA	4:9:188:LYS:HD2	1.78	0.65
16:L:101:ARG:NH1	53:5:946:G:OP2	2.29	0.65
51:3:679:A:N1	51:3:2377:A:O2'	2.26	0.65
51:3:1385:U:H3	51:3:1402:G:H1	1.43	0.65
51:3:1554:A:N6	51:3:1576:G:O2'	2.30	0.65
52:4:104:C:H2'	52:4:105:A:H8	1.62	0.65
53:5:1080:G:O6	53:5:1088:C:N4	2.30	0.65
2:1:24:ALA:HB2	35:k:62:LEU:HD23	1.78	0.65
5:A:160:GLU:HA	5:A:164:GLY:HA3	1.78	0.65
23:S:34:ASN:HA	23:S:37:LYS:HD2	1.78	0.65
53:5:688:G:O2'	53:5:693:A:N6	2.29	0.65
20:P:44:LYS:NZ	20:P:46:GLN:OE1	2.30	0.65
51:3:1624:A:H2'	51:3:1625:G:H8	1.62	0.65
51:3:2088:U:H2'	51:3:2245:G:H22	1.61	0.65
53:5:1046:A:N7	53:5:1175:C:N3	2.44	0.65
9:E:6:ILE:HD13	9:E:86:LEU:HD23	1.78	0.65
16:L:114:LYS:O	53:5:1202:A:O2'	2.15	0.65
40:p:79:ILE:HB	51:3:1187:C:H5''	1.79	0.65
41:q:61:LYS:HG2	41:q:91:LYS:HB3	1.77	0.65
51:3:296:U:O2	51:3:300:G:O2'	2.14	0.65
51:3:2376:C:H2'	51:3:2377:A:H8	1.60	0.65
51:3:2758:A:O2'	51:3:2761:A:N6	2.30	0.65
6:B:153:LYS:HB2	6:B:176:MET:HE1	1.78	0.65
16:L:21:TYR:OH	53:5:1276:U:OP2	2.13	0.65
29:e:4:ILE:HG21	29:e:69:GLY:HA2	1.78	0.65
33:i:42:LYS:NZ	51:3:1043:C:OP1	2.29	0.65
35:k:83:ASN:ND2	35:k:118:THR:OG1	2.30	0.65
46:v:2:ALA:N	51:3:1392:G:OP2	2.29	0.65
51:3:675:U:O4	51:3:685:G:O6	2.14	0.65
51:3:1845:C:N4	51:3:1906:G:OP2	2.30	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1086:U:OP1	53:5:1099:G:N1	2.20	0.65
54:6:10:A:H62	54:6:24:A:N6	1.91	0.65
23:S:13:GLN:NE2	53:5:90:G:OP2	2.29	0.65
36:l:82:ARG:HH12	51:3:2505:A:H62	1.44	0.65
51:3:2399:G:N2	51:3:2437:G:N3	2.44	0.65
53:5:51:A:N6	53:5:356:G:O2'	2.30	0.65
12:H:116:LYS:HG3	53:5:1343:G:H5''	1.78	0.64
20:P:65:GLU:HG2	53:5:113:C:H4'	1.79	0.64
21:Q:54:ILE:HG13	21:Q:57:LEU:HD23	1.78	0.64
51:3:450:C:O3'	51:3:1885:G:N2	2.30	0.64
51:3:955:A:OP2	51:3:2276:A:N6	2.30	0.64
51:3:2306:A:H3'	51:3:2307:G:H8	1.62	0.64
24:T:35:HIS:HA	24:T:41:ARG:HH11	1.61	0.64
34:j:66:LYS:NZ	51:3:1699:A:OP1	2.31	0.64
35:k:30:LYS:NZ	51:3:599:U:OP1	2.30	0.64
35:k:136:LEU:HA	35:k:139:VAL:HG12	1.79	0.64
39:o:23:PRO:HG2	39:o:25:PHE:CZ	2.32	0.64
42:r:124:LEU:HD13	42:r:127:LYS:HD3	1.79	0.64
53:5:97:G:H21	53:5:350:G:H5'	1.62	0.64
53:5:135:A:O2'	53:5:1421:A:N6	2.29	0.64
53:5:275:A:H5''	53:5:276:U:H3'	1.79	0.64
12:H:34:ARG:NH1	53:5:1121:U:O5'	2.30	0.64
27:c:80:ARG:HE	27:c:86:GLY:HA3	1.63	0.64
41:q:41:LEU:HG	41:q:42:ASP:H	1.63	0.64
46:v:26:ARG:NH1	51:3:193:G:OP2	2.30	0.64
47:w:86:ALA:O	47:w:90:HIS:ND1	2.30	0.64
53:5:802:C:N4	53:5:803:C:H41	1.95	0.64
53:5:1478:A:H5'	53:5:1506:A:H1'	1.78	0.64
13:I:65:LYS:O	13:I:68:ARG:NH2	2.30	0.64
51:3:1001:C:H2'	51:3:1002:A:H8	1.62	0.64
51:3:1809:A:OP2	51:3:1822:A:N6	2.31	0.64
51:3:2071:C:H2'	51:3:2072:C:C6	2.32	0.64
53:5:144:U:H2'	53:5:145:G:C8	2.31	0.64
4:9:209:LYS:HD3	4:9:210:PRO:HD2	1.79	0.64
42:r:36:LEU:HD21	42:r:47:ILE:HG23	1.79	0.64
51:3:665:C:O2'	51:3:675:U:O2	2.14	0.64
21:Q:91:LYS:NZ	53:5:716:C:N3	2.46	0.64
40:p:80:ASN:ND2	51:3:1186:A:O2'	2.25	0.64
51:3:625:G:H2'	51:3:626:A:C8	2.32	0.64
51:3:2154:A:H2'	51:3:2155:G:O4'	1.98	0.64
51:3:2305:C:H3'	51:3:2326:G:H22	1.62	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:4:42:G:H1'	52:4:45:C:H42	1.61	0.64
53:5:50:U:H3	53:5:358:G:H1'	1.63	0.64
53:5:815:G:N2	53:5:817:U:O2'	2.31	0.64
53:5:1059:G:OP1	53:5:1362:G:O2'	2.15	0.64
16:L:101:ARG:NH2	53:5:945:U:OP2	2.29	0.64
35:k:28:LEU:HB2	35:k:32:SER:HA	1.78	0.64
42:r:1:MET:HE1	42:r:64:MET:HG3	1.79	0.64
45:u:51:ILE:H	45:u:74:PHE:HA	1.62	0.64
51:3:159:G:H2'	51:3:160:A:H8	1.63	0.64
51:3:1859:U:O2	51:3:1897:A:N6	2.31	0.64
22:R:27:LYS:NZ	22:R:46:GLY:O	2.30	0.64
42:r:26:GLY:H	42:r:71:VAL:HB	1.61	0.64
51:3:154:U:H2'	51:3:155:A:C8	2.33	0.64
51:3:864:A:N6	51:3:2255:A:O2'	2.30	0.64
51:3:2514:U:OP1	51:3:2580:A:O2'	2.15	0.64
52:4:71:A:N6	52:4:94:A:N3	2.46	0.64
53:5:63:U:O2'	53:5:375:C:O2	2.15	0.64
11:G:11:HIS:NE2	53:5:821:U:O2	2.26	0.64
36:l:61:THR:O	36:l:108:ASN:ND2	2.31	0.64
37:m:76:ASP:HA	37:m:79:MET:HE2	1.80	0.64
46:v:10:ARG:NH1	46:v:31:VAL:HB	2.13	0.64
53:5:731:A:H2'	53:5:732:A:H8	1.62	0.64
53:5:1407:A:O2'	53:5:1442:A:N1	2.30	0.64
53:5:1436:C:H2'	53:5:1437:A:H8	1.63	0.64
12:H:34:ARG:NH2	12:H:67:VAL:O	2.31	0.64
26:b:142:ARG:NH1	51:3:1690:C:OP1	2.31	0.64
51:3:1910:G:H2'	51:3:1911:G:C8	2.33	0.64
51:3:2353:G:O6	51:3:2379:G:N2	2.29	0.64
53:5:310:C:H2'	53:5:311:A:C8	2.33	0.64
7:C:63:MET:O	7:C:110:ARG:NH2	2.31	0.63
26:b:124:LYS:HZ2	51:3:2005:G:H5''	1.63	0.63
51:3:1414:C:H2'	51:3:1415:A:H8	1.64	0.63
51:3:1536:C:H2'	51:3:1537:A:C8	2.33	0.63
51:3:2799:U:O2'	51:3:2800:U:O2	2.11	0.63
38:n:31:MET:HE1	38:n:44:TRP:HB2	1.81	0.63
51:3:204:U:H3	51:3:254:G:H1	1.46	0.63
51:3:802:U:H2'	51:3:803:G:H8	1.63	0.63
51:3:2025:C:H2'	51:3:2026:A:H8	1.62	0.63
53:5:767:U:H2'	53:5:768:G:C8	2.33	0.63
22:R:53:ASN:ND2	22:R:76:PRO:O	2.31	0.63
34:j:107:ARG:NH1	34:j:107:ARG:O	2.31	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:z:28:ASN:HD21	51:3:2294:A:H5'	1.62	0.63
51:3:1284:A:H5''	51:3:1285:U:H5''	1.80	0.63
51:3:2054:C:H2'	51:3:2055:A:H8	1.63	0.63
53:5:1141:U:O2'	53:5:1142:G:O4'	2.15	0.63
53:5:1432:A:H2'	53:5:1433:G:C8	2.33	0.63
11:G:61:GLU:HB2	11:G:68:ARG:HE	1.63	0.63
13:I:48:LEU:HD22	53:5:1255:A:H5''	1.80	0.63
27:c:181:LYS:HD3	27:c:186:VAL:HA	1.80	0.63
29:e:122:LYS:HA	29:e:122:LYS:HE3	1.80	0.63
33:i:117:LEU:HA	33:i:120:ARG:HG2	1.79	0.63
39:o:99:ALA:HB2	51:3:2852:G:C8	2.33	0.63
49:y:6:ARG:NH1	49:y:7:ARG:O	2.32	0.63
51:3:2776:U:H2'	51:3:2777:A:C8	2.33	0.63
44:t:44:ARG:HB3	44:t:63:VAL:HB	1.79	0.63
51:3:1930:U:H4'	54:7:25:G:H21	1.62	0.63
51:3:2072:C:H2'	51:3:2073:C:H6	1.64	0.63
51:3:2104:A:H2'	51:3:2105:G:C8	2.32	0.63
51:3:2436:G:H4'	51:3:2437:G:C4	2.33	0.63
51:3:2476:A:H2'	51:3:2484:A:C2	2.34	0.63
11:G:39:LYS:NZ	53:5:639:A:O5'	2.32	0.63
20:P:48:HIS:HE1	20:P:66:THR:HG21	1.64	0.63
23:S:26:THR:HB	53:5:1432:A:H5''	1.81	0.63
26:b:168:HIS:HE1	26:b:171:HIS:HB2	1.64	0.63
50:z:24:ASN:ND2	51:3:2293:C:OP1	2.32	0.63
51:3:309:A:O2'	51:3:311:G:N2	2.31	0.63
51:3:984:C:H2'	51:3:985:A:H8	1.64	0.63
51:3:1247:C:N4	51:3:1262:G:O6	2.31	0.63
51:3:1504:G:H1	51:3:1539:U:H3	1.44	0.63
51:3:1920:A:H62	53:5:1468:A:H2'	1.62	0.63
51:3:2117:G:O2'	51:3:2127:G:OP2	2.13	0.63
11:G:11:HIS:HB2	53:5:822:A:H1'	1.80	0.63
33:i:72:LYS:HE3	33:i:93:ARG:HE	1.63	0.63
35:k:64:LYS:NZ	51:3:253:C:O2'	2.31	0.63
49:y:19:HIS:HE1	51:3:2632:C:H1'	1.64	0.63
51:3:454:G:H2'	51:3:455:G:C8	2.33	0.63
51:3:2061:A:N6	51:3:2585:A:C2	2.67	0.63
51:3:2339:G:O2'	51:3:2344:A:N6	2.29	0.63
52:4:38:U:O2'	52:4:40:U:O2'	2.14	0.63
53:5:756:A:H5''	53:5:874:C:H4'	1.81	0.63
7:C:112:SER:HG	53:5:403:A:HO2'	1.45	0.63
10:F:112:GLU:HG2	10:F:118:LYS:HE2	1.81	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:K:26:TYR:O	15:K:72:ASN:ND2	2.32	0.63
28:d:35:VAL:HG12	28:d:90:THR:HG22	1.80	0.63
34:j:16:ALA:HA	34:j:46:ALA:HA	1.81	0.63
51:3:230:G:H4'	51:3:261:A:H4'	1.79	0.63
51:3:1270:C:H2'	51:3:1271:A:H8	1.64	0.63
51:3:2274:A:N6	51:3:2281:A:OP2	2.32	0.63
53:5:616:C:H5'	53:5:617:U:H5''	1.80	0.63
4:9:155:ARG:NH1	4:9:165:GLY:O	2.32	0.63
8:D:185:ARG:NH1	53:5:22:G:OP2	2.28	0.63
26:b:30:TYR:HH	39:o:3:LYS:N	1.97	0.63
38:n:107:GLU:HG3	38:n:110:ARG:HD2	1.81	0.63
51:3:656:G:OP2	51:3:656:G:N2	2.26	0.63
51:3:2420:A:H2'	51:3:2421:U:O4'	1.99	0.63
51:3:2653:G:OP2	51:3:2653:G:N2	2.19	0.63
53:5:397:C:H2'	53:5:398:G:H8	1.64	0.63
4:9:40:GLY:HA3	4:9:72:SER:HA	1.81	0.62
4:9:115:GLN:O	4:9:119:HIS:ND1	2.24	0.62
26:b:39:VAL:HG22	26:b:92:MET:HE3	1.81	0.62
26:b:185:ASP:HB3	26:b:190:LEU:HB2	1.81	0.62
28:d:36:ILE:HG22	28:d:89:VAL:H	1.64	0.62
28:d:150:ARG:NH2	51:3:2315:G:O6	2.25	0.62
30:f:95:LYS:HG2	51:3:2227:U:H4'	1.81	0.62
40:p:31:TYR:HE2	51:3:1282:G:H5'	1.63	0.62
46:v:6:GLN:NE2	46:v:49:LEU:O	2.30	0.62
51:3:31:U:H2'	51:3:32:G:C8	2.34	0.62
51:3:738:U:O4	51:3:763:G:O6	2.16	0.62
51:3:2304:U:OP2	51:3:2342:U:N3	2.31	0.62
53:5:677:C:H2'	53:5:678:A:C8	2.33	0.62
25:a:48:ASN:HB3	25:a:50:GLN:HG2	1.82	0.62
51:3:633:G:O6	51:3:692:U:O4	2.15	0.62
51:3:1754:U:H2'	51:3:1755:A:H8	1.63	0.62
53:5:582:G:H2'	53:5:583:G:C8	2.34	0.62
6:B:159:ARG:NH2	6:B:196:TYR:O	2.33	0.62
27:c:7:ILE:HA	27:c:13:PHE:HA	1.80	0.62
40:p:1:MET:N	51:3:1278:G:N7	2.47	0.62
51:3:28:G:H2'	51:3:29:G:C4	2.33	0.62
51:3:518:A:O2'	51:3:532:A:N1	2.32	0.62
51:3:1476:C:H2'	51:3:1477:A:C8	2.35	0.62
51:3:2521:A:H2'	51:3:2522:U:C6	2.34	0.62
53:5:599:G:N2	53:5:634:U:O2	2.27	0.62
54:6:16:G:N2	54:6:60:U:O4	2.32	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:d:85:ILE:HD11	51:3:2320:U:H5'	1.81	0.62
40:p:62:LEU:HD13	51:3:1045:A:H5''	1.81	0.62
43:s:25:LYS:NZ	43:s:87:LYS:O	2.26	0.62
51:3:840:G:OP2	51:3:841:C:N4	2.28	0.62
51:3:1086:G:H1	51:3:1143:U:H3	1.47	0.62
51:3:1514:U:O2	51:3:1525:G:N2	2.27	0.62
13:I:78:ARG:HE	53:5:1127:A:H4'	1.64	0.62
22:R:63:THR:HG21	22:R:66:MET:HE3	1.80	0.62
25:a:11:ASN:HB2	51:3:766:C:H5'	1.82	0.62
34:j:29:ARG:NH2	51:3:2555:U:O3'	2.33	0.62
51:3:224:G:N1	51:3:464:A:OP2	2.33	0.62
51:3:597:C:H2'	51:3:598:G:C8	2.35	0.62
51:3:990:G:H2'	51:3:991:G:C8	2.35	0.62
52:4:47:C:H2'	52:4:48:A:C8	2.35	0.62
53:5:288:A:O2'	53:5:606:A:N6	2.31	0.62
53:5:1460:U:H2'	53:5:1461:G:H8	1.65	0.62
3:2:27:CYS:SG	3:2:28:LYS:N	2.72	0.62
12:H:115:ARG:NH1	53:5:1343:G:O3'	2.29	0.62
21:Q:43:PHE:HA	21:Q:46:ILE:HG22	1.81	0.62
27:c:181:LYS:HG3	27:c:185:LYS:HB3	1.81	0.62
35:k:59:TYR:CE1	51:3:254:G:H5'	2.35	0.62
51:3:1956:G:H2'	51:3:1957:G:C8	2.35	0.62
1:0:2:LYS:NZ	51:3:1654:G:O2'	2.32	0.62
28:d:40:VAL:HG11	28:d:50:LEU:HD21	1.80	0.62
33:i:95:MET:HE3	33:i:99:GLN:O	2.00	0.62
36:l:46:ALA:HA	51:3:2492:G:H4'	1.81	0.62
37:m:14:ARG:NH1	51:3:2009:U:OP1	2.32	0.62
38:n:110:ARG:NH2	51:3:2384:A:N3	2.46	0.62
41:q:19:THR:HG22	41:q:93:LYS:HD2	1.82	0.62
42:r:133:GLN:HG2	42:r:137:MET:HE1	1.80	0.62
51:3:638:A:N6	51:3:661:G:O6	2.33	0.62
51:3:2840:U:H2'	51:3:2841:A:C8	2.35	0.62
53:5:612:G:N1	53:5:624:U:N3	2.46	0.62
53:5:694:U:O2'	53:5:782:G:O2'	2.17	0.62
53:5:1057:C:O2	53:5:1166:A:N6	2.33	0.62
53:5:1207:U:H2'	53:5:1208:G:H8	1.64	0.62
3:2:25:VAL:HG22	3:2:34:GLN:HB2	1.80	0.62
4:9:215:ILE:HD12	4:9:291:GLN:HB3	1.81	0.62
22:R:18:LYS:NZ	53:5:1010:A:OP2	2.32	0.62
25:a:173:GLN:NE2	25:a:177:GLY:O	2.33	0.62
28:d:58:HIS:HD2	28:d:65:PRO:HD2	1.64	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:o:59:GLY:O	39:o:82:HIS:NE2	2.33	0.62
43:s:52:PRO:HB3	43:s:83:ILE:HG23	1.81	0.62
46:v:33:LEU:HB3	46:v:49:LEU:HD12	1.81	0.62
51:3:697:U:H2'	51:3:698:A:H8	1.64	0.62
51:3:1422:U:H4'	51:3:1637:A:H5''	1.82	0.62
51:3:2071:C:H2'	51:3:2072:C:H6	1.65	0.62
53:5:316:G:H2'	53:5:317:A:C8	2.35	0.62
53:5:694:U:H3'	53:5:695:G:H8	1.63	0.62
53:5:1321:G:N2	53:5:1349:A:O5'	2.29	0.62
8:D:135:SER:HA	8:D:175:TYR:HD1	1.65	0.62
29:e:57:ARG:NH2	29:e:60:GLU:OE1	2.32	0.62
38:n:99:HIS:NE2	52:4:35:C:O2	2.28	0.62
51:3:1326:C:O2	51:3:1330:U:O2'	2.18	0.62
51:3:1370:A:O2'	51:3:1372:U:OP1	2.18	0.62
51:3:1754:U:H2'	51:3:1755:A:C8	2.34	0.62
53:5:557:A:H4'	53:5:558:U:H3'	1.81	0.62
54:7:16:G:N2	54:7:60:U:O4	2.33	0.62
27:c:6:LEU:HD12	27:c:7:ILE:H	1.65	0.62
27:c:70:HIS:HA	51:3:2066:A:H5'	1.82	0.62
51:3:513:A:H2'	51:3:514:A:C8	2.35	0.62
51:3:2057:C:H2'	51:3:2058:G:C8	2.34	0.62
51:3:2663:G:N2	51:3:2673:A:O5'	2.32	0.62
53:5:70:A:H2'	53:5:71:A:C8	2.34	0.62
53:5:1110:C:H2'	53:5:1111:G:H8	1.65	0.62
4:9:93:ILE:HD11	4:9:122:LEU:HD13	1.82	0.61
10:F:115:MET:HE1	53:5:1214:A:H3'	1.82	0.61
11:G:26:ARG:HH22	11:G:87:VAL:H	1.48	0.61
12:H:101:LYS:NZ	53:5:1153:G:OP2	2.30	0.61
51:3:719:G:O3'	51:3:823:A:N6	2.33	0.61
51:3:2604:U:O2'	51:3:2605:G:OP1	2.17	0.61
53:5:1267:G:H2'	53:5:1268:G:C8	2.35	0.61
12:H:116:LYS:HA	12:H:123:ALA:HA	1.81	0.61
51:3:453:U:H2'	51:3:454:G:H8	1.65	0.61
51:3:566:G:OP1	51:3:594:G:N2	2.32	0.61
51:3:684:A:H2'	51:3:685:G:H8	1.65	0.61
51:3:1329:U:N3	51:3:1331:G:O6	2.32	0.61
51:3:1609:U:H2'	51:3:1610:U:C6	2.35	0.61
51:3:2295:A:N6	51:3:2354:A:N7	2.49	0.61
51:3:2514:U:OP2	51:3:2584:G:N1	2.32	0.61
4:9:46:ARG:HG3	4:9:49:GLN:HB2	1.81	0.61
10:F:70:PRO:HG3	10:F:98:LEU:HG	1.80	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:T:28:LEU:HG	24:T:32:HIS:HE1	1.65	0.61
25:a:113:ASP:N	25:a:202:VAL:O	2.29	0.61
26:b:134:GLY:HA3	51:3:2000:U:H4'	1.83	0.61
45:u:60:TYR:HB2	45:u:94:ARG:NH1	2.15	0.61
49:y:2:ALA:N	51:3:2621:U:OP2	2.33	0.61
51:3:2536:U:O4	51:3:2543:G:O6	2.18	0.61
51:3:2706:U:O4	51:3:2707:A:N6	2.33	0.61
53:5:590:G:H2'	53:5:591:A:H8	1.65	0.61
53:5:1489:C:H2'	53:5:1490:G:C8	2.35	0.61
13:I:90:ILE:HD12	13:I:93:LEU:HD11	1.81	0.61
51:3:606:G:O2'	51:3:608:A:OP1	2.19	0.61
53:5:308:C:H2'	53:5:309:A:H8	1.66	0.61
53:5:591:A:H2'	53:5:592:A:C8	2.35	0.61
53:5:704:U:H2'	53:5:705:A:C8	2.35	0.61
25:a:149:ASN:H	25:a:161:ALA:HB3	1.64	0.61
26:b:163:LYS:HB2	26:b:165:MET:HE1	1.83	0.61
34:j:77:LEU:HD13	39:o:77:LYS:HD2	1.81	0.61
51:3:574:G:O6	51:3:587:U:O4	2.19	0.61
51:3:2169:G:H4'	51:3:2170:A:H3'	1.82	0.61
53:5:379:A:OP1	53:5:452:A:O2'	2.19	0.61
53:5:537:A:H2'	53:5:538:G:C8	2.36	0.61
53:5:672:A:N6	53:5:712:A:H61	1.99	0.61
16:L:108:THR:HG23	16:L:109:ARG:HG2	1.81	0.61
28:d:26:MET:HE1	52:4:28:C:H2'	1.83	0.61
35:k:82:LEU:HA	35:k:85:ILE:HG22	1.82	0.61
51:3:178:A:C6	51:3:179:A:N6	2.69	0.61
51:3:1254:U:N3	51:3:1255:G:O6	2.34	0.61
51:3:2669:G:H2'	51:3:2670:A:C8	2.36	0.61
53:5:591:A:H2'	53:5:592:A:H8	1.65	0.61
53:5:831:C:H2'	53:5:832:G:C8	2.35	0.61
8:D:69:ARG:HH11	8:D:168:ALA:HB1	1.64	0.61
12:H:44:LYS:HG2	12:H:45:LEU:H	1.66	0.61
25:a:12:SER:HB2	51:3:1782:U:H4'	1.82	0.61
26:b:148:GLN:HB2	51:3:2583:U:H1'	1.81	0.61
51:3:629:G:O6	51:3:696:U:O4	2.19	0.61
51:3:1243:A:H2'	51:3:1244:A:C8	2.34	0.61
51:3:2195:U:H2'	51:3:2196:G:H8	1.64	0.61
53:5:1289:U:H3	53:5:1293:A:H62	1.47	0.61
26:b:3:ILE:N	26:b:87:MET:HE1	2.12	0.61
45:u:60:TYR:HB2	45:u:94:ARG:HH12	1.65	0.61
51:3:572:G:N2	51:3:588:G:O2'	2.27	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:700:U:H2'	51:3:701:A:C8	2.34	0.61
51:3:2229:C:H2'	51:3:2230:A:C8	2.35	0.61
51:3:2297:G:H2'	51:3:2298:G:C8	2.34	0.61
4:9:71:SER:HB2	4:9:76:HIS:HD2	1.65	0.61
11:G:99:ARG:HD3	11:G:103:LYS:HB2	1.82	0.61
37:m:18:VAL:HG13	37:m:41:THR:HG23	1.82	0.61
51:3:707:C:H2'	51:3:708:C:C6	2.36	0.61
51:3:740:A:H2'	51:3:741:A:C8	2.35	0.61
51:3:1008:A:H5''	51:3:1009:A:H5''	1.83	0.61
51:3:1141:U:H2'	51:3:1142:G:H8	1.65	0.61
51:3:2277:A:H2'	51:3:2278:G:H8	1.66	0.61
51:3:2822:C:H2'	51:3:2823:A:C8	2.36	0.61
51:3:2832:G:H2'	51:3:2833:A:C8	2.36	0.61
53:5:671:G:H2'	53:5:672:A:C8	2.35	0.61
6:B:3:GLN:NE2	53:5:1166:A:OP2	2.34	0.61
7:C:123:LEU:HG	7:C:143:ARG:HH21	1.66	0.61
8:D:143:ARG:HA	8:D:148:ARG:HG3	1.81	0.61
8:D:211:LEU:HD12	8:D:212:ARG:HD3	1.83	0.61
21:Q:83:GLN:HA	21:Q:86:VAL:HG22	1.83	0.61
23:S:71:ARG:NH2	53:5:256:G:OP2	2.33	0.61
25:a:146:GLN:OE1	25:a:169:ARG:NH2	2.34	0.61
35:k:126:PHE:HB2	35:k:146:VAL:HG22	1.82	0.61
50:z:43:LYS:NZ	50:z:44:VAL:O	2.34	0.61
51:3:1647:A:H5'	51:3:1648:A:H5''	1.83	0.61
51:3:2155:G:H2'	51:3:2156:G:C8	2.35	0.61
53:5:413:G:H1	53:5:423:U:H3	1.49	0.61
53:5:833:G:O6	53:5:844:U:O4	2.18	0.61
7:C:84:ASN:ND2	8:D:156:GLN:OE1	2.26	0.60
9:E:4:ASN:HD21	9:E:59:ARG:HG3	1.66	0.60
15:K:124:ARG:HG2	15:K:135:PRO:HG3	1.82	0.60
26:b:90:PHE:HZ	26:b:101:LEU:HD21	1.66	0.60
49:y:42:VAL:HA	49:y:48:TYR:HA	1.83	0.60
51:3:159:G:H2'	51:3:160:A:C8	2.36	0.60
51:3:488:G:N2	51:3:493:A:O2'	2.34	0.60
53:5:576:A:O2'	53:5:725:A:N3	2.30	0.60
53:5:683:G:H21	53:5:701:A:H62	1.49	0.60
54:7:27:A:H3'	54:7:28:A:H8	1.65	0.60
1:0:19:LEU:HD12	51:3:126:C:H3'	1.83	0.60
9:E:25:GLN:O	9:E:28:THR:OG1	2.15	0.60
9:E:89:ASN:ND2	53:5:735:C:OP1	2.31	0.60
26:b:98:PRO:HB2	26:b:189:MET:HE2	1.82	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:j:36:GLY:HA3	34:j:109:ARG:HH22	1.64	0.60
34:j:51:MET:HE1	34:j:94:ARG:HB3	1.81	0.60
41:q:14:VAL:HG13	41:q:18:ASP:HB2	1.82	0.60
51:3:111:G:H2'	51:3:112:A:H8	1.66	0.60
51:3:341:G:H21	51:3:364:A:H61	1.49	0.60
51:3:603:G:H1	51:3:2507:C:P	2.24	0.60
51:3:1017:A:H2	51:3:2034:G:H21	1.48	0.60
51:3:1999:G:N2	51:3:2003:C:O2	2.34	0.60
51:3:2143:G:O6	51:3:2162:U:O4	2.19	0.60
53:5:137:A:H3'	53:5:138:A:H8	1.66	0.60
53:5:1062:C:H2'	53:5:1063:G:C8	2.36	0.60
10:F:110:ARG:HB3	10:F:118:LYS:HB2	1.83	0.60
16:L:29:ARG:HD2	53:5:1303:A:H5''	1.83	0.60
22:R:39:THR:HG22	22:R:40:ILE:H	1.67	0.60
51:3:189:U:H2'	51:3:190:G:H8	1.66	0.60
51:3:223:A:H2'	51:3:224:G:C4	2.37	0.60
51:3:569:U:O4	51:3:592:G:O6	2.19	0.60
51:3:2094:A:H2'	51:3:2095:A:C8	2.36	0.60
53:5:60:A:H5''	53:5:383:U:H4'	1.83	0.60
53:5:213:U:H4'	53:5:466:U:H3	1.66	0.60
6:B:34:LEU:HD11	17:M:47:LEU:HD13	1.83	0.60
23:S:3:ASN:N	53:5:327:G:HO2'	1.99	0.60
25:a:215:LYS:NZ	51:3:799:A:OP1	2.29	0.60
33:i:73:GLU:OE2	33:i:93:ARG:NH1	2.34	0.60
35:k:10:PRO:HD3	51:3:1274:A:H5'	1.82	0.60
47:w:15:LEU:HD21	47:w:58:LEU:HD21	1.82	0.60
51:3:2229:C:H2'	51:3:2230:A:H8	1.66	0.60
51:3:2274:A:H5'	51:3:2275:A:C4	2.36	0.60
52:4:76:A:H3'	52:4:77:G:H8	1.66	0.60
53:5:421:G:H2'	53:5:422:A:H8	1.66	0.60
53:5:609:G:O6	53:5:627:U:O2	2.19	0.60
53:5:698:U:H5'	53:5:699:A:H2'	1.84	0.60
53:5:830:U:H2'	53:5:831:C:C6	2.36	0.60
53:5:1277:C:H3'	53:5:1278:G:H8	1.67	0.60
53:5:1369:A:N6	53:5:1475:A:O2'	2.35	0.60
8:D:208:VAL:HG23	8:D:212:ARG:HH12	1.65	0.60
42:r:128:ARG:HH12	42:r:132:GLN:HB2	1.65	0.60
51:3:1686:U:H3'	51:3:1687:G:C8	2.36	0.60
51:3:2738:U:H2'	51:3:2739:C:C6	2.36	0.60
53:5:710:G:H21	53:5:774:A:H1'	1.66	0.60
7:C:144:LEU:HD12	7:C:149:ILE:HD13	1.83	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:a:135:SER:O	25:a:197:ARG:NH2	2.34	0.60
51:3:293:G:H2'	51:3:294:G:C4	2.37	0.60
51:3:755:C:H2'	51:3:756:A:C8	2.36	0.60
51:3:880:C:N4	51:3:968:U:O2'	2.34	0.60
51:3:984:C:H2'	51:3:985:A:C8	2.36	0.60
51:3:1687:G:H5'	51:3:2826:G:H1	1.67	0.60
51:3:2650:A:H2'	51:3:2651:G:H8	1.65	0.60
51:3:2828:C:OP2	51:3:2829:G:N2	2.35	0.60
53:5:68:C:H2'	53:5:69:G:C8	2.36	0.60
53:5:311:A:O2'	53:5:326:C:O2'	2.18	0.60
53:5:661:G:N2	53:5:738:A:N1	2.44	0.60
53:5:863:A:H4'	53:5:866:A:C8	2.37	0.60
53:5:905:U:H2'	53:5:906:C:C6	2.37	0.60
54:6:27:A:H3'	54:6:28:A:H8	1.65	0.60
5:A:199:VAL:HG12	5:A:213:PHE:HB2	1.83	0.60
11:G:109:ASN:O	11:G:109:ASN:ND2	2.33	0.60
45:u:83:TYR:HB2	51:3:892:G:H4'	1.84	0.60
51:3:274:A:OP2	51:3:294:G:N1	2.35	0.60
51:3:986:G:H1	51:3:1003:U:H3	1.50	0.60
51:3:1090:G:H3'	51:3:1091:G:H8	1.67	0.60
51:3:1454:G:N2	51:3:1607:G:N7	2.49	0.60
51:3:1610:U:H2'	51:3:1611:C:C6	2.36	0.60
51:3:1887:U:H2'	51:3:1888:U:C6	2.37	0.60
52:4:37:A:O2'	52:4:44:A:N1	2.33	0.60
53:5:663:G:H1	53:5:737:U:H3	1.49	0.60
4:9:67:HIS:CD2	4:9:80:VAL:HG22	2.37	0.60
4:9:75:ARG:NH2	4:9:202:THR:OG1	2.34	0.60
5:A:69:TYR:O	5:A:72:VAL:HG12	2.01	0.60
12:H:123:ALA:N	53:5:1323:A:OP1	2.34	0.60
12:H:125:ARG:HH21	53:5:1323:A:H4'	1.65	0.60
13:I:54:VAL:HG22	13:I:72:GLU:HG2	1.84	0.60
43:s:44:PHE:HD2	43:s:52:PRO:HD3	1.66	0.60
51:3:61:U:O4	51:3:70:G:O6	2.20	0.60
51:3:1297:U:O2'	51:3:1298:A:OP1	2.20	0.60
51:3:1619:A:H2'	51:3:1620:A:C8	2.37	0.60
51:3:1806:G:H5'	51:3:1826:A:H61	1.65	0.60
51:3:2013:C:O2'	51:3:2827:A:N3	2.35	0.60
51:3:2668:A:O2'	51:3:2669:G:H8	1.85	0.60
51:3:2852:G:O2'	51:3:2871:G:N2	2.31	0.60
5:A:93:LYS:O	5:A:97:ASN:ND2	2.35	0.60
7:C:88:ASN:OD1	7:C:91:ARG:NH1	2.34	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:C:123:LEU:HD23	7:C:143:ARG:HD2	1.84	0.60
11:G:23:ASN:ND2	53:5:869:U:O2'	2.33	0.60
25:a:101:TYR:HB2	25:a:105:ALA:HB3	1.84	0.60
26:b:185:ASP:O	26:b:189:MET:N	2.35	0.60
37:m:107:ARG:HH21	51:3:1314:A:H3'	1.66	0.60
40:p:54:ARG:HH12	51:3:1013:G:H5'	1.66	0.60
51:3:2829:G:N2	51:3:2829:G:OP2	2.35	0.60
53:5:18:U:O2'	53:5:1070:G:O2'	2.19	0.60
53:5:1328:C:H2'	53:5:1329:G:C8	2.37	0.60
51:3:990:G:N2	51:3:999:U:O2	2.28	0.60
51:3:1445:U:H2'	51:3:1446:G:O4'	2.02	0.60
53:5:648:C:N4	53:5:750:A:C8	2.68	0.60
20:P:59:ASP:OD2	20:P:83:ARG:NE	2.35	0.59
22:R:55:LYS:NZ	53:5:980:C:O2'	2.34	0.59
33:i:109:LYS:NZ	51:3:2047:U:OP1	2.29	0.59
40:p:2:ARG:NH2	51:3:481:C:O2'	2.35	0.59
42:r:77:ASN:O	42:r:102:ASN:N	2.35	0.59
51:3:663:A:O2'	51:3:672:G:N2	2.21	0.59
51:3:874:U:O2'	51:3:1222:A:N3	2.35	0.59
51:3:881:A:N7	51:3:968:U:N3	2.50	0.59
51:3:1041:C:H2'	51:3:1042:C:C6	2.37	0.59
51:3:1242:G:H1'	51:3:1267:A:H61	1.67	0.59
53:5:711:G:H2'	53:5:712:A:H8	1.67	0.59
53:5:1133:A:N6	53:5:1153:G:N2	2.36	0.59
54:6:19:G:H1	54:6:56:U:H1'	1.66	0.59
2:1:6:ALA:HB1	51:3:254:G:H5''	1.84	0.59
30:f:28:HIS:HA	30:f:34:LYS:HD3	1.84	0.59
51:3:663:A:N3	51:3:672:G:N2	2.49	0.59
51:3:880:C:H4'	51:3:881:A:H5'	1.84	0.59
51:3:1814:G:N2	51:3:1817:A:OP2	2.34	0.59
51:3:2695:U:O4	51:3:2730:G:O6	2.20	0.59
52:4:58:C:H2'	52:4:59:A:H8	1.66	0.59
53:5:99:U:H1'	53:5:349:A:H1'	1.84	0.59
53:5:1009:G:N2	53:5:1012:A:OP2	2.35	0.59
51:3:990:G:O6	51:3:999:U:O4	2.20	0.59
51:3:1582:G:H2'	51:3:1583:G:C8	2.37	0.59
51:3:1871:U:OP1	51:3:2418:G:O2'	2.19	0.59
51:3:2092:U:H3	51:3:2242:G:H1	1.50	0.59
51:3:2299:U:H1'	51:3:2382:A:H1'	1.85	0.59
51:3:2374:A:H3'	51:3:2375:A:H8	1.66	0.59
53:5:407:A:C6	53:5:426:U:C4	2.91	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:663:G:H5'	53:5:723:C:H1'	1.83	0.59
14:J:73:ALA:O	14:J:99:SER:OG	2.15	0.59
16:L:95:LEU:HD21	16:L:102:THR:HG21	1.84	0.59
26:b:15:GLN:OE1	26:b:23:ARG:NH2	2.35	0.59
34:j:1:MET:HE1	51:3:1698:A:C2	2.37	0.59
35:k:6:LEU:HD12	35:k:7:LYS:HG2	1.85	0.59
36:l:13:HIS:N	51:3:947:A:N7	2.48	0.59
53:5:365:U:O4	53:5:388:G:O6	2.20	0.59
53:5:732:A:H2'	53:5:733:A:H8	1.67	0.59
53:5:961:G:N2	54:7:35:G:N3	2.51	0.59
4:9:173:GLY:HA3	4:9:188:LYS:HD3	1.83	0.59
8:D:198:GLY:O	8:D:202:GLN:NE2	2.36	0.59
12:H:125:ARG:NH2	53:5:1323:A:O2'	2.34	0.59
17:M:42:LEU:HA	17:M:45:ARG:HE	1.67	0.59
34:j:91:LYS:HE3	34:j:112:ASN:H	1.68	0.59
46:v:12:PRO:HA	46:v:29:TRP:O	2.01	0.59
48:x:11:SER:HA	48:x:26:GLU:HA	1.84	0.59
51:3:824:A:N6	51:3:1648:A:OP2	2.36	0.59
51:3:1930:U:H2'	51:3:1931:C:H6	1.67	0.59
51:3:2321:C:H2'	51:3:2322:G:H8	1.67	0.59
51:3:2416:U:H2'	51:3:2417:G:C8	2.37	0.59
53:5:617:U:OP1	53:5:619:A:N6	2.35	0.59
53:5:1139:A:H2'	53:5:1140:A:C8	2.37	0.59
4:9:342:ILE:HG22	4:9:344:LEU:HG	1.84	0.59
7:C:167:VAL:HG12	7:C:178:TYR:HA	1.84	0.59
40:p:91:ARG:HH22	51:3:1032:A:H4'	1.67	0.59
51:3:1842:G:H1'	51:3:1938:U:H1'	1.85	0.59
53:5:943:C:H2'	53:5:944:A:C8	2.38	0.59
12:H:49:ASP:O	12:H:82:ARG:NH1	2.32	0.59
14:J:118:LYS:NZ	53:5:1498:G:OP1	2.35	0.59
15:K:52:THR:HA	15:K:64:LYS:HA	1.85	0.59
28:d:16:LEU:HD22	28:d:28:VAL:HG13	1.85	0.59
35:k:105:SER:HB3	35:k:108:SER:HB3	1.85	0.59
41:q:40:MET:HA	41:q:45:ILE:HG13	1.83	0.59
2:1:34:THR:OG1	2:1:37:GLN:OE1	2.17	0.59
4:9:34:THR:HG23	4:9:45:THR:HG21	1.85	0.59
6:B:60:ARG:HG2	6:B:65:VAL:HG12	1.85	0.59
51:3:125:G:OP1	51:3:1404:C:O2'	2.20	0.59
51:3:1162:A:O2'	51:3:2526:A:OP1	2.18	0.59
51:3:2266:C:O2'	51:3:2435:C:OP2	2.17	0.59
51:3:2683:G:H2'	51:3:2684:G:C8	2.38	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:365:U:O2	53:5:388:G:N2	2.28	0.59
53:5:961:G:H1	53:5:1375:C:H42	1.51	0.59
53:5:1200:G:O2'	53:5:1201:C:O5'	2.20	0.59
36:l:48:GLU:OE1	36:l:51:ARG:NH1	2.35	0.59
36:l:87:LYS:HE3	51:3:991:G:H5''	1.84	0.59
51:3:665:C:O2	51:3:675:U:O2'	2.20	0.59
51:3:1297:U:H2'	51:3:1298:A:H8	1.67	0.59
51:3:1385:U:H2'	51:3:1386:G:O4'	2.03	0.59
51:3:1930:U:H2'	51:3:1931:C:C6	2.38	0.59
51:3:2380:U:H2'	51:3:2381:G:C8	2.37	0.59
51:3:2703:U:O2	51:3:2722:G:O6	2.20	0.59
53:5:445:A:H3'	53:5:446:A:H8	1.67	0.59
22:R:36:ARG:HA	22:R:71:LEU:HB3	1.85	0.59
28:d:44:ILE:HG13	28:d:45:ARG:HD2	1.85	0.59
37:m:77:GLN:O	37:m:81:HIS:ND1	2.29	0.59
51:3:1035:U:H5'	51:3:1189:G:O6	2.03	0.59
53:5:944:A:H1'	53:5:1339:U:H3	1.68	0.59
54:7:19:G:H1	54:7:56:U:H1'	1.66	0.59
9:E:42:LEU:HB2	9:E:56:HIS:NE2	2.18	0.58
17:M:5:SER:OG	53:5:1191:U:OP1	2.21	0.58
19:O:71:GLY:O	19:O:75:LYS:NZ	2.36	0.58
21:Q:74:ARG:HH22	24:T:52:LYS:HE3	1.67	0.58
21:Q:101:PHE:O	53:5:715:A:N6	2.35	0.58
33:i:61:ASN:H	33:i:129:LYS:HA	1.66	0.58
42:r:34:ASN:HD21	49:y:36:LYS:HB2	1.67	0.58
51:3:1337:G:O6	51:3:1640:G:N2	2.35	0.58
52:4:28:C:O2'	52:4:55:A:N1	2.35	0.58
53:5:459:C:H2'	53:5:460:A:C8	2.38	0.58
53:5:656:U:H2'	53:5:657:G:C8	2.37	0.58
53:5:731:A:H2'	53:5:732:A:C8	2.37	0.58
4:9:31:ALA:HB2	4:9:179:LEU:HD23	1.85	0.58
4:9:103:ILE:HD12	4:9:192:LEU:HD11	1.85	0.58
5:A:217:ALA:HB2	5:A:228:LEU:HD22	1.85	0.58
7:C:49:GLY:HA2	7:C:52:GLN:HE21	1.66	0.58
8:D:119:ILE:HG23	8:D:123:HIS:CE1	2.38	0.58
11:G:92:LYS:HD2	53:5:871:U:H5''	1.85	0.58
12:H:111:ARG:HH21	53:5:1320:A:H1'	1.68	0.58
15:K:99:ARG:NH2	15:K:100:VAL:O	2.37	0.58
46:v:36:CYS:O	46:v:47:ARG:HA	2.02	0.58
51:3:763:G:O2'	51:3:765:A:O4'	2.21	0.58
51:3:959:C:H2'	51:3:960:A:H8	1.68	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1070:U:H2'	51:3:1071:G:C8	2.37	0.58
51:3:1273:U:H2'	51:3:1274:A:C8	2.38	0.58
51:3:1693:U:H2'	51:3:1694:A:C8	2.38	0.58
51:3:1747:G:H1	51:3:1751:A:H5''	1.67	0.58
51:3:1803:U:H2'	51:3:1804:A:C8	2.38	0.58
53:5:377:A:H3'	53:5:378:A:C8	2.38	0.58
53:5:452:A:H2'	53:5:453:C:H5'	1.85	0.58
53:5:819:G:H2'	53:5:820:A:H8	1.67	0.58
11:G:127:VAL:O	11:G:131:LYS:N	2.34	0.58
12:H:52:GLN:OE1	12:H:82:ARG:NH2	2.32	0.58
14:J:67:VAL:HB	14:J:72:MET:HE3	1.86	0.58
19:O:65:SER:O	19:O:68:SER:OG	2.20	0.58
21:Q:95:TYR:OH	53:5:669:U:O2	2.18	0.58
26:b:109:ASP:HB3	26:b:177:GLN:HG3	1.85	0.58
28:d:40:VAL:HG23	28:d:86:GLY:HA2	1.86	0.58
35:k:22:ARG:NH2	51:3:620:G:OP2	2.37	0.58
40:p:7:LYS:HD2	51:3:1245:G:H5''	1.86	0.58
43:s:27:TYR:HE2	43:s:85:LEU:HD22	1.68	0.58
51:3:77:G:H1	51:3:112:A:H61	1.51	0.58
51:3:742:G:O6	51:3:759:U:O4	2.22	0.58
51:3:904:C:N3	51:3:949:C:O2'	2.36	0.58
51:3:1848:U:H2'	51:3:1849:G:H8	1.69	0.58
51:3:2776:U:H2'	51:3:2777:A:H8	1.67	0.58
53:5:397:C:H2'	53:5:398:G:C8	2.39	0.58
53:5:572:A:O2'	53:5:876:C:O2	2.20	0.58
53:5:803:C:H2'	53:5:804:A:C8	2.38	0.58
53:5:1226:A:N3	53:5:1344:C:O2'	2.25	0.58
53:5:1281:U:H2'	53:5:1282:U:C6	2.38	0.58
53:5:1384:A:H2'	53:5:1385:A:C8	2.39	0.58
15:K:60:SER:OG	53:5:516:C:O2'	2.21	0.58
26:b:16:VAL:HG12	26:b:26:ILE:HG13	1.85	0.58
30:f:129:HIS:HA	30:f:135:THR:HG23	1.84	0.58
40:p:91:ARG:HE	41:q:11:GLN:HB3	1.68	0.58
53:5:580:C:N3	53:5:756:A:N7	2.51	0.58
26:b:36:VAL:HA	26:b:52:LEU:HD13	1.85	0.58
40:p:91:ARG:HH12	51:3:1032:A:H4'	1.68	0.58
42:r:23:LEU:O	42:r:27:LYS:NZ	2.34	0.58
42:r:128:ARG:NH1	42:r:132:GLN:HB2	2.19	0.58
51:3:491:A:O2'	51:3:493:A:OP1	2.21	0.58
51:3:632:A:H2'	51:3:633:G:C8	2.38	0.58
51:3:2026:A:H61	51:3:2042:A:H61	1.49	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2599:C:H2'	51:3:2600:G:C8	2.38	0.58
53:5:69:G:H2'	53:5:70:A:O4'	2.03	0.58
53:5:655:G:H1	53:5:744:U:H3	1.51	0.58
53:5:1216:G:H2'	53:5:1217:G:H8	1.69	0.58
4:9:196:VAL:HG13	4:9:200:ILE:HD12	1.85	0.58
5:A:20:LEU:HD23	5:A:65:LEU:HD21	1.84	0.58
8:D:143:ARG:NH2	8:D:146:ALA:H	2.01	0.58
19:O:21:LYS:HB3	53:5:96:G:H5''	1.86	0.58
23:S:32:VAL:HG12	23:S:36:HIS:HE1	1.68	0.58
25:a:112:PRO:HG2	25:a:115:ILE:HD13	1.86	0.58
25:a:159:GLN:NE2	51:3:1807:C:O2	2.35	0.58
34:j:58:LEU:HD23	34:j:59:ARG:N	2.17	0.58
51:3:812:G:H2'	51:3:813:G:C8	2.38	0.58
51:3:2134:G:O2'	51:3:2181:A:N1	2.32	0.58
51:3:2614:U:H2'	51:3:2615:G:C8	2.37	0.58
53:5:499:U:H3	53:5:542:G:H1	1.52	0.58
53:5:1127:A:HO2'	53:5:1128:G:H5''	1.69	0.58
53:5:1401:A:O2'	53:5:1402:U:O4'	2.12	0.58
34:j:70:GLN:HA	34:j:76:HIS:HA	1.84	0.58
51:3:609:U:H2'	51:3:610:G:C8	2.38	0.58
51:3:1337:G:H2'	51:3:1338:G:H8	1.68	0.58
51:3:1340:U:O2'	51:3:1342:C:N4	2.36	0.58
53:5:80:U:H2'	53:5:81:A:C8	2.38	0.58
53:5:354:U:H2'	53:5:355:A:C8	2.38	0.58
24:T:15:LEU:HA	24:T:18:PHE:HB2	1.84	0.58
38:n:27:ARG:NH2	51:3:2386:A:O2'	2.37	0.58
51:3:1007:C:H1'	51:3:1019:A:H2	1.68	0.58
53:5:473:A:H2'	53:5:474:G:H8	1.67	0.58
53:5:1384:A:H2'	53:5:1385:A:H8	1.68	0.58
26:b:10:LYS:HD2	26:b:13:MET:HE3	1.85	0.58
28:d:77:TYR:OH	51:3:2316:G:N1	2.34	0.58
41:q:69:ASN:ND2	51:3:1255:G:OP1	2.35	0.58
51:3:740:A:H2'	51:3:741:A:H8	1.68	0.58
51:3:748:G:H21	51:3:753:A:H62	1.51	0.58
51:3:1768:G:H2'	51:3:1769:A:O4'	2.04	0.58
53:5:1263:A:H3'	53:5:1264:G:H8	1.68	0.58
40:p:59:LEU:O	40:p:63:ARG:HG2	2.04	0.58
40:p:63:ARG:HG3	40:p:96:GLU:OE2	2.03	0.58
51:3:196:G:H21	51:3:837:A:H4'	1.68	0.58
51:3:821:C:O2'	51:3:1787:A:N6	2.37	0.58
51:3:2223:C:H2'	51:3:2224:A:C8	2.37	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2226:U:H2'	51:3:2227:U:O4'	2.04	0.58
10:F:73:GLU:OE2	10:F:88:THR:OG1	2.22	0.57
12:H:15:SER:HB2	12:H:72:GLY:HA3	1.85	0.57
14:J:12:GLY:HA3	14:J:72:MET:SD	2.44	0.57
15:K:28:LEU:HG	15:K:72:ASN:HA	1.86	0.57
25:a:249:VAL:HG11	51:3:1909:C:H5''	1.85	0.57
51:3:1104:A:H62	54:6:20:G:H1	1.51	0.57
51:3:1470:C:H2'	51:3:1471:A:H8	1.68	0.57
51:3:2196:G:H2'	51:3:2197:U:C6	2.39	0.57
51:3:2826:G:O2'	51:3:2829:G:N1	2.36	0.57
14:J:110:PRO:HD3	53:5:673:A:H4'	1.86	0.57
51:3:406:C:H2'	51:3:407:U:C6	2.40	0.57
51:3:853:G:N2	51:3:1219:U:OP2	2.31	0.57
51:3:1065:G:O6	51:3:1160:G:N2	2.37	0.57
51:3:1201:A:H2'	51:3:1202:A:C8	2.39	0.57
51:3:1961:A:O2'	51:3:1963:U:O4	2.19	0.57
51:3:2197:U:H2'	51:3:2198:G:C8	2.39	0.57
51:3:2840:U:H2'	51:3:2841:A:H8	1.69	0.57
53:5:621:C:H2'	53:5:622:A:C8	2.40	0.57
53:5:712:A:OP1	53:5:802:C:O2'	2.21	0.57
53:5:732:A:H2'	53:5:733:A:C8	2.39	0.57
53:5:933:A:N3	53:5:1351:U:O2'	2.34	0.57
25:a:17:SER:OG	25:a:212:VAL:O	2.22	0.57
46:v:58:LEU:HD12	46:v:63:ARG:HB2	1.86	0.57
51:3:28:G:N2	51:3:548:A:OP2	2.36	0.57
51:3:680:A:H2'	51:3:682:A:C8	2.40	0.57
51:3:1478:U:O2	51:3:1488:U:N3	2.37	0.57
53:5:947:U:O3'	53:5:959:A:N6	2.37	0.57
4:9:319:ARG:HB2	4:9:353:PRO:HG3	1.87	0.57
5:A:102:ARG:HH12	5:A:237:ALA:HB2	1.70	0.57
12:H:42:PRO:HB3	53:5:1265:U:H4'	1.85	0.57
27:c:175:ILE:HG22	27:c:177:ASN:H	1.68	0.57
28:d:93:GLY:H	28:d:96:MET:HE2	1.69	0.57
51:3:122:G:H2'	51:3:123:G:H8	1.68	0.57
51:3:140:G:N2	51:3:142:A:H3'	2.19	0.57
51:3:2419:A:H2'	51:3:2420:A:C8	2.39	0.57
51:3:2797:C:O2	51:3:2895:A:O2'	2.21	0.57
53:5:59:C:N3	53:5:350:G:N1	2.50	0.57
53:5:325:A:OP2	53:5:329:C:N4	2.37	0.57
11:G:61:GLU:HB2	11:G:68:ARG:NE	2.19	0.57
15:K:25:HIS:HE1	53:5:551:A:O2'	1.87	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:L:19:LEU:HB3	16:L:25:ILE:HG21	1.85	0.57
34:j:88:LYS:NZ	34:j:90:ASP:OD2	2.37	0.57
41:q:6:VAL:HG22	41:q:11:GLN:HG3	1.87	0.57
51:3:410:G:H4'	51:3:411:U:O5'	2.03	0.57
51:3:625:G:H2'	51:3:626:A:H8	1.69	0.57
51:3:697:U:H2'	51:3:698:A:C8	2.38	0.57
51:3:811:G:N2	51:3:2250:G:OP1	2.38	0.57
51:3:2861:G:N2	51:3:2864:A:OP2	2.28	0.57
53:5:1214:A:N6	53:5:1271:U:O4'	2.38	0.57
53:5:1222:U:O4	53:5:1264:G:O6	2.23	0.57
7:C:104:MET:CE	7:C:169:THR:HB	2.35	0.57
9:E:25:GLN:HG3	9:E:72:PHE:CE1	2.40	0.57
29:e:155:ARG:NH1	29:e:163:LYS:O	2.37	0.57
38:n:99:HIS:HD2	52:4:46:C:H4'	1.69	0.57
51:3:645:C:H2'	51:3:646:A:C8	2.40	0.57
51:3:1633:C:H2'	51:3:1634:A:C8	2.39	0.57
53:5:407:A:C6	53:5:426:U:N3	2.72	0.57
53:5:541:C:H2'	53:5:542:G:C8	2.39	0.57
53:5:680:G:O6	53:5:704:U:O2	2.22	0.57
53:5:926:C:N4	53:5:1362:G:O6	2.38	0.57
4:9:260:GLU:HA	4:9:265:GLU:HA	1.86	0.57
18:N:19:VAL:HG12	53:5:747:C:H1'	1.87	0.57
50:z:5:ARG:HB2	50:z:22:PHE:CE1	2.40	0.57
51:3:443:C:H2'	51:3:444:C:C6	2.40	0.57
51:3:610:G:H2'	51:3:611:A:C8	2.40	0.57
51:3:1001:C:H2'	51:3:1002:A:C8	2.39	0.57
51:3:1450:G:H1	51:3:1610:U:H3	1.52	0.57
51:3:1677:G:H2'	51:3:1678:U:C6	2.40	0.57
51:3:2101:A:N6	51:3:2204:C:N3	2.53	0.57
53:5:1165:G:H4'	53:5:1166:A:H5'	1.87	0.57
5:A:88:LYS:HD3	5:A:92:VAL:HG21	1.85	0.57
7:C:8:PHE:HD2	53:5:426:U:H5'	1.70	0.57
13:I:43:LYS:HE2	53:5:1115:G:H4'	1.87	0.57
15:K:95:LEU:HA	15:K:110:ILE:HA	1.86	0.57
51:3:495:U:H2'	51:3:496:A:H8	1.70	0.57
51:3:500:U:H2'	51:3:501:G:C4	2.40	0.57
51:3:522:C:H2'	51:3:523:A:C8	2.40	0.57
51:3:666:G:N2	51:3:669:A:OP2	2.24	0.57
51:3:1046:A:O2'	51:3:1187:C:O2	2.19	0.57
51:3:1582:G:H2'	51:3:1583:G:H8	1.69	0.57
51:3:2413:G:O2'	51:3:2419:A:N6	2.37	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2527:U:O4'	51:3:2550:A:N6	2.38	0.57
23:S:63:ASN:ND2	53:5:259:A:H5'	2.20	0.57
47:w:8:ARG:NH1	47:w:8:ARG:O	2.38	0.57
51:3:402:A:H1'	51:3:404:C:H5	1.69	0.57
51:3:1499:C:H2'	51:3:1500:A:C8	2.40	0.57
51:3:1641:A:H4'	51:3:1642:G:C8	2.39	0.57
51:3:2039:G:OP2	51:3:2462:G:O2'	2.21	0.57
51:3:2114:C:N4	51:3:2191:G:O6	2.38	0.57
51:3:2141:A:OP2	51:3:2164:G:N2	2.36	0.57
51:3:2476:A:P	51:3:2484:A:H61	2.27	0.57
52:4:38:U:HO2'	52:4:40:U:HO2'	1.51	0.57
52:4:60:C:H2'	52:4:61:A:C8	2.40	0.57
53:5:98:G:H1	53:5:310:C:H42	1.53	0.57
53:5:766:G:H4'	53:5:1488:A:H4'	1.87	0.57
53:5:1120:A:H5''	53:5:1121:U:H5'	1.87	0.57
5:A:20:LEU:HD22	5:A:69:TYR:CE1	2.39	0.57
5:A:64:SER:O	5:A:67:THR:OG1	2.20	0.57
17:M:10:GLN:OE1	17:M:25:GLN:NE2	2.37	0.57
28:d:77:TYR:HH	51:3:2316:G:H1	1.53	0.57
51:3:401:G:O2'	51:3:402:A:OP1	2.23	0.57
51:3:574:G:H1	51:3:587:U:H3	1.53	0.57
51:3:1337:G:H2'	51:3:1338:G:C8	2.40	0.57
51:3:1756:A:H2'	51:3:1757:G:C8	2.40	0.57
51:3:2146:A:H2'	51:3:2147:G:H8	1.69	0.57
51:3:2150:C:H1'	51:3:2156:G:H22	1.70	0.57
51:3:2802:C:OP2	51:3:2806:A:N6	2.37	0.57
53:5:1051:U:H2'	53:5:1052:G:C8	2.40	0.57
4:9:92:MET:HG3	4:9:119:HIS:CD2	2.40	0.56
43:s:5:ASN:O	43:s:5:ASN:ND2	2.38	0.56
43:s:62:PRO:HD3	43:s:77:LEU:HD12	1.87	0.56
51:3:134:U:H2'	51:3:135:A:C8	2.40	0.56
51:3:322:A:H2'	51:3:323:A:C8	2.40	0.56
51:3:781:U:H5''	51:3:782:U:H5'	1.87	0.56
51:3:2036:G:N1	51:3:2040:A:OP2	2.36	0.56
51:3:2224:A:H2'	51:3:2225:G:H8	1.70	0.56
51:3:2308:U:H2'	51:3:2309:A:H8	1.69	0.56
51:3:2718:C:H2'	51:3:2719:A:C8	2.40	0.56
51:3:2814:A:N1	51:3:2894:G:O2'	2.33	0.56
53:5:82:C:H2'	53:5:83:U:H6	1.70	0.56
53:5:885:U:N3	53:5:901:A:C8	2.72	0.56
53:5:1228:C:H2'	53:5:1229:A:C8	2.40	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:E:40:LEU:HB2	9:E:57:TYR:HB2	1.87	0.56
15:K:3:THR:OG1	53:5:874:C:OP2	2.23	0.56
22:R:70:LYS:NZ	53:5:1292:A:O2'	2.38	0.56
30:f:79:PHE:HE2	30:f:97:ILE:HG22	1.69	0.56
46:v:27:ARG:NH2	51:3:2240:U:OP1	2.38	0.56
51:3:659:C:H2'	51:3:660:U:C6	2.40	0.56
51:3:1785:U:O2	51:3:1792:A:N7	2.38	0.56
51:3:2096:U:O4	51:3:2097:A:N6	2.38	0.56
51:3:2227:U:H2'	51:3:2228:U:H6	1.70	0.56
51:3:2380:U:H2'	51:3:2381:G:H8	1.70	0.56
53:5:44:C:H2'	53:5:45:A:C8	2.40	0.56
53:5:502:C:H1'	53:5:508:A:H2'	1.87	0.56
3:2:11:CYS:SG	3:2:12:LYS:N	2.76	0.56
4:9:223:GLY:HA2	53:5:354:U:H1'	1.86	0.56
4:9:237:LEU:HB2	4:9:269:ALA:HB3	1.87	0.56
9:E:5:ILE:HG13	9:E:87:ILE:HG12	1.87	0.56
10:F:67:ASN:HB3	10:F:134:ILE:HD11	1.88	0.56
14:J:33:ASN:HA	53:5:680:G:N2	2.17	0.56
21:Q:81:MET:HE3	21:Q:85:HIS:HE1	1.66	0.56
23:S:6:SER:O	23:S:10:ARG:NH2	2.39	0.56
24:T:15:LEU:HD12	24:T:19:LYS:NZ	2.20	0.56
25:a:183:GLN:NE2	25:a:188:GLU:O	2.37	0.56
27:c:81:ASN:H	27:c:84:PHE:HB2	1.70	0.56
34:j:67:LYS:NZ	51:3:1698:A:N3	2.53	0.56
36:l:62:GLY:HA2	36:l:108:ASN:HD22	1.71	0.56
38:n:64:ASN:HB2	38:n:70:ALA:HB2	1.88	0.56
42:r:53:SER:O	42:r:57:ASN:ND2	2.38	0.56
44:t:90:LYS:HB3	44:t:92:VAL:HG22	1.86	0.56
48:x:43:HIS:HB3	48:x:46:TYR:HB3	1.87	0.56
51:3:579:U:O2'	51:3:581:A:OP2	2.22	0.56
51:3:995:A:N3	51:3:2465:U:O2'	2.34	0.56
51:3:1756:A:H2'	51:3:1757:G:H8	1.69	0.56
51:3:2704:U:H2'	51:3:2705:G:C8	2.41	0.56
51:3:2794:U:H2'	51:3:2795:C:C6	2.40	0.56
52:4:104:C:H2'	52:4:105:A:C8	2.40	0.56
53:5:134:G:N1	53:5:160:A:N6	2.26	0.56
53:5:157:A:H2'	53:5:158:A:C8	2.41	0.56
53:5:290:G:OP1	53:5:608:G:O2'	2.23	0.56
53:5:1007:U:H2'	53:5:1008:G:C8	2.41	0.56
53:5:1178:C:H2'	53:5:1179:A:C8	2.40	0.56
26:b:51:LEU:HD21	26:b:81:LEU:HB3	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:q:36:ASP:HA	41:q:54:ARG:HE	1.71	0.56
51:3:196:G:H4'	51:3:712:A:H2	1.70	0.56
51:3:454:G:H2'	51:3:455:G:H8	1.71	0.56
51:3:1925:A:O2'	51:3:1927:C:N4	2.38	0.56
51:3:2667:G:H2'	51:3:2668:A:H2'	1.87	0.56
53:5:240:U:O4	53:5:887:C:N3	2.38	0.56
53:5:922:G:H1	53:5:1365:U:H3	1.52	0.56
6:B:21:ARG:HH22	13:I:99:PRO:HB2	1.71	0.56
8:D:78:LYS:HA	53:5:16:G:H21	1.70	0.56
51:3:1160:G:OP2	51:3:1161:A:O2'	2.24	0.56
51:3:1245:G:H22	51:3:1264:U:H3	1.53	0.56
51:3:1306:G:H2'	51:3:1307:G:C8	2.40	0.56
51:3:1327:G:N1	51:3:1674:A:OP2	2.33	0.56
51:3:1468:U:H3	51:3:1586:U:H3	1.53	0.56
51:3:2567:C:H2'	51:3:2568:G:H8	1.71	0.56
53:5:87:G:H2'	53:5:88:A:H8	1.70	0.56
53:5:554:C:H2'	53:5:555:G:H8	1.70	0.56
4:9:309:ILE:HD13	4:9:359:ILE:HG12	1.88	0.56
4:9:343:SER:OG	4:9:360:THR:O	2.23	0.56
7:C:56:GLU:HG3	7:C:195:TYR:HD2	1.70	0.56
29:e:77:ASN:HD21	51:3:2755:G:H5'	1.69	0.56
39:o:99:ALA:HB2	51:3:2852:G:H8	1.71	0.56
45:u:60:TYR:OH	51:3:2339:G:O2'	2.22	0.56
45:u:61:PRO:HG2	45:u:67:LEU:HD21	1.87	0.56
50:z:14:CYS:O	50:z:15:ARG:HD3	2.05	0.56
51:3:2599:C:H2'	51:3:2600:G:H8	1.69	0.56
51:3:2857:C:H2'	51:3:2858:A:C8	2.41	0.56
53:5:22:G:H2'	53:5:23:G:C8	2.41	0.56
4:9:240:GLY:H	4:9:256:VAL:HG23	1.68	0.56
7:C:100:ILE:HD12	7:C:136:LEU:HD22	1.87	0.56
22:R:38:SER:O	22:R:71:LEU:N	2.38	0.56
45:u:77:SER:OG	45:u:78:ASP:N	2.37	0.56
51:3:152:A:H2'	51:3:153:U:C6	2.41	0.56
51:3:1480:A:O2'	51:3:1485:A:N6	2.38	0.56
53:5:461:G:H21	53:5:462:G:H5'	1.71	0.56
9:E:149:ALA:HA	11:G:58:GLN:HE21	1.71	0.56
20:P:56:LYS:HD3	20:P:83:ARG:HH12	1.70	0.56
25:a:183:GLN:NE2	25:a:184:LEU:O	2.38	0.56
27:c:18:VAL:HG21	27:c:127:LEU:HD22	1.88	0.56
50:z:36:LYS:HB2	50:z:47:HIS:HD2	1.71	0.56
51:3:665:C:H2'	51:3:666:G:C8	2.40	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1116:U:H2'	51:3:1117:U:C6	2.40	0.56
51:3:1591:C:OP2	51:3:1592:A:O2'	2.22	0.56
53:5:428:A:H2'	53:5:429:A:H8	1.71	0.56
53:5:450:U:H3'	53:5:451:G:H8	1.71	0.56
53:5:542:G:H2'	53:5:543:C:C6	2.41	0.56
53:5:1081:U:H2'	53:5:1082:U:C6	2.41	0.56
53:5:1383:A:N6	53:5:1469:G:O6	2.39	0.56
5:A:87:THR:OG1	5:A:109:THR:O	2.20	0.56
20:P:2:LYS:NZ	53:5:114:C:OP2	2.39	0.56
26:b:58:GLU:HG3	26:b:60:LYS:H	1.71	0.56
29:e:87:GLU:OE1	29:e:137:SER:OG	2.21	0.56
30:f:112:MET:HE1	30:f:130:ILE:HD12	1.87	0.56
36:l:85:SER:HA	51:3:2283:C:H1'	1.86	0.56
51:3:138:U:H2'	51:3:139:G:C8	2.41	0.56
51:3:977:A:O2'	51:3:1221:G:O3'	2.24	0.56
52:4:64:G:H1'	52:4:97:A:H62	1.70	0.56
53:5:74:U:H2'	53:5:75:A:C8	2.41	0.56
53:5:819:G:H2'	53:5:820:A:C8	2.40	0.56
53:5:1062:C:H2'	53:5:1063:G:H8	1.71	0.56
53:5:1151:A:H2'	53:5:1152:G:C8	2.41	0.56
53:5:1396:U:O2	53:5:1454:G:O6	2.24	0.56
10:F:65:VAL:HG12	10:F:69:MET:HE3	1.87	0.56
16:L:29:ARG:HH22	16:L:64:LYS:HZ2	1.54	0.56
23:S:22:LYS:NZ	53:5:1433:G:OP1	2.32	0.56
23:S:63:ASN:HD21	53:5:259:A:H5'	1.70	0.56
46:v:35:PRO:HB2	46:v:47:ARG:HD2	1.88	0.56
47:w:49:ARG:O	47:w:53:THR:HG23	2.06	0.56
51:3:123:G:H2'	51:3:124:A:H8	1.70	0.56
51:3:189:U:H2'	51:3:190:G:C8	2.41	0.56
51:3:418:G:N2	51:3:430:U:O2	2.31	0.56
51:3:1136:U:H2'	51:3:1137:C:C6	2.41	0.56
51:3:2831:U:H2'	51:3:2832:G:C8	2.41	0.56
53:5:281:U:H2'	53:5:282:G:H8	1.69	0.56
53:5:490:U:H2'	53:5:491:U:C6	2.40	0.56
53:5:815:G:O2'	53:5:817:U:OP2	2.24	0.56
7:C:94:GLU:OE1	7:C:99:ASN:ND2	2.39	0.55
25:a:268:ARG:NH1	51:3:1806:G:OP1	2.39	0.55
30:f:98:ILE:HG22	30:f:102:HIS:CE1	2.41	0.55
34:j:7:ARG:HG3	34:j:18:GLN:HB3	1.88	0.55
51:3:558:C:O2	51:3:587:U:O2'	2.23	0.55
51:3:2278:G:C2	51:3:2279:G:H1'	2.41	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2461:A:H2'	51:3:2462:G:H8	1.70	0.55
53:5:611:A:H2'	53:5:612:G:C8	2.40	0.55
53:5:855:G:H21	53:5:868:G:H5'	1.72	0.55
53:5:1150:G:H2'	53:5:1151:A:H8	1.71	0.55
53:5:1194:A:H2'	53:5:1195:G:C8	2.41	0.55
53:5:1197:G:OP2	53:5:1296:C:N4	2.39	0.55
2:1:49:ALA:HA	2:1:52:PHE:CE2	2.41	0.55
4:9:331:PHE:CD1	4:9:377:ILE:HG12	2.41	0.55
9:E:23:GLU:O	9:E:27:GLN:HG2	2.07	0.55
10:F:19:ASN:HB3	10:F:21:LEU:HG	1.88	0.55
17:M:42:LEU:HB2	17:M:45:ARG:HH11	1.71	0.55
23:S:32:VAL:HG12	23:S:36:HIS:CE1	2.41	0.55
27:c:59:ARG:HH12	51:3:494:G:H1	1.53	0.55
51:3:163:A:N3	51:3:2216:U:O2'	2.32	0.55
51:3:320:A:H2'	51:3:321:A:C8	2.41	0.55
51:3:939:U:H2'	51:3:940:A:H8	1.70	0.55
51:3:1508:G:OP2	51:3:1508:G:H4'	2.04	0.55
53:5:82:C:H2'	53:5:83:U:C6	2.42	0.55
53:5:111:A:H5'	53:5:630:G:H22	1.71	0.55
53:5:1320:A:N6	53:5:1350:A:N7	2.54	0.55
53:5:1412:C:H2'	53:5:1413:G:H8	1.71	0.55
4:9:62:THR:HG23	4:9:83:PRO:HB3	1.88	0.55
10:F:2:ARG:NH2	53:5:926:C:OP2	2.40	0.55
25:a:67:ARG:NH1	25:a:90:PRO:HD2	2.21	0.55
25:a:179:TYR:HB3	25:a:191:LYS:HD2	1.88	0.55
46:v:53:ARG:NH2	51:3:436:G:O6	2.39	0.55
50:z:36:LYS:HB2	50:z:47:HIS:CD2	2.41	0.55
51:3:17:G:H1	51:3:560:U:H3	1.54	0.55
51:3:1415:A:H2'	51:3:1416:G:C8	2.41	0.55
51:3:1867:G:H2'	51:3:1868:A:H8	1.68	0.55
51:3:1923:A:N1	53:5:1383:A:O2'	2.39	0.55
51:3:2274:A:OP1	51:3:2281:A:N6	2.32	0.55
51:3:2475:C:H42	51:3:2491:C:H42	1.54	0.55
53:5:541:C:H2'	53:5:542:G:H8	1.72	0.55
1:0:40:ALA:N	51:3:495:U:OP1	2.38	0.55
8:D:160:ILE:HG23	8:D:178:ILE:HG22	1.89	0.55
36:l:109:ILE:HD11	36:l:114:MET:HB3	1.88	0.55
43:s:25:LYS:HE3	43:s:90:ALA:HB2	1.88	0.55
51:3:959:C:H2'	51:3:960:A:C8	2.41	0.55
51:3:1001:C:H1'	51:3:2281:A:H2	1.72	0.55
51:3:1115:G:H2'	51:3:1116:U:H6	1.71	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1270:C:H2'	51:3:1271:A:C8	2.41	0.55
51:3:1777:G:H2'	51:3:1778:G:C8	2.41	0.55
51:3:1937:G:N2	51:3:1976:A:O5'	2.40	0.55
53:5:754:U:O2'	53:5:873:U:O2	2.25	0.55
4:9:59:ARG:HG2	4:9:61:ILE:HG23	1.87	0.55
5:A:29:HIS:CE1	5:A:61:GLN:HG3	2.42	0.55
10:F:107:ALA:HB1	10:F:119:ILE:HG22	1.89	0.55
15:K:120:VAL:HG11	15:K:130:TYR:HB3	1.88	0.55
17:M:6:LEU:HB3	17:M:23:ARG:HH22	1.72	0.55
22:R:18:LYS:HE2	22:R:31:ILE:HD11	1.88	0.55
27:c:80:ARG:NH1	51:3:505:G:OP1	2.39	0.55
39:o:27:ALA:HB2	39:o:55:ARG:HB3	1.88	0.55
51:3:1761:C:N4	51:3:2724:U:O2'	2.36	0.55
51:3:2584:G:O2'	51:3:2587:U:OP2	2.16	0.55
53:5:231:U:H2'	53:5:232:G:C8	2.42	0.55
53:5:474:G:C6	53:5:475:U:O4	2.59	0.55
53:5:673:A:H2'	53:5:674:U:H6	1.71	0.55
53:5:1182:C:H2'	53:5:1183:C:C6	2.41	0.55
53:5:1321:G:N2	53:5:1322:U:O4	2.35	0.55
4:9:117:ARG:HA	4:9:157:LEU:HD21	1.88	0.55
5:A:88:LYS:HB2	5:A:92:VAL:HB	1.88	0.55
5:A:95:LEU:O	5:A:99:ILE:HG12	2.06	0.55
7:C:123:LEU:HB2	7:C:145:LYS:HG2	1.89	0.55
37:m:100:VAL:HG22	37:m:116:LEU:HD23	1.87	0.55
45:u:34:ARG:NH1	51:3:2279:G:O2'	2.40	0.55
51:3:123:G:H2'	51:3:124:A:C8	2.42	0.55
51:3:140:G:H22	51:3:142:A:H3'	1.70	0.55
51:3:174:A:H2'	51:3:175:A:H8	1.71	0.55
51:3:225:A:H1'	51:3:237:A:H1'	1.89	0.55
51:3:556:U:H2'	51:3:557:G:C8	2.40	0.55
51:3:1199:A:H2'	51:3:1200:U:C6	2.41	0.55
51:3:2323:U:H2'	51:3:2324:A:C8	2.42	0.55
53:5:168:A:H3'	53:5:169:G:H8	1.70	0.55
54:6:68:G:H2'	54:6:69:A:H8	1.72	0.55
13:I:56:THR:HG22	13:I:70:GLN:HG2	1.89	0.55
15:K:47:CYS:O	15:K:90:HIS:ND1	2.39	0.55
51:3:1444:C:O2'	51:3:1445:U:O5'	2.24	0.55
51:3:2262:C:H2'	51:3:2263:G:H8	1.71	0.55
51:3:2548:G:O2'	51:3:2748:A:N3	2.32	0.55
51:3:2850:G:N2	51:3:2875:U:O2	2.40	0.55
53:5:707:G:H2'	53:5:708:A:H8	1.72	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1194:A:H2'	53:5:1195:G:H8	1.71	0.55
3:2:24:ARG:NH1	51:3:2750:A:OP1	2.39	0.55
11:G:99:ARG:HE	11:G:104:LEU:HD23	1.71	0.55
37:m:42:GLN:NE2	51:3:2842:G:O2'	2.22	0.55
41:q:65:GLN:HG3	41:q:87:GLN:O	2.07	0.55
51:3:1311:G:N1	51:3:1314:A:OP2	2.40	0.55
51:3:2278:G:H3'	51:3:2279:G:H8	1.70	0.55
51:3:2548:G:H2'	51:3:2549:A:O4'	2.07	0.55
53:5:421:G:H2'	53:5:422:A:C8	2.41	0.55
53:5:515:G:H1	53:5:530:A:H4'	1.70	0.55
53:5:1006:A:H2'	53:5:1007:U:C6	2.42	0.55
5:A:164:GLY:O	5:A:167:LYS:NZ	2.34	0.55
6:B:32:LYS:HD2	6:B:33:TRP:HD1	1.71	0.55
7:C:134:ILE:HG13	53:5:618:U:H5'	1.88	0.55
25:a:109:ILE:HG22	25:a:110:ILE:H	1.70	0.55
34:j:91:LYS:O	34:j:113:LYS:HG3	2.07	0.55
42:r:79:GLY:H	42:r:101:SER:HA	1.72	0.55
43:s:3:VAL:HG13	43:s:5:ASN:H	1.72	0.55
51:3:277:C:H42	51:3:293:G:H21	1.55	0.55
51:3:453:U:H2'	51:3:454:G:C8	2.42	0.55
51:3:558:C:O5'	51:3:575:C:O2'	2.23	0.55
51:3:982:G:H2'	51:3:983:A:H8	1.72	0.55
51:3:1409:G:H2'	51:3:1410:A:H8	1.71	0.55
51:3:2111:U:N3	51:3:2194:G:N3	2.55	0.55
51:3:2150:C:H2'	51:3:2151:G:O4'	2.07	0.55
53:5:1245:A:H2'	53:5:1246:A:H8	1.71	0.55
1:0:8:SER:OG	51:3:721:G:N2	2.39	0.55
13:I:50:THR:HA	13:I:75:ARG:O	2.07	0.55
36:l:62:GLY:HA2	36:l:108:ASN:HB3	1.89	0.55
51:3:733:C:O2'	51:3:769:A:N6	2.23	0.55
51:3:935:U:H2'	51:3:936:G:C4	2.42	0.55
51:3:947:A:H2'	51:3:948:A:C5	2.42	0.55
51:3:2630:U:H2'	51:3:2631:G:C8	2.41	0.55
53:5:674:U:O2	53:5:774:A:O2'	2.25	0.55
53:5:803:C:H2'	53:5:804:A:H8	1.72	0.55
53:5:1229:A:H2'	53:5:1230:G:C8	2.42	0.55
10:F:21:LEU:O	10:F:25:ILE:HG12	2.07	0.54
25:a:159:GLN:NE2	51:3:1825:U:H3	2.04	0.54
27:c:30:LYS:NZ	51:3:633:G:OP1	2.39	0.54
34:j:1:MET:HE2	34:j:1:MET:N	2.22	0.54
40:p:2:ARG:HH22	51:3:485:A:H1'	1.71	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:755:C:H2'	51:3:756:A:H8	1.72	0.54
51:3:1111:C:H2'	51:3:1112:A:C8	2.36	0.54
51:3:1122:G:O6	51:3:1124:G:N2	2.40	0.54
51:3:1606:A:C2	51:3:1607:G:H1'	2.43	0.54
51:3:2586:G:OP1	51:3:2622:A:N6	2.39	0.54
53:5:534:C:H2'	53:5:535:A:C8	2.42	0.54
53:5:1058:A:H1'	53:5:1059:G:C8	2.42	0.54
53:5:1186:U:O2'	53:5:1188:A:N7	2.39	0.54
11:G:127:VAL:HG22	11:G:131:LYS:HG3	1.90	0.54
15:K:81:PRO:HB2	15:K:130:TYR:HE1	1.72	0.54
18:N:25:GLN:HG2	53:5:654:U:H4'	1.89	0.54
20:P:35:TYR:HB3	20:P:37:LYS:NZ	2.23	0.54
30:f:94:THR:OG1	30:f:118:ARG:NH2	2.39	0.54
38:n:27:ARG:NH1	38:n:115:ASN:O	2.41	0.54
40:p:106:ASN:HA	40:p:109:VAL:HG22	1.89	0.54
50:z:22:PHE:HE2	51:3:2293:C:H5	1.53	0.54
51:3:197:U:H2'	51:3:198:G:C8	2.42	0.54
51:3:603:G:O4'	51:3:1019:A:N6	2.40	0.54
51:3:1460:G:H2'	51:3:1461:A:C8	2.42	0.54
52:4:60:C:H2'	52:4:61:A:H8	1.71	0.54
53:5:83:U:H2'	53:5:84:U:C6	2.42	0.54
53:5:662:G:H1'	53:5:730:G:H5'	1.88	0.54
53:5:881:G:N1	53:5:905:U:N3	2.55	0.54
53:5:1068:G:O2'	53:5:1070:G:O6	2.25	0.54
53:5:1498:G:H2'	53:5:1499:G:H8	1.71	0.54
6:B:180:THR:HG22	53:5:1102:A:H2	1.71	0.54
36:l:27:VAL:HG13	36:l:134:ARG:HA	1.87	0.54
51:3:1451:A:H2'	51:3:1452:G:C8	2.42	0.54
51:3:2037:A:H1'	51:3:2507:C:H4'	1.89	0.54
51:3:2405:G:N2	51:3:2427:U:O2	2.34	0.54
51:3:2684:G:H2'	51:3:2685:A:C8	2.42	0.54
53:5:1218:C:H2'	53:5:1219:C:C6	2.42	0.54
53:5:1385:A:H2'	53:5:1386:C:C6	2.43	0.54
4:9:260:GLU:HG3	4:9:265:GLU:HA	1.90	0.54
11:G:108:LEU:HB3	11:G:111:LEU:HB2	1.90	0.54
21:Q:94:ARG:HD3	21:Q:101:PHE:HD1	1.73	0.54
24:T:31:ARG:NH1	53:5:716:C:OP1	2.40	0.54
27:c:47:GLN:NE2	51:3:477:U:O2	2.40	0.54
28:d:15:GLU:HA	28:d:18:LYS:HG2	1.89	0.54
51:3:764:G:H1'	51:3:799:A:H5'	1.89	0.54
51:3:901:C:N4	51:3:946:A:N7	2.56	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1713:U:H1'	51:3:1996:A:H2	1.71	0.54
51:3:1979:G:H2'	51:3:1980:G:C8	2.41	0.54
51:3:2484:A:H2'	51:3:2485:U:C6	2.43	0.54
51:3:2565:G:H2'	51:3:2566:C:C6	2.43	0.54
53:5:295:G:H2'	53:5:296:A:C4	2.43	0.54
53:5:1436:C:H2'	53:5:1437:A:C8	2.43	0.54
1:0:16:HIS:O	1:0:21:ARG:NE	2.31	0.54
4:9:98:GLN:HE21	4:9:231:ARG:HB2	1.73	0.54
9:E:36:GLN:HB2	9:E:61:LYS:HE2	1.89	0.54
22:R:42:PRO:HD3	22:R:67:VAL:HG11	1.88	0.54
26:b:86:ASN:C	26:b:87:MET:HE2	2.33	0.54
33:i:23:ALA:HB1	33:i:65:VAL:HB	1.88	0.54
37:m:21:GLN:OE1	51:3:1305:G:O2'	2.24	0.54
51:3:857:U:H2'	51:3:858:A:C8	2.43	0.54
51:3:963:U:H2'	51:3:964:A:H8	1.72	0.54
51:3:1265:G:H2'	51:3:1266:G:C4	2.43	0.54
51:3:2476:A:O2'	51:3:2489:G:N2	2.30	0.54
53:5:145:G:N2	53:5:147:A:H3'	2.22	0.54
53:5:412:G:N2	53:5:424:U:O2	2.36	0.54
53:5:704:U:H2'	53:5:705:A:H8	1.73	0.54
53:5:788:G:N2	53:5:1472:G:OP1	2.41	0.54
53:5:1112:U:H2'	53:5:1113:U:C6	2.43	0.54
7:C:144:LEU:HD23	7:C:144:LEU:H	1.73	0.54
8:D:88:PHE:HZ	8:D:111:VAL:HA	1.73	0.54
16:L:74:ALA:O	16:L:78:LYS:HG2	2.08	0.54
37:m:42:GLN:HE22	51:3:2842:G:HO2'	1.53	0.54
37:m:69:ASN:ND2	51:3:1322:A:O5'	2.37	0.54
41:q:36:ASP:OD1	41:q:37:LYS:N	2.40	0.54
47:w:19:VAL:HG12	47:w:23:LYS:HE2	1.88	0.54
51:3:857:U:H2'	51:3:858:A:H8	1.72	0.54
51:3:1755:A:H2'	51:3:1756:A:C8	2.43	0.54
51:3:2018:U:H2'	51:3:2019:G:O4'	2.07	0.54
51:3:2589:G:N2	51:3:2618:C:OP2	2.40	0.54
53:5:191:A:H2'	53:5:192:A:C8	2.43	0.54
53:5:670:G:H2'	53:5:671:G:C8	2.43	0.54
53:5:1294:U:N3	53:5:1295:U:O4	2.40	0.54
5:A:91:TYR:HE2	5:A:226:CYS:HB3	1.73	0.54
6:B:10:LEU:O	17:M:57:LYS:NZ	2.33	0.54
7:C:151:ILE:HB	7:C:154:VAL:HG12	1.90	0.54
30:f:32:PRO:HD2	30:f:111:PHE:CE2	2.43	0.54
48:x:12:VAL:HB	48:x:27:SER:HB2	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:445:C:H2'	51:3:446:A:C8	2.43	0.54
51:3:622:U:H2'	51:3:623:A:H8	1.73	0.54
51:3:909:U:H2'	51:3:910:G:C8	2.43	0.54
51:3:962:U:H2'	51:3:963:U:C6	2.43	0.54
51:3:989:G:O6	51:3:1000:U:O4	2.24	0.54
51:3:1473:C:H2'	51:3:1474:C:C6	2.43	0.54
51:3:1928:G:H2'	51:3:1929:G:C8	2.43	0.54
51:3:2057:C:H42	51:3:2626:A:H61	1.56	0.54
51:3:2539:A:N6	51:3:2670:A:H61	2.05	0.54
53:5:304:U:H2'	53:5:305:A:C8	2.38	0.54
53:5:1065:G:O6	53:5:1074:U:O4	2.26	0.54
53:5:1505:G:N2	53:5:1506:A:H62	2.05	0.54
54:7:30:G:H2'	54:7:31:G:C8	2.42	0.54
54:7:68:G:H2'	54:7:69:A:H8	1.72	0.54
4:9:280:ARG:NH1	53:5:363:U:OP1	2.41	0.54
11:G:134:GLY:O	53:5:597:C:O2'	2.20	0.54
15:K:81:PRO:HG3	15:K:110:ILE:H	1.71	0.54
21:Q:73:ARG:NH2	53:5:718:A:OP2	2.40	0.54
25:a:9:ARG:HH11	51:3:762:A:H61	1.55	0.54
29:e:24:HIS:ND1	29:e:37:LYS:HA	2.23	0.54
46:v:55:LEU:HG	46:v:59:LYS:NZ	2.23	0.54
51:3:339:U:H2'	51:3:340:U:C6	2.43	0.54
51:3:442:G:N1	51:3:457:U:C2	2.75	0.54
51:3:677:U:O2	51:3:683:G:O6	2.26	0.54
51:3:684:A:H2'	51:3:685:G:C8	2.41	0.54
51:3:1255:G:O2'	51:3:1256:A:O4'	2.26	0.54
51:3:1546:U:H3'	51:3:1547:G:C8	2.42	0.54
51:3:1807:C:O2	51:3:1824:G:O6	2.26	0.54
51:3:1943:A:H8	51:3:1950:U:H3	1.54	0.54
51:3:2082:U:OP2	51:3:2246:G:O2'	2.21	0.54
51:3:2607:G:H2'	51:3:2608:A:H8	1.72	0.54
51:3:2842:G:H2'	51:3:2843:G:H8	1.73	0.54
51:3:2848:A:H2'	51:3:2849:G:C8	2.42	0.54
51:3:2896:G:H5'	51:3:2897:G:H21	1.72	0.54
53:5:1261:A:H2'	53:5:1262:A:H8	1.72	0.54
6:B:76:PHE:O	6:B:84:ASN:ND2	2.41	0.54
11:G:45:LEU:O	11:G:49:VAL:HG23	2.08	0.54
14:J:116:PRO:HD2	24:T:35:HIS:HB2	1.90	0.54
37:m:102:LYS:HB2	49:y:48:TYR:CE1	2.43	0.54
51:3:455:G:H2'	51:3:456:G:C8	2.43	0.54
51:3:625:G:N2	51:3:700:U:O2	2.24	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:674:G:H2'	51:3:675:U:C6	2.43	0.54
51:3:1473:C:O2	51:3:1580:G:N2	2.41	0.54
51:3:1913:G:O5'	51:3:1936:G:O2'	2.26	0.54
51:3:2291:U:O4	51:3:2292:A:N6	2.41	0.54
51:3:2832:G:H2'	51:3:2833:A:H8	1.73	0.54
53:5:245:U:O4	53:5:271:G:O6	2.26	0.54
53:5:292:U:H2'	53:5:293:G:C8	2.43	0.54
53:5:662:G:H21	53:5:729:C:H3'	1.73	0.54
53:5:735:C:H2'	53:5:736:U:C6	2.42	0.54
53:5:787:A:H4'	53:5:788:G:OP1	2.08	0.54
53:5:882:U:H3'	53:5:883:A:H8	1.73	0.54
53:5:969:A:H4'	53:5:970:A:H3'	1.90	0.54
53:5:1355:U:O2	53:5:1357:C:N4	2.39	0.54
2:1:1:MET:HE1	51:3:625:G:H21	1.71	0.54
8:D:110:GLU:CD	8:D:112:PRO:HD2	2.32	0.54
8:D:212:ARG:HD2	11:G:83:SER:OG	2.08	0.54
18:N:18:ASP:HA	53:5:747:C:H4'	1.88	0.54
39:o:95:LYS:HE3	39:o:113:LYS:HD2	1.90	0.54
40:p:65:ASN:ND2	51:3:1047:A:OP2	2.41	0.54
42:r:24:ILE:HA	42:r:27:LYS:HD2	1.90	0.54
51:3:348:A:H2'	51:3:349:G:C8	2.43	0.54
51:3:373:U:H2'	51:3:374:A:H8	1.73	0.54
51:3:1461:A:H2'	51:3:1462:A:C8	2.43	0.54
51:3:2533:A:H2'	51:3:2534:G:H8	1.73	0.54
53:5:331:C:O2'	53:5:1408:A:N3	2.35	0.54
53:5:1142:G:H1'	53:5:1145:A:N6	2.23	0.54
4:9:246:VAL:HG13	4:9:292:VAL:HG23	1.89	0.53
8:D:66:PHE:N	8:D:95:GLY:O	2.41	0.53
10:F:74:LEU:HD12	10:F:85:GLN:HG3	1.89	0.53
13:I:28:THR:HG21	13:I:78:ARG:HH21	1.72	0.53
42:r:82:MET:HB3	42:r:98:LYS:HB2	1.90	0.53
47:w:53:THR:HG22	51:3:79:U:H5'	1.90	0.53
50:z:33:ALA:HA	50:z:48:LYS:HG3	1.90	0.53
51:3:535:G:N2	51:3:540:A:H62	2.06	0.53
51:3:634:C:H2'	51:3:635:G:O4'	2.08	0.53
51:3:678:U:HO2'	51:3:2357:G:HO2'	1.55	0.53
51:3:714:G:H2'	51:3:715:G:C8	2.43	0.53
51:3:1227:C:H2'	51:3:1228:G:C8	2.43	0.53
51:3:2017:G:H2'	51:3:2018:U:H6	1.74	0.53
51:3:2053:G:O6	51:3:2630:U:O2	2.26	0.53
53:5:1127:A:O2'	53:5:1128:G:H5''	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1433:G:H2'	53:5:1434:C:C6	2.44	0.53
4:9:244:GLU:HG3	4:9:296:PRO:HD3	1.90	0.53
28:d:34:ILE:HD12	28:d:91:LEU:HD11	1.90	0.53
28:d:35:VAL:HA	28:d:89:VAL:O	2.08	0.53
29:e:161:LYS:HG2	29:e:163:LYS:HG2	1.90	0.53
34:j:36:GLY:HA3	34:j:109:ARG:HH12	1.73	0.53
34:j:67:LYS:HB2	51:3:1699:A:H5'	1.89	0.53
36:l:10:ARG:HH21	51:3:2286:A:H4'	1.73	0.53
46:v:10:ARG:NH2	46:v:51:SER:OG	2.36	0.53
46:v:26:ARG:NH2	51:3:209:G:O6	2.41	0.53
51:3:269:A:H2'	51:3:464:A:N6	2.23	0.53
51:3:738:U:H3	51:3:763:G:H1	1.55	0.53
51:3:756:A:H2'	51:3:757:A:C8	2.44	0.53
51:3:1495:A:H2'	51:3:1496:A:H8	1.73	0.53
51:3:2125:U:OP1	51:3:2170:A:N6	2.40	0.53
51:3:2413:G:H1'	51:3:2420:A:H61	1.74	0.53
51:3:2475:C:H42	51:3:2491:C:N4	2.06	0.53
51:3:2819:C:H2'	51:3:2820:G:C8	2.40	0.53
51:3:2888:U:O2'	51:3:2889:U:H5''	2.08	0.53
53:5:316:G:H2'	53:5:317:A:H8	1.72	0.53
53:5:543:C:H2'	53:5:544:A:H8	1.73	0.53
53:5:1289:U:O2'	53:5:1334:A:O2'	2.17	0.53
2:1:49:ALA:HA	2:1:52:PHE:HE2	1.72	0.53
4:9:331:PHE:CD2	4:9:363:LEU:HD21	2.44	0.53
6:B:187:TYR:OH	6:B:202:LYS:HE3	2.08	0.53
25:a:190:ARG:HH11	25:a:192:PHE:HE1	1.55	0.53
26:b:123:ILE:HD13	26:b:142:ARG:HG2	1.90	0.53
29:e:80:ILE:HG13	29:e:86:PHE:HZ	1.74	0.53
43:s:85:LEU:HD21	43:s:90:ALA:HA	1.90	0.53
51:3:997:G:O2'	51:3:2038:A:N6	2.40	0.53
51:3:2056:A:H2'	51:3:2057:C:C6	2.43	0.53
51:3:2121:A:C2	51:3:2176:G:H1'	2.43	0.53
51:3:2330:A:H2'	51:3:2331:G:C8	2.44	0.53
51:3:2425:C:H2'	51:3:2426:A:C8	2.44	0.53
51:3:2502:G:H2'	51:3:2503:G:H8	1.74	0.53
51:3:2528:C:HO2'	51:3:2573:A:HO2'	1.57	0.53
53:5:655:G:O6	53:5:744:U:O4	2.26	0.53
53:5:1047:U:H2'	53:5:1048:G:H8	1.73	0.53
53:5:1320:A:H62	53:5:1349:A:H3'	1.73	0.53
54:7:13:U:O4	54:7:25:G:O6	2.27	0.53
11:G:8:ILE:HG21	11:G:34:THR:HG23	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:I:70:GLN:NE2	53:5:1343:G:OP2	2.42	0.53
15:K:81:PRO:HB2	15:K:130:TYR:CE1	2.43	0.53
21:Q:94:ARG:HD3	21:Q:101:PHE:HA	1.89	0.53
33:i:76:PHE:HB3	33:i:89:LYS:HG2	1.91	0.53
45:u:46:ARG:NH2	51:3:2361:G:O2'	2.41	0.53
51:3:53:G:H1'	51:3:119:A:H61	1.74	0.53
51:3:80:U:H2'	51:3:81:C:C6	2.44	0.53
51:3:503:G:O2'	51:3:832:C:OP1	2.26	0.53
51:3:519:A:OP2	51:3:520:C:N4	2.36	0.53
51:3:1115:G:H2'	51:3:1116:U:C6	2.43	0.53
51:3:1527:U:H2'	51:3:1528:G:H8	1.72	0.53
51:3:1721:G:H21	51:3:1735:A:H8	1.56	0.53
51:3:2120:G:H22	51:3:2176:G:H4'	1.73	0.53
52:4:73:U:H5	52:4:74:G:C5	2.27	0.53
53:5:37:C:O2'	53:5:499:U:OP1	2.26	0.53
53:5:108:C:OP1	53:5:307:C:O2'	2.27	0.53
53:5:460:A:C6	53:5:467:G:O6	2.62	0.53
53:5:887:C:H2'	53:5:888:A:H8	1.73	0.53
54:7:68:G:H2'	54:7:69:A:C8	2.43	0.53
2:1:25:TYR:HA	51:3:2400:A:H4'	1.91	0.53
11:G:44:ILE:HG22	11:G:122:VAL:HG11	1.89	0.53
51:3:590:U:H2'	51:3:591:G:C8	2.43	0.53
51:3:1007:C:OP1	51:3:1025:G:N1	2.41	0.53
51:3:1886:C:H2'	51:3:1887:U:C6	2.44	0.53
51:3:2095:A:H2'	51:3:2096:U:C6	2.43	0.53
51:3:2547:C:H2'	51:3:2548:G:H8	1.74	0.53
52:4:95:G:H2'	52:4:96:G:C8	2.43	0.53
53:5:474:G:H2'	53:5:475:U:C6	2.44	0.53
5:A:246:PHE:CE1	5:A:253:GLU:HB3	2.43	0.53
15:K:94:LEU:O	15:K:111:VAL:N	2.29	0.53
22:R:48:THR:HG22	22:R:61:TYR:HA	1.90	0.53
27:c:26:ALA:H	27:c:117:SER:HB3	1.73	0.53
28:d:33:LYS:HD3	28:d:92:ARG:HH22	1.74	0.53
37:m:70:THR:HG23	37:m:72:LEU:H	1.74	0.53
51:3:15:A:O4'	51:3:561:A:N6	2.42	0.53
51:3:562:C:N4	51:3:2787:U:OP2	2.40	0.53
51:3:823:A:H5''	51:3:825:U:H5	1.74	0.53
51:3:1589:A:H2'	51:3:1590:U:C6	2.43	0.53
51:3:1956:G:H2'	51:3:1957:G:H8	1.74	0.53
51:3:2002:U:H3'	51:3:2003:C:H2'	1.90	0.53
51:3:2058:G:N2	51:3:2059:G:O6	2.41	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2084:A:N3	51:3:2442:A:O2'	2.38	0.53
51:3:2539:A:H61	51:3:2670:A:H61	1.55	0.53
51:3:2629:G:H2'	51:3:2630:U:O4'	2.08	0.53
53:5:73:G:H2'	53:5:74:U:C6	2.44	0.53
53:5:480:C:C5	53:5:481:U:H2'	2.43	0.53
53:5:499:U:H2'	53:5:500:G:C8	2.44	0.53
53:5:675:U:H2'	53:5:676:U:C6	2.43	0.53
53:5:770:G:N1	53:5:804:A:C6	2.77	0.53
53:5:877:C:H2'	53:5:878:U:C6	2.43	0.53
53:5:974:C:O2'	53:5:1195:G:OP2	2.19	0.53
53:5:1487:U:O2	53:5:1498:G:N2	2.31	0.53
54:6:13:U:O4	54:6:25:G:O6	2.27	0.53
4:9:380:GLY:HA3	4:9:382:ARG:HH11	1.74	0.53
14:J:45:PHE:CD1	14:J:49:ARG:HB3	2.39	0.53
17:M:32:ALA:HA	53:5:970:A:O2'	2.09	0.53
23:S:64:ARG:NH2	53:5:257:U:OP1	2.42	0.53
30:f:1:MET:HG2	30:f:29:PHE:HD1	1.74	0.53
51:3:178:A:H2'	51:3:179:A:C8	2.44	0.53
51:3:440:C:H6	51:3:442:G:C2	2.26	0.53
51:3:2003:C:H4'	51:3:2004:G:H5'	1.90	0.53
51:3:2022:A:O2'	51:3:2064:G:O2'	2.14	0.53
51:3:2094:A:H2'	51:3:2095:A:H8	1.74	0.53
53:5:290:G:H2'	53:5:291:C:H6	1.73	0.53
53:5:648:C:N3	53:5:750:A:N7	2.57	0.53
53:5:659:U:O2	53:5:740:G:N2	2.37	0.53
53:5:710:G:H2'	53:5:711:G:C8	2.43	0.53
53:5:1211:A:H2'	53:5:1212:C:C6	2.44	0.53
53:5:1349:A:H2'	53:5:1350:A:C8	2.44	0.53
10:F:24:ARG:HH11	10:F:100:LEU:HD13	1.73	0.53
11:G:37:ALA:HB2	11:G:70:VAL:HG13	1.91	0.53
33:i:76:PHE:CD2	33:i:89:LYS:HD3	2.44	0.53
36:l:120:ARG:NE	51:3:2475:C:O2'	2.40	0.53
40:p:96:GLU:O	40:p:100:LYS:NZ	2.42	0.53
51:3:580:U:OP1	51:3:1249:A:O2'	2.27	0.53
51:3:875:G:H2'	51:3:876:A:H8	1.74	0.53
51:3:899:A:H2'	51:3:900:G:C8	2.44	0.53
51:3:914:G:H21	51:3:937:A:H62	1.55	0.53
51:3:1764:U:C2	51:3:1769:A:N6	2.77	0.53
51:3:2072:C:H2'	51:3:2073:C:C6	2.42	0.53
51:3:2133:A:N3	51:3:2171:A:O2'	2.42	0.53
53:5:303:A:H2'	53:5:304:U:C6	2.44	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:754:U:H2'	53:5:755:U:O4'	2.08	0.53
54:6:68:G:H2'	54:6:69:A:C8	2.43	0.53
4:9:88:TYR:HE1	54:6:3:G:H4'	1.73	0.53
4:9:245:ILE:O	4:9:251:ILE:HA	2.09	0.53
16:L:101:ARG:O	16:L:106:ALA:HB3	2.09	0.53
27:c:105:LYS:HG3	51:3:641:U:OP2	2.09	0.53
34:j:66:LYS:NZ	51:3:1699:A:H5''	2.23	0.53
51:3:411:U:OP2	51:3:436:G:N1	2.42	0.53
51:3:580:U:H5	51:3:1249:A:H2'	1.74	0.53
51:3:590:U:H2'	51:3:591:G:H8	1.73	0.53
53:5:536:U:H2'	53:5:537:A:C8	2.44	0.53
4:9:97:ALA:HA	4:9:334:ARG:HH11	1.74	0.53
4:9:120:ILE:HD12	4:9:157:LEU:HD23	1.91	0.53
5:A:20:LEU:HG	5:A:21:ALA:H	1.74	0.53
9:E:4:ASN:ND2	9:E:59:ARG:HG3	2.24	0.53
16:L:52:GLU:HG3	16:L:56:ILE:HG23	1.91	0.53
18:N:21:SER:HB2	18:N:23:GLN:HE22	1.74	0.53
26:b:198:ALA:HB2	51:3:2687:A:H4'	1.91	0.53
37:m:16:MET:HG3	37:m:19:ARG:NH2	2.24	0.53
51:3:1845:C:O2	51:3:1908:A:N6	2.42	0.53
53:5:663:G:N2	53:5:737:U:O2	2.38	0.53
53:5:1055:G:N2	53:5:1165:G:O3'	2.42	0.53
1:0:5:TYR:HB2	51:3:500:U:C4	2.44	0.52
8:D:162:ALA:HB1	8:D:166:ILE:HB	1.91	0.52
14:J:43:MET:SD	14:J:45:PHE:N	2.80	0.52
19:O:7:HIS:NE2	53:5:389:A:OP1	2.40	0.52
19:O:11:TYR:O	19:O:33:LEU:HB3	2.09	0.52
21:Q:63:PHE:HB3	21:Q:76:THR:HG22	1.89	0.52
25:a:127:PRO:HB3	25:a:140:PHE:CD2	2.45	0.52
35:k:69:ARG:HH21	51:3:669:A:H4'	1.73	0.52
37:m:76:ASP:OD1	37:m:77:GLN:N	2.42	0.52
51:3:84:G:H21	51:3:105:U:H5	1.55	0.52
51:3:852:C:H2'	51:3:853:G:O4'	2.09	0.52
51:3:1033:A:H2'	51:3:1034:A:C8	2.43	0.52
51:3:1499:C:H2'	51:3:1500:A:H8	1.74	0.52
51:3:1777:G:H1	51:3:1989:U:H3	1.57	0.52
51:3:1855:A:H3'	51:3:1856:G:H8	1.74	0.52
51:3:2151:G:O2'	51:3:2154:A:N6	2.42	0.52
51:3:2303:U:H2'	51:3:2304:U:H6	1.74	0.52
51:3:2693:U:H2'	51:3:2694:A:C8	2.44	0.52
53:5:19:C:H2'	53:5:20:C:H6	1.74	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:551:A:H2'	53:5:552:U:H6	1.75	0.52
53:5:582:G:H2'	53:5:583:G:H8	1.73	0.52
53:5:611:A:H2'	53:5:612:G:H8	1.73	0.52
53:5:1388:A:N1	53:5:1462:G:C6	2.77	0.52
6:B:114:LEU:HB2	6:B:207:ARG:HB3	1.91	0.52
13:I:12:LEU:HB2	13:I:85:VAL:HG11	1.89	0.52
16:L:110:LYS:NZ	53:5:1202:A:OP2	2.28	0.52
26:b:34:ASN:HB3	26:b:52:LEU:HD12	1.92	0.52
27:c:52:ILE:HD11	27:c:89:ILE:HB	1.90	0.52
51:3:874:U:H3	51:3:975:G:H1	1.57	0.52
51:3:1334:U:H2'	51:3:1335:A:H8	1.74	0.52
51:3:1495:A:OP2	51:3:1548:A:N6	2.41	0.52
51:3:2075:U:H3	51:3:2438:A:H62	1.58	0.52
51:3:2465:U:O4	51:3:2502:G:O6	2.26	0.52
52:4:23:A:H3'	52:4:24:A:H8	1.73	0.52
52:4:43:A:C2	52:4:44:A:H1'	2.44	0.52
53:5:13:U:O2	53:5:23:G:O6	2.26	0.52
53:5:768:G:O6	53:5:806:A:N6	2.42	0.52
53:5:941:A:H2'	53:5:942:G:C8	2.45	0.52
53:5:962:G:OP2	53:5:963:U:O2'	2.26	0.52
53:5:1266:U:H2'	53:5:1267:G:H8	1.75	0.52
5:A:35:ARG:HE	5:A:37:TRP:NE1	2.06	0.52
13:I:29:LYS:HA	13:I:32:VAL:HG12	1.91	0.52
27:c:115:VAL:HA	27:c:118:GLU:HG2	1.92	0.52
28:d:24:SER:N	28:d:27:GLN:OE1	2.42	0.52
34:j:9:ASN:N	34:j:82:ASN:O	2.37	0.52
42:r:122:LYS:HA	42:r:125:VAL:HG12	1.92	0.52
45:u:61:PRO:O	45:u:94:ARG:NH2	2.42	0.52
49:y:6:ARG:HH22	51:3:2026:A:H3'	1.72	0.52
51:3:517:G:N1	51:3:542:A:H1'	2.24	0.52
51:3:1217:G:H2'	51:3:1218:G:O4'	2.09	0.52
51:3:1480:A:O2'	51:3:2710:G:O6	2.19	0.52
51:3:1764:U:O4	51:3:1769:A:N7	2.43	0.52
51:3:2003:C:N4	51:3:2734:C:H5''	2.24	0.52
51:3:2061:A:N6	51:3:2585:A:H2	2.06	0.52
51:3:2073:C:N4	51:3:2074:G:O6	2.42	0.52
51:3:2764:U:H4'	51:3:2765:A:OP1	2.08	0.52
53:5:63:U:H2'	53:5:64:C:H6	1.74	0.52
53:5:130:G:H2'	53:5:131:G:C8	2.43	0.52
53:5:171:A:H2'	53:5:172:C:C6	2.44	0.52
53:5:233:C:H2'	53:5:234:G:C8	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:254:G:H2'	53:5:255:G:C8	2.41	0.52
53:5:947:U:OP1	53:5:967:C:N4	2.42	0.52
53:5:1058:A:N6	53:5:1100:C:H5'	2.23	0.52
4:9:331:PHE:N	4:9:338:VAL:O	2.40	0.52
9:E:20:GLN:HA	9:E:23:GLU:CD	2.34	0.52
14:J:119:ARG:HG3	24:T:34:TYR:CZ	2.44	0.52
25:a:126:HIS:HB3	25:a:127:PRO:HD2	1.92	0.52
28:d:17:GLN:NE2	28:d:25:ILE:HG12	2.22	0.52
35:k:53:GLY:O	51:3:866:G:N2	2.43	0.52
51:3:20:C:O2'	51:3:587:U:H5''	2.09	0.52
51:3:165:U:O2'	51:3:168:A:N6	2.42	0.52
51:3:197:U:H2'	51:3:198:G:H8	1.74	0.52
51:3:252:G:H5'	51:3:254:G:C6	2.44	0.52
51:3:425:U:H4'	51:3:426:U:OP2	2.08	0.52
51:3:820:U:H2'	51:3:821:C:C6	2.45	0.52
51:3:868:C:H2'	51:3:869:U:H6	1.74	0.52
51:3:1073:A:H2'	51:3:1074:A:H8	1.72	0.52
51:3:1800:C:O2'	51:3:1907:A:N6	2.42	0.52
51:3:2729:A:C4	51:3:2730:G:H1'	2.43	0.52
51:3:2752:G:H2'	51:3:2753:C:C6	2.44	0.52
51:3:2764:U:H1'	51:3:2765:A:H5''	1.91	0.52
51:3:2879:U:H2'	51:3:2880:A:C8	2.44	0.52
53:5:152:U:H2'	53:5:153:A:C8	2.45	0.52
53:5:660:A:N1	53:5:739:G:N2	2.57	0.52
53:5:691:A:N6	53:5:784:A:O2'	2.29	0.52
53:5:1225:A:H2	53:5:1345:G:H1'	1.74	0.52
53:5:1488:A:H2'	53:5:1489:C:C6	2.44	0.52
4:9:252:ARG:NH1	4:9:281:GLY:O	2.42	0.52
25:a:73:ARG:NH1	25:a:199:THR:OG1	2.42	0.52
25:a:220:ARG:NH1	51:3:799:A:N3	2.54	0.52
38:n:27:ARG:NH2	38:n:89:VAL:O	2.43	0.52
39:o:63:THR:HG22	39:o:80:GLN:HG3	1.92	0.52
51:3:500:U:H2'	51:3:501:G:C8	2.45	0.52
51:3:598:G:O4'	51:3:1283:A:N6	2.42	0.52
51:3:1911:G:H2'	51:3:1912:C:O4'	2.10	0.52
51:3:2249:A:H2'	51:3:2250:G:C8	2.44	0.52
51:3:2363:C:H2'	51:3:2364:A:C8	2.45	0.52
51:3:2575:G:H2'	51:3:2576:A:C8	2.45	0.52
53:5:55:C:N4	53:5:349:A:OP2	2.42	0.52
53:5:170:A:H2'	53:5:171:A:C8	2.44	0.52
53:5:249:U:H2'	53:5:250:G:C8	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:292:U:H2'	53:5:293:G:H8	1.75	0.52
53:5:554:C:H2'	53:5:555:G:C8	2.44	0.52
53:5:712:A:H2'	53:5:713:A:C8	2.45	0.52
53:5:772:G:N2	53:5:802:C:N3	2.58	0.52
53:5:1287:G:H2'	53:5:1288:C:C6	2.45	0.52
53:5:1333:C:O2'	53:5:1335:G:N7	2.34	0.52
2:1:28:HIS:NE2	51:3:2429:G:OP2	2.40	0.52
3:2:18:LYS:N	3:2:18:LYS:HD2	2.24	0.52
5:A:47:PRO:HB2	5:A:49:ARG:HH22	1.75	0.52
6:B:159:ARG:HD3	6:B:197:GLY:HA3	1.92	0.52
10:F:21:LEU:HD13	10:F:61:PHE:CE2	2.44	0.52
10:F:104:ALA:HB1	10:F:108:ARG:HH12	1.75	0.52
15:K:26:TYR:HD2	15:K:74:PHE:HE2	1.57	0.52
16:L:16:GLU:O	16:L:20:THR:HG23	2.10	0.52
19:O:22:ARG:HH12	53:5:386:U:H4'	1.74	0.52
25:a:136:MET:HE2	25:a:137:PRO:O	2.10	0.52
29:e:159:PRO:O	29:e:174:ARG:NH2	2.42	0.52
30:f:2:LYS:HA	30:f:39:LEU:HD21	1.90	0.52
51:3:94:A:H3'	51:3:95:G:C8	2.44	0.52
51:3:714:G:H2'	51:3:715:G:H8	1.74	0.52
51:3:861:U:O2	51:3:866:G:N2	2.37	0.52
51:3:1184:U:H2'	51:3:1185:U:C6	2.45	0.52
51:3:1659:C:H2'	51:3:1660:A:O4'	2.09	0.52
51:3:2015:C:H2'	51:3:2016:G:C8	2.44	0.52
51:3:2035:U:C2	51:3:2040:A:N7	2.78	0.52
51:3:2305:C:H2'	51:3:2306:A:C8	2.43	0.52
51:3:2534:G:H2'	51:3:2535:C:C6	2.44	0.52
53:5:71:A:H2'	53:5:72:A:C8	2.45	0.52
53:5:334:A:H2'	53:5:335:C:H6	1.73	0.52
53:5:631:C:H2'	53:5:632:A:C8	2.44	0.52
53:5:660:A:N6	53:5:739:G:H1	2.07	0.52
53:5:939:G:N1	53:5:1312:G:OP2	2.30	0.52
53:5:1267:G:C6	53:5:1268:G:C6	2.98	0.52
53:5:1443:A:H3'	53:5:1444:G:H8	1.75	0.52
9:E:107:LEU:O	9:E:111:LYS:HG2	2.10	0.52
15:K:64:LYS:HG3	15:K:80:ILE:HB	1.91	0.52
19:O:12:ARG:HA	19:O:33:LEU:H	1.74	0.52
26:b:39:VAL:HG22	26:b:92:MET:CE	2.40	0.52
27:c:113:HIS:O	27:c:117:SER:OG	2.23	0.52
27:c:182:HIS:HB3	27:c:185:LYS:HB2	1.91	0.52
32:h:58:TYR:HB3	32:h:61:LYS:HA	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:i:99:GLN:HE21	33:i:102:LYS:HE2	1.73	0.52
43:s:43:ALA:HA	43:s:46:LEU:HG	1.91	0.52
51:3:389:C:H2'	51:3:390:A:C8	2.45	0.52
51:3:1356:G:H2'	51:3:1358:C:C4	2.44	0.52
51:3:1494:U:O4	51:3:1550:G:O6	2.28	0.52
51:3:1702:A:H1'	51:3:1704:C:H41	1.74	0.52
51:3:2372:C:H2'	51:3:2373:G:O4'	2.10	0.52
53:5:26:C:H2'	53:5:27:A:C8	2.45	0.52
53:5:211:G:H2'	53:5:212:G:O4'	2.10	0.52
53:5:309:A:H2'	53:5:310:C:C6	2.44	0.52
53:5:708:A:H2'	53:5:709:A:C8	2.45	0.52
1:0:35:ARG:NH1	51:3:56:G:O2'	2.42	0.52
4:9:212:LEU:HB3	4:9:234:ARG:HG2	1.91	0.52
4:9:319:ARG:NH2	4:9:322:GLY:O	2.42	0.52
5:A:30:VAL:HB	5:A:55:HIS:CG	2.45	0.52
5:A:81:GLN:HB2	5:A:173:PRO:HA	1.91	0.52
7:C:130:ASP:HB2	53:5:617:U:H3	1.74	0.52
7:C:198:GLU:O	53:5:9:A:N6	2.43	0.52
13:I:11:GLU:HA	13:I:82:LEU:O	2.10	0.52
15:K:25:HIS:ND1	15:K:39:TYR:HA	2.25	0.52
27:c:25:ILE:HA	27:c:117:SER:HA	1.92	0.52
28:d:74:ILE:HG21	28:d:77:TYR:HD2	1.74	0.52
29:e:146:GLN:HG2	51:3:2753:C:H1'	1.90	0.52
41:q:19:THR:HA	41:q:93:LYS:HB3	1.90	0.52
51:3:549:A:H2'	51:3:550:A:C8	2.43	0.52
51:3:1723:A:H2'	51:3:1724:A:C8	2.44	0.52
51:3:2560:U:H2'	51:3:2562:U:C5	2.45	0.52
52:4:87:U:H3'	52:4:88:G:C8	2.45	0.52
53:5:135:A:H2'	53:5:136:U:C6	2.45	0.52
53:5:400:G:O2'	53:5:496:A:N6	2.42	0.52
53:5:439:U:H2'	53:5:440:U:C6	2.45	0.52
19:O:74:LYS:NZ	53:5:459:C:O2	2.42	0.52
28:d:38:MET:HB3	28:d:87:CYS:H	1.75	0.52
29:e:108:LEU:O	29:e:116:ILE:HB	2.10	0.52
30:f:63:ALA:O	30:f:67:LYS:HG3	2.10	0.52
34:j:21:ILE:HA	34:j:41:VAL:HG12	1.92	0.52
35:k:23:GLY:HA2	51:3:846:U:H3'	1.90	0.52
35:k:35:GLY:HA2	51:3:978:G:H5''	1.91	0.52
35:k:82:LEU:HD23	35:k:117:HIS:HA	1.92	0.52
37:m:9:LYS:HG2	37:m:13:TRP:CZ3	2.45	0.52
43:s:37:LYS:HA	43:s:40:VAL:HG22	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:u:54:GLN:NE2	45:u:57:THR:HA	2.25	0.52
46:v:30:ASN:ND2	51:3:2238:G:H5''	2.25	0.52
46:v:30:ASN:OD1	46:v:31:VAL:N	2.35	0.52
46:v:61:HIS:NE2	51:3:410:G:OP2	2.41	0.52
51:3:54:A:H3'	51:3:55:A:H8	1.74	0.52
51:3:410:G:N2	51:3:437:A:OP2	2.34	0.52
51:3:1317:C:H2'	51:3:1318:U:C6	2.45	0.52
51:3:1672:C:H5''	51:3:2718:C:O2'	2.10	0.52
51:3:1860:A:H2'	51:3:1861:A:C8	2.45	0.52
51:3:2784:A:O2'	51:3:2790:A:N7	2.30	0.52
53:5:534:C:H2'	53:5:535:A:H8	1.75	0.52
53:5:596:U:H2'	53:5:597:C:C6	2.45	0.52
3:2:4:ARG:NE	51:3:2474:C:OP1	2.37	0.52
4:9:320:HIS:CE1	54:6:54:G:H4'	2.45	0.52
5:A:90:ASP:OD1	5:A:91:TYR:N	2.42	0.52
8:D:69:ARG:HH22	8:D:172:LEU:HD13	1.75	0.52
9:E:17:GLN:O	9:E:20:GLN:HG3	2.10	0.52
9:E:65:ASP:OD1	9:E:66:ASN:N	2.43	0.52
28:d:76:THR:HG21	51:3:2318:A:N3	2.25	0.52
36:l:126:PRO:HD3	51:3:2493:G:H4'	1.92	0.52
44:t:76:LEU:HD21	44:t:102:ARG:HD2	1.92	0.52
45:u:86:PHE:CD1	45:u:94:ARG:HG2	2.44	0.52
46:v:15:GLY:HA3	46:v:29:TRP:HZ3	1.75	0.52
51:3:31:U:H2'	51:3:32:G:H8	1.75	0.52
51:3:104:A:H2'	51:3:105:U:O4'	2.09	0.52
51:3:227:A:O2'	51:3:456:G:N3	2.30	0.52
51:3:317:U:H2'	51:3:318:U:C6	2.45	0.52
51:3:675:U:H2'	51:3:676:U:C6	2.45	0.52
51:3:889:G:H2'	51:3:890:U:C6	2.45	0.52
51:3:954:A:H3'	51:3:955:A:H8	1.75	0.52
51:3:998:C:O2'	51:3:2505:A:OP1	2.23	0.52
51:3:1881:C:H2'	51:3:1882:G:O4'	2.09	0.52
51:3:1902:C:H2'	51:3:1903:A:C8	2.45	0.52
51:3:2055:A:H2'	51:3:2056:A:O4'	2.09	0.52
51:3:2308:U:H2'	51:3:2309:A:C8	2.45	0.52
51:3:2667:G:N2	51:3:2669:G:H3'	2.25	0.52
51:3:2800:U:OP1	51:3:2896:G:N2	2.43	0.52
51:3:2843:G:O6	51:3:2882:U:O4	2.28	0.52
53:5:305:A:H2'	53:5:306:G:C8	2.45	0.52
53:5:551:A:H2'	53:5:552:U:C6	2.45	0.52
53:5:673:A:H2'	53:5:674:U:C6	2.45	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:7:34:U:O2'	54:7:37:A:N7	2.39	0.52
12:H:7:TYR:OH	12:H:18:LYS:HD2	2.10	0.51
26:b:54:PHE:O	26:b:78:THR:HB	2.11	0.51
26:b:198:ALA:HA	51:3:2688:C:H5'	1.92	0.51
43:s:41:LYS:HE2	43:s:52:PRO:HG2	1.91	0.51
51:3:525:A:H2'	51:3:526:G:C8	2.45	0.51
51:3:662:U:H5''	51:3:663:A:H5'	1.92	0.51
51:3:944:U:H2'	51:3:945:U:C6	2.46	0.51
51:3:1344:U:H2'	51:3:1345:G:C8	2.45	0.51
51:3:1663:G:N3	51:3:2706:U:H4'	2.25	0.51
51:3:2187:C:H2'	51:3:2188:U:C6	2.45	0.51
51:3:2248:C:H2'	51:3:2249:A:H8	1.75	0.51
51:3:2332:U:O2'	51:3:2393:C:N4	2.42	0.51
51:3:2461:A:H2'	51:3:2462:G:C8	2.45	0.51
53:5:362:U:H1'	53:5:390:G:H22	1.74	0.51
53:5:428:A:H2'	53:5:429:A:C8	2.45	0.51
53:5:663:G:H2'	53:5:664:A:C8	2.45	0.51
53:5:684:A:H62	53:5:700:G:H21	1.56	0.51
53:5:952:U:H1'	53:5:955:U:N3	2.25	0.51
53:5:981:U:H2'	53:5:982:A:C8	2.44	0.51
20:P:48:HIS:ND1	20:P:75:PHE:O	2.44	0.51
42:r:86:ILE:HG22	42:r:96:ILE:HD11	1.91	0.51
51:3:154:U:H2'	51:3:155:A:H8	1.74	0.51
51:3:188:G:H2'	51:3:189:U:H6	1.75	0.51
51:3:420:A:H62	51:3:425:U:H3	1.59	0.51
51:3:860:C:O4'	51:3:2366:A:N6	2.43	0.51
51:3:1308:A:H2'	51:3:1309:G:C8	2.45	0.51
51:3:1506:U:H5''	51:3:1595:C:H5'	1.91	0.51
51:3:1527:U:H2'	51:3:1528:G:C8	2.46	0.51
53:5:631:C:H2'	53:5:632:A:H8	1.75	0.51
53:5:1061:U:O4	53:5:1085:G:N2	2.43	0.51
4:9:219:MET:HE1	4:9:263:LYS:HG2	1.91	0.51
8:D:187:THR:O	8:D:191:MET:HG2	2.10	0.51
25:a:282:ARG:NH1	51:3:1804:A:OP2	2.35	0.51
26:b:140:PRO:HA	51:3:1691:U:H5''	1.91	0.51
26:b:175:THR:HG21	26:b:208:ARG:HH12	1.75	0.51
27:c:50:HIS:HE1	27:c:97:ARG:HB2	1.76	0.51
30:f:33:LYS:NZ	30:f:109:GLN:OE1	2.24	0.51
33:i:88:LYS:HZ2	51:3:2648:A:H5''	1.74	0.51
37:m:18:VAL:O	37:m:22:VAL:HG13	2.09	0.51
50:z:15:ARG:HH22	51:3:2408:G:H4'	1.74	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:23:A:OP1	51:3:1248:A:H4'	2.11	0.51
51:3:908:A:H2'	51:3:909:U:C6	2.45	0.51
51:3:1071:G:O6	51:3:1154:U:O4	2.28	0.51
51:3:1456:C:O2'	51:3:1603:A:OP2	2.21	0.51
51:3:2857:C:H2'	51:3:2858:A:H8	1.75	0.51
53:5:656:U:H2'	53:5:657:G:H8	1.75	0.51
53:5:945:U:H2'	53:5:946:G:H8	1.75	0.51
53:5:1397:G:H2'	53:5:1398:G:H8	1.76	0.51
4:9:124:ARG:HG2	4:9:161:TYR:HB3	1.93	0.51
4:9:327:TYR:CD1	54:6:53:A:H5'	2.46	0.51
9:E:30:THR:OG1	9:E:31:ASN:N	2.43	0.51
21:Q:72:PRO:HG2	21:Q:74:ARG:HG3	1.92	0.51
25:a:26:LEU:HD11	25:a:88:TYR:N	2.26	0.51
25:a:232:ALA:O	25:a:233:MET:HE2	2.09	0.51
27:c:92:GLY:HA2	51:3:1278:G:H5'	1.92	0.51
29:e:3:LYS:HG3	29:e:5:GLY:H	1.75	0.51
51:3:117:C:H2'	51:3:118:G:O4'	2.10	0.51
51:3:228:A:H2'	51:3:229:C:C6	2.45	0.51
51:3:335:G:O2'	51:3:336:C:O5'	2.27	0.51
51:3:727:C:H2'	51:3:728:A:C8	2.45	0.51
51:3:1028:C:C2	51:3:1198:G:N1	2.78	0.51
51:3:2224:A:H2'	51:3:2225:G:C8	2.45	0.51
51:3:2267:G:H2'	51:3:2268:C:H6	1.75	0.51
52:4:70:G:N2	52:4:94:A:OP2	2.43	0.51
4:9:135:LEU:HB3	4:9:172:TYR:HA	1.93	0.51
6:B:61:THR:O	6:B:64:THR:OG1	2.22	0.51
8:D:142:GLY:O	8:D:148:ARG:HA	2.10	0.51
9:E:5:ILE:HD11	9:E:62:PHE:HE1	1.76	0.51
9:E:112:ARG:O	9:E:112:ARG:NH1	2.35	0.51
26:b:227:GLU:O	39:o:19:LYS:NZ	2.34	0.51
27:c:101:LEU:HG	51:3:695:G:H5''	1.92	0.51
34:j:73:ASP:OD1	34:j:74:GLY:N	2.43	0.51
35:k:30:LYS:HB2	51:3:845:U:C5	2.46	0.51
36:l:62:GLY:HA3	36:l:109:ILE:HG23	1.93	0.51
37:m:19:ARG:HH11	37:m:68:LEU:HD11	1.74	0.51
45:u:52:TYR:HB3	45:u:73:LEU:HB2	1.92	0.51
51:3:122:G:H2'	51:3:123:G:C8	2.45	0.51
51:3:155:A:N6	51:3:178:A:H61	2.08	0.51
51:3:219:G:H1'	51:3:220:A:H4'	1.92	0.51
51:3:1509:U:O2	51:3:1530:G:N2	2.43	0.51
51:3:1723:A:H2'	51:3:1724:A:H8	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2510:G:H5'	51:3:2511:A:H5''	1.91	0.51
51:3:2744:A:H2'	51:3:2745:G:C8	2.45	0.51
53:5:943:C:H2'	53:5:944:A:H8	1.76	0.51
53:5:1190:G:H2'	53:5:1191:U:C6	2.46	0.51
54:7:7:U:H2'	54:7:8:G:C8	2.46	0.51
28:d:36:ILE:HG22	28:d:89:VAL:N	2.24	0.51
40:p:31:TYR:CE2	51:3:1282:G:H5'	2.45	0.51
44:t:93:MET:SD	44:t:103:VAL:HB	2.50	0.51
51:3:48:G:H2'	51:3:49:C:C6	2.46	0.51
51:3:1036:A:H2'	51:3:1037:A:C8	2.45	0.51
51:3:1248:A:H2'	51:3:1249:A:C8	2.46	0.51
51:3:1325:C:H42	51:3:1677:G:H1	1.58	0.51
51:3:1764:U:N3	51:3:1769:A:N6	2.58	0.51
51:3:1816:A:O2'	51:3:1817:A:O4'	2.27	0.51
51:3:2005:G:H2'	51:3:2006:C:H6	1.74	0.51
51:3:2235:A:H3'	51:3:2236:G:H8	1.75	0.51
51:3:2323:U:H2'	51:3:2324:A:H8	1.76	0.51
51:3:2388:C:H2'	51:3:2389:A:H8	1.75	0.51
53:5:63:U:H2'	53:5:64:C:C6	2.45	0.51
53:5:175:U:H2'	53:5:176:G:H8	1.76	0.51
53:5:337:C:H2'	53:5:338:C:C6	2.45	0.51
53:5:434:U:O2	53:5:493:A:N7	2.43	0.51
53:5:500:G:H2'	53:5:501:A:H8	1.74	0.51
53:5:511:A:H2'	53:5:512:U:C6	2.46	0.51
53:5:780:U:H2'	53:5:781:A:C8	2.45	0.51
53:5:1324:A:H2'	53:5:1325:U:O4'	2.11	0.51
53:5:1484:C:H2'	53:5:1485:C:H6	1.76	0.51
54:7:65:C:H2'	54:7:66:C:H6	1.76	0.51
21:Q:80:GLN:NE2	53:5:719:G:N7	2.57	0.51
22:R:36:ARG:HD3	53:5:1195:G:O3'	2.11	0.51
29:e:102:GLU:OE1	29:e:107:ASN:ND2	2.44	0.51
30:f:9:VAL:HG22	30:f:16:PHE:H	1.76	0.51
30:f:57:HIS:HA	30:f:60:ILE:HG12	1.92	0.51
42:r:38:ASN:HB3	49:y:38:LEU:HD21	1.91	0.51
42:r:78:GLN:OE1	51:3:26:G:N2	2.41	0.51
45:u:31:HIS:ND1	45:u:31:HIS:O	2.44	0.51
49:y:28:SER:HB3	49:y:39:PHE:HA	1.93	0.51
51:3:670:G:H2'	51:3:671:C:C6	2.45	0.51
51:3:868:C:H2'	51:3:869:U:C6	2.45	0.51
51:3:874:U:H3	51:3:975:G:H22	1.58	0.51
51:3:2392:U:H5''	51:3:2394:A:OP1	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2693:U:O2'	51:3:2734:C:N4	2.41	0.51
52:4:8:C:H2'	52:4:9:C:O4'	2.11	0.51
53:5:18:U:H2'	53:5:19:C:C6	2.46	0.51
53:5:707:G:H2'	53:5:708:A:C8	2.46	0.51
4:9:6:PHE:CZ	4:9:264:LYS:HB2	2.46	0.51
4:9:232:VAL:O	4:9:272:GLY:N	2.44	0.51
7:C:16:PHE:CE1	7:C:63:MET:HB3	2.45	0.51
14:J:64:ALA:O	14:J:68:LYS:HG2	2.11	0.51
16:L:52:GLU:HA	16:L:55:ALA:HB3	1.93	0.51
23:S:39:ILE:HD11	23:S:76:LEU:HA	1.91	0.51
28:d:130:ILE:HB	28:d:154:VAL:HG22	1.93	0.51
29:e:76:THR:O	29:e:80:ILE:HG12	2.10	0.51
41:q:4:ILE:HB	41:q:39:LEU:O	2.11	0.51
51:3:69:U:H2'	51:3:70:G:C8	2.46	0.51
51:3:214:C:H2'	51:3:215:A:C8	2.45	0.51
51:3:539:U:H4'	51:3:540:A:H5''	1.93	0.51
51:3:1003:U:H2'	51:3:1004:U:C6	2.45	0.51
51:3:1355:C:H2'	51:3:1356:G:C4	2.46	0.51
51:3:1776:G:H2'	51:3:1777:G:H8	1.76	0.51
51:3:2446:U:H5'	51:3:2607:G:H4'	1.93	0.51
52:4:64:G:H1'	52:4:97:A:N6	2.25	0.51
53:5:253:G:N2	53:5:265:U:O2	2.28	0.51
53:5:350:G:H2'	53:5:351:C:C6	2.45	0.51
53:5:576:A:H2'	53:5:577:G:H8	1.75	0.51
53:5:737:U:H2'	53:5:738:A:C8	2.44	0.51
53:5:1267:G:N1	53:5:1268:G:C6	2.79	0.51
53:5:1290:G:N1	53:5:1293:A:OP2	2.25	0.51
54:6:30:G:H2'	54:6:31:G:C8	2.42	0.51
4:9:13:VAL:HG23	4:9:75:ARG:NE	2.22	0.51
4:9:380:GLY:HA3	4:9:382:ARG:NH1	2.26	0.51
16:L:64:LYS:HZ3	16:L:69:LEU:HG	1.76	0.51
22:R:81:LYS:HA	53:5:1200:G:H21	1.75	0.51
25:a:88:TYR:CE2	25:a:90:PRO:HD3	2.46	0.51
26:b:111:SER:OG	26:b:208:ARG:NH2	2.43	0.51
36:l:82:ARG:NH2	51:3:2505:A:N7	2.45	0.51
39:o:30:GLU:HB3	39:o:92:ARG:HB2	1.93	0.51
51:3:400:A:H2'	51:3:401:G:C8	2.46	0.51
51:3:1091:G:H5''	51:3:1092:A:O4'	2.11	0.51
51:3:1126:G:H2'	51:3:1127:C:H6	1.76	0.51
51:3:1588:A:O2'	51:3:1589:A:OP1	2.28	0.51
51:3:1778:G:H2'	51:3:1779:G:C8	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2101:A:H61	51:3:2203:U:H3	1.58	0.51
51:3:2122:G:O2'	51:3:2174:G:N2	2.44	0.51
51:3:2387:U:H2'	51:3:2388:C:C6	2.46	0.51
51:3:2705:G:H2'	51:3:2706:U:C6	2.46	0.51
53:5:948:U:H3	53:5:1203:A:H61	1.59	0.51
53:5:1425:A:H2'	53:5:1427:U:H3	1.76	0.51
54:6:7:U:H2'	54:6:8:G:C8	2.46	0.51
4:9:15:VAL:O	4:9:79:HIS:HA	2.11	0.51
4:9:24:GLY:O	4:9:28:LEU:HG	2.11	0.51
4:9:207:VAL:HG23	4:9:236:GLU:HG2	1.93	0.51
13:I:11:GLU:N	13:I:82:LEU:O	2.44	0.51
17:M:19:ARG:NH1	53:5:974:C:O2'	2.43	0.51
33:i:95:MET:HG2	33:i:103:LEU:HD12	1.92	0.51
36:l:39:GLY:CA	36:l:97:VAL:O	2.57	0.51
43:s:12:LEU:HD12	43:s:17:TYR:CE1	2.44	0.51
44:t:89:ILE:HD13	44:t:104:PHE:HA	1.93	0.51
51:3:9:G:H2'	51:3:10:U:C6	2.46	0.51
51:3:170:A:H3'	51:3:171:G:H8	1.75	0.51
51:3:338:G:H2'	51:3:339:U:C6	2.45	0.51
51:3:854:A:O3'	51:3:872:C:O2'	2.28	0.51
51:3:990:G:H2'	51:3:991:G:H8	1.75	0.51
51:3:1260:U:H2'	51:3:1261:U:C6	2.46	0.51
51:3:1862:A:H2'	51:3:1863:G:C8	2.46	0.51
51:3:2017:G:H2'	51:3:2018:U:C6	2.46	0.51
51:3:2122:G:O2'	51:3:2175:U:O2	2.29	0.51
51:3:2299:U:O4	51:3:2349:G:O6	2.29	0.51
53:5:175:U:H2'	53:5:176:G:C8	2.46	0.51
53:5:500:G:H2'	53:5:501:A:C8	2.45	0.51
53:5:637:A:H2'	53:5:638:A:C8	2.46	0.51
53:5:1406:U:O2	53:5:1444:G:N2	2.34	0.51
16:L:87:ARG:HE	53:5:1294:U:H4'	1.77	0.50
26:b:51:LEU:HA	26:b:83:GLU:HA	1.91	0.50
51:3:174:A:H2'	51:3:175:A:C8	2.46	0.50
51:3:176:U:H2'	51:3:177:U:C6	2.46	0.50
51:3:214:C:H2'	51:3:215:A:H8	1.75	0.50
51:3:450:C:H2'	51:3:451:A:C8	2.46	0.50
51:3:464:A:H2'	51:3:464:A:N3	2.27	0.50
51:3:1364:A:H2'	51:3:1365:G:C8	2.45	0.50
51:3:2031:C:H2'	51:3:2032:G:C8	2.41	0.50
51:3:2794:U:OP2	51:3:2794:U:H6	1.94	0.50
53:5:143:U:H2'	53:5:144:U:C6	2.46	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:536:U:H2'	53:5:537:A:H8	1.76	0.50
53:5:1366:U:H2'	53:5:1367:G:C8	2.46	0.50
54:7:23:G:H2'	54:7:24:A:H8	1.77	0.50
54:7:29:C:H2'	54:7:30:G:C8	2.47	0.50
6:B:36:GLU:OE2	6:B:40:ILE:HD11	2.10	0.50
25:a:50:GLN:HE22	51:3:1813:C:H1'	1.76	0.50
35:k:64:LYS:HE3	51:3:2402:C:H5''	1.94	0.50
47:w:15:LEU:O	47:w:19:VAL:HG23	2.11	0.50
51:3:173:C:H2'	51:3:174:A:C8	2.45	0.50
51:3:379:A:O2'	51:3:381:A:N6	2.44	0.50
51:3:450:C:H2'	51:3:451:A:H8	1.75	0.50
51:3:523:A:H2'	51:3:524:G:H8	1.76	0.50
51:3:562:C:N4	51:3:2785:G:O2'	2.31	0.50
51:3:683:G:H2'	51:3:684:A:C8	2.46	0.50
51:3:2124:A:N6	51:3:2174:G:H22	2.09	0.50
53:5:63:U:O2	53:5:375:C:O2'	2.28	0.50
53:5:1502:G:H2'	53:5:1503:U:C6	2.46	0.50
54:6:29:C:H2'	54:6:30:G:C8	2.47	0.50
1:0:8:SER:OG	1:0:11:LYS:HB3	2.11	0.50
14:J:22:ASN:HD21	53:5:686:C:H5''	1.76	0.50
15:K:3:THR:HG21	53:5:873:U:C5	2.46	0.50
28:d:96:MET:O	28:d:100:LEU:N	2.42	0.50
49:y:7:ARG:NH1	51:3:612:G:N3	2.58	0.50
51:3:330:A:H2'	51:3:331:A:C8	2.46	0.50
51:3:604:A:H1'	51:3:606:G:C8	2.46	0.50
51:3:900:G:N2	51:3:950:U:O2	2.44	0.50
51:3:1436:C:H2'	51:3:1437:A:C8	2.46	0.50
51:3:1470:C:O2	51:3:1583:G:N1	2.45	0.50
51:3:2288:G:O2'	51:3:2396:A:N1	2.39	0.50
51:3:2632:C:H2'	51:3:2633:C:C6	2.47	0.50
51:3:2812:U:H1'	51:3:2813:A:H2'	1.94	0.50
53:5:1056:U:H1'	53:5:1057:C:H5	1.75	0.50
53:5:1485:C:H2'	53:5:1486:C:C6	2.46	0.50
54:6:65:C:H2'	54:6:66:C:H6	1.76	0.50
2:1:28:HIS:CE1	51:3:2428:C:H3'	2.42	0.50
4:9:124:ARG:HB2	4:9:163:PHE:CE2	2.46	0.50
4:9:312:LEU:HB3	4:9:318:GLY:HA3	1.94	0.50
27:c:169:GLU:HA	27:c:180:VAL:HG11	1.94	0.50
34:j:88:LYS:HB3	34:j:94:ARG:HD3	1.93	0.50
35:k:114:LEU:HB2	35:k:131:VAL:HA	1.93	0.50
38:n:80:LYS:HA	38:n:83:LYS:HE3	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:341:G:N2	51:3:364:A:H61	2.09	0.50
51:3:800:C:H2'	51:3:801:U:C6	2.47	0.50
51:3:1419:U:H2'	51:3:1421:A:N7	2.27	0.50
51:3:2813:A:OP2	51:3:2894:G:N2	2.40	0.50
53:5:132:G:H2'	53:5:133:G:C8	2.46	0.50
53:5:456:U:H2'	53:5:457:A:C8	2.45	0.50
53:5:614:U:H2'	53:5:615:G:C8	2.46	0.50
53:5:879:G:H2'	53:5:880:G:H8	1.76	0.50
53:5:1055:G:H21	53:5:1165:G:H1'	1.75	0.50
53:5:1262:A:N1	53:5:1346:G:H1'	2.27	0.50
53:5:1279:G:N2	53:5:1305:G:N3	2.59	0.50
15:K:127:ARG:NH1	53:5:499:U:OP1	2.44	0.50
17:M:43:CYS:O	17:M:46:GLU:HG2	2.12	0.50
19:O:10:THR:HA	19:O:35:PRO:HD2	1.93	0.50
25:a:180:VAL:N	25:a:192:PHE:O	2.44	0.50
25:a:240:HIS:HE1	51:3:1832:G:H4'	1.76	0.50
28:d:66:VAL:HB	52:4:40:U:H5'	1.93	0.50
49:y:11:HIS:CD2	51:3:19:G:H5'	2.46	0.50
51:3:162:G:H1	51:3:169:U:H5''	1.76	0.50
51:3:401:G:H3'	51:3:402:A:H5''	1.94	0.50
51:3:709:G:H3'	51:3:839:A:H61	1.77	0.50
51:3:1503:A:OP2	51:3:1540:G:N2	2.44	0.50
51:3:1509:U:H3	51:3:1530:G:H1	1.60	0.50
51:3:2200:U:H2'	51:3:2201:G:C8	2.46	0.50
51:3:2304:U:N3	51:3:2342:U:OP2	2.44	0.50
51:3:2388:C:H2'	51:3:2389:A:C8	2.46	0.50
51:3:2625:U:C2	51:3:2626:A:C8	2.99	0.50
51:3:2785:G:OP2	51:3:2789:A:O2'	2.30	0.50
53:5:249:U:H2'	53:5:250:G:H8	1.75	0.50
53:5:575:A:H2'	53:5:576:A:C8	2.47	0.50
53:5:856:U:H2'	53:5:857:U:C6	2.47	0.50
53:5:920:G:H2'	53:5:922:G:C8	2.47	0.50
54:6:23:G:H2'	54:6:24:A:H8	1.76	0.50
3:2:16:ILE:HG12	3:2:25:VAL:HG12	1.94	0.50
4:9:245:ILE:HG22	4:9:252:ARG:HB3	1.93	0.50
6:B:41:ARG:NH1	6:B:56:VAL:O	2.45	0.50
15:K:128:SER:N	53:5:500:G:OP1	2.41	0.50
33:i:116:ARG:NH1	51:3:565:C:OP1	2.45	0.50
51:3:78:C:H2'	51:3:79:U:C6	2.47	0.50
51:3:1045:A:OP2	51:3:1046:A:N6	2.39	0.50
51:3:1378:C:N3	51:3:1410:A:N6	2.60	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2100:G:O2'	51:3:2206:A:N1	2.35	0.50
51:3:2121:A:H3'	51:3:2122:G:H8	1.77	0.50
51:3:2471:U:H2'	51:3:2472:G:C8	2.47	0.50
51:3:2695:U:O2	51:3:2730:G:N2	2.38	0.50
51:3:2810:A:H62	51:3:2896:G:H1	1.60	0.50
52:4:7:G:O6	52:4:101:C:N4	2.45	0.50
53:5:305:A:H2'	53:5:306:G:H8	1.77	0.50
53:5:441:U:H2'	53:5:442:G:C8	2.47	0.50
53:5:664:A:OP1	53:5:729:C:O2'	2.23	0.50
53:5:912:G:H2'	53:5:913:A:C8	2.47	0.50
53:5:1214:A:H1'	53:5:1216:G:C4	2.46	0.50
53:5:1401:A:H2'	53:5:1402:U:C6	2.47	0.50
2:1:53:LYS:HD3	2:1:54:ARG:HH11	1.75	0.50
6:B:134:ARG:HH22	8:D:111:VAL:H	1.58	0.50
9:E:35:LEU:HD13	9:E:60:TRP:CZ3	2.47	0.50
12:H:38:SER:HA	12:H:47:ILE:HD12	1.93	0.50
23:S:49:SER:HB2	53:5:195:U:H5''	1.92	0.50
24:T:16:LYS:HA	24:T:19:LYS:NZ	2.26	0.50
28:d:128:TYR:CE1	28:d:130:ILE:HG12	2.45	0.50
30:f:64:LEU:HD13	30:f:67:LYS:HD2	1.94	0.50
33:i:56:TYR:HD1	33:i:126:HIS:HE1	1.60	0.50
36:l:37:THR:O	36:l:37:THR:HG22	2.12	0.50
42:r:38:ASN:HB3	49:y:38:LEU:HD11	1.94	0.50
51:3:974:C:H2'	51:3:975:G:C8	2.46	0.50
51:3:2137:A:O2'	51:3:2165:A:N1	2.37	0.50
53:5:337:C:H2'	53:5:338:C:H6	1.77	0.50
53:5:796:A:H3'	53:5:797:G:H8	1.76	0.50
2:1:6:ALA:HB2	51:3:251:G:H1	1.75	0.50
4:9:21:ILE:HD13	4:9:61:ILE:HG22	1.94	0.50
5:A:29:HIS:NE2	5:A:216:PRO:O	2.44	0.50
9:E:97:LEU:HD22	53:5:658:G:H5''	1.94	0.50
10:F:40:ARG:NH2	53:5:1265:U:OP1	2.45	0.50
28:d:122:PHE:CE1	28:d:128:TYR:HD2	2.29	0.50
37:m:44:ARG:NH1	51:3:2698:U:O2'	2.43	0.50
39:o:54:ARG:H	39:o:65:ILE:HG22	1.76	0.50
42:r:9:ARG:O	42:r:9:ARG:HD3	2.12	0.50
51:3:719:G:O2'	51:3:823:A:N7	2.45	0.50
51:3:772:C:N4	51:3:773:G:O6	2.45	0.50
51:3:855:A:H61	51:3:1008:A:H2'	1.77	0.50
51:3:910:G:H2'	51:3:911:U:O4'	2.11	0.50
51:3:930:C:H5''	51:3:931:G:OP2	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1308:A:H2'	51:3:1309:G:H8	1.77	0.50
51:3:1476:C:H2'	51:3:1477:A:H8	1.76	0.50
51:3:1715:A:O2'	51:3:1769:A:O2'	2.07	0.50
51:3:1730:C:H2'	51:3:1731:G:O4'	2.12	0.50
51:3:2407:G:H2'	51:3:2408:G:C8	2.46	0.50
51:3:2632:C:H2'	51:3:2633:C:H6	1.76	0.50
51:3:2716:U:H2'	51:3:2717:G:H8	1.77	0.50
51:3:2756:A:H5'	51:3:2760:C:OP2	2.12	0.50
52:4:59:A:O2'	52:4:60:C:OP1	2.28	0.50
53:5:152:U:H2'	53:5:153:A:H8	1.76	0.50
53:5:358:G:N1	53:5:361:U:OP2	2.37	0.50
53:5:422:A:H2'	53:5:423:U:C6	2.47	0.50
53:5:669:U:H2'	53:5:670:G:H8	1.76	0.50
53:5:941:A:H2'	53:5:942:G:H8	1.76	0.50
53:5:1329:G:H2'	53:5:1330:A:C8	2.43	0.50
4:9:221:ILE:HB	4:9:224:ARG:HB2	1.93	0.50
7:C:123:LEU:HB2	7:C:145:LYS:HE2	1.92	0.50
16:L:25:ILE:HA	16:L:29:ARG:HD3	1.93	0.50
33:i:45:VAL:HG12	40:p:67:ALA:HB2	1.94	0.50
34:j:2:VAL:HG13	34:j:6:THR:HG21	1.94	0.50
51:3:28:G:H1'	51:3:549:A:H61	1.76	0.50
51:3:67:C:O2'	51:3:492:C:N3	2.33	0.50
51:3:735:G:H2'	51:3:736:G:C8	2.46	0.50
51:3:1073:A:H2'	51:3:1074:A:C8	2.45	0.50
51:3:1264:U:H3'	51:3:1265:G:H8	1.76	0.50
51:3:1723:A:OP2	51:3:1732:A:N6	2.44	0.50
51:3:2004:G:H2'	51:3:2005:G:C8	2.47	0.50
52:4:4:G:O6	52:4:105:A:N6	2.45	0.50
53:5:394:U:H2'	53:5:395:G:H8	1.77	0.50
53:5:412:G:H2'	53:5:413:G:C8	2.47	0.50
53:5:568:G:H2'	53:5:569:U:C5	2.46	0.50
2:1:31:PRO:HG3	50:z:20:LEU:HD21	1.93	0.49
19:O:13:ILE:HG12	19:O:33:LEU:HB2	1.94	0.49
25:a:161:ALA:N	51:3:1825:U:O2'	2.45	0.49
27:c:59:ARG:NH1	51:3:488:G:O4'	2.44	0.49
29:e:104:GLU:HG3	29:e:120:ILE:HB	1.94	0.49
33:i:126:HIS:CD2	51:3:8:A:H4'	2.47	0.49
45:u:55:ARG:HD2	51:3:2395:U:H1'	1.94	0.49
51:3:523:A:H2'	51:3:524:G:C8	2.47	0.49
51:3:641:U:O2	51:3:657:A:C5	2.64	0.49
51:3:1273:U:H2'	51:3:1274:A:H8	1.76	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2005:G:H2'	51:3:2006:C:C6	2.47	0.49
51:3:2547:C:H2'	51:3:2548:G:C8	2.47	0.49
53:5:214:U:H2'	53:5:215:C:C6	2.47	0.49
53:5:605:A:H3'	53:5:606:A:H8	1.76	0.49
53:5:767:U:H2'	53:5:768:G:H8	1.75	0.49
53:5:883:A:N1	53:5:901:A:H5''	2.26	0.49
53:5:1093:A:H2'	53:5:1094:C:H6	1.76	0.49
53:5:1463:A:H2'	53:5:1464:G:C8	2.47	0.49
5:A:81:GLN:HG2	5:A:169:LEU:HD13	1.93	0.49
9:E:5:ILE:HG12	9:E:72:PHE:HE2	1.77	0.49
9:E:69:THR:HA	9:E:72:PHE:HB3	1.93	0.49
26:b:123:ILE:H	26:b:123:ILE:HD12	1.75	0.49
27:c:77:GLY:H	51:3:709:G:H5''	1.77	0.49
34:j:91:LYS:HZ2	34:j:111:TYR:H	1.58	0.49
51:3:193:G:N1	51:3:209:G:O2'	2.31	0.49
51:3:337:U:H2'	51:3:338:G:C8	2.47	0.49
51:3:386:U:H2'	51:3:387:U:C6	2.46	0.49
51:3:1516:G:H2'	51:3:1517:G:C8	2.47	0.49
51:3:2075:U:O4	51:3:2438:A:N7	2.45	0.49
51:3:2225:G:H2'	51:3:2226:U:C6	2.46	0.49
51:3:2800:U:H5''	51:3:2801:U:H5	1.75	0.49
51:3:2850:G:H2'	51:3:2851:U:C6	2.47	0.49
52:4:13:G:OP1	52:4:64:G:N2	2.45	0.49
52:4:69:C:H1'	52:4:96:G:H22	1.76	0.49
52:4:100:G:H2'	52:4:101:C:C6	2.47	0.49
53:5:97:G:N2	53:5:350:G:OP2	2.45	0.49
53:5:228:G:H2'	53:5:229:G:C8	2.47	0.49
53:5:290:G:H2'	53:5:291:C:C6	2.47	0.49
53:5:293:G:N2	53:5:295:G:H3'	2.26	0.49
53:5:810:U:O2	53:5:810:U:H2'	2.12	0.49
53:5:1058:A:N1	53:5:1099:G:O2'	2.30	0.49
53:5:1277:C:H3'	53:5:1278:G:C8	2.46	0.49
53:5:1322:U:H2'	53:5:1323:A:C8	2.47	0.49
4:9:300:LYS:HG2	4:9:301:PRO:HD2	1.95	0.49
5:A:116:THR:HB	5:A:123:LEU:HD11	1.94	0.49
11:G:17:ASP:O	11:G:21:LYS:HG2	2.12	0.49
28:d:31:LEU:HD21	28:d:34:ILE:HD11	1.94	0.49
30:f:111:PHE:CE1	51:3:2206:A:H5''	2.47	0.49
35:k:17:THR:HA	51:3:697:U:O3'	2.12	0.49
36:l:32:TYR:HB2	36:l:114:MET:CE	2.43	0.49
47:w:63:LEU:HB2	47:w:66:GLN:HG2	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:85:U:N3	51:3:104:A:OP1	2.43	0.49
51:3:584:G:H21	51:3:1250:A:H61	1.60	0.49
51:3:1116:U:H2'	51:3:1117:U:H6	1.77	0.49
51:3:1279:U:H2'	51:3:1280:G:C8	2.47	0.49
51:3:1446:G:HO2'	51:3:1613:A:H62	1.55	0.49
51:3:2363:C:H2'	51:3:2364:A:H8	1.77	0.49
51:3:2382:A:H2'	51:3:2383:G:C8	2.48	0.49
51:3:2456:A:H5''	51:3:2506:C:OP2	2.12	0.49
51:3:2838:G:H1'	51:3:2887:A:H61	1.77	0.49
53:5:22:G:H21	53:5:908:A:H62	1.61	0.49
53:5:641:U:H2'	53:5:642:A:C8	2.42	0.49
54:7:4:U:O4	54:7:72:C:N4	2.45	0.49
7:C:166:PHE:CD2	7:C:167:VAL:HG13	2.48	0.49
25:a:228:VAL:HG23	51:3:816:A:H4'	1.94	0.49
35:k:93:ILE:HG12	35:k:124:LEU:HD12	1.93	0.49
51:3:175:A:H2'	51:3:176:U:C6	2.48	0.49
51:3:358:A:N6	51:3:373:U:O4'	2.46	0.49
51:3:524:G:N2	51:3:526:G:H3'	2.27	0.49
51:3:807:U:H2'	51:3:808:U:C6	2.48	0.49
51:3:1318:U:H2'	51:3:1319:C:C6	2.47	0.49
51:3:2080:C:H2'	51:3:2081:U:H6	1.78	0.49
51:3:2897:G:O2'	51:3:2898:A:O5'	2.29	0.49
53:5:76:G:N2	53:5:79:A:OP2	2.29	0.49
53:5:517:C:H2'	53:5:518:A:O4'	2.12	0.49
53:5:1263:A:N1	53:5:1346:G:O2'	2.38	0.49
9:E:25:GLN:NE2	9:E:28:THR:OG1	2.45	0.49
12:H:82:ARG:HA	12:H:85:ILE:HG12	1.94	0.49
13:I:90:ILE:HG13	13:I:94:LYS:HE3	1.95	0.49
15:K:127:ARG:CZ	15:K:135:PRO:HD2	2.42	0.49
25:a:44:HIS:H	25:a:61:ARG:NH1	2.11	0.49
38:n:57:SER:HA	38:n:61:LYS:HB2	1.93	0.49
51:3:84:G:H2'	51:3:85:U:C2	2.47	0.49
51:3:265:G:H2'	51:3:266:A:H8	1.76	0.49
51:3:638:A:N6	51:3:639:G:O6	2.45	0.49
51:3:888:A:H2'	51:3:889:G:O4'	2.11	0.49
51:3:1070:U:O2	51:3:1155:G:O6	2.31	0.49
51:3:1201:A:H2'	51:3:1202:A:H8	1.75	0.49
51:3:1269:C:H2'	51:3:1270:C:C6	2.48	0.49
51:3:1361:U:H2'	51:3:1362:C:C6	2.48	0.49
51:3:1436:C:H2'	51:3:1437:A:H8	1.78	0.49
51:3:2524:U:H2'	51:3:2525:C:C6	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2753:C:H2'	51:3:2754:U:C6	2.47	0.49
53:5:132:G:H2'	53:5:133:G:H8	1.77	0.49
53:5:333:U:H2'	53:5:334:A:C8	2.48	0.49
53:5:977:U:O2	53:5:1197:G:N1	2.35	0.49
9:E:7:LEU:HB3	9:E:58:TYR:HB2	1.93	0.49
28:d:122:PHE:CD2	28:d:163:ASP:HB2	2.47	0.49
37:m:9:LYS:HG2	37:m:13:TRP:HZ3	1.78	0.49
38:n:74:GLY:HA3	38:n:105:LEU:HD22	1.93	0.49
40:p:91:ARG:NH1	51:3:1032:A:O5'	2.46	0.49
43:s:13:THR:H	43:s:16:VAL:HB	1.78	0.49
51:3:558:C:H1'	51:3:587:U:H1'	1.94	0.49
51:3:626:A:H2'	51:3:627:U:C6	2.47	0.49
51:3:793:C:H2'	51:3:794:G:C8	2.47	0.49
51:3:1114:C:N4	51:3:1123:A:OP2	2.34	0.49
51:3:1446:G:N2	51:3:1612:U:H3'	2.27	0.49
51:3:2084:A:H2'	51:3:2085:C:C6	2.47	0.49
51:3:2213:A:H2'	51:3:2214:A:C8	2.47	0.49
51:3:2608:A:O2'	51:3:2609:C:H5'	2.12	0.49
53:5:550:U:O4	53:5:551:A:N6	2.46	0.49
53:5:858:A:H2'	53:5:859:A:C8	2.48	0.49
53:5:1439:G:H2'	53:5:1440:U:C6	2.47	0.49
53:5:1487:U:H2'	53:5:1488:A:C8	2.47	0.49
1:0:2:LYS:NZ	51:3:1655:U:O4'	2.46	0.49
1:0:18:PHE:O	1:0:22:MET:N	2.44	0.49
5:A:112:TRP:CZ2	5:A:117:LEU:HB2	2.48	0.49
16:L:83:ILE:HD13	22:R:66:MET:HE1	1.94	0.49
26:b:83:GLU:OE2	51:3:2644:U:H4'	2.13	0.49
42:r:6:LYS:HB2	51:3:529:G:H4'	1.93	0.49
44:t:27:ILE:HA	44:t:34:ALA:HA	1.95	0.49
51:3:1239:G:N2	51:3:1267:A:O2'	2.45	0.49
51:3:1446:G:N2	51:3:1613:A:OP2	2.46	0.49
51:3:1470:C:H2'	51:3:1471:A:C8	2.46	0.49
51:3:1670:U:H2'	51:3:1671:C:C6	2.48	0.49
51:3:2497:U:H3'	51:3:2498:G:C8	2.47	0.49
51:3:2602:C:H2'	51:3:2603:G:H8	1.77	0.49
51:3:2754:U:H2'	51:3:2755:G:O4'	2.13	0.49
53:5:432:U:C2'	53:5:433:C:H5'	2.43	0.49
53:5:1474:A:H1'	53:5:1495:C:O5'	2.13	0.49
53:5:1489:C:H2'	53:5:1490:G:H8	1.76	0.49
6:B:38:GLU:OE2	17:M:26:ARG:NH1	2.45	0.49
13:I:26:LEU:O	13:I:29:LYS:HG3	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:O:67:PHE:O	19:O:71:GLY:N	2.44	0.49
27:c:160:VAL:HG23	27:c:183:LEU:HA	1.95	0.49
29:e:27:VAL:O	29:e:33:GLN:NE2	2.45	0.49
34:j:88:LYS:HG3	34:j:90:ASP:OD1	2.12	0.49
35:k:114:LEU:HD21	35:k:128:VAL:HG11	1.95	0.49
51:3:107:C:H2'	51:3:108:G:C8	2.47	0.49
51:3:587:U:H2'	51:3:588:G:O4'	2.13	0.49
51:3:1039:G:H21	51:3:1046:A:H1'	1.78	0.49
51:3:2660:C:H2'	51:3:2661:U:O4'	2.12	0.49
53:5:19:C:O2'	53:5:1070:G:N2	2.46	0.49
53:5:826:G:H1	53:5:851:U:H3	1.59	0.49
53:5:1225:A:H2'	53:5:1226:A:H8	1.74	0.49
53:5:1266:U:H2'	53:5:1267:G:C8	2.48	0.49
53:5:1285:G:H2'	53:5:1286:G:H8	1.77	0.49
4:9:115:GLN:C	4:9:119:HIS:HD1	2.18	0.49
8:D:196:MET:HA	8:D:199:ILE:HG12	1.94	0.49
8:D:207:ARG:HA	8:D:210:ILE:HG22	1.95	0.49
10:F:3:LYS:HG2	53:5:930:A:N6	2.28	0.49
30:f:64:LEU:O	30:f:68:LEU:HD23	2.12	0.49
31:g:108:PHE:HB3	31:g:120:SER:HB3	1.94	0.49
51:3:62:G:H1'	51:3:64:U:C4	2.48	0.49
51:3:209:G:H1'	51:3:210:U:H5	1.77	0.49
51:3:344:A:H4'	51:3:345:A:C8	2.48	0.49
51:3:713:C:H2'	51:3:714:G:C8	2.47	0.49
51:3:863:U:H4'	51:3:866:G:C2	2.48	0.49
51:3:982:G:H2'	51:3:983:A:C8	2.47	0.49
51:3:1071:G:H2'	51:3:1072:A:H8	1.78	0.49
51:3:1693:U:H2'	51:3:1694:A:H8	1.75	0.49
51:3:1849:G:H2'	51:3:1850:C:C6	2.47	0.49
51:3:2469:A:H2'	51:3:2470:C:C6	2.47	0.49
53:5:98:G:N2	53:5:311:A:N1	2.61	0.49
53:5:1472:G:N2	53:5:1494:A:H1'	2.28	0.49
54:6:4:U:O4	54:6:72:C:N4	2.45	0.49
1:0:18:PHE:HB2	1:0:43:THR:HG21	1.95	0.49
6:B:35:ILE:HA	6:B:38:GLU:OE2	2.13	0.49
10:F:16:VAL:HB	12:H:48:GLN:NE2	2.28	0.49
26:b:26:ILE:HG21	26:b:192:LEU:HD23	1.95	0.49
26:b:180:ARG:HG2	26:b:218:LYS:HD3	1.95	0.49
28:d:66:VAL:HG11	52:4:40:U:C6	2.48	0.49
29:e:57:ARG:HD2	29:e:64:SER:OG	2.13	0.49
51:3:203:A:N6	51:3:2442:A:OP2	2.45	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:694:U:H2'	51:3:695:G:C8	2.48	0.49
51:3:1180:U:H2'	51:3:1181:A:C8	2.47	0.49
51:3:1572:U:H2'	51:3:1573:A:H8	1.77	0.49
51:3:2107:A:H2'	51:3:2108:C:C6	2.48	0.49
51:3:2425:C:H2'	51:3:2426:A:H8	1.77	0.49
51:3:2581:C:O5'	51:3:2582:G:H5''	2.13	0.49
51:3:2663:G:H1'	51:3:2664:U:H5	1.78	0.49
51:3:2678:A:H2'	51:3:2679:G:C8	2.47	0.49
52:4:69:C:O2	52:4:96:G:N1	2.45	0.49
53:5:146:A:H2'	53:5:147:A:C8	2.48	0.49
53:5:331:C:H2'	53:5:332:A:C8	2.48	0.49
53:5:380:G:H2'	53:5:381:C:H6	1.78	0.49
53:5:918:A:H2'	53:5:919:C:C6	2.48	0.49
53:5:1031:A:H2'	53:5:1032:G:C8	2.48	0.49
53:5:1298:U:H2'	53:5:1299:C:C6	2.48	0.49
53:5:1383:A:H2'	53:5:1384:A:C8	2.48	0.49
4:9:16:GLY:H	4:9:102:ALA:HA	1.78	0.48
4:9:117:ARG:HG2	4:9:161:TYR:OH	2.13	0.48
11:G:23:ASN:O	11:G:26:ARG:HG2	2.12	0.48
13:I:11:GLU:CA	13:I:82:LEU:O	2.61	0.48
14:J:68:LYS:HD3	14:J:98:LEU:HB2	1.95	0.48
26:b:148:GLN:NE2	51:3:2582:G:O2'	2.46	0.48
32:h:77:LYS:HB3	32:h:82:LEU:HB2	1.94	0.48
42:r:118:ILE:HG22	42:r:122:LYS:NZ	2.27	0.48
51:3:195:A:H2'	51:3:196:G:H8	1.78	0.48
51:3:565:C:O2	51:3:2028:G:N2	2.46	0.48
51:3:919:C:H2'	51:3:920:G:C8	2.47	0.48
51:3:1223:C:H2'	51:3:1224:G:C8	2.48	0.48
51:3:1336:A:C4	51:3:1337:G:C8	3.01	0.48
51:3:1721:G:H2'	51:3:1722:U:C6	2.48	0.48
51:3:1986:C:H2'	51:3:1987:C:C6	2.47	0.48
51:3:2330:A:H61	51:3:2343:A:H2	1.61	0.48
51:3:2848:A:H2'	51:3:2849:G:H8	1.77	0.48
53:5:350:G:H2'	53:5:351:C:H6	1.78	0.48
53:5:929:C:H42	53:5:934:G:H22	1.60	0.48
53:5:1385:A:H2'	53:5:1386:C:H6	1.78	0.48
1:0:39:ARG:NH2	51:3:504:G:N7	2.61	0.48
4:9:3:ARG:HG3	4:9:224:ARG:NH1	2.28	0.48
5:A:32:MET:HE3	5:A:32:MET:HA	1.96	0.48
8:D:147:SER:HB3	8:D:191:MET:HE1	1.94	0.48
9:E:92:ARG:HE	9:E:93:GLU:H	1.61	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:I:19:TYR:CE2	17:M:54:PRO:HB2	2.47	0.48
14:J:112:ASN:ND2	53:5:714:C:O3'	2.41	0.48
19:O:48:VAL:HA	19:O:52:TRP:CE3	2.48	0.48
32:h:123:MET:HA	51:3:1115:G:H1'	1.95	0.48
35:k:139:VAL:HG11	35:k:146:VAL:HG23	1.95	0.48
46:v:3:LYS:C	46:v:4:LYS:HD3	2.38	0.48
51:3:116:C:H2'	51:3:117:C:H6	1.78	0.48
51:3:222:A:H3'	51:3:223:A:C8	2.48	0.48
51:3:495:U:H2'	51:3:496:A:C8	2.47	0.48
51:3:932:U:HO2'	51:3:934:C:N4	2.11	0.48
51:3:1135:C:H2'	51:3:1136:U:O4'	2.14	0.48
51:3:1713:U:H1'	51:3:1996:A:C2	2.49	0.48
51:3:2148:U:H2'	51:3:2149:U:H6	1.79	0.48
51:3:2313:U:H2'	51:3:2314:U:C6	2.48	0.48
53:5:351:C:H1'	53:5:384:G:H1'	1.95	0.48
53:5:598:U:H2'	53:5:599:G:C8	2.48	0.48
53:5:906:C:H2'	53:5:907:A:C8	2.48	0.48
53:5:1059:G:O6	53:5:1085:G:O2'	2.29	0.48
53:5:1109:U:C2	53:5:1154:A:C6	3.02	0.48
53:5:1151:A:H2'	53:5:1152:G:H8	1.77	0.48
6:B:37:ASP:HB3	6:B:60:ARG:NH1	2.27	0.48
6:B:179:SER:N	53:5:1099:G:OP1	2.31	0.48
7:C:145:LYS:O	7:C:148:THR:HG22	2.12	0.48
11:G:66:THR:HG21	53:5:648:C:H1'	1.95	0.48
25:a:31:ASN:OD1	25:a:88:TYR:OH	2.32	0.48
35:k:59:TYR:HE1	51:3:254:G:H5'	1.77	0.48
49:y:3:VAL:HG11	51:3:2064:G:H1'	1.94	0.48
51:3:130:C:H2'	51:3:131:C:C6	2.48	0.48
51:3:234:G:H2'	51:3:235:U:C6	2.47	0.48
51:3:375:U:H2'	51:3:376:U:C6	2.49	0.48
51:3:534:U:H2'	51:3:535:G:O4'	2.14	0.48
51:3:535:G:C2	51:3:540:A:N6	2.81	0.48
51:3:1071:G:N1	51:3:1154:U:N3	2.47	0.48
51:3:1176:U:H4'	51:3:1177:A:O4'	2.12	0.48
51:3:1704:C:H2'	51:3:1705:U:O4'	2.13	0.48
51:3:2469:A:H2'	51:3:2470:C:H6	1.78	0.48
51:3:2530:U:O2'	51:3:2655:U:OP1	2.20	0.48
51:3:2663:G:H22	51:3:2673:A:P	2.36	0.48
52:4:72:A:H2'	52:4:73:U:C6	2.48	0.48
53:5:321:A:H2'	53:5:322:G:N9	2.29	0.48
53:5:515:G:N2	53:5:528:G:OP1	2.45	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:576:A:H2'	53:5:577:G:C8	2.47	0.48
53:5:1360:G:H2'	53:5:1361:G:C8	2.48	0.48
11:G:37:ALA:HB3	11:G:68:ARG:HG3	1.94	0.48
13:I:90:ILE:O	13:I:94:LYS:HG2	2.13	0.48
25:a:30:LYS:HA	51:3:1599:C:H41	1.78	0.48
26:b:160:PHE:CZ	33:i:83:TYR:HA	2.48	0.48
29:e:34:ILE:HD11	29:e:139:ILE:HD12	1.94	0.48
35:k:39:GLN:HE22	35:k:45:GLY:HA2	1.79	0.48
39:o:65:ILE:HD12	39:o:77:LYS:C	2.38	0.48
51:3:612:G:O2'	51:3:2026:A:OP1	2.31	0.48
51:3:1489:G:H2'	51:3:1490:G:C8	2.48	0.48
51:3:2304:U:O4	51:3:2343:A:N7	2.46	0.48
51:3:2336:A:H2'	51:3:2337:U:C6	2.48	0.48
51:3:2465:U:H2'	51:3:2466:G:O4'	2.13	0.48
52:4:66:A:H2'	52:4:67:G:O4'	2.13	0.48
53:5:195:U:H2'	53:5:196:G:C8	2.44	0.48
53:5:1484:C:H2'	53:5:1485:C:C6	2.48	0.48
2:1:37:GLN:NE2	51:3:2371:U:OP2	2.47	0.48
3:2:3:VAL:HG23	3:2:36:GLN:HB2	1.94	0.48
5:A:85:VAL:HG11	5:A:112:TRP:HE3	1.79	0.48
7:C:9:LYS:NZ	53:5:540:U:OP1	2.40	0.48
10:F:90:VAL:O	10:F:95:LYS:NZ	2.44	0.48
22:R:39:THR:HA	22:R:70:LYS:HA	1.94	0.48
26:b:179:LEU:HD21	51:3:2737:G:O2'	2.13	0.48
34:j:1:MET:HE1	51:3:1698:A:H2	1.76	0.48
35:k:84:LYS:HB3	51:3:637:U:O4	2.13	0.48
41:q:28:PRO:HB2	41:q:31:LYS:HB2	1.96	0.48
42:r:88:ARG:HE	51:3:782:U:H2'	1.78	0.48
51:3:614:C:H2'	51:3:615:G:C8	2.43	0.48
51:3:668:A:H2'	51:3:669:A:C8	2.48	0.48
51:3:1261:U:H2'	51:3:1262:G:C8	2.41	0.48
51:3:2141:A:H62	51:3:2163:U:H2'	1.79	0.48
51:3:2336:A:H2'	51:3:2337:U:H6	1.79	0.48
53:5:210:G:H2'	53:5:211:G:C8	2.49	0.48
53:5:386:U:H2'	53:5:387:G:C8	2.48	0.48
53:5:420:A:H3'	53:5:421:G:C8	2.49	0.48
53:5:430:G:C2	53:5:431:U:C4	3.01	0.48
53:5:597:C:H2'	53:5:598:U:O4'	2.14	0.48
53:5:697:G:N2	53:5:698:U:O4	2.45	0.48
53:5:851:U:H2'	53:5:852:G:O4'	2.13	0.48
53:5:929:C:H42	53:5:934:G:N2	2.11	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:J:17:SER:HA	14:J:80:LYS:HB3	1.94	0.48
15:K:124:ARG:CZ	15:K:135:PRO:HB3	2.44	0.48
17:M:6:LEU:HB3	17:M:23:ARG:NH1	2.26	0.48
18:N:70:ASN:OD1	18:N:71:ASP:N	2.46	0.48
25:a:138:LEU:HD23	25:a:141:ILE:HD12	1.94	0.48
30:f:53:LYS:O	30:f:56:GLU:HG3	2.13	0.48
30:f:65:SER:O	30:f:69:LYS:HG2	2.13	0.48
45:u:25:LYS:O	45:u:28:ARG:NH2	2.47	0.48
50:z:11:CYS:O	50:z:15:ARG:N	2.46	0.48
51:3:276:A:H5'	51:3:277:C:OP2	2.14	0.48
51:3:322:A:H2'	51:3:323:A:H8	1.78	0.48
51:3:532:A:H2'	51:3:533:G:C8	2.48	0.48
51:3:1345:G:H2'	51:3:1346:G:H8	1.79	0.48
51:3:1367:G:N2	51:3:1368:U:O4	2.46	0.48
51:3:2880:A:H2'	51:3:2881:A:C8	2.48	0.48
53:5:1410:A:H2'	53:5:1411:A:C8	2.49	0.48
53:5:1440:U:H2'	53:5:1441:C:C6	2.48	0.48
4:9:63:ILE:HD11	54:6:3:G:H1'	1.96	0.48
7:C:72:ARG:HE	7:C:203:LEU:HD12	1.78	0.48
12:H:111:ARG:HB3	53:5:1321:G:C8	2.49	0.48
12:H:121:TYR:CE1	53:5:1341:U:H5''	2.49	0.48
19:O:13:ILE:HG22	19:O:30:ILE:HB	1.95	0.48
25:a:20:ILE:HB	25:a:22:TYR:CE1	2.48	0.48
41:q:5:VAL:HG23	41:q:35:LEU:HD22	1.95	0.48
47:w:54:ILE:HG13	47:w:55:LEU:N	2.29	0.48
51:3:181:G:H2'	51:3:182:C:O4'	2.13	0.48
51:3:993:A:N1	51:3:2465:U:O2'	2.47	0.48
51:3:1057:G:O2'	51:3:1059:G:O6	2.20	0.48
51:3:1507:G:O2'	51:3:1508:G:P	2.72	0.48
51:3:1957:G:N1	51:3:1961:A:O2'	2.46	0.48
52:4:45:C:H2'	52:4:46:C:C6	2.48	0.48
53:5:456:U:H2'	53:5:457:A:H8	1.77	0.48
53:5:674:U:H2'	53:5:675:U:C6	2.49	0.48
53:5:818:A:H2'	53:5:819:G:H8	1.78	0.48
53:5:1055:G:O3'	53:5:1165:G:N2	2.46	0.48
53:5:1104:C:H2'	53:5:1105:C:C6	2.49	0.48
54:7:11:G:H2'	54:7:12:C:C6	2.49	0.48
7:C:8:PHE:HA	7:C:11:SER:HB2	1.96	0.48
8:D:181:LYS:HG2	53:5:8:G:N2	2.27	0.48
13:I:59:ARG:NH2	53:5:1052:G:OP1	2.46	0.48
26:b:88:THR:O	26:b:88:THR:HG22	2.12	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:p:83:LYS:NZ	51:3:1187:C:OP1	2.46	0.48
41:q:57:CYS:SG	41:q:92:LEU:HD12	2.54	0.48
41:q:67:LYS:HB2	41:q:86:ARG:HH21	1.79	0.48
46:v:17:ASN:OD1	46:v:27:ARG:HB3	2.12	0.48
51:3:320:A:H2'	51:3:321:A:H8	1.78	0.48
51:3:683:G:H2'	51:3:684:A:H8	1.79	0.48
51:3:869:U:C2	51:3:870:A:C8	3.02	0.48
51:3:877:G:H2'	51:3:878:A:C8	2.49	0.48
51:3:1841:U:C2	51:3:1979:G:N1	2.82	0.48
51:3:1903:A:H2'	51:3:1904:G:C8	2.48	0.48
51:3:2062:C:O2'	51:3:2580:A:N6	2.46	0.48
51:3:2141:A:H2'	51:3:2142:U:C6	2.48	0.48
51:3:2862:U:H2'	51:3:2863:G:C4	2.49	0.48
53:5:110:U:H2'	53:5:111:A:C8	2.49	0.48
53:5:826:G:H2'	53:5:827:C:H6	1.78	0.48
53:5:1405:U:O2	53:5:1445:G:N2	2.42	0.48
4:9:5:LYS:HA	4:9:265:GLU:HG2	1.95	0.48
11:G:24:ASN:ND2	53:5:823:C:O2	2.47	0.48
15:K:55:PRO:HB3	15:K:61:ALA:O	2.13	0.48
16:L:101:ARG:HG3	53:5:1200:G:OP1	2.13	0.48
21:Q:100:PRO:HB2	21:Q:103:LYS:HB2	1.96	0.48
30:f:47:ARG:NH1	30:f:48:ASP:HA	2.28	0.48
30:f:53:LYS:HA	30:f:56:GLU:HG3	1.95	0.48
40:p:13:ARG:O	40:p:17:LEU:HD23	2.14	0.48
42:r:128:ARG:NH2	51:3:1249:A:H2	2.12	0.48
44:t:100:LYS:NZ	51:3:330:A:H5''	2.29	0.48
51:3:78:C:H2'	51:3:79:U:H6	1.79	0.48
51:3:208:A:OP1	51:3:210:U:H1'	2.14	0.48
51:3:485:A:N6	51:3:490:A:H62	2.06	0.48
51:3:651:A:H2'	51:3:652:U:O4'	2.14	0.48
51:3:1507:G:O2'	51:3:1508:G:OP1	2.31	0.48
51:3:1662:G:H2'	51:3:1663:G:C8	2.48	0.48
51:3:1837:C:H2'	51:3:1838:A:C8	2.49	0.48
51:3:2696:G:H1'	51:3:2729:A:H61	1.79	0.48
51:3:2828:C:H3'	51:3:2829:G:N2	2.24	0.48
53:5:590:G:H2'	53:5:591:A:C8	2.48	0.48
53:5:920:G:H2'	53:5:922:G:H8	1.79	0.48
53:5:1066:U:H2'	53:5:1067:C:C6	2.49	0.48
53:5:1154:A:H2'	53:5:1155:A:C8	2.48	0.48
53:5:1397:G:H2'	53:5:1398:G:C8	2.48	0.48
14:J:70:MET:HE3	14:J:72:MET:HE2	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:O:43:LYS:NZ	53:5:624:U:O3'	2.47	0.48
23:S:55:ALA:O	23:S:62:THR:OG1	2.29	0.48
23:S:56:ARG:NH2	53:5:197:A:OP1	2.47	0.48
25:a:225:ARG:HH12	51:3:725:G:H4'	1.79	0.48
30:f:104:LYS:HD2	30:f:106:MET:HE2	1.96	0.48
36:l:41:TRP:CG	36:l:74:LYS:HZ1	2.32	0.48
44:t:13:ILE:HG13	44:t:14:THR:N	2.29	0.48
44:t:88:LYS:HB2	44:t:105:LYS:HD2	1.96	0.48
51:3:251:G:N2	51:3:254:G:H3'	2.28	0.48
51:3:264:G:O2'	51:3:642:A:N6	2.40	0.48
51:3:274:A:N7	51:3:295:U:O4	2.46	0.48
51:3:325:G:O6	51:3:383:U:O4	2.32	0.48
51:3:332:G:N2	51:3:373:U:OP2	2.22	0.48
51:3:609:U:H5''	51:3:2511:A:OP1	2.14	0.48
51:3:752:C:H3'	51:3:753:A:H8	1.79	0.48
51:3:1229:U:H2'	51:3:1230:U:C6	2.49	0.48
51:3:1318:U:H2'	51:3:1319:C:H6	1.78	0.48
51:3:1801:U:H2'	51:3:1802:C:C6	2.49	0.48
51:3:2238:G:H2'	51:3:2239:U:C6	2.49	0.48
53:5:901:A:H2'	53:5:902:A:C8	2.49	0.48
4:9:301:PRO:HB2	4:9:366:PRO:HB2	1.96	0.47
5:A:71:TYR:HE1	9:E:164:GLY:HA2	1.79	0.47
7:C:78:VAL:O	7:C:81:GLN:HG3	2.14	0.47
7:C:114:ARG:NE	53:5:400:G:OP1	2.47	0.47
24:T:31:ARG:NH2	53:5:716:C:H5'	2.23	0.47
42:r:80:PRO:O	42:r:100:SER:OG	2.31	0.47
45:u:43:GLN:NE2	51:3:961:U:OP1	2.47	0.47
51:3:69:U:H2'	51:3:70:G:H8	1.78	0.47
51:3:312:U:O4	51:3:396:A:N6	2.48	0.47
51:3:445:C:H2'	51:3:446:A:H8	1.78	0.47
51:3:501:G:H21	51:3:719:G:H4'	1.78	0.47
51:3:1449:G:H1'	51:3:1519:A:N6	2.29	0.47
51:3:1474:C:H2'	51:3:1475:C:H6	1.79	0.47
51:3:1672:C:OP1	51:3:2718:C:O2'	2.32	0.47
51:3:1798:A:N6	51:3:1835:G:H1'	2.28	0.47
51:3:1848:U:C2	51:3:1849:G:C8	3.02	0.47
51:3:1943:A:OP2	51:3:1969:C:N4	2.42	0.47
51:3:2709:C:O5'	51:3:2710:G:H5''	2.14	0.47
53:5:36:G:H2'	53:5:37:C:C6	2.48	0.47
53:5:471:A:H2'	53:5:472:G:C8	2.49	0.47
53:5:1230:G:H3'	53:5:1254:A:H61	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1322:U:H2'	53:5:1323:A:H8	1.79	0.47
53:5:1410:A:H2'	53:5:1411:A:H8	1.79	0.47
4:9:211:PHE:HD1	4:9:237:LEU:HD11	1.78	0.47
4:9:314:LYS:HA	4:9:318:GLY:H	1.78	0.47
5:A:118:THR:HG23	5:A:190:GLU:HB3	1.95	0.47
8:D:80:THR:OG1	8:D:85:ASN:OD1	2.21	0.47
12:H:9:LEU:O	12:H:87:ARG:NE	2.48	0.47
12:H:114:GLU:OE2	12:H:117:LYS:NZ	2.47	0.47
15:K:101:LYS:HE2	53:5:523:U:H5''	1.96	0.47
27:c:161:VAL:HG21	27:c:168:LEU:HD21	1.95	0.47
30:f:53:LYS:HG2	30:f:57:HIS:CD2	2.49	0.47
34:j:107:ARG:NH1	34:j:112:ASN:OD1	2.47	0.47
40:p:80:ASN:HA	40:p:83:LYS:HG2	1.96	0.47
42:r:115:GLN:HA	42:r:118:ILE:HD12	1.96	0.47
46:v:53:ARG:NH1	51:3:435:U:OP2	2.47	0.47
51:3:202:C:O2'	51:3:203:A:H5'	2.14	0.47
51:3:241:C:H2'	51:3:242:G:C8	2.48	0.47
51:3:615:G:H2'	51:3:616:G:H8	1.78	0.47
51:3:1108:A:H2'	51:3:1109:G:O4'	2.14	0.47
51:3:1475:C:H2'	51:3:1476:C:C6	2.48	0.47
51:3:1495:A:H2'	51:3:1496:A:C8	2.49	0.47
51:3:2223:C:H2'	51:3:2224:A:H8	1.79	0.47
51:3:2273:U:OP2	51:3:2274:A:O2'	2.25	0.47
53:5:226:G:H2'	53:5:227:A:H8	1.79	0.47
53:5:274:A:H4'	53:5:277:G:H4'	1.94	0.47
53:5:537:A:H2'	53:5:538:G:H8	1.76	0.47
2:1:50:SER:HB2	51:3:870:A:H5'	1.96	0.47
4:9:211:PHE:HA	4:9:235:GLY:HA3	1.96	0.47
5:A:32:MET:SD	5:A:218:ASN:HA	2.54	0.47
6:B:80:SER:O	6:B:81:GLU:HG3	2.14	0.47
6:B:194:THR:HG23	6:B:196:TYR:H	1.79	0.47
8:D:75:ARG:HA	8:D:88:PHE:HA	1.95	0.47
9:E:3:TYR:HE2	9:E:66:ASN:HB3	1.79	0.47
11:G:125:ASP:OD1	11:G:125:ASP:N	2.45	0.47
16:L:47:ASP:HA	16:L:53:PHE:HZ	1.80	0.47
17:M:22:THR:HG21	17:M:38:GLY:HA2	1.95	0.47
22:R:60:VAL:HG21	22:R:74:PHE:HB3	1.97	0.47
27:c:55:LYS:NZ	51:3:708:C:H5''	2.30	0.47
37:m:10:THR:O	37:m:14:ARG:HG3	2.15	0.47
38:n:44:TRP:CE2	38:n:51:VAL:HG22	2.49	0.47
51:3:107:C:O2	51:3:328:A:O2'	2.29	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:771:C:H2'	51:3:772:C:C6	2.50	0.47
51:3:771:C:C2	51:3:772:C:C5	3.03	0.47
51:3:1638:C:H2'	51:3:1639:C:C6	2.49	0.47
51:3:2399:G:N2	51:3:2433:A:OP1	2.42	0.47
53:5:381:C:H2'	53:5:382:U:C6	2.49	0.47
53:5:395:G:H2'	53:5:396:C:C6	2.49	0.47
53:5:432:U:H2'	53:5:433:C:H6	1.78	0.47
53:5:517:C:N4	53:5:527:G:O2'	2.39	0.47
53:5:598:U:O2	53:5:635:G:O6	2.33	0.47
53:5:822:A:H2'	53:5:823:C:C6	2.50	0.47
53:5:854:A:H3'	53:5:855:G:H8	1.78	0.47
53:5:950:C:H2'	53:5:951:U:O4'	2.15	0.47
53:5:1452:C:H2'	53:5:1453:C:C6	2.49	0.47
54:6:9:U:H5''	54:6:50:G:H5'	1.96	0.47
54:6:11:G:H2'	54:6:12:C:C6	2.49	0.47
5:A:179:ASP:OD1	5:A:180:ASP:N	2.48	0.47
7:C:92:VAL:HA	7:C:95:SER:HB3	1.96	0.47
12:H:100:LEU:HD22	12:H:105:LEU:HD23	1.95	0.47
16:L:28:SER:HB3	53:5:1302:C:H5''	1.97	0.47
27:c:104:ASN:OD1	51:3:693:U:O2'	2.29	0.47
28:d:58:HIS:CD2	28:d:65:PRO:HD2	2.47	0.47
45:u:86:PHE:CZ	45:u:92:LYS:HB3	2.50	0.47
49:y:37:LYS:NZ	49:y:41:ARG:O	2.38	0.47
51:3:535:G:H22	51:3:538:A:P	2.38	0.47
51:3:1415:A:H2'	51:3:1416:G:H8	1.78	0.47
51:3:1755:A:H2'	51:3:1756:A:H8	1.80	0.47
51:3:2474:C:C2	51:3:2475:C:H5	2.31	0.47
51:3:2602:C:H2'	51:3:2603:G:C8	2.49	0.47
53:5:612:G:O6	53:5:624:U:O4	2.33	0.47
53:5:1233:G:H2'	53:5:1234:C:C6	2.49	0.47
5:A:85:VAL:HG22	5:A:108:ILE:HB	1.95	0.47
5:A:154:ARG:O	5:A:157:GLU:HG3	2.14	0.47
6:B:173:GLU:O	6:B:176:MET:HE2	2.13	0.47
7:C:81:GLN:HE22	7:C:88:ASN:HD22	1.62	0.47
12:H:22:THR:O	12:H:63:PHE:HA	2.14	0.47
15:K:51:GLY:O	15:K:65:TYR:N	2.43	0.47
16:L:9:ILE:HD11	16:L:57:ARG:HH12	1.78	0.47
16:L:118:ASN:O	16:L:120:LYS:NZ	2.43	0.47
18:N:62:ARG:NE	53:5:580:C:OP1	2.44	0.47
24:T:32:HIS:NE2	53:5:715:A:O2'	2.46	0.47
36:l:26:TYR:OH	51:3:942:A:O3'	2.32	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:122:G:H4'	51:3:152:A:H5'	1.97	0.47
51:3:134:U:H2'	51:3:135:A:H8	1.78	0.47
51:3:252:G:C2	51:3:2439:U:H4'	2.49	0.47
51:3:1162:A:H2'	51:3:2526:A:C2	2.50	0.47
51:3:1212:C:H2'	51:3:1213:U:C6	2.50	0.47
51:3:1409:G:H2'	51:3:1410:A:C8	2.49	0.47
51:3:1487:U:H2'	51:3:1488:U:C6	2.50	0.47
51:3:1809:A:P	51:3:1822:A:H61	2.37	0.47
53:5:612:G:N2	53:5:624:U:O2	2.47	0.47
53:5:1307:A:H2'	53:5:1308:G:O4'	2.14	0.47
4:9:373:SER:HB3	4:9:375:PHE:CE2	2.50	0.47
9:E:159:VAL:O	11:G:79:ARG:NH1	2.48	0.47
10:F:69:MET:SD	10:F:95:LYS:HB3	2.54	0.47
14:J:117:PRO:HG3	53:5:776:C:H5''	1.96	0.47
19:O:5:ARG:NH1	53:5:44:C:OP1	2.48	0.47
25:a:25:LEU:HD23	25:a:25:LEU:H	1.80	0.47
28:d:63:GLN:HB3	28:d:89:VAL:HG13	1.96	0.47
29:e:149:THR:HG21	51:3:2753:C:H5'	1.95	0.47
44:t:40:ASN:ND2	44:t:67:ALA:O	2.36	0.47
49:y:28:SER:HA	51:3:2890:G:O2'	2.14	0.47
51:3:39:C:H2'	51:3:40:A:H8	1.79	0.47
51:3:59:C:H2'	51:3:60:G:C8	2.50	0.47
51:3:371:C:H2'	51:3:372:G:O4'	2.15	0.47
51:3:680:A:H4'	51:3:681:A:C5	2.50	0.47
51:3:696:U:H2'	51:3:697:U:H6	1.80	0.47
51:3:941:C:N3	51:3:942:A:N6	2.63	0.47
51:3:1164:A:N6	51:3:2499:U:OP1	2.47	0.47
51:3:1223:C:H2'	51:3:1224:G:H8	1.79	0.47
51:3:1344:U:H2'	51:3:1345:G:H8	1.79	0.47
51:3:1777:G:H2'	51:3:1778:G:H8	1.77	0.47
51:3:2093:U:H2'	51:3:2094:A:C8	2.50	0.47
53:5:228:G:H2'	53:5:229:G:H8	1.79	0.47
53:5:334:A:H2'	53:5:335:C:C6	2.50	0.47
53:5:372:G:H2'	53:5:373:A:C8	2.49	0.47
53:5:376:G:N2	53:5:378:A:H3'	2.29	0.47
53:5:394:U:H2'	53:5:395:G:C8	2.50	0.47
53:5:466:U:H3'	53:5:467:G:H8	1.79	0.47
53:5:1051:U:H2'	53:5:1052:G:H8	1.79	0.47
4:9:98:GLN:NE2	4:9:231:ARG:HB2	2.29	0.47
9:E:5:ILE:HG12	9:E:72:PHE:CE2	2.49	0.47
9:E:89:ASN:OD1	9:E:90:LEU:N	2.43	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:F:147:ASN:OD1	10:F:150:PHE:HB2	2.15	0.47
16:L:103:ARG:NE	53:5:1200:G:OP2	2.48	0.47
26:b:213:LYS:HE3	26:b:216:VAL:HB	1.97	0.47
28:d:92:ARG:H	28:d:95:ARG:HE	1.61	0.47
29:e:155:ARG:CZ	29:e:163:LYS:HB2	2.44	0.47
32:h:108:LYS:HA	32:h:111:ASP:HB3	1.96	0.47
34:j:4:PHE:HD1	34:j:22:ILE:HA	1.80	0.47
40:p:68:LEU:HD13	40:p:75:TYR:HA	1.97	0.47
43:s:2:ASP:N	51:3:146:G:O2'	2.41	0.47
46:v:16:ASN:ND2	46:v:18:ARG:HH22	2.13	0.47
49:y:12:ARG:HA	49:y:15:LYS:HG2	1.96	0.47
51:3:163:A:N6	51:3:170:A:H1'	2.30	0.47
51:3:188:G:H2'	51:3:189:U:C6	2.49	0.47
51:3:196:G:O2'	51:3:712:A:N1	2.47	0.47
51:3:199:A:H2'	51:3:202:C:N4	2.29	0.47
51:3:251:G:O2'	51:3:254:G:O6	2.28	0.47
51:3:533:G:H2'	51:3:534:U:H6	1.79	0.47
51:3:829:A:H2'	51:3:830:A:C8	2.50	0.47
51:3:1077:G:H2'	51:3:1078:C:C6	2.50	0.47
51:3:1097:G:O6	51:3:1112:A:N6	2.47	0.47
51:3:1336:A:N6	51:3:1640:G:O2'	2.48	0.47
51:3:1474:C:O2	51:3:1492:G:N2	2.48	0.47
51:3:1691:U:H2'	51:3:1692:A:C8	2.49	0.47
51:3:1780:A:C5	51:3:1836:A:H1'	2.50	0.47
51:3:1852:G:C6	51:3:1853:G:C6	3.03	0.47
51:3:2299:U:O2	51:3:2382:A:O2'	2.31	0.47
51:3:2513:G:H2'	51:3:2584:G:H1	1.80	0.47
51:3:2619:C:H2'	51:3:2620:C:C6	2.50	0.47
51:3:2700:C:H2'	51:3:2701:A:C8	2.50	0.47
51:3:2820:G:H2'	51:3:2821:U:C6	2.49	0.47
53:5:336:U:H2'	53:5:337:C:C6	2.50	0.47
53:5:405:C:H2'	53:5:406:G:O4'	2.15	0.47
53:5:522:G:H2'	53:5:523:U:C6	2.49	0.47
53:5:1047:U:H2'	53:5:1048:G:C8	2.49	0.47
53:5:1403:A:H2'	53:5:1404:U:C6	2.50	0.47
53:5:1415:G:H2'	53:5:1416:U:H6	1.80	0.47
53:5:1498:G:H2'	53:5:1499:G:C8	2.48	0.47
1:0:27:GLY:HA2	1:0:30:VAL:HG22	1.97	0.47
5:A:37:TRP:CZ3	5:A:39:PRO:HA	2.49	0.47
6:B:116:ALA:HB2	6:B:205:ILE:HG22	1.96	0.47
10:F:136:LYS:HD3	10:F:136:LYS:HA	1.78	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:G:131:LYS:O	11:G:133:ILE:HG12	2.15	0.47
21:Q:84:ARG:NH2	53:5:661:G:H5''	2.30	0.47
21:Q:94:ARG:HG2	21:Q:99:VAL:HG23	1.97	0.47
25:a:191:LYS:NZ	25:a:276:ASN:O	2.47	0.47
27:c:6:LEU:HD21	27:c:129:ASP:HB3	1.95	0.47
32:h:88:ASN:HA	51:3:1111:C:O2'	2.15	0.47
33:i:56:TYR:CD1	33:i:126:HIS:HE1	2.33	0.47
35:k:128:VAL:O	35:k:149:LEU:N	2.41	0.47
36:l:45:ARG:NH2	51:3:2493:G:OP2	2.43	0.47
42:r:120:GLN:O	42:r:124:LEU:HD23	2.15	0.47
43:s:51:LYS:HB3	47:w:87:TRP:CZ2	2.49	0.47
51:3:499:G:O2'	51:3:501:G:O6	2.32	0.47
51:3:615:G:H2'	51:3:616:G:C8	2.49	0.47
51:3:747:A:H2'	51:3:748:G:O4'	2.15	0.47
51:3:822:C:H3'	51:3:826:C:N4	2.29	0.47
51:3:998:C:H2'	51:3:999:U:C6	2.50	0.47
51:3:1007:C:H1'	51:3:1019:A:C2	2.48	0.47
51:3:1099:C:H2'	51:3:1100:U:O4'	2.15	0.47
51:3:1541:A:O2'	51:3:1590:U:O2'	2.15	0.47
51:3:1541:A:H3'	51:3:1542:G:H8	1.79	0.47
51:3:1778:G:O2'	51:3:1945:A:N6	2.48	0.47
51:3:2093:U:H2'	51:3:2094:A:H8	1.79	0.47
51:3:2190:G:C6	51:3:2191:G:N7	2.82	0.47
51:3:2316:G:O2'	51:3:2317:A:OP1	2.31	0.47
51:3:2355:C:H2'	51:3:2356:U:C6	2.50	0.47
51:3:2600:G:H2'	51:3:2601:U:C6	2.50	0.47
52:4:48:A:HO2'	52:4:49:G:H8	1.59	0.47
53:5:411:A:H2'	53:5:412:G:O4'	2.15	0.47
53:5:765:A:N3	53:5:1487:U:O2'	2.46	0.47
53:5:880:G:H1	53:5:905:U:H3	1.62	0.47
53:5:1249:G:N2	53:5:1250:A:N7	2.63	0.47
54:7:11:G:O2'	54:7:12:C:H5'	2.15	0.47
7:C:12:ARG:HB3	7:C:35:PRO:HD3	1.97	0.47
7:C:193:GLU:O	7:C:197:VAL:HG22	2.14	0.47
8:D:132:HIS:O	8:D:133:LYS:HG3	2.14	0.47
8:D:191:MET:O	8:D:195:THR:HG23	2.14	0.47
9:E:109:LEU:HD13	53:5:838:A:H5''	1.97	0.47
11:G:109:ASN:C	11:G:111:LEU:H	2.21	0.47
11:G:116:ILE:HD11	11:G:135:GLY:N	2.30	0.47
14:J:43:MET:SD	14:J:45:PHE:HB2	2.55	0.47
19:O:74:LYS:HE2	53:5:469:C:H1'	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:a:57:HIS:NE2	25:a:224:ILE:HD12	2.29	0.47
25:a:72:LYS:HA	25:a:157:GLY:HA2	1.95	0.47
25:a:185:LEU:HD13	51:3:1826:A:H3'	1.97	0.47
26:b:179:LEU:HD23	26:b:179:LEU:HA	1.73	0.47
27:c:36:ASP:OD1	27:c:37:ALA:N	2.48	0.47
27:c:141:LYS:O	27:c:145:GLN:HG2	2.14	0.47
29:e:128:VAL:HG22	29:e:134:ILE:HD12	1.97	0.47
35:k:55:GLN:HE22	51:3:867:G:H22	1.63	0.47
42:r:128:ARG:NH2	51:3:580:U:O4'	2.48	0.47
43:s:56:ASN:ND2	51:3:1426:C:OP1	2.47	0.47
50:z:36:LYS:HG2	51:3:2353:G:OP2	2.15	0.47
51:3:241:C:H2'	51:3:242:G:H8	1.80	0.47
51:3:300:G:H2'	51:3:301:G:H8	1.79	0.47
51:3:861:U:H5''	51:3:2437:G:P	2.55	0.47
51:3:1239:G:H4'	51:3:1242:G:H4'	1.97	0.47
51:3:1384:C:H2'	51:3:1385:U:C6	2.50	0.47
51:3:1644:A:H5'	51:3:1645:C:H5	1.80	0.47
51:3:1830:G:H2'	51:3:1831:G:C8	2.50	0.47
51:3:2265:U:H2'	51:3:2266:C:C6	2.50	0.47
53:5:297:A:H2'	53:5:298:G:C8	2.50	0.47
53:5:378:A:H2'	53:5:379:A:C8	2.50	0.47
53:5:855:G:H2'	53:5:856:U:C6	2.50	0.47
53:5:1225:A:C2	53:5:1345:G:H1'	2.50	0.47
53:5:1415:G:H2'	53:5:1416:U:C6	2.50	0.47
4:9:125:GLN:NE2	4:9:375:PHE:O	2.39	0.47
6:B:84:ASN:O	6:B:88:ILE:HG12	2.14	0.47
34:j:19:VAL:HG12	34:j:43:VAL:HA	1.97	0.47
38:n:86:LEU:HD12	38:n:87:THR:N	2.30	0.47
41:q:41:LEU:HD22	41:q:53:ALA:HB1	1.97	0.47
46:v:15:GLY:HA3	46:v:29:TRP:CZ3	2.50	0.47
47:w:31:PHE:O	47:w:35:HIS:ND1	2.39	0.47
51:3:336:C:H2'	51:3:337:U:C6	2.50	0.47
51:3:721:G:H2'	51:3:823:A:N1	2.30	0.47
51:3:1416:G:H2'	51:3:1417:G:C8	2.50	0.47
51:3:2009:U:H2'	51:3:2010:A:H8	1.80	0.47
51:3:2114:C:H3'	51:3:2115:A:H8	1.79	0.47
51:3:2557:G:H2'	51:3:2558:G:H8	1.80	0.47
53:5:126:U:N3	53:5:220:U:O2	2.48	0.47
53:5:760:U:H2'	53:5:761:U:C6	2.50	0.47
53:5:827:C:H2'	53:5:828:U:C6	2.49	0.47
53:5:1124:U:H3'	53:5:1125:C:C6	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1133:A:N6	53:5:1153:G:C2	2.75	0.47
5:A:42:GLY:HA2	5:A:45:ILE:HG22	1.97	0.46
16:L:23:PHE:CE1	53:5:1304:U:H4'	2.50	0.46
19:O:14:VAL:HB	19:O:29:LEU:HD12	1.96	0.46
27:c:127:LEU:HD12	27:c:199:VAL:HG13	1.96	0.46
29:e:18:LEU:HD23	29:e:18:LEU:H	1.78	0.46
29:e:110:LEU:HG	29:e:111:GLY:H	1.81	0.46
34:j:93:PRO:HD3	34:j:114:ILE:HG13	1.97	0.46
37:m:19:ARG:HA	37:m:22:VAL:HG22	1.97	0.46
42:r:104:VAL:HG23	42:r:106:LYS:HZ3	1.80	0.46
49:y:47:MET:HB2	49:y:47:MET:HE2	1.54	0.46
51:3:352:C:H2'	51:3:353:G:C8	2.50	0.46
51:3:587:U:H3'	51:3:588:G:H8	1.80	0.46
51:3:1647:A:C5'	51:3:1648:A:H5''	2.45	0.46
51:3:1662:G:H2'	51:3:1663:G:H8	1.81	0.46
51:3:2101:A:H2'	51:3:2102:U:O4'	2.14	0.46
51:3:2267:G:H5''	51:3:2436:G:OP1	2.15	0.46
51:3:2350:C:H2'	51:3:2351:U:O4'	2.15	0.46
51:3:2486:A:H1'	51:3:2536:U:O2'	2.15	0.46
51:3:2486:A:H2'	51:3:2487:U:H5'	1.97	0.46
51:3:2527:U:H5'	51:3:2575:G:N2	2.29	0.46
51:3:2624:C:H2'	51:3:2625:U:H6	1.81	0.46
53:5:682:G:H2'	53:5:683:G:C5	2.50	0.46
53:5:747:C:H2'	53:5:748:U:C6	2.50	0.46
53:5:802:C:C4	53:5:803:C:N4	2.83	0.46
53:5:1104:C:H2'	53:5:1105:C:H6	1.79	0.46
54:7:9:U:H5''	54:7:50:G:H5'	1.96	0.46
4:9:10:LYS:HA	4:9:10:LYS:HD3	1.64	0.46
6:B:61:THR:HB	13:I:100:VAL:HB	1.97	0.46
22:R:16:LEU:HA	22:R:19:VAL:HG22	1.97	0.46
24:T:31:ARG:HB2	24:T:41:ARG:HH22	1.80	0.46
26:b:37:ALA:HB2	26:b:53:SER:HB3	1.97	0.46
26:b:50:THR:HG22	26:b:52:LEU:HD22	1.96	0.46
26:b:123:ILE:HA	26:b:128:PHE:H	1.80	0.46
33:i:106:ASN:HA	33:i:109:LYS:HB3	1.98	0.46
36:l:85:SER:OG	45:u:22:GLY:O	2.32	0.46
45:u:50:ILE:HA	45:u:74:PHE:HB2	1.97	0.46
51:3:548:A:H2'	51:3:549:A:C8	2.50	0.46
51:3:642:A:H2'	51:3:643:A:O4'	2.14	0.46
51:3:777:C:H42	51:3:790:U:H3	1.62	0.46
51:3:1244:A:H3'	51:3:1245:G:C8	2.49	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1348:C:OP2	51:3:1357:U:H5'	2.15	0.46
51:3:1400:U:O2'	51:3:2220:A:N3	2.45	0.46
51:3:1608:C:C4	51:3:1609:U:C4	3.03	0.46
51:3:1761:C:H2'	51:3:1762:A:O4'	2.14	0.46
51:3:1858:U:C4	51:3:1898:G:O6	2.69	0.46
51:3:2066:A:N6	51:3:2511:A:H2'	2.31	0.46
51:3:2096:U:O4	51:3:2238:G:O6	2.34	0.46
51:3:2115:A:N1	51:3:2190:G:C6	2.83	0.46
53:5:1125:C:O2'	53:5:1255:A:N1	2.42	0.46
53:5:1139:A:H2'	53:5:1140:A:H8	1.79	0.46
54:6:11:G:O2'	54:6:12:C:H5'	2.15	0.46
7:C:17:SER:HA	7:C:23:LYS:CB	2.43	0.46
10:F:8:LYS:NZ	53:5:1351:U:OP2	2.38	0.46
11:G:106:LEU:H	11:G:106:LEU:CD2	2.29	0.46
12:H:87:ARG:NH2	53:5:1109:U:O3'	2.48	0.46
26:b:143:PHE:HD1	26:b:145:GLY:H	1.62	0.46
34:j:18:GLN:HB2	34:j:45:ASP:HB2	1.97	0.46
34:j:48:PRO:HB3	53:5:1397:G:H4'	1.97	0.46
40:p:12:ARG:O	40:p:15:LYS:HG2	2.15	0.46
40:p:33:VAL:O	40:p:37:THR:HG23	2.15	0.46
41:q:3:ALA:HB2	41:q:41:LEU:HD12	1.96	0.46
42:r:34:ASN:ND2	49:y:36:LYS:HB2	2.30	0.46
45:u:86:PHE:HD1	45:u:94:ARG:HG2	1.78	0.46
51:3:36:U:O2'	51:3:37:G:O5'	2.25	0.46
51:3:630:C:H2'	51:3:631:A:C8	2.51	0.46
51:3:1422:U:H5'	51:3:1637:A:O3'	2.15	0.46
51:3:2634:C:H2'	51:3:2635:G:C8	2.50	0.46
51:3:2856:G:H2'	51:3:2857:C:H6	1.80	0.46
53:5:317:A:H61	53:5:328:G:H1	1.63	0.46
53:5:715:A:OP2	53:5:716:C:N4	2.48	0.46
53:5:1162:G:H2'	53:5:1163:A:C8	2.50	0.46
54:6:29:C:H2'	54:6:30:G:H8	1.81	0.46
54:6:34:U:O2'	54:6:37:A:N7	2.39	0.46
3:2:1:MET:HE1	3:2:33:LYS:HB2	1.97	0.46
4:9:35:VAL:HG21	4:9:189:ILE:HD12	1.96	0.46
16:L:67:GLY:O	16:L:71:ARG:NH2	2.48	0.46
26:b:114:SER:HG	26:b:172:GLU:H	1.60	0.46
29:e:67:PHE:HA	29:e:70:THR:HG22	1.97	0.46
30:f:99:ASN:OD1	51:3:165:U:H4'	2.15	0.46
40:p:91:ARG:O	40:p:95:SER:OG	2.25	0.46
45:u:64:ASN:HB2	45:u:97:VAL:HB	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:353:G:C2	51:3:367:G:C2	3.03	0.46
51:3:727:C:H2'	51:3:728:A:H8	1.80	0.46
51:3:741:A:H2'	51:3:742:G:O4'	2.15	0.46
51:3:804:U:H2'	51:3:805:G:C8	2.50	0.46
51:3:955:A:H62	51:3:2276:A:H8	1.64	0.46
51:3:1320:C:H2'	51:3:1321:C:C6	2.51	0.46
51:3:1645:C:H2'	51:3:1646:G:C8	2.51	0.46
51:3:1646:G:H2'	51:3:1647:A:O4'	2.16	0.46
51:3:2063:G:H2'	51:3:2064:G:C8	2.49	0.46
53:5:622:A:H2'	53:5:623:G:H8	1.80	0.46
53:5:791:A:H2'	53:5:792:C:C6	2.51	0.46
53:5:1485:C:H2'	53:5:1486:C:H6	1.80	0.46
54:6:65:C:H2'	54:6:66:C:C6	2.50	0.46
5:A:112:TRP:HZ2	5:A:117:LEU:HB2	1.81	0.46
7:C:197:VAL:HG23	7:C:198:GLU:OE2	2.15	0.46
8:D:103:TYR:O	8:D:125:SER:OG	2.30	0.46
10:F:28:VAL:HG12	53:5:1350:A:H4'	1.98	0.46
20:P:31:LYS:HA	20:P:38:SER:HA	1.98	0.46
21:Q:81:MET:HE1	53:5:660:A:O3'	2.15	0.46
36:l:4:PRO:HD2	36:l:93:TRP:CE2	2.51	0.46
42:r:119:LYS:HA	42:r:122:LYS:HG2	1.98	0.46
47:w:39:ASP:O	47:w:40:LYS:HE2	2.15	0.46
51:3:124:A:H3'	51:3:125:G:H8	1.79	0.46
51:3:341:G:H22	51:3:344:A:P	2.38	0.46
51:3:535:G:H21	51:3:540:A:N6	2.12	0.46
51:3:769:A:C4	51:3:770:A:C8	3.04	0.46
51:3:890:U:H2'	51:3:891:G:H8	1.80	0.46
51:3:931:G:H2'	51:3:932:U:H4'	1.97	0.46
51:3:1104:A:H5'	51:3:1105:A:C8	2.50	0.46
51:3:1437:A:H2'	51:3:1438:G:C8	2.50	0.46
51:3:1829:U:H2'	51:3:1830:G:C8	2.50	0.46
51:3:2381:G:H2'	51:3:2382:A:H8	1.81	0.46
51:3:2666:C:N4	51:3:2667:G:O6	2.48	0.46
53:5:168:A:H3'	53:5:169:G:C8	2.49	0.46
53:5:318:C:H42	53:5:325:A:N6	1.91	0.46
53:5:621:C:H2'	53:5:622:A:H8	1.79	0.46
53:5:899:U:H2'	53:5:900:G:O4'	2.15	0.46
53:5:1390:G:H1	53:5:1460:U:H3	1.61	0.46
11:G:101:PHE:HD1	11:G:129:ARG:HH11	1.63	0.46
11:G:108:LEU:HD12	11:G:108:LEU:HA	1.67	0.46
12:H:9:LEU:H	12:H:87:ARG:HD2	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:I:31:ILE:HA	13:I:34:VAL:HG22	1.97	0.46
13:I:56:THR:HB	13:I:68:ARG:HD2	1.97	0.46
22:R:73:GLU:HG2	53:5:1294:U:H1'	1.97	0.46
35:k:55:GLN:HE22	51:3:867:G:N2	2.14	0.46
39:o:37:LEU:O	39:o:43:VAL:HA	2.15	0.46
40:p:65:ASN:HA	40:p:68:LEU:HD12	1.98	0.46
51:3:79:U:H2'	51:3:80:U:O4'	2.14	0.46
51:3:639:G:H2'	51:3:640:U:C6	2.51	0.46
51:3:1309:G:H2'	51:3:1310:U:C6	2.51	0.46
51:3:1394:A:H2'	51:3:1395:A:O4'	2.16	0.46
51:3:1848:U:H2'	51:3:1849:G:C8	2.50	0.46
51:3:2103:C:H2'	51:3:2104:A:C8	2.51	0.46
51:3:2267:G:H2'	51:3:2268:C:C6	2.50	0.46
51:3:2671:G:H2'	51:3:2672:G:O4'	2.16	0.46
53:5:318:C:H2'	53:5:319:U:C6	2.50	0.46
53:5:348:C:H4'	53:5:350:G:OP1	2.15	0.46
53:5:380:G:H2'	53:5:381:C:C6	2.51	0.46
53:5:481:U:H4'	53:5:482:G:H2'	1.97	0.46
53:5:682:G:N2	53:5:703:A:C6	2.84	0.46
53:5:1244:A:O2'	53:5:1299:C:O2	2.29	0.46
54:7:65:C:H2'	54:7:66:C:C6	2.51	0.46
2:1:19:ILE:H	2:1:19:ILE:HD12	1.80	0.46
4:9:328:ARG:NH2	54:6:51:G:N3	2.64	0.46
13:I:43:LYS:HD2	13:I:81:ILE:HD12	1.98	0.46
15:K:114:THR:O	15:K:115:LEU:HG	2.16	0.46
22:R:41:PHE:CG	22:R:42:PRO:HD2	2.50	0.46
27:c:4:LEU:HD11	27:c:126:HIS:HA	1.97	0.46
27:c:165:ASN:O	27:c:168:LEU:HG	2.15	0.46
33:i:71:LYS:HA	33:i:75:GLU:OE1	2.16	0.46
35:k:43:LYS:NZ	51:3:708:C:OP2	2.41	0.46
36:l:34:LEU:HB2	36:l:118:LEU:HD13	1.97	0.46
36:l:45:ARG:NH2	51:3:2492:G:H5''	2.30	0.46
40:p:22:GLY:HA2	51:3:20:C:O3'	2.16	0.46
44:t:10:VAL:HG21	44:t:74:LEU:HB3	1.96	0.46
51:3:37:G:H1'	51:3:490:A:C4	2.51	0.46
51:3:118:G:OP2	51:3:120:A:O2'	2.17	0.46
51:3:212:G:H2'	51:3:213:C:C6	2.51	0.46
51:3:532:A:H2'	51:3:533:G:H8	1.81	0.46
51:3:646:A:H2'	51:3:647:G:H5'	1.98	0.46
51:3:723:U:H2'	51:3:724:A:C8	2.51	0.46
51:3:1296:G:N2	51:3:2019:G:H2'	2.31	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1337:G:C2	51:3:1338:G:C5	3.04	0.46
51:3:1384:C:H2'	51:3:1385:U:H6	1.80	0.46
51:3:1472:C:H2'	51:3:1473:C:C6	2.50	0.46
51:3:1931:C:H2'	51:3:1932:C:O4'	2.15	0.46
53:5:26:C:H5'	53:5:522:G:H1'	1.97	0.46
53:5:115:A:C5	53:5:186:A:H1'	2.50	0.46
53:5:144:U:O2	53:5:149:G:N2	2.32	0.46
53:5:252:U:H2'	53:5:253:G:C8	2.51	0.46
53:5:336:U:H2'	53:5:337:C:H6	1.80	0.46
53:5:661:G:N1	53:5:738:A:N6	2.34	0.46
53:5:705:A:H2'	53:5:706:U:C6	2.51	0.46
53:5:1390:G:H2'	53:5:1391:A:H8	1.81	0.46
4:9:191:ASP:HA	4:9:194:ASN:HD22	1.81	0.46
8:D:153:PRO:HA	8:D:178:ILE:HD12	1.98	0.46
9:E:92:ARG:HH12	21:Q:88:LYS:HB2	1.80	0.46
11:G:98:TYR:CE2	11:G:136:GLU:HB2	2.51	0.46
12:H:53:PRO:HG2	12:H:85:ILE:HD11	1.98	0.46
15:K:47:CYS:HA	15:K:68:VAL:HA	1.98	0.46
16:L:28:SER:CB	53:5:1302:C:H5''	2.46	0.46
19:O:22:ARG:HH22	53:5:386:U:H4'	1.81	0.46
25:a:13:GLY:HA3	51:3:764:G:H22	1.81	0.46
27:c:59:ARG:NH2	51:3:505:G:OP2	2.38	0.46
29:e:89:LYS:HG2	29:e:168:PHE:CD1	2.50	0.46
29:e:146:GLN:CD	51:3:2752:G:H21	2.22	0.46
34:j:15:GLY:HA3	34:j:50:GLY:HA2	1.96	0.46
42:r:70:TYR:OH	42:r:110:ASN:O	2.29	0.46
43:s:16:VAL:O	43:s:20:GLN:HB2	2.15	0.46
47:w:18:LEU:HA	47:w:21:LYS:HG2	1.97	0.46
50:z:12:ASN:ND2	50:z:48:LYS:HB2	2.30	0.46
51:3:8:A:H2'	51:3:9:G:C8	2.51	0.46
51:3:269:A:N3	51:3:270:G:H1'	2.31	0.46
51:3:519:A:P	51:3:520:C:H41	2.39	0.46
51:3:563:A:H2'	51:3:2049:A:C2	2.51	0.46
51:3:900:G:H2'	51:3:901:C:C6	2.50	0.46
51:3:1578:A:H2'	51:3:1579:G:O4'	2.15	0.46
51:3:1779:G:H2'	51:3:1780:A:O3'	2.15	0.46
51:3:2152:C:OP2	51:3:2153:U:N3	2.47	0.46
51:3:2654:U:H2'	51:3:2655:U:O4'	2.16	0.46
51:3:2658:U:H2'	51:3:2659:U:C6	2.50	0.46
51:3:2700:C:H2'	51:3:2701:A:H8	1.81	0.46
53:5:226:G:H2'	53:5:227:A:C8	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:575:A:H2'	53:5:576:A:H8	1.81	0.46
53:5:826:G:H2'	53:5:827:C:C6	2.50	0.46
53:5:1131:A:H2'	53:5:1132:G:O4'	2.16	0.46
53:5:1390:G:H2'	53:5:1391:A:C8	2.50	0.46
54:7:22:A:N6	54:7:47:G:H1'	2.31	0.46
54:7:23:G:N7	54:7:47:G:C2	2.83	0.46
1:0:19:LEU:HA	1:0:22:MET:HB3	1.98	0.46
3:2:11:CYS:HB2	3:2:32:HIS:ND1	2.30	0.46
8:D:66:PHE:CZ	8:D:96:ASN:HB3	2.51	0.46
11:G:11:HIS:HB3	11:G:17:ASP:OD1	2.16	0.46
16:L:73:ILE:O	16:L:77:ILE:HG12	2.15	0.46
25:a:90:PRO:HG3	51:3:1601:A:H2'	1.98	0.46
25:a:233:MET:HB2	25:a:241:GLY:HA3	1.98	0.46
26:b:57:VAL:HG11	26:b:79:LYS:HZ3	1.81	0.46
32:h:129:LYS:O	51:3:1112:A:O2'	2.32	0.46
34:j:98:ILE:HB	34:j:118:ALA:HA	1.97	0.46
35:k:40:LYS:HA	35:k:45:GLY:HA3	1.98	0.46
35:k:64:LYS:NZ	51:3:2403:C:OP1	2.46	0.46
51:3:534:U:O4	51:3:538:A:N7	2.49	0.46
51:3:542:A:P	51:3:543:U:H3	2.38	0.46
51:3:562:C:O2'	51:3:563:A:OP2	2.29	0.46
51:3:721:G:H2'	51:3:823:A:C2	2.51	0.46
51:3:756:A:H2'	51:3:757:A:H8	1.79	0.46
51:3:808:U:O2'	51:3:813:G:H4'	2.16	0.46
51:3:1038:G:H2'	51:3:1039:G:C8	2.51	0.46
51:3:1051:U:H2'	51:3:1052:A:C8	2.50	0.46
51:3:1293:U:H3'	51:3:1294:G:C8	2.50	0.46
51:3:1604:A:H2'	51:3:1605:A:C8	2.51	0.46
51:3:2371:U:H2'	51:3:2372:C:C6	2.51	0.46
51:3:2639:G:H2'	51:3:2640:A:C8	2.51	0.46
53:5:232:G:H2'	53:5:233:C:O4'	2.16	0.46
53:5:288:A:OP2	53:5:301:G:N2	2.42	0.46
53:5:880:G:H2'	53:5:881:G:C8	2.50	0.46
53:5:988:G:H21	53:5:991:A:H61	1.62	0.46
53:5:1124:U:H3'	53:5:1125:C:H6	1.81	0.46
53:5:1240:U:H2'	53:5:1241:G:C8	2.51	0.46
53:5:1285:G:H2'	53:5:1286:G:C8	2.51	0.46
53:5:1376:G:O6	53:5:1479:G:N2	2.49	0.46
54:6:22:A:N6	54:6:47:G:H1'	2.31	0.46
54:6:56:U:H2'	54:6:57:C:H3'	1.98	0.46
54:7:66:C:H2'	54:7:67:C:C6	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:37:GLN:O	2:1:41:LEU:HB2	2.15	0.46
4:9:214:ALA:O	4:9:230:GLY:HA3	2.16	0.46
6:B:44:PHE:HE2	6:B:67:VAL:HG21	1.80	0.46
9:E:42:LEU:HB2	9:E:56:HIS:CD2	2.51	0.46
9:E:53:LEU:HD23	9:E:53:LEU:H	1.81	0.46
15:K:128:SER:O	53:5:36:G:H1'	2.16	0.46
22:R:82:GLN:HB2	53:5:951:U:H4'	1.98	0.46
25:a:124:SER:N	25:a:197:ARG:HH22	2.14	0.46
27:c:133:PHE:HB3	27:c:165:ASN:HD22	1.81	0.46
30:f:10:SER:HB2	30:f:14:LYS:HE3	1.96	0.46
30:f:79:PHE:O	30:f:142:VAL:HA	2.16	0.46
33:i:47:PHE:HA	33:i:53:CYS:SG	2.56	0.46
37:m:109:ASP:HB3	51:3:1683:G:H21	1.80	0.46
41:q:76:GLN:NE2	51:3:598:G:OP2	2.48	0.46
43:s:27:TYR:CE2	43:s:85:LEU:HD22	2.50	0.46
51:3:55:A:H3'	51:3:56:G:H8	1.79	0.46
51:3:500:U:H2'	51:3:501:G:C5	2.51	0.46
51:3:533:G:H2'	51:3:534:U:C6	2.50	0.46
51:3:914:G:N2	51:3:915:A:N7	2.64	0.46
51:3:1118:U:O2'	51:3:1120:A:N7	2.38	0.46
51:3:1974:U:H3'	51:3:1975:G:H8	1.80	0.46
51:3:2088:U:H2'	51:3:2245:G:N2	2.30	0.46
52:4:59:A:H2'	52:4:60:C:C6	2.51	0.46
53:5:240:U:N3	53:5:887:C:O2	2.37	0.46
53:5:549:U:H2'	53:5:550:U:H6	1.81	0.46
53:5:825:A:H2'	53:5:826:G:O4'	2.16	0.46
53:5:992:U:H2'	53:5:993:C:O4'	2.16	0.46
53:5:1193:U:H2'	53:5:1194:A:C8	2.51	0.46
53:5:1242:U:H5''	53:5:1243:A:OP2	2.16	0.46
54:6:12:C:H2'	54:6:13:U:C6	2.51	0.46
54:6:23:G:N7	54:6:47:G:C2	2.83	0.46
9:E:103:LYS:HD3	9:E:103:LYS:HA	1.72	0.45
30:f:6:LYS:HB2	30:f:33:LYS:O	2.16	0.45
35:k:133:LYS:O	35:k:137:LYS:HG2	2.15	0.45
37:m:102:LYS:HA	37:m:102:LYS:HE3	1.98	0.45
38:n:14:ARG:O	38:n:17:LYS:HG3	2.15	0.45
38:n:79:ASP:HA	38:n:82:VAL:HG22	1.98	0.45
51:3:210:U:C2	51:3:211:A:C8	3.03	0.45
51:3:360:G:H2'	51:3:361:G:C8	2.51	0.45
51:3:653:G:H2'	51:3:654:G:H8	1.79	0.45
51:3:1204:A:N1	51:3:1212:C:N3	2.64	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1342:C:H5'	51:3:1644:A:N1	2.31	0.45
51:3:1418:U:H3	51:3:1423:A:H62	1.64	0.45
51:3:2268:C:H2'	51:3:2269:C:C6	2.50	0.45
51:3:2552:G:H2'	51:3:2553:G:C8	2.51	0.45
51:3:2557:G:H2'	51:3:2558:G:C8	2.51	0.45
52:4:23:A:OP2	52:4:25:A:N6	2.48	0.45
52:4:74:G:H2'	52:4:75:U:C6	2.50	0.45
53:5:101:A:H2'	53:5:102:G:O4'	2.16	0.45
53:5:693:A:H2	53:5:783:G:N3	2.14	0.45
53:5:953:A:H2'	53:5:954:A:C8	2.50	0.45
53:5:1377:C:H2'	53:5:1378:C:O4'	2.15	0.45
54:6:66:C:H2'	54:6:67:C:C6	2.51	0.45
6:B:87:LYS:O	6:B:90:LYS:HG3	2.16	0.45
13:I:78:ARG:NE	53:5:1127:A:H4'	2.29	0.45
14:J:48:SER:N	53:5:692:A:OP1	2.35	0.45
16:L:87:ARG:HH11	53:5:1294:U:H5''	1.82	0.45
16:L:101:ARG:HH22	53:5:945:U:P	2.38	0.45
22:R:39:THR:HG22	22:R:40:ILE:N	2.30	0.45
24:T:51:LYS:NZ	53:5:1508:C:O2'	2.50	0.45
28:d:4:LEU:CD1	28:d:101:GLU:HB3	2.47	0.45
29:e:65:LYS:HE3	51:3:2757:A:H4'	1.97	0.45
37:m:84:SER:OG	37:m:85:LYS:NZ	2.43	0.45
37:m:103:LEU:HD21	37:m:115:ILE:HB	1.97	0.45
40:p:12:ARG:NH1	51:3:847:C:OP1	2.32	0.45
40:p:50:ARG:NH2	51:3:1028:C:O5'	2.45	0.45
51:3:137:U:H2'	51:3:138:U:C6	2.51	0.45
51:3:143:A:H8	51:3:143:A:O5'	1.99	0.45
51:3:245:U:O3'	51:3:246:G:H4'	2.16	0.45
51:3:567:U:H4'	51:3:568:G:C8	2.52	0.45
51:3:738:U:C4	51:3:763:G:O6	2.68	0.45
51:3:1396:A:H2'	51:3:1397:G:C8	2.51	0.45
51:3:1851:U:H2'	51:3:1852:G:C8	2.50	0.45
51:3:2101:A:N6	51:3:2203:U:H3	2.14	0.45
51:3:2292:A:O2'	51:3:2296:A:N1	2.39	0.45
51:3:2486:A:C2'	51:3:2487:U:H5'	2.46	0.45
53:5:429:A:H2'	53:5:430:G:O4'	2.16	0.45
53:5:543:C:O2'	53:5:547:C:H5''	2.16	0.45
53:5:674:U:H2'	53:5:675:U:H6	1.81	0.45
53:5:1065:G:N2	53:5:1074:U:O2	2.30	0.45
53:5:1245:A:H2'	53:5:1246:A:C8	2.51	0.45
53:5:1306:A:H2'	53:5:1307:A:C8	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:7:12:C:H2'	54:7:13:U:C6	2.51	0.45
1:0:32:LYS:HB3	1:0:36:LYS:NZ	2.30	0.45
5:A:112:TRP:CD1	5:A:186:ASN:HB2	2.52	0.45
5:A:158:ARG:HA	5:A:161:LYS:HG2	1.98	0.45
16:L:29:ARG:NH2	16:L:64:LYS:HD2	2.31	0.45
20:P:25:GLN:HE21	20:P:42:HIS:CD2	2.33	0.45
25:a:266:LYS:NZ	25:a:282:ARG:HH21	2.13	0.45
26:b:4:ARG:HB3	26:b:101:LEU:HD13	1.98	0.45
26:b:211:LYS:HB3	51:3:2779:C:H5''	1.99	0.45
34:j:59:ARG:NH1	51:3:2570:U:OP1	2.49	0.45
35:k:53:GLY:HA3	51:3:867:G:O2'	2.17	0.45
36:l:134:ARG:HD2	36:l:135:GLU:O	2.16	0.45
41:q:60:GLU:OE1	41:q:91:LYS:NZ	2.49	0.45
42:r:72:PHE:HB2	42:r:108:SER:HB3	1.98	0.45
51:3:660:U:H2'	51:3:661:G:C8	2.51	0.45
51:3:855:A:OP2	51:3:1009:A:N6	2.37	0.45
51:3:1010:G:N2	51:3:1025:G:H1'	2.31	0.45
51:3:1937:G:H22	51:3:1976:A:P	2.38	0.45
51:3:2650:A:H2'	51:3:2651:G:C8	2.48	0.45
51:3:2705:G:H2'	51:3:2706:U:H6	1.80	0.45
53:5:7:U:H4'	53:5:294:A:O4'	2.16	0.45
53:5:116:A:O2'	53:5:117:U:H5''	2.16	0.45
53:5:400:G:H8	53:5:400:G:OP2	1.99	0.45
53:5:926:C:H2'	53:5:927:C:C6	2.51	0.45
53:5:945:U:H2'	53:5:946:G:C8	2.51	0.45
53:5:1008:G:H2'	53:5:1009:G:O4'	2.16	0.45
53:5:1283:G:H2'	53:5:1284:A:H8	1.81	0.45
53:5:1434:C:H2'	53:5:1435:G:H5'	1.98	0.45
53:5:1503:U:O2'	53:5:1505:G:H8	2.00	0.45
54:7:29:C:H2'	54:7:30:G:H8	1.81	0.45
4:9:205:ARG:HG3	4:9:271:ALA:O	2.16	0.45
5:A:231:LEU:HD22	5:A:246:PHE:CD2	2.52	0.45
12:H:50:MET:SD	12:H:50:MET:N	2.88	0.45
13:I:48:LEU:HB2	13:I:77:LYS:O	2.16	0.45
13:I:66:ALA:HA	13:I:68:ARG:NH2	2.31	0.45
16:L:87:ARG:NH2	16:L:98:ARG:HA	2.32	0.45
30:f:68:LEU:O	30:f:72:ILE:HG12	2.17	0.45
33:i:36:ALA:HA	33:i:39:ILE:HG22	1.98	0.45
46:v:57:THR:O	46:v:60:LYS:HG2	2.15	0.45
51:3:488:G:N2	51:3:494:G:O4'	2.49	0.45
51:3:511:U:H2'	51:3:512:G:O4'	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:645:C:H2'	51:3:646:A:H8	1.80	0.45
51:3:731:A:H2'	51:3:732:G:O4'	2.16	0.45
51:3:961:U:H2'	51:3:962:U:C5	2.51	0.45
51:3:2406:U:H2'	51:3:2407:G:C8	2.52	0.45
51:3:2528:C:H2'	51:3:2529:C:C6	2.51	0.45
51:3:2670:A:C8	51:3:2671:G:C8	3.05	0.45
53:5:234:G:H2'	53:5:235:C:C6	2.51	0.45
53:5:660:A:H61	53:5:739:G:H1	1.62	0.45
53:5:779:A:H62	53:5:797:G:H21	1.64	0.45
53:5:822:A:H2'	53:5:823:C:H6	1.80	0.45
53:5:1146:A:H2'	53:5:1147:U:C6	2.51	0.45
53:5:1453:C:H2'	53:5:1454:G:H8	1.81	0.45
54:7:28:A:H2'	54:7:29:C:C5	2.52	0.45
4:9:211:PHE:HB2	4:9:295:LYS:HE2	1.98	0.45
15:K:127:ARG:H	15:K:127:ARG:HD3	1.82	0.45
26:b:173:LYS:HG2	51:3:2781:C:H5''	1.99	0.45
28:d:56:GLU:O	28:d:60:ILE:HG13	2.16	0.45
28:d:65:PRO:HA	28:d:89:VAL:HG22	1.98	0.45
33:i:38:LEU:HD22	33:i:57:LEU:HD21	1.97	0.45
51:3:177:U:H2'	51:3:178:A:C8	2.52	0.45
51:3:333:A:C6	51:3:356:A:H1'	2.52	0.45
51:3:333:A:N3	51:3:353:G:O2'	2.50	0.45
51:3:513:A:O2'	51:3:514:A:OP1	2.29	0.45
51:3:535:G:N2	51:3:540:A:N6	2.64	0.45
51:3:947:A:C5	51:3:948:A:N6	2.85	0.45
51:3:1039:G:N2	51:3:1046:A:H1'	2.32	0.45
51:3:1292:A:H2'	51:3:1293:U:C6	2.52	0.45
51:3:1439:U:H2'	51:3:1440:U:C6	2.51	0.45
51:3:1449:G:H2'	51:3:1450:G:C8	2.52	0.45
51:3:2111:U:O4	51:3:2194:G:H1'	2.17	0.45
51:3:2355:C:N3	51:3:2379:G:N2	2.65	0.45
53:5:111:A:H5'	53:5:630:G:N2	2.30	0.45
53:5:201:G:H2'	53:5:202:A:C8	2.52	0.45
53:5:663:G:H2'	53:5:664:A:H8	1.82	0.45
53:5:744:U:H4'	53:5:745:U:C5	2.51	0.45
53:5:915:U:H2'	53:5:916:U:C6	2.51	0.45
53:5:1117:U:H3'	53:5:1118:A:C2	2.52	0.45
54:7:72:C:H2'	54:7:73:C:C6	2.52	0.45
4:9:151:ALA:O	4:9:155:ARG:HG3	2.16	0.45
4:9:171:ILE:HD13	4:9:192:LEU:HD12	1.99	0.45
7:C:79:LEU:O	7:C:82:ARG:NH1	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:K:67:LYS:HG3	15:K:75:GLU:HG3	1.99	0.45
28:d:58:HIS:CD2	28:d:64:LYS:HD3	2.51	0.45
32:h:72:VAL:HA	32:h:75:LEU:HB2	1.97	0.45
37:m:22:VAL:HA	37:m:25:VAL:HG12	1.99	0.45
38:n:36:LEU:HD21	52:4:27:A:C8	2.51	0.45
51:3:39:C:H2'	51:3:40:A:C8	2.52	0.45
51:3:219:G:H21	51:3:220:A:H1'	1.81	0.45
51:3:713:C:H2'	51:3:714:G:H8	1.82	0.45
51:3:1009:A:O2'	51:3:1217:G:N2	2.50	0.45
51:3:1062:A:H2'	51:3:1063:A:H8	1.81	0.45
51:3:1382:A:H8	51:3:1383:G:C8	2.34	0.45
51:3:1512:A:H2'	51:3:1513:A:H8	1.82	0.45
51:3:1638:C:H2'	51:3:1639:C:H6	1.82	0.45
51:3:1682:C:H2'	51:3:1683:G:C8	2.52	0.45
51:3:2234:C:C2	51:3:2235:A:C8	3.05	0.45
51:3:2264:G:H2'	51:3:2265:U:C6	2.52	0.45
53:5:19:C:H2'	53:5:20:C:C6	2.51	0.45
53:5:87:G:H2'	53:5:88:A:C8	2.50	0.45
53:5:163:G:OP2	53:5:163:G:N2	2.43	0.45
53:5:861:A:H2'	53:5:862:C:C6	2.51	0.45
54:6:72:C:H2'	54:6:73:C:C6	2.52	0.45
2:1:6:ALA:HA	2:1:9:LYS:HZ2	1.80	0.45
5:A:37:TRP:HA	5:A:205:ASN:HB3	1.99	0.45
16:L:5:LEU:HB2	16:L:57:ARG:HH21	1.82	0.45
16:L:28:SER:O	16:L:31:GLN:HG3	2.17	0.45
29:e:89:LYS:CE	29:e:133:GLU:HG3	2.46	0.45
34:j:27:SER:OG	51:3:2681:G:N2	2.49	0.45
37:m:99:ARG:HB2	37:m:117:GLN:NE2	2.23	0.45
42:r:9:ARG:HG2	42:r:100:SER:HB2	1.97	0.45
47:w:23:LYS:HE3	47:w:64:ASN:HD22	1.81	0.45
51:3:90:G:H2'	51:3:91:G:C8	2.51	0.45
51:3:712:A:O2'	51:3:2077:A:O3'	2.34	0.45
51:3:829:A:O5'	51:3:829:A:H8	1.99	0.45
51:3:851:U:H2'	51:3:852:C:C6	2.51	0.45
51:3:863:U:H2'	51:3:864:A:C8	2.52	0.45
51:3:1020:G:OP1	51:3:1021:C:N4	2.45	0.45
51:3:1141:U:H2'	51:3:1142:G:C8	2.50	0.45
51:3:1298:A:C4	51:3:2020:A:C6	3.05	0.45
51:3:1778:G:H2'	51:3:1779:G:H8	1.80	0.45
51:3:1828:A:H2'	51:3:1829:U:C6	2.51	0.45
51:3:1987:C:H3'	51:3:1988:A:H5''	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2004:G:C6	51:3:2005:G:C6	3.04	0.45
51:3:2663:G:HO2'	51:3:2672:G:H1	1.64	0.45
53:5:11:A:H2'	53:5:12:G:C8	2.52	0.45
53:5:359:A:H2'	53:5:360:A:C8	2.52	0.45
53:5:662:G:N3	53:5:729:C:H2'	2.32	0.45
53:5:1371:A:H4'	53:5:1372:C:H5''	1.98	0.45
4:9:302:HIS:CD2	4:9:369:CYS:H	2.35	0.45
5:A:30:VAL:HG12	5:A:56:PHE:H	1.82	0.45
9:E:1:MET:HG2	9:E:2:GLN:H	1.82	0.45
27:c:172:THR:HB	27:c:178:VAL:HB	1.99	0.45
29:e:55:ILE:HG13	29:e:68:HIS:CE1	2.50	0.45
29:e:98:ARG:HG2	29:e:99:ALA:N	2.32	0.45
38:n:77:ILE:HA	38:n:80:LYS:HE2	1.99	0.45
40:p:94:LEU:HG	41:q:13:LEU:HD22	1.98	0.45
51:3:46:A:H2'	51:3:47:G:C8	2.52	0.45
51:3:54:A:C2	51:3:55:A:H1'	2.51	0.45
51:3:200:A:H61	51:3:866:G:N2	2.09	0.45
51:3:223:A:O2'	51:3:238:U:O2'	2.33	0.45
51:3:257:C:H2'	51:3:258:G:O4'	2.17	0.45
51:3:461:C:H2'	51:3:462:C:C6	2.52	0.45
51:3:746:G:H2'	51:3:747:A:H8	1.82	0.45
51:3:1551:U:H2'	51:3:1552:C:O4'	2.16	0.45
51:3:1613:A:H3'	51:3:1614:G:H8	1.82	0.45
51:3:1690:C:H2'	51:3:1691:U:H6	1.81	0.45
51:3:2081:U:H2'	51:3:2082:U:H6	1.82	0.45
51:3:2120:G:N1	51:3:2176:G:O2'	2.32	0.45
51:3:2150:C:H1'	51:3:2156:G:N2	2.32	0.45
51:3:2332:U:H3'	51:3:2333:G:H5'	1.98	0.45
51:3:2555:U:H2'	51:3:2556:C:C6	2.51	0.45
53:5:36:G:C6	53:5:548:G:C2	3.05	0.45
53:5:42:G:H2'	53:5:43:G:H8	1.82	0.45
53:5:265:U:H2'	53:5:266:A:C8	2.51	0.45
53:5:266:A:H2'	53:5:267:C:C6	2.51	0.45
53:5:320:G:N1	53:5:323:A:OP2	2.46	0.45
53:5:896:G:H2'	53:5:897:A:H8	1.82	0.45
53:5:1405:U:H2'	53:5:1406:U:H6	1.82	0.45
4:9:93:ILE:O	4:9:97:ALA:N	2.48	0.45
10:F:104:ALA:O	10:F:108:ARG:HG2	2.16	0.45
15:K:61:ALA:HB2	53:5:527:G:H22	1.81	0.45
16:L:29:ARG:O	16:L:33:ILE:HG12	2.17	0.45
25:a:92:ARG:NE	25:a:94:CYS:SG	2.80	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:b:17:PHE:CE2	26:b:23:ARG:HB2	2.52	0.45
26:b:126:TRP:HE1	26:b:165:MET:C	2.25	0.45
26:b:160:PHE:CZ	33:i:84:ILE:HG13	2.52	0.45
30:f:120:GLY:HA2	30:f:124:HIS:CG	2.51	0.45
46:v:12:PRO:HB3	46:v:30:ASN:HA	1.99	0.45
51:3:254:G:H2'	51:3:255:A:C8	2.51	0.45
51:3:334:A:H1'	51:3:353:G:H1'	1.98	0.45
51:3:748:G:N2	51:3:753:A:H62	2.14	0.45
51:3:806:A:H2'	51:3:807:U:C6	2.52	0.45
51:3:920:G:N1	51:3:931:G:O6	2.50	0.45
51:3:1010:G:O4'	51:3:1026:A:N6	2.50	0.45
51:3:1126:G:H2'	51:3:1127:C:C6	2.51	0.45
51:3:1508:G:O2'	51:3:1535:A:N6	2.50	0.45
51:3:1544:G:H2'	51:3:1545:A:H8	1.81	0.45
51:3:1546:U:H3'	51:3:1547:G:H8	1.80	0.45
51:3:2348:U:H2'	51:3:2349:G:C8	2.52	0.45
51:3:2513:G:H5'	51:3:2580:A:N1	2.32	0.45
51:3:2644:U:H2'	51:3:2645:U:C6	2.51	0.45
51:3:2731:U:H2'	51:3:2732:A:C8	2.52	0.45
51:3:2794:U:OP2	51:3:2794:U:C6	2.70	0.45
53:5:285:G:H2'	53:5:286:C:C6	2.52	0.45
53:5:368:C:N4	53:5:384:G:OP2	2.44	0.45
53:5:585:G:N2	53:5:751:C:OP2	2.48	0.45
53:5:859:A:H5'	53:5:1069:U:O4	2.17	0.45
53:5:1400:A:O2'	53:5:1401:A:H5'	2.17	0.45
4:9:112:VAL:HG13	4:9:116:THR:HB	1.99	0.45
4:9:146:VAL:O	4:9:150:VAL:HG23	2.17	0.45
6:B:178:LEU:N	53:5:1099:G:OP1	2.49	0.45
10:F:115:MET:HG3	10:F:118:LYS:HD2	1.98	0.45
11:G:9:LYS:HE2	11:G:9:LYS:HB3	1.82	0.45
25:a:229:ARG:HH22	51:3:1834:U:H3'	1.82	0.45
26:b:161:LYS:HE3	51:3:2627:U:H5''	1.99	0.45
30:f:38:PRO:HB2	30:f:41:LYS:HE3	1.99	0.45
34:j:1:MET:HE2	34:j:1:MET:H2	1.82	0.45
40:p:77:VAL:O	40:p:81:LEU:HG	2.17	0.45
42:r:9:ARG:H	42:r:102:ASN:HA	1.81	0.45
42:r:116:GLU:N	42:r:116:GLU:OE1	2.49	0.45
44:t:26:LYS:HD3	44:t:26:LYS:HA	1.78	0.45
49:y:19:HIS:CE1	51:3:2632:C:H1'	2.47	0.45
50:z:9:LEU:HA	50:z:49:GLU:HA	1.99	0.45
51:3:664:G:H2'	51:3:665:C:C6	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1094:G:H2'	51:3:1095:U:C5	2.51	0.45
51:3:1227:C:H2'	51:3:1228:G:H8	1.81	0.45
51:3:1244:A:H3'	51:3:1245:G:H8	1.82	0.45
51:3:1672:C:O3'	51:3:2717:G:N2	2.50	0.45
51:3:2455:G:H1	51:3:2459:A:H61	1.65	0.45
51:3:2561:G:C8	51:3:2591:G:H4'	2.52	0.45
51:3:2816:A:H2'	51:3:2817:G:H8	1.81	0.45
53:5:453:C:H2'	53:5:454:U:C6	2.52	0.45
53:5:577:G:H5'	53:5:725:A:H1'	1.99	0.45
53:5:625:U:H2'	53:5:626:G:C8	2.52	0.45
53:5:776:C:H2'	53:5:777:A:O4'	2.17	0.45
53:5:981:U:H2'	53:5:982:A:H8	1.82	0.45
53:5:1008:G:O6	53:5:1014:A:N6	2.50	0.45
53:5:1410:A:H61	53:5:1441:C:H42	1.63	0.45
4:9:190:HIS:HA	4:9:193:MET:HG3	1.98	0.44
7:C:68:ASP:OD2	53:5:543:C:H5''	2.17	0.44
10:F:16:VAL:HG13	10:F:17:PHE:CD1	2.52	0.44
10:F:113:LYS:HA	53:5:1272:C:C6	2.52	0.44
15:K:40:SER:OG	15:K:43:LYS:NZ	2.50	0.44
16:L:101:ARG:NH1	53:5:945:U:H3'	2.32	0.44
26:b:10:LYS:HE3	26:b:201:GLU:HA	1.99	0.44
27:c:181:LYS:HE2	51:3:648:G:H1	1.82	0.44
27:c:194:ALA:C	27:c:196:ALA:H	2.24	0.44
35:k:47:THR:HB	35:k:51:PHE:HD2	1.81	0.44
40:p:2:ARG:O	40:p:3:ILE:HD13	2.16	0.44
51:3:297:G:H2'	51:3:457:U:OP2	2.17	0.44
51:3:465:A:H3'	51:3:465:A:OP2	2.18	0.44
51:3:680:A:H4'	51:3:681:A:C4	2.53	0.44
51:3:741:A:C2	51:3:742:G:H1'	2.51	0.44
51:3:771:C:H2'	51:3:772:C:H6	1.82	0.44
51:3:995:A:H2'	51:3:996:A:C8	2.52	0.44
51:3:1263:G:C2	51:3:1264:U:C5	3.05	0.44
51:3:1474:C:H2'	51:3:1475:C:C6	2.51	0.44
51:3:1491:G:H2'	51:3:1492:G:C8	2.53	0.44
51:3:1803:U:O2	51:3:1830:G:N2	2.35	0.44
51:3:1869:G:H2'	51:3:1870:G:C8	2.52	0.44
51:3:2047:U:H2'	51:3:2048:U:C6	2.52	0.44
51:3:2105:G:N2	51:3:2200:U:O2	2.50	0.44
51:3:2260:G:H2'	51:3:2261:G:H8	1.82	0.44
52:4:59:A:H2'	52:4:60:C:H6	1.81	0.44
53:5:207:C:H3'	53:5:208:A:H8	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:445:A:H3'	53:5:446:A:C8	2.50	0.44
53:5:977:U:H4'	53:5:978:A:H5'	1.99	0.44
53:5:1196:G:H5''	53:5:1295:U:O2	2.17	0.44
53:5:1279:G:H2'	53:5:1305:G:H22	1.83	0.44
53:5:1349:A:H2'	53:5:1350:A:H8	1.81	0.44
54:7:56:U:H2'	54:7:57:C:H3'	1.98	0.44
4:9:16:GLY:HA3	4:9:99:MET:HE3	1.98	0.44
16:L:107:ARG:HE	16:L:112:PRO:HA	1.83	0.44
20:P:75:PHE:HE1	53:5:231:U:H4'	1.83	0.44
25:a:239:PRO:HG3	25:a:255:ARG:HB2	1.99	0.44
29:e:38:LEU:HD12	29:e:39:PRO:HD2	2.00	0.44
37:m:14:ARG:O	37:m:18:VAL:HG23	2.17	0.44
51:3:83:G:H2'	51:3:84:G:O4'	2.17	0.44
51:3:124:A:H3'	51:3:125:G:C8	2.52	0.44
51:3:190:G:H2'	51:3:191:G:C8	2.53	0.44
51:3:206:U:H2'	51:3:207:C:O4'	2.18	0.44
51:3:335:G:C6	51:3:351:G:C6	3.05	0.44
51:3:402:A:N3	51:3:404:C:N4	2.65	0.44
51:3:918:G:C2	51:3:934:C:N3	2.85	0.44
51:3:948:A:C2	51:3:2272:C:H1'	2.51	0.44
51:3:987:U:H2'	51:3:988:G:H8	1.83	0.44
51:3:1262:G:H2'	51:3:1263:G:C8	2.52	0.44
51:3:1301:G:H5''	51:3:1302:C:H5''	2.00	0.44
51:3:1437:A:H2'	51:3:1438:G:H8	1.81	0.44
51:3:1595:C:H2'	51:3:1596:U:H6	1.81	0.44
51:3:1858:U:O4	51:3:1898:G:O6	2.35	0.44
51:3:2174:G:H2'	51:3:2175:U:C6	2.52	0.44
51:3:2454:G:O2'	51:3:2456:A:H8	2.00	0.44
51:3:2680:C:H2'	51:3:2681:G:O4'	2.17	0.44
52:4:94:A:H2'	52:4:95:G:O4'	2.18	0.44
53:5:118:C:H42	53:5:226:G:H1	1.66	0.44
53:5:706:U:H2'	53:5:707:G:O4'	2.16	0.44
53:5:708:A:H2'	53:5:709:A:H8	1.82	0.44
53:5:780:U:H2'	53:5:781:A:H8	1.80	0.44
53:5:1016:A:N1	53:5:1017:A:C6	2.85	0.44
53:5:1114:A:N6	53:5:1127:A:H61	2.16	0.44
53:5:1418:G:H8	53:5:1418:G:O5'	2.00	0.44
6:B:8:ASN:ND2	6:B:187:TYR:HB3	2.33	0.44
11:G:76:TYR:CD1	11:G:82:PRO:HA	2.52	0.44
12:H:87:ARG:HH12	53:5:1109:U:H5''	1.82	0.44
20:P:57:ASP:OD1	20:P:58:GLY:N	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:Q:71:ASN:HD22	21:Q:75:ILE:HD11	1.81	0.44
24:T:15:LEU:C	24:T:19:LYS:HZ3	2.25	0.44
27:c:26:ALA:HB2	27:c:113:HIS:HE2	1.82	0.44
29:e:100:ASN:OD1	29:e:107:ASN:HB2	2.17	0.44
30:f:32:PRO:HD2	30:f:111:PHE:HE2	1.82	0.44
40:p:57:ARG:HH21	51:3:1033:A:H3'	1.81	0.44
42:r:124:LEU:O	42:r:127:LYS:HG2	2.17	0.44
44:t:9:LYS:HB2	44:t:77:PHE:CD2	2.52	0.44
51:3:173:C:H2'	51:3:174:A:H8	1.82	0.44
51:3:584:G:H21	51:3:1250:A:N6	2.15	0.44
51:3:597:C:O2'	51:3:1283:A:N6	2.42	0.44
51:3:1085:A:N3	51:3:2759:G:H2'	2.32	0.44
51:3:1710:A:H2'	51:3:1711:A:C8	2.53	0.44
51:3:2610:A:O2'	54:7:76:C:O2	2.25	0.44
52:4:29:C:H2'	52:4:30:U:H6	1.82	0.44
53:5:204:C:H2'	53:5:205:U:O4'	2.17	0.44
53:5:669:U:H2'	53:5:670:G:C8	2.52	0.44
53:5:762:G:N1	53:5:809:G:O2'	2.30	0.44
53:5:827:C:H2'	53:5:828:U:H6	1.82	0.44
53:5:1001:A:H2'	53:5:1002:A:O4'	2.17	0.44
53:5:1037:A:H3'	53:5:1038:G:C8	2.46	0.44
53:5:1037:A:H61	53:5:1188:A:H61	1.66	0.44
54:6:66:C:H2'	54:6:67:C:H6	1.82	0.44
5:A:113:LEU:HD22	53:5:1093:A:H4'	2.00	0.44
9:E:37:THR:HG22	9:E:37:THR:O	2.18	0.44
10:F:66:GLY:HA2	10:F:69:MET:HG2	1.98	0.44
13:I:98:ILE:HD12	13:I:98:ILE:H	1.83	0.44
14:J:93:PHE:HD1	14:J:98:LEU:HD23	1.82	0.44
17:M:22:THR:O	17:M:33:VAL:HG11	2.17	0.44
18:N:58:SER:OG	53:5:579:G:H4'	2.17	0.44
25:a:163:SER:HB3	51:3:1825:U:H5''	2.00	0.44
26:b:6:ILE:HG13	26:b:34:ASN:OD1	2.17	0.44
26:b:98:PRO:HD2	26:b:189:MET:HG3	2.00	0.44
34:j:66:LYS:HB3	34:j:81:ASP:N	2.33	0.44
39:o:35:ILE:HG23	39:o:46:GLN:HB3	1.99	0.44
44:t:90:LYS:CG	44:t:105:LYS:HG2	2.45	0.44
46:v:7:LEU:HD23	46:v:7:LEU:H	1.82	0.44
47:w:20:ILE:HG22	47:w:64:ASN:HD21	1.82	0.44
47:w:28:GLU:HA	47:w:31:PHE:CD2	2.52	0.44
49:y:6:ARG:NH2	51:3:2026:A:H3'	2.32	0.44
51:3:571:A:H3'	51:3:572:G:H8	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1232:U:H2'	51:3:1233:A:H8	1.83	0.44
51:3:1245:G:C6	51:3:1265:G:N2	2.85	0.44
51:3:1381:A:OP2	51:3:1405:G:N1	2.33	0.44
51:3:1447:A:O2'	51:3:1448:U:H5''	2.18	0.44
51:3:1621:U:H2'	51:3:1622:C:C6	2.51	0.44
51:3:1786:U:H5''	51:3:1787:A:H5''	2.00	0.44
51:3:1902:C:H2'	51:3:1903:A:H8	1.81	0.44
51:3:2213:A:H2'	51:3:2214:A:H8	1.81	0.44
51:3:2322:G:H2'	51:3:2323:U:C6	2.53	0.44
53:5:409:G:H1'	53:5:425:G:H21	1.82	0.44
53:5:563:U:OP2	53:5:564:G:O2'	2.32	0.44
53:5:767:U:H1'	53:5:893:C:H42	1.82	0.44
53:5:881:G:N1	53:5:905:U:C2	2.85	0.44
53:5:1228:C:H2'	53:5:1229:A:H8	1.81	0.44
53:5:1482:A:H2'	53:5:1483:C:C6	2.52	0.44
8:D:188:PRO:O	8:D:192:ILE:HG12	2.16	0.44
11:G:84:ILE:O	11:G:84:ILE:HG13	2.17	0.44
17:M:23:ARG:HG3	17:M:29:ARG:O	2.17	0.44
17:M:23:ARG:HH11	17:M:30:ALA:HB2	1.83	0.44
25:a:169:ARG:HD2	25:a:169:ARG:HA	1.74	0.44
29:e:150:GLU:O	29:e:153:LYS:HG2	2.18	0.44
32:h:33:GLY:O	32:h:36:THR:HB	2.18	0.44
36:l:9:TYR:OH	36:l:11:LYS:O	2.35	0.44
40:p:44:TYR:O	40:p:47:ARG:HG2	2.17	0.44
45:u:45:ILE:N	45:u:79:GLY:O	2.42	0.44
45:u:82:LYS:HA	45:u:82:LYS:HD2	1.84	0.44
51:3:138:U:H2'	51:3:139:G:H8	1.78	0.44
51:3:373:U:H2'	51:3:374:A:C8	2.53	0.44
51:3:707:C:N3	51:3:844:G:N1	2.65	0.44
51:3:775:C:H5'	51:3:1791:A:H2'	2.00	0.44
51:3:842:U:H2'	51:3:843:G:O4'	2.18	0.44
51:3:887:A:N6	51:3:888:A:H62	2.16	0.44
51:3:1426:C:H2'	51:3:1427:C:C6	2.53	0.44
51:3:1659:C:H3'	51:3:1660:A:C8	2.53	0.44
51:3:1773:A:H2'	51:3:1774:G:H8	1.82	0.44
51:3:1779:G:N2	51:3:1781:C:H5''	2.33	0.44
51:3:2236:G:H2'	51:3:2237:U:C6	2.53	0.44
51:3:2706:U:H3	51:3:2717:G:H1	1.66	0.44
51:3:2845:U:H2'	51:3:2846:A:C8	2.53	0.44
53:5:59:C:O2	53:5:350:G:N2	2.36	0.44
53:5:410:A:N6	53:5:428:A:H1'	2.33	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:698:U:OP1	53:5:699:A:O2'	2.27	0.44
53:5:1179:A:H2'	53:5:1180:U:O4'	2.17	0.44
53:5:1216:G:H2'	53:5:1217:G:C8	2.50	0.44
53:5:1434:C:C2'	53:5:1435:G:H5'	2.47	0.44
2:1:39:ARG:HH12	51:3:2390:G:N2	2.14	0.44
5:A:159:LEU:O	5:A:164:GLY:N	2.51	0.44
12:H:53:PRO:HG3	12:H:105:LEU:HD21	2.00	0.44
23:S:7:ASN:ND2	53:5:328:G:OP1	2.49	0.44
24:T:20:ARG:O	24:T:24:GLU:OE1	2.35	0.44
25:a:57:HIS:CD2	25:a:224:ILE:HG23	2.45	0.44
25:a:163:SER:HB3	51:3:1825:U:H3'	2.00	0.44
28:d:93:GLY:N	28:d:96:MET:HE2	2.33	0.44
34:j:66:LYS:HZ1	51:3:1699:A:H5''	1.82	0.44
50:z:19:TYR:OH	51:3:2355:C:O2'	2.32	0.44
51:3:152:A:H2'	51:3:153:U:H6	1.80	0.44
51:3:228:A:H2'	51:3:229:C:H6	1.82	0.44
51:3:1687:G:H21	51:3:2012:A:N6	2.10	0.44
51:3:1702:A:H1'	51:3:1704:C:N4	2.33	0.44
51:3:2006:C:H2'	51:3:2007:U:C6	2.53	0.44
51:3:2034:G:H2'	51:3:2035:U:O4'	2.18	0.44
51:3:2156:G:H2'	51:3:2157:A:C4	2.52	0.44
51:3:2157:A:H2'	51:3:2158:C:C6	2.52	0.44
51:3:2227:U:H2'	51:3:2228:U:C6	2.50	0.44
51:3:2294:A:H1'	51:3:2295:A:N1	2.33	0.44
51:3:2299:U:H5''	51:3:2388:C:O2'	2.17	0.44
51:3:2580:A:O2'	51:3:2583:U:OP1	2.35	0.44
51:3:2701:A:H2'	51:3:2702:G:C8	2.52	0.44
51:3:2895:A:H2'	51:3:2896:G:C8	2.52	0.44
53:5:317:A:H4'	53:5:1411:A:H5'	2.00	0.44
53:5:866:A:O2'	53:5:868:G:OP2	2.36	0.44
53:5:885:U:O2	53:5:901:A:C5	2.70	0.44
53:5:1116:U:O2'	53:5:1117:U:H2'	2.18	0.44
53:5:1173:A:H2'	53:5:1174:U:C6	2.52	0.44
53:5:1297:G:H2'	53:5:1298:U:C6	2.53	0.44
54:7:66:C:H2'	54:7:67:C:H6	1.82	0.44
4:9:209:LYS:O	4:9:235:GLY:HA2	2.17	0.44
4:9:331:PHE:CE1	4:9:377:ILE:HG12	2.53	0.44
6:B:33:TRP:O	6:B:60:ARG:NH1	2.48	0.44
9:E:31:ASN:OD1	9:E:32:VAL:HG23	2.17	0.44
10:F:90:VAL:HG13	10:F:95:LYS:HG3	2.00	0.44
12:H:75:THR:HG21	53:5:1348:G:P	2.57	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:O:2:ARG:NH1	53:5:388:G:OP1	2.50	0.44
24:T:19:LYS:O	24:T:23:LEU:HD23	2.17	0.44
25:a:148:HIS:ND1	25:a:201:GLY:O	2.37	0.44
26:b:86:ASN:O	26:b:87:MET:HE2	2.18	0.44
27:c:128:VAL:N	27:c:199:VAL:O	2.51	0.44
27:c:162:ASN:ND2	27:c:203:VAL:HG12	2.32	0.44
30:f:118:ARG:HD2	30:f:126:ILE:HG12	2.00	0.44
35:k:12:ALA:HB3	51:3:631:A:H4'	2.00	0.44
37:m:19:ARG:NH1	37:m:68:LEU:HD21	2.32	0.44
38:n:108:ALA:O	38:n:112:ARG:HG2	2.18	0.44
42:r:79:GLY:N	42:r:101:SER:HA	2.32	0.44
48:x:16:CYS:HB3	48:x:21:ASN:HB3	2.00	0.44
51:3:178:A:C6	51:3:179:A:C6	3.05	0.44
51:3:246:G:H22	51:3:258:G:H3'	1.83	0.44
51:3:415:U:H2'	51:3:416:C:H6	1.83	0.44
51:3:418:G:H2'	51:3:419:A:C8	2.53	0.44
51:3:558:C:O2'	51:3:574:G:N2	2.49	0.44
51:3:567:U:H4'	51:3:568:G:H8	1.83	0.44
51:3:603:G:N2	51:3:2037:A:O4'	2.50	0.44
51:3:846:U:N3	51:3:1280:G:OP1	2.51	0.44
51:3:986:G:H2'	51:3:987:U:C6	2.53	0.44
51:3:1117:U:H2'	51:3:1118:U:O4'	2.18	0.44
51:3:1390:C:H2'	51:3:1391:U:C6	2.52	0.44
51:3:1615:G:H2'	51:3:1616:G:C8	2.53	0.44
53:5:684:A:H62	53:5:700:G:N2	2.15	0.44
3:2:19:ARG:HA	51:3:2764:U:H3'	2.00	0.44
4:9:331:PHE:CE2	4:9:361:VAL:HG11	2.53	0.44
6:B:25:ASN:CG	6:B:29:GLN:HE21	2.26	0.44
13:I:50:THR:HG22	13:I:76:HIS:HA	2.00	0.44
19:O:73:TRP:O	19:O:77:VAL:HG13	2.18	0.44
20:P:7:LYS:HZ3	53:5:112:U:H4'	1.83	0.44
27:c:166:THR:HA	27:c:169:GLU:OE2	2.17	0.44
28:d:13:ALA:O	28:d:17:GLN:HG3	2.18	0.44
33:i:59:ILE:HB	33:i:127:VAL:HG13	2.00	0.44
43:s:60:ARG:HD3	43:s:60:ARG:HA	1.84	0.44
49:y:12:ARG:HA	49:y:15:LYS:HD3	1.99	0.44
51:3:225:A:C1'	51:3:237:A:H1'	2.48	0.44
51:3:281:U:H2'	51:3:282:C:C6	2.53	0.44
51:3:522:C:H2'	51:3:523:A:H8	1.80	0.44
51:3:641:U:O2	51:3:642:A:C8	2.71	0.44
51:3:905:U:H2'	51:3:906:G:O4'	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1079:U:O2'	51:3:1146:A:N6	2.43	0.44
51:3:1356:G:H4'	51:3:1357:U:C5	2.52	0.44
51:3:1389:G:H2'	51:3:1390:C:C6	2.52	0.44
51:3:1746:U:O2	51:3:1753:G:N2	2.42	0.44
51:3:1917:G:H2'	51:3:1918:U:C6	2.52	0.44
51:3:1938:U:C2	51:3:1939:A:C8	3.06	0.44
51:3:2568:G:H2'	51:3:2569:A:C8	2.52	0.44
51:3:2739:C:H2'	51:3:2740:U:C6	2.52	0.44
51:3:2800:U:H3'	51:3:2801:U:C5	2.53	0.44
53:5:27:A:H61	53:5:556:G:H1'	1.82	0.44
53:5:483:U:H2'	53:5:484:A:H8	1.83	0.44
53:5:925:C:H2'	53:5:926:C:C6	2.52	0.44
53:5:1094:C:H2'	53:5:1095:G:O4'	2.17	0.44
53:5:1251:G:H2'	53:5:1252:C:C6	2.52	0.44
53:5:1330:A:N3	53:5:1331:A:C8	2.86	0.44
53:5:1425:A:H2'	53:5:1427:U:N3	2.31	0.44
53:5:1461:G:H2'	53:5:1462:G:C8	2.52	0.44
54:6:28:A:H2'	54:6:29:C:C5	2.52	0.44
4:9:43:ALA:HB1	4:9:70:TYR:HB2	2.00	0.44
7:C:6:SER:O	7:C:10:ARG:NH2	2.51	0.44
7:C:14:LEU:O	7:C:59:ARG:NH2	2.51	0.44
11:G:60:LEU:O	11:G:68:ARG:HD3	2.18	0.44
11:G:116:ILE:HG13	11:G:136:GLU:O	2.17	0.44
15:K:48:THR:HA	15:K:90:HIS:CE1	2.53	0.44
29:e:44:LEU:HD12	29:e:55:ILE:HB	2.00	0.44
29:e:83:THR:HG23	29:e:84:GLN:CD	2.43	0.44
30:f:98:ILE:CG2	30:f:102:HIS:CE1	3.01	0.44
33:i:26:LEU:HB3	33:i:145:TRP:CH2	2.53	0.44
33:i:68:THR:HG21	51:3:1176:U:H5''	2.00	0.44
34:j:78:LYS:HB3	39:o:76:GLU:HG2	2.00	0.44
36:l:13:HIS:CD2	51:3:990:G:H5''	2.53	0.44
37:m:76:ASP:OD1	37:m:77:GLN:HG3	2.17	0.44
38:n:41:VAL:HG11	38:n:77:ILE:HG21	2.00	0.44
43:s:76:LYS:HD2	51:3:60:G:OP1	2.17	0.44
45:u:47:THR:HG23	51:3:2360:A:H2	1.82	0.44
46:v:20:HIS:HB3	51:3:2087:G:OP1	2.18	0.44
46:v:54:THR:O	46:v:58:LEU:HD23	2.18	0.44
51:3:28:G:H2'	51:3:29:G:N9	2.32	0.44
51:3:57:G:H2'	51:3:58:A:C8	2.53	0.44
51:3:641:U:C2	51:3:657:A:N7	2.86	0.44
51:3:718:U:H2'	51:3:719:G:C8	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1071:G:H2'	51:3:1072:A:C8	2.53	0.44
51:3:1238:A:H2'	51:3:1239:G:C8	2.52	0.44
51:3:1739:G:H2'	51:3:1740:U:C6	2.53	0.44
51:3:1836:A:H5''	51:3:1837:C:H5	1.83	0.44
51:3:1852:G:C6	51:3:1853:G:O6	2.71	0.44
51:3:2281:A:H2'	51:3:2282:A:C8	2.53	0.44
51:3:2358:U:H2'	51:3:2359:G:O4'	2.18	0.44
51:3:2646:G:H1'	51:3:2786:A:H61	1.83	0.44
53:5:508:A:H1'	53:5:541:C:H1'	2.00	0.44
53:5:701:A:H2'	53:5:702:U:O4'	2.17	0.44
53:5:760:U:H2'	53:5:761:U:H6	1.83	0.44
53:5:763:A:H2'	53:5:764:A:O4'	2.17	0.44
53:5:1128:G:H2'	53:5:1129:C:C6	2.52	0.44
53:5:1488:A:H2'	53:5:1489:C:H6	1.81	0.44
4:9:68:VAL:CG2	4:9:79:HIS:HB3	2.48	0.43
5:A:73:LYS:HG3	5:A:239:ALA:HA	1.99	0.43
9:E:26:GLN:HA	9:E:29:LEU:HD12	2.00	0.43
10:F:35:LYS:HD3	53:5:1348:G:H5''	2.00	0.43
25:a:64:ARG:HE	51:3:1601:A:P	2.41	0.43
25:a:283:LYS:HD3	25:a:285:GLU:H	1.82	0.43
27:c:90:VAL:HG11	51:3:707:C:H4'	1.98	0.43
29:e:57:ARG:HE	29:e:57:ARG:HB3	1.62	0.43
29:e:149:THR:HA	29:e:152:ARG:HG2	2.00	0.43
33:i:83:TYR:CD2	51:3:2650:A:H5'	2.53	0.43
37:m:81:HIS:O	37:m:85:LYS:HG2	2.18	0.43
40:p:53:LYS:HA	51:3:1031:U:H5'	2.00	0.43
42:r:99:ARG:NH1	51:3:1296:G:O6	2.51	0.43
44:t:88:LYS:HG3	51:3:334:A:P	2.58	0.43
51:3:28:G:H1'	51:3:549:A:N6	2.32	0.43
51:3:192:U:H2'	51:3:193:G:C8	2.53	0.43
51:3:289:U:H2'	51:3:290:A:C8	2.53	0.43
51:3:997:G:N1	51:3:2037:A:OP2	2.51	0.43
51:3:1219:U:C2	51:3:1220:A:C8	3.06	0.43
51:3:1389:G:H2'	51:3:1390:C:H6	1.83	0.43
51:3:1441:A:H2'	51:3:1442:G:C8	2.53	0.43
51:3:1927:C:H2'	51:3:1928:G:H8	1.83	0.43
51:3:2004:G:N1	51:3:2005:G:C6	2.86	0.43
51:3:2094:A:O2'	51:3:2095:A:H5'	2.17	0.43
51:3:2407:G:H2'	51:3:2408:G:H8	1.83	0.43
51:3:2682:A:C6	51:3:2683:G:C6	3.06	0.43
51:3:2829:G:N7	51:3:2830:A:H1'	2.33	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:4:87:U:H3'	52:4:88:G:H8	1.83	0.43
53:5:92:G:OP1	53:5:321:A:N6	2.51	0.43
53:5:150:A:H2'	53:5:151:C:C6	2.53	0.43
53:5:414:U:H2'	53:5:415:C:C6	2.53	0.43
53:5:452:A:N6	53:5:476:U:H3	2.13	0.43
53:5:717:C:H2'	53:5:718:A:C8	2.52	0.43
53:5:1170:C:H2'	53:5:1172:A:O4'	2.18	0.43
53:5:1263:A:H3'	53:5:1264:G:C8	2.52	0.43
53:5:1341:U:H2'	53:5:1342:C:O4'	2.18	0.43
3:2:10:ILE:HD12	3:2:32:HIS:HA	1.99	0.43
7:C:97:LEU:HD13	7:C:129:VAL:HG21	2.01	0.43
12:H:6:TYR:CE2	12:H:92:PHE:HD1	2.36	0.43
15:K:24:LEU:H	15:K:24:LEU:HD12	1.84	0.43
16:L:25:ILE:HD13	16:L:29:ARG:NE	2.33	0.43
16:L:56:ILE:HG13	16:L:57:ARG:N	2.33	0.43
26:b:161:LYS:HA	51:3:2627:U:H5''	1.99	0.43
29:e:34:ILE:HG22	29:e:36:LEU:HD12	2.00	0.43
33:i:26:LEU:HB3	33:i:145:TRP:CZ2	2.53	0.43
37:m:102:LYS:HB2	49:y:48:TYR:HE1	1.82	0.43
49:y:12:ARG:HD3	51:3:2624:C:H5''	1.99	0.43
51:3:38:G:H2'	51:3:39:C:C6	2.52	0.43
51:3:866:G:H2'	51:3:867:G:H8	1.84	0.43
51:3:987:U:H2'	51:3:988:G:C8	2.53	0.43
51:3:1375:G:H2'	51:3:1376:G:H5''	2.00	0.43
51:3:1489:G:H2'	51:3:1490:G:H8	1.82	0.43
51:3:1673:U:O2'	51:3:2707:A:H4'	2.18	0.43
51:3:1699:A:H2'	51:3:1700:G:C8	2.53	0.43
51:3:1980:G:H2'	51:3:1981:U:C6	2.53	0.43
51:3:2077:A:H2'	51:3:2078:A:O4'	2.18	0.43
51:3:2120:G:H1	51:3:2176:G:HO2'	1.56	0.43
51:3:2356:U:O4	51:3:2390:G:N1	2.52	0.43
51:3:2589:G:N2	51:3:2618:C:H2'	2.34	0.43
51:3:2677:A:H2'	51:3:2678:A:C8	2.52	0.43
53:5:37:C:H2'	53:5:38:U:O4'	2.17	0.43
53:5:400:G:N2	53:5:496:A:N3	2.53	0.43
53:5:752:G:H2'	53:5:753:C:C6	2.52	0.43
53:5:880:G:H2'	53:5:881:G:H8	1.83	0.43
53:5:997:G:H2'	53:5:998:G:C8	2.52	0.43
53:5:1394:G:N2	53:5:1456:U:O2	2.36	0.43
53:5:1430:G:C4	53:5:1431:A:C8	3.06	0.43
54:6:67:C:H2'	54:6:68:G:C8	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:7:13:U:N3	54:7:25:G:C6	2.86	0.43
3:2:20:HIS:ND1	3:2:20:HIS:O	2.51	0.43
4:9:221:ILE:HG21	4:9:224:ARG:HD3	2.00	0.43
8:D:101:ILE:C	8:D:126:LEU:HD23	2.43	0.43
8:D:116:LYS:O	8:D:120:LYS:HG3	2.18	0.43
8:D:205:PRO:HA	8:D:208:VAL:HG12	2.00	0.43
10:F:34:LYS:HE3	53:5:1346:G:H21	1.83	0.43
13:I:10:PRO:HB3	13:I:83:VAL:O	2.18	0.43
16:L:39:ILE:HG22	16:L:39:ILE:O	2.19	0.43
27:c:170:GLN:NE2	51:3:355:A:N3	2.59	0.43
35:k:114:LEU:HD12	35:k:131:VAL:HG12	2.00	0.43
51:3:34:C:H2'	51:3:35:U:C6	2.53	0.43
51:3:37:G:H1'	51:3:490:A:N3	2.33	0.43
51:3:196:G:H5'	51:3:713:C:H1'	2.00	0.43
51:3:217:A:H2	51:3:221:A:H4'	1.82	0.43
51:3:525:A:P	51:3:525:A:H8	2.41	0.43
51:3:788:G:H2'	51:3:789:A:H8	1.82	0.43
51:3:880:C:N4	51:3:968:U:HO2'	2.15	0.43
51:3:1054:U:OP1	51:3:1070:U:O2'	2.35	0.43
51:3:1230:U:H2'	51:3:1231:G:C8	2.53	0.43
51:3:1449:G:H2'	51:3:1450:G:H8	1.83	0.43
51:3:1596:U:H2'	51:3:1597:U:H6	1.83	0.43
51:3:1656:A:H2'	51:3:1656:A:N3	2.32	0.43
51:3:1883:A:C4	51:3:1884:A:C8	3.06	0.43
51:3:2122:G:N1	51:3:2124:A:O2'	2.51	0.43
51:3:2128:G:H5'	51:3:2178:A:O2'	2.19	0.43
51:3:2471:U:H2'	51:3:2472:G:H8	1.83	0.43
52:4:30:U:H2'	52:4:31:G:O4'	2.18	0.43
53:5:253:G:O6	53:5:265:U:O4	2.35	0.43
53:5:333:U:H2'	53:5:334:A:H8	1.84	0.43
53:5:568:G:H1'	53:5:817:U:C4	2.53	0.43
53:5:712:A:H2'	53:5:713:A:H8	1.83	0.43
53:5:818:A:H2'	53:5:819:G:C8	2.52	0.43
53:5:1207:U:H2'	53:5:1208:G:C8	2.51	0.43
53:5:1217:G:O2'	53:5:1218:C:H5'	2.18	0.43
53:5:1253:A:H4'	53:5:1254:A:C4	2.53	0.43
1:0:32:LYS:HB3	1:0:36:LYS:HZ1	1.84	0.43
15:K:12:ARG:HD2	53:5:560:U:H1'	1.99	0.43
15:K:49:ARG:HA	15:K:49:ARG:HD2	1.83	0.43
16:L:87:ARG:HH11	53:5:1294:U:C5'	2.31	0.43
21:Q:101:PHE:HE2	53:5:671:G:H1'	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:b:90:PHE:CE2	26:b:96:ILE:HG12	2.53	0.43
27:c:127:LEU:HD11	27:c:201:LYS:HA	2.01	0.43
27:c:157:VAL:HG22	27:c:196:ALA:HB3	2.00	0.43
28:d:151:GLY:N	51:3:2313:U:O2	2.52	0.43
29:e:92:LEU:HD12	29:e:164:GLY:O	2.17	0.43
29:e:99:ALA:HA	29:e:107:ASN:O	2.19	0.43
37:m:43:LYS:O	37:m:47:LYS:HG3	2.18	0.43
44:t:90:LYS:HG2	44:t:105:LYS:NZ	2.32	0.43
47:w:39:ASP:OD1	47:w:40:LYS:HG2	2.19	0.43
50:z:23:LYS:HB2	51:3:2294:A:H2	1.83	0.43
50:z:28:ASN:ND2	51:3:2294:A:H3'	2.34	0.43
51:3:155:A:H2'	51:3:156:A:H8	1.84	0.43
51:3:243:U:O4	51:3:262:G:O6	2.37	0.43
51:3:359:G:H2'	51:3:360:G:C8	2.54	0.43
51:3:409:A:N6	51:3:438:A:OP2	2.49	0.43
51:3:415:U:H2'	51:3:416:C:C6	2.53	0.43
51:3:558:C:H2'	51:3:559:C:C6	2.54	0.43
51:3:780:G:H2'	51:3:783:G:H21	1.84	0.43
51:3:1049:U:H2'	51:3:1050:A:C8	2.53	0.43
51:3:1278:G:H3'	51:3:1279:U:H5''	2.00	0.43
51:3:1358:C:H2'	51:3:1359:C:C6	2.54	0.43
51:3:1442:G:H2'	51:3:1443:A:C8	2.53	0.43
51:3:1740:U:H2'	51:3:1764:U:OP2	2.18	0.43
51:3:1850:C:H2'	51:3:1851:U:C6	2.53	0.43
51:3:2350:C:O2'	51:3:2382:A:H5''	2.19	0.43
53:5:20:C:H2'	53:5:21:U:C6	2.52	0.43
53:5:21:U:H2'	53:5:22:G:O4'	2.19	0.43
53:5:404:A:H2'	53:5:405:C:O4'	2.18	0.43
53:5:957:C:H1'	53:5:1176:A:N1	2.34	0.43
53:5:1039:G:N1	53:5:1185:C:N3	2.66	0.43
53:5:1116:U:H2'	53:5:1118:A:C5	2.53	0.43
54:7:67:C:H2'	54:7:68:G:H8	1.83	0.43
4:9:342:ILE:HG23	4:9:359:ILE:HD12	1.99	0.43
5:A:63:GLN:O	5:A:67:THR:HG23	2.18	0.43
5:A:136:LYS:O	5:A:140:ASN:N	2.52	0.43
6:B:161:ASN:HA	6:B:196:TYR:HB2	2.00	0.43
7:C:114:ARG:O	7:C:114:ARG:NH2	2.52	0.43
10:F:65:VAL:HA	10:F:68:VAL:HG12	2.00	0.43
14:J:54:TYR:O	14:J:58:ILE:HG12	2.19	0.43
21:Q:56:ASP:OD1	21:Q:56:ASP:N	2.48	0.43
22:R:80:PHE:CE2	22:R:82:GLN:HG2	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:b:124:LYS:HB2	26:b:142:ARG:HH22	1.83	0.43
35:k:43:LYS:HE3	51:3:708:C:H5	1.81	0.43
36:l:9:TYR:CG	36:l:10:ARG:N	2.85	0.43
38:n:101:ARG:O	38:n:105:LEU:HG	2.18	0.43
41:q:56:VAL:HG12	41:q:95:VAL:HB	2.00	0.43
42:r:29:THR:HG22	42:r:69:LEU:HB2	1.99	0.43
42:r:126:LYS:HA	42:r:129:VAL:HG22	2.01	0.43
49:y:4:GLN:NE2	51:3:2023:U:O2	2.51	0.43
51:3:25:G:H2'	51:3:26:G:C8	2.53	0.43
51:3:54:A:OP2	51:3:120:A:N6	2.44	0.43
51:3:418:G:O6	51:3:430:U:O4	2.36	0.43
51:3:557:G:C2'	51:3:558:C:H5'	2.49	0.43
51:3:641:U:O2	51:3:657:A:N7	2.52	0.43
51:3:1035:U:N3	51:3:1036:A:N7	2.67	0.43
51:3:1381:A:H8	51:3:1405:G:H21	1.65	0.43
51:3:1512:A:H2'	51:3:1513:A:C8	2.54	0.43
51:3:2036:G:C8	51:3:2038:A:H5'	2.53	0.43
51:3:2063:G:H2'	51:3:2064:G:H8	1.82	0.43
51:3:2080:C:H2'	51:3:2081:U:C6	2.53	0.43
51:3:2132:G:H21	51:3:2182:C:N4	2.16	0.43
51:3:2330:A:H2'	51:3:2331:G:H8	1.81	0.43
53:5:189:C:H2'	53:5:190:A:H8	1.83	0.43
53:5:321:A:H2'	53:5:322:G:C4	2.53	0.43
53:5:648:C:N4	53:5:750:A:OP2	2.34	0.43
53:5:759:C:H2'	53:5:760:U:C6	2.53	0.43
53:5:961:G:H21	54:7:35:G:H1'	1.84	0.43
53:5:1212:C:H3'	53:5:1213:A:H5'	1.99	0.43
53:5:1236:A:H2'	53:5:1237:G:O4'	2.18	0.43
53:5:1258:U:H2'	53:5:1259:G:C8	2.54	0.43
53:5:1393:A:C5	53:5:1394:G:H1'	2.53	0.43
53:5:1440:U:H2'	53:5:1441:C:H6	1.84	0.43
3:2:7:VAL:HB	3:2:37:GLY:HA3	2.00	0.43
4:9:33:CYS:HB2	4:9:45:THR:HG23	2.01	0.43
4:9:176:LEU:O	4:9:179:LEU:HG	2.18	0.43
7:C:95:SER:O	7:C:95:SER:OG	2.33	0.43
20:P:34:LEU:HD21	53:5:297:A:O5'	2.18	0.43
26:b:189:MET:HA	26:b:189:MET:HE3	2.01	0.43
27:c:40:VAL:HG11	27:c:103:LEU:HD22	2.00	0.43
30:f:67:LYS:O	30:f:71:VAL:HG23	2.19	0.43
37:m:82:LEU:HD12	37:m:86:VAL:HB	2.01	0.43
40:p:61:ILE:HG22	51:3:1046:A:OP1	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:r:128:ARG:HH21	51:3:1249:A:H2	1.65	0.43
47:w:9:GLN:HE22	47:w:15:LEU:HB2	1.82	0.43
51:3:21:U:C2'	51:3:22:U:H5'	2.48	0.43
51:3:378:G:N1	51:3:379:A:N7	2.66	0.43
51:3:518:A:N1	51:3:541:G:O2'	2.51	0.43
51:3:591:G:H2'	51:3:592:G:H8	1.84	0.43
51:3:688:U:H4'	51:3:689:U:OP2	2.18	0.43
51:3:1042:C:H2'	51:3:1043:C:C6	2.54	0.43
51:3:1213:U:H2'	51:3:1214:U:C6	2.54	0.43
51:3:1418:U:O4	51:3:1423:A:N7	2.51	0.43
51:3:1657:G:C5	51:3:1658:U:C5	3.06	0.43
51:3:1990:C:H2'	51:3:1991:U:O4'	2.19	0.43
51:3:2505:A:H4'	51:3:2506:C:H5'	2.01	0.43
51:3:2646:G:H1'	51:3:2786:A:N6	2.34	0.43
51:3:2697:C:OP2	51:3:2876:G:N1	2.42	0.43
51:3:2752:G:N2	51:3:2768:U:O2	2.38	0.43
52:4:55:A:C4	52:4:56:A:C8	3.07	0.43
53:5:505:C:H5''	53:5:506:U:H3'	2.00	0.43
53:5:714:C:H2'	53:5:731:A:O4'	2.18	0.43
53:5:853:A:C4	53:5:854:A:C8	3.06	0.43
53:5:930:A:H1'	53:5:1359:C:N3	2.34	0.43
53:5:1006:A:C6	53:5:1016:A:N6	2.87	0.43
53:5:1033:U:H2'	53:5:1034:G:C8	2.54	0.43
53:5:1093:A:H2'	53:5:1094:C:C6	2.53	0.43
53:5:1118:A:O5'	53:5:1120:A:N6	2.51	0.43
53:5:1214:A:H1'	53:5:1216:G:C5	2.53	0.43
4:9:342:ILE:HA	4:9:361:VAL:HG22	1.99	0.43
11:G:118:THR:HB	11:G:133:ILE:HG22	2.01	0.43
16:L:13:LYS:H	16:L:46:LYS:HB2	1.83	0.43
18:N:56:LYS:HE3	53:5:739:G:OP1	2.18	0.43
19:O:2:ARG:HB2	19:O:10:THR:O	2.19	0.43
19:O:25:LYS:HB2	53:5:306:G:H4'	1.99	0.43
26:b:119:PHE:O	51:3:1688:A:O2'	2.34	0.43
29:e:79:ILE:HA	29:e:82:VAL:HG12	2.01	0.43
32:h:26:ALA:HB2	32:h:32:MET:HB2	2.00	0.43
40:p:91:ARG:NH2	51:3:1032:A:H4'	2.34	0.43
43:s:44:PHE:CD2	43:s:52:PRO:HD3	2.49	0.43
45:u:84:GLN:HG2	45:u:94:ARG:HB2	2.00	0.43
51:3:333:A:N6	51:3:356:A:H1'	2.33	0.43
51:3:392:A:N3	51:3:392:A:H2'	2.34	0.43
51:3:421:A:H62	51:3:424:G:P	2.42	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:652:U:H2'	51:3:653:G:C8	2.54	0.43
51:3:1159:C:H2'	51:3:1160:G:O4'	2.19	0.43
51:3:1696:C:O2'	51:3:2695:U:H5'	2.18	0.43
51:3:1974:U:H2'	51:3:1975:G:O4'	2.19	0.43
51:3:1985:A:H2'	51:3:1986:C:O4'	2.18	0.43
51:3:2504:C:O2'	51:3:2505:A:OP1	2.33	0.43
51:3:2859:U:H2'	51:3:2860:A:C8	2.53	0.43
52:4:78:C:H5	52:4:86:G:H1	1.65	0.43
53:5:275:A:H5'	53:5:277:G:O4'	2.18	0.43
53:5:372:G:H2'	53:5:373:A:H8	1.84	0.43
53:5:403:A:H2'	53:5:404:A:H8	1.83	0.43
53:5:462:G:O2'	53:5:463:U:O4'	2.28	0.43
53:5:616:C:H5'	53:5:617:U:C5'	2.48	0.43
53:5:814:C:O2'	53:5:1502:G:H4'	2.19	0.43
53:5:913:A:H2'	53:5:914:A:C8	2.53	0.43
53:5:972:A:H8	53:5:1198:C:C6	2.36	0.43
53:5:1128:G:H2'	53:5:1129:C:H6	1.82	0.43
53:5:1152:G:H2'	53:5:1153:G:O4'	2.19	0.43
53:5:1229:A:H2'	53:5:1230:G:H8	1.83	0.43
53:5:1252:C:H1'	53:5:1257:C:O2	2.19	0.43
54:7:67:C:H2'	54:7:68:G:C8	2.53	0.43
3:2:4:ARG:HD2	3:2:4:ARG:HA	1.85	0.43
7:C:60:MET:HA	7:C:63:MET:HG3	2.01	0.43
7:C:202:ARG:CZ	53:5:28:G:H5''	2.49	0.43
14:J:70:MET:CE	14:J:72:MET:HE2	2.49	0.43
17:M:42:LEU:HD13	17:M:45:ARG:NH1	2.34	0.43
25:a:81:ALA:HB2	25:a:101:TYR:CE1	2.53	0.43
26:b:30:TYR:HA	26:b:190:LEU:CD2	2.49	0.43
26:b:163:LYS:NZ	51:3:2627:U:O2'	2.51	0.43
27:c:81:ASN:HB2	27:c:84:PHE:CD2	2.54	0.43
28:d:14:LYS:HG3	28:d:18:LYS:NZ	2.33	0.43
28:d:29:PRO:HG3	28:d:165:GLU:HB2	2.00	0.43
28:d:32:GLU:HG2	28:d:33:LYS:HG2	2.00	0.43
33:i:111:MET:HE2	51:3:1173:G:N2	2.34	0.43
35:k:57:PRO:HB2	35:k:59:TYR:CE2	2.54	0.43
51:3:143:A:H3'	51:3:144:C:H6	1.83	0.43
51:3:164:A:H1'	51:3:2216:U:H1'	2.00	0.43
51:3:359:G:H2'	51:3:360:G:H8	1.84	0.43
51:3:773:G:N1	51:3:794:G:C6	2.87	0.43
51:3:1335:A:N3	51:3:1336:A:C8	2.87	0.43
51:3:1343:C:H2'	51:3:1344:U:C6	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1511:C:H2'	51:3:1512:A:C8	2.53	0.43
51:3:1556:U:H2'	51:3:1557:G:O4'	2.19	0.43
51:3:1595:C:H2'	51:3:1596:U:C6	2.53	0.43
51:3:1953:U:H2'	51:3:1954:C:C6	2.54	0.43
51:3:2055:A:C6	51:3:2629:G:N1	2.87	0.43
51:3:2487:U:H5''	51:3:2544:G:N3	2.34	0.43
51:3:2533:A:H2'	51:3:2534:G:C8	2.52	0.43
51:3:2537:G:H5''	51:3:2538:A:H5''	1.99	0.43
51:3:2603:G:N1	51:3:2606:A:OP2	2.47	0.43
51:3:2603:G:N2	51:3:2606:A:OP2	2.45	0.43
53:5:20:C:H2'	53:5:21:U:H6	1.83	0.43
53:5:646:A:H2'	53:5:647:U:O4'	2.19	0.43
53:5:1304:U:H2'	53:5:1305:G:O4'	2.18	0.43
54:6:13:U:N3	54:6:25:G:C6	2.86	0.43
4:9:321:THR:HG21	54:6:54:G:H5'	2.00	0.43
5:A:20:LEU:HG	5:A:21:ALA:N	2.34	0.43
8:D:91:LEU:HD13	8:D:105:ILE:HB	2.00	0.43
15:K:88:GLN:HB2	15:K:91:SER:OG	2.19	0.43
19:O:30:ILE:HG22	19:O:44:ILE:HB	2.01	0.43
20:P:16:THR:HG23	20:P:16:THR:O	2.19	0.43
26:b:115:LYS:HE2	26:b:200:PRO:HA	2.01	0.43
26:b:124:LYS:NZ	51:3:2005:G:H5''	2.33	0.43
26:b:213:LYS:HE3	26:b:216:VAL:CB	2.49	0.43
34:j:71:ARG:CZ	39:o:77:LYS:HE2	2.49	0.43
37:m:118:LEU:HD12	37:m:118:LEU:O	2.19	0.43
45:u:20:GLY:HA3	54:7:2:G:H21	1.84	0.43
46:v:30:ASN:CG	51:3:2238:G:H5''	2.44	0.43
51:3:117:C:O2'	51:3:127:A:H1'	2.18	0.43
51:3:156:A:H2'	51:3:157:U:C6	2.53	0.43
51:3:611:A:H3'	51:3:612:G:H5''	2.01	0.43
51:3:794:G:H4'	51:3:1988:A:H5'	2.01	0.43
51:3:898:A:O3'	52:4:76:A:O2'	2.36	0.43
51:3:1158:C:H2'	51:3:1159:C:H6	1.82	0.43
51:3:1198:G:H2'	51:3:1199:A:N9	2.34	0.43
51:3:1575:C:H2'	51:3:1576:G:O4'	2.18	0.43
51:3:1587:U:H2'	51:3:1588:A:C8	2.54	0.43
51:3:1773:A:H2'	51:3:1774:G:C8	2.54	0.43
51:3:1798:A:H2'	51:3:1799:A:O4'	2.18	0.43
51:3:2043:C:H2'	51:3:2044:C:C6	2.54	0.43
51:3:2375:A:H2'	51:3:2376:C:H6	1.84	0.43
51:3:2457:U:O5'	51:3:2509:C:N4	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2521:A:H2'	51:3:2522:U:H6	1.83	0.43
51:3:2842:G:H2'	51:3:2843:G:C8	2.54	0.43
52:4:70:G:H22	52:4:93:U:H3'	1.84	0.43
53:5:74:U:H2'	53:5:75:A:H8	1.82	0.43
53:5:91:C:O2	53:5:375:C:H4'	2.19	0.43
53:5:675:U:H2'	53:5:676:U:H6	1.81	0.43
53:5:859:A:H2'	53:5:860:C:C6	2.53	0.43
53:5:920:G:C6	53:5:922:G:C6	3.07	0.43
53:5:1039:G:O2'	53:5:1041:G:H5''	2.19	0.43
53:5:1111:G:C6	53:5:1130:G:C2	3.07	0.43
53:5:1168:G:O2'	53:5:1169:U:H5'	2.19	0.43
54:7:66:C:C2	54:7:67:C:C5	3.07	0.43
1:0:7:PRO:HG3	51:3:1646:G:H5'	2.01	0.43
6:B:10:LEU:HD22	17:M:58:LYS:HE3	2.01	0.43
8:D:178:ILE:HG23	8:D:180:THR:HG23	2.00	0.43
10:F:14:ASP:HB3	10:F:19:ASN:H	1.83	0.43
11:G:40:LEU:HD12	11:G:41:LYS:N	2.33	0.43
15:K:123:ARG:HA	15:K:123:ARG:HD2	1.68	0.43
16:L:5:LEU:HD11	16:L:60:ALA:HB3	2.00	0.43
16:L:88:GLY:O	16:L:92:ARG:HD3	2.19	0.43
22:R:70:LYS:N	22:R:73:GLU:HG3	2.34	0.43
22:R:81:LYS:HD2	22:R:83:HIS:CD2	2.54	0.43
25:a:20:ILE:HG22	25:a:22:TYR:H	1.83	0.43
26:b:110:VAL:HG22	26:b:207:ILE:HG13	2.01	0.43
28:d:150:ARG:CZ	51:3:2314:U:H3	2.32	0.43
40:p:54:ARG:NH2	51:3:1191:A:OP1	2.52	0.43
41:q:59:VAL:HG11	41:q:62:HIS:HE1	1.83	0.43
41:q:82:LYS:HZ3	51:3:1255:G:H5''	1.83	0.43
46:v:55:LEU:HG	46:v:59:LYS:HZ2	1.83	0.43
51:3:155:A:N1	51:3:178:A:N6	2.67	0.43
51:3:196:G:H4'	51:3:712:A:C2	2.51	0.43
51:3:643:A:H62	51:3:655:G:H21	1.67	0.43
51:3:1116:U:C2	51:3:1117:U:C5	3.06	0.43
51:3:1163:G:N7	51:3:2497:U:H4'	2.34	0.43
51:3:1416:G:H2'	51:3:1417:G:H8	1.83	0.43
51:3:1463:G:H2'	51:3:1464:G:C8	2.54	0.43
51:3:1626:C:H2'	51:3:1627:U:C6	2.54	0.43
51:3:1702:A:H5'	51:3:1703:A:N7	2.34	0.43
51:3:1846:A:C5	51:3:1847:G:C8	3.07	0.43
51:3:2357:G:H2'	51:3:2358:U:O4'	2.19	0.43
51:3:2483:C:N4	51:3:2537:G:N2	2.38	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2594:C:H2'	51:3:2595:A:O4'	2.18	0.43
51:3:2678:A:H2'	51:3:2679:G:H8	1.84	0.43
51:3:2681:G:C4	51:3:2682:A:C8	3.07	0.43
52:4:99:A:H2'	52:4:100:G:O4'	2.18	0.43
53:5:117:U:H2'	53:5:118:C:C6	2.54	0.43
53:5:210:G:H2'	53:5:211:G:H8	1.83	0.43
53:5:294:A:H2'	53:5:295:G:C8	2.54	0.43
53:5:369:A:O4'	53:5:478:G:H5''	2.18	0.43
53:5:573:G:C6	53:5:875:G:N1	2.87	0.43
53:5:635:G:C6	53:5:636:G:C5	3.06	0.43
53:5:676:U:H2'	53:5:677:C:C6	2.54	0.43
53:5:735:C:H2'	53:5:736:U:H6	1.82	0.43
53:5:1080:G:C5	53:5:1081:U:C4	3.07	0.43
53:5:1333:C:H2'	53:5:1335:G:OP2	2.19	0.43
54:7:42:C:N4	54:7:43:G:O6	2.52	0.43
2:1:24:ALA:HA	35:k:63:PRO:HD3	2.00	0.42
4:9:219:MET:HE2	54:6:75:C:H1'	2.00	0.42
6:B:177:PRO:HA	53:5:1098:C:H5''	2.00	0.42
10:F:25:ILE:O	10:F:29:ILE:HG12	2.19	0.42
23:S:32:VAL:O	23:S:36:HIS:ND1	2.49	0.42
23:S:35:PHE:HE1	23:S:76:LEU:HD12	1.83	0.42
25:a:147:VAL:O	25:a:168:ALA:N	2.52	0.42
28:d:24:SER:HB3	28:d:27:GLN:HG3	2.00	0.42
33:i:6:MET:O	33:i:7:LEU:HD23	2.18	0.42
36:l:82:ARG:NH2	51:3:2504:C:OP2	2.52	0.42
40:p:52:LYS:NZ	51:3:1031:U:OP2	2.52	0.42
51:3:165:U:HO2'	51:3:168:A:N6	2.16	0.42
51:3:433:A:N6	51:3:434:G:O6	2.52	0.42
51:3:696:U:H2'	51:3:697:U:C6	2.54	0.42
51:3:844:G:C1'	51:3:1284:A:H1'	2.49	0.42
51:3:1416:G:H4'	51:3:1552:C:H5'	1.99	0.42
51:3:1475:C:H2'	51:3:1476:C:H6	1.83	0.42
51:3:1516:G:H2'	51:3:1517:G:H8	1.84	0.42
51:3:1521:A:H2'	51:3:1523:C:C4	2.54	0.42
51:3:1627:U:H2'	51:3:1628:G:C8	2.54	0.42
51:3:1999:G:N2	51:3:2003:C:O2'	2.52	0.42
51:3:2083:U:OP2	51:3:2246:G:H5''	2.19	0.42
51:3:2444:G:H2'	51:3:2445:C:C6	2.54	0.42
51:3:2502:G:H2'	51:3:2503:G:C8	2.52	0.42
51:3:2600:G:H2'	51:3:2601:U:H6	1.83	0.42
51:3:2797:C:N4	51:3:2798:A:H62	2.17	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2813:A:H3'	51:3:2814:A:H8	1.84	0.42
52:4:106:A:H2'	52:4:107:G:C8	2.54	0.42
53:5:149:G:H2'	53:5:150:A:C8	2.54	0.42
53:5:151:C:H2'	53:5:152:U:C6	2.54	0.42
53:5:307:C:H2'	53:5:308:C:C6	2.54	0.42
53:5:460:A:N1	53:5:467:G:C6	2.85	0.42
53:5:620:A:H8	53:5:621:C:C6	2.37	0.42
53:5:831:C:H2'	53:5:832:G:H8	1.81	0.42
53:5:849:A:H2'	53:5:850:G:C8	2.54	0.42
53:5:1156:G:H1'	53:5:1157:G:C5	2.54	0.42
53:5:1317:A:H2'	53:5:1318:C:C6	2.54	0.42
53:5:1449:G:H2'	53:5:1450:C:C6	2.54	0.42
54:6:42:C:N4	54:6:43:G:O6	2.52	0.42
4:9:64:ASN:HB3	4:9:289:ARG:HH12	1.84	0.42
6:B:37:ASP:OD2	6:B:60:ARG:NH2	2.52	0.42
7:C:31:ARG:NH2	53:5:423:U:OP1	2.47	0.42
11:G:107:VAL:HB	11:G:112:GLY:C	2.44	0.42
11:G:110:GLY:C	11:G:112:GLY:N	2.75	0.42
13:I:40:VAL:HG12	13:I:41:LYS:N	2.34	0.42
14:J:40:SER:OG	14:J:55:SER:HB3	2.19	0.42
29:e:98:ARG:O	29:e:108:LEU:HD12	2.19	0.42
38:n:19:ILE:HA	38:n:22:THR:HG22	2.01	0.42
41:q:22:VAL:HG22	41:q:92:LEU:HD22	2.00	0.42
46:v:32:ASN:ND2	51:3:434:G:OP1	2.52	0.42
50:z:19:TYR:OH	51:3:2356:U:H5'	2.18	0.42
51:3:341:G:H21	51:3:364:A:N6	2.16	0.42
51:3:1006:U:H2'	51:3:1007:C:C6	2.54	0.42
51:3:1130:A:H2'	51:3:1131:A:C8	2.54	0.42
51:3:1131:A:H2'	51:3:1132:C:O4'	2.19	0.42
51:3:1326:C:H3'	51:3:1327:G:H8	1.83	0.42
51:3:1393:A:H3'	51:3:1394:A:H8	1.84	0.42
51:3:1400:U:H2'	51:3:1401:A:H8	1.84	0.42
51:3:1798:A:H61	51:3:1835:G:H1'	1.83	0.42
51:3:1819:G:H2'	51:3:1820:U:H6	1.83	0.42
51:3:2385:A:H2'	51:3:2386:A:H8	1.84	0.42
51:3:2815:G:H2'	51:3:2816:A:C8	2.54	0.42
53:5:218:U:H2'	53:5:219:A:C8	2.54	0.42
53:5:655:G:O6	53:5:744:U:C4	2.73	0.42
53:5:845:C:H2'	53:5:846:G:C8	2.54	0.42
53:5:1206:G:H2'	53:5:1207:U:C6	2.54	0.42
53:5:1214:A:H2'	53:5:1272:C:H41	1.83	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1362:G:H2'	53:5:1363:U:H6	1.84	0.42
4:9:51:ASP:HA	4:9:56:GLU:CD	2.43	0.42
5:A:100:ALA:HB1	5:A:107:PHE:CD1	2.54	0.42
5:A:174:ASN:C	5:A:175:LEU:HD12	2.44	0.42
7:C:49:GLY:HA2	7:C:52:GLN:NE2	2.32	0.42
23:S:24:GLN:HB3	23:S:54:LEU:HD11	2.01	0.42
25:a:146:GLN:OE1	25:a:169:ARG:HD3	2.19	0.42
37:m:99:ARG:NH2	51:3:2885:U:H5'	2.33	0.42
37:m:117:GLN:OE1	37:m:119:THR:HG23	2.19	0.42
38:n:101:ARG:HG3	52:4:47:C:OP1	2.20	0.42
40:p:35:LYS:O	40:p:39:ILE:HG13	2.20	0.42
45:u:30:SER:HB3	51:3:2269:C:C6	2.54	0.42
46:v:16:ASN:HD21	46:v:18:ARG:HH22	1.66	0.42
47:w:23:LYS:HE3	47:w:64:ASN:ND2	2.34	0.42
47:w:30:ARG:HD3	47:w:33:LEU:HD12	2.02	0.42
50:z:38:CYS:HB3	50:z:41:CYS:HB3	2.01	0.42
51:3:143:A:C8	51:3:144:C:C6	3.07	0.42
51:3:442:G:N1	51:3:457:U:N3	2.66	0.42
51:3:475:A:H2'	51:3:476:G:O4'	2.18	0.42
51:3:580:U:C5	51:3:1249:A:H2'	2.52	0.42
51:3:1228:G:H1'	51:3:1257:G:OP1	2.20	0.42
51:3:1398:C:H2'	51:3:1399:G:O4'	2.18	0.42
51:3:1427:C:H2'	51:3:1428:U:C6	2.55	0.42
51:3:1510:A:H2'	51:3:1511:C:C6	2.54	0.42
51:3:1537:A:H2'	51:3:1538:U:O4'	2.18	0.42
51:3:2196:G:C2	51:3:2197:U:C4	3.07	0.42
51:3:2332:U:H3'	51:3:2333:G:C5'	2.48	0.42
51:3:2393:C:H2'	51:3:2394:A:H8	1.81	0.42
51:3:2729:A:O2'	51:3:2878:G:H5'	2.19	0.42
53:5:164:C:H2'	53:5:165:A:C8	2.54	0.42
53:5:409:G:O3'	53:5:425:G:N2	2.51	0.42
53:5:438:A:C5	53:5:439:U:C5	3.07	0.42
53:5:491:U:H2'	53:5:492:G:C8	2.53	0.42
53:5:517:C:H41	53:5:527:G:HO2'	1.64	0.42
53:5:568:G:H2'	53:5:569:U:C6	2.55	0.42
53:5:610:C:H2'	53:5:611:A:C8	2.54	0.42
53:5:1016:A:N6	53:5:1017:A:N6	2.67	0.42
53:5:1177:U:H2'	53:5:1178:C:O4'	2.19	0.42
53:5:1438:U:H2'	53:5:1439:G:C8	2.54	0.42
53:5:1438:U:O2'	53:5:1439:G:H5'	2.18	0.42
53:5:1496:G:H2'	53:5:1497:U:C6	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:6:66:C:C2	54:6:67:C:C5	3.07	0.42
4:9:290:GLY:C	4:9:335:THR:HB	2.44	0.42
11:G:101:PHE:CE1	11:G:132:LYS:HA	2.54	0.42
19:O:14:VAL:HG23	19:O:29:LEU:HA	2.01	0.42
22:R:20:ILE:O	22:R:24:LYS:HD3	2.20	0.42
23:S:33:LYS:HA	23:S:36:HIS:HD1	1.84	0.42
25:a:191:LYS:NZ	25:a:277:LEU:HA	2.35	0.42
26:b:56:THR:HA	26:b:78:THR:HG22	2.01	0.42
26:b:138:GLY:HA3	51:3:2587:U:H4'	2.01	0.42
27:c:84:PHE:CE1	51:3:1287:C:H4'	2.55	0.42
31:g:87:ASN:O	31:g:88:GLU:HB2	2.19	0.42
33:i:21:VAL:HG13	33:i:145:TRP:HA	2.01	0.42
39:o:105:ARG:H	39:o:105:ARG:HG3	1.63	0.42
42:r:112:ASN:CG	42:r:115:GLN:HE22	2.27	0.42
45:u:43:GLN:HG2	51:3:960:A:O2'	2.19	0.42
46:v:16:ASN:O	51:3:418:G:H4'	2.18	0.42
47:w:85:ASN:OD1	47:w:89:GLN:NE2	2.51	0.42
51:3:976:C:O2'	51:3:1222:A:H5''	2.19	0.42
51:3:1198:G:C6	51:3:1199:A:N1	2.87	0.42
51:3:1275:C:H2'	51:3:1276:A:C8	2.54	0.42
51:3:1334:U:C2	51:3:1335:A:C8	3.07	0.42
51:3:1624:A:H2'	51:3:1625:G:C8	2.48	0.42
51:3:1640:G:H4'	51:3:1642:G:C2	2.54	0.42
51:3:2147:G:H2'	51:3:2148:U:H6	1.84	0.42
51:3:2598:C:H2'	51:3:2599:C:C6	2.54	0.42
52:4:71:A:H2'	52:4:72:A:C4	2.55	0.42
53:5:238:U:O2	53:5:280:G:C6	2.72	0.42
53:5:601:U:H2'	53:5:602:G:C8	2.54	0.42
53:5:763:A:H2	53:5:1500:G:N3	2.16	0.42
53:5:1344:C:H2'	53:5:1345:G:C8	2.55	0.42
53:5:1351:U:H2'	53:5:1352:A:C8	2.55	0.42
53:5:1460:U:H2'	53:5:1461:G:C8	2.49	0.42
6:B:39:LYS:O	6:B:43:LEU:HD23	2.19	0.42
7:C:50:TYR:CE2	7:C:54:LEU:HD11	2.55	0.42
9:E:40:LEU:HD21	9:E:59:ARG:CZ	2.50	0.42
12:H:125:ARG:HD2	53:5:1323:A:H4'	2.01	0.42
19:O:54:ASN:O	53:5:123:U:O2'	2.22	0.42
22:R:17:LYS:NZ	53:5:1009:G:OP2	2.53	0.42
23:S:66:ARG:O	23:S:69:LYS:HG2	2.20	0.42
25:a:55:VAL:HG12	25:a:58:GLN:OE1	2.19	0.42
25:a:233:MET:O	25:a:242:GLY:N	2.45	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:b:151:ARG:N	51:3:2580:A:OP2	2.43	0.42
28:d:53:ALA:O	28:d:56:GLU:HG3	2.20	0.42
33:i:135:MET:HA	33:i:138:GLN:HG2	2.01	0.42
35:k:53:GLY:HA3	51:3:867:G:H1'	2.00	0.42
50:z:14:CYS:C	50:z:15:ARG:HD3	2.44	0.42
51:3:11:U:H3	51:3:2898:A:H2	1.67	0.42
51:3:93:A:H1'	51:3:94:A:H2	1.83	0.42
51:3:249:G:O2'	51:3:422:A:N1	2.40	0.42
51:3:300:G:H2'	51:3:301:G:C8	2.54	0.42
51:3:338:G:H2'	51:3:339:U:H6	1.84	0.42
51:3:587:U:H3'	51:3:588:G:C8	2.54	0.42
51:3:671:C:H2'	51:3:672:G:C8	2.54	0.42
51:3:904:C:N3	51:3:905:U:C5	2.88	0.42
51:3:956:U:C2	51:3:957:G:C8	3.07	0.42
51:3:1204:A:N1	51:3:1212:C:C4	2.88	0.42
51:3:1364:A:H2'	51:3:1365:G:H8	1.82	0.42
51:3:2081:U:H2'	51:3:2082:U:C6	2.54	0.42
51:3:2193:U:H2'	51:3:2194:G:O4'	2.19	0.42
51:3:2304:U:H3	51:3:2343:A:N6	2.15	0.42
51:3:2543:G:C2	51:3:2544:G:C5	3.07	0.42
51:3:2570:U:H2'	51:3:2571:U:O4'	2.19	0.42
53:5:26:C:H2'	53:5:27:A:H8	1.83	0.42
53:5:81:A:H2'	53:5:82:C:C6	2.53	0.42
53:5:590:G:N2	53:5:644:U:O2	2.37	0.42
53:5:652:A:H2'	53:5:653:G:O4'	2.20	0.42
53:5:1032:G:H2'	53:5:1033:U:C6	2.55	0.42
2:1:47:VAL:HG11	2:1:55:ILE:HD11	2.02	0.42
3:2:21:GLN:HE22	51:3:1159:C:H5'	1.85	0.42
4:9:211:PHE:CE1	4:9:237:LEU:HD21	2.54	0.42
4:9:248:LEU:HB3	4:9:291:GLN:HE22	1.85	0.42
4:9:263:LYS:C	4:9:264:LYS:HD2	2.44	0.42
6:B:70:TYR:HB3	6:B:109:ILE:HB	2.01	0.42
9:E:67:GLN:HA	9:E:70:LYS:NZ	2.35	0.42
10:F:37:LEU:HA	10:F:40:ARG:HD3	2.00	0.42
11:G:99:ARG:NE	11:G:104:LEU:HD23	2.34	0.42
12:H:10:GLY:HA3	12:H:83:LEU:HB3	2.02	0.42
16:L:14:ARG:HG3	16:L:17:ILE:H	1.84	0.42
20:P:10:ILE:HB	20:P:60:LYS:HE3	2.00	0.42
21:Q:64:LEU:HD23	21:Q:65:SER:O	2.19	0.42
23:S:17:ARG:NH2	53:5:161:C:H5''	2.35	0.42
27:c:93:PRO:HD3	51:3:1278:G:H5'	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:d:14:LYS:HG3	28:d:18:LYS:HZ1	1.85	0.42
29:e:156:LYS:HE2	29:e:156:LYS:HB2	1.90	0.42
33:i:7:LEU:HG	51:3:1031:U:N3	2.35	0.42
40:p:91:ARG:HB3	40:p:94:LEU:HB2	2.01	0.42
42:r:106:LYS:HE2	42:r:106:LYS:HB2	1.84	0.42
42:r:110:ASN:HB3	42:r:112:ASN:HB2	2.01	0.42
43:s:86:PRO:HG3	47:w:90:HIS:CE1	2.55	0.42
45:u:89:LYS:HD3	45:u:89:LYS:HA	1.79	0.42
47:w:26:LEU:HA	47:w:29:TYR:HD2	1.84	0.42
51:3:20:C:O2	51:3:587:U:H4'	2.19	0.42
51:3:562:C:H41	51:3:2785:G:HO2'	1.58	0.42
51:3:573:A:H2'	51:3:574:G:O4'	2.19	0.42
51:3:666:G:N2	51:3:668:A:H3'	2.35	0.42
51:3:811:G:C4	51:3:2249:A:H5''	2.54	0.42
51:3:1316:U:H1'	51:3:1681:G:H1	1.85	0.42
51:3:2070:C:O2	51:3:2070:C:H2'	2.18	0.42
51:3:2096:U:H2'	51:3:2097:A:C8	2.55	0.42
51:3:2149:U:H3	51:3:2156:G:N2	2.17	0.42
51:3:2466:G:H1'	51:3:2467:A:N7	2.34	0.42
51:3:2502:G:N3	51:3:2503:G:C8	2.88	0.42
51:3:2657:C:H2'	51:3:2658:U:C6	2.54	0.42
51:3:2695:U:H2'	51:3:2696:G:O4'	2.20	0.42
51:3:2734:C:O2'	51:3:2735:G:H8	2.03	0.42
51:3:2775:C:H2'	51:3:2776:U:C6	2.54	0.42
52:4:78:C:H6	52:4:78:C:H2'	1.72	0.42
53:5:90:G:H2'	53:5:91:C:C6	2.54	0.42
53:5:719:G:C8	53:5:721:G:H1'	2.55	0.42
53:5:795:U:C2	53:5:796:A:C8	3.08	0.42
53:5:1231:U:OP2	53:5:1253:A:H1'	2.20	0.42
54:6:5:C:N3	54:6:71:A:N6	2.67	0.42
11:G:50:LYS:HD3	11:G:50:LYS:HA	1.74	0.42
12:H:20:TYR:OH	53:5:1123:G:OP1	2.33	0.42
12:H:87:ARG:HH12	53:5:1109:U:C5'	2.33	0.42
16:L:24:GLY:H	53:5:1304:U:H5''	1.84	0.42
23:S:22:LYS:NZ	23:S:26:THR:OG1	2.52	0.42
26:b:160:PHE:HZ	33:i:84:ILE:H	1.68	0.42
29:e:152:ARG:HH22	51:3:2752:G:P	2.43	0.42
30:f:78:HIS:HA	30:f:141:LYS:O	2.20	0.42
32:h:89:ALA:HA	32:h:132:GLY:HA3	2.02	0.42
32:h:128:ALA:HB1	32:h:133:ILE:O	2.19	0.42
33:i:99:GLN:O	33:i:99:GLN:HG2	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:m:56:ASN:O	37:m:60:ARG:HG2	2.20	0.42
47:w:51:LEU:HA	47:w:54:ILE:HG12	2.01	0.42
51:3:313:G:H2'	51:3:314:G:C8	2.55	0.42
51:3:353:G:H2'	51:3:354:C:C2	2.53	0.42
51:3:370:C:H2'	51:3:371:C:C6	2.55	0.42
51:3:608:A:H2'	51:3:609:U:C6	2.55	0.42
51:3:1188:C:H2'	51:3:1189:G:C8	2.55	0.42
51:3:1220:A:H2'	51:3:1221:G:O4'	2.20	0.42
51:3:1335:A:C2	51:3:1336:A:C8	3.08	0.42
51:3:1674:A:C4	51:3:1675:A:C8	3.08	0.42
51:3:1884:A:C4	51:3:1885:G:C8	3.07	0.42
51:3:2118:U:O2'	51:3:2119:A:H5''	2.20	0.42
51:3:2134:G:H2'	51:3:2135:C:O4'	2.20	0.42
52:4:85:A:C2	52:4:86:G:H1'	2.55	0.42
53:5:133:G:H2'	53:5:134:G:C8	2.55	0.42
53:5:429:A:C2	53:5:430:G:H1'	2.55	0.42
53:5:516:C:N3	53:5:528:G:N2	2.68	0.42
53:5:920:G:H4'	53:5:921:G:OP1	2.19	0.42
53:5:1417:U:H2'	53:5:1418:G:N7	2.34	0.42
54:6:27:A:H3'	54:6:28:A:C8	2.52	0.42
54:6:49:C:H4'	54:6:50:G:H5''	2.02	0.42
12:H:46:VAL:HA	12:H:49:ASP:OD2	2.20	0.42
12:H:97:LYS:O	12:H:101:LYS:HB2	2.19	0.42
16:L:14:ARG:HD3	16:L:43:LYS:HA	2.02	0.42
19:O:38:LYS:HE3	53:5:447:G:H5''	2.02	0.42
20:P:34:LEU:O	20:P:36:HIS:ND1	2.52	0.42
23:S:43:ASN:C	23:S:43:ASN:HD22	2.26	0.42
27:c:35:PHE:O	27:c:38:VAL:HG12	2.18	0.42
28:d:60:ILE:HD11	28:d:141:ILE:HB	2.01	0.42
28:d:66:VAL:HG11	52:4:40:U:C5	2.55	0.42
28:d:74:ILE:HG22	28:d:77:TYR:H	1.85	0.42
35:k:39:GLN:NE2	35:k:45:GLY:HA2	2.35	0.42
36:l:9:TYR:OH	51:3:948:A:N6	2.52	0.42
36:l:30:GLY:HA2	36:l:65:TRP:CZ3	2.54	0.42
38:n:72:LEU:HA	38:n:75:GLN:HG3	2.01	0.42
38:n:106:ALA:HB1	38:n:110:ARG:HH12	1.84	0.42
42:r:118:ILE:O	42:r:121:GLN:HG3	2.20	0.42
44:t:44:ARG:N	44:t:63:VAL:O	2.52	0.42
46:v:55:LEU:O	46:v:59:LYS:HG3	2.20	0.42
51:3:14:U:O2	51:3:14:U:H2'	2.20	0.42
51:3:81:C:H2'	51:3:82:G:C8	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:122:G:C4	51:3:132:G:C2	3.07	0.42
51:3:222:A:C2'	51:3:223:A:H5'	2.50	0.42
51:3:250:U:H2'	51:3:251:G:C8	2.54	0.42
51:3:1023:C:O2'	51:3:1036:A:N3	2.43	0.42
51:3:1158:C:H2'	51:3:1159:C:C6	2.55	0.42
51:3:1336:A:C5	51:3:1337:G:N7	2.87	0.42
51:3:2284:G:H2'	51:3:2285:G:H8	1.84	0.42
51:3:2468:U:C2	51:3:2469:A:C8	3.08	0.42
51:3:2480:G:H21	51:3:2486:A:H62	1.68	0.42
51:3:2495:A:H2'	51:3:2496:G:C8	2.55	0.42
51:3:2656:G:H2'	51:3:2657:C:H6	1.85	0.42
53:5:128:A:H2'	53:5:129:U:O4'	2.20	0.42
53:5:153:A:H2'	53:5:154:G:H8	1.84	0.42
53:5:177:G:H22	53:5:188:U:H3	1.68	0.42
53:5:448:A:OP1	53:5:478:G:N1	2.40	0.42
53:5:607:A:H3'	53:5:608:G:H8	1.83	0.42
53:5:750:A:H4'	53:5:751:C:O4'	2.20	0.42
53:5:1091:C:H2'	53:5:1093:A:O5'	2.20	0.42
4:9:17:THR:HB	4:9:79:HIS:NE2	2.35	0.42
4:9:307:ALA:HB3	4:9:309:ILE:HD11	2.00	0.42
6:B:153:LYS:HG3	6:B:171:TYR:O	2.20	0.42
7:C:89:LEU:O	7:C:93:LEU:N	2.38	0.42
12:H:79:GLY:O	12:H:82:ARG:HG2	2.20	0.42
18:N:51:ARG:NE	53:5:577:G:O2'	2.40	0.42
19:O:61:ASP:HA	19:O:64:ARG:HH21	1.84	0.42
22:R:79:ASN:ND2	53:5:953:A:N7	2.68	0.42
25:a:35:LYS:NZ	51:3:1454:G:N7	2.61	0.42
25:a:218:ARG:NE	51:3:1600:A:OP1	2.53	0.42
27:c:97:ARG:NH1	27:c:99:TYR:OH	2.43	0.42
28:d:128:TYR:HE1	28:d:130:ILE:HG12	1.84	0.42
30:f:9:VAL:HG13	30:f:15:ARG:HA	2.01	0.42
40:p:14:LYS:NZ	51:3:1247:C:OP1	2.52	0.42
42:r:105:VAL:C	42:r:106:LYS:HD3	2.45	0.42
43:s:86:PRO:HG3	47:w:90:HIS:HE1	1.85	0.42
49:y:12:ARG:NH1	51:3:2029:U:OP2	2.52	0.42
50:z:23:LYS:HB2	51:3:2294:A:C2	2.55	0.42
51:3:187:C:O2	51:3:220:A:H2	2.03	0.42
51:3:664:G:C6	51:3:672:G:N1	2.88	0.42
51:3:697:U:C2	51:3:698:A:C8	3.08	0.42
51:3:945:U:H2'	51:3:946:A:C8	2.55	0.42
51:3:1036:A:H2'	51:3:1037:A:H8	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1041:C:H2'	51:3:1042:C:H6	1.81	0.42
51:3:1090:G:H3'	51:3:1091:G:C8	2.51	0.42
51:3:1337:G:N2	51:3:1645:C:H5'	2.25	0.42
51:3:1391:U:H2'	51:3:1392:G:C8	2.54	0.42
51:3:1621:U:H2'	51:3:1622:C:H6	1.84	0.42
51:3:1690:C:H2'	51:3:1691:U:C6	2.55	0.42
51:3:1889:U:H2'	51:3:1890:U:C5	2.55	0.42
51:3:1939:A:H1'	51:3:1976:A:N6	2.34	0.42
51:3:2377:A:H2'	51:3:2378:G:C8	2.55	0.42
51:3:2379:G:H2'	51:3:2380:U:O4'	2.19	0.42
51:3:2831:U:H2'	51:3:2832:G:H8	1.83	0.42
51:3:2896:G:H5'	51:3:2897:G:N3	2.35	0.42
52:4:10:C:H1'	52:4:11:A:H5'	2.02	0.42
53:5:169:G:H1	53:5:196:G:N2	2.18	0.42
53:5:736:U:H2'	53:5:737:U:C6	2.54	0.42
53:5:846:G:H2'	53:5:847:G:C8	2.55	0.42
53:5:1076:U:O4'	53:5:1085:G:N1	2.53	0.42
53:5:1130:G:H2'	53:5:1131:A:C8	2.55	0.42
53:5:1301:U:H2'	53:5:1302:C:C6	2.55	0.42
4:9:219:MET:CE	54:6:75:C:H1'	2.50	0.42
4:9:302:HIS:CE1	4:9:392:VAL:HG11	2.54	0.42
7:C:125:ASN:N	7:C:143:ARG:HH22	2.18	0.42
7:C:126:ASP:H	7:C:143:ARG:NH2	2.18	0.42
8:D:80:THR:HA	53:5:917:G:H4'	2.01	0.42
9:E:5:ILE:O	9:E:59:ARG:HA	2.20	0.42
13:I:28:THR:HA	13:I:31:ILE:HG12	2.02	0.42
17:M:23:ARG:NH1	17:M:30:ALA:HB2	2.35	0.42
23:S:43:ASN:O	23:S:43:ASN:ND2	2.49	0.42
24:T:15:LEU:HD12	24:T:19:LYS:HZ3	1.84	0.42
25:a:57:HIS:HE1	51:3:1830:G:H5''	1.85	0.42
26:b:63:ASN:ND2	51:3:2815:G:OP1	2.53	0.42
40:p:17:LEU:HD21	40:p:31:TYR:HA	2.01	0.42
46:v:32:ASN:HD22	51:3:434:G:P	2.42	0.42
51:3:101:C:H5''	51:3:102:A:H5'	2.02	0.42
51:3:353:G:H2'	51:3:354:C:N1	2.34	0.42
51:3:503:G:H4'	51:3:832:C:H5'	2.02	0.42
51:3:707:C:N4	51:3:844:G:O6	2.53	0.42
51:3:746:G:H2'	51:3:747:A:C8	2.55	0.42
51:3:1200:U:H2'	51:3:1201:A:C8	2.54	0.42
51:3:2299:U:O4	51:3:2300:A:N6	2.52	0.42
51:3:2403:C:H2'	51:3:2404:G:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2522:U:H2'	51:3:2523:C:H6	1.85	0.42
51:3:2632:C:C2	51:3:2633:C:C5	3.08	0.42
53:5:54:A:H2'	53:5:55:C:O4'	2.20	0.42
53:5:501:A:H2'	53:5:502:C:C6	2.55	0.42
53:5:862:C:H2'	53:5:863:A:O4'	2.19	0.42
53:5:1298:U:H2'	53:5:1299:C:H6	1.85	0.42
53:5:1501:G:H2'	53:5:1502:G:C8	2.54	0.42
4:9:138:CYS:HB2	4:9:185:TRP:HZ3	1.85	0.41
7:C:96:ARG:CZ	7:C:99:ASN:HB2	2.51	0.41
7:C:168:GLU:HG2	7:C:179:VAL:HG21	2.00	0.41
9:E:88:ILE:HD11	21:Q:92:ARG:HE	1.84	0.41
10:F:136:LYS:O	10:F:140:THR:HG23	2.19	0.41
11:G:94:GLY:O	15:K:4:ILE:HG21	2.20	0.41
12:H:18:LYS:HD3	53:5:1124:U:O4'	2.19	0.41
16:L:83:ILE:HD12	22:R:69:HIS:CE1	2.55	0.41
25:a:42:LYS:NZ	51:3:1382:A:H5''	2.35	0.41
26:b:125:ARG:NH1	26:b:172:GLU:OE2	2.54	0.41
27:c:140:THR:HG22	27:c:172:THR:H	1.85	0.41
28:d:173:LEU:HD23	28:d:173:LEU:HA	1.91	0.41
33:i:16:ARG:HB2	33:i:56:TYR:CE2	2.55	0.41
33:i:100:SER:O	33:i:103:LEU:HB3	2.19	0.41
37:m:62:GLN:HB3	37:m:66:TRP:HZ3	1.83	0.41
38:n:86:LEU:HD12	38:n:88:ASN:H	1.85	0.41
51:3:290:A:C6	51:3:291:G:N7	2.88	0.41
51:3:361:G:H2'	51:3:362:U:C6	2.55	0.41
51:3:435:U:H2'	51:3:436:G:C8	2.54	0.41
51:3:437:A:N6	51:3:458:A:H61	2.17	0.41
51:3:723:U:H2'	51:3:724:A:H8	1.85	0.41
51:3:767:C:H2'	51:3:768:G:O4'	2.18	0.41
51:3:948:A:N3	51:3:2272:C:H1'	2.35	0.41
51:3:1187:C:H2'	51:3:1188:C:C6	2.54	0.41
51:3:1243:A:C5	51:3:1267:A:C6	3.08	0.41
51:3:1264:U:H2'	51:3:1265:G:O4'	2.20	0.41
51:3:1536:C:N3	51:3:1537:A:N6	2.66	0.41
51:3:1696:C:H2'	51:3:1697:C:C6	2.54	0.41
51:3:1804:A:H2'	51:3:1805:U:C6	2.55	0.41
51:3:1858:U:N3	51:3:1898:G:N1	2.68	0.41
51:3:2034:G:H2'	51:3:2035:U:C6	2.55	0.41
51:3:2079:G:H2'	51:3:2080:C:C6	2.55	0.41
51:3:2196:G:H2'	51:3:2197:U:C5	2.55	0.41
51:3:2327:U:H1'	51:3:2328:A:C8	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2868:G:H2'	51:3:2869:U:O4'	2.20	0.41
52:4:4:G:H2'	52:4:5:G:C8	2.55	0.41
53:5:351:C:H2'	53:5:352:A:O4'	2.20	0.41
53:5:514:U:H2'	53:5:517:C:H42	1.84	0.41
53:5:680:G:C6	53:5:704:U:O2	2.73	0.41
53:5:929:C:O2	53:5:933:A:N6	2.53	0.41
53:5:1176:A:H4'	53:5:1177:U:H5''	2.02	0.41
53:5:1280:A:H3'	53:5:1281:U:C5	2.55	0.41
53:5:1282:U:C4	53:5:1303:A:N1	2.89	0.41
54:6:67:C:H2'	54:6:68:G:H8	1.83	0.41
4:9:143:ASP:HB2	4:9:147:GLN:HG3	2.02	0.41
4:9:306:LYS:HE2	4:9:358:SER:HB3	2.01	0.41
7:C:67:THR:HG23	7:C:70:GLN:H	1.85	0.41
7:C:73:ARG:HA	7:C:76:ARG:HE	1.84	0.41
18:N:62:ARG:CZ	53:5:579:G:H5''	2.50	0.41
20:P:49:ASN:ND2	20:P:77:ILE:HD13	2.36	0.41
27:c:187:SER:OG	27:c:189:ARG:NH2	2.53	0.41
29:e:63:GLN:HA	29:e:66:ILE:HD12	2.02	0.41
36:l:9:TYR:CZ	51:3:948:A:N6	2.88	0.41
38:n:10:LEU:HD23	38:n:14:ARG:HH11	1.83	0.41
38:n:35:SER:OG	38:n:38:HIS:O	2.32	0.41
44:t:12:VAL:HG11	44:t:17:ASN:ND2	2.36	0.41
46:v:22:LYS:HA	46:v:22:LYS:HD3	1.92	0.41
51:3:121:U:H5''	51:3:123:G:OP2	2.20	0.41
51:3:135:A:H2'	51:3:136:G:H8	1.86	0.41
51:3:155:A:H2'	51:3:156:A:C8	2.55	0.41
51:3:213:C:H2'	51:3:214:C:C6	2.56	0.41
51:3:335:G:C6	51:3:351:G:C5	3.08	0.41
51:3:411:U:H1'	51:3:459:A:N3	2.36	0.41
51:3:476:G:H2'	51:3:477:U:C6	2.55	0.41
51:3:542:A:H4'	51:3:544:U:O4'	2.20	0.41
51:3:995:A:C2	51:3:2465:U:H1'	2.55	0.41
51:3:1295:A:H61	51:3:2020:A:H3'	1.85	0.41
51:3:1461:A:H2'	51:3:1462:A:H8	1.83	0.41
51:3:1851:U:H2'	51:3:1852:G:H8	1.85	0.41
51:3:2068:G:H1'	51:3:2069:A:H2'	2.02	0.41
51:3:2092:U:H2'	51:3:2093:U:C6	2.55	0.41
51:3:2101:A:C8	51:3:2206:A:N6	2.88	0.41
51:3:2171:A:H2'	51:3:2172:A:O4'	2.19	0.41
51:3:2248:C:H2'	51:3:2249:A:C8	2.54	0.41
51:3:2743:U:H2'	51:3:2744:A:C8	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2810:A:N6	51:3:2896:G:H22	2.19	0.41
53:5:305:A:C2	53:5:306:G:C5	3.08	0.41
53:5:682:G:H2'	53:5:683:G:C4	2.55	0.41
53:5:1236:A:H4'	53:5:1258:U:H5''	2.02	0.41
54:7:5:C:N3	54:7:71:A:N6	2.67	0.41
54:7:49:C:H4'	54:7:50:G:H5''	2.02	0.41
54:7:75:C:H3'	54:7:76:C:O4'	2.20	0.41
1:0:37:LYS:HE2	1:0:39:ARG:HD3	2.03	0.41
3:2:11:CYS:HB2	3:2:32:HIS:CE1	2.55	0.41
4:9:238:LYS:HG2	4:9:241:GLN:NE2	2.36	0.41
6:B:134:ARG:NH1	8:D:112:PRO:HD3	2.35	0.41
8:D:137:TYR:O	11:G:109:ASN:HB2	2.20	0.41
10:F:68:VAL:HG13	10:F:99:ALA:HB1	2.01	0.41
11:G:45:LEU:HD12	11:G:46:GLU:N	2.34	0.41
11:G:102:GLU:O	11:G:103:LYS:HD3	2.20	0.41
15:K:44:ARG:HB3	15:K:94:LEU:HD12	2.03	0.41
23:S:56:ARG:HH22	53:5:219:A:H5'	1.85	0.41
25:a:57:HIS:ND1	51:3:1831:G:OP1	2.54	0.41
25:a:139:ALA:HA	25:a:194:LYS:HE2	2.02	0.41
27:c:185:LYS:HE3	51:3:650:G:H1	1.85	0.41
29:e:97:TYR:HA	29:e:109:GLN:O	2.20	0.41
37:m:30:LYS:HD2	37:m:115:ILE:HD11	2.01	0.41
44:t:90:LYS:HB2	44:t:103:VAL:HG13	2.02	0.41
47:w:55:LEU:HA	47:w:58:LEU:HB2	2.00	0.41
49:y:4:GLN:HE22	51:3:1294:G:H1'	1.85	0.41
51:3:156:A:H2'	51:3:157:U:H6	1.84	0.41
51:3:314:G:O3'	51:3:315:A:H3'	2.20	0.41
51:3:703:A:H2'	51:3:705:A:N6	2.31	0.41
51:3:742:G:H2'	51:3:743:G:C8	2.56	0.41
51:3:759:U:H2'	51:3:760:G:O4'	2.21	0.41
51:3:1014:G:H2'	51:3:1015:G:C8	2.55	0.41
51:3:1027:U:H2'	51:3:1028:C:C6	2.55	0.41
51:3:1053:C:H5''	51:3:1071:G:H4'	2.01	0.41
51:3:1820:U:H2'	51:3:1821:G:O4'	2.20	0.41
51:3:1884:A:H2'	51:3:1885:G:H8	1.86	0.41
51:3:2009:U:H2'	51:3:2010:A:C8	2.55	0.41
51:3:2541:C:H3'	51:3:2542:A:C8	2.55	0.41
51:3:2542:A:N7	51:3:2543:G:C8	2.89	0.41
51:3:2664:U:H2'	51:3:2665:A:H8	1.86	0.41
51:3:2676:G:H2'	51:3:2677:A:C8	2.55	0.41
51:3:2854:A:H2'	51:3:2855:A:C8	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:148:A:H8	53:5:148:A:O5'	2.03	0.41
53:5:445:A:OP1	53:5:445:A:H4'	2.19	0.41
53:5:960:C:OP1	53:5:1173:A:H5''	2.19	0.41
53:5:1074:U:H2'	53:5:1093:A:N7	2.36	0.41
53:5:1279:G:O2'	53:5:1280:A:H8	2.03	0.41
53:5:1351:U:H2'	53:5:1352:A:H8	1.86	0.41
6:B:133:LEU:HG	6:B:137:MET:CE	2.50	0.41
8:D:97:ARG:NH1	8:D:171:GLU:HB3	2.35	0.41
8:D:187:THR:HG23	8:D:190:ASN:HB2	2.01	0.41
9:E:43:LYS:HB2	9:E:57:TYR:HE2	1.85	0.41
11:G:26:ARG:NH2	11:G:86:GLY:HA2	2.35	0.41
12:H:72:GLY:HA2	53:5:1346:G:OP1	2.21	0.41
12:H:131:LYS:HB2	53:5:965:C:H41	1.85	0.41
16:L:118:ASN:ND2	53:5:1203:A:N3	2.66	0.41
17:M:13:ILE:HD13	17:M:13:ILE:HA	1.94	0.41
18:N:22:ILE:HG21	18:N:67:LEU:HD22	2.03	0.41
22:R:40:ILE:HA	22:R:44:PHE:HB2	2.02	0.41
26:b:26:ILE:HD13	26:b:26:ILE:HA	1.93	0.41
40:p:50:ARG:O	40:p:53:LYS:NZ	2.45	0.41
41:q:22:VAL:HG13	41:q:92:LEU:HD21	2.02	0.41
51:3:90:G:H2'	51:3:91:G:H8	1.86	0.41
51:3:429:U:H2'	51:3:430:U:C6	2.56	0.41
51:3:943:A:H2'	51:3:944:U:O4'	2.21	0.41
51:3:1599:C:O2'	51:3:1601:A:N7	2.50	0.41
51:3:1836:A:H3'	51:3:1837:C:H6	1.84	0.41
51:3:1869:G:H2'	51:3:1870:G:H8	1.85	0.41
51:3:2330:A:C6	51:3:2331:G:C6	3.08	0.41
51:3:2513:G:H2'	51:3:2584:G:N1	2.36	0.41
51:3:2730:G:H2'	51:3:2731:U:C6	2.55	0.41
53:5:323:A:H1'	53:5:325:A:C8	2.55	0.41
53:5:407:A:N6	53:5:426:U:N3	2.68	0.41
53:5:474:G:C2	53:5:475:U:C4	3.07	0.41
53:5:552:U:H2'	53:5:553:C:H6	1.85	0.41
53:5:607:A:H2'	53:5:608:G:O4'	2.20	0.41
53:5:858:A:P	53:5:858:A:H8	2.44	0.41
53:5:978:A:N1	53:5:1197:G:N2	2.69	0.41
53:5:1380:G:N1	53:5:1472:G:O6	2.54	0.41
3:2:29:THR:HG22	3:2:31:LYS:H	1.85	0.41
4:9:126:VAL:HG21	4:9:334:ARG:NH1	2.35	0.41
5:A:113:LEU:HD21	53:5:1091:C:C6	2.55	0.41
13:I:28:THR:HG21	13:I:78:ARG:NH2	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:K:79:TYR:O	15:K:81:PRO:HD3	2.20	0.41
15:K:92:VAL:HG13	15:K:115:LEU:HD22	2.02	0.41
17:M:3:LYS:HB3	53:5:1040:U:OP1	2.20	0.41
18:N:15:HIS:HB2	18:N:18:ASP:OD1	2.20	0.41
22:R:10:PHE:CG	53:5:1292:A:H4'	2.54	0.41
23:S:63:ASN:ND2	53:5:258:A:O3'	2.53	0.41
24:T:16:LYS:HD3	24:T:19:LYS:HZ1	1.84	0.41
27:c:50:HIS:CE1	27:c:97:ARG:HB2	2.56	0.41
33:i:4:THR:HA	51:3:1031:U:O2'	2.20	0.41
34:j:8:LEU:HD23	34:j:19:VAL:O	2.21	0.41
34:j:101:PRO:HB3	34:j:120:GLU:OE2	2.21	0.41
35:k:119:LYS:HE2	35:k:121:GLU:OE2	2.21	0.41
39:o:7:GLN:CD	51:3:2879:U:H5''	2.46	0.41
39:o:16:LYS:HA	39:o:16:LYS:HD3	1.89	0.41
39:o:100:TYR:HD2	51:3:2726:G:H4'	1.84	0.41
47:w:83:ALA:O	47:w:87:TRP:CE3	2.74	0.41
51:3:222:A:H3'	51:3:223:A:H8	1.84	0.41
51:3:656:G:H1'	51:3:658:G:O6	2.20	0.41
51:3:722:C:N4	51:3:822:C:O2'	2.48	0.41
51:3:895:G:H1'	51:3:896:U:H5	1.85	0.41
51:3:1109:G:H2'	51:3:1110:C:O4'	2.19	0.41
51:3:1340:U:O2	51:3:1367:G:N2	2.53	0.41
51:3:1447:A:O2'	51:3:1449:G:N7	2.48	0.41
51:3:1896:A:H1'	51:3:2094:A:H4'	2.01	0.41
51:3:1907:A:C5	51:3:1977:A:C5	3.09	0.41
51:3:2343:A:N6	51:3:2345:G:N3	2.68	0.41
51:3:2554:U:O2'	51:3:2574:A:H1'	2.20	0.41
51:3:2697:C:P	51:3:2876:G:H22	2.42	0.41
53:5:50:U:N3	53:5:358:G:H1'	2.33	0.41
53:5:91:C:H2'	53:5:92:G:C8	2.55	0.41
53:5:243:G:H2'	53:5:244:C:C6	2.55	0.41
53:5:346:G:H2'	53:5:347:G:C8	2.55	0.41
53:5:553:C:H2'	53:5:554:C:H6	1.85	0.41
53:5:1044:G:N2	53:5:1048:G:OP2	2.53	0.41
53:5:1153:G:N2	53:5:1156:G:OP2	2.51	0.41
53:5:1172:A:H2'	53:5:1173:A:C8	2.55	0.41
53:5:1217:G:H21	53:5:1276:U:H3	1.68	0.41
53:5:1490:G:H2'	53:5:1491:A:C8	2.55	0.41
2:1:21:ARG:HA	35:k:65:PHE:HZ	1.86	0.41
2:1:39:ARG:O	2:1:43:LYS:NZ	2.46	0.41
4:9:122:LEU:HD21	4:9:383:THR:OG1	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:A:190:GLU:OE2	53:5:1092:A:N6	2.54	0.41
6:B:34:LEU:O	6:B:37:ASP:OD1	2.38	0.41
12:H:11:ARG:H	12:H:83:LEU:HD23	1.85	0.41
14:J:114:CYS:HB2	53:5:712:A:H1'	2.02	0.41
23:S:60:ILE:HG23	23:S:64:ARG:HE	1.86	0.41
25:a:64:ARG:NE	51:3:1601:A:OP1	2.53	0.41
25:a:89:ASP:HB2	25:a:96:VAL:HG23	2.02	0.41
27:c:135:LYS:HE3	27:c:135:LYS:HB2	1.86	0.41
29:e:7:ARG:O	29:e:72:ASN:ND2	2.53	0.41
34:j:97:ARG:NH1	53:5:335:C:OP2	2.54	0.41
41:q:36:ASP:OD1	41:q:37:LYS:HG2	2.21	0.41
51:3:325:G:C6	51:3:384:G:C6	3.09	0.41
51:3:525:A:C6	51:3:526:G:C6	3.09	0.41
51:3:609:U:H1'	51:3:2510:G:C6	2.55	0.41
51:3:855:A:N6	51:3:1008:A:H2'	2.33	0.41
51:3:1114:C:H2'	51:3:1115:G:H8	1.84	0.41
51:3:1341:U:H2'	51:3:1644:A:C2	2.55	0.41
51:3:1456:C:OP1	51:3:1593:U:N3	2.53	0.41
51:3:1473:C:C2	51:3:1580:G:N2	2.89	0.41
51:3:1840:C:O2'	51:3:1976:A:N1	2.45	0.41
51:3:1868:A:H2'	51:3:1869:G:H8	1.86	0.41
51:3:1878:A:H2'	51:3:1879:A:O4'	2.20	0.41
51:3:2232:G:H4'	51:3:2234:C:H1'	2.02	0.41
51:3:2550:A:H4'	51:3:2551:G:C8	2.55	0.41
53:5:107:A:N6	53:5:235:C:H42	2.19	0.41
53:5:145:G:H22	53:5:147:A:H3'	1.85	0.41
53:5:553:C:H2'	53:5:554:C:C6	2.55	0.41
53:5:876:C:N3	53:5:877:C:N4	2.68	0.41
53:5:1110:C:H2'	53:5:1111:G:C8	2.52	0.41
53:5:1234:C:H2'	53:5:1258:U:O2'	2.21	0.41
53:5:1290:G:H1'	53:5:1334:A:C2	2.55	0.41
54:6:9:U:O2'	54:6:22:A:N1	2.45	0.41
54:6:29:C:N3	54:6:44:U:C4	2.89	0.41
54:6:75:C:H3'	54:6:76:C:O4'	2.21	0.41
3:2:35:ARG:HG2	3:2:36:GLN:NE2	2.36	0.41
4:9:41:LYS:HA	4:9:41:LYS:HD3	1.80	0.41
4:9:97:ALA:CB	4:9:334:ARG:HD3	2.50	0.41
5:A:218:ASN:O	5:A:224:SER:HB3	2.21	0.41
7:C:64:TYR:CD1	7:C:96:ARG:NH1	2.89	0.41
9:E:8:LEU:HB3	9:E:83:LEU:HB2	2.03	0.41
12:H:130:THR:HG23	53:5:1206:G:H4'	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:J:116:PRO:HG2	24:T:35:HIS:HB2	2.02	0.41
15:K:29:ASN:O	15:K:33:LYS:HA	2.21	0.41
27:c:108:HIS:NE2	51:3:652:U:H4'	2.36	0.41
28:d:30:ARG:N	28:d:158:THR:OG1	2.54	0.41
28:d:84:LEU:HD12	28:d:84:LEU:H	1.86	0.41
28:d:92:ARG:HB2	28:d:95:ARG:HH21	1.86	0.41
30:f:33:LYS:HE2	30:f:111:PHE:HB2	2.01	0.41
33:i:101:ASP:OD1	33:i:127:VAL:HG12	2.21	0.41
34:j:13:ASN:OD1	34:j:97:ARG:HB3	2.19	0.41
39:o:53:LEU:HD13	39:o:105:ARG:HE	1.86	0.41
42:r:88:ARG:HD2	42:r:94:ASN:OD1	2.21	0.41
46:v:27:ARG:HH12	46:v:29:TRP:CD1	2.39	0.41
51:3:266:A:C2	51:3:466:A:H1'	2.56	0.41
51:3:306:G:H2'	51:3:307:C:C6	2.56	0.41
51:3:340:U:H2'	51:3:341:G:O4'	2.20	0.41
51:3:626:A:H2'	51:3:627:U:H6	1.85	0.41
51:3:674:G:H2'	51:3:675:U:H6	1.83	0.41
51:3:679:A:H61	51:3:2377:A:H1'	1.85	0.41
51:3:1091:G:H4'	51:3:1121:A:C8	2.55	0.41
51:3:1193:U:H2'	51:3:1194:U:O4'	2.21	0.41
51:3:1232:U:C2	51:3:1233:A:C8	3.08	0.41
51:3:1456:C:N4	51:3:1603:A:H3'	2.36	0.41
51:3:1479:A:H4'	51:3:1480:A:C4	2.55	0.41
51:3:1552:C:H2'	51:3:1553:G:C8	2.56	0.41
51:3:1714:U:H2'	51:3:1715:A:O4'	2.20	0.41
51:3:2106:G:H2'	51:3:2107:A:H5'	2.03	0.41
51:3:2297:G:N2	51:3:2352:U:O2	2.54	0.41
51:3:2306:A:N6	51:3:2326:G:O2'	2.54	0.41
51:3:2467:A:H3'	51:3:2468:U:H6	1.86	0.41
51:3:2549:A:H1'	51:3:2773:A:H61	1.85	0.41
51:3:2566:C:H2'	51:3:2567:C:C6	2.55	0.41
51:3:2580:A:OP1	51:3:2582:G:H4'	2.21	0.41
51:3:2607:G:H2'	51:3:2608:A:C8	2.53	0.41
51:3:2662:A:C2	51:3:2673:A:H5''	2.56	0.41
51:3:2667:G:H22	51:3:2669:G:H3'	1.84	0.41
51:3:2787:U:H5''	51:3:2788:U:H2'	2.01	0.41
51:3:2828:C:H2'	51:3:2829:G:O4'	2.20	0.41
53:5:28:G:C6	53:5:555:G:C6	3.08	0.41
53:5:209:A:H8	53:5:209:A:O5'	2.04	0.41
53:5:425:G:C8	53:5:427:A:H1'	2.56	0.41
53:5:512:U:H2'	53:5:513:G:C8	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:961:G:P	53:5:961:G:H8	2.43	0.41
53:5:1223:A:H2'	53:5:1224:C:C6	2.55	0.41
54:7:29:C:N3	54:7:44:U:C4	2.89	0.41
3:2:7:VAL:O	3:2:7:VAL:HG13	2.20	0.41
4:9:54:PRO:C	4:9:56:GLU:H	2.28	0.41
12:H:97:LYS:NZ	53:5:1152:G:H5''	2.36	0.41
13:I:26:LEU:HD12	13:I:27:THR:N	2.35	0.41
16:L:13:LYS:HE3	16:L:21:TYR:CE2	2.54	0.41
16:L:119:LYS:HA	16:L:119:LYS:HD2	1.87	0.41
19:O:25:LYS:HE2	53:5:306:G:H4'	2.01	0.41
22:R:73:GLU:HG2	53:5:1294:U:C1'	2.51	0.41
26:b:153:GLY:HA3	51:3:2039:G:H1'	2.02	0.41
28:d:26:MET:HE1	52:4:29:C:H5'	2.02	0.41
28:d:36:ILE:HD12	28:d:153:ASP:O	2.20	0.41
30:f:100:GLN:O	30:f:104:LYS:HG3	2.21	0.41
30:f:124:HIS:CE1	30:f:126:ILE:HD11	2.56	0.41
32:h:128:ALA:O	32:h:132:GLY:N	2.27	0.41
33:i:96:LEU:HD13	33:i:100:SER:OG	2.21	0.41
37:m:101:LEU:HD22	49:y:48:TYR:CE2	2.55	0.41
39:o:9:LEU:HA	39:o:12:LEU:HD12	2.03	0.41
42:r:77:ASN:ND2	51:3:25:G:O2'	2.47	0.41
44:t:93:MET:C	44:t:95:PRO:HD3	2.45	0.41
51:3:212:G:H2'	51:3:213:C:H6	1.85	0.41
51:3:491:A:C2	51:3:509:G:H5'	2.55	0.41
51:3:675:U:H2'	51:3:676:U:H6	1.86	0.41
51:3:692:U:H2'	51:3:693:U:C6	2.56	0.41
51:3:872:C:N3	51:3:977:A:N6	2.69	0.41
51:3:891:G:H2'	51:3:892:G:C8	2.56	0.41
51:3:1019:A:H3'	51:3:1020:G:C2	2.55	0.41
51:3:1056:A:H2'	51:3:1057:G:H4'	2.01	0.41
51:3:1123:A:H4'	51:3:1124:G:H8	1.86	0.41
51:3:1128:G:N2	51:3:1134:G:O6	2.54	0.41
51:3:1174:G:O2'	51:3:1178:A:N6	2.52	0.41
51:3:1201:A:O2'	51:3:1202:A:H5'	2.20	0.41
51:3:1290:G:H2'	51:3:1291:C:C6	2.56	0.41
51:3:1452:G:H2'	51:3:1453:U:O4'	2.20	0.41
51:3:1638:C:O2'	51:3:1644:A:N6	2.54	0.41
51:3:2097:A:H2'	51:3:2098:U:O4'	2.20	0.41
51:3:2179:A:H1'	51:3:2180:U:C6	2.56	0.41
51:3:2844:U:H2'	51:3:2845:U:C6	2.56	0.41
52:4:43:A:C5	52:4:44:A:C8	3.09	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:510:U:H2'	53:5:511:A:H8	1.85	0.41
53:5:581:A:N6	53:5:755:U:O2'	2.53	0.41
53:5:587:A:H2'	53:5:588:U:C6	2.56	0.41
53:5:683:G:O2'	53:5:700:G:N2	2.50	0.41
53:5:785:U:H2'	53:5:786:U:C6	2.56	0.41
53:5:912:G:H2'	53:5:913:A:H8	1.85	0.41
53:5:942:G:H1	53:5:1209:C:H42	1.68	0.41
53:5:961:G:H1'	54:7:35:G:O2'	2.21	0.41
53:5:1329:G:N3	53:5:1330:A:C8	2.89	0.41
1:0:33:LEU:O	1:0:37:LYS:HD3	2.21	0.41
4:9:311:ALA:HB3	4:9:354:GLY:N	2.36	0.41
4:9:312:LEU:O	4:9:353:PRO:HB3	2.21	0.41
4:9:340:GLY:HA3	4:9:363:LEU:HD23	2.03	0.41
7:C:198:GLU:OE2	8:D:159:GLY:HA3	2.21	0.41
9:E:95:GLY:O	21:Q:50:ARG:HG3	2.21	0.41
11:G:43:ALA:O	11:G:46:GLU:HG3	2.21	0.41
12:H:71:GLY:HA2	53:5:1225:A:H4'	2.02	0.41
13:I:45:PRO:HD2	53:5:1114:A:H4'	2.02	0.41
14:J:14:ILE:HD13	14:J:93:PHE:CZ	2.56	0.41
14:J:109:ILE:HG13	14:J:109:ILE:O	2.21	0.41
25:a:50:GLN:HG3	25:a:52:LYS:H	1.85	0.41
25:a:127:PRO:HB3	25:a:140:PHE:HD2	1.85	0.41
26:b:151:ARG:HH12	51:3:2584:G:H22	1.68	0.41
26:b:154:ALA:H	51:3:2039:G:H21	1.69	0.41
28:d:64:LYS:HB2	28:d:64:LYS:HE3	1.91	0.41
29:e:57:ARG:NH1	29:e:65:LYS:HB2	2.36	0.41
29:e:97:TYR:CE1	29:e:110:LEU:HD12	2.56	0.41
30:f:124:HIS:HB3	30:f:140:VAL:HG13	2.02	0.41
33:i:88:LYS:NZ	51:3:2648:A:H5''	2.36	0.41
33:i:118:SER:HA	33:i:121:TRP:CE3	2.56	0.41
33:i:120:ARG:O	33:i:124:LYS:HG3	2.21	0.41
37:m:6:LYS:HE3	51:3:1303:U:H4'	2.03	0.41
37:m:58:ASN:O	37:m:62:GLN:OE1	2.39	0.41
37:m:107:ARG:HE	51:3:1314:A:H5''	1.86	0.41
40:p:24:PHE:HD1	51:3:19:G:H4'	1.85	0.41
41:q:4:ILE:CD1	41:q:40:MET:HE3	2.51	0.41
42:r:97:THR:HG23	42:r:99:ARG:NE	2.35	0.41
42:r:104:VAL:HG23	42:r:106:LYS:NZ	2.36	0.41
43:s:31:VAL:HG21	43:s:40:VAL:HG12	2.02	0.41
44:t:3:ARG:CZ	51:3:370:C:H4'	2.51	0.41
44:t:40:ASN:HB3	44:t:67:ALA:HB3	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:w:18:LEU:HD23	47:w:21:LYS:HD2	2.02	0.41
47:w:22:LEU:HD11	47:w:47:THR:OG1	2.21	0.41
47:w:51:LEU:HD23	47:w:54:ILE:HD11	2.03	0.41
48:x:40:GLY:HA2	48:x:43:HIS:HB2	2.03	0.41
50:z:23:LYS:HB3	50:z:23:LYS:HE2	1.81	0.41
51:3:78:C:N3	51:3:112:A:N6	2.69	0.41
51:3:195:A:H2'	51:3:196:G:C8	2.55	0.41
51:3:211:A:C4	51:3:212:G:C8	3.09	0.41
51:3:348:A:H2'	51:3:349:G:H8	1.86	0.41
51:3:535:G:H21	51:3:540:A:H62	1.68	0.41
51:3:562:C:H5''	51:3:2050:G:H1'	2.03	0.41
51:3:603:G:N1	51:3:2507:C:OP1	2.51	0.41
51:3:603:G:H21	51:3:2037:A:H5''	1.85	0.41
51:3:627:U:H2'	51:3:628:A:C8	2.55	0.41
51:3:637:U:H4'	51:3:638:A:O4'	2.21	0.41
51:3:780:G:O2'	51:3:783:G:H1'	2.20	0.41
51:3:914:G:N2	51:3:937:A:H62	2.17	0.41
51:3:947:A:N3	51:3:2272:C:O2'	2.51	0.41
51:3:1026:A:H5''	51:3:1192:U:OP1	2.20	0.41
51:3:1056:A:O2'	51:3:1158:C:OP1	2.30	0.41
51:3:1093:U:H2'	51:3:1094:G:C8	2.55	0.41
51:3:1288:C:H2'	51:3:1289:G:C8	2.55	0.41
51:3:1379:C:H4'	51:3:1606:A:H4'	2.03	0.41
51:3:1497:A:N6	51:3:1547:G:H21	2.18	0.41
51:3:1572:U:H2'	51:3:1573:A:C8	2.55	0.41
51:3:1849:G:H1	51:3:1905:U:H3	1.67	0.41
51:3:2121:A:H3'	51:3:2122:G:C8	2.54	0.41
51:3:2204:C:H2'	51:3:2205:U:C6	2.55	0.41
51:3:2348:U:H2'	51:3:2349:G:H8	1.84	0.41
51:3:2435:C:H5''	51:3:2436:G:H5'	2.02	0.41
51:3:2567:C:H2'	51:3:2568:G:C8	2.54	0.41
52:4:49:G:H2'	52:4:50:C:C6	2.56	0.41
53:5:43:G:H2'	53:5:44:C:O4'	2.20	0.41
53:5:177:G:H1	53:5:188:U:H3	1.68	0.41
53:5:200:G:C6	53:5:216:G:C2	3.09	0.41
53:5:371:U:C2	53:5:372:G:C8	3.09	0.41
53:5:511:A:H2'	53:5:512:U:H6	1.83	0.41
53:5:548:G:H2'	53:5:549:U:C6	2.55	0.41
53:5:640:C:H2'	53:5:641:U:C6	2.56	0.41
53:5:709:A:H2'	53:5:710:G:O4'	2.21	0.41
53:5:761:U:H2'	53:5:762:G:O4'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:778:A:N7	53:5:798:U:C2	2.89	0.41
53:5:797:G:H2'	53:5:798:U:C5	2.55	0.41
53:5:931:C:H2'	53:5:932:A:O4'	2.21	0.41
53:5:1016:A:C6	53:5:1017:A:C6	3.09	0.41
53:5:1217:G:N2	53:5:1269:U:O2	2.54	0.41
53:5:1236:A:C8	53:5:1250:A:C6	3.08	0.41
53:5:1328:C:H2'	53:5:1329:G:H8	1.82	0.41
53:5:1406:U:C2'	53:5:1407:A:H5'	2.51	0.41
53:5:1406:U:O4	53:5:1407:A:N6	2.53	0.41
53:5:1487:U:H2'	53:5:1488:A:H8	1.85	0.41
54:7:16:G:O2'	54:7:17:U:OP1	2.37	0.41
4:9:116:THR:O	4:9:120:ILE:HG13	2.21	0.41
4:9:258:GLY:O	4:9:277:VAL:HA	2.21	0.41
4:9:343:SER:OG	4:9:343:SER:O	2.37	0.41
7:C:7:ILE:HG13	7:C:8:PHE:H	1.85	0.41
7:C:64:TYR:HB3	7:C:96:ARG:HH11	1.86	0.41
9:E:1:MET:HG2	9:E:2:GLN:N	2.36	0.41
9:E:20:GLN:HA	9:E:23:GLU:OE1	2.20	0.41
9:E:94:TYR:HA	21:Q:50:ARG:NH1	2.36	0.41
12:H:106:THR:O	53:5:1154:A:H5''	2.21	0.41
15:K:44:ARG:HD2	53:5:359:A:H5'	2.03	0.41
15:K:100:VAL:HB	53:5:521:A:C6	2.55	0.41
22:R:40:ILE:HG13	22:R:67:VAL:HA	2.03	0.41
25:a:184:LEU:H	25:a:189:THR:HA	1.86	0.41
28:d:171:ARG:HA	28:d:175:LEU:HB3	2.03	0.41
42:r:110:ASN:C	42:r:112:ASN:N	2.78	0.41
45:u:20:GLY:CA	54:7:2:G:H21	2.34	0.41
47:w:104:LYS:HE3	51:3:1430:U:H5''	2.01	0.41
49:y:19:HIS:NE2	51:3:2052:C:O2	2.50	0.41
51:3:70:G:H2'	51:3:71:C:O4'	2.21	0.41
51:3:250:U:O2	51:3:256:G:O6	2.38	0.41
51:3:448:A:C6	51:3:2420:A:H1'	2.56	0.41
51:3:463:U:O2'	51:3:464:A:H8	2.04	0.41
51:3:890:U:H2'	51:3:891:G:C8	2.55	0.41
51:3:985:A:C6	51:3:1005:G:C6	3.09	0.41
51:3:1033:A:H2'	51:3:1034:A:H8	1.85	0.41
51:3:1326:C:H2'	51:3:1327:G:O4'	2.21	0.41
51:3:1504:G:C6	51:3:1540:G:C2	3.09	0.41
51:3:1577:A:H2'	51:3:1578:A:C8	2.56	0.41
51:3:1647:A:N6	51:3:1650:A:OP2	2.54	0.41
51:3:1928:G:N1	51:3:1929:G:C6	2.88	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1992:C:H2'	51:3:1993:U:C6	2.56	0.41
51:3:2775:C:H2'	51:3:2776:U:H6	1.86	0.41
51:3:2801:U:H2'	51:3:2802:C:C6	2.56	0.41
52:4:61:A:H2'	52:4:62:G:H8	1.85	0.41
53:5:88:A:O2'	53:5:158:A:N1	2.41	0.41
53:5:216:G:H2'	53:5:217:U:C6	2.56	0.41
53:5:407:A:C5	53:5:426:U:C4	3.09	0.41
53:5:516:C:H5''	53:5:527:G:H2'	2.03	0.41
53:5:733:A:H2'	53:5:734:A:C8	2.56	0.41
53:5:1150:G:N3	53:5:1151:A:C8	2.89	0.41
1:0:28:ARG:O	1:0:32:LYS:HG3	2.21	0.40
4:9:50:ILE:HD12	4:9:68:VAL:CG1	2.51	0.40
4:9:247:GLY:C	4:9:249:ARG:H	2.28	0.40
6:B:60:ARG:HA	6:B:64:THR:O	2.21	0.40
6:B:184:ASP:OD2	6:B:207:ARG:NE	2.52	0.40
10:F:100:LEU:HA	10:F:103:ILE:HG12	2.02	0.40
15:K:40:SER:HA	15:K:41:PRO:HD3	1.95	0.40
15:K:96:ARG:NH2	53:5:550:U:H5''	2.36	0.40
20:P:64:VAL:HG23	20:P:76:ARG:HE	1.85	0.40
29:e:11:LEU:HB3	29:e:52:ASN:N	2.36	0.40
29:e:120:ILE:HG23	29:e:124:LEU:HD23	2.03	0.40
33:i:110:GLY:HA3	51:3:1173:G:H4'	2.03	0.40
34:j:14:THR:HG23	34:j:51:MET:HE2	2.02	0.40
38:n:13:LYS:HA	38:n:16:VAL:HG12	2.03	0.40
39:o:98:ARG:NH1	51:3:2725:G:N3	2.57	0.40
40:p:60:TRP:CD2	40:p:93:VAL:HB	2.56	0.40
40:p:105:PHE:O	40:p:109:VAL:HG13	2.21	0.40
42:r:44:ALA:HA	42:r:47:ILE:HG22	2.03	0.40
48:x:15:LYS:O	48:x:35:THR:HA	2.21	0.40
50:z:22:PHE:CE2	51:3:2293:C:H5	2.36	0.40
51:3:94:A:H3'	51:3:95:G:H8	1.86	0.40
51:3:179:A:H1'	51:3:180:A:H5'	2.03	0.40
51:3:242:G:N2	51:3:657:A:O2'	2.54	0.40
51:3:603:G:C1'	51:3:1019:A:H62	2.34	0.40
51:3:905:U:C4	51:3:906:G:N7	2.89	0.40
51:3:949:C:H2'	51:3:950:U:C6	2.56	0.40
51:3:1363:C:H2'	51:3:1364:A:C8	2.56	0.40
51:3:1523:C:H2'	51:3:1524:C:C6	2.55	0.40
51:3:1893:C:H2'	51:3:1894:U:C6	2.55	0.40
51:3:1981:U:H2'	51:3:1982:G:C8	2.55	0.40
51:3:2200:U:H2'	51:3:2201:G:H8	1.84	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2208:U:H2'	51:3:2209:U:C6	2.56	0.40
51:3:2274:A:C8	51:3:2281:A:N6	2.90	0.40
51:3:2321:C:H2'	51:3:2322:G:C8	2.51	0.40
51:3:2496:G:C6	51:3:2497:U:C4	3.09	0.40
51:3:2644:U:H2'	51:3:2645:U:H6	1.85	0.40
51:3:2800:U:H3'	51:3:2801:U:C6	2.55	0.40
53:5:67:U:H2'	53:5:68:C:C6	2.56	0.40
53:5:94:A:N6	53:5:322:G:N7	2.70	0.40
53:5:98:G:H2'	53:5:99:U:C6	2.56	0.40
53:5:180:C:O2	53:5:185:G:N1	2.47	0.40
53:5:219:A:H2'	53:5:220:U:O4'	2.21	0.40
53:5:1395:C:H2'	53:5:1396:U:O4'	2.22	0.40
1:0:12:ARG:HB3	51:3:721:G:H1	1.86	0.40
4:9:138:CYS:H	4:9:174:SER:HB3	1.87	0.40
5:A:32:MET:HE1	5:A:219:ASN:N	2.24	0.40
6:B:34:LEU:O	6:B:35:ILE:C	2.63	0.40
6:B:116:ALA:HB1	6:B:203:VAL:HG13	2.03	0.40
7:C:70:GLN:HG2	53:5:398:G:OP1	2.21	0.40
7:C:134:ILE:HD12	7:C:134:ILE:H	1.85	0.40
7:C:166:PHE:CG	7:C:182:PRO:HB3	2.55	0.40
10:F:37:LEU:O	10:F:41:ILE:HG12	2.21	0.40
12:H:109:ASP:C	12:H:110:LYS:HG2	2.46	0.40
15:K:48:THR:HG22	15:K:90:HIS:HE1	1.86	0.40
16:L:104:THR:OG1	53:5:1205:C:N4	2.55	0.40
19:O:5:ARG:HH11	19:O:7:HIS:HB2	1.85	0.40
25:a:144:GLY:O	25:a:169:ARG:NH1	2.55	0.40
26:b:161:LYS:CG	33:i:82:GLN:HG3	2.51	0.40
28:d:37:ASN:ND2	51:3:2312:G:H21	2.19	0.40
29:e:155:ARG:NH1	29:e:156:LYS:O	2.55	0.40
31:g:26:ILE:O	31:g:109:VAL:HB	2.21	0.40
32:h:116:THR:H	32:h:119:ALA:HB3	1.85	0.40
34:j:60:ALA:HB2	34:j:86:LEU:HD12	2.03	0.40
35:k:90:LEU:HD21	35:k:97:SER:HB3	2.02	0.40
36:l:5:LYS:HD3	36:l:6:ARG:HB2	2.03	0.40
37:m:59:ASN:O	37:m:63:VAL:HG23	2.22	0.40
39:o:57:GLY:HA3	39:o:62:GLU:HA	2.03	0.40
43:s:45:GLU:O	43:s:49:GLY:N	2.35	0.40
51:3:178:A:C2	51:3:179:A:N1	2.88	0.40
51:3:419:A:H2'	51:3:420:A:C8	2.56	0.40
51:3:451:A:N6	51:3:2417:G:O6	2.54	0.40
51:3:500:U:H2'	51:3:501:G:N9	2.36	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:821:C:H2'	51:3:822:C:C6	2.57	0.40
51:3:830:A:H2'	51:3:831:U:O4'	2.21	0.40
51:3:983:A:H2'	51:3:984:C:C6	2.56	0.40
51:3:1063:A:H2'	51:3:1064:A:C8	2.56	0.40
51:3:1390:C:H2'	51:3:1391:U:H6	1.86	0.40
51:3:1406:A:O2'	51:3:1407:U:OP2	2.39	0.40
51:3:1646:G:C2	51:3:1647:A:H1'	2.56	0.40
51:3:1670:U:H1'	51:3:1768:G:H21	1.86	0.40
51:3:1919:A:C8	51:3:1925:A:C2	3.09	0.40
51:3:2364:A:N6	51:3:2370:G:O6	2.54	0.40
51:3:2659:U:H2'	51:3:2660:C:C6	2.56	0.40
51:3:2666:C:H2'	51:3:2667:G:C8	2.56	0.40
51:3:2841:A:C4	51:3:2842:G:C8	3.09	0.40
53:5:16:G:H22	53:5:916:U:H1'	1.86	0.40
53:5:42:G:H2'	53:5:43:G:C8	2.57	0.40
53:5:59:C:H2'	53:5:60:A:H8	1.87	0.40
53:5:395:G:H2'	53:5:396:C:H6	1.84	0.40
53:5:449:A:OP1	53:5:450:U:H5''	2.21	0.40
53:5:494:A:H2'	53:5:495:U:C5	2.56	0.40
53:5:725:A:H2'	53:5:726:A:C8	2.56	0.40
53:5:1186:U:O2'	53:5:1187:U:H5''	2.21	0.40
53:5:1384:A:O2'	53:5:1385:A:H5'	2.20	0.40
4:9:304:LYS:HA	4:9:362:GLU:HA	2.03	0.40
6:B:39:LYS:HD3	6:B:39:LYS:HA	1.80	0.40
7:C:58:GLN:O	7:C:62:TYR:HB2	2.22	0.40
7:C:160:SER:O	7:C:160:SER:OG	2.32	0.40
10:F:8:LYS:HD2	53:5:1351:U:C5	2.56	0.40
10:F:47:ASP:O	10:F:50:GLU:HG3	2.21	0.40
11:G:25:ALA:HB2	11:G:33:VAL:HG21	2.03	0.40
11:G:109:ASN:C	11:G:109:ASN:HD22	2.27	0.40
14:J:63:VAL:O	14:J:67:VAL:HG13	2.21	0.40
15:K:61:ALA:HB3	15:K:63:ARG:CZ	2.51	0.40
18:N:53:LEU:HD21	51:3:750:A:C5	2.56	0.40
20:P:23:THR:HG22	20:P:46:GLN:HE22	1.86	0.40
25:a:136:MET:HE1	25:a:140:PHE:HB2	2.03	0.40
26:b:106:GLU:HB2	26:b:217:VAL:HG22	2.04	0.40
26:b:129:LYS:HG2	51:3:2519:U:H5''	2.03	0.40
27:c:105:LYS:NZ	51:3:641:U:OP2	2.51	0.40
27:c:159:PHE:O	27:c:181:LYS:HB3	2.21	0.40
29:e:108:LEU:HB3	29:e:116:ILE:HB	2.03	0.40
29:e:110:LEU:HG	29:e:111:GLY:N	2.36	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:k:98:LEU:HD12	35:k:103:VAL:HG21	2.03	0.40
39:o:54:ARG:H	39:o:65:ILE:CG2	2.33	0.40
40:p:2:ARG:HE	51:3:482:G:P	2.44	0.40
45:u:55:ARG:NH2	51:3:2271:C:OP1	2.54	0.40
51:3:60:G:H2'	51:3:61:U:C6	2.56	0.40
51:3:108:G:O2'	51:3:327:U:H2'	2.21	0.40
51:3:299:A:H2'	51:3:300:G:C8	2.56	0.40
51:3:991:G:H3'	51:3:992:G:H8	1.86	0.40
51:3:1104:A:O4'	51:3:1131:A:H4'	2.22	0.40
51:3:1387:A:P	51:3:1399:G:H22	2.44	0.40
51:3:1861:A:H2'	51:3:1862:A:O4'	2.22	0.40
51:3:2317:A:H3'	51:3:2318:A:H8	1.86	0.40
51:3:2699:C:H2'	51:3:2700:C:H6	1.85	0.40
51:3:2725:G:H2'	51:3:2726:G:O4'	2.21	0.40
51:3:2737:G:C2	51:3:2738:U:C5	3.10	0.40
53:5:224:A:H2'	53:5:225:U:O4'	2.21	0.40
53:5:398:G:H2'	53:5:399:C:O4'	2.22	0.40
53:5:1064:U:C2	53:5:1065:G:C8	3.10	0.40
53:5:1388:A:H2'	53:5:1389:U:C6	2.56	0.40
3:2:35:ARG:NE	3:2:36:GLN:HE22	2.19	0.40
4:9:20:HIS:CE1	4:9:85:HIS:H	2.39	0.40
4:9:30:ALA:HB2	4:9:47:TYR:HB2	2.02	0.40
5:A:71:TYR:O	5:A:75:VAL:HG23	2.21	0.40
5:A:201:LEU:HA	5:A:215:ILE:O	2.21	0.40
6:B:11:ARG:HD2	6:B:16:LYS:HE3	2.04	0.40
9:E:72:PHE:CD2	9:E:73:LYS:HE3	2.56	0.40
11:G:99:ARG:HA	11:G:100:PRO:HD3	1.89	0.40
14:J:16:VAL:HG23	14:J:25:VAL:HG12	2.03	0.40
19:O:53:LEU:HD11	19:O:67:PHE:CE2	2.56	0.40
22:R:70:LYS:H	22:R:73:GLU:HG3	1.86	0.40
23:S:29:LYS:O	23:S:33:LYS:HG3	2.21	0.40
26:b:70:PHE:CD2	26:b:77:PRO:HA	2.56	0.40
28:d:151:GLY:H	51:3:2313:U:H3	1.69	0.40
30:f:51:LEU:O	30:f:55:GLN:OE1	2.39	0.40
39:o:35:ILE:CG2	39:o:46:GLN:HB3	2.52	0.40
40:p:77:VAL:O	40:p:81:LEU:N	2.50	0.40
43:s:32:ASN:HA	43:s:33:PRO:HD3	1.98	0.40
46:v:54:THR:HA	46:v:57:THR:HB	2.03	0.40
51:3:37:G:H3'	51:3:38:G:H8	1.85	0.40
51:3:265:G:H2'	51:3:266:A:C8	2.56	0.40
51:3:428:U:H2'	51:3:429:U:O4'	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:442:G:O6	51:3:457:U:O4	2.39	0.40
51:3:524:G:H22	51:3:526:G:H3'	1.86	0.40
51:3:526:G:H2'	51:3:527:A:C8	2.56	0.40
51:3:602:U:H5'	51:3:856:A:H2	1.85	0.40
51:3:870:A:H2'	51:3:871:G:C8	2.57	0.40
51:3:934:C:H2'	51:3:935:U:C6	2.56	0.40
51:3:938:A:H2'	51:3:939:U:C6	2.56	0.40
51:3:947:A:H1'	51:3:2272:C:O2'	2.22	0.40
51:3:986:G:H2'	51:3:987:U:H6	1.86	0.40
51:3:1198:G:H2'	51:3:1199:A:C4	2.57	0.40
51:3:1440:U:H2'	51:3:1441:A:C8	2.56	0.40
51:3:1454:G:N3	51:3:1607:G:C6	2.90	0.40
51:3:1587:U:O2'	51:3:1588:A:OP1	2.34	0.40
51:3:2023:U:H2'	51:3:2024:C:C6	2.56	0.40
51:3:2225:G:O2'	51:3:2226:U:H5'	2.22	0.40
51:3:2401:U:H2'	51:3:2402:C:C6	2.56	0.40
51:3:2472:G:H2'	51:3:2473:C:C6	2.57	0.40
51:3:2473:C:H2'	51:3:2474:C:C6	2.57	0.40
51:3:2577:G:H2'	51:3:2578:A:C8	2.57	0.40
51:3:2763:C:O3'	51:3:2764:U:H6	2.04	0.40
53:5:112:U:O2	53:5:230:G:N2	2.38	0.40
53:5:137:A:N3	53:5:137:A:H2'	2.36	0.40
53:5:204:C:C2	53:5:212:G:N2	2.90	0.40
53:5:317:A:N6	53:5:328:G:H1	2.20	0.40
53:5:688:G:H22	53:5:692:A:H3'	1.87	0.40
53:5:714:C:H3'	53:5:731:A:H5''	2.03	0.40
53:5:877:C:O2'	53:5:878:U:O4'	2.30	0.40
53:5:897:A:H2'	53:5:898:A:H8	1.87	0.40
53:5:1101:A:H2'	53:5:1102:A:O4'	2.21	0.40
53:5:1114:A:N1	53:5:1127:A:N6	2.69	0.40
53:5:1156:G:H1'	53:5:1157:G:C4	2.56	0.40
53:5:1214:A:H62	53:5:1273:A:N6	2.19	0.40
53:5:1283:G:H2'	53:5:1284:A:C8	2.56	0.40
53:5:1488:A:C6	53:5:1498:G:C6	3.08	0.40
53:5:1499:G:H2'	53:5:1500:G:H8	1.87	0.40
3:2:21:GLN:NE2	51:3:1158:C:O2'	2.51	0.40
4:9:329:PRO:HA	4:9:379:GLU:HG3	2.04	0.40
7:C:155:LYS:O	7:C:159:GLU:HG2	2.21	0.40
7:C:201:LYS:HB3	53:5:9:A:C6	2.57	0.40
9:E:11:GLY:N	9:E:52:GLN:HG2	2.37	0.40
10:F:21:LEU:HD12	10:F:22:VAL:N	2.37	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:I:40:VAL:HG12	13:I:41:LYS:H	1.86	0.40
14:J:107:THR:O	14:J:109:ILE:HG23	2.22	0.40
16:L:87:ARG:HH22	16:L:98:ARG:HA	1.85	0.40
22:R:78:ARG:CZ	53:5:1200:G:H1'	2.52	0.40
26:b:185:ASP:O	26:b:189:MET:CA	2.70	0.40
28:d:153:ASP:CG	51:3:2313:U:H5	2.29	0.40
30:f:128:LEU:HD23	30:f:129:HIS:N	2.36	0.40
43:s:2:ASP:N	51:3:147:C:H5'	2.37	0.40
47:w:54:ILE:O	47:w:58:LEU:HD23	2.22	0.40
49:y:16:ARG:HA	51:3:2053:G:O5'	2.22	0.40
51:3:24:U:H2'	51:3:25:G:C8	2.56	0.40
51:3:155:A:N1	51:3:178:A:C6	2.90	0.40
51:3:220:A:H2'	51:3:221:A:O4'	2.22	0.40
51:3:266:A:H3'	51:3:267:A:H8	1.87	0.40
51:3:336:C:H2'	51:3:337:U:H6	1.86	0.40
51:3:453:U:C2	51:3:454:G:C8	3.09	0.40
51:3:612:G:C6	51:3:1292:A:C6	3.10	0.40
51:3:621:U:H2'	51:3:622:U:H6	1.87	0.40
51:3:841:C:H2'	51:3:842:U:H5''	2.03	0.40
51:3:862:U:H4'	51:3:863:U:C5	2.57	0.40
51:3:895:G:N2	51:3:953:G:H2'	2.36	0.40
51:3:975:G:H2'	51:3:976:C:C6	2.57	0.40
51:3:1251:G:C2	51:3:1259:A:C4	3.10	0.40
51:3:1429:G:H2'	51:3:1430:U:C6	2.56	0.40
51:3:1784:U:H2'	51:3:1785:U:O4'	2.22	0.40
51:3:1790:U:O2	51:3:2615:G:N2	2.54	0.40
51:3:1942:G:H1'	51:3:1971:G:N2	2.37	0.40
51:3:2172:A:H3'	51:3:2173:G:H8	1.87	0.40
51:3:2589:G:H22	51:3:2618:C:H2'	1.85	0.40
53:5:176:G:C6	53:5:190:A:N6	2.89	0.40
53:5:573:G:O2'	53:5:818:A:H5'	2.21	0.40
53:5:596:U:H2'	53:5:597:C:H6	1.85	0.40
53:5:1052:G:H2'	53:5:1053:U:C6	2.56	0.40
53:5:1320:A:N7	53:5:1349:A:H5''	2.35	0.40
53:5:1503:U:O2'	53:5:1505:G:H5''	2.21	0.40
54:6:55:U:H2'	54:6:56:U:C6	2.57	0.40
54:7:55:U:H2'	54:7:56:U:C6	2.57	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	0	45/48 (94%)	43 (96%)	2 (4%)	0	100	100
2	1	57/59 (97%)	53 (93%)	4 (7%)	0	100	100
3	2	35/37 (95%)	31 (89%)	4 (11%)	0	100	100
4	9	391/394 (99%)	360 (92%)	31 (8%)	0	100	100
5	A	238/294 (81%)	212 (89%)	26 (11%)	0	100	100
6	B	213/273 (78%)	200 (94%)	13 (6%)	0	100	100
7	C	201/205 (98%)	191 (95%)	10 (5%)	0	100	100
8	D	151/219 (69%)	143 (95%)	8 (5%)	0	100	100
9	E	165/215 (77%)	143 (87%)	22 (13%)	0	100	100
10	F	152/155 (98%)	137 (90%)	15 (10%)	0	100	100
11	G	139/142 (98%)	123 (88%)	15 (11%)	1 (1%)	18	56
12	H	126/132 (96%)	121 (96%)	5 (4%)	0	100	100
13	I	99/108 (92%)	84 (85%)	15 (15%)	0	100	100
14	J	112/121 (93%)	106 (95%)	6 (5%)	0	100	100
15	K	134/139 (96%)	117 (87%)	17 (13%)	0	100	100
16	L	116/124 (94%)	104 (90%)	11 (10%)	1 (1%)	14	51
17	M	58/61 (95%)	55 (95%)	3 (5%)	0	100	100
18	N	81/86 (94%)	80 (99%)	1 (1%)	0	100	100
19	O	78/94 (83%)	70 (90%)	8 (10%)	0	100	100
20	P	81/85 (95%)	79 (98%)	2 (2%)	0	100	100
21	Q	63/104 (61%)	54 (86%)	9 (14%)	0	100	100
22	R	82/87 (94%)	72 (88%)	10 (12%)	0	100	100
23	S	75/87 (86%)	75 (100%)	0	0	100	100
24	T	51/60 (85%)	49 (96%)	2 (4%)	0	100	100
25	a	283/287 (99%)	261 (92%)	22 (8%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
26	b	227/287 (79%)	209 (92%)	18 (8%)	0	100	100
27	c	208/212 (98%)	196 (94%)	12 (6%)	0	100	100
28	d	173/180 (96%)	160 (92%)	13 (8%)	0	100	100
29	e	174/184 (95%)	165 (95%)	8 (5%)	1 (1%)	21	59
30	f	143/149 (96%)	128 (90%)	14 (10%)	1 (1%)	18	56
31	g	117/161 (73%)	107 (92%)	7 (6%)	3 (3%)	4	25
32	h	126/137 (92%)	115 (91%)	11 (9%)	0	100	100
33	i	142/146 (97%)	128 (90%)	14 (10%)	0	100	100
34	j	120/122 (98%)	114 (95%)	6 (5%)	0	100	100
35	k	146/151 (97%)	137 (94%)	9 (6%)	0	100	100
36	l	134/139 (96%)	125 (93%)	8 (6%)	1 (1%)	18	56
37	m	117/124 (94%)	114 (97%)	3 (3%)	0	100	100
38	n	108/116 (93%)	98 (91%)	10 (9%)	0	100	100
39	o	113/119 (95%)	102 (90%)	11 (10%)	0	100	100
40	p	112/127 (88%)	109 (97%)	3 (3%)	0	100	100
41	q	97/100 (97%)	85 (88%)	12 (12%)	0	100	100
42	r	137/159 (86%)	124 (90%)	13 (10%)	0	100	100
43	s	90/237 (38%)	86 (96%)	4 (4%)	0	100	100
44	t	109/111 (98%)	101 (93%)	8 (7%)	0	100	100
45	u	84/104 (81%)	81 (96%)	3 (4%)	0	100	100
46	v	61/65 (94%)	61 (100%)	0	0	100	100
47	w	96/111 (86%)	91 (95%)	5 (5%)	0	100	100
48	x	42/97 (43%)	35 (83%)	7 (17%)	0	100	100
49	y	54/57 (95%)	51 (94%)	3 (6%)	0	100	100
50	z	48/53 (91%)	47 (98%)	1 (2%)	0	100	100
All	All	6204/7064 (88%)	5732 (92%)	464 (8%)	8 (0%)	49	83

All (8) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
31	g	88	GLU
29	e	169	ASP
31	g	32	MET

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Mol	Chain	Res	Type
31	g	30	THR
11	G	105	PRO
16	L	112	PRO
36	l	12	PRO
30	f	19	VAL

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	0	40/41 (98%)	40 (100%)	0	100	100
2	1	51/51 (100%)	51 (100%)	0	100	100
3	2	35/35 (100%)	35 (100%)	0	100	100
4	9	324/325 (100%)	324 (100%)	0	100	100
5	A	212/262 (81%)	212 (100%)	0	100	100
6	B	180/232 (78%)	179 (99%)	1 (1%)	78	83
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%)	120 (98%)	3 (2%)	43	64
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%)	114 (97%)	3 (3%)	40	62
16	L	100/105 (95%)	100 (100%)	0	100	100
17	M	47/48 (98%)	47 (100%)	0	100	100
18	N	76/78 (97%)	76 (100%)	0	100	100
19	O	69/82 (84%)	69 (100%)	0	100	100
20	P	73/75 (97%)	73 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
21	Q	56/94 (60%)	56 (100%)	0	100	100
22	R	74/77 (96%)	74 (100%)	0	100	100
23	S	70/77 (91%)	70 (100%)	0	100	100
24	T	49/56 (88%)	49 (100%)	0	100	100
25	a	241/243 (99%)	241 (100%)	0	100	100
26	b	186/233 (80%)	186 (100%)	0	100	100
27	c	182/184 (99%)	182 (100%)	0	100	100
28	d	150/154 (97%)	150 (100%)	0	100	100
29	e	153/159 (96%)	153 (100%)	0	100	100
30	f	123/134 (92%)	123 (100%)	0	100	100
31	g	96/129 (74%)	88 (92%)	8 (8%)	10	30
32	h	102/110 (93%)	102 (100%)	0	100	100
33	i	126/128 (98%)	126 (100%)	0	100	100
34	j	103/103 (100%)	103 (100%)	0	100	100
35	k	123/126 (98%)	123 (100%)	0	100	100
36	l	113/115 (98%)	113 (100%)	0	100	100
37	m	105/109 (96%)	105 (100%)	0	100	100
38	n	96/99 (97%)	96 (100%)	0	100	100
39	o	101/105 (96%)	101 (100%)	0	100	100
40	p	100/108 (93%)	100 (100%)	0	100	100
41	q	90/91 (99%)	90 (100%)	0	100	100
42	r	116/132 (88%)	116 (100%)	0	100	100
43	s	82/208 (39%)	82 (100%)	0	100	100
44	t	96/96 (100%)	96 (100%)	0	100	100
45	u	69/85 (81%)	69 (100%)	0	100	100
46	v	58/60 (97%)	58 (100%)	0	100	100
47	w	87/98 (89%)	87 (100%)	0	100	100
48	x	41/86 (48%)	41 (100%)	0	100	100
49	y	48/49 (98%)	46 (96%)	2 (4%)	26	48
50	z	47/50 (94%)	47 (100%)	0	100	100
All	All	5412/6076 (89%)	5395 (100%)	17 (0%)	84	86

All (17) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
6	B	139	GLN
11	G	107	VAL
11	G	108	LEU
11	G	109	ASN
15	K	118	VAL
15	K	120	VAL
15	K	122	LYS
31	g	43	LYS
31	g	44	LEU
31	g	45	PHE
31	g	46	LYS
31	g	84	VAL
31	g	86	VAL
31	g	87	ASN
31	g	90	VAL
49	y	47	MET
49	y	51	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (92) such sidechains are listed below:

Mol	Chain	Res	Type
2	1	40	HIS
3	2	30	GLN
4	9	12	HIS
4	9	64	ASN
4	9	136	ASN
4	9	194	ASN
4	9	241	GLN
4	9	302	HIS
5	A	51	HIS
5	A	55	HIS
5	A	186	ASN
5	A	221	GLN
6	B	6	ASN
6	B	8	ASN
6	B	47	ASN
6	B	125	ASN
7	C	52	GLN
7	C	115	GLN
7	C	119	HIS
7	C	171	ASN

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Mol	Chain	Res	Type
9	E	17	GLN
10	F	18	ASN
10	F	39	GLN
10	F	51	GLN
11	G	23	ASN
11	G	58	GLN
12	H	48	GLN
13	I	76	HIS
15	K	25	HIS
15	K	90	HIS
15	K	125	GLN
16	L	12	GLN
16	L	38	ASN
18	N	13	GLN
18	N	15	HIS
18	N	32	GLN
18	N	35	GLN
20	P	5	GLN
20	P	42	HIS
22	R	23	ASN
22	R	53	ASN
22	R	59	ASN
23	S	31	ASN
23	S	43	ASN
23	S	50	GLN
23	S	63	ASN
25	a	50	GLN
25	a	78	ASN
25	a	126	HIS
25	a	149	ASN
26	b	127	ASN
27	c	31	GLN
27	c	50	HIS
27	c	81	ASN
27	c	165	ASN
27	c	167	ASN
28	d	161	ASN
29	e	6	ASN
29	e	63	GLN
29	e	77	ASN
30	f	57	HIS
30	f	129	HIS

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Mol	Chain	Res	Type
33	i	17	GLN
33	i	126	HIS
33	i	134	ASN
33	i	138	GLN
34	j	56	GLN
35	k	39	GLN
35	k	83	ASN
36	l	13	HIS
36	l	108	ASN
37	m	20	GLN
37	m	40	ASN
38	n	88	ASN
39	o	46	GLN
40	p	85	HIS
40	p	106	ASN
41	q	17	ASN
42	r	7	GLN
42	r	34	ASN
42	r	62	HIS
43	s	19	ASN
44	t	17	ASN
44	t	33	GLN
45	u	54	GLN
46	v	34	GLN
47	w	64	ASN
47	w	66	GLN
47	w	89	GLN
49	y	4	GLN
49	y	25	GLN
50	z	28	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
51	3	2875/2907 (98%)	849 (29%)	29 (1%)
52	4	103/108 (95%)	38 (36%)	3 (2%)
53	5	1490/1520 (98%)	411 (27%)	7 (0%)
54	6	75/76 (98%)	30 (40%)	2 (2%)
54	7	75/76 (98%)	30 (40%)	2 (2%)
All	All	4618/4687 (98%)	1358 (29%)	43 (0%)

All (1358) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
51	3	14	U
51	3	15	A
51	3	20	C
51	3	22	U
51	3	29	G
51	3	30	A
51	3	32	G
51	3	36	U
51	3	37	G
51	3	38	G
51	3	41	C
51	3	44	A
51	3	48	G
51	3	52	U
51	3	53	G
51	3	56	G
51	3	63	U
51	3	64	U
51	3	65	A
51	3	73	A
51	3	74	U
51	3	75	A
51	3	76	A
51	3	77	G
51	3	82	G
51	3	86	A
51	3	87	G
51	3	90	G
51	3	95	G
51	3	96	A
51	3	97	A
51	3	102	A
51	3	103	G
51	3	104	A
51	3	115	U
51	3	116	C
51	3	119	A
51	3	120	A
51	3	121	U
51	3	122	G
51	3	126	C
51	3	127	A
51	3	128	A

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Mol	Chain	Res	Type
51	3	132	G
51	3	136	G
51	3	141	A
51	3	146	G
51	3	163	A
51	3	164	A
51	3	165	U
51	3	169	U
51	3	172	U
51	3	178	A
51	3	180	A
51	3	181	G
51	3	183	A
51	3	184	A
51	3	186	A
51	3	188	G
51	3	200	A
51	3	203	A
51	3	210	U
51	3	219	G
51	3	220	A
51	3	223	A
51	3	224	G
51	3	225	A
51	3	226	A
51	3	227	A
51	3	230	G
51	3	232	A
51	3	234	G
51	3	237	A
51	3	245	U
51	3	246	G
51	3	252	G
51	3	253	C
51	3	254	G
51	3	256	G
51	3	262	G
51	3	269	A
51	3	270	G
51	3	273	C
51	3	274	A
51	3	276	A

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Mol	Chain	Res	Type
51	3	283	A
51	3	284	U
51	3	285	U
51	3	286	A
51	3	287	G
51	3	294	G
51	3	295	U
51	3	296	U
51	3	297	G
51	3	298	U
51	3	299	A
51	3	306	G
51	3	310	U
51	3	312	U
51	3	314	G
51	3	315	A
51	3	316	C
51	3	319	G
51	3	325	G
51	3	331	A
51	3	336	C
51	3	345	A
51	3	351	G
51	3	355	A
51	3	356	A
51	3	357	A
51	3	363	G
51	3	364	A
51	3	369	C
51	3	374	A
51	3	396	A
51	3	397	G
51	3	399	G
51	3	400	A
51	3	401	G
51	3	402	A
51	3	403	U
51	3	404	C
51	3	408	G
51	3	409	A
51	3	410	G
51	3	411	U

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Mol	Chain	Res	Type
51	3	417	G
51	3	422	A
51	3	424	G
51	3	425	U
51	3	426	U
51	3	428	U
51	3	432	G
51	3	434	G
51	3	437	A
51	3	441	U
51	3	442	G
51	3	447	G
51	3	448	A
51	3	460	G
51	3	464	A
51	3	465	A
51	3	466	A
51	3	471	A
51	3	482	G
51	3	483	A
51	3	484	U
51	3	485	A
51	3	487	C
51	3	490	A
51	3	491	A
51	3	494	G
51	3	495	U
51	3	500	U
51	3	501	G
51	3	502	A
51	3	507	A
51	3	509	G
51	3	511	U
51	3	514	A
51	3	515	A
51	3	516	A
51	3	517	G
51	3	519	A
51	3	520	C
51	3	523	A
51	3	529	G
51	3	530	G

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Mol	Chain	Res	Type
51	3	539	U
51	3	544	U
51	3	545	C
51	3	548	A
51	3	553	A
51	3	558	C
51	3	562	C
51	3	565	C
51	3	566	G
51	3	567	U
51	3	568	G
51	3	581	A
51	3	583	U
51	3	584	G
51	3	586	G
51	3	589	A
51	3	595	U
51	3	601	U
51	3	605	A
51	3	606	G
51	3	607	U
51	3	608	A
51	3	620	G
51	3	631	A
51	3	636	U
51	3	637	U
51	3	639	G
51	3	646	A
51	3	647	G
51	3	648	G
51	3	650	G
51	3	663	A
51	3	673	A
51	3	681	A
51	3	682	A
51	3	687	G
51	3	689	U
51	3	691	G
51	3	699	U
51	3	705	A
51	3	706	C
51	3	710	A

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Mol	Chain	Res	Type
51	3	712	A
51	3	719	G
51	3	721	G
51	3	722	C
51	3	725	G
51	3	732	G
51	3	737	U
51	3	739	G
51	3	740	A
51	3	743	G
51	3	752	C
51	3	761	G
51	3	762	A
51	3	764	G
51	3	765	A
51	3	769	A
51	3	774	A
51	3	782	U
51	3	792	G
51	3	797	U
51	3	798	G
51	3	799	A
51	3	810	G
51	3	811	G
51	3	812	G
51	3	816	A
51	3	817	A
51	3	819	U
51	3	820	U
51	3	824	A
51	3	825	U
51	3	827	G
51	3	828	A
51	3	829	A
51	3	835	U
51	3	837	A
51	3	840	G
51	3	842	U
51	3	847	C
51	3	854	A
51	3	860	C
51	3	862	U

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Mol	Chain	Res	Type
51	3	863	U
51	3	864	A
51	3	865	A
51	3	866	G
51	3	880	C
51	3	881	A
51	3	882	C
51	3	883	A
51	3	885	A
51	3	887	A
51	3	895	G
51	3	902	U
51	3	904	C
51	3	906	G
51	3	914	G
51	3	917	G
51	3	922	C
51	3	930	C
51	3	931	G
51	3	932	U
51	3	933	A
51	3	936	G
51	3	937	A
51	3	940	A
51	3	944	U
51	3	947	A
51	3	949	C
51	3	953	G
51	3	964	A
51	3	968	U
51	3	970	U
51	3	977	A
51	3	982	G
51	3	984	C
51	3	989	G
51	3	994	U
51	3	997	G
51	3	998	C
51	3	1001	C
51	3	1002	A
51	3	1005	G
51	3	1007	C

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Mol	Chain	Res	Type
51	3	1008	A
51	3	1009	A
51	3	1010	G
51	3	1016	A
51	3	1019	A
51	3	1026	A
51	3	1027	U
51	3	1029	A
51	3	1035	U
51	3	1041	C
51	3	1044	C
51	3	1046	A
51	3	1048	A
51	3	1049	U
51	3	1052	A
51	3	1055	A
51	3	1061	A
51	3	1062	A
51	3	1068	U
51	3	1075	G
51	3	1080	A
51	3	1081	A
51	3	1082	A
51	3	1089	A
51	3	1091	G
51	3	1095	U
51	3	1096	U
51	3	1099	C
51	3	1102	A
51	3	1103	G
51	3	1104	A
51	3	1105	A
51	3	1106	G
51	3	1107	C
51	3	1108	A
51	3	1111	C
51	3	1115	G
51	3	1123	A
51	3	1124	G
51	3	1125	U
51	3	1126	G
51	3	1130	A

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Mol	Chain	Res	Type
51	3	1132	C
51	3	1141	U
51	3	1145	G
51	3	1146	A
51	3	1147	G
51	3	1151	U
51	3	1154	U
51	3	1165	U
51	3	1166	G
51	3	1167	U
51	3	1168	A
51	3	1169	A
51	3	1170	C
51	3	1171	G
51	3	1176	U
51	3	1177	A
51	3	1178	A
51	3	1187	C
51	3	1189	G
51	3	1191	A
51	3	1193	U
51	3	1202	A
51	3	1204	A
51	3	1208	A
51	3	1209	U
51	3	1210	A
51	3	1212	C
51	3	1215	G
51	3	1216	U
51	3	1217	G
51	3	1219	U
51	3	1225	A
51	3	1234	U
51	3	1235	U
51	3	1250	A
51	3	1251	G
51	3	1253	G
51	3	1256	A
51	3	1257	G
51	3	1265	G
51	3	1266	G
51	3	1267	A

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Mol	Chain	Res	Type
51	3	1268	U
51	3	1274	A
51	3	1277	A
51	3	1279	U
51	3	1281	A
51	3	1283	A
51	3	1284	A
51	3	1285	U
51	3	1286	G
51	3	1292	A
51	3	1297	U
51	3	1298	A
51	3	1300	C
51	3	1301	G
51	3	1302	C
51	3	1304	U
51	3	1305	G
51	3	1314	A
51	3	1316	U
51	3	1317	C
51	3	1322	A
51	3	1325	C
51	3	1328	A
51	3	1329	U
51	3	1330	U
51	3	1331	G
51	3	1338	G
51	3	1353	G
51	3	1356	G
51	3	1357	U
51	3	1360	U
51	3	1368	U
51	3	1369	U
51	3	1371	G
51	3	1374	U
51	3	1376	G
51	3	1378	C
51	3	1380	U
51	3	1387	A
51	3	1388	G
51	3	1393	A
51	3	1406	A

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Mol	Chain	Res	Type
51	3	1407	U
51	3	1408	G
51	3	1412	A
51	3	1420	A
51	3	1422	U
51	3	1423	A
51	3	1424	U
51	3	1425	U
51	3	1431	A
51	3	1434	U
51	3	1444	C
51	3	1445	U
51	3	1448	U
51	3	1456	C
51	3	1457	A
51	3	1463	G
51	3	1466	U
51	3	1467	U
51	3	1480	A
51	3	1481	U
51	3	1482	U
51	3	1483	G
51	3	1486	U
51	3	1487	U
51	3	1497	A
51	3	1502	A
51	3	1506	U
51	3	1507	G
51	3	1508	G
51	3	1510	A
51	3	1513	A
51	3	1515	A
51	3	1518	C
51	3	1519	A
51	3	1523	C
51	3	1528	G
51	3	1534	A
51	3	1537	A
51	3	1541	A
51	3	1546	U
51	3	1550	G
51	3	1559	A

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Mol	Chain	Res	Type
51	3	1571	G
51	3	1577	A
51	3	1582	G
51	3	1584	U
51	3	1585	A
51	3	1586	U
51	3	1587	U
51	3	1588	A
51	3	1589	A
51	3	1593	U
51	3	1594	G
51	3	1600	A
51	3	1603	A
51	3	1607	G
51	3	1612	U
51	3	1615	G
51	3	1616	G
51	3	1617	U
51	3	1618	U
51	3	1619	A
51	3	1630	A
51	3	1632	C
51	3	1641	A
51	3	1642	G
51	3	1643	A
51	3	1644	A
51	3	1645	C
51	3	1651	C
51	3	1653	C
51	3	1661	A
51	3	1669	A
51	3	1681	G
51	3	1682	C
51	3	1683	G
51	3	1685	G
51	3	1687	G
51	3	1688	A
51	3	1692	A
51	3	1694	A
51	3	1698	A
51	3	1699	A
51	3	1701	G

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Mol	Chain	Res	Type
51	3	1702	A
51	3	1708	G
51	3	1727	U
51	3	1728	A
51	3	1729	G
51	3	1733	G
51	3	1734	A
51	3	1735	A
51	3	1737	G
51	3	1747	G
51	3	1748	U
51	3	1751	A
51	3	1764	U
51	3	1765	G
51	3	1766	A
51	3	1768	G
51	3	1769	A
51	3	1770	A
51	3	1771	C
51	3	1772	G
51	3	1780	A
51	3	1784	U
51	3	1788	A
51	3	1789	C
51	3	1792	A
51	3	1806	G
51	3	1807	C
51	3	1809	A
51	3	1813	C
51	3	1816	A
51	3	1817	A
51	3	1823	U
51	3	1828	A
51	3	1836	A
51	3	1839	C
51	3	1842	G
51	3	1845	C
51	3	1850	C
51	3	1855	A
51	3	1866	G
51	3	1871	U
51	3	1873	A

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Mol	Chain	Res	Type
51	3	1883	A
51	3	1886	C
51	3	1890	U
51	3	1891	A
51	3	1892	A
51	3	1903	A
51	3	1906	G
51	3	1907	A
51	3	1913	G
51	3	1920	A
51	3	1921	C
51	3	1923	A
51	3	1934	A
51	3	1938	U
51	3	1943	A
51	3	1944	A
51	3	1945	A
51	3	1950	U
51	3	1951	A
51	3	1952	G
51	3	1953	U
51	3	1955	G
51	3	1961	A
51	3	1962	U
51	3	1965	C
51	3	1970	C
51	3	1971	G
51	3	1972	C
51	3	1977	A
51	3	1978	U
51	3	1979	G
51	3	1982	G
51	3	1998	U
51	3	1999	G
51	3	2000	U
51	3	2003	C
51	3	2009	U
51	3	2011	G
51	3	2020	A
51	3	2027	G
51	3	2028	G
51	3	2030	A

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Mol	Chain	Res	Type
51	3	2037	A
51	3	2038	A
51	3	2039	G
51	3	2040	A
51	3	2041	C
51	3	2043	C
51	3	2045	C
51	3	2050	G
51	3	2055	A
51	3	2056	A
51	3	2062	C
51	3	2063	G
51	3	2064	G
51	3	2067	A
51	3	2068	G
51	3	2069	A
51	3	2070	C
51	3	2071	C
51	3	2076	G
51	3	2078	A
51	3	2083	U
51	3	2084	A
51	3	2087	G
51	3	2095	A
51	3	2099	U
51	3	2100	G
51	3	2106	G
51	3	2107	A
51	3	2109	A
51	3	2111	U
51	3	2112	A
51	3	2114	C
51	3	2115	A
51	3	2117	G
51	3	2123	A
51	3	2124	A
51	3	2125	U
51	3	2127	G
51	3	2130	A
51	3	2131	G
51	3	2133	A
51	3	2135	C

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Mol	Chain	Res	Type
51	3	2139	C
51	3	2140	G
51	3	2152	C
51	3	2153	U
51	3	2154	A
51	3	2155	G
51	3	2165	A
51	3	2166	U
51	3	2171	A
51	3	2173	G
51	3	2180	U
51	3	2182	C
51	3	2193	U
51	3	2194	G
51	3	2195	U
51	3	2198	G
51	3	2200	U
51	3	2201	G
51	3	2202	U
51	3	2203	U
51	3	2204	C
51	3	2206	A
51	3	2211	G
51	3	2218	U
51	3	2220	A
51	3	2221	U
51	3	2222	C
51	3	2226	U
51	3	2227	U
51	3	2228	U
51	3	2231	A
51	3	2233	A
51	3	2246	G
51	3	2247	G
51	3	2258	G
51	3	2267	G
51	3	2274	A
51	3	2275	A
51	3	2276	A
51	3	2280	U
51	3	2284	G
51	3	2286	A

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Mol	Chain	Res	Type
51	3	2291	U
51	3	2294	A
51	3	2295	A
51	3	2296	A
51	3	2297	G
51	3	2305	C
51	3	2312	G
51	3	2313	U
51	3	2315	G
51	3	2316	G
51	3	2317	A
51	3	2327	U
51	3	2333	G
51	3	2335	A
51	3	2340	U
51	3	2341	G
51	3	2342	U
51	3	2343	A
51	3	2351	U
51	3	2352	U
51	3	2355	C
51	3	2358	U
51	3	2362	A
51	3	2365	U
51	3	2367	C
51	3	2380	U
51	3	2387	U
51	3	2391	G
51	3	2393	C
51	3	2396	A
51	3	2397	G
51	3	2414	U
51	3	2415	A
51	3	2422	G
51	3	2431	U
51	3	2433	A
51	3	2435	C
51	3	2436	G
51	3	2437	G
51	3	2438	A
51	3	2439	U
51	3	2442	A

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Mol	Chain	Res	Type
51	3	2444	G
51	3	2449	U
51	3	2455	G
51	3	2457	U
51	3	2458	A
51	3	2460	C
51	3	2468	U
51	3	2475	C
51	3	2484	A
51	3	2486	A
51	3	2487	U
51	3	2492	G
51	3	2495	A
51	3	2498	G
51	3	2499	U
51	3	2502	G
51	3	2504	C
51	3	2505	A
51	3	2506	C
51	3	2507	C
51	3	2510	G
51	3	2513	G
51	3	2514	U
51	3	2521	A
51	3	2525	C
51	3	2526	A
51	3	2528	C
51	3	2538	A
51	3	2539	A
51	3	2543	G
51	3	2544	G
51	3	2551	G
51	3	2555	U
51	3	2557	G
51	3	2570	U
51	3	2574	A
51	3	2575	G
51	3	2580	A
51	3	2581	C
51	3	2582	G
51	3	2585	A
51	3	2586	G

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Mol	Chain	Res	Type
51	3	2589	G
51	3	2590	G
51	3	2593	U
51	3	2594	C
51	3	2600	G
51	3	2604	U
51	3	2605	G
51	3	2607	G
51	3	2609	C
51	3	2610	A
51	3	2611	G
51	3	2617	U
51	3	2618	C
51	3	2619	C
51	3	2621	U
51	3	2622	A
51	3	2629	G
51	3	2631	G
51	3	2637	A
51	3	2638	G
51	3	2640	A
51	3	2643	A
51	3	2645	U
51	3	2647	A
51	3	2649	G
51	3	2654	U
51	3	2664	U
51	3	2669	G
51	3	2681	G
51	3	2683	G
51	3	2689	C
51	3	2690	U
51	3	2697	C
51	3	2698	U
51	3	2699	C
51	3	2704	U
51	3	2715	C
51	3	2722	G
51	3	2726	G
51	3	2730	G
51	3	2731	U
51	3	2734	C

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Mol	Chain	Res	Type
51	3	2735	G
51	3	2736	U
51	3	2737	G
51	3	2741	A
51	3	2747	U
51	3	2752	G
51	3	2756	A
51	3	2759	G
51	3	2764	U
51	3	2765	A
51	3	2769	G
51	3	2774	A
51	3	2777	A
51	3	2789	A
51	3	2794	U
51	3	2795	C
51	3	2798	A
51	3	2799	U
51	3	2800	U
51	3	2801	U
51	3	2804	C
51	3	2805	A
51	3	2807	G
51	3	2809	A
51	3	2810	A
51	3	2811	G
51	3	2812	U
51	3	2813	A
51	3	2822	C
51	3	2824	A
51	3	2828	C
51	3	2834	C
51	3	2837	U
51	3	2839	A
51	3	2853	U
51	3	2854	A
51	3	2863	G
51	3	2864	A
51	3	2865	U
51	3	2871	G
51	3	2876	G
51	3	2881	A

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Mol	Chain	Res	Type
51	3	2884	C
51	3	2887	A
51	3	2888	U
51	3	2890	G
51	3	2896	G
51	3	2897	G
51	3	2898	A
51	3	2899	C
52	4	8	C
52	4	10	C
52	4	11	A
52	4	20	U
52	4	22	G
52	4	23	A
52	4	25	A
52	4	26	C
52	4	28	C
52	4	31	G
52	4	32	G
52	4	33	U
52	4	35	C
52	4	38	U
52	4	40	U
52	4	41	C
52	4	42	G
52	4	44	A
52	4	48	A
52	4	49	G
52	4	52	G
52	4	55	A
52	4	60	C
52	4	65	G
52	4	66	A
52	4	74	G
52	4	76	A
52	4	77	G
52	4	78	C
52	4	79	U
52	4	80	G
52	4	86	G
52	4	88	G
52	4	89	A

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Mol	Chain	Res	Type
52	4	97	A
52	4	99	A
52	4	102	A
52	4	108	C
53	5	8	G
53	5	9	A
53	5	16	G
53	5	32	U
53	5	33	A
53	5	40	G
53	5	48	C
53	5	49	C
53	5	51	A
53	5	52	A
53	5	61	A
53	5	66	A
53	5	67	U
53	5	75	A
53	5	78	A
53	5	80	U
53	5	81	A
53	5	86	A
53	5	93	A
53	5	99	U
53	5	100	G
53	5	105	A
53	5	106	C
53	5	109	G
53	5	114	C
53	5	115	A
53	5	116	A
53	5	117	U
53	5	120	A
53	5	128	A
53	5	130	G
53	5	135	A
53	5	140	U
53	5	149	G
53	5	152	U
53	5	156	U
53	5	159	U
53	5	161	C

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Mol	Chain	Res	Type
53	5	167	A
53	5	169	G
53	5	171	A
53	5	174	U
53	5	197	A
53	5	198	A
53	5	199	A
53	5	206	G
53	5	218	U
53	5	220	U
53	5	223	G
53	5	227	A
53	5	232	G
53	5	234	G
53	5	236	C
53	5	240	U
53	5	241	C
53	5	243	G
53	5	247	G
53	5	249	U
53	5	262	G
53	5	263	C
53	5	265	U
53	5	269	A
53	5	285	G
53	5	288	A
53	5	294	A
53	5	301	G
53	5	302	A
53	5	303	A
53	5	306	G
53	5	312	A
53	5	323	A
53	5	324	C
53	5	326	C
53	5	328	G
53	5	341	C
53	5	342	G
53	5	348	C
53	5	359	A
53	5	363	U
53	5	364	U

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Mol	Chain	Res	Type
53	5	365	U
53	5	368	C
53	5	370	A
53	5	375	C
53	5	376	G
53	5	377	A
53	5	388	G
53	5	394	U
53	5	398	G
53	5	400	G
53	5	402	G
53	5	407	A
53	5	408	U
53	5	409	G
53	5	410	A
53	5	413	G
53	5	417	U
53	5	418	U
53	5	419	A
53	5	420	A
53	5	421	G
53	5	423	U
53	5	426	U
53	5	431	U
53	5	432	U
53	5	433	C
53	5	435	U
53	5	436	U
53	5	445	A
53	5	449	A
53	5	450	U
53	5	452	A
53	5	453	C
53	5	455	U
53	5	456	U
53	5	457	A
53	5	461	G
53	5	462	G
53	5	464	A
53	5	466	U
53	5	468	G
53	5	471	A

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Mol	Chain	Res	Type
53	5	473	A
53	5	476	U
53	5	477	U
53	5	478	G
53	5	481	U
53	5	482	G
53	5	483	U
53	5	488	U
53	5	489	U
53	5	490	U
53	5	493	A
53	5	494	A
53	5	505	C
53	5	506	U
53	5	509	C
53	5	510	U
53	5	515	G
53	5	516	C
53	5	519	G
53	5	522	G
53	5	523	U
53	5	525	G
53	5	526	C
53	5	528	G
53	5	530	A
53	5	531	A
53	5	532	U
53	5	534	C
53	5	542	G
53	5	543	C
53	5	545	A
53	5	558	U
53	5	560	U
53	5	561	A
53	5	562	U
53	5	568	G
53	5	569	U
53	5	570	A
53	5	574	C
53	5	575	A
53	5	579	G
53	5	586	G

Continued on next page...

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Mol	Chain	Res	Type
53	5	594	A
53	5	595	G
53	5	616	C
53	5	618	U
53	5	619	A
53	5	628	A
53	5	639	A
53	5	642	A
53	5	646	A
53	5	647	U
53	5	653	G
53	5	656	U
53	5	662	G
53	5	672	A
53	5	683	G
53	5	684	A
53	5	692	A
53	5	695	G
53	5	699	A
53	5	715	A
53	5	719	G
53	5	721	G
53	5	724	G
53	5	731	A
53	5	735	C
53	5	738	A
53	5	742	C
53	5	745	U
53	5	747	C
53	5	749	G
53	5	752	G
53	5	756	A
53	5	773	G
53	5	774	A
53	5	778	A
53	5	781	A
53	5	784	A
53	5	787	A
53	5	788	G
53	5	789	A
53	5	790	U
53	5	794	C

Continued on next page...

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Mol	Chain	Res	Type
53	5	802	C
53	5	806	A
53	5	810	U
53	5	812	A
53	5	813	A
53	5	814	C
53	5	815	G
53	5	818	A
53	5	825	A
53	5	829	G
53	5	838	A
53	5	846	G
53	5	855	G
53	5	857	U
53	5	861	A
53	5	864	U
53	5	868	G
53	5	870	A
53	5	877	C
53	5	879	G
53	5	882	U
53	5	883	A
53	5	885	U
53	5	896	G
53	5	898	A
53	5	908	A
53	5	910	C
53	5	911	G
53	5	917	G
53	5	918	A
53	5	921	G
53	5	922	G
53	5	924	A
53	5	927	C
53	5	929	C
53	5	930	A
53	5	934	G
53	5	937	G
53	5	940	G
53	5	941	A
53	5	953	A
53	5	955	U

Continued on next page...

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Mol	Chain	Res	Type
53	5	956	U
53	5	959	A
53	5	960	C
53	5	964	A
53	5	966	A
53	5	968	G
53	5	969	A
53	5	970	A
53	5	971	A
53	5	972	A
53	5	977	U
53	5	978	A
53	5	979	C
53	5	984	A
53	5	986	U
53	5	987	U
53	5	988	G
53	5	989	A
53	5	997	G
53	5	1000	A
53	5	1003	G
53	5	1004	U
53	5	1014	A
53	5	1015	U
53	5	1018	U
53	5	1030	G
53	5	1033	U
53	5	1035	A
53	5	1037	A
53	5	1038	G
53	5	1041	G
53	5	1044	G
53	5	1045	C
53	5	1046	A
53	5	1047	U
53	5	1055	G
53	5	1056	U
53	5	1057	C
53	5	1061	U
53	5	1064	U
53	5	1070	G
53	5	1071	A

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Mol	Chain	Res	Type
53	5	1072	G
53	5	1075	G
53	5	1081	U
53	5	1084	A
53	5	1085	G
53	5	1086	U
53	5	1092	A
53	5	1095	G
53	5	1106	U
53	5	1109	U
53	5	1113	U
53	5	1114	A
53	5	1119	C
53	5	1120	A
53	5	1121	U
53	5	1122	U
53	5	1123	G
53	5	1124	U
53	5	1125	C
53	5	1127	A
53	5	1130	G
53	5	1134	C
53	5	1135	U
53	5	1140	A
53	5	1142	G
53	5	1154	A
53	5	1159	A
53	5	1165	G
53	5	1166	A
53	5	1169	U
53	5	1171	A
53	5	1172	A
53	5	1173	A
53	5	1187	U
53	5	1188	A
53	5	1189	U
53	5	1190	G
53	5	1199	U
53	5	1200	G
53	5	1202	A
53	5	1203	A
53	5	1211	A

Continued on next page...

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Mol	Chain	Res	Type
53	5	1215	U
53	5	1218	C
53	5	1225	A
53	5	1227	A
53	5	1233	G
53	5	1235	C
53	5	1242	U
53	5	1243	A
53	5	1245	A
53	5	1248	U
53	5	1251	G
53	5	1253	A
53	5	1255	A
53	5	1257	C
53	5	1260	U
53	5	1261	A
53	5	1265	U
53	5	1274	G
53	5	1276	U
53	5	1278	G
53	5	1279	G
53	5	1280	A
53	5	1281	U
53	5	1283	G
53	5	1286	G
53	5	1294	U
53	5	1296	C
53	5	1309	U
53	5	1312	G
53	5	1316	C
53	5	1320	A
53	5	1322	U
53	5	1337	U
53	5	1338	A
53	5	1343	G
53	5	1354	G
53	5	1356	U
53	5	1362	G
53	5	1374	C
53	5	1375	C
53	5	1376	G
53	5	1380	G

Continued on next page...

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Mol	Chain	Res	Type
53	5	1381	U
53	5	1385	A
53	5	1394	G
53	5	1397	G
53	5	1400	A
53	5	1401	A
53	5	1404	U
53	5	1407	A
53	5	1408	A
53	5	1417	U
53	5	1418	G
53	5	1421	A
53	5	1423	C
53	5	1427	U
53	5	1429	G
53	5	1435	G
53	5	1439	G
53	5	1442	A
53	5	1449	G
53	5	1466	U
53	5	1467	A
53	5	1468	A
53	5	1472	G
53	5	1474	A
53	5	1475	A
53	5	1476	C
53	5	1477	A
53	5	1478	A
53	5	1480	G
53	5	1481	U
53	5	1492	G
53	5	1495	C
53	5	1502	G
53	5	1504	G
53	5	1505	G
53	5	1507	U
53	5	1508	C
54	6	3	G
54	6	9	U
54	6	11	G
54	6	12	C
54	6	17	U

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Mol	Chain	Res	Type
54	6	18	C
54	6	20	G
54	6	22	A
54	6	23	G
54	6	24	A
54	6	25	G
54	6	32	U
54	6	38	G
54	6	41	C
54	6	42	C
54	6	43	G
54	6	44	U
54	6	47	G
54	6	48	U
54	6	49	C
54	6	57	C
54	6	58	G
54	6	59	A
54	6	62	C
54	6	67	C
54	6	71	A
54	6	72	C
54	6	73	C
54	6	75	C
54	6	76	C
54	7	3	G
54	7	9	U
54	7	11	G
54	7	12	C
54	7	17	U
54	7	18	C
54	7	20	G
54	7	22	A
54	7	23	G
54	7	24	A
54	7	25	G
54	7	32	U
54	7	38	G
54	7	41	C
54	7	42	C
54	7	43	G
54	7	44	U

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Mol	Chain	Res	Type
54	7	47	G
54	7	48	U
54	7	49	C
54	7	57	C
54	7	58	G
54	7	59	A
54	7	62	C
54	7	67	C
54	7	71	A
54	7	72	C
54	7	73	C
54	7	75	C
54	7	76	C

All (43) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
51	3	309	A
51	3	311	G
51	3	315	A
51	3	410	G
51	3	425	U
51	3	500	U
51	3	513	A
51	3	688	U
51	3	881	A
51	3	935	U
51	3	936	G
51	3	952	U
51	3	1048	A
51	3	1124	G
51	3	1209	U
51	3	1216	U
51	3	1297	U
51	3	1507	G
51	3	1583	G
51	3	1587	U
51	3	1588	A
51	3	2124	A
51	3	2219	U
51	3	2504	C
51	3	2604	U

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Mol	Chain	Res	Type
51	3	2668	A
51	3	2764	U
51	3	2862	U
51	3	2897	G
52	4	10	C
52	4	54	U
52	4	59	A
53	5	8	G
53	5	196	G
53	5	448	A
53	5	618	U
53	5	787	A
53	5	920	G
53	5	1133	A
54	6	16	G
54	6	48	U
54	7	16	G
54	7	48	U

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

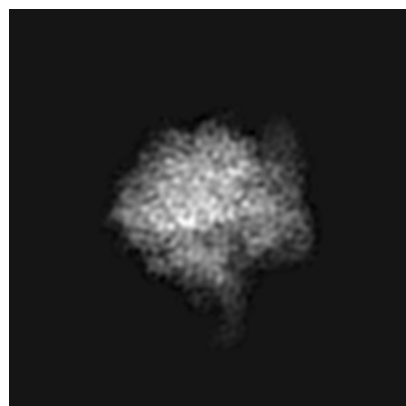
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-13446. These allow visual inspection of the internal detail of the map and identification of artifacts.

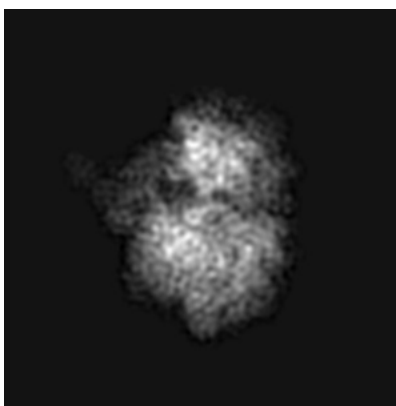
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

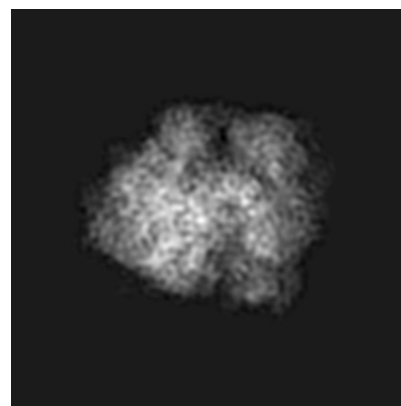
6.1.1 Primary map



X

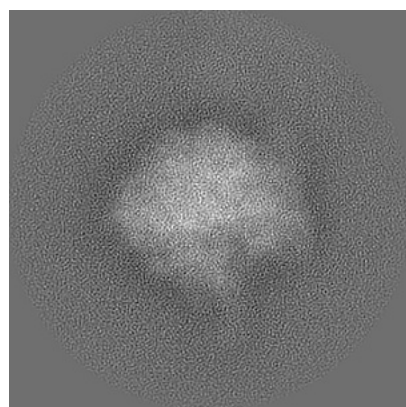


Y

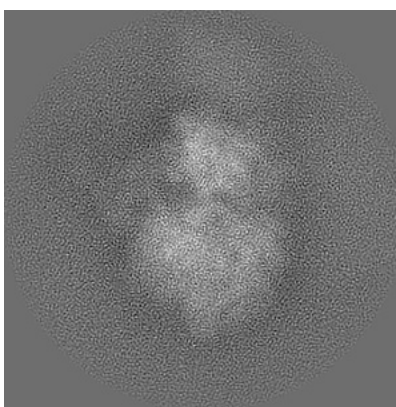


Z

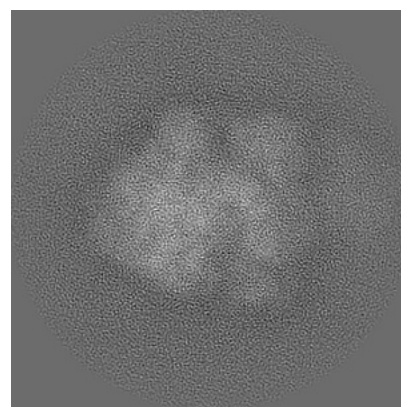
6.1.2 Raw map



X



Y

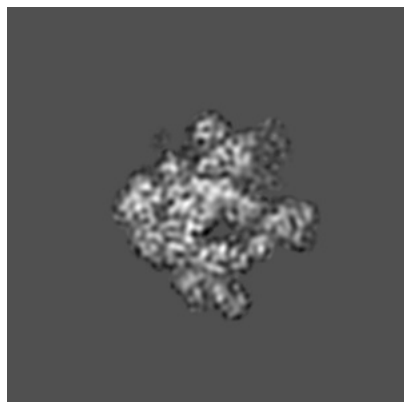


Z

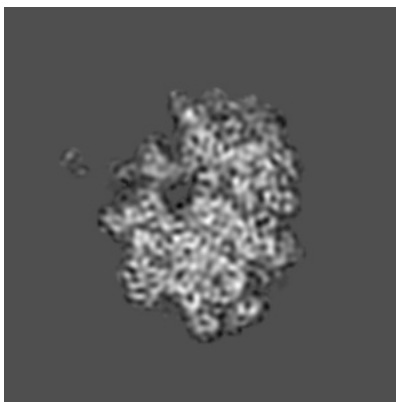
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

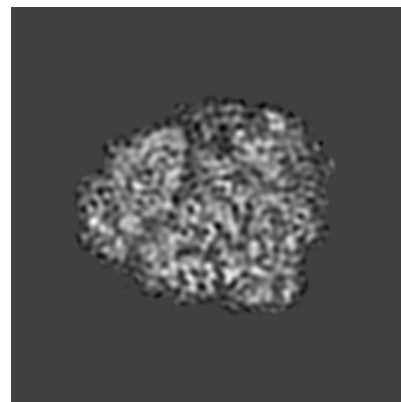
6.2.1 Primary map



X Index: 128

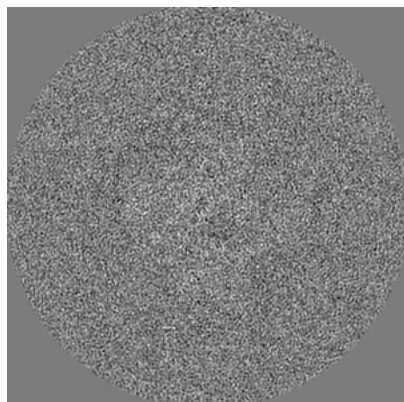


Y Index: 128

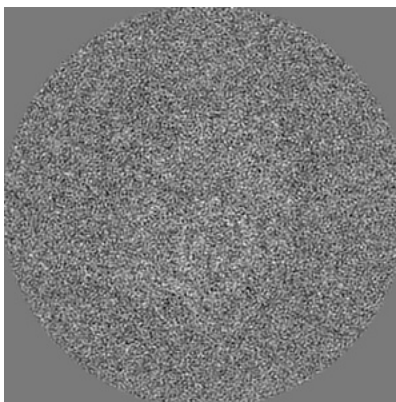


Z Index: 128

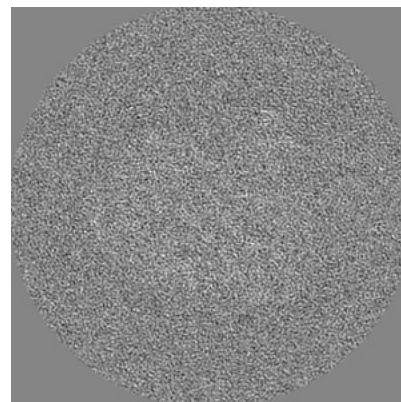
6.2.2 Raw map



X Index: 128



Y Index: 128

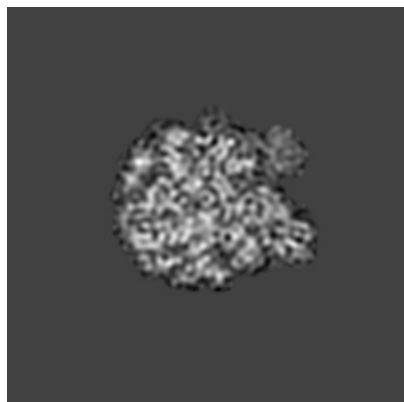


Z Index: 128

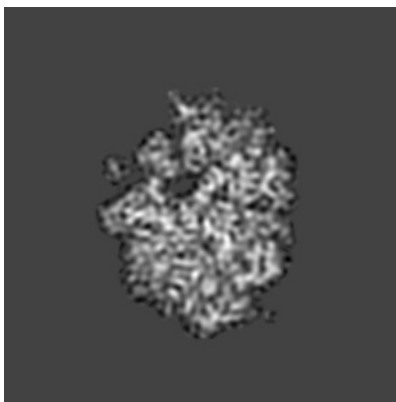
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

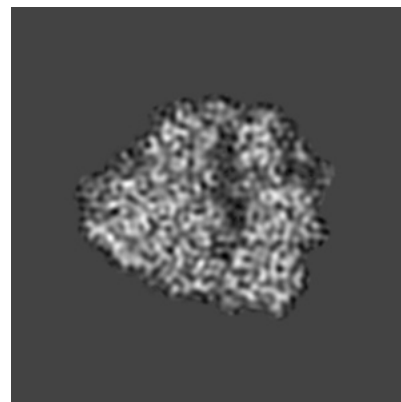
6.3.1 Primary map



X Index: 103

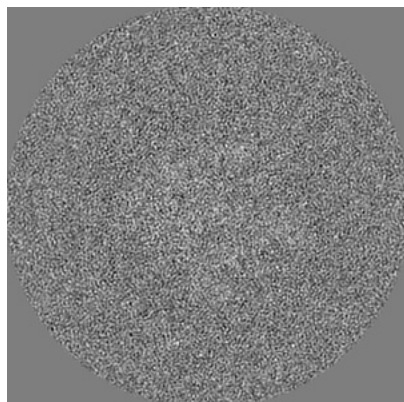


Y Index: 121

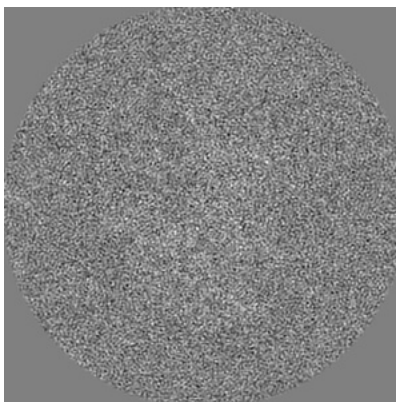


Z Index: 121

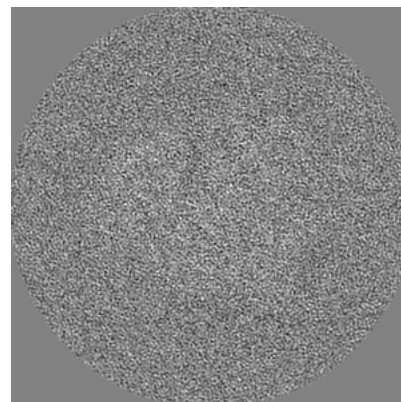
6.3.2 Raw map



X Index: 125



Y Index: 127

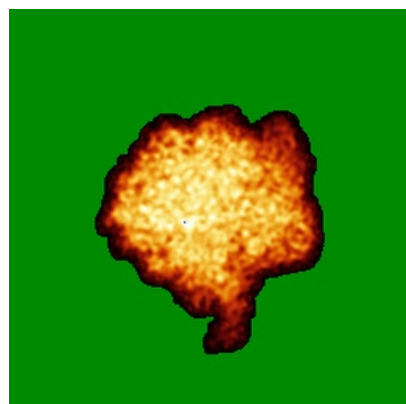


Z Index: 129

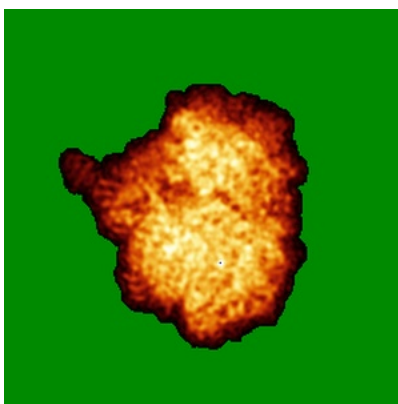
The images above show the largest variance slices of the map in three orthogonal directions.

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

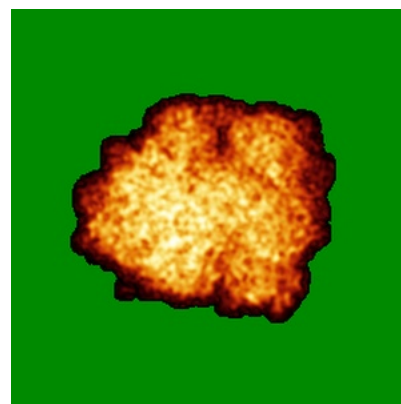
6.4.1 Primary map



X

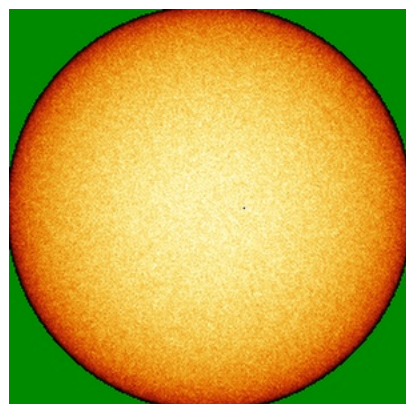


Y

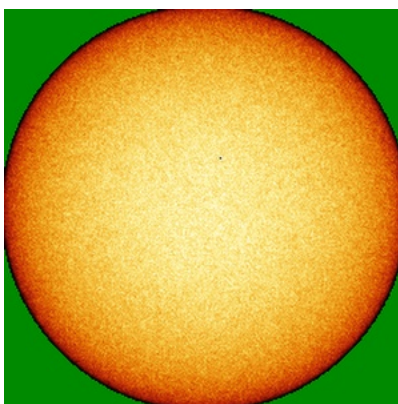


Z

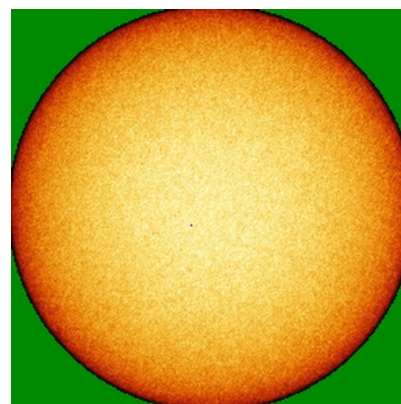
6.4.2 Raw map



X



Y

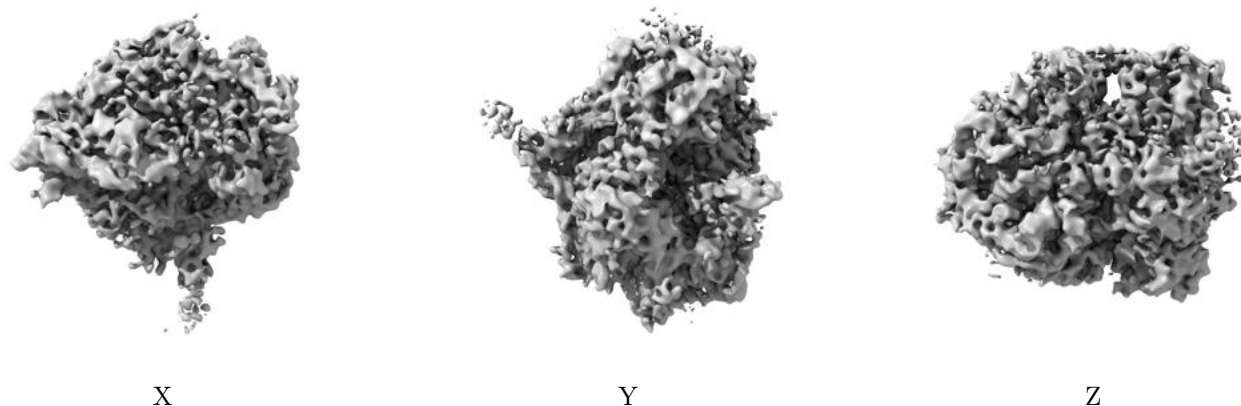


Z

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.

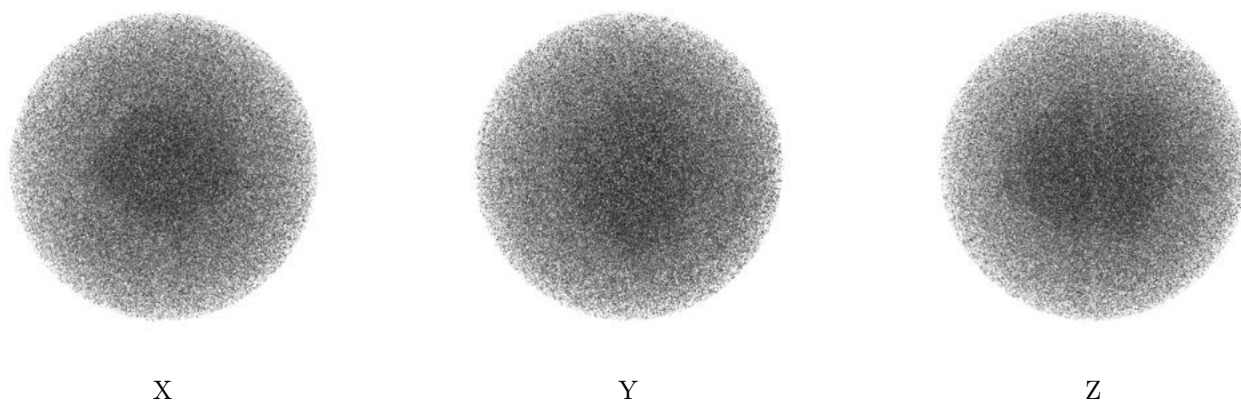
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.39. 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.

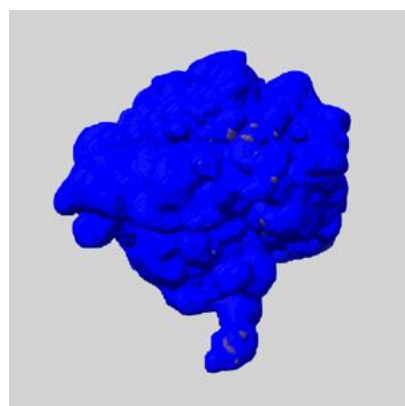
6.6 Mask visualisation [i](#)

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

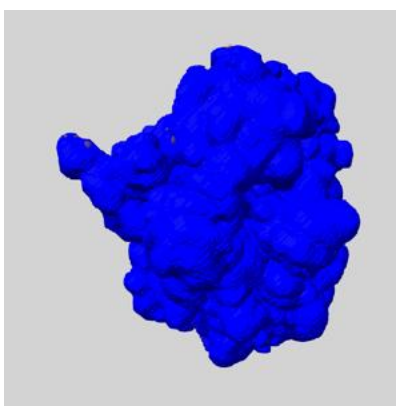
A mask typically either:

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

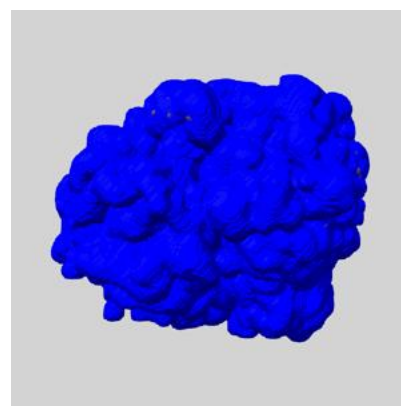
6.6.1 emd_13446_msk_1.map [i](#)



X



Y

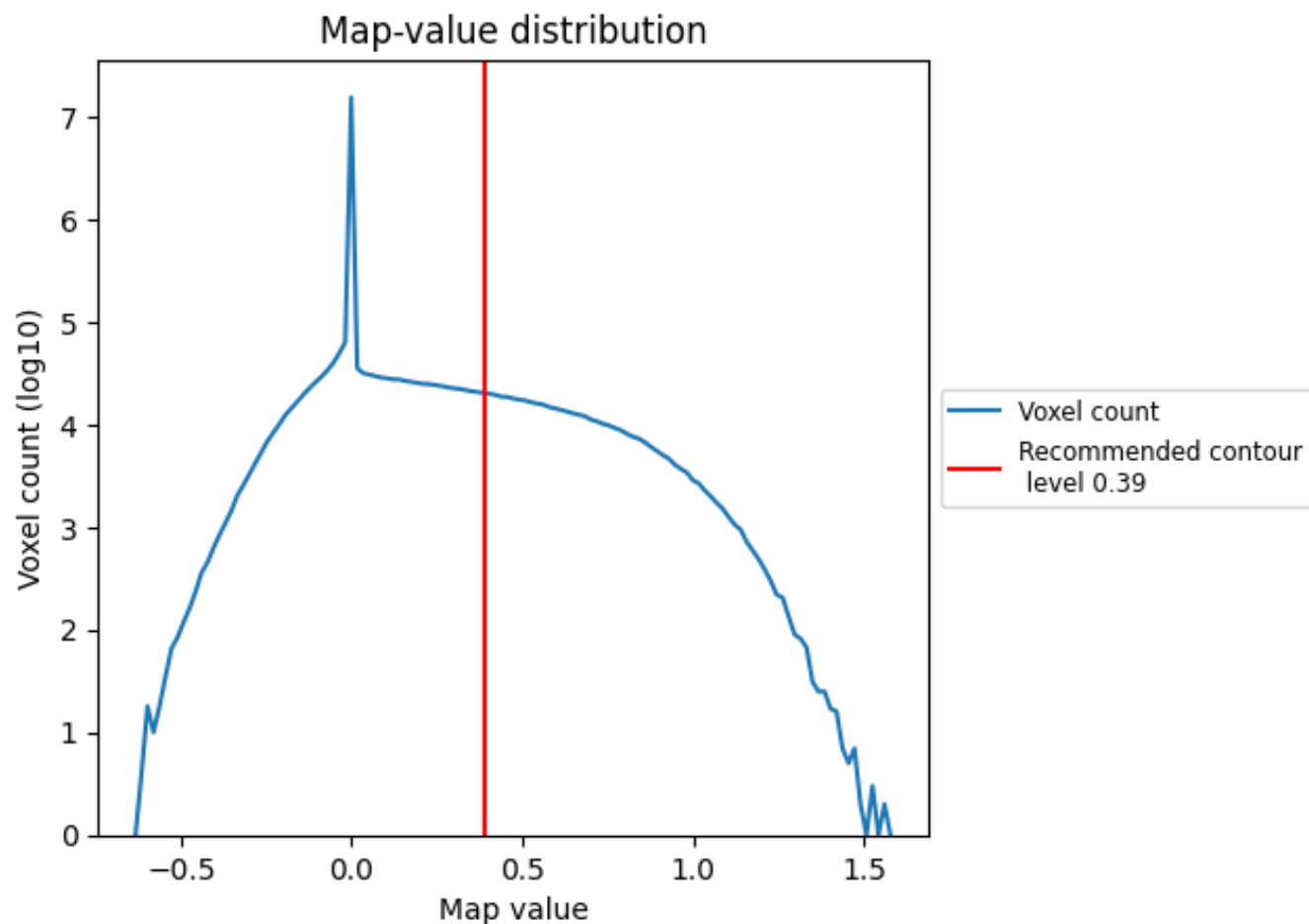


Z

7 Map analysis [i](#)

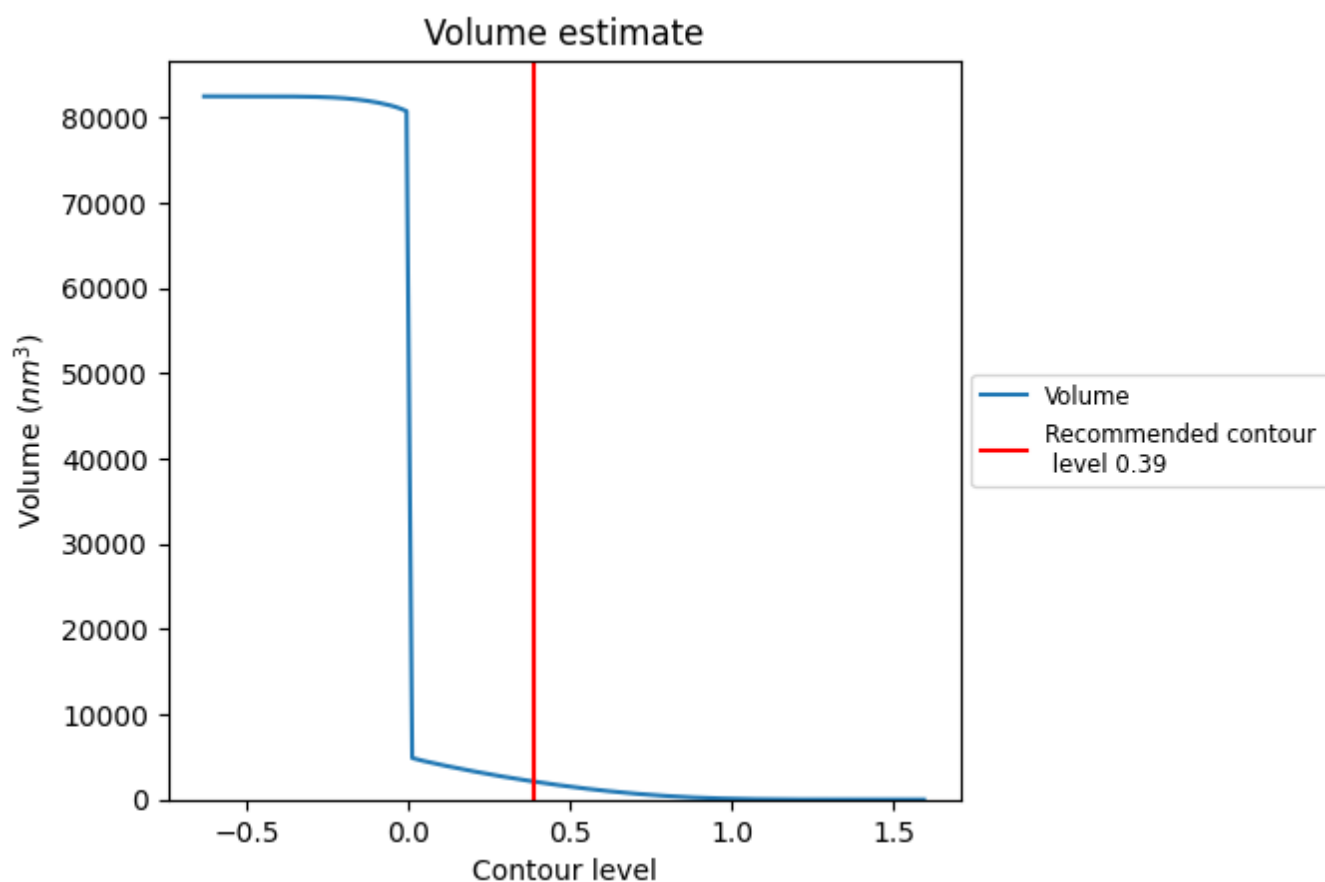
This section contains the results of statistical analysis of the map.

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.

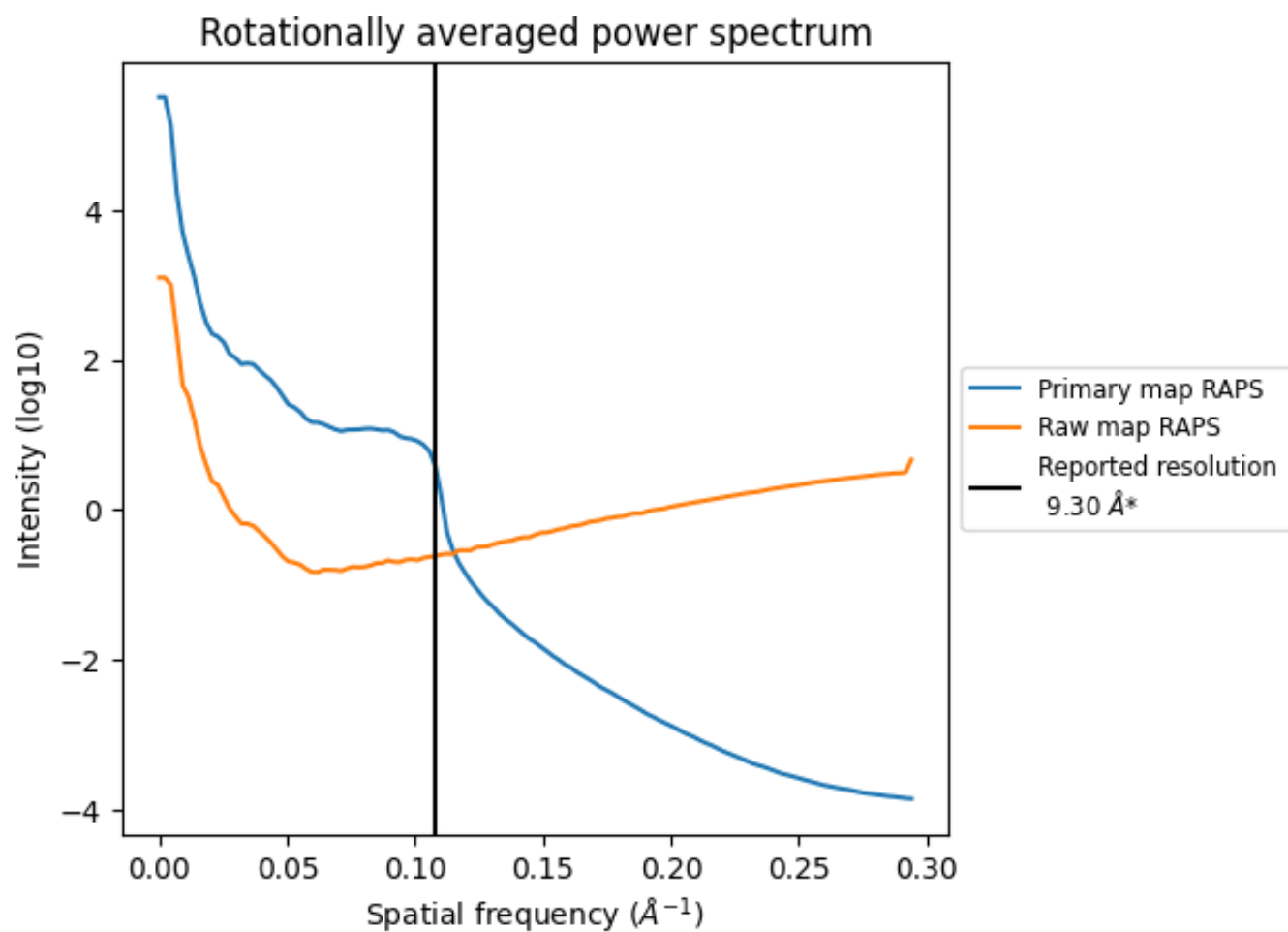
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 2100 nm^3 ; this corresponds to an approximate mass of 1897 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 ⓘ

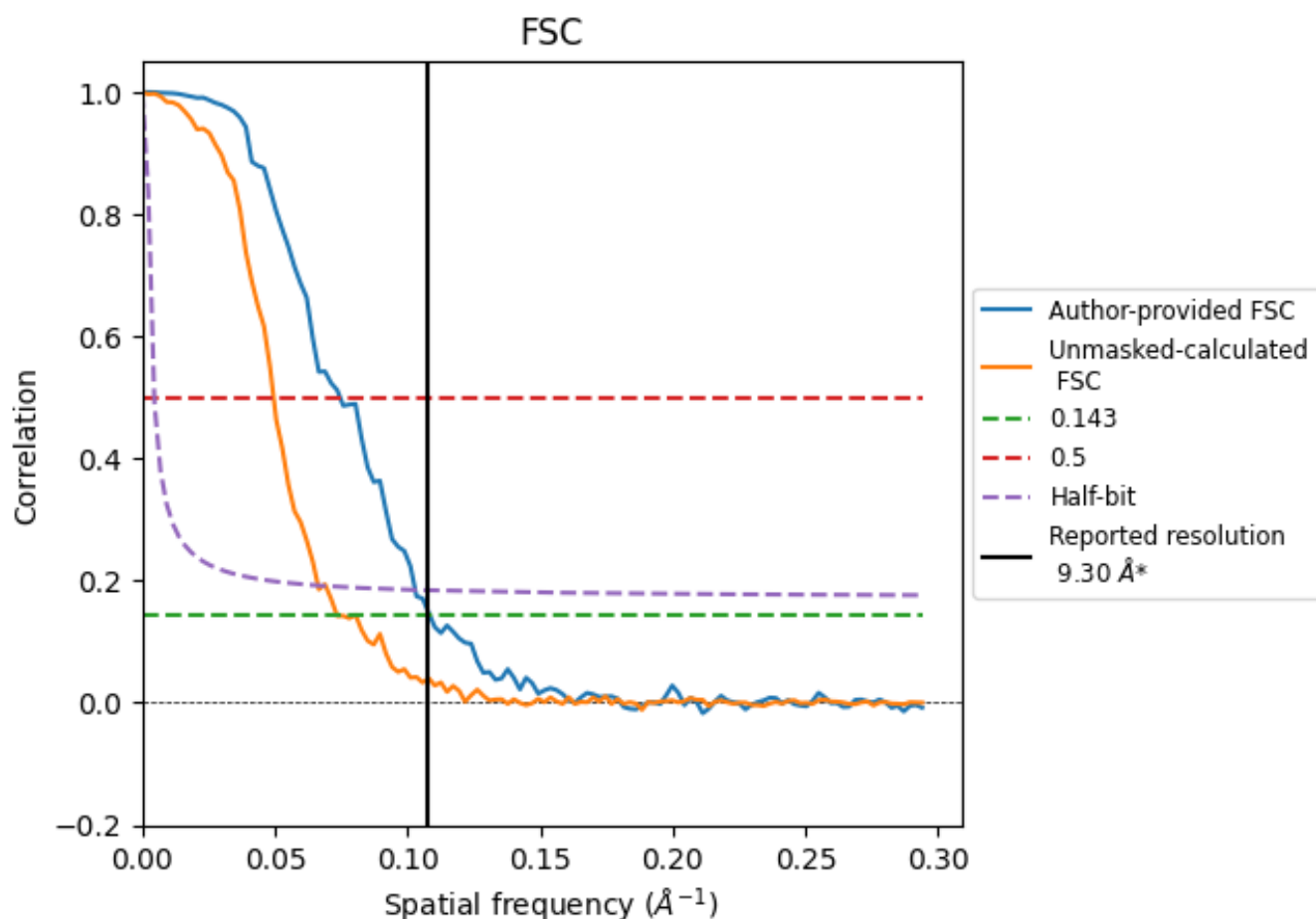


*Reported resolution corresponds to spatial frequency of 0.108 $\text{\AA}^{-1}$

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 0.108 $\text{\AA}^{-1}$

8.2 Resolution estimates

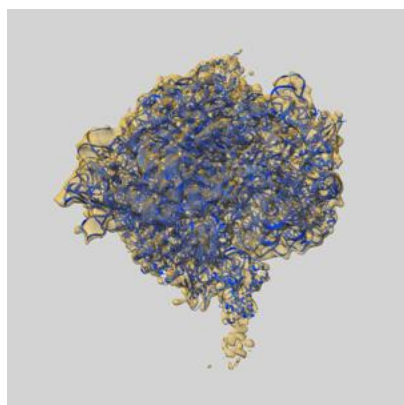
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	9.30	-	-
Author-provided FSC curve	9.23	13.40	9.72
Unmasked-calculated*	13.62	20.16	15.08

*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 13.62 differs from the reported value 9.3 by more than 10 %

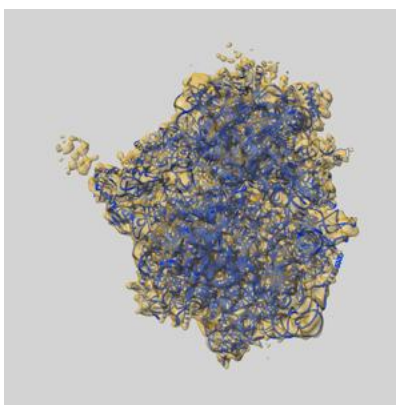
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-13446 and PDB model 7PIP. Per-residue inclusion information can be found in section [3](#) on page [14](#).

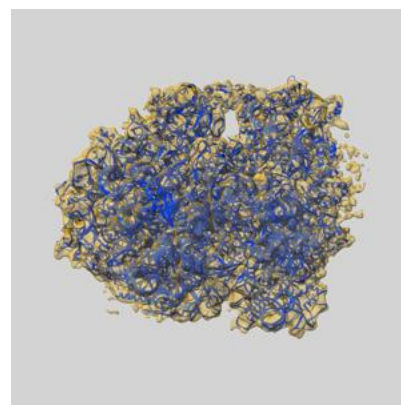
9.1 Map-model overlay [i](#)



X



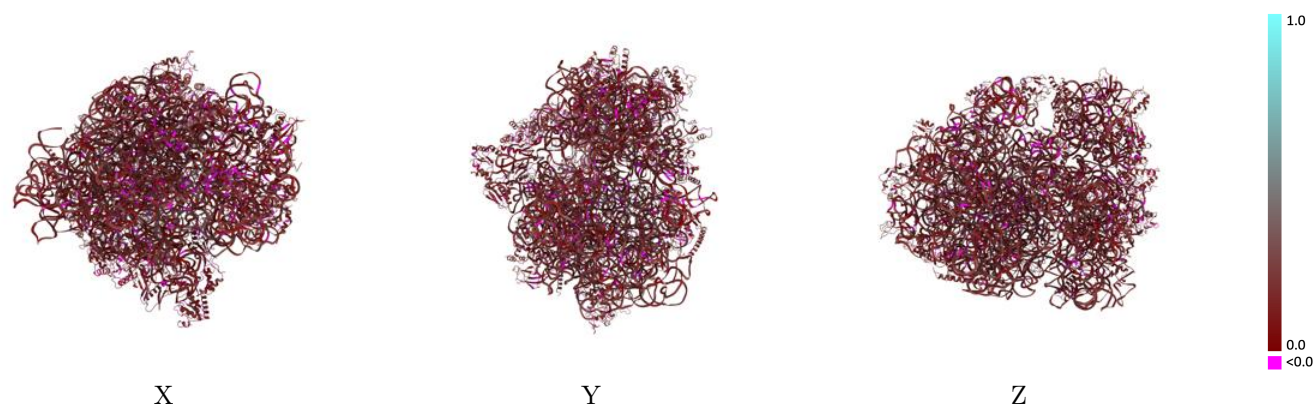
Y



Z

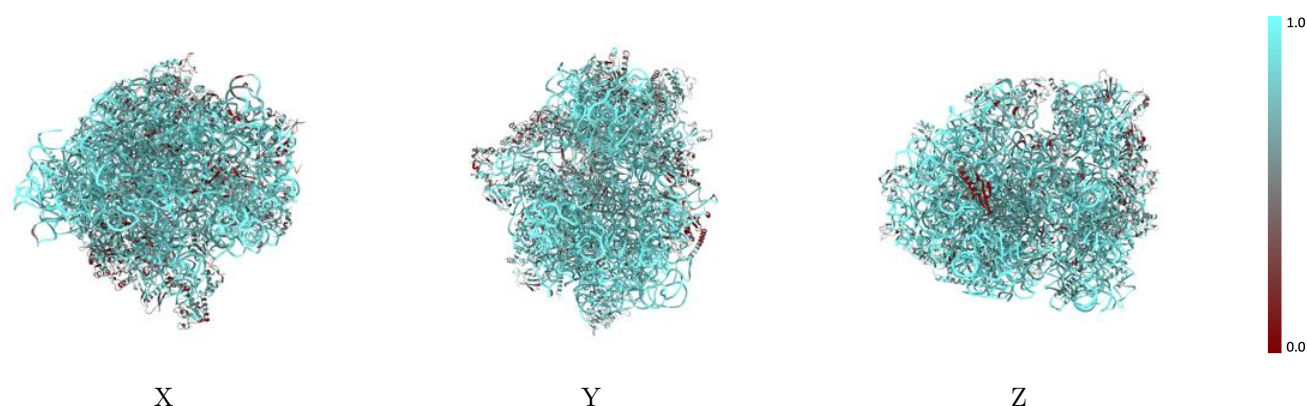
The images above show the 3D surface view of the map at the recommended contour level 0.39 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



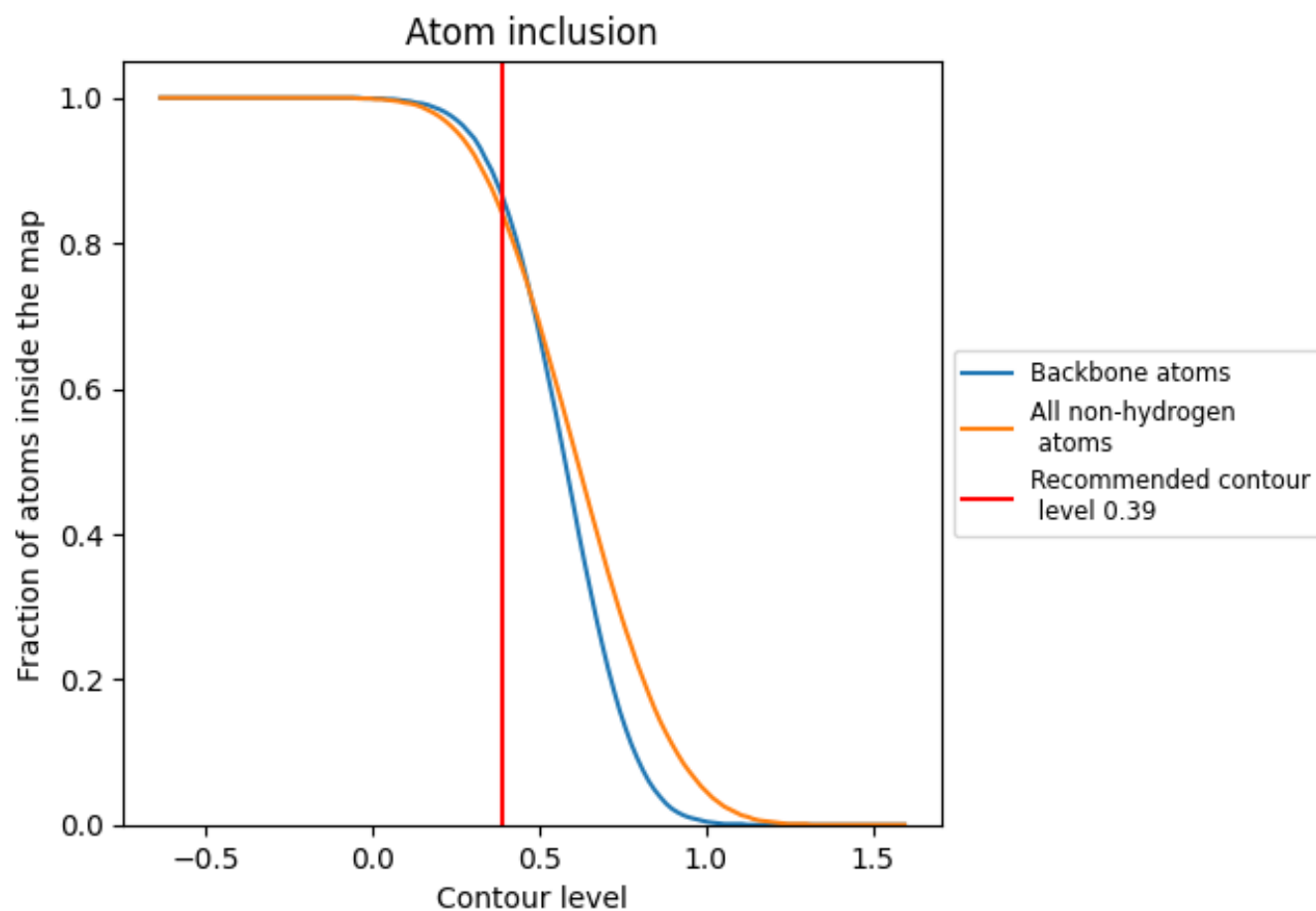
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.39).

9.4 Atom inclusion [i](#)



At the recommended contour level, 87% of all backbone atoms, 84% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.39) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8420	 0.1590
0	 0.7940	 0.1400
1	 0.7620	 0.1410
2	 0.7470	 0.1130
3	 0.9410	 0.1680
4	 0.9420	 0.1790
5	 0.9440	 0.1710
6	 0.7850	 0.1530
7	 0.7500	 0.1100
9	 0.4820	 0.1290
A	 0.5770	 0.1580
B	 0.5900	 0.1450
C	 0.6760	 0.1420
D	 0.6320	 0.1390
E	 0.6040	 0.1620
F	 0.6310	 0.1450
G	 0.6580	 0.1360
H	 0.6260	 0.1110
I	 0.6080	 0.1400
J	 0.6400	 0.1270
K	 0.7010	 0.1410
L	 0.6570	 0.1480
M	 0.6240	 0.1050
N	 0.7020	 0.1720
O	 0.8190	 0.1670
P	 0.7310	 0.1640
Q	 0.6200	 0.1360
R	 0.6180	 0.0970
S	 0.7790	 0.1640
T	 0.7190	 0.1880
a	 0.7320	 0.1280
b	 0.6840	 0.1320
c	 0.6900	 0.1490
d	 0.6190	 0.1470
e	 0.6300	 0.1530



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Chain	Atom inclusion	Q-score
f	 0.2460	 0.1380
g	 0.5150	 0.1540
h	 0.5220	 0.1410
i	 0.7030	 0.1310
j	 0.5900	 0.1290
k	 0.7410	 0.1430
l	 0.7280	 0.1410
m	 0.7420	 0.1370
n	 0.6770	 0.1450
o	 0.6820	 0.1550
p	 0.7720	 0.1390
q	 0.6850	 0.1400
r	 0.7960	 0.1710
s	 0.6700	 0.1370
t	 0.6270	 0.1510
u	 0.7640	 0.1170
v	 0.7510	 0.1520
w	 0.7550	 0.1870
x	 0.5390	 0.1620
y	 0.7470	 0.1270
z	 0.7930	 0.1300