



Full wwPDB EM Validation Report ⓘ

Mar 12, 2026 – 03:43 PM UTC

PDB ID : 7PAM / pdb_00007pam
EMDB ID : EMD-13277
Title : 70S ribosome with A*- and P/E-site tRNAs in Mycoplasma pneumoniae cells
Authors : Xue, L.; Lenz, S.; Rappsilber, J.; Mahamid, J.
Deposited on : 2021-07-30
Resolution : 6.80 Å(reported)
Based on initial models : 7OOC, 7OOD, 4V7C

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

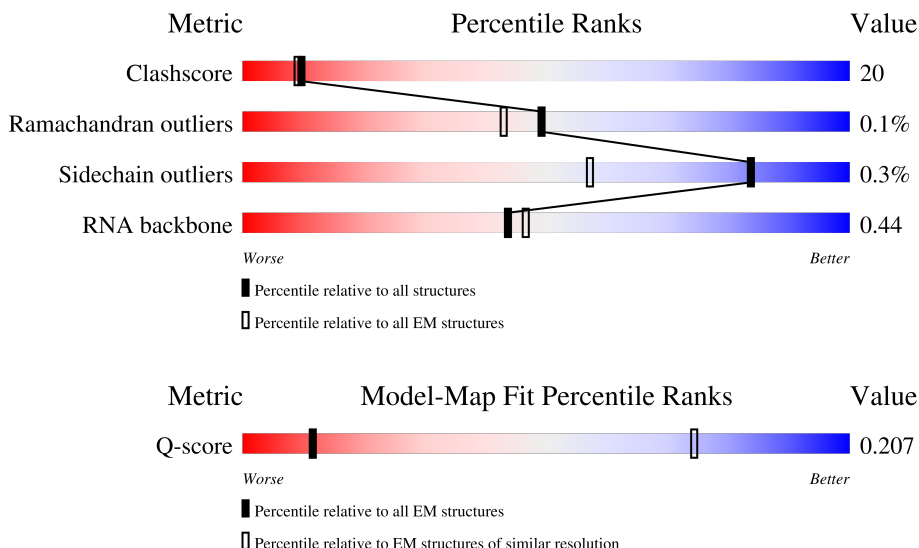
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 6.80 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	503 (6.30 - 7.30)

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	A	294	
5	B	273	
6	C	205	
7	D	219	
8	E	215	
9	F	155	
10	G	142	
11	H	132	
12	I	108	
13	J	121	
14	K	139	
15	L	124	
16	M	61	
17	N	86	
18	O	94	
19	P	85	
20	Q	104	
21	R	87	
22	S	87	
23	T	60	
24	a	287	
25	b	287	
26	c	212	
27	d	180	
28	e	184	

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Mol	Chain	Length	Quality of chain
29	f	149	
30	g	161	
31	h	137	
32	i	146	
33	j	122	
34	k	151	
35	l	139	
36	m	124	
37	n	116	
38	o	119	
39	p	127	
40	q	100	
41	r	159	
42	s	237	
43	t	111	
44	u	104	
45	v	65	
46	w	111	
47	x	97	
48	y	57	
49	z	53	
50	3	2907	
51	4	108	
52	5	1520	
53	6	76	

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Mol	Chain	Length	Quality of chain
53	8	76	25% 51% 22%

2 Entry composition

There are 53 unique types of molecules in this entry. The entry contains 146120 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 30S ribosomal protein S2.

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

- Molecule 5 is a protein called 30S ribosomal protein S3.

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

- Molecule 6 is a protein called 30S ribosomal protein S4.

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

- Molecule 7 is a protein called 30S ribosomal protein S5.

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

- Molecule 8 is a protein called 30S ribosomal protein S6.

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

- Molecule 9 is a protein called 30S ribosomal protein S7.

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

- Molecule 10 is a protein called 30S ribosomal protein S8.

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

- Molecule 11 is a protein called 30S ribosomal protein S9.

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

- Molecule 12 is a protein called 30S ribosomal protein S10.

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

- Molecule 13 is a protein called 30S ribosomal protein S11.

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

- Molecule 14 is a protein called 30S ribosomal protein S12.

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

- Molecule 15 is a protein called 30S ribosomal protein S13.

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

- Molecule 16 is a protein called 30S ribosomal protein S14 type Z.

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

- Molecule 17 is a protein called 30S ribosomal protein S15.

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

- Molecule 18 is a protein called 30S ribosomal protein S16.

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

- Molecule 19 is a protein called 30S ribosomal protein S17.

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

- Molecule 20 is a protein called 30S ribosomal protein S18.

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

- Molecule 21 is a protein called 30S ribosomal protein S19.

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

- Molecule 22 is a protein called 30S ribosomal protein S20.

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

- Molecule 23 is a protein called 30S ribosomal protein S21.

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

- Molecule 24 is a protein called 50S ribosomal protein L2.

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

- Molecule 25 is a protein called 50S ribosomal protein L3.

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

- Molecule 26 is a protein called 50S ribosomal protein L4.

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

- Molecule 27 is a protein called 50S ribosomal protein L5.

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

- Molecule 28 is a protein called 50S ribosomal protein L6.

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

- Molecule 29 is a protein called 50S ribosomal protein L9.

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

- Molecule 30 is a protein called 50S ribosomal protein L10.

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

- Molecule 31 is a protein called 50S ribosomal protein L11.

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

- Molecule 32 is a protein called 50S ribosomal protein L13.

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

- Molecule 33 is a protein called 50S ribosomal protein L14.

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

- Molecule 34 is a protein called 50S ribosomal protein L15.

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

- Molecule 35 is a protein called 50S ribosomal protein L16.

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

- Molecule 36 is a protein called 50S ribosomal protein L17.

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

- Molecule 37 is a protein called 50S ribosomal protein L18.

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

- Molecule 38 is a protein called 50S ribosomal protein L19.

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

- Molecule 39 is a protein called 50S ribosomal protein L20.

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

- Molecule 40 is a protein called 50S ribosomal protein L21.

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

- Molecule 41 is a protein called 50S ribosomal protein L22.

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

- Molecule 42 is a protein called 50S ribosomal protein L23.

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

- Molecule 43 is a protein called 50S ribosomal protein L24.

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

- Molecule 44 is a protein called 50S ribosomal protein L27.

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

- Molecule 45 is a protein called 50S ribosomal protein L28.

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

- Molecule 46 is a protein called 50S ribosomal protein L29.

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

- Molecule 47 is a protein called 50S ribosomal protein L31.

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

- Molecule 48 is a protein called 50S ribosomal protein L32.

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

- Molecule 49 is a protein called 50S ribosomal protein L33 1.

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

- Molecule 50 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	3	2878	Total	C	N	O	P	0	0
			61664	27558	11236	19995	2875		

- Molecule 51 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	4	105	Total	C	N	O	P	0	0
			2239	1003	409	724	103		

- Molecule 52 is a RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	5	1493	Total	C	N	O	P	0	0
			31943	14279	5792	10382	1490		

- Molecule 53 is a RNA chain called tRNA-Phe.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	6	76	Total	C	N	O	P	0	0
			1618	723	289	531	75		
53	8	76	Total	C	N	O	P	0	0
			1618	723	289	531	75		

3 Residue-property plots

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

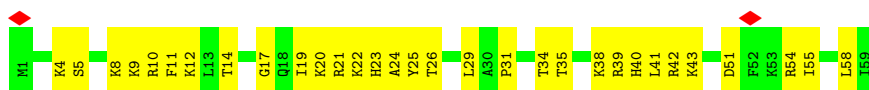
• Molecule 1: 50S ribosomal protein L34

Chain 0: 



• Molecule 2: 50S ribosomal protein L35

Chain 1: 

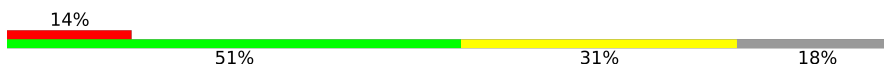


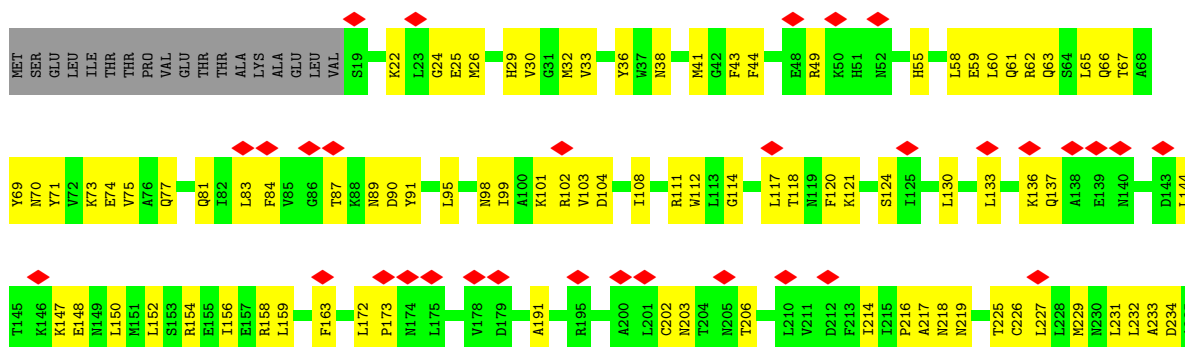
• Molecule 3: 50S ribosomal protein L36

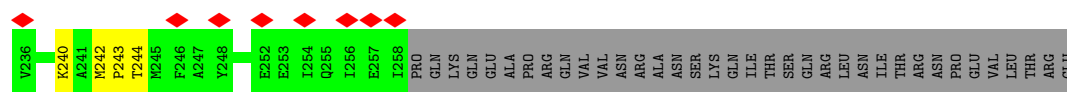
Chain 2: 



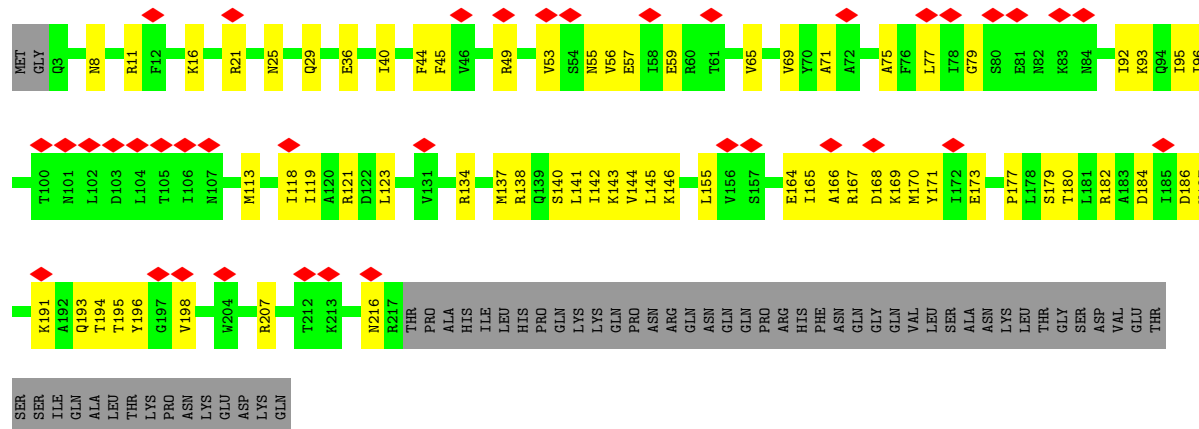
• Molecule 4: 30S ribosomal protein S2

Chain A: 

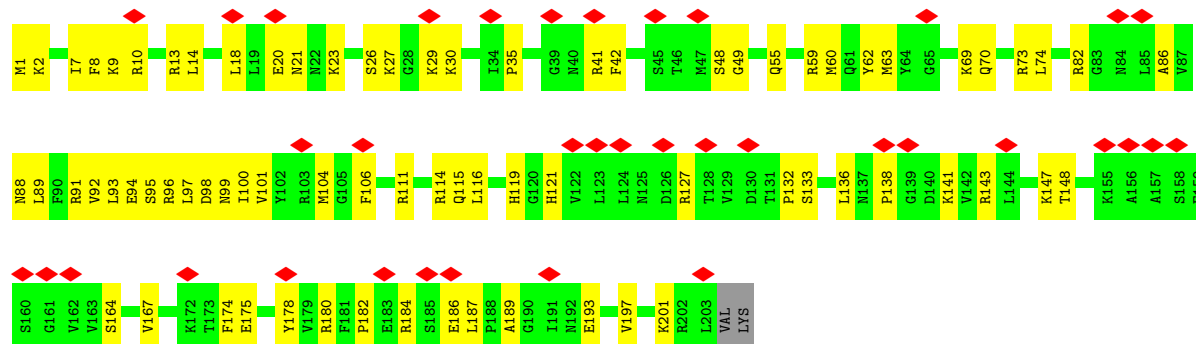




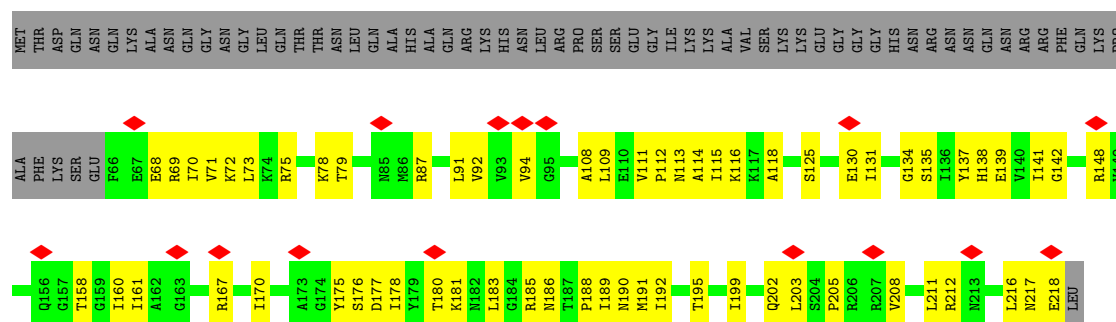
• Molecule 5: 30S ribosomal protein S3



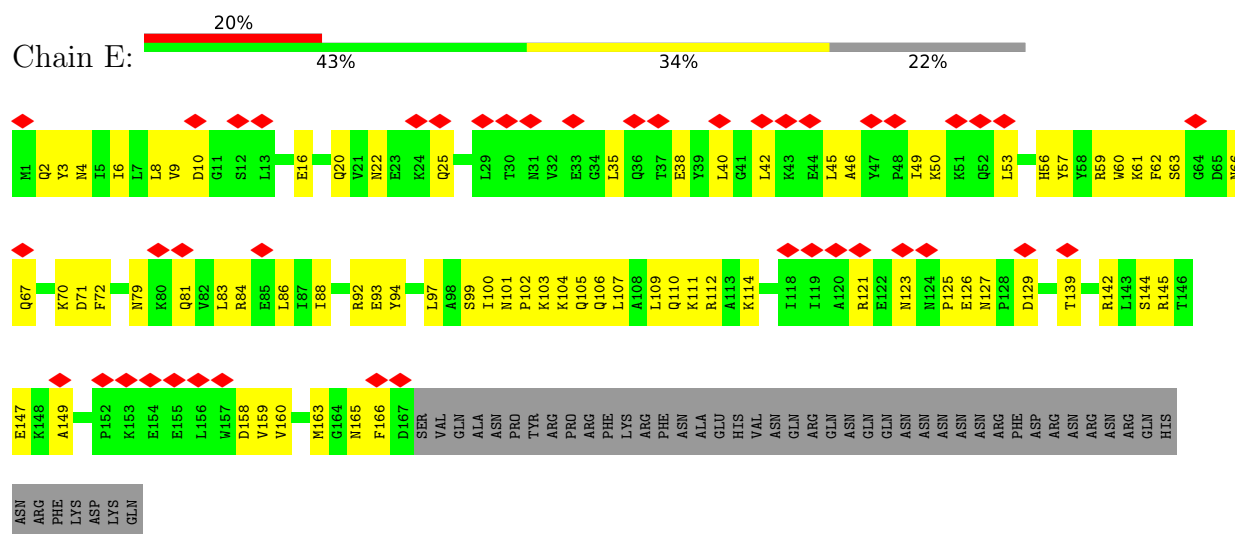
• Molecule 6: 30S ribosomal protein S4



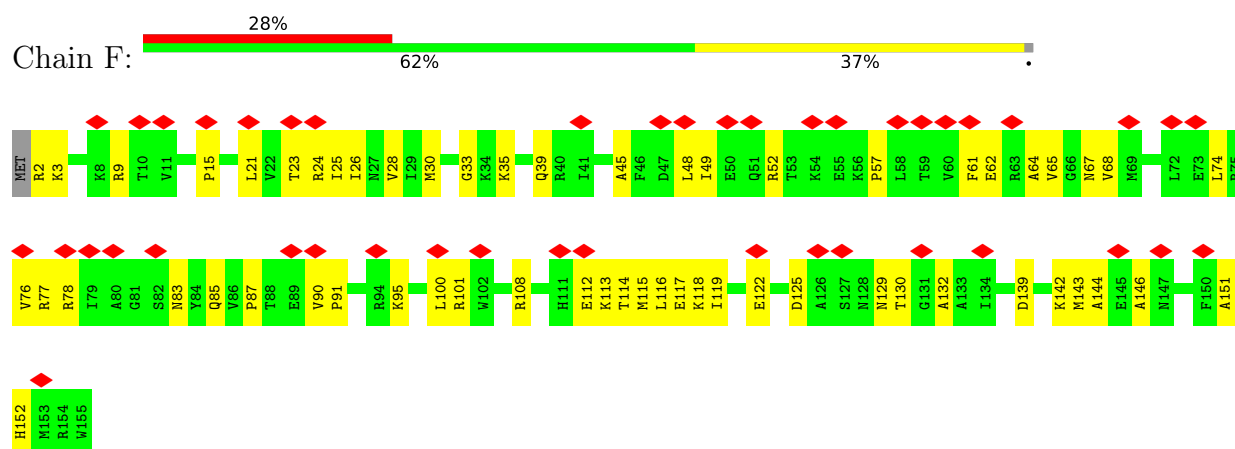
• Molecule 7: 30S ribosomal protein S5



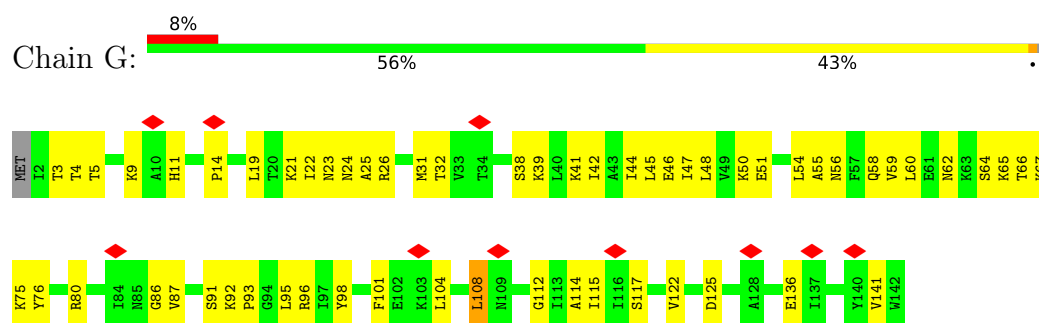
• Molecule 8: 30S ribosomal protein S6



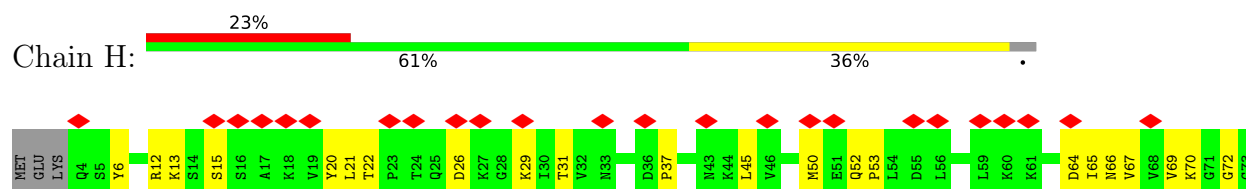
• Molecule 9: 30S ribosomal protein S7

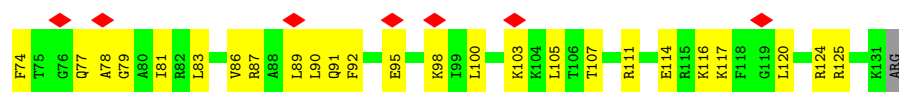


• Molecule 10: 30S ribosomal protein S8

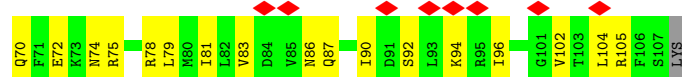
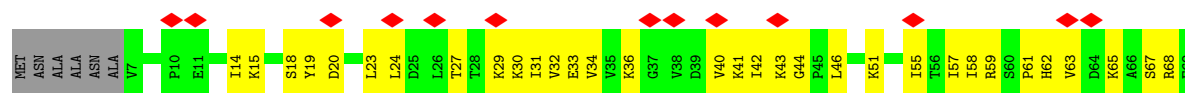


• Molecule 11: 30S ribosomal protein S9

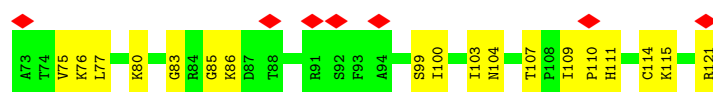
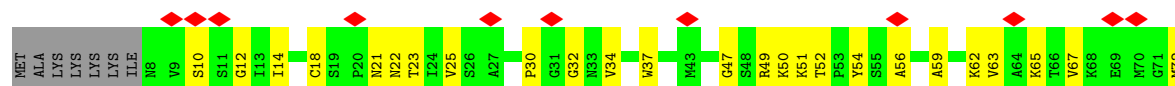




- Molecule 12: 30S ribosomal protein S10



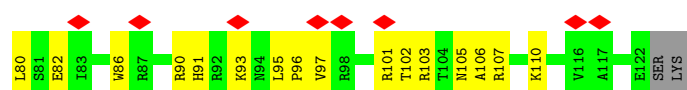
- Molecule 13: 30S ribosomal protein S11



- Molecule 14: 30S ribosomal protein S12



- Molecule 15: 30S ribosomal protein S13



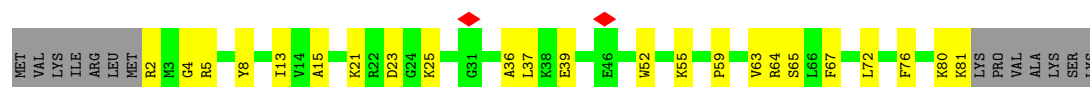
- Molecule 16: 30S ribosomal protein S14 type Z



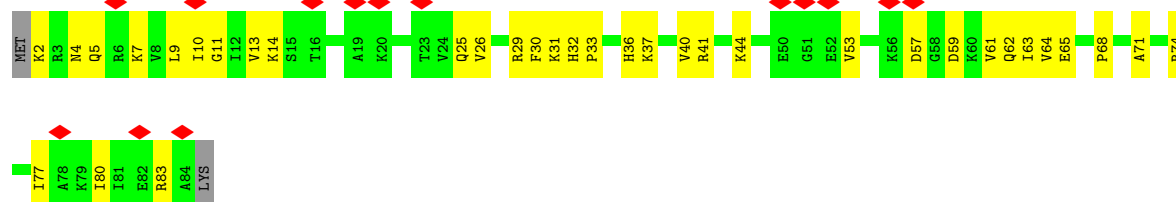
- Molecule 17: 30S ribosomal protein S15



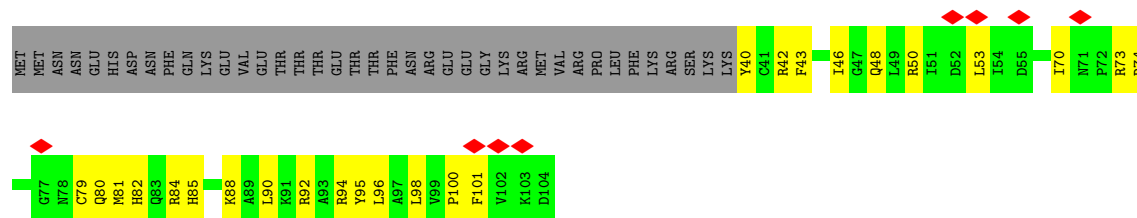
- Molecule 18: 30S ribosomal protein S16



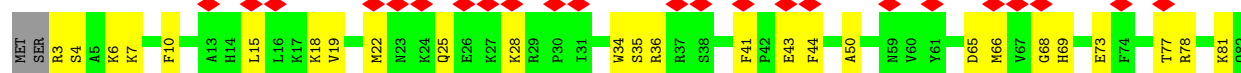
- Molecule 19: 30S ribosomal protein S17

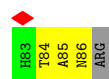


- Molecule 20: 30S ribosomal protein S18

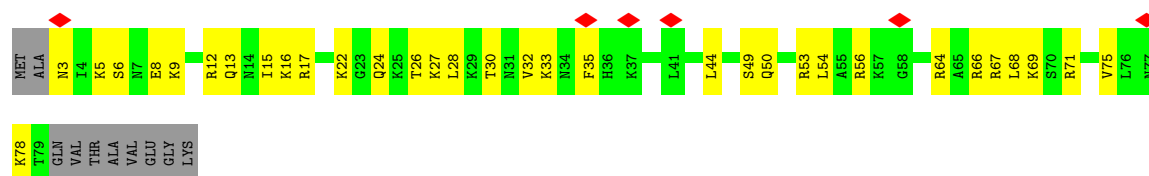


- Molecule 21: 30S ribosomal protein S19





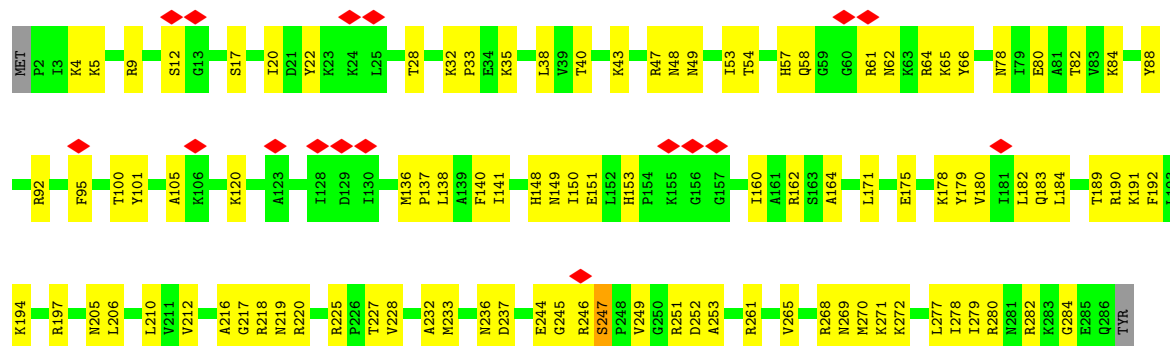
- Molecule 22: 30S ribosomal protein S20



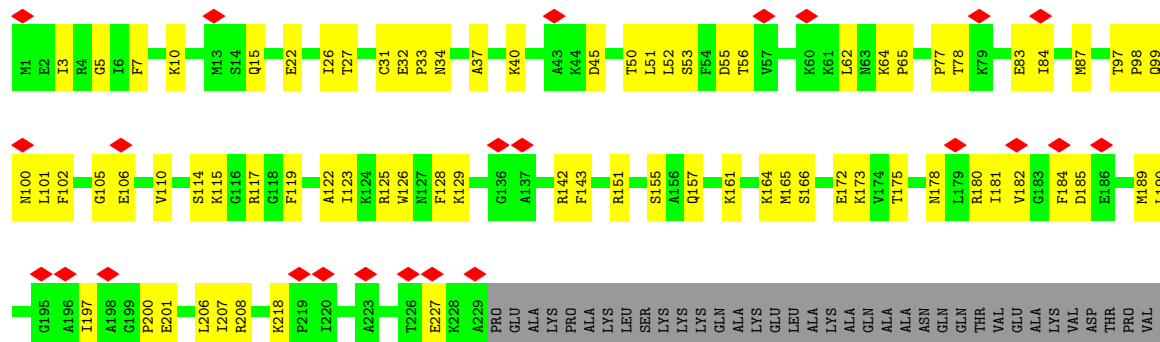
- Molecule 23: 30S ribosomal protein S21



- Molecule 24: 50S ribosomal protein L2



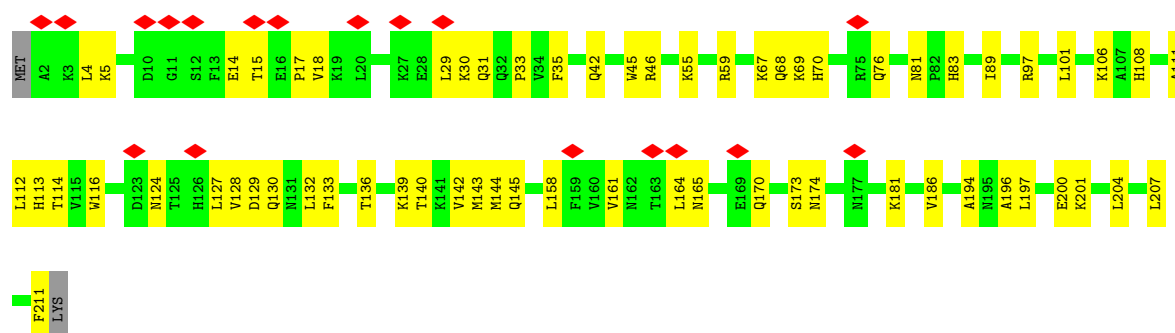
- Molecule 25: 50S ribosomal protein L3



GLU
PRO
LYS
PRO
THR
GLU
VAL
LYS
LYS
ALA
ALA
PRO
VAL
VAL
GLU
LYS
GLY
GLU
ASP
LYS

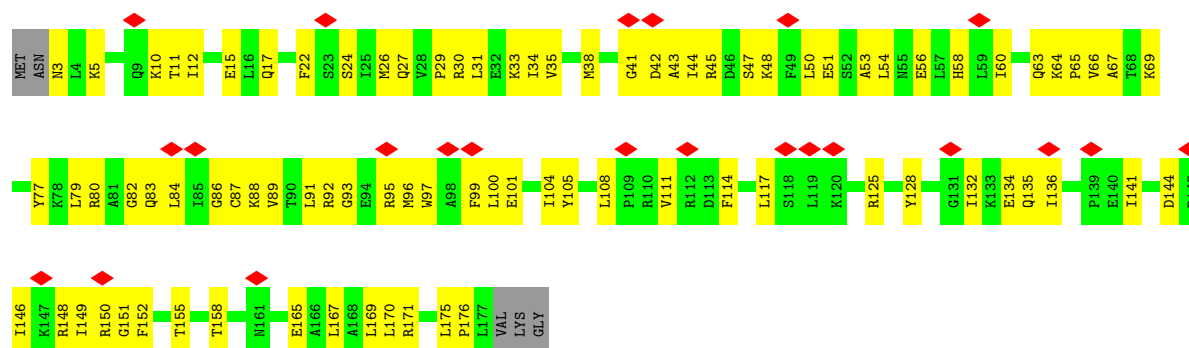
• Molecule 26: 50S ribosomal protein L4

Chain c:  8% 69% 30%



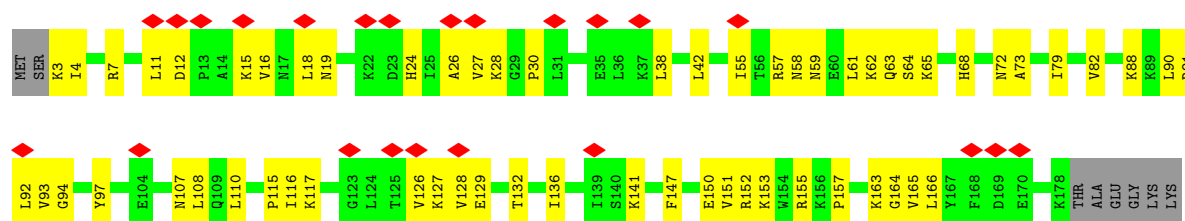
• Molecule 27: 50S ribosomal protein L5

Chain d:  13% 49% 48%



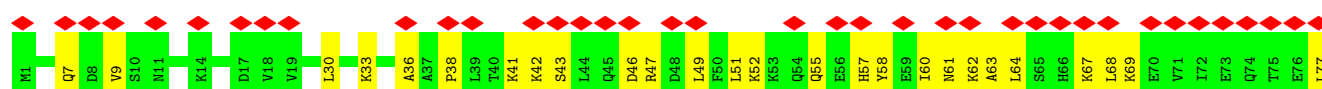
• Molecule 28: 50S ribosomal protein L6

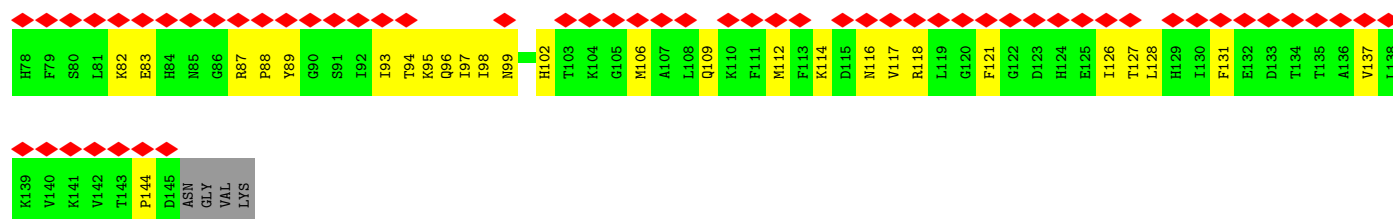
Chain e:  12% 62% 33%



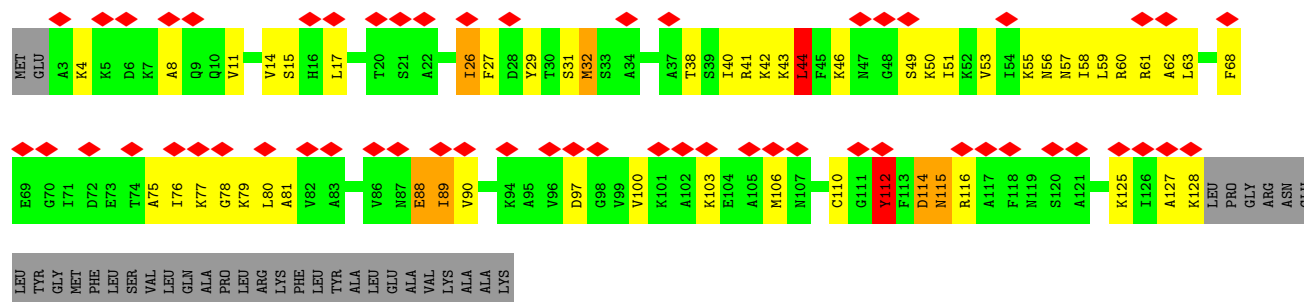
• Molecule 29: 50S ribosomal protein L9

Chain f:  64% 62% 36%

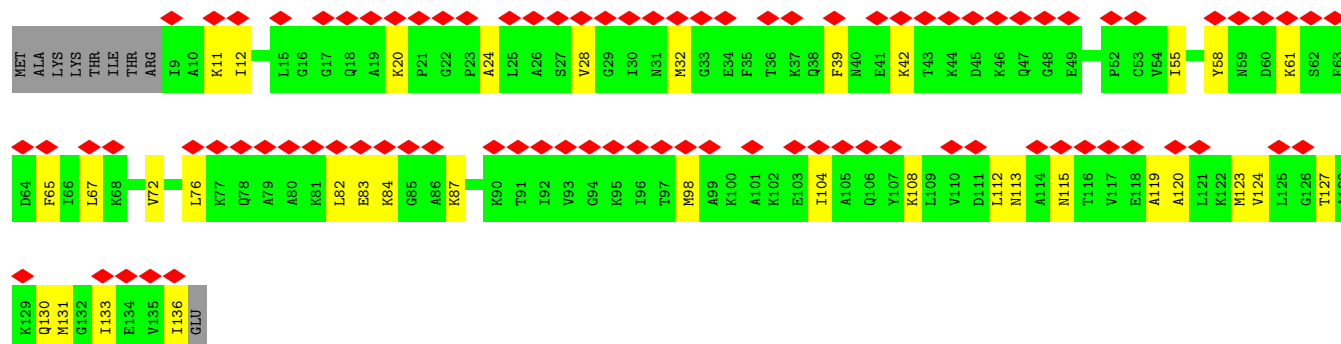




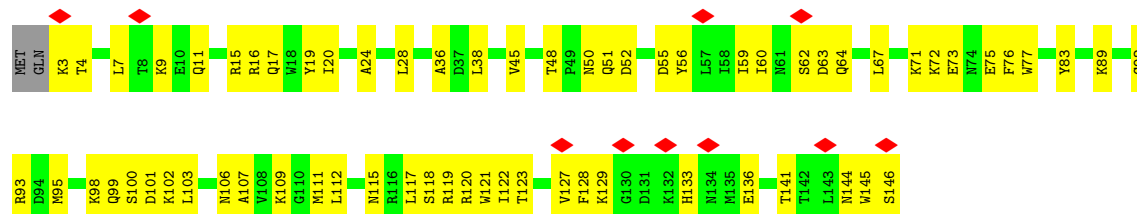
• Molecule 30: 50S ribosomal protein L10



• Molecule 31: 50S ribosomal protein L11

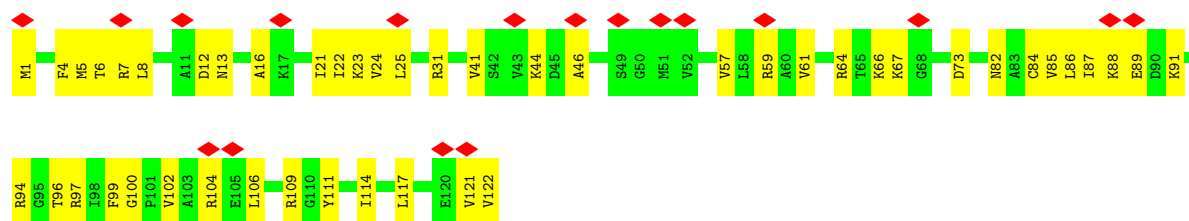


• Molecule 32: 50S ribosomal protein L13

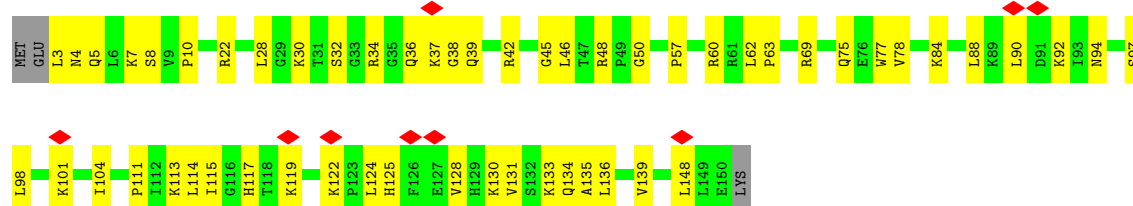


• Molecule 33: 50S ribosomal protein L14

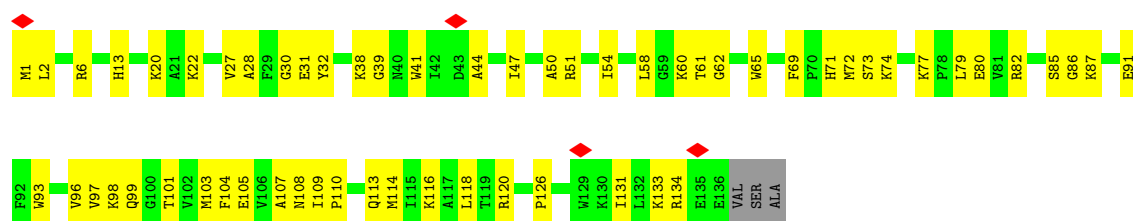




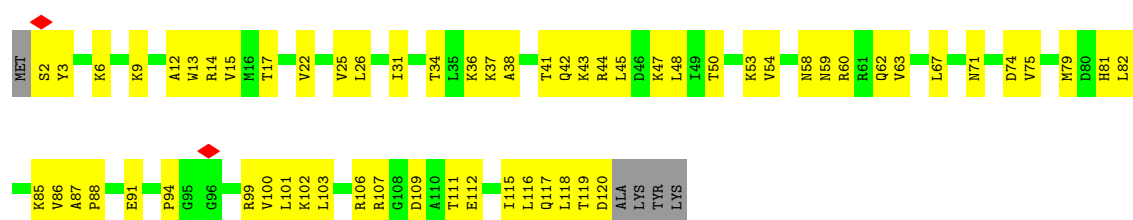
• Molecule 34: 50S ribosomal protein L15



• Molecule 35: 50S ribosomal protein L16



• Molecule 36: 50S ribosomal protein L17

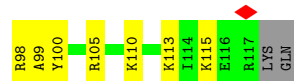
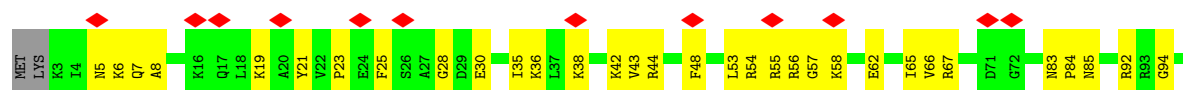


• Molecule 37: 50S ribosomal protein L18





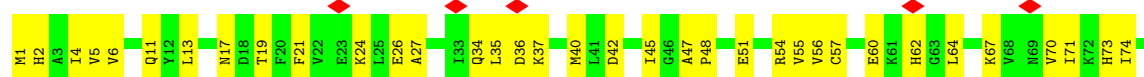
- Molecule 38: 50S ribosomal protein L19



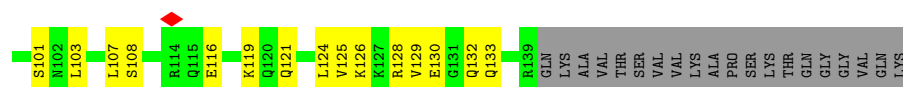
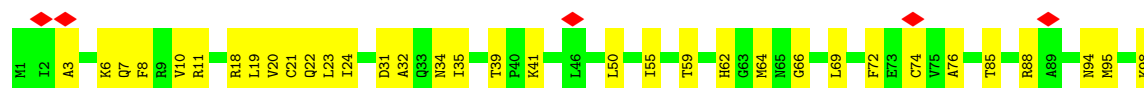
- Molecule 39: 50S ribosomal protein L20



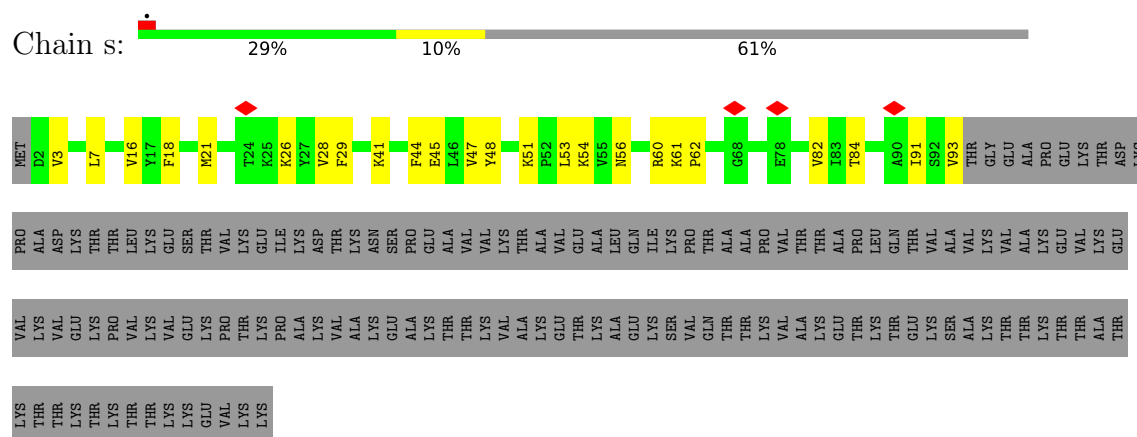
- Molecule 40: 50S ribosomal protein L21



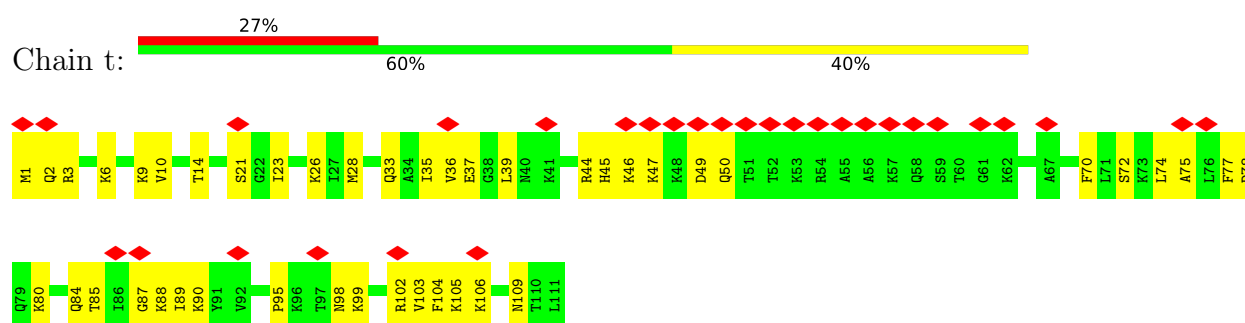
- Molecule 41: 50S ribosomal protein L22



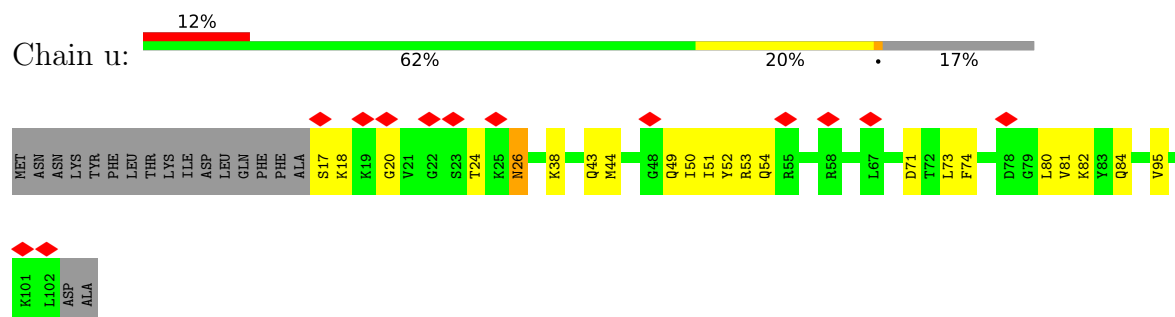
- Molecule 42: 50S ribosomal protein L23



• Molecule 43: 50S ribosomal protein L24

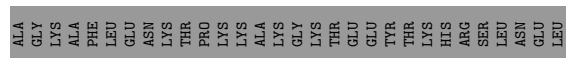


• Molecule 44: 50S ribosomal protein L27

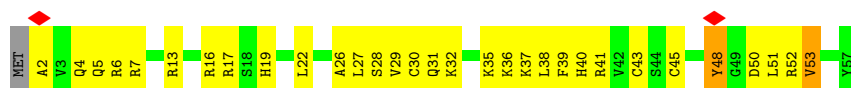




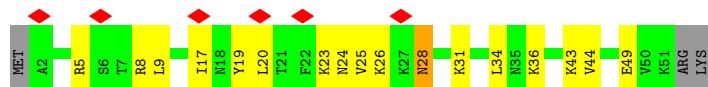
• Molecule 47: 50S ribosomal protein L31



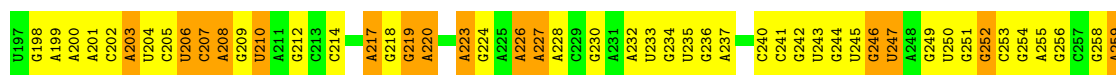
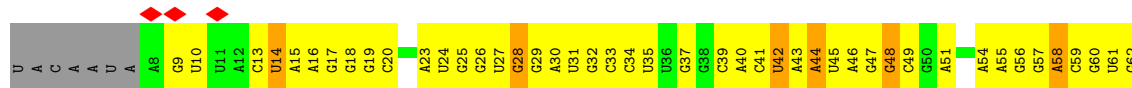
• Molecule 48: 50S ribosomal protein L32

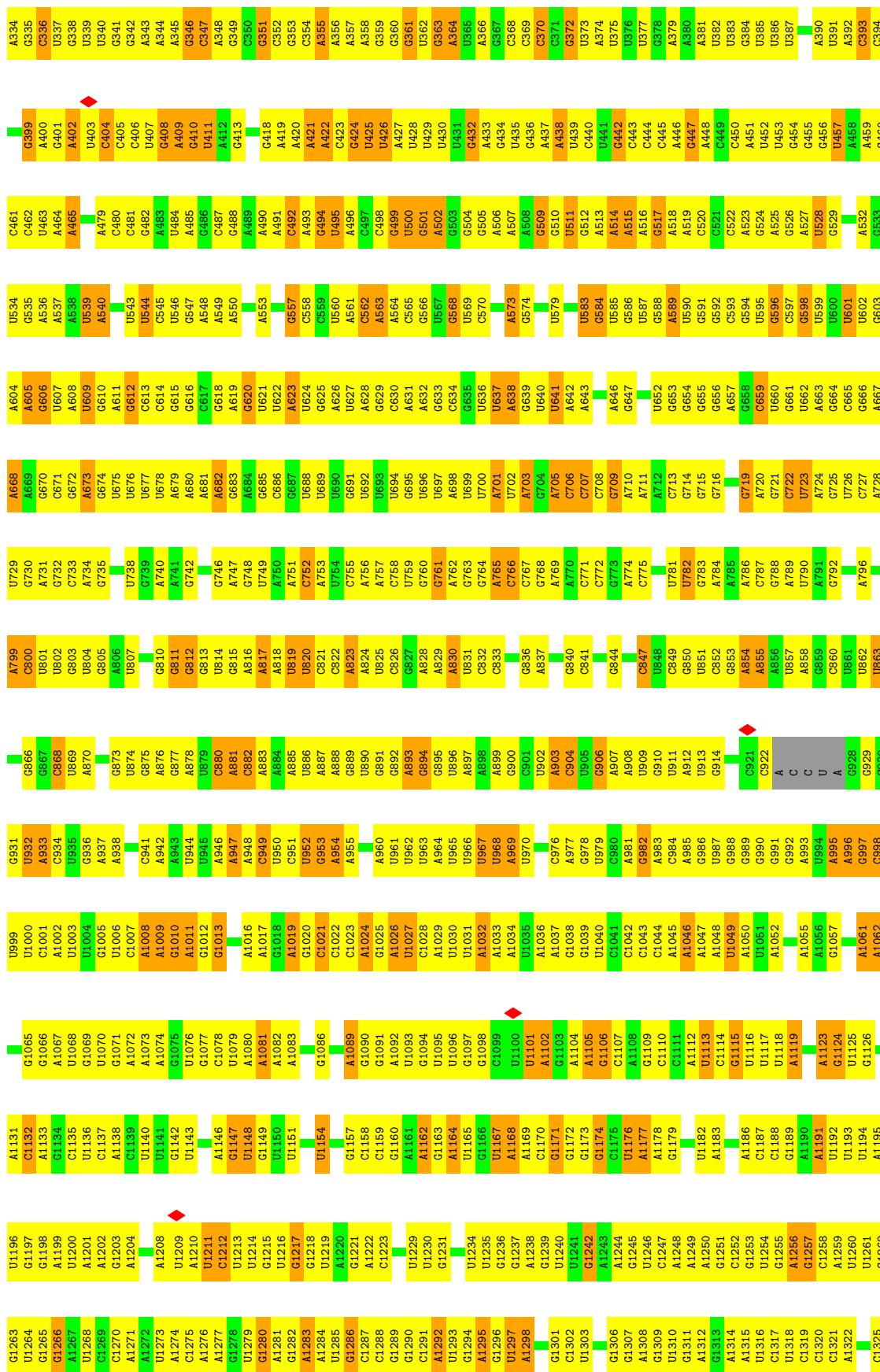


• Molecule 49: 50S ribosomal protein L33 1

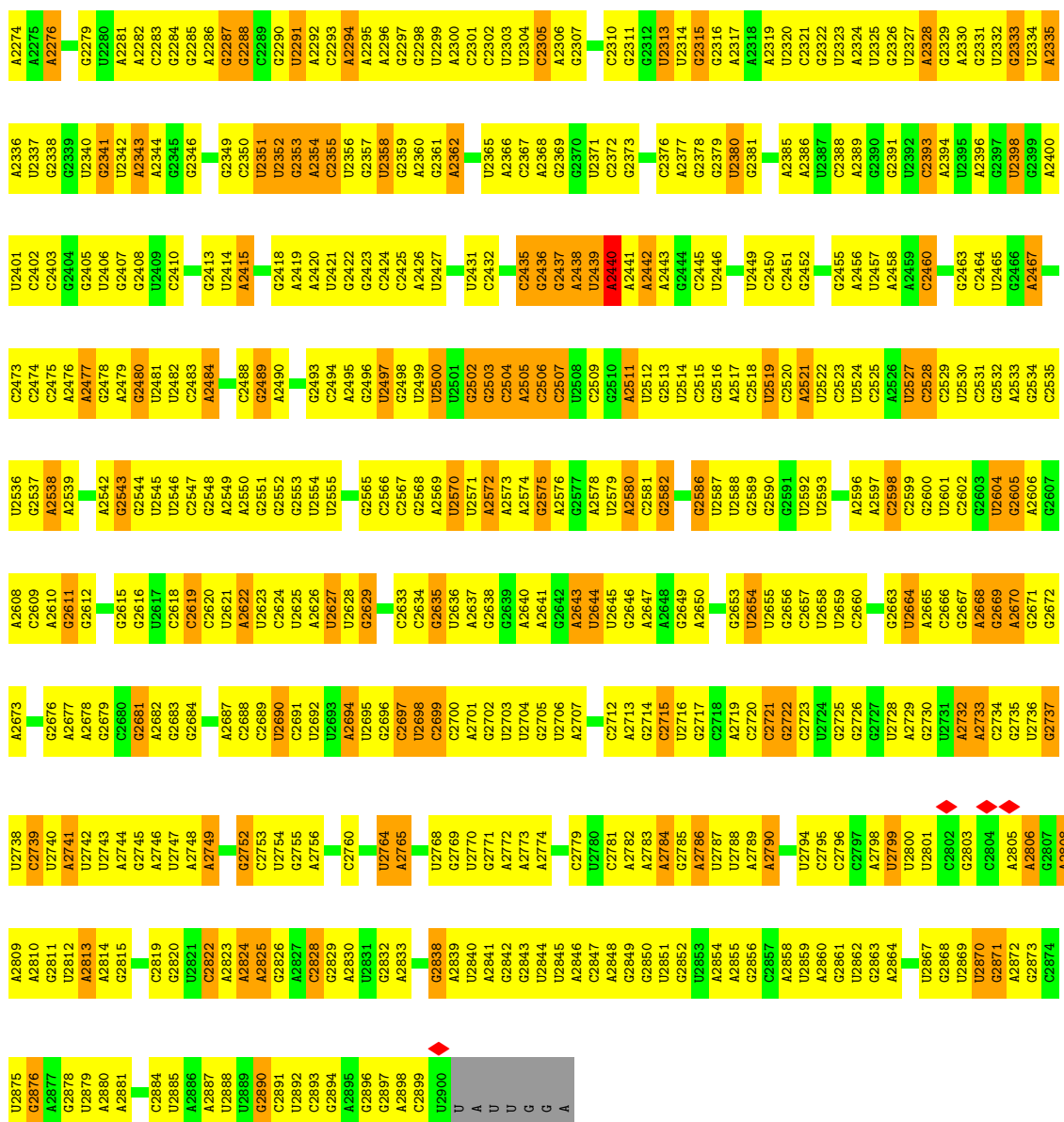


• Molecule 50: 23S ribosomal RNA

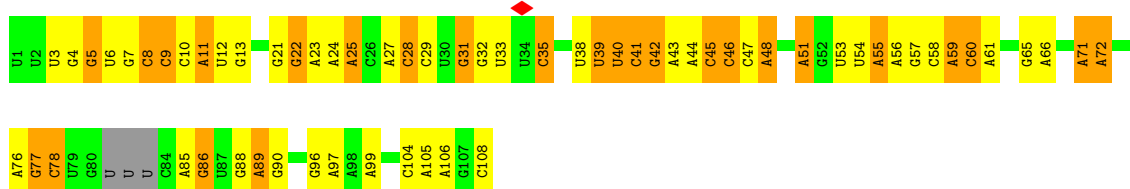




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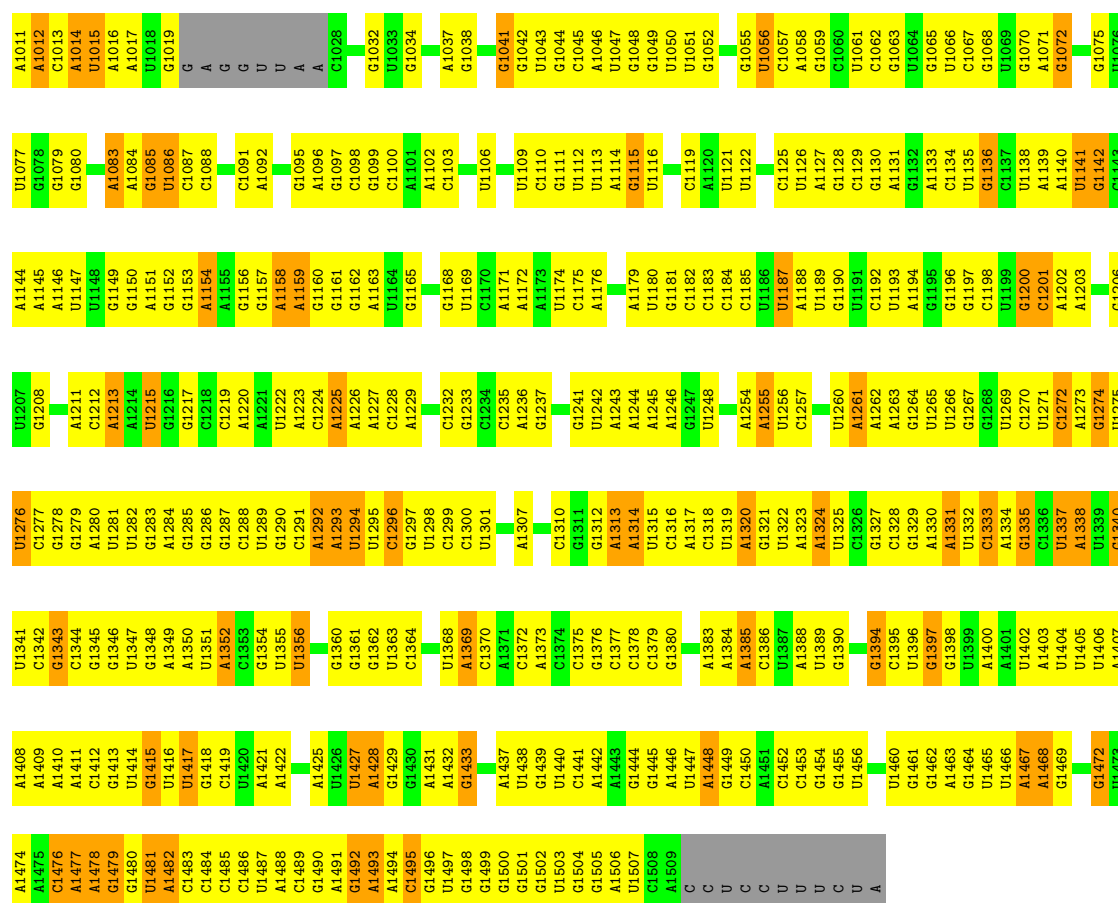
• Molecule 51: 5S ribosomal RNA



• Molecule 52: 16S ribosomal RNA



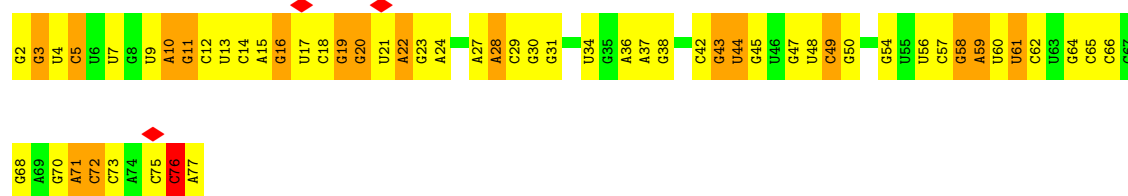
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C802	C803	A804	C805	C806	C807	C808	G809	U810	U811	A812	C813	C814	G815	A818	G819	A820	U821	A822	C823	U824	A825	G826	C827	U828	A829	C830	U831	G832	A833	C834	U835	A836	C837	A838	U839	C840	C841	C842	C843	U844	C845	U848	A849	G850	U851	G852	A859	C860	A861	C862	A863	U864	U865	A866	G867	G868															
U736	U737	A738	U739	G740	C741	C742	A743	U744	U745	A746	C747	U748	G749	G752	U753	U754	U755	A756	C759	U760	U761	G762	A763	A764	U767	U768	U769	G770	U771	G772	U773	A774	U775	C776	A777	A778	U779	A780	A781	G782	U783	A784	U785	U786	A787	G788	U789	U790	A791	C794	U795	U796	U797	U801																	
C610	A611	G612	C613	U614	G615	C616	U617	U618	A619	A620	C621	A622	G623	G626	U627	A628	U629	A630	A631	A632	U633	U634	G635	G636	A637	A638	A639	C640	U641	A642	U643	U644	A645	A646	C647	C648	U649	A650	G653	G654	G655	U656	G657	U658	A659	A660	G661	G662	G663	A664	G665	U668	U669	G670	A671																
C541	G542	C543	A544	A545	G546	C547	G548	U549	U550	A551	U552	C553	C554	G555	G556	A557	A561	U562	G565	G566	C567	G568	U569	A570	A571	A572	C573	C574	A575	A576	C577	C578	G579	C580	G583	G586	A587	U588	U589	G590	A591	A592	A593	A594	G595	U596	C597	U598	G600	U603	U604	A605	A606																		
A471	G472	G473	A474	U475	U476	U477	U481	A482	U483	U488	U489	U490	U491	G492	A493	A494	U495	G498	G500	A501	C502	A503	C504	C505	U506	A507	A508	C509	U510	A511	U512	G513	U514	G515	C516	C517	A518	G519	G522	U523	C524	G525	C526	G527	U528	U529	A530	G461	C531	U532	A533	U536	A537																		
A406	A407	U408	G409	A410	A411	G412	G413	U414	C415	U416	U417	U418	A419	A420	A421	A422	U423	U424	U425	U426	A427	A428	A429	G430	U431	U432	C433	U434	U435	U436	U437	U441	G442	G443	A446	U447	A448	A449	U450	G451	A452	C453	U454	U455	U456	A457	G458	C459	A460	G461	G462	U463	A464	A465	G467																
G343	G346	G347	A348	C349	G350	C351	A352	U353	U354	A355	G356	C357	G358	A359	U361	U362	U363	U364	U365	C366	A367	C368	A369	U370	C371	G372	A373	G374	C375	G376	A377	A378	A379	G380	C381	U382	U383	G384	A385	U386	G387	G388	A392	A393	C390	A391	G395	C396	U397	G398	C399	G400	C402	A403	C404	C405															
A274	A275	U276	G277	A278	U281	G282	U283	G284	G285	A288	U289	G290	C291	G292	A293	A294	G295	A296	A297	G298	A303	U304	A305	G306	C307	C308	A309	G314	G315	G316	A317	C318	U319	G320	A323	C324	A325	C326	G327	G328	C329	U330	C331	A332	U333	A334	C335	U336	C337	C338	U339	A340	G342																		
G206	C207	A208	A209	G210	G211	G212	U213	U214	G215	G216	U217	U218	A219	U220	G223	A224	U225	G226	A227	G228	G229	G230	U231	G232	C233	G234	C235	C236	A239	U240	A242	G243	G247	G250	G251	G252	G253	G254	G255	G256	U257	A258	C259	G260	G261	G262	C263	C264	U265	A266	A269	C273																			
G69	A70	A71	G73	U74	A75	G76	U79	U80	A81	C82	U83	U84	U85	A86	G87	A88	G89	G90	C91	G92	C95	G96	G97	G98	U99	A100	G101	G102	U103	A104	C105	A106	A107	C108	G109	U110	A111	U112	C113	C114	A115	A116	U117	C118	U119	A120	A125	A128	U129	G131	G132	G133	G134																		
U	U	U	U	C6	U6	U7	G8	A9	G10	A11	G12	U13	U14	U15	U18	G19	C20	U21	G22	G23	A27	G28	C29	A30	U31	U32	U33	A34	C35	G36	C37	U38	G39	G40	C41	G42	G43	C44	A45	C48	C49	A52	A56	U57	G58	C59	A60	A61	G62	U63	G64	G65	A66																		



• Molecule 53: tRNA-Phe



• Molecule 53: tRNA-Phe



4 Experimental information

Property	Value	Source
EM reconstruction method	SUBTOMOGRAM AVERAGING	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of subtomograms used	6587	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	1.866	Depositor
Minimum map value	-0.639	Depositor
Average map value	0.025	Depositor
Map value standard deviation	0.126	Depositor
Recommended contour level	0.47	Depositor
Map size (Å)	435.328, 435.328, 435.328	wwPDB
Map dimensions	256, 256, 256	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.7005, 1.7005, 1.7005	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	0	0.15	0/383	0.50	0/504
2	1	0.18	0/484	0.50	0/637
3	2	0.20	0/306	0.46	0/401
4	A	0.18	0/1954	0.50	0/2642
5	B	0.18	0/1721	0.49	1/2323 (0.0%)
6	C	0.15	0/1691	0.47	0/2267
7	D	0.16	0/1188	0.47	0/1593
8	E	0.18	0/1384	0.47	0/1867
9	F	0.19	0/1266	0.50	0/1700
10	G	0.23	0/1126	0.69	0/1517
11	H	0.19	0/1044	0.52	0/1395
12	I	0.15	0/820	0.45	0/1103
13	J	0.54	2/844 (0.2%)	0.79	4/1136 (0.4%)
14	K	0.31	0/1094	0.70	1/1468 (0.1%)
15	L	0.18	0/962	0.53	0/1289
16	M	0.15	0/483	0.45	0/643
17	N	0.16	0/679	0.46	0/907
18	O	0.15	0/659	0.41	0/885
19	P	0.18	0/684	0.46	0/913
20	Q	0.15	0/545	0.50	0/730
21	R	0.14	0/698	0.46	0/936
22	S	0.16	0/631	0.39	0/838
23	T	0.18	0/475	0.52	0/621
24	a	0.17	0/2267	0.49	0/3044
25	b	0.17	0/1795	0.47	0/2412
26	c	0.16	0/1671	0.48	0/2246
27	d	0.17	0/1409	0.50	0/1894
28	e	0.15	0/1420	0.39	0/1912
29	f	0.16	0/1183	0.50	0/1587
30	g	2.16	8/969 (0.8%)	1.26	8/1295 (0.6%)
31	h	0.16	0/968	0.44	0/1298
32	i	0.25	0/1186	0.55	0/1592
33	j	0.18	0/953	0.53	0/1275
34	k	0.21	0/1170	0.56	0/1559

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
35	l	0.18	0/1104	0.56	0/1481
36	m	0.18	0/973	0.50	0/1309
37	n	0.22	0/897	0.59	0/1198
38	o	0.17	0/948	0.49	0/1262
39	p	0.18	0/961	0.48	0/1278
40	q	0.19	0/828	0.55	0/1111
41	r	0.17	0/1077	0.47	0/1441
42	s	0.17	0/732	0.51	0/988
43	t	0.18	0/879	0.49	0/1165
44	u	0.15	0/665	0.50	0/884
45	v	0.17	0/519	0.47	0/695
46	w	0.18	0/826	0.49	0/1104
47	x	0.17	0/353	0.40	0/474
48	y	0.34	0/457	0.76	0/601
49	z	0.22	0/412	0.62	0/547
50	3	0.25	6/69073 (0.0%)	0.25	0/107710
51	4	0.10	0/2505	0.26	0/3902
52	5	0.10	0/35768	0.24	0/55764
53	6	0.67	3/1808 (0.2%)	0.55	8/2817 (0.3%)
53	8	0.67	3/1808 (0.2%)	0.55	8/2817 (0.3%)
All	All	0.28	22/158705 (0.0%)	0.36	30/236977 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
10	G	0	1
24	a	0	1
30	g	0	1
44	u	0	1
All	All	0	4

All (22) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
30	g	112	TYR	CD1-CE1	33.77	2.40	1.38
30	g	112	TYR	CD2-CE2	27.95	2.22	1.38
50	3	2440	A	C5-C6	27.28	1.95	1.41
50	3	2440	A	C2-N3	25.90	1.85	1.33
50	3	2440	A	N3-C4	25.78	1.86	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
50	3	2440	A	C6-N1	25.43	1.86	1.35
53	8	76	C	C1'-N1	24.11	1.84	1.48
53	6	76	C	C1'-N1	23.96	1.84	1.48
30	g	112	TYR	CE1-CZ	23.25	1.94	1.38
50	3	2440	A	N1-C2	23.00	1.80	1.34
30	g	115	ASN	N-CA	21.45	1.73	1.46
30	g	112	TYR	CE2-CZ	21.24	1.89	1.38
50	3	2440	A	C5-C4	20.84	1.80	1.38
30	g	112	TYR	CG-CD2	18.72	1.78	1.39
30	g	112	TYR	CG-CD1	18.54	1.78	1.39
30	g	114	ASP	C-N	17.13	1.57	1.33
13	J	110	PRO	CG-CD	-11.76	1.10	1.50
53	8	76	C	N1-C2	10.52	1.61	1.40
53	6	76	C	N1-C2	10.50	1.61	1.40
53	6	76	C	N1-C6	8.19	1.53	1.37
53	8	76	C	N1-C6	8.19	1.53	1.37
13	J	110	PRO	N-CD	6.83	1.57	1.47

All (30) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
30	g	114	ASP	CA-C-N	23.26	165.97	121.54
30	g	114	ASP	C-N-CA	23.26	165.97	121.54
13	J	110	PRO	N-CD-CG	-14.43	81.55	103.20
53	6	76	C	C6-N1-C2	-12.71	82.08	120.20
53	8	76	C	C6-N1-C2	-12.70	82.09	120.20
13	J	110	PRO	CA-N-CD	-11.11	96.45	112.00
53	6	76	C	N1-C1'-C2'	10.17	127.26	112.00
53	8	76	C	N1-C1'-C2'	10.15	127.23	112.00
30	g	115	ASN	N-CA-CB	9.69	126.86	110.49
53	6	76	C	C5-C6-N1	9.64	149.92	121.00
53	8	76	C	C5-C6-N1	9.63	149.90	121.00
30	g	115	ASN	CB-CA-C	-8.28	93.94	110.42
13	J	110	PRO	CA-CB-CG	-8.19	88.95	104.50
30	g	114	ASP	CA-C-O	-8.16	108.84	120.51
53	6	76	C	N3-C2-O2	-8.09	97.64	121.90
53	8	76	C	N3-C2-O2	-8.08	97.67	121.90
53	6	76	C	C2-N1-C1'	7.13	140.19	118.80
53	8	76	C	C2-N1-C1'	7.12	140.17	118.80
14	K	117	THR	CB-CA-C	7.12	123.08	111.05
30	g	115	ASN	CA-CB-CG	6.49	119.08	112.60
30	g	115	ASN	N-CA-C	6.33	124.27	110.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
53	6	76	C	O4'-C1'-N1	6.13	117.70	108.50
53	8	76	C	O4'-C1'-N1	6.10	117.64	108.50
53	8	76	C	C6-N1-C1'	5.56	137.49	120.80
53	6	76	C	C6-N1-C1'	5.56	137.49	120.80
13	J	110	PRO	N-CA-CB	-5.42	97.56	103.25
5	B	165	ILE	N-CA-C	-5.28	107.98	113.10
30	g	44	LEU	N-CA-C	-5.09	106.91	112.72
53	6	76	C	N1-C2-N3	5.05	134.34	119.20
53	8	76	C	N1-C2-N3	5.04	134.33	119.20

There are no chirality outliers.

All (4) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
10	G	108	LEU	Peptide
24	a	247	SER	Peptide
30	g	112	TYR	Peptide
44	u	24	THR	Peptide

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	0	380	0	429	20	0
2	1	477	0	530	31	0
3	2	304	0	350	10	0
4	A	1921	0	1973	79	0
5	B	1698	0	1768	53	0
6	C	1660	0	1719	74	0
7	D	1173	0	1267	51	0
8	E	1362	0	1377	69	0
9	F	1246	0	1308	45	0
10	G	1110	0	1226	64	0
11	H	1028	0	1094	33	0
12	I	809	0	894	41	0
13	J	829	0	855	36	0
14	K	1076	0	1170	57	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
15	L	951	0	1014	43	0
16	M	474	0	509	26	0
17	N	673	0	730	23	0
18	O	646	0	677	22	0
19	P	675	0	728	31	0
20	Q	535	0	562	22	0
21	R	682	0	691	25	0
22	S	629	0	681	31	0
23	T	471	0	522	17	0
24	a	2225	0	2301	81	0
25	b	1762	0	1808	65	0
26	c	1644	0	1731	52	0
27	d	1388	0	1469	72	0
28	e	1396	0	1481	41	0
29	f	1160	0	1172	43	0
30	g	960	0	1014	83	0
31	h	959	0	1039	30	0
32	i	1164	0	1192	62	0
33	j	944	0	1019	38	0
34	k	1153	0	1256	50	0
35	l	1079	0	1134	52	0
36	m	958	0	1011	66	0
37	n	889	0	952	37	0
38	o	938	0	1008	35	0
39	p	947	0	1028	55	0
40	q	811	0	858	41	0
41	r	1068	0	1150	35	0
42	s	720	0	803	27	0
43	t	872	0	972	40	0
44	u	657	0	695	17	0
45	v	513	0	560	31	0
46	w	818	0	870	34	0
47	x	344	0	333	19	0
48	y	452	0	472	30	0
49	z	408	0	440	16	0
50	3	61664	0	30954	1959	0
51	4	2239	0	1137	52	0
52	5	31943	0	16058	1044	0
53	6	1618	0	821	38	0
53	8	1618	0	821	74	0
All	All	146120	0	99633	4618	0

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

hydrogen atoms). The all-atom clashscore for this structure is 20.

All (4618) 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)
30:g:112:TYR:CG	30:g:112:TYR:CD1	1.78	1.71
30:g:112:TYR:CG	30:g:112:TYR:CD2	1.78	1.66
30:g:112:TYR:CZ	30:g:112:TYR:CE2	1.89	1.58
50:3:2440:A:C5	53:8:76:C:HI'	1.36	1.56
30:g:112:TYR:CZ	30:g:112:TYR:CE1	1.94	1.55
50:3:2440:A:C5	50:3:2440:A:C6	1.95	1.54
50:3:2440:A:C2	50:3:2440:A:N1	1.80	1.49
30:g:115:ASN:N	30:g:115:ASN:CA	1.73	1.47
50:3:2440:A:C5	50:3:2440:A:C4	1.80	1.45
50:3:2440:A:C6	50:3:2440:A:N1	1.86	1.43
50:3:2440:A:C2	50:3:2440:A:N3	1.85	1.42
50:3:2440:A:C4	50:3:2440:A:N3	1.86	1.40
53:6:76:C:N1	53:6:76:C:CI'	1.84	1.40
53:8:76:C:N1	53:8:76:C:CI'	1.84	1.38
50:3:2440:A:C6	53:8:76:C:N1	1.94	1.35
50:3:2440:A:C4	53:8:76:C:N1	1.95	1.34
30:g:112:TYR:CD1	30:g:115:ASN:N	1.94	1.33
30:g:112:TYR:CD2	30:g:115:ASN:N	1.98	1.30
50:3:2440:A:C5	53:8:76:C:N1	1.98	1.30
50:3:2440:A:C6	53:8:76:C:C2	2.19	1.30
50:3:2440:A:C5	53:8:76:C:CI'	2.14	1.30
50:3:2440:A:C2	53:8:76:C:C6	2.19	1.29
30:g:112:TYR:CE1	30:g:115:ASN:N	2.01	1.28
50:3:2440:A:N3	53:8:76:C:C6	2.01	1.28
30:g:112:TYR:CD2	30:g:112:TYR:CE2	2.22	1.27
50:3:2440:A:C6	53:8:76:C:CI'	2.16	1.27
30:g:112:TYR:CE2	30:g:115:ASN:N	2.02	1.26
50:3:2440:A:C2	53:8:76:C:N1	2.05	1.25
30:g:112:TYR:CZ	30:g:115:ASN:N	2.05	1.24
50:3:2440:A:C4	53:8:76:C:CI'	2.20	1.24
30:g:112:TYR:CG	30:g:115:ASN:N	2.05	1.24
50:3:2440:A:N1	53:8:76:C:N1	1.85	1.23
50:3:2440:A:C5	53:8:76:C:C2	2.29	1.20
50:3:2440:A:C6	53:8:76:C:HI'	1.74	1.18
30:g:112:TYR:CZ	30:g:114:ASP:C	2.27	1.13
50:3:2440:A:C2	53:8:76:C:CI'	2.31	1.13
30:g:112:TYR:CE1	30:g:114:ASP:C	2.27	1.12
50:3:2440:A:N3	53:8:76:C:N1	1.98	1.11

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:g:112:TYR:CD1	30:g:112:TYR:CE1	2.40	1.10
50:3:341:G:N2	50:3:364:A:H61	1.52	1.06
52:5:661:G:H1	52:5:738:A:N6	1.52	1.05
25:b:185:ASP:O	25:b:189:MET:HA	1.58	1.03
50:3:1508:G:H21	50:3:1534:A:N6	1.56	1.03
50:3:2440:A:N1	53:8:76:C:C1'	2.22	1.02
50:3:2440:A:N3	53:8:76:C:C1'	2.22	1.01
30:g:112:TYR:CE1	30:g:114:ASP:O	2.14	1.00
50:3:1940:G:H1	50:3:1974:U:H3	1.09	0.99
27:d:132:ILE:O	27:d:151:GLY:HA3	1.63	0.98
50:3:341:G:H21	50:3:364:A:N6	1.59	0.98
52:5:499:U:H3	52:5:542:G:H1	1.06	0.98
50:3:358:A:N6	50:3:372:G:H21	1.60	0.98
50:3:2440:A:C6	53:8:76:C:O2	2.17	0.97
52:5:317:A:H61	52:5:328:G:H1	1.10	0.97
52:5:603:U:H3	52:5:630:G:H1	1.08	0.97
50:3:358:A:H62	50:3:372:G:N2	1.63	0.96
49:z:5:ARG:HH12	49:z:25:VAL:HG12	1.28	0.96
52:5:253:G:H1	52:5:265:U:H3	1.02	0.96
24:a:179:TYR:HA	24:a:192:PHE:O	1.66	0.96
30:g:115:ASN:N	30:g:115:ASN:HA	1.79	0.96
50:3:2736:U:HO2'	50:3:2737:G:H8	0.96	0.96
50:3:2440:A:N3	53:8:76:C:H6	1.46	0.95
50:3:569:U:H3	50:3:592:G:H1	1.12	0.95
30:g:112:TYR:CD2	30:g:115:ASN:HA	2.01	0.95
50:3:1071:G:H1	50:3:1154:U:H3	1.13	0.95
50:3:1244:A:H62	50:3:1265:G:N2	1.65	0.95
52:5:1106:U:H3	52:5:1160:G:H1	1.05	0.95
50:3:730:G:H1	50:3:802:U:H3	1.04	0.95
30:g:112:TYR:CD1	30:g:114:ASP:C	2.44	0.94
4:A:95:LEU:HB3	4:A:229:MET:HE3	1.49	0.94
50:3:1858:U:H3	50:3:1898:G:H1	1.10	0.94
45:v:18:ARG:HD2	45:v:22:LYS:HG2	1.47	0.94
50:3:2440:A:N3	53:8:76:C:O4'	2.01	0.94
50:3:1310:U:H3	50:3:1314:A:H62	1.04	0.93
50:3:1509:U:H3	50:3:1530:G:H1	1.17	0.93
50:3:1200:U:H3	50:3:1215:G:H1	1.13	0.93
50:3:2440:A:C2	53:8:76:C:H6	1.84	0.93
50:3:2088:U:H3	50:3:2247:G:H1	1.01	0.92
50:3:80:U:H3	50:3:109:G:H1	0.93	0.92
50:3:1508:G:H21	50:3:1534:A:H61	1.01	0.92

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2749:A:H62	50:3:2771:G:H21	1.16	0.92
52:5:590:G:H1	52:5:644:U:H3	0.94	0.92
50:3:1244:A:H62	50:3:1265:G:H21	0.93	0.92
50:3:133:G:H1	50:3:150:U:H3	1.02	0.92
50:3:625:G:H1	50:3:700:U:H3	1.18	0.92
50:3:418:G:H1	50:3:430:U:H3	1.02	0.92
52:5:580:C:H42	52:5:756:A:H62	1.18	0.92
52:5:1325:U:H3	52:5:1346:G:H1	0.93	0.91
52:5:406:G:H21	52:5:429:A:H62	1.17	0.91
50:3:2440:A:C6	53:8:76:C:C2'	2.53	0.91
52:5:1112:U:H3	52:5:1128:G:H1	0.92	0.91
52:5:1217:G:H1	52:5:1269:U:H3	1.13	0.91
52:5:1388:A:H2	52:5:1462:G:H1	0.96	0.90
30:g:112:TYR:CE2	30:g:114:ASP:C	2.49	0.90
50:3:1245:G:H1	50:3:1264:U:H3	0.91	0.90
50:3:2143:G:H1	50:3:2162:U:H3	0.93	0.90
52:5:1287:G:H1	52:5:1298:U:H3	1.20	0.90
50:3:161:U:H3	50:3:171:G:H1	1.19	0.89
52:5:242:A:N6	52:5:277:G:C2	2.41	0.89
50:3:17:G:H1	50:3:560:U:H3	1.20	0.89
50:3:1244:A:N6	50:3:1265:G:H21	1.70	0.89
52:5:406:G:N2	52:5:429:A:H62	1.71	0.89
48:y:35:LYS:HZ1	48:y:45:CYS:HB2	1.36	0.88
50:3:2440:A:C4	53:8:76:C:C6	2.60	0.88
50:3:14:U:H3	50:3:561:A:H62	1.17	0.88
27:d:38:MET:O	27:d:86:GLY:HA3	1.74	0.88
52:5:599:G:H1	52:5:634:U:H3	0.89	0.88
32:i:95:MET:HE3	32:i:100:SER:HA	1.56	0.87
50:3:2440:A:N1	53:8:76:C:C2'	2.37	0.87
50:3:2440:A:C4	53:8:76:C:O4'	2.27	0.87
50:3:633:G:H1	50:3:692:U:H3	1.20	0.87
50:3:2440:A:N1	53:8:76:C:H2'	1.90	0.87
52:5:317:A:N6	52:5:328:G:H1	1.72	0.86
52:5:1237:G:H1	52:5:1248:U:H3	1.22	0.86
50:3:1494:U:H3	50:3:1550:G:H1	1.22	0.85
19:P:53:VAL:HG21	19:P:77:ILE:HG21	1.58	0.85
50:3:2516:G:H1	50:3:2588:U:H3	1.21	0.85
50:3:1841:U:H5''	50:3:1842:G:H5'	1.59	0.85
52:5:117:U:HO2'	52:5:258:A:HO2'	1.22	0.85
52:5:365:U:H3	52:5:388:G:H1	0.85	0.84
50:3:164:A:H62	50:3:168:A:H61	1.21	0.84

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:N:33:ILE:HD11	17:N:56:LYS:HB2	1.60	0.84
50:3:1418:U:C2	50:3:1423:A:N6	2.45	0.84
50:3:358:A:H62	50:3:372:G:H21	1.14	0.84
52:5:1136:G:N1	52:5:1151:A:C2	2.44	0.84
52:5:169:G:N2	52:5:219:A:O2'	2.11	0.83
50:3:2035:U:H3	50:3:2040:A:H62	1.24	0.83
50:3:2075:U:H3	50:3:2438:A:H62	1.22	0.83
50:3:29:G:H1	50:3:547:G:HO2'	1.25	0.83
52:5:1406:U:H3	52:5:1444:G:H1	0.84	0.83
50:3:1772:G:H1	50:3:1994:U:H3	1.24	0.83
50:3:2059:G:H1	50:3:2625:U:H3	1.26	0.83
52:5:600:G:H1	52:5:633:U:H3	1.23	0.82
30:g:112:TYR:CE1	30:g:115:ASN:CA	2.62	0.82
48:y:5:GLN:HE22	50:3:2061:A:H2'	1.42	0.82
50:3:2440:A:C4	53:8:76:C:H1'	2.12	0.82
32:i:95:MET:HE2	32:i:103:LEU:HD23	1.62	0.82
50:3:421:A:N6	50:3:424:G:OP2	2.12	0.82
19:P:29:ARG:HH21	19:P:40:VAL:HG13	1.42	0.82
50:3:990:G:H1	50:3:999:U:H3	1.27	0.82
50:3:164:A:H62	50:3:168:A:N6	1.78	0.81
50:3:1504:G:H1	50:3:1539:U:H3	1.27	0.81
50:3:1937:G:HO2'	50:3:1975:G:H1	1.23	0.81
50:3:2465:U:H3	50:3:2502:G:H1	1.28	0.81
9:F:48:LEU:HD11	9:F:116:LEU:HB3	1.62	0.81
50:3:904:C:H42	50:3:949:C:H1'	1.46	0.81
50:3:1020:G:H5''	50:3:1021:C:H5	1.43	0.81
50:3:2534:G:H1	50:3:2545:U:H3	1.29	0.81
50:3:1093:U:H3	50:3:1115:G:H1	1.25	0.81
53:6:23:G:N7	53:6:47:G:N2	2.29	0.81
4:A:98:ASN:OD1	4:A:101:LYS:NZ	2.14	0.80
50:3:341:G:H21	50:3:364:A:H61	0.81	0.80
52:5:1405:U:H3	52:5:1445:G:H1	1.26	0.80
52:5:710:G:H2'	52:5:711:G:H8	1.45	0.80
39:p:94:LEU:HD13	40:q:4:ILE:HD12	1.63	0.80
50:3:2299:U:H3	50:3:2349:G:H1	1.26	0.80
33:j:22:ILE:HG23	33:j:23:LYS:HD2	1.62	0.80
30:g:112:TYR:CD1	30:g:115:ASN:CA	2.65	0.79
43:t:2:GLN:NE2	50:3:87:G:OP1	2.15	0.79
50:3:2105:G:H2'	50:3:2106:G:H8	1.47	0.79
50:3:1392:G:N2	50:3:1395:A:OP2	2.15	0.79
50:3:1508:G:N2	50:3:1534:A:H61	1.78	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:167:VAL:HG23	6:C:178:TYR:HA	1.63	0.79
50:3:1095:U:O4	50:3:1123:A:N6	2.15	0.79
53:8:23:G:N7	53:8:47:G:N2	2.29	0.79
50:3:1474:C:O2	50:3:1491:G:N2	2.12	0.79
50:3:1027:U:H3	50:3:1198:G:H1	0.84	0.79
7:D:150:LEU:HD23	52:5:8:G:H1	1.47	0.78
31:h:20:LYS:HA	31:h:32:MET:HE1	1.65	0.78
50:3:1418:U:N3	50:3:1423:A:N6	2.31	0.78
48:y:35:LYS:NZ	48:y:45:CYS:HB2	1.99	0.78
50:3:325:G:H1	50:3:383:U:H3	1.28	0.78
31:h:130:GLN:HG3	31:h:131:MET:HE2	1.65	0.78
30:g:38:THR:HG21	31:h:113:ASN:HD22	1.47	0.78
52:5:1142:G:N2	52:5:1145:A:OP2	2.16	0.78
50:3:2441:A:N7	53:8:76:C:N4	2.30	0.78
6:C:104:MET:HE1	6:C:167:VAL:HG21	1.66	0.78
27:d:33:LYS:HE3	27:d:92:ARG:HH21	1.48	0.78
49:z:31:LYS:HZ3	49:z:49:GLU:H	1.31	0.78
52:5:826:G:H1	52:5:851:U:H3	1.30	0.77
10:G:56:ASN:OD1	10:G:58:GLN:NE2	2.16	0.77
50:3:1919:A:N6	50:3:1924:U:N3	2.33	0.77
50:3:297:G:H1	50:3:440:C:H5	1.30	0.77
50:3:2440:A:C5	53:8:76:C:O2	2.37	0.77
50:3:1871:U:H3	50:3:1885:G:H1	1.30	0.77
50:3:2749:A:H62	50:3:2771:G:N2	1.82	0.77
52:5:1325:U:O2	52:5:1346:G:N2	2.16	0.77
30:g:112:TYR:CD1	30:g:116:ARG:N	2.53	0.77
50:3:1104:A:H5'	50:3:1131:A:H4'	1.65	0.77
50:3:1252:C:O2	50:3:1257:G:N2	2.17	0.77
27:d:171:ARG:NH1	27:d:175:LEU:O	2.18	0.77
50:3:1294:G:N2	50:3:2023:U:O4	2.17	0.77
10:G:92:LYS:HB2	10:G:95:LEU:HB3	1.68	0.76
43:t:28:MET:HB2	43:t:33:GLN:HB2	1.68	0.76
52:5:579:G:N2	52:5:756:A:OP2	2.17	0.76
52:5:1228:C:H2'	52:5:1229:A:H8	1.49	0.76
52:5:1312:G:O2'	53:8:42:C:O2'	2.02	0.76
30:g:112:TYR:CZ	30:g:115:ASN:CG	2.64	0.76
50:3:605:A:H61	50:3:2036:G:H21	1.32	0.76
2:1:42:ARG:HH21	50:3:2426:A:H5''	1.50	0.76
53:8:76:C:H1'	53:8:76:C:N1	1.97	0.76
27:d:69:LYS:HA	27:d:84:LEU:HA	1.67	0.75
29:f:95:LYS:O	29:f:99:ASN:ND2	2.17	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:p:106:ASN:O	39:p:110:GLN:NE2	2.18	0.75
37:n:7:GLN:HE22	37:n:11:ARG:HD3	1.50	0.75
53:6:76:C:N1	53:6:76:C:H1'	1.97	0.75
6:C:132:PRO:HD2	52:5:399:C:H5''	1.68	0.75
30:g:115:ASN:CA	30:g:115:ASN:H	1.98	0.75
42:s:51:LYS:NZ	50:3:1630:A:OP1	2.19	0.75
10:G:14:PRO:HB2	10:G:41:LYS:HG3	1.69	0.75
50:3:2253:U:H5''	50:3:2254:G:H5''	1.67	0.75
50:3:2667:G:N2	50:3:2670:A:OP2	2.17	0.75
52:5:372:G:H1	52:5:383:U:H3	1.34	0.75
52:5:834:G:H2'	52:5:835:G:C8	2.22	0.75
26:c:174:ASN:ND2	50:3:354:C:N3	2.35	0.75
32:i:67:LEU:HD21	32:i:71:LYS:HB2	1.66	0.75
50:3:2697:C:OP2	50:3:2699:C:N4	2.20	0.75
25:b:50:THR:O	25:b:83:GLU:HA	1.87	0.75
50:3:742:G:H1	50:3:759:U:H3	0.82	0.75
14:K:67:LYS:HE3	14:K:75:GLU:HG3	1.69	0.74
50:3:886:U:H3	50:3:964:A:H61	1.35	0.74
50:3:1529:U:H2'	50:3:1530:G:H8	1.52	0.74
52:5:257:U:N3	52:5:259:A:C8	2.55	0.74
50:3:900:G:H21	50:3:903:A:H61	1.34	0.74
50:3:2310:C:O2	50:3:2322:G:N2	2.14	0.74
9:F:125:ASP:OD2	9:F:130:THR:OG1	2.05	0.74
50:3:1932:C:H42	50:3:1936:G:H22	1.35	0.74
4:A:130:LEU:HD12	4:A:159:LEU:HB3	1.69	0.74
14:K:93:THR:HG22	14:K:94:LEU:H	1.53	0.74
31:h:104:ILE:HD12	31:h:124:VAL:HG11	1.69	0.74
52:5:1388:A:C2	52:5:1462:G:N1	2.50	0.74
52:5:1394:G:H1	52:5:1456:U:H3	1.34	0.74
50:3:2752:G:H1	50:3:2768:U:H3	1.34	0.74
52:5:257:U:O2	52:5:259:A:N7	2.20	0.74
52:5:1390:G:H1	52:5:1460:U:H3	0.78	0.74
50:3:1422:U:H4'	50:3:1637:A:H4'	1.68	0.74
50:3:2075:U:O4	50:3:2438:A:N7	2.20	0.74
52:5:1388:A:H2	52:5:1462:G:N1	1.80	0.74
49:z:43:LYS:NZ	49:z:44:VAL:O	2.20	0.74
50:3:1814:G:N2	50:3:1817:A:OP2	2.21	0.74
50:3:625:G:N2	50:3:700:U:O2	2.12	0.73
1:0:9:LYS:HG2	50:3:1337:G:H5''	1.70	0.73
46:w:11:SER:HB3	46:w:15:LEU:HD13	1.70	0.73
2:1:12:LYS:NZ	50:3:667:A:OP2	2.21	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1292:A:H61	50:3:2024:C:H42	1.37	0.73
50:3:931:G:H2'	50:3:932:U:H4'	1.69	0.73
52:5:98:G:N3	52:5:349:A:O2'	2.21	0.73
52:5:1487:U:H3	52:5:1498:G:H1	1.33	0.73
7:D:139:GLU:HA	7:D:151:LEU:O	1.88	0.73
45:v:18:ARG:NH2	50:3:419:A:OP1	2.21	0.73
50:3:2498:G:N2	50:3:2500:U:O4	2.18	0.73
8:E:49:ILE:HD13	8:E:83:LEU:HB3	1.69	0.73
50:3:1262:G:H2'	50:3:1263:G:C8	2.24	0.73
50:3:2092:U:H3	50:3:2242:G:H1	1.34	0.73
27:d:35:VAL:HG12	27:d:155:THR:HG22	1.70	0.73
50:3:1775:G:H1	50:3:1991:U:H3	1.34	0.73
50:3:2096:U:H3	50:3:2238:G:H1	1.36	0.73
52:5:1274:G:H4'	52:5:1275:U:H5'	1.71	0.73
14:K:127:ARG:HD2	52:5:499:U:H5''	1.70	0.73
30:g:112:TYR:CG	30:g:115:ASN:HA	2.24	0.73
50:3:2572:A:N6	50:3:2655:U:HO2'	1.87	0.72
52:5:570:A:HO2'	52:5:911:G:HO2'	1.36	0.72
50:3:2413:G:O2'	50:3:2419:A:N6	2.22	0.72
32:i:100:SER:H	32:i:129:LYS:HD3	1.52	0.72
52:5:1313:A:O2'	53:8:31:G:N2	2.22	0.72
24:a:179:TYR:HB3	24:a:191:LYS:HB3	1.69	0.72
50:3:539:U:H4'	50:3:540:A:H5'	1.69	0.72
28:e:108:LEU:HB3	28:e:110:LEU:HD23	1.71	0.72
48:y:32:LYS:HE3	48:y:50:ASP:HB3	1.72	0.72
4:A:26:MET:HB2	4:A:58:LEU:HD13	1.71	0.72
15:L:107:ARG:HH12	52:5:943:C:H41	1.35	0.72
28:e:90:LEU:HD12	28:e:165:VAL:HG12	1.72	0.72
52:5:111:A:OP1	52:5:603:U:O2'	2.06	0.72
27:d:24:SER:OG	27:d:26:MET:SD	2.48	0.72
50:3:499:G:N2	50:3:502:A:OP2	2.19	0.72
35:l:118:LEU:HD23	35:l:131:ILE:HD12	1.72	0.72
14:K:81:PRO:HD3	14:K:110:ILE:HB	1.71	0.72
50:3:86:A:OP2	50:3:103:G:N2	2.22	0.72
28:e:110:LEU:HB3	28:e:155:ARG:HH21	1.55	0.71
52:5:580:C:N4	52:5:756:A:H62	1.87	0.71
52:5:661:G:H1	52:5:738:A:H61	0.76	0.71
26:c:128:VAL:HG13	26:c:132:LEU:HD21	1.72	0.71
50:3:1123:A:H4'	50:3:1124:G:H5''	1.72	0.71
52:5:831:C:H2'	52:5:832:G:H8	1.55	0.71
13:J:114:CYS:SG	52:5:711:G:N2	2.62	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:163:A:H62	50:3:169:U:H3	1.37	0.71
52:5:331:C:O2'	52:5:1408:A:N3	2.24	0.71
18:O:2:ARG:N	18:O:23:ASP:OD2	2.23	0.71
52:5:1388:A:N1	52:5:1462:G:O6	2.23	0.71
52:5:655:G:O6	52:5:744:U:C2	2.44	0.71
9:F:24:ARG:HE	9:F:100:LEU:HD22	1.55	0.71
24:a:225:ARG:NH2	50:3:816:A:OP1	2.24	0.71
50:3:1252:C:N3	50:3:1257:G:N1	2.32	0.71
50:3:1494:U:O2	50:3:1550:G:N2	2.22	0.71
50:3:2258:G:O2'	50:3:2504:C:OP1	2.09	0.71
24:a:228:VAL:HG11	24:a:233:MET:HE3	1.73	0.71
31:h:130:GLN:HE21	50:3:1097:G:H21	1.39	0.71
52:5:733:A:H2'	52:5:734:A:H8	1.55	0.71
3:2:1:MET:SD	50:3:2534:G:O2'	2.49	0.71
10:G:23:ASN:HA	10:G:26:ARG:NH2	2.05	0.71
50:3:61:U:H3	50:3:70:G:H1	1.39	0.71
50:3:137:U:H3	50:3:146:G:H1	1.39	0.71
50:3:1807:C:N3	50:3:1825:U:O2	2.23	0.70
14:K:133:LYS:HD3	52:5:37:C:H5''	1.71	0.70
32:i:3:LYS:N	50:3:1030:U:HO2'	1.88	0.70
50:3:192:U:H3	50:3:212:G:H1	1.39	0.70
19:P:68:PRO:O	52:5:260:C:O2'	2.10	0.70
20:Q:81:MET:SD	20:Q:84:ARG:NH1	2.63	0.70
50:3:1273:U:H2'	50:3:1274:A:H8	1.56	0.70
52:5:598:U:H3	52:5:635:G:H1	1.38	0.70
30:g:112:TYR:CD2	30:g:114:ASP:HA	2.26	0.70
50:3:784:A:H61	50:3:788:G:H21	1.39	0.70
6:C:143:ARG:HG3	6:C:175:GLU:HG2	1.73	0.70
11:H:103:LYS:HB3	11:H:105:LEU:HD23	1.73	0.70
14:K:124:ARG:O	14:K:127:ARG:NH1	2.24	0.70
25:b:64:LYS:HD3	50:3:2814:A:H5''	1.74	0.70
30:g:112:TYR:CD2	30:g:114:ASP:C	2.70	0.70
38:o:7:GLN:HG2	50:3:2879:U:H4'	1.74	0.70
50:3:714:G:H2'	50:3:715:G:C8	2.27	0.70
50:3:1999:G:N2	50:3:2003:C:O2	2.25	0.70
52:5:21:U:O2'	52:5:571:A:N1	2.24	0.70
26:c:113:HIS:HA	26:c:116:TRP:CD1	2.26	0.70
48:y:16:ARG:NH2	50:3:1294:G:OP1	2.25	0.70
50:3:1994:U:H2'	50:3:1995:G:H8	1.57	0.70
50:3:2307:G:H1	50:3:2325:U:H3	1.38	0.70
52:5:474:G:H2'	52:5:475:U:C6	2.27	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:P:71:ALA:HB2	52:5:262:G:H3'	1.74	0.69
50:3:383:U:H2'	50:3:384:G:H8	1.56	0.69
50:3:1262:G:H2'	50:3:1263:G:H8	1.56	0.69
50:3:1801:U:H3	50:3:1832:G:H1	1.39	0.69
35:l:62:GLY:HA2	35:l:107:ALA:O	1.92	0.69
50:3:86:A:N6	50:3:101:C:O4'	2.25	0.69
50:3:1536:C:H2'	50:3:1537:A:C8	2.27	0.69
50:3:2328:A:O2'	50:3:2341:G:N2	2.24	0.69
50:3:2849:G:H2'	50:3:2850:G:H8	1.57	0.69
50:3:1275:C:H2'	50:3:1276:A:C8	2.27	0.69
34:k:133:LYS:NZ	50:3:672:G:OP1	2.24	0.69
39:p:54:ARG:HH12	50:3:1013:G:H5'	1.57	0.69
50:3:1310:U:O4	50:3:1314:A:N7	2.26	0.69
4:A:32:MET:HG3	4:A:33:VAL:H	1.58	0.69
12:I:30:LYS:HB3	12:I:96:ILE:HD11	1.74	0.69
33:j:104:ARG:HG2	33:j:121:VAL:HG12	1.74	0.69
50:3:1296:G:HO2'	50:3:2019:G:H1	1.38	0.69
52:5:354:U:H2'	52:5:355:A:H8	1.57	0.69
52:5:1413:G:H1	52:5:1438:U:H3	1.40	0.69
50:3:223:A:N6	50:3:464:A:OP2	2.26	0.69
52:5:442:G:H2'	52:5:443:G:H8	1.58	0.69
30:g:112:TYR:CG	30:g:114:ASP:C	2.70	0.69
30:g:112:TYR:CD2	30:g:115:ASN:CA	2.75	0.69
32:i:72:LYS:HB3	32:i:93:ARG:HB3	1.72	0.69
32:i:77:TRP:NE1	50:3:1174:G:OP1	2.24	0.69
41:r:98:LYS:NZ	50:3:2018:U:O2'	2.25	0.69
52:5:941:A:O2'	52:5:1307:A:N3	2.23	0.69
18:O:37:LEU:HD23	18:O:39:GLU:H	1.58	0.69
27:d:77:TYR:O	27:d:80:ARG:NH2	2.25	0.69
42:s:18:PHE:HA	42:s:21:MET:HE3	1.75	0.69
43:t:105:LYS:NZ	50:3:333:A:OP1	2.24	0.69
50:3:954:A:H5''	50:3:2276:A:H61	1.58	0.69
52:5:1222:U:O2	52:5:1264:G:O6	2.11	0.69
24:a:282:ARG:NH2	50:3:1826:A:N1	2.40	0.69
52:5:376:G:O2'	52:5:378:A:N6	2.26	0.69
12:I:61:PRO:HA	16:M:41:ARG:HH12	1.58	0.68
17:N:22:ILE:HD11	17:N:63:LEU:HB3	1.75	0.68
25:b:27:THR:HG21	25:b:197:ILE:HG12	1.75	0.68
36:m:94:PRO:O	50:3:2843:G:N2	2.26	0.68
41:r:11:ARG:NH1	50:3:1355:C:OP1	2.25	0.68
50:3:2436:G:H5''	50:3:2437:G:H5'	1.74	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:368:C:N4	52:5:384:G:OP2	2.26	0.68
36:m:50:THR:HG21	50:3:2844:U:H5''	1.74	0.68
5:B:182:ARG:NH2	52:5:1103:C:O2'	2.26	0.68
50:3:2088:U:H2'	50:3:2089:A:H8	1.58	0.68
52:5:662:G:O6	52:5:721:G:O6	2.10	0.68
52:5:1226:A:N3	52:5:1344:C:O2'	2.23	0.68
24:a:136:MET:HE1	24:a:140:PHE:HB2	1.75	0.68
50:3:1261:U:H2'	50:3:1262:G:H8	1.58	0.68
43:t:72:SER:OG	50:3:369:C:O2	2.11	0.68
50:3:418:G:N2	50:3:430:U:O2	2.24	0.68
50:3:2531:C:O2'	50:3:2772:A:O2'	2.11	0.68
52:5:96:G:H22	52:5:326:C:H41	1.39	0.68
9:F:90:VAL:O	9:F:95:LYS:NZ	2.26	0.68
50:3:897:A:N3	50:3:954:A:N6	2.42	0.68
52:5:76:G:N2	52:5:79:A:OP2	2.16	0.68
53:6:23:G:H2'	53:6:24:A:H8	1.57	0.68
3:2:7:VAL:HG22	3:2:34:GLN:HB2	1.75	0.68
14:K:44:ARG:NE	52:5:359:A:OP2	2.23	0.68
24:a:151:GLU:HG2	24:a:153:HIS:H	1.58	0.68
26:c:194:ALA:HB1	26:c:197:LEU:HB3	1.76	0.68
52:5:656:U:H2'	52:5:657:G:C8	2.28	0.68
8:E:142:ARG:HB2	10:G:5:THR:H	1.58	0.68
26:c:113:HIS:HA	26:c:116:TRP:HD1	1.59	0.68
32:i:101:ASP:HB2	32:i:127:VAL:HG13	1.75	0.68
50:3:625:G:H2'	50:3:626:A:H8	1.59	0.68
52:5:406:G:H21	52:5:429:A:N6	1.90	0.68
53:8:23:G:H2'	53:8:24:A:H8	1.58	0.68
4:A:74:GLU:OE1	8:E:165:ASN:ND2	2.27	0.68
6:C:20:GLU:HG2	6:C:21:ASN:H	1.59	0.68
35:l:38:LYS:HA	35:l:99:GLN:HG3	1.76	0.68
50:3:13:C:H3'	50:3:14:U:H4'	1.75	0.68
50:3:618:G:H3'	50:3:1281:A:H61	1.59	0.68
17:N:67:LEU:HD11	17:N:74:ALA:HB3	1.76	0.68
50:3:2634:C:H2'	50:3:2635:G:H8	1.57	0.68
52:5:671:G:H2'	52:5:672:A:H8	1.59	0.68
53:6:10:A:N6	53:6:24:A:N7	2.42	0.68
4:A:133:LEU:HD11	4:A:152:LEU:HD11	1.75	0.67
26:c:68:GLN:HG2	50:3:2451:C:H5''	1.75	0.67
50:3:1370:A:O2'	50:3:1372:U:OP1	2.11	0.67
52:5:518:A:H2	52:5:531:A:H61	1.42	0.67
8:E:67:GLN:OE1	8:E:70:LYS:NZ	2.25	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:N:33:ILE:HG13	17:N:60:ARG:HH12	1.59	0.67
26:c:140:THR:HA	26:c:143:MET:HE2	1.76	0.67
43:t:90:LYS:NZ	43:t:104:PHE:O	2.28	0.67
50:3:329:G:H1	50:3:377:U:H3	1.41	0.67
50:3:343:A:N3	50:3:363:G:O2'	2.24	0.67
50:3:629:G:H1	50:3:696:U:H3	1.42	0.67
26:c:59:ARG:NH1	50:3:488:G:OP1	2.27	0.67
40:q:1:MET:SD	40:q:2:HIS:N	2.67	0.67
48:y:27:LEU:HB3	48:y:36:LYS:HG3	1.76	0.67
49:z:9:LEU:HD12	49:z:19:TYR:HB2	1.76	0.67
52:5:471:A:H2'	52:5:472:G:H8	1.58	0.67
36:m:100:VAL:HG22	36:m:116:LEU:HG	1.75	0.67
50:3:368:C:OP1	50:3:369:C:N4	2.23	0.67
51:4:6:U:H2'	51:4:7:G:H8	1.58	0.67
27:d:125:ARG:NH1	50:3:2323:U:O2	2.27	0.67
50:3:1919:A:N7	50:3:1924:U:O4	2.28	0.67
52:5:250:G:H2'	52:5:251:G:H8	1.60	0.67
2:1:10:ARG:NH1	34:k:62:LEU:O	2.28	0.67
6:C:127:ARG:HH11	52:5:617:U:H4'	1.59	0.67
27:d:135:GLN:HG3	27:d:136:ILE:HD12	1.77	0.67
50:3:2820:G:N3	50:3:2887:A:O2'	2.27	0.67
12:I:44:GLY:HA3	52:5:1114:A:H4'	1.76	0.67
19:P:74:ARG:HG2	52:5:230:G:H4'	1.76	0.67
50:3:2589:G:N2	50:3:2589:G:OP2	2.27	0.67
51:4:42:G:N3	51:4:45:C:N4	2.38	0.67
52:5:499:U:H2'	52:5:500:G:C8	2.30	0.67
52:5:1261:A:H2'	52:5:1262:A:C8	2.30	0.67
38:o:83:ASN:ND2	38:o:84:PRO:O	2.28	0.67
41:r:69:LEU:HD12	41:r:107:LEU:HB3	1.75	0.67
50:3:1691:U:O4	50:3:1692:A:N6	2.28	0.67
50:3:2465:U:O2	50:3:2502:G:N2	2.28	0.67
52:5:257:U:C2	52:5:259:A:N7	2.62	0.67
52:5:394:U:H2'	52:5:395:G:H8	1.60	0.67
52:5:1432:A:H2'	52:5:1433:G:C8	2.30	0.67
12:I:31:ILE:HD13	12:I:96:ILE:HD13	1.77	0.67
50:3:1495:A:OP2	50:3:1548:A:N6	2.27	0.67
24:a:268:ARG:NH1	24:a:269:ASN:O	2.27	0.67
41:r:20:VAL:HA	41:r:23:LEU:HG	1.75	0.67
52:5:1438:U:H2'	52:5:1439:G:H8	1.58	0.67
21:R:81:LYS:NZ	21:R:84:THR:O	2.28	0.66
25:b:173:LYS:NZ	50:3:2781:C:OP1	2.26	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2197:U:H2'	50:3:2198:G:C4	2.29	0.66
15:L:15:ILE:HA	15:L:18:ALA:HB3	1.78	0.66
24:a:138:LEU:HD23	24:a:141:ILE:HD12	1.77	0.66
50:3:723:U:O2	50:3:821:C:O2'	2.12	0.66
50:3:1503:A:OP2	50:3:1540:G:N2	2.28	0.66
11:H:124:ARG:HD2	52:5:1322:U:H4'	1.77	0.66
30:g:112:TYR:CZ	30:g:115:ASN:CA	2.78	0.66
33:j:106:LEU:HD13	33:j:111:TYR:HB2	1.75	0.66
50:3:585:U:H2'	50:3:586:G:H8	1.61	0.66
50:3:1176:U:O2	50:3:1177:A:N6	2.28	0.66
10:G:114:ALA:HB3	10:G:125:ASP:HB3	1.77	0.66
15:L:101:ARG:NH2	52:5:946:G:OP2	2.27	0.66
50:3:663:A:N6	50:3:673:A:O5'	2.27	0.66
50:3:2849:G:N2	50:3:2875:U:O2	2.26	0.66
52:5:1389:U:H3	52:5:1461:G:H1	1.42	0.66
50:3:615:G:H2'	50:3:616:G:H8	1.60	0.66
50:3:2703:U:O2	50:3:2722:G:O6	2.13	0.66
52:5:1417:U:H2'	52:5:1418:G:C8	2.30	0.66
9:F:2:ARG:N	52:5:927:C:OP2	2.28	0.66
32:i:19:TYR:HA	32:i:141:THR:H	1.61	0.66
40:q:4:ILE:HG12	40:q:40:MET:HE3	1.76	0.66
52:5:661:G:N2	52:5:738:A:N1	2.37	0.66
52:5:957:C:H2'	52:5:958:G:H8	1.59	0.66
52:5:1051:U:H2'	52:5:1052:G:H8	1.59	0.66
53:8:10:A:N6	53:8:24:A:N7	2.42	0.66
5:B:49:ARG:HD3	5:B:121:ARG:HD3	1.76	0.66
11:H:107:THR:HA	52:5:1154:A:H5''	1.77	0.66
15:L:31:GLN:HA	15:L:34:LEU:HD12	1.77	0.66
50:3:992:G:O2'	50:3:995:A:N6	2.28	0.66
50:3:1354:U:O2'	50:3:2017:G:O2'	2.10	0.66
50:3:1446:G:N2	50:3:1613:A:OP2	2.28	0.66
50:3:2108:C:H2'	50:3:2109:A:C8	2.31	0.66
36:m:118:LEU:HG	36:m:119:THR:HG23	1.77	0.66
50:3:189:U:H2'	50:3:190:G:H8	1.61	0.66
50:3:869:U:H2'	50:3:870:A:H8	1.61	0.66
50:3:1446:G:O2'	50:3:1613:A:N6	2.28	0.66
52:5:670:G:H2'	52:5:671:G:C8	2.30	0.66
18:O:5:ARG:NH1	52:5:43:G:O2'	2.29	0.66
31:h:112:LEU:HD21	31:h:123:MET:HE3	1.77	0.66
39:p:7:LYS:HD2	50:3:32:G:H5'	1.76	0.66
50:3:333:A:N3	50:3:353:G:O2'	2.27	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2870:U:H4'	50:3:2871:G:H4'	1.77	0.66
4:A:102:ARG:HG3	4:A:103:VAL:HG13	1.76	0.66
7:D:69:ARG:HH22	7:D:70:ILE:HG12	1.61	0.66
7:D:160:ILE:HD13	7:D:170:ILE:HG21	1.78	0.66
12:I:18:SER:HB2	12:I:102:VAL:HA	1.78	0.66
19:P:4:ASN:ND2	19:P:65:GLU:O	2.29	0.66
38:o:25:PHE:H	38:o:55:ARG:HH12	1.43	0.66
45:v:27:ARG:NH1	45:v:28:LYS:O	2.29	0.66
50:3:1027:U:O4	50:3:1198:G:O6	2.14	0.66
50:3:2481:U:OP1	50:3:2537:G:N2	2.28	0.66
30:g:112:TYR:CE2	30:g:115:ASN:CA	2.79	0.65
37:n:61:LYS:HE3	37:n:73:VAL:HA	1.76	0.65
50:3:606:G:N1	50:3:2038:A:OP1	2.27	0.65
52:5:406:G:O6	52:5:426:U:O2'	2.12	0.65
24:a:12:SER:O	50:3:764:G:N2	2.30	0.65
27:d:104:ILE:HD12	27:d:108:LEU:HD12	1.77	0.65
52:5:1043:U:O2	52:5:1181:G:O6	2.14	0.65
9:F:113:LYS:HA	52:5:1272:C:H42	1.61	0.65
13:J:32:GLY:O	52:5:680:G:N2	2.29	0.65
32:i:11:GLN:HB3	50:3:573:A:H4'	1.78	0.65
36:m:106:ARG:NH1	50:3:1315:A:N7	2.44	0.65
39:p:12:ARG:NH2	50:3:1281:A:OP1	2.30	0.65
50:3:823:A:OP1	50:3:826:C:N4	2.28	0.65
50:3:1592:A:H4'	50:3:1593:U:H3'	1.79	0.65
50:3:1754:U:H2'	50:3:1755:A:H8	1.60	0.65
6:C:13:ARG:HG2	6:C:35:PRO:HD2	1.79	0.65
17:N:29:LEU:HD11	17:N:56:LYS:HB3	1.78	0.65
24:a:150:ILE:HD11	24:a:184:LEU:HD21	1.77	0.65
50:3:625:G:H2'	50:3:626:A:C8	2.31	0.65
50:3:1310:U:H3	50:3:1314:A:N6	1.87	0.65
52:5:1402:U:H2'	52:5:1403:A:H8	1.61	0.65
32:i:38:LEU:HD21	32:i:55:ASP:HB2	1.79	0.65
50:3:2572:A:N6	50:3:2655:U:O2'	2.29	0.65
50:3:2749:A:N6	50:3:2771:G:H21	1.92	0.65
28:e:18:LEU:HD12	28:e:27:VAL:HB	1.79	0.65
36:m:109:ASP:HB3	50:3:1683:G:H21	1.62	0.65
49:z:8:ARG:HB2	49:z:17:ILE:HD11	1.79	0.65
50:3:852:C:H42	50:3:1221:G:H1	1.44	0.65
50:3:1619:A:H2'	50:3:1620:A:C8	2.32	0.65
52:5:250:G:H2'	52:5:251:G:C8	2.31	0.65
52:5:409:G:O3'	52:5:425:G:N2	2.28	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:j:1:MET:HG2	33:j:67:LYS:HG2	1.76	0.65
50:3:890:U:H2'	50:3:891:G:H8	1.62	0.65
50:3:1171:G:O2'	50:3:2045:C:O2'	2.14	0.65
6:C:111:ARG:HE	52:5:403:A:H4'	1.62	0.65
50:3:227:A:O2'	50:3:456:G:N2	2.30	0.65
50:3:432:G:H2'	50:3:433:A:H8	1.61	0.65
50:3:900:G:N2	50:3:903:A:H61	1.94	0.65
50:3:2176:G:N1	50:3:2179:A:OP2	2.30	0.65
52:5:13:U:H3	52:5:23:G:H1	1.43	0.65
8:E:104:LYS:HA	8:E:107:LEU:HD12	1.79	0.65
12:I:15:LYS:HG2	12:I:79:LEU:HG	1.79	0.65
46:w:19:VAL:HG11	46:w:64:ASN:HD21	1.62	0.65
50:3:1507:G:O2'	50:3:1508:G:OP1	2.15	0.65
50:3:2655:U:H2'	50:3:2656:G:H8	1.61	0.65
52:5:1402:U:H2'	52:5:1403:A:C8	2.31	0.65
28:e:91:ARG:HH11	28:e:166:LEU:HD12	1.61	0.65
50:3:612:G:H5''	50:3:2024:C:H3'	1.78	0.65
50:3:1554:A:N6	50:3:1576:G:O2'	2.29	0.65
50:3:2599:C:H2'	50:3:2600:G:H8	1.61	0.65
52:5:922:G:OP1	52:5:1480:G:N2	2.30	0.65
52:5:1417:U:H2'	52:5:1418:G:H8	1.63	0.65
4:A:87:THR:HG21	4:A:111:ARG:HE	1.62	0.64
14:K:107:ARG:NH2	52:5:905:U:OP1	2.30	0.64
26:c:124:ASN:HB2	26:c:196:ALA:HB1	1.79	0.64
30:g:112:TYR:CG	30:g:115:ASN:CA	2.80	0.64
33:j:111:TYR:HB3	33:j:114:ILE:HD13	1.78	0.64
52:5:316:G:H2'	52:5:317:A:H8	1.61	0.64
8:E:8:LEU:HD23	8:E:84:ARG:HB2	1.78	0.64
21:R:73:GLU:HB3	52:5:1294:U:H1'	1.80	0.64
38:o:6:LYS:HD2	38:o:8:ALA:H	1.61	0.64
52:5:580:C:H42	52:5:756:A:N6	1.93	0.64
52:5:629:U:H2'	52:5:630:G:H8	1.62	0.64
24:a:54:THR:HG21	50:3:1820:U:H1'	1.79	0.64
39:p:26:THR:HG21	48:y:7:ARG:HH12	1.62	0.64
50:3:1023:C:O2'	50:3:1036:A:N3	2.30	0.64
52:5:515:G:N1	52:5:531:A:OP1	2.29	0.64
16:M:19:ARG:HA	52:5:974:C:H42	1.63	0.64
50:3:144:C:H2'	50:3:145:A:C8	2.32	0.64
50:3:1665:G:N2	50:3:1670:U:O4	2.30	0.64
51:4:58:C:H2'	51:4:59:A:H8	1.61	0.64
52:5:317:A:N1	52:5:328:G:N2	2.43	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:631:C:H2'	52:5:632:A:H8	1.63	0.64
10:G:23:ASN:HA	10:G:26:ARG:HH21	1.63	0.64
11:H:114:GLU:OE2	11:H:117:LYS:NZ	2.31	0.64
25:b:123:ILE:HA	25:b:128:PHE:HB2	1.79	0.64
27:d:104:ILE:HD13	27:d:175:LEU:HD13	1.78	0.64
52:5:791:A:O2'	52:5:1481:U:O4	2.14	0.64
1:0:8:SER:OG	50:3:721:G:N2	2.31	0.64
4:A:99:ILE:HD12	4:A:102:ARG:HH22	1.62	0.64
50:3:2123:A:OP1	50:3:2124:A:N6	2.31	0.64
10:G:9:LYS:HE2	52:5:822:A:H5''	1.79	0.64
18:O:55:LYS:HD3	52:5:224:A:H4'	1.79	0.64
26:c:127:LEU:HD21	26:c:201:LYS:HG3	1.79	0.64
40:q:93:LYS:NZ	40:q:94:VAL:O	2.30	0.64
50:3:986:G:H1	50:3:1003:U:H3	1.46	0.64
52:5:1361:G:H2'	52:5:1362:G:H8	1.63	0.64
24:a:61:ARG:HB3	24:a:64:ARG:HH12	1.63	0.64
25:b:180:ARG:HH22	50:3:2738:U:H5''	1.62	0.64
36:m:53:LYS:NZ	36:m:87:ALA:O	2.30	0.64
50:3:14:U:O4	50:3:561:A:N7	2.31	0.64
50:3:2663:G:N2	50:3:2664:U:O4	2.28	0.64
52:5:1379:C:N4	52:5:1380:G:O6	2.31	0.64
6:C:96:ARG:NH1	6:C:132:PRO:O	2.31	0.64
12:I:43:LYS:HB2	12:I:81:ILE:HB	1.80	0.64
41:r:85:THR:HG22	41:r:95:MET:HE1	1.80	0.64
52:5:320:G:N1	52:5:323:A:OP2	2.27	0.64
15:L:107:ARG:NE	52:5:942:G:OP2	2.30	0.64
26:c:67:LYS:HE2	26:c:70:HIS:HB2	1.77	0.64
32:i:112:LEU:HD13	32:i:118:SER:HB2	1.80	0.64
49:z:36:LYS:NZ	50:3:2355:C:OP1	2.31	0.64
50:3:245:U:H4'	50:3:246:G:H5'	1.79	0.64
50:3:1105:A:O2'	50:3:1131:A:O2'	2.15	0.64
53:8:19:G:N2	53:8:59:A:N7	2.46	0.64
9:F:28:VAL:HG11	9:F:100:LEU:HB3	1.80	0.63
25:b:33:PRO:HD3	25:b:189:MET:HE1	1.80	0.63
37:n:107:GLU:HA	37:n:110:ARG:HG2	1.80	0.63
50:3:849:C:H2'	50:3:850:G:H8	1.64	0.63
52:5:955:U:H4'	52:5:956:U:H5''	1.80	0.63
52:5:1136:G:N1	52:5:1151:A:H2	1.96	0.63
19:P:9:LEU:HD21	19:P:63:ILE:HG22	1.78	0.63
40:q:34:GLN:HG3	40:q:56:VAL:HG12	1.80	0.63
40:q:51:GLU:HA	40:q:54:ARG:HH12	1.63	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:997:G:OP1	50:3:2464:C:O2'	2.12	0.63
50:3:2160:U:H2'	50:3:2161:G:H8	1.61	0.63
50:3:2589:G:H1'	50:3:2590:G:N7	2.13	0.63
52:5:1062:C:H2'	52:5:1063:G:H8	1.62	0.63
52:5:1228:C:H2'	52:5:1229:A:C8	2.33	0.63
27:d:26:MET:HE1	51:4:53:U:H1'	1.80	0.63
34:k:34:ARG:NH1	50:3:620:G:H1	1.95	0.63
34:k:84:LYS:NZ	50:3:662:U:O2	2.31	0.63
50:3:666:G:O2'	50:3:668:A:N6	2.29	0.63
50:3:1919:A:N6	50:3:1924:U:C2	2.66	0.63
52:5:242:A:N6	52:5:277:G:N2	2.46	0.63
26:c:106:LYS:HD2	50:3:634:C:H4'	1.81	0.63
40:q:56:VAL:HG21	40:q:96:ARG:HG2	1.80	0.63
42:s:26:LYS:NZ	50:3:1427:C:OP1	2.31	0.63
50:3:1786:U:H5''	50:3:1787:A:H5''	1.80	0.63
52:5:893:C:H3'	52:5:894:A:C8	2.34	0.63
27:d:38:MET:O	27:d:86:GLY:CA	2.47	0.63
32:i:45:VAL:HB	39:p:99:ILE:HG21	1.80	0.63
36:m:6:LYS:HG2	50:3:1303:U:H5''	1.80	0.63
36:m:36:LYS:NZ	50:3:1685:G:O2'	2.31	0.63
42:s:16:VAL:HG22	42:s:28:VAL:HG11	1.80	0.63
50:3:2440:A:C4	53:8:76:C:C2	2.85	0.63
52:5:27:A:H61	52:5:556:G:H1'	1.64	0.63
52:5:1138:U:H3	52:5:1149:G:H1	1.47	0.63
27:d:48:LYS:HG3	27:d:51:GLU:HB2	1.80	0.63
30:g:76:ILE:HG13	30:g:77:LYS:H	1.63	0.63
50:3:2529:C:O2'	50:3:2572:A:N3	2.31	0.63
53:6:19:G:N2	53:6:59:A:N7	2.46	0.63
5:B:25:ASN:OD1	5:B:29:GLN:NE2	2.32	0.63
9:F:67:ASN:ND2	9:F:129:ASN:OD1	2.31	0.63
50:3:812:G:H2'	50:3:813:G:C8	2.34	0.63
50:3:2031:C:H2'	50:3:2032:G:H8	1.64	0.63
50:3:2829:G:N2	50:3:2829:G:OP2	2.29	0.63
13:J:22:ASN:ND2	52:5:687:G:OP2	2.31	0.63
14:K:12:ARG:NH1	52:5:561:A:O2'	2.32	0.63
50:3:42:U:H2'	50:3:43:A:H8	1.64	0.63
50:3:2400:A:N6	50:3:2432:C:O2	2.31	0.63
52:5:201:G:H1	52:5:214:U:H3	1.47	0.63
4:A:74:GLU:HA	4:A:77:GLN:HG2	1.81	0.63
5:B:179:SER:O	52:5:1103:C:N4	2.31	0.63
28:e:108:LEU:HB2	28:e:116:ILE:HB	1.80	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:144:C:H2'	50:3:145:A:H8	1.63	0.63
50:3:514:A:O2'	50:3:515:A:OP1	2.16	0.63
24:a:216:ALA:HA	24:a:219:ASN:HD22	1.64	0.62
50:3:714:G:OP1	50:3:811:G:N2	2.31	0.62
50:3:1746:U:H3	50:3:1753:G:H1	1.46	0.62
50:3:2248:C:H2'	50:3:2249:A:H8	1.64	0.62
52:5:591:A:H2'	52:5:592:A:C8	2.34	0.62
1:0:2:LYS:NZ	50:3:722:C:O5'	2.32	0.62
25:b:62:LEU:HD22	25:b:77:PRO:HB3	1.81	0.62
30:g:112:TYR:CD2	30:g:114:ASP:CA	2.82	0.62
33:j:88:LYS:HB3	33:j:94:ARG:HD2	1.81	0.62
46:w:102:ARG:NH2	50:3:1626:C:OP1	2.33	0.62
50:3:1295:A:N6	50:3:2021:A:OP2	2.32	0.62
50:3:2599:C:H2'	50:3:2600:G:C8	2.34	0.62
5:B:16:LYS:O	5:B:216:ASN:ND2	2.33	0.62
9:F:30:MET:HE1	9:F:33:GLY:HA2	1.81	0.62
17:N:10:LYS:HA	17:N:13:GLN:HG3	1.81	0.62
22:S:64:ARG:NH1	52:5:256:G:OP1	2.33	0.62
33:j:96:THR:HG22	33:j:97:ARG:HG3	1.82	0.62
52:5:242:A:C6	52:5:277:G:N2	2.67	0.62
52:5:316:G:H2'	52:5:317:A:C8	2.34	0.62
52:5:590:G:N2	52:5:644:U:O2	2.26	0.62
7:D:181:LYS:HB3	52:5:8:G:H21	1.64	0.62
10:G:101:PHE:HA	10:G:104:LEU:HD23	1.80	0.62
30:g:53:VAL:HG22	30:g:81:ALA:HA	1.82	0.62
47:x:17:ALA:HB3	47:x:37:ASP:HA	1.82	0.62
50:3:622:U:H2'	50:3:623:A:C8	2.33	0.62
50:3:1509:U:O4	50:3:1510:A:N6	2.32	0.62
19:P:61:VAL:HB	19:P:77:ILE:HD11	1.82	0.62
22:S:17:ARG:NH2	52:5:319:U:O2'	2.32	0.62
24:a:252:ASP:OD2	24:a:253:ALA:N	2.32	0.62
32:i:103:LEU:HD13	32:i:106:ASN:HD22	1.65	0.62
35:l:1:MET:SD	35:l:2:LEU:N	2.72	0.62
41:r:132:GLN:NE2	50:3:1260:U:O2	2.29	0.62
47:x:19:CYS:SG	47:x:41:LYS:NZ	2.62	0.62
50:3:224:G:H22	50:3:463:U:H2'	1.64	0.62
50:3:224:G:H1	50:3:463:U:H3'	1.65	0.62
50:3:347:C:H2'	50:3:348:A:C8	2.34	0.62
50:3:914:G:O2'	50:3:937:A:N6	2.32	0.62
50:3:1869:G:H1	50:3:1887:U:H3	0.77	0.62
35:l:39:GLY:HA2	35:l:97:VAL:O	1.99	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:t:72:SER:O	50:3:369:C:O2'	2.18	0.62
50:3:2058:G:N2	50:3:2059:G:O6	2.32	0.62
50:3:2323:U:H2'	50:3:2324:A:C8	2.35	0.62
53:8:29:C:H2'	53:8:30:G:H8	1.65	0.62
4:A:159:LEU:O	4:A:163:PHE:HB2	1.99	0.62
24:a:35:LYS:NZ	50:3:1605:A:OP2	2.27	0.62
32:i:117:LEU:O	32:i:121:TRP:N	2.31	0.62
35:l:13:HIS:H	50:3:947:A:H62	1.47	0.62
50:3:1529:U:H2'	50:3:1530:G:C8	2.33	0.62
52:5:257:U:H2'	52:5:258:A:H8	1.65	0.62
52:5:442:G:H2'	52:5:443:G:C8	2.35	0.62
6:C:41:ARG:NH2	6:C:42:PHE:O	2.32	0.62
15:L:14:ARG:HB3	15:L:42:ASP:HB2	1.82	0.62
51:4:21:G:H2'	51:4:22:G:C8	2.35	0.62
52:5:510:U:H2'	52:5:511:A:H8	1.65	0.62
52:5:788:G:H22	52:5:1472:G:H5'	1.65	0.62
4:A:81:GLN:HB3	4:A:173:PRO:HA	1.82	0.62
14:K:94:LEU:HB2	14:K:111:VAL:HG21	1.82	0.62
50:3:1446:G:H22	50:3:1612:U:H3'	1.63	0.62
52:5:128:A:O2'	52:5:198:A:N1	2.30	0.62
10:G:68:ARG:NH2	52:5:587:A:O2'	2.33	0.62
26:c:5:LYS:HB3	26:c:17:PRO:HA	1.81	0.62
40:q:40:MET:HA	40:q:45:ILE:HG13	1.82	0.62
50:3:251:G:OP2	50:3:253:C:N4	2.33	0.62
50:3:774:A:N3	50:3:775:C:N4	2.47	0.62
52:5:655:G:O6	52:5:744:U:O2	2.17	0.62
5:B:191:LYS:NZ	52:5:1048:G:N3	2.39	0.61
8:E:110:GLN:O	8:E:114:LYS:HG2	2.00	0.61
26:c:69:LYS:HE2	50:3:2067:A:H3'	1.81	0.61
35:l:51:ARG:HD2	35:l:104:PHE:HE1	1.65	0.61
50:3:42:U:H2'	50:3:43:A:C8	2.35	0.61
50:3:1699:A:H2'	50:3:1700:G:H8	1.64	0.61
52:5:622:A:H2'	52:5:623:G:C8	2.35	0.61
52:5:929:C:O2'	52:5:1318:C:OP2	2.18	0.61
52:5:983:G:H21	52:5:1012:A:H8	1.46	0.61
52:5:1196:G:OP1	52:5:1295:U:N3	2.32	0.61
27:d:60:ILE:HG23	27:d:99:PHE:HE2	1.64	0.61
47:x:19:CYS:HB2	47:x:40:GLY:HA3	1.82	0.61
50:3:137:U:O2	50:3:146:G:N2	2.33	0.61
50:3:1807:C:C4	50:3:1825:U:O2	2.54	0.61
50:3:2798:A:O2'	50:3:2806:A:N6	2.33	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:65:VAL:HG11	5:B:96:ILE:HD11	1.82	0.61
5:B:134:ARG:HH11	7:D:112:PRO:HG2	1.64	0.61
49:z:20:LEU:HD11	50:3:2427:U:H5''	1.82	0.61
50:3:501:G:N2	50:3:719:G:O2'	2.33	0.61
52:5:373:A:H2'	52:5:374:G:C8	2.35	0.61
52:5:572:A:O2'	52:5:876:C:O2'	2.16	0.61
6:C:106:PHE:HE1	6:C:174:PHE:HA	1.65	0.61
9:F:21:LEU:HB3	9:F:61:PHE:HZ	1.65	0.61
10:G:93:PRO:HB2	52:5:872:C:H5'	1.81	0.61
26:c:55:LYS:NZ	50:3:709:G:OP2	2.31	0.61
45:v:56:ARG:NH2	50:3:436:G:N7	2.48	0.61
50:3:362:U:O2	50:3:366:A:N7	2.34	0.61
50:3:1095:U:H4'	50:3:1096:U:H3'	1.81	0.61
50:3:1807:C:N3	50:3:1825:U:C2	2.68	0.61
50:3:2062:C:H2'	50:3:2512:U:H5'	1.82	0.61
52:5:1110:C:H2'	52:5:1111:G:H8	1.65	0.61
5:B:195:THR:HG23	5:B:196:TYR:HD2	1.65	0.61
7:D:91:LEU:HD21	7:D:192:ILE:HD13	1.82	0.61
26:c:14:GLU:HG2	26:c:15:THR:H	1.65	0.61
50:3:339:U:O4	50:3:346:G:O6	2.18	0.61
50:3:454:G:H2'	50:3:455:G:H8	1.65	0.61
50:3:2828:C:H3'	50:3:2829:G:H21	1.64	0.61
21:R:84:THR:HG22	21:R:86:ASN:H	1.64	0.61
27:d:79:LEU:HA	27:d:83:GLN:HG3	1.82	0.61
31:h:87:LYS:HB2	50:3:1098:G:H21	1.64	0.61
32:i:28:LEU:HD22	50:3:1174:G:H4'	1.81	0.61
38:o:36:LYS:O	38:o:85:ASN:ND2	2.33	0.61
45:v:6:GLN:HB2	45:v:48:ILE:HD12	1.81	0.61
50:3:164:A:N6	50:3:168:A:H61	1.95	0.61
50:3:347:C:H2'	50:3:348:A:H8	1.66	0.61
50:3:1094:G:H3'	50:3:1095:U:H2'	1.82	0.61
51:4:3:U:OP1	51:4:59:A:O2'	2.18	0.61
52:5:305:A:O2'	52:5:605:A:N1	2.33	0.61
44:u:38:LYS:N	44:u:51:ILE:O	2.32	0.61
50:3:878:A:N6	50:3:969:A:OP2	2.31	0.61
50:3:1046:A:HO2'	50:3:1187:C:HO2'	1.47	0.61
50:3:2306:A:N6	50:3:2326:G:O2'	2.34	0.61
15:L:101:ARG:NH1	52:5:946:G:N7	2.49	0.61
25:b:117:ARG:NH1	50:3:2688:C:OP2	2.34	0.61
35:l:82:ARG:HG3	44:u:18:LYS:HB2	1.83	0.61
46:w:51:LEU:HA	46:w:54:ILE:HG12	1.82	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:62:G:H1'	50:3:64:U:C4	2.36	0.61
50:3:887:A:H61	50:3:963:U:H3	1.48	0.61
50:3:1406:A:O2'	50:3:1408:G:OP2	2.17	0.61
50:3:1856:G:H2'	50:3:1857:G:H8	1.66	0.61
53:6:29:C:H2'	53:6:30:G:H8	1.65	0.61
8:E:142:ARG:H	10:G:3:THR:HG23	1.65	0.61
10:G:39:LYS:NZ	52:5:588:U:OP2	2.23	0.61
50:3:986:G:N2	50:3:1003:U:O2	2.30	0.61
50:3:1725:G:O6	50:3:1731:G:N2	2.34	0.61
13:J:49:ARG:O	13:J:52:THR:OG1	2.18	0.61
24:a:189:THR:HB	24:a:279:ILE:HB	1.83	0.61
32:i:133:HIS:HB2	32:i:136:GLU:HG3	1.81	0.61
50:3:373:U:H2'	50:3:374:A:H8	1.65	0.61
50:3:1955:G:H2'	50:3:1956:G:C8	2.36	0.61
50:3:2701:A:H2'	50:3:2702:G:C8	2.36	0.61
9:F:28:VAL:O	9:F:108:ARG:NH2	2.34	0.60
23:T:42:LEU:O	23:T:45:LYS:HG3	2.01	0.60
25:b:125:ARG:NH2	25:b:165:MET:O	2.34	0.60
32:i:24:ALA:HB1	32:i:64:GLN:HB2	1.83	0.60
39:p:7:LYS:HE3	50:3:1245:G:H5'	1.82	0.60
50:3:1261:U:H2'	50:3:1262:G:C8	2.36	0.60
50:3:2271:C:N4	50:3:2272:C:N4	2.48	0.60
1:0:12:ARG:NH2	50:3:501:G:OP1	2.34	0.60
2:1:22:LYS:NZ	2:1:42:ARG:O	2.33	0.60
26:c:133:PHE:HB3	26:c:165:ASN:HD22	1.66	0.60
40:q:47:ALA:HB3	40:q:48:PRO:HD3	1.82	0.60
50:3:54:A:OP2	50:3:118:G:N2	2.34	0.60
50:3:752:C:H3'	50:3:753:A:H8	1.66	0.60
52:5:392:A:O2'	52:5:394:U:OP1	2.19	0.60
11:H:69:VAL:HG11	11:H:77:GLN:HE21	1.64	0.60
14:K:69:ARG:NH1	14:K:72:ASN:O	2.34	0.60
18:O:64:ARG:HA	18:O:67:PHE:HD2	1.66	0.60
19:P:59:ASP:HA	19:P:83:ARG:NH1	2.16	0.60
52:5:680:G:H1	52:5:704:U:H3	1.48	0.60
52:5:1197:G:N7	52:5:1296:C:N4	2.48	0.60
1:0:6:GLN:O	50:3:721:G:N2	2.35	0.60
6:C:96:ARG:HH12	6:C:133:SER:HA	1.67	0.60
20:Q:81:MET:HE3	20:Q:85:HIS:CE1	2.37	0.60
32:i:76:PHE:CD2	32:i:89:LYS:HD3	2.37	0.60
34:k:114:LEU:HD12	34:k:131:VAL:HG12	1.81	0.60
50:3:641:U:H3'	50:3:655:G:H1	1.65	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1297:U:H2'	50:3:1298:A:H8	1.65	0.60
50:3:1722:U:O2'	50:3:1734:A:N7	2.33	0.60
50:3:2297:G:H2'	50:3:2298:G:H8	1.67	0.60
51:4:3:U:H2'	51:4:4:G:H8	1.65	0.60
52:5:59:C:H2'	52:5:60:A:H8	1.67	0.60
52:5:603:U:O4	52:5:630:G:O6	2.19	0.60
52:5:999:C:H4'	52:5:1000:A:H5'	1.84	0.60
17:N:62:ARG:NH2	52:5:579:G:OP1	2.33	0.60
36:m:2:SER:OG	36:m:3:TYR:N	2.34	0.60
38:o:58:LYS:NZ	50:3:2728:U:OP1	2.27	0.60
39:p:91:ARG:HH21	50:3:1033:A:H5'	1.67	0.60
40:q:27:ALA:O	40:q:62:HIS:NE2	2.31	0.60
50:3:401:G:O2'	50:3:402:A:O4'	2.17	0.60
50:3:509:G:H2'	50:3:510:G:C8	2.37	0.60
50:3:549:A:N3	50:3:614:C:O2'	2.32	0.60
50:3:881:A:H4'	50:3:882:C:OP1	2.00	0.60
52:5:257:U:H2'	52:5:258:A:C8	2.35	0.60
52:5:522:G:H2'	52:5:523:U:C6	2.36	0.60
52:5:656:U:H2'	52:5:657:G:H8	1.66	0.60
17:N:46:ASP:O	17:N:49:SER:OG	2.18	0.60
26:c:42:GLN:HA	26:c:45:TRP:HD1	1.66	0.60
30:g:8:ALA:HB2	50:3:1081:A:H61	1.67	0.60
35:l:41:TRP:CD1	35:l:96:VAL:HG12	2.37	0.60
37:n:39:ILE:HD13	37:n:64:ASN:HB3	1.84	0.60
52:5:145:G:H22	52:5:147:A:H3'	1.65	0.60
52:5:1062:C:H2'	52:5:1063:G:C8	2.36	0.60
52:5:1278:G:H21	52:5:1307:A:H62	1.50	0.60
8:E:38:GLU:OE2	8:E:59:ARG:NH2	2.34	0.60
19:P:44:LYS:NZ	52:5:274:A:OP2	2.34	0.60
35:l:39:GLY:CA	35:l:97:VAL:O	2.50	0.60
50:3:703:A:H2'	50:3:705:A:H62	1.65	0.60
52:5:297:A:H2'	52:5:298:G:C8	2.37	0.60
4:A:234:ASP:OD1	4:A:244:THR:OG1	2.16	0.60
24:a:175:GLU:OE1	52:5:679:U:O2'	2.17	0.60
33:j:64:ARG:NH2	33:j:99:PHE:O	2.34	0.60
34:k:77:TRP:HB2	34:k:113:LYS:NZ	2.16	0.60
35:l:62:GLY:HA2	35:l:108:ASN:HB2	1.82	0.60
39:p:10:ARG:HG2	39:p:13:ARG:HH21	1.65	0.60
50:3:274:A:OP2	50:3:294:G:N1	2.35	0.60
50:3:2121:A:H2	50:3:2176:G:H4'	1.65	0.60
52:5:1224:C:N4	52:5:1262:A:OP2	2.35	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:1383:A:H2'	52:5:1384:A:H8	1.67	0.60
4:A:32:MET:HG3	4:A:33:VAL:HG22	1.83	0.60
27:d:29:PRO:HG2	27:d:169:LEU:HD13	1.83	0.60
36:m:14:ARG:NH2	50:3:2698:U:OP2	2.35	0.60
50:3:787:C:OP2	50:3:1788:A:N6	2.35	0.60
16:M:9:LYS:HD3	52:5:1192:C:H5''	1.84	0.60
23:T:43:ARG:HH11	52:5:1502:G:H5''	1.66	0.60
26:c:70:HIS:HA	50:3:2066:A:H4'	1.82	0.60
32:i:45:VAL:O	39:p:63:ARG:NH2	2.35	0.60
50:3:1112:A:H5''	50:3:1113:U:H5	1.67	0.60
50:3:1201:A:H2'	50:3:1202:A:H8	1.66	0.60
50:3:1450:G:H1	50:3:1610:U:H3	1.48	0.60
50:3:2854:A:N7	50:3:2872:A:O2'	2.30	0.60
52:5:412:G:H2'	52:5:413:G:H8	1.66	0.60
52:5:732:A:H2'	52:5:733:A:H8	1.67	0.60
10:G:66:THR:HG23	52:5:649:U:H4'	1.83	0.59
32:i:62:SER:H	32:i:129:LYS:HA	1.66	0.59
37:n:31:MET:HG2	37:n:92:ASP:OD2	2.01	0.59
50:3:631:A:H2'	50:3:632:A:H8	1.66	0.59
52:5:1224:C:O2	52:5:1262:A:N6	2.34	0.59
2:1:5:SER:HA	2:1:8:LYS:HG2	1.84	0.59
24:a:12:SER:OG	50:3:765:A:OP1	2.20	0.59
32:i:67:LEU:HD22	32:i:72:LYS:HG3	1.85	0.59
39:p:47:ARG:HH22	50:3:594:G:H1'	1.66	0.59
50:3:2216:U:H2'	50:3:2217:G:C8	2.37	0.59
52:5:116:A:N1	52:5:229:G:O2'	2.32	0.59
6:C:201:LYS:HE2	52:5:28:G:H4'	1.84	0.59
10:G:46:GLU:HB3	10:G:50:LYS:NZ	2.17	0.59
10:G:87:VAL:HG22	10:G:141:VAL:HG23	1.84	0.59
13:J:14:ILE:HG23	13:J:75:VAL:HG21	1.83	0.59
26:c:130:GLN:HA	26:c:133:PHE:HD1	1.68	0.59
33:j:6:THR:HG23	50:3:1700:G:H4'	1.84	0.59
35:l:65:TRP:HB2	35:l:105:GLU:HG3	1.84	0.59
36:m:26:LEU:HD23	36:m:82:LEU:HD11	1.83	0.59
43:t:90:LYS:HB2	43:t:103:VAL:HG13	1.83	0.59
44:u:52:TYR:HB3	44:u:73:LEU:HD12	1.84	0.59
50:3:28:G:N1	50:3:548:A:OP2	2.33	0.59
50:3:362:U:H3	50:3:366:A:H8	1.46	0.59
50:3:2406:U:H2'	50:3:2407:G:C8	2.38	0.59
50:3:2460:C:H5''	53:6:77:A:H4'	1.85	0.59
50:3:2721:C:O2'	50:3:2723:C:OP2	2.19	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:1499:G:H2'	52:5:1500:G:C8	2.37	0.59
12:I:58:ILE:HG22	12:I:68:ARG:HG2	1.83	0.59
13:J:67:VAL:HG11	13:J:72:MET:HE3	1.85	0.59
24:a:233:MET:HE1	50:3:817:A:C5	2.37	0.59
28:e:16:VAL:HA	28:e:28:LYS:O	2.02	0.59
33:j:31:ARG:HH21	50:3:2683:G:H5''	1.67	0.59
36:m:53:LYS:HE3	36:m:91:GLU:HG2	1.83	0.59
50:3:340:U:H2'	50:3:341:G:O4'	2.01	0.59
50:3:1754:U:H2'	50:3:1755:A:C8	2.38	0.59
50:3:1834:U:H5'	50:3:1978:U:H5''	1.84	0.59
50:3:2764:U:H1'	50:3:2765:A:H5''	1.83	0.59
52:5:13:U:O4	52:5:23:G:O6	2.19	0.59
52:5:711:G:H2'	52:5:712:A:C8	2.37	0.59
52:5:807:C:O2'	52:5:894:A:N6	2.36	0.59
52:5:1136:G:O6	52:5:1151:A:N1	2.35	0.59
53:6:7:U:H3	53:6:68:G:H1	1.50	0.59
11:H:20:TYR:HB2	11:H:66:ASN:HB3	1.85	0.59
13:J:23:THR:HG21	13:J:56:ALA:HB2	1.84	0.59
46:w:48:ARG:NH1	50:3:76:A:OP1	2.34	0.59
50:3:965:U:H2'	50:3:966:U:C6	2.38	0.59
50:3:2291:U:O2	50:3:2333:G:O6	2.19	0.59
52:5:44:C:H2'	52:5:45:A:H8	1.68	0.59
52:5:1236:A:H3'	52:5:1237:G:H8	1.68	0.59
4:A:98:ASN:HA	4:A:101:LYS:HG2	1.85	0.59
20:Q:70:ILE:HD11	20:Q:90:LEU:HD22	1.84	0.59
25:b:185:ASP:O	25:b:189:MET:CA	2.45	0.59
41:r:128:ARG:HE	50:3:1262:G:H1'	1.67	0.59
50:3:781:U:O2'	50:3:783:G:N2	2.35	0.59
50:3:1270:C:H2'	50:3:1271:A:H8	1.67	0.59
50:3:1325:C:N3	50:3:1677:G:N2	2.50	0.59
50:3:1845:C:H4'	50:3:1846:A:H5'	1.84	0.59
5:B:113:MET:HE3	5:B:143:LYS:HE3	1.85	0.59
7:D:79:THR:OG1	52:5:916:U:O2	2.20	0.59
9:F:9:ARG:NH2	52:5:1320:A:OP2	2.33	0.59
33:j:97:ARG:HA	33:j:117:LEU:HD11	1.84	0.59
34:k:114:LEU:HD21	34:k:128:VAL:HG11	1.85	0.59
50:3:130:C:H2'	50:3:131:C:C6	2.37	0.59
50:3:410:G:H4'	50:3:411:U:O5'	2.02	0.59
50:3:1451:A:H2'	50:3:1452:G:C8	2.38	0.59
50:3:2125:U:H5	50:3:2155:G:H1'	1.68	0.59
50:3:2849:G:H2'	50:3:2850:G:C8	2.37	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:22:G:H2'	52:5:23:G:C8	2.38	0.59
52:5:376:G:N2	52:5:379:A:OP2	2.34	0.59
52:5:1139:A:H2'	52:5:1140:A:H8	1.68	0.59
4:A:30:VAL:O	4:A:218:ASN:ND2	2.35	0.59
15:L:93:LYS:HZ2	15:L:95:LEU:HB3	1.67	0.59
22:S:9:LYS:HG2	22:S:12:ARG:HH11	1.67	0.59
39:p:109:VAL:O	39:p:113:LYS:NZ	2.36	0.59
50:3:217:A:H2'	50:3:218:G:C8	2.37	0.59
50:3:758:C:H2'	50:3:759:U:H6	1.66	0.59
50:3:1070:U:H2'	50:3:1071:G:C8	2.38	0.59
50:3:1588:A:H2'	50:3:1589:A:C8	2.38	0.59
50:3:2305:C:H3'	50:3:2326:G:H22	1.68	0.59
52:5:186:A:H2'	52:5:187:A:C5	2.38	0.59
52:5:206:G:N2	52:5:209:A:OP2	2.26	0.59
7:D:87:ARG:NH1	52:5:1072:G:OP2	2.35	0.59
32:i:115:ASN:O	32:i:118:SER:OG	2.21	0.59
50:3:47:G:H5''	50:3:48:G:H5'	1.83	0.59
50:3:637:U:H3	50:3:662:U:H3	1.50	0.59
50:3:755:C:H2'	50:3:756:A:H8	1.67	0.59
50:3:2388:C:H2'	50:3:2389:A:C8	2.38	0.59
50:3:2752:G:O6	50:3:2768:U:O4	2.21	0.59
51:4:58:C:H2'	51:4:59:A:C8	2.37	0.59
52:5:1262:A:H2'	52:5:1263:A:C8	2.37	0.59
24:a:137:PRO:HG3	24:a:197:ARG:HD2	1.85	0.59
41:r:64:MET:HG3	41:r:69:LEU:HD21	1.85	0.59
49:z:28:ASN:ND2	49:z:28:ASN:O	2.35	0.59
50:3:1923:A:N1	52:5:1384:A:H5'	2.18	0.59
52:5:133:G:H2'	52:5:134:G:C8	2.38	0.59
52:5:1084:A:O2'	52:5:1086:U:OP1	2.17	0.59
53:8:7:U:H3	53:8:68:G:H1	1.50	0.59
12:I:20:ASP:HB2	12:I:23:LEU:HB2	1.85	0.58
39:p:46:TYR:OH	50:3:1028:C:OP1	2.21	0.58
39:p:57:ARG:NH2	50:3:1034:A:OP2	2.36	0.58
48:y:28:SER:N	48:y:37:LYS:O	2.34	0.58
50:3:299:A:H2'	50:3:300:G:C8	2.37	0.58
50:3:1246:U:H2'	50:3:1247:C:C6	2.38	0.58
50:3:1940:G:O6	50:3:1974:U:O4	2.20	0.58
52:5:170:A:H61	52:5:195:U:H3	1.51	0.58
52:5:295:G:H2'	52:5:296:A:C4	2.37	0.58
52:5:491:U:H2'	52:5:492:G:O4'	2.03	0.58
52:5:631:C:H2'	52:5:632:A:C8	2.38	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:679:U:H2'	52:5:680:G:C8	2.38	0.58
35:l:54:ILE:O	35:l:58:LEU:N	2.36	0.58
36:m:106:ARG:NH1	36:m:109:ASP:OD2	2.36	0.58
50:3:1032:A:H2'	50:3:1033:A:C8	2.38	0.58
50:3:2687:A:H2'	50:3:2688:C:C6	2.38	0.58
52:5:70:A:H2'	52:5:71:A:C8	2.38	0.58
52:5:775:G:H1	52:5:801:U:H3	1.51	0.58
25:b:122:ALA:N	25:b:166:SER:OG	2.36	0.58
26:c:127:LEU:HD11	26:c:201:LYS:HA	1.84	0.58
34:k:94:ASN:N	34:k:97:SER:OG	2.35	0.58
50:3:85:U:O2	50:3:104:A:N7	2.36	0.58
50:3:1066:G:H2'	50:3:1067:A:C8	2.38	0.58
52:5:1418:G:H2'	52:5:1419:C:C6	2.38	0.58
15:L:16:GLU:HA	15:L:34:LEU:HD21	1.85	0.58
27:d:60:ILE:HD11	27:d:141:ILE:HD12	1.85	0.58
30:g:14:VAL:HG21	30:g:58:ILE:HG12	1.85	0.58
31:h:119:ALA:HB1	50:3:1116:U:H4'	1.85	0.58
39:p:30:SER:HB3	39:p:33:VAL:HG12	1.84	0.58
45:v:33:LEU:HD23	45:v:49:LEU:HG	1.84	0.58
50:3:163:A:N3	50:3:2216:U:O2'	2.28	0.58
50:3:1957:G:H22	50:3:1963:U:H3	1.50	0.58
50:3:2151:G:H1'	50:3:2154:A:H61	1.67	0.58
6:C:73:ARG:HH11	52:5:619:A:H2'	1.67	0.58
50:3:2388:C:H2'	50:3:2389:A:H8	1.69	0.58
50:3:2440:A:N1	53:8:76:C:C6	2.71	0.58
50:3:2646:G:H1	50:3:2783:A:H2'	1.67	0.58
1:0:34:ARG:HB3	1:0:42:LEU:HD22	1.84	0.58
16:M:13:ILE:HD12	16:M:14:PRO:HD2	1.85	0.58
20:Q:81:MET:HE3	20:Q:85:HIS:HE1	1.67	0.58
27:d:95:ARG:HH22	51:4:41:C:H4'	1.67	0.58
39:p:23:SER:OG	39:p:28:HIS:ND1	2.37	0.58
50:3:762:A:H2'	50:3:763:G:C8	2.38	0.58
50:3:869:U:H2'	50:3:870:A:C8	2.37	0.58
50:3:1869:G:N2	50:3:1887:U:O2	2.29	0.58
50:3:2497:U:H2'	50:3:2498:G:C8	2.38	0.58
52:5:1193:U:H2'	52:5:1194:A:C8	2.38	0.58
30:g:14:VAL:HG23	30:g:62:ALA:HB2	1.85	0.58
30:g:112:TYR:CE1	30:g:116:ARG:N	2.71	0.58
34:k:30:LYS:HZ3	50:3:599:U:H4'	1.68	0.58
50:3:522:C:H2'	50:3:523:A:C8	2.39	0.58
50:3:900:G:H21	50:3:903:A:N6	2.01	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2867:U:H2'	50:3:2868:G:C8	2.39	0.58
52:5:510:U:H2'	52:5:511:A:C8	2.38	0.58
52:5:1112:U:O4	52:5:1128:G:O6	2.22	0.58
7:D:73:LEU:HD12	7:D:75:ARG:HH12	1.69	0.58
28:e:110:LEU:HD12	28:e:155:ARG:HE	1.68	0.58
45:v:13:LEU:HD22	50:3:432:G:H5'	1.86	0.58
50:3:359:G:H2'	50:3:360:G:H8	1.69	0.58
50:3:659:C:H2'	50:3:660:U:C6	2.39	0.58
50:3:2141:A:N3	50:3:2166:U:O2'	2.35	0.58
50:3:2249:A:H2'	50:3:2250:G:C8	2.39	0.58
50:3:2435:C:H5''	50:3:2437:G:H5''	1.85	0.58
50:3:2536:U:O2	50:3:2543:G:O6	2.21	0.58
4:A:104:ASP:O	4:A:240:LYS:NZ	2.36	0.58
7:D:113:ASN:HA	7:D:116:LYS:HE2	1.86	0.58
8:E:107:LEU:O	8:E:111:LYS:HG2	2.03	0.58
35:l:110:PRO:HG2	35:l:113:GLN:HE22	1.69	0.58
41:r:128:ARG:NE	50:3:1262:G:H1'	2.18	0.58
52:5:454:U:H2'	52:5:455:U:C6	2.39	0.58
52:5:954:A:O2'	52:5:979:C:O2'	2.22	0.58
6:C:13:ARG:NE	52:5:541:C:OP1	2.37	0.58
50:3:1942:G:H3'	50:3:1969:C:H42	1.69	0.58
50:3:1980:G:H2'	50:3:1981:U:C6	2.39	0.58
50:3:2440:A:N1	53:8:76:C:C2	2.71	0.58
52:5:1323:A:H3'	52:5:1324:A:H8	1.68	0.58
11:H:65:ILE:HG22	11:H:67:VAL:HG23	1.86	0.57
22:S:24:GLN:HE21	22:S:54:LEU:HD21	1.68	0.57
33:j:66:LYS:N	33:j:82:ASN:OD1	2.36	0.57
45:v:58:LEU:HA	45:v:61:HIS:HB2	1.85	0.57
52:5:376:G:H21	52:5:378:A:H8	1.51	0.57
6:C:2:LYS:HD3	6:C:114:ARG:HE	1.69	0.57
6:C:184:ARG:O	6:C:184:ARG:NH2	2.37	0.57
14:K:41:PRO:HD2	52:5:359:A:N6	2.19	0.57
23:T:7:LYS:HE2	23:T:21:VAL:HG21	1.86	0.57
32:i:71:LYS:O	32:i:75:GLU:HG3	2.04	0.57
32:i:92:GLY:HA2	32:i:95:MET:HB3	1.86	0.57
45:v:21:SER:HA	53:8:77:A:C8	2.38	0.57
50:3:1106:G:N2	50:3:1124:G:N3	2.51	0.57
50:3:1837:C:H2'	50:3:1838:A:H8	1.69	0.57
52:5:641:U:H2'	52:5:642:A:H8	1.69	0.57
52:5:1136:G:C6	52:5:1151:A:N1	2.72	0.57
52:5:1245:A:H2'	52:5:1246:A:C8	2.39	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:K:64:LYS:HB2	14:K:80:ILE:HD12	1.86	0.57
16:M:23:ARG:HE	16:M:28:GLY:HA2	1.69	0.57
50:3:632:A:H2'	50:3:633:G:H8	1.70	0.57
52:5:989:A:N6	52:5:1190:G:O2'	2.36	0.57
15:L:14:ARG:NH2	15:L:16:GLU:OE1	2.37	0.57
25:b:161:LYS:NZ	50:3:2627:U:OP1	2.24	0.57
50:3:1002:A:H4'	50:3:2279:G:H22	1.69	0.57
52:5:108:C:H2'	52:5:109:G:H8	1.69	0.57
52:5:747:C:H2'	52:5:748:U:C6	2.39	0.57
52:5:1041:G:H2'	52:5:1042:G:C8	2.39	0.57
28:e:61:LEU:HD23	28:e:63:GLN:HE21	1.69	0.57
50:3:1104:A:H5''	50:3:1105:A:H2'	1.86	0.57
50:3:1273:U:H2'	50:3:1274:A:C8	2.37	0.57
50:3:2035:U:O4	50:3:2040:A:N7	2.37	0.57
50:3:2825:A:O2'	50:3:2830:A:N1	2.35	0.57
50:3:2840:U:H2'	50:3:2841:A:C8	2.40	0.57
11:H:12:ARG:HG3	11:H:13:LYS:HG2	1.86	0.57
15:L:105:ASN:O	15:L:110:LYS:NZ	2.35	0.57
24:a:218:ARG:NH2	50:3:1600:A:OP2	2.34	0.57
25:b:123:ILE:HG13	25:b:142:ARG:HG3	1.87	0.57
50:3:455:G:H2'	50:3:456:G:C8	2.40	0.57
50:3:1919:A:N6	50:3:1924:U:H3	2.02	0.57
50:3:2552:G:H2'	50:3:2553:G:C8	2.38	0.57
51:4:60:C:H2'	51:4:61:A:C8	2.40	0.57
4:A:61:GLN:NE2	4:A:217:ALA:HB2	2.19	0.57
22:S:6:SER:OG	52:5:62:G:N7	2.38	0.57
27:d:33:LYS:HE3	27:d:92:ARG:NH2	2.18	0.57
50:3:2812:U:O2'	50:3:2814:A:N7	2.37	0.57
52:5:281:U:H2'	52:5:282:G:C8	2.40	0.57
8:E:40:LEU:HB2	8:E:57:TYR:HB2	1.87	0.57
20:Q:42:ARG:HE	20:Q:46:ILE:HD13	1.69	0.57
20:Q:43:PHE:HB3	20:Q:82:HIS:CD2	2.39	0.57
26:c:129:ASP:OD1	26:c:130:GLN:N	2.33	0.57
43:t:75:ALA:HB1	43:t:87:GLY:H	1.70	0.57
50:3:413:G:O6	50:3:435:U:O2	2.23	0.57
50:3:562:C:OP2	50:3:2787:U:N3	2.32	0.57
50:3:603:G:H1	50:3:2507:C:P	2.28	0.57
50:3:1200:U:O2	50:3:1215:G:N2	2.34	0.57
50:3:1838:A:H2'	50:3:1839:C:C6	2.39	0.57
50:3:2223:C:H2'	50:3:2224:A:C8	2.40	0.57
52:5:71:A:H2'	52:5:72:A:C8	2.40	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:110:U:H2'	52:5:111:A:C8	2.40	0.57
52:5:371:U:H2'	52:5:372:G:H8	1.69	0.57
52:5:660:A:H2	52:5:739:G:H1	1.49	0.57
52:5:714:C:O2'	52:5:731:A:O4'	2.19	0.57
52:5:1390:G:N2	52:5:1460:U:O2	2.27	0.57
24:a:206:LEU:O	50:3:1827:U:N3	2.36	0.57
37:n:54:SER:OG	51:4:104:C:O2'	2.19	0.57
38:o:30:GLU:OE1	38:o:92:ARG:HD2	2.05	0.57
49:z:19:TYR:OH	50:3:2355:C:O2'	2.21	0.57
50:3:67:C:O2'	50:3:492:C:N3	2.30	0.57
50:3:339:U:H3	50:3:346:G:H1	1.53	0.57
50:3:1335:A:OP2	50:3:1640:G:N1	2.29	0.57
50:3:2376:C:H2'	50:3:2377:A:H8	1.70	0.57
52:5:512:U:H2'	52:5:513:G:H8	1.68	0.57
1:0:32:LYS:HA	1:0:35:ARG:HG2	1.87	0.57
5:B:134:ARG:HH22	5:B:138:ARG:HE	1.53	0.57
9:F:21:LEU:O	9:F:25:ILE:HG12	2.05	0.57
14:K:69:ARG:HH12	14:K:73:GLY:C	2.13	0.57
30:g:56:ASN:HB3	50:3:1142:G:H5''	1.85	0.57
32:i:95:MET:CE	32:i:103:LEU:HD23	2.34	0.57
36:m:2:SER:N	50:3:1692:A:N3	2.53	0.57
36:m:38:ALA:HA	36:m:41:THR:HG22	1.86	0.57
38:o:38:LYS:HG2	38:o:43:VAL:HG22	1.85	0.57
49:z:5:ARG:HH22	49:z:26:LYS:H	1.53	0.57
49:z:24:ASN:ND2	50:3:2294:A:OP2	2.32	0.57
50:3:496:A:H62	50:3:505:G:H21	1.53	0.57
50:3:1690:C:H2'	50:3:1691:U:C6	2.40	0.57
50:3:2575:G:H2'	50:3:2576:A:C8	2.40	0.57
52:5:453:C:H2'	52:5:454:U:C6	2.39	0.57
10:G:41:LYS:O	10:G:45:LEU:HG	2.04	0.56
12:I:63:VAL:HG13	52:5:967:C:H1'	1.87	0.56
19:P:9:LEU:HD12	19:P:26:VAL:HG11	1.86	0.56
33:j:91:LYS:NZ	33:j:109:ARG:O	2.31	0.56
35:l:133:LYS:HG3	35:l:134:ARG:N	2.20	0.56
50:3:2100:G:H21	50:3:2206:A:N6	2.02	0.56
50:3:2644:U:H2'	50:3:2645:U:C6	2.40	0.56
52:5:733:A:H2'	52:5:734:A:C8	2.38	0.56
52:5:1009:G:N2	52:5:1012:A:OP2	2.39	0.56
4:A:58:LEU:HA	4:A:61:GLN:HB2	1.87	0.56
5:B:142:ILE:HD13	5:B:145:LEU:HD21	1.86	0.56
25:b:175:THR:OG1	50:3:2781:C:OP1	2.22	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:m:106:ARG:HD2	36:m:109:ASP:H	1.70	0.56
50:3:1167:U:H2'	50:3:1168:A:C8	2.40	0.56
50:3:1676:G:H2'	50:3:1677:G:C8	2.40	0.56
50:3:1856:G:H2'	50:3:1857:G:C8	2.40	0.56
50:3:2017:G:H2'	50:3:2018:U:C6	2.40	0.56
50:3:2745:G:H2'	50:3:2746:A:H8	1.69	0.56
3:2:3:VAL:HG12	3:2:36:GLN:HE22	1.70	0.56
5:B:194:THR:HG23	5:B:196:TYR:H	1.69	0.56
6:C:7:ILE:HD13	6:C:111:ARG:HH22	1.71	0.56
7:D:87:ARG:HG3	7:D:109:LEU:HD22	1.87	0.56
11:H:12:ARG:HH22	11:H:111:ARG:HB3	1.70	0.56
13:J:104:ASN:ND2	23:T:5:GLU:O	2.26	0.56
13:J:121:ARG:NH1	52:5:1497:U:OP1	2.39	0.56
14:K:96:ARG:HH22	14:K:111:VAL:HA	1.71	0.56
15:L:102:THR:OG1	52:5:1201:C:OP2	2.14	0.56
16:M:18:VAL:HG21	52:5:1291:C:H5	1.69	0.56
25:b:157:GLN:NE2	50:3:607:U:O4	2.38	0.56
27:d:10:LYS:HG2	27:d:11:THR:HG23	1.85	0.56
32:i:119:ARG:NH1	50:3:563:A:OP2	2.38	0.56
34:k:57:PRO:HG2	34:k:60:ARG:HG3	1.86	0.56
35:l:110:PRO:HG2	35:l:113:GLN:NE2	2.20	0.56
48:y:5:GLN:NE2	50:3:2061:A:H2'	2.16	0.56
50:3:214:C:H4'	50:3:1395:A:H1'	1.87	0.56
50:3:730:G:H2'	50:3:731:A:C8	2.39	0.56
50:3:2424:C:H2'	50:3:2425:C:C6	2.40	0.56
52:5:403:A:H2'	52:5:404:A:C8	2.40	0.56
52:5:412:G:H2'	52:5:413:G:C8	2.40	0.56
52:5:1150:G:H2'	52:5:1151:A:C8	2.41	0.56
52:5:1193:U:H2'	52:5:1194:A:H8	1.70	0.56
52:5:1383:A:H2'	52:5:1384:A:C8	2.41	0.56
52:5:1384:A:H2'	52:5:1385:A:C8	2.40	0.56
29:f:58:TYR:CZ	29:f:62:LYS:HE2	2.41	0.56
30:g:57:ASN:O	30:g:60:ARG:HG2	2.05	0.56
30:g:60:ARG:HD3	30:g:75:ALA:HB2	1.87	0.56
50:3:1286:G:H2'	50:3:1287:C:C6	2.40	0.56
50:3:1932:C:N4	50:3:1936:G:H22	2.03	0.56
50:3:2743:U:H2'	50:3:2744:A:H8	1.71	0.56
50:3:2861:G:N2	50:3:2864:A:OP2	2.27	0.56
52:5:660:A:H2'	52:5:661:G:C8	2.41	0.56
52:5:1130:G:H2'	52:5:1131:A:H8	1.70	0.56
52:5:1384:A:H2'	52:5:1385:A:H8	1.71	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:1432:A:H2'	52:5:1433:G:H8	1.71	0.56
7:D:137:TYR:OH	7:D:203:LEU:O	2.21	0.56
16:M:21:TYR:HE2	16:M:23:ARG:HD3	1.71	0.56
50:3:746:G:H2'	50:3:747:A:H8	1.70	0.56
50:3:2330:A:H2'	50:3:2331:G:C8	2.40	0.56
52:5:110:U:H5''	52:5:604:U:H4'	1.88	0.56
20:Q:94:ARG:HB3	20:Q:101:PHE:CE1	2.40	0.56
34:k:36:GLN:O	34:k:37:LYS:HG2	2.04	0.56
36:m:71:ASN:HB3	50:3:1321:C:H4'	1.87	0.56
50:3:1449:G:H2'	50:3:1450:G:H8	1.70	0.56
50:3:1589:A:H2'	50:3:1590:U:C6	2.41	0.56
50:3:2223:C:H2'	50:3:2224:A:H8	1.71	0.56
50:3:2353:G:H4'	50:3:2354:A:H5''	1.88	0.56
52:5:265:U:H2'	52:5:266:A:C8	2.40	0.56
5:B:11:ARG:NH1	5:B:184:ASP:OD1	2.38	0.56
8:E:145:ARG:HH21	8:E:145:ARG:HG2	1.71	0.56
21:R:3:ARG:HA	21:R:7:LYS:HB3	1.87	0.56
25:b:143:PHE:HE1	50:3:2586:G:H1'	1.70	0.56
27:d:3:ASN:HB2	47:x:25:ILE:HD11	1.87	0.56
27:d:134:GLU:HA	27:d:149:ILE:HD11	1.88	0.56
32:i:119:ARG:O	32:i:123:THR:HG23	2.06	0.56
35:l:13:HIS:CE1	50:3:990:G:H5''	2.41	0.56
50:3:722:C:H42	50:3:822:C:H4'	1.70	0.56
50:3:1070:U:H2'	50:3:1071:G:H8	1.70	0.56
50:3:1443:A:O2'	50:3:1445:U:OP2	2.19	0.56
52:5:679:U:H2'	52:5:680:G:H8	1.70	0.56
24:a:225:ARG:NH1	50:3:815:G:OP1	2.39	0.56
50:3:672:G:H4'	50:3:674:G:H4'	1.87	0.56
50:3:1171:G:H2'	50:3:1172:G:C8	2.41	0.56
52:5:23:G:H4'	52:5:879:G:C8	2.41	0.56
52:5:629:U:H2'	52:5:630:G:C8	2.41	0.56
52:5:680:G:N2	52:5:704:U:O2	2.35	0.56
7:D:189:ILE:HA	7:D:192:ILE:HG12	1.88	0.56
21:R:7:LYS:HD2	21:R:10:PHE:HB2	1.87	0.56
22:S:53:ARG:NE	52:5:196:G:O3'	2.38	0.56
25:b:34:ASN:HB3	25:b:52:LEU:HD12	1.87	0.56
26:c:29:LEU:HB3	26:c:31:GLN:HE22	1.70	0.56
30:g:112:TYR:CD1	30:g:115:ASN:C	2.84	0.56
33:j:8:LEU:HD11	33:j:84:CYS:SG	2.45	0.56
40:q:17:ASN:HA	40:q:93:LYS:HZ1	1.71	0.56
50:3:219:G:H1'	50:3:220:A:H4'	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:358:A:N6	50:3:372:G:N2	2.31	0.56
50:3:818:A:H2'	50:3:819:U:H4'	1.87	0.56
50:3:1456:C:N4	50:3:1604:A:OP2	2.38	0.56
50:3:2032:G:H2'	50:3:2033:G:H8	1.71	0.56
50:3:2297:G:H2'	50:3:2298:G:C8	2.41	0.56
52:5:1014:A:H3'	52:5:1015:U:H5''	1.88	0.56
52:5:1487:U:H2'	52:5:1488:A:C8	2.41	0.56
7:D:130:GLU:O	7:D:175:TYR:OH	2.24	0.56
7:D:180:THR:O	52:5:8:G:O2'	2.24	0.56
25:b:155:SER:OG	50:3:2579:U:O2'	2.21	0.56
29:f:82:LYS:HG3	29:f:89:TYR:HB3	1.87	0.56
33:j:25:LEU:HD13	33:j:59:ARG:HH11	1.70	0.56
39:p:32:LYS:HB3	50:3:1282:G:H21	1.71	0.56
50:3:259:A:O2'	50:3:422:A:OP1	2.24	0.56
50:3:1820:U:O2'	50:3:1821:G:OP1	2.22	0.56
50:3:2840:U:H2'	50:3:2841:A:H8	1.71	0.56
52:5:197:A:O2'	52:5:198:A:O5'	2.23	0.56
52:5:546:G:H2'	52:5:547:C:C6	2.41	0.56
1:0:34:ARG:NH1	50:3:502:A:OP1	2.38	0.55
4:A:147:LYS:HD3	4:A:150:LEU:HD21	1.87	0.55
9:F:77:ARG:HG2	52:5:1356:U:H1'	1.88	0.55
11:H:6:TYR:HB2	11:H:21:LEU:HB2	1.88	0.55
17:N:51:ARG:NH2	52:5:578:C:O4'	2.39	0.55
28:e:152:ARG:HH21	28:e:157:PRO:HD2	1.70	0.55
29:f:93:ILE:HG12	29:f:95:LYS:HG2	1.89	0.55
49:z:5:ARG:HH21	49:z:26:LYS:HE2	1.70	0.55
50:3:2060:G:H2'	50:3:2061:A:C8	2.41	0.55
50:3:2568:G:H2'	50:3:2569:A:H8	1.70	0.55
50:3:2716:U:H2'	50:3:2717:G:H8	1.70	0.55
51:4:31:G:H2'	51:4:32:G:C8	2.41	0.55
52:5:405:C:H2'	52:5:406:G:O4'	2.04	0.55
52:5:1051:U:H2'	52:5:1052:G:C8	2.40	0.55
4:A:152:LEU:O	4:A:156:ILE:HG12	2.06	0.55
29:f:83:GLU:HG2	29:f:88:PRO:HA	1.87	0.55
35:l:47:ILE:O	35:l:51:ARG:HG2	2.07	0.55
42:s:93:VAL:HG12	46:w:31:PHE:HB3	1.89	0.55
50:3:178:A:H2'	50:3:179:A:C8	2.41	0.55
50:3:922:C:N4	50:3:929:G:O6	2.39	0.55
50:3:1242:G:N2	50:3:1266:G:O2'	2.37	0.55
50:3:1937:G:N2	50:3:1938:U:O4	2.31	0.55
52:5:396:C:H2'	52:5:397:C:C6	2.41	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:848:U:H3'	52:5:865:U:H3	1.72	0.55
4:A:227:LEU:O	4:A:231:LEU:HG	2.06	0.55
5:B:36:GLU:O	5:B:40:ILE:HD12	2.06	0.55
24:a:48:ASN:OD1	24:a:49:ASN:N	2.38	0.55
28:e:127:LYS:NZ	28:e:128:VAL:O	2.37	0.55
32:i:111:MET:HE1	50:3:1173:G:N3	2.21	0.55
36:m:3:TYR:OH	50:3:784:A:N7	2.39	0.55
36:m:36:LYS:HG3	50:3:1685:G:H4'	1.88	0.55
50:3:1187:C:H2'	50:3:1188:C:C6	2.42	0.55
50:3:2084:A:N3	50:3:2442:A:O2'	2.35	0.55
50:3:2149:U:H3	50:3:2156:G:H1	1.53	0.55
50:3:2575:G:H2'	50:3:2576:A:H8	1.71	0.55
52:5:380:G:H2'	52:5:381:C:C6	2.42	0.55
1:0:39:ARG:NE	50:3:494:G:O2'	2.39	0.55
23:T:24:GLU:HA	23:T:27:ARG:HG2	1.89	0.55
31:h:82:LEU:HD11	31:h:133:ILE:HG21	1.87	0.55
33:j:5:MET:N	33:j:21:ILE:O	2.37	0.55
50:3:240:C:N3	50:3:266:A:N6	2.54	0.55
50:3:680:A:H2'	50:3:682:A:C8	2.41	0.55
50:3:733:C:O2'	50:3:769:A:N6	2.39	0.55
50:3:1749:A:H2'	50:3:1750:A:C8	2.41	0.55
50:3:1999:G:H5'	50:3:2001:C:H41	1.71	0.55
50:3:2105:G:H2'	50:3:2106:G:C8	2.35	0.55
50:3:2134:G:H2'	50:3:2135:C:C6	2.41	0.55
51:4:3:U:H2'	51:4:4:G:C8	2.41	0.55
52:5:710:G:H2'	52:5:711:G:C8	2.33	0.55
52:5:1490:G:H2'	52:5:1491:A:C8	2.42	0.55
6:C:70:GLN:HE22	6:C:74:LEU:HD11	1.71	0.55
8:E:160:VAL:HG23	10:G:80:ARG:HH21	1.71	0.55
18:O:52:TRP:HA	18:O:55:LYS:HG2	1.89	0.55
19:P:11:GLY:HA2	19:P:26:VAL:HG22	1.88	0.55
27:d:117:LEU:O	27:d:128:TYR:OH	2.24	0.55
32:i:16:ARG:NH1	32:i:56:TYR:OH	2.40	0.55
36:m:101:LEU:HD23	36:m:117:GLN:HE22	1.72	0.55
50:3:328:A:H5''	50:3:379:A:H61	1.72	0.55
50:3:895:G:N1	50:3:954:A:OP2	2.33	0.55
50:3:954:A:H5''	50:3:2276:A:N6	2.20	0.55
50:3:2018:U:H2'	50:3:2019:G:O4'	2.06	0.55
50:3:2088:U:O4	50:3:2247:G:O6	2.24	0.55
50:3:2478:G:H2'	50:3:2479:A:H8	1.70	0.55
52:5:97:G:H21	52:5:350:G:H5'	1.70	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:175:U:H2'	52:5:176:G:H8	1.70	0.55
52:5:677:C:H2'	52:5:678:A:H8	1.71	0.55
52:5:1009:G:H21	52:5:1012:A:H2	1.54	0.55
52:5:1151:A:H2'	52:5:1152:G:C8	2.42	0.55
8:E:109:LEU:O	8:E:112:ARG:HD3	2.06	0.55
22:S:75:VAL:HA	22:S:78:LYS:HG3	1.88	0.55
41:r:76:ALA:HB1	41:r:101:SER:HB3	1.88	0.55
50:3:163:A:N7	50:3:169:U:O4	2.40	0.55
50:3:450:C:H2'	50:3:451:A:H8	1.72	0.55
50:3:1316:U:H5	50:3:1354:U:H3	1.54	0.55
50:3:1451:A:H2'	50:3:1452:G:H8	1.69	0.55
50:3:1507:G:H1'	50:3:1508:G:OP2	2.07	0.55
50:3:1932:C:H42	50:3:1936:G:N2	2.03	0.55
52:5:44:C:H2'	52:5:45:A:C8	2.42	0.55
52:5:1000:A:N6	52:5:1019:G:OP2	2.39	0.55
52:5:1087:C:H2'	52:5:1088:C:C6	2.41	0.55
7:D:108:ALA:HB3	7:D:114:ALA:HB2	1.87	0.55
7:D:112:PRO:O	7:D:116:LYS:HG3	2.07	0.55
7:D:217:ASN:OD1	7:D:218:GLU:N	2.40	0.55
24:a:246:ARG:NH2	50:3:1794:A:OP1	2.39	0.55
27:d:17:GLN:OE1	27:d:22:PHE:N	2.39	0.55
34:k:88:LEU:O	34:k:122:LYS:NZ	2.39	0.55
40:q:5:VAL:HG12	40:q:55:VAL:HG21	1.89	0.55
48:y:26:ALA:O	48:y:38:LEU:HD13	2.07	0.55
50:3:1296:G:O2'	50:3:2019:G:N1	2.32	0.55
50:3:1866:G:H2'	50:3:1867:G:H8	1.72	0.55
8:E:142:ARG:HB3	10:G:4:THR:H	1.72	0.55
9:F:112:GLU:O	9:F:118:LYS:NZ	2.36	0.55
13:J:12:GLY:HA2	13:J:30:PRO:HD3	1.89	0.55
13:J:115:LYS:O	52:5:775:G:O2'	2.24	0.55
21:R:3:ARG:N	52:5:1293:A:OP1	2.40	0.55
26:c:46:ARG:NE	50:3:480:C:OP1	2.40	0.55
26:c:132:LEU:O	26:c:136:THR:N	2.40	0.55
29:f:9:VAL:HG11	29:f:33:LYS:HZ2	1.72	0.55
38:o:44:ARG:NH2	52:5:342:G:O3'	2.39	0.55
39:p:50:ARG:NH1	50:3:1191:A:O4'	2.40	0.55
43:t:10:VAL:HG22	43:t:74:LEU:HD12	1.88	0.55
50:3:49:C:O2'	50:3:54:A:O2'	2.23	0.55
50:3:134:U:H2'	50:3:135:A:H8	1.72	0.55
50:3:2377:A:H2'	50:3:2378:G:C8	2.42	0.55
50:3:2515:C:O2'	53:6:76:C:N4	2.40	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:108:C:H2'	52:5:109:G:C8	2.41	0.55
52:5:665:G:N1	52:5:736:U:N3	2.55	0.55
52:5:1156:G:H1'	52:5:1157:G:C4	2.42	0.55
52:5:1323:A:H1'	52:5:1349:A:N6	2.22	0.55
53:6:2:G:H2'	53:6:3:G:H8	1.72	0.55
2:1:38:LYS:HB3	2:1:42:ARG:NH1	2.22	0.55
6:C:184:ARG:HH12	6:C:189:ALA:HA	1.72	0.55
8:E:79:ASN:HD21	8:E:81:GLN:HG3	1.71	0.55
15:L:96:PRO:HB3	52:5:1281:U:O3'	2.07	0.55
16:M:45:ARG:NH1	52:5:1050:U:O3'	2.40	0.55
24:a:17:SER:HA	24:a:212:VAL:HB	1.89	0.55
41:r:55:ILE:O	41:r:59:THR:HG23	2.07	0.55
50:3:1806:G:N2	50:3:1826:A:OP2	2.31	0.55
52:5:556:G:H3'	52:5:557:A:H2'	1.89	0.55
52:5:663:G:O6	52:5:737:U:O2	2.25	0.55
52:5:772:G:N2	52:5:802:C:N3	2.55	0.55
52:5:833:G:H1	52:5:844:U:H3	1.55	0.55
11:H:72:GLY:O	52:5:1224:C:O2'	2.24	0.55
12:I:42:ILE:HG22	12:I:83:VAL:H	1.72	0.55
19:P:9:LEU:O	19:P:62:GLN:NE2	2.40	0.55
22:S:35:PHE:CE1	22:S:44:LEU:HB2	2.42	0.55
27:d:91:LEU:C	27:d:92:ARG:HD3	2.32	0.55
28:e:12:ASP:HB3	28:e:16:VAL:HB	1.88	0.55
36:m:34:THR:HG22	36:m:37:LYS:HG2	1.89	0.55
41:r:88:ARG:H	50:3:1648:A:H61	1.53	0.55
50:3:401:G:O2'	50:3:402:A:OP1	2.25	0.55
50:3:406:C:H2'	50:3:407:U:C6	2.42	0.55
50:3:868:C:H2'	50:3:869:U:H6	1.72	0.55
50:3:1730:C:H2'	50:3:1731:G:O4'	2.07	0.55
50:3:1780:A:H2'	50:3:1781:C:O4'	2.06	0.55
50:3:2205:U:H1'	50:3:2206:A:C8	2.40	0.55
50:3:2655:U:H2'	50:3:2656:G:C8	2.41	0.55
52:5:787:A:H2'	52:5:788:G:C4	2.41	0.55
52:5:1185:C:O2	52:5:1189:U:O2'	2.22	0.55
4:A:65:LEU:O	4:A:69:TYR:HB2	2.06	0.54
25:b:5:GLY:HA2	25:b:207:ILE:O	2.07	0.54
26:c:158:LEU:HD11	26:c:181:LYS:HG2	1.88	0.54
29:f:57:HIS:HD2	29:f:60:ILE:HD11	1.72	0.54
50:3:142:A:O2'	50:3:1436:C:O3'	2.25	0.54
50:3:293:G:H2'	50:3:294:G:C8	2.42	0.54
50:3:652:U:H2'	50:3:653:G:H8	1.72	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1019:A:H2'	50:3:1020:G:C4	2.42	0.54
50:3:1046:A:O2'	50:3:1187:C:O2'	2.25	0.54
50:3:2075:U:H3	50:3:2438:A:N6	1.99	0.54
50:3:2143:G:N2	50:3:2162:U:O2	2.22	0.54
50:3:2859:U:H2'	50:3:2860:A:H8	1.72	0.54
51:4:42:G:N2	51:4:45:C:N3	2.42	0.54
52:5:117:U:H2'	52:5:118:C:C6	2.41	0.54
52:5:420:A:H3'	52:5:421:G:H8	1.71	0.54
9:F:87:PRO:HD2	9:F:151:ALA:HB2	1.89	0.54
9:F:113:LYS:HA	52:5:1272:C:N4	2.20	0.54
11:H:31:THR:HA	11:H:37:PRO:HD3	1.89	0.54
11:H:111:ARG:HG2	52:5:1321:G:C8	2.42	0.54
50:3:189:U:H2'	50:3:190:G:C8	2.42	0.54
50:3:2478:G:O6	50:3:2489:G:N2	2.39	0.54
52:5:192:A:H2'	52:5:193:G:H8	1.72	0.54
52:5:358:G:N2	52:5:361:U:OP2	2.40	0.54
52:5:578:C:H3'	52:5:579:G:H8	1.72	0.54
53:8:2:G:H2'	53:8:3:G:H8	1.72	0.54
7:D:135:SER:HB3	7:D:178:ILE:HD11	1.88	0.54
8:E:46:ALA:HB1	20:Q:100:PRO:HA	1.88	0.54
20:Q:53:LEU:HD21	20:Q:92:ARG:HB3	1.89	0.54
24:a:180:VAL:HB	24:a:194:LYS:HG2	1.88	0.54
24:a:236:ASN:OD1	24:a:237:ASP:N	2.39	0.54
25:b:7:PHE:HE1	25:b:84:ILE:HD11	1.72	0.54
25:b:37:ALA:N	25:b:51:LEU:O	2.40	0.54
28:e:92:LEU:O	28:e:132:THR:OG1	2.26	0.54
45:v:37:LYS:HB3	45:v:47:ARG:HG3	1.89	0.54
50:3:1292:A:H61	50:3:2024:C:N4	2.05	0.54
50:3:1502:A:O2'	50:3:1541:A:N6	2.41	0.54
50:3:1534:A:O2'	50:3:1535:A:H8	1.89	0.54
50:3:2021:A:H2'	50:3:2022:A:C4	2.42	0.54
52:5:598:U:H2'	52:5:599:G:H8	1.71	0.54
52:5:930:A:H2'	52:5:931:C:C6	2.42	0.54
52:5:1067:C:H2'	52:5:1068:G:C8	2.42	0.54
4:A:112:TRP:CD1	4:A:114:GLY:H	2.26	0.54
5:B:141:LEU:HA	5:B:144:VAL:HG22	1.89	0.54
8:E:66:ASN:OD1	8:E:67:GLN:HG2	2.08	0.54
10:G:95:LEU:HD12	19:P:37:LYS:HZ3	1.72	0.54
39:p:64:LEU:HD11	39:p:95:SER:HB3	1.88	0.54
48:y:6:ARG:NH2	50:3:2025:C:H3'	2.22	0.54
50:3:1588:A:H2'	50:3:1589:A:H8	1.71	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2494:C:H2'	50:3:2495:A:H8	1.71	0.54
50:3:2504:C:O2'	50:3:2505:A:O5'	2.20	0.54
50:3:2844:U:H2'	50:3:2845:U:C6	2.42	0.54
52:5:732:A:H2'	52:5:733:A:C8	2.42	0.54
52:5:830:U:H2'	52:5:831:C:C6	2.43	0.54
52:5:836:C:H42	52:5:842:C:H42	1.54	0.54
8:E:42:LEU:HB2	8:E:56:HIS:CE1	2.42	0.54
29:f:58:TYR:O	29:f:62:LYS:HG2	2.08	0.54
30:g:41:ARG:HB2	30:g:51:ILE:HD11	1.90	0.54
39:p:46:TYR:OH	39:p:50:ARG:NH2	2.40	0.54
42:s:53:LEU:N	42:s:84:THR:O	2.40	0.54
50:3:270:G:O2'	50:3:315:A:N6	2.41	0.54
50:3:755:C:H2'	50:3:756:A:C8	2.42	0.54
50:3:1603:A:H2'	50:3:1604:A:C8	2.43	0.54
50:3:2752:G:N2	50:3:2768:U:O2	2.40	0.54
52:5:451:G:O6	52:5:476:U:N3	2.41	0.54
52:5:505:C:OP2	52:5:506:U:O2'	2.23	0.54
4:A:99:ILE:CD1	4:A:102:ARG:HH22	2.20	0.54
9:F:64:ALA:O	9:F:68:VAL:HG23	2.07	0.54
10:G:98:TYR:HE1	10:G:136:GLU:HG2	1.73	0.54
30:g:100:VAL:HA	30:g:106:MET:HG3	1.90	0.54
43:t:88:LYS:HB3	43:t:105:LYS:HB2	1.89	0.54
47:x:31:GLN:OE1	47:x:31:GLN:N	2.41	0.54
50:3:1254:U:H2'	50:3:1255:G:C4	2.43	0.54
50:3:1677:G:H2'	50:3:1678:U:C6	2.43	0.54
50:3:2393:C:H2'	50:3:2394:A:C8	2.43	0.54
50:3:2851:U:H3	50:3:2873:G:H1	1.53	0.54
52:5:499:U:H2'	52:5:500:G:H8	1.69	0.54
52:5:1161:G:H2'	52:5:1162:G:H8	1.72	0.54
53:6:11:G:O6	53:6:45:G:N2	2.41	0.54
10:G:11:HIS:NE2	52:5:871:U:O2	2.41	0.54
26:c:139:LYS:O	26:c:142:VAL:HG22	2.08	0.54
36:m:74:ASP:OD1	36:m:75:VAL:N	2.41	0.54
50:3:425:U:H4'	50:3:426:U:OP2	2.08	0.54
50:3:515:A:H1'	50:3:517:G:H5''	1.90	0.54
50:3:518:A:O2'	50:3:532:A:N1	2.40	0.54
50:3:1873:A:H62	50:3:1882:G:H21	1.54	0.54
50:3:1916:C:H2'	50:3:1917:G:C8	2.43	0.54
50:3:2406:U:H2'	50:3:2407:G:H8	1.71	0.54
51:4:31:G:O6	51:4:48:A:N6	2.41	0.54
4:A:59:GLU:O	4:A:62:ARG:HD3	2.08	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:118:THR:OG1	52:5:1065:G:O3'	2.25	0.54
10:G:98:TYR:CD2	52:5:596:U:H4'	2.43	0.54
13:J:34:VAL:O	52:5:681:U:O2'	2.25	0.54
17:N:29:LEU:HG	17:N:60:ARG:NH1	2.23	0.54
29:f:126:ILE:O	29:f:137:VAL:HA	2.08	0.54
38:o:48:PHE:HE2	38:o:66:VAL:HG13	1.72	0.54
46:w:101:SER:O	46:w:105:ARG:HG2	2.07	0.54
50:3:569:U:O4	50:3:592:G:O6	2.26	0.54
50:3:909:U:H2'	50:3:910:G:C8	2.42	0.54
50:3:1245:G:N2	50:3:1264:U:O2	2.30	0.54
50:3:1702:A:N3	50:3:1704:C:N4	2.56	0.54
50:3:1743:U:O2'	50:3:2863:G:N3	2.40	0.54
50:3:1836:A:H3'	50:3:1837:C:H6	1.73	0.54
50:3:2254:G:H2'	50:3:2255:A:C8	2.42	0.54
50:3:2420:A:H2'	50:3:2421:U:O4'	2.07	0.54
50:3:2440:A:C2	53:8:76:C:C2'	2.90	0.54
50:3:2735:G:H2'	50:3:2736:U:C6	2.43	0.54
52:5:441:U:H2'	52:5:442:G:C8	2.42	0.54
52:5:1390:G:O6	52:5:1460:U:O4	2.25	0.54
52:5:1396:U:H2'	52:5:1397:G:C8	2.42	0.54
53:6:2:G:H2'	53:6:3:G:C8	2.42	0.54
12:I:14:ILE:HD11	12:I:104:LEU:HB2	1.89	0.54
28:e:55:ILE:HD11	28:e:72:ASN:HB2	1.88	0.54
35:l:65:TRP:HB2	35:l:105:GLU:CG	2.38	0.54
45:v:22:LYS:NZ	50:3:204:U:O2'	2.41	0.54
47:x:39:CYS:SG	47:x:40:GLY:N	2.81	0.54
50:3:137:U:H2'	50:3:138:U:C6	2.43	0.54
50:3:2380:U:H2'	50:3:2381:G:H8	1.73	0.54
50:3:2534:G:H2'	50:3:2535:C:C6	2.42	0.54
52:5:638:A:H2	52:5:639:A:H62	1.55	0.54
52:5:1088:C:O2'	52:5:1144:A:N3	2.38	0.54
52:5:1448:A:H2'	52:5:1449:G:C8	2.42	0.54
11:H:79:GLY:O	11:H:83:LEU:HG	2.07	0.54
49:z:5:ARG:NH1	49:z:25:VAL:HG12	2.11	0.54
50:3:1020:G:N2	50:3:1020:G:OP2	2.41	0.54
50:3:1588:A:O2'	50:3:1589:A:OP1	2.25	0.54
50:3:2041:C:H2'	50:3:2042:A:C8	2.43	0.54
50:3:2745:G:H2'	50:3:2746:A:C8	2.43	0.54
52:5:71:A:H2'	52:5:72:A:H8	1.73	0.54
52:5:430:G:H2'	52:5:431:U:C6	2.43	0.54
52:5:712:A:H2'	52:5:713:A:C8	2.42	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:882:U:H3'	52:5:883:A:H8	1.73	0.54
6:C:100:ILE:O	6:C:104:MET:HG2	2.08	0.53
8:E:4:ASN:HB2	8:E:88:ILE:HB	1.89	0.53
22:S:56:ARG:NH1	52:5:197:A:OP2	2.41	0.53
30:g:4:LYS:HE3	50:3:1081:A:H62	1.73	0.53
33:j:31:ARG:NH2	50:3:2683:G:OP1	2.42	0.53
36:m:59:ASN:O	36:m:63:VAL:HG23	2.08	0.53
43:t:3:ARG:NH1	43:t:87:GLY:O	2.40	0.53
50:3:1137:C:H2'	50:3:1138:A:H8	1.73	0.53
50:3:2436:G:H4'	50:3:2437:G:C4	2.43	0.53
50:3:2738:U:H2'	50:3:2739:C:C6	2.43	0.53
50:3:2849:G:H1	50:3:2875:U:H3	1.55	0.53
50:3:2850:G:H2'	50:3:2851:U:H6	1.72	0.53
52:5:69:G:H2'	52:5:70:A:O4'	2.08	0.53
52:5:683:G:H1	52:5:700:G:HO2'	1.54	0.53
52:5:884:G:N2	52:5:901:A:O5'	2.40	0.53
52:5:1126:U:O4	52:5:1127:A:N6	2.40	0.53
52:5:1241:G:N2	52:5:1244:A:OP2	2.19	0.53
53:8:2:G:H2'	53:8:3:G:C8	2.42	0.53
5:B:179:SER:OG	52:5:1102:A:N6	2.39	0.53
24:a:80:GLU:OE1	24:a:120:LYS:NZ	2.36	0.53
29:f:69:LYS:HZ3	29:f:137:VAL:H	1.55	0.53
32:i:109:LYS:O	32:i:112:LEU:HG	2.06	0.53
36:m:75:VAL:O	36:m:79:MET:HG2	2.08	0.53
52:5:459:C:H2'	52:5:460:A:C8	2.43	0.53
52:5:1012:A:C5	52:5:1013:C:H1'	2.43	0.53
53:8:11:G:O6	53:8:45:G:N2	2.41	0.53
30:g:56:ASN:N	50:3:1142:G:OP1	2.27	0.53
34:k:3:LEU:HD13	34:k:8:SER:HA	1.90	0.53
50:3:626:A:H2'	50:3:627:U:C6	2.44	0.53
50:3:822:C:H3'	50:3:826:C:H41	1.72	0.53
50:3:1702:A:H1'	50:3:1704:C:H41	1.71	0.53
50:3:2669:G:H2'	50:3:2670:A:C4	2.43	0.53
52:5:671:G:H2'	52:5:672:A:C8	2.39	0.53
52:5:1139:A:H2'	52:5:1140:A:C8	2.43	0.53
52:5:1141:U:O2'	52:5:1142:G:H8	1.90	0.53
9:F:119:ILE:HA	9:F:122:GLU:OE1	2.08	0.53
12:I:72:GLU:HB2	16:M:59:ALA:HA	1.89	0.53
20:Q:95:TYR:OH	52:5:669:U:O2	2.23	0.53
28:e:126:VAL:HG22	28:e:136:ILE:HG22	1.91	0.53
31:h:120:ALA:O	31:h:124:VAL:HG23	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:k:42:ARG:HA	50:3:706:C:H41	1.74	0.53
41:r:72:PHE:HD2	41:r:108:SER:HB2	1.72	0.53
46:w:105:ARG:NH1	50:3:1431:A:O5'	2.41	0.53
50:3:142:A:H2'	50:3:143:A:C8	2.43	0.53
50:3:631:A:H2'	50:3:632:A:C8	2.44	0.53
50:3:2188:U:H2'	50:3:2189:U:C6	2.43	0.53
50:3:2743:U:H2'	50:3:2744:A:C8	2.43	0.53
52:5:73:G:N1	52:5:83:U:O4	2.41	0.53
52:5:212:G:HO2'	52:5:465:A:H61	1.56	0.53
52:5:424:U:OP2	52:5:425:G:O2'	2.26	0.53
3:2:25:VAL:HG23	3:2:33:LYS:HA	1.89	0.53
6:C:10:ARG:O	6:C:14:LEU:HG	2.09	0.53
50:3:590:U:H2'	50:3:591:G:H8	1.73	0.53
50:3:1363:C:H2'	50:3:1364:A:H8	1.73	0.53
50:3:1832:G:H2'	50:3:1833:G:H8	1.73	0.53
52:5:1351:U:H2'	52:5:1352:A:H8	1.73	0.53
52:5:1406:U:O4	52:5:1444:G:O6	2.27	0.53
7:D:158:THR:OG1	7:D:177:ASP:OD2	2.21	0.53
8:E:142:ARG:HH21	8:E:144:SER:HA	1.73	0.53
11:H:22:THR:N	11:H:64:ASP:OD1	2.42	0.53
22:S:13:GLN:NE2	52:5:90:G:OP2	2.42	0.53
29:f:114:LYS:HG2	29:f:128:LEU:HD12	1.90	0.53
30:g:97:ASP:HB3	30:g:127:ALA:HB1	1.91	0.53
35:l:120:ARG:NH1	50:3:2475:C:O3'	2.42	0.53
36:m:50:THR:HA	36:m:53:LYS:HG2	1.90	0.53
43:t:14:THR:HG23	50:3:344:A:H5''	1.90	0.53
50:3:135:A:H2'	50:3:136:G:H8	1.74	0.53
50:3:665:C:N4	50:3:666:G:O6	2.42	0.53
50:3:1327:G:N2	50:3:1676:G:O6	2.41	0.53
50:3:1727:U:O4	50:3:1983:U:O2'	2.23	0.53
50:3:1798:A:C2	50:3:1836:A:H4'	2.44	0.53
50:3:2657:C:H2'	50:3:2658:U:C6	2.44	0.53
52:5:21:U:H2'	52:5:22:G:C8	2.44	0.53
52:5:1149:G:H2'	52:5:1150:G:H8	1.72	0.53
8:E:149:ALA:HA	10:G:58:GLN:HG3	1.91	0.53
14:K:107:ARG:HG3	14:K:108:TYR:CE2	2.44	0.53
34:k:34:ARG:N	50:3:1221:G:OP1	2.41	0.53
34:k:92:LYS:H	34:k:125:HIS:HB2	1.73	0.53
36:m:12:ALA:HA	36:m:15:VAL:HG22	1.90	0.53
50:3:122:G:H4'	50:3:152:A:H5'	1.90	0.53
50:3:140:G:N2	50:3:143:A:OP2	2.24	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:193:G:N1	50:3:209:G:O2'	2.29	0.53
50:3:1327:G:O2'	50:3:1674:A:N6	2.41	0.53
50:3:2291:U:O4	50:3:2292:A:N6	2.42	0.53
50:3:2633:C:H2'	50:3:2634:C:C6	2.43	0.53
50:3:2696:G:N1	50:3:2728:U:OP2	2.32	0.53
50:3:2826:G:O2'	50:3:2828:C:OP2	2.15	0.53
52:5:719:G:O2'	52:5:721:G:O4'	2.27	0.53
52:5:1499:G:H2'	52:5:1500:G:H8	1.71	0.53
8:E:165:ASN:OD1	8:E:166:PHE:N	2.41	0.53
24:a:232:ALA:O	50:3:817:A:O2'	2.26	0.53
24:a:245:GLY:C	24:a:247:SER:H	2.16	0.53
25:b:56:THR:HA	25:b:78:THR:HA	1.90	0.53
28:e:19:ASN:OD1	28:e:26:ALA:HB3	2.09	0.53
36:m:58:ASN:ND2	50:3:2855:A:N3	2.54	0.53
50:3:360:G:H2'	50:3:361:G:C8	2.44	0.53
50:3:685:G:H2'	50:3:686:C:C6	2.44	0.53
50:3:1071:G:O6	50:3:1154:U:O4	2.26	0.53
50:3:1086:G:H1	50:3:1143:U:H3	1.57	0.53
50:3:1089:A:H2'	50:3:1090:G:C8	2.44	0.53
50:3:1113:U:O2'	50:3:1123:A:OP1	2.25	0.53
50:3:2340:U:HO2'	50:3:2343:A:HO2'	1.57	0.53
50:3:2643:A:H2'	50:3:2644:U:O4'	2.09	0.53
52:5:185:G:H2'	52:5:186:A:C8	2.44	0.53
52:5:442:G:H3'	52:5:482:G:H22	1.73	0.53
52:5:616:C:H5'	52:5:617:U:H5''	1.91	0.53
4:A:66:GLN:O	4:A:70:ASN:ND2	2.42	0.53
6:C:97:LEU:HD23	6:C:132:PRO:HA	1.91	0.53
7:D:190:ASN:ND2	52:5:20:C:OP1	2.42	0.53
10:G:62:ASN:HD22	10:G:67:LYS:HB3	1.74	0.53
21:R:66:MET:SD	21:R:68:GLY:N	2.79	0.53
24:a:282:ARG:HH22	50:3:1805:U:H3'	1.74	0.53
33:j:88:LYS:O	33:j:89:GLU:HG3	2.09	0.53
50:3:337:U:H2'	50:3:338:G:C8	2.44	0.53
50:3:362:U:C2	50:3:366:A:N7	2.77	0.53
50:3:738:U:H3	50:3:763:G:H1	1.56	0.53
50:3:1746:U:O2	50:3:1753:G:N2	2.40	0.53
50:3:1803:U:H3	50:3:1830:G:H1	1.56	0.53
50:3:1852:G:H2'	50:3:1853:G:C8	2.44	0.53
50:3:2137:A:H5''	50:3:2138:U:H5'	1.90	0.53
52:5:218:U:O4	52:5:219:A:N6	2.42	0.53
52:5:333:U:H2'	52:5:334:A:C8	2.44	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:365:U:O2	52:5:388:G:N2	2.26	0.53
52:5:500:G:H2'	52:5:501:A:C8	2.44	0.53
52:5:821:U:H2'	52:5:822:A:H8	1.74	0.53
52:5:1213:A:H62	52:5:1275:U:H3	1.52	0.53
52:5:1213:A:N6	52:5:1275:U:C2	2.77	0.53
52:5:1266:U:H2'	52:5:1267:G:C8	2.43	0.53
52:5:1330:A:H2'	52:5:1331:A:C8	2.42	0.53
5:B:134:ARG:HH12	5:B:138:ARG:HH11	1.56	0.53
13:J:111:HIS:CD2	52:5:672:A:H1'	2.44	0.53
15:L:12:GLN:H	15:L:46:LYS:HD3	1.74	0.53
25:b:185:ASP:HB3	25:b:190:LEU:H	1.74	0.53
27:d:69:LYS:HD2	27:d:82:GLY:HA2	1.91	0.53
35:l:79:LEU:HG	35:l:80:GLU:HG2	1.90	0.53
36:m:59:ASN:HA	36:m:62:GLN:HE21	1.74	0.53
41:r:50:LEU:HD13	41:r:103:LEU:HD23	1.90	0.53
50:3:1201:A:H2'	50:3:1202:A:C8	2.43	0.53
50:3:2156:G:H2'	50:3:2157:A:C8	2.44	0.53
50:3:2867:U:H2'	50:3:2868:G:H8	1.73	0.53
52:5:421:G:H2'	52:5:422:A:C8	2.44	0.53
4:A:202:CYS:SG	4:A:206:THR:OG1	2.64	0.52
6:C:14:LEU:HD13	6:C:59:ARG:HG2	1.91	0.52
10:G:46:GLU:HB3	10:G:50:LYS:HZ3	1.72	0.52
14:K:127:ARG:C	14:K:129:ALA:H	2.17	0.52
45:v:22:LYS:HD2	45:v:22:LYS:O	2.09	0.52
50:3:45:U:H2'	50:3:46:A:O4'	2.09	0.52
52:5:145:G:N2	52:5:147:A:H3'	2.23	0.52
52:5:599:G:O6	52:5:634:U:O4	2.26	0.52
2:1:39:ARG:NH2	50:3:2357:G:OP2	2.42	0.52
32:i:120:ARG:O	32:i:123:THR:OG1	2.21	0.52
37:n:27:ARG:NH2	50:3:2386:A:O2'	2.42	0.52
50:3:1020:G:H5''	50:3:1021:C:C5	2.34	0.52
50:3:1869:G:O6	50:3:1887:U:O4	2.27	0.52
50:3:2054:C:H2'	50:3:2055:A:H8	1.74	0.52
50:3:2171:A:OP1	50:3:2180:U:O2'	2.25	0.52
50:3:2376:C:H2'	50:3:2377:A:C8	2.45	0.52
50:3:2611:G:H2'	50:3:2612:G:C8	2.44	0.52
50:3:2634:C:H2'	50:3:2635:G:C8	2.41	0.52
52:5:234:G:H2'	52:5:235:C:C6	2.44	0.52
52:5:922:G:O2'	52:5:1478:A:N7	2.43	0.52
52:5:1498:G:H2'	52:5:1499:G:H8	1.73	0.52
53:6:20:G:H5'	53:6:58:G:N3	2.24	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:8:20:G:H5'	53:8:58:G:N3	2.24	0.52
3:2:30:GLN:HB3	50:3:2535:C:H5''	1.91	0.52
7:D:142:GLY:O	7:D:148:ARG:HA	2.10	0.52
9:F:35:LYS:HE2	9:F:39:GLN:HE22	1.74	0.52
19:P:13:VAL:HG13	19:P:57:ASP:HA	1.91	0.52
22:S:67:ARG:NH1	52:5:257:U:O4	2.43	0.52
27:d:17:GLN:HE22	27:d:22:PHE:HB2	1.74	0.52
45:v:58:LEU:HD12	45:v:63:ARG:HB2	1.90	0.52
46:w:63:LEU:O	46:w:66:GLN:NE2	2.35	0.52
50:3:947:A:H2'	50:3:948:A:C8	2.44	0.52
50:3:1949:C:OP2	50:3:1950:U:O2'	2.23	0.52
50:3:2074:G:H3'	50:3:2075:U:H4'	1.92	0.52
50:3:2377:A:H2'	50:3:2378:G:H8	1.73	0.52
50:3:2677:A:H2'	50:3:2678:A:C8	2.45	0.52
50:3:2739:C:H2'	50:3:2740:U:C6	2.44	0.52
50:3:2828:C:H3'	50:3:2829:G:N2	2.25	0.52
51:4:60:C:H2'	51:4:61:A:H8	1.73	0.52
52:5:87:G:H2'	52:5:88:A:H8	1.73	0.52
52:5:448:A:H4'	52:5:449:A:OP2	2.08	0.52
9:F:15:PRO:HD2	11:H:45:LEU:HD21	1.90	0.52
14:K:26:TYR:O	14:K:43:LYS:NZ	2.41	0.52
15:L:15:ILE:HD12	15:L:18:ALA:HB3	1.91	0.52
24:a:82:THR:OG1	24:a:100:THR:O	2.26	0.52
25:b:122:ALA:HA	25:b:125:ARG:HB3	1.91	0.52
50:3:18:G:H2'	50:3:19:G:H8	1.74	0.52
50:3:306:G:N1	50:3:399:G:N7	2.58	0.52
50:3:746:G:H2'	50:3:747:A:C8	2.44	0.52
50:3:815:G:N2	50:3:820:U:O4	2.42	0.52
50:3:989:G:N2	50:3:2281:A:N1	2.56	0.52
50:3:1689:A:H61	50:3:2012:A:H1'	1.75	0.52
50:3:2032:G:H2'	50:3:2033:G:C8	2.45	0.52
50:3:2624:C:H2'	50:3:2625:U:C6	2.44	0.52
50:3:2699:C:O2'	50:3:2875:U:O2'	2.20	0.52
52:5:409:G:H1'	52:5:425:G:H21	1.74	0.52
52:5:763:A:OP2	52:5:809:G:N2	2.31	0.52
52:5:937:G:H1	52:5:1315:U:H3	1.57	0.52
52:5:1408:A:N6	52:5:1442:A:O2'	2.41	0.52
2:1:4:LYS:HB3	2:1:58:LEU:HD21	1.92	0.52
5:B:21:ARG:O	5:B:59:GLU:HA	2.09	0.52
6:C:29:LYS:NZ	52:5:422:A:H5''	2.24	0.52
8:E:93:GLU:OE1	20:Q:88:LYS:NZ	2.34	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:F:74:LEU:HD13	9:F:85:GLN:HG3	1.92	0.52
13:J:21:ASN:ND2	52:5:688:G:OP2	2.36	0.52
29:f:69:LYS:NZ	29:f:137:VAL:H	2.07	0.52
30:g:59:LEU:HD23	30:g:80:LEU:HD13	1.90	0.52
39:p:47:ARG:NH1	50:3:593:C:O2'	2.42	0.52
40:q:79:HIS:ND1	50:3:1219:U:OP1	2.42	0.52
50:3:464:A:H2'	50:3:464:A:N3	2.25	0.52
50:3:1007:C:OP1	50:3:1025:G:N1	2.34	0.52
50:3:1801:U:O2	50:3:1832:G:N2	2.37	0.52
50:3:1816:A:H2'	50:3:1817:A:C8	2.45	0.52
50:3:2176:G:N2	50:3:2179:A:O5'	2.33	0.52
52:5:132:G:H2'	52:5:133:G:C8	2.44	0.52
52:5:725:A:H2'	52:5:726:A:C8	2.45	0.52
12:I:59:ARG:NH2	12:I:67:SER:OG	2.43	0.52
12:I:62:HIS:CE1	52:5:1174:U:H4'	2.45	0.52
16:M:16:PHE:HB3	16:M:18:VAL:HG23	1.91	0.52
50:3:71:C:O2	50:3:75:A:O2'	2.22	0.52
50:3:192:U:H2'	50:3:193:G:O4'	2.10	0.52
50:3:297:G:C8	50:3:457:U:H5''	2.45	0.52
50:3:1587:U:H2'	50:3:1588:A:C8	2.44	0.52
52:5:375:C:N4	52:5:376:G:O6	2.42	0.52
5:B:193:GLN:NE2	52:5:1180:U:H4'	2.25	0.52
10:G:48:LEU:HD23	10:G:54:LEU:HB2	1.90	0.52
25:b:65:PRO:HB3	50:3:2795:C:H1'	1.92	0.52
28:e:57:ARG:HG2	28:e:64:SER:HB2	1.92	0.52
30:g:56:ASN:ND2	50:3:1142:G:OP1	2.39	0.52
35:l:31:GLU:HA	35:l:134:ARG:HB2	1.91	0.52
50:3:464:A:H5''	50:3:465:A:N7	2.24	0.52
50:3:2440:A:C6	53:8:76:C:H2'	2.41	0.52
50:3:2521:A:H2'	50:3:2522:U:C6	2.45	0.52
52:5:81:A:H2'	52:5:82:C:O4'	2.09	0.52
52:5:145:G:N2	52:5:148:A:C8	2.77	0.52
52:5:818:A:H2'	52:5:819:G:H8	1.74	0.52
52:5:1243:A:O2'	52:5:1244:A:O4'	2.22	0.52
4:A:41:MET:HE1	4:A:206:THR:N	2.25	0.52
8:E:35:LEU:HA	8:E:61:LYS:O	2.10	0.52
15:L:43:LYS:HD3	52:5:1269:U:H5''	1.92	0.52
17:N:33:ILE:HD11	17:N:56:LYS:CB	2.37	0.52
27:d:30:ARG:N	27:d:158:THR:OG1	2.42	0.52
30:g:11:VAL:HG22	30:g:58:ILE:HG13	1.92	0.52
30:g:79:LYS:HZ2	30:g:81:ALA:HB2	1.75	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:k:3:LEU:HB3	34:k:7:LYS:HG3	1.92	0.52
46:w:38:LEU:O	46:w:40:LYS:N	2.43	0.52
50:3:204:U:O2	50:3:424:G:N2	2.43	0.52
50:3:1187:C:H2'	50:3:1188:C:H6	1.74	0.52
50:3:1309:G:H2'	50:3:1310:U:H6	1.75	0.52
50:3:2528:C:H41	50:3:2550:A:H2	1.56	0.52
50:3:2529:C:H2'	50:3:2530:U:C6	2.44	0.52
52:5:296:A:O2'	52:5:562:U:O4	2.22	0.52
52:5:778:A:H62	52:5:798:U:H3	1.57	0.52
52:5:1290:G:N2	52:5:1293:A:OP2	2.39	0.52
7:D:141:ILE:HD11	7:D:148:ARG:HB2	1.90	0.52
8:E:100:ILE:HA	8:E:103:LYS:HZ3	1.75	0.52
8:E:114:LYS:HE3	20:Q:40:TYR:HE1	1.75	0.52
14:K:93:THR:HG22	14:K:94:LEU:N	2.21	0.52
18:O:25:LYS:HB2	52:5:306:G:H5''	1.92	0.52
25:b:157:GLN:NE2	50:3:2041:C:OP1	2.43	0.52
27:d:27:GLN:HG2	51:4:55:A:H1'	1.91	0.52
30:g:112:TYR:CE2	30:g:114:ASP:HA	2.45	0.52
44:u:50:ILE:HA	44:u:74:PHE:HA	1.91	0.52
50:3:29:G:O2'	50:3:547:G:N2	2.42	0.52
50:3:59:C:H2'	50:3:60:G:C8	2.45	0.52
50:3:742:G:N2	50:3:759:U:O2	2.28	0.52
50:3:2380:U:H2'	50:3:2381:G:C8	2.45	0.52
52:5:415:C:H2'	52:5:416:U:C6	2.45	0.52
52:5:677:C:H2'	52:5:678:A:C8	2.45	0.52
52:5:880:G:H1	52:5:905:U:H3	1.57	0.52
52:5:1061:U:H2'	52:5:1062:C:C6	2.45	0.52
52:5:1150:G:H2'	52:5:1151:A:H8	1.74	0.52
52:5:1213:A:N6	52:5:1275:U:N3	2.58	0.52
8:E:142:ARG:NH2	10:G:60:LEU:HB3	2.24	0.52
27:d:31:LEU:HD21	27:d:34:ILE:HD11	1.90	0.52
34:k:4:ASN:OD1	34:k:5:GLN:N	2.42	0.52
37:n:7:GLN:NE2	37:n:11:ARG:HD3	2.22	0.52
47:x:18:SER:OG	47:x:39:CYS:O	2.28	0.52
50:3:329:G:H2'	50:3:330:A:H8	1.74	0.52
50:3:453:U:H2'	50:3:454:G:C8	2.45	0.52
50:3:664:G:H2'	50:3:665:C:C6	2.45	0.52
50:3:1306:G:H2'	50:3:1307:G:C8	2.44	0.52
50:3:1363:C:H2'	50:3:1364:A:C8	2.44	0.52
50:3:2592:U:H2'	50:3:2593:U:H2'	1.91	0.52
52:5:372:G:N2	52:5:383:U:O2	2.39	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:461:G:H3'	52:5:462:G:H8	1.75	0.52
52:5:1405:U:O2	52:5:1445:G:N2	2.29	0.52
4:A:22:LYS:HE3	4:A:25:GLU:HG3	1.92	0.51
4:A:154:ARG:O	4:A:158:ARG:HG2	2.10	0.51
5:B:134:ARG:NH2	5:B:138:ARG:HE	2.08	0.51
15:L:34:LEU:HD23	15:L:39:ILE:HD12	1.92	0.51
15:L:97:VAL:H	52:5:1282:U:H5''	1.76	0.51
18:O:5:ARG:HB3	52:5:44:C:H5''	1.91	0.51
22:S:13:GLN:O	22:S:17:ARG:HG3	2.10	0.51
24:a:182:LEU:HD12	24:a:192:PHE:HD2	1.75	0.51
50:3:729:U:H3	50:3:803:G:H1	1.58	0.51
50:3:2097:A:H2'	50:3:2098:U:O4'	2.10	0.51
50:3:2303:U:H2'	50:3:2304:U:H6	1.75	0.51
50:3:2569:A:H2'	50:3:2570:U:O4'	2.10	0.51
50:3:2701:A:H2'	50:3:2702:G:H8	1.74	0.51
52:5:712:A:H2'	52:5:713:A:H8	1.75	0.51
52:5:838:A:H2'	52:5:839:U:C6	2.45	0.51
52:5:950:C:H2'	52:5:951:U:C6	2.45	0.51
13:J:50:LYS:NZ	52:5:688:G:O6	2.34	0.51
26:c:200:GLU:HG2	26:c:201:LYS:N	2.26	0.51
44:u:20:GLY:HA3	50:3:2263:G:H1'	1.92	0.51
45:v:4:LYS:NZ	50:3:1393:A:O3'	2.43	0.51
50:3:619:A:H62	50:3:1281:A:H2	1.56	0.51
50:3:2290:G:O2'	50:3:2398:U:O4	2.21	0.51
50:3:2832:G:H2'	50:3:2833:A:C8	2.45	0.51
52:5:230:G:H2'	52:5:231:U:C6	2.45	0.51
52:5:951:U:H3	52:5:1200:G:H1	1.58	0.51
52:5:1245:A:H2'	52:5:1246:A:H8	1.74	0.51
34:k:30:LYS:NZ	50:3:844:G:OP2	2.43	0.51
43:t:9:LYS:HG2	43:t:77:PHE:CD2	2.45	0.51
48:y:5:GLN:NE2	50:3:2061:A:N3	2.57	0.51
50:3:641:U:H2'	50:3:642:A:H8	1.75	0.51
50:3:749:U:H3	50:3:751:A:H3'	1.75	0.51
50:3:1414:C:H2'	50:3:1415:A:C8	2.45	0.51
50:3:2506:C:O2'	50:3:2507:C:OP1	2.27	0.51
50:3:2858:A:N6	50:3:2868:G:O6	2.43	0.51
52:5:58:G:H2'	52:5:59:C:C6	2.45	0.51
52:5:337:C:H2'	52:5:338:C:H6	1.74	0.51
52:5:919:C:H2'	52:5:920:G:C8	2.46	0.51
5:B:155:LEU:HD13	5:B:170:MET:HB3	1.91	0.51
6:C:26:SER:HB2	6:C:30:LYS:HB2	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Q:80:GLN:OE1	52:5:721:G:O2'	2.23	0.51
29:f:7:GLN:HG2	29:f:33:LYS:HA	1.92	0.51
36:m:106:ARG:NE	36:m:111:THR:OG1	2.43	0.51
46:w:23:LYS:HD3	46:w:26:LEU:HD21	1.91	0.51
50:3:450:C:H2'	50:3:451:A:C8	2.46	0.51
50:3:966:U:H2'	50:3:967:U:C6	2.45	0.51
50:3:984:C:H2'	50:3:985:A:H8	1.74	0.51
50:3:1077:G:H2'	50:3:1078:C:C6	2.46	0.51
50:3:1428:U:H2'	50:3:1429:G:C8	2.45	0.51
50:3:2100:G:H21	50:3:2206:A:H62	1.58	0.51
50:3:2313:U:O2'	50:3:2314:U:O4'	2.26	0.51
52:5:516:C:H4'	52:5:517:C:H5''	1.92	0.51
52:5:1213:A:N7	52:5:1277:C:H1'	2.26	0.51
52:5:1226:A:H2'	52:5:1227:A:C8	2.46	0.51
52:5:1488:A:H2'	52:5:1489:C:C6	2.45	0.51
17:N:33:ILE:CG1	17:N:60:ARG:HH12	2.23	0.51
27:d:97:TRP:HA	27:d:100:LEU:HB3	1.92	0.51
50:3:89:U:H5''	50:3:90:G:H5''	1.93	0.51
50:3:868:C:H2'	50:3:869:U:C6	2.44	0.51
50:3:1026:A:H5''	50:3:1192:U:H5''	1.93	0.51
50:3:1254:U:H2'	50:3:1255:G:C5	2.45	0.51
50:3:2031:C:H2'	50:3:2032:G:C8	2.44	0.51
50:3:2828:C:OP2	50:3:2829:G:N2	2.44	0.51
52:5:1213:A:N6	52:5:1275:U:H3	2.09	0.51
53:8:10:A:N7	53:8:47:G:N2	2.58	0.51
7:D:216:LEU:HG	7:D:218:GLU:H	1.76	0.51
13:J:21:ASN:HA	13:J:51:LYS:HB3	1.92	0.51
14:K:52:THR:HG22	14:K:64:LYS:HA	1.92	0.51
14:K:57:LYS:NZ	52:5:1467:A:OP1	2.42	0.51
25:b:178:ASN:ND2	50:3:2739:C:OP1	2.43	0.51
36:m:31:ILE:HG22	36:m:116:LEU:HB2	1.93	0.51
38:o:58:LYS:H	50:3:2849:G:H5''	1.75	0.51
38:o:67:ARG:HH12	38:o:105:ARG:HA	1.76	0.51
40:q:70:VAL:HG23	40:q:83:TYR:HB3	1.92	0.51
41:r:3:ALA:H	41:r:62:HIS:CD2	2.29	0.51
43:t:95:PRO:HG2	43:t:98:ASN:HB3	1.91	0.51
50:3:155:A:H2'	50:3:156:A:C8	2.45	0.51
50:3:339:U:H2'	50:3:340:U:C6	2.46	0.51
50:3:622:U:H2'	50:3:623:A:H8	1.76	0.51
50:3:725:G:H1	50:3:807:U:H3	1.59	0.51
50:3:1039:G:H2'	50:3:1040:U:C6	2.45	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1089:A:H2'	50:3:1090:G:H8	1.76	0.51
50:3:1361:U:H2'	50:3:1362:C:H6	1.76	0.51
50:3:1483:G:H2'	50:3:1484:G:H8	1.76	0.51
50:3:1758:C:H2'	50:3:1759:C:H6	1.75	0.51
50:3:2271:C:C4	50:3:2272:C:N4	2.79	0.51
52:5:36:G:H2'	52:5:37:C:C6	2.46	0.51
52:5:346:G:H2'	52:5:347:G:C8	2.46	0.51
52:5:385:A:H3'	52:5:386:U:C6	2.45	0.51
52:5:512:U:H2'	52:5:513:G:C8	2.46	0.51
52:5:1402:U:O2	52:5:1449:G:N2	2.43	0.51
6:C:121:HIS:HE1	52:5:435:U:H5'	1.76	0.51
24:a:17:SER:OG	24:a:212:VAL:O	2.25	0.51
24:a:191:LYS:HB2	24:a:277:LEU:HD22	1.93	0.51
34:k:124:LEU:HD22	34:k:139:VAL:HG21	1.93	0.51
35:l:85:SER:HA	50:3:2283:C:H1'	1.92	0.51
41:r:34:ASN:OD1	41:r:35:ILE:N	2.44	0.51
45:v:32:ASN:OD1	50:3:2238:G:H1'	2.11	0.51
50:3:675:U:H3	50:3:685:G:H1	1.58	0.51
50:3:768:G:H3'	50:3:796:A:H61	1.75	0.51
50:3:1010:G:O2'	50:3:1011:A:OP2	2.29	0.51
50:3:1445:U:O2	50:3:1615:G:N2	2.44	0.51
50:3:1661:A:H2'	50:3:1662:G:H8	1.76	0.51
50:3:1843:C:H2'	50:3:1844:C:C6	2.45	0.51
50:3:1851:U:H2'	50:3:1852:G:C8	2.46	0.51
50:3:1887:U:H2'	50:3:1888:U:C6	2.45	0.51
51:4:11:A:H2'	51:4:12:U:H3'	1.91	0.51
52:5:498:G:H2'	52:5:499:U:C6	2.46	0.51
52:5:1133:A:H61	52:5:1153:G:H1'	1.74	0.51
53:6:10:A:N7	53:6:47:G:N2	2.58	0.51
2:1:4:LYS:NZ	50:3:255:A:OP1	2.39	0.51
4:A:99:ILE:HD11	4:A:229:MET:HE1	1.92	0.51
12:I:27:THR:O	12:I:31:ILE:HG12	2.11	0.51
14:K:80:ILE:HA	14:K:110:ILE:HD12	1.93	0.51
15:L:34:LEU:HA	15:L:39:ILE:HD12	1.93	0.51
18:O:21:LYS:HB3	52:5:96:G:H5''	1.92	0.51
30:g:15:SER:HB3	30:g:62:ALA:HA	1.93	0.51
30:g:125:LYS:HA	30:g:128:LYS:HE3	1.93	0.51
37:n:108:ALA:HA	37:n:111:GLU:OE2	2.11	0.51
42:s:51:LYS:HB3	46:w:87:TRP:HZ2	1.76	0.51
50:3:534:U:H2'	50:3:535:G:O4'	2.10	0.51
50:3:874:U:H2'	50:3:875:G:C8	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1445:U:H2'	50:3:1446:G:O4'	2.10	0.51
50:3:1504:G:O6	50:3:1539:U:O4	2.29	0.51
50:3:1836:A:H3'	50:3:1837:C:C6	2.45	0.51
50:3:2310:C:N3	50:3:2322:G:N1	2.37	0.51
50:3:2668:A:O2'	50:3:2669:G:H8	1.94	0.51
50:3:2892:U:H2'	50:3:2893:C:C6	2.46	0.51
52:5:14:U:N3	52:5:911:G:N7	2.58	0.51
52:5:198:A:O2'	52:5:199:A:H2'	2.11	0.51
52:5:621:C:H2'	52:5:622:A:C8	2.46	0.51
52:5:680:G:H2'	52:5:681:U:H6	1.75	0.51
5:B:93:LYS:HA	5:B:96:ILE:HG22	1.93	0.51
8:E:142:ARG:HH22	10:G:60:LEU:HB3	1.76	0.51
24:a:47:ARG:HG2	24:a:53:ILE:HD12	1.92	0.51
27:d:22:PHE:HB3	27:d:27:GLN:NE2	2.25	0.51
29:f:43:SER:H	29:f:46:ASP:HB3	1.76	0.51
30:g:112:TYR:CE2	30:g:114:ASP:CA	2.94	0.51
36:m:107:ARG:HH12	50:3:1355:C:HO2'	1.53	0.51
37:n:11:ARG:O	37:n:15:ILE:HG12	2.11	0.51
37:n:101:ARG:HG2	51:4:47:C:OP1	2.11	0.51
50:3:615:G:H2'	50:3:616:G:C8	2.44	0.51
50:3:730:G:O6	50:3:802:U:O4	2.28	0.51
50:3:731:A:H2'	50:3:732:G:C8	2.46	0.51
50:3:1028:C:H2'	50:3:1029:A:C8	2.46	0.51
50:3:1288:C:N4	50:3:1289:G:O6	2.43	0.51
50:3:2071:C:H2'	50:3:2072:C:C6	2.46	0.51
50:3:2646:G:N1	50:3:2783:A:H2'	2.26	0.51
50:3:2720:C:OP1	50:3:2722:G:O2'	2.20	0.51
50:3:2852:G:O2'	50:3:2871:G:N2	2.39	0.51
52:5:403:A:H2'	52:5:404:A:H8	1.76	0.51
52:5:590:G:H2'	52:5:591:A:H8	1.75	0.51
52:5:688:G:N2	52:5:693:A:OP2	2.38	0.51
52:5:1146:A:H2'	52:5:1147:U:C6	2.46	0.51
52:5:1227:A:H2'	52:5:1228:C:C6	2.46	0.51
14:K:86:ASN:HB3	14:K:117:THR:HA	1.93	0.51
25:b:31:CYS:O	25:b:189:MET:HE3	2.11	0.51
25:b:32:GLU:OE1	25:b:55:ASP:N	2.38	0.51
31:h:39:PHE:HE1	31:h:67:LEU:HD11	1.76	0.51
37:n:115:ASN:OD1	37:n:116:PHE:N	2.44	0.51
40:q:89:TYR:OH	50:3:583:U:OP2	2.29	0.51
42:s:26:LYS:HD3	42:s:84:THR:HG22	1.93	0.51
42:s:93:VAL:HG11	46:w:35:HIS:HE1	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:988:G:O6	50:3:1002:A:N6	2.44	0.51
50:3:1073:A:H2'	50:3:1074:A:C8	2.46	0.51
50:3:1466:U:H3'	50:3:1467:U:H5''	1.93	0.51
50:3:1507:G:HO2'	50:3:1508:G:P	2.33	0.51
50:3:1521:A:H2'	50:3:1523:C:C5	2.46	0.51
50:3:2665:A:H1'	50:3:2673:A:N6	2.25	0.51
52:5:371:U:H2'	52:5:372:G:C8	2.45	0.51
52:5:414:U:H2'	52:5:415:C:C6	2.46	0.51
52:5:688:G:N2	52:5:693:A:C8	2.75	0.51
52:5:877:C:O2'	52:5:878:U:O4'	2.19	0.51
52:5:1317:A:H2'	52:5:1318:C:C6	2.46	0.51
52:5:1438:U:H2'	52:5:1439:G:C8	2.41	0.51
1:0:29:LYS:O	1:0:32:LYS:HG3	2.11	0.50
2:1:25:TYR:O	2:1:41:LEU:HD21	2.11	0.50
9:F:74:LEU:HB3	9:F:85:GLN:HE21	1.76	0.50
24:a:33:PRO:HB3	24:a:38:LEU:HD11	1.92	0.50
27:d:92:ARG:HA	27:d:96:MET:HE2	1.93	0.50
34:k:28:LEU:HA	34:k:32:SER:HA	1.94	0.50
38:o:5:ASN:O	50:3:2880:A:H5''	2.10	0.50
39:p:65:ASN:ND2	50:3:1047:A:OP2	2.44	0.50
40:q:67:LYS:HE2	40:q:86:ARG:HG3	1.93	0.50
50:3:525:A:H2'	50:3:526:G:C8	2.46	0.50
50:3:1200:U:H2'	50:3:1201:A:H8	1.76	0.50
50:3:1511:C:H2'	50:3:1512:A:H8	1.77	0.50
50:3:2111:U:O4	50:3:2194:G:H1'	2.11	0.50
52:5:366:C:H2'	52:5:367:A:C8	2.46	0.50
52:5:583:G:C2	52:5:754:U:O2	2.63	0.50
52:5:1098:C:N4	52:5:1099:G:O6	2.44	0.50
53:8:15:A:C2	53:8:16:G:H1'	2.47	0.50
12:I:18:SER:OG	12:I:19:TYR:N	2.45	0.50
17:N:58:SER:HB2	52:5:579:G:H5'	1.94	0.50
21:R:4:SER:OG	52:5:1297:G:O6	2.28	0.50
26:c:30:LYS:HB3	26:c:33:PRO:HG2	1.92	0.50
41:r:88:ARG:HG3	41:r:94:ASN:OD1	2.11	0.50
50:3:341:G:N1	50:3:344:A:OP2	2.30	0.50
50:3:409:A:N6	50:3:438:A:OP2	2.42	0.50
50:3:432:G:H2'	50:3:433:A:C8	2.43	0.50
50:3:1230:U:H2'	50:3:1231:G:C8	2.47	0.50
50:3:2126:A:C2	50:3:2176:G:N2	2.72	0.50
50:3:2297:G:C2	50:3:2352:U:O2	2.64	0.50
50:3:2451:C:H2'	50:3:2452:G:C8	2.46	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:212:G:O2'	52:5:465:A:N6	2.39	0.50
52:5:647:U:H2'	52:5:648:C:C6	2.46	0.50
52:5:1237:G:N2	52:5:1248:U:O2	2.30	0.50
52:5:1463:A:H2'	52:5:1464:G:C8	2.46	0.50
5:B:137:MET:HE1	5:B:171:TYR:CD2	2.46	0.50
8:E:25:GLN:HB3	8:E:72:PHE:HE1	1.77	0.50
14:K:4:ILE:HA	14:K:7:LEU:HB3	1.92	0.50
18:O:5:ARG:NH1	52:5:43:G:HO2'	2.08	0.50
24:a:78:ASN:OD1	29:f:87:ARG:NH1	2.44	0.50
31:h:11:LYS:NZ	50:3:1096:U:OP1	2.42	0.50
37:n:107:GLU:O	37:n:110:ARG:N	2.44	0.50
50:3:129:U:H2'	50:3:130:C:C6	2.46	0.50
50:3:352:C:H2'	50:3:353:G:H8	1.76	0.50
50:3:941:C:H2'	50:3:942:A:C8	2.46	0.50
50:3:955:A:N3	51:4:78:C:O2'	2.44	0.50
50:3:1610:U:H2'	50:3:1611:C:C6	2.47	0.50
50:3:1758:C:H2'	50:3:1759:C:C6	2.46	0.50
50:3:2337:U:H2'	50:3:2338:G:C8	2.45	0.50
50:3:2590:G:H8	50:3:2590:G:O5'	1.93	0.50
50:3:2676:G:H2'	50:3:2677:A:H8	1.76	0.50
50:3:2832:G:H2'	50:3:2833:A:H8	1.76	0.50
52:5:821:U:H2'	52:5:822:A:C8	2.46	0.50
52:5:1059:G:O6	52:5:1099:G:N1	2.44	0.50
2:1:23:HIS:HB3	2:1:41:LEU:HD12	1.92	0.50
14:K:25:HIS:ND1	14:K:39:TYR:HA	2.26	0.50
24:a:225:ARG:HH22	50:3:815:G:H5''	1.76	0.50
26:c:201:LYS:O	26:c:204:LEU:HG	2.12	0.50
30:g:26:ILE:HD13	30:g:110:CYS:HB2	1.93	0.50
32:i:83:TYR:HD2	50:3:2650:A:H5'	1.75	0.50
33:j:106:LEU:HD12	33:j:106:LEU:O	2.12	0.50
41:r:126:LYS:O	41:r:129:VAL:HG22	2.11	0.50
50:3:334:A:H1'	50:3:353:G:H1'	1.94	0.50
50:3:711:A:O2'	50:3:2450:C:O2'	2.27	0.50
50:3:1499:C:H2'	50:3:1500:A:C8	2.47	0.50
50:3:2122:G:H2'	50:3:2124:A:N7	2.25	0.50
52:5:11:A:H2'	52:5:12:G:C8	2.46	0.50
52:5:70:A:H2'	52:5:71:A:H8	1.76	0.50
52:5:1068:G:N2	52:5:1071:A:OP2	2.31	0.50
52:5:1409:A:H2'	52:5:1410:A:H8	1.76	0.50
8:E:105:GLN:O	8:E:109:LEU:HG	2.10	0.50
9:F:62:GLU:HA	9:F:65:VAL:HG22	1.92	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:I:61:PRO:O	52:5:968:G:O2'	2.28	0.50
14:K:61:ALA:HB3	14:K:63:ARG:HE	1.76	0.50
18:O:2:ARG:NH1	18:O:8:TYR:O	2.22	0.50
27:d:170:LEU:HB2	27:d:175:LEU:HG	1.93	0.50
29:f:30:LEU:HD21	50:3:2207:A:H5'	1.92	0.50
40:q:73:HIS:NE2	40:q:77:LYS:O	2.33	0.50
41:r:19:LEU:HD21	48:y:22:LEU:HB2	1.92	0.50
44:u:53:ARG:HH22	50:3:2371:U:H1'	1.77	0.50
50:3:359:G:H2'	50:3:360:G:C8	2.45	0.50
50:3:863:U:H4'	50:3:866:G:C6	2.47	0.50
50:3:1028:C:H2'	50:3:1029:A:H8	1.76	0.50
50:3:1690:C:H2'	50:3:1691:U:H6	1.75	0.50
50:3:2515:C:H2'	50:3:2516:G:H8	1.76	0.50
50:3:2681:G:H2'	50:3:2682:A:C8	2.47	0.50
52:5:404:A:H2'	52:5:405:C:C6	2.47	0.50
52:5:684:A:N3	52:5:685:G:H1'	2.26	0.50
52:5:1133:A:H2	52:5:1153:G:H21	1.60	0.50
18:O:5:ARG:NH2	52:5:616:C:N3	2.60	0.50
24:a:28:THR:HG23	24:a:32:LYS:NZ	2.26	0.50
30:g:55:LYS:HB3	30:g:58:ILE:HG22	1.93	0.50
36:m:81:HIS:NE2	36:m:85:LYS:HD2	2.27	0.50
50:3:28:G:H8	50:3:28:G:OP2	1.95	0.50
50:3:641:U:O2	50:3:657:A:N7	2.44	0.50
50:3:914:G:N2	50:3:937:A:OP2	2.39	0.50
50:3:990:G:H2'	50:3:991:G:H8	1.76	0.50
50:3:1240:U:H5'	50:3:1242:G:H5'	1.94	0.50
50:3:2553:G:H2'	50:3:2554:U:O4'	2.12	0.50
52:5:490:U:H2'	52:5:491:U:H6	1.77	0.50
53:6:15:A:C2	53:6:16:G:H1'	2.47	0.50
6:C:29:LYS:HZ2	52:5:422:A:H5''	1.77	0.50
11:H:50:MET:CE	11:H:78:ALA:HB1	2.41	0.50
15:L:103:ARG:HG2	52:5:1201:C:H5	1.76	0.50
24:a:62:ASN:ND2	50:3:1600:A:N3	2.59	0.50
32:i:83:TYR:CD2	50:3:2650:A:H5'	2.46	0.50
34:k:48:ARG:HG2	34:k:50:GLY:H	1.76	0.50
37:n:79:ASP:O	37:n:82:VAL:HG22	2.11	0.50
38:o:28:GLY:O	38:o:115:LYS:NZ	2.44	0.50
39:p:91:ARG:HG2	40:q:11:GLN:OE1	2.11	0.50
40:q:77:LYS:NZ	50:3:601:U:O4	2.29	0.50
41:r:125:VAL:O	41:r:128:ARG:HB3	2.12	0.50
50:3:621:U:H2'	50:3:622:U:C6	2.47	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1244:A:H2'	50:3:1245:G:H5'	1.92	0.50
50:3:1260:U:H2'	50:3:1261:U:C6	2.47	0.50
50:3:1846:A:C8	50:3:1934:A:C4	3.00	0.50
50:3:1906:G:H22	50:3:1909:C:H41	1.59	0.50
50:3:2238:G:H2'	50:3:2239:U:C6	2.47	0.50
50:3:2310:C:N4	50:3:2311:G:O6	2.45	0.50
50:3:2796:C:O2'	50:3:2812:U:O2	2.30	0.50
52:5:259:A:C8	52:5:260:C:H5	2.30	0.50
52:5:1281:U:H2'	52:5:1282:U:O4'	2.11	0.50
52:5:1288:C:H2'	52:5:1289:U:H6	1.76	0.50
5:B:56:VAL:HG12	5:B:69:VAL:HG23	1.94	0.50
15:L:14:ARG:HG2	15:L:44:ARG:H	1.76	0.50
40:q:73:HIS:CD2	40:q:80:LEU:HD22	2.47	0.50
50:3:51:A:N6	50:3:180:A:N7	2.59	0.50
50:3:57:G:H2'	50:3:58:A:C8	2.46	0.50
50:3:348:A:H2'	50:3:349:G:C8	2.47	0.50
50:3:419:A:H2'	50:3:420:A:C8	2.46	0.50
50:3:445:C:H2'	50:3:446:A:C8	2.46	0.50
50:3:512:G:N2	50:3:515:A:O4'	2.43	0.50
50:3:610:G:H2'	50:3:611:A:C8	2.46	0.50
50:3:747:A:H2'	50:3:748:G:O4'	2.11	0.50
50:3:1072:A:H2'	50:3:1073:A:H8	1.76	0.50
50:3:1094:G:H2'	50:3:1095:U:C5	2.46	0.50
50:3:1188:C:H2'	50:3:1189:G:O4'	2.12	0.50
50:3:1755:A:H2'	50:3:1756:A:C8	2.46	0.50
50:3:2034:G:H2'	50:3:2035:U:C6	2.47	0.50
50:3:2425:C:H2'	50:3:2426:A:C8	2.47	0.50
52:5:35:C:H2'	52:5:36:G:H8	1.75	0.50
52:5:356:G:H2'	52:5:357:G:H8	1.77	0.50
52:5:1096:A:H2'	52:5:1097:G:H8	1.77	0.50
52:5:1283:G:H2'	52:5:1284:A:H8	1.77	0.50
7:D:73:LEU:HB3	7:D:75:ARG:HH22	1.77	0.50
21:R:34:TRP:HB3	21:R:50:ALA:O	2.12	0.50
26:c:4:LEU:O	26:c:18:VAL:N	2.38	0.50
27:d:5:LYS:HD2	27:d:97:TRP:CD1	2.47	0.50
31:h:72:VAL:HG12	31:h:76:LEU:HB2	1.93	0.50
50:3:1344:U:H2'	50:3:1345:G:H8	1.76	0.50
50:3:2135:C:H2'	50:3:2136:A:C8	2.46	0.50
52:5:1493:A:O2'	52:5:1494:A:O4'	2.29	0.50
53:6:5:C:H42	53:6:70:G:H1	1.60	0.50
10:G:76:TYR:HB3	10:G:80:ARG:HA	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:t:1:MET:HE1	50:3:85:U:H5'	1.94	0.49
50:3:87:G:H2'	50:3:88:G:C8	2.47	0.49
50:3:329:G:O6	50:3:377:U:O4	2.29	0.49
50:3:1010:G:OP1	50:3:1218:G:O2'	2.21	0.49
50:3:2506:C:H2'	50:3:2507:C:C6	2.47	0.49
52:5:719:G:O2'	52:5:721:G:OP1	2.27	0.49
52:5:859:A:H2'	52:5:860:C:C6	2.47	0.49
52:5:951:U:H2'	52:5:952:U:C6	2.47	0.49
52:5:1266:U:H2'	52:5:1267:G:H8	1.77	0.49
53:8:23:G:H2'	53:8:24:A:C8	2.43	0.49
2:1:14:THR:OG1	2:1:17:GLY:O	2.28	0.49
14:K:112:ARG:HB3	14:K:130:TYR:HA	1.94	0.49
14:K:129:ALA:O	14:K:130:TYR:HB2	2.12	0.49
45:v:18:ARG:NE	45:v:24:ILE:HG12	2.27	0.49
50:3:857:U:H2'	50:3:858:A:H8	1.76	0.49
50:3:1290:G:H2'	50:3:1291:C:C6	2.47	0.49
50:3:1511:C:H2'	50:3:1512:A:C8	2.47	0.49
50:3:2248:C:H2'	50:3:2249:A:C8	2.46	0.49
50:3:2659:U:H2'	50:3:2660:C:C6	2.48	0.49
50:3:2716:U:H2'	50:3:2717:G:C8	2.47	0.49
52:5:573:G:H4'	52:5:574:C:H5''	1.94	0.49
53:6:27:A:H3'	53:6:28:A:C8	2.48	0.49
16:M:18:VAL:HG12	52:5:974:C:C4	2.48	0.49
24:a:217:GLY:HA2	24:a:220:ARG:HD3	1.94	0.49
25:b:129:LYS:HD2	50:3:2519:U:H5''	1.95	0.49
30:g:50:LYS:NZ	50:3:1118:U:OP1	2.44	0.49
38:o:56:ARG:HH22	50:3:2691:C:H5''	1.76	0.49
46:w:48:ARG:O	46:w:51:LEU:HG	2.13	0.49
50:3:962:U:H2'	50:3:963:U:C6	2.46	0.49
50:3:1011:A:H62	50:3:1024:A:H2	1.59	0.49
50:3:2697:C:H5'	50:3:2876:G:N2	2.27	0.49
51:4:35:C:N3	51:4:46:C:O2'	2.44	0.49
51:4:104:C:H2'	51:4:105:A:C8	2.47	0.49
52:5:63:U:H3	52:5:90:G:H1	1.60	0.49
52:5:1070:G:H2'	52:5:1071:A:C8	2.47	0.49
8:E:97:LEU:HG	8:E:99:SER:H	1.76	0.49
11:H:125:ARG:NH2	52:5:1324:A:OP2	2.38	0.49
13:J:83:GLY:H	13:J:86:LYS:NZ	2.10	0.49
14:K:112:ARG:HD2	14:K:117:THR:C	2.38	0.49
32:i:15:ARG:NE	32:i:17:GLN:OE1	2.46	0.49
36:m:22:VAL:HA	36:m:25:VAL:HG12	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:p:52:LYS:HG3	39:p:53:LYS:HD3	1.95	0.49
42:s:61:LYS:HG2	42:s:62:PRO:HD2	1.94	0.49
43:t:89:ILE:HD13	43:t:102:ARG:HD2	1.94	0.49
47:x:15:LYS:NZ	47:x:16:CYS:O	2.43	0.49
50:3:568:G:H2'	50:3:569:U:H6	1.78	0.49
50:3:1006:U:H2'	50:3:1007:C:C6	2.48	0.49
50:3:1520:A:H2'	50:3:1521:A:C8	2.46	0.49
50:3:1964:C:H2'	50:3:1965:C:C6	2.47	0.49
50:3:2859:U:H2'	50:3:2860:A:C8	2.47	0.49
52:5:294:A:H2'	52:5:295:G:C4	2.47	0.49
52:5:657:G:H2'	52:5:658:G:O4'	2.11	0.49
52:5:1055:G:O3'	52:5:1165:G:N2	2.42	0.49
52:5:1312:G:N2	53:8:43:G:O2'	2.45	0.49
53:8:27:A:H3'	53:8:28:A:C8	2.48	0.49
4:A:59:GLU:HG2	4:A:60:LEU:N	2.27	0.49
17:N:68:LYS:HG2	17:N:75:TYR:CE2	2.47	0.49
18:O:15:ALA:HA	18:O:59:PRO:HB3	1.94	0.49
26:c:108:HIS:O	26:c:112:LEU:HD23	2.12	0.49
32:i:101:ASP:OD2	32:i:101:ASP:N	2.45	0.49
33:j:97:ARG:HH21	52:5:334:A:H3'	1.77	0.49
40:q:21:PHE:CZ	50:3:583:U:H1'	2.48	0.49
50:3:585:U:H2'	50:3:586:G:C8	2.43	0.49
50:3:701:A:H2'	50:3:702:U:C6	2.47	0.49
50:3:982:G:H2'	50:3:983:A:H8	1.78	0.49
50:3:1337:G:C6	50:3:1338:G:C6	3.00	0.49
50:3:1755:A:H2'	50:3:1756:A:H8	1.78	0.49
52:5:1502:G:H2'	52:5:1503:U:C6	2.48	0.49
53:6:23:G:H2'	53:6:24:A:C8	2.43	0.49
2:1:42:ARG:NH2	50:3:2426:A:H5''	2.22	0.49
10:G:21:LYS:O	10:G:25:ALA:HB2	2.12	0.49
13:J:21:ASN:HD21	52:5:688:G:P	2.34	0.49
22:S:22:LYS:O	22:S:26:THR:HG22	2.13	0.49
24:a:61:ARG:HA	24:a:64:ARG:HH22	1.78	0.49
27:d:63:GLN:OE1	27:d:95:ARG:NH2	2.42	0.49
29:f:96:GLN:NE2	29:f:97:ILE:HG23	2.26	0.49
35:l:98:LYS:HB2	35:l:101:THR:HG21	1.94	0.49
48:y:30:CYS:SG	48:y:31:GLN:N	2.84	0.49
50:3:73:A:H4'	50:3:74:U:H3'	1.94	0.49
50:3:1102:A:N6	50:3:1131:A:OP1	2.46	0.49
50:3:1591:C:H3'	50:3:1592:A:H2'	1.94	0.49
50:3:1617:U:H4'	50:3:1619:A:C6	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1881:C:H2'	50:3:1882:G:O4'	2.12	0.49
50:3:2267:G:H2'	50:3:2268:C:C6	2.48	0.49
50:3:2676:G:H2'	50:3:2677:A:C8	2.48	0.49
52:5:195:U:H2'	52:5:196:G:C8	2.48	0.49
52:5:682:G:H8	52:5:682:G:OP2	1.96	0.49
52:5:1446:A:H2'	52:5:1447:U:C6	2.46	0.49
6:C:86:ALA:HB1	6:C:193:GLU:HB2	1.95	0.49
14:K:41:PRO:HB3	52:5:551:A:H1'	1.93	0.49
17:N:12:ALA:HB1	17:N:23:GLN:HG3	1.95	0.49
21:R:22:MET:HA	21:R:25:GLN:NE2	2.28	0.49
35:l:86:GLY:N	50:3:2284:G:OP2	2.43	0.49
50:3:14:U:O2	50:3:14:U:H2'	2.11	0.49
50:3:360:G:H2'	50:3:361:G:H8	1.77	0.49
50:3:897:A:H61	50:3:953:G:H1'	1.78	0.49
50:3:1171:G:H2'	50:3:1172:G:H8	1.76	0.49
50:3:1843:C:H2'	50:3:1844:C:H6	1.77	0.49
50:3:1886:C:H2'	50:3:1887:U:H6	1.78	0.49
50:3:2057:C:H42	50:3:2626:A:H61	1.61	0.49
52:5:610:C:H2'	52:5:611:A:C8	2.48	0.49
52:5:778:A:N7	52:5:798:U:O4	2.46	0.49
52:5:870:A:H2'	52:5:871:U:C6	2.48	0.49
52:5:1313:A:OP1	52:5:1314:A:N6	2.46	0.49
14:K:123:ARG:NH1	14:K:126:GLN:OE1	2.46	0.49
18:O:81:LYS:NZ	52:5:125:A:OP1	2.33	0.49
21:R:18:LYS:NZ	52:5:1010:A:OP2	2.39	0.49
23:T:37:ARG:NH2	52:5:1501:G:OP2	2.45	0.49
24:a:162:ARG:NH2	50:3:1824:G:OP2	2.46	0.49
25:b:5:GLY:CA	25:b:207:ILE:O	2.61	0.49
36:m:102:LYS:HE2	36:m:112:GLU:HB2	1.95	0.49
50:3:601:U:N3	50:3:604:A:OP2	2.26	0.49
50:3:730:G:H2'	50:3:731:A:H8	1.78	0.49
50:3:740:A:H8	50:3:761:G:H21	1.61	0.49
50:3:1132:C:H2'	50:3:1133:A:O4'	2.13	0.49
50:3:1476:C:H2'	50:3:1477:A:C8	2.48	0.49
50:3:2157:A:H2'	50:3:2158:C:C6	2.48	0.49
50:3:2666:C:N4	50:3:2667:G:O6	2.46	0.49
50:3:2892:U:H2'	50:3:2893:C:H6	1.77	0.49
51:4:59:A:H2'	51:4:60:C:C6	2.47	0.49
52:5:85:U:O2'	52:5:86:A:N7	2.45	0.49
52:5:90:G:N2	52:5:375:C:O2'	2.45	0.49
52:5:314:G:C6	52:5:332:A:C6	3.01	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:709:A:H2'	52:5:710:G:C8	2.48	0.49
52:5:849:A:OP2	52:5:865:U:N3	2.46	0.49
52:5:1048:G:H2'	52:5:1049:G:H8	1.77	0.49
52:5:1142:G:N2	52:5:1144:A:H3'	2.27	0.49
4:A:38:ASN:ND2	4:A:206:THR:O	2.45	0.49
5:B:92:ILE:HA	5:B:95:ILE:HG22	1.94	0.49
6:C:9:LYS:NZ	52:5:425:G:OP2	2.37	0.49
6:C:14:LEU:HD13	6:C:59:ARG:HA	1.94	0.49
7:D:138:HIS:HD2	10:G:108:LEU:HD23	1.78	0.49
8:E:2:GLN:HA	8:E:63:SER:HA	1.95	0.49
11:H:52:GLN:HG3	11:H:53:PRO:HD3	1.95	0.49
12:I:32:VAL:O	12:I:36:LYS:NZ	2.45	0.49
48:y:39:PHE:CE1	50:3:2890:G:H1'	2.48	0.49
50:3:511:U:H2'	50:3:512:G:C8	2.48	0.49
50:3:1237:G:H2'	50:3:1238:A:H8	1.77	0.49
50:3:1764:U:O4	50:3:1769:A:N7	2.46	0.49
50:3:1916:C:H2'	50:3:1917:G:H8	1.78	0.49
50:3:2572:A:H2'	50:3:2573:A:C8	2.48	0.49
50:3:2628:U:H2'	50:3:2629:G:H8	1.77	0.49
50:3:2737:G:H2'	50:3:2738:U:C6	2.48	0.49
52:5:1427:U:H4'	52:5:1428:A:H5'	1.95	0.49
53:8:4:U:H3	53:8:71:A:H61	1.61	0.49
9:F:23:THR:HA	9:F:26:ILE:HD12	1.95	0.49
9:F:152:HIS:HE1	13:J:54:TYR:HB2	1.78	0.49
11:H:95:GLU:O	11:H:98:LYS:NZ	2.44	0.49
13:J:34:VAL:HG12	52:5:681:U:O2	2.13	0.49
15:L:80:LEU:HD22	15:L:91:HIS:NE2	2.27	0.49
17:N:51:ARG:HH12	52:5:578:C:H5'	1.76	0.49
27:d:43:ALA:HA	27:d:47:SER:H	1.77	0.49
37:n:108:ALA:HA	37:n:111:GLU:CD	2.38	0.49
50:3:433:A:H2'	50:3:434:G:C8	2.47	0.49
50:3:955:A:OP2	50:3:2276:A:N6	2.45	0.49
50:3:982:G:H2'	50:3:983:A:C8	2.48	0.49
50:3:1456:C:C4	50:3:1603:A:H5''	2.48	0.49
52:5:135:A:N6	52:5:157:A:O5'	2.45	0.49
52:5:336:U:H2'	52:5:337:C:C6	2.48	0.49
52:5:1288:C:H2'	52:5:1289:U:C6	2.47	0.49
4:A:95:LEU:HD13	4:A:229:MET:HG2	1.95	0.48
13:J:25:VAL:HG21	13:J:63:VAL:HG21	1.95	0.48
21:R:36:ARG:HH12	21:R:77:THR:HG21	1.78	0.48
27:d:50:LEU:O	27:d:54:LEU:N	2.30	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:r:7:GLN:NE2	41:r:10:VAL:HG13	2.27	0.48
44:u:50:ILE:HG22	44:u:74:PHE:HB3	1.94	0.48
48:y:29:VAL:HG22	48:y:36:LYS:HB2	1.94	0.48
50:3:300:G:H2'	50:3:301:G:C8	2.48	0.48
50:3:670:G:H2'	50:3:671:C:C6	2.48	0.48
50:3:1355:C:H3'	50:3:1356:G:C8	2.48	0.48
50:3:1692:A:H2'	50:3:1693:U:H6	1.78	0.48
50:3:1828:A:H2'	50:3:1829:U:H6	1.78	0.48
50:3:2109:A:N6	50:3:2196:G:O6	2.46	0.48
50:3:2385:A:H2'	50:3:2386:A:C8	2.48	0.48
51:4:3:U:O2'	51:4:24:A:N1	2.41	0.48
52:5:490:U:H2'	52:5:491:U:C6	2.48	0.48
52:5:612:G:H2'	52:5:613:C:C6	2.48	0.48
52:5:1222:U:O2	52:5:1264:G:C6	2.65	0.48
53:6:9:U:O2'	53:6:22:A:N1	2.41	0.48
4:A:219:ASN:HA	4:A:225:THR:HG22	1.95	0.48
6:C:18:LEU:H	6:C:23:LYS:HG3	1.78	0.48
6:C:121:HIS:HB3	6:C:148:THR:HB	1.94	0.48
23:T:41:ARG:HA	23:T:44:GLU:HG3	1.95	0.48
26:c:89:ILE:H	26:c:89:ILE:HD12	1.78	0.48
29:f:46:ASP:HA	29:f:49:LEU:HD12	1.95	0.48
31:h:55:ILE:HD12	31:h:65:PHE:HD1	1.77	0.48
48:y:16:ARG:NH1	50:3:1296:G:OP2	2.42	0.48
50:3:697:U:H2'	50:3:698:A:C8	2.48	0.48
50:3:1147:G:H2'	50:3:1148:U:C6	2.47	0.48
50:3:1461:A:H2'	50:3:1462:A:C8	2.48	0.48
50:3:1474:C:N3	50:3:1491:G:N1	2.40	0.48
50:3:1942:G:N1	50:3:1969:C:O2'	2.43	0.48
50:3:2072:C:H2'	50:3:2073:C:C6	2.48	0.48
50:3:2190:G:H2'	50:3:2191:G:H8	1.78	0.48
50:3:2515:C:H4'	53:6:76:C:O2	2.14	0.48
50:3:2516:G:O6	50:3:2588:U:O4	2.31	0.48
50:3:2527:U:O4'	50:3:2550:A:N6	2.47	0.48
52:5:214:U:H2'	52:5:215:C:H6	1.77	0.48
52:5:884:G:N2	52:5:885:U:O4	2.34	0.48
52:5:1225:A:H2'	52:5:1226:A:C8	2.48	0.48
4:A:49:ARG:HG2	4:A:55:HIS:CG	2.48	0.48
9:F:114:THR:HG23	9:F:117:GLU:H	1.78	0.48
11:H:6:TYR:CE2	11:H:92:PHE:HD1	2.31	0.48
11:H:89:LEU:HD11	11:H:100:LEU:HD11	1.95	0.48
15:L:93:LYS:HE3	15:L:95:LEU:HD22	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:c:97:ARG:CZ	50:3:622:U:H5''	2.43	0.48
29:f:61:ASN:HD22	29:f:64:LEU:HD21	1.78	0.48
35:l:73:SER:HB2	35:l:93:TRP:CD1	2.48	0.48
40:q:19:THR:OG1	40:q:91:LYS:NZ	2.46	0.48
45:v:10:ARG:NH2	50:3:432:G:OP2	2.46	0.48
50:3:633:G:O6	50:3:692:U:O4	2.31	0.48
50:3:1298:A:H5''	50:3:2012:A:H5'	1.95	0.48
50:3:1319:C:H2'	50:3:1320:C:C6	2.48	0.48
50:3:1751:A:C2	50:3:1752:A:H1'	2.48	0.48
50:3:2224:A:H2'	50:3:2225:G:C8	2.48	0.48
50:3:2322:G:H2'	50:3:2323:U:C6	2.49	0.48
50:3:2644:U:H2'	50:3:2645:U:H6	1.78	0.48
52:5:324:C:H4'	52:5:325:A:H5''	1.95	0.48
4:A:26:MET:HA	4:A:29:HIS:NE2	2.29	0.48
6:C:27:LYS:NZ	52:5:406:G:O5'	2.45	0.48
7:D:212:ARG:NH2	10:G:51:GLU:HB2	2.28	0.48
10:G:23:ASN:OD1	10:G:26:ARG:NH2	2.46	0.48
21:R:77:THR:HB	52:5:1196:G:H4'	1.94	0.48
24:a:35:LYS:NZ	50:3:1455:A:N1	2.51	0.48
25:b:99:GLN:HE21	25:b:184:PHE:HB3	1.78	0.48
25:b:227:GLU:HG2	38:o:19:LYS:HB3	1.95	0.48
27:d:135:GLN:HB3	27:d:150:ARG:O	2.14	0.48
34:k:98:LEU:HB3	34:k:104:ILE:HG12	1.93	0.48
36:m:2:SER:O	50:3:1692:A:O2'	2.30	0.48
39:p:96:GLU:HA	39:p:99:ILE:HG12	1.94	0.48
47:x:27:SER:OG	47:x:28:THR:N	2.46	0.48
50:3:250:U:H3	50:3:256:G:H1	1.62	0.48
50:3:913:U:H2'	50:3:914:G:O4'	2.13	0.48
50:3:1222:A:H2'	50:3:1223:C:C6	2.48	0.48
50:3:1307:G:H2'	50:3:1308:A:H8	1.78	0.48
50:3:1699:A:H2'	50:3:1700:G:C8	2.46	0.48
50:3:1927:C:H5'	52:5:1492:G:C2	2.48	0.48
52:5:417:U:H4'	52:5:418:U:OP2	2.14	0.48
52:5:1388:A:N1	52:5:1462:G:C6	2.81	0.48
53:6:4:U:H3	53:6:71:A:H61	1.61	0.48
53:8:5:C:H42	53:8:70:G:H1	1.60	0.48
1:0:18:PHE:N	50:3:127:A:OP2	2.47	0.48
4:A:59:GLU:HG2	4:A:60:LEU:H	1.79	0.48
4:A:203:ASN:OD1	4:A:219:ASN:ND2	2.45	0.48
6:C:96:ARG:HB2	6:C:99:ASN:HB3	1.95	0.48
6:C:180:ARG:NH1	6:C:186:GLU:OE1	2.38	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:I:14:ILE:HA	12:I:105:ARG:O	2.14	0.48
12:I:86:ASN:OD1	12:I:87:GLN:N	2.42	0.48
24:a:162:ARG:HG2	50:3:1825:U:H2'	1.95	0.48
25:b:178:ASN:HD22	50:3:2739:C:P	2.36	0.48
26:c:101:LEU:HB3	50:3:695:G:H5''	1.94	0.48
28:e:150:GLU:O	28:e:153:LYS:HG2	2.13	0.48
40:q:36:ASP:HA	40:q:54:ARG:HD2	1.96	0.48
44:u:26:ASN:HD22	44:u:26:ASN:C	2.18	0.48
50:3:860:C:H4'	50:3:2436:G:C6	2.49	0.48
50:3:1182:U:H2'	50:3:1183:A:C8	2.48	0.48
50:3:1316:U:H1'	50:3:1681:G:N2	2.29	0.48
50:3:1803:U:H2'	50:3:1804:A:H8	1.78	0.48
50:3:1834:U:H2'	50:3:1835:G:O4'	2.13	0.48
50:3:2006:C:H2'	50:3:2007:U:C6	2.48	0.48
50:3:2640:A:H2'	50:3:2641:A:H8	1.79	0.48
51:4:29:C:O2'	51:4:51:A:N1	2.47	0.48
52:5:152:U:H2'	52:5:153:A:C8	2.49	0.48
52:5:1320:A:H62	52:5:1349:A:H3'	1.78	0.48
14:K:56:LYS:HE3	14:K:102:ASP:HA	1.95	0.48
21:R:15:LEU:HD21	21:R:35:SER:HB3	1.94	0.48
25:b:117:ARG:HD2	50:3:2732:A:OP1	2.12	0.48
29:f:109:GLN:HE21	29:f:112:MET:HE2	1.78	0.48
50:3:498:C:H2'	50:3:499:G:C8	2.49	0.48
50:3:1077:G:N1	50:3:1149:G:O6	2.46	0.48
50:3:1344:U:H2'	50:3:1345:G:C8	2.48	0.48
50:3:1778:G:H2'	50:3:1779:G:H8	1.78	0.48
50:3:1846:A:C4	50:3:1847:G:C8	3.02	0.48
52:5:368:C:O2	52:5:385:A:N6	2.47	0.48
52:5:1099:G:H2'	52:5:1100:C:C6	2.49	0.48
52:5:1263:A:H2	52:5:1346:G:H21	1.60	0.48
52:5:1341:U:H2'	52:5:1342:C:C6	2.48	0.48
52:5:1441:C:H2'	52:5:1442:A:O4'	2.14	0.48
52:5:1501:G:C6	52:5:1502:G:C6	3.02	0.48
53:8:11:G:O6	53:8:27:A:N6	2.47	0.48
4:A:137:GLN:HE22	4:A:156:ILE:HD11	1.79	0.48
5:B:53:VAL:HA	5:B:71:ALA:HA	1.95	0.48
8:E:107:LEU:O	8:E:110:GLN:HG3	2.14	0.48
12:I:72:GLU:OE2	12:I:74:ASN:HB2	2.14	0.48
24:a:35:LYS:HE3	50:3:1604:A:H5''	1.96	0.48
32:i:19:TYR:HD1	32:i:141:THR:HB	1.77	0.48
32:i:51:GLN:HG3	32:i:52:ASP:H	1.79	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:l:32:TYR:CD2	35:l:114:MET:HE2	2.48	0.48
38:o:25:PHE:H	38:o:55:ARG:NH1	2.10	0.48
39:p:99:ILE:HD13	39:p:105:PHE:CE2	2.49	0.48
43:t:3:ARG:NH1	50:3:370:C:OP1	2.46	0.48
50:3:176:U:H2'	50:3:177:U:C6	2.47	0.48
50:3:1095:U:O4'	50:3:1097:G:H5'	2.13	0.48
50:3:2134:G:H2'	50:3:2135:C:H6	1.79	0.48
52:5:132:G:H2'	52:5:133:G:H8	1.78	0.48
52:5:628:A:H3'	52:5:629:U:C6	2.48	0.48
52:5:1454:G:H2'	52:5:1455:G:H8	1.77	0.48
1:0:12:ARG:HG2	1:0:44:VAL:HG21	1.95	0.48
2:1:35:THR:HG21	50:3:2356:U:OP1	2.13	0.48
10:G:55:ALA:HA	10:G:75:LYS:NZ	2.29	0.48
21:R:81:LYS:HD2	52:5:1201:C:H4'	1.95	0.48
40:q:6:VAL:HG22	40:q:11:GLN:HG2	1.96	0.48
50:3:317:U:H2'	50:3:318:U:C6	2.49	0.48
50:3:742:G:O6	50:3:759:U:O4	2.31	0.48
50:3:1093:U:O4	50:3:1115:G:O6	2.32	0.48
50:3:1309:G:H2'	50:3:1310:U:C6	2.49	0.48
50:3:2552:G:H2'	50:3:2553:G:H8	1.77	0.48
50:3:2704:U:H2'	50:3:2705:G:H8	1.79	0.48
50:3:2737:G:H2'	50:3:2738:U:H6	1.79	0.48
50:3:2796:C:H4'	50:3:2814:A:H5'	1.94	0.48
50:3:2855:A:H2'	50:3:2856:G:O4'	2.13	0.48
51:4:43:A:H3'	51:4:44:A:H8	1.79	0.48
52:5:297:A:H2'	52:5:298:G:H8	1.79	0.48
52:5:356:G:H2'	52:5:357:G:C8	2.49	0.48
52:5:511:A:H2'	52:5:512:U:C6	2.49	0.48
52:5:554:C:H2'	52:5:555:G:H8	1.79	0.48
52:5:659:U:O2	52:5:740:G:N2	2.47	0.48
52:5:1244:A:H2'	52:5:1287:G:H1'	1.95	0.48
52:5:1287:G:N2	52:5:1298:U:O2	2.33	0.48
8:E:35:LEU:HD13	8:E:60:TRP:HE3	1.79	0.48
8:E:126:GLU:HG2	52:5:839:U:H2'	1.96	0.48
11:H:83:LEU:HA	11:H:86:VAL:HG22	1.95	0.48
12:I:51:LYS:HE2	12:I:75:ARG:HG3	1.96	0.48
14:K:95:LEU:HD21	14:K:108:TYR:CD1	2.48	0.48
16:M:58:LYS:NZ	52:5:1163:A:O3'	2.47	0.48
24:a:58:GLN:NE2	24:a:61:ARG:HE	2.12	0.48
26:c:161:VAL:HG13	26:c:164:LEU:HD22	1.95	0.48
32:i:3:LYS:N	50:3:1030:U:O2'	2.45	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:l:6:ARG:HH12	50:3:906:G:H4'	1.79	0.48
35:l:39:GLY:N	35:l:99:GLN:HE21	2.12	0.48
37:n:7:GLN:O	37:n:11:ARG:HG2	2.14	0.48
38:o:25:PHE:O	38:o:55:ARG:NH1	2.47	0.48
39:p:83:LYS:NZ	50:3:1187:C:OP1	2.28	0.48
43:t:90:LYS:HG2	43:t:105:LYS:HE2	1.95	0.48
50:3:355:A:C4	50:3:375:U:H4'	2.49	0.48
50:3:598:G:H1	50:3:609:U:H3	1.61	0.48
50:3:715:G:H2'	50:3:716:G:H8	1.78	0.48
50:3:946:A:N6	50:3:949:C:O2	2.47	0.48
50:3:1065:G:O6	50:3:1160:G:N2	2.47	0.48
50:3:1831:G:H2'	50:3:1832:G:H8	1.78	0.48
50:3:2299:U:H2'	50:3:2300:A:C8	2.49	0.48
50:3:2683:G:H2'	50:3:2684:G:C8	2.48	0.48
52:5:373:A:H2'	52:5:374:G:H8	1.79	0.48
52:5:1110:C:H2'	52:5:1111:G:C8	2.46	0.48
52:5:1287:G:H2'	52:5:1288:C:C6	2.48	0.48
53:6:11:G:O6	53:6:27:A:N6	2.47	0.48
4:A:32:MET:HG3	4:A:33:VAL:N	2.28	0.48
4:A:137:GLN:HE21	4:A:152:LEU:HG	1.78	0.48
6:C:94:GLU:HG3	6:C:187:LEU:HD11	1.96	0.48
10:G:47:ILE:HD13	10:G:115:ILE:HD12	1.96	0.48
15:L:103:ARG:HH12	52:5:1198:C:H5''	1.78	0.48
22:S:24:GLN:O	22:S:28:LEU:HD23	2.13	0.48
43:t:49:ASP:HB3	50:3:520:C:OP1	2.13	0.48
50:3:589:A:H2'	50:3:590:U:O4'	2.14	0.48
50:3:590:U:H2'	50:3:591:G:C8	2.48	0.48
50:3:1005:G:N2	50:3:1021:C:OP1	2.42	0.48
50:3:1507:G:O2'	50:3:1508:G:P	2.72	0.48
50:3:1948:C:H3'	50:3:1949:C:C6	2.49	0.48
52:5:449:A:OP2	52:5:450:U:H5''	2.14	0.48
52:5:1138:U:H2'	52:5:1139:A:H8	1.77	0.48
52:5:1418:G:H2'	52:5:1419:C:H6	1.78	0.48
52:5:1489:C:H2'	52:5:1490:G:C8	2.48	0.48
1:0:21:ARG:NH2	50:3:719:G:OP1	2.46	0.47
6:C:95:SER:HG	6:C:136:LEU:H	1.62	0.47
22:S:24:GLN:HA	22:S:27:LYS:HE2	1.96	0.47
24:a:244:GLU:OE2	50:3:2608:A:N6	2.46	0.47
39:p:12:ARG:HH22	50:3:1281:A:H5''	1.78	0.47
42:s:26:LYS:HG2	42:s:84:THR:HA	1.96	0.47
45:v:3:LYS:HE3	50:3:1392:G:P	2.54	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:443:C:H2'	50:3:444:C:C6	2.48	0.47
50:3:614:C:H42	50:3:1289:G:H1	1.61	0.47
50:3:1076:U:H2'	50:3:1077:G:C8	2.48	0.47
50:3:1475:C:O2'	50:3:1577:A:N3	2.47	0.47
50:3:2208:U:H2'	50:3:2209:U:H6	1.79	0.47
50:3:2240:U:H2'	50:3:2241:A:C8	2.49	0.47
50:3:2419:A:H2'	50:3:2420:A:C8	2.48	0.47
50:3:2677:A:H2'	50:3:2678:A:H8	1.78	0.47
52:5:528:G:OP2	52:5:528:G:N2	2.35	0.47
52:5:1397:G:H2'	52:5:1398:G:C8	2.49	0.47
22:S:5:LYS:HE3	52:5:62:G:H5''	1.95	0.47
24:a:261:ARG:HG2	24:a:265:VAL:HG21	1.95	0.47
27:d:29:PRO:HD3	27:d:165:GLU:HB3	1.95	0.47
32:i:7:LEU:HD13	39:p:97:LEU:HD21	1.95	0.47
35:l:113:GLN:HA	35:l:116:LYS:HB3	1.96	0.47
39:p:44:TYR:HA	39:p:47:ARG:HE	1.79	0.47
45:v:31:VAL:HG12	50:3:432:G:O3'	2.15	0.47
50:3:646:A:N6	50:3:647:G:O6	2.47	0.47
50:3:961:U:H2'	50:3:962:U:C6	2.49	0.47
50:3:976:C:O2'	50:3:1222:A:H5''	2.14	0.47
50:3:1002:A:H4'	50:3:2279:G:N2	2.27	0.47
50:3:1306:G:H2'	50:3:1307:G:H8	1.79	0.47
50:3:2013:C:H2'	50:3:2014:U:C6	2.48	0.47
50:3:2627:U:H2'	50:3:2628:U:C6	2.49	0.47
52:5:641:U:H2'	52:5:642:A:C8	2.48	0.47
52:5:775:G:H2'	52:5:776:C:C6	2.49	0.47
52:5:1320:A:H4'	52:5:1321:G:H4'	1.96	0.47
6:C:14:LEU:HB3	6:C:59:ARG:HG2	1.96	0.47
8:E:97:LEU:HD23	8:E:100:ILE:HG23	1.96	0.47
23:T:38:LYS:O	23:T:41:ARG:HG3	2.13	0.47
23:T:43:ARG:O	23:T:46:ARG:HD3	2.14	0.47
35:l:27:VAL:HB	35:l:134:ARG:HH11	1.78	0.47
40:q:5:VAL:O	40:q:11:GLN:HA	2.14	0.47
40:q:64:LEU:HB2	40:q:86:ARG:HE	1.79	0.47
46:w:30:ARG:NH2	46:w:33:LEU:HD13	2.29	0.47
50:3:24:U:H2'	50:3:25:G:C8	2.49	0.47
50:3:494:G:N2	50:3:505:G:H2'	2.29	0.47
50:3:954:A:H2	51:4:77:G:H21	1.62	0.47
50:3:1065:G:C6	50:3:1160:G:N2	2.82	0.47
50:3:1237:G:H2'	50:3:1238:A:C8	2.49	0.47
50:3:1604:A:H2'	50:3:1605:A:C8	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2097:A:N6	50:3:2238:G:O6	2.47	0.47
50:3:2225:G:H2'	50:3:2226:U:C6	2.49	0.47
52:5:66:A:N7	52:5:377:A:N6	2.62	0.47
52:5:500:G:H2'	52:5:501:A:H8	1.79	0.47
52:5:599:G:N2	52:5:634:U:O2	2.33	0.47
52:5:653:G:N1	52:5:748:U:O4	2.48	0.47
10:G:98:TYR:HD2	52:5:596:U:H4'	1.80	0.47
14:K:24:LEU:HG	14:K:95:LEU:HD22	1.95	0.47
15:L:27:LEU:O	15:L:30:SER:HB3	2.14	0.47
19:P:2:LYS:NZ	52:5:115:A:O2'	2.32	0.47
27:d:64:LYS:HD2	27:d:65:PRO:HD2	1.95	0.47
30:g:40:ILE:HD12	30:g:43:LYS:HB3	1.96	0.47
38:o:100:TYR:CD2	50:3:2726:G:H4'	2.49	0.47
41:r:116:GLU:HA	41:r:119:LYS:HD2	1.96	0.47
50:3:117:C:H2'	50:3:118:G:O4'	2.14	0.47
50:3:363:G:OP2	50:3:363:G:H8	1.96	0.47
50:3:562:C:H4'	50:3:563:A:H5'	1.97	0.47
50:3:661:G:H2'	50:3:662:U:C6	2.49	0.47
50:3:990:G:H2'	50:3:991:G:C8	2.50	0.47
50:3:1853:G:H5''	52:5:699:A:N6	2.29	0.47
50:3:2195:U:H2'	50:3:2196:G:C8	2.50	0.47
50:3:2199:C:H2'	50:3:2200:U:C6	2.50	0.47
50:3:2357:G:H2'	50:3:2358:U:O4'	2.15	0.47
50:3:2515:C:H2'	50:3:2516:G:C8	2.48	0.47
52:5:292:U:H2'	52:5:293:G:C8	2.49	0.47
52:5:598:U:O2	52:5:635:G:N2	2.35	0.47
52:5:912:G:H2'	52:5:913:A:C8	2.50	0.47
52:5:1360:G:H2'	52:5:1361:G:C8	2.50	0.47
52:5:1415:G:H2'	52:5:1416:U:C6	2.50	0.47
52:5:1477:A:H5''	52:5:1479:G:C8	2.49	0.47
6:C:73:ARG:CZ	52:5:397:C:H4'	2.44	0.47
6:C:96:ARG:HH22	6:C:133:SER:HA	1.79	0.47
21:R:19:VAL:HG21	21:R:44:PHE:CD1	2.50	0.47
30:g:63:LEU:HD11	30:g:68:PHE:HB3	1.96	0.47
32:i:95:MET:O	32:i:100:SER:OG	2.31	0.47
40:q:60:GLU:OE2	40:q:93:LYS:HG2	2.13	0.47
50:3:818:A:H8	50:3:1786:U:O2	1.97	0.47
50:3:889:G:H1	50:3:961:U:H3	1.62	0.47
50:3:1164:A:H1'	50:3:2524:U:H1'	1.97	0.47
50:3:1848:U:C2	50:3:1849:G:C8	3.02	0.47
50:3:1890:U:O2'	50:3:1891:A:O4'	2.32	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2108:C:H2'	50:3:2109:A:H8	1.78	0.47
50:3:2601:U:H2'	50:3:2602:C:C6	2.49	0.47
51:4:8:C:H2'	51:4:9:C:C6	2.49	0.47
52:5:305:A:H2'	52:5:306:G:C8	2.50	0.47
52:5:308:C:H2'	52:5:309:A:H8	1.80	0.47
52:5:909:A:O2'	52:5:910:C:H5'	2.14	0.47
6:C:141:LYS:HE3	6:C:141:LYS:HB3	1.61	0.47
13:J:77:LEU:HB3	13:J:103:ILE:HA	1.97	0.47
15:L:31:GLN:O	15:L:35:LYS:HG2	2.15	0.47
20:Q:94:ARG:HB3	20:Q:101:PHE:HE1	1.79	0.47
28:e:38:LEU:HB3	28:e:42:LEU:HD11	1.96	0.47
32:i:128:PHE:HD2	32:i:133:HIS:CD2	2.33	0.47
33:j:7:ARG:NH1	50:3:1995:G:OP1	2.33	0.47
36:m:44:ARG:O	36:m:48:LEU:HG	2.14	0.47
37:n:1:MET:HG3	37:n:2:LYS:H	1.80	0.47
40:q:24:LYS:HD2	40:q:26:GLU:H	1.80	0.47
43:t:44:ARG:HG3	43:t:46:LYS:HG3	1.97	0.47
46:w:55:LEU:HD23	46:w:58:LEU:HD21	1.97	0.47
50:3:314:G:O2'	50:3:315:A:H5'	2.15	0.47
50:3:767:C:H2'	50:3:768:G:O4'	2.14	0.47
50:3:1114:C:N4	50:3:1123:A:OP2	2.37	0.47
50:3:1297:U:O2'	50:3:1298:A:OP1	2.31	0.47
50:3:2077:A:H2'	50:3:2078:A:H8	1.79	0.47
50:3:2100:G:N2	50:3:2206:A:N6	2.63	0.47
50:3:2125:U:O2'	50:3:2126:A:H5''	2.15	0.47
50:3:2502:G:N1	50:3:2503:G:O6	2.48	0.47
52:5:228:G:H2'	52:5:229:G:C8	2.50	0.47
52:5:811:A:C5	52:5:813:A:H1'	2.50	0.47
52:5:1037:A:H3'	52:5:1038:G:H8	1.79	0.47
52:5:1241:G:N2	52:5:1243:A:H8	2.13	0.47
1:0:35:ARG:HH12	50:3:55:A:H2	1.63	0.47
2:1:54:ARG:HH22	50:3:868:C:H4'	1.80	0.47
6:C:82:ARG:HH22	52:5:611:A:H4'	1.80	0.47
14:K:33:LYS:O	14:K:34:LYS:HD3	2.15	0.47
14:K:41:PRO:HD2	52:5:359:A:H61	1.78	0.47
16:M:15:LYS:HG2	16:M:19:ARG:HH12	1.80	0.47
25:b:26:ILE:HD12	25:b:182:VAL:HG21	1.95	0.47
26:c:42:GLN:HB3	50:3:479:A:H61	1.79	0.47
28:e:94:GLY:HA2	28:e:163:LYS:HG2	1.97	0.47
32:i:20:ILE:HD11	32:i:60:ILE:HB	1.97	0.47
33:j:102:VAL:O	33:j:122:VAL:N	2.36	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:n:16:VAL:HA	37:n:19:ILE:HG12	1.96	0.47
50:3:29:G:H1'	50:3:30:A:N7	2.29	0.47
50:3:134:U:H2'	50:3:135:A:C8	2.50	0.47
50:3:276:A:N7	50:3:302:G:O2'	2.46	0.47
50:3:383:U:H2'	50:3:384:G:C8	2.44	0.47
50:3:405:C:H2'	50:3:406:C:C6	2.49	0.47
50:3:632:A:H2'	50:3:633:G:C8	2.48	0.47
50:3:1135:C:H2'	50:3:1136:U:O4'	2.15	0.47
50:3:1195:A:H2'	50:3:1196:U:C6	2.48	0.47
50:3:1528:G:H2'	50:3:1529:U:C6	2.49	0.47
50:3:1653:C:H2'	50:3:1654:G:C8	2.50	0.47
50:3:1775:G:H2'	50:3:1776:G:C8	2.50	0.47
50:3:1833:G:H2'	50:3:1834:U:C6	2.49	0.47
50:3:1878:A:H3'	50:3:1879:A:C8	2.50	0.47
50:3:2069:A:N1	50:3:2511:A:N6	2.62	0.47
50:3:2213:A:H2'	50:3:2214:A:H8	1.80	0.47
50:3:2598:C:H2'	50:3:2599:C:C6	2.49	0.47
50:3:2668:A:O2'	50:3:2669:G:C8	2.67	0.47
50:3:2697:C:OP1	50:3:2721:C:N4	2.46	0.47
50:3:2872:A:H2'	50:3:2873:G:C8	2.50	0.47
51:4:96:G:H2'	51:4:97:A:C8	2.50	0.47
52:5:22:G:H2'	52:5:23:G:H8	1.76	0.47
52:5:259:A:H2'	52:5:260:C:H6	1.80	0.47
52:5:591:A:H2'	52:5:592:A:H8	1.78	0.47
52:5:818:A:H2'	52:5:819:G:C8	2.50	0.47
52:5:827:C:H2'	52:5:828:U:C6	2.48	0.47
52:5:1048:G:H2'	52:5:1049:G:C8	2.50	0.47
2:1:23:HIS:ND1	2:1:40:HIS:O	2.45	0.47
4:A:71:TYR:O	4:A:75:VAL:HG23	2.15	0.47
9:F:48:LEU:O	9:F:52:ARG:N	2.34	0.47
14:K:82:GLY:HA2	52:5:519:G:H5'	1.96	0.47
15:L:90:ARG:NH1	15:L:95:LEU:HD11	2.29	0.47
25:b:10:LYS:HE2	25:b:201:GLU:HA	1.95	0.47
25:b:119:PHE:CE2	50:3:1689:A:H1'	2.50	0.47
37:n:4:ARG:HD2	51:4:44:A:H5''	1.97	0.47
37:n:104:ALA:HA	37:n:107:GLU:OE1	2.15	0.47
40:q:42:ASP:OD2	40:q:99:HIS:ND1	2.46	0.47
43:t:77:PHE:HE1	43:t:84:GLN:HG3	1.79	0.47
50:3:186:A:H2'	50:3:187:C:H6	1.80	0.47
50:3:322:A:H2'	50:3:323:A:C8	2.50	0.47
50:3:2141:A:OP2	50:3:2164:G:N2	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2534:G:H2'	50:3:2535:C:H6	1.78	0.47
52:5:583:G:N1	52:5:754:U:N3	2.62	0.47
52:5:1461:G:H2'	52:5:1462:G:H8	1.80	0.47
4:A:242:MET:SD	4:A:243:PRO:HD2	2.55	0.47
5:B:21:ARG:HB2	5:B:59:GLU:HG3	1.97	0.47
12:I:40:VAL:HG12	12:I:41:LYS:HG2	1.96	0.47
19:P:10:ILE:O	19:P:10:ILE:HG13	2.15	0.47
32:i:36:ALA:HB2	32:i:111:MET:HB3	1.97	0.47
45:v:54:THR:HA	45:v:57:THR:HG22	1.96	0.47
50:3:59:C:H2'	50:3:60:G:H8	1.80	0.47
50:3:515:A:H4'	50:3:516:A:H5'	1.96	0.47
50:3:700:U:H2'	50:3:701:A:C8	2.50	0.47
50:3:813:G:C5	50:3:814:U:C4	3.02	0.47
50:3:1510:A:N1	50:3:1530:G:C6	2.82	0.47
50:3:1791:A:H4'	50:3:1792:A:O4'	2.15	0.47
50:3:1803:U:H2'	50:3:1804:A:C8	2.49	0.47
50:3:1833:G:H2'	50:3:1834:U:H6	1.80	0.47
50:3:2551:G:H2'	50:3:2552:G:C8	2.49	0.47
50:3:2700:C:H1'	50:3:2851:U:H1'	1.97	0.47
52:5:205:U:H2'	52:5:206:G:H8	1.80	0.47
52:5:410:A:P	52:5:425:G:H22	2.38	0.47
52:5:526:C:N4	52:5:527:G:O6	2.48	0.47
52:5:611:A:N6	52:5:612:G:O6	2.47	0.47
52:5:920:G:H1'	52:5:1477:A:C4	2.49	0.47
17:N:68:LYS:HG2	17:N:75:TYR:CZ	2.50	0.47
24:a:227:THR:N	50:3:1797:C:OP1	2.47	0.47
24:a:251:ARG:NE	24:a:253:ALA:O	2.46	0.47
29:f:57:HIS:HA	29:f:60:ILE:HG12	1.97	0.47
29:f:93:ILE:O	29:f:96:GLN:NE2	2.48	0.47
34:k:124:LEU:HB3	34:k:139:VAL:HG23	1.97	0.47
38:o:94:GLY:HA3	38:o:113:LYS:HE2	1.95	0.47
41:r:121:GLN:HA	41:r:124:LEU:HG	1.96	0.47
43:t:78:ASP:N	43:t:85:THR:OG1	2.48	0.47
50:3:48:G:H2'	50:3:49:C:C6	2.50	0.47
50:3:408:G:OP2	50:3:459:A:N6	2.48	0.47
50:3:888:A:H2'	50:3:889:G:H8	1.80	0.47
50:3:1257:G:H2'	50:3:1258:C:C6	2.49	0.47
50:3:1822:A:H4'	50:3:1823:U:H5'	1.97	0.47
50:3:1923:A:H2'	50:3:1924:U:O4'	2.15	0.47
50:3:2379:G:H2'	50:3:2380:U:O4'	2.15	0.47
50:3:2522:U:H2'	50:3:2523:C:C6	2.51	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2695:U:H2'	50:3:2696:G:O4'	2.15	0.47
50:3:2770:U:H2'	50:3:2771:G:O4'	2.15	0.47
52:5:660:A:N1	52:5:739:G:O6	2.48	0.47
52:5:1179:A:H2'	52:5:1180:U:O4'	2.15	0.47
52:5:1454:G:H2'	52:5:1455:G:C8	2.50	0.47
52:5:1501:G:H2'	52:5:1502:G:C8	2.49	0.47
6:C:98:ASP:OD1	6:C:99:ASN:N	2.48	0.46
6:C:116:LEU:HD12	6:C:121:HIS:CD2	2.50	0.46
11:H:87:ARG:O	11:H:90:LEU:HB3	2.15	0.46
35:l:6:ARG:NH2	50:3:906:G:O3'	2.47	0.46
36:m:6:LYS:HE3	50:3:2010:A:H5''	1.98	0.46
50:3:204:U:H2'	50:3:205:C:O4'	2.15	0.46
50:3:209:G:N2	50:3:210:U:O4	2.34	0.46
50:3:386:U:H2'	50:3:387:U:C6	2.50	0.46
50:3:1554:A:OP2	50:3:1576:G:N2	2.48	0.46
50:3:2109:A:N1	50:3:2196:G:C6	2.83	0.46
50:3:2424:C:C2	50:3:2425:C:C5	3.03	0.46
50:3:2537:G:H5''	50:3:2538:A:H5''	1.97	0.46
52:5:304:U:H2'	52:5:305:A:C8	2.50	0.46
52:5:1363:U:H2'	52:5:1364:C:C6	2.50	0.46
53:8:14:C:N3	53:8:24:A:N6	2.62	0.46
4:A:117:LEU:HD22	4:A:191:ALA:HA	1.98	0.46
5:B:44:PHE:HE1	5:B:77:LEU:HD11	1.80	0.46
8:E:142:ARG:NH1	10:G:69:ILE:HG12	2.30	0.46
15:L:68:ASP:O	15:L:71:ARG:N	2.48	0.46
18:O:25:LYS:HD3	52:5:306:G:H4'	1.98	0.46
19:P:5:GLN:HE22	19:P:7:LYS:HD3	1.79	0.46
22:S:30:THR:HG21	52:5:1431:A:O2'	2.15	0.46
25:b:102:PHE:HB2	25:b:184:PHE:HZ	1.80	0.46
25:b:123:ILE:O	25:b:128:PHE:N	2.45	0.46
25:b:151:ARG:N	50:3:2580:A:OP2	2.45	0.46
35:l:62:GLY:CA	35:l:107:ALA:O	2.63	0.46
41:r:130:GLU:HA	41:r:133:GLN:HG3	1.96	0.46
43:t:70:PHE:CD1	50:3:362:U:H4'	2.50	0.46
44:u:17:SER:OG	44:u:18:LYS:N	2.47	0.46
50:3:293:G:H8	50:3:293:G:OP2	1.99	0.46
50:3:1927:C:H5'	52:5:1492:G:N2	2.30	0.46
50:3:2237:U:H2'	50:3:2238:G:H8	1.79	0.46
50:3:2306:A:H3'	50:3:2307:G:H8	1.80	0.46
52:5:134:G:H21	52:5:1422:A:H2	1.63	0.46
52:5:205:U:H2'	52:5:206:G:C8	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:365:U:O4	52:5:388:G:O6	2.33	0.46
53:6:14:C:N3	53:6:24:A:N6	2.62	0.46
35:l:20:LYS:NZ	51:4:76:A:OP1	2.46	0.46
38:o:54:ARG:HB3	38:o:100:TYR:HD1	1.81	0.46
39:p:27:ARG:HH21	39:p:37:THR:HG22	1.80	0.46
42:s:47:VAL:HG13	42:s:48:TYR:HD2	1.81	0.46
50:3:401:G:H3'	50:3:402:A:H5''	1.96	0.46
50:3:428:U:H2'	50:3:429:U:C6	2.50	0.46
51:4:85:A:H2'	51:4:86:G:H8	1.79	0.46
53:6:60:U:H2'	53:6:61:U:C4	2.51	0.46
53:8:16:G:N1	53:8:60:U:O2	2.48	0.46
4:A:71:TYR:OH	8:E:163:MET:O	2.24	0.46
6:C:104:MET:HE1	6:C:167:VAL:HG11	1.98	0.46
14:K:69:ARG:HD2	14:K:75:GLU:OE1	2.14	0.46
17:N:20:GLY:HA3	52:5:747:C:O2	2.15	0.46
27:d:101:GLU:HA	27:d:104:ILE:HG22	1.96	0.46
30:g:14:VAL:HA	30:g:17:LEU:HG	1.98	0.46
32:i:95:MET:HE3	32:i:99:GLN:O	2.16	0.46
32:i:144:ASN:HB3	32:i:145:TRP:CE3	2.51	0.46
32:i:144:ASN:OD1	32:i:145:TRP:N	2.40	0.46
37:n:102:ILE:H	37:n:102:ILE:HD12	1.80	0.46
41:r:24:ILE:HD11	41:r:32:ALA:HB1	1.98	0.46
46:w:29:TYR:HB2	46:w:44:ILE:HD13	1.98	0.46
47:x:32:LYS:HE2	47:x:32:LYS:HA	1.97	0.46
50:3:734:A:H2'	50:3:735:G:O4'	2.14	0.46
50:3:909:U:H2'	50:3:910:G:H8	1.79	0.46
50:3:978:G:H2'	50:3:979:U:O4'	2.15	0.46
50:3:1296:G:N2	50:3:1297:U:O4	2.43	0.46
50:3:1464:G:N3	50:3:1503:A:H2	2.13	0.46
50:3:1701:G:N1	50:3:1998:U:H3'	2.30	0.46
50:3:2201:G:H2'	50:3:2202:U:O4'	2.15	0.46
50:3:2656:G:H2'	50:3:2657:C:H6	1.81	0.46
50:3:2696:G:H1'	50:3:2729:A:H61	1.80	0.46
50:3:2705:G:H2'	50:3:2706:U:C6	2.51	0.46
52:5:227:A:H2'	52:5:228:G:C8	2.51	0.46
52:5:536:U:H2'	52:5:537:A:C8	2.51	0.46
52:5:586:G:H2'	52:5:587:A:H8	1.80	0.46
52:5:943:C:H2'	52:5:944:A:H8	1.81	0.46
52:5:1222:U:O2	52:5:1265:U:N3	2.48	0.46
52:5:1396:U:O2	52:5:1454:G:O6	2.33	0.46
7:D:92:VAL:HG12	7:D:118:ALA:HB1	1.96	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:F:125:ASP:OD1	9:F:132:ALA:HB2	2.15	0.46
14:K:82:GLY:C	52:5:519:G:H5'	2.41	0.46
14:K:115:LEU:O	14:K:117:THR:N	2.48	0.46
18:O:63:VAL:HG12	18:O:67:PHE:CE2	2.50	0.46
36:m:31:ILE:CG2	36:m:116:LEU:HB2	2.45	0.46
36:m:42:GLN:HA	36:m:45:LEU:HD12	1.97	0.46
41:r:41:LYS:NZ	50:3:2017:G:OP2	2.48	0.46
42:s:7:LEU:HB2	42:s:29:PHE:CE2	2.50	0.46
50:3:241:C:H2'	50:3:242:G:C8	2.50	0.46
50:3:313:G:H2'	50:3:314:G:H1'	1.97	0.46
50:3:328:A:N6	50:3:379:A:O4'	2.49	0.46
50:3:495:U:O2	50:3:507:A:N6	2.47	0.46
50:3:727:C:H2'	50:3:728:A:C8	2.50	0.46
50:3:1623:U:H2'	50:3:1624:A:C8	2.51	0.46
52:5:8:G:H5'	52:5:294:A:OP1	2.15	0.46
52:5:90:G:H2'	52:5:91:C:C6	2.51	0.46
52:5:420:A:H3'	52:5:421:G:C8	2.50	0.46
52:5:748:U:H3'	52:5:749:G:C8	2.50	0.46
53:6:16:G:N1	53:6:60:U:O2	2.48	0.46
53:6:30:G:H2'	53:6:31:G:H8	1.80	0.46
6:C:2:LYS:HD3	6:C:114:ARG:NE	2.29	0.46
8:E:121:ARG:HE	8:E:123:ASN:HB3	1.80	0.46
14:K:83:GLU:HA	52:5:519:G:OP1	2.15	0.46
14:K:127:ARG:N	52:5:500:G:OP1	2.49	0.46
17:N:52:GLY:O	17:N:56:LYS:HG2	2.15	0.46
36:m:38:ALA:HB2	36:m:116:LEU:HD11	1.98	0.46
50:3:336:C:H2'	50:3:337:U:C6	2.50	0.46
50:3:433:A:H2'	50:3:434:G:H8	1.81	0.46
50:3:698:A:H2'	50:3:699:U:C6	2.51	0.46
50:3:852:C:H2'	50:3:853:G:O4'	2.16	0.46
50:3:890:U:H2'	50:3:891:G:C8	2.47	0.46
50:3:1073:A:H2'	50:3:1074:A:H8	1.79	0.46
50:3:1406:A:H4'	50:3:1407:U:C5	2.51	0.46
50:3:2330:A:H2'	50:3:2331:G:H8	1.80	0.46
50:3:2645:U:H3'	50:3:2646:G:H8	1.80	0.46
52:5:288:A:O2'	52:5:606:A:N6	2.48	0.46
52:5:767:U:H2'	52:5:768:G:C8	2.51	0.46
52:5:872:C:H2'	52:5:873:U:C6	2.50	0.46
8:E:147:GLU:HB3	10:G:59:VAL:HG13	1.98	0.46
12:I:33:GLU:HA	12:I:36:LYS:NZ	2.31	0.46
13:J:62:LYS:O	13:J:65:LYS:HG3	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:d:60:ILE:HG23	27:d:99:PHE:CE2	2.48	0.46
27:d:88:LYS:HD2	50:3:2321:C:H4'	1.98	0.46
30:g:68:PHE:HD1	30:g:116:ARG:HH11	1.64	0.46
35:l:73:SER:OG	35:l:91:GLU:O	2.33	0.46
50:3:159:G:H2'	50:3:160:A:C8	2.50	0.46
50:3:286:A:OP1	50:3:287:G:N1	2.48	0.46
50:3:613:C:H2'	50:3:614:C:H6	1.81	0.46
50:3:1117:U:H2'	50:3:1118:U:O4'	2.16	0.46
50:3:1295:A:OP1	50:3:2021:A:N6	2.48	0.46
50:3:1937:G:N2	50:3:1975:G:H2'	2.30	0.46
50:3:2121:A:C2	50:3:2176:G:H4'	2.47	0.46
50:3:2663:G:H22	50:3:2673:A:P	2.38	0.46
52:5:253:G:O6	52:5:266:A:N6	2.48	0.46
52:5:972:A:O2'	52:5:1198:C:N4	2.48	0.46
52:5:976:U:OP2	52:5:977:U:H3'	2.16	0.46
52:5:1341:U:H2'	52:5:1342:C:H6	1.81	0.46
52:5:1385:A:H2'	52:5:1386:C:C6	2.51	0.46
53:8:60:U:H2'	53:8:61:U:C4	2.51	0.46
4:A:41:MET:HE1	4:A:206:THR:H	1.81	0.46
4:A:61:GLN:O	4:A:65:LEU:HG	2.16	0.46
7:D:185:ARG:HB3	7:D:190:ASN:HD21	1.81	0.46
7:D:191:MET:O	7:D:195:THR:HG23	2.16	0.46
18:O:36:ALA:O	52:5:446:A:O2'	2.33	0.46
28:e:73:ALA:HB1	50:3:2755:G:H5''	1.98	0.46
33:j:4:PHE:HA	33:j:21:ILE:HG22	1.97	0.46
37:n:86:LEU:O	37:n:87:THR:OG1	2.34	0.46
50:3:500:U:O2'	50:3:501:G:OP1	2.30	0.46
50:3:628:A:H2'	50:3:629:G:H8	1.81	0.46
50:3:1717:C:H2'	50:3:1718:C:C6	2.50	0.46
50:3:2004:G:H2'	50:3:2005:G:H8	1.81	0.46
50:3:2033:G:H2'	50:3:2034:G:C8	2.51	0.46
50:3:2171:A:H5''	50:3:2181:A:C8	2.51	0.46
50:3:2628:U:H2'	50:3:2629:G:C8	2.50	0.46
50:3:2656:G:H2'	50:3:2657:C:C6	2.51	0.46
50:3:2700:C:H2'	50:3:2701:A:H8	1.81	0.46
51:4:4:G:H2'	51:4:5:G:C8	2.51	0.46
52:5:116:A:O2'	52:5:117:U:H5''	2.16	0.46
52:5:191:A:H2'	52:5:192:A:C8	2.50	0.46
52:5:1182:C:H2'	52:5:1183:C:C6	2.51	0.46
52:5:1461:G:H2'	52:5:1462:G:C8	2.50	0.46
53:8:30:G:H2'	53:8:31:G:H8	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:44:PHE:HD2	4:A:214:ILE:HG21	1.79	0.46
7:D:151:LEU:HD13	7:D:180:THR:HG22	1.98	0.46
7:D:167:ARG:HA	7:D:170:ILE:HG22	1.97	0.46
8:E:6:ILE:HB	8:E:86:LEU:HB2	1.97	0.46
15:L:15:ILE:HG22	15:L:42:ASP:OD2	2.15	0.46
27:d:104:ILE:HD11	27:d:176:PRO:HD3	1.98	0.46
28:e:157:PRO:HG3	28:e:164:GLY:HA3	1.98	0.46
30:g:57:ASN:HB3	30:g:61:ARG:HH22	1.81	0.46
34:k:131:VAL:HG21	34:k:136:LEU:HD21	1.97	0.46
38:o:98:ARG:HH12	50:3:2725:G:H21	1.64	0.46
39:p:8:GLN:CD	50:3:1229:U:H4'	2.40	0.46
46:w:53:THR:O	46:w:56:THR:OG1	2.30	0.46
50:3:145:A:H2'	50:3:146:G:C8	2.51	0.46
50:3:154:U:H2'	50:3:155:A:C8	2.51	0.46
50:3:254:G:H2'	50:3:255:A:C8	2.51	0.46
50:3:912:A:H2'	50:3:913:U:C6	2.51	0.46
50:3:1355:C:H3'	50:3:1356:G:H8	1.81	0.46
50:3:1885:G:H2'	50:3:1886:C:C6	2.51	0.46
50:3:2264:G:H2'	50:3:2265:U:C6	2.50	0.46
50:3:2752:G:N1	50:3:2768:U:N3	2.42	0.46
51:4:71:A:H3'	51:4:72:A:H8	1.81	0.46
52:5:204:C:H2'	52:5:205:U:O4'	2.16	0.46
52:5:590:G:O6	52:5:644:U:O4	2.33	0.46
52:5:673:A:N1	52:5:711:G:O6	2.49	0.46
52:5:1183:C:H2'	52:5:1184:C:H6	1.81	0.46
53:6:65:C:H2'	53:6:66:C:C6	2.51	0.46
6:C:55:GLN:O	6:C:59:ARG:HG3	2.16	0.46
6:C:60:MET:HA	6:C:63:MET:HG2	1.98	0.46
9:F:3:LYS:HD3	52:5:1352:A:O2'	2.16	0.46
12:I:68:ARG:NH2	52:5:970:A:N1	2.57	0.46
15:L:8:ASP:HB3	15:L:21:TYR:HB3	1.98	0.46
27:d:42:ASP:OD2	27:d:150:ARG:NH2	2.49	0.46
30:g:44:LEU:HG	30:g:49:SER:HB3	1.97	0.46
31:h:131:MET:HB2	31:h:133:ILE:HG12	1.97	0.46
33:j:57:VAL:HG21	50:3:1959:A:H1'	1.98	0.46
35:l:50:ALA:O	35:l:54:ILE:HG12	2.16	0.46
50:3:129:U:H2'	50:3:130:C:H6	1.80	0.46
50:3:135:A:H2'	50:3:136:G:C8	2.51	0.46
50:3:155:A:N6	50:3:178:A:H61	2.14	0.46
50:3:877:G:C2	50:3:878:A:H1'	2.51	0.46
50:3:1000:U:H2'	50:3:1001:C:C6	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1463:G:H2'	50:3:1464:G:C8	2.51	0.46
50:3:1759:C:H2'	50:3:1760:G:C8	2.51	0.46
50:3:2208:U:H2'	50:3:2209:U:C6	2.51	0.46
50:3:2300:A:N6	50:3:2349:G:O6	2.49	0.46
50:3:2301:C:H2'	50:3:2302:C:H6	1.81	0.46
50:3:2477:A:C6	50:3:2490:A:C8	3.04	0.46
50:3:2502:G:H2'	50:3:2503:G:C8	2.51	0.46
50:3:2528:C:H2'	50:3:2529:C:C6	2.51	0.46
50:3:2850:G:H2'	50:3:2851:U:C6	2.51	0.46
52:5:393:A:N7	52:5:545:A:O2'	2.37	0.46
52:5:423:U:H2'	52:5:424:U:C6	2.51	0.46
52:5:770:G:O6	52:5:804:A:N6	2.48	0.46
52:5:947:U:H2'	52:5:948:U:H6	1.81	0.46
52:5:986:U:C6	52:5:1187:U:H1'	2.51	0.46
4:A:43:PHE:HE1	10:G:80:ARG:CZ	2.29	0.45
5:B:186:ASP:HB2	5:B:207:ARG:HD3	1.98	0.45
8:E:45:LEU:N	8:E:53:LEU:O	2.48	0.45
14:K:113:GLY:H	14:K:119:GLY:H	1.64	0.45
22:S:49:SER:OG	52:5:195:U:H4'	2.16	0.45
32:i:107:ALA:O	32:i:111:MET:HG2	2.16	0.45
33:j:24:VAL:HG21	33:j:31:ARG:H	1.81	0.45
40:q:74:ILE:HG13	40:q:77:LYS:HB2	1.98	0.45
41:r:35:ILE:O	41:r:39:THR:HG23	2.16	0.45
50:3:454:G:H2'	50:3:455:G:C8	2.49	0.45
50:3:523:A:H2'	50:3:524:G:C8	2.51	0.45
50:3:587:U:H2'	50:3:588:G:C8	2.51	0.45
50:3:822:C:H3'	50:3:826:C:N4	2.31	0.45
50:3:1008:A:C8	50:3:1009:A:H2'	2.51	0.45
50:3:1199:A:H2'	50:3:1200:U:C6	2.51	0.45
50:3:1779:G:H2'	50:3:1780:A:H4'	1.98	0.45
50:3:1922:U:H3'	50:3:1923:A:H8	1.81	0.45
50:3:1989:U:H2'	50:3:1990:C:C6	2.51	0.45
50:3:2122:G:O2'	50:3:2179:A:N6	2.49	0.45
50:3:2480:G:N2	50:3:2537:G:O6	2.49	0.45
50:3:2565:G:H2'	50:3:2566:C:H6	1.81	0.45
51:4:59:A:HO2'	51:4:60:C:P	2.38	0.45
52:5:69:G:N2	52:5:137:A:C2	2.84	0.45
52:5:370:A:N1	52:5:386:U:O2'	2.44	0.45
52:5:523:U:H2'	52:5:524:C:C6	2.51	0.45
52:5:662:G:N3	52:5:729:C:H2'	2.31	0.45
52:5:905:U:H2'	52:5:906:C:C6	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:8:43:G:H3'	53:8:44:U:H5''	1.98	0.45
1:0:8:SER:HA	50:3:1337:G:H5'	1.98	0.45
6:C:116:LEU:HD12	6:C:121:HIS:HD2	1.80	0.45
8:E:22:ASN:HB3	8:E:60:TRP:HH2	1.82	0.45
10:G:24:ASN:ND2	52:5:823:C:O2'	2.49	0.45
11:H:87:ARG:O	11:H:91:GLN:OE1	2.34	0.45
34:k:135:ALA:O	34:k:139:VAL:HG12	2.17	0.45
35:l:28:ALA:C	35:l:134:ARG:HH12	2.24	0.45
50:3:697:U:H2'	50:3:698:A:H8	1.81	0.45
50:3:804:U:H2'	50:3:805:G:C8	2.51	0.45
50:3:1049:U:H2'	50:3:1050:A:C8	2.51	0.45
50:3:1744:U:H4'	50:3:2862:U:H3	1.80	0.45
50:3:1766:A:H1'	50:3:2719:A:H2	1.81	0.45
50:3:2063:G:H2'	50:3:2064:G:H8	1.82	0.45
52:5:726:A:H2'	52:5:727:G:C8	2.52	0.45
52:5:885:U:H2'	52:5:886:A:H8	1.81	0.45
52:5:1347:U:H2'	52:5:1348:G:O4'	2.16	0.45
7:D:125:SER:O	7:D:125:SER:OG	2.28	0.45
9:F:91:PRO:O	9:F:95:LYS:HG3	2.17	0.45
14:K:61:ALA:HB3	14:K:63:ARG:NE	2.31	0.45
19:P:14:LYS:HD3	19:P:25:GLN:HB3	1.99	0.45
21:R:36:ARG:NH1	52:5:1196:G:OP1	2.50	0.45
23:T:50:GLN:HA	23:T:53:ARG:HG2	1.98	0.45
24:a:280:ARG:HD3	24:a:284:GLY:C	2.42	0.45
25:b:7:PHE:CE1	25:b:84:ILE:HD11	2.50	0.45
27:d:58:HIS:NE2	47:x:6:HIS:HA	2.31	0.45
29:f:96:GLN:HE22	29:f:97:ILE:HG23	1.80	0.45
32:i:63:ASP:HB3	32:i:129:LYS:HD2	1.98	0.45
34:k:117:HIS:HD2	50:3:673:A:H5'	1.81	0.45
38:o:36:LYS:HG3	38:o:85:ASN:HA	1.98	0.45
43:t:33:GLN:HE22	43:t:70:PHE:HD2	1.63	0.45
50:3:54:A:N1	50:3:182:C:H1'	2.31	0.45
50:3:57:G:H2'	50:3:58:A:H8	1.80	0.45
50:3:80:U:O2	50:3:109:G:N2	2.34	0.45
50:3:206:U:H2'	50:3:207:C:C2	2.52	0.45
50:3:639:G:H2'	50:3:640:U:C6	2.51	0.45
50:3:851:U:H2'	50:3:852:C:H6	1.81	0.45
50:3:855:A:H8	50:3:1009:A:H62	1.65	0.45
50:3:998:C:H2'	50:3:999:U:C6	2.51	0.45
50:3:1361:U:H2'	50:3:1362:C:C6	2.51	0.45
50:3:1692:A:H2'	50:3:1693:U:C6	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:38:U:O2'	52:5:545:A:N1	2.40	0.45
52:5:616:C:N4	52:5:619:A:OP2	2.37	0.45
52:5:676:U:H2'	52:5:677:C:C6	2.51	0.45
52:5:721:G:H2'	52:5:722:G:C8	2.51	0.45
52:5:842:C:H2'	52:5:843:C:C6	2.51	0.45
52:5:927:C:H2'	52:5:928:G:C8	2.51	0.45
4:A:99:ILE:HA	4:A:102:ARG:NH2	2.31	0.45
5:B:167:ARG:O	5:B:169:LYS:NZ	2.48	0.45
7:D:148:ARG:HG3	7:D:183:LEU:HB2	1.97	0.45
15:L:53:PHE:O	15:L:57:ARG:HG2	2.17	0.45
31:h:98:MET:N	31:h:98:MET:HE2	2.31	0.45
36:m:82:LEU:HD23	36:m:86:VAL:HG21	1.99	0.45
50:3:297:G:O2'	50:3:298:U:OP2	2.32	0.45
50:3:332:G:O2'	50:3:356:A:N1	2.37	0.45
50:3:696:U:H2'	50:3:697:U:C6	2.52	0.45
50:3:900:G:H1	50:3:950:U:H3	1.64	0.45
50:3:2100:G:N2	50:3:2206:A:H62	2.15	0.45
52:5:212:G:HO2'	52:5:465:A:N6	2.13	0.45
52:5:227:A:H2'	52:5:228:G:H8	1.79	0.45
52:5:546:G:H2'	52:5:547:C:H6	1.81	0.45
3:2:35:ARG:HG3	3:2:36:GLN:OE1	2.16	0.45
5:B:138:ARG:O	5:B:141:LEU:HG	2.16	0.45
11:H:117:LYS:HB2	11:H:120:LEU:HB2	1.98	0.45
21:R:22:MET:SD	21:R:28:LYS:HB3	2.56	0.45
23:T:39:GLY:O	23:T:43:ARG:HG2	2.17	0.45
25:b:15:GLN:HB3	50:3:2690:U:H1'	1.99	0.45
34:k:94:ASN:O	34:k:97:SER:OG	2.32	0.45
40:q:57:CYS:SG	40:q:92:LEU:HD12	2.56	0.45
43:t:88:LYS:HG3	43:t:106:LYS:HE2	1.98	0.45
50:3:629:G:H2'	50:3:630:C:C6	2.52	0.45
50:3:941:C:H2'	50:3:942:A:H8	1.80	0.45
50:3:1350:A:N6	50:3:1361:U:O2'	2.48	0.45
50:3:1378:C:H2'	50:3:1379:C:C6	2.51	0.45
50:3:1906:G:N2	50:3:1909:C:H41	2.14	0.45
50:3:2335:A:H2'	50:3:2336:A:C8	2.51	0.45
50:3:2421:U:H2'	50:3:2422:G:H8	1.81	0.45
50:3:2645:U:H3'	50:3:2646:G:C8	2.52	0.45
50:3:2752:G:H2'	50:3:2753:C:C6	2.51	0.45
52:5:116:A:O3'	52:5:259:A:O2'	2.34	0.45
52:5:565:G:H2'	52:5:566:G:H8	1.81	0.45
52:5:600:G:N2	52:5:633:U:O2	2.33	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:648:C:H2'	52:5:649:U:C6	2.52	0.45
52:5:825:A:H2'	52:5:826:G:O4'	2.16	0.45
52:5:1067:C:H2'	52:5:1068:G:H8	1.81	0.45
52:5:1115:G:N2	52:5:1116:U:O4	2.39	0.45
52:5:1467:A:H2'	52:5:1468:A:C5	2.51	0.45
7:D:138:HIS:CD2	10:G:108:LEU:HD23	2.51	0.45
15:L:93:LYS:NZ	15:L:95:LEU:HD13	2.32	0.45
19:P:7:LYS:H	19:P:64:VAL:HG12	1.81	0.45
25:b:83:GLU:CD	50:3:2644:U:H4'	2.41	0.45
27:d:44:ILE:O	27:d:45:ARG:NH2	2.50	0.45
29:f:102:HIS:HB3	50:3:166:A:C5	2.51	0.45
30:g:112:TYR:CZ	30:g:115:ASN:CB	2.99	0.45
30:g:112:TYR:CZ	30:g:115:ASN:OD1	2.69	0.45
30:g:112:TYR:CE1	30:g:115:ASN:OD1	2.69	0.45
37:n:108:ALA:HB1	37:n:112:ARG:CZ	2.47	0.45
43:t:26:LYS:HE2	43:t:35:ILE:HG13	1.98	0.45
45:v:6:GLN:HG3	45:v:48:ILE:HB	1.98	0.45
50:3:481:C:N4	50:3:482:G:O6	2.50	0.45
50:3:535:G:N2	50:3:537:A:H3'	2.31	0.45
50:3:652:U:H2'	50:3:653:G:C8	2.50	0.45
50:3:1242:G:C2	50:3:1266:G:C4	3.04	0.45
50:3:1383:G:H2'	50:3:1384:C:H6	1.81	0.45
50:3:2057:C:H2'	50:3:2058:G:O4'	2.17	0.45
50:3:2307:G:O6	50:3:2325:U:O4	2.34	0.45
50:3:2801:U:H2'	50:3:2808:A:N1	2.32	0.45
52:5:13:U:N3	52:5:23:G:N1	2.52	0.45
52:5:410:A:N6	52:5:428:A:O2'	2.48	0.45
52:5:711:G:H2'	52:5:712:A:H8	1.78	0.45
52:5:1212:C:H5''	52:5:1213:A:H8	1.81	0.45
53:8:65:C:H2'	53:8:66:C:C6	2.51	0.45
2:1:24:ALA:HB2	34:k:62:LEU:HD23	1.99	0.45
4:A:73:LYS:O	4:A:77:GLN:HG2	2.17	0.45
14:K:40:SER:HB3	14:K:43:LYS:HE3	1.99	0.45
27:d:111:VAL:HB	27:d:114:PHE:HB2	1.98	0.45
30:g:32:MET:HE2	30:g:32:MET:HB2	1.71	0.45
34:k:90:LEU:HD22	34:k:101:LYS:HZ1	1.82	0.45
36:m:54:VAL:HG23	36:m:59:ASN:ND2	2.31	0.45
44:u:43:GLN:CD	50:3:960:A:H4'	2.42	0.45
50:3:241:C:H2'	50:3:242:G:H8	1.81	0.45
50:3:605:A:N6	50:3:2036:G:H21	2.09	0.45
50:3:694:U:H2'	50:3:695:G:C8	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:964:A:H2'	50:3:965:U:C6	2.52	0.45
50:3:1193:U:H2'	50:3:1194:U:C6	2.52	0.45
50:3:1616:G:H2'	50:3:1619:A:H2	1.82	0.45
50:3:2496:G:C2	50:3:2497:U:C4	3.04	0.45
50:3:2530:U:O2'	50:3:2655:U:H5''	2.17	0.45
50:3:2600:G:H2'	50:3:2601:U:O4'	2.16	0.45
50:3:2640:A:H2'	50:3:2641:A:C8	2.52	0.45
52:5:224:A:H2'	52:5:225:U:C6	2.52	0.45
52:5:460:A:N1	52:5:467:G:O6	2.50	0.45
52:5:590:G:C6	52:5:645:A:C6	3.04	0.45
52:5:986:U:C5	52:5:1187:U:H1'	2.51	0.45
53:8:12:C:H2'	53:8:13:U:C6	2.51	0.45
2:1:26:THR:H	50:3:2401:U:P	2.38	0.45
5:B:119:ILE:O	5:B:123:LEU:HD23	2.16	0.45
6:C:97:LEU:O	6:C:101:VAL:HG23	2.17	0.45
7:D:186:ASN:C	7:D:191:MET:HE1	2.41	0.45
12:I:74:ASN:OD1	12:I:75:ARG:N	2.50	0.45
27:d:79:LEU:HD22	27:d:83:GLN:HB3	1.98	0.45
32:i:59:ILE:HB	32:i:127:VAL:HG23	1.99	0.45
34:k:90:LEU:HD21	34:k:97:SER:HB2	1.99	0.45
36:m:42:GLN:NE2	36:m:100:VAL:HG23	2.31	0.45
46:w:65:TRP:NE1	50:3:148:U:OP1	2.50	0.45
50:3:186:A:H2'	50:3:187:C:C6	2.52	0.45
50:3:316:C:O2'	50:3:392:A:N1	2.48	0.45
50:3:352:C:H2'	50:3:353:G:C8	2.52	0.45
50:3:784:A:H61	50:3:788:G:N2	2.11	0.45
50:3:832:C:H2'	50:3:833:C:C6	2.52	0.45
50:3:1415:A:H4'	50:3:1495:A:H1'	1.98	0.45
50:3:1883:A:C4	50:3:1884:A:C8	3.05	0.45
50:3:1931:C:H2'	50:3:1932:C:C6	2.52	0.45
50:3:2274:A:N6	50:3:2281:A:OP2	2.50	0.45
50:3:2699:C:H2'	50:3:2700:C:H6	1.81	0.45
52:5:210:G:H2'	52:5:211:G:H8	1.82	0.45
52:5:724:G:H2'	52:5:726:A:OP2	2.17	0.45
52:5:1016:A:H2'	52:5:1017:A:C8	2.52	0.45
52:5:1316:C:H2'	52:5:1317:A:C8	2.51	0.45
53:8:3:G:H1	53:8:72:C:N4	2.15	0.45
16:M:10:GLN:O	16:M:10:GLN:NE2	2.44	0.45
32:i:102:LYS:HE2	32:i:102:LYS:HA	1.98	0.45
43:t:9:LYS:HE3	43:t:21:SER:OG	2.17	0.45
50:3:597:C:O2'	50:3:1283:A:N1	2.41	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:880:C:O2'	50:3:968:U:N3	2.50	0.45
50:3:1749:A:H2'	50:3:1750:A:H8	1.82	0.45
50:3:1778:G:H2'	50:3:1779:G:C8	2.52	0.45
50:3:1923:A:N6	52:5:1383:A:O2'	2.47	0.45
50:3:2030:A:H2'	50:3:2031:C:C6	2.51	0.45
50:3:2054:C:H2'	50:3:2055:A:C8	2.51	0.45
50:3:2189:U:H2'	50:3:2190:G:C8	2.51	0.45
50:3:2422:G:C2	50:3:2423:G:C8	3.05	0.45
52:5:675:U:H2'	52:5:676:U:C6	2.52	0.45
52:5:675:U:H2'	52:5:676:U:H6	1.82	0.45
2:1:34:THR:O	2:1:38:LYS:HG3	2.16	0.45
9:F:115:MET:HE3	52:5:1215:U:C4	2.52	0.45
10:G:44:ILE:HA	10:G:122:VAL:HG11	1.98	0.45
16:M:26:ARG:HD2	16:M:27:CYS:SG	2.57	0.45
27:d:101:GLU:O	27:d:105:TYR:HB3	2.17	0.45
27:d:136:ILE:HA	27:d:141:ILE:HG21	1.99	0.45
30:g:29:TYR:HB2	30:g:103:LYS:HD3	1.97	0.45
33:j:88:LYS:C	33:j:89:GLU:HG3	2.42	0.45
34:k:115:ILE:HD11	50:3:663:A:C5	2.52	0.45
36:m:13:TRP:CE3	36:m:14:ARG:HB3	2.51	0.45
43:t:23:ILE:HB	43:t:37:GLU:OE1	2.16	0.45
44:u:49:GLN:HG2	50:3:2362:A:H4'	1.98	0.45
46:w:18:LEU:O	46:w:22:LEU:HG	2.17	0.45
48:y:39:PHE:O	48:y:41:ARG:NH1	2.50	0.45
50:3:23:A:H2'	50:3:24:U:C6	2.51	0.45
50:3:525:A:N6	50:3:1312:A:N1	2.65	0.45
50:3:1366:G:H21	50:3:1421:A:H2	1.65	0.45
50:3:1750:A:H2'	50:3:1751:A:O4'	2.17	0.45
52:5:91:C:H2'	52:5:92:G:C8	2.51	0.45
52:5:827:C:H2'	52:5:828:U:H6	1.82	0.45
52:5:833:G:O6	52:5:845:C:N4	2.50	0.45
52:5:1321:G:O2'	52:5:1348:G:N1	2.37	0.45
52:5:1350:A:H2'	52:5:1351:U:O4'	2.17	0.45
52:5:1369:A:C5	52:5:1476:C:H4'	2.51	0.45
52:5:1425:A:H2'	52:5:1427:U:N3	2.32	0.45
52:5:1482:A:H2'	52:5:1483:C:C6	2.52	0.45
8:E:107:LEU:HD13	20:Q:48:GLN:OE1	2.17	0.44
8:E:127:ASN:ND2	8:E:129:ASP:OD1	2.44	0.44
16:M:41:ARG:NE	52:5:969:A:OP2	2.49	0.44
17:N:41:LEU:HD13	17:N:44:LYS:NZ	2.32	0.44
26:c:112:LEU:O	26:c:116:TRP:CD1	2.71	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:d:41:GLY:N	50:3:2315:G:O6	2.50	0.44
27:d:67:ALA:HA	27:d:87:CYS:HA	1.98	0.44
28:e:58:ASN:OD1	28:e:59:ASN:N	2.50	0.44
35:l:87:LYS:NZ	50:3:2284:G:O2'	2.29	0.44
40:q:87:GLN:NE2	50:3:1197:G:H21	2.15	0.44
41:r:64:MET:HG2	41:r:66:GLY:H	1.82	0.44
50:3:322:A:H2'	50:3:323:A:H8	1.82	0.44
50:3:549:A:H2'	50:3:550:A:C8	2.52	0.44
50:3:800:C:H2'	50:3:801:U:C6	2.53	0.44
50:3:899:A:H2'	50:3:900:G:C8	2.53	0.44
50:3:1217:G:H2'	50:3:1218:G:O4'	2.16	0.44
50:3:1338:G:H2'	50:3:1339:U:C2	2.52	0.44
50:3:1523:C:H2'	50:3:1524:C:H6	1.81	0.44
50:3:1829:U:H2'	50:3:1830:G:H8	1.82	0.44
50:3:1832:G:H2'	50:3:1833:G:C8	2.51	0.44
50:3:1878:A:H3'	50:3:1879:A:H8	1.82	0.44
50:3:1959:A:H2	50:3:2568:G:H1'	1.81	0.44
50:3:2440:A:N6	53:8:76:C:O2	2.46	0.44
50:3:2781:C:H2'	50:3:2782:A:H8	1.83	0.44
50:3:2838:G:N2	50:3:2887:A:H62	2.14	0.44
52:5:242:A:C5	52:5:277:G:N2	2.85	0.44
52:5:275:A:H5''	52:5:276:U:H3'	1.99	0.44
52:5:494:A:H2'	52:5:495:U:C5	2.52	0.44
52:5:583:G:N1	52:5:754:U:C2	2.85	0.44
52:5:861:A:H2'	52:5:862:C:C6	2.51	0.44
52:5:984:A:H3'	52:5:985:C:C5	2.52	0.44
52:5:1046:A:H62	52:5:1175:C:H42	1.64	0.44
52:5:1289:U:H2'	52:5:1290:G:O4'	2.17	0.44
52:5:1300:C:H2'	52:5:1301:U:C6	2.52	0.44
52:5:1344:C:H2'	52:5:1345:G:C8	2.51	0.44
52:5:1405:U:H2'	52:5:1406:U:H6	1.82	0.44
8:E:49:ILE:HG12	8:E:83:LEU:HD12	1.99	0.44
14:K:86:ASN:HB2	14:K:112:ARG:HH11	1.82	0.44
15:L:102:THR:HG22	15:L:106:ALA:HB3	1.98	0.44
21:R:10:PHE:CZ	52:5:1292:A:H4'	2.52	0.44
23:T:17:LYS:HD3	23:T:17:LYS:HA	1.85	0.44
27:d:108:LEU:HD13	27:d:114:PHE:CZ	2.53	0.44
29:f:68:LEU:HD21	29:f:106:MET:HE2	2.00	0.44
31:h:28:VAL:HB	31:h:61:LYS:HE3	1.98	0.44
32:i:50:ASN:ND2	50:3:590:U:O2	2.47	0.44
34:k:39:GLN:HG3	34:k:45:GLY:HA2	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:k:130:LYS:HA	34:k:148:LEU:HD11	2.00	0.44
39:p:9:THR:O	39:p:13:ARG:HG3	2.17	0.44
41:r:21:CYS:HB3	41:r:74:CYS:HB3	1.75	0.44
47:x:12:VAL:H	47:x:26:GLU:HA	1.81	0.44
50:3:127:A:O2'	50:3:128:A:O4'	2.33	0.44
50:3:321:A:H2'	50:3:322:A:C8	2.52	0.44
50:3:523:A:C6	50:3:529:G:N1	2.85	0.44
50:3:627:U:H2'	50:3:628:A:C8	2.52	0.44
50:3:732:G:H2'	50:3:733:C:C6	2.52	0.44
50:3:937:A:H2'	50:3:938:A:O4'	2.17	0.44
50:3:1317:C:H2'	50:3:1318:U:C6	2.52	0.44
50:3:1422:U:H2'	50:3:1423:A:O4'	2.18	0.44
50:3:1510:A:N6	50:3:1530:G:O6	2.50	0.44
50:3:1709:C:H2'	50:3:1710:A:O4'	2.17	0.44
50:3:1820:U:HO2'	50:3:1821:G:P	2.40	0.44
50:3:1886:C:H2'	50:3:1887:U:C6	2.52	0.44
50:3:2367:C:H2'	50:3:2368:A:O4'	2.18	0.44
50:3:2812:U:H1'	50:3:2813:A:H2'	1.98	0.44
52:5:15:U:N3	52:5:18:U:OP2	2.47	0.44
52:5:293:G:N2	52:5:296:A:OP2	2.34	0.44
52:5:413:G:H2'	52:5:414:U:C6	2.53	0.44
52:5:452:A:H2'	52:5:453:C:H5'	1.98	0.44
52:5:506:U:H1'	52:5:507:A:N7	2.33	0.44
52:5:514:U:H2'	52:5:515:G:C4	2.52	0.44
52:5:556:G:H2'	52:5:557:A:C2	2.53	0.44
52:5:851:U:H2'	52:5:852:G:O4'	2.17	0.44
52:5:877:C:H2'	52:5:878:U:C6	2.52	0.44
52:5:1049:G:O6	52:5:1174:U:O2	2.34	0.44
52:5:1197:G:H2'	52:5:1198:C:C6	2.53	0.44
52:5:1278:G:N2	52:5:1307:A:H62	2.13	0.44
53:6:12:C:H2'	53:6:13:U:C6	2.51	0.44
9:F:78:ARG:HG2	9:F:83:ASN:HB2	1.99	0.44
13:J:80:LYS:HG3	13:J:107:THR:HA	1.99	0.44
22:S:8:GLU:O	22:S:12:ARG:HG3	2.18	0.44
24:a:171:LEU:HD11	24:a:183:GLN:HB2	2.00	0.44
30:g:55:LYS:HD3	50:3:1142:G:OP1	2.18	0.44
34:k:134:GLN:HE22	50:3:672:G:H5''	1.82	0.44
36:m:43:LYS:O	36:m:47:LYS:HG3	2.17	0.44
38:o:53:LEU:HB2	38:o:65:ILE:HB	1.99	0.44
39:p:36:GLN:NE2	50:3:596:G:N3	2.55	0.44
42:s:48:TYR:HE1	42:s:91:ILE:HB	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:w:55:LEU:O	46:w:59:THR:HG23	2.17	0.44
48:y:7:ARG:NH2	50:3:2026:A:H5''	2.33	0.44
50:3:26:G:H2'	50:3:27:U:H6	1.81	0.44
50:3:226:A:H1'	50:3:228:A:O4'	2.17	0.44
50:3:297:G:N2	50:3:442:G:O6	2.51	0.44
50:3:514:A:HO2'	50:3:515:A:P	2.38	0.44
50:3:857:U:H2'	50:3:858:A:C8	2.51	0.44
50:3:1307:G:H2'	50:3:1308:A:C8	2.52	0.44
50:3:1318:U:H2'	50:3:1319:C:H6	1.82	0.44
50:3:1418:U:O4	50:3:1423:A:N7	2.50	0.44
50:3:1537:A:H2'	50:3:1538:U:C6	2.52	0.44
50:3:1851:U:H2'	50:3:1852:G:H8	1.81	0.44
50:3:1943:A:C8	50:3:1952:G:C8	3.05	0.44
50:3:2533:A:H2'	50:3:2534:G:H8	1.82	0.44
50:3:2741:A:H3'	50:3:2742:U:H6	1.82	0.44
52:5:336:U:H2'	52:5:337:C:H6	1.82	0.44
52:5:911:G:H2'	52:5:912:G:H8	1.82	0.44
5:B:8:ASN:ND2	5:B:187:TYR:HB3	2.33	0.44
11:H:111:ARG:HG3	52:5:1321:G:O5'	2.18	0.44
15:L:93:LYS:HZ2	15:L:95:LEU:HD13	1.83	0.44
22:S:64:ARG:NH2	22:S:68:LEU:HB3	2.32	0.44
27:d:148:ARG:HD3	27:d:150:ARG:HE	1.83	0.44
28:e:141:LYS:HE2	50:3:2754:U:H5''	2.00	0.44
29:f:94:THR:O	29:f:98:ILE:HG12	2.18	0.44
29:f:127:THR:HA	29:f:137:VAL:HG22	2.00	0.44
35:l:103:MET:HB3	35:l:104:PHE:HD2	1.82	0.44
40:q:35:LEU:HB2	40:q:55:VAL:HB	1.98	0.44
40:q:71:ILE:HA	40:q:81:LYS:O	2.17	0.44
43:t:6:LYS:HE3	43:t:6:LYS:HB2	1.70	0.44
45:v:34:GLN:HE22	50:3:2236:G:H22	1.65	0.44
50:3:159:G:H2'	50:3:160:A:H8	1.82	0.44
50:3:568:G:H2'	50:3:569:U:C6	2.52	0.44
50:3:1192:U:H2'	50:3:1193:U:C6	2.52	0.44
50:3:1383:G:H2'	50:3:1384:C:C6	2.53	0.44
50:3:2360:A:H2'	50:3:2361:G:O4'	2.18	0.44
50:3:2732:A:H2'	50:3:2733:A:C8	2.53	0.44
50:3:2844:U:H2'	50:3:2845:U:H6	1.80	0.44
52:5:231:U:H2'	52:5:232:G:C8	2.53	0.44
52:5:239:A:N6	52:5:277:G:N3	2.64	0.44
52:5:708:A:H2'	52:5:709:A:C8	2.52	0.44
52:5:813:A:OP1	52:5:1501:G:O2'	2.33	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:1377:C:H2'	52:5:1378:C:O4'	2.16	0.44
5:B:138:ARG:HH21	5:B:141:LEU:HD11	1.82	0.44
6:C:10:ARG:HG2	6:C:62:TYR:CD2	2.53	0.44
7:D:161:ILE:HG13	52:5:9:A:C4	2.53	0.44
9:F:76:VAL:HG22	9:F:85:GLN:HE22	1.82	0.44
12:I:34:VAL:HG22	12:I:92:SER:HB2	1.99	0.44
17:N:37:THR:O	17:N:41:LEU:HD23	2.17	0.44
18:O:67:PHE:CD1	18:O:72:LEU:HD13	2.53	0.44
36:m:99:ARG:NH2	36:m:120:ASP:OD1	2.50	0.44
38:o:99:ALA:N	50:3:2852:G:OP2	2.45	0.44
50:3:18:G:H2'	50:3:19:G:C8	2.52	0.44
50:3:195:A:H2'	50:3:196:G:C8	2.52	0.44
50:3:271:G:O5'	50:3:315:A:N6	2.51	0.44
50:3:569:U:H2'	50:3:570:C:C6	2.53	0.44
50:3:627:U:H2'	50:3:628:A:H8	1.82	0.44
50:3:725:G:H2'	50:3:726:U:C6	2.53	0.44
50:3:1416:G:H2'	50:3:1417:G:H8	1.82	0.44
50:3:1510:A:C6	50:3:1530:G:C6	3.04	0.44
50:3:2078:A:H2'	50:3:2079:G:C8	2.52	0.44
50:3:2567:C:H2'	50:3:2568:G:C8	2.53	0.44
50:3:2729:A:H2'	50:3:2730:G:O4'	2.18	0.44
50:3:2825:A:H2'	50:3:2826:G:O4'	2.18	0.44
52:5:206:G:H22	52:5:209:A:P	2.39	0.44
52:5:226:G:H2'	52:5:227:A:C8	2.53	0.44
52:5:626:G:O2'	52:5:627:U:H5'	2.17	0.44
52:5:748:U:H3'	52:5:749:G:H8	1.83	0.44
52:5:835:G:C6	52:5:836:C:N4	2.85	0.44
52:5:1139:A:C6	52:5:1149:G:C6	3.05	0.44
52:5:1283:G:H2'	52:5:1284:A:C8	2.52	0.44
2:1:10:ARG:HH22	50:3:2402:C:C5'	2.30	0.44
6:C:119:HIS:HB2	6:C:121:HIS:NE2	2.33	0.44
8:E:2:GLN:NE2	8:E:62:PHE:O	2.50	0.44
19:P:65:GLU:H	19:P:65:GLU:CD	2.25	0.44
23:T:21:VAL:O	23:T:24:GLU:HG3	2.18	0.44
26:c:106:LYS:HE3	50:3:639:G:H5''	1.99	0.44
31:h:55:ILE:HD11	31:h:61:LYS:HZ3	1.83	0.44
31:h:83:GLU:O	31:h:84:LYS:HE2	2.18	0.44
39:p:61:ILE:HG22	50:3:1046:A:H5'	2.00	0.44
45:v:52:THR:HA	45:v:55:LEU:HD12	1.98	0.44
48:y:4:GLN:NE2	50:3:1293:U:O2'	2.50	0.44
50:3:39:C:H2'	50:3:40:A:C8	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:66:A:H2'	50:3:67:C:C6	2.52	0.44
50:3:321:A:H2'	50:3:322:A:H8	1.83	0.44
50:3:699:U:H2'	50:3:700:U:O4'	2.17	0.44
50:3:894:G:N3	50:3:2276:A:H2'	2.33	0.44
50:3:1331:G:H2'	50:3:1332:A:H8	1.82	0.44
50:3:1384:C:H2'	50:3:1385:U:C6	2.53	0.44
50:3:1546:U:H3'	50:3:1547:G:H8	1.83	0.44
50:3:2402:C:H2'	50:3:2403:C:O4'	2.18	0.44
50:3:2664:U:H2'	50:3:2665:A:H8	1.82	0.44
50:3:2714:G:H2'	50:3:2715:C:C6	2.53	0.44
52:5:217:U:H2'	52:5:218:U:C6	2.53	0.44
52:5:556:G:OP2	52:5:557:A:O2'	2.27	0.44
52:5:721:G:H2'	52:5:722:G:H8	1.83	0.44
52:5:912:G:H2'	52:5:913:A:H8	1.83	0.44
52:5:962:G:H2'	52:5:963:U:C5	2.52	0.44
52:5:1109:U:C2	52:5:1154:A:C6	3.06	0.44
52:5:1217:G:O6	52:5:1269:U:O4	2.35	0.44
52:5:1223:A:H2'	52:5:1224:C:C6	2.53	0.44
52:5:1316:C:N3	52:5:1317:A:N6	2.65	0.44
52:5:1354:G:H2'	52:5:1355:U:C6	2.52	0.44
5:B:36:GLU:OE2	5:B:96:ILE:HG13	2.18	0.44
8:E:109:LEU:HA	8:E:112:ARG:CD	2.48	0.44
10:G:32:THR:HB	10:G:73:ASN:ND2	2.32	0.44
10:G:41:LYS:HA	10:G:44:ILE:HG12	1.99	0.44
16:M:45:ARG:NH1	52:5:1051:U:H5'	2.32	0.44
19:P:5:GLN:HG2	52:5:112:U:O2'	2.17	0.44
24:a:88:TYR:HA	24:a:95:PHE:HD1	1.83	0.44
24:a:249:VAL:HG13	24:a:249:VAL:O	2.18	0.44
29:f:121:PHE:HB2	29:f:144:PRO:HG3	1.98	0.44
36:m:9:LYS:HB2	50:3:2009:U:H5'	1.99	0.44
36:m:107:ARG:NH1	50:3:1355:C:O2'	2.28	0.44
43:t:80:LYS:HB3	43:t:109:ASN:HD22	1.83	0.44
48:y:51:LEU:HB3	48:y:53:VAL:HG13	2.00	0.44
50:3:618:G:H3'	50:3:1281:A:N6	2.29	0.44
50:3:643:A:H62	50:3:655:G:N2	2.16	0.44
50:3:1319:C:H2'	50:3:1320:C:H6	1.80	0.44
50:3:1828:A:H2'	50:3:1829:U:C6	2.53	0.44
50:3:2828:C:H2'	50:3:2829:G:O4'	2.18	0.44
52:5:101:A:H2'	52:5:102:G:C8	2.53	0.44
52:5:522:G:H2'	52:5:523:U:H6	1.81	0.44
2:1:21:ARG:HD2	34:k:62:LEU:HD21	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:95:LEU:O	4:A:99:ILE:HG12	2.17	0.44
5:B:171:TYR:HB3	5:B:173:GLU:OE2	2.18	0.44
8:E:97:LEU:HD21	8:E:99:SER:HB3	1.99	0.44
9:F:139:ASP:HA	9:F:142:LYS:HG2	2.00	0.44
13:J:18:CYS:SG	13:J:85:GLY:N	2.84	0.44
14:K:66:ALA:HB3	14:K:110:ILE:HD11	1.99	0.44
20:Q:96:LEU:HD23	20:Q:98:LEU:HD11	1.99	0.44
24:a:220:ARG:NH1	50:3:799:A:N3	2.66	0.44
26:c:46:ARG:HD3	50:3:479:A:C8	2.53	0.44
26:c:173:SER:OG	50:3:356:A:OP1	2.28	0.44
28:e:15:LYS:NZ	28:e:30:PRO:HA	2.32	0.44
28:e:79:ILE:HA	28:e:82:VAL:HG12	2.00	0.44
47:x:31:GLN:NE2	47:x:34:ILE:HB	2.33	0.44
49:z:24:ASN:ND2	50:3:2293:C:OP1	2.51	0.44
50:3:390:A:H2'	50:3:391:U:O4'	2.17	0.44
50:3:485:A:N6	50:3:490:A:H62	2.16	0.44
50:3:525:A:N1	50:3:1312:A:N6	2.65	0.44
50:3:766:C:H2'	50:3:767:C:H6	1.82	0.44
50:3:1837:C:H2'	50:3:1838:A:C8	2.49	0.44
50:3:1861:A:H2'	50:3:1862:A:O4'	2.17	0.44
50:3:2059:G:O6	50:3:2625:U:O4	2.35	0.44
50:3:2193:U:H2'	50:3:2194:G:O4'	2.17	0.44
50:3:2213:A:H2'	50:3:2214:A:C8	2.52	0.44
50:3:2519:U:H2'	50:3:2520:C:C6	2.53	0.44
50:3:2521:A:H2'	50:3:2522:U:H6	1.82	0.44
50:3:2604:U:O2'	50:3:2605:G:OP1	2.31	0.44
50:3:2845:U:H2'	50:3:2846:A:C8	2.53	0.44
52:5:29:G:O6	52:5:30:A:N6	2.51	0.44
52:5:95:C:H3'	52:5:96:G:H8	1.82	0.44
52:5:110:U:H2'	52:5:111:A:H8	1.82	0.44
52:5:226:G:H2'	52:5:227:A:H8	1.82	0.44
52:5:498:G:H2'	52:5:499:U:H6	1.82	0.44
52:5:627:U:H2'	52:5:628:A:C4	2.53	0.44
52:5:680:G:H2'	52:5:681:U:C6	2.53	0.44
52:5:923:G:O6	52:5:924:A:N6	2.51	0.44
52:5:1440:U:H2'	52:5:1441:C:C6	2.53	0.44
13:J:22:ASN:HD22	52:5:687:G:P	2.41	0.44
22:S:71:ARG:O	22:S:75:VAL:HG13	2.18	0.44
25:b:22:GLU:HA	33:j:73:ASP:HA	2.00	0.44
25:b:110:VAL:C	25:b:208:ARG:HH12	2.26	0.44
28:e:61:LEU:HG	28:e:63:GLN:HG3	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:e:94:GLY:HA3	28:e:97:TYR:CD2	2.52	0.44
29:f:51:LEU:O	29:f:55:GLN:HG2	2.17	0.44
36:m:82:LEU:HA	36:m:86:VAL:HB	1.99	0.44
37:n:58:LEU:HD21	51:4:25:A:H4'	2.00	0.44
37:n:77:ILE:HA	37:n:80:LYS:HD2	1.99	0.44
44:u:54:GLN:NE2	44:u:71:ASP:OD2	2.48	0.44
50:3:173:C:H2'	50:3:174:A:C8	2.53	0.44
50:3:252:G:N3	50:3:2439:U:O2'	2.49	0.44
50:3:623:A:H2'	50:3:624:U:C6	2.53	0.44
50:3:869:U:H1'	50:3:2366:A:H1'	2.00	0.44
50:3:1248:A:H2'	50:3:1249:A:C8	2.53	0.44
50:3:1487:U:H2'	50:3:1488:U:C6	2.53	0.44
50:3:2331:G:H2'	50:3:2332:U:O4'	2.17	0.44
52:5:206:G:N2	52:5:208:A:H3'	2.33	0.44
52:5:212:G:H2'	52:5:213:U:H6	1.83	0.44
52:5:260:C:H2'	52:5:261:G:O4'	2.18	0.44
52:5:290:G:H2'	52:5:291:C:C6	2.52	0.44
52:5:767:U:H2'	52:5:768:G:H8	1.82	0.44
52:5:1130:G:H2'	52:5:1131:A:C8	2.51	0.44
53:8:9:U:O2'	53:8:22:A:N1	2.41	0.44
4:A:229:MET:HA	4:A:232:LEU:HG	2.00	0.43
7:D:188:PRO:HA	7:D:191:MET:HE2	1.99	0.43
8:E:50:LYS:HD2	8:E:83:LEU:HD11	1.99	0.43
8:E:109:LEU:HD12	52:5:838:A:H5''	1.99	0.43
9:F:2:ARG:HH11	52:5:930:A:H2	1.66	0.43
12:I:63:VAL:HG22	52:5:967:C:O2	2.17	0.43
17:N:68:LYS:HA	17:N:75:TYR:CE1	2.53	0.43
24:a:160:ILE:HG21	24:a:184:LEU:HD22	2.00	0.43
26:c:76:GLN:OE1	26:c:81:ASN:ND2	2.51	0.43
27:d:53:ALA:O	27:d:56:GLU:HG3	2.18	0.43
27:d:92:ARG:HA	27:d:96:MET:CE	2.48	0.43
29:f:61:ASN:HA	29:f:64:LEU:HG	2.00	0.43
33:j:64:ARG:NH2	33:j:100:GLY:HA3	2.33	0.43
35:l:44:ALA:HA	35:l:47:ILE:HG12	1.99	0.43
36:m:44:ARG:HA	36:m:44:ARG:HD3	1.87	0.43
37:n:34:LYS:HD2	37:n:101:ARG:HH11	1.82	0.43
37:n:35:SER:OG	37:n:36:LEU:N	2.50	0.43
37:n:76:ASP:N	37:n:76:ASP:OD1	2.50	0.43
41:r:31:ASP:HA	41:r:34:ASN:HD21	1.83	0.43
42:s:3:VAL:HB	46:w:65:TRP:HH2	1.83	0.43
46:w:62:LYS:HD2	46:w:62:LYS:HA	1.78	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:99:C:H2'	50:3:100:U:H6	1.82	0.43
50:3:513:A:OP1	50:3:536:A:N6	2.51	0.43
50:3:557:G:H2'	50:3:558:C:C6	2.53	0.43
50:3:896:U:H1'	50:3:2276:A:H5''	1.99	0.43
50:3:1444:C:O2'	50:3:1445:U:O5'	2.33	0.43
50:3:1524:C:C2	50:3:1525:G:C8	3.05	0.43
50:3:1939:A:H2'	50:3:1940:G:O4'	2.18	0.43
50:3:2088:U:H2'	50:3:2089:A:C8	2.45	0.43
50:3:2535:C:H2'	50:3:2536:U:O4'	2.18	0.43
50:3:2879:U:H2'	50:3:2880:A:C8	2.53	0.43
52:5:41:C:H2'	52:5:42:G:H8	1.82	0.43
52:5:676:U:H2'	52:5:677:C:H6	1.83	0.43
52:5:1183:C:H2'	52:5:1184:C:C6	2.53	0.43
52:5:1395:C:H2'	52:5:1396:U:O4'	2.18	0.43
52:5:1488:A:H2'	52:5:1489:C:H6	1.83	0.43
53:6:27:A:H2'	53:6:27:A:N3	2.33	0.43
53:6:43:G:H3'	53:6:44:U:H5''	1.98	0.43
3:2:24:ARG:HG2	3:2:35:ARG:HB3	1.99	0.43
5:B:180:THR:HA	52:5:1103:C:H42	1.82	0.43
7:D:68:GLU:HG3	7:D:94:VAL:HG13	2.00	0.43
9:F:74:LEU:HD22	9:F:85:GLN:HB3	1.99	0.43
10:G:19:LEU:HD13	10:G:22:ILE:HD11	1.99	0.43
10:G:95:LEU:HD12	19:P:37:LYS:NZ	2.33	0.43
12:I:29:LYS:HA	12:I:32:VAL:HG12	2.00	0.43
13:J:10:SER:HA	13:J:72:MET:HA	2.00	0.43
21:R:66:MET:HE3	21:R:69:HIS:CD2	2.53	0.43
22:S:28:LEU:O	22:S:32:VAL:HG23	2.18	0.43
24:a:9:ARG:HH22	50:3:1729:G:H4'	1.83	0.43
26:c:170:GLN:HE21	50:3:355:A:C4'	2.31	0.43
29:f:62:LYS:HE3	29:f:131:PHE:HZ	1.83	0.43
43:t:9:LYS:HA	43:t:23:ILE:HD13	1.98	0.43
48:y:17:ARG:NE	50:3:1296:G:OP2	2.32	0.43
50:3:199:A:H2'	50:3:202:C:N4	2.33	0.43
50:3:674:G:H2'	50:3:675:U:C6	2.53	0.43
50:3:847:C:H5''	50:3:1280:G:O2'	2.18	0.43
50:3:1061:A:H2'	50:3:1062:A:C8	2.53	0.43
50:3:1146:A:H2	50:3:1147:G:C2	2.37	0.43
50:3:1311:G:H21	50:3:1357:U:H3	1.66	0.43
50:3:1502:A:H2'	50:3:1540:G:N2	2.32	0.43
50:3:1884:A:H2'	50:3:1885:G:H8	1.83	0.43
50:3:2080:C:H2'	50:3:2081:U:H6	1.82	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2254:G:H2'	50:3:2255:A:H8	1.83	0.43
50:3:2259:G:C4	50:3:2260:G:C8	3.06	0.43
50:3:2265:U:H2'	50:3:2266:C:C6	2.52	0.43
50:3:2856:G:O6	50:3:2869:U:O2	2.37	0.43
52:5:98:G:H2'	52:5:99:U:C6	2.52	0.43
52:5:326:C:N4	52:5:350:G:O4'	2.51	0.43
52:5:573:G:O2'	52:5:818:A:H5'	2.18	0.43
52:5:741:C:H2'	52:5:742:C:C6	2.53	0.43
52:5:831:C:H2'	52:5:832:G:C8	2.44	0.43
52:5:1000:A:H2'	52:5:1019:G:N1	2.33	0.43
53:6:3:G:H1	53:6:72:C:N4	2.15	0.43
53:8:49:C:C4	53:8:60:U:N3	2.86	0.43
1:0:3:ARG:HD3	1:0:3:ARG:HA	1.85	0.43
2:1:11:PHE:HB3	2:1:19:ILE:HD11	2.00	0.43
4:A:89:ASN:OD1	4:A:90:ASP:N	2.45	0.43
7:D:205:PRO:HA	7:D:208:VAL:HG22	1.99	0.43
10:G:26:ARG:NH1	10:G:86:GLY:HA2	2.33	0.43
14:K:122:LYS:HB3	14:K:122:LYS:HE3	1.32	0.43
31:h:82:LEU:HD11	31:h:133:ILE:HD13	2.00	0.43
32:i:112:LEU:HD13	32:i:118:SER:CB	2.48	0.43
35:l:60:LYS:HG3	35:l:61:THR:HG23	2.00	0.43
44:u:26:ASN:O	44:u:26:ASN:ND2	2.47	0.43
48:y:16:ARG:HH12	50:3:1296:G:P	2.41	0.43
50:3:863:U:H4'	50:3:866:G:N1	2.34	0.43
50:3:1021:C:H2'	50:3:1022:C:H6	1.83	0.43
50:3:1431:A:H2'	50:3:1432:C:C6	2.53	0.43
50:3:1474:C:H2'	50:3:1475:C:C6	2.52	0.43
50:3:1589:A:H2'	50:3:1590:U:H6	1.83	0.43
50:3:1590:U:H2'	50:3:1591:C:C6	2.53	0.43
50:3:1889:U:H2'	50:3:1890:U:C6	2.53	0.43
50:3:2071:C:H2'	50:3:2072:C:H6	1.82	0.43
50:3:2523:C:H2'	50:3:2524:U:H6	1.83	0.43
50:3:2712:C:C2	50:3:2713:A:C8	3.07	0.43
50:3:2822:C:O2'	50:3:2841:A:H5'	2.18	0.43
52:5:168:A:H3'	52:5:169:G:H8	1.82	0.43
52:5:759:C:H2'	52:5:760:U:C6	2.54	0.43
52:5:1152:G:H2'	52:5:1153:G:O4'	2.18	0.43
52:5:1161:G:H2'	52:5:1162:G:C8	2.52	0.43
52:5:1324:A:H2'	52:5:1325:U:H6	1.83	0.43
4:A:83:LEU:HB2	4:A:173:PRO:HG2	2.01	0.43
4:A:111:ARG:HG2	52:5:1091:C:OP1	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:1:MET:HE2	52:5:544:A:C4	2.53	0.43
6:C:138:PRO:HA	6:C:178:TYR:HD2	1.83	0.43
8:E:158:ASP:O	10:G:80:ARG:NH1	2.41	0.43
11:H:78:ALA:O	11:H:81:ILE:HG12	2.18	0.43
24:a:4:LYS:NZ	24:a:5:LYS:O	2.36	0.43
28:e:4:ILE:HA	28:e:7:ARG:HD2	2.01	0.43
30:g:55:LYS:HB2	30:g:55:LYS:HE3	1.83	0.43
37:n:34:LYS:NZ	51:4:46:C:H3'	2.32	0.43
39:p:91:ARG:HD2	50:3:1032:A:H4'	2.00	0.43
41:r:116:GLU:N	41:r:116:GLU:OE1	2.51	0.43
50:3:528:U:H2'	50:3:529:G:C8	2.53	0.43
50:3:660:U:O2'	50:3:692:U:OP1	2.37	0.43
50:3:1337:G:O2'	50:3:1338:G:H5'	2.18	0.43
50:3:1887:U:H2'	50:3:1888:U:H6	1.82	0.43
50:3:2517:A:H2'	50:3:2518:C:H6	1.84	0.43
50:3:2531:C:H2'	50:3:2532:G:H8	1.83	0.43
50:3:2706:U:H2'	50:3:2707:A:C8	2.53	0.43
52:5:145:G:N2	52:5:148:A:C5	2.86	0.43
52:5:441:U:H2'	52:5:442:G:H8	1.82	0.43
52:5:780:U:H2'	52:5:781:A:H8	1.83	0.43
52:5:1337:U:O5'	52:5:1338:A:H5'	2.18	0.43
3:2:2:LYS:HD2	3:2:4:ARG:HB2	2.00	0.43
6:C:91:ARG:HD2	6:C:182:PRO:HD2	2.01	0.43
10:G:95:LEU:HA	19:P:37:LYS:HZ3	1.83	0.43
30:g:42:LYS:HD2	31:h:115:ASN:HD21	1.83	0.43
33:j:86:LEU:HD12	33:j:94:ARG:HH21	1.82	0.43
34:k:113:LYS:HE2	34:k:113:LYS:HB2	1.88	0.43
34:k:119:LYS:HD2	34:k:119:LYS:HA	1.80	0.43
36:m:14:ARG:HH11	36:m:15:VAL:HG13	1.83	0.43
36:m:102:LYS:NZ	36:m:103:LEU:O	2.39	0.43
37:n:12:HIS:ND1	37:n:94:GLY:HA2	2.34	0.43
38:o:21:TYR:HD2	38:o:23:PRO:HG3	1.83	0.43
50:3:84:G:N2	50:3:104:A:OP2	2.45	0.43
50:3:292:G:C6	50:3:293:G:C2	3.06	0.43
50:3:342:G:H2'	50:3:343:A:O4'	2.19	0.43
50:3:539:U:O2	50:3:1264:U:O2'	2.29	0.43
50:3:613:C:H2'	50:3:614:C:C6	2.53	0.43
50:3:680:A:H2'	50:3:682:A:H8	1.82	0.43
50:3:892:G:H2'	50:3:893:A:C8	2.53	0.43
50:3:995:A:H2'	50:3:996:A:C8	2.53	0.43
50:3:1456:C:O2'	50:3:1603:A:OP2	2.34	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2140:G:H2'	50:3:2164:G:N2	2.34	0.43
50:3:2358:U:H2'	50:3:2359:G:O4'	2.18	0.43
50:3:2530:U:H2'	50:3:2531:C:H5'	2.00	0.43
50:3:2893:C:H2'	50:3:2894:G:O4'	2.19	0.43
51:4:89:A:C4	51:4:90:G:C8	3.07	0.43
52:5:975:C:O2'	52:5:976:U:OP1	2.32	0.43
53:8:9:U:H5'	53:8:50:G:H5'	2.00	0.43
4:A:144:LEU:HD13	4:A:148:GLU:HB3	1.99	0.43
7:D:208:VAL:HA	7:D:211:LEU:HG	2.01	0.43
11:H:70:LYS:HA	11:H:70:LYS:HD3	1.83	0.43
25:b:218:LYS:HE3	25:b:218:LYS:HB2	1.72	0.43
32:i:4:THR:HB	50:3:1031:U:C4	2.54	0.43
33:j:104:ARG:HG3	33:j:122:VAL:C	2.44	0.43
35:l:77:LYS:HB2	50:3:992:G:H5''	2.00	0.43
39:p:80:ASN:HD22	39:p:83:LYS:HE2	1.83	0.43
45:v:32:ASN:O	45:v:51:SER:HA	2.19	0.43
50:3:116:C:H2'	50:3:117:C:C6	2.53	0.43
50:3:381:A:H2'	50:3:382:U:C6	2.53	0.43
50:3:517:G:H1	50:3:544:U:H3	1.65	0.43
50:3:789:A:H2'	50:3:790:U:C6	2.53	0.43
50:3:1508:G:OP2	50:3:1508:G:H4'	2.05	0.43
50:3:1510:A:C2'	50:3:1511:C:H5'	2.48	0.43
50:3:2862:U:H3'	50:3:2863:G:C8	2.54	0.43
52:5:407:A:H62	52:5:409:G:H21	1.66	0.43
52:5:1501:G:N1	52:5:1502:G:C6	2.87	0.43
1:0:24:THR:O	1:0:28:ARG:N	2.49	0.43
5:B:75:ALA:O	5:B:79:GLY:N	2.51	0.43
7:D:195:THR:O	7:D:199:ILE:HG12	2.17	0.43
9:F:2:ARG:HG3	52:5:1355:U:H2'	2.01	0.43
12:I:18:SER:O	12:I:75:ARG:HA	2.18	0.43
22:S:66:ARG:O	22:S:69:LYS:HG2	2.19	0.43
27:d:35:VAL:HA	27:d:89:VAL:O	2.18	0.43
28:e:88:LYS:HB2	28:e:136:ILE:HG13	2.00	0.43
38:o:5:ASN:CG	38:o:7:GLN:HE22	2.25	0.43
38:o:57:GLY:HA2	38:o:62:GLU:HG3	2.01	0.43
42:s:54:LYS:HA	42:s:54:LYS:HD2	1.73	0.43
43:t:49:ASP:H	43:t:50:GLN:HG2	1.82	0.43
48:y:6:ARG:HH21	50:3:2025:C:H3'	1.82	0.43
50:3:9:G:H2'	50:3:10:U:C6	2.53	0.43
50:3:175:A:H2'	50:3:176:U:C6	2.53	0.43
50:3:201:A:N6	50:3:2438:A:H2'	2.32	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:419:A:H2'	50:3:420:A:H8	1.84	0.43
50:3:549:A:H2'	50:3:550:A:H8	1.82	0.43
50:3:675:U:H2'	50:3:676:U:H6	1.84	0.43
50:3:1474:C:H2'	50:3:1475:C:H6	1.84	0.43
50:3:1539:U:H3'	50:3:1540:G:H8	1.84	0.43
50:3:2082:U:OP2	50:3:2246:G:O2'	2.22	0.43
50:3:2451:C:H2'	50:3:2452:G:H8	1.83	0.43
50:3:2753:C:H2'	50:3:2754:U:C6	2.54	0.43
50:3:2764:U:H4'	50:3:2765:A:OP1	2.18	0.43
50:3:2799:U:O5'	50:3:2896:G:N2	2.51	0.43
51:4:55:A:C4	51:4:56:A:C8	3.07	0.43
52:5:974:C:H2'	52:5:974:C:O2	2.19	0.43
52:5:985:C:H2'	52:5:986:U:C5	2.53	0.43
52:5:1059:G:N7	52:5:1085:G:O2'	2.51	0.43
52:5:1133:A:N6	52:5:1153:G:H1'	2.34	0.43
52:5:1285:G:H2'	52:5:1286:G:H8	1.84	0.43
52:5:1452:C:H2'	52:5:1453:C:C6	2.53	0.43
53:6:49:C:C4	53:6:60:U:N3	2.86	0.43
4:A:22:LYS:HD2	4:A:24:GLY:H	1.84	0.43
4:A:67:THR:HA	4:A:70:ASN:HD21	1.84	0.43
6:C:164:SER:HB2	6:C:167:VAL:HG12	2.00	0.43
7:D:212:ARG:HH22	10:G:51:GLU:HB2	1.83	0.43
8:E:106:GLN:HG2	52:5:838:A:O5'	2.19	0.43
10:G:19:LEU:O	10:G:23:ASN:ND2	2.52	0.43
12:I:65:LYS:HD3	52:5:967:C:O5'	2.18	0.43
19:P:31:LYS:HG3	19:P:36:HIS:HA	2.00	0.43
22:S:33:LYS:NZ	52:5:1414:U:OP1	2.29	0.43
24:a:148:HIS:ND1	24:a:149:ASN:OD1	2.45	0.43
26:c:144:MET:HE2	26:c:174:ASN:ND2	2.34	0.43
29:f:58:TYR:CE2	29:f:62:LYS:HE2	2.54	0.43
31:h:12:ILE:HB	31:h:24:ALA:HB3	2.01	0.43
33:j:16:ALA:HA	33:j:46:ALA:HA	2.01	0.43
34:k:38:GLY:HA2	50:3:866:G:H5''	2.01	0.43
39:p:55:ASP:OD1	39:p:56:PHE:N	2.52	0.43
42:s:41:LYS:O	42:s:45:GLU:OE1	2.37	0.43
48:y:13:ARG:NH2	50:3:1293:U:OP1	2.50	0.43
50:3:612:G:H2'	50:3:613:C:O4'	2.19	0.43
50:3:771:C:H2'	50:3:772:C:H6	1.83	0.43
50:3:854:A:H5'	50:3:1009:A:C2	2.53	0.43
50:3:1037:A:H2'	50:3:1038:G:O4'	2.18	0.43
50:3:1351:G:H2'	50:3:1352:G:C8	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1764:U:C2	50:3:1769:A:N6	2.86	0.43
50:3:1871:U:O4	50:3:1885:G:O6	2.37	0.43
50:3:2117:G:H5''	50:3:2152:C:H41	1.83	0.43
50:3:2214:A:H2'	50:3:2215:C:C6	2.53	0.43
50:3:2699:C:H2'	50:3:2700:C:C6	2.53	0.43
50:3:2784:A:H4'	50:3:2786:A:OP1	2.18	0.43
51:4:22:G:N1	51:4:57:G:O6	2.52	0.43
52:5:143:U:H2'	52:5:144:U:C6	2.53	0.43
52:5:811:A:OP2	52:5:813:A:N6	2.51	0.43
52:5:862:C:H3'	52:5:863:A:H8	1.83	0.43
52:5:983:G:H3'	52:5:984:A:H8	1.84	0.43
52:5:1056:U:O4'	52:5:1165:G:N2	2.51	0.43
52:5:1111:G:H2'	52:5:1112:U:H6	1.83	0.43
52:5:1338:A:H2'	52:5:1340:G:C8	2.53	0.43
52:5:1485:C:H2'	52:5:1486:C:C6	2.54	0.43
52:5:1495:C:H2'	52:5:1496:G:C8	2.54	0.43
4:A:99:ILE:HD11	4:A:229:MET:CE	2.49	0.43
6:C:69:LYS:HZ3	52:5:544:A:H5''	1.84	0.43
6:C:89:LEU:O	6:C:93:LEU:HG	2.18	0.43
8:E:139:THR:O	10:G:5:THR:OG1	2.25	0.43
9:F:101:ARG:NH1	52:5:934:G:O2'	2.52	0.43
16:M:7:LYS:NZ	16:M:25:GLN:O	2.52	0.43
27:d:66:VAL:HG21	51:4:40:U:C4	2.54	0.43
27:d:148:ARG:HD3	27:d:150:ARG:NE	2.32	0.43
31:h:108:LYS:HG3	31:h:112:LEU:HD11	2.01	0.43
31:h:130:GLN:NE2	50:3:1097:G:H21	2.12	0.43
36:m:14:ARG:HA	36:m:17:THR:OG1	2.19	0.43
38:o:5:ASN:OD1	38:o:7:GLN:NE2	2.52	0.43
43:t:26:LYS:H	43:t:35:ILE:HB	1.83	0.43
50:3:54:A:H2'	50:3:55:A:O4'	2.19	0.43
50:3:81:C:H2'	50:3:82:G:C8	2.54	0.43
50:3:95:G:O2'	50:3:96:A:O4'	2.36	0.43
50:3:609:U:H2'	50:3:610:G:C8	2.53	0.43
50:3:1115:G:H2'	50:3:1116:U:O4'	2.19	0.43
50:3:1387:A:OP2	50:3:1399:G:N1	2.51	0.43
50:3:1845:C:N4	50:3:1905:U:H2'	2.34	0.43
50:3:1915:C:H2'	50:3:1916:C:C6	2.54	0.43
50:3:2224:A:H2'	50:3:2225:G:H8	1.83	0.43
50:3:2282:A:O2'	50:3:2284:G:OP1	2.33	0.43
50:3:2654:U:H2'	50:3:2655:U:O4'	2.19	0.43
50:3:2669:G:O2'	50:3:2670:A:O4'	2.24	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2819:C:C2	50:3:2820:G:C8	3.07	0.43
52:5:637:A:H2'	52:5:638:A:N9	2.33	0.43
52:5:957:C:H2'	52:5:958:G:C8	2.48	0.43
52:5:973:A:H4'	52:5:1296:C:H1'	2.01	0.43
53:8:27:A:H2'	53:8:27:A:N3	2.33	0.43
7:D:111:VAL:O	7:D:115:ILE:HG12	2.19	0.43
8:E:71:ASP:OD1	8:E:72:PHE:N	2.52	0.43
9:F:45:ALA:O	9:F:49:ILE:HG13	2.18	0.43
22:S:8:GLU:HG2	22:S:9:LYS:N	2.34	0.43
25:b:3:ILE:C	25:b:87:MET:HE1	2.44	0.43
27:d:132:ILE:O	27:d:151:GLY:CA	2.52	0.43
28:e:11:LEU:HG	28:e:12:ASP:H	1.84	0.43
30:g:60:ARG:HH11	30:g:61:ARG:HH22	1.67	0.43
30:g:63:LEU:HD11	30:g:68:PHE:HD2	1.83	0.43
35:l:30:GLY:HA2	35:l:107:ALA:HB2	2.00	0.43
35:l:74:LYS:O	35:l:91:GLU:N	2.47	0.43
39:p:86:ASN:O	39:p:88:GLU:HG2	2.19	0.43
39:p:93:VAL:O	39:p:96:GLU:HG2	2.18	0.43
44:u:82:LYS:HZ3	44:u:84:GLN:HG3	1.84	0.43
45:v:2:ALA:O	45:v:3:LYS:HE2	2.19	0.43
46:w:52:ALA:O	46:w:56:THR:HG23	2.19	0.43
47:x:16:CYS:SG	47:x:19:CYS:N	2.88	0.43
50:3:66:A:H2'	50:3:67:C:H6	1.83	0.43
50:3:251:G:H4'	50:3:424:G:C5	2.53	0.43
50:3:342:G:C6	50:3:536:A:C6	3.06	0.43
50:3:676:U:H2'	50:3:677:U:H6	1.83	0.43
50:3:771:C:H2'	50:3:772:C:C6	2.53	0.43
50:3:1414:C:H2'	50:3:1415:A:H8	1.84	0.43
50:3:1772:G:H2'	50:3:1773:A:H8	1.83	0.43
50:3:2118:U:OP2	50:3:2152:C:N4	2.52	0.43
50:3:2664:U:H2'	50:3:2665:A:C8	2.54	0.43
50:3:2794:U:H2'	50:3:2795:C:C6	2.54	0.43
51:4:39:U:H3'	51:4:40:U:H6	1.84	0.43
52:5:87:G:H2'	52:5:88:A:C8	2.53	0.43
52:5:273:C:H2'	52:5:274:A:H8	1.84	0.43
52:5:599:G:C6	52:5:635:G:C6	3.07	0.43
52:5:747:C:H2'	52:5:748:U:H6	1.79	0.43
52:5:760:U:H2'	52:5:761:U:C6	2.54	0.43
52:5:763:A:H2'	52:5:764:A:O4'	2.19	0.43
52:5:951:U:O2	52:5:1200:G:N2	2.46	0.43
52:5:1222:U:C2	52:5:1264:G:O6	2.72	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:2:4:ARG:HG3	50:3:2474:C:OP1	2.18	0.42
4:A:121:LYS:O	4:A:124:SER:OG	2.22	0.42
9:F:49:ILE:HG21	9:F:57:PRO:HA	2.01	0.42
10:G:112:GLY:HA3	10:G:141:VAL:O	2.19	0.42
19:P:30:PHE:CE1	19:P:41:ARG:HB2	2.54	0.42
25:b:50:THR:HG23	25:b:52:LEU:HD23	2.01	0.42
38:o:35:ILE:HA	38:o:85:ASN:O	2.19	0.42
40:q:6:VAL:HB	40:q:37:LYS:HB3	2.00	0.42
46:w:53:THR:O	46:w:57:ILE:HG13	2.19	0.42
48:y:7:ARG:NE	50:3:2026:A:OP1	2.51	0.42
49:z:34:LEU:HD13	50:3:2352:U:H2'	2.01	0.42
50:3:33:C:H2'	50:3:34:C:C6	2.54	0.42
50:3:69:U:H2'	50:3:70:G:C8	2.54	0.42
50:3:404:C:H2'	50:3:405:C:C6	2.54	0.42
50:3:535:G:H1'	50:3:540:A:H61	1.84	0.42
50:3:759:U:H2'	50:3:760:G:O4'	2.19	0.42
50:3:1437:A:H2'	50:3:1438:G:H8	1.84	0.42
50:3:1991:U:H2'	50:3:1992:C:H6	1.84	0.42
50:3:2033:G:H2'	50:3:2034:G:H8	1.84	0.42
50:3:2076:G:H2'	50:3:2077:A:C8	2.54	0.42
50:3:2357:G:O6	50:3:2377:A:N6	2.52	0.42
50:3:2425:C:H2'	50:3:2426:A:H8	1.82	0.42
50:3:2696:G:H1'	50:3:2729:A:N6	2.34	0.42
50:3:2744:A:H2'	50:3:2745:G:H8	1.84	0.42
52:5:177:G:H22	52:5:188:U:H3	1.65	0.42
52:5:503:G:OP2	52:5:533:A:H5'	2.19	0.42
52:5:761:U:H2'	52:5:762:G:O4'	2.19	0.42
52:5:932:A:C4	52:5:933:A:C8	3.07	0.42
52:5:933:A:C5	52:5:934:G:C8	3.07	0.42
52:5:976:U:H2'	52:5:977:U:C5	2.54	0.42
52:5:1112:U:H2'	52:5:1113:U:C6	2.54	0.42
52:5:1322:U:H2'	52:5:1323:A:O4'	2.19	0.42
4:A:91:TYR:CE2	4:A:95:LEU:HD11	2.54	0.42
4:A:133:LEU:O	4:A:136:LYS:HB3	2.18	0.42
5:B:193:GLN:HE22	5:B:198:VAL:HG22	1.84	0.42
8:E:92:ARG:HB3	8:E:94:TYR:CE2	2.54	0.42
8:E:101:ASN:N	8:E:102:PRO:HD2	2.34	0.42
10:G:21:LYS:O	10:G:25:ALA:CB	2.67	0.42
10:G:42:ILE:O	10:G:46:GLU:OE1	2.37	0.42
16:M:35:SER:HB3	52:5:1332:U:H5''	2.01	0.42
18:O:65:SER:OG	52:5:450:U:O3'	2.37	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:R:6:LYS:HD2	52:5:1288:C:OP2	2.19	0.42
25:b:98:PRO:HA	25:b:101:LEU:HD12	2.00	0.42
27:d:167:LEU:O	27:d:171:ARG:HG2	2.19	0.42
28:e:129:GLU:N	28:e:129:GLU:OE1	2.52	0.42
29:f:46:ASP:OD1	29:f:46:ASP:O	2.37	0.42
34:k:46:LEU:HD13	50:3:700:U:H5''	2.00	0.42
36:m:14:ARG:NH1	36:m:15:VAL:HG13	2.35	0.42
37:n:72:LEU:HD12	37:n:75:GLN:HG3	2.00	0.42
41:r:18:ARG:HG2	41:r:22:GLN:OE1	2.19	0.42
45:v:18:ARG:HA	45:v:18:ARG:HD3	1.91	0.42
50:3:279:U:O4	50:3:280:A:N6	2.52	0.42
50:3:335:G:C6	50:3:351:G:C5	3.07	0.42
50:3:393:C:H2'	50:3:394:C:H6	1.83	0.42
50:3:874:U:H2'	50:3:875:G:H8	1.84	0.42
50:3:876:A:H2'	50:3:877:G:C8	2.54	0.42
50:3:1270:C:H2'	50:3:1271:A:C8	2.51	0.42
50:3:1362:C:H2'	50:3:1363:C:H6	1.84	0.42
50:3:1661:A:H2'	50:3:1662:G:C8	2.54	0.42
50:3:1691:U:H2'	50:3:1692:A:C8	2.54	0.42
50:3:1860:A:H2'	50:3:1861:A:O4'	2.19	0.42
50:3:1947:U:H1'	50:3:1949:C:H42	1.83	0.42
50:3:1985:A:H2'	50:3:1986:C:O4'	2.19	0.42
50:3:1989:U:H2'	50:3:1990:C:H6	1.83	0.42
50:3:2372:C:H2'	50:3:2373:G:O4'	2.19	0.42
50:3:2405:G:H2'	50:3:2406:U:C6	2.53	0.42
50:3:2548:G:H2'	50:3:2549:A:C8	2.54	0.42
50:3:2597:A:O2'	50:3:2598:C:H5'	2.19	0.42
50:3:2664:U:N3	50:3:2673:A:C8	2.81	0.42
50:3:2694:A:H2'	50:3:2695:U:C6	2.54	0.42
50:3:2789:A:OP1	50:3:2790:A:H5''	2.19	0.42
52:5:40:G:H2'	52:5:41:C:O4'	2.19	0.42
52:5:75:A:H2'	52:5:76:G:C8	2.54	0.42
52:5:935:U:H2'	52:5:936:G:C8	2.54	0.42
52:5:940:G:H5'	52:5:1312:G:O6	2.18	0.42
52:5:1096:A:H2'	52:5:1097:G:C8	2.54	0.42
52:5:1322:U:C2	52:5:1323:A:C8	3.07	0.42
52:5:1328:C:H2'	52:5:1329:G:H8	1.84	0.42
52:5:1376:G:H2'	52:5:1377:C:C6	2.53	0.42
53:8:37:A:H2'	53:8:38:G:O4'	2.19	0.42
1:0:25:ALA:O	1:0:29:LYS:HG2	2.20	0.42
3:2:10:ILE:HD11	3:2:32:HIS:CD2	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:117:LEU:HA	4:A:172:LEU:HD13	2.02	0.42
5:B:44:PHE:CE1	5:B:77:LEU:HD11	2.54	0.42
6:C:8:PHE:CD2	52:5:426:U:H3'	2.55	0.42
6:C:9:LYS:HE3	52:5:424:U:OP1	2.19	0.42
10:G:91:SER:OG	10:G:96:ARG:NH1	2.52	0.42
33:j:12:ASP:OD2	33:j:85:VAL:HA	2.20	0.42
33:j:13:ASN:HD21	33:j:99:PHE:HZ	1.67	0.42
33:j:21:ILE:HD12	33:j:21:ILE:H	1.84	0.42
34:k:57:PRO:HG2	34:k:60:ARG:CG	2.48	0.42
36:m:85:LYS:C	36:m:88:PRO:HD2	2.45	0.42
37:n:103:ALA:O	37:n:106:ALA:HB3	2.18	0.42
38:o:42:LYS:NZ	52:5:342:G:OP1	2.52	0.42
44:u:73:LEU:HD13	44:u:95:VAL:HG11	2.01	0.42
45:v:29:TRP:CE3	50:3:432:G:H1'	2.54	0.42
46:w:28:GLU:HB3	46:w:32:LYS:NZ	2.34	0.42
47:x:13:SER:HB2	47:x:24:THR:HG23	2.01	0.42
47:x:31:GLN:HE21	47:x:34:ILE:HB	1.84	0.42
50:3:202:C:O2'	50:3:203:A:H5'	2.19	0.42
50:3:325:G:H2'	50:3:326:A:C8	2.54	0.42
50:3:346:G:N3	50:3:346:G:H2'	2.34	0.42
50:3:385:U:H2'	50:3:386:U:C6	2.54	0.42
50:3:535:G:H1'	50:3:540:A:N6	2.34	0.42
50:3:535:G:H22	50:3:537:A:H3'	1.84	0.42
50:3:774:A:H1'	50:3:775:C:H5	1.84	0.42
50:3:1007:C:H2'	50:3:1008:A:O4'	2.19	0.42
50:3:1021:C:H2'	50:3:1022:C:C6	2.55	0.42
50:3:1119:A:H1'	50:3:1140:U:O2'	2.19	0.42
50:3:1416:G:H4'	50:3:1551:U:O2'	2.19	0.42
50:3:1609:U:H2'	50:3:1610:U:C6	2.55	0.42
50:3:2073:C:H2'	50:3:2074:G:C8	2.54	0.42
50:3:2666:C:H2'	50:3:2667:G:C8	2.54	0.42
50:3:2744:A:H2'	50:3:2745:G:C8	2.55	0.42
50:3:2847:C:C2	50:3:2848:A:C8	3.07	0.42
51:4:89:A:H3'	51:4:90:G:H8	1.85	0.42
52:5:6:C:H2'	52:5:7:U:O4'	2.18	0.42
52:5:61:A:OP1	52:5:327:G:N1	2.49	0.42
52:5:189:C:H2'	52:5:190:A:H8	1.83	0.42
52:5:319:U:H2'	52:5:320:G:O4'	2.18	0.42
52:5:436:U:H2'	52:5:437:U:O4'	2.19	0.42
52:5:1111:G:H2'	52:5:1112:U:C6	2.54	0.42
52:5:1351:U:H2'	52:5:1352:A:C8	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:84:PHE:O	4:A:108:ILE:N	2.52	0.42
6:C:82:ARG:HH22	52:5:611:A:C5'	2.32	0.42
6:C:86:ALA:O	6:C:89:LEU:HG	2.19	0.42
6:C:115:GLN:HE22	52:5:402:G:N2	2.17	0.42
24:a:270:MET:HG2	24:a:271:LYS:HD3	1.99	0.42
26:c:83:HIS:NE2	50:3:708:C:H4'	2.34	0.42
36:m:102:LYS:HB3	48:y:48:TYR:HE1	1.84	0.42
43:t:98:ASN:C	43:t:99:LYS:HD3	2.44	0.42
45:v:34:GLN:HE22	50:3:2236:G:N2	2.18	0.42
46:w:80:ASN:HD21	46:w:82:ALA:HB3	1.83	0.42
50:3:71:C:H4'	50:3:77:G:N7	2.35	0.42
50:3:118:G:OP2	50:3:120:A:O2'	2.36	0.42
50:3:329:G:H2'	50:3:330:A:C8	2.55	0.42
50:3:341:G:N2	50:3:343:A:H3'	2.34	0.42
50:3:361:G:H2'	50:3:362:U:O4'	2.19	0.42
50:3:461:C:H2'	50:3:462:C:C6	2.54	0.42
50:3:851:U:H2'	50:3:852:C:C6	2.53	0.42
50:3:1101:U:N3	50:3:1104:A:OP1	2.46	0.42
50:3:1162:A:N6	50:3:2496:G:N3	2.67	0.42
50:3:1400:U:H2'	50:3:1401:A:C8	2.54	0.42
50:3:1696:C:O2'	50:3:2695:U:H5''	2.20	0.42
50:3:1701:G:H1	50:3:1998:U:H3'	1.84	0.42
50:3:2478:G:H2'	50:3:2479:A:C8	2.53	0.42
50:3:2524:U:H2'	50:3:2525:C:C6	2.54	0.42
52:5:213:U:H2'	52:5:214:U:H6	1.84	0.42
52:5:253:G:C6	52:5:266:A:C6	3.07	0.42
52:5:513:G:H2'	52:5:514:U:O4'	2.19	0.42
52:5:657:G:C6	52:5:743:A:N1	2.87	0.42
52:5:945:U:H3	52:5:1206:G:H1	1.68	0.42
53:6:37:A:H2'	53:6:38:G:O4'	2.19	0.42
6:C:89:LEU:O	6:C:93:LEU:N	2.46	0.42
8:E:3:TYR:HB2	8:E:62:PHE:CE2	2.55	0.42
15:L:27:LEU:CD1	15:L:31:GLN:HE22	2.32	0.42
15:L:27:LEU:HD11	15:L:31:GLN:HE22	1.85	0.42
24:a:164:ALA:HB1	24:a:205:ASN:O	2.19	0.42
24:a:190:ARG:HE	24:a:278:ILE:HG12	1.84	0.42
25:b:115:LYS:NZ	50:3:2732:A:OP2	2.52	0.42
29:f:109:GLN:HG3	29:f:112:MET:HE2	2.00	0.42
39:p:94:LEU:HD22	40:q:13:LEU:HB2	2.02	0.42
43:t:47:LYS:HB2	50:3:518:A:P	2.59	0.42
50:3:369:C:H2'	50:3:370:C:C6	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:418:G:O6	50:3:430:U:O4	2.38	0.42
50:3:1091:G:H5'	50:3:1092:A:H5'	2.01	0.42
50:3:1106:G:N2	50:3:1124:G:C4	2.87	0.42
50:3:1109:G:H2'	50:3:1110:C:O4'	2.20	0.42
50:3:1263:G:C4	50:3:1264:U:C5	3.08	0.42
50:3:1711:A:H2'	50:3:1712:A:H8	1.84	0.42
50:3:1775:G:H2'	50:3:1776:G:H8	1.85	0.42
51:4:65:G:H2'	51:4:66:A:C8	2.55	0.42
52:5:33:A:H2'	52:5:34:A:C8	2.54	0.42
52:5:239:A:N1	52:5:278:A:N6	2.67	0.42
52:5:454:U:H2'	52:5:455:U:H6	1.85	0.42
53:6:9:U:H5'	53:6:50:G:H5'	2.00	0.42
4:A:22:LYS:NZ	4:A:24:GLY:HA3	2.34	0.42
4:A:44:PHE:CZ	8:E:159:VAL:HG23	2.55	0.42
6:C:7:ILE:HD13	6:C:111:ARG:NH2	2.35	0.42
7:D:131:ILE:HG23	7:D:175:TYR:HE1	1.83	0.42
10:G:65:LYS:HA	10:G:68:ARG:HE	1.84	0.42
15:L:103:ARG:HG2	52:5:1201:C:C5	2.54	0.42
18:O:13:ILE:HG23	18:O:63:VAL:HG22	2.02	0.42
19:P:7:LYS:HA	19:P:7:LYS:HD2	1.84	0.42
22:S:67:ARG:NH1	52:5:260:C:OP2	2.52	0.42
27:d:100:LEU:O	27:d:104:ILE:HG22	2.19	0.42
27:d:144:ASP:OD2	27:d:144:ASP:N	2.52	0.42
34:k:77:TRP:HB2	34:k:113:LYS:HZ3	1.84	0.42
36:m:13:TRP:O	36:m:17:THR:HG23	2.19	0.42
39:p:102:PRO:O	39:p:103:SER:OG	2.35	0.42
40:q:93:LYS:HE2	40:q:93:LYS:HB2	1.91	0.42
42:s:60:ARG:HA	42:s:60:ARG:HD3	1.73	0.42
50:3:1245:G:C6	50:3:1246:U:C4	3.08	0.42
50:3:1258:C:H2'	50:3:1259:A:O4'	2.19	0.42
50:3:1326:C:H2'	50:3:1327:G:O4'	2.19	0.42
50:3:1345:G:H2'	50:3:1346:G:H8	1.84	0.42
50:3:1379:C:O2'	50:3:1605:A:N3	2.50	0.42
50:3:1398:C:H2'	50:3:1399:G:O4'	2.19	0.42
50:3:1491:G:H2'	50:3:1492:G:C8	2.55	0.42
50:3:1586:U:H2'	50:3:1587:U:C6	2.54	0.42
50:3:1772:G:H2'	50:3:1773:A:C8	2.55	0.42
50:3:2063:G:H2'	50:3:2064:G:C8	2.55	0.42
50:3:2121:A:H2'	50:3:2122:G:O4'	2.20	0.42
50:3:2463:G:H2'	50:3:2464:C:C6	2.54	0.42
52:5:457:A:H2'	52:5:458:G:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:460:A:H2	52:5:467:G:H1	1.63	0.42
52:5:598:U:C2	52:5:636:G:N1	2.87	0.42
52:5:988:G:H2'	52:5:990:C:H41	1.85	0.42
52:5:1425:A:H2'	52:5:1427:U:H3	1.83	0.42
2:1:23:HIS:ND1	2:1:43:LYS:O	2.53	0.42
8:E:10:ASP:HB3	8:E:81:GLN:HA	2.01	0.42
14:K:93:THR:HG21	14:K:117:THR:HG22	2.02	0.42
23:T:57:ARG:HD3	23:T:57:ARG:HA	1.84	0.42
29:f:116:ASN:O	29:f:118:ARG:NH2	2.53	0.42
31:h:42:LYS:HA	31:h:42:LYS:HD2	1.88	0.42
31:h:123:MET:CE	50:3:1094:G:H1'	2.50	0.42
47:x:13:SER:HA	47:x:24:THR:HA	2.01	0.42
50:3:26:G:H2'	50:3:27:U:C6	2.54	0.42
50:3:243:U:H2'	50:3:244:G:C8	2.55	0.42
50:3:488:G:N2	50:3:494:G:C4	2.88	0.42
50:3:504:G:H2'	50:3:505:G:O4'	2.20	0.42
50:3:638:A:N1	50:3:661:G:N1	2.64	0.42
50:3:702:U:O4	50:3:703:A:N6	2.52	0.42
50:3:946:A:C6	50:3:949:C:C2	3.07	0.42
50:3:988:G:C6	50:3:1002:A:C6	3.08	0.42
50:3:1094:G:H2'	50:3:1095:U:C6	2.54	0.42
50:3:1501:U:H2'	50:3:1502:A:O4'	2.18	0.42
50:3:1507:G:OP2	50:3:1507:G:H2'	2.20	0.42
50:3:1738:G:H2'	50:3:1739:G:H8	1.84	0.42
50:3:1739:G:H2'	50:3:1740:U:C6	2.55	0.42
50:3:1900:C:H2'	50:3:1901:C:H5'	2.00	0.42
50:3:2084:A:H2'	50:3:2085:C:C6	2.54	0.42
50:3:2445:C:H2'	50:3:2446:U:C6	2.54	0.42
50:3:2494:C:H2'	50:3:2495:A:C8	2.53	0.42
50:3:2678:A:H2'	50:3:2679:G:C8	2.54	0.42
50:3:2681:G:H2'	50:3:2682:A:H8	1.85	0.42
50:3:2781:C:H2'	50:3:2782:A:C8	2.55	0.42
50:3:2842:G:C4	50:3:2843:G:C8	3.08	0.42
52:5:499:U:O4	52:5:542:G:O6	2.38	0.42
52:5:586:G:H2'	52:5:587:A:C8	2.54	0.42
52:5:1009:G:H2'	52:5:1011:A:OP2	2.20	0.42
52:5:1160:G:H2'	52:5:1161:G:C8	2.55	0.42
52:5:1168:G:H2'	52:5:1169:U:H6	1.84	0.42
52:5:1291:C:H2'	52:5:1292:A:O4'	2.19	0.42
52:5:1415:G:C2	52:5:1437:A:C2	3.08	0.42
2:1:5:SER:OG	50:3:247:U:OP2	2.38	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:120:PHE:HB2	4:A:172:LEU:HD21	2.02	0.42
5:B:45:PHE:HA	5:B:49:ARG:CZ	2.50	0.42
6:C:119:HIS:ND1	52:5:434:U:O2'	2.53	0.42
6:C:147:LYS:HZ1	52:5:435:U:H5'	1.83	0.42
17:N:51:ARG:NH1	52:5:578:C:H5'	2.35	0.42
19:P:9:LEU:HD12	19:P:26:VAL:HG21	2.02	0.42
27:d:60:ILE:HD13	27:d:152:PHE:HZ	1.84	0.42
27:d:146:ILE:HD12	27:d:146:ILE:HA	1.95	0.42
31:h:98:MET:HE1	31:h:136:ILE:HG23	2.00	0.42
31:h:124:VAL:HA	31:h:127:THR:HG22	2.02	0.42
39:p:36:GLN:O	39:p:40:GLN:OE1	2.38	0.42
42:s:7:LEU:HD11	46:w:27:LEU:HD21	2.01	0.42
43:t:36:VAL:HG13	43:t:39:LEU:HB2	2.01	0.42
48:y:35:LYS:HE2	48:y:43:CYS:HB2	2.00	0.42
50:3:671:C:H2'	50:3:672:G:C8	2.55	0.42
50:3:910:G:H2'	50:3:911:U:C6	2.54	0.42
50:3:1327:G:O6	50:3:1673:U:H5''	2.20	0.42
50:3:1355:C:H2'	50:3:1356:G:O4'	2.20	0.42
50:3:2567:C:H2'	50:3:2568:G:H8	1.85	0.42
52:5:41:C:H2'	52:5:42:G:C8	2.53	0.42
52:5:264:C:H2'	52:5:265:U:C6	2.55	0.42
52:5:633:U:H2'	52:5:634:U:C6	2.55	0.42
52:5:691:A:N1	52:5:784:A:O2'	2.53	0.42
52:5:1061:U:H2'	52:5:1062:C:H6	1.83	0.42
52:5:1083:A:H2'	52:5:1084:A:C8	2.54	0.42
53:6:27:A:H3'	53:6:28:A:H8	1.84	0.42
2:1:51:ASP:O	2:1:55:ILE:HG12	2.19	0.42
7:D:134:GLY:O	7:D:176:SER:N	2.53	0.42
15:L:17:ILE:HG21	52:5:1276:U:C4	2.55	0.42
20:Q:42:ARG:O	20:Q:46:ILE:HG12	2.20	0.42
20:Q:73:ARG:NH1	20:Q:79:CYS:HA	2.35	0.42
28:e:147:PHE:O	28:e:151:VAL:HG23	2.19	0.42
29:f:36:ALA:HB1	45:v:62:ASN:HB3	2.00	0.42
30:g:112:TYR:CZ	30:g:114:ASP:O	2.69	0.42
31:h:58:TYR:HB3	31:h:61:LYS:HA	2.02	0.42
36:m:101:LEU:HD23	36:m:117:GLN:NE2	2.35	0.42
41:r:6:LYS:O	50:3:529:G:H4'	2.20	0.42
42:s:41:LYS:O	42:s:44:PHE:HB3	2.20	0.42
50:3:301:G:H2'	50:3:302:G:H8	1.85	0.42
50:3:629:G:H2'	50:3:630:C:H6	1.85	0.42
50:3:654:G:H2'	50:3:655:G:O4'	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:664:G:C6	50:3:672:G:C2	3.08	0.42
50:3:676:U:H2'	50:3:677:U:C6	2.55	0.42
50:3:1585:A:N3	50:3:1585:A:H2'	2.35	0.42
50:3:1934:A:H2'	50:3:1935:A:C8	2.54	0.42
50:3:2120:G:H3'	50:3:2121:A:C8	2.55	0.42
50:3:2891:C:H2'	50:3:2892:U:C6	2.55	0.42
52:5:335:C:H2'	52:5:336:U:C6	2.55	0.42
52:5:536:U:H2'	52:5:537:A:H8	1.83	0.42
52:5:551:A:H2'	52:5:552:U:C6	2.55	0.42
52:5:566:G:O2'	52:5:567:C:H5'	2.20	0.42
52:5:687:G:H2'	52:5:688:G:C8	2.55	0.42
52:5:695:G:H2'	52:5:695:G:N3	2.34	0.42
52:5:715:A:H3'	52:5:716:C:H6	1.84	0.42
52:5:913:A:H2'	52:5:914:A:O4'	2.20	0.42
52:5:956:U:H2'	52:5:957:C:O4'	2.19	0.42
52:5:1158:A:H3'	52:5:1159:A:H5''	2.01	0.42
52:5:1219:C:H2'	52:5:1220:A:C8	2.55	0.42
5:B:140:SER:O	5:B:144:VAL:HG13	2.20	0.42
6:C:73:ARG:NH1	52:5:620:A:O4'	2.52	0.42
7:D:177:ASP:OD1	7:D:177:ASP:N	2.52	0.42
10:G:117:SER:HB2	52:5:639:A:H1'	2.01	0.42
12:I:43:LYS:HD3	52:5:1116:U:H5'	2.01	0.42
13:J:37:TRP:HE1	52:5:682:G:H1'	1.85	0.42
15:L:86:TRP:O	15:L:90:ARG:HG2	2.19	0.42
24:a:84:LYS:HA	24:a:84:LYS:HD3	1.82	0.42
26:c:111:ALA:HA	26:c:114:THR:HG22	2.02	0.42
26:c:116:TRP:HH2	26:c:186:VAL:HG11	1.83	0.42
28:e:62:LYS:HA	28:e:65:LYS:HE2	2.01	0.42
32:i:59:ILE:HB	32:i:127:VAL:HA	2.02	0.42
35:l:72:MET:SD	35:l:72:MET:N	2.90	0.42
39:p:12:ARG:HA	39:p:15:LYS:HE3	2.02	0.42
39:p:91:ARG:NE	39:p:91:ARG:HA	2.35	0.42
39:p:91:ARG:HB3	39:p:93:VAL:HG12	2.00	0.42
40:q:67:LYS:HG2	40:q:86:ARG:HH21	1.85	0.42
44:u:80:LEU:HD23	44:u:81:VAL:O	2.20	0.42
50:3:43:A:H2'	50:3:44:A:H8	1.85	0.42
50:3:143:A:H3'	50:3:144:C:H6	1.85	0.42
50:3:191:G:H2'	50:3:192:U:H6	1.85	0.42
50:3:373:U:H2'	50:3:374:A:C8	2.51	0.42
50:3:562:C:C4	50:3:2787:U:H2'	2.55	0.42
50:3:830:A:H2'	50:3:831:U:C6	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1703:A:H5''	50:3:1704:C:OP2	2.20	0.42
50:3:1711:A:H2'	50:3:1712:A:C8	2.55	0.42
50:3:1922:U:H3'	50:3:1923:A:C8	2.55	0.42
50:3:2169:G:H4'	50:3:2170:A:H3'	2.02	0.42
50:3:2305:C:H41	50:3:2326:G:H2'	1.85	0.42
50:3:2465:U:O2	50:3:2503:G:C6	2.73	0.42
51:4:46:C:H2'	51:4:47:C:C6	2.55	0.42
52:5:56:A:N6	52:5:353:G:H1'	2.35	0.42
52:5:682:G:O2'	52:5:683:G:O4'	2.35	0.42
52:5:1140:A:C2'	52:5:1141:U:H5'	2.49	0.42
1:0:9:LYS:H	50:3:1337:G:H5''	1.85	0.41
4:A:158:ARG:HH11	4:A:158:ARG:HA	1.84	0.41
5:B:164:GLU:HG2	5:B:166:ALA:H	1.85	0.41
6:C:48:SER:OG	6:C:49:GLY:N	2.51	0.41
8:E:9:VAL:CG1	8:E:56:HIS:HB2	2.50	0.41
8:E:16:GLU:O	8:E:20:GLN:HG2	2.19	0.41
8:E:102:PRO:HG2	8:E:103:LYS:NZ	2.35	0.41
14:K:32:ASN:OD1	14:K:33:LYS:N	2.53	0.41
16:M:43:CYS:HA	16:M:46:GLU:OE2	2.19	0.41
24:a:210:LEU:HD21	52:5:770:G:O3'	2.19	0.41
24:a:225:ARG:HH12	50:3:725:G:H4'	1.83	0.41
25:b:114:SER:N	25:b:172:GLU:O	2.43	0.41
25:b:227:GLU:OE2	38:o:23:PRO:HD3	2.19	0.41
29:f:63:ALA:O	29:f:67:LYS:HG2	2.20	0.41
33:j:7:ARG:HG2	33:j:44:LYS:HG3	2.02	0.41
34:k:34:ARG:C	50:3:978:G:H5''	2.45	0.41
35:l:69:PHE:HB3	35:l:71:HIS:NE2	2.34	0.41
36:m:99:ARG:HG3	50:3:2885:U:O2'	2.19	0.41
40:q:94:VAL:HG21	40:q:97:PHE:HB3	2.00	0.41
43:t:44:ARG:NH2	43:t:45:HIS:O	2.52	0.41
46:w:63:LEU:HG	46:w:64:ASN:H	1.83	0.41
50:3:190:G:H2'	50:3:191:G:H8	1.84	0.41
50:3:313:G:H2'	50:3:314:G:C1'	2.50	0.41
50:3:348:A:H2'	50:3:349:G:H8	1.85	0.41
50:3:400:A:H2'	50:3:401:G:C8	2.55	0.41
50:3:421:A:N6	50:3:423:C:H2'	2.35	0.41
50:3:427:A:H1'	50:3:447:G:H1'	2.02	0.41
50:3:450:C:O2'	50:3:1871:U:O2	2.37	0.41
50:3:1078:C:H2'	50:3:1079:U:O4'	2.19	0.41
50:3:1263:G:H2'	50:3:1264:U:H6	1.85	0.41
50:3:1318:U:H2'	50:3:1319:C:C6	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1458:A:H2'	50:3:1459:A:C8	2.55	0.41
50:3:1534:A:C4	50:3:1535:A:C8	3.08	0.41
50:3:1692:A:O2'	50:3:1693:U:H5'	2.20	0.41
50:3:1702:A:H1'	50:3:1704:C:N4	2.35	0.41
50:3:1785:U:O2'	50:3:1786:U:O2	2.26	0.41
50:3:1790:U:O2'	50:3:2615:G:O2'	2.31	0.41
50:3:2210:G:O2'	50:3:2212:U:OP2	2.37	0.41
50:3:2237:U:H2'	50:3:2238:G:C8	2.55	0.41
50:3:2405:G:H2'	50:3:2406:U:H6	1.84	0.41
50:3:2473:C:H2'	50:3:2474:C:C6	2.55	0.41
52:5:11:A:H2'	52:5:12:G:H8	1.84	0.41
52:5:35:C:H2'	52:5:36:G:C8	2.55	0.41
52:5:150:A:H2'	52:5:151:C:C6	2.55	0.41
52:5:662:G:H1'	52:5:730:G:H5'	2.01	0.41
52:5:1269:U:H2'	52:5:1270:C:C6	2.55	0.41
10:G:64:SER:C	10:G:66:THR:H	2.28	0.41
11:H:12:ARG:O	11:H:15:SER:OG	2.33	0.41
21:R:78:ARG:HH12	52:5:1198:C:P	2.42	0.41
23:T:21:VAL:HA	23:T:24:GLU:HG3	2.02	0.41
24:a:270:MET:SD	24:a:270:MET:N	2.90	0.41
26:c:35:PHE:CE2	34:k:10:PRO:HG3	2.55	0.41
26:c:140:THR:O	26:c:144:MET:HG2	2.19	0.41
28:e:94:GLY:HA3	28:e:97:TYR:CE2	2.55	0.41
39:p:40:GLN:NE2	50:3:596:G:O2'	2.54	0.41
42:s:93:VAL:HG21	46:w:35:HIS:CE1	2.55	0.41
43:t:44:ARG:HE	50:3:516:A:P	2.43	0.41
45:v:61:HIS:O	45:v:63:ARG:NH2	2.53	0.41
48:y:2:ALA:N	50:3:2622:A:O4'	2.53	0.41
50:3:31:U:H2'	50:3:32:G:H8	1.84	0.41
50:3:165:U:O2	50:3:167:A:N6	2.36	0.41
50:3:194:A:H5''	50:3:208:A:N1	2.35	0.41
50:3:386:U:H2'	50:3:387:U:H6	1.84	0.41
50:3:831:U:H2'	50:3:832:C:C6	2.55	0.41
50:3:907:A:H2'	50:3:908:A:O4'	2.20	0.41
50:3:1072:A:H2'	50:3:1073:A:C8	2.54	0.41
50:3:1536:C:H2'	50:3:1537:A:H8	1.79	0.41
50:3:1614:G:C6	50:3:1615:G:C4	3.08	0.41
50:3:1701:G:O2'	50:3:1998:U:O4	2.38	0.41
50:3:1783:G:H2'	50:3:1783:G:N3	2.35	0.41
50:3:1866:G:O6	50:3:1890:U:C4	2.74	0.41
50:3:1994:U:H2'	50:3:1995:G:C8	2.45	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2197:U:H2'	50:3:2198:G:C5	2.54	0.41
50:3:2546:U:H2'	50:3:2547:C:C6	2.55	0.41
50:3:2568:G:H2'	50:3:2569:A:C8	2.54	0.41
52:5:194:U:H2'	52:5:195:U:O4'	2.20	0.41
52:5:614:U:H2'	52:5:615:G:C8	2.54	0.41
52:5:1008:G:O6	52:5:1014:A:N6	2.53	0.41
52:5:1038:G:H21	52:5:1190:G:H5'	1.86	0.41
52:5:1300:C:H2'	52:5:1301:U:H6	1.85	0.41
52:5:1368:U:H2'	52:5:1370:C:H5	1.85	0.41
2:1:5:SER:O	2:1:9:LYS:HG3	2.21	0.41
2:1:54:ARG:NH1	50:3:868:C:O3'	2.53	0.41
10:G:14:PRO:HB3	10:G:41:LYS:HE2	2.02	0.41
14:K:69:ARG:HH12	14:K:74:PHE:N	2.18	0.41
14:K:131:GLY:HA2	52:5:36:G:O2'	2.20	0.41
24:a:40:THR:OG1	24:a:65:LYS:NZ	2.49	0.41
24:a:178:LYS:HA	24:a:194:LYS:HZ2	1.85	0.41
25:b:83:GLU:OE2	50:3:2643:A:O2'	2.35	0.41
27:d:12:ILE:HA	27:d:15:GLU:CD	2.45	0.41
33:j:21:ILE:HA	33:j:41:VAL:HG12	2.02	0.41
34:k:69:ARG:HH22	50:3:2413:G:H5'	1.85	0.41
34:k:75:GLN:HB3	34:k:77:TRP:HE1	1.85	0.41
35:l:62:GLY:HA3	35:l:109:ILE:HG12	2.02	0.41
37:n:4:ARG:HB3	51:4:28:C:OP1	2.21	0.41
37:n:28:VAL:HG22	37:n:45:ASP:OD1	2.21	0.41
38:o:58:LYS:HG2	50:3:2849:G:H4'	2.02	0.41
42:s:18:PHE:O	42:s:21:MET:HG2	2.20	0.41
46:w:91:LEU:O	46:w:95:LYS:HG2	2.19	0.41
50:3:104:A:H2'	50:3:105:U:O4'	2.20	0.41
50:3:119:A:O5'	50:3:120:A:H8	2.02	0.41
50:3:317:U:N3	50:3:392:A:N7	2.69	0.41
50:3:452:U:H3	50:3:2415:A:H61	1.68	0.41
50:3:664:G:H2'	50:3:665:C:H6	1.85	0.41
50:3:725:G:H2'	50:3:726:U:H6	1.85	0.41
50:3:906:G:C6	50:3:946:A:C6	3.09	0.41
50:3:1338:G:H8	50:3:1338:G:OP2	2.03	0.41
50:3:1470:C:H2'	50:3:1471:A:C8	2.56	0.41
50:3:2072:C:H2'	50:3:2073:C:H6	1.84	0.41
50:3:2077:A:H2'	50:3:2078:A:C8	2.55	0.41
51:4:43:A:C4	51:4:44:A:C8	3.08	0.41
52:5:144:U:H3	52:5:149:G:H1	1.67	0.41
52:5:174:U:H2'	52:5:175:U:C6	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:547:C:C2	52:5:548:G:C8	3.07	0.41
52:5:615:G:H2'	52:5:616:C:O4'	2.20	0.41
52:5:881:G:H2'	52:5:882:U:O4'	2.19	0.41
52:5:982:A:H2'	52:5:983:G:H8	1.84	0.41
8:E:125:PRO:HB2	20:Q:40:TYR:CZ	2.56	0.41
8:E:126:GLU:HB3	52:5:840:C:H1'	2.02	0.41
12:I:46:LEU:HD21	52:5:1115:G:H1'	2.00	0.41
14:K:30:LEU:O	14:K:31:LEU:HD23	2.21	0.41
15:L:79:HIS:O	15:L:82:GLU:HG3	2.19	0.41
25:b:126:TRP:CD2	25:b:164:LYS:HD3	2.55	0.41
28:e:55:ILE:HG13	28:e:68:HIS:CD2	2.56	0.41
29:f:62:LYS:HA	29:f:62:LYS:HD3	1.79	0.41
29:f:93:ILE:HG13	29:f:117:VAL:HG22	2.02	0.41
32:i:59:ILE:HD13	32:i:127:VAL:HB	2.01	0.41
35:l:27:VAL:HG21	35:l:134:ARG:HD2	2.02	0.41
35:l:101:THR:OG1	35:l:103:MET:HE3	2.19	0.41
36:m:60:ARG:NH1	50:3:1482:U:O5'	2.53	0.41
38:o:110:LYS:NZ	52:5:1438:U:OP2	2.54	0.41
42:s:44:PHE:O	42:s:48:TYR:HB2	2.20	0.41
50:3:86:A:C2	50:3:104:A:C5	3.09	0.41
50:3:130:C:H2'	50:3:131:C:H6	1.82	0.41
50:3:330:A:H2'	50:3:331:A:C8	2.54	0.41
50:3:385:U:H2'	50:3:386:U:H6	1.86	0.41
50:3:496:A:H1'	50:3:506:A:N6	2.35	0.41
50:3:853:G:N1	50:3:1219:U:OP2	2.43	0.41
50:3:967:U:H4'	50:3:968:U:OP1	2.19	0.41
50:3:1097:G:C8	50:3:1123:A:C8	3.08	0.41
50:3:1255:G:H2'	50:3:1256:A:C4	2.56	0.41
50:3:1275:C:H2'	50:3:1276:A:H8	1.79	0.41
50:3:2313:U:H2'	50:3:2314:U:C6	2.55	0.41
51:4:78:C:H5	51:4:86:G:H22	1.68	0.41
52:5:146:A:C6	52:5:340:A:C5	3.08	0.41
52:5:305:A:H2'	52:5:306:G:H8	1.84	0.41
52:5:636:G:C6	52:5:637:A:N6	2.88	0.41
52:5:781:A:H2'	52:5:782:G:H8	1.84	0.41
4:A:60:LEU:O	4:A:63:GLN:HG3	2.20	0.41
6:C:9:LYS:NZ	52:5:424:U:H5''	2.36	0.41
7:D:199:ILE:HA	7:D:202:GLN:HE22	1.85	0.41
10:G:98:TYR:CE1	10:G:136:GLU:HG2	2.53	0.41
22:S:28:LEU:HD13	22:S:50:GLN:NE2	2.35	0.41
22:S:53:ARG:HH21	52:5:196:G:H5''	1.84	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:a:66:TYR:HE1	24:a:92:ARG:HH12	1.69	0.41
30:g:89:ILE:H	30:g:89:ILE:HG12	1.49	0.41
32:i:119:ARG:O	32:i:122:ILE:HG22	2.21	0.41
39:p:105:PHE:O	39:p:109:VAL:HG23	2.21	0.41
39:p:108:ILE:O	39:p:112:VAL:HG13	2.21	0.41
48:y:40:HIS:HB2	50:3:2819:C:O2'	2.21	0.41
50:3:161:U:H2'	50:3:162:G:O4'	2.21	0.41
50:3:198:G:H2'	50:3:199:A:O4'	2.19	0.41
50:3:291:G:C2	50:3:292:G:C5	3.08	0.41
50:3:677:U:H2'	50:3:678:U:O4'	2.19	0.41
50:3:1211:U:O2'	50:3:1212:C:OP1	2.36	0.41
50:3:1245:G:C6	50:3:1265:G:C2	3.08	0.41
50:3:1297:U:HO2'	50:3:1298:A:P	2.43	0.41
50:3:1510:A:O2'	50:3:1511:C:H5'	2.20	0.41
50:3:1661:A:C2	50:3:1674:A:C8	3.09	0.41
50:3:2050:G:OP1	50:3:2785:G:O2'	2.23	0.41
50:3:2130:A:H2'	50:3:2131:G:C8	2.56	0.41
50:3:2704:U:H2'	50:3:2705:G:C8	2.56	0.41
51:4:32:G:N2	51:4:35:C:H41	2.17	0.41
52:5:203:C:H2'	52:5:204:C:C6	2.56	0.41
52:5:337:C:H2'	52:5:338:C:C6	2.52	0.41
52:5:421:G:H2'	52:5:422:A:H8	1.83	0.41
52:5:678:A:H2'	52:5:679:U:C6	2.55	0.41
52:5:975:C:H3'	52:5:976:U:C6	2.56	0.41
52:5:983:G:C4	52:5:984:A:C8	3.08	0.41
5:B:11:ARG:HG3	5:B:16:LYS:HE3	2.02	0.41
8:E:84:ARG:NE	20:Q:95:TYR:O	2.54	0.41
11:H:26:ASP:OD2	11:H:29:LYS:HG3	2.20	0.41
12:I:55:ILE:HG22	12:I:57:ILE:HG12	2.03	0.41
12:I:61:PRO:HG3	16:M:42:LEU:HD11	2.02	0.41
12:I:90:ILE:O	12:I:94:LYS:HG2	2.21	0.41
16:M:61:TRP:CH2	52:5:1343:G:H4'	2.55	0.41
24:a:28:THR:HG23	24:a:32:LYS:HZ1	1.85	0.41
26:c:142:VAL:HA	26:c:145:GLN:HG3	2.01	0.41
32:i:73:GLU:HG2	32:i:93:ARG:HD2	2.01	0.41
33:j:97:ARG:NH2	52:5:334:A:H3'	2.35	0.41
37:n:76:ASP:HB2	37:n:80:LYS:NZ	2.35	0.41
46:w:15:LEU:O	46:w:19:VAL:HG23	2.20	0.41
50:3:48:G:H2'	50:3:49:C:H6	1.82	0.41
50:3:420:A:H2'	50:3:421:A:C8	2.55	0.41
50:3:675:U:H2'	50:3:676:U:C6	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:782:U:H3	50:3:2021:A:H1'	1.85	0.41
50:3:933:A:H3'	50:3:934:C:C6	2.55	0.41
50:3:1406:A:O2'	50:3:1408:G:N7	2.53	0.41
50:3:1947:U:H1'	50:3:1949:C:N4	2.36	0.41
50:3:1991:U:H2'	50:3:1992:C:C6	2.55	0.41
50:3:2303:U:H2'	50:3:2304:U:C6	2.53	0.41
50:3:2580:A:OP1	50:3:2582:G:H4'	2.21	0.41
52:5:172:C:H2'	52:5:173:U:C6	2.56	0.41
52:5:686:C:C2	52:5:687:G:C8	3.08	0.41
52:5:980:C:H2'	52:5:981:U:C6	2.56	0.41
52:5:1506:A:H2'	52:5:1507:U:C6	2.56	0.41
53:8:27:A:H3'	53:8:28:A:H8	1.84	0.41
5:B:191:LYS:HE3	52:5:1048:G:H21	1.85	0.41
13:J:109:ILE:HG23	13:J:109:ILE:O	2.20	0.41
13:J:111:HIS:NE2	52:5:672:A:H1'	2.36	0.41
25:b:165:MET:SD	25:b:166:SER:N	2.90	0.41
25:b:206:LEU:O	25:b:208:ARG:NH2	2.53	0.41
29:f:38:PRO:O	29:f:41:LYS:HG2	2.21	0.41
37:n:103:ALA:O	37:n:107:GLU:OE1	2.39	0.41
39:p:36:GLN:O	39:p:39:ILE:HG22	2.21	0.41
41:r:125:VAL:O	41:r:129:VAL:HG13	2.21	0.41
42:s:54:LYS:N	42:s:84:THR:OG1	2.48	0.41
42:s:56:ASN:HB2	42:s:82:VAL:CG2	2.51	0.41
50:3:69:U:C2	50:3:70:G:C8	3.08	0.41
50:3:154:U:H2'	50:3:155:A:H8	1.84	0.41
50:3:526:G:H2'	50:3:527:A:C8	2.56	0.41
50:3:706:C:O2'	50:3:707:C:H5'	2.21	0.41
50:3:891:G:C4	50:3:892:G:C8	3.09	0.41
50:3:952:U:H3'	50:3:953:G:C8	2.55	0.41
50:3:1664:A:H2'	50:3:1665:G:C8	2.56	0.41
50:3:1944:A:O2'	50:3:1945:A:O5'	2.38	0.41
50:3:2351:U:H2'	50:3:2352:U:C6	2.56	0.41
50:3:2619:C:H2'	50:3:2620:C:C6	2.56	0.41
52:5:329:C:H2'	52:5:330:C:C6	2.56	0.41
52:5:598:U:O2	52:5:636:G:C2	2.74	0.41
52:5:707:G:H2'	52:5:708:A:C8	2.56	0.41
52:5:794:C:H2'	52:5:795:U:C6	2.55	0.41
52:5:1079:G:H2'	52:5:1080:G:H8	1.86	0.41
52:5:1298:U:H2'	52:5:1299:C:C6	2.56	0.41
52:5:1328:C:H2'	52:5:1329:G:C8	2.56	0.41
2:1:10:ARG:HH22	50:3:2402:C:H5'	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:J:25:VAL:HG13	13:J:63:VAL:HG11	2.03	0.41
24:a:101:TYR:HB2	24:a:105:ALA:HB3	2.02	0.41
25:b:53:SER:HB2	25:b:78:THR:OG1	2.20	0.41
28:e:24:HIS:ND1	28:e:24:HIS:O	2.53	0.41
30:g:112:TYR:CD2	30:g:112:TYR:CB	2.83	0.41
31:h:55:ILE:HD11	31:h:61:LYS:NZ	2.36	0.41
34:k:77:TRP:HB2	34:k:113:LYS:HZ2	1.85	0.41
35:l:22:LYS:NZ	50:3:900:G:OP2	2.48	0.41
35:l:51:ARG:HD2	35:l:104:PHE:CE1	2.52	0.41
36:m:42:GLN:CD	36:m:100:VAL:HG23	2.45	0.41
37:n:34:LYS:HD2	37:n:101:ARG:NH1	2.36	0.41
42:s:47:VAL:HG13	42:s:48:TYR:CD2	2.55	0.41
43:t:90:LYS:HG3	43:t:105:LYS:HG2	2.03	0.41
46:w:23:LYS:O	46:w:26:LEU:HG	2.21	0.41
50:3:949:C:O2'	50:3:950:U:O4'	2.14	0.41
50:3:1012:G:H2'	50:3:1013:G:C8	2.54	0.41
50:3:1043:C:H3'	50:3:1044:C:H2'	2.03	0.41
50:3:1096:U:H1'	50:3:1105:A:H1'	2.03	0.41
50:3:1449:G:H1'	50:3:1519:A:H61	1.84	0.41
50:3:1764:U:N3	50:3:1769:A:N6	2.68	0.41
50:3:1853:G:N2	50:3:1902:C:C2	2.89	0.41
50:3:2034:G:H2'	50:3:2035:U:H6	1.84	0.41
50:3:2565:G:H2'	50:3:2566:C:C6	2.56	0.41
51:4:59:A:H2'	51:4:60:C:H6	1.85	0.41
52:5:96:G:N2	52:5:326:C:H41	2.14	0.41
52:5:214:U:H2'	52:5:215:C:C6	2.55	0.41
52:5:366:C:H2'	52:5:367:A:H8	1.84	0.41
52:5:472:G:H2'	52:5:473:A:C8	2.55	0.41
52:5:1363:U:H2'	52:5:1364:C:H6	1.85	0.41
52:5:1483:C:H2'	52:5:1484:C:C6	2.55	0.41
2:1:12:LYS:HB2	2:1:20:LYS:HE3	2.02	0.41
2:1:22:LYS:HB3	34:k:63:PRO:HG2	2.03	0.41
4:A:108:ILE:HD13	4:A:112:TRP:HB2	2.02	0.41
4:A:226:CYS:O	4:A:229:MET:HG3	2.21	0.41
5:B:113:MET:HA	5:B:118:ILE:HD11	2.02	0.41
5:B:143:LYS:O	5:B:146:LYS:HG3	2.20	0.41
5:B:177:PRO:HB2	5:B:180:THR:HB	2.03	0.41
6:C:82:ARG:HH22	52:5:611:A:H5''	1.86	0.41
6:C:88:ASN:O	6:C:92:VAL:HG23	2.21	0.41
7:D:78:LYS:HZ1	52:5:1061:U:P	2.43	0.41
8:E:92:ARG:HH21	8:E:93:GLU:H	1.69	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:H:74:PHE:CE2	52:5:1223:A:H2	2.39	0.41
12:I:19:TYR:CZ	16:M:54:PRO:HB2	2.56	0.41
13:J:47:GLY:H	13:J:50:LYS:HE2	1.85	0.41
14:K:30:LEU:C	14:K:31:LEU:HD23	2.45	0.41
14:K:95:LEU:HD21	14:K:108:TYR:HD1	1.86	0.41
18:O:4:GLY:HA2	52:5:622:A:H4'	2.02	0.41
20:Q:74:ARG:HD3	23:T:57:ARG:HH11	1.85	0.41
22:S:71:ARG:NE	52:5:255:G:OP2	2.54	0.41
23:T:10:ASP:HB3	23:T:11:LEU:H	1.78	0.41
24:a:43:LYS:HD3	50:3:727:C:H5''	2.02	0.41
26:c:140:THR:OG1	50:3:354:C:H2'	2.20	0.41
26:c:207:LEU:O	26:c:211:PHE:N	2.53	0.41
27:d:93:GLY:O	27:d:96:MET:HG3	2.21	0.41
28:e:115:PRO:HB2	28:e:117:LYS:NZ	2.36	0.41
29:f:77:LEU:HD13	29:f:77:LEU:HA	1.93	0.41
30:g:78:GLY:HA2	50:3:1142:G:O2'	2.20	0.41
35:l:126:PRO:HB3	50:3:2493:G:O3'	2.21	0.41
39:p:44:TYR:HA	39:p:47:ARG:HG2	2.03	0.41
46:w:16:VAL:HG21	46:w:69:GLN:HE22	1.86	0.41
47:x:32:LYS:O	47:x:32:LYS:HD3	2.20	0.41
50:3:20:C:O2'	50:3:587:U:H5''	2.21	0.41
50:3:41:C:H2'	50:3:42:U:C6	2.56	0.41
50:3:69:U:H2'	50:3:70:G:H8	1.86	0.41
50:3:86:A:H2	50:3:104:A:C5	2.38	0.41
50:3:133:G:H2'	50:3:134:U:C6	2.56	0.41
50:3:133:G:N2	50:3:150:U:O2	2.38	0.41
50:3:336:C:H2'	50:3:337:U:H6	1.86	0.41
50:3:682:A:H2'	50:3:683:G:C8	2.56	0.41
50:3:715:G:H2'	50:3:716:G:C8	2.55	0.41
50:3:726:U:H2'	50:3:727:C:C6	2.56	0.41
50:3:907:A:H3'	50:3:908:A:H8	1.86	0.41
50:3:1032:A:H2'	50:3:1033:A:H8	1.84	0.41
50:3:1158:C:H2'	50:3:1159:C:C6	2.56	0.41
50:3:1202:A:H2'	50:3:1203:G:H8	1.84	0.41
50:3:1213:U:H2'	50:3:1214:U:C6	2.56	0.41
50:3:1238:A:H2'	50:3:1239:G:C8	2.56	0.41
50:3:1292:A:C5	50:3:1293:U:C4	3.09	0.41
50:3:1311:G:H1'	50:3:1357:U:O2	2.21	0.41
50:3:1354:U:H2'	50:3:1355:C:H6	1.85	0.41
50:3:1428:U:H2'	50:3:1429:G:H8	1.86	0.41
50:3:1446:G:N2	50:3:1612:U:H3'	2.33	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1502:A:H2'	50:3:1540:G:H22	1.86	0.41
50:3:1712:A:C2	50:3:1997:C:H1'	2.55	0.41
50:3:1738:G:H2'	50:3:1739:G:C8	2.56	0.41
50:3:1847:G:H2'	50:3:1848:U:C6	2.55	0.41
50:3:2180:U:O2'	50:3:2181:A:OP1	2.39	0.41
50:3:2287:G:H3'	50:3:2288:G:H5''	2.03	0.41
50:3:2407:G:H2'	50:3:2408:G:C8	2.56	0.41
50:3:2609:C:H2'	50:3:2611:G:H8	1.85	0.41
50:3:2702:G:H2'	50:3:2703:U:O4'	2.21	0.41
50:3:2720:C:P	50:3:2720:C:H6	2.44	0.41
50:3:2880:A:H2'	50:3:2881:A:C8	2.56	0.41
52:5:167:A:H61	52:5:197:A:H5'	1.85	0.41
52:5:228:G:H2'	52:5:229:G:H8	1.85	0.41
52:5:257:U:O2	52:5:259:A:C5	2.73	0.41
52:5:282:G:H2'	52:5:283:U:O4'	2.21	0.41
52:5:416:U:O2	52:5:420:A:N6	2.46	0.41
52:5:457:A:H2'	52:5:458:G:H8	1.85	0.41
52:5:598:U:H2'	52:5:599:G:C8	2.53	0.41
52:5:682:G:N2	52:5:701:A:OP2	2.54	0.41
52:5:731:A:H2'	52:5:732:A:C8	2.56	0.41
52:5:742:C:H5''	52:5:845:C:H1'	2.03	0.41
52:5:884:G:H22	52:5:901:A:P	2.44	0.41
52:5:1245:A:H4'	52:5:1287:G:O2'	2.20	0.41
52:5:1280:A:H2'	52:5:1281:U:O4'	2.20	0.41
52:5:1406:U:O4	52:5:1407:A:N6	2.54	0.41
5:B:55:ASN:OD1	5:B:55:ASN:N	2.54	0.41
9:F:119:ILE:HG13	9:F:122:GLU:OE2	2.21	0.41
15:L:79:HIS:NE2	21:R:65:ASP:HB3	2.36	0.41
19:P:30:PHE:HE1	19:P:41:ARG:HB2	1.85	0.41
25:b:97:THR:OG1	25:b:100:ASN:ND2	2.48	0.41
25:b:200:PRO:HG3	50:3:2824:A:H1'	2.03	0.41
32:i:9:LYS:HD2	32:i:48:THR:HG23	2.03	0.41
33:j:61:VAL:HG23	33:j:87:ILE:HD13	2.03	0.41
36:m:31:ILE:O	36:m:115:ILE:HD12	2.21	0.41
36:m:109:ASP:HB3	50:3:1683:G:N2	2.34	0.41
39:p:61:ILE:HD13	50:3:1188:C:H5''	2.02	0.41
50:3:14:U:H3	50:3:561:A:N6	2.00	0.41
50:3:17:G:H2'	50:3:18:G:H8	1.86	0.41
50:3:99:C:H2'	50:3:100:U:C6	2.56	0.41
50:3:141:A:H3'	50:3:142:A:C8	2.56	0.41
50:3:170:A:C2	50:3:171:G:H1'	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1200:U:O4	50:3:1215:G:O6	2.40	0.41
52:5:293:G:O2'	52:5:295:G:O6	2.34	0.41
52:5:407:A:H2	52:5:410:A:H8	1.68	0.41
52:5:511:A:H2'	52:5:512:U:H6	1.84	0.41
52:5:711:G:C2	52:5:712:A:C5	3.08	0.41
52:5:889:U:H2'	52:5:890:U:C6	2.56	0.41
52:5:1057:C:H2'	52:5:1058:A:C4	2.56	0.41
52:5:1241:G:H21	52:5:1243:A:H8	1.69	0.41
5:B:168:ASP:N	5:B:168:ASP:OD1	2.51	0.40
10:G:31:MET:N	10:G:31:MET:SD	2.94	0.40
11:H:116:LYS:HG2	52:5:1343:G:H5''	2.03	0.40
12:I:70:GLN:HB3	16:M:59:ALA:HB3	2.03	0.40
13:J:99:SER:O	13:J:100:ILE:HD13	2.20	0.40
19:P:53:VAL:HB	19:P:80:ILE:HD11	2.03	0.40
21:R:41:PHE:O	21:R:43:GLU:N	2.48	0.40
24:a:190:ARG:NH1	50:3:1807:C:OP2	2.32	0.40
25:b:102:PHE:HD1	25:b:106:GLU:OE1	2.04	0.40
27:d:34:ILE:O	27:d:91:LEU:HD23	2.21	0.40
28:e:107:ASN:OD1	28:e:117:LYS:HG3	2.20	0.40
34:k:22:ARG:NH2	50:3:620:G:OP2	2.53	0.40
36:m:31:ILE:HD11	50:3:1306:G:H4'	2.03	0.40
38:o:48:PHE:CE2	38:o:66:VAL:HG13	2.54	0.40
39:p:67:ALA:O	39:p:71:GLN:HG2	2.21	0.40
43:t:9:LYS:HG2	43:t:77:PHE:HD2	1.86	0.40
47:x:36:ILE:HG12	47:x:38:ILE:H	1.86	0.40
50:3:34:C:H2'	50:3:35:U:C6	2.55	0.40
50:3:362:U:N3	50:3:366:A:C8	2.68	0.40
50:3:525:A:C6	50:3:1312:A:C6	3.09	0.40
50:3:784:A:N6	50:3:788:G:H21	2.13	0.40
50:3:803:G:H2'	50:3:804:U:C6	2.56	0.40
50:3:873:G:H2'	50:3:874:U:C6	2.56	0.40
50:3:986:G:H2'	50:3:987:U:C6	2.56	0.40
50:3:1077:G:H2'	50:3:1078:C:H6	1.85	0.40
50:3:1659:C:H2'	50:3:1660:A:O4'	2.21	0.40
50:3:1683:G:C6	50:3:2016:G:C6	3.09	0.40
50:3:1789:C:O2	50:3:2616:G:O2'	2.34	0.40
50:3:1798:A:H8	50:3:1798:A:P	2.44	0.40
50:3:1820:U:H2'	50:3:1821:G:C8	2.56	0.40
50:3:1822:A:C4	50:3:1824:G:N7	2.90	0.40
50:3:1987:C:O2'	50:3:1989:U:H5'	2.21	0.40
50:3:2100:G:O6	50:3:2101:A:N6	2.54	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2173:G:H3'	50:3:2174:G:C8	2.56	0.40
50:3:2229:C:H2'	50:3:2230:A:C8	2.57	0.40
50:3:2301:C:H2'	50:3:2302:C:C6	2.56	0.40
50:3:2378:G:H2'	50:3:2379:G:C8	2.56	0.40
50:3:2439:U:N3	50:3:2441:A:C8	2.90	0.40
50:3:2476:A:H2'	50:3:2484:A:C2	2.56	0.40
50:3:2497:U:H2'	50:3:2498:G:N9	2.35	0.40
50:3:2586:G:H2'	50:3:2587:U:C6	2.56	0.40
51:4:47:C:N4	51:4:48:A:H62	2.19	0.40
52:5:105:A:C4	52:5:107:A:C8	3.08	0.40
52:5:186:A:H2'	52:5:187:A:C4	2.55	0.40
52:5:335:C:H2'	52:5:336:U:H6	1.86	0.40
52:5:616:C:N4	52:5:620:A:H62	2.19	0.40
52:5:735:C:H2'	52:5:736:U:H6	1.86	0.40
52:5:959:A:OP2	52:5:960:C:N4	2.54	0.40
52:5:982:A:H2'	52:5:983:G:C8	2.56	0.40
52:5:1345:G:H2'	52:5:1346:G:H8	1.85	0.40
1:0:1:MET:O	1:0:3:ARG:HG2	2.21	0.40
6:C:193:GLU:O	6:C:197:VAL:HG23	2.21	0.40
12:I:18:SER:HB3	12:I:24:LEU:HD21	2.03	0.40
13:J:10:SER:C	13:J:72:MET:HG2	2.45	0.40
14:K:112:ARG:HD2	14:K:117:THR:O	2.21	0.40
24:a:269:ASN:HB3	24:a:272:LYS:HE3	2.02	0.40
28:e:3:LYS:HE2	28:e:3:LYS:HB2	1.91	0.40
29:f:52:LYS:HA	29:f:55:GLN:HG2	2.02	0.40
30:g:41:ARG:HH11	50:3:1118:U:P	2.43	0.40
32:i:38:LEU:HD12	32:i:146:SER:HB2	2.03	0.40
39:p:36:GLN:HA	39:p:39:ILE:HG22	2.04	0.40
40:q:24:LYS:HE3	40:q:24:LYS:HB3	1.93	0.40
42:s:7:LEU:HD23	42:s:7:LEU:H	1.86	0.40
50:3:235:U:H2'	50:3:236:G:O4'	2.21	0.40
50:3:400:A:H2'	50:3:401:G:H8	1.86	0.40
50:3:490:A:H3'	50:3:491:A:C8	2.56	0.40
50:3:573:A:H3'	50:3:574:G:H8	1.85	0.40
50:3:630:C:H2'	50:3:631:A:C8	2.56	0.40
50:3:643:A:H62	50:3:655:G:H21	1.68	0.40
50:3:727:C:HO2'	50:3:1382:A:HO2'	1.62	0.40
50:3:756:A:H2'	50:3:757:A:C8	2.56	0.40
50:3:868:C:C2	50:3:869:U:C5	3.09	0.40
50:3:899:A:N6	50:3:950:U:O4	2.53	0.40
50:3:1440:U:O4	50:3:1441:A:N6	2.55	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1827:U:H5''	50:3:1828:A:C8	2.55	0.40
50:3:1866:G:H2'	50:3:1867:G:C8	2.53	0.40
50:3:2048:U:H2'	50:3:2049:A:C8	2.56	0.40
50:3:2467:A:N6	50:3:2502:G:N3	2.69	0.40
50:3:2869:U:H2'	50:3:2870:U:C5	2.57	0.40
52:5:13:U:C4	52:5:23:G:O6	2.74	0.40
52:5:590:G:O6	52:5:645:A:N6	2.54	0.40
52:5:664:A:H2'	52:5:665:G:C8	2.56	0.40
52:5:1086:U:H2'	52:5:1087:C:C6	2.56	0.40
52:5:1128:G:H2'	52:5:1129:C:C6	2.57	0.40
52:5:1316:C:H2'	52:5:1317:A:N7	2.36	0.40
53:6:22:A:N6	53:6:47:G:H1'	2.36	0.40
4:A:33:VAL:CG2	4:A:36:TYR:HB2	2.51	0.40
5:B:134:ARG:HH12	5:B:138:ARG:NH1	2.19	0.40
8:E:145:ARG:HG2	8:E:145:ARG:NH2	2.36	0.40
9:F:144:ALA:C	9:F:146:ALA:H	2.29	0.40
13:J:75:VAL:HG22	13:J:76:LYS:O	2.21	0.40
14:K:46:VAL:HG22	14:K:92:VAL:HB	2.03	0.40
16:M:43:CYS:HA	16:M:46:GLU:CD	2.45	0.40
22:S:3:ASN:HA	52:5:327:G:H21	1.86	0.40
24:a:57:HIS:HE2	50:3:1831:G:P	2.43	0.40
24:a:162:ARG:NE	50:3:1825:U:OP2	2.53	0.40
25:b:40:LYS:HD3	25:b:45:ASP:HB3	2.03	0.40
25:b:105:GLY:HA2	25:b:181:ILE:O	2.21	0.40
28:e:93:VAL:HG13	28:e:163:LYS:HA	2.03	0.40
32:i:98:LYS:HD3	32:i:98:LYS:HA	1.70	0.40
40:q:82:LYS:HE2	50:3:1255:G:H4'	2.04	0.40
44:u:44:MET:HA	44:u:44:MET:HE2	2.03	0.40
49:z:23:LYS:C	49:z:23:LYS:HD3	2.46	0.40
50:3:58:A:H2'	50:3:59:C:O4'	2.22	0.40
50:3:81:C:H2'	50:3:82:G:H8	1.87	0.40
50:3:498:C:N4	50:3:499:G:O6	2.55	0.40
50:3:831:U:H2'	50:3:832:C:H6	1.87	0.40
50:3:954:A:H2	51:4:77:G:N2	2.19	0.40
50:3:1409:G:H2'	50:3:1410:A:C8	2.57	0.40
50:3:1454:G:H2'	50:3:1455:A:N7	2.36	0.40
50:3:1556:U:H3	50:3:1574:G:H1	1.69	0.40
50:3:1701:G:N1	50:3:1999:G:OP2	2.37	0.40
50:3:2113:U:O2	50:3:2191:G:N2	2.48	0.40
50:3:2135:C:H2'	50:3:2136:A:H8	1.87	0.40
50:3:2257:U:H1'	50:3:2283:C:H41	1.85	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:96:G:H2'	52:5:97:G:C8	2.56	0.40
52:5:589:U:H2'	52:5:590:G:H8	1.85	0.40
52:5:1065:G:H2'	52:5:1066:U:C6	2.56	0.40
52:5:1126:U:H1'	52:5:1255:A:H61	1.85	0.40
52:5:1334:A:O2'	52:5:1335:G:H5'	2.21	0.40
4:A:214:ILE:HG12	4:A:216:PRO:HD3	2.03	0.40
5:B:55:ASN:ND2	5:B:57:GLU:OE2	2.54	0.40
7:D:71:VAL:HG23	7:D:72:LYS:N	2.36	0.40
16:M:22:THR:O	16:M:33:VAL:HG21	2.21	0.40
19:P:32:HIS:CG	19:P:33:PRO:HD2	2.56	0.40
20:Q:48:GLN:C	20:Q:50:ARG:H	2.28	0.40
29:f:42:LYS:HE2	29:f:47:ARG:HD3	2.02	0.40
34:k:78:VAL:N	34:k:111:PRO:O	2.53	0.40
50:3:522:C:H2'	50:3:523:A:H8	1.84	0.40
50:3:524:G:N1	50:3:527:A:OP2	2.49	0.40
50:3:584:G:H2'	50:3:585:U:C6	2.55	0.40
50:3:713:C:H2'	50:3:714:G:H8	1.86	0.40
50:3:1277:A:H8	50:3:1277:A:OP2	2.04	0.40
50:3:1418:U:H3	50:3:1423:A:N6	2.14	0.40
50:3:1759:C:H2'	50:3:1760:G:H8	1.86	0.40
50:3:1779:G:H21	50:3:1781:C:H5'	1.85	0.40
50:3:2441:A:O2'	50:3:2442:A:H5'	2.21	0.40
50:3:2495:A:C2	50:3:2496:G:C5	3.10	0.40
50:3:2523:C:H2'	50:3:2524:U:C6	2.56	0.40
50:3:2664:U:O2	50:3:2673:A:N7	2.55	0.40
50:3:2671:G:H2'	50:3:2672:G:O4'	2.21	0.40
52:5:1409:A:H2'	52:5:1410:A:C8	2.55	0.40
52:5:1411:A:H2'	52:5:1412:C:H6	1.86	0.40
53:8:22:A:N6	53:8:47:G:H1'	2.36	0.40
2:1:29:LEU:HB2	2:1:31:PRO:HD3	2.02	0.40
4:A:102:ARG:NH1	4:A:233:ALA:HB1	2.36	0.40
9:F:116:LEU:O	9:F:119:ILE:HG22	2.21	0.40
9:F:142:LYS:HG3	9:F:143:MET:N	2.37	0.40
10:G:38:SER:O	10:G:42:ILE:HG13	2.22	0.40
12:I:78:ARG:C	12:I:79:LEU:HD12	2.46	0.40
13:J:59:ALA:O	13:J:63:VAL:HG22	2.20	0.40
15:L:68:ASP:OD1	15:L:71:ARG:HD3	2.21	0.40
15:L:90:ARG:HA	15:L:90:ARG:HD2	1.95	0.40
18:O:76:PHE:CZ	18:O:80:LYS:HE3	2.56	0.40
21:R:85:ALA:HA	52:5:1202:A:H1'	2.03	0.40
22:S:15:ILE:HG13	22:S:16:LYS:N	2.36	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:a:20:ILE:HB	24:a:22:TYR:CE1	2.57	0.40
30:g:31:SER:HA	50:3:1089:A:O2'	2.21	0.40
32:i:115:ASN:C	32:i:118:SER:HG	2.26	0.40
36:m:67:LEU:HD12	36:m:79:MET:SD	2.61	0.40
41:r:7:GLN:NE2	41:r:8:PHE:O	2.55	0.40
45:v:60:LYS:HD3	50:3:410:G:N7	2.36	0.40
50:3:17:G:H2'	50:3:18:G:C8	2.57	0.40
50:3:133:G:H2'	50:3:134:U:H6	1.87	0.40
50:3:254:G:H2'	50:3:255:A:O4'	2.22	0.40
50:3:536:A:H2'	50:3:537:A:C4	2.57	0.40
50:3:602:U:H2'	50:3:603:G:O4'	2.22	0.40
50:3:886:U:H3	50:3:964:A:N6	2.10	0.40
50:3:1215:G:N3	50:3:1215:G:H2'	2.37	0.40
50:3:1508:G:O6	50:3:1509:U:C4	2.74	0.40
50:3:1531:C:H2'	50:3:1532:A:O4'	2.21	0.40
50:3:2169:G:H1'	50:3:2173:G:C6	2.57	0.40
50:3:2171:A:N6	50:3:2172:A:N3	2.69	0.40
50:3:2196:G:H2'	50:3:2197:U:C6	2.56	0.40
50:3:2231:A:H2'	50:3:2232:G:O4'	2.21	0.40
50:3:2349:G:H2'	50:3:2350:C:C6	2.56	0.40
50:3:2572:A:C6	50:3:2655:U:H4'	2.55	0.40
50:3:2748:A:N7	50:3:2771:G:N2	2.69	0.40
52:5:583:G:C2	52:5:754:U:C2	3.10	0.40
52:5:945:U:H2'	52:5:946:G:C8	2.56	0.40
52:5:1324:A:H2'	52:5:1325:U:C6	2.57	0.40
52:5:1332:U:H3'	52:5:1333:C:C6	2.57	0.40
52:5:1406:U:O2	52:5:1444:G:N2	2.32	0.40
52:5:1487:U:H2'	52:5:1488:A:H8	1.86	0.40
53:6:66:C:H2'	53:6:67:C: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%)	40 (89%)	5 (11%)	0	100	100
2	1	57/59 (97%)	49 (86%)	8 (14%)	0	100	100
3	2	35/37 (95%)	32 (91%)	3 (9%)	0	100	100
4	A	238/294 (81%)	215 (90%)	23 (10%)	0	100	100
5	B	213/273 (78%)	200 (94%)	13 (6%)	0	100	100
6	C	201/205 (98%)	192 (96%)	9 (4%)	0	100	100
7	D	151/219 (69%)	146 (97%)	5 (3%)	0	100	100
8	E	165/215 (77%)	153 (93%)	12 (7%)	0	100	100
9	F	152/155 (98%)	142 (93%)	10 (7%)	0	100	100
10	G	139/142 (98%)	121 (87%)	18 (13%)	0	100	100
11	H	126/132 (96%)	113 (90%)	13 (10%)	0	100	100
12	I	99/108 (92%)	89 (90%)	10 (10%)	0	100	100
13	J	112/121 (93%)	105 (94%)	7 (6%)	0	100	100
14	K	134/139 (96%)	119 (89%)	14 (10%)	1 (1%)	18	56
15	L	116/124 (94%)	105 (90%)	11 (10%)	0	100	100
16	M	58/61 (95%)	55 (95%)	3 (5%)	0	100	100
17	N	81/86 (94%)	79 (98%)	2 (2%)	0	100	100
18	O	78/94 (83%)	72 (92%)	6 (8%)	0	100	100
19	P	81/85 (95%)	77 (95%)	4 (5%)	0	100	100
20	Q	63/104 (61%)	58 (92%)	5 (8%)	0	100	100
21	R	82/87 (94%)	75 (92%)	7 (8%)	0	100	100
22	S	75/87 (86%)	74 (99%)	1 (1%)	0	100	100
23	T	51/60 (85%)	50 (98%)	1 (2%)	0	100	100
24	a	283/287 (99%)	256 (90%)	27 (10%)	0	100	100
25	b	227/287 (79%)	213 (94%)	14 (6%)	0	100	100
26	c	208/212 (98%)	197 (95%)	11 (5%)	0	100	100
27	d	173/180 (96%)	161 (93%)	12 (7%)	0	100	100
28	e	174/184 (95%)	165 (95%)	9 (5%)	0	100	100
29	f	143/149 (96%)	136 (95%)	7 (5%)	0	100	100
30	g	124/161 (77%)	114 (92%)	9 (7%)	1 (1%)	16	54
31	h	126/137 (92%)	114 (90%)	12 (10%)	0	100	100
32	i	142/146 (97%)	131 (92%)	11 (8%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
33	j	120/122 (98%)	110 (92%)	10 (8%)	0	100	100
34	k	146/151 (97%)	137 (94%)	9 (6%)	0	100	100
35	l	134/139 (96%)	124 (92%)	10 (8%)	0	100	100
36	m	117/124 (94%)	109 (93%)	8 (7%)	0	100	100
37	n	108/116 (93%)	97 (90%)	11 (10%)	0	100	100
38	o	113/119 (95%)	106 (94%)	7 (6%)	0	100	100
39	p	112/127 (88%)	110 (98%)	2 (2%)	0	100	100
40	q	97/100 (97%)	82 (84%)	15 (16%)	0	100	100
41	r	137/159 (86%)	127 (93%)	10 (7%)	0	100	100
42	s	90/237 (38%)	87 (97%)	3 (3%)	0	100	100
43	t	109/111 (98%)	98 (90%)	11 (10%)	0	100	100
44	u	84/104 (81%)	78 (93%)	6 (7%)	0	100	100
45	v	61/65 (94%)	55 (90%)	6 (10%)	0	100	100
46	w	96/111 (86%)	92 (96%)	3 (3%)	1 (1%)	12	48
47	x	42/97 (43%)	40 (95%)	2 (5%)	0	100	100
48	y	54/57 (95%)	49 (91%)	4 (7%)	1 (2%)	6	32
49	z	48/53 (91%)	48 (100%)	0	0	100	100
All	All	5820/6670 (87%)	5397 (93%)	419 (7%)	4 (0%)	49	83

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
14	K	116	ASP
30	g	88	GLU
46	w	39	ASP
48	y	53	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	A	212/262 (81%)	212 (100%)	0	100	100
5	B	180/232 (78%)	180 (100%)	0	100	100
6	C	181/183 (99%)	181 (100%)	0	100	100
7	D	123/178 (69%)	123 (100%)	0	100	100
8	E	150/196 (76%)	150 (100%)	0	100	100
9	F	131/132 (99%)	131 (100%)	0	100	100
10	G	123/124 (99%)	123 (100%)	0	100	100
11	H	111/115 (96%)	111 (100%)	0	100	100
12	I	95/99 (96%)	95 (100%)	0	100	100
13	J	91/97 (94%)	91 (100%)	0	100	100
14	K	117/120 (98%)	114 (97%)	3 (3%)	40	62
15	L	100/105 (95%)	100 (100%)	0	100	100
16	M	47/48 (98%)	47 (100%)	0	100	100
17	N	76/78 (97%)	76 (100%)	0	100	100
18	O	69/82 (84%)	69 (100%)	0	100	100
19	P	73/75 (97%)	73 (100%)	0	100	100
20	Q	56/94 (60%)	56 (100%)	0	100	100
21	R	74/77 (96%)	74 (100%)	0	100	100
22	S	70/77 (91%)	70 (100%)	0	100	100
23	T	49/56 (88%)	49 (100%)	0	100	100
24	a	241/243 (99%)	241 (100%)	0	100	100
25	b	186/233 (80%)	186 (100%)	0	100	100
26	c	182/184 (99%)	182 (100%)	0	100	100
27	d	150/154 (97%)	150 (100%)	0	100	100
28	e	153/159 (96%)	153 (100%)	0	100	100
29	f	123/134 (92%)	123 (100%)	0	100	100
30	g	101/129 (78%)	93 (92%)	8 (8%)	11	32
31	h	102/110 (93%)	102 (100%)	0	100	100
32	i	126/128 (98%)	126 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
33	j	103/103 (100%)	103 (100%)	0	100	100
34	k	123/126 (98%)	123 (100%)	0	100	100
35	l	113/115 (98%)	113 (100%)	0	100	100
36	m	105/109 (96%)	105 (100%)	0	100	100
37	n	96/99 (97%)	96 (100%)	0	100	100
38	o	101/105 (96%)	101 (100%)	0	100	100
39	p	100/108 (93%)	100 (100%)	0	100	100
40	q	90/91 (99%)	90 (100%)	0	100	100
41	r	116/132 (88%)	116 (100%)	0	100	100
42	s	82/208 (39%)	82 (100%)	0	100	100
43	t	96/96 (100%)	96 (100%)	0	100	100
44	u	69/85 (81%)	68 (99%)	1 (1%)	59	72
45	v	58/60 (97%)	58 (100%)	0	100	100
46	w	87/98 (89%)	87 (100%)	0	100	100
47	x	41/86 (48%)	41 (100%)	0	100	100
48	y	48/49 (98%)	45 (94%)	3 (6%)	16	37
49	z	47/50 (94%)	46 (98%)	1 (2%)	47	65
All	All	5093/5751 (89%)	5077 (100%)	16 (0%)	84	86

All (16) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
14	K	116	ASP
14	K	118	VAL
14	K	122	LYS
30	g	26	ILE
30	g	27	PHE
30	g	32	MET
30	g	44	LEU
30	g	46	LYS
30	g	88	GLU
30	g	89	ILE
30	g	90	VAL
44	u	26	ASN
48	y	19	HIS
48	y	48	TYR

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Mol	Chain	Res	Type
48	y	52	ARG
49	z	28	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (86) such sidechains are listed below:

Mol	Chain	Res	Type
1	0	6	GLN
1	0	41	GLN
3	2	21	GLN
4	A	70	ASN
5	B	15	ASN
5	B	62	GLN
5	B	73	GLN
5	B	94	GLN
5	B	193	GLN
6	C	40	ASN
6	C	53	GLN
6	C	61	GLN
6	C	70	GLN
6	C	118	ASN
6	C	121	HIS
6	C	137	ASN
7	D	85	ASN
7	D	127	HIS
8	E	17	GLN
8	E	25	GLN
9	F	39	GLN
9	F	67	ASN
9	F	85	GLN
11	H	52	GLN
11	H	77	GLN
13	J	112	ASN
15	L	12	GLN
15	L	100	GLN
19	P	5	GLN
20	Q	82	HIS
21	R	79	ASN
22	S	3	ASN
22	S	46	ASN
22	S	50	GLN
24	a	15	HIS
24	a	29	ASN

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Mol	Chain	Res	Type
24	a	58	GLN
24	a	126	HIS
24	a	219	ASN
24	a	221	HIS
25	b	20	ASN
25	b	21	ASN
25	b	82	GLN
26	c	31	GLN
26	c	76	GLN
26	c	81	ASN
26	c	108	HIS
26	c	126	HIS
26	c	162	ASN
27	d	27	GLN
28	e	63	GLN
29	f	28	HIS
29	f	54	GLN
29	f	61	ASN
29	f	124	HIS
31	h	113	ASN
31	h	115	ASN
31	h	130	GLN
32	i	51	GLN
32	i	82	GLN
32	i	106	ASN
32	i	126	HIS
32	i	138	GLN
35	l	3	GLN
35	l	13	HIS
35	l	14	ASN
36	m	62	GLN
37	n	7	GLN
37	n	69	ASN
38	o	17	GLN
38	o	83	ASN
38	o	85	ASN
39	p	19	GLN
39	p	110	GLN
40	q	17	ASN
40	q	34	GLN
40	q	85	HIS
40	q	87	GLN

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Mol	Chain	Res	Type
41	r	57	ASN
45	v	20	HIS
46	w	35	HIS
46	w	64	ASN
46	w	90	HIS
48	y	5	GLN
49	z	18	ASN
49	z	28	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
50	3	2876/2907 (98%)	774 (26%)	34 (1%)
51	4	103/108 (95%)	36 (34%)	3 (2%)
52	5	1490/1520 (98%)	353 (23%)	5 (0%)
53	6	75/76 (98%)	29 (38%)	4 (5%)
53	8	75/76 (98%)	29 (38%)	4 (5%)
All	All	4619/4687 (98%)	1221 (26%)	50 (1%)

All (1221) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
50	3	14	U
50	3	15	A
50	3	16	A
50	3	28	G
50	3	37	G
50	3	42	U
50	3	44	A
50	3	48	G
50	3	56	G
50	3	58	A
50	3	63	U
50	3	64	U
50	3	65	A
50	3	73	A
50	3	75	A
50	3	76	A
50	3	77	G
50	3	86	A
50	3	102	A

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Mol	Chain	Res	Type
50	3	103	G
50	3	115	U
50	3	119	A
50	3	120	A
50	3	121	U
50	3	123	G
50	3	132	G
50	3	141	A
50	3	146	G
50	3	148	U
50	3	152	A
50	3	163	A
50	3	165	U
50	3	180	A
50	3	181	G
50	3	184	A
50	3	185	U
50	3	187	C
50	3	188	G
50	3	200	A
50	3	203	A
50	3	206	U
50	3	207	C
50	3	208	A
50	3	210	U
50	3	217	A
50	3	219	G
50	3	220	A
50	3	223	A
50	3	226	A
50	3	227	A
50	3	230	G
50	3	232	A
50	3	233	U
50	3	234	G
50	3	237	A
50	3	246	G
50	3	247	U
50	3	249	G
50	3	252	G
50	3	258	G
50	3	259	A

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Mol	Chain	Res	Type
50	3	260	A
50	3	266	A
50	3	269	A
50	3	270	G
50	3	276	A
50	3	284	U
50	3	286	A
50	3	287	G
50	3	293	G
50	3	295	U
50	3	296	U
50	3	297	G
50	3	298	U
50	3	299	A
50	3	309	A
50	3	310	U
50	3	312	U
50	3	314	G
50	3	318	U
50	3	319	G
50	3	325	G
50	3	326	A
50	3	336	C
50	3	345	A
50	3	346	G
50	3	347	C
50	3	351	G
50	3	355	A
50	3	357	A
50	3	361	G
50	3	363	G
50	3	364	A
50	3	370	C
50	3	372	G
50	3	393	C
50	3	399	G
50	3	402	A
50	3	403	U
50	3	404	C
50	3	408	G
50	3	409	A
50	3	411	U

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Mol	Chain	Res	Type
50	3	421	A
50	3	422	A
50	3	424	G
50	3	425	U
50	3	426	U
50	3	432	G
50	3	437	A
50	3	438	A
50	3	439	U
50	3	442	G
50	3	447	G
50	3	448	A
50	3	457	U
50	3	460	G
50	3	465	A
50	3	484	U
50	3	487	C
50	3	492	C
50	3	493	A
50	3	494	G
50	3	495	U
50	3	499	G
50	3	501	G
50	3	502	A
50	3	509	G
50	3	511	U
50	3	514	A
50	3	515	A
50	3	517	G
50	3	519	A
50	3	528	U
50	3	539	U
50	3	540	A
50	3	543	U
50	3	544	U
50	3	545	C
50	3	546	U
50	3	553	A
50	3	557	G
50	3	562	C
50	3	563	A
50	3	564	A

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Mol	Chain	Res	Type
50	3	565	C
50	3	566	G
50	3	568	G
50	3	573	A
50	3	579	U
50	3	583	U
50	3	584	G
50	3	589	A
50	3	595	U
50	3	596	G
50	3	598	G
50	3	601	U
50	3	605	A
50	3	606	G
50	3	608	A
50	3	609	U
50	3	612	G
50	3	620	G
50	3	623	A
50	3	636	U
50	3	637	U
50	3	638	A
50	3	641	U
50	3	656	G
50	3	659	C
50	3	668	A
50	3	673	A
50	3	679	A
50	3	681	A
50	3	682	A
50	3	689	U
50	3	691	G
50	3	701	A
50	3	703	A
50	3	705	A
50	3	706	C
50	3	707	C
50	3	709	G
50	3	710	A
50	3	719	G
50	3	720	A
50	3	722	C

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Mol	Chain	Res	Type
50	3	723	U
50	3	724	A
50	3	752	C
50	3	761	G
50	3	765	A
50	3	766	C
50	3	782	U
50	3	786	A
50	3	792	G
50	3	799	A
50	3	800	C
50	3	810	G
50	3	811	G
50	3	812	G
50	3	817	A
50	3	819	U
50	3	820	U
50	3	823	A
50	3	824	A
50	3	825	U
50	3	828	A
50	3	829	A
50	3	830	A
50	3	836	G
50	3	837	A
50	3	840	G
50	3	841	C
50	3	847	C
50	3	854	A
50	3	855	A
50	3	862	U
50	3	863	U
50	3	868	C
50	3	880	C
50	3	882	C
50	3	883	A
50	3	885	A
50	3	893	A
50	3	894	G
50	3	902	U
50	3	904	C
50	3	906	G

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Mol	Chain	Res	Type
50	3	932	U
50	3	933	A
50	3	936	G
50	3	944	U
50	3	947	A
50	3	949	C
50	3	951	C
50	3	952	U
50	3	953	G
50	3	954	A
50	3	968	U
50	3	969	A
50	3	970	U
50	3	977	A
50	3	981	A
50	3	982	G
50	3	993	A
50	3	995	A
50	3	997	G
50	3	998	C
50	3	1008	A
50	3	1009	A
50	3	1010	G
50	3	1011	A
50	3	1013	G
50	3	1016	A
50	3	1017	A
50	3	1019	A
50	3	1021	C
50	3	1024	A
50	3	1026	A
50	3	1027	U
50	3	1032	A
50	3	1042	C
50	3	1045	A
50	3	1046	A
50	3	1049	U
50	3	1052	A
50	3	1055	A
50	3	1057	G
50	3	1061	A
50	3	1062	A

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Mol	Chain	Res	Type
50	3	1068	U
50	3	1069	G
50	3	1080	A
50	3	1081	A
50	3	1083	A
50	3	1089	A
50	3	1101	U
50	3	1102	A
50	3	1105	A
50	3	1106	G
50	3	1107	C
50	3	1113	U
50	3	1115	G
50	3	1119	A
50	3	1123	A
50	3	1124	G
50	3	1125	U
50	3	1126	G
50	3	1132	C
50	3	1147	G
50	3	1148	U
50	3	1151	U
50	3	1154	U
50	3	1157	G
50	3	1162	A
50	3	1163	G
50	3	1164	A
50	3	1165	U
50	3	1167	U
50	3	1168	A
50	3	1169	A
50	3	1170	C
50	3	1171	G
50	3	1174	G
50	3	1176	U
50	3	1177	A
50	3	1178	A
50	3	1179	G
50	3	1186	A
50	3	1191	A
50	3	1204	A
50	3	1208	A

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Mol	Chain	Res	Type
50	3	1209	U
50	3	1210	A
50	3	1212	C
50	3	1216	U
50	3	1217	G
50	3	1234	U
50	3	1235	U
50	3	1236	G
50	3	1242	G
50	3	1250	A
50	3	1251	G
50	3	1253	G
50	3	1256	A
50	3	1257	G
50	3	1266	G
50	3	1268	U
50	3	1279	U
50	3	1280	G
50	3	1283	A
50	3	1284	A
50	3	1285	U
50	3	1286	G
50	3	1292	A
50	3	1295	A
50	3	1297	U
50	3	1298	A
50	3	1301	G
50	3	1302	C
50	3	1322	A
50	3	1328	A
50	3	1329	U
50	3	1330	U
50	3	1338	G
50	3	1340	U
50	3	1342	C
50	3	1349	C
50	3	1353	G
50	3	1357	U
50	3	1360	U
50	3	1361	U
50	3	1370	A
50	3	1371	G

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Mol	Chain	Res	Type
50	3	1378	C
50	3	1380	U
50	3	1393	A
50	3	1395	A
50	3	1396	A
50	3	1404	C
50	3	1406	A
50	3	1408	G
50	3	1412	A
50	3	1422	U
50	3	1423	A
50	3	1424	U
50	3	1431	A
50	3	1434	U
50	3	1437	A
50	3	1438	G
50	3	1444	C
50	3	1445	U
50	3	1448	U
50	3	1455	A
50	3	1456	C
50	3	1457	A
50	3	1463	G
50	3	1466	U
50	3	1467	U
50	3	1470	C
50	3	1480	A
50	3	1481	U
50	3	1482	U
50	3	1483	G
50	3	1485	A
50	3	1487	U
50	3	1507	G
50	3	1508	G
50	3	1509	U
50	3	1510	A
50	3	1511	C
50	3	1515	A
50	3	1518	C
50	3	1519	A
50	3	1523	C
50	3	1527	U

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Mol	Chain	Res	Type
50	3	1530	G
50	3	1532	A
50	3	1533	U
50	3	1534	A
50	3	1535	A
50	3	1541	A
50	3	1550	G
50	3	1557	G
50	3	1571	G
50	3	1581	U
50	3	1584	U
50	3	1587	U
50	3	1588	A
50	3	1589	A
50	3	1592	A
50	3	1600	A
50	3	1603	A
50	3	1612	U
50	3	1615	G
50	3	1616	G
50	3	1618	U
50	3	1619	A
50	3	1637	A
50	3	1640	G
50	3	1641	A
50	3	1642	G
50	3	1643	A
50	3	1644	A
50	3	1651	C
50	3	1652	A
50	3	1653	C
50	3	1656	A
50	3	1667	G
50	3	1668	G
50	3	1681	G
50	3	1682	C
50	3	1693	U
50	3	1694	A
50	3	1697	C
50	3	1703	A
50	3	1706	C
50	3	1707	U

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Mol	Chain	Res	Type
50	3	1708	G
50	3	1715	A
50	3	1716	A
50	3	1727	U
50	3	1728	A
50	3	1729	G
50	3	1733	G
50	3	1734	A
50	3	1737	G
50	3	1747	G
50	3	1748	U
50	3	1761	C
50	3	1762	A
50	3	1763	G
50	3	1764	U
50	3	1765	G
50	3	1768	G
50	3	1769	A
50	3	1770	A
50	3	1771	C
50	3	1780	A
50	3	1788	A
50	3	1789	C
50	3	1790	U
50	3	1793	A
50	3	1794	A
50	3	1798	A
50	3	1807	C
50	3	1808	C
50	3	1809	A
50	3	1815	U
50	3	1821	G
50	3	1822	A
50	3	1823	U
50	3	1824	G
50	3	1828	A
50	3	1836	A
50	3	1842	G
50	3	1843	C
50	3	1855	A
50	3	1865	A
50	3	1866	G

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Mol	Chain	Res	Type
50	3	1872	U
50	3	1873	A
50	3	1876	G
50	3	1878	A
50	3	1879	A
50	3	1880	G
50	3	1891	A
50	3	1906	G
50	3	1907	A
50	3	1908	A
50	3	1910	G
50	3	1913	G
50	3	1914	G
50	3	1920	A
50	3	1921	C
50	3	1922	U
50	3	1926	A
50	3	1934	A
50	3	1936	G
50	3	1937	G
50	3	1938	U
50	3	1944	A
50	3	1945	A
50	3	1951	A
50	3	1952	G
50	3	1953	U
50	3	1961	A
50	3	1962	U
50	3	1970	C
50	3	1973	U
50	3	1977	A
50	3	1979	G
50	3	1988	A
50	3	1989	U
50	3	1998	U
50	3	1999	G
50	3	2000	U
50	3	2011	G
50	3	2012	A
50	3	2020	A
50	3	2028	G
50	3	2030	A

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Mol	Chain	Res	Type
50	3	2037	A
50	3	2038	A
50	3	2040	A
50	3	2049	A
50	3	2050	G
50	3	2056	A
50	3	2059	G
50	3	2062	C
50	3	2063	G
50	3	2066	A
50	3	2067	A
50	3	2068	G
50	3	2075	U
50	3	2076	G
50	3	2080	C
50	3	2084	A
50	3	2100	G
50	3	2107	A
50	3	2108	C
50	3	2110	U
50	3	2111	U
50	3	2112	A
50	3	2114	C
50	3	2115	A
50	3	2117	G
50	3	2118	U
50	3	2119	A
50	3	2123	A
50	3	2124	A
50	3	2125	U
50	3	2127	G
50	3	2131	G
50	3	2132	G
50	3	2133	A
50	3	2134	G
50	3	2138	U
50	3	2140	G
50	3	2154	A
50	3	2165	A
50	3	2166	U
50	3	2170	A
50	3	2171	A

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Mol	Chain	Res	Type
50	3	2172	A
50	3	2180	U
50	3	2181	A
50	3	2184	A
50	3	2187	C
50	3	2193	U
50	3	2195	U
50	3	2197	U
50	3	2198	G
50	3	2200	U
50	3	2201	G
50	3	2202	U
50	3	2206	A
50	3	2207	A
50	3	2212	U
50	3	2219	U
50	3	2220	A
50	3	2222	C
50	3	2227	U
50	3	2228	U
50	3	2231	A
50	3	2233	A
50	3	2242	G
50	3	2246	G
50	3	2247	G
50	3	2254	G
50	3	2257	U
50	3	2276	A
50	3	2285	G
50	3	2286	A
50	3	2287	G
50	3	2288	G
50	3	2291	U
50	3	2294	A
50	3	2295	A
50	3	2296	A
50	3	2305	C
50	3	2313	U
50	3	2315	G
50	3	2316	G
50	3	2317	A
50	3	2319	A

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Mol	Chain	Res	Type
50	3	2320	U
50	3	2327	U
50	3	2328	A
50	3	2329	G
50	3	2333	G
50	3	2334	U
50	3	2335	A
50	3	2341	G
50	3	2342	U
50	3	2343	A
50	3	2344	A
50	3	2346	G
50	3	2351	U
50	3	2352	U
50	3	2353	G
50	3	2354	A
50	3	2355	C
50	3	2358	U
50	3	2362	A
50	3	2365	U
50	3	2369	G
50	3	2380	U
50	3	2391	G
50	3	2393	C
50	3	2396	A
50	3	2398	U
50	3	2410	C
50	3	2414	U
50	3	2415	A
50	3	2418	G
50	3	2431	U
50	3	2435	C
50	3	2436	G
50	3	2437	G
50	3	2438	A
50	3	2439	U
50	3	2440	A
50	3	2442	A
50	3	2443	A
50	3	2449	U
50	3	2455	G
50	3	2456	A

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Mol	Chain	Res	Type
50	3	2457	U
50	3	2458	A
50	3	2460	C
50	3	2467	A
50	3	2477	A
50	3	2480	G
50	3	2482	U
50	3	2483	C
50	3	2484	A
50	3	2488	C
50	3	2489	G
50	3	2497	U
50	3	2499	U
50	3	2500	U
50	3	2502	G
50	3	2503	G
50	3	2505	A
50	3	2507	C
50	3	2509	C
50	3	2511	A
50	3	2513	G
50	3	2514	U
50	3	2519	U
50	3	2521	A
50	3	2527	U
50	3	2528	C
50	3	2538	A
50	3	2539	A
50	3	2542	A
50	3	2543	G
50	3	2544	G
50	3	2555	U
50	3	2570	U
50	3	2571	U
50	3	2572	A
50	3	2574	A
50	3	2575	G
50	3	2578	A
50	3	2580	A
50	3	2581	C
50	3	2582	G
50	3	2586	G

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Mol	Chain	Res	Type
50	3	2596	A
50	3	2598	C
50	3	2605	G
50	3	2606	A
50	3	2610	A
50	3	2611	G
50	3	2618	C
50	3	2619	C
50	3	2621	U
50	3	2622	A
50	3	2623	U
50	3	2627	U
50	3	2629	G
50	3	2636	U
50	3	2637	A
50	3	2638	G
50	3	2643	A
50	3	2644	U
50	3	2647	A
50	3	2649	G
50	3	2653	G
50	3	2654	U
50	3	2664	U
50	3	2669	G
50	3	2670	A
50	3	2681	G
50	3	2689	C
50	3	2690	U
50	3	2692	U
50	3	2694	A
50	3	2697	C
50	3	2698	U
50	3	2699	C
50	3	2715	C
50	3	2721	C
50	3	2722	G
50	3	2732	A
50	3	2733	A
50	3	2734	C
50	3	2737	G
50	3	2739	C
50	3	2741	A

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Mol	Chain	Res	Type
50	3	2747	U
50	3	2749	A
50	3	2752	G
50	3	2756	A
50	3	2760	C
50	3	2765	A
50	3	2769	G
50	3	2773	A
50	3	2774	A
50	3	2779	C
50	3	2784	A
50	3	2786	A
50	3	2788	U
50	3	2790	A
50	3	2799	U
50	3	2800	U
50	3	2803	G
50	3	2805	A
50	3	2806	A
50	3	2808	A
50	3	2809	A
50	3	2810	A
50	3	2811	G
50	3	2813	A
50	3	2815	G
50	3	2822	C
50	3	2824	A
50	3	2825	A
50	3	2828	C
50	3	2838	G
50	3	2839	A
50	3	2870	U
50	3	2871	G
50	3	2876	G
50	3	2878	G
50	3	2884	C
50	3	2888	U
50	3	2890	G
50	3	2897	G
50	3	2898	A
50	3	2899	C
51	4	5	G

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Mol	Chain	Res	Type
51	4	8	C
51	4	9	C
51	4	10	C
51	4	11	A
51	4	13	G
51	4	22	G
51	4	23	A
51	4	25	A
51	4	27	A
51	4	28	C
51	4	31	G
51	4	33	U
51	4	35	C
51	4	38	U
51	4	39	U
51	4	40	U
51	4	41	C
51	4	42	G
51	4	45	C
51	4	46	C
51	4	48	A
51	4	51	A
51	4	54	U
51	4	55	A
51	4	60	C
51	4	71	A
51	4	72	A
51	4	77	G
51	4	78	C
51	4	86	G
51	4	88	G
51	4	89	A
51	4	99	A
51	4	106	A
51	4	108	C
52	5	6	C
52	5	8	G
52	5	10	G
52	5	15	U
52	5	21	U
52	5	32	U
52	5	33	A

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Mol	Chain	Res	Type
52	5	40	G
52	5	41	C
52	5	48	C
52	5	49	C
52	5	52	A
52	5	58	G
52	5	61	A
52	5	65	G
52	5	75	A
52	5	82	C
52	5	86	A
52	5	87	G
52	5	95	C
52	5	100	G
52	5	101	A
52	5	103	U
52	5	106	C
52	5	107	A
52	5	112	U
52	5	114	C
52	5	115	A
52	5	116	A
52	5	117	U
52	5	120	A
52	5	130	G
52	5	132	G
52	5	134	G
52	5	136	U
52	5	137	A
52	5	149	G
52	5	159	U
52	5	163	G
52	5	167	A
52	5	169	G
52	5	187	A
52	5	197	A
52	5	198	A
52	5	202	A
52	5	203	C
52	5	212	G
52	5	220	U
52	5	223	G

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Mol	Chain	Res	Type
52	5	230	G
52	5	236	C
52	5	240	U
52	5	241	C
52	5	242	A
52	5	243	G
52	5	247	G
52	5	262	G
52	5	269	A
52	5	277	G
52	5	285	G
52	5	303	A
52	5	324	C
52	5	325	A
52	5	326	C
52	5	328	G
52	5	340	A
52	5	342	G
52	5	343	G
52	5	348	C
52	5	352	A
52	5	361	U
52	5	363	U
52	5	368	C
52	5	369	A
52	5	371	U
52	5	374	G
52	5	377	A
52	5	378	A
52	5	380	G
52	5	384	G
52	5	385	A
52	5	393	A
52	5	396	C
52	5	398	G
52	5	400	G
52	5	402	G
52	5	408	U
52	5	409	G
52	5	414	U
52	5	417	U
52	5	418	U

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Mol	Chain	Res	Type
52	5	419	A
52	5	420	A
52	5	422	A
52	5	425	G
52	5	426	U
52	5	432	U
52	5	433	C
52	5	435	U
52	5	443	G
52	5	449	A
52	5	450	U
52	5	452	A
52	5	453	C
52	5	462	G
52	5	464	A
52	5	465	A
52	5	471	A
52	5	474	G
52	5	476	U
52	5	477	U
52	5	481	U
52	5	482	G
52	5	483	U
52	5	488	U
52	5	489	U
52	5	493	A
52	5	494	A
52	5	503	G
52	5	508	A
52	5	509	C
52	5	510	U
52	5	515	G
52	5	516	C
52	5	525	G
52	5	530	A
52	5	532	U
52	5	545	A
52	5	547	C
52	5	549	U
52	5	557	A
52	5	561	A
52	5	562	U

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Mol	Chain	Res	Type
52	5	567	C
52	5	568	G
52	5	569	U
52	5	570	A
52	5	571	A
52	5	574	C
52	5	575	A
52	5	577	G
52	5	578	C
52	5	586	G
52	5	592	A
52	5	594	A
52	5	605	A
52	5	618	U
52	5	627	U
52	5	628	A
52	5	637	A
52	5	638	A
52	5	639	A
52	5	642	A
52	5	647	U
52	5	650	A
52	5	653	G
52	5	657	G
52	5	660	A
52	5	662	G
52	5	668	U
52	5	672	A
52	5	682	G
52	5	694	U
52	5	698	U
52	5	699	A
52	5	712	A
52	5	715	A
52	5	718	A
52	5	719	G
52	5	720	U
52	5	721	G
52	5	729	C
52	5	731	A
52	5	733	A
52	5	744	U

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Mol	Chain	Res	Type
52	5	745	U
52	5	747	C
52	5	749	G
52	5	752	G
52	5	774	A
52	5	778	A
52	5	785	U
52	5	787	A
52	5	790	U
52	5	791	A
52	5	798	U
52	5	806	A
52	5	810	U
52	5	812	A
52	5	813	A
52	5	814	C
52	5	815	G
52	5	820	A
52	5	825	A
52	5	829	G
52	5	837	G
52	5	838	A
52	5	861	A
52	5	866	A
52	5	867	A
52	5	868	G
52	5	870	A
52	5	877	C
52	5	883	A
52	5	885	U
52	5	895	A
52	5	896	G
52	5	907	A
52	5	908	A
52	5	910	C
52	5	911	G
52	5	921	G
52	5	922	G
52	5	929	C
52	5	934	G
52	5	935	U
52	5	953	A

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Mol	Chain	Res	Type
52	5	955	U
52	5	963	U
52	5	964	A
52	5	965	C
52	5	966	A
52	5	970	A
52	5	972	A
52	5	973	A
52	5	974	C
52	5	975	C
52	5	976	U
52	5	977	U
52	5	984	A
52	5	985	C
52	5	987	U
52	5	988	G
52	5	999	C
52	5	1000	A
52	5	1001	A
52	5	1002	A
52	5	1012	A
52	5	1014	A
52	5	1015	U
52	5	1032	G
52	5	1034	G
52	5	1041	G
52	5	1044	G
52	5	1045	C
52	5	1047	U
52	5	1056	U
52	5	1072	G
52	5	1075	G
52	5	1077	U
52	5	1083	A
52	5	1085	G
52	5	1086	U
52	5	1092	A
52	5	1095	G
52	5	1115	G
52	5	1119	C
52	5	1121	U
52	5	1122	U

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Mol	Chain	Res	Type
52	5	1125	C
52	5	1134	C
52	5	1135	U
52	5	1136	G
52	5	1141	U
52	5	1142	G
52	5	1154	A
52	5	1158	A
52	5	1159	A
52	5	1171	A
52	5	1172	A
52	5	1176	A
52	5	1187	U
52	5	1188	A
52	5	1200	G
52	5	1201	C
52	5	1203	A
52	5	1208	G
52	5	1211	A
52	5	1213	A
52	5	1215	U
52	5	1225	A
52	5	1232	C
52	5	1233	G
52	5	1235	C
52	5	1242	U
52	5	1254	A
52	5	1255	A
52	5	1256	U
52	5	1257	C
52	5	1260	U
52	5	1261	A
52	5	1271	U
52	5	1272	C
52	5	1273	A
52	5	1274	G
52	5	1276	U
52	5	1279	G
52	5	1292	A
52	5	1293	A
52	5	1294	U
52	5	1296	C

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Mol	Chain	Res	Type
52	5	1310	C
52	5	1313	A
52	5	1314	A
52	5	1319	U
52	5	1320	A
52	5	1324	A
52	5	1327	G
52	5	1331	A
52	5	1333	C
52	5	1335	G
52	5	1337	U
52	5	1338	A
52	5	1340	G
52	5	1343	G
52	5	1352	A
52	5	1356	U
52	5	1369	A
52	5	1372	C
52	5	1373	A
52	5	1375	C
52	5	1385	A
52	5	1394	G
52	5	1397	G
52	5	1400	A
52	5	1404	U
52	5	1415	G
52	5	1417	U
52	5	1421	A
52	5	1427	U
52	5	1428	A
52	5	1429	G
52	5	1433	G
52	5	1448	A
52	5	1450	C
52	5	1465	U
52	5	1466	U
52	5	1467	A
52	5	1468	A
52	5	1469	G
52	5	1472	G
52	5	1474	A
52	5	1476	C

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Mol	Chain	Res	Type
52	5	1477	A
52	5	1478	A
52	5	1479	G
52	5	1481	U
52	5	1482	A
52	5	1492	G
52	5	1493	A
52	5	1495	C
52	5	1504	G
52	5	1505	G
53	6	3	G
53	6	5	C
53	6	10	A
53	6	11	G
53	6	17	U
53	6	18	C
53	6	20	G
53	6	21	U
53	6	22	A
53	6	28	A
53	6	34	U
53	6	36	A
53	6	43	G
53	6	44	U
53	6	48	U
53	6	49	C
53	6	54	G
53	6	56	U
53	6	57	C
53	6	58	G
53	6	59	A
53	6	61	U
53	6	62	C
53	6	64	G
53	6	71	A
53	6	72	C
53	6	73	C
53	6	75	C
53	6	76	C
53	8	3	G
53	8	5	C
53	8	10	A

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Mol	Chain	Res	Type
53	8	11	G
53	8	17	U
53	8	18	C
53	8	20	G
53	8	21	U
53	8	22	A
53	8	28	A
53	8	34	U
53	8	36	A
53	8	43	G
53	8	44	U
53	8	48	U
53	8	49	C
53	8	54	G
53	8	56	U
53	8	57	C
53	8	58	G
53	8	59	A
53	8	61	U
53	8	62	C
53	8	64	G
53	8	71	A
53	8	72	C
53	8	73	C
53	8	75	C
53	8	76	C

All (50) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
50	3	296	U
50	3	311	G
50	3	402	A
50	3	410	G
50	3	425	U
50	3	500	U
50	3	514	A
50	3	688	U
50	3	881	A
50	3	903	A
50	3	967	U
50	3	996	A

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Mol	Chain	Res	Type
50	3	1048	A
50	3	1082	A
50	3	1209	U
50	3	1211	U
50	3	1297	U
50	3	1507	G
50	3	1570	A
50	3	1583	G
50	3	1587	U
50	3	1588	A
50	3	1820	U
50	3	2132	G
50	3	2180	U
50	3	2342	U
50	3	2504	C
50	3	2506	C
50	3	2604	U
50	3	2635	G
50	3	2668	A
50	3	2764	U
50	3	2823	A
50	3	2897	G
51	4	10	C
51	4	54	U
51	4	59	A
52	5	197	A
52	5	425	G
52	5	448	A
52	5	748	U
52	5	975	C
53	6	16	G
53	6	19	G
53	6	56	U
53	6	58	G
53	8	16	G
53	8	19	G
53	8	56	U
53	8	58	G

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

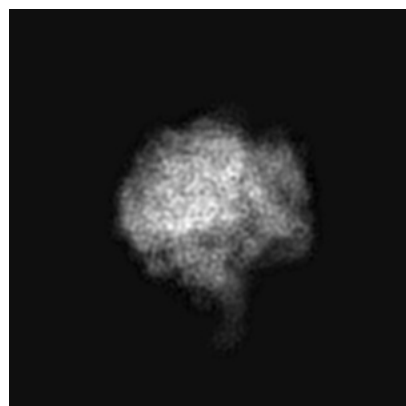
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-13277. These allow visual inspection of the internal detail of the map and identification of artifacts.

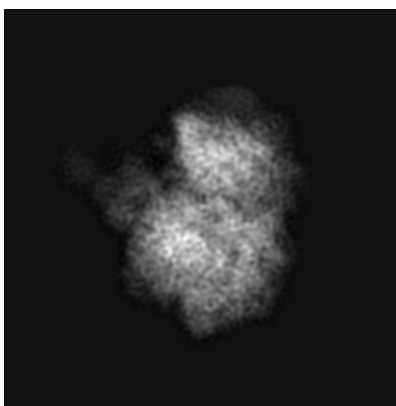
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

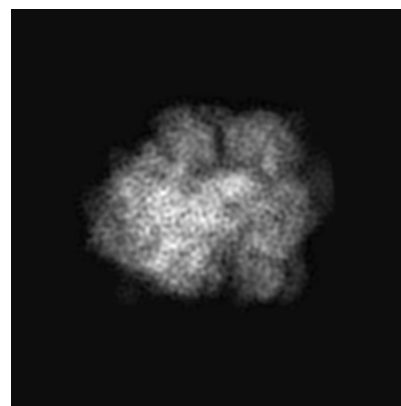
6.1.1 Primary map



X

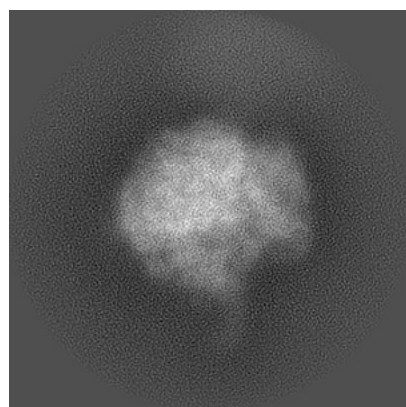


Y

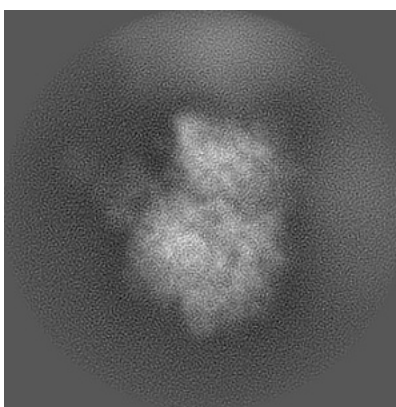


Z

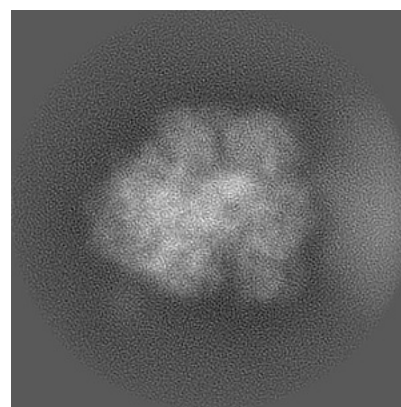
6.1.2 Raw map



X



Y

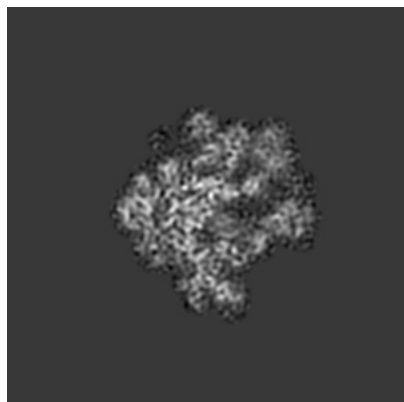


Z

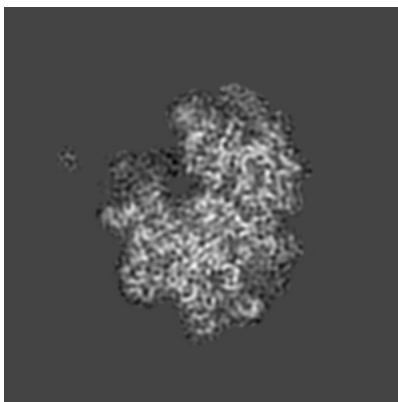
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

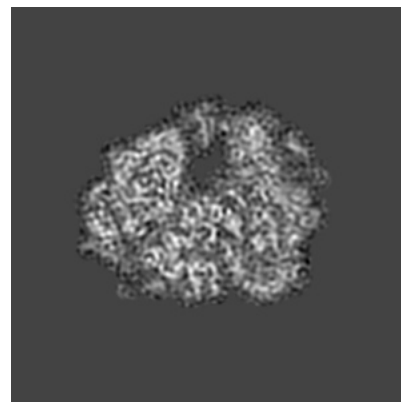
6.2.1 Primary map



X Index: 128

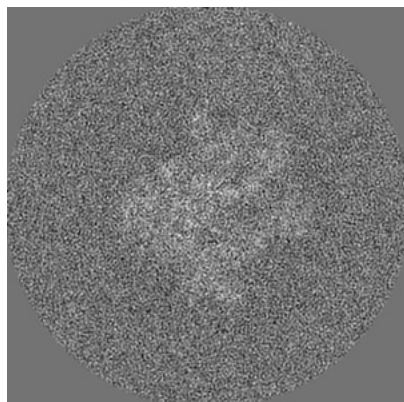


Y Index: 128

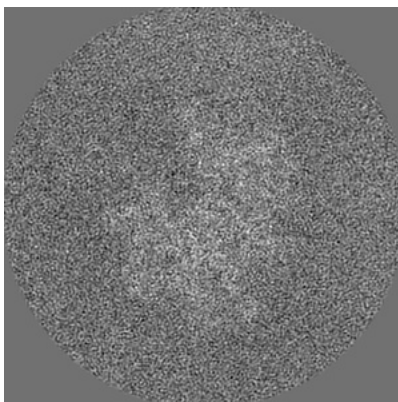


Z Index: 128

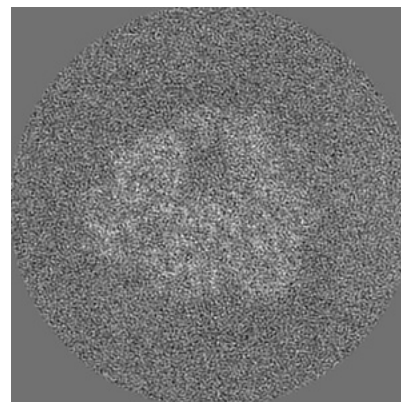
6.2.2 Raw map



X Index: 128



Y Index: 128

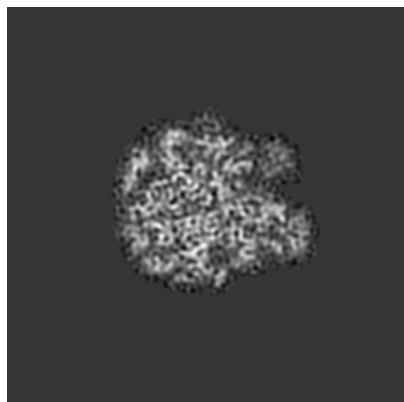


Z Index: 128

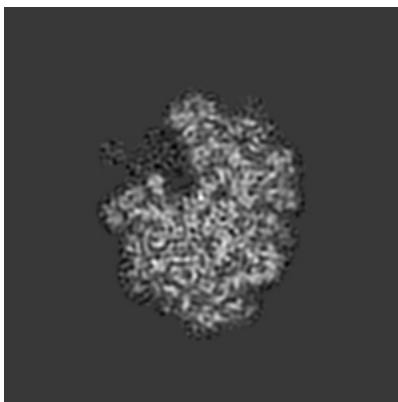
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

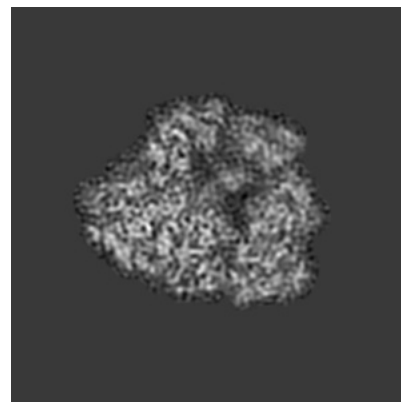
6.3.1 Primary map



X Index: 104

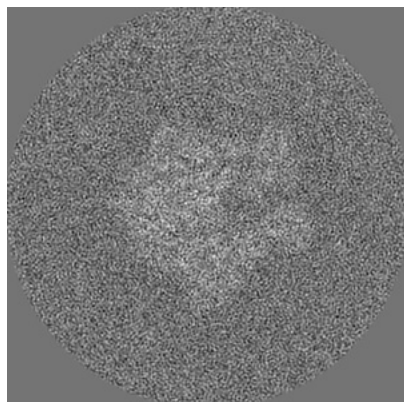


Y Index: 120

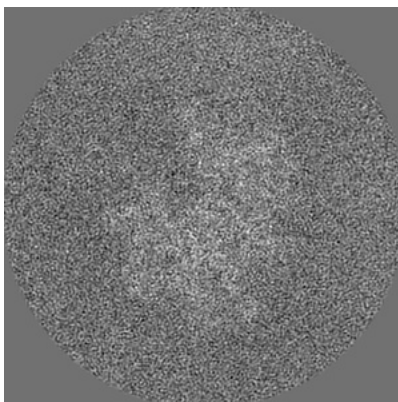


Z Index: 120

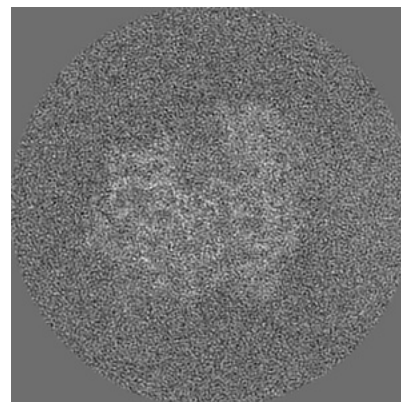
6.3.2 Raw map



X Index: 120



Y Index: 128

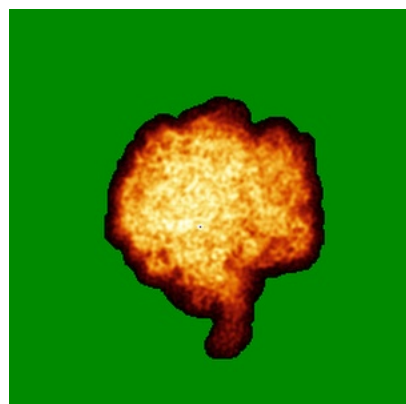


Z Index: 135

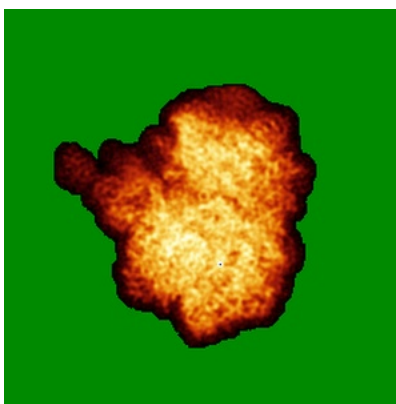
The images above show the largest variance slices of the map in three orthogonal directions.

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

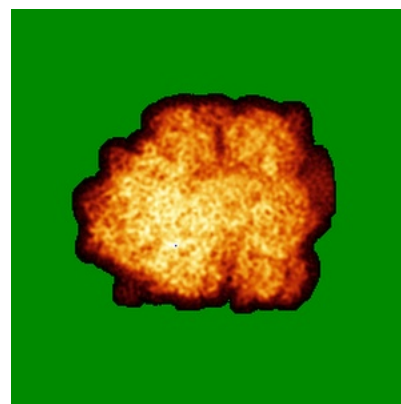
6.4.1 Primary map



X

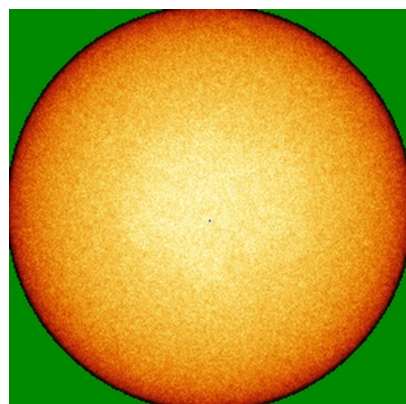


Y

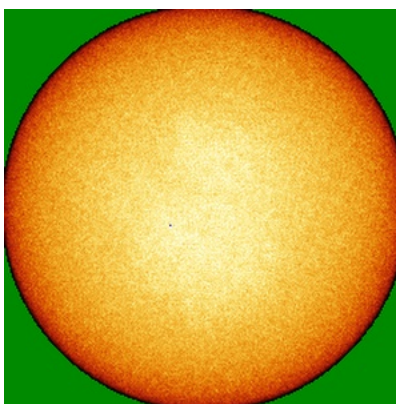


Z

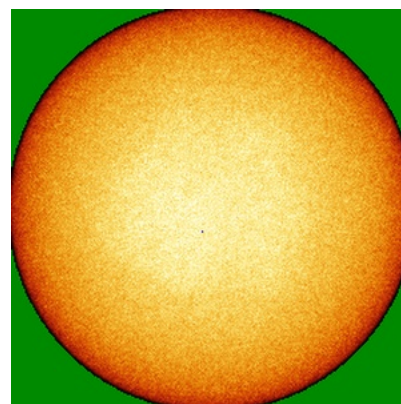
6.4.2 Raw map



X



Y



Z

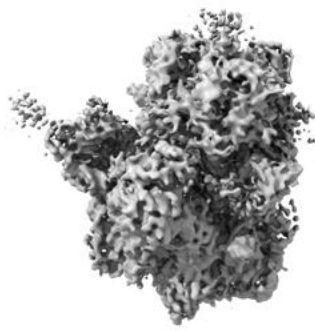
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



X



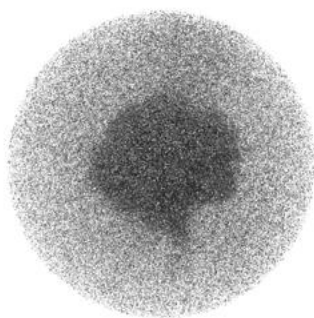
Y



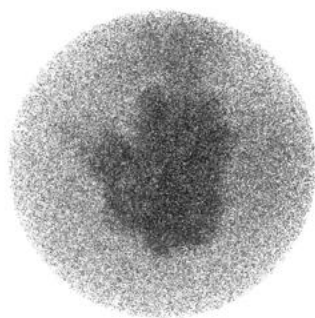
Z

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

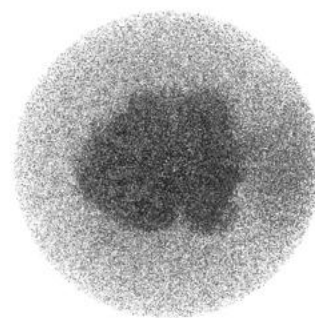
6.5.2 Raw map



X



Y



Z

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.

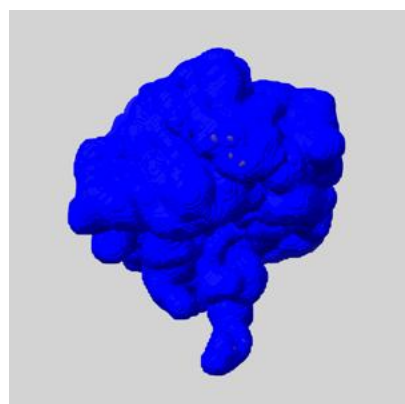
6.6 Mask visualisation [i](#)

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

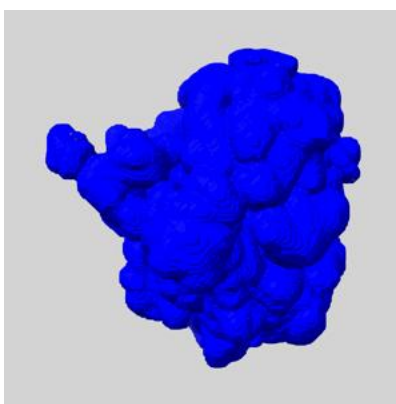
A mask typically either:

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

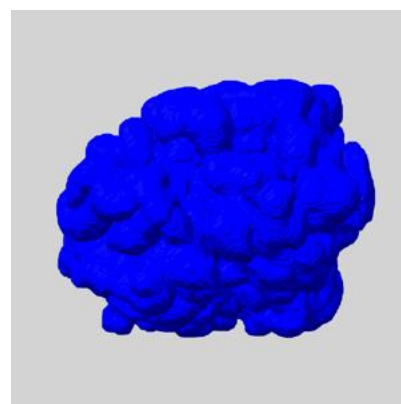
6.6.1 emd_13277_msk_1.map [i](#)



X



Y

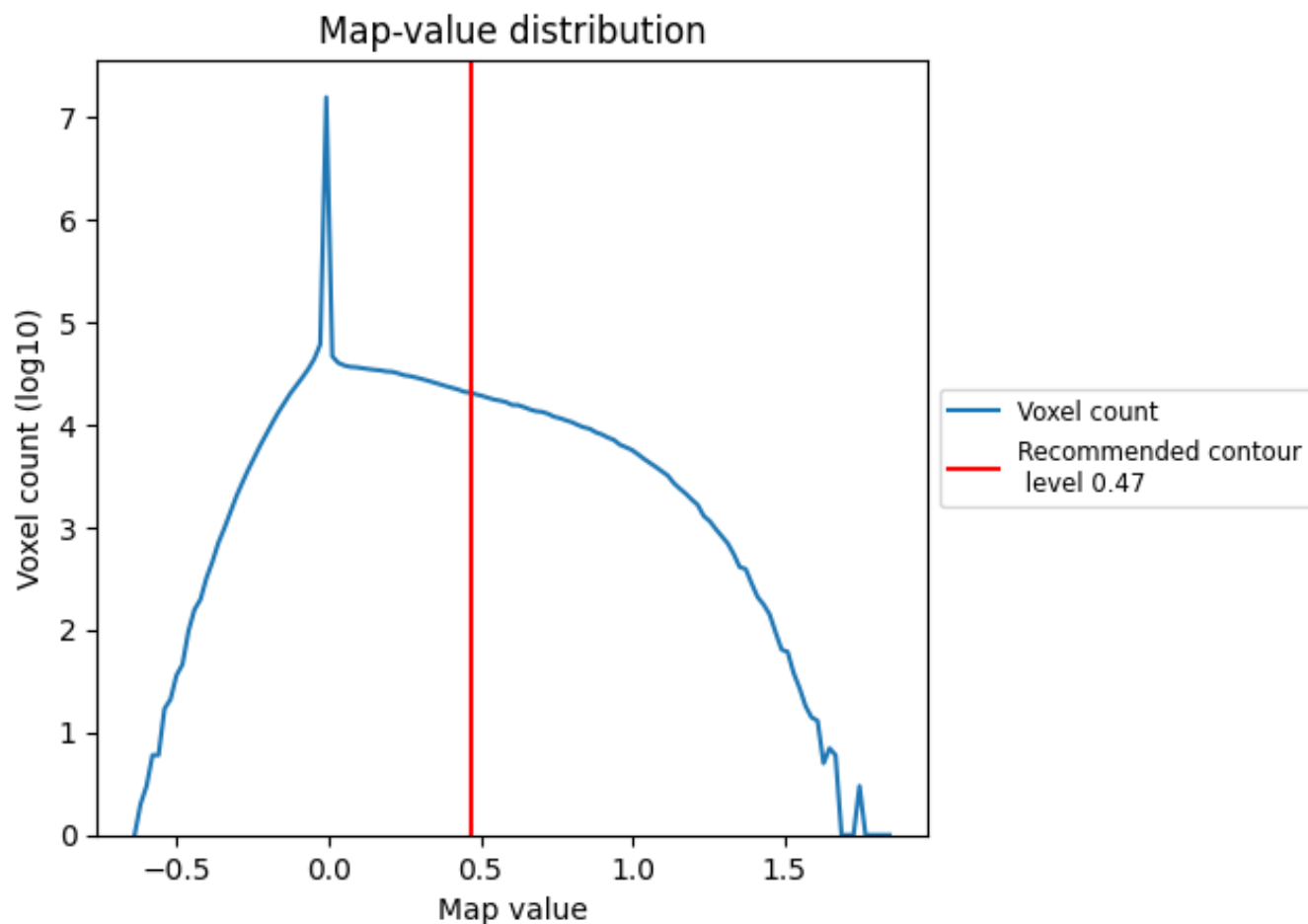


Z

7 Map analysis [i](#)

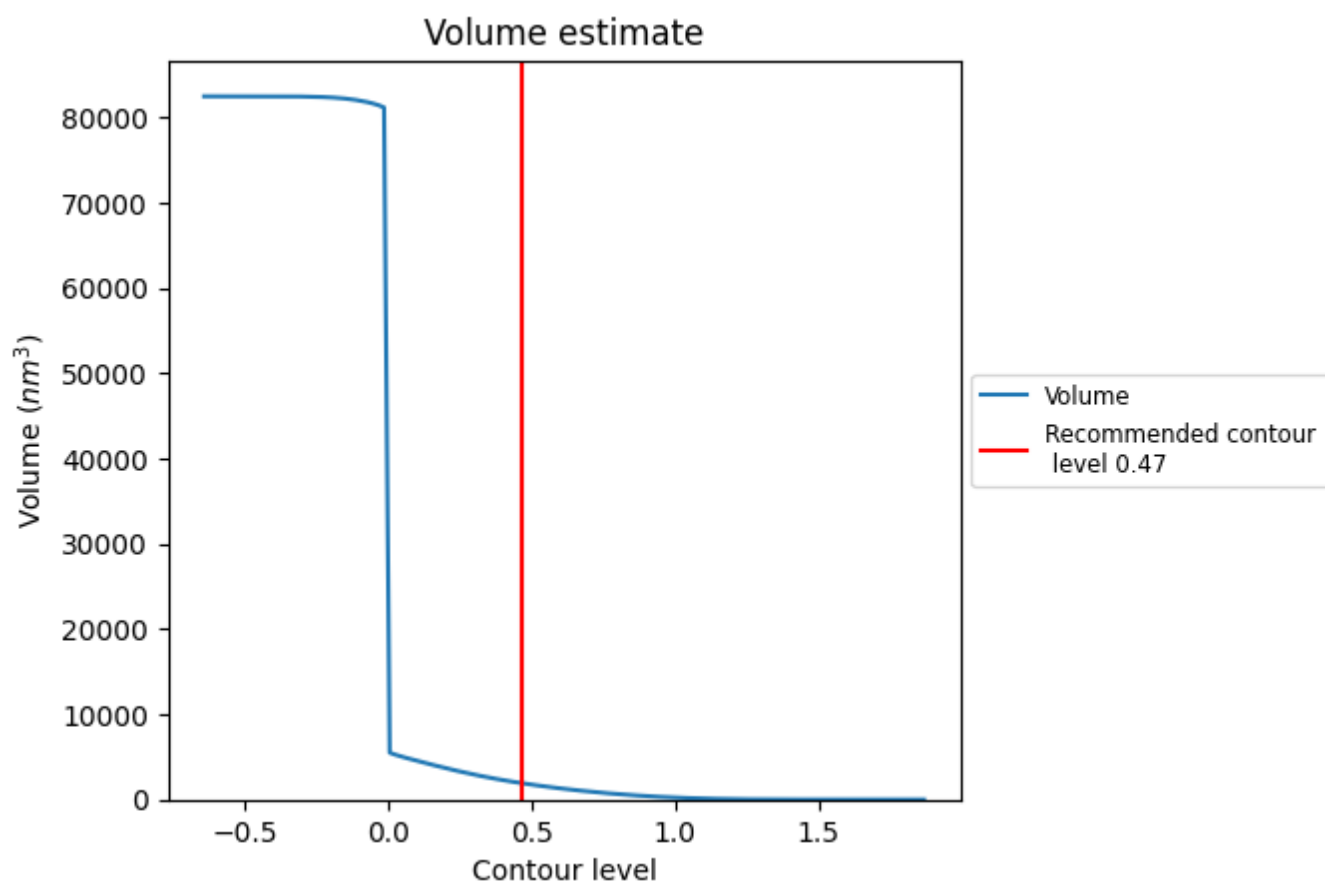
This section contains the results of statistical analysis of the map.

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.

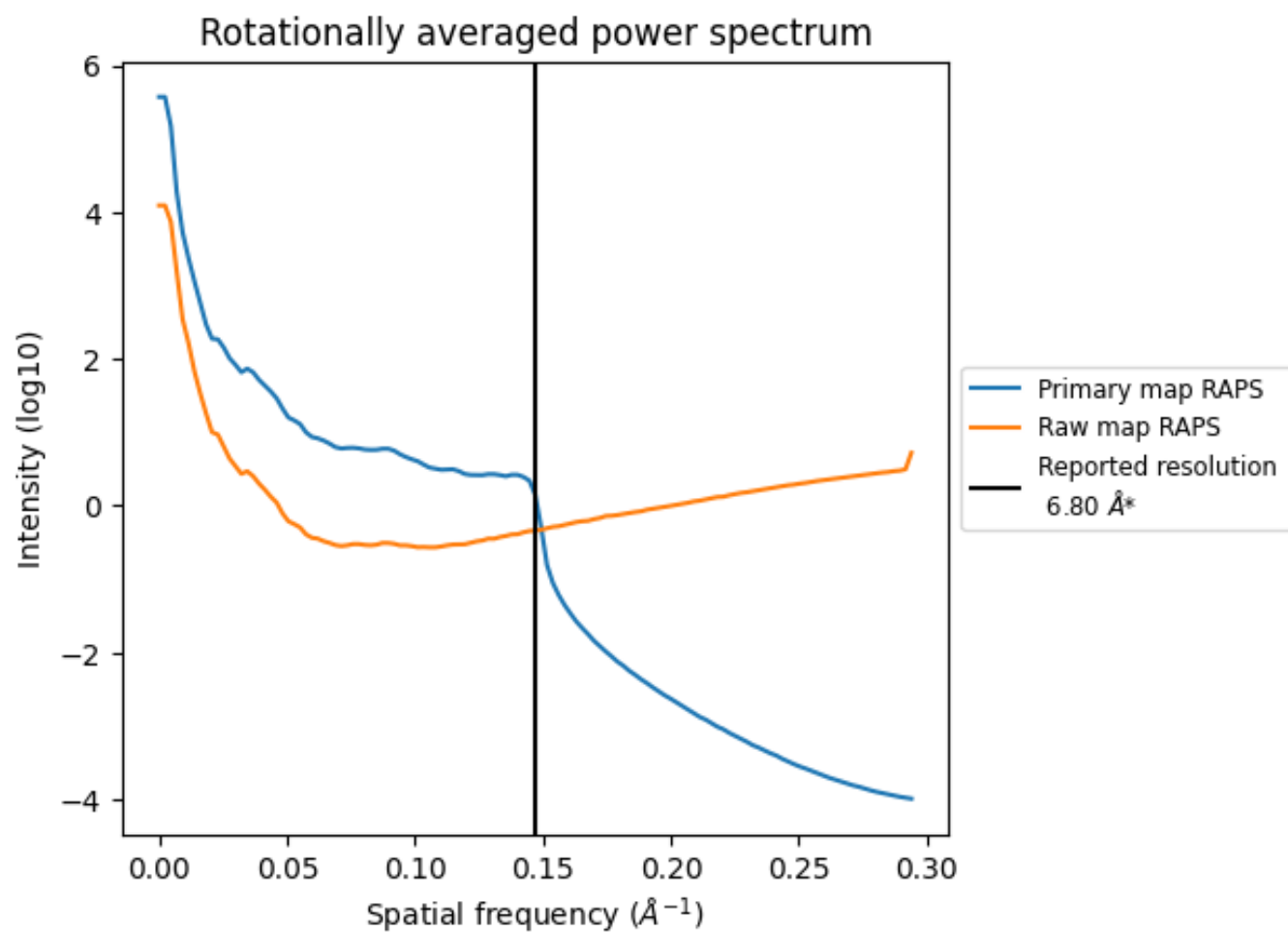
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1905 nm³; this corresponds to an approximate mass of 1721 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 ⓘ

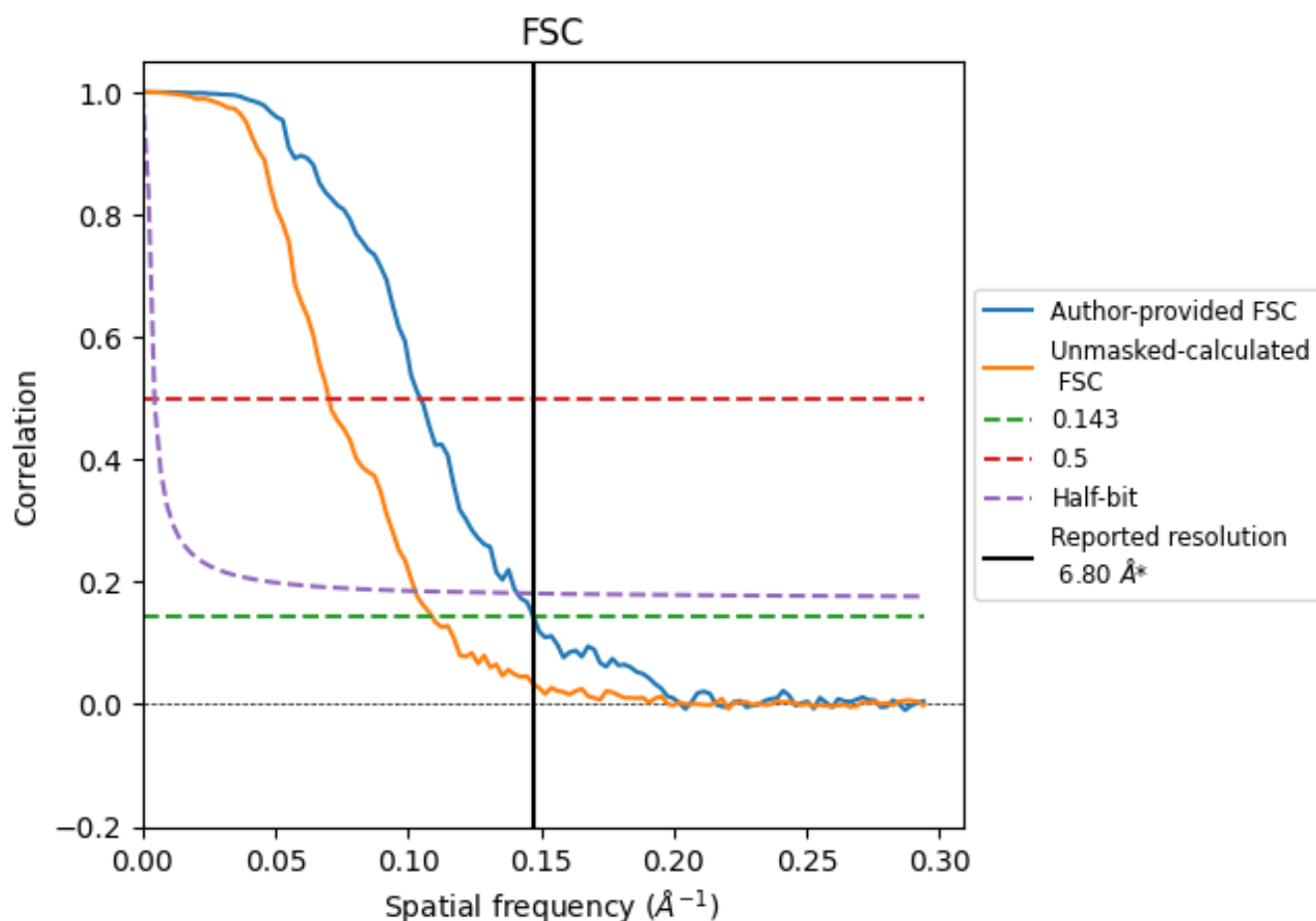


*Reported resolution corresponds to spatial frequency of 0.147 Å⁻¹

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 $0.147 \text{ \AA}^{-1}$

8.2 Resolution estimates [i](#)

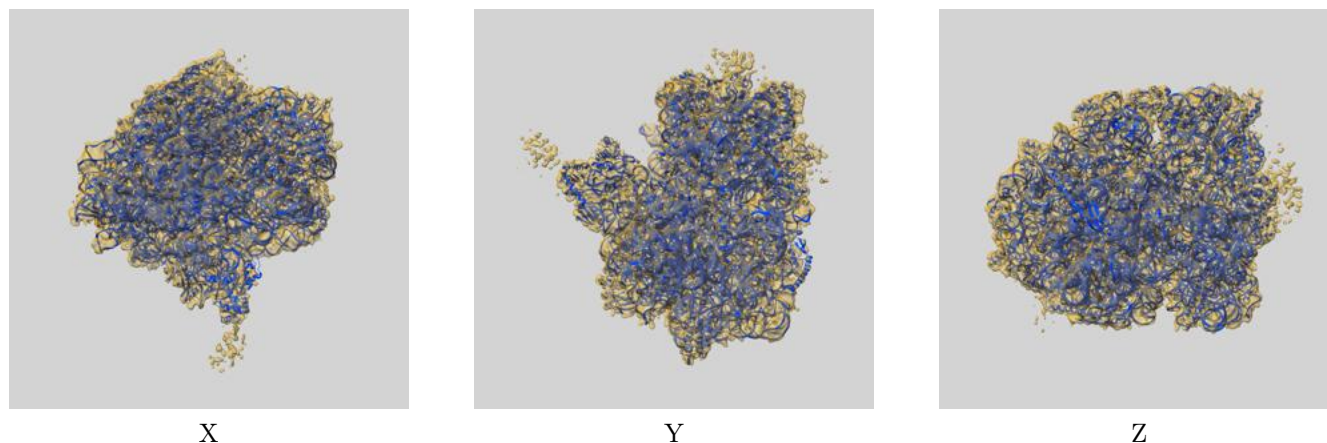
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	6.80	-	-
Author-provided FSC curve	6.79	9.57	7.09
Unmasked-calculated*	9.17	14.27	9.74

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 9.17 differs from the reported value 6.8 by more than 10 %

9 Map-model fit [i](#)

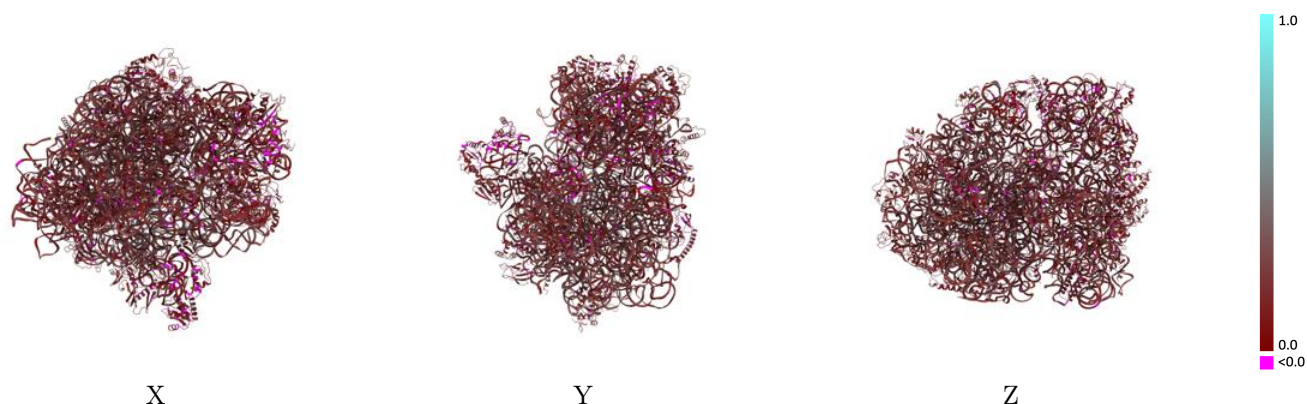
This section contains information regarding the fit between EMDB map EMD-13277 and PDB model 7PAM. Per-residue inclusion information can be found in [section 3](#) on [page 14](#).

9.1 Map-model overlay [i](#)



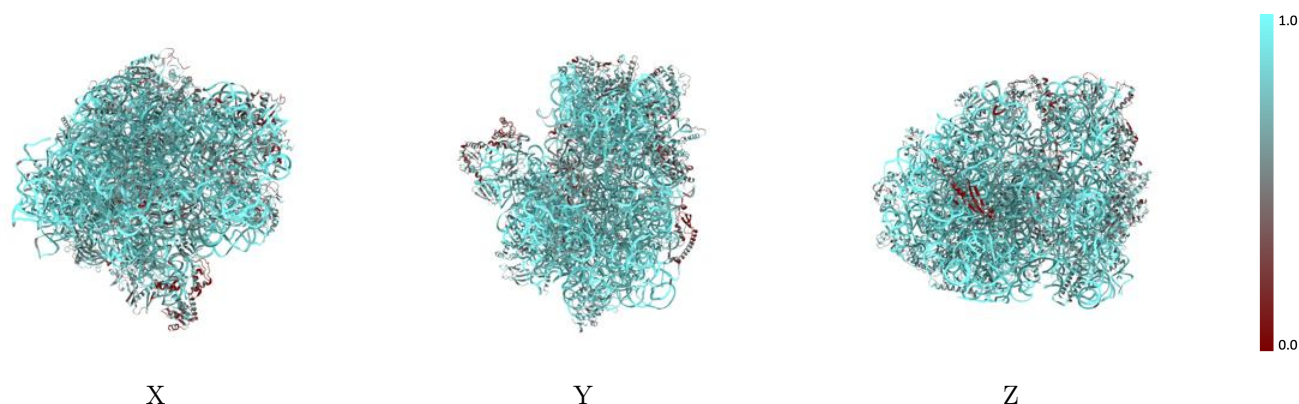
The images above show the 3D surface view of the map at the recommended contour level 0.47 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



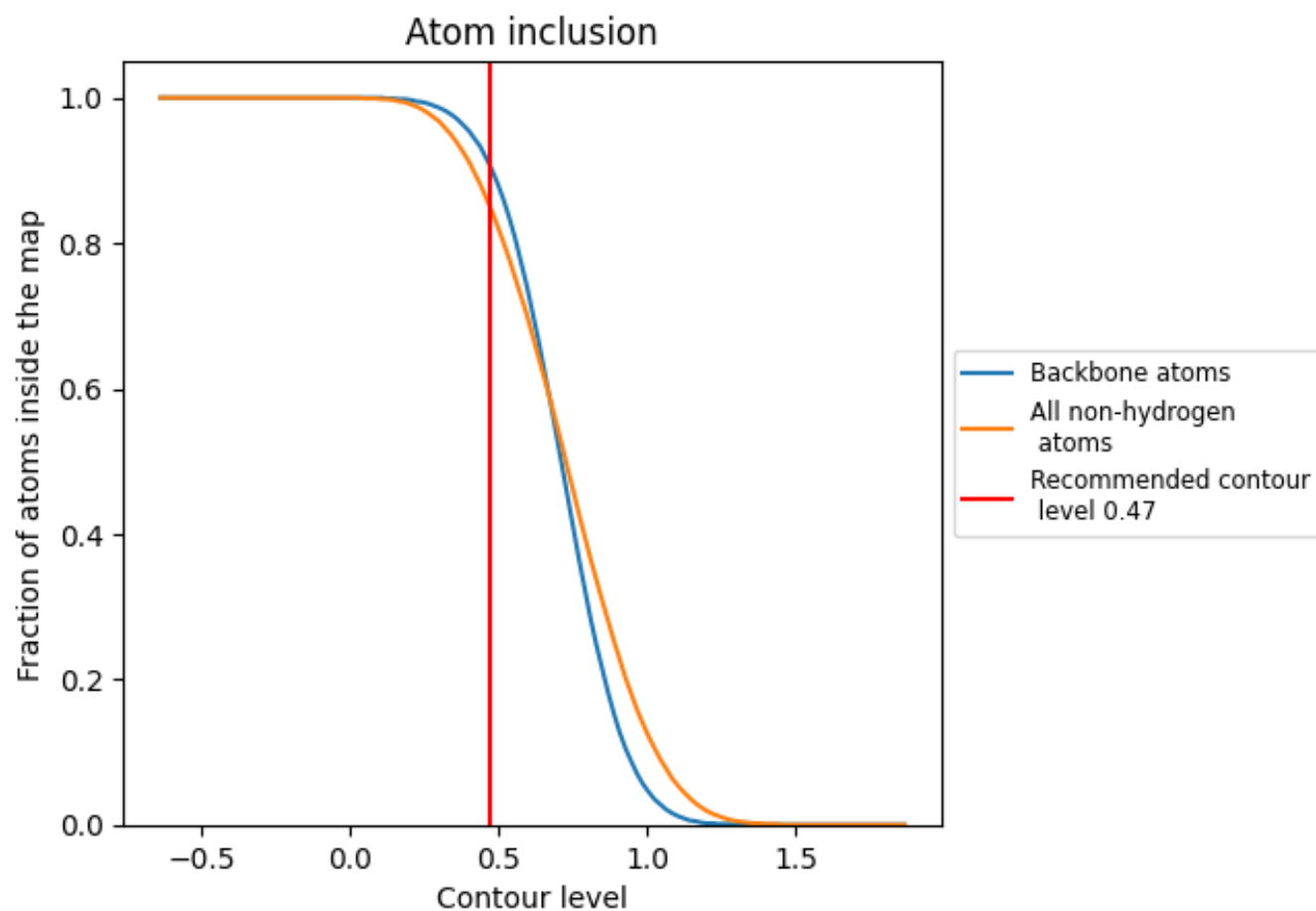
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



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

9.4 Atom inclusion [i](#)



At the recommended contour level, 91% of all backbone atoms, 85% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.47) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8500	 0.2070
0	 0.7780	 0.2020
1	 0.7360	 0.1820
2	 0.7740	 0.1920
3	 0.9510	 0.2250
4	 0.9400	 0.2230
5	 0.9430	 0.2100
6	 0.5790	 0.0940
8	 0.8780	 0.1940
A	 0.6320	 0.2010
B	 0.6220	 0.1920
C	 0.6310	 0.1730
D	 0.6790	 0.1900
E	 0.5970	 0.1960
F	 0.5620	 0.1730
G	 0.6620	 0.1780
H	 0.6080	 0.1660
I	 0.5900	 0.1650
J	 0.6780	 0.1820
K	 0.7140	 0.1950
L	 0.5620	 0.1710
M	 0.6860	 0.1500
N	 0.6370	 0.1840
O	 0.7680	 0.1960
P	 0.6930	 0.1740
Q	 0.6800	 0.1850
R	 0.5880	 0.1280
S	 0.7160	 0.1710
T	 0.6900	 0.1930
a	 0.7530	 0.1910
b	 0.6940	 0.1780
c	 0.7020	 0.2030
d	 0.6350	 0.1710
e	 0.6430	 0.2010
f	 0.2820	 0.1690



Continued on next page...

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Chain	Atom inclusion	Q-score
g	 0.4810	 0.1440
h	 0.3030	 0.1390
i	 0.7400	 0.1920
j	 0.6390	 0.1800
k	 0.7420	 0.1980
l	 0.7550	 0.2050
m	 0.7670	 0.1890
n	 0.7070	 0.2000
o	 0.6830	 0.2000
p	 0.7490	 0.1670
q	 0.7000	 0.1990
r	 0.7380	 0.2000
s	 0.7150	 0.2000
t	 0.5690	 0.1720
u	 0.6860	 0.1560
v	 0.7560	 0.1780
w	 0.6900	 0.2060
x	 0.5630	 0.1940
y	 0.7880	 0.2140
z	 0.7330	 0.1960