



Full wwPDB EM Validation Report ⓘ

Mar 9, 2026 – 02:10 PM UTC

PDB ID : 7PAI / pdb_00007pai
EMDB ID : EMD-13273
Title : 70S ribosome with P-site tRNA in Mycoplasma pneumoniae cells
Authors : Xue, L.; Lenz, S.; Rappsilber, J.; Mahamid, J.
Deposited on : 2021-07-30
Resolution : 6.70 Å (reported)
Based on initial models : 4V7C, 7OOD, 7OOC

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

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

A user guide is available at

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

The types of validation reports are described at

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

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

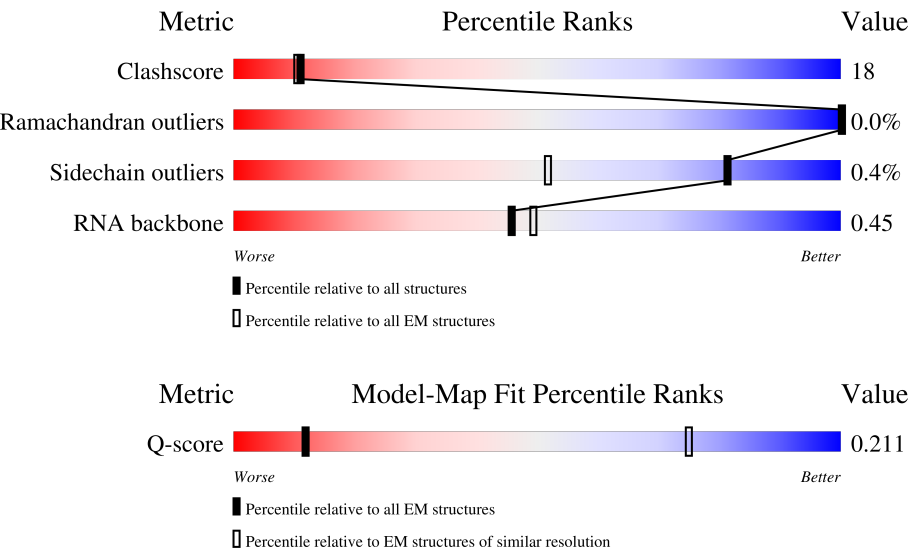
EMDB validation analysis : 0.0.1.dev132
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDb archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh &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

1 Overall quality at a glance i

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

The reported resolution of this entry is 6.70 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	523 (6.20 - 7.20)

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	7	76	

2 Entry composition

There are 53 unique types of molecules in this entry. The entry contains 144502 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		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		
			1396	899	247	250	0	0

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

Mol	Chain	Residues	Atoms				AltConf	Trace
29	f	145	Total	C	N	O	S	
			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	
			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	
			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	
			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	
			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		
			1153	731	226	196	0	0

- 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		

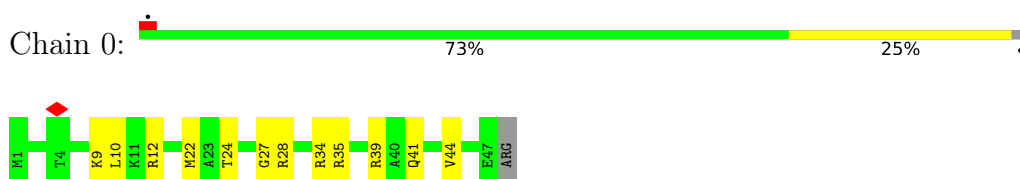
- Molecule 53 is a RNA chain called tRNA-Phe.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	7	76	Total	C	N	O	P	0	0
			1618	723	289	531	75		

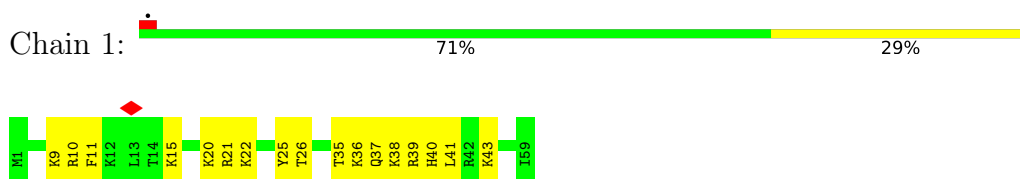
3 Residue-property plots

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

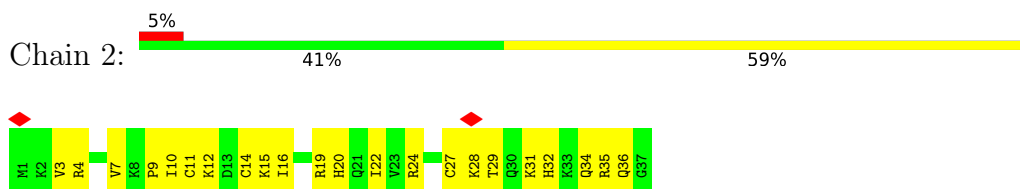
- Molecule 1: 50S ribosomal protein L34



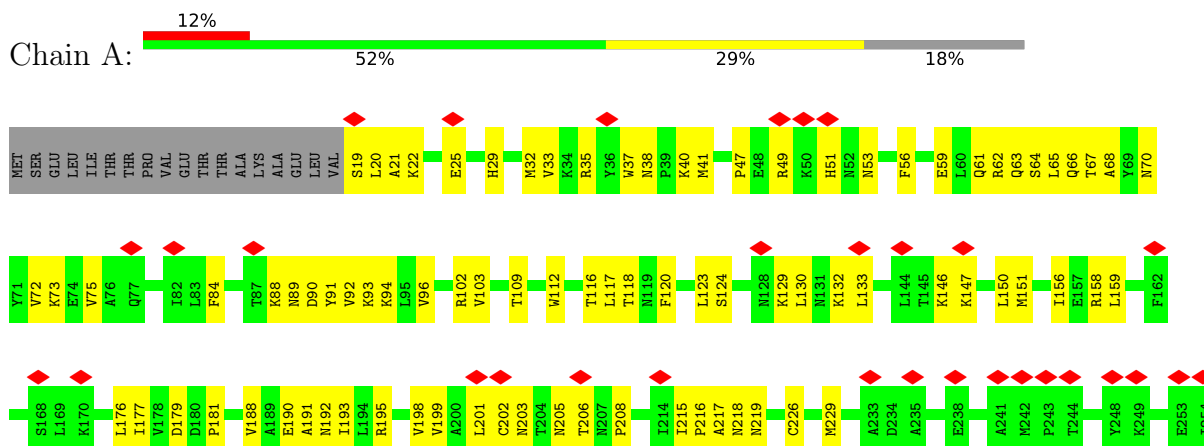
- Molecule 2: 50S ribosomal protein L35

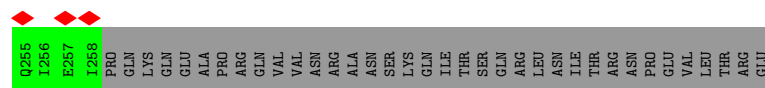


- Molecule 3: 50S ribosomal protein L36

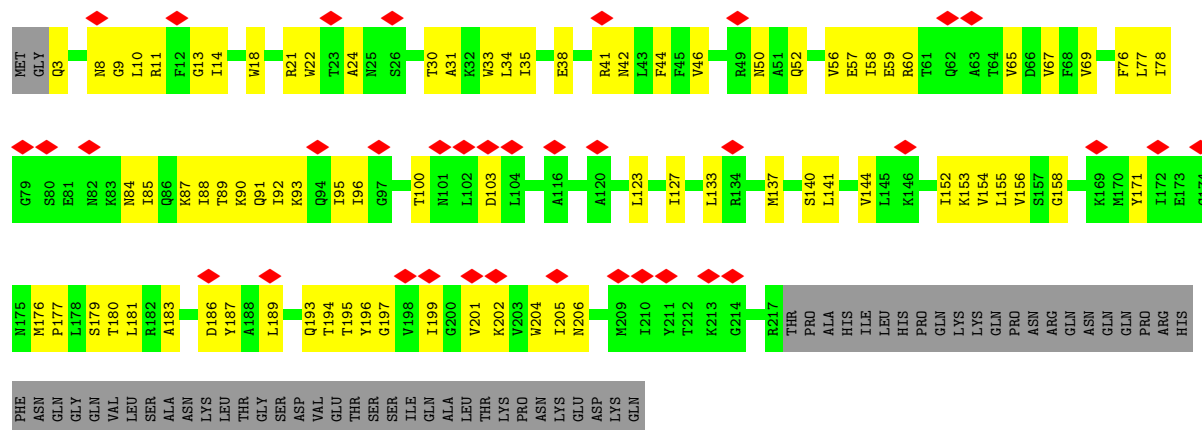


- Molecule 4: 30S ribosomal protein S2

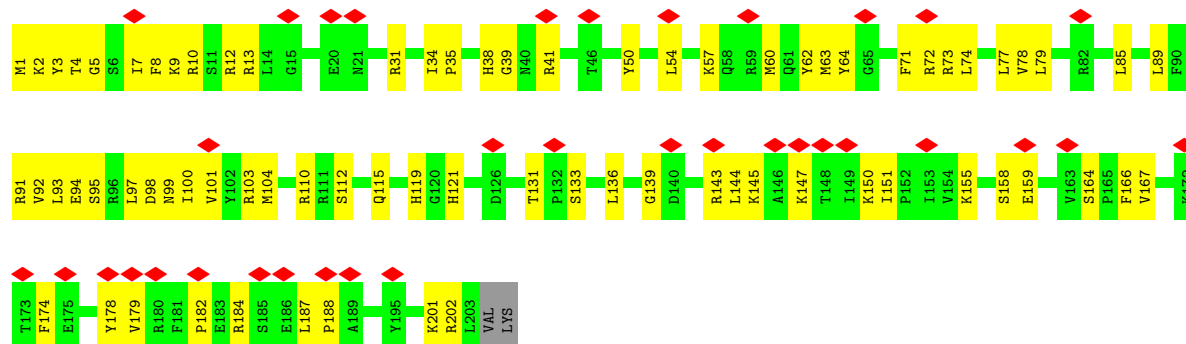




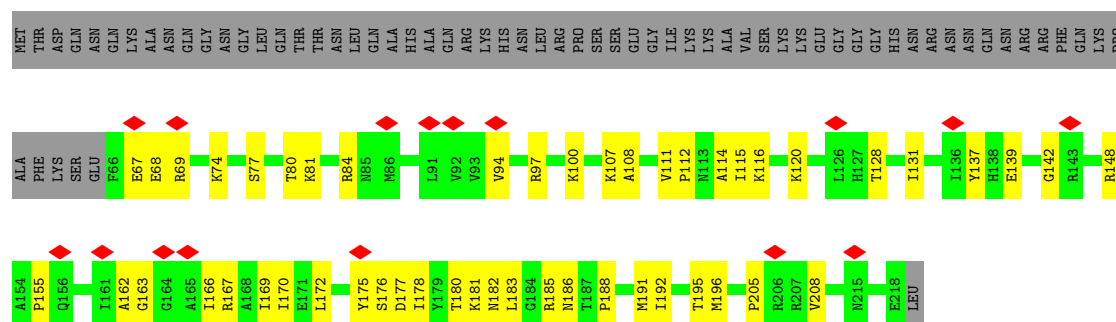
• Molecule 5: 30S ribosomal protein S3



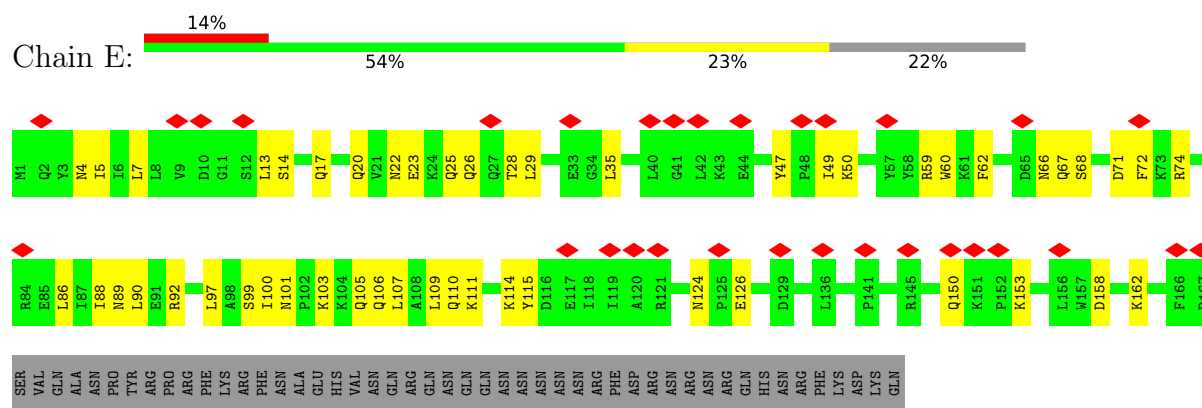
• Molecule 6: 30S ribosomal protein S4



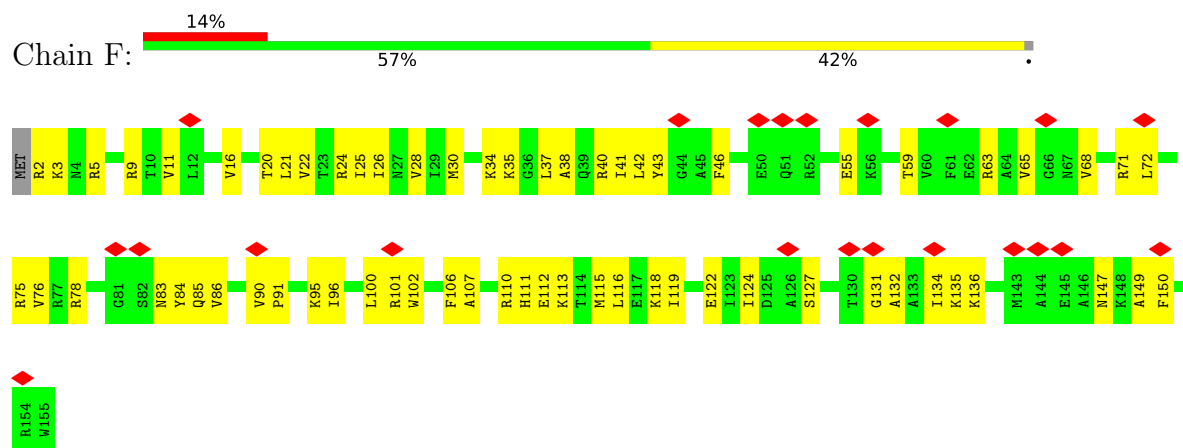
• Molecule 7: 30S ribosomal protein S5



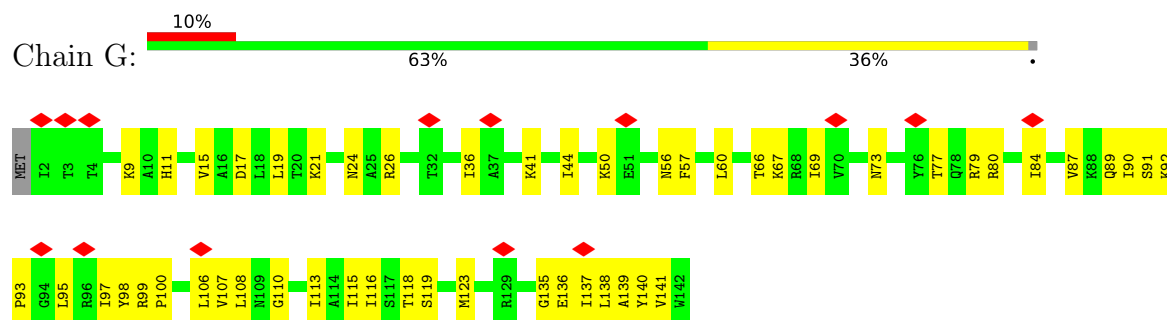
• Molecule 8: 30S ribosomal protein S6



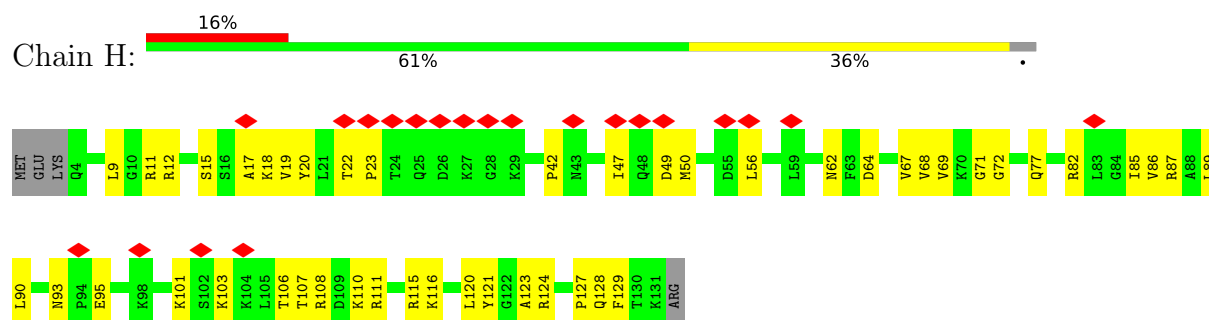
- Molecule 9: 30S ribosomal protein S7



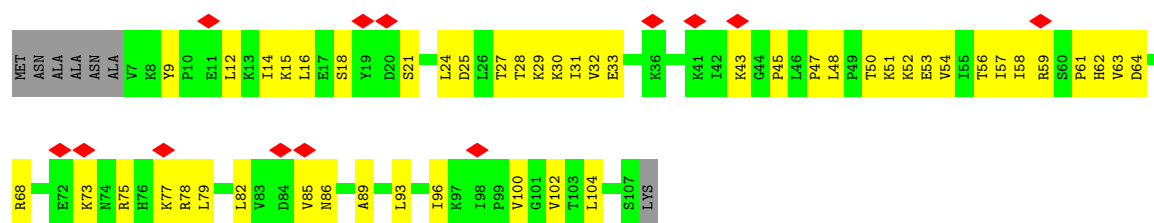
- Molecule 10: 30S ribosomal protein S8



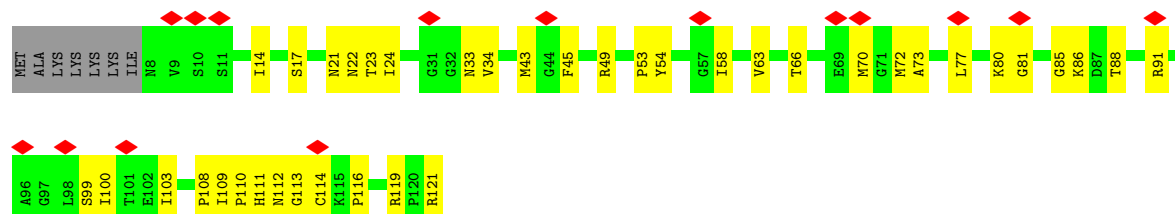
- Molecule 11: 30S ribosomal protein S9



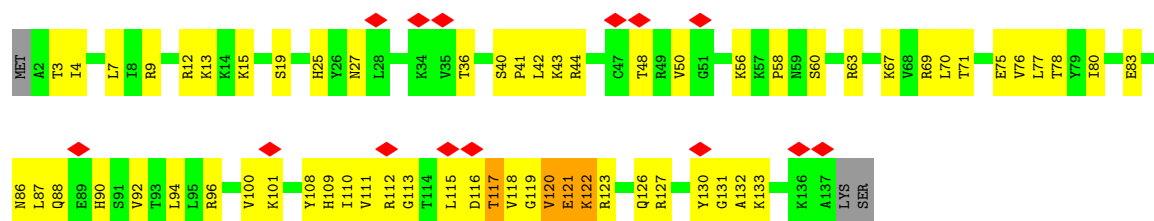
- Molecule 12: 30S ribosomal protein S10



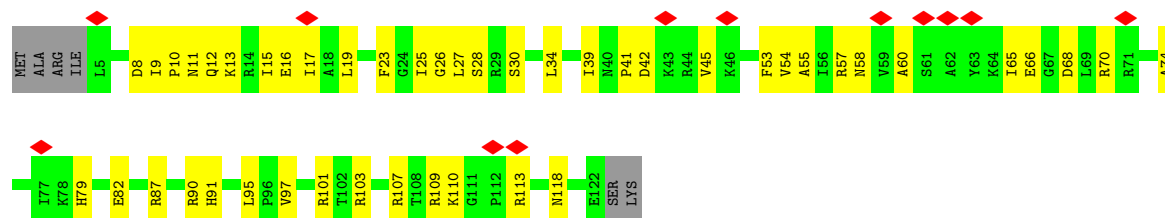
- Molecule 13: 30S ribosomal protein S11



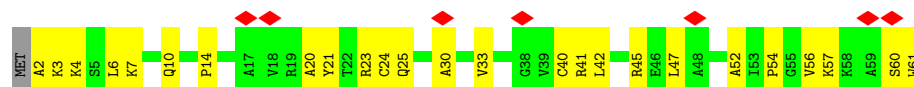
- Molecule 14: 30S ribosomal protein S12



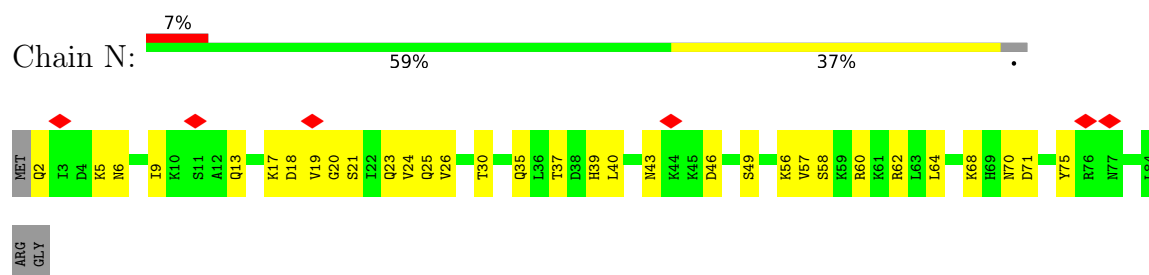
- Molecule 15: 30S ribosomal protein S13



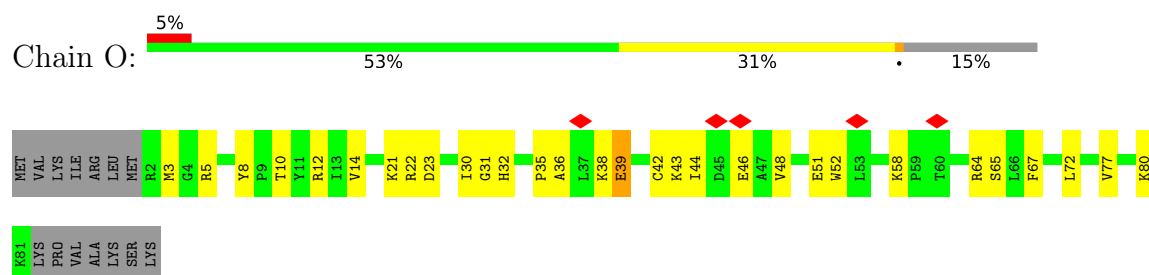
- Molecule 16: 30S ribosomal protein S14 type Z



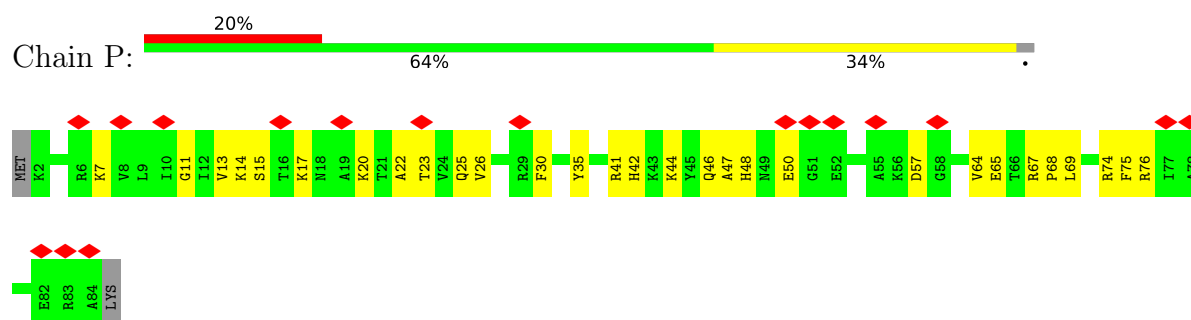
- Molecule 17: 30S ribosomal protein S15



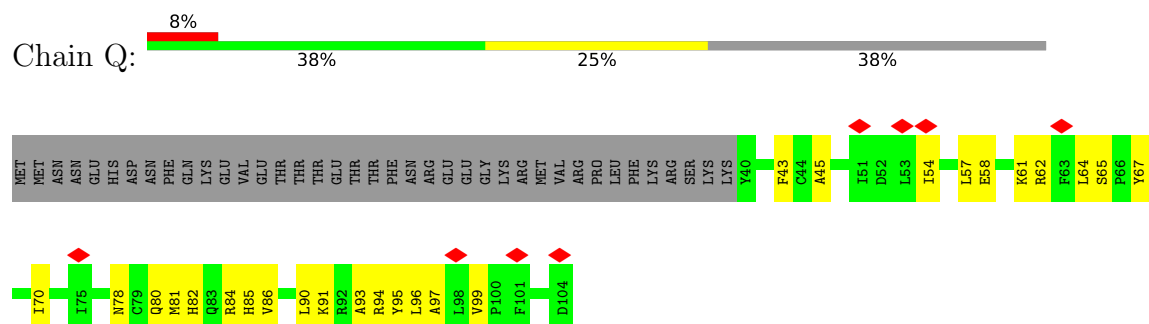
- Molecule 18: 30S ribosomal protein S16



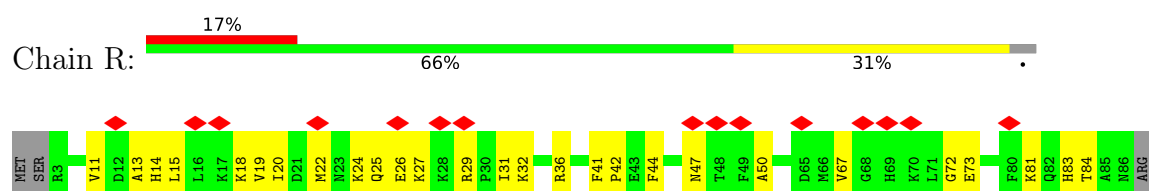
- Molecule 19: 30S ribosomal protein S17

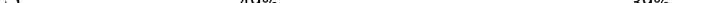


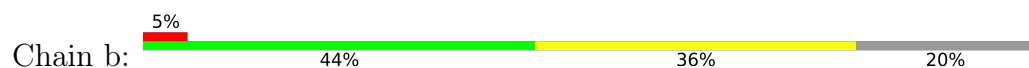
- Molecule 20: 30S ribosomal protein S18



- Molecule 21: 30S ribosomal protein S19



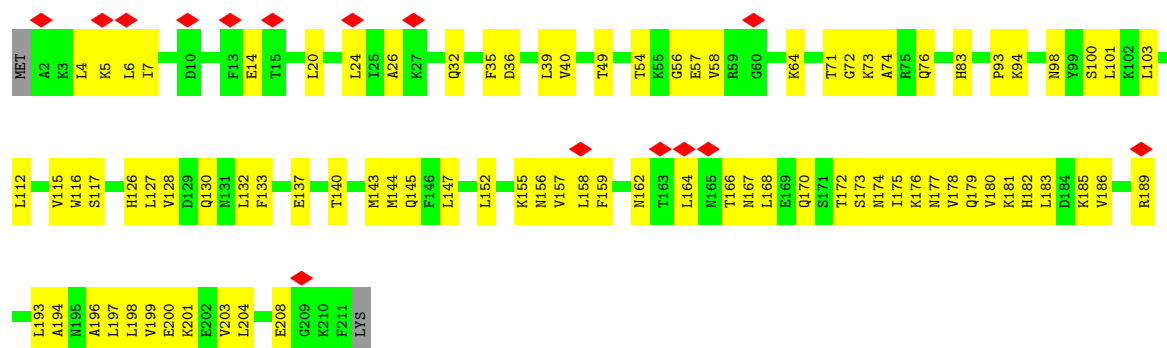
- Chain S:  49% 39% 11%



ALA
LYS
LEU
SER
LYS
LYS
LYS
GLN
ALA
LYS
GLU
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LYS
ALA
GLN
ALA
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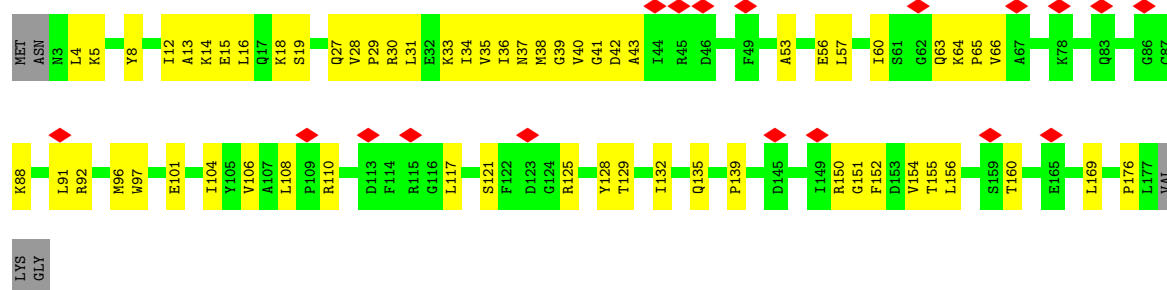
• Molecule 26: 50S ribosomal protein L4

Chain c: 



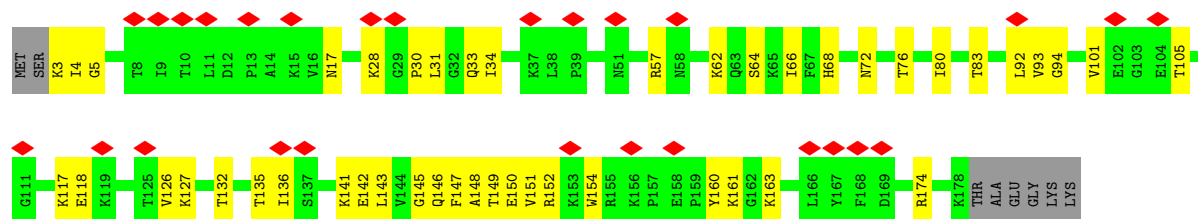
• Molecule 27: 50S ribosomal protein L5

Chain d: 



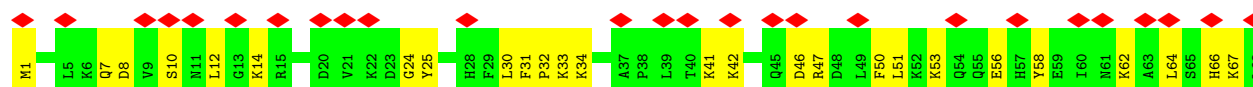
• Molecule 28: 50S ribosomal protein L6

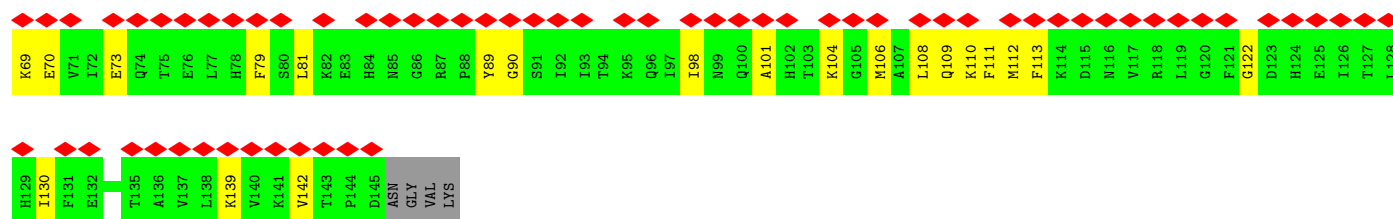
Chain e: 



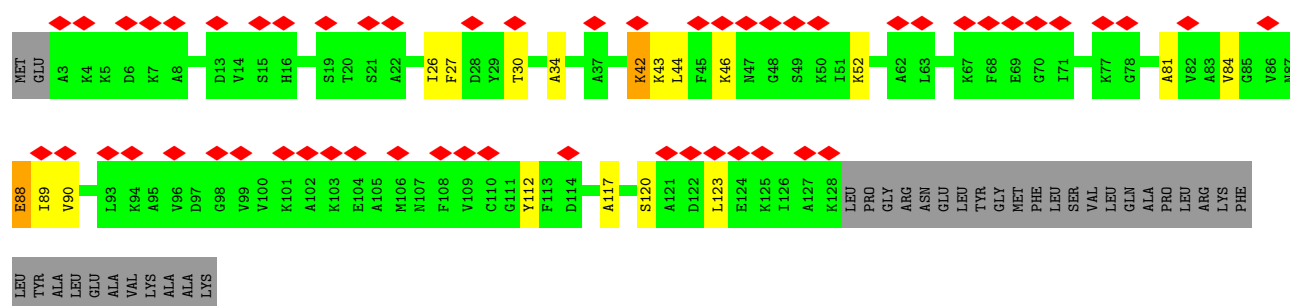
• Molecule 29: 50S ribosomal protein L9

Chain f: 

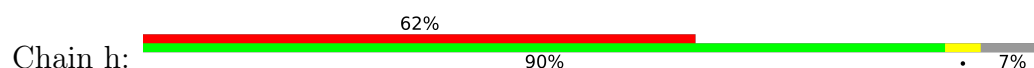




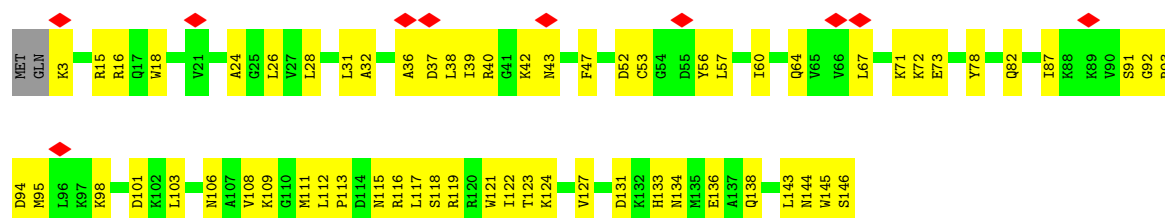
• Molecule 30: 50S ribosomal protein L10



• Molecule 31: 50S ribosomal protein L11

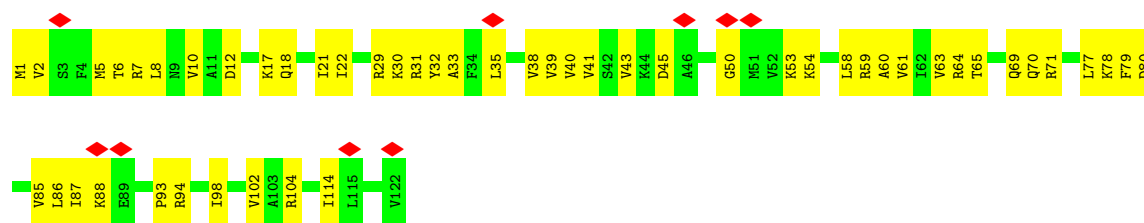


• Molecule 32: 50S ribosomal protein L13

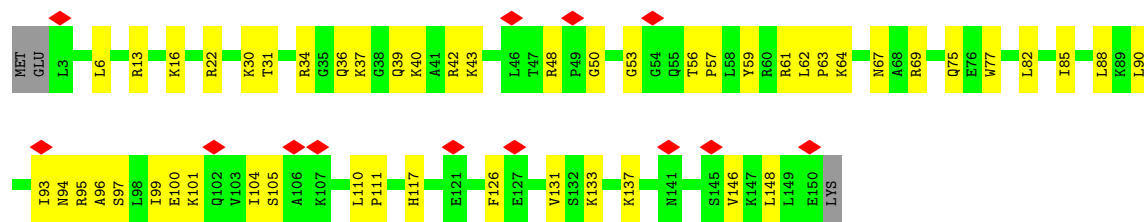


• Molecule 33: 50S ribosomal protein L14

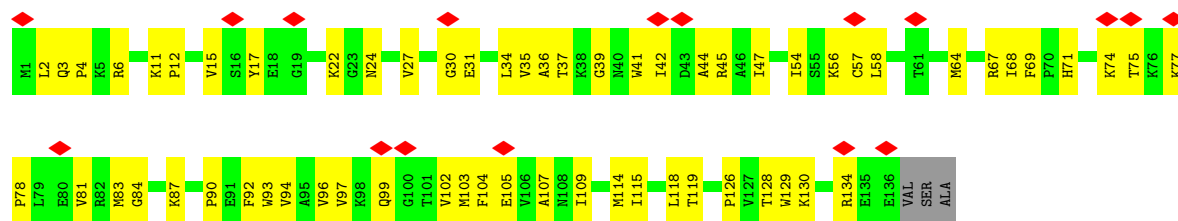




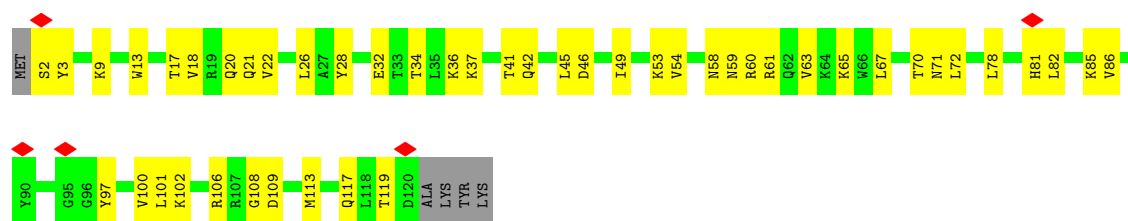
• Molecule 34: 50S ribosomal protein L15



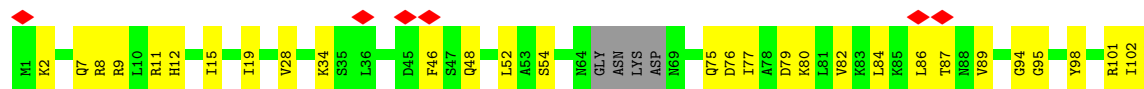
• Molecule 35: 50S ribosomal protein L16

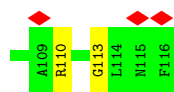


• Molecule 36: 50S ribosomal protein L17

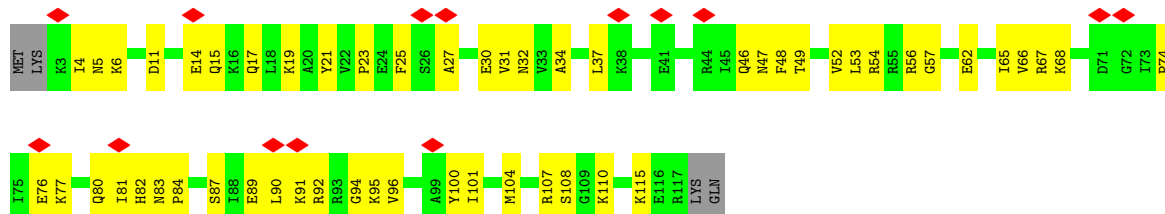


• Molecule 37: 50S ribosomal protein L18

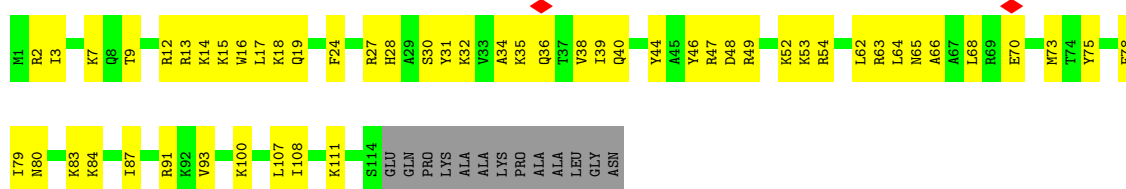




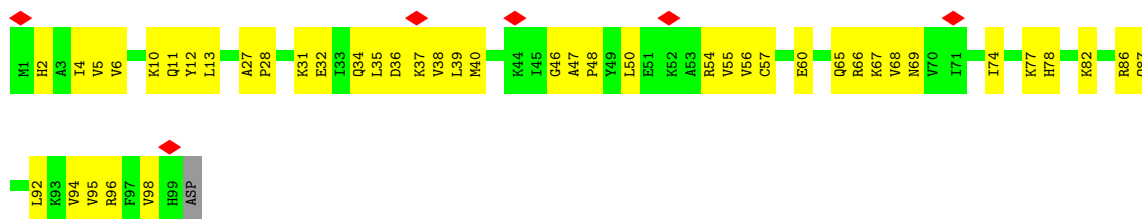
• Molecule 38: 50S ribosomal protein L19



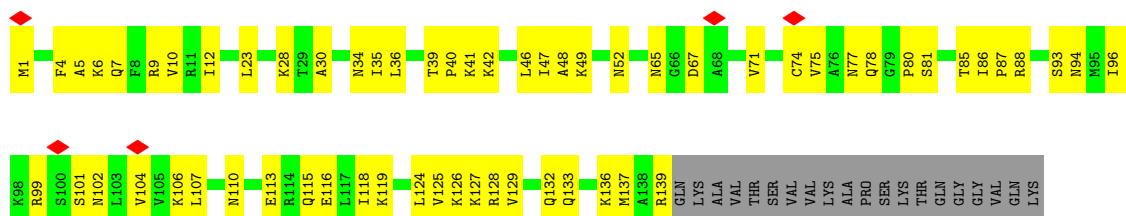
• Molecule 39: 50S ribosomal protein L20



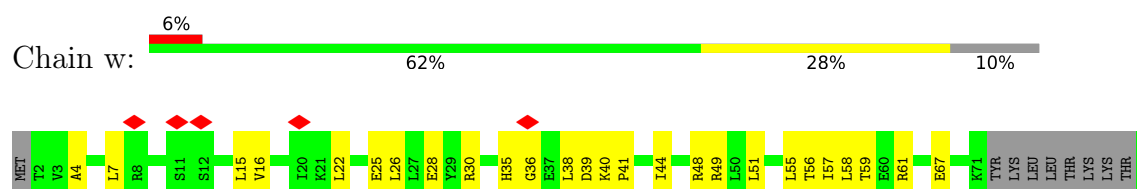
• Molecule 40: 50S ribosomal protein L21



• Molecule 41: 50S ribosomal protein L22

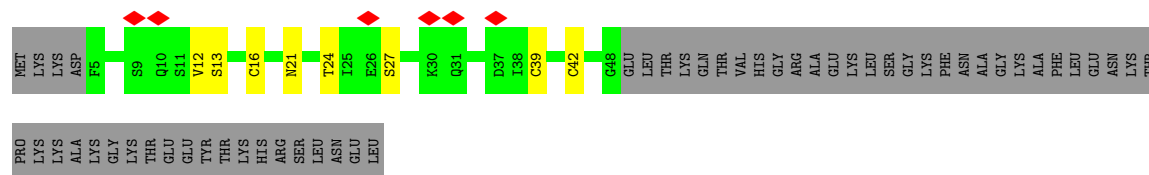
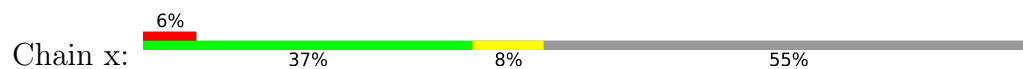


• Molecule 42: 50S ribosomal protein L23

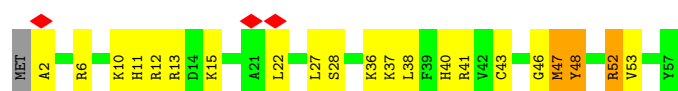




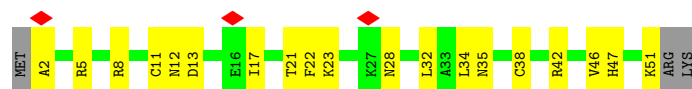
- Molecule 47: 50S ribosomal protein L31



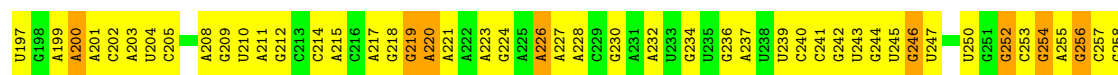
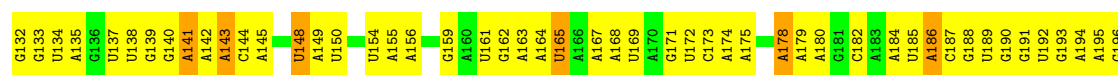
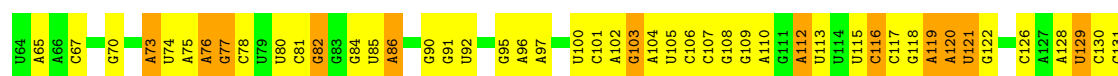
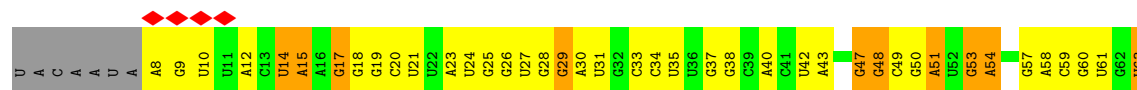
- Molecule 48: 50S ribosomal protein L32



- Molecule 49: 50S ribosomal protein L33 1



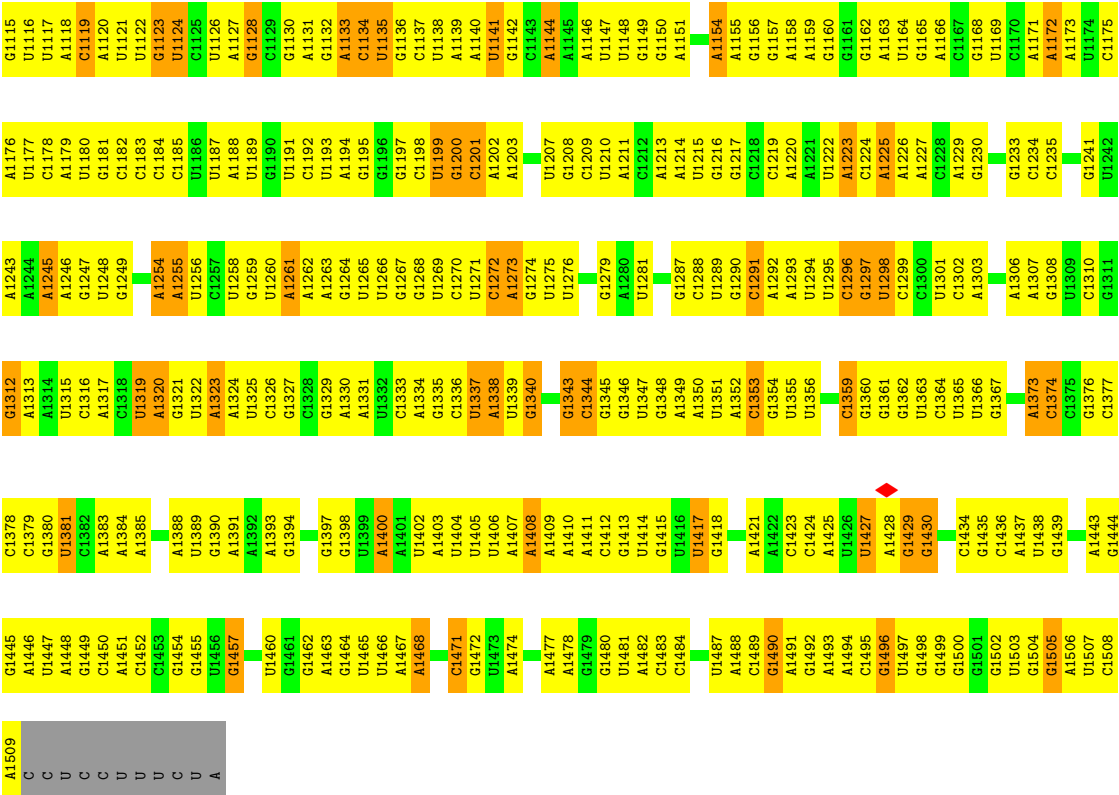
- Molecule 50: 23S ribosomal RNA



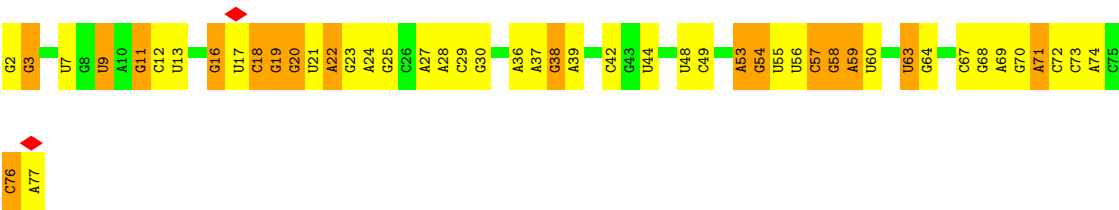
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U2113	C2114	U2115	C2116	G2117	U2118	U2119	U2120	U2121	U2122	A2123	A2124	U2125	A2126	U2127	U2128	U2129	A2130	U2131	G2132	A2133	G2134	C2135	U2136	U2137	C2138	U2139	U2140	U2141	U2142	U2143	C2144	U2145	A2146	U2147	U2148	U2149	C2150	G2151	U2152	C2153	C2154	U2155	U2156	A2157	C2158	U2159	U2160	G2161	U2162	U2163	U2164	A2165	U2166	G2167	U2168	U2169	A2170	U2171	U2172	U2173																						
G2174	G2175	G2176	A2177	U2178	U2179	U2180	U2181	U2182	U2183	U2184	C2185	U2186	U2187	U2188	U2189	G2190	G2191	U2192	U2193	U2194	U2195	U2196	U2197	U2198	U2199	U2200	G2201	U2202	A2206	G2211	U2212	A2213	A2214	U2219	U2220	U2221	C2222	C2223	A2224	C2229	U2230	A2231	G2232	A2233	C2234	U2235	U2236	U2237	U2238	U2239	A2241	U2242	G2243	U2244	G2245																											
G2246	G2247	G2248	G2249	G2250	U2253	G2254	U2255	C2256	U2257	G2258	G2259	G2260	G2261	G2262	G2263	G2264	G2265	G2266	G2267	G2268	G2269	G2270	A2271	A2272	A2273	A2274	A2275	A2276	A2277	G2278	G2279	U2280	A2281	G2285	G2286	G2287	G2288	G2289	U2290	U2291	A2292	C2293	A2294	U2295	A2296	G2297	U2298	U2299	A2300	C2301	A2302	U2303	U2304	C2305	A2306	G2307	G2311	G2312	U2313	U2314	U2315																					

G1045	A1046	U1047	G1048	U1051	G1052	U1053	C1054	G1055	U1056	C1057	A1058	U1061	C1062	G1063	U1064	G1065	U1066	C1067	G1068	A1071	G988	C999	A1000	U1074	G1075	U1076	G1077	G1085	U1086	C1087	U1088	C1089	G1090	C1091	A1092	U1093	C1094	G1095	A1096	G1097	C1098	U1099	G1100	A1101	C1102	C1103	U1106	U1107	A1108	U1109	C1110	G1111	U1112	U1113	A1114																																																																																																																																																																																																	
G958	U963	A964	A965	A966	A967	A970	A971	A972	C974	U977	A978	C979	G980	U981	A982	G983	A984	U987	G988	G920	G921	G922	G923	A1001	U1075	G1002	G1003	A1010	A1011	A1012	C1013	A1014	U1015	A1016	U1017	U1018	G1019	A	G	A	G	U	U	A	C1028	U1031	G1032	U1033	U1034	A1035	G1036	U1037	G1038	U1039	U1040																																																																																																																																																																																																	
A818	G819	A820	U821	A822	C823	U824	A825	A826	G829	U830	C831	G832	U833	G834	C835	A836	C837	A838	U839	C842	C843	U844	C845	G846	U847	U848	A849	C850	U851	A858	C859	U860	A861	C862	U863	U864	U865	A866	A867	A870	U871	C872	C874	G875	G879	G880	U881	G882	U883	G884	U885	C887																																																																																																																																																																																																				
A888	C893	A894	A895	U899	G900	A901	U905	C906	A907	A908	A909	C910	G911	G912	U913	A914	U915	C919	G920	G921	G922	G923	A1001	U1075	G1002	G1003	A1010	A1011	A1012	C1013	A1014	U1015	A1016	U1017	U1018	G1019	A	G	A	G	U	U	A	C1028	U1031	G1032	U1033	U1034	A1035	G1036	U1037	G1038	U1039	U1040																																																																																																																																																																																																		
A738	G739	G740	C741	C742	U743	U744	U745	U746	C747	U748	U749	A750	C751	G752	C753	A763	C764	A765	G766	U767	G768	G773	A774	G775	U778	A779	U780	G781	U782	U786	U789	U790	A791	C792	C793	A796	G797	U798	A799	C802	A806	C807	C808	G809	U810	U811	A812	A813	C814	G815																																																																																																																																																																																																						
A604	A605	A606	A607	G608	C609	C610	A611	G612	C613	U614	G615	C616	U617	A618	C619	A620	C621	A622	C623	U624	A628	C629	G630	C631	A632	U633	U634	A638	C639	C640	U641	A642	U643	U644	A645	A646	U649	A650	C651	A652	C653	U654	G655	U656	G657	C658	U659	A660	G661	C662	C663	A664	G665	U669	G670																																																																																																																																																																																																	
G538	G539	U540	C541	C542	A544	A545	G546	C547	U548	U549	A550	A551	U552	C553	C554	G555	G556	A557	U558	U559	A560	A561	U562	C563	G564	G565	U569	A570	A571	C572	G573	A574	A575	A576	G577	C578	G579	G585	G586	A587	U588	U589	G590	A591	A592	A593	A594	G595	U596	G597	C598	U599	G600	U601	G602	U603																																																																																																																																																																																																
U604	A605	A606	A607	G608	C609	C610	A611	G612	C613	U614	G615	C616	U617	A618	C619	A620	C621	A622	C623	U624	A628	C629	G630	C631	A632	U633	U634	A638	C639	C640	U641	A642	U643	U644	A645	A646	U649	A650	C651	A652	C653	U654	G655	U656	G657	C658	U659	A660	G661	C662	C663	A664	G665	U669	G670																																																																																																																																																																																																	
G671	A672	A673	U674	U675	U676	U677	A678	U679	U680	U681	U682	U683	A684	G685	C686	G687	U688	U689	G697	U698	A699	G700	U701	U702	A703	U704	A705	U706	G707	A708	U709	G710	G711	A712	A713	C714	A715	C716	A717	A718	G719	U720	G721	G724	A725	A726	G727	G728	C729	G730	A731	U732	A733	A734	C735	U736	U737																																																																																																																																																																																															
A738	G739	G740	C741	C742	U743	U744	U745	U746	C747	U748	U749	A750	C751	G752	C753	A763	C764	A765	G766	U767	G768	G773	A774	G775	U778	A779	U780	G781	U782	U786	U789	U790	A791	C792	C793	A796	G797	U798	A799	C802	A806	C807	C808	G809	U810	U811	A812	A813	C814	G815																																																																																																																																																																																																						
A818	G819	A820	U821	A822	C823	U824	A825	A826	G829	U830	C831	G832	U833	G834	C835	A836	C837	A838	U839	C842	C843	U844	C845	G846	U847	U848	A849	C850	U851	A858	C859	U860	A861	C862	U863	U864	U865	A866	A867	A870	U871	C872	C874	G875	G879	G880	U881	G882	U883	G884	U885	C887																																																																																																																																																																																																				
A888	C893	A894	A895	U899	G900	A901	U905	C906	A907	A908	A909	C910	G911	G912	U913	A914	U915	C919	G920	G921	G922	G923	A1001	U1075	G1002	G1003	A1010	A1011	A1012	C1013	A1014	U1015	A1016	U1017	U1018	G1019	A	G	A	G	U	U	A	C1028	U1031	G1032	U1033	U1034	A1035	G1036	U1037	G1038	U1039	U1040																																																																																																																																																																																																		
A866	U867	A868	A869	A870	A871	A872	A873	A874	A875	A876	A877	A878	A879	A880	A881	A882	A883	A884	A885	A886	A887	A888	A889	A890	A891	A892	A893	A894	A895	A896	A897	A898	A899	A900	A901	A902	A903	A904	A905	A906	A907	A908	A909	A910	A911	A912	A913	A914	A915	A916	A917	A918	A919	A920	A921	A922	A923	A924	A925	A926	A927	A928	A929	A930	A931	A932	A933	A934	A935	A936	A937	A938	A939	A940	A941	A942	A943	A944	A945	A946	A947	A948	A949	A950	A951	A952	A953	A954	A955	A956	A957	A958	A959	A960	A961	A962	A963	A964	A965	A966	A967	A968	A969	A970	A971	A972	A973	A974	A975	A976	A977	A978	A979	A980	A981	A982	A983	A984	A985	A986	A987	A988	A989	A990	A991	A992	A993	A994	A995	A996	A997	A998	A999	A1000	A1001	A1002	A1003	A1004	A1005	A1006	A1007	A1008	A1009	A1010	A1011	A1012	A1013	A1014	A1015	A1016	A1017	A1018	A1019	A1020	A1021	A1022	A1023	A1024	A1025	A1026	A1027	A1028	A1029	A1030	A1031	A1032	A1033	A1034	A1035	A1036	A1037	A1038	A1039	A1040	A1041	A1042	A1043	A1044	A1045	A1046	A1047	A1048	A1049	A1050	A1051	A1052	A1053	A1054	A1055	A1056	A1057	A1058	A1059	A1060	A1061	A1062	A1063	A1064	A1065	A1066	A1067	A1068	A1069	A1070	A1071	A1072	A1073	A1074	A1075	A1076	A1077	A1078	A1079	A1080	A1081	A1082	A1083	A1084	A1085	A1086	A1087	A1088	A1089	A1090	A1091	A1092	A1093	A1094	A1095	A1096	A1097	A1098	A1099	A1100	A1101	A1102	A1103	A1104	A1105	A1106	A1107	A1108	A1109	A1110	A1111	A1112	A1113	A1114



● 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	6223	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	1.902	Depositor
Minimum map value	-0.783	Depositor
Average map value	0.025	Depositor
Map value standard deviation	0.128	Depositor
Recommended contour level	0.47	Depositor
Map size (Å)	435.328, 435.328, 435.328	wwPDB
Map dimensions	256, 256, 256	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.7005, 1.7005, 1.7005	Depositor

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	0	0.13	0/383	0.38	0/504
2	1	0.18	0/484	0.54	0/637
3	2	0.16	0/306	0.46	0/401
4	A	0.14	0/1954	0.43	0/2642
5	B	0.17	0/1721	0.49	0/2323
6	C	0.16	0/1691	0.49	0/2267
7	D	0.18	0/1188	0.52	1/1593 (0.1%)
8	E	0.16	0/1384	0.48	2/1867 (0.1%)
9	F	0.19	0/1266	0.56	1/1700 (0.1%)
10	G	0.17	0/1126	0.53	0/1517
11	H	0.17	0/1044	0.46	0/1395
12	I	0.20	0/820	0.58	1/1103 (0.1%)
13	J	0.15	0/844	0.44	0/1136
14	K	0.28	0/1094	0.60	2/1468 (0.1%)
15	L	0.18	0/962	0.50	0/1289
16	M	0.18	0/483	0.51	0/643
17	N	0.14	0/679	0.49	1/907 (0.1%)
18	O	0.18	0/659	0.57	1/885 (0.1%)
19	P	0.14	0/684	0.42	0/913
20	Q	0.19	0/545	0.60	0/730
21	R	0.15	0/698	0.49	0/936
22	S	0.17	0/631	0.46	0/838
23	T	0.19	0/475	0.55	0/621
24	a	0.15	0/2267	0.43	0/3044
25	b	0.17	0/1795	0.51	0/2412
26	c	0.18	0/1671	0.51	1/2246 (0.0%)
27	d	0.15	0/1409	0.44	0/1894
28	e	0.14	0/1420	0.42	0/1912
29	f	0.19	0/1183	0.56	2/1587 (0.1%)
30	g	0.41	0/969	0.73	0/1295
31	h	0.16	0/968	0.43	0/1298
32	i	0.15	0/1186	0.46	0/1592
33	j	0.16	0/953	0.47	0/1275
34	k	0.17	0/1170	0.46	0/1559

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
35	l	0.17	0/1104	0.47	0/1481
36	m	0.22	0/973	0.58	0/1309
37	n	0.18	0/897	0.53	0/1198
38	o	0.17	0/948	0.49	0/1262
39	p	0.19	0/961	0.48	0/1278
40	q	0.18	0/828	0.56	0/1111
41	r	0.17	0/1077	0.52	0/1441
42	s	0.16	0/732	0.52	1/988 (0.1%)
43	t	0.14	0/879	0.44	0/1165
44	u	0.15	0/665	0.43	0/884
45	v	0.22	0/519	0.53	0/695
46	w	0.18	0/826	0.47	0/1104
47	x	0.17	0/353	0.40	0/474
48	y	0.31	0/457	0.67	0/601
49	z	0.14	0/412	0.48	0/547
50	3	0.09	0/69073	0.23	0/107710
51	4	0.10	0/2505	0.28	0/3902
52	5	0.09	0/35768	0.22	0/55764
53	7	0.10	0/1808	0.28	0/2817
All	All	0.13	0/156897	0.33	13/234160 (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
13	J	0	1
18	O	0	1
All	All	0	3

There are no bond length outliers.

All (13) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	F	16	VAL	N-CA-C	-6.73	107.32	113.71
8	E	162	LYS	CA-C-N	6.26	133.51	121.54
8	E	162	LYS	C-N-CA	6.26	133.51	121.54
14	K	122	LYS	N-CA-C	-6.25	105.23	112.86
7	D	155	PRO	CA-N-CD	-6.21	103.31	112.00
18	O	39	GLU	N-CA-C	-6.06	103.81	110.91

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
17	N	19	VAL	N-CA-C	-5.68	107.20	112.43
14	K	117	THR	CB-CA-C	5.58	119.80	109.54
29	f	69	LYS	CA-C-N	-5.23	112.87	120.29
29	f	69	LYS	C-N-CA	-5.23	112.87	120.29
42	s	6	VAL	N-CA-C	-5.19	107.66	112.43
26	c	93	PRO	N-CD-CG	-5.13	95.50	103.20
12	I	96	ILE	N-CA-C	-5.02	108.94	113.71

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
10	G	108	LEU	Peptide
13	J	111	HIS	Peptide
18	O	39	GLU	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	8	0
2	1	477	0	530	24	0
3	2	304	0	350	16	0
4	A	1921	0	1973	60	0
5	B	1698	0	1768	64	0
6	C	1660	0	1719	62	0
7	D	1173	0	1267	34	0
8	E	1362	0	1377	42	0
9	F	1246	0	1308	55	0
10	G	1110	0	1226	41	0
11	H	1028	0	1094	37	0
12	I	809	0	894	41	0
13	J	829	0	855	35	0
14	K	1076	0	1170	49	0
15	L	951	0	1014	32	0
16	M	474	0	509	22	0
17	N	673	0	730	28	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
18	O	646	0	677	26	0
19	P	675	0	728	24	0
20	Q	535	0	562	23	0
21	R	682	0	691	25	0
22	S	629	0	681	33	0
23	T	471	0	522	18	0
24	a	2225	0	2301	101	0
25	b	1762	0	1808	91	0
26	c	1644	0	1731	69	0
27	d	1388	0	1469	47	0
28	e	1396	0	1481	33	0
29	f	1160	0	1172	34	0
30	g	960	0	1014	5	0
31	h	959	0	1039	3	0
32	i	1164	0	1192	56	0
33	j	944	0	1019	44	0
34	k	1153	0	1256	46	0
35	l	1079	0	1134	52	0
36	m	958	0	1011	38	0
37	n	889	0	952	26	0
38	o	938	0	1008	48	0
39	p	947	0	1028	64	0
40	q	811	0	858	38	0
41	r	1068	0	1150	52	0
42	s	720	0	803	19	0
43	t	872	0	972	18	0
44	u	657	0	695	23	0
45	v	513	0	560	28	0
46	w	818	0	870	21	0
47	x	344	0	333	4	0
48	y	452	0	472	23	0
49	z	408	0	440	14	0
50	3	61664	0	30954	1830	0
51	4	2239	0	1137	67	0
52	5	31943	0	16058	925	0
53	7	1618	0	821	47	0
All	All	144502	0	98812	4165	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 18.

All (4165) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:1331:A:N6	52:5:1340:G:H1	1.44	1.13
52:5:1136:G:H1	52:5:1151:A:N6	1.53	1.07
50:3:1807:C:H42	50:3:1824:G:N2	1.51	1.06
52:5:684:A:H62	52:5:700:G:N2	1.55	1.03
52:5:69:G:H1	52:5:86:A:H61	1.06	1.01
50:3:1807:C:N4	50:3:1824:G:H22	1.56	1.01
52:5:661:G:H1	52:5:738:A:N6	1.55	1.01
52:5:684:A:N6	52:5:700:G:H21	1.60	1.00
50:3:226:A:N6	50:3:236:G:C2	2.30	1.00
25:b:185:ASP:O	25:b:189:MET:HA	1.63	0.99
50:3:204:U:H3	50:3:254:G:H1	1.05	0.99
50:3:742:G:H1	50:3:759:U:H3	1.08	0.98
50:3:633:G:H1	50:3:692:U:H3	1.03	0.97
50:3:1764:U:C2	50:3:1769:A:N6	2.32	0.97
52:5:290:G:H1	52:5:299:U:H3	1.08	0.97
50:3:192:U:H3	50:3:212:G:H1	1.10	0.97
50:3:2061:A:H62	50:3:2585:A:H61	1.10	0.97
50:3:629:G:H1	50:3:696:U:H3	1.02	0.97
50:3:2695:U:H3	50:3:2730:G:H1	1.06	0.97
52:5:779:A:H62	52:5:797:G:N2	1.63	0.96
52:5:1405:U:H3	52:5:1445:G:H1	1.02	0.95
50:3:2360:A:H62	50:3:2373:G:H21	1.14	0.94
52:5:319:U:H3	52:5:323:A:H62	1.07	0.94
50:3:900:G:N2	50:3:903:A:H61	1.64	0.94
50:3:418:G:H1	50:3:430:U:H3	1.07	0.93
52:5:518:A:H62	52:5:527:G:H21	1.14	0.93
52:5:460:A:H2	52:5:467:G:H1	1.06	0.93
50:3:725:G:H1	50:3:807:U:H3	1.09	0.92
50:3:80:U:H3	50:3:109:G:H1	0.94	0.92
52:5:779:A:H62	52:5:797:G:H21	1.17	0.92
50:3:2035:U:H3	50:3:2040:A:N6	1.67	0.91
50:3:1801:U:H3	50:3:1832:G:H1	1.18	0.91
52:5:826:G:H1	52:5:851:U:H3	1.17	0.91
52:5:253:G:H1	52:5:265:U:H3	1.19	0.91
50:3:1807:C:H42	50:3:1824:G:H22	1.03	0.90
52:5:63:U:H3	52:5:90:G:H1	1.14	0.90
52:5:1390:G:H1	52:5:1460:U:H3	1.19	0.90
35:l:68:ILE:HD11	35:l:103:MET:HB2	1.51	0.90
50:3:1027:U:H3	50:3:1198:G:H1	1.10	0.89
50:3:163:A:H62	50:3:169:U:H3	1.21	0.89
50:3:442:G:H1	50:3:457:U:H3	1.18	0.89
27:d:132:ILE:O	27:d:151:GLY:HA3	1.70	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1494:U:H3	50:3:1550:G:H1	1.16	0.89
50:3:2090:G:H1	50:3:2244:U:H3	1.21	0.89
50:3:2299:U:H3	50:3:2349:G:H1	0.93	0.88
50:3:739:G:HO2'	50:3:761:G:H1	0.92	0.88
50:3:413:G:H1	50:3:435:U:H3	1.18	0.87
50:3:1071:G:H1	50:3:1154:U:H3	0.88	0.87
50:3:2035:U:H3	50:3:2040:A:H62	0.89	0.87
52:5:779:A:N6	52:5:797:G:H21	1.73	0.87
52:5:245:U:H3	52:5:271:G:H1	1.16	0.86
52:5:1112:U:H3	52:5:1128:G:H1	0.86	0.86
25:b:40:LYS:O	25:b:48:SER:HA	1.74	0.86
50:3:2810:A:N7	50:3:2895:A:N6	2.24	0.85
50:3:61:U:H3	50:3:70:G:H1	0.87	0.85
38:o:92:ARG:HD3	38:o:115:LYS:HE3	1.58	0.84
29:f:112:MET:HE3	29:f:130:ILE:HG23	1.59	0.84
37:n:9:ARG:NH1	51:4:5:G:OP1	2.10	0.84
52:5:365:U:H3	52:5:388:G:H1	1.20	0.84
17:N:58:SER:HB2	52:5:579:G:H5'	1.59	0.84
52:5:590:G:H1	52:5:644:U:H3	1.20	0.84
50:3:2851:U:H3	50:3:2873:G:H1	1.25	0.84
37:n:7:GLN:HG3	37:n:11:ARG:HH21	1.44	0.83
36:m:26:LEU:HD21	36:m:67:LEU:HD11	1.62	0.82
50:3:313:G:N2	50:3:394:C:O2	2.13	0.81
50:3:2405:G:H1	50:3:2427:U:H3	1.25	0.81
52:5:134:G:H1	52:5:160:A:H61	1.26	0.81
52:5:661:G:H1	52:5:738:A:H61	0.84	0.81
38:o:80:GLN:HG3	38:o:83:ASN:HB2	1.61	0.81
50:3:900:G:N2	50:3:903:A:N6	2.29	0.81
52:5:69:G:H1	52:5:86:A:N6	1.79	0.81
53:7:2:G:N2	53:7:73:C:O2	2.13	0.81
50:3:186:A:H2	50:3:219:G:H1	1.29	0.80
50:3:1054:U:O2'	50:3:1056:A:N7	2.14	0.80
53:7:2:G:N1	53:7:73:C:N3	2.28	0.80
10:G:56:ASN:HB2	10:G:73:ASN:HD22	1.46	0.80
50:3:900:G:H21	50:3:903:A:N6	1.79	0.80
50:3:1382:A:H62	50:3:1405:G:H21	1.30	0.80
50:3:2570:U:H3	50:3:2574:A:H62	1.25	0.80
36:m:20:GLN:NE2	50:3:1305:G:N3	2.30	0.80
50:3:454:G:H2'	50:3:455:G:H8	1.47	0.80
50:3:1492:G:H5''	50:3:1493:A:H5'	1.64	0.80
17:N:35:GLN:HG2	17:N:39:HIS:HE1	1.46	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:i:32:ALA:HB1	32:i:111:MET:HE1	1.63	0.79
38:o:25:PHE:HE1	38:o:31:VAL:HG21	1.47	0.79
50:3:2799:U:O4	50:3:2895:A:C6	2.36	0.79
38:o:34:ALA:HA	38:o:46:GLN:O	1.83	0.79
13:J:17:SER:HB2	13:J:80:LYS:HE3	1.63	0.78
35:l:74:LYS:HB2	35:l:92:PHE:HB2	1.65	0.78
52:5:732:A:H2'	52:5:733:A:H8	1.49	0.78
4:A:191:ALA:HB1	4:A:198:VAL:HG21	1.65	0.78
24:a:233:MET:SD	24:a:234:ASN:N	2.55	0.78
38:o:27:ALA:HB3	38:o:96:VAL:HG21	1.66	0.78
50:3:2570:U:H3	50:3:2574:A:N6	1.82	0.78
9:F:115:MET:HG3	9:F:118:LYS:HE2	1.65	0.78
24:a:55:VAL:HG21	50:3:1830:G:H5''	1.66	0.78
50:3:186:A:N1	50:3:219:G:O6	2.16	0.78
52:5:1136:G:H1	52:5:1151:A:H61	0.80	0.77
24:a:119:ASP:OD2	24:a:120:LYS:N	2.17	0.77
50:3:329:G:H1	50:3:377:U:H3	1.28	0.77
50:3:2116:U:OP1	50:3:2156:G:N2	2.17	0.77
14:K:131:GLY:HA2	52:5:36:G:H4'	1.67	0.77
53:7:12:C:O2	53:7:25:G:N2	2.17	0.77
25:b:110:VAL:HG11	25:b:197:ILE:HD12	1.67	0.77
50:3:2143:G:H1	50:3:2162:U:H3	1.31	0.77
50:3:2534:G:H1	50:3:2545:U:H3	0.84	0.77
50:3:2088:U:H3	50:3:2247:G:H1	1.33	0.77
52:5:833:G:H1	52:5:844:U:H3	0.79	0.77
40:q:65:GLN:HB3	40:q:87:GLN:HB3	1.67	0.77
41:r:96:ILE:HD11	50:3:2019:G:H4'	1.67	0.77
26:c:54:THR:HG22	26:c:57:GLU:HG3	1.66	0.77
50:3:2189:U:H2'	50:3:2190:G:H8	1.50	0.77
50:3:1785:U:H3	50:3:1792:A:H62	1.33	0.76
52:5:655:G:O6	52:5:744:U:C2	2.38	0.76
12:I:48:LEU:HB3	12:I:77:LYS:HE2	1.67	0.76
52:5:603:U:H3	52:5:630:G:H1	1.32	0.76
27:d:31:LEU:HD11	27:d:156:LEU:HB3	1.66	0.76
38:o:30:GLU:HB3	38:o:92:ARG:HB2	1.67	0.76
50:3:2175:U:N3	50:3:2179:A:C8	2.53	0.76
44:u:86:PHE:O	44:u:92:LYS:HB2	1.85	0.76
52:5:319:U:O4	52:5:323:A:N7	2.19	0.76
52:5:1381:U:O2	52:5:1492:G:N2	2.18	0.76
10:G:92:LYS:HB2	10:G:95:LEU:HB2	1.68	0.75
36:m:46:ASP:HB2	36:m:97:TYR:HD1	1.50	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2590:G:N2	50:3:2591:G:N2	2.34	0.75
7:D:192:ILE:HG22	7:D:196:MET:HE1	1.67	0.75
52:5:1136:G:N2	52:5:1151:A:N1	2.35	0.75
50:3:1392:G:N2	50:3:1395:A:OP2	2.20	0.75
52:5:1295:U:H3'	52:5:1296:C:H2'	1.68	0.75
9:F:102:TRP:CD1	9:F:136:LYS:HZ2	2.04	0.75
50:3:358:A:N6	50:3:372:G:H21	1.82	0.75
50:3:1446:G:H22	50:3:1612:U:H5''	1.50	0.75
52:5:711:G:H2'	52:5:712:A:H8	1.51	0.75
53:7:12:C:N3	53:7:25:G:N1	2.35	0.75
50:3:421:A:N6	50:3:424:G:OP2	2.20	0.75
52:5:600:G:H1	52:5:633:U:H3	1.33	0.75
50:3:1764:U:N3	50:3:1769:A:C6	2.55	0.75
8:E:158:ASP:HB2	10:G:80:ARG:HH11	1.52	0.74
50:3:219:G:N2	50:3:468:A:N1	2.35	0.74
52:5:41:C:H2'	52:5:42:G:H8	1.53	0.74
52:5:1138:U:H3	52:5:1149:G:H1	1.35	0.74
52:5:1331:A:N1	52:5:1340:G:N2	2.33	0.74
26:c:175:ILE:HG22	26:c:177:ASN:H	1.52	0.74
4:A:176:LEU:HD21	4:A:198:VAL:HG22	1.70	0.74
50:3:2061:A:H62	50:3:2585:A:N6	1.85	0.74
5:B:152:ILE:HD12	5:B:205:ILE:HD12	1.70	0.74
50:3:161:U:H3	50:3:171:G:H1	1.33	0.74
9:F:55:GLU:OE2	9:F:59:THR:OG1	2.05	0.74
33:j:31:ARG:HH12	50:3:2683:G:H5''	1.51	0.73
43:t:69:ILE:HD12	43:t:74:LEU:HD21	1.70	0.73
50:3:2291:U:O2	50:3:2333:G:O6	2.04	0.73
6:C:73:ARG:NH2	52:5:619:A:O2'	2.20	0.73
8:E:59:ARG:HH22	20:Q:54:ILE:HD13	1.50	0.73
15:L:34:LEU:HA	15:L:39:ILE:HD12	1.69	0.73
50:3:675:U:H3	50:3:685:G:H1	1.35	0.73
52:5:21:U:O2'	52:5:571:A:N6	2.21	0.73
52:5:317:A:N1	52:5:328:G:O6	2.21	0.73
27:d:64:LYS:HB2	51:4:40:U:H4'	1.70	0.73
36:m:42:GLN:HE21	36:m:100:VAL:HG11	1.52	0.73
50:3:2589:G:N2	50:3:2589:G:OP2	2.22	0.73
5:B:155:LEU:HD23	5:B:202:LYS:HD2	1.70	0.73
50:3:2820:G:N3	50:3:2887:A:O2'	2.20	0.73
4:A:90:ASP:HB2	4:A:94:LYS:HE2	1.70	0.73
20:Q:94:ARG:HH22	52:5:715:A:H61	1.36	0.73
50:3:247:U:N3	50:3:259:A:C8	2.56	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2223:C:H2'	50:3:2224:A:H8	1.52	0.73
30:g:112:TYR:HB2	30:g:117:ALA:HA	1.70	0.73
43:t:38:GLY:H	43:t:41:LYS:HE2	1.54	0.73
50:3:898:A:O2'	51:4:76:A:N3	2.22	0.73
50:3:1803:U:H3	50:3:1830:G:H1	1.37	0.72
52:5:111:A:OP1	52:5:603:U:O2'	2.07	0.72
50:3:990:G:H1	50:3:999:U:H3	1.36	0.72
50:3:1956:G:H2'	50:3:1957:G:C8	2.24	0.72
50:3:1070:U:H3	50:3:1155:G:H1	1.37	0.72
50:3:598:G:H1	50:3:609:U:H3	1.38	0.72
50:3:1541:A:O2'	50:3:1590:U:O2'	2.04	0.72
1:0:24:THR:HG23	1:0:27:GLY:H	1.54	0.72
50:3:313:G:N1	50:3:394:C:N3	2.37	0.72
50:3:1099:C:N4	50:3:1105:A:OP1	2.22	0.72
50:3:2645:U:H3	50:3:2784:A:H62	1.35	0.72
52:5:1224:C:N3	52:5:1262:A:N7	2.37	0.72
24:a:56:ARG:NH2	50:3:1832:G:OP2	2.22	0.72
19:P:22:ALA:HB3	19:P:47:ALA:O	1.90	0.72
52:5:518:A:H62	52:5:527:G:N2	1.86	0.72
52:5:807:C:O2'	52:5:894:A:N6	2.20	0.72
50:3:1489:G:H2'	50:3:1490:G:C8	2.24	0.72
13:J:100:ILE:HG23	23:T:8:ASN:HD21	1.55	0.71
20:Q:81:MET:HE3	20:Q:85:HIS:HE1	1.54	0.71
37:n:76:ASP:OD1	37:n:77:ILE:N	2.21	0.71
46:w:57:ILE:HG22	46:w:61:ARG:HH22	1.54	0.71
14:K:86:ASN:OD1	14:K:88:GLN:NE2	2.23	0.71
41:r:126:LYS:HA	41:r:129:VAL:HG22	1.71	0.71
50:3:638:A:N6	50:3:661:G:C6	2.58	0.71
50:3:849:C:H2'	50:3:850:G:H8	1.55	0.71
33:j:70:GLN:NE2	33:j:71:ARG:O	2.23	0.71
52:5:1217:G:H1	52:5:1269:U:H3	1.38	0.71
45:v:34:GLN:HE22	45:v:55:LEU:HD11	1.54	0.71
50:3:1446:G:O2'	50:3:1613:A:N6	2.21	0.71
50:3:1553:G:N2	50:3:1577:A:OP2	2.24	0.71
50:3:1083:A:H1'	50:3:1147:G:H21	1.56	0.71
52:5:1193:U:H2'	52:5:1194:A:H8	1.54	0.71
38:o:62:GLU:HB3	38:o:81:ILE:HD12	1.72	0.71
50:3:1661:A:H2'	50:3:1662:G:H8	1.54	0.71
50:3:2360:A:H62	50:3:2373:G:N2	1.86	0.71
20:Q:78:ASN:HB3	20:Q:82:HIS:HB2	1.72	0.71
50:3:638:A:H62	50:3:660:U:H3	1.38	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:G:115:ILE:HB	10:G:138:LEU:HB2	1.73	0.70
25:b:117:ARG:NH2	50:3:2732:A:OP1	2.22	0.70
36:m:2:SER:N	50:3:2010:A:N3	2.39	0.70
46:w:57:ILE:O	46:w:61:ARG:NH1	2.22	0.70
50:3:226:A:N6	50:3:236:G:N2	2.39	0.70
41:r:88:ARG:HH21	50:3:782:U:H2'	1.56	0.70
42:s:60:ARG:O	42:s:77:LEU:HA	1.90	0.70
50:3:631:A:H2'	50:3:632:A:H8	1.56	0.70
5:B:127:ILE:HD12	5:B:133:LEU:HD22	1.73	0.70
50:3:250:U:H3	50:3:256:G:H1	1.39	0.70
50:3:1143:U:C4	50:3:1144:C:N4	2.58	0.70
17:N:56:LYS:NZ	52:5:739:G:OP1	2.22	0.70
19:P:68:PRO:HB3	19:P:74:ARG:HG2	1.73	0.70
50:3:1385:U:H3	50:3:1402:G:H1	1.38	0.70
50:3:2572:A:N6	50:3:2655:U:O2'	2.24	0.70
52:5:1316:C:H2'	52:5:1317:A:C8	2.27	0.70
2:1:20:LYS:HZ3	50:3:666:G:H5''	1.54	0.70
13:J:21:ASN:ND2	52:5:688:G:N7	2.40	0.70
26:c:183:LEU:HG	26:c:203:VAL:HG11	1.72	0.70
50:3:1262:G:H2'	50:3:1263:G:C8	2.25	0.70
13:J:116:PRO:HD2	23:T:35:HIS:HB2	1.74	0.70
16:M:60:SER:OG	52:5:1162:G:N2	2.25	0.70
22:S:13:GLN:HA	22:S:16:LYS:HE2	1.72	0.70
50:3:51:A:N7	50:3:121:U:O4	2.24	0.70
50:3:1764:U:N3	50:3:1769:A:N6	2.39	0.70
50:3:2574:A:H4'	50:3:2575:G:H5''	1.74	0.70
52:5:294:A:O2'	52:5:295:G:O5'	2.09	0.70
5:B:176:MET:HE2	5:B:204:TRP:HB3	1.72	0.70
29:f:47:ARG:HH22	29:f:51:LEU:HB2	1.57	0.70
50:3:1738:G:H2'	50:3:1739:G:C8	2.27	0.70
50:3:2695:U:O2	50:3:2730:G:N2	2.23	0.70
52:5:1106:U:H3	52:5:1160:G:H1	1.40	0.70
33:j:63:VAL:HG23	33:j:64:ARG:HG3	1.73	0.69
50:3:2736:U:HO2'	50:3:2737:G:H8	1.37	0.69
44:u:84:GLN:OE1	44:u:94:ARG:NH2	2.25	0.69
50:3:2455:G:H21	50:3:2457:U:H3'	1.56	0.69
5:B:93:LYS:HA	5:B:96:ILE:HG22	1.73	0.69
24:a:159:GLN:NE2	50:3:1807:C:O2'	2.25	0.69
45:v:4:LYS:O	45:v:6:GLN:NE2	2.26	0.69
50:3:358:A:H62	50:3:372:G:N2	1.90	0.69
3:2:3:VAL:HG12	3:2:35:ARG:HB3	1.75	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:D:169:ILE:HD11	7:D:192:ILE:HD12	1.73	0.69
14:K:67:LYS:HE3	14:K:75:GLU:HG3	1.74	0.69
31:h:15:LEU:HA	31:h:50:MET:HA	1.73	0.69
50:3:2799:U:C4	50:3:2895:A:N1	2.60	0.69
52:5:1213:A:N6	52:5:1275:U:N3	2.41	0.69
2:1:36:LYS:O	2:1:40:HIS:ND1	2.25	0.69
28:e:141:LYS:HE2	50:3:2754:U:H5''	1.75	0.69
35:l:39:GLY:HA2	35:l:97:VAL:O	1.92	0.69
52:5:134:G:H1	52:5:160:A:N6	1.89	0.69
50:3:1092:A:OP2	50:3:1124:G:N1	2.23	0.69
50:3:226:A:C6	50:3:236:G:N2	2.61	0.69
2:1:39:ARG:NH2	50:3:2359:G:O6	2.25	0.69
3:2:27:CYS:SG	3:2:28:LYS:N	2.66	0.69
29:f:7:GLN:NE2	29:f:8:ASP:OD1	2.26	0.69
50:3:703:A:H2'	50:3:705:A:H62	1.58	0.69
50:3:2124:A:O2'	50:3:2126:A:OP2	2.11	0.69
52:5:70:A:H2'	52:5:71:A:H8	1.57	0.69
52:5:1413:G:N2	52:5:1438:U:O2	2.24	0.69
17:N:35:GLN:HG2	17:N:39:HIS:CE1	2.27	0.69
50:3:640:U:H3	50:3:658:G:H1	1.41	0.69
52:5:885:U:O2	52:5:901:A:N7	2.25	0.69
33:j:6:THR:HG23	50:3:1700:G:H4'	1.75	0.69
9:F:43:TYR:HA	9:F:46:PHE:HD2	1.58	0.68
43:t:93:MET:HG3	43:t:95:PRO:HD3	1.75	0.68
50:3:487:C:N4	50:3:490:A:OP2	2.25	0.68
2:1:36:LYS:HG3	2:1:40:HIS:HE1	1.57	0.68
44:u:58:ARG:NH1	50:3:895:G:OP2	2.26	0.68
50:3:2661:U:O2	50:3:2676:G:C2	2.46	0.68
52:5:170:A:O2'	52:5:220:U:OP1	2.06	0.68
26:c:159:PHE:HB2	26:c:180:VAL:HG22	1.76	0.68
50:3:1043:C:H3'	50:3:1044:C:H2'	1.74	0.68
52:5:201:G:H1	52:5:214:U:H3	1.42	0.68
52:5:1077:U:H3	52:5:1090:G:H22	1.40	0.68
32:i:116:ARG:NH2	50:3:590:U:OP1	2.27	0.68
41:r:36:LEU:HD21	41:r:47:ILE:HG13	1.76	0.68
44:u:35:LEU:HD13	44:u:54:GLN:HA	1.75	0.68
48:y:47:MET:HG3	48:y:52:ARG:HB2	1.74	0.68
50:3:2536:U:H3	50:3:2543:G:H1	1.40	0.68
8:E:66:ASN:OD1	8:E:67:GLN:NE2	2.25	0.68
28:e:101:VAL:HG21	28:e:126:VAL:HG21	1.75	0.68
50:3:1418:U:O4	50:3:1423:A:N7	2.26	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:K:86:ASN:HD22	14:K:118:VAL:H	1.39	0.68
15:L:8:ASP:OD1	15:L:9:ILE:N	2.27	0.68
25:b:3:ILE:HG23	25:b:209:THR:HB	1.76	0.68
50:3:2570:U:O4	50:3:2574:A:N7	2.26	0.68
52:5:460:A:C2	52:5:467:G:N1	2.55	0.68
52:5:1046:A:N7	52:5:1175:C:N4	2.41	0.68
50:3:733:C:H4'	50:3:769:A:H61	1.59	0.68
50:3:1554:A:OP2	50:3:1576:G:N2	2.27	0.68
51:4:28:C:O2'	51:4:55:A:N1	2.25	0.68
40:q:36:ASP:HA	40:q:54:ARG:HE	1.59	0.68
50:3:420:A:H62	50:3:425:U:H3	1.40	0.68
5:B:10:LEU:HD11	52:5:1164:U:H5''	1.75	0.67
10:G:11:HIS:NE2	52:5:821:U:O2	2.25	0.67
10:G:118:THR:HA	10:G:135:GLY:HA3	1.76	0.67
7:D:163:GLY:O	7:D:167:ARG:N	2.25	0.67
24:a:3:ILE:HD11	24:a:207:ASP:HB3	1.76	0.67
46:w:38:LEU:HD23	46:w:40:LYS:H	1.59	0.67
9:F:86:VAL:HG22	9:F:150:PHE:HB3	1.76	0.67
50:3:1067:A:N1	50:3:1157:G:O6	2.27	0.67
52:5:289:U:OP1	52:5:608:G:N2	2.28	0.67
52:5:662:G:O6	52:5:721:G:O6	2.12	0.67
8:E:97:LEU:HG	8:E:99:SER:H	1.60	0.67
19:P:44:LYS:HE2	52:5:273:C:H5''	1.75	0.67
50:3:2266:C:O2'	50:3:2435:C:OP2	2.13	0.67
50:3:2321:C:H2'	50:3:2322:G:H8	1.60	0.67
5:B:133:LEU:HB3	5:B:137:MET:HE1	1.77	0.67
22:S:16:LYS:O	22:S:20:ASN:ND2	2.27	0.67
22:S:35:PHE:HE1	22:S:44:LEU:HB2	1.59	0.67
22:S:52:ASP:O	22:S:56:ARG:NH2	2.27	0.67
50:3:2291:U:O4	50:3:2292:A:N6	2.27	0.67
52:5:460:A:N1	52:5:467:G:O6	2.28	0.67
25:b:164:LYS:NZ	50:3:2521:A:OP1	2.27	0.67
33:j:10:VAL:HG12	33:j:12:ASP:H	1.59	0.67
51:4:22:G:O2'	51:4:25:A:N6	2.28	0.67
33:j:86:LEU:HB3	33:j:94:ARG:HD2	1.75	0.67
39:p:79:ILE:HD13	50:3:1187:C:H5''	1.76	0.67
52:5:742:C:H2'	52:5:743:A:C8	2.28	0.67
52:5:1150:G:H2'	52:5:1151:A:H8	1.58	0.67
50:3:1295:A:H61	50:3:2020:A:H3'	1.59	0.67
50:3:1476:C:H2'	50:3:1477:A:H8	1.60	0.67
50:3:2655:U:H2'	50:3:2656:G:H8	1.58	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:1012:A:OP2	52:5:1013:C:N4	2.28	0.67
52:5:1224:C:O2	52:5:1262:A:N6	2.27	0.67
25:b:158:ARG:NH1	25:b:159:VAL:O	2.27	0.67
50:3:2096:U:H3	50:3:2238:G:H1	1.41	0.67
50:3:2455:G:N2	50:3:2458:A:OP2	2.28	0.67
50:3:49:C:HO2'	50:3:54:A:HO2'	1.40	0.66
50:3:857:U:O4	50:3:858:A:N6	2.28	0.66
50:3:1837:C:H2'	50:3:1838:A:H8	1.58	0.66
52:5:683:G:O2'	52:5:700:G:N2	2.29	0.66
52:5:684:A:H62	52:5:700:G:H21	0.78	0.66
28:e:4:ILE:O	28:e:72:ASN:ND2	2.28	0.66
50:3:1023:C:O2'	50:3:1036:A:N3	2.27	0.66
50:3:2749:A:H62	50:3:2771:G:H21	1.41	0.66
4:A:59:GLU:O	4:A:63:GLN:NE2	2.29	0.66
6:C:31:ARG:NH2	52:5:423:U:OP1	2.29	0.66
24:a:83:VAL:HB	24:a:118:GLY:H	1.59	0.66
25:b:110:VAL:HG21	25:b:179:LEU:HD22	1.78	0.66
50:3:1232:U:H2'	50:3:1233:A:H8	1.61	0.66
52:5:350:G:N2	52:5:384:G:O2'	2.28	0.66
23:T:43:ARG:NH2	52:5:1503:U:OP2	2.29	0.66
25:b:185:ASP:O	25:b:189:MET:CA	2.42	0.66
37:n:8:ARG:HG2	37:n:95:GLY:HA3	1.77	0.66
39:p:16:TRP:HA	39:p:19:GLN:HE22	1.60	0.66
52:5:786:U:N3	52:5:789:A:OP2	2.28	0.66
25:b:66:GLN:NE2	50:3:2641:A:O2'	2.29	0.66
39:p:46:TYR:OH	50:3:1028:C:OP1	2.12	0.66
50:3:2360:A:N6	50:3:2373:G:H21	1.90	0.66
5:B:90:LYS:HA	5:B:93:LYS:HZ3	1.60	0.66
24:a:43:LYS:NZ	24:a:62:ASN:O	2.29	0.66
41:r:94:ASN:HD21	50:3:2020:A:H1'	1.59	0.66
50:3:2035:U:O4	50:3:2040:A:N7	2.29	0.66
52:5:518:A:N6	52:5:527:G:H21	1.92	0.66
7:D:116:LYS:HE3	7:D:120:LYS:HZ1	1.60	0.66
11:H:42:PRO:HB3	52:5:1265:U:H4'	1.77	0.66
50:3:411:U:H3	50:3:437:A:H62	1.42	0.66
50:3:1379:C:O2'	50:3:1605:A:O2'	2.12	0.66
50:3:1807:C:N3	50:3:1824:G:N1	2.42	0.66
52:5:1245:A:H2'	52:5:1246:A:H8	1.59	0.66
11:H:72:GLY:O	52:5:1224:C:O2'	2.14	0.66
26:c:140:THR:HA	26:c:143:MET:HE2	1.78	0.66
27:d:39:GLY:O	50:3:2315:G:N1	2.29	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:j:80:ASP:OD2	38:o:67:ARG:NH2	2.29	0.66
50:3:1414:C:H2'	50:3:1415:A:C8	2.31	0.66
11:H:71:GLY:HA2	52:5:1225:A:H4'	1.78	0.65
12:I:12:LEU:HB3	12:I:82:LEU:HB2	1.77	0.65
36:m:117:GLN:HE22	36:m:119:THR:HG22	1.61	0.65
20:Q:67:TYR:HE1	23:T:5:GLU:HA	1.61	0.65
50:3:2070:C:N4	50:3:2509:C:O2	2.29	0.65
52:5:249:U:H3	52:5:269:A:H61	1.41	0.65
3:2:31:LYS:NZ	50:3:2535:C:O2'	2.30	0.65
4:A:202:CYS:HG	4:A:206:THR:HG1	1.43	0.65
13:J:110:PRO:HB3	52:5:673:A:H1'	1.78	0.65
25:b:139:TYR:CG	25:b:140:PRO:HD3	2.31	0.65
34:k:42:ARG:HG3	50:3:840:G:H5''	1.77	0.65
34:k:62:LEU:HD12	34:k:63:PRO:HD2	1.78	0.65
50:3:1355:C:N3	50:3:1681:G:N2	2.44	0.65
50:3:2592:U:O2'	53:7:77:A:N6	2.30	0.65
52:5:1110:C:H2'	52:5:1111:G:H8	1.62	0.65
11:H:9:LEU:H	11:H:87:ARG:HD2	1.61	0.65
26:c:158:LEU:HD11	26:c:181:LYS:HG3	1.78	0.65
50:3:1166:G:O2'	50:3:2032:G:O2'	2.15	0.65
10:G:19:LEU:HD22	10:G:87:VAL:HG11	1.79	0.65
24:a:38:LEU:HD11	24:a:65:LYS:HB3	1.78	0.65
25:b:56:THR:HA	25:b:78:THR:HA	1.77	0.65
52:5:311:A:O2'	52:5:326:C:O2'	2.15	0.65
25:b:48:SER:O	25:b:85:ARG:NH1	2.29	0.65
27:d:30:ARG:NH1	51:4:29:C:OP1	2.29	0.65
33:j:87:ILE:HA	33:j:93:PRO:HA	1.78	0.65
36:m:42:GLN:HA	36:m:45:LEU:HD12	1.77	0.65
42:s:8:LEU:HB3	42:s:30:VAL:HG13	1.79	0.65
42:s:52:PRO:HA	42:s:85:LEU:HD13	1.77	0.65
47:x:12:VAL:HB	47:x:27:SER:HB2	1.77	0.65
50:3:1128:G:N2	50:3:1134:G:O6	2.30	0.65
52:5:1141:U:HO2'	52:5:1142:G:H8	1.45	0.65
3:2:14:CYS:HA	3:2:27:CYS:HB2	1.77	0.65
6:C:74:LEU:HD23	6:C:77:LEU:HD21	1.77	0.65
26:c:185:LYS:HG3	50:3:648:G:H22	1.61	0.65
50:3:700:U:H2'	50:3:701:A:H8	1.61	0.65
50:3:2499:U:H5'	50:3:2578:A:H5''	1.79	0.65
10:G:92:LYS:NZ	52:5:871:U:OP1	2.29	0.65
50:3:625:G:H2'	50:3:626:A:H8	1.62	0.65
50:3:2789:A:H5''	50:3:2790:A:H5'	1.79	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:133:G:H2'	52:5:134:G:C8	2.32	0.65
26:c:174:ASN:ND2	50:3:354:C:O2	2.30	0.64
27:d:34:ILE:HG13	27:d:96:MET:HE3	1.78	0.64
29:f:79:PHE:HB2	29:f:142:VAL:HG12	1.78	0.64
41:r:42:LYS:HB2	50:3:2017:G:H5''	1.79	0.64
50:3:1292:A:H61	50:3:2024:C:H42	1.44	0.64
50:3:1702:A:H62	50:3:1998:U:H3	1.45	0.64
50:3:2588:U:H2'	50:3:2589:G:C4	2.33	0.64
52:5:319:U:H3	52:5:323:A:N6	1.89	0.64
17:N:2:GLN:NE2	52:5:736:U:OP1	2.30	0.64
18:O:21:LYS:HA	52:5:96:G:H5''	1.79	0.64
37:n:2:LYS:HD2	37:n:7:GLN:HB2	1.79	0.64
50:3:155:A:H2'	50:3:156:A:C8	2.32	0.64
50:3:1616:G:O2'	50:3:1619:A:N3	2.28	0.64
50:3:2307:G:H1	50:3:2325:U:H3	1.45	0.64
52:5:1497:U:H2'	52:5:1498:G:H8	1.61	0.64
36:m:70:THR:HG23	36:m:72:LEU:H	1.62	0.64
45:v:4:LYS:HG2	45:v:11:GLY:HA2	1.78	0.64
50:3:512:G:N2	50:3:515:A:N7	2.46	0.64
50:3:631:A:H2'	50:3:632:A:C8	2.33	0.64
50:3:919:C:H2'	50:3:920:G:H8	1.63	0.64
50:3:1737:G:H2'	50:3:1738:G:C8	2.33	0.64
50:3:2104:A:H2'	50:3:2105:G:C8	2.32	0.64
24:a:9:ARG:HG3	50:3:1729:G:H4'	1.79	0.64
24:a:225:ARG:NH2	50:3:816:A:OP2	2.30	0.64
32:i:73:GLU:HG3	32:i:93:ARG:HD2	1.79	0.64
50:3:713:C:H2'	50:3:714:G:H8	1.61	0.64
50:3:1382:A:H62	50:3:1405:G:N2	1.94	0.64
50:3:2745:G:H2'	50:3:2746:A:C8	2.32	0.64
52:5:316:G:H2'	52:5:317:A:C8	2.33	0.64
24:a:251:ARG:HH21	24:a:254:PRO:HA	1.61	0.64
26:c:173:SER:OG	50:3:356:A:OP1	2.15	0.64
33:j:5:MET:O	50:3:1700:G:O2'	2.16	0.64
50:3:193:G:H1	50:3:209:G:HO2'	1.44	0.64
50:3:312:U:H2'	50:3:313:G:C8	2.32	0.64
50:3:1016:A:N6	50:3:1171:G:OP2	2.31	0.64
52:5:33:A:H61	52:5:550:U:H3	1.46	0.64
25:b:10:LYS:HD3	25:b:197:ILE:HB	1.80	0.64
50:3:452:U:H3	50:3:2415:A:H61	1.46	0.64
50:3:1187:C:H2'	50:3:1188:C:H6	1.61	0.64
50:3:1204:A:N6	50:3:1212:C:N3	2.46	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:460:A:H2	52:5:467:G:N1	1.87	0.64
52:5:749:G:H1'	52:5:751:C:H41	1.63	0.64
21:R:32:LYS:HA	21:R:50:ALA:HB3	1.79	0.64
34:k:34:ARG:HH21	50:3:620:G:H1	1.44	0.64
50:3:892:G:H2'	50:3:893:A:H8	1.62	0.64
50:3:1067:A:H2	50:3:1157:G:H1	1.44	0.64
50:3:2299:U:H1'	50:3:2382:A:H1'	1.80	0.64
52:5:1261:A:H2'	52:5:1262:A:C8	2.33	0.64
2:1:10:ARG:NH1	34:k:59:TYR:O	2.31	0.64
22:S:29:LYS:NZ	52:5:1414:U:OP1	2.29	0.64
24:a:38:LEU:HD21	24:a:65:LYS:HD3	1.77	0.64
24:a:254:PRO:O	24:a:261:ARG:NH1	2.31	0.64
27:d:37:ASN:ND2	50:3:2321:C:O4'	2.30	0.64
50:3:1734:A:H3'	50:3:1735:A:H8	1.63	0.64
50:3:2828:C:H3'	50:3:2829:G:H21	1.62	0.64
11:H:19:VAL:HG12	11:H:67:VAL:HG22	1.80	0.64
50:3:86:A:OP2	50:3:103:G:N2	2.32	0.64
50:3:2676:G:H2'	50:3:2677:A:H8	1.61	0.64
52:5:1213:A:N6	52:5:1275:U:H3	1.96	0.64
3:2:11:CYS:SG	3:2:12:LYS:N	2.71	0.63
5:B:22:TRP:H	16:M:54:PRO:HG3	1.64	0.63
25:b:158:ARG:NH1	50:3:2626:A:O2'	2.26	0.63
32:i:24:ALA:HA	32:i:64:GLN:HE21	1.63	0.63
32:i:106:ASN:HA	32:i:109:LYS:HG2	1.81	0.63
43:t:2:GLN:HE22	50:3:85:U:H4'	1.63	0.63
50:3:142:A:HO2'	50:3:1436:C:HO2'	1.44	0.63
50:3:515:A:H1'	50:3:517:G:H5'	1.79	0.63
50:3:896:U:H2'	50:3:897:A:H8	1.64	0.63
50:3:1511:C:N4	50:3:1512:A:N6	2.46	0.63
50:3:1920:A:H62	52:5:1468:A:H1'	1.63	0.63
50:3:2812:U:H1'	50:3:2813:A:H2'	1.80	0.63
15:L:87:ARG:HG3	15:L:97:VAL:HG13	1.78	0.63
1:0:12:ARG:NH1	50:3:500:U:O2'	2.31	0.63
5:B:57:GLU:O	5:B:67:VAL:HA	1.98	0.63
20:Q:91:LYS:NZ	52:5:732:A:OP1	2.30	0.63
50:3:204:U:O4	50:3:254:G:N2	2.26	0.63
50:3:1086:G:H4'	50:3:2760:C:H1'	1.80	0.63
50:3:2697:C:OP2	50:3:2699:C:N4	2.31	0.63
52:5:376:G:N2	52:5:379:A:OP2	2.25	0.63
52:5:1330:A:H2'	52:5:1331:A:H8	1.64	0.63
52:5:1436:C:H2'	52:5:1437:A:C8	2.33	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:9:LYS:NZ	50:3:253:C:O2	2.32	0.63
17:N:35:GLN:O	17:N:39:HIS:ND1	2.32	0.63
52:5:87:G:H2'	52:5:88:A:H8	1.63	0.63
11:H:22:THR:O	11:H:64:ASP:HB3	1.98	0.63
52:5:670:G:H2'	52:5:671:G:C8	2.34	0.63
52:5:1288:C:H2'	52:5:1289:U:H6	1.64	0.63
5:B:153:LYS:NZ	5:B:154:VAL:O	2.32	0.63
21:R:19:VAL:HG21	21:R:44:PHE:HE1	1.64	0.63
50:3:1418:U:H3	50:3:1423:A:N6	1.97	0.63
50:3:1511:C:N4	50:3:1512:A:H62	1.97	0.63
24:a:138:LEU:HD23	24:a:141:ILE:HD12	1.81	0.63
26:c:144:MET:HE1	26:c:147:LEU:HD23	1.79	0.63
45:v:63:ARG:HH22	50:3:287:G:H22	1.44	0.63
50:3:1020:G:H5''	50:3:1021:C:H5	1.64	0.63
50:3:1230:U:H2'	50:3:1231:G:C8	2.33	0.63
50:3:2145:A:H2'	50:3:2146:A:H8	1.63	0.63
52:5:213:U:OP1	52:5:461:G:N2	2.31	0.63
52:5:305:A:O2'	52:5:605:A:N1	2.32	0.63
52:5:416:U:C2	52:5:421:G:C2	2.87	0.63
4:A:146:LYS:O	4:A:150:LEU:HB2	1.99	0.63
9:F:147:ASN:HB2	9:F:150:PHE:HD2	1.62	0.63
29:f:7:GLN:HB2	29:f:34:LYS:HG2	1.79	0.63
29:f:101:ALA:HA	29:f:106:MET:HE2	1.79	0.63
36:m:36:LYS:HD2	50:3:1685:G:H4'	1.79	0.63
39:p:7:LYS:NZ	50:3:31:U:O2'	2.32	0.63
50:3:2528:C:H2'	50:3:2529:C:C6	2.34	0.63
50:3:2691:C:H41	50:3:2735:G:H21	1.47	0.63
52:5:709:A:H2'	52:5:710:G:C8	2.34	0.63
42:s:15:LYS:HD2	50:3:1367:G:H5''	1.80	0.63
50:3:611:A:H2'	50:3:2025:C:H5''	1.81	0.63
50:3:1306:G:H2'	50:3:1307:G:H8	1.64	0.63
50:3:1491:G:H2'	50:3:1492:G:C8	2.33	0.63
50:3:2321:C:H2'	50:3:2322:G:C8	2.34	0.63
52:5:265:U:H2'	52:5:266:A:H8	1.63	0.63
6:C:99:ASN:HA	6:C:110:ARG:HG2	1.81	0.62
26:c:54:THR:H	26:c:57:GLU:HB2	1.63	0.62
40:q:39:LEU:HA	40:q:50:LEU:HG	1.81	0.62
48:y:13:ARG:NH1	50:3:552:C:OP1	2.31	0.62
50:3:1712:A:O2'	50:3:1997:C:O2'	2.16	0.62
50:3:1872:U:N3	50:3:1882:G:N1	2.46	0.62
36:m:58:ASN:ND2	50:3:2855:A:N3	2.48	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1446:G:N1	50:3:1612:U:OP2	2.32	0.62
52:5:403:A:H2'	52:5:404:A:C8	2.34	0.62
52:5:831:C:H2'	52:5:832:G:C8	2.35	0.62
52:5:1429:G:H2'	52:5:1430:G:H8	1.63	0.62
15:L:28:SER:HB3	52:5:1302:C:H5''	1.82	0.62
24:a:113:ASP:HB3	24:a:202:VAL:HG23	1.81	0.62
36:m:46:ASP:HB2	36:m:97:TYR:CD1	2.32	0.62
38:o:4:ILE:O	38:o:6:LYS:NZ	2.32	0.62
50:3:2195:U:H2'	50:3:2196:G:H8	1.64	0.62
50:3:2436:G:H5''	50:3:2437:G:H5'	1.80	0.62
51:4:79:U:H2'	51:4:80:G:C4	2.34	0.62
52:5:831:C:H2'	52:5:832:G:H8	1.65	0.62
9:F:76:VAL:HG12	9:F:85:GLN:HE22	1.64	0.62
14:K:126:GLN:HA	52:5:500:G:H5''	1.81	0.62
50:3:163:A:N7	50:3:169:U:O4	2.32	0.62
50:3:1999:G:H22	50:3:2003:C:H1'	1.64	0.62
6:C:9:LYS:NZ	52:5:540:U:OP1	2.30	0.62
6:C:57:LYS:O	6:C:60:MET:HG3	1.98	0.62
45:v:18:ARG:NH2	50:3:205:C:OP1	2.30	0.62
50:3:603:G:H1'	50:3:1019:A:N1	2.14	0.62
50:3:782:U:H3	50:3:2021:A:H1'	1.64	0.62
52:5:1448:A:H2'	52:5:1449:G:C8	2.34	0.62
2:1:10:ARG:NH1	34:k:62:LEU:O	2.32	0.62
13:J:81:GLY:O	13:J:86:LYS:NZ	2.26	0.62
13:J:85:GLY:O	13:J:88:THR:OG1	2.17	0.62
40:q:77:LYS:NZ	50:3:1010:G:OP2	2.31	0.62
50:3:2859:U:H2'	50:3:2860:A:H8	1.64	0.62
7:D:68:GLU:H	7:D:94:VAL:HG23	1.64	0.62
12:I:9:TYR:HB3	12:I:85:VAL:HB	1.82	0.62
32:i:113:PRO:HD3	50:3:1043:C:H4'	1.82	0.62
50:3:638:A:C6	50:3:661:G:C6	2.88	0.62
50:3:1323:A:H2'	50:3:1324:A:C8	2.34	0.62
51:4:58:C:H2'	51:4:59:A:H8	1.63	0.62
52:5:320:G:N1	52:5:323:A:OP2	2.29	0.62
52:5:1213:A:N6	52:5:1275:U:C2	2.67	0.62
4:A:47:PRO:HB2	4:A:49:ARG:HH12	1.62	0.62
50:3:2590:G:N2	50:3:2591:G:H22	1.96	0.62
50:3:869:U:H2'	50:3:870:A:C8	2.35	0.62
52:5:394:U:H2'	52:5:395:G:H8	1.64	0.62
6:C:78:VAL:HG11	6:C:89:LEU:HB3	1.82	0.62
15:L:103:ARG:HH22	52:5:1200:G:H2'	1.64	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:S:53:ARG:NH1	52:5:164:C:OP2	2.33	0.62
41:r:81:SER:HG	41:r:97:THR:HG1	1.46	0.62
43:t:90:LYS:NZ	43:t:104:PHE:O	2.33	0.62
50:3:389:C:H2'	50:3:390:A:C8	2.35	0.62
52:5:659:U:H3	52:5:740:G:H1	1.48	0.62
37:n:110:ARG:HH22	50:3:2385:A:H1'	1.65	0.61
39:p:2:ARG:NH1	50:3:485:A:H1'	2.15	0.61
50:3:2754:U:O2	50:3:2766:A:N6	2.33	0.61
51:4:16:G:O6	51:4:63:U:O2	2.18	0.61
52:5:940:G:N2	52:5:1308:G:O2'	2.33	0.61
4:A:32:MET:SD	4:A:203:ASN:ND2	2.71	0.61
26:c:71:THR:HG22	26:c:73:LYS:H	1.64	0.61
32:i:47:PHE:HB3	39:p:63:ARG:HD3	1.83	0.61
41:r:115:GLN:HA	41:r:118:ILE:HD12	1.81	0.61
43:t:44:ARG:HG3	43:t:63:VAL:HB	1.83	0.61
50:3:358:A:H62	50:3:372:G:H21	1.47	0.61
50:3:1414:C:H2'	50:3:1415:A:H8	1.66	0.61
14:K:115:LEU:HB3	14:K:117:THR:HG22	1.81	0.61
44:u:35:LEU:HD11	44:u:55:ARG:HH11	1.64	0.61
50:3:1462:A:O2'	50:3:1463:G:O5'	2.18	0.61
50:3:1476:C:H2'	50:3:1477:A:C8	2.35	0.61
50:3:1764:U:C2	50:3:1769:A:C6	2.89	0.61
52:5:1507:U:OP2	52:5:1509:A:N6	2.33	0.61
14:K:12:ARG:NH1	52:5:565:G:N7	2.45	0.61
33:j:98:ILE:HG12	33:j:114:ILE:HG23	1.82	0.61
50:3:1012:G:H2'	50:3:1013:G:H8	1.66	0.61
50:3:2093:U:H2'	50:3:2094:A:C8	2.36	0.61
39:p:30:SER:OG	50:3:614:C:OP1	2.17	0.61
22:S:48:TYR:CE1	22:S:69:LYS:HD2	2.35	0.61
28:e:66:ILE:HG12	50:3:2757:A:H1'	1.82	0.61
50:3:729:U:H3	50:3:803:G:H1	1.46	0.61
50:3:742:G:O6	50:3:759:U:O4	2.19	0.61
50:3:1298:A:H62	50:3:2019:G:H21	1.49	0.61
50:3:2469:A:N1	50:3:2498:G:N2	2.48	0.61
50:3:2645:U:O4	50:3:2784:A:N7	2.34	0.61
19:P:67:ARG:NH2	52:5:185:G:O2'	2.33	0.61
22:S:66:ARG:HA	22:S:69:LYS:HE2	1.82	0.61
33:j:59:ARG:O	33:j:94:ARG:NH1	2.31	0.61
50:3:33:C:O2'	50:3:1268:U:OP1	2.17	0.61
50:3:2274:A:N6	50:3:2281:A:OP2	2.34	0.61
51:4:31:G:O6	51:4:48:A:N6	2.34	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:94:A:N7	52:5:320:G:N2	2.47	0.61
39:p:9:THR:O	39:p:13:ARG:HG3	2.01	0.61
50:3:2031:C:H2'	50:3:2032:G:H8	1.65	0.61
51:4:37:A:O2'	51:4:44:A:N1	2.32	0.61
3:2:24:ARG:NH1	50:3:2750:A:OP2	2.32	0.61
16:M:6:LEU:HD13	16:M:23:ARG:HD3	1.83	0.61
50:3:201:A:N6	50:3:2438:A:O2'	2.33	0.61
52:5:655:G:O6	52:5:744:U:O2	2.19	0.61
6:C:73:ARG:NH2	52:5:397:C:O3'	2.33	0.61
6:C:139:GLY:N	6:C:178:TYR:O	2.34	0.61
10:G:97:ILE:HG23	10:G:99:ARG:HH22	1.66	0.61
24:a:12:SER:O	50:3:764:G:N2	2.34	0.61
25:b:117:ARG:HD2	25:b:169:TYR:HD2	1.65	0.61
32:i:117:LEU:O	32:i:121:TRP:N	2.34	0.61
50:3:2735:G:H2'	50:3:2736:U:C6	2.35	0.61
50:3:2829:G:N2	50:3:2829:G:OP2	2.31	0.61
51:4:12:U:H2'	51:4:13:G:H21	1.65	0.61
52:5:1241:G:N1	52:5:1245:A:C6	2.69	0.61
4:A:96:VAL:HA	4:A:229:MET:HE1	1.81	0.60
4:A:201:LEU:HD12	4:A:217:ALA:HB3	1.83	0.60
5:B:3:GLN:NE2	52:5:1166:A:OP2	2.34	0.60
14:K:44:ARG:NH1	52:5:358:G:OP1	2.34	0.60
24:a:190:ARG:NH1	24:a:191:LYS:O	2.34	0.60
39:p:83:LYS:HZ3	50:3:1034:A:H5''	1.64	0.60
50:3:2144:C:H2'	50:3:2145:A:H8	1.65	0.60
50:3:2822:C:H2'	50:3:2823:A:C8	2.36	0.60
52:5:474:G:H2'	52:5:475:U:C6	2.35	0.60
52:5:983:G:H21	52:5:1012:A:H8	1.49	0.60
12:I:43:LYS:HD2	52:5:1115:G:H4'	1.82	0.60
27:d:106:VAL:HG11	27:d:139:PRO:HD3	1.81	0.60
36:m:60:ARG:HA	36:m:63:VAL:HG22	1.82	0.60
50:3:1702:A:N7	50:3:1998:U:O4	2.34	0.60
8:E:105:GLN:NE2	52:5:838:A:OP2	2.33	0.60
14:K:120:VAL:HG23	14:K:132:ALA:HB2	1.82	0.60
24:a:246:ARG:NH2	50:3:1794:A:OP1	2.33	0.60
27:d:104:ILE:HG22	27:d:108:LEU:HD12	1.83	0.60
35:l:6:ARG:HH12	53:7:53:A:H4'	1.67	0.60
43:t:31:ARG:HG3	43:t:33:GLN:HG2	1.83	0.60
44:u:90:GLN:NE2	51:4:11:A:OP2	2.34	0.60
50:3:1305:G:H2'	50:3:1306:G:C8	2.36	0.60
50:3:2720:C:OP1	50:3:2722:G:O2'	2.18	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:1406:U:H3	52:5:1444:G:H1	1.49	0.60
6:C:119:HIS:HB3	52:5:435:U:H4'	1.83	0.60
15:L:15:ILE:HG21	15:L:39:ILE:HG21	1.81	0.60
24:a:61:ARG:HH21	24:a:64:ARG:HE	1.49	0.60
27:d:63:GLN:NE2	51:4:40:U:O2	2.33	0.60
52:5:1003:G:O6	52:5:1018:U:C4	2.54	0.60
35:l:54:ILE:O	35:l:58:LEU:HB2	2.01	0.60
39:p:108:ILE:HA	39:p:111:LYS:HE2	1.82	0.60
51:4:4:G:O6	51:4:105:A:N6	2.33	0.60
51:4:12:U:OP2	51:4:68:C:O2'	2.19	0.60
12:I:27:THR:HG21	12:I:102:VAL:HG21	1.81	0.60
14:K:27:ASN:OD1	14:K:36:THR:OG1	2.20	0.60
24:a:269:ASN:O	24:a:272:LYS:NZ	2.35	0.60
32:i:98:LYS:HA	32:i:98:LYS:HE3	1.84	0.60
35:l:34:LEU:HD11	35:l:129:TRP:HB2	1.83	0.60
38:o:110:LYS:HG3	52:5:1407:A:H5''	1.83	0.60
50:3:559:C:O2'	50:3:589:A:OP1	2.19	0.60
50:3:869:U:H2'	50:3:870:A:H8	1.67	0.60
50:3:1619:A:H2'	50:3:1620:A:C8	2.36	0.60
50:3:1748:U:N3	50:3:1751:A:N7	2.47	0.60
52:5:1241:G:N1	52:5:1245:A:N6	2.49	0.60
52:5:1397:G:H2'	52:5:1398:G:H8	1.66	0.60
6:C:64:TYR:CZ	6:C:93:LEU:HB3	2.36	0.60
35:l:39:GLY:N	35:l:99:GLN:OE1	2.35	0.60
50:3:615:G:H2'	50:3:616:G:H8	1.67	0.60
50:3:1208:A:H2'	50:3:1209:U:H4'	1.83	0.60
52:5:68:C:H2'	52:5:69:G:C8	2.36	0.60
24:a:213:ILE:HG23	24:a:222:ARG:HH22	1.66	0.60
26:c:73:LYS:NZ	50:3:1287:C:OP1	2.31	0.60
35:l:75:THR:HG22	35:l:90:PRO:HG3	1.84	0.60
50:3:686:C:H2'	50:3:687:G:H8	1.65	0.60
5:B:153:LYS:HB3	5:B:204:TRP:HB2	1.82	0.60
7:D:192:ILE:O	7:D:195:THR:OG1	2.16	0.60
14:K:50:VAL:HG21	14:K:87:LEU:HD13	1.81	0.60
26:c:116:TRP:HZ2	26:c:186:VAL:HG21	1.67	0.60
26:c:172:THR:HA	26:c:178:VAL:HG23	1.83	0.60
41:r:78:GLN:OE1	50:3:26:G:N2	2.34	0.60
50:3:1451:A:HO2'	50:3:1524:C:HO2'	1.50	0.60
52:5:215:C:N4	52:5:216:G:O6	2.35	0.60
26:c:7:ILE:HD11	26:c:126:HIS:HB2	1.84	0.60
48:y:12:ARG:HA	48:y:15:LYS:HG2	1.84	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:y:27:LEU:HD12	48:y:28:SER:H	1.67	0.60
48:y:27:LEU:HD11	48:y:36:LYS:HE3	1.84	0.60
50:3:95:G:H2'	50:3:96:A:C8	2.37	0.60
50:3:1588:A:H2'	50:3:1589:A:C8	2.37	0.60
52:5:885:U:H2'	52:5:886:A:H8	1.67	0.60
52:5:1384:A:H2'	52:5:1385:A:H8	1.67	0.60
3:2:10:ILE:HD12	3:2:32:HIS:HA	1.84	0.59
18:O:5:ARG:HB2	18:O:8:TYR:HB3	1.84	0.59
36:m:34:THR:HB	36:m:37:LYS:HG3	1.82	0.59
39:p:47:ARG:NH2	50:3:593:C:O2'	2.35	0.59
50:3:70:G:N2	50:3:76:A:O4'	2.35	0.59
50:3:2133:A:N6	50:3:2180:U:OP2	2.35	0.59
52:5:711:G:H2'	52:5:712:A:C8	2.35	0.59
52:5:1112:U:O2	52:5:1128:G:N2	2.28	0.59
37:n:34:LYS:HD3	37:n:102:ILE:HD11	1.83	0.59
50:3:61:U:O4	50:3:70:G:O6	2.20	0.59
50:3:2032:G:H2'	50:3:2033:G:H8	1.67	0.59
50:3:2057:C:H2'	50:3:2058:G:C4	2.36	0.59
52:5:195:U:H2'	52:5:196:G:C8	2.37	0.59
50:3:1261:U:H2'	50:3:1262:G:C8	2.37	0.59
50:3:1722:U:O2'	50:3:1734:A:N7	2.30	0.59
50:3:2481:U:OP1	50:3:2537:G:N2	2.34	0.59
52:5:727:G:O2'	52:5:811:A:N6	2.35	0.59
52:5:941:A:H2'	52:5:942:G:C8	2.38	0.59
5:B:38:GLU:HA	5:B:41:ARG:HG3	1.83	0.59
10:G:89:GLN:NE2	52:5:870:A:O3'	2.34	0.59
18:O:77:VAL:HG23	18:O:80:LYS:HE3	1.84	0.59
26:c:32:GLN:NE2	26:c:36:ASP:OD2	2.35	0.59
50:3:1316:U:O2'	50:3:1681:G:N2	2.35	0.59
50:3:2253:U:H5''	50:3:2254:G:H5'	1.84	0.59
52:5:1326:C:H2'	52:5:1327:G:C8	2.38	0.59
14:K:60:SER:O	14:K:63:ARG:NH1	2.35	0.59
50:3:28:G:O6	50:3:29:G:N2	2.36	0.59
50:3:869:U:O4	50:3:980:C:N4	2.34	0.59
50:3:1332:A:N1	50:3:1659:C:N4	2.50	0.59
50:3:1345:G:H2'	50:3:1346:G:H8	1.67	0.59
52:5:893:C:H3'	52:5:894:A:C8	2.36	0.59
9:F:41:ILE:HD12	9:F:116:LEU:HD21	1.85	0.59
25:b:180:ARG:NH1	25:b:218:LYS:O	2.31	0.59
26:c:128:VAL:HG13	26:c:132:LEU:HD21	1.84	0.59
38:o:34:ALA:HB3	38:o:87:SER:HB2	1.85	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:w:16:VAL:HG21	46:w:67:GLU:HB3	1.85	0.59
49:z:2:ALA:N	50:3:2290:G:HO2'	2.00	0.59
50:3:1837:C:H2'	50:3:1838:A:C8	2.38	0.59
50:3:2294:A:H1'	50:3:2295:A:C5	2.38	0.59
9:F:11:VAL:HG23	9:F:20:THR:HB	1.85	0.59
44:u:84:GLN:NE2	44:u:85:LYS:O	2.36	0.59
52:5:70:A:H2'	52:5:71:A:C8	2.36	0.59
11:H:12:ARG:O	11:H:15:SER:HB2	2.02	0.59
11:H:115:ARG:NH1	52:5:1343:G:O3'	2.36	0.59
29:f:64:LEU:HD23	29:f:67:LYS:HZ1	1.66	0.59
36:m:32:GLU:N	36:m:32:GLU:OE2	2.34	0.59
50:3:788:G:H2'	50:3:789:A:H8	1.68	0.59
50:3:2376:C:H2'	50:3:2377:A:H8	1.67	0.59
52:5:810:U:OP2	52:5:813:A:N6	2.36	0.59
52:5:1068:G:N2	52:5:1071:A:OP2	2.36	0.59
12:I:61:PRO:HA	16:M:41:ARG:HH12	1.67	0.59
15:L:107:ARG:HG3	15:L:110:LYS:HB2	1.84	0.59
36:m:46:ASP:HA	36:m:49:ILE:HD12	1.85	0.59
52:5:65:G:H5''	52:5:378:A:H61	1.67	0.59
52:5:677:C:H2'	52:5:678:A:H8	1.68	0.59
52:5:1062:C:H2'	52:5:1063:G:H8	1.68	0.59
9:F:149:ALA:HB3	13:J:49:ARG:NH1	2.18	0.59
26:c:112:LEU:O	26:c:116:TRP:HD1	1.86	0.59
38:o:53:LEU:HB3	38:o:101:ILE:O	2.03	0.59
39:p:91:ARG:NH2	50:3:1032:A:O5'	2.36	0.59
40:q:95:VAL:HG13	40:q:96:ARG:HG3	1.85	0.59
50:3:590:U:H2'	50:3:591:G:C8	2.38	0.59
50:3:1093:U:H3	50:3:1115:G:H1	1.50	0.59
50:3:1543:U:H2'	50:3:1544:G:H8	1.68	0.59
52:5:48:C:N4	52:5:356:G:O6	2.35	0.59
52:5:893:C:H3'	52:5:894:A:H8	1.67	0.59
52:5:1130:G:H2'	52:5:1131:A:H8	1.67	0.59
52:5:1245:A:HO2'	52:5:1287:G:HO2'	1.50	0.59
18:O:48:VAL:HG23	18:O:52:TRP:CZ3	2.38	0.58
50:3:8:A:H2'	50:3:9:G:C8	2.37	0.58
50:3:192:U:O4	50:3:212:G:O6	2.21	0.58
50:3:872:C:N4	50:3:978:G:O6	2.35	0.58
50:3:1019:A:O2'	50:3:1020:G:O4'	2.20	0.58
52:5:433:C:H2'	52:5:434:U:C6	2.38	0.58
52:5:834:G:H2'	52:5:835:G:C8	2.39	0.58
6:C:145:LYS:HD3	6:C:147:LYS:HE2	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:286:A:O2'	50:3:288:A:N7	2.34	0.58
50:3:734:A:H62	50:3:768:G:H21	1.50	0.58
50:3:752:C:H3'	50:3:753:A:H8	1.68	0.58
50:3:1103:G:O2'	50:3:1131:A:N3	2.36	0.58
50:3:2031:C:H2'	50:3:2032:G:C8	2.38	0.58
52:5:22:G:H2'	52:5:23:G:C8	2.38	0.58
52:5:448:A:N6	52:5:478:G:OP2	2.36	0.58
52:5:1115:G:N2	52:5:1116:U:O4	2.33	0.58
9:F:24:ARG:NH2	9:F:96:ILE:HD12	2.18	0.58
29:f:81:LEU:HD21	29:f:90:GLY:HA3	1.85	0.58
50:3:53:G:H21	50:3:119:A:H62	1.49	0.58
50:3:333:A:H2'	50:3:334:A:C4	2.38	0.58
50:3:746:G:H2'	50:3:747:A:H8	1.67	0.58
2:1:35:THR:HA	2:1:38:LYS:HB2	1.84	0.58
9:F:101:ARG:HH22	52:5:934:G:H4'	1.68	0.58
10:G:24:ASN:ND2	52:5:823:C:O2	2.33	0.58
50:3:220:A:H2'	50:3:221:A:H8	1.68	0.58
50:3:247:U:C2	50:3:259:A:N7	2.71	0.58
50:3:247:U:O2	50:3:259:A:N7	2.37	0.58
50:3:2090:G:N2	50:3:2244:U:O2	2.31	0.58
50:3:2603:G:N2	50:3:2606:A:OP2	2.35	0.58
50:3:2700:C:H2'	50:3:2701:A:H8	1.67	0.58
2:1:21:ARG:NH1	2:1:22:LYS:O	2.36	0.58
24:a:147:VAL:HG22	24:a:200:VAL:HG12	1.86	0.58
33:j:104:ARG:HH12	38:o:37:LEU:HD13	1.68	0.58
50:3:489:A:N3	50:3:493:A:O2'	2.36	0.58
50:3:672:G:H4'	50:3:674:G:H4'	1.84	0.58
52:5:680:G:O6	52:5:705:A:N6	2.36	0.58
4:A:21:ALA:HB2	4:A:65:LEU:HD23	1.85	0.58
12:I:24:LEU:O	12:I:28:THR:HG23	2.04	0.58
27:d:15:GLU:O	27:d:19:SER:OG	2.17	0.58
50:3:517:G:H1	50:3:544:U:H3	1.52	0.58
50:3:1418:U:N3	50:3:1423:A:N6	2.51	0.58
50:3:2655:U:H2'	50:3:2656:G:C8	2.38	0.58
52:5:145:G:N2	52:5:148:A:OP2	2.36	0.58
52:5:369:A:H61	52:5:387:G:H1'	1.68	0.58
53:7:63:U:H2'	53:7:64:G:C8	2.39	0.58
8:E:5:ILE:HG12	8:E:62:PHE:HE1	1.68	0.58
8:E:49:ILE:HG23	8:E:50:LYS:H	1.67	0.58
11:H:120:LEU:HD13	11:H:124:ARG:HA	1.85	0.58
28:e:105:THR:HG21	28:e:117:LYS:HE3	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:m:42:GLN:NE2	36:m:100:VAL:HG11	2.19	0.58
50:3:2552:G:H2'	50:3:2553:G:C8	2.38	0.58
50:3:2604:U:O2'	50:3:2605:G:OP1	2.20	0.58
50:3:2676:G:H2'	50:3:2677:A:C8	2.38	0.58
50:3:2812:U:H5'	50:3:2895:A:C8	2.38	0.58
52:5:406:G:O6	52:5:426:U:O2'	2.20	0.58
10:G:97:ILE:HG23	10:G:99:ARG:NH2	2.17	0.58
21:R:81:LYS:NZ	21:R:84:THR:O	2.31	0.58
24:a:125:GLU:OE1	29:f:89:TYR:OH	2.19	0.58
24:a:249:VAL:HG11	50:3:1909:C:H5''	1.85	0.58
26:c:128:VAL:HG21	26:c:198:LEU:HB2	1.85	0.58
50:3:633:G:O6	50:3:692:U:O4	2.21	0.58
50:3:1207:U:O2	50:3:1208:A:N6	2.36	0.58
50:3:2447:A:N6	53:7:77:A:OP2	2.37	0.58
50:3:2814:A:H2'	50:3:2815:G:O4'	2.04	0.58
52:5:373:A:H2'	52:5:374:G:H8	1.69	0.58
52:5:663:G:O6	52:5:737:U:O2	2.21	0.58
5:B:50:ASN:O	5:B:52:GLN:NE2	2.36	0.58
14:K:92:VAL:HG22	14:K:115:LEU:HD21	1.86	0.58
50:3:90:G:H2'	50:3:91:G:C8	2.39	0.58
50:3:410:G:H4'	50:3:411:U:O5'	2.04	0.58
50:3:1436:C:H2'	50:3:1437:A:H8	1.67	0.58
50:3:2299:U:O4	50:3:2349:G:O6	2.20	0.58
52:5:1225:A:H2'	52:5:1226:A:C8	2.38	0.58
3:2:36:GLN:OE1	50:3:1159:C:O2'	2.22	0.58
4:A:158:ARG:NH2	52:5:1089:C:OP2	2.37	0.58
26:c:83:HIS:O	50:3:1286:G:N2	2.35	0.58
32:i:144:ASN:OD1	32:i:145:TRP:N	2.37	0.58
37:n:54:SER:O	37:n:80:LYS:NZ	2.36	0.58
38:o:92:ARG:HD3	38:o:115:LYS:CE	2.32	0.58
50:3:1445:U:H2'	50:3:1446:G:O4'	2.04	0.58
50:3:2847:C:H2'	50:3:2848:A:H8	1.69	0.58
52:5:704:U:H2'	52:5:705:A:C8	2.38	0.58
52:5:1326:C:H2'	52:5:1327:G:H8	1.69	0.58
52:5:1388:A:H2	52:5:1462:G:H22	1.52	0.58
8:E:4:ASN:HB2	8:E:88:ILE:HB	1.85	0.57
14:K:63:ARG:NH2	52:5:519:G:N7	2.51	0.57
52:5:146:A:H2'	52:5:147:A:C4	2.39	0.57
52:5:287:U:N3	52:5:306:G:C6	2.71	0.57
52:5:372:G:H2'	52:5:373:A:H8	1.69	0.57
52:5:416:U:N3	52:5:421:G:N1	2.52	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:G:60:LEU:HB2	10:G:69:ILE:HG13	1.84	0.57
18:O:5:ARG:NH2	52:5:621:C:O2	2.36	0.57
26:c:130:GLN:HA	26:c:133:PHE:CE1	2.39	0.57
34:k:43:LYS:NZ	50:3:839:A:OP2	2.37	0.57
41:r:6:LYS:HB2	50:3:529:G:H4'	1.86	0.57
50:3:1754:U:H2'	50:3:1755:A:H8	1.69	0.57
50:3:2781:C:H2'	50:3:2782:A:H8	1.69	0.57
52:5:262:G:OP1	52:5:262:G:N2	2.37	0.57
4:A:147:LYS:HB3	4:A:151:MET:HE1	1.87	0.57
21:R:29:ARG:HH11	21:R:47:ASN:HB3	1.69	0.57
45:v:27:ARG:NH1	45:v:28:LYS:O	2.37	0.57
50:3:29:G:OP1	50:3:1289:G:O2'	2.22	0.57
50:3:1294:G:N1	50:3:2021:A:OP2	2.35	0.57
50:3:1833:G:O2'	50:3:1978:U:OP2	2.21	0.57
50:3:2021:A:H2'	50:3:2022:A:C4	2.39	0.57
4:A:93:LYS:NZ	4:A:109:THR:O	2.36	0.57
12:I:53:GLU:HB2	12:I:73:LYS:HB3	1.86	0.57
14:K:40:SER:OG	52:5:359:A:N1	2.38	0.57
26:c:152:LEU:HD22	26:c:155:LYS:HG3	1.86	0.57
50:3:522:C:H2'	50:3:523:A:C8	2.39	0.57
50:3:990:G:N2	50:3:999:U:O2	2.29	0.57
50:3:2088:U:O4	50:3:2247:G:O6	2.22	0.57
50:3:2092:U:H3	50:3:2242:G:H1	1.50	0.57
52:5:576:A:O2'	52:5:725:A:N3	2.33	0.57
52:5:603:U:O2	52:5:630:G:N2	2.37	0.57
52:5:1208:G:O2'	52:5:1340:G:OP1	2.22	0.57
14:K:56:LYS:HG3	14:K:58:PRO:HD2	1.86	0.57
24:a:9:ARG:NH2	50:3:740:A:O2'	2.37	0.57
25:b:72:LYS:HD2	50:3:2794:U:H5''	1.86	0.57
34:k:22:ARG:HA	50:3:846:U:H2'	1.86	0.57
50:3:1093:U:O2	50:3:1115:G:N2	2.37	0.57
50:3:2032:G:H2'	50:3:2033:G:C8	2.39	0.57
50:3:2716:U:H2'	50:3:2717:G:H8	1.70	0.57
52:5:558:U:H4'	52:5:559:U:H3'	1.86	0.57
35:l:39:GLY:CA	35:l:97:VAL:O	2.52	0.57
36:m:81:HIS:CE1	36:m:85:LYS:HD3	2.38	0.57
50:3:1301:G:H22	50:3:1649:C:H42	1.51	0.57
50:3:1702:A:N6	50:3:1998:U:H3	2.03	0.57
50:3:2704:U:H2'	50:3:2705:G:H8	1.68	0.57
52:5:1057:C:O2'	52:5:1058:A:O4'	2.19	0.57
10:G:106:LEU:HB2	10:G:110:GLY:HA2	1.87	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:d:42:ASP:OD1	27:d:43:ALA:N	2.37	0.57
45:v:52:THR:HA	45:v:55:LEU:HD12	1.86	0.57
50:3:154:U:H2'	50:3:155:A:C8	2.40	0.57
50:3:1289:G:H2'	50:3:1290:G:C8	2.40	0.57
50:3:1768:G:O6	50:3:1769:A:N6	2.37	0.57
50:3:2094:A:H2'	50:3:2095:A:C8	2.40	0.57
50:3:2745:G:H2'	50:3:2746:A:H8	1.69	0.57
4:A:130:LEU:HD12	4:A:159:LEU:HD22	1.86	0.57
7:D:69:ARG:HE	7:D:172:LEU:HD21	1.69	0.57
25:b:143:PHE:HD2	25:b:145:GLY:H	1.52	0.57
34:k:105:SER:OG	50:3:657:A:OP2	2.20	0.57
50:3:697:U:H2'	50:3:698:A:H8	1.68	0.57
50:3:886:U:H3	50:3:964:A:H61	1.52	0.57
50:3:1248:A:H2'	50:3:1249:A:C8	2.39	0.57
50:3:2141:A:OP2	50:3:2164:G:N2	2.38	0.57
50:3:2154:A:H2'	50:3:2155:G:C8	2.39	0.57
52:5:966:A:O2'	52:5:1340:G:O2'	2.16	0.57
3:2:7:VAL:HG12	3:2:34:GLN:HG3	1.87	0.57
6:C:63:MET:HE2	6:C:63:MET:HA	1.87	0.57
9:F:24:ARG:HH22	9:F:96:ILE:HD12	1.69	0.57
14:K:42:LEU:HD23	14:K:94:LEU:HD21	1.87	0.57
15:L:110:LYS:NZ	52:5:1202:A:OP2	2.32	0.57
50:3:159:G:O6	50:3:174:A:N6	2.38	0.57
50:3:713:C:H2'	50:3:714:G:C8	2.38	0.57
50:3:784:A:N7	50:3:1652:A:N6	2.52	0.57
50:3:1141:U:H2'	50:3:1142:G:H8	1.70	0.57
52:5:939:G:N1	52:5:1312:G:OP2	2.34	0.57
52:5:1051:U:H2'	52:5:1052:G:H8	1.70	0.57
2:1:36:LYS:HG3	2:1:40:HIS:CE1	2.38	0.57
4:A:32:MET:O	4:A:53:ASN:ND2	2.32	0.57
4:A:91:TYR:HE1	4:A:226:CYS:HB3	1.69	0.57
16:M:14:PRO:HG3	16:M:20:ALA:HB2	1.86	0.57
26:c:140:THR:O	26:c:144:MET:N	2.36	0.57
29:f:104:LYS:HB2	29:f:106:MET:HE1	1.85	0.57
35:l:12:PRO:HA	50:3:947:A:H62	1.69	0.57
51:4:60:C:H2'	51:4:61:A:H8	1.70	0.57
52:5:354:U:H2'	52:5:355:A:H8	1.70	0.57
19:P:20:LYS:HB2	19:P:48:HIS:HB2	1.86	0.56
32:i:111:MET:HA	50:3:1172:G:H21	1.68	0.56
50:3:1180:U:H2'	50:3:1181:A:C8	2.40	0.56
51:4:11:A:H1'	51:4:13:G:H2'	1.86	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:170:A:H61	52:5:195:U:H3	1.52	0.56
52:5:833:G:O6	52:5:844:U:O4	2.22	0.56
52:5:1241:G:C2	52:5:1245:A:C6	2.93	0.56
52:5:1330:A:H2'	52:5:1331:A:C8	2.40	0.56
4:A:192:ASN:O	4:A:195:ARG:NH1	2.38	0.56
12:I:21:SER:O	12:I:25:ASP:N	2.35	0.56
21:R:41:PHE:CG	21:R:42:PRO:HD2	2.40	0.56
50:3:1316:U:H5	50:3:1354:U:H3	1.52	0.56
50:3:2514:U:OP2	50:3:2584:G:N1	2.37	0.56
51:4:104:C:H2'	51:4:105:A:C8	2.40	0.56
52:5:145:G:N1	52:5:149:G:N7	2.54	0.56
52:5:556:G:OP2	52:5:557:A:O2'	2.23	0.56
52:5:621:C:H2'	52:5:622:A:H8	1.70	0.56
4:A:67:THR:HA	4:A:70:ASN:HD21	1.70	0.56
15:L:34:LEU:HD21	15:L:41:PRO:HD3	1.86	0.56
24:a:185:LEU:HD23	24:a:186:SER:N	2.20	0.56
24:a:229:ARG:NH1	50:3:1796:A:OP2	2.38	0.56
27:d:125:ARG:NH1	50:3:2323:U:O2	2.38	0.56
32:i:3:LYS:N	40:q:12:TYR:OH	2.38	0.56
50:3:312:U:H2'	50:3:313:G:H8	1.68	0.56
50:3:499:G:N2	50:3:502:A:OP2	2.33	0.56
50:3:1764:U:H5'	50:3:1765:G:H5''	1.87	0.56
50:3:1784:U:H2'	50:3:1785:U:C6	2.41	0.56
50:3:2381:G:H2'	50:3:2382:A:H8	1.70	0.56
50:3:2706:U:H2'	50:3:2707:A:C8	2.40	0.56
52:5:573:G:H4'	52:5:574:C:H5''	1.85	0.56
52:5:672:A:H61	52:5:712:A:H61	1.51	0.56
52:5:715:A:H5''	52:5:716:C:H5	1.69	0.56
52:5:748:U:H2'	52:5:749:G:O4'	2.05	0.56
52:5:1214:A:H62	52:5:1273:A:H62	1.51	0.56
52:5:1393:A:N6	52:5:1457:G:O2'	2.39	0.56
9:F:2:ARG:N	52:5:927:C:OP2	2.37	0.56
9:F:115:MET:HA	9:F:118:LYS:HG2	1.86	0.56
41:r:71:VAL:HA	41:r:107:LEU:HD13	1.88	0.56
50:3:640:U:O4	50:3:658:G:O6	2.22	0.56
50:3:2054:C:H2'	50:3:2055:A:H8	1.71	0.56
50:3:2832:G:H2'	50:3:2833:A:H8	1.70	0.56
53:7:67:C:H2'	53:7:68:G:H8	1.71	0.56
3:2:15:LYS:NZ	3:2:16:ILE:O	2.37	0.56
38:o:32:ASN:HB3	38:o:91:LYS:HZ1	1.69	0.56
39:p:13:ARG:O	39:p:17:LEU:HD23	2.05	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:w:49:ARG:NH1	50:3:78:C:OP1	2.38	0.56
50:3:1016:A:C2	50:3:1171:G:H4'	2.41	0.56
50:3:1495:A:OP2	50:3:1548:A:N6	2.35	0.56
50:3:1529:U:H2'	50:3:1530:G:C8	2.41	0.56
50:3:1549:U:H3'	50:3:1550:G:H8	1.71	0.56
50:3:2332:U:O4	50:3:2339:G:O6	2.24	0.56
50:3:2798:A:H5''	50:3:2799:U:C6	2.41	0.56
52:5:664:A:H2'	52:5:665:G:C8	2.40	0.56
52:5:1197:G:OP2	52:5:1296:C:N4	2.39	0.56
4:A:61:GLN:NE2	4:A:216:PRO:O	2.34	0.56
7:D:188:PRO:O	7:D:192:ILE:HG12	2.06	0.56
21:R:36:ARG:HA	21:R:72:GLY:HA3	1.87	0.56
25:b:6:ILE:HG22	25:b:207:ILE:HB	1.87	0.56
25:b:151:ARG:N	50:3:2580:A:OP2	2.29	0.56
35:l:64:MET:N	35:l:64:MET:SD	2.79	0.56
36:m:106:ARG:HG2	36:m:108:GLY:H	1.71	0.56
49:z:23:LYS:NZ	49:z:28:ASN:O	2.39	0.56
50:3:164:A:H3'	50:3:165:U:H2'	1.87	0.56
50:3:500:U:O2'	50:3:501:G:OP1	2.23	0.56
50:3:2335:A:H2'	50:3:2336:A:C8	2.41	0.56
52:5:1288:C:H2'	52:5:1289:U:C6	2.40	0.56
52:5:1436:C:H2'	52:5:1437:A:H8	1.71	0.56
28:e:57:ARG:HG3	28:e:68:HIS:HD2	1.69	0.56
34:k:31:THR:HG21	34:k:36:GLN:HE22	1.70	0.56
50:3:1963:U:H2'	50:3:1964:C:H5'	1.87	0.56
50:3:2802:C:H41	50:3:2807:G:H4'	1.70	0.56
51:4:11:A:N6	51:4:67:G:O2'	2.39	0.56
52:5:1287:G:H2'	52:5:1288:C:H6	1.71	0.56
52:5:1389:U:H2'	52:5:1390:G:H8	1.70	0.56
35:l:44:ALA:O	35:l:47:ILE:N	2.38	0.56
48:y:13:ARG:HH12	50:3:552:C:H5''	1.70	0.56
49:z:21:THR:OG1	50:3:2294:A:N6	2.39	0.56
50:3:2750:A:H2'	50:3:2751:C:C6	2.41	0.56
52:5:60:A:H3'	52:5:327:G:H22	1.70	0.56
52:5:1329:G:H2'	52:5:1330:A:C8	2.40	0.56
5:B:11:ARG:HH22	5:B:183:ALA:HB3	1.70	0.56
23:T:20:ARG:O	23:T:23:LEU:HG	2.06	0.56
35:l:15:VAL:HG11	35:l:96:VAL:HG11	1.87	0.56
50:3:2175:U:C2	50:3:2179:A:N7	2.74	0.56
24:a:217:GLY:HA2	50:3:799:A:H5''	1.87	0.56
24:a:243:GLY:HA3	24:a:247:SER:HB3	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:a:262:HIS:ND1	24:a:263:MET:SD	2.78	0.56
39:p:12:ARG:HA	39:p:15:LYS:HG2	1.88	0.56
50:3:116:C:O2'	50:3:128:A:O2'	2.21	0.56
50:3:1159:C:H3'	50:3:1160:G:C8	2.41	0.56
52:5:768:G:O6	52:5:806:A:N6	2.38	0.56
52:5:1329:G:H2'	52:5:1330:A:H8	1.69	0.56
6:C:38:HIS:NE2	52:5:509:C:O2	2.38	0.55
28:e:92:LEU:N	28:e:132:THR:O	2.39	0.55
35:l:4:PRO:HG3	35:l:69:PHE:HE2	1.70	0.55
38:o:56:ARG:NH1	50:3:2691:C:OP1	2.39	0.55
50:3:164:A:H62	50:3:168:A:H61	1.53	0.55
50:3:1261:U:H2'	50:3:1262:G:H8	1.71	0.55
50:3:1645:C:H2'	50:3:1646:G:C8	2.42	0.55
50:3:2684:G:H2'	50:3:2685:A:C8	2.41	0.55
50:3:2704:U:H2'	50:3:2705:G:C8	2.41	0.55
4:A:35:ARG:HE	4:A:37:TRP:HE1	1.52	0.55
16:M:42:LEU:O	16:M:45:ARG:N	2.36	0.55
29:f:10:SER:HG	29:f:14:LYS:HZ3	1.51	0.55
50:3:254:G:H2'	50:3:255:A:C8	2.41	0.55
50:3:697:U:H2'	50:3:698:A:C8	2.41	0.55
50:3:892:G:H2'	50:3:893:A:C8	2.41	0.55
50:3:939:U:H2'	50:3:940:A:H8	1.71	0.55
50:3:2577:G:H2'	50:3:2578:A:C8	2.41	0.55
52:5:1226:A:H2'	52:5:1227:A:C8	2.42	0.55
4:A:120:PHE:O	4:A:124:SER:N	2.36	0.55
5:B:179:SER:OG	52:5:1102:A:N6	2.39	0.55
11:H:116:LYS:HE2	11:H:123:ALA:HA	1.86	0.55
15:L:109:ARG:NH1	52:5:1281:U:O3'	2.39	0.55
27:d:27:GLN:NE2	51:4:55:A:H4'	2.21	0.55
29:f:122:GLY:N	29:f:142:VAL:O	2.39	0.55
32:i:26:LEU:HB3	32:i:31:LEU:HD23	1.89	0.55
42:s:13:THR:H	42:s:16:VAL:HB	1.71	0.55
50:3:26:G:H2'	50:3:27:U:C6	2.40	0.55
50:3:2393:C:H2'	50:3:2394:A:C8	2.42	0.55
51:4:58:C:H2'	51:4:59:A:C8	2.41	0.55
52:5:536:U:H2'	52:5:537:A:H8	1.71	0.55
52:5:576:A:H2'	52:5:577:G:H8	1.71	0.55
52:5:641:U:H2'	52:5:642:A:H8	1.71	0.55
19:P:48:HIS:CE1	19:P:69:LEU:HD11	2.41	0.55
28:e:30:PRO:HG2	28:e:31:LEU:HD12	1.88	0.55
41:r:1:MET:N	41:r:113:GLU:OE1	2.39	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:711:A:HO2'	50:3:2450:C:HO2'	1.53	0.55
52:5:14:U:H3	52:5:909:A:H62	1.54	0.55
52:5:144:U:O2	52:5:149:G:O6	2.25	0.55
52:5:416:U:N3	52:5:421:G:C6	2.74	0.55
52:5:1397:G:H2'	52:5:1398:G:C8	2.41	0.55
53:7:18:C:H4'	53:7:19:G:H5''	1.87	0.55
2:1:10:ARG:HD3	34:k:64:LYS:HA	1.88	0.55
4:A:22:LYS:HB3	4:A:25:GLU:HB3	1.88	0.55
7:D:74:LYS:HE2	52:5:18:U:H5''	1.87	0.55
14:K:19:SER:HB3	14:K:25:HIS:HE2	1.71	0.55
22:S:10:ARG:HD3	22:S:13:GLN:HE21	1.71	0.55
34:k:77:TRP:CZ3	34:k:111:PRO:HB2	2.41	0.55
42:s:74:LEU:O	42:s:76:LYS:NZ	2.37	0.55
52:5:207:C:H3'	52:5:208:A:C8	2.41	0.55
52:5:951:U:H3	52:5:1200:G:H1	1.55	0.55
52:5:1138:U:H2'	52:5:1139:A:H8	1.72	0.55
52:5:1384:A:H2'	52:5:1385:A:C8	2.42	0.55
8:E:23:GLU:HA	8:E:26:GLN:HG2	1.88	0.55
12:I:59:ARG:HB3	52:5:1051:U:H5''	1.89	0.55
14:K:48:THR:HA	14:K:90:HIS:CE1	2.42	0.55
14:K:80:ILE:HG12	14:K:112:ARG:HH11	1.71	0.55
24:a:12:SER:OG	50:3:764:G:N2	2.38	0.55
35:l:2:LEU:HB3	35:l:69:PHE:HE1	1.72	0.55
50:3:1853:G:H2'	50:3:1854:A:C4	2.41	0.55
52:5:372:G:H2'	52:5:373:A:C8	2.42	0.55
11:H:116:LYS:N	52:5:1344:C:OP1	2.28	0.55
18:O:12:ARG:HH22	18:O:23:ASP:HB2	1.71	0.55
19:P:50:GLU:OE1	19:P:76:ARG:NH1	2.39	0.55
22:S:73:VAL:HG11	52:5:172:C:O2'	2.07	0.55
33:j:8:LEU:O	33:j:18:GLN:NE2	2.40	0.55
33:j:88:LYS:HB3	33:j:94:ARG:HG2	1.88	0.55
50:3:902:U:N3	50:3:941:C:OP2	2.39	0.55
50:3:941:C:H2'	50:3:942:A:C8	2.42	0.55
50:3:2521:A:H2'	50:3:2522:U:C6	2.41	0.55
50:3:2635:G:O2'	50:3:2789:A:N1	2.36	0.55
50:3:2781:C:H2'	50:3:2782:A:C8	2.41	0.55
52:5:412:G:H2'	52:5:413:G:H8	1.71	0.55
5:B:186:ASP:OD1	5:B:187:TYR:N	2.39	0.55
6:C:155:LYS:O	6:C:158:SER:OG	2.19	0.55
22:S:67:ARG:NH2	52:5:257:U:OP2	2.40	0.55
25:b:122:ALA:N	25:b:166:SER:OG	2.40	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:o:21:TYR:CE2	38:o:23:PRO:HG3	2.42	0.55
50:3:477:U:H2'	50:3:478:G:C8	2.41	0.55
50:3:1382:A:N6	50:3:1405:G:H21	2.00	0.55
50:3:2259:G:H2'	50:3:2260:G:H8	1.72	0.55
50:3:2484:A:H2	50:3:2489:G:H1	1.54	0.55
52:5:461:G:O6	52:5:462:G:N2	2.39	0.55
52:5:684:A:N1	52:5:697:G:O2'	2.36	0.55
18:O:10:THR:HA	18:O:35:PRO:HD2	1.89	0.55
24:a:236:ASN:HB2	50:3:2080:C:H5''	1.88	0.55
27:d:14:LYS:HB2	27:d:18:LYS:NZ	2.21	0.55
33:j:29:ARG:NH2	50:3:2556:C:OP1	2.39	0.55
35:l:41:TRP:HB3	35:l:94:VAL:HG11	1.87	0.55
41:r:128:ARG:NH2	50:3:1249:A:N3	2.55	0.55
50:3:408:G:O2'	50:3:460:G:OP1	2.24	0.55
50:3:2828:C:H3'	50:3:2829:G:N2	2.21	0.55
52:5:1156:G:H4'	52:5:1157:G:H5'	1.89	0.55
6:C:34:ILE:HD11	6:C:39:GLY:HA3	1.88	0.55
13:J:70:MET:HB2	13:J:72:MET:HE1	1.89	0.55
26:c:24:LEU:HD21	26:c:208:GLU:HA	1.88	0.55
33:j:30:LYS:HD3	50:3:2682:A:H4'	1.88	0.55
39:p:7:LYS:NZ	50:3:1245:G:O3'	2.38	0.55
43:t:29:PRO:O	43:t:32:GLN:NE2	2.39	0.55
45:v:13:LEU:HB2	50:3:432:G:H5'	1.87	0.55
50:3:1326:C:H2'	50:3:1327:G:C8	2.41	0.55
52:5:149:G:H2'	52:5:150:A:C8	2.42	0.55
52:5:448:A:H62	52:5:478:G:H5'	1.71	0.55
52:5:1213:A:N7	52:5:1275:U:O4	2.39	0.55
13:J:33:ASN:HA	52:5:680:G:H21	1.71	0.54
24:a:97:SER:HB3	24:a:111:SER:HB3	1.89	0.54
41:r:136:LYS:O	41:r:139:ARG:NH2	2.40	0.54
50:3:2591:G:H2'	50:3:2592:U:C6	2.42	0.54
52:5:145:G:O2'	52:5:147:A:N6	2.39	0.54
52:5:510:U:H2'	52:5:511:A:H8	1.72	0.54
52:5:880:G:H1	52:5:905:U:H3	1.53	0.54
52:5:1225:A:H2	52:5:1345:G:H1'	1.72	0.54
28:e:146:GLN:O	28:e:149:THR:OG1	2.20	0.54
50:3:2176:G:N1	50:3:2179:A:OP2	2.39	0.54
50:3:2769:G:H2'	50:3:2770:U:C6	2.41	0.54
52:5:536:U:H2'	52:5:537:A:C8	2.42	0.54
6:C:10:ARG:HD3	6:C:62:TYR:CE2	2.41	0.54
6:C:143:ARG:NH2	6:C:144:LEU:O	2.41	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:c:166:THR:O	26:c:170:GLN:HB2	2.06	0.54
34:k:16:LYS:NZ	50:3:1224:G:N7	2.56	0.54
35:l:71:HIS:NE2	50:3:945:U:O2'	2.40	0.54
39:p:65:ASN:ND2	50:3:1046:A:H5''	2.23	0.54
50:3:241:C:H2'	50:3:242:G:H8	1.73	0.54
50:3:370:C:H2'	50:3:371:C:C6	2.42	0.54
50:3:452:U:H3	50:3:2415:A:N6	2.04	0.54
50:3:1717:C:H2'	50:3:1718:C:C6	2.43	0.54
50:3:2126:A:O2'	50:3:2127:G:H5'	2.08	0.54
50:3:2417:G:H2'	50:3:2418:G:C8	2.43	0.54
52:5:541:C:H2'	52:5:542:G:H8	1.72	0.54
52:5:585:G:N1	52:5:751:C:OP2	2.37	0.54
52:5:612:G:H1	52:5:624:U:H3	1.56	0.54
6:C:13:ARG:NH1	52:5:540:U:O2'	2.40	0.54
8:E:22:ASN:O	8:E:26:GLN:NE2	2.41	0.54
25:b:125:ARG:HD2	25:b:126:TRP:NE1	2.21	0.54
33:j:2:VAL:HG23	33:j:33:ALA:HB3	1.89	0.54
34:k:39:GLN:OE1	50:3:866:G:O2'	2.22	0.54
39:p:79:ILE:HG21	50:3:1187:C:H5'	1.90	0.54
40:q:67:LYS:NZ	50:3:1253:G:N7	2.47	0.54
50:3:313:G:N2	50:3:394:C:C2	2.75	0.54
50:3:700:U:H2'	50:3:701:A:C8	2.42	0.54
52:5:295:G:H2'	52:5:296:A:C4	2.42	0.54
52:5:375:C:H2'	52:5:376:G:C8	2.42	0.54
52:5:1003:G:C6	52:5:1018:U:N3	2.76	0.54
6:C:139:GLY:H	6:C:179:VAL:HA	1.71	0.54
21:R:25:GLN:O	21:R:26:GLU:HG3	2.08	0.54
22:S:17:ARG:HH22	52:5:320:G:H5'	1.73	0.54
33:j:77:LEU:HD13	38:o:77:LYS:HB2	1.89	0.54
50:3:226:A:C6	50:3:236:G:C2	2.95	0.54
52:5:265:U:H2'	52:5:266:A:C8	2.42	0.54
52:5:407:A:N6	52:5:426:U:O5'	2.41	0.54
5:B:123:LEU:O	5:B:127:ILE:HG12	2.07	0.54
10:G:15:VAL:O	10:G:19:LEU:HG	2.07	0.54
21:R:27:LYS:HZ1	21:R:47:ASN:HB3	1.73	0.54
24:a:220:ARG:NH1	50:3:799:A:N3	2.55	0.54
37:n:87:THR:OG1	37:n:113:GLY:O	2.25	0.54
39:p:52:LYS:NZ	50:3:1030:U:OP1	2.35	0.54
50:3:918:G:N2	50:3:932:U:O2'	2.27	0.54
50:3:1203:G:H2'	50:3:1204:A:H8	1.71	0.54
50:3:2382:A:H2'	50:3:2383:G:C8	2.42	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:136:U:H3	52:5:157:A:H62	1.56	0.54
2:1:11:PHE:HE2	34:k:59:TYR:HB3	1.72	0.54
13:J:21:ASN:ND2	52:5:689:U:O4	2.33	0.54
32:i:42:LYS:HE3	39:p:62:LEU:HD11	1.89	0.54
34:k:126:PHE:HB2	34:k:146:VAL:HG22	1.90	0.54
50:3:51:A:N7	50:3:121:U:C4	2.76	0.54
50:3:2025:C:H2'	50:3:2026:A:H8	1.73	0.54
52:5:1224:C:N4	52:5:1262:A:OP2	2.33	0.54
5:B:89:THR:HA	5:B:92:ILE:HG12	1.90	0.54
6:C:91:ARG:HG3	6:C:182:PRO:HD2	1.89	0.54
24:a:69:ILE:HG23	24:a:109:ILE:HA	1.89	0.54
32:i:133:HIS:CE1	32:i:136:GLU:HG3	2.43	0.54
34:k:67:ASN:ND2	34:k:69:ARG:O	2.40	0.54
35:l:115:ILE:O	35:l:119:THR:HG23	2.08	0.54
36:m:109:ASP:OD2	50:3:1315:A:N6	2.38	0.54
39:p:91:ARG:HD3	40:q:11:GLN:HB3	1.88	0.54
40:q:32:GLU:OE2	40:q:56:VAL:HG12	2.08	0.54
50:3:2494:C:H2'	50:3:2495:A:H8	1.73	0.54
51:4:104:C:H2'	51:4:105:A:H8	1.73	0.54
52:5:748:U:H3'	52:5:749:G:C8	2.42	0.54
2:1:20:LYS:NZ	50:3:666:G:H5''	2.22	0.54
10:G:91:SER:OG	10:G:137:ILE:O	2.25	0.54
22:S:14:ASN:OD1	22:S:15:ILE:HD12	2.07	0.54
34:k:131:VAL:HG22	34:k:148:LEU:HD11	1.90	0.54
50:3:59:C:H2'	50:3:60:G:C8	2.43	0.54
50:3:223:A:N6	50:3:464:A:OP2	2.40	0.54
50:3:611:A:OP1	50:3:1285:U:O2'	2.25	0.54
50:3:802:U:H2'	50:3:803:G:H8	1.73	0.54
50:3:1027:U:O4	50:3:1198:G:O6	2.25	0.54
50:3:1079:U:O2'	50:3:1146:A:N1	2.41	0.54
50:3:2646:G:O2'	50:3:2647:A:N7	2.41	0.54
52:5:1302:C:H2'	52:5:1303:A:C8	2.43	0.54
11:H:11:ARG:NH1	52:5:1109:U:OP2	2.36	0.54
24:a:64:ARG:NH1	24:a:90:PRO:O	2.41	0.54
46:w:15:LEU:HD22	46:w:58:LEU:HD21	1.90	0.54
50:3:606:G:O6	50:3:2036:G:O2'	2.24	0.54
50:3:1184:U:H2'	50:3:1185:U:C6	2.43	0.54
50:3:2663:G:N1	50:3:2673:A:OP2	2.32	0.54
5:B:11:ARG:HD3	5:B:181:LEU:HA	1.88	0.53
7:D:142:GLY:O	7:D:148:ARG:HA	2.08	0.53
7:D:181:LYS:NZ	7:D:182:ASN:O	2.40	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:d:29:PRO:HD2	27:d:169:LEU:HD11	1.89	0.53
34:k:75:GLN:OE1	34:k:77:TRP:NE1	2.42	0.53
35:l:45:ARG:NH2	50:3:2493:G:OP2	2.40	0.53
38:o:57:GLY:HA3	38:o:62:GLU:HG2	1.90	0.53
50:3:999:U:O2'	50:3:2258:G:O6	2.26	0.53
50:3:2018:U:H2'	50:3:2019:G:O4'	2.08	0.53
50:3:2332:U:N3	50:3:2339:G:N1	2.45	0.53
50:3:2587:U:H2'	50:3:2588:U:C6	2.44	0.53
50:3:2840:U:H2'	50:3:2841:A:C8	2.42	0.53
11:H:49:ASP:OD1	11:H:50:MET:N	2.41	0.53
17:N:6:ASN:HA	17:N:9:ILE:HG12	1.91	0.53
22:S:17:ARG:NH2	52:5:319:U:O2'	2.40	0.53
40:q:28:PRO:HD2	40:q:31:LYS:HE3	1.88	0.53
44:u:72:THR:HG21	50:3:2372:C:H4'	1.91	0.53
50:3:139:G:H2'	50:3:140:G:C8	2.43	0.53
50:3:762:A:OP2	50:3:1459:A:O2'	2.25	0.53
52:5:957:C:H2'	52:5:958:G:C8	2.43	0.53
52:5:1241:G:C2	52:5:1245:A:N1	2.76	0.53
26:c:127:LEU:HD12	26:c:199:VAL:HG23	1.89	0.53
41:r:128:ARG:HG2	50:3:1262:G:H1'	1.90	0.53
50:3:73:A:H4'	50:3:74:U:H3'	1.91	0.53
50:3:1463:G:H2'	50:3:1464:G:H8	1.73	0.53
50:3:1923:A:N6	52:5:1383:A:O2'	2.40	0.53
50:3:2609:C:H2'	50:3:2611:G:C8	2.44	0.53
50:3:2694:A:H2'	50:3:2695:U:H6	1.74	0.53
18:O:31:GLY:HA3	18:O:43:LYS:O	2.08	0.53
24:a:248:PRO:HB3	50:3:1978:U:H1'	1.89	0.53
26:c:64:LYS:NZ	50:3:711:A:OP1	2.38	0.53
41:r:115:GLN:CD	41:r:115:GLN:H	2.17	0.53
45:v:34:GLN:NE2	50:3:2098:U:O2'	2.41	0.53
50:3:523:A:C6	50:3:529:G:N1	2.76	0.53
50:3:732:G:H2'	50:3:733:C:C6	2.43	0.53
52:5:369:A:H2'	52:5:370:A:H8	1.74	0.53
52:5:944:A:O2'	52:5:966:A:N6	2.42	0.53
52:5:1113:U:H2'	52:5:1114:A:C8	2.43	0.53
2:l:37:GLN:NE2	50:3:2371:U:OP2	2.40	0.53
12:I:28:THR:CG2	12:I:78:ARG:HG2	2.39	0.53
17:N:46:ASP:O	17:N:49:SER:OG	2.24	0.53
25:b:158:ARG:HD3	50:3:2031:C:H5''	1.91	0.53
29:f:12:LEU:HD21	50:3:2102:U:H5''	1.90	0.53
29:f:30:LEU:HD21	50:3:2206:A:H1'	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:17:G:O6	50:3:560:U:O2	2.26	0.53
50:3:425:U:H4'	50:3:426:U:OP2	2.06	0.53
50:3:1391:U:O2'	50:3:1816:A:N3	2.34	0.53
50:3:1416:G:H2'	50:3:1417:G:C8	2.42	0.53
50:3:2093:U:H2'	50:3:2094:A:H8	1.73	0.53
50:3:2695:U:O4	50:3:2730:G:O6	2.25	0.53
50:3:2885:U:H2'	50:3:2886:A:H8	1.74	0.53
51:4:95:G:H2'	51:4:96:G:H8	1.74	0.53
52:5:36:G:H2'	52:5:37:C:C6	2.43	0.53
52:5:675:U:H2'	52:5:676:U:C6	2.44	0.53
52:5:681:U:H2'	52:5:682:G:C8	2.44	0.53
52:5:939:G:N2	52:5:1313:A:OP2	2.41	0.53
53:7:67:C:H2'	53:7:68:G:C8	2.43	0.53
10:G:67:LYS:HG2	52:5:650:A:C5	2.44	0.53
14:K:13:LYS:N	52:5:560:U:O2	2.42	0.53
14:K:69:ARG:HD2	14:K:70:LEU:O	2.09	0.53
24:a:47:ARG:NH2	50:3:725:G:O2'	2.42	0.53
25:b:118:GLY:N	50:3:2826:G:OP1	2.41	0.53
25:b:161:LYS:NZ	32:i:82:GLN:HG3	2.23	0.53
27:d:4:LEU:HD22	27:d:101:GLU:HB2	1.90	0.53
50:3:30:A:H2'	50:3:31:U:C6	2.43	0.53
50:3:982:G:H2'	50:3:983:A:C8	2.44	0.53
50:3:1450:G:H1	50:3:1610:U:H3	1.55	0.53
50:3:1942:G:N2	50:3:1971:G:O5'	2.38	0.53
50:3:2350:C:H2'	50:3:2351:U:C6	2.44	0.53
50:3:2697:C:H5'	50:3:2876:G:H22	1.73	0.53
52:5:169:G:N2	52:5:219:A:O2'	2.41	0.53
52:5:612:G:N2	52:5:624:U:O2	2.40	0.53
52:5:1219:C:H2'	52:5:1220:A:C8	2.44	0.53
53:7:23:G:H2'	53:7:24:A:H8	1.73	0.53
9:F:91:PRO:O	9:F:95:LYS:HG3	2.09	0.53
13:J:73:ALA:O	13:J:99:SER:OG	2.27	0.53
18:O:12:ARG:HH12	18:O:23:ASP:C	2.16	0.53
18:O:38:LYS:HE3	52:5:448:A:H3'	1.90	0.53
25:b:47:TYR:OH	50:3:2644:U:O2'	2.27	0.53
37:n:11:ARG:NH1	37:n:95:GLY:O	2.42	0.53
40:q:28:PRO:O	40:q:31:LYS:NZ	2.41	0.53
50:3:144:C:H2'	50:3:145:A:C8	2.43	0.53
52:5:675:U:H2'	52:5:676:U:H6	1.73	0.53
52:5:923:G:O2'	52:5:1508:C:OP1	2.26	0.53
8:E:153:LYS:HA	10:G:56:ASN:HD21	1.74	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:L:55:ALA:O	15:L:58:ASN:HB2	2.08	0.53
24:a:282:ARG:HH22	50:3:1805:U:H3'	1.72	0.53
50:3:2061:A:N6	50:3:2585:A:H61	1.93	0.53
50:3:2823:A:O2'	50:3:2825:A:N7	2.35	0.53
50:3:2857:C:H2'	50:3:2858:A:C8	2.44	0.53
52:5:836:C:H2'	52:5:837:G:C4	2.44	0.53
53:7:29:C:H2'	53:7:30:G:H8	1.74	0.53
14:K:76:VAL:HG21	14:K:108:TYR:HE1	1.74	0.53
32:i:78:TYR:HB3	32:i:87:ILE:HD12	1.91	0.53
38:o:32:ASN:HA	38:o:49:THR:HA	1.90	0.53
44:u:62:GLY:N	44:u:95:VAL:O	2.42	0.53
50:3:355:A:O2'	50:3:374:A:N3	2.41	0.53
50:3:740:A:OP2	50:3:761:G:N2	2.42	0.53
50:3:2312:G:H1	50:3:2320:U:H3	1.57	0.53
52:5:1267:G:H2'	52:5:1268:G:H8	1.74	0.53
8:E:13:LEU:HB3	8:E:17:GLN:HE21	1.73	0.53
9:F:124:ILE:O	9:F:127:SER:OG	2.27	0.53
35:l:11:LYS:HD2	50:3:2285:G:H5''	1.91	0.53
50:3:96:A:H2'	50:3:97:A:C8	2.43	0.53
50:3:129:U:H2'	50:3:130:C:C6	2.44	0.53
50:3:220:A:H2'	50:3:221:A:C8	2.44	0.53
50:3:269:A:N6	50:3:315:A:O4'	2.42	0.53
50:3:316:C:O2'	50:3:392:A:N1	2.38	0.53
50:3:1754:U:H2'	50:3:1755:A:C8	2.43	0.53
50:3:2292:A:O2'	50:3:2296:A:N1	2.32	0.53
50:3:2744:A:H2'	50:3:2745:G:H8	1.74	0.53
50:3:2843:G:O6	50:3:2882:U:O2	2.27	0.53
50:3:2855:A:H3'	50:3:2856:G:H8	1.73	0.53
52:5:661:G:N2	52:5:738:A:N1	2.42	0.53
52:5:1248:U:H2'	52:5:1249:G:O4'	2.09	0.53
15:L:113:ARG:NH1	52:5:941:A:OP2	2.42	0.52
22:S:50:GLN:HA	22:S:53:ARG:HD2	1.91	0.52
44:u:89:LYS:NZ	51:4:69:C:OP1	2.39	0.52
50:3:163:A:H2'	50:3:164:A:C8	2.44	0.52
50:3:389:C:H2'	50:3:390:A:H8	1.71	0.52
50:3:849:C:H2'	50:3:850:G:C8	2.42	0.52
50:3:1764:U:O4	50:3:1769:A:N7	2.42	0.52
50:3:1845:C:H4'	50:3:1846:A:H5'	1.90	0.52
50:3:1862:A:N6	50:3:1863:G:O6	2.43	0.52
50:3:2405:G:N2	50:3:2427:U:O2	2.36	0.52
50:3:2798:A:N1	50:3:2897:G:C6	2.77	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:4:3:U:H2'	51:4:4:G:H8	1.73	0.52
52:5:331:C:H2'	52:5:332:A:H8	1.74	0.52
52:5:412:G:H2'	52:5:413:G:C8	2.44	0.52
53:7:2:G:O6	53:7:73:C:N4	2.42	0.52
6:C:166:PHE:CD2	6:C:167:VAL:HG13	2.44	0.52
11:H:93:ASN:ND2	11:H:95:GLU:OE2	2.42	0.52
16:M:2:ALA:HA	52:5:1039:G:H5''	1.92	0.52
21:R:81:LYS:HD3	52:5:1201:C:H4'	1.91	0.52
24:a:4:LYS:NZ	24:a:5:LYS:O	2.35	0.52
38:o:48:PHE:HE2	38:o:66:VAL:HG13	1.74	0.52
40:q:78:HIS:NE2	50:3:599:U:OP1	2.42	0.52
50:3:142:A:H2	50:3:1628:G:H21	1.57	0.52
50:3:300:G:H2'	50:3:301:G:C8	2.44	0.52
50:3:1633:C:H2'	50:3:1634:A:C8	2.44	0.52
50:3:1917:G:H2'	50:3:1918:U:C6	2.45	0.52
50:3:2409:U:O4	50:3:2423:G:O6	2.27	0.52
52:5:65:G:H4'	52:5:66:A:H3'	1.91	0.52
9:F:28:VAL:HG12	52:5:1350:A:H4'	1.91	0.52
17:N:25:GLN:NE2	52:5:654:U:O2'	2.43	0.52
26:c:26:ALA:N	26:c:117:SER:OG	2.42	0.52
26:c:194:ALA:C	26:c:196:ALA:H	2.16	0.52
35:l:31:GLU:H	35:l:107:ALA:HB2	1.74	0.52
50:3:61:U:O2	50:3:70:G:N2	2.38	0.52
50:3:674:G:H2'	50:3:675:U:H6	1.74	0.52
50:3:2269:C:H2'	50:3:2270:U:H6	1.74	0.52
50:3:2700:C:H2'	50:3:2701:A:C8	2.45	0.52
52:5:47:G:O2'	52:5:361:U:H1'	2.09	0.52
52:5:250:G:H2'	52:5:251:G:C8	2.44	0.52
52:5:1178:C:H2'	52:5:1179:A:C8	2.44	0.52
53:7:54:G:N1	53:7:63:U:N3	2.57	0.52
5:B:11:ARG:NH1	5:B:177:PRO:O	2.43	0.52
7:D:191:MET:O	7:D:195:THR:HG23	2.09	0.52
9:F:107:ALA:HA	9:F:122:GLU:CD	2.35	0.52
16:M:10:GLN:NE2	16:M:21:TYR:O	2.42	0.52
17:N:62:ARG:NH2	52:5:753:C:OP2	2.41	0.52
24:a:147:VAL:HA	24:a:200:VAL:HA	1.91	0.52
25:b:115:LYS:NZ	50:3:2731:U:OP1	2.37	0.52
50:3:347:C:H2'	50:3:348:A:C8	2.44	0.52
50:3:567:U:H4'	50:3:568:G:C8	2.44	0.52
50:3:680:A:H2'	50:3:682:A:N7	2.24	0.52
50:3:1543:U:H2'	50:3:1544:G:C8	2.45	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1872:U:O4	50:3:1882:G:O6	2.27	0.52
50:3:2104:A:H2'	50:3:2105:G:H8	1.75	0.52
50:3:2353:G:H1'	50:3:2389:A:H2'	1.90	0.52
50:3:2668:A:O2'	50:3:2669:G:H8	1.93	0.52
50:3:2743:U:H2'	50:3:2744:A:C8	2.45	0.52
52:5:157:A:O2'	52:5:158:A:O4'	2.22	0.52
52:5:250:G:H2'	52:5:251:G:H8	1.74	0.52
52:5:649:U:O4	52:5:749:G:O2'	2.21	0.52
52:5:879:G:H2'	52:5:880:G:H8	1.74	0.52
52:5:881:G:N1	52:5:905:U:C2	2.77	0.52
52:5:909:A:H2'	52:5:911:G:H5''	1.90	0.52
52:5:1345:G:H2'	52:5:1346:G:H8	1.73	0.52
53:7:2:G:N2	53:7:74:A:N7	2.58	0.52
53:7:63:U:H2'	53:7:64:G:H8	1.73	0.52
8:E:97:LEU:HD23	8:E:100:ILE:HB	1.92	0.52
34:k:22:ARG:HE	50:3:1280:G:P	2.33	0.52
50:3:57:G:H2'	50:3:58:A:C8	2.45	0.52
50:3:714:G:H2'	50:3:715:G:H8	1.73	0.52
50:3:784:A:H61	50:3:788:G:H21	1.57	0.52
50:3:974:C:N4	50:3:975:G:O6	2.42	0.52
50:3:2885:U:H2'	50:3:2886:A:C8	2.44	0.52
52:5:317:A:H2	52:5:328:G:H1	1.57	0.52
52:5:779:A:N6	52:5:797:G:N2	2.38	0.52
53:7:55:U:O2	53:7:59:A:N7	2.43	0.52
25:b:13:MET:HA	25:b:27:THR:HA	1.90	0.52
37:n:28:VAL:HG13	37:n:89:VAL:HG12	1.91	0.52
40:q:27:ALA:HB1	40:q:31:LYS:HZ1	1.75	0.52
42:s:66:ARG:NH1	50:3:1364:A:OP1	2.43	0.52
50:3:894:G:H21	50:3:2276:A:H3'	1.75	0.52
50:3:2083:U:O5'	50:3:2246:G:N2	2.42	0.52
50:3:2195:U:H2'	50:3:2196:G:C8	2.43	0.52
50:3:2259:G:O2'	50:3:2457:U:O2	2.23	0.52
50:3:2706:U:H2'	50:3:2707:A:H8	1.73	0.52
52:5:473:A:O2'	52:5:474:G:O4'	2.14	0.52
52:5:1003:G:N1	52:5:1018:U:N3	2.58	0.52
52:5:1031:A:H2'	52:5:1032:G:C8	2.45	0.52
52:5:1114:A:N6	52:5:1127:A:H61	2.07	0.52
52:5:1116:U:O2'	52:5:1117:U:O5'	2.26	0.52
4:A:72:VAL:HA	4:A:75:VAL:HG12	1.92	0.52
4:A:117:LEU:N	4:A:190:GLU:OE1	2.41	0.52
17:N:21:SER:OG	17:N:23:GLN:OE1	2.27	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:499:G:N2	50:3:501:G:H3'	2.24	0.52
50:3:1032:A:H2'	50:3:1033:A:H8	1.75	0.52
52:5:610:C:H2'	52:5:611:A:H8	1.74	0.52
52:5:732:A:H2'	52:5:733:A:C8	2.37	0.52
52:5:1176:A:H4'	52:5:1177:U:H5''	1.91	0.52
52:5:1193:U:H2'	52:5:1194:A:C8	2.40	0.52
52:5:1312:G:H2'	52:5:1313:A:C4	2.44	0.52
17:N:39:HIS:HD2	52:5:736:U:O2'	1.93	0.52
27:d:129:THR:HG21	50:3:2311:G:N3	2.25	0.52
34:k:48:ARG:HG2	34:k:50:GLY:H	1.74	0.52
39:p:28:HIS:NE2	50:3:21:U:OP1	2.43	0.52
47:x:13:SER:HA	47:x:24:THR:HB	1.91	0.52
49:z:34:LEU:HD22	50:3:2352:U:H2'	1.92	0.52
51:4:95:G:H2'	51:4:96:G:C8	2.45	0.52
52:5:842:C:H2'	52:5:843:C:C6	2.45	0.52
52:5:1054:C:OP2	52:5:1055:G:O2'	2.23	0.52
7:D:139:GLU:OE1	7:D:152:LYS:HB2	2.09	0.52
13:J:22:ASN:OD1	13:J:23:THR:N	2.43	0.52
24:a:51:GLY:HA3	50:3:808:U:H4'	1.92	0.52
45:v:57:THR:O	45:v:61:HIS:ND1	2.42	0.52
50:3:686:C:H2'	50:3:687:G:C8	2.44	0.52
50:3:733:C:H5''	50:3:734:A:H5'	1.91	0.52
50:3:893:A:H2'	50:3:894:G:C8	2.44	0.52
50:3:1662:G:H2'	50:3:1663:G:H8	1.75	0.52
50:3:1820:U:O2'	50:3:1821:G:OP1	2.25	0.52
50:3:2845:U:H2'	50:3:2846:A:H8	1.75	0.52
50:3:2892:U:H2'	50:3:2893:C:C6	2.45	0.52
51:4:38:U:H1'	51:4:43:A:H62	1.74	0.52
52:5:621:C:H2'	52:5:622:A:C8	2.45	0.52
52:5:662:G:H1'	52:5:730:G:H5'	1.92	0.52
52:5:1287:G:H2'	52:5:1288:C:C6	2.44	0.52
53:7:12:C:N4	53:7:25:G:O6	2.43	0.52
4:A:29:HIS:CD2	4:A:56:PHE:HB2	2.45	0.52
16:M:47:LEU:HD12	16:M:52:ALA:HB2	1.91	0.52
19:P:20:LYS:HE2	52:5:251:G:H5''	1.91	0.52
20:Q:57:LEU:O	20:Q:61:LYS:HG2	2.10	0.52
25:b:139:TYR:HD2	50:3:1691:U:H4'	1.75	0.52
32:i:67:LEU:HB2	32:i:72:LYS:HG3	1.91	0.52
32:i:71:LYS:NZ	50:3:1176:U:OP2	2.39	0.52
32:i:106:ASN:HA	32:i:109:LYS:HE2	1.91	0.52
35:l:77:LYS:HG3	35:l:81:VAL:HG11	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:p:53:LYS:NZ	50:3:1191:A:OP1	2.33	0.52
50:3:192:U:O2	50:3:212:G:N2	2.36	0.52
50:3:274:A:OP2	50:3:294:G:N1	2.42	0.52
50:3:454:G:H2'	50:3:455:G:C8	2.37	0.52
50:3:670:G:H2'	50:3:671:C:C6	2.45	0.52
50:3:869:U:O2'	50:3:2366:A:H1'	2.10	0.52
52:5:146:A:N1	52:5:340:A:O2'	2.36	0.52
52:5:306:G:H2'	52:5:307:C:C6	2.45	0.52
52:5:561:A:H2'	52:5:565:G:C8	2.45	0.52
52:5:1197:G:OP1	52:5:1295:U:O2'	2.26	0.52
2:1:36:LYS:O	2:1:39:ARG:HD3	2.10	0.51
10:G:26:ARG:HG3	10:G:84:ILE:HG23	1.92	0.51
42:s:36:SER:OG	42:s:37:LYS:N	2.43	0.51
48:y:2:ALA:N	50:3:2622:A:O4'	2.43	0.51
50:3:325:G:H1	50:3:383:U:H3	1.58	0.51
50:3:1756:A:H2'	50:3:1757:G:C8	2.46	0.51
50:3:2144:C:H2'	50:3:2145:A:C8	2.44	0.51
52:5:1222:U:H2'	52:5:1223:A:H8	1.74	0.51
8:E:5:ILE:HG12	8:E:62:PHE:CE1	2.44	0.51
9:F:21:LEU:O	9:F:24:ARG:HG2	2.09	0.51
9:F:40:ARG:NH2	52:5:1266:U:OP2	2.42	0.51
50:3:86:A:N6	50:3:101:C:O4'	2.42	0.51
50:3:134:U:H2'	50:3:135:A:C8	2.45	0.51
50:3:379:A:N3	50:3:381:A:N6	2.58	0.51
50:3:401:G:O2'	50:3:402:A:OP1	2.25	0.51
50:3:632:A:H2'	50:3:633:G:H8	1.76	0.51
50:3:815:G:H21	50:3:818:A:H61	1.56	0.51
50:3:935:U:H2'	50:3:936:G:C8	2.45	0.51
50:3:1846:A:H1'	50:3:1934:A:C8	2.45	0.51
50:3:2249:A:H2'	50:3:2250:G:C8	2.45	0.51
50:3:2744:A:H2'	50:3:2745:G:C8	2.46	0.51
52:5:58:G:H2'	52:5:59:C:C6	2.46	0.51
52:5:190:A:H2'	52:5:191:A:O4'	2.10	0.51
52:5:832:G:H2'	52:5:833:G:H8	1.76	0.51
52:5:1175:C:OP1	52:5:1176:A:O2'	2.24	0.51
52:5:1359:C:H2'	52:5:1360:G:C8	2.45	0.51
4:A:133:LEU:HB3	4:A:156:ILE:HD11	1.92	0.51
5:B:90:LYS:HD3	5:B:93:LYS:HZ1	1.74	0.51
5:B:153:LYS:NZ	5:B:171:TYR:O	2.39	0.51
7:D:67:GLU:HG2	7:D:97:ARG:HH11	1.75	0.51
12:I:25:ASP:O	12:I:29:LYS:HG2	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:S:25:LYS:O	22:S:28:LEU:HG	2.10	0.51
25:b:30:TYR:OH	25:b:32:GLU:OE2	2.23	0.51
41:r:49:LYS:HA	41:r:52:ASN:HD21	1.75	0.51
49:z:8:ARG:HD3	49:z:17:ILE:HG23	1.93	0.51
50:3:163:A:N6	50:3:169:U:H3	2.00	0.51
50:3:1012:G:H2'	50:3:1013:G:C8	2.44	0.51
50:3:1201:A:H2'	50:3:1202:A:H8	1.74	0.51
50:3:2659:U:H2'	50:3:2660:C:C6	2.45	0.51
51:4:103:C:H2'	51:4:104:C:C6	2.45	0.51
52:5:7:U:O2'	52:5:294:A:N3	2.42	0.51
52:5:519:G:C6	52:5:527:G:C2	2.97	0.51
53:7:7:U:H3	53:7:68:G:H1	1.57	0.51
53:7:19:G:H4'	53:7:20:G:OP1	2.08	0.51
11:H:18:LYS:HD2	52:5:1124:U:H4'	1.93	0.51
13:J:100:ILE:HG12	13:J:103:ILE:HD11	1.91	0.51
22:S:53:ARG:HA	22:S:56:ARG:HH22	1.75	0.51
24:a:136:MET:HA	24:a:197:ARG:HH21	1.76	0.51
38:o:67:ARG:HE	38:o:74:PRO:HB2	1.73	0.51
50:3:1649:C:OP2	50:3:1651:C:N4	2.43	0.51
50:3:2072:C:H2'	50:3:2073:C:H6	1.76	0.51
50:3:2561:G:N2	50:3:2591:G:H21	2.08	0.51
52:5:63:U:O2'	52:5:375:C:O2	2.28	0.51
52:5:219:A:H2'	52:5:220:U:O4'	2.09	0.51
4:A:90:ASP:OD1	4:A:91:TYR:N	2.43	0.51
11:H:23:PRO:HB3	11:H:62:ASN:O	2.09	0.51
13:J:113:GLY:HA2	52:5:713:A:H1'	1.92	0.51
22:S:53:ARG:HA	22:S:56:ARG:NH2	2.25	0.51
35:l:3:GLN:OE1	35:l:4:PRO:HD2	2.10	0.51
35:l:44:ALA:HA	35:l:47:ILE:HD12	1.91	0.51
38:o:54:ARG:HG3	38:o:100:TYR:CE1	2.45	0.51
41:r:12:ILE:HD11	41:r:46:LEU:HD13	1.93	0.51
47:x:16:CYS:HB3	47:x:21:ASN:HB3	1.91	0.51
50:3:299:A:H2'	50:3:300:G:C8	2.45	0.51
50:3:1354:U:HO2'	50:3:2017:G:HO2'	1.56	0.51
50:3:2301:C:H2'	50:3:2302:C:C6	2.46	0.51
50:3:2555:U:H2'	50:3:2556:C:C6	2.46	0.51
50:3:2892:U:H2'	50:3:2893:C:H6	1.75	0.51
52:5:34:A:H2'	52:5:35:C:C6	2.45	0.51
52:5:927:C:H42	52:5:1360:G:H1	1.59	0.51
4:A:181:PRO:HB3	4:A:188:VAL:HG11	1.92	0.51
6:C:94:GLU:HG3	6:C:187:LEU:HD13	1.91	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:D:162:ALA:HB1	7:D:166:ILE:HG22	1.92	0.51
26:c:116:TRP:CZ2	26:c:186:VAL:HG21	2.46	0.51
39:p:13:ARG:NH2	50:3:616:G:OP1	2.43	0.51
41:r:124:LEU:O	41:r:127:LYS:HG2	2.11	0.51
46:w:51:LEU:O	46:w:55:LEU:HD23	2.11	0.51
49:z:35:ASN:HB3	49:z:46:VAL:HG22	1.92	0.51
50:3:1475:C:H1'	50:3:1577:A:H2	1.76	0.51
50:3:1511:C:H2'	50:3:1512:A:C8	2.45	0.51
50:3:1816:A:H2'	50:3:1817:A:C8	2.46	0.51
50:3:1866:G:N1	50:3:1891:A:N7	2.59	0.51
51:4:59:A:O2'	51:4:60:C:OP1	2.28	0.51
52:5:259:A:C8	52:5:260:C:H5	2.29	0.51
4:A:88:LYS:HB2	4:A:92:VAL:HG12	1.93	0.51
17:N:70:ASN:OD1	17:N:71:ASP:N	2.44	0.51
24:a:112:PRO:HD2	24:a:115:ILE:HD13	1.93	0.51
24:a:136:MET:HE2	24:a:140:PHE:HB2	1.92	0.51
26:c:57:GLU:OE1	26:c:94:LYS:NZ	2.43	0.51
27:d:129:THR:OG1	50:3:2311:G:O2'	2.22	0.51
33:j:50:GLY:O	33:j:53:LYS:NZ	2.41	0.51
34:k:93:ILE:HD13	34:k:126:PHE:HE1	1.75	0.51
34:k:117:HIS:HB2	50:3:673:A:OP1	2.11	0.51
37:n:8:ARG:NH1	37:n:9:ARG:HE	2.09	0.51
38:o:32:ASN:HD21	38:o:47:ASN:HB3	1.74	0.51
50:3:769:A:H3'	50:3:770:A:H8	1.76	0.51
50:3:2376:C:H2'	50:3:2377:A:C8	2.45	0.51
52:5:385:A:H3'	52:5:386:U:C6	2.46	0.51
52:5:599:G:O6	52:5:634:U:O2	2.28	0.51
52:5:655:G:C6	52:5:746:A:C6	2.98	0.51
52:5:818:A:H2'	52:5:819:G:C8	2.46	0.51
52:5:1065:G:H2'	52:5:1066:U:H6	1.76	0.51
52:5:1112:U:O4	52:5:1128:G:O6	2.28	0.51
52:5:1219:C:H2'	52:5:1220:A:H8	1.76	0.51
52:5:1230:G:N7	52:5:1254:A:N6	2.59	0.51
14:K:67:LYS:HD3	14:K:77:LEU:HD23	1.91	0.51
18:O:14:VAL:HA	18:O:30:ILE:HD13	1.93	0.51
24:a:229:ARG:HH21	24:a:232:ALA:HB2	1.74	0.51
35:l:24:ASN:N	50:3:944:U:OP1	2.35	0.51
41:r:132:GLN:OE1	50:3:1260:U:O2'	2.26	0.51
50:3:15:A:N6	50:3:561:A:OP2	2.37	0.51
50:3:300:G:H2'	50:3:301:G:H8	1.76	0.51
50:3:723:U:H2'	50:3:724:A:H8	1.74	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1838:A:H2'	50:3:1839:C:C6	2.46	0.51
50:3:2478:G:O6	50:3:2489:G:N2	2.43	0.51
52:5:318:C:H2'	52:5:319:U:C6	2.46	0.51
52:5:882:U:H3'	52:5:883:A:H8	1.76	0.51
52:5:1065:G:H2'	52:5:1066:U:C6	2.45	0.51
52:5:1139:A:H2'	52:5:1140:A:H8	1.75	0.51
52:5:1483:C:H2'	52:5:1484:C:H6	1.75	0.51
4:A:89:ASN:OD1	4:A:90:ASP:N	2.40	0.51
8:E:71:ASP:N	8:E:71:ASP:OD1	2.43	0.51
22:S:17:ARG:NH2	52:5:319:U:O3'	2.44	0.51
32:i:101:ASP:HB2	32:i:127:VAL:HG13	1.93	0.51
50:3:918:G:H22	50:3:932:U:HO2'	1.55	0.51
50:3:1306:G:H2'	50:3:1307:G:C8	2.46	0.51
50:3:1370:A:N6	50:3:1636:U:O2	2.41	0.51
50:3:2631:G:O5'	50:3:2830:A:O2'	2.26	0.51
50:3:2826:G:O2'	50:3:2828:C:OP2	2.22	0.51
50:3:2841:A:H2'	50:3:2842:G:H8	1.76	0.51
52:5:368:C:N4	52:5:384:G:OP2	2.35	0.51
5:B:42:ASN:O	5:B:46:VAL:HG22	2.10	0.51
25:b:161:LYS:HZ2	32:i:82:GLN:HG3	1.76	0.51
27:d:33:LYS:HD3	27:d:92:ARG:HH11	1.76	0.51
33:j:29:ARG:O	33:j:31:ARG:NH1	2.43	0.51
43:t:24:VAL:HA	43:t:36:VAL:HG22	1.92	0.51
50:3:960:A:H2'	50:3:961:U:C6	2.45	0.51
50:3:1106:G:O2'	50:3:1124:G:OP2	2.28	0.51
50:3:1451:A:H2'	50:3:1452:G:H8	1.76	0.51
50:3:2002:U:OP2	50:3:2003:C:O2'	2.25	0.51
52:5:331:C:H2'	52:5:332:A:C8	2.46	0.51
52:5:462:G:O2'	52:5:463:U:O4'	2.14	0.51
52:5:537:A:H2'	52:5:538:G:C8	2.46	0.51
52:5:554:C:H2'	52:5:555:G:C8	2.45	0.51
52:5:1214:A:H62	52:5:1273:A:N6	2.09	0.51
53:7:23:G:H2'	53:7:24:A:C8	2.46	0.51
7:D:176:SER:OG	7:D:177:ASP:OD1	2.28	0.50
25:b:165:MET:HE3	25:b:166:SER:H	1.75	0.50
50:3:453:U:H2'	50:3:454:G:C8	2.45	0.50
50:3:715:G:OP2	50:3:811:G:N1	2.44	0.50
50:3:1073:A:H2'	50:3:1074:A:C8	2.46	0.50
50:3:2017:G:H2'	50:3:2018:U:C6	2.46	0.50
50:3:2097:A:N6	50:3:2238:G:O6	2.44	0.50
50:3:2859:U:H2'	50:3:2860:A:C8	2.46	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:57:U:N3	52:5:58:G:O6	2.44	0.50
52:5:1096:A:H2'	52:5:1097:G:H8	1.76	0.50
52:5:1156:G:H1'	52:5:1157:G:C4	2.46	0.50
52:5:1417:U:H2'	52:5:1418:G:H8	1.75	0.50
53:7:68:G:H2'	53:7:69:A:H8	1.75	0.50
7:D:177:ASP:OD1	7:D:177:ASP:N	2.42	0.50
20:Q:43:PHE:HB2	20:Q:82:HIS:ND1	2.26	0.50
24:a:271:LYS:HE3	50:3:2235:A:H5''	1.93	0.50
27:d:88:LYS:HE2	50:3:2321:C:H5'	1.93	0.50
46:w:55:LEU:O	46:w:59:THR:HG23	2.12	0.50
50:3:155:A:H2'	50:3:156:A:H8	1.74	0.50
50:3:513:A:O2'	50:3:514:A:OP1	2.27	0.50
50:3:597:C:O2'	50:3:1283:A:N1	2.41	0.50
50:3:904:C:H42	50:3:949:C:H1'	1.76	0.50
50:3:1196:U:H2'	50:3:1197:G:C8	2.47	0.50
50:3:1290:G:H2'	50:3:1291:C:C6	2.46	0.50
52:5:318:C:H2'	52:5:319:U:H6	1.75	0.50
52:5:631:C:H2'	52:5:632:A:C8	2.46	0.50
52:5:1405:U:O2	52:5:1445:G:N2	2.34	0.50
9:F:63:ARG:NE	9:F:127:SER:O	2.44	0.50
13:J:112:ASN:OD1	52:5:714:C:H4'	2.12	0.50
24:a:11:ASN:OD1	50:3:1730:C:H4'	2.12	0.50
25:b:154:ALA:H	50:3:2039:G:H1'	1.76	0.50
26:c:4:LEU:HB3	26:c:20:LEU:HD21	1.93	0.50
50:3:694:U:H2'	50:3:695:G:H8	1.77	0.50
50:3:986:G:H2'	50:3:987:U:H6	1.77	0.50
50:3:1609:U:H2'	50:3:1610:U:C6	2.47	0.50
50:3:2794:U:H2'	50:3:2795:C:C6	2.47	0.50
51:4:3:U:OP1	51:4:59:A:O2'	2.29	0.50
52:5:249:U:H3	52:5:269:A:N6	2.08	0.50
52:5:500:G:H2'	52:5:501:A:C8	2.46	0.50
52:5:510:U:H2'	52:5:511:A:C8	2.45	0.50
52:5:519:G:C6	52:5:527:G:N1	2.78	0.50
52:5:649:U:H1'	52:5:650:A:C8	2.47	0.50
10:G:66:THR:O	52:5:650:A:N6	2.44	0.50
24:a:35:LYS:HD3	50:3:1455:A:H2	1.75	0.50
24:a:213:ILE:HD13	24:a:222:ARG:HH12	1.77	0.50
38:o:67:ARG:NH1	38:o:76:GLU:OE1	2.45	0.50
50:3:24:U:H2'	50:3:25:G:C8	2.47	0.50
50:3:859:G:H21	50:3:2366:A:N6	2.09	0.50
50:3:966:U:H2'	50:3:967:U:C6	2.45	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2843:G:H2'	50:3:2844:U:C6	2.47	0.50
52:5:442:G:H2'	52:5:443:G:H8	1.77	0.50
52:5:1261:A:N3	52:5:1327:G:O2'	2.32	0.50
53:7:38:G:H3'	53:7:39:A:H8	1.76	0.50
22:S:35:PHE:CE1	22:S:44:LEU:HB2	2.42	0.50
35:l:24:ASN:OD1	35:l:67:ARG:NH1	2.44	0.50
39:p:49:ARG:NE	50:3:1029:A:OP1	2.42	0.50
39:p:83:LYS:NZ	50:3:1034:A:OP1	2.42	0.50
50:3:352:C:H2'	50:3:353:G:C8	2.46	0.50
50:3:358:A:N6	50:3:372:G:N2	2.50	0.50
50:3:1024:A:N1	50:3:1025:G:N2	2.59	0.50
50:3:1347:A:H2'	50:3:1348:C:C6	2.46	0.50
50:3:1461:A:H2'	50:3:1462:A:C8	2.47	0.50
50:3:1834:U:H2'	50:3:1835:G:O4'	2.12	0.50
50:3:2100:G:N7	50:3:2233:A:H2'	2.26	0.50
50:3:2378:G:H2'	50:3:2379:G:C8	2.47	0.50
52:5:441:U:H2'	52:5:442:G:C8	2.46	0.50
52:5:724:G:N2	52:5:727:G:OP2	2.37	0.50
43:t:9:LYS:HB2	43:t:79:GLN:HE21	1.77	0.50
49:z:5:ARG:HB2	49:z:22:PHE:HB3	1.94	0.50
50:3:53:G:N2	50:3:119:A:H62	2.09	0.50
50:3:609:U:H2'	50:3:610:G:C8	2.47	0.50
50:3:793:C:H2'	50:3:794:G:H8	1.76	0.50
50:3:1416:G:H2'	50:3:1417:G:H8	1.77	0.50
50:3:1934:A:H2'	50:3:1935:A:C8	2.46	0.50
50:3:2268:C:H2'	50:3:2269:C:C6	2.47	0.50
50:3:2351:U:O2'	50:3:2381:G:O2'	2.23	0.50
50:3:2602:C:N4	50:3:2603:G:O6	2.44	0.50
50:3:2840:U:H2'	50:3:2841:A:H8	1.77	0.50
52:5:283:U:H2'	52:5:284:A:C8	2.47	0.50
52:5:435:U:O2'	52:5:437:U:O4	2.29	0.50
52:5:1051:U:H2'	52:5:1052:G:C8	2.47	0.50
12:I:89:ALA:O	12:I:93:LEU:HG	2.12	0.50
13:J:119:ARG:HB2	23:T:34:TYR:HB2	1.93	0.50
21:R:19:VAL:HG21	21:R:44:PHE:CE1	2.45	0.50
25:b:185:ASP:HB3	25:b:190:LEU:H	1.76	0.50
33:j:6:THR:H	33:j:21:ILE:HG22	1.77	0.50
35:l:37:THR:O	35:l:99:GLN:NE2	2.45	0.50
39:p:2:ARG:HH12	50:3:485:A:H1'	1.76	0.50
40:q:68:VAL:H	40:q:86:ARG:HH11	1.59	0.50
49:z:32:LEU:HD21	49:z:34:LEU:HD12	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:148:U:H2'	50:3:149:A:C8	2.46	0.50
50:3:522:C:H2'	50:3:523:A:H8	1.76	0.50
50:3:1176:U:O2	50:3:1177:A:N6	2.45	0.50
50:3:1305:G:C6	50:3:1322:A:C6	2.99	0.50
50:3:1389:G:H2'	50:3:1390:C:C6	2.47	0.50
50:3:1648:A:OP1	50:3:1651:C:N4	2.45	0.50
50:3:1937:G:HO2'	50:3:1975:G:H1	1.59	0.50
50:3:2213:A:H2'	50:3:2214:A:C8	2.47	0.50
50:3:2749:A:H62	50:3:2771:G:N2	2.10	0.50
52:5:937:G:H1	52:5:1315:U:H3	1.60	0.50
52:5:1290:G:N1	52:5:1293:A:OP2	2.44	0.50
11:H:129:PHE:HB3	52:5:1316:C:H4'	1.93	0.50
24:a:56:ARG:NH1	24:a:228:VAL:O	2.45	0.50
24:a:225:ARG:HH22	50:3:725:G:H4'	1.77	0.50
24:a:226:PRO:HB3	50:3:1797:C:H5'	1.94	0.50
25:b:11:VAL:HG23	25:b:28:VAL:HG23	1.94	0.50
38:o:92:ARG:HB3	38:o:115:LYS:HD2	1.93	0.50
39:p:65:ASN:OD1	39:p:75:TYR:HB2	2.11	0.50
45:v:14:TYR:CD1	50:3:192:U:H5''	2.46	0.50
50:3:133:G:H2'	50:3:134:U:H6	1.77	0.50
50:3:364:A:N7	50:3:1240:U:O2'	2.41	0.50
50:3:572:G:N2	50:3:590:U:O4	2.45	0.50
50:3:2799:U:O4	50:3:2895:A:N1	2.45	0.50
52:5:671:G:H2'	52:5:672:A:H8	1.77	0.50
52:5:679:U:H2'	52:5:680:G:H8	1.77	0.50
52:5:885:U:C2	52:5:901:A:N7	2.80	0.50
52:5:1156:G:H1'	52:5:1157:G:C5	2.47	0.50
4:A:120:PHE:HA	4:A:123:LEU:HB2	1.93	0.50
5:B:8:ASN:OD1	5:B:9:GLY:N	2.44	0.50
7:D:167:ARG:HA	7:D:170:ILE:HG22	1.93	0.50
9:F:132:ALA:O	9:F:135:LYS:NZ	2.45	0.50
10:G:36:ILE:HA	10:G:69:ILE:HG22	1.94	0.50
13:J:14:ILE:HG23	13:J:77:LEU:HA	1.94	0.50
13:J:119:ARG:HH12	23:T:36:LEU:HD13	1.76	0.50
14:K:94:LEU:HD22	14:K:111:VAL:HB	1.94	0.50
16:M:23:ARG:O	16:M:25:GLN:NE2	2.45	0.50
16:M:24:CYS:HB2	16:M:40:CYS:H	1.77	0.50
20:Q:81:MET:O	20:Q:85:HIS:ND1	2.37	0.50
33:j:22:ILE:HD11	50:3:1959:A:N3	2.27	0.50
34:k:69:ARG:NH2	50:3:2412:A:O3'	2.45	0.50
41:r:77:ASN:HB2	41:r:102:ASN:HB2	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:202:C:O2'	50:3:203:A:H5'	2.12	0.50
50:3:329:G:O6	50:3:377:U:O4	2.30	0.50
50:3:984:C:H2'	50:3:985:A:H8	1.76	0.50
50:3:1222:A:H2'	50:3:1223:C:C6	2.47	0.50
50:3:2315:G:N2	50:3:2319:A:O2'	2.44	0.50
50:3:2331:G:O2'	50:3:2332:U:H5'	2.12	0.50
51:4:76:A:C6	51:4:77:G:C6	2.99	0.50
52:5:91:C:H2'	52:5:92:G:C8	2.47	0.50
52:5:506:U:O2	52:5:507:A:N6	2.45	0.50
52:5:858:A:H2'	52:5:859:A:C8	2.47	0.50
4:A:32:MET:HE3	4:A:33:VAL:HG22	1.93	0.49
6:C:201:LYS:HB3	52:5:9:A:H62	1.77	0.49
12:I:28:THR:HG22	12:I:78:ARG:HG2	1.93	0.49
14:K:40:SER:OG	14:K:42:LEU:O	2.30	0.49
24:a:131:LYS:HD2	24:a:132:PRO:HD2	1.92	0.49
26:c:145:GLN:NE2	26:c:145:GLN:O	2.45	0.49
40:q:57:CYS:HA	40:q:94:VAL:HA	1.94	0.49
50:3:1691:U:H2'	50:3:1692:A:C8	2.47	0.49
50:3:2339:G:H2'	50:3:2340:U:O4'	2.11	0.49
50:3:2527:U:O2'	50:3:2529:C:OP2	2.30	0.49
50:3:2832:G:H2'	50:3:2833:A:C8	2.47	0.49
52:5:601:U:H2'	52:5:602:G:C8	2.47	0.49
52:5:1052:G:O6	52:5:1172:A:N6	2.45	0.49
52:5:1255:A:H3'	52:5:1256:U:H6	1.77	0.49
6:C:72:ARG:HH12	6:C:202:ARG:HH21	1.59	0.49
9:F:5:ARG:HH12	52:5:1353:C:H5''	1.77	0.49
10:G:11:HIS:HB3	10:G:17:ASP:OD1	2.12	0.49
27:d:14:LYS:HB2	27:d:18:LYS:HZ3	1.77	0.49
39:p:32:LYS:HA	50:3:1282:G:H21	1.77	0.49
41:r:4:PHE:CE2	50:3:530:G:H5''	2.48	0.49
50:3:81:C:H2'	50:3:82:G:H8	1.77	0.49
50:3:155:A:C6	50:3:178:A:N1	2.80	0.49
50:3:343:A:H1'	50:3:363:G:C2	2.47	0.49
50:3:385:U:H2'	50:3:386:U:C6	2.46	0.49
50:3:590:U:H2'	50:3:591:G:H8	1.76	0.49
52:5:441:U:H2'	52:5:442:G:H8	1.76	0.49
52:5:442:G:H2'	52:5:443:G:C8	2.47	0.49
52:5:885:U:H2'	52:5:886:A:C8	2.48	0.49
52:5:1408:A:N7	52:5:1443:A:N6	2.60	0.49
9:F:149:ALA:HB3	13:J:49:ARG:HH12	1.77	0.49
13:J:53:PRO:HB2	13:J:88:THR:HG21	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:J:114:CYS:SG	52:5:775:G:H1'	2.53	0.49
17:N:20:GLY:HA2	17:N:25:GLN:HE22	1.77	0.49
34:k:13:ARG:HD2	34:k:13:ARG:O	2.12	0.49
41:r:86:ILE:HD12	41:r:87:PRO:HD2	1.95	0.49
50:3:740:A:H2'	50:3:741:A:O4'	2.13	0.49
50:3:1104:A:H5''	50:3:1105:A:C8	2.47	0.49
50:3:1176:U:H4'	50:3:1177:A:O4'	2.12	0.49
50:3:1227:C:H2'	50:3:1228:G:H8	1.77	0.49
50:3:2494:C:H2'	50:3:2495:A:C8	2.47	0.49
50:3:2849:G:H2'	50:3:2850:G:C8	2.47	0.49
51:4:61:A:H2'	51:4:62:G:C8	2.48	0.49
4:A:202:CYS:SG	4:A:206:THR:OG1	2.62	0.49
9:F:119:ILE:HA	9:F:122:GLU:OE1	2.12	0.49
12:I:45:PRO:HB3	12:I:78:ARG:HD2	1.93	0.49
13:J:17:SER:CB	13:J:80:LYS:HE3	2.41	0.49
23:T:27:ARG:O	23:T:31:ARG:NH1	2.46	0.49
25:b:63:ASN:HB3	25:b:66:GLN:OE1	2.11	0.49
26:c:185:LYS:NZ	50:3:650:G:O6	2.45	0.49
27:d:29:PRO:HB3	27:d:160:THR:HG23	1.94	0.49
32:i:3:LYS:N	40:q:12:TYR:HH	2.10	0.49
34:k:94:ASN:HD21	34:k:96:ALA:HB3	1.77	0.49
37:n:7:GLN:HG3	37:n:11:ARG:NH2	2.20	0.49
39:p:73:MET:HE1	39:p:78:PHE:HB2	1.94	0.49
41:r:124:LEU:O	41:r:128:ARG:HG3	2.12	0.49
50:3:8:A:H2'	50:3:9:G:H8	1.78	0.49
50:3:130:C:H2'	50:3:131:C:C6	2.47	0.49
50:3:178:A:O2'	50:3:179:A:O4'	2.16	0.49
50:3:322:A:H2'	50:3:323:A:C8	2.47	0.49
50:3:474:U:H2'	50:3:475:A:C8	2.47	0.49
50:3:663:A:N3	50:3:672:G:N2	2.59	0.49
50:3:772:C:N4	50:3:773:G:O6	2.46	0.49
50:3:987:U:H2'	50:3:988:G:C8	2.47	0.49
50:3:1292:A:N6	50:3:2024:C:H42	2.10	0.49
50:3:1833:G:H2'	50:3:1834:U:C6	2.47	0.49
50:3:1982:G:H2'	50:3:1983:U:O4'	2.13	0.49
50:3:2123:A:N7	50:3:2169:G:O2'	2.46	0.49
50:3:2325:U:H2'	50:3:2326:G:O4'	2.13	0.49
50:3:2575:G:H2'	50:3:2576:A:C8	2.47	0.49
50:3:2694:A:H2'	50:3:2695:U:C6	2.46	0.49
50:3:2743:U:H2'	50:3:2744:A:H8	1.77	0.49
50:3:2822:C:H2'	50:3:2823:A:H8	1.73	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:673:A:H2'	52:5:674:U:H6	1.77	0.49
52:5:822:A:H2'	52:5:823:C:C6	2.48	0.49
52:5:977:U:H5'	52:5:978:A:C8	2.48	0.49
8:E:13:LEU:HD12	8:E:17:GLN:HE22	1.77	0.49
8:E:25:GLN:O	8:E:28:THR:OG1	2.24	0.49
8:E:106:GLN:O	8:E:110:GLN:N	2.44	0.49
12:I:78:ARG:HD3	12:I:79:LEU:N	2.28	0.49
39:p:79:ILE:HG21	50:3:1187:C:C5'	2.42	0.49
40:q:4:ILE:HB	40:q:39:LEU:O	2.13	0.49
50:3:511:U:H4'	50:3:545:C:H5''	1.94	0.49
50:3:606:G:N2	50:3:2038:A:OP1	2.40	0.49
50:3:615:G:H2'	50:3:616:G:C8	2.48	0.49
50:3:1009:A:H5'	50:3:1219:U:H1'	1.94	0.49
50:3:1028:C:H2'	50:3:1029:A:H8	1.77	0.49
50:3:1224:G:H2'	50:3:1225:A:C8	2.47	0.49
50:3:1378:C:N4	50:3:1379:C:N4	2.61	0.49
50:3:1437:A:H2'	50:3:1438:G:C8	2.47	0.49
50:3:1749:A:O2'	50:3:1750:A:O4'	2.18	0.49
50:3:2078:A:H2'	50:3:2079:G:C8	2.48	0.49
50:3:2661:U:OP2	50:3:2662:A:O2'	2.29	0.49
52:5:394:U:H2'	52:5:395:G:C8	2.48	0.49
52:5:483:U:H2'	52:5:484:A:C8	2.47	0.49
53:7:70:G:H2'	53:7:71:A:C8	2.47	0.49
6:C:145:LYS:HG2	6:C:147:LYS:H	1.76	0.49
8:E:14:SER:H	8:E:17:GLN:HE21	1.59	0.49
36:m:18:VAL:O	36:m:22:VAL:HG13	2.13	0.49
41:r:9:ARG:H	41:r:102:ASN:HA	1.76	0.49
42:s:3:VAL:HG13	42:s:5:ASN:H	1.78	0.49
45:v:4:LYS:NZ	50:3:1393:A:O3'	2.46	0.49
48:y:28:SER:N	48:y:37:LYS:O	2.42	0.49
50:3:14:U:O4	50:3:2634:C:O2'	2.30	0.49
50:3:116:C:H2'	50:3:117:C:H6	1.76	0.49
50:3:199:A:H61	50:3:202:C:H3'	1.76	0.49
50:3:655:G:H3'	50:3:656:G:H21	1.77	0.49
50:3:759:U:H2'	50:3:760:G:O4'	2.13	0.49
50:3:1389:G:H2'	50:3:1390:C:H6	1.77	0.49
50:3:1803:U:H2'	50:3:1804:A:C8	2.48	0.49
51:4:31:G:N2	51:4:34:U:O4	2.45	0.49
52:5:141:A:H2'	52:5:142:G:H8	1.77	0.49
52:5:1213:A:OP1	52:5:1310:C:N4	2.45	0.49
9:F:30:MET:HE3	52:5:1348:G:H4'	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:b:116:GLY:HA3	50:3:2825:A:H5''	1.95	0.49
30:g:34:ALA:HB3	50:3:1092:A:H1'	1.95	0.49
39:p:2:ARG:NH2	50:3:482:G:H5'	2.27	0.49
49:z:8:ARG:HD3	49:z:17:ILE:HD12	1.95	0.49
50:3:161:U:H2'	50:3:162:G:O4'	2.13	0.49
50:3:1080:A:H5''	50:3:1082:A:O4'	2.12	0.49
50:3:1784:U:H2'	50:3:1785:U:H6	1.77	0.49
50:3:2118:U:C2	50:3:2125:U:H4'	2.48	0.49
50:3:2134:G:H2'	50:3:2135:C:C6	2.48	0.49
50:3:2297:G:N2	50:3:2354:A:OP1	2.44	0.49
50:3:2599:C:H2'	50:3:2600:G:C8	2.47	0.49
52:5:830:U:H3	52:5:847:G:H1	1.59	0.49
52:5:939:G:N2	52:5:1312:G:H3'	2.28	0.49
52:5:1147:U:H2'	52:5:1148:U:C6	2.47	0.49
52:5:1323:A:H3'	52:5:1324:A:H8	1.78	0.49
4:A:38:ASN:OD1	4:A:40:LYS:HG2	2.13	0.49
5:B:13:GLY:O	16:M:57:LYS:NZ	2.46	0.49
5:B:92:ILE:HA	5:B:95:ILE:HG22	1.95	0.49
12:I:73:LYS:NZ	12:I:75:ARG:HE	2.11	0.49
16:M:3:LYS:HG3	16:M:4:LYS:HD3	1.93	0.49
24:a:252:ASP:N	24:a:252:ASP:OD1	2.44	0.49
38:o:54:ARG:NH2	38:o:65:ILE:HG13	2.28	0.49
50:3:133:G:H2'	50:3:134:U:C6	2.48	0.49
50:3:720:A:H5''	50:3:809:A:H62	1.78	0.49
50:3:768:G:H3'	50:3:796:A:H61	1.78	0.49
50:3:1287:C:H2'	50:3:1288:C:C6	2.48	0.49
50:3:2001:C:H2'	50:3:2002:U:C6	2.48	0.49
50:3:2383:G:N2	50:3:2386:A:OP2	2.23	0.49
50:3:2799:U:N3	50:3:2810:A:N6	2.60	0.49
52:5:999:C:O2	52:5:1000:A:O2'	2.29	0.49
5:B:14:ILE:HG12	5:B:181:LEU:HD21	1.94	0.49
7:D:111:VAL:O	7:D:115:ILE:HG12	2.12	0.49
8:E:101:ASN:C	8:E:103:LYS:H	2.20	0.49
11:H:86:VAL:HA	11:H:89:LEU:HG	1.94	0.49
23:T:22:SER:HA	23:T:25:ILE:HG12	1.95	0.49
24:a:125:GLU:HG3	24:a:137:PRO:HG2	1.95	0.49
41:r:28:LYS:NZ	41:r:67:ASP:O	2.42	0.49
50:3:511:U:H3'	50:3:512:G:C8	2.48	0.49
50:3:694:U:H2'	50:3:695:G:C8	2.48	0.49
50:3:941:C:H2'	50:3:942:A:H8	1.78	0.49
50:3:1201:A:H2'	50:3:1202:A:C8	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2063:G:H2'	50:3:2064:G:C8	2.48	0.49
50:3:2301:C:H2'	50:3:2302:C:H6	1.78	0.49
52:5:308:C:H2'	52:5:309:A:C8	2.47	0.49
52:5:1183:C:H2'	52:5:1184:C:H6	1.78	0.49
52:5:1222:U:H2'	52:5:1223:A:C8	2.47	0.49
20:Q:58:GLU:O	20:Q:62:ARG:HG3	2.12	0.49
24:a:113:ASP:OD1	24:a:114:GLY:N	2.46	0.49
26:c:185:LYS:HD2	50:3:650:G:H1	1.78	0.49
32:i:109:LYS:HB3	32:i:122:ILE:HD12	1.94	0.49
34:k:95:ARG:NH1	34:k:110:LEU:O	2.46	0.49
50:3:1653:C:N4	50:3:1654:G:O6	2.45	0.49
50:3:2324:A:H2'	50:3:2325:U:C6	2.48	0.49
50:3:2547:C:H2'	50:3:2548:G:C8	2.48	0.49
52:5:293:G:N2	52:5:295:G:OP1	2.46	0.49
52:5:432:U:H2'	52:5:433:C:H6	1.78	0.49
52:5:590:G:H2'	52:5:591:A:H8	1.76	0.49
52:5:843:C:H2'	52:5:844:U:H6	1.77	0.49
52:5:905:U:H2'	52:5:906:C:C6	2.48	0.49
52:5:1135:U:O4'	52:5:1157:G:N2	2.46	0.49
52:5:1214:A:H1'	52:5:1216:G:C5	2.48	0.49
53:7:36:A:H2'	53:7:37:A:C8	2.47	0.49
2:1:26:THR:HG22	2:1:41:LEU:HD22	1.94	0.48
4:A:68:ALA:O	4:A:72:VAL:HG13	2.13	0.48
9:F:35:LYS:O	9:F:38:ALA:N	2.46	0.48
14:K:115:LEU:HG	14:K:116:ASP:H	1.77	0.48
19:P:13:VAL:HG13	19:P:57:ASP:HA	1.95	0.48
37:n:8:ARG:HH12	37:n:9:ARG:HE	1.60	0.48
50:3:189:U:H2'	50:3:190:G:C8	2.49	0.48
50:3:1246:U:H2'	50:3:1247:C:C6	2.48	0.48
50:3:2644:U:H2'	50:3:2645:U:C6	2.48	0.48
52:5:33:A:H2'	52:5:34:A:C8	2.48	0.48
52:5:34:A:H4'	52:5:360:A:N3	2.28	0.48
52:5:704:U:H2'	52:5:705:A:H8	1.77	0.48
52:5:733:A:H2'	52:5:734:A:C8	2.48	0.48
52:5:912:G:H2'	52:5:913:A:C8	2.48	0.48
10:G:56:ASN:HB2	10:G:73:ASN:ND2	2.23	0.48
12:I:18:SER:HB2	12:I:102:VAL:HG12	1.94	0.48
23:T:20:ARG:O	23:T:23:LEU:N	2.46	0.48
26:c:6:LEU:HG	26:c:14:GLU:HG3	1.95	0.48
26:c:201:LYS:HA	26:c:204:LEU:HG	1.94	0.48
28:e:94:GLY:HA2	28:e:163:LYS:HE2	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:i:118:SER:HA	32:i:121:TRP:HB2	1.96	0.48
32:i:119:ARG:NH1	50:3:563:A:N1	2.62	0.48
36:m:102:LYS:HG2	48:y:48:TYR:HE1	1.77	0.48
41:r:34:ASN:OD1	41:r:35:ILE:N	2.45	0.48
46:w:30:ARG:HH22	46:w:44:ILE:HG12	1.78	0.48
50:3:173:C:H2'	50:3:174:A:C8	2.48	0.48
50:3:210:U:H2'	50:3:211:A:H8	1.78	0.48
50:3:241:C:H2'	50:3:242:G:C8	2.48	0.48
50:3:404:C:H2'	50:3:405:C:C6	2.48	0.48
50:3:815:G:O2'	50:3:817:A:N7	2.45	0.48
50:3:1143:U:N3	50:3:1144:C:N4	2.61	0.48
50:3:1182:U:H2'	50:3:1183:A:C8	2.48	0.48
50:3:1374:U:N3	50:3:1375:G:N7	2.61	0.48
50:3:1661:A:H2'	50:3:1662:G:C8	2.43	0.48
50:3:1710:A:H2'	50:3:1711:A:O4'	2.13	0.48
50:3:1806:G:N2	50:3:1826:A:OP2	2.35	0.48
50:3:2100:G:H2'	50:3:2101:A:H8	1.78	0.48
52:5:1402:U:H2'	52:5:1403:A:C8	2.48	0.48
52:5:1425:A:O2'	52:5:1428:A:N6	2.46	0.48
1:0:9:LYS:HG3	1:0:10:LEU:HD22	1.94	0.48
9:F:21:LEU:O	9:F:25:ILE:HG12	2.13	0.48
11:H:20:TYR:OH	52:5:1123:G:OP1	2.29	0.48
11:H:111:ARG:HG2	52:5:1321:G:C8	2.49	0.48
25:b:133:LEU:HD12	50:3:2000:U:H5''	1.96	0.48
40:q:47:ALA:HB3	40:q:48:PRO:HD3	1.94	0.48
50:3:669:A:O2'	50:3:2412:A:OP1	2.24	0.48
50:3:1071:G:O6	50:3:1154:U:O4	2.31	0.48
50:3:2533:A:H2'	50:3:2534:G:H8	1.79	0.48
52:5:1179:A:H2'	52:5:1180:U:O4'	2.13	0.48
52:5:1182:C:C4	52:5:1183:C:N4	2.80	0.48
52:5:1425:A:H2'	52:5:1427:U:H3	1.78	0.48
24:a:20:ILE:HB	24:a:22:TYR:CZ	2.48	0.48
24:a:183:GLN:OE1	24:a:189:THR:OG1	2.31	0.48
26:c:112:LEU:C	26:c:116:TRP:HD1	2.22	0.48
46:w:26:LEU:HD13	46:w:48:ARG:HH12	1.78	0.48
50:3:50:G:H22	50:3:179:A:H2'	1.79	0.48
50:3:730:G:H1	50:3:802:U:H3	1.61	0.48
50:3:853:G:N1	50:3:1219:U:OP2	2.39	0.48
50:3:891:G:H2'	50:3:892:G:C8	2.48	0.48
50:3:1141:U:H2'	50:3:1142:G:C8	2.48	0.48
50:3:1264:U:H2'	50:3:1265:G:O4'	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1951:A:H61	50:3:2565:G:H1'	1.79	0.48
50:3:2324:A:H2'	50:3:2325:U:H6	1.78	0.48
50:3:2331:G:H22	50:3:2340:U:H2'	1.78	0.48
50:3:2495:A:H2'	50:3:2496:G:C8	2.48	0.48
50:3:2577:G:H2'	50:3:2578:A:H8	1.78	0.48
50:3:2843:G:O6	50:3:2881:A:N6	2.47	0.48
52:5:357:G:H2'	52:5:358:G:O4'	2.13	0.48
52:5:1016:A:H2'	52:5:1017:A:C8	2.48	0.48
52:5:1297:G:H2'	52:5:1298:U:O4'	2.13	0.48
15:L:107:ARG:NH2	52:5:1203:A:OP2	2.41	0.48
26:c:127:LEU:HD21	26:c:201:LYS:HB3	1.95	0.48
48:y:27:LEU:HD11	48:y:36:LYS:HB3	1.95	0.48
50:3:352:C:H2'	50:3:353:G:H8	1.78	0.48
50:3:518:A:O2'	50:3:532:A:N1	2.47	0.48
50:3:595:U:C4	50:3:605:A:N7	2.82	0.48
50:3:931:G:H2'	50:3:932:U:H4'	1.94	0.48
50:3:1116:U:H2'	50:3:1117:U:C6	2.48	0.48
50:3:2146:A:H2'	50:3:2147:G:C8	2.49	0.48
50:3:2477:A:H2'	50:3:2478:G:O4'	2.12	0.48
52:5:223:G:H2'	52:5:224:A:H8	1.77	0.48
52:5:372:G:O2'	52:5:373:A:H5'	2.13	0.48
52:5:405:C:H2'	52:5:406:G:O4'	2.14	0.48
52:5:1376:G:H2'	52:5:1377:C:C6	2.48	0.48
52:5:1377:C:H2'	52:5:1378:C:O4'	2.13	0.48
53:7:76:C:H3'	53:7:77:A:H8	1.77	0.48
5:B:41:ARG:HD2	5:B:42:ASN:N	2.29	0.48
5:B:59:GLU:HG3	12:I:100:VAL:HG22	1.94	0.48
14:K:86:ASN:HD22	14:K:118:VAL:N	2.10	0.48
24:a:183:GLN:NE2	24:a:188:GLU:O	2.46	0.48
25:b:117:ARG:HD2	25:b:169:TYR:CD2	2.46	0.48
33:j:85:VAL:HG13	33:j:87:ILE:HD11	1.96	0.48
35:l:22:LYS:HG3	50:3:945:U:OP1	2.12	0.48
42:s:35:ALA:O	42:s:79:LYS:NZ	2.45	0.48
50:3:112:A:O2'	50:3:113:U:O4'	2.26	0.48
50:3:178:A:H2'	50:3:179:A:C8	2.48	0.48
50:3:246:G:N2	50:3:259:A:OP2	2.47	0.48
50:3:337:U:H2'	50:3:338:G:C8	2.49	0.48
50:3:674:G:H2'	50:3:675:U:C6	2.48	0.48
50:3:696:U:H2'	50:3:697:U:H6	1.78	0.48
50:3:696:U:H2'	50:3:697:U:C6	2.48	0.48
50:3:762:A:H2'	50:3:763:G:C8	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:767:C:H2'	50:3:768:G:O4'	2.14	0.48
50:3:768:G:H2'	50:3:769:A:H5''	1.95	0.48
50:3:917:G:N2	50:3:935:U:O2	2.47	0.48
50:3:1005:G:H2'	50:3:1006:U:C6	2.49	0.48
50:3:1400:U:H2'	50:3:1401:A:H8	1.79	0.48
50:3:1545:A:H2'	50:3:1546:U:C6	2.49	0.48
50:3:1608:C:H2'	50:3:1609:U:C6	2.49	0.48
50:3:2406:U:H2'	50:3:2407:G:C8	2.48	0.48
50:3:2695:U:H2'	50:3:2696:G:O4'	2.14	0.48
1:0:34:ARG:NH2	1:0:41:GLN:O	2.41	0.48
9:F:131:GLY:HA2	9:F:134:ILE:HB	1.94	0.48
11:H:108:ARG:NH1	11:H:110:LYS:HB3	2.29	0.48
21:R:22:MET:O	21:R:27:LYS:N	2.35	0.48
24:a:146:GLN:HG3	24:a:169:ARG:HD3	1.94	0.48
27:d:35:VAL:HG12	27:d:155:THR:HG22	1.96	0.48
33:j:78:LYS:HB2	38:o:76:GLU:HG3	1.96	0.48
37:n:46:PHE:C	37:n:48:GLN:H	2.22	0.48
38:o:94:GLY:HA2	38:o:115:LYS:HA	1.96	0.48
41:r:99:ARG:NH1	50:3:1292:A:OP1	2.44	0.48
50:3:486:G:N1	50:3:490:A:OP1	2.45	0.48
50:3:652:U:H2'	50:3:653:G:H8	1.79	0.48
50:3:669:A:N3	50:3:2411:C:H4'	2.29	0.48
50:3:1070:U:H2'	50:3:1071:G:H8	1.78	0.48
50:3:2145:A:H2'	50:3:2146:A:C8	2.44	0.48
50:3:2738:U:H2'	50:3:2739:C:C6	2.49	0.48
52:5:337:C:H2'	52:5:338:C:C6	2.49	0.48
52:5:381:C:H2'	52:5:382:U:C6	2.49	0.48
52:5:749:G:H1'	52:5:751:C:N4	2.28	0.48
52:5:1493:A:H2'	52:5:1494:A:C4	2.49	0.48
6:C:38:HIS:HB3	52:5:509:C:H4'	1.94	0.48
8:E:17:GLN:HA	8:E:20:GLN:HG2	1.96	0.48
9:F:38:ALA:O	9:F:42:LEU:HD23	2.14	0.48
14:K:121:GLU:C	14:K:123:ARG:N	2.71	0.48
15:L:15:ILE:HD13	15:L:39:ILE:HD13	1.95	0.48
21:R:22:MET:HG3	21:R:27:LYS:HD2	1.95	0.48
25:b:1:MET:N	25:b:88:THR:H	2.11	0.48
26:c:164:LEU:HD21	26:c:182:HIS:HD2	1.78	0.48
31:h:126:GLY:HA3	50:3:1115:G:H1'	1.95	0.48
33:j:43:VAL:HG13	33:j:54:LYS:HA	1.94	0.48
34:k:30:LYS:HD3	50:3:845:U:C5	2.49	0.48
34:k:36:GLN:OE1	34:k:37:LYS:HE3	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:m:37:LYS:O	36:m:41:THR:OG1	2.19	0.48
50:3:34:C:N4	50:3:510:G:O6	2.47	0.48
50:3:568:G:H2'	50:3:569:U:C6	2.49	0.48
50:3:1229:U:H2'	50:3:1230:U:C6	2.49	0.48
50:3:1471:A:N6	50:3:1582:G:O6	2.47	0.48
50:3:1511:C:C4	50:3:1512:A:N6	2.81	0.48
50:3:1987:C:H3'	50:3:1988:A:H5''	1.95	0.48
50:3:2090:G:O6	50:3:2244:U:O4	2.31	0.48
50:3:2580:A:H5''	50:3:2582:G:H4'	1.94	0.48
50:3:2825:A:H2'	50:3:2826:G:O4'	2.13	0.48
52:5:643:U:H2'	52:5:644:U:C6	2.49	0.48
52:5:1266:U:H2'	52:5:1267:G:C8	2.49	0.48
8:E:17:GLN:O	8:E:20:GLN:HG2	2.14	0.48
10:G:9:LYS:HA	10:G:36:ILE:HD11	1.96	0.48
22:S:29:LYS:HA	22:S:32:VAL:HG22	1.96	0.48
25:b:65:PRO:HB3	50:3:2795:C:H1'	1.94	0.48
25:b:110:VAL:CG2	25:b:179:LEU:HD22	2.44	0.48
25:b:165:MET:HE3	25:b:166:SER:N	2.28	0.48
50:3:336:C:H2'	50:3:337:U:C6	2.49	0.48
50:3:568:G:H2'	50:3:569:U:H6	1.79	0.48
50:3:863:U:H4'	50:3:866:G:N1	2.29	0.48
50:3:1406:A:O2'	50:3:1408:G:OP2	2.32	0.48
50:3:1470:C:H2'	50:3:1471:A:C8	2.49	0.48
50:3:2413:G:O2'	50:3:2419:A:N6	2.47	0.48
50:3:2420:A:H2'	50:3:2421:U:O4'	2.14	0.48
50:3:2677:A:H2'	50:3:2678:A:C8	2.49	0.48
50:3:2852:G:H1'	50:3:2872:A:H61	1.79	0.48
50:3:2861:G:N2	50:3:2863:G:OP2	2.47	0.48
52:5:1297:G:O2'	52:5:1336:C:H1'	2.13	0.48
12:I:27:THR:O	12:I:31:ILE:HG12	2.14	0.48
25:b:180:ARG:HE	25:b:220:ILE:HD12	1.79	0.48
26:c:168:LEU:HB3	26:c:180:VAL:HG21	1.96	0.48
37:n:101:ARG:HE	51:4:47:C:P	2.36	0.48
38:o:31:VAL:HG13	38:o:90:LEU:HA	1.96	0.48
50:3:610:G:H2'	50:3:611:A:C8	2.49	0.48
50:3:638:A:C6	50:3:661:G:N1	2.82	0.48
50:3:913:U:H2'	50:3:914:G:O4'	2.14	0.48
50:3:1345:G:H2'	50:3:1346:G:C8	2.49	0.48
50:3:1511:C:H42	50:3:1512:A:N6	2.10	0.48
50:3:1735:A:OP1	50:3:1770:A:N6	2.47	0.48
50:3:1736:G:H2'	50:3:1737:G:H5''	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1833:G:H2'	50:3:1834:U:H6	1.79	0.48
50:3:2094:A:H2'	50:3:2095:A:H8	1.77	0.48
50:3:2464:C:N4	50:3:2465:U:O4	2.46	0.48
50:3:2845:U:H2'	50:3:2846:A:C8	2.49	0.48
51:4:27:A:O2'	51:4:56:A:N1	2.41	0.48
52:5:253:G:O6	52:5:265:U:O4	2.32	0.48
52:5:980:C:H2'	52:5:981:U:C6	2.49	0.48
52:5:1126:U:H2'	52:5:1127:A:C8	2.49	0.48
4:A:179:ASP:OD1	4:A:179:ASP:N	2.47	0.47
8:E:88:ILE:HG23	8:E:92:ARG:HE	1.79	0.47
14:K:7:LEU:HB3	19:P:35:TYR:CZ	2.49	0.47
26:c:40:VAL:HG12	26:c:101:LEU:HD13	1.96	0.47
33:j:18:GLN:HB3	33:j:45:ASP:HB2	1.95	0.47
37:n:2:LYS:HD3	37:n:2:LYS:HA	1.74	0.47
40:q:46:GLY:H	40:q:50:LEU:HD23	1.79	0.47
45:v:10:ARG:NH1	50:3:432:G:OP2	2.47	0.47
46:w:22:LEU:HA	46:w:25:GLU:HG3	1.95	0.47
50:3:200:A:H61	50:3:866:G:H21	1.61	0.47
50:3:499:G:H22	50:3:501:G:H3'	1.79	0.47
50:3:587:U:H2'	50:3:588:G:O4'	2.14	0.47
50:3:993:A:N6	50:3:995:A:N1	2.62	0.47
50:3:1298:A:H2'	50:3:1299:A:O4'	2.14	0.47
50:3:1552:C:H2'	50:3:1553:G:O4'	2.13	0.47
50:3:1698:A:N3	50:3:1698:A:H2'	2.29	0.47
50:3:1767:A:H2'	50:3:1768:G:C8	2.49	0.47
50:3:2071:C:H2'	50:3:2072:C:C6	2.49	0.47
50:3:2197:U:H2'	50:3:2198:G:C8	2.49	0.47
52:5:335:C:H2'	52:5:336:U:H6	1.78	0.47
52:5:560:U:OP1	52:5:564:G:N2	2.47	0.47
52:5:643:U:H2'	52:5:644:U:H6	1.79	0.47
9:F:110:ARG:HH11	9:F:122:GLU:HG3	1.78	0.47
11:H:116:LYS:HB3	52:5:1343:G:H5'	1.96	0.47
17:N:26:VAL:O	17:N:30:THR:HG23	2.14	0.47
24:a:98:LEU:HB2	24:a:108:TYR:CE1	2.49	0.47
25:b:83:GLU:HB2	50:3:2644:U:OP1	2.14	0.47
32:i:72:LYS:HA	32:i:92:GLY:HA3	1.95	0.47
34:k:90:LEU:HD21	34:k:97:SER:HB2	1.94	0.47
35:l:83:MET:HE2	50:3:991:G:H21	1.78	0.47
41:r:7:GLN:NE2	41:r:10:VAL:HB	2.29	0.47
44:u:56:GLY:HA2	50:3:2338:G:H21	1.78	0.47
46:w:4:ALA:HA	46:w:7:LEU:HD23	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:29:G:O2'	50:3:30:A:N7	2.40	0.47
50:3:139:G:O6	50:3:145:A:N6	2.47	0.47
50:3:224:G:H1	50:3:463:U:H3'	1.78	0.47
50:3:445:C:H2'	50:3:446:A:C8	2.50	0.47
50:3:1073:A:H2'	50:3:1074:A:H8	1.78	0.47
50:3:1187:C:H2'	50:3:1188:C:C6	2.44	0.47
50:3:1544:G:H2'	50:3:1545:A:H8	1.79	0.47
50:3:1775:G:H2'	50:3:1776:G:C8	2.49	0.47
50:3:2267:G:H2'	50:3:2268:C:C6	2.49	0.47
50:3:2623:U:H2'	50:3:2624:C:C6	2.49	0.47
50:3:2776:U:O4	50:3:2777:A:N6	2.47	0.47
52:5:590:G:H2'	52:5:591:A:C8	2.50	0.47
52:5:640:C:H2'	52:5:641:U:C6	2.49	0.47
52:5:1013:C:H2'	52:5:1014:A:N9	2.28	0.47
6:C:131:THR:HG22	52:5:399:C:H4'	1.96	0.47
11:H:56:LEU:HD13	11:H:103:LYS:HG3	1.95	0.47
25:b:70:PHE:O	25:b:74:ASN:N	2.46	0.47
26:c:74:ALA:O	26:c:76:GLN:NE2	2.47	0.47
27:d:57:LEU:HD23	27:d:65:PRO:HB3	1.95	0.47
29:f:12:LEU:HB2	29:f:14:LYS:HZ2	1.79	0.47
35:l:24:ASN:O	35:l:102:VAL:N	2.47	0.47
41:r:133:GLN:HB3	41:r:137:MET:HE1	1.95	0.47
50:3:59:C:H2'	50:3:60:G:H8	1.79	0.47
50:3:406:C:H2'	50:3:407:U:C6	2.49	0.47
50:3:746:G:H2'	50:3:747:A:C8	2.49	0.47
50:3:771:C:H2'	50:3:772:C:C6	2.49	0.47
50:3:1221:G:H2'	50:3:1222:A:C8	2.49	0.47
50:3:1475:C:H1'	50:3:1577:A:C2	2.50	0.47
50:3:1764:U:N3	50:3:1769:A:C5	2.82	0.47
50:3:2190:G:H2'	50:3:2191:G:C8	2.49	0.47
50:3:2418:G:H2'	50:3:2419:A:C8	2.50	0.47
52:5:361:U:H5''	52:5:362:U:H5'	1.96	0.47
52:5:718:A:H4'	52:5:719:G:C4	2.50	0.47
52:5:919:C:H2'	52:5:920:G:C8	2.50	0.47
52:5:946:G:H2'	52:5:947:U:C6	2.49	0.47
52:5:1010:A:H2'	52:5:1011:A:C8	2.48	0.47
20:Q:64:LEU:HD23	20:Q:65:SER:O	2.14	0.47
25:b:33:PRO:HG3	25:b:97:THR:HG22	1.95	0.47
25:b:139:TYR:CD2	25:b:140:PRO:HD3	2.49	0.47
25:b:172:GLU:OE2	50:3:2781:C:O2'	2.32	0.47
38:o:11:ASP:O	38:o:15:GLN:HG3	2.13	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:w:56:THR:HG21	50:3:78:C:H1'	1.97	0.47
50:3:20:C:H2'	50:3:21:U:C6	2.49	0.47
50:3:134:U:H2'	50:3:135:A:H8	1.79	0.47
50:3:144:C:H2'	50:3:145:A:H8	1.79	0.47
50:3:1262:G:H2'	50:3:1263:G:H8	1.74	0.47
50:3:1819:G:H2'	50:3:1820:U:H6	1.79	0.47
50:3:1872:U:C4	50:3:1882:G:O6	2.67	0.47
50:3:2534:G:O6	50:3:2545:U:O4	2.32	0.47
52:5:911:G:H2'	52:5:912:G:H8	1.79	0.47
52:5:1142:G:H2'	52:5:1144:A:OP2	2.14	0.47
3:2:29:THR:HB	3:2:32:HIS:CG	2.50	0.47
5:B:176:MET:N	52:5:1098:C:OP1	2.39	0.47
9:F:102:TRP:HD1	9:F:136:LYS:HZ2	1.54	0.47
20:Q:95:TYR:CE2	52:5:732:A:H1'	2.50	0.47
24:a:62:ASN:ND2	50:3:1600:A:N3	2.62	0.47
25:b:109:ASP:HB3	25:b:208:ARG:HE	1.78	0.47
25:b:160:PHE:H	25:b:163:LYS:HE2	1.80	0.47
50:3:34:C:N4	50:3:483:A:OP2	2.48	0.47
50:3:319:G:O6	50:3:390:A:N6	2.47	0.47
50:3:650:G:H2'	50:3:651:A:C8	2.49	0.47
50:3:997:G:N2	50:3:2037:A:OP1	2.48	0.47
50:3:1032:A:H2'	50:3:1033:A:C8	2.49	0.47
50:3:1504:G:H1	50:3:1539:U:H3	1.60	0.47
50:3:2561:G:H21	50:3:2590:G:H21	1.61	0.47
50:3:2843:G:H2'	50:3:2844:U:H6	1.79	0.47
52:5:285:G:H2'	52:5:286:C:C6	2.49	0.47
52:5:302:A:H3'	52:5:303:A:H8	1.78	0.47
52:5:386:U:H2'	52:5:387:G:C8	2.49	0.47
52:5:742:C:H2'	52:5:743:A:H8	1.74	0.47
52:5:833:G:N2	52:5:844:U:O2	2.30	0.47
52:5:931:C:C2	52:5:932:A:C8	3.02	0.47
53:7:57:C:H3'	53:7:58:G:C8	2.49	0.47
5:B:194:THR:HG23	5:B:196:TYR:H	1.79	0.47
7:D:185:ARG:HE	7:D:186:ASN:H	1.61	0.47
8:E:109:LEU:HD13	52:5:838:A:C8	2.49	0.47
27:d:135:GLN:HA	27:d:152:PHE:CZ	2.50	0.47
28:e:118:GLU:OE2	28:e:154:TRP:NE1	2.38	0.47
37:n:15:ILE:O	37:n:19:ILE:HG12	2.15	0.47
39:p:9:THR:OG1	50:3:1281:A:OP1	2.33	0.47
40:q:68:VAL:N	40:q:86:ARG:HH11	2.12	0.47
42:s:4:THR:HG21	42:s:47:VAL:HB	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:333:A:C6	50:3:356:A:C4	3.03	0.47
50:3:359:G:H2'	50:3:360:G:C8	2.50	0.47
50:3:597:C:H2'	50:3:598:G:C8	2.50	0.47
50:3:1870:G:H4'	50:3:2419:A:H4'	1.96	0.47
50:3:2547:C:H2'	50:3:2548:G:H8	1.79	0.47
50:3:2665:A:H1'	50:3:2673:A:H61	1.78	0.47
51:4:3:U:H2'	51:4:4:G:C8	2.49	0.47
52:5:373:A:H2'	52:5:374:G:C8	2.47	0.47
52:5:408:U:H4'	52:5:409:G:H5'	1.97	0.47
52:5:671:G:H2'	52:5:672:A:C8	2.48	0.47
52:5:1241:G:C6	52:5:1245:A:N6	2.82	0.47
52:5:1505:G:O2'	52:5:1506:A:O4'	2.26	0.47
6:C:50:TYR:CE2	6:C:54:LEU:HD11	2.49	0.47
8:E:7:LEU:HD21	8:E:72:PHE:HZ	1.79	0.47
9:F:65:VAL:HA	9:F:68:VAL:HG22	1.96	0.47
15:L:42:ASP:HB3	15:L:45:VAL:HB	1.97	0.47
19:P:30:PHE:CZ	19:P:41:ARG:HD3	2.50	0.47
19:P:44:LYS:HD3	19:P:46:GLN:OE1	2.14	0.47
20:Q:43:PHE:HB2	20:Q:82:HIS:CG	2.50	0.47
25:b:161:LYS:HE2	50:3:2627:U:H5''	1.96	0.47
29:f:12:LEU:HB2	29:f:14:LYS:NZ	2.29	0.47
33:j:63:VAL:HB	33:j:102:VAL:HG23	1.97	0.47
39:p:27:ARG:NH2	50:3:567:U:H5''	2.29	0.47
39:p:54:ARG:NH2	50:3:1190:A:O3'	2.42	0.47
40:q:4:ILE:HG13	40:q:40:MET:HE3	1.95	0.47
40:q:34:GLN:O	40:q:34:GLN:HG2	2.15	0.47
40:q:74:ILE:HG22	40:q:77:LYS:HG3	1.97	0.47
41:r:6:LYS:HD3	41:r:104:VAL:HB	1.97	0.47
50:3:109:G:H1'	50:3:380:A:H61	1.80	0.47
50:3:461:C:H2'	50:3:462:C:C6	2.49	0.47
50:3:569:U:H2'	50:3:570:C:C6	2.49	0.47
50:3:858:A:H2'	50:3:859:G:H8	1.80	0.47
50:3:860:C:H4'	50:3:2436:G:C5	2.50	0.47
50:3:1000:U:H1'	50:3:2281:A:C2	2.50	0.47
50:3:1203:G:H2'	50:3:1204:A:C8	2.49	0.47
50:3:1604:A:H2'	50:3:1605:A:O4'	2.15	0.47
50:3:1953:U:H2'	50:3:1954:C:O4'	2.15	0.47
50:3:1999:G:N2	50:3:2003:C:H1'	2.30	0.47
50:3:2043:C:H2'	50:3:2044:C:C6	2.50	0.47
50:3:2076:G:H2'	50:3:2077:A:C8	2.50	0.47
50:3:2200:U:H2'	50:3:2201:G:H8	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2299:U:H2'	50:3:2300:A:C8	2.50	0.47
50:3:2388:C:H2'	50:3:2389:A:C8	2.49	0.47
50:3:2764:U:H1'	50:3:2765:A:H5''	1.96	0.47
52:5:144:U:N3	52:5:145:G:N7	2.62	0.47
52:5:309:A:H2'	52:5:310:C:C6	2.50	0.47
52:5:416:U:C2	52:5:421:G:N1	2.83	0.47
52:5:432:U:H2'	52:5:433:C:C6	2.49	0.47
52:5:701:A:H2'	52:5:702:U:C6	2.50	0.47
52:5:706:U:H2'	52:5:707:G:C8	2.49	0.47
52:5:741:C:H2'	52:5:742:C:C6	2.49	0.47
52:5:797:G:N2	52:5:798:U:O4	2.48	0.47
52:5:1106:U:O2'	52:5:1107:U:H5'	2.15	0.47
52:5:1138:U:H2'	52:5:1139:A:C8	2.48	0.47
52:5:1216:G:H2'	52:5:1217:G:H8	1.79	0.47
53:7:16:G:N2	53:7:22:A:N3	2.62	0.47
53:7:38:G:H3'	53:7:39:A:C8	2.49	0.47
4:A:66:GLN:O	4:A:70:ASN:ND2	2.47	0.47
4:A:112:TRP:HZ2	4:A:117:LEU:HG	1.80	0.47
11:H:47:ILE:O	11:H:50:MET:HE3	2.15	0.47
19:P:68:PRO:HA	19:P:74:ARG:HA	1.96	0.47
21:R:15:LEU:HD23	21:R:15:LEU:H	1.79	0.47
33:j:65:THR:O	33:j:79:PHE:HB2	2.15	0.47
39:p:24:PHE:H	50:3:568:G:P	2.38	0.47
39:p:91:ARG:HE	39:p:93:VAL:HG12	1.79	0.47
45:v:16:ASN:HD21	45:v:25:THR:H	1.63	0.47
50:3:279:U:H2'	50:3:280:A:C8	2.49	0.47
50:3:450:C:H2'	50:3:451:A:H8	1.79	0.47
50:3:576:A:H2'	50:3:577:C:O4'	2.14	0.47
50:3:987:U:H2'	50:3:988:G:H8	1.79	0.47
50:3:1158:C:H2'	50:3:1159:C:C6	2.50	0.47
50:3:1477:A:N6	50:3:1489:G:O6	2.48	0.47
50:3:1688:A:H62	50:3:2012:A:H2	1.63	0.47
50:3:1871:U:H3	50:3:1885:G:H1	1.62	0.47
50:3:2106:G:H22	50:3:2198:G:H1	1.62	0.47
50:3:2391:G:H2'	50:3:2392:U:C6	2.49	0.47
50:3:2683:G:H2'	50:3:2684:G:C8	2.49	0.47
50:3:2687:A:H2'	50:3:2688:C:C6	2.50	0.47
50:3:2810:A:C8	50:3:2895:A:N6	2.83	0.47
51:4:93:U:H2'	51:4:94:A:C8	2.50	0.47
4:A:70:ASN:HA	4:A:73:LYS:NZ	2.30	0.47
4:A:158:ARG:NH1	52:5:1088:C:OP1	2.46	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:E:107:LEU:O	8:E:110:GLN:HB2	2.15	0.47
11:H:128:GLN:HB3	52:5:1207:U:H5''	1.96	0.47
34:k:36:GLN:HG3	34:k:37:LYS:HG2	1.96	0.47
36:m:28:TYR:OH	36:m:71:ASN:OD1	2.26	0.47
38:o:53:LEU:HD11	38:o:104:MET:HE2	1.97	0.47
39:p:87:ILE:H	39:p:87:ILE:HD12	1.80	0.47
41:r:28:LYS:HG2	41:r:30:ALA:H	1.80	0.47
50:3:35:U:H3	50:3:483:A:H62	1.63	0.47
50:3:86:A:H2	50:3:104:A:C5	2.33	0.47
50:3:224:G:N1	50:3:464:A:OP2	2.48	0.47
50:3:1289:G:H2'	50:3:1290:G:H8	1.78	0.47
50:3:1319:C:H2'	50:3:1320:C:C6	2.49	0.47
50:3:1546:U:H3'	50:3:1547:G:C8	2.49	0.47
50:3:1589:A:H2'	50:3:1590:U:C6	2.49	0.47
50:3:1730:C:H2'	50:3:1731:G:O4'	2.15	0.47
50:3:2844:U:H2'	50:3:2845:U:C6	2.50	0.47
52:5:26:C:H2'	52:5:27:A:C8	2.49	0.47
52:5:929:C:N3	52:5:932:A:N6	2.63	0.47
8:E:59:ARG:HH12	20:Q:54:ILE:HB	1.79	0.47
10:G:21:LYS:HA	10:G:21:LYS:HD2	1.67	0.47
27:d:5:LYS:HB2	27:d:97:TRP:CD1	2.50	0.47
29:f:58:TYR:O	29:f:62:LYS:HG2	2.15	0.47
30:g:26:ILE:HA	30:g:81:ALA:O	2.15	0.47
32:i:52:ASP:OD1	32:i:121:TRP:NE1	2.48	0.47
40:q:69:ASN:HD21	40:q:82:LYS:HE3	1.79	0.47
42:s:8:LEU:HG	42:s:9:LYS:HG3	1.96	0.47
43:t:1:MET:HB2	43:t:100:LYS:HE2	1.97	0.47
50:3:117:C:H2'	50:3:118:G:O4'	2.14	0.47
50:3:652:U:H2'	50:3:653:G:C8	2.50	0.47
50:3:1095:U:H1'	50:3:1097:G:OP2	2.15	0.47
50:3:2034:G:H2'	50:3:2035:U:C6	2.50	0.47
50:3:2213:A:H2'	50:3:2214:A:H8	1.80	0.47
51:4:74:G:H2'	51:4:75:U:C6	2.50	0.47
52:5:330:C:H2'	52:5:331:C:C6	2.49	0.47
52:5:503:G:H2'	52:5:504:A:C8	2.50	0.47
52:5:950:C:H2'	52:5:951:U:C2	2.50	0.47
52:5:1139:A:H2'	52:5:1140:A:C8	2.50	0.47
52:5:1362:G:H2'	52:5:1363:U:C6	2.50	0.47
52:5:1406:U:H2'	52:5:1407:A:C8	2.50	0.47
13:J:63:VAL:HA	13:J:66:THR:HG22	1.97	0.46
16:M:33:VAL:HA	16:M:40:CYS:HA	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:R:22:MET:HE1	21:R:31:ILE:HD13	1.98	0.46
28:e:149:THR:O	28:e:152:ARG:HG2	2.15	0.46
34:k:110:LEU:HD12	34:k:111:PRO:HD2	1.96	0.46
41:r:88:ARG:HG3	41:r:94:ASN:HB2	1.97	0.46
50:3:214:C:H2'	50:3:215:A:C8	2.51	0.46
50:3:793:C:H2'	50:3:794:G:C8	2.50	0.46
50:3:986:G:H2'	50:3:987:U:C6	2.50	0.46
50:3:1019:A:H2'	50:3:1020:G:C4	2.50	0.46
50:3:1842:G:H2'	50:3:1843:C:H6	1.81	0.46
52:5:149:G:H2'	52:5:150:A:H8	1.79	0.46
52:5:736:U:H2'	52:5:737:U:O4'	2.15	0.46
52:5:737:U:H2'	52:5:738:A:C8	2.50	0.46
52:5:744:U:H4'	52:5:745:U:H5	1.79	0.46
53:7:70:G:H2'	53:7:71:A:H8	1.79	0.46
13:J:17:SER:OG	13:J:24:ILE:HB	2.15	0.46
22:S:18:ASN:OD1	52:5:318:C:O2'	2.22	0.46
25:b:38:GLY:HA2	25:b:92:MET:HE1	1.96	0.46
27:d:117:LEU:H	27:d:176:PRO:HB2	1.79	0.46
33:j:5:MET:HE2	50:3:1702:A:H5'	1.97	0.46
40:q:6:VAL:HA	40:q:11:GLN:HA	1.98	0.46
50:3:67:C:O2'	50:3:492:C:N3	2.35	0.46
50:3:186:A:N1	50:3:219:G:C6	2.83	0.46
50:3:383:U:H2'	50:3:384:G:H8	1.79	0.46
50:3:411:U:O4	50:3:437:A:N7	2.48	0.46
50:3:421:A:N6	50:3:423:C:H2'	2.30	0.46
50:3:756:A:H2'	50:3:757:A:H8	1.80	0.46
50:3:2322:G:H2'	50:3:2323:U:C6	2.51	0.46
50:3:2496:G:O2'	50:3:2497:U:H5'	2.15	0.46
50:3:2823:A:C2	50:3:2832:G:C2	3.03	0.46
51:4:56:A:C4	51:4:57:G:C8	3.03	0.46
52:5:38:U:H2'	52:5:39:G:H8	1.80	0.46
52:5:526:C:H4'	52:5:533:A:C6	2.51	0.46
52:5:672:A:N6	52:5:712:A:H61	2.12	0.46
52:5:706:U:H2'	52:5:707:G:H8	1.80	0.46
52:5:1347:U:H2'	52:5:1348:G:O4'	2.16	0.46
8:E:150:GLN:HB2	10:G:57:PHE:CE1	2.50	0.46
11:H:56:LEU:HD23	11:H:56:LEU:H	1.80	0.46
25:b:35:GLN:HG2	25:b:75:LEU:HD23	1.96	0.46
36:m:60:ARG:NH1	50:3:1482:U:O4'	2.39	0.46
50:3:141:A:H3'	50:3:142:A:C8	2.50	0.46
50:3:762:A:H2'	50:3:763:G:N9	2.30	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:975:G:H2'	50:3:976:C:C6	2.51	0.46
50:3:1065:G:O6	50:3:1160:G:N2	2.48	0.46
50:3:2629:G:H2'	50:3:2630:U:O4'	2.15	0.46
50:3:2799:U:H3'	50:3:2896:G:N2	2.30	0.46
52:5:61:A:N6	52:5:92:G:O2'	2.48	0.46
52:5:290:G:OP1	52:5:608:G:O2'	2.34	0.46
52:5:703:A:H2'	52:5:704:U:C6	2.50	0.46
52:5:911:G:H2'	52:5:912:G:C8	2.51	0.46
5:B:195:THR:O	52:5:1181:G:O2'	2.26	0.46
6:C:89:LEU:HA	6:C:92:VAL:HG22	1.98	0.46
15:L:11:ASN:OD1	15:L:12:GLN:HG2	2.15	0.46
24:a:6:ILE:HD11	24:a:19:VAL:HG22	1.98	0.46
25:b:111:SER:OG	25:b:206:LEU:HB2	2.15	0.46
30:g:120:SER:HA	30:g:123:LEU:HB3	1.97	0.46
43:t:70:PHE:O	43:t:74:LEU:HD23	2.14	0.46
46:w:39:ASP:O	46:w:40:LYS:HE2	2.15	0.46
50:3:252:G:O5'	50:3:253:C:H5''	2.16	0.46
50:3:317:U:H2'	50:3:318:U:C6	2.50	0.46
50:3:565:C:O2'	50:3:567:U:O4	2.32	0.46
50:3:851:U:H2'	50:3:852:C:C6	2.50	0.46
50:3:1376:G:O6	50:3:1377:A:N6	2.48	0.46
50:3:1460:G:H2'	50:3:1461:A:C8	2.50	0.46
50:3:1480:A:O2'	50:3:2710:G:O6	2.21	0.46
50:3:2071:C:H2'	50:3:2072:C:H6	1.79	0.46
50:3:2497:U:H2'	50:3:2498:G:C4	2.51	0.46
50:3:2503:G:H2'	50:3:2504:C:C6	2.50	0.46
52:5:1383:A:H2'	52:5:1384:A:C8	2.51	0.46
4:A:91:TYR:CE1	4:A:226:CYS:HB3	2.50	0.46
5:B:33:TRP:HB3	5:B:60:ARG:NH2	2.31	0.46
6:C:57:LYS:HA	6:C:60:MET:HG3	1.98	0.46
6:C:147:LYS:O	6:C:150:LYS:NZ	2.49	0.46
9:F:110:ARG:HG2	9:F:111:HIS:N	2.30	0.46
12:I:63:VAL:HG12	12:I:64:ASP:H	1.81	0.46
21:R:14:HIS:ND1	52:5:1010:A:H5''	2.31	0.46
27:d:57:LEU:HA	27:d:60:ILE:HG22	1.96	0.46
32:i:38:LEU:HD23	32:i:57:LEU:HD22	1.97	0.46
33:j:8:LEU:H	33:j:8:LEU:HD23	1.79	0.46
38:o:48:PHE:CE1	38:o:68:LYS:HB2	2.51	0.46
44:u:70:ASP:HA	50:3:2394:A:H4'	1.97	0.46
50:3:801:U:H2'	50:3:802:U:C6	2.50	0.46
50:3:1042:C:H2'	50:3:1043:C:C6	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1457:A:H2'	50:3:1458:A:C8	2.51	0.46
50:3:1641:A:H4'	50:3:1642:G:C8	2.51	0.46
50:3:1801:U:O2	50:3:1832:G:N2	2.30	0.46
50:3:1928:G:H2'	50:3:1929:G:C8	2.50	0.46
50:3:1941:C:H2'	50:3:1942:G:C8	2.50	0.46
50:3:2054:C:H2'	50:3:2055:A:C8	2.51	0.46
50:3:2078:A:H2'	50:3:2079:G:H8	1.81	0.46
50:3:2085:C:H2'	50:3:2086:U:C6	2.50	0.46
50:3:2200:U:H2'	50:3:2201:G:C8	2.50	0.46
50:3:2476:A:H2'	50:3:2484:A:C6	2.50	0.46
50:3:2530:U:H1'	50:3:2572:A:H2	1.81	0.46
50:3:2708:G:H2'	50:3:2709:C:C6	2.51	0.46
52:5:366:C:H2'	52:5:367:A:C8	2.50	0.46
52:5:881:G:C2	52:5:905:U:C2	3.03	0.46
52:5:1379:C:H2'	52:5:1380:G:C8	2.51	0.46
2:1:36:LYS:C	2:1:40:HIS:HD1	2.23	0.46
8:E:35:LEU:HD12	8:E:60:TRP:CD1	2.51	0.46
32:i:115:ASN:OD1	32:i:116:ARG:N	2.48	0.46
41:r:129:VAL:O	41:r:133:GLN:HG3	2.16	0.46
50:3:381:A:H2'	50:3:382:U:C6	2.50	0.46
50:3:831:U:H2'	50:3:832:C:C6	2.51	0.46
50:3:1463:G:H2'	50:3:1464:G:C8	2.49	0.46
50:3:1475:C:H2'	50:3:1476:C:O4'	2.16	0.46
50:3:2082:U:OP2	50:3:2246:G:O2'	2.24	0.46
50:3:2381:G:H2'	50:3:2382:A:C8	2.50	0.46
50:3:2506:C:O2'	50:3:2507:C:OP1	2.26	0.46
52:5:13:U:O2'	52:5:908:A:OP2	2.29	0.46
52:5:45:A:H2'	52:5:46:U:C6	2.51	0.46
52:5:72:A:H2'	52:5:73:G:C8	2.51	0.46
52:5:460:A:N1	52:5:467:G:C6	2.84	0.46
52:5:511:A:H2'	52:5:512:U:C6	2.50	0.46
52:5:1146:A:H2'	52:5:1147:U:C6	2.49	0.46
52:5:1319:U:O2'	52:5:1352:A:N6	2.46	0.46
52:5:1447:U:H2'	52:5:1448:A:C8	2.51	0.46
14:K:133:LYS:HA	52:5:37:C:H5''	1.98	0.46
17:N:64:LEU:O	17:N:68:LYS:HG2	2.16	0.46
22:S:17:ARG:HD3	52:5:319:U:H4'	1.98	0.46
22:S:40:ASN:OD1	22:S:43:ASN:ND2	2.49	0.46
26:c:72:GLY:N	50:3:2066:A:OP1	2.49	0.46
26:c:162:ASN:N	26:c:200:GLU:OE2	2.49	0.46
30:g:52:LYS:HA	50:3:1119:A:OP1	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:l:4:PRO:HG3	35:l:69:PHE:CE2	2.50	0.46
35:l:109:ILE:O	35:l:114:MET:HE2	2.16	0.46
45:v:62:ASN:O	45:v:63:ARG:NE	2.48	0.46
50:3:20:C:O2'	50:3:587:U:H5''	2.15	0.46
50:3:616:G:H2'	50:3:617:C:C6	2.50	0.46
50:3:1180:U:H2'	50:3:1181:A:H8	1.79	0.46
50:3:1453:U:H3'	50:3:1454:G:C8	2.51	0.46
50:3:1634:A:N6	50:3:1635:G:O6	2.49	0.46
50:3:1737:G:H2'	50:3:1738:G:H8	1.80	0.46
50:3:1761:C:H2'	50:3:1762:A:C8	2.50	0.46
50:3:1954:C:H2'	50:3:1955:G:H8	1.79	0.46
50:3:2259:G:H2'	50:3:2260:G:C8	2.49	0.46
51:4:105:A:H2'	51:4:106:A:C8	2.51	0.46
52:5:416:U:O2	52:5:421:G:C2	2.68	0.46
52:5:538:G:H2'	52:5:539:G:C8	2.51	0.46
52:5:1389:U:H2'	52:5:1390:G:C8	2.50	0.46
4:A:41:MET:HE3	4:A:208:PRO:HD3	1.96	0.46
5:B:18:TRP:CD1	16:M:54:PRO:HA	2.50	0.46
16:M:23:ARG:NH1	16:M:30:ALA:HB2	2.30	0.46
19:P:20:LYS:HD2	19:P:48:HIS:HB2	1.98	0.46
25:b:58:GLU:HG2	25:b:60:LYS:H	1.79	0.46
32:i:18:TRP:NE1	32:i:138:GLN:HE21	2.14	0.46
39:p:13:ARG:NH2	50:3:615:G:H5''	2.30	0.46
50:3:1372:U:H4'	50:3:1412:A:C5	2.51	0.46
50:3:1400:U:H2'	50:3:1401:A:C8	2.50	0.46
50:3:1436:C:H2'	50:3:1437:A:C8	2.47	0.46
50:3:1654:G:H2'	50:3:1655:U:C6	2.50	0.46
50:3:2645:U:H2'	50:3:2646:G:O4'	2.15	0.46
50:3:2736:U:O2'	50:3:2737:G:H8	1.95	0.46
52:5:236:C:H2'	52:5:237:A:C8	2.51	0.46
52:5:409:G:H1'	52:5:425:G:H21	1.81	0.46
52:5:1245:A:H2'	52:5:1246:A:C8	2.45	0.46
4:A:102:ARG:HE	4:A:103:VAL:HG13	1.81	0.46
5:B:76:PHE:O	5:B:84:ASN:ND2	2.47	0.46
6:C:100:ILE:HG13	6:C:136:LEU:HG	1.98	0.46
7:D:108:ALA:HB3	7:D:114:ALA:HB2	1.98	0.46
10:G:100:PRO:HA	52:5:597:C:H5''	1.98	0.46
12:I:86:ASN:O	12:I:89:ALA:N	2.46	0.46
18:O:48:VAL:O	18:O:51:GLU:HB3	2.16	0.46
19:P:7:LYS:HZ2	19:P:65:GLU:H	1.63	0.46
20:Q:95:TYR:CD2	52:5:732:A:H1'	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:R:20:ILE:O	21:R:24:LYS:HG2	2.15	0.46
24:a:83:VAL:HA	24:a:99:ILE:HG13	1.97	0.46
26:c:128:VAL:O	26:c:200:GLU:HA	2.15	0.46
27:d:121:SER:HB3	27:d:128:TYR:CZ	2.51	0.46
32:i:78:TYR:HB2	50:3:1167:U:C5	2.51	0.46
33:j:1:MET:HE1	33:j:32:TYR:HB3	1.98	0.46
39:p:91:ARG:HH21	39:p:93:VAL:HG11	1.81	0.46
50:3:29:G:N2	50:3:547:G:O2'	2.46	0.46
50:3:173:C:H2'	50:3:174:A:H8	1.80	0.46
50:3:498:C:N4	50:3:499:G:O6	2.49	0.46
50:3:513:A:H2'	50:3:514:A:C8	2.51	0.46
50:3:625:G:H2'	50:3:626:A:C8	2.47	0.46
50:3:990:G:H2'	50:3:991:G:C8	2.51	0.46
50:3:1061:A:H2'	50:3:1062:A:H8	1.81	0.46
50:3:1305:G:H2'	50:3:1306:G:H8	1.79	0.46
50:3:2110:U:H2'	50:3:2111:U:O2	2.16	0.46
50:3:2496:G:H2'	50:3:2497:U:C6	2.51	0.46
50:3:2558:G:H2'	50:3:2559:C:H6	1.80	0.46
52:5:253:G:C6	52:5:266:A:C6	3.03	0.46
52:5:672:A:H61	52:5:712:A:N6	2.14	0.46
52:5:733:A:H2'	52:5:734:A:H8	1.81	0.46
52:5:740:G:C2	52:5:741:C:C5	3.03	0.46
52:5:781:A:H2'	52:5:782:G:H8	1.80	0.46
52:5:826:G:N2	52:5:851:U:O2	2.35	0.46
52:5:912:G:H2'	52:5:913:A:H8	1.81	0.46
14:K:9:ARG:NH1	52:5:874:C:H5''	2.31	0.46
14:K:43:LYS:HD2	14:K:43:LYS:HA	1.74	0.46
24:a:191:LYS:HB2	24:a:277:LEU:HD12	1.98	0.46
29:f:73:GLU:OE2	29:f:139:LYS:NZ	2.48	0.46
34:k:30:LYS:HE2	50:3:845:U:OP2	2.16	0.46
50:3:450:C:O2'	50:3:1871:U:O2	2.32	0.46
50:3:1390:C:H2'	50:3:1391:U:H6	1.81	0.46
50:3:2513:G:O2'	50:3:2514:U:O5'	2.33	0.46
50:3:2651:G:H2'	50:3:2652:U:O4'	2.16	0.46
50:3:2799:U:H3	50:3:2810:A:N6	2.14	0.46
52:5:264:C:H2'	52:5:265:U:C6	2.51	0.46
52:5:473:A:H2'	52:5:474:G:C8	2.51	0.46
52:5:649:U:H1'	52:5:650:A:H8	1.80	0.46
52:5:744:U:H4'	52:5:745:U:C5	2.51	0.46
52:5:823:C:H2'	52:5:824:U:C6	2.51	0.46
6:C:41:ARG:HH21	6:C:41:ARG:HG2	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:115:GLN:NE2	52:5:402:G:N3	2.63	0.45
6:C:144:LEU:HB3	6:C:174:PHE:HB3	1.98	0.45
13:J:121:ARG:NH2	52:5:1497:U:OP1	2.29	0.45
18:O:32:HIS:O	18:O:42:CYS:HA	2.16	0.45
18:O:58:LYS:HB3	18:O:64:ARG:NH1	2.32	0.45
25:b:27:THR:HG21	25:b:197:ILE:HG12	1.98	0.45
32:i:108:VAL:O	32:i:112:LEU:HD23	2.15	0.45
40:q:35:LEU:HB3	40:q:55:VAL:HG23	1.99	0.45
41:r:115:GLN:HB3	41:r:119:LYS:NZ	2.31	0.45
45:v:18:ARG:HB3	45:v:22:LYS:HA	1.98	0.45
46:w:25:GLU:HA	46:w:28:GLU:HG3	1.97	0.45
48:y:43:CYS:SG	48:y:46:GLY:N	2.90	0.45
50:3:306:G:H2'	50:3:307:C:C6	2.51	0.45
50:3:464:A:H2'	50:3:464:A:N3	2.31	0.45
50:3:715:G:H2'	50:3:716:G:H8	1.81	0.45
50:3:1101:U:O2	50:3:1108:A:N6	2.50	0.45
50:3:1255:G:O2'	50:3:1256:A:O5'	2.32	0.45
50:3:1390:C:H2'	50:3:1391:U:C6	2.51	0.45
50:3:1798:A:C2	50:3:1836:A:H4'	2.52	0.45
50:3:2106:G:H2'	50:3:2107:A:H8	1.81	0.45
50:3:2701:A:H2'	50:3:2702:G:H8	1.80	0.45
50:3:2712:C:C2	50:3:2713:A:C8	3.04	0.45
50:3:2823:A:N1	50:3:2832:G:C6	2.84	0.45
50:3:2866:A:H2'	50:3:2867:U:C6	2.51	0.45
52:5:822:A:H2'	52:5:823:C:H6	1.80	0.45
52:5:865:U:O2'	52:5:866:A:OP1	2.34	0.45
52:5:1183:C:H2'	52:5:1184:C:C6	2.51	0.45
52:5:1269:U:H2'	52:5:1270:C:C6	2.51	0.45
10:G:116:ILE:O	10:G:123:MET:N	2.39	0.45
15:L:27:LEU:N	52:5:1303:A:OP1	2.29	0.45
32:i:119:ARG:NH2	50:3:562:C:O2	2.49	0.45
33:j:5:MET:HG2	50:3:1703:A:H8	1.81	0.45
44:u:83:TYR:CD2	50:3:892:G:H4'	2.52	0.45
50:3:448:A:H62	50:3:2420:A:H1'	1.80	0.45
50:3:794:G:H2'	50:3:795:G:H8	1.81	0.45
50:3:853:G:H21	50:3:1220:A:H62	1.64	0.45
50:3:1010:G:H1'	50:3:1025:G:N2	2.31	0.45
50:3:1371:G:N3	50:3:1371:G:H2'	2.31	0.45
50:3:1777:G:O6	50:3:1990:C:N4	2.49	0.45
50:3:1872:U:N3	50:3:1882:G:C6	2.84	0.45
50:3:2339:G:O2'	50:3:2344:A:N6	2.49	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2678:A:H2'	50:3:2679:G:C8	2.50	0.45
50:3:2780:U:H2'	50:3:2781:C:C6	2.52	0.45
50:3:2856:G:H2'	50:3:2857:C:H6	1.80	0.45
52:5:87:G:H2'	52:5:88:A:C8	2.49	0.45
52:5:280:G:H2'	52:5:281:U:C6	2.51	0.45
52:5:669:U:H2'	52:5:670:G:C8	2.51	0.45
52:5:767:U:H1'	52:5:894:A:H2	1.81	0.45
52:5:1325:U:H2'	52:5:1326:C:C6	2.51	0.45
4:A:112:TRP:CZ2	4:A:116:THR:HB	2.51	0.45
6:C:164:SER:HB2	6:C:167:VAL:HG22	1.97	0.45
8:E:88:ILE:HG23	8:E:92:ARG:NE	2.32	0.45
9:F:90:VAL:HG13	9:F:95:LYS:HG2	1.99	0.45
25:b:35:GLN:HE22	25:b:76:LYS:HB2	1.82	0.45
50:3:418:G:N2	50:3:430:U:O2	2.34	0.45
50:3:704:G:N3	50:3:704:G:H2'	2.31	0.45
50:3:774:A:H1'	50:3:775:C:H5	1.81	0.45
50:3:843:G:H2'	50:3:844:G:C8	2.52	0.45
50:3:1016:A:H2'	50:3:1017:A:C4	2.50	0.45
50:3:1186:A:H2'	50:3:1187:C:O4'	2.15	0.45
50:3:1505:G:H2'	50:3:1506:U:C6	2.51	0.45
50:3:1596:U:H2'	50:3:1597:U:C6	2.51	0.45
50:3:1819:G:H2'	50:3:1820:U:C6	2.51	0.45
50:3:1848:U:C2	50:3:1849:G:C8	3.04	0.45
50:3:2100:G:H2'	50:3:2101:A:C8	2.51	0.45
50:3:2277:A:C4	50:3:2278:G:C8	3.05	0.45
50:3:2467:A:H2'	50:3:2468:U:O4'	2.16	0.45
50:3:2684:G:H2'	50:3:2685:A:H8	1.80	0.45
50:3:2699:C:H2'	50:3:2700:C:H6	1.81	0.45
52:5:94:A:O2'	52:5:95:C:H5'	2.15	0.45
52:5:446:A:H2'	52:5:447:G:O4'	2.16	0.45
52:5:660:A:H61	52:5:739:G:H1	1.64	0.45
52:5:1184:C:H2'	52:5:1185:C:C6	2.51	0.45
52:5:1360:G:H2'	52:5:1361:G:C8	2.51	0.45
52:5:1361:G:H2'	52:5:1362:G:H8	1.80	0.45
2:1:11:PHE:CE2	34:k:59:TYR:HB3	2.52	0.45
5:B:56:VAL:HG12	5:B:69:VAL:HG12	1.97	0.45
15:L:19:LEU:HD12	15:L:25:ILE:HG21	1.97	0.45
19:P:25:GLN:OE1	19:P:42:HIS:HB2	2.16	0.45
20:Q:93:ALA:O	20:Q:97:ALA:N	2.49	0.45
21:R:15:LEU:HA	21:R:18:LYS:NZ	2.32	0.45
22:S:29:LYS:HZ1	52:5:1414:U:P	2.39	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:b:64:LYS:O	25:b:67:GLN:HG2	2.16	0.45
26:c:40:VAL:HG11	26:c:103:LEU:HD23	1.99	0.45
26:c:130:GLN:HA	26:c:133:PHE:CD1	2.51	0.45
33:j:17:LYS:HE3	33:j:45:ASP:HB3	1.97	0.45
37:n:28:VAL:HG11	37:n:86:LEU:HD13	1.99	0.45
39:p:79:ILE:HD11	39:p:83:LYS:NZ	2.32	0.45
39:p:107:LEU:O	39:p:111:LYS:HG3	2.16	0.45
45:v:34:GLN:NE2	45:v:55:LEU:HD11	2.27	0.45
50:3:558:C:H5''	50:3:575:C:O2'	2.16	0.45
50:3:897:A:H62	50:3:953:G:H21	1.63	0.45
50:3:1243:A:H2'	50:3:1244:A:O4'	2.17	0.45
50:3:1349:C:H2'	50:3:1350:A:C8	2.51	0.45
50:3:1468:U:H2'	50:3:1469:C:O4'	2.16	0.45
50:3:1535:A:H2'	50:3:1536:C:O4'	2.16	0.45
50:3:1839:C:H2'	50:3:1840:C:C6	2.52	0.45
50:3:2171:A:H5''	50:3:2180:U:O2'	2.16	0.45
50:3:2372:C:H2'	50:3:2373:G:C8	2.51	0.45
50:3:2582:G:H2'	50:3:2583:U:C6	2.51	0.45
50:3:2852:G:H1'	50:3:2872:A:N6	2.32	0.45
51:4:57:G:C5	51:4:58:C:C5	3.05	0.45
51:4:78:C:H3'	51:4:79:U:C2	2.51	0.45
52:5:335:C:H2'	52:5:336:U:C6	2.51	0.45
52:5:337:C:H2'	52:5:338:C:H6	1.81	0.45
52:5:763:A:N7	52:5:810:U:O4	2.50	0.45
52:5:1089:C:H2'	52:5:1090:G:C8	2.51	0.45
52:5:1261:A:H2'	52:5:1262:A:H8	1.81	0.45
6:C:7:ILE:HG13	6:C:8:PHE:CD1	2.52	0.45
9:F:71:ARG:HG3	9:F:72:LEU:HD22	1.99	0.45
47:x:39:CYS:H	47:x:42:CYS:HB2	1.82	0.45
48:y:11:HIS:NE2	50:3:2028:G:OP1	2.50	0.45
50:3:387:U:H2'	50:3:388:U:C6	2.52	0.45
50:3:755:C:H2'	50:3:756:A:C8	2.51	0.45
50:3:886:U:H3	50:3:964:A:N6	2.13	0.45
50:3:1709:C:H3'	50:3:1710:A:C8	2.51	0.45
50:3:1709:C:H3'	50:3:1710:A:H8	1.81	0.45
50:3:1756:A:H2'	50:3:1757:G:H8	1.82	0.45
50:3:1955:G:C2'	50:3:1956:G:H5'	2.46	0.45
50:3:2609:C:H2'	50:3:2611:G:H8	1.79	0.45
50:3:2681:G:H2'	50:3:2682:A:C8	2.51	0.45
52:5:106:C:H41	52:5:231:U:H3'	1.82	0.45
52:5:137:A:H3'	52:5:138:A:H8	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:224:A:H2'	52:5:225:U:C6	2.51	0.45
52:5:1011:A:H2'	52:5:1012:A:N3	2.31	0.45
52:5:1294:U:N3	52:5:1295:U:O4	2.49	0.45
52:5:1351:U:H2'	52:5:1352:A:H8	1.82	0.45
5:B:141:LEU:HA	5:B:144:VAL:HG22	1.98	0.45
9:F:9:ARG:HE	52:5:1320:A:H2'	1.80	0.45
12:I:54:VAL:HG21	16:M:61:TRP:HH2	1.81	0.45
22:S:71:ARG:HD3	52:5:255:G:OP2	2.15	0.45
24:a:215:LYS:NZ	50:3:764:G:O4'	2.49	0.45
25:b:1:MET:CE	25:b:2:GLU:HG2	2.46	0.45
25:b:14:SER:HB2	38:o:14:GLU:OE1	2.17	0.45
25:b:120:THR:HG21	25:b:169:TYR:HB2	1.98	0.45
32:i:37:ASP:OD2	32:i:43:ASN:ND2	2.49	0.45
32:i:143:LEU:HG	32:i:146:SER:HB3	1.99	0.45
33:j:21:ILE:HD11	33:j:39:VAL:HB	1.99	0.45
40:q:27:ALA:HB1	40:q:31:LYS:NZ	2.31	0.45
44:u:20:GLY:HA3	53:7:3:G:H1'	1.99	0.45
45:v:39:LYS:HB3	45:v:64:LEU:HD12	1.98	0.45
50:3:448:A:H3'	50:3:449:C:C6	2.51	0.45
50:3:491:A:H2	50:3:509:G:H5'	1.81	0.45
50:3:719:G:C6	50:3:809:A:H1'	2.51	0.45
50:3:877:G:H2'	50:3:878:A:C8	2.52	0.45
50:3:958:C:H2'	50:3:959:C:C6	2.52	0.45
50:3:1039:G:H2'	50:3:1040:U:C6	2.52	0.45
50:3:1076:U:O2	50:3:1149:G:N2	2.44	0.45
50:3:1758:C:H2'	50:3:1759:C:C6	2.52	0.45
50:3:2157:A:H2'	50:3:2158:C:C6	2.51	0.45
50:3:2472:G:H2'	50:3:2473:C:H6	1.82	0.45
52:5:712:A:H2'	52:5:713:A:C8	2.52	0.45
52:5:862:C:H2'	52:5:863:A:O4'	2.17	0.45
52:5:1446:A:H2'	52:5:1447:U:C6	2.51	0.45
53:7:2:G:N2	53:7:73:C:C2	2.78	0.45
5:B:60:ARG:HG2	5:B:65:VAL:HA	1.99	0.45
25:b:123:ILE:H	25:b:123:ILE:HD12	1.82	0.45
38:o:90:LEU:C	38:o:91:LYS:HD3	2.42	0.45
38:o:107:ARG:HD3	38:o:108:SER:O	2.16	0.45
40:q:5:VAL:HG22	40:q:38:VAL:HG23	1.97	0.45
41:r:80:PRO:HD3	50:3:27:U:H4'	1.98	0.45
42:s:53:LEU:HD11	42:s:86:PRO:HA	1.98	0.45
50:3:679:A:N1	50:3:2377:A:O2'	2.48	0.45
50:3:780:G:O2'	50:3:783:G:H1'	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:858:A:N6	50:3:870:A:H61	2.15	0.45
50:3:863:U:O2'	50:3:866:G:O6	2.30	0.45
50:3:1202:A:H2'	50:3:1203:G:C8	2.52	0.45
50:3:1219:U:H2'	50:3:1220:A:O4'	2.16	0.45
50:3:1826:A:H1'	50:3:1828:A:C5	2.52	0.45
50:3:1842:G:H2'	50:3:1843:C:C6	2.51	0.45
50:3:2447:A:H1'	50:3:2595:A:OP1	2.17	0.45
50:3:2483:C:H42	50:3:2537:G:N2	2.15	0.45
51:4:16:G:O6	51:4:63:U:C2	2.70	0.45
52:5:1012:A:O2'	52:5:1192:C:O2'	2.33	0.45
9:F:78:ARG:HE	9:F:83:ASN:HA	1.81	0.45
15:L:101:ARG:NH2	52:5:946:G:OP2	2.49	0.45
15:L:107:ARG:NH1	52:5:1203:A:OP1	2.39	0.45
27:d:150:ARG:HB2	50:3:2313:U:H3	1.80	0.45
28:e:147:PHE:HA	28:e:150:GLU:CD	2.42	0.45
29:f:47:ARG:NH2	29:f:51:LEU:HB2	2.28	0.45
36:m:106:ARG:HB2	36:m:113:MET:HE1	1.99	0.45
41:r:99:ARG:NH2	50:3:1292:A:OP2	2.49	0.45
44:u:38:LYS:N	44:u:51:ILE:O	2.44	0.45
45:v:4:LYS:HG2	45:v:12:PRO:HD3	1.99	0.45
46:w:49:ARG:NH2	50:3:77:G:OP1	2.50	0.45
50:3:61:U:O2'	50:3:76:A:OP2	2.33	0.45
50:3:289:U:H2'	50:3:290:A:C8	2.52	0.45
50:3:1127:C:H2'	50:3:1128:G:O4'	2.16	0.45
50:3:1544:G:C2	50:3:1545:A:C5	3.05	0.45
50:3:1775:G:H2'	50:3:1776:G:H8	1.82	0.45
50:3:2106:G:N2	50:3:2198:G:H1	2.15	0.45
50:3:2265:U:H2'	50:3:2266:C:C6	2.52	0.45
52:5:613:C:H2'	52:5:614:U:H6	1.82	0.45
52:5:1003:G:C6	52:5:1018:U:C4	3.04	0.45
52:5:1047:U:H2'	52:5:1048:G:H8	1.81	0.45
52:5:1098:C:C2	52:5:1099:G:C8	3.05	0.45
52:5:1223:A:H2'	52:5:1224:C:C6	2.51	0.45
6:C:74:LEU:HA	6:C:77:LEU:HG	1.99	0.45
6:C:95:SER:O	6:C:95:SER:OG	2.35	0.45
10:G:118:THR:OG1	10:G:119:SER:N	2.49	0.45
12:I:62:HIS:CD2	12:I:63:VAL:HG23	2.51	0.45
17:N:21:SER:O	17:N:24:VAL:HG22	2.16	0.45
18:O:36:ALA:O	52:5:446:A:O2'	2.34	0.45
18:O:48:VAL:HG23	18:O:52:TRP:HZ3	1.81	0.45
24:a:234:ASN:C	24:a:241:GLY:HA3	2.41	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:b:208:ARG:HD2	25:b:209:THR:N	2.32	0.45
28:e:57:ARG:NH1	28:e:64:SER:OG	2.50	0.45
32:i:121:TRP:CD1	32:i:124:LYS:HZ3	2.35	0.45
32:i:138:GLN:OE1	50:3:8:A:H1'	2.17	0.45
35:l:129:TRP:HH2	50:3:1065:G:H5''	1.81	0.45
48:y:40:HIS:C	48:y:41:ARG:HD2	2.42	0.45
50:3:195:A:H2'	50:3:196:G:C8	2.52	0.45
50:3:297:G:H1	50:3:440:C:H5	1.65	0.45
50:3:832:C:H2'	50:3:833:C:C6	2.52	0.45
50:3:1597:U:H2'	50:3:1598:U:C6	2.52	0.45
50:3:2074:G:H3'	50:3:2075:U:H4'	1.99	0.45
51:4:70:G:H21	51:4:94:A:H62	1.65	0.45
52:5:85:U:O2	52:5:86:A:N6	2.42	0.45
52:5:152:U:H2'	52:5:153:A:C8	2.52	0.45
52:5:223:G:H2'	52:5:224:A:C8	2.52	0.45
52:5:879:G:H2'	52:5:880:G:C8	2.51	0.45
52:5:964:A:H2'	52:5:965:C:C6	2.52	0.45
52:5:1066:U:H2'	52:5:1067:C:C6	2.51	0.45
53:7:68:G:H2'	53:7:69:A:C8	2.51	0.45
5:B:18:TRP:O	5:B:21:ARG:NH1	2.50	0.45
9:F:22:VAL:O	9:F:26:ILE:HG12	2.17	0.45
20:Q:81:MET:HA	20:Q:84:ARG:NH2	2.31	0.45
24:a:258:TRP:NE1	50:3:1813:C:OP1	2.49	0.45
28:e:127:LYS:HB2	28:e:135:THR:HB	1.98	0.45
28:e:145:GLY:O	28:e:149:THR:HG23	2.16	0.45
32:i:111:MET:HA	50:3:1172:G:N2	2.31	0.45
33:j:30:LYS:O	33:j:31:ARG:HG2	2.17	0.45
37:n:75:GLN:O	37:n:79:ASP:N	2.39	0.45
37:n:79:ASP:O	37:n:82:VAL:HG22	2.16	0.45
44:u:55:ARG:HG2	50:3:2395:U:H1'	1.99	0.45
48:y:10:LYS:NZ	50:3:552:C:OP2	2.37	0.45
50:3:47:G:H5''	50:3:48:G:OP1	2.17	0.45
50:3:788:G:H2'	50:3:789:A:C8	2.51	0.45
50:3:984:C:H2'	50:3:985:A:C8	2.52	0.45
50:3:1001:C:H2'	50:3:1002:A:C8	2.52	0.45
50:3:1447:A:O2'	50:3:1448:U:H5''	2.17	0.45
50:3:1778:G:H2'	50:3:1779:G:C8	2.52	0.45
50:3:1841:U:H5''	50:3:1842:G:H5''	1.99	0.45
50:3:2023:U:H2'	50:3:2024:C:O4'	2.17	0.45
50:3:2303:U:C2	50:3:2346:G:N1	2.85	0.45
50:3:2656:G:H2'	50:3:2657:C:C6	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:108:C:H5''	52:5:307:C:H1'	1.99	0.45
52:5:501:A:H2'	52:5:502:C:C6	2.51	0.45
52:5:742:C:H5''	52:5:845:C:O2'	2.16	0.45
7:D:137:TYR:O	7:D:153:PRO:HG3	2.17	0.44
7:D:148:ARG:HB2	7:D:183:LEU:HB2	1.98	0.44
10:G:21:LYS:NZ	52:5:823:C:O2'	2.30	0.44
11:H:106:THR:HG23	11:H:107:THR:HG23	1.99	0.44
26:c:156:ASN:O	26:c:194:ALA:HA	2.16	0.44
26:c:176:LYS:C	26:c:179:GLN:HE22	2.23	0.44
27:d:106:VAL:O	27:d:110:ARG:HB2	2.17	0.44
39:p:2:ARG:NH2	50:3:481:C:O3'	2.51	0.44
45:v:2:ALA:HB1	50:3:1392:G:H3'	1.97	0.44
50:3:868:C:H2'	50:3:869:U:C6	2.52	0.44
50:3:1037:A:H3'	50:3:1038:G:H8	1.82	0.44
50:3:1108:A:H2'	50:3:1109:G:O4'	2.17	0.44
50:3:1300:C:OP1	50:3:1301:G:H5'	2.17	0.44
50:3:1380:U:H1'	50:3:1604:A:H2	1.81	0.44
50:3:1695:G:H4'	50:3:2720:C:O2	2.17	0.44
50:3:1830:G:H2'	50:3:1831:G:C8	2.52	0.44
50:3:2330:A:H3'	50:3:2331:G:H8	1.82	0.44
50:3:2515:C:H2'	50:3:2516:G:O4'	2.17	0.44
50:3:2524:U:H2'	50:3:2525:C:C6	2.52	0.44
50:3:2639:G:H2'	50:3:2640:A:C8	2.52	0.44
50:3:2701:A:H2'	50:3:2702:G:C8	2.52	0.44
52:5:80:U:H2'	52:5:81:A:C8	2.53	0.44
52:5:176:G:H2'	52:5:177:G:C8	2.52	0.44
52:5:418:U:H5''	52:5:420:A:H2	1.83	0.44
52:5:1168:G:H2'	52:5:1169:U:H6	1.82	0.44
4:A:132:LYS:HE2	4:A:132:LYS:HB3	1.83	0.44
6:C:12:ARG:HG2	6:C:35:PRO:HD3	1.99	0.44
14:K:113:GLY:HA2	14:K:119:GLY:HA2	1.99	0.44
17:N:17:LYS:HE3	52:5:747:C:H5'	1.98	0.44
19:P:14:LYS:HD2	19:P:15:SER:OG	2.17	0.44
21:R:41:PHE:CD1	21:R:42:PRO:HD2	2.52	0.44
21:R:73:GLU:HB2	52:5:1294:U:H1'	1.98	0.44
21:R:81:LYS:HG3	21:R:83:HIS:H	1.82	0.44
22:S:50:GLN:NE2	22:S:54:LEU:HD23	2.32	0.44
24:a:58:GLN:NE2	50:3:1830:G:OP1	2.50	0.44
38:o:5:ASN:C	38:o:6:LYS:HD3	2.43	0.44
40:q:67:LYS:HA	40:q:86:ARG:HE	1.82	0.44
41:r:116:GLU:OE1	41:r:116:GLU:N	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:164:A:OP2	50:3:165:U:O2'	2.35	0.44
50:3:616:G:H2'	50:3:617:C:H6	1.82	0.44
50:3:810:G:H4'	50:3:811:G:H5'	1.99	0.44
50:3:929:G:H2'	50:3:930:C:C6	2.52	0.44
50:3:1337:G:H2'	50:3:1338:G:C8	2.53	0.44
50:3:1440:U:H2'	50:3:1441:A:C8	2.52	0.44
50:3:2070:C:O2'	53:7:77:A:H5''	2.17	0.44
50:3:2268:C:H2'	50:3:2269:C:H6	1.81	0.44
50:3:2275:A:N6	50:3:2280:U:C2	2.85	0.44
50:3:2656:G:H2'	50:3:2657:C:H6	1.82	0.44
52:5:14:U:H3'	52:5:15:U:C6	2.52	0.44
52:5:222:U:H2'	52:5:223:G:C8	2.53	0.44
52:5:490:U:H2'	52:5:491:U:C6	2.52	0.44
6:C:2:LYS:HG3	6:C:3:TYR:HD1	1.82	0.44
6:C:151:ILE:HG12	52:5:433:C:O2'	2.18	0.44
9:F:101:ARG:NH1	52:5:934:G:O2'	2.47	0.44
13:J:119:ARG:HH22	23:T:36:LEU:HD13	1.82	0.44
20:Q:70:ILE:HD12	20:Q:90:LEU:HD21	1.99	0.44
22:S:71:ARG:NH1	52:5:256:G:O6	2.50	0.44
35:I:87:LYS:HE3	50:3:991:G:H4'	1.99	0.44
50:3:745:U:H2'	50:3:746:G:C8	2.52	0.44
50:3:873:G:H2'	50:3:874:U:C6	2.52	0.44
50:3:1408:G:H2'	50:3:1409:G:H8	1.82	0.44
50:3:1460:G:N2	50:3:1596:U:O2	2.50	0.44
50:3:1462:A:O2'	50:3:1463:G:H8	1.99	0.44
50:3:1687:G:OP1	50:3:2826:G:N1	2.50	0.44
50:3:1872:U:O2	50:3:1882:G:N2	2.49	0.44
50:3:1992:C:H2'	50:3:1993:U:C6	2.53	0.44
50:3:2382:A:H2'	50:3:2383:G:H8	1.82	0.44
50:3:2764:U:H4'	50:3:2765:A:OP1	2.18	0.44
52:5:111:A:H8	52:5:111:A:OP2	2.01	0.44
52:5:137:A:C2	52:5:138:A:H1'	2.53	0.44
52:5:402:G:O6	52:5:403:A:N6	2.50	0.44
52:5:798:U:C2	52:5:799:A:C8	3.06	0.44
52:5:1464:G:H2'	52:5:1465:U:C6	2.52	0.44
52:5:1487:U:H3	52:5:1498:G:H1	1.64	0.44
4:A:67:THR:HA	4:A:70:ASN:ND2	2.33	0.44
8:E:13:LEU:HB3	8:E:17:GLN:NE2	2.32	0.44
17:N:9:ILE:O	17:N:13:GLN:HG3	2.18	0.44
19:P:41:ARG:HA	52:5:276:U:C2	2.53	0.44
24:a:62:ASN:HD22	50:3:1600:A:H1'	1.80	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:a:204:SER:OG	24:a:205:ASN:N	2.50	0.44
35:l:67:ARG:HB2	35:l:103:MET:HA	2.00	0.44
36:m:117:GLN:HG2	48:y:53:VAL:HG21	2.00	0.44
43:t:13:ILE:HG13	43:t:14:THR:N	2.32	0.44
45:v:34:GLN:HE22	45:v:55:LEU:CD1	2.28	0.44
49:z:11:CYS:HA	49:z:47:HIS:ND1	2.33	0.44
50:3:609:U:O2'	50:3:610:G:H5'	2.18	0.44
50:3:731:A:H2'	50:3:732:G:C8	2.53	0.44
50:3:858:A:H2'	50:3:859:G:C8	2.52	0.44
50:3:899:A:H2'	50:3:900:G:C8	2.52	0.44
50:3:1308:A:H2'	50:3:1309:G:H8	1.83	0.44
50:3:1640:G:H4'	50:3:1642:G:N1	2.33	0.44
50:3:2002:U:H2'	50:3:2003:C:C5	2.52	0.44
50:3:2568:G:H2'	50:3:2569:A:C8	2.51	0.44
50:3:2823:A:C6	50:3:2832:G:N1	2.86	0.44
51:4:4:G:C6	51:4:105:A:N6	2.86	0.44
51:4:59:A:H2'	51:4:60:C:H6	1.83	0.44
52:5:499:U:H2'	52:5:500:G:C8	2.53	0.44
52:5:606:A:H3'	52:5:607:A:H8	1.82	0.44
52:5:619:A:OP2	52:5:619:A:H8	2.00	0.44
52:5:887:C:H2'	52:5:888:A:O4'	2.17	0.44
52:5:909:A:O2'	52:5:910:C:H5'	2.18	0.44
52:5:1214:A:H1'	52:5:1216:G:C4	2.53	0.44
52:5:1390:G:H2'	52:5:1391:A:H8	1.82	0.44
52:5:1438:U:H2'	52:5:1439:G:C8	2.52	0.44
53:7:9:U:O2'	53:7:22:A:N1	2.48	0.44
5:B:158:GLY:HA3	5:B:199:ILE:HG13	2.00	0.44
7:D:80:THR:OG1	7:D:81:LYS:N	2.50	0.44
11:H:107:THR:HA	52:5:1154:A:H5''	2.00	0.44
12:I:16:LEU:HD21	12:I:78:ARG:HG3	1.97	0.44
19:P:7:LYS:O	19:P:64:VAL:HG12	2.18	0.44
24:a:225:ARG:NH2	50:3:815:G:H5''	2.33	0.44
25:b:175:THR:HG21	50:3:2780:U:H4'	2.00	0.44
27:d:117:LEU:HB2	27:d:176:PRO:HG2	2.00	0.44
32:i:39:ILE:HD11	32:i:121:TRP:HB3	2.00	0.44
39:p:100:LYS:HA	39:p:100:LYS:HD3	1.59	0.44
40:q:54:ARG:HB2	40:q:98:VAL:HG22	1.99	0.44
41:r:65:ASN:ND2	41:r:67:ASP:OD2	2.50	0.44
50:3:42:U:H2'	50:3:43:A:C8	2.52	0.44
50:3:597:C:H2'	50:3:598:G:H8	1.82	0.44
50:3:1343:C:H2'	50:3:1344:U:C6	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1457:A:H2'	50:3:1458:A:H8	1.81	0.44
50:3:1459:A:H2'	50:3:1460:G:C8	2.52	0.44
50:3:2891:C:H2'	50:3:2892:U:H6	1.83	0.44
52:5:317:A:N1	52:5:328:G:C6	2.85	0.44
52:5:371:U:H2'	52:5:372:G:C8	2.53	0.44
12:I:62:HIS:CG	12:I:63:VAL:H	2.36	0.44
24:a:125:GLU:HB2	29:f:89:TYR:HE1	1.82	0.44
25:b:161:LYS:HG2	32:i:82:GLN:HG2	2.00	0.44
32:i:16:ARG:HD2	32:i:56:TYR:CZ	2.53	0.44
41:r:12:ILE:O	41:r:101:SER:OG	2.25	0.44
50:3:84:G:H2'	50:3:85:U:C6	2.52	0.44
50:3:109:G:H2'	50:3:110:A:C8	2.52	0.44
50:3:118:G:OP2	50:3:120:A:O2'	2.25	0.44
50:3:280:A:H2'	50:3:281:U:C6	2.52	0.44
50:3:755:C:H2'	50:3:756:A:H8	1.82	0.44
50:3:874:U:H2'	50:3:875:G:C8	2.52	0.44
50:3:1050:A:N6	50:3:1183:A:H61	2.16	0.44
50:3:1344:U:H2'	50:3:1345:G:C8	2.53	0.44
50:3:1368:U:O2	50:3:1636:U:H5''	2.18	0.44
50:3:1513:A:H2'	50:3:1514:U:C6	2.52	0.44
50:3:1536:C:H2'	50:3:1537:A:C8	2.53	0.44
50:3:1807:C:N4	50:3:1824:G:N2	2.26	0.44
50:3:1869:G:H2'	50:3:1870:G:C8	2.53	0.44
50:3:2002:U:H3'	50:3:2003:C:H2'	2.00	0.44
50:3:2334:U:O2'	50:3:2335:A:N7	2.51	0.44
50:3:2599:C:H2'	50:3:2600:G:H8	1.82	0.44
50:3:2835:G:O3'	50:3:2838:G:N2	2.49	0.44
50:3:2893:C:H2'	50:3:2894:G:O4'	2.17	0.44
51:4:77:G:H2'	51:4:78:C:H1'	1.98	0.44
52:5:304:U:H2'	52:5:305:A:C8	2.52	0.44
52:5:678:A:H2'	52:5:679:U:H6	1.83	0.44
52:5:881:G:N1	52:5:905:U:N3	2.66	0.44
52:5:949:G:H3'	52:5:950:C:C5	2.52	0.44
52:5:1258:U:H2'	52:5:1259:G:C8	2.52	0.44
52:5:1366:U:H2'	52:5:1367:G:C8	2.53	0.44
15:L:118:ASN:CG	53:7:30:G:H5''	2.42	0.44
17:N:37:THR:HA	17:N:40:LEU:HG	2.00	0.44
20:Q:61:LYS:NZ	20:Q:99:VAL:HG12	2.32	0.44
25:b:25:PRO:O	25:b:195:GLY:N	2.51	0.44
26:c:112:LEU:O	26:c:115:VAL:HG12	2.18	0.44
26:c:189:ARG:O	26:c:193:LEU:N	2.51	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:e:93:VAL:HG13	28:e:163:LYS:HA	1.99	0.44
29:f:25:TYR:CE2	29:f:30:LEU:HB2	2.53	0.44
35:l:36:ALA:N	35:l:103:MET:HE1	2.33	0.44
50:3:9:G:H2'	50:3:10:U:C6	2.53	0.44
50:3:108:G:O3'	50:3:327:U:O2'	2.35	0.44
50:3:455:G:C4	50:3:456:G:C8	3.05	0.44
50:3:629:G:N2	50:3:696:U:O2	2.38	0.44
50:3:683:G:H2'	50:3:684:A:H8	1.83	0.44
50:3:898:A:O3'	51:4:76:A:O2'	2.26	0.44
50:3:1364:A:H2'	50:3:1365:G:C8	2.53	0.44
50:3:1954:C:H2'	50:3:1955:G:C8	2.53	0.44
50:3:2087:G:H2'	50:3:2088:U:C6	2.53	0.44
50:3:2126:A:H2	50:3:2176:G:H21	1.65	0.44
52:5:10:G:H2'	52:5:11:A:C8	2.53	0.44
52:5:255:G:H2'	52:5:256:G:C8	2.53	0.44
52:5:324:C:H4'	52:5:325:A:H5''	2.00	0.44
52:5:1032:G:H2'	52:5:1033:U:C6	2.52	0.44
5:B:11:ARG:HG2	5:B:181:LEU:HD12	1.99	0.44
7:D:131:ILE:HD13	7:D:175:TYR:CE2	2.53	0.44
8:E:111:LYS:O	8:E:115:TYR:N	2.51	0.44
9:F:37:LEU:O	9:F:41:ILE:HG12	2.18	0.44
10:G:90:ILE:HG12	10:G:139:ALA:HA	2.00	0.44
14:K:9:ARG:NH1	52:5:875:G:OP1	2.50	0.44
19:P:30:PHE:HZ	19:P:41:ARG:HD3	1.82	0.44
24:a:146:GLN:O	24:a:201:GLY:N	2.39	0.44
28:e:148:ALA:HA	28:e:151:VAL:HG22	1.99	0.44
28:e:161:LYS:HA	28:e:174:ARG:HH12	1.83	0.44
32:i:95:MET:HE2	32:i:103:LEU:HB2	1.99	0.44
33:j:22:ILE:HD11	50:3:1959:A:C4	2.53	0.44
33:j:38:VAL:HA	33:j:61:VAL:HG22	1.99	0.44
34:k:6:LEU:HD23	34:k:6:LEU:H	1.83	0.44
39:p:2:ARG:HB2	50:3:1278:G:C5	2.53	0.44
50:3:107:C:H2'	50:3:108:G:C8	2.53	0.44
50:3:405:C:H2'	50:3:406:C:C6	2.52	0.44
50:3:1070:U:H2'	50:3:1071:G:C8	2.53	0.44
50:3:1229:U:H2'	50:3:1230:U:H6	1.83	0.44
50:3:2035:U:N3	50:3:2040:A:N6	2.41	0.44
50:3:2072:C:H2'	50:3:2073:C:C6	2.52	0.44
50:3:2080:C:H2'	50:3:2081:U:C6	2.53	0.44
50:3:2081:U:O2'	50:3:2605:G:O2'	2.16	0.44
52:5:238:U:H2'	52:5:280:G:H22	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:519:G:C5	52:5:527:G:N2	2.86	0.44
52:5:575:A:H2'	52:5:576:A:C8	2.52	0.44
52:5:591:A:H2'	52:5:592:A:C8	2.52	0.44
52:5:773:G:O2'	52:5:774:A:N7	2.51	0.44
52:5:1463:A:H2'	52:5:1464:G:C8	2.53	0.44
5:B:90:LYS:HA	5:B:93:LYS:NZ	2.30	0.44
10:G:41:LYS:HA	10:G:44:ILE:HG12	2.00	0.44
12:I:56:THR:O	12:I:68:ARG:NH1	2.51	0.44
14:K:101:LYS:NZ	52:5:523:U:H5''	2.33	0.44
15:L:90:ARG:HG2	15:L:95:LEU:HB2	2.00	0.44
25:b:83:GLU:OE2	50:3:2643:A:O2'	2.32	0.44
39:p:64:LEU:O	39:p:68:LEU:HG	2.18	0.44
41:r:85:THR:OG1	41:r:93:SER:OG	2.35	0.44
44:u:37:ALA:HA	44:u:52:TYR:HD2	1.83	0.44
50:3:344:A:H1'	50:3:346:G:N7	2.33	0.44
50:3:349:G:H2'	50:3:350:C:C6	2.53	0.44
50:3:727:C:H2'	50:3:728:A:C8	2.52	0.44
50:3:963:U:O2	50:3:964:A:C8	2.71	0.44
50:3:1470:C:H2'	50:3:1471:A:H8	1.82	0.44
50:3:1544:G:H2'	50:3:1545:A:C8	2.51	0.44
50:3:1785:U:H2'	50:3:1786:U:O2	2.18	0.44
50:3:1857:G:H2'	50:3:1858:U:C6	2.53	0.44
50:3:2073:C:H2'	50:3:2074:G:C8	2.52	0.44
50:3:2127:G:N3	50:3:2127:G:H2'	2.33	0.44
50:3:2330:A:H2'	50:3:2331:G:O4'	2.17	0.44
50:3:2409:U:N3	50:3:2423:G:N1	2.54	0.44
52:5:455:U:H3	52:5:472:G:H22	1.65	0.44
52:5:1003:G:N1	52:5:1018:U:C2	2.86	0.44
52:5:1364:C:H2'	52:5:1365:U:C6	2.53	0.44
22:S:24:GLN:HA	22:S:27:LYS:HG2	2.00	0.43
25:b:97:THR:OG1	25:b:100:ASN:OD1	2.36	0.43
27:d:40:VAL:HG23	27:d:150:ARG:CZ	2.48	0.43
28:e:62:LYS:HE2	50:3:1070:U:H5''	1.98	0.43
32:i:47:PHE:HA	32:i:53:CYS:SG	2.58	0.43
35:l:84:GLY:HA3	50:3:2258:G:N2	2.33	0.43
36:m:106:ARG:NH1	50:3:1315:A:H8	2.16	0.43
48:y:6:ARG:NH1	50:3:2024:C:O3'	2.51	0.43
48:y:40:HIS:O	48:y:41:ARG:HD2	2.18	0.43
50:3:142:A:O2'	50:3:1436:C:O2'	2.18	0.43
50:3:870:A:C6	50:3:871:G:C6	3.06	0.43
50:3:1082:A:O2'	50:3:1083:A:O5'	2.36	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1231:G:H2'	50:3:1232:U:C6	2.53	0.43
50:3:1557:G:H21	50:3:1573:A:H62	1.65	0.43
50:3:1725:G:O6	50:3:1731:G:N2	2.51	0.43
50:3:1843:C:H2'	50:3:1844:C:C6	2.52	0.43
50:3:2179:A:H1'	50:3:2180:U:C5	2.53	0.43
50:3:2183:U:H2'	50:3:2184:A:C8	2.53	0.43
50:3:2345:G:H2'	50:3:2345:G:N3	2.33	0.43
50:3:2463:G:H2'	50:3:2464:C:C6	2.53	0.43
50:3:2702:G:H2'	50:3:2703:U:C6	2.53	0.43
51:4:49:G:O2'	51:4:50:C:O4'	2.20	0.43
52:5:779:A:OP1	52:5:1496:G:N2	2.42	0.43
52:5:1194:A:H2'	52:5:1195:G:H8	1.83	0.43
52:5:1233:G:H2'	52:5:1234:C:C6	2.53	0.43
3:2:4:ARG:HB3	50:3:2474:C:OP1	2.18	0.43
6:C:112:SER:HA	52:5:403:A:H4'	1.99	0.43
9:F:78:ARG:HH11	9:F:84:TYR:N	2.15	0.43
17:N:5:LYS:O	17:N:9:ILE:HG23	2.18	0.43
18:O:32:HIS:HE2	52:5:623:G:H4'	1.82	0.43
20:Q:45:ALA:HB2	52:5:839:U:H1'	1.99	0.43
25:b:227:GLU:OE1	25:b:227:GLU:N	2.51	0.43
26:c:49:THR:HB	50:3:40:A:H1'	2.00	0.43
49:z:35:ASN:HA	49:z:46:VAL:HA	2.00	0.43
50:3:82:G:N2	50:3:328:A:N3	2.67	0.43
50:3:591:G:H2'	50:3:592:G:H8	1.83	0.43
50:3:666:G:N1	50:3:670:G:O6	2.51	0.43
50:3:1171:G:H2'	50:3:1172:G:C8	2.53	0.43
50:3:1307:G:H2'	50:3:1308:A:C8	2.53	0.43
50:3:1587:U:O2'	50:3:1588:A:N7	2.45	0.43
50:3:1598:U:H2'	50:3:1599:C:O4'	2.19	0.43
50:3:1764:U:C4	50:3:1769:A:N7	2.86	0.43
50:3:2797:C:N4	50:3:2798:A:N6	2.66	0.43
51:4:85:A:O2'	51:4:86:G:O4'	2.32	0.43
52:5:656:U:H2'	52:5:657:G:C8	2.53	0.43
52:5:1002:A:H3'	52:5:1003:G:H8	1.83	0.43
52:5:1072:G:H2'	52:5:1073:A:C8	2.53	0.43
2:1:43:LYS:HD3	2:1:43:LYS:HA	1.57	0.43
4:A:129:LYS:O	4:A:133:LEU:HD23	2.18	0.43
25:b:29:ILE:HB	25:b:191:VAL:HG13	2.00	0.43
27:d:16:LEU:HA	27:d:19:SER:OG	2.18	0.43
36:m:49:ILE:O	36:m:53:LYS:HG3	2.19	0.43
38:o:52:VAL:HA	38:o:65:ILE:O	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:w:89:GLN:O	46:w:92:GLU:HG2	2.18	0.43
48:y:27:LEU:HD12	48:y:28:SER:N	2.32	0.43
50:3:174:A:H2'	50:3:175:A:H8	1.82	0.43
50:3:309:A:N3	50:3:311:G:N1	2.66	0.43
50:3:477:U:H2'	50:3:478:G:H8	1.82	0.43
50:3:481:C:H2'	50:3:482:G:C8	2.54	0.43
50:3:725:G:N2	50:3:807:U:O2	2.35	0.43
50:3:766:C:H2'	50:3:767:C:C6	2.53	0.43
50:3:942:A:H2'	50:3:943:A:O4'	2.19	0.43
50:3:1171:G:H2'	50:3:1172:G:H8	1.82	0.43
50:3:1320:C:H2'	50:3:1321:C:C6	2.53	0.43
50:3:1454:G:H2'	50:3:1455:A:N7	2.32	0.43
50:3:1578:A:H2'	50:3:1579:G:O4'	2.18	0.43
50:3:2269:C:H2'	50:3:2270:U:C6	2.51	0.43
50:3:2269:C:H1'	50:3:2396:A:H1'	1.99	0.43
50:3:2819:C:H2'	50:3:2820:G:H8	1.84	0.43
50:3:2849:G:H2'	50:3:2850:G:H8	1.83	0.43
52:5:292:U:H1'	52:5:554:C:H1'	2.01	0.43
52:5:519:G:O6	52:5:527:G:N1	2.51	0.43
52:5:596:U:H2'	52:5:597:C:C6	2.53	0.43
52:5:781:A:H2'	52:5:782:G:C8	2.53	0.43
52:5:914:A:H2'	52:5:915:U:C6	2.54	0.43
52:5:1114:A:N6	52:5:1127:A:N6	2.65	0.43
6:C:60:MET:HE1	6:C:71:PHE:HE1	1.83	0.43
8:E:71:ASP:HA	8:E:74:ARG:NE	2.33	0.43
15:L:54:VAL:O	15:L:58:ASN:N	2.41	0.43
18:O:38:LYS:NZ	52:5:449:A:OP2	2.38	0.43
29:f:1:MET:N	29:f:24:GLY:HA2	2.33	0.43
29:f:98:ILE:HD13	29:f:108:LEU:HD12	1.99	0.43
36:m:54:VAL:HB	36:m:59:ASN:HD22	1.84	0.43
42:s:60:ARG:HH12	50:3:1367:G:H3'	1.82	0.43
50:3:137:U:H2'	50:3:138:U:C6	2.53	0.43
50:3:226:A:C5	50:3:236:G:N2	2.86	0.43
50:3:730:G:H2'	50:3:731:A:C8	2.53	0.43
50:3:852:C:H2'	50:3:853:G:O4'	2.19	0.43
50:3:897:A:C2	51:4:76:A:H2	2.37	0.43
50:3:1028:C:H2'	50:3:1029:A:C8	2.53	0.43
50:3:1585:A:N3	50:3:1585:A:H2'	2.34	0.43
50:3:1692:A:H2'	50:3:1693:U:C6	2.53	0.43
50:3:1974:U:H2'	50:3:1975:G:O4'	2.19	0.43
50:3:2566:C:H2'	50:3:2567:C:C6	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2669:G:H2'	50:3:2670:A:C8	2.54	0.43
50:3:2858:A:H2'	50:3:2859:U:C6	2.53	0.43
52:5:253:G:H2'	52:5:254:G:C8	2.53	0.43
52:5:404:A:H2'	52:5:405:C:C6	2.53	0.43
53:7:11:G:N2	53:7:27:A:H1'	2.33	0.43
5:B:24:ALA:HB3	5:B:30:THR:HG22	2.01	0.43
8:E:106:GLN:HG2	52:5:838:A:H4'	2.01	0.43
9:F:113:LYS:HD2	52:5:1272:C:C6	2.54	0.43
12:I:57:ILE:HD12	16:M:41:ARG:HB2	2.00	0.43
18:O:65:SER:HB2	52:5:451:G:H5'	2.01	0.43
23:T:28:LEU:HA	23:T:31:ARG:NH2	2.33	0.43
26:c:54:THR:HG23	26:c:56:GLY:H	1.83	0.43
27:d:53:ALA:O	27:d:56:GLU:HG3	2.18	0.43
28:e:141:LYS:HB3	50:3:2754:U:H5''	1.99	0.43
37:n:101:ARG:NE	51:4:47:C:OP1	2.42	0.43
42:s:16:VAL:HA	42:s:19:ASN:HD22	1.83	0.43
50:3:494:G:HO2'	50:3:505:G:H1	1.65	0.43
50:3:766:C:H2'	50:3:767:C:H6	1.83	0.43
50:3:912:A:H2'	50:3:913:U:C6	2.54	0.43
50:3:1213:U:H2'	50:3:1214:U:C6	2.53	0.43
50:3:1310:U:H2'	50:3:1311:G:C8	2.53	0.43
50:3:1314:A:H1'	50:3:1316:U:OP1	2.19	0.43
50:3:1317:C:H2'	50:3:1318:U:C6	2.53	0.43
50:3:1451:A:H2'	50:3:1452:G:C8	2.53	0.43
50:3:1647:A:H61	50:3:1651:C:H2'	1.83	0.43
50:3:2041:C:H2'	50:3:2042:A:C8	2.53	0.43
50:3:2677:A:H2'	50:3:2678:A:H8	1.83	0.43
50:3:2795:C:H2'	50:3:2796:C:C6	2.54	0.43
50:3:2800:U:O2	50:3:2800:U:H2'	2.18	0.43
50:3:2850:G:H2'	50:3:2851:U:H6	1.82	0.43
52:5:287:U:N3	52:5:306:G:N1	2.66	0.43
52:5:409:G:O3'	52:5:425:G:N2	2.51	0.43
52:5:922:G:H1	52:5:1365:U:H3	1.64	0.43
52:5:1208:G:H2'	52:5:1209:C:C6	2.54	0.43
52:5:1306:A:H2'	52:5:1307:A:O4'	2.19	0.43
5:B:31:ALA:HA	5:B:34:LEU:HG	2.00	0.43
5:B:77:LEU:HD12	5:B:78:ILE:HG12	2.00	0.43
5:B:123:LEU:HD21	5:B:140:SER:HB2	1.99	0.43
8:E:49:ILE:HG23	8:E:50:LYS:N	2.32	0.43
12:I:63:VAL:HG12	12:I:64:ASP:N	2.33	0.43
14:K:100:VAL:HG13	14:K:109:HIS:HE1	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:L:57:ARG:HA	15:L:60:ALA:HB3	1.99	0.43
17:N:57:VAL:HG23	17:N:60:ARG:NH1	2.34	0.43
24:a:49:ASN:ND2	50:3:1399:G:OP1	2.52	0.43
25:b:37:ALA:HB3	25:b:51:LEU:HD22	2.01	0.43
42:s:7:LEU:HD23	42:s:31:VAL:HG12	2.01	0.43
45:v:14:TYR:CE2	45:v:28:LYS:HB2	2.53	0.43
46:w:35:HIS:CG	46:w:36:GLY:H	2.36	0.43
50:3:1433:U:H2'	50:3:1434:U:H6	1.84	0.43
50:3:1758:C:H2'	50:3:1759:C:H6	1.83	0.43
50:3:2237:U:H2'	50:3:2238:G:H8	1.82	0.43
50:3:2478:G:H2'	50:3:2479:A:H8	1.84	0.43
50:3:2861:G:O2'	50:3:2863:G:N7	2.47	0.43
52:5:60:A:N6	52:5:327:G:H1'	2.33	0.43
52:5:65:G:H5''	52:5:378:A:N6	2.33	0.43
52:5:173:U:H2'	52:5:174:U:C6	2.54	0.43
52:5:214:U:H2'	52:5:215:C:C6	2.53	0.43
52:5:343:G:H2'	52:5:344:G:O4'	2.18	0.43
52:5:403:A:H2'	52:5:404:A:H8	1.79	0.43
52:5:719:G:C8	52:5:721:G:H1'	2.53	0.43
52:5:939:G:N2	52:5:1312:G:H8	2.16	0.43
52:5:1132:G:N2	52:5:1154:A:C2	2.86	0.43
52:5:1482:A:H2'	52:5:1483:C:O4'	2.18	0.43
4:A:37:TRP:CD1	4:A:37:TRP:H	2.37	0.43
5:B:58:ILE:HG13	5:B:67:VAL:HG12	2.00	0.43
6:C:1:MET:HB3	6:C:2:LYS:H	1.48	0.43
7:D:166:ILE:H	7:D:166:ILE:HD12	1.83	0.43
9:F:35:LYS:HE3	52:5:1348:G:H5''	1.99	0.43
17:N:18:ASP:OD1	17:N:18:ASP:N	2.50	0.43
24:a:270:MET:HE1	50:3:2092:U:O3'	2.18	0.43
28:e:126:VAL:HG12	28:e:136:ILE:HD13	2.00	0.43
28:e:147:PHE:HA	28:e:150:GLU:OE2	2.18	0.43
34:k:99:ILE:HG13	34:k:100:GLU:N	2.33	0.43
39:p:24:PHE:N	50:3:568:G:OP1	2.48	0.43
41:r:125:VAL:O	41:r:128:ARG:HB2	2.19	0.43
46:w:87:TRP:O	46:w:91:LEU:HG	2.18	0.43
50:3:105:U:H2'	50:3:106:C:H5'	2.01	0.43
50:3:498:C:H2'	50:3:499:G:C8	2.53	0.43
50:3:667:A:N1	50:3:2424:C:H4'	2.34	0.43
50:3:1019:A:H2'	50:3:1020:G:N3	2.34	0.43
50:3:1065:G:H2'	50:3:1066:G:C8	2.53	0.43
50:3:1429:G:H2'	50:3:1430:U:C6	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1766:A:H2'	50:3:1767:A:C8	2.54	0.43
50:3:2022:A:H8	50:3:2023:U:C5	2.37	0.43
50:3:2025:C:H2'	50:3:2026:A:C8	2.51	0.43
50:3:2138:U:H4'	50:3:2140:G:N7	2.34	0.43
50:3:2681:G:H2'	50:3:2682:A:H8	1.82	0.43
52:5:212:G:H2'	52:5:213:U:C6	2.53	0.43
1:0:12:ARG:HG3	1:0:44:VAL:HG11	2.01	0.43
4:A:68:ALA:HB2	4:A:215:ILE:HD11	2.01	0.43
4:A:218:ASN:OD1	4:A:219:ASN:N	2.51	0.43
5:B:35:ILE:HG12	16:M:25:GLN:HB2	2.00	0.43
6:C:97:LEU:HD12	6:C:97:LEU:HA	1.83	0.43
8:E:26:GLN:HE22	8:E:60:TRP:HZ2	1.67	0.43
13:J:34:VAL:HG12	52:5:681:U:O2	2.19	0.43
22:S:27:LYS:O	22:S:30:THR:OG1	2.34	0.43
24:a:98:LEU:HB2	24:a:108:TYR:HE1	1.84	0.43
24:a:132:PRO:HA	24:a:200:VAL:HG23	2.00	0.43
28:e:33:GLN:NE2	28:e:34:ILE:O	2.52	0.43
29:f:33:LYS:HE3	29:f:109:GLN:NE2	2.33	0.43
32:i:71:LYS:HD3	50:3:1057:G:N7	2.34	0.43
33:j:22:ILE:HG22	33:j:40:VAL:C	2.44	0.43
39:p:2:ARG:HH21	50:3:482:G:H5'	1.83	0.43
48:y:10:LYS:HZ1	50:3:551:C:P	2.39	0.43
50:3:595:U:H2'	50:3:605:A:C1'	2.48	0.43
50:3:1173:G:H2'	50:3:1174:G:O4'	2.19	0.43
50:3:1408:G:H2'	50:3:1409:G:C8	2.54	0.43
50:3:1475:C:H2'	50:3:1476:C:C6	2.54	0.43
50:3:1737:G:C6	50:3:1738:G:C6	3.07	0.43
50:3:1741:G:H2'	50:3:1742:C:C6	2.53	0.43
50:3:2001:C:H2'	50:3:2002:U:C5	2.52	0.43
50:3:2231:A:H2'	50:3:2232:G:O4'	2.19	0.43
50:3:2238:G:H2'	50:3:2239:U:C6	2.53	0.43
50:3:2673:A:H2'	50:3:2674:C:C6	2.53	0.43
50:3:2798:A:H5''	50:3:2799:U:H6	1.83	0.43
52:5:85:U:O2'	52:5:86:A:N7	2.35	0.43
52:5:203:C:H2'	52:5:204:C:C6	2.54	0.43
52:5:273:C:H2'	52:5:274:A:C8	2.54	0.43
52:5:360:A:C8	52:5:361:U:C5	3.07	0.43
52:5:492:G:H2'	52:5:494:A:H8	1.83	0.43
52:5:1016:A:H2'	52:5:1017:A:H8	1.83	0.43
52:5:1114:A:H2'	52:5:1115:G:C8	2.53	0.43
53:7:28:A:H2'	53:7:29:C:C6	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:F:30:MET:SD	9:F:34:LYS:N	2.92	0.43
13:J:43:MET:HE3	13:J:45:PHE:HE1	1.83	0.43
19:P:11:GLY:HA3	19:P:26:VAL:HG12	1.99	0.43
22:S:59:ILE:HG13	22:S:60:ILE:N	2.34	0.43
25:b:139:TYR:HB2	50:3:1691:U:O3'	2.19	0.43
26:c:35:PHE:HE2	34:k:13:ARG:HH21	1.67	0.43
28:e:76:THR:O	28:e:80:ILE:HG12	2.19	0.43
33:j:22:ILE:HG22	33:j:40:VAL:O	2.19	0.43
34:k:133:LYS:O	34:k:137:LYS:HG2	2.19	0.43
38:o:4:ILE:C	38:o:6:LYS:HZ2	2.26	0.43
39:p:34:ALA:O	39:p:38:VAL:HG23	2.18	0.43
42:s:41:LYS:HG3	42:s:42:LEU:HD22	2.01	0.43
44:u:38:LYS:NZ	50:3:2363:C:O3'	2.52	0.43
50:3:224:G:H22	50:3:463:U:H2'	1.84	0.43
50:3:433:A:H2'	50:3:434:G:H8	1.83	0.43
50:3:659:C:H2'	50:3:660:U:C6	2.54	0.43
50:3:725:G:H2'	50:3:726:U:C6	2.53	0.43
50:3:1077:G:H2'	50:3:1078:C:C6	2.54	0.43
50:3:1084:C:C2	50:3:1085:A:C8	3.07	0.43
50:3:1301:G:H22	50:3:1649:C:N4	2.16	0.43
50:3:2113:U:O2	50:3:2191:G:N2	2.51	0.43
50:3:2174:G:H2'	50:3:2175:U:C6	2.54	0.43
50:3:2551:G:H21	50:3:2654:U:H5''	1.84	0.43
52:5:253:G:O6	52:5:266:A:N6	2.52	0.43
52:5:494:A:H5'	52:5:495:U:OP2	2.19	0.43
52:5:604:U:H5''	52:5:605:A:H5'	2.00	0.43
52:5:818:A:H2'	52:5:819:G:H8	1.83	0.43
52:5:949:G:H21	52:5:1202:A:N6	2.16	0.43
52:5:1471:C:H2'	52:5:1472:G:C8	2.53	0.43
6:C:3:TYR:HD2	6:C:5:GLY:H	1.66	0.43
7:D:77:SER:OG	7:D:84:ARG:HD3	2.19	0.43
9:F:100:LEU:HD12	9:F:101:ARG:N	2.34	0.43
10:G:77:THR:HG22	10:G:79:ARG:H	1.84	0.43
18:O:5:ARG:CZ	52:5:621:C:H1'	2.49	0.43
20:Q:80:GLN:HB2	52:5:831:C:H5''	2.01	0.43
21:R:19:VAL:HA	21:R:22:MET:HG2	2.01	0.43
26:c:98:ASN:ND2	26:c:100:SER:OG	2.52	0.43
26:c:185:LYS:HG3	50:3:648:G:N2	2.30	0.43
29:f:10:SER:OG	29:f:14:LYS:NZ	2.31	0.43
29:f:41:LYS:HB2	29:f:46:ASP:HB2	2.00	0.43
29:f:110:LYS:HD2	29:f:113:PHE:CE2	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:m:17:THR:O	36:m:21:GLN:OE1	2.36	0.43
37:n:98:TYR:CE1	37:n:103:ALA:HA	2.54	0.43
38:o:48:PHE:CE2	38:o:66:VAL:HG13	2.53	0.43
41:r:5:ALA:O	41:r:104:VAL:HA	2.19	0.43
43:t:41:LYS:HD2	43:t:64:GLN:HB3	1.99	0.43
44:u:77:SER:OG	44:u:78:ASP:N	2.52	0.43
49:z:51:LYS:H	49:z:51:LYS:HG2	1.69	0.43
50:3:552:C:H2'	50:3:553:A:C8	2.54	0.43
50:3:675:U:H2'	50:3:676:U:H6	1.83	0.43
50:3:756:A:H2'	50:3:757:A:C8	2.53	0.43
50:3:762:A:H2'	50:3:763:G:C4	2.53	0.43
50:3:837:A:H2'	50:3:838:U:C6	2.53	0.43
50:3:915:A:C6	50:3:937:A:C8	3.07	0.43
50:3:1149:G:O2'	50:3:1150:U:H5'	2.18	0.43
50:3:1299:A:H61	50:3:2018:U:H3	1.67	0.43
50:3:1363:C:H2'	50:3:1364:A:C8	2.54	0.43
50:3:1635:G:H2'	50:3:1636:U:C6	2.54	0.43
50:3:1656:A:H2'	50:3:1657:G:O4'	2.19	0.43
50:3:1836:A:H3'	50:3:1837:C:C6	2.54	0.43
50:3:1881:C:H2'	50:3:1882:G:C8	2.54	0.43
50:3:2623:U:H2'	50:3:2624:C:H6	1.84	0.43
50:3:2718:C:H2'	50:3:2719:A:C8	2.54	0.43
50:3:2730:G:H2'	50:3:2731:U:C6	2.53	0.43
50:3:2750:A:H2'	50:3:2751:C:H6	1.83	0.43
52:5:59:C:H42	52:5:351:C:N4	2.16	0.43
52:5:82:C:H2'	52:5:83:U:C6	2.53	0.43
52:5:386:U:H2'	52:5:387:G:H8	1.83	0.43
52:5:1056:U:H1'	52:5:1057:C:H5	1.84	0.43
6:C:57:LYS:O	6:C:60:MET:N	2.48	0.42
14:K:83:GLU:O	14:K:112:ARG:NH2	2.52	0.42
14:K:127:ARG:N	52:5:500:G:OP1	2.52	0.42
18:O:58:LYS:HB3	18:O:64:ARG:HH12	1.84	0.42
23:T:24:GLU:HG3	23:T:27:ARG:NH1	2.35	0.42
24:a:2:PRO:HB2	24:a:3:ILE:H	1.61	0.42
24:a:33:PRO:HG3	24:a:67:ARG:NH1	2.34	0.42
24:a:160:ILE:HG23	50:3:1806:G:N2	2.34	0.42
25:b:1:MET:SD	25:b:3:ILE:HD12	2.59	0.42
32:i:52:ASP:OD1	32:i:53:CYS:N	2.52	0.42
33:j:7:ARG:NH1	50:3:1701:G:H5''	2.33	0.42
36:m:9:LYS:HD3	36:m:13:TRP:CZ3	2.53	0.42
41:r:48:ALA:O	41:r:52:ASN:ND2	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:s:58:LEU:HG	50:3:1369:U:H4'	2.00	0.42
45:v:13:LEU:HB3	45:v:29:TRP:HB2	2.01	0.42
45:v:18:ARG:HA	45:v:23:THR:O	2.19	0.42
50:3:57:G:H2'	50:3:58:A:H8	1.81	0.42
50:3:172:U:H2'	50:3:173:C:C6	2.54	0.42
50:3:347:C:H2'	50:3:348:A:H8	1.84	0.42
50:3:500:U:HO2'	50:3:501:G:P	2.40	0.42
50:3:659:C:H2'	50:3:660:U:C5	2.54	0.42
50:3:867:G:H2'	50:3:868:C:C6	2.55	0.42
50:3:1095:U:O4'	50:3:1097:G:H5'	2.19	0.42
50:3:1211:U:H2'	50:3:1212:C:O4'	2.19	0.42
50:3:2332:U:O2	50:3:2339:G:N2	2.47	0.42
52:5:56:A:H2'	52:5:57:U:O4'	2.19	0.42
52:5:780:U:H2'	52:5:781:A:H8	1.84	0.42
52:5:861:A:H2'	52:5:862:C:H6	1.84	0.42
10:G:107:VAL:HG13	10:G:140:TYR:HB3	2.01	0.42
11:H:101:LYS:HE2	11:H:101:LYS:HB3	1.93	0.42
14:K:96:ARG:HH22	14:K:130:TYR:HE1	1.65	0.42
17:N:57:VAL:HG23	17:N:60:ARG:CZ	2.50	0.42
26:c:137:GLU:HA	26:c:167:ASN:HD22	1.83	0.42
29:f:67:LYS:HA	29:f:70:GLU:CD	2.44	0.42
38:o:89:GLU:HG2	38:o:91:LYS:NZ	2.34	0.42
41:r:23:LEU:HD11	48:y:22:LEU:HG	2.01	0.42
45:v:3:LYS:HB2	45:v:3:LYS:HE2	1.76	0.42
50:3:500:U:H2'	50:3:501:G:C8	2.54	0.42
50:3:714:G:H2'	50:3:715:G:C8	2.52	0.42
50:3:945:U:H2'	50:3:946:A:H8	1.84	0.42
50:3:1307:G:H2'	50:3:1308:A:H8	1.83	0.42
50:3:1437:A:H2'	50:3:1438:G:H8	1.84	0.42
50:3:1439:U:H3	50:3:1625:G:H1	1.66	0.42
50:3:1702:A:N7	50:3:1998:U:C4	2.87	0.42
50:3:1860:A:N3	50:3:2241:A:O2'	2.49	0.42
50:3:1980:G:H2'	50:3:1981:U:C6	2.55	0.42
50:3:2087:G:H2'	50:3:2088:U:H6	1.83	0.42
50:3:2384:A:H2'	50:3:2385:A:O4'	2.19	0.42
50:3:2800:U:H3'	50:3:2801:U:C5	2.54	0.42
52:5:290:G:H2'	52:5:291:C:H6	1.84	0.42
52:5:741:C:H2'	52:5:742:C:H6	1.85	0.42
52:5:944:A:H2'	52:5:945:U:C6	2.54	0.42
52:5:1499:G:H2'	52:5:1500:G:H8	1.83	0.42
5:B:65:VAL:HG12	5:B:100:THR:HB	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:G:113:ILE:HB	10:G:141:VAL:HB	2.01	0.42
11:H:90:LEU:HD23	11:H:90:LEU:HA	1.89	0.42
12:I:16:LEU:HA	12:I:104:LEU:HA	2.01	0.42
14:K:3:THR:OG1	52:5:874:C:OP2	2.29	0.42
14:K:121:GLU:C	14:K:123:ARG:H	2.26	0.42
24:a:148:HIS:HB2	24:a:161:ALA:O	2.19	0.42
26:c:36:ASP:HA	26:c:39:LEU:HD12	2.01	0.42
34:k:56:THR:O	34:k:61:ARG:NH2	2.49	0.42
35:l:27:VAL:HG13	35:l:134:ARG:HG3	2.00	0.42
39:p:66:ALA:O	39:p:70:GLU:HG3	2.19	0.42
40:q:37:LYS:HB2	40:q:37:LYS:HE3	1.75	0.42
43:t:90:LYS:HG2	43:t:105:LYS:HE2	2.01	0.42
50:3:428:U:H2'	50:3:429:U:C6	2.54	0.42
50:3:491:A:C2	50:3:509:G:H5'	2.54	0.42
50:3:1041:C:H2'	50:3:1042:C:C6	2.54	0.42
50:3:1163:G:H1'	50:3:1164:A:C8	2.55	0.42
50:3:1270:C:H2'	50:3:1271:A:H8	1.83	0.42
50:3:2189:U:H2'	50:3:2190:G:C8	2.40	0.42
50:3:2348:U:H2'	50:3:2349:G:H8	1.83	0.42
50:3:2728:U:H2'	50:3:2729:A:O4'	2.19	0.42
51:4:14:U:H2'	51:4:15:C:C6	2.55	0.42
51:4:90:G:H2'	51:4:91:A:O4'	2.19	0.42
52:5:118:C:H2'	52:5:119:U:C6	2.54	0.42
52:5:176:G:O6	52:5:190:A:N6	2.52	0.42
52:5:880:G:H2'	52:5:881:G:C8	2.54	0.42
52:5:974:C:O2	52:5:974:C:H2'	2.19	0.42
52:5:1092:A:H4'	52:5:1093:A:O5'	2.19	0.42
52:5:1302:C:H2'	52:5:1303:A:H8	1.84	0.42
3:2:20:HIS:O	3:2:22:ILE:HD12	2.19	0.42
9:F:2:ARG:N	52:5:927:C:H5''	2.33	0.42
10:G:50:LYS:HA	10:G:50:LYS:HD2	1.96	0.42
12:I:15:LYS:HD3	12:I:79:LEU:HD11	2.02	0.42
12:I:59:ARG:NH1	52:5:1051:U:OP1	2.53	0.42
17:N:18:ASP:HA	52:5:747:C:H4'	2.00	0.42
22:S:70:SER:HA	22:S:73:VAL:HG12	2.01	0.42
24:a:267:THR:HB	50:3:1805:U:H5'	2.01	0.42
28:e:127:LYS:N	28:e:135:THR:O	2.52	0.42
29:f:53:LYS:HA	29:f:56:GLU:HG2	2.00	0.42
35:l:84:GLY:HA3	50:3:2258:G:H22	1.83	0.42
36:m:61:ARG:NH1	50:3:2855:A:O2'	2.52	0.42
40:q:66:ARG:NH1	50:3:1251:G:OP1	2.45	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:r:104:VAL:HG13	41:r:106:LYS:NZ	2.34	0.42
44:u:83:TYR:HD2	50:3:892:G:H4'	1.83	0.42
50:3:552:C:H2'	50:3:553:A:H8	1.84	0.42
50:3:612:G:H5'	50:3:2024:C:H3'	2.02	0.42
50:3:847:C:H5''	50:3:1280:G:O2'	2.19	0.42
50:3:1541:A:H3'	50:3:1542:G:H8	1.83	0.42
50:3:2874:C:H2'	50:3:2875:U:C6	2.54	0.42
52:5:778:A:H2	52:5:1489:C:H4'	1.83	0.42
52:5:1182:C:H2'	52:5:1183:C:C6	2.55	0.42
52:5:1320:A:H62	52:5:1349:A:H3'	1.83	0.42
52:5:1423:C:H2'	52:5:1424:C:C6	2.54	0.42
52:5:1490:G:H2'	52:5:1491:A:C8	2.53	0.42
3:2:9:PRO:HB3	3:2:14:CYS:HB2	2.02	0.42
4:A:64:SER:O	4:A:67:THR:OG1	2.32	0.42
12:I:14:ILE:HD11	12:I:104:LEU:HD13	2.02	0.42
21:R:11:VAL:HG22	21:R:13:ALA:H	1.84	0.42
24:a:35:LYS:HD3	50:3:1455:A:C2	2.54	0.42
25:b:17:PHE:HZ	25:b:21:ASN:HD22	1.66	0.42
25:b:135:HIS:HE1	50:3:1707:U:H5	1.68	0.42
26:c:176:LYS:HE2	50:3:358:A:P	2.59	0.42
27:d:66:VAL:HG21	51:4:40:U:C5	2.54	0.42
39:p:47:ARG:HH12	50:3:594:G:H4'	1.85	0.42
39:p:80:ASN:HD22	39:p:84:LYS:HE3	1.84	0.42
43:t:89:ILE:HG21	43:t:102:ARG:HB3	2.01	0.42
46:w:100:LYS:HE3	46:w:100:LYS:HB3	1.79	0.42
48:y:52:ARG:HE	48:y:52:ARG:HB3	1.74	0.42
50:3:621:U:H2'	50:3:622:U:C6	2.55	0.42
50:3:990:G:H2'	50:3:991:G:H8	1.84	0.42
50:3:1061:A:H2'	50:3:1062:A:C8	2.54	0.42
50:3:1155:G:H2'	50:3:1156:C:C6	2.54	0.42
50:3:1672:C:H1'	50:3:2706:U:O2'	2.19	0.42
50:3:1720:C:H3'	50:3:1721:G:H8	1.85	0.42
50:3:1867:G:H2'	50:3:1868:A:H8	1.85	0.42
50:3:2419:A:H2'	50:3:2420:A:C8	2.54	0.42
50:3:2562:U:H2'	50:3:2563:U:H6	1.84	0.42
52:5:710:G:H2'	52:5:711:G:C8	2.55	0.42
52:5:951:U:H2'	52:5:952:U:N1	2.35	0.42
52:5:1061:U:H2'	52:5:1062:C:C6	2.54	0.42
52:5:1373:A:H4'	52:5:1374:C:O5'	2.17	0.42
52:5:1454:G:H2'	52:5:1455:G:C8	2.54	0.42
5:B:103:ASP:N	5:B:103:ASP:OD1	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:156:VAL:HG22	5:B:201:VAL:HG12	2.01	0.42
7:D:84:ARG:NH2	52:5:16:G:O2'	2.53	0.42
8:E:110:GLN:O	8:E:114:LYS:HG2	2.19	0.42
24:a:48:ASN:OD1	24:a:49:ASN:N	2.52	0.42
24:a:256:THR:HG23	24:a:262:HIS:HB2	2.02	0.42
29:f:31:PHE:HD1	29:f:111:PHE:CD1	2.36	0.42
38:o:21:TYR:HE2	38:o:23:PRO:HG3	1.84	0.42
39:p:13:ARG:HA	39:p:31:TYR:HE1	1.85	0.42
39:p:40:GLN:HG3	39:p:44:TYR:CZ	2.55	0.42
40:q:5:VAL:N	40:q:11:GLN:OE1	2.53	0.42
40:q:60:GLU:CD	40:q:92:LEU:HA	2.45	0.42
41:r:128:ARG:HH22	50:3:1249:A:H1'	1.84	0.42
50:3:190:G:H2'	50:3:191:G:C8	2.55	0.42
50:3:430:U:H2'	50:3:431:U:C6	2.54	0.42
50:3:645:C:H2'	50:3:646:A:C8	2.54	0.42
50:3:904:C:H2'	50:3:905:U:O4'	2.19	0.42
50:3:985:A:C6	50:3:1005:G:C6	3.08	0.42
50:3:993:A:C6	50:3:995:A:N1	2.88	0.42
50:3:1263:G:H2'	50:3:1264:U:H6	1.83	0.42
50:3:1489:G:C6	50:3:1490:G:C6	3.07	0.42
50:3:1885:G:H2'	50:3:1886:C:C6	2.55	0.42
50:3:1921:C:H3'	50:3:1922:U:H6	1.84	0.42
51:4:4:G:H5'	51:4:25:A:H2	1.84	0.42
52:5:175:U:H3	52:5:190:A:H61	1.67	0.42
52:5:311:A:H4'	52:5:313:U:OP2	2.19	0.42
52:5:400:G:N3	52:5:400:G:H2'	2.35	0.42
52:5:622:A:H2'	52:5:623:G:C8	2.55	0.42
52:5:899:U:H2'	52:5:900:G:O4'	2.20	0.42
52:5:1087:C:H2'	52:5:1088:C:C6	2.55	0.42
52:5:1315:U:H2'	52:5:1316:C:C5	2.54	0.42
52:5:1429:G:H2'	52:5:1430:G:C8	2.48	0.42
3:2:19:ARG:HA	50:3:2764:U:H5''	2.00	0.42
6:C:79:LEU:HA	6:C:85:LEU:HD11	2.02	0.42
9:F:2:ARG:NH1	52:5:1355:U:O2'	2.53	0.42
15:L:16:GLU:OE2	15:L:17:ILE:HG23	2.19	0.42
16:M:4:LYS:HA	16:M:7:LYS:HD3	2.02	0.42
21:R:22:MET:SD	21:R:27:LYS:NZ	2.93	0.42
24:a:136:MET:CE	24:a:140:PHE:HB2	2.49	0.42
26:c:54:THR:O	26:c:58:VAL:HG23	2.19	0.42
27:d:40:VAL:HA	27:d:150:ARG:NH1	2.34	0.42
28:e:80:ILE:HA	28:e:83:THR:HG22	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:e:143:LEU:O	28:e:146:GLN:HG3	2.20	0.42
32:i:3:LYS:O	50:3:1030:U:O2'	2.33	0.42
41:r:74:CYS:SG	41:r:75:VAL:N	2.92	0.42
50:3:17:G:H2'	50:3:18:G:O4'	2.19	0.42
50:3:27:U:H2'	50:3:28:G:C8	2.55	0.42
50:3:101:C:H4'	50:3:103:G:C4	2.55	0.42
50:3:377:U:H2'	50:3:378:G:C8	2.55	0.42
50:3:738:U:H3'	50:3:739:G:C8	2.55	0.42
50:3:849:C:O2'	50:3:850:G:H5'	2.19	0.42
50:3:851:U:H2'	50:3:852:C:H6	1.85	0.42
50:3:1701:G:O2'	50:3:1998:U:O4	2.35	0.42
50:3:1840:C:H2'	50:3:1841:U:C6	2.55	0.42
50:3:1842:G:O6	50:3:1937:G:N2	2.53	0.42
50:3:1860:A:H2'	50:3:1861:A:O4'	2.20	0.42
50:3:1974:U:H3'	50:3:1975:G:H8	1.85	0.42
50:3:2639:G:H2'	50:3:2640:A:H8	1.83	0.42
50:3:2782:A:H2'	50:3:2783:A:O4'	2.19	0.42
52:5:675:U:O2	52:5:710:G:N2	2.52	0.42
52:5:966:A:HO2'	52:5:1340:G:HO2'	1.60	0.42
52:5:980:C:H2'	52:5:981:U:H6	1.83	0.42
52:5:1013:C:H2'	52:5:1014:A:C8	2.55	0.42
52:5:1191:U:H2'	52:5:1192:C:C6	2.55	0.42
4:A:193:ILE:O	4:A:195:ARG:NH2	2.48	0.42
5:B:44:PHE:HD2	5:B:56:VAL:HG21	1.85	0.42
13:J:109:ILE:HG23	23:T:32:HIS:ND1	2.34	0.42
14:K:41:PRO:C	14:K:42:LEU:HD12	2.45	0.42
24:a:167:TYR:HE1	24:a:169:ARG:HD3	1.84	0.42
25:b:147:VAL:O	25:b:163:LYS:NZ	2.52	0.42
26:c:157:VAL:HB	26:c:159:PHE:CE1	2.55	0.42
26:c:176:LYS:O	26:c:179:GLN:NE2	2.37	0.42
44:u:89:LYS:HA	44:u:89:LYS:HD2	1.87	0.42
50:3:270:G:H2'	50:3:271:G:H8	1.84	0.42
50:3:493:A:H4'	50:3:494:G:H4'	2.01	0.42
50:3:1077:G:C6	50:3:1149:G:C6	3.07	0.42
50:3:1458:A:H2'	50:3:1459:A:C8	2.54	0.42
50:3:1676:G:H2'	50:3:1677:G:C8	2.55	0.42
50:3:1829:U:H2'	50:3:1830:G:H8	1.84	0.42
50:3:2267:G:H2'	50:3:2268:C:H6	1.83	0.42
50:3:2841:A:H2'	50:3:2842:G:C8	2.55	0.42
52:5:206:G:H2'	52:5:208:A:OP2	2.20	0.42
52:5:260:C:H2'	52:5:261:G:O4'	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:358:G:O2'	52:5:359:A:N7	2.46	0.42
52:5:451:G:H2'	52:5:451:G:N3	2.35	0.42
52:5:652:A:H2'	52:5:653:G:O4'	2.19	0.42
52:5:1413:G:H2'	52:5:1414:U:C6	2.55	0.42
52:5:1451:A:H2'	52:5:1452:C:C6	2.54	0.42
53:7:54:G:C2	53:7:63:U:C2	3.07	0.42
5:B:92:ILE:O	5:B:96:ILE:N	2.52	0.42
7:D:178:ILE:HG23	7:D:180:THR:HG23	2.01	0.42
10:G:93:PRO:O	52:5:872:C:H5''	2.20	0.42
12:I:48:LEU:HD23	12:I:48:LEU:HA	1.88	0.42
13:J:88:THR:O	13:J:91:ARG:HB2	2.20	0.42
16:M:56:VAL:O	16:M:57:LYS:HE2	2.20	0.42
21:R:27:LYS:HG3	21:R:29:ARG:HD3	2.02	0.42
24:a:272:LYS:HB2	24:a:275:THR:HG23	2.02	0.42
29:f:32:PRO:HG2	29:f:111:PHE:HZ	1.84	0.42
32:i:40:ARG:HA	32:i:121:TRP:CZ3	2.53	0.42
32:i:60:ILE:HG23	32:i:131:ASP:HA	2.02	0.42
32:i:91:SER:N	32:i:94:ASP:OD2	2.43	0.42
33:j:58:LEU:HD23	33:j:94:ARG:NE	2.35	0.42
35:l:114:MET:O	35:l:118:LEU:HD23	2.19	0.42
38:o:100:TYR:CE2	50:3:2726:G:H4'	2.55	0.42
40:q:39:LEU:HA	40:q:39:LEU:HD12	1.91	0.42
50:3:174:A:C2	50:3:175:A:C5	3.08	0.42
50:3:725:G:H2'	50:3:726:U:H6	1.85	0.42
50:3:1392:G:H2'	50:3:1394:A:OP2	2.20	0.42
50:3:1523:C:H2'	50:3:1524:C:H6	1.85	0.42
50:3:1611:C:H2'	50:3:1612:U:C6	2.55	0.42
50:3:1714:U:H2'	50:3:1715:A:O4'	2.20	0.42
50:3:2553:G:H2'	50:3:2554:U:H6	1.85	0.42
52:5:524:C:C4	52:5:525:G:H1'	2.54	0.42
52:5:543:C:C2	52:5:544:A:C8	3.08	0.42
52:5:843:C:H2'	52:5:844:U:C6	2.54	0.42
52:5:951:U:H2'	52:5:952:U:C6	2.54	0.42
52:5:1301:U:H2'	52:5:1302:C:C6	2.55	0.42
52:5:1376:G:H2'	52:5:1377:C:H6	1.85	0.42
52:5:1488:A:H2'	52:5:1489:C:C6	2.54	0.42
4:A:177:ILE:HD13	4:A:199:VAL:HG13	2.01	0.42
13:J:80:LYS:HD3	13:J:108:PRO:HD3	2.00	0.42
15:L:10:PRO:HG2	15:L:13:LYS:HD2	2.02	0.42
18:O:46:GLU:OE1	18:O:72:LEU:HD12	2.20	0.42
24:a:12:SER:O	24:a:12:SER:OG	2.38	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:a:213:ILE:HB	50:3:1798:A:O3'	2.20	0.42
25:b:129:LYS:NZ	50:3:2519:U:H5'	2.34	0.42
25:b:165:MET:HE3	25:b:166:SER:HB2	2.02	0.42
34:k:53:GLY:HA2	50:3:867:G:H1'	2.01	0.42
37:n:12:HIS:ND1	37:n:94:GLY:HA2	2.34	0.42
37:n:52:LEU:HD13	37:n:84:LEU:HD13	2.02	0.42
39:p:35:LYS:O	39:p:39:ILE:HG12	2.19	0.42
41:r:39:THR:HG22	41:r:41:LYS:HG2	2.01	0.42
50:3:217:A:H2'	50:3:218:G:C8	2.55	0.42
50:3:534:U:H2'	50:3:535:G:O4'	2.19	0.42
50:3:745:U:H2'	50:3:746:G:H8	1.85	0.42
50:3:1138:A:H2'	50:3:1139:C:O4'	2.19	0.42
50:3:1999:G:H5'	50:3:2001:C:H41	1.85	0.42
50:3:2294:A:H8	50:3:2295:A:N6	2.18	0.42
50:3:2522:U:H2'	50:3:2523:C:C6	2.54	0.42
50:3:2630:U:H2'	50:3:2631:G:C8	2.55	0.42
51:4:76:A:H2'	51:4:77:G:C8	2.54	0.42
52:5:109:G:N2	52:5:233:C:O2	2.35	0.42
52:5:150:A:H2'	52:5:151:C:C6	2.54	0.42
52:5:226:G:H2'	52:5:227:A:C8	2.55	0.42
52:5:511:A:H2'	52:5:512:U:H6	1.85	0.42
52:5:1046:A:H62	52:5:1175:C:N4	2.18	0.42
52:5:1434:C:H2'	52:5:1435:G:H8	1.85	0.42
1:0:22:MET:O	1:0:28:ARG:NH1	2.53	0.41
5:B:176:MET:SD	5:B:206:ASN:HB2	2.60	0.41
6:C:103:ARG:HG3	6:C:166:PHE:HZ	1.83	0.41
7:D:205:PRO:HA	7:D:208:VAL:HG22	2.02	0.41
11:H:17:ALA:HA	11:H:68:VAL:O	2.20	0.41
12:I:30:LYS:O	12:I:33:GLU:HG3	2.20	0.41
14:K:12:ARG:NH1	52:5:562:U:OP2	2.53	0.41
19:P:23:THR:HG22	19:P:46:GLN:OE1	2.20	0.41
23:T:18:PHE:HA	23:T:21:VAL:HG22	2.02	0.41
24:a:229:ARG:NH2	50:3:1795:C:OP1	2.48	0.41
25:b:24:LEU:HD12	25:b:25:PRO:HD2	2.02	0.41
25:b:58:GLU:HG2	25:b:60:LYS:HB2	2.02	0.41
34:k:39:GLN:NE2	50:3:200:A:N7	2.66	0.41
34:k:104:ILE:HG13	34:k:105:SER:N	2.35	0.41
36:m:3:TYR:HE2	50:3:1652:A:N1	2.18	0.41
50:3:228:A:N6	50:3:455:G:O2'	2.48	0.41
50:3:794:G:H2'	50:3:795:G:C8	2.55	0.41
50:3:820:U:H2'	50:3:821:C:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:928:G:H2'	50:3:929:G:C8	2.55	0.41
50:3:1067:A:N1	50:3:1157:G:C6	2.88	0.41
50:3:2003:C:H4'	50:3:2004:G:O4'	2.20	0.41
50:3:2222:C:H2'	50:3:2223:C:O4'	2.19	0.41
50:3:2545:U:H2'	50:3:2546:U:C6	2.55	0.41
50:3:2558:G:H2'	50:3:2559:C:C6	2.55	0.41
50:3:2604:U:HO2'	50:3:2605:G:P	2.43	0.41
50:3:2657:C:H2'	50:3:2658:U:C6	2.54	0.41
50:3:2799:U:H3'	50:3:2896:G:H21	1.83	0.41
50:3:2846:A:H2'	50:3:2847:C:C6	2.55	0.41
52:5:10:G:H2'	52:5:11:A:H8	1.85	0.41
52:5:130:G:H2'	52:5:131:G:C8	2.55	0.41
52:5:287:U:C4	52:5:306:G:C6	3.08	0.41
52:5:290:G:H2'	52:5:291:C:C6	2.54	0.41
52:5:950:C:H2'	52:5:951:U:C6	2.55	0.41
52:5:963:U:OP1	52:5:1053:U:H4'	2.20	0.41
52:5:1055:G:H1'	52:5:1165:G:N2	2.34	0.41
52:5:1123:G:O2'	52:5:1124:U:O5'	2.36	0.41
52:5:1247:G:H2'	52:5:1248:U:C6	2.54	0.41
4:A:84:PHE:HA	4:A:177:ILE:HG22	2.02	0.41
7:D:111:VAL:HB	7:D:112:PRO:HD3	2.02	0.41
11:H:121:TYR:CE2	11:H:127:PRO:HB3	2.55	0.41
15:L:9:ILE:HD13	15:L:53:PHE:CZ	2.56	0.41
15:L:70:ARG:NH2	15:L:74:ALA:HB2	2.35	0.41
16:M:4:LYS:HE3	52:5:1038:G:OP1	2.20	0.41
25:b:47:TYR:HB2	25:b:85:ARG:CZ	2.50	0.41
25:b:56:THR:HB	25:b:78:THR:HG22	2.02	0.41
35:l:34:LEU:HD12	35:l:130:LYS:O	2.20	0.41
36:m:9:LYS:HB2	50:3:2009:U:H5'	2.00	0.41
39:p:14:LYS:C	39:p:18:LYS:HZ3	2.28	0.41
39:p:91:ARG:CD	40:q:11:GLN:HB3	2.50	0.41
49:z:38:CYS:O	49:z:42:ARG:N	2.53	0.41
50:3:101:C:H4'	50:3:103:G:C5	2.54	0.41
50:3:243:U:H2'	50:3:244:G:O4'	2.20	0.41
50:3:291:G:C2	50:3:292:G:C5	3.08	0.41
50:3:325:G:C6	50:3:384:G:C6	3.07	0.41
50:3:483:A:O4'	50:3:485:A:N6	2.53	0.41
50:3:657:A:C5	50:3:658:G:H1'	2.55	0.41
50:3:675:U:O4	50:3:685:G:O6	2.38	0.41
50:3:680:A:H2'	50:3:682:A:C8	2.55	0.41
50:3:744:U:H2'	50:3:745:U:C6	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1501:U:H2'	50:3:1502:A:O4'	2.19	0.41
50:3:1853:G:N2	50:3:1902:C:C2	2.88	0.41
50:3:2034:G:H2'	50:3:2035:U:H6	1.84	0.41
50:3:2520:C:H2'	50:3:2521:A:O4'	2.20	0.41
50:3:2570:U:N3	50:3:2574:A:N6	2.48	0.41
51:4:26:C:H2'	51:4:27:A:C8	2.55	0.41
52:5:498:G:H2'	52:5:499:U:O4'	2.20	0.41
52:5:874:C:H2'	52:5:875:G:C8	2.55	0.41
52:5:924:A:H2'	52:5:925:C:C6	2.55	0.41
52:5:1052:G:C6	52:5:1053:U:C4	3.07	0.41
52:5:1262:A:H2'	52:5:1263:A:C8	2.55	0.41
52:5:1402:U:H2'	52:5:1403:A:H8	1.84	0.41
15:L:23:PHE:HB3	15:L:66:GLU:HB2	2.02	0.41
17:N:68:LYS:HD3	17:N:75:TYR:CD1	2.56	0.41
24:a:215:LYS:HG3	24:a:217:GLY:H	1.85	0.41
24:a:253:ALA:O	24:a:261:ARG:NH2	2.43	0.41
27:d:36:ILE:HD13	27:d:154:VAL:HG12	2.02	0.41
27:d:41:GLY:N	50:3:2315:G:O6	2.53	0.41
29:f:66:HIS:O	29:f:70:GLU:OE1	2.38	0.41
39:p:3:ILE:HD11	50:3:1230:U:H1'	2.01	0.41
39:p:13:ARG:HA	39:p:31:TYR:CE1	2.54	0.41
39:p:49:ARG:HA	39:p:52:LYS:HE2	2.02	0.41
42:s:60:ARG:NH1	50:3:1367:G:H3'	2.36	0.41
49:z:12:ASN:OD1	49:z:13:ASP:N	2.53	0.41
50:3:23:A:H2'	50:3:24:U:C6	2.55	0.41
50:3:401:G:HO2'	50:3:402:A:P	2.44	0.41
50:3:860:C:H4'	50:3:2436:G:N7	2.35	0.41
50:3:1309:G:H2'	50:3:1310:U:C6	2.55	0.41
50:3:1391:U:C2	50:3:1392:G:C8	3.08	0.41
50:3:1783:G:C2	50:3:1796:A:C2	3.08	0.41
50:3:1801:U:H2'	50:3:1802:C:C6	2.55	0.41
50:3:1937:G:O2'	50:3:1975:G:N1	2.38	0.41
50:3:2175:U:O2	50:3:2179:A:N7	2.53	0.41
50:3:2513:G:HO2'	50:3:2514:U:P	2.43	0.41
50:3:2578:A:H2'	50:3:2579:U:C6	2.55	0.41
50:3:2596:A:N6	50:3:2615:G:O6	2.53	0.41
50:3:2608:A:H2'	50:3:2609:C:C6	2.55	0.41
51:4:76:A:N6	51:4:89:A:H1'	2.35	0.41
52:5:981:U:H2'	52:5:982:A:C8	2.56	0.41
52:5:1289:U:O2'	52:5:1334:A:N3	2.47	0.41
4:A:118:THR:HG21	52:5:1065:G:O2'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:65:VAL:HG11	5:B:96:ILE:HG12	2.02	0.41
6:C:4:THR:HG21	6:C:62:TYR:CE1	2.55	0.41
14:K:76:VAL:HG21	14:K:108:TYR:CE1	2.53	0.41
15:L:79:HIS:HA	15:L:82:GLU:OE1	2.20	0.41
24:a:41:LEU:HD23	24:a:66:TYR:HB3	2.02	0.41
27:d:8:TYR:HA	27:d:12:ILE:HG12	2.02	0.41
28:e:3:LYS:HB3	28:e:4:ILE:H	1.61	0.41
29:f:67:LYS:HA	29:f:70:GLU:OE1	2.21	0.41
32:i:28:LEU:HD21	32:i:103:LEU:HD21	2.02	0.41
34:k:82:LEU:HA	34:k:85:ILE:HG22	2.03	0.41
37:n:98:TYR:CG	50:3:2384:A:N6	2.89	0.41
38:o:49:THR:HG22	38:o:68:LYS:HE3	2.02	0.41
39:p:65:ASN:HD22	50:3:1046:A:H5''	1.85	0.41
50:3:51:A:C5	50:3:121:U:O4	2.73	0.41
50:3:140:G:N2	50:3:143:A:H62	2.18	0.41
50:3:286:A:H4'	50:3:287:G:C8	2.56	0.41
50:3:1230:U:H2'	50:3:1231:G:H8	1.84	0.41
50:3:1255:G:O2'	50:3:1256:A:O4'	2.34	0.41
50:3:1558:A:H3'	50:3:1570:A:H61	1.84	0.41
50:3:1958:U:H2'	50:3:1960:A:OP2	2.21	0.41
50:3:1991:U:H2'	50:3:1992:C:C6	2.55	0.41
50:3:2254:G:H2'	50:3:2255:A:C8	2.55	0.41
50:3:2590:G:C2	50:3:2591:G:N2	2.88	0.41
50:3:2841:A:C4	50:3:2842:G:C8	3.08	0.41
52:5:174:U:H2'	52:5:175:U:C6	2.55	0.41
52:5:610:C:H2'	52:5:611:A:C8	2.53	0.41
52:5:680:G:C6	52:5:681:U:C4	3.09	0.41
52:5:1052:G:C6	52:5:1172:A:C6	3.08	0.41
1:0:35:ARG:NH2	50:3:182:C:O3'	2.54	0.41
9:F:75:ARG:HD2	9:F:76:VAL:H	1.85	0.41
14:K:70:LEU:HG	14:K:71:THR:H	1.85	0.41
22:S:26:THR:O	22:S:30:THR:HG23	2.21	0.41
23:T:20:ARG:HA	23:T:23:LEU:HG	2.01	0.41
25:b:53:SER:HB2	25:b:78:THR:OG1	2.21	0.41
26:c:4:LEU:HD12	26:c:5:LYS:H	1.86	0.41
26:c:170:GLN:NE2	50:3:355:A:O4'	2.46	0.41
27:d:37:ASN:O	27:d:38:MET:HE2	2.21	0.41
32:i:116:ARG:NH1	50:3:563:A:OP1	2.53	0.41
38:o:19:LYS:HD2	38:o:82:HIS:HA	2.03	0.41
43:t:42:VAL:HG22	43:t:43:THR:H	1.84	0.41
45:v:35:PRO:HB3	45:v:49:LEU:HD22	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:38:G:N3	50:3:486:G:O2'	2.54	0.41
50:3:116:C:H2'	50:3:117:C:C6	2.54	0.41
50:3:386:U:H2'	50:3:387:U:C6	2.55	0.41
50:3:462:C:H2'	50:3:463:U:C6	2.55	0.41
50:3:580:U:OP1	50:3:1249:A:O2'	2.21	0.41
50:3:1477:A:C6	50:3:1489:G:C6	3.08	0.41
50:3:1603:A:H2'	50:3:1604:A:O4'	2.21	0.41
50:3:1790:U:C2	50:3:2595:A:N6	2.89	0.41
50:3:1845:C:N4	50:3:1905:U:H2'	2.35	0.41
50:3:1997:C:H2'	50:3:1998:U:C6	2.55	0.41
50:3:2007:U:H2'	50:3:2008:A:C8	2.55	0.41
50:3:2160:U:H2'	50:3:2161:G:C8	2.56	0.41
50:3:2229:C:H2'	50:3:2230:A:C8	2.55	0.41
50:3:2770:U:H2'	50:3:2771:G:O4'	2.21	0.41
50:3:2791:U:H2'	50:3:2792:C:C6	2.55	0.41
50:3:2803:G:H8	50:3:2805:A:H4'	1.85	0.41
50:3:2821:U:O2'	50:3:2841:A:H1'	2.21	0.41
52:5:177:G:H2'	52:5:178:U:C6	2.56	0.41
52:5:203:C:H2'	52:5:204:C:H6	1.84	0.41
52:5:259:A:H2'	52:5:260:C:C5	2.56	0.41
52:5:320:G:N1	52:5:323:A:N7	2.68	0.41
52:5:453:C:H2'	52:5:454:U:C6	2.55	0.41
52:5:614:U:H2'	52:5:615:G:H8	1.86	0.41
52:5:677:C:H2'	52:5:678:A:C8	2.52	0.41
52:5:1089:C:H2'	52:5:1090:G:H8	1.85	0.41
52:5:1137:C:H2'	52:5:1138:U:H6	1.84	0.41
52:5:1137:C:H2'	52:5:1138:U:C6	2.55	0.41
52:5:1413:G:H1	52:5:1438:U:H3	1.69	0.41
52:5:1424:C:H2'	52:5:1425:A:O4'	2.21	0.41
8:E:47:TYR:CE1	52:5:671:G:H5'	2.55	0.41
9:F:111:HIS:ND1	9:F:112:GLU:HG3	2.36	0.41
14:K:78:THR:HG22	14:K:110:ILE:HG13	2.03	0.41
23:T:11:LEU:HG	23:T:12:GLU:HG2	2.03	0.41
26:c:185:LYS:NZ	50:3:647:G:O3'	2.54	0.41
26:c:197:LEU:HD23	26:c:198:LEU:N	2.35	0.41
34:k:88:LEU:HD13	50:3:637:U:C6	2.55	0.41
35:l:17:TYR:HD1	35:l:41:TRP:NE1	2.19	0.41
35:l:35:VAL:HG12	35:l:130:LYS:HB3	2.02	0.41
35:l:37:THR:OG1	35:l:128:THR:HB	2.20	0.41
39:p:32:LYS:O	39:p:36:GLN:HG3	2.21	0.41
44:u:39:LYS:HD2	44:u:45:ILE:HG21	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:149:A:H2'	50:3:150:U:O4'	2.21	0.41
50:3:173:C:N4	50:3:174:A:H62	2.19	0.41
50:3:196:G:H2'	50:3:197:U:O4'	2.21	0.41
50:3:435:U:H2'	50:3:436:G:O4'	2.20	0.41
50:3:627:U:H2'	50:3:628:A:C8	2.55	0.41
50:3:638:A:C5	50:3:661:G:C2	3.08	0.41
50:3:1336:A:H2'	50:3:1337:G:O4'	2.21	0.41
50:3:1592:A:H4'	50:3:1593:U:H3'	2.03	0.41
50:3:1647:A:N6	50:3:1651:C:H2'	2.36	0.41
50:3:2348:U:H2'	50:3:2349:G:C8	2.55	0.41
50:3:2364:A:H2	50:3:2370:G:N1	2.19	0.41
50:3:2472:G:H2'	50:3:2473:C:C6	2.55	0.41
50:3:2649:G:H2'	50:3:2650:A:C8	2.56	0.41
50:3:2873:G:H2'	50:3:2874:C:C6	2.55	0.41
52:5:31:U:H3	52:5:551:A:H61	1.69	0.41
52:5:576:A:H2'	52:5:577:G:C8	2.53	0.41
52:5:686:C:HO2'	52:5:702:U:HO2'	1.66	0.41
52:5:1337:U:O5'	52:5:1338:A:H5'	2.21	0.41
53:7:54:G:N1	53:7:63:U:C4	2.89	0.41
6:C:100:ILE:O	6:C:104:MET:HG2	2.20	0.41
6:C:184:ARG:NH2	6:C:188:PRO:O	2.52	0.41
12:I:51:LYS:NZ	52:5:1229:A:OP1	2.51	0.41
15:L:26:GLY:O	15:L:30:SER:OG	2.29	0.41
18:O:22:ARG:NH2	52:5:387:G:OP1	2.53	0.41
24:a:215:LYS:HD3	50:3:764:G:C8	2.56	0.41
27:d:13:ALA:HA	27:d:28:VAL:HG11	2.03	0.41
27:d:125:ARG:CZ	50:3:2324:A:H1'	2.51	0.41
28:e:5:GLY:HA2	28:e:72:ASN:HD22	1.85	0.41
33:j:21:ILE:HA	33:j:41:VAL:HG12	2.01	0.41
35:l:3:GLN:HE22	35:l:93:TRP:NE1	2.19	0.41
35:l:77:LYS:HD3	35:l:78:PRO:HD2	2.02	0.41
36:m:101:LEU:HD13	48:y:48:TYR:HB3	2.03	0.41
39:p:48:ASP:O	39:p:52:LYS:HG2	2.21	0.41
45:v:58:LEU:CD1	45:v:63:ARG:HB2	2.50	0.41
46:w:41:PRO:HB2	50:3:63:U:C2	2.56	0.41
50:3:38:G:H4'	50:3:487:C:C4	2.56	0.41
50:3:167:A:H2'	50:3:168:A:O4'	2.21	0.41
50:3:341:G:N1	50:3:344:A:OP2	2.35	0.41
50:3:499:G:N1	50:3:501:G:OP2	2.54	0.41
50:3:531:G:C4	50:3:532:A:C8	3.08	0.41
50:3:656:G:H4'	50:3:657:A:H5''	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:771:C:H2'	50:3:772:C:H6	1.84	0.41
50:3:947:A:H2'	50:3:948:A:C8	2.55	0.41
50:3:983:A:H2'	50:3:984:C:H6	1.86	0.41
50:3:2129:U:H2'	50:3:2130:A:C8	2.56	0.41
50:3:2166:U:H2'	50:3:2167:G:H8	1.86	0.41
50:3:2190:G:H2'	50:3:2191:G:H8	1.86	0.41
50:3:2196:G:H2'	50:3:2197:U:C6	2.55	0.41
50:3:2699:C:H2'	50:3:2700:C:C6	2.56	0.41
52:5:294:A:H2'	52:5:295:G:C8	2.56	0.41
52:5:588:U:H2'	52:5:589:U:H6	1.86	0.41
52:5:1298:U:H2'	52:5:1299:C:C6	2.56	0.41
52:5:1477:A:O2'	52:5:1478:A:H3'	2.21	0.41
53:7:55:U:C2	53:7:59:A:N7	2.89	0.41
2:1:15:LYS:HD2	50:3:687:G:H5''	2.02	0.41
5:B:193:GLN:NE2	5:B:194:THR:O	2.53	0.41
8:E:124:ASN:O	8:E:126:GLU:N	2.50	0.41
13:J:54:TYR:O	13:J:58:ILE:HG12	2.21	0.41
13:J:77:LEU:HB3	13:J:103:ILE:HG13	2.03	0.41
17:N:39:HIS:CD2	52:5:737:U:H5'	2.55	0.41
17:N:43:ASN:HD22	52:5:665:G:H1'	1.86	0.41
25:b:91:GLU:HB2	25:b:94:GLN:NE2	2.36	0.41
36:m:65:LYS:HE3	50:3:2715:C:H4'	2.03	0.41
41:r:110:ASN:OD1	41:r:110:ASN:N	2.54	0.41
50:3:47:G:H4'	50:3:48:G:H5'	2.03	0.41
50:3:205:C:H1'	50:3:255:A:H2	1.86	0.41
50:3:267:A:H2'	50:3:268:C:C6	2.56	0.41
50:3:404:C:H2'	50:3:405:C:H6	1.86	0.41
50:3:815:G:H21	50:3:818:A:N6	2.17	0.41
50:3:1078:C:H2'	50:3:1079:U:O4'	2.21	0.41
50:3:1391:U:H2'	50:3:1392:G:C8	2.55	0.41
50:3:1479:A:H4'	50:3:1480:A:N9	2.36	0.41
50:3:1701:G:C6	50:3:1998:U:H3'	2.56	0.41
50:3:1802:C:H2'	50:3:1803:U:C6	2.56	0.41
50:3:1852:G:H2'	50:3:1853:G:C8	2.56	0.41
50:3:1894:U:H2'	50:3:1895:G:O4'	2.20	0.41
50:3:2035:U:C2	50:3:2040:A:N6	2.88	0.41
50:3:2337:U:H2'	50:3:2338:G:C8	2.56	0.41
50:3:2546:U:H2'	50:3:2547:C:C6	2.56	0.41
50:3:2625:U:O4	50:3:2626:A:N6	2.54	0.41
52:5:404:A:H2'	52:5:405:C:H6	1.85	0.41
52:5:663:G:C6	52:5:737:U:O2	2.74	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:983:G:N2	52:5:1012:A:H8	2.17	0.41
2:1:15:LYS:HB3	50:3:687:G:H5''	2.02	0.41
2:1:43:LYS:NZ	50:3:2358:U:O5'	2.47	0.41
3:2:15:LYS:HA	3:2:15:LYS:HD2	1.82	0.41
4:A:37:TRP:HA	4:A:205:ASN:HB3	2.03	0.41
8:E:29:LEU:HD22	8:E:68:SER:OG	2.20	0.41
8:E:89:ASN:OD1	8:E:90:LEU:N	2.48	0.41
9:F:28:VAL:HG11	9:F:100:LEU:CD1	2.51	0.41
11:H:15:SER:OG	11:H:72:GLY:HA3	2.20	0.41
11:H:82:ARG:HA	11:H:85:ILE:HG12	2.02	0.41
11:H:106:THR:OG1	11:H:107:THR:N	2.53	0.41
24:a:231:SER:HA	24:a:240:HIS:HB3	2.03	0.41
25:b:33:PRO:HB2	25:b:95:GLN:HB3	2.01	0.41
25:b:113:ILE:HD11	25:b:171:HIS:CD2	2.56	0.41
27:d:35:VAL:HG11	50:3:2321:C:O2'	2.20	0.41
36:m:26:LEU:CD1	36:m:78:LEU:HD13	2.51	0.41
36:m:82:LEU:O	36:m:86:VAL:HG22	2.21	0.41
39:p:31:TYR:CZ	39:p:35:LYS:HD2	2.56	0.41
50:3:194:A:N6	50:3:211:A:H1'	2.35	0.41
50:3:227:A:H5'	50:3:228:A:H5'	2.03	0.41
50:3:255:A:H8	50:3:255:A:O5'	2.04	0.41
50:3:291:G:H2'	50:3:292:G:C8	2.56	0.41
50:3:319:G:C6	50:3:390:A:C6	3.09	0.41
50:3:476:G:H2'	50:3:477:U:H6	1.86	0.41
50:3:525:A:C6	50:3:1312:A:N6	2.89	0.41
50:3:955:A:N3	51:4:78:C:O2'	2.54	0.41
50:3:1036:A:H2'	50:3:1037:A:C8	2.55	0.41
50:3:1418:U:C2	50:3:1423:A:N6	2.89	0.41
50:3:1588:A:O2'	50:3:1589:A:P	2.78	0.41
50:3:1738:G:C6	50:3:1739:G:C6	3.09	0.41
50:3:1841:U:H4'	50:3:1842:G:H5'	2.03	0.41
50:3:1920:A:N6	52:5:1468:A:H1'	2.33	0.41
50:3:1954:C:C2	50:3:1955:G:C8	3.08	0.41
50:3:2148:U:H2'	50:3:2149:U:C6	2.55	0.41
50:3:2336:A:H61	50:3:2395:U:H3	1.69	0.41
50:3:2473:C:H2'	50:3:2474:C:C6	2.56	0.41
50:3:2483:C:N4	50:3:2537:G:N2	2.69	0.41
50:3:2557:G:H2'	50:3:2558:G:H8	1.85	0.41
50:3:2590:G:C2	50:3:2591:G:C2	3.09	0.41
50:3:2661:U:H3'	50:3:2662:A:H8	1.86	0.41
51:4:1:U:H2'	51:4:2:U:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:63:U:H2'	52:5:64:C:C6	2.55	0.41
52:5:191:A:H2'	52:5:192:A:C8	2.55	0.41
52:5:333:U:H2'	52:5:334:A:C8	2.56	0.41
52:5:471:A:H2'	52:5:472:G:C8	2.56	0.41
52:5:546:G:H2'	52:5:547:C:C6	2.56	0.41
52:5:554:C:N4	52:5:555:G:O6	2.54	0.41
52:5:727:G:C5	52:5:728:G:H1'	2.56	0.41
52:5:1062:C:H2'	52:5:1063:G:C8	2.53	0.41
52:5:1113:U:H2'	52:5:1114:A:H8	1.84	0.41
52:5:1209:C:H2'	52:5:1210:U:O4'	2.21	0.41
52:5:1267:G:H2'	52:5:1268:G:C8	2.53	0.41
52:5:1291:C:H3'	52:5:1292:A:C8	2.55	0.41
52:5:1325:U:H2'	52:5:1326:C:H6	1.86	0.41
52:5:1331:A:H61	52:5:1340:G:H1	0.64	0.41
53:7:12:C:H2'	53:7:13:U:C6	2.56	0.41
53:7:19:G:N7	53:7:56:U:O2'	2.47	0.41
1:0:39:ARG:NE	50:3:494:G:O2'	2.54	0.41
6:C:89:LEU:O	6:C:93:LEU:HD23	2.20	0.41
6:C:133:SER:HB2	52:5:618:U:C2	2.55	0.41
7:D:100:LYS:HA	7:D:128:THR:HA	2.02	0.41
10:G:98:TYR:HD1	52:5:596:U:H4'	1.86	0.41
13:J:54:TYR:CZ	13:J:58:ILE:HD11	2.55	0.41
18:O:67:PHE:CD2	18:O:72:LEU:HD13	2.56	0.41
27:d:92:ARG:HA	27:d:96:MET:SD	2.61	0.41
29:f:42:LYS:NZ	29:f:50:PHE:HB3	2.36	0.41
35:l:15:VAL:HG11	35:l:96:VAL:HG21	2.03	0.41
41:r:125:VAL:O	41:r:129:VAL:HG13	2.20	0.41
44:u:74:PHE:CZ	50:3:2373:G:H4'	2.55	0.41
50:3:49:C:O2'	50:3:54:A:O2'	2.26	0.41
50:3:86:A:N1	50:3:100:U:O2'	2.42	0.41
50:3:226:A:C8	50:3:456:G:H4'	2.56	0.41
50:3:897:A:H62	50:3:953:G:N2	2.19	0.41
50:3:1041:C:H2'	50:3:1042:C:C5	2.56	0.41
50:3:1049:U:O4	50:3:1050:A:N6	2.53	0.41
50:3:1082:A:H2'	50:3:1145:G:N1	2.36	0.41
50:3:1188:C:H2'	50:3:1189:G:O4'	2.21	0.41
50:3:1231:G:H2'	50:3:1232:U:H6	1.86	0.41
50:3:1268:U:H2'	50:3:1269:C:C6	2.56	0.41
50:3:1269:C:H2'	50:3:1270:C:C6	2.56	0.41
50:3:1995:G:C2	50:3:1996:A:C5	3.09	0.41
50:3:2120:G:H2'	50:3:2121:A:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2557:G:O2'	50:3:2558:G:H5'	2.21	0.41
50:3:2793:U:H2'	50:3:2794:U:C6	2.56	0.41
52:5:172:C:H2'	52:5:173:U:C6	2.56	0.41
52:5:551:A:H2'	52:5:552:U:C6	2.56	0.41
52:5:880:G:H2'	52:5:881:G:H8	1.85	0.41
53:7:2:G:H1	53:7:74:A:H62	1.69	0.41
4:A:21:ALA:HB3	4:A:62:ARG:HG3	2.03	0.40
5:B:87:LYS:O	5:B:91:GLN:OE1	2.39	0.40
5:B:189:LEU:HD12	5:B:202:LYS:HE2	2.04	0.40
6:C:73:ARG:NH2	52:5:398:G:H5'	2.36	0.40
6:C:121:HIS:NE2	52:5:434:U:O2'	2.45	0.40
6:C:178:TYR:OH	6:C:182:PRO:HD3	2.21	0.40
10:G:116:ILE:HA	10:G:136:GLU:O	2.21	0.40
12:I:50:THR:O	12:I:52:LYS:HG3	2.21	0.40
12:I:58:ILE:HD12	12:I:68:ARG:HB3	2.03	0.40
19:P:17:LYS:HD3	52:5:271:G:H5'	2.04	0.40
19:P:65:GLU:HA	19:P:75:PHE:HD1	1.86	0.40
20:Q:82:HIS:O	20:Q:86:VAL:HG22	2.21	0.40
28:e:160:TYR:HE1	50:3:2538:A:C5	2.39	0.40
31:h:98:MET:O	31:h:102:LYS:HB2	2.21	0.40
34:k:101:LYS:HD2	34:k:101:LYS:HA	1.82	0.40
35:l:42:ILE:HD12	35:l:126:PRO:HG2	2.03	0.40
35:l:103:MET:HG2	35:l:104:PHE:CD1	2.56	0.40
39:p:24:PHE:CE1	50:3:19:G:H4'	2.55	0.40
40:q:2:HIS:HB2	40:q:13:LEU:HD11	2.03	0.40
41:r:39:THR:HA	41:r:40:PRO:HD3	1.88	0.40
45:v:53:ARG:O	45:v:57:THR:HG23	2.21	0.40
50:3:80:U:O4	50:3:109:G:O6	2.38	0.40
50:3:239:U:O4	50:3:240:C:N4	2.53	0.40
50:3:256:G:H2'	50:3:257:C:C6	2.56	0.40
50:3:280:A:H2'	50:3:281:U:H6	1.85	0.40
50:3:513:A:O2'	50:3:514:A:P	2.79	0.40
50:3:548:A:N1	50:3:615:G:H4'	2.37	0.40
50:3:784:A:H4'	50:3:1301:G:N3	2.36	0.40
50:3:983:A:H2'	50:3:984:C:C6	2.56	0.40
50:3:1167:U:H2'	50:3:1168:A:C5	2.56	0.40
50:3:1451:A:N6	50:3:1610:U:H3	2.20	0.40
50:3:1613:A:H3'	50:3:1614:G:H8	1.86	0.40
50:3:2056:A:H2'	50:3:2057:C:C6	2.55	0.40
50:3:2363:C:H2'	50:3:2364:A:C4	2.56	0.40
50:3:2530:U:H1'	50:3:2572:A:C2	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2624:C:H2'	50:3:2625:U:C6	2.56	0.40
52:5:176:G:H2'	52:5:177:G:H8	1.86	0.40
52:5:248:U:H2'	52:5:249:U:C6	2.56	0.40
52:5:253:G:H2'	52:5:254:G:H8	1.86	0.40
52:5:267:C:H2'	52:5:268:C:C6	2.56	0.40
52:5:601:U:H2'	52:5:602:G:H8	1.87	0.40
52:5:1093:A:H2'	52:5:1094:C:C6	2.55	0.40
52:5:1110:C:H2'	52:5:1111:G:C8	2.49	0.40
52:5:1198:C:H5''	52:5:1199:U:H5''	2.04	0.40
52:5:1400:A:H61	52:5:1450:C:N4	2.20	0.40
4:A:177:ILE:HA	4:A:199:VAL:O	2.21	0.40
5:B:33:TRP:HB3	5:B:60:ARG:CZ	2.51	0.40
6:C:97:LEU:O	6:C:101:VAL:HG23	2.21	0.40
11:H:124:ARG:HH21	52:5:1322:U:HO2'	1.70	0.40
12:I:78:ARG:HD3	12:I:79:LEU:H	1.85	0.40
14:K:15:LYS:HE2	14:K:15:LYS:HB2	1.96	0.40
21:R:42:PRO:HD3	21:R:67:VAL:HG21	2.03	0.40
24:a:62:ASN:HD21	24:a:221:HIS:CD2	2.39	0.40
24:a:191:LYS:HE2	24:a:277:LEU:HD13	2.03	0.40
28:e:17:ASN:OD1	28:e:28:LYS:HB3	2.20	0.40
28:e:142:GLU:OE1	28:e:142:GLU:N	2.38	0.40
32:i:36:ALA:HA	32:i:39:ILE:HG22	2.02	0.40
32:i:123:THR:HB	50:3:2788:U:H5''	2.02	0.40
33:j:60:ALA:HB2	33:j:86:LEU:HD13	2.02	0.40
34:k:57:PRO:O	34:k:61:ARG:HG3	2.21	0.40
35:l:30:GLY:HA3	35:l:105:GLU:HB3	2.03	0.40
35:l:54:ILE:HA	35:l:57:CYS:SG	2.61	0.40
43:t:78:ASP:OD2	43:t:81:ALA:HB3	2.21	0.40
50:3:772:C:H4'	50:3:801:U:H4'	2.03	0.40
50:3:855:A:H2'	50:3:856:A:O4'	2.22	0.40
50:3:894:G:H3'	50:3:895:G:C8	2.55	0.40
50:3:1202:A:H2'	50:3:1203:G:H8	1.86	0.40
50:3:1760:G:N2	50:3:1762:A:H5''	2.36	0.40
51:4:30:U:C2	51:4:49:G:N2	2.89	0.40
51:4:60:C:H2'	51:4:61:A:C8	2.52	0.40
51:4:89:A:C4	51:4:90:G:C8	3.09	0.40
52:5:297:A:H2'	52:5:298:G:C8	2.56	0.40
52:5:421:G:H2'	52:5:422:A:H8	1.86	0.40
52:5:458:G:H2'	52:5:459:C:C6	2.55	0.40
52:5:1133:A:H5'	52:5:1134:C:C6	2.56	0.40
2:1:25:TYR:HD1	50:3:2400:A:H4'	1.86	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:39:ARG:O	2:1:43:LYS:HG2	2.21	0.40
4:A:19:SER:OG	4:A:20:LEU:N	2.51	0.40
5:B:85:ILE:HA	5:B:88:ILE:HG22	2.04	0.40
5:B:180:THR:HA	52:5:1103:C:N3	2.36	0.40
6:C:155:LYS:O	6:C:159:GLU:OE1	2.39	0.40
7:D:107:LYS:NZ	52:5:1072:G:H8	2.20	0.40
12:I:29:LYS:HA	12:I:32:VAL:HG12	2.02	0.40
12:I:47:PRO:HA	12:I:78:ARG:HH22	1.86	0.40
23:T:37:ARG:NH1	52:5:1502:G:N7	2.70	0.40
25:b:17:PHE:HB3	38:o:17:GLN:HE22	1.86	0.40
50:3:81:C:O2'	50:3:380:A:N3	2.42	0.40
50:3:343:A:H1'	50:3:363:G:N3	2.36	0.40
50:3:421:A:H2'	50:3:423:C:N4	2.37	0.40
50:3:464:A:H5''	50:3:465:A:N7	2.36	0.40
50:3:573:A:H2'	50:3:574:G:O4'	2.21	0.40
50:3:759:U:C4	50:3:760:G:C5	3.09	0.40
50:3:806:A:H2'	50:3:807:U:C6	2.57	0.40
50:3:812:G:H2'	50:3:813:G:C8	2.56	0.40
50:3:992:G:O3'	50:3:993:A:H8	2.04	0.40
50:3:1263:G:H2'	50:3:1264:U:C6	2.56	0.40
50:3:1611:C:H2'	50:3:1612:U:N1	2.36	0.40
50:3:2155:G:H2'	50:3:2156:G:C8	2.56	0.40
50:3:2264:G:H2'	50:3:2265:U:C6	2.57	0.40
50:3:2637:A:N3	50:3:2898:A:N6	2.70	0.40
50:3:2810:A:H5'	50:3:2811:G:OP2	2.22	0.40
50:3:2819:C:C2	50:3:2820:G:C8	3.09	0.40
50:3:2850:G:H2'	50:3:2851:U:C6	2.57	0.40
52:5:764:A:H2'	52:5:765:A:O4'	2.21	0.40
52:5:1118:A:N7	52:5:1119:C:H1'	2.37	0.40
8:E:86:LEU:HD22	20:Q:96:LEU:HD21	2.04	0.40
9:F:106:PHE:CZ	9:F:136:LYS:HE2	2.57	0.40
11:H:69:VAL:HB	11:H:77:GLN:CD	2.46	0.40
15:L:65:ILE:HB	15:L:68:ASP:HB2	2.04	0.40
25:b:15:GLN:OE1	25:b:23:ARG:NH2	2.42	0.40
33:j:35:LEU:HB2	33:j:69:GLN:NE2	2.37	0.40
40:q:10:LYS:HA	40:q:10:LYS:HD3	1.75	0.40
48:y:38:LEU:HD22	48:y:41:ARG:HD3	2.04	0.40
50:3:35:U:O4	50:3:483:A:N7	2.54	0.40
50:3:107:C:H2'	50:3:108:G:H8	1.85	0.40
50:3:200:A:N6	50:3:866:G:H21	2.19	0.40
50:3:201:A:H2	50:3:2442:A:H62	1.70	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:257:C:H2'	50:3:258:G:O4'	2.21	0.40
50:3:266:A:N3	50:3:466:A:O2'	2.48	0.40
50:3:342:G:N2	50:3:513:A:OP1	2.46	0.40
50:3:433:A:H2'	50:3:434:G:C8	2.56	0.40
50:3:495:U:H2'	50:3:496:A:H8	1.87	0.40
50:3:595:U:H2'	50:3:605:A:H1'	2.04	0.40
50:3:683:G:H2'	50:3:684:A:C8	2.56	0.40
50:3:688:U:H5''	50:3:689:U:H5'	2.03	0.40
50:3:720:A:O2'	50:3:808:U:O4	2.27	0.40
50:3:897:A:H2	51:4:76:A:H2	1.69	0.40
50:3:958:C:H2'	50:3:959:C:H6	1.87	0.40
50:3:1117:U:H2'	50:3:1118:U:O4'	2.21	0.40
50:3:1821:G:H2'	50:3:1822:A:C8	2.57	0.40
50:3:1878:A:H2'	50:3:1879:A:O4'	2.20	0.40
50:3:2388:C:H2'	50:3:2389:A:H8	1.86	0.40
50:3:2561:G:H21	50:3:2590:G:N2	2.19	0.40
50:3:2726:G:H2'	50:3:2727:G:O4'	2.22	0.40
51:4:99:A:C4	51:4:100:G:C8	3.09	0.40
52:5:20:C:H2'	52:5:21:U:C6	2.57	0.40
52:5:147:A:O2'	52:5:148:A:O4'	2.30	0.40
52:5:949:G:N7	52:5:950:C:N4	2.69	0.40
52:5:1230:G:H2'	52:5:1233:G:H21	1.86	0.40
52:5:1321:G:O2'	52:5:1348:G:N1	2.48	0.40
52:5:1409:A:H2'	52:5:1410:A:H8	1.86	0.40
52:5:1444:G:C2	52:5:1445:G:C8	3.09	0.40
53:7:28:A:H2'	53:7:29:C:H6	1.86	0.40
5:B:197:GLY:HA2	52:5:1046:A:H2	1.85	0.40
6:C:98:ASP:OD1	6:C:99:ASN:N	2.55	0.40
7:D:69:ARG:HH11	7:D:172:LEU:HG	1.87	0.40
9:F:3:LYS:HD3	52:5:1352:A:N3	2.37	0.40
9:F:34:LYS:HD2	52:5:1264:G:H5'	2.04	0.40
10:G:15:VAL:HG21	10:G:138:LEU:HD12	2.03	0.40
10:G:95:LEU:HD13	14:K:4:ILE:HD13	2.03	0.40
18:O:3:MET:N	18:O:3:MET:SD	2.94	0.40
18:O:44:ILE:CG1	18:O:46:GLU:HG2	2.52	0.40
25:b:225:GLN:NE2	38:o:84:PRO:HG3	2.36	0.40
26:c:170:GLN:NE2	50:3:355:A:N3	2.50	0.40
27:d:34:ILE:O	27:d:91:LEU:HD23	2.20	0.40
32:i:15:ARG:HD3	32:i:15:ARG:HA	1.96	0.40
32:i:134:ASN:OD1	32:i:134:ASN:N	2.54	0.40
34:k:34:ARG:NH1	34:k:40:LYS:O	2.47	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:l:56:LYS:HB2	35:l:56:LYS:HE2	1.90	0.40
38:o:95:LYS:HE3	38:o:95:LYS:HB3	1.94	0.40
50:3:525:A:N6	50:3:1312:A:N1	2.69	0.40
50:3:1055:A:N6	50:3:1176:U:O2'	2.49	0.40
50:3:1140:U:H2'	50:3:1141:U:C6	2.56	0.40
50:3:1288:C:N4	50:3:1289:G:O6	2.55	0.40
50:3:1415:A:C6	50:3:1429:G:N1	2.90	0.40
50:3:1718:C:H2'	50:3:1719:C:C6	2.57	0.40
50:3:1850:C:H2'	50:3:1851:U:C6	2.57	0.40
50:3:2513:G:H2'	50:3:2584:G:H1	1.86	0.40
50:3:2669:G:H2'	50:3:2670:A:O4'	2.22	0.40
50:3:2845:U:C2	50:3:2846:A:C8	3.10	0.40
52:5:18:U:H2'	52:5:19:C:C6	2.57	0.40
52:5:23:G:H2'	52:5:24:C:C6	2.56	0.40
52:5:40:G:H2'	52:5:41:C:C6	2.56	0.40
52:5:103:U:O4	52:5:285:G:O2'	2.30	0.40
52:5:655:G:O6	52:5:746:A:N6	2.55	0.40
52:5:678:A:H2'	52:5:679:U:C6	2.57	0.40
52:5:714:C:O2'	52:5:731:A:O4'	2.27	0.40
52:5:774:A:H2'	52:5:775:G:O4'	2.22	0.40
52:5:1411:A:H2'	52:5:1412:C:C6	2.56	0.40
52:5:1495:C:H2'	52:5:1496:G:C8	2.56	0.40
53:7:57:C:H3'	53:7:58:G:H8	1.86	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	0	45/48 (94%)	44 (98%)	1 (2%)	0	100	100
2	1	57/59 (97%)	54 (95%)	3 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
3	2	35/37 (95%)	33 (94%)	2 (6%)	0	100	100
4	A	238/294 (81%)	222 (93%)	16 (7%)	0	100	100
5	B	213/273 (78%)	196 (92%)	17 (8%)	0	100	100
6	C	201/205 (98%)	191 (95%)	10 (5%)	0	100	100
7	D	151/219 (69%)	145 (96%)	6 (4%)	0	100	100
8	E	165/215 (77%)	147 (89%)	18 (11%)	0	100	100
9	F	152/155 (98%)	135 (89%)	17 (11%)	0	100	100
10	G	139/142 (98%)	125 (90%)	14 (10%)	0	100	100
11	H	126/132 (96%)	115 (91%)	11 (9%)	0	100	100
12	I	99/108 (92%)	87 (88%)	12 (12%)	0	100	100
13	J	112/121 (93%)	105 (94%)	7 (6%)	0	100	100
14	K	134/139 (96%)	125 (93%)	9 (7%)	0	100	100
15	L	116/124 (94%)	104 (90%)	12 (10%)	0	100	100
16	M	58/61 (95%)	56 (97%)	2 (3%)	0	100	100
17	N	81/86 (94%)	81 (100%)	0	0	100	100
18	O	78/94 (83%)	70 (90%)	8 (10%)	0	100	100
19	P	81/85 (95%)	78 (96%)	3 (4%)	0	100	100
20	Q	63/104 (61%)	51 (81%)	12 (19%)	0	100	100
21	R	82/87 (94%)	73 (89%)	9 (11%)	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%)	265 (94%)	18 (6%)	0	100	100
25	b	227/287 (79%)	214 (94%)	13 (6%)	0	100	100
26	c	208/212 (98%)	197 (95%)	11 (5%)	0	100	100
27	d	173/180 (96%)	160 (92%)	13 (8%)	0	100	100
28	e	174/184 (95%)	166 (95%)	8 (5%)	0	100	100
29	f	143/149 (96%)	125 (87%)	18 (13%)	0	100	100
30	g	124/161 (77%)	109 (88%)	13 (10%)	2 (2%)	7	38
31	h	126/137 (92%)	114 (90%)	12 (10%)	0	100	100
32	i	142/146 (97%)	136 (96%)	6 (4%)	0	100	100
33	j	120/122 (98%)	113 (94%)	7 (6%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
34	k	146/151 (97%)	139 (95%)	7 (5%)	0	100	100
35	l	134/139 (96%)	124 (92%)	10 (8%)	0	100	100
36	m	117/124 (94%)	108 (92%)	9 (8%)	0	100	100
37	n	108/116 (93%)	99 (92%)	9 (8%)	0	100	100
38	o	113/119 (95%)	101 (89%)	12 (11%)	0	100	100
39	p	112/127 (88%)	108 (96%)	4 (4%)	0	100	100
40	q	97/100 (97%)	90 (93%)	7 (7%)	0	100	100
41	r	137/159 (86%)	134 (98%)	3 (2%)	0	100	100
42	s	90/237 (38%)	88 (98%)	2 (2%)	0	100	100
43	t	109/111 (98%)	104 (95%)	5 (5%)	0	100	100
44	u	84/104 (81%)	81 (96%)	3 (4%)	0	100	100
45	v	61/65 (94%)	59 (97%)	2 (3%)	0	100	100
46	w	96/111 (86%)	89 (93%)	7 (7%)	0	100	100
47	x	42/97 (43%)	35 (83%)	7 (17%)	0	100	100
48	y	54/57 (95%)	52 (96%)	2 (4%)	0	100	100
49	z	48/53 (91%)	47 (98%)	1 (2%)	0	100	100
All	All	5820/6670 (87%)	5418 (93%)	400 (7%)	2 (0%)	100	100

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
30	g	88	GLU
30	g	42	LYS

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

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	2	35/35 (100%)	35 (100%)	0	100	100
4	A	212/262 (81%)	211 (100%)	1 (0%)	81	83
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%)	99 (99%)	1 (1%)	68	78
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%)	91 (90%)	10 (10%)	7	24
31	h	102/110 (93%)	102 (100%)	0	100	100
32	i	126/128 (98%)	126 (100%)	0	100	100
33	j	103/103 (100%)	103 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
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%)	69 (100%)	0	100	100
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%)	47 (100%)	0	100	100
All	All	5093/5751 (89%)	5075 (100%)	18 (0%)	81	84

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

Mol	Chain	Res	Type
4	A	51	HIS
14	K	120	VAL
14	K	121	GLU
14	K	122	LYS
15	L	91	HIS
30	g	27	PHE
30	g	30	THR
30	g	42	LYS
30	g	43	LYS
30	g	44	LEU
30	g	46	LYS
30	g	84	VAL
30	g	88	GLU
30	g	89	ILE
30	g	90	VAL

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Mol	Chain	Res	Type
48	y	47	MET
48	y	48	TYR
48	y	52	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (70) such sidechains are listed below:

Mol	Chain	Res	Type
2	1	44	GLN
4	A	52	ASN
4	A	63	GLN
4	A	66	GLN
4	A	70	ASN
4	A	97	ASN
4	A	98	ASN
4	A	192	ASN
5	B	6	ASN
5	B	47	ASN
5	B	193	GLN
6	C	53	GLN
7	D	190	ASN
7	D	193	HIS
7	D	202	GLN
8	E	17	GLN
8	E	36	GLN
8	E	106	GLN
9	F	85	GLN
10	G	56	ASN
11	H	77	GLN
12	I	74	ASN
14	K	59	ASN
14	K	86	ASN
14	K	88	GLN
14	K	90	HIS
15	L	40	ASN
15	L	94	ASN
17	N	13	GLN
17	N	25	GLN
17	N	39	HIS
19	P	5	GLN
20	Q	82	HIS
21	R	47	ASN
22	S	20	ASN

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Mol	Chain	Res	Type
22	S	46	ASN
23	T	8	ASN
24	a	62	ASN
24	a	159	GLN
24	a	209	ASN
25	b	178	ASN
26	c	104	ASN
26	c	108	HIS
27	d	7	HIS
28	e	6	ASN
28	e	54	GLN
28	e	63	GLN
28	e	68	HIS
28	e	72	ASN
32	i	51	GLN
32	i	61	ASN
32	i	138	GLN
34	k	36	GLN
35	l	14	ASN
35	l	113	GLN
36	m	117	GLN
37	n	75	GLN
39	p	85	HIS
40	q	69	ASN
41	r	52	ASN
41	r	94	ASN
42	s	5	ASN
42	s	19	ASN
43	t	33	GLN
43	t	64	GLN
44	u	64	ASN
45	v	6	GLN
45	v	16	ASN
48	y	19	HIS
49	z	18	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
50	3	2875/2907 (98%)	733 (25%)	25 (0%)
51	4	103/108 (95%)	34 (33%)	5 (4%)

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Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
52	5	1490/1520 (98%)	349 (23%)	6 (0%)
53	7	75/76 (98%)	25 (33%)	2 (2%)
All	All	4543/4611 (98%)	1141 (25%)	38 (0%)

All (1141) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
50	3	12	A
50	3	14	U
50	3	15	A
50	3	17	G
50	3	29	G
50	3	37	G
50	3	47	G
50	3	48	G
50	3	51	A
50	3	53	G
50	3	54	A
50	3	63	U
50	3	65	A
50	3	73	A
50	3	75	A
50	3	76	A
50	3	77	G
50	3	82	G
50	3	86	A
50	3	92	U
50	3	102	A
50	3	103	G
50	3	112	A
50	3	115	U
50	3	116	C
50	3	119	A
50	3	120	A
50	3	121	U
50	3	122	G
50	3	126	C
50	3	129	U
50	3	132	G
50	3	141	A
50	3	143	A
50	3	148	U

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Mol	Chain	Res	Type
50	3	165	U
50	3	178	A
50	3	180	A
50	3	184	A
50	3	185	U
50	3	186	A
50	3	187	C
50	3	188	G
50	3	200	A
50	3	208	A
50	3	219	G
50	3	220	A
50	3	226	A
50	3	230	G
50	3	232	A
50	3	234	G
50	3	237	A
50	3	245	U
50	3	246	G
50	3	252	G
50	3	254	G
50	3	256	G
50	3	269	A
50	3	270	G
50	3	276	A
50	3	284	U
50	3	287	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	315	A
50	3	319	G
50	3	325	G
50	3	334	A
50	3	336	C
50	3	341	G

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Mol	Chain	Res	Type
50	3	345	A
50	3	346	G
50	3	347	C
50	3	351	G
50	3	357	A
50	3	358	A
50	3	363	G
50	3	364	A
50	3	367	G
50	3	369	C
50	3	374	A
50	3	380	A
50	3	401	G
50	3	402	A
50	3	403	U
50	3	404	C
50	3	409	A
50	3	410	G
50	3	411	U
50	3	422	A
50	3	425	U
50	3	426	U
50	3	432	G
50	3	437	A
50	3	439	U
50	3	440	C
50	3	441	U
50	3	447	G
50	3	448	A
50	3	449	C
50	3	457	U
50	3	460	G
50	3	464	A
50	3	465	A
50	3	466	A
50	3	467	U
50	3	480	C
50	3	482	G
50	3	484	U
50	3	485	A
50	3	487	C
50	3	491	A

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Mol	Chain	Res	Type
50	3	492	C
50	3	495	U
50	3	500	U
50	3	501	G
50	3	509	G
50	3	514	A
50	3	515	A
50	3	516	A
50	3	517	G
50	3	519	A
50	3	527	A
50	3	540	A
50	3	543	U
50	3	544	U
50	3	545	C
50	3	565	C
50	3	566	G
50	3	567	U
50	3	581	A
50	3	582	A
50	3	583	U
50	3	595	U
50	3	596	G
50	3	599	U
50	3	601	U
50	3	605	A
50	3	606	G
50	3	607	U
50	3	608	A
50	3	610	G
50	3	616	G
50	3	620	G
50	3	623	A
50	3	636	U
50	3	637	U
50	3	638	A
50	3	663	A
50	3	668	A
50	3	670	G
50	3	673	A
50	3	681	A
50	3	682	A

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Mol	Chain	Res	Type
50	3	689	U
50	3	690	U
50	3	691	G
50	3	694	U
50	3	695	G
50	3	701	A
50	3	702	U
50	3	705	A
50	3	706	C
50	3	712	A
50	3	721	G
50	3	722	C
50	3	730	G
50	3	737	U
50	3	740	A
50	3	752	C
50	3	761	G
50	3	763	G
50	3	764	G
50	3	765	A
50	3	769	A
50	3	775	C
50	3	782	U
50	3	790	U
50	3	792	G
50	3	798	G
50	3	799	A
50	3	800	C
50	3	801	U
50	3	810	G
50	3	811	G
50	3	815	G
50	3	816	A
50	3	817	A
50	3	819	U
50	3	820	U
50	3	824	A
50	3	825	U
50	3	827	G
50	3	828	A
50	3	829	A
50	3	840	G

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Mol	Chain	Res	Type
50	3	841	C
50	3	846	U
50	3	847	C
50	3	850	G
50	3	854	A
50	3	855	A
50	3	862	U
50	3	863	U
50	3	865	A
50	3	873	G
50	3	881	A
50	3	882	C
50	3	883	A
50	3	893	A
50	3	895	G
50	3	902	U
50	3	903	A
50	3	904	C
50	3	906	G
50	3	917	G
50	3	918	G
50	3	931	G
50	3	932	U
50	3	944	U
50	3	947	A
50	3	949	C
50	3	951	C
50	3	977	A
50	3	980	C
50	3	981	A
50	3	982	G
50	3	989	G
50	3	991	G
50	3	993	A
50	3	995	A
50	3	997	G
50	3	1009	A
50	3	1013	G
50	3	1016	A
50	3	1019	A
50	3	1021	C
50	3	1022	C

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Mol	Chain	Res	Type
50	3	1024	A
50	3	1026	A
50	3	1027	U
50	3	1032	A
50	3	1042	C
50	3	1044	C
50	3	1045	A
50	3	1049	U
50	3	1055	A
50	3	1061	A
50	3	1068	U
50	3	1075	G
50	3	1080	A
50	3	1081	A
50	3	1083	A
50	3	1092	A
50	3	1095	U
50	3	1096	U
50	3	1100	U
50	3	1102	A
50	3	1105	A
50	3	1106	G
50	3	1113	U
50	3	1124	G
50	3	1125	U
50	3	1129	U
50	3	1140	U
50	3	1145	G
50	3	1147	G
50	3	1150	U
50	3	1151	U
50	3	1155	G
50	3	1157	G
50	3	1162	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	1176	U
50	3	1177	A

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Mol	Chain	Res	Type
50	3	1178	A
50	3	1184	U
50	3	1186	A
50	3	1203	G
50	3	1204	A
50	3	1208	A
50	3	1209	U
50	3	1210	A
50	3	1212	C
50	3	1215	G
50	3	1217	G
50	3	1222	A
50	3	1226	G
50	3	1234	U
50	3	1236	G
50	3	1248	A
50	3	1250	A
50	3	1251	G
50	3	1252	C
50	3	1255	G
50	3	1256	A
50	3	1257	G
50	3	1259	A
50	3	1266	G
50	3	1268	U
50	3	1278	G
50	3	1279	U
50	3	1280	G
50	3	1281	A
50	3	1283	A
50	3	1285	U
50	3	1286	G
50	3	1292	A
50	3	1293	U
50	3	1301	G
50	3	1302	C
50	3	1303	U
50	3	1304	U
50	3	1322	A
50	3	1323	A
50	3	1326	C
50	3	1328	A

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Mol	Chain	Res	Type
50	3	1329	U
50	3	1341	U
50	3	1342	C
50	3	1343	C
50	3	1349	C
50	3	1353	G
50	3	1360	U
50	3	1361	U
50	3	1369	U
50	3	1370	A
50	3	1371	G
50	3	1372	U
50	3	1378	C
50	3	1393	A
50	3	1396	A
50	3	1400	U
50	3	1406	A
50	3	1412	A
50	3	1414	C
50	3	1423	A
50	3	1424	U
50	3	1425	U
50	3	1426	C
50	3	1431	A
50	3	1436	C
50	3	1444	C
50	3	1445	U
50	3	1448	U
50	3	1455	A
50	3	1456	C
50	3	1462	A
50	3	1463	G
50	3	1466	U
50	3	1467	U
50	3	1480	A
50	3	1481	U
50	3	1483	G
50	3	1487	U
50	3	1508	G
50	3	1510	A
50	3	1513	A
50	3	1515	A

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Mol	Chain	Res	Type
50	3	1518	C
50	3	1519	A
50	3	1528	G
50	3	1534	A
50	3	1541	A
50	3	1546	U
50	3	1548	A
50	3	1549	U
50	3	1550	G
50	3	1558	A
50	3	1559	A
50	3	1571	G
50	3	1572	U
50	3	1577	A
50	3	1580	G
50	3	1583	G
50	3	1584	U
50	3	1585	A
50	3	1589	A
50	3	1592	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	1632	C
50	3	1641	A
50	3	1642	G
50	3	1643	A
50	3	1644	A
50	3	1647	A
50	3	1648	A
50	3	1651	C
50	3	1659	C
50	3	1669	A
50	3	1670	U
50	3	1681	G
50	3	1682	C
50	3	1694	A
50	3	1695	G
50	3	1697	C

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Mol	Chain	Res	Type
50	3	1698	A
50	3	1699	A
50	3	1702	A
50	3	1706	C
50	3	1707	U
50	3	1708	G
50	3	1727	U
50	3	1732	A
50	3	1733	G
50	3	1737	G
50	3	1747	G
50	3	1748	U
50	3	1761	C
50	3	1763	G
50	3	1764	U
50	3	1769	A
50	3	1770	A
50	3	1771	C
50	3	1772	G
50	3	1780	A
50	3	1785	U
50	3	1788	A
50	3	1790	U
50	3	1791	A
50	3	1794	A
50	3	1807	C
50	3	1808	C
50	3	1815	U
50	3	1816	A
50	3	1821	G
50	3	1822	A
50	3	1823	U
50	3	1824	G
50	3	1827	U
50	3	1836	A
50	3	1837	C
50	3	1842	G
50	3	1844	C
50	3	1854	A
50	3	1855	A
50	3	1857	G
50	3	1876	G

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Mol	Chain	Res	Type
50	3	1891	A
50	3	1906	G
50	3	1907	A
50	3	1910	G
50	3	1913	G
50	3	1920	A
50	3	1921	C
50	3	1934	A
50	3	1936	G
50	3	1937	G
50	3	1938	U
50	3	1943	A
50	3	1944	A
50	3	1945	A
50	3	1947	U
50	3	1948	C
50	3	1951	A
50	3	1956	G
50	3	1960	A
50	3	1962	U
50	3	1971	G
50	3	1977	A
50	3	1978	U
50	3	1979	G
50	3	1988	A
50	3	1998	U
50	3	1999	G
50	3	2000	U
50	3	2007	U
50	3	2010	A
50	3	2011	G
50	3	2020	A
50	3	2022	A
50	3	2025	C
50	3	2028	G
50	3	2030	A
50	3	2037	A
50	3	2038	A
50	3	2040	A
50	3	2041	C
50	3	2043	C
50	3	2050	G

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Mol	Chain	Res	Type
50	3	2057	C
50	3	2058	G
50	3	2062	C
50	3	2063	G
50	3	2067	A
50	3	2068	G
50	3	2069	A
50	3	2070	C
50	3	2076	G
50	3	2080	C
50	3	2083	U
50	3	2084	A
50	3	2087	G
50	3	2099	U
50	3	2100	G
50	3	2106	G
50	3	2107	A
50	3	2110	U
50	3	2111	U
50	3	2112	A
50	3	2114	C
50	3	2118	U
50	3	2123	A
50	3	2124	A
50	3	2126	A
50	3	2127	G
50	3	2128	G
50	3	2131	G
50	3	2132	G
50	3	2133	A
50	3	2138	U
50	3	2140	G
50	3	2151	G
50	3	2157	A
50	3	2164	G
50	3	2166	U
50	3	2171	A
50	3	2172	A
50	3	2180	U
50	3	2181	A
50	3	2184	A
50	3	2189	U

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Mol	Chain	Res	Type
50	3	2192	U
50	3	2193	U
50	3	2195	U
50	3	2196	G
50	3	2197	U
50	3	2198	G
50	3	2199	C
50	3	2200	U
50	3	2201	G
50	3	2202	U
50	3	2206	A
50	3	2211	G
50	3	2212	U
50	3	2219	U
50	3	2220	A
50	3	2222	C
50	3	2231	A
50	3	2233	A
50	3	2246	G
50	3	2247	G
50	3	2257	U
50	3	2258	G
50	3	2274	A
50	3	2276	A
50	3	2277	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	2297	G
50	3	2305	C
50	3	2313	U
50	3	2316	G
50	3	2317	A
50	3	2319	A
50	3	2327	U
50	3	2328	A
50	3	2330	A
50	3	2332	U
50	3	2333	G

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Mol	Chain	Res	Type
50	3	2341	G
50	3	2342	U
50	3	2343	A
50	3	2344	A
50	3	2345	G
50	3	2351	U
50	3	2353	G
50	3	2355	C
50	3	2358	U
50	3	2362	A
50	3	2391	G
50	3	2393	C
50	3	2397	G
50	3	2410	C
50	3	2411	C
50	3	2414	U
50	3	2415	A
50	3	2417	G
50	3	2430	C
50	3	2433	A
50	3	2434	A
50	3	2435	C
50	3	2436	G
50	3	2437	G
50	3	2438	A
50	3	2442	A
50	3	2443	A
50	3	2447	A
50	3	2448	C
50	3	2449	U
50	3	2455	G
50	3	2477	A
50	3	2483	C
50	3	2484	A
50	3	2486	A
50	3	2488	C
50	3	2489	G
50	3	2492	G
50	3	2497	U
50	3	2498	G
50	3	2499	U
50	3	2500	U

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Mol	Chain	Res	Type
50	3	2503	G
50	3	2505	A
50	3	2506	C
50	3	2507	C
50	3	2509	C
50	3	2511	A
50	3	2512	U
50	3	2513	G
50	3	2514	U
50	3	2515	C
50	3	2516	G
50	3	2526	A
50	3	2527	U
50	3	2528	C
50	3	2539	A
50	3	2543	G
50	3	2558	G
50	3	2560	U
50	3	2570	U
50	3	2574	A
50	3	2577	G
50	3	2580	A
50	3	2581	C
50	3	2587	U
50	3	2590	G
50	3	2593	U
50	3	2594	C
50	3	2595	A
50	3	2596	A
50	3	2597	A
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	2629	G
50	3	2631	G
50	3	2637	A

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Mol	Chain	Res	Type
50	3	2638	G
50	3	2642	G
50	3	2644	U
50	3	2647	A
50	3	2649	G
50	3	2653	G
50	3	2654	U
50	3	2655	U
50	3	2664	U
50	3	2668	A
50	3	2669	G
50	3	2675	C
50	3	2689	C
50	3	2693	U
50	3	2694	A
50	3	2697	C
50	3	2698	U
50	3	2703	U
50	3	2708	G
50	3	2715	C
50	3	2722	G
50	3	2732	A
50	3	2734	C
50	3	2737	G
50	3	2738	U
50	3	2741	A
50	3	2747	U
50	3	2752	G
50	3	2756	A
50	3	2761	A
50	3	2765	A
50	3	2772	A
50	3	2773	A
50	3	2774	A
50	3	2786	A
50	3	2788	U
50	3	2799	U
50	3	2800	U
50	3	2801	U
50	3	2804	C
50	3	2806	A
50	3	2809	A

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Mol	Chain	Res	Type
50	3	2811	G
50	3	2812	U
50	3	2813	A
50	3	2814	A
50	3	2815	G
50	3	2822	C
50	3	2824	A
50	3	2828	C
50	3	2837	U
50	3	2839	A
50	3	2853	U
50	3	2854	A
50	3	2856	G
50	3	2863	G
50	3	2870	U
50	3	2871	G
50	3	2872	A
50	3	2876	G
50	3	2884	C
50	3	2888	U
50	3	2889	U
50	3	2890	G
50	3	2895	A
50	3	2897	G
50	3	2898	A
50	3	2899	C
51	4	9	C
51	4	10	C
51	4	11	A
51	4	13	G
51	4	14	U
51	4	15	C
51	4	16	G
51	4	23	A
51	4	25	A
51	4	28	C
51	4	33	U
51	4	38	U
51	4	39	U
51	4	40	U
51	4	41	C
51	4	42	G

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Mol	Chain	Res	Type
51	4	48	A
51	4	49	G
51	4	50	C
51	4	51	A
51	4	54	U
51	4	55	A
51	4	60	C
51	4	71	A
51	4	74	G
51	4	77	G
51	4	78	C
51	4	88	G
51	4	89	A
51	4	98	A
51	4	99	A
51	4	103	C
51	4	106	A
51	4	108	C
52	5	6	C
52	5	8	G
52	5	9	A
52	5	10	G
52	5	33	A
52	5	40	G
52	5	48	C
52	5	49	C
52	5	52	A
52	5	55	C
52	5	56	A
52	5	58	G
52	5	67	U
52	5	85	U
52	5	86	A
52	5	94	A
52	5	95	C
52	5	100	G
52	5	101	A
52	5	103	U
52	5	105	A
52	5	106	C
52	5	107	A
52	5	111	A

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Mol	Chain	Res	Type
52	5	114	C
52	5	115	A
52	5	116	A
52	5	117	U
52	5	120	A
52	5	128	A
52	5	129	U
52	5	130	G
52	5	134	G
52	5	136	U
52	5	145	G
52	5	147	A
52	5	149	G
52	5	159	U
52	5	167	A
52	5	168	A
52	5	169	G
52	5	179	U
52	5	186	A
52	5	190	A
52	5	197	A
52	5	198	A
52	5	200	G
52	5	218	U
52	5	219	A
52	5	220	U
52	5	230	G
52	5	236	C
52	5	239	A
52	5	241	C
52	5	242	A
52	5	243	G
52	5	247	G
52	5	259	A
52	5	260	C
52	5	262	G
52	5	263	C
52	5	270	A
52	5	285	G
52	5	286	C
52	5	294	A
52	5	295	G

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Mol	Chain	Res	Type
52	5	302	A
52	5	311	A
52	5	323	A
52	5	324	C
52	5	325	A
52	5	326	C
52	5	328	G
52	5	340	A
52	5	341	C
52	5	342	G
52	5	344	G
52	5	345	A
52	5	348	C
52	5	349	A
52	5	350	G
52	5	352	A
52	5	359	A
52	5	363	U
52	5	364	U
52	5	368	C
52	5	373	A
52	5	377	A
52	5	381	C
52	5	384	G
52	5	385	A
52	5	386	U
52	5	393	A
52	5	394	U
52	5	402	G
52	5	409	G
52	5	410	A
52	5	412	G
52	5	417	U
52	5	418	U
52	5	420	A
52	5	423	U
52	5	425	G
52	5	426	U
52	5	432	U
52	5	436	U
52	5	440	U
52	5	445	A

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Mol	Chain	Res	Type
52	5	446	A
52	5	449	A
52	5	451	G
52	5	452	A
52	5	453	C
52	5	456	U
52	5	457	A
52	5	461	G
52	5	464	A
52	5	471	A
52	5	473	A
52	5	476	U
52	5	477	U
52	5	478	G
52	5	481	U
52	5	482	G
52	5	488	U
52	5	493	A
52	5	504	A
52	5	507	A
52	5	509	C
52	5	510	U
52	5	515	G
52	5	516	C
52	5	517	C
52	5	524	C
52	5	525	G
52	5	527	G
52	5	529	U
52	5	530	A
52	5	531	A
52	5	543	C
52	5	545	A
52	5	548	G
52	5	557	A
52	5	558	U
52	5	560	U
52	5	562	U
52	5	569	U
52	5	570	A
52	5	571	A
52	5	574	C

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Mol	Chain	Res	Type
52	5	575	A
52	5	585	G
52	5	586	G
52	5	594	A
52	5	595	G
52	5	608	G
52	5	616	C
52	5	619	A
52	5	628	A
52	5	638	A
52	5	639	A
52	5	646	A
52	5	650	A
52	5	653	G
52	5	662	G
52	5	663	G
52	5	683	G
52	5	684	A
52	5	699	A
52	5	700	G
52	5	715	A
52	5	716	C
52	5	718	A
52	5	719	G
52	5	720	U
52	5	721	G
52	5	726	A
52	5	729	C
52	5	744	U
52	5	745	U
52	5	746	A
52	5	752	G
52	5	753	C
52	5	763	A
52	5	791	A
52	5	793	C
52	5	796	A
52	5	802	C
52	5	809	G
52	5	811	A
52	5	812	A
52	5	814	C

Continued on next page...

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Mol	Chain	Res	Type
52	5	815	G
52	5	818	A
52	5	825	A
52	5	826	G
52	5	829	G
52	5	836	C
52	5	849	A
52	5	858	A
52	5	864	U
52	5	866	A
52	5	867	A
52	5	870	A
52	5	875	G
52	5	879	G
52	5	883	A
52	5	885	U
52	5	895	A
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	930	A
52	5	934	G
52	5	953	A
52	5	954	A
52	5	955	U
52	5	956	U
52	5	958	G
52	5	964	A
52	5	966	A
52	5	970	A
52	5	971	A
52	5	972	A
52	5	973	A
52	5	978	A
52	5	984	A
52	5	987	U
52	5	988	G
52	5	1000	A

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Mol	Chain	Res	Type
52	5	1001	A
52	5	1003	G
52	5	1010	A
52	5	1011	A
52	5	1013	C
52	5	1014	A
52	5	1015	U
52	5	1016	A
52	5	1033	U
52	5	1037	A
52	5	1044	G
52	5	1045	C
52	5	1046	A
52	5	1047	U
52	5	1056	U
52	5	1057	C
52	5	1072	G
52	5	1074	U
52	5	1075	G
52	5	1076	U
52	5	1085	G
52	5	1086	U
52	5	1092	A
52	5	1101	A
52	5	1107	U
52	5	1109	U
52	5	1113	U
52	5	1119	C
52	5	1120	A
52	5	1121	U
52	5	1122	U
52	5	1123	G
52	5	1124	U
52	5	1128	G
52	5	1133	A
52	5	1134	C
52	5	1135	U
52	5	1141	U
52	5	1144	A
52	5	1154	A
52	5	1155	A
52	5	1158	A

Continued on next page...

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Mol	Chain	Res	Type
52	5	1159	A
52	5	1163	A
52	5	1171	A
52	5	1172	A
52	5	1173	A
52	5	1187	U
52	5	1188	A
52	5	1189	U
52	5	1199	U
52	5	1200	G
52	5	1201	C
52	5	1211	A
52	5	1215	U
52	5	1223	A
52	5	1225	A
52	5	1235	C
52	5	1243	A
52	5	1245	A
52	5	1254	A
52	5	1255	A
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	1291	C
52	5	1296	C
52	5	1297	G
52	5	1298	U
52	5	1312	G
52	5	1319	U
52	5	1320	A
52	5	1323	A
52	5	1333	C
52	5	1335	G
52	5	1337	U
52	5	1338	A
52	5	1339	U
52	5	1340	G

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Mol	Chain	Res	Type
52	5	1343	G
52	5	1344	C
52	5	1353	C
52	5	1354	G
52	5	1356	U
52	5	1359	C
52	5	1373	A
52	5	1374	C
52	5	1381	U
52	5	1394	G
52	5	1400	A
52	5	1404	U
52	5	1408	A
52	5	1415	G
52	5	1417	U
52	5	1421	A
52	5	1427	U
52	5	1429	G
52	5	1430	G
52	5	1457	G
52	5	1466	U
52	5	1467	A
52	5	1468	A
52	5	1471	C
52	5	1474	A
52	5	1480	G
52	5	1481	U
52	5	1490	G
52	5	1496	G
52	5	1504	G
52	5	1505	G
53	7	3	G
53	7	9	U
53	7	11	G
53	7	16	G
53	7	17	U
53	7	18	C
53	7	19	G
53	7	20	G
53	7	21	U
53	7	22	A
53	7	38	G

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Mol	Chain	Res	Type
53	7	42	C
53	7	44	U
53	7	48	U
53	7	49	C
53	7	53	A
53	7	54	G
53	7	57	C
53	7	58	G
53	7	59	A
53	7	60	U
53	7	63	U
53	7	71	A
53	7	72	C
53	7	76	C

All (38) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
50	3	309	A
50	3	410	G
50	3	425	U
50	3	500	U
50	3	513	A
50	3	688	U
50	3	881	A
50	3	996	A
50	3	1048	A
50	3	1082	A
50	3	1209	U
50	3	1255	G
50	3	1327	G
50	3	1583	G
50	3	1588	A
50	3	1820	U
50	3	1920	A
50	3	2180	U
50	3	2504	C
50	3	2506	C
50	3	2513	G
50	3	2604	U
50	3	2668	A
50	3	2764	U

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Mol	Chain	Res	Type
50	3	2897	G
51	4	10	C
51	4	50	C
51	4	54	U
51	4	59	A
51	4	70	G
52	5	294	A
52	5	417	U
52	5	448	A
52	5	1075	G
52	5	1123	G
52	5	1373	A
53	7	16	G
53	7	19	G

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

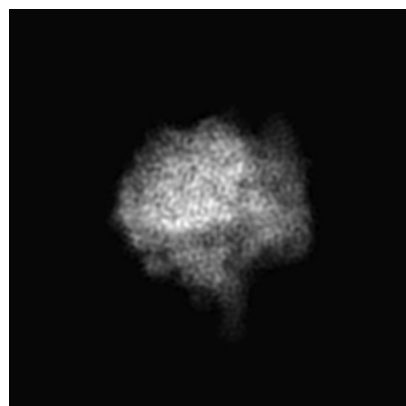
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-13273. These allow visual inspection of the internal detail of the map and identification of artifacts.

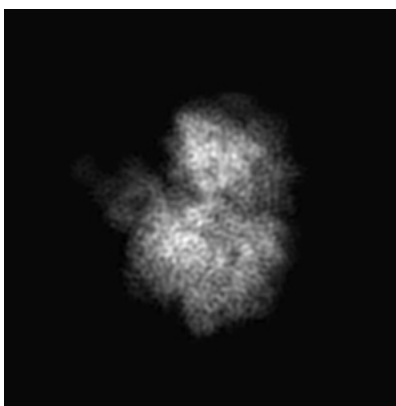
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

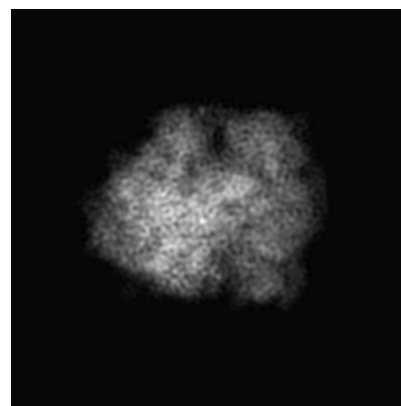
6.1.1 Primary map



X

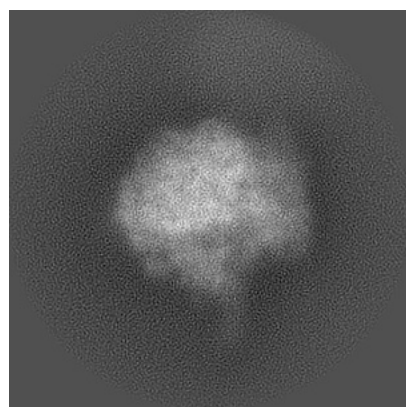


Y

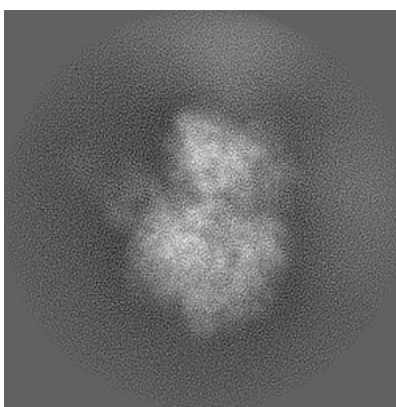


Z

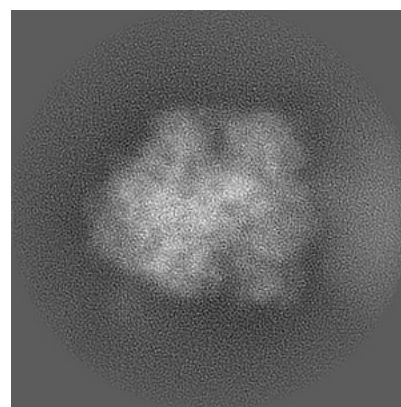
6.1.2 Raw map



X



Y

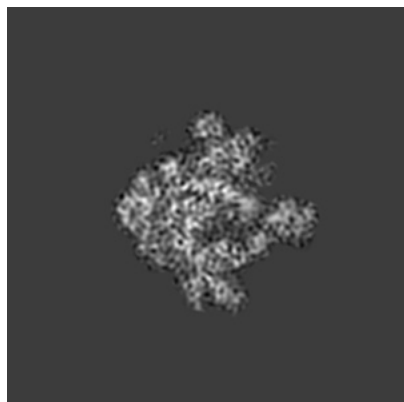


Z

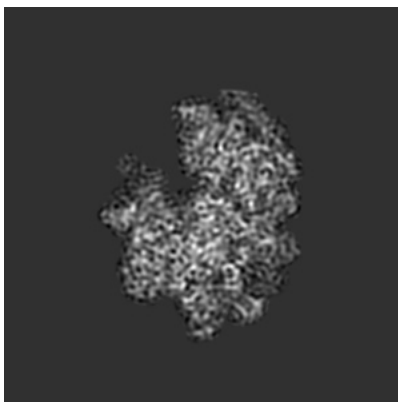
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

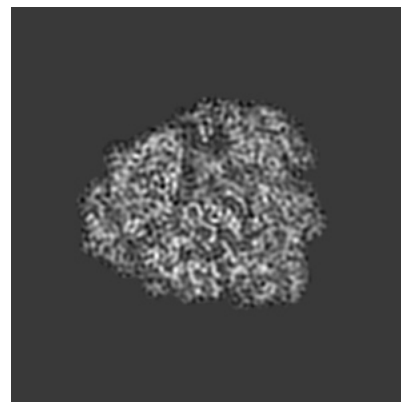
6.2.1 Primary map



X Index: 128

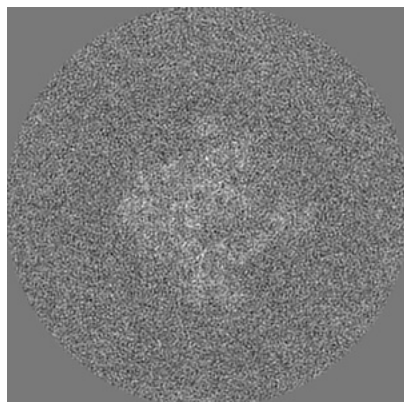


Y Index: 128

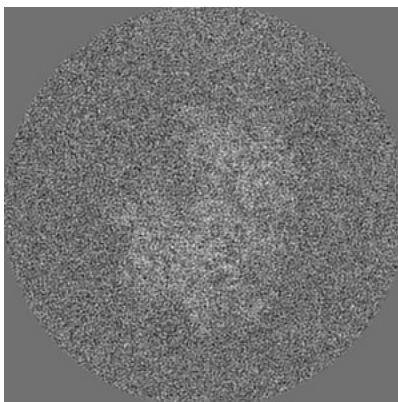


Z Index: 128

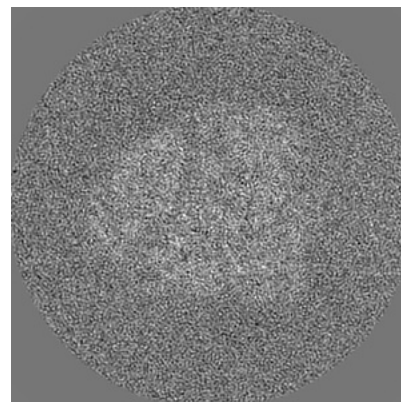
6.2.2 Raw map



X Index: 128



Y Index: 128

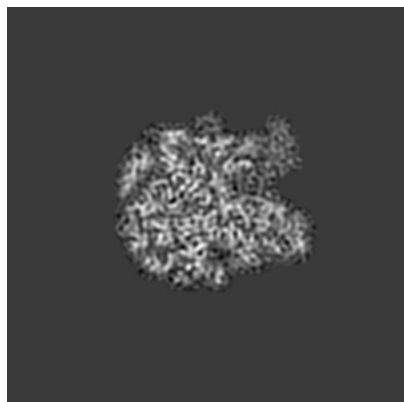


Z Index: 128

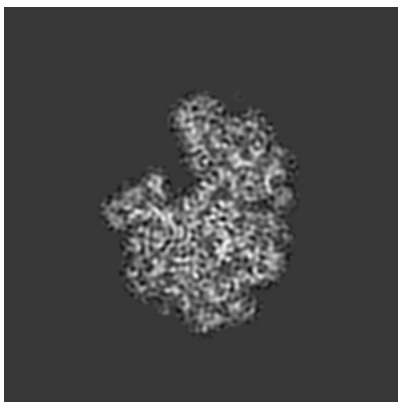
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

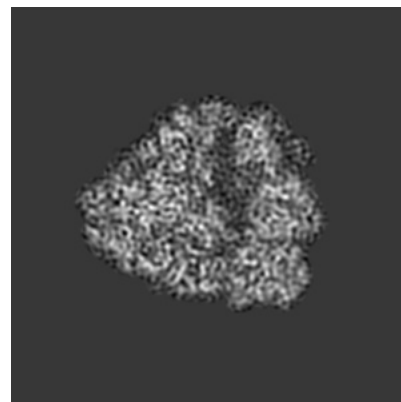
6.3.1 Primary map



X Index: 104

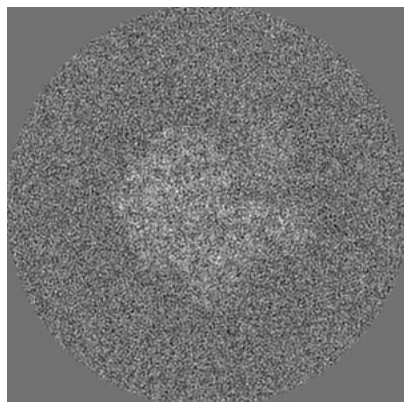


Y Index: 120

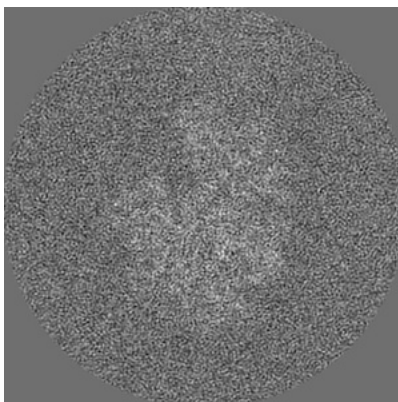


Z Index: 122

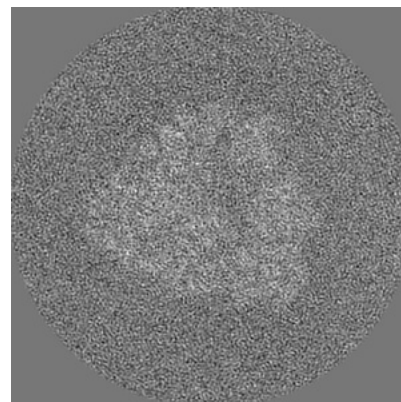
6.3.2 Raw map



X Index: 119



Y Index: 120

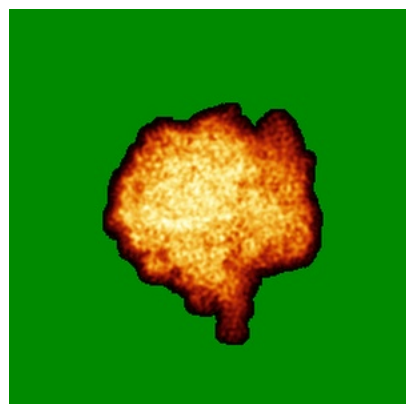


Z Index: 122

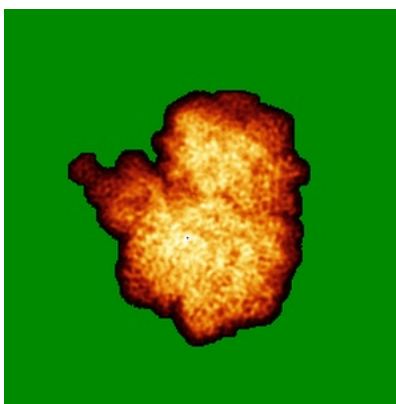
The images above show the largest variance slices of the map in three orthogonal directions.

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

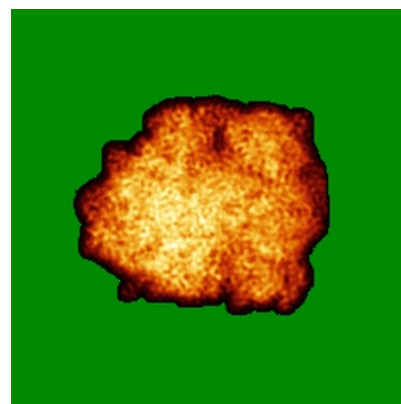
6.4.1 Primary map



X

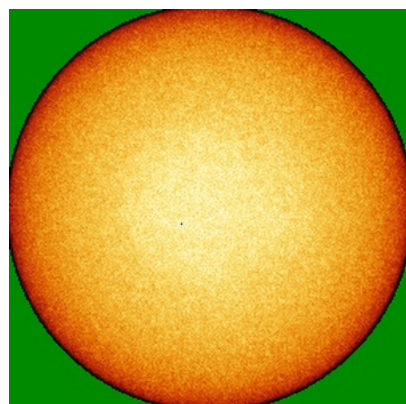


Y

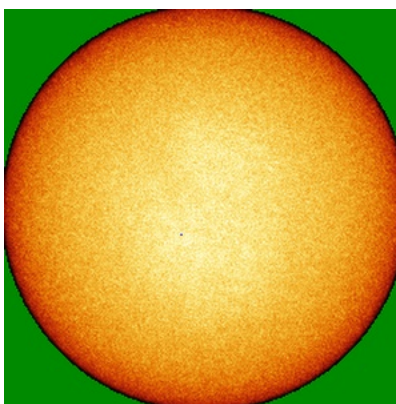


Z

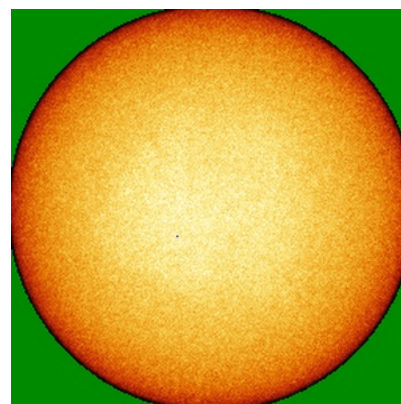
6.4.2 Raw map



X



Y

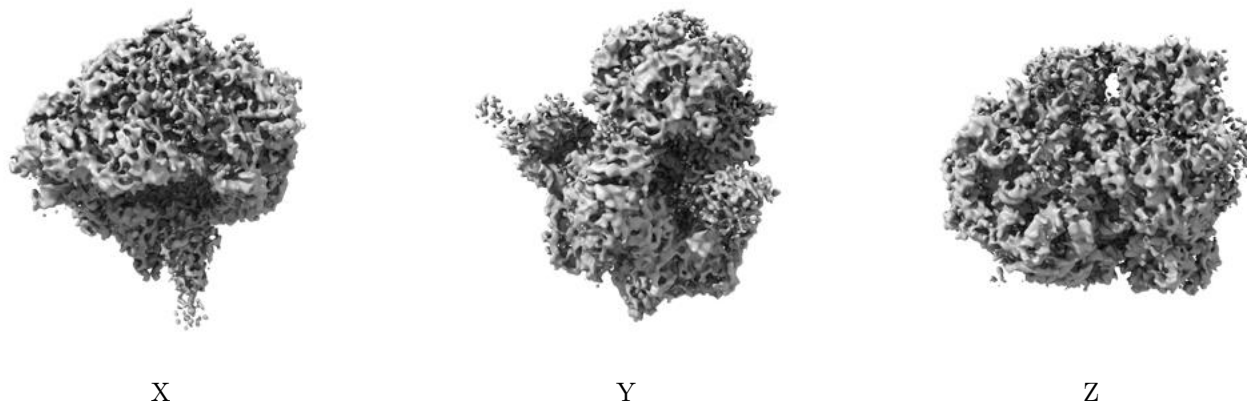


Z

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

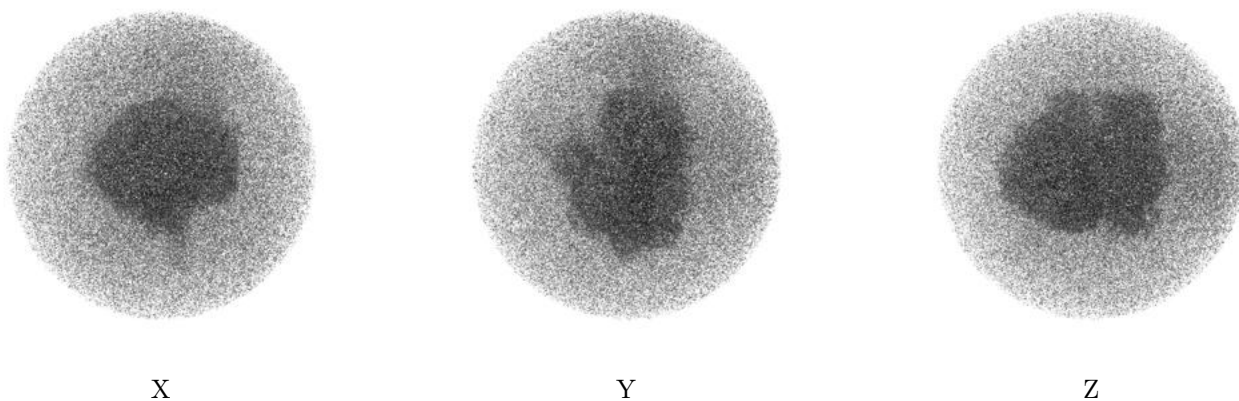
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



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

6.5.2 Raw map



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

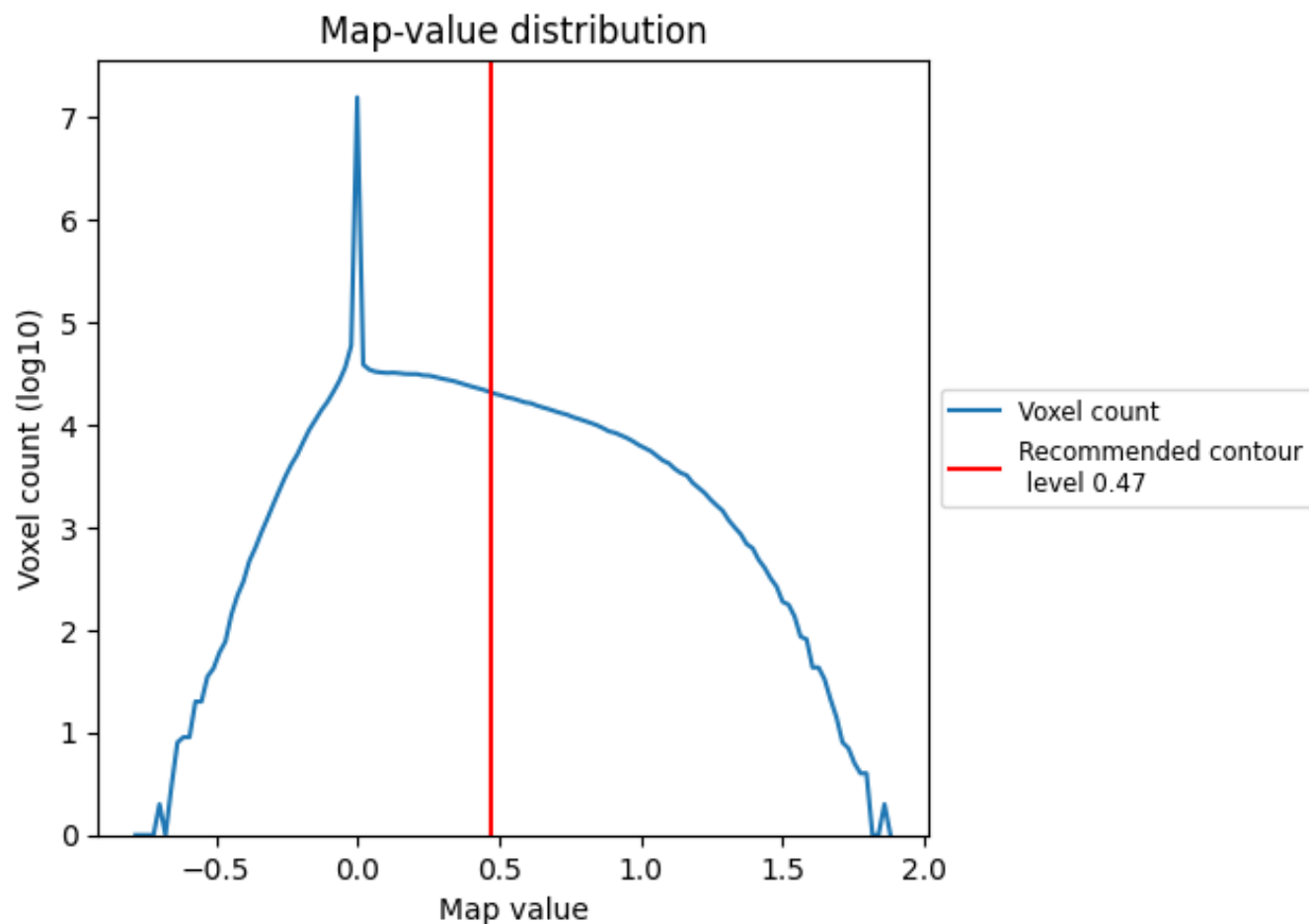
6.6 Mask visualisation [i](#)

This section was not generated. No masks/segmentation were deposited.

7 Map analysis [i](#)

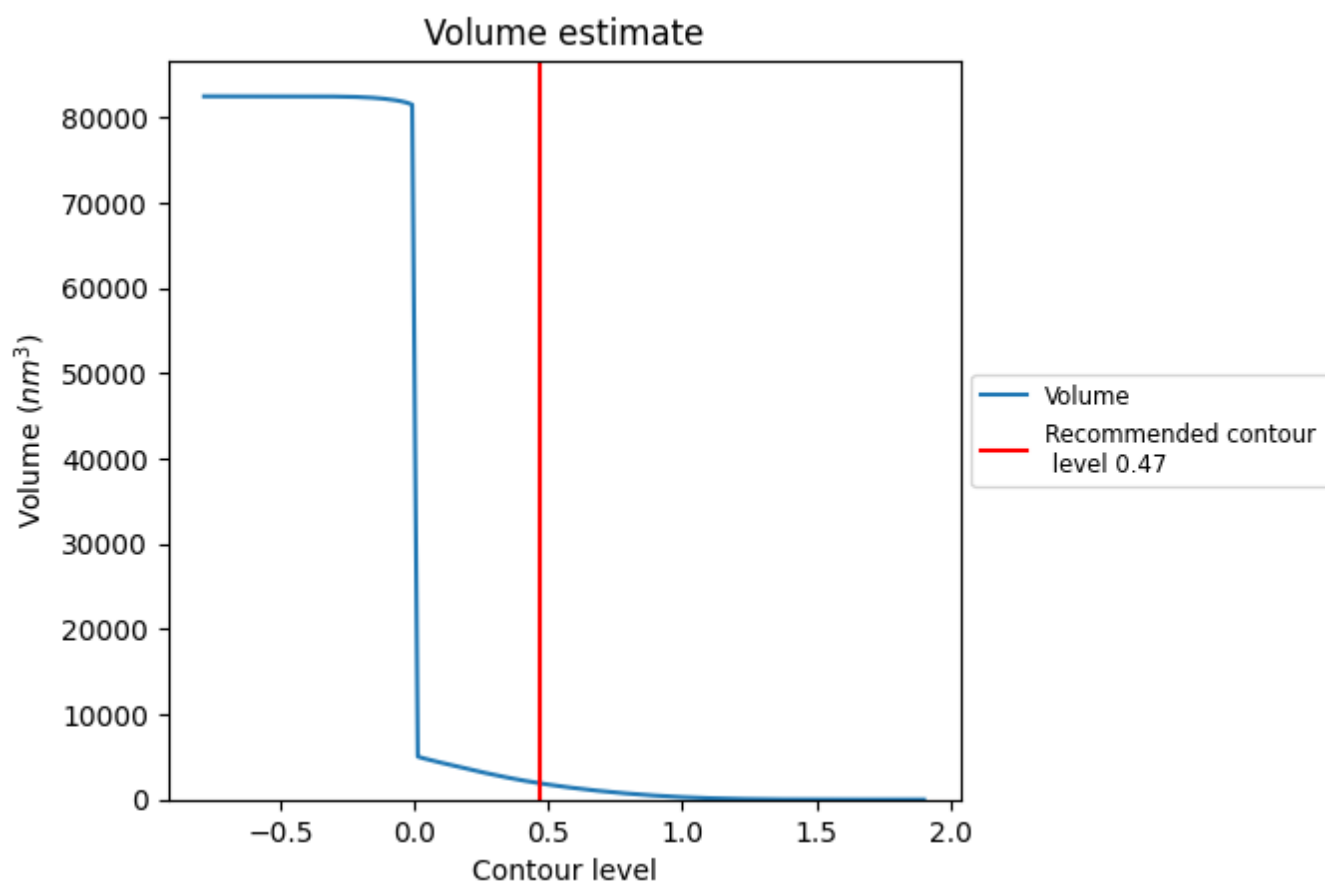
This section contains the results of statistical analysis of the map.

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.

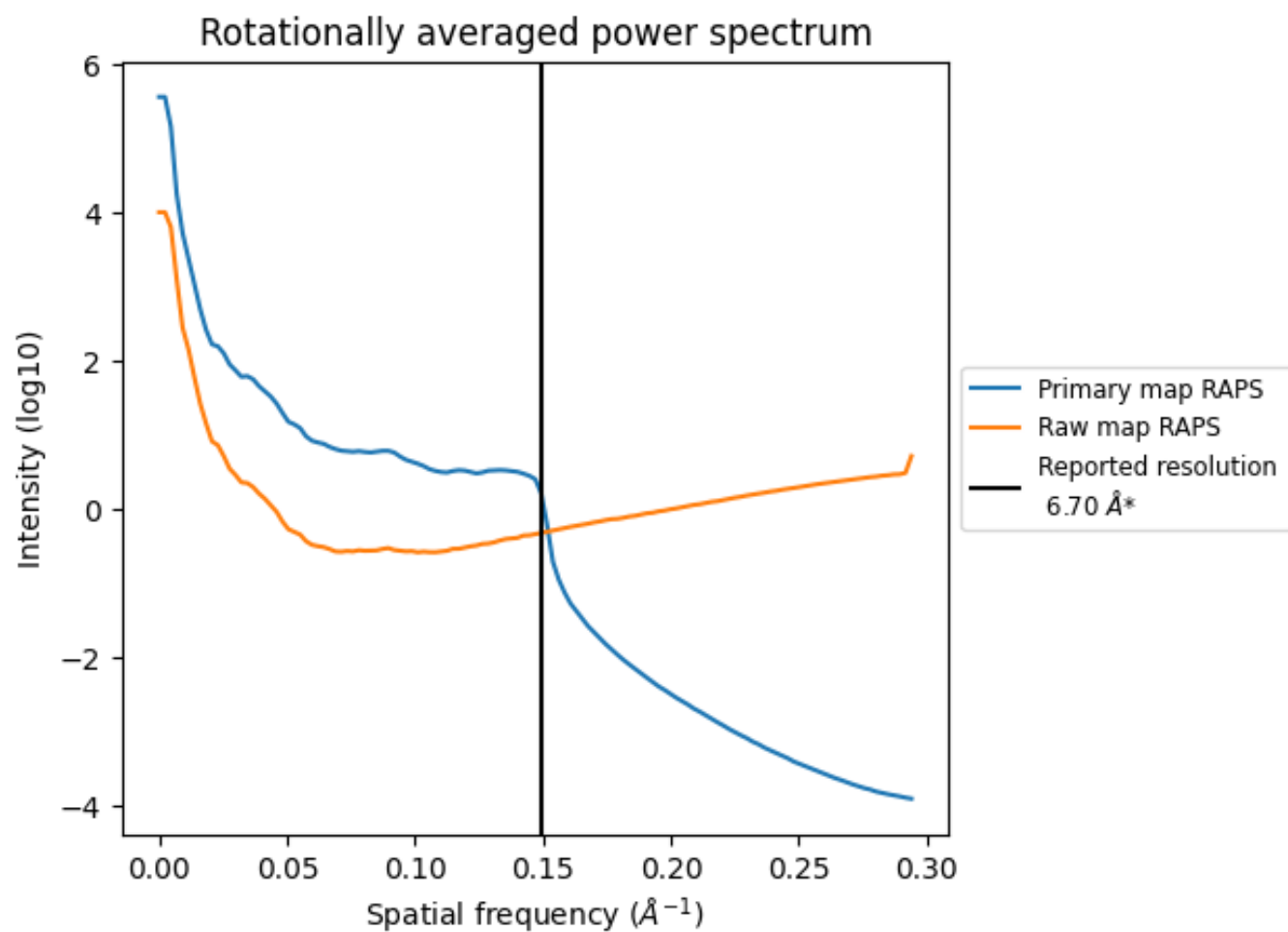
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1908 nm^3 ; this corresponds to an approximate mass of 1723 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 ⓘ

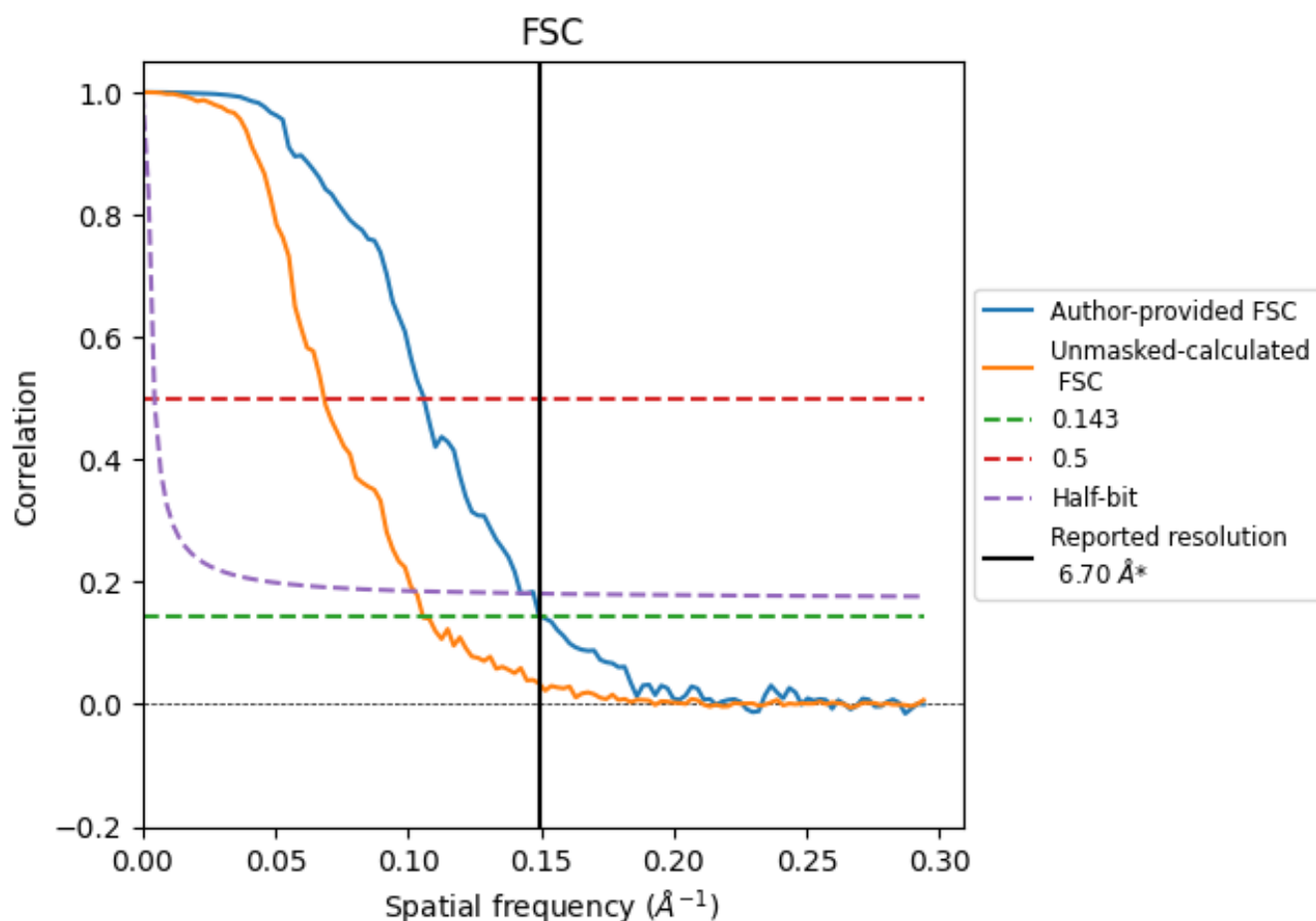


*Reported resolution corresponds to spatial frequency of 0.149 Å⁻¹

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 0.149 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

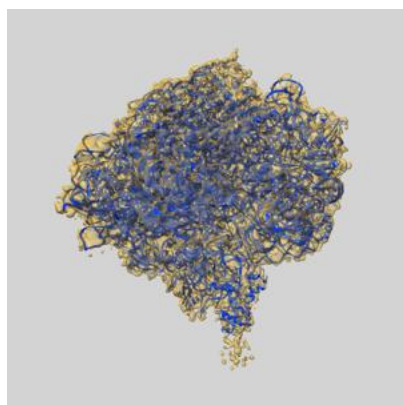
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	6.70	-	-
Author-provided FSC curve	6.65	9.44	7.02
Unmasked-calculated*	9.47	14.62	9.77

*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 9.47 differs from the reported value 6.7 by more than 10 %

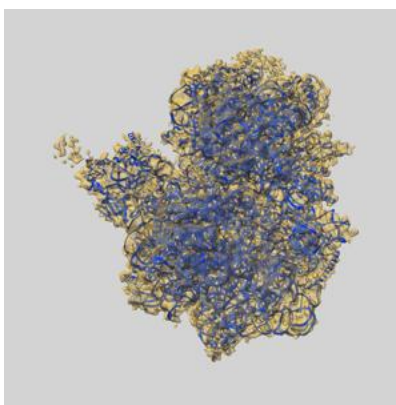
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-13273 and PDB model 7PAI. Per-residue inclusion information can be found in section [3](#) on page [13](#).

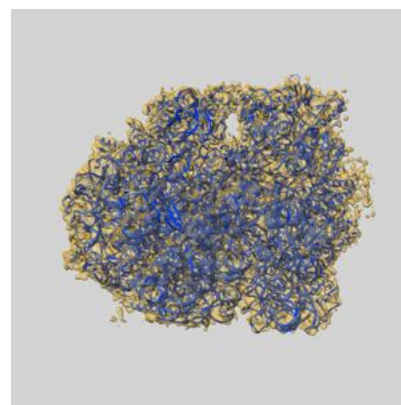
9.1 Map-model overlay [i](#)



X



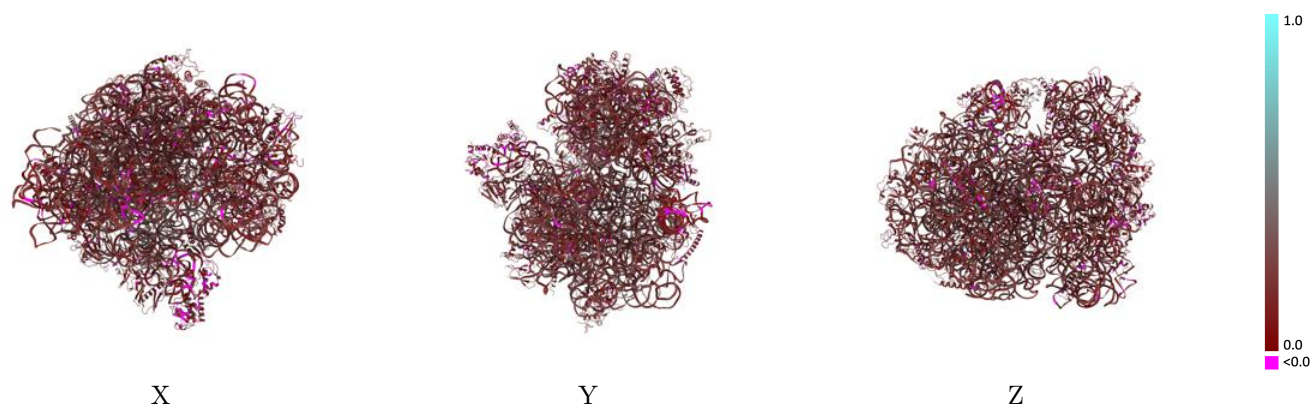
Y



Z

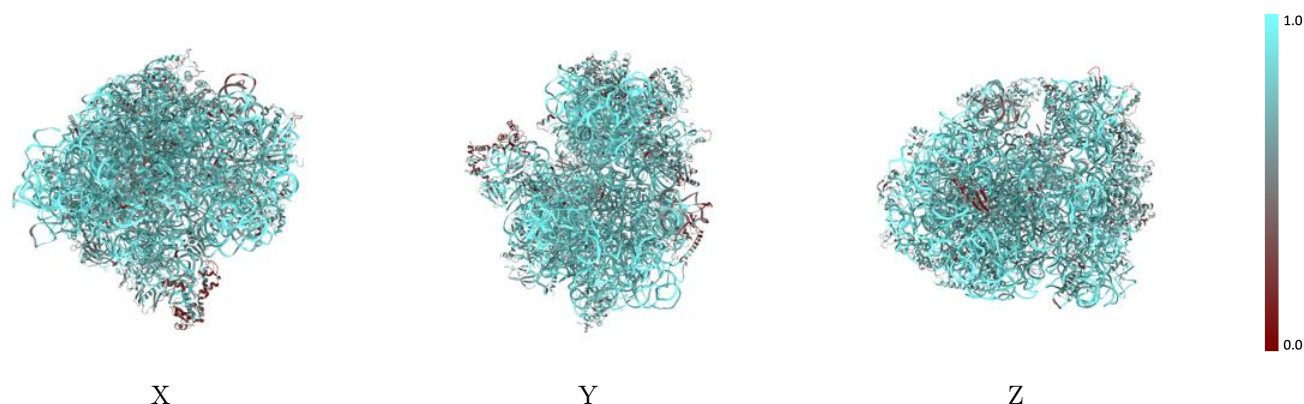
The images above show the 3D surface view of the map at the recommended contour level 0.47 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



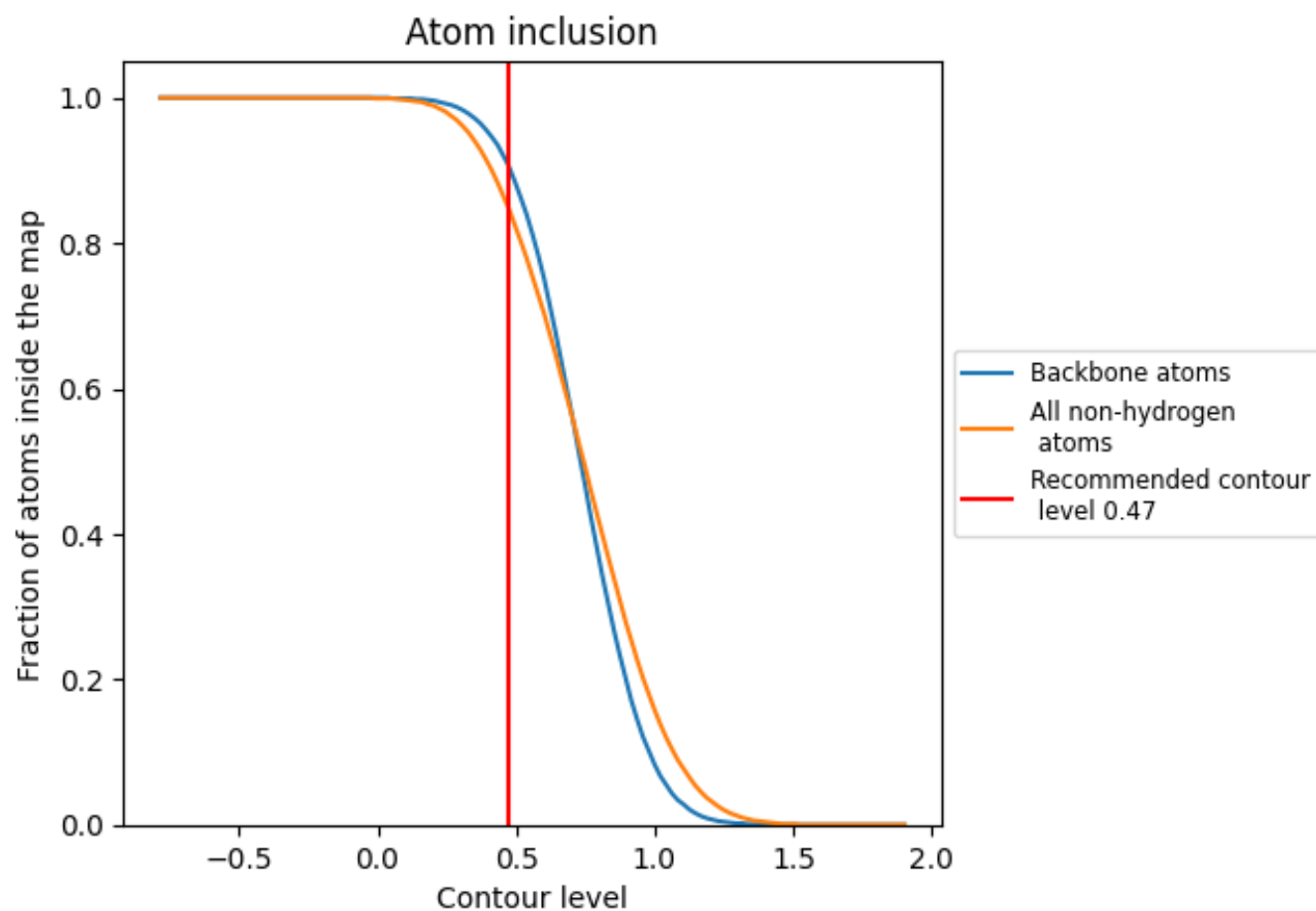
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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	 0.8510	 0.2110
0	 0.7840	 0.1880
1	 0.7770	 0.2000
2	 0.7630	 0.1700
3	 0.9360	 0.2240
4	 0.9290	 0.2270
5	 0.9370	 0.2140
7	 0.8860	 0.2070
A	 0.6430	 0.1980
B	 0.6500	 0.1880
C	 0.6510	 0.1760
D	 0.6610	 0.1840
E	 0.6170	 0.2090
F	 0.6550	 0.1850
G	 0.6700	 0.1770
H	 0.6790	 0.1690
I	 0.6460	 0.1810
J	 0.6890	 0.1930
K	 0.7160	 0.2000
L	 0.6850	 0.2000
M	 0.7360	 0.1620
N	 0.6840	 0.1980
O	 0.7280	 0.1710
P	 0.6590	 0.1890
Q	 0.6960	 0.1780
R	 0.6400	 0.1800
S	 0.7390	 0.1850
T	 0.6900	 0.1980
a	 0.7540	 0.1940
b	 0.7200	 0.1870
c	 0.7240	 0.2140
d	 0.6880	 0.1920
e	 0.6460	 0.2040
f	 0.3310	 0.1710
g	 0.4420	 0.1380



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Chain	Atom inclusion	Q-score
h	 0.3080	 0.1460
i	 0.7390	 0.1980
j	 0.6880	 0.2040
k	 0.7240	 0.2010
l	 0.7200	 0.2110
m	 0.7310	 0.2010
n	 0.7220	 0.1960
o	 0.6710	 0.1970
p	 0.7530	 0.1730
q	 0.6820	 0.1940
r	 0.7460	 0.1950
s	 0.7550	 0.2250
t	 0.6210	 0.1950
u	 0.7480	 0.1990
v	 0.7480	 0.1930
w	 0.6840	 0.1920
x	 0.6710	 0.2290
y	 0.7560	 0.2130
z	 0.7930	 0.2150