



## wwPDB EM Map/Model Validation Report ⓘ

Apr 10, 2016 – 03:13 PM BST

PDB ID : 3JCE  
EMDB ID: : EMD-6550  
Title : Structure of Escherichia coli EF4 in pretranslocational ribosomes (Pre EF4)  
Authors : Zhang, D.; Yan, K.; Liu, G.; Song, G.; Luo, J.; Shi, Y.; Cheng, E.; Wu, S.;  
Jiang, T.; Low, J.; Gao, N.; Qin, Y.  
Deposited on : 2015-12-01  
Resolution : 3.20 Å(reported)  
Based on PDB ID : 4V9O

This is a wwPDB EM Map/Model Validation Report for a publicly released PDB/EMDB entry.  
For rigid body fitted models, validation errors reported here could stem from errors in the original structure(s) used in the fitting.  
We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)  
A user guide is available at  
<http://wwpdb.org/validation/2016/EMValidationReportHelp>

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MolProbity : 4.02b-467  
Mogul : 1.7.1 (RC1), CSD as537be (2016)  
Percentile statistics : 20151230.v01 (using entries in the PDB archive December 30th 2015)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et. al. (1996)  
Validation Pipeline (wwPDB-VP) : trunk27241

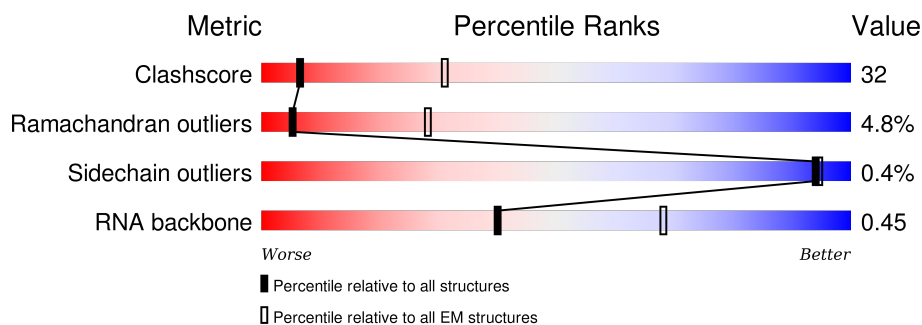
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 3.20 Å.

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





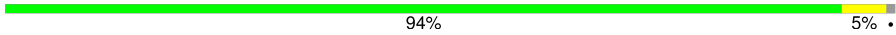


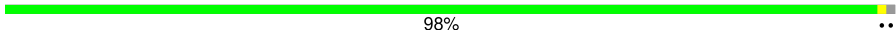
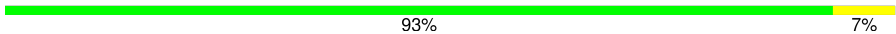



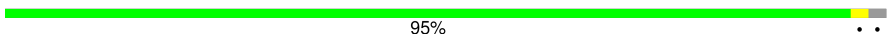














Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	114402	924
Ramachandran outliers	111179	726
Sidechain outliers	111093	686
RNA backbone	3027	244

The table below summarises the geometric issues observed across the polymeric chains. The red, orange, yellow and green segments on the bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria. 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  $\leq 5\%$ .

Mol	Chain	Length	Quality of chain
1	a	1533	80% 20%
2	c	233	86% • 12%
3	d	206	96% •
4	e	167	87% • 10%
5	f	135	70% 5% 24%
6	g	179	82% • 16%
7	h	130	98% ••
8	i	130	95% ••


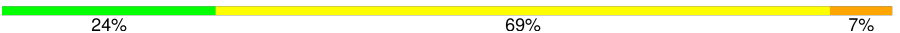
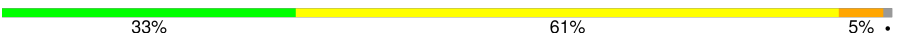


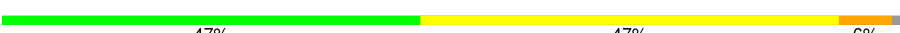
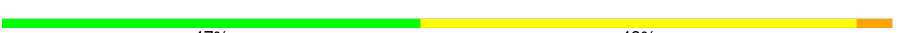




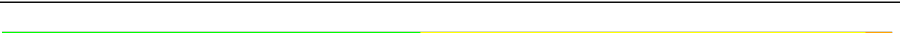





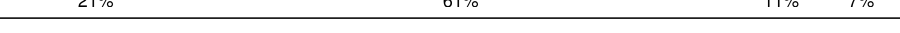







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Mol	Chain	Length	Quality of chain
9	j	103	
10	k	129	
11	l	124	
12	m	118	
13	n	101	
14	o	89	
15	p	82	
16	q	84	
17	r	75	
18	s	92	
19	t	87	
20	u	71	
21	b	241	
22	0	57	
23	1	55	
24	2	46	
25	3	65	
26	4	38	
27	5	234	
28	A	2904	
29	B	120	
30	C	273	
31	D	209	
32	E	201	
33	F	179	

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Mol	Chain	Length	Quality of chain
34	G	177	
35	H	149	
36	I	142	
37	J	142	
38	K	123	
39	L	144	
40	M	136	
41	N	127	
42	O	117	
43	P	115	
44	Q	118	
45	R	103	
46	S	110	
47	T	100	
48	U	104	
49	V	94	
50	W	85	
51	X	78	
52	Y	63	
53	Z	59	
54	6	76	
55	7	15	
56	8	77	
57	x	599	
58	9	76	

## 2 Entry composition [i](#)

There are 60 unique types of molecules in this entry. The entry contains 154017 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 RNA chain called EF4.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	a	1533	Total	C	N	O	P	0	0
			32895	14671	6036	10655	1533		

- Molecule 2 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	c	206	Total	C	N	O	S	0	0
			1624	1028	305	288	3		

- Molecule 3 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	d	205	Total	C	N	O	S	0	0
			1643	1026	315	298	4		

- Molecule 4 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	e	150	Total	C	N	O	S	0	0
			1105	687	211	201	6		

- Molecule 5 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	f	102	Total	C	N	O	S	0	0
			832	525	150	150	7		

- Molecule 6 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	g	151	Total	C	N	O	S	0	0
			1181	735	227	215	4		

- Molecule 7 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	h	129	Total	C	N	O	S	0	0
			979	616	173	184	6		

- Molecule 8 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	i	127	Total	C	N	O	S	0	0
			1022	634	206	179	3		

- Molecule 9 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	j	98	Total	C	N	O	S	0	0
			786	493	150	142	1		

- Molecule 10 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	k	117	Total	C	N	O	S	0	0
			877	540	174	160	3		

- Molecule 11 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	l	123	Total	C	N	O	S	0	0
			955	590	196	165	4		

- Molecule 12 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	m	114	Total	C	N	O	S	0	0
			883	546	178	156	3		

- Molecule 13 is a protein called 30S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	n	100	Total	C	N	O	S	0	0
			805	499	164	139	3		

- Molecule 14 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	o	88	Total	C	N	O	S	0	0
			714	439	144	130	1		

- Molecule 15 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	p	82	Total	C	N	O	S	0	0
			649	406	128	114	1		

- Molecule 16 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	q	80	Total	C	N	O	S	0	0
			648	411	121	113	3		

- Molecule 17 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms				AltConf	Trace
17	r	55	Total	C	N	O	0	0
			455	288	86	81		

- Molecule 18 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	s	79	Total	C	N	O	S	0	0
			637	408	120	107	2		

- Molecule 19 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	t	85	Total	C	N	O	S	0	0
			665	411	137	114	3		

- Molecule 20 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	u	51	Total	C	N	O	S	0	0
			425	265	86	73	1		

- Molecule 21 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	b	218	Total	C	N	O	S	0	0
			1704	1081	305	311	7		

- Molecule 22 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	0	56	Total	C	N	O	S	0	0
			444	269	94	80	1		

- Molecule 23 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms				AltConf	Trace
23	1	50	Total	C	N	O	0	0
			409	263	75	71		

- Molecule 24 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	2	46	Total	C	N	O	S	0	0
			377	228	90	57	2		

- Molecule 25 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	3	64	Total	C	N	O	S	0	0
			504	323	105	74	2		

- Molecule 26 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	4	38	Total	C	N	O	S	0	0
			302	185	65	48	4		

- Molecule 27 is a protein called 50S ribosomal protein L1.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	5	234	Total	C	N	O	S	0	0
			1733	1081	315	330	7		

- Molecule 28 is a RNA chain called RNA (2903-MER).



Mol	Chain	Residues	Atoms					AltConf	Trace
28	A	2903	Total	C	N	O	P	0	0
			62320	27801	11467	20149	2903		

- Molecule 29 is a RNA chain called RNA (118-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
29	B	118	Total	C	N	O	P	0	0
			2529	1126	464	821	118		

- Molecule 30 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	C	270	Total	C	N	O	S	0	0
			2076	1285	422	362	7		

- Molecule 31 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	D	209	Total	C	N	O	S	0	0
			1565	979	288	294	4		

- Molecule 32 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	E	201	Total	C	N	O	S	0	0
			1552	974	283	290	5		

- Molecule 33 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	F	177	Total	C	N	O	S	0	0
			1410	899	249	256	6		

- Molecule 34 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	G	176	Total	C	N	O	S	0	0
			1323	832	243	246	2		

- Molecule 35 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	H	149	Total	C	N	O	S	0	0
			1111	699	197	214	1		

- Molecule 36 is a protein called 50S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	I	141	Total	C	N	O	S	0	0
			1032	651	179	196	6		

- Molecule 37 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	J	142	Total	C	N	O	S	0	0
			1129	714	212	199	4		

- Molecule 38 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	K	122	Total	C	N	O	S	0	0
			938	587	180	165	6		

- Molecule 39 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	L	143	Total	C	N	O	S	0	0
			1045	649	206	189	1		

- Molecule 40 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	M	136	Total	C	N	O	S	0	0
			1074	686	205	177	6		

- Molecule 41 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	N	120	Total	C	N	O	S	0	0
			960	593	196	166	5		

- Molecule 42 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms				AltConf	Trace
42	O	116	Total	C	N	O	0	0
			892	552	178	162		

- Molecule 43 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	P	114	Total	C	N	O	S	0	0
			917	574	179	163	1		

- Molecule 44 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms				AltConf	Trace
44	Q	117	Total	C	N	O	0	0
			947	604	192	151		

- Molecule 45 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	R	103	Total	C	N	O	S	0	0
			816	516	153	145	2		

- Molecule 46 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	S	110	Total	C	N	O	S	0	0
			857	532	166	156	3		

- Molecule 47 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	T	93	Total	C	N	O	S	0	0
			738	466	139	131	2		

- Molecule 48 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms				AltConf	Trace
48	U	102	Total	C	N	O	0	0
			779	492	146	141		

- Molecule 49 is a protein called 50S ribosomal protein L25.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	V	94	Total	C	N	O	S	0	0
			753	479	137	134	3		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
50	W	79	Total	C	N	O	S	0	0
			596	367	120	108	1		

- Molecule 51 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	X	77	Total	C	N	O	S	0	0
			625	388	129	106	2		

- Molecule 52 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	Y	63	Total	C	N	O	S	0	0
			509	313	99	95	2		

- Molecule 53 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	Z	58	Total	C	N	O	S	0	0
			449	281	87	79	2		

- Molecule 54 is a RNA chain called PHOSPHOAMINOPHOSPHONIC ACID-GUANYLATE ESTER.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	6	76	Total	C	N	O	P	0	0
			1633	732	291	534	76		

- Molecule 55 is a RNA chain called RNA (5'-R(P\*CP\*AP\*UP\*AP\*UP\*GP\*UP\*UP\*CP\*A P\*AP\*AP\*GP\*AP\*A)-3').

Mol	Chain	Residues	Atoms					AltConf	Trace
55	7	15	Total	C	N	O	P	0	0
			320	144	59	102	15		

- Molecule 56 is a RNA chain called RNA (77-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
56	8	77	Total	C	N	O	P	0	0
			1640	732	297	535	76		

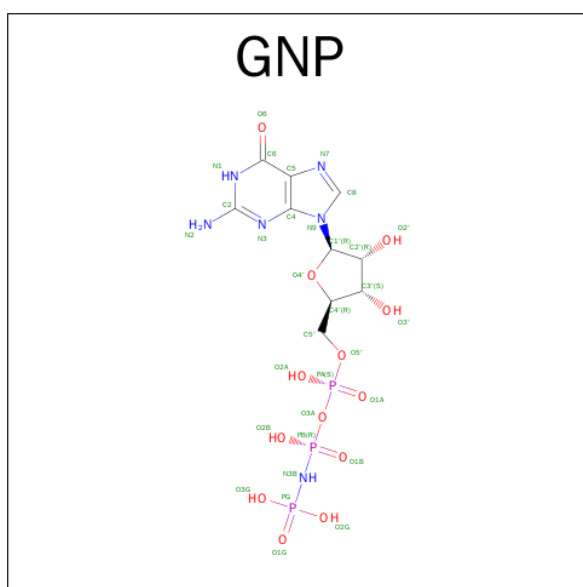
- Molecule 57 is a protein called Elongation factor 4.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	x	586	Total	C	N	O	S	0	0
			4573	2885	792	875	21		

- Molecule 58 is a RNA chain called RNA (76-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
58	9	76	Total	C	N	O	P	0	0
			1623	723	290	534	76		

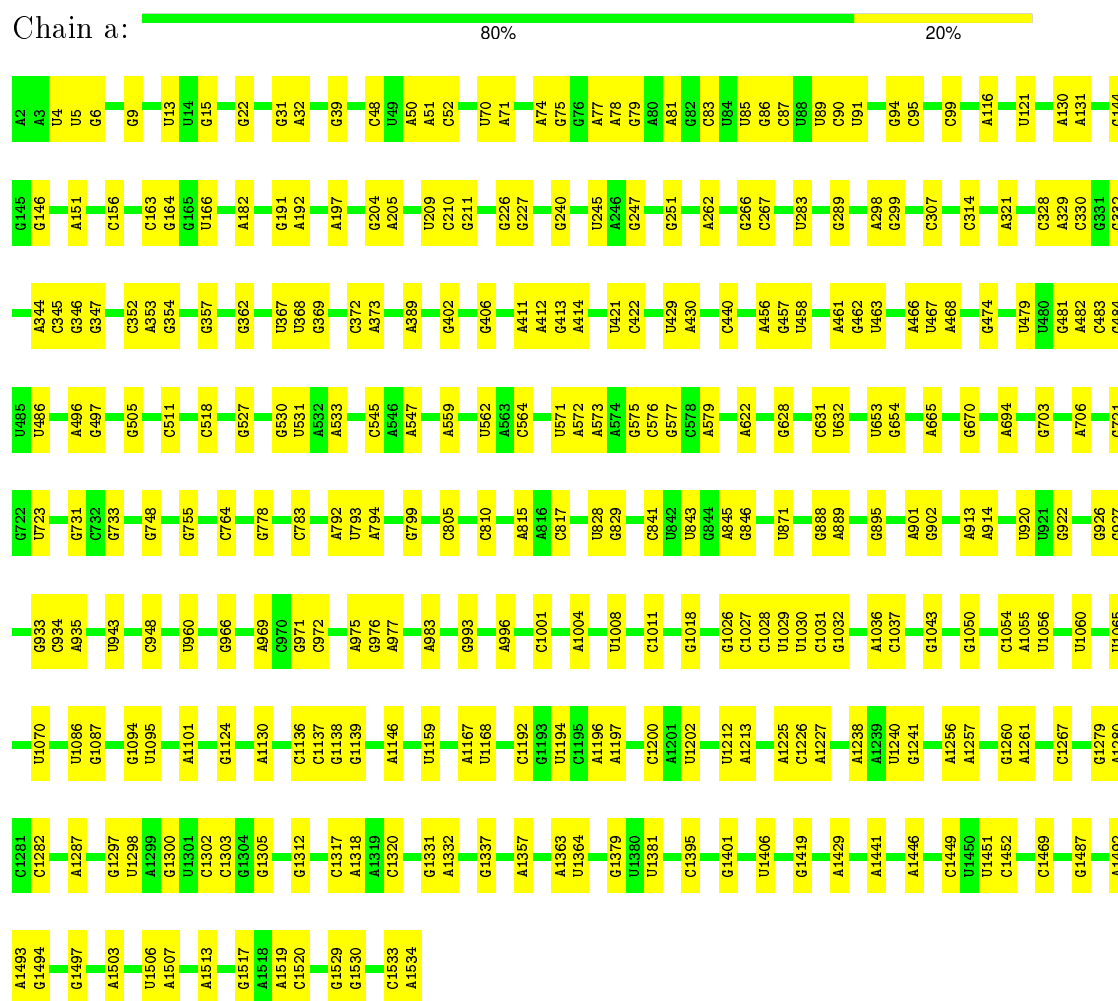
- Molecule 59 is PHOSPHOAMINOPHOSPHONIC ACID-GUANYLATE ESTER (three-letter code: GNP) (formula:  $C_{10}H_{17}N_6O_{13}P_3$ ).



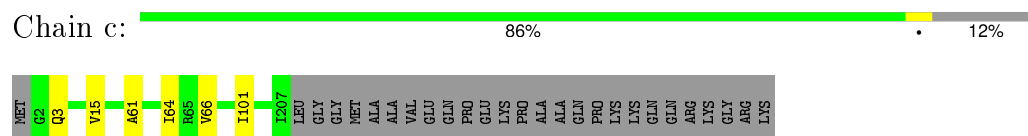
### 3 Residue-property plots

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of errors displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. 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. 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: EF4



- Molecule 2: 30S ribosomal protein S3




- Molecule 3: 30S ribosomal protein S4

Chain d:  96%



- Molecule 4: 30S ribosomal protein S5

Chain e:  87% 10%




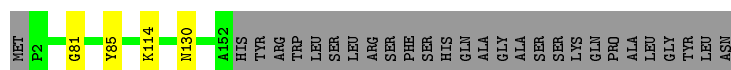
- Molecule 5: 30S ribosomal protein S6

Chain f:  70% 5% 24%



- Molecule 6: 30S ribosomal protein S7

Chain g:  82% 16%



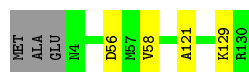
- Molecule 7: 30S ribosomal protein S8

Chain h:  98%




- Molecule 8: 30S ribosomal protein S9

Chain i:  95%




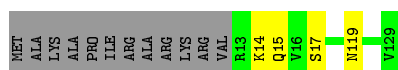
- Molecule 9: 30S ribosomal protein S10

Chain j:  86% 9% 5%



- Molecule 10: 30S ribosomal protein S11

Chain k:  88% 9%



- Molecule 11: 30S ribosomal protein S12

Chain l: 94% 5%



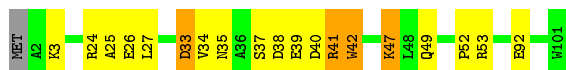
- Molecule 12: 30S ribosomal protein S13

Chain m: 92%



- Molecule 13: 30S ribosomal protein S14

Chain n: 80% 15%



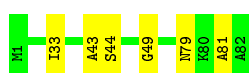
- Molecule 14: 30S ribosomal protein S15

Chain o: 98%



- Molecule 15: 30S ribosomal protein S16

Chain p: 93% 7%



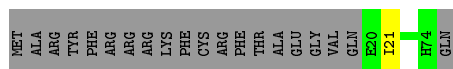
- Molecule 16: 30S ribosomal protein S17

Chain q: 93% 5%




- Molecule 17: 30S ribosomal protein S18

Chain r: 72% 27%





- Molecule 18: 30S ribosomal protein S19

Chain s:  82% 14%



- Molecule 19: 30S ribosomal protein S20

Chain t:  95%




- Molecule 20: 30S ribosomal protein S21

Chain u:  66% 6% 28%



- Molecule 21: 30S ribosomal protein S2

Chain b:  88% 10%

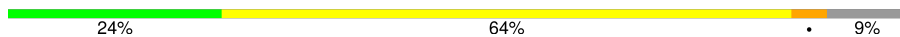


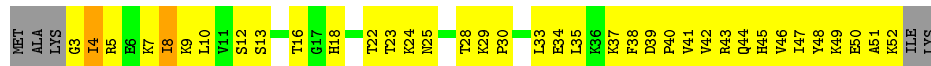
- Molecule 22: 50S ribosomal protein L32

Chain 0:  51% 46%



- Molecule 23: 50S ribosomal protein L33

Chain 1:  24% 64% 9%



- Molecule 24: 50S ribosomal protein L34

Chain 2:  70% 30%

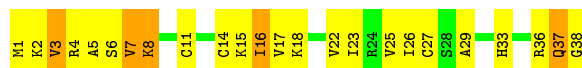


- Molecule 25: 50S ribosomal protein L35

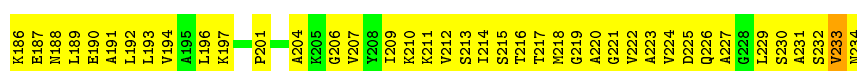
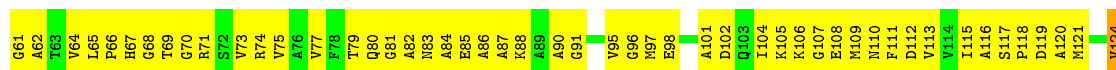
Chain 3:  51% 45%



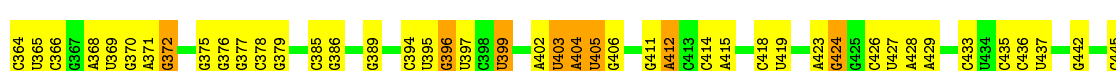
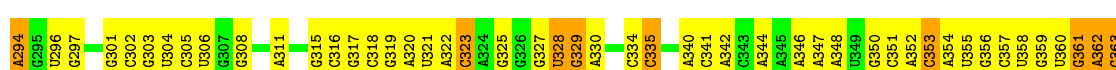
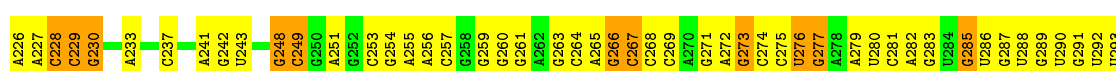
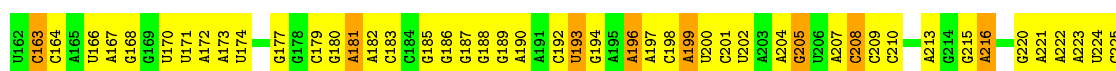
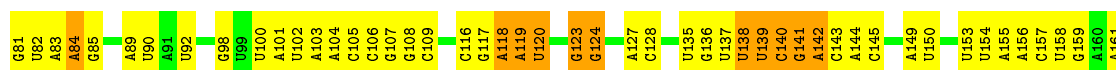
- Molecule 26: 50S ribosomal protein L36



- Molecule 27: 50S ribosomal protein L1



- Molecule 28: RNA (2903-MER)



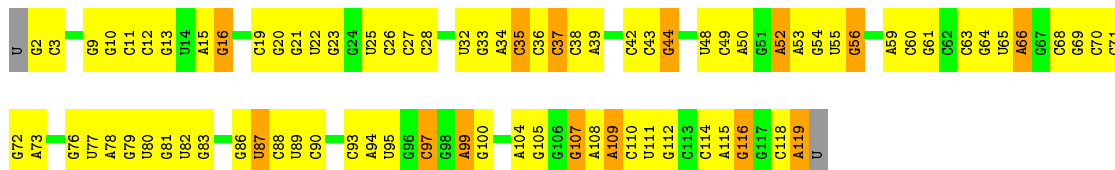
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G1622	A1551	G1491	U1409	C1319	G1236	G1160	U1094	A1028	C961	C888	A819	G745	U591	A527
A1626	A1553	G1492	U1411	C1320	A1095	G1162	A1096	C1030	G962	C890	A821	U746	U594	A528
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U1629	U1495	A1415	C1414	G1324	C1243	U1168	G1099	U1033	A972	C893	A826	A749	G597	A532
A1630	U1496	G1416	U1325	A1244	G1245	C1169	U1101	G1036	A973	U894	U827	A750	U598	G533
G1631	U1497	C1417	U1326	A1327	G1246	C1170	G1102	G1037	G974	A896	U828	A751	A599	U534
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A1652	A1509	A1431	G1271	G1192	G1271	G1192	G1113	A1050	C985	U906	U843	U768	A614	U545
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C1670	G1473	A1385	G1297	G1212	A1297	G1212	U1141	G1071	U1004	U931	U864	A792	G629	C558
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U1679	U1480	U1398	C1306	G1227	A1306	G1227	U1141	C1076	A1009	C944	U871	C797	U641	U563
U1680	U1481	U1401	G1309	G1228	A1309	G1228	U1142	C1077	A1010	A945	U872	A800	U642	A571
G1694	U1482	U1402	G1309	G1229	A1309	G1229	A1143	U1078	U1011	U946	C873	A801	A643	U572
G1695	U1483	A1403	U1313	G1230	A1313	G1230	G1140	C1079	U1012	A947	C874	A802	G647	U573
G1696	U1484	U1404	U1314	G1231	A1314	G1231	U1141	A1080	U1013	U948	G875	U803	G648	A574
A1700	U1485	U1405	C1315	G1232	A1315	G1232	A1147	U1081	A1014	C949	C876	A804	G649	A575
	U1486	U1406	U1316	G1233	A1316	G1233	U1148	U1082	G1017	A949	C877	A805	G728	G579
	U1487	U1407	U1317	G1234	A1317	G1234	U1149	U1083	U1018	U950	A878	G806	G729	U580
							U1150	A1084	U1019	C946	A879	U807	C731	
							U1151	A1085	U1020	C947	G808	C732	U651	G583
							U1152	A1086	A1021	C948	G809	G733	U652	G584
							U1153	A1087	G1022	C949	U811	C734	U653	G585
							U1154	A1088	G1023	C950	U812	C735	U654	G586
							U1155	A1089	G1024	C951	U813	C736	U655	G587
							U1156	A1090	G1025	C952	U814	C737	U656	G588
							U1157	G1091					U658	

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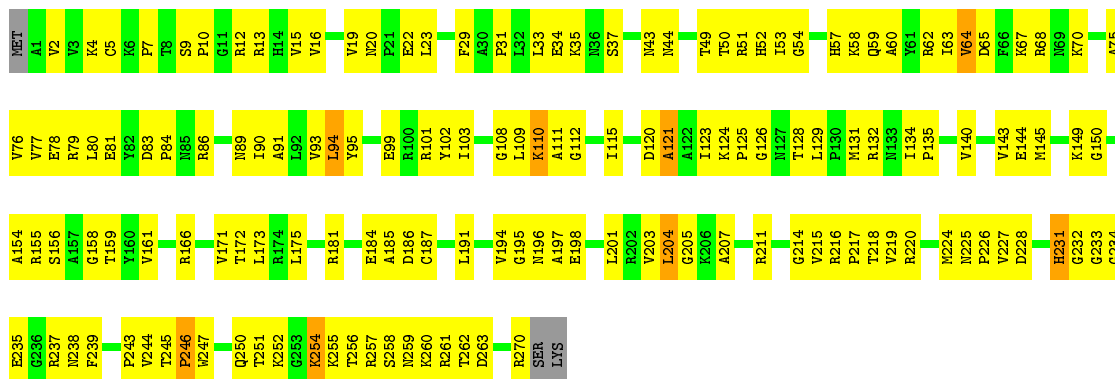
• Molecule 29: RNA (118-MER)

Chain B: 30% 57% 12%



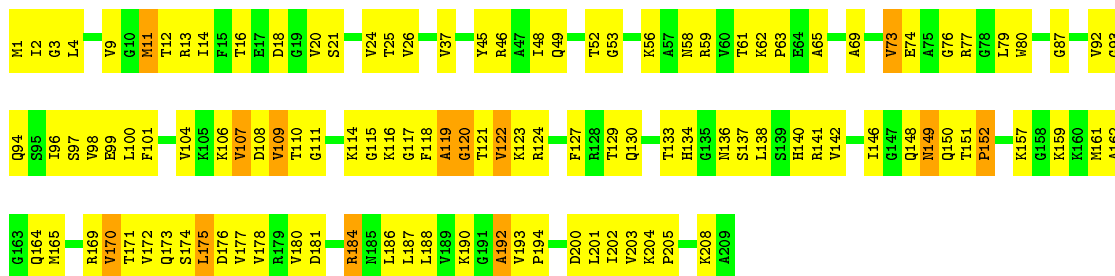
• Molecule 30: 50S ribosomal protein L2

Chain C: 44% 52%



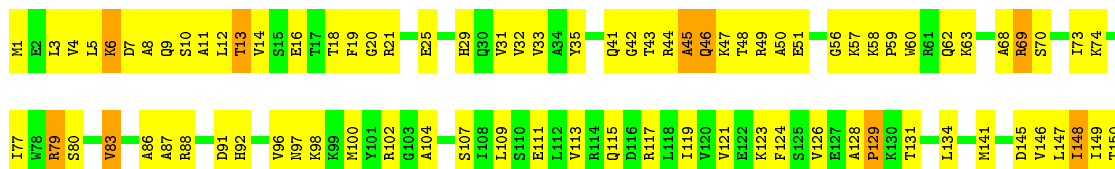
• Molecule 31: 50S ribosomal protein L3

Chain D: 45% 49% 6%



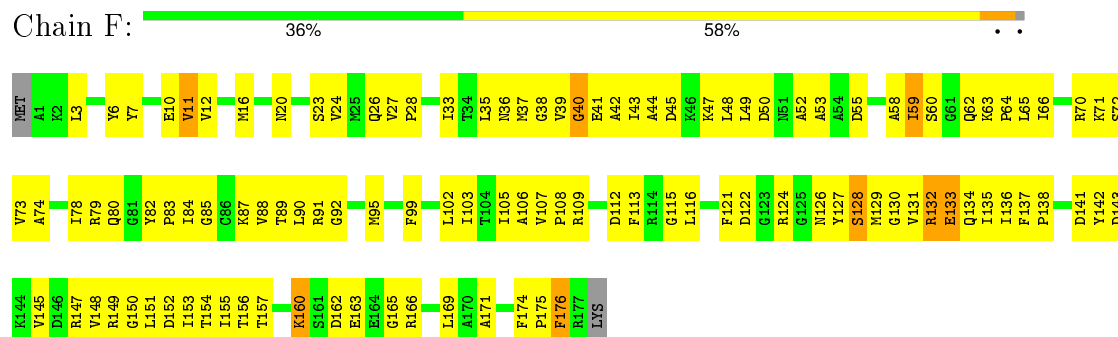
• Molecule 32: 50S ribosomal protein L4

Chain E: 43% 52% 5%

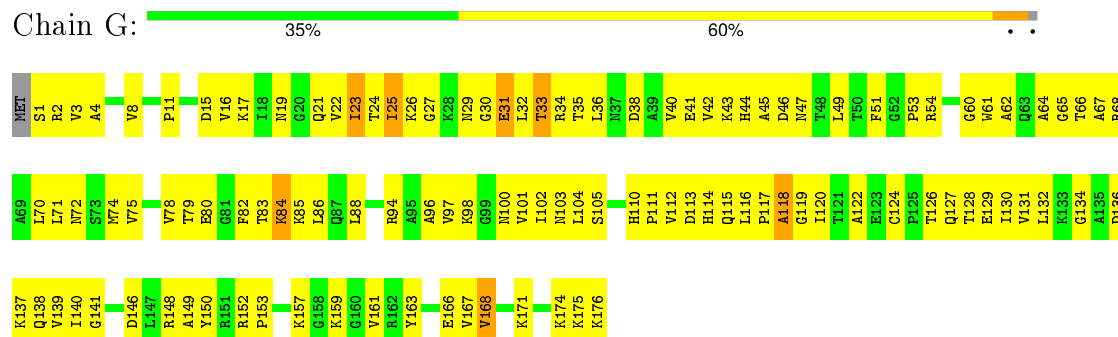




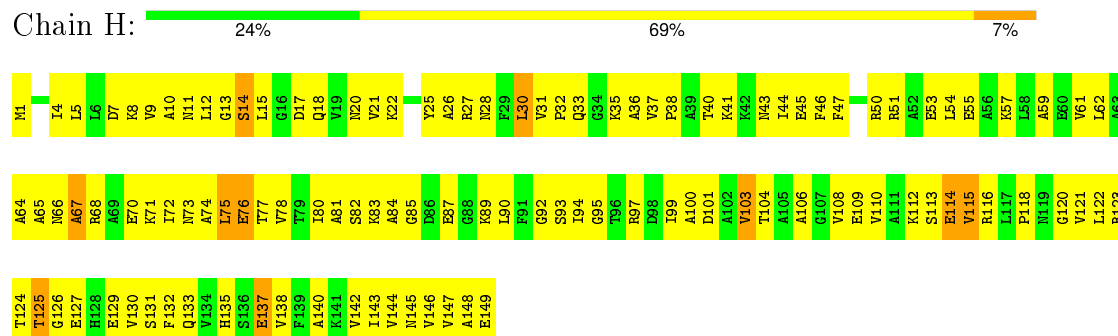
• Molecule 33: 50S ribosomal protein L5



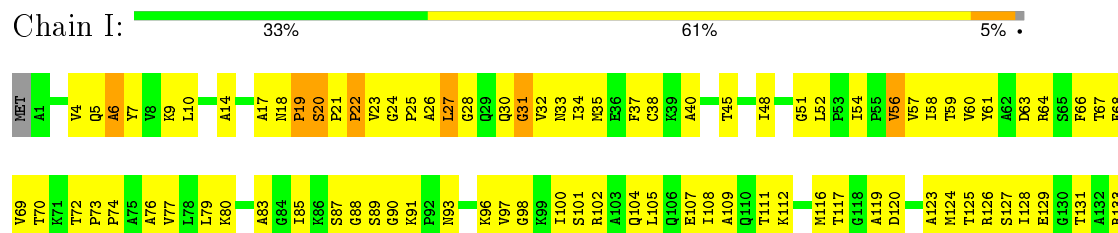
• Molecule 34: 50S ribosomal protein L6



• Molecule 35: 50S ribosomal protein L9



• Molecule 36: 50S ribosomal protein L11



S134  
M135  
G136  
L137  
V138  
V139  
E140  
D141

• Molecule 37: 50S ribosomal protein L13

Chain J: 45% 51%

H1 H2 T3 F4 K7 T10 V11 K12 R13 D14 H15 Y16 V17 V18 G26 A29 T30 L32 L33 R35 L36 R37 G38 K39 R40 R41 R42 R43 R44 T45 P46 R47 V48 D49 T50 G51 D52 Y53 I54 I55 V56 L57 M58 A59 V64 T65 K68 R69 T70 D71 R72 V73 T74

Y75 H80 I81 G82 G83 I84 T88 F89 E90 E91 R96 P97 E98 R99 I103 A104 V105 P110 K111 G112 P113 L114 G115 R116 A117 M118 F119 K120 K121 L122 K123 V124 Y125 A126 E129 H132 Q135 Q136 P137 L140 D141 I142

• Molecule 38: 50S ribosomal protein L14

Chain K: 45% 51%

H1 I2 Q3 E4 Q5 T6 M7 L8 N9 V10 A11 D12 H13 S14 G15 A16 R17 R18 R19 M20 C21 I22 I23 R24 L25 V35 G36 I39 K40 I41 I42 I43 K44 E45 A46 I47 P48 R49 G50 K51 D56 V61 V62 V63 R64 T65 G68 V69 R70 P71 P72 D73 V76 I77

R78 F79 N82 A83 G84 V85 L86 L87 E92 Q93 P94 R98 V103 T104 R105 R106 L107 R108 S109 E110 M113 L118 A119 V122 L120

• Molecule 39: 50S ribosomal protein L15

Chain L: 47% 47% 6%

MET R2 L3 N4 T5 L6 S7 P8 K14 L19 G20 R21 G22 G26 L27 G28 K29 T30 G31 G32 R33 K36 G37 Q38 K39 S40 R41 R47 Q54 P55 P56 L57 R60 L61 P62 P66 P67 S68 R69 R70 A71 T74 I77 R78 L79 S80 D81 L82 A83 R84

V85 E86 V89 V90 N93 T94 L95 K96 I100 I101 I105 E106 F107 A108 K109 V110 I111 L112 A113 T117 T118 P119 V120 V121 V122 R123 G124 L125 R126 V127 G130 I135 A138 K141 I142 E143 E144

• Molecule 40: 50S ribosomal protein L16

Chain M: 47% 49%

M1 L2 P3 K8 F9 R10 H13 K14 L20 A21 G22 G23 T24 D25 V26 S27 F28 G29 S30 F31 G32 A35 V36 G37 R40 L41 T42 A43 R44 Q45 I46 E47 R50 M53 A56 R59 K62 I63 W64 I65 R66 V67 V68 P69 D70 K71 P72 I73 T74

P77 M82 K86 G87 V93 A94 L95 I96 O97 P98 L102 Y103 E104 M105 D106 G107 V108 P109 E110 F111 L112 A113 R114 F117 A120 K123 L124 P125 I126 K127 T128 V131 T132 K133 T134 V135 M136

• Molecule 41: 50S ribosomal protein L17

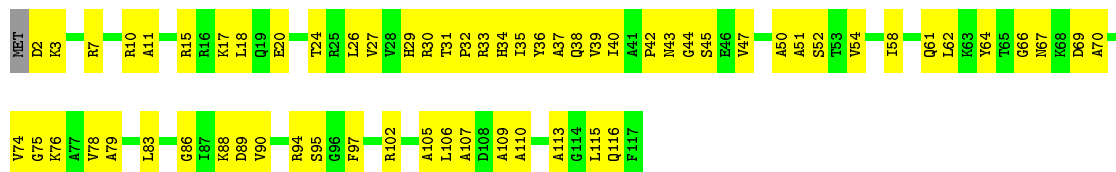
Chain N: 49% 44% 6%

H1 R2 R12 R17 N20 F21 N24 A25 G26 S27 L28 V29 R31 E32 I33 T36 T37 P38 P39 R40 A41 A42 E43 E44 V48 E49 F50 L51 A55 V56 D57 D58 S59 N62 R63 F67 A68 R69 T70 T71 D72 I73 E74 I75 V76 A77 K78 L79 F80 N81



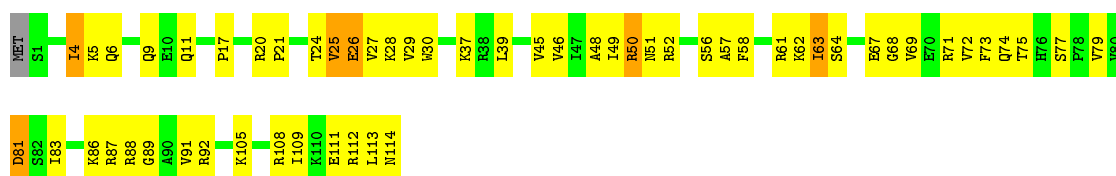
• Molecule 42: 50S ribosomal protein L18

Chain O: 45% 54%



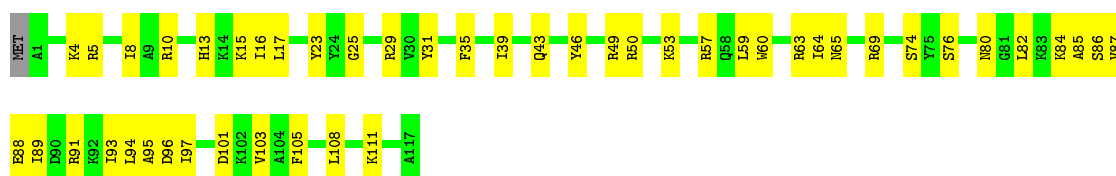
• Molecule 43: 50S ribosomal protein L19

Chain P: 50% 43% 5%



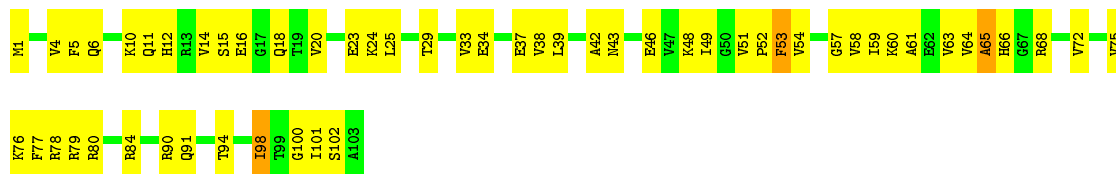
• Molecule 44: 50S ribosomal protein L20

Chain Q: 59% 40%



• Molecule 45: 50S ribosomal protein L21

Chain R: 47% 50%

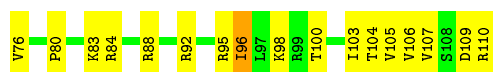


• Molecule 46: 50S ribosomal protein L22

Chain S: 47% 51%

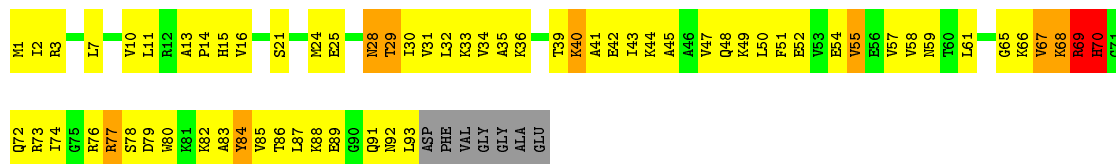






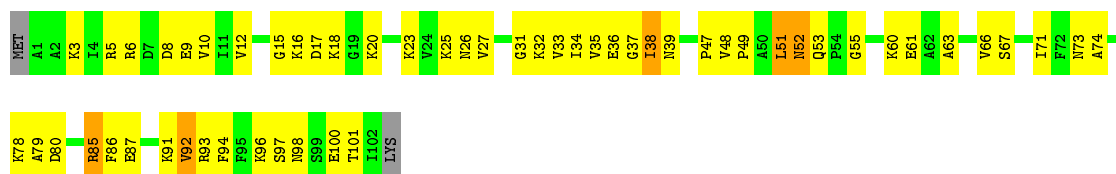
• Molecule 47: 50S ribosomal protein L23

Chain T: 27% 56% 8% 7%



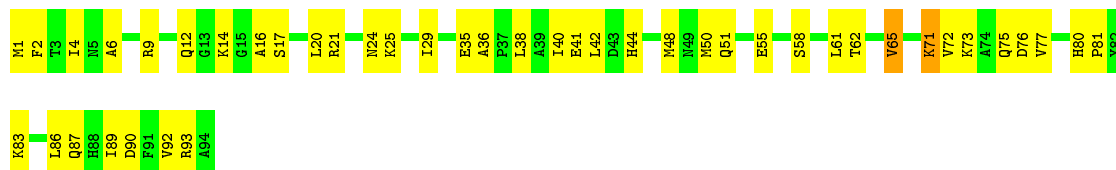
• Molecule 48: 50S ribosomal protein L24

Chain U: 45% 48% 5%



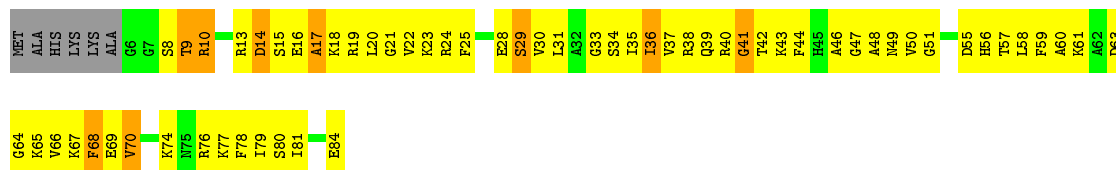
• Molecule 49: 50S ribosomal protein L25

Chain V: 53% 45% 2%



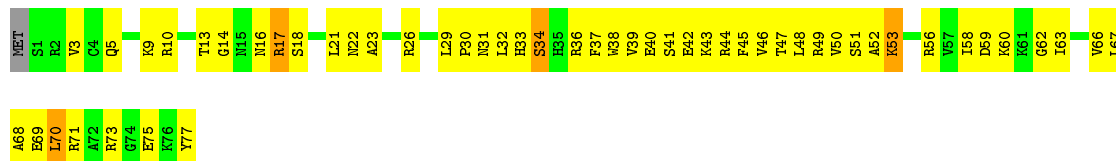
• Molecule 50: 50S ribosomal protein L27

Chain W: 21% 61% 11% 7%

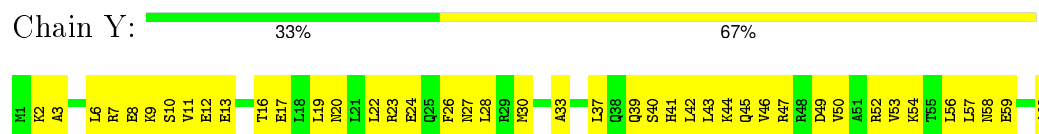


• Molecule 51: 50S ribosomal protein L28

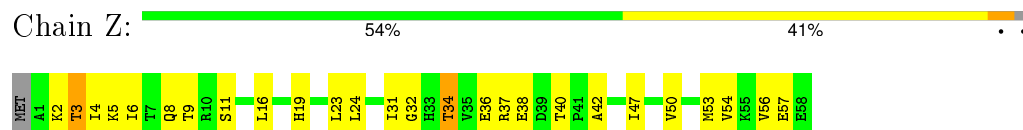
Chain X: 32% 62% 5%



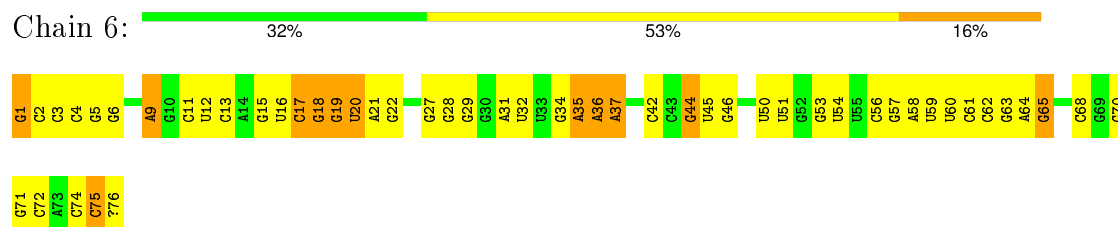
- Molecule 52: 50S ribosomal protein L29



- Molecule 53: 50S ribosomal protein L30



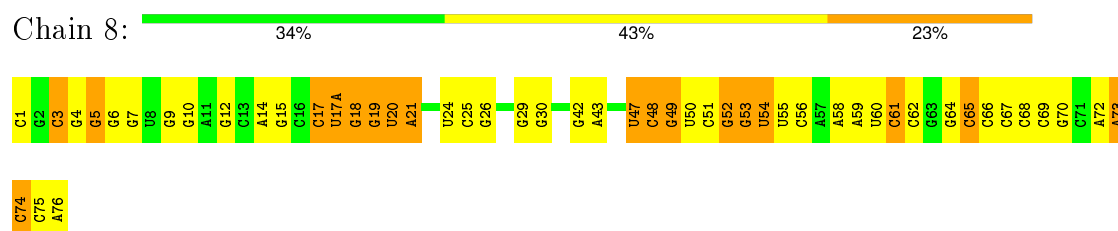
- Molecule 54: PHOSPHOAMINOPHOSPHONIC ACID-GUANYLATE ESTER



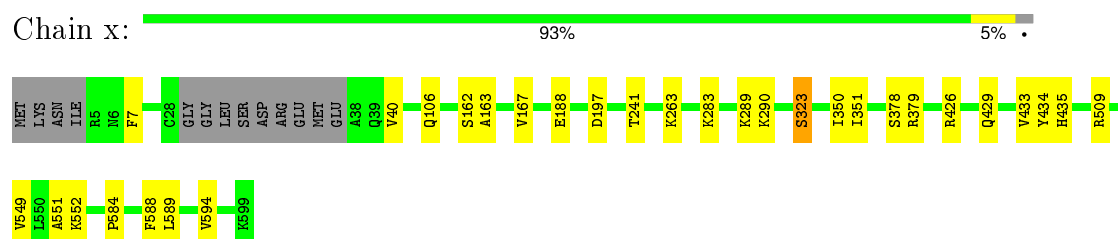
- Molecule 55: RNA (5'-R(P\*CP\*AP\*UP\*AP\*UP\*GP\*UP\*UP\*CP\*AP\*AP\*AP\*GP\*AP\*A)-3')



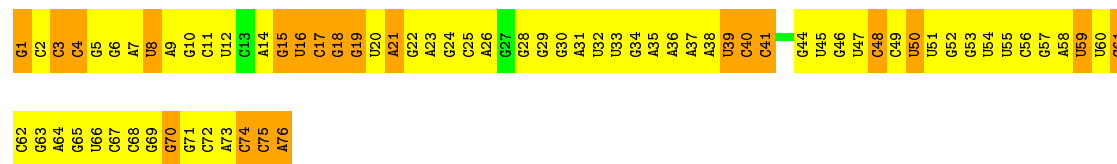
- Molecule 56: RNA (77-MER)



- Molecule 57: Elongation factor 4



Chain 9:  5% 67% 28%



## 4 Experimental information

Property	Value	Source
Reconstruction method	Not provided	Depositor
Imposed symmetry	POINT, Not provided	Depositor
Number of images	Not provided	Depositor
Resolution determination method	Not provided	Depositor
CTF correction method	Not provided	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	Not provided	Depositor
Minimum defocus (nm)	Not provided	Depositor
Maximum defocus (nm)	Not provided	Depositor
Magnification	Not provided	Depositor
Image detector	GATAN K2 SUMMIT (4K X 4K)	Depositor

## 5 Model quality ⓘ

### 5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: GNP, MG, F3O

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	$\# Z  > 2$	RMSZ	$\# Z  > 2$
1	a	0.73	0/36834	0.79	0/57462
10	k	0.43	0/893	0.54	0/1205
11	l	0.46	0/969	0.55	0/1300
12	m	0.38	0/892	0.55	0/1193
13	n	0.37	0/817	0.52	0/1088
14	o	0.43	0/722	0.50	0/964
15	p	0.36	0/659	0.47	0/884
16	q	0.42	0/657	0.54	0/881
17	r	0.43	0/462	0.49	0/621
18	s	0.36	0/652	0.50	0/877
19	t	0.37	0/671	0.46	0/888
2	c	0.42	0/1651	0.52	0/2225
20	u	0.38	0/430	0.53	0/570
21	b	0.35	0/1735	0.51	0/2338
22	0	0.48	0/450	0.54	0/599
23	1	0.44	0/416	0.52	0/554
24	2	0.52	0/380	0.57	0/498
25	3	0.45	0/513	0.58	0/676
26	4	0.45	0/303	0.58	0/397
27	5	0.24	0/1748	0.53	0/2355
28	A	0.84	0/69799	0.81	2/108892 (0.0%)
29	B	0.63	0/2828	0.74	0/4410
3	d	0.38	0/1665	0.50	0/2227
30	C	0.52	0/2115	0.58	0/2844
31	D	0.48	0/1586	0.56	0/2134
32	E	0.43	0/1571	0.54	0/2113
33	F	0.37	0/1434	0.47	0/1926
34	G	0.37	0/1343	0.51	0/1816
35	H	0.30	0/1122	0.57	0/1515
36	I	0.28	0/1046	0.50	0/1410
37	J	0.50	0/1152	0.58	0/1551
38	K	0.49	0/947	0.58	0/1268

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >2	RMSZ	# Z  >2
39	L	0.45	0/1054	0.57	0/1403
4	e	0.46	0/1118	0.56	0/1504
40	M	0.49	0/1093	0.61	0/1460
41	N	0.48	0/973	0.56	0/1301
42	O	0.38	0/902	0.48	0/1209
43	P	0.45	0/929	0.56	0/1242
44	Q	0.57	0/960	0.55	0/1278
45	R	0.48	0/829	0.54	0/1107
46	S	0.48	0/864	0.57	0/1156
47	T	0.40	0/744	0.57	0/994
48	U	0.37	0/787	0.54	0/1051
49	V	0.40	0/766	0.49	0/1025
5	f	0.37	0/851	0.53	0/1150
50	W	0.47	0/603	0.64	0/797
51	X	0.47	0/635	0.56	0/848
52	Y	0.41	0/510	0.51	0/677
53	Z	0.41	0/453	0.58	0/605
54	6	0.63	1/1788 (0.1%)	0.78	0/2784
55	7	0.64	0/358	0.92	2/555 (0.4%)
56	8	0.64	0/1832	0.76	0/2855
57	x	0.39	0/4646	0.52	0/6285
58	9	0.40	1/1813 (0.1%)	0.79	0/2823
6	g	0.37	0/1195	0.49	0/1602
7	h	0.43	0/989	0.52	0/1326
8	i	0.39	0/1034	0.56	0/1375
9	j	0.37	0/796	0.51	0/1077
All	All	0.70	2/166984 (0.0%)	0.74	4/249170 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
11	l	0	1
20	u	0	1
All	All	0	2

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
58	9	1	G	OP3-P	-10.74	1.48	1.61

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
54	6	1	G	OP3-P	-10.67	1.48	1.61

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
28	A	323	C	N1-C2-O2	5.44	122.17	118.90
55	7	21	C	C2-N1-C1'	5.24	124.56	118.80
55	7	21	C	N1-C2-O2	5.22	122.03	118.90
28	A	2689	U	C2-N1-C1'	-5.05	111.64	117.70

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
11	l	23	ALA	Peptide
20	u	37	PHE	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	a	32895	0	16553	0	0
2	c	1624	0	1696	0	0
3	d	1643	0	1707	0	0
4	e	1105	0	1148	0	0
5	f	832	0	824	0	0
6	g	1181	0	1238	0	0
7	h	979	0	1031	0	0
8	i	1022	0	1070	0	0
9	j	786	0	828	0	0
10	k	877	0	887	0	0
11	l	955	0	1016	0	0
12	m	883	0	941	0	0
13	n	805	0	843	0	0
14	o	714	0	734	0	0
15	p	649	0	666	0	0
16	q	648	0	691	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
17	r	455	0	478	0	0
18	s	637	0	665	0	0
19	t	665	0	714	0	0
20	u	425	0	449	0	0
21	b	1704	0	1732	0	0
22	0	444	0	461	39	0
23	1	409	0	440	53	0
24	2	377	0	418	16	0
25	3	504	0	574	34	0
26	4	302	0	340	40	0
27	5	1733	0	1824	393	0
28	A	62320	0	31344	2129	0
29	B	2529	0	1281	94	0
30	C	2076	0	2152	168	0
31	D	1565	0	1616	144	0
32	E	1552	0	1619	134	0
33	F	1410	0	1447	127	0
34	G	1323	0	1374	155	0
35	H	1111	0	1148	235	0
36	I	1032	0	1088	163	0
37	J	1129	0	1162	114	0
38	K	938	0	1012	76	0
39	L	1045	0	1117	97	0
40	M	1074	0	1157	81	0
41	N	960	0	1000	59	0
42	O	892	0	923	83	0
43	P	917	0	965	86	0
44	Q	947	0	1022	100	0
45	R	816	0	839	93	0
46	S	857	0	922	61	0
47	T	738	0	807	100	0
48	U	779	0	834	53	0
49	V	753	0	780	47	0
50	W	596	0	610	121	0
51	X	625	0	655	63	0
52	Y	509	0	543	45	0
53	Z	449	0	491	33	0
54	6	1633	0	830	51	0
55	7	320	0	162	18	0
56	8	1640	0	837	50	0
57	x	4573	0	4619	0	0
58	9	1623	0	821	158	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
59	x	32	0	13	0	0
60	x	1	0	0	0	0
All	All	154017	0	105158	4944	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 32.

All (4944) 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)
50:W:37:VAL:HG12	50:W:38:ARG:HG3	1.19	1.17
35:H:90:LEU:HD11	35:H:146:VAL:HG23	1.27	1.15
42:O:51:ALA:HB3	42:O:78:VAL:HG12	1.25	1.14
31:D:119:ALA:HB1	31:D:124:ARG:HB2	1.24	1.13
31:D:184:ARG:HG2	31:D:186:LEU:HD13	1.26	1.13
28:A:558:U:H5"	37:J:111:LYS:HE3	1.24	1.13
27:5:85:GLU:HG2	27:5:88:LYS:HD2	1.30	1.12
27:5:62:ALA:HB3	27:5:145:VAL:HA	1.28	1.11
27:5:71:ARG:HA	27:5:177:LYS:HB2	1.24	1.10
28:A:1336:A:P	47:T:68:LYS:HZ3	1.75	1.09
31:D:151:THR:HG23	31:D:152:PRO:HD3	1.18	1.09
27:5:42:VAL:HG21	27:5:175:ILE:HB	1.30	1.08
35:H:77:THR:HG22	35:H:144:VAL:HB	1.26	1.08
27:5:51:ASP:HB2	27:5:204:ALA:HB2	1.32	1.08
36:I:105:LEU:HA	36:I:108:ILE:HD12	1.36	1.07
48:U:38:ILE:HG23	48:U:39:ASN:H	1.18	1.05
28:A:1813:G:H1'	30:C:49:THR:HG21	1.38	1.05
27:5:44:VAL:HG23	27:5:212:VAL:HG13	1.33	1.05
30:C:68:ARG:HD3	30:C:103:ILE:HD13	1.35	1.05
28:A:2117:A:H4'	28:A:2145:C:H4'	1.31	1.04
27:5:131:LEU:HD13	27:5:138:PRO:HG2	1.35	1.03
33:F:105:ILE:HD12	33:F:138:PRO:HG2	1.40	1.03
27:5:45:ALA:HB3	27:5:213:SER:HB2	1.34	1.03
30:C:132:ARG:HG2	35:H:120:GLY:HA3	1.39	1.02
31:D:151:THR:CG2	31:D:152:PRO:HD3	1.89	1.02
41:N:44:LEU:HD23	41:N:113:ILE:HD13	1.39	1.02
34:G:102:ILE:HD12	34:G:116:LEU:HD11	1.38	1.02
27:5:33:LEU:HG	27:5:220:ALA:HB3	1.43	1.01
27:5:11:ILE:HG22	27:5:33:LEU:HD12	1.41	1.01
22:0:42:ILE:HD11	41:N:98:LEU:HB3	1.39	1.01
33:F:39:VAL:HG11	33:F:49:LEU:HD13	1.39	1.01

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:9:40:C:H2'	58:9:41:C:H5''	1.40	1.01
34:G:26:LYS:HB2	34:G:32:LEU:HG	1.40	1.00
28:A:1645:G:H5''	28:A:1646:C:H5'	1.41	1.00
35:H:90:LEU:HG	35:H:147:VAL:HG12	1.40	1.00
37:J:44:TYR:HB2	44:Q:63:ARG:HB3	1.40	1.00
28:A:1533:C:H2'	28:A:1534:U:H5''	1.44	1.00
31:D:2:ILE:HD12	31:D:96:ILE:HD13	1.44	0.99
35:H:83:LYS:HG3	35:H:90:LEU:HD22	1.44	0.99
42:O:79:ALA:HB1	42:O:115:LEU:HD13	1.41	0.99
27:5:69:THR:HG22	27:5:73:VAL:HG12	1.42	0.98
27:5:134:ARG:HB3	28:A:2125:G:H1	1.24	0.98
52:Y:9:LYS:HG3	52:Y:11:VAL:H	1.27	0.98
35:H:67:ALA:HB3	35:H:68:ARG:HA	1.43	0.98
48:U:35:VAL:HB	48:U:38:ILE:HG21	1.44	0.98
36:I:17:ALA:HB1	36:I:38:CYS:HA	1.46	0.97
43:P:50:ARG:HB2	43:P:56:SER:HB3	1.45	0.97
27:5:130:VAL:HB	28:A:2170:A:H1'	1.46	0.97
43:P:4:ILE:HG22	43:P:5:LYS:H	1.28	0.97
28:A:1043:C:H2'	28:A:1044:C:H5''	1.43	0.97
28:A:547:A:H3'	28:A:548:G:H5'	1.46	0.97
27:5:36:ALA:HA	27:5:37:LYS:HG2	1.44	0.97
34:G:96:ALA:HB3	34:G:103:ASN:HB2	1.46	0.97
34:G:1:SER:HA	34:G:4:ALA:HB3	1.44	0.97
28:A:1336:A:P	47:T:68:LYS:NZ	2.36	0.96
34:G:24:THR:HG21	34:G:32:LEU:HD23	1.45	0.96
44:Q:111:LYS:HB2	45:R:48:LYS:HE3	1.43	0.96
36:I:4:VAL:HG13	36:I:59:THR:HG23	1.47	0.96
54:6:35:A:H1'	54:6:36:A:H5'	1.48	0.96
32:E:32:VAL:HG23	32:E:178:VAL:HG12	1.47	0.96
27:5:115:ILE:HG21	27:5:153:VAL:HG22	1.44	0.96
35:H:94:ILE:HA	35:H:114:GLU:HG3	1.45	0.96
27:5:148:ASN:HB2	27:5:152:ALA:HB2	1.45	0.96
27:5:36:ALA:HA	27:5:37:LYS:CG	1.95	0.95
28:A:1597:A:H5''	28:A:1598:A:H5'	1.46	0.95
43:P:25:VAL:HB	43:P:83:ILE:HD11	1.45	0.95
36:I:96:LYS:HG2	36:I:138:VAL:HG23	1.47	0.95
23:1:34:GLU:HG2	23:1:49:LYS:HG2	1.47	0.95
28:A:996:A:H4'	44:Q:91:ARG:HE	1.27	0.94
27:5:79:THR:HA	27:5:120:ALA:HB3	1.47	0.94
49:V:86:LEU:HD13	49:V:89:ILE:HD11	1.47	0.94
36:I:10:LEU:HD21	36:I:23:VAL:HG12	1.46	0.94

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:K:108:ARG:NH2	38:K:113:MET:SD	2.41	0.94
33:F:113:PHE:HE1	33:F:116:LEU:HD12	1.30	0.94
26:4:7:VAL:HG23	26:4:8:LYS:H	1.32	0.93
44:Q:43:GLN:HE21	45:R:77:PHE:HB3	1.33	0.93
28:A:2131:U:H3	28:A:2157:G:HO2'	1.17	0.93
39:L:95:LEU:HB2	39:L:101:ILE:HD11	1.47	0.93
27:5:175:ILE:HG22	27:5:185:LEU:HD22	1.49	0.93
36:I:85:ILE:HG22	36:I:87:SER:H	1.30	0.93
41:N:33:ILE:HD13	41:N:114:GLU:HB3	1.49	0.92
31:D:151:THR:HG23	31:D:152:PRO:CD	1.98	0.92
26:4:3:VAL:HG23	26:4:4:ARG:H	1.30	0.92
34:G:26:LYS:HD2	34:G:32:LEU:HD11	1.52	0.92
27:5:27:ILE:HG22	27:5:31:LYS:HE3	1.50	0.92
43:P:21:PRO:HD3	43:P:49:ILE:HD12	1.48	0.92
24:2:3:ARG:NH2	28:A:1613:G:O2'	2.03	0.91
33:F:79:ARG:HB3	33:F:82:TYR:CE2	2.05	0.91
28:A:2192:U:H2'	28:A:2193:G:H5'	1.52	0.91
36:I:4:VAL:HG12	36:I:6:ALA:H	1.36	0.91
35:H:37:VAL:HG13	35:H:38:PRO:HD2	1.52	0.91
50:W:13:ARG:HG2	50:W:14:ASP:H	1.32	0.91
28:A:279:A:H2'	28:A:280:U:H5'	1.50	0.91
23:1:8:ILE:HD13	23:1:24:LYS:HG2	1.53	0.90
28:A:710:U:H2'	28:A:711:G:H5''	1.51	0.90
33:F:147:ARG:HG3	33:F:149:ARG:H	1.32	0.90
44:Q:87:VAL:HG12	44:Q:89:ILE:HG23	1.50	0.90
28:A:2354:C:H4'	50:W:31:LEU:HD22	1.51	0.90
28:A:2298:A:OP1	33:F:70:ARG:NH2	2.02	0.90
34:G:15:ASP:HB2	34:G:26:LYS:HB3	1.50	0.90
28:A:2140:G:H2'	28:A:2141:G:C8	2.07	0.90
43:P:17:PRO:HG3	43:P:83:ILE:HG23	1.55	0.89
49:V:72:VAL:HG12	49:V:93:ARG:HA	1.52	0.89
27:5:30:LEU:HD11	27:5:216:THR:H	1.37	0.89
28:A:2355:G:H4'	50:W:20:LEU:HD13	1.52	0.89
36:I:79:LEU:HD12	36:I:131:THR:HG22	1.53	0.89
48:U:92:VAL:HG22	48:U:93:ARG:H	1.36	0.89
28:A:1069:A:H1'	28:A:1073:A:H62	1.38	0.89
28:A:635:C:OP2	39:L:126:ARG:NH1	2.06	0.89
43:P:50:ARG:HD3	43:P:75:THR:HG21	1.54	0.89
35:H:144:VAL:HG23	35:H:146:VAL:HG13	1.53	0.89
28:A:1482:G:H2'	28:A:1483:G:H8	1.36	0.89
44:Q:91:ARG:HD3	45:R:11:GLN:HB2	1.53	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:X:36:ARG:HG2	51:X:47:THR:HG22	1.55	0.89
23:1:8:ILE:HG23	23:1:51:ALA:HA	1.55	0.88
28:A:2138:G:H2'	28:A:2139:U:H6	1.38	0.88
36:I:98:GLY:HA3	36:I:137:LEU:HD22	1.56	0.88
38:K:71:ARG:HB3	38:K:72:PRO:HD2	1.55	0.88
38:K:10:VAL:HG21	38:K:16:ALA:HB3	1.53	0.88
54:6:35:A:H1'	54:6:36:A:C5'	2.04	0.88
27:5:212:VAL:HB	27:5:224:VAL:HG11	1.56	0.88
35:H:129:GLU:CG	35:H:146:VAL:HG22	2.04	0.88
40:M:134:THR:HG22	40:M:136:MET:H	1.37	0.87
37:J:44:TYR:CD1	44:Q:63:ARG:HD3	2.09	0.87
45:R:49:ILE:HD12	45:R:52:PRO:HA	1.56	0.87
51:X:3:VAL:HG22	51:X:10:ARG:HG2	1.54	0.87
37:J:55:ILE:HG22	37:J:123:LYS:HB2	1.57	0.87
58:9:2:C:H2'	58:9:3:C:H5'	1.52	0.87
38:K:18:ARG:HB3	38:K:45:GLU:HG2	1.57	0.87
35:H:1:MET:N	35:H:21:VAL:O	2.08	0.87
35:H:78:VAL:HG12	35:H:81:ALA:HA	1.55	0.87
28:A:1336:A:OP2	47:T:68:LYS:NZ	2.07	0.87
27:5:186:LYS:HD2	27:5:189:LEU:HD12	1.57	0.87
35:H:104:THR:HG23	35:H:109:GLU:HA	1.55	0.87
53:Z:8:GLN:HG2	53:Z:31:ILE:HA	1.54	0.87
25:3:38:LYS:NZ	28:A:2365:G:N7	2.23	0.87
25:3:7:ARG:NH1	28:A:243:U:OP2	2.07	0.87
28:A:1199:U:H5'	44:Q:4:LYS:HE3	1.53	0.87
50:W:49:ASN:HB3	50:W:81:ILE:HD12	1.57	0.87
46:S:59:GLU:HA	46:S:64:ALA:HB2	1.56	0.86
38:K:108:ARG:HH12	38:K:113:MET:HA	1.40	0.86
58:9:4:C:H42	58:9:69:G:H1	1.18	0.86
43:P:50:ARG:HB2	43:P:56:SER:CB	2.04	0.86
27:5:43:ASP:H	27:5:214:ILE:HD12	1.40	0.86
29:B:86:G:H2'	29:B:87:U:H5''	1.55	0.86
47:T:54:GLU:HG3	47:T:88:LYS:HB3	1.53	0.86
55:7:13:C:N4	58:9:34:G:O6	2.08	0.86
35:H:93:SER:H	35:H:116:ARG:HB3	1.40	0.86
27:5:36:ALA:HB1	27:5:38:PHE:N	1.91	0.86
27:5:42:VAL:HA	27:5:214:ILE:HD11	1.56	0.86
28:A:1474:U:H2'	28:A:1475:G:H5'	1.58	0.86
28:A:880:G:N2	28:A:897:C:N3	2.23	0.86
35:H:104:THR:HA	35:H:109:GLU:H	1.41	0.86
37:J:17:VAL:HG13	37:J:137:PRO:HB2	1.57	0.86

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:1175:A:H5'	28:A:1176:U:H4'	1.57	0.85
28:A:2138:G:H2'	28:A:2139:U:C6	2.10	0.85
36:I:17:ALA:CB	36:I:38:CYS:HA	2.05	0.85
28:A:1055:G:H1	28:A:1104:C:H42	1.24	0.85
36:I:116:MET:HE2	36:I:124:MET:HB3	1.56	0.85
36:I:100:ILE:HB	36:I:139:VAL:HG23	1.58	0.85
43:P:105:LYS:HE3	43:P:108:ARG:HH22	1.37	0.85
43:P:50:ARG:CB	43:P:56:SER:HB3	2.06	0.85
28:A:2230:G:H5''	51:X:29:LEU:HD11	1.58	0.85
28:A:355:U:H2'	28:A:356:G:C8	2.12	0.85
36:I:102:ARG:HB3	36:I:141:ASP:HA	1.58	0.85
30:C:251:THR:HG22	30:C:252:LYS:H	1.42	0.85
34:G:84:LYS:HD2	34:G:131:VAL:HB	1.58	0.84
34:G:24:THR:HG23	34:G:32:LEU:HB3	1.58	0.84
35:H:64:ALA:HA	35:H:71:LYS:HE3	1.57	0.84
47:T:28:ASN:HB2	47:T:91:GLN:HE22	1.42	0.84
49:V:58:SER:O	49:V:73:LYS:NZ	2.11	0.84
50:W:19:ARG:HH11	50:W:22:VAL:HG11	1.41	0.84
28:A:1567:G:H5'	30:C:57:HIS:HD2	1.40	0.84
44:Q:94:LEU:CD2	45:R:4:VAL:HG21	2.07	0.84
47:T:58:VAL:HG12	47:T:85:VAL:HA	1.60	0.84
47:T:68:LYS:HD3	47:T:69:ARG:N	1.93	0.84
28:A:1568:G:H4'	30:C:58:LYS:HB3	1.59	0.84
36:I:105:LEU:HD11	36:I:139:VAL:HG21	1.58	0.84
24:2:12:ARG:HE	24:2:44:VAL:HG11	1.41	0.84
58:9:4:C:N3	58:9:69:G:N2	2.25	0.84
30:C:134:ILE:HD13	30:C:140:VAL:HG11	1.59	0.84
49:V:6:ALA:HB2	49:V:42:LEU:HD23	1.60	0.84
27:5:80:GLN:HG2	27:5:120:ALA:CB	2.07	0.83
53:Z:6:ILE:HD11	53:Z:47:ILE:HD11	1.60	0.83
28:A:2091:C:H3'	28:A:2092:U:H5''	1.58	0.83
28:A:880:G:O2'	28:A:881:G:N7	2.10	0.83
32:E:149:ILE:HG13	32:E:188:MET:HA	1.61	0.83
50:W:23:LYS:HG2	50:W:24:ARG:H	1.42	0.83
28:A:2432:A:H1'	58:9:75:C:H1'	1.58	0.83
58:9:38:A:H2'	58:9:39:U:H5''	1.60	0.83
27:5:45:ALA:HB1	28:A:2177:C:H4'	1.60	0.83
28:A:2557:G:H2'	28:A:2558:C:C6	2.12	0.83
25:3:46:LYS:NZ	28:A:631:A:OP1	2.12	0.83
28:A:716:A:C2	28:A:717:C:H1'	2.14	0.83
28:A:2639:A:O3'	37:J:96:ARG:NH2	2.12	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:5:139:ASN:HB3	28:A:2123:G:OP1	1.78	0.83
28:A:1069:A:H1'	28:A:1073:A:N6	1.94	0.82
35:H:54:LEU:HA	35:H:57:LYS:HZ3	1.44	0.82
28:A:2115:G:H3'	28:A:2116:G:H5''	1.61	0.82
28:A:1779:U:OP2	28:A:1784:A:N6	2.12	0.82
31:D:107:VAL:HG22	31:D:108:ASP:H	1.44	0.82
27:5:80:GLN:HG2	27:5:120:ALA:HB2	1.60	0.82
43:P:50:ARG:HD2	43:P:56:SER:HB3	1.60	0.82
30:C:132:ARG:HG2	35:H:120:GLY:CA	2.08	0.82
35:H:129:GLU:HG3	35:H:146:VAL:HG22	1.61	0.82
28:A:996:A:H5'	44:Q:91:ARG:HH21	1.44	0.82
28:A:2115:G:H5'	28:A:2167:U:H4'	1.60	0.82
37:J:44:TYR:CD1	44:Q:59:LEU:HD21	2.14	0.82
35:H:41:LYS:HA	35:H:44:ILE:HG12	1.59	0.82
27:5:64:VAL:HA	27:5:160:GLN:HA	1.62	0.82
28:A:1248:G:OP1	32:E:44:ARG:NH1	2.13	0.82
51:X:39:VAL:HG21	51:X:42:GLU:HB2	1.61	0.82
23:1:50:GLU:HG3	23:1:51:ALA:H	1.45	0.82
28:A:597:G:H2'	28:A:598:U:H5'	3.34	0.82
28:A:2822:G:H2'	28:A:2823:A:H5''	1.61	0.82
28:A:996:A:OP2	44:Q:91:ARG:NH2	2.13	0.82
35:H:41:LYS:H	35:H:44:ILE:HG23	1.45	0.81
27:5:65:LEU:HD12	27:5:161:VAL:HG21	1.62	0.81
28:A:2060:A:O4'	28:A:2502:G:H4'	1.80	0.81
33:F:39:VAL:HG12	33:F:85:GLY:HA2	1.60	0.81
28:A:1923:U:O2'	56:8:12:G:H1'	1.79	0.81
33:F:11:VAL:HG22	33:F:171:ALA:HB1	1.61	0.81
28:A:833:A:OP2	39:L:39:LYS:NZ	2.13	0.81
42:O:75:GLY:HA3	42:O:106:LEU:HB2	1.61	0.81
48:U:12:VAL:HG21	48:U:38:ILE:HD11	1.62	0.81
58:9:59:U:H2'	58:9:60:U:H5'	1.63	0.81
43:P:62:LYS:HE2	43:P:64:SER:HB2	1.61	0.81
30:C:68:ARG:HD3	30:C:103:ILE:CD1	2.10	0.81
28:A:1327:A:C2'	28:A:1328:A:H5'	2.11	0.81
35:H:85:GLY:HA2	35:H:90:LEU:HD23	1.63	0.81
27:5:67:HIS:NE2	27:5:187:GLU:OE1	2.13	0.81
53:Z:8:GLN:CG	53:Z:31:ILE:HA	2.11	0.81
28:A:1094:U:O2'	28:A:1096:A:N7	2.13	0.81
27:5:134:ARG:HB3	28:A:2125:G:N1	1.95	0.81
27:5:15:VAL:HB	27:5:33:LEU:HD13	1.60	0.81
58:9:18:G:H22	58:9:55:U:H1'	1.46	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:I:102:ARG:CB	36:I:141:ASP:HA	2.11	0.81
30:C:226:PRO:HG3	30:C:233:GLY:HA2	1.61	0.81
35:H:90:LEU:HG	35:H:147:VAL:CG1	2.11	0.81
28:A:2345:G:H4'	28:A:2346:A:H5''	1.63	0.81
34:G:94:ARG:HB3	34:G:105:SER:HB3	1.62	0.81
56:8:67:C:H2'	56:8:68:C:H5'	1.61	0.81
28:A:2588:G:H2'	28:A:2589:A:H5'	1.61	0.81
36:I:76:ALA:HA	36:I:131:THR:CG2	2.10	0.80
28:A:2134:A:N7	28:A:2135:A:H1'	1.96	0.80
34:G:84:LYS:HB2	34:G:132:LEU:H	1.44	0.80
28:A:2588:G:C2'	28:A:2589:A:H5'	2.11	0.80
28:A:2375:G:N2	28:A:2378:A:OP2	2.13	0.80
34:G:22:VAL:HG12	34:G:36:LEU:HD21	1.63	0.80
28:A:2061:G:H5''	28:A:2503:A:H5''	1.63	0.80
44:Q:63:ARG:NH1	44:Q:95:ALA:O	2.14	0.80
27:5:140:PRO:HD3	28:A:2122:U:H5''	1.63	0.80
38:K:71:ARG:HE	38:K:106:GLU:CG	1.95	0.80
33:F:113:PHE:CE1	33:F:116:LEU:HD12	2.15	0.80
28:A:396:G:OP2	51:X:9:LYS:NZ	2.14	0.80
33:F:10:GLU:O	33:F:12:VAL:N	2.13	0.80
28:A:1022:G:H22	28:A:1142:A:H2	1.30	0.80
35:H:78:VAL:HG23	35:H:146:VAL:HG11	1.63	0.80
28:A:2131:U:N3	28:A:2157:G:O2'	2.14	0.80
34:G:102:ILE:CD1	34:G:116:LEU:HD11	2.11	0.80
24:2:12:ARG:NE	24:2:44:VAL:HG11	1.96	0.80
28:A:468:G:H2'	28:A:469:G:H5'	1.63	0.80
37:J:39:LYS:HA	37:J:43:GLU:HB2	1.61	0.80
34:G:104:LEU:HB2	34:G:112:VAL:CG2	2.11	0.80
28:A:2474:U:OP2	28:A:2475:C:N4	2.12	0.80
41:N:73:ASN:HA	41:N:76:VAL:HG12	1.64	0.80
28:A:1059:G:H1	28:A:1079:C:H42	1.29	0.80
28:A:1495:A:H2	28:A:1578:U:H1'	1.46	0.80
28:A:2061:G:O2'	28:A:2062:A:H5''	1.81	0.80
30:C:234:GLY:O	30:C:238:ASN:ND2	2.15	0.80
28:A:320:A:N3	32:E:163:ASN:ND2	2.30	0.80
28:A:630:G:N2	28:A:633:A:OP2	2.15	0.80
35:H:47:PHE:HA	35:H:50:ARG:HE	1.46	0.80
27:5:14:LYS:HE2	28:A:2131:U:OP1	1.80	0.80
28:A:1080:A:H1'	36:I:127:SER:HA	1.62	0.80
28:A:2062:A:N7	28:A:2503:A:N6	2.30	0.80
42:O:51:ALA:HB3	42:O:78:VAL:CG1	2.10	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:2123:G:H1'	28:A:2176:A:N1	1.97	0.80
36:I:4:VAL:HG21	36:I:7:TYR:HB3	1.65	0.79
28:A:280:U:H2'	28:A:281:C:C6	2.17	0.79
35:H:70:GLU:HG2	35:H:74:ALA:HB3	1.61	0.79
28:A:2110:G:H5''	28:A:2111:U:H5	1.45	0.79
28:A:856:G:C1'	50:W:23:LYS:HD3	2.11	0.79
31:D:37:VAL:HG12	31:D:48:ILE:HG22	1.64	0.79
45:R:38:VAL:HG13	45:R:54:VAL:HG22	1.62	0.79
44:Q:94:LEU:HD23	45:R:4:VAL:HG21	1.63	0.79
28:A:558:U:H5''	37:J:111:LYS:CE	2.10	0.79
27:5:65:LEU:HG	27:5:161:VAL:HB	1.63	0.79
36:I:105:LEU:CD1	36:I:139:VAL:HG21	2.13	0.79
27:5:33:LEU:HG	27:5:220:ALA:CB	2.12	0.79
28:A:192:C:H2'	28:A:193:U:H5'	1.62	0.79
28:A:2061:G:N2	28:A:2062:A:O2'	2.16	0.79
27:5:65:LEU:HD13	27:5:188:ASN:HB3	1.65	0.79
27:5:60:ARG:HD3	27:5:164:ARG:NE	1.98	0.79
28:A:2134:A:H1'	28:A:2159:G:N3	1.97	0.79
28:A:2505:G:N2	28:A:2610:C:O2	2.16	0.79
28:A:998:C:N4	28:A:1157:G:O6	2.16	0.79
58:9:16:U:C5	58:9:18:G:H5''	2.19	0.79
47:T:69:ARG:HD2	47:T:70:HIS:N	1.98	0.79
56:8:17:C:H5''	56:8:17(A):U:C6	2.18	0.78
28:A:215:G:H4'	28:A:216:A:H4'	1.63	0.78
42:O:106:LEU:HA	42:O:109:ALA:HB3	1.64	0.78
27:5:140:PRO:HB2	27:5:164:ARG:NH2	1.97	0.78
34:G:116:LEU:HD21	34:G:122:ALA:HB2	1.65	0.78
28:A:2305:U:H5''	33:F:130:GLY:HA3	1.65	0.78
44:Q:91:ARG:NH1	45:R:11:GLN:O	2.17	0.78
28:A:547:A:H3'	28:A:548:G:C5'	2.14	0.78
27:5:83:ASN:ND2	27:5:118:PRO:HG2	1.99	0.78
33:F:33:ILE:HG12	33:F:155:ILE:HG12	1.66	0.78
31:D:52:THR:HG21	31:D:77:ARG:HE	1.49	0.78
39:L:2:ARG:O	39:L:5:THR:HG22	1.84	0.78
27:5:51:ASP:CB	27:5:204:ALA:HB2	2.13	0.78
28:A:2602:A:H4'	28:A:2603:G:C5'	2.14	0.78
58:9:40:C:C2'	58:9:41:C:H5''	2.14	0.78
28:A:1654:A:O2'	31:D:118:PHE:HB3	1.82	0.78
33:F:79:ARG:HB3	33:F:82:TYR:HE2	1.45	0.78
39:L:81:ASP:O	39:L:83:ALA:N	2.17	0.78
28:A:2327:A:H2'	28:A:2328:A:C8	2.18	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:C:158:GLY:H	30:C:194:VAL:HG13	1.48	0.78
47:T:40:LYS:O	47:T:43:ILE:HG13	1.84	0.78
50:W:29:SER:N	50:W:63:ASP:OD1	2.17	0.78
27:5:140:PRO:CD	28:A:2122:U:H5'	2.13	0.78
30:C:5:CYS:SG	30:C:12:ARG:NH2	2.55	0.78
28:A:149:A:N1	28:A:172:A:N6	15.18	0.77
28:A:905:A:H2'	28:A:906:U:H5'	1.66	0.77
32:E:98:LYS:HB3	32:E:102:ARG:HH22	1.49	0.77
50:W:24:ARG:CZ	50:W:65:LYS:HG2	2.13	0.77
28:A:2644:G:N2	28:A:2770:G:O6	2.16	0.77
23:1:7:LYS:HG2	23:1:23:THR:HG22	1.66	0.77
41:N:21:PHE:CA	41:N:25:ALA:HB3	5.11	0.77
31:D:124:ARG:NH1	31:D:164:GLN:O	2.17	0.77
35:H:116:ARG:NH2	35:H:126:GLY:O	2.18	0.77
27:5:177:LYS:HG3	27:5:179:ASP:H	1.47	0.77
27:5:181:ASP:HB2	27:5:184:LYS:HB2	1.66	0.77
45:R:68:ARG:HD3	45:R:90:ARG:HB2	1.65	0.77
46:S:18:ARG:O	46:S:19:LEU:HB2	1.85	0.77
28:A:2324:U:H3'	28:A:2325:G:H5'	1.67	0.77
28:A:2358:A:H61	39:L:54:GLN:HE22	1.32	0.77
58:9:5:G:N2	58:9:68:C:O2	2.17	0.77
58:9:29:G:H2'	58:9:30:G:H8	1.49	0.77
28:A:279:A:OP2	28:A:361:G:N2	2.17	0.77
35:H:94:ILE:CA	35:H:114:GLU:HG3	2.14	0.77
27:5:1:MET:HB3	28:A:2120:G:C8	2.20	0.77
58:9:40:C:H2'	58:9:41:C:C5'	2.15	0.77
23:1:9:LYS:HD3	23:1:52:LYS:C	2.05	0.77
28:A:2796:U:H3	28:A:2799:A:H61	1.30	0.77
27:5:18:THR:HG23	27:5:222:VAL:HA	1.65	0.77
38:K:104:THR:HB	38:K:106:GLU:OE1	1.85	0.77
28:A:2793:C:N4	28:A:2803:G:O6	2.15	0.77
27:5:146:THR:HG22	27:5:152:ALA:HB1	1.66	0.77
28:A:2114:A:C5	28:A:2115:G:H1'	2.21	0.77
43:P:4:ILE:O	43:P:6:GLN:N	2.18	0.77
39:L:74:THR:HG22	39:L:107:PHE:HB2	1.66	0.76
44:Q:25:GLY:O	44:Q:29:ARG:NH1	2.18	0.76
34:G:8:VAL:CG1	34:G:49:LEU:HB2	2.15	0.76
40:M:53:MET:HE2	40:M:63:ILE:HD13	1.67	0.76
28:A:895:U:H2'	28:A:897:C:C6	2.20	0.76
34:G:102:ILE:HD12	34:G:116:LEU:CD1	2.16	0.76
34:G:104:LEU:HB2	34:G:112:VAL:HG21	1.65	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:1043:C:C2'	28:A:1044:C:H5''	2.15	0.76
44:Q:93:ILE:HG23	44:Q:94:LEU:HD13	1.66	0.76
27:5:46:VAL:CG2	27:5:212:VAL:HG22	2.14	0.76
38:K:19:VAL:CG1	38:K:41:ILE:HG23	2.16	0.76
28:A:710:U:C2'	28:A:711:G:H5''	2.15	0.76
28:A:287:G:O6	28:A:352:A:N6	2.18	0.76
28:A:1584:U:H2'	28:A:1585:C:C5'	2.15	0.76
29:B:43:C:H2'	29:B:44:G:H5'	1.67	0.76
45:R:61:ALA:HB2	45:R:98:ILE:HD13	1.66	0.76
48:U:38:ILE:HG23	48:U:39:ASN:N	1.96	0.76
27:5:29:LEU:HB2	27:5:222:VAL:HG21	1.67	0.76
58:9:19:G:H22	58:9:56:C:H42	1.29	0.76
28:A:1771:C:C2'	28:A:1772:A:H5'	2.15	0.76
28:A:1141:U:H4'	28:A:1142:A:O4'	1.85	0.76
44:Q:93:ILE:HG23	44:Q:94:LEU:CD1	2.15	0.76
27:5:11:ILE:HG22	27:5:33:LEU:CD1	2.14	0.76
28:A:2112:G:C2'	28:A:2113:U:H5'	2.15	0.76
28:A:2162:G:H4'	28:A:2164:C:H1'	1.67	0.76
31:D:2:ILE:CD1	31:D:96:ILE:HD13	2.15	0.76
37:J:64:VAL:O	37:J:65:THR:HG22	1.85	0.76
44:Q:85:ALA:O	44:Q:88:GLU:HB2	1.85	0.76
28:A:2125:G:H1'	28:A:2173:A:H61	1.50	0.76
28:A:662:G:C2'	28:A:663:G:H5'	2.16	0.76
32:E:146:VAL:CG2	32:E:167:VAL:HG23	2.15	0.76
27:5:37:LYS:HG3	27:5:38:PHE:CD2	2.21	0.76
43:P:50:ARG:HG3	43:P:51:ASN:H	1.50	0.76
28:A:1254:A:H5''	28:A:1255:U:H5'	1.68	0.76
27:5:7:ARG:HH12	27:5:219:GLY:H	1.34	0.76
43:P:21:PRO:HD3	43:P:49:ILE:CD1	2.16	0.76
50:W:19:ARG:HH11	50:W:22:VAL:CG1	1.99	0.76
28:A:1059:G:H2'	28:A:1060:U:C5	2.21	0.75
58:9:39:U:H2'	58:9:40:C:H5'	1.67	0.75
35:H:73:ASN:HA	35:H:130:VAL:HG13	1.68	0.75
29:B:21:G:N2	29:B:63:C:O2	2.18	0.75
53:Z:23:LEU:HD21	53:Z:53:MET:CE	2.16	0.75
28:A:140:C:H4'	28:A:141:G:OP1	1.85	0.75
27:5:115:ILE:HG21	27:5:153:VAL:CG2	2.16	0.75
30:C:16:VAL:HB	30:C:203:VAL:HG12	1.66	0.75
28:A:2693:G:O6	28:A:2716:C:N4	2.16	0.75
58:9:39:U:C2'	58:9:40:C:H5'	2.16	0.75
30:C:184:GLU:O	30:C:186:ASP:N	2.18	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:1918:A:O2'	28:A:1920:C:N4	2.18	0.75
30:C:29:PHE:CE2	30:C:31:PRO:HG2	2.20	0.75
50:W:9:THR:HG23	50:W:10:ARG:HG3	1.69	0.75
44:Q:91:ARG:NH1	45:R:11:GLN:H	1.85	0.75
58:9:15:G:N1	58:9:48:C:O2	2.19	0.75
28:A:1799:G:OP1	30:C:257:ARG:NE	2.19	0.75
28:A:2537:U:H2'	28:A:2538:C:C6	2.22	0.75
28:A:1064:C:H5'	36:I:88:GLY:H	1.50	0.75
28:A:863:A:O3'	29:B:100:G:N2	2.17	0.75
37:J:43:GLU:O	37:J:45:THR:N	2.19	0.75
45:R:4:VAL:HG13	45:R:39:LEU:HB2	1.67	0.75
27:5:35:THR:HG23	27:5:219:GLY:HA2	1.67	0.75
27:5:71:ARG:HA	27:5:177:LYS:CB	2.11	0.75
35:H:37:VAL:CG1	35:H:38:PRO:HD2	2.15	0.75
40:M:66:ARG:NH1	40:M:104:GLU:OE2	2.18	0.75
27:5:81:GLY:H	27:5:84:ALA:HB3	1.50	0.75
27:5:21:TYR:O	27:5:225:ASP:N	2.16	0.75
28:A:544:C:H42	28:A:548:G:P	2.09	0.75
33:F:127:TYR:HE2	33:F:129:MET:HB3	1.52	0.75
26:4:2:LYS:NZ	28:A:2478:A:OP2	2.20	0.75
35:H:104:THR:HA	35:H:109:GLU:N	2.02	0.75
58:9:15:G:N2	58:9:48:C:N3	2.33	0.75
28:A:2133:G:H2'	28:A:2134:A:H4'	1.68	0.75
34:G:132:LEU:O	34:G:140:ILE:HD11	1.87	0.75
28:A:1413:A:H61	28:A:1589:U:H3	1.34	0.75
58:9:18:G:H1	58:9:55:U:H1'	1.52	0.74
27:5:134:ARG:CB	28:A:2125:G:H1	2.00	0.74
28:A:1087:G:H2'	28:A:1088:A:H5''	1.67	0.74
51:X:67:LEU:HD23	51:X:70:LEU:HD12	1.68	0.74
28:A:2478:A:O2'	28:A:2536:G:N2	2.19	0.74
51:X:34:SER:HA	51:X:49:ARG:HA	1.69	0.74
28:A:1064:C:OP1	36:I:80:LYS:NZ	2.17	0.74
28:A:2502:G:H3'	28:A:2502:G:OP2	1.86	0.74
28:A:2189:U:C2'	28:A:2190:G:H5'	2.17	0.74
38:K:19:VAL:HG13	38:K:41:ILE:HG23	1.68	0.74
28:A:870:U:H4'	28:A:871:U:H5''	6.34	0.74
28:A:613:A:H3'	28:A:614:A:H5'	1.69	0.74
28:A:1175:A:H5'	28:A:1176:U:C4'	2.16	0.74
39:L:108:ALA:HB3	39:L:125:LEU:HD22	1.67	0.74
28:A:996:A:H4'	44:Q:91:ARG:NE	2.01	0.74
50:W:18:LYS:HE3	50:W:19:ARG:HG2	1.69	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:887:U:O2'	28:A:888:C:H5''	1.86	0.74
38:K:108:ARG:NH1	38:K:113:MET:HA	2.02	0.74
58:9:67:C:H2'	58:9:68:C:C6	2.22	0.74
28:A:1327:A:H2'	28:A:1328:A:H5'	1.67	0.74
28:A:856:G:H1'	50:W:23:LYS:HD3	1.68	0.74
32:E:134:LEU:CD2	32:E:161:ALA:HB2	2.18	0.74
26:4:11:CYS:SG	26:4:33:HIS:ND1	2.57	0.74
27:5:7:ARG:HH12	27:5:219:GLY:N	1.85	0.74
28:A:2683:C:H4'	31:D:13:ARG:NH1	2.02	0.74
34:G:101:VAL:HG12	34:G:115:GLN:HA	1.70	0.74
44:Q:111:LYS:HD3	45:R:48:LYS:HE2	1.69	0.74
28:A:528:A:C2	28:A:2042:A:H2'	2.22	0.74
58:9:52:G:O6	58:9:62:C:N4	2.20	0.74
34:G:84:LYS:CD	34:G:131:VAL:HB	2.18	0.74
28:A:2748:A:H1'	34:G:66:THR:CG2	2.18	0.74
28:A:289:G:H2'	28:A:290:U:C6	2.23	0.74
53:Z:23:LEU:CD1	53:Z:50:VAL:HG11	2.17	0.74
28:A:1680:U:O2'	28:A:1763:G:N7	2.17	0.74
28:A:2469:A:H61	28:A:2481:G:H1'	1.52	0.74
28:A:1893:C:H2'	28:A:1894:C:H5'	1.69	0.74
38:K:47:ILE:HG23	38:K:48:PRO:HD2	1.67	0.74
28:A:1801:A:OP2	30:C:149:LYS:NZ	2.20	0.74
28:A:275:C:H2'	28:A:276:U:H4'	1.70	0.74
28:A:544:C:N4	28:A:547:A:O3'	2.20	0.74
35:H:14:SER:OG	35:H:17:ASP:HB2	1.88	0.74
44:Q:91:ARG:HH11	45:R:11:GLN:H	1.36	0.74
28:A:535:G:H2'	28:A:536:G:H8	1.52	0.74
28:A:602:A:HO2'	28:A:604:G:HO2'	1.32	0.73
31:D:58:ASN:OD1	31:D:59:ARG:N	2.21	0.73
36:I:4:VAL:CB	36:I:7:TYR:HB3	2.17	0.73
28:A:2167:U:H2'	28:A:2168:G:O4'	1.87	0.73
47:T:32:LEU:H	47:T:83:ALA:HB3	1.53	0.73
54:6:1:G:H1	54:6:72:C:H42	1.34	0.73
28:A:1723:G:H2'	28:A:1724:G:O4'	1.86	0.73
28:A:2111:U:H1'	28:A:2117:A:H5''	1.70	0.73
44:Q:16:ILE:HD12	44:Q:31:TYR:HE1	1.52	0.73
28:A:987:C:H2'	28:A:988:A:H5'	1.70	0.73
28:A:1220:G:H1	28:A:1229:C:H42	1.35	0.73
28:A:1494:A:H2'	28:A:1495:A:C8	2.23	0.73
28:A:404:A:H1'	28:A:405:U:OP2	1.89	0.73
32:E:58:LYS:NZ	32:E:70:SER:OG	2.19	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:O:106:LEU:O	42:O:110:ALA:N	2.18	0.73
45:R:49:ILE:CD1	45:R:52:PRO:HA	2.19	0.73
58:9:63:G:H2'	58:9:64:A:C8	2.23	0.73
28:A:2140:G:C2	28:A:2152:G:H1'	2.22	0.73
30:C:109:LEU:HD12	30:C:110:LYS:HG3	1.68	0.73
32:E:188:MET:SD	32:E:193:VAL:HG22	2.28	0.73
33:F:3:LEU:HA	33:F:6:TYR:HB3	1.69	0.73
27:5:109:MET:CE	27:5:111:PHE:HB2	2.18	0.73
27:5:172:HIS:NE2	28:A:2177:C:H1'	2.03	0.73
28:A:821:A:N6	28:A:972:A:O2'	2.20	0.73
31:D:16:THR:CG2	31:D:20:VAL:HB	2.18	0.73
28:A:2221:G:H5'	35:H:137:GLU:HG2	1.71	0.73
27:5:24:ASN:HD21	27:5:232:SER:HB2	1.51	0.73
27:5:27:ILE:CG2	27:5:31:LYS:HE3	2.19	0.73
58:9:9:A:C2'	58:9:11:C:H41	2.00	0.73
27:5:107:GLY:HA3	28:A:2162:G:C2	2.24	0.73
28:A:141:G:N7	47:T:2:ILE:HD11	2.02	0.73
28:A:265:A:H4'	28:A:266:G:OP1	1.87	0.73
36:I:19:PRO:HB2	36:I:22:PRO:HD2	1.69	0.73
47:T:28:ASN:CB	47:T:91:GLN:HE22	2.01	0.73
28:A:2354:C:H4'	50:W:31:LEU:CD2	2.17	0.73
56:8:6:G:H1	56:8:67:C:H42	1.37	0.73
28:A:1107:G:H2'	28:A:1108:U:C6	2.24	0.73
23:1:7:LYS:HA	23:1:23:THR:HG22	1.69	0.73
43:P:88:ARG:NH2	43:P:114:ASN:OD1	2.22	0.73
49:V:21:ARG:NH2	49:V:87:GLN:O	2.21	0.73
28:A:280:U:H2'	28:A:281:C:H6	1.54	0.73
26:4:7:VAL:O	26:4:8:LYS:HG2	1.89	0.73
28:A:1414:C:O2	28:A:1588:G:N1	2.16	0.73
28:A:2834:G:H2'	28:A:2879:A:H61	1.54	0.73
28:A:1725:U:H2'	28:A:1726:C:C6	2.24	0.73
28:A:880:G:H1	28:A:897:C:H42	1.36	0.73
51:X:75:GLU:HG3	51:X:77:TYR:H	1.54	0.73
51:X:75:GLU:HG3	51:X:77:TYR:N	2.04	0.73
23:1:3:GLY:O	23:1:5:ARG:N	2.22	0.73
39:L:135:ILE:HB	39:L:142:ILE:HD11	1.69	0.72
34:G:84:LYS:CB	34:G:132:LEU:H	2.01	0.72
22:0:2:VAL:CG1	28:A:2016:U:H1'	2.19	0.72
41:N:38:LEU:HB3	41:N:39:PRO:HD3	1.69	0.72
28:A:2158:A:OP2	28:A:2159:G:N1	2.22	0.72
29:B:60:C:H2'	29:B:61:G:C8	2.24	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:548:G:H4'	28:A:549:G:C4	2.23	0.72
23:1:50:GLU:HG3	23:1:51:ALA:N	2.03	0.72
28:A:1582:C:O2'	28:A:1585:C:N3	2.20	0.72
28:A:1266:G:N2	28:A:2013:A:OP2	2.19	0.72
28:A:2332:C:OP1	50:W:76:ARG:NH2	2.22	0.72
31:D:149:ASN:OD1	31:D:150:GLN:N	2.21	0.72
27:5:110:ASN:HA	28:A:2126:A:OP2	1.89	0.72
28:A:855:G:N3	50:W:23:LYS:HD2	2.04	0.72
29:B:60:C:H2'	29:B:61:G:H8	1.53	0.72
28:A:1047:G:HO2'	28:A:1110:G:H1	1.36	0.72
28:A:757:G:H2'	28:A:758:C:H5'	1.72	0.72
28:A:2221:G:OP1	35:H:137:GLU:HB3	1.87	0.72
28:A:2262:U:OP1	50:W:38:ARG:NH2	2.21	0.72
58:9:3:C:H2'	58:9:4:C:O4'	1.90	0.72
28:A:2177:C:H2'	28:A:2178:C:O4'	1.88	0.72
32:E:121:VAL:O	32:E:190:ALA:N	2.19	0.72
56:8:67:C:C2'	56:8:68:C:H5'	2.18	0.72
35:H:30:LEU:HB3	35:H:36:ALA:HB3	1.71	0.72
47:T:11:LEU:HD22	47:T:32:LEU:HD13	1.71	0.72
28:A:1533:C:H2'	28:A:1534:U:C5'	2.19	0.72
28:A:1199:U:C5'	44:Q:4:LYS:HE3	2.20	0.72
28:A:1107:G:H2'	28:A:1108:U:H6	1.53	0.72
28:A:414:C:H2'	28:A:415:A:H8	1.54	0.72
30:C:64:VAL:HG21	30:C:86:ARG:NH2	2.05	0.72
30:C:83:ASP:OD2	30:C:86:ARG:NH2	2.23	0.72
27:5:83:ASN:HD21	27:5:118:PRO:HG2	1.54	0.72
27:5:42:VAL:CG2	27:5:175:ILE:HB	2.15	0.72
30:C:43:ASN:OD1	30:C:44:ASN:N	2.22	0.72
48:U:3:LYS:O	48:U:93:ARG:NH2	2.23	0.72
28:A:783:A:H8	28:A:784:G:H5''	1.54	0.72
32:E:62:GLN:NE2	32:E:69:ARG:O	2.22	0.72
28:A:2116:G:O6	28:A:2148:G:H4'	1.89	0.72
28:A:2684:U:O4'	38:K:70:ARG:NH1	2.21	0.72
36:I:129:GLU:O	36:I:133:ARG:N	2.20	0.72
28:A:2659:G:OP2	34:G:157:LYS:NZ	2.19	0.72
47:T:50:LEU:HD23	52:Y:26:PHE:CZ	2.25	0.72
40:M:42:THR:HA	40:M:93:VAL:HG12	1.69	0.72
28:A:1798:U:OP2	30:C:270:ARG:NH2	2.23	0.72
28:A:736:C:H2'	28:A:737:C:C6	2.94	0.72
58:9:63:G:H2'	58:9:64:A:H8	1.54	0.72
28:A:855:G:N2	50:W:23:LYS:HE2	2.05	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:1314:C:H5	46:S:6:LYS:HD3	43.83	0.72
28:A:1069:A:C1'	28:A:1073:A:H62	2.03	0.71
28:A:543:G:H3'	28:A:544:C:H5''	1.72	0.71
28:A:2386:A:C2	50:W:38:ARG:HG2	2.24	0.71
27:5:212:VAL:HB	27:5:224:VAL:CG1	2.18	0.71
58:9:16:U:H3'	58:9:17:C:H5'	1.72	0.71
28:A:279:A:C2'	28:A:280:U:H5'	2.20	0.71
28:A:2103:C:H2'	28:A:2104:C:C6	2.25	0.71
27:5:71:ARG:NH2	28:A:2126:A:OP1	2.23	0.71
32:E:31:VAL:HG21	32:E:104:ALA:HB2	1.71	0.71
28:A:495:G:H5''	46:S:4:ILE:HD11	1.71	0.71
28:A:45:G:N2	28:A:433:C:O2	2.23	0.71
28:A:998:C:OP2	44:Q:57:ARG:NH2	2.23	0.71
58:9:9:A:H2'	58:9:11:C:H41	1.56	0.71
28:A:2547:A:H2'	28:A:2548:U:C6	2.26	0.71
28:A:154:U:N3	28:A:167:A:N1	19.32	0.71
35:H:75:LEU:HD23	35:H:103:VAL:HG13	1.72	0.71
37:J:16:TYR:CD1	37:J:140:LEU:HD23	2.25	0.71
44:Q:63:ARG:HH12	44:Q:95:ALA:C	1.93	0.71
28:A:2330:G:H21	50:W:38:ARG:HA	1.54	0.71
28:A:2137:U:H2'	28:A:2138:G:C8	2.25	0.71
28:A:290:U:H3	28:A:350:G:H1	1.35	0.71
31:D:172:VAL:CG2	31:D:194:PRO:HD3	2.21	0.71
28:A:883:G:H1	28:A:894:U:H1'	1.56	0.71
23:1:50:GLU:CG	23:1:51:ALA:H	2.04	0.71
28:A:1771:C:H2'	28:A:1772:A:H5'	1.72	0.71
54:6:57:G:H2'	54:6:58:A:H5'	1.71	0.71
22:0:42:ILE:HG22	22:0:43:THR:O	1.90	0.71
40:M:8:LYS:HE3	40:M:9:PHE:CE2	2.25	0.71
34:G:84:LYS:HB3	34:G:132:LEU:O	1.91	0.71
35:H:72:ILE:HG12	35:H:130:VAL:CG2	2.20	0.71
31:D:14:ILE:HD11	31:D:178:VAL:HG11	1.72	0.71
31:D:184:ARG:CG	31:D:186:LEU:HD13	2.13	0.71
35:H:82:SER:HB3	35:H:99:ILE:HG22	1.73	0.71
48:U:9:GLU:HA	48:U:23:LYS:HA	1.71	0.71
47:T:39:THR:O	47:T:41:ALA:N	2.24	0.71
47:T:87:LEU:HB2	47:T:91:GLN:HG2	1.71	0.71
32:E:146:VAL:HG23	32:E:167:VAL:HG23	1.70	0.71
32:E:4:VAL:HG12	32:E:6:LYS:H	1.54	0.71
33:F:109:ARG:HD3	33:F:136:ILE:O	1.91	0.71
42:O:62:LEU:HD13	42:O:70:ALA:CB	2.21	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:R:49:ILE:HB	45:R:51:VAL:O	1.91	0.71
28:A:1534:U:H5'	28:A:1535:A:OP1	1.91	0.71
28:A:2210:U:H4'	28:A:2211:A:H5'	1.72	0.71
28:A:2503:A:O2'	28:A:2504:U:H5'	1.90	0.71
28:A:554:U:H2'	28:A:555:G:H5'	1.73	0.71
28:A:948:C:O2	28:A:984:A:O2'	2.08	0.71
37:J:44:TYR:HD1	44:Q:59:LEU:HD21	1.54	0.71
39:L:79:LEU:H	39:L:113:ALA:HB3	1.55	0.71
27:5:140:PRO:HG3	28:A:2122:U:OP1	1.91	0.71
28:A:2135:A:H3'	28:A:2136:G:H8	1.55	0.71
28:A:2123:G:H1'	28:A:2176:A:C2	2.26	0.71
30:C:75:ALA:HB2	30:C:95:TYR:CD1	2.25	0.71
34:G:15:ASP:N	34:G:26:LYS:O	2.23	0.71
30:C:251:THR:HG22	30:C:252:LYS:N	2.05	0.71
28:A:2800:A:H3'	28:A:2801:G:H5'	1.71	0.71
31:D:9:VAL:HG22	31:D:26:VAL:O	1.90	0.71
28:A:2490:G:H4'	28:A:2491:U:OP1	1.89	0.71
28:A:2006:C:O2'	28:A:2823:A:N3	2.24	0.71
45:R:58:VAL:CG1	45:R:102:SER:HB2	2.21	0.71
45:R:39:LEU:O	45:R:49:ILE:HG23	1.91	0.71
28:A:2115:G:H3'	28:A:2116:G:C5'	2.21	0.71
28:A:2139:U:H2'	28:A:2140:G:H5'	1.71	0.71
34:G:101:VAL:HA	34:G:116:LEU:HD13	1.73	0.71
24:2:12:ARG:HE	24:2:44:VAL:CG1	2.04	0.71
35:H:1:MET:N	35:H:20:ASN:OD1	2.19	0.70
35:H:4:ILE:HD11	35:H:44:ILE:HA	1.72	0.70
44:Q:13:HIS:O	44:Q:17:LEU:HD13	1.91	0.70
28:A:2105:U:H2'	28:A:2106:U:O4'	1.90	0.70
28:A:974:G:H4'	45:R:78:ARG:HH22	1.54	0.70
33:F:107:VAL:HB	33:F:108:PRO:HD3	1.73	0.70
31:D:49:GLN:NE2	31:D:79:LEU:HD13	2.06	0.70
35:H:4:ILE:HD11	35:H:44:ILE:HG22	1.71	0.70
35:H:94:ILE:HA	35:H:114:GLU:CG	2.20	0.70
42:O:66:GLY:HA2	42:O:102:ARG:NH1	2.06	0.70
28:A:139:U:C5	47:T:1:MET:HG2	2.26	0.70
28:A:2324:U:H3'	28:A:2325:G:C5'	2.21	0.70
43:P:88:ARG:HD2	43:P:112:ARG:NH2	2.06	0.70
30:C:9:SER:HB2	30:C:10:PRO:HD2	1.73	0.70
28:A:2127:G:O2'	28:A:2128:G:O4'	2.09	0.70
28:A:2147:A:H3'	28:A:2148:G:C8	2.26	0.70
27:5:129:GLN:HB2	28:A:2170:A:C2	2.25	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:G:15:ASP:HB3	34:G:26:LYS:H	1.55	0.70
44:Q:43:GLN:NE2	45:R:77:PHE:HB3	2.07	0.70
28:A:864:G:OP2	40:M:22:GLN:NE2	2.24	0.70
28:A:1816:C:N4	30:C:34:GLU:OE2	2.24	0.70
28:A:549:G:H5''	28:A:550:C:C6	2.26	0.70
35:H:46:PHE:CE2	35:H:50:ARG:HD3	2.27	0.70
35:H:71:LYS:HD2	35:H:108:VAL:HG13	1.73	0.70
36:I:100:ILE:O	36:I:140:GLU:N	2.22	0.70
39:L:77:ILE:CD1	39:L:108:ALA:HB1	2.21	0.70
27:5:212:VAL:HG21	27:5:227:ALA:HB3	1.73	0.70
28:A:856:G:H1'	50:W:23:LYS:HB2	1.73	0.70
23:1:29:LYS:NZ	28:A:2287:A:OP1	2.20	0.70
43:P:30:TRP:CE3	43:P:37:LYS:HE2	2.27	0.70
28:A:631:A:O2'	39:L:66:PHE:HB3	1.91	0.70
27:5:62:ALA:HB3	27:5:145:VAL:CA	2.16	0.70
28:A:2146:C:H4'	28:A:2148:G:C2	2.27	0.70
34:G:19:ASN:O	34:G:22:VAL:HG22	1.92	0.70
28:A:2270:A:O2'	50:W:16:GLU:OE2	2.10	0.70
39:L:95:LEU:CB	39:L:101:ILE:HD11	2.22	0.70
27:5:8:MET:HG2	28:A:2175:C:H5''	1.72	0.70
24:2:4:THR:HG22	28:A:687:C:H1'	1.73	0.70
37:J:29:ALA:HB1	37:J:105:VAL:HG12	1.74	0.70
28:A:511:U:H2'	28:A:512:G:H5'	1.73	0.70
58:9:21:A:N6	58:9:48:C:O4'	2.25	0.70
28:A:2800:A:H3'	28:A:2801:G:C5'	2.22	0.70
52:Y:56:LEU:O	52:Y:58:ASN:N	2.24	0.70
28:A:2313:C:H5''	33:F:87:LYS:HD3	1.72	0.70
55:7:21:C:H2'	55:7:22:A:H5'	1.74	0.70
32:E:172:ALA:HB2	32:E:192:ALA:HB1	1.73	0.70
27:5:129:GLN:HB2	28:A:2170:A:H2	1.56	0.70
27:5:36:ALA:CA	27:5:37:LYS:HG2	2.21	0.70
47:T:36:LYS:HE3	47:T:80:TRP:HA	1.72	0.70
50:W:24:ARG:NH2	50:W:84:GLU:OE1	2.24	0.70
28:A:1070:A:H5'	28:A:1072:C:OP2	1.92	0.70
28:A:833:A:H2'	28:A:834:G:H8	1.56	0.70
28:A:72:U:OP2	52:Y:54:LYS:NZ	2.25	0.70
58:9:68:C:O2'	58:9:69:G:H5'	1.92	0.70
28:A:2845:U:O3'	43:P:52:ARG:NH1	2.25	0.70
28:A:2352:A:N6	50:W:30:VAL:HG11	2.06	0.70
31:D:111:GLY:HA3	31:D:194:PRO:HG2	1.74	0.70
28:A:1818:U:OP2	30:C:155:ARG:NH1	2.24	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:H:14:SER:CB	35:H:17:ASP:HB2	2.22	0.69
27:5:50:ILE:HG12	27:5:169:GLY:HA3	1.73	0.69
28:A:1466:U:HO2'	28:A:1546:G:HO2'	1.40	0.69
28:A:74:A:H2'	28:A:75:G:H5''	7.45	0.69
35:H:66:ASN:O	35:H:68:ARG:HA	1.92	0.69
27:5:85:GLU:CG	27:5:88:LYS:HD2	2.18	0.69
27:5:65:LEU:HD22	27:5:191:ALA:HB3	1.73	0.69
28:A:2153:C:O2'	28:A:2154:A:H5''	1.92	0.69
28:A:956:G:O6	40:M:14:LYS:NZ	2.25	0.69
56:8:3:C:H2'	56:8:4:G:H5'	1.74	0.69
35:H:75:LEU:HD23	35:H:103:VAL:HG22	1.74	0.69
27:5:46:VAL:HG22	27:5:212:VAL:HG22	1.73	0.69
34:G:24:THR:OG1	34:G:34:ARG:NE	2.24	0.69
22:0:2:VAL:HG11	28:A:2016:U:H1'	1.74	0.69
44:Q:49:ARG:O	44:Q:53:LYS:NZ	2.25	0.69
23:1:35:LEU:HD11	23:1:37:LYS:HD2	1.74	0.69
56:8:54:U:H2'	56:8:55:U:O4'	1.93	0.69
28:A:84:A:P	48:U:5:ARG:HH22	2.14	0.69
31:D:109:VAL:HG13	31:D:201:LEU:HD23	1.73	0.69
32:E:149:ILE:CG1	32:E:188:MET:HA	2.22	0.69
33:F:39:VAL:CG1	33:F:49:LEU:HD13	2.17	0.69
28:A:1607:C:N4	28:A:1622:G:OP2	2.25	0.69
33:F:35:LEU:CD2	33:F:153:ILE:HG22	2.23	0.69
54:6:60:U:H5''	54:6:61:C:H5	1.57	0.69
28:A:1097:U:H2'	28:A:1098:A:H5'	1.75	0.69
28:A:1177:G:H3'	28:A:1178:C:H5''	1.74	0.69
36:I:4:VAL:CG2	36:I:7:TYR:HB3	2.23	0.69
58:9:16:U:H5	58:9:18:G:H5''	1.57	0.69
34:G:21:GLN:NE2	34:G:38:ASP:O	2.26	0.69
28:A:1413:A:H2'	28:A:1414:C:H5'	1.75	0.69
56:8:61:C:H2'	56:8:62:C:H6	1.58	0.69
28:A:2760:C:O2'	28:A:2761:A:H5'	1.93	0.69
36:I:40:ALA:HB1	36:I:68:PHE:CE2	2.27	0.69
43:P:50:ARG:CD	43:P:56:SER:HB3	2.22	0.69
28:A:28:A:O2'	28:A:296:U:OP1	50.81	0.69
49:V:76:ASP:OD1	49:V:77:VAL:N	2.24	0.69
28:A:1847:A:H2'	28:A:1847:A:OP1	1.91	0.69
28:A:1071:G:H1'	28:A:1089:A:C8	2.28	0.69
28:A:1007:C:H5''	37:J:37:ARG:NH2	2.08	0.69
27:5:43:ASP:H	27:5:214:ILE:CD1	2.04	0.69
58:9:58:A:H1'	58:9:60:U:H5	1.56	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:9:2:C:C2'	58:9:3:C:H5'	2.23	0.69
38:K:71:ARG:HE	38:K:106:GLU:HG2	1.57	0.69
27:5:77:VAL:HG22	27:5:115:ILE:HB	1.74	0.69
24:2:3:ARG:NH2	28:A:1613:G:HO2'	1.91	0.69
35:H:73:ASN:OD1	35:H:131:SER:HA	1.93	0.69
28:A:2203:U:H5''	28:A:2204:G:OP1	1.93	0.69
32:E:58:LYS:HE3	32:E:60:TRP:O	1.93	0.69
28:A:138:U:OP1	28:A:140:C:N4	2.25	0.69
55:7:23:A:H1'	55:7:24:A:C8	2.27	0.69
49:V:17:SER:HB3	49:V:21:ARG:HH12	1.57	0.69
28:A:1478:G:H1	28:A:1513:U:H3	1.41	0.69
28:A:177:G:N2	28:A:177:G:OP2	2.23	0.69
28:A:468:G:C2'	28:A:469:G:H5'	2.23	0.69
27:5:168:ASN:ND2	28:A:2179:C:H5'	2.07	0.69
28:A:1508:A:O2'	28:A:1509:A:O4'	2.07	0.69
43:P:87:ARG:NH2	43:P:109:ILE:O	2.23	0.69
28:A:2097:A:H2'	28:A:2098:U:C6	2.28	0.69
28:A:2339:C:H2'	28:A:2340:A:C8	2.27	0.69
28:A:1077:A:H1'	36:I:93:ASN:HD22	1.56	0.68
28:A:2502:G:P	28:A:2502:G:H3'	2.33	0.68
37:J:122:LEU:O	37:J:123:LYS:HD2	1.92	0.68
27:5:68:GLY:HA2	27:5:159:GLY:CA	2.23	0.68
58:9:16:U:C4	58:9:18:G:H3'	2.28	0.68
28:A:2112:G:H1'	58:9:19:G:C2	2.28	0.68
28:A:2139:U:N3	28:A:2140:G:N7	2.41	0.68
28:A:597:G:C2'	28:A:598:U:H5'	3.66	0.68
47:T:14:PRO:HD3	52:Y:30:MET:HE3	1.74	0.68
46:S:13:SER:O	46:S:15:GLN:N	2.26	0.68
35:H:67:ALA:HB3	35:H:68:ARG:CA	2.19	0.68
28:A:2352:A:C6	50:W:30:VAL:HG11	2.29	0.68
56:8:51:C:O2'	56:8:52:G:H5'	1.92	0.68
28:A:118:A:H3'	28:A:119:A:H5''	1.75	0.68
22:0:4:GLN:NE2	28:A:2056:G:O2'	2.26	0.68
22:0:42:ILE:CG2	22:0:46:GLY:HA2	2.24	0.68
28:A:321:U:O3'	32:E:162:ARG:NH1	2.26	0.68
43:P:91:VAL:O	43:P:92:ARG:HG2	1.93	0.68
41:N:21:PHE:HA	41:N:25:ALA:HB3	5.12	0.68
37:J:4:PHE:N	37:J:44:TYR:OH	2.27	0.68
37:J:17:VAL:HG12	37:J:55:ILE:HD11	1.75	0.68
42:O:76:LYS:HB2	42:O:109:ALA:HB1	1.74	0.68
27:5:47:ASN:HB2	27:5:210:LYS:HB2	1.76	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:139:U:H5	47:T:1:MET:HG2	1.58	0.68
40:M:31:PHE:CE2	40:M:110:GLU:HA	2.27	0.68
23:1:39:ASP:O	23:1:43:ARG:N	2.25	0.68
41:N:73:ASN:HA	41:N:76:VAL:CG1	2.23	0.68
49:V:24:ASN:O	49:V:25:LYS:HD2	1.93	0.68
28:A:1019:U:H3	28:A:1142:A:H62	1.42	0.68
51:X:16:ASN:HD21	51:X:26:ARG:HD3	1.58	0.68
27:5:42:VAL:HG22	27:5:176:GLY:O	1.92	0.68
35:H:72:ILE:HG21	35:H:132:PHE:HA	1.74	0.68
49:V:80:HIS:HD2	49:V:83:LYS:HB2	1.59	0.68
35:H:104:THR:HA	35:H:109:GLU:HA	1.76	0.68
34:G:22:VAL:HG12	34:G:36:LEU:CD2	2.23	0.68
28:A:445:C:C2'	28:A:446:G:H5'	2.23	0.68
56:8:61:C:H2'	56:8:62:C:C6	2.28	0.68
28:A:1870:C:H2'	28:A:1871:A:C5	2.29	0.68
27:5:48:LEU:HD11	27:5:171:ILE:N	2.07	0.68
28:A:1494:A:H2'	28:A:1495:A:H8	1.59	0.68
28:A:634:C:H2'	28:A:635:C:H6	1.59	0.68
32:E:56:GLY:CA	32:E:73:ILE:HG22	2.23	0.68
35:H:146:VAL:HA	35:H:149:GLU:CG	2.24	0.68
35:H:54:LEU:HA	35:H:57:LYS:NZ	2.08	0.68
37:J:17:VAL:HG12	37:J:55:ILE:CG1	2.24	0.68
28:A:2171:A:N3	28:A:2172:U:N3	2.42	0.68
47:T:65:GLY:O	47:T:76:ARG:NH1	2.27	0.68
43:P:4:ILE:HG22	43:P:5:LYS:N	2.06	0.68
30:C:90:ILE:HD12	30:C:102:TYR:CD1	2.28	0.68
28:A:266:G:H2'	28:A:267:C:H5''	1.76	0.68
28:A:201:C:O2'	28:A:251:A:N1	2.25	0.68
28:A:1:G:N1	28:A:2902:C:O2	2.18	0.68
29:B:114:C:H2'	29:B:115:A:C8	2.28	0.68
32:E:1:MET:O	32:E:13:THR:HA	1.94	0.68
35:H:97:ARG:NE	35:H:114:GLU:OE1	2.21	0.68
36:I:100:ILE:CB	36:I:139:VAL:HG23	2.23	0.68
36:I:20:SER:HB3	36:I:21:PRO:HD3	1.74	0.68
27:5:134:ARG:HG2	28:A:2125:G:H22	1.57	0.68
47:T:50:LEU:HD23	52:Y:26:PHE:CE2	2.28	0.68
26:4:4:ARG:HG3	28:A:2466:C:OP1	1.93	0.68
50:W:49:ASN:HB3	50:W:81:ILE:CD1	2.23	0.68
44:Q:63:ARG:HH22	44:Q:96:ASP:N	1.92	0.68
28:A:1364:G:N2	28:A:1367:A:OP2	2.25	0.68
28:A:736:C:H2'	28:A:737:C:H6	2.59	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:H:41:LYS:CA	35:H:44:ILE:HG12	2.23	0.68
56:8:52:G:O2'	56:8:53:G:O5'	2.11	0.68
52:Y:16:THR:O	52:Y:20:ASN:ND2	2.27	0.68
48:U:37:GLY:N	48:U:61:GLU:OE2	2.20	0.67
34:G:132:LEU:O	34:G:132:LEU:HD12	1.94	0.67
28:A:526:A:N6	28:A:2626:C:H4'	2.09	0.67
32:E:4:VAL:HG13	32:E:9:GLN:HG3	1.76	0.67
53:Z:3:THR:HA	53:Z:38:GLU:HA	1.75	0.67
28:A:2142:A:H2'	28:A:2143:C:H6	1.59	0.67
53:Z:4:ILE:N	53:Z:37:ARG:O	2.26	0.67
35:H:146:VAL:HA	35:H:149:GLU:HB2	1.75	0.67
39:L:82:LEU:HD12	39:L:83:ALA:N	2.08	0.67
40:M:2:LEU:O	40:M:69:PRO:HG2	1.94	0.67
27:5:105:LYS:HB2	28:A:2163:A:O4'	1.95	0.67
27:5:136:LEU:HB3	28:A:2125:G:O6	1.95	0.67
58:9:14:A:C2	58:9:22:G:H1'	2.29	0.67
47:T:32:LEU:N	47:T:83:ALA:HB3	2.09	0.67
50:W:39:GLN:NE2	50:W:43:LYS:HB2	2.10	0.67
27:5:139:ASN:HB2	27:5:164:ARG:HD3	1.76	0.67
28:A:2355:G:H4'	50:W:20:LEU:CD1	2.24	0.67
28:A:1089:A:H4'	28:A:1090:A:OP1	1.93	0.67
36:I:96:LYS:CG	36:I:138:VAL:HG23	2.22	0.67
28:A:58:G:OP1	47:T:78:SER:OG	2.13	0.67
28:A:2561:U:O2	38:K:23:LYS:NZ	2.27	0.67
27:5:4:LEU:CD1	28:A:2106:U:H3'	2.25	0.67
28:A:2114:A:H2'	28:A:2167:U:O2'	1.95	0.67
34:G:8:VAL:HG12	34:G:49:LEU:HB2	1.76	0.67
47:T:14:PRO:HD3	52:Y:30:MET:CE	2.25	0.67
28:A:1614:A:H61	46:S:88:ARG:H	1.40	0.67
29:B:66:A:H61	29:B:107:G:H2'	1.59	0.67
28:A:2111:U:C1'	28:A:2117:A:H5''	2.25	0.67
43:P:50:ARG:HD2	43:P:56:SER:CB	2.25	0.67
27:5:186:LYS:CD	27:5:189:LEU:HD12	2.24	0.67
34:G:114:HIS:HD1	34:G:150:TYR:HH	1.42	0.67
28:A:2600:A:C2'	28:A:2601:C:H5'	2.25	0.67
27:5:182:ALA:HB1	27:5:234:ASN:H	1.60	0.67
49:V:9:ARG:NH2	49:V:12:GLN:HA	2.09	0.67
27:5:116:ALA:HB1	27:5:121:MET:HB2	1.76	0.67
31:D:119:ALA:HB1	31:D:124:ARG:CB	2.15	0.67
35:H:116:ARG:HE	35:H:122:LEU:HD13	1.60	0.67
36:I:135:MET:HG2	36:I:137:LEU:HD23	1.76	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:I:4:VAL:HG11	36:I:7:TYR:HB3	1.77	0.67
37:J:35:ARG:HA	37:J:40:HIS:HD2	1.59	0.67
27:5:54:LYS:HD3	58:9:63:G:C4'	2.24	0.67
28:A:2146:C:H4'	28:A:2148:G:C4	2.30	0.67
28:A:1533:C:H1'	28:A:1534:U:C5	2.29	0.67
28:A:279:A:N6	28:A:361:G:H1'	2.09	0.67
28:A:322:A:P	32:E:162:ARG:HH11	2.16	0.67
37:J:32:LEU:HD22	37:J:54:ILE:HD13	1.77	0.67
58:9:24:G:C2	58:9:25:C:H1'	2.30	0.67
34:G:44:HIS:HA	34:G:49:LEU:CD2	2.25	0.67
28:A:1725:U:H2'	28:A:1726:C:H6	1.59	0.67
28:A:879:G:H2'	28:A:880:G:H4'	1.76	0.67
32:E:147:LEU:HB3	32:E:186:VAL:HG23	1.76	0.67
35:H:104:THR:CG2	35:H:109:GLU:HA	2.23	0.67
27:5:71:ARG:CA	27:5:177:LYS:HB2	2.14	0.67
58:9:59:U:C2'	58:9:60:U:H5'	2.25	0.67
38:K:71:ARG:HB3	38:K:72:PRO:CD	2.25	0.67
34:G:24:THR:CG2	34:G:32:LEU:HD23	2.24	0.67
28:A:807:U:OP2	39:L:41:ARG:NH1	2.27	0.67
36:I:56:VAL:HG23	36:I:70:THR:HA	1.75	0.67
42:O:105:ALA:O	42:O:106:LEU:HG	1.94	0.67
27:5:69:THR:HG22	27:5:73:VAL:CG1	2.20	0.67
28:A:2657:A:O2'	34:G:159:LYS:NZ	2.28	0.67
28:A:1064:C:H5'	36:I:88:GLY:N	2.09	0.66
28:A:1069:A:N3	28:A:1073:A:N6	2.43	0.66
28:A:141:G:N3	28:A:141:G:H2'	2.09	0.66
41:N:72:ASP:HB3	41:N:75:ILE:HG12	1.76	0.66
28:A:1047:G:O2'	28:A:1109:C:N4	2.27	0.66
28:A:1827:U:O2'	28:A:1970:A:N3	2.24	0.66
27:5:215:SER:HB2	28:A:2175:C:O2'	1.95	0.66
47:T:76:ARG:HH11	47:T:76:ARG:HG3	1.59	0.66
50:W:18:LYS:H	50:W:35:ILE:HG22	1.60	0.66
30:C:154:ALA:HB2	30:C:161:VAL:HG23	1.77	0.66
38:K:47:ILE:HG22	38:K:49:ARG:H	1.60	0.66
54:6:36:A:O2'	54:6:37:A:O5'	2.12	0.66
28:A:327:G:H2'	28:A:328:U:H6	1.60	0.66
30:C:124:LYS:CG	30:C:125:PRO:HD2	2.25	0.66
34:G:22:VAL:HA	34:G:36:LEU:HD23	1.78	0.66
28:A:1002:G:C2	28:A:1003:G:H1'	2.30	0.66
28:A:188:G:H2'	28:A:189:G:H5'	1.76	0.66
35:H:64:ALA:CA	35:H:71:LYS:HE3	2.25	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:994:C:O2'	45:R:10:LYS:HE2	1.95	0.66
32:E:31:VAL:HG21	32:E:104:ALA:CB	2.25	0.66
50:W:19:ARG:HH11	50:W:22:VAL:CB	2.09	0.66
34:G:82:PHE:CZ	34:G:137:LYS:HB2	2.29	0.66
28:A:2849:U:H4'	28:A:2868:A:C2	2.30	0.66
27:5:60:ARG:HB3	27:5:164:ARG:HG3	1.76	0.66
28:A:2123:G:N2	28:A:2175:C:N3	2.43	0.66
47:T:68:LYS:HD3	47:T:69:ARG:H	1.60	0.66
38:K:18:ARG:HB3	38:K:45:GLU:CG	2.26	0.66
34:G:15:ASP:CB	34:G:26:LYS:HB3	2.24	0.66
56:8:17:C:H5''	56:8:17(A):U:C5	2.31	0.66
28:A:474:G:O2'	28:A:475:C:H5'	3.24	0.66
28:A:547:A:H8	28:A:548:G:H5'	1.61	0.66
29:B:66:A:O4'	29:B:108:A:N6	2.27	0.66
30:C:128:THR:C	30:C:129:LEU:HD12	2.16	0.66
31:D:107:VAL:HG21	31:D:203:VAL:CG2	2.26	0.66
28:A:2140:G:H2'	28:A:2141:G:H8	1.58	0.66
45:R:68:ARG:HG2	45:R:90:ARG:HB3	1.77	0.66
28:A:170:U:H2'	28:A:171:U:H6	1.61	0.66
28:A:619:G:OP2	28:A:620:G:N2	2.27	0.66
28:A:1567:G:H5'	30:C:57:HIS:CD2	2.27	0.66
35:H:32:PRO:HB3	51:X:38:TRP:CG	2.30	0.66
28:A:774:G:H2'	28:A:775:G:H5'	5.69	0.66
56:8:19:G:OP1	56:8:60:U:N3	2.28	0.66
28:A:84:A:H4'	28:A:85:G:O5'	1.96	0.66
28:A:992:C:O2'	28:A:993:G:H5'	1.95	0.66
40:M:134:THR:HG22	40:M:136:MET:N	2.10	0.66
29:B:49:C:OP1	42:O:102:ARG:HG2	1.96	0.66
45:R:49:ILE:HG21	45:R:53:PHE:H	1.61	0.66
47:T:32:LEU:HB2	47:T:83:ALA:HB2	1.77	0.66
47:T:57:VAL:O	47:T:86:THR:OG1	2.13	0.66
55:7:14:A:H2'	55:7:14:A:N3	2.10	0.66
50:W:17:ALA:HA	50:W:35:ILE:HG23	1.76	0.66
28:A:2426:A:H3'	28:A:2427:C:H5'	1.77	0.66
28:A:1548:A:H2'	28:A:1549:A:C8	2.31	0.66
56:8:17:C:H5''	56:8:17(A):U:H6	1.59	0.66
28:A:27:G:N2	28:A:512:G:H1'	2.11	0.66
43:P:6:GLN:OE1	43:P:9:GLN:NE2	2.28	0.66
27:5:131:LEU:CD1	27:5:138:PRO:HG2	2.20	0.66
58:9:74:C:H4'	58:9:75:C:OP1	1.96	0.66
41:N:51:LEU:O	41:N:51:LEU:HD12	4.97	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:B:2:G:H22	29:B:119:A:H1'	1.59	0.66
55:7:27:A:N3	55:7:27:A:H3'	2.11	0.66
28:A:1176:U:H2'	28:A:1177:G:C8	2.31	0.65
28:A:833:A:H2'	28:A:834:G:C8	2.31	0.65
31:D:53:GLY:O	31:D:76:GLY:HA2	1.95	0.65
35:H:26:ALA:O	35:H:28:ASN:N	2.26	0.65
58:9:16:U:C5	58:9:18:G:H3'	2.31	0.65
28:A:2287:A:O2'	28:A:2288:A:H2'	1.96	0.65
49:V:80:HIS:CD2	49:V:83:LYS:HB2	2.31	0.65
46:S:73:LYS:HE2	46:S:75:PHE:HE2	1.60	0.65
33:F:53:ALA:HB1	33:F:64:PRO:HG2	1.78	0.65
27:5:107:GLY:HA2	27:5:134:ARG:NH2	2.12	0.65
58:9:52:G:H3'	58:9:53:G:H8	1.59	0.65
38:K:2:ILE:HD12	38:K:8:LEU:HD21	1.77	0.65
45:R:61:ALA:CB	45:R:98:ILE:HD13	2.26	0.65
27:5:46:VAL:HG22	27:5:212:VAL:HA	1.78	0.65
47:T:29:THR:CB	47:T:86:THR:HA	2.26	0.65
28:A:707:G:C2'	28:A:708:G:H5'	2.26	0.65
34:G:88:LEU:CD2	34:G:161:VAL:HG22	2.26	0.65
28:A:1301:A:O2'	28:A:1302:A:H5''	1.97	0.65
28:A:2098:U:H2'	28:A:2099:U:O4'	1.96	0.65
25:3:21:PHE:O	25:3:22:LYS:HG2	1.95	0.65
42:O:7:ARG:HA	42:O:10:ARG:HE	1.61	0.65
28:A:2818:U:O2'	28:A:2819:G:H5'	1.96	0.65
40:M:28:PHE:HB2	40:M:104:GLU:OE1	1.97	0.65
34:G:35:THR:HG21	34:G:70:LEU:HD13	1.76	0.65
49:V:4:ILE:CG2	49:V:42:LEU:HD22	2.26	0.65
28:A:163:C:H3'	28:A:163:C:OP2	1.95	0.65
27:5:21:TYR:CE2	27:5:222:VAL:HB	2.32	0.65
27:5:226:GLN:OE1	27:5:229:LEU:HD12	1.97	0.65
27:5:44:VAL:CG2	27:5:46:VAL:HG23	2.27	0.65
28:A:1474:U:C2'	28:A:1475:G:H5'	2.26	0.65
28:A:2510:C:H2'	28:A:2511:U:H6	1.61	0.65
46:S:73:LYS:HE2	46:S:75:PHE:CE2	2.32	0.65
28:A:276:U:H2'	28:A:277:G:O4'	1.96	0.65
31:D:129:THR:HG23	31:D:140:HIS:O	1.95	0.65
27:5:64:VAL:HG21	27:5:155:ASN:HB3	1.77	0.65
58:9:57:G:H2'	58:9:58:A:H5'	1.77	0.65
28:A:2748:A:H1'	34:G:66:THR:HG22	1.78	0.65
44:Q:16:ILE:HD13	44:Q:35:PHE:HD1	1.60	0.65
46:S:69:LEU:HG	46:S:107:VAL:CG2	2.26	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:5:19:LYS:HB3	27:5:21:TYR:CZ	2.32	0.65
27:5:30:LEU:HD11	27:5:216:THR:N	2.10	0.65
28:A:2140:G:N1	28:A:2151:U:O2	2.18	0.65
28:A:2156:G:H4'	28:A:2158:A:H62	1.61	0.65
28:A:2178:C:H2'	28:A:2179:C:H5	1.61	0.65
28:A:707:G:H2'	28:A:708:G:H5'	1.77	0.65
28:A:1535:A:H5''	28:A:1536:C:H5	1.62	0.65
28:A:1723:G:C2	28:A:1724:G:H1'	2.31	0.65
50:W:48:ALA:O	50:W:61:LYS:HB3	1.97	0.65
31:D:136:ASN:OD1	31:D:137:SER:N	2.29	0.65
35:H:113:SER:HA	35:H:133:GLN:NE2	2.12	0.65
35:H:47:PHE:HB2	35:H:50:ARG:HH21	1.62	0.65
36:I:45:THR:HA	36:I:48:ILE:HG12	1.79	0.65
39:L:78:ARG:HB3	39:L:113:ALA:CB	2.25	0.65
28:A:2386:A:H2	50:W:38:ARG:HG2	1.62	0.65
58:9:16:U:H5'	58:9:17:C:OP2	1.96	0.65
58:9:32:U:H2'	58:9:33:U:O4'	1.97	0.65
33:F:113:PHE:CZ	33:F:115:GLY:HA2	2.31	0.65
26:4:3:VAL:HG23	26:4:4:ARG:N	2.08	0.65
48:U:86:PHE:CE2	48:U:92:VAL:HG11	2.32	0.65
28:A:2485:G:OP1	40:M:45:GLN:NE2	2.26	0.65
25:3:27:ASN:O	25:3:35:LYS:NZ	2.30	0.65
41:N:2:ARG:O	41:N:2:ARG:HG2	1.96	0.65
44:Q:91:ARG:CD	45:R:11:GLN:HB2	2.25	0.65
27:5:64:VAL:HG22	27:5:160:GLN:HB2	1.79	0.65
28:A:2146:C:H5''	28:A:2147:A:C2	2.31	0.65
33:F:74:ALA:N	56:8:56:C:O2'	2.30	0.65
35:H:67:ALA:CB	35:H:68:ARG:HA	2.21	0.65
28:A:2326:C:O2'	28:A:2327:A:OP1	2.11	0.65
27:5:175:ILE:CG2	27:5:185:LEU:HB3	2.26	0.65
27:5:68:GLY:HA2	27:5:159:GLY:HA3	1.79	0.65
58:9:18:G:HO2'	58:9:57:G:H1	1.43	0.65
58:9:57:G:H2'	58:9:58:A:C5'	2.27	0.65
28:A:2132:U:H6	28:A:2157:G:H21	1.43	0.65
28:A:2189:U:H2'	28:A:2190:G:H5'	1.77	0.65
28:A:1437:C:H2'	28:A:1438:U:H6	1.62	0.65
29:B:2:G:N2	29:B:119:A:O2'	2.30	0.65
30:C:244:VAL:HG12	30:C:250:GLN:HA	1.78	0.65
28:A:2311:A:N3	33:F:84:ILE:HD11	2.11	0.65
28:A:1405:U:H2'	28:A:1406:U:C6	2.32	0.64
28:A:879:G:H2'	28:A:880:G:C4'	2.27	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:B:36:C:H5'	29:B:37:C:OP2	1.97	0.64
37:J:3:THR:HG21	44:Q:60:TRP:HE1	1.62	0.64
39:L:122:VAL:HG13	39:L:142:ILE:HG23	1.79	0.64
58:9:9:A:O2'	58:9:11:C:N4	2.30	0.64
28:A:2311:A:C2	33:F:84:ILE:HD11	2.33	0.64
28:A:2312:U:H5'	33:F:84:ILE:HG21	1.78	0.64
28:A:629:G:H1'	28:A:639:U:H1'	1.80	0.64
28:A:2571:U:O2'	31:D:151:THR:HG21	1.97	0.64
39:L:101:ILE:HG22	39:L:105:ILE:HB	1.79	0.64
42:O:35:ILE:HB	42:O:102:ARG:HH11	1.61	0.64
42:O:62:LEU:HD13	42:O:70:ALA:HB1	1.79	0.64
35:H:116:ARG:NE	35:H:122:LEU:HD13	2.12	0.64
27:5:210:LYS:O	27:5:226:GLN:NE2	2.24	0.64
28:A:2112:G:N3	58:9:19:G:N1	2.45	0.64
34:G:88:LEU:HD22	34:G:161:VAL:HG22	1.78	0.64
40:M:42:THR:HG22	40:M:93:VAL:HG12	1.80	0.64
28:A:662:G:H2'	28:A:663:G:H5'	1.79	0.64
28:A:1154:G:OP2	44:Q:57:ARG:NH1	2.30	0.64
28:A:845:A:H3'	28:A:845:A:N3	2.12	0.64
31:D:110:THR:OG1	31:D:171:THR:HG22	1.97	0.64
35:H:129:GLU:OE1	35:H:142:VAL:HG13	1.97	0.64
36:I:98:GLY:H	36:I:137:LEU:HB3	1.61	0.64
27:5:35:THR:HG1	27:5:218:MET:HG2	1.62	0.64
34:G:51:PHE:CE2	34:G:68:ARG:HA	2.33	0.64
28:A:1413:A:C2'	28:A:1414:C:H5'	2.28	0.64
28:A:2581:G:N2	28:A:2581:G:OP2	2.30	0.64
28:A:1062:G:O2'	28:A:1063:G:H5'	1.98	0.64
28:A:1568:G:H4'	30:C:58:LYS:CB	2.26	0.64
28:A:2059:A:H5'	28:A:2060:A:OP2	1.98	0.64
35:H:113:SER:HA	35:H:133:GLN:CD	2.18	0.64
35:H:115:VAL:HG11	35:H:137:GLU:N	2.12	0.64
36:I:96:LYS:HE2	36:I:138:VAL:CG2	2.28	0.64
53:Z:23:LEU:HD21	53:Z:53:MET:HE1	1.79	0.64
28:A:2480:C:H2'	28:A:2481:G:H5'	1.78	0.64
31:D:172:VAL:HG23	31:D:194:PRO:HD3	1.79	0.64
28:A:2886:A:C2	28:A:2887:A:H1'	2.32	0.64
39:L:57:LEU:HD13	39:L:60:ARG:HH11	1.62	0.64
28:A:2119:A:N1	28:A:2171:A:H5'	2.12	0.64
50:W:51:GLY:HA2	50:W:59:PHE:CD2	2.32	0.64
38:K:9:ASN:O	38:K:83:ALA:HA	1.97	0.64
28:A:916:G:O2'	28:A:917:A:O4'	2.13	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:B:23:G:O6	29:B:59:A:N6	2.31	0.64
37:J:110:PRO:HB2	37:J:111:LYS:HG2	1.80	0.64
28:A:1584:U:H2'	28:A:1585:C:H5'	1.77	0.64
56:8:64:G:H2'	56:8:65:C:C6	2.33	0.64
28:A:2788:C:H2'	28:A:2789:C:C6	2.33	0.64
28:A:107:G:C2'	28:A:108:G:H5'	2.81	0.64
31:D:25:THR:HG21	31:D:193:VAL:HG22	1.80	0.64
32:E:56:GLY:HA2	32:E:73:ILE:HG22	1.79	0.64
42:O:83:LEU:HD11	42:O:115:LEU:HD12	1.78	0.64
58:9:67:C:H2'	58:9:68:C:H6	1.59	0.64
47:T:54:GLU:CG	47:T:88:LYS:HB3	2.25	0.64
28:A:2683:C:O2	38:K:70:ARG:NH2	2.31	0.64
53:Z:38:GLU:HG3	53:Z:40:THR:HG23	1.79	0.64
25:3:26:ALA:O	25:3:27:ASN:HB2	1.98	0.64
28:A:1435:G:C2'	28:A:1436:G:H5'	2.28	0.64
28:A:1766:G:O2'	28:A:1767:G:H5'	1.98	0.64
27:5:60:ARG:HG2	27:5:165:ASN:H	1.62	0.64
27:5:107:GLY:HA3	28:A:2162:G:N2	2.12	0.64
44:Q:111:LYS:HD3	45:R:48:LYS:CE	2.27	0.64
32:E:47:LYS:HA	32:E:51:GLU:OE2	1.98	0.64
52:Y:22:LEU:O	52:Y:27:ASN:ND2	2.31	0.64
28:A:198:C:H2'	28:A:199:A:H5''	1.78	0.64
28:A:895:U:O3'	28:A:896:A:H3'	1.98	0.64
31:D:101:PHE:HA	31:D:104:VAL:HG23	1.80	0.64
44:Q:94:LEU:HD21	45:R:4:VAL:HG21	1.78	0.64
27:5:65:LEU:CD2	27:5:191:ALA:HB3	2.28	0.64
58:9:38:A:C2'	58:9:39:U:H5''	2.28	0.64
49:V:4:ILE:HG21	49:V:42:LEU:HD22	1.80	0.64
28:A:172:A:H2'	28:A:173:A:C8	2.33	0.63
28:A:1437:C:H2'	28:A:1438:U:C6	2.34	0.63
43:P:17:PRO:CG	43:P:83:ILE:HG23	2.26	0.63
28:A:1045:C:H4'	28:A:1046:A:H5''	1.80	0.63
28:A:1847:A:H4'	28:A:1848:A:OP2	1.97	0.63
52:Y:24:GLU:O	52:Y:28:LEU:HG	1.98	0.63
28:A:2783:U:O2'	28:A:2784:U:H5'	1.98	0.63
28:A:1064:C:H42	28:A:1074:G:H1	1.45	0.63
28:A:845:A:H61	28:A:932:U:H3	1.45	0.63
35:H:7:ASP:OD2	35:H:10:ALA:N	2.24	0.63
28:A:2117:A:H4'	28:A:2145:C:C4'	2.20	0.63
34:G:98:LYS:HB2	34:G:103:ASN:HD21	1.61	0.63
28:A:2277:G:OP2	50:W:8:SER:HB2	1.98	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:2030:A:C2	28:A:2499:C:H5''	2.33	0.63
22:0:9:ARG:HH12	44:Q:29:ARG:CZ	2.11	0.63
29:B:65:U:C2'	29:B:66:A:H5'	2.28	0.63
36:I:4:VAL:HG13	36:I:59:THR:CG2	2.25	0.63
27:5:226:GLN:O	27:5:230:SER:OG	2.17	0.63
28:A:2210:U:C4'	28:A:2211:A:H5'	2.28	0.63
28:A:1545:A:H2'	28:A:1546:G:H5'	1.80	0.63
28:A:2339:C:H2'	28:A:2340:A:H8	1.63	0.63
28:A:215:G:C4'	28:A:216:A:H4'	2.29	0.63
29:B:48:U:OP1	42:O:30:ARG:NH1	2.29	0.63
30:C:33:LEU:CD2	30:C:62:ARG:HG2	2.29	0.63
34:G:1:SER:O	34:G:3:VAL:N	2.31	0.63
35:H:104:THR:HA	35:H:109:GLU:CA	2.28	0.63
35:H:90:LEU:HD11	35:H:146:VAL:CG2	2.16	0.63
23:1:7:LYS:HG2	23:1:23:THR:CG2	2.28	0.63
28:A:14:A:H5''	28:A:15:G:OP2	1.98	0.63
28:A:207:A:H2'	28:A:208:C:O4'	1.99	0.63
28:A:879:G:C2	28:A:880:G:H1'	2.32	0.63
42:O:66:GLY:HA2	42:O:102:ARG:CZ	2.28	0.63
28:A:2174:C:H2'	28:A:2175:C:C4	2.33	0.63
33:F:127:TYR:CE2	33:F:129:MET:HB3	2.34	0.63
41:N:69:ARG:O	41:N:70:THR:OG1	2.11	0.63
28:A:860:U:H1'	28:A:2268:A:H5'	1.81	0.63
28:A:2287:A:O2'	28:A:2288:A:O5'	2.14	0.63
28:A:2562:U:H4'	38:K:25:LEU:CD2	2.28	0.63
28:A:1800:C:H5'	30:C:145:MET:CE	2.28	0.63
28:A:1055:G:H2'	28:A:1056:G:O4'	1.99	0.63
29:B:37:C:H2'	29:B:38:C:O4'	1.99	0.63
45:R:54:VAL:HG23	45:R:57:GLY:HA3	1.80	0.63
48:U:35:VAL:HB	48:U:38:ILE:CG2	2.24	0.63
27:5:170:ILE:HD13	28:A:2177:C:O2'	1.98	0.63
28:A:1248:G:P	32:E:44:ARG:HH12	2.22	0.63
51:X:69:GLU:O	51:X:71:ARG:N	2.32	0.63
54:6:44:G:H5'	54:6:45:U:H5	1.64	0.63
28:A:757:G:C2'	28:A:758:C:H5'	2.28	0.63
28:A:881:G:N1	28:A:898:C:H1'	2.13	0.63
28:A:996:A:C5'	44:Q:91:ARG:HH21	2.11	0.63
27:5:21:TYR:HE2	27:5:222:VAL:HB	1.62	0.63
28:A:2162:G:H3'	28:A:2162:G:N3	2.12	0.63
49:V:44:HIS:HE1	49:V:86:LEU:H	1.47	0.63
28:A:2260:C:H5''	50:W:13:ARG:HH21	1.63	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:1964:G:O2'	28:A:1967:C:OP2	2.11	0.63
24:2:34:ARG:CZ	24:2:39:ARG:HD2	2.28	0.63
22:0:42:ILE:HD12	41:N:99:LYS:O	1.97	0.63
28:A:1071:G:H1'	28:A:1089:A:C5	2.34	0.63
34:G:1:SER:HA	34:G:4:ALA:CB	2.23	0.63
36:I:4:VAL:CG1	36:I:59:THR:HG23	2.26	0.63
37:J:53:TYR:CE1	37:J:121:LYS:HG2	2.32	0.63
28:A:188:G:H5'	51:X:13:THR:CG2	2.29	0.63
27:5:29:LEU:CB	27:5:222:VAL:HG21	2.28	0.63
50:W:24:ARG:NH1	50:W:65:LYS:HG2	2.13	0.63
28:A:782:A:N7	30:C:219:VAL:HG21	2.14	0.63
28:A:370:G:O2'	28:A:424:G:OP1	2.12	0.63
45:R:68:ARG:HD2	45:R:90:ARG:HE	1.64	0.63
28:A:803:U:C2'	28:A:804:A:H5'	2.28	0.63
23:1:35:LEU:CD1	23:1:37:LYS:HD2	2.28	0.63
33:F:122:ASP:OD2	33:F:126:ASN:ND2	2.31	0.63
27:5:101:ALA:O	27:5:104:ILE:HG12	1.99	0.63
28:A:1173:U:O2	28:A:1176:U:N3	2.32	0.63
30:C:134:ILE:HD13	30:C:140:VAL:CG1	2.29	0.63
37:J:32:LEU:HD22	37:J:54:ILE:CD1	2.28	0.63
58:9:18:G:H4'	58:9:60:U:C2	2.34	0.63
34:G:22:VAL:HA	34:G:36:LEU:CD2	2.29	0.63
44:Q:87:VAL:CG1	44:Q:89:ILE:HG23	2.28	0.63
50:W:19:ARG:NH1	50:W:22:VAL:HG11	2.12	0.63
53:Z:6:ILE:O	53:Z:34:THR:HA	1.98	0.63
28:A:548:G:H4'	28:A:549:G:C5	2.33	0.62
32:E:149:ILE:HD11	32:E:188:MET:CE	2.29	0.62
35:H:146:VAL:HA	35:H:149:GLU:CB	2.28	0.62
28:A:2133:G:C2'	28:A:2134:A:H4'	2.28	0.62
34:G:120:ILE:HD11	34:G:139:VAL:HG12	1.80	0.62
34:G:24:THR:CG2	34:G:32:LEU:HB3	2.29	0.62
28:A:1159:U:O4'	28:A:1182:G:N2	21.20	0.62
28:A:304:U:H2'	28:A:305:C:H6	1.64	0.62
58:9:35:A:H2'	58:9:36:A:N7	2.14	0.62
32:E:119:ILE:HG13	32:E:119:ILE:O	1.99	0.62
28:A:2780:G:OP2	37:J:120:ARG:NE	2.27	0.62
28:A:285:G:N2	28:A:355:U:O2	2.32	0.62
28:A:464:U:H2'	28:A:466:A:C8	8.33	0.62
28:A:554:U:C2'	28:A:555:G:H5'	2.29	0.62
35:H:108:VAL:HG12	35:H:110:VAL:HB	1.80	0.62
35:H:51:ARG:HD3	35:H:55:GLU:OE2	1.98	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:I:24:GLY:O	36:I:27:LEU:HG	1.99	0.62
42:O:38:GLN:HA	42:O:50:ALA:HB2	1.81	0.62
44:Q:63:ARG:NH1	44:Q:96:ASP:HA	2.14	0.62
28:A:2330:G:N2	50:W:38:ARG:HA	2.13	0.62
34:G:26:LYS:HB2	34:G:32:LEU:CG	2.23	0.62
23:1:39:ASP:OD1	23:1:41:VAL:HG12	1.99	0.62
28:A:2530:A:H62	34:G:171:LYS:NZ	1.97	0.62
28:A:1924:C:C2'	28:A:1925:C:H5'	2.30	0.62
28:A:107:G:H2'	28:A:108:G:H5'	2.78	0.62
28:A:627:A:H4'	28:A:628:G:OP1	1.98	0.62
58:9:7:A:H3'	58:9:8:U:C5'	2.29	0.62
28:A:2125:G:H1'	28:A:2173:A:N6	2.14	0.62
34:G:112:VAL:HG23	34:G:113:ASP:N	2.15	0.62
34:G:17:LYS:HB3	34:G:24:THR:HB	1.80	0.62
48:U:8:ASP:OD2	48:U:71:ILE:HG13	2.00	0.62
42:O:58:ILE:O	42:O:61:GLN:HG2	1.98	0.62
28:A:291:G:H2'	28:A:292:U:H5'	1.80	0.62
28:A:2047:C:O2'	28:A:2048:G:H5'	1.98	0.62
35:H:14:SER:HB2	35:H:17:ASP:OD2	1.99	0.62
27:5:38:PHE:CE2	27:5:218:MET:HB3	2.34	0.62
47:T:69:ARG:HD2	47:T:70:HIS:H	1.62	0.62
34:G:134:GLY:HA3	34:G:140:ILE:HD13	1.80	0.62
28:A:30:G:OP1	44:Q:4:LYS:HD2	1.98	0.62
28:A:442:G:O4'	32:E:41:GLN:NE2	2.32	0.62
28:A:1046:A:H3'	28:A:1047:G:H5'	1.81	0.62
28:A:892:A:H2'	28:A:892:A:N3	2.15	0.62
28:A:56:A:C2'	28:A:57:C:H5'	2.29	0.62
28:A:281:C:O2'	28:A:282:A:H5'	1.99	0.62
28:A:901:C:H2'	28:A:902:C:O4'	2.00	0.62
31:D:52:THR:HG23	31:D:53:GLY:H	1.62	0.62
33:F:49:LEU:CD2	33:F:83:PRO:HB2	2.30	0.62
35:H:4:ILE:HG12	35:H:18:GLN:HE22	1.63	0.62
38:K:76:VAL:HB	43:P:72:VAL:HG22	1.81	0.62
33:F:105:ILE:CD1	33:F:138:PRO:HG2	2.25	0.62
51:X:48:LEU:CB	51:X:50:VAL:HG23	2.30	0.62
28:A:291:G:C2'	28:A:292:U:H5'	2.30	0.62
32:E:21:ARG:NH2	32:E:107:SER:OG	2.32	0.62
28:A:1063:G:H2'	28:A:1064:C:O4'	1.99	0.62
28:A:1083:U:H2'	28:A:1085:A:OP2	1.99	0.62
28:A:893:C:H2'	28:A:894:U:C6	2.35	0.62
28:A:934:U:H2'	28:A:935:C:C6	2.35	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:F:131:VAL:HG22	33:F:151:LEU:O	1.99	0.62
35:H:46:PHE:HE2	35:H:50:ARG:HD3	1.64	0.62
37:J:37:ARG:HG3	37:J:118:MET:HE1	1.80	0.62
37:J:120:ARG:O	37:J:123:LYS:NZ	2.33	0.62
39:L:95:LEU:HD22	39:L:100:ILE:HD11	1.81	0.62
40:M:8:LYS:HE3	40:M:9:PHE:HE2	1.65	0.62
42:O:79:ALA:HB3	42:O:113:ALA:CB	2.29	0.62
48:U:6:ARG:NH2	48:U:25:LYS:O	2.33	0.62
28:A:2683:C:H4'	31:D:13:ARG:HH11	1.64	0.62
58:9:37:A:H3'	58:9:38:A:H8	1.65	0.62
30:C:158:GLY:N	30:C:194:VAL:HG13	2.13	0.62
30:C:203:VAL:O	30:C:205:GLY:N	2.31	0.62
28:A:1968:G:O2'	28:A:1969:A:O4'	2.17	0.62
28:A:1097:U:C2'	28:A:1098:A:H5'	2.30	0.62
28:A:1411:U:H2'	28:A:1412:U:H5'	1.82	0.62
29:B:38:C:H2'	29:B:39:A:H8	1.64	0.62
35:H:90:LEU:H	35:H:147:VAL:HG12	1.63	0.62
36:I:27:LEU:HD12	36:I:30:GLN:H	1.63	0.62
42:O:15:ARG:NH2	42:O:95:SER:OG	2.32	0.62
27:5:148:ASN:HB2	27:5:152:ALA:CB	2.27	0.62
27:5:69:THR:CB	27:5:161:VAL:HG22	2.30	0.62
24:2:35:ARG:HE	24:2:42:LEU:HD13	1.64	0.62
28:A:1857:G:N2	28:A:1884:G:O2'	2.27	0.62
28:A:1130:U:N3	28:A:2025:C:H5''	2.15	0.62
28:A:1130:U:OP2	28:A:2570:G:N2	2.32	0.62
48:U:15:GLY:O	48:U:17:ASP:N	2.32	0.62
28:A:2111:U:N3	28:A:2145:C:OP1	2.33	0.62
28:A:2116:G:C5	28:A:2117:A:H1'	2.34	0.62
28:A:745:G:H2'	28:A:746:U:H5'	1.82	0.62
28:A:1173:U:O2'	28:A:1177:G:N2	2.33	0.62
30:C:2:VAL:HG11	30:C:201:LEU:HD23	1.80	0.62
36:I:72:THR:OG1	36:I:73:PRO:HD2	1.98	0.62
26:4:3:VAL:HG11	28:A:2539:C:H5'	1.82	0.62
29:B:21:G:C2'	29:B:22:U:H5'	2.29	0.62
28:A:1046:A:H3'	28:A:1047:G:C5'	2.29	0.62
29:B:48:U:P	42:O:30:ARG:HH22	2.22	0.62
27:5:1:MET:HB3	28:A:2120:G:N7	2.15	0.62
47:T:67:VAL:HG23	47:T:76:ARG:HB2	1.81	0.62
38:K:70:ARG:O	38:K:71:ARG:HB2	2.00	0.62
26:4:16:ILE:HD13	26:4:25:VAL:HG22	1.81	0.62
30:C:260:LYS:HA	30:C:263:ASP:OD2	2.00	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:883:G:N1	28:A:894:U:H1'	2.15	0.61
36:I:79:LEU:HD12	36:I:131:THR:CG2	2.28	0.61
45:R:34:GLU:HG2	45:R:60:LYS:HG2	1.82	0.61
27:5:137:MET:HB3	27:5:138:PRO:HD2	1.81	0.61
34:G:126:THR:HG22	34:G:128:THR:H	1.65	0.61
22:0:2:VAL:HG22	28:A:2015:A:C2	2.35	0.61
28:A:341:C:H2'	28:A:342:A:C8	2.35	0.61
28:A:2314:A:H2'	28:A:2315:G:H8	1.65	0.61
31:D:148:GLN:N	31:D:148:GLN:OE1	2.33	0.61
28:A:144:A:H2'	28:A:145:C:C6	2.35	0.61
35:H:104:THR:HG23	35:H:109:GLU:CA	2.29	0.61
36:I:123:ALA:HB1	36:I:126:ARG:NH2	2.14	0.61
38:K:71:ARG:HE	38:K:106:GLU:HG3	1.64	0.61
40:M:40:ARG:C	40:M:41:LEU:HD12	2.21	0.61
50:W:68:PHE:CD1	50:W:79:ILE:HG12	2.35	0.61
28:A:930:G:H1'	53:Z:24:LEU:HD21	1.81	0.61
28:A:200:U:H2'	28:A:201:C:H5'	1.80	0.61
28:A:549:G:H5''	28:A:550:C:H6	1.64	0.61
35:H:129:GLU:H	35:H:142:VAL:CG1	2.12	0.61
35:H:77:THR:CG2	35:H:144:VAL:HB	2.17	0.61
36:I:105:LEU:HA	36:I:108:ILE:CD1	2.22	0.61
36:I:72:THR:HG23	36:I:112:LYS:NZ	2.15	0.61
44:Q:60:TRP:CZ3	44:Q:93:ILE:HB	2.35	0.61
28:A:2745:C:H2'	28:A:2746:U:H6	1.66	0.61
28:A:2758:A:H2'	28:A:2759:G:H5'	1.82	0.61
23:1:4:ILE:HG23	23:1:5:ARG:N	2.16	0.61
33:F:102:LEU:O	33:F:107:VAL:HG23	2.00	0.61
28:A:1759:A:O2'	28:A:2714:G:O2'	2.18	0.61
49:V:75:GLN:HB3	49:V:90:ASP:O	2.00	0.61
47:T:15:HIS:HB3	47:T:31:VAL:HG13	1.81	0.61
28:A:197:A:N1	28:A:220:G:O2'	51.30	0.61
28:A:885:C:C2'	28:A:886:A:H5'	2.31	0.61
29:B:114:C:H2'	29:B:115:A:H8	1.64	0.61
28:A:2112:G:O2'	58:9:19:G:N3	2.22	0.61
28:A:2192:U:C2'	28:A:2193:G:H5'	2.28	0.61
28:A:1306:C:N4	28:A:1606:C:H2'	2.16	0.61
28:A:1734:G:H2'	28:A:1735:A:C8	2.34	0.61
28:A:2281:A:O2'	28:A:2282:G:H5'	2.00	0.61
34:G:167:VAL:O	34:G:168:VAL:HG22	2.00	0.61
46:S:59:GLU:HA	46:S:64:ALA:CB	2.30	0.61
35:H:71:LYS:HB3	35:H:108:VAL:HG11	1.83	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:5:35:THR:OG1	27:5:218:MET:HG2	2.00	0.61
27:5:21:TYR:HB2	27:5:26:ALA:HB2	1.83	0.61
28:A:2110:G:C2	28:A:2120:G:H1'	2.35	0.61
28:A:2164:C:H5''	28:A:2172:U:H5	1.65	0.61
34:G:120:ILE:CD1	34:G:139:VAL:HG12	2.30	0.61
50:W:13:ARG:HG2	50:W:14:ASP:N	2.11	0.61
28:A:2813:A:O2'	28:A:2814:A:H5'	1.98	0.61
28:A:2066:C:O2	28:A:2445:G:N2	2.34	0.61
33:F:141:ASP:OD2	33:F:143:ASP:HB2	2.01	0.61
35:H:146:VAL:HA	35:H:149:GLU:HG2	1.81	0.61
48:U:47:PRO:HB3	48:U:55:GLY:CA	2.30	0.61
27:5:38:PHE:HB3	28:A:2126:A:H5''	1.82	0.61
58:9:60:U:P	58:9:61:C:H41	2.23	0.61
47:T:35:ALA:C	47:T:36:LYS:HD2	2.21	0.61
30:C:80:LEU:HD23	30:C:91:ALA:HB2	1.82	0.61
28:A:843:G:O2'	28:A:844:A:H5'	2.01	0.61
28:A:1082:U:H5'	36:I:117:THR:OG1	2.01	0.61
27:5:69:THR:HB	27:5:161:VAL:HG22	1.81	0.61
34:G:86:LEU:HD23	34:G:161:VAL:CG1	2.31	0.61
30:C:226:PRO:HG3	30:C:233:GLY:CA	2.31	0.61
32:E:25:GLU:OE2	39:L:7:SER:N	2.32	0.61
28:A:1528:A:H2'	28:A:1529:G:H5'	1.82	0.61
28:A:1315:C:O2'	28:A:1316:U:H5'	2.01	0.61
28:A:1936:A:H2	28:A:1943:U:C5	2.19	0.61
41:N:32:GLU:OE1	41:N:118:ARG:HG3	2.00	0.61
28:A:2491:U:O2'	28:A:2492:U:H5'	2.01	0.61
44:Q:91:ARG:HB3	44:Q:93:ILE:HG22	1.81	0.61
28:A:414:C:H2'	28:A:415:A:C8	2.36	0.61
28:A:2336:A:N6	50:W:40:ARG:HD3	2.16	0.61
40:M:108:VAL:HG13	40:M:112:LEU:HD23	1.82	0.61
42:O:24:THR:OG1	42:O:90:VAL:HG12	2.01	0.61
28:A:1813:G:H1'	30:C:49:THR:CG2	2.24	0.61
27:5:77:VAL:HA	27:5:115:ILE:O	2.01	0.61
41:N:73:ASN:CA	41:N:76:VAL:HG12	2.30	0.61
28:A:2469:A:N6	28:A:2481:G:H1'	2.16	0.61
32:E:145:ASP:HA	32:E:166:LYS:O	2.00	0.61
26:4:15:LYS:HE3	26:4:17:VAL:CG2	2.30	0.61
28:A:2681:C:OP2	31:D:114:LYS:NZ	2.26	0.61
41:N:103:ARG:HD3	41:N:110:MET:CE	2.30	0.61
32:E:91:ASP:OD1	32:E:92:HIS:N	2.34	0.61
28:A:1178:C:H2'	28:A:1179:G:C8	2.35	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:D:3:GLY:O	31:D:4:LEU:HD12	2.00	0.61
27:5:133:PRO:HD3	28:A:2171:A:H5'	1.81	0.61
43:P:74:GLN:HB2	43:P:77:SER:HB2	1.82	0.61
34:G:19:ASN:HB3	34:G:22:VAL:CG2	2.31	0.61
40:M:35:ALA:O	40:M:128:THR:HA	2.01	0.61
28:A:1173:U:N3	28:A:1174:U:H1'	2.16	0.60
28:A:156:A:H2'	28:A:157:C:O4'	2.02	0.60
28:A:274:C:H2'	28:A:275:C:O4'	2.00	0.60
28:A:893:C:H2'	28:A:894:U:H6	1.65	0.60
30:C:65:ASP:OD2	30:C:101:ARG:NH1	2.34	0.60
32:E:69:ARG:O	32:E:70:SER:OG	2.17	0.60
35:H:94:ILE:HG23	35:H:115:VAL:O	2.01	0.60
39:L:96:LYS:N	39:L:101:ILE:HD12	2.15	0.60
40:M:108:VAL:HG13	40:M:109:PRO:HD2	1.82	0.60
45:R:24:LYS:O	45:R:25:LEU:HD12	2.01	0.60
27:5:108:GLU:OE1	28:A:2126:A:O2'	2.14	0.60
28:A:2116:G:OP1	28:A:2117:A:N6	2.34	0.60
34:G:31:GLU:O	34:G:33:THR:N	2.32	0.60
28:A:728:G:H4'	30:C:12:ARG:HD3	1.83	0.60
54:6:44:G:H5'	54:6:45:U:C5	2.36	0.60
30:C:78:GLU:OE2	30:C:94:LEU:HD22	2.01	0.60
28:A:588:U:O2'	28:A:589:U:H5'	2.01	0.60
28:A:144:A:H2'	28:A:145:C:H6	1.64	0.60
28:A:273:G:H2'	28:A:274:C:H6	1.65	0.60
28:A:404:A:H4'	28:A:405:U:O5'	2.01	0.60
31:D:107:VAL:HG21	31:D:203:VAL:HG22	1.81	0.60
32:E:97:ASN:HB2	32:E:100:MET:CG	2.31	0.60
35:H:104:THR:HG23	35:H:109:GLU:HG3	1.83	0.60
37:J:56:VAL:HB	37:J:124:VAL:HA	1.83	0.60
27:5:35:THR:CG2	27:5:219:GLY:HA2	2.30	0.60
58:9:58:A:H1'	58:9:60:U:C5	2.35	0.60
58:9:7:A:H3'	58:9:8:U:H5''	1.82	0.60
28:A:2748:A:H1'	34:G:66:THR:HG23	1.83	0.60
28:A:2477:U:H4'	28:A:2479:U:O4	2.01	0.60
28:A:1509:A:H1'	28:A:1510:G:H5'	1.83	0.60
56:8:47:U:H3'	56:8:48:C:H5'	1.83	0.60
28:A:1550:C:H2'	28:A:1551:A:C8	2.36	0.60
28:A:1492:G:O6	28:A:1498:C:N4	2.34	0.60
28:A:1655:A:C4'	31:D:118:PHE:HB2	2.32	0.60
35:H:82:SER:HB3	35:H:99:ILE:CG2	2.31	0.60
35:H:99:ILE:HD11	35:H:101:ASP:OD2	2.01	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:9:19:G:O5'	58:9:57:G:N2	2.34	0.60
28:A:2107:G:H2'	28:A:2108:A:C8	2.37	0.60
34:G:61:TRP:O	34:G:65:GLY:N	2.26	0.60
48:U:96:LYS:O	48:U:97:SER:OG	2.15	0.60
22:0:8:THR:CG2	28:A:2020:A:H5'	2.32	0.60
39:L:110:VAL:HB	39:L:127:VAL:HG23	1.83	0.60
28:A:1275:A:N1	28:A:1295:C:O2'	2.32	0.60
39:L:85:VAL:CG2	39:L:94:THR:HG22	2.31	0.60
44:Q:86:SER:O	44:Q:88:GLU:N	2.34	0.60
58:9:18:G:N2	58:9:55:U:H1'	2.15	0.60
58:9:61:C:H2'	58:9:62:C:C6	2.36	0.60
28:A:2179:C:H2'	28:A:2180:U:C6	2.36	0.60
47:T:67:VAL:O	47:T:67:VAL:HG22	2.01	0.60
50:W:24:ARG:NE	50:W:65:LYS:HE2	2.16	0.60
28:A:445:C:O2'	28:A:446:G:H5'	2.01	0.60
28:A:1856:U:H2'	28:A:1857:G:H5'	1.83	0.60
31:D:120:GLY:HA2	31:D:162:ALA:CB	2.32	0.60
36:I:76:ALA:HA	36:I:131:THR:HG21	1.83	0.60
37:J:117:ALA:HA	37:J:120:ARG:HH21	1.66	0.60
27:5:164:ARG:NH1	27:5:165:ASN:O	2.34	0.60
58:9:18:G:H1	58:9:55:U:C1'	2.14	0.60
43:P:27:VAL:CG2	43:P:83:ILE:HD13	2.31	0.60
28:A:1759:A:HO2'	28:A:2714:G:HO2'	1.43	0.60
28:A:1401:G:OP1	55:7:18:G:O2'	146.26	0.60
28:A:2446:G:OP1	28:A:2502:G:N2	2.35	0.60
28:A:995:C:C2	37:J:3:THR:HG23	2.36	0.60
32:E:97:ASN:HB2	32:E:100:MET:HG3	1.83	0.60
35:H:97:ARG:NH2	35:H:114:GLU:HB3	2.17	0.60
28:A:2199:A:OP1	51:X:36:ARG:NH1	2.33	0.60
27:5:3:LYS:NZ	28:A:2109:U:O4	2.35	0.60
28:A:2171:A:H1'	28:A:2172:U:C5	2.36	0.60
38:K:36:GLY:HA2	38:K:62:VAL:O	2.02	0.60
22:0:4:GLN:HE22	28:A:2056:G:H4'	1.65	0.60
32:E:175:ILE:HD11	32:E:180:LEU:HD11	1.83	0.60
50:W:77:LYS:O	50:W:78:PHE:HB2	2.02	0.60
33:F:36:ASN:HB3	33:F:152:ASP:OD1	2.02	0.60
27:5:35:THR:HG21	28:A:2130:U:C5	2.35	0.60
33:F:128:SER:HA	33:F:154:THR:HA	1.83	0.60
51:X:33:HIS:O	51:X:34:SER:OG	2.19	0.60
28:A:1046:A:C2'	28:A:1047:G:H5'	3.82	0.60
50:W:39:GLN:HG2	50:W:40:ARG:N	2.17	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:1177:G:C3'	28:A:1178:C:H5'	2.32	0.60
42:O:79:ALA:HB3	42:O:113:ALA:HB3	1.83	0.60
28:A:2169:A:N6	28:A:2170:A:N1	2.50	0.60
27:5:201:PRO:HG2	27:5:206:GLY:CA	2.32	0.60
53:Z:23:LEU:HD11	53:Z:50:VAL:HG11	1.84	0.60
53:Z:19:HIS:O	53:Z:23:LEU:HD13	2.02	0.60
28:A:2679:A:O2'	28:A:2680:U:H5'	2.02	0.60
38:K:13:ASN:O	38:K:14:SER:OG	2.15	0.60
43:P:30:TRP:CE3	43:P:37:LYS:HG2	2.37	0.60
22:0:4:GLN:O	22:0:5:ASN:ND2	2.34	0.60
28:A:1550:C:H2'	28:A:1551:A:H8	1.65	0.60
28:A:2584:U:H2'	28:A:2585:U:H5'	1.83	0.60
28:A:1563:U:H2'	28:A:1564:C:C6	2.36	0.60
28:A:493:G:O2'	28:A:494:G:H5'	2.02	0.60
46:S:3:THR:CG2	46:S:107:VAL:HG13	2.31	0.60
28:A:1592:C:H2'	28:A:1593:A:C8	2.37	0.60
28:A:2059:A:N7	28:A:2503:A:H2'	2.17	0.60
28:A:364:C:O2'	28:A:365:U:H5'	2.01	0.60
35:H:129:GLU:H	35:H:142:VAL:HG13	1.67	0.60
34:G:101:VAL:CG1	34:G:115:GLN:HG3	2.32	0.60
28:A:2298:A:H2'	28:A:2299:U:O4'	2.01	0.60
32:E:134:LEU:HD23	32:E:161:ALA:HB2	1.82	0.60
28:A:1545:A:C2'	28:A:1546:G:H5'	2.32	0.60
28:A:1924:C:H2'	28:A:1925:C:H5'	1.84	0.60
22:0:8:THR:HG21	28:A:2020:A:H5'	1.82	0.60
40:M:74:THR:HB	40:M:87:GLY:O	2.02	0.60
22:0:24:VAL:O	22:0:25:THR:OG1	2.18	0.60
46:S:29:VAL:HG23	46:S:69:LEU:O	2.01	0.60
28:A:1496:A:O2'	28:A:1577:C:O2'	2.16	0.60
28:A:197:A:H2'	28:A:198:C:H5'	1.84	0.60
30:C:124:LYS:C	30:C:191:LEU:HD23	2.22	0.60
35:H:104:THR:CB	35:H:109:GLU:HA	2.32	0.60
35:H:78:VAL:H	35:H:146:VAL:HG12	1.65	0.60
36:I:18:ASN:HB2	36:I:38:CYS:HB3	1.84	0.60
42:O:105:ALA:O	42:O:107:ALA:N	2.30	0.60
27:5:35:THR:N	27:5:219:GLY:HA3	2.16	0.60
27:5:65:LEU:CD1	27:5:161:VAL:HG21	2.31	0.60
28:A:427:U:OP1	31:D:13:ARG:NH2	138.82	0.60
28:A:1779:U:O2	28:A:1783:A:N6	2.35	0.60
28:A:1279:G:H2'	28:A:1279:G:N3	3.17	0.60
28:A:2632:A:H2'	28:A:2633:G:C8	2.37	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:C:20:ASN:OD1	30:C:22:GLU:HG2	2.00	0.59
54:6:36:A:H2'	54:6:37:A:C8	2.37	0.59
28:A:1411:U:C2'	28:A:1412:U:H5'	2.32	0.59
28:A:547:A:H4'	28:A:548:G:O5'	3.81	0.59
28:A:2636:C:O2'	31:D:45:TYR:OH	2.20	0.59
27:5:35:THR:HG21	28:A:2130:U:C6	2.36	0.59
40:M:42:THR:HG22	40:M:93:VAL:CG1	2.32	0.59
28:A:1386:C:H2'	28:A:1387:A:C8	2.37	0.59
28:A:106:C:HO2'	28:A:294:A:HO2'	1.49	0.59
39:L:57:LEU:HD13	39:L:60:ARG:NH1	2.17	0.59
28:A:1607:C:H4'	28:A:1608:A:O5'	2.02	0.59
28:A:530:G:N3	28:A:530:G:H3'	5.34	0.59
23:1:35:LEU:HD12	23:1:35:LEU:O	2.01	0.59
28:A:188:G:C2'	28:A:189:G:H5'	2.32	0.59
32:E:58:LYS:HE2	32:E:62:GLN:HA	1.84	0.59
47:T:28:ASN:HB2	47:T:91:GLN:NE2	2.17	0.59
28:A:1207:C:O2'	28:A:1208:C:H5'	2.02	0.59
28:A:1112:G:H2'	28:A:1113:U:C6	2.37	0.59
34:G:153:PRO:HA	34:G:159:LYS:O	2.02	0.59
28:A:2791:G:N2	28:A:2805:C:O2	2.29	0.59
28:A:2638:G:O2'	28:A:2775:G:N2	2.33	0.59
54:6:35:A:C1'	54:6:36:A:H5'	2.28	0.59
28:A:1216:G:H5''	44:Q:10:ARG:NH1	2.18	0.59
28:A:881:G:N2	28:A:898:C:O2'	2.35	0.59
36:I:4:VAL:CG1	36:I:7:TYR:HB3	2.32	0.59
27:5:36:ALA:HB1	27:5:38:PHE:H	1.66	0.59
27:5:133:PRO:HG2	28:A:2172:U:C1'	2.32	0.59
34:G:44:HIS:HA	34:G:49:LEU:HD23	1.84	0.59
28:A:225:C:H2'	28:A:226:A:O4'	2.03	0.59
28:A:782:A:C8	30:C:219:VAL:HG21	2.36	0.59
50:W:36:ILE:HD13	50:W:42:THR:HG21	1.83	0.59
28:A:571:U:H5''	28:A:572:A:OP2	4.89	0.59
32:E:32:VAL:CG2	32:E:178:VAL:HG12	2.28	0.59
36:I:102:ARG:CA	36:I:141:ASP:HA	2.32	0.59
42:O:38:GLN:HG2	42:O:50:ALA:CB	2.33	0.59
27:5:44:VAL:HA	27:5:213:SER:O	2.02	0.59
28:A:1314:C:OP2	46:S:6:LYS:HD2	40.50	0.59
38:K:15:GLY:O	38:K:46:ALA:HA	2.02	0.59
29:B:76:G:O2'	29:B:77:U:H5'	2.02	0.59
47:T:92:ASN:O	47:T:93:LEU:HD12	2.03	0.59
33:F:79:ARG:NH1	56:8:56:C:N3	2.49	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:1055:G:O2'	28:A:1056:G:H5'	2.02	0.59
28:A:1132:U:H3'	28:A:1133:A:H5''	1.85	0.59
28:A:976:G:O2'	28:A:1155:A:O2'	2.17	0.59
28:A:1216:G:OP1	44:Q:10:ARG:NH2	2.36	0.59
45:R:54:VAL:CG2	45:R:57:GLY:HA3	2.32	0.59
27:5:33:LEU:O	27:5:220:ALA:N	2.36	0.59
27:5:36:ALA:HA	27:5:37:LYS:HG3	1.83	0.59
58:9:9:A:N6	58:9:22:G:H3'	2.18	0.59
50:W:19:ARG:HE	50:W:22:VAL:CG2	2.16	0.59
28:A:287:G:O6	28:A:353:C:N4	2.35	0.59
28:A:1724:G:H1	28:A:1737:G:H1'	1.66	0.59
28:A:1874:C:H2'	28:A:1875:G:O4'	2.02	0.59
44:Q:97:ILE:HD11	44:Q:108:LEU:HD12	1.85	0.59
28:A:1060:U:H4'	28:A:1061:U:C5'	2.33	0.59
28:A:1495:A:C2	28:A:1578:U:H1'	2.33	0.59
28:A:327:G:H2'	28:A:328:U:C6	2.38	0.59
31:D:16:THR:HG22	31:D:20:VAL:HB	1.83	0.59
32:E:149:ILE:HD11	32:E:188:MET:HE3	1.84	0.59
33:F:88:VAL:HG12	33:F:90:LEU:CD1	2.32	0.59
28:A:2090:A:H2	51:X:31:ASN:HD21	1.50	0.59
27:5:4:LEU:HD13	28:A:2106:U:H3'	1.84	0.59
28:A:2108:A:O2'	28:A:2109:U:H5'	2.01	0.59
28:A:2115:G:H4'	28:A:2167:U:C1'	2.33	0.59
28:A:2178:C:H2'	28:A:2179:C:C5	2.37	0.59
47:T:35:ALA:O	47:T:36:LYS:HD2	2.02	0.59
26:4:36:ARG:HD3	28:A:2742:G:OP1	2.02	0.59
28:A:2816:G:O2'	28:A:2817:U:H5'	2.02	0.59
28:A:873:C:O2	28:A:904:G:N2	2.33	0.59
39:L:122:VAL:CG1	39:L:142:ILE:HG23	2.33	0.59
27:5:51:ASP:HB2	27:5:204:ALA:CB	2.22	0.59
26:4:1:MET:CE	26:4:36:ARG:HB2	2.32	0.59
28:A:854:C:O2'	28:A:855:G:H5'	2.03	0.59
28:A:2345:G:H4'	28:A:2346:A:C5'	2.31	0.59
28:A:2210:U:H4'	28:A:2211:A:C5'	2.33	0.59
43:P:28:LYS:O	43:P:81:ASP:HB3	2.03	0.59
48:U:73:ASN:ND2	48:U:80:ASP:OD2	2.36	0.59
28:A:633:A:OP1	39:L:71:ALA:HB2	2.03	0.59
32:E:68:ALA:O	32:E:70:SER:N	2.36	0.59
35:H:71:LYS:HB3	35:H:108:VAL:CG1	2.33	0.59
26:4:2:LYS:HD3	26:4:4:ARG:HH22	1.67	0.59
28:A:818:G:O2'	28:A:819:A:H5'	4.48	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:6:64:A:H2'	54:6:65:G:O4'	2.03	0.59
28:A:1007:C:H5''	37:J:37:ARG:HH21	1.68	0.59
30:C:124:LYS:HG3	30:C:125:PRO:HD2	1.85	0.59
31:D:200:ASP:O	31:D:201:LEU:HD12	2.03	0.59
37:J:13:ARG:O	37:J:14:ASP:HB2	2.03	0.59
37:J:17:VAL:HG12	37:J:55:ILE:CD1	2.32	0.59
28:A:558:U:C5'	37:J:111:LYS:HE3	2.16	0.59
27:5:141:LYS:HB2	27:5:164:ARG:HH21	1.68	0.59
27:5:27:ILE:CD1	27:5:214:ILE:HG12	2.33	0.59
58:9:65:G:H2'	58:9:66:U:C6	2.38	0.59
34:G:32:LEU:O	34:G:33:THR:OG1	2.19	0.59
55:7:23:A:H1'	55:7:24:A:N7	2.17	0.59
46:S:27:LYS:O	46:S:71:VAL:HG12	2.02	0.59
28:A:159:G:H21	28:A:161:A:H3'	12.85	0.58
28:A:59:U:O2'	28:A:74:A:OP2	2.17	0.58
28:A:880:G:H1	28:A:897:C:N4	2.01	0.58
28:A:888:C:H5'	28:A:889:C:H5	1.68	0.58
31:D:52:THR:HG23	31:D:53:GLY:N	2.16	0.58
35:H:75:LEU:CD2	35:H:103:VAL:HG22	2.32	0.58
37:J:16:TYR:CG	37:J:140:LEU:HD23	2.37	0.58
28:A:228:C:H4'	28:A:229:C:H5''	1.85	0.58
35:H:72:ILE:HG12	35:H:130:VAL:HG22	1.85	0.58
49:V:2:PHE:HB3	49:V:50:MET:CE	2.33	0.58
27:5:97:MET:HG2	27:5:98:GLU:CD	2.24	0.58
28:A:2841:C:H2'	28:A:2842:G:C8	2.38	0.58
46:S:7:HIS:ND1	46:S:10:ALA:HB2	2.19	0.58
28:A:188:G:H5'	51:X:13:THR:HG21	1.85	0.58
28:A:263:G:H2'	28:A:264:C:O4'	2.03	0.58
28:A:285:G:H3'	28:A:286:U:C5	2.37	0.58
32:E:147:LEU:HD22	32:E:149:ILE:HG23	1.84	0.58
37:J:140:LEU:O	37:J:140:LEU:HD12	2.02	0.58
47:T:28:ASN:O	47:T:29:THR:HG22	2.03	0.58
28:A:777:G:O2'	28:A:778:G:H5'	2.03	0.58
35:H:131:SER:OG	35:H:140:ALA:N	2.24	0.58
28:A:2000:C:O2'	28:A:2001:C:H5'	2.02	0.58
28:A:474:G:H2'	28:A:475:C:O4'	6.62	0.58
27:5:54:LYS:HD3	58:9:63:G:O4'	2.03	0.58
34:G:101:VAL:CG1	34:G:115:GLN:HA	2.34	0.58
28:A:1365:A:O2'	51:X:10:ARG:NH1	2.35	0.58
26:4:7:VAL:HG23	26:4:8:LYS:N	2.12	0.58
50:W:23:LYS:O	50:W:66:VAL:HB	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:8:5:G:O2'	56:8:6:G:H5'	2.03	0.58
29:B:21:G:H2'	29:B:22:U:H5'	1.86	0.58
28:A:2430:A:H5'	28:A:2431:U:OP2	2.03	0.58
28:A:1404:C:O2'	28:A:1405:U:H5'	2.03	0.58
28:A:322:A:H4'	28:A:323:C:OP2	2.03	0.58
35:H:94:ILE:O	35:H:114:GLU:HG3	2.03	0.58
27:5:130:VAL:HG11	28:A:2119:A:C2	2.39	0.58
43:P:48:ALA:O	43:P:49:ILE:HG13	2.04	0.58
28:A:1724:G:N1	28:A:1737:G:H1'	2.18	0.58
28:A:1548:A:H2'	28:A:1549:A:H8	1.67	0.58
28:A:1138:G:N3	28:A:1138:G:H3'	4.71	0.58
46:S:83:LYS:HD3	46:S:95:ARG:HH11	1.68	0.58
28:A:196:A:H2'	28:A:196:A:N3	2.17	0.58
28:A:1071:G:H1'	28:A:1089:A:N7	2.18	0.58
28:A:2358:A:H61	39:L:54:GLN:NE2	2.01	0.58
28:A:864:G:P	29:B:100:G:H21	2.26	0.58
29:B:94:A:C2'	29:B:95:U:H5'	2.33	0.58
32:E:56:GLY:HA2	32:E:73:ILE:CG2	2.34	0.58
36:I:101:SER:HB3	36:I:104:GLN:HG3	1.86	0.58
44:Q:46:TYR:O	44:Q:50:ARG:NH1	2.37	0.58
28:A:2328:A:H2'	28:A:2329:U:C6	2.39	0.58
27:5:19:LYS:HE3	27:5:20:GLN:HG2	1.85	0.58
43:P:62:LYS:HB3	43:P:69:VAL:CG2	2.33	0.58
28:A:710:U:C3'	28:A:711:G:H5"	2.32	0.58
28:A:1227:G:OP2	44:Q:15:LYS:NZ	2.34	0.58
28:A:954:G:H4'	40:M:13:HIS:CE1	2.38	0.58
29:B:2:G:N2	29:B:119:A:H1'	2.18	0.58
28:A:2562:U:H4'	38:K:25:LEU:HD22	1.85	0.58
28:A:2076:U:OP2	28:A:2238:G:N2	2.33	0.58
28:A:1497:U:N3	28:A:1578:U:OP1	2.36	0.58
28:A:2061:G:H21	28:A:2062:A:H8	1.51	0.58
28:A:2094:A:H5'	35:H:25:TYR:HD1	1.69	0.58
28:A:359:G:H2'	28:A:360:U:O4'	2.03	0.58
34:G:85:LYS:HA	34:G:131:VAL:HG12	1.85	0.58
28:A:350:G:H2'	28:A:351:C:C6	2.39	0.58
28:A:2065:C:H2'	28:A:2066:C:O4'	2.04	0.58
40:M:35:ALA:O	40:M:36:VAL:HB	2.04	0.58
28:A:1185:G:O2'	28:A:1186:G:H5'	5.34	0.58
28:A:2842:G:O2'	28:A:2843:G:H5'	2.04	0.58
41:N:67:PHE:O	41:N:71:ARG:HD2	2.03	0.58
28:A:2393:U:H5'	39:L:60:ARG:O	2.04	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:F:39:VAL:O	33:F:41:GLU:N	2.37	0.58
36:I:40:ALA:HB1	36:I:68:PHE:CZ	2.38	0.58
28:A:635:C:P	39:L:126:ARG:HH11	2.27	0.58
58:9:19:G:O4'	58:9:57:G:N2	2.36	0.58
27:5:1:MET:N	28:A:2109:U:O4	2.30	0.58
28:A:2353:G:N3	50:W:30:VAL:HG13	2.19	0.58
50:W:30:VAL:HG23	50:W:59:PHE:HD1	1.68	0.58
49:V:6:ALA:CB	49:V:42:LEU:HD23	2.33	0.58
28:A:978:G:O2'	28:A:979:A:H5'	2.03	0.58
28:A:198:C:H42	28:A:248:G:H1	1.52	0.58
28:A:2570:G:H2'	28:A:2571:U:O4'	2.03	0.58
31:D:80:TRP:CD1	31:D:202:ILE:HD11	2.37	0.58
35:H:43:ASN:HA	35:H:46:PHE:CB	2.33	0.58
36:I:120:ASP:O	36:I:124:MET:HG3	2.03	0.58
36:I:58:ILE:HD12	36:I:68:PHE:CB	2.33	0.58
37:J:54:ILE:HD11	37:J:122:LEU:CD1	2.34	0.58
39:L:122:VAL:HG12	39:L:142:ILE:HG12	1.85	0.58
47:T:10:VAL:HG11	47:T:42:GLU:HG2	1.86	0.58
27:5:23:ILE:HD13	27:5:227:ALA:HB2	1.86	0.58
28:A:2193:G:H2'	28:A:2194:U:C6	2.39	0.58
28:A:1198:U:H4'	44:Q:8:ILE:HG21	1.84	0.58
58:9:34:G:H2'	58:9:34:G:N3	2.17	0.58
50:W:39:GLN:HE21	50:W:43:LYS:N	2.01	0.58
44:Q:97:ILE:HD12	44:Q:105:PHE:HB2	1.86	0.58
28:A:1655:A:H5'	31:D:118:PHE:CG	2.38	0.58
28:A:1129:A:O2'	28:A:2515:C:O2	2.14	0.58
28:A:308:G:C8	28:A:501:A:H1'	2.39	0.58
28:A:629:G:N3	28:A:639:U:O2'	2.35	0.58
32:E:147:LEU:HB2	32:E:183:PHE:HD2	1.69	0.58
33:F:132:ARG:O	33:F:133:GLU:HB3	2.03	0.58
37:J:4:PHE:HB3	37:J:44:TYR:HE2	1.68	0.58
43:P:105:LYS:HE3	43:P:108:ARG:NH2	2.15	0.58
58:9:5:G:H2'	58:9:6:G:H5'	1.85	0.58
28:A:2135:A:H3'	28:A:2136:G:C8	2.36	0.58
34:G:112:VAL:HG23	34:G:113:ASP:H	1.68	0.58
28:A:1416:G:O2'	28:A:1417:C:OP2	2.16	0.58
28:A:266:G:H2'	28:A:267:C:C5'	2.33	0.58
49:V:24:ASN:C	49:V:25:LYS:HD2	2.24	0.58
28:A:1869:G:N2	28:A:1871:A:O2'	2.37	0.58
25:3:15:LYS:HG2	25:3:16:THR:O	2.04	0.58
35:H:21:VAL:HG22	35:H:22:LYS:N	2.18	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:U:60:LYS:HD2	48:U:61:GLU:H	1.68	0.58
27:5:175:ILE:HG22	27:5:185:LEU:CD2	2.28	0.58
27:5:43:ASP:OD1	27:5:215:SER:N	2.37	0.58
27:5:7:ARG:HH12	27:5:219:GLY:CA	2.16	0.58
58:9:29:G:H2'	58:9:30:G:C8	2.34	0.58
50:W:28:GLU:O	50:W:31:LEU:HG	2.04	0.58
28:A:2533:U:H2'	28:A:2534:A:H5'	1.86	0.58
33:F:99:PHE:CZ	33:F:103:ILE:HD11	2.38	0.58
26:4:6:SER:HB2	28:A:1031:G:H4'	1.85	0.58
31:D:107:VAL:CG2	31:D:203:VAL:HG22	2.33	0.57
32:E:16:GLU:O	32:E:20:GLY:N	2.33	0.57
27:5:140:PRO:CG	28:A:2122:U:H5''	2.33	0.57
28:A:2107:G:H2'	28:A:2108:A:H8	1.68	0.57
38:K:61:VAL:HG23	38:K:87:LEU:HD11	1.86	0.57
58:9:29:G:H1	58:9:41:C:N4	2.02	0.57
34:G:84:LYS:HD2	34:G:132:LEU:N	2.19	0.57
28:A:1243:C:H1'	39:L:4:ASN:O	2.04	0.57
26:4:14:CYS:N	26:4:27:CYS:SG	2.76	0.57
28:A:809:G:C2'	28:A:810:U:H5'	2.34	0.57
28:A:2872:A:O2'	28:A:2873:A:H5'	2.04	0.57
41:N:31:HIS:O	41:N:32:GLU:HB2	2.04	0.57
28:A:1129:A:N6	28:A:2491:U:OP1	2.37	0.57
28:A:394:C:N4	28:A:395:U:O4	2.37	0.57
28:A:402:A:H2'	28:A:403:U:O4'	2.04	0.57
28:A:523:C:O2	28:A:554:U:O2'	2.22	0.57
28:A:827:U:O2'	28:A:2068:U:N3	2.37	0.57
32:E:49:ARG:O	32:E:74:LYS:HD3	2.04	0.57
32:E:98:LYS:HB3	32:E:102:ARG:NH2	2.18	0.57
35:H:127:GLU:OE1	35:H:147:VAL:HG11	2.04	0.57
35:H:4:ILE:CD1	35:H:44:ILE:HG22	2.34	0.57
35:H:59:ALA:O	35:H:62:LEU:HB3	2.03	0.57
36:I:108:ILE:O	36:I:111:THR:OG1	2.21	0.57
27:5:80:GLN:N	27:5:120:ALA:HB2	2.19	0.57
28:A:2132:U:H3	28:A:2159:G:N2	2.01	0.57
47:T:29:THR:HB	47:T:86:THR:HG22	1.86	0.57
32:E:168:ASP:OD1	32:E:169:VAL:N	2.38	0.57
33:F:124:ARG:HA	33:F:160:LYS:O	2.03	0.57
35:H:103:VAL:CG1	35:H:110:VAL:HG12	2.34	0.57
35:H:44:ILE:HG13	35:H:45:GLU:N	2.18	0.57
36:I:104:GLN:O	36:I:105:LEU:HB2	2.04	0.57
27:5:87:ALA:HA	27:5:91:GLY:C	2.24	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:5:60:ARG:HD3	27:5:164:ARG:CZ	2.34	0.57
58:9:58:A:C1'	58:9:60:U:H5	2.17	0.57
58:9:64:A:H2'	58:9:65:G:O4'	2.04	0.57
28:A:31:C:O2'	28:A:1238:G:OP1	2.22	0.57
26:4:1:MET:N	28:A:2526:G:N3	2.51	0.57
28:A:2321:U:H5'	28:A:2322:A:OP2	2.03	0.57
53:Z:50:VAL:O	53:Z:54:VAL:HG22	2.04	0.57
28:A:527:C:H4'	28:A:528:A:O5'	2.04	0.57
28:A:1510:G:H2'	28:A:1511:G:C8	2.39	0.57
28:A:2841:C:N4	28:A:2842:G:O6	2.38	0.57
28:A:1188:U:O2'	28:A:1189:A:H5'	2.04	0.57
28:A:1419:A:N6	28:A:1421:G:N3	2.52	0.57
37:J:55:ILE:HG22	37:J:123:LYS:CB	2.33	0.57
27:5:214:ILE:HG22	27:5:224:VAL:N	2.20	0.57
28:A:2112:G:H2'	28:A:2113:U:H3'	1.86	0.57
47:T:69:ARG:HG3	47:T:69:ARG:HH11	1.69	0.57
28:A:1301:A:O2'	28:A:1302:A:H3'	2.04	0.57
28:A:1893:C:H2'	28:A:1894:C:C5'	2.35	0.57
28:A:1526:C:H2'	28:A:1527:G:H5'	1.87	0.57
28:A:2729:G:H5'	31:D:190:LYS:NZ	2.19	0.57
31:D:121:THR:HB	31:D:127:PHE:CD2	2.39	0.57
36:I:27:LEU:HD13	36:I:32:VAL:HG23	1.85	0.57
36:I:27:LEU:HD22	36:I:32:VAL:CB	2.34	0.57
27:5:21:TYR:CB	27:5:26:ALA:HB2	2.34	0.57
28:A:2757:A:N1	34:G:66:THR:HG21	2.19	0.57
34:G:75:VAL:O	34:G:78:VAL:HG12	2.05	0.57
34:G:86:LEU:HD23	34:G:161:VAL:HG11	1.86	0.57
28:A:1534:U:H2'	28:A:1536:C:C4	2.39	0.57
29:B:86:G:C2'	29:B:87:U:H5''	2.30	0.57
28:A:119:A:H1'	28:A:120:U:OP2	2.05	0.57
28:A:774:G:C2'	28:A:775:G:H5'	4.88	0.57
54:6:44:G:H4'	54:6:45:U:O5'	2.04	0.57
31:D:181:ASP:OD2	31:D:184:ARG:HD2	2.04	0.57
35:H:75:LEU:O	35:H:76:GLU:HG2	2.04	0.57
28:A:227:A:O2'	28:A:228:C:OP2	2.21	0.57
41:N:55:ALA:HA	41:N:80:PHE:CE1	2.39	0.57
28:A:1790:C:O2'	30:C:207:ALA:HB2	2.05	0.57
28:A:237:C:O2'	28:A:609:A:O2'	2.20	0.57
28:A:699:A:H2'	28:A:700:G:H5'	1.87	0.57
28:A:1130:U:C2	28:A:2025:C:H5''	2.40	0.57
31:D:120:GLY:HA2	31:D:162:ALA:HB2	1.87	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:H:43:ASN:HA	35:H:46:PHE:HB3	1.85	0.57
36:I:98:GLY:HA3	36:I:137:LEU:CD2	2.31	0.57
42:O:31:THR:HG23	42:O:32:PRO:HD2	1.86	0.57
48:U:47:PRO:HD3	48:U:55:GLY:HA2	1.86	0.57
47:T:44:LYS:O	47:T:48:GLN:HG2	2.05	0.57
49:V:72:VAL:CG1	49:V:93:ARG:HA	2.29	0.57
40:M:71:LYS:HB3	40:M:93:VAL:O	2.04	0.57
43:P:112:ARG:C	43:P:113:LEU:HG	2.24	0.57
31:D:9:VAL:CG2	31:D:26:VAL:HB	2.34	0.57
28:A:2809:A:OP2	28:A:2890:G:N1	2.25	0.57
28:A:1055:G:H1	28:A:1104:C:N4	1.97	0.57
28:A:905:A:C2'	28:A:906:U:H5'	2.33	0.57
36:I:109:ALA:HA	36:I:116:MET:SD	2.45	0.57
36:I:27:LEU:CD1	36:I:30:GLN:H	2.18	0.57
39:L:95:LEU:HB2	39:L:101:ILE:CD1	2.27	0.57
27:5:117:SER:OG	27:5:149:VAL:O	2.23	0.57
58:9:24:G:H2'	58:9:25:C:O4'	2.05	0.57
28:A:2115:G:H5'	28:A:2167:U:C4'	2.35	0.57
28:A:2745:C:H2'	28:A:2746:U:C6	2.40	0.57
50:W:18:LYS:HG3	50:W:19:ARG:N	2.20	0.57
30:C:154:ALA:CB	30:C:161:VAL:HG23	2.35	0.57
27:5:48:LEU:HD11	27:5:171:ILE:HG13	1.87	0.57
58:9:35:A:H2'	58:9:36:A:C5	2.39	0.57
28:A:2316:G:O2'	28:A:2317:A:H5'	2.05	0.57
33:F:142:TYR:O	33:F:145:VAL:HG22	2.04	0.57
43:P:24:THR:O	43:P:86:LYS:HB2	2.05	0.57
41:N:24:MET:CE	41:N:36:THR:HG21	2.34	0.57
28:A:2822:G:O6	41:N:2:ARG:HD3	2.04	0.57
28:A:541:A:H2'	28:A:542:C:O4'	2.05	0.57
28:A:885:C:H2'	28:A:886:A:H5'	1.86	0.57
37:J:96:ARG:HE	37:J:99:ARG:HG3	1.70	0.57
32:E:111:GLU:HG2	39:L:2:ARG:NH2	2.20	0.57
45:R:58:VAL:HG13	45:R:102:SER:HB2	1.85	0.57
27:5:81:GLY:H	27:5:84:ALA:CB	2.16	0.57
27:5:27:ILE:O	27:5:31:LYS:HG3	2.05	0.57
28:A:587:C:O2'	39:L:19:LEU:HD22	2.04	0.57
28:A:978:G:C2'	28:A:979:A:H5'	2.34	0.57
28:A:2315:G:H2'	28:A:2316:G:H8	1.70	0.57
56:8:69:C:O2'	56:8:70:G:H5'	2.05	0.57
22:0:21:LEU:HD21	46:S:41:LYS:HE3	1.86	0.57
28:A:760:G:H2'	28:A:761:A:H5'	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:F:66:ILE:HG13	33:F:66:ILE:O	2.05	0.57
28:A:2438:U:O2'	28:A:2439:A:H5''	2.05	0.57
56:8:17:C:OP1	56:8:60:U:O2'	2.19	0.57
28:A:357:C:H2'	28:A:358:U:C6	2.40	0.57
28:A:436:C:H2'	28:A:437:U:C6	3.14	0.57
30:C:2:VAL:HG11	30:C:201:LEU:CD2	2.34	0.57
28:A:674:G:H1'	32:E:69:ARG:NH1	2.20	0.57
33:F:64:PRO:HA	33:F:88:VAL:HG22	1.87	0.57
35:H:92:GLY:HA2	35:H:116:ARG:CG	2.34	0.57
35:H:89:LYS:HD2	35:H:120:GLY:O	10.39	0.57
36:I:100:ILE:CG2	36:I:139:VAL:HG23	2.35	0.57
41:N:1:MET:O	41:N:2:ARG:HB3	2.03	0.57
42:O:26:LEU:HD13	42:O:39:VAL:HG22	1.87	0.57
37:J:44:TYR:CG	44:Q:63:ARG:HD3	2.39	0.57
27:5:8:MET:O	27:5:12:ARG:HG3	2.05	0.57
58:9:51:U:H3	58:9:63:G:H1	1.53	0.57
38:K:76:VAL:N	43:P:72:VAL:HG22	2.20	0.57
56:8:1:C:H41	56:8:72:A:H61	1.52	0.57
28:A:869:G:H2'	28:A:870:U:O4'	2.05	0.57
40:M:59:ARG:HD3	54:6:54:U:H4'	1.86	0.57
33:F:3:LEU:O	33:F:7:TYR:N	2.38	0.56
37:J:16:TYR:HB3	37:J:140:LEU:HD23	1.87	0.56
39:L:93:ASN:O	39:L:95:LEU:N	2.35	0.56
27:5:7:ARG:HG3	28:A:2130:U:N3	2.20	0.56
47:T:32:LEU:HB2	47:T:83:ALA:CB	2.34	0.56
28:A:11:C:H2'	28:A:12:U:H5'	1.86	0.56
46:S:83:LYS:HD3	46:S:95:ARG:NH1	2.20	0.56
28:A:1702:G:H2'	28:A:1703:G:O4'	2.04	0.56
28:A:102:U:C2	52:Y:2:LYS:HD2	2.40	0.56
24:2:11:LYS:HE3	28:A:686:U:O2	2.05	0.56
28:A:2521:C:C2'	28:A:2522:U:H5'	2.34	0.56
41:N:33:ILE:HD11	41:N:114:GLU:OE1	2.04	0.56
28:A:834:G:N3	28:A:2358:A:H1'	2.20	0.56
28:A:881:G:H1	28:A:898:C:H1'	1.69	0.56
28:A:895:U:H5''	28:A:896:A:H5'	1.85	0.56
32:E:155:GLU:HG3	32:E:159:LEU:HD13	1.86	0.56
37:J:16:TYR:HB2	37:J:54:ILE:HG22	1.87	0.56
37:J:73:VAL:HG21	37:J:75:TYR:CE2	2.40	0.56
51:X:38:TRP:NE1	51:X:40:GLU:OE1	2.34	0.56
51:X:70:LEU:O	51:X:73:ARG:HG2	2.05	0.56
27:5:47:ASN:HB2	27:5:210:LYS:CB	2.35	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:5:23:ILE:HG21	27:5:232:SER:O	2.06	0.56
47:T:69:ARG:NH1	47:T:70:HIS:CD2	2.73	0.56
27:5:51:ASP:N	27:5:57:GLN:OE1	2.37	0.56
28:A:426:C:H2'	28:A:427:U:H6	1.70	0.56
27:5:180:PHE:HB3	27:5:184:LYS:HD3	1.87	0.56
44:Q:16:ILE:HD12	44:Q:31:TYR:CE1	2.36	0.56
28:A:266:G:C2'	28:A:267:C:H5''	2.35	0.56
50:W:36:ILE:HB	50:W:39:GLN:OE1	2.04	0.56
28:A:1020:A:H1'	28:A:1021:A:OP2	2.04	0.56
28:A:1172:C:H2'	28:A:1173:U:C1'	2.35	0.56
28:A:179:C:O2'	28:A:180:G:H5'	2.04	0.56
28:A:189:G:O6	28:A:205:G:O2'	2.21	0.56
28:A:883:G:C6	28:A:894:U:H1'	2.40	0.56
28:A:883:G:O6	28:A:894:U:H1'	2.05	0.56
29:B:110:C:H2'	29:B:111:U:O4'	2.05	0.56
36:I:51:GLY:C	36:I:52:LEU:HD12	2.26	0.56
42:O:79:ALA:CB	42:O:115:LEU:HD13	2.26	0.56
42:O:11:ALA:O	42:O:15:ARG:HG2	2.04	0.56
22:O:9:ARG:HH12	44:Q:29:ARG:NH1	2.02	0.56
30:C:77:VAL:HG23	30:C:111:ALA:HA	1.87	0.56
27:5:79:THR:HA	27:5:120:ALA:CB	2.27	0.56
27:5:141:LYS:CB	27:5:164:ARG:HH21	2.18	0.56
27:5:1:MET:N	28:A:2110:G:O6	2.38	0.56
28:A:2110:G:H5''	28:A:2111:U:C5	2.34	0.56
28:A:1864:U:OP1	28:A:2410:G:O2'	2.19	0.56
54:6:5:G:N2	54:6:68:C:O2	2.38	0.56
38:K:43:ILE:HD12	38:K:56:ASP:HB2	1.86	0.56
28:A:1628:G:H2'	28:A:1629:U:H6	1.69	0.56
28:A:1097:U:H2'	28:A:1098:A:C5'	2.35	0.56
28:A:2394:C:N3	58:9:76:A:O2'	2.38	0.56
35:H:67:ALA:HB1	35:H:70:GLU:H	1.70	0.56
27:5:54:LYS:HD3	58:9:63:G:H4'	1.88	0.56
28:A:2156:G:H4'	28:A:2158:A:N6	2.21	0.56
34:G:97:VAL:HG12	34:G:97:VAL:O	2.04	0.56
28:A:2747:G:O2'	34:G:66:THR:HG22	2.04	0.56
28:A:2705:A:H2'	28:A:2706:A:O4'	2.04	0.56
51:X:48:LEU:HB2	51:X:50:VAL:HG23	1.86	0.56
54:6:57:G:C2'	54:6:58:A:H5'	2.35	0.56
28:A:700:G:O2'	28:A:701:G:H5'	2.05	0.56
28:A:1191:G:O2'	28:A:1192:G:H5'	2.06	0.56
28:A:363:G:H2'	28:A:364:C:C6	2.40	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:H:75:LEU:HD21	35:H:103:VAL:HA	1.88	0.56
36:I:4:VAL:HG22	36:I:59:THR:HG23	1.88	0.56
28:A:873:C:H4'	40:M:64:TRP:HE1	1.70	0.56
27:5:133:PRO:HG2	28:A:2172:U:H1'	1.87	0.56
43:P:50:ARG:HB2	43:P:56:SER:CA	2.36	0.56
28:A:1279:G:N2	28:A:1279:G:OP2	9.98	0.56
28:A:1055:G:C2'	28:A:1056:G:H5'	2.36	0.56
28:A:329:G:O4'	28:A:477:A:H1'	2.06	0.56
30:C:123:ILE:HG23	30:C:191:LEU:CD2	2.35	0.56
28:A:2578:G:H21	31:D:130:GLN:HE22	1.52	0.56
33:F:10:GLU:O	33:F:12:VAL:HG12	2.06	0.56
36:I:89:SER:O	36:I:97:VAL:HG21	2.06	0.56
28:A:143:C:H5'	47:T:3:ARG:HH12	1.70	0.56
27:5:221:GLY:HA3	28:A:2176:A:OP1	2.05	0.56
27:5:23:ILE:HG13	27:5:233:VAL:HA	1.88	0.56
28:A:2112:G:H1'	58:9:19:G:C4	2.41	0.56
28:A:2101:A:H2'	28:A:2102:G:C8	2.40	0.56
28:A:2157:G:O2'	28:A:2158:A:OP1	2.23	0.56
43:P:63:ILE:HA	43:P:68:GLY:HA2	1.86	0.56
45:R:68:ARG:HD3	45:R:90:ARG:CB	2.35	0.56
32:E:131:THR:HG22	32:E:161:ALA:H	1.70	0.56
58:9:35:A:H2'	58:9:36:A:C8	2.40	0.56
28:A:1323:C:H2'	28:A:1324:G:H5'	1.87	0.56
28:A:768:G:N2	28:A:1379:U:O2'	2.39	0.56
28:A:1482:G:H2'	28:A:1483:G:C8	2.28	0.56
28:A:634:C:O2'	28:A:635:C:H5'	2.05	0.56
28:A:881:G:H22	28:A:898:C:C2'	2.19	0.56
32:E:147:LEU:CD2	32:E:149:ILE:HG23	2.36	0.56
35:H:44:ILE:O	35:H:47:PHE:HB3	2.05	0.56
36:I:9:LYS:CB	36:I:57:VAL:HG22	2.36	0.56
42:O:38:GLN:HA	42:O:50:ALA:CB	2.36	0.56
51:X:14:GLY:O	51:X:26:ARG:HB3	2.06	0.56
58:9:54:U:H3	58:9:58:A:H62	1.53	0.56
28:A:2124:G:H2'	28:A:2125:G:O4'	2.05	0.56
28:A:228:C:H5''	28:A:229:C:C6	2.40	0.56
34:G:98:LYS:H	34:G:103:ASN:ND2	2.03	0.56
28:A:783:A:H3'	28:A:784:G:H5''	1.88	0.56
28:A:1870:C:H2'	28:A:1871:A:N7	2.20	0.56
28:A:24:G:O2'	28:A:25:U:H5'	2.06	0.56
52:Y:13:GLU:O	52:Y:17:GLU:N	2.37	0.56
48:U:27:VAL:HG23	48:U:33:VAL:HG12	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:1488:C:O2'	28:A:1489:C:H5'	2.06	0.56
28:A:828:U:OP1	35:H:22:LYS:NZ	68.89	0.56
31:D:16:THR:HG21	31:D:20:VAL:HB	1.86	0.56
42:O:36:TYR:HD1	42:O:52:SER:CB	2.19	0.56
27:5:62:ALA:N	27:5:144:THR:O	2.26	0.56
58:9:48:C:O2'	58:9:49:C:OP1	2.21	0.56
34:G:96:ALA:CB	34:G:103:ASN:HB2	2.27	0.56
27:5:77:VAL:HG22	27:5:115:ILE:CG2	2.35	0.56
40:M:53:MET:CE	40:M:63:ILE:HD13	2.34	0.56
28:A:56:A:H2'	28:A:57:C:H5'	1.88	0.56
56:8:47:U:H3'	56:8:48:C:C5'	2.36	0.56
47:T:61:LEU:HD11	47:T:82:LYS:HD3	1.87	0.56
53:Z:56:VAL:HG13	53:Z:56:VAL:O	2.06	0.56
41:N:33:ILE:HG12	41:N:118:ARG:CD	2.36	0.56
28:A:1086:A:H3'	28:A:1086:A:N3	2.21	0.56
28:A:1568:G:H4'	30:C:58:LYS:CG	2.36	0.56
28:A:638:G:H2'	28:A:639:U:H6	1.70	0.56
35:H:129:GLU:HG2	35:H:144:VAL:CG2	2.36	0.56
34:G:26:LYS:HD2	34:G:32:LEU:CD1	2.33	0.56
26:4:36:ARG:HG2	26:4:37:GLN:N	2.21	0.56
48:U:92:VAL:HG22	48:U:93:ARG:N	2.16	0.56
25:3:20:GLY:HA3	25:3:48:MET:CE	2.36	0.56
28:A:2713:U:H3'	28:A:2714:G:C5'	2.36	0.56
40:M:102:LEU:HD21	40:M:126:ILE:HD11	1.87	0.56
25:3:34:LYS:NZ	28:A:2390:U:OP2	2.38	0.56
28:A:2044:C:H2'	28:A:2045:C:H5'	1.88	0.56
28:A:275:C:H2'	28:A:276:U:C4'	2.37	0.56
29:B:32:U:H2'	29:B:33:G:C8	2.40	0.56
33:F:72:SER:OG	33:F:78:ILE:O	2.22	0.56
37:J:117:ALA:HA	37:J:120:ARG:NH2	2.21	0.56
28:A:533:G:H5'	44:Q:23:TYR:CD1	2.40	0.56
48:U:23:LYS:HB3	48:U:36:GLU:OE2	2.06	0.56
28:A:2133:G:O2'	28:A:2134:A:O3'	2.20	0.56
28:A:2147:A:H3'	28:A:2148:G:H8	1.71	0.56
28:A:1208:C:H42	28:A:1238:G:H1	1.51	0.56
34:G:53:PRO:HG3	34:G:61:TRP:NE1	2.21	0.56
50:W:30:VAL:HG23	50:W:59:PHE:CD1	2.40	0.56
28:A:783:A:C8	28:A:784:G:H5''	2.39	0.56
28:A:1242:U:H2'	28:A:1243:C:C6	2.41	0.56
28:A:2211:A:O2'	28:A:2212:A:OP1	2.21	0.56
39:L:19:LEU:HD23	39:L:19:LEU:O	2.06	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:G:136:ASP:OD2	34:G:138:GLN:HB3	2.06	0.56
41:N:77:ALA:O	41:N:81:ASN:HB2	2.05	0.56
28:A:960:A:H61	40:M:82:MET:HE3	1.71	0.55
28:A:2091:C:H3'	28:A:2092:U:C5'	2.33	0.55
29:B:35:C:H2'	29:B:36:C:O4'	2.05	0.55
28:A:1255:U:H3'	32:E:68:ALA:HB2	1.89	0.55
35:H:129:GLU:HG2	35:H:144:VAL:HG23	1.87	0.55
35:H:7:ASP:OD1	35:H:9:VAL:HB	2.06	0.55
36:I:19:PRO:HG2	36:I:23:VAL:HG22	1.87	0.55
40:M:1:MET:O	40:M:2:LEU:HB3	2.06	0.55
29:B:48:U:OP2	42:O:30:ARG:NH2	2.37	0.55
28:A:2726:A:O2'	28:A:2727:A:O5'	2.21	0.55
28:A:2705:A:C2	28:A:2706:A:H1'	2.41	0.55
28:A:1819:A:H5''	30:C:159:THR:HG21	1.87	0.55
28:A:1681:G:N2	28:A:1763:G:OP2	2.26	0.55
25:3:53:ASP:OD2	28:A:2359:C:O2'	2.15	0.55
25:3:32:LEU:HD13	28:A:2419:U:OP2	2.05	0.55
27:5:194:VAL:O	27:5:197:LYS:HB3	2.06	0.55
46:S:109:ASP:OD1	46:S:110:ARG:N	2.39	0.55
28:A:84:A:H62	28:A:101:A:H2	1.53	0.55
35:H:84:ALA:HA	35:H:149:GLU:OXT	2.06	0.55
44:Q:94:LEU:C	44:Q:96:ASP:H	2.09	0.55
28:A:2262:U:H5''	50:W:38:ARG:HH21	1.70	0.55
27:5:73:VAL:HA	27:5:112:ASP:OD2	2.06	0.55
38:K:77:ILE:HD11	43:P:71:ARG:HD2	1.88	0.55
23:1:50:GLU:CG	23:1:51:ALA:N	2.65	0.55
52:Y:20:ASN:O	52:Y:24:GLU:HB2	2.05	0.55
29:B:80:U:O4	49:V:14:LYS:NZ	2.32	0.55
28:A:801:G:C8	32:E:50:ALA:HB2	2.42	0.55
52:Y:45:GLN:O	52:Y:47:ARG:N	2.39	0.55
41:N:38:LEU:HD11	41:N:42:LYS:HE3	1.89	0.55
28:A:2094:A:H4'	35:H:25:TYR:CE1	2.41	0.55
28:A:318:C:O2'	28:A:319:G:H5'	2.07	0.55
30:C:123:ILE:CG2	30:C:191:LEU:HD21	2.36	0.55
36:I:125:THR:HA	36:I:128:ILE:HG12	1.88	0.55
37:J:53:TYR:HE1	37:J:121:LYS:HG2	1.72	0.55
27:5:212:VAL:CB	27:5:224:VAL:HG11	2.34	0.55
28:A:783:A:C3'	28:A:784:G:H5''	2.37	0.55
28:A:445:C:H2'	28:A:446:G:H5'	1.88	0.55
53:Z:23:LEU:HD21	53:Z:53:MET:HE2	1.86	0.55
56:8:51:C:C2'	56:8:52:G:H5'	2.36	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:1543:G:H5''	28:A:1544:A:OP1	2.06	0.55
30:C:216:ARG:HB3	30:C:217:PRO:HD2	1.88	0.55
28:A:2861:U:H2'	28:A:2862:G:H8	1.71	0.55
28:A:1178:C:N4	28:A:1179:G:O6	2.39	0.55
35:H:146:VAL:CA	35:H:149:GLU:HB2	2.37	0.55
35:H:85:GLY:CA	35:H:90:LEU:HD23	2.35	0.55
58:9:44:G:H2'	58:9:45:U:C6	2.41	0.55
28:A:2115:G:H4'	28:A:2167:U:O4'	2.06	0.55
47:T:44:LYS:HG3	47:T:45:ALA:N	4.36	0.55
28:A:229:C:H2'	28:A:230:G:O4'	2.07	0.55
34:G:61:TRP:HA	34:G:64:ALA:HB3	1.89	0.55
28:A:2396:G:O2'	28:A:2397:G:H5'	2.05	0.55
28:A:4:U:O2'	28:A:5:A:H5'	2.06	0.55
28:A:1647:U:P	28:A:1647:U:H3'	2.46	0.55
55:7:20:U:O2'	55:7:21:C:O5'	2.23	0.55
28:A:198:C:C2'	28:A:199:A:H5''	2.37	0.55
28:A:600:G:H2'	28:A:601:C:O4'	2.06	0.55
35:H:64:ALA:HA	35:H:71:LYS:CE	2.33	0.55
36:I:4:VAL:HG11	36:I:7:TYR:CA	2.36	0.55
37:J:45:THR:H	37:J:46:PRO:HD3	1.71	0.55
42:O:83:LEU:CD1	42:O:115:LEU:HD12	2.36	0.55
27:5:211:LYS:HE3	27:5:225:ASP:OD1	2.07	0.55
47:T:76:ARG:HH11	47:T:76:ARG:CG	2.19	0.55
43:P:58:PHE:CE2	43:P:75:THR:HG22	2.41	0.55
28:A:856:G:N9	50:W:23:LYS:HD3	2.22	0.55
28:A:923:G:O2'	28:A:924:G:H5'	2.07	0.55
50:W:74:LYS:O	50:W:76:ARG:HG3	2.07	0.55
28:A:2631:G:O2'	28:A:2632:A:H5'	2.07	0.55
28:A:2619:C:O2'	28:A:2620:C:H5'	2.06	0.55
37:J:71:ASP:O	37:J:73:VAL:HG13	2.07	0.55
27:5:39:VAL:HG23	27:5:177:LYS:HE2	1.88	0.55
27:5:214:ILE:HB	27:5:224:VAL:HG23	1.89	0.55
28:A:2118:U:H5	28:A:2145:C:H1'	1.71	0.55
28:A:2128:G:H5''	28:A:2129:C:OP2	2.07	0.55
28:A:1804:C:O2'	28:A:1805:A:H5'	2.07	0.55
52:Y:8:GLU:O	52:Y:12:GLU:HB2	2.07	0.55
28:A:2645:G:N2	28:A:2645:G:OP2	2.35	0.55
28:A:350:G:H2'	28:A:351:C:H6	1.71	0.55
22:0:21:LEU:HD11	46:S:41:LYS:HE3	1.88	0.55
28:A:1244:A:C2'	28:A:1245:G:H5'	2.37	0.55
28:A:1080:A:H4'	36:I:126:ARG:HB3	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:279:A:H2'	28:A:280:U:C5'	2.31	0.55
28:A:895:U:H4'	28:A:896:A:C5	2.41	0.55
29:B:11:C:H2'	29:B:12:C:H5'	1.89	0.55
31:D:119:ALA:HB2	31:D:165:MET:HB2	1.89	0.55
35:H:25:TYR:CE2	35:H:30:LEU:HD11	2.42	0.55
36:I:27:LEU:HD13	36:I:32:VAL:CG2	2.37	0.55
36:I:87:SER:O	36:I:135:MET:HE1	2.07	0.55
27:5:134:ARG:HD3	28:A:2125:G:N1	2.22	0.55
47:T:29:THR:OG1	47:T:86:THR:N	2.34	0.55
47:T:83:ALA:O	47:T:84:TYR:HB2	2.07	0.55
40:M:40:ARG:O	40:M:41:LEU:HD12	2.06	0.55
55:7:13:C:H3'	55:7:14:A:C5'	2.36	0.55
30:C:159:THR:O	30:C:194:VAL:HG12	2.07	0.55
28:A:1584:U:H2'	28:A:1585:C:C4'	2.35	0.55
25:3:22:LYS:HA	25:3:47:ALA:O	2.07	0.55
28:A:1353:A:O3'	30:C:35:LYS:NZ	2.39	0.55
51:X:52:ALA:O	51:X:53:LYS:HB3	2.07	0.55
28:A:1076:C:H2'	28:A:1077:A:O4'	2.07	0.55
31:D:3:GLY:C	31:D:4:LEU:HD12	2.27	0.55
35:H:108:VAL:CG1	35:H:110:VAL:HB	2.36	0.55
36:I:4:VAL:HB	36:I:7:TYR:HD2	1.71	0.55
37:J:11:VAL:HG11	37:J:13:ARG:HE	1.72	0.55
39:L:79:LEU:N	39:L:113:ALA:HB3	2.22	0.55
45:R:38:VAL:HG13	45:R:54:VAL:CG2	2.32	0.55
27:5:54:LYS:O	27:5:54:LYS:HG2	2.06	0.55
28:A:2135:A:N6	28:A:2155:U:H1'	2.22	0.55
28:A:1534:U:H3'	28:A:1536:C:N4	2.22	0.55
40:M:110:GLU:OE2	40:M:114:ARG:NE	2.40	0.55
58:9:73:A:H2'	58:9:74:C:C4'	2.37	0.55
28:A:1738:G:HO2'	28:A:1739:A:H8	1.55	0.55
32:E:45:ALA:O	32:E:46:GLN:HB2	2.07	0.55
33:F:47:LYS:HA	33:F:50:ASP:OD2	2.07	0.55
28:A:857:G:C2'	28:A:858:G:H5'	2.36	0.55
37:J:84:ILE:HG23	37:J:84:ILE:O	2.06	0.55
33:F:126:ASN:OD1	33:F:156:THR:HG23	2.07	0.55
28:A:84:A:N1	28:A:98:G:O2'	2.35	0.55
30:C:62:ARG:NH2	30:C:84:PRO:HD2	2.22	0.55
31:D:118:PHE:O	31:D:120:GLY:N	2.40	0.55
32:E:149:ILE:HD11	32:E:188:MET:CG	2.36	0.55
35:H:4:ILE:HG12	35:H:18:GLN:NE2	2.22	0.55
28:A:993:G:OP2	44:Q:50:ARG:NH2	2.40	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:X:39:VAL:HG22	51:X:44:ARG:H	1.70	0.55
27:5:215:SER:HB3	28:A:2176:A:H4'	1.87	0.55
40:M:20:LEU:HD13	49:V:81:PRO:HG2	1.89	0.55
28:A:2558:C:O4'	54:6:76:F3O:H13	2.06	0.55
28:A:1977:A:O2'	28:A:1978:A:H5'	2.07	0.55
28:A:548:G:P	28:A:549:G:H5'	2.46	0.55
31:D:110:THR:HG23	31:D:171:THR:HG22	1.88	0.55
35:H:121:VAL:O	35:H:122:LEU:HB3	2.06	0.55
39:L:121:THR:HG22	39:L:141:LYS:HB3	1.89	0.55
27:5:140:PRO:HD2	27:5:164:ARG:NH1	2.21	0.55
27:5:37:LYS:NZ	28:A:2127:G:H1'	2.22	0.55
27:5:75:VAL:HG13	27:5:115:ILE:HG12	1.89	0.55
33:F:116:LEU:HD21	33:F:129:MET:SD	2.47	0.55
28:A:2734:A:N6	28:A:2770:G:O2'	2.40	0.55
28:A:869:G:H5''	28:A:870:U:OP1	5.35	0.55
28:A:2331:G:O2'	50:W:39:GLN:O	2.22	0.55
54:6:34:G:C6	54:6:35:A:N6	2.74	0.54
28:A:259:G:N2	28:A:260:G:H1'	3.35	0.54
28:A:881:G:N1	28:A:898:C:O2	2.36	0.54
29:B:38:C:H2'	29:B:39:A:C8	2.43	0.54
35:H:144:VAL:CG2	35:H:146:VAL:HG13	2.34	0.54
27:5:175:ILE:HG21	27:5:185:LEU:HB3	1.89	0.54
27:5:46:VAL:HG22	27:5:212:VAL:CG2	2.38	0.54
28:A:2140:G:N2	28:A:2152:G:H1'	2.23	0.54
47:T:29:THR:HB	47:T:86:THR:HA	1.88	0.54
28:A:2688:G:N1	28:A:2720:U:OP2	2.31	0.54
28:A:2720:U:H5''	43:P:52:ARG:NH2	2.22	0.54
34:G:101:VAL:HG12	34:G:115:GLN:HG3	1.89	0.54
50:W:23:LYS:CG	50:W:24:ARG:H	2.17	0.54
28:A:1182:G:H5''	28:A:1183:U:OP2	2.07	0.54
29:B:20:G:H2'	29:B:21:G:O4'	2.07	0.54
28:A:535:G:H2'	28:A:536:G:C8	2.37	0.54
28:A:1505:A:H2'	28:A:1506:U:O4'	2.07	0.54
28:A:792:A:O2'	28:A:794:A:N7	15.27	0.54
28:A:474:G:C2'	28:A:475:C:H5'	3.76	0.54
30:C:64:VAL:HG21	30:C:86:ARG:HH22	1.72	0.54
32:E:151:GLY:CA	32:E:192:ALA:HB2	2.37	0.54
36:I:89:SER:O	36:I:91:LYS:N	2.40	0.54
37:J:3:THR:HB	37:J:44:TYR:OH	2.07	0.54
27:5:18:THR:HG23	27:5:223:ALA:H	1.71	0.54
32:E:48:THR:CG2	32:E:86:ALA:HB3	2.37	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:1501:G:O2'	28:A:1502:A:H5'	2.07	0.54
33:F:162:ASP:HB3	33:F:166:ARG:NH1	2.22	0.54
52:Y:41:HIS:CE1	52:Y:42:LEU:HD12	2.42	0.54
38:K:98:ARG:O	38:K:99:ILE:HD13	2.08	0.54
42:O:79:ALA:O	42:O:83:LEU:HD13	2.08	0.54
28:A:335:C:O2	48:U:67:SER:OG	2.25	0.54
28:A:2135:A:N7	28:A:2155:U:N3	2.56	0.54
28:A:2134:A:O4'	28:A:2159:G:N2	2.41	0.54
40:M:29:GLY:O	40:M:133:LYS:HD2	2.07	0.54
28:A:718:A:H2'	28:A:719:C:H5'	1.89	0.54
28:A:2406:A:N3	39:L:69:ARG:NH2	2.56	0.54
28:A:776:G:N2	28:A:2241:A:OP1	2.29	0.54
28:A:1271:G:H5''	28:A:1272:A:OP1	2.08	0.54
28:A:1432:G:P	43:P:105:LYS:HG2	54.69	0.54
28:A:2489:U:O2'	28:A:2490:G:H5'	2.07	0.54
28:A:543:G:H2'	28:A:544:C:O4'	2.07	0.54
28:A:737:C:O2'	28:A:738:G:H5'	2.07	0.54
29:B:78:A:H2'	29:B:79:G:O4'	2.07	0.54
32:E:124:PHE:HE2	32:E:148:ILE:HD13	1.72	0.54
35:H:67:ALA:CB	35:H:68:ARG:CA	2.83	0.54
35:H:74:ALA:O	35:H:76:GLU:N	2.40	0.54
28:A:2329:U:O2	50:W:38:ARG:HD3	2.07	0.54
27:5:109:MET:HE3	27:5:111:PHE:HB2	1.88	0.54
27:5:37:LYS:HD3	27:5:218:MET:SD	2.48	0.54
28:A:2166:U:H3'	28:A:2167:U:C6	2.42	0.54
28:A:1027:A:C2	28:A:2488:G:H5'	2.42	0.54
28:A:2286:G:H4'	28:A:2287:A:O4'	2.07	0.54
44:Q:69:ARG:HE	44:Q:74:SER:HA	1.72	0.54
28:A:1529:G:N7	28:A:1543:G:N2	2.56	0.54
28:A:2314:A:H2'	28:A:2315:G:C8	2.42	0.54
28:A:1244:A:H2'	28:A:1245:G:H5'	1.90	0.54
28:A:275:C:C2'	28:A:276:U:H4'	2.37	0.54
35:H:53:GLU:O	35:H:57:LYS:NZ	2.36	0.54
27:5:141:LYS:CG	27:5:164:ARG:HH21	2.20	0.54
43:P:58:PHE:CD2	43:P:75:THR:HG22	2.43	0.54
48:U:94:PHE:HA	48:U:101:THR:HA	1.88	0.54
51:X:34:SER:HA	51:X:48:LEU:O	2.08	0.54
28:A:1642:G:O2'	28:A:1643:G:H5'	2.07	0.54
28:A:1856:U:C2'	28:A:1857:G:H5'	2.37	0.54
28:A:2714:G:C2'	28:A:2715:C:H5'	2.38	0.54
51:X:18:SER:O	51:X:21:LEU:N	2.35	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:1036:G:O2'	28:A:1037:G:H5'	2.06	0.54
31:D:133:THR:OG1	31:D:134:HIS:N	2.40	0.54
28:A:45:G:H2'	28:A:46:G:H8	5.85	0.54
28:A:689:A:N3	28:A:779:U:O2'	2.35	0.54
30:C:144:GLU:HG2	30:C:150:GLY:O	2.08	0.54
35:H:25:TYR:CD2	35:H:30:LEU:HD11	2.43	0.54
43:P:105:LYS:O	43:P:108:ARG:HG3	2.08	0.54
58:9:18:G:N1	58:9:55:U:H1'	2.21	0.54
27:5:130:VAL:HG11	28:A:2119:A:N3	2.22	0.54
43:P:49:ILE:CG2	43:P:50:ARG:N	2.69	0.54
51:X:50:VAL:HG12	51:X:51:SER:O	2.07	0.54
48:U:8:ASP:O	48:U:10:VAL:HG13	2.08	0.54
30:C:154:ALA:HB2	30:C:161:VAL:CG2	2.37	0.54
28:A:304:U:H2'	28:A:305:C:C6	2.43	0.54
28:A:1466:U:O2'	28:A:1546:G:O2'	2.14	0.54
42:O:7:ARG:HA	42:O:10:ARG:HH11	1.73	0.54
28:A:15:G:N2	28:A:16:C:H1'	2.23	0.54
28:A:1341:G:H5'	47:T:61:LEU:CD2	2.37	0.54
28:A:123:G:H2'	28:A:124:G:H5'	1.89	0.54
46:S:69:LEU:HG	46:S:107:VAL:HG21	1.90	0.54
28:A:1087:G:H2'	28:A:1088:A:C5'	2.35	0.54
28:A:204:A:H4'	28:A:205:G:OP1	2.08	0.54
28:A:882:G:H1'	54:6:17:C:H42	1.72	0.54
29:B:43:C:H4'	33:F:62:GLN:NE2	2.21	0.54
32:E:151:GLY:HA2	32:E:192:ALA:HB2	1.90	0.54
35:H:14:SER:HB2	35:H:17:ASP:HB2	1.90	0.54
36:I:27:LEU:HD22	36:I:32:VAL:HB	1.88	0.54
39:L:79:LEU:HD23	39:L:82:LEU:HD21	1.88	0.54
27:5:80:GLN:HG2	27:5:120:ALA:HB1	1.85	0.54
27:5:23:ILE:CG1	27:5:233:VAL:HA	2.38	0.54
27:5:54:LYS:NZ	27:5:56:ASP:OD1	2.38	0.54
58:9:25:C:O2'	58:9:26:A:H5'	2.08	0.54
28:A:2114:A:C2	28:A:2168:G:H4'	2.42	0.54
28:A:2127:G:O6	28:A:2161:C:H2'	2.08	0.54
28:A:2163:A:H5''	28:A:2164:C:OP2	2.08	0.54
43:P:62:LYS:CE	43:P:64:SER:HB2	2.34	0.54
51:X:32:LEU:O	51:X:33:HIS:ND1	2.41	0.54
28:A:1186:G:O2'	28:A:1187:G:H5'	2.07	0.54
28:A:1952:A:N3	28:A:2560:A:O2'	2.30	0.54
28:A:1867:G:O2'	28:A:1868:C:H5'	2.08	0.54
28:A:1163:G:OP1	45:R:24:LYS:NZ	2.30	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:633:A:H5''	28:A:634:C:OP2	2.08	0.54
32:E:3:LEU:O	32:E:11:ALA:HA	2.08	0.54
36:I:107:GLU:O	36:I:111:THR:HG23	2.07	0.54
36:I:72:THR:HG23	36:I:112:LYS:HZ1	1.72	0.54
37:J:41:LYS:NZ	37:J:50:THR:O	2.27	0.54
27:5:35:THR:HG23	27:5:219:GLY:CA	2.37	0.54
28:A:2137:U:H2'	28:A:2138:G:N9	2.21	0.54
28:A:2158:A:H3'	28:A:2159:G:C4	2.43	0.54
43:P:26:GLU:H	43:P:83:ILE:HD11	1.73	0.54
52:Y:28:LEU:HB3	52:Y:43:LEU:HD21	1.88	0.54
28:A:1205:A:H2'	32:E:165:HIS:HE1	1.72	0.54
28:A:1567:G:C5'	30:C:57:HIS:HD2	2.18	0.54
31:D:25:THR:HG21	31:D:193:VAL:CG2	2.37	0.54
33:F:64:PRO:HA	33:F:88:VAL:CG2	2.37	0.54
27:5:16:ASP:OD2	27:5:29:LEU:HD22	2.08	0.54
47:T:28:ASN:CA	47:T:91:GLN:HE22	2.21	0.54
24:2:9:VAL:HG22	28:A:1309:G:OP1	2.08	0.54
40:M:21:ALA:HB2	40:M:97:GLN:O	2.08	0.54
50:W:19:ARG:HA	50:W:34:SER:HA	1.89	0.54
30:C:15:VAL:HG22	30:C:204:LEU:O	2.07	0.54
28:A:2532:G:N2	28:A:2663:G:O2'	2.41	0.54
28:A:1614:A:N6	46:S:88:ARG:H	2.06	0.54
28:A:1924:C:O2'	28:A:1925:C:H5'	2.08	0.54
28:A:891:G:OP1	28:A:891:G:H4'	2.07	0.54
40:M:74:THR:OG1	40:M:86:LYS:HE3	2.07	0.54
46:S:36:LEU:HD21	46:S:47:VAL:HG12	1.88	0.54
28:A:7:G:H1'	37:J:135:GLN:NE2	2.23	0.54
42:O:29:HIS:HB3	42:O:36:TYR:HB2	1.90	0.54
27:5:42:VAL:HA	27:5:214:ILE:CD1	2.34	0.54
42:O:88:LYS:O	42:O:89:ASP:HB2	2.07	0.54
30:C:203:VAL:HG22	30:C:203:VAL:O	2.08	0.54
32:E:5:LEU:O	32:E:5:LEU:HD23	2.08	0.54
28:A:791:C:O2'	28:A:792:A:OP2	2.22	0.54
28:A:179:C:C2'	28:A:180:G:H5'	2.38	0.53
28:A:463:G:N2	28:A:466:A:OP2	2.36	0.53
31:D:58:ASN:OD1	31:D:59:ARG:HG2	2.07	0.53
31:D:61:THR:OG1	31:D:63:PRO:HD2	2.07	0.53
32:E:189:THR:O	32:E:193:VAL:HG23	2.07	0.53
27:5:49:GLY:H	27:5:207:VAL:CG2	2.21	0.53
28:A:1812:U:O2'	28:A:1813:G:H5'	2.07	0.53
34:G:84:LYS:HD2	34:G:131:VAL:CB	2.35	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:X:32:LEU:HA	51:X:51:SER:HA	1.89	0.53
34:G:136:ASP:OD1	34:G:137:LYS:N	2.41	0.53
32:E:175:ILE:HD11	32:E:180:LEU:HD21	1.89	0.53
28:A:2631:G:C2'	28:A:2632:A:H5'	2.39	0.53
28:A:565:C:C2'	28:A:566:U:H5'	2.38	0.53
54:6:19:G:H4'	54:6:20:U:OP2	2.08	0.53
28:A:172:A:H2'	28:A:173:A:H8	1.71	0.53
27:5:170:ILE:HG21	28:A:2177:C:O2'	2.08	0.53
27:5:214:ILE:HG13	27:5:215:SER:N	2.23	0.53
27:5:68:GLY:HA2	27:5:159:GLY:HA2	1.88	0.53
47:T:29:THR:CA	47:T:86:THR:HA	2.38	0.53
38:K:68:GLY:HA3	38:K:77:ILE:O	2.08	0.53
34:G:30:GLY:O	34:G:32:LEU:N	2.41	0.53
28:A:2353:G:H1'	50:W:30:VAL:HG12	1.90	0.53
28:A:1606:C:H5''	28:A:1607:C:OP1	2.07	0.53
28:A:2796:U:O2'	28:A:2797:U:H2'	2.08	0.53
28:A:2662:A:H2'	28:A:2663:G:O4'	2.08	0.53
49:V:1:MET:HG3	49:V:2:PHE:N	2.24	0.53
28:A:123:G:C2'	28:A:124:G:H5'	2.38	0.53
28:A:1553:A:C6	28:A:1555:G:H1'	2.43	0.53
28:A:2575:C:H2'	28:A:2578:G:O6	2.07	0.53
27:5:60:ARG:NE	27:5:165:ASN:HB2	2.23	0.53
27:5:43:ASP:OD1	27:5:214:ILE:HD12	2.08	0.53
34:G:100:ASN:OD1	34:G:101:VAL:HG13	2.09	0.53
28:A:141:G:O2'	28:A:142:A:H4'	2.08	0.53
54:6:70:G:C2'	54:6:71:G:H5'	2.38	0.53
28:A:1001:A:H2'	28:A:1002:G:O4'	2.08	0.53
28:A:1059:G:H2'	28:A:1060:U:H5	1.72	0.53
28:A:1084:A:H1'	28:A:1105:U:O2'	2.08	0.53
28:A:403:U:HO2'	28:A:404:A:P	2.31	0.53
33:F:52:ALA:HA	33:F:149:ARG:NH1	2.24	0.53
37:J:18:VAL:HG22	37:J:140:LEU:HD11	1.91	0.53
39:L:119:PRO:HG3	39:L:138:ALA:O	2.08	0.53
44:Q:64:ILE:HD11	44:Q:95:ALA:HB3	1.91	0.53
38:K:110:GLU:OE1	38:K:110:GLU:N	2.40	0.53
49:V:35:GLU:CG	49:V:93:ARG:HH12	2.22	0.53
50:W:23:LYS:HG2	50:W:24:ARG:N	2.18	0.53
28:A:2267:A:H5''	28:A:2268:A:H5'	1.90	0.53
28:A:1046:A:H2'	28:A:1047:G:O4'	6.01	0.53
28:A:2483:C:N3	40:M:123:LYS:NZ	2.56	0.53
28:A:171:U:O2'	28:A:172:A:H5'	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:395:U:O2'	28:A:396:G:N7	2.35	0.53
35:H:104:THR:CA	35:H:109:GLU:HA	2.38	0.53
35:H:41:LYS:HA	35:H:44:ILE:CG1	2.34	0.53
42:O:75:GLY:CA	42:O:106:LEU:HB2	2.35	0.53
28:A:2114:A:H2	28:A:2168:G:H4'	1.74	0.53
47:T:43:ILE:O	47:T:47:VAL:HG23	2.09	0.53
47:T:33:LYS:HG3	47:T:80:TRP:CE3	2.44	0.53
52:Y:9:LYS:HB3	52:Y:12:GLU:CG	2.39	0.53
26:4:5:ALA:O	26:4:38:GLY:HA2	2.09	0.53
23:1:38:PHE:CZ	23:1:43:ARG:HA	2.44	0.53
28:A:1734:G:H2'	28:A:1735:A:H8	1.72	0.53
28:A:1869:G:H2'	28:A:1871:A:N7	2.23	0.53
53:Z:3:THR:HA	53:Z:37:ARG:O	2.09	0.53
28:A:2713:U:C3'	28:A:2714:G:H5''	2.39	0.53
28:A:2618:G:O2'	28:A:2619:C:H5'	2.08	0.53
28:A:2519:U:C6	28:A:2542:A:N6	2.77	0.53
28:A:1517:G:H2'	28:A:1518:C:O4'	2.08	0.53
28:A:2301:C:H2'	28:A:2302:U:H6	1.72	0.53
28:A:201:C:H2'	28:A:202:U:H6	1.74	0.53
28:A:322:A:OP1	32:E:162:ARG:NE	2.41	0.53
29:B:49:C:O2'	29:B:50:A:H5'	2.08	0.53
30:C:79:ARG:NE	30:C:81:GLU:OE2	2.42	0.53
39:L:85:VAL:HG22	39:L:94:THR:HG22	1.89	0.53
45:R:37:GLU:HB3	45:R:53:PHE:CD1	2.44	0.53
27:5:134:ARG:HD3	28:A:2125:G:H1	1.73	0.53
43:P:50:ARG:HG3	43:P:51:ASN:N	2.23	0.53
43:P:77:SER:OG	43:P:79:VAL:HG22	2.08	0.53
26:4:22:VAL:HG21	26:4:36:ARG:CG	2.39	0.53
28:A:819:A:OP2	28:A:1187:G:N2	2.29	0.53
33:F:149:ARG:HG2	33:F:150:GLY:N	2.24	0.53
33:F:92:GLY:O	33:F:95:MET:HB3	2.09	0.53
37:J:96:ARG:NE	37:J:99:ARG:HG3	2.24	0.53
39:L:109:LYS:HA	39:L:126:ARG:O	2.08	0.53
22:0:9:ARG:HH22	44:Q:29:ARG:NE	2.06	0.53
48:U:47:PRO:HB3	48:U:55:GLY:N	2.23	0.53
28:A:2155:U:H3'	28:A:2156:G:H8	1.74	0.53
28:A:347:A:O2'	28:A:348:A:H5'	2.09	0.53
28:A:715:A:H2'	28:A:716:A:C8	2.44	0.53
28:A:718:A:C2'	28:A:719:C:H5'	2.39	0.53
28:A:1092:C:H2'	28:A:1093:G:H5'	1.89	0.53
28:A:74:A:C2'	28:A:75:G:H5''	6.76	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:F:131:VAL:HG23	33:F:132:ARG:N	2.23	0.53
40:M:68:PHE:CD1	40:M:69:PRO:HD2	2.44	0.53
51:X:36:ARG:CG	51:X:47:THR:HG22	2.33	0.53
27:5:46:VAL:HG22	27:5:212:VAL:CA	2.39	0.53
28:A:1805:A:N3	30:C:49:THR:OG1	2.42	0.53
28:A:2756:U:H4'	28:A:2757:A:OP1	2.07	0.53
28:A:1536:C:H1'	28:A:1537:G:C2	2.43	0.53
28:A:1473:G:H2'	28:A:1474:U:C6	2.44	0.53
33:F:43:ILE:HG13	33:F:44:ALA:N	2.22	0.53
39:L:7:SER:HB2	39:L:8:PRO:HD2	1.91	0.53
28:A:116:C:H2'	28:A:117:G:O4'	2.08	0.53
28:A:1156:A:C8	44:Q:50:ARG:HD3	2.43	0.53
28:A:1173:U:H1'	28:A:1177:G:H22	1.72	0.53
28:A:127:A:H5''	28:A:128:C:O5'	2.08	0.53
28:A:273:G:H2'	28:A:274:C:C6	2.43	0.53
33:F:27:VAL:CG2	33:F:28:PRO:HD2	2.39	0.53
33:F:79:ARG:CB	33:F:82:TYR:HE2	2.18	0.53
48:U:91:LYS:O	48:U:92:VAL:HG12	2.09	0.53
51:X:37:PHE:O	51:X:45:PHE:HA	2.09	0.53
28:A:1337:G:H5''	28:A:1338:G:OP1	5.00	0.53
37:J:69:ARG:HD3	37:J:89:PHE:CD2	2.44	0.53
28:A:2632:A:H2'	28:A:2633:G:H8	1.74	0.53
28:A:657:U:H2'	28:A:658:U:C6	2.43	0.53
50:W:70:VAL:O	50:W:70:VAL:HG13	2.08	0.53
28:A:1677:A:H8	28:A:1677:A:O5'	1.92	0.53
28:A:1092:C:H2'	28:A:1093:G:C5'	2.39	0.53
28:A:769:U:O2	28:A:1379:U:H1'	2.09	0.53
28:A:881:G:H2'	28:A:882:G:O4'	2.09	0.53
28:A:1081:U:P	36:I:126:ARG:HE	2.32	0.53
36:I:135:MET:HG2	36:I:137:LEU:CD2	2.38	0.53
36:I:48:ILE:HD12	36:I:54:ILE:CD1	2.38	0.53
39:L:29:LYS:HG2	39:L:30:THR:N	2.24	0.53
44:Q:91:ARG:HH11	45:R:11:GLN:N	2.07	0.53
44:Q:64:ILE:HG12	44:Q:95:ALA:CB	2.39	0.53
51:X:38:TRP:CZ2	51:X:43:LYS:HA	2.44	0.53
27:5:83:ASN:OD1	27:5:149:VAL:HG11	2.08	0.53
58:9:61:C:H2'	58:9:62:C:C5	2.44	0.53
33:F:116:LEU:HD23	33:F:127:TYR:OH	2.09	0.53
30:C:16:VAL:CB	30:C:203:VAL:HG12	2.38	0.53
27:5:181:ASP:HB2	27:5:184:LYS:CB	2.38	0.53
45:R:68:ARG:CD	45:R:90:ARG:HE	2.21	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:2267:A:H5''	28:A:2268:A:C5'	2.39	0.53
27:5:59:VAL:HB	27:5:196:LEU:HD22	1.91	0.53
29:B:118:C:H2'	29:B:119:A:H4'	1.91	0.53
49:V:61:LEU:O	49:V:61:LEU:HD12	2.08	0.53
28:A:2061:G:H5''	28:A:2503:A:C5'	2.37	0.52
28:A:320:A:H4'	28:A:322:A:N7	2.24	0.52
28:A:652:U:O2'	28:A:653:U:OP2	5.06	0.52
28:A:828:U:H4'	28:A:828:U:OP1	4.97	0.52
33:F:149:ARG:HG2	33:F:150:GLY:H	1.74	0.52
35:H:93:SER:N	35:H:116:ARG:HB3	2.17	0.52
35:H:90:LEU:N	35:H:147:VAL:HG12	2.25	0.52
35:H:4:ILE:CG1	35:H:18:GLN:HE22	2.22	0.52
36:I:105:LEU:HD22	36:I:128:ILE:HG22	1.90	0.52
42:O:26:LEU:HD12	42:O:38:GLN:O	2.09	0.52
42:O:52:SER:OG	42:O:54:VAL:HG12	2.10	0.52
27:5:85:GLU:HG2	27:5:88:LYS:CD	2.20	0.52
50:W:50:VAL:HB	50:W:61:LYS:CE	2.40	0.52
28:A:2247:A:H2'	28:A:2248:C:H6	1.74	0.52
28:A:2786:U:O2'	28:A:2787:C:H5'	2.09	0.52
54:6:34:G:O6	54:6:35:A:N6	2.42	0.52
28:A:107:G:O2'	28:A:108:G:H5'	2.09	0.52
28:A:108:G:O2'	28:A:109:C:H5'	2.10	0.52
28:A:1817:G:H5''	30:C:86:ARG:HG2	1.91	0.52
29:B:42:C:C5	33:F:65:LEU:HD22	2.44	0.52
35:H:129:GLU:HB2	35:H:142:VAL:CG1	2.40	0.52
36:I:79:LEU:HD21	36:I:105:LEU:HD23	1.90	0.52
44:Q:94:LEU:HD21	45:R:4:VAL:CG2	2.38	0.52
27:5:23:ILE:HB	27:5:227:ALA:HB2	1.91	0.52
27:5:69:THR:HB	27:5:160:GLN:O	2.09	0.52
28:A:2323:G:O2'	28:A:2324:U:H5'	2.09	0.52
28:A:1590:A:H2'	28:A:1591:A:C8	2.44	0.52
28:A:1745:A:H2'	28:A:1746:A:O4'	2.09	0.52
56:8:9:G:O2'	56:8:10:G:N7	2.41	0.52
28:A:2646:C:O5'	28:A:2646:C:H6	1.92	0.52
28:A:889:C:C2'	28:A:890:C:H5'	2.39	0.52
32:E:148:ILE:O	32:E:148:ILE:HG22	2.10	0.52
35:H:10:ALA:HB1	35:H:12:LEU:HG	1.91	0.52
37:J:47:HIS:CD2	37:J:48:VAL:HG23	2.44	0.52
44:Q:82:LEU:HG	44:Q:88:GLU:OE1	2.09	0.52
44:Q:88:GLU:HA	45:R:49:ILE:CD1	2.38	0.52
27:5:105:LYS:HB2	28:A:2163:A:C4'	2.40	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:5:24:ASN:ND2	27:5:232:SER:HB2	2.21	0.52
27:5:67:HIS:HB2	27:5:188:ASN:OD1	2.09	0.52
58:9:21:A:H62	58:9:48:C:P	2.31	0.52
47:T:1:MET:SD	47:T:49:LYS:NZ	2.73	0.52
50:W:30:VAL:O	50:W:30:VAL:HG22	2.09	0.52
28:A:370:G:O2'	28:A:423:A:H3'	2.10	0.52
28:A:1797:G:O3'	30:C:255:LYS:HA	2.10	0.52
28:A:2333:A:OP1	50:W:76:ARG:NH1	2.42	0.52
42:O:7:ARG:CB	42:O:10:ARG:HH11	2.23	0.52
28:A:1186:G:H2'	28:A:1187:G:O4'	2.09	0.52
28:A:2235:G:H2'	28:A:2236:U:O4'	2.09	0.52
28:A:995:C:C3'	28:A:996:A:H5''	4.94	0.52
31:D:61:THR:CB	31:D:63:PRO:HD2	2.39	0.52
36:I:4:VAL:HB	36:I:7:TYR:CD2	2.45	0.52
29:B:48:U:P	42:O:30:ARG:HH12	2.31	0.52
27:5:212:VAL:C	27:5:224:VAL:HB	2.28	0.52
58:9:74:C:O2'	58:9:75:C:H5'	2.09	0.52
41:N:72:ASP:HB3	41:N:75:ILE:CG1	2.38	0.52
28:A:1314:C:C5	46:S:6:LYS:HD3	44.52	0.52
28:A:1545:A:H2'	28:A:1546:G:C5'	2.39	0.52
27:5:182:ALA:CB	27:5:234:ASN:H	2.21	0.52
28:A:2564:A:OP1	28:A:2648:G:O2'	2.21	0.52
28:A:1060:U:O2	28:A:1062:G:H5'	2.08	0.52
29:B:94:A:H2'	29:B:95:U:H5'	1.90	0.52
28:A:1081:U:H5'	36:I:126:ARG:HH21	1.75	0.52
36:I:58:ILE:CD1	36:I:68:PHE:HB2	2.39	0.52
42:O:24:THR:CG2	42:O:42:PRO:HG3	2.40	0.52
50:W:64:GLY:HA2	50:W:84:GLU:HG2	1.90	0.52
41:N:73:ASN:O	41:N:76:VAL:HG12	2.10	0.52
28:A:1046:A:O2'	28:A:1047:G:H5'	4.40	0.52
28:A:2247:A:H2'	28:A:2248:C:C6	2.45	0.52
33:F:169:LEU:HB2	33:F:176:PHE:HZ	1.75	0.52
52:Y:49:ASP:OD1	52:Y:52:ARG:NH2	2.43	0.52
28:A:159:G:H1'	28:A:167:A:N6	2.25	0.52
32:E:149:ILE:HD11	32:E:188:MET:HG3	1.91	0.52
36:I:76:ALA:HA	36:I:131:THR:HG23	1.90	0.52
42:O:31:THR:CG2	42:O:32:PRO:HD2	2.39	0.52
27:5:133:PRO:HG2	28:A:2172:U:O4'	2.10	0.52
27:5:46:VAL:CG1	27:5:210:LYS:H	2.23	0.52
58:9:49:C:C2'	58:9:50:U:H5'	2.40	0.52
28:A:1533:C:H1'	28:A:1534:U:C6	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:5:173:THR:HG21	27:5:192:LEU:HD22	1.92	0.52
27:5:181:ASP:O	27:5:184:LYS:HB3	2.10	0.52
32:E:5:LEU:O	32:E:6:LYS:HB3	2.09	0.52
28:A:1151:A:H4'	44:Q:80:ASN:ND2	2.25	0.52
28:A:900:A:O2'	28:A:901:C:H5'	2.09	0.52
36:I:30:GLN:HG3	36:I:30:GLN:O	2.10	0.52
38:K:63:VAL:HG12	38:K:64:ARG:N	2.23	0.52
51:X:67:LEU:CD2	51:X:70:LEU:HD12	2.39	0.52
48:U:47:PRO:HB2	48:U:53:GLN:HB2	1.91	0.52
38:K:61:VAL:HG11	38:K:107:LEU:HD11	1.91	0.52
58:9:31:A:N1	58:9:39:U:N3	2.57	0.52
58:9:29:G:H1	58:9:41:C:H42	1.57	0.52
50:W:49:ASN:HB2	50:W:59:PHE:O	2.09	0.52
28:A:1248:G:N2	32:E:83:VAL:HG22	2.25	0.52
23:1:41:VAL:HG13	23:1:42:VAL:HG23	1.91	0.52
28:A:1435:G:H2'	28:A:1436:G:H5'	1.91	0.52
28:A:801:G:N7	32:E:50:ALA:HB2	2.24	0.52
54:6:62:C:O2'	54:6:63:G:H5'	2.09	0.52
28:A:889:C:H2'	28:A:890:C:O4'	2.09	0.52
28:A:982:C:H5''	28:A:983:A:OP1	2.10	0.52
31:D:107:VAL:HG22	31:D:108:ASP:N	2.21	0.52
35:H:75:LEU:CD2	35:H:103:VAL:HG13	2.39	0.52
39:L:100:ILE:HD12	39:L:100:ILE:O	2.09	0.52
58:9:24:G:H2'	58:9:25:C:C6	2.45	0.52
58:9:69:G:H2'	58:9:70:G:C8	2.44	0.52
28:A:2112:G:O2'	28:A:2113:U:H5'	2.09	0.52
28:A:2112:G:H2'	28:A:2113:U:H5'	1.90	0.52
28:A:2114:A:N3	28:A:2167:U:O2'	2.41	0.52
28:A:2146:C:H4'	28:A:2148:G:N3	2.25	0.52
34:G:102:ILE:CG2	34:G:104:LEU:HG	2.40	0.52
43:P:27:VAL:HG22	43:P:83:ILE:HD13	1.92	0.52
51:X:48:LEU:HB3	51:X:50:VAL:HG23	1.92	0.52
28:A:923:G:N3	50:W:23:LYS:NZ	2.58	0.52
28:A:1720:U:H2'	28:A:1721:G:O4'	2.09	0.52
28:A:1331:G:O2'	28:A:1332:G:H5'	2.10	0.52
28:A:536:G:O2'	28:A:537:G:H5'	2.10	0.52
34:G:82:PHE:CE2	34:G:137:LYS:HB2	2.45	0.52
28:A:2238:G:H2'	28:A:2238:G:N3	2.25	0.52
28:A:1807:G:H5''	28:A:1808:A:OP2	2.09	0.52
28:A:1678:A:O2'	28:A:1679:A:H5'	2.10	0.52
28:A:1064:C:N4	28:A:1074:G:H1	2.08	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:997:G:O2'	28:A:998:C:H5'	2.10	0.52
36:I:135:MET:CG	36:I:137:LEU:HD23	2.40	0.52
37:J:44:TYR:O	37:J:45:THR:HB	2.10	0.52
48:U:26:ASN:OD1	48:U:34:ILE:HB	2.08	0.52
28:A:511:U:C2'	28:A:512:G:H5'	2.38	0.52
34:G:27:GLY:HA3	34:G:78:VAL:HG22	1.91	0.52
50:W:51:GLY:HA2	50:W:59:PHE:CE2	2.45	0.52
48:U:86:PHE:CD2	48:U:92:VAL:HG11	2.44	0.52
32:E:48:THR:HG23	32:E:86:ALA:HB3	1.92	0.52
32:E:167:VAL:HG22	32:E:168:ASP:N	2.23	0.52
22:O:2:VAL:HG11	28:A:2016:U:C1'	2.38	0.52
28:A:1112:G:H2'	28:A:1113:U:H6	1.74	0.52
31:D:26:VAL:HG22	31:D:188:LEU:CD2	2.40	0.52
34:G:138:GLN:O	34:G:141:GLY:N	2.39	0.52
28:A:1530:G:H3'	28:A:1531:C:C6	2.45	0.52
50:W:50:VAL:HB	50:W:61:LYS:HE3	1.92	0.52
28:A:1628:G:H2'	28:A:1629:U:C6	2.44	0.52
28:A:1420:A:H5'	28:A:1421:G:OP2	2.10	0.52
28:A:880:G:H4'	28:A:881:G:OP2	2.10	0.52
31:D:118:PHE:CE1	31:D:123:LYS:HD3	2.44	0.52
31:D:149:ASN:CG	31:D:150:GLN:H	2.13	0.52
27:5:9:ARG:HA	27:5:12:ARG:HH11	1.74	0.52
27:5:155:ASN:O	27:5:158:ALA:HB3	2.09	0.52
30:C:76:VAL:HG13	30:C:76:VAL:O	2.10	0.52
34:G:79:THR:OG1	34:G:80:GLU:N	2.43	0.52
34:G:8:VAL:HG13	34:G:8:VAL:O	2.09	0.52
44:Q:111:LYS:HB2	45:R:48:LYS:CE	2.29	0.52
28:A:2801:G:O2'	28:A:2802:G:H5'	2.09	0.52
28:A:1313:U:O2'	28:A:1314:C:H5'	3.69	0.52
33:F:102:LEU:HA	33:F:106:ALA:HB3	1.92	0.52
28:A:1529:G:H2'	28:A:1530:G:O4'	2.10	0.52
32:E:87:ALA:O	32:E:88:ARG:HD3	2.10	0.52
28:A:1013:C:H2'	28:A:1014:A:O4'	2.10	0.51
28:A:1220:G:H2'	28:A:1221:C:O4'	2.10	0.51
28:A:44:A:O2'	28:A:45:G:H5'	2.31	0.51
31:D:184:ARG:HD3	31:D:186:LEU:HD22	1.92	0.51
33:F:11:VAL:HG13	33:F:171:ALA:CB	2.41	0.51
35:H:32:PRO:HB3	51:X:38:TRP:CB	2.40	0.51
28:A:2148:G:H5'	28:A:2149:U:OP2	2.10	0.51
58:9:28:G:H3'	58:9:29:G:C8	2.45	0.51
28:A:2739:U:O2'	28:A:2740:A:H5'	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:2290:G:O6	28:A:2342:C:N4	2.43	0.51
28:A:2839:G:H4'	41:N:49:GLU:OE1	2.11	0.51
28:A:197:A:C2'	28:A:198:C:H5'	2.40	0.51
28:A:327:G:H2'	28:A:328:U:O4'	2.09	0.51
28:A:71:A:H4'	28:A:72:U:H5''	1.91	0.51
30:C:124:LYS:O	30:C:191:LEU:HD23	2.11	0.51
30:C:196:ASN:O	30:C:197:ALA:HB3	2.10	0.51
35:H:80:ILE:HG22	35:H:99:ILE:HD13	1.91	0.51
37:J:125:TYR:OH	37:J:132:HIS:NE2	2.35	0.51
31:D:157:LYS:O	37:J:81:ILE:HG22	2.10	0.51
44:Q:60:TRP:CH2	44:Q:93:ILE:HB	2.45	0.51
27:5:19:LYS:HB3	27:5:21:TYR:CE1	2.45	0.51
28:A:2147:A:H2'	28:A:2147:A:N3	2.24	0.51
47:T:50:LEU:O	47:T:51:PHE:HB2	2.11	0.51
44:Q:43:GLN:HE22	45:R:77:PHE:HD2	1.58	0.51
28:A:1590:A:H2'	28:A:1591:A:H8	1.73	0.51
28:A:221:A:N1	28:A:265:A:O2'	2.43	0.51
27:5:171:ILE:CD1	27:5:196:LEU:HD11	2.40	0.51
28:A:2070:A:H2'	28:A:2071:A:O4'	2.10	0.51
28:A:925:A:H2'	28:A:926:G:C8	2.46	0.51
30:C:23:LEU:HD21	30:C:89:ASN:ND2	2.26	0.51
31:D:97:SER:OG	31:D:99:GLU:HG2	2.11	0.51
35:H:75:LEU:HD22	35:H:108:VAL:HG21	1.91	0.51
35:H:33:GLN:HG2	35:H:35:LYS:NZ	2.25	0.51
37:J:26:GLY:O	37:J:29:ALA:N	2.44	0.51
42:O:67:ASN:ND2	42:O:69:ASP:HB2	2.25	0.51
51:X:56:ARG:O	51:X:59:ASP:HB2	2.11	0.51
50:W:60:ALA:HA	50:W:81:ILE:CD1	2.41	0.51
49:V:35:GLU:HG2	49:V:93:ARG:HH12	1.75	0.51
28:A:974:G:H4'	45:R:78:ARG:NH2	2.25	0.51
28:A:613:A:C3'	28:A:614:A:H5'	2.40	0.51
28:A:2359:C:O2'	28:A:2360:G:H5'	2.10	0.51
28:A:1656:C:H2'	28:A:1657:U:C6	2.45	0.51
39:L:89:VAL:O	39:L:89:VAL:HG13	2.10	0.51
27:5:79:THR:HB	27:5:117:SER:HB2	1.91	0.51
28:A:2188:U:H2'	28:A:2189:U:O4'	2.10	0.51
38:K:10:VAL:HG11	38:K:16:ALA:HB1	1.91	0.51
28:A:1812:U:O2	30:C:43:ASN:ND2	2.44	0.51
34:G:51:PHE:CD2	34:G:68:ARG:HB2	2.45	0.51
34:G:53:PRO:HD3	34:G:61:TRP:CD2	2.45	0.51
28:A:777:G:C2'	28:A:778:G:H5'	2.41	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:E:164:LEU:HB2	32:E:167:VAL:HG12	1.93	0.51
28:A:623:C:O2'	28:A:624:C:H5'	3.25	0.51
31:D:172:VAL:HG21	31:D:194:PRO:HD3	1.90	0.51
28:A:1932:A:H2'	28:A:1933:G:O4'	2.11	0.51
28:A:2347:C:OP1	28:A:2347:C:H4'	2.11	0.51
46:S:18:ARG:O	46:S:19:LEU:CB	2.57	0.51
28:A:279:A:C6	28:A:361:G:H1'	2.45	0.51
28:A:1568:G:H4'	30:C:58:LYS:HG2	1.92	0.51
31:D:129:THR:HG22	31:D:130:GLN:O	2.10	0.51
36:I:102:ARG:N	36:I:140:GLU:O	2.43	0.51
36:I:23:VAL:C	36:I:25:PRO:HD2	2.30	0.51
36:I:83:ALA:HB1	36:I:85:ILE:CD1	2.41	0.51
37:J:17:VAL:HG12	37:J:55:ILE:HG13	1.91	0.51
37:J:56:VAL:O	37:J:57:LEU:HD12	2.10	0.51
27:5:87:ALA:HA	27:5:91:GLY:CA	2.40	0.51
27:5:43:ASP:OD2	27:5:215:SER:OG	2.26	0.51
28:A:2180:U:H2'	28:A:2181:U:C6	2.46	0.51
27:5:204:ALA:O	27:5:206:GLY:N	2.35	0.51
27:5:131:LEU:HD13	27:5:138:PRO:CG	2.24	0.51
28:A:1535:A:H4'	28:A:1536:C:OP2	2.09	0.51
28:A:2557:G:H2'	28:A:2558:C:H6	1.73	0.51
30:C:254:LYS:HG2	30:C:254:LYS:O	2.09	0.51
44:Q:35:PHE:HZ	45:R:84:ARG:HH22	1.57	0.51
28:A:303:G:H2'	28:A:304:U:O4'	2.10	0.51
28:A:1062:G:C2'	28:A:1063:G:H5'	2.41	0.51
28:A:1071:G:O2'	28:A:1089:A:H2'	2.11	0.51
28:A:361:G:O2'	28:A:362:A:H5'	2.11	0.51
28:A:544:C:H3'	28:A:545:U:C6	2.45	0.51
28:A:548:G:H5''	28:A:549:G:O4'	2.09	0.51
35:H:118:PRO:CD	35:H:122:LEU:HD23	2.41	0.51
35:H:85:GLY:CA	35:H:147:VAL:HA	2.41	0.51
37:J:44:TYR:HD1	44:Q:59:LEU:CD2	2.23	0.51
34:G:116:LEU:HD12	34:G:116:LEU:N	2.25	0.51
34:G:15:ASP:HB3	34:G:26:LYS:N	2.23	0.51
32:E:146:VAL:HA	32:E:185:LYS:O	2.11	0.51
28:A:2287:A:H61	28:A:2344:U:H3	1.59	0.51
46:S:71:VAL:O	46:S:71:VAL:HG13	2.10	0.51
28:A:1079:C:H2'	28:A:1080:A:H5'	1.92	0.51
28:A:1567:G:H2'	30:C:84:PRO:HG3	1.93	0.51
38:K:63:VAL:HG11	38:K:103:VAL:HG12	1.93	0.51
39:L:90:VAL:HB	39:L:122:VAL:HA	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:2330:G:N3	50:W:38:ARG:HB3	2.26	0.51
28:A:2130:U:H4'	28:A:2131:U:OP1	2.10	0.51
28:A:1336:A:O5'	47:T:68:LYS:NZ	2.41	0.51
50:W:28:GLU:O	50:W:30:VAL:N	2.44	0.51
30:C:171:VAL:HG12	30:C:173:LEU:CD1	2.40	0.51
54:6:11:C:H2'	54:6:12:U:H6	1.75	0.51
45:R:66:HIS:CD2	45:R:94:THR:HG22	2.46	0.51
46:S:76:VAL:HG13	46:S:76:VAL:O	2.10	0.51
28:A:155:A:N6	28:A:166:U:O4	16.58	0.51
28:A:479:A:H4'	28:A:480:A:OP1	2.11	0.51
28:A:842:U:O2'	28:A:843:G:H5'	2.10	0.51
28:A:934:U:H2'	28:A:935:C:H6	1.75	0.51
31:D:3:GLY:HA3	31:D:204:LYS:HG2	1.92	0.51
32:E:1:MET:HG3	32:E:19:PHE:HB2	1.93	0.51
33:F:131:VAL:O	33:F:132:ARG:HB3	2.11	0.51
36:I:101:SER:O	36:I:104:GLN:HB2	2.11	0.51
36:I:4:VAL:HG11	36:I:7:TYR:CB	2.41	0.51
51:X:16:ASN:ND2	51:X:26:ARG:HD3	2.24	0.51
27:5:65:LEU:HD12	27:5:161:VAL:CG2	2.39	0.51
28:A:707:G:H2'	28:A:708:G:C5'	2.41	0.51
34:G:126:THR:HG22	34:G:127:GLN:N	2.26	0.51
28:A:1533:C:H1'	28:A:1534:U:H5	1.73	0.51
28:A:139:U:C5	47:T:1:MET:HA	2.46	0.51
23:1:18:HIS:ND1	23:1:40:PRO:HD2	2.25	0.51
28:A:1181:U:H2'	28:A:1182:G:C8	2.46	0.51
56:8:54:U:C2'	56:8:55:U:H5'	2.40	0.51
28:A:1847:A:H1'	28:A:1848:A:OP1	2.11	0.51
28:A:1191:G:C2'	28:A:1192:G:H5'	2.41	0.51
52:Y:39:GLN:HG3	52:Y:42:LEU:HD13	1.93	0.51
28:A:2414:G:C2'	28:A:2415:G:H5'	2.41	0.51
28:A:1576:U:O2'	28:A:1577:C:H5'	2.11	0.51
28:A:877:A:O2'	28:A:878:A:O4'	2.29	0.51
29:B:82:U:H2'	29:B:83:G:H8	1.74	0.51
35:H:5:LEU:HD12	35:H:14:SER:OG	2.11	0.51
39:L:77:ILE:HD12	39:L:108:ALA:HB1	1.91	0.51
42:O:15:ARG:HH21	42:O:95:SER:CB	2.23	0.51
42:O:24:THR:HG22	42:O:42:PRO:HD3	1.91	0.51
28:A:2184:A:H2'	28:A:2185:U:C6	2.46	0.51
47:T:39:THR:HG22	47:T:39:THR:O	2.10	0.51
48:U:93:ARG:O	48:U:101:THR:HG23	2.10	0.51
28:A:783:A:H2'	28:A:784:G:H5''	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:1332:G:N7	28:A:1609:A:O2'	2.38	0.51
28:A:268:C:C2'	28:A:269:C:H5'	2.40	0.51
30:C:161:VAL:HG11	30:C:173:LEU:HD23	1.93	0.51
23:1:4:ILE:HG23	23:1:5:ARG:H	1.76	0.51
28:A:1234:U:H2'	28:A:1235:G:O4'	2.11	0.51
25:3:23:HIS:N	25:3:47:ALA:O	2.43	0.51
28:A:2638:G:N2	28:A:2775:G:H2'	2.26	0.51
28:A:1185:G:C2'	28:A:1186:G:H5'	5.10	0.51
28:A:1785:A:HO2'	28:A:1786:A:H8	1.59	0.51
46:S:69:LEU:CD1	46:S:107:VAL:HG22	2.41	0.51
54:6:36:A:H2'	54:6:37:A:H8	1.73	0.51
28:A:1023:U:H2'	28:A:1024:G:C8	4.34	0.51
28:A:1102:C:H2'	28:A:1103:A:O4'	2.11	0.51
33:F:134:GLN:OE1	33:F:149:ARG:HB3	2.11	0.51
35:H:41:LYS:H	35:H:44:ILE:CG2	2.20	0.51
39:L:135:ILE:CB	39:L:142:ILE:HD11	2.40	0.51
39:L:82:LEU:O	39:L:85:VAL:HG12	2.11	0.51
44:Q:88:GLU:HG2	45:R:49:ILE:HG13	1.93	0.51
58:9:21:A:N1	58:9:46:G:N2	2.58	0.51
58:9:54:U:H2'	58:9:55:U:H5'	1.93	0.51
28:A:2758:A:C2'	28:A:2759:G:H5'	2.41	0.51
52:Y:9:LYS:HG2	52:Y:12:GLU:HG3	1.93	0.51
28:A:139:U:O2'	28:A:140:C:OP1	2.24	0.51
26:4:22:VAL:HG21	26:4:36:ARG:HG3	1.92	0.51
51:X:30:PRO:HB2	51:X:32:LEU:CD1	2.41	0.51
28:A:855:G:C4	50:W:23:LYS:HD2	2.45	0.51
49:V:6:ALA:HB2	49:V:42:LEU:CD2	2.37	0.51
58:9:73:A:H2'	58:9:74:C:O4'	2.11	0.51
22:0:3:GLN:O	28:A:2016:U:O2'	2.29	0.51
43:P:30:TRP:CD2	43:P:37:LYS:HE2	2.45	0.51
28:A:2522:U:O2'	28:A:2647:U:OP1	2.29	0.51
28:A:2751:G:N3	28:A:2751:G:H2'	2.25	0.51
28:A:1684:G:H2'	28:A:1685:C:C6	2.46	0.51
28:A:1865:U:OP1	28:A:2409:G:N2	2.31	0.51
31:D:92:VAL:O	31:D:94:GLN:N	2.44	0.51
28:A:851:C:H2'	28:A:852:U:C6	2.46	0.51
56:8:17(A):U:H5''	56:8:18:G:OP2	2.12	0.50
28:A:1272:A:C3'	28:A:1273:U:H5''	2.41	0.50
29:B:55:U:H2'	29:B:56:G:C8	2.46	0.50
39:L:68:SER:O	39:L:70:LYS:N	2.43	0.50
42:O:40:ILE:HA	42:O:47:VAL:HA	1.92	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:R:38:VAL:CG1	45:R:57:GLY:HA3	2.42	0.50
27:5:140:PRO:HB2	27:5:164:ARG:HH22	1.73	0.50
58:9:68:C:C2'	58:9:69:G:H5'	2.41	0.50
28:A:2104:C:H2'	28:A:2105:U:C6	2.46	0.50
28:A:2114:A:C4	28:A:2115:G:H1'	2.46	0.50
38:K:73:ASP:OD2	43:P:79:VAL:HG21	2.10	0.50
28:A:855:G:C2	50:W:23:LYS:HE2	2.45	0.50
28:A:974:G:N3	28:A:974:G:H2'	2.26	0.50
28:A:1106:G:C2'	28:A:1107:G:H5'	2.41	0.50
29:B:25:U:H2'	29:B:26:C:O4'	2.11	0.50
26:4:25:VAL:O	26:4:26:ILE:HD13	2.10	0.50
28:A:705:A:C2	28:A:727:A:H1'	2.46	0.50
28:A:1710:G:O2'	28:A:1711:A:H5'	2.11	0.50
31:D:170:VAL:O	31:D:170:VAL:HG13	2.11	0.50
33:F:42:ALA:HA	33:F:45:ASP:O	2.12	0.50
35:H:100:ALA:O	35:H:103:VAL:HB	2.12	0.50
28:A:723:C:H2'	28:A:724:U:O4'	2.11	0.50
58:9:15:G:O2'	58:9:16:U:OP1	2.28	0.50
58:9:62:C:H6	58:9:62:C:O5'	1.94	0.50
28:A:2156:G:C4'	28:A:2158:A:H62	2.22	0.50
28:A:1159:U:O2'	28:A:1160:G:H5'	2.10	0.50
42:O:7:ARG:CA	42:O:10:ARG:HH11	2.23	0.50
28:A:760:G:H2'	28:A:761:A:C5'	2.40	0.50
45:R:15:SER:HB2	45:R:18:GLN:CD	2.32	0.50
25:3:49:VAL:CG2	25:3:54:LEU:HD13	2.41	0.50
28:A:319:G:C2'	28:A:320:A:H5'	2.61	0.50
30:C:123:ILE:HG23	30:C:191:LEU:HD21	1.92	0.50
32:E:149:ILE:HD11	32:E:188:MET:HB2	1.94	0.50
35:H:89:LYS:HE3	35:H:123:ARG:O	2.12	0.50
36:I:4:VAL:HG12	36:I:6:ALA:N	2.16	0.50
36:I:56:VAL:O	36:I:56:VAL:HG13	2.11	0.50
27:5:214:ILE:CG2	27:5:224:VAL:HG23	2.42	0.50
28:A:2747:G:O6	28:A:2755:C:H5''	2.10	0.50
28:A:141:G:HO2'	28:A:142:A:P	2.34	0.50
26:4:36:ARG:HH22	28:A:2539:C:H4'	1.76	0.50
28:A:536:G:C2'	28:A:537:G:H5'	2.41	0.50
41:N:79:LEU:O	41:N:80:PHE:HB2	2.11	0.50
28:A:1766:G:C2'	28:A:1767:G:H5'	2.41	0.50
52:Y:46:VAL:O	52:Y:50:VAL:HG23	2.11	0.50
28:A:2342:C:O2	28:A:2374:C:H4'	2.11	0.50
28:A:2599:G:N7	30:C:235:GLU:HB3	2.26	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:1487:U:H1'	28:A:1503:A:H2	1.76	0.50
28:A:356:G:O2'	28:A:357:C:H5'	2.10	0.50
28:A:1568:G:OP2	30:C:62:ARG:NH1	2.44	0.50
31:D:62:LYS:HB2	31:D:63:PRO:HD3	1.93	0.50
27:5:105:LYS:HE3	28:A:2163:A:C1'	2.42	0.50
27:5:47:ASN:CB	27:5:210:LYS:HD2	2.41	0.50
26:4:23:ILE:HD12	26:4:38:GLY:OXT	2.11	0.50
40:M:132:THR:HG22	40:M:133:LYS:N	2.26	0.50
40:M:31:PHE:CZ	40:M:110:GLU:HA	2.45	0.50
28:A:613:A:H3'	28:A:614:A:C5'	2.39	0.50
28:A:570:G:H2'	28:A:2030:A:N7	2.27	0.50
25:3:44:ARG:N	25:3:45:PRO:HD2	2.27	0.50
28:A:1963:U:O5'	28:A:1963:U:H6	1.94	0.50
28:A:1079:C:C2'	28:A:1080:A:H5'	2.42	0.50
28:A:1171:G:H2'	28:A:1172:C:O4'	2.11	0.50
28:A:1348:C:H2'	28:A:1349:C:H5'	1.93	0.50
28:A:404:A:H3'	28:A:404:A:OP1	2.11	0.50
28:A:473:G:O2'	28:A:474:G:H5'	2.11	0.50
28:A:322:A:OP2	32:E:163:ASN:HB2	2.11	0.50
35:H:129:GLU:HG2	35:H:146:VAL:HG22	1.91	0.50
35:H:33:GLN:HG2	35:H:35:LYS:HZ3	1.75	0.50
37:J:45:THR:HG23	37:J:45:THR:O	2.11	0.50
39:L:101:ILE:CG2	39:L:105:ILE:HB	2.41	0.50
42:O:38:GLN:HG2	42:O:50:ALA:HB1	1.93	0.50
45:R:29:THR:HG23	45:R:65:ALA:H	1.74	0.50
27:5:60:ARG:HG3	27:5:165:ASN:HD22	1.77	0.50
27:5:6:LYS:HE3	28:A:2151:U:P	2.51	0.50
38:K:61:VAL:HG12	38:K:62:VAL:O	2.11	0.50
26:4:1:MET:HE1	26:4:36:ARG:HB2	1.92	0.50
28:A:1719:G:O2'	28:A:1720:U:H5'	2.12	0.50
54:6:1:G:H2'	54:6:2:C:C6	2.47	0.50
23:1:5:ARG:NH1	28:A:2285:C:OP2	2.45	0.50
23:1:33:LEU:HD21	23:1:35:LEU:CD2	2.41	0.50
28:A:1657:U:O2'	31:D:138:LEU:HD22	2.12	0.50
28:A:2660:A:H2'	28:A:2661:G:O4'	2.11	0.50
54:6:31:A:H2'	54:6:32:U:H5'	1.92	0.50
28:A:1013:C:O2'	28:A:1014:A:H5'	2.11	0.50
28:A:107:G:H2'	28:A:108:G:C5'	3.14	0.50
28:A:1216:G:H5''	44:Q:10:ARG:HH12	1.75	0.50
30:C:134:ILE:O	30:C:166:ARG:NH1	2.45	0.50
28:A:873:C:H4'	40:M:64:TRP:NE1	2.26	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:5:61:GLY:HA3	27:5:144:THR:HB	1.93	0.50
38:K:20:MET:O	38:K:42:THR:HG22	2.12	0.50
34:G:84:LYS:HD3	34:G:132:LEU:C	2.32	0.50
27:5:77:VAL:HG22	27:5:115:ILE:CB	2.40	0.50
28:A:1248:G:P	32:E:44:ARG:NH1	2.84	0.50
29:B:19:C:C2'	29:B:20:G:H5'	2.42	0.50
41:N:103:ARG:HD3	41:N:110:MET:HE3	1.92	0.50
28:A:2291:U:O2'	28:A:2374:C:O2	2.30	0.50
53:Z:5:LYS:O	53:Z:57:GLU:HB2	2.10	0.50
28:A:1661:G:O2'	28:A:1662:U:H5'	2.10	0.50
28:A:1787:A:H2'	28:A:1787:A:N3	2.25	0.50
28:A:149:A:H2'	28:A:150:U:O4'	2.86	0.50
28:A:285:G:H2'	28:A:285:G:N3	2.26	0.50
28:A:635:C:O2'	28:A:639:U:H5''	2.10	0.50
28:A:842:U:C2'	28:A:843:G:H5'	2.42	0.50
28:A:889:C:H2'	28:A:890:C:H5'	1.94	0.50
41:N:72:ASP:HB3	41:N:75:ILE:CD1	2.42	0.50
32:E:5:LEU:HB3	32:E:8:ALA:O	2.12	0.50
31:D:177:VAL:HG13	31:D:177:VAL:O	2.12	0.50
49:V:55:GLU:OE1	49:V:55:GLU:N	2.39	0.50
55:7:21:C:C2'	55:7:22:A:H5'	2.40	0.50
28:A:2060:A:N3	28:A:2502:G:H5'	2.27	0.50
30:C:134:ILE:CD1	30:C:140:VAL:HG11	2.35	0.50
33:F:147:ARG:HG3	33:F:149:ARG:N	2.15	0.50
36:I:58:ILE:HD12	36:I:68:PHE:HB2	1.93	0.50
51:X:58:ILE:CG2	51:X:63:ILE:HG12	2.42	0.50
51:X:70:LEU:HA	51:X:73:ARG:HG2	1.93	0.50
28:A:2329:U:O2'	28:A:2330:G:H5'	2.12	0.50
27:5:21:TYR:H	27:5:225:ASP:N	2.09	0.50
58:9:20:U:C2	58:9:21:A:H4'	2.47	0.50
52:Y:9:LYS:HD2	52:Y:10:SER:H	1.77	0.50
50:W:33:GLY:O	50:W:34:SER:HB3	2.12	0.50
28:A:491:G:O6	46:S:49:LYS:HE2	2.11	0.50
28:A:1614:A:N6	46:S:92:ARG:O	2.45	0.50
26:4:16:ILE:CD1	26:4:25:VAL:HG22	2.41	0.50
30:C:211:ARG:HD2	30:C:215:VAL:O	2.12	0.50
28:A:435:C:H2'	28:A:436:C:H5'	1.94	0.50
28:A:45:G:H2'	28:A:46:G:C8	6.41	0.50
31:D:109:VAL:HG11	31:D:193:VAL:CG1	2.41	0.50
35:H:47:PHE:CB	35:H:50:ARG:HH21	2.23	0.50
37:J:56:VAL:N	37:J:123:LYS:O	2.44	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:T:7:LEU:HD11	47:T:42:GLU:OE2	2.12	0.50
27:5:141:LYS:HG3	27:5:164:ARG:HH21	1.77	0.50
27:5:185:LEU:O	27:5:188:ASN:HB2	2.11	0.50
27:5:34:ALA:CB	27:5:216:THR:HG21	2.42	0.50
43:P:50:ARG:CG	43:P:51:ASN:H	2.16	0.50
28:A:37:C:O2'	28:A:38:A:H5'	2.12	0.50
30:C:16:VAL:HB	30:C:203:VAL:CG1	2.39	0.50
28:A:1893:C:C2'	28:A:1894:C:H5'	2.40	0.50
28:A:2281:A:C2'	28:A:2282:G:H5'	2.42	0.50
22:0:31:LYS:HE2	22:0:49:ARG:O	2.12	0.50
28:A:193:U:O2'	28:A:194:G:H5'	2.12	0.49
28:A:874:G:C2'	28:A:875:G:H5'	2.41	0.49
28:A:895:U:H4'	28:A:896:A:C8	2.47	0.49
32:E:58:LYS:HD2	32:E:70:SER:O	2.12	0.49
36:I:116:MET:CE	36:I:124:MET:HB3	2.36	0.49
36:I:45:THR:HA	36:I:48:ILE:CG1	2.41	0.49
37:J:45:THR:OG1	37:J:48:VAL:HB	2.12	0.49
45:R:6:GLN:HG3	45:R:10:LYS:O	2.12	0.49
34:G:60:GLY:O	34:G:62:ALA:N	2.44	0.49
28:A:2364:C:H2'	28:A:2365:G:O4'	2.12	0.49
28:A:718:A:H2'	28:A:719:C:C5'	2.42	0.49
28:A:966:G:O4'	28:A:2267:A:N6	2.45	0.49
32:E:6:LYS:HG2	32:E:7:ASP:N	2.27	0.49
28:A:2286:G:H5'	28:A:2287:A:O5'	2.12	0.49
25:3:29:ARG:HH12	39:L:62:PRO:HB2	1.77	0.49
45:R:1:MET:HE1	45:R:43:ASN:HD21	1.75	0.49
45:R:42:ALA:HA	45:R:46:GLU:HA	1.94	0.49
56:8:58:A:H1'	56:8:60:U:OP2	2.12	0.49
37:J:96:ARG:N	37:J:97:PRO:HD3	2.27	0.49
45:R:49:ILE:HD12	45:R:52:PRO:CA	2.36	0.49
48:U:49:PRO:HA	48:U:53:GLN:OE1	2.12	0.49
27:5:167:LYS:NZ	28:A:2120:G:H21	2.10	0.49
58:9:5:G:N1	58:9:68:C:N3	2.56	0.49
38:K:79:PHE:CD1	43:P:69:VAL:HG12	2.47	0.49
28:A:1414:C:H2'	28:A:1415:U:C6	2.47	0.49
28:A:1413:A:N6	28:A:1589:U:H3	2.08	0.49
28:A:1526:C:C2'	28:A:1527:G:H5'	2.41	0.49
28:A:2350:C:H2'	28:A:2351:G:O4'	2.12	0.49
28:A:1800:C:H5'	30:C:145:MET:HE3	1.92	0.49
31:D:1:MET:HG2	31:D:205:PRO:HG3	1.95	0.49
28:A:1859:U:O2'	28:A:1860:G:H5'	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:1070:A:C2	28:A:1097:U:H4'	2.47	0.49
28:A:500:G:N1	28:A:503:A:OP2	2.45	0.49
28:A:545:U:O5'	28:A:545:U:H6	1.94	0.49
28:A:975:A:H4'	28:A:976:G:H5'	5.93	0.49
28:A:993:G:N3	28:A:993:G:H2'	3.33	0.49
30:C:124:LYS:HG2	30:C:125:PRO:HD2	1.92	0.49
30:C:33:LEU:HD23	30:C:62:ARG:HG2	1.95	0.49
31:D:52:THR:CG2	31:D:53:GLY:H	2.23	0.49
31:D:65:ALA:O	31:D:69:ALA:HB2	2.12	0.49
39:L:78:ARG:HB3	39:L:113:ALA:HB1	1.94	0.49
58:9:9:A:H61	58:9:22:G:H3'	1.75	0.49
58:9:53:G:H2'	58:9:53:G:N3	2.27	0.49
28:A:223:A:H2'	28:A:224:U:C6	7.27	0.49
28:A:2297:A:N7	28:A:2320:U:N3	2.60	0.49
28:A:28:A:C2'	28:A:29:U:H5'	2.42	0.49
42:O:89:ASP:OD1	42:O:116:GLN:HB3	2.12	0.49
46:S:4:ILE:HG22	46:S:106:VAL:HG22	1.93	0.49
33:F:35:LEU:HD22	33:F:153:ILE:HG22	1.92	0.49
29:B:2:G:H2'	29:B:3:C:C6	2.47	0.49
49:V:75:GLN:HG2	49:V:92:VAL:HG23	1.94	0.49
28:A:2623:G:OP1	28:A:2826:A:O2'	2.27	0.49
28:A:1600:C:O2'	28:A:1601:G:H5'	2.12	0.49
46:S:3:THR:HG21	46:S:107:VAL:HG13	1.94	0.49
28:A:135:U:O2'	28:A:136:G:H5'	2.11	0.49
29:B:43:C:O2	33:F:91:ARG:NH2	2.45	0.49
39:L:135:ILE:HD12	39:L:142:ILE:HD11	1.95	0.49
42:O:76:LYS:CB	42:O:109:ALA:HB1	2.43	0.49
28:A:2116:G:OP2	28:A:2166:U:H1'	2.12	0.49
47:T:44:LYS:HG3	47:T:55:VAL:HG11	1.94	0.49
27:5:57:GLN:OE1	27:5:204:ALA:HB3	2.12	0.49
28:A:1779:U:H5	28:A:1784:A:N7	2.11	0.49
28:A:1792:G:H5''	30:C:203:VAL:HG23	1.93	0.49
50:W:9:THR:HG23	50:W:10:ARG:N	2.25	0.49
28:A:2834:G:H2'	28:A:2879:A:N6	2.26	0.49
28:A:656:G:H2'	28:A:657:U:O4'	2.12	0.49
28:A:1538:G:O2'	28:A:1539:U:H5'	2.12	0.49
28:A:1041:G:O2'	28:A:1042:G:H5'	2.12	0.49
28:A:1177:G:H2'	28:A:1178:C:C5'	2.43	0.49
28:A:1179:G:H5''	28:A:1180:U:OP2	2.12	0.49
28:A:167:A:H2'	28:A:168:G:O4'	2.12	0.49
28:A:476:G:N2	28:A:479:A:OP2	2.45	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:85:G:P	48:U:6:ARG:HB2	2.52	0.49
36:I:123:ALA:HA	36:I:126:ARG:NH1	2.27	0.49
37:J:4:PHE:HB3	37:J:44:TYR:CE2	2.47	0.49
27:5:38:PHE:HE2	27:5:218:MET:HB3	1.74	0.49
27:5:5:THR:O	27:5:8:MET:HB2	2.12	0.49
58:9:49:C:O2'	58:9:50:U:H5'	2.13	0.49
28:A:2135:A:H5'	28:A:2136:G:OP2	2.13	0.49
28:A:2154:A:N7	28:A:2155:U:H5	2.11	0.49
27:5:50:ILE:HA	27:5:57:GLN:OE1	2.13	0.49
34:G:118:ALA:O	34:G:120:ILE:N	2.39	0.49
34:G:46:ASP:OD1	34:G:47:ASN:N	2.40	0.49
23:1:34:GLU:OE2	23:1:49:LYS:HD3	2.12	0.49
26:4:3:VAL:HG12	26:4:36:ARG:NH2	2.28	0.49
30:C:7:PRO:HB3	30:C:13:ARG:HG3	1.94	0.49
28:A:2411:A:O2'	28:A:2412:A:H5'	2.12	0.49
53:Z:2:LYS:O	53:Z:3:THR:OG1	2.27	0.49
28:A:2600:A:H2'	28:A:2601:C:H5'	1.93	0.49
37:J:7:LYS:O	37:J:10:THR:OG1	2.28	0.49
49:V:62:THR:HA	49:V:71:LYS:HA	1.95	0.49
28:A:2586:U:O2'	28:A:2587:A:H5'	2.13	0.49
55:7:15:U:H2'	55:7:16:A:C8	2.47	0.49
22:0:52:LYS:HG3	22:0:52:LYS:O	2.13	0.49
28:A:2292:U:O2'	28:A:2293:G:H5'	2.12	0.49
28:A:864:G:O2'	28:A:865:C:H5'	2.12	0.49
29:B:93:C:O2'	29:B:94:A:H5'	2.13	0.49
28:A:2049:G:H21	31:D:161:MET:HE2	1.77	0.49
31:D:49:GLN:HA	31:D:80:TRP:O	2.13	0.49
35:H:83:LYS:HD3	35:H:95:GLY:HA3	1.94	0.49
36:I:105:LEU:HD22	36:I:128:ILE:CG2	2.43	0.49
50:W:37:VAL:O	50:W:38:ARG:HB2	2.13	0.49
27:5:70:GLY:N	27:5:176:GLY:HA2	2.27	0.49
58:9:14:A:N6	58:9:15:G:N3	2.60	0.49
47:T:29:THR:HA	47:T:86:THR:HA	1.94	0.49
47:T:50:LEU:HD12	47:T:50:LEU:N	2.27	0.49
28:A:1237:A:H4'	28:A:1238:G:OP1	2.12	0.49
28:A:614:A:O2'	28:A:615:U:OP2	2.29	0.49
28:A:528:A:C2	28:A:2043:C:H5'	2.47	0.49
28:A:2581:G:N3	28:A:2581:G:H2'	2.27	0.49
28:A:2075:U:OP2	28:A:2238:G:O2'	2.20	0.49
28:A:792:A:H3'	28:A:793:A:H5'	1.94	0.49
54:6:50:U:C2'	54:6:51:U:H5'	2.43	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:2343:U:O2'	28:A:2373:G:O2'	2.24	0.49
28:A:1652:A:H5'	28:A:1653:G:OP2	2.12	0.49
28:A:2271:G:O5'	28:A:2271:G:H8	1.96	0.49
28:A:2492:U:O2'	28:A:2493:U:H5'	2.12	0.49
28:A:881:G:C2	28:A:898:C:H1'	2.48	0.49
30:C:143:VAL:HG12	30:C:144:GLU:N	2.27	0.49
40:M:68:PHE:O	40:M:94:ALA:HB2	2.12	0.49
30:C:172:THR:C	30:C:173:LEU:HD12	2.33	0.49
28:A:859:G:OP2	28:A:869:G:N1	21.94	0.49
43:P:30:TRP:CZ3	43:P:37:LYS:HE2	2.47	0.49
28:A:2657:A:H2'	28:A:2658:C:H5'	1.95	0.49
28:A:2304:G:H22	28:A:2312:U:H3	1.59	0.49
28:A:699:A:H2'	28:A:700:G:C5'	2.42	0.49
33:F:121:PHE:HB3	33:F:162:ASP:OD1	2.11	0.49
28:A:1428:C:C5	28:A:1569:A:H5''	2.47	0.49
28:A:1517:G:H2'	28:A:1518:C:H6	1.77	0.49
28:A:1684:G:H2'	28:A:1685:C:H6	1.76	0.49
28:A:1794:A:H2'	28:A:1795:C:C6	2.47	0.49
28:A:1172:C:H2'	28:A:1173:U:O4'	2.13	0.49
28:A:467:G:H4'	28:A:796:C:O2'	2.13	0.49
32:E:188:MET:HG2	32:E:193:VAL:HG22	1.94	0.49
33:F:72:SER:HB2	33:F:80:GLN:N	2.27	0.49
35:H:76:GLU:HG3	35:H:77:THR:O	2.13	0.49
37:J:124:VAL:HG23	37:J:125:TYR:H	1.78	0.49
38:K:103:VAL:O	38:K:122:VAL:HB	2.12	0.49
31:D:116:LYS:HD3	41:N:1:MET:SD	2.52	0.49
28:A:996:A:O2'	44:Q:91:ARG:HG2	2.12	0.49
28:A:2130:U:O2'	28:A:2131:U:OP1	2.25	0.49
28:A:2158:A:H2'	28:A:2159:G:N3	2.28	0.49
38:K:87:LEU:HD23	38:K:94:PRO:HA	1.94	0.49
34:G:26:LYS:HA	34:G:32:LEU:HA	1.93	0.49
50:W:21:GLY:HA2	50:W:25:PHE:CE1	2.48	0.49
30:C:172:THR:HA	30:C:181:ARG:O	2.12	0.49
28:A:1726:C:O2'	28:A:1727:C:H5'	2.13	0.49
54:6:15:G:H2'	54:6:16:U:C6	2.48	0.49
33:F:102:LEU:O	33:F:106:ALA:HB3	2.12	0.49
52:Y:56:LEU:HA	52:Y:59:GLU:HG2	1.94	0.49
28:A:1845:G:H2'	28:A:1846:G:C5'	2.42	0.49
28:A:2433:A:H5''	28:A:2434:A:P	2.52	0.49
54:6:35:A:O2'	54:6:36:A:O5'	2.30	0.49
28:A:1404:C:C2'	28:A:1405:U:H5'	2.42	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:1433:A:H2'	28:A:1434:A:C1'	2.43	0.49
28:A:276:U:O2	28:A:277:G:H1'	2.13	0.49
29:B:35:C:H2'	29:B:36:C:C4'	2.43	0.49
35:H:125:THR:O	35:H:125:THR:HG22	2.13	0.49
36:I:27:LEU:HD21	36:I:34:ILE:HD11	1.94	0.49
37:J:122:LEU:C	37:J:123:LYS:HD2	2.32	0.49
58:9:70:G:H4'	58:9:70:G:OP1	2.13	0.49
28:A:2134:A:C8	28:A:2135:A:H1'	2.47	0.49
43:P:50:ARG:N	43:P:57:ALA:O	2.46	0.49
52:Y:9:LYS:CB	52:Y:12:GLU:HG3	2.43	0.49
32:E:45:ALA:O	32:E:46:GLN:CB	2.61	0.49
32:E:164:LEU:HB2	32:E:167:VAL:CG1	2.43	0.49
28:A:966:G:H2'	28:A:967:U:O4'	2.12	0.49
28:A:378:C:O2'	28:A:379:G:H5'	2.13	0.49
46:S:29:VAL:CG1	46:S:55:ILE:HD11	2.43	0.49
28:A:1432:G:O2'	28:A:1433:A:H5'	2.12	0.49
28:A:136:G:H1	28:A:143:C:H42	1.61	0.49
39:L:77:ILE:HG22	39:L:78:ARG:N	2.27	0.49
45:R:37:GLU:HB3	45:R:53:PHE:CE1	2.48	0.49
27:5:110:ASN:HD22	28:A:2126:A:P	2.36	0.49
58:9:10:G:H3'	58:9:11:C:C6	2.48	0.49
27:5:135:GLY:N	28:A:2124:G:O6	2.31	0.49
28:A:2171:A:H4'	28:A:2172:U:O4'	2.13	0.49
28:A:2178:C:H6	28:A:2178:C:O5'	1.95	0.49
28:A:1533:C:O2	28:A:1533:C:H2'	2.13	0.49
53:Z:16:LEU:HB2	53:Z:19:HIS:CD2	2.48	0.49
28:A:528:A:N1	28:A:2042:A:H2'	2.27	0.49
28:A:587:C:O2	39:L:33:ARG:NH2	2.46	0.49
28:A:2600:A:O2'	28:A:2601:C:H5'	2.13	0.49
28:A:2311:A:C2	33:F:40:GLY:HA2	2.48	0.49
28:A:1516:G:C2'	28:A:1517:G:H5'	2.43	0.49
28:A:2839:G:H2'	28:A:2840:C:O4'	2.13	0.48
28:A:327:G:H1	28:A:335:C:H42	1.59	0.48
29:B:109:A:H2'	29:B:110:C:H6	1.77	0.48
31:D:142:VAL:O	31:D:142:VAL:HG23	2.63	0.48
36:I:31:GLY:HA3	36:I:64:ARG:CZ	2.43	0.48
37:J:56:VAL:C	37:J:57:LEU:HD12	2.33	0.48
39:L:85:VAL:O	39:L:86:GLU:HB3	2.13	0.48
48:U:47:PRO:CD	48:U:55:GLY:HA2	2.43	0.48
27:5:4:LEU:HD12	28:A:2107:G:H5''	1.95	0.48
28:A:2757:A:H2'	28:A:2758:A:H5'	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:2297:A:O2'	28:A:2298:A:H5'	2.13	0.48
28:A:1417:C:O2'	28:A:1587:G:O2'	2.31	0.48
28:A:1511:G:H2'	28:A:1512:C:C6	2.48	0.48
52:Y:17:GLU:HA	52:Y:20:ASN:HD22	1.78	0.48
25:3:49:VAL:HG21	25:3:54:LEU:HD13	1.94	0.48
28:A:1794:A:H2'	28:A:1795:C:H6	1.78	0.48
22:0:39:ARG:O	22:0:40:HIS:HB2	2.13	0.48
28:A:1173:U:O2	28:A:1174:U:H4'	2.14	0.48
28:A:334:C:O2'	28:A:335:C:H5'	4.79	0.48
28:A:634:C:H2'	28:A:635:C:C6	2.43	0.48
29:B:104:A:H2'	29:B:105:G:O4'	2.13	0.48
29:B:11:C:C2'	29:B:12:C:H5'	2.43	0.48
33:F:151:LEU:HD12	33:F:152:ASP:N	2.27	0.48
35:H:64:ALA:C	35:H:71:LYS:HE3	2.34	0.48
36:I:102:ARG:HA	36:I:141:ASP:HA	1.93	0.48
36:I:83:ALA:HB1	36:I:85:ILE:HD12	1.96	0.48
28:A:833:A:P	39:L:39:LYS:HZ1	2.35	0.48
28:A:372:G:C8	51:X:60:LYS:HE2	2.47	0.48
27:5:37:LYS:O	27:5:38:PHE:HB3	2.13	0.48
35:H:72:ILE:HG21	35:H:132:PHE:CA	2.42	0.48
28:A:1589:U:H2'	28:A:1590:A:C8	2.48	0.48
33:F:162:ASP:HB3	33:F:166:ARG:HH12	1.77	0.48
45:R:46:GLU:N	45:R:46:GLU:OE1	2.29	0.48
56:8:14:A:H2'	56:8:15:G:H5'	1.95	0.48
28:A:1070:A:H2	28:A:1097:U:HO2'	1.61	0.48
28:A:170:U:H2'	28:A:171:U:C6	2.45	0.48
28:A:874:G:H2'	28:A:875:G:H5'	1.94	0.48
29:B:36:C:H41	29:B:49:C:H1'	1.77	0.48
33:F:27:VAL:HG23	33:F:28:PRO:HD2	1.95	0.48
35:H:94:ILE:C	35:H:114:GLU:HG3	2.33	0.48
37:J:12:LYS:O	37:J:13:ARG:HB2	2.13	0.48
37:J:49:ASP:OD1	37:J:121:LYS:NZ	2.39	0.48
45:R:4:VAL:HG23	45:R:12:HIS:O	2.14	0.48
27:5:7:ARG:NH1	27:5:219:GLY:H	2.06	0.48
27:5:23:ILE:CG1	27:5:227:ALA:HB2	2.43	0.48
28:A:1534:U:H2'	28:A:1536:C:N3	2.28	0.48
38:K:118:LEU:O	38:K:119:ALA:HB3	2.13	0.48
28:A:2602:A:H4'	28:A:2603:G:H5''	1.91	0.48
28:A:1799:G:N2	28:A:1819:A:OP2	2.42	0.48
30:C:16:VAL:HG12	30:C:16:VAL:O	2.12	0.48
52:Y:13:GLU:HA	52:Y:16:THR:OG1	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:J:89:PHE:HE1	37:J:100:VAL:HG11	1.79	0.48
28:A:1188:U:C2'	28:A:1189:A:H5'	2.43	0.48
28:A:2567:G:H2'	28:A:2568:U:C6	2.48	0.48
30:C:245:THR:C	30:C:247:TRP:H	2.16	0.48
28:A:2671:G:O2'	28:A:2672:U:H5'	2.14	0.48
28:A:1559:U:H4'	28:A:1560:G:OP2	2.13	0.48
28:A:1482:G:N2	28:A:1507:C:O2	2.47	0.48
25:3:4:LYS:NZ	28:A:253:C:OP2	2.27	0.48
36:I:56:VAL:HG23	36:I:70:THR:CA	2.41	0.48
48:U:48:VAL:O	48:U:53:GLN:HB3	2.13	0.48
27:5:146:THR:CG2	27:5:152:ALA:HB1	2.39	0.48
58:9:49:C:H2'	58:9:50:U:H5'	1.96	0.48
28:A:1533:C:C2'	28:A:1534:U:H5''	2.30	0.48
35:H:37:VAL:CG1	35:H:38:PRO:CD	2.87	0.48
28:A:2264:C:O2'	28:A:2265:U:H5'	2.13	0.48
28:A:1120:G:O2'	28:A:1121:C:H5'	2.13	0.48
27:5:48:LEU:HD11	27:5:171:ILE:CG1	2.43	0.48
54:6:50:U:H2'	54:6:51:U:H5'	1.95	0.48
27:5:86:ALA:O	27:5:90:ALA:N	2.46	0.48
56:8:7:G:N2	56:8:66:C:O2	2.35	0.48
28:A:1128:G:N7	28:A:2489:U:O2'	2.46	0.48
28:A:1176:U:O2'	28:A:1177:G:O4'	2.18	0.48
28:A:2423:U:H4'	28:A:2424:C:O5'	2.13	0.48
28:A:2059:A:C8	28:A:2503:A:N3	2.82	0.48
31:D:73:VAL:HG23	31:D:74:GLU:N	2.29	0.48
35:H:103:VAL:HA	35:H:106:ALA:HB3	1.95	0.48
37:J:124:VAL:HG23	37:J:125:TYR:N	2.28	0.48
44:Q:91:ARG:CZ	44:Q:93:ILE:HG21	2.44	0.48
27:5:211:LYS:HA	27:5:226:GLN:HG2	1.95	0.48
30:C:49:THR:HG23	30:C:50:THR:N	2.29	0.48
28:A:1638:C:H5''	28:A:2710:C:O2'	2.14	0.48
28:A:1484:U:H2'	28:A:1485:U:C6	2.48	0.48
28:A:2883:A:H5'	28:A:2884:U:H5'	1.95	0.48
36:I:74:PRO:HG2	36:I:77:VAL:CG2	2.44	0.48
50:W:67:LYS:HG2	50:W:69:GLU:OE2	2.12	0.48
28:A:1253:A:H4'	28:A:1254:A:OP2	2.12	0.48
28:A:273:G:H1	28:A:364:C:H42	1.61	0.48
42:O:2:ASP:CG	42:O:3:LYS:H	2.17	0.48
27:5:35:THR:H	27:5:219:GLY:HA3	1.77	0.48
28:A:2164:C:H5''	28:A:2172:U:C5	2.46	0.48
28:A:1438:U:O2'	28:A:1439:A:H5'	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:229:C:O2'	28:A:230:G:OP1	2.26	0.48
43:P:50:ARG:HB3	43:P:57:ALA:N	2.28	0.48
34:G:8:VAL:HG13	34:G:49:LEU:HB2	1.94	0.48
33:F:127:TYR:O	33:F:128:SER:HB2	2.13	0.48
28:A:2799:A:C2	28:A:2801:G:H1'	2.49	0.48
28:A:536:G:H2'	28:A:537:G:C5'	2.43	0.48
28:A:1386:C:H2'	28:A:1387:A:H8	1.78	0.48
28:A:2843:G:H2'	28:A:2844:G:O4'	2.14	0.48
28:A:760:G:C2'	28:A:761:A:H5'	2.43	0.48
27:5:190:GLU:O	27:5:194:VAL:HG22	2.14	0.48
28:A:2236:U:C2'	28:A:2237:G:H5'	2.43	0.48
28:A:1206:G:N3	28:A:1206:G:H2'	2.28	0.48
38:K:11:ALA:HB3	38:K:85:VAL:HG22	1.95	0.48
28:A:156:A:O2'	28:A:157:C:H5'	2.12	0.48
28:A:405:U:H4'	28:A:406:G:OP2	2.14	0.48
29:B:52:A:N7	42:O:64:TYR:OH	2.37	0.48
37:J:18:VAL:CG2	37:J:140:LEU:HD11	2.43	0.48
27:5:64:VAL:HG22	27:5:160:GLN:CB	2.43	0.48
28:A:2151:U:H2'	28:A:2152:G:O4'	2.13	0.48
27:5:75:VAL:HG13	27:5:115:ILE:CG1	2.44	0.48
56:8:73:A:H5'	56:8:74:C:OP1	2.14	0.48
28:A:1694:C:H4'	28:A:1695:G:O5'	2.13	0.48
28:A:2680:U:H5'	31:D:194:PRO:HA	1.96	0.48
25:3:31:ILE:O	25:3:31:ILE:HG13	2.14	0.48
28:A:809:G:O2'	28:A:810:U:H5'	2.13	0.48
54:6:70:G:O2'	54:6:71:G:H5'	2.14	0.48
28:A:1124:G:O2'	28:A:1125:G:H5'	2.13	0.48
49:V:65:VAL:HG13	49:V:65:VAL:O	2.13	0.48
28:A:1081:U:C5'	36:I:126:ARG:HH21	2.25	0.48
28:A:158:U:O2'	28:A:159:G:H5'	2.14	0.48
29:B:114:C:O2'	29:B:115:A:H5'	2.13	0.48
36:I:33:ASN:OD1	36:I:35:MET:HB3	2.14	0.48
37:J:45:THR:N	37:J:46:PRO:HD3	2.28	0.48
39:L:122:VAL:CG1	39:L:142:ILE:HG12	2.42	0.48
32:E:164:LEU:CB	32:E:167:VAL:HG12	2.43	0.48
34:G:114:HIS:ND1	34:G:150:TYR:OH	2.39	0.48
28:A:2366:A:H4'	50:W:61:LYS:NZ	2.29	0.48
40:M:32:GLY:O	40:M:131:VAL:HG22	2.14	0.48
25:3:12:ARG:NE	39:L:61:LEU:O	2.47	0.48
28:A:2060:A:C1'	28:A:2502:G:H4'	2.43	0.48
28:A:825:A:O2'	28:A:826:U:H5'	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:895:U:O2'	28:A:897:C:O4'	2.32	0.48
32:E:117:ARG:NH2	32:E:183:PHE:O	2.47	0.48
36:I:59:THR:O	36:I:66:PHE:HB2	2.14	0.48
37:J:105:VAL:HG21	37:J:122:LEU:HD22	1.95	0.48
39:L:101:ILE:HG22	39:L:105:ILE:CB	2.44	0.48
27:5:46:VAL:CG2	27:5:212:VAL:HA	2.43	0.48
58:9:61:C:N3	58:9:62:C:N4	2.62	0.48
43:P:49:ILE:HG22	43:P:50:ARG:N	2.28	0.48
49:V:35:GLU:HG2	49:V:93:ARG:NH1	2.29	0.48
41:N:73:ASN:C	41:N:76:VAL:HG12	2.35	0.48
56:8:54:U:O2'	56:8:55:U:H5'	2.14	0.48
50:W:36:ILE:HG22	50:W:36:ILE:O	2.14	0.48
28:A:2295:C:OP2	42:O:10:ARG:HD3	2.14	0.48
28:A:2843:G:O2'	28:A:2844:G:H5'	2.13	0.48
28:A:1201:U:O2'	28:A:1202:G:H5'	2.14	0.48
29:B:80:U:H2'	29:B:81:G:H8	1.79	0.48
52:Y:3:ALA:O	52:Y:6:LEU:HB3	2.14	0.48
27:5:52:ALA:O	27:5:53:ARG:HG3	2.14	0.48
28:A:143:C:H5'	47:T:3:ARG:NH1	2.29	0.48
29:B:53:A:H2'	29:B:54:G:O4'	2.13	0.48
29:B:71:C:H2'	29:B:72:G:H5'	1.96	0.48
31:D:46:ARG:NH2	31:D:87:GLY:O	2.47	0.48
58:9:2:C:C4	58:9:3:C:C5	3.02	0.48
47:T:67:VAL:HA	47:T:76:ARG:HA	1.94	0.48
38:K:7:MET:HA	38:K:19:VAL:O	2.14	0.48
38:K:76:VAL:HB	43:P:72:VAL:CG2	2.44	0.48
52:Y:9:LYS:HB3	52:Y:12:GLU:HB2	1.96	0.48
28:A:2457:U:O2'	28:A:2458:G:H5'	2.14	0.48
28:A:2195:U:O2'	28:A:2196:C:H5'	2.13	0.48
28:A:1398:C:OP1	47:T:59:ASN:ND2	2.47	0.48
35:H:118:PRO:HD3	35:H:122:LEU:HD23	1.96	0.47
36:I:17:ALA:HB3	36:I:38:CYS:HA	1.93	0.47
45:R:54:VAL:HG23	45:R:57:GLY:CA	2.42	0.47
58:9:6:G:O2'	58:9:7:A:H5'	2.13	0.47
28:A:2102:G:C2'	28:A:2103:C:H5'	2.44	0.47
28:A:2115:G:O2'	28:A:2171:A:N6	2.40	0.47
34:G:97:VAL:HG23	34:G:124:CYS:SG	2.54	0.47
51:X:29:LEU:HB2	51:X:30:PRO:HD2	1.96	0.47
30:C:54:GLY:O	30:C:214:GLY:HA2	2.13	0.47
28:A:859:G:HO2'	28:A:860:U:P	2.36	0.47
28:A:536:G:H2'	28:A:537:G:H5'	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:266:G:C3'	28:A:267:C:H5''	2.44	0.47
28:A:1845:G:C2	28:A:1846:G:H1'	2.49	0.47
28:A:315:G:H2'	28:A:316:C:O4'	2.13	0.47
22:0:7:PRO:HD2	28:A:1263:U:O2'	2.14	0.47
28:A:2037:A:O2'	28:A:2038:G:H5'	2.14	0.47
28:A:50:U:H3'	28:A:51:G:C5'	2.44	0.47
28:A:282:A:H2'	28:A:283:G:C8	2.50	0.47
31:D:49:GLN:HE21	31:D:79:LEU:HD13	1.78	0.47
31:D:49:GLN:HE21	31:D:79:LEU:HB3	1.78	0.47
35:H:47:PHE:CA	35:H:50:ARG:HH21	2.27	0.47
35:H:66:ASN:O	35:H:71:LYS:HE2	2.14	0.47
36:I:21:PRO:HB2	36:I:22:PRO:HD3	1.96	0.47
36:I:58:ILE:HD12	36:I:68:PHE:HB3	1.96	0.47
37:J:40:HIS:CE1	37:J:41:LYS:HE3	2.50	0.47
27:5:141:LYS:HB2	27:5:164:ARG:HE	1.79	0.47
38:K:76:VAL:H	43:P:72:VAL:HG22	1.79	0.47
28:A:1120:G:H2'	28:A:1121:C:O4'	2.14	0.47
28:A:1871:A:H1'	28:A:1872:A:C8	2.49	0.47
28:A:836:G:O6	28:A:850:U:N3	30.18	0.47
28:A:2311:A:O2'	33:F:84:ILE:HG12	2.14	0.47
29:B:27:C:H2'	29:B:28:C:H5'	1.96	0.47
28:A:1116:G:O2'	28:A:1117:C:H5'	2.14	0.47
35:H:66:ASN:O	35:H:67:ALA:HB3	2.14	0.47
36:I:37:PHE:HA	36:I:40:ALA:HB3	1.96	0.47
36:I:4:VAL:HB	36:I:7:TYR:HB3	1.94	0.47
37:J:16:TYR:CB	37:J:140:LEU:HD23	2.43	0.47
48:U:25:LYS:HB3	48:U:34:ILE:O	2.14	0.47
58:9:24:G:H2'	58:9:25:C:H6	1.78	0.47
27:5:35:THR:HB	28:A:2128:G:O2'	2.15	0.47
28:A:2134:A:H2'	28:A:2160:C:H5'	1.96	0.47
34:G:102:ILE:O	34:G:113:ASP:HA	2.13	0.47
26:4:3:VAL:CG2	26:4:4:ARG:H	2.14	0.47
50:W:30:VAL:HA	50:W:60:ALA:O	2.15	0.47
28:A:519:U:O2'	28:A:520:G:H5'	2.13	0.47
28:A:2425:A:H4'	28:A:2426:A:H5''	1.97	0.47
28:A:1936:A:H2	28:A:1943:U:H5	1.62	0.47
24:2:19:ARG:NH2	28:A:124:G:H2'	2.29	0.47
45:R:101:ILE:O	45:R:101:ILE:HG22	2.14	0.47
35:H:145:ASN:O	35:H:148:ALA:HB3	2.15	0.47
23:1:25:ASN:ND2	23:1:28:THR:HG23	2.29	0.47
56:8:24:U:H2'	56:8:25:C:O4'	2.13	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:9:1:G:OP3	58:9:1:G:H3'	2.15	0.47
25:3:2:LYS:HB2	28:A:242:G:N7	2.29	0.47
28:A:993:G:O2'	28:A:994:C:H5'	2.13	0.47
32:E:147:LEU:HD23	32:E:147:LEU:O	2.14	0.47
33:F:41:GLU:CG	33:F:48:LEU:HD23	2.44	0.47
37:J:18:VAL:HG22	37:J:140:LEU:CD1	2.45	0.47
44:Q:93:ILE:HG23	44:Q:94:LEU:HD12	1.93	0.47
27:5:65:LEU:HD22	27:5:188:ASN:O	2.15	0.47
27:5:216:THR:O	28:A:2175:C:H1'	2.15	0.47
38:K:7:MET:HB3	38:K:18:ARG:HD2	1.96	0.47
28:A:786:C:O2'	28:A:787:C:H5'	2.14	0.47
28:A:1722:A:N6	28:A:1738:G:H1'	2.29	0.47
28:A:2405:G:O2'	28:A:2411:A:N6	2.47	0.47
49:V:75:GLN:CB	49:V:92:VAL:HG23	2.44	0.47
34:G:166:GLU:OE1	34:G:168:VAL:HG13	2.15	0.47
28:A:493:G:C2'	28:A:494:G:H5'	2.44	0.47
46:S:68:ASP:O	46:S:109:ASP:HB3	2.14	0.47
22:0:47:TYR:CZ	22:0:52:LYS:HD3	2.49	0.47
32:E:79:ARG:HG2	32:E:80:SER:N	2.29	0.47
28:A:2877:G:C2'	28:A:2878:U:H5'	2.45	0.47
28:A:135:U:C2'	28:A:136:G:H5'	2.45	0.47
28:A:242:G:O2'	28:A:254:G:O6	2.22	0.47
29:B:66:A:N6	29:B:107:G:H2'	2.29	0.47
29:B:33:G:O2'	29:B:34:A:H5'	2.14	0.47
35:H:129:GLU:HB2	35:H:142:VAL:HG11	1.97	0.47
39:L:142:ILE:HG22	39:L:142:ILE:O	2.14	0.47
27:5:38:PHE:HB3	28:A:2126:A:C5'	2.43	0.47
58:9:59:U:H2'	58:9:60:U:C5'	2.41	0.47
28:A:2107:G:H2'	28:A:2108:A:O4'	2.15	0.47
47:T:68:LYS:CD	47:T:69:ARG:N	2.73	0.47
27:5:201:PRO:HG2	27:5:206:GLY:HA2	1.95	0.47
34:G:134:GLY:CA	34:G:140:ILE:HD13	2.44	0.47
26:4:1:MET:HE2	26:4:36:ARG:HB2	1.96	0.47
28:A:585:G:OP2	44:Q:5:ARG:NH2	2.48	0.47
50:W:41:GLY:HA2	50:W:44:PHE:CE2	2.50	0.47
28:A:817:C:O2'	28:A:818:G:H5'	2.14	0.47
28:A:2841:C:H2'	28:A:2842:G:H8	1.79	0.47
28:A:256:A:O2'	28:A:257:C:H5'	2.14	0.47
28:A:1678:A:H2'	28:A:1679:A:C5'	2.44	0.47
34:G:174:LYS:O	34:G:174:LYS:HG3	2.15	0.47
28:A:995:C:H2'	28:A:996:A:H5''	6.85	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:D:121:THR:O	31:D:122:VAL:HG23	2.14	0.47
32:E:124:PHE:CE2	32:E:148:ILE:HD13	2.50	0.47
28:A:2094:A:OP1	35:H:22:LYS:HD3	2.14	0.47
28:A:2111:U:H1'	28:A:2117:A:C5'	2.41	0.47
43:P:4:ILE:CG2	43:P:5:LYS:H	2.11	0.47
28:A:1199:U:O5'	28:A:1199:U:H6	1.98	0.47
28:A:1242:U:H2'	28:A:1243:C:H6	1.79	0.47
51:X:68:ALA:HA	51:X:71:ARG:NH2	2.29	0.47
50:W:39:GLN:HG2	50:W:41:GLY:H	1.80	0.47
28:A:1765:U:O2'	28:A:1766:G:H5'	2.14	0.47
28:A:2831:G:N2	28:A:2884:U:OP2	2.47	0.47
28:A:32:C:O2'	28:A:33:C:H5'	2.14	0.47
28:A:1639:C:O2'	28:A:1640:A:H5'	2.14	0.47
28:A:2400:G:O2'	28:A:2401:U:H5'	2.14	0.47
28:A:1058:U:O2'	28:A:1059:G:H5'	2.14	0.47
28:A:2092:U:OP1	28:A:2199:A:O2'	2.33	0.47
28:A:2822:G:C2'	28:A:2823:A:H5''	2.41	0.47
28:A:308:G:O2'	28:A:329:G:N2	2.47	0.47
28:A:551:G:H2'	28:A:552:U:H5'	1.95	0.47
31:D:16:THR:HG23	31:D:18:ASP:OD1	2.15	0.47
32:E:124:PHE:HE1	32:E:141:MET:SD	2.37	0.47
32:E:57:LYS:O	32:E:59:PRO:HD3	2.15	0.47
35:H:118:PRO:HB3	35:H:122:LEU:HB3	1.97	0.47
35:H:7:ASP:N	35:H:35:LYS:O	2.48	0.47
37:J:38:GLY:HA3	37:J:50:THR:OG1	2.15	0.47
37:J:98:GLU:HB3	37:J:124:VAL:HG21	1.95	0.47
28:A:1592:C:H2'	28:A:1593:A:H8	1.79	0.47
28:A:539:G:O2'	28:A:540:C:H5'	2.14	0.47
32:E:150:THR:HG21	32:E:153:LEU:HA	1.95	0.47
33:F:24:VAL:O	33:F:27:VAL:HG12	2.15	0.47
37:J:16:TYR:HB3	37:J:140:LEU:CD2	2.44	0.47
27:5:127:LEU:CD2	28:A:2169:A:C4	2.97	0.47
27:5:69:THR:HB	27:5:161:VAL:CG2	2.44	0.47
27:5:7:ARG:HD2	28:A:2130:U:C4	2.49	0.47
58:9:20:U:H2'	58:9:21:A:H4'	1.97	0.47
27:5:37:LYS:HZ2	28:A:2127:G:H1'	1.78	0.47
28:A:2186:G:H2'	28:A:2187:U:H6	1.80	0.47
28:A:707:G:O2'	28:A:708:G:H5'	2.14	0.47
28:A:426:C:H2'	28:A:427:U:C6	2.48	0.47
43:P:64:SER:N	43:P:67:GLU:O	2.35	0.47
34:G:70:LEU:O	34:G:74:MET:HG3	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:G:51:PHE:HE2	34:G:68:ARG:HA	1.77	0.47
28:A:2320:U:H4'	28:A:2321:U:H6	1.80	0.47
23:1:43:ARG:NH2	28:A:643:A:H1'	2.29	0.47
28:A:2481:G:HO2'	28:A:2482:A:H8	1.63	0.47
28:A:1879:C:H2'	28:A:1880:U:O4'	2.15	0.47
28:A:12:U:H2'	28:A:12:U:O2	2.15	0.47
28:A:2783:U:H2'	28:A:2784:U:H6	1.80	0.47
26:4:17:VAL:HG12	26:4:18:LYS:N	2.28	0.47
53:Z:24:LEU:HD23	53:Z:24:LEU:O	2.14	0.47
40:M:50:ARG:HD3	40:M:65:ILE:HD11	1.96	0.47
28:A:579:G:O2'	28:A:2019:A:OP1	2.31	0.47
28:A:1500:G:O2'	28:A:1501:G:H5'	2.14	0.47
28:A:2877:G:O2'	28:A:2878:U:H5'	2.14	0.47
23:1:44:GLN:O	23:1:46:VAL:HG23	2.14	0.47
28:A:418:C:N3	28:A:419:U:N3	2.63	0.47
45:R:72:VAL:HG23	45:R:72:VAL:O	2.14	0.47
28:A:2829:A:O2'	28:A:2830:C:H5'	2.15	0.47
28:A:2216:G:H2'	28:A:2217:G:H8	1.79	0.47
22:0:38:LEU:HB2	22:0:41:HIS:HB2	1.96	0.47
41:N:57:THR:O	41:N:62:ASN:ND2	2.38	0.47
46:S:23:LEU:C	46:S:24:ILE:HD13	2.35	0.47
28:A:154:U:O4	28:A:167:A:N6	17.09	0.47
28:A:188:G:H5'	51:X:13:THR:HG23	1.97	0.47
28:A:2293:G:OP1	42:O:94:ARG:NH1	2.47	0.47
28:A:2428:G:H5''	28:A:2429:G:O5'	2.15	0.47
28:A:912:C:O2'	28:A:913:U:H5'	2.15	0.47
30:C:60:ALA:O	30:C:62:ARG:NH2	2.48	0.47
28:A:2116:G:H3'	28:A:2117:A:C8	2.50	0.47
34:G:38:ASP:N	34:G:38:ASP:OD1	2.47	0.47
28:A:137:U:H3	28:A:142:A:N6	2.12	0.47
28:A:2230:G:H5''	51:X:29:LEU:CD1	2.39	0.47
28:A:2644:G:O2'	28:A:2645:G:H5'	2.14	0.47
25:3:44:ARG:HD3	28:A:2418:A:OP1	2.14	0.47
28:A:2234:G:C2'	28:A:2235:G:H5'	2.44	0.47
28:A:2671:G:H2'	28:A:2672:U:O4'	2.15	0.47
28:A:806:C:O2	28:A:2444:G:O2'	2.32	0.47
28:A:1777:U:O2'	28:A:1778:U:H5'	2.15	0.47
32:E:12:LEU:HD23	32:E:12:LEU:O	2.15	0.47
39:L:112:LEU:O	39:L:112:LEU:HD23	2.15	0.47
28:A:1060:U:H4'	28:A:1061:U:H5''	1.96	0.47
28:A:156:A:C2'	28:A:157:C:H5'	2.45	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:628:G:O2'	28:A:629:G:H5'	2.15	0.47
31:D:11:MET:HE1	31:D:192:ALA:H	1.80	0.47
32:E:129:PRO:HG3	32:E:156:ASN:OD1	2.15	0.47
45:R:5:PHE:HE2	45:R:14:VAL:HG21	1.80	0.47
27:5:224:VAL:HG12	27:5:225:ASP:N	2.30	0.47
58:9:20:U:O2	58:9:21:A:H4'	2.15	0.47
58:9:60:U:H2'	58:9:61:C:C5	2.50	0.47
27:5:133:PRO:HB2	28:A:2172:U:H4'	1.97	0.47
48:U:85:ARG:HD3	48:U:86:PHE:N	2.29	0.47
40:M:41:LEU:CD1	40:M:96:ILE:HG12	2.45	0.47
55:7:14:A:C2'	55:7:14:A:N3	2.77	0.47
50:W:22:VAL:HG13	50:W:22:VAL:O	2.15	0.47
28:A:1212:G:H1'	28:A:1236:G:N2	2.30	0.47
37:J:88:THR:HG22	37:J:91:GLU:CD	2.35	0.47
28:A:1924:C:H2'	28:A:1925:C:C5'	2.44	0.47
28:A:571:U:H5'	28:A:819:A:C5	19.19	0.47
40:M:59:ARG:HD3	54:6:54:U:C4'	2.45	0.47
28:A:1678:A:C2'	28:A:1679:A:H5'	2.45	0.47
28:A:2290:G:N1	28:A:2343:U:O2	2.48	0.47
23:1:46:VAL:HG12	23:1:47:ILE:N	2.29	0.47
28:A:1268:A:H2'	28:A:1269:A:O4'	2.15	0.47
28:A:2765:A:H5'	28:A:2766:A:OP2	2.15	0.47
28:A:594:U:H2'	28:A:595:C:C6	2.50	0.47
46:S:59:GLU:OE2	46:S:66:ILE:HG23	2.15	0.47
25:3:12:ARG:NH1	28:A:2394:C:H5'	2.30	0.47
28:A:497:A:H2'	28:A:498:G:O4'	2.16	0.47
28:A:903:C:H2'	28:A:904:G:C8	2.50	0.47
30:C:120:ASP:O	30:C:121:ALA:HB3	2.15	0.47
30:C:134:ILE:HG22	30:C:135:PRO:O	2.16	0.47
31:D:146:ILE:HG13	31:D:146:ILE:O	2.15	0.47
35:H:40:THR:O	35:H:41:LYS:HB2	2.14	0.47
36:I:63:ASP:O	36:I:64:ARG:HB3	2.15	0.47
39:L:81:ASP:O	39:L:82:LEU:HG	2.15	0.47
40:M:106:ASP:O	40:M:108:VAL:N	2.42	0.47
28:A:912:C:P	40:M:8:LYS:HZ1	2.38	0.47
44:Q:64:ILE:HG12	44:Q:95:ALA:HB1	1.95	0.47
28:A:329:G:O6	48:U:16:LYS:HB2	2.15	0.47
27:5:70:GLY:O	27:5:177:LYS:N	2.48	0.47
27:5:74:ARG:NH1	27:5:110:ASN:HB3	2.30	0.47
28:A:2157:G:O2'	28:A:2158:A:P	2.73	0.47
34:G:53:PRO:HB3	34:G:60:GLY:HA3	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:M:53:MET:HB2	40:M:120:ALA:HB2	1.97	0.47
32:E:46:GLN:O	32:E:86:ALA:HB1	2.15	0.47
30:C:156:SER:O	30:C:194:VAL:HG11	2.14	0.47
28:A:820:A:N3	28:A:943:A:O2'	2.44	0.47
28:A:2553:G:H5''	28:A:2554:U:OP2	2.15	0.47
28:A:2289:G:O2'	28:A:2383:G:O2'	2.32	0.47
28:A:2654:A:H4'	28:A:2655:G:OP1	2.15	0.47
45:R:75:VAL:HG12	45:R:76:LYS:N	2.30	0.47
28:A:960:A:H61	40:M:82:MET:CE	2.28	0.46
46:S:70:LYS:O	46:S:107:VAL:HG23	2.15	0.46
28:A:376:G:N2	28:A:399:U:O2	2.48	0.46
31:D:101:PHE:HA	31:D:104:VAL:CG2	2.45	0.46
51:X:36:ARG:HG2	51:X:47:THR:CG2	2.38	0.46
28:A:2145:C:O2	28:A:2148:G:H2'	2.15	0.46
34:G:116:LEU:HD21	34:G:122:ALA:CB	2.41	0.46
40:M:26:VAL:HB	40:M:133:LYS:HA	1.96	0.46
53:Z:8:GLN:HB3	53:Z:32:GLY:H	1.80	0.46
28:A:783:A:C2'	28:A:784:G:H5''	2.45	0.46
28:A:1695:G:N7	30:C:13:ARG:NH2	2.63	0.46
28:A:1047:G:HO2'	28:A:1109:C:N4	2.13	0.46
39:L:40:SER:O	39:L:41:ARG:HB2	2.15	0.46
37:J:129:GLU:OE1	37:J:129:GLU:N	2.49	0.46
28:A:1478:G:O2'	28:A:1479:G:H5'	2.16	0.46
28:A:154:U:O2'	28:A:155:A:H5'	2.30	0.46
28:A:824:U:O2'	28:A:825:A:H5'	2.15	0.46
28:A:886:A:O2'	28:A:887:U:O5'	2.33	0.46
29:B:78:A:C2	29:B:99:A:C4	3.04	0.46
28:A:1655:A:O4'	31:D:118:PHE:HB2	2.16	0.46
31:D:98:VAL:HG12	31:D:180:VAL:HG13	1.96	0.46
32:E:188:MET:CG	32:E:193:VAL:HG22	2.45	0.46
33:F:59:ILE:HG22	33:F:60:SER:N	2.29	0.46
33:F:3:LEU:CA	33:F:6:TYR:HB3	2.43	0.46
39:L:27:LEU:O	39:L:31:GLY:HA2	2.14	0.46
41:N:1:MET:O	41:N:2:ARG:CB	2.62	0.46
42:O:24:THR:HG22	42:O:42:PRO:CD	2.45	0.46
28:A:559:G:H2'	28:A:560:C:H6	1.80	0.46
27:5:66:PRO:HD3	27:5:191:ALA:HB2	1.97	0.46
27:5:36:ALA:HB2	27:5:38:PHE:CE1	2.50	0.46
47:T:85:VAL:O	47:T:86:THR:OG1	2.32	0.46
34:G:22:VAL:O	34:G:23:ILE:HG13	2.16	0.46
40:M:53:MET:HE3	40:M:63:ILE:HG21	1.96	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:M:71:LYS:HD3	40:M:95:LEU:CD1	2.44	0.46
28:A:774:G:O2'	28:A:775:G:OP2	2.27	0.46
33:F:163:GLU:OE1	33:F:166:ARG:NH2	2.44	0.46
38:K:11:ALA:HB3	38:K:85:VAL:CG2	2.46	0.46
56:8:25:C:H2'	56:8:26:G:O4'	2.15	0.46
28:A:811:U:H2'	39:L:21:ARG:HA	1.97	0.46
28:A:2655:G:H4'	28:A:2655:G:OP1	2.14	0.46
41:N:26:GLY:HA2	41:N:29:VAL:HG12	1.96	0.46
46:S:3:THR:O	46:S:3:THR:HG23	2.15	0.46
28:A:1026:G:OP2	28:A:1134:A:O2'	2.26	0.46
28:A:640:C:H2'	28:A:641:U:C6	2.50	0.46
28:A:932:U:O2'	28:A:934:U:O4	2.27	0.46
27:5:37:LYS:HG3	27:5:38:PHE:HD2	1.74	0.46
58:9:69:G:H2'	58:9:70:G:O4'	2.15	0.46
28:A:2120:G:C2	28:A:2121:G:H1'	2.50	0.46
34:G:129:GLU:HG2	34:G:130:ILE:N	2.31	0.46
27:5:150:ALA:HA	27:5:153:VAL:HG23	1.98	0.46
28:A:719:C:O2'	28:A:720:U:H5'	2.16	0.46
28:A:37:C:O2'	32:E:45:ALA:HB3	2.16	0.46
30:C:16:VAL:HG23	30:C:203:VAL:HG11	1.97	0.46
53:Z:50:VAL:HG23	53:Z:54:VAL:HG22	1.97	0.46
26:4:11:CYS:HB3	26:4:33:HIS:CE1	2.51	0.46
28:A:266:G:H3'	28:A:267:C:H5''	1.97	0.46
34:G:114:HIS:HB2	34:G:150:TYR:CE2	2.51	0.46
28:A:803:U:H2'	28:A:804:A:H5'	1.96	0.46
29:B:118:C:H2'	29:B:119:A:C4'	2.46	0.46
28:A:1323:C:C2'	28:A:1324:G:H5'	2.45	0.46
24:2:35:ARG:HE	24:2:42:LEU:CD1	2.28	0.46
28:A:1789:A:H2'	28:A:1790:C:C6	2.50	0.46
28:A:1742:U:O2'	28:A:1743:G:H5'	2.15	0.46
22:0:54:ILE:HG22	22:0:56:LYS:OXT	2.15	0.46
41:N:33:ILE:CD1	41:N:114:GLU:HB3	2.34	0.46
28:A:496:G:H2'	28:A:497:A:H5'	1.98	0.46
28:A:538:A:O2'	28:A:539:G:H5'	2.15	0.46
29:B:64:G:H2'	29:B:65:U:C6	2.50	0.46
31:D:14:ILE:HG22	43:P:11:GLN:HE22	1.80	0.46
35:H:104:THR:CG2	35:H:109:GLU:HG3	2.44	0.46
36:I:9:LYS:HB3	36:I:57:VAL:HG22	1.96	0.46
51:X:39:VAL:O	51:X:41:SER:N	2.44	0.46
51:X:39:VAL:HG22	51:X:44:ARG:O	2.16	0.46
27:5:15:VAL:HG12	27:5:16:ASP:OD1	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:5:24:ASN:ND2	27:5:231:ALA:O	2.45	0.46
27:5:34:ALA:HA	27:5:219:GLY:HA3	1.97	0.46
58:9:45:U:H2'	58:9:46:G:H5'	1.96	0.46
27:5:7:ARG:HG3	28:A:2130:U:C2	2.50	0.46
34:G:29:ASN:ND2	34:G:79:THR:O	2.48	0.46
28:A:296:U:H2'	28:A:297:G:C8	2.50	0.46
40:M:45:GLN:OE1	40:M:125:PRO:HG3	2.14	0.46
28:A:990:A:N1	45:R:78:ARG:NH1	2.64	0.46
23:1:7:LYS:NZ	28:A:2420:C:H5''	2.31	0.46
28:A:412:A:N6	28:A:2411:A:O2'	2.47	0.46
28:A:2867:G:O2'	28:A:2868:A:OP2	2.29	0.46
23:1:13:SER:OG	23:1:47:ILE:HG23	2.16	0.46
41:N:83:LEU:HD21	41:N:115:LEU:HD11	1.97	0.46
28:A:1982:U:C2'	28:A:1983:G:H5'	2.46	0.46
54:6:34:G:H1	55:7:21:C:H5	1.62	0.46
28:A:1005:C:O2'	37:J:30:THR:HG21	2.16	0.46
28:A:1059:G:H2'	28:A:1060:U:C6	2.48	0.46
28:A:1:G:H2'	28:A:2:G:H8	1.80	0.46
28:A:273:G:H1	28:A:364:C:N4	2.14	0.46
28:A:460:A:H2'	28:A:461:C:O4'	2.16	0.46
29:B:13:G:N2	29:B:16:G:N3	2.62	0.46
42:O:26:LEU:HD13	42:O:39:VAL:CG2	2.44	0.46
44:Q:91:ARG:HG3	45:R:11:GLN:OE1	2.15	0.46
45:R:52:PRO:O	45:R:53:PHE:HB2	2.16	0.46
27:5:34:ALA:HB2	27:5:216:THR:HG21	1.97	0.46
28:A:2133:G:N1	28:A:2159:G:N7	2.63	0.46
58:9:30:G:O6	58:9:31:A:N6	2.49	0.46
28:A:2758:A:H2'	28:A:2759:G:C5'	2.45	0.46
40:M:73:ILE:HG12	40:M:93:VAL:HG22	1.98	0.46
27:5:163:TYR:HB2	27:5:171:ILE:CG2	2.46	0.46
28:A:2038:G:O2'	28:A:2039:U:H5'	2.16	0.46
28:A:2685:G:O2'	28:A:2686:G:H5'	2.15	0.46
31:D:52:THR:OG1	31:D:53:GLY:N	2.49	0.46
33:F:89:THR:C	33:F:90:LEU:HD12	2.36	0.46
35:H:85:GLY:HA3	35:H:147:VAL:HA	1.97	0.46
36:I:100:ILE:HG23	36:I:104:GLN:HB2	1.98	0.46
39:L:117:THR:HG22	39:L:118:THR:N	2.30	0.46
28:A:2428:G:H21	39:L:60:ARG:NH2	2.14	0.46
45:R:5:PHE:CE2	45:R:14:VAL:HG21	2.51	0.46
28:A:2135:A:N7	28:A:2155:U:C4	2.84	0.46
43:P:50:ARG:HB3	43:P:57:ALA:O	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:9:37:A:H3'	58:9:38:A:C8	2.49	0.46
28:A:495:G:C5'	46:S:4:ILE:HD11	2.41	0.46
28:A:118:A:H3'	28:A:119:A:C5'	2.43	0.46
28:A:1656:C:H2'	28:A:1657:U:H6	1.80	0.46
22:0:53:VAL:O	22:0:54:ILE:HB	2.16	0.46
42:O:33:ARG:O	42:O:34:HIS:ND1	2.49	0.46
28:A:127:A:H5''	28:A:128:C:O4'	2.15	0.46
28:A:1482:G:O2'	28:A:1483:G:O5'	2.31	0.46
28:A:259:G:H2'	28:A:260:G:O4'	2.98	0.46
29:B:115:A:H2'	29:B:116:G:O4'	2.15	0.46
31:D:108:ASP:O	31:D:109:VAL:HB	2.16	0.46
35:H:142:VAL:HG22	35:H:143:ILE:N	2.31	0.46
42:O:105:ALA:C	42:O:107:ALA:H	2.17	0.46
45:R:4:VAL:HG22	45:R:5:PHE:N	2.30	0.46
28:A:2101:A:H2'	28:A:2102:G:H8	1.79	0.46
47:T:50:LEU:C	47:T:52:GLU:H	2.19	0.46
47:T:76:ARG:NH1	47:T:76:ARG:CG	2.76	0.46
38:K:19:VAL:CG1	38:K:20:MET:N	2.79	0.46
38:K:40:LYS:O	38:K:41:ILE:HD13	2.16	0.46
43:P:20:ARG:HG3	43:P:21:PRO:HD2	1.97	0.46
28:A:2364:C:O2'	28:A:2365:G:H5'	2.16	0.46
28:A:1106:G:H2'	28:A:1107:G:H5'	1.98	0.46
31:D:26:VAL:HG22	31:D:188:LEU:HD21	1.97	0.46
28:A:2211:A:O2'	28:A:2212:A:P	2.74	0.46
47:T:25:GLU:OE1	47:T:30:ILE:HG22	2.15	0.46
28:A:1847:A:N3	28:A:1847:A:H2'	2.30	0.46
28:A:2029:G:H2'	28:A:2031:A:OP1	2.15	0.46
28:A:2777:G:H5''	28:A:2778:A:H3'	1.97	0.46
28:A:1752:C:O2'	28:A:1753:G:H5'	2.16	0.46
46:S:9:HIS:O	46:S:11:ARG:NH1	2.49	0.46
28:A:1043:C:C3'	28:A:1044:C:H5''	2.46	0.46
28:A:1094:U:H2'	28:A:1096:A:OP2	2.15	0.46
28:A:55:G:O2'	28:A:127:A:N1	2.39	0.46
28:A:193:U:C2'	28:A:194:G:H5'	2.46	0.46
28:A:82:U:O2	28:A:82:U:H2'	2.16	0.46
28:A:321:U:C2	32:E:159:LEU:HD23	2.51	0.46
37:J:32:LEU:CD2	37:J:54:ILE:HD13	2.45	0.46
42:O:74:VAL:O	42:O:78:VAL:HG22	2.15	0.46
42:O:94:ARG:HD2	42:O:97:PHE:O	2.16	0.46
58:9:48:C:C2	58:9:59:U:H1'	2.51	0.46
51:X:3:VAL:CG2	51:X:10:ARG:HG2	2.37	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:F:113:PHE:HZ	33:F:175:PRO:HB2	1.80	0.46
28:A:988:A:P	53:Z:11:SER:HB3	2.55	0.46
28:A:2426:A:H4'	28:A:2427:C:OP2	2.16	0.46
28:A:1788:C:H2'	28:A:1789:A:H8	1.79	0.46
28:A:2044:C:C2'	28:A:2045:C:H5'	2.45	0.46
28:A:563:A:OP2	45:R:79:ARG:NH2	2.46	0.46
28:A:2343:U:HO2'	28:A:2373:G:HO2'	1.59	0.46
54:6:29:G:N2	54:6:42:C:H1'	2.31	0.46
28:A:1175:A:P	28:A:1176:U:H1'	2.55	0.46
28:A:1177:G:H2'	28:A:1178:C:H5''	1.98	0.46
28:A:2060:A:O2'	32:E:63:LYS:NZ	2.49	0.46
28:A:209:C:O2'	28:A:210:C:H5'	2.16	0.46
28:A:548:G:O2'	28:A:549:G:N1	2.45	0.46
28:A:739:A:H1'	28:A:740:C:H5	1.80	0.46
35:H:99:ILE:HG12	35:H:101:ASP:H	1.80	0.46
39:L:57:LEU:CD1	39:L:60:ARG:HH11	2.26	0.46
40:M:68:PHE:CG	40:M:69:PRO:HD2	2.51	0.46
38:K:2:ILE:O	38:K:3:GLN:HB3	2.16	0.46
38:K:19:VAL:HG11	38:K:41:ILE:HG23	1.94	0.46
43:P:50:ARG:CB	43:P:57:ALA:H	2.28	0.46
28:A:2278:A:OP1	40:M:10:ARG:NH1	2.49	0.46
28:A:784:G:H4'	28:A:785:G:O5'	2.16	0.46
32:E:47:LYS:HB3	32:E:51:GLU:HG3	1.97	0.46
35:H:73:ASN:ND2	35:H:132:PHE:HD2	2.14	0.46
37:J:59:ALA:HB3	37:J:126:ALA:HA	1.98	0.46
23:1:10:LEU:HD21	23:1:33:LEU:HD22	1.97	0.46
27:5:48:LEU:CD1	27:5:171:ILE:HG13	2.46	0.46
44:Q:97:ILE:HD11	44:Q:108:LEU:CD1	2.45	0.46
30:C:175:LEU:N	30:C:175:LEU:HD12	2.30	0.46
28:A:378:C:C2'	28:A:379:G:H5'	2.46	0.46
39:L:22:GLY:O	39:L:28:GLY:HA3	2.16	0.46
28:A:2652:C:C2'	28:A:2653:U:H5'	2.46	0.46
28:A:1147:A:H2'	28:A:1148:U:C6	2.50	0.46
28:A:335:C:O2'	28:A:1433:A:N3	113.64	0.46
28:A:2062:A:C5	28:A:2503:A:N6	2.83	0.46
28:A:736:C:O2'	28:A:737:C:H5'	2.71	0.46
30:C:196:ASN:C	30:C:198:GLU:H	2.20	0.46
35:H:4:ILE:CG1	35:H:44:ILE:HG22	2.46	0.46
36:I:105:LEU:HD12	36:I:139:VAL:HG21	1.95	0.46
37:J:17:VAL:CG1	37:J:55:ILE:HD11	2.45	0.46
45:R:33:VAL:HG22	45:R:61:ALA:O	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:558:U:P	37:J:113:PRO:HB2	2.56	0.46
27:5:109:MET:HG2	28:A:2126:A:N7	2.31	0.46
27:5:37:LYS:O	28:A:2126:A:H4'	2.16	0.46
27:5:38:PHE:CB	28:A:2126:A:H5''	2.46	0.46
49:V:35:GLU:HG3	49:V:36:ALA:N	2.31	0.46
30:C:251:THR:CG2	30:C:252:LYS:H	2.18	0.46
28:A:1584:U:C2	28:A:1585:C:H4'	2.51	0.46
28:A:857:G:O2'	28:A:858:G:H5'	2.17	0.46
50:W:74:LYS:O	50:W:74:LYS:HG3	2.16	0.46
28:A:2681:C:P	31:D:114:LYS:HZ2	2.37	0.46
28:A:1517:G:H2'	28:A:1518:C:C6	2.50	0.46
28:A:2233:U:H2'	28:A:2234:G:C8	2.51	0.46
28:A:50:U:H3'	28:A:51:G:H5'	1.97	0.46
28:A:669:G:H2'	28:A:670:A:N7	2.30	0.46
28:A:1750:G:O2'	28:A:1751:U:H5'	2.15	0.46
28:A:104:A:H2'	28:A:105:C:O4'	2.16	0.45
28:A:2578:G:H21	31:D:130:GLN:NE2	2.13	0.45
28:A:285:G:H1'	28:A:356:G:N2	2.31	0.45
28:A:888:C:H5'	28:A:889:C:C5	2.48	0.45
31:D:12:THR:O	31:D:24:VAL:HG22	2.16	0.45
33:F:88:VAL:HG12	33:F:90:LEU:HD12	1.97	0.45
38:K:92:GLU:O	38:K:93:GLN:HB2	2.15	0.45
27:5:141:LYS:H	27:5:164:ARG:NE	2.14	0.45
28:A:2108:A:H2'	28:A:2109:U:O4'	2.16	0.45
34:G:27:GLY:HA3	34:G:78:VAL:CG2	2.46	0.45
50:W:13:ARG:CG	50:W:14:ASP:H	2.15	0.45
28:A:910:A:HO2'	28:A:2264:C:HO2'	1.60	0.45
28:A:855:G:H21	50:W:23:LYS:HE2	1.78	0.45
32:E:160:ALA:O	32:E:161:ALA:HB3	2.16	0.45
28:A:2356:U:H5''	50:W:16:GLU:HG2	1.97	0.45
28:A:2760:C:C2'	28:A:2761:A:H5'	2.46	0.45
28:A:1510:G:H2'	28:A:1511:G:H8	1.80	0.45
58:9:35:A:C2	58:9:36:A:N6	2.84	0.45
40:M:35:ALA:O	40:M:36:VAL:CB	2.64	0.45
52:Y:45:GLN:HG3	52:Y:46:VAL:HG23	1.97	0.45
28:A:1715:G:O2'	28:A:1743:G:O6	2.35	0.45
28:A:1616:A:H4'	28:A:1617:C:OP2	2.16	0.45
28:A:1088:A:H4'	28:A:1089:A:C8	2.51	0.45
28:A:285:G:H3'	28:A:286:U:H5	1.77	0.45
25:3:18:LYS:HB2	28:A:651:G:OP1	2.16	0.45
48:U:23:LYS:O	48:U:36:GLU:HG2	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:T:48:GLN:O	47:T:52:GLU:HA	2.16	0.45
47:T:54:GLU:CD	47:T:54:GLU:H	2.18	0.45
38:K:79:PHE:HD1	43:P:69:VAL:HG12	1.81	0.45
48:U:100:GLU:O	48:U:101:THR:HB	2.17	0.45
50:W:9:THR:HG23	50:W:10:ARG:CG	2.43	0.45
52:Y:17:GLU:HB2	52:Y:53:VAL:HG11	1.98	0.45
28:A:2236:U:H2'	28:A:2237:G:H5'	1.98	0.45
28:A:1425:G:H2'	28:A:1426:G:O4'	2.16	0.45
28:A:959:A:N6	40:M:82:MET:HE1	2.31	0.45
54:6:19:G:H1	54:6:56:C:H42	1.65	0.45
32:E:97:ASN:HB2	32:E:100:MET:SD	2.56	0.45
35:H:104:THR:HG23	35:H:109:GLU:CB	2.47	0.45
35:H:71:LYS:HD2	35:H:108:VAL:CG1	2.43	0.45
37:J:4:PHE:HD2	37:J:44:TYR:CE2	2.35	0.45
39:L:93:ASN:O	39:L:94:THR:HB	2.16	0.45
27:5:18:THR:OG1	27:5:221:GLY:O	2.23	0.45
28:A:2111:U:O4'	28:A:2117:A:H5''	2.16	0.45
28:A:2184:A:H2'	28:A:2185:U:H6	1.81	0.45
28:A:2704:C:H2'	28:A:2705:A:O4'	2.16	0.45
40:M:42:THR:OG1	40:M:45:GLN:HG3	2.17	0.45
40:M:37:GLY:O	40:M:98:PRO:HG3	2.16	0.45
51:X:34:SER:CA	51:X:49:ARG:HA	2.44	0.45
30:C:194:VAL:HG22	30:C:195:GLY:N	2.31	0.45
28:A:1727:C:H2'	28:A:1728:C:C6	2.51	0.45
54:6:18:G:H1'	54:6:57:G:H22	1.80	0.45
28:A:1490:A:N3	28:A:1490:A:H2'	2.31	0.45
53:Z:5:LYS:HG2	53:Z:36:GLU:HB2	1.97	0.45
50:W:46:ALA:HB3	50:W:80:SER:HA	1.98	0.45
31:D:174:SER:OG	31:D:175:LEU:N	2.49	0.45
28:A:1177:G:C2'	28:A:1178:C:H5''	2.46	0.45
28:A:2515:C:O2'	28:A:2516:A:H5'	2.17	0.45
28:A:640:C:O2	28:A:649:G:N2	2.50	0.45
31:D:77:ARG:NH2	31:D:200:ASP:OD1	2.50	0.45
31:D:56:LYS:HD3	31:D:58:ASN:HD21	1.82	0.45
32:E:3:LEU:CD1	32:E:14:VAL:HG22	2.46	0.45
29:B:42:C:H1'	33:F:63:LYS:O	2.16	0.45
35:H:146:VAL:C	35:H:149:GLU:H	2.20	0.45
28:A:2094:A:H4'	35:H:25:TYR:HE1	1.81	0.45
36:I:27:LEU:CD2	36:I:32:VAL:HB	2.46	0.45
27:5:15:VAL:HG12	27:5:16:ASP:N	2.31	0.45
58:9:17:C:O2'	58:9:61:C:OP1	2.35	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:T:69:ARG:NH1	47:T:70:HIS:HD2	2.15	0.45
38:K:71:ARG:HG3	38:K:105:ARG:NH2	2.32	0.45
28:A:137:U:H3	28:A:142:A:H61	1.64	0.45
23:1:9:LYS:NZ	23:1:52:LYS:O	2.42	0.45
23:1:7:LYS:CG	23:1:23:THR:HG22	2.42	0.45
39:L:37:GLY:O	39:L:40:SER:OG	2.31	0.45
52:Y:45:GLN:O	52:Y:46:VAL:HB	2.17	0.45
22:0:18:HIS:CD2	28:A:2046:G:H1'	2.51	0.45
28:A:1178:C:H2'	28:A:1179:G:O4'	2.16	0.45
28:A:1492:G:H5''	28:A:1493:C:H5'	1.98	0.45
28:A:2305:U:O4	33:F:38:GLY:N	2.45	0.45
28:A:253:C:H2'	28:A:254:G:H5'	1.99	0.45
28:A:827:U:H4'	28:A:828:U:C6	2.52	0.45
32:E:149:ILE:HD11	32:E:188:MET:CB	2.46	0.45
36:I:100:ILE:HG23	36:I:104:GLN:CB	2.47	0.45
51:X:70:LEU:HB3	51:X:75:GLU:CB	2.46	0.45
52:Y:9:LYS:NZ	52:Y:11:VAL:HB	2.31	0.45
28:A:1719:G:C2'	28:A:1720:U:H5'	2.47	0.45
28:A:1211:C:O2'	28:A:1212:G:OP1	2.26	0.45
28:A:2411:A:H2'	28:A:2412:A:C8	2.52	0.45
56:8:7:G:O2'	56:8:49:G:O4'	2.33	0.45
28:A:2029:G:N1	28:A:2033:A:OP2	2.43	0.45
28:A:2531:A:N7	34:G:175:LYS:HG2	2.32	0.45
28:A:2460:U:C2'	28:A:2461:A:H5'	2.46	0.45
28:A:1003:G:O2'	28:A:1010:A:N1	2.38	0.45
28:A:995:C:C2'	28:A:996:A:H5''	5.96	0.45
31:D:110:THR:CG2	31:D:171:THR:HG22	2.47	0.45
32:E:56:GLY:C	32:E:73:ILE:HG22	2.37	0.45
33:F:37:MET:HE1	33:F:149:ARG:HH11	1.81	0.45
33:F:79:ARG:H	33:F:82:TYR:HE2	1.64	0.45
35:H:11:ASN:OD1	35:H:12:LEU:N	2.49	0.45
36:I:98:GLY:C	36:I:137:LEU:HB2	2.37	0.45
28:A:636:G:N7	39:L:109:LYS:HE2	2.30	0.45
27:5:71:ARG:CB	27:5:177:LYS:HD3	2.47	0.45
28:A:1668:A:H4'	28:A:1669:A:O5'	2.17	0.45
38:K:3:GLN:HG2	38:K:4:GLU:N	2.32	0.45
52:Y:59:GLU:O	52:Y:63:ALA:HB3	2.16	0.45
28:A:1847:A:H2'	28:A:1847:A:P	2.55	0.45
49:V:2:PHE:HB3	49:V:50:MET:HE1	1.99	0.45
28:A:1516:G:H2'	28:A:1517:G:H5'	1.99	0.45
28:A:1823:G:O2'	28:A:1824:G:H5'	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:921:C:O2'	28:A:922:C:H5'	2.17	0.45
32:E:18:THR:O	32:E:18:THR:HG22	2.16	0.45
41:N:33:ILE:HG12	41:N:118:ARG:HD2	1.98	0.45
28:A:1409:U:O2'	28:A:1410:G:H5'	2.17	0.45
28:A:192:C:H2'	28:A:193:U:C5'	2.42	0.45
28:A:253:C:C2'	28:A:254:G:H5'	2.46	0.45
32:E:111:GLU:HG2	39:L:2:ARG:HH21	1.81	0.45
37:J:55:ILE:O	37:J:55:ILE:HG13	2.17	0.45
27:5:60:ARG:CG	27:5:164:ARG:HG3	2.47	0.45
34:G:102:ILE:HG21	34:G:104:LEU:HG	1.97	0.45
50:W:24:ARG:NH1	50:W:25:PHE:O	2.50	0.45
30:C:109:LEU:HD12	30:C:110:LYS:N	2.31	0.45
28:A:414:C:H4'	28:A:1879:C:O2	2.16	0.45
28:A:1341:G:H5'	47:T:61:LEU:HD23	1.98	0.45
28:A:1050:A:C2	28:A:2751:G:C4	3.04	0.45
28:A:1662:U:H2'	28:A:1663:G:O4'	2.16	0.45
30:C:245:THR:O	30:C:247:TRP:N	2.49	0.45
32:E:194:LYS:HA	32:E:197:GLU:HB3	1.98	0.45
28:A:1070:A:N3	28:A:1097:U:H4'	2.31	0.45
28:A:1521:G:H5''	28:A:1522:A:OP2	2.16	0.45
28:A:354:A:H2'	28:A:355:U:C6	2.51	0.45
28:A:80:G:C2'	28:A:81:G:H5'	2.46	0.45
28:A:569:U:O2'	28:A:983:A:N1	2.43	0.45
29:B:11:C:H2'	29:B:12:C:C5'	2.47	0.45
36:I:100:ILE:HG23	36:I:104:GLN:OE1	2.16	0.45
28:A:632:A:H5''	39:L:68:SER:HB2	1.99	0.45
27:5:4:LEU:HB3	28:A:2107:G:OP2	2.16	0.45
28:A:2116:G:C6	28:A:2117:A:H1'	2.52	0.45
28:A:2167:U:H2'	28:A:2168:G:C5'	2.47	0.45
28:A:2167:U:C2'	28:A:2168:G:H5'	2.46	0.45
27:5:129:GLN:OE1	28:A:2169:A:N6	2.50	0.45
47:T:43:ILE:HD11	47:T:58:VAL:HG11	1.98	0.45
38:K:8:LEU:CD2	38:K:82:ASN:HB3	2.47	0.45
28:A:1029:A:H5''	28:A:1030:C:OP2	2.17	0.45
23:1:38:PHE:CE1	23:1:43:ARG:HA	2.51	0.45
28:A:1695:G:H2'	28:A:1696:G:O4'	2.17	0.45
23:1:4:ILE:CG2	23:1:5:ARG:N	2.79	0.45
28:A:1401:G:H2'	28:A:1402:U:C6	2.52	0.45
28:A:493:G:H2'	28:A:494:G:O4'	2.16	0.45
28:A:2397:G:O2'	28:A:2398:U:H5'	2.16	0.45
28:A:794:A:N3	28:A:794:A:H2'	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:6:9:A:OP2	54:6:13:C:N4	2.49	0.45
46:S:20:VAL:HG11	46:S:44:ALA:HA	1.99	0.45
27:5:124:VAL:HG12	27:5:125:GLY:N	2.32	0.45
46:S:3:THR:HG22	46:S:107:VAL:O	2.17	0.45
28:A:1411:U:H2'	28:A:1412:U:C5'	2.47	0.45
28:A:2446:G:O6	28:A:2501:C:O2'	2.34	0.45
28:A:983:A:N3	28:A:983:A:H2'	3.39	0.45
35:H:103:VAL:CA	35:H:106:ALA:HB3	2.47	0.45
36:I:26:ALA:C	36:I:28:GLY:H	2.19	0.45
45:R:29:THR:O	45:R:63:VAL:HG23	2.17	0.45
51:X:16:ASN:O	51:X:17:ARG:HB2	2.16	0.45
28:A:2112:G:H4'	58:9:19:G:C8	2.51	0.45
28:A:2152:G:H2'	28:A:2153:C:H5'	1.99	0.45
28:A:2185:U:H2'	28:A:2186:G:O4'	2.17	0.45
47:T:83:ALA:O	47:T:84:TYR:CB	2.64	0.45
43:P:57:ALA:HA	43:P:73:PHE:O	2.16	0.45
34:G:104:LEU:HB2	34:G:112:VAL:HG22	1.97	0.45
52:Y:8:GLU:HG3	52:Y:8:GLU:O	2.16	0.45
28:A:2260:C:H5''	50:W:13:ARG:NH2	2.31	0.45
23:1:8:ILE:CG1	23:1:51:ALA:HB1	2.47	0.45
28:A:2530:A:H62	34:G:171:LYS:HZ1	1.65	0.45
28:A:940:G:H2'	28:A:941:A:C4'	2.47	0.45
28:A:1876:A:N3	28:A:1876:A:H2'	2.30	0.45
28:A:1093:G:O2'	28:A:1098:A:N6	2.50	0.45
28:A:2512:C:O2'	31:D:159:LYS:NZ	2.33	0.45
28:A:499:U:C2'	28:A:500:G:H5'	2.47	0.45
33:F:147:ARG:HG3	33:F:148:VAL:N	2.32	0.45
35:H:103:VAL:HG12	35:H:110:VAL:HG12	1.99	0.45
36:I:105:LEU:CA	36:I:108:ILE:HD12	2.25	0.45
37:J:64:VAL:HG22	37:J:68:LYS:HB2	1.99	0.45
28:A:2262:U:H5''	50:W:38:ARG:NH2	2.33	0.45
27:5:37:LYS:HB3	28:A:2128:G:H5'	1.99	0.45
27:5:7:ARG:HD2	28:A:2130:U:O4	2.17	0.45
58:9:5:G:C2'	58:9:6:G:H5'	2.47	0.45
34:G:11:PRO:HD2	34:G:75:VAL:HG13	1.99	0.45
34:G:53:PRO:HG3	34:G:61:TRP:CE2	2.52	0.45
53:Z:9:THR:O	53:Z:31:ILE:HB	2.17	0.45
54:6:76:F3O:H24	54:6:76:F3O:H14	1.72	0.45
23:1:16:THR:HB	23:1:41:VAL:HG11	1.98	0.45
28:A:597:G:H2'	28:A:598:U:C5'	3.58	0.45
28:A:1106:G:O2'	28:A:1107:G:H5'	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:2644:G:C2'	28:A:2645:G:H5'	2.47	0.45
43:P:30:TRP:CZ3	43:P:39:LEU:HD12	2.52	0.45
53:Z:4:ILE:O	53:Z:37:ARG:N	2.42	0.45
25:3:22:LYS:HA	25:3:48:MET:HA	1.99	0.45
49:V:75:GLN:HB2	49:V:92:VAL:HG23	1.99	0.45
28:A:1936:A:C2	28:A:1943:U:H5	2.35	0.45
48:U:32:LYS:HB3	48:U:63:ALA:HB1	1.99	0.45
30:C:246:PRO:HG2	30:C:247:TRP:CZ3	2.52	0.45
28:A:2790:U:H5'	28:A:2893:A:N7	2.32	0.45
49:V:29:ILE:HG13	49:V:38:LEU:O	2.17	0.45
28:A:1378:A:O2'	28:A:1379:U:OP2	2.26	0.44
28:A:253:C:H2'	28:A:254:G:C5'	2.46	0.44
28:A:319:G:O2'	28:A:320:A:H5'	2.28	0.44
28:A:933:A:H3'	28:A:933:A:N3	2.32	0.44
29:B:65:U:H2'	29:B:66:A:H5'	1.99	0.44
31:D:107:VAL:CG2	31:D:203:VAL:CG2	2.93	0.44
33:F:12:VAL:HG23	33:F:27:VAL:HG11	1.99	0.44
35:H:12:LEU:C	35:H:12:LEU:HD12	2.37	0.44
27:5:60:ARG:CB	27:5:164:ARG:HG3	2.45	0.44
58:9:17:C:O2'	58:9:61:C:H5'	2.16	0.44
30:C:4:LYS:HE3	30:C:16:VAL:HG21	1.99	0.44
28:A:2405:G:O2'	28:A:2406:A:OP1	2.32	0.44
51:X:52:ALA:O	51:X:53:LYS:CB	2.65	0.44
28:A:2739:U:C2'	28:A:2740:A:H5'	2.47	0.44
54:6:27:G:O2'	54:6:28:G:H5'	2.17	0.44
41:N:20:MET:HE3	41:N:40:LYS:HE2	1.99	0.44
28:A:1292:G:O2'	28:A:1293:C:H5'	2.18	0.44
28:A:158:U:C2'	28:A:159:G:H5'	2.48	0.44
28:A:365:U:O2'	28:A:366:C:H5'	2.18	0.44
28:A:538:A:C2'	28:A:539:G:H5'	2.48	0.44
30:C:128:THR:O	30:C:129:LEU:HD12	2.16	0.44
30:C:70:LYS:HD2	30:C:99:GLU:OE1	2.17	0.44
32:E:149:ILE:CD1	32:E:188:MET:HG3	2.47	0.44
33:F:63:LYS:HA	33:F:64:PRO:HD3	1.84	0.44
27:5:127:LEU:HD22	28:A:2169:A:C4	2.52	0.44
27:5:10:VAL:O	27:5:14:LYS:HG2	2.17	0.44
27:5:166:ASP:HA	28:A:2122:U:H4'	1.99	0.44
27:5:71:ARG:HA	27:5:177:LYS:HD3	2.00	0.44
27:5:36:ALA:HB1	27:5:38:PHE:CA	2.46	0.44
47:T:67:VAL:HG13	47:T:67:VAL:O	2.17	0.44
43:P:61:ARG:HG3	43:P:69:VAL:O	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:G:41:GLU:HG3	34:G:54:ARG:NH2	2.32	0.44
23:1:35:LEU:HD12	23:1:37:LYS:HG3	1.98	0.44
28:A:1678:A:H2'	28:A:1679:A:O4'	2.17	0.44
56:8:20:U:C3'	56:8:21:A:C5'	2.96	0.44
28:A:1408:G:H1	28:A:1594:U:H3	1.63	0.44
28:A:2573:C:H6	28:A:2573:C:O5'	2.00	0.44
28:A:1011:G:OP1	44:Q:76:SER:N	2.50	0.44
28:A:83:A:H2'	28:A:84:A:N7	2.32	0.44
31:D:4:LEU:O	31:D:203:VAL:HG12	2.17	0.44
33:F:39:VAL:CB	33:F:49:LEU:HD13	2.47	0.44
35:H:80:ILE:CD1	35:H:101:ASP:HB3	2.47	0.44
35:H:87:GLU:O	35:H:89:LYS:HG2	2.18	0.44
28:A:1063:G:O3'	36:I:88:GLY:HA3	2.18	0.44
39:L:81:ASP:C	39:L:82:LEU:HG	2.38	0.44
42:O:37:ALA:O	42:O:50:ALA:HB1	2.18	0.44
27:5:85:GLU:HA	27:5:88:LYS:CG	2.48	0.44
27:5:207:VAL:HB	27:5:210:LYS:HZ1	1.81	0.44
27:5:222:VAL:O	27:5:222:VAL:HG23	2.17	0.44
28:A:2113:U:H2'	28:A:2114:A:C8	2.53	0.44
30:C:68:ARG:NH2	30:C:126:GLY:O	2.50	0.44
34:G:25:ILE:HG22	34:G:25:ILE:O	2.17	0.44
28:A:2556:C:C2'	28:A:2557:G:H5'	2.47	0.44
28:A:781:A:H5'	28:A:782:A:OP2	6.34	0.44
56:8:73:A:H5'	56:8:74:C:H5'	1.99	0.44
28:A:1279:G:O2'	28:A:1280:G:H5'	2.17	0.44
38:K:47:ILE:CG2	38:K:48:PRO:HD2	2.42	0.44
27:5:48:LEU:HD11	27:5:171:ILE:H	1.80	0.44
50:W:50:VAL:CG2	50:W:61:LYS:HE3	2.47	0.44
28:A:1966:A:H4'	28:A:1967:C:OP1	2.17	0.44
28:A:2804:U:H2'	28:A:2805:C:C6	2.52	0.44
54:6:28:G:H2'	54:6:29:G:O4'	2.17	0.44
28:A:2554:U:H2'	28:A:2555:U:C6	2.52	0.44
48:U:78:LYS:HG2	48:U:79:ALA:N	2.32	0.44
28:A:1773:A:H2'	28:A:1774:C:H5'	2.00	0.44
30:C:259:ASN:O	30:C:261:ARG:N	2.43	0.44
46:S:96:ILE:O	46:S:96:ILE:HG23	2.17	0.44
45:R:20:VAL:O	45:R:20:VAL:HG13	2.17	0.44
46:S:33:LEU:O	46:S:37:THR:OG1	2.18	0.44
28:A:1087:G:N2	28:A:1099:G:H1'	18.25	0.44
28:A:183:C:N4	28:A:213:A:H61	2.15	0.44
28:A:436:C:H2'	28:A:437:U:H6	2.75	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:D:11:MET:HE1	31:D:192:ALA:HA	1.99	0.44
31:D:109:VAL:HG11	31:D:193:VAL:HB	1.99	0.44
35:H:10:ALA:C	35:H:13:GLY:H	2.20	0.44
36:I:100:ILE:CG2	36:I:104:GLN:HB2	2.47	0.44
42:O:30:ARG:HB3	42:O:97:PHE:CE1	2.52	0.44
42:O:43:ASN:OD1	42:O:44:GLY:N	2.50	0.44
29:B:50:A:OP2	42:O:67:ASN:HA	2.18	0.44
42:O:78:VAL:HG23	42:O:79:ALA:N	2.32	0.44
27:5:87:ALA:O	27:5:91:GLY:HA2	2.17	0.44
27:5:107:GLY:HA2	27:5:134:ARG:HH21	1.81	0.44
58:9:10:G:H2'	58:9:11:C:C6	2.51	0.44
58:9:20:U:H2'	58:9:21:A:C5'	2.47	0.44
28:A:2132:U:H3	28:A:2159:G:H22	1.64	0.44
43:P:29:VAL:HG11	43:P:73:PHE:HE1	1.82	0.44
43:P:62:LYS:HB3	43:P:69:VAL:HG23	1.98	0.44
38:K:118:LEU:HD12	38:K:118:LEU:N	2.33	0.44
28:A:1472:C:O2'	28:A:1473:G:H5'	2.18	0.44
28:A:488:G:H4'	46:S:49:LYS:NZ	2.31	0.44
28:A:2734:A:H2'	28:A:2735:G:H5'	2.00	0.44
28:A:662:G:O2'	39:L:14:LYS:HG2	2.17	0.44
53:Z:16:LEU:HB2	53:Z:19:HIS:HD2	1.83	0.44
23:1:3:GLY:O	23:1:4:ILE:HG22	2.18	0.44
25:3:29:ARG:NH1	39:L:62:PRO:HB2	2.32	0.44
50:W:36:ILE:HD13	50:W:42:THR:CG2	2.47	0.44
32:E:29:HIS:O	32:E:33:VAL:HG23	2.17	0.44
28:A:1186:G:C2'	28:A:1187:G:H5'	2.47	0.44
28:A:2441:U:O2'	28:A:2442:C:H5'	2.18	0.44
52:Y:19:LEU:O	52:Y:23:ARG:HB3	2.17	0.44
30:C:227:VAL:HG13	30:C:228:ASP:OD1	2.17	0.44
28:A:1102:C:O2'	28:A:1103:A:H5'	2.18	0.44
28:A:1418:G:H5''	28:A:1419:A:OP1	2.18	0.44
28:A:2090:A:H5''	28:A:2091:C:OP2	2.18	0.44
28:A:544:C:H3'	28:A:545:U:C5	2.52	0.44
28:A:590:A:O2'	28:A:591:U:H5'	2.17	0.44
28:A:905:A:H2'	28:A:906:U:C5'	2.40	0.44
29:B:82:U:O2'	29:B:83:G:H5'	2.17	0.44
36:I:27:LEU:HD22	36:I:32:VAL:HG21	1.99	0.44
36:I:27:LEU:CD2	36:I:34:ILE:HD11	2.47	0.44
42:O:43:ASN:OD1	42:O:45:SER:N	2.50	0.44
27:5:30:LEU:HD12	27:5:221:GLY:HA2	2.00	0.44
43:P:50:ARG:CG	43:P:56:SER:HB3	2.47	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:288:U:H2'	28:A:289:G:O4'	2.17	0.44
28:A:803:U:O2'	28:A:804:A:H5'	2.18	0.44
40:M:59:ARG:NE	54:6:53:G:O2'	2.49	0.44
28:A:2670:A:H2'	28:A:2671:G:H8	1.82	0.44
41:N:28:LEU:HD12	41:N:32:GLU:O	2.17	0.44
28:A:1433:A:H2'	28:A:1434:A:O4'	2.17	0.44
28:A:1522:A:C4'	28:A:1524:G:H1'	2.48	0.44
28:A:153:U:O2'	28:A:154:U:H5'	2.17	0.44
28:A:365:U:H2'	28:A:366:C:C6	2.53	0.44
35:H:104:THR:HG23	35:H:109:GLU:CG	2.45	0.44
35:H:43:ASN:HA	35:H:46:PHE:HB2	1.99	0.44
35:H:51:ARG:O	35:H:55:GLU:HG3	2.17	0.44
35:H:85:GLY:HA3	35:H:147:VAL:CA	2.48	0.44
36:I:48:ILE:HD12	36:I:54:ILE:HD11	2.00	0.44
37:J:99:ARG:O	37:J:103:ILE:HG22	2.17	0.44
27:5:117:SER:HB3	27:5:118:PRO:HD2	1.99	0.44
27:5:73:VAL:HG21	27:5:156:ALA:O	2.18	0.44
58:9:18:G:H4'	58:9:60:U:N3	2.33	0.44
58:9:52:G:H1'	58:9:63:G:C2	2.52	0.44
47:T:44:LYS:HG3	47:T:45:ALA:H	4.73	0.44
27:5:201:PRO:HG2	27:5:206:GLY:N	2.32	0.44
34:G:11:PRO:HD2	34:G:75:VAL:CG1	2.48	0.44
34:G:46:ASP:CG	34:G:47:ASN:H	2.20	0.44
28:A:1535:A:OP2	28:A:1536:C:N4	2.37	0.44
33:F:112:ASP:OD1	33:F:113:PHE:N	2.46	0.44
51:X:29:LEU:HD12	51:X:29:LEU:O	2.17	0.44
30:C:5:CYS:CB	30:C:12:ARG:HH21	2.29	0.44
28:A:830:G:H4'	28:A:831:G:OP2	2.17	0.44
28:A:2481:G:HO2'	28:A:2482:A:P	2.41	0.44
42:O:7:ARG:HB2	42:O:10:ARG:HH11	1.83	0.44
28:A:1856:U:H2'	28:A:1857:G:C5'	2.46	0.44
28:A:2714:G:H2'	28:A:2715:C:H5'	1.99	0.44
54:6:31:A:C2'	54:6:32:U:H5'	2.48	0.44
22:0:39:ARG:HG2	22:0:40:HIS:ND1	2.32	0.44
49:V:48:MET:O	49:V:51:GLN:HG2	2.17	0.44
27:5:113:VAL:HG12	27:5:162:ARG:HH12	1.82	0.44
28:A:959:A:N6	40:M:82:MET:CE	2.81	0.44
28:A:1379:U:H5''	28:A:1380:G:P	2.58	0.44
28:A:403:U:O2'	28:A:404:A:O5'	2.35	0.44
28:A:549:G:O5'	28:A:550:C:H5'	2.18	0.44
30:C:124:LYS:HG2	30:C:125:PRO:CD	2.48	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:C:67:LYS:HG2	30:C:150:GLY:HA2	2.00	0.44
28:A:2094:A:H5'	35:H:25:TYR:CD1	2.51	0.44
35:H:59:ALA:HA	35:H:62:LEU:HB2	2.00	0.44
28:A:2328:A:H2'	28:A:2329:U:H6	1.81	0.44
27:5:80:GLN:HG3	27:5:80:GLN:O	2.18	0.44
27:5:212:VAL:HG21	27:5:227:ALA:CB	2.43	0.44
27:5:31:LYS:HG2	27:5:40:GLU:OE2	2.18	0.44
27:5:69:THR:OG1	27:5:161:VAL:HG22	2.18	0.44
28:A:2179:C:H2'	28:A:2180:U:C5	2.53	0.44
28:A:261:G:HO2'	28:A:610:C:HO2'	1.66	0.44
47:T:48:GLN:OE1	47:T:55:VAL:HB	2.17	0.44
28:A:268:C:O2'	28:A:269:C:H5'	2.18	0.44
41:N:70:THR:HB	41:N:75:ILE:HD11	2.00	0.44
30:C:254:LYS:O	30:C:255:LYS:HB2	2.18	0.44
44:Q:35:PHE:CE2	44:Q:39:ILE:HD11	2.52	0.44
50:W:36:ILE:HG22	50:W:39:GLN:HB2	2.00	0.44
28:A:1883:U:C2'	28:A:1884:G:H5'	2.48	0.44
28:A:685:A:H4'	28:A:686:U:O5'	2.17	0.44
28:A:1124:G:H2'	28:A:1125:G:O4'	2.18	0.44
28:A:2245:U:H5''	28:A:2246:G:H5'	1.99	0.44
28:A:2732:G:P	31:D:208:LYS:HZ3	2.40	0.44
28:A:1347:A:H2'	28:A:1348:C:H5'	2.00	0.44
28:A:464:U:C2	28:A:466:A:H5''	10.63	0.44
28:A:652:U:H3'	28:A:653:U:C6	2.52	0.44
28:A:737:C:H2'	28:A:738:G:O4'	2.18	0.44
36:I:100:ILE:HG21	36:I:105:LEU:HG	2.00	0.44
36:I:100:ILE:HG22	36:I:101:SER:O	2.18	0.44
28:A:1161:C:O2'	45:R:23:GLU:HG2	2.18	0.44
48:U:31:GLY:O	48:U:66:VAL:HB	2.17	0.44
51:X:36:ARG:HA	51:X:46:VAL:O	2.18	0.44
27:5:152:ALA:O	27:5:155:ASN:HB2	2.18	0.44
27:5:36:ALA:HB2	27:5:38:PHE:CD1	2.53	0.44
27:5:50:ILE:HG23	27:5:169:GLY:CA	2.47	0.44
34:G:102:ILE:HG22	34:G:103:ASN:N	2.33	0.44
28:A:2746:U:H2'	28:A:2747:G:H5'	2.00	0.44
35:H:72:ILE:CG2	35:H:132:PHE:HB3	2.48	0.44
28:A:1112:G:O2'	28:A:1113:U:H5'	2.17	0.44
38:K:14:SER:HA	38:K:51:LYS:HB3	1.99	0.44
28:A:2670:A:H2'	28:A:2671:G:C8	2.53	0.44
34:G:148:ARG:HG2	34:G:152:ARG:HG2	1.99	0.44
47:T:34:VAL:O	47:T:34:VAL:HG23	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:6:36:A:H2	55:7:19:U:H3	1.66	0.44
28:A:7:G:H1'	37:J:135:GLN:HE22	1.83	0.44
31:D:117:GLY:HA2	31:D:164:GLN:NE2	2.32	0.44
35:H:10:ALA:HB3	35:H:13:GLY:CA	2.48	0.44
35:H:77:THR:HG22	35:H:144:VAL:CB	2.19	0.44
36:I:120:ASP:HB3	36:I:123:ALA:CB	2.47	0.44
38:K:110:GLU:O	38:K:113:MET:HB2	2.17	0.44
34:G:19:ASN:HB3	34:G:22:VAL:HG21	1.99	0.44
48:U:85:ARG:HG3	48:U:86:PHE:O	2.17	0.44
40:M:44:ARG:O	40:M:47:GLU:HB3	2.18	0.44
28:A:855:G:N3	50:W:23:LYS:CD	2.77	0.44
28:A:1918:A:HO2'	28:A:1920:C:N4	2.15	0.44
54:6:1:G:H1	54:6:72:C:N4	2.10	0.44
47:T:92:ASN:C	47:T:93:LEU:HD12	2.38	0.44
22:O:21:LEU:CD2	46:S:41:LYS:HE3	2.48	0.44
55:7:15:U:H4'	55:7:15:U:OP1	2.18	0.44
25:3:37:THR:HG21	28:A:2348:U:OP1	2.18	0.44
41:N:33:ILE:HG12	41:N:118:ARG:HD3	2.00	0.43
28:A:323:C:O2'	28:A:1205:A:N6	2.36	0.43
31:D:117:GLY:HA2	31:D:164:GLN:CD	2.38	0.43
31:D:151:THR:CG2	31:D:152:PRO:CD	2.75	0.43
33:F:49:LEU:HD23	33:F:83:PRO:HB2	1.98	0.43
42:O:26:LEU:O	42:O:26:LEU:HG	2.18	0.43
42:O:36:TYR:CD1	42:O:52:SER:HB2	2.53	0.43
44:Q:64:ILE:CD1	44:Q:95:ALA:HB3	2.48	0.43
37:J:111:LYS:HG3	37:J:112:GLY:N	2.33	0.43
28:A:2682:A:H2'	28:A:2683:C:O4'	2.17	0.43
38:K:39:ILE:HD11	38:K:41:ILE:HD11	2.00	0.43
28:A:223:A:H2'	28:A:224:U:H6	6.44	0.43
40:M:62:LYS:HG2	40:M:63:ILE:N	2.33	0.43
28:A:28:A:H2'	28:A:29:U:C5'	2.61	0.43
28:A:2795:C:C2	28:A:2796:U:C5	3.05	0.43
29:B:19:C:H2'	29:B:20:G:H5'	2.00	0.43
33:F:23:SER:HB3	33:F:26:GLN:HB2	2.00	0.43
28:A:1045:C:H4'	28:A:1046:A:C5'	2.48	0.43
28:A:1870:C:P	28:A:1871:A:H62	2.41	0.43
28:A:807:U:O2'	28:A:808:G:H5'	2.17	0.43
28:A:1315:C:H2'	28:A:1316:U:H6	1.83	0.43
56:8:29:G:O2'	56:8:30:G:H5'	2.18	0.43
28:A:2698:U:H2'	28:A:2699:C:H6	1.83	0.43
28:A:2051:A:H4'	28:A:2052:A:OP1	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:2570:G:O2'	28:A:2571:U:H5'	2.18	0.43
28:A:524:G:H2'	28:A:525:U:O4'	2.18	0.43
28:A:637:A:H4'	28:A:638:G:O5'	2.18	0.43
29:B:9:G:O2'	29:B:10:G:H5'	2.18	0.43
31:D:106:LYS:HG2	31:D:176:ASP:OD1	2.17	0.43
35:H:90:LEU:CG	35:H:147:VAL:HG12	2.30	0.43
36:I:10:LEU:CD2	36:I:23:VAL:HG12	2.33	0.43
28:A:1007:C:OP1	37:J:39:LYS:HE3	2.17	0.43
40:M:69:PRO:HA	40:M:94:ALA:HB2	2.00	0.43
27:5:81:GLY:O	27:5:85:GLU:HG3	2.18	0.43
27:5:15:VAL:HB	27:5:33:LEU:CD1	2.40	0.43
27:5:70:GLY:H	27:5:176:GLY:HA2	1.82	0.43
28:A:141:G:H2'	28:A:142:A:O4'	2.18	0.43
33:F:112:ASP:CG	33:F:113:PHE:H	2.20	0.43
55:7:13:C:O2	55:7:13:C:H2'	2.17	0.43
28:A:662:G:O2'	28:A:663:G:H5'	2.16	0.43
31:D:187:LEU:O	31:D:188:LEU:HD23	2.17	0.43
28:A:2813:A:H8	28:A:2813:A:O5'	2.00	0.43
28:A:2813:A:H2'	28:A:2814:A:O4'	2.18	0.43
28:A:1657:U:O2'	28:A:1658:C:H5'	2.19	0.43
28:A:1979:U:O2'	28:A:1980:G:H5'	2.18	0.43
46:S:69:LEU:HD11	46:S:107:VAL:HG22	2.00	0.43
28:A:1257:C:H2'	28:A:1258:U:C6	2.54	0.43
28:A:49:A:N6	28:A:177:G:C4	2.86	0.43
28:A:201:C:H2'	28:A:202:U:C6	2.51	0.43
29:B:69:G:H2'	29:B:70:C:H5'	2.00	0.43
30:C:33:LEU:HD21	30:C:62:ARG:HG2	2.00	0.43
31:D:118:PHE:HE1	31:D:123:LYS:HD3	1.83	0.43
37:J:38:GLY:CA	37:J:51:GLY:HA2	2.47	0.43
42:O:76:LYS:CA	42:O:109:ALA:HB1	2.48	0.43
45:R:61:ALA:HB2	45:R:98:ILE:HA	1.99	0.43
47:T:10:VAL:HG21	47:T:42:GLU:O	2.18	0.43
28:A:346:A:H2'	28:A:347:A:H5'	2.00	0.43
38:K:65:THR:HA	38:K:82:ASN:OD1	2.18	0.43
52:Y:9:LYS:HZ1	52:Y:11:VAL:HB	1.82	0.43
24:2:3:ARG:HD3	24:2:3:ARG:HA	1.82	0.43
28:A:1181:U:H2'	28:A:1182:G:H8	1.84	0.43
45:R:68:ARG:HD3	45:R:90:ARG:HD3	1.99	0.43
23:1:35:LEU:CD1	23:1:37:LYS:HG3	2.48	0.43
28:A:1319:C:O2'	28:A:1320:C:H5'	2.18	0.43
28:A:1368:G:O2'	28:A:1369:G:H5'	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:4:15:LYS:O	26:4:16:ILE:HB	2.18	0.43
28:A:1993:U:H4'	31:D:133:THR:HG22	1.99	0.43
28:A:962:G:O2'	28:A:2496:C:O2'	2.29	0.43
28:A:1084:A:H2'	28:A:1085:A:O4'	2.19	0.43
28:A:163:C:H3'	28:A:163:C:P	2.58	0.43
28:A:2821:A:H2'	28:A:2822:G:O4'	2.17	0.43
28:A:881:G:H1	28:A:898:C:C1'	2.31	0.43
28:A:881:G:N2	28:A:898:C:H1'	2.34	0.43
28:A:947:A:HO2'	28:A:984:A:H2	1.65	0.43
33:F:41:GLU:HG2	33:F:48:LEU:HD23	2.00	0.43
35:H:116:ARG:NH2	35:H:122:LEU:HD13	2.33	0.43
28:A:2221:G:OP2	35:H:135:HIS:HB3	2.18	0.43
35:H:54:LEU:HD12	35:H:57:LYS:HZ3	1.82	0.43
36:I:105:LEU:HD23	36:I:108:ILE:HD12	2.00	0.43
48:U:60:LYS:HD2	48:U:61:GLU:N	2.31	0.43
28:A:2134:A:C2'	28:A:2160:C:H5'	2.48	0.43
43:P:20:ARG:CG	43:P:21:PRO:HD2	2.48	0.43
27:5:132:GLY:HA2	27:5:137:MET:HG3	2.01	0.43
34:G:97:VAL:HA	34:G:101:VAL:O	2.18	0.43
50:W:18:LYS:CG	50:W:19:ARG:N	2.80	0.43
28:A:268:C:H2'	28:A:269:C:H5'	2.01	0.43
28:A:614:A:OP2	28:A:614:A:H3'	2.19	0.43
28:A:414:C:O2	28:A:1864:U:H4'	2.18	0.43
28:A:792:A:C3'	28:A:793:A:H5'	2.46	0.43
28:A:1700:A:H2'	28:A:1701:A:H5'	2.00	0.43
30:C:224:MET:O	30:C:232:GLY:HA2	2.18	0.43
29:B:97:C:H2'	29:B:97:C:O2	2.17	0.43
28:A:1480:C:H2'	28:A:1481:U:O4'	2.17	0.43
31:D:61:THR:HB	31:D:63:PRO:HD2	1.99	0.43
35:H:103:VAL:O	35:H:106:ALA:HB3	2.17	0.43
35:H:80:ILE:HD12	35:H:101:ASP:HB3	1.99	0.43
35:H:90:LEU:H	35:H:147:VAL:CG1	2.29	0.43
39:L:26:GLY:C	39:L:27:LEU:HD12	2.38	0.43
38:K:5:GLN:O	38:K:21:CYS:HB3	2.18	0.43
58:9:40:C:C3'	58:9:41:C:H5''	2.47	0.43
49:V:6:ALA:HB1	49:V:40:ILE:HG23	1.99	0.43
28:A:613:A:N3	28:A:613:A:H2'	2.32	0.43
26:4:11:CYS:HB3	26:4:33:HIS:HE1	1.82	0.43
43:P:37:LYS:HG2	43:P:37:LYS:O	2.18	0.43
28:A:1790:C:H5''	28:A:1791:A:OP1	2.18	0.43
28:A:2521:C:O2'	28:A:2522:U:H5'	2.17	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:2039:U:O2'	28:A:2040:G:H5'	2.19	0.43
31:D:174:SER:O	31:D:175:LEU:HB2	2.18	0.43
33:F:79:ARG:NH1	56:8:19:G:O6	2.52	0.43
56:8:58:A:H4'	56:8:59:A:OP1	2.19	0.43
29:B:70:C:O2'	29:B:71:C:H5'	2.18	0.43
33:F:133:GLU:OE2	33:F:135:ILE:HB	2.18	0.43
35:H:41:LYS:HD3	35:H:44:ILE:HD13	2.01	0.43
35:H:9:VAL:CG2	35:H:65:ALA:HB1	2.48	0.43
36:I:96:LYS:HE2	36:I:138:VAL:HG22	2.00	0.43
44:Q:91:ARG:HG3	45:R:11:GLN:CD	2.39	0.43
33:F:113:PHE:CE1	33:F:115:GLY:HA2	2.53	0.43
23:1:39:ASP:HA	23:1:40:PRO:HD2	1.88	0.43
31:D:26:VAL:HA	31:D:188:LEU:HD23	1.99	0.43
33:F:102:LEU:C	33:F:102:LEU:HD23	2.39	0.43
52:Y:56:LEU:O	52:Y:57:LEU:HB3	2.18	0.43
56:8:47:U:H3	56:8:50:U:H5'	1.84	0.43
22:0:1:ALA:CB	28:A:2577:A:H2	2.31	0.43
28:A:1060:U:C4'	28:A:1061:U:H5'	2.49	0.43
28:A:1098:A:H2'	28:A:1099:G:C5'	2.49	0.43
28:A:479:A:HO2'	28:A:481:G:H8	1.62	0.43
28:A:259:G:O2'	28:A:621:A:O2'	2.26	0.43
28:A:983:A:N3	28:A:983:A:C2'	3.61	0.43
30:C:57:HIS:CG	30:C:58:LYS:H	2.37	0.43
33:F:3:LEU:HA	33:F:6:TYR:CB	2.45	0.43
33:F:89:THR:O	33:F:90:LEU:HD12	2.19	0.43
35:H:103:VAL:C	35:H:106:ALA:H	2.21	0.43
35:H:8:LYS:CB	35:H:62:LEU:HD11	2.49	0.43
36:I:104:GLN:O	36:I:105:LEU:CB	2.66	0.43
36:I:20:SER:H	36:I:22:PRO:HD2	1.84	0.43
36:I:67:THR:O	36:I:69:VAL:HG23	2.17	0.43
44:Q:84:LYS:O	44:Q:86:SER:N	2.50	0.43
51:X:5:GLN:O	51:X:70:LEU:HD21	2.17	0.43
27:5:185:LEU:HD13	27:5:233:VAL:HG11	1.99	0.43
27:5:35:THR:OG1	27:5:219:GLY:HA2	2.19	0.43
52:Y:9:LYS:HB3	52:Y:12:GLU:HG3	2.00	0.43
49:V:36:ALA:O	49:V:93:ARG:NH2	2.48	0.43
28:A:2556:C:O2'	28:A:2557:G:H5'	2.18	0.43
30:C:131:MET:HE2	30:C:187:CYS:HB2	2.00	0.43
28:A:1119:U:OP1	49:V:83:LYS:NZ	2.51	0.43
28:A:2366:A:H4'	50:W:61:LYS:HZ2	1.84	0.43
56:8:64:G:H2'	56:8:65:C:H6	1.82	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:B:27:C:C4	29:B:28:C:C5	3.07	0.43
28:A:693:A:O2'	28:A:1353:A:N3	2.43	0.43
32:E:194:LYS:O	32:E:197:GLU:HB3	2.18	0.43
56:8:42:G:H2'	56:8:43:A:O4'	2.18	0.43
46:S:12:SER:HB3	46:S:17:VAL:CG2	2.48	0.43
28:A:1099:G:H2'	28:A:1100:C:O4'	3.14	0.43
28:A:1099:G:H2'	28:A:1099:G:N3	2.34	0.43
28:A:1176:U:N3	28:A:1177:G:C6	2.87	0.43
28:A:177:G:H2'	28:A:177:G:N3	2.33	0.43
28:A:368:A:H2'	28:A:369:U:H5'	2.01	0.43
35:H:116:ARG:CZ	35:H:122:LEU:HD13	2.47	0.43
35:H:55:GLU:O	35:H:59:ALA:HB2	2.18	0.43
36:I:140:GLU:OE1	36:I:140:GLU:N	2.51	0.43
44:Q:93:ILE:O	44:Q:96:ASP:HB2	2.19	0.43
27:5:215:SER:HB2	28:A:2175:C:HO2'	1.81	0.43
27:5:33:LEU:CG	27:5:220:ALA:HB3	2.30	0.43
58:9:53:G:H2'	58:9:54:U:C6	2.54	0.43
28:A:2129:C:HO2'	28:A:2131:U:P	2.39	0.43
47:T:65:GLY:N	47:T:79:ASP:OD1	2.51	0.43
28:A:28:A:O2'	28:A:583:G:H5'	2.18	0.43
29:B:19:C:O2'	29:B:20:G:H5'	2.19	0.43
28:A:1048:A:C6	28:A:1111:A:C2	3.06	0.43
46:S:6:LYS:HB2	46:S:103:ILE:O	2.19	0.43
25:3:31:ILE:HD12	28:A:2391:G:OP2	2.19	0.43
37:J:69:ARG:HD3	37:J:89:PHE:CE2	2.54	0.43
28:A:1341:G:H5'	47:T:61:LEU:HB3	1.99	0.43
45:R:79:ARG:O	45:R:80:ARG:HB2	2.19	0.43
28:A:1425:G:H8	28:A:1425:G:O5'	2.00	0.43
28:A:1998:A:H4'	28:A:2724:U:O2'	2.18	0.43
43:P:89:GLY:HA2	43:P:111:GLU:HA	2.01	0.43
23:1:12:SER:HA	23:1:48:TYR:CE1	2.54	0.43
28:A:486:C:H4'	46:S:60:HIS:CD2	2.54	0.43
28:A:1817:G:H5''	30:C:86:ARG:CG	2.49	0.43
32:E:1:MET:HB2	32:E:14:VAL:O	2.18	0.43
32:E:32:VAL:HG23	32:E:178:VAL:CG1	2.32	0.43
28:A:673:C:H4'	32:E:77:ILE:HD12	2.00	0.43
35:H:99:ILE:HG12	35:H:100:ALA:N	2.33	0.43
44:Q:63:ARG:CZ	44:Q:96:ASP:HA	2.49	0.43
27:5:83:ASN:HD22	27:5:119:ASP:H	1.67	0.43
58:9:15:G:H4'	58:9:16:U:OP1	2.19	0.43
47:T:58:VAL:HG12	47:T:85:VAL:CA	2.40	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:2684:U:H4'	38:K:76:VAL:HG21	2.00	0.43
38:K:71:ARG:HH21	38:K:106:GLU:CG	2.32	0.43
33:F:137:PHE:HA	33:F:138:PRO:HD3	1.72	0.43
34:G:67:ALA:O	34:G:71:LEU:HD13	2.19	0.43
34:G:21:GLN:O	34:G:23:ILE:HD12	2.19	0.43
26:4:3:VAL:HG11	28:A:2539:C:C5'	2.46	0.43
28:A:2353:G:N3	50:W:30:VAL:CG1	2.81	0.43
53:Z:8:GLN:C	53:Z:9:THR:HG1	2.20	0.43
28:A:855:G:N2	28:A:923:G:C5	2.87	0.43
33:F:16:MET:O	33:F:20:ASN:HA	2.17	0.43
30:C:255:LYS:O	30:C:256:THR:HG22	2.19	0.43
25:3:21:PHE:O	25:3:22:LYS:CG	2.65	0.43
37:J:88:THR:CG2	37:J:91:GLU:HG3	2.48	0.43
27:5:97:MET:HG2	27:5:98:GLU:OE2	2.19	0.43
28:A:2630:G:C6	28:A:2894:G:C6	3.07	0.43
28:A:186:G:O2'	28:A:187:G:H5'	2.19	0.43
28:A:1762:A:H8	28:A:1762:A:O5'	2.02	0.43
41:N:21:PHE:N	41:N:25:ALA:HB3	6.25	0.43
28:A:1092:C:C2'	28:A:1093:G:H5'	2.48	0.43
28:A:198:C:N4	28:A:248:G:H1	2.16	0.43
28:A:2822:G:O2'	28:A:2824:C:OP2	2.27	0.43
28:A:540:C:O2'	28:A:541:A:H5'	2.19	0.43
36:I:123:ALA:HB1	36:I:126:ARG:HH22	1.82	0.43
36:I:18:ASN:ND2	36:I:34:ILE:HG22	2.34	0.43
28:A:557:C:O2	37:J:47:HIS:HB2	2.18	0.43
39:L:77:ILE:CG2	39:L:78:ARG:N	2.81	0.43
40:M:43:ALA:O	40:M:46:ILE:HG13	2.19	0.43
28:A:2108:A:C2'	28:A:2109:U:H5'	2.48	0.43
30:C:52:HIS:CE1	30:C:218:THR:HG23	2.53	0.43
28:A:2192:U:H2'	28:A:2193:G:C5'	2.36	0.43
28:A:954:G:H5''	40:M:13:HIS:ND1	2.33	0.43
28:A:784:G:H5'	30:C:225:ASN:OD1	2.19	0.43
28:A:38:A:O2'	32:E:43:THR:HA	2.17	0.43
28:A:1641:A:H2'	28:A:1642:G:H5'	2.01	0.43
45:R:68:ARG:CG	45:R:90:ARG:HB3	2.48	0.43
28:A:528:A:H2	28:A:2042:A:H2'	1.79	0.43
48:U:73:ASN:O	48:U:74:ALA:HB3	2.19	0.43
30:C:259:ASN:ND2	30:C:262:THR:OG1	2.50	0.43
28:A:1733:G:H2'	28:A:1733:G:N3	2.34	0.43
28:A:2244:U:H6	28:A:2244:U:O5'	2.02	0.43
28:A:532:A:H2'	28:A:532:A:N3	2.34	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:2840:C:H4'	41:N:91:ALA:O	2.18	0.42
46:S:7:HIS:HD1	46:S:10:ALA:HB2	1.84	0.42
28:A:1469:A:OP2	28:A:1522:A:N6	2.52	0.42
28:A:768:G:H2'	28:A:769:U:O4'	2.19	0.42
29:B:68:C:O2'	29:B:69:G:H5'	2.19	0.42
32:E:35:TYR:CE2	32:E:178:VAL:HG22	2.54	0.42
36:I:96:LYS:HG3	36:I:137:LEU:HA	2.01	0.42
47:T:7:LEU:HD21	47:T:42:GLU:OE2	2.19	0.42
48:U:25:LYS:O	48:U:26:ASN:HB3	2.19	0.42
28:A:2326:C:HO2'	28:A:2327:A:P	2.36	0.42
48:U:53:GLN:O	48:U:53:GLN:HG3	2.19	0.42
27:5:226:GLN:CD	27:5:229:LEU:HD12	2.40	0.42
28:A:2115:G:H4'	28:A:2167:U:H1'	2.01	0.42
27:5:134:ARG:CG	28:A:2125:G:H1	2.32	0.42
28:A:2141:G:H2'	28:A:2142:A:H8	1.82	0.42
27:5:105:LYS:HE3	28:A:2163:A:H1'	2.01	0.42
28:A:2846:G:P	43:P:52:ARG:HH12	2.42	0.42
43:P:45:VAL:HG12	43:P:46:VAL:O	2.18	0.42
28:A:1300:G:C2	28:A:1626:A:N6	2.86	0.42
58:9:38:A:C3'	58:9:39:U:H5''	2.48	0.42
40:M:117:PHE:O	40:M:120:ALA:N	2.51	0.42
28:A:2296:U:H4'	28:A:2297:A:OP1	2.19	0.42
46:S:80:PRO:O	46:S:100:THR:OG1	2.29	0.42
28:A:1736:U:H2'	28:A:1737:G:O4'	2.19	0.42
28:A:2510:C:H2'	28:A:2511:U:C6	2.49	0.42
28:A:745:G:C2'	28:A:746:U:H5'	2.46	0.42
28:A:1969:A:H2'	28:A:1972:G:H21	1.84	0.42
28:A:1323:C:OP1	46:S:84:ARG:NE	2.49	0.42
28:A:2585:U:H6	28:A:2585:U:H3'	1.83	0.42
28:A:196:A:OP2	39:L:47:ARG:NH1	2.33	0.42
28:A:2418:A:C6	28:A:2419:U:N3	2.86	0.42
28:A:2038:G:H2'	28:A:2039:U:O4'	2.18	0.42
45:R:16:GLU:HB3	45:R:101:ILE:HG13	2.01	0.42
49:V:48:MET:SD	49:V:51:GLN:NE2	2.92	0.42
22:0:1:ALA:HB2	28:A:2577:A:C2	2.53	0.42
24:2:31:LEU:HD21	24:2:43:THR:CG2	2.49	0.42
50:W:55:ASP:O	50:W:56:HIS:HB2	2.18	0.42
28:A:2094:A:C5'	35:H:25:TYR:CD1	3.02	0.42
28:A:220:G:N3	28:A:233:A:H2	2.16	0.42
28:A:63:A:O2'	28:A:64:A:H5'	2.18	0.42
28:A:825:A:C2'	28:A:826:U:H5'	2.49	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:933:A:H5''	28:A:934:U:H5	1.83	0.42
30:C:64:VAL:CG2	30:C:86:ARG:NH2	2.80	0.42
33:F:151:LEU:CD1	33:F:152:ASP:N	2.82	0.42
36:I:96:LYS:HE2	36:I:138:VAL:HG23	1.99	0.42
37:J:140:LEU:C	37:J:140:LEU:HD12	2.39	0.42
39:L:79:LEU:HA	39:L:82:LEU:HD21	2.01	0.42
27:5:107:GLY:CA	27:5:134:ARG:NH2	2.80	0.42
58:9:20:U:H2'	58:9:21:A:C4'	2.49	0.42
58:9:3:C:H2'	58:9:4:C:C1'	2.50	0.42
58:9:48:C:OP1	58:9:48:C:H6	2.01	0.42
28:A:2112:G:C3'	28:A:2113:U:H5'	2.49	0.42
28:A:2189:U:O2'	28:A:2190:G:H5'	2.19	0.42
30:C:68:ARG:HH22	30:C:115:ILE:CG2	2.31	0.42
28:A:1812:U:O4'	30:C:44:ASN:ND2	2.52	0.42
26:4:3:VAL:CG2	26:4:4:ARG:N	2.79	0.42
23:1:51:ALA:O	23:1:52:LYS:HB2	2.19	0.42
28:A:2322:A:O2'	28:A:2323:G:H5'	2.19	0.42
30:C:171:VAL:HG12	30:C:173:LEU:HD12	2.01	0.42
28:A:966:G:N3	28:A:966:G:H2'	3.36	0.42
28:A:1734:G:O2'	28:A:1735:A:O4'	2.33	0.42
27:5:48:LEU:HD11	27:5:171:ILE:CB	2.49	0.42
28:A:2073:C:O2'	28:A:2074:U:H5'	2.19	0.42
28:A:1936:A:C2	28:A:1943:U:C5	3.04	0.42
28:A:2842:G:C2'	28:A:2843:G:H5'	2.49	0.42
22:0:21:LEU:CD1	46:S:41:LYS:HE3	2.49	0.42
28:A:1705:A:N6	28:A:1706:C:H42	2.16	0.42
39:L:20:GLY:O	39:L:21:ARG:NH2	2.37	0.42
28:A:1982:U:O2'	28:A:1983:G:H5'	2.19	0.42
23:1:45:HIS:CE1	28:A:2371:G:HO2'	2.29	0.42
28:A:1568:G:P	30:C:62:ARG:HH12	2.41	0.42
28:A:179:C:H2'	28:A:180:G:H5'	2.02	0.42
28:A:276:U:H2'	28:A:277:G:C1'	2.50	0.42
29:B:43:C:H2'	29:B:44:G:C5'	2.43	0.42
30:C:65:ASP:OD2	30:C:101:ARG:HD3	2.19	0.42
35:H:118:PRO:CB	35:H:122:LEU:HD23	2.49	0.42
40:M:108:VAL:HG12	40:M:109:PRO:O	2.19	0.42
45:R:38:VAL:CG1	45:R:54:VAL:HG22	2.43	0.42
58:9:11:C:C2	58:9:12:U:C5	3.08	0.42
34:G:112:VAL:CG2	34:G:113:ASP:N	2.82	0.42
58:9:38:A:H3'	58:9:39:U:C5'	2.49	0.42
34:G:68:ARG:NH1	34:G:72:ASN:HD22	2.17	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:1167:C:H2'	28:A:1168:G:O4'	2.19	0.42
30:C:255:LYS:O	30:C:257:ARG:N	2.52	0.42
28:A:1727:C:H1'	28:A:1734:G:N2	2.33	0.42
49:V:75:GLN:CG	49:V:92:VAL:HG23	2.50	0.42
28:A:1516:G:O2'	28:A:1517:G:H5'	2.19	0.42
30:C:245:THR:C	30:C:247:TRP:N	2.73	0.42
28:A:1270:C:N4	28:A:1648:U:O4	2.52	0.42
27:5:102:ASP:O	27:5:106:LYS:HG2	2.19	0.42
28:A:1522:A:H4'	28:A:1524:G:H1'	2.01	0.42
28:A:2394:C:O5'	28:A:2394:C:H6	2.03	0.42
28:A:259:G:C4	28:A:260:G:C8	3.84	0.42
28:A:320:A:H4'	28:A:322:A:C8	2.54	0.42
28:A:551:G:C2'	28:A:552:U:H5'	2.50	0.42
29:B:65:U:O2'	29:B:66:A:H5'	2.18	0.42
35:H:41:LYS:N	35:H:44:ILE:HG23	2.24	0.42
36:I:5:GLN:HB3	36:I:60:VAL:O	2.20	0.42
37:J:105:VAL:HG21	37:J:122:LEU:CD2	2.50	0.42
27:5:79:THR:CB	27:5:117:SER:HB2	2.50	0.42
27:5:212:VAL:N	27:5:225:ASP:O	2.51	0.42
27:5:11:ILE:CG2	27:5:33:LEU:HD12	2.30	0.42
58:9:53:G:C2	58:9:62:C:N3	2.87	0.42
47:T:54:GLU:OE1	47:T:54:GLU:N	2.39	0.42
38:K:77:ILE:CD1	43:P:71:ARG:HD2	2.47	0.42
28:A:1535:A:H5''	28:A:1536:C:C5	2.48	0.42
28:A:2484:G:O2'	28:A:2485:G:H5'	2.19	0.42
30:C:225:ASN:HB3	30:C:226:PRO:CD	2.48	0.42
28:A:2602:A:H4'	28:A:2603:G:H5'	2.00	0.42
30:C:109:LEU:CD1	30:C:110:LYS:N	2.82	0.42
25:3:20:GLY:HA3	25:3:48:MET:HE1	2.01	0.42
28:A:2316:G:H4'	33:F:124:ARG:NH1	2.34	0.42
28:A:1936:A:OP1	28:A:1936:A:H3'	2.19	0.42
28:A:2647:U:H2'	28:A:2648:G:H8	1.84	0.42
52:Y:39:GLN:O	52:Y:42:LEU:HD13	2.19	0.42
28:A:1485:U:H2'	28:A:1486:U:C6	2.54	0.42
28:A:1631:G:N2	28:A:1634:A:OP2	2.52	0.42
28:A:2223:G:H2'	28:A:2224:G:C5'	2.50	0.42
28:A:108:G:H2'	28:A:109:C:O4'	2.20	0.42
28:A:1173:U:H3	28:A:1174:U:H1'	1.82	0.42
28:A:1177:G:H2'	28:A:1178:C:C4'	2.49	0.42
28:A:1379:U:H5''	28:A:1380:G:OP2	2.19	0.42
28:A:1411:U:O2'	28:A:1412:U:H5'	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:1431:A:O2'	28:A:1432:G:H5'	2.20	0.42
28:A:825:A:C2	28:A:833:A:C2	3.07	0.42
29:B:32:U:H2'	29:B:33:G:H8	1.83	0.42
31:D:121:THR:O	31:D:122:VAL:CB	2.67	0.42
28:A:574:A:H2	31:D:150:GLN:NE2	2.17	0.42
44:Q:88:GLU:HA	45:R:49:ILE:HD11	2.00	0.42
27:5:82:ALA:O	27:5:85:GLU:HB2	2.18	0.42
28:A:1669:A:C8	38:K:5:GLN:HG3	2.55	0.42
29:B:21:G:O2'	29:B:22:U:H5'	2.19	0.42
23:1:4:ILE:CG2	23:1:5:ARG:H	2.32	0.42
28:A:119:A:O2'	28:A:120:U:OP2	2.31	0.42
29:B:76:G:OP1	49:V:12:GLN:HB2	2.19	0.42
28:A:1530:G:H2'	28:A:1530:G:N3	2.34	0.42
44:Q:97:ILE:CD1	44:Q:105:PHE:HD1	2.32	0.42
47:T:61:LEU:HD12	47:T:61:LEU:C	2.39	0.42
28:A:377:G:O2'	28:A:378:C:H5'	2.20	0.42
28:A:1877:A:O2'	28:A:1878:G:H5'	2.20	0.42
28:A:2899:A:H5'	37:J:136:GLN:NE2	2.33	0.42
28:A:1173:U:H2'	28:A:1174:U:H4'	2.02	0.42
28:A:1384:A:O2'	28:A:1404:C:O2	2.38	0.42
28:A:273:G:H2'	28:A:274:C:O4'	2.20	0.42
28:A:524:G:C2	28:A:525:U:C2	3.08	0.42
28:A:638:G:H2'	28:A:639:U:C6	2.53	0.42
28:A:885:C:O2'	28:A:886:A:H5'	2.20	0.42
32:E:172:ALA:HB3	32:E:195:GLN:OE1	2.20	0.42
33:F:149:ARG:CG	33:F:150:GLY:H	2.32	0.42
35:H:115:VAL:HG21	35:H:138:VAL:O	2.20	0.42
37:J:80:HIS:HB3	37:J:81:ILE:H	1.55	0.42
28:A:833:A:P	39:L:39:LYS:NZ	2.93	0.42
45:R:14:VAL:HG11	45:R:98:ILE:HG13	2.01	0.42
28:A:2129:C:O2'	28:A:2130:U:O3'	2.25	0.42
28:A:2142:A:O2'	28:A:2143:C:H5'	2.18	0.42
38:K:10:VAL:HG11	38:K:16:ALA:CB	2.49	0.42
34:G:130:ILE:HG22	34:G:131:VAL:N	2.33	0.42
34:G:16:VAL:O	34:G:16:VAL:HG22	2.19	0.42
43:P:26:GLU:H	43:P:83:ILE:CD1	2.33	0.42
23:1:10:LEU:CD2	23:1:33:LEU:HD22	2.50	0.42
33:F:35:LEU:HD23	33:F:153:ILE:HG22	1.98	0.42
28:A:730:A:C2'	28:A:731:C:H5'	2.49	0.42
33:F:121:PHE:CZ	33:F:166:ARG:HG2	2.55	0.42
52:Y:41:HIS:O	52:Y:44:LYS:HB3	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:C:246:PRO:HG2	30:C:247:TRP:CE3	2.54	0.42
28:A:920:A:O2'	28:A:921:C:H5'	2.18	0.42
28:A:2591:C:OP1	30:C:237:ARG:HG3	2.19	0.42
22:O:42:ILE:HD11	41:N:98:LEU:CB	2.27	0.42
28:A:84:A:N6	28:A:101:A:H2	2.16	0.42
28:A:1514:G:H5''	28:A:1515:A:OP1	2.19	0.42
28:A:358:U:H2'	28:A:359:G:O4'	2.20	0.42
28:A:464:U:N3	28:A:466:A:H5''	10.74	0.42
29:B:72:G:O2'	29:B:73:A:O4'	2.32	0.42
29:B:9:G:N2	29:B:10:G:H1'	2.34	0.42
32:E:149:ILE:HG13	32:E:149:ILE:O	2.20	0.42
45:R:58:VAL:HG22	45:R:59:ILE:N	2.35	0.42
48:U:48:VAL:HG23	48:U:48:VAL:O	2.18	0.42
27:5:60:ARG:HD3	27:5:164:ARG:CG	2.49	0.42
27:5:38:PHE:CE1	27:5:217:THR:HG22	2.54	0.42
58:9:44:G:N3	58:9:44:G:H2'	2.34	0.42
27:5:134:ARG:CD	28:A:2125:G:H1	2.33	0.42
28:A:2152:G:N3	28:A:2152:G:H2'	2.34	0.42
47:T:69:ARG:CG	47:T:69:ARG:HH11	2.32	0.42
43:P:50:ARG:CG	43:P:51:ASN:N	2.82	0.42
34:G:40:VAL:HG12	34:G:41:GLU:N	2.34	0.42
49:V:40:ILE:HG22	49:V:41:GLU:N	2.33	0.42
28:A:597:G:C2	28:A:661:A:C2	3.07	0.42
28:A:1297:C:OP1	28:A:2710:C:H4'	2.20	0.42
54:6:74:C:O5'	54:6:74:C:H6	2.03	0.42
28:A:2713:U:C3'	28:A:2714:G:C5'	2.96	0.42
34:G:146:ASP:O	34:G:149:ALA:HB3	2.20	0.42
32:E:126:VAL:HG22	32:E:128:ALA:H	1.83	0.42
28:A:2591:C:O5'	28:A:2591:C:H6	2.02	0.42
28:A:9:G:H21	28:A:10:A:H1'	6.49	0.42
48:U:51:LEU:O	48:U:52:ASN:HB2	2.20	0.42
46:S:14:ALA:O	46:S:18:ARG:HG3	2.19	0.42
28:A:1216:G:H5''	44:Q:10:ARG:CZ	2.49	0.42
28:A:1418:G:N2	28:A:1579:A:N7	2.68	0.42
25:3:11:LYS:NZ	28:A:249:C:O2	2.52	0.42
28:A:499:U:H2'	28:A:500:G:H5'	2.01	0.42
28:A:68:G:H2'	28:A:69:C:O4'	2.19	0.42
28:A:895:U:H2'	28:A:897:C:N1	2.33	0.42
30:C:123:ILE:HG22	30:C:191:LEU:HD21	2.02	0.42
28:A:1655:A:H5'	31:D:118:PHE:CD1	2.54	0.42
31:D:120:GLY:HA2	31:D:162:ALA:HB1	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:E:111:GLU:OE2	32:E:115:GLN:NE2	2.53	0.42
33:F:71:LYS:O	33:F:73:VAL:HG13	2.20	0.42
27:5:84:ALA:O	27:5:87:ALA:HB3	2.20	0.42
27:5:133:PRO:HD3	28:A:2119:A:C2	2.55	0.42
27:5:215:SER:HB2	28:A:2175:C:C2'	2.49	0.42
58:9:20:U:H3'	58:9:21:A:H5''	2.02	0.42
28:A:2146:C:H4'	28:A:2148:G:C5	2.54	0.42
28:A:2134:A:H2'	28:A:2160:C:C5'	2.50	0.42
43:P:62:LYS:HE2	43:P:64:SER:CB	2.39	0.42
26:4:23:ILE:HD13	28:A:1032:A:H1'	2.02	0.42
50:W:30:VAL:HG13	50:W:30:VAL:O	2.20	0.42
28:A:2557:G:H2'	28:A:2558:C:C5	2.51	0.42
28:A:2588:G:C3'	28:A:2589:A:H5'	2.49	0.42
28:A:2734:A:H2'	28:A:2735:G:C5'	2.49	0.42
28:A:869:G:C2'	28:A:870:U:H5'	2.50	0.42
28:A:978:G:H2'	28:A:979:A:H5'	2.01	0.42
28:A:748:G:O6	28:A:751:A:H5'	2.19	0.42
28:A:2778:A:H4'	28:A:2779:U:OP2	2.19	0.42
28:A:691:C:O5'	28:A:691:C:H6	2.02	0.42
52:Y:37:LEU:HD21	52:Y:40:SER:HA	2.01	0.42
28:A:1272:A:H3'	28:A:1273:U:H5''	2.01	0.42
28:A:998:C:H2'	28:A:999:U:O5'	2.19	0.42
30:C:63:ILE:O	30:C:64:VAL:HB	2.18	0.42
36:I:93:ASN:OD1	36:I:136:GLY:HA3	2.19	0.42
36:I:9:LYS:HA	36:I:57:VAL:HA	2.02	0.42
40:M:4:PRO:HG3	40:M:68:PHE:HE2	1.85	0.42
42:O:36:TYR:HD1	42:O:52:SER:HB2	1.85	0.42
42:O:74:VAL:O	42:O:78:VAL:HG13	2.19	0.42
48:U:20:LYS:HD2	48:U:20:LYS:HA	4.52	0.42
58:9:50:U:H2'	58:9:51:U:O4'	2.19	0.42
58:9:68:C:H2'	58:9:69:G:O4'	2.20	0.42
27:5:4:LEU:HD13	28:A:2107:G:P	2.60	0.42
34:G:98:LYS:CB	34:G:103:ASN:HD21	2.32	0.42
28:A:28:A:O2'	28:A:29:U:H5'	2.19	0.42
28:A:29:U:H6	28:A:29:U:O5'	2.03	0.42
55:7:24:A:O2'	55:7:25:G:H5'	2.19	0.42
50:W:18:LYS:H	50:W:35:ILE:CG2	2.28	0.42
28:A:859:G:O2'	28:A:860:U:OP2	2.32	0.42
28:A:521:U:O5'	28:A:521:U:H6	2.03	0.42
28:A:2317:A:O2'	28:A:2318:G:H5'	2.20	0.42
28:A:1559:U:C3'	28:A:1560:G:H5'	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:2456:C:H2'	28:A:2457:U:H5'	2.02	0.42
28:A:960:A:H5''	28:A:961:C:P	2.60	0.42
28:A:1010:A:H5''	44:Q:65:ASN:ND2	2.35	0.42
28:A:2428:G:H21	39:L:60:ARG:HH21	1.66	0.42
28:A:633:A:H1'	28:A:2403:C:O3'	2.19	0.42
28:A:641:U:H5''	28:A:642:U:OP2	2.20	0.42
31:D:49:GLN:HE22	31:D:79:LEU:HD13	1.82	0.42
32:E:1:MET:HG2	32:E:16:GLU:HA	2.01	0.42
33:F:134:GLN:OE1	33:F:134:GLN:N	2.41	0.42
36:I:27:LEU:HD22	36:I:32:VAL:CG2	2.50	0.42
28:A:873:C:H4'	40:M:64:TRP:CD1	2.55	0.42
42:O:79:ALA:CB	42:O:113:ALA:HB3	2.47	0.42
45:R:64:VAL:O	45:R:65:ALA:HB3	2.19	0.42
37:J:110:PRO:O	37:J:115:GLY:HA3	2.19	0.42
27:5:139:ASN:HB2	27:5:164:ARG:CD	2.48	0.42
27:5:65:LEU:HB3	27:5:66:PRO:HD2	2.02	0.42
27:5:67:HIS:O	27:5:159:GLY:HA3	2.19	0.42
30:C:51:ARG:HG2	30:C:52:HIS:CD2	2.55	0.42
26:4:3:VAL:O	26:4:4:ARG:HB3	2.19	0.42
49:V:41:GLU:O	49:V:41:GLU:HG3	2.19	0.42
41:N:75:ILE:HG13	41:N:76:VAL:N	2.35	0.42
50:W:9:THR:O	50:W:10:ARG:HB2	2.19	0.42
23:1:29:LYS:HA	23:1:30:PRO:HD2	1.64	0.42
28:A:1559:U:H3'	28:A:1560:G:H5'	2.02	0.42
28:A:2776:A:H4'	28:A:2777:G:O5'	2.20	0.42
28:A:1574:C:H2'	28:A:1575:C:H5'	2.01	0.42
28:A:2053:G:N2	28:A:2617:U:H1'	2.35	0.42
28:A:2257:U:O5'	28:A:2257:U:H6	2.03	0.42
37:J:114:LEU:O	37:J:114:LEU:HD23	2.20	0.42
41:N:38:LEU:HD13	41:N:99:LYS:HG2	2.02	0.41
28:A:896:A:N7	54:6:56:C:C5	2.88	0.41
28:A:100:U:H4'	28:A:101:A:O4'	2.19	0.41
28:A:1091:G:O2'	28:A:1092:C:H5'	2.20	0.41
28:A:1419:A:N6	28:A:1421:G:C4	2.88	0.41
28:A:2570:G:C2'	28:A:2571:U:H5'	2.50	0.41
28:A:2819:G:C6	28:A:2821:A:N3	2.88	0.41
28:A:632:A:H4'	39:L:66:PHE:CE2	2.55	0.41
33:F:3:LEU:O	33:F:6:TYR:HB3	2.20	0.41
45:R:52:PRO:O	45:R:53:PHE:CB	2.68	0.41
48:U:35:VAL:O	48:U:38:ILE:HG22	2.20	0.41
27:5:4:LEU:HD12	28:A:2107:G:C5'	2.49	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:9:7:A:H61	58:9:66:U:H3	1.67	0.41
28:A:2164:C:H6	28:A:2172:U:C5	2.38	0.41
47:T:74:ILE:HG23	47:T:74:ILE:O	2.20	0.41
26:4:2:LYS:HE2	28:A:2477:U:H2'	2.01	0.41
28:A:1584:U:O2	28:A:1585:C:H4'	2.20	0.41
46:S:84:ARG:HG3	46:S:98:LYS:HE2	2.02	0.41
28:A:2889:C:N4	28:A:2890:G:C6	2.88	0.41
28:A:1484:U:O2'	28:A:1485:U:H5'	2.19	0.41
28:A:1915:U:H2'	28:A:1916:A:O4'	2.20	0.41
28:A:1088:A:H4'	28:A:1089:A:H8	1.84	0.41
28:A:89:A:H2'	28:A:90:U:C6	2.55	0.41
30:C:166:ARG:O	30:C:166:ARG:HG3	2.20	0.41
31:D:4:LEU:CD1	31:D:100:LEU:HD23	2.50	0.41
35:H:89:LYS:HD3	35:H:125:THR:OG1	2.20	0.41
28:A:1081:U:H5'	36:I:126:ARG:NH2	2.34	0.41
44:Q:60:TRP:O	44:Q:64:ILE:HG13	2.20	0.41
27:5:19:LYS:HD2	27:5:20:GLN:H	1.84	0.41
38:K:4:GLU:O	38:K:5:GLN:HB2	2.20	0.41
43:P:50:ARG:CB	43:P:57:ALA:N	2.82	0.41
28:A:2298:A:O2'	28:A:2299:U:H5'	2.20	0.41
40:M:41:LEU:HD13	40:M:96:ILE:HG12	2.02	0.41
35:H:72:ILE:HG12	35:H:130:VAL:HG21	2.01	0.41
28:A:987:C:C2'	28:A:988:A:H5'	2.43	0.41
29:B:2:G:N1	29:B:119:A:N3	2.67	0.41
28:A:2713:U:H3'	28:A:2714:G:H5''	1.99	0.41
28:A:1551:A:H2'	28:A:1552:A:O4'	2.20	0.41
54:6:70:G:H2'	54:6:71:G:H5'	2.01	0.41
28:A:2721:A:H2'	28:A:2722:G:O4'	2.20	0.41
28:A:1604:C:O2'	28:A:1610:A:N1	2.40	0.41
34:G:110:HIS:HA	34:G:111:PRO:HD3	1.91	0.41
28:A:1062:G:C2	28:A:1063:G:C8	3.08	0.41
28:A:1347:A:C2'	28:A:1348:C:H5'	2.50	0.41
28:A:1410:G:H2'	28:A:1411:U:C6	2.55	0.41
28:A:334:C:H2'	28:A:335:C:H6	5.85	0.41
28:A:375:G:C2'	28:A:376:G:H5'	2.50	0.41
28:A:874:G:C2	28:A:904:G:C2	3.08	0.41
35:H:70:GLU:HG2	35:H:74:ALA:CB	2.41	0.41
35:H:78:VAL:HG23	35:H:146:VAL:CG1	2.43	0.41
35:H:93:SER:O	35:H:114:GLU:HA	2.21	0.41
40:M:2:LEU:HD23	40:M:46:ILE:CD1	2.50	0.41
51:X:17:ARG:CZ	51:X:23:ALA:HB2	2.50	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:9:21:A:C6	58:9:46:G:C2	3.08	0.41
38:K:77:ILE:HG21	38:K:79:PHE:CZ	2.55	0.41
30:C:93:VAL:CG2	30:C:103:ILE:HG22	2.50	0.41
58:9:28:G:H3'	58:9:29:G:H8	1.84	0.41
28:A:2297:A:C2	28:A:2298:A:C8	3.09	0.41
23:1:7:LYS:CA	23:1:23:THR:HG22	2.45	0.41
50:W:9:THR:OG1	50:W:10:ARG:N	2.49	0.41
28:A:1413:A:H2'	28:A:1414:C:C5'	2.46	0.41
49:V:21:ARG:HH21	49:V:87:GLN:C	2.23	0.41
34:G:114:HIS:HB2	34:G:150:TYR:HE2	1.86	0.41
28:A:1528:A:H2'	28:A:1529:G:C5'	2.48	0.41
28:A:1810:A:O5'	28:A:1810:A:H8	2.03	0.41
25:3:34:LYS:NZ	28:A:2390:U:O5'	2.53	0.41
54:6:51:U:H3	54:6:63:G:H1	1.68	0.41
22:0:49:ARG:NH1	28:A:2883:A:OP2	2.53	0.41
45:R:1:MET:CE	45:R:43:ASN:HD21	2.33	0.41
23:1:12:SER:HA	23:1:48:TYR:CD1	2.55	0.41
28:A:1916:A:H2'	28:A:1917:U:O4'	2.19	0.41
44:Q:101:ASP:OD1	44:Q:103:VAL:HG22	2.20	0.41
28:A:2010:G:O2'	28:A:2011:U:H5'	2.20	0.41
28:A:575:A:OP2	28:A:2055:C:N4	2.52	0.41
28:A:1009:A:O5'	28:A:1009:A:H8	2.03	0.41
28:A:190:A:C4	28:A:207:A:C2	3.09	0.41
28:A:209:C:C2'	28:A:210:C:H5'	2.50	0.41
28:A:637:A:OP1	39:L:130:GLY:HA3	2.21	0.41
31:D:14:ILE:CD1	31:D:178:VAL:HG11	2.47	0.41
31:D:20:VAL:HG12	31:D:21:SER:N	2.36	0.41
35:H:54:LEU:CD1	35:H:57:LYS:HZ3	2.33	0.41
36:I:4:VAL:HG11	36:I:59:THR:HA	2.02	0.41
40:M:108:VAL:CG1	40:M:109:PRO:HD2	2.49	0.41
40:M:22:GLN:O	40:M:24:THR:N	2.52	0.41
28:A:2183:A:C2	28:A:2184:A:C8	3.08	0.41
47:T:28:ASN:HA	47:T:91:GLN:HE22	1.85	0.41
28:A:708:G:H2'	28:A:709:U:H6	1.86	0.41
34:G:132:LEU:HD12	34:G:140:ILE:HD11	2.02	0.41
28:A:1533:C:C2'	28:A:1534:U:H6	2.33	0.41
52:Y:9:LYS:HB3	52:Y:12:GLU:CB	2.50	0.41
33:F:55:ASP:O	33:F:58:ALA:HB3	2.21	0.41
53:Z:23:LEU:CD2	53:Z:53:MET:HE1	2.49	0.41
28:A:858:G:O6	28:A:869:G:H3'	33.26	0.41
56:8:54:U:O5'	56:8:54:U:H6	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:2276:G:O2'	28:A:2277:G:H5'	2.21	0.41
28:A:2030:A:N3	28:A:2499:C:H5''	2.34	0.41
28:A:56:A:O2'	28:A:57:C:H5'	2.20	0.41
28:A:1789:A:OP1	30:C:220:ARG:HG2	2.20	0.41
28:A:1661:G:C2'	28:A:1662:U:H5'	2.51	0.41
28:A:397:U:H6	28:A:397:U:O5'	2.04	0.41
28:A:1060:U:C2	28:A:1062:G:H5'	2.56	0.41
28:A:1178:C:N3	28:A:1179:G:C5	2.89	0.41
28:A:181:A:H2'	28:A:182:A:C8	2.55	0.41
28:A:368:A:H8	28:A:368:A:O5'	2.04	0.41
28:A:368:A:C2'	28:A:369:U:H5'	2.50	0.41
28:A:671:C:O2'	28:A:672:C:H5'	2.20	0.41
33:F:49:LEU:HD22	33:F:83:PRO:O	2.20	0.41
35:H:115:VAL:O	35:H:116:ARG:HB3	2.20	0.41
37:J:132:HIS:O	37:J:135:GLN:HG2	2.20	0.41
42:O:27:VAL:HG13	42:O:95:SER:OG	2.20	0.41
58:9:10:G:N2	58:9:26:A:H1'	2.36	0.41
47:T:87:LEU:HD23	47:T:87:LEU:HA	1.86	0.41
28:A:139:U:HO2'	28:A:140:C:P	2.40	0.41
28:A:28:A:H2'	28:A:29:U:H5'	2.02	0.41
56:8:1:C:N4	56:8:72:A:H61	2.16	0.41
30:C:108:GLY:C	30:C:109:LEU:HG	2.41	0.41
28:A:1045:C:O2	28:A:1047:G:N1	2.53	0.41
28:A:1863:G:H4'	28:A:2411:A:H4'	2.02	0.41
28:A:2287:A:N6	28:A:2344:U:H3	2.18	0.41
34:G:175:LYS:HA	34:G:176:LYS:HA	1.52	0.41
28:A:1731:G:N3	28:A:1733:G:H1'	2.35	0.41
28:A:2898:U:O5'	28:A:2898:U:H6	2.04	0.41
52:Y:7:ARG:HG3	52:Y:7:ARG:O	2.21	0.41
28:A:1147:A:O2'	28:A:1148:U:H5'	2.20	0.41
28:A:1418:G:O2'	28:A:1580:A:N6	2.54	0.41
28:A:275:C:H3'	28:A:276:U:H5''	2.03	0.41
29:B:55:U:H2'	29:B:56:G:H8	1.84	0.41
30:C:134:ILE:HG23	30:C:135:PRO:HD2	2.02	0.41
32:E:147:LEU:CD2	32:E:149:ILE:CG2	2.98	0.41
35:H:103:VAL:HG11	35:H:110:VAL:HG12	2.02	0.41
42:O:83:LEU:C	42:O:86:GLY:H	2.24	0.41
37:J:111:LYS:HG3	37:J:112:GLY:H	1.86	0.41
27:5:164:ARG:HG2	27:5:165:ASN:O	2.21	0.41
27:5:207:VAL:HB	27:5:210:LYS:NZ	2.35	0.41
28:A:2683:C:N3	28:A:2727:A:O2'	2.47	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:P:62:LYS:O	43:P:63:ILE:HB	2.20	0.41
28:A:1299:G:H5''	28:A:1300:G:OP1	2.20	0.41
43:P:27:VAL:HG23	43:P:83:ILE:HD13	2.02	0.41
45:R:68:ARG:HD2	45:R:90:ARG:NE	2.31	0.41
32:E:164:LEU:N	32:E:164:LEU:HD12	2.36	0.41
28:A:2318:G:H8	28:A:2318:G:O5'	2.04	0.41
28:A:941:A:H2'	28:A:942:G:O4'	2.20	0.41
28:A:657:U:N3	28:A:749:A:N1	88.59	0.41
28:A:2862:G:C2	28:A:2863:C:C2	3.08	0.41
28:A:1684:G:C2	28:A:1705:A:C2	3.08	0.41
45:R:1:MET:HA	45:R:43:ASN:OD1	2.20	0.41
46:S:42:LYS:O	46:S:45:VAL:HG12	2.20	0.41
28:A:1256:G:N3	32:E:77:ILE:HG23	2.35	0.41
28:A:80:G:H2'	28:A:81:G:H5'	2.03	0.41
28:A:900:A:O5'	28:A:900:A:H8	2.55	0.41
33:F:79:ARG:HG3	33:F:80:GLN:N	2.36	0.41
35:H:97:ARG:O	35:H:112:LYS:HD3	2.20	0.41
35:H:15:LEU:O	35:H:15:LEU:HG	2.19	0.41
35:H:61:VAL:HG12	35:H:61:VAL:O	2.21	0.41
36:I:116:MET:HB3	36:I:124:MET:HE3	2.02	0.41
36:I:100:ILE:HG22	36:I:139:VAL:HG23	2.02	0.41
36:I:20:SER:HA	36:I:23:VAL:O	2.20	0.41
39:L:95:LEU:O	39:L:100:ILE:HG13	2.21	0.41
44:Q:94:LEU:C	44:Q:96:ASP:N	2.71	0.41
45:R:61:ALA:CB	45:R:98:ILE:HA	2.50	0.41
51:X:70:LEU:HB3	51:X:75:GLU:HB3	2.03	0.41
28:A:26:G:C6	28:A:27:G:N1	2.89	0.41
37:J:110:PRO:C	37:J:111:LYS:HG2	2.41	0.41
27:5:10:VAL:O	27:5:13:GLU:HB3	2.21	0.41
27:5:207:VAL:CG2	27:5:210:LYS:HZ3	2.34	0.41
27:5:226:GLN:NE2	27:5:229:LEU:HD12	2.35	0.41
28:A:141:G:HO2'	28:A:142:A:C5'	2.31	0.41
28:A:855:G:N3	50:W:23:LYS:CE	2.83	0.41
28:A:2480:C:C2'	28:A:2481:G:H5'	2.47	0.41
28:A:428:A:O2'	28:A:429:A:H5'	2.20	0.41
33:F:109:ARG:HD3	33:F:136:ILE:C	2.40	0.41
56:8:53:G:H2'	56:8:54:U:C5	2.55	0.41
28:A:851:C:O2'	53:Z:42:ALA:O	2.39	0.41
28:A:2776:A:N1	28:A:2782:G:H1'	2.35	0.41
47:T:13:ALA:HB1	52:Y:33:ALA:CB	2.51	0.41
30:C:258:SER:O	30:C:258:SER:OG	2.38	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:N:96:ARG:CZ	41:N:116:VAL:HG23	2.50	0.41
28:A:155:A:C2	28:A:156:A:C4	3.08	0.41
28:A:2516:A:C5	28:A:2517:C:C4	3.09	0.41
28:A:399:U:H3'	51:X:56:ARG:HH12	1.86	0.41
28:A:674:G:H1'	32:E:69:ARG:HH11	1.86	0.41
31:D:115:GLY:O	31:D:116:LYS:HG2	2.21	0.41
32:E:58:LYS:HE2	32:E:62:GLN:CA	2.49	0.41
35:H:124:THR:O	35:H:125:THR:CB	2.68	0.41
35:H:59:ALA:HA	35:H:62:LEU:CB	2.50	0.41
28:A:1080:A:O2'	36:I:127:SER:N	2.54	0.41
48:U:35:VAL:CG1	48:U:38:ILE:HB	2.51	0.41
27:5:73:VAL:HG21	27:5:157:LYS:HA	2.03	0.41
27:5:37:LYS:HB3	28:A:2128:G:C4'	2.50	0.41
27:5:37:LYS:HB3	28:A:2128:G:H4'	2.03	0.41
34:G:40:VAL:CG2	34:G:64:ALA:HA	2.50	0.41
50:W:51:GLY:HA3	50:W:58:LEU:HA	2.03	0.41
27:5:189:LEU:O	27:5:192:LEU:HB3	2.20	0.41
40:M:71:LYS:HA	40:M:72:PRO:HD3	1.55	0.41
40:M:71:LYS:HD3	40:M:95:LEU:HD13	2.01	0.41
28:A:853:C:C4	28:A:854:C:C5	3.09	0.41
50:W:24:ARG:HE	50:W:65:LYS:HE2	1.85	0.41
28:A:2097:A:H2'	28:A:2098:U:N1	2.36	0.41
56:8:69:C:C2'	56:8:70:G:H5'	2.51	0.41
24:2:19:ARG:HH21	24:2:19:ARG:HG3	1.86	0.41
28:A:1845:G:H2'	28:A:1846:G:O4'	2.21	0.41
51:X:62:GLY:O	51:X:66:VAL:HG23	2.21	0.41
46:S:104:THR:HG22	46:S:105:VAL:N	2.36	0.41
28:A:2785:C:O5'	28:A:2785:C:H6	2.04	0.41
28:A:249:C:H5'	28:A:2394:C:O2'	2.20	0.41
28:A:2059:A:N7	28:A:2503:A:N3	2.68	0.41
35:H:118:PRO:HB3	35:H:122:LEU:HD23	2.01	0.41
35:H:31:VAL:HG13	35:H:36:ALA:O	2.21	0.41
35:H:75:LEU:HD23	35:H:103:VAL:CG1	2.46	0.41
36:I:14:ALA:HB1	36:I:48:ILE:HD12	2.03	0.41
28:A:2428:G:H5''	28:A:2429:G:P	2.61	0.41
28:A:317:G:H1	28:A:334:C:H42	1.67	0.41
28:A:80:G:O2'	28:A:81:G:H5'	2.21	0.41
29:B:35:C:C2	29:B:36:C:H1'	2.56	0.41
30:C:123:ILE:HG23	30:C:191:LEU:HD22	2.02	0.41
31:D:110:THR:CB	31:D:171:THR:HG22	2.51	0.41
31:D:62:LYS:N	31:D:63:PRO:CD	2.83	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:H:75:LEU:HD23	35:H:103:VAL:CG2	2.47	0.41
39:L:95:LEU:CD2	39:L:100:ILE:HD11	2.51	0.41
28:A:2386:A:N3	50:W:38:ARG:HG2	2.34	0.41
27:5:37:LYS:HG3	27:5:38:PHE:CE2	2.54	0.41
28:A:2167:U:H2'	28:A:2168:G:C4'	2.50	0.41
28:A:2183:A:H2'	28:A:2184:A:H5'	2.02	0.41
28:A:2146:C:H5''	28:A:2147:A:H2	1.82	0.41
50:W:17:ALA:HA	50:W:35:ILE:CG2	2.49	0.41
50:W:23:LYS:CG	50:W:24:ARG:N	2.81	0.41
56:8:67:C:H2'	56:8:68:C:C5'	2.43	0.41
28:A:528:A:H2	28:A:2043:C:H5'	1.86	0.41
56:8:52:G:HO2'	56:8:53:G:P	2.42	0.41
28:A:1869:G:N2	28:A:1871:A:HO2'	2.19	0.41
24:2:34:ARG:NH2	24:2:39:ARG:HD2	2.35	0.41
28:A:1967:C:H2'	28:A:1968:G:H5'	2.02	0.41
33:F:156:THR:HG22	33:F:157:THR:N	2.35	0.41
41:N:100:CYS:SG	41:N:101:GLY:N	2.94	0.41
28:A:565:C:O5'	28:A:565:C:H6	2.04	0.41
25:3:1:PRO:HD2	28:A:667:U:O2	2.20	0.41
28:A:1750:G:H2'	28:A:1751:U:H6	1.86	0.41
28:A:1425:G:O2'	28:A:1426:G:H5'	2.21	0.41
56:8:42:G:O2'	56:8:43:A:H5'	2.21	0.41
54:6:3:C:H2'	54:6:4:C:C6	2.55	0.41
30:C:231:HIS:NE2	30:C:243:PRO:HA	2.36	0.41
27:5:95:VAL:HG12	27:5:96:GLY:N	2.36	0.41
41:N:12:ARG:O	41:N:17:ARG:NH2	2.54	0.41
28:A:1905:C:O2'	28:A:1906:G:OP2	2.23	0.41
32:E:200:LEU:N	32:E:200:LEU:HD12	2.36	0.41
28:A:1671:U:H6	28:A:1671:U:O5'	2.03	0.41
28:A:2250:G:OP1	28:A:2275:C:O2'	2.29	0.41
41:N:28:LEU:HD23	41:N:48:VAL:HG21	2.03	0.41
46:S:29:VAL:O	46:S:33:LEU:HD13	2.20	0.41
46:S:59:GLU:HG2	46:S:64:ALA:HB1	2.03	0.41
28:A:100:U:O2	28:A:101:A:N6	2.54	0.41
28:A:1054:A:H61	28:A:1105:U:H3	1.69	0.41
28:A:1149:G:O2'	28:A:1150:C:H5'	2.21	0.41
28:A:301:G:O2'	28:A:302:C:OP2	2.23	0.41
28:A:322:A:H5'	28:A:340:A:H1'	2.02	0.41
28:A:385:C:H6	28:A:385:C:O5'	2.91	0.41
28:A:880:G:O2'	28:A:880:G:N3	2.54	0.41
31:D:118:PHE:CD1	31:D:119:ALA:N	2.89	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:E:109:LEU:O	32:E:113:VAL:HG12	2.20	0.41
35:H:97:ARG:HB2	35:H:114:GLU:OE1	2.21	0.41
36:I:102:ARG:HB3	36:I:141:ASP:CA	2.41	0.41
36:I:79:LEU:CD2	36:I:105:LEU:HD23	2.50	0.41
42:O:24:THR:HG22	42:O:42:PRO:HG3	2.03	0.41
29:B:112:G:N2	42:O:45:SER:O	2.54	0.41
45:R:4:VAL:O	45:R:38:VAL:HG23	2.21	0.41
28:A:2162:G:N7	28:A:2173:A:O2'	2.52	0.41
34:G:16:VAL:HG21	34:G:44:HIS:CE1	2.56	0.41
28:A:720:U:H2'	28:A:721:A:C8	2.56	0.41
28:A:490:C:O2'	28:A:491:G:O5'	3.93	0.41
43:P:112:ARG:O	43:P:113:LEU:HG	2.21	0.41
28:A:1212:G:N3	28:A:1236:G:C2	2.89	0.41
54:6:18:G:H1'	54:6:57:G:N2	2.36	0.41
28:A:2287:A:HO2'	28:A:2288:A:H2'	1.86	0.41
28:A:1324:G:O2'	28:A:1325:U:H5'	2.20	0.41
42:O:18:LEU:HD12	42:O:18:LEU:N	2.35	0.41
28:A:1715:G:O2'	28:A:1716:U:OP2	2.39	0.41
28:A:1595:C:O2'	28:A:1596:A:H5'	2.20	0.41
49:V:16:ALA:O	49:V:20:LEU:HD13	2.22	0.40
55:7:20:U:H2'	55:7:21:C:O2	2.21	0.40
28:A:1021:A:N3	28:A:1021:A:H3'	2.36	0.40
28:A:107:G:H2'	28:A:108:G:H8	1.86	0.40
28:A:1523:U:H3'	28:A:1524:G:C5'	2.50	0.40
28:A:758:C:O2	28:A:1981:A:H2	2.03	0.40
28:A:356:G:C2'	28:A:357:C:H5'	2.51	0.40
28:A:825:A:H2'	28:A:826:U:O4'	2.20	0.40
30:C:77:VAL:HG23	30:C:112:GLY:H	1.86	0.40
35:H:133:GLN:HG3	35:H:133:GLN:O	2.20	0.40
45:R:54:VAL:HG23	45:R:57:GLY:H	1.86	0.40
28:A:2079:U:O2'	51:X:22:ASN:OD1	2.35	0.40
27:5:80:GLN:HA	27:5:84:ALA:HB2	2.03	0.40
27:5:214:ILE:CB	27:5:224:VAL:HG23	2.50	0.40
34:G:32:LEU:N	34:G:32:LEU:HD12	2.35	0.40
34:G:86:LEU:O	34:G:129:GLU:HG3	2.21	0.40
40:M:14:LYS:HE3	40:M:14:LYS:HB2	1.83	0.40
23:1:22:THR:OG1	23:1:23:THR:N	2.54	0.40
33:F:107:VAL:N	33:F:108:PRO:CD	2.84	0.40
28:A:2331:G:H4'	50:W:41:GLY:HA3	2.02	0.40
28:A:2391:G:O6	28:A:2425:A:H8	2.04	0.40
50:W:79:ILE:HG22	50:W:79:ILE:O	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:2533:U:C2'	28:A:2534:A:H5'	2.49	0.40
28:A:565:C:O2'	28:A:566:U:H5'	2.20	0.40
27:5:193:LEU:HD22	27:5:209:ILE:HG22	2.03	0.40
31:D:141:ARG:O	31:D:141:ARG:HG2	2.21	0.40
28:A:1175:A:OP1	28:A:1176:U:H1'	2.21	0.40
28:A:2575:C:H6	28:A:2575:C:O5'	2.03	0.40
28:A:548:G:O5'	28:A:549:G:H5'	2.22	0.40
28:A:58:G:N2	28:A:70:G:C4	2.90	0.40
28:A:878:A:H2'	28:A:879:G:H5'	2.03	0.40
35:H:41:LYS:HD3	35:H:44:ILE:CD1	2.51	0.40
35:H:64:ALA:O	35:H:71:LYS:HE3	2.20	0.40
36:I:88:GLY:HA2	36:I:135:MET:SD	2.61	0.40
39:L:123:ARG:NE	39:L:143:GLU:OE2	2.48	0.40
45:R:34:GLU:CG	45:R:60:LYS:HG2	2.48	0.40
27:5:23:ILE:CD1	27:5:227:ALA:HB2	2.49	0.40
28:A:2112:G:H4'	58:9:19:G:N9	2.36	0.40
27:5:129:GLN:HB3	28:A:2113:U:O4	2.21	0.40
34:G:24:THR:C	34:G:25:ILE:HG13	2.41	0.40
34:G:42:VAL:HG22	34:G:43:LYS:N	2.37	0.40
44:Q:43:GLN:NE2	45:R:77:PHE:HD2	2.19	0.40
26:4:36:ARG:O	26:4:37:GLN:HB3	2.21	0.40
40:M:53:MET:HE3	40:M:63:ILE:CG2	2.51	0.40
23:1:8:ILE:HG12	23:1:51:ALA:CB	2.51	0.40
28:A:2352:A:H2'	28:A:2353:G:H5'	2.03	0.40
32:E:131:THR:HB	32:E:164:LEU:HD11	2.03	0.40
54:6:74:C:H2'	54:6:75:C:O5'	2.21	0.40
22:0:4:GLN:NE2	28:A:2056:G:H4'	2.33	0.40
39:L:55:MET:HA	39:L:56:PRO:HD3	1.88	0.40
28:A:2351:G:C2'	28:A:2366:A:H61	2.32	0.40
28:A:1873:G:O2'	28:A:1874:C:H5'	2.22	0.40
28:A:2216:G:H2'	28:A:2217:G:C8	2.55	0.40
28:A:2655:G:O2'	28:A:2656:U:OP2	2.39	0.40
47:T:21:SER:O	47:T:24:MET:HB3	2.21	0.40
28:A:2307:G:H4'	28:A:2308:G:O4'	2.21	0.40
30:C:19:VAL:O	30:C:19:VAL:HG23	2.22	0.40
28:A:1231:U:O5'	28:A:1231:U:H6	2.04	0.40
41:N:20:MET:HE3	41:N:40:LYS:CE	2.51	0.40
28:A:1153:C:O2'	28:A:1154:G:H5'	2.22	0.40
28:A:159:G:O2'	28:A:161:A:N7	9.10	0.40
28:A:523:C:O2'	28:A:524:G:H5'	2.22	0.40
28:A:983:A:N6	28:A:984:A:C2	2.90	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:B:48:U:H2'	29:B:49:C:C6	2.56	0.40
31:D:11:MET:HE1	31:D:192:ALA:N	2.37	0.40
42:O:24:THR:HG23	42:O:42:PRO:HG3	2.03	0.40
27:5:107:GLY:CA	27:5:134:ARG:HH22	2.34	0.40
27:5:140:PRO:CG	28:A:2122:U:C5'	3.00	0.40
58:9:64:A:H2'	58:9:65:G:C8	2.56	0.40
47:T:51:PHE:O	47:T:52:GLU:HG2	2.21	0.40
30:C:52:HIS:O	30:C:53:ILE:HG13	2.20	0.40
30:C:225:ASN:HB3	30:C:226:PRO:HD2	2.03	0.40
33:F:47:LYS:O	33:F:50:ASP:HB2	2.21	0.40
28:A:1792:G:O2'	28:A:1793:C:H5'	2.21	0.40
28:A:1819:A:OP1	30:C:154:ALA:HA	2.20	0.40
41:N:84:GLY:N	41:N:85:PRO:HD2	2.37	0.40
39:L:110:VAL:O	39:L:111:ILE:HB	2.21	0.40
46:S:20:VAL:HG21	46:S:43:ALA:HB3	2.03	0.40
28:A:2053:G:H2'	28:A:2054:A:O5'	2.20	0.40
42:O:17:LYS:O	42:O:20:GLU:HB3	2.21	0.40
28:A:1371:G:HO2'	28:A:1372:U:C5'	2.34	0.40
28:A:1495:A:O2'	28:A:1496:A:H5'	2.21	0.40
31:D:169:ARG:C	31:D:170:VAL:HG12	2.42	0.40
35:H:14:SER:HB2	35:H:17:ASP:CG	2.41	0.40
36:I:72:THR:CG2	36:I:112:LYS:HZ1	2.34	0.40
36:I:60:VAL:HG12	36:I:61:TYR:N	2.36	0.40
36:I:72:THR:HG23	36:I:112:LYS:HZ2	1.86	0.40
45:R:23:GLU:O	45:R:25:LEU:HD13	2.21	0.40
51:X:58:ILE:HG23	51:X:63:ILE:HG12	2.01	0.40
58:9:4:C:H6	58:9:4:C:OP2	2.04	0.40
58:9:52:G:H1'	58:9:63:G:N2	2.35	0.40
27:5:11:ILE:HG12	28:A:2130:U:O4'	2.22	0.40
30:C:49:THR:CG2	30:C:50:THR:N	2.84	0.40
58:9:37:A:C3'	58:9:38:A:H8	2.34	0.40
26:4:22:VAL:HG22	26:4:23:ILE:N	2.37	0.40
40:M:133:LYS:O	40:M:134:THR:HB	2.22	0.40
28:A:717:C:H5'	28:A:718:A:OP2	2.21	0.40
50:W:22:VAL:O	50:W:23:LYS:HB3	2.21	0.40
41:N:59:SER:O	41:N:63:ARG:HG3	2.21	0.40
41:N:51:LEU:HD21	41:N:70:THR:HG23	2.03	0.40
28:A:1642:G:C2'	28:A:1643:G:H5'	2.51	0.40
29:B:21:G:H2'	29:B:22:U:C5'	2.50	0.40
28:A:2833:U:HO2'	28:A:2834:G:P	2.44	0.40
22:0:16:ARG:NE	28:A:1266:G:OP2	2.53	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:1501:G:C2'	28:A:1502:A:H5'	2.51	0.40
28:A:2223:G:H2'	28:A:2224:G:H5'	2.03	0.40
28:A:2856:A:O2'	28:A:2857:G:H5'	2.22	0.40
25:3:28:LEU:O	25:3:28:LEU:HG	2.21	0.40
41:N:26:GLY:O	41:N:29:VAL:HG12	2.22	0.40
22:0:9:ARG:HH22	44:Q:29:ARG:CD	2.34	0.40
28:A:1273:U:H4'	28:A:1275:A:OP1	2.21	0.40
28:A:2424:C:O2	28:A:2429:G:O2'	2.31	0.40
28:A:474:G:C2	28:A:475:C:H1'	12.43	0.40
28:A:883:G:H1	28:A:894:U:C1'	2.29	0.40
28:A:900:A:C2'	28:A:901:C:H5'	2.51	0.40
29:B:33:G:H2'	29:B:34:A:O4'	2.21	0.40
30:C:64:VAL:CG2	30:C:86:ARG:HH22	2.33	0.40
31:D:151:THR:HG22	31:D:152:PRO:HD3	1.94	0.40
36:I:4:VAL:HG21	36:I:7:TYR:CB	2.42	0.40
39:L:135:ILE:O	39:L:138:ALA:HB3	2.22	0.40
31:D:45:TYR:N	31:D:45:TYR:CD2	2.89	0.40
58:9:55:U:O2'	58:9:57:G:N7	2.51	0.40
28:A:2134:A:O2'	28:A:2160:C:H5'	2.22	0.40
38:K:71:ARG:NE	38:K:106:GLU:HG3	2.32	0.40
58:9:39:U:H3'	58:9:39:U:O2	2.22	0.40
33:F:116:LEU:HD22	33:F:174:PHE:CZ	2.57	0.40
50:W:57:THR:C	50:W:58:LEU:HD12	2.42	0.40
28:A:910:A:C4	40:M:13:HIS:CD2	3.10	0.40
41:N:72:ASP:CB	41:N:75:ILE:HG12	2.46	0.40
53:Z:23:LEU:HD12	53:Z:50:VAL:HG11	1.99	0.40
53:Z:50:VAL:HG23	53:Z:54:VAL:CG2	2.51	0.40
28:A:2480:C:OP1	28:A:2537:U:H5''	2.22	0.40
28:A:623:C:H6	28:A:623:C:O5'	2.32	0.40
44:Q:16:ILE:CD1	44:Q:31:TYR:CE1	3.04	0.40
28:A:2814:A:O5'	28:A:2814:A:H8	2.04	0.40
33:F:165:GLY:O	33:F:169:LEU:HD13	2.21	0.40
30:C:235:GLU:O	30:C:235:GLU:HG3	2.22	0.40
28:A:418:C:H2'	28:A:419:U:O4'	2.21	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles ⓘ

### 5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	c	204/233 (88%)	182 (89%)	16 (8%)	6 (3%)	6	36
3	d	203/206 (98%)	180 (89%)	16 (8%)	7 (3%)	5	31
4	e	148/167 (89%)	125 (84%)	19 (13%)	4 (3%)	6	39
5	f	100/135 (74%)	84 (84%)	9 (9%)	7 (7%)	1	10
6	g	149/179 (83%)	134 (90%)	11 (7%)	4 (3%)	6	39
7	h	127/130 (98%)	114 (90%)	11 (9%)	2 (2%)	12	54
8	i	125/130 (96%)	107 (86%)	14 (11%)	4 (3%)	5	33
9	j	96/103 (93%)	76 (79%)	11 (12%)	9 (9%)	1	5
10	k	115/129 (89%)	102 (89%)	9 (8%)	4 (4%)	4	31
11	l	121/124 (98%)	104 (86%)	12 (10%)	5 (4%)	3	27
12	m	112/118 (95%)	101 (90%)	6 (5%)	5 (4%)	3	24
13	n	98/101 (97%)	70 (71%)	15 (15%)	13 (13%)	0	1
14	o	86/89 (97%)	76 (88%)	9 (10%)	1 (1%)	16	60
15	p	80/82 (98%)	66 (82%)	8 (10%)	6 (8%)	1	9
16	q	78/84 (93%)	62 (80%)	14 (18%)	2 (3%)	7	40
17	r	53/75 (71%)	50 (94%)	2 (4%)	1 (2%)	10	50
18	s	77/92 (84%)	68 (88%)	5 (6%)	4 (5%)	2	19
19	t	83/87 (95%)	78 (94%)	3 (4%)	2 (2%)	7	43
20	u	49/71 (69%)	39 (80%)	7 (14%)	3 (6%)	2	15
21	b	216/241 (90%)	189 (88%)	20 (9%)	7 (3%)	5	33
22	0	54/57 (95%)	51 (94%)	2 (4%)	1 (2%)	10	50
23	1	48/55 (87%)	41 (85%)	6 (12%)	1 (2%)	9	46
24	2	44/46 (96%)	43 (98%)	0	1 (2%)	8	44
25	3	62/65 (95%)	55 (89%)	5 (8%)	2 (3%)	5	33
26	4	36/38 (95%)	25 (69%)	5 (14%)	6 (17%)	0	1

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
27	5	232/234 (99%)	190 (82%)	34 (15%)	8 (3%)	5	31
30	C	268/273 (98%)	228 (85%)	28 (10%)	12 (4%)	3	24
31	D	207/209 (99%)	169 (82%)	23 (11%)	15 (7%)	1	10
32	E	199/201 (99%)	171 (86%)	14 (7%)	14 (7%)	1	10
33	F	175/179 (98%)	146 (83%)	21 (12%)	8 (5%)	3	23
34	G	174/177 (98%)	140 (80%)	21 (12%)	13 (8%)	1	9
35	H	147/149 (99%)	114 (78%)	22 (15%)	11 (8%)	1	9
36	I	139/142 (98%)	119 (86%)	11 (8%)	9 (6%)	1	13
37	J	140/142 (99%)	121 (86%)	13 (9%)	6 (4%)	3	25
38	K	120/123 (98%)	100 (83%)	14 (12%)	6 (5%)	3	21
39	L	141/144 (98%)	115 (82%)	17 (12%)	9 (6%)	2	13
40	M	134/136 (98%)	112 (84%)	15 (11%)	7 (5%)	2	19
41	N	118/127 (93%)	104 (88%)	10 (8%)	4 (3%)	5	31
42	O	114/117 (97%)	104 (91%)	10 (9%)	0	100	100
43	P	112/115 (97%)	93 (83%)	13 (12%)	6 (5%)	2	19
44	Q	115/118 (98%)	109 (95%)	6 (5%)	0	100	100
45	R	101/103 (98%)	81 (80%)	15 (15%)	5 (5%)	3	21
46	S	108/110 (98%)	94 (87%)	11 (10%)	3 (3%)	6	37
47	T	91/100 (91%)	61 (67%)	18 (20%)	12 (13%)	0	1
48	U	100/104 (96%)	81 (81%)	11 (11%)	8 (8%)	1	7
49	V	92/94 (98%)	81 (88%)	9 (10%)	2 (2%)	8	45
50	W	77/85 (91%)	49 (64%)	17 (22%)	11 (14%)	0	1
51	X	75/78 (96%)	64 (85%)	7 (9%)	4 (5%)	2	19
52	Y	61/63 (97%)	50 (82%)	11 (18%)	0	100	100
53	Z	56/59 (95%)	51 (91%)	3 (5%)	2 (4%)	4	30
57	x	582/599 (97%)	496 (85%)	58 (10%)	28 (5%)	3	22
All	All	6442/6818 (94%)	5465 (85%)	667 (10%)	310 (5%)	5	22

All (310) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	d	125	VAL
5	f	98	GLU

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Mol	Chain	Res	Type
5	f	101	PRO
9	j	57	VAL
9	j	61	ALA
11	l	44	LYS
12	m	10	PRO
13	n	34	VAL
13	n	35	ASN
13	n	37	SER
13	n	41	ARG
13	n	42	TRP
13	n	49	GLN
13	n	52	PRO
16	q	50	ASN
20	u	9	ASN
20	u	38	TYR
20	u	40	LYS
21	b	150	ILE
21	b	163	ILE
27	5	38	PHE
30	C	59	GLN
30	C	64	VAL
30	C	204	LEU
31	D	11	MET
31	D	73	VAL
31	D	122	VAL
31	D	192	ALA
32	E	69	ARG
32	E	79	ARG
33	F	40	GLY
34	G	2	ARG
34	G	84	LYS
34	G	163	TYR
34	G	168	VAL
35	H	125	THR
36	I	56	VAL
37	J	44	TYR
37	J	45	THR
38	K	13	ASN
39	L	111	ILE
40	M	36	VAL
41	N	106	ASP
43	P	50	ARG

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Mol	Chain	Res	Type
46	S	19	LEU
46	S	96	ILE
47	T	72	GLN
48	U	92	VAL
49	V	65	VAL
50	W	29	SER
50	W	36	ILE
50	W	70	VAL
57	x	40	VAL
57	x	197	ASP
57	x	323	SER
57	x	350	ILE
57	x	351	ILE
57	x	378	SER
57	x	426	ARG
57	x	549	VAL
57	x	584	PRO
57	x	588	PHE
57	x	594	VAL
2	c	15	VAL
2	c	64	ILE
2	c	101	ILE
3	d	24	GLY
3	d	25	VAL
3	d	36	GLN
5	f	85	ILE
5	f	93	LYS
6	g	130	ASN
7	h	67	GLN
7	h	75	ILE
8	i	121	ALA
8	i	129	LYS
9	j	36	VAL
9	j	91	ASP
10	k	119	ASN
11	l	73	ASN
11	l	75	GLN
12	m	4	ILE
12	m	47	GLU
12	m	105	ASN
13	n	25	ALA
13	n	33	ASP

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Mol	Chain	Res	Type
13	n	47	LYS
13	n	53	ARG
13	n	92	GLU
15	p	43	ALA
16	q	15	ASP
18	s	28	LYS
19	t	4	ILE
21	b	19	THR
23	1	4	ILE
25	3	22	LYS
26	4	7	VAL
27	5	124	VAL
27	5	145	VAL
27	5	167	LYS
30	C	185	ALA
30	C	239	PHE
31	D	93	GLY
31	D	170	VAL
31	D	184	ARG
32	E	148	ILE
33	F	176	PHE
34	G	117	PRO
35	H	14	SER
35	H	27	ARG
35	H	75	LEU
35	H	103	VAL
35	H	115	VAL
35	H	137	GLU
36	I	6	ALA
36	I	20	SER
37	J	13	ARG
37	J	82	GLY
37	J	125	TYR
38	K	35	VAL
38	K	50	GLY
39	L	81	ASP
39	L	82	LEU
40	M	73	ILE
41	N	2	ARG
47	T	40	LYS
47	T	69	ARG
47	T	77	ARG

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Mol	Chain	Res	Type
47	T	84	TYR
47	T	89	GLU
48	U	87	GLU
48	U	98	ASN
50	W	17	ALA
50	W	68	PHE
57	x	7	PHE
57	x	163	ALA
57	x	263	LYS
57	x	289	LYS
57	x	379	ARG
57	x	552	LYS
3	d	32	CYS
4	e	12	GLN
4	e	24	THR
4	e	45	ARG
4	e	78	ASN
5	f	54	LEU
5	f	92	THR
5	f	94	HIS
10	k	17	SER
12	m	114	LYS
15	p	49	GLY
18	s	4	SER
18	s	5	LEU
21	b	81	ASP
21	b	125	PHE
25	3	27	ASN
27	5	53	ARG
31	D	119	ALA
32	E	6	LYS
32	E	13	THR
32	E	123	LYS
34	G	31	GLU
34	G	33	THR
34	G	45	ALA
34	G	118	ALA
35	H	30	LEU
35	H	67	ALA
35	H	76	GLU
35	H	114	GLU
39	L	41	ARG

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Mol	Chain	Res	Type
40	M	56	ALA
40	M	69	PRO
40	M	77	PRO
47	T	29	THR
47	T	55	VAL
47	T	70	HIS
48	U	18	LYS
50	W	14	ASP
50	W	41	GLY
50	W	47	GLY
51	X	53	LYS
57	x	429	GLN
57	x	433	VAL
57	x	434	TYR
57	x	435	HIS
6	g	114	LYS
8	i	56	ASP
8	i	58	VAL
9	j	34	ALA
10	k	14	LYS
10	k	15	GLN
11	l	98	VAL
13	n	3	LYS
14	o	46	HIS
15	p	44	SER
15	p	79	ASN
15	p	81	ALA
18	s	6	LYS
21	b	148	GLY
26	4	29	ALA
26	4	37	GLN
27	5	15	VAL
30	C	37	SER
30	C	110	LYS
32	E	10	SER
32	E	42	GLY
32	E	45	ALA
34	G	83	THR
36	I	19	PRO
36	I	27	LEU
38	K	93	GLN
39	L	19	LEU

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Mol	Chain	Res	Type
39	L	40	SER
43	P	81	ASP
45	R	100	GLY
47	T	28	ASN
48	U	52	ASN
49	V	71	LYS
50	W	9	THR
53	Z	3	THR
57	x	188	GLU
57	x	283	LYS
2	c	61	ALA
2	c	66	VAL
3	d	167	LYS
6	g	85	TYR
9	j	89	ARG
9	j	93	ALA
11	l	48	ALA
19	t	68	HIS
24	2	45	SER
26	4	8	LYS
26	4	16	ILE
27	5	150	ALA
30	C	94	LEU
30	C	121	ALA
30	C	231	HIS
30	C	254	LYS
31	D	149	ASN
31	D	152	PRO
31	D	173	GLN
32	E	46	GLN
32	E	83	VAL
32	E	96	VAL
33	F	11	VAL
33	F	128	SER
33	F	133	GLU
33	F	160	LYS
34	G	119	GLY
36	I	90	GLY
36	I	119	ALA
38	K	46	ALA
39	L	36	LYS
39	L	86	GLU

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Mol	Chain	Res	Type
40	M	35	ALA
43	P	63	ILE
45	R	65	ALA
45	R	91	GLN
45	R	98	ILE
46	S	65	ASP
47	T	67	VAL
48	U	85	ARG
50	W	10	ARG
50	W	15	SER
51	X	34	SER
51	X	70	LEU
53	Z	34	THR
57	x	162	SER
57	x	290	LYS
2	c	3	GLN
3	d	195	ILE
9	j	42	LEU
21	b	67	LEU
22	o	54	ILE
31	D	109	VAL
31	D	120	GLY
31	D	175	LEU
32	E	151	GLY
33	F	132	ARG
36	I	22	PRO
37	J	65	THR
38	K	119	ALA
39	L	66	PHE
40	M	134	THR
41	N	32	GLU
41	N	102	PHE
43	P	4	ILE
43	P	25	VAL
43	P	26	GLU
45	R	53	PHE
47	T	16	VAL
48	U	51	LEU
51	X	17	ARG
57	x	551	ALA
30	C	246	PRO
33	F	59	ILE

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Mol	Chain	Res	Type
36	I	31	GLY
15	p	33	ILE
26	4	3	VAL
31	D	107	VAL
34	G	25	ILE
48	U	38	ILE
57	x	167	VAL
6	g	81	GLY
17	r	21	ILE
27	5	233	VAL
34	G	23	ILE
57	x	241	THR
9	j	74	VAL
32	E	129	PRO

### 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	
2	c	170/190 (90%)	170 (100%)	0	100	100
3	d	172/173 (99%)	172 (100%)	0	100	100
4	e	113/126 (90%)	113 (100%)	0	100	100
5	f	89/116 (77%)	89 (100%)	0	100	100
6	g	124/147 (84%)	124 (100%)	0	100	100
7	h	104/105 (99%)	104 (100%)	0	100	100
8	i	105/107 (98%)	105 (100%)	0	100	100
9	j	86/90 (96%)	86 (100%)	0	100	100
10	k	90/99 (91%)	90 (100%)	0	100	100
11	l	103/104 (99%)	103 (100%)	0	100	100
12	m	92/96 (96%)	92 (100%)	0	100	100
13	n	83/84 (99%)	73 (88%)	10 (12%)	6	28
14	o	76/77 (99%)	76 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
15	p	65/65 (100%)	65 (100%)	0	100	100
16	q	74/78 (95%)	74 (100%)	0	100	100
17	r	48/65 (74%)	48 (100%)	0	100	100
18	s	70/79 (89%)	70 (100%)	0	100	100
19	t	65/66 (98%)	65 (100%)	0	100	100
20	u	44/61 (72%)	44 (100%)	0	100	100
21	b	180/199 (90%)	180 (100%)	0	100	100
22	0	47/48 (98%)	47 (100%)	0	100	100
23	1	45/49 (92%)	44 (98%)	1 (2%)	60	87
24	2	38/38 (100%)	38 (100%)	0	100	100
25	3	51/52 (98%)	51 (100%)	0	100	100
26	4	34/34 (100%)	34 (100%)	0	100	100
27	5	181/181 (100%)	181 (100%)	0	100	100
30	C	215/218 (99%)	215 (100%)	0	100	100
31	D	164/164 (100%)	164 (100%)	0	100	100
32	E	165/165 (100%)	165 (100%)	0	100	100
33	F	148/150 (99%)	148 (100%)	0	100	100
34	G	137/138 (99%)	137 (100%)	0	100	100
35	H	114/114 (100%)	114 (100%)	0	100	100
36	I	109/110 (99%)	109 (100%)	0	100	100
37	J	116/116 (100%)	116 (100%)	0	100	100
38	K	103/104 (99%)	103 (100%)	0	100	100
39	L	102/103 (99%)	102 (100%)	0	100	100
40	M	109/109 (100%)	109 (100%)	0	100	100
41	N	100/103 (97%)	100 (100%)	0	100	100
42	O	86/87 (99%)	86 (100%)	0	100	100
43	P	99/100 (99%)	99 (100%)	0	100	100
44	Q	89/90 (99%)	89 (100%)	0	100	100
45	R	84/84 (100%)	84 (100%)	0	100	100
46	S	93/93 (100%)	93 (100%)	0	100	100
47	T	80/84 (95%)	74 (92%)	6 (8%)	17	55

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
48	U	83/85 (98%)	83 (100%)	0	100	100
49	V	78/78 (100%)	78 (100%)	0	100	100
50	W	59/63 (94%)	59 (100%)	0	100	100
51	X	67/68 (98%)	67 (100%)	0	100	100
52	Y	55/55 (100%)	55 (100%)	0	100	100
53	Z	48/49 (98%)	48 (100%)	0	100	100
57	x	500/511 (98%)	496 (99%)	4 (1%)	86	96
All	All	5352/5570 (96%)	5331 (100%)	21 (0%)	94	98

All (21) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
13	n	24	ARG
13	n	26	GLU
13	n	27	LEU
13	n	33	ASP
13	n	38	ASP
13	n	39	GLU
13	n	40	ASP
13	n	41	ARG
13	n	42	TRP
13	n	47	LYS
23	1	8	ILE
47	T	66	LYS
47	T	68	LYS
47	T	69	ARG
47	T	70	HIS
47	T	73	ARG
47	T	77	ARG
57	x	106	GLN
57	x	323	SER
57	x	509	ARG
57	x	589	LEU

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (74) such sidechains are listed below:

Mol	Chain	Res	Type
3	d	120	HIS

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Mol	Chain	Res	Type
5	f	46	GLN
5	f	55	HIS
5	f	63	ASN
6	g	86	GLN
7	h	67	GLN
8	i	75	GLN
9	j	35	GLN
10	k	22	HIS
11	l	5	ASN
12	m	14	HIS
13	n	35	ASN
13	n	43	ASN
13	n	60	GLN
14	o	35	GLN
16	q	51	ASN
18	s	69	HIS
19	t	48	GLN
19	t	82	GLN
21	b	119	GLN
22	0	4	GLN
22	0	5	ASN
22	0	18	HIS
27	5	58	ASN
27	5	83	ASN
27	5	110	ASN
30	C	52	HIS
30	C	57	HIS
30	C	114	GLN
30	C	259	ASN
31	D	49	GLN
31	D	130	GLN
32	E	62	GLN
32	E	165	HIS
34	G	21	GLN
34	G	72	ASN
34	G	103	ASN
34	G	110	HIS
35	H	2	GLN
35	H	18	GLN
35	H	28	ASN
37	J	40	HIS
37	J	135	GLN

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Mol	Chain	Res	Type
39	L	54	GLN
40	M	22	GLN
41	N	9	GLN
43	P	9	GLN
43	P	11	GLN
44	Q	43	GLN
45	R	66	HIS
47	T	15	HIS
47	T	70	HIS
47	T	91	GLN
48	U	65	GLN
49	V	44	HIS
49	V	51	GLN
49	V	80	HIS
50	W	39	GLN
51	X	16	ASN
52	Y	20	ASN
52	Y	27	ASN
52	Y	41	HIS
53	Z	19	HIS
57	x	81	HIS
57	x	192	GLN
57	x	214	ASN
57	x	266	HIS
57	x	294	GLN
57	x	407	HIS
57	x	429	GLN
57	x	476	GLN
57	x	548	ASN
57	x	568	GLN
57	x	593	HIS

### 5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	a	1532/1533 (99%)	302 (19%)	0
28	A	2902/2904 (99%)	566 (19%)	24 (0%)
29	B	117/120 (97%)	18 (15%)	0
54	6	74/76 (97%)	15 (20%)	3 (4%)
55	7	14/15 (93%)	7 (50%)	1 (7%)
56	8	76/77 (98%)	20 (26%)	0

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Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
58	9	75/76 (98%)	24 (32%)	2 (2%)
All	All	4790/4801 (99%)	952 (19%)	30 (0%)

All (952) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	a	4	U
1	a	5	U
1	a	6	G
1	a	9	G
1	a	13	U
1	a	15	G
1	a	22	G
1	a	31	G
1	a	32	A
1	a	39	G
1	a	48	C
1	a	50	A
1	a	51	A
1	a	52	C
1	a	70	U
1	a	71	A
1	a	74	A
1	a	75	G
1	a	77	A
1	a	78	A
1	a	79	G
1	a	81	A
1	a	83	C
1	a	85	U
1	a	86	G
1	a	87	C
1	a	89	U
1	a	90	C
1	a	91	U
1	a	94	G
1	a	95	C
1	a	99	C
1	a	116	A
1	a	121	U
1	a	130	A
1	a	131	A

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Mol	Chain	Res	Type
1	a	144	G
1	a	146	G
1	a	151	A
1	a	156	C
1	a	163	C
1	a	164	G
1	a	166	U
1	a	182	A
1	a	191	G
1	a	192	A
1	a	197	A
1	a	204	G
1	a	205	A
1	a	209	U
1	a	210	C
1	a	211	G
1	a	226	G
1	a	227	G
1	a	240	G
1	a	245	U
1	a	247	G
1	a	251	G
1	a	262	A
1	a	266	G
1	a	267	C
1	a	283	U
1	a	289	G
1	a	298	A
1	a	299	G
1	a	307	C
1	a	314	C
1	a	321	A
1	a	328	C
1	a	329	A
1	a	330	C
1	a	332	G
1	a	344	A
1	a	345	C
1	a	346	G
1	a	347	G
1	a	352	C
1	a	353	A

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Mol	Chain	Res	Type
1	a	354	G
1	a	357	G
1	a	362	G
1	a	367	U
1	a	368	U
1	a	369	G
1	a	372	C
1	a	373	A
1	a	389	A
1	a	402	G
1	a	406	G
1	a	411	A
1	a	412	A
1	a	413	G
1	a	414	A
1	a	421	U
1	a	422	C
1	a	429	U
1	a	430	A
1	a	440	C
1	a	456	A
1	a	457	G
1	a	458	U
1	a	461	A
1	a	462	G
1	a	463	U
1	a	466	A
1	a	467	U
1	a	468	A
1	a	474	G
1	a	479	U
1	a	481	G
1	a	482	A
1	a	483	C
1	a	484	G
1	a	486	U
1	a	496	A
1	a	497	G
1	a	505	G
1	a	511	C
1	a	518	C
1	a	527	G

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Mol	Chain	Res	Type
1	a	530	G
1	a	531	U
1	a	533	A
1	a	545	C
1	a	547	A
1	a	559	A
1	a	562	U
1	a	564	C
1	a	571	U
1	a	572	A
1	a	573	A
1	a	575	G
1	a	576	C
1	a	577	G
1	a	579	A
1	a	622	A
1	a	628	G
1	a	631	C
1	a	632	U
1	a	653	U
1	a	654	G
1	a	665	A
1	a	670	G
1	a	694	A
1	a	703	G
1	a	706	A
1	a	721	G
1	a	723	U
1	a	731	G
1	a	733	G
1	a	748	G
1	a	755	G
1	a	764	C
1	a	778	G
1	a	783	C
1	a	792	A
1	a	793	U
1	a	794	A
1	a	799	G
1	a	805	C
1	a	810	C
1	a	815	A

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Mol	Chain	Res	Type
1	a	817	C
1	a	828	U
1	a	829	G
1	a	841	C
1	a	843	U
1	a	845	A
1	a	846	G
1	a	871	U
1	a	888	G
1	a	889	A
1	a	895	G
1	a	901	A
1	a	902	G
1	a	913	A
1	a	914	A
1	a	920	U
1	a	922	G
1	a	926	G
1	a	927	G
1	a	933	G
1	a	934	C
1	a	935	A
1	a	943	U
1	a	948	C
1	a	960	U
1	a	966	G
1	a	969	A
1	a	971	G
1	a	972	C
1	a	975	A
1	a	976	G
1	a	977	A
1	a	983	A
1	a	993	G
1	a	996	A
1	a	1001	C
1	a	1004	A
1	a	1008	U
1	a	1011	C
1	a	1018	G
1	a	1026	G
1	a	1027	C

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Mol	Chain	Res	Type
1	a	1028	C
1	a	1029	U
1	a	1030	U
1	a	1031	C
1	a	1032	G
1	a	1036	A
1	a	1037	C
1	a	1043	G
1	a	1050	G
1	a	1054	C
1	a	1055	A
1	a	1056	U
1	a	1060	U
1	a	1065	U
1	a	1070	U
1	a	1086	U
1	a	1087	G
1	a	1094	G
1	a	1095	U
1	a	1101	A
1	a	1124	G
1	a	1130	A
1	a	1136	C
1	a	1137	C
1	a	1138	G
1	a	1139	G
1	a	1146	A
1	a	1159	U
1	a	1167	A
1	a	1168	U
1	a	1192	C
1	a	1194	U
1	a	1196	A
1	a	1197	A
1	a	1200	C
1	a	1202	U
1	a	1212	U
1	a	1213	A
1	a	1225	A
1	a	1226	C
1	a	1227	A
1	a	1238	A

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Mol	Chain	Res	Type
1	a	1240	U
1	a	1241	G
1	a	1256	A
1	a	1257	A
1	a	1260	G
1	a	1261	A
1	a	1267	C
1	a	1279	G
1	a	1280	A
1	a	1282	C
1	a	1287	A
1	a	1297	G
1	a	1298	U
1	a	1300	G
1	a	1302	C
1	a	1303	C
1	a	1305	G
1	a	1312	G
1	a	1317	C
1	a	1318	A
1	a	1320	C
1	a	1331	G
1	a	1332	A
1	a	1337	G
1	a	1357	A
1	a	1363	A
1	a	1364	U
1	a	1379	G
1	a	1381	U
1	a	1395	C
1	a	1401	G
1	a	1406	U
1	a	1419	G
1	a	1429	A
1	a	1441	A
1	a	1446	A
1	a	1449	C
1	a	1451	U
1	a	1452	C
1	a	1469	C
1	a	1487	G
1	a	1492	A

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Mol	Chain	Res	Type
1	a	1493	A
1	a	1494	G
1	a	1497	G
1	a	1503	A
1	a	1506	U
1	a	1507	A
1	a	1513	A
1	a	1517	G
1	a	1519	A
1	a	1520	C
1	a	1529	G
1	a	1530	G
1	a	1533	C
1	a	1534	A
28	A	10	A
28	A	14	A
28	A	15	G
28	A	34	U
28	A	35	G
28	A	46	G
28	A	50	U
28	A	51	G
28	A	63	A
28	A	71	A
28	A	72	U
28	A	74	A
28	A	75	G
28	A	84	A
28	A	92	U
28	A	103	A
28	A	118	A
28	A	120	U
28	A	123	G
28	A	124	G
28	A	138	U
28	A	139	U
28	A	140	C
28	A	141	G
28	A	142	A
28	A	163	C
28	A	164	C
28	A	174	U

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Mol	Chain	Res	Type
28	A	181	A
28	A	185	G
28	A	193	U
28	A	196	A
28	A	199	A
28	A	205	G
28	A	208	C
28	A	216	A
28	A	222	A
28	A	228	C
28	A	230	G
28	A	241	A
28	A	248	G
28	A	249	C
28	A	255	A
28	A	266	G
28	A	267	C
28	A	272	A
28	A	273	G
28	A	276	U
28	A	277	G
28	A	285	G
28	A	293	U
28	A	294	A
28	A	306	U
28	A	311	A
28	A	325	G
28	A	329	G
28	A	330	A
28	A	335	C
28	A	353	C
28	A	361	G
28	A	362	A
28	A	363	G
28	A	371	A
28	A	372	G
28	A	386	G
28	A	389	G
28	A	396	G
28	A	399	U
28	A	404	A
28	A	405	U

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Mol	Chain	Res	Type
28	A	411	G
28	A	412	A
28	A	424	G
28	A	449	A
28	A	451	U
28	A	467	G
28	A	472	A
28	A	481	G
28	A	491	G
28	A	504	A
28	A	505	A
28	A	509	C
28	A	510	C
28	A	528	A
28	A	531	C
28	A	532	A
28	A	533	G
28	A	543	G
28	A	544	C
28	A	546	U
28	A	548	G
28	A	549	G
28	A	550	C
28	A	551	G
28	A	562	U
28	A	563	A
28	A	573	U
28	A	575	A
28	A	580	U
28	A	584	C
28	A	586	A
28	A	588	U
28	A	595	C
28	A	603	A
28	A	604	G
28	A	614	A
28	A	615	U
28	A	627	A
28	A	633	A
28	A	637	A
28	A	647	G
28	A	654	A

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Mol	Chain	Res	Type
28	A	655	A
28	A	656	G
28	A	663	G
28	A	686	U
28	A	696	G
28	A	711	G
28	A	717	C
28	A	724	U
28	A	728	G
28	A	730	A
28	A	733	G
28	A	739	A
28	A	747	U
28	A	750	A
28	A	751	A
28	A	762	U
28	A	764	A
28	A	767	U
28	A	775	G
28	A	776	G
28	A	782	A
28	A	784	G
28	A	785	G
28	A	792	A
28	A	794	A
28	A	801	G
28	A	805	G
28	A	812	C
28	A	819	A
28	A	827	U
28	A	846	U
28	A	847	U
28	A	859	G
28	A	872	U
28	A	873	C
28	A	880	G
28	A	881	G
28	A	887	U
28	A	888	C
28	A	891	G
28	A	895	U
28	A	896	A

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Mol	Chain	Res	Type
28	A	897	C
28	A	899	A
28	A	910	A
28	A	914	G
28	A	915	C
28	A	931	U
28	A	941	A
28	A	945	A
28	A	946	C
28	A	955	U
28	A	961	C
28	A	972	A
28	A	973	A
28	A	974	G
28	A	976	G
28	A	983	A
28	A	984	A
28	A	985	C
28	A	990	A
28	A	995	C
28	A	996	A
28	A	1003	G
28	A	1006	C
28	A	1012	U
28	A	1013	C
28	A	1017	G
28	A	1021	A
28	A	1022	G
28	A	1023	U
28	A	1024	G
28	A	1025	G
28	A	1026	G
28	A	1033	U
28	A	1044	C
28	A	1047	G
28	A	1056	G
28	A	1061	U
28	A	1062	G
28	A	1064	C
28	A	1066	U
28	A	1069	A
28	A	1070	A

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Mol	Chain	Res	Type
28	A	1072	C
28	A	1081	U
28	A	1082	U
28	A	1089	A
28	A	1112	G
28	A	1120	G
28	A	1130	U
28	A	1132	U
28	A	1133	A
28	A	1135	C
28	A	1139	G
28	A	1141	U
28	A	1142	A
28	A	1143	A
28	A	1151	A
28	A	1168	G
28	A	1169	A
28	A	1171	G
28	A	1173	U
28	A	1174	U
28	A	1175	A
28	A	1176	U
28	A	1178	C
28	A	1180	U
28	A	1183	U
28	A	1190	G
28	A	1191	G
28	A	1206	G
28	A	1212	G
28	A	1227	G
28	A	1233	C
28	A	1238	G
28	A	1246	A
28	A	1247	A
28	A	1248	G
28	A	1250	G
28	A	1253	A
28	A	1254	A
28	A	1255	U
28	A	1256	G
28	A	1262	A
28	A	1265	A

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Mol	Chain	Res	Type
28	A	1266	G
28	A	1268	A
28	A	1271	G
28	A	1272	A
28	A	1273	U
28	A	1274	A
28	A	1275	A
28	A	1300	G
28	A	1301	A
28	A	1302	A
28	A	1313	U
28	A	1321	A
28	A	1326	U
28	A	1365	A
28	A	1366	A
28	A	1376	C
28	A	1379	U
28	A	1380	G
28	A	1383	A
28	A	1386	C
28	A	1395	A
28	A	1398	C
28	A	1415	U
28	A	1416	G
28	A	1417	C
28	A	1419	A
28	A	1420	A
28	A	1425	G
28	A	1428	C
28	A	1434	A
28	A	1436	G
28	A	1449	G
28	A	1452	G
28	A	1453	A
28	A	1456	G
28	A	1458	U
28	A	1459	G
28	A	1478	G
28	A	1482	G
28	A	1483	G
28	A	1493	C
28	A	1497	U

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Mol	Chain	Res	Type
28	A	1504	A
28	A	1507	C
28	A	1510	G
28	A	1512	C
28	A	1515	A
28	A	1522	A
28	A	1524	G
28	A	1530	G
28	A	1532	A
28	A	1534	U
28	A	1535	A
28	A	1536	C
28	A	1538	G
28	A	1540	G
28	A	1542	U
28	A	1544	A
28	A	1560	G
28	A	1562	U
28	A	1566	A
28	A	1569	A
28	A	1583	A
28	A	1585	C
28	A	1605	C
28	A	1608	A
28	A	1609	A
28	A	1610	A
28	A	1629	U
28	A	1639	C
28	A	1647	U
28	A	1648	U
28	A	1649	G
28	A	1652	A
28	A	1654	A
28	A	1656	C
28	A	1674	G
28	A	1703	G
28	A	1705	A
28	A	1721	G
28	A	1729	U
28	A	1730	C
28	A	1733	G
28	A	1738	G

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Mol	Chain	Res	Type
28	A	1756	G
28	A	1758	U
28	A	1764	C
28	A	1772	A
28	A	1773	A
28	A	1781	U
28	A	1791	A
28	A	1800	C
28	A	1802	A
28	A	1806	C
28	A	1807	G
28	A	1808	A
28	A	1809	A
28	A	1811	G
28	A	1816	C
28	A	1819	A
28	A	1829	A
28	A	1847	A
28	A	1848	A
28	A	1869	G
28	A	1870	C
28	A	1872	A
28	A	1882	U
28	A	1891	G
28	A	1903	G
28	A	1906	G
28	A	1913	A
28	A	1914	C
28	A	1927	A
28	A	1929	G
28	A	1930	G
28	A	1935	G
28	A	1937	A
28	A	1938	A
28	A	1955	U
28	A	1965	C
28	A	1966	A
28	A	1967	C
28	A	1970	A
28	A	1971	U
28	A	1972	G
28	A	1981	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
28	A	1991	U
28	A	1992	G
28	A	1993	U
28	A	1997	C
28	A	2022	U
28	A	2023	C
28	A	2024	G
28	A	2027	G
28	A	2031	A
28	A	2033	A
28	A	2036	C
28	A	2037	A
28	A	2041	U
28	A	2043	C
28	A	2047	C
28	A	2052	A
28	A	2054	A
28	A	2055	C
28	A	2056	G
28	A	2060	A
28	A	2061	G
28	A	2062	A
28	A	2069	G
28	A	2072	C
28	A	2077	A
28	A	2090	A
28	A	2092	U
28	A	2093	G
28	A	2107	G
28	A	2111	U
28	A	2112	G
28	A	2113	U
28	A	2117	A
28	A	2119	A
28	A	2120	G
28	A	2127	G
28	A	2129	C
28	A	2130	U
28	A	2131	U
28	A	2132	U
28	A	2133	G
28	A	2134	A

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Mol	Chain	Res	Type
28	A	2135	A
28	A	2137	U
28	A	2140	G
28	A	2141	G
28	A	2142	A
28	A	2145	C
28	A	2146	C
28	A	2147	A
28	A	2148	G
28	A	2149	U
28	A	2153	C
28	A	2154	A
28	A	2157	G
28	A	2158	A
28	A	2159	G
28	A	2160	C
28	A	2161	C
28	A	2162	G
28	A	2164	C
28	A	2165	C
28	A	2170	A
28	A	2172	U
28	A	2173	A
28	A	2174	C
28	A	2176	A
28	A	2183	A
28	A	2186	G
28	A	2189	U
28	A	2190	G
28	A	2191	A
28	A	2198	A
28	A	2199	A
28	A	2203	U
28	A	2204	G
28	A	2211	A
28	A	2212	A
28	A	2225	A
28	A	2226	C
28	A	2238	G
28	A	2239	G
28	A	2250	G
28	A	2257	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
28	A	2279	G
28	A	2283	C
28	A	2286	G
28	A	2287	A
28	A	2288	A
28	A	2292	U
28	A	2305	U
28	A	2308	G
28	A	2309	A
28	A	2311	A
28	A	2322	A
28	A	2325	G
28	A	2327	A
28	A	2334	U
28	A	2345	G
28	A	2347	C
28	A	2355	G
28	A	2361	G
28	A	2371	G
28	A	2383	G
28	A	2385	C
28	A	2396	G
28	A	2402	U
28	A	2403	C
28	A	2406	A
28	A	2423	U
28	A	2424	C
28	A	2425	A
28	A	2429	G
28	A	2430	A
28	A	2431	U
28	A	2434	A
28	A	2439	A
28	A	2440	C
28	A	2441	U
28	A	2448	A
28	A	2464	G
28	A	2475	C
28	A	2476	A
28	A	2478	A
28	A	2479	U
28	A	2480	C

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Mol	Chain	Res	Type
28	A	2482	A
28	A	2491	U
28	A	2492	U
28	A	2501	C
28	A	2502	G
28	A	2503	A
28	A	2504	U
28	A	2505	G
28	A	2506	U
28	A	2507	C
28	A	2513	A
28	A	2518	A
28	A	2520	C
28	A	2529	G
28	A	2530	A
28	A	2542	A
28	A	2546	U
28	A	2553	G
28	A	2554	U
28	A	2566	A
28	A	2567	G
28	A	2573	C
28	A	2585	U
28	A	2586	U
28	A	2587	A
28	A	2589	A
28	A	2590	A
28	A	2601	C
28	A	2602	A
28	A	2604	U
28	A	2609	U
28	A	2613	U
28	A	2615	U
28	A	2629	U
28	A	2630	G
28	A	2638	G
28	A	2682	A
28	A	2689	U
28	A	2690	U
28	A	2714	G
28	A	2716	C
28	A	2727	A

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Mol	Chain	Res	Type
28	A	2728	U
28	A	2729	G
28	A	2733	A
28	A	2744	G
28	A	2748	A
28	A	2758	A
28	A	2778	A
28	A	2791	G
28	A	2793	C
28	A	2795	C
28	A	2797	U
28	A	2798	U
28	A	2800	A
28	A	2811	G
28	A	2820	A
28	A	2821	A
28	A	2824	C
28	A	2832	U
28	A	2833	U
28	A	2834	G
28	A	2835	A
28	A	2837	A
28	A	2851	A
28	A	2861	U
28	A	2867	G
28	A	2872	A
28	A	2873	A
28	A	2879	A
28	A	2880	C
28	A	2883	A
28	A	2884	U
28	A	2885	G
28	A	2887	A
28	A	2901	C
29	B	15	A
29	B	16	G
29	B	35	C
29	B	37	C
29	B	44	G
29	B	52	A
29	B	56	G
29	B	66	A

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Mol	Chain	Res	Type
29	B	87	U
29	B	88	C
29	B	89	U
29	B	90	C
29	B	97	C
29	B	99	A
29	B	107	G
29	B	109	A
29	B	116	G
29	B	119	A
54	6	6	G
54	6	9	A
54	6	17	C
54	6	18	G
54	6	19	G
54	6	20	U
54	6	21	A
54	6	22	G
54	6	36	A
54	6	37	A
54	6	44	G
54	6	46	G
54	6	59	U
54	6	65	G
54	6	75	C
55	7	14	A
55	7	15	U
55	7	21	C
55	7	23	A
55	7	24	A
55	7	26	A
55	7	27	A
56	8	3	C
56	8	5	G
56	8	17	C
56	8	17(A)	U
56	8	18	G
56	8	19	G
56	8	20	U
56	8	21	A
56	8	47	U
56	8	48	C

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Mol	Chain	Res	Type
56	8	49	G
56	8	52	G
56	8	53	G
56	8	54	U
56	8	61	C
56	8	65	C
56	8	73	A
56	8	74	C
56	8	75	C
56	8	76	A
58	9	3	C
58	9	4	C
58	9	8	U
58	9	15	G
58	9	16	U
58	9	17	C
58	9	18	G
58	9	19	G
58	9	21	A
58	9	23	A
58	9	39	U
58	9	40	C
58	9	41	C
58	9	47	U
58	9	48	C
58	9	50	U
58	9	59	U
58	9	61	C
58	9	70	G
58	9	71	G
58	9	72	C
58	9	74	C
58	9	75	C
58	9	76	A

All (30) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
28	A	119	A
28	A	229	C
28	A	271	G
28	A	328	U

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Mol	Chain	Res	Type
28	A	344	A
28	A	403	U
28	A	404	A
28	A	527	C
28	A	530	G
28	A	784	G
28	A	800	A
28	A	894	U
28	A	976	G
28	A	1020	A
28	A	1331	G
28	A	1584	U
28	A	1847	A
28	A	1905	C
28	A	2119	A
28	A	2130	U
28	A	2326	C
28	A	2423	U
28	A	2481	G
28	A	2820	A
54	6	17	C
54	6	35	A
54	6	36	A
55	7	20	U
58	9	15	G
58	9	74	C

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

1 non-standard protein/DNA/RNA residue is modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the chemical component dictionary. The Link column lists molecule types, if any, to which the group is linked. 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  $|Z| > 2$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
54	F3O	6	76	54	29,35,37	1.11	1 (3%)	31,49,54	2.15	6 (19%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the chemical component dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
54	F3O	6	76	54	-	0/14/36/38	0/4/4/4

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
54	6	76	F3O	O3'-C	4.84	1.45	1.34

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
54	6	76	F3O	N3-C2-N1	-9.62	121.31	128.87
54	6	76	F3O	C3'-O3'-C	-3.35	112.54	118.06
54	6	76	F3O	O3'-C-O	-2.46	119.12	123.88
54	6	76	F3O	C4'-O4'-C1'	2.32	112.10	109.64
54	6	76	F3O	C3'-C2'-C1'	2.65	105.82	100.06
54	6	76	F3O	O3'-C-CA	2.94	120.15	111.74

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

1 monomer is involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
54	6	76	F3O	2	0

## 5.5 Carbohydrates

There are no carbohydrates in this entry.

## 5.6 Ligand geometry

Of 2 ligands modelled in this entry, 1 is monoatomic - leaving 1 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the chemical component dictionary. The Link



column lists molecule types, if any, to which the group is linked. 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  $|Z| > 2$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
59	GNP	x	701	60	29,34,34	1.97	7 (24%)	29,54,54	2.65	7 (24%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the chemical component dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
59	GNP	x	701	60	-	0/13/38/38	0/3/3/3

All (7) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
59	x	701	GNP	PB-O3A	-5.91	1.51	1.59
59	x	701	GNP	PB-O2B	-3.23	1.48	1.56
59	x	701	GNP	PG-O2G	-2.26	1.50	1.56
59	x	701	GNP	PG-O3G	-2.24	1.50	1.56
59	x	701	GNP	C8-N7	-2.11	1.30	1.34
59	x	701	GNP	C6-N1	3.51	1.39	1.33
59	x	701	GNP	PG-O1G	4.67	1.51	1.46

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
59	x	701	GNP	C5-C6-N1	-8.93	111.85	123.52
59	x	701	GNP	PA-O3A-PB	-3.63	119.55	132.71
59	x	701	GNP	O3G-PG-O1G	-2.99	105.70	113.58
59	x	701	GNP	N3-C2-N1	-2.70	123.88	127.56
59	x	701	GNP	O3G-PG-O2G	2.39	114.62	107.67
59	x	701	GNP	O2B-PB-O1B	4.42	118.72	110.02
59	x	701	GNP	C6-N1-C2	7.68	124.88	115.88

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

## 5.7 Other polymers

There are no such residues in this entry.

## 5.8 Polymer linkage issues

There are no chain breaks in this entry.