



Full wwPDB EM Validation Report ⓘ

Nov 3, 2022 – 02:45 AM EDT

PDB ID : 5UYP
EMDB ID : EMD-8619
Title : 70S ribosome bound with near-cognate ternary complex base-paired to A site codon, open 30S (Structure II-nc)
Authors : Loveland, A.B.; Demo, G.; Grigorieff, N.; Korostelev, A.A.
Deposited on : 2017-02-24
Resolution : 3.90 Å(reported)

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

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

A user guide is available at

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

The types of validation reports are described at

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

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

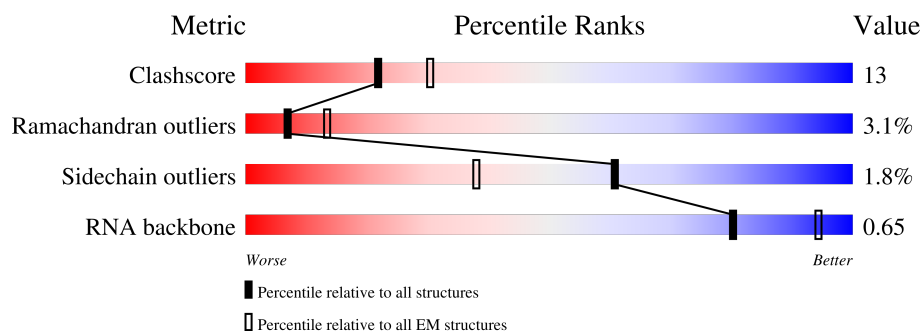
EMDB validation analysis : 0.0.1.dev43
Mogul : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : **FAILED**
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.31.2

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 3.90 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.




















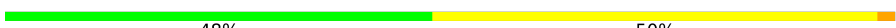







Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826
RNA backbone	4643	859

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$.

Mol	Chain	Length	Quality of chain
1	04	271	58% 40% .
2	05	209	65% 34% .
3	06	201	68% 31% .
4	07	177	57% 41% ..
5	08	176	60% 40%
6	09	149	56% 42% .
7	10	131	46% 47% 7% .




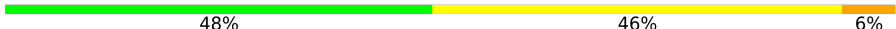







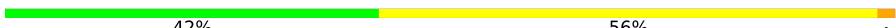







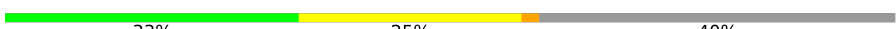





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Mol	Chain	Length	Quality of chain
8	11	141	
9	12	142	
10	13	122	
11	14	143	
12	15	136	
13	16	120	
14	17	116	
15	18	114	
16	19	117	
17	20	103	
18	21	110	
19	22	93	
20	23	102	
21	24	94	
22	25	75	
23	26	77	
24	27	63	
25	28	58	
26	29	66	
27	30	56	
28	31	50	
29	32	46	
30	33	64	
31	34	38	
32	B	218	

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Mol	Chain	Length	Quality of chain
33	C	206	
34	D	205	
35	E	157	
36	F	100	
37	G	151	
38	H	129	
39	I	127	
40	J	98	
41	K	116	
42	L	123	
43	M	114	
44	N	100	
45	O	88	
46	P	82	
47	Q	80	
48	R	65	
49	S	79	
50	T	85	
51	U	65	
52	03	223	
53	A	1539	
54	01	2903	
55	02	120	
56	W	77	
56	X	77	

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Mol	Chain	Length	Quality of chain
57	V	19	<div><div></div><div>63%</div><div>32%</div><div>5%</div></div>
58	Y	76	<div><div></div><div>61%</div><div>25%</div><div>12%</div><div>.</div></div>
59	Z	392	<div><div></div><div>49%</div><div>49%</div><div>..</div></div>

2 Entry composition

There are 62 unique types of molecules in this entry. The entry contains 153780 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	04	271	Total	C	N	O	S	0	0
			2083	1288	423	365	7		

- Molecule 2 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	05	209	Total	C	N	O	S	0	0
			1565	979	288	294	4		

- Molecule 3 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	06	201	Total	C	N	O	S	0	0
			1552	974	283	290	5		

- Molecule 4 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	07	177	Total	C	N	O	S	0	0
			1411	899	249	257	6		

- Molecule 5 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	08	176	Total	C	N	O	S	0	0
			1323	832	243	246	2		

- Molecule 6 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	09	149	Total	C	N	O	S	0	0
			1111	699	197	214	1		

- Molecule 7 is a protein called 50S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	10	131	Total	C	N	O	S	0	0
			989	625	175	184	5		

- Molecule 8 is a protein called 50S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	11	141	Total	C	N	O	S	0	0
			1032	651	179	196	6		

- Molecule 9 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	12	142	Total	C	N	O	S	0	0
			1129	714	212	199	4		

- Molecule 10 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	13	122	Total	C	N	O	S	0	0
			939	587	180	166	6		

- Molecule 11 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	14	143	Total	C	N	O	S	0	0
			1045	649	206	189	1		

- Molecule 12 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	15	136	Total	C	N	O	S	0	0
			1074	686	205	177	6		

- Molecule 13 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	16	120	Total	C	N	O	S	0	0
			961	593	196	167	5		

- Molecule 14 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms				AltConf	Trace
14	17	116	Total	C	N	O	0	0
			892	552	178	162		

- Molecule 15 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	18	114	Total	C	N	O	S	0	0
			917	574	179	163	1		

- Molecule 16 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms				AltConf	Trace
16	19	117	Total	C	N	O	0	0
			947	604	192	151		

- Molecule 17 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	20	103	Total	C	N	O	S	0	0
			816	516	153	145	2		

- Molecule 18 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	21	110	Total	C	N	O	S	0	0
			857	532	166	156	3		

- Molecule 19 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	22	93	Total	C	N	O	S	0	0
			739	466	139	132	2		

- Molecule 20 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms				AltConf	Trace
20	23	102	Total	C	N	O	0	0
			780	492	146	142		

- Molecule 21 is a protein called 50S ribosomal protein L25.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	24	94	Total	C	N	O	S	0	0
			753	479	137	134	3		

- Molecule 22 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	25	75	Total	C	N	O	S	0	0
			575	356	116	102	1		

- Molecule 23 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	26	77	Total	C	N	O	S	0	0
			625	388	129	106	2		

- Molecule 24 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	27	63	Total	C	N	O	S	0	0
			509	313	99	95	2		

- Molecule 25 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	28	58	Total	C	N	O	S	0	0
			449	281	87	79	2		

- Molecule 26 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	29	66	Total	C	N	O	S	0	0
			523	323	99	95	6		

- Molecule 27 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	30	56	Total	C	N	O	S	0	0
			444	269	94	80	1		

- Molecule 28 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms				AltConf	Trace
28	31	50	Total	C	N	O	0	0
			410	263	75	72		

- Molecule 29 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	32	46	Total	C	N	O	S	0	0
			377	228	90	57	2		

- Molecule 30 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	33	64	Total	C	N	O	S	0	0
			504	323	105	74	2		

- Molecule 31 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	34	38	Total	C	N	O	S	0	0
			302	185	65	48	4		

- Molecule 32 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	B	218	Total	C	N	O	S	0	0
			1705	1081	305	312	7		

- Molecule 33 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	C	206	Total	C	N	O	S	0	0
			1625	1028	305	289	3		

- Molecule 34 is a protein called 30S ribosomal protein S4.

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

- Molecule 35 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	E	157	Total	C	N	O	S	0	0
			1157	719	218	214	6		

- Molecule 36 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	F	100	Total	C	N	O	S	0	0
			818	515	148	149	6		

- Molecule 37 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	G	151	Total	C	N	O	S	0	0
			1182	735	227	216	4		

- Molecule 38 is a protein called 30S ribosomal protein S8.

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

- Molecule 39 is a protein called 30S ribosomal protein S9.

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

- Molecule 40 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	J	98	Total	C	N	O	S	0	0
			787	493	150	143	1		

- Molecule 41 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	K	116	Total	C	N	O	S	0	0
			870	535	173	159	3		

- Molecule 42 is a protein called 30S ribosomal protein S12.

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

- Molecule 43 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	M	114	Total	C	N	O	S	0	0
			884	546	178	157	3		

- Molecule 44 is a protein called 30S ribosomal protein S14.

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

- Molecule 45 is a protein called 30S ribosomal protein S15.

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

- Molecule 46 is a protein called 30S ribosomal protein S16.

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

- Molecule 47 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	Q	80	Total	C	N	O	S	0	0
			649	411	121	114	3		

- Molecule 48 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	R	65	Total	C	N	O	S	0	0
			536	339	100	96	1		

- Molecule 49 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	S	79	Total	C	N	O	S	0	0
			638	408	120	108	2		

- Molecule 50 is a protein called 30S ribosomal protein S20.

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

- Molecule 51 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	U	65	Total	C	N	O	S	0	0
			545	335	117	92	1		

- Molecule 52 is a protein called 50S ribosomal protein L1.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	03	134	Total	C	N	O	S	0	0
			1027	645	186	194	2		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
53	A	1539	Total	C	N	O	P	0	0
			33012	14725	6052	10697	1538		

- Molecule 54 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	01	2903	Total	C	N	O	P	0	0
			62317	27801	11468	20146	2902		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
01	747	C	U	conflict	GB 802133627

- Molecule 55 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	02	120	Total	C	N	O	P	0	0
			2568	1145	471	833	119		

- Molecule 56 is a RNA chain called tRNAfMet.

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

- Molecule 57 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	V	19	Total	C	N	O	P	0	0
			417	188	89	122	18		

- Molecule 58 is a RNA chain called tRNA^{Lys}.

Mol	Chain	Residues	Atoms						AltConf	Trace
58	Y	76	Total	C	N	O	P	S	0	0
			1618	723	282	536	76	1		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Y	34	U8U	-	insertion	GB 558570689

- Molecule 59 is a protein called Elongation factor Tu 2.

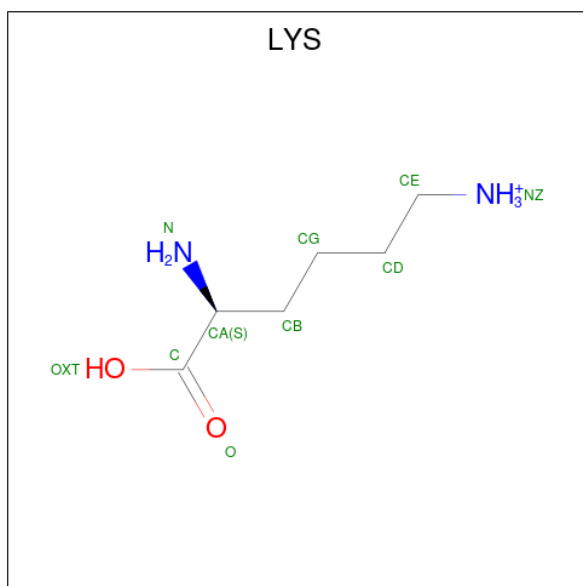
Mol	Chain	Residues	Atoms					AltConf	Trace
59	Z	392	Total	C	N	O	S	0	0
			3029	1915	521	580	13		

- Molecule 60 is N-FORMYLMETHIONINE (three-letter code: FME) (formula: C₆H₁₁NO₃S).



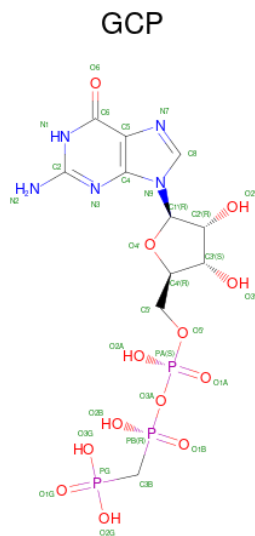
Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	S	
60	W	1	10	6	1	2	1	0

- Molecule 61 is LYSINE (three-letter code: LYS) (formula: $C_6H_{15}N_2O_2$).



Mol	Chain	Residues	Atoms				AltConf
			Total	C	N	O	
61	Y	1	9	6	2	1	0

- Molecule 62 is PHOSPHOMETHYLPHOSPHONIC ACID GUANYLATE ESTER (three-letter code: GCP) (formula: $C_{11}H_{18}N_5O_{13}P_3$).

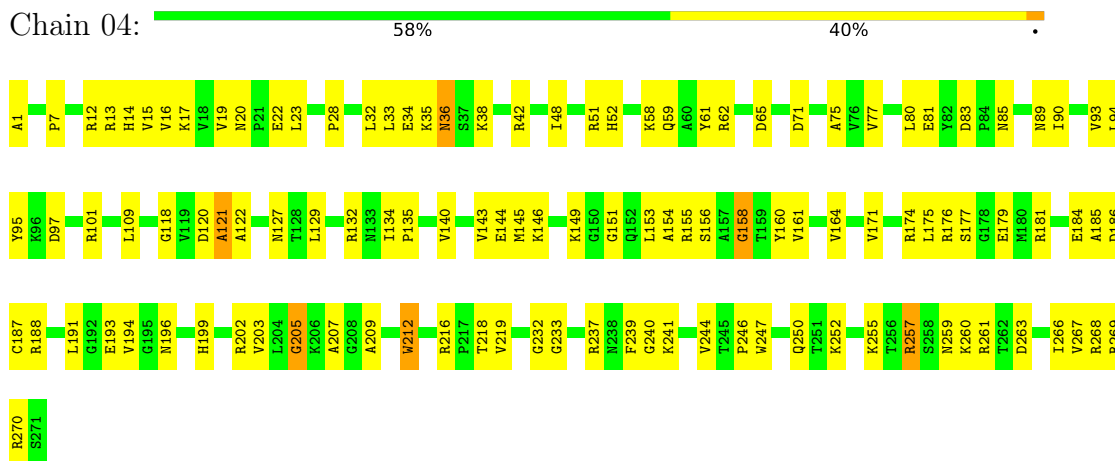


Mol	Chain	Residues	Atoms					AltConf
62	Z	1	Total	C	N	O	P	0
			32	11	5	13	3	

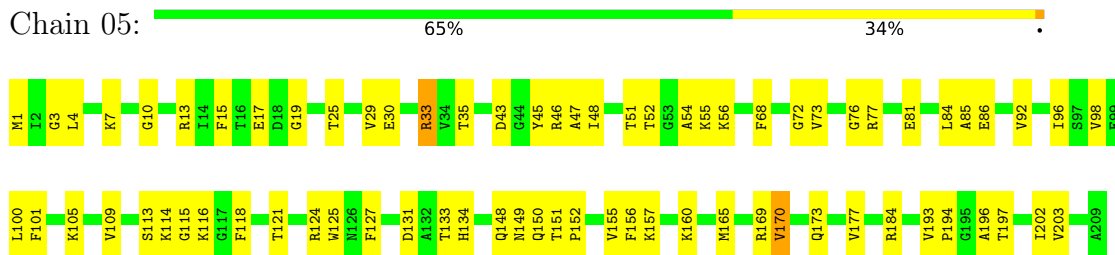
3 Residue-property plots

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

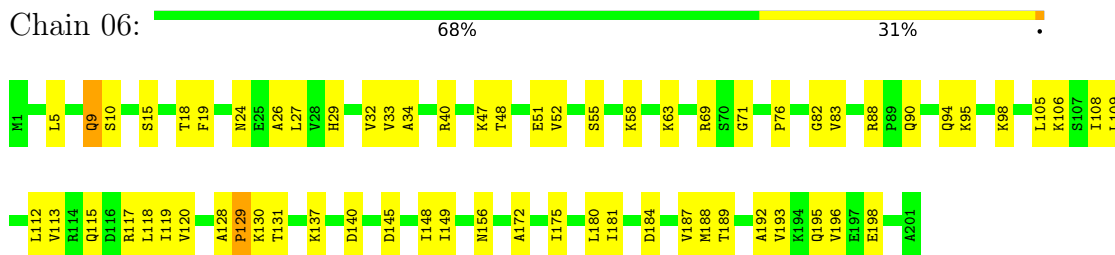
• Molecule 1: 50S ribosomal protein L2



• Molecule 2: 50S ribosomal protein L3

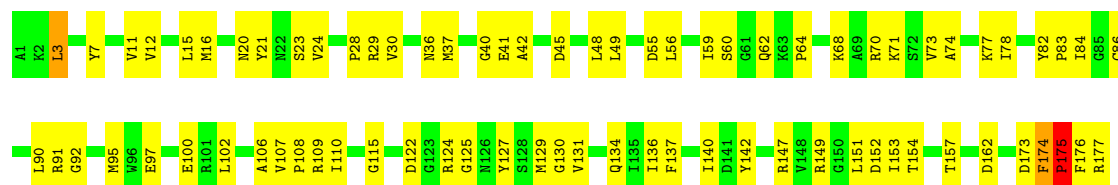


• Molecule 3: 50S ribosomal protein L4



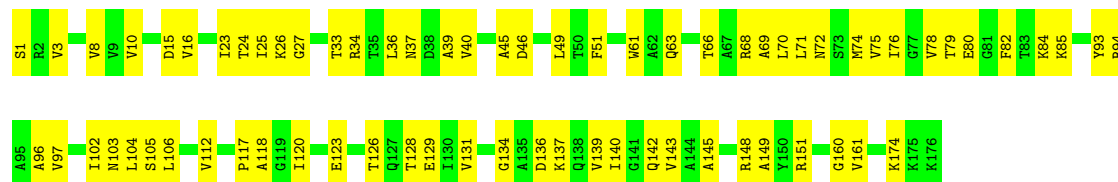
• Molecule 4: 50S ribosomal protein L5





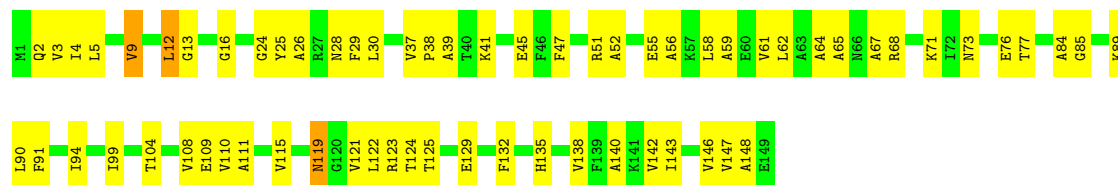
• Molecule 5: 50S ribosomal protein L6

Chain 08: 60% 40%



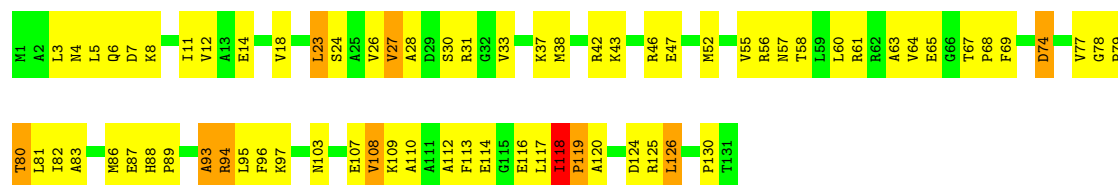
• Molecule 6: 50S ribosomal protein L9

Chain 09: 56% 42%



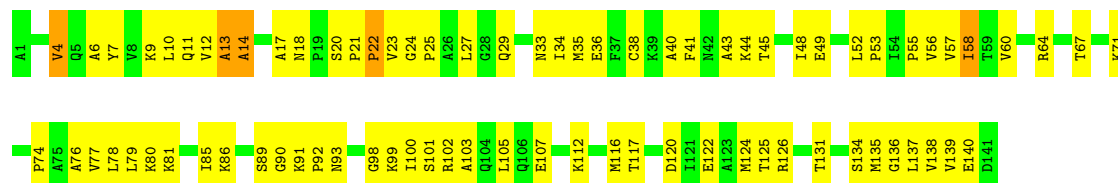
• Molecule 7: 50S ribosomal protein L10

Chain 10: 46% 47% 7%



• Molecule 8: 50S ribosomal protein L11

Chain 11: 44% 52%

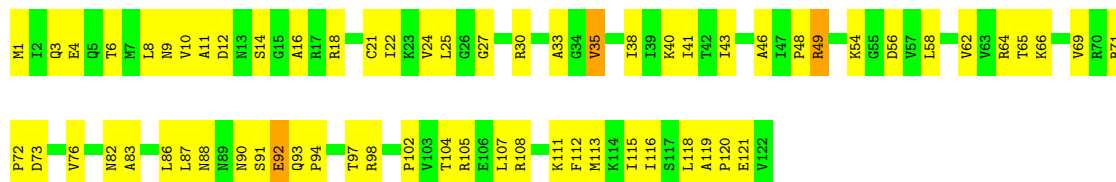


• Molecule 9: 50S ribosomal protein L13

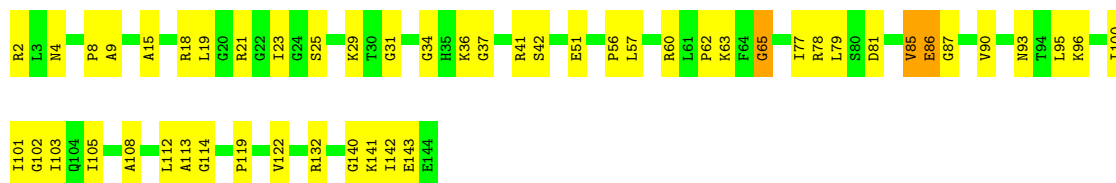
Chain 12: 66% 33%



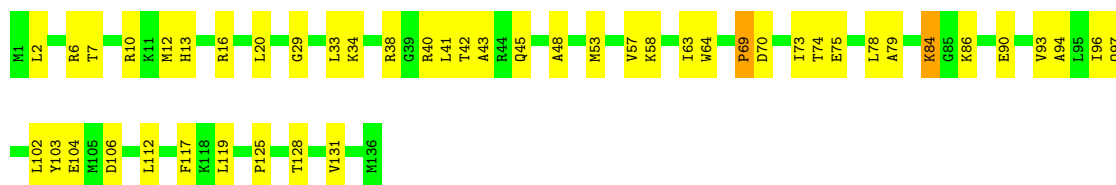
- Molecule 10: 50S ribosomal protein L14



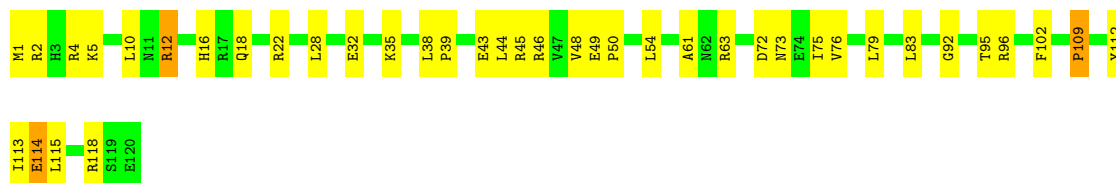
- Molecule 11: 50S ribosomal protein L15



- Molecule 12: 50S ribosomal protein L16

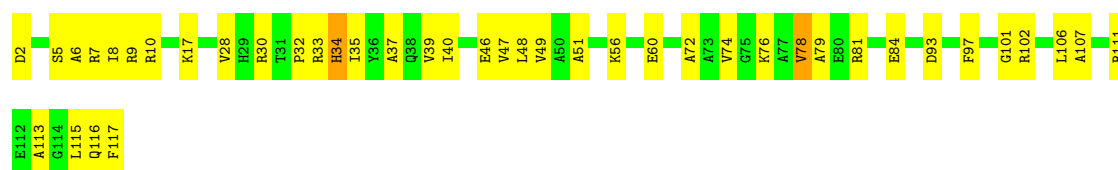


- Molecule 13: 50S ribosomal protein L17



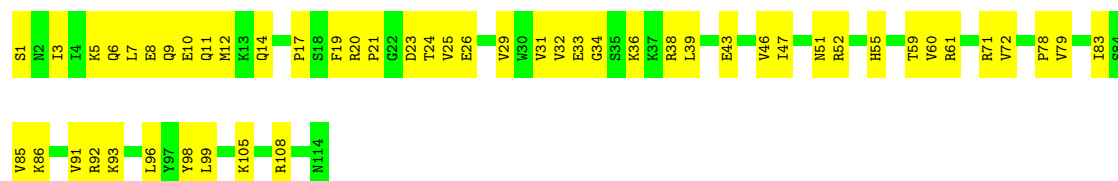
- Molecule 14: 50S ribosomal protein L18





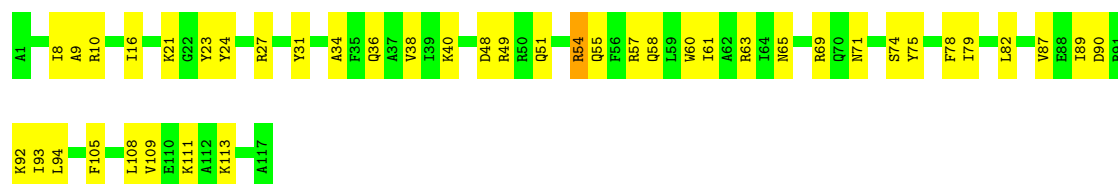
- Molecule 15: 50S ribosomal protein L19

Chain 18: 55% 45%



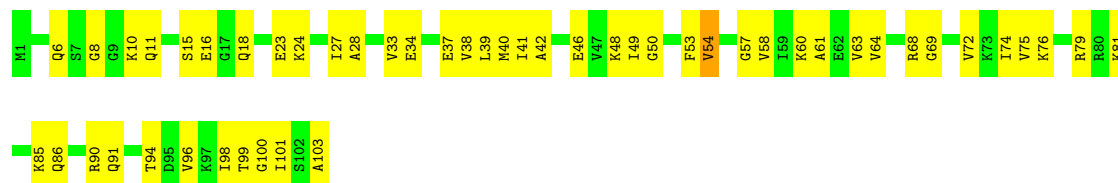
- Molecule 16: 50S ribosomal protein L20

Chain 19: 64% 35%



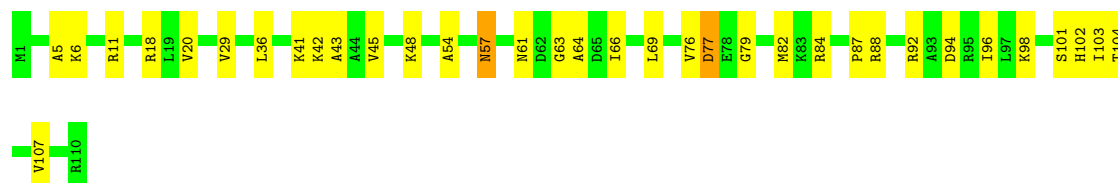
- Molecule 17: 50S ribosomal protein L21

Chain 20: 51% 48%



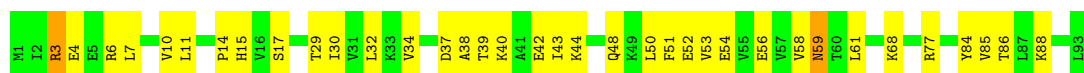
- Molecule 18: 50S ribosomal protein L22

Chain 21: 68% 30%



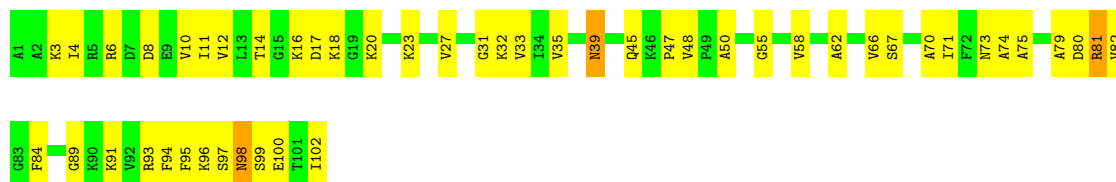
- Molecule 19: 50S ribosomal protein L23

Chain 22: 61% 37%



- Molecule 20: 50S ribosomal protein L24

Chain 23: 52% 45%



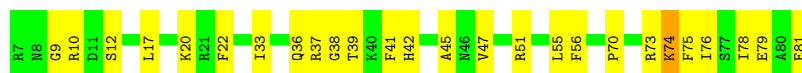
- Molecule 21: 50S ribosomal protein L25

Chain 24: 65% 34%



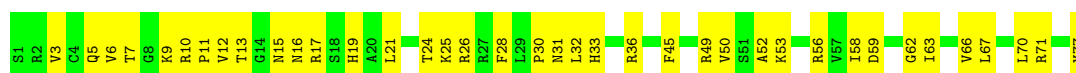
- Molecule 22: 50S ribosomal protein L27

Chain 25: 65% 33%



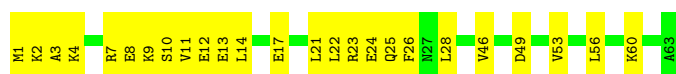
- Molecule 23: 50S ribosomal protein L28

Chain 26: 51% 49%



- Molecule 24: 50S ribosomal protein L29

Chain 27: 60% 40%



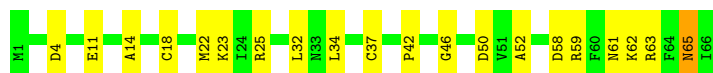
- Molecule 25: 50S ribosomal protein L30

Chain 28: 48% 50%



- Molecule 26: 50S ribosomal protein L31

Chain 29:  70% 29% .



- Molecule 27: 50S ribosomal protein L32

Chain 30:  54% 46%



- Molecule 28: 50S ribosomal protein L33

Chain 31:  62% 38%



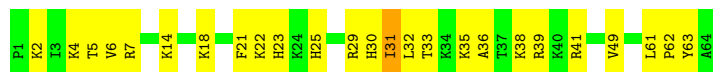
- Molecule 29: 50S ribosomal protein L34

Chain 32:  67% 33%




- Molecule 30: 50S ribosomal protein L35

Chain 33:  61% 38% .



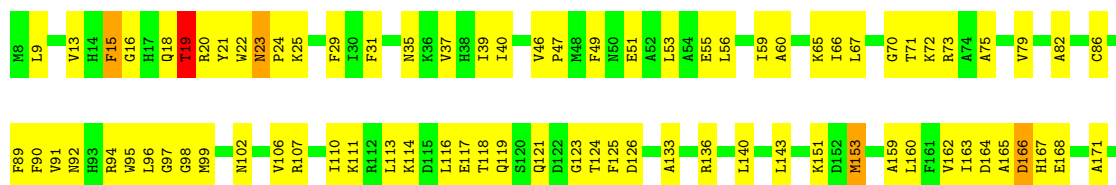
- Molecule 31: 50S ribosomal protein L36

Chain 34:  76% 21% .



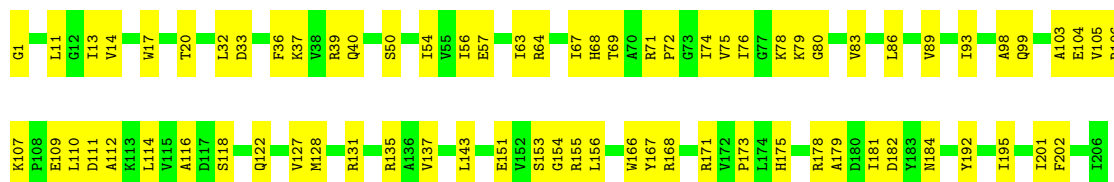
- Molecule 32: 30S ribosomal protein S2

Chain B:  50% 46% .

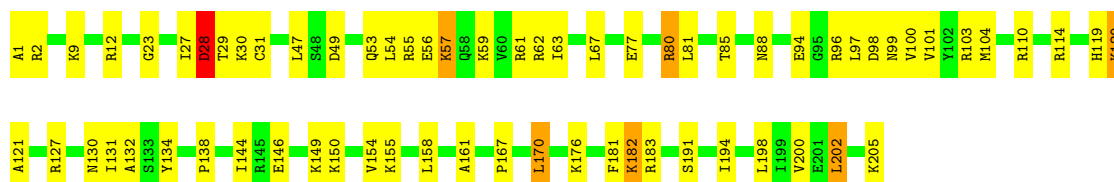




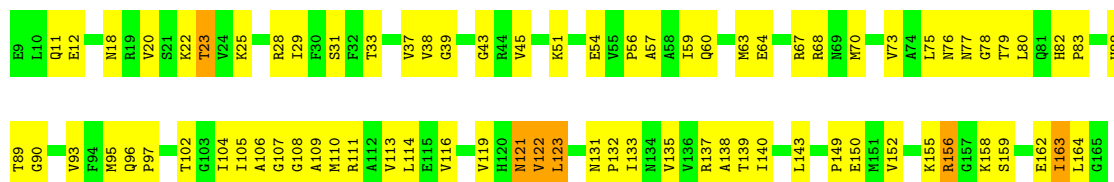
• Molecule 33: 30S ribosomal protein S3



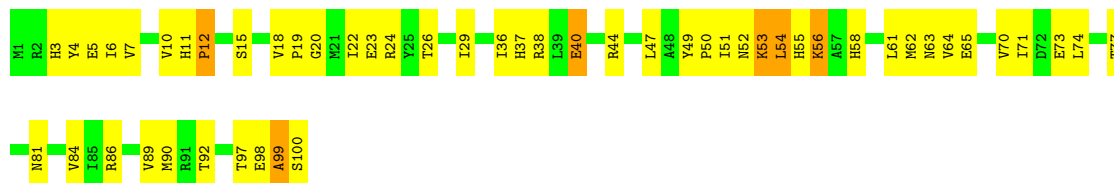
• Molecule 34: 30S ribosomal protein S4



• Molecule 35: 30S ribosomal protein S5

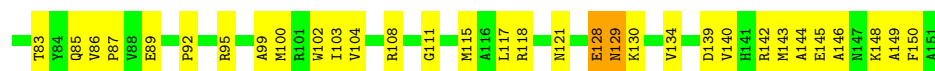


• Molecule 36: 30S ribosomal protein S6

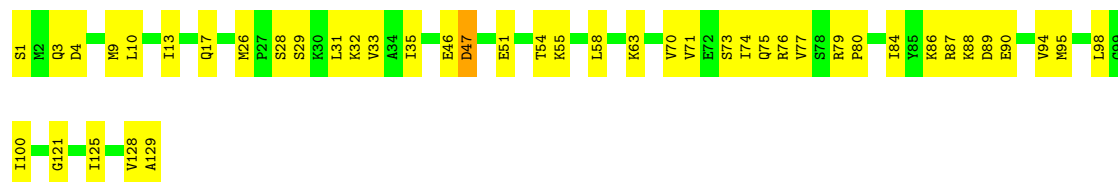


• Molecule 37: 30S ribosomal protein S7

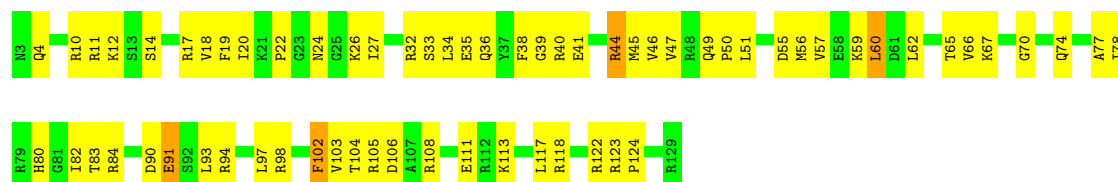




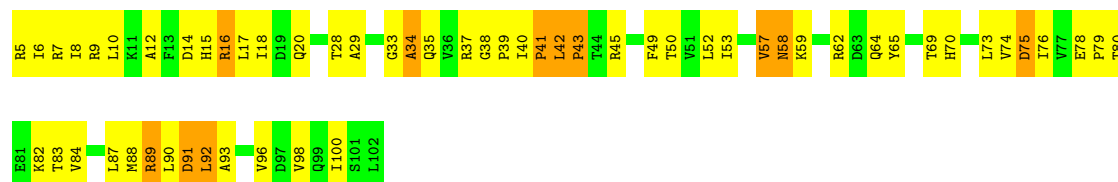
• Molecule 38: 30S ribosomal protein S8



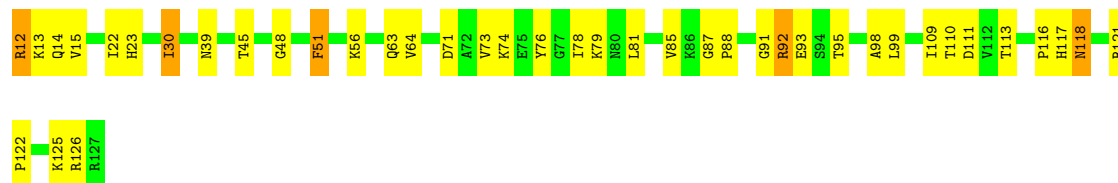
• Molecule 39: 30S ribosomal protein S9



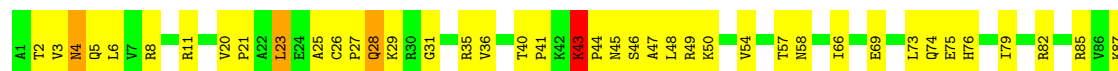
• Molecule 40: 30S ribosomal protein S10

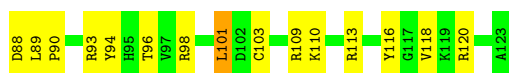


• Molecule 41: 30S ribosomal protein S11



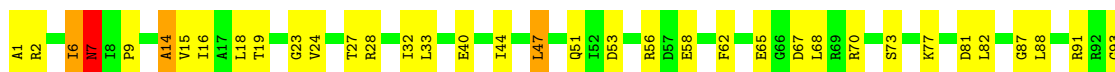
• Molecule 42: 30S ribosomal protein S12





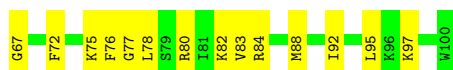
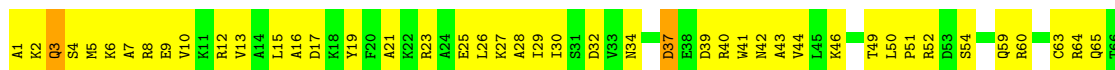
• Molecule 43: 30S ribosomal protein S13

Chain M: 61% 34%



• Molecule 44: 30S ribosomal protein S14

Chain N: 42% 56%



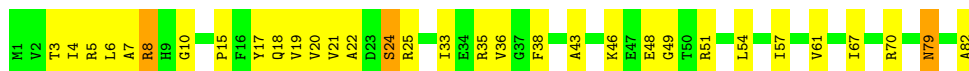
• Molecule 45: 30S ribosomal protein S15

Chain O: 68% 32%



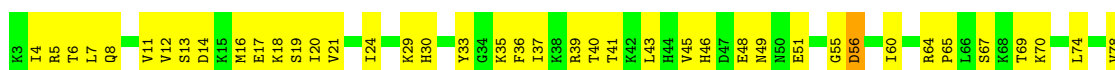
• Molecule 46: 30S ribosomal protein S16

Chain P: 61% 35%



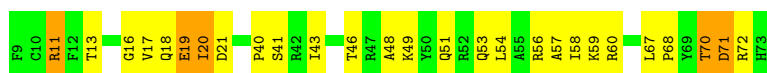
• Molecule 47: 30S ribosomal protein S17

Chain Q: 46% 51%



• Molecule 48: 30S ribosomal protein S18

Chain R: 58% 34% 8%



- Molecule 49: 30S ribosomal protein S19



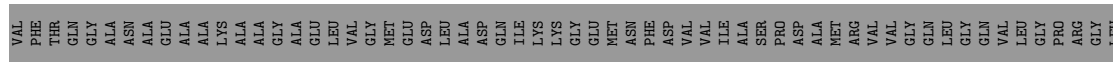
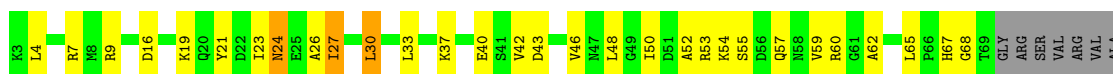
- Molecule 50: 30S ribosomal protein S20



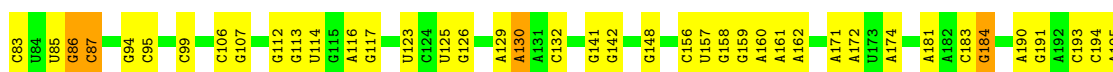
- Molecule 51: 30S ribosomal protein S21

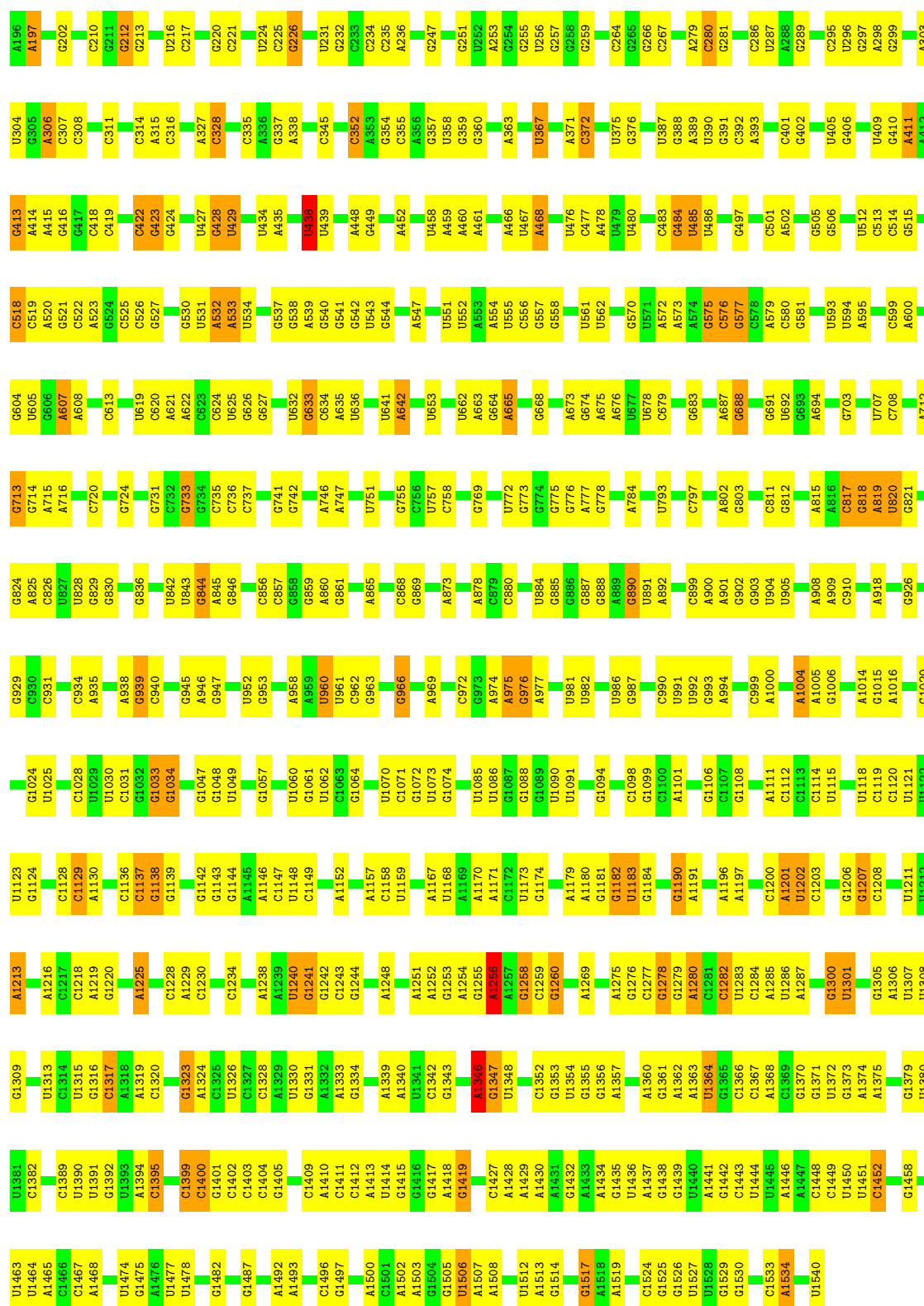


- Molecule 52: 50S ribosomal protein L1



- Molecule 53: 16S ribosomal RNA



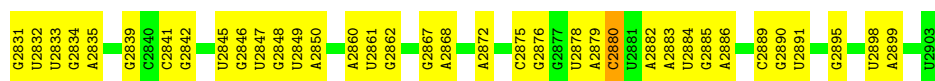


• Molecule 54: 23S ribosomal RNA

Chain 01: 54% 40% 5%

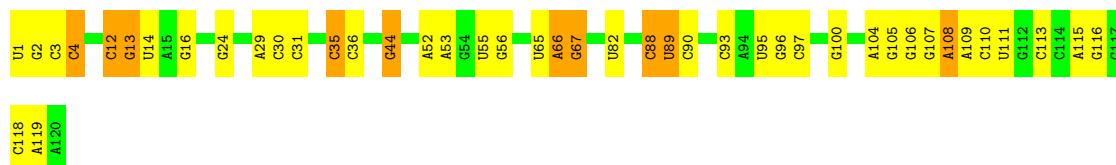
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G1358	A1273	U1273	G1170	A1073	A983	C876	A802	G700	G619	A528	G424	A311	A222	A127	G2
A1359	A1274	G1274	G1171	G1074	A984	A877	U803	G701	G620	A529	G530	G319	C225	C128	G7
G1360	C985	C985	U1174	A1076	G985	G881	A804	G703	A621	C531	C433	A320	A226	U138	A10
C1363	A1175	A1175	A1175	A1077	G989	G882	G806	U704	G622	A532	U434	A322	A227	C119	C11
G1364	U1176	U1176	U1176	C1078	A990	C885	U807	G705	G623	A533	C435	C323	C228	C140	U12
A1365	G1177	G1177	G1177	A1079	C991	C886	G808	A716	G624	U534	C436	C324	C229	G141	G17
A1366	C1178	C1178	C1178	C1080	G992	U887	G809	C717	G625	G535	C440	G327	C239	A142	U18
A1367	G1179	G1179	G1179	U1083	G993	U886	G809	C718	A626	G536	U441	U328	C240	A149	A19
G1368	C1180	C1180	C1180	A1084	C994	C888	U810	C719	A627	U537	C442	G329	A241	U150	C20
G1369	U1181	U1181	U1181	A1085	C995	C889	U811	U720	A628	A538	C443	A330	G242	C151	A21
C1370	G1182	G1182	G1182	A1086	A996	C890	C812	A721	A629	C542	C444	A340	G248	A155	G24
G1371	U1183	U1183	U1183	G997	G997	G891	U813	A722	A630	G543	C445	C341	C249	U25	U25
U1372	G1186	G1186	G1186	A1088	A1001	C892	C817	G723	A631	C544	A449	A342	C249	A156	G24
A1373	G1187	G1187	G1187	A1089	G1002	C893	U818	U724	A632	G545	U450	C343	C253	G157	G24
G1374	U1188	U1188	U1188	A819	G1002	U894	A819	G725	A633	U546	U451	C344	C253	U158	A28
U1375	G1188	G1188	G1188	U895	G1002	U895	U895	G726	A634	U547	U452	A345	C254	G159	G24
C1376	U1188	U1188	U1188	U896	G1002	U896	U896	G727	A635	U548	U453	A346	C255	A160	G35
G1377	G1197	G1197	G1197	C997	G1007	C897	G822	G728	A636	U549	U454	A347	C256	G160	G35
A1378	U1198	U1198	U1198	A1088	G1007	C898	U829	G729	A637	U550	U455	A348	C257	A161	U40
U1379	U1199	U1199	U1199	A1089	G1007	C899	U830	A730	A638	U551	U456	A349	C258	U162	C41
G1380	C1200	C1200	C1200	A1090	G1007	C900	U831	U731	A639	U552	U457	A350	C259	C163	G45
A1381	U1201	U1201	U1201	A1091	G1007	C901	U832	U732	A640	U553	U458	A351	C260	C164	G45
G1382	G1202	G1202	G1202	A1092	G1007	C902	U833	A733	A641	U554	U459	A352	C261	A165	G46
A1383	U1203	U1203	U1203	A1093	G1007	C903	U834	U734	A642	U555	U460	A353	C262	U174	U40
U1384	G1203	G1203	G1203	A1094	G1007	C904	U835	A735	A643	U556	U461	A354	C263	G175	C41
G1385	U1204	U1204	U1204	A1095	G1007	C905	U836	U736	A644	U557	U462	A355	C264	C165	G45
A1386	C1205	C1205	C1205	A1096	G1007	C906	U837	A737	A645	U558	U463	A356	C265	A166	G46
G1387	U1206	U1206	U1206	A1097	G1007	C907	U838	U738	A646	U559	U464	A357	C266	U175	U40
A1388	G1207	G1207	G1207	A1098	G1007	C908	U839	A739	A647	U560	U465	A358	C267	G176	A49
U1389	U1208	U1208	U1208	A1099	G1007	C909	U840	U740	A648	U561	U466	A359	C268	U177	U50
G1390	C1209	C1209	C1209	A1100	G1007	C910	U841	U741	A649	U562	U467	A360	C269	G178	G51
A1391	U1210	U1210	U1210	A1101	G1007	C911	U842	A742	A650	U563	U468	A361	C270	U179	G60
G1392	G1211	G1211	G1211	A1102	G1007	C912	U843	U743	A651	U564	U469	A362	C271	C184	A63
U1393	U1212	U1212	U1212	A1103	G1007	C913	U844	A744	A652	U565	U470	A363	C272	G185	U65
C1394	G1213	G1213	G1213	A1104	G1007	C914	U845	U745	A653	U566	U471	A364	C273	U180	C66
G1395	U1214	U1214	U1214	A1105	G1007	C915	U846	A746	A654	U567	U472	A365	C274	G181	U67
A1396	C1215	C1215	C1215	A1106	G1007	C916	U847	U747	A655	U568	U473	A366	C275	C182	U68
G1397	U1216	U1216	U1216	A1107	G1007	C917	U848	A748	A656	U569	U474	A367	C276	U183	G69
A1398	G1217	G1217	G1217	A1108	G1007	C918	U849	U749	A657	U570	U475	A368	C277	C192	A71
U1399	U1218	U1218	U1218	A1109	G1007	C919	U850	A750	A658	U571	U476	A369	C278	U184	U74
G1400	C1219	C1219	C1219	A1110	G1007	C920	U851	U751	A659	U572	U477	A370	C279	A195	G75
G1401	U1220	U1220	U1220	A1111	G1007	C921	U852	A752	A660	U573	U478	A371	C280	A196	G75
A1402	G1221	G1221	G1221	A1112	G1007	C922	U853	A753	A661	U574	U479	A372	C281	C197	U78
U1403	U1222	U1222	U1222	A1113	G1007	C923	U854	U754	A662	U575	U480	A373	C282	A198	A84
G1404	C1223	C1223	C1223	A1114	G1007	C924	U855	A755	A663	U576	U481	A374	C283	G205	C96
A1405	U1224	U1224	U1224	A1115	G1007	C925	U856	U756	A664	U577	U482	A375	C284	C209	C97
U1406	G1225	G1225	G1225	A1116	G1007	C926	U857	A757	A665	U578	U483	A376	C285	C210	U102
G1407	U1226	U1226	U1226	A1117	G1007	C927	U858	U758	A666	U579	U484	A377	C286	C211	U102
A1408	C1227	C1227	C1227	A1118	G1007	C928	U859	A759	A667	U580	U485	A378	C287	U190	G69
U1409	U1228	U1228	U1228	A1119	G1007	C929	U860	U760	A668	U581	U486	A379	C288	A191	A71
G1410	G1229	G1229	G1229	A1120	G1007	C930	U861	A761	A669	U582	U487	A380	C289	C192	U74
A1411	U1230	U1230	U1230	A1121	G1007	C931	U862	U762	A670	U583	U488	A381	C290	A192	G75
U1412	C1231	C1231	C1231	A1122	G1007	C932	U863	U763	A671	U584	U489	A382	C291	A193	U78
G1413	U1232	U1232	U1232	A1123	G1007	C933	U864	A764	A672	U585	U490	A383	C292	A194	A84
A1414	U1233	U1233	U1233	A1124	G1007	C934	U865	U765	A673	U586	U491	A384	C293	G206	C96
U1415	G1234	G1234	G1234	A1125	G1007	C935	U866	A766	A674	U587	U492	A385	C294	C209	C97
G1416	U1235	U1235	U1235	A1126	G1007	C936	U867	U767	A675	U588	U493	A386	C295	C210	U102
A1417	C1236	C1236	C1236	A1127	G1007	C937	U868	A768	A676	U589	U494	A387	C296	C211	U102
U1418	U1237	U1237	U1237	A1128	G1007	C938	U869	U769	A677	U590	U495	A388	C297	U191	G69
G1419	G1238	G1238	G1238	A1129	G1007	C939	U870	A770	A678	U591	U496	A389	C298	A192	A71
A1420	U1239	U1239	U1239	A1130	G1007	C940	U871	U771	A679	U592	U497	A390	C299	A193	U74
U1421	C1240	C1240	C1240	A1131	G1007	C941	U872	A772	A680	U593	U498	A391	C300	A194	G75
G1422	U1241	U1241	U1241	A1132	G1007	C942	U873	U773	A681	U594	U499	A392	C301	A195	U78
A1423	U1242	U1242	U1242	A1133	G1007	C943	U874	A774	A682	U595	U500	A393	C302	A196	A84
U1424	G1243	G1243	G1243	A1134	G1007	C944	U875	U775	A683	U596	U501	A394	C303	G207	C96
G1425	U1244	U1244	U1244	A1135	G1007	C945	U876	A776	A684	U597	U502	A395	C304	C209	C97
A1426	C1245	C1245	C1245	A1136	G1007	C946	U877	U777	A685	U598	U503	A396	C305	C210	U102
U1427	U1246	U1246	U1246	A1137	G1007	C947	U878	U778	A686	U599	U504	A397	C306	C211	U102
G1428	G1247	G1247	G1247	A1138	G1007	C948	U879	A779	A687	U600	U505	A398	C307	U192	A74
A1429	U1248	U1248	U1248	A1139	G1007	C949	U880	U780	A688	U601	U506	A399	C308	A193	G75
U1430	C1249	C1249	C1249	A1140	G1007	C950	U881	A781	A689	U602	U507	A400	C309	A194	U78
G1431	U1250	U1250	U1250	A1141	G1007	C951	U882	U782	A690	U603	U508	A401	C310	G208	A84
A1432	G1251	G1251	G1251	A1142	G1007	C952	U883	A783	A691	U604	U509	A402	C311	C209	C96
U1433	U1252	U1252	U1252	A1143	G1007	C953	U884	U784	A692	U605	U510	A403	C312	C210	U102
A1434	C1253	C1253	C1253	A1144	G1007	C954	U885	A785	A693	U606	U511	A404	C313	C211	U102
G1435	U1254	U1254	U1254	A1145	G1007	C955	U886	U786	A694	U607	U512	A405	C314	U193	A74
U1436	G1255	G1255	G1255	A1146	G1007	C956	U887	A787	A695	U608	U513	A406	C315	A194	G75
A1437	U1256	U1256	U1256	A1147	G1007	C957	U888	U788	A696	U609	U514	A407	C316	A195	U78
U1438	C1257	C1257	C1257	A1148	G1007	C958	U889	A789	A697	U610	U515	A408	C317	A196	A84
A1439	U1258	U1258	U1258	A1149	G1007	C959	U890	U790	A698	U611	U516	A409	C318	G209	C96
U1440	G1259	G1259	G1259	A1150	G1007	C960	U891	A791	A699	U612	U517	A410	C319	C210	U102
G1441	U1260	U1260	U1260	A1151	G1007	C961	U892	U792	A700	U613	U518	A411	C320	C211	U102
A1442	C1261	C1261	C1261	A1152	G1007	C962	U893	A793	A701	U614	U519	A412	C321	U194	A74
U1443	U1262	U1262	U1262	A1153	G1007	C963	U894	A794	A702	U615	U520	A413	C322	A195	U78
G1444	G1263	G1263	G1263	A1154	G1007	C964	U895	U795	A703	U616	U521	A414	C323	A196	A84
A1445	U1264														

G2744	C2646	U2555	C2452	G2367	U2291	C2208	U2139	G2056	G1972	U1859	C1760	G1653	C1536	G1445
C2745	U2647	G2557	C2462	C2368	U2292	G2209	G2140	G2057	A1978	G1860	A1759	G1860	G1540	C1446
G2746	G2648	C2558	C2463	C2369	U2296	A2211	C2141	A2058	G1979	A1871	C1760	U1657	G1540	G1448
A2748	C2649	G2567	C2467	G2370	A2297	A2212	C2142	A2059	G1980	A1872	C1764	U1662	C1550	C1451
U2754	U2650	G2567	A2468	G2373	A2297	U2213	G2144	G2061	G1991	A1877	U1765	U1682	A1551	G1452
G2655	C2573	G2574	U2473	A2376	U2305	C2214	A2147	A2062	U1991	G1873	U1765	U1682	A1551	C1451
U2656	G2574	G2574	U2473	A2377	U2305	G2216	G2148	C2065	C1992	A1877	U1766	G1663	G1555	C1453
A2758	A2577	A2577	A2476	A2378	A2309	G2224	U2149	G2066	C1994	G1878	U1773	A1664	G1555	C1454
A2764	C2666	A2577	U2476	G2379	U2312	A2225	C2150	G2067	C1987	A1885	C1774	G1666	C1560	C1461
A2765	C2666	U2580	A2478	C2380	C2313	C2226	G2152	C2069	A1986	U1886	A1780	U1669	U1562	C1462
C2771	G2674	G2581	U2479	C2380	A2314	C2226	C2153	C2069	A1986	U1886	A1780	U1669	U1562	C1463
C2772	A2675	G2582	U2480	G2383	G2315	U2229	C2154	A2071	A1986	C1893	A1784	C1670	U1563	G1464
C2773	C2676	G2583	G2481	U2384	G2316	G2230	U2155	C2072	G2004	C1894	A1784	C1670	U1563	G1464
C2774	G2677	U2584	G2481	C2385	A2317	G2230	G2156	C2073	A2005	C1894	C1790	G1674	C1565	U1466
U2778	U2680	U2585	G2484	G2389	G2318	G2238	G2157	U2074	C2006	A1899	A1791	A1676	G1567	A1469
A2778	U2680	U2586	G2485	G2389	G2318	G2239	A2158	U2075	C2006	A1900	A1791	A1676	G1567	A1469
U2779	C2681	A2587	G2488	U2390	U2321	G2240	G2159	U2075	G2010	A1901	U1796	A1679	G1568	A1470
U2784	A2682	G2588	G2488	C2391	A2322	U2241	G2159	A2080	G2010	A1901	U1796	A1679	G1568	A1470
U2785	A2682	G2588	G2488	C2391	A2322	U2241	G2159	A2080	G2010	A1901	U1796	A1679	G1568	A1470
U2786	A2682	G2588	G2488	C2391	A2322	U2241	G2159	A2080	G2010	A1901	U1796	A1679	G1568	A1470
C2787	U2689	G2592	U2493	C2394	C2325	U2244	G2162	U2081	G2012	C1902	G1797	U1680	A1570	G1471
C2788	U2689	G2592	U2493	C2394	C2325	U2244	G2162	U2081	G2012	C1902	G1797	U1680	A1570	G1471
C2789	U2689	G2592	U2493	C2394	C2325	U2244	G2162	U2081	G2012	C1902	G1797	U1680	A1570	G1471
U2790	U2696	C2601	C2498	A2406	U2329	G2248	U2167	A2095	A2016	U1911	A1802	A1689	U1578	G1482
G2791	G2697	G2603	G2502	A2407	U2329	C2248	A2169	A2095	A2016	U1911	A1802	A1689	U1578	G1482
U2792	C2697	G2603	G2502	A2407	U2329	C2248	A2169	A2095	A2016	U1911	A1802	A1689	U1578	G1482
C2793	U2604	U2604	A2503	G2413	G2330	U2249	A2170	C2103	A2020	A1918	C1806	A1700	U1584	U1484
C2794	U2604	U2604	A2503	G2413	G2330	U2249	A2170	C2103	A2020	A1918	C1806	A1700	U1584	U1484
U2795	U2706	C2606	G2505	G2415	C2332	G2251	U2172	C2104	G2023	A1919	G1807	A1701	C1585	U1486
U2796	U2707	C2606	G2505	G2415	C2332	G2251	U2172	C2104	G2023	A1919	G1807	A1701	C1585	U1486
U2797	G2708	U2609	G2508	G2415	C2332	G2251	U2172	C2104	G2023	A1919	G1807	A1701	C1585	U1486
U2798	G2709	U2613	U2514	C2420	A2336	U2257	A2176	U2106	G2027	G1929	A1808	A1701	C1585	U1486
A2799	C2710	A2614	C2515	C2421	A2337	U2258	C2177	G2110	G2027	G1929	A1808	A1701	C1585	U1486
A2800	U2711	U2615	C2516	C2422	C2338	U2259	C2177	G2111	G2027	G1929	A1808	A1701	C1585	U1486
G2801	C2712	U2616	A2517	U2423	C2339	U2260	C2177	G2112	A2030	A1936	C1816	G1710	A1603	C1498
G2802	U2713	U2617	C2518	C2424	A2340	U2261	C2177	G2113	A2031	A1937	C1816	G1710	A1603	C1498
G2803	U2714	U2618	A2518	C2425	A2340	U2262	C2177	G2114	A2032	A1937	C1816	G1710	A1603	C1498
U2807	C2714	C2619	G2529	C2427	U2343	C2264	U2187	C2116	G2034	A1939	U1818	G1715	A1608	A1504
U2807	C2714	C2619	G2529	C2427	U2343	C2264	U2187	C2116	G2034	A1939	U1818	G1715	A1608	A1504
G2808	U2720	C2620	A2530	G2428	U2344	U2265	U2187	A2117	G2035	U1940	A1821	U1729	G1612	U1506
G2809	A2721	C2620	A2531	G2429	G2345	U2266	U2188	A2118	G2036	U1940	A1821	U1729	G1612	U1506
C2810	C2722	G2623	G2532	U2431	A2346	A2267	U2189	A2119	C2037	C1942	U1825	G1730	G1613	C1507
G2811	C2723	G2624	G2533	U2432	C2347	U2268	U2190	G2120	C1931	C1942	U1825	G1730	G1613	C1507
G2812	G2625	G2625	A2534	A2433	U2348	G2269	A2191	G2121	G2038	C1942	U1825	G1730	G1613	C1507
U2815	A2725	C2626	G2534	A2434	G2349	G2269	U2192	U2122	G2040	C1942	U1825	G1730	G1613	C1507
U2815	A2725	C2626	G2534	A2434	G2349	G2269	U2192	U2122	G2040	C1942	U1825	G1730	G1613	C1507
A2726	A2726	G2627	U2537	U2435	C2350	A2273	C2193	G2123	U2041	G1954	A1829	U1736	G1625	C1512
A2727	A2727	G2627	U2537	U2435	C2350	A2273	C2193	G2123	U2041	G1954	A1829	U1736	G1625	C1512
U2728	U2728	U2628	C2538	U2440	G2351	A2274	U2194	G2124	A2042	C1830	G1830	U1737	A1626	U1513
U2817	C2630	U2629	G2543	C2441	U2356	G2277	U2195	A2126	C2043	C1831	G1831	U1737	A1626	U1513
U2818	C2630	U2629	G2543	C2441	U2356	G2277	U2195	A2126	C2043	C1831	G1831	U1737	A1626	U1513
C2819	G2633	C2633	G2544	C2442	G2357	A2278	A2198	G2128	G2046	C1962	C1833	G1740	A1637	G1524
A2820	G2633	C2633	G2544	C2442	G2357	A2278	A2198	G2128	G2046	C1962	C1833	G1740	A1637	G1524
A2821	G2636	C2636	G2545	C2443	G2357	A2278	A2198	G2128	G2046	C1962	C1833	G1740	A1637	G1524
A2822	G2637	C2637	G2546	C2444	G2357	A2278	A2198	G2128	G2046	C1962	C1833	G1740	A1637	G1524
A2823	G2737	U2637	U2547	G2444	A2360	G2282	U2203	U2132	G2049	C1968	C1844	U1747	A1640	C1527
A2823	G2737	U2637	U2547	G2444	A2360	G2282	U2203	U2132	G2049	C1968	C1844	U1747	A1640	C1527
G2823	U2739	G2638	U2552	U2448	G2361	G2286	G2204	G2133	A2052	A1969	U1856	U1751	G1645	A1532
G2823	U2739	G2638	U2552	U2448	G2361	G2286	G2204	G2133	A2052	A1969	U1856	U1751	G1645	A1532
A2740	A2740	C2641	U2554	U2451	G2365	A2287	C2206	A2134	C2055	A1970	C1857	U1752	G1646	A1533
A2740	A2740	C2641	U2554	U2451	G2365	A2287	C2206	A2134	C2055	A1970	C1857	U1752	G1646	A1533



• Molecule 55: 5S ribosomal RNA

Chain 02: 63% 28% 8%



• Molecule 56: tRNA^{fMet}

Chain X: 58% 38% .



• Molecule 56: tRNA^{fMet}

Chain W: 69% 27% .



• Molecule 57: mRNA

Chain V: 63% 32% 5%



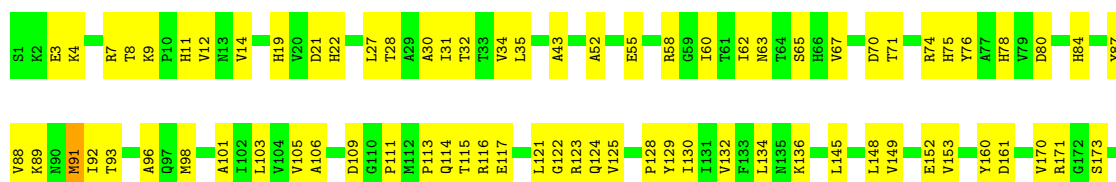
• Molecule 58: tRNA^{Lys}

Chain Y: 61% 25% 12% .



• Molecule 59: Elongation factor Tu 2

Chain Z: 49% 49% ..



A182	A183	E260	F261	E262	K263	L264	L265	D266	E267	G268	R269	A270	G271	E272	N273	V276	R279	E287	R288	G289	Q290	V291	L292	A293	K294	P295	G296	T297	L298	H301	T302	K303	F304	E305	S306	E307	V308	Y309	I310	L311	S312	K313	D314	E315	R318	H319	T320	P321	F322	F323	K324	G325	Q329	F330	Y331
E184	E185	A186	A187	I188	I189	E190	L191	A192	G193	F194	L195	D196	S197	Y198	I199	K208	P209	F210	L211	L212	P213	I214	E215	E216	T217	I220	S221	G222	R223	V226	V227	T228	V231	E232	I235	I236	K237	V242	V245	G246	I247	T250	T256	G257	V258	E259									
F332	R333	T334	T335	D336	V337	T338	G339	T340	I341	E342	L343	F344	E345	G346	V347	E348	M349	V350	M351	P352	I356	K357	M358	V359	V360	T361	L362	I363	H364	P365	I366	A367	M368	D369	D370	G371	L372	R373	F374	A375	I376	R377	T382	V383	G384	A385	G386	V387	V388	A389	K390	V391	L392		

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	6910	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION; CTFFIND3 was used to determine CTF values. FREALIGN applied CTF correction.	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	1.0	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	5000	Depositor
Magnification	60976	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: GCP, FME, U8U

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# $ Z > 5$	RMSZ	# $ Z > 5$
1	04	0.30	0/2122	0.59	0/2852
2	05	0.32	0/1586	0.57	0/2134
3	06	0.32	0/1571	0.59	0/2113
4	07	0.35	0/1435	0.58	0/1926
5	08	0.32	0/1343	0.62	0/1816
6	09	0.35	0/1122	0.62	1/1515 (0.1%)
7	10	0.40	0/1002	0.73	0/1350
8	11	0.37	0/1046	0.66	0/1410
9	12	0.33	0/1152	0.59	0/1551
10	13	0.31	0/948	0.58	0/1268
11	14	0.32	0/1054	0.64	0/1403
12	15	0.33	0/1093	0.59	0/1460
13	16	0.32	0/974	0.55	0/1301
14	17	0.31	0/902	0.56	0/1209
15	18	0.32	0/929	0.60	0/1242
16	19	0.33	0/960	0.52	0/1278
17	20	0.34	0/829	0.65	1/1107 (0.1%)
18	21	0.30	0/864	0.59	0/1156
19	22	0.32	0/745	0.58	0/994
20	23	0.33	0/788	0.62	0/1051
21	24	0.35	0/766	0.59	0/1025
22	25	0.33	0/582	0.54	0/769
23	26	0.31	0/635	0.55	0/848
24	27	0.32	0/510	0.60	0/677
25	28	0.30	0/453	0.58	0/605
26	29	0.35	0/532	0.64	0/709
27	30	0.32	0/450	0.56	0/599
28	31	0.35	0/417	0.57	0/554
29	32	0.33	0/380	0.60	0/498
30	33	0.31	0/513	0.58	0/676
31	34	0.32	0/303	0.60	0/397
32	B	0.36	0/1736	0.63	0/2338

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	C	0.34	0/1652	0.54	0/2225
34	D	0.34	0/1665	0.58	0/2227
35	E	0.33	0/1170	0.65	1/1573 (0.1%)
36	F	0.35	0/836	0.64	0/1128
37	G	0.32	0/1196	0.57	0/1602
38	H	0.32	0/989	0.61	0/1326
39	I	0.34	0/1034	0.64	0/1375
40	J	0.34	0/797	0.65	0/1077
41	K	0.33	0/886	0.59	0/1195
42	L	0.32	0/969	0.66	1/1300 (0.1%)
43	M	0.31	0/893	0.59	0/1193
44	N	0.33	0/817	0.56	0/1088
45	O	0.31	0/722	0.53	0/964
46	P	0.33	0/659	0.58	0/884
47	Q	0.34	0/658	0.71	0/881
48	R	0.36	0/545	0.58	0/731
49	S	0.35	0/653	0.63	0/877
50	T	0.31	0/671	0.53	0/888
51	U	0.40	0/551	0.64	0/728
52	03	0.38	0/1034	0.67	0/1387
53	A	0.39	0/36963	0.69	10/57662 (0.0%)
54	01	0.39	0/69796	0.68	3/108888 (0.0%)
55	02	0.41	0/2872	0.68	1/4479 (0.0%)
56	W	0.44	0/1832	0.68	0/2855
56	X	0.48	0/1832	0.68	0/2855
57	V	0.41	0/471	0.63	0/735
58	Y	0.55	1/1780 (0.1%)	0.74	2/2767 (0.1%)
59	Z	0.38	0/3085	0.67	0/4173
All	All	0.38	1/166770 (0.0%)	0.66	20/248894 (0.0%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
58	Y	1	G	OP3-P	-7.06	1.52	1.61

All (20) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
54	01	1178	C	N1-C1'-C2'	8.80	125.44	114.00
53	A	1301	U	N1-C1'-C2'	6.29	122.18	114.00
53	A	960	U	N1-C1'-C2'	6.09	121.92	114.00
17	20	50	GLY	N-CA-C	-5.95	98.23	113.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
53	A	1256	A	N9-C1'-C2'	5.87	121.63	114.00
35	E	123	LEU	N-CA-C	-5.86	95.17	111.00
53	A	1300	G	N9-C1'-C2'	5.79	121.53	114.00
53	A	1346	A	N9-C1'-C2'	5.79	121.53	114.00
58	Y	69	A	C2'-C3'-O3'	5.48	122.47	113.70
53	A	428	G	N9-C1'-C2'	5.38	120.99	114.00
42	L	43	LYS	N-CA-C	5.30	125.30	111.00
53	A	438	U	C2'-C3'-O3'	5.29	122.17	113.70
53	A	733	G	N9-C1'-C2'	5.23	120.79	114.00
55	02	44	G	N9-C1'-C2'	5.21	120.77	114.00
54	01	2326	C	C2'-C3'-O3'	5.14	121.93	113.70
54	01	458	G	C1'-O4'-C4'	-5.12	105.80	109.90
53	A	1181	G	N9-C1'-C2'	5.12	120.65	114.00
58	Y	17	U	N1-C1'-C2'	5.08	120.61	114.00
6	09	85	GLY	N-CA-C	-5.01	100.57	113.10
53	A	890	G	C1'-O4'-C4'	-5.00	105.90	109.90

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	04	2083	0	2157	88	0
2	05	1565	0	1616	53	0
3	06	1552	0	1619	48	0
4	07	1411	0	1447	59	0
5	08	1323	0	1374	55	0
6	09	1111	0	1148	52	0
7	10	989	0	1025	60	0
8	11	1032	0	1088	74	0
9	12	1129	0	1162	44	0
10	13	939	0	1012	39	0
11	14	1045	0	1117	46	0
12	15	1074	0	1157	39	0
13	16	961	0	1000	32	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
14	17	892	0	923	34	0
15	18	917	0	965	43	0
16	19	947	0	1022	34	0
17	20	816	0	839	38	0
18	21	857	0	922	36	0
19	22	739	0	807	26	0
20	23	780	0	834	40	0
21	24	753	0	780	25	0
22	25	575	0	592	24	0
23	26	625	0	655	31	0
24	27	509	0	543	23	0
25	28	449	0	491	22	0
26	29	523	0	524	11	0
27	30	444	0	461	24	0
28	31	410	0	440	17	0
29	32	377	0	418	15	0
30	33	504	0	574	19	0
31	34	302	0	343	9	0
32	B	1705	0	1732	77	0
33	C	1625	0	1699	58	0
34	D	1643	0	1710	55	0
35	E	1157	0	1199	53	0
36	F	818	0	808	44	0
37	G	1182	0	1240	56	0
38	H	979	0	1034	38	0
39	I	1022	0	1070	57	0
40	J	787	0	828	52	0
41	K	870	0	878	33	0
42	L	955	0	1019	48	0
43	M	884	0	944	42	0
44	N	805	0	847	47	0
45	O	714	0	737	17	0
46	P	649	0	666	33	0
47	Q	649	0	691	32	0
48	R	536	0	552	19	0
49	S	638	0	665	32	0
50	T	665	0	714	30	0
51	U	545	0	579	26	0
52	03	1027	0	1092	58	0
53	A	33012	0	16618	489	0
54	01	62317	0	31346	907	0
55	02	2568	0	1303	42	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
56	W	1640	0	836	14	0
56	X	1640	0	837	20	0
57	V	417	0	209	6	0
58	Y	1618	0	820	23	0
59	Z	3029	0	3043	172	0
60	W	10	0	10	0	0
61	Y	9	0	12	4	0
62	Z	32	0	14	3	0
All	All	153780	0	104807	3324	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 13.

All (3324) 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)
54:01:45:G:H5''	54:01:46:G:H5'	1.35	1.07
54:01:1645:G:H5''	54:01:1646:C:H5'	1.42	1.00
7:10:118:ILE:HG23	7:10:119:PRO:HD3	1.43	0.99
4:07:15:LEU:HD13	4:07:28:PRO:HD2	1.41	0.98
39:I:83:THR:HG21	39:I:102:PHE:HB3	1.44	0.96
54:01:475:C:H4'	54:01:510:C:H5'	1.46	0.96
29:32:34:ARG:HE	29:32:39:ARG:HD2	1.30	0.96
6:09:84:ALA:HA	6:09:91:PHE:H	1.31	0.95
53:A:484:G:H4'	53:A:485:U:H5''	1.48	0.94
51:U:66:ARG:HG3	53:A:1099:G:H4'	1.47	0.94
12:15:12:MET:HA	54:01:910:A:H62	1.33	0.94
40:J:53:ILE:HG12	53:A:1060:U:H5''	1.50	0.93
52:03:30:LEU:HD13	52:03:178:VAL:HG23	1.51	0.93
22:25:39:THR:H	54:01:2331:G:H4'	1.34	0.93
43:M:88:LEU:HD13	43:M:91:ARG:HH21	1.33	0.91
15:18:92:ARG:HD3	54:01:1753:G:H5''	1.52	0.91
52:03:162:ARG:HD3	52:03:162:ARG:H	1.35	0.90
3:06:76:PRO:HA	3:06:82:GLY:HA2	1.54	0.90
6:09:5:LEU:HD22	6:09:13:GLY:HA3	1.52	0.90
7:10:27:VAL:HG13	7:10:83:ALA:HB3	1.53	0.90
36:F:3:HIS:H	36:F:92:THR:HG22	1.35	0.89
34:D:103:ARG:HH12	34:D:110:ARG:HH12	1.16	0.89
53:A:1200:C:H5''	53:A:1201:A:H3'	1.53	0.89
53:A:112:G:H21	53:A:354:G:H5'	1.36	0.89
21:24:48:MET:HA	21:24:51:GLN:HE21	1.38	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:B:9:LEU:HD11	32:B:13:VAL:HG22	1.56	0.88
6:09:84:ALA:HB2	6:09:90:LEU:HD12	1.54	0.88
21:24:9:ARG:HG2	21:24:41:GLU:HB2	1.55	0.87
55:02:13:G:H21	55:02:16:G:H1'	1.37	0.87
28:31:33:LEU:HD22	54:01:2286:G:H2'	1.57	0.86
37:G:46:LEU:HD23	37:G:57:GLU:HB3	1.57	0.86
53:A:1206:G:H2'	53:A:1207:G:H5''	1.55	0.86
53:A:85:U:H5''	53:A:86:G:H5'	1.56	0.86
1:04:121:ALA:HB1	1:04:127:ASN:HD22	1.41	0.86
33:C:122:GLN:HE22	33:C:135:ARG:HD2	1.40	0.86
9:12:81:ILE:HD11	54:01:2514:U:H5''	1.58	0.85
46:P:20:VAL:HG23	46:P:35:ARG:HA	1.56	0.85
11:14:96:LYS:HE3	11:14:103:ILE:HA	1.58	0.85
52:03:48:LEU:HD13	52:03:50:ILE:HD11	1.59	0.85
22:25:20:LYS:HG3	54:01:2355:G:H4'	1.59	0.84
54:01:1053:C:H2'	54:01:1054:A:H5''	1.58	0.84
34:D:103:ARG:HD2	34:D:167:PRO:HG2	1.58	0.84
54:01:2452:C:H42	54:01:2504:U:H3	1.21	0.84
42:L:23:LEU:HD22	42:L:58:ASN:HB3	1.59	0.84
34:D:97:LEU:HB2	34:D:134:TYR:HB3	1.59	0.83
39:I:94:ARG:HA	39:I:97:LEU:HB3	1.60	0.83
7:10:24:SER:HB2	7:10:116:GLU:HB2	1.61	0.83
59:Z:210:PHE:H	59:Z:294:LYS:HE2	1.43	0.83
36:F:7:VAL:HG22	36:F:61:LEU:HD13	1.60	0.83
53:A:405:U:H3'	53:A:406:G:H5'	1.60	0.83
15:18:52:ARG:HH22	54:01:2720:U:H5''	1.43	0.83
56:X:13:C:H2'	56:X:14:A:H5''	1.61	0.82
59:Z:245:VAL:HA	59:Z:250:THR:HG22	1.60	0.82
35:E:57:ALA:HA	35:E:60:GLN:HE21	1.45	0.82
49:S:30:LEU:HB2	49:S:48:ILE:HG22	1.61	0.82
4:07:130:GLY:HA3	54:01:2305:U:H5''	1.62	0.82
11:14:37:GLY:H	11:14:41:ARG:HH22	1.23	0.81
12:15:45:GLN:HE21	54:01:2485:G:H5''	1.45	0.81
54:01:1474:U:H2'	54:01:1475:G:H5'	1.63	0.80
18:21:11:ARG:HH21	54:01:1321:A:H4'	1.44	0.80
53:A:1259:C:H3'	53:A:1260:G:H5''	1.63	0.80
41:K:87:GLY:H	41:K:113:THR:HG22	1.47	0.80
41:K:71:ASP:HA	41:K:74:LYS:HG3	1.62	0.79
54:01:121:G:H4'	54:01:149:A:H5'	1.63	0.79
52:03:180:PHE:HB3	52:03:184:LYS:HB2	1.62	0.79
17:20:63:VAL:HA	17:20:96:VAL:HG12	1.63	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:M:15:VAL:HG23	43:M:16:ILE:HD12	1.64	0.79
21:24:72:VAL:HG12	21:24:93:ARG:HA	1.63	0.79
54:01:2277:G:H2'	54:01:2278:A:H5''	1.64	0.79
53:A:1500:A:H5''	53:A:1508:A:H5''	1.64	0.79
13:16:44:LEU:HD23	13:16:113:ILE:HD13	1.65	0.78
17:20:76:LYS:HB2	17:20:85:LYS:HB3	1.65	0.78
13:16:2:ARG:HA	13:16:5:LYS:HD2	1.65	0.78
35:E:107:GLY:HA3	53:A:9:G:H5'	1.65	0.78
13:16:28:LEU:HD23	13:16:48:VAL:HG21	1.63	0.78
54:01:889:C:H2'	54:01:890:C:H5'	1.66	0.78
8:11:38:CYS:HA	8:11:41:PHE:HB3	1.66	0.78
17:20:38:VAL:HG11	17:20:57:GLY:HA3	1.66	0.78
20:23:33:VAL:HG13	20:23:66:VAL:HG22	1.64	0.78
38:H:10:LEU:HD22	38:H:74:ILE:HD11	1.66	0.78
10:13:43:ILE:HD12	10:13:56:ASP:HB2	1.65	0.78
34:D:80:ARG:HH11	34:D:81:LEU:HD23	1.49	0.78
9:12:64:VAL:HB	9:12:68:LYS:HE3	1.65	0.77
54:01:1827:U:H5'	54:01:1971:U:H5''	1.66	0.77
18:21:29:VAL:HG21	18:21:69:LEU:HD23	1.65	0.77
48:R:70:THR:HG23	48:R:71:ASP:H	1.48	0.77
34:D:200:VAL:HG21	35:E:102:THR:HG22	1.66	0.77
40:J:57:VAL:HG22	40:J:58:ASN:H	1.49	0.77
54:01:2553:G:H3'	54:01:2554:U:H5''	1.67	0.77
35:E:105:ILE:HD11	35:E:123:LEU:HD23	1.67	0.77
40:J:39:PRO:HD2	53:A:1123:U:H4'	1.67	0.77
37:G:72:VAL:HG12	37:G:89:GLU:HA	1.65	0.77
2:05:113:SER:HB3	2:05:170:VAL:HG21	1.67	0.77
42:L:26:CYS:SG	42:L:29:LYS:HG3	2.25	0.77
58:Y:46:G:H3'	58:Y:47:U:H4'	1.66	0.77
5:08:137:LYS:HG2	54:01:2746:U:H5''	1.65	0.76
32:B:118:THR:HA	32:B:121:GLN:HE21	1.50	0.76
33:C:106:ARG:HG3	33:C:107:LYS:HG3	1.67	0.76
14:17:49:VAL:HG11	14:17:81:ARG:HB2	1.67	0.76
41:K:15:VAL:HG12	41:K:76:TYR:HB3	1.66	0.76
54:01:2427:C:H5''	54:01:2429:G:H5'	1.67	0.76
59:Z:289:GLY:HA2	59:Z:335:THR:HG22	1.66	0.76
42:L:113:ARG:HB2	42:L:118:VAL:HB	1.68	0.76
38:H:1:SER:HA	53:A:824:G:H1'	1.68	0.75
1:04:20:ASN:HD22	1:04:23:LEU:HG	1.50	0.75
6:09:67:ALA:HA	6:09:138:VAL:HG11	1.67	0.75
12:15:64:TRP:HB2	12:15:104:GLU:HB2	1.69	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:06:129:PRO:HG3	3:06:156:ASN:HA	1.68	0.75
33:C:76:ILE:HB	33:C:80:GLY:HA2	1.68	0.75
37:G:145:GLU:H	37:G:148:LYS:HB2	1.52	0.75
39:I:20:ILE:HD11	39:I:60:LEU:HD22	1.69	0.75
14:17:40:ILE:HG12	14:17:47:VAL:HG12	1.66	0.74
23:26:31:ASN:HD22	23:26:52:ALA:HB2	1.51	0.74
32:B:160:LEU:HB3	32:B:182:VAL:HG12	1.69	0.74
52:03:68:GLY:HA2	52:03:159:GLY:HA3	1.69	0.74
59:Z:211:LEU:HD11	59:Z:298:ILE:HD11	1.67	0.74
52:03:62:ALA:HA	52:03:162:ARG:HA	1.68	0.74
17:20:41:ILE:HG13	17:20:54:VAL:HG21	1.69	0.74
18:21:6:LYS:HG3	54:01:494:G:H4'	1.69	0.74
32:B:66:ILE:HD12	32:B:159:ALA:HB3	1.68	0.74
41:K:22:ILE:HG21	41:K:95:THR:HG21	1.69	0.74
54:01:507:A:H5''	54:01:508:A:H2'	1.70	0.74
2:05:55:LYS:HE2	2:05:77:ARG:HA	1.69	0.74
49:S:77:ARG:HH21	53:A:1225:A:H4'	1.51	0.73
8:11:10:LEU:HD12	8:11:58:ILE:HG13	1.71	0.73
1:04:160:TYR:HB3	1:04:193:GLU:HG2	1.71	0.73
4:07:48:LEU:HD21	4:07:147:ARG:HH12	1.52	0.73
1:04:48:ILE:HD11	1:04:51:ARG:HA	1.70	0.73
54:01:161:A:H3'	54:01:162:U:H5''	1.70	0.73
42:L:98:ARG:HB2	42:L:116:TYR:HA	1.71	0.72
52:03:46:VAL:HG13	52:03:212:VAL:HG22	1.71	0.72
3:06:24:ASN:HD22	3:06:27:LEU:HB2	1.53	0.72
7:10:64:VAL:HG21	7:10:78:GLY:HA2	1.71	0.72
8:11:33:ASN:HD21	8:11:35:MET:HB3	1.54	0.72
32:B:91:VAL:HG11	32:B:95:TRP:HD1	1.54	0.72
43:M:6:ILE:HG13	43:M:7:ASN:H	1.54	0.72
34:D:158:LEU:HA	34:D:161:ALA:HB3	1.72	0.72
20:23:73:ASN:ND2	20:23:75:ALA:HB3	2.05	0.72
23:26:9:LYS:HE2	23:26:53:LYS:HD3	1.69	0.71
55:02:3:C:H2'	55:02:4:C:H5''	1.72	0.71
18:21:20:VAL:HG21	18:21:43:ALA:HB3	1.70	0.71
36:F:3:HIS:HB2	36:F:92:THR:HA	1.69	0.71
1:04:143:VAL:HB	1:04:153:LEU:HB2	1.72	0.71
43:M:94:LEU:HB3	43:M:95:PRO:HD2	1.71	0.71
5:08:3:VAL:HG21	54:01:2748:A:H5'	1.73	0.71
6:09:55:GLU:HA	6:09:58:LEU:HB2	1.71	0.71
6:09:124:THR:HG22	6:09:125:THR:H	1.56	0.71
7:10:87:GLU:HB3	7:10:93:ALA:HB3	1.72	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:11:92:PRO:HA	8:11:136:GLY:HA3	1.73	0.71
39:I:123:ARG:HB3	53:A:1343:G:H4'	1.72	0.71
32:B:205:ALA:HB3	32:B:208:ALA:HB3	1.72	0.71
54:01:805:G:H22	54:01:828:U:H5''	1.55	0.71
10:13:24:VAL:HG13	10:13:33:ALA:HB2	1.73	0.71
43:M:70:ARG:HA	43:M:73:SER:HB2	1.73	0.71
54:01:2628:C:H3'	54:01:2629:U:H5'	1.71	0.70
59:Z:4:LYS:HA	59:Z:264:LEU:HB2	1.72	0.70
7:10:61:ARG:HD3	7:10:65:GLU:HG2	1.73	0.70
43:M:23:GLY:HA2	43:M:68:LEU:HD22	1.74	0.70
14:17:51:ALA:HB2	14:17:78:VAL:HG13	1.73	0.70
42:L:49:ARG:HD2	42:L:89:LEU:HD11	1.73	0.70
17:20:16:GLU:HB2	17:20:101:ILE:HG12	1.72	0.70
35:E:23:THR:HA	35:E:28:ARG:HA	1.73	0.70
3:06:47:LYS:HB2	3:06:51:GLU:HB2	1.73	0.70
58:Y:72:C:H3'	58:Y:73:A:H5''	1.72	0.70
4:07:140:ILE:HG22	4:07:142:TYR:H	1.54	0.70
7:10:33:VAL:HG12	54:01:1055:G:H5''	1.74	0.70
46:P:7:ALA:HB3	46:P:18:GLN:HB3	1.72	0.70
53:A:1502:A:H8	53:A:1505:G:H22	1.35	0.70
47:Q:45:VAL:HG21	47:Q:60:ILE:HD13	1.74	0.70
53:A:819:A:H3'	53:A:820:U:H5'	1.73	0.70
13:16:79:LEU:HD23	13:16:83:LEU:HB2	1.74	0.70
37:G:26:VAL:HG22	37:G:42:VAL:HG21	1.73	0.69
1:04:153:LEU:HD13	1:04:175:LEU:HD21	1.74	0.69
16:19:109:VAL:HG12	16:19:113:LYS:HE2	1.74	0.69
59:Z:116:ARG:HB2	59:Z:160:TYR:HE2	1.57	0.69
1:04:15:VAL:HG22	1:04:205:GLY:HA3	1.74	0.69
5:08:40:VAL:HG23	5:08:63:GLN:HG3	1.72	0.69
15:18:59:THR:HG22	15:18:72:VAL:HG12	1.73	0.69
41:K:30:ILE:HB	41:K:45:THR:HG22	1.74	0.69
53:A:59:A:H5''	53:A:387:U:H5''	1.75	0.69
54:01:917:A:H5''	54:01:2268:A:H61	1.58	0.69
5:08:39:ALA:HB3	5:08:63:GLN:HG2	1.74	0.69
42:L:109:ARG:HB2	42:L:118:VAL:HG21	1.75	0.69
53:A:769:G:H4'	53:A:1513:A:H4'	1.75	0.69
54:01:704:G:H2'	54:01:726:G:N2	2.07	0.69
54:01:1103:A:H3'	54:01:1104:C:H5''	1.75	0.69
59:Z:235:ILE:HG22	59:Z:269:ARG:HA	1.73	0.69
2:05:54:ALA:HA	2:05:76:GLY:HA2	1.73	0.69
43:M:47:LEU:HD21	43:M:51:GLN:HB2	1.74	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:25:12:SER:OG	54:01:2261:C:H3'	1.93	0.68
25:28:8:GLN:HG2	25:28:31:ILE:HG22	1.74	0.68
30:33:32:LEU:HD23	30:33:35:LYS:HD2	1.75	0.68
34:D:81:LEU:HD12	34:D:88:ASN:HB3	1.75	0.68
54:01:873:C:H2'	54:01:874:G:C8	2.29	0.68
7:10:118:ILE:HG23	7:10:119:PRO:CD	2.21	0.68
35:E:159:SER:HB2	35:E:162:GLU:HG2	1.76	0.68
33:C:112:ALA:HB2	33:C:182:ASP:HB3	1.75	0.68
35:E:76:ASN:HB3	35:E:79:THR:HG23	1.75	0.68
37:G:92:PRO:O	37:G:95:ARG:HG2	1.93	0.68
41:K:23:HIS:HB3	41:K:30:ILE:HG23	1.74	0.68
12:15:10:ARG:HH12	56:W:64:G:H4'	1.59	0.68
41:K:116:PRO:HB3	53:A:676:A:H1'	1.76	0.68
50:T:77:ASN:O	50:T:81:GLN:HG2	1.94	0.68
10:13:102:PRO:HB3	10:13:121:GLU:HB3	1.74	0.68
35:E:121:ASN:ND2	35:E:122:VAL:HG13	2.08	0.68
34:D:57:LYS:HG3	34:D:202:LEU:HD22	1.74	0.68
40:J:40:ILE:HB	40:J:73:LEU:HB2	1.76	0.68
53:A:1206:G:C2'	53:A:1207:G:H5''	2.23	0.68
8:11:48:ILE:HG13	8:11:49:GLU:H	1.59	0.68
12:15:34:LYS:HE3	12:15:131:VAL:HG21	1.76	0.67
15:18:32:VAL:HG12	15:18:34:GLY:H	1.58	0.67
20:23:14:THR:HB	54:01:310:A:H5''	1.77	0.67
34:D:9:LYS:HG3	34:D:12:ARG:HH21	1.59	0.67
34:D:127:ARG:HH21	53:A:619:U:H4'	1.59	0.67
42:L:25:ALA:CB	53:A:554:A:H5'	2.23	0.67
36:F:38:ARG:HH21	36:F:40:GLU:HG3	1.59	0.67
54:01:306:U:H3	54:01:310:A:H62	1.42	0.67
54:01:2121:G:H2'	54:01:2122:U:O4'	1.94	0.67
29:32:10:LEU:HD23	54:01:770:G:H5''	1.77	0.67
33:C:179:ALA:HB1	33:C:202:PHE:HE1	1.59	0.67
3:06:34:ALA:HA	3:06:94:GLN:HE21	1.60	0.67
51:U:28:LEU:HA	51:U:31:VAL:HG12	1.75	0.67
7:10:56:ARG:HE	7:10:83:ALA:HB2	1.59	0.67
7:10:58:THR:HG21	7:10:81:LEU:HA	1.77	0.67
39:I:35:GLU:HA	39:I:39:GLY:HA3	1.76	0.67
54:01:1936:A:H2	54:01:1943:U:H3	1.41	0.67
54:01:2249:U:H3'	54:01:2250:G:H5'	1.75	0.67
51:U:4:LYS:HG2	51:U:5:VAL:N	2.09	0.67
5:08:94:ARG:H	5:08:105:SER:HB2	1.60	0.67
8:11:33:ASN:HB2	8:11:64:ARG:HH22	1.59	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:03:37:LYS:HB3	54:01:2127:G:H5'	1.76	0.67
11:14:37:GLY:H	11:14:41:ARG:NH2	1.93	0.67
37:G:111:GLY:HA2	37:G:118:ARG:HD3	1.77	0.67
37:G:118:ARG:HA	37:G:121:ASN:HD22	1.60	0.67
59:Z:194:PHE:HA	59:Z:197:SER:HB3	1.77	0.67
59:Z:242:VAL:HA	59:Z:295:PRO:HD3	1.76	0.67
8:11:102:ARG:HA	8:11:105:LEU:HB2	1.76	0.66
29:32:31:LEU:HD11	29:32:43:THR:HG23	1.77	0.66
53:A:664:G:H22	53:A:741:G:H1	1.42	0.66
1:04:259:ASN:ND2	1:04:261:ARG:HG2	2.11	0.66
8:11:112:LYS:HG2	8:11:116:MET:HG2	1.77	0.66
29:32:26:ASN:O	29:32:30:VAL:HG23	1.96	0.66
6:09:84:ALA:HA	6:09:91:PHE:N	2.08	0.66
53:A:327:A:O2'	53:A:328:C:H4'	1.95	0.66
54:01:1597:A:H5''	54:01:1598:A:H5'	1.77	0.66
8:11:91:LYS:N	8:11:92:PRO:HD3	2.11	0.66
27:30:8:THR:HG23	54:01:2020:A:H5'	1.77	0.66
50:T:55:PRO:HB3	53:A:193:C:H4'	1.77	0.66
20:23:71:ILE:HD13	20:23:82:VAL:HG22	1.77	0.66
53:A:31:G:H3'	53:A:32:A:H5''	1.77	0.66
58:Y:25:C:H3'	58:Y:26:A:H5''	1.78	0.66
59:Z:321:PRO:HB3	59:Z:351:MET:HA	1.78	0.66
14:17:35:ILE:HG23	14:17:74:VAL:HG21	1.77	0.66
32:B:183:PHE:HB3	32:B:197:PHE:HB2	1.76	0.66
49:S:52:ASN:HB2	49:S:76:THR:HG22	1.76	0.66
53:A:212:G:H2'	53:A:213:G:H8	1.61	0.66
59:Z:350:VAL:HG11	59:Z:356:ILE:HG12	1.78	0.66
8:11:93:ASN:HB2	54:01:1077:A:C5'	2.26	0.66
20:23:10:VAL:HG12	20:23:71:ILE:HA	1.77	0.66
36:F:38:ARG:HD3	36:F:97:THR:HA	1.78	0.66
38:H:86:LYS:HD2	38:H:90:GLU:HG2	1.76	0.66
8:11:33:ASN:HD22	8:11:36:GLU:H	1.44	0.65
9:12:98:GLU:OE2	9:12:126:ALA:HB2	1.96	0.65
15:18:12:MET:HB3	15:18:14:GLN:HE21	1.61	0.65
3:06:71:GLY:H	54:01:674:G:H5''	1.60	0.65
1:04:36:ASN:HB2	1:04:61:TYR:HB2	1.79	0.65
38:H:4:ASP:HB2	38:H:80:PRO:HG3	1.76	0.65
42:L:73:LEU:HD21	42:L:79:ILE:HG21	1.76	0.65
48:R:40:PRO:HB3	53:A:720:C:H5''	1.79	0.65
12:15:42:THR:HG22	12:15:93:VAL:HG12	1.77	0.65
31:34:19:ARG:HD2	31:34:24:ARG:HD2	1.78	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:Z:297:THR:HG23	59:Z:298:ILE:HG13	1.77	0.65
3:06:18:THR:HG23	3:06:106:LYS:HE3	1.78	0.65
35:E:64:GLU:HB3	35:E:68:ARG:HH12	1.62	0.65
22:25:12:SER:HB2	54:01:2262:U:H5	1.60	0.65
53:A:422:C:H4'	53:A:423:G:H5''	1.79	0.65
42:L:29:LYS:HE2	42:L:58:ASN:ND2	2.12	0.65
54:01:2114:A:H61	54:01:2117:A:H62	1.43	0.65
56:W:47:U:H3'	56:W:48:C:H5'	1.78	0.65
59:Z:256:THR:HG21	59:Z:279:ARG:HB2	1.77	0.65
27:30:8:THR:CG2	54:01:2020:A:H5'	2.27	0.65
3:06:58:LYS:HG2	3:06:71:GLY:HA2	1.77	0.65
6:09:58:LEU:O	6:09:61:VAL:HG22	1.96	0.65
30:33:36:ALA:HB3	30:33:39:ARG:HG3	1.79	0.65
4:07:3:LEU:HD21	4:07:100:GLU:HA	1.78	0.65
5:08:117:PRO:HD2	5:08:120:ILE:HG13	1.79	0.65
46:P:48:GLU:HG3	46:P:49:GLY:H	1.61	0.65
59:Z:213:PRO:HD3	59:Z:232:GLU:HB2	1.78	0.65
32:B:16:GLY:HA3	32:B:39:ILE:HA	1.79	0.64
41:K:63:GLN:HG3	41:K:98:ALA:HB2	1.79	0.64
12:15:96:ILE:HG21	12:15:102:LEU:HD21	1.79	0.64
37:G:35:LYS:HD2	53:A:1373:G:H5''	1.80	0.64
53:A:82:G:H2'	53:A:83:C:O4'	1.97	0.64
8:11:58:ILE:HG22	8:11:60:VAL:HG23	1.79	0.64
13:16:49:GLU:HG3	54:01:2839:G:H4'	1.78	0.64
43:M:87:GLY:O	43:M:91:ARG:HG3	1.98	0.64
51:U:33:ARG:NH2	51:U:34:ARG:HE	1.96	0.64
53:A:50:A:H4'	53:A:51:A:H5'	1.78	0.64
54:01:676:A:H62	54:01:802:A:H61	1.46	0.64
32:B:110:ILE:HG23	32:B:151:LYS:HG3	1.78	0.64
53:A:1506:U:O2'	53:A:1507:A:H5'	1.98	0.64
2:05:151:THR:HB	2:05:152:PRO:HD3	1.80	0.64
38:H:1:SER:N	38:H:3:GLN:HE21	1.95	0.64
18:21:84:ARG:HB2	18:21:96:ILE:HG13	1.79	0.64
36:F:6:ILE:HB	36:F:62:MET:HB2	1.78	0.64
49:S:62:THR:H	49:S:65:MET:HE3	1.62	0.64
50:T:24:ARG:HG3	50:T:65:LEU:HD11	1.80	0.64
55:02:65:U:H3'	55:02:108:A:H61	1.63	0.64
12:15:2:LEU:H	12:15:43:ALA:HB1	1.62	0.64
18:21:57:ASN:ND2	18:21:61:ASN:HD22	1.95	0.64
34:D:131:ILE:H	34:D:131:ILE:HD12	1.62	0.64
37:G:128:GLU:HG3	37:G:130:LYS:HE2	1.80	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:03:46:VAL:HG22	52:03:212:VAL:HG13	1.78	0.64
53:A:1005:A:H2'	53:A:1006:G:O4'	1.98	0.64
54:01:644:A:H2'	54:01:645:C:H4'	1.78	0.64
3:06:71:GLY:N	54:01:674:G:H5''	2.13	0.64
27:30:54:ILE:HG23	27:30:56:LYS:H	1.63	0.64
53:A:358:U:H2'	53:A:359:G:C8	2.33	0.64
35:E:12:GLU:HB3	35:E:38:VAL:HG12	1.78	0.63
54:01:2800:A:H3'	54:01:2801:G:H5'	1.80	0.63
58:Y:46:G:H3'	58:Y:47:U:C4'	2.28	0.63
9:12:29:ALA:HA	9:12:32:LEU:HD12	1.81	0.63
17:20:6:GLN:HG3	17:20:39:LEU:HD11	1.79	0.63
19:22:54:GLU:HB2	19:22:88:LYS:HD2	1.79	0.63
33:C:20:THR:HB	33:C:57:GLU:HG2	1.80	0.63
45:O:24:THR:HG21	45:O:69:LEU:HB2	1.80	0.63
59:Z:258:VAL:HG13	59:Z:276:VAL:HG22	1.80	0.63
11:14:90:VAL:HG13	11:14:95:LEU:HD21	1.81	0.63
15:18:52:ARG:NH2	54:01:2720:U:H5''	2.14	0.63
52:03:59:VAL:HB	52:03:165:ASN:HB3	1.81	0.63
1:04:1:ALA:HB3	1:04:19:VAL:HB	1.80	0.63
15:18:3:ILE:H	15:18:3:ILE:HD12	1.64	0.63
38:H:9:MET:HB2	38:H:32:LYS:HE2	1.81	0.63
3:06:145:ASP:HB3	3:06:184:ASP:HB2	1.81	0.63
4:07:30:VAL:HA	4:07:157:THR:HG22	1.81	0.63
36:F:36:ILE:HA	36:F:64:VAL:HG23	1.79	0.63
49:S:18:VAL:HG11	49:S:43:MET:HG2	1.81	0.63
55:02:106:G:H2'	55:02:107:G:O4'	1.99	0.63
4:07:62:GLN:NE2	4:07:90:LEU:HB3	2.14	0.63
5:08:104:LEU:HB2	5:08:112:VAL:HB	1.80	0.63
11:14:77:ILE:HD11	11:14:108:ALA:HB1	1.80	0.63
49:S:32:THR:HG22	49:S:49:ALA:O	1.98	0.63
54:01:873:C:H2'	54:01:874:G:H8	1.62	0.63
2:05:148:GLN:HB2	2:05:152:PRO:HG2	1.80	0.63
11:14:25:SER:HA	54:01:813:U:C5	2.34	0.63
23:26:31:ASN:ND2	23:26:52:ALA:HB2	2.13	0.63
40:J:89:ARG:HG3	40:J:90:LEU:HG	1.81	0.63
51:U:9:GLU:HB3	51:U:10:PRO:HD3	1.80	0.63
54:01:859:G:H1'	54:01:860:U:H5	1.63	0.63
3:06:26:ALA:HB2	11:14:9:ALA:HB2	1.79	0.63
18:21:42:LYS:HB2	54:01:2010:G:H5''	1.81	0.63
20:23:47:PRO:HD3	20:23:55:GLY:HA2	1.80	0.63
36:F:12:PRO:HD2	36:F:54:LEU:HD21	1.79	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:13:58:LEU:HD11	10:13:86:LEU:HD22	1.81	0.62
11:14:62:PRO:HB2	30:33:29:ARG:HH11	1.63	0.62
21:24:10:LYS:HG3	21:24:11:GLU:HG3	1.81	0.62
38:H:94:VAL:HG12	38:H:95:MET:HG3	1.81	0.62
44:N:25:GLU:HA	44:N:28:ALA:HB3	1.80	0.62
5:08:85:LYS:HG3	5:08:131:VAL:HG22	1.81	0.62
23:26:24:THR:HG21	54:01:2081:U:H4'	1.79	0.62
24:27:1:MET:HA	24:27:4:LYS:HE2	1.81	0.62
56:X:13:C:C2'	56:X:14:A:H5''	2.29	0.62
59:Z:231:VAL:HB	59:Z:270:ALA:HA	1.81	0.62
24:27:9:LYS:HE2	24:27:11:VAL:HG23	1.81	0.62
32:B:60:ALA:HB3	32:B:223:GLY:HA3	1.81	0.62
40:J:50:THR:HG23	40:J:64:GLN:HG2	1.81	0.62
18:21:88:ARG:H	54:01:1614:A:H61	1.45	0.62
37:G:142:ARG:HG3	56:X:41:C:H4'	1.82	0.62
53:A:352:C:H4'	53:A:354:G:OP1	1.98	0.62
53:A:868:C:H2'	53:A:869:G:O4'	1.99	0.62
59:Z:269:ARG:HE	59:Z:272:GLU:HG3	1.63	0.62
2:05:4:LEU:HD23	2:05:29:VAL:HG11	1.80	0.62
8:11:100:ILE:HG22	8:11:101:SER:H	1.64	0.62
31:34:4:ARG:O	31:34:37:GLN:HB3	2.00	0.62
40:J:45:ARG:HB2	40:J:69:THR:HB	1.80	0.62
53:A:884:U:H4'	53:A:885:G:H5''	1.81	0.62
54:01:554:U:H2'	54:01:555:G:O4'	1.99	0.62
8:11:89:SER:HA	8:11:92:PRO:HG3	1.81	0.62
12:15:73:ILE:HD11	12:15:93:VAL:HG22	1.81	0.62
13:16:61:ALA:HB2	54:01:2850:A:H2	1.65	0.62
31:34:36:ARG:O	31:34:37:GLN:HB2	1.98	0.62
53:A:817:C:H4'	53:A:818:G:H5''	1.81	0.62
10:13:87:LEU:HD13	10:13:92:GLU:HB3	1.82	0.62
14:17:79:ALA:HB1	14:17:113:ALA:HB3	1.82	0.62
18:21:76:VAL:HG13	18:21:103:ILE:HG12	1.82	0.62
54:01:2508:G:H1	54:01:2580:U:H3	1.47	0.62
59:Z:113:PRO:HA	59:Z:116:ARG:HG2	1.81	0.62
38:H:29:SER:HB3	38:H:32:LYS:HG3	1.82	0.62
51:U:5:VAL:HG11	51:U:16:ARG:HB3	1.82	0.62
9:12:47:HIS:ND1	9:12:48:VAL:HG23	2.15	0.61
35:E:54:GLU:HG2	35:E:56:PRO:HD2	1.82	0.61
40:J:57:VAL:O	40:J:58:ASN:HB2	2.00	0.61
42:L:79:ILE:HG22	42:L:103:CYS:HB2	1.82	0.61
30:33:23:HIS:HD2	30:33:49:VAL:HG22	1.65	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:1179:G:H2'	54:01:1180:U:H4'	1.81	0.61
54:01:1509:A:H2'	54:01:1510:G:C8	2.35	0.61
54:01:1807:G:H2'	54:01:1808:A:H5'	1.82	0.61
3:06:48:THR:O	3:06:52:VAL:HG23	1.99	0.61
3:06:5:LEU:HD22	3:06:10:SER:HB3	1.83	0.61
23:26:16:ASN:HB2	23:26:26:ARG:HB3	1.81	0.61
25:28:51:SER:HA	25:28:54:VAL:HG22	1.82	0.61
36:F:5:GLU:HA	36:F:63:ASN:HA	1.82	0.61
26:29:42:PRO:O	26:29:46:GLY:HA3	2.01	0.61
48:R:70:THR:HG23	48:R:72:ARG:H	1.65	0.61
50:T:53:MET:HA	50:T:56:ILE:HG22	1.80	0.61
33:C:86:LEU:HA	33:C:89:VAL:HG22	1.83	0.61
55:02:118:C:H2'	55:02:119:A:C8	2.36	0.61
59:Z:58:ARG:NH2	59:Z:62:ILE:HG21	2.15	0.61
7:10:3:LEU:HD12	7:10:6:GLN:H	1.65	0.61
9:12:58:ASN:HD22	9:12:61:LYS:HG3	1.64	0.61
7:10:42:ARG:HD3	8:11:117:THR:HB	1.82	0.61
20:23:73:ASN:HD21	20:23:75:ALA:HB3	1.65	0.61
30:33:18:LYS:HG3	54:01:651:G:H5'	1.81	0.61
54:01:1053:C:C2'	54:01:1054:A:H5''	2.30	0.61
54:01:1535:A:H3'	54:01:1536:C:H5'	1.83	0.61
8:11:93:ASN:HB2	54:01:1077:A:H4'	1.83	0.61
14:17:40:ILE:HA	14:17:47:VAL:HA	1.83	0.61
36:F:3:HIS:HB2	36:F:92:THR:CA	2.30	0.61
53:A:297:G:H4'	53:A:557:G:H4'	1.82	0.61
59:Z:121:LEU:HD23	59:Z:375:ALA:HB1	1.83	0.61
3:06:112:LEU:HB3	3:06:118:LEU:HB2	1.81	0.61
24:27:2:LYS:HE2	54:01:102:U:H1'	1.81	0.61
42:L:109:ARG:NH1	53:A:537:G:H5''	2.14	0.61
53:A:1496:C:H1'	53:A:1517:G:H22	1.66	0.61
54:01:310:A:C2'	54:01:311:A:H5''	2.31	0.61
7:10:28:ALA:H	7:10:110:ALA:HA	1.66	0.60
17:20:27:ILE:HG13	17:20:33:VAL:HG11	1.81	0.60
33:C:109:GLU:HB2	33:C:143:LEU:HD13	1.83	0.60
54:01:189:G:H2'	54:01:205:G:H22	1.66	0.60
8:11:21:PRO:HB2	8:11:22:PRO:HD3	1.83	0.60
14:17:17:LYS:NZ	54:01:2380:C:H5'	2.16	0.60
8:11:93:ASN:HB2	54:01:1077:A:H5''	1.83	0.60
40:J:5:ARG:HG2	40:J:79:PRO:HB3	1.82	0.60
43:M:16:ILE:HD12	43:M:16:ILE:H	1.65	0.60
50:T:4:LYS:HG3	50:T:6:ALA:H	1.66	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:2747:G:H1	54:01:2754:U:H2'	1.66	0.60
59:Z:11:HIS:HA	59:Z:75:HIS:HB3	1.83	0.60
33:C:182:ASP:HB2	33:C:201:ILE:HB	1.82	0.60
35:E:131:ASN:H	35:E:135:VAL:HG13	1.66	0.60
13:16:10:LEU:O	13:16:12:ARG:HD2	2.01	0.60
38:H:46:GLU:O	38:H:47:ASP:HB2	2.00	0.60
38:H:77:VAL:HG12	38:H:84:ILE:HD12	1.83	0.60
52:03:60:ARG:HE	52:03:164:ARG:HG3	1.66	0.60
54:01:1251:C:O2'	54:01:1252:G:H3'	2.01	0.60
54:01:2158:A:H4'	54:01:2159:G:O4'	2.02	0.60
6:09:94:ILE:HB	6:09:122:LEU:HB2	1.82	0.60
7:10:31:ARG:HB3	7:10:108:VAL:HG11	1.82	0.60
11:14:63:LYS:HE3	54:01:2394:C:H5''	1.84	0.60
32:B:159:ALA:HB1	32:B:183:PHE:HE1	1.65	0.60
1:04:259:ASN:HD21	1:04:261:ARG:HG2	1.67	0.60
5:08:40:VAL:CG2	5:08:63:GLN:HG3	2.30	0.60
16:19:40:LYS:HE3	54:01:563:A:H4'	1.83	0.60
17:20:79:ARG:HH22	54:01:572:A:H5'	1.66	0.60
35:E:110:MET:HG3	35:E:139:THR:HG21	1.83	0.60
40:J:9:ARG:NH1	53:A:1279:G:H5''	2.17	0.60
42:L:88:ASP:HB3	42:L:89:LEU:HD12	1.82	0.60
44:N:3:GLN:HG3	53:A:1047:G:H5''	1.83	0.60
54:01:807:U:H2'	54:01:808:G:C8	2.36	0.60
11:14:85:VAL:O	11:14:86:GLU:HB2	2.00	0.60
35:E:104:ILE:HD11	35:E:114:LEU:HD23	1.84	0.60
49:S:54:ARG:HB3	53:A:958:A:C2	2.37	0.60
50:T:25:SER:HB3	53:A:1458:G:H5''	1.84	0.60
5:08:8:VAL:HB	5:08:49:LEU:HB2	1.82	0.60
10:13:11:ALA:HB2	10:13:83:ALA:HB1	1.83	0.60
49:S:5:LYS:HG3	49:S:6:LYS:HG2	1.83	0.60
54:01:293:U:H2'	54:01:294:A:H5''	1.84	0.60
54:01:1186:G:H2'	54:01:1187:G:O4'	2.01	0.60
59:Z:34:VAL:HG22	59:Z:185:GLU:HG3	1.84	0.60
13:16:63:ARG:NH2	54:01:1454:C:H5'	2.17	0.60
16:19:49:ARG:HH21	17:20:74:ILE:HG13	1.67	0.60
48:R:40:PRO:HG2	48:R:43:ILE:HG12	1.83	0.60
51:U:57:LYS:HE2	51:U:57:LYS:HA	1.83	0.60
7:10:96:PHE:HE2	7:10:125:ARG:HA	1.66	0.59
19:22:4:GLU:HA	19:22:7:LEU:HB2	1.83	0.59
44:N:2:LYS:HD3	53:A:1049:U:H2'	1.83	0.59
53:A:1218:C:H2'	53:A:1219:A:C8	2.36	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:31:4:ILE:HG23	28:31:27:ARG:HH21	1.66	0.59
32:B:15:PHE:H	32:B:15:PHE:HD1	1.51	0.59
42:L:101:LEU:HD12	42:L:101:LEU:H	1.66	0.59
5:08:15:ASP:HB2	5:08:26:LYS:H	1.67	0.59
37:G:38:ALA:HA	37:G:41:ILE:HD12	1.84	0.59
48:R:11:ARG:HD3	48:R:11:ARG:H	1.66	0.59
54:01:2267:A:H5''	54:01:2268:A:H5'	1.84	0.59
5:08:84:LYS:HG3	5:08:140:ILE:HB	1.85	0.59
6:09:62:LEU:HA	6:09:65:ALA:HB3	1.84	0.59
8:11:33:ASN:ND2	8:11:36:GLU:H	2.00	0.59
8:11:33:ASN:ND2	8:11:35:MET:HB3	2.16	0.59
15:18:17:PRO:HG2	15:18:83:ILE:HB	1.84	0.59
17:20:81:LYS:HD2	54:01:973:A:H5''	1.83	0.59
19:22:40:LYS:HA	19:22:43:ILE:HD12	1.82	0.59
34:D:59:LYS:NZ	34:D:194:ILE:HG22	2.17	0.59
51:U:36:PHE:C	51:U:38:GLU:H	2.06	0.59
32:B:31:PHE:HB2	32:B:39:ILE:O	2.02	0.59
36:F:15:SER:HA	36:F:18:VAL:HG23	1.84	0.59
54:01:1474:U:C2'	54:01:1475:G:H5'	2.32	0.59
17:20:38:VAL:HG13	17:20:54:VAL:HG23	1.83	0.59
42:L:36:VAL:HG21	42:L:74:GLN:HA	1.85	0.59
46:P:19:VAL:HG13	46:P:36:VAL:O	2.03	0.59
53:A:1342:C:H2'	53:A:1343:G:C8	2.37	0.59
54:01:2296:U:H5''	54:01:2297:A:OP1	2.03	0.59
59:Z:343:LEU:HA	59:Z:358:MET:HB3	1.84	0.59
18:21:41:LYS:NZ	27:30:21:LEU:HD11	2.18	0.59
18:21:76:VAL:HG22	18:21:103:ILE:HG23	1.83	0.59
56:X:21:A:H61	56:X:46:G:H2'	1.68	0.59
59:Z:14:VAL:HG23	59:Z:78:HIS:ND1	2.18	0.59
59:Z:88:VAL:O	59:Z:92:ILE:HG13	2.02	0.59
6:09:64:ALA:O	6:09:68:ARG:HG3	2.03	0.59
9:12:27:ARG:HH22	54:01:1142:A:H4'	1.65	0.59
42:L:25:ALA:HB1	53:A:554:A:H5'	1.85	0.59
53:A:7:A:H5'	53:A:298:A:H5'	1.85	0.59
4:07:68:LYS:HE3	4:07:83:PRO:HB3	1.84	0.59
54:01:1363:C:H2'	54:01:1364:G:H8	1.68	0.59
54:01:1394:U:H4'	54:01:1603:A:H4'	1.85	0.59
20:23:17:ASP:HB3	20:23:20:LYS:HD2	1.85	0.59
34:D:2:ARG:HD2	34:D:114:ARG:HD3	1.85	0.59
48:R:20:ILE:HG21	48:R:54:LEU:HD12	1.84	0.59
51:U:66:ARG:CG	53:A:1099:G:H4'	2.27	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:1524:C:H2'	53:A:1525:G:C8	2.37	0.59
4:07:127:TYR:HE2	4:07:129:MET:HB3	1.68	0.58
6:09:94:ILE:HD12	6:09:122:LEU:HB3	1.85	0.58
12:15:69:PRO:HA	12:15:94:ALA:HB2	1.84	0.58
36:F:29:ILE:HG21	36:F:64:VAL:HG21	1.85	0.58
59:Z:106:ALA:HB1	59:Z:136:LYS:HB2	1.85	0.58
3:06:149:ILE:HG22	3:06:188:MET:HA	1.85	0.58
12:15:20:LEU:O	12:15:97:GLN:HG3	2.03	0.58
20:23:12:VAL:HB	20:23:18:LYS:HA	1.85	0.58
52:03:178:VAL:HB	52:03:216:THR:HG21	1.85	0.58
53:A:55:A:C4	59:Z:222:GLY:HA3	2.38	0.58
54:01:1278:C:H2'	54:01:1279:G:H8	1.68	0.58
1:04:42:ARG:HH12	1:04:48:ILE:HD12	1.68	0.58
2:05:133:THR:HG22	54:01:1993:U:H4'	1.85	0.58
15:18:1:SER:HA	54:01:2876:G:H5'	1.84	0.58
54:01:1900:A:O4'	54:01:1970:A:H5''	2.03	0.58
32:B:186:VAL:HG11	32:B:192:PRO:HB3	1.86	0.58
37:G:75:LYS:NZ	37:G:77:ARG:HD3	2.19	0.58
38:H:9:MET:HG3	38:H:26:MET:SD	2.43	0.58
39:I:17:ARG:HH12	39:I:19:PHE:HE2	1.50	0.58
53:A:1033:G:H2'	53:A:1034:G:H5''	1.86	0.58
54:01:639:U:H2'	54:01:640:C:C6	2.38	0.58
54:01:2131:U:O5'	54:01:2133:G:H4'	2.03	0.58
10:13:21:CYS:HA	10:13:41:ILE:HG22	1.85	0.58
18:21:36:LEU:HD13	18:21:48:LYS:HA	1.86	0.58
32:B:221:ARG:HA	32:B:224:ARG:NH1	2.17	0.58
37:G:22:LEU:O	37:G:26:VAL:HG23	2.04	0.58
41:K:88:PRO:HA	41:K:92:ARG:HD2	1.84	0.58
44:N:63:CYS:HB3	44:N:67:GLY:H	1.68	0.58
47:Q:55:GLY:O	47:Q:56:ASP:HB3	2.03	0.58
1:04:184:GLU:HG3	1:04:186:ASP:H	1.69	0.58
18:21:79:GLY:H	18:21:101:SER:HA	1.68	0.58
41:K:85:VAL:HG22	41:K:110:THR:O	2.03	0.58
53:A:842:U:H2'	53:A:844:G:H5'	1.86	0.58
53:A:946:A:H2'	53:A:947:G:H8	1.67	0.58
53:A:1301:U:O2	53:A:1301:U:H2'	2.03	0.58
53:A:1437:A:H2'	53:A:1438:G:H8	1.67	0.58
54:01:239:C:H2'	54:01:240:C:O4'	2.03	0.58
54:01:1434:A:H2'	54:01:1435:G:C8	2.39	0.58
58:Y:41:A:H2'	58:Y:42:A:H8	1.68	0.58
59:Z:7:ARG:HB2	59:Z:269:ARG:NH1	2.18	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:24:21:ARG:HA	21:24:25:LYS:O	2.04	0.58
37:G:145:GLU:N	37:G:148:LYS:HB2	2.19	0.58
46:P:33:ILE:H	46:P:33:ILE:HD12	1.68	0.58
54:01:402:A:H2'	54:01:403:U:H5'	1.84	0.58
54:01:1138:G:H2'	54:01:1139:G:O4'	2.03	0.58
1:04:20:ASN:ND2	1:04:23:LEU:HG	2.18	0.58
32:B:15:PHE:HB2	32:B:39:ILE:HG23	1.84	0.58
47:Q:29:LYS:HA	47:Q:36:PHE:HA	1.86	0.58
53:A:532:A:H3'	53:A:533:A:H5'	1.85	0.58
54:01:1837:C:H2'	54:01:1899:A:H61	1.68	0.58
3:06:29:HIS:HA	3:06:32:VAL:HG12	1.85	0.58
16:19:8:ILE:HD12	16:19:9:ALA:N	2.19	0.58
32:B:96:LEU:H	32:B:99:MET:HE3	1.68	0.58
53:A:197:A:C6	53:A:221:C:H4'	2.39	0.58
7:10:56:ARG:HH21	7:10:83:ALA:HB2	1.68	0.58
28:31:33:LEU:HD13	54:01:2286:G:C8	2.39	0.58
32:B:23:ASN:HD22	32:B:24:PRO:HD2	1.69	0.58
35:E:54:GLU:HB3	35:E:57:ALA:HB3	1.86	0.58
53:A:1230:C:H5'	56:W:30:G:H5''	1.86	0.58
54:01:2633:G:H5''	54:01:2812:G:H5'	1.86	0.58
2:05:113:SER:HB3	2:05:170:VAL:CG2	2.33	0.57
4:07:107:VAL:HG11	4:07:175:PRO:HG2	1.86	0.57
9:12:109:LEU:HD13	9:12:118:MET:HG3	1.85	0.57
16:19:82:LEU:HD21	16:19:108:LEU:HD21	1.86	0.57
30:33:14:LYS:HD3	30:33:22:LYS:HE3	1.86	0.57
32:B:49:PHE:O	32:B:53:LEU:HG	2.04	0.57
46:P:19:VAL:HG12	46:P:38:PHE:HA	1.86	0.57
54:01:323:C:H2'	54:01:1205:A:N1	2.19	0.57
13:16:12:ARG:HG2	13:16:16:HIS:ND1	2.19	0.57
40:J:59:LYS:HE2	40:J:62:ARG:HH21	1.68	0.57
46:P:5:ARG:HB2	53:A:376:G:H5''	1.85	0.57
54:01:581:C:H2'	54:01:582:A:C8	2.39	0.57
57:V:20:G:H2'	57:V:21:A:C8	2.39	0.57
10:13:112:PHE:HB3	10:13:115:ILE:HD12	1.86	0.57
32:B:113:LEU:HD13	32:B:143:LEU:HB3	1.87	0.57
45:O:28:VAL:HG13	45:O:62:ARG:HG3	1.86	0.57
51:U:39:LYS:HA	51:U:42:THR:HB	1.85	0.57
7:10:18:VAL:HA	7:10:86:MET:HG3	1.87	0.57
7:10:55:VAL:HA	54:01:1084:A:H5''	1.86	0.57
51:U:32:ARG:HG3	51:U:33:ARG:HG2	1.86	0.57
54:01:414:C:H2'	54:01:415:A:C8	2.39	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:Z:256:THR:CG2	59:Z:279:ARG:HB2	2.34	0.57
1:04:257:ARG:HH21	1:04:266:ILE:HD12	1.69	0.57
4:07:109:ARG:HH12	43:M:2:ARG:NH1	2.03	0.57
7:10:30:SER:HB2	7:10:109:LYS:HD2	1.84	0.57
8:11:116:MET:HB3	8:11:124:MET:SD	2.45	0.57
44:N:37:ASP:OD1	44:N:39:ASP:HB3	2.05	0.57
52:03:206:GLY:HA3	54:01:1860:G:H5''	1.87	0.57
54:01:2112:G:H2'	54:01:2113:U:H5'	1.85	0.57
54:01:2807:U:H3	54:01:2891:U:H3	1.53	0.57
6:09:147:VAL:HG12	6:09:148:ALA:H	1.69	0.57
36:F:90:MET:SD	48:R:60:ARG:HD2	2.44	0.57
38:H:80:PRO:HG2	53:A:878:A:C5'	2.34	0.57
39:I:70:GLY:H	53:A:1371:G:H5''	1.69	0.57
59:Z:148:LEU:O	59:Z:152:GLU:HG3	2.05	0.57
59:Z:149:VAL:O	59:Z:153:VAL:HG23	2.04	0.57
18:21:5:ALA:HB2	18:21:54:ALA:HB2	1.87	0.57
24:27:21:LEU:HA	24:27:25:GLN:HB3	1.86	0.57
25:28:18:LYS:HE3	54:01:920:A:H5''	1.87	0.57
44:N:15:LEU:HD23	44:N:54:SER:HB3	1.87	0.57
47:Q:46:HIS:HA	47:Q:70:LYS:HE3	1.87	0.57
53:A:946:A:H2'	53:A:947:G:C8	2.38	0.57
53:A:1382:C:H1'	56:X:34:C:H5''	1.86	0.57
54:01:2249:U:C3'	54:01:2250:G:H5'	2.34	0.57
55:02:115:A:H2'	55:02:116:G:C8	2.40	0.57
9:12:27:ARG:HH21	54:01:1141:U:H5''	1.69	0.57
13:16:73:ASN:HA	13:16:76:VAL:HG12	1.87	0.57
32:B:46:VAL:HB	32:B:47:PRO:HD3	1.86	0.57
35:E:20:VAL:HG23	35:E:31:SER:OG	2.05	0.57
35:E:82:HIS:HB2	35:E:83:PRO:HD2	1.85	0.57
35:E:155:LYS:HB3	38:H:70:VAL:HG13	1.87	0.57
44:N:4:SER:HB3	53:A:1216:A:H5''	1.87	0.57
52:03:206:GLY:H	54:01:1861:G:P	2.28	0.57
53:A:518:C:H5'	53:A:530:G:H5'	1.86	0.57
53:A:604:G:H2'	53:A:605:U:O4'	2.05	0.57
54:01:1469:A:H2'	54:01:1470:A:C8	2.40	0.57
54:01:1827:U:H5'	54:01:1971:U:C5'	2.35	0.57
1:04:144:GLU:HA	1:04:151:GLY:HA2	1.85	0.57
17:20:40:MET:HG3	17:20:48:LYS:HA	1.87	0.57
40:J:73:LEU:HB3	40:J:75:ASP:OD2	2.04	0.57
46:P:67:ILE:H	46:P:67:ILE:HD12	1.69	0.57
52:03:215:SER:HB3	52:03:221:GLY:HA2	1.87	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:70:U:H5''	53:A:71:A:OP1	2.04	0.57
53:A:1144:G:H21	53:A:1146:A:H62	1.51	0.57
11:14:62:PRO:HB2	30:33:29:ARG:NH1	2.20	0.57
11:14:79:LEU:HG	11:14:113:ALA:H	1.69	0.57
34:D:100:VAL:O	34:D:104:MET:HG2	2.03	0.57
41:K:88:PRO:HD3	51:U:28:LEU:HD13	1.86	0.57
51:U:18:PHE:HB3	51:U:19:LYS:HZ3	1.69	0.57
52:03:67:HIS:NE2	52:03:187:GLU:HB2	2.20	0.57
53:A:225:C:C3'	53:A:226:G:H5''	2.35	0.57
54:01:1083:U:H2'	54:01:1085:A:OP2	2.05	0.57
54:01:2725:A:H2'	54:01:2726:A:H2'	1.86	0.57
59:Z:134:LEU:HD12	59:Z:171:ARG:HG2	1.85	0.57
2:05:4:LEU:HB2	2:05:101:PHE:HE2	1.68	0.56
2:05:47:ALA:HA	2:05:84:LEU:HG	1.87	0.56
32:B:71:THR:HG22	32:B:72:LYS:H	1.70	0.56
35:E:59:ILE:HD12	35:E:60:GLN:N	2.20	0.56
39:I:17:ARG:HH21	53:A:1147:C:H1'	1.70	0.56
40:J:84:VAL:HA	40:J:87:LEU:HD12	1.86	0.56
54:01:306:U:H2'	54:01:307:G:O4'	2.04	0.56
54:01:644:A:H2'	54:01:645:C:C4'	2.34	0.56
54:01:2244:U:H2'	54:01:2245:U:O4'	2.05	0.56
59:Z:27:LEU:O	59:Z:31:ILE:HG13	2.05	0.56
59:Z:70:ASP:HA	59:Z:76:TYR:HD2	1.69	0.56
6:09:2:GLN:O	6:09:39:ALA:HB2	2.05	0.56
8:11:20:SER:HB3	8:11:21:PRO:HD3	1.86	0.56
17:20:74:ILE:HG12	54:01:992:C:O3'	2.04	0.56
19:22:39:THR:O	19:22:43:ILE:HG13	2.05	0.56
52:03:60:ARG:NE	52:03:164:ARG:HG3	2.20	0.56
53:A:860:A:H2'	53:A:861:G:O4'	2.04	0.56
54:01:1078:U:H4'	54:01:1079:C:H5''	1.87	0.56
56:X:18:G:H1	56:X:55:U:H1'	1.69	0.56
58:Y:41:A:H2'	58:Y:42:A:C8	2.39	0.56
59:Z:212:LEU:HD12	59:Z:231:VAL:HG22	1.86	0.56
13:16:4:ARG:HB2	54:01:2722:G:H4'	1.87	0.56
14:17:39:VAL:HG12	14:17:48:LEU:HD12	1.86	0.56
40:J:12:ALA:HB2	40:J:96:VAL:HG22	1.87	0.56
50:T:31:ILE:HG23	50:T:78:LEU:HD21	1.87	0.56
52:03:40:GLU:HB3	52:03:216:THR:HB	1.87	0.56
54:01:527:C:H4'	54:01:528:A:O4'	2.05	0.56
54:01:1287:A:O2'	54:01:1288:G:H5'	2.06	0.56
54:01:2039:U:H2'	54:01:2040:G:C8	2.40	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:2376:A:H2'	54:01:2377:A:O4'	2.04	0.56
55:02:65:U:H3'	55:02:108:A:N6	2.19	0.56
59:Z:343:LEU:HD23	59:Z:358:MET:HB3	1.87	0.56
1:04:89:ASN:OD1	1:04:196:ASN:HB2	2.05	0.56
4:07:134:GLN:HB3	4:07:149:ARG:O	2.06	0.56
8:11:126:ARG:HG3	54:01:1080:A:O2'	2.05	0.56
12:15:34:LYS:O	12:15:128:THR:HB	2.06	0.56
14:17:28:VAL:HG23	14:17:106:LEU:HD13	1.87	0.56
20:23:39:ASN:HB3	20:23:62:ALA:HB3	1.88	0.56
35:E:39:GLY:HA3	35:E:116:VAL:HB	1.88	0.56
35:E:158:LYS:HA	35:E:158:LYS:HE2	1.87	0.56
37:G:87:PRO:HG3	37:G:148:LYS:HG3	1.88	0.56
44:N:16:ALA:HA	44:N:54:SER:HB2	1.85	0.56
53:A:1305:G:H22	53:A:1331:G:H2'	1.70	0.56
55:02:30:C:H2'	55:02:31:C:H5'	1.87	0.56
59:Z:343:LEU:HD13	59:Z:347:VAL:HG12	1.88	0.56
50:T:26:MET:HE3	50:T:27:MET:HB2	1.87	0.56
54:01:353:C:H2'	54:01:354:A:H8	1.69	0.56
59:Z:269:ARG:NE	59:Z:272:GLU:HG3	2.20	0.56
7:10:23:LEU:HB3	7:10:87:GLU:OE1	2.05	0.56
28:31:38:PHE:HA	28:31:45:HIS:HA	1.87	0.56
4:07:107:VAL:HB	4:07:108:PRO:HD3	1.86	0.56
20:23:67:SER:HB2	54:01:327:G:H21	1.71	0.56
20:23:91:LYS:HZ3	54:01:296:U:H5''	1.69	0.56
53:A:1409:C:H2'	53:A:1410:A:C8	2.41	0.56
55:02:3:C:C2'	55:02:4:C:H5''	2.36	0.56
22:25:74:LYS:H	22:25:74:LYS:HD2	1.70	0.56
33:C:131:ARG:HB3	33:C:135:ARG:HH21	1.70	0.56
37:G:12:LEU:HG	37:G:13:PRO:HD2	1.87	0.56
43:M:27:THR:HG21	53:A:1328:C:H5''	1.87	0.56
53:A:181:A:H61	53:A:194:C:H2'	1.70	0.56
5:08:139:VAL:O	5:08:143:VAL:HG23	2.06	0.56
8:11:92:PRO:HD2	54:01:1076:C:O2'	2.05	0.56
9:12:81:ILE:HG23	9:12:82:GLY:H	1.70	0.56
11:14:95:LEU:HB2	11:14:101:ILE:HD13	1.88	0.56
12:15:75:GLU:HB3	12:15:90:GLU:HG3	1.86	0.56
34:D:27:ILE:H	34:D:27:ILE:HD12	1.71	0.56
42:L:43:LYS:HB3	42:L:44:PRO:HD3	1.88	0.56
49:S:18:VAL:HG13	49:S:46:LEU:HD11	1.86	0.56
54:01:833:A:H2'	54:01:834:G:C8	2.41	0.56
59:Z:212:LEU:HD22	59:Z:292:LEU:HD12	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:04:156:SER:HB2	54:01:1818:U:H5'	1.87	0.56
2:05:30:GLU:HB2	2:05:52:THR:OG1	2.05	0.56
7:10:118:ILE:CG2	7:10:119:PRO:HD3	2.26	0.56
8:11:81:LYS:HA	8:11:86:LYS:NZ	2.21	0.56
21:24:48:MET:HA	21:24:51:GLN:NE2	2.17	0.56
46:P:6:LEU:HD22	46:P:17:TYR:HB3	1.88	0.56
54:01:373:U:H2'	54:01:374:A:H8	1.70	0.56
5:08:96:ALA:HB3	5:08:103:ASN:HB3	1.88	0.55
8:11:131:THR:O	8:11:135:MET:HG2	2.07	0.55
41:K:122:PRO:HB2	51:U:33:ARG:HA	1.87	0.55
53:A:1323:G:H2'	53:A:1324:A:C8	2.41	0.55
59:Z:134:LEU:HB2	59:Z:171:ARG:HA	1.86	0.55
1:04:14:HIS:O	1:04:203:VAL:HG21	2.06	0.55
6:09:84:ALA:CB	6:09:90:LEU:HD12	2.34	0.55
13:16:35:LYS:HB2	13:16:112:TYR:CE1	2.40	0.55
17:20:98:ILE:HG22	17:20:100:GLY:H	1.71	0.55
53:A:171:A:H2'	53:A:172:A:C8	2.41	0.55
53:A:231:U:H2'	53:A:232:G:H8	1.71	0.55
54:01:310:A:H2'	54:01:311:A:H5''	1.87	0.55
10:13:62:VAL:HG11	10:13:65:THR:HG22	1.87	0.55
11:14:57:LEU:HB2	11:14:60:ARG:HH11	1.71	0.55
12:15:75:GLU:HB3	12:15:90:GLU:CD	2.26	0.55
24:27:7:ARG:HG3	24:27:8:GLU:OE2	2.06	0.55
34:D:167:PRO:HB2	34:D:170:LEU:HD11	1.87	0.55
35:E:83:PRO:HB3	35:E:96:GLN:HG3	1.88	0.55
54:01:528:A:C2	54:01:2042:A:H2'	2.41	0.55
54:01:581:C:H2'	54:01:582:A:H8	1.71	0.55
56:X:14:A:H2'	56:X:15:G:O4'	2.06	0.55
59:Z:209:PRO:HB3	59:Z:294:LYS:HD2	1.88	0.55
6:09:89:LYS:H	6:09:124:THR:HA	1.72	0.55
12:15:7:THR:HG22	54:01:870:U:H4'	1.89	0.55
27:30:11:LYS:NZ	54:01:2616:C:H5''	2.22	0.55
53:A:819:A:H3'	53:A:820:U:C5'	2.35	0.55
59:Z:236:ILE:HG13	59:Z:268:GLY:HA3	1.88	0.55
1:04:184:GLU:HB3	1:04:187:CYS:SG	2.47	0.55
19:22:61:LEU:HB3	54:01:1341:G:H4'	1.88	0.55
39:I:98:ARG:HG2	39:I:103:VAL:HG11	1.88	0.55
44:N:84:ARG:O	44:N:88:MET:HG2	2.06	0.55
54:01:2427:C:C5'	54:01:2429:G:H5'	2.36	0.55
4:07:36:ASN:HB3	4:07:152:ASP:OD1	2.06	0.55
4:07:109:ARG:NH1	43:M:2:ARG:HD3	2.21	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:08:8:VAL:HB	5:08:49:LEU:HD12	1.87	0.55
5:08:69:ALA:HB1	54:01:2747:G:H5''	1.88	0.55
7:10:8:LYS:O	7:10:12:VAL:HG23	2.07	0.55
27:30:33:SER:HB3	27:30:35:GLU:HG3	1.89	0.55
46:P:57:ILE:O	46:P:61:VAL:HG23	2.07	0.55
51:U:49:ALA:HB1	51:U:53:LYS:HE3	1.89	0.55
53:A:1130:A:H61	53:A:1144:G:H1'	1.71	0.55
54:01:1697:G:H4'	54:01:1978:A:H5''	1.89	0.55
54:01:1893:C:H2'	54:01:1894:C:H5'	1.87	0.55
59:Z:93:THR:HG23	59:Z:334:THR:HG22	1.88	0.55
1:04:140:VAL:HG12	1:04:191:LEU:HA	1.87	0.55
5:08:15:ASP:O	5:08:25:ILE:HA	2.07	0.55
13:16:32:GLU:O	13:16:114:GLU:HB2	2.07	0.55
33:C:13:ILE:H	33:C:13:ILE:HD12	1.70	0.55
34:D:150:LYS:HB2	34:D:155:LYS:HG2	1.87	0.55
35:E:33:THR:HG22	35:E:51:LYS:HB2	1.88	0.55
53:A:434:U:H2'	53:A:435:A:C8	2.42	0.55
54:01:833:A:H2'	54:01:834:G:H8	1.71	0.55
54:01:1739:A:H2'	54:01:1740:G:O4'	2.06	0.55
56:X:21:A:N6	56:X:46:G:H2'	2.22	0.55
7:10:61:ARG:HB3	54:01:1046:A:H4'	1.88	0.55
13:16:32:GLU:OE1	13:16:118:ARG:HA	2.07	0.55
39:I:49:GLN:N	39:I:50:PRO:HD2	2.22	0.55
42:L:11:ARG:HG3	53:A:562:U:H1'	1.89	0.55
54:01:199:A:H61	54:01:2433:A:H2'	1.72	0.55
54:01:215:G:H4'	54:01:216:A:H4'	1.89	0.55
54:01:703:U:H2'	54:01:704:G:O4'	2.06	0.55
23:26:36:ARG:HD2	23:26:45:PHE:HB3	1.88	0.55
25:28:26:LEU:HD21	25:28:43:ILE:HG23	1.88	0.55
27:30:10:SER:O	27:30:14:MET:HG3	2.07	0.55
44:N:9:GLU:O	44:N:13:VAL:HG23	2.07	0.55
53:A:1277:C:H2'	53:A:1278:G:H5''	1.89	0.55
59:Z:21:ASP:HA	62:Z:401:GCP:H3B1	1.89	0.55
59:Z:129:TYR:HB3	59:Z:199:ILE:HG12	1.89	0.55
1:04:32:LEU:HD11	1:04:101:ARG:HA	1.88	0.55
8:11:100:ILE:HD12	8:11:138:VAL:O	2.06	0.55
9:12:78:THR:HG22	54:01:2641:G:H5''	1.88	0.55
23:26:63:ILE:O	23:26:67:LEU:HD13	2.07	0.55
24:27:24:GLU:O	24:27:28:LEU:HB2	2.07	0.55
33:C:179:ALA:HB1	33:C:202:PHE:CE1	2.41	0.55
36:F:37:HIS:HB2	36:F:63:ASN:O	2.07	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:G:55:LYS:HB3	37:G:59:GLU:HG3	1.89	0.55
40:J:29:ALA:HA	40:J:33:GLY:HA3	1.88	0.55
54:01:2194:U:H2'	54:01:2195:U:C6	2.41	0.55
1:04:144:GLU:HB2	1:04:187:CYS:HB3	1.89	0.54
5:08:1:SER:HB2	5:08:61:TRP:HB3	1.89	0.54
7:10:3:LEU:HD12	7:10:5:LEU:H	1.72	0.54
16:19:36:GLN:HE21	54:01:1252:G:H1	1.55	0.54
33:C:69:THR:HG21	33:C:75:VAL:HG21	1.88	0.54
52:03:26:ALA:HB2	52:03:222:VAL:HG11	1.88	0.54
53:A:358:U:H2'	53:A:359:G:H8	1.72	0.54
53:A:1429:A:H2'	53:A:1430:A:H8	1.71	0.54
54:01:937:C:H2'	54:01:938:G:C8	2.42	0.54
54:01:971:G:H2'	54:01:972:A:O4'	2.06	0.54
54:01:1141:U:H4'	54:01:1142:A:O4'	2.06	0.54
4:07:12:VAL:O	4:07:16:MET:HG2	2.08	0.54
22:25:45:ALA:O	22:25:47:VAL:HG23	2.07	0.54
42:L:49:ARG:HG2	42:L:49:ARG:HH11	1.73	0.54
47:Q:43:LEU:HD21	53:A:236:A:H5''	1.89	0.54
53:A:225:C:H2'	53:A:226:G:H5''	1.90	0.54
53:A:484:G:H4'	53:A:485:U:C5'	2.31	0.54
54:01:255:A:H2'	54:01:256:A:O4'	2.07	0.54
54:01:1316:U:H2'	54:01:1317:G:C8	2.43	0.54
54:01:2039:U:H2'	54:01:2040:G:H8	1.72	0.54
54:01:2809:A:H2'	54:01:2810:A:C8	2.41	0.54
54:01:2884:U:H2'	54:01:2885:G:C8	2.42	0.54
3:06:192:ALA:O	3:06:196:VAL:HG23	2.07	0.54
6:09:73:ASN:HB3	6:09:108:VAL:HG23	1.88	0.54
7:10:80:THR:O	7:10:82:ILE:HG12	2.06	0.54
10:13:30:ARG:HE	54:01:2674:G:H4'	1.71	0.54
18:21:77:ASP:OD1	18:21:102:HIS:HB2	2.07	0.54
53:A:78:A:H2'	53:A:79:G:O4'	2.06	0.54
53:A:1137:C:H5'	53:A:1138:G:H5'	1.90	0.54
53:A:1391:U:H2'	53:A:1392:G:C8	2.42	0.54
8:11:11:GLN:HG3	8:11:41:PHE:HE1	1.72	0.54
37:G:65:LEU:HD23	37:G:69:ARG:HH21	1.72	0.54
46:P:21:VAL:HG12	46:P:33:ILE:HD13	1.90	0.54
47:Q:29:LYS:HB2	47:Q:36:PHE:CE1	2.42	0.54
54:01:1161:C:H2'	54:01:1162:G:C8	2.43	0.54
54:01:1197:G:H2'	54:01:1198:U:C6	2.43	0.54
54:01:1506:U:H2'	54:01:1507:C:C6	2.43	0.54
54:01:2889:C:H2'	54:01:2890:G:O4'	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:Z:377:ARG:HA	59:Z:382:THR:HA	1.88	0.54
1:04:52:HIS:NE2	1:04:218:THR:HG23	2.22	0.54
1:04:145:MET:HB2	1:04:149:LYS:HG2	1.89	0.54
5:08:151:ARG:HB3	5:08:161:VAL:HG23	1.88	0.54
9:12:109:LEU:HD22	9:12:118:MET:SD	2.48	0.54
38:H:73:SER:HB3	38:H:129:ALA:HB3	1.89	0.54
52:03:30:LEU:HD22	52:03:216:THR:HG23	1.89	0.54
54:01:322:A:H5'	54:01:340:A:H1'	1.90	0.54
54:01:488:G:N2	54:01:491:G:H5''	2.22	0.54
54:01:1060:U:H5'	54:01:1062:G:H5''	1.89	0.54
3:06:109:LEU:HD11	3:06:180:LEU:HD13	1.89	0.54
3:06:117:ARG:HH12	11:14:2:ARG:HG2	1.72	0.54
7:10:23:LEU:O	7:10:87:GLU:HG3	2.07	0.54
9:12:16:TYR:HA	9:12:138:GLN:O	2.08	0.54
33:C:68:HIS:HA	33:C:103:ALA:HB3	1.90	0.54
34:D:131:ILE:HG21	53:A:620:C:H1'	1.90	0.54
54:01:864:G:H21	54:01:866:A:H62	1.54	0.54
54:01:1268:A:H2'	54:01:1269:A:O4'	2.07	0.54
58:Y:25:C:H3'	58:Y:26:A:C5'	2.38	0.54
5:08:104:LEU:HB3	5:08:106:LEU:HG	1.88	0.54
28:31:16:THR:HG21	28:31:39:ASP:OD2	2.07	0.54
41:K:22:ILE:HD13	41:K:95:THR:HG23	1.90	0.54
53:A:256:U:H2'	53:A:257:G:C8	2.42	0.54
53:A:1475:G:H4'	54:01:1689:A:H4'	1.89	0.54
54:01:1932:A:H2'	54:01:1933:G:O4'	2.08	0.54
54:01:2794:C:H2'	54:01:2795:C:C6	2.43	0.54
59:Z:70:ASP:CB	59:Z:75:HIS:HA	2.37	0.54
4:07:56:LEU:HD21	4:07:151:LEU:HD22	1.89	0.54
8:11:11:GLN:HG3	8:11:41:PHE:CE1	2.43	0.54
8:11:23:VAL:HG12	8:11:27:LEU:HD23	1.89	0.54
9:12:13:ARG:HD3	9:12:51:GLY:O	2.07	0.54
21:24:86:LEU:HD13	21:24:89:ILE:HD11	1.90	0.54
53:A:279:A:H5''	53:A:280:C:O3'	2.07	0.54
53:A:505:G:H5'	53:A:534:U:H2'	1.90	0.54
54:01:543:G:H5'	54:01:543:G:H8	1.73	0.54
54:01:2277:G:C2'	54:01:2278:A:H5''	2.34	0.54
4:07:74:ALA:HA	4:07:77:LYS:HA	1.90	0.54
8:11:40:ALA:HA	8:11:43:ALA:HB3	1.88	0.54
18:21:88:ARG:HH11	54:01:747:C:H2'	1.73	0.54
53:A:427:U:H2'	53:A:428:G:C8	2.42	0.54
53:A:746:A:H2'	53:A:747:A:C8	2.43	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:435:C:H2'	54:01:436:C:H5'	1.90	0.54
54:01:858:G:H21	54:01:2269:G:H5'	1.73	0.54
2:05:109:VAL:HG22	2:05:203:VAL:HG22	1.89	0.54
38:H:46:GLU:O	38:H:47:ASP:CB	2.56	0.54
59:Z:96:ALA:HB2	59:Z:125:VAL:HG21	1.90	0.54
15:18:99:LEU:O	15:18:99:LEU:HD23	2.08	0.53
21:24:76:ASP:HB3	21:24:90:ASP:HB2	1.89	0.53
54:01:65:U:H2'	54:01:66:C:C6	2.43	0.53
54:01:1463:C:H2'	54:01:1464:G:C8	2.43	0.53
54:01:2297:A:N1	54:01:2321:U:H5	2.06	0.53
54:01:2710:C:H2'	54:01:2711:A:C8	2.43	0.53
5:08:37:ASN:HD22	5:08:63:GLN:NE2	2.05	0.53
12:15:78:LEU:HD23	12:15:79:ALA:N	2.23	0.53
21:24:21:ARG:HE	21:24:87:GLN:HA	1.73	0.53
22:25:55:LEU:HD12	22:25:76:ILE:HD12	1.90	0.53
37:G:14:ASP:HB3	37:G:17:PHE:O	2.08	0.53
37:G:58:LEU:HD12	37:G:59:GLU:N	2.23	0.53
54:01:1077:A:H2'	54:01:1078:U:H5'	1.90	0.53
5:08:174:LYS:HG3	54:01:2529:G:H4'	1.90	0.53
10:13:69:VAL:HG21	10:13:104:THR:HG21	1.90	0.53
35:E:119:VAL:HB	35:E:121:ASN:OD1	2.08	0.53
49:S:13:HIS:HE1	49:S:34:SER:HB2	1.73	0.53
53:A:116:A:H2'	53:A:117:G:O4'	2.08	0.53
53:A:392:C:H2'	53:A:393:A:C8	2.44	0.53
53:A:1429:A:H2'	53:A:1430:A:C8	2.42	0.53
54:01:1139:G:O2'	54:01:1140:C:H5'	2.08	0.53
59:Z:19:HIS:HB2	59:Z:115:THR:OG1	2.08	0.53
59:Z:184:TRP:CE3	59:Z:187:LYS:HG3	2.43	0.53
59:Z:259:GLU:HA	59:Z:265:LEU:H	1.72	0.53
6:09:47:PHE:HA	6:09:51:ARG:HD2	1.91	0.53
20:23:97:SER:O	20:23:98:ASN:HB3	2.08	0.53
22:25:17:LEU:HD21	22:25:37:ARG:HH12	1.73	0.53
41:K:87:GLY:N	41:K:113:THR:HG22	2.21	0.53
50:T:67:HIS:HE1	53:A:132:C:H4'	1.73	0.53
53:A:634:C:H2'	53:A:635:A:C8	2.43	0.53
54:01:596:U:H2'	54:01:597:G:H8	1.73	0.53
8:11:85:ILE:HD13	8:11:98:GLY:HA3	1.89	0.53
20:23:47:PRO:HB3	20:23:55:GLY:N	2.24	0.53
22:25:12:SER:HB2	54:01:2262:U:C5	2.41	0.53
34:D:150:LYS:HA	34:D:154:VAL:HB	1.89	0.53
39:I:33:SER:HB3	39:I:36:GLN:HG2	1.89	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:I:45:MET:O	39:I:49:GLN:HG3	2.08	0.53
53:A:225:C:H3'	53:A:226:G:H5''	1.90	0.53
54:01:1326:U:H2'	54:01:1327:A:H8	1.73	0.53
54:01:1526:C:H2'	54:01:1527:G:O4'	2.09	0.53
54:01:1930:G:H1'	54:01:1931:U:H5	1.74	0.53
58:Y:54:U:OP1	59:Z:320:THR:HG21	2.08	0.53
59:Z:323:PHE:HB3	59:Z:349:MET:HA	1.90	0.53
6:09:24:GLY:HA2	6:09:28:ASN:ND2	2.23	0.53
37:G:24:LYS:HE2	53:A:1375:A:H5''	1.90	0.53
50:T:67:HIS:CE1	53:A:132:C:H4'	2.44	0.53
2:05:105:LYS:HA	2:05:177:VAL:HG12	1.91	0.53
6:09:12:LEU:HD12	6:09:13:GLY:N	2.24	0.53
13:16:49:GLU:HB2	13:16:50:PRO:HD3	1.90	0.53
17:20:64:VAL:HG23	17:20:96:VAL:HA	1.90	0.53
33:C:50:SER:HB3	33:C:114:LEU:HD22	1.91	0.53
36:F:19:PRO:HA	36:F:22:ILE:HD12	1.90	0.53
37:G:14:ASP:HB3	37:G:19:SER:H	1.73	0.53
53:A:427:U:H2'	53:A:428:G:H8	1.74	0.53
54:01:327:G:H2'	54:01:328:U:O4'	2.08	0.53
54:01:542:C:H2'	54:01:543:G:H5''	1.91	0.53
54:01:548:G:H2'	54:01:549:G:O4'	2.09	0.53
54:01:940:G:H3'	54:01:941:A:H5''	1.90	0.53
54:01:1222:U:H2'	54:01:1223:G:C8	2.44	0.53
16:19:75:TYR:HE2	54:01:1153:C:H5'	1.73	0.53
26:29:61:ASN:O	26:29:65:ASN:HA	2.08	0.53
54:01:704:G:H2'	54:01:726:G:H22	1.73	0.53
54:01:1872:A:H2'	54:01:1873:G:O4'	2.09	0.53
54:01:2114:A:C2	54:01:2166:U:H2'	2.44	0.53
1:04:77:VAL:HA	1:04:93:VAL:HG22	1.91	0.53
4:07:60:SER:HB2	4:07:90:LEU:HD23	1.91	0.53
4:07:110:ILE:HG12	4:07:136:ILE:HG21	1.89	0.53
9:12:47:HIS:HD1	9:12:48:VAL:HG23	1.73	0.53
32:B:162:VAL:HB	32:B:184:ALA:CB	2.38	0.53
53:A:337:G:H2'	53:A:338:A:C8	2.44	0.53
53:A:757:U:H2'	53:A:758:C:O4'	2.09	0.53
53:A:1339:A:H2'	53:A:1340:A:O4'	2.08	0.53
54:01:2102:G:H2'	54:01:2103:C:O4'	2.09	0.53
1:04:34:GLU:HG3	1:04:61:TYR:HB3	1.90	0.53
17:20:75:VAL:HG22	17:20:86:GLN:OE1	2.09	0.53
26:29:11:GLU:HA	26:29:25:ARG:HA	1.90	0.53
32:B:162:VAL:HB	32:B:184:ALA:HB2	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:D:120:LYS:NZ	34:D:130:ASN:HD21	2.07	0.53
53:A:673:A:H2'	53:A:674:G:C8	2.44	0.53
53:A:952:U:H5'	53:A:972:C:H41	1.74	0.53
54:01:2724:U:H2'	54:01:2725:A:C8	2.44	0.53
56:X:41:C:H2'	56:X:42:G:C8	2.43	0.53
7:10:58:THR:HG22	54:01:1107:G:H5''	1.91	0.52
9:12:40:HIS:CE1	9:12:41:LYS:HG3	2.44	0.52
14:17:81:ARG:HA	14:17:84:GLU:HG3	1.91	0.52
19:22:14:PRO:HA	19:22:32:LEU:HA	1.91	0.52
24:27:8:GLU:HB3	24:27:12:GLU:HG2	1.91	0.52
54:01:2646:C:H2'	54:01:2647:U:O4'	2.09	0.52
59:Z:89:LYS:HA	59:Z:92:ILE:HD12	1.91	0.52
28:31:4:ILE:HG23	28:31:27:ARG:NH2	2.24	0.52
47:Q:6:THR:O	47:Q:7:LEU:HD12	2.09	0.52
53:A:357:G:OP1	53:A:367:U:H5''	2.09	0.52
53:A:662:U:H2'	53:A:663:A:C8	2.44	0.52
54:01:1001:A:H2'	54:01:1002:G:O4'	2.09	0.52
59:Z:22:HIS:ND1	59:Z:105:VAL:HA	2.24	0.52
59:Z:113:PRO:O	59:Z:116:ARG:HG2	2.08	0.52
5:08:126:THR:HB	5:08:129:GLU:HB3	1.91	0.52
13:16:92:GLY:O	54:01:2880:C:H1'	2.09	0.52
14:17:107:ALA:O	14:17:111:ARG:HG3	2.09	0.52
33:C:153:SER:HB2	53:A:1057:G:H5''	1.92	0.52
38:H:95:MET:O	38:H:98:LEU:HG	2.09	0.52
43:M:32:ILE:HD13	43:M:58:GLU:HG3	1.91	0.52
53:A:392:C:H2'	53:A:393:A:H8	1.73	0.52
54:01:209:C:H4'	54:01:681:G:H4'	1.91	0.52
2:05:33:ARG:O	2:05:51:THR:HG22	2.10	0.52
8:11:55:PRO:HG2	8:11:71:LYS:HB2	1.91	0.52
18:21:18:ARG:NH1	54:01:518:G:H4'	2.25	0.52
19:22:59:ASN:OD1	19:22:84:TYR:HB2	2.10	0.52
25:28:3:THR:HB	25:28:36:GLU:HG2	1.90	0.52
31:34:24:ARG:HG2	31:34:36:ARG:HG3	1.90	0.52
53:A:1379:G:O2'	53:A:1380:U:H5'	2.10	0.52
54:01:2118:U:C5	54:01:2149:U:H1'	2.45	0.52
54:01:2144:G:H1'	54:01:2147:A:H61	1.73	0.52
54:01:2208:C:H2'	54:01:2209:G:C8	2.45	0.52
59:Z:312:SER:HB2	59:Z:315:GLU:HG3	1.90	0.52
36:F:97:THR:O	36:F:98:GLU:HG2	2.10	0.52
39:I:55:ASP:HB3	39:I:59:LYS:HG3	1.92	0.52
41:K:51:PHE:HB3	41:K:56:LYS:HA	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:1207:G:H2'	53:A:1208:C:O4'	2.09	0.52
53:A:1413:A:H2	53:A:1487:G:H22	1.56	0.52
54:01:184:C:H2'	54:01:185:G:H8	1.74	0.52
54:01:2577:A:H2'	54:01:2614:A:H62	1.73	0.52
55:02:3:C:C3'	55:02:4:C:H5''	2.40	0.52
59:Z:247:ILE:HG23	59:Z:364:HIS:HB3	1.91	0.52
8:11:9:LYS:HD2	8:11:9:LYS:N	2.24	0.52
8:11:33:ASN:HB2	8:11:64:ARG:NH2	2.24	0.52
9:12:36:LEU:O	9:12:51:GLY:HA3	2.10	0.52
11:14:77:ILE:CD1	11:14:108:ALA:HB1	2.40	0.52
16:19:36:GLN:NE2	54:01:1252:G:H22	2.08	0.52
18:21:82:MET:HB3	18:21:84:ARG:HH22	1.75	0.52
42:L:41:PRO:HB2	42:L:45:ASN:HB2	1.90	0.52
47:Q:14:ASP:HA	47:Q:20:ILE:HG13	1.92	0.52
50:T:14:GLU:O	50:T:17:ARG:HG3	2.08	0.52
53:A:77:A:H2'	53:A:78:A:C8	2.45	0.52
53:A:1173:U:H2'	53:A:1174:G:H8	1.73	0.52
54:01:225:C:H2'	54:01:226:A:O4'	2.10	0.52
54:01:1744:A:H3'	54:01:1745:A:H8	1.74	0.52
54:01:2011:U:H2'	54:01:2012:G:O4'	2.09	0.52
1:04:160:TYR:CB	1:04:193:GLU:HG2	2.40	0.52
11:14:51:GLU:OE1	11:14:56:PRO:HA	2.10	0.52
11:14:96:LYS:HB2	11:14:101:ILE:HD11	1.91	0.52
11:14:101:ILE:O	11:14:105:ILE:HG13	2.10	0.52
12:15:119:LEU:HD22	54:01:2468:A:H5'	1.92	0.52
23:26:16:ASN:HD22	54:01:2081:U:H5''	1.74	0.52
32:B:67:LEU:HD23	32:B:89:PHE:HB2	1.92	0.52
32:B:95:TRP:CZ2	32:B:171:ALA:HA	2.45	0.52
33:C:175:HIS:HD2	53:A:1108:G:H5'	1.75	0.52
33:C:178:ARG:HH21	53:A:1112:C:H4'	1.75	0.52
39:I:98:ARG:HG2	39:I:103:VAL:HG21	1.92	0.52
53:A:1412:C:H2'	53:A:1413:A:C8	2.45	0.52
54:01:2130:U:H5''	54:01:2134:A:H4'	1.90	0.52
54:01:2480:C:H2'	54:01:2481:G:O4'	2.10	0.52
59:Z:62:ILE:HB	59:Z:87:TYR:CE2	2.43	0.52
59:Z:186:ALA:HA	59:Z:189:LEU:HD12	1.92	0.52
59:Z:305:GLU:HB3	59:Z:390:LYS:HB3	1.92	0.52
59:Z:341:ILE:HG23	59:Z:358:MET:HG2	1.90	0.52
11:14:79:LEU:H	11:14:113:ALA:HB3	1.74	0.52
12:15:75:GLU:HB3	12:15:90:GLU:CG	2.40	0.52
14:17:30:ARG:HH11	14:17:102:ARG:HH11	1.57	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:29:14:ALA:HA	26:29:32:LEU:HD23	1.92	0.52
36:F:20:GLY:O	36:F:24:ARG:HG3	2.10	0.52
40:J:41:PRO:O	40:J:42:LEU:HB2	2.09	0.52
42:L:88:ASP:HB2	53:A:523:A:N1	2.24	0.52
46:P:79:ASN:HB2	46:P:82:ALA:OXT	2.10	0.52
47:Q:16:MET:HG3	47:Q:19:SER:O	2.10	0.52
52:03:26:ALA:HB1	52:03:214:ILE:HD11	1.91	0.52
53:A:401:C:H2'	53:A:402:G:H8	1.75	0.52
53:A:1360:A:H2'	53:A:1361:G:H5'	1.92	0.52
54:01:296:U:H2'	54:01:297:G:C8	2.45	0.52
54:01:2139:U:H2'	54:01:2140:G:C8	2.45	0.52
6:09:4:ILE:HD11	6:09:16:GLY:HA2	1.92	0.52
7:10:56:ARG:HG2	54:01:1106:G:O2'	2.09	0.52
9:12:110:PRO:HB3	54:01:1007:C:O3'	2.09	0.52
15:18:29:VAL:CG1	15:18:79:VAL:HG22	2.40	0.52
16:19:105:PHE:O	16:19:109:VAL:HG23	2.09	0.52
53:A:1004:A:H2'	53:A:1005:A:O4'	2.09	0.52
54:01:1026:G:H2'	54:01:1027:A:H8	1.75	0.52
54:01:1752:C:H2'	54:01:1753:G:C8	2.45	0.52
54:01:2784:U:H2'	54:01:2785:C:C6	2.45	0.52
59:Z:74:ARG:NH2	59:Z:196:ASP:HA	2.25	0.52
2:05:114:LYS:HE2	2:05:196:ALA:HB2	1.92	0.52
10:13:48:PRO:HB2	10:13:49:ARG:HD2	1.91	0.52
12:15:94:ALA:O	12:15:96:ILE:HG12	2.09	0.52
14:17:56:LYS:O	14:17:60:GLU:HG3	2.10	0.52
53:A:56:U:H2'	53:A:57:G:C8	2.45	0.52
53:A:70:U:H2'	53:A:94:G:N7	2.24	0.52
53:A:1071:C:H2'	53:A:1072:G:H8	1.75	0.52
54:01:191:A:H2'	54:01:192:C:C6	2.45	0.52
54:01:1019:U:H3	54:01:1142:A:N6	2.08	0.52
54:01:1074:G:H2'	54:01:1075:C:O4'	2.10	0.52
54:01:1443:U:H2'	54:01:1444:G:H8	1.75	0.52
54:01:2771:C:H2'	54:01:2772:C:C6	2.45	0.52
54:01:2817:U:H3'	54:01:2818:U:H5''	1.92	0.52
3:06:95:LYS:HD2	54:01:659:G:H4'	1.92	0.51
6:09:5:LEU:HD23	6:09:9:VAL:HG21	1.92	0.51
6:09:94:ILE:HD13	6:09:146:VAL:HG21	1.91	0.51
10:13:97:THR:HA	10:13:118:LEU:HD13	1.92	0.51
18:21:6:LYS:HA	18:21:104:THR:HA	1.92	0.51
27:30:3:GLN:HA	54:01:2615:U:C2	2.45	0.51
42:L:21:PRO:HD2	42:L:93:ARG:HE	1.73	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:248:G:H3'	54:01:249:C:C5'	2.41	0.51
54:01:2553:G:C2	54:01:2583:G:H1'	2.45	0.51
58:Y:46:G:H3'	58:Y:47:U:C5'	2.40	0.51
3:06:5:LEU:HD13	3:06:10:SER:HB3	1.92	0.51
5:08:23:ILE:O	5:08:33:THR:HG23	2.10	0.51
5:08:27:GLY:HA3	5:08:78:VAL:HB	1.91	0.51
16:19:74:SER:HB2	54:01:1011:G:OP1	2.11	0.51
32:B:53:LEU:HA	32:B:56:LEU:HD12	1.92	0.51
33:C:116:ALA:HB3	33:C:184:ASN:HD22	1.75	0.51
34:D:176:LYS:O	34:D:176:LYS:HD3	2.11	0.51
35:E:33:THR:HG22	35:E:51:LYS:HE2	1.92	0.51
35:E:107:GLY:HA2	53:A:8:A:H1'	1.91	0.51
36:F:18:VAL:O	36:F:22:ILE:HG13	2.09	0.51
36:F:64:VAL:HG22	36:F:65:GLU:N	2.25	0.51
43:M:93:GLY:HA2	43:M:108:ARG:HH12	1.75	0.51
53:A:77:A:H2'	53:A:78:A:H8	1.75	0.51
53:A:1121:U:H3	53:A:1152:A:H61	1.56	0.51
54:01:189:G:H2'	54:01:205:G:N2	2.25	0.51
54:01:718:A:H2'	54:01:719:C:O4'	2.10	0.51
54:01:1675:C:H2'	54:01:1676:A:O4'	2.10	0.51
54:01:2159:G:H2'	54:01:2160:C:O4'	2.09	0.51
54:01:2515:C:H2'	54:01:2516:A:H8	1.75	0.51
55:02:55:U:H2'	55:02:56:G:C8	2.45	0.51
59:Z:111:PRO:HD3	59:Z:149:VAL:HG13	1.91	0.51
59:Z:214:ILE:HG23	59:Z:227:VAL:HG23	1.92	0.51
1:04:209:ALA:HA	1:04:212:TRP:CE2	2.46	0.51
9:12:8:PRO:HG3	9:12:48:VAL:HG21	1.91	0.51
11:14:65:GLY:HA2	54:01:2415:G:O3'	2.10	0.51
21:24:20:LEU:HD11	21:24:41:GLU:HG3	1.92	0.51
27:30:49:ARG:HG2	54:01:2884:U:C6	2.44	0.51
43:M:106:ARG:HG2	53:A:947:G:OP1	2.10	0.51
47:Q:30:HIS:HD2	47:Q:33:TYR:H	1.59	0.51
48:R:54:LEU:O	48:R:58:ILE:HG12	2.10	0.51
53:A:1513:A:H2'	53:A:1514:G:C8	2.45	0.51
54:01:825:A:H2'	54:01:826:U:C6	2.45	0.51
54:01:974:G:H1'	54:01:975:A:C8	2.45	0.51
54:01:2637:U:H2'	54:01:2638:G:O4'	2.10	0.51
54:01:2682:A:H61	54:01:2728:U:H1'	1.75	0.51
54:01:2834:G:H2'	54:01:2879:A:H61	1.74	0.51
3:06:88:ARG:O	3:06:90:GLN:N	2.42	0.51
12:15:29:GLY:HA2	12:15:106:ASP:HB2	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:F:18:VAL:HB	36:F:19:PRO:HD3	1.91	0.51
36:F:70:VAL:O	36:F:74:LEU:HG	2.11	0.51
40:J:100:ILE:HD12	40:J:100:ILE:O	2.11	0.51
54:01:1273:U:H5''	54:01:1646:C:H41	1.76	0.51
54:01:2215:C:H2'	54:01:2216:G:C8	2.45	0.51
59:Z:92:ILE:HG12	59:Z:121:LEU:HD13	1.91	0.51
6:09:104:THR:HG23	6:09:109:GLU:HA	1.93	0.51
7:10:60:LEU:HG	7:10:78:GLY:HA3	1.91	0.51
10:13:6:THR:HG23	54:01:1666:G:O3'	2.11	0.51
43:M:24:VAL:HG23	43:M:28:ARG:HB3	1.91	0.51
53:A:811:C:H4'	53:A:901:A:H61	1.75	0.51
58:Y:15:G:H22	58:Y:48:C:H42	1.57	0.51
1:04:177:SER:O	1:04:270:ARG:HG3	2.11	0.51
2:05:116:LYS:HG3	2:05:165:MET:SD	2.50	0.51
4:07:91:ARG:HA	4:07:95:MET:HB3	1.92	0.51
5:08:51:PHE:HE1	5:08:71:LEU:HD22	1.75	0.51
16:19:90:ASP:OD1	17:20:11:GLN:HB2	2.11	0.51
25:28:47:ILE:HG23	25:28:54:VAL:HG21	1.91	0.51
32:B:67:LEU:HD11	32:B:153:MET:HE1	1.92	0.51
34:D:56:GLU:HG2	34:D:198:LEU:HD12	1.93	0.51
53:A:20:U:H2'	53:A:21:G:O4'	2.09	0.51
53:A:1120:C:H2'	53:A:1121:U:C6	2.45	0.51
53:A:1517:G:H1'	54:01:1919:A:O2'	2.10	0.51
54:01:723:C:H2'	54:01:724:U:O4'	2.11	0.51
54:01:819:A:H3'	54:01:973:A:H61	1.75	0.51
1:04:65:ASP:HB2	1:04:101:ARG:HD3	1.92	0.51
5:08:51:PHE:CZ	5:08:68:ARG:HA	2.46	0.51
14:17:17:LYS:HZ2	54:01:2380:C:H5'	1.76	0.51
24:27:2:LYS:HG3	24:27:3:ALA:H	1.76	0.51
33:C:1:GLY:HA3	53:A:1060:U:H5	1.76	0.51
53:A:641:U:H4'	53:A:642:A:H8	1.76	0.51
54:01:275:C:H3'	54:01:276:U:H5''	1.92	0.51
54:01:508:A:O2'	54:01:509:C:H5'	2.10	0.51
54:01:817:C:H2'	54:01:818:G:O4'	2.11	0.51
54:01:948:C:H2'	54:01:949:G:H8	1.75	0.51
54:01:2811:G:H2'	54:01:2812:G:C8	2.46	0.51
59:Z:372:LEU:H	59:Z:388:VAL:HB	1.76	0.51
2:05:1:MET:HA	2:05:85:ALA:HB2	1.92	0.51
2:05:124:ARG:HA	2:05:165:MET:CE	2.41	0.51
3:06:108:ILE:HG21	3:06:181:ILE:HD11	1.93	0.51
14:17:33:ARG:HD2	55:02:52:A:N6	2.25	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:33:38:LYS:HA	30:33:41:ARG:NH2	2.25	0.51
33:C:155:ARG:HG3	33:C:192:TYR:HB3	1.92	0.51
36:F:4:TYR:HB3	36:F:89:VAL:HG13	1.93	0.51
36:F:81:ASN:HB3	36:F:84:VAL:HG23	1.93	0.51
42:L:57:THR:HG21	53:A:363:A:P	2.51	0.51
53:A:575:G:O2'	53:A:821:G:H5'	2.11	0.51
54:01:329:G:O4'	54:01:477:A:H1'	2.09	0.51
54:01:807:U:H2'	54:01:808:G:H8	1.74	0.51
54:01:1178:C:H2'	54:01:1178:C:O2	2.10	0.51
54:01:1709:U:H2'	54:01:1710:G:H8	1.76	0.51
54:01:2343:U:H2'	54:01:2344:U:C6	2.46	0.51
59:Z:62:ILE:HD12	59:Z:63:ASN:ND2	2.25	0.51
59:Z:170:VAL:HG21	59:Z:191:LEU:HB2	1.92	0.51
2:05:46:ARG:HB2	2:05:84:LEU:HD12	1.93	0.51
20:23:3:LYS:HB3	20:23:82:VAL:HG21	1.92	0.51
28:31:34:GLU:OE1	28:31:49:LYS:HG2	2.11	0.51
29:32:35:ARG:HG2	29:32:42:LEU:HD11	1.92	0.51
33:C:112:ALA:HA	33:C:201:ILE:HD12	1.93	0.51
36:F:47:LEU:HD12	36:F:55:HIS:HA	1.93	0.51
40:J:91:ASP:O	40:J:92:LEU:HB2	2.11	0.51
44:N:50:LEU:HB3	44:N:51:PRO:HD2	1.92	0.51
54:01:20:C:H2'	54:01:21:A:C8	2.46	0.51
54:01:2629:U:O2'	54:01:2630:G:H5''	2.11	0.51
58:Y:69:A:H1'	58:Y:70:C:OP1	2.11	0.51
16:19:21:LYS:HG2	54:01:19:A:H5''	1.92	0.51
23:26:16:ASN:HB2	23:26:26:ARG:HD2	1.93	0.51
33:C:175:HIS:CD2	53:A:1108:G:H5'	2.46	0.51
43:M:108:ARG:HD3	53:A:1307:U:O2'	2.10	0.51
53:A:24:U:H2'	53:A:25:C:C6	2.46	0.51
53:A:802:A:H2'	53:A:803:G:O4'	2.12	0.51
4:07:70:ARG:HH22	4:07:71:LYS:HD3	1.75	0.50
8:11:7:TYR:HA	8:11:58:ILE:O	2.11	0.50
9:12:134:ALA:HA	54:01:2899:A:H1'	1.91	0.50
32:B:98:GLY:O	32:B:102:ASN:HB3	2.10	0.50
37:G:117:LEU:HG	37:G:121:ASN:HD21	1.75	0.50
52:03:48:LEU:HD12	52:03:169:GLY:HA2	1.93	0.50
53:A:1464:U:H2'	53:A:1465:A:C8	2.46	0.50
54:01:1825:U:H2'	54:01:1826:G:H8	1.76	0.50
1:04:241:LYS:O	54:01:1902:C:H4'	2.10	0.50
6:09:84:ALA:HB1	6:09:90:LEU:HA	1.92	0.50
17:20:60:LYS:HB2	17:20:100:GLY:HA3	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:31:38:PHE:HB2	28:31:45:HIS:CE1	2.46	0.50
33:C:11:LEU:HD13	33:C:17:TRP:HE1	1.77	0.50
37:G:100:MET:HA	37:G:103:ILE:HD12	1.92	0.50
44:N:40:ARG:HH22	49:S:5:LYS:HZ2	1.59	0.50
44:N:80:ARG:HA	44:N:83:VAL:HG12	1.93	0.50
53:A:476:U:H2'	53:A:477:C:C6	2.46	0.50
53:A:715:A:H2'	53:A:716:A:C8	2.45	0.50
53:A:1111:A:H2'	53:A:1112:C:O4'	2.11	0.50
53:A:1256:A:H1'	53:A:1258:G:C4	2.46	0.50
54:01:362:A:H3'	54:01:363:G:H8	1.76	0.50
54:01:948:C:H2'	54:01:949:G:C8	2.46	0.50
54:01:1434:A:H2'	54:01:1435:G:H8	1.76	0.50
54:01:1758:U:C5	54:01:2696:U:H5'	2.46	0.50
54:01:1790:C:H2'	54:01:1791:A:C5	2.47	0.50
59:Z:217:VAL:HG12	59:Z:227:VAL:HA	1.93	0.50
14:17:33:ARG:O	14:17:34:HIS:HB2	2.10	0.50
17:20:61:ALA:HA	17:20:99:THR:H	1.77	0.50
27:30:49:ARG:HG2	54:01:2884:U:H6	1.76	0.50
35:E:75:LEU:HB2	35:E:79:THR:O	2.11	0.50
51:U:4:LYS:HG2	51:U:5:VAL:H	1.73	0.50
54:01:2811:G:H2'	54:01:2812:G:H8	1.76	0.50
59:Z:103:LEU:HB3	59:Z:132:VAL:HG22	1.93	0.50
1:04:42:ARG:NH1	1:04:48:ILE:HB	2.27	0.50
3:06:112:LEU:HA	3:06:115:GLN:HB2	1.94	0.50
6:09:3:VAL:HG13	6:09:37:VAL:C	2.32	0.50
7:10:61:ARG:C	7:10:65:GLU:HB2	2.32	0.50
11:14:101:ILE:HG13	11:14:102:GLY:N	2.26	0.50
12:15:45:GLN:NE2	54:01:2485:G:H5''	2.20	0.50
25:28:14:GLY:C	25:28:15:ARG:HD2	2.32	0.50
30:33:4:LYS:HG2	54:01:242:G:N7	2.27	0.50
37:G:129:ASN:HA	37:G:134:VAL:HG11	1.93	0.50
49:S:13:HIS:HB2	53:A:1014:A:H5''	1.92	0.50
53:A:514:C:H2'	53:A:515:G:H8	1.77	0.50
53:A:1206:G:C3'	53:A:1207:G:H5''	2.40	0.50
54:01:297:G:H2'	54:01:298:G:O4'	2.11	0.50
54:01:632:A:H2'	54:01:633:A:C8	2.46	0.50
54:01:749:A:H2'	54:01:750:A:H8	1.76	0.50
54:01:889:C:C2'	54:01:890:C:H5'	2.40	0.50
54:01:1509:A:H2'	54:01:1510:G:H8	1.75	0.50
54:01:2366:A:H2'	54:01:2367:G:O4'	2.11	0.50
54:01:2819:G:H2'	54:01:2821:A:N7	2.26	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:Y:18:G:H1	58:Y:55:U:H6	1.59	0.50
9:12:23:LYS:HB2	9:12:28:LEU:HD22	1.92	0.50
10:13:87:LEU:HD23	10:13:94:PRO:HA	1.92	0.50
15:18:26:GLU:HG2	15:18:43:GLU:HB2	1.94	0.50
22:25:79:GLU:HB2	22:25:81:GLU:HG2	1.94	0.50
23:26:12:VAL:O	23:26:28:PHE:HB2	2.12	0.50
25:28:5:LYS:HB2	25:28:57:GLU:HG3	1.94	0.50
28:31:20:TYR:OH	54:01:2348:U:H5'	2.11	0.50
35:E:149:PRO:HA	35:E:152:VAL:HG22	1.93	0.50
38:H:28:SER:HA	38:H:58:LEU:HD23	1.94	0.50
52:03:24:ASN:ND2	52:03:27:ILE:HD11	2.27	0.50
52:03:174:THR:CG2	54:01:2124:G:H5''	2.42	0.50
53:A:184:G:H4'	53:A:224:U:O3'	2.11	0.50
53:A:1251:A:H2'	53:A:1252:A:O4'	2.11	0.50
54:01:848:C:H2'	54:01:849:A:C8	2.46	0.50
54:01:1443:U:H2'	54:01:1444:G:C8	2.47	0.50
54:01:2104:C:H42	54:01:2185:U:H3	1.58	0.50
1:04:219:VAL:HG22	54:01:781:A:H5'	1.92	0.50
6:09:41:LYS:O	6:09:45:GLU:HG3	2.11	0.50
8:11:90:GLY:N	8:11:92:PRO:HD3	2.27	0.50
12:15:33:LEU:HD13	12:15:117:PHE:HB3	1.94	0.50
14:17:46:GLU:HB2	55:02:113:C:O2'	2.12	0.50
32:B:94:ARG:HD2	32:B:94:ARG:N	2.26	0.50
34:D:77:GLU:O	34:D:81:LEU:HG	2.12	0.50
51:U:50:SER:HA	51:U:53:LYS:HD2	1.94	0.50
53:A:1219:A:H2'	53:A:1220:G:C8	2.46	0.50
54:01:372:G:HO2'	54:01:373:U:H6	1.59	0.50
54:01:1999:C:H5''	54:01:2723:C:O2'	2.11	0.50
54:01:2432:A:H1'	56:X:75:C:O4'	2.12	0.50
56:X:33:U:H2'	56:X:35:A:OP2	2.11	0.50
58:Y:25:C:C3'	58:Y:26:A:H5''	2.42	0.50
59:Z:67:VAL:HG23	59:Z:78:HIS:HB3	1.94	0.50
59:Z:289:GLY:CA	59:Z:335:THR:HG22	2.37	0.50
1:04:252:LYS:HB2	1:04:252:LYS:NZ	2.27	0.50
5:08:97:VAL:HG22	5:08:102:ILE:HG12	1.93	0.50
7:10:88:HIS:HB2	7:10:89:PRO:HD3	1.94	0.50
8:11:77:VAL:HG12	8:11:80:LYS:HE2	1.92	0.50
10:13:25:LEU:HD12	10:13:38:ILE:HG22	1.93	0.50
42:L:8:ARG:HB2	42:L:8:ARG:CZ	2.41	0.50
53:A:79:G:H2'	53:A:80:A:O4'	2.12	0.50
53:A:335:C:H4'	53:A:1434:A:H4'	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:937:C:H2'	54:01:938:G:H8	1.77	0.50
54:01:1709:U:H2'	54:01:1710:G:C8	2.47	0.50
54:01:2356:U:H2'	54:01:2357:G:C8	2.47	0.50
54:01:2391:G:H4'	54:01:2392:A:OP1	2.11	0.50
55:02:66:A:H5''	55:02:67:G:OP1	2.11	0.50
3:06:149:ILE:HD11	3:06:172:ALA:HA	1.94	0.50
33:C:76:ILE:HA	33:C:83:VAL:HG23	1.93	0.50
39:I:14:SER:HB3	39:I:77:ALA:HB2	1.94	0.50
53:A:909:A:H2'	53:A:910:C:O4'	2.12	0.50
54:01:742:A:H2'	54:01:743:A:C8	2.47	0.50
54:01:1023:U:O2'	54:01:1122:G:H5'	2.12	0.50
58:Y:18:G:O2'	58:Y:19:G:H5''	2.12	0.50
59:Z:35:LEU:HD13	59:Z:70:ASP:O	2.12	0.50
7:10:47:GLU:OE1	7:10:95:LEU:HD21	2.12	0.50
7:10:79:PRO:HA	54:01:1108:U:OP1	2.10	0.50
8:11:11:GLN:HE22	8:11:44:LYS:HG2	1.77	0.50
21:24:44:HIS:NE2	21:24:85:LYS:HB2	2.26	0.50
27:30:11:LYS:HD2	27:30:14:MET:HE3	1.94	0.50
35:E:22:LYS:HB3	35:E:29:ILE:HG23	1.93	0.50
35:E:163:ILE:HG13	35:E:164:LEU:N	2.27	0.50
45:O:10:ILE:HD12	45:O:30:LEU:HD12	1.94	0.50
53:A:26:A:H61	53:A:558:G:H1'	1.76	0.50
53:A:410:G:H2'	53:A:429:U:C4	2.47	0.50
53:A:736:C:H2'	53:A:737:C:C6	2.47	0.50
54:01:1177:G:H2'	54:01:1178:C:C4'	2.41	0.50
54:01:1278:C:H2'	54:01:1279:G:C8	2.47	0.50
54:01:1300:G:H4'	54:01:1301:A:H5'	1.94	0.50
54:01:1400:U:H2'	54:01:1401:G:C8	2.47	0.50
54:01:2841:C:H2'	54:01:2842:G:C8	2.46	0.50
2:05:13:ARG:NH1	15:18:55:HIS:HA	2.26	0.49
7:10:60:LEU:C	7:10:64:VAL:HB	2.33	0.49
21:24:45:ASP:O	21:24:48:MET:HB3	2.11	0.49
34:D:97:LEU:O	34:D:101:VAL:HG23	2.12	0.49
34:D:182:LYS:NZ	34:D:182:LYS:HB2	2.27	0.49
40:J:65:TYR:HB3	44:N:95:LEU:HD11	1.93	0.49
44:N:92:ILE:H	44:N:92:ILE:HD12	1.76	0.49
53:A:1064:G:N2	53:A:1190:G:H1'	2.27	0.49
54:01:1310:G:H3'	54:01:1311:G:C8	2.47	0.49
1:04:75:ALA:HB2	1:04:95:TYR:CD1	2.47	0.49
14:17:28:VAL:HG12	14:17:93:ASP:O	2.11	0.49
20:23:23:LYS:O	20:23:35:VAL:HG13	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:29:58:ASP:O	26:29:62:LYS:HG3	2.12	0.49
40:J:64:GLN:HE22	53:A:1368:A:H5'	1.77	0.49
54:01:1810:A:H2'	54:01:1811:G:O4'	2.12	0.49
54:01:2584:U:H2'	54:01:2585:U:H2'	1.94	0.49
3:06:148:ILE:HD13	3:06:187:VAL:HG13	1.94	0.49
5:08:66:THR:OG1	54:01:2748:A:H1'	2.12	0.49
6:09:94:ILE:HG22	6:09:99:ILE:HD11	1.94	0.49
15:18:7:LEU:O	15:18:10:GLU:HG2	2.12	0.49
33:C:36:PHE:O	33:C:40:GLN:HG3	2.12	0.49
34:D:103:ARG:NH1	34:D:110:ARG:HH12	1.96	0.49
46:P:46:LYS:HG3	46:P:48:GLU:H	1.78	0.49
53:A:1202:U:H2'	53:A:1203:C:H5'	1.93	0.49
53:A:1333:A:H2'	53:A:1334:G:O4'	2.12	0.49
53:A:1356:G:H2'	53:A:1357:A:C8	2.47	0.49
53:A:1435:G:H2'	53:A:1436:U:C6	2.47	0.49
54:01:622:G:H2'	54:01:623:C:C6	2.47	0.49
54:01:2093:G:N7	54:01:2225:A:H2'	2.28	0.49
59:Z:329:GLN:HA	59:Z:338:THR:HA	1.94	0.49
1:04:237:ARG:NE	54:01:2590:A:H5''	2.27	0.49
8:11:27:LEU:HD11	8:11:34:ILE:HG13	1.93	0.49
19:22:15:HIS:HE1	19:22:17:SER:HB3	1.76	0.49
31:34:2:LYS:HB2	31:34:35:GLN:HA	1.93	0.49
32:B:182:VAL:HG23	32:B:195:VAL:HA	1.94	0.49
34:D:85:THR:HB	35:E:102:THR:HG21	1.95	0.49
36:F:51:ILE:C	36:F:53:LYS:H	2.15	0.49
39:I:17:ARG:HB2	39:I:65:THR:HG1	1.77	0.49
53:A:235:C:H2'	53:A:236:A:C8	2.47	0.49
54:01:74:A:H4'	54:01:75:G:O5'	2.13	0.49
54:01:898:C:H2'	54:01:899:A:O4'	2.13	0.49
54:01:1318:U:H2'	54:01:1319:C:C6	2.48	0.49
11:14:79:LEU:HD11	11:14:112:LEU:HA	1.94	0.49
15:18:19:PHE:HB2	15:18:23:ASP:OD2	2.12	0.49
23:26:16:ASN:ND2	54:01:2081:U:H5''	2.27	0.49
32:B:126:ASP:HA	32:B:133:ALA:CB	2.42	0.49
36:F:49:TYR:HE2	36:F:86:ARG:HH22	1.59	0.49
38:H:80:PRO:HG2	53:A:878:A:H5'	1.93	0.49
39:I:27:ILE:HB	39:I:34:LEU:HB2	1.93	0.49
40:J:52:LEU:HD21	40:J:59:LYS:HD2	1.94	0.49
40:J:57:VAL:HG22	40:J:58:ASN:N	2.23	0.49
43:M:104:ASN:O	43:M:105:ALA:HB3	2.12	0.49
52:03:163:TYR:CD2	52:03:171:ILE:HD11	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:477:C:H2'	53:A:478:A:C8	2.48	0.49
54:01:745:G:O2'	54:01:748:G:H1'	2.11	0.49
54:01:760:G:H2'	54:01:761:A:O4'	2.12	0.49
54:01:862:G:H2'	54:01:863:A:O4'	2.12	0.49
54:01:918:A:H5''	55:02:97:C:O2'	2.12	0.49
54:01:1047:G:H2'	54:01:1110:G:N2	2.26	0.49
54:01:1856:U:H2'	54:01:1857:G:O4'	2.12	0.49
58:Y:22:G:H2'	58:Y:23:A:C8	2.47	0.49
1:04:7:PRO:HB3	1:04:13:ARG:HD3	1.94	0.49
4:07:23:SER:HB2	55:02:56:G:H5'	1.94	0.49
20:23:4:ILE:HD12	20:23:4:ILE:H	1.78	0.49
36:F:4:TYR:HB3	36:F:89:VAL:CG1	2.43	0.49
38:H:88:LYS:HB3	53:A:600:A:OP1	2.13	0.49
53:A:1070:U:H2'	53:A:1071:C:C6	2.48	0.49
54:01:1765:U:H2'	54:01:1766:G:H8	1.76	0.49
54:01:2543:G:H2'	54:01:2544:G:C8	2.48	0.49
11:14:18:ARG:HH22	54:01:1249:U:H2'	1.77	0.49
16:19:54:ARG:HG3	54:01:1155:A:OP1	2.13	0.49
18:21:66:ILE:HD12	18:21:66:ILE:N	2.27	0.49
18:21:82:MET:HB2	18:21:98:LYS:HB2	1.95	0.49
21:24:51:GLN:HE22	21:24:86:LEU:HG	1.78	0.49
32:B:181:PRO:HA	32:B:196:ASP:OD2	2.13	0.49
44:N:2:LYS:NZ	53:A:1048:G:H4'	2.28	0.49
53:A:539:A:H2'	53:A:540:G:C8	2.48	0.49
54:01:716:A:H3'	54:01:717:C:H5''	1.94	0.49
54:01:942:G:H2'	54:01:943:A:O4'	2.12	0.49
54:01:2147:A:H2'	54:01:2148:G:O4'	2.11	0.49
54:01:2350:C:H2'	54:01:2351:G:O4'	2.12	0.49
54:01:2368:C:H2'	54:01:2369:A:C8	2.48	0.49
58:Y:69:A:O2'	58:Y:70:C:O5'	2.28	0.49
5:08:34:ARG:HE	5:08:70:LEU:HD13	1.77	0.49
19:22:43:ILE:HG21	19:22:58:VAL:HG11	1.94	0.49
33:C:64:ARG:HG3	33:C:99:GLN:O	2.12	0.49
33:C:151:GLU:HA	33:C:166:TRP:HA	1.95	0.49
39:I:51:LEU:HB3	39:I:56:MET:HB2	1.95	0.49
39:I:78:ILE:O	39:I:82:ILE:HG13	2.12	0.49
42:L:110:LYS:HB2	53:A:538:G:H5''	1.94	0.49
49:S:52:ASN:HD22	49:S:76:THR:HA	1.78	0.49
53:A:1255:G:H2'	53:A:1279:G:H1	1.77	0.49
53:A:1477:U:H2'	53:A:1478:U:C6	2.48	0.49
54:01:278:A:C2	54:01:362:A:H1'	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:741:U:H2'	54:01:742:A:C8	2.48	0.49
54:01:832:U:H2'	54:01:833:A:C8	2.48	0.49
54:01:1097:U:H2'	54:01:1098:A:O4'	2.13	0.49
54:01:1424:G:H2'	54:01:1425:G:O4'	2.13	0.49
54:01:2047:C:H2'	54:01:2048:G:C8	2.48	0.49
54:01:2533:U:H2'	54:01:2534:A:O4'	2.13	0.49
15:18:3:ILE:HD12	15:18:3:ILE:N	2.27	0.49
52:03:162:ARG:HD3	52:03:162:ARG:N	2.17	0.49
53:A:79:G:O2'	53:A:80:A:H5'	2.13	0.49
53:A:123:U:H5''	53:A:311:C:O2'	2.11	0.49
53:A:1275:A:H2'	53:A:1276:G:O4'	2.12	0.49
54:01:917:A:H5''	54:01:2268:A:N6	2.28	0.49
54:01:2111:U:H3	54:01:2147:A:H1'	1.78	0.49
54:01:2273:A:H2'	54:01:2274:A:C8	2.47	0.49
54:01:2676:C:H2'	54:01:2677:G:C8	2.48	0.49
59:Z:62:ILE:HB	59:Z:87:TYR:CD2	2.48	0.49
59:Z:173:SER:HB3	59:Z:184:TRP:CE3	2.48	0.49
9:12:15:TRP:HH2	54:01:7:G:H4'	1.78	0.49
13:16:96:ARG:HG3	54:01:2882:A:H5'	1.93	0.49
14:17:37:ALA:HB2	14:17:106:LEU:HD11	1.95	0.49
15:18:10:GLU:HG3	15:18:11:GLN:HG3	1.94	0.49
19:22:56:GLU:OE2	19:22:88:LYS:HG2	2.13	0.49
20:23:48:VAL:HG22	20:23:50:ALA:H	1.78	0.49
20:23:70:ALA:HB3	20:23:79:ALA:HB1	1.95	0.49
20:23:80:ASP:OD1	20:23:97:SER:HB3	2.12	0.49
21:24:80:HIS:HB2	21:24:85:LYS:HG3	1.95	0.49
32:B:75:ALA:O	32:B:79:VAL:HG23	2.13	0.49
36:F:71:ILE:HD12	36:F:74:LEU:HD12	1.94	0.49
46:P:6:LEU:HD13	46:P:17:TYR:CG	2.48	0.49
53:A:10:A:H2'	53:A:11:G:C8	2.48	0.49
53:A:580:C:H2'	53:A:581:G:O4'	2.13	0.49
53:A:1346:A:O2'	53:A:1347:G:H4'	2.12	0.49
54:01:1447:C:H2'	54:01:1448:G:C8	2.48	0.49
54:01:2167:U:H3	54:01:2170:A:H62	1.61	0.49
59:Z:88:VAL:O	59:Z:91:MET:HG3	2.13	0.49
59:Z:258:VAL:HG12	59:Z:265:LEU:HD23	1.93	0.49
59:Z:350:VAL:HG22	59:Z:356:ILE:HG21	1.95	0.49
2:05:173:GLN:NE2	54:01:2772:C:H5'	2.28	0.48
13:16:43:GLU:OE2	13:16:46:ARG:HD3	2.13	0.48
25:28:56:VAL:HG22	25:28:57:GLU:N	2.28	0.48
32:B:19:THR:HA	32:B:37:VAL:HG23	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:B:86:CYS:HB2	32:B:217:ALA:HB1	1.95	0.48
51:U:49:ALA:O	51:U:53:LYS:HG3	2.13	0.48
53:A:418:C:H2'	53:A:419:C:C6	2.48	0.48
54:01:1:G:H2'	54:01:2:G:H8	1.78	0.48
54:01:1463:C:H2'	54:01:1464:G:H8	1.78	0.48
54:01:1765:U:H2'	54:01:1766:G:C8	2.48	0.48
54:01:1801:A:H5''	54:01:2203:U:H2'	1.95	0.48
59:Z:19:HIS:HB3	59:Z:22:HIS:CE1	2.48	0.48
10:13:16:ALA:HA	10:13:46:ALA:HA	1.93	0.48
20:23:91:LYS:NZ	54:01:296:U:H5''	2.27	0.48
37:G:35:LYS:CD	53:A:1373:G:H5''	2.44	0.48
39:I:91:GLU:HA	39:I:94:ARG:HB2	1.95	0.48
40:J:8:ILE:HB	40:J:74:VAL:HB	1.94	0.48
42:L:23:LEU:HB2	42:L:58:ASN:HD22	1.79	0.48
42:L:74:GLN:O	42:L:76:HIS:N	2.42	0.48
44:N:42:ASN:O	44:N:46:LYS:HG3	2.13	0.48
53:A:24:U:H4'	53:A:525:C:H5'	1.95	0.48
53:A:632:U:H3'	53:A:633:G:H5'	1.96	0.48
54:01:11:C:H2'	54:01:12:U:H5''	1.95	0.48
54:01:1328:A:H2'	54:01:1330:C:C5	2.48	0.48
2:05:46:ARG:HG3	2:05:84:LEU:HB2	1.96	0.48
8:11:120:ASP:OD2	8:11:122:GLU:HB3	2.14	0.48
14:17:33:ARG:O	14:17:34:HIS:CB	2.60	0.48
30:33:30:HIS:ND1	30:33:31:ILE:HG13	2.28	0.48
35:E:140:ILE:HA	35:E:143:LEU:HD12	1.96	0.48
38:H:28:SER:HB2	38:H:58:LEU:HB3	1.95	0.48
54:01:1023:U:H4'	54:01:1123:C:OP1	2.12	0.48
54:01:2478:A:H2'	54:01:2479:U:O4'	2.12	0.48
54:01:2591:C:H2'	54:01:2592:G:C8	2.48	0.48
59:Z:330:PHE:CD2	59:Z:339:GLY:HA3	2.47	0.48
1:04:22:GLU:HB3	1:04:80:LEU:HD12	1.94	0.48
2:05:35:THR:HA	2:05:92:VAL:HG13	1.96	0.48
4:07:125:GLY:HA2	4:07:162:ASP:HA	1.94	0.48
7:10:7:ASP:O	7:10:11:ILE:HG12	2.13	0.48
7:10:118:ILE:H	7:10:119:PRO:CD	2.26	0.48
8:11:4:VAL:HG13	8:11:7:TYR:HE1	1.77	0.48
8:11:77:VAL:HA	8:11:80:LYS:HE2	1.94	0.48
15:18:5:LYS:O	15:18:8:GLU:HB2	2.14	0.48
18:21:88:ARG:HG3	18:21:94:ASP:OD2	2.12	0.48
23:26:5:GLN:HB3	23:26:70:LEU:HD11	1.94	0.48
34:D:98:ASP:OD2	34:D:132:ALA:HB1	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:F:38:ARG:CD	36:F:97:THR:HA	2.43	0.48
44:N:65:GLN:HG3	44:N:78:LEU:HD22	1.95	0.48
46:P:4:ILE:HD12	46:P:67:ILE:HG13	1.95	0.48
53:A:220:G:O2'	53:A:221:C:H5'	2.13	0.48
53:A:1142:G:H2'	53:A:1143:G:O4'	2.13	0.48
53:A:1417:G:H2'	53:A:1482:G:N2	2.29	0.48
54:01:174:U:H2'	54:01:175:G:C8	2.48	0.48
54:01:828:U:H2'	54:01:829:A:C8	2.48	0.48
54:01:1303:G:H2'	54:01:1304:A:O4'	2.13	0.48
54:01:2368:C:H2'	54:01:2369:A:H8	1.77	0.48
54:01:2554:U:H2'	54:01:2555:U:C6	2.48	0.48
59:Z:309:TYR:HB3	59:Z:385:ALA:H	1.78	0.48
5:08:85:LYS:HB2	5:08:85:LYS:NZ	2.28	0.48
11:14:101:ILE:HG13	11:14:102:GLY:H	1.78	0.48
27:30:47:TYR:CZ	27:30:52:LYS:HD3	2.48	0.48
32:B:60:ALA:HB1	32:B:224:ARG:HG3	1.95	0.48
34:D:96:ARG:O	34:D:100:VAL:HG23	2.13	0.48
37:G:92:PRO:HA	37:G:95:ARG:HE	1.79	0.48
38:H:54:THR:HG23	38:H:55:LYS:HG3	1.94	0.48
40:J:80:THR:HG22	40:J:82:LYS:H	1.78	0.48
52:03:42:VAL:HG11	52:03:175:ILE:HD11	1.96	0.48
53:A:1330:U:H2'	53:A:1331:G:O4'	2.12	0.48
54:01:792:A:H3'	54:01:793:A:H5'	1.96	0.48
54:01:2317:A:H2'	54:01:2318:G:O4'	2.13	0.48
55:02:3:C:H3'	55:02:4:C:H5''	1.94	0.48
59:Z:32:THR:HB	59:Z:43:ALA:N	2.29	0.48
8:11:12:VAL:O	8:11:13:ALA:C	2.52	0.48
13:16:114:GLU:HB2	13:16:118:ARG:HD2	1.96	0.48
14:17:7:ARG:HA	14:17:10:ARG:NH2	2.28	0.48
15:18:25:VAL:HB	15:18:46:VAL:HG23	1.96	0.48
15:18:29:VAL:HG13	15:18:79:VAL:O	2.13	0.48
34:D:1:ALA:HA	34:D:67:LEU:HD11	1.95	0.48
36:F:64:VAL:HG22	36:F:65:GLU:H	1.77	0.48
39:I:44:ARG:O	39:I:47:VAL:HG22	2.14	0.48
43:M:14:ALA:O	43:M:18:LEU:HG	2.12	0.48
43:M:53:ASP:HA	43:M:56:ARG:HH11	1.78	0.48
49:S:49:ALA:HB1	49:S:56:HIS:HB3	1.95	0.48
53:A:1366:C:H2'	53:A:1367:C:C6	2.49	0.48
54:01:353:C:H2'	54:01:354:A:C8	2.48	0.48
54:01:827:U:H4'	54:01:828:U:C5	2.48	0.48
54:01:1432:G:H2'	54:01:1433:A:C8	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:1485:U:H2'	54:01:1486:U:C6	2.49	0.48
59:Z:124:GLN:NE2	59:Z:385:ALA:HB1	2.28	0.48
59:Z:356:ILE:HD12	59:Z:356:ILE:O	2.14	0.48
3:06:189:THR:O	3:06:193:VAL:HG23	2.14	0.48
5:08:148:ARG:HA	5:08:161:VAL:HB	1.96	0.48
20:23:8:ASP:OD1	20:23:71:ILE:HG22	2.12	0.48
33:C:131:ARG:O	33:C:135:ARG:HB2	2.14	0.48
39:I:11:ARG:NH2	39:I:108:ARG:HD3	2.28	0.48
49:S:50:VAL:O	49:S:56:HIS:HA	2.14	0.48
53:A:665:A:C1'	53:A:733:G:H1'	2.44	0.48
54:01:278:A:H2'	54:01:278:A:N3	2.29	0.48
54:01:575:A:O2'	54:01:576:U:H5'	2.12	0.48
54:01:721:A:H2'	54:01:722:A:C8	2.48	0.48
54:01:1028:A:H2'	54:01:1029:A:C8	2.49	0.48
54:01:1594:U:H2'	54:01:1595:C:C6	2.49	0.48
54:01:1746:A:H2'	54:01:1747:U:C6	2.48	0.48
54:01:2185:U:H2'	54:01:2186:G:C8	2.48	0.48
54:01:2287:A:O2'	54:01:2288:A:H2'	2.13	0.48
54:01:2848:G:O2'	54:01:2849:U:H5'	2.13	0.48
59:Z:9:LYS:HG3	59:Z:75:HIS:HB2	1.95	0.48
59:Z:210:PHE:CD2	59:Z:242:VAL:HG11	2.49	0.48
1:04:12:ARG:HH21	54:01:728:G:C5'	2.27	0.48
1:04:83:ASP:HB2	1:04:90:ILE:HG23	1.94	0.48
6:09:76:GLU:C	6:09:142:VAL:HG13	2.34	0.48
23:26:11:PRO:HG3	23:26:30:PRO:HD2	1.96	0.48
23:26:15:ASN:O	54:01:380:G:H4'	2.13	0.48
30:33:61:LEU:HD12	30:33:61:LEU:O	2.14	0.48
31:34:19:ARG:HB2	31:34:24:ARG:HD2	1.96	0.48
37:G:115:MET:HB2	53:A:1240:U:OP1	2.13	0.48
53:A:1128:C:H2'	53:A:1129:C:C6	2.49	0.48
54:01:542:C:H2'	54:01:543:G:C5'	2.44	0.48
54:01:1283:G:H1'	54:01:1329:U:O2	2.14	0.48
54:01:1570:A:H2'	54:01:1571:A:C8	2.48	0.48
54:01:1704:C:H2'	54:01:1705:A:H8	1.79	0.48
54:01:1736:U:H2'	54:01:1737:G:O4'	2.13	0.48
54:01:2802:G:H2'	54:01:2803:G:C8	2.49	0.48
59:Z:52:ALA:HB3	59:Z:55:GLU:HB2	1.95	0.48
1:04:51:ARG:NH2	1:04:246:PRO:HG2	2.29	0.48
2:05:7:LYS:HE3	2:05:77:ARG:NH1	2.29	0.48
2:05:48:ILE:O	2:05:81:GLU:HG3	2.14	0.48
4:07:115:GLY:HA3	4:07:177:ARG:HB2	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:09:58:LEU:HA	6:09:61:VAL:HG13	1.96	0.48
10:13:107:LEU:HD21	10:13:115:ILE:HG21	1.95	0.48
19:22:56:GLU:HB2	19:22:86:THR:OG1	2.14	0.48
22:25:12:SER:HG	54:01:2261:C:H3'	1.77	0.48
26:29:18:CYS:SG	26:29:37:CYS:N	2.87	0.48
27:30:42:ILE:HG22	27:30:48:TYR:HB2	1.96	0.48
29:32:34:ARG:NE	29:32:39:ARG:HD2	2.13	0.48
32:B:22:TRP:CZ3	32:B:24:PRO:HA	2.49	0.48
36:F:37:HIS:O	36:F:38:ARG:HD2	2.14	0.48
50:T:26:MET:HB3	53:A:1458:G:H5'	1.95	0.48
51:U:35:GLU:O	51:U:36:PHE:HB2	2.14	0.48
53:A:35:G:H2'	53:A:36:C:C6	2.49	0.48
54:01:20:C:H2'	54:01:21:A:H8	1.79	0.48
54:01:2345:G:H5'	54:01:2347:C:O4'	2.13	0.48
59:Z:123:ARG:HG3	59:Z:161:ASP:O	2.14	0.48
59:Z:186:ALA:O	59:Z:190:GLU:HG3	2.14	0.48
6:09:135:HIS:HB3	6:09:138:VAL:H	1.79	0.48
11:14:141:LYS:HG2	11:14:142:ILE:N	2.29	0.48
13:16:32:GLU:HG2	13:16:115:LEU:HD12	1.96	0.48
32:B:166:ASP:HB2	32:B:190:SER:OG	2.13	0.48
53:A:448:A:H3'	53:A:449:G:C8	2.47	0.48
53:A:466:A:H2'	53:A:468:A:N7	2.29	0.48
53:A:758:C:H4'	53:A:880:C:H4'	1.96	0.48
54:01:150:U:H2'	54:01:151:C:C6	2.48	0.48
54:01:174:U:H2'	54:01:175:G:H8	1.79	0.48
54:01:195:A:H61	54:01:198:C:H3'	1.78	0.48
54:01:2537:U:H2'	54:01:2538:C:C6	2.49	0.48
56:W:6:G:O2'	56:W:7:G:H5'	2.13	0.48
1:04:77:VAL:HG21	1:04:109:LEU:HD11	1.96	0.47
6:09:4:ILE:HG22	6:09:37:VAL:O	2.14	0.47
8:11:81:LYS:HA	8:11:86:LYS:HZ1	1.79	0.47
12:15:84:LYS:N	12:15:84:LYS:HD2	2.28	0.47
23:26:71:ARG:HD2	23:26:77:TYR:OH	2.14	0.47
32:B:117:GLU:OE2	32:B:151:LYS:HE3	2.14	0.47
37:G:74:VAL:HB	37:G:85:GLN:HB3	1.95	0.47
42:L:28:GLN:HE22	42:L:82:ARG:HB3	1.79	0.47
53:A:1443:C:H2'	53:A:1444:U:O4'	2.14	0.47
54:01:118:A:H2'	54:01:120:U:O4	2.14	0.47
54:01:610:C:H2'	54:01:611:C:C6	2.49	0.47
54:01:717:C:H2'	54:01:718:A:O4'	2.14	0.47
54:01:1319:C:H2'	54:01:1320:C:O4'	2.13	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:1688:U:H2'	54:01:1698:A:N6	2.29	0.47
54:01:2125:G:H2'	54:01:2126:A:O4'	2.14	0.47
59:Z:117:GLU:O	59:Z:121:LEU:HG	2.13	0.47
59:Z:372:LEU:N	59:Z:388:VAL:HB	2.28	0.47
1:04:257:ARG:NH2	1:04:266:ILE:HD12	2.28	0.47
5:08:72:ASN:O	5:08:76:ILE:HG12	2.14	0.47
7:10:31:ARG:O	7:10:108:VAL:HG21	2.14	0.47
10:13:35:VAL:HG13	10:13:69:VAL:HG11	1.96	0.47
11:14:119:PRO:HA	11:14:140:GLY:H	1.78	0.47
26:29:59:ARG:NH1	26:29:63:ARG:HE	2.12	0.47
27:30:2:VAL:HG21	54:01:2057:G:O2'	2.14	0.47
35:E:80:LEU:H	35:E:121:ASN:ND2	2.12	0.47
36:F:44:ARG:HA	36:F:58:HIS:HA	1.96	0.47
37:G:3:ARG:NH2	53:A:931:C:H5''	2.29	0.47
38:H:80:PRO:HG2	53:A:878:A:H5''	1.95	0.47
46:P:38:PHE:CE1	46:P:51:ARG:HB2	2.48	0.47
47:Q:12:VAL:HB	47:Q:21:VAL:HG13	1.96	0.47
53:A:460:A:H2'	53:A:461:A:H8	1.78	0.47
53:A:1441:A:H2'	53:A:1442:G:H5'	1.95	0.47
54:01:1297:C:H2'	54:01:1298:C:C6	2.49	0.47
54:01:2421:G:H2'	56:X:76:A:N6	2.29	0.47
59:Z:84:HIS:O	59:Z:88:VAL:HG23	2.14	0.47
1:04:59:GLN:HA	54:01:1568:G:H5'	1.95	0.47
3:06:40:ARG:NH2	54:01:1246:A:H4'	2.29	0.47
12:15:53:MET:HE3	12:15:63:ILE:HG21	1.96	0.47
24:27:9:LYS:HD3	24:27:10:SER:N	2.29	0.47
33:C:71:ARG:HD2	33:C:74:ILE:HD11	1.96	0.47
39:I:113:LYS:HE2	39:I:118:ARG:O	2.14	0.47
43:M:82:LEU:HD21	49:S:64:GLU:HB3	1.95	0.47
52:03:27:ILE:HD12	52:03:182:ALA:O	2.14	0.47
53:A:501:C:H2'	53:A:502:A:C8	2.50	0.47
54:01:2473:U:H5'	58:Y:17:U:C4	2.49	0.47
54:01:2875:C:H2'	54:01:2876:G:C8	2.49	0.47
55:02:89:U:H5'	55:02:90:C:C6	2.50	0.47
58:Y:26:A:H4'	58:Y:26:A:OP1	2.13	0.47
59:Z:70:ASP:HB3	59:Z:75:HIS:HA	1.95	0.47
59:Z:184:TRP:O	59:Z:188:ILE:HG12	2.15	0.47
2:05:25:THR:HG21	2:05:193:VAL:HG22	1.96	0.47
7:10:52:MET:SD	7:10:95:LEU:HD13	2.54	0.47
8:11:91:LYS:N	8:11:92:PRO:CD	2.77	0.47
22:25:56:PHE:CE1	54:01:2365:G:H4'	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:B:56:LEU:HD13	32:B:216:VAL:HA	1.96	0.47
32:B:99:MET:HA	32:B:106:VAL:HG21	1.96	0.47
37:G:56:SER:HB3	37:G:59:GLU:HG2	1.96	0.47
38:H:87:ARG:HD2	38:H:89:ASP:OD1	2.15	0.47
43:M:6:ILE:HG13	43:M:7:ASN:N	2.27	0.47
53:A:505:G:H2'	53:A:506:G:C8	2.50	0.47
53:A:634:C:H2'	53:A:635:A:H8	1.80	0.47
54:01:215:G:C4'	54:01:216:A:H4'	2.44	0.47
54:01:1562:U:H2'	54:01:1563:U:O4'	2.15	0.47
54:01:1564:C:H2'	54:01:1565:C:O4'	2.15	0.47
54:01:2006:C:H5''	54:01:2048:G:H5''	1.96	0.47
54:01:2141:G:N2	54:01:2151:U:H1'	2.29	0.47
54:01:2440:C:H5''	54:01:2587:A:H4'	1.95	0.47
54:01:2861:U:H2'	54:01:2862:G:H8	1.79	0.47
59:Z:318:ARG:HB3	59:Z:352:PRO:HG3	1.95	0.47
1:04:260:LYS:HA	1:04:263:ASP:OD2	2.14	0.47
6:09:147:VAL:HG12	6:09:148:ALA:N	2.29	0.47
7:10:94:ARG:O	7:10:97:LYS:HG2	2.15	0.47
11:14:93:ASN:C	11:14:95:LEU:H	2.18	0.47
18:21:41:LYS:HZ3	27:30:21:LEU:HD11	1.80	0.47
24:27:14:LEU:O	24:27:17:GLU:HB3	2.14	0.47
35:E:59:ILE:O	35:E:63:MET:HG2	2.14	0.47
35:E:82:HIS:C	35:E:97:PRO:HD3	2.34	0.47
42:L:3:VAL:HA	42:L:6:LEU:HD12	1.96	0.47
43:M:28:ARG:O	43:M:32:ILE:HG12	2.13	0.47
52:03:42:VAL:HG22	52:03:216:THR:HG23	1.96	0.47
54:01:560:C:H2'	54:01:561:G:O4'	2.14	0.47
54:01:1354:A:H2'	54:01:1355:G:O4'	2.13	0.47
54:01:1625:C:H2'	54:01:1626:A:O4'	2.15	0.47
54:01:2024:G:OP2	54:01:2034:U:H4'	2.14	0.47
54:01:2185:U:H2'	54:01:2186:G:H8	1.80	0.47
54:01:2636:C:H2'	54:01:2637:U:C6	2.50	0.47
54:01:2818:U:H2'	54:01:2819:G:C8	2.49	0.47
59:Z:170:VAL:HG21	59:Z:191:LEU:HD13	1.96	0.47
59:Z:342:GLU:HG3	59:Z:361:THR:CG2	2.44	0.47
59:Z:343:LEU:HA	59:Z:358:MET:CB	2.44	0.47
2:05:10:GLY:N	2:05:197:THR:HG23	2.30	0.47
7:10:77:VAL:HG11	7:10:82:ILE:HG13	1.97	0.47
19:22:3:ARG:NE	19:22:3:ARG:HA	2.30	0.47
32:B:167:HIS:ND1	32:B:168:GLU:HG3	2.29	0.47
45:O:31:LEU:O	45:O:35:ILE:HG13	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:T:28:ARG:HA	50:T:31:ILE:HD12	1.97	0.47
53:A:409:U:H2'	53:A:410:G:O4'	2.15	0.47
53:A:1086:U:H5''	53:A:1389:C:H5''	1.97	0.47
53:A:1170:A:H2'	53:A:1171:A:O4'	2.14	0.47
53:A:1402:C:H2'	53:A:1403:C:O4'	2.13	0.47
54:01:163:C:H2'	54:01:164:C:O4'	2.13	0.47
54:01:248:G:C4	54:01:2431:U:H4'	2.50	0.47
54:01:752:A:H1'	54:01:753:A:OP2	2.14	0.47
54:01:1470:A:H2'	54:01:1471:G:O4'	2.13	0.47
54:01:1704:C:H2'	54:01:1705:A:C8	2.50	0.47
54:01:2676:C:H2'	54:01:2677:G:H8	1.80	0.47
59:Z:30:ALA:O	59:Z:34:VAL:HG23	2.14	0.47
59:Z:307:GLU:HA	59:Z:357:LYS:HA	1.97	0.47
1:04:28:PRO:HG2	1:04:33:LEU:HD21	1.96	0.47
4:07:124:ARG:NH2	54:01:2316:G:H4'	2.30	0.47
5:08:123:GLU:HB2	5:08:131:VAL:O	2.15	0.47
8:11:56:VAL:HG22	8:11:57:VAL:N	2.30	0.47
10:13:10:VAL:HG21	10:13:16:ALA:CB	2.45	0.47
14:17:32:PRO:HD2	55:02:29:A:OP2	2.13	0.47
15:18:19:PHE:CE2	15:18:46:VAL:HG21	2.50	0.47
17:20:24:LYS:HA	17:20:94:THR:OG1	2.15	0.47
18:21:11:ARG:NH2	54:01:1321:A:H4'	2.23	0.47
19:22:40:LYS:HE2	19:22:59:ASN:HA	1.97	0.47
23:26:6:VAL:HG23	23:26:50:VAL:HG12	1.97	0.47
28:31:47:ILE:H	28:31:47:ILE:HD12	1.79	0.47
30:33:38:LYS:HA	30:33:41:ARG:HH22	1.79	0.47
33:C:143:LEU:HD23	33:C:143:LEU:O	2.13	0.47
34:D:61:ARG:HH21	34:D:62:ARG:HE	1.63	0.47
38:H:29:SER:O	38:H:33:VAL:HG23	2.15	0.47
38:H:46:GLU:HB2	38:H:63:LYS:HD2	1.96	0.47
40:J:35:GLN:HB3	40:J:78:GLU:HG2	1.96	0.47
41:K:39:ASN:HA	53:A:683:G:H21	1.80	0.47
46:P:43:ALA:HB1	46:P:46:LYS:HE3	1.96	0.47
47:Q:46:HIS:ND1	47:Q:70:LYS:HE2	2.30	0.47
50:T:32:LYS:HE2	53:A:1439:G:OP1	2.14	0.47
53:A:3:A:H1'	53:A:613:C:H1'	1.97	0.47
53:A:34:C:H2'	53:A:35:G:C8	2.50	0.47
53:A:551:U:H2'	53:A:552:U:C6	2.50	0.47
53:A:986:U:H2'	53:A:987:G:C8	2.48	0.47
54:01:49:A:H5'	54:01:51:G:O4'	2.15	0.47
54:01:184:C:H2'	54:01:185:G:C8	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:389:G:C8	54:01:2413:G:H4'	2.48	0.47
54:01:482:A:H1'	54:01:498:G:N2	2.30	0.47
54:01:1201:U:H2'	54:01:1202:G:H8	1.80	0.47
54:01:1525:A:H2'	54:01:1526:C:O4'	2.15	0.47
54:01:2291:U:H2'	54:01:2292:U:C6	2.50	0.47
55:02:104:A:H2'	55:02:105:G:O4'	2.15	0.47
59:Z:222:GLY:O	59:Z:223:ARG:HD2	2.15	0.47
59:Z:302:THR:O	59:Z:362:LEU:HB2	2.14	0.47
59:Z:333:ARG:HH11	59:Z:372:LEU:HD13	1.80	0.47
8:11:103:ALA:O	8:11:107:GLU:HG3	2.15	0.47
9:12:34:ARG:NH2	16:19:69:ARG:HD2	2.30	0.47
12:15:42:THR:OG1	12:15:45:GLN:HG3	2.14	0.47
15:18:38:ARG:HG2	15:18:39:LEU:H	1.80	0.47
15:18:52:ARG:HB3	15:18:55:HIS:HB2	1.95	0.47
33:C:56:ILE:CG2	33:C:63:ILE:HD11	2.45	0.47
35:E:159:SER:HB2	35:E:162:GLU:CG	2.43	0.47
37:G:139:ASP:O	37:G:143:MET:HG2	2.15	0.47
39:I:105:ARG:O	39:I:105:ARG:HD3	2.15	0.47
44:N:52:ARG:HD2	53:A:1317:C:N3	2.30	0.47
50:T:24:ARG:O	50:T:28:ARG:HG2	2.14	0.47
53:A:202:G:H21	53:A:466:A:H61	1.63	0.47
53:A:940:C:H4'	53:A:1374:A:H2	1.80	0.47
53:A:1016:A:H4'	53:A:1218:C:H4'	1.97	0.47
53:A:1409:C:H2'	53:A:1410:A:H8	1.79	0.47
53:A:1449:C:H2'	53:A:1450:U:O4'	2.15	0.47
54:01:2131:U:OP1	54:01:2134:A:H5'	2.14	0.47
54:01:2358:A:H2'	54:01:2359:C:O4'	2.15	0.47
6:09:125:THR:HG23	6:09:146:VAL:O	2.15	0.47
11:14:57:LEU:HA	11:14:60:ARG:HE	1.80	0.47
12:15:73:ILE:HD11	12:15:93:VAL:CG2	2.45	0.47
13:16:28:LEU:CD2	13:16:48:VAL:HG21	2.39	0.47
16:19:49:ARG:NH2	17:20:74:ILE:HG13	2.29	0.47
23:26:31:ASN:HD22	23:26:52:ALA:CB	2.24	0.47
33:C:153:SER:CB	53:A:1057:G:H5''	2.45	0.47
36:F:12:PRO:CD	36:F:54:LEU:HD21	2.43	0.47
39:I:18:VAL:HG11	39:I:82:ILE:HA	1.97	0.47
44:N:13:VAL:HA	44:N:59:GLN:HE22	1.80	0.47
44:N:49:THR:OG1	49:S:12:LEU:HD11	2.15	0.47
48:R:49:LYS:HE3	53:A:663:A:H5''	1.97	0.47
49:S:47:THR:HA	49:S:60:PHE:HA	1.96	0.47
52:03:24:ASN:HA	52:03:27:ILE:HD11	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:570:G:H5'	53:A:820:U:O4'	2.14	0.47
54:01:687:C:H2'	54:01:688:U:O4'	2.14	0.47
54:01:940:G:C3'	54:01:941:A:H5''	2.45	0.47
54:01:1061:U:H4'	54:01:1070:A:N3	2.29	0.47
54:01:1070:A:H5'	54:01:1072:C:OP2	2.14	0.47
54:01:2048:G:H3'	54:01:2049:G:H5''	1.97	0.47
54:01:2114:A:C6	54:01:2115:G:H1'	2.50	0.47
54:01:2140:G:H2'	54:01:2141:G:O4'	2.15	0.47
54:01:2492:U:H2'	54:01:2493:U:C6	2.50	0.47
54:01:2515:C:H2'	54:01:2516:A:C8	2.49	0.47
61:Y:101:LYS:N	59:Z:260:MET:HA	2.29	0.47
5:08:71:LEU:O	5:08:75:VAL:HG23	2.15	0.47
10:13:22:ILE:HD11	10:13:40:LYS:HG3	1.97	0.47
18:21:88:ARG:HB2	18:21:92:ARG:HG3	1.97	0.47
21:24:42:LEU:HD13	21:24:47:VAL:HG21	1.97	0.47
35:E:37:VAL:HG11	35:E:113:VAL:HA	1.97	0.47
35:E:83:PRO:HB3	35:E:96:GLN:CG	2.45	0.47
37:G:24:LYS:O	37:G:28:ILE:HG13	2.15	0.47
48:R:49:LYS:O	48:R:53:GLN:HG3	2.16	0.47
52:03:4:LEU:HD12	52:03:9:ARG:HG3	1.96	0.47
53:A:112:G:H5'	53:A:389:A:H4'	1.97	0.47
53:A:371:A:H2'	53:A:372:C:O4'	2.15	0.47
53:A:687:A:N3	53:A:688:G:H1'	2.30	0.47
53:A:981:U:H2'	53:A:982:U:C5	2.49	0.47
53:A:1352:C:H2'	53:A:1353:G:C8	2.50	0.47
54:01:995:C:H6	54:01:995:C:H5'	1.79	0.47
54:01:1020:A:H1'	54:01:1021:A:OP2	2.15	0.47
54:01:2331:G:H2'	54:01:2332:C:C6	2.50	0.47
2:05:15:PHE:HB3	15:18:78:PRO:HD3	1.97	0.46
20:23:31:GLY:C	20:23:66:VAL:HG23	2.35	0.46
23:26:16:ASN:HB3	23:26:24:THR:HB	1.97	0.46
38:H:100:ILE:CD1	38:H:128:VAL:HB	2.46	0.46
39:I:33:SER:H	39:I:36:GLN:CG	2.28	0.46
39:I:93:LEU:O	39:I:97:LEU:N	2.44	0.46
43:M:28:ARG:HG2	43:M:62:PHE:CE2	2.50	0.46
46:P:6:LEU:HD12	53:A:375:U:H4'	1.97	0.46
50:T:82:ILE:HD12	50:T:83:ASN:N	2.30	0.46
53:A:625:U:H2'	53:A:626:G:C8	2.51	0.46
53:A:887:G:H2'	53:A:888:G:O4'	2.15	0.46
54:01:141:G:H3'	54:01:142:A:O4'	2.14	0.46
54:01:226:A:H2'	54:01:227:A:O4'	2.13	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:2182:U:H2'	54:01:2183:A:C8	2.49	0.46
59:Z:12:VAL:HG21	59:Z:74:ARG:NH1	2.30	0.46
59:Z:21:ASP:H	62:Z:401:GCP:H3B1	1.81	0.46
3:06:5:LEU:HG	3:06:120:VAL:O	2.15	0.46
4:07:24:VAL:HG12	55:02:55:U:H4'	1.97	0.46
8:11:52:LEU:HD12	8:11:53:PRO:HD2	1.96	0.46
11:14:42:SER:HB2	54:01:672:C:H5	1.79	0.46
12:15:13:HIS:HE1	54:01:2265:U:H4'	1.80	0.46
17:20:42:ALA:HB2	17:20:46:GLU:HG2	1.98	0.46
22:25:36:GLN:HE22	22:25:41:PHE:H	1.63	0.46
24:27:21:LEU:HA	24:27:25:GLN:CB	2.45	0.46
35:E:23:THR:HG23	35:E:28:ARG:HB3	1.97	0.46
38:H:17:GLN:HG3	38:H:71:VAL:HB	1.97	0.46
39:I:49:GLN:N	39:I:50:PRO:CD	2.78	0.46
41:K:51:PHE:CE2	41:K:64:VAL:HG11	2.50	0.46
42:L:4:ASN:HB3	53:A:880:C:OP2	2.16	0.46
50:T:27:MET:O	50:T:31:ILE:HG13	2.14	0.46
53:A:12:U:H4'	53:A:526:C:H4'	1.97	0.46
54:01:1429:G:H2'	54:01:1430:G:H8	1.79	0.46
54:01:2393:U:H2'	54:01:2394:C:O4'	2.15	0.46
55:02:88:C:H5''	55:02:89:U:OP1	2.15	0.46
2:05:150:GLN:HE22	54:01:574:A:H2	1.64	0.46
5:08:142:GLN:O	5:08:145:ALA:HB3	2.16	0.46
6:09:12:LEU:HD12	6:09:13:GLY:H	1.79	0.46
12:15:45:GLN:HA	12:15:48:ALA:HB3	1.98	0.46
14:17:5:SER:HA	14:17:8:ILE:HD12	1.97	0.46
16:19:55:GLN:HA	16:19:58:GLN:HG2	1.97	0.46
18:21:69:LEU:HG	18:21:107:VAL:HG22	1.95	0.46
39:I:22:PRO:HA	39:I:60:LEU:HA	1.97	0.46
40:J:15:HIS:HA	40:J:18:ILE:HG22	1.97	0.46
41:K:22:ILE:HD13	41:K:95:THR:CG2	2.46	0.46
47:Q:39:ARG:HH11	53:A:280:C:C1'	2.29	0.46
53:A:595:A:H61	53:A:641:U:H2'	1.80	0.46
53:A:692:U:H2'	53:A:694:A:OP2	2.15	0.46
53:A:1024:G:H2'	53:A:1025:U:O4'	2.14	0.46
53:A:1354:U:H2'	53:A:1355:G:H8	1.80	0.46
54:01:1101:U:H2'	54:01:1102:C:C6	2.50	0.46
54:01:2601:C:H2'	54:01:2603:G:C8	2.51	0.46
4:07:40:GLY:HA2	4:07:84:ILE:HD11	1.96	0.46
11:14:57:LEU:HB2	11:14:60:ARG:NH1	2.31	0.46
34:D:77:GLU:O	34:D:80:ARG:HG3	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:D:131:ILE:HG12	53:A:620:C:C1'	2.45	0.46
44:N:2:LYS:O	44:N:4:SER:N	2.48	0.46
45:O:55:LEU:O	45:O:59:VAL:HG23	2.15	0.46
53:A:390:U:H2'	53:A:391:G:H8	1.80	0.46
53:A:1513:A:H2'	53:A:1514:G:H8	1.80	0.46
54:01:1877:A:H2'	54:01:1878:G:O4'	2.15	0.46
54:01:2322:A:H2'	54:01:2323:G:O4'	2.16	0.46
54:01:2389:G:H5''	54:01:2390:U:O4'	2.15	0.46
55:02:30:C:C2'	55:02:31:C:H5'	2.46	0.46
59:Z:145:LEU:O	59:Z:149:VAL:HG23	2.15	0.46
59:Z:325:GLY:HA2	59:Z:342:GLU:OE2	2.15	0.46
1:04:171:VAL:HG23	1:04:185:ALA:HA	1.98	0.46
7:10:43:LYS:HA	7:10:46:ARG:HG2	1.97	0.46
8:11:74:PRO:HG2	8:11:77:VAL:HG22	1.97	0.46
10:13:1:MET:SD	54:01:1665:A:H1'	2.56	0.46
12:15:86:LYS:HB2	54:01:2277:G:H5'	1.97	0.46
15:18:91:VAL:HG21	15:18:96:LEU:HD11	1.97	0.46
32:B:114:LYS:HB2	32:B:114:LYS:NZ	2.30	0.46
32:B:125:PHE:O	32:B:133:ALA:HB1	2.16	0.46
33:C:39:ARG:HH12	33:C:54:ILE:HG13	1.81	0.46
33:C:173:PRO:O	33:C:181:ILE:HD11	2.15	0.46
48:R:11:ARG:HD2	53:A:845:A:O2'	2.15	0.46
54:01:887:U:H5'	54:01:888:C:OP1	2.16	0.46
54:01:1258:U:H2'	54:01:1259:G:C8	2.51	0.46
54:01:1357:C:H2'	54:01:1358:G:O4'	2.14	0.46
54:01:1751:U:H2'	54:01:1752:C:C6	2.50	0.46
54:01:2176:A:H2'	54:01:2177:C:C6	2.50	0.46
54:01:2183:A:H2'	54:01:2184:A:C8	2.51	0.46
54:01:2573:C:H5''	54:01:2574:G:H5''	1.96	0.46
59:Z:98:MET:SD	59:Z:101:ALA:HA	2.55	0.46
1:04:247:TRP:CD2	54:01:1805:A:H5''	2.51	0.46
2:05:184:ARG:HH11	15:18:6:GLN:HE21	1.62	0.46
3:06:119:ILE:HB	3:06:187:VAL:HA	1.98	0.46
17:20:68:ARG:NH1	17:20:90:ARG:HB2	2.31	0.46
19:22:51:PHE:O	19:22:53:VAL:HG13	2.15	0.46
24:27:9:LYS:O	24:27:12:GLU:HB3	2.15	0.46
32:B:23:ASN:HD22	32:B:24:PRO:CD	2.29	0.46
32:B:66:ILE:HG23	32:B:159:ALA:HB3	1.98	0.46
32:B:102:ASN:O	32:B:106:VAL:HG23	2.15	0.46
34:D:94:GLU:HA	34:D:99:ASN:ND2	2.30	0.46
35:E:149:PRO:HG2	35:E:150:GLU:OE2	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:J:50:THR:HG22	40:J:62:ARG:HG2	1.97	0.46
45:O:10:ILE:HD13	45:O:30:LEU:HA	1.97	0.46
53:A:501:C:H2'	53:A:502:A:H8	1.80	0.46
53:A:599:C:H2'	53:A:600:A:H8	1.80	0.46
54:01:1283:G:H21	54:01:1329:U:H3	1.64	0.46
59:Z:58:ARG:CB	59:Z:60:ILE:HG12	2.46	0.46
59:Z:70:ASP:HB2	59:Z:75:HIS:HA	1.96	0.46
59:Z:366:ILE:HG13	59:Z:367:ALA:N	2.30	0.46
3:06:9:GLN:O	3:06:9:GLN:HG2	2.15	0.46
8:11:93:ASN:HB2	54:01:1077:A:C4'	2.46	0.46
16:19:24:TYR:HE1	54:01:17:G:H4'	1.80	0.46
23:26:56:ARG:O	23:26:59:ASP:HB3	2.16	0.46
32:B:79:VAL:HG12	32:B:90:PHE:HB2	1.96	0.46
38:H:1:SER:H2	38:H:3:GLN:HE21	1.64	0.46
39:I:32:ARG:NH2	53:A:1248:A:H5''	2.31	0.46
40:J:53:ILE:HG23	53:A:1060:U:H4'	1.98	0.46
42:L:5:GLN:HA	42:L:8:ARG:NH1	2.31	0.46
44:N:2:LYS:O	44:N:5:MET:N	2.45	0.46
53:A:458:U:H2'	53:A:459:A:C8	2.51	0.46
53:A:521:G:O2'	53:A:522:C:H5'	2.15	0.46
53:A:1182:G:H5'	53:A:1183:U:OP1	2.16	0.46
54:01:2023:C:H2'	54:01:2024:G:H8	1.80	0.46
54:01:2605:U:H2'	54:01:2606:C:C6	2.51	0.46
54:01:2795:C:H2'	54:01:2796:U:O4'	2.15	0.46
54:01:2898:U:H2'	54:01:2899:A:C8	2.50	0.46
56:W:6:G:H2'	56:W:7:G:H8	1.79	0.46
61:Y:101:LYS:HE2	59:Z:228:THR:HB	1.98	0.46
1:04:35:LYS:NZ	54:01:1353:A:H5''	2.30	0.46
4:07:41:GLU:HB3	4:07:48:LEU:HD23	1.98	0.46
4:07:55:ASP:O	4:07:59:ILE:HG13	2.15	0.46
4:07:102:LEU:O	4:07:106:ALA:HB3	2.16	0.46
5:08:136:ASP:O	5:08:140:ILE:HG12	2.15	0.46
8:11:25:PRO:O	8:11:29:GLN:HG2	2.16	0.46
10:13:10:VAL:HG21	10:13:16:ALA:HB3	1.97	0.46
15:18:93:LYS:HD2	15:18:98:TYR:CE1	2.51	0.46
32:B:216:VAL:O	32:B:220:VAL:HG23	2.15	0.46
35:E:156:ARG:O	35:E:156:ARG:HD3	2.16	0.46
37:G:50:ALA:HA	37:G:53:SER:OG	2.16	0.46
39:I:46:VAL:HA	39:I:49:GLN:HG3	1.97	0.46
39:I:80:HIS:O	39:I:84:ARG:HG2	2.16	0.46
51:U:36:PHE:C	51:U:38:GLU:N	2.68	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:225:C:C2'	53:A:226:G:H5''	2.46	0.46
53:A:298:A:H2'	53:A:299:G:O4'	2.16	0.46
53:A:641:U:H4'	53:A:642:A:C8	2.50	0.46
53:A:1148:U:H2'	53:A:1149:C:O4'	2.16	0.46
53:A:1391:U:H2'	53:A:1392:G:H8	1.81	0.46
54:01:498:G:H2'	54:01:499:U:C6	2.51	0.46
54:01:596:U:H2'	54:01:597:G:C8	2.49	0.46
54:01:1447:C:H2'	54:01:1448:G:H8	1.79	0.46
54:01:1565:C:O2'	54:01:1566:A:H2'	2.15	0.46
54:01:2047:C:H2'	54:01:2048:G:H8	1.80	0.46
54:01:2704:C:H2'	54:01:2705:A:O4'	2.16	0.46
59:Z:304:PHE:CE2	59:Z:388:VAL:HG22	2.51	0.46
4:07:73:VAL:HG22	4:07:78:ILE:HD11	1.98	0.46
9:12:42:ALA:O	16:19:63:ARG:HD3	2.15	0.46
9:12:115:GLY:O	9:12:118:MET:HG2	2.16	0.46
12:15:41:LEU:HA	12:15:45:GLN:OE1	2.15	0.46
17:20:27:ILE:HG13	17:20:33:VAL:CG1	2.46	0.46
18:21:66:ILE:HD12	18:21:66:ILE:H	1.79	0.46
20:23:73:ASN:O	20:23:74:ALA:HB3	2.15	0.46
44:N:40:ARG:O	44:N:44:VAL:HG13	2.16	0.46
47:Q:11:VAL:HG23	47:Q:56:ASP:O	2.15	0.46
47:Q:35:LYS:O	47:Q:37:ILE:HG13	2.16	0.46
53:A:390:U:H2'	53:A:391:G:C8	2.51	0.46
53:A:519:C:H2'	53:A:520:A:O4'	2.16	0.46
53:A:526:C:H2'	53:A:527:G:H4'	1.98	0.46
53:A:595:A:N6	53:A:641:U:H2'	2.30	0.46
53:A:674:G:H2'	53:A:675:A:C8	2.50	0.46
54:01:854:C:H2'	54:01:855:G:H8	1.81	0.46
54:01:1110:G:H2'	54:01:1111:A:H8	1.81	0.46
54:01:1127:A:H2'	54:01:1128:G:H5''	1.97	0.46
54:01:1441:G:H4'	54:01:1628:G:H5'	1.98	0.46
54:01:1444:G:H2'	54:01:1445:G:O4'	2.15	0.46
56:W:6:G:H2'	56:W:7:G:C8	2.51	0.46
59:Z:311:LEU:HG	59:Z:384:GLY:HA2	1.97	0.46
1:04:51:ARG:HH22	1:04:246:PRO:HG2	1.81	0.46
20:23:82:VAL:HG13	20:23:93:ARG:HB3	1.98	0.46
21:24:23:ALA:O	21:24:25:LYS:HG3	2.16	0.46
30:33:41:ARG:HD3	54:01:2350:C:H6	1.81	0.46
34:D:54:LEU:CD2	34:D:55:ARG:HH21	2.28	0.46
35:E:39:GLY:HA2	35:E:45:VAL:HG12	1.98	0.46
39:I:44:ARG:H	39:I:44:ARG:HD2	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:J:6:ILE:HB	40:J:76:ILE:HB	1.98	0.46
44:N:19:TYR:HD1	44:N:23:ARG:HD3	1.80	0.46
44:N:30:ILE:HG21	44:N:43:ALA:CB	2.46	0.46
45:O:42:PHE:HE1	45:O:48:ASP:HB3	1.79	0.46
51:U:9:GLU:HB3	51:U:10:PRO:CD	2.45	0.46
53:A:76:G:H2'	53:A:77:A:O4'	2.16	0.46
53:A:1418:A:H3'	53:A:1419:G:H5''	1.97	0.46
53:A:1467:C:H2'	53:A:1468:A:C8	2.51	0.46
54:01:267:C:H2'	54:01:268:C:C6	2.51	0.46
54:01:473:G:O2'	54:01:474:G:H5'	2.16	0.46
59:Z:65:SER:HB3	59:Z:80:ASP:HB3	1.98	0.46
2:05:133:THR:HG23	2:05:134:HIS:N	2.31	0.45
8:11:79:LEU:HD13	8:11:137:LEU:HD12	1.96	0.45
10:13:66:LYS:NZ	10:13:66:LYS:HB3	2.30	0.45
37:G:144:ALA:C	37:G:146:ALA:H	2.19	0.45
39:I:62:LEU:HD12	39:I:62:LEU:N	2.31	0.45
47:Q:13:SER:H	47:Q:21:VAL:HG13	1.81	0.45
52:03:174:THR:HG22	54:01:2124:G:H5''	1.97	0.45
53:A:401:C:H2'	53:A:402:G:C8	2.50	0.45
53:A:411:A:C4	53:A:413:G:H1'	2.51	0.45
53:A:999:C:H2'	53:A:1000:A:C8	2.52	0.45
54:01:305:C:H2'	54:01:306:U:C6	2.51	0.45
54:01:310:A:O2'	54:01:311:A:H5''	2.16	0.45
54:01:1295:C:H2'	54:01:1296:G:C8	2.51	0.45
54:01:2004:G:H2'	54:01:2005:A:O4'	2.16	0.45
54:01:2199:A:H2'	54:01:2200:C:O4'	2.15	0.45
54:01:2329:U:H2'	54:01:2330:G:C8	2.52	0.45
59:Z:71:THR:HG23	59:Z:195:LEU:HD23	1.97	0.45
2:05:116:LYS:HB2	2:05:165:MET:HB3	1.98	0.45
6:09:132:PHE:HB2	6:09:140:ALA:HB3	1.97	0.45
9:12:81:ILE:HG23	9:12:82:GLY:N	2.31	0.45
13:16:96:ARG:HB3	13:16:114:GLU:OE2	2.17	0.45
18:21:57:ASN:C	18:21:57:ASN:HD22	2.19	0.45
22:25:33:ILE:HD11	22:25:78:ILE:HD11	1.98	0.45
32:B:65:LYS:HD2	32:B:89:PHE:HE2	1.81	0.45
40:J:88:MET:C	40:J:90:LEU:H	2.19	0.45
41:K:48:GLY:HA2	53:A:688:G:O5'	2.16	0.45
50:T:73:ARG:HG2	50:T:77:ASN:HD21	1.81	0.45
54:01:340:A:H2'	54:01:341:C:O4'	2.16	0.45
54:01:357:C:H2'	54:01:358:U:C6	2.51	0.45
54:01:851:C:H2'	54:01:852:U:C6	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:1317:G:H2'	54:01:1318:U:O4'	2.16	0.45
54:01:1796:U:H2'	54:01:1797:G:H8	1.82	0.45
54:01:1802:A:H2'	54:01:1803:A:C8	2.52	0.45
54:01:1812:U:H2'	54:01:1813:G:C8	2.52	0.45
54:01:1830:C:H2'	54:01:1831:G:H8	1.80	0.45
54:01:1858:A:H1'	54:01:1885:A:C2	2.51	0.45
54:01:2467:C:H2'	54:01:2468:A:O4'	2.16	0.45
59:Z:235:ILE:HB	59:Z:268:GLY:O	2.16	0.45
59:Z:301:HIS:HB2	59:Z:368:MET:HB2	1.96	0.45
1:04:154:ALA:HB2	1:04:161:VAL:HG23	1.97	0.45
7:10:26:VAL:HB	7:10:82:ILE:HD12	1.99	0.45
37:G:37:THR:O	37:G:41:ILE:HG13	2.14	0.45
44:N:97:LYS:NZ	44:N:97:LYS:HB3	2.30	0.45
51:U:11:PHE:C	51:U:13:VAL:H	2.19	0.45
52:03:16:ASP:HB3	52:03:19:LYS:HB2	1.98	0.45
52:03:60:ARG:CD	52:03:164:ARG:HG3	2.47	0.45
53:A:106:C:H2'	53:A:107:G:H8	1.82	0.45
53:A:303:A:H2'	53:A:304:U:O4'	2.16	0.45
53:A:1524:C:H2'	53:A:1525:G:H8	1.79	0.45
54:01:808:G:H2'	54:01:809:G:C8	2.52	0.45
54:01:996:A:H2'	54:01:997:G:H8	1.81	0.45
54:01:1451:C:H4'	54:01:1452:G:C4	2.52	0.45
54:01:1657:U:H2'	54:01:1658:C:C6	2.51	0.45
54:01:2687:U:H2'	54:01:2688:G:O4'	2.16	0.45
54:01:2737:G:H2'	54:01:2738:A:C8	2.51	0.45
59:Z:105:VAL:O	59:Z:134:LEU:HA	2.16	0.45
2:05:121:THR:HB	2:05:127:PHE:CD2	2.51	0.45
4:07:90:LEU:HD12	4:07:90:LEU:O	2.16	0.45
6:09:115:VAL:HG22	6:09:132:PHE:HE1	1.80	0.45
8:11:14:ALA:HB1	8:11:45:THR:HG23	1.97	0.45
14:17:72:ALA:O	14:17:76:LYS:HB2	2.16	0.45
17:20:37:GLU:HA	17:20:53:PHE:CD1	2.51	0.45
23:26:15:ASN:ND2	54:01:381:G:H5''	2.31	0.45
23:26:30:PRO:HG2	23:26:32:LEU:HG	1.99	0.45
33:C:168:ARG:HH12	53:A:1106:G:H1'	1.81	0.45
43:M:94:LEU:HB3	43:M:95:PRO:CD	2.44	0.45
44:N:25:GLU:HB2	44:N:29:ILE:CD1	2.47	0.45
45:O:17:ASP:OD1	45:O:19:ASN:HB3	2.16	0.45
47:Q:64:ARG:HD2	53:A:264:C:H4'	1.99	0.45
53:A:355:C:H1'	53:A:388:G:H1'	1.97	0.45
53:A:514:C:H2'	53:A:515:G:C8	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:543:U:H2'	53:A:544:G:H8	1.80	0.45
53:A:1228:C:H2'	53:A:1229:A:H8	1.81	0.45
53:A:1432:G:H1'	53:A:1468:A:N6	2.30	0.45
54:01:657:U:H2'	54:01:658:U:C6	2.52	0.45
54:01:876:C:H2'	54:01:877:A:O4'	2.17	0.45
54:01:1348:C:H2'	54:01:1349:C:H5'	1.98	0.45
54:01:2155:U:H2'	54:01:2156:G:H5'	1.98	0.45
54:01:2739:U:O2'	54:01:2740:A:H5'	2.17	0.45
54:01:2847:U:H2'	54:01:2848:G:O4'	2.16	0.45
59:Z:58:ARG:HB3	59:Z:60:ILE:HG12	1.99	0.45
59:Z:259:GLU:HG3	59:Z:263:LYS:C	2.36	0.45
2:05:202:ILE:N	2:05:202:ILE:HD12	2.31	0.45
3:06:98:LYS:H	54:01:607:U:P	2.39	0.45
8:11:17:ALA:O	8:11:18:ASN:HB3	2.15	0.45
20:23:11:ILE:HG12	20:23:12:VAL:N	2.32	0.45
21:24:65:VAL:HG22	21:24:66:ASP:OD2	2.16	0.45
24:27:22:LEU:HG	24:27:23:ARG:NH1	2.32	0.45
32:B:75:ALA:HB1	32:B:163:ILE:HD13	1.99	0.45
33:C:37:LYS:HB3	33:C:93:ILE:CG2	2.47	0.45
33:C:127:VAL:HG22	33:C:128:MET:N	2.31	0.45
42:L:73:LEU:HD11	42:L:103:CYS:HA	1.99	0.45
43:M:15:VAL:O	43:M:19:THR:HG23	2.17	0.45
45:O:42:PHE:CE1	45:O:48:ASP:HB3	2.51	0.45
46:P:51:ARG:NH1	53:A:627:G:H5'	2.32	0.45
46:P:51:ARG:HH12	53:A:627:G:H5'	1.81	0.45
47:Q:40:THR:HG22	47:Q:41:THR:N	2.31	0.45
53:A:1173:U:H2'	53:A:1174:G:C8	2.50	0.45
56:W:69:C:H2'	56:W:70:G:H8	1.82	0.45
59:Z:186:ALA:HA	59:Z:189:LEU:HB2	1.98	0.45
2:05:35:THR:HG22	2:05:73:VAL:HG21	1.99	0.45
3:06:40:ARG:HH22	54:01:1246:A:H4'	1.82	0.45
9:12:27:ARG:NH2	54:01:1142:A:H4'	2.31	0.45
19:22:29:THR:HG23	19:22:85:VAL:C	2.37	0.45
23:26:33:HIS:N	23:26:50:VAL:O	2.49	0.45
29:32:30:VAL:HA	29:32:33:ARG:NH1	2.31	0.45
32:B:55:GLU:O	32:B:59:ILE:HG12	2.17	0.45
35:E:106:ALA:HB1	35:E:110:MET:HE3	1.99	0.45
42:L:47:ALA:HB1	53:A:520:A:OP2	2.17	0.45
47:Q:5:ARG:HD2	53:A:636:U:OP1	2.17	0.45
50:T:50:PHE:HA	50:T:53:MET:HG2	1.97	0.45
52:03:221:GLY:N	54:01:2176:A:H5''	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:156:C:H2'	53:A:157:U:O4'	2.16	0.45
53:A:555:U:H2'	53:A:556:C:C6	2.52	0.45
53:A:1033:G:C3'	53:A:1034:G:H5''	2.47	0.45
54:01:441:U:O2'	54:01:442:G:H5'	2.17	0.45
54:01:2553:G:H2'	54:01:2554:U:H4'	1.98	0.45
56:W:65:C:H2'	56:W:66:C:C6	2.52	0.45
58:Y:37:A:H2'	58:Y:38:A:O4'	2.16	0.45
58:Y:73:A:H2'	58:Y:74:C:O4'	2.17	0.45
1:04:216:ARG:HH22	54:01:690:G:H4'	1.81	0.45
2:05:56:LYS:HZ1	54:01:2830:C:H5''	1.82	0.45
6:09:110:VAL:HG22	6:09:111:ALA:N	2.32	0.45
6:09:129:GLU:HG3	6:09:143:ILE:HD13	1.98	0.45
8:11:134:SER:CB	54:01:1088:A:H61	2.29	0.45
23:26:6:VAL:HG21	23:26:58:ILE:HD11	1.99	0.45
27:30:12:ARG:HG3	27:30:15:ARG:NH1	2.32	0.45
31:34:1:MET:HB2	31:34:34:LYS:O	2.17	0.45
33:C:33:ASP:HB2	44:N:64:ARG:HD3	1.99	0.45
33:C:137:VAL:HG21	33:C:167:TYR:CD2	2.52	0.45
40:J:40:ILE:HD12	40:J:75:ASP:OD2	2.16	0.45
44:N:40:ARG:HH12	49:S:6:LYS:HG3	1.82	0.45
50:T:56:ILE:O	50:T:60:GLN:HG2	2.16	0.45
53:A:212:G:H2'	53:A:213:G:C8	2.47	0.45
53:A:359:G:H2'	53:A:360:G:O4'	2.17	0.45
53:A:1064:G:H1'	53:A:1190:G:N2	2.32	0.45
54:01:45:G:H5''	54:01:46:G:C5'	2.25	0.45
54:01:253:C:H2'	54:01:254:G:O4'	2.16	0.45
54:01:1662:U:H2'	54:01:1663:G:C8	2.52	0.45
54:01:2883:A:H3'	54:01:2884:U:H5'	1.99	0.45
55:02:1:U:H2'	55:02:2:G:C8	2.51	0.45
55:02:110:C:H2'	55:02:111:U:O4'	2.17	0.45
59:Z:182:ALA:HA	59:Z:185:GLU:HB3	1.98	0.45
1:04:261:ARG:HH21	54:01:1801:A:H2'	1.82	0.45
3:06:195:GLN:HA	3:06:198:GLU:HB3	1.98	0.45
4:07:40:GLY:HA2	4:07:84:ILE:CD1	2.47	0.45
5:08:10:VAL:HG21	5:08:16:VAL:CG2	2.46	0.45
9:12:53:TYR:CD1	9:12:121:LYS:HA	2.52	0.45
15:18:33:GLU:HB2	15:18:36:LYS:HB2	1.99	0.45
19:22:68:LYS:HG3	19:22:77:ARG:HD3	1.99	0.45
27:30:42:ILE:HB	27:30:46:GLY:HA2	1.99	0.45
28:31:36:LYS:HE2	28:31:45:HIS:HB3	1.99	0.45
32:B:51:GLU:O	32:B:55:GLU:HG2	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:F:24:ARG:NH1	36:F:24:ARG:HB3	2.32	0.45
46:P:6:LEU:HD11	46:P:70:ARG:HG2	1.99	0.45
52:03:23:ILE:HG13	52:03:24:ASN:N	2.31	0.45
53:A:45:G:H5''	53:A:307:C:O2'	2.17	0.45
53:A:715:A:H2'	53:A:716:A:H8	1.81	0.45
53:A:812:G:OP1	53:A:903:G:H1'	2.17	0.45
53:A:1306:A:H62	53:A:1331:G:H1'	1.82	0.45
54:01:158:U:H2'	54:01:159:G:O4'	2.16	0.45
54:01:2070:A:H2'	54:01:2071:A:O4'	2.16	0.45
54:01:2617:U:H2'	54:01:2618:G:O4'	2.17	0.45
54:01:2834:G:O2'	54:01:2835:A:H5'	2.17	0.45
55:02:95:U:H2'	55:02:96:G:C8	2.52	0.45
1:04:97:ASP:HB3	54:01:1490:A:N7	2.32	0.45
6:09:24:GLY:HA2	6:09:28:ASN:HD22	1.81	0.45
7:10:94:ARG:HD3	7:10:94:ARG:H	1.82	0.45
9:12:35:ARG:HA	9:12:40:HIS:CD2	2.52	0.45
10:13:12:ASP:OD2	10:13:14:SER:HB3	2.16	0.45
36:F:52:ASN:O	36:F:53:LYS:HG3	2.17	0.45
41:K:78:ILE:HG22	41:K:79:LYS:N	2.32	0.45
43:M:94:LEU:HD23	43:M:109:LYS:HG3	1.97	0.45
47:Q:16:MET:HG3	47:Q:19:SER:C	2.37	0.45
53:A:452:A:H61	53:A:480:U:H3	1.63	0.45
54:01:96:C:H2'	54:01:97:C:C6	2.52	0.45
54:01:861:A:H2'	54:01:862:G:O4'	2.17	0.45
54:01:1182:G:H2'	54:01:1183:U:O4'	2.17	0.45
54:01:1440:U:H2'	54:01:1441:G:C8	2.51	0.45
54:01:2033:A:H1'	54:01:2035:G:OP2	2.17	0.45
54:01:2327:A:H2'	54:01:2328:A:C8	2.52	0.45
4:07:7:TYR:OH	4:07:29:ARG:HB3	2.16	0.45
13:16:12:ARG:HG2	13:16:16:HIS:CE1	2.52	0.45
21:24:18:ARG:HB3	55:02:93:C:OP1	2.17	0.45
21:24:42:LEU:CD1	21:24:47:VAL:HG21	2.47	0.45
34:D:55:ARG:HA	34:D:55:ARG:NE	2.32	0.45
41:K:126:ARG:NH2	53:A:692:U:H5''	2.32	0.45
42:L:101:LEU:HD12	42:L:101:LEU:N	2.32	0.45
43:M:9:PRO:HG2	43:M:44:ILE:HG21	1.99	0.45
47:Q:18:LYS:NZ	47:Q:18:LYS:HB2	2.31	0.45
52:03:30:LEU:HA	52:03:33:LEU:HB2	1.99	0.45
53:A:981:U:H5	53:A:982:U:HO2'	1.64	0.45
53:A:1315:U:H2'	53:A:1316:G:O4'	2.17	0.45
54:01:138:U:H5	54:01:141:G:H22	1.65	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:582:A:H2'	54:01:583:G:C8	2.52	0.45
54:01:1071:G:O2'	54:01:1089:A:H2'	2.16	0.45
54:01:1259:G:H2'	54:01:1260:A:C8	2.52	0.45
54:01:1713:A:H61	54:01:1745:A:H61	1.65	0.45
54:01:2028:U:H2'	54:01:2029:G:O4'	2.16	0.45
54:01:2360:G:H2'	54:01:2361:G:H5'	1.98	0.45
54:01:2710:C:H2'	54:01:2711:A:H8	1.82	0.45
57:V:21:A:H2'	57:V:22:A:O4'	2.17	0.45
59:Z:71:THR:CG2	59:Z:195:LEU:HD23	2.47	0.45
5:08:93:TYR:HD1	5:08:106:LEU:HA	1.82	0.44
8:11:33:ASN:HD22	8:11:36:GLU:HG3	1.82	0.44
11:14:4:ASN:O	54:01:1243:C:H1'	2.17	0.44
12:15:42:THR:HA	12:15:93:VAL:HA	1.98	0.44
29:32:21:ARG:HB3	29:32:31:LEU:HD23	1.99	0.44
34:D:59:LYS:O	34:D:63:ILE:HG13	2.17	0.44
35:E:67:ARG:O	35:E:70:MET:HG3	2.17	0.44
35:E:156:ARG:CD	35:E:163:ILE:HG22	2.47	0.44
39:I:104:THR:HG23	53:A:1180:A:H5'	2.00	0.44
39:I:118:ARG:HD3	39:I:122:ARG:HG3	1.98	0.44
53:A:533:A:O2'	53:A:534:U:H5''	2.17	0.44
54:01:1513:U:H2'	54:01:1514:G:C8	2.52	0.44
54:01:1744:A:H3'	54:01:1745:A:C8	2.52	0.44
54:01:1939:U:O2'	54:01:1940:U:H5'	2.17	0.44
54:01:2027:G:H2'	54:01:2028:U:C6	2.51	0.44
54:01:2036:C:H2'	54:01:2037:A:H8	1.82	0.44
56:W:20:U:H3'	56:W:21:A:H5'	1.99	0.44
58:Y:72:C:H2'	58:Y:73:A:H4'	1.99	0.44
1:04:75:ALA:HB2	1:04:95:TYR:HD1	1.82	0.44
4:07:84:ILE:HG21	54:01:2312:U:H4'	1.99	0.44
4:07:153:ILE:HD12	4:07:153:ILE:N	2.32	0.44
9:12:35:ARG:HA	9:12:40:HIS:HD2	1.81	0.44
12:15:125:PRO:HB3	54:01:2485:G:O3'	2.16	0.44
14:17:6:ALA:HA	14:17:9:ARG:NE	2.32	0.44
18:21:79:GLY:N	18:21:101:SER:HA	2.31	0.44
24:27:2:LYS:HD2	54:01:78:U:OP2	2.17	0.44
24:27:9:LYS:O	24:27:13:GLU:HG2	2.16	0.44
29:32:34:ARG:HD3	54:01:467:G:OP2	2.18	0.44
30:33:21:PHE:O	30:33:49:VAL:HG23	2.17	0.44
32:B:19:THR:HA	32:B:37:VAL:HA	1.99	0.44
32:B:19:THR:HG23	32:B:20:ARG:N	2.32	0.44
37:G:74:VAL:HG12	37:G:87:PRO:HA	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:S:27:LYS:HG2	49:S:28:LYS:H	1.82	0.44
52:03:65:LEU:HD13	52:03:188:ASN:HB3	1.98	0.44
53:A:148:G:H1	53:A:174:A:H61	1.65	0.44
53:A:691:G:O2'	53:A:797:C:H4'	2.17	0.44
53:A:1228:C:H2'	53:A:1229:A:C8	2.52	0.44
54:01:199:A:N6	54:01:2433:A:H2'	2.33	0.44
54:01:435:C:C2'	54:01:436:C:H5'	2.48	0.44
54:01:534:U:H2'	54:01:535:G:H8	1.81	0.44
54:01:580:U:H2'	54:01:581:C:C6	2.52	0.44
54:01:892:A:H2'	54:01:893:C:C6	2.52	0.44
54:01:1170:C:H2'	54:01:1171:G:C8	2.52	0.44
54:01:1316:U:H2'	54:01:1317:G:H8	1.83	0.44
54:01:1940:U:H3'	54:01:1940:U:OP2	2.17	0.44
54:01:2105:U:H2'	54:01:2106:U:O4'	2.18	0.44
54:01:2707:U:H2'	54:01:2708:G:C8	2.52	0.44
54:01:2839:G:H1	54:01:2878:U:H3	1.65	0.44
59:Z:122:GLY:O	59:Z:125:VAL:HG12	2.16	0.44
59:Z:236:ILE:O	59:Z:267:GLU:HG3	2.17	0.44
59:Z:313:LYS:HB2	59:Z:319:HIS:HA	1.99	0.44
4:07:174:PHE:O	4:07:176:PHE:N	2.51	0.44
7:10:67:THR:C	7:10:69:PHE:H	2.21	0.44
9:12:25:LEU:HB3	54:01:1140:C:OP1	2.17	0.44
23:26:7:THR:HB	23:26:9:LYS:HZ2	1.83	0.44
33:C:32:LEU:HD23	44:N:76:PHE:O	2.17	0.44
34:D:205:LYS:HB3	53:A:8:A:C5	2.51	0.44
39:I:104:THR:HG22	39:I:106:ASP:H	1.82	0.44
50:T:80:ALA:HA	50:T:83:ASN:HD21	1.81	0.44
53:A:26:A:N6	53:A:558:G:H1'	2.33	0.44
53:A:483:C:H2'	53:A:484:G:C8	2.53	0.44
53:A:741:G:H2'	53:A:742:G:C8	2.53	0.44
53:A:825:A:H2'	53:A:826:C:C6	2.53	0.44
53:A:1157:A:H4'	53:A:1158:C:O5'	2.17	0.44
53:A:1399:C:H1'	53:A:1400:C:OP2	2.17	0.44
53:A:1450:U:H2'	53:A:1452:C:H5'	1.98	0.44
54:01:577:G:OP1	54:01:2502:G:H2'	2.17	0.44
54:01:669:G:H2'	54:01:669:G:N3	2.32	0.44
54:01:680:C:H2'	54:01:681:G:H8	1.81	0.44
54:01:802:A:H2'	54:01:803:U:O4'	2.17	0.44
54:01:935:C:H2'	54:01:936:A:C8	2.53	0.44
54:01:1417:C:H2'	54:01:1418:G:O4'	2.17	0.44
54:01:1825:U:H2'	54:01:1826:G:C8	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:2266:A:H4'	54:01:2267:A:N3	2.31	0.44
59:Z:206:ILE:HG13	59:Z:207:ASP:N	2.33	0.44
1:04:17:LYS:HD2	54:01:1565:C:H5''	1.99	0.44
2:05:43:ASP:HB3	2:05:45:TYR:CE1	2.53	0.44
4:07:7:TYR:HA	4:07:11:VAL:CG2	2.47	0.44
9:12:49:ASP:HB2	9:12:114:LEU:HD11	1.99	0.44
11:14:21:ARG:HA	54:01:811:U:H2'	2.00	0.44
17:20:49:ILE:HG22	17:20:54:VAL:HA	1.99	0.44
19:22:39:THR:OG1	19:22:42:GLU:HG3	2.17	0.44
26:29:22:MET:HG2	26:29:23:LYS:N	2.32	0.44
37:G:99:ALA:O	37:G:103:ILE:HG13	2.17	0.44
39:I:10:ARG:HG3	39:I:105:ARG:HE	1.83	0.44
53:A:513:C:H2'	53:A:514:C:C6	2.52	0.44
53:A:1071:C:H2'	53:A:1072:G:C8	2.52	0.44
53:A:1282:C:H2'	53:A:1283:U:C6	2.53	0.44
54:01:40:U:H2'	54:01:41:C:C6	2.52	0.44
54:01:433:C:H2'	54:01:434:U:C6	2.53	0.44
54:01:619:G:H3'	54:01:620:G:H21	1.83	0.44
54:01:1045:C:H5'	54:01:1046:A:C5'	2.48	0.44
54:01:1679:A:H2'	54:01:1680:U:C6	2.52	0.44
54:01:1954:G:N2	54:01:1956:U:H3	2.15	0.44
54:01:2348:U:H2'	54:01:2349:G:H8	1.82	0.44
54:01:2845:U:H2'	54:01:2846:G:C8	2.52	0.44
56:X:35:A:H61	57:V:14:A:N6	2.15	0.44
59:Z:103:LEU:O	59:Z:132:VAL:HG13	2.17	0.44
2:05:194:PRO:HA	54:01:2680:U:H5'	2.00	0.44
5:08:145:ALA:O	5:08:149:ALA:HB2	2.17	0.44
6:09:3:VAL:HA	6:09:38:PRO:HA	2.00	0.44
10:13:8:LEU:O	10:13:18:ARG:HD3	2.18	0.44
11:14:132:ARG:HA	11:14:142:ILE:HD11	2.00	0.44
18:21:41:LYS:O	18:21:45:VAL:HG23	2.18	0.44
25:28:29:ARG:NE	54:01:1183:U:H5''	2.33	0.44
33:C:105:VAL:HG21	33:C:111:ASP:OD2	2.17	0.44
39:I:34:LEU:HD11	39:I:47:VAL:HG21	1.99	0.44
39:I:123:ARG:HB3	53:A:1343:G:C4'	2.46	0.44
41:K:121:ARG:HB3	53:A:778:G:H21	1.83	0.44
42:L:98:ARG:HD2	42:L:103:CYS:SG	2.57	0.44
43:M:33:LEU:HD23	43:M:40:GLU:HA	1.99	0.44
46:P:3:THR:HG22	46:P:24:SER:HA	1.99	0.44
49:S:54:ARG:HH22	49:S:78:THR:HG21	1.81	0.44
53:A:891:U:O2'	53:A:892:A:H5'	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:974:A:C5'	53:A:975:A:H3'	2.48	0.44
54:01:455:C:O2	54:01:472:A:H2'	2.18	0.44
54:01:576:U:H2'	54:01:577:G:C8	2.52	0.44
54:01:577:G:H2'	54:01:578:G:C8	2.53	0.44
54:01:780:G:H2'	54:01:782:A:N7	2.33	0.44
54:01:1438:U:H2'	54:01:1439:A:H8	1.83	0.44
54:01:1510:G:H2'	54:01:1511:G:O4'	2.18	0.44
54:01:1532:A:H1'	54:01:1540:G:N2	2.32	0.44
54:01:2286:G:H5''	54:01:2287:A:OP1	2.17	0.44
56:X:31:G:H2'	56:X:32:C:H5'	2.00	0.44
59:Z:124:GLN:HA	59:Z:373:ARG:HH12	1.83	0.44
59:Z:220:ILE:HG13	59:Z:226:VAL:HB	2.00	0.44
59:Z:304:PHE:HB2	59:Z:391:VAL:HA	1.99	0.44
2:05:56:LYS:NZ	54:01:2830:C:H5''	2.33	0.44
2:05:68:PHE:O	2:05:72:GLY:N	2.49	0.44
12:15:16:ARG:HD2	55:02:90:C:OP2	2.17	0.44
16:19:16:ILE:HG13	16:19:31:TYR:HE1	1.83	0.44
17:20:74:ILE:N	17:20:74:ILE:HD12	2.33	0.44
20:23:45:GLN:OE1	20:23:58:VAL:HG21	2.17	0.44
25:28:16:LEU:CD1	55:02:82:U:H5''	2.47	0.44
39:I:17:ARG:HB2	39:I:65:THR:OG1	2.17	0.44
39:I:24:ASN:HB3	39:I:26:LYS:HG2	1.99	0.44
40:J:83:THR:O	40:J:87:LEU:HG	2.18	0.44
44:N:41:TRP:O	44:N:44:VAL:HG22	2.18	0.44
49:S:18:VAL:O	49:S:22:VAL:HG23	2.18	0.44
53:A:34:C:H2'	53:A:35:G:H8	1.83	0.44
54:01:262:A:H3'	54:01:263:G:H8	1.83	0.44
54:01:2557:G:H2'	54:01:2558:C:C6	2.53	0.44
54:01:2788:C:H2'	54:01:2789:C:C6	2.51	0.44
59:Z:338:THR:HB	59:Z:363:ILE:HD13	1.99	0.44
5:08:75:VAL:HA	5:08:78:VAL:HG22	1.98	0.44
6:09:26:ALA:HA	6:09:30:LEU:HD12	1.99	0.44
11:14:8:PRO:HD3	54:01:1244:A:H4'	1.99	0.44
15:18:23:ASP:HB3	15:18:85:VAL:HG13	1.99	0.44
15:18:61:ARG:HG3	15:18:61:ARG:HH21	1.83	0.44
19:22:61:LEU:HD23	54:01:1341:G:O4'	2.17	0.44
30:33:5:THR:O	30:33:7:ARG:N	2.51	0.44
33:C:56:ILE:HG23	33:C:63:ILE:HD11	1.98	0.44
33:C:137:VAL:HG21	33:C:167:TYR:HD2	1.82	0.44
39:I:117:LEU:HD21	39:I:123:ARG:CZ	2.46	0.44
43:M:9:PRO:CG	43:M:44:ILE:HG13	2.47	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:M:28:ARG:HG2	43:M:62:PHE:CD2	2.53	0.44
44:N:7:ALA:HA	44:N:10:VAL:HG12	1.99	0.44
52:03:7:ARG:HB3	54:01:2129:C:OP1	2.18	0.44
52:03:173:THR:HG21	52:03:192:LEU:HD13	1.99	0.44
53:A:707:U:H2'	53:A:708:C:C6	2.52	0.44
53:A:1144:G:N2	53:A:1146:A:H62	2.16	0.44
54:01:716:A:C3'	54:01:717:C:H5''	2.47	0.44
54:01:1045:C:OP1	54:01:1046:A:H3'	2.17	0.44
54:01:1270:C:H5''	54:01:1271:G:O5'	2.17	0.44
54:01:1940:U:H4'	54:01:1941:C:O5'	2.18	0.44
54:01:2450:A:OP1	54:01:2497:A:H2'	2.17	0.44
59:Z:189:LEU:HA	59:Z:192:ALA:HB3	2.00	0.44
3:06:55:SER:HB3	54:01:468:G:H5''	2.00	0.44
3:06:63:LYS:HD2	54:01:2444:G:OP2	2.18	0.44
3:06:128:ALA:O	3:06:130:LYS:N	2.50	0.44
5:08:126:THR:HG22	5:08:128:THR:H	1.83	0.44
7:10:124:ASP:O	7:10:126:LEU:N	2.47	0.44
18:21:6:LYS:O	54:01:494:G:H4'	2.18	0.44
18:21:87:PRO:HA	54:01:1614:A:N1	2.33	0.44
23:26:3:VAL:HG22	23:26:10:ARG:HB3	1.99	0.44
35:E:133:ILE:O	35:E:137:ARG:HG3	2.17	0.44
39:I:32:ARG:HD2	39:I:36:GLN:HG3	1.99	0.44
42:L:66:ILE:HA	42:L:96:THR:OG1	2.17	0.44
43:M:1:ALA:HA	43:M:9:PRO:HD2	1.99	0.44
43:M:67:ASP:HA	43:M:70:ARG:NH1	2.33	0.44
50:T:54:GLN:O	50:T:57:VAL:HG12	2.18	0.44
51:U:36:PHE:CE1	51:U:39:LYS:HD3	2.53	0.44
53:A:70:U:H4'	53:A:71:A:H8	1.83	0.44
53:A:1410:A:H2'	53:A:1411:C:C6	2.52	0.44
54:01:24:G:H2'	54:01:25:U:C6	2.53	0.44
54:01:680:C:H2'	54:01:681:G:C8	2.52	0.44
54:01:1578:U:O2'	54:01:1579:A:H5'	2.17	0.44
54:01:2120:G:H2'	54:01:2121:G:C8	2.52	0.44
54:01:2344:U:H5'	54:01:2373:G:H4'	1.99	0.44
54:01:2649:C:H2'	54:01:2650:U:C6	2.52	0.44
54:01:2786:U:H2'	54:01:2787:C:C6	2.52	0.44
54:01:2832:U:H1'	54:01:2834:G:C2	2.53	0.44
1:04:267:VAL:HG12	1:04:268:ARG:NH1	2.33	0.44
4:07:37:MET:HE2	4:07:151:LEU:HB3	1.99	0.44
9:12:15:TRP:CH2	54:01:7:G:H4'	2.53	0.44
10:13:64:ARG:O	10:13:82:ASN:HA	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:27:1:MET:HG3	24:27:4:LYS:HE3	1.98	0.44
34:D:94:GLU:HA	34:D:99:ASN:HD22	1.83	0.44
34:D:103:ARG:HB3	34:D:170:LEU:HD21	1.99	0.44
37:G:59:GLU:O	37:G:63:VAL:HG23	2.18	0.44
45:O:16:ARG:H	45:O:20:ASP:HB3	1.83	0.44
47:Q:11:VAL:HG11	47:Q:20:ILE:HD11	1.99	0.44
47:Q:11:VAL:CG1	47:Q:55:GLY:H	2.30	0.44
50:T:23:ARG:HH11	50:T:23:ARG:HG3	1.82	0.44
53:A:899:C:H2'	53:A:900:A:O4'	2.18	0.44
53:A:938:A:H2'	53:A:939:G:O4'	2.18	0.44
53:A:1015:G:O2'	53:A:1016:A:H5'	2.18	0.44
54:01:741:U:H2'	54:01:742:A:H8	1.83	0.44
54:01:970:U:H2'	54:01:971:G:C8	2.53	0.44
54:01:1428:C:C4	54:01:1569:A:H5''	2.53	0.44
54:01:1507:C:H2'	54:01:1508:A:C4'	2.48	0.44
54:01:2348:U:H2'	54:01:2349:G:C8	2.52	0.44
1:04:158:GLY:HA2	1:04:194:VAL:O	2.18	0.43
3:06:131:THR:HG21	54:01:320:A:H2'	1.99	0.43
4:07:78:ILE:O	4:07:78:ILE:HG13	2.18	0.43
9:12:28:LEU:O	9:12:32:LEU:HG	2.17	0.43
9:12:59:ALA:O	9:12:62:VAL:HG12	2.18	0.43
10:13:35:VAL:HG22	10:13:69:VAL:HG12	2.00	0.43
10:13:105:ARG:CZ	10:13:108:ARG:HE	2.30	0.43
12:15:38:ARG:CD	55:02:90:C:H4'	2.48	0.43
19:22:44:LYS:O	19:22:48:GLN:HG2	2.18	0.43
29:32:7:PRO:HG3	54:01:1612:C:H5'	1.99	0.43
29:32:46:LYS:O	29:32:46:LYS:HD3	2.18	0.43
34:D:80:ARG:HD3	34:D:80:ARG:C	2.38	0.43
38:H:73:SER:HG	38:H:75:GLN:HE22	1.64	0.43
42:L:31:GLY:HA3	42:L:54:VAL:CG1	2.47	0.43
50:T:77:ASN:HA	50:T:80:ALA:HB3	2.00	0.43
52:03:60:ARG:HD2	52:03:164:ARG:HG3	1.99	0.43
53:A:579:A:H2'	53:A:580:C:C6	2.53	0.43
53:A:1251:A:O2'	53:A:1370:G:H5'	2.17	0.43
53:A:1496:C:H2'	53:A:1497:G:C8	2.53	0.43
54:01:1429:G:H2'	54:01:1430:G:C8	2.53	0.43
54:01:1437:C:H2'	54:01:1438:U:C6	2.53	0.43
54:01:1464:G:H2'	54:01:1465:G:C8	2.53	0.43
54:01:2114:A:H2'	54:01:2167:U:H5'	1.99	0.43
3:06:105:LEU:HD13	3:06:175:ILE:HD11	2.00	0.43
7:10:14:GLU:O	7:10:18:VAL:HG23	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:11:89:SER:CB	54:01:1062:G:H21	2.31	0.43
10:13:111:LYS:HG3	10:13:112:PHE:CD2	2.53	0.43
11:14:36:LYS:HE2	54:01:808:G:OP2	2.18	0.43
16:19:24:TYR:CE1	54:01:17:G:H4'	2.52	0.43
17:20:69:GLY:N	17:20:91:GLN:O	2.51	0.43
19:22:54:GLU:CB	19:22:88:LYS:HD2	2.48	0.43
20:23:16:LYS:N	54:01:309:A:H4'	2.33	0.43
23:26:15:ASN:HD22	54:01:381:G:H5''	1.83	0.43
23:26:19:HIS:HB3	54:01:2080:A:OP1	2.18	0.43
27:30:28:SER:HA	54:01:2886:A:H2	1.82	0.43
31:34:24:ARG:HA	31:34:36:ARG:HG3	1.99	0.43
36:F:50:PRO:HG3	36:F:55:HIS:CE1	2.53	0.43
40:J:10:LEU:HB3	40:J:98:VAL:HG23	2.00	0.43
43:M:91:ARG:HD2	54:01:888:C:C5	2.53	0.43
45:O:77:TYR:O	45:O:81:ILE:HG12	2.18	0.43
48:R:13:THR:C	48:R:16:GLY:H	2.21	0.43
53:A:106:C:H2'	53:A:107:G:C8	2.52	0.43
53:A:184:G:H4'	53:A:224:U:H4'	2.00	0.43
53:A:1088:G:H21	53:A:1167:A:H61	1.66	0.43
53:A:1243:C:H2'	53:A:1244:G:C8	2.52	0.43
53:A:1526:G:H2'	53:A:1527:U:C6	2.53	0.43
54:01:449:A:H2'	54:01:450:G:O4'	2.18	0.43
54:01:1095:A:H3'	54:01:1096:A:H8	1.83	0.43
54:01:1295:C:H2'	54:01:1296:G:H8	1.82	0.43
54:01:2066:C:O2'	54:01:2067:G:H5'	2.18	0.43
54:01:2339:C:H2'	54:01:2340:A:C8	2.53	0.43
6:09:76:GLU:HB3	6:09:142:VAL:HA	1.99	0.43
6:09:121:VAL:HG23	6:09:123:ARG:HG3	2.00	0.43
11:14:77:ILE:N	11:14:77:ILE:HD12	2.33	0.43
16:19:71:ASN:OD1	16:19:109:VAL:HG21	2.19	0.43
16:19:92:LYS:HD3	16:19:93:ILE:HD13	2.01	0.43
16:19:111:LYS:HB2	17:20:48:LYS:HE3	1.99	0.43
20:23:27:VAL:HG23	20:23:33:VAL:HG12	2.00	0.43
20:23:93:ARG:HB2	20:23:102:ILE:HD12	1.99	0.43
34:D:120:LYS:CE	34:D:130:ASN:HD21	2.31	0.43
35:E:111:ARG:HH11	35:E:111:ARG:HG3	1.83	0.43
38:H:87:ARG:HA	53:A:599:C:H5''	2.01	0.43
39:I:123:ARG:HD3	39:I:124:PRO:HD2	1.99	0.43
41:K:78:ILE:HG22	41:K:79:LYS:H	1.82	0.43
52:03:40:GLU:HG2	52:03:218:MET:H	1.84	0.43
53:A:1316:G:H2'	53:A:1317:C:H5''	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:1404:C:H2'	53:A:1405:G:C8	2.53	0.43
54:01:1911:U:H2'	54:01:1918:A:N1	2.33	0.43
54:01:2263:C:H2'	54:01:2264:C:C6	2.53	0.43
55:02:29:A:H2'	55:02:30:C:C6	2.53	0.43
56:X:35:A:H61	57:V:14:A:H61	1.66	0.43
59:Z:106:ALA:HB3	59:Z:109:ASP:OD2	2.17	0.43
59:Z:265:LEU:HD21	59:Z:268:GLY:HA2	1.99	0.43
59:Z:309:TYR:O	59:Z:384:GLY:HA3	2.18	0.43
5:08:93:TYR:CD1	5:08:106:LEU:HA	2.53	0.43
8:11:6:ALA:HB3	8:11:60:VAL:O	2.18	0.43
9:12:15:TRP:HB3	9:12:137:PRO:HB3	2.00	0.43
19:22:6:ARG:O	19:22:10:VAL:HG23	2.18	0.43
19:22:29:THR:OG1	19:22:86:THR:HG22	2.18	0.43
28:31:9:LYS:O	28:31:51:ALA:N	2.52	0.43
31:34:2:LYS:HB2	31:34:35:GLN:CB	2.49	0.43
37:G:104:VAL:O	37:G:108:ARG:HG2	2.19	0.43
38:H:100:ILE:HD12	38:H:128:VAL:HB	2.00	0.43
42:L:50:LYS:HD2	42:L:50:LYS:N	2.34	0.43
46:P:20:VAL:HG22	46:P:21:VAL:N	2.33	0.43
48:R:41:SER:HB3	48:R:51:GLN:HE21	1.84	0.43
53:A:129:A:H1'	53:A:130:A:C8	2.53	0.43
53:A:663:A:H5'	53:A:836:G:OP1	2.18	0.43
53:A:945:G:H2'	53:A:945:G:N3	2.33	0.43
54:01:242:G:N2	54:01:254:G:H2'	2.33	0.43
54:01:740:C:H5''	54:01:1784:A:OP1	2.18	0.43
54:01:1101:U:H2'	54:01:1102:C:H6	1.84	0.43
54:01:1827:U:O2'	54:01:1828:G:H5'	2.18	0.43
59:Z:28:THR:HA	59:Z:31:ILE:HD12	2.01	0.43
59:Z:101:ALA:HB3	59:Z:130:ILE:HG12	1.99	0.43
1:04:16:VAL:HB	1:04:203:VAL:HG22	2.00	0.43
4:07:56:LEU:HB2	4:07:64:PRO:HG3	2.00	0.43
4:07:56:LEU:HD12	4:07:86:CYS:SG	2.59	0.43
7:10:112:ALA:O	7:10:114:GLU:N	2.51	0.43
10:13:54:LYS:NZ	10:13:54:LYS:HB3	2.33	0.43
37:G:12:LEU:HD11	39:I:49:GLN:HE22	1.83	0.43
39:I:111:GLU:OE2	53:A:1348:U:H5'	2.18	0.43
40:J:49:PHE:CZ	44:N:75:LYS:HG2	2.53	0.43
43:M:9:PRO:HG2	43:M:44:ILE:HG13	2.00	0.43
46:P:36:VAL:O	46:P:36:VAL:HG13	2.19	0.43
50:T:25:SER:CB	53:A:1458:G:H5''	2.47	0.43
53:A:576:C:OP2	53:A:577:G:H5''	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:1395:C:H5''	53:A:1401:G:H21	1.83	0.43
53:A:1399:C:H4'	53:A:1400:C:O5'	2.19	0.43
54:01:935:C:H2'	54:01:936:A:H8	1.83	0.43
54:01:1177:G:H2'	54:01:1178:C:H4'	2.00	0.43
54:01:1978:A:H2'	54:01:1979:U:O4'	2.19	0.43
54:01:2114:A:N6	54:01:2115:G:H1'	2.34	0.43
54:01:2142:A:C2	54:01:2150:C:H1'	2.54	0.43
54:01:2860:A:H2'	54:01:2861:U:H5'	2.01	0.43
55:02:35:C:H2'	55:02:36:C:O4'	2.18	0.43
1:04:12:ARG:HH21	54:01:728:G:H5'	1.84	0.43
1:04:94:LEU:HD21	54:01:1501:G:H4'	2.00	0.43
1:04:129:LEU:N	1:04:129:LEU:HD23	2.34	0.43
3:06:33:VAL:HG13	54:01:1245:G:H4'	2.01	0.43
12:15:40:ARG:NH1	12:15:73:ILE:HD12	2.33	0.43
19:22:11:LEU:HA	19:22:34:VAL:HG12	2.01	0.43
25:28:15:ARG:O	25:28:20:LYS:HE2	2.19	0.43
34:D:119:HIS:ND1	53:A:438:U:H5'	2.34	0.43
37:G:75:LYS:HZ2	37:G:77:ARG:HD3	1.82	0.43
42:L:87:LYS:HG2	42:L:87:LYS:O	2.18	0.43
50:T:53:MET:O	50:T:56:ILE:HG22	2.19	0.43
52:03:190:GLU:HA	52:03:193:LEU:HD12	2.01	0.43
53:A:678:U:H2'	53:A:679:C:C6	2.52	0.43
53:A:1474:U:H4'	54:01:1701:A:N3	2.34	0.43
54:01:1215:G:H2'	54:01:1216:G:O4'	2.18	0.43
54:01:2065:C:H5''	54:01:2252:G:H1'	2.00	0.43
54:01:2339:C:H2'	54:01:2340:A:H8	1.84	0.43
1:04:155:ARG:CZ	54:01:1818:U:H5	2.32	0.43
1:04:207:ALA:CB	54:01:1790:C:H4'	2.49	0.43
1:04:255:LYS:NZ	54:01:1844:C:H4'	2.34	0.43
5:08:136:ASP:OD2	5:08:139:VAL:HG23	2.18	0.43
7:10:74:ASP:OD1	7:10:116:GLU:HB3	2.19	0.43
10:13:88:ASN:HB2	10:13:91:SER:O	2.19	0.43
12:15:57:VAL:HA	12:15:112:LEU:HD11	1.99	0.43
15:18:105:LYS:O	15:18:108:ARG:HG2	2.19	0.43
20:23:32:LYS:NZ	54:01:478:A:H5''	2.34	0.43
39:I:70:GLY:O	39:I:74:GLN:HG3	2.19	0.43
40:J:34:ALA:HB1	40:J:78:GLU:OE2	2.18	0.43
44:N:8:ARG:HG2	44:N:12:ARG:NH1	2.33	0.43
49:S:28:LYS:CD	49:S:29:PRO:HD2	2.48	0.43
53:A:1179:A:H2'	53:A:1180:A:O4'	2.19	0.43
53:A:1211:U:H4'	53:A:1213:A:N3	2.33	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:1306:A:N6	53:A:1331:G:H1'	2.34	0.43
54:01:67:U:H2'	54:01:68:G:H8	1.84	0.43
54:01:395:U:H2'	54:01:396:G:C8	2.53	0.43
54:01:700:G:H2'	54:01:701:G:H8	1.83	0.43
54:01:866:A:H2'	54:01:867:C:O4'	2.19	0.43
54:01:1359:A:H2'	54:01:1360:G:O4'	2.19	0.43
6:09:52:ALA:O	6:09:56:ALA:HB3	2.19	0.43
21:24:4:ILE:HD12	21:24:63:ILE:HG12	2.00	0.43
24:27:49:ASP:O	24:27:53:VAL:HG23	2.19	0.43
32:B:15:PHE:CD1	32:B:15:PHE:N	2.87	0.43
36:F:40:GLU:OE1	36:F:100:SER:HA	2.18	0.43
37:G:3:ARG:O	37:G:5:VAL:N	2.51	0.43
37:G:20:GLU:HA	37:G:23:ALA:HB3	1.99	0.43
39:I:98:ARG:CZ	39:I:103:VAL:HG21	2.48	0.43
41:K:116:PRO:HB3	53:A:676:A:C1'	2.46	0.43
45:O:23:SER:HA	53:A:751:U:H4'	2.01	0.43
46:P:8:ARG:NE	46:P:15:PRO:HB3	2.34	0.43
52:03:46:VAL:HG11	52:03:196:LEU:HD23	1.99	0.43
53:A:113:G:H1'	53:A:354:G:H5''	1.99	0.43
53:A:976:G:N2	53:A:1362:A:H2'	2.34	0.43
53:A:1414:U:H2'	53:A:1415:G:H8	1.84	0.43
54:01:1027:A:C2	54:01:2488:G:H5'	2.54	0.43
1:04:77:VAL:HG21	1:04:109:LEU:HD21	2.01	0.43
4:07:56:LEU:HA	4:07:59:ILE:HB	2.00	0.43
11:14:132:ARG:HA	11:14:142:ILE:CD1	2.49	0.43
22:25:22:PHE:CD2	54:01:922:C:H1'	2.53	0.43
24:27:9:LYS:HD3	24:27:11:VAL:N	2.33	0.43
30:33:2:LYS:HE3	54:01:242:G:C5	2.54	0.43
33:C:1:GLY:HA3	53:A:1060:U:C5	2.53	0.43
35:E:64:GLU:HB3	35:E:68:ARG:NH1	2.30	0.43
38:H:31:LEU:O	38:H:35:ILE:HG13	2.19	0.43
39:I:65:THR:HG21	53:A:1130:A:OP1	2.19	0.43
40:J:9:ARG:CZ	53:A:1279:G:H5''	2.48	0.43
45:O:23:SER:O	45:O:27:GLN:HG3	2.17	0.43
46:P:54:LEU:HA	46:P:57:ILE:HD12	2.00	0.43
51:U:39:LYS:O	51:U:43:GLU:HG2	2.19	0.43
52:03:48:LEU:HB3	52:03:50:ILE:HG13	2.00	0.43
52:03:67:HIS:CD2	52:03:187:GLU:HB2	2.53	0.43
53:A:415:A:H2'	53:A:416:G:O4'	2.19	0.43
53:A:458:U:H2'	53:A:459:A:H8	1.83	0.43
54:01:633:A:H2'	54:01:634:C:O4'	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:1563:U:H2'	54:01:1564:C:C6	2.54	0.43
54:01:1637:A:H5'	54:01:1760:C:O2'	2.19	0.43
54:01:2186:G:H2'	54:01:2187:U:O4'	2.19	0.43
54:01:2696:U:H2'	54:01:2697:G:C8	2.54	0.43
54:01:2773:C:H2'	54:01:2774:C:C6	2.53	0.43
54:01:2799:A:H2'	54:01:2800:A:H5'	2.00	0.43
59:Z:331:TYR:CD1	59:Z:336:ASP:HA	2.54	0.43
1:04:244:VAL:HG12	1:04:250:GLN:HA	1.99	0.43
3:06:33:VAL:CG1	54:01:1245:G:H4'	2.49	0.43
4:07:82:TYR:CD1	4:07:83:PRO:HD2	2.54	0.43
4:07:173:ASP:O	4:07:174:PHE:C	2.57	0.43
5:08:79:THR:O	5:08:80:GLU:HG3	2.19	0.43
23:26:62:GLY:O	23:26:66:VAL:HG23	2.19	0.43
25:28:13:ILE:HG12	54:01:989:G:N7	2.33	0.43
28:31:47:ILE:HD12	28:31:47:ILE:N	2.34	0.43
29:32:44:VAL:HG13	29:32:44:VAL:O	2.19	0.43
39:I:27:ILE:HG21	39:I:34:LEU:HD13	2.00	0.43
52:03:42:VAL:HB	52:03:175:ILE:CG1	2.49	0.43
53:A:216:U:H2'	53:A:217:C:C6	2.54	0.43
53:A:772:U:H2'	53:A:773:G:C8	2.54	0.43
53:A:1073:U:H2'	53:A:1074:G:H8	1.84	0.43
53:A:1090:U:H2'	53:A:1091:U:C6	2.54	0.43
54:01:319:G:H2'	54:01:320:A:O4'	2.19	0.43
54:01:1483:G:H4'	54:01:1510:G:N2	2.34	0.43
4:07:109:ARG:HD3	4:07:136:ILE:O	2.18	0.42
8:11:21:PRO:CB	8:11:22:PRO:HD3	2.49	0.42
8:11:89:SER:HB3	54:01:1062:G:H21	1.83	0.42
10:13:116:ILE:HA	10:13:119:ALA:HB2	2.01	0.42
20:23:4:ILE:HD12	20:23:4:ILE:N	2.33	0.42
22:25:51:ARG:HH11	22:25:51:ARG:HG3	1.83	0.42
38:H:100:ILE:HD12	38:H:100:ILE:O	2.19	0.42
44:N:27:LYS:HE2	53:A:1317:C:OP2	2.19	0.42
47:Q:24:ILE:HD12	47:Q:43:LEU:HD12	2.01	0.42
53:A:314:C:H2'	53:A:315:A:C8	2.54	0.42
53:A:1474:U:H4'	54:01:1701:A:C2	2.54	0.42
54:01:1376:C:H2'	54:01:1377:G:O4'	2.19	0.42
54:01:2238:G:N3	54:01:2238:G:H2'	2.33	0.42
59:Z:216:ASP:HB2	59:Z:228:THR:OG1	2.19	0.42
1:04:14:HIS:CE1	54:01:1830:C:H4'	2.54	0.42
5:08:82:PHE:N	5:08:134:GLY:O	2.52	0.42
8:11:20:SER:O	8:11:25:PRO:HD3	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:18:3:ILE:H	15:18:3:ILE:CD1	2.32	0.42
15:18:51:ASN:O	54:01:2845:U:H5''	2.19	0.42
21:24:18:ARG:HD3	55:02:93:C:OP2	2.19	0.42
25:28:56:VAL:HG22	25:28:57:GLU:H	1.84	0.42
32:B:162:VAL:HG12	32:B:164:ASP:H	1.84	0.42
35:E:28:ARG:NH1	53:A:15:G:H4'	2.34	0.42
39:I:4:GLN:HE21	39:I:19:PHE:HB3	1.84	0.42
40:J:88:MET:O	40:J:89:ARG:HG2	2.19	0.42
42:L:113:ARG:HH21	42:L:120:ARG:HG3	1.83	0.42
44:N:1:ALA:H1	44:N:6:LYS:HD2	1.84	0.42
44:N:32:ASP:HB3	44:N:34:ASN:ND2	2.34	0.42
46:P:67:ILE:HD12	46:P:67:ILE:N	2.33	0.42
47:Q:18:LYS:HD2	53:A:255:G:H4'	2.01	0.42
47:Q:60:ILE:HA	47:Q:74:LEU:HA	2.00	0.42
52:03:42:VAL:HG22	52:03:216:THR:CG2	2.50	0.42
53:A:16:A:O2'	53:A:17:U:H5'	2.19	0.42
53:A:460:A:H2'	53:A:461:A:C8	2.54	0.42
53:A:929:G:H5''	53:A:1534:A:O2'	2.19	0.42
54:01:303:G:H2'	54:01:304:U:O4'	2.18	0.42
54:01:2747:G:N1	54:01:2754:U:H2'	2.32	0.42
1:04:255:LYS:HE3	1:04:269:ARG:HH22	1.84	0.42
2:05:125:TRP:CD1	2:05:160:LYS:HB3	2.54	0.42
4:07:140:ILE:HD12	4:07:140:ILE:N	2.34	0.42
5:08:36:LEU:HD11	5:08:71:LEU:HD11	2.02	0.42
5:08:70:LEU:HD11	54:01:2758:A:C2	2.54	0.42
9:12:58:ASN:OD1	9:12:128:ASN:HA	2.19	0.42
9:12:122:LEU:HG	9:12:124:VAL:HG13	2.01	0.42
15:18:20:ARG:HB3	15:18:21:PRO:HD2	2.02	0.42
18:21:92:ARG:HD2	54:01:747:C:O2'	2.19	0.42
32:B:29:PHE:HB3	32:B:40:ILE:HG23	2.01	0.42
32:B:107:ARG:HD2	32:B:107:ARG:C	2.40	0.42
36:F:73:GLU:O	36:F:77:THR:HG23	2.20	0.42
42:L:20:VAL:HB	42:L:94:TYR:CE1	2.54	0.42
42:L:66:ILE:HD12	42:L:66:ILE:N	2.35	0.42
48:R:57:ALA:HA	48:R:60:ARG:HE	1.83	0.42
49:S:35:ARG:HD2	49:S:51:HIS:O	2.19	0.42
49:S:69:LYS:HE3	53:A:1319:A:H5''	2.00	0.42
49:S:79:TYR:CG	49:S:80:ARG:N	2.86	0.42
53:A:160:A:H2'	53:A:161:A:O4'	2.19	0.42
53:A:286:C:H2'	53:A:287:U:C6	2.55	0.42
53:A:410:G:H2'	53:A:429:U:O4	2.18	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:1269:A:H1'	53:A:1326:U:H1'	2.02	0.42
54:01:248:G:N3	54:01:2431:U:H4'	2.34	0.42
54:01:699:A:H2'	54:01:700:G:O4'	2.18	0.42
54:01:722:A:H2'	54:01:723:C:O4'	2.19	0.42
54:01:752:A:N3	54:01:752:A:H5'	2.35	0.42
54:01:1308:A:H2'	54:01:1309:G:O4'	2.18	0.42
54:01:1507:C:H2'	54:01:1508:A:H4'	2.01	0.42
54:01:1965:C:H5''	54:01:1966:A:H2'	2.02	0.42
54:01:2041:U:H2'	54:01:2042:A:C8	2.55	0.42
54:01:2114:A:N6	54:01:2117:A:H62	2.15	0.42
54:01:2553:G:H1'	54:01:2582:G:H21	1.84	0.42
54:01:2800:A:C2	54:01:2895:G:H1'	2.54	0.42
59:Z:52:ALA:HB3	59:Z:55:GLU:CB	2.49	0.42
59:Z:211:LEU:CD1	59:Z:298:ILE:HD11	2.45	0.42
59:Z:301:HIS:CD2	59:Z:368:MET:HB2	2.55	0.42
1:04:71:ASP:CG	1:04:118:GLY:HA2	2.39	0.42
2:05:3:GLY:O	2:05:4:LEU:HD12	2.19	0.42
2:05:118:PHE:HB2	54:01:2823:A:OP1	2.19	0.42
7:10:28:ALA:O	7:10:109:LYS:HG3	2.20	0.42
7:10:61:ARG:O	54:01:1046:A:H4'	2.20	0.42
8:11:4:VAL:HG13	8:11:7:TYR:CE1	2.54	0.42
10:13:3:GLN:HB2	10:13:4:GLU:H	1.74	0.42
13:16:102:PHE:HE1	13:16:109:PRO:HG3	1.84	0.42
18:21:82:MET:HB3	18:21:84:ARG:NH2	2.35	0.42
32:B:212:TYR:O	32:B:216:VAL:HG23	2.20	0.42
33:C:54:ILE:HG22	33:C:67:ILE:HA	2.01	0.42
33:C:69:THR:O	33:C:105:VAL:HG12	2.19	0.42
34:D:150:LYS:HE3	34:D:155:LYS:HG3	2.01	0.42
37:G:102:TRP:CZ2	37:G:140:VAL:HG21	2.55	0.42
40:J:14:ASP:OD2	40:J:16:ARG:HG3	2.19	0.42
40:J:28:THR:O	40:J:28:THR:HG22	2.19	0.42
40:J:37:ARG:HD2	53:A:1124:G:H5''	2.01	0.42
41:K:118:ASN:HD22	41:K:118:ASN:HA	1.54	0.42
43:M:23:GLY:CA	43:M:68:LEU:HD22	2.45	0.42
53:A:952:U:H2'	53:A:953:G:H8	1.84	0.42
54:01:443:A:H5''	54:01:444:C:C5'	2.49	0.42
54:01:664:G:H4'	54:01:941:A:OP1	2.19	0.42
54:01:704:G:H1'	54:01:727:A:H61	1.84	0.42
54:01:784:G:OP1	54:01:2588:G:H5''	2.19	0.42
54:01:1246:A:H2'	54:01:1247:A:C4'	2.50	0.42
54:01:1796:U:O2'	54:01:1797:G:H5'	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:2264:C:H2'	54:01:2265:U:O4'	2.19	0.42
54:01:2553:G:H3'	54:01:2554:U:C5'	2.43	0.42
59:Z:260:MET:CE	59:Z:272:GLU:HB3	2.49	0.42
59:Z:305:GLU:HA	59:Z:359:VAL:HA	2.02	0.42
59:Z:370:ASP:OD1	59:Z:391:VAL:HG23	2.20	0.42
1:04:20:ASN:HD22	1:04:23:LEU:CG	2.26	0.42
1:04:81:GLU:HB2	1:04:90:ILE:HG13	2.01	0.42
1:04:209:ALA:HA	1:04:212:TRP:NE1	2.34	0.42
4:07:154:THR:HG21	54:01:2314:A:O4'	2.20	0.42
6:09:124:THR:HG22	6:09:125:THR:N	2.31	0.42
7:10:37:LYS:HE3	7:10:38:MET:HG3	2.01	0.42
8:11:76:ALA:O	8:11:80:LYS:HG3	2.20	0.42
22:25:22:PHE:HD2	54:01:922:C:H1'	1.84	0.42
22:25:42:HIS:HB2	22:25:75:PHE:CD1	2.55	0.42
25:28:41:PRO:HA	25:28:44:ARG:HB3	2.02	0.42
28:31:37:LYS:HB2	28:31:48:TYR:CD2	2.54	0.42
32:B:60:ALA:HB2	32:B:220:VAL:HG13	2.01	0.42
32:B:119:GLN:HA	32:B:123:GLY:HA3	2.01	0.42
42:L:109:ARG:CB	42:L:118:VAL:HG21	2.46	0.42
47:Q:6:THR:C	47:Q:7:LEU:HD12	2.40	0.42
53:A:125:U:H2'	53:A:126:G:C8	2.55	0.42
53:A:158:G:H2'	53:A:159:G:O4'	2.18	0.42
53:A:190:A:H2'	53:A:191:G:O4'	2.18	0.42
53:A:593:U:H2'	53:A:594:U:C6	2.54	0.42
53:A:856:C:O2'	53:A:857:C:H5'	2.20	0.42
53:A:929:G:H4'	53:A:1534:A:H4'	2.01	0.42
53:A:1399:C:H4'	53:A:1400:C:H2'	2.01	0.42
54:01:631:A:H1'	54:01:2415:G:O2'	2.19	0.42
54:01:1508:A:H2'	54:01:1509:A:O4'	2.19	0.42
54:01:1550:C:H2'	54:01:1551:A:C8	2.54	0.42
54:01:2544:G:H2'	54:01:2545:G:O4'	2.19	0.42
59:Z:260:MET:HE2	59:Z:272:GLU:HB3	2.01	0.42
4:07:174:PHE:HA	4:07:175:PRO:HD2	1.77	0.42
5:08:36:LEU:HD13	5:08:40:VAL:HG11	2.00	0.42
8:11:9:LYS:HA	8:11:56:VAL:O	2.20	0.42
8:11:99:LYS:HD3	8:11:140:GLU:HB2	2.02	0.42
20:23:81:ARG:NH2	20:23:96:LYS:HG3	2.34	0.42
22:25:39:THR:HG21	54:01:2336:A:H61	1.84	0.42
25:28:51:SER:HA	25:28:54:VAL:CG2	2.49	0.42
26:29:50:ASP:OD1	43:M:70:ARG:HD2	2.19	0.42
37:G:11:ILE:HD13	37:G:24:LYS:HD3	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:G:42:VAL:O	37:G:46:LEU:HD13	2.20	0.42
37:G:69:ARG:HA	37:G:99:ALA:HB2	2.01	0.42
37:G:76:SER:HB2	37:G:83:THR:HG23	2.00	0.42
46:P:25:ARG:NH1	46:P:25:ARG:HB2	2.34	0.42
49:S:27:LYS:HD3	49:S:30:LEU:HG	2.01	0.42
50:T:54:GLN:N	50:T:55:PRO:HD2	2.34	0.42
53:A:962:C:H2'	53:A:963:G:H8	1.85	0.42
54:01:594:U:H2'	54:01:595:C:C6	2.53	0.42
54:01:1669:A:H2'	54:01:1670:C:H5'	2.01	0.42
54:01:1930:G:N2	54:01:1968:G:H2'	2.34	0.42
54:01:2074:U:H2'	54:01:2075:U:C6	2.55	0.42
59:Z:331:TYR:OH	59:Z:377:ARG:HB2	2.20	0.42
1:04:239:PHE:O	1:04:241:LYS:HG3	2.20	0.42
2:05:115:GLY:HA3	54:01:2822:G:P	2.59	0.42
2:05:155:VAL:O	54:01:2619:C:H5'	2.19	0.42
4:07:74:ALA:C	4:07:77:LYS:H	2.23	0.42
8:11:74:PRO:O	8:11:78:LEU:HG	2.19	0.42
8:11:131:THR:O	8:11:135:MET:N	2.51	0.42
13:16:118:ARG:NH2	13:16:118:ARG:HB3	2.35	0.42
16:19:23:TYR:CD1	54:01:533:G:H5'	2.55	0.42
17:20:41:ILE:HD13	17:20:103:ALA:HA	2.01	0.42
18:21:41:LYS:HZ2	27:30:21:LEU:HD11	1.84	0.42
18:21:69:LEU:HG	18:21:107:VAL:CG2	2.50	0.42
19:22:30:ILE:HG23	19:22:85:VAL:HB	2.01	0.42
24:27:28:LEU:HD12	24:27:46:VAL:HG21	2.02	0.42
32:B:56:LEU:HD13	32:B:219:THR:OG1	2.19	0.42
34:D:131:ILE:HG12	53:A:620:C:N1	2.34	0.42
38:H:9:MET:O	38:H:13:ILE:HG13	2.20	0.42
44:N:26:LEU:O	44:N:30:ILE:HD12	2.19	0.42
53:A:67:C:H2'	53:A:68:G:C8	2.54	0.42
53:A:184:G:C4'	53:A:224:U:H4'	2.49	0.42
53:A:904:U:H2'	53:A:905:U:C6	2.54	0.42
53:A:1061:G:H2'	53:A:1062:U:O4'	2.20	0.42
54:01:848:C:H2'	54:01:849:A:H8	1.85	0.42
54:01:922:C:H2'	54:01:923:G:C8	2.55	0.42
54:01:1019:U:H2'	54:01:1020:A:H8	1.85	0.42
54:01:2821:A:H2'	54:01:2822:G:C8	2.54	0.42
59:Z:60:ILE:HB	62:Z:401:GCP:O2G	2.20	0.42
59:Z:363:ILE:HG13	59:Z:364:HIS:N	2.35	0.42
13:16:1:MET:SD	54:01:2723:C:H4'	2.60	0.42
13:16:45:ARG:HG2	13:16:95:THR:HG21	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:19:34:ALA:O	16:19:38:VAL:HG23	2.20	0.42
17:20:72:VAL:O	17:20:74:ILE:HD12	2.19	0.42
20:23:94:PHE:HB2	20:23:100:GLU:O	2.20	0.42
30:33:33:THR:HB	54:01:2420:C:OP1	2.20	0.42
32:B:165:ALA:HB3	32:B:190:SER:HB3	2.02	0.42
33:C:78:LYS:O	33:C:79:LYS:HB3	2.19	0.42
33:C:118:SER:O	33:C:122:GLN:HG3	2.19	0.42
34:D:28:ASP:O	34:D:30:LYS:N	2.46	0.42
38:H:79:ARG:HB2	53:A:878:A:OP1	2.20	0.42
40:J:59:LYS:HE2	40:J:62:ARG:NH2	2.34	0.42
40:J:59:LYS:HB2	53:A:972:C:H4'	2.01	0.42
45:O:44:GLU:O	45:O:45:HIS:HB2	2.20	0.42
46:P:22:ALA:HA	46:P:33:ILE:HD12	2.01	0.42
53:A:448:A:H3'	53:A:449:G:H8	1.85	0.42
53:A:865:A:H2	53:A:918:A:H4'	1.84	0.42
54:01:195:A:H2'	54:01:198:C:N4	2.34	0.42
54:01:374:A:H2'	54:01:375:G:O4'	2.19	0.42
54:01:1187:G:HO2'	54:01:1188:U:H6	1.67	0.42
54:01:2128:G:H2'	54:01:2129:C:O4'	2.19	0.42
4:07:42:ALA:HB2	4:07:49:LEU:HB2	2.00	0.42
5:08:151:ARG:HG3	5:08:160:GLY:HA2	2.02	0.42
7:10:67:THR:HB	7:10:68:PRO:HD3	2.01	0.42
8:11:112:LYS:HB2	8:11:112:LYS:NZ	2.35	0.42
16:19:57:ARG:HA	16:19:60:TRP:CE3	2.55	0.42
21:24:29:ILE:HG22	21:24:88:HIS:NE2	2.35	0.42
25:28:6:ILE:O	25:28:34:THR:HA	2.20	0.42
32:B:25:LYS:HE3	32:B:191:ASP:OD2	2.20	0.42
32:B:212:TYR:HB2	32:B:213:LEU:H	1.74	0.42
34:D:31:CYS:HA	53:A:429:U:OP2	2.20	0.42
34:D:131:ILE:HG12	53:A:620:C:C2	2.55	0.42
38:H:84:ILE:HG21	38:H:86:LYS:HE3	2.02	0.42
42:L:69:GLU:HA	53:A:521:G:OP1	2.20	0.42
52:03:30:LEU:HA	52:03:33:LEU:HD12	2.01	0.42
52:03:53:ARG:HB3	56:X:62:C:H4'	2.02	0.42
53:A:41:G:H2'	53:A:42:G:H8	1.84	0.42
54:01:248:G:H3'	54:01:249:C:H5'	2.01	0.42
54:01:694:U:OP1	54:01:1569:A:H1'	2.20	0.42
54:01:1554:U:H3'	54:01:1555:G:H5'	2.01	0.42
54:01:1856:U:H3	54:01:1886:U:H3	1.67	0.42
54:01:2257:U:H2'	54:01:2258:C:C6	2.54	0.42
56:W:3:C:H2'	56:W:4:G:H8	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:W:65:C:H2'	56:W:66:C:H6	1.84	0.42
1:04:132:ARG:HB2	6:09:123:ARG:NH1	2.35	0.42
1:04:164:VAL:CG2	1:04:174:ARG:HB2	2.49	0.42
3:06:76:PRO:HD2	54:01:673:C:H5''	2.01	0.42
3:06:148:ILE:HD13	3:06:187:VAL:CG1	2.50	0.42
7:10:33:VAL:HA	54:01:1055:G:H4'	2.02	0.42
7:10:60:LEU:O	7:10:64:VAL:HB	2.19	0.42
8:11:74:PRO:O	8:11:77:VAL:HG22	2.20	0.42
8:11:138:VAL:HG12	8:11:139:VAL:N	2.35	0.42
11:14:78:ARG:HB2	11:14:81:ASP:OD1	2.20	0.42
17:20:34:GLU:HB3	17:20:58:VAL:HG23	2.02	0.42
21:24:20:LEU:HD21	21:24:41:GLU:OE2	2.20	0.42
24:27:8:GLU:HB2	24:27:13:GLU:OE1	2.20	0.42
32:B:106:VAL:O	32:B:110:ILE:HG13	2.20	0.42
32:B:126:ASP:HA	32:B:133:ALA:HB3	2.01	0.42
33:C:63:ILE:O	33:C:98:ALA:HA	2.20	0.42
34:D:27:ILE:HD12	34:D:27:ILE:N	2.34	0.42
36:F:23:GLU:HA	36:F:26:THR:HG22	2.02	0.42
40:J:91:ASP:O	40:J:92:LEU:CB	2.67	0.42
49:S:30:LEU:HD12	49:S:30:LEU:N	2.35	0.42
53:A:974:A:H5'	53:A:976:G:OP1	2.19	0.42
53:A:1118:U:H2'	53:A:1119:C:O4'	2.20	0.42
54:01:123:G:H5''	54:01:1375:U:O2'	2.20	0.42
54:01:626:A:H3'	54:01:627:A:C5'	2.50	0.42
54:01:1199:U:H2'	54:01:1200:C:C6	2.55	0.42
54:01:1325:U:H5''	54:01:1648:U:OP2	2.20	0.42
54:01:1423:G:H2'	54:01:1424:G:H8	1.85	0.42
54:01:1993:U:H2'	54:01:1994:C:O4'	2.20	0.42
54:01:2861:U:H2'	54:01:2862:G:C8	2.55	0.42
55:02:95:U:H2'	55:02:96:G:H8	1.85	0.42
55:02:115:A:H2'	55:02:116:G:H8	1.85	0.42
56:X:65:C:H2'	56:X:66:C:C6	2.54	0.42
59:Z:116:ARG:NH1	59:Z:116:ARG:HB3	2.35	0.42
59:Z:212:LEU:HA	59:Z:213:PRO:HD3	1.89	0.42
59:Z:372:LEU:O	59:Z:388:VAL:HG23	2.20	0.42
1:04:48:ILE:O	1:04:48:ILE:HG23	2.20	0.41
2:05:156:PHE:O	54:01:2619:C:H4'	2.19	0.41
2:05:157:LYS:HA	54:01:2619:C:O3'	2.20	0.41
4:07:134:GLN:O	4:07:137:PHE:HB2	2.20	0.41
5:08:66:THR:HG23	54:01:2747:G:O2'	2.20	0.41
11:14:23:ILE:N	11:14:23:ILE:HD12	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:15:73:ILE:HG13	12:15:93:VAL:HG13	2.02	0.41
14:17:30:ARG:HB3	14:17:97:PHE:CE1	2.55	0.41
17:20:38:VAL:CG1	17:20:57:GLY:HA3	2.44	0.41
25:28:45:GLY:O	25:28:48:ASN:HB3	2.20	0.41
32:B:18:GLN:HG2	32:B:188:THR:OG1	2.20	0.41
42:L:47:ALA:C	42:L:48:LEU:HD12	2.40	0.41
47:Q:4:ILE:HD12	47:Q:4:ILE:O	2.20	0.41
53:A:49:U:O2'	53:A:50:A:H2'	2.21	0.41
53:A:1114:C:H2'	53:A:1115:U:O4'	2.19	0.41
53:A:1372:U:H2'	53:A:1373:G:O4'	2.19	0.41
53:A:1463:U:H2'	53:A:1464:U:C6	2.55	0.41
53:A:1464:U:H2'	53:A:1465:A:H8	1.85	0.41
54:01:343:C:O2'	54:01:344:A:H5'	2.20	0.41
55:02:53:A:H2'	55:02:53:A:N3	2.35	0.41
58:Y:33:U:H2'	58:Y:34:U8U:H5''	2.01	0.41
58:Y:72:C:H2'	58:Y:73:A:C4'	2.50	0.41
59:Z:210:PHE:HD2	59:Z:242:VAL:HG11	1.85	0.41
1:04:199:HIS:CE1	1:04:202:ARG:HH12	2.38	0.41
3:06:137:LYS:HA	3:06:140:ASP:OD2	2.19	0.41
6:09:56:ALA:O	6:09:59:ALA:HB3	2.20	0.41
17:20:15:SER:O	17:20:18:GLN:HG2	2.19	0.41
30:33:18:LYS:HB2	54:01:651:G:OP1	2.20	0.41
32:B:19:THR:CG2	32:B:20:ARG:N	2.83	0.41
33:C:154:GLY:HA3	33:C:195:ILE:HG23	2.01	0.41
35:E:88:HIS:HB3	35:E:138:ALA:HA	2.02	0.41
40:J:16:ARG:O	40:J:20:GLN:HG2	2.19	0.41
44:N:65:GLN:OE1	44:N:82:LYS:HB3	2.20	0.41
45:O:47:LYS:HB2	53:A:668:G:H4'	2.02	0.41
48:R:11:ARG:HH21	53:A:845:A:H1'	1.85	0.41
53:A:295:C:H2'	53:A:296:U:O4'	2.20	0.41
53:A:908:A:H2'	53:A:909:A:C8	2.55	0.41
53:A:966:G:C2	56:W:34:C:H5'	2.55	0.41
54:01:1038:G:H2'	54:01:1039:A:C8	2.55	0.41
54:01:1270:C:OP1	54:01:1271:G:H5'	2.20	0.41
54:01:1373:A:H5'	54:01:2212:A:H1'	2.02	0.41
54:01:2187:U:H2'	54:01:2188:U:C6	2.55	0.41
54:01:2206:C:H2'	54:01:2207:C:C6	2.55	0.41
55:02:30:C:H2'	55:02:31:C:C5'	2.49	0.41
59:Z:191:LEU:O	59:Z:195:LEU:N	2.53	0.41
2:05:46:ARG:HD3	2:05:86:GLU:HA	2.02	0.41
4:07:92:GLY:O	4:07:95:MET:HG2	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:08:174:LYS:HB2	54:01:2531:A:OP2	2.20	0.41
6:09:25:TYR:O	6:09:29:PHE:HB3	2.20	0.41
7:10:119:PRO:O	7:10:120:ALA:HB3	2.20	0.41
10:13:9:ASN:O	10:13:83:ALA:HA	2.20	0.41
12:15:74:THR:HG21	12:15:86:LYS:HE2	2.03	0.41
20:23:95:PHE:HB2	20:23:100:GLU:HB2	2.02	0.41
29:32:31:LEU:HD11	29:32:43:THR:CG2	2.48	0.41
37:G:71:THR:HG22	37:G:72:VAL:HG13	2.02	0.41
41:K:12:ARG:O	41:K:14:GLN:N	2.48	0.41
43:M:97:ARG:HG2	43:M:97:ARG:HH11	1.84	0.41
44:N:15:LEU:CD2	44:N:54:SER:HB3	2.49	0.41
44:N:30:ILE:HG21	44:N:43:ALA:HB3	2.02	0.41
46:P:5:ARG:HD2	53:A:376:G:H4'	2.02	0.41
48:R:67:LEU:HA	48:R:68:PRO:HD3	1.93	0.41
49:S:15:LEU:O	49:S:19:GLU:HG2	2.20	0.41
53:A:512:U:H2'	53:A:513:C:C6	2.55	0.41
53:A:621:A:H2'	53:A:622:A:C8	2.55	0.41
53:A:775:G:H2'	53:A:776:G:O4'	2.20	0.41
54:01:863:A:H4'	55:02:100:G:N2	2.35	0.41
54:01:881:G:H2'	54:01:882:G:H5'	2.03	0.41
54:01:1367:A:H2'	54:01:1368:G:H5'	2.02	0.41
54:01:2152:G:H2'	54:01:2153:C:C6	2.55	0.41
54:01:2190:G:H2'	54:01:2191:A:C8	2.54	0.41
54:01:2786:U:H2'	54:01:2787:C:H6	1.85	0.41
56:X:1:C:H2'	56:X:2:G:O4'	2.20	0.41
59:Z:287:GLU:HG2	59:Z:290:GLN:HE22	1.85	0.41
59:Z:331:TYR:HD1	59:Z:336:ASP:HA	1.85	0.41
3:06:109:LEU:O	3:06:113:VAL:HG23	2.20	0.41
14:17:40:ILE:HG23	14:17:46:GLU:O	2.20	0.41
27:30:11:LYS:HZ3	54:01:2616:C:H5''	1.86	0.41
32:B:206:ILE:O	32:B:209:VAL:HG22	2.20	0.41
33:C:13:ILE:HG22	33:C:14:VAL:HG23	2.03	0.41
34:D:53:GLN:HE22	53:A:8:A:N6	2.19	0.41
38:H:76:ARG:NH1	38:H:125:ILE:HG23	2.35	0.41
41:K:81:LEU:HD11	41:K:99:LEU:HD23	2.02	0.41
53:A:113:G:H2'	53:A:114:U:C6	2.55	0.41
53:A:1430:A:H5'	54:01:1704:C:H5''	2.02	0.41
54:01:164:C:H2'	54:01:165:A:H5'	2.02	0.41
54:01:176:A:O2'	54:01:177:G:H5'	2.19	0.41
54:01:264:C:H5'	54:01:265:A:OP1	2.20	0.41
54:01:1374:G:H2'	54:01:1375:U:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:2016:U:OP1	54:01:2058:A:H5''	2.20	0.41
54:01:2133:G:H2'	54:01:2157:G:N2	2.35	0.41
54:01:2247:A:H2'	54:01:2248:C:C6	2.56	0.41
54:01:2443:C:H2'	54:01:2444:G:C8	2.55	0.41
56:W:36:U:H2'	56:W:37:A:C8	2.55	0.41
59:Z:19:HIS:CD2	59:Z:114:GLN:HB3	2.56	0.41
59:Z:333:ARG:O	59:Z:334:THR:HG23	2.20	0.41
1:04:38:LYS:NZ	1:04:58:LYS:HA	2.35	0.41
1:04:146:LYS:HB2	1:04:149:LYS:HB2	2.02	0.41
1:04:179:GLU:OE1	1:04:181:ARG:HB2	2.21	0.41
10:13:30:ARG:NE	54:01:2674:G:H4'	2.36	0.41
10:13:71:ARG:HH12	15:18:71:ARG:NH2	2.17	0.41
13:16:72:ASP:OD2	13:16:75:ILE:HG12	2.19	0.41
14:17:115:LEU:HD23	14:17:117:PHE:CE1	2.54	0.41
15:18:47:ILE:HG22	15:18:96:LEU:HB2	2.02	0.41
17:20:10:LYS:HE2	54:01:994:C:O2'	2.20	0.41
22:25:38:GLY:HA2	54:01:2330:G:H21	1.85	0.41
27:30:29:VAL:HA	27:30:35:GLU:O	2.20	0.41
32:B:136:ARG:O	32:B:140:LEU:HB2	2.19	0.41
33:C:33:ASP:O	33:C:37:LYS:HG2	2.19	0.41
37:G:75:LYS:HZ1	37:G:77:ARG:HD3	1.83	0.41
43:M:77:LYS:HG2	43:M:81:ASP:OD2	2.21	0.41
43:M:82:LEU:HD23	49:S:65:MET:HG2	2.02	0.41
47:Q:78:VAL:O	47:Q:79:GLU:C	2.58	0.41
52:03:183:ASP:HA	52:03:186:LYS:HB3	2.03	0.41
53:A:194:C:O2'	53:A:195:A:H5'	2.21	0.41
53:A:335:C:H4'	53:A:1434:A:C4'	2.51	0.41
53:A:1234:C:H4'	53:A:1364:U:H4'	2.01	0.41
53:A:1284:C:H2'	53:A:1285:A:C8	2.56	0.41
53:A:1512:U:H2'	53:A:1513:A:C8	2.56	0.41
54:01:310:A:O2'	54:01:311:A:H2'	2.20	0.41
54:01:546:U:H2'	54:01:547:A:C4'	2.51	0.41
54:01:779:U:H2'	54:01:780:G:O4'	2.20	0.41
54:01:856:G:H2'	54:01:857:G:C8	2.55	0.41
54:01:1380:G:H21	54:01:1570:A:H2	1.67	0.41
54:01:1423:G:H2'	54:01:1424:G:C8	2.56	0.41
54:01:2377:A:O2'	54:01:2378:A:H5'	2.21	0.41
59:Z:9:LYS:HD2	59:Z:70:ASP:OD2	2.20	0.41
59:Z:183:GLU:O	59:Z:186:ALA:HB3	2.20	0.41
4:07:15:LEU:HB3	4:07:21:TYR:HE2	1.84	0.41
4:07:109:ARG:HD3	4:07:136:ILE:HA	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:09:119:ASN:HD22	6:09:119:ASN:HA	1.65	0.41
8:11:85:ILE:HD12	8:11:137:LEU:HD22	2.02	0.41
9:12:78:THR:CG2	54:01:2641:G:H5''	2.51	0.41
13:16:50:PRO:O	13:16:54:LEU:N	2.53	0.41
14:17:28:VAL:HG13	14:17:28:VAL:O	2.20	0.41
29:32:4:THR:O	54:01:687:C:H5''	2.21	0.41
29:32:7:PRO:HD3	54:01:1612:C:H4'	2.02	0.41
34:D:121:ALA:O	34:D:144:ILE:HG23	2.21	0.41
36:F:3:HIS:O	36:F:92:THR:HA	2.20	0.41
40:J:14:ASP:OD2	40:J:17:LEU:HB2	2.20	0.41
52:03:43:ASP:HB3	54:01:2124:G:C4'	2.51	0.41
52:03:50:ILE:HD12	52:03:50:ILE:O	2.20	0.41
53:A:141:G:H2'	53:A:142:G:H8	1.85	0.41
53:A:714:G:H2'	53:A:715:A:C8	2.56	0.41
53:A:741:G:H2'	53:A:742:G:H8	1.86	0.41
53:A:1033:G:C2'	53:A:1034:G:H5''	2.48	0.41
54:01:214:G:H2'	54:01:215:G:C8	2.55	0.41
54:01:858:G:H5'	54:01:859:G:OP2	2.20	0.41
54:01:1979:U:O2'	54:01:1980:G:H5'	2.21	0.41
54:01:2048:G:C3'	54:01:2049:G:H5''	2.50	0.41
54:01:2713:U:H3'	54:01:2714:G:H5''	2.01	0.41
2:05:121:THR:HB	2:05:127:PHE:CE2	2.55	0.41
13:16:18:GLN:HE21	13:16:22:ARG:NH1	2.18	0.41
13:16:38:LEU:HB3	13:16:39:PRO:HD3	2.02	0.41
17:20:27:ILE:HG22	17:20:28:ALA:N	2.36	0.41
33:C:154:GLY:O	33:C:156:LEU:HG	2.21	0.41
44:N:17:ASP:HA	44:N:21:ALA:HB2	2.03	0.41
46:P:20:VAL:HG23	46:P:35:ARG:CA	2.39	0.41
53:A:784:A:H4'	54:01:1837:C:OP1	2.20	0.41
53:A:884:U:H4'	53:A:885:G:C5'	2.49	0.41
53:A:1308:U:H2'	53:A:1309:G:C8	2.56	0.41
53:A:1427:C:H2'	53:A:1428:A:C8	2.55	0.41
54:01:273:G:H2'	54:01:274:C:C6	2.56	0.41
54:01:291:G:H2'	54:01:292:U:C6	2.55	0.41
54:01:458:G:O2'	54:01:459:U:H5	2.03	0.41
54:01:2266:A:H4'	54:01:2267:A:C2	2.56	0.41
54:01:2529:G:OP2	54:01:2530:A:H5''	2.21	0.41
54:01:2619:C:O2'	54:01:2620:C:H5'	2.21	0.41
54:01:2707:U:H2'	54:01:2708:G:H8	1.84	0.41
54:01:2834:G:H2'	54:01:2879:A:N6	2.36	0.41
59:Z:304:PHE:HE1	59:Z:362:LEU:HD21	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:05:96:ILE:HG23	2:05:100:LEU:HD13	2.03	0.41
3:06:105:LEU:O	3:06:109:LEU:HD13	2.19	0.41
7:10:56:ARG:HG2	7:10:56:ARG:HH11	1.85	0.41
7:10:60:LEU:HA	7:10:64:VAL:HB	2.02	0.41
8:11:10:LEU:HD13	8:11:23:VAL:CG1	2.51	0.41
9:12:7:LYS:HG2	54:01:538:A:H5''	2.02	0.41
10:13:113:MET:SD	10:13:116:ILE:HD11	2.60	0.41
16:19:75:TYR:O	16:19:79:ILE:HG12	2.20	0.41
19:22:29:THR:HG23	19:22:86:THR:N	2.36	0.41
20:23:84:PHE:HB3	54:01:297:G:H5''	2.03	0.41
23:26:17:ARG:HH11	23:26:21:LEU:HD22	1.86	0.41
27:30:30:ASP:HB3	27:30:34:GLY:N	2.35	0.41
27:30:40:HIS:HA	27:30:48:TYR:OH	2.21	0.41
34:D:49:ASP:O	34:D:53:GLN:HG3	2.21	0.41
34:D:144:ILE:N	34:D:144:ILE:HD12	2.36	0.41
40:J:42:LEU:HA	40:J:43:PRO:HD2	1.81	0.41
40:J:53:ILE:HG12	53:A:1060:U:C5'	2.36	0.41
41:K:91:GLY:O	41:K:93:GLU:N	2.47	0.41
42:L:48:LEU:HB2	53:A:520:A:OP1	2.20	0.41
44:N:72:PHE:CZ	44:N:77:GLY:HA2	2.56	0.41
47:Q:48:GLU:HB2	47:Q:51:GLU:OE1	2.21	0.41
48:R:17:VAL:O	48:R:18:GLN:HB2	2.20	0.41
48:R:19:GLU:CD	48:R:53:GLN:HE22	2.24	0.41
53:A:161:A:H2'	53:A:162:A:O4'	2.21	0.41
53:A:427:U:H3'	53:A:428:G:H2'	2.03	0.41
53:A:530:G:H2'	53:A:530:G:N3	2.36	0.41
53:A:712:A:H2'	53:A:713:G:O4'	2.21	0.41
53:A:1202:U:C2'	53:A:1203:C:H5'	2.51	0.41
54:01:528:A:H2	54:01:2042:A:H2'	1.85	0.41
54:01:686:U:H3'	54:01:687:C:H5'	2.03	0.41
54:01:1077:A:C2'	54:01:1078:U:H5'	2.51	0.41
54:01:2241:A:H2'	54:01:2242:G:C8	2.55	0.41
54:01:2281:A:O2'	54:01:2282:G:H5'	2.21	0.41
54:01:2690:U:O2'	54:01:2872:A:H1'	2.21	0.41
56:X:35:A:N6	57:V:14:A:H61	2.19	0.41
4:07:97:GLU:HG2	26:29:25:ARG:HB2	2.03	0.41
4:07:131:VAL:HG23	4:07:151:LEU:H	1.85	0.41
6:09:77:THR:N	6:09:142:VAL:HG13	2.36	0.41
7:10:57:ASN:OD1	7:10:63:ALA:HB2	2.21	0.41
10:13:76:VAL:H	15:18:72:VAL:HG22	1.86	0.41
14:17:30:ARG:HH11	14:17:102:ARG:NH1	2.17	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:17:115:LEU:HD23	14:17:117:PHE:HE1	1.85	0.41
15:18:24:THR:HB	15:18:86:LYS:HB2	2.03	0.41
16:19:65:ASN:O	16:19:69:ARG:HG3	2.20	0.41
20:23:67:SER:HB2	54:01:327:G:N2	2.36	0.41
20:23:91:LYS:HD3	54:01:297:G:OP1	2.21	0.41
21:24:14:LYS:CG	21:24:18:ARG:HE	2.33	0.41
22:25:39:THR:C	22:25:41:PHE:H	2.23	0.41
22:25:70:PRO:HB3	55:02:12:C:C4	2.56	0.41
22:25:74:LYS:H	22:25:74:LYS:CD	2.34	0.41
23:26:5:GLN:HG2	23:26:49:ARG:O	2.21	0.41
25:28:11:SER:OG	25:28:12:ALA:N	2.54	0.41
34:D:138:PRO:HA	34:D:181:PHE:CE2	2.56	0.41
36:F:98:GLU:HB3	36:F:99:ALA:H	1.73	0.41
37:G:62:GLU:O	37:G:66:GLU:HG2	2.21	0.41
39:I:10:ARG:HA	39:I:14:SER:O	2.20	0.41
39:I:12:LYS:HG2	53:A:1371:G:OP1	2.21	0.41
39:I:66:VAL:HG22	39:I:67:LYS:N	2.36	0.41
40:J:7:ARG:HD3	40:J:75:ASP:HB3	2.02	0.41
41:K:109:ILE:HG21	51:U:16:ARG:HE	1.86	0.41
46:P:10:GLY:HA2	53:A:624:C:O3'	2.21	0.41
46:P:79:ASN:HD22	46:P:79:ASN:HA	1.65	0.41
52:03:21:TYR:CD2	52:03:222:VAL:HG13	2.56	0.41
52:03:43:ASP:HB3	54:01:2124:G:H4'	2.01	0.41
53:A:23:C:H2'	53:A:24:U:C6	2.56	0.41
53:A:428:G:H4'	53:A:429:U:O5'	2.21	0.41
53:A:625:U:H2'	53:A:626:G:H8	1.85	0.41
53:A:828:U:H3	53:A:859:G:H1'	1.86	0.41
53:A:1064:G:H21	53:A:1190:G:H1'	1.84	0.41
53:A:1241:G:H2'	53:A:1242:G:H8	1.86	0.41
53:A:1412:C:H2'	53:A:1413:A:H8	1.83	0.41
54:01:28:A:O2'	54:01:583:G:H5'	2.21	0.41
54:01:779:U:H2'	54:01:780:G:C8	2.56	0.41
54:01:893:C:H2'	54:01:894:U:O4'	2.19	0.41
54:01:970:U:H2'	54:01:971:G:H8	1.85	0.41
54:01:1179:G:C5	54:01:1180:U:H1'	2.55	0.41
54:01:1299:G:H5''	54:01:1300:G:OP1	2.21	0.41
54:01:1370:C:H2'	54:01:1371:G:C8	2.56	0.41
54:01:1378:A:H1'	54:01:1379:U:C6	2.55	0.41
54:01:1465:G:H2'	54:01:1466:U:O4'	2.20	0.41
54:01:1639:C:O2'	54:01:1640:A:H5'	2.21	0.41
54:01:1837:C:H2'	54:01:1899:A:N6	2.34	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:2229:U:H2'	54:01:2230:G:C8	2.56	0.41
54:01:2623:G:H2'	54:01:2624:G:H8	1.86	0.41
54:01:2731:G:H2'	54:01:2732:G:C8	2.56	0.41
59:Z:74:ARG:HH21	59:Z:196:ASP:HA	1.85	0.41
59:Z:220:ILE:HG13	59:Z:226:VAL:CG2	2.51	0.41
59:Z:342:GLU:HG3	59:Z:361:THR:HG23	2.02	0.41
1:04:132:ARG:HD3	1:04:186:ASP:OD1	2.21	0.41
2:05:19:GLY:HA2	15:18:78:PRO:HD2	2.03	0.41
16:19:10:ARG:HG2	16:19:10:ARG:HH11	1.85	0.41
16:19:78:PHE:HE1	16:19:109:VAL:HA	1.85	0.41
17:20:8:GLY:HA3	17:20:23:GLU:OE1	2.20	0.41
21:24:30:ILE:HG12	21:24:91:PHE:HB2	2.03	0.41
28:31:43:ARG:NH1	54:01:2370:G:H4'	2.36	0.41
34:D:149:LYS:HE3	34:D:176:LYS:HE2	2.02	0.41
36:F:12:PRO:HG3	36:F:56:LYS:O	2.21	0.41
37:G:76:SER:CB	37:G:83:THR:HG23	2.51	0.41
39:I:38:PHE:O	39:I:41:GLU:HB2	2.20	0.41
41:K:92:ARG:HE	51:U:24:LYS:HE2	1.86	0.41
45:O:55:LEU:O	45:O:58:MET:HG2	2.20	0.41
48:R:59:LYS:CD	53:A:735:C:H5'	2.50	0.41
50:T:30:PHE:O	50:T:34:VAL:HG23	2.20	0.41
52:03:192:LEU:O	52:03:196:LEU:HD13	2.21	0.41
53:A:86:G:H4'	53:A:87:C:C5	2.55	0.41
53:A:518:C:H2'	53:A:530:G:C8	2.55	0.41
53:A:1064:G:H1'	53:A:1190:G:H21	1.86	0.41
53:A:1254:A:H2'	53:A:1255:G:C8	2.56	0.41
53:A:1390:U:H2'	53:A:1391:U:C6	2.56	0.41
53:A:1394:A:H3'	53:A:1395:C:H5'	2.03	0.41
54:01:12:U:O2	54:01:2626:C:H4'	2.21	0.41
54:01:267:C:H2'	54:01:268:C:H6	1.85	0.41
54:01:566:U:H2'	54:01:567:U:O4'	2.20	0.41
54:01:828:U:H4'	54:01:831:G:C2	2.55	0.41
54:01:2014:A:H2'	54:01:2015:A:C8	2.56	0.41
54:01:2462:C:H2'	54:01:2463:C:C6	2.55	0.41
61:Y:101:LYS:CB	59:Z:261:PHE:H	2.34	0.41
1:04:120:ASP:O	1:04:121:ALA:C	2.59	0.40
5:08:137:LYS:HG2	54:01:2746:U:C5'	2.44	0.40
7:10:103:ASN:HA	7:10:107:GLU:HB3	2.03	0.40
9:12:68:LYS:HD3	54:01:1022:G:O6	2.21	0.40
12:15:33:LEU:HD23	12:15:103:TYR:HD2	1.86	0.40
17:20:68:ARG:HH11	17:20:90:ARG:HB2	1.86	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:23:39:ASN:HD22	20:23:39:ASN:HA	1.57	0.40
24:27:56:LEU:O	24:27:60:LYS:HG2	2.21	0.40
26:29:14:ALA:HB1	26:29:34:LEU:HD11	2.03	0.40
35:E:95:MET:HE3	35:E:122:VAL:HG21	2.04	0.40
35:E:108:GLY:O	35:E:109:ALA:HB3	2.21	0.40
38:H:121:GLY:C	53:A:599:C:H4'	2.42	0.40
39:I:35:GLU:O	39:I:40:ARG:HG3	2.20	0.40
40:J:40:ILE:HB	40:J:73:LEU:HD12	2.02	0.40
41:K:56:LYS:HE2	53:A:691:G:O6	2.21	0.40
44:N:5:MET:HE1	53:A:982:U:H3'	2.03	0.40
44:N:80:ARG:HH11	44:N:80:ARG:HG3	1.85	0.40
49:S:36:ARG:HB3	53:A:1320:C:N4	2.36	0.40
50:T:19:HIS:O	50:T:23:ARG:HG2	2.21	0.40
52:03:42:VAL:HA	52:03:216:THR:HA	2.02	0.40
53:A:427:U:H4'	53:A:541:G:H5''	2.02	0.40
53:A:542:G:H2'	53:A:543:U:C6	2.56	0.40
54:01:127:A:H5''	54:01:128:C:O4'	2.20	0.40
54:01:287:G:H2'	54:01:288:U:C6	2.56	0.40
54:01:531:C:O2'	54:01:563:A:H5''	2.21	0.40
54:01:796:C:H2'	54:01:797:G:C8	2.56	0.40
54:01:2208:C:H2'	54:01:2209:G:H8	1.86	0.40
57:V:13:A:H2'	57:V:14:A:C8	2.57	0.40
1:04:134:ILE:HA	1:04:135:PRO:HD3	1.95	0.40
1:04:140:VAL:HG12	1:04:191:LEU:HD23	2.02	0.40
2:05:131:ASP:OD2	2:05:134:HIS:HB2	2.20	0.40
9:12:49:ASP:H	9:12:114:LEU:HD11	1.87	0.40
11:14:79:LEU:HB2	11:14:114:GLY:H	1.86	0.40
14:17:2:ASP:O	14:17:6:ALA:N	2.53	0.40
14:17:33:ARG:HB2	55:02:52:A:N6	2.37	0.40
15:18:59:THR:HA	15:18:72:VAL:HA	2.03	0.40
20:23:97:SER:O	20:23:98:ASN:CB	2.69	0.40
22:25:42:HIS:NE2	22:25:73:ARG:HB2	2.36	0.40
25:28:8:GLN:HB3	25:28:31:ILE:HA	2.03	0.40
32:B:71:THR:HA	32:B:92:ASN:O	2.21	0.40
32:B:184:ALA:H	32:B:195:VAL:HG11	1.86	0.40
35:E:43:GLY:HA2	35:E:73:VAL:HB	2.02	0.40
36:F:81:ASN:HB3	36:F:84:VAL:CG2	2.51	0.40
49:S:5:LYS:HA	53:A:1313:U:OP2	2.21	0.40
53:A:71:A:H61	53:A:99:C:H1'	1.86	0.40
53:A:1098:C:H2'	53:A:1099:G:O4'	2.20	0.40
53:A:1128:C:O2'	53:A:1129:C:H5'	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:443:A:H5''	54:01:444:C:H5''	2.03	0.40
54:01:729:G:H4'	54:01:763:G:C5'	2.51	0.40
54:01:1664:A:H2'	54:01:1664:A:N3	2.36	0.40
54:01:1773:A:H2'	54:01:1774:C:O4'	2.21	0.40
54:01:1937:A:H62	54:01:1940:U:H5	1.67	0.40
54:01:2628:C:H3'	54:01:2629:U:C5'	2.48	0.40
55:02:14:U:O2	55:02:107:G:H4'	2.21	0.40
56:X:48:C:H5''	56:X:50:U:OP2	2.21	0.40
2:05:56:LYS:HE3	54:01:2831:G:P	2.61	0.40
5:08:70:LEU:O	5:08:74:MET:HG3	2.20	0.40
8:11:122:GLU:HA	8:11:125:THR:OG1	2.22	0.40
9:12:53:TYR:CE1	9:12:121:LYS:HD3	2.56	0.40
11:14:78:ARG:NH2	11:14:78:ARG:HB3	2.37	0.40
11:14:122:VAL:O	11:14:143:GLU:HG2	2.20	0.40
13:16:2:ARG:HD2	54:01:1653:G:H3'	2.01	0.40
16:19:48:ASP:HA	16:19:51:GLN:HB2	2.02	0.40
16:19:87:VAL:HG12	16:19:89:ILE:HG13	2.04	0.40
19:22:50:LEU:HD23	24:27:26:PHE:CZ	2.57	0.40
28:31:24:LYS:HG3	28:31:33:LEU:HD12	2.04	0.40
28:31:42:VAL:O	28:31:43:ARG:HB2	2.21	0.40
30:33:63:TYR:CE2	54:01:242:G:H5''	2.57	0.40
32:B:95:TRP:CZ3	32:B:97:GLY:HA2	2.56	0.40
33:C:110:LEU:HG	33:C:143:LEU:HD22	2.03	0.40
36:F:10:VAL:HG12	36:F:11:HIS:N	2.35	0.40
37:G:28:ILE:HG22	37:G:104:VAL:HG21	2.02	0.40
40:J:15:HIS:HB3	40:J:70:HIS:CE1	2.57	0.40
44:N:60:ARG:HG2	53:A:981:U:H4'	2.03	0.40
47:Q:65:PRO:HG2	53:A:234:C:H4'	2.02	0.40
47:Q:67:SER:OG	47:Q:70:LYS:HB3	2.21	0.40
50:T:35:TYR:OH	53:A:259:G:H5''	2.22	0.40
53:A:607:A:H2'	53:A:608:A:C8	2.56	0.40
53:A:829:G:H2'	53:A:830:G:C8	2.56	0.40
54:01:155:A:H2'	54:01:156:A:C8	2.56	0.40
54:01:211:C:H2'	54:01:212:G:H8	1.87	0.40
54:01:466:A:N3	54:01:683:U:H1'	2.36	0.40
54:01:624:C:O2'	54:01:657:U:H5''	2.20	0.40
54:01:863:A:H2'	54:01:864:G:H8	1.86	0.40
54:01:1344:U:H3'	54:01:1345:C:H5'	2.03	0.40
54:01:1956:U:H1'	54:01:2552:U:OP1	2.22	0.40
54:01:2746:U:H2'	54:01:2747:G:O4'	2.22	0.40
56:W:27:U:H2'	56:W:28:C:C6	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:Y:101:LYS:HB3	59:Z:261:PHE:H	1.86	0.40
59:Z:373:ARG:HG2	59:Z:387:VAL:HG23	2.03	0.40
1:04:62:ARG:HG3	1:04:62:ARG:HH11	1.86	0.40
1:04:144:GLU:HG3	1:04:188:ARG:O	2.20	0.40
3:06:117:ARG:NH1	11:14:2:ARG:HG2	2.36	0.40
5:08:23:ILE:HG22	5:08:24:THR:N	2.36	0.40
6:09:67:ALA:O	6:09:71:LYS:HG3	2.21	0.40
9:12:69:ARG:HA	9:12:89:PHE:CD2	2.57	0.40
14:17:51:ALA:CB	14:17:78:VAL:HG13	2.46	0.40
15:18:9:GLN:HA	15:18:12:MET:HG3	2.02	0.40
15:18:31:VAL:HG13	15:18:38:ARG:HB3	2.04	0.40
15:18:46:VAL:HG22	15:18:60:VAL:HG22	2.03	0.40
16:19:27:ARG:HH12	54:01:532:A:H5''	1.87	0.40
23:26:13:THR:CG2	54:01:188:G:H5'	2.52	0.40
24:27:56:LEU:O	24:27:60:LYS:N	2.43	0.40
25:28:11:SER:OG	25:28:13:ILE:HG13	2.22	0.40
27:30:14:MET:SD	54:01:2045:C:H5''	2.62	0.40
32:B:70:GLY:HA2	32:B:163:ILE:HG22	2.03	0.40
33:C:37:LYS:HB3	33:C:93:ILE:HG22	2.02	0.40
33:C:72:PRO:HG3	33:C:104:GLU:OE1	2.21	0.40
33:C:171:ARG:HG2	33:C:173:PRO:HD3	2.02	0.40
37:G:86:VAL:HG13	37:G:150:PHE:O	2.21	0.40
42:L:40:THR:HA	42:L:47:ALA:O	2.21	0.40
43:M:27:THR:CG2	53:A:1328:C:H5''	2.51	0.40
45:O:63:ARG:NH1	45:O:87:ARG:HH21	2.19	0.40
53:A:990:C:H2'	53:A:991:U:O4'	2.22	0.40
54:01:320:A:H4'	54:01:322:A:N7	2.36	0.40
54:01:440:C:H2'	54:01:441:U:C6	2.56	0.40
54:01:615:U:H5''	54:01:616:A:OP2	2.22	0.40
54:01:1054:A:H2'	54:01:1055:G:C8	2.56	0.40
54:01:1657:U:H2'	54:01:1658:C:H6	1.86	0.40
54:01:2065:C:H1'	54:01:2449:U:H3	1.86	0.40
54:01:2665:A:O2'	54:01:2666:C:H5'	2.22	0.40
55:02:106:G:C2	55:02:107:G:H1'	2.56	0.40
3:06:15:SER:HB2	3:06:18:THR:HB	2.02	0.40
4:07:122:ASP:OD2	54:01:2315:G:H1'	2.20	0.40
7:10:56:ARG:NH1	7:10:81:LEU:HD21	2.36	0.40
11:14:19:LEU:HG	11:14:31:GLY:HA3	2.04	0.40
11:14:95:LEU:O	11:14:100:ILE:HG12	2.21	0.40
16:19:57:ARG:O	16:19:61:ILE:HG13	2.22	0.40
25:28:35:VAL:HG13	25:28:37:ARG:HG2	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:G:145:GLU:HA	37:G:148:LYS:HE3	2.04	0.40
40:J:42:LEU:HD22	53:A:1280:A:H5'	2.03	0.40
40:J:59:LYS:CE	40:J:62:ARG:HH21	2.34	0.40
41:K:85:VAL:HG23	41:K:111:ASP:OD1	2.22	0.40
41:K:111:ASP:OD1	41:K:113:THR:HG23	2.21	0.40
42:L:29:LYS:HA	53:A:363:A:OP1	2.21	0.40
42:L:85:ARG:HA	42:L:93:ARG:HA	2.04	0.40
43:M:97:ARG:HD3	53:A:1308:U:OP2	2.21	0.40
52:03:54:LYS:HB2	52:03:57:GLN:CG	2.52	0.40
53:A:306:A:H2'	53:A:307:C:O4'	2.22	0.40
53:A:842:U:H2'	53:A:844:G:C5'	2.50	0.40
53:A:1073:U:H2'	53:A:1074:G:C8	2.57	0.40
54:01:660:C:H2'	54:01:661:A:C8	2.57	0.40
54:01:1370:C:H2'	54:01:1371:G:O4'	2.21	0.40
54:01:1607:C:H4'	54:01:1608:A:C8	2.57	0.40
54:01:1669:A:C2'	54:01:1670:C:H5'	2.52	0.40
54:01:2224:G:H4'	54:01:2226:C:C2	2.57	0.40
54:01:2371:G:O2'	54:01:2372:U:H5'	2.21	0.40
54:01:2815:C:H2'	54:01:2816:G:H8	1.87	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	04	269/271 (99%)	227 (84%)	35 (13%)	7 (3%)	5	35
2	05	207/209 (99%)	171 (83%)	31 (15%)	5 (2%)	6	37
3	06	199/201 (99%)	172 (86%)	24 (12%)	3 (2%)	10	45
4	07	175/177 (99%)	150 (86%)	22 (13%)	3 (2%)	9	43
5	08	174/176 (99%)	151 (87%)	20 (12%)	3 (2%)	9	43

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
6	09	147/149 (99%)	119 (81%)	26 (18%)	2 (1%)	11	46
7	10	129/131 (98%)	82 (64%)	37 (29%)	10 (8%)	1	15
8	11	139/141 (99%)	109 (78%)	24 (17%)	6 (4%)	2	26
9	12	140/142 (99%)	123 (88%)	15 (11%)	2 (1%)	11	46
10	13	120/122 (98%)	94 (78%)	18 (15%)	8 (7%)	1	18
11	14	141/143 (99%)	110 (78%)	24 (17%)	7 (5%)	2	23
12	15	134/136 (98%)	112 (84%)	19 (14%)	3 (2%)	6	38
13	16	118/120 (98%)	99 (84%)	18 (15%)	1 (1%)	19	57
14	17	114/116 (98%)	98 (86%)	13 (11%)	3 (3%)	5	35
15	18	112/114 (98%)	91 (81%)	21 (19%)	0	100	100
16	19	115/117 (98%)	105 (91%)	10 (9%)	0	100	100
17	20	101/103 (98%)	83 (82%)	17 (17%)	1 (1%)	15	52
18	21	108/110 (98%)	97 (90%)	9 (8%)	2 (2%)	8	41
19	22	91/93 (98%)	64 (70%)	24 (26%)	3 (3%)	4	31
20	23	100/102 (98%)	78 (78%)	18 (18%)	4 (4%)	3	27
21	24	92/94 (98%)	79 (86%)	13 (14%)	0	100	100
22	25	73/75 (97%)	62 (85%)	9 (12%)	2 (3%)	5	35
23	26	75/77 (97%)	70 (93%)	4 (5%)	1 (1%)	12	48
24	27	61/63 (97%)	54 (88%)	7 (12%)	0	100	100
25	28	56/58 (97%)	51 (91%)	4 (7%)	1 (2%)	8	42
26	29	64/66 (97%)	50 (78%)	11 (17%)	3 (5%)	2	24
27	30	54/56 (96%)	47 (87%)	6 (11%)	1 (2%)	8	41
28	31	48/50 (96%)	44 (92%)	4 (8%)	0	100	100
29	32	44/46 (96%)	41 (93%)	3 (7%)	0	100	100
30	33	62/64 (97%)	49 (79%)	10 (16%)	3 (5%)	2	24
31	34	36/38 (95%)	32 (89%)	3 (8%)	1 (3%)	5	34
32	B	216/218 (99%)	177 (82%)	30 (14%)	9 (4%)	3	26
33	C	204/206 (99%)	188 (92%)	16 (8%)	0	100	100
34	D	203/205 (99%)	169 (83%)	26 (13%)	8 (4%)	3	28
35	E	155/157 (99%)	118 (76%)	27 (17%)	10 (6%)	1	19
36	F	98/100 (98%)	75 (76%)	17 (17%)	6 (6%)	1	20

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
37	G	149/151 (99%)	124 (83%)	20 (13%)	5 (3%)	3	31
38	H	127/129 (98%)	111 (87%)	14 (11%)	2 (2%)	9	44
39	I	125/127 (98%)	92 (74%)	29 (23%)	4 (3%)	4	32
40	J	96/98 (98%)	74 (77%)	11 (12%)	11 (12%)	0	7
41	K	114/116 (98%)	89 (78%)	20 (18%)	5 (4%)	2	25
42	L	121/123 (98%)	94 (78%)	19 (16%)	8 (7%)	1	19
43	M	112/114 (98%)	91 (81%)	17 (15%)	4 (4%)	3	29
44	N	98/100 (98%)	80 (82%)	16 (16%)	2 (2%)	7	40
45	O	86/88 (98%)	71 (83%)	13 (15%)	2 (2%)	6	38
46	P	80/82 (98%)	64 (80%)	13 (16%)	3 (4%)	3	28
47	Q	78/80 (98%)	57 (73%)	15 (19%)	6 (8%)	1	16
48	R	63/65 (97%)	50 (79%)	8 (13%)	5 (8%)	1	15
49	S	77/79 (98%)	62 (80%)	12 (16%)	3 (4%)	3	28
50	T	83/85 (98%)	79 (95%)	2 (2%)	2 (2%)	6	37
51	U	63/65 (97%)	39 (62%)	19 (30%)	5 (8%)	1	15
52	03	130/223 (58%)	112 (86%)	15 (12%)	3 (2%)	6	38
59	Z	390/392 (100%)	330 (85%)	53 (14%)	7 (2%)	8	42
All	All	6366/6563 (97%)	5260 (83%)	911 (14%)	195 (3%)	7	32

All (195) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	04	121	ALA
1	04	233	GLY
2	05	170	VAL
3	06	83	VAL
4	07	175	PRO
5	08	45	ALA
5	08	46	ASP
6	09	9	VAL
6	09	12	LEU
7	10	113	PHE
9	12	43	GLU
9	12	81	ILE
10	13	35	VAL
10	13	92	GLU

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Mol	Chain	Res	Type
11	14	85	VAL
12	15	58	LYS
14	17	34	HIS
17	20	54	VAL
18	21	63	GLY
26	29	65	ASN
31	34	37	GLN
32	B	19	THR
34	D	29	THR
34	D	191	SER
35	E	89	THR
35	E	93	VAL
35	E	122	VAL
36	F	53	LYS
36	F	99	ALA
38	H	47	ASP
39	I	57	VAL
39	I	90	ASP
39	I	91	GLU
40	J	34	ALA
40	J	92	LEU
41	K	125	LYS
42	L	43	LYS
42	L	101	LEU
43	M	7	ASN
43	M	65	GLU
44	N	3	GLN
45	O	46	LYS
46	P	79	ASN
47	Q	17	GLU
47	Q	49	ASN
47	Q	80	LYS
48	R	48	ALA
48	R	71	ASP
59	Z	295	PRO
59	Z	345	GLU
1	04	205	GLY
1	04	240	GLY
2	05	149	ASN
2	05	169	ARG
4	07	20	ASN
5	08	118	ALA

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Mol	Chain	Res	Type
7	10	23	LEU
7	10	108	VAL
7	10	126	LEU
8	11	24	GLY
10	13	73	ASP
11	14	34	GLY
11	14	65	GLY
11	14	86	GLU
12	15	69	PRO
18	21	64	ALA
19	22	38	ALA
20	23	6	ARG
20	23	81	ARG
20	23	98	ASN
26	29	4	ASP
26	29	52	ALA
32	B	73	ARG
32	B	153	MET
34	D	23	GLY
34	D	28	ASP
34	D	120	LYS
34	D	146	GLU
35	E	23	THR
36	F	54	LEU
37	G	4	ARG
37	G	18	GLY
38	H	51	GLU
40	J	38	GLY
40	J	89	ARG
41	K	13	LYS
42	L	23	LEU
42	L	75	GLU
43	M	6	ILE
43	M	14	ALA
44	N	37	ASP
46	P	24	SER
48	R	19	GLU
49	S	5	LYS
49	S	42	ASN
49	S	48	ILE
50	T	68	LYS
50	T	76	ALA

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Mol	Chain	Res	Type
51	U	9	GLU
51	U	34	ARG
52	03	55	SER
59	Z	3	GLU
59	Z	264	LEU
59	Z	334	THR
7	10	93	ALA
8	11	13	ALA
8	11	14	ALA
10	13	98	ARG
19	22	52	GLU
22	25	74	LYS
27	30	25	THR
30	33	31	ILE
34	D	47	LEU
35	E	11	GLN
35	E	25	LYS
36	F	12	PRO
36	F	40	GLU
37	G	149	ALA
39	I	102	PHE
40	J	43	PRO
40	J	58	ASN
40	J	91	ASP
40	J	93	ALA
42	L	35	ARG
42	L	46	SER
47	Q	56	ASP
47	Q	79	GLU
48	R	46	THR
3	06	9	GLN
8	11	4	VAL
11	14	15	ALA
11	14	87	GLY
32	B	82	ALA
32	B	124	THR
32	B	166	ASP
32	B	212	TYR
32	B	213	LEU
35	E	90	GLY
35	E	121	ASN
37	G	78	ARG

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Mol	Chain	Res	Type
37	G	129	ASN
40	J	42	LEU
40	J	57	VAL
45	O	13	GLU
48	R	20	ILE
51	U	14	ALA
52	03	52	ALA
59	Z	128	PRO
2	05	17	GLU
4	07	174	PHE
7	10	27	VAL
7	10	80	THR
7	10	118	ILE
7	10	119	PRO
11	14	29	LYS
12	15	6	ARG
14	17	116	GLN
19	22	3	ARG
22	25	9	GLY
30	33	62	PRO
34	D	183	ARG
35	E	77	ASN
35	E	78	GLY
41	K	51	PHE
41	K	92	ARG
46	P	8	ARG
47	Q	8	GLN
51	U	12	ASP
59	Z	8	THR
1	04	122	ALA
20	23	89	GLY
23	26	25	LYS
36	F	56	LYS
42	L	90	PRO
51	U	66	ARG
52	03	27	ILE
8	11	58	ILE
13	16	109	PRO
32	B	206	ILE
41	K	73	VAL
1	04	232	GLY
3	06	129	PRO

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Mol	Chain	Res	Type
10	13	27	GLY
10	13	120	PRO
1	04	158	GLY
8	11	22	PRO
10	13	72	PRO
10	13	93	GLN
14	17	101	GLY
42	L	27	PRO
2	05	98	VAL
7	10	130	PRO
25	28	50	VAL
30	33	6	VAL
40	J	41	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	
1	04	216/216 (100%)	211 (98%)	5 (2%)	50	71
2	05	164/164 (100%)	163 (99%)	1 (1%)	86	91
3	06	165/165 (100%)	163 (99%)	2 (1%)	71	83
4	07	148/148 (100%)	145 (98%)	3 (2%)	55	74
5	08	137/137 (100%)	137 (100%)	0	100	100
6	09	114/114 (100%)	113 (99%)	1 (1%)	78	87
7	10	100/100 (100%)	95 (95%)	5 (5%)	24	53
8	11	109/109 (100%)	108 (99%)	1 (1%)	78	87
9	12	116/116 (100%)	116 (100%)	0	100	100
10	13	103/103 (100%)	101 (98%)	2 (2%)	57	75
11	14	102/102 (100%)	102 (100%)	0	100	100
12	15	109/109 (100%)	107 (98%)	2 (2%)	59	77
13	16	100/100 (100%)	98 (98%)	2 (2%)	55	74
14	17	86/86 (100%)	85 (99%)	1 (1%)	71	83

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
15	18	99/99 (100%)	99 (100%)	0	100	100
16	19	89/89 (100%)	87 (98%)	2 (2%)	52	71
17	20	84/84 (100%)	84 (100%)	0	100	100
18	21	93/93 (100%)	91 (98%)	2 (2%)	52	71
19	22	80/80 (100%)	78 (98%)	2 (2%)	47	69
20	23	83/83 (100%)	81 (98%)	2 (2%)	49	69
21	24	78/78 (100%)	77 (99%)	1 (1%)	69	82
22	25	57/57 (100%)	56 (98%)	1 (2%)	59	77
23	26	67/67 (100%)	67 (100%)	0	100	100
24	27	55/55 (100%)	55 (100%)	0	100	100
25	28	48/48 (100%)	47 (98%)	1 (2%)	53	73
26	29	59/59 (100%)	59 (100%)	0	100	100
27	30	47/47 (100%)	46 (98%)	1 (2%)	53	73
28	31	45/45 (100%)	45 (100%)	0	100	100
29	32	38/38 (100%)	38 (100%)	0	100	100
30	33	51/51 (100%)	50 (98%)	1 (2%)	55	74
31	34	34/34 (100%)	34 (100%)	0	100	100
32	B	180/180 (100%)	170 (94%)	10 (6%)	21	51
33	C	170/170 (100%)	170 (100%)	0	100	100
34	D	172/172 (100%)	166 (96%)	6 (4%)	36	62
35	E	119/119 (100%)	115 (97%)	4 (3%)	37	62
36	F	87/87 (100%)	87 (100%)	0	100	100
37	G	124/124 (100%)	123 (99%)	1 (1%)	81	89
38	H	104/104 (100%)	104 (100%)	0	100	100
39	I	105/105 (100%)	103 (98%)	2 (2%)	57	75
40	J	86/86 (100%)	84 (98%)	2 (2%)	50	71
41	K	89/89 (100%)	85 (96%)	4 (4%)	27	56
42	L	103/103 (100%)	100 (97%)	3 (3%)	42	65
43	M	92/92 (100%)	89 (97%)	3 (3%)	38	63
44	N	83/83 (100%)	83 (100%)	0	100	100
45	O	76/76 (100%)	76 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
46	P	65/65 (100%)	65 (100%)	0	100	100
47	Q	74/74 (100%)	73 (99%)	1 (1%)	67	81
48	R	56/56 (100%)	52 (93%)	4 (7%)	14	44
49	S	70/70 (100%)	70 (100%)	0	100	100
50	T	65/65 (100%)	64 (98%)	1 (2%)	65	80
51	U	55/55 (100%)	53 (96%)	2 (4%)	35	61
52	03	110/174 (63%)	105 (96%)	5 (4%)	27	56
59	Z	324/325 (100%)	315 (97%)	9 (3%)	43	66
All	All	5285/5350 (99%)	5190 (98%)	95 (2%)	61	77

All (95) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	04	36	ASN
1	04	85	ASN
1	04	176	ARG
1	04	212	TRP
1	04	257	ARG
2	05	33	ARG
3	06	19	PHE
3	06	69	ARG
4	07	3	LEU
4	07	45	ASP
4	07	175	PRO
6	09	119	ASN
7	10	4	ASN
7	10	74	ASP
7	10	94	ARG
7	10	117	LEU
7	10	118	ILE
8	11	67	THR
10	13	49	ARG
10	13	90	ASN
12	15	70	ASP
12	15	84	LYS
13	16	12	ARG
13	16	114	GLU
14	17	78	VAL
16	19	54	ARG

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Mol	Chain	Res	Type
16	19	94	LEU
18	21	57	ASN
18	21	77	ASP
19	22	37	ASP
19	22	59	ASN
20	23	39	ASN
20	23	99	SER
21	24	87	GLN
22	25	10	ARG
25	28	15	ARG
27	30	31	LYS
30	33	25	HIS
32	B	15	PHE
32	B	19	THR
32	B	21	TYR
32	B	23	ASN
32	B	35	ASN
32	B	111	LYS
32	B	116	LEU
32	B	176	ASN
32	B	185	ILE
32	B	202	ASN
34	D	28	ASP
34	D	57	LYS
34	D	80	ARG
34	D	170	LEU
34	D	182	LYS
34	D	202	LEU
35	E	18	ASN
35	E	132	PRO
35	E	156	ARG
35	E	163	ILE
37	G	128	GLU
39	I	44	ARG
39	I	60	LEU
40	J	16	ARG
40	J	75	ASP
41	K	12	ARG
41	K	30	ILE
41	K	117	HIS
41	K	118	ASN
42	L	2	THR

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Mol	Chain	Res	Type
42	L	4	ASN
42	L	28	GLN
43	M	7	ASN
43	M	47	LEU
43	M	97	ARG
47	Q	69	THR
48	R	11	ARG
48	R	21	ASP
48	R	56	ARG
48	R	70	THR
50	T	26	MET
51	U	28	LEU
51	U	65	ARG
52	03	24	ASN
52	03	30	LEU
52	03	162	ARG
52	03	177	LYS
52	03	216	THR
59	Z	91	MET
59	Z	237	LYS
59	Z	266	ASP
59	Z	273	ASN
59	Z	288	ARG
59	Z	295	PRO
59	Z	334	THR
59	Z	349	MET
59	Z	358	MET

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (97) such sidechains are listed below:

Mol	Chain	Res	Type
1	04	20	ASN
1	04	36	ASN
1	04	44	ASN
1	04	45	ASN
1	04	85	ASN
1	04	127	ASN
1	04	259	ASN
2	05	32	ASN
2	05	49	GLN
2	05	130	GLN
2	05	150	GLN

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Mol	Chain	Res	Type
2	05	164	GLN
3	06	24	ASN
3	06	94	GLN
3	06	156	ASN
3	06	165	HIS
5	08	21	GLN
5	08	29	ASN
5	08	63	GLN
5	08	138	GLN
6	09	28	ASN
6	09	33	GLN
6	09	119	ASN
6	09	135	HIS
7	10	103	ASN
8	11	11	GLN
8	11	33	ASN
9	12	40	HIS
9	12	86	GLN
10	13	88	ASN
12	15	13	HIS
13	16	18	GLN
14	17	19	GLN
15	18	6	GLN
15	18	14	GLN
15	18	65	ASN
16	19	36	GLN
16	19	51	GLN
16	19	55	GLN
16	19	80	ASN
17	20	18	GLN
18	21	7	HIS
18	21	57	ASN
20	23	39	ASN
20	23	73	ASN
21	24	51	GLN
21	24	87	GLN
23	26	16	ASN
23	26	31	ASN
24	27	39	GLN
26	29	61	ASN
32	B	23	ASN
32	B	35	ASN

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Mol	Chain	Res	Type
32	B	121	GLN
32	B	176	ASN
32	B	177	ASN
32	B	202	ASN
33	C	122	GLN
33	C	175	HIS
33	C	184	ASN
34	D	35	GLN
34	D	88	ASN
34	D	125	ASN
34	D	130	ASN
35	E	18	ASN
35	E	60	GLN
35	E	81	GLN
35	E	121	ASN
37	G	27	ASN
37	G	67	ASN
37	G	121	ASN
37	G	129	ASN
37	G	147	ASN
38	H	3	GLN
39	I	36	GLN
39	I	125	GLN
40	J	58	ASN
40	J	64	GLN
41	K	21	HIS
41	K	39	ASN
41	K	80	ASN
42	L	4	ASN
42	L	28	GLN
42	L	45	ASN
43	M	7	ASN
45	O	34	GLN
46	P	79	ASN
47	Q	30	HIS
48	R	51	GLN
48	R	53	GLN
49	S	13	HIS
49	S	52	ASN
50	T	20	ASN
52	03	24	ASN
59	Z	63	ASN

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Mol	Chain	Res	Type
59	Z	97	GLN
59	Z	273	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
53	A	1538/1539 (99%)	161 (10%)	7 (0%)
54	01	2902/2903 (99%)	353 (12%)	13 (0%)
55	02	119/120 (99%)	10 (8%)	2 (1%)
56	W	76/77 (98%)	8 (10%)	0
56	X	76/77 (98%)	12 (15%)	1 (1%)
57	V	18/19 (94%)	3 (16%)	0
58	Y	74/76 (97%)	14 (18%)	3 (4%)
All	All	4803/4811 (99%)	561 (11%)	26 (0%)

All (561) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
53	A	6	G
53	A	7	A
53	A	9	G
53	A	22	G
53	A	32	A
53	A	39	G
53	A	51	A
53	A	71	A
53	A	86	G
53	A	87	C
53	A	95	C
53	A	130	A
53	A	183	C
53	A	184	G
53	A	197	A
53	A	210	C
53	A	212	G
53	A	226	G
53	A	247	G
53	A	251	G
53	A	253	A
53	A	266	G
53	A	267	C

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Mol	Chain	Res	Type
53	A	281	G
53	A	289	G
53	A	306	A
53	A	308	C
53	A	316	C
53	A	328	C
53	A	345	C
53	A	352	C
53	A	367	U
53	A	372	C
53	A	411	A
53	A	413	G
53	A	414	A
53	A	422	C
53	A	423	G
53	A	424	G
53	A	429	U
53	A	439	U
53	A	467	U
53	A	468	A
53	A	484	G
53	A	485	U
53	A	486	U
53	A	497	G
53	A	518	C
53	A	531	U
53	A	532	A
53	A	533	A
53	A	547	A
53	A	561	U
53	A	572	A
53	A	573	A
53	A	575	G
53	A	576	C
53	A	577	G
53	A	607	A
53	A	633	G
53	A	642	A
53	A	653	U
53	A	665	A
53	A	688	G
53	A	703	G

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Mol	Chain	Res	Type
53	A	713	G
53	A	724	G
53	A	731	G
53	A	755	G
53	A	777	A
53	A	793	U
53	A	815	A
53	A	817	C
53	A	818	G
53	A	819	A
53	A	820	U
53	A	843	U
53	A	844	G
53	A	846	G
53	A	873	A
53	A	890	G
53	A	902	G
53	A	926	G
53	A	934	C
53	A	935	A
53	A	939	G
53	A	960	U
53	A	961	U
53	A	966	G
53	A	969	A
53	A	975	A
53	A	976	G
53	A	977	A
53	A	992	U
53	A	993	G
53	A	994	A
53	A	1004	A
53	A	1020	G
53	A	1028	C
53	A	1030	U
53	A	1031	C
53	A	1033	G
53	A	1034	G
53	A	1085	U
53	A	1094	G
53	A	1101	A
53	A	1129	C

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Mol	Chain	Res	Type
53	A	1136	C
53	A	1137	C
53	A	1138	G
53	A	1139	G
53	A	1159	U
53	A	1168	U
53	A	1183	U
53	A	1184	G
53	A	1191	A
53	A	1196	A
53	A	1197	A
53	A	1201	A
53	A	1202	U
53	A	1207	G
53	A	1213	A
53	A	1225	A
53	A	1238	A
53	A	1240	U
53	A	1241	G
53	A	1253	G
53	A	1256	A
53	A	1258	G
53	A	1260	G
53	A	1278	G
53	A	1280	A
53	A	1282	C
53	A	1286	U
53	A	1287	A
53	A	1300	G
53	A	1317	C
53	A	1323	G
53	A	1346	A
53	A	1347	G
53	A	1363	A
53	A	1364	U
53	A	1395	C
53	A	1399	C
53	A	1400	C
53	A	1419	G
53	A	1446	A
53	A	1448	C
53	A	1451	U

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Mol	Chain	Res	Type
53	A	1452	C
53	A	1492	A
53	A	1493	A
53	A	1503	A
53	A	1506	U
53	A	1517	G
53	A	1519	A
53	A	1529	G
53	A	1530	G
53	A	1533	C
53	A	1534	A
53	A	1540	U
54	01	10	A
54	01	12	U
54	01	35	G
54	01	46	G
54	01	50	U
54	01	51	G
54	01	60	G
54	01	63	A
54	01	71	A
54	01	74	A
54	01	75	G
54	01	84	A
54	01	119	A
54	01	120	U
54	01	138	U
54	01	139	U
54	01	140	C
54	01	141	G
54	01	142	A
54	01	162	U
54	01	163	C
54	01	181	A
54	01	196	A
54	01	216	A
54	01	221	A
54	01	222	A
54	01	225	C
54	01	228	C
54	01	229	C
54	01	242	G

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Mol	Chain	Res	Type
54	01	248	G
54	01	249	C
54	01	255	A
54	01	266	G
54	01	267	C
54	01	276	U
54	01	278	A
54	01	281	C
54	01	294	A
54	01	301	G
54	01	311	A
54	01	323	C
54	01	329	G
54	01	330	A
54	01	346	A
54	01	361	G
54	01	367	G
54	01	371	A
54	01	372	G
54	01	386	G
54	01	387	U
54	01	404	A
54	01	406	G
54	01	411	G
54	01	424	G
54	01	451	U
54	01	456	C
54	01	457	A
54	01	458	G
54	01	481	G
54	01	491	G
54	01	504	A
54	01	505	A
54	01	506	G
54	01	529	A
54	01	531	C
54	01	532	A
54	01	542	C
54	01	543	G
54	01	545	U
54	01	547	A
54	01	563	A

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Mol	Chain	Res	Type
54	01	573	U
54	01	575	A
54	01	588	U
54	01	603	A
54	01	616	A
54	01	627	A
54	01	637	A
54	01	646	U
54	01	654	A
54	01	670	A
54	01	686	U
54	01	687	C
54	01	717	C
54	01	730	A
54	01	747	C
54	01	752	A
54	01	753	A
54	01	764	A
54	01	776	G
54	01	782	A
54	01	784	G
54	01	785	G
54	01	805	G
54	01	812	C
54	01	819	A
54	01	822	G
54	01	827	U
54	01	828	U
54	01	830	G
54	01	845	A
54	01	846	U
54	01	847	U
54	01	858	G
54	01	860	U
54	01	878	A
54	01	885	C
54	01	886	A
54	01	887	U
54	01	896	A
54	01	910	A
54	01	932	U
54	01	941	A

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Mol	Chain	Res	Type
54	01	946	C
54	01	953	G
54	01	961	C
54	01	974	G
54	01	983	A
54	01	985	C
54	01	990	A
54	01	995	C
54	01	1012	U
54	01	1013	C
54	01	1021	A
54	01	1022	G
54	01	1026	G
54	01	1033	U
54	01	1046	A
54	01	1047	G
54	01	1054	A
54	01	1057	A
54	01	1062	G
54	01	1065	U
54	01	1066	U
54	01	1070	A
54	01	1072	C
54	01	1076	C
54	01	1079	C
54	01	1084	A
54	01	1088	A
54	01	1090	A
54	01	1104	C
54	01	1111	A
54	01	1130	U
54	01	1131	G
54	01	1132	U
54	01	1135	C
54	01	1157	G
54	01	1174	U
54	01	1176	U
54	01	1177	G
54	01	1179	G
54	01	1180	U
54	01	1211	C
54	01	1212	G

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Mol	Chain	Res	Type
54	01	1250	G
54	01	1251	C
54	01	1253	A
54	01	1256	G
54	01	1271	G
54	01	1272	A
54	01	1275	A
54	01	1301	A
54	01	1306	C
54	01	1314	C
54	01	1321	A
54	01	1329	U
54	01	1332	G
54	01	1341	G
54	01	1345	C
54	01	1365	A
54	01	1378	A
54	01	1379	U
54	01	1383	A
54	01	1395	A
54	01	1416	G
54	01	1419	A
54	01	1420	A
54	01	1461	C
54	01	1482	G
54	01	1490	A
54	01	1493	C
54	01	1498	C
54	01	1504	A
54	01	1515	A
54	01	1524	G
54	01	1533	C
54	01	1535	A
54	01	1536	C
54	01	1555	G
54	01	1560	G
54	01	1569	A
54	01	1584	U
54	01	1585	C
54	01	1608	A
54	01	1616	A
54	01	1647	U

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Mol	Chain	Res	Type
54	01	1648	U
54	01	1674	G
54	01	1699	G
54	01	1715	G
54	01	1729	U
54	01	1730	C
54	01	1732	C
54	01	1738	G
54	01	1758	U
54	01	1764	C
54	01	1773	A
54	01	1780	A
54	01	1800	C
54	01	1801	A
54	01	1802	A
54	01	1808	A
54	01	1816	C
54	01	1821	A
54	01	1833	C
54	01	1871	A
54	01	1901	A
54	01	1906	G
54	01	1913	A
54	01	1929	G
54	01	1930	G
54	01	1931	U
54	01	1937	A
54	01	1938	A
54	01	1940	U
54	01	1941	C
54	01	1944	U
54	01	1955	U
54	01	1962	C
54	01	1967	C
54	01	1970	A
54	01	1972	G
54	01	1991	U
54	01	1993	U
54	01	1997	C
54	01	2022	U
54	01	2023	C
54	01	2031	A

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Mol	Chain	Res	Type
54	01	2036	C
54	01	2043	C
54	01	2049	G
54	01	2052	A
54	01	2055	C
54	01	2056	G
54	01	2060	A
54	01	2061	G
54	01	2062	A
54	01	2069	G
54	01	2072	C
54	01	2095	A
54	01	2096	C
54	01	2110	G
54	01	2111	U
54	01	2112	G
54	01	2113	U
54	01	2118	U
54	01	2119	A
54	01	2120	G
54	01	2127	G
54	01	2131	U
54	01	2132	U
54	01	2133	G
54	01	2147	A
54	01	2162	G
54	01	2168	G
54	01	2172	U
54	01	2173	A
54	01	2192	U
54	01	2198	A
54	01	2203	U
54	01	2204	G
54	01	2211	A
54	01	2213	U
54	01	2225	A
54	01	2239	G
54	01	2250	G
54	01	2259	U
54	01	2278	A
54	01	2283	C
54	01	2287	A

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Mol	Chain	Res	Type
54	01	2297	A
54	01	2305	U
54	01	2309	A
54	01	2325	G
54	01	2327	A
54	01	2334	U
54	01	2335	A
54	01	2336	A
54	01	2337	G
54	01	2350	C
54	01	2357	G
54	01	2383	G
54	01	2385	C
54	01	2392	A
54	01	2402	U
54	01	2406	A
54	01	2407	A
54	01	2423	U
54	01	2424	C
54	01	2427	C
54	01	2429	G
54	01	2430	A
54	01	2431	U
54	01	2435	A
54	01	2441	U
54	01	2448	A
54	01	2476	A
54	01	2484	G
54	01	2498	C
54	01	2502	G
54	01	2503	A
54	01	2504	U
54	01	2505	G
54	01	2518	A
54	01	2547	A
54	01	2554	U
54	01	2567	G
54	01	2602	A
54	01	2609	U
54	01	2613	U
54	01	2614	A
54	01	2629	U

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Mol	Chain	Res	Type
54	01	2646	C
54	01	2655	G
54	01	2656	U
54	01	2682	A
54	01	2689	U
54	01	2690	U
54	01	2714	G
54	01	2726	A
54	01	2744	G
54	01	2748	A
54	01	2764	A
54	01	2765	A
54	01	2778	A
54	01	2779	U
54	01	2791	G
54	01	2792	A
54	01	2794	C
54	01	2797	U
54	01	2799	A
54	01	2800	A
54	01	2801	G
54	01	2809	A
54	01	2818	U
54	01	2820	A
54	01	2821	A
54	01	2833	U
54	01	2867	G
54	01	2868	A
54	01	2880	C
55	02	4	C
55	02	12	C
55	02	13	G
55	02	24	G
55	02	35	C
55	02	44	G
55	02	67	G
55	02	89	U
55	02	108	A
55	02	109	A
56	X	8	U
56	X	9	G
56	X	14	A

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Mol	Chain	Res	Type
56	X	19	G
56	X	21	A
56	X	34	C
56	X	38	A
56	X	61	C
56	X	64	G
56	X	69	C
56	X	70	G
56	X	71	C
57	V	12	A
57	V	13	A
57	V	23	A
56	W	9	G
56	W	18	G
56	W	19	G
56	W	20	U
56	W	47	U
56	W	48	C
56	W	61	C
56	W	76	A
58	Y	4	U
58	Y	13	C
58	Y	17	U
58	Y	19	G
58	Y	20	U
58	Y	23	A
58	Y	26	A
58	Y	46	G
58	Y	47	U
58	Y	48	C
58	Y	61	C
58	Y	63	U
58	Y	70	C
58	Y	73	A

All (26) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
53	A	70	U
53	A	280	C
53	A	438	U
53	A	1182	G

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Mol	Chain	Res	Type
53	A	1190	G
53	A	1201	A
53	A	1399	C
54	01	490	C
54	01	752	A
54	01	859	G
54	01	1020	A
54	01	1130	U
54	01	1378	A
54	01	1930	G
54	01	1940	U
54	01	2286	G
54	01	2296	U
54	01	2326	C
54	01	2391	G
54	01	2655	G
55	02	66	A
55	02	88	C
56	X	69	C
58	Y	17	U
58	Y	19	G
58	Y	69	A

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	$\# Z > 2$
58	U8U	Y	34	58	19,24,25	1.41	3 (15%)	23,34,37	1.20	2 (8%)

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
58	U8U	Y	34	58	-	3/9/28/29	0/2/2/2

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
58	Y	34	U8U	C6-N1	4.17	1.45	1.38
58	Y	34	U8U	C4-C5	2.43	1.50	1.45
58	Y	34	U8U	C2-N3	2.29	1.42	1.37

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
58	Y	34	U8U	C5-C6-N1	2.66	126.48	122.91
58	Y	34	U8U	C1'-N1-C6	-2.17	117.52	121.12

There are no chirality outliers.

All (3) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
58	Y	34	U8U	N-C-C5-C4
58	Y	34	U8U	C2'-C1'-N1-C2
58	Y	34	U8U	N-C-C5-C6

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
58	Y	34	U8U	1	0

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

3 ligands are 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
62	GCP	Z	401	-	27,34,34	1.98	7 (25%)	34,54,54	3.98	17 (50%)
60	FME	W	101	-	8,9,10	0.85	0	7,9,11	1.17	1 (14%)
61	LYS	Y	101	58	7,8,9	0.70	0	3,8,10	0.19	0

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
62	GCP	Z	401	-	-	8/15/38/38	0/3/3/3
60	FME	W	101	-	-	4/7/9/11	-
61	LYS	Y	101	58	-	3/6/7/9	-

All (7) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
62	Z	401	GCP	PB-O3A	-4.91	1.52	1.58
62	Z	401	GCP	O4'-C1'	4.66	1.47	1.41
62	Z	401	GCP	C2'-C1'	3.31	1.58	1.53
62	Z	401	GCP	C5-C6	3.30	1.47	1.41
62	Z	401	GCP	C6-N1	2.85	1.38	1.33
62	Z	401	GCP	PB-O2B	-2.11	1.51	1.56
62	Z	401	GCP	C2-N1	2.09	1.39	1.35

All (18) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
62	Z	401	GCP	C1'-N9-C4	14.24	151.65	126.64
62	Z	401	GCP	C5-C6-N1	-8.82	111.37	123.43
62	Z	401	GCP	O1G-PG-C3B	-7.57	94.92	111.24
62	Z	401	GCP	C2-N1-C6	6.64	126.48	115.93
62	Z	401	GCP	O4'-C1'-C2'	-4.55	100.28	106.93
62	Z	401	GCP	O5'-PA-O1A	-4.03	93.31	109.07
62	Z	401	GCP	C2-N3-C4	-4.01	110.78	115.36
62	Z	401	GCP	C4-C5-C6	-3.75	117.21	120.80
62	Z	401	GCP	PB-O3A-PA	3.74	144.41	132.56

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
62	Z	401	GCP	O2B-PB-O1B	3.71	122.45	110.07
62	Z	401	GCP	O3'-C3'-C4'	-3.36	101.32	111.05
62	Z	401	GCP	O2G-PG-C3B	2.98	113.63	106.40
62	Z	401	GCP	O3G-PG-O1G	2.97	120.23	112.39
62	Z	401	GCP	C4-C5-N7	2.76	112.27	109.40
62	Z	401	GCP	O4'-C4'-C5'	2.26	116.81	109.37
62	Z	401	GCP	O2A-PA-O1A	2.25	123.36	112.24
60	W	101	FME	O-C-CA	-2.13	119.21	124.78
62	Z	401	GCP	N3-C2-N1	-2.06	124.47	127.22

There are no chirality outliers.

All (15) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
60	W	101	FME	O1-CN-N-CA
60	W	101	FME	C-CA-CB-CG
60	W	101	FME	O-C-CA-CB
61	Y	101	LYS	N-CA-CB-CG
61	Y	101	LYS	C-CA-CB-CG
62	Z	401	GCP	PB-C3B-PG-O1G
62	Z	401	GCP	PB-C3B-PG-O2G
62	Z	401	GCP	PG-C3B-PB-O1B
62	Z	401	GCP	C5'-O5'-PA-O3A
61	Y	101	LYS	CE-CD-CG-CB
62	Z	401	GCP	O4'-C4'-C5'-O5'
62	Z	401	GCP	C5'-O5'-PA-O1A
62	Z	401	GCP	C5'-O5'-PA-O2A
62	Z	401	GCP	PB-C3B-PG-O3G
60	W	101	FME	N-CA-CB-CG

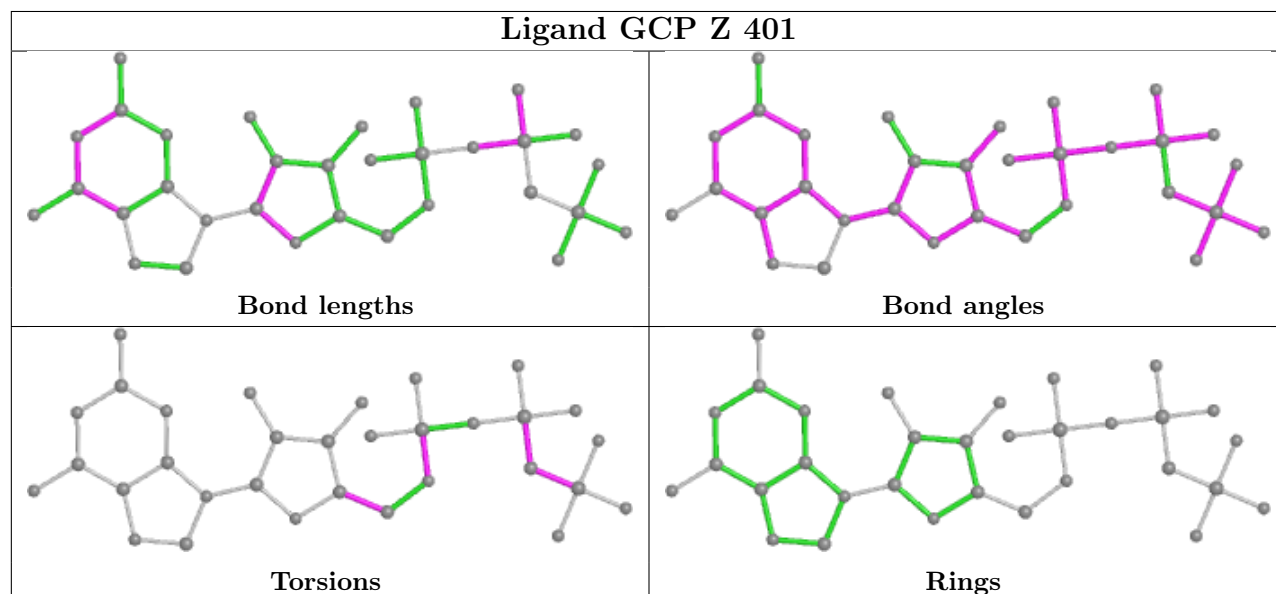
There are no ring outliers.

2 monomers are involved in 7 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
62	Z	401	GCP	3	0
61	Y	101	LYS	4	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier.

Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Map visualisation

This section contains visualisations of the EMDB entry EMD-8619. These allow visual inspection of the internal detail of the map and identification of artifacts.

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

6.1 Orthogonal projections

This section was not generated.

6.2 Central slices

This section was not generated.

6.3 Largest variance slices

This section was not generated.

6.4 Orthogonal surface views

This section was not generated.

6.5 Mask visualisation

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

7 Map analysis ⓘ

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

7.1 Map-value distribution ⓘ

This section was not generated.

7.2 Volume estimate versus contour level ⓘ

This section was not generated.

7.3 Rotationally averaged power spectrum ⓘ

This section was not generated. The rotationally averaged power spectrum had issues being displayed.

8 Fourier-Shell correlation ⓘ

This section was not generated. No FSC curve or half-maps provided.

9 Map-model fit

This section was not generated.