



Full wwPDB EM Validation Report ⓘ

Nov 3, 2022 – 01:43 AM EDT

PDB ID : 5UYK
EMDB ID : EMD-8615
Title : 70S ribosome bound with cognate ternary complex not base-paired to A site codon (Structure I)
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

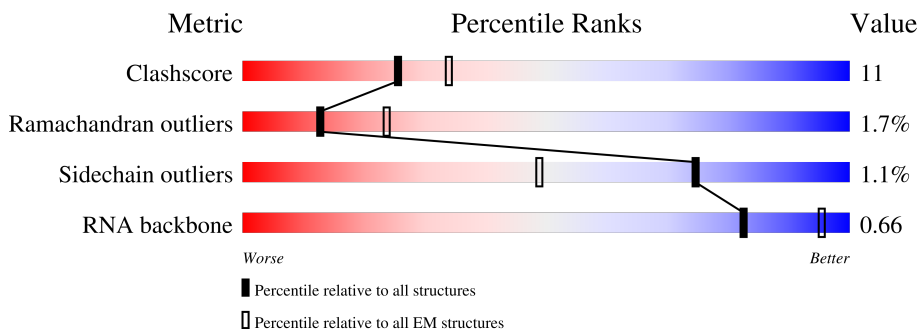
1 Overall quality at a glance

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	64% 34% .
2	05	209	69% 30%
3	06	201	73% 26% .
4	07	177	66% 32% .
5	08	176	63% 36% .
6	09	149	59% 40% .
7	10	131	47% 47% 5%


























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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	



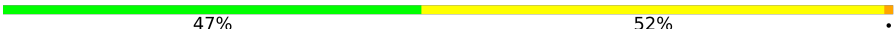
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Mol	Chain	Length	Quality of chain
33	C	206	
34	D	205	
35	E	157	
36	F	100	
37	G	151	
38	H	129	
39	I	127	
40	J	98	
41	K	116	
42	L	123	
43	M	114	
44	N	100	
45	O	88	
46	P	82	
47	Q	80	
48	R	65	
49	S	79	
50	T	85	
51	U	65	
52	03	223	
53	A	1539	
54	01	2903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

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Mol	Chain	Length	Quality of chain
57	V	20	 75% 25%
58	Y	76	 57% 34% 9%
59	Z	392	 47% 52% .

2 Entry composition

There are 60 unique types of molecules in this entry. The entry contains 154412 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	223	Total	C	N	O	S	0	0
			1662	1039	302	315	6		

- 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	20	Total	C	N	O	P	0	0
			432	195	86	132	19		

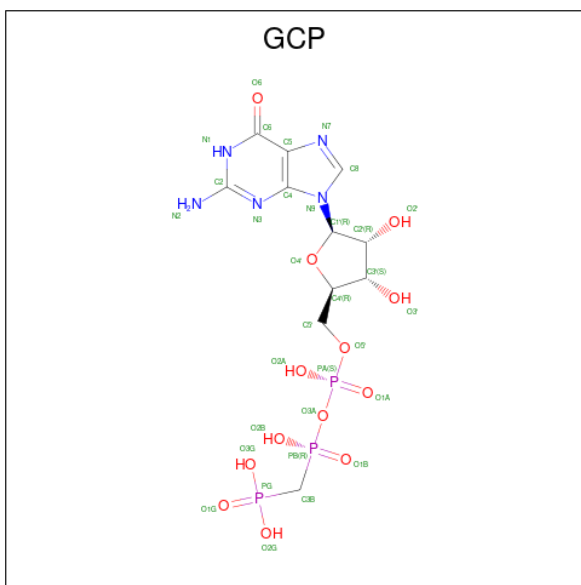
- Molecule 58 is a RNA chain called tRNAPhe.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	Y	76	Total	C	N	O	P	0	0
			1619	723	290	531	75		

- 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 PHOSPHOMETHYLPHOSPHONIC ACID GUANYLATE ESTER (three-letter code: GCP) (formula: C₁₁H₁₈N₅O₁₃P₃).



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

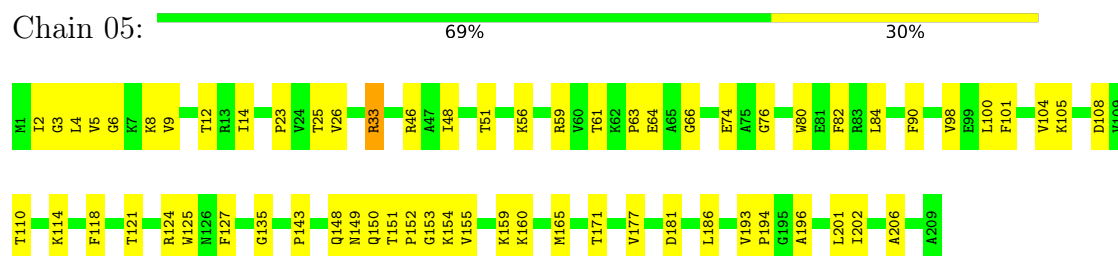
3 Residue-property plots

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.

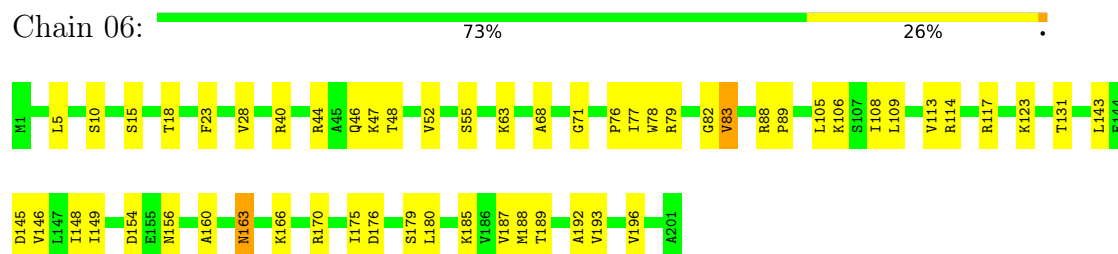
- Molecule 1: 50S ribosomal protein L2



- Molecule 2: 50S ribosomal protein L3

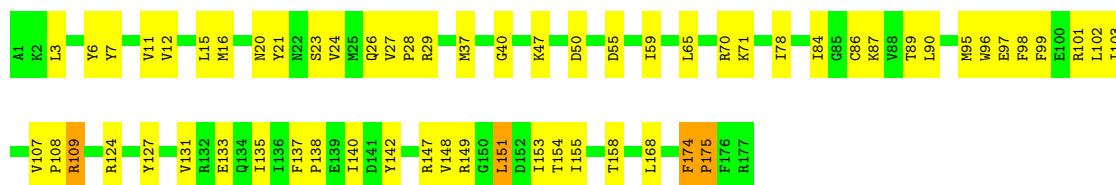


- Molecule 3: 50S ribosomal protein L4



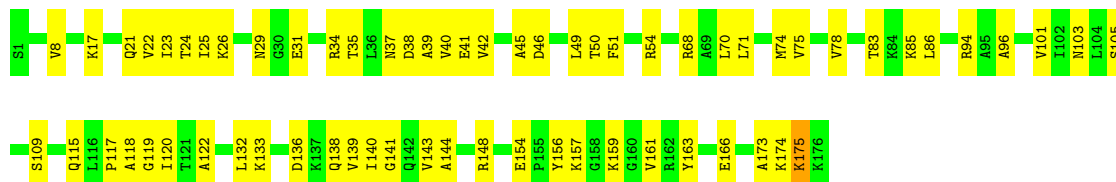
- Molecule 4: 50S ribosomal protein L5





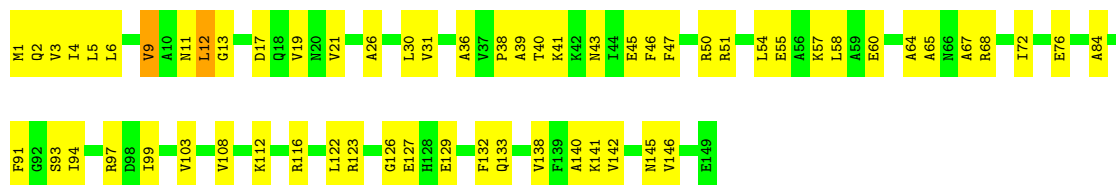
- Molecule 5: 50S ribosomal protein L6

Chain 08: 63% 36% .



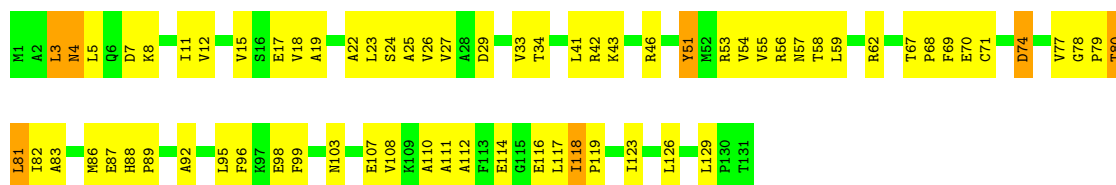
- Molecule 6: 50S ribosomal protein L9

Chain 09: 59% 40% .



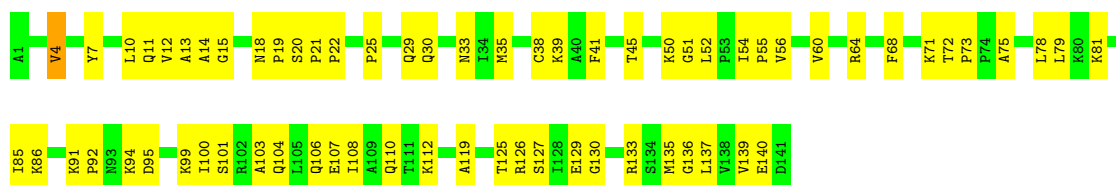
- Molecule 7: 50S ribosomal protein L10

Chain 10: 47% 47% 5% .



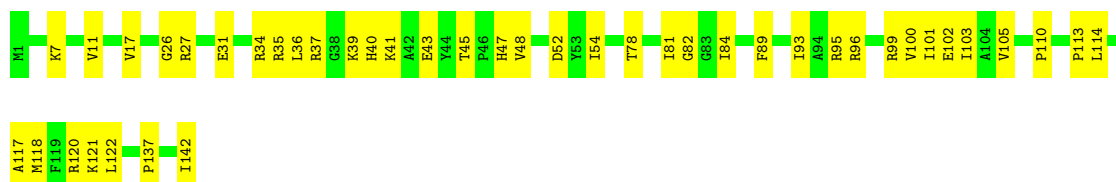
- Molecule 8: 50S ribosomal protein L11

Chain 11: 53% 46% .



- Molecule 9: 50S ribosomal protein L13

Chain 12: 70% 30% .



- Molecule 10: 50S ribosomal protein L14

Chain 13: 71% 27% .



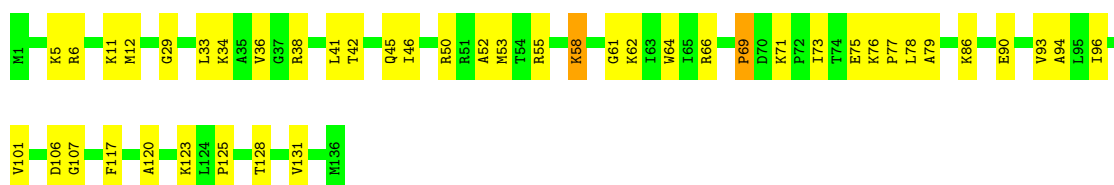
- Molecule 11: 50S ribosomal protein L15

Chain 14: 76% 23% .



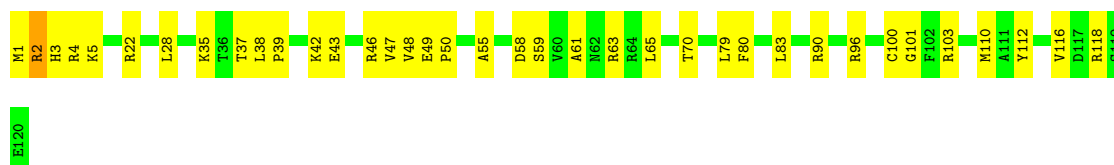
- Molecule 12: 50S ribosomal protein L16

Chain 15: 68% 31% .



- Molecule 13: 50S ribosomal protein L17

Chain 16: 69% 30% .



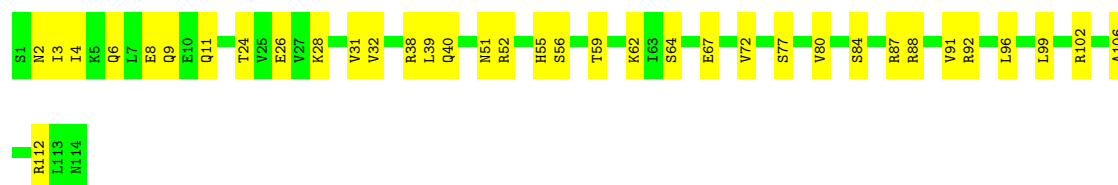
- Molecule 14: 50S ribosomal protein L18

Chain 17: 74% 26% .



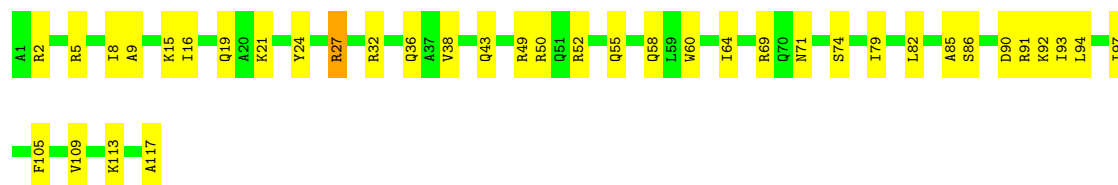
- Molecule 15: 50S ribosomal protein L19

Chain 18:  68% 32%



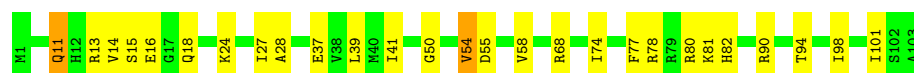
- Molecule 16: 50S ribosomal protein L20

Chain 19:  68% 32%



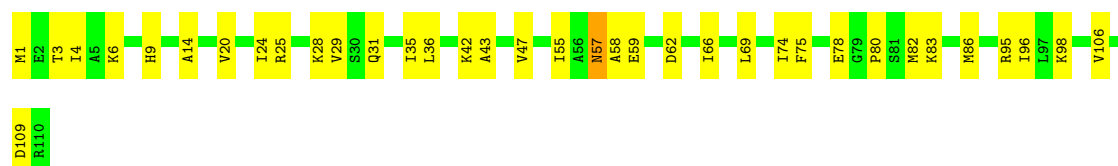
- Molecule 17: 50S ribosomal protein L21

Chain 20:  74% 24%



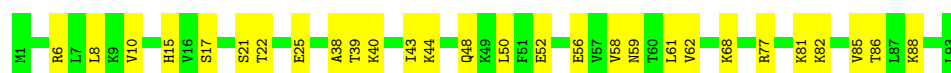
- Molecule 18: 50S ribosomal protein L22

Chain 21:  67% 32%



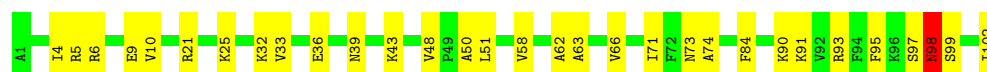
- Molecule 19: 50S ribosomal protein L23

Chain 22:  70% 30%



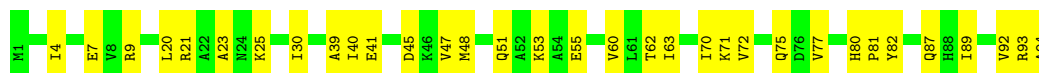
- Molecule 20: 50S ribosomal protein L24

Chain 23:  70% 29%



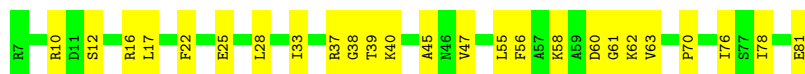
- Molecule 21: 50S ribosomal protein L25

Chain 24:  65% 35%



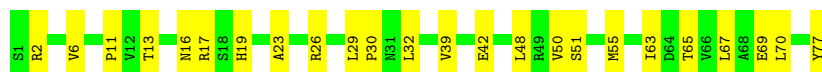
- Molecule 22: 50S ribosomal protein L27

Chain 25:  67% 33%



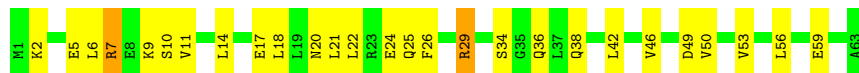
- Molecule 23: 50S ribosomal protein L28

Chain 26:  69% 31%




- Molecule 24: 50S ribosomal protein L29

Chain 27:  57% 40% .



- Molecule 25: 50S ribosomal protein L30

Chain 28:  76% 22% .



- Molecule 26: 50S ribosomal protein L31

Chain 29:  67% 33%



- Molecule 27: 50S ribosomal protein L32

Chain 30:  50% 50%




- Molecule 28: 50S ribosomal protein L33

Chain 31:  70% 30%




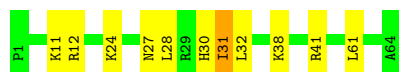
- Molecule 29: 50S ribosomal protein L34

Chain 32:  76% 24%



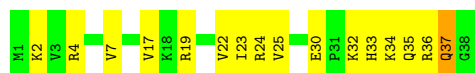
- Molecule 30: 50S ribosomal protein L35

Chain 33:  83% 16% .



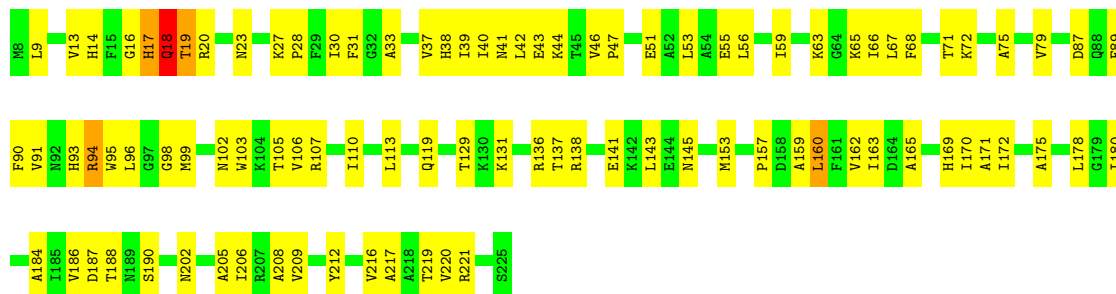
- Molecule 31: 50S ribosomal protein L36

Chain 34:  58% 39% .



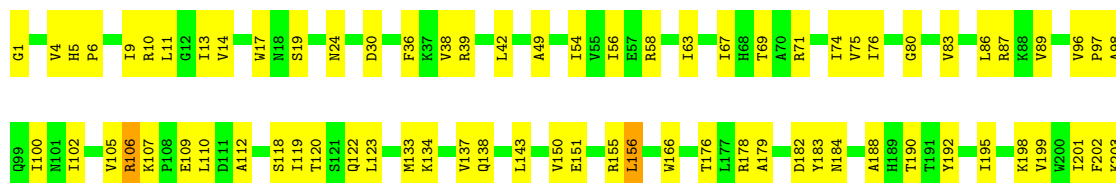
- Molecule 32: 30S ribosomal protein S2

Chain B:  57% 41% .



- Molecule 33: 30S ribosomal protein S3

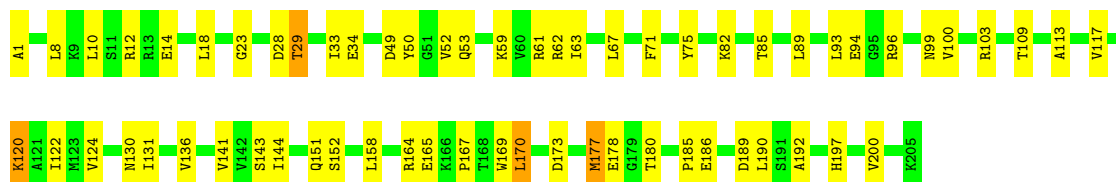
Chain C:  64% 35% .





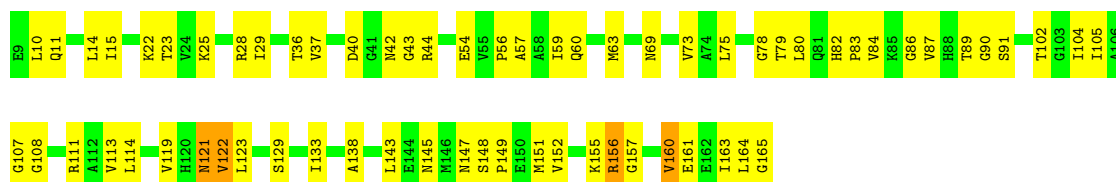
- Molecule 34: 30S ribosomal protein S4

Chain D: 70% 28%



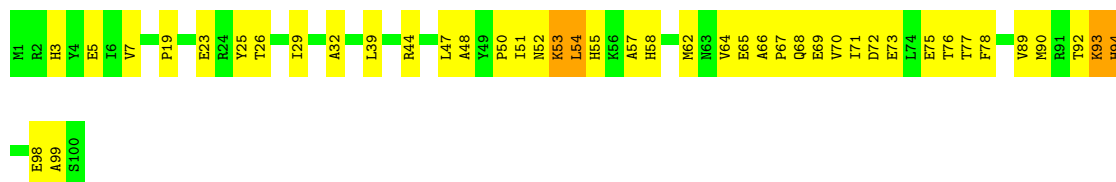
- Molecule 35: 30S ribosomal protein S5

Chain E: 59% 39%



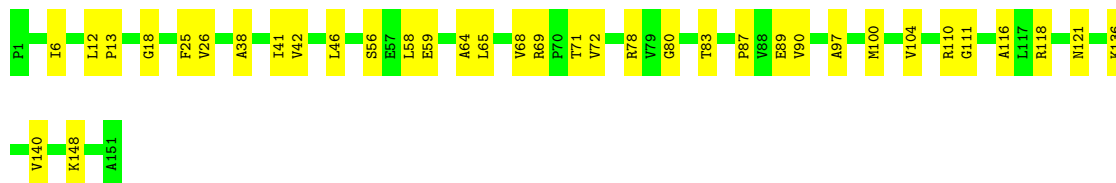
- Molecule 36: 30S ribosomal protein S6

Chain F: 57% 39%



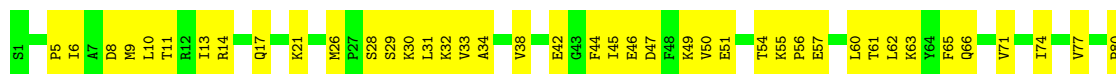
- Molecule 37: 30S ribosomal protein S7

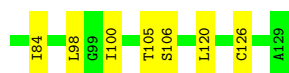
Chain G: 76% 24%



- Molecule 38: 30S ribosomal protein S8

Chain H: 63% 37%

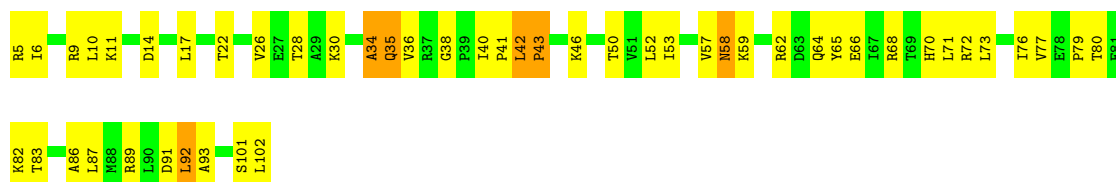




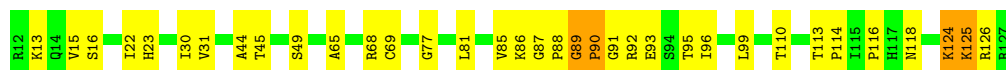
- Molecule 39: 30S ribosomal protein S9



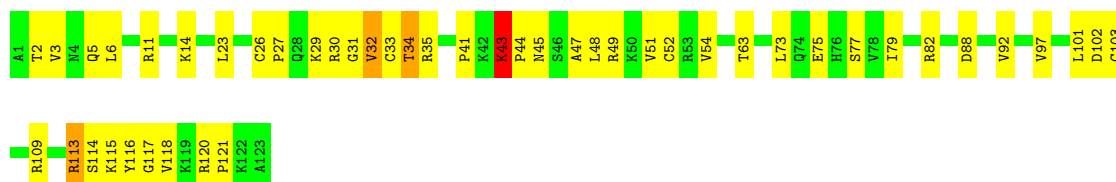
- Molecule 40: 30S ribosomal protein S10



- Molecule 41: 30S ribosomal protein S11



- Molecule 42: 30S ribosomal protein S12

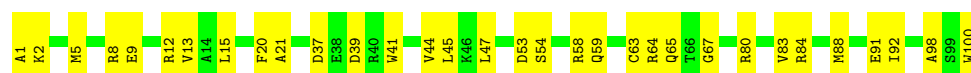


- Molecule 43: 30S ribosomal protein S13



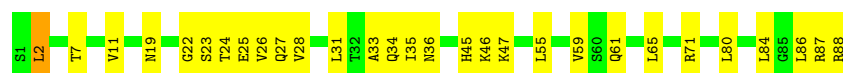
- Molecule 44: 30S ribosomal protein S14

Chain N:  68% 32%



- Molecule 45: 30S ribosomal protein S15

Chain O:  67% 32%



- Molecule 46: 30S ribosomal protein S16

Chain P:  60% 39%



- Molecule 47: 30S ribosomal protein S17

Chain Q:  59% 39%



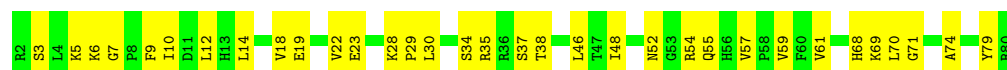
- Molecule 48: 30S ribosomal protein S18

Chain R:  71% 26%



- Molecule 49: 30S ribosomal protein S19

Chain S:  58% 42%



- Molecule 50: 30S ribosomal protein S20

Chain T:  68% 31%



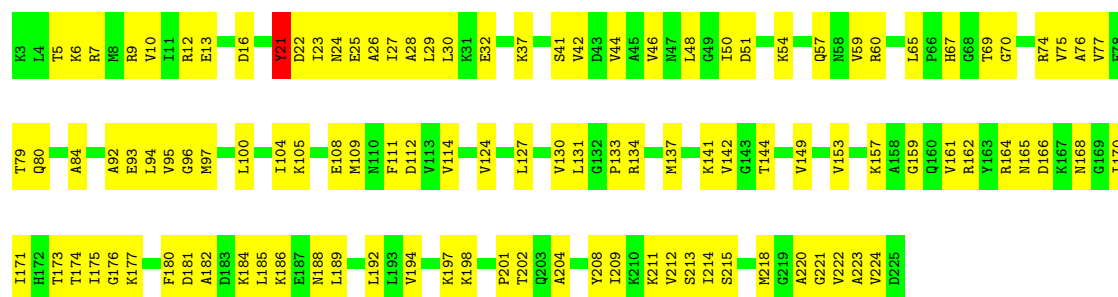
- Molecule 51: 30S ribosomal protein S21

Chain U:  48% 52%



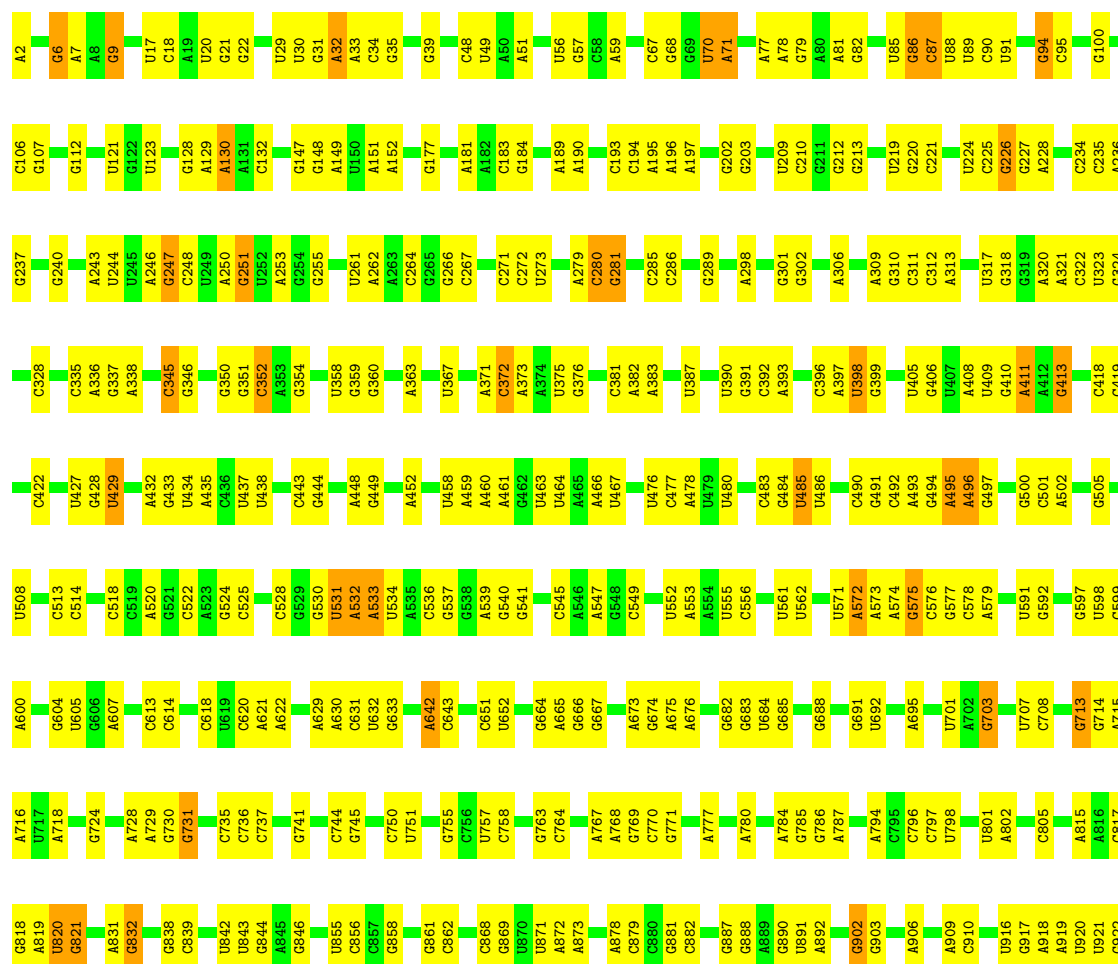
- Molecule 52: 50S ribosomal protein L1

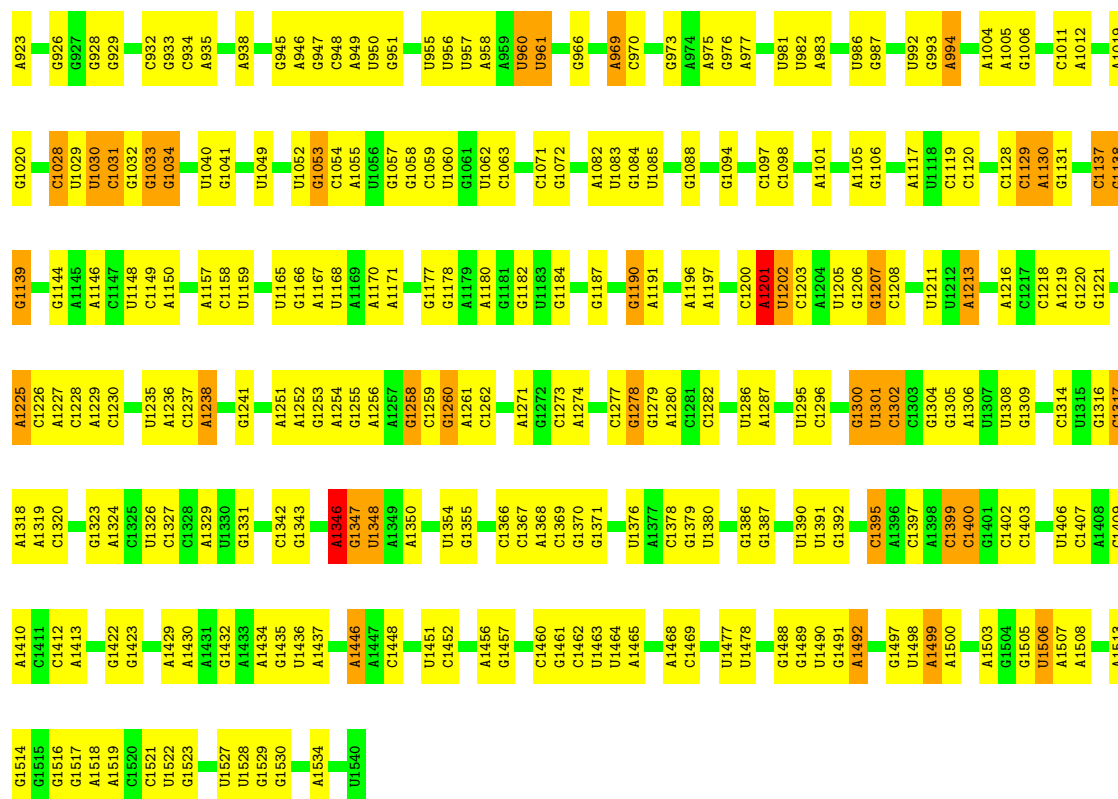
Chain 03:  50% 49%



- Molecule 53: 16S ribosomal RNA

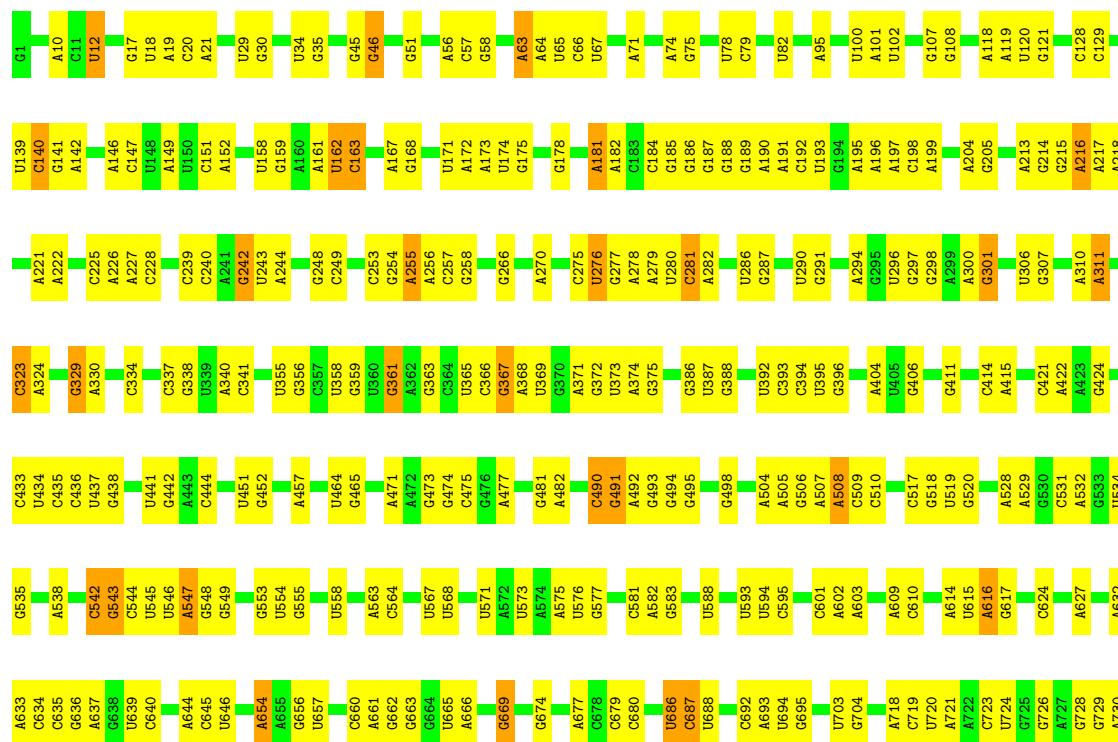
Chain A:  58% 37% 5%



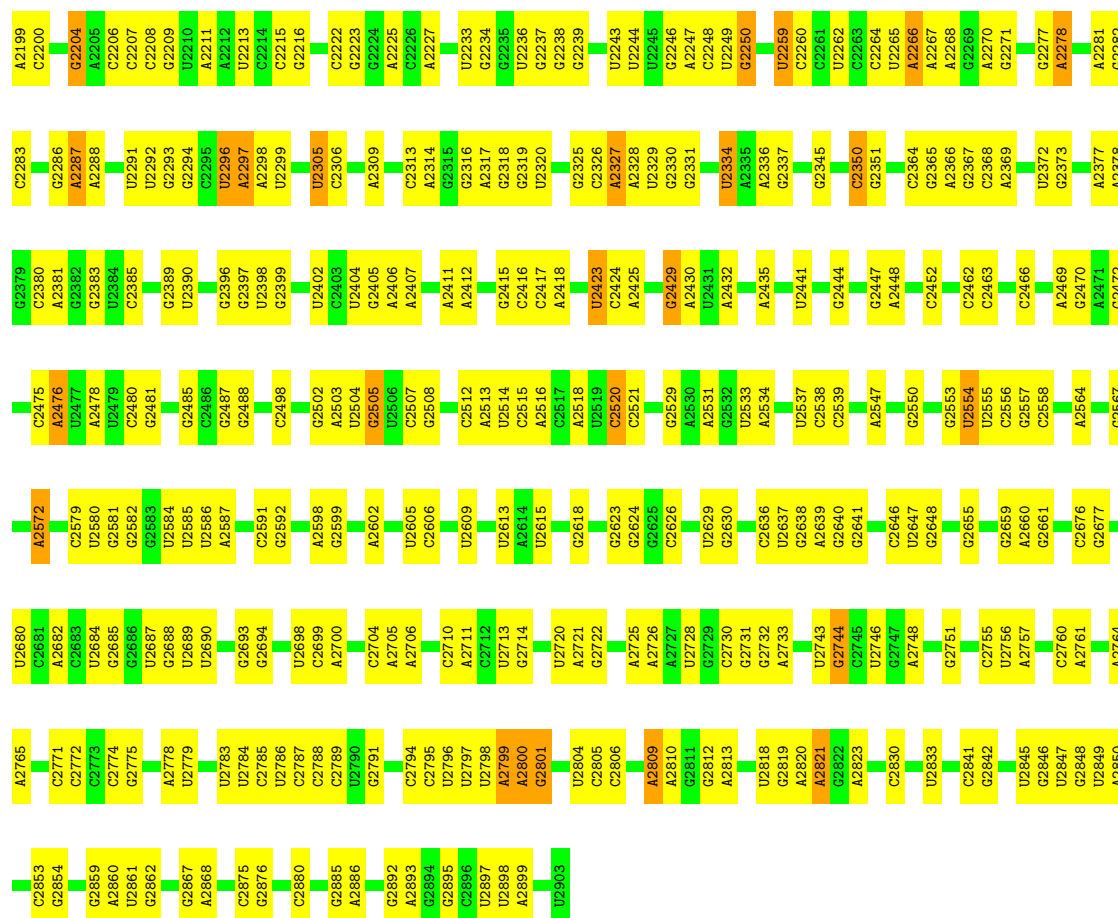


• Molecule 54: 23S ribosomal RNA

Chain 01: 57% 39%

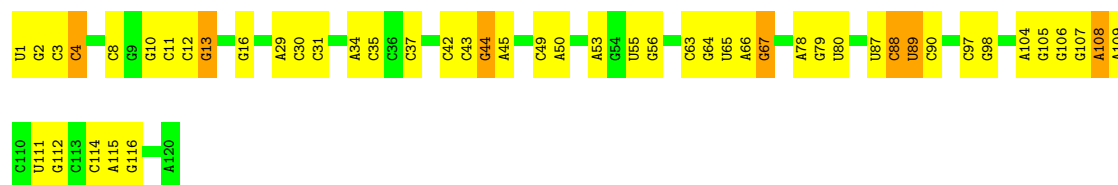


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G2138	C2066	A1970	U1856	C1761	A1665	G1555	U1442	G1332	A1213	A1103	G1002	A905	A820	C732
U2139	G2067	G1857	G1862	G1763	G1666	U1559	G1443	G1332	G1236	C1104	G1011	U906	A821	G733
G2140	U2068	C1764	A1858	C1764	A1569	U1559	G1444	U1344	G1237	C1105	G1012	U906	A826	U741
G2141	G2069	U1765	U1859	G1765	A1569	U1559	G1444	G1346	G1238	U1106	C1013	A910	U826	U742
A2142	A2070	G1766	G1860	G1766	A1569	U1559	G1444	G1347	G1246	U1107	U1019	A911	U827	U743
C2143	A2071	G1767	G1861	G1767	A1569	U1559	G1444	G1348	A1246	G1108	U1020	C915	U828	U744
G2144	C2072	A1772	G1862	A1772	A1569	U1559	G1444	C1349	A1247	G1109	A1021	C916	U829	U745
C2145	C2073	A1773	G1863	A1773	A1569	U1559	G1444	G1357	G1251	G1110	G1022	A917	U830	U746
A2146	U2074	U1775	G1864	G1775	A1569	U1559	G1444	G1358	G1252	G1111	G1023	C922	U833	G748
A2147	U2075	G1776	G1865	G1776	A1569	U1559	G1444	G1359	G1253	G1112	G1024	C923	U834	A752
G2148	A2080	A1780	G1866	A1780	A1569	U1559	G1444	G1362	A1254	G1113	A1027	A927	U839	U755
U2149	U2081	U1781	G1867	U1781	A1569	U1559	G1444	G1363	A1255	G1114	A1028	A928	U840	A756
C2150	A2082	U1782	G1868	U1782	A1569	U1559	G1444	G1364	G1256	G1115	U1033	A932	A845	A760
G2152	G2083	A1783	G1869	A1783	A1569	U1559	G1444	G1365	G1257	G1116	A1034	U933	A846	U761
U2155	U2086	A1787	G1870	A1787	A1569	U1559	G1444	G1366	G1258	G1117	A1035	U934	U847	U762
C2156	G2087	A1788	G1871	A1788	A1569	U1559	G1444	G1367	G1259	G1118	A1036	U935	U848	G763
A2158	C2091	A1789	G1872	A1789	A1569	U1559	G1444	G1368	A1264	G1119	C1044	C940	U849	A764
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C2160	G2093	A1791	G1874	A1791	A1569	U1559	G1444	G1370	A1266	G1121	C1046	C942	C854	U767
C2161	A2094	G1792	G1875	G1792	A1569	U1559	G1444	G1371	G1270	G1122	C1047	A943	U855	G768
G2162	U2095	A1793	G1876	A1793	A1569	U1559	G1444	G1372	G1271	G1123	C1048	C944	U856	G774
A2163	C2096	C1795	G1877	C1795	A1569	U1559	G1444	G1373	G1272	G1124	C1049	C945	U857	G775
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C2170	G2104	A1801	G1882	A1801	A1569	U1559	G1444	G1378	G1277	G1129	C1054	C950	U862	G782
A2171	U2105	G1802	G1883	G1802	A1569	U1559	G1444	G1379	G1278	G1130	C1055	C951	U863	A783
U2172	U2106	A1803	G1884	A1803	A1569	U1559	G1444	G1380	G1279	G1131	C1056	C952	U864	U784
C2173	G2107	U1804	G1885	U1804	A1569	U1559	G1444	G1381	G1280	G1132	C1057	C953	U865	G785
G2174	U2108	A1805	G1886	A1805	A1569	U1559	G1444	G1382	G1281	G1133	C1058	C954	U866	C795
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A2176	G2110	A1807	G1888	A1807	A1569	U1559	G1444	G1384	G1283	G1135	C1060	C956	U868	C797
C2177	U2111	G1808	G1889	G1808	A1569	U1559	G1444	G1385	G1284	G1136	C1061	C957	U869	G798
U2180	G2112	U1809	G1890	U1809	A1569	U1559	G1444	G1386	G1285	G1137	C1062	C958	U870	U799
G2181	U2113	A1810	G1891	A1810	A1569	U1559	G1444	G1387	G1286	G1138	C1063	C959	U871	A800
U2182	A2114	G1811	G1892	G1811	A1569	U1559	G1444	G1388	G1287	G1139	C1064	C960	U872	G801
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G2186	U2118	U1815	G1896	U1815	A1569	U1559	G1444	G1392	G1291	G1143	C1068	C964	U876	G806
C2187	A2119	A1816	G1897	A1816	A1569	U1559	G1444	G1393	G1292	G1144	C1069	C965	U877	U807
U2188	G2120	G1817	G1898	G1817	A1569	U1559	G1444	G1394	G1293	G1145	C1070	C966	U878	G808
U2189	U2121	A1818	G1899	A1818	A1569	U1559	G1444	G1395	G1294	G1146	C1071	C967	U879	C812
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A2191	A2054	U1820	G1901	U1820	A1569	U1559	G1444	G1397	G1296	G1148	C1073	C969	U881	C816
U2192	G2123	A1821	G1902	A1821	A1569	U1559	G1444	G1398	G1297	G1149	C1074	C970	U882	G818
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C2194	U2124	A1823	G1904	A1823	A1569	U1559	G1444	G1400	G1299	G1151	C1076	C972	U884	U895
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C2202	U2061	U1831	G1912	U1831	A1569	U1559	G1444	G1408	G1307	G1159	C1084	C980	U892	C819
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G2204	A2063	G1833	G1914	G1833	A1569	U1559	G1444	G1410	G1309	G1161	C1086	C982	U894	C821
C2205	U2064	C1834	G1915	C1834	A1569	U1559	G1444	G1411	G1310	G1162	C1087	C983	U895	C822
U2206	G2065	A1835	G1916	A1835	A1569	U1559	G1444	G1412	G1311	G1163	C1088	C984	U896	C823
C2207	U2066	G1836	G1917	G1836	A1569	U1559	G1444	G1413	G1312	G1164	C1089	C985	U897	C824
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U2209	A2068	A1838	G1919	A1838	A1569	U1559	G1444	G1415	G1314	G1166	C1091	C987	U899	C826
C2210	U2069	G1839	G1920	G1839	A1569	U1559	G1444	G1416	G1315	G1167	C1092	C988	U900	C827
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G2212	A2071	A1841	G1922	A1841	A1569	U1559	G1444	G1418	G1317	G1169	C1094	C990	U902	C829
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C2214	U2072	U1843	G1924	U1843	A1569	U1559	G1444	G1420	G1319	G1171	C1096	C992	U904	C831
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G2216	A2074	G1845	G1926	G1845	A1569	U1559	G1444	G1422	G1321	G1173	C1098	C994	U906	C833
C2217	U2075	U1846	G1927	U1846	A1569	U1559	G1444	G1423	G1322	G1174	C1099	C995	U907	C834
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U2219	A2076	G1848	G1929	G1848	A1569	U1559	G1444	G1425	G1324	G1176	C1101	C997	U909	C836
C2220	U2077	U1849	G1930	U1849	A1569	U1559	G1444	G1426	G1325	G1177	C1102	C998	U910	C837
U2221	G2078	A1850	G1931	A1850	A1569	U1559	G1444	G1427	G1326	G1178	C1103	C999	U911	C838
G2222	A2078	G1851	G1932	G1851	A1569	U1559	G1444	G1428	G1327	G1179	C1104	C1000	U912	C839
U2223	U2079	U1852	G1933	U1852	A1569	U1559	G1444	G1429	G1328	G1180	C1105	C1001	U913	C840
C2224	G2079	A1853	G1934	A1853	A1569	U1559	G1444	G1430	G1329	G1181	C1106	C1002	U914	C841
U2225	A2080	G1854	G1935	G1854	A1569	U1559	G1444	G1431	G1330	G1182	C1107	C1003	U915	C842
G2226	U2081	U1855	G1936	U1855	A1569	U1559	G1444	G1432	G1331	G1183	C1108	C1004	U916	C843
U2227	C2082	A1856	G1937	A1856	A1569	U1559	G1444	G1433	G1332	G1184	C1109	C1005	U917	C844
C2228	G2083	G1857	G1938	G1857	A1569	U1559	G1444	G1434	G1333	G1185	C1110	C1006	U918	C845
U2229	A2083	U1858	G1939	U1858	A1569	U1559	G1444	G1435	G1334	G1186	C1111	C1007	U919	C846
G2230	U2084	A1859	G1940	A1859	A1569	U1559	G1444	G1436	G1335	G1187	C1112	C1008	U920	C847
U2231	C2085	G1860	G1941	G1860	A1569	U1559	G1444	G1437	G1336	G1188	C1113	C1009	U921	C848
C2232	U2086	U1861	G1942	U1861	A1569	U1559	G1444	G1438	G1337	G1189	C11			



• Molecule 55: 5S ribosomal RNA

Chain 02: 58% 36% 6%



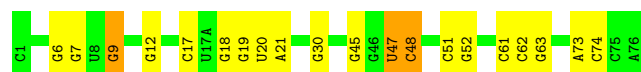
• Molecule 56: tRNAfMet

Chain X: 53% 39% 8%



• Molecule 56: tRNAfMet

Chain W: 74% 22% 4%



- Molecule 57: mRNA

Chain V:  75% 25%



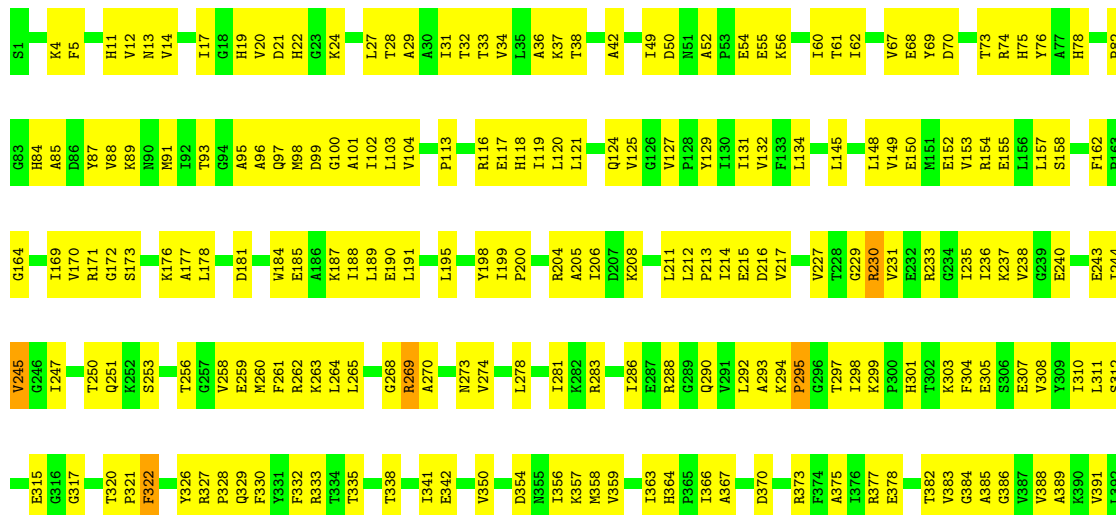
- Molecule 58: tRNAPhe

Chain Y:  57% 34% 9%



- Molecule 59: Elongation factor Tu 2

Chain Z:  47% 52%



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	6726	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

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	0.32	0/2122	0.60	0/2852
2	05	0.34	0/1586	0.57	0/2134
3	06	0.33	0/1571	0.56	0/2113
4	07	0.37	0/1435	0.57	0/1926
5	08	0.31	0/1343	0.57	0/1816
6	09	0.37	0/1122	0.58	0/1515
7	10	0.41	0/1002	0.69	0/1350
8	11	0.38	0/1046	0.56	0/1410
9	12	0.33	0/1152	0.56	0/1551
10	13	0.32	0/948	0.59	0/1268
11	14	0.33	0/1054	0.61	0/1403
12	15	0.36	0/1093	0.57	0/1460
13	16	0.35	0/974	0.55	0/1301
14	17	0.32	0/902	0.52	0/1209
15	18	0.34	0/929	0.57	0/1242
16	19	0.36	0/960	0.49	0/1278
17	20	0.36	0/829	0.63	0/1107
18	21	0.30	0/864	0.60	0/1156
19	22	0.31	0/745	0.54	0/994
20	23	0.35	0/788	0.64	1/1051 (0.1%)
21	24	0.35	0/766	0.57	0/1025
22	25	0.37	0/582	0.51	0/769
23	26	0.35	0/635	0.53	0/848
24	27	0.32	0/510	0.55	0/677
25	28	0.31	0/453	0.54	0/605
26	29	0.40	0/532	0.58	0/709
27	30	0.31	0/450	0.57	0/599
28	31	0.37	0/417	0.59	0/554
29	32	0.37	0/380	0.54	0/498
30	33	0.34	0/513	0.61	0/676
31	34	0.29	0/303	0.54	0/397
32	B	0.36	0/1736	0.64	2/2338 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	C	0.33	0/1652	0.53	0/2225
34	D	0.33	0/1665	0.58	0/2227
35	E	0.34	0/1170	0.65	0/1573
36	F	0.34	0/836	0.63	0/1128
37	G	0.33	0/1196	0.57	0/1602
38	H	0.33	0/989	0.60	0/1326
39	I	0.35	0/1034	0.65	0/1375
40	J	0.33	0/797	0.64	0/1077
41	K	0.35	0/886	0.57	0/1195
42	L	0.33	0/969	0.73	2/1300 (0.2%)
43	M	0.30	0/893	0.58	0/1193
44	N	0.33	0/817	0.51	0/1088
45	O	0.33	0/722	0.54	0/964
46	P	0.36	0/659	0.60	0/884
47	Q	0.34	0/658	0.62	0/881
48	R	0.37	0/545	0.58	0/731
49	S	0.37	0/653	0.54	0/877
50	T	0.32	0/671	0.50	0/888
51	U	0.40	0/551	0.59	0/728
52	03	1.26	0/1677	0.68	0/2259
53	A	0.41	0/36963	0.68	6/57662 (0.0%)
54	01	0.41	0/69796	0.67	3/108888 (0.0%)
55	02	0.36	0/2872	0.67	0/4479
56	W	0.42	0/1832	0.66	0/2855
56	X	0.55	0/1832	0.68	0/2855
57	V	0.51	0/486	0.68	0/757
58	Y	0.51	0/1809	0.69	0/2819
59	Z	1.24	0/3085	0.69	0/4173
All	All	0.44	0/167457	0.65	14/249840 (0.0%)

There are no bond length outliers.

All (14) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
32	B	160	LEU	O-C-N	-6.91	111.65	122.70
54	01	974	G	N9-C1'-C2'	6.48	122.42	114.00
53	A	1300	G	N9-C1'-C2'	6.31	122.21	114.00
53	A	1201	A	C2'-C3'-O3'	5.85	123.05	113.70
53	A	438	U	N1-C1'-C2'	5.84	121.59	114.00
54	01	242	G	N9-C1'-C2'	5.50	121.15	114.00
42	L	117	GLY	N-CA-C	5.41	126.62	113.10
53	A	1301	U	N1-C1'-C2'	5.40	121.02	114.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
42	L	43	LYS	N-CA-C	5.39	125.55	111.00
54	01	301	G	N9-C1'-C2'	5.38	121.00	114.00
32	B	17	HIS	N-CA-C	5.38	125.52	111.00
53	A	1346	A	N9-C1'-C2'	5.25	120.83	114.00
53	A	280	C	C2'-C3'-O3'	5.06	121.79	113.70
20	23	98	ASN	N-CA-C	-5.04	97.38	111.00

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	85	0
2	05	1565	0	1616	53	0
3	06	1552	0	1619	44	0
4	07	1411	0	1447	48	0
5	08	1323	0	1374	47	0
6	09	1111	0	1148	42	0
7	10	989	0	1025	67	0
8	11	1032	0	1088	52	0
9	12	1129	0	1162	41	0
10	13	939	0	1012	26	0
11	14	1045	0	1117	30	0
12	15	1074	0	1157	38	0
13	16	961	0	1000	26	0
14	17	892	0	923	22	0
15	18	917	0	965	32	0
16	19	947	0	1022	34	0
17	20	816	0	839	25	0
18	21	857	0	922	28	0
19	22	739	0	807	18	0
20	23	780	0	834	22	0
21	24	753	0	780	21	0
22	25	575	0	592	21	0
23	26	625	0	655	16	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
24	27	509	0	543	27	0
25	28	449	0	491	9	0
26	29	523	0	524	16	0
27	30	444	0	461	22	0
28	31	410	0	440	10	0
29	32	377	0	418	9	0
30	33	504	0	574	8	0
31	34	302	0	343	15	0
32	B	1705	0	1732	79	0
33	C	1625	0	1699	63	0
34	D	1643	0	1710	45	0
35	E	1157	0	1199	56	0
36	F	818	0	808	36	0
37	G	1182	0	1240	24	0
38	H	979	0	1034	35	0
39	I	1022	0	1070	40	0
40	J	787	0	828	39	0
41	K	870	0	878	27	0
42	L	955	0	1019	39	0
43	M	884	0	944	31	0
44	N	805	0	847	31	0
45	O	714	0	737	17	0
46	P	649	0	666	27	0
47	Q	649	0	691	31	0
48	R	536	0	552	12	0
49	S	638	0	665	26	0
50	T	665	0	714	20	0
51	U	545	0	579	29	0
52	03	1662	0	1750	101	0
53	A	33012	0	16618	425	0
54	01	62317	0	31346	822	0
55	02	2568	0	1303	43	0
56	W	1640	0	837	10	0
56	X	1640	0	837	23	0
57	V	432	0	218	3	0
58	Y	1619	0	822	23	0
59	Z	3029	0	3043	167	0
60	Z	32	0	14	4	0
All	All	154412	0	105455	2964	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 11.

All (2964) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:03:137:MET:SD	52:03:137:MET:CE	2.01	1.49
54:01:45:G:H5''	54:01:46:G:H5'	1.31	1.07
52:03:26:ALA:HB2	52:03:224:VAL:HG11	1.41	1.02
36:F:3:HIS:H	36:F:92:THR:HG22	1.30	0.97
37:G:12:LEU:HD11	39:I:49:GLN:HE22	1.30	0.95
33:C:109:GLU:HB2	33:C:143:LEU:HD13	1.49	0.94
54:01:275:C:H2'	54:01:276:U:H4'	1.50	0.93
52:03:21:TYR:HB2	52:03:224:VAL:HG12	1.51	0.92
52:03:27:ILE:HD13	52:03:186:LYS:HD3	1.50	0.91
35:E:80:LEU:HD13	35:E:122:VAL:HG11	1.53	0.91
17:20:15:SER:H	17:20:18:GLN:HE21	1.18	0.91
10:13:121:GLU:HG2	10:13:122:VAL:HG23	1.53	0.91
53:A:1206:G:H2'	53:A:1207:G:H5''	1.52	0.90
33:C:71:ARG:HD3	33:C:74:ILE:HD12	1.53	0.89
56:X:13:C:H2'	56:X:14:A:H5''	1.54	0.89
52:03:133:PRO:HG2	54:01:2169:A:H5'	1.55	0.88
15:18:38:ARG:HH22	15:18:40:GLN:HB3	1.39	0.88
53:A:112:G:H21	53:A:354:G:H5'	1.37	0.88
32:B:56:LEU:HD23	32:B:59:ILE:HD11	1.57	0.87
35:E:107:GLY:HA3	53:A:9:G:H5'	1.56	0.87
40:J:70:HIS:HB3	40:J:72:ARG:HH12	1.39	0.87
33:C:13:ILE:HG22	33:C:14:VAL:HG23	1.55	0.87
15:18:6:GLN:HA	15:18:9:GLN:HE21	1.38	0.87
3:06:146:VAL:HG12	3:06:185:LYS:HB2	1.56	0.86
52:03:37:LYS:HB2	54:01:2127:G:H5'	1.57	0.86
38:H:46:GLU:HB3	38:H:61:THR:HB	1.56	0.86
54:01:2277:G:H2'	54:01:2278:A:H5''	1.56	0.86
47:Q:46:HIS:HB2	47:Q:70:LYS:HD3	1.56	0.86
52:03:134:ARG:HG3	54:01:2169:A:H5''	1.56	0.85
11:14:67:THR:HG21	54:01:244:A:H5''	1.56	0.85
53:A:531:U:H5'	53:A:532:A:OP1	1.76	0.85
31:34:36:ARG:HG2	31:34:37:GLN:H	1.42	0.85
22:25:39:THR:H	54:01:2331:G:H4'	1.43	0.84
34:D:173:ASP:HB3	34:D:178:GLU:HB3	1.59	0.84
54:01:2800:A:H3'	54:01:2801:G:H5'	1.58	0.84
59:Z:134:LEU:HD12	59:Z:171:ARG:HG2	1.60	0.84
12:15:12:MET:HA	54:01:910:A:H62	1.43	0.83
54:01:1645:G:H5''	54:01:1646:C:H5'	1.61	0.83
12:15:45:GLN:HE21	54:01:2485:G:H5''	1.44	0.83
1:04:38:LYS:HB3	54:01:692:C:H5''	1.61	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:02:13:G:H21	55:02:16:G:H1'	1.43	0.82
32:B:67:LEU:HD21	32:B:91:VAL:HG23	1.60	0.82
48:R:17:VAL:HG22	48:R:18:GLN:H	1.45	0.82
18:21:66:ILE:H	18:21:66:ILE:HD12	1.44	0.82
33:C:30:ASP:HA	44:N:64:ARG:HH12	1.45	0.82
54:01:1394:U:H4'	54:01:1603:A:H4'	1.59	0.82
44:N:84:ARG:HH22	53:A:1059:C:H4'	1.45	0.81
35:E:119:VAL:HG11	35:E:122:VAL:HG22	1.63	0.81
8:11:55:PRO:HG2	8:11:71:LYS:HB2	1.62	0.81
2:05:33:ARG:H	2:05:33:ARG:HD2	1.45	0.81
59:Z:117:GLU:HA	59:Z:120:LEU:HG	1.63	0.81
7:10:24:SER:HB2	7:10:116:GLU:HG3	1.61	0.80
34:D:144:ILE:HD13	34:D:177:MET:HB3	1.62	0.80
8:11:78:LEU:HG	8:11:81:LYS:HE3	1.61	0.80
7:10:43:LYS:HA	7:10:46:ARG:HE	1.44	0.80
33:C:106:ARG:H	33:C:106:ARG:HD2	1.47	0.80
12:15:42:THR:HG22	12:15:93:VAL:HG12	1.64	0.80
43:M:6:ILE:HD11	43:M:21:ILE:HA	1.63	0.80
7:10:71:CYS:HA	7:10:117:LEU:HD12	1.62	0.79
53:A:1137:C:H5'	53:A:1138:G:H5'	1.63	0.79
56:X:25:C:H2'	56:X:26:G:H8	1.46	0.79
55:02:3:C:H2'	55:02:4:C:H5''	1.65	0.79
43:M:6:ILE:HG13	43:M:7:ASN:H	1.46	0.79
54:01:1790:C:H2'	54:01:1791:A:C5	2.18	0.78
59:Z:297:THR:HG23	59:Z:298:ILE:HD12	1.65	0.78
59:Z:206:ILE:HG22	59:Z:270:ALA:H	1.47	0.78
59:Z:332:PHE:HB2	59:Z:335:THR:HB	1.64	0.78
6:09:116:ARG:HG3	6:09:133:GLN:HG3	1.64	0.78
54:01:1053:C:H2'	54:01:1054:A:H5''	1.66	0.78
54:01:2553:G:H3'	54:01:2554:U:H5''	1.65	0.78
53:A:1259:C:H3'	53:A:1260:G:H5''	1.65	0.78
59:Z:238:VAL:HG13	59:Z:256:THR:HA	1.65	0.78
21:24:77:VAL:HG23	21:24:89:ILE:HG12	1.67	0.77
49:S:30:LEU:HB2	49:S:48:ILE:HG22	1.67	0.77
5:08:154:GLU:HG2	5:08:156:TYR:H	1.48	0.77
8:11:11:GLN:HB2	8:11:56:VAL:HG12	1.65	0.77
26:29:28:VAL:HG11	26:29:32:LEU:HD13	1.64	0.77
54:01:799:G:H5''	54:01:800:A:H2'	1.66	0.77
8:11:91:LYS:HG3	8:11:94:LYS:HE2	1.67	0.77
53:A:405:U:H3'	53:A:406:G:H5'	1.66	0.77
54:01:1105:U:H2'	54:01:1106:G:H5''	1.65	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:10:23:LEU:HB2	7:10:118:ILE:HG13	1.67	0.77
9:12:95:ARG:HG2	9:12:96:ARG:HG2	1.67	0.76
32:B:94:ARG:H	32:B:94:ARG:HD2	1.51	0.76
38:H:54:THR:HG23	38:H:55:LYS:HG3	1.66	0.76
8:11:100:ILE:HD11	8:11:137:LEU:HD13	1.68	0.76
53:A:769:G:H4'	53:A:1513:A:H4'	1.66	0.76
59:Z:52:ALA:HB3	59:Z:55:GLU:HG3	1.68	0.76
56:X:35:A:H61	57:V:13:A:H61	1.34	0.75
47:Q:16:MET:HG3	47:Q:19:SER:HB2	1.69	0.75
35:E:160:VAL:HG13	35:E:161:GLU:H	1.51	0.75
59:Z:227:VAL:HG11	59:Z:292:LEU:HD11	1.69	0.75
52:03:67:HIS:HB2	52:03:188:ASN:HD21	1.52	0.74
15:18:59:THR:HG22	15:18:72:VAL:HG12	1.69	0.74
43:M:15:VAL:HG23	43:M:16:ILE:HD12	1.67	0.74
53:A:1052:U:H2'	53:A:1200:C:H41	1.50	0.74
21:24:20:LEU:HD11	21:24:41:GLU:HG2	1.68	0.74
32:B:165:ALA:HB3	32:B:190:SER:HB3	1.69	0.74
58:Y:8:U:H2'	58:Y:13:C:H41	1.53	0.74
59:Z:305:GLU:HG3	59:Z:359:VAL:HG22	1.69	0.74
1:04:244:VAL:HG12	1:04:250:GLN:HA	1.70	0.73
2:05:151:THR:HB	2:05:152:PRO:HD3	1.70	0.73
6:09:65:ALA:HA	6:09:68:ARG:HD2	1.70	0.73
47:Q:59:GLU:HG3	47:Q:76:ARG:HG2	1.70	0.73
54:01:807:U:H2'	54:01:808:G:H8	1.51	0.73
54:01:1077:A:H2'	54:01:1078:U:H5'	1.70	0.73
10:13:21:CYS:HA	10:13:41:ILE:HG22	1.69	0.73
15:18:92:ARG:HD3	54:01:1753:G:H5''	1.70	0.73
34:D:164:ARG:HG2	34:D:165:GLU:H	1.54	0.73
8:11:12:VAL:HG12	8:11:13:ALA:H	1.53	0.73
52:03:27:ILE:HG21	52:03:186:LYS:HB2	1.71	0.73
33:C:39:ARG:HG3	33:C:54:ILE:HD11	1.71	0.72
49:S:5:LYS:HG3	49:S:6:LYS:HG2	1.70	0.72
4:07:133:GLU:HB3	4:07:135:ILE:HG13	1.69	0.72
42:L:3:VAL:HA	42:L:6:LEU:HD12	1.70	0.72
39:I:98:ARG:HG3	39:I:103:VAL:HG21	1.72	0.72
53:A:1033:G:H3'	53:A:1034:G:H5''	1.70	0.72
8:11:11:GLN:HB3	8:11:55:PRO:HA	1.71	0.72
40:J:53:ILE:HG12	53:A:1060:U:H5''	1.71	0.72
16:19:43:GLN:HE21	17:20:77:PHE:HB3	1.55	0.72
7:10:107:GLU:HG2	7:10:110:ALA:HB2	1.71	0.72
1:04:47:ARG:HH21	54:01:774:G:H5''	1.53	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:04:204:LEU:HD22	1:04:209:ALA:HB1	1.72	0.72
5:08:96:ALA:HB3	5:08:103:ASN:HB3	1.72	0.72
18:21:3:THR:HG21	18:21:58:ALA:HB2	1.72	0.71
42:L:101:LEU:O	42:L:103:CYS:N	2.22	0.71
53:A:85:U:H5''	53:A:86:G:H5'	1.70	0.71
20:23:33:VAL:HG13	20:23:66:VAL:HG22	1.71	0.71
53:A:1218:C:H2'	53:A:1219:A:C8	2.25	0.71
54:01:1807:G:H2'	54:01:1808:A:H5'	1.72	0.71
59:Z:258:VAL:HG13	59:Z:274:VAL:HG21	1.72	0.71
2:05:14:ILE:HG23	15:18:11:GLN:HE22	1.54	0.71
3:06:18:THR:HA	3:06:106:LYS:HE3	1.72	0.71
27:30:42:ILE:HG22	27:30:48:TYR:HB2	1.73	0.71
54:01:507:A:H5''	54:01:508:A:H5''	1.73	0.71
54:01:2296:U:H5''	54:01:2297:A:OP1	1.90	0.71
1:04:261:ARG:HD2	1:04:262:THR:HG23	1.72	0.71
1:04:52:HIS:HE2	1:04:218:THR:HG23	1.56	0.70
7:10:87:GLU:HG2	7:10:95:LEU:HD12	1.73	0.70
10:13:76:VAL:H	15:18:72:VAL:HG22	1.56	0.70
32:B:119:GLN:HG2	32:B:136:ARG:HH22	1.56	0.70
10:13:48:PRO:HB3	53:A:1422:G:H5'	1.73	0.70
11:14:95:LEU:HD22	11:14:100:ILE:HD11	1.72	0.70
59:Z:54:GLU:HG2	59:Z:60:ILE:HD11	1.71	0.70
1:04:257:ARG:HE	1:04:266:ILE:HD12	1.57	0.70
17:20:15:SER:H	17:20:18:GLN:NE2	1.87	0.70
42:L:45:ASN:HD22	53:A:528:C:H41	1.37	0.70
40:J:57:VAL:O	40:J:58:ASN:HB2	1.92	0.69
3:06:143:LEU:HD22	3:06:146:VAL:HG11	1.74	0.69
46:P:6:LEU:HD22	46:P:17:TYR:HB3	1.73	0.69
31:34:2:LYS:NZ	54:01:2478:A:H5''	2.07	0.69
52:03:30:LEU:HD22	52:03:42:VAL:HG21	1.74	0.69
52:03:97:MET:HB3	52:03:100:LEU:HB2	1.73	0.69
54:01:807:U:H2'	54:01:808:G:C8	2.26	0.69
54:01:2452:C:H42	54:01:2504:U:H3	1.40	0.69
12:15:55:ARG:HD3	54:01:2469:A:H4'	1.73	0.69
59:Z:21:ASP:H	60:Z:401:GCP:H3B1	1.57	0.69
36:F:54:LEU:HD23	36:F:55:HIS:O	1.93	0.69
3:06:175:ILE:HD12	3:06:180:LEU:HD11	1.74	0.69
5:08:17:LYS:HB2	5:08:24:THR:HB	1.74	0.69
11:14:111:ILE:H	11:14:111:ILE:HD12	1.58	0.69
12:15:34:LYS:HE3	12:15:131:VAL:HG11	1.74	0.69
51:U:13:VAL:HG13	51:U:15:LEU:HG	1.75	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:Y:16:U:H2'	58:Y:17:C:H4'	1.73	0.69
59:Z:17:ILE:HG13	59:Z:103:LEU:HA	1.75	0.69
31:34:25:VAL:HB	31:34:35:GLN:HG3	1.74	0.69
35:E:133:ILE:HD12	35:E:133:ILE:H	1.58	0.69
54:01:1326:U:H2'	54:01:1327:A:H8	1.58	0.69
59:Z:103:LEU:HB3	59:Z:132:VAL:HG22	1.74	0.69
19:22:58:VAL:HG13	19:22:85:VAL:HG22	1.75	0.68
56:W:47:U:H3'	56:W:48:C:H5'	1.75	0.68
34:D:200:VAL:HG11	35:E:102:THR:HG22	1.75	0.68
38:H:5:PRO:HB2	38:H:32:LYS:HE3	1.74	0.68
40:J:9:ARG:HH12	40:J:11:LYS:NZ	1.91	0.68
40:J:10:LEU:HD23	40:J:10:LEU:H	1.58	0.68
54:01:1368:G:H2'	54:01:1369:G:H8	1.59	0.68
2:05:46:ARG:HG2	2:05:84:LEU:HD12	1.76	0.68
32:B:162:VAL:HB	32:B:184:ALA:HB2	1.75	0.68
54:01:546:U:H2'	54:01:547:A:H4'	1.75	0.68
45:O:33:ALA:HA	45:O:36:ASN:HD22	1.59	0.68
59:Z:73:THR:HG22	59:Z:74:ARG:HG3	1.75	0.68
8:11:20:SER:HB3	8:11:21:PRO:HD3	1.76	0.68
53:A:484:G:H4'	53:A:485:U:H5''	1.74	0.68
1:04:23:LEU:HD13	1:04:82:TYR:HB2	1.76	0.68
33:C:151:GLU:HG3	33:C:166:TRP:HB3	1.76	0.68
53:A:960:U:H4'	53:A:961:U:O5'	1.92	0.68
3:06:5:LEU:HD22	3:06:10:SER:HB3	1.76	0.68
32:B:16:GLY:HA2	32:B:40:ILE:HG13	1.75	0.68
8:11:119:ALA:HB2	54:01:1082:U:H5''	1.76	0.67
54:01:542:C:H2'	54:01:543:G:H5''	1.74	0.67
54:01:1026:G:H2'	54:01:1027:A:H8	1.59	0.67
1:04:154:ALA:HB2	1:04:161:VAL:HG23	1.76	0.67
6:09:126:GLY:H	6:09:146:VAL:HB	1.59	0.67
15:18:4:ILE:O	15:18:8:GLU:HG3	1.94	0.67
33:C:76:ILE:HG22	33:C:83:VAL:HG21	1.76	0.67
52:03:166:ASP:OD2	52:03:168:ASN:HB2	1.93	0.67
19:22:61:LEU:HD11	19:22:82:LYS:HD3	1.75	0.67
46:P:5:ARG:HB2	53:A:376:G:H5''	1.76	0.67
34:D:96:ARG:O	34:D:100:VAL:HG23	1.94	0.67
43:M:94:LEU:HB3	43:M:95:PRO:HD2	1.75	0.67
9:12:78:THR:HG22	54:01:2641:G:H5''	1.77	0.67
42:L:113:ARG:HB2	42:L:118:VAL:HB	1.76	0.67
1:04:74:PRO:HB3	1:04:114:GLN:HE21	1.59	0.67
18:21:83:LYS:HG2	18:21:95:ARG:HH12	1.60	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:08:41:GLU:HG3	5:08:54:ARG:HH21	1.59	0.67
15:18:88:ARG:HH11	15:18:112:ARG:NH2	1.92	0.67
26:29:58:ASP:O	26:29:62:LYS:HG3	1.96	0.66
52:03:197:LYS:HE3	52:03:209:ILE:HD13	1.77	0.66
21:24:72:VAL:HG12	21:24:93:ARG:HA	1.76	0.66
36:F:64:VAL:HG22	36:F:65:GLU:N	2.10	0.66
59:Z:294:LYS:HE2	59:Z:297:THR:HG21	1.77	0.66
7:10:7:ASP:O	7:10:11:ILE:HG12	1.95	0.66
8:11:30:GLN:HB3	8:11:60:VAL:HG11	1.76	0.66
7:10:53:ARG:HB3	7:10:55:VAL:HG22	1.76	0.66
55:02:88:C:H5''	55:02:89:U:OP1	1.96	0.66
16:19:91:ARG:HH11	54:01:997:G:H5''	1.61	0.66
55:02:3:C:C2'	55:02:4:C:H5''	2.26	0.66
1:04:153:LEU:HD11	1:04:181:ARG:NH2	2.10	0.66
41:K:23:HIS:HB3	41:K:30:ILE:HG23	1.76	0.66
40:J:52:LEU:HD12	44:N:80:ARG:NE	2.11	0.66
46:P:67:ILE:H	46:P:67:ILE:HD12	1.61	0.66
59:Z:308:VAL:HG22	59:Z:386:GLY:HA3	1.76	0.66
59:Z:326:TYR:HB3	59:Z:341:ILE:HG13	1.77	0.66
15:18:38:ARG:HH11	53:A:345:C:H5'	1.59	0.66
22:25:12:SER:HB3	54:01:2262:U:H5	1.61	0.66
58:Y:8:U:H2'	58:Y:13:C:N4	2.11	0.66
1:04:235:GLU:H	1:04:238:ASN:ND2	1.94	0.66
52:03:185:LEU:HA	52:03:188:ASN:HB2	1.78	0.66
4:07:140:ILE:HG22	4:07:142:TYR:H	1.60	0.65
32:B:71:THR:HG22	32:B:72:LYS:H	1.61	0.65
39:I:94:ARG:HA	39:I:97:LEU:HB3	1.78	0.65
41:K:116:PRO:HB3	53:A:676:A:H1'	1.78	0.65
23:26:2:ARG:HD2	23:26:29:LEU:HD22	1.77	0.65
35:E:23:THR:HA	35:E:28:ARG:HA	1.78	0.65
54:01:121:G:H4'	54:01:149:A:H5'	1.77	0.65
54:01:833:A:H2'	54:01:834:G:H8	1.60	0.65
54:01:833:A:H2'	54:01:834:G:C8	2.31	0.65
45:O:55:LEU:O	45:O:59:VAL:HG23	1.97	0.65
54:01:2277:G:C2'	54:01:2278:A:H5''	2.26	0.65
42:L:45:ASN:ND2	53:A:528:C:H41	1.94	0.65
54:01:1105:U:C2'	54:01:1106:G:H5''	2.26	0.65
54:01:2389:G:H5''	54:01:2390:U:O4'	1.95	0.65
42:L:49:ARG:HH12	53:A:522:C:H41	1.44	0.65
53:A:1205:U:H2'	53:A:1206:G:H8	1.61	0.65
10:13:40:LYS:HE3	10:13:57:VAL:HG12	1.78	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:917:A:H5''	54:01:2268:A:H61	1.61	0.65
58:Y:15:G:H2'	58:Y:16:U:H5'	1.79	0.65
39:I:125:GLN:HE22	53:A:1342:C:H1'	1.61	0.65
53:A:868:C:H2'	53:A:869:G:O4'	1.97	0.65
53:A:1088:G:H21	53:A:1167:A:H61	1.45	0.65
5:08:71:LEU:HA	5:08:74:MET:HB2	1.79	0.65
15:18:28:LYS:HB3	15:18:39:LEU:HD11	1.78	0.65
32:B:16:GLY:HA3	32:B:39:ILE:HA	1.79	0.65
52:03:76:ALA:HB3	52:03:114:VAL:HG22	1.79	0.65
20:23:48:VAL:HG22	20:23:50:ALA:H	1.61	0.64
44:N:92:ILE:H	44:N:92:ILE:HD12	1.62	0.64
53:A:212:G:H2'	53:A:213:G:H8	1.62	0.64
15:18:38:ARG:NH2	15:18:40:GLN:HB3	2.10	0.64
38:H:77:VAL:HG12	38:H:84:ILE:HD12	1.79	0.64
41:K:30:ILE:HD13	41:K:45:THR:HG22	1.80	0.64
49:S:18:VAL:O	49:S:22:VAL:HG23	1.97	0.64
2:05:101:PHE:HA	2:05:104:VAL:HG22	1.78	0.64
54:01:729:G:H4'	54:01:763:G:H5'	1.79	0.64
54:01:1509:A:H2'	54:01:1510:G:C8	2.33	0.64
2:05:148:GLN:HB2	2:05:152:PRO:HG2	1.79	0.64
9:12:7:LYS:HG2	54:01:538:A:H4'	1.77	0.64
59:Z:235:ILE:HG22	59:Z:269:ARG:HA	1.80	0.64
15:18:102:ARG:HD3	15:18:106:ALA:HB1	1.78	0.64
54:01:2267:A:H5''	54:01:2268:A:H5'	1.79	0.64
55:02:55:U:H2'	55:02:56:G:C8	2.32	0.64
7:10:57:ASN:HB2	7:10:62:ARG:HG2	1.80	0.64
11:14:79:LEU:HD23	11:14:110:VAL:HG12	1.78	0.64
52:03:57:GLN:OE1	52:03:204:ALA:HB2	1.97	0.64
53:A:1052:U:H2'	53:A:1200:C:N4	2.12	0.64
7:10:19:ALA:HA	7:10:70:GLU:HG3	1.79	0.64
32:B:47:PRO:O	32:B:51:GLU:HG3	1.98	0.64
32:B:162:VAL:HG21	32:B:172:ILE:HG12	1.79	0.64
38:H:11:THR:HA	38:H:14:ARG:NH1	2.12	0.64
52:03:65:LEU:HB2	52:03:159:GLY:HA3	1.78	0.64
32:B:31:PHE:HB2	32:B:39:ILE:HB	1.80	0.64
32:B:202:ASN:HD22	32:B:208:ALA:HB2	1.63	0.64
42:L:26:CYS:SG	42:L:29:LYS:HG2	2.38	0.64
52:03:194:VAL:HG12	52:03:198:LYS:NZ	2.12	0.64
2:05:8:LYS:HB2	2:05:201:LEU:HD11	1.80	0.64
19:22:68:LYS:HE3	19:22:77:ARG:NH2	2.13	0.64
32:B:186:VAL:HB	32:B:190:SER:HB2	1.78	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:Z:307:GLU:HG3	59:Z:389:ALA:HB2	1.79	0.64
1:04:209:ALA:HA	1:04:212:TRP:NE1	2.13	0.63
10:13:104:THR:HG22	10:13:106:GLU:H	1.63	0.63
16:19:8:ILE:HD12	16:19:9:ALA:N	2.11	0.63
12:15:45:GLN:NE2	54:01:2485:G:H5''	2.13	0.63
18:21:1:MET:HG2	18:21:109:ASP:OD2	1.97	0.63
54:01:215:G:H4'	54:01:216:A:H4'	1.78	0.63
1:04:260:LYS:HA	1:04:263:ASP:OD2	1.97	0.63
16:19:24:TYR:HE1	54:01:17:G:H4'	1.64	0.63
25:28:12:ALA:HA	25:28:15:ARG:HD3	1.79	0.63
54:01:528:A:C2	54:01:2042:A:H2'	2.34	0.63
14:17:17:LYS:HZ1	54:01:2380:C:H5'	1.64	0.63
46:P:20:VAL:HG22	46:P:21:VAL:N	2.14	0.63
59:Z:13:ASN:HB3	59:Z:98:MET:HA	1.80	0.63
39:I:60:LEU:HD21	39:I:89:TYR:HE2	1.62	0.63
47:Q:43:LEU:HD21	53:A:236:A:H5''	1.81	0.63
10:13:116:ILE:HD12	10:13:117:SER:N	2.14	0.63
36:F:64:VAL:HG22	36:F:65:GLU:H	1.62	0.63
47:Q:7:LEU:HD22	47:Q:24:ILE:HD13	1.80	0.63
52:03:60:ARG:HB2	52:03:141:LYS:HG3	1.80	0.63
2:05:33:ARG:HD3	2:05:51:THR:HG23	1.81	0.63
24:27:9:LYS:HD3	24:27:11:VAL:H	1.64	0.63
34:D:94:GLU:HA	34:D:99:ASN:ND2	2.14	0.63
37:G:58:LEU:HD12	37:G:59:GLU:N	2.14	0.63
54:01:2167:U:H2'	54:01:2169:A:OP2	1.99	0.63
9:12:93:ILE:HD13	9:12:100:VAL:HG21	1.81	0.63
50:T:23:ARG:NH2	50:T:60:GLN:HE22	1.96	0.62
53:A:701:U:H4'	53:A:703:G:H1'	1.81	0.62
54:01:2286:G:H5''	54:01:2287:A:OP1	1.98	0.62
37:G:97:ALA:HA	37:G:100:MET:HE2	1.81	0.62
52:03:37:LYS:CB	54:01:2127:G:H5'	2.28	0.62
55:02:66:A:H5''	55:02:67:G:OP1	1.99	0.62
7:10:4:ASN:HA	7:10:7:ASP:HB2	1.79	0.62
36:F:47:LEU:HD21	36:F:57:ALA:HB3	1.82	0.62
51:U:16:ARG:HB2	51:U:19:LYS:HD3	1.82	0.62
53:A:1227:A:H2'	53:A:1228:C:H5'	1.80	0.62
59:Z:89:LYS:HG2	59:Z:288:ARG:HH22	1.64	0.62
35:E:105:ILE:HD11	35:E:123:LEU:HD22	1.81	0.62
50:T:59:ARG:NH1	53:A:177:G:H5'	2.15	0.62
52:03:60:ARG:HH11	52:03:164:ARG:HD2	1.64	0.62
6:09:127:GLU:HA	6:09:145:ASN:HA	1.82	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:D:120:LYS:HG2	34:D:130:ASN:OD1	2.00	0.62
40:J:6:ILE:HB	40:J:76:ILE:HB	1.81	0.62
47:Q:30:HIS:HD2	47:Q:33:TYR:H	1.47	0.62
53:A:1277:C:H2'	53:A:1278:G:H5''	1.81	0.62
54:01:1837:C:H2'	54:01:1899:A:H61	1.62	0.62
59:Z:338:THR:HB	59:Z:363:ILE:HD13	1.82	0.62
14:17:80:GLU:O	14:17:84:GLU:HG3	1.99	0.62
54:01:2249:U:H3'	54:01:2250:G:H5'	1.82	0.62
7:10:22:ALA:HB1	7:10:118:ILE:HD11	1.81	0.62
10:13:63:VAL:HG22	10:13:84:CYS:HA	1.80	0.62
34:D:33:ILE:HG13	34:D:34:GLU:N	2.14	0.62
44:N:1:ALA:HB2	53:A:1203:C:H5''	1.82	0.62
1:04:235:GLU:H	1:04:238:ASN:HD22	1.48	0.62
6:09:12:LEU:HD12	6:09:13:GLY:N	2.15	0.62
54:01:2800:A:C2	54:01:2895:G:H1'	2.34	0.62
59:Z:260:MET:HA	59:Z:274:VAL:HG12	1.82	0.62
5:08:26:LYS:HB2	5:08:31:GLU:HG3	1.82	0.62
6:09:17:ASP:HB3	6:09:19:VAL:HG23	1.80	0.62
32:B:66:ILE:HD12	32:B:159:ALA:HB3	1.81	0.62
32:B:75:ALA:O	32:B:79:VAL:HG23	2.00	0.62
39:I:51:LEU:HD13	39:I:56:MET:HG3	1.81	0.62
54:01:704:G:H2'	54:01:726:G:N2	2.15	0.62
55:02:3:C:C3'	55:02:4:C:H5''	2.29	0.62
49:S:69:LYS:HE3	53:A:1319:A:H5''	1.82	0.61
55:02:115:A:H2'	55:02:116:G:C8	2.35	0.61
59:Z:247:ILE:N	59:Z:290:GLN:HE21	1.98	0.61
6:09:76:GLU:HB3	6:09:142:VAL:HA	1.81	0.61
52:03:44:VAL:HG13	52:03:214:ILE:HG22	1.81	0.61
5:08:154:GLU:OE1	5:08:157:LYS:HB2	2.00	0.61
19:22:56:GLU:OE2	19:22:88:LYS:HG2	1.99	0.61
33:C:112:ALA:HB1	33:C:184:ASN:HB2	1.83	0.61
34:D:8:LEU:HD23	53:A:429:U:H5'	1.82	0.61
50:T:82:ILE:HD12	50:T:83:ASN:N	2.14	0.61
7:10:43:LYS:HE3	7:10:98:GLU:HG3	1.82	0.61
11:14:82:LEU:HG	11:14:120:VAL:HG11	1.82	0.61
12:15:11:LYS:HE3	12:15:86:LYS:HB3	1.82	0.61
34:D:61:ARG:HH21	34:D:67:LEU:HA	1.63	0.61
42:L:79:ILE:HG22	42:L:103:CYS:HB2	1.82	0.61
54:01:2636:C:H2'	54:01:2637:U:C6	2.36	0.61
3:06:154:ASP:OD2	3:06:156:ASN:HB3	2.00	0.61
9:12:37:ARG:HD3	9:12:39:LYS:HD2	1.81	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:34:33:HIS:O	31:34:35:GLN:HG2	1.99	0.61
35:E:82:HIS:HB2	35:E:83:PRO:HD2	1.82	0.61
53:A:427:U:H4'	53:A:541:G:H5''	1.82	0.61
59:Z:243:GLU:HG3	59:Z:295:PRO:HA	1.81	0.61
16:19:71:ASN:OD1	16:19:109:VAL:HG21	2.00	0.61
26:29:16:CYS:HA	26:29:34:LEU:HB2	1.81	0.61
37:G:111:GLY:HA2	37:G:118:ARG:HD3	1.82	0.61
52:03:51:ASP:HB3	52:03:54:LYS:HG3	1.82	0.61
59:Z:294:LYS:HB3	59:Z:297:THR:HG22	1.81	0.61
7:10:23:LEU:HD21	7:10:96:PHE:HB2	1.81	0.61
56:X:59:A:H2'	56:X:60:U:H5'	1.83	0.61
35:E:59:ILE:O	35:E:63:MET:HG2	2.00	0.61
44:N:100:TRP:HZ2	53:A:1368:A:H5''	1.66	0.61
52:03:75:VAL:HB	52:03:92:ALA:HA	1.83	0.61
59:Z:74:ARG:CZ	59:Z:200:PRO:HA	2.31	0.61
1:04:47:ARG:NH2	54:01:774:G:H5''	2.16	0.60
32:B:41:ASN:ND2	32:B:43:GLU:HB2	2.16	0.60
34:D:100:VAL:HG21	34:D:136:VAL:HG21	1.82	0.60
52:03:7:ARG:HE	54:01:2128:G:H4'	1.65	0.60
14:17:76:LYS:O	14:17:80:GLU:HG3	2.02	0.60
35:E:15:ILE:HD11	35:E:37:VAL:HG23	1.83	0.60
53:A:1296:C:H4'	53:A:1302:C:N4	2.16	0.60
54:01:475:C:H4'	54:01:510:C:H5'	1.81	0.60
59:Z:124:GLN:HA	59:Z:373:ARG:HG2	1.81	0.60
59:Z:312:SER:H	59:Z:315:GLU:HB2	1.66	0.60
13:16:2:ARG:HG2	54:01:1653:G:H3'	1.83	0.60
36:F:26:THR:HA	36:F:29:ILE:HD12	1.83	0.60
44:N:2:LYS:HD3	53:A:1049:U:H2'	1.84	0.60
54:01:2698:U:H2'	54:01:2699:C:C6	2.35	0.60
12:15:5:LYS:HG2	12:15:6:ARG:HG2	1.84	0.60
24:27:42:LEU:O	24:27:46:VAL:HG23	2.01	0.60
53:A:1513:A:H2'	53:A:1514:G:C8	2.37	0.60
54:01:1830:C:H2'	54:01:1831:G:H8	1.65	0.60
54:01:1936:A:H2	54:01:1943:U:H3	1.50	0.60
1:04:165:ALA:HB3	1:04:172:THR:HB	1.83	0.60
14:17:17:LYS:NZ	54:01:2380:C:H5'	2.17	0.60
34:D:12:ARG:HG2	34:D:33:ILE:HD12	1.83	0.60
53:A:1412:C:H2'	53:A:1413:A:C8	2.37	0.60
54:01:1857:G:H2'	54:01:1884:G:H22	1.66	0.60
54:01:2086:U:H2'	54:01:2087:G:C8	2.37	0.60
46:P:2:VAL:HG23	46:P:65:ALA:HA	1.82	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:P:43:ALA:HA	46:P:46:LYS:NZ	2.16	0.60
55:02:106:G:H2'	55:02:107:G:O4'	2.02	0.60
56:X:38:A:H3'	56:X:39:C:C6	2.37	0.60
56:W:17:C:H5'	56:W:61:C:OP1	2.02	0.60
59:Z:293:ALA:HB1	59:Z:298:ILE:HD13	1.82	0.60
7:10:8:LYS:O	7:10:12:VAL:HG23	2.02	0.60
9:12:27:ARG:NH2	54:01:1142:A:H4'	2.17	0.60
23:26:65:THR:O	23:26:69:GLU:HG3	2.00	0.60
31:34:2:LYS:HZ1	54:01:2478:A:H5''	1.65	0.60
45:O:86:LEU:HD12	45:O:86:LEU:O	2.02	0.60
52:03:77:VAL:HB	52:03:95:VAL:HG13	1.83	0.60
54:01:1063:G:H1	54:01:1075:C:H42	1.49	0.60
13:16:59:SER:O	13:16:63:ARG:HG2	2.02	0.60
14:17:16:ARG:HD3	14:17:19:GLN:HE21	1.66	0.60
32:B:202:ASN:HD21	32:B:205:ALA:HB3	1.67	0.60
52:03:7:ARG:NH1	52:03:218:MET:HE2	2.17	0.60
53:A:279:A:H5'	53:A:281:G:H5'	1.82	0.60
15:18:3:ILE:H	15:18:3:ILE:HD12	1.66	0.59
21:24:21:ARG:HE	21:24:87:GLN:HA	1.66	0.59
54:01:704:G:H2'	54:01:726:G:H22	1.66	0.59
7:10:17:GLU:HG2	7:10:88:HIS:NE2	2.17	0.59
8:11:92:PRO:HA	8:11:136:GLY:HA2	1.84	0.59
54:01:1060:U:H5'	54:01:1062:G:H5'	1.84	0.59
4:07:135:ILE:HG21	4:07:142:TYR:HD1	1.66	0.59
54:01:1186:G:H2'	54:01:1187:G:O4'	2.02	0.59
54:01:2070:A:H2'	54:01:2071:A:C8	2.37	0.59
54:01:2699:C:H2'	54:01:2700:A:H8	1.66	0.59
8:11:14:ALA:HB3	8:11:54:ILE:HD12	1.84	0.59
36:F:92:THR:OG1	36:F:93:LYS:N	2.34	0.59
18:21:82:MET:HB2	18:21:98:LYS:HB2	1.84	0.59
33:C:120:THR:HG23	33:C:188:ALA:HB2	1.83	0.59
53:A:236:A:H2'	53:A:237:G:C8	2.38	0.59
54:01:2215:C:H2'	54:01:2216:G:H8	1.67	0.59
59:Z:67:VAL:CG2	59:Z:78:HIS:HB3	2.32	0.59
2:05:149:ASN:HB3	54:01:2572:A:OP2	2.03	0.59
4:07:16:MET:SD	4:07:21:TYR:HB2	2.42	0.59
6:09:41:LYS:O	6:09:45:GLU:HG3	2.02	0.59
20:23:10:VAL:HG12	20:23:71:ILE:HG22	1.84	0.59
24:27:46:VAL:O	24:27:50:VAL:HG23	2.02	0.59
32:B:41:ASN:HD21	32:B:43:GLU:HB2	1.66	0.59
38:H:77:VAL:HG23	38:H:126:CYS:HA	1.82	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:12:17:VAL:HG23	9:12:137:PRO:HB2	1.84	0.59
22:25:38:GLY:HA2	54:01:2330:G:H21	1.67	0.59
40:J:46:LYS:HE2	40:J:68:ARG:HG2	1.83	0.59
53:A:571:U:H2'	53:A:572:A:H5''	1.84	0.59
54:01:2800:A:H3'	54:01:2801:G:C5'	2.29	0.59
10:13:79:PHE:HB3	15:18:67:GLU:OE2	2.03	0.59
34:D:10:LEU:HD13	34:D:62:ARG:HD2	1.85	0.59
45:O:23:SER:O	45:O:27:GLN:HG3	2.01	0.59
2:05:59:ARG:HH11	54:01:2830:C:H3'	1.67	0.59
7:10:74:ASP:HA	7:10:77:VAL:HG23	1.84	0.59
8:11:125:THR:O	8:11:129:GLU:HG3	2.03	0.59
46:P:20:VAL:HG23	46:P:35:ARG:HA	1.85	0.59
54:01:742:A:H2'	54:01:743:A:C8	2.38	0.59
59:Z:131:ILE:HD12	59:Z:195:LEU:HD12	1.83	0.59
38:H:45:ILE:HD13	38:H:60:LEU:HD13	1.85	0.59
53:A:1391:U:H2'	53:A:1392:G:H8	1.67	0.59
54:01:639:U:H2'	54:01:640:C:C6	2.37	0.59
54:01:968:C:H2'	54:01:969:G:H8	1.67	0.59
54:01:1159:U:H2'	54:01:1160:G:H8	1.68	0.59
11:14:17:LYS:HD3	54:01:663:G:H5''	1.84	0.58
23:26:16:ASN:ND2	54:01:2081:U:H5''	2.18	0.58
40:J:80:THR:HG22	40:J:82:LYS:H	1.68	0.58
52:03:104:ILE:O	52:03:109:MET:HG3	2.03	0.58
53:A:70:U:H5''	53:A:71:A:OP1	2.03	0.58
54:01:2190:G:H2'	54:01:2191:A:C8	2.38	0.58
59:Z:54:GLU:OE1	59:Z:62:ILE:HG21	2.03	0.58
22:25:62:LYS:O	22:25:78:ILE:HG23	2.03	0.58
27:30:30:ASP:HB3	27:30:34:GLY:H	1.68	0.58
37:G:136:LYS:O	37:G:140:VAL:HG23	2.03	0.58
47:Q:46:HIS:HB2	47:Q:70:LYS:CD	2.29	0.58
54:01:1794:A:H2'	54:01:1795:C:C6	2.38	0.58
59:Z:27:LEU:O	59:Z:31:ILE:HG13	2.03	0.58
2:05:135:GLY:O	54:01:2580:U:H5''	2.03	0.58
25:28:5:LYS:HG2	25:28:36:GLU:HG3	1.85	0.58
48:R:41:SER:HB3	48:R:51:GLN:HE21	1.68	0.58
54:01:1251:C:O2'	54:01:1252:G:H3'	2.03	0.58
1:04:16:VAL:HB	1:04:203:VAL:HG22	1.85	0.58
1:04:140:VAL:HG12	1:04:191:LEU:HD23	1.84	0.58
3:06:117:ARG:HH12	11:14:2:ARG:HG2	1.69	0.58
8:11:99:LYS:HE3	8:11:140:GLU:HG2	1.85	0.58
51:U:53:LYS:O	51:U:57:LYS:HG2	2.04	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:780:G:H2'	54:01:782:A:N7	2.17	0.58
54:01:2591:C:H2'	54:01:2592:G:C8	2.39	0.58
59:Z:68:GLU:HB2	59:Z:261:PHE:CD2	2.38	0.58
59:Z:155:GLU:HA	59:Z:158:SER:HB2	1.84	0.58
16:19:5:ARG:HB2	16:19:8:ILE:HD11	1.86	0.58
24:27:6:LEU:HD11	24:27:59:GLU:OE2	2.04	0.58
32:B:178:LEU:HG	32:B:180:ILE:HG13	1.85	0.58
33:C:151:GLU:HB3	33:C:198:LYS:HG3	1.85	0.58
35:E:10:LEU:HA	35:E:40:ASP:HA	1.86	0.58
52:03:74:ARG:H	52:03:112:ASP:HB2	1.67	0.58
53:A:902:G:H2'	53:A:903:G:H8	1.68	0.58
54:01:1053:C:C2'	54:01:1054:A:H5''	2.33	0.58
55:02:87:U:H5''	55:02:88:C:OP2	2.04	0.58
8:11:45:THR:HG22	8:11:50:LYS:HG2	1.86	0.58
32:B:67:LEU:HD23	32:B:68:PHE:N	2.19	0.58
52:03:124:VAL:HG13	52:03:127:LEU:HD12	1.86	0.58
54:01:581:C:H2'	54:01:582:A:C8	2.38	0.58
54:01:2646:C:H2'	54:01:2647:U:O4'	2.03	0.58
55:02:3:C:H3'	55:02:4:C:H5''	1.86	0.58
1:04:235:GLU:N	1:04:238:ASN:HD22	2.01	0.58
6:09:3:VAL:HG22	6:09:38:PRO:HA	1.86	0.58
40:J:91:ASP:O	40:J:92:LEU:HB2	2.04	0.58
53:A:1206:G:C2'	53:A:1207:G:H5''	2.29	0.58
54:01:2248:C:H2'	54:01:2249:U:H5'	1.85	0.58
5:08:37:ASN:ND2	5:08:39:ALA:HB3	2.19	0.58
8:11:127:SER:HA	54:01:1080:A:H1'	1.85	0.58
9:12:45:THR:HG22	9:12:47:HIS:H	1.69	0.58
9:12:114:LEU:O	9:12:118:MET:HG2	2.04	0.58
12:15:11:LYS:HD2	12:15:86:LYS:HG2	1.86	0.58
46:P:14:ARG:HH12	53:A:618:C:H1'	1.67	0.58
53:A:112:G:N2	53:A:354:G:H5'	2.13	0.58
54:01:1348:C:H2'	54:01:1349:C:H5'	1.86	0.58
59:Z:69:TYR:HE1	59:Z:78:HIS:HB2	1.68	0.58
7:10:41:LEU:HD11	7:10:54:VAL:HG11	1.85	0.58
55:02:66:A:N1	55:02:107:G:H2'	2.19	0.58
51:U:17:ARG:HA	51:U:20:ARG:HH11	1.68	0.58
53:A:770:C:H2'	53:A:771:G:H8	1.68	0.58
56:X:13:C:C2'	56:X:14:A:H5''	2.28	0.58
58:Y:61:C:H6	58:Y:61:C:H5'	1.69	0.58
59:Z:214:ILE:HD12	59:Z:290:GLN:HB2	1.86	0.58
11:14:23:ILE:HD12	11:14:23:ILE:H	1.68	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:15:52:ALA:HB2	12:15:123:LYS:HE3	1.86	0.57
18:21:55:ILE:O	18:21:59:GLU:HG2	2.04	0.57
26:29:48:GLN:NE2	26:29:52:ALA:HB2	2.19	0.57
39:I:59:LYS:HB3	39:I:60:LEU:HD12	1.86	0.57
53:A:715:A:H2'	53:A:716:A:C8	2.39	0.57
53:A:831:A:H3'	53:A:832:G:H5''	1.86	0.57
53:A:1386:G:H2'	53:A:1387:G:H8	1.69	0.57
54:01:968:C:H2'	54:01:969:G:C8	2.39	0.57
59:Z:187:LYS:HA	59:Z:190:GLU:HG3	1.86	0.57
6:09:3:VAL:HA	6:09:39:ALA:H	1.69	0.57
6:09:132:PHE:HB2	6:09:140:ALA:HB3	1.85	0.57
17:20:68:ARG:HB2	17:20:90:ARG:HH21	1.68	0.57
52:03:46:VAL:HG22	52:03:212:VAL:HG13	1.85	0.57
53:A:950:U:H2'	53:A:951:G:H8	1.69	0.57
54:01:286:U:H2'	54:01:287:G:C8	2.39	0.57
51:U:39:LYS:O	51:U:43:GLU:HG2	2.04	0.57
53:A:1391:U:H2'	53:A:1392:G:C8	2.39	0.57
24:27:49:ASP:O	24:27:53:VAL:HG23	2.04	0.57
32:B:55:GLU:O	32:B:59:ILE:HG12	2.05	0.57
54:01:917:A:H5''	54:01:2268:A:N6	2.19	0.57
54:01:1765:U:H2'	54:01:1766:G:C8	2.40	0.57
54:01:2605:U:H2'	54:01:2606:C:C6	2.39	0.57
54:01:2699:C:H2'	54:01:2700:A:C8	2.39	0.57
3:06:40:ARG:HH22	54:01:1246:A:H4'	1.68	0.57
23:26:16:ASN:HD22	54:01:2081:U:H5''	1.70	0.57
44:N:13:VAL:HA	44:N:59:GLN:HE22	1.68	0.57
53:A:501:C:H2'	53:A:502:A:H8	1.68	0.57
53:A:707:U:H2'	53:A:708:C:C6	2.39	0.57
2:05:105:LYS:HA	2:05:177:VAL:HG12	1.87	0.57
18:21:83:LYS:HG2	18:21:95:ARG:NH1	2.19	0.57
52:03:211:LYS:HE2	52:03:213:SER:HB3	1.86	0.57
59:Z:4:LYS:HA	59:Z:264:LEU:HB2	1.85	0.57
2:05:25:THR:HG21	2:05:193:VAL:HG22	1.87	0.57
4:07:90:LEU:HD12	4:07:90:LEU:O	2.05	0.57
5:08:23:ILE:HG22	5:08:25:ILE:HG13	1.86	0.57
5:08:71:LEU:O	5:08:75:VAL:HG23	2.03	0.57
34:D:49:ASP:HA	34:D:52:VAL:HG22	1.85	0.57
39:I:33:SER:H	39:I:36:GLN:HE21	1.52	0.57
44:N:20:PHE:O	44:N:21:ALA:HB3	2.04	0.57
54:01:996:A:H2'	54:01:997:G:H8	1.70	0.57
59:Z:176:LYS:HD2	59:Z:184:TRP:CD1	2.40	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:07:133:GLU:OE2	4:07:148:VAL:HG13	2.04	0.57
32:B:160:LEU:HD22	32:B:175:ALA:HB2	1.86	0.57
52:03:175:ILE:HB	52:03:188:ASN:HB3	1.86	0.57
53:A:352:C:H4'	53:A:354:G:OP1	2.04	0.57
53:A:1228:C:H2'	53:A:1229:A:H8	1.70	0.57
53:A:1369:C:H2'	53:A:1370:G:C8	2.39	0.57
59:Z:67:VAL:HG23	59:Z:78:HIS:HB3	1.86	0.57
59:Z:214:ILE:HD13	59:Z:286:ILE:HD11	1.85	0.57
6:09:94:ILE:HD11	6:09:122:LEU:HB2	1.85	0.57
33:C:9:ILE:HG23	33:C:10:ARG:HG3	1.85	0.57
53:A:312:C:H2'	53:A:313:A:C8	2.40	0.57
59:Z:328:PRO:HG2	59:Z:330:PHE:CZ	2.40	0.57
7:10:26:VAL:HB	7:10:82:ILE:HD12	1.86	0.57
9:12:45:THR:HB	9:12:48:VAL:HB	1.87	0.57
35:E:148:SER:HB2	35:E:149:PRO:HD2	1.85	0.57
51:U:58:LYS:NZ	51:U:58:LYS:HB2	2.20	0.57
3:06:192:ALA:O	3:06:196:VAL:HG23	2.05	0.56
24:27:7:ARG:HD3	24:27:7:ARG:N	2.20	0.56
35:E:54:GLU:HG2	35:E:56:PRO:HD2	1.87	0.56
39:I:49:GLN:N	39:I:50:PRO:HD2	2.20	0.56
46:P:70:ARG:NH1	53:A:452:A:H1'	2.20	0.56
52:03:12:ARG:HG2	52:03:220:ALA:HB2	1.86	0.56
52:03:48:LEU:HD12	52:03:165:ASN:ND2	2.20	0.56
53:A:358:U:H2'	53:A:359:G:H8	1.70	0.56
53:A:398:U:H2'	53:A:399:G:H8	1.69	0.56
53:A:501:C:H2'	53:A:502:A:C8	2.40	0.56
53:A:1129:C:H2'	53:A:1139:G:N7	2.19	0.56
54:01:1268:A:H2'	54:01:1269:A:O4'	2.04	0.56
59:Z:97:GLN:HE21	59:Z:229:GLY:HA2	1.70	0.56
1:04:206:LYS:HD2	54:01:729:G:C8	2.41	0.56
4:07:87:LYS:HD2	54:01:2313:C:H5''	1.87	0.56
13:16:39:PRO:HG2	54:01:1651:G:H4'	1.86	0.56
14:17:29:HIS:HB3	14:17:36:TYR:HB2	1.87	0.56
34:D:117:VAL:HG22	34:D:122:ILE:HG13	1.87	0.56
36:F:52:ASN:O	36:F:53:LYS:HG3	2.04	0.56
53:A:744:C:H2'	53:A:745:G:C8	2.40	0.56
53:A:1429:A:H2'	53:A:1430:A:H8	1.70	0.56
54:01:1717:A:H2'	54:01:1718:G:O4'	2.06	0.56
59:Z:74:ARG:HB2	59:Z:76:TYR:CZ	2.41	0.56
2:05:118:PHE:HB2	54:01:2823:A:OP1	2.04	0.56
3:06:176:ASP:OD1	3:06:179:SER:HB2	2.06	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:J:28:THR:HG22	40:J:86:ALA:HB1	1.86	0.56
42:L:2:THR:CG2	42:L:5:GLN:HG3	2.35	0.56
52:03:142:VAL:HG11	52:03:162:ARG:HD2	1.87	0.56
53:A:1144:G:H21	53:A:1146:A:H62	1.52	0.56
54:01:473:G:O2'	54:01:474:G:H5'	2.05	0.56
54:01:554:U:H2'	54:01:555:G:O4'	2.04	0.56
54:01:660:C:H2'	54:01:661:A:C8	2.41	0.56
54:01:679:C:H2'	54:01:680:C:C6	2.40	0.56
54:01:1149:G:H2'	54:01:1150:C:C6	2.41	0.56
54:01:2636:C:H2'	54:01:2637:U:H6	1.68	0.56
59:Z:157:LEU:HB3	59:Z:162:PHE:HB2	1.87	0.56
59:Z:366:ILE:HG13	59:Z:367:ALA:N	2.21	0.56
5:08:34:ARG:NE	5:08:70:LEU:HD13	2.19	0.56
20:23:10:VAL:HG12	20:23:71:ILE:HA	1.86	0.56
40:J:5:ARG:HG2	40:J:79:PRO:HB3	1.86	0.56
48:R:70:THR:HG23	48:R:72:ARG:H	1.71	0.56
54:01:2287:A:O2'	54:01:2288:A:H2'	2.06	0.56
54:01:2297:A:N6	54:01:2319:G:H1'	2.19	0.56
1:04:61:TYR:HE1	54:01:1816:C:H3'	1.71	0.56
15:18:52:ARG:NH2	54:01:2720:U:H5''	2.21	0.56
31:34:7:VAL:HB	31:34:35:GLN:NE2	2.20	0.56
32:B:160:LEU:HD22	32:B:175:ALA:CB	2.35	0.56
43:M:24:VAL:HA	53:A:1329:A:H5''	1.86	0.56
43:M:47:LEU:HD21	43:M:51:GLN:HB2	1.88	0.56
52:03:46:VAL:O	52:03:171:ILE:HG22	2.05	0.56
52:03:105:LYS:HA	52:03:109:MET:SD	2.46	0.56
15:18:88:ARG:HH11	15:18:112:ARG:HH21	1.52	0.56
22:25:47:VAL:HG13	22:25:56:PHE:O	2.05	0.56
54:01:1432:G:H2'	54:01:1433:A:C8	2.40	0.56
59:Z:184:TRP:O	59:Z:188:ILE:HG12	2.05	0.56
1:04:61:TYR:CE1	54:01:1816:C:H3'	2.40	0.56
8:11:78:LEU:HD13	8:11:112:LYS:NZ	2.21	0.56
38:H:6:ILE:HD11	38:H:31:LEU:HD23	1.86	0.56
52:03:27:ILE:HB	52:03:182:ALA:HB1	1.88	0.56
54:01:184:C:H2'	54:01:185:G:H8	1.70	0.56
7:10:78:GLY:N	7:10:79:PRO:HD2	2.21	0.56
33:C:118:SER:O	33:C:122:GLN:HG3	2.06	0.56
52:03:153:VAL:HG12	52:03:157:LYS:HD3	1.87	0.56
53:A:1170:A:H2'	53:A:1171:A:O4'	2.05	0.56
53:A:1399:C:H4'	53:A:1400:C:O5'	2.05	0.56
54:01:100:U:H4'	54:01:101:A:O4'	2.06	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:1071:G:OP1	54:01:1071:G:H3'	2.05	0.56
54:01:1316:U:H2'	54:01:1317:G:C8	2.41	0.56
33:C:69:THR:HG21	33:C:75:VAL:HG21	1.87	0.56
35:E:152:VAL:HG11	38:H:98:LEU:HD13	1.87	0.56
44:N:80:ARG:O	44:N:83:VAL:HG12	2.06	0.56
52:03:22:ASP:H	52:03:25:GLU:HB3	1.70	0.56
53:A:1429:A:H2'	53:A:1430:A:C8	2.41	0.56
59:Z:100:GLY:HA3	59:Z:199:ILE:HD13	1.88	0.56
2:05:124:ARG:HA	2:05:165:MET:SD	2.46	0.56
7:10:59:LEU:HD22	7:10:62:ARG:NH2	2.21	0.56
17:20:78:ARG:HH12	54:01:990:A:H61	1.54	0.56
21:24:62:THR:HG22	21:24:71:LYS:HG2	1.88	0.56
46:P:20:VAL:HG22	46:P:21:VAL:H	1.71	0.56
48:R:17:VAL:HG22	48:R:18:GLN:N	2.19	0.56
53:A:89:U:H2'	53:A:90:C:O4'	2.06	0.56
53:A:797:C:H2'	53:A:798:U:C6	2.41	0.56
14:17:110:ALA:HB1	14:17:115:LEU:HD23	1.88	0.55
20:23:25:LYS:HG2	20:23:36:GLU:OE1	2.05	0.55
33:C:76:ILE:HB	33:C:80:GLY:HA2	1.88	0.55
40:J:42:LEU:HD11	40:J:73:LEU:HG	1.88	0.55
44:N:45:LEU:O	49:S:12:LEU:HD11	2.07	0.55
52:03:48:LEU:HG	52:03:171:ILE:HB	1.89	0.55
54:01:2350:C:H2'	54:01:2351:G:O4'	2.05	0.55
16:19:32:ARG:HB2	54:01:581:C:OP1	2.05	0.55
18:21:4:ILE:HG22	18:21:106:VAL:HG22	1.88	0.55
32:B:41:ASN:HD22	32:B:44:LYS:HG2	1.71	0.55
43:M:47:LEU:HD23	43:M:48:SER:O	2.06	0.55
54:01:1138:G:H2'	54:01:1139:G:O4'	2.06	0.55
54:01:2537:U:H2'	54:01:2538:C:C6	2.41	0.55
54:01:1278:C:H2'	54:01:1279:G:H8	1.71	0.55
54:01:1368:G:H2'	54:01:1369:G:C8	2.41	0.55
54:01:2329:U:H2'	54:01:2330:G:H8	1.72	0.55
13:16:47:VAL:C	13:16:50:PRO:HD2	2.26	0.55
23:26:70:LEU:HD13	23:26:77:TYR:HB3	1.88	0.55
24:27:21:LEU:HA	24:27:25:GLN:HB3	1.89	0.55
53:A:744:C:H2'	53:A:745:G:H8	1.72	0.55
54:01:161:A:H3'	54:01:162:U:H5''	1.87	0.55
54:01:703:U:H2'	54:01:704:G:O4'	2.05	0.55
39:I:104:THR:HG23	53:A:1180:A:H5'	1.89	0.55
54:01:1283:G:H1'	54:01:1329:U:O2	2.07	0.55
54:01:2799:A:H2'	54:01:2800:A:H5'	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:Z:354:ASP:HB3	59:Z:356:ILE:HG23	1.89	0.55
5:08:8:VAL:HB	5:08:49:LEU:HB2	1.89	0.55
16:19:21:LYS:HG2	54:01:19:A:H5''	1.89	0.55
20:23:5:ARG:HG2	20:23:93:ARG:NH2	2.22	0.55
42:L:32:VAL:O	42:L:33:CYS:HB2	2.06	0.55
54:01:2111:U:H3	54:01:2147:A:H1'	1.71	0.55
59:Z:212:LEU:HD21	59:Z:229:GLY:HA3	1.89	0.55
8:11:85:ILE:HD11	8:11:137:LEU:HD21	1.88	0.55
11:14:135:ILE:HB	11:14:142:ILE:HD11	1.88	0.55
33:C:106:ARG:HG2	33:C:107:LYS:HD2	1.88	0.55
54:01:1874:C:H2'	54:01:1875:G:O4'	2.07	0.55
54:01:2155:U:H2'	54:01:2156:G:H5'	1.89	0.55
54:01:2512:C:H2'	54:01:2513:A:O4'	2.06	0.55
11:14:23:ILE:HD12	11:14:23:ILE:N	2.22	0.55
16:19:49:ARG:HG2	16:19:52:ARG:NH2	2.22	0.55
32:B:9:LEU:HD11	32:B:13:VAL:HG22	1.87	0.55
53:A:532:A:O2'	53:A:533:A:OP1	2.16	0.55
53:A:1296:C:H4'	53:A:1302:C:H42	1.72	0.55
54:01:2182:U:H2'	54:01:2183:A:C8	2.42	0.55
54:01:2423:U:O2'	54:01:2425:A:H2'	2.07	0.55
3:06:71:GLY:N	54:01:674:G:H5''	2.22	0.55
27:30:29:VAL:HB	54:01:2885:G:H1	1.71	0.55
32:B:17:HIS:HB2	32:B:188:THR:HG23	1.88	0.55
32:B:65:LYS:HB3	32:B:89:PHE:HE2	1.72	0.55
44:N:53:ASP:HA	44:N:58:ARG:HD3	1.87	0.55
53:A:220:G:O2'	53:A:221:C:H5'	2.07	0.55
53:A:236:A:H2'	53:A:237:G:H8	1.72	0.55
53:A:398:U:H2'	53:A:399:G:C8	2.42	0.55
53:A:1346:A:O2'	53:A:1347:G:H4'	2.07	0.55
54:01:365:U:H2'	54:01:366:C:C6	2.41	0.55
54:01:593:U:H2'	54:01:594:U:C6	2.42	0.55
59:Z:206:ILE:HG22	59:Z:270:ALA:N	2.19	0.55
5:08:154:GLU:HG2	5:08:157:LYS:H	1.72	0.55
8:11:33:ASN:ND2	8:11:35:MET:HB3	2.21	0.55
33:C:58:ARG:NH1	33:C:58:ARG:HB2	2.22	0.55
37:G:80:GLY:HA3	57:V:11:U:O2'	2.06	0.55
45:O:7:THR:O	45:O:11:VAL:HG23	2.06	0.55
53:A:225:C:H2'	53:A:226:G:H5''	1.89	0.55
54:01:172:A:H2'	54:01:173:A:H8	1.72	0.55
59:Z:317:GLY:HA2	59:Z:383:VAL:HA	1.87	0.55
6:09:51:ARG:HA	6:09:55:GLU:HG3	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:22:39:THR:O	19:22:43:ILE:HG13	2.07	0.54
54:01:1906:G:H2'	54:01:1907:G:H5''	1.88	0.54
54:01:2743:U:H3'	54:01:2744:G:H5''	1.88	0.54
59:Z:184:TRP:CE3	59:Z:187:LYS:HG2	2.42	0.54
7:10:51:TYR:HA	7:10:53:ARG:HH12	1.71	0.54
9:12:31:GLU:HG2	9:12:142:ILE:HG12	1.89	0.54
18:21:42:LYS:HB2	54:01:2010:G:H5''	1.88	0.54
31:34:30:GLU:HG3	31:34:32:LYS:H	1.71	0.54
48:R:59:LYS:HD3	53:A:735:C:H5'	1.89	0.54
54:01:741:U:H2'	54:01:742:A:H8	1.72	0.54
54:01:2180:U:H2'	54:01:2181:U:O4'	2.07	0.54
59:Z:13:ASN:HB2	59:Z:99:ASP:H	1.72	0.54
59:Z:21:ASP:N	60:Z:401:GCP:H3B1	2.22	0.54
59:Z:245:VAL:HA	59:Z:250:THR:HG22	1.89	0.54
4:07:55:ASP:O	4:07:59:ILE:HG13	2.07	0.54
17:20:68:ARG:HB2	17:20:90:ARG:NH2	2.22	0.54
30:33:61:LEU:HD12	30:33:61:LEU:O	2.07	0.54
32:B:18:GLN:HG2	32:B:187:ASP:OD2	2.07	0.54
33:C:133:MET:O	33:C:137:VAL:HG23	2.07	0.54
33:C:134:LYS:O	33:C:138:GLN:HG3	2.06	0.54
49:S:54:ARG:HG3	49:S:55:GLN:HG2	1.90	0.54
54:01:1609:A:H1'	54:01:1616:A:H1'	1.89	0.54
54:01:2185:U:H2'	54:01:2186:G:C8	2.43	0.54
1:04:106:PRO:HG2	1:04:109:LEU:HB2	1.87	0.54
3:06:105:LEU:HD23	3:06:108:ILE:HD11	1.88	0.54
4:07:47:LYS:HA	4:07:50:ASP:OD2	2.05	0.54
5:08:51:PHE:HZ	5:08:71:LEU:HD22	1.72	0.54
19:22:6:ARG:O	19:22:10:VAL:HG23	2.08	0.54
41:K:93:GLU:HG2	41:K:96:ILE:HD11	1.88	0.54
42:L:109:ARG:HB2	42:L:118:VAL:HG21	1.88	0.54
54:01:2368:C:H2'	54:01:2369:A:C8	2.43	0.54
54:01:2404:U:H2'	54:01:2405:G:O4'	2.07	0.54
54:01:2861:U:H2'	54:01:2862:G:H8	1.73	0.54
6:09:30:LEU:HB3	6:09:36:ALA:HB3	1.89	0.54
16:19:91:ARG:HD2	16:19:91:ARG:N	2.23	0.54
32:B:103:TRP:CH2	32:B:107:ARG:HD3	2.42	0.54
50:T:4:LYS:HG3	50:T:6:ALA:H	1.72	0.54
53:A:434:U:H2'	53:A:435:A:C8	2.42	0.54
53:A:682:G:H2'	53:A:683:G:H8	1.72	0.54
53:A:918:A:H2'	53:A:919:A:C8	2.42	0.54
53:A:1379:G:O2'	53:A:1380:U:H5'	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:57:C:H2'	54:01:58:G:O4'	2.07	0.54
54:01:969:G:H2'	54:01:970:U:C6	2.43	0.54
54:01:1447:C:H2'	54:01:1448:G:H8	1.71	0.54
54:01:2208:C:H2'	54:01:2209:G:C8	2.42	0.54
54:01:2676:C:H2'	54:01:2677:G:C8	2.43	0.54
58:Y:53:G:H4'	59:Z:320:THR:OG1	2.08	0.54
59:Z:12:VAL:HB	59:Z:76:TYR:CD1	2.43	0.54
33:C:107:LYS:HG2	33:C:110:LEU:HD12	1.90	0.54
40:J:59:LYS:HE2	40:J:62:ARG:HH21	1.73	0.54
49:S:19:GLU:O	49:S:23:GLU:HG2	2.08	0.54
53:A:70:U:H2'	53:A:94:G:N7	2.23	0.54
53:A:235:C:H2'	53:A:236:A:C8	2.43	0.54
53:A:335:C:H2'	53:A:336:A:H8	1.73	0.54
7:10:118:ILE:HB	7:10:119:PRO:HD3	1.89	0.54
10:13:66:LYS:NZ	10:13:66:LYS:HB3	2.22	0.54
24:27:26:PHE:HA	24:27:29:ARG:HE	1.73	0.54
30:33:38:LYS:HA	30:33:41:ARG:HH11	1.72	0.54
34:D:49:ASP:O	34:D:53:GLN:HG3	2.07	0.54
54:01:873:C:H2'	54:01:874:G:H8	1.72	0.54
54:01:975:A:H1'	54:01:990:A:C6	2.43	0.54
54:01:1827:U:O2'	54:01:1828:G:H5'	2.07	0.54
59:Z:304:PHE:HD2	59:Z:388:VAL:HG13	1.73	0.54
1:04:12:ARG:HH21	54:01:728:G:C5'	2.21	0.54
2:05:9:VAL:O	2:05:26:VAL:HB	2.07	0.54
4:07:23:SER:HB3	4:07:26:GLN:HG3	1.89	0.54
5:08:118:ALA:O	5:08:120:ILE:N	2.41	0.54
14:17:66:GLY:HA2	14:17:102:ARG:NH2	2.23	0.54
32:B:162:VAL:HB	32:B:184:ALA:CB	2.38	0.54
33:C:67:ILE:HD11	33:C:100:ILE:HD11	1.88	0.54
33:C:86:LEU:HA	33:C:89:VAL:HG22	1.88	0.54
35:E:79:THR:OG1	35:E:80:LEU:N	2.40	0.54
35:E:79:THR:HG23	35:E:80:LEU:O	2.08	0.54
40:J:66:GLU:HG2	44:N:98:ALA:HB2	1.88	0.54
51:U:34:ARG:HB3	51:U:36:PHE:CE2	2.43	0.54
52:03:111:PHE:CE2	52:03:114:VAL:HG23	2.43	0.54
53:A:1201:A:H1'	53:A:1202:U:OP2	2.08	0.54
54:01:290:U:H2'	54:01:291:G:H8	1.71	0.54
54:01:1909:C:H2'	54:01:1910:G:H8	1.72	0.54
54:01:2789:C:H2'	54:01:2893:A:N7	2.23	0.54
55:02:13:G:N2	55:02:16:G:H1'	2.20	0.54
59:Z:70:ASP:HA	59:Z:76:TYR:HD2	1.71	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:Z:253:SER:HB2	59:Z:281:ILE:HD11	1.87	0.54
40:J:57:VAL:O	40:J:58:ASN:CB	2.55	0.54
47:Q:10:ARG:HH11	47:Q:55:GLY:HA2	1.72	0.54
54:01:1697:G:H4'	54:01:1978:A:H5''	1.89	0.54
59:Z:214:ILE:CD1	59:Z:286:ILE:HD11	2.37	0.54
2:05:125:TRP:CD1	2:05:160:LYS:HB3	2.42	0.54
4:07:40:GLY:HA2	4:07:84:ILE:HG13	1.89	0.54
5:08:8:VAL:HB	5:08:49:LEU:HD12	1.89	0.54
7:10:88:HIS:HB2	7:10:89:PRO:HD3	1.90	0.54
13:16:47:VAL:O	13:16:50:PRO:HD2	2.08	0.54
33:C:110:LEU:HD13	33:C:203:LYS:HE3	1.90	0.54
33:C:182:ASP:HB2	33:C:201:ILE:HB	1.90	0.54
34:D:190:LEU:HD12	34:D:190:LEU:O	2.08	0.54
36:F:50:PRO:HG3	36:F:55:HIS:CE1	2.43	0.54
49:S:54:ARG:HB3	53:A:958:A:C2	2.43	0.54
53:A:1228:C:H2'	53:A:1229:A:C8	2.43	0.54
54:01:741:U:H2'	54:01:742:A:C8	2.43	0.54
54:01:1669:A:H5''	54:01:2550:G:OP1	2.08	0.54
54:01:2144:G:H1'	54:01:2147:A:H61	1.73	0.54
59:Z:124:GLN:NE2	59:Z:385:ALA:HB1	2.22	0.54
59:Z:329:GLN:HE22	59:Z:378:GLU:HA	1.72	0.54
2:05:181:ASP:HB3	2:05:186:LEU:HB2	1.90	0.53
4:07:154:THR:HG21	54:01:2314:A:O4'	2.07	0.53
32:B:27:LYS:HB3	32:B:28:PRO:HD3	1.89	0.53
33:C:87:ARG:HG3	33:C:98:ALA:O	2.07	0.53
42:L:113:ARG:HH12	42:L:121:PRO:HD3	1.72	0.53
52:03:69:THR:HG22	52:03:174:THR:HG23	1.89	0.53
54:01:310:A:C2'	54:01:311:A:H5''	2.38	0.53
54:01:2270:A:H2'	54:01:2271:G:O4'	2.08	0.53
54:01:2398:U:H2'	54:01:2399:G:C8	2.43	0.53
18:21:86:MET:HB2	18:21:96:ILE:HD13	1.89	0.53
53:A:358:U:H2'	53:A:359:G:C8	2.42	0.53
54:01:255:A:H2'	54:01:256:A:O4'	2.08	0.53
54:01:1775:U:H2'	54:01:1776:G:O4'	2.07	0.53
54:01:2162:G:H2'	54:01:2163:A:C8	2.43	0.53
59:Z:68:GLU:HB2	59:Z:261:PHE:HD2	1.72	0.53
1:04:12:ARG:HA	1:04:15:VAL:HG23	1.90	0.53
35:E:59:ILE:HD12	35:E:60:GLN:N	2.23	0.53
41:K:124:LYS:HD3	41:K:124:LYS:H	1.74	0.53
53:A:20:U:H2'	53:A:21:G:O4'	2.08	0.53
53:A:59:A:H5''	53:A:387:U:H5''	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:1306:A:N6	53:A:1331:G:H1'	2.24	0.53
53:A:1460:C:H2'	53:A:1461:G:H8	1.73	0.53
54:01:1675:C:H2'	54:01:1676:A:O4'	2.07	0.53
54:01:1689:A:H2'	54:01:1690:A:H8	1.74	0.53
59:Z:145:LEU:O	59:Z:149:VAL:HG23	2.09	0.53
1:04:261:ARG:CD	1:04:262:THR:HG23	2.39	0.53
2:05:2:ILE:HG21	2:05:90:PHE:HE2	1.73	0.53
2:05:33:ARG:H	2:05:33:ARG:CD	2.19	0.53
33:C:155:ARG:HG3	33:C:192:TYR:O	2.08	0.53
45:O:45:HIS:O	45:O:47:LYS:N	2.41	0.53
54:01:1316:U:H2'	54:01:1317:G:H8	1.73	0.53
54:01:2329:U:H2'	54:01:2330:G:C8	2.44	0.53
24:27:9:LYS:HE2	24:27:11:VAL:HG23	1.89	0.53
27:30:27:LEU:HD11	27:30:36:LYS:HB3	1.91	0.53
39:I:115:VAL:HG21	40:J:62:ARG:HB2	1.90	0.53
47:Q:48:GLU:HB2	47:Q:51:GLU:OE2	2.08	0.53
54:01:859:G:H1'	54:01:860:U:H5	1.73	0.53
54:01:1765:U:H2'	54:01:1766:G:H8	1.74	0.53
54:01:2345:G:N3	54:01:2381:A:H2'	2.24	0.53
56:W:47:U:H3'	56:W:48:C:C5'	2.39	0.53
59:Z:93:THR:HG22	59:Z:215:GLU:HG2	1.91	0.53
32:B:79:VAL:HG12	32:B:90:PHE:HB2	1.89	0.53
34:D:131:ILE:HG12	53:A:620:C:C2	2.43	0.53
38:H:65:PHE:CD2	38:H:66:GLN:HG2	2.43	0.53
53:A:891:U:O2'	53:A:892:A:H5'	2.08	0.53
54:01:435:C:H2'	54:01:436:C:H5'	1.90	0.53
54:01:742:A:H2'	54:01:743:A:H8	1.74	0.53
54:01:1310:G:H1'	54:01:1611:C:H5'	1.88	0.53
16:19:15:LYS:O	16:19:19:GLN:HG3	2.09	0.53
33:C:11:LEU:HD13	33:C:17:TRP:NE1	2.24	0.53
35:E:119:VAL:HG11	35:E:122:VAL:CG2	2.37	0.53
42:L:43:LYS:HB3	42:L:44:PRO:HD3	1.90	0.53
49:S:35:ARG:HH22	49:S:52:ASN:HA	1.74	0.53
54:01:2215:C:H2'	54:01:2216:G:C8	2.44	0.53
59:Z:212:LEU:HG	59:Z:230:ARG:O	2.08	0.53
5:08:94:ARG:HB2	5:08:105:SER:HB2	1.90	0.53
6:09:93:SER:HB3	6:09:123:ARG:HG2	1.90	0.53
8:11:21:PRO:HB2	8:11:22:PRO:HD3	1.90	0.53
8:11:94:LYS:HZ2	54:01:1076:C:H4'	1.74	0.53
12:15:42:THR:O	12:15:46:ILE:HD13	2.09	0.53
16:19:105:PHE:O	16:19:109:VAL:HG23	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:H:45:ILE:HG21	38:H:60:LEU:HD22	1.90	0.53
39:I:89:TYR:HB3	39:I:93:LEU:HD12	1.90	0.53
42:L:48:LEU:HB2	53:A:520:A:OP1	2.09	0.53
51:U:11:PHE:O	51:U:13:VAL:HG12	2.09	0.53
53:A:784:A:H2'	53:A:785:G:C8	2.43	0.53
53:A:1402:C:H2'	53:A:1403:C:O4'	2.09	0.53
54:01:575:A:O2'	54:01:576:U:H5'	2.09	0.53
6:09:64:ALA:O	6:09:68:ARG:HG3	2.08	0.53
46:P:70:ARG:HD3	53:A:375:U:OP1	2.09	0.53
52:03:9:ARG:O	52:03:13:GLU:HG3	2.09	0.53
53:A:335:C:H2'	53:A:336:A:C8	2.44	0.53
53:A:411:A:H1'	53:A:413:G:H1'	1.90	0.53
54:01:1141:U:H4'	54:01:1142:A:O4'	2.09	0.53
54:01:1332:G:N7	54:01:1609:A:H2'	2.24	0.53
54:01:2141:G:H2'	54:01:2142:A:C8	2.44	0.53
55:02:114:C:H2'	55:02:115:A:H8	1.72	0.53
2:05:194:PRO:HA	54:01:2680:U:H5'	1.89	0.53
16:19:50:ARG:HG2	54:01:1156:A:C8	2.44	0.53
29:32:16:HIS:HA	29:32:21:ARG:HH22	1.72	0.53
33:C:179:ALA:HB1	33:C:202:PHE:HE1	1.73	0.53
50:T:23:ARG:HH21	50:T:60:GLN:HE22	1.57	0.53
53:A:309:A:H2'	53:A:310:G:H8	1.72	0.53
54:01:2317:A:H2'	54:01:2318:G:O4'	2.09	0.53
59:Z:11:HIS:CB	59:Z:269:ARG:HH12	2.22	0.53
4:07:124:ARG:HH21	54:01:2316:G:H4'	1.74	0.52
12:15:29:GLY:HA2	12:15:106:ASP:HB2	1.91	0.52
28:31:47:ILE:HD12	28:31:47:ILE:N	2.23	0.52
33:C:54:ILE:HG22	33:C:67:ILE:HA	1.90	0.52
53:A:483:C:H2'	53:A:484:G:C8	2.43	0.52
54:01:329:G:O4'	54:01:477:A:H1'	2.09	0.52
54:01:1447:C:H2'	54:01:1448:G:C8	2.45	0.52
4:07:107:VAL:HB	4:07:108:PRO:HD3	1.91	0.52
5:08:136:ASP:OD2	5:08:139:VAL:HG23	2.09	0.52
17:20:80:ARG:NH2	54:01:571:U:H3'	2.24	0.52
51:U:17:ARG:HA	51:U:20:ARG:NH1	2.25	0.52
53:A:1409:C:H2'	53:A:1410:A:C8	2.44	0.52
53:A:1498:U:H1'	53:A:1499:A:N7	2.24	0.52
54:01:519:U:H2'	54:01:520:G:C8	2.45	0.52
54:01:1297:C:OP1	54:01:2710:C:H4'	2.08	0.52
54:01:2248:C:C2'	54:01:2249:U:H5'	2.39	0.52
59:Z:230:ARG:HA	59:Z:273:ASN:HA	1.89	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:Z:370:ASP:OD1	59:Z:391:VAL:HG23	2.09	0.52
6:09:2:GLN:O	6:09:39:ALA:HB3	2.09	0.52
7:10:33:VAL:HG12	7:10:34:THR:N	2.25	0.52
38:H:17:GLN:NE2	38:H:71:VAL:H	2.08	0.52
42:L:115:LYS:O	42:L:116:TYR:HB2	2.09	0.52
47:Q:43:LEU:HD13	47:Q:72:TRP:NE1	2.25	0.52
53:A:1527:U:H2'	53:A:1528:U:C6	2.43	0.52
59:Z:310:ILE:HG21	59:Z:350:VAL:HG12	1.92	0.52
12:15:69:PRO:HA	12:15:94:ALA:HB2	1.89	0.52
35:E:163:ILE:HD12	35:E:164:LEU:N	2.24	0.52
38:H:29:SER:HB3	38:H:32:LYS:HD3	1.90	0.52
54:01:546:U:H2'	54:01:547:A:C4'	2.39	0.52
54:01:1047:G:H2'	54:01:1110:G:N2	2.24	0.52
59:Z:172:GLY:HA3	59:Z:187:LYS:HB3	1.91	0.52
53:A:1230:C:H5'	56:W:30:G:H5''	1.92	0.52
54:01:66:C:H2'	54:01:67:U:C6	2.44	0.52
54:01:2861:U:H2'	54:01:2862:G:C8	2.44	0.52
55:02:63:C:H2'	55:02:64:G:H8	1.75	0.52
6:09:1:MET:HB3	6:09:3:VAL:HG23	1.91	0.52
11:14:23:ILE:HG13	17:20:82:HIS:NE2	2.25	0.52
28:31:8:ILE:HG21	28:31:24:LYS:HE2	1.90	0.52
32:B:208:ALA:HB1	32:B:212:TYR:HE2	1.73	0.52
38:H:17:GLN:HE21	38:H:71:VAL:HB	1.75	0.52
53:A:418:C:H2'	53:A:419:C:C6	2.45	0.52
54:01:2629:U:O2'	54:01:2630:G:H5''	2.10	0.52
3:06:79:ARG:HH22	54:01:471:A:H5''	1.73	0.52
7:10:23:LEU:HB3	7:10:87:GLU:OE1	2.09	0.52
22:25:45:ALA:O	22:25:47:VAL:HG23	2.10	0.52
33:C:110:LEU:HG	33:C:143:LEU:HD22	1.91	0.52
55:02:37:C:H42	55:02:49:C:H1'	1.74	0.52
35:E:84:VAL:HG23	35:E:145:ASN:HD22	1.75	0.52
52:03:57:GLN:HG2	52:03:201:PRO:HB2	1.92	0.52
53:A:494:G:O2'	53:A:496:A:H1'	2.10	0.52
53:A:1406:U:H2'	53:A:1407:C:O4'	2.10	0.52
2:05:154:LYS:NZ	54:01:2024:G:H4'	2.25	0.52
5:08:23:ILE:HD13	5:08:71:LEU:HD21	1.90	0.52
10:13:15:GLY:O	10:13:47:ILE:HG12	2.10	0.52
12:15:33:LEU:HB2	12:15:117:PHE:CD1	2.45	0.52
12:15:50:ARG:HH21	12:15:50:ARG:HG2	1.74	0.52
16:19:36:GLN:NE2	54:01:564:C:H1'	2.25	0.52
24:27:2:LYS:HD2	54:01:78:U:OP2	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:L:26:CYS:SG	42:L:29:LYS:HE2	2.50	0.52
44:N:2:LYS:HB3	44:N:5:MET:HG2	1.92	0.52
47:Q:59:GLU:HB2	47:Q:76:ARG:H	1.74	0.52
51:U:28:LEU:HA	51:U:31:VAL:HG12	1.92	0.52
53:A:235:C:H2'	53:A:236:A:H8	1.75	0.52
53:A:410:G:H2'	53:A:429:U:C4	2.45	0.52
54:01:1437:C:H2'	54:01:1438:U:C6	2.45	0.52
7:10:103:ASN:HA	7:10:107:GLU:HB3	1.92	0.52
21:24:70:ILE:HG22	21:24:72:VAL:HG13	1.91	0.52
29:32:12:ARG:NH1	29:32:44:VAL:HG21	2.25	0.52
32:B:53:LEU:HD23	32:B:56:LEU:HD12	1.91	0.52
34:D:85:THR:HB	35:E:102:THR:HG21	1.91	0.52
34:D:141:VAL:HG12	34:D:180:THR:HG23	1.92	0.52
35:E:147:ASN:HB2	35:E:151:MET:HG3	1.91	0.52
41:K:85:VAL:HG22	41:K:110:THR:O	2.10	0.52
48:R:11:ARG:CZ	48:R:14:ALA:HB3	2.40	0.52
53:A:129:A:H1'	53:A:130:A:N7	2.25	0.52
54:01:290:U:H2'	54:01:291:G:C8	2.43	0.52
54:01:910:A:H2'	54:01:911:A:C8	2.45	0.52
54:01:927:A:H2'	54:01:928:A:C8	2.45	0.52
54:01:1625:C:H2'	54:01:1626:A:O4'	2.10	0.52
54:01:2082:A:H2'	54:01:2083:G:O4'	2.10	0.52
55:02:114:C:H2'	55:02:115:A:C8	2.44	0.52
59:Z:294:LYS:HB3	59:Z:297:THR:CG2	2.40	0.52
8:11:15:GLY:HA3	8:11:51:GLY:H	1.74	0.51
37:G:111:GLY:HA2	37:G:118:ARG:HH11	1.75	0.51
53:A:948:C:H2'	53:A:949:A:H8	1.74	0.51
54:01:942:G:H2'	54:01:943:A:O4'	2.10	0.51
54:01:2366:A:H2'	54:01:2367:G:O4'	2.10	0.51
59:Z:150:GLU:OE2	59:Z:169:ILE:HB	2.11	0.51
6:09:43:ASN:HA	6:09:46:PHE:HD2	1.75	0.51
32:B:216:VAL:O	32:B:220:VAL:HG23	2.10	0.51
33:C:11:LEU:HD13	33:C:17:TRP:HE1	1.76	0.51
35:E:122:VAL:HG23	35:E:122:VAL:O	2.11	0.51
53:A:106:C:H2'	53:A:107:G:H8	1.75	0.51
53:A:575:G:HO2'	53:A:821:G:H5'	1.74	0.51
53:A:902:G:H2'	53:A:903:G:C8	2.45	0.51
54:01:2538:C:H2'	54:01:2539:C:H6	1.75	0.51
54:01:2898:U:H2'	54:01:2899:A:H8	1.73	0.51
55:02:34:A:N6	55:02:44:G:H2'	2.25	0.51
59:Z:102:ILE:HD11	59:Z:195:LEU:HD11	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:04:163:ILE:HA	1:04:173:LEU:HD23	1.92	0.51
2:05:66:GLY:HA3	54:01:2787:C:H5'	1.92	0.51
14:17:26:LEU:HD23	14:17:92:PHE:HD1	1.75	0.51
14:17:74:VAL:O	14:17:78:VAL:HG23	2.11	0.51
19:22:58:VAL:HG22	19:22:85:VAL:HG13	1.92	0.51
22:25:70:PRO:HD3	55:02:12:C:H42	1.74	0.51
33:C:102:ILE:HD12	33:C:102:ILE:O	2.10	0.51
37:G:78:ARG:HB3	37:G:83:THR:HA	1.93	0.51
40:J:41:PRO:HG3	53:A:1150:A:N3	2.25	0.51
42:L:114:SER:HB3	53:A:35:G:H21	1.76	0.51
45:O:23:SER:HB3	45:O:26:VAL:HG23	1.92	0.51
52:03:215:SER:HB3	52:03:221:GLY:HA2	1.92	0.51
54:01:107:G:H2'	54:01:108:G:H8	1.75	0.51
54:01:189:G:H2'	54:01:205:G:H22	1.75	0.51
54:01:1782:U:H2'	54:01:1783:A:H5'	1.91	0.51
54:01:1971:U:H5'	54:01:1972:G:H5''	1.91	0.51
54:01:2849:U:H4'	54:01:2850:A:H5'	1.91	0.51
56:X:70:G:H2'	56:X:71:C:O4'	2.10	0.51
5:08:148:ARG:HA	5:08:161:VAL:HB	1.93	0.51
15:18:3:ILE:HD12	15:18:3:ILE:N	2.24	0.51
53:A:1062:U:H2'	53:A:1063:C:C6	2.45	0.51
54:01:582:A:H2'	54:01:583:G:C8	2.45	0.51
54:01:940:G:H3'	54:01:941:A:H5''	1.93	0.51
54:01:1761:C:H2'	54:01:1762:A:O4'	2.11	0.51
54:01:2676:C:H2'	54:01:2677:G:H8	1.74	0.51
54:01:2859:G:H2'	54:01:2860:A:C8	2.44	0.51
19:22:8:LEU:HD11	24:27:22:LEU:HD12	1.91	0.51
20:23:4:ILE:HD12	20:23:4:ILE:N	2.25	0.51
32:B:129:THR:HG22	32:B:131:LYS:H	1.75	0.51
42:L:2:THR:HG21	42:L:5:GLN:HG3	1.92	0.51
51:U:29:ALA:HA	51:U:32:ARG:HD3	1.91	0.51
52:03:149:VAL:O	52:03:153:VAL:HG23	2.10	0.51
53:A:887:G:H2'	53:A:888:G:H5'	1.93	0.51
53:A:1011:C:H2'	53:A:1012:A:C8	2.46	0.51
54:01:56:A:H2'	54:01:57:C:O4'	2.11	0.51
54:01:2185:U:H2'	54:01:2186:G:H8	1.76	0.51
56:X:38:A:H3'	56:X:39:C:H6	1.73	0.51
2:05:2:ILE:HD11	2:05:100:LEU:HD22	1.91	0.51
4:07:90:LEU:HD13	4:07:95:MET:HA	1.93	0.51
5:08:173:ALA:HB1	54:01:2531:A:C8	2.45	0.51
9:12:95:ARG:HH11	9:12:95:ARG:HG3	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:J:40:ILE:HD12	40:J:73:LEU:HB2	1.92	0.51
41:K:88:PRO:HG2	41:K:89:GLY:H	1.75	0.51
43:M:24:VAL:HG23	43:M:28:ARG:HB3	1.93	0.51
53:A:382:A:H2'	53:A:383:A:C8	2.44	0.51
53:A:1219:A:H2'	53:A:1220:G:C8	2.46	0.51
54:01:197:A:H4'	54:01:2069:G:OP2	2.10	0.51
54:01:1657:U:H2'	54:01:1658:C:H6	1.76	0.51
54:01:2195:U:H2'	54:01:2196:C:C6	2.46	0.51
55:02:30:C:H2'	55:02:31:C:H5'	1.91	0.51
56:X:32:C:H2'	56:X:33:U:C4	2.45	0.51
1:04:131:MET:HG3	1:04:187:CYS:O	2.11	0.51
11:14:96:LYS:HB2	11:14:96:LYS:NZ	2.26	0.51
28:31:4:ILE:HD13	28:31:27:ARG:NH2	2.26	0.51
32:B:94:ARG:HD2	32:B:94:ARG:N	2.22	0.51
34:D:151:GLN:HG3	53:A:437:U:OP1	2.11	0.51
43:M:9:PRO:HG3	43:M:44:ILE:HG13	1.93	0.51
54:01:609:A:H2'	54:01:610:C:O4'	2.11	0.51
54:01:723:C:H2'	54:01:724:U:O4'	2.11	0.51
54:01:2070:A:H2'	54:01:2071:A:H8	1.74	0.51
59:Z:34:VAL:O	59:Z:38:THR:HG23	2.11	0.51
4:07:137:PHE:HB2	4:07:140:ILE:HD13	1.93	0.51
8:11:91:LYS:HA	8:11:94:LYS:HE2	1.93	0.51
12:15:12:MET:CA	54:01:910:A:H62	2.20	0.51
12:15:66:ARG:HG3	12:15:66:ARG:HH11	1.75	0.51
27:30:43:THR:HG23	27:30:47:TYR:O	2.10	0.51
35:E:121:ASN:OD1	35:E:122:VAL:HG13	2.11	0.51
47:Q:13:SER:HB3	47:Q:21:VAL:CG1	2.40	0.51
54:01:2487:G:H2'	54:01:2488:G:C8	2.44	0.51
59:Z:33:THR:O	59:Z:37:LYS:HG3	2.09	0.51
3:06:68:ALA:HA	54:01:1255:U:C6	2.45	0.51
16:19:109:VAL:HG12	16:19:113:LYS:HE2	1.93	0.51
28:31:37:LYS:HB2	28:31:48:TYR:CE2	2.46	0.51
35:E:73:VAL:HG21	35:E:143:LEU:HD13	1.91	0.51
46:P:19:VAL:HG13	46:P:36:VAL:O	2.11	0.51
52:03:41:SER:HB2	52:03:176:GLY:O	2.10	0.51
54:01:2368:C:H2'	54:01:2369:A:H8	1.76	0.51
54:01:2812:G:H2'	54:01:2813:A:C8	2.46	0.51
59:Z:50:ASP:HB3	59:Z:56:LYS:HG3	1.92	0.51
1:04:144:GLU:HG3	1:04:188:ARG:O	2.11	0.51
4:07:102:LEU:O	4:07:107:VAL:HG23	2.11	0.51
13:16:38:LEU:HB3	13:16:39:PRO:HD3	1.91	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:16:58:ASP:OD1	13:16:63:ARG:HD3	2.11	0.51
18:21:24:ILE:HD13	18:21:36:LEU:HD11	1.93	0.51
32:B:96:LEU:H	32:B:99:MET:HE3	1.76	0.51
39:I:33:SER:HB3	39:I:36:GLN:HG2	1.93	0.51
43:M:56:ARG:HA	43:M:59:VAL:HG22	1.92	0.51
45:O:24:THR:O	45:O:28:VAL:HG23	2.11	0.51
52:03:104:ILE:HG22	52:03:109:MET:HG2	1.92	0.51
53:A:1144:G:N2	53:A:1146:A:H62	2.09	0.51
54:01:996:A:H2'	54:01:997:G:C8	2.46	0.51
54:01:1063:G:H1	54:01:1075:C:N4	2.08	0.51
54:01:1170:C:H2'	54:01:1171:G:C8	2.46	0.51
54:01:1357:C:H2'	54:01:1358:G:O4'	2.11	0.51
59:Z:120:LEU:HD12	59:Z:121:LEU:HG	1.93	0.51
59:Z:149:VAL:O	59:Z:153:VAL:HG23	2.10	0.51
11:14:95:LEU:HB3	11:14:100:ILE:HD11	1.92	0.50
14:17:88:LYS:HE2	14:17:116:GLN:HG3	1.92	0.50
33:C:56:ILE:HG22	33:C:63:ILE:HD11	1.92	0.50
33:C:71:ARG:O	33:C:75:VAL:HG23	2.11	0.50
43:M:104:ASN:O	43:M:105:ALA:HB3	2.11	0.50
47:Q:60:ILE:HG23	47:Q:72:TRP:HB3	1.91	0.50
53:A:86:G:H4'	53:A:87:C:C5	2.46	0.50
53:A:673:A:H2'	53:A:674:G:C8	2.47	0.50
53:A:1436:U:H2'	53:A:1437:A:C8	2.45	0.50
54:01:296:U:H2'	54:01:297:G:C8	2.47	0.50
54:01:2114:A:N3	54:01:2114:A:H2'	2.26	0.50
59:Z:278:LEU:HD13	59:Z:281:ILE:HG13	1.92	0.50
27:30:8:THR:HG22	54:01:2020:A:H5'	1.93	0.50
27:30:12:ARG:HH11	27:30:16:ARG:CZ	2.24	0.50
32:B:178:LEU:HD23	32:B:178:LEU:H	1.77	0.50
45:O:2:LEU:HB2	45:O:34:GLN:HE22	1.76	0.50
49:S:14:LEU:O	49:S:18:VAL:HG23	2.11	0.50
50:T:59:ARG:O	50:T:63:LYS:HG2	2.11	0.50
53:A:29:U:O2'	53:A:30:U:H5'	2.11	0.50
54:01:414:C:H2'	54:01:415:A:C8	2.45	0.50
54:01:576:U:H2'	54:01:577:G:C8	2.46	0.50
54:01:1710:G:H2'	54:01:1711:A:C8	2.46	0.50
8:11:106:GLN:O	8:11:110:GLN:HG2	2.11	0.50
18:21:20:VAL:HG21	18:21:43:ALA:HB3	1.93	0.50
32:B:30:ILE:HB	32:B:38:HIS:HB3	1.94	0.50
32:B:138:ARG:HD2	32:B:141:GLU:OE1	2.10	0.50
37:G:100:MET:O	37:G:104:VAL:HG23	2.10	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:H:29:SER:O	38:H:33:VAL:HG23	2.11	0.50
38:H:34:ALA:O	38:H:38:VAL:HG23	2.11	0.50
51:U:65:ARG:HA	51:U:65:ARG:HE	1.76	0.50
53:A:77:A:H2'	53:A:78:A:C8	2.46	0.50
53:A:1308:U:H2'	53:A:1309:G:C8	2.46	0.50
53:A:1521:C:H2'	53:A:1522:U:C6	2.47	0.50
54:01:876:C:H2'	54:01:877:A:O4'	2.11	0.50
54:01:2432:A:H1'	56:X:75:C:H5'	1.91	0.50
55:02:66:A:H61	55:02:107:G:H3'	1.76	0.50
4:07:127:TYR:HB3	4:07:155:ILE:HB	1.93	0.50
23:26:32:LEU:HA	23:26:51:SER:HA	1.92	0.50
36:F:51:ILE:C	36:F:53:LYS:H	2.14	0.50
36:F:68:GLN:O	36:F:71:ILE:HG22	2.10	0.50
41:K:49:SER:HB3	41:K:68:ARG:HD3	1.92	0.50
42:L:113:ARG:NH2	42:L:120:ARG:HA	2.27	0.50
53:A:1082:A:H2'	53:A:1083:U:O4'	2.12	0.50
53:A:1252:A:H2'	53:A:1253:G:O4'	2.11	0.50
54:01:732:C:H2'	54:01:733:G:O4'	2.11	0.50
54:01:992:C:H2'	54:01:993:G:C8	2.46	0.50
54:01:1159:U:H2'	54:01:1160:G:C8	2.46	0.50
54:01:2755:C:O5'	54:01:2755:C:H6	1.94	0.50
1:04:140:VAL:HG12	1:04:191:LEU:HA	1.93	0.50
25:28:23:LEU:HD11	25:28:53:MET:SD	2.51	0.50
29:32:10:LEU:O	29:32:14:ARG:HG2	2.12	0.50
32:B:93:HIS:ND1	32:B:145:ASN:HB2	2.26	0.50
54:01:879:G:H2'	54:01:880:G:H8	1.76	0.50
1:04:224:MET:HG2	54:01:782:A:C2	2.47	0.50
7:10:56:ARG:HD2	54:01:1106:G:O2'	2.12	0.50
8:11:4:VAL:HA	8:11:7:TYR:CE1	2.47	0.50
24:27:18:LEU:HG	24:27:22:LEU:HD13	1.94	0.50
52:03:221:GLY:N	54:01:2176:A:H5''	2.26	0.50
53:A:1128:C:H2'	53:A:1129:C:O4'	2.11	0.50
53:A:1205:U:H2'	53:A:1206:G:C8	2.45	0.50
54:01:355:U:H2'	54:01:356:G:H8	1.76	0.50
54:01:1822:C:H2'	54:01:1823:G:H8	1.77	0.50
54:01:1909:C:H2'	54:01:1910:G:C8	2.47	0.50
54:01:2875:C:H2'	54:01:2876:G:C8	2.47	0.50
1:04:94:LEU:HD13	1:04:100:ARG:HG2	1.92	0.50
3:06:145:ASP:HA	3:06:166:LYS:HB3	1.94	0.50
8:11:130:GLY:HA2	8:11:133:ARG:NH1	2.27	0.50
9:12:31:GLU:OE2	9:12:34:ARG:HD3	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:18:24:THR:HB	15:18:87:ARG:H	1.76	0.50
33:C:5:HIS:HB3	44:N:88:MET:CE	2.42	0.50
34:D:1:ALA:HA	34:D:67:LEU:HD11	1.94	0.50
37:G:65:LEU:HA	37:G:68:VAL:HG22	1.93	0.50
49:S:71:GLY:HA3	53:A:1320:C:O2	2.12	0.50
51:U:9:GLU:HB2	51:U:10:PRO:HD3	1.94	0.50
53:A:1207:G:H2'	53:A:1208:C:O4'	2.12	0.50
54:01:594:U:H2'	54:01:595:C:C6	2.47	0.50
54:01:940:G:C3'	54:01:941:A:H5''	2.42	0.50
54:01:971:G:H2'	54:01:972:A:O4'	2.12	0.50
54:01:1872:A:H2'	54:01:1873:G:O4'	2.11	0.50
54:01:2196:C:O2'	54:01:2197:U:H5'	2.11	0.50
54:01:2372:U:H2'	54:01:2373:G:H8	1.76	0.50
59:Z:68:GLU:HG2	59:Z:76:TYR:O	2.12	0.50
3:06:52:VAL:HG13	54:01:452:G:OP1	2.12	0.50
10:13:48:PRO:HG2	10:13:49:ARG:HD2	1.93	0.50
10:13:122:VAL:OXT	10:13:122:VAL:HG12	2.11	0.50
18:21:28:LYS:HB2	18:21:31:GLN:OE1	2.11	0.50
51:U:49:ALA:O	51:U:53:LYS:HG3	2.12	0.50
53:A:48:C:H5'	53:A:49:U:OP2	2.11	0.50
53:A:986:U:H2'	53:A:987:G:C8	2.47	0.50
53:A:1005:A:H2'	53:A:1006:G:O4'	2.12	0.50
53:A:1305:G:H22	53:A:1331:G:H2'	1.76	0.50
54:01:1300:G:H4'	54:01:1301:A:C5'	2.41	0.50
54:01:2623:G:H2'	54:01:2624:G:H8	1.76	0.50
58:Y:56:C:H2'	58:Y:57:G:H8	1.76	0.50
59:Z:5:PHE:CD1	59:Z:263:LYS:HD2	2.46	0.50
59:Z:375:ALA:HA	59:Z:385:ALA:HA	1.93	0.50
11:14:30:THR:O	11:14:33:ARG:HG2	2.11	0.50
15:18:26:GLU:HB3	15:18:84:SER:OG	2.12	0.50
20:23:39:ASN:HB3	20:23:62:ALA:HB3	1.94	0.50
21:24:53:LYS:HB3	21:24:55:GLU:OE1	2.11	0.50
27:30:40:HIS:HA	27:30:48:TYR:OH	2.12	0.50
39:I:129:ARG:HG2	39:I:129:ARG:HH11	1.77	0.50
53:A:410:G:H2'	53:A:429:U:O4	2.11	0.50
54:01:915:C:H3'	54:01:916:G:C8	2.47	0.50
54:01:1857:G:N2	54:01:1884:G:H2'	2.27	0.50
54:01:2515:C:H2'	54:01:2516:A:C8	2.47	0.50
59:Z:24:LYS:HG2	59:Z:104:VAL:HB	1.93	0.50
1:04:252:LYS:HB2	1:04:252:LYS:NZ	2.27	0.49
3:06:68:ALA:HA	54:01:1255:U:C5	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:12:26:GLY:HA3	54:01:1140:C:H5'	1.93	0.49
16:19:32:ARG:HG2	54:01:1252:G:N2	2.27	0.49
22:25:28:LEU:HA	22:25:60:ASP:OD1	2.12	0.49
22:25:55:LEU:HD12	22:25:76:ILE:HD12	1.93	0.49
32:B:99:MET:HA	32:B:106:VAL:HG21	1.93	0.49
35:E:119:VAL:CG1	35:E:122:VAL:HG22	2.39	0.49
38:H:100:ILE:HD12	38:H:100:ILE:O	2.12	0.49
40:J:65:TYR:OH	44:N:84:ARG:HG3	2.12	0.49
41:K:81:LEU:HD12	41:K:81:LEU:O	2.12	0.49
41:K:86:LYS:NZ	41:K:114:PRO:HD3	2.27	0.49
54:01:257:C:H2'	54:01:258:G:O4'	2.12	0.49
54:01:872:U:H2'	54:01:873:C:C6	2.47	0.49
54:01:1278:C:H2'	54:01:1279:G:C8	2.47	0.49
54:01:1434:A:H2'	54:01:1435:G:C8	2.47	0.49
54:01:1636:U:H2'	54:01:1637:A:H8	1.75	0.49
54:01:1709:U:H2'	54:01:1710:G:H8	1.77	0.49
1:04:66:PHE:HB3	1:04:150:GLY:O	2.12	0.49
3:06:46:GLN:CB	3:06:83:VAL:HG11	2.42	0.49
5:08:29:ASN:HB2	5:08:78:VAL:HA	1.94	0.49
6:09:84:ALA:HA	6:09:91:PHE:H	1.76	0.49
52:03:28:ALA:O	52:03:32:GLU:HG3	2.12	0.49
52:03:41:SER:HA	52:03:177:LYS:HA	1.94	0.49
52:03:50:ILE:HG12	52:03:165:ASN:HD21	1.77	0.49
53:A:212:G:H2'	53:A:213:G:C8	2.46	0.49
53:A:1301:U:O2	53:A:1301:U:H2'	2.11	0.49
53:A:1342:C:H2'	53:A:1343:G:C8	2.46	0.49
54:01:171:U:H2'	54:01:172:A:C8	2.47	0.49
54:01:492:A:H2'	54:01:493:G:O4'	2.12	0.49
54:01:669:G:H2'	54:01:669:G:N3	2.27	0.49
54:01:1527:G:H21	54:01:1545:A:H62	1.60	0.49
54:01:2247:A:H2'	54:01:2248:C:C6	2.47	0.49
54:01:2514:U:H2'	54:01:2515:C:C6	2.47	0.49
54:01:2771:C:H2'	54:01:2772:C:C6	2.47	0.49
54:01:2788:C:H2'	54:01:2789:C:C6	2.47	0.49
32:B:53:LEU:HA	32:B:56:LEU:HB2	1.94	0.49
42:L:31:GLY:HA3	42:L:54:VAL:CG1	2.43	0.49
42:L:51:VAL:HG22	42:L:52:CYS:N	2.27	0.49
45:O:19:ASN:OD1	53:A:750:C:H5'	2.12	0.49
46:P:51:ARG:C	46:P:52:LEU:HD12	2.32	0.49
54:01:553:G:H2'	54:01:554:U:O4'	2.11	0.49
54:01:2804:U:H2'	54:01:2805:C:C6	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:02:65:U:H3'	55:02:108:A:N6	2.26	0.49
2:05:61:THR:OG1	2:05:64:GLU:HG3	2.13	0.49
9:12:89:PHE:O	9:12:93:ILE:HG12	2.12	0.49
34:D:75:TYR:HA	34:D:89:LEU:HD13	1.94	0.49
41:K:85:VAL:HG21	51:U:16:ARG:HH22	1.77	0.49
54:01:1370:C:H2'	54:01:1371:G:O4'	2.13	0.49
54:01:1810:A:H2'	54:01:1811:G:O4'	2.12	0.49
54:01:2186:G:H2'	54:01:2187:U:O4'	2.12	0.49
54:01:2556:C:H2'	54:01:2557:G:O4'	2.11	0.49
54:01:2705:A:H2'	54:01:2706:A:O4'	2.12	0.49
55:02:53:A:H2'	55:02:53:A:N3	2.27	0.49
59:Z:84:HIS:HB3	59:Z:87:TYR:HD2	1.77	0.49
2:05:121:THR:HG21	2:05:143:PRO:HB3	1.93	0.49
13:16:43:GLU:OE2	13:16:46:ARG:HD3	2.13	0.49
17:20:24:LYS:HA	17:20:94:THR:OG1	2.12	0.49
50:T:20:ASN:HD21	50:T:65:LEU:HD11	1.78	0.49
53:A:476:U:H2'	53:A:477:C:C6	2.48	0.49
53:A:1254:A:H2'	53:A:1255:G:C8	2.47	0.49
53:A:1395:C:H6	53:A:1395:C:H5'	1.77	0.49
54:01:1463:C:H2'	54:01:1464:G:C8	2.48	0.49
54:01:2704:C:H2'	54:01:2705:A:O4'	2.13	0.49
59:Z:85:ALA:O	59:Z:88:VAL:HG23	2.12	0.49
3:06:189:THR:O	3:06:193:VAL:HG23	2.12	0.49
9:12:36:LEU:HD11	9:12:122:LEU:HD13	1.95	0.49
12:15:42:THR:OG1	12:15:45:GLN:HG3	2.13	0.49
23:26:19:HIS:HB3	54:01:2080:A:OP1	2.13	0.49
30:33:28:LEU:HD12	30:33:32:LEU:HD22	1.94	0.49
31:34:23:ILE:HD13	54:01:1032:A:H1'	1.93	0.49
32:B:46:VAL:HB	32:B:47:PRO:HD3	1.95	0.49
32:B:96:LEU:H	32:B:99:MET:CE	2.26	0.49
33:C:76:ILE:HA	33:C:83:VAL:HG23	1.94	0.49
42:L:49:ARG:HH22	53:A:522:C:N4	2.11	0.49
49:S:38:THR:HG22	49:S:69:LYS:HG2	1.94	0.49
53:A:181:A:N6	53:A:194:C:H2'	2.27	0.49
54:01:581:C:H2'	54:01:582:A:H8	1.77	0.49
54:01:601:C:H2'	54:01:602:A:O4'	2.13	0.49
54:01:644:A:H2'	54:01:645:C:C4'	2.43	0.49
54:01:660:C:H2'	54:01:661:A:H8	1.77	0.49
54:01:905:A:O2'	54:01:906:U:H5'	2.12	0.49
54:01:915:C:H3'	54:01:916:G:H8	1.76	0.49
54:01:1780:A:O2'	54:01:1781:U:H2'	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:1857:G:H2'	54:01:1884:G:N2	2.27	0.49
54:01:1932:A:H2'	54:01:1933:G:O4'	2.12	0.49
54:01:2515:C:H2'	54:01:2516:A:H8	1.78	0.49
54:01:2637:U:H2'	54:01:2638:G:O4'	2.12	0.49
54:01:2760:C:O2'	54:01:2761:A:H5'	2.12	0.49
3:06:63:LYS:HD2	54:01:2444:G:OP2	2.13	0.49
4:07:7:TYR:O	4:07:12:VAL:HG23	2.12	0.49
24:27:9:LYS:HD3	24:27:10:SER:N	2.27	0.49
47:Q:60:ILE:CG2	47:Q:72:TRP:HB3	2.43	0.49
53:A:1202:U:H2'	53:A:1203:C:O4'	2.13	0.49
54:01:18:U:H2'	54:01:19:A:C8	2.48	0.49
54:01:873:C:H2'	54:01:874:G:C8	2.48	0.49
54:01:1474:U:H2'	54:01:1475:G:H5'	1.93	0.49
55:02:29:A:H2'	55:02:30:C:O4'	2.12	0.49
58:Y:64:A:H1'	59:Z:378:GLU:OE2	2.12	0.49
6:09:6:LEU:HD21	6:09:51:ARG:HH11	1.78	0.49
8:11:33:ASN:HB2	8:11:64:ARG:HH22	1.77	0.49
9:12:93:ILE:CD1	9:12:100:VAL:HG21	2.43	0.49
12:15:61:GLY:HA2	12:15:107:GLY:HA3	1.95	0.49
21:24:80:HIS:ND1	21:24:81:PRO:HD2	2.28	0.49
35:E:113:VAL:HG13	35:E:114:LEU:HD12	1.94	0.49
53:A:1342:C:H2'	53:A:1343:G:H8	1.77	0.49
54:01:687:C:H2'	54:01:688:U:O4'	2.13	0.49
54:01:879:G:H2'	54:01:880:G:C8	2.47	0.49
54:01:1078:U:H4'	54:01:1079:C:H5'	1.95	0.49
54:01:1082:U:H3	54:01:1086:A:H61	1.59	0.49
54:01:1683:U:H2'	54:01:1684:G:C8	2.48	0.49
54:01:2039:U:H2'	54:01:2040:G:C8	2.47	0.49
54:01:2507:C:H2'	54:01:2508:G:H8	1.78	0.49
59:Z:11:HIS:HA	59:Z:75:HIS:HB3	1.95	0.49
5:08:118:ALA:O	5:08:120:ILE:HG12	2.12	0.49
15:18:99:LEU:O	15:18:99:LEU:HD23	2.12	0.49
17:20:37:GLU:O	17:20:39:LEU:HD12	2.13	0.49
23:26:6:VAL:HG23	23:26:50:VAL:HG12	1.95	0.49
44:N:37:ASP:OD1	44:N:39:ASP:HB3	2.13	0.49
53:A:831:A:H2'	53:A:832:G:O4'	2.13	0.49
54:01:1077:A:C2'	54:01:1078:U:H5'	2.40	0.49
54:01:2364:C:H2'	54:01:2365:G:O4'	2.13	0.49
59:Z:366:ILE:HG13	59:Z:367:ALA:H	1.77	0.49
7:10:26:VAL:HB	7:10:82:ILE:HG23	1.94	0.49
14:17:106:LEU:O	14:17:106:LEU:HD23	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:I:46:VAL:HA	39:I:49:GLN:HG3	1.95	0.49
39:I:111:GLU:HB3	39:I:114:LYS:NZ	2.27	0.49
40:J:91:ASP:O	40:J:92:LEU:CB	2.60	0.49
41:K:125:LYS:HD2	53:A:797:C:OP1	2.13	0.49
52:03:7:ARG:NE	54:01:2128:G:H4'	2.28	0.49
52:03:23:ILE:HG23	52:03:189:LEU:HD23	1.95	0.49
53:A:350:G:H2'	53:A:351:G:C8	2.48	0.49
53:A:1308:U:H2'	53:A:1309:G:H8	1.77	0.49
54:01:1367:A:H2'	54:01:1368:G:H5'	1.94	0.49
54:01:2074:U:H2'	54:01:2075:U:C6	2.48	0.49
54:01:2158:A:H4'	54:01:2159:G:O4'	2.13	0.49
54:01:2898:U:H2'	54:01:2899:A:C8	2.48	0.49
59:Z:97:GLN:NE2	59:Z:229:GLY:HA2	2.27	0.49
59:Z:326:TYR:O	59:Z:341:ILE:HG12	2.13	0.49
3:06:88:ARG:HB3	3:06:89:PRO:HD2	1.95	0.48
3:06:149:ILE:CG2	3:06:188:MET:HG2	2.43	0.48
16:19:74:SER:HB2	54:01:1011:G:OP1	2.13	0.48
21:24:30:ILE:HG13	21:24:40:ILE:HG13	1.95	0.48
33:C:5:HIS:HB3	44:N:88:MET:HE3	1.95	0.48
35:E:119:VAL:HG12	35:E:121:ASN:H	1.78	0.48
42:L:63:THR:HG23	42:L:92:VAL:HA	1.95	0.48
46:P:12:LYS:HD2	53:A:393:A:OP2	2.13	0.48
46:P:70:ARG:HH11	53:A:452:A:H1'	1.77	0.48
52:03:161:VAL:HB	52:03:173:THR:OG1	2.13	0.48
53:A:149:A:H1'	53:A:1446:A:H2	1.78	0.48
53:A:524:G:H2'	53:A:525:C:C6	2.48	0.48
53:A:932:C:H2'	53:A:933:G:C8	2.48	0.48
54:01:1709:U:H2'	54:01:1710:G:C8	2.47	0.48
54:01:1869:G:H3'	54:01:1870:C:C5'	2.43	0.48
1:04:120:ASP:HB2	6:09:91:PHE:HZ	1.78	0.48
16:19:90:ASP:OD2	16:19:92:LYS:HB3	2.13	0.48
18:21:14:ALA:HB2	18:21:78:GLU:HB3	1.96	0.48
24:27:26:PHE:O	24:27:29:ARG:HD3	2.13	0.48
25:28:40:THR:OG1	25:28:41:PRO:HD2	2.13	0.48
38:H:106:SER:HA	53:A:642:A:C8	2.48	0.48
40:J:22:THR:O	40:J:26:VAL:HG23	2.13	0.48
47:Q:17:GLU:OE2	53:A:255:G:H1'	2.13	0.48
54:01:296:U:H2'	54:01:297:G:H8	1.78	0.48
54:01:767:U:H2'	54:01:768:G:H8	1.78	0.48
54:01:2141:G:H2'	54:01:2142:A:H8	1.77	0.48
54:01:2195:U:H2'	54:01:2196:C:H6	1.79	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:Z:91:MET:HE3	59:Z:118:HIS:HA	1.95	0.48
1:04:149:LYS:HD3	54:01:2204:G:H4'	1.95	0.48
4:07:131:VAL:HG22	4:07:151:LEU:O	2.14	0.48
9:12:52:ASP:O	9:12:54:ILE:HG13	2.13	0.48
9:12:113:PRO:HD2	54:01:558:U:P	2.53	0.48
16:19:79:ILE:HG21	16:19:91:ARG:NH2	2.28	0.48
49:S:35:ARG:NH2	49:S:52:ASN:HA	2.28	0.48
53:A:757:U:H2'	53:A:758:C:O4'	2.13	0.48
53:A:1432:G:H1'	53:A:1468:A:N6	2.28	0.48
54:01:1947:C:H2'	54:01:1948:G:H8	1.78	0.48
5:08:37:ASN:HB3	5:08:40:VAL:HG23	1.94	0.48
5:08:140:ILE:HD12	5:08:141:GLY:N	2.28	0.48
29:32:24:THR:HG23	29:32:27:GLY:H	1.76	0.48
32:B:153:MET:CE	32:B:157:PRO:HG3	2.43	0.48
33:C:1:GLY:HA3	53:A:1060:U:H5	1.78	0.48
39:I:114:LYS:HE3	53:A:1187:G:H5'	1.94	0.48
41:K:87:GLY:H	41:K:113:THR:HG22	1.77	0.48
49:S:38:THR:HA	49:S:69:LYS:HA	1.95	0.48
53:A:195:A:H2'	53:A:196:A:C8	2.48	0.48
53:A:1097:C:H2'	53:A:1098:C:C6	2.48	0.48
8:11:126:ARG:HE	54:01:1081:U:P	2.37	0.48
13:16:28:LEU:HD23	13:16:48:VAL:HG11	1.96	0.48
18:21:66:ILE:H	18:21:66:ILE:CD1	2.20	0.48
39:I:119:LYS:HE3	53:A:1350:A:OP2	2.13	0.48
54:01:253:C:H2'	54:01:254:G:O4'	2.14	0.48
54:01:441:U:O2'	54:01:442:G:H5'	2.12	0.48
54:01:2199:A:H2'	54:01:2200:C:O4'	2.12	0.48
2:05:186:LEU:HD21	15:18:3:ILE:HG21	1.96	0.48
4:07:65:LEU:HD22	55:02:42:C:C5	2.48	0.48
4:07:140:ILE:HD12	4:07:140:ILE:N	2.29	0.48
6:09:50:ARG:O	6:09:55:GLU:HG3	2.13	0.48
6:09:76:GLU:HA	6:09:142:VAL:HG13	1.95	0.48
13:16:90:ARG:HB2	13:16:90:ARG:NH1	2.28	0.48
24:27:9:LYS:HD3	24:27:11:VAL:N	2.27	0.48
29:32:3:ARG:HB3	54:01:1612:C:O2'	2.13	0.48
47:Q:29:LYS:HB2	47:Q:36:PHE:CE1	2.48	0.48
52:03:75:VAL:HG21	52:03:153:VAL:HG13	1.95	0.48
53:A:151:A:H2'	53:A:152:A:O4'	2.14	0.48
53:A:545:C:O2'	53:A:549:C:H5''	2.13	0.48
53:A:909:A:H2'	53:A:910:C:O4'	2.14	0.48
54:01:799:G:H3'	54:01:800:A:C8	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:1906:G:C3'	54:01:1907:G:H5''	2.44	0.48
54:01:2024:G:H2'	54:01:2025:C:O4'	2.14	0.48
2:05:121:THR:HB	2:05:127:PHE:CD2	2.48	0.48
9:12:27:ARG:HH21	54:01:1142:A:H4'	1.79	0.48
40:J:50:THR:HG23	40:J:64:GLN:HG2	1.95	0.48
42:L:30:ARG:HB3	53:A:363:A:OP2	2.14	0.48
45:O:22:GLY:HA3	53:A:750:C:O2	2.13	0.48
52:03:180:PHE:HD2	52:03:185:LEU:HD21	1.76	0.48
53:A:312:C:H2'	53:A:313:A:H8	1.77	0.48
53:A:691:G:H2'	53:A:692:U:C6	2.49	0.48
54:01:225:C:H2'	54:01:226:A:O4'	2.14	0.48
54:01:1825:U:H2'	54:01:1826:G:H8	1.79	0.48
54:01:2710:C:H2'	54:01:2711:A:C8	2.48	0.48
59:Z:181:ASP:O	59:Z:185:GLU:HB3	2.13	0.48
59:Z:243:GLU:CG	59:Z:295:PRO:HA	2.43	0.48
59:Z:327:ARG:NH2	59:Z:363:ILE:HG21	2.29	0.48
1:04:48:ILE:O	1:04:48:ILE:HG23	2.13	0.48
11:14:68:SER:HB2	54:01:632:A:H5''	1.95	0.48
12:15:76:LYS:HD3	12:15:77:PRO:HD2	1.96	0.48
14:17:26:LEU:HD13	14:17:39:VAL:HG22	1.95	0.48
15:18:31:VAL:HG22	15:18:32:VAL:N	2.29	0.48
32:B:98:GLY:O	32:B:102:ASN:HB3	2.12	0.48
40:J:59:LYS:HE2	40:J:62:ARG:NH2	2.29	0.48
40:J:91:ASP:CG	40:J:92:LEU:H	2.17	0.48
42:L:11:ARG:HD2	53:A:562:U:H1'	1.96	0.48
46:P:36:VAL:O	46:P:36:VAL:HG13	2.14	0.48
48:R:33:THR:HG22	48:R:37:LYS:H	1.79	0.48
53:A:359:G:H2'	53:A:360:G:O4'	2.13	0.48
53:A:948:C:H2'	53:A:949:A:C8	2.49	0.48
53:A:1033:G:C3'	53:A:1034:G:H5''	2.40	0.48
54:01:1506:U:H2'	54:01:1507:C:C6	2.49	0.48
54:01:2047:C:H2'	54:01:2048:G:C8	2.48	0.48
54:01:2243:U:H2'	54:01:2244:U:C6	2.49	0.48
54:01:2264:C:H2'	54:01:2265:U:O4'	2.14	0.48
55:02:63:C:H2'	55:02:64:G:C8	2.49	0.48
59:Z:102:ILE:HG23	59:Z:131:ILE:O	2.13	0.48
59:Z:299:LYS:NZ	59:Z:301:HIS:HA	2.28	0.48
59:Z:326:TYR:HB3	59:Z:341:ILE:CG1	2.44	0.48
1:04:144:GLU:HA	1:04:151:GLY:HA2	1.95	0.48
3:06:48:THR:O	3:06:52:VAL:HG23	2.14	0.48
13:16:101:GLY:H	27:30:41:HIS:HD2	1.62	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:24:75:GLN:HB2	21:24:92:VAL:HG23	1.96	0.48
32:B:102:ASN:O	32:B:105:THR:HG22	2.13	0.48
34:D:124:VAL:HG23	34:D:141:VAL:O	2.14	0.48
42:L:113:ARG:HH22	42:L:120:ARG:HA	1.78	0.48
53:A:492:C:H2'	53:A:493:A:C8	2.48	0.48
53:A:1368:A:O2'	53:A:1369:C:H5'	2.13	0.48
54:01:158:U:H2'	54:01:159:G:O4'	2.13	0.48
54:01:181:A:H2'	54:01:182:A:C8	2.49	0.48
54:01:2848:G:O2'	54:01:2849:U:H5'	2.13	0.48
59:Z:19:HIS:HB3	59:Z:22:HIS:CE1	2.49	0.48
59:Z:173:SER:HB3	59:Z:184:TRP:CD2	2.49	0.48
3:06:47:LYS:O	3:06:83:VAL:HB	2.14	0.48
9:12:35:ARG:HA	9:12:40:HIS:HD2	1.78	0.48
13:16:118:ARG:NH1	27:30:55:ALA:HB3	2.28	0.48
15:18:52:ARG:H	15:18:56:SER:HB3	1.79	0.48
22:25:40:LYS:HE3	54:01:2330:G:O2'	2.13	0.48
36:F:71:ILE:HD11	36:F:89:VAL:HG21	1.95	0.48
52:03:29:LEU:HD23	52:03:222:VAL:HG13	1.96	0.48
54:01:226:A:H2'	54:01:227:A:O4'	2.13	0.48
54:01:323:C:H2'	54:01:1205:A:N1	2.29	0.48
54:01:1900:A:H1'	54:01:1970:A:H2'	1.94	0.48
54:01:2281:A:O2'	54:01:2282:G:H5'	2.14	0.48
59:Z:55:GLU:HA	59:Z:60:ILE:HG13	1.96	0.48
13:16:96:ARG:NH1	13:16:116:VAL:HG13	2.29	0.47
18:21:24:ILE:HD11	18:21:74:ILE:HD13	1.94	0.47
20:23:32:LYS:HB3	20:23:63:ALA:HB1	1.96	0.47
31:34:25:VAL:HG21	31:34:35:GLN:HE21	1.79	0.47
35:E:54:GLU:HB3	35:E:57:ALA:HB3	1.96	0.47
36:F:93:LYS:O	36:F:94:HIS:HB2	2.14	0.47
41:K:92:ARG:HE	51:U:24:LYS:NZ	2.12	0.47
42:L:114:SER:CB	53:A:35:G:H21	2.27	0.47
52:03:24:ASN:OD1	52:03:27:ILE:HD11	2.14	0.47
53:A:78:A:H2'	53:A:79:G:O4'	2.13	0.47
53:A:202:G:H21	53:A:466:A:H61	1.62	0.47
53:A:494:G:H2'	53:A:496:A:H8	1.79	0.47
53:A:539:A:H2'	53:A:540:G:C8	2.48	0.47
53:A:831:A:C3'	53:A:832:G:H5''	2.43	0.47
54:01:286:U:H2'	54:01:287:G:H8	1.76	0.47
54:01:1020:A:H1'	54:01:1021:A:OP2	2.14	0.47
54:01:2507:C:H2'	54:01:2508:G:C8	2.49	0.47
59:Z:217:VAL:HB	59:Z:283:ARG:NH1	2.29	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:Z:297:THR:HG23	59:Z:298:ILE:CD1	2.41	0.47
5:08:41:GLU:HA	5:08:54:ARG:HH21	1.79	0.47
18:21:29:VAL:HG23	18:21:69:LEU:O	2.14	0.47
24:27:7:ARG:HD3	24:27:7:ARG:H	1.79	0.47
32:B:53:LEU:HD22	32:B:219:THR:HG21	1.97	0.47
46:P:46:LYS:HE2	46:P:48:GLU:O	2.14	0.47
51:U:35:GLU:O	51:U:36:PHE:HB2	2.14	0.47
53:A:770:C:H2'	53:A:771:G:C8	2.49	0.47
54:01:1681:G:N3	54:01:1762:A:H2'	2.29	0.47
54:01:1893:C:H2'	54:01:1894:C:H5'	1.96	0.47
56:X:4:G:H2'	56:X:5:G:C8	2.49	0.47
56:X:71:C:H2'	56:X:72:A:C8	2.48	0.47
3:06:77:ILE:HG13	3:06:78:TRP:HD1	1.78	0.47
19:22:40:LYS:HA	19:22:43:ILE:HD12	1.95	0.47
20:23:93:ARG:CB	20:23:102:ILE:HD12	2.45	0.47
34:D:62:ARG:HG3	34:D:62:ARG:HH11	1.79	0.47
34:D:131:ILE:HD12	34:D:131:ILE:N	2.29	0.47
34:D:186:GLU:HB3	34:D:189:ASP:OD2	2.14	0.47
38:H:105:THR:HB	38:H:120:LEU:HD11	1.96	0.47
45:O:71:ARG:HG2	45:O:71:ARG:HH11	1.79	0.47
53:A:81:A:H2	53:A:88:U:H3	1.63	0.47
53:A:271:C:H2'	53:A:272:C:C6	2.49	0.47
53:A:621:A:H2'	53:A:622:A:C8	2.50	0.47
54:01:45:G:H5''	54:01:46:G:C5'	2.23	0.47
54:01:392:U:H2'	54:01:393:C:C6	2.48	0.47
54:01:1053:C:C3'	54:01:1054:A:H5''	2.44	0.47
54:01:2151:U:H2'	54:01:2152:G:C8	2.50	0.47
58:Y:25:C:H2'	58:Y:26:A:O4'	2.14	0.47
59:Z:5:PHE:HD1	59:Z:263:LYS:HD2	1.78	0.47
59:Z:34:VAL:HG21	59:Z:188:ILE:HB	1.96	0.47
2:05:12:THR:HG21	15:18:4:ILE:HG23	1.97	0.47
2:05:159:LYS:HE2	54:01:2512:C:O2'	2.13	0.47
5:08:138:GLN:HE22	54:01:2746:U:H1'	1.80	0.47
7:10:112:ALA:HB1	7:10:123:ILE:HD12	1.95	0.47
12:15:71:LYS:HE3	12:15:73:ILE:HD11	1.96	0.47
37:G:71:THR:O	37:G:90:VAL:HG12	2.15	0.47
38:H:11:THR:HA	38:H:14:ARG:HH12	1.79	0.47
45:O:31:LEU:O	45:O:35:ILE:HG13	2.14	0.47
52:03:218:MET:HG2	54:01:2174:C:O2	2.14	0.47
53:A:106:C:H2'	53:A:107:G:C8	2.49	0.47
53:A:838:G:H2'	53:A:839:C:O4'	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:215:G:C4'	54:01:216:A:H4'	2.43	0.47
54:01:2411:A:H2'	54:01:2412:A:C8	2.49	0.47
54:01:2557:G:H2'	54:01:2558:C:C6	2.49	0.47
3:06:23:PHE:HB2	3:06:114:ARG:HH22	1.80	0.47
3:06:79:ARG:NH2	54:01:471:A:H5''	2.29	0.47
7:10:3:LEU:HB3	54:01:1044:C:OP2	2.14	0.47
8:11:56:VAL:HG21	8:11:68:PHE:HB2	1.96	0.47
33:C:67:ILE:CD1	33:C:100:ILE:HD11	2.45	0.47
36:F:32:ALA:HB1	36:F:70:VAL:HG21	1.95	0.47
36:F:64:VAL:CG2	36:F:65:GLU:N	2.78	0.47
39:I:104:THR:HG22	39:I:106:ASP:H	1.79	0.47
52:03:70:GLY:HA3	52:03:177:LYS:HG2	1.96	0.47
54:01:394:C:H2'	54:01:395:U:O4'	2.14	0.47
54:01:1859:U:H2'	54:01:1860:G:H8	1.79	0.47
54:01:2472:G:H2'	54:01:2475:C:H42	1.80	0.47
54:01:2743:U:C3'	54:01:2744:G:H5''	2.45	0.47
59:Z:299:LYS:HZ2	59:Z:301:HIS:HA	1.79	0.47
5:08:163:TYR:HB2	5:08:166:GLU:HB2	1.95	0.47
7:10:25:ALA:HB3	7:10:99:PHE:CD2	2.50	0.47
8:11:72:THR:HG23	8:11:73:PRO:HD2	1.96	0.47
9:12:41:LYS:HG2	9:12:43:GLU:OE1	2.14	0.47
39:I:83:THR:HG21	39:I:102:PHE:HB3	1.96	0.47
40:J:36:VAL:HG22	40:J:38:GLY:H	1.78	0.47
40:J:52:LEU:HB2	44:N:80:ARG:HD2	1.96	0.47
49:S:35:ARG:HD2	53:A:1221:G:OP1	2.15	0.47
53:A:950:U:H2'	53:A:951:G:C8	2.50	0.47
53:A:1500:A:H5''	53:A:1508:A:H5''	1.96	0.47
54:01:2105:U:H2'	54:01:2106:U:O4'	2.14	0.47
54:01:2533:U:H2'	54:01:2534:A:O4'	2.14	0.47
55:02:1:U:H2'	55:02:2:G:C8	2.50	0.47
2:05:33:ARG:HD2	2:05:33:ARG:N	2.23	0.47
2:05:108:ASP:OD2	2:05:206:ALA:HA	2.13	0.47
4:07:29:ARG:CZ	4:07:158:THR:HG21	2.44	0.47
4:07:70:ARG:NH2	4:07:71:LYS:HG2	2.30	0.47
4:07:174:PHE:HA	4:07:175:PRO:HD2	1.70	0.47
5:08:86:LEU:HG	5:08:163:TYR:HA	1.97	0.47
6:09:47:PHE:HD1	6:09:51:ARG:HD2	1.80	0.47
20:23:95:PHE:O	20:23:99:SER:HA	2.14	0.47
21:24:21:ARG:HA	21:24:25:LYS:O	2.14	0.47
27:30:3:GLN:HA	54:01:2615:U:C2	2.49	0.47
32:B:91:VAL:HG11	32:B:95:TRP:HD1	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:B:137:THR:O	32:B:141:GLU:HG3	2.14	0.47
33:C:13:ILE:N	33:C:13:ILE:HD12	2.30	0.47
34:D:96:ARG:HG2	34:D:96:ARG:HH11	1.78	0.47
36:F:3:HIS:H	36:F:92:THR:CG2	2.14	0.47
39:I:29:ILE:HG12	39:I:30:ASN:OD1	2.15	0.47
42:L:113:ARG:HH22	42:L:120:ARG:HG3	1.79	0.47
43:M:13:HIS:NE2	53:A:1296:C:H5'	2.28	0.47
45:O:87:ARG:HG3	45:O:88:ARG:H	1.80	0.47
50:T:28:ARG:HH12	53:A:1437:A:H5''	1.80	0.47
52:O3:131:LEU:HA	52:O3:134:ARG:HB2	1.97	0.47
53:A:189:A:H2'	53:A:190:A:O4'	2.14	0.47
53:A:371:A:H2'	53:A:372:C:O4'	2.14	0.47
54:O1:20:C:H2'	54:O1:21:A:C8	2.50	0.47
54:O1:65:U:H2'	54:O1:66:C:C6	2.49	0.47
54:O1:437:U:H2'	54:O1:438:G:C8	2.50	0.47
54:O1:729:G:H4'	54:O1:763:G:C5'	2.44	0.47
54:O1:755:U:H2'	54:O1:756:A:C8	2.49	0.47
54:O1:1657:U:H2'	54:O1:1658:C:C6	2.50	0.47
54:O1:1748:C:H2'	54:O1:1749:A:C8	2.50	0.47
54:O1:2137:U:H2'	54:O1:2138:G:H8	1.78	0.47
54:O1:2291:U:H2'	54:O1:2292:U:C6	2.49	0.47
54:O1:2853:C:H2'	54:O1:2854:G:C8	2.49	0.47
59:Z:148:LEU:O	59:Z:152:GLU:HG3	2.15	0.47
59:Z:231:VAL:CG1	59:Z:270:ALA:HA	2.45	0.47
59:Z:261:PHE:O	59:Z:262:ARG:HB2	2.15	0.47
1:O4:59:GLN:HA	54:O1:1568:G:H5'	1.97	0.47
2:O5:110:THR:HG23	2:O5:171:THR:OG1	2.15	0.47
3:O6:44:ARG:HD2	54:O1:444:C:OP2	2.15	0.47
8:11:119:ALA:HB2	54:O1:1082:U:C5'	2.43	0.47
24:27:2:LYS:HE2	54:O1:102:U:H1'	1.96	0.47
30:33:11:LYS:HB2	30:33:11:LYS:NZ	2.30	0.47
34:D:169:TRP:CG	34:D:185:PRO:HG3	2.50	0.47
35:E:14:LEU:HA	35:E:36:THR:HG22	1.96	0.47
35:E:22:LYS:HB3	35:E:29:ILE:CG2	2.44	0.47
35:E:56:PRO:O	35:E:59:ILE:HG13	2.15	0.47
37:G:65:LEU:HD23	37:G:69:ARG:HH21	1.80	0.47
44:N:41:TRP:HA	44:N:44:VAL:HG22	1.95	0.47
54:O1:1468:U:H2'	54:O1:1522:A:H61	1.78	0.47
54:O1:1856:U:H2'	54:O1:1857:G:O4'	2.14	0.47
54:O1:2065:C:H2'	54:O1:2066:C:C6	2.50	0.47
7:10:3:LEU:HD12	7:10:5:LEU:HG	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:12:117:ALA:HA	9:12:120:ARG:NH2	2.29	0.47
13:16:103:ARG:NH1	54:01:1287:A:H5'	2.29	0.47
21:24:4:ILE:HB	21:24:63:ILE:HG12	1.97	0.47
22:25:12:SER:HB3	54:01:2262:U:C5	2.45	0.47
36:F:93:LYS:O	36:F:94:HIS:CB	2.63	0.47
49:S:46:LEU:O	49:S:61:VAL:HG23	2.15	0.47
53:A:575:G:O2'	53:A:821:G:H5'	2.14	0.47
53:A:1354:U:H2'	53:A:1355:G:H8	1.80	0.47
54:01:337:C:H2'	54:01:338:G:O4'	2.15	0.47
54:01:1065:U:H5'	54:01:1066:U:OP2	2.14	0.47
54:01:2785:C:H2'	54:01:2786:U:C6	2.49	0.47
55:02:10:G:H2'	55:02:11:C:O4'	2.14	0.47
56:X:31:G:H2'	56:X:32:C:H5'	1.97	0.47
59:Z:11:HIS:HB3	59:Z:204:ARG:HH12	1.78	0.47
59:Z:189:LEU:O	59:Z:189:LEU:HD23	2.15	0.47
2:05:14:ILE:HG23	15:18:11:GLN:NE2	2.28	0.47
7:10:27:VAL:O	7:10:82:ILE:HA	2.15	0.47
8:11:78:LEU:HD21	8:11:108:ILE:HD13	1.97	0.47
8:11:130:GLY:HA2	8:11:133:ARG:HH12	1.80	0.47
21:24:47:VAL:O	21:24:51:GLN:HG2	2.15	0.47
26:29:56:ARG:HH12	49:S:68:HIS:CE1	2.33	0.47
32:B:33:ALA:HB3	32:B:37:VAL:HG13	1.97	0.47
44:N:47:LEU:HD21	53:A:1317:C:H4'	1.96	0.47
47:Q:46:HIS:CB	47:Q:70:LYS:HD3	2.36	0.47
54:01:12:U:O2	54:01:2626:C:H4'	2.15	0.47
54:01:760:G:H2'	54:01:761:A:O4'	2.14	0.47
54:01:1040:A:H2'	54:01:1041:G:H8	1.79	0.47
54:01:1139:G:O2'	54:01:1140:C:H5'	2.15	0.47
54:01:1857:G:H1'	54:01:1885:A:N6	2.29	0.47
59:Z:33:THR:HG21	59:Z:178:LEU:HA	1.97	0.47
2:05:56:LYS:HB2	2:05:56:LYS:NZ	2.31	0.46
7:10:54:VAL:HG22	7:10:83:ALA:HB1	1.96	0.46
19:22:21:SER:O	19:22:25:GLU:HG2	2.14	0.46
23:26:16:ASN:HB2	23:26:26:ARG:HB3	1.96	0.46
39:I:12:LYS:HG3	39:I:109:GLN:OE1	2.15	0.46
52:03:27:ILE:HG21	52:03:186:LYS:CB	2.43	0.46
53:A:123:U:H5''	53:A:311:C:O2'	2.15	0.46
53:A:477:C:H2'	53:A:478:A:C8	2.49	0.46
53:A:1462:C:H2'	53:A:1463:U:C6	2.50	0.46
53:A:1513:A:H2'	53:A:1514:G:H8	1.80	0.46
54:01:1103:A:H2'	54:01:1103:A:N3	2.30	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:1169:A:H2'	54:01:1170:C:O4'	2.16	0.46
54:01:1752:C:H5''	54:01:2862:G:H5'	1.96	0.46
54:01:2487:G:H2'	54:01:2488:G:H8	1.79	0.46
2:05:125:TRP:CG	2:05:160:LYS:HB3	2.50	0.46
5:08:139:VAL:O	5:08:143:VAL:HG23	2.15	0.46
7:10:18:VAL:HA	7:10:86:MET:HE1	1.98	0.46
7:10:92:ALA:HB1	7:10:129:LEU:HB3	1.96	0.46
8:11:101:SER:HB3	8:11:104:GLN:OE1	2.14	0.46
28:31:47:ILE:HD12	28:31:47:ILE:H	1.80	0.46
32:B:208:ALA:HB1	32:B:212:TYR:CE2	2.51	0.46
34:D:143:SER:C	34:D:144:ILE:HD12	2.36	0.46
50:T:23:ARG:HH11	50:T:23:ARG:HG3	1.81	0.46
54:01:306:U:H2'	54:01:307:G:O4'	2.15	0.46
54:01:1468:U:H2'	54:01:1522:A:N6	2.31	0.46
54:01:2006:C:H5'	54:01:2049:G:OP1	2.15	0.46
54:01:2478:A:C2	54:01:2529:G:H2'	2.50	0.46
1:04:17:LYS:HD2	54:01:1565:C:H5''	1.98	0.46
4:07:99:PHE:O	4:07:103:ILE:HG12	2.15	0.46
7:10:33:VAL:HA	54:01:1055:G:H4'	1.97	0.46
26:29:66:ILE:O	26:29:66:ILE:HG12	2.15	0.46
28:31:5:ARG:NH1	28:31:25:ASN:HB2	2.31	0.46
36:F:64:VAL:CG2	36:F:65:GLU:H	2.28	0.46
44:N:15:LEU:CD2	44:N:54:SER:HB3	2.46	0.46
53:A:1273:C:H2'	53:A:1274:A:O4'	2.15	0.46
54:01:542:C:C2'	54:01:543:G:H5''	2.43	0.46
54:01:991:C:H5'	54:01:1185:G:H2'	1.97	0.46
59:Z:173:SER:HB3	59:Z:184:TRP:CG	2.51	0.46
2:05:48:ILE:HG23	2:05:84:LEU:HD21	1.97	0.46
7:10:29:ASP:N	7:10:81:LEU:HD22	2.30	0.46
10:13:105:ARG:HG2	10:13:122:VAL:HG13	1.98	0.46
12:15:75:GLU:HB3	12:15:90:GLU:HG3	1.98	0.46
13:16:79:LEU:HD23	13:16:83:LEU:HD12	1.98	0.46
19:22:50:LEU:HD23	24:27:26:PHE:CE2	2.51	0.46
25:28:40:THR:HG23	25:28:43:ILE:H	1.81	0.46
28:31:12:SER:HA	28:31:48:TYR:CD1	2.51	0.46
32:B:9:LEU:HD11	32:B:13:VAL:HG13	1.98	0.46
33:C:5:HIS:CG	44:N:88:MET:HB3	2.50	0.46
35:E:87:VAL:HA	35:E:91:SER:O	2.15	0.46
39:I:21:LYS:O	39:I:60:LEU:HB3	2.15	0.46
53:A:458:U:H2'	53:A:459:A:C8	2.51	0.46
53:A:490:C:H2'	53:A:491:G:C8	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:1456:A:H2'	53:A:1457:G:O4'	2.15	0.46
54:01:300:A:H2'	54:01:334:C:H1'	1.97	0.46
54:01:853:C:H2'	54:01:854:C:C6	2.50	0.46
54:01:2841:C:H2'	54:01:2842:G:C8	2.51	0.46
1:04:146:LYS:HB2	1:04:149:LYS:HB2	1.97	0.46
7:10:23:LEU:HD13	7:10:118:ILE:HB	1.98	0.46
8:11:25:PRO:O	8:11:29:GLN:HB2	2.16	0.46
11:14:124:GLY:C	11:14:125:LEU:HD12	2.35	0.46
15:18:91:VAL:HG21	15:18:96:LEU:HD21	1.97	0.46
32:B:95:TRP:CZ2	32:B:171:ALA:HA	2.50	0.46
33:C:19:SER:HB2	44:N:91:GLU:O	2.14	0.46
34:D:103:ARG:HB3	34:D:170:LEU:HD21	1.98	0.46
37:G:42:VAL:O	37:G:46:LEU:HD13	2.16	0.46
40:J:70:HIS:C	40:J:71:LEU:HD12	2.36	0.46
43:M:3:ILE:H	43:M:7:ASN:HB3	1.80	0.46
54:01:745:G:O2'	54:01:748:G:H1'	2.16	0.46
54:01:1127:A:H2'	54:01:1128:G:H5''	1.97	0.46
54:01:1386:C:H2'	54:01:1387:A:H8	1.80	0.46
54:01:1869:G:H3'	54:01:1870:C:H5''	1.98	0.46
54:01:2102:G:H2'	54:01:2103:C:O4'	2.16	0.46
54:01:2121:G:H2'	54:01:2122:U:O4'	2.16	0.46
54:01:2504:U:C2'	54:01:2505:G:H5'	2.46	0.46
54:01:2508:G:H1	54:01:2580:U:H3	1.64	0.46
56:W:73:A:H5''	56:W:74:C:O4'	2.15	0.46
1:04:131:MET:HA	1:04:134:ILE:HD12	1.98	0.46
8:11:72:THR:HG21	8:11:112:LYS:HG2	1.98	0.46
9:12:99:ARG:O	9:12:103:ILE:HG13	2.15	0.46
13:16:22:ARG:HG3	13:16:70:THR:HA	1.97	0.46
20:23:91:LYS:NZ	54:01:82:U:H5'	2.31	0.46
23:26:55:MET:SD	54:01:2091:C:H4'	2.56	0.46
33:C:143:LEU:HD23	33:C:143:LEU:O	2.15	0.46
44:N:8:ARG:HB3	44:N:12:ARG:HH12	1.81	0.46
48:R:25:ILE:HG21	48:R:66:LEU:HB3	1.98	0.46
51:U:40:PRO:HA	51:U:43:GLU:HG2	1.98	0.46
53:A:1489:G:H2'	53:A:1490:U:C6	2.50	0.46
54:01:162:U:O2'	54:01:163:C:H5'	2.14	0.46
54:01:898:C:H2'	54:01:899:A:O4'	2.15	0.46
59:Z:11:HIS:HB2	59:Z:269:ARG:HH12	1.81	0.46
1:04:48:ILE:HD11	1:04:51:ARG:HA	1.97	0.46
2:05:56:LYS:HB2	2:05:56:LYS:HZ2	1.80	0.46
9:12:36:LEU:HG	9:12:54:ILE:HD12	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:15:45:GLN:HE21	54:01:2485:G:C5'	2.21	0.46
16:19:27:ARG:HB3	16:19:27:ARG:HH11	1.80	0.46
18:21:9:HIS:HE1	18:21:80:PRO:HG2	1.80	0.46
32:B:113:LEU:HD13	32:B:143:LEU:HG	1.98	0.46
34:D:10:LEU:HD22	34:D:62:ARG:CZ	2.46	0.46
35:E:156:ARG:NE	35:E:163:ILE:HG21	2.30	0.46
37:G:110:ARG:HH12	37:G:121:ASN:CB	2.28	0.46
52:03:50:ILE:CD1	52:03:165:ASN:HD21	2.29	0.46
53:A:381:C:H2'	53:A:382:A:O4'	2.15	0.46
53:A:513:C:H2'	53:A:514:C:C6	2.50	0.46
53:A:1119:C:H2'	53:A:1120:C:C6	2.50	0.46
54:01:198:C:O2'	54:01:199:A:H5'	2.16	0.46
54:01:576:U:H2'	54:01:577:G:H8	1.79	0.46
54:01:656:G:O2'	54:01:657:U:H5'	2.16	0.46
54:01:1105:U:C3'	54:01:1106:G:H5''	2.45	0.46
54:01:2123:G:H2'	54:01:2124:G:H8	1.81	0.46
3:06:76:PRO:HA	3:06:82:GLY:HA2	1.97	0.46
7:10:42:ARG:O	7:10:46:ARG:HG3	2.16	0.46
16:19:2:ARG:HD2	54:01:1248:G:C2	2.50	0.46
33:C:106:ARG:H	33:C:106:ARG:CD	2.23	0.46
34:D:197:HIS:HE1	35:E:104:ILE:H	1.64	0.46
38:H:9:MET:O	38:H:13:ILE:HG13	2.14	0.46
41:K:124:LYS:NZ	53:A:780:A:H5''	2.31	0.46
42:L:73:LEU:N	42:L:73:LEU:HD12	2.31	0.46
52:03:48:LEU:HD22	52:03:208:TYR:CE1	2.50	0.46
53:A:234:C:H2'	53:A:235:C:C6	2.50	0.46
53:A:434:U:H2'	53:A:435:A:H8	1.80	0.46
53:A:664:G:H22	53:A:741:G:H1	1.64	0.46
54:01:815:C:H2'	54:01:816:C:C6	2.50	0.46
54:01:1133:A:H4'	54:01:1134:A:H5''	1.98	0.46
54:01:1179:G:C5	54:01:1180:U:H1'	2.51	0.46
54:01:1430:G:H2'	54:01:1431:A:O4'	2.16	0.46
54:01:1443:U:H2'	54:01:1444:G:C8	2.50	0.46
54:01:1790:C:H2'	54:01:1791:A:N7	2.30	0.46
56:W:6:G:O2'	56:W:7:G:H5'	2.16	0.46
1:04:221:GLY:H	54:01:1826:G:P	2.39	0.46
19:22:44:LYS:O	19:22:48:GLN:HG2	2.15	0.46
20:23:90:LYS:NZ	54:01:100:U:H2'	2.31	0.46
21:24:9:ARG:HD3	21:24:39:ALA:HB1	1.97	0.46
31:34:19:ARG:HD2	31:34:24:ARG:HD2	1.98	0.46
39:I:70:GLY:O	39:I:74:GLN:HG3	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:J:34:ALA:O	40:J:35:GLN:HB3	2.16	0.46
47:Q:58:VAL:HG22	47:Q:59:GLU:N	2.30	0.46
50:T:70:LYS:HA	50:T:73:ARG:NH1	2.31	0.46
52:03:133:PRO:O	54:01:2169:A:H4'	2.15	0.46
53:A:56:U:H2'	53:A:57:G:C8	2.50	0.46
53:A:373:A:H61	53:A:391:G:H1'	1.81	0.46
53:A:1499:A:H2'	53:A:1500:A:H8	1.80	0.46
54:01:29:U:H2'	54:01:30:G:C8	2.50	0.46
54:01:2818:U:H2'	54:01:2819:G:H8	1.80	0.46
59:Z:212:LEU:HA	59:Z:213:PRO:HD3	1.74	0.46
59:Z:377:ARG:HD2	59:Z:378:GLU:N	2.31	0.46
3:06:149:ILE:HG21	3:06:188:MET:HG2	1.98	0.46
6:09:116:ARG:CG	6:09:133:GLN:HG3	2.40	0.46
12:15:41:LEU:HA	12:15:45:GLN:OE1	2.16	0.46
33:C:10:ARG:HA	33:C:13:ILE:HD13	1.98	0.46
53:A:861:G:H2'	53:A:862:C:C6	2.51	0.46
53:A:1460:C:H2'	53:A:1461:G:C8	2.50	0.46
54:01:118:A:N3	54:01:178:G:H1'	2.30	0.46
54:01:197:A:H2'	54:01:198:C:O4'	2.16	0.46
54:01:1127:A:C2'	54:01:1128:G:H5''	2.46	0.46
54:01:2066:C:O2'	54:01:2067:G:H5'	2.16	0.46
54:01:2259:U:H2'	54:01:2260:C:C6	2.51	0.46
59:Z:97:GLN:HB3	59:Z:273:ASN:ND2	2.31	0.46
59:Z:303:LYS:HE3	59:Z:342:GLU:OE1	2.16	0.46
3:06:77:ILE:HG13	3:06:78:TRP:CD1	2.52	0.45
5:08:154:GLU:HB3	5:08:159:LYS:H	1.80	0.45
5:08:174:LYS:HG3	54:01:2529:G:H4'	1.98	0.45
9:12:84:ILE:HG23	9:12:84:ILE:O	2.16	0.45
16:19:86:SER:HB3	17:20:50:GLY:O	2.16	0.45
18:21:57:ASN:HD21	54:01:495:G:H1'	1.81	0.45
28:31:36:LYS:HG3	28:31:47:ILE:HG13	1.99	0.45
32:B:42:LEU:O	32:B:46:VAL:HG23	2.17	0.45
34:D:82:LYS:HE2	53:A:2:A:H4'	1.98	0.45
35:E:84:VAL:CG2	35:E:145:ASN:HD22	2.28	0.45
35:E:161:GLU:HA	35:E:164:LEU:HD11	1.98	0.45
44:N:63:CYS:HB3	44:N:67:GLY:H	1.80	0.45
45:O:61:GLN:O	45:O:65:LEU:HG	2.16	0.45
53:A:1071:C:H2'	53:A:1072:G:H8	1.81	0.45
53:A:1130:A:H2'	53:A:1131:G:O4'	2.16	0.45
53:A:1219:A:H2'	53:A:1220:G:H8	1.80	0.45
53:A:1271:A:H5'	53:A:1314:C:H5''	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:693:A:H2'	54:01:694:U:O4'	2.17	0.45
54:01:1386:C:H2'	54:01:1387:A:C8	2.51	0.45
54:01:1434:A:H2'	54:01:1435:G:H8	1.81	0.45
54:01:1482:G:H1'	54:01:1509:A:C2	2.51	0.45
54:01:2853:C:H2'	54:01:2854:G:H8	1.80	0.45
59:Z:304:PHE:CE2	59:Z:388:VAL:HG22	2.51	0.45
2:05:114:LYS:HG2	2:05:196:ALA:HB2	1.98	0.45
18:21:31:GLN:O	18:21:35:ILE:HG13	2.15	0.45
20:23:73:ASN:O	20:23:74:ALA:HB3	2.16	0.45
42:L:47:ALA:HB3	42:L:49:ARG:HE	1.80	0.45
53:A:90:C:H2'	53:A:91:U:C5	2.50	0.45
54:01:20:C:H2'	54:01:21:A:H8	1.81	0.45
54:01:616:A:H2'	54:01:617:G:O4'	2.16	0.45
54:01:861:A:H2'	54:01:862:G:O4'	2.15	0.45
54:01:1111:A:H2'	54:01:1111:A:N3	2.31	0.45
54:01:1773:A:C2'	54:01:1774:C:H5'	2.46	0.45
54:01:2475:C:C2'	54:01:2476:A:H5'	2.46	0.45
54:01:2579:C:O2'	54:01:2580:U:H5'	2.16	0.45
54:01:2584:U:H2'	54:01:2585:U:H2'	1.98	0.45
1:04:51:ARG:HB2	1:04:52:HIS:ND1	2.31	0.45
6:09:67:ALA:HA	6:09:138:VAL:HG11	1.98	0.45
7:10:11:ILE:O	7:10:15:VAL:HG23	2.16	0.45
27:30:39:ARG:HD3	54:01:2886:A:N1	2.31	0.45
33:C:36:PHE:CE2	44:N:65:GLN:HG2	2.51	0.45
35:E:40:ASP:OD1	35:E:44:ARG:HB2	2.16	0.45
38:H:80:PRO:HG2	53:A:878:A:H5''	1.98	0.45
53:A:70:U:H4'	53:A:71:A:H8	1.80	0.45
53:A:552:U:H2'	53:A:553:A:C8	2.50	0.45
53:A:695:A:H2	53:A:787:A:HO2'	1.63	0.45
53:A:1235:U:O2'	53:A:1305:G:H5'	2.15	0.45
53:A:1434:A:H2'	53:A:1435:G:O4'	2.15	0.45
54:01:718:A:H2'	54:01:719:C:O4'	2.16	0.45
54:01:2193:G:H2'	54:01:2194:U:C6	2.52	0.45
54:01:2469:A:H2'	54:01:2470:G:O4'	2.17	0.45
58:Y:56:C:H2'	58:Y:57:G:C8	2.51	0.45
7:10:67:THR:HG23	7:10:74:ASP:HB2	1.98	0.45
19:22:62:VAL:HG22	19:22:81:LYS:HE2	1.98	0.45
35:E:156:ARG:HG2	38:H:42:GLU:O	2.17	0.45
37:G:12:LEU:HD12	37:G:13:PRO:HD2	1.98	0.45
38:H:49:LYS:NZ	38:H:49:LYS:HB2	2.31	0.45
38:H:63:LYS:NZ	38:H:63:LYS:HB3	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:L:51:VAL:HG22	42:L:52:CYS:H	1.82	0.45
47:Q:6:THR:C	47:Q:7:LEU:HD12	2.36	0.45
52:03:181:ASP:HB2	52:03:184:LYS:HG2	1.98	0.45
53:A:224:U:H2'	53:A:225:C:C6	2.52	0.45
53:A:250:A:H4'	53:A:251:G:O5'	2.17	0.45
53:A:629:A:H2'	53:A:630:A:O4'	2.17	0.45
53:A:1397:C:H2'	57:V:22:A:N6	2.31	0.45
54:01:189:G:H2'	54:01:205:G:N2	2.31	0.45
54:01:828:U:H2'	54:01:829:A:C8	2.52	0.45
54:01:1326:U:H2'	54:01:1327:A:C8	2.45	0.45
54:01:1937:A:O2'	54:01:1938:A:H3'	2.16	0.45
54:01:2480:C:H2'	54:01:2481:G:O4'	2.16	0.45
54:01:2538:C:H2'	54:01:2539:C:C6	2.51	0.45
59:Z:154:ARG:HG2	59:Z:164:GLY:O	2.17	0.45
1:04:12:ARG:HA	1:04:15:VAL:CG2	2.47	0.45
1:04:42:ARG:HE	1:04:48:ILE:HB	1.82	0.45
4:07:78:ILE:O	4:07:78:ILE:HG13	2.17	0.45
10:13:14:SER:OG	10:13:86:LEU:HD12	2.17	0.45
11:14:79:LEU:CD1	11:14:112:LEU:HA	2.47	0.45
18:21:6:LYS:HG3	54:01:494:G:H4'	1.99	0.45
19:22:56:GLU:HB2	19:22:86:THR:OG1	2.16	0.45
46:P:33:ILE:N	46:P:33:ILE:HD12	2.32	0.45
53:A:597:G:H2'	53:A:598:U:H5'	1.98	0.45
54:01:893:C:H2'	54:01:894:U:O4'	2.16	0.45
54:01:1246:A:H2'	54:01:1247:A:O4'	2.16	0.45
54:01:2298:A:H2'	54:01:2299:U:O4'	2.17	0.45
1:04:22:GLU:HB3	1:04:80:LEU:HD12	1.99	0.45
1:04:41:GLY:O	1:04:49:THR:N	2.49	0.45
1:04:174:ARG:HG2	1:04:174:ARG:HH11	1.81	0.45
4:07:3:LEU:HA	4:07:6:TYR:HB3	1.98	0.45
7:10:43:LYS:NZ	7:10:43:LYS:HB3	2.31	0.45
8:11:14:ALA:HB1	8:11:45:THR:OG1	2.16	0.45
12:15:34:LYS:HD3	21:24:82:TYR:HA	1.99	0.45
12:15:62:LYS:HD3	12:15:64:TRP:CZ2	2.52	0.45
18:21:9:HIS:CE1	18:21:80:PRO:HG2	2.52	0.45
24:27:20:ASN:O	24:27:24:GLU:HB2	2.16	0.45
24:27:26:PHE:HA	24:27:29:ARG:NE	2.32	0.45
27:30:8:THR:CG2	54:01:2020:A:H5'	2.47	0.45
36:F:73:GLU:O	36:F:77:THR:HG23	2.15	0.45
42:L:41:PRO:HD2	42:L:47:ALA:H	1.82	0.45
48:R:25:ILE:HA	48:R:28:LEU:HB3	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:S:9:PHE:CD2	53:A:1318:A:H4'	2.52	0.45
50:T:66:ILE:HG21	50:T:71:ALA:HB2	1.99	0.45
53:A:1492:A:H2'	54:01:1913:A:H2	1.82	0.45
54:01:128:C:H2'	54:01:129:C:C6	2.51	0.45
55:02:30:C:C2'	55:02:31:C:H5'	2.46	0.45
56:X:59:A:C2'	56:X:60:U:H5'	2.46	0.45
59:Z:236:ILE:HA	59:Z:240:GLU:OE1	2.16	0.45
2:05:98:VAL:O	2:05:98:VAL:HG22	2.17	0.45
3:06:15:SER:HB2	3:06:18:THR:HB	1.99	0.45
4:07:98:PHE:HD1	4:07:101:ARG:HH11	1.63	0.45
7:10:96:PHE:HE2	7:10:126:LEU:HB2	1.82	0.45
9:12:47:HIS:ND1	9:12:48:VAL:HG23	2.31	0.45
19:22:15:HIS:HE1	19:22:17:SER:HB3	1.82	0.45
26:29:2:LYS:HB2	26:29:5:ILE:HD11	1.98	0.45
26:29:11:GLU:HA	26:29:25:ARG:HA	1.98	0.45
29:32:12:ARG:HH11	29:32:44:VAL:HG21	1.80	0.45
33:C:39:ARG:HH21	33:C:56:ILE:HG12	1.81	0.45
34:D:71:PHE:HE1	34:D:93:LEU:HD11	1.82	0.45
52:03:84:ALA:HA	52:03:95:VAL:HG11	1.97	0.45
53:A:337:G:H2'	53:A:338:A:C8	2.51	0.45
53:A:1251:A:H2'	53:A:1252:A:C8	2.51	0.45
54:01:146:A:H2'	54:01:147:C:C6	2.52	0.45
54:01:582:A:H2'	54:01:583:G:H8	1.80	0.45
54:01:1796:U:H2'	54:01:1797:G:C8	2.51	0.45
54:01:2097:A:H2'	54:01:2098:U:O4'	2.16	0.45
59:Z:95:ALA:HB1	59:Z:125:VAL:HG11	1.99	0.45
5:08:83:THR:HG23	5:08:133:LYS:HG2	1.98	0.45
34:D:29:THR:O	34:D:29:THR:HG22	2.17	0.45
34:D:50:TYR:CD2	53:A:508:U:H4'	2.51	0.45
35:E:43:GLY:O	35:E:73:VAL:N	2.47	0.45
36:F:72:ASP:O	36:F:76:THR:HG23	2.17	0.45
38:H:10:LEU:HD22	38:H:74:ILE:CD1	2.46	0.45
42:L:41:PRO:HG3	42:L:49:ARG:HG2	1.99	0.45
47:Q:59:GLU:HB3	47:Q:75:VAL:HB	1.99	0.45
53:A:460:A:H2'	53:A:461:A:C8	2.52	0.45
53:A:684:U:H2'	53:A:685:G:O4'	2.17	0.45
53:A:871:U:H5''	53:A:872:A:OP2	2.16	0.45
54:01:367:G:H2'	54:01:368:A:O4'	2.16	0.45
54:01:2377:A:H2'	54:01:2378:A:C8	2.52	0.45
59:Z:176:LYS:HB3	59:Z:181:ASP:HB2	1.99	0.45
59:Z:247:ILE:HG12	59:Z:364:HIS:HB3	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:Z:310:ILE:HG21	59:Z:350:VAL:CG1	2.47	0.45
7:10:67:THR:CG2	7:10:74:ASP:HB2	2.46	0.45
15:18:52:ARG:HB3	15:18:55:HIS:HB2	1.99	0.45
20:23:93:ARG:HB2	20:23:102:ILE:HD12	1.99	0.45
21:24:60:VAL:HG11	21:24:71:LYS:HE3	1.99	0.45
31:34:22:VAL:O	31:34:24:ARG:HG3	2.16	0.45
34:D:158:LEU:HD23	34:D:158:LEU:O	2.17	0.45
43:M:3:ILE:HG12	43:M:7:ASN:OD1	2.16	0.45
43:M:76:ILE:O	43:M:80:MET:HE2	2.17	0.45
46:P:23:ASP:HB3	46:P:26:ASN:OD1	2.17	0.45
51:U:11:PHE:CG	51:U:12:ASP:N	2.85	0.45
51:U:65:ARG:HA	51:U:65:ARG:NE	2.32	0.45
52:03:175:ILE:HD12	52:03:185:LEU:HB3	1.99	0.45
53:A:285:C:H2'	53:A:286:C:C6	2.51	0.45
53:A:881:G:H2'	53:A:882:C:O4'	2.16	0.45
53:A:1148:U:H2'	53:A:1149:C:O4'	2.17	0.45
53:A:1258:G:H2'	53:A:1259:C:C6	2.51	0.45
53:A:1436:U:H2'	53:A:1437:A:H8	1.82	0.45
54:01:63:A:H2'	54:01:64:A:H8	1.81	0.45
54:01:195:A:H2'	54:01:198:C:N4	2.31	0.45
54:01:2806:C:H42	54:01:2892:G:H1	1.64	0.45
2:05:202:ILE:N	2:05:202:ILE:HD12	2.32	0.45
4:07:7:TYR:HA	4:07:11:VAL:CG2	2.46	0.45
4:07:15:LEU:HD11	4:07:168:LEU:HA	1.98	0.45
4:07:24:VAL:O	4:07:27:VAL:HG12	2.17	0.45
4:07:138:PRO:HB3	26:29:32:LEU:HD11	1.99	0.45
9:12:35:ARG:HA	9:12:40:HIS:CD2	2.51	0.45
11:14:70:LYS:HD3	54:01:633:A:H5'	1.99	0.45
12:15:58:LYS:HA	12:15:58:LYS:HD3	1.79	0.45
16:19:82:LEU:HA	16:19:85:ALA:HB3	1.98	0.45
20:23:9:GLU:OE2	20:23:21:ARG:HG2	2.17	0.45
35:E:160:VAL:HG13	35:E:161:GLU:N	2.27	0.45
37:G:56:SER:HB3	37:G:59:GLU:HG2	1.99	0.45
39:I:24:ASN:ND2	39:I:26:LYS:HE3	2.32	0.45
40:J:35:GLN:HG2	40:J:77:VAL:HB	1.99	0.45
41:K:118:ASN:OD1	53:A:718:A:H5'	2.16	0.45
44:N:20:PHE:O	44:N:21:ALA:CB	2.65	0.45
51:U:39:LYS:N	51:U:40:PRO:CD	2.80	0.45
53:A:1522:U:H2'	53:A:1523:G:H8	1.81	0.45
54:01:184:C:H2'	54:01:185:G:C8	2.51	0.45
54:01:213:A:H2'	54:01:214:G:C8	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:1900:A:O4'	54:01:1970:A:H5''	2.17	0.45
54:01:2145:C:H3'	54:01:2146:C:H5'	1.99	0.45
1:04:129:LEU:N	1:04:129:LEU:HD23	2.33	0.44
4:07:147:ARG:HG3	4:07:148:VAL:N	2.32	0.44
34:D:59:LYS:O	34:D:63:ILE:HG13	2.17	0.44
52:03:181:ASP:HB2	52:03:184:LYS:CG	2.47	0.44
54:01:172:A:H2'	54:01:173:A:C8	2.51	0.44
54:01:720:U:H2'	54:01:721:A:C8	2.52	0.44
54:01:1346:G:H2'	54:01:1347:A:H8	1.82	0.44
54:01:2137:U:H2'	54:01:2138:G:C8	2.51	0.44
54:01:2553:G:H1'	54:01:2582:G:H21	1.82	0.44
54:01:2799:A:C2'	54:01:2800:A:H5'	2.47	0.44
54:01:2875:C:H2'	54:01:2876:G:H8	1.82	0.44
59:Z:14:VAL:HG21	59:Z:69:TYR:OH	2.16	0.44
1:04:257:ARG:HE	1:04:266:ILE:CD1	2.28	0.44
9:12:37:ARG:HH22	9:12:110:PRO:HG3	1.83	0.44
10:13:48:PRO:HB3	53:A:1422:G:C5'	2.44	0.44
15:18:62:LYS:HE2	15:18:64:SER:HB3	1.99	0.44
37:G:25:PHE:HD1	37:G:100:MET:HB3	1.82	0.44
52:03:144:THR:HG23	52:03:162:ARG:HD3	2.00	0.44
53:A:1492:A:H2'	54:01:1913:A:C2	2.53	0.44
54:01:281:C:H2'	54:01:282:A:H8	1.82	0.44
54:01:1083:U:H2'	54:01:1085:A:OP2	2.17	0.44
54:01:1440:U:H2'	54:01:1441:G:C8	2.52	0.44
1:04:89:ASN:OD1	1:04:196:ASN:HB2	2.16	0.44
7:10:51:TYR:HA	7:10:53:ARG:NH1	2.32	0.44
8:11:10:LEU:HD21	54:01:1061:U:H5''	1.99	0.44
12:15:78:LEU:HD23	12:15:79:ALA:N	2.32	0.44
13:16:61:ALA:O	13:16:65:LEU:HD13	2.18	0.44
21:24:45:ASP:O	21:24:48:MET:HB3	2.16	0.44
38:H:28:SER:HB3	38:H:56:PRO:HB2	1.99	0.44
39:I:26:LYS:C	39:I:27:ILE:HD12	2.38	0.44
51:U:34:ARG:HD2	51:U:36:PHE:CZ	2.53	0.44
52:03:96:GLY:HA3	52:03:104:ILE:HD11	1.99	0.44
53:A:128:G:H2'	53:A:129:A:C8	2.53	0.44
54:01:297:G:H2'	54:01:298:G:O4'	2.18	0.44
54:01:974:G:H1'	54:01:975:A:C8	2.53	0.44
54:01:1908:C:O2	56:W:12:G:H4'	2.17	0.44
59:Z:377:ARG:HA	59:Z:382:THR:HA	1.99	0.44
17:20:16:GLU:HB2	17:20:101:ILE:HG12	1.99	0.44
31:34:36:ARG:CG	31:34:37:GLN:H	2.13	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:F:3:HIS:HB2	36:F:92:THR:HA	1.98	0.44
39:I:82:ILE:O	39:I:86:LEU:HG	2.16	0.44
51:U:36:PHE:C	51:U:38:GLU:H	2.19	0.44
52:03:5:THR:O	52:03:9:ARG:N	2.48	0.44
53:A:994:A:C8	53:A:1216:A:H4'	2.53	0.44
53:A:1254:A:H2'	53:A:1255:G:H8	1.80	0.44
54:01:279:A:H2'	54:01:280:U:H5'	1.98	0.44
54:01:677:A:O2'	54:01:2071:A:H5'	2.17	0.44
54:01:878:A:H3'	54:01:879:G:H8	1.83	0.44
54:01:2847:U:H2'	54:01:2848:G:O4'	2.17	0.44
55:02:65:U:H3'	55:02:108:A:H61	1.83	0.44
59:Z:117:GLU:HA	59:Z:120:LEU:CG	2.40	0.44
26:29:46:GLY:HA2	26:29:49:ARG:HG2	2.00	0.44
40:J:59:LYS:HD3	53:A:973:G:OP1	2.17	0.44
43:M:6:ILE:O	43:M:8:ILE:HG13	2.16	0.44
50:T:23:ARG:O	50:T:26:MET:HG2	2.17	0.44
53:A:674:G:H2'	53:A:675:A:C8	2.52	0.44
53:A:916:U:H2'	53:A:917:G:H8	1.82	0.44
53:A:946:A:H2'	53:A:947:G:C8	2.52	0.44
53:A:1040:U:H2'	53:A:1041:G:C8	2.52	0.44
53:A:1088:G:N2	53:A:1167:A:H61	2.12	0.44
53:A:1261:A:H3'	53:A:1262:C:H6	1.83	0.44
53:A:1354:U:H2'	53:A:1355:G:C8	2.52	0.44
53:A:1464:U:H2'	53:A:1465:A:C8	2.52	0.44
54:01:1689:A:H2'	54:01:1690:A:C8	2.52	0.44
54:01:1744:A:H3'	54:01:1745:A:H8	1.83	0.44
54:01:1947:C:H2'	54:01:1948:G:C8	2.52	0.44
54:01:2028:U:H2'	54:01:2029:G:C8	2.53	0.44
54:01:2730:C:H2'	54:01:2731:G:H8	1.82	0.44
59:Z:131:ILE:HD11	59:Z:198:TYR:HB3	2.00	0.44
59:Z:170:VAL:HG13	59:Z:190:GLU:HB2	2.00	0.44
59:Z:211:LEU:HB3	59:Z:233:ARG:HG2	1.99	0.44
7:10:3:LEU:CD1	7:10:5:LEU:HG	2.47	0.44
9:12:113:PRO:O	9:12:117:ALA:N	2.50	0.44
10:13:49:ARG:NH2	53:A:1423:G:H5'	2.33	0.44
14:17:110:ALA:O	14:17:115:LEU:HB3	2.17	0.44
20:23:84:PHE:HB2	54:01:297:G:H5''	1.99	0.44
29:32:44:VAL:HG13	29:32:44:VAL:O	2.17	0.44
33:C:156:LEU:HD12	33:C:156:LEU:O	2.18	0.44
36:F:92:THR:C	36:F:94:HIS:H	2.21	0.44
41:K:126:ARG:HA	41:K:126:ARG:NE	2.32	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:L:41:PRO:HB3	42:L:88:ASP:OD1	2.17	0.44
43:M:76:ILE:O	43:M:80:MET:HG3	2.17	0.44
46:P:38:PHE:CE1	46:P:51:ARG:HB2	2.52	0.44
49:S:79:TYR:CZ	53:A:1226:C:H4'	2.52	0.44
53:A:736:C:H2'	53:A:737:C:C6	2.52	0.44
53:A:1236:A:H4'	53:A:1304:G:H4'	2.00	0.44
54:01:186:G:H2'	54:01:187:G:H8	1.83	0.44
54:01:217:A:H2'	54:01:218:A:O4'	2.18	0.44
54:01:1300:G:H4'	54:01:1301:A:H5''	1.99	0.44
54:01:2259:U:H2'	54:01:2260:C:H6	1.83	0.44
56:X:8:U:H5'	56:X:49:G:OP2	2.18	0.44
59:Z:259:GLU:OE1	59:Z:262:ARG:HA	2.17	0.44
2:05:3:GLY:C	2:05:4:LEU:HD12	2.36	0.44
4:07:3:LEU:HD12	4:07:96:TRP:HE3	1.83	0.44
8:11:39:LYS:HE2	8:11:39:LYS:HA	1.99	0.44
8:11:79:LEU:HD12	8:11:135:MET:HG3	1.99	0.44
8:11:139:VAL:HG13	8:11:139:VAL:O	2.18	0.44
22:25:17:LEU:HD21	22:25:37:ARG:NH2	2.33	0.44
22:25:22:PHE:HD2	54:01:922:C:H1'	1.82	0.44
34:D:113:ALA:O	34:D:117:VAL:HG23	2.18	0.44
36:F:39:LEU:HD23	36:F:62:MET:HA	1.99	0.44
53:A:32:A:H2'	53:A:33:A:C8	2.53	0.44
53:A:219:U:H2'	53:A:220:G:H8	1.83	0.44
53:A:1057:G:H2'	53:A:1058:G:O4'	2.17	0.44
54:01:66:C:H2'	54:01:67:U:H6	1.81	0.44
54:01:310:A:H2'	54:01:311:A:H5''	1.98	0.44
54:01:310:A:O2'	54:01:311:A:H5''	2.18	0.44
54:01:395:U:H2'	54:01:396:G:C8	2.53	0.44
54:01:665:U:H2'	54:01:666:A:C8	2.52	0.44
54:01:665:U:H2'	54:01:666:A:H8	1.83	0.44
54:01:1536:C:H4'	54:01:1537:G:C2	2.52	0.44
54:01:1593:A:H2'	54:01:1594:U:C6	2.53	0.44
54:01:2111:U:N3	54:01:2147:A:H1'	2.32	0.44
54:01:2462:C:H2'	54:01:2463:C:C6	2.52	0.44
54:01:2581:G:H2'	54:01:2581:G:N3	2.33	0.44
55:02:49:C:H2'	55:02:50:A:H8	1.83	0.44
3:06:109:LEU:O	3:06:113:VAL:HG23	2.18	0.44
7:10:78:GLY:N	7:10:79:PRO:CD	2.81	0.44
17:20:54:VAL:HG12	17:20:55:ASP:N	2.33	0.44
22:25:16:ARG:HG3	54:01:2270:A:O2'	2.18	0.44
33:C:96:VAL:HB	33:C:97:PRO:HD2	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:E:37:VAL:HG11	35:E:113:VAL:HG23	2.00	0.44
39:I:115:VAL:HG23	53:A:1367:C:H5''	1.99	0.44
40:J:9:ARG:HH12	40:J:11:LYS:HZ3	1.65	0.44
53:A:448:A:H3'	53:A:449:G:C8	2.53	0.44
53:A:714:G:H2'	53:A:715:A:C8	2.53	0.44
53:A:820:U:H3'	53:A:821:G:C5'	2.48	0.44
54:01:1019:U:H3	54:01:1142:A:H62	1.65	0.44
54:01:1344:U:H3'	54:01:1345:C:H5'	1.98	0.44
54:01:1664:A:H61	54:01:1996:C:H42	1.66	0.44
54:01:2159:G:H2'	54:01:2160:C:O4'	2.17	0.44
54:01:2756:U:H4'	54:01:2757:A:OP1	2.17	0.44
59:Z:212:LEU:HD12	59:Z:231:VAL:HG22	2.00	0.44
3:06:55:SER:HB2	54:01:797:G:OP1	2.17	0.44
16:19:93:ILE:HG13	17:20:11:GLN:HB3	1.99	0.44
23:26:13:THR:CG2	54:01:188:G:H5'	2.46	0.44
26:29:2:LYS:HB2	26:29:5:ILE:CD1	2.48	0.44
27:30:2:VAL:HG21	54:01:2057:G:H1'	1.99	0.44
32:B:96:LEU:N	32:B:99:MET:HE3	2.33	0.44
32:B:163:ILE:HD11	32:B:209:VAL:HG12	1.99	0.44
33:C:6:PRO:HD2	33:C:183:TYR:CD2	2.53	0.44
35:E:15:ILE:HD12	35:E:15:ILE:N	2.33	0.44
42:L:82:ARG:HD3	42:L:97:VAL:HG22	1.99	0.44
44:N:84:ARG:NH2	53:A:1059:C:H4'	2.23	0.44
49:S:48:ILE:HG13	49:S:59:VAL:HG23	2.00	0.44
51:U:49:ALA:O	51:U:52:VAL:HG12	2.18	0.44
52:03:194:VAL:HG12	52:03:198:LYS:HZ3	1.79	0.44
53:A:413:G:H2'	53:A:428:G:N2	2.32	0.44
53:A:1165:U:H2'	53:A:1166:G:O4'	2.18	0.44
54:01:239:C:H2'	54:01:240:C:O4'	2.17	0.44
54:01:856:G:H2'	54:01:857:G:C8	2.53	0.44
54:01:863:A:H2'	54:01:864:G:C8	2.53	0.44
54:01:2014:A:H2'	54:01:2015:A:C8	2.52	0.44
54:01:2055:C:H2'	54:01:2504:U:H5'	2.00	0.44
54:01:2586:U:H2'	54:01:2587:A:C8	2.52	0.44
54:01:2730:C:H2'	54:01:2731:G:C8	2.52	0.44
59:Z:129:TYR:CE2	59:Z:200:PRO:HD2	2.53	0.44
1:04:233:GLY:HA3	54:01:2598:A:H5''	1.99	0.43
5:08:26:LYS:CB	5:08:31:GLU:HG3	2.46	0.43
5:08:42:VAL:HG23	5:08:50:THR:O	2.17	0.43
6:09:47:PHE:HA	6:09:51:ARG:HB2	2.00	0.43
16:19:93:ILE:O	16:19:97:ILE:HG13	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:20:14:VAL:HG21	17:20:98:ILE:HG13	1.99	0.43
17:20:74:ILE:N	17:20:74:ILE:HD12	2.33	0.43
32:B:94:ARG:HH21	51:U:66:ARG:HH11	1.66	0.43
39:I:118:ARG:NH2	39:I:122:ARG:HG2	2.33	0.43
46:P:78:VAL:O	46:P:78:VAL:HG22	2.18	0.43
52:03:21:TYR:CD2	52:03:25:GLU:HG2	2.53	0.43
53:A:147:G:H2'	53:A:148:G:C8	2.53	0.43
53:A:618:C:H3'	53:A:620:C:OP2	2.18	0.43
53:A:1032:G:H21	53:A:1033:G:H4'	1.83	0.43
53:A:1177:G:H2'	53:A:1178:G:O4'	2.18	0.43
53:A:1488:G:O2'	53:A:1489:G:H5'	2.17	0.43
54:01:654:A:H3'	54:01:654:A:N3	2.33	0.43
59:Z:101:ALA:H	59:Z:127:VAL:HG11	1.81	0.43
59:Z:244:ILE:HD13	59:Z:251:GLN:HG3	1.99	0.43
1:04:23:LEU:HD21	1:04:89:ASN:ND2	2.33	0.43
1:04:153:LEU:HD11	1:04:181:ARG:HH22	1.83	0.43
7:10:8:LYS:HD3	54:01:1046:A:N1	2.34	0.43
9:12:41:LYS:HG2	9:12:43:GLU:CD	2.38	0.43
14:17:92:PHE:HB2	14:17:117:PHE:CD2	2.53	0.43
20:23:90:LYS:HZ1	54:01:100:U:H2'	1.81	0.43
36:F:5:GLU:O	36:F:7:VAL:HG23	2.18	0.43
38:H:50:VAL:HG22	38:H:50:VAL:O	2.17	0.43
46:P:26:ASN:ND2	46:P:31:ARG:HB3	2.33	0.43
47:Q:10:ARG:NH1	47:Q:55:GLY:HA2	2.32	0.43
52:03:57:GLN:HB3	52:03:201:PRO:HG2	1.99	0.43
53:A:1225:A:H2'	53:A:1225:A:N3	2.34	0.43
54:01:490:C:HO2'	54:01:491:G:P	2.41	0.43
54:01:848:C:H2'	54:01:849:A:C8	2.53	0.43
54:01:1097:U:H2'	54:01:1098:A:O4'	2.17	0.43
54:01:1199:U:H2'	54:01:1200:C:C6	2.52	0.43
54:01:2093:G:H2'	54:01:2094:A:H8	1.83	0.43
54:01:2236:U:H2'	54:01:2237:G:O4'	2.17	0.43
1:04:234:GLY:HA3	1:04:238:ASN:HB2	2.00	0.43
1:04:254:LYS:O	54:01:1797:G:H4'	2.18	0.43
4:07:28:PRO:HB2	4:07:168:LEU:HD22	2.00	0.43
10:13:36:GLY:HA2	10:13:62:VAL:O	2.18	0.43
10:13:93:GLN:HA	10:13:94:PRO:HD2	1.83	0.43
19:22:22:THR:HA	19:22:25:GLU:HG2	2.00	0.43
22:25:10:ARG:HH11	22:25:10:ARG:HG3	1.83	0.43
35:E:40:ASP:OD2	35:E:42:ASN:HB3	2.18	0.43
39:I:49:GLN:N	39:I:50:PRO:CD	2.82	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:I:113:LYS:HE2	39:I:118:ARG:O	2.17	0.43
50:T:34:VAL:HG11	50:T:78:LEU:HD21	1.99	0.43
52:O3:180:PHE:HB2	52:O3:185:LEU:HD11	2.00	0.43
53:A:452:A:H61	53:A:480:U:H3	1.66	0.43
53:A:631:C:H3'	53:A:632:U:H5'	1.99	0.43
53:A:767:A:H2'	53:A:768:A:O4'	2.19	0.43
53:A:955:U:H3	53:A:1225:A:H61	1.65	0.43
54:O1:437:U:H2'	54:O1:438:G:H8	1.82	0.43
54:O1:635:C:H2'	54:O1:636:G:C8	2.52	0.43
54:O1:1772:A:H2'	54:O1:1773:A:H4'	2.00	0.43
54:O1:2207:C:H2'	54:O1:2208:C:C6	2.54	0.43
54:O1:2277:G:C3'	54:O1:2278:A:H5''	2.48	0.43
54:O1:2293:G:H2'	54:O1:2294:G:C8	2.53	0.43
59:Z:321:PRO:HA	59:Z:350:VAL:O	2.17	0.43
1:O4:131:MET:HE2	1:O4:187:CYS:HB2	2.00	0.43
1:O4:145:MET:SD	1:O4:181:ARG:NH2	2.91	0.43
3:O6:123:LYS:HA	3:O6:189:THR:HG23	2.00	0.43
4:O7:135:ILE:HG21	4:O7:142:TYR:CD1	2.49	0.43
6:O9:1:MET:N	6:O9:21:VAL:O	2.43	0.43
6:O9:72:ILE:HB	6:O9:108:VAL:HG22	2.00	0.43
11:14:93:ASN:O	11:14:94:THR:HB	2.18	0.43
25:28:40:THR:CG2	25:28:43:ILE:HG12	2.48	0.43
25:28:56:VAL:HG22	25:28:57:GLU:N	2.33	0.43
26:29:59:ARG:O	26:29:63:ARG:HG3	2.18	0.43
28:31:14:ALA:HB2	28:31:46:VAL:HG13	2.00	0.43
36:F:66:ALA:HB1	36:F:67:PRO:HD2	2.00	0.43
43:M:7:ASN:ND2	43:M:9:PRO:HD3	2.34	0.43
46:P:13:LYS:HE3	53:A:392:C:H4'	2.00	0.43
46:P:20:VAL:CG2	46:P:21:VAL:N	2.81	0.43
48:R:34:GLU:HB3	51:U:18:PHE:HZ	1.84	0.43
50:T:28:ARG:O	50:T:32:LYS:HG2	2.18	0.43
52:O3:60:ARG:HB2	52:O3:141:LYS:CG	2.47	0.43
53:A:599:C:H2'	53:A:600:A:C8	2.52	0.43
53:A:1316:G:H2'	53:A:1317:C:H5''	1.99	0.43
54:O1:1934:C:H2'	54:O1:1935:G:O4'	2.18	0.43
54:O1:2452:C:N4	54:O1:2504:U:H3	2.12	0.43
54:O1:2795:C:H2'	54:O1:2796:U:O4'	2.18	0.43
59:Z:119:ILE:HG21	59:Z:157:LEU:HD23	2.01	0.43
3:O6:149:ILE:HD12	3:O6:170:ARG:O	2.18	0.43
4:O7:109:ARG:HH11	43:M:2:ARG:NE	2.16	0.43
7:10:118:ILE:HD13	7:10:118:ILE:HA	1.90	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:13:61:VAL:HB	10:13:87:LEU:HD11	2.00	0.43
11:14:85:VAL:HG11	11:14:95:LEU:HD23	2.00	0.43
32:B:102:ASN:O	32:B:106:VAL:HG23	2.18	0.43
32:B:119:GLN:HG2	32:B:136:ARG:NH2	2.30	0.43
33:C:105:VAL:O	33:C:105:VAL:HG13	2.17	0.43
33:C:190:THR:HG21	33:C:195:ILE:HD12	2.01	0.43
39:I:70:GLY:HA3	53:A:1371:G:O3'	2.18	0.43
53:A:193:C:O2'	53:A:194:C:H5'	2.18	0.43
53:A:1490:U:H2'	53:A:1491:G:O4'	2.18	0.43
53:A:1516:G:H2'	53:A:1518:A:OP2	2.18	0.43
54:01:435:C:C2'	54:01:436:C:H5'	2.48	0.43
54:01:755:U:H2'	54:01:756:A:H8	1.83	0.43
54:01:1499:C:H2'	54:01:1500:G:H8	1.84	0.43
54:01:1654:A:H2'	54:01:1655:A:H8	1.83	0.43
54:01:2327:A:H2'	54:01:2328:A:C8	2.54	0.43
54:01:2417:C:H2'	54:01:2418:A:H8	1.84	0.43
54:01:2743:U:H2'	54:01:2744:G:C4'	2.49	0.43
59:Z:17:ILE:HG13	59:Z:103:LEU:HD12	2.00	0.43
1:04:85:ASN:HD21	54:01:1817:G:H5'	1.84	0.43
1:04:235:GLU:HG2	54:01:2599:G:C8	2.54	0.43
5:08:51:PHE:CE2	5:08:68:ARG:HA	2.54	0.43
5:08:85:LYS:C	5:08:86:LEU:HD12	2.39	0.43
12:15:125:PRO:HB3	54:01:2485:G:O3'	2.19	0.43
14:17:40:ILE:HD13	55:02:8:C:O2'	2.19	0.43
32:B:19:THR:OG1	32:B:20:ARG:N	2.51	0.43
33:C:38:VAL:HG23	33:C:39:ARG:N	2.34	0.43
41:K:22:ILE:HG12	41:K:31:VAL:HG13	2.01	0.43
51:U:11:PHE:C	51:U:13:VAL:H	2.21	0.43
52:03:93:GLU:C	52:03:94:LEU:HD12	2.39	0.43
52:03:133:PRO:HG3	54:01:2168:G:O3'	2.18	0.43
52:03:175:ILE:HG23	52:03:192:LEU:HD22	1.99	0.43
53:A:86:G:H4'	53:A:87:C:C6	2.53	0.43
53:A:132:C:H5'	53:A:262:A:O2'	2.19	0.43
53:A:243:A:H4'	53:A:244:U:H3'	2.01	0.43
54:01:184:C:H4'	54:01:217:A:H2	1.83	0.43
54:01:825:A:H2'	54:01:826:U:O4'	2.19	0.43
54:01:1783:A:N1	54:01:2587:A:H2'	2.33	0.43
54:01:2139:U:H2'	54:01:2140:G:C8	2.53	0.43
54:01:2190:G:H2'	54:01:2191:A:H8	1.84	0.43
54:01:2660:A:H2'	54:01:2661:G:O4'	2.18	0.43
55:02:79:G:H2'	55:02:80:U:O4'	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:X:31:G:C2'	56:X:32:C:H5'	2.48	0.43
56:W:51:C:H2'	56:W:52:G:O4'	2.18	0.43
1:04:132:ARG:HD3	1:04:132:ARG:H	1.84	0.43
5:08:22:VAL:HG22	5:08:35:THR:OG1	2.18	0.43
5:08:144:ALA:HB1	5:08:163:TYR:HE1	1.83	0.43
6:09:5:LEU:HD23	6:09:9:VAL:HG21	2.00	0.43
9:12:99:ARG:HA	9:12:102:GLU:HB3	2.00	0.43
15:18:51:ASN:O	54:01:2845:U:H5''	2.18	0.43
19:22:8:LEU:HD13	24:27:21:LEU:HB3	2.01	0.43
22:25:33:ILE:HD11	22:25:78:ILE:HD11	1.99	0.43
41:K:44:ALA:HB3	41:K:69:CYS:HB2	2.00	0.43
51:U:23:GLU:HB3	51:U:27:VAL:HG22	1.99	0.43
53:A:321:A:O2'	53:A:322:C:H5'	2.18	0.43
53:A:730:G:C5	53:A:731:G:H1'	2.53	0.43
54:01:1906:G:C2'	54:01:1907:G:H5''	2.49	0.43
58:Y:29:G:H2'	58:Y:30:G:C8	2.53	0.43
58:Y:60:U:O2'	58:Y:61:C:H5'	2.18	0.43
7:10:118:ILE:CB	7:10:119:PRO:HD3	2.48	0.43
10:13:7:MET:C	10:13:8:LEU:HD12	2.38	0.43
14:17:111:ARG:HB2	14:17:117:PHE:CE1	2.54	0.43
24:27:38:GLN:O	54:01:95:A:H4'	2.18	0.43
34:D:14:GLU:OE1	34:D:59:LYS:HB2	2.19	0.43
35:E:129:SER:HB2	53:A:20:U:OP2	2.18	0.43
35:E:152:VAL:O	35:E:156:ARG:HB3	2.19	0.43
35:E:156:ARG:HG3	38:H:44:PHE:CZ	2.54	0.43
36:F:19:PRO:O	36:F:23:GLU:HG3	2.19	0.43
37:G:87:PRO:HG3	37:G:148:LYS:HA	1.99	0.43
53:A:728:A:H2'	53:A:729:A:C8	2.53	0.43
53:A:801:U:H2'	53:A:802:A:H8	1.84	0.43
53:A:922:G:H2'	53:A:923:A:C8	2.54	0.43
54:01:796:C:H2'	54:01:797:G:H8	1.84	0.43
54:01:1362:C:H2'	54:01:1363:C:O4'	2.19	0.43
54:01:1710:G:H1'	54:01:2859:G:H21	1.83	0.43
54:01:2026:U:H2'	54:01:2027:G:O4'	2.19	0.43
54:01:2725:A:H2'	54:01:2726:A:H2'	2.00	0.43
58:Y:68:C:H2'	58:Y:69:G:C8	2.53	0.43
1:04:64:VAL:HB	1:04:66:PHE:CZ	2.54	0.43
4:07:147:ARG:HG3	4:07:148:VAL:H	1.84	0.43
11:14:141:LYS:HE2	11:14:143:GLU:HB3	2.00	0.43
17:20:27:ILE:HG22	17:20:28:ALA:N	2.34	0.43
17:20:58:VAL:O	17:20:58:VAL:HG13	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:21:86:MET:HB2	18:21:96:ILE:CD1	2.48	0.43
24:27:5:GLU:O	24:27:56:LEU:HD13	2.19	0.43
36:F:5:GLU:HB2	36:F:90:MET:HB2	2.00	0.43
36:F:67:PRO:HG2	36:F:70:VAL:HG23	1.99	0.43
38:H:51:GLU:O	38:H:57:GLU:N	2.51	0.43
49:S:10:ILE:HG22	49:S:37:SER:HB2	2.01	0.43
49:S:34:SER:O	49:S:70:LEU:HD12	2.19	0.43
52:03:7:ARG:HH11	54:01:2128:G:H4'	1.84	0.43
52:03:105:LYS:HE3	52:03:130:VAL:HG21	2.01	0.43
53:A:604:G:H2'	53:A:605:U:O4'	2.18	0.43
53:A:763:G:H2'	53:A:764:C:C6	2.54	0.43
53:A:1237:C:OP1	53:A:1238:A:H1'	2.19	0.43
54:01:191:A:H2'	54:01:192:C:C6	2.53	0.43
54:01:374:A:H2'	54:01:375:G:O4'	2.19	0.43
54:01:826:U:H5''	54:01:2429:G:P	2.59	0.43
58:Y:55:U:H2'	58:Y:57:G:OP2	2.18	0.43
59:Z:206:ILE:HB	59:Z:235:ILE:HG23	2.01	0.43
13:16:2:ARG:HA	13:16:5:LYS:HG3	2.00	0.43
20:23:4:ILE:HD12	20:23:4:ILE:H	1.83	0.43
32:B:67:LEU:HD21	32:B:91:VAL:CG2	2.40	0.43
41:K:95:THR:O	41:K:99:LEU:HD13	2.19	0.43
43:M:9:PRO:CG	43:M:44:ILE:HG13	2.49	0.43
53:A:408:A:H2'	53:A:409:U:O4'	2.18	0.43
53:A:591:U:H2'	53:A:592:G:H8	1.84	0.43
53:A:682:G:H2'	53:A:683:G:C8	2.53	0.43
53:A:1157:A:H4'	53:A:1158:C:O5'	2.19	0.43
54:01:193:U:H4'	54:01:803:U:H4'	2.01	0.43
54:01:817:C:O2'	54:01:839:U:H5''	2.18	0.43
54:01:1152:C:H2'	54:01:1153:C:C6	2.54	0.43
54:01:1683:U:H2'	54:01:1684:G:H8	1.84	0.43
54:01:1697:G:C4'	54:01:1978:A:H5''	2.49	0.43
56:X:68:C:H2'	56:X:69:C:O4'	2.19	0.43
1:04:235:GLU:N	1:04:238:ASN:ND2	2.60	0.42
2:05:154:LYS:HZ2	54:01:2024:G:H4'	1.82	0.42
4:07:97:GLU:CG	26:29:25:ARG:HB2	2.48	0.42
6:09:26:ALA:O	6:09:31:VAL:HG23	2.19	0.42
7:10:58:THR:HG21	7:10:82:ILE:H	1.85	0.42
8:11:12:VAL:HG12	8:11:13:ALA:N	2.28	0.42
13:16:37:THR:HG22	13:16:110:MET:HE1	2.00	0.42
36:F:44:ARG:HA	36:F:58:HIS:HA	2.00	0.42
37:G:38:ALA:O	37:G:42:VAL:HG23	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:I:62:LEU:HD12	39:I:62:LEU:N	2.34	0.42
51:U:17:ARG:HA	51:U:20:ARG:HG2	2.00	0.42
53:A:227:G:H2'	53:A:228:A:O4'	2.19	0.42
53:A:443:C:H2'	53:A:444:G:H8	1.83	0.42
54:01:1844:C:H2'	54:01:1845:G:H8	1.82	0.42
56:X:21:A:N6	56:X:46:G:H2'	2.34	0.42
1:04:7:PRO:HB3	1:04:13:ARG:HA	2.01	0.42
1:04:257:ARG:HG3	54:01:1799:G:OP1	2.19	0.42
5:08:157:LYS:HD2	54:01:2659:G:OP1	2.19	0.42
20:23:43:LYS:O	20:23:58:VAL:N	2.52	0.42
22:25:22:PHE:CD2	54:01:922:C:H1'	2.54	0.42
22:25:25:GLU:O	22:25:63:VAL:HG23	2.19	0.42
30:33:38:LYS:CA	30:33:41:ARG:HH11	2.32	0.42
42:L:47:ALA:C	42:L:48:LEU:HD12	2.39	0.42
47:Q:46:HIS:HB2	47:Q:70:LYS:CG	2.48	0.42
50:T:70:LYS:HA	50:T:73:ARG:HH12	1.83	0.42
53:A:225:C:C3'	53:A:226:G:H5''	2.49	0.42
53:A:666:G:H2'	53:A:667:G:C8	2.54	0.42
53:A:969:A:H2'	53:A:970:C:O4'	2.18	0.42
54:01:548:G:H2'	54:01:549:G:O4'	2.19	0.42
54:01:795:C:H2'	54:01:796:C:C6	2.54	0.42
54:01:992:C:H2'	54:01:993:G:H8	1.84	0.42
54:01:1655:A:H2'	54:01:1656:C:O4'	2.19	0.42
54:01:2123:G:H2'	54:01:2124:G:C8	2.55	0.42
59:Z:29:ALA:HB2	59:Z:49:ILE:HD12	2.00	0.42
59:Z:60:ILE:HA	60:Z:401:GCP:O2G	2.19	0.42
3:06:188:MET:CE	3:06:196:VAL:HG21	2.49	0.42
5:08:132:LEU:HD12	5:08:132:LEU:O	2.19	0.42
15:18:77:SER:O	15:18:80:VAL:HG22	2.19	0.42
17:20:15:SER:N	17:20:18:GLN:HE21	2.01	0.42
25:28:50:VAL:O	25:28:54:VAL:HG22	2.19	0.42
35:E:75:LEU:O	35:E:75:LEU:HD12	2.19	0.42
38:H:30:LYS:HD2	53:A:643:C:OP1	2.19	0.42
47:Q:13:SER:HB3	47:Q:21:VAL:HG11	2.00	0.42
50:T:30:PHE:O	50:T:34:VAL:HG23	2.20	0.42
53:A:244:U:O4	53:A:906:A:H1'	2.18	0.42
53:A:555:U:H2'	53:A:556:C:C6	2.54	0.42
54:01:190:A:H5''	54:01:204:A:H61	1.84	0.42
54:01:310:A:O2'	54:01:311:A:H2'	2.20	0.42
54:01:433:C:O2'	54:01:434:U:H5'	2.19	0.42
54:01:935:C:H2'	54:01:936:A:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:1258:U:H2'	54:01:1259:G:C8	2.54	0.42
54:01:1282:U:H2'	54:01:1283:G:O4'	2.20	0.42
54:01:1532:A:H1'	54:01:1540:G:N2	2.34	0.42
54:01:1773:A:H2'	54:01:1774:C:H5'	2.00	0.42
58:Y:15:G:C2'	58:Y:16:U:H5'	2.46	0.42
1:04:48:ILE:HG22	54:01:779:U:OP1	2.20	0.42
5:08:21:GLN:NE2	5:08:38:ASP:HA	2.33	0.42
7:10:43:LYS:CB	7:10:46:ARG:HH21	2.32	0.42
7:10:69:PHE:CD2	7:10:70:GLU:HG2	2.55	0.42
7:10:81:LEU:HA	54:01:1107:G:H4'	2.00	0.42
12:15:53:MET:HB2	12:15:120:ALA:HB2	2.02	0.42
12:15:78:LEU:HD23	12:15:79:ALA:HB2	2.01	0.42
13:16:49:GLU:HB2	13:16:50:PRO:HD3	2.02	0.42
14:17:27:VAL:HG13	14:17:95:SER:OG	2.20	0.42
30:33:30:HIS:ND1	30:33:31:ILE:HG13	2.35	0.42
43:M:16:ILE:HD12	43:M:16:ILE:H	1.84	0.42
44:N:45:LEU:HG	49:S:12:LEU:HD22	2.02	0.42
47:Q:74:LEU:HD12	47:Q:75:VAL:N	2.34	0.42
49:S:28:LYS:HE3	49:S:29:PRO:HD2	2.02	0.42
52:03:6:LYS:O	52:03:10:VAL:HG23	2.19	0.42
52:03:46:VAL:HG13	52:03:212:VAL:HG22	2.02	0.42
53:A:578:C:H2'	53:A:579:A:C8	2.54	0.42
53:A:797:C:H2'	53:A:798:U:H6	1.83	0.42
53:A:945:G:H2'	53:A:945:G:N3	2.34	0.42
53:A:1030:U:H3'	53:A:1031:C:H5'	2.01	0.42
53:A:1030:U:H5	53:A:1033:G:H21	1.67	0.42
54:01:799:G:H3'	54:01:800:A:H8	1.84	0.42
54:01:844:A:H5'	54:01:845:A:OP1	2.20	0.42
54:01:917:A:H2	55:02:79:G:H21	1.68	0.42
54:01:1565:C:O2'	54:01:1566:A:H2'	2.19	0.42
54:01:2149:U:H2'	54:01:2150:C:O4'	2.18	0.42
58:Y:37:A:H2'	58:Y:38:A:O4'	2.20	0.42
3:06:105:LEU:O	3:06:109:LEU:HD13	2.18	0.42
9:12:113:PRO:HD2	54:01:558:U:OP1	2.20	0.42
11:14:63:LYS:HA	30:33:12:ARG:HG2	2.00	0.42
15:18:2:ASN:ND2	54:01:2876:G:H5''	2.34	0.42
22:25:58:LYS:HE3	54:01:2366:A:H4'	2.02	0.42
27:30:10:SER:O	27:30:14:MET:HG3	2.20	0.42
32:B:102:ASN:ND2	32:B:105:THR:HG21	2.34	0.42
36:F:75:GLU:HA	36:F:78:PHE:HD2	1.83	0.42
50:T:35:TYR:O	50:T:39:GLU:HG2	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:482:A:H1'	54:01:498:G:N2	2.34	0.42
54:01:1285:A:H2'	54:01:1286:A:H5'	2.01	0.42
54:01:2783:U:H2'	54:01:2784:U:C6	2.54	0.42
54:01:2897:U:H2'	54:01:2898:U:C6	2.54	0.42
59:Z:177:ALA:CB	59:Z:188:ILE:HG13	2.49	0.42
1:04:134:ILE:HA	1:04:135:PRO:HD3	1.94	0.42
1:04:260:LYS:HB3	54:01:2227:A:H5''	2.00	0.42
6:09:99:ILE:O	6:09:103:VAL:HG23	2.19	0.42
7:10:27:VAL:HG23	7:10:110:ALA:HA	2.02	0.42
7:10:116:GLU:HB3	7:10:117:LEU:H	1.72	0.42
8:11:127:SER:HB2	54:01:1080:A:N3	2.35	0.42
9:12:7:LYS:O	9:12:11:VAL:HG23	2.20	0.42
13:16:55:ALA:HA	13:16:80:PHE:CE1	2.55	0.42
14:17:29:HIS:HA	14:17:97:PHE:CE2	2.55	0.42
20:23:10:VAL:HA	20:23:71:ILE:HA	2.02	0.42
32:B:96:LEU:O	32:B:99:MET:HG2	2.19	0.42
32:B:206:ILE:O	32:B:209:VAL:HG22	2.20	0.42
32:B:217:ALA:O	32:B:221:ARG:HB2	2.19	0.42
35:E:164:LEU:HD12	35:E:165:GLY:N	2.34	0.42
36:F:25:TYR:O	36:F:29:ILE:HG13	2.19	0.42
37:G:72:VAL:HG12	37:G:89:GLU:HA	2.02	0.42
37:G:110:ARG:HH22	37:G:121:ASN:HB3	1.84	0.42
40:J:42:LEU:HA	40:J:43:PRO:HD2	1.73	0.42
43:M:53:ASP:HA	43:M:56:ARG:HH11	1.85	0.42
52:03:57:GLN:HG2	52:03:201:PRO:CB	2.50	0.42
53:A:390:U:H2'	53:A:391:G:C8	2.55	0.42
53:A:878:A:H2'	53:A:879:C:C6	2.55	0.42
53:A:1477:U:H2'	53:A:1478:U:C6	2.54	0.42
54:01:140:C:H3'	54:01:140:C:OP2	2.19	0.42
54:01:1748:C:H2'	54:01:1749:A:H8	1.84	0.42
54:01:2246:G:H2'	54:01:2247:A:C8	2.55	0.42
58:Y:9:A:C2	58:Y:44:G:H2'	2.54	0.42
59:Z:243:GLU:CD	59:Z:295:PRO:HA	2.39	0.42
12:15:38:ARG:CD	55:02:90:C:H4'	2.50	0.42
14:17:12:THR:HB	54:01:2334:U:H4'	2.01	0.42
18:21:25:ARG:NH2	54:01:519:U:H5''	2.34	0.42
24:27:14:LEU:O	24:27:14:LEU:HD23	2.20	0.42
40:J:14:ASP:OD2	40:J:17:LEU:HB2	2.19	0.42
42:L:120:ARG:NH1	53:A:500:G:H5'	2.34	0.42
52:03:104:ILE:HG23	52:03:108:GLU:O	2.20	0.42
52:03:170:ILE:HG21	54:01:2177:C:H1'	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:17:U:H2'	53:A:18:C:C6	2.54	0.42
53:A:67:C:H2'	53:A:68:G:C8	2.55	0.42
53:A:539:A:H2'	53:A:540:G:H8	1.84	0.42
53:A:651:C:H2'	53:A:652:U:C6	2.55	0.42
53:A:855:U:H2'	53:A:856:C:C6	2.54	0.42
53:A:1053:G:H4'	53:A:1055:A:OP1	2.19	0.42
54:01:151:C:H2'	54:01:152:A:C8	2.54	0.42
54:01:464:U:H1'	54:01:686:U:H5	1.84	0.42
54:01:935:C:H2'	54:01:936:A:H8	1.85	0.42
54:01:995:C:H6	54:01:995:C:H5'	1.85	0.42
54:01:1318:U:H2'	54:01:1319:C:C6	2.54	0.42
54:01:1989:G:H2'	54:01:1990:C:O4'	2.19	0.42
54:01:2415:G:H2'	54:01:2416:C:C6	2.54	0.42
54:01:2818:U:H2'	54:01:2819:G:C8	2.54	0.42
55:02:30:C:H2'	55:02:31:C:C5'	2.49	0.42
56:X:14:A:H2'	56:X:15:G:O4'	2.20	0.42
59:Z:20:VAL:HA	60:Z:401:GCP:O1G	2.19	0.42
59:Z:67:VAL:HG22	59:Z:78:HIS:HB3	1.99	0.42
59:Z:191:LEU:O	59:Z:195:LEU:HB2	2.19	0.42
59:Z:311:LEU:HG	59:Z:384:GLY:HA2	2.01	0.42
59:Z:322:PHE:N	59:Z:322:PHE:CD1	2.87	0.42
3:06:163:ASN:ND2	54:01:323:C:H5''	2.35	0.42
4:07:148:VAL:HG12	4:07:148:VAL:O	2.20	0.42
10:13:41:ILE:C	10:13:41:ILE:HD12	2.40	0.42
12:15:36:VAL:HG13	21:24:82:TYR:CD2	2.55	0.42
14:17:30:ARG:HG2	14:17:30:ARG:HH11	1.84	0.42
16:19:8:ILE:H	16:19:8:ILE:HG13	1.70	0.42
23:26:17:ARG:HE	23:26:23:ALA:HB2	1.85	0.42
25:28:14:GLY:C	25:28:15:ARG:HD2	2.39	0.42
41:K:126:ARG:HH21	53:A:796:C:H4'	1.84	0.42
43:M:97:ARG:HG2	43:M:97:ARG:HH11	1.84	0.42
46:P:40:ASN:OD1	46:P:42:ILE:HG12	2.20	0.42
53:A:301:G:H2'	53:A:302:G:H8	1.84	0.42
53:A:713:G:H2'	53:A:714:G:C8	2.55	0.42
53:A:1071:C:H2'	53:A:1072:G:C8	2.54	0.42
54:01:355:U:H2'	54:01:356:G:C8	2.54	0.42
54:01:624:C:O2'	54:01:657:U:H5''	2.20	0.42
54:01:633:A:H2'	54:01:634:C:H5'	2.00	0.42
54:01:1474:U:C2'	54:01:1475:G:H5'	2.49	0.42
54:01:2721:A:H2'	54:01:2722:G:O4'	2.20	0.42
55:02:78:A:H2'	55:02:79:G:O4'	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:04:30:ALA:HB3	1:04:31:PRO:HD3	2.02	0.42
2:05:135:GLY:HA2	54:01:743:A:OP1	2.20	0.42
2:05:149:ASN:CG	2:05:150:GLN:H	2.23	0.42
4:07:89:THR:O	55:02:43:C:H1'	2.20	0.42
7:10:111:ALA:O	7:10:114:GLU:HG2	2.20	0.42
8:11:99:LYS:O	8:11:100:ILE:HD13	2.20	0.42
11:14:23:ILE:HG13	17:20:82:HIS:CE1	2.55	0.42
11:14:27:LEU:O	11:14:31:GLY:HA2	2.19	0.42
11:14:79:LEU:HD11	11:14:112:LEU:HA	2.02	0.42
20:23:97:SER:O	20:23:98:ASN:CB	2.67	0.42
27:30:33:SER:CB	27:30:35:GLU:HG3	2.50	0.42
33:C:38:VAL:O	33:C:42:LEU:HD13	2.19	0.42
36:F:98:GLU:HB3	36:F:99:ALA:H	1.67	0.42
41:K:44:ALA:HB3	41:K:65:ALA:O	2.20	0.42
53:A:928:G:H2'	53:A:929:G:H8	1.85	0.42
54:01:280:U:H2'	54:01:281:C:C2	2.55	0.42
54:01:767:U:H2'	54:01:768:G:C8	2.55	0.42
54:01:859:G:O2'	54:01:860:U:P	2.77	0.42
54:01:1844:C:H2'	54:01:1845:G:C8	2.55	0.42
54:01:2233:U:H2'	54:01:2234:G:H8	1.84	0.42
54:01:2774:C:H2'	54:01:2775:G:O4'	2.20	0.42
56:X:1:C:H2'	56:X:2:G:C8	2.55	0.42
59:Z:113:PRO:O	59:Z:116:ARG:HB3	2.20	0.42
1:04:65:ASP:OD2	1:04:68:ARG:HD2	2.20	0.42
1:04:104:LEU:HD12	1:04:142:ASN:ND2	2.35	0.42
1:04:243:PRO:O	1:04:251:THR:HG22	2.20	0.42
1:04:252:LYS:HB2	1:04:252:LYS:HZ3	1.84	0.42
5:08:34:ARG:HE	5:08:70:LEU:HD13	1.81	0.42
7:10:29:ASP:H	7:10:81:LEU:HD22	1.83	0.42
8:11:75:ALA:O	8:11:79:LEU:N	2.50	0.42
9:12:117:ALA:HA	9:12:120:ARG:HH21	1.83	0.42
11:14:62:PRO:HG2	30:33:24:LYS:HB3	2.02	0.42
13:16:1:MET:O	13:16:2:ARG:HG3	2.20	0.42
17:20:78:ARG:NH1	54:01:990:A:H61	2.17	0.42
33:C:13:ILE:HD12	33:C:13:ILE:H	1.85	0.42
39:I:80:HIS:CD2	39:I:105:ARG:HA	2.55	0.42
43:M:100:ARG:HH12	43:M:103:THR:CB	2.33	0.42
53:A:1295:U:H2'	53:A:1296:C:C6	2.54	0.42
54:01:358:U:H2'	54:01:359:G:O4'	2.20	0.42
54:01:2292:U:H2'	54:01:2293:G:C8	2.55	0.42
54:01:2520:C:O2'	54:01:2521:C:H5'	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:04:55:GLY:H	54:01:692:C:P	2.43	0.41
1:04:86:ARG:HG2	1:04:86:ARG:HH11	1.86	0.41
2:05:6:GLY:O	2:05:201:LEU:N	2.47	0.41
7:10:67:THR:HB	7:10:68:PRO:HD3	2.02	0.41
12:15:33:LEU:HD11	12:15:128:THR:OG1	2.20	0.41
16:19:60:TRP:O	16:19:64:ILE:HG13	2.20	0.41
22:25:61:GLY:HA2	22:25:81:GLU:OXT	2.20	0.41
24:27:9:LYS:HE2	24:27:11:VAL:CG2	2.50	0.41
32:B:63:LYS:HD2	32:B:63:LYS:HA	1.86	0.41
32:B:202:ASN:ND2	32:B:208:ALA:HB2	2.31	0.41
35:E:108:GLY:H	53:A:9:G:H4'	1.85	0.41
47:Q:39:ARG:HG3	47:Q:39:ARG:HH11	1.85	0.41
53:A:6:G:O2'	53:A:298:A:H1'	2.20	0.41
54:01:78:U:H2'	54:01:79:C:C6	2.55	0.41
54:01:195:A:H2'	54:01:198:C:H41	1.84	0.41
54:01:1550:C:H2'	54:01:1551:A:C8	2.55	0.41
54:01:1686:C:H2'	54:01:1687:G:O4'	2.20	0.41
54:01:2114:A:O2'	54:01:2167:U:H5'	2.19	0.41
54:01:2819:G:H2'	54:01:2821:A:N7	2.35	0.41
56:X:1:C:H2'	56:X:2:G:H8	1.84	0.41
2:05:33:ARG:HH22	2:05:74:GLU:HB3	1.85	0.41
2:05:155:VAL:HG21	54:01:2618:G:H21	1.85	0.41
4:07:153:ILE:HD12	4:07:153:ILE:N	2.35	0.41
8:11:30:GLN:CB	8:11:60:VAL:HG21	2.50	0.41
10:13:71:ARG:HH11	10:13:77:ILE:HD11	1.85	0.41
27:30:27:LEU:HD12	27:30:37:HIS:O	2.21	0.41
33:C:112:ALA:HA	33:C:201:ILE:HD12	2.02	0.41
36:F:47:LEU:HD13	36:F:51:ILE:HG13	2.01	0.41
52:03:16:ASP:HB2	52:03:21:TYR:HE1	1.85	0.41
53:A:396:C:H2'	53:A:397:A:H5''	2.01	0.41
53:A:613:C:H2'	53:A:614:C:C6	2.55	0.41
54:01:107:G:H2'	54:01:108:G:C8	2.55	0.41
54:01:392:U:H2'	54:01:393:C:H6	1.85	0.41
54:01:946:C:H2'	54:01:947:A:H8	1.85	0.41
54:01:1074:G:H2'	54:01:1075:C:O4'	2.20	0.41
54:01:1548:A:H2'	54:01:1549:A:C8	2.55	0.41
54:01:1595:C:H2'	54:01:1596:A:H8	1.86	0.41
54:01:1720:U:H2'	54:01:1721:G:O4'	2.20	0.41
54:01:1796:U:H2'	54:01:1797:G:H8	1.85	0.41
54:01:2266:A:H4'	54:01:2267:A:N3	2.35	0.41
54:01:2305:U:H2'	54:01:2306:C:C6	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:2328:A:H2'	54:01:2329:U:C6	2.55	0.41
54:01:2684:U:H2'	54:01:2685:G:O4'	2.20	0.41
55:02:49:C:H2'	55:02:50:A:C8	2.55	0.41
55:02:88:C:C5'	55:02:89:U:OP1	2.67	0.41
3:06:148:ILE:HD13	3:06:187:VAL:HG11	2.02	0.41
4:07:40:GLY:HA2	4:07:84:ILE:CG1	2.50	0.41
4:07:97:GLU:HG2	26:29:25:ARG:HB2	2.02	0.41
5:08:29:ASN:HD22	5:08:78:VAL:C	2.23	0.41
9:12:35:ARG:HB2	9:12:54:ILE:HD11	2.02	0.41
10:13:3:GLN:HE21	54:01:1666:G:H1'	1.85	0.41
21:24:7:GLU:HB2	21:24:41:GLU:HB3	2.02	0.41
23:26:63:ILE:O	23:26:67:LEU:HD13	2.20	0.41
32:B:14:HIS:HB2	32:B:202:ASN:HB2	2.01	0.41
32:B:16:GLY:HA2	32:B:40:ILE:H	1.85	0.41
32:B:107:ARG:HA	32:B:110:ILE:HD12	2.02	0.41
33:C:150:VAL:HG12	33:C:199:VAL:HG23	2.01	0.41
33:C:176:THR:HG22	33:C:178:ARG:HG2	2.03	0.41
37:G:41:ILE:HG23	37:G:116:ALA:HA	2.02	0.41
41:K:118:ASN:O	53:A:716:A:H1'	2.20	0.41
49:S:35:ARG:NH1	49:S:74:ALA:HB3	2.35	0.41
53:A:225:C:H2'	53:A:226:G:O4'	2.20	0.41
53:A:459:A:H2'	53:A:460:A:C8	2.55	0.41
54:01:340:A:H2'	54:01:341:C:O4'	2.20	0.41
54:01:2055:C:H5'	54:01:2056:G:O5'	2.19	0.41
54:01:2564:A:OP1	54:01:2648:G:H4'	2.21	0.41
59:Z:32:THR:O	59:Z:36:ALA:N	2.53	0.41
59:Z:205:ALA:HB1	59:Z:208:LYS:HE3	2.02	0.41
1:04:124:LYS:HB3	1:04:127:ASN:OD1	2.21	0.41
1:04:154:ALA:CB	1:04:161:VAL:HG23	2.48	0.41
8:11:103:ALA:O	8:11:107:GLU:HG3	2.20	0.41
10:13:76:VAL:H	15:18:72:VAL:CG2	2.28	0.41
11:14:29:LYS:HG2	11:14:30:THR:HG23	2.03	0.41
21:24:72:VAL:HA	21:24:94:ALA:H	1.84	0.41
31:34:4:ARG:HB3	54:01:2466:C:OP1	2.20	0.41
32:B:169:HIS:CE1	32:B:170:ILE:HG23	2.55	0.41
33:C:1:GLY:HA3	53:A:1060:U:C5	2.55	0.41
44:N:9:GLU:O	44:N:13:VAL:HG23	2.21	0.41
47:Q:59:GLU:O	47:Q:74:LEU:HA	2.20	0.41
47:Q:61:ARG:HD2	47:Q:62:GLU:O	2.20	0.41
52:03:21:TYR:N	52:03:223:ALA:O	2.43	0.41
53:A:323:U:H2'	53:A:324:G:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:1084:G:H2'	53:A:1085:U:C5	2.56	0.41
53:A:1323:G:H2'	53:A:1324:A:C8	2.55	0.41
54:01:167:A:H2'	54:01:168:G:O4'	2.20	0.41
54:01:801:G:H3'	54:01:802:A:H5'	2.02	0.41
54:01:2206:C:H2'	54:01:2207:C:C6	2.55	0.41
54:01:2639:A:H2'	54:01:2640:G:O4'	2.20	0.41
54:01:2845:U:H2'	54:01:2846:G:C8	2.55	0.41
55:02:111:U:H2'	55:02:112:G:H8	1.85	0.41
56:X:9:G:H5''	56:X:11:A:N7	2.36	0.41
58:Y:45:U:H3'	58:Y:46:G:H5''	2.03	0.41
59:Z:215:GLU:OE2	59:Z:216:ASP:HB2	2.19	0.41
59:Z:328:PRO:HG2	59:Z:330:PHE:CE1	2.55	0.41
1:04:141:HIS:CD2	1:04:194:VAL:HG22	2.56	0.41
6:09:50:ARG:O	6:09:54:LEU:HB3	2.19	0.41
7:10:80:THR:O	7:10:82:ILE:HG12	2.20	0.41
9:12:118:MET:HA	9:12:121:LYS:HG2	2.01	0.41
11:14:95:LEU:HB3	11:14:100:ILE:CG1	2.50	0.41
13:16:100:CYS:HB3	27:30:42:ILE:HD11	2.02	0.41
17:20:14:VAL:HG23	17:20:18:GLN:NE2	2.36	0.41
23:26:48:LEU:HD21	23:26:77:TYR:HB2	2.03	0.41
27:30:24:VAL:HG22	27:30:26:SER:HB2	2.02	0.41
35:E:84:VAL:HG23	35:E:145:ASN:ND2	2.34	0.41
39:I:61:ASP:C	39:I:62:LEU:HD12	2.41	0.41
47:Q:28:VAL:HG22	47:Q:29:LYS:N	2.35	0.41
52:03:7:ARG:HE	54:01:2128:G:C4'	2.29	0.41
52:03:212:VAL:HG12	52:03:214:ILE:HG23	2.02	0.41
53:A:149:A:H1'	53:A:1446:A:C2	2.54	0.41
53:A:219:U:H2'	53:A:220:G:C8	2.56	0.41
53:A:1040:U:H2'	53:A:1041:G:H8	1.85	0.41
53:A:1326:U:O2'	53:A:1327:C:H5'	2.20	0.41
54:01:774:G:O2'	54:01:775:G:H5''	2.21	0.41
54:01:894:U:O2'	54:01:895:U:H5'	2.20	0.41
54:01:947:A:H2'	54:01:948:C:C6	2.56	0.41
54:01:1213:A:N6	54:01:1236:G:H1'	2.35	0.41
54:01:1399:C:H2'	54:01:1400:U:C6	2.55	0.41
54:01:1433:A:H2'	54:01:1434:A:O4'	2.21	0.41
55:02:104:A:H2'	55:02:105:G:O4'	2.21	0.41
58:Y:44:G:H1'	58:Y:45:U:C6	2.55	0.41
59:Z:96:ALA:HB2	59:Z:333:ARG:O	2.20	0.41
1:04:224:MET:SD	1:04:229:HIS:HB2	2.60	0.41
2:05:5:VAL:HG11	2:05:80:TRP:CZ3	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:10:33:VAL:HG12	7:10:34:THR:H	1.86	0.41
8:11:19:PRO:C	8:11:22:PRO:HD2	2.41	0.41
12:15:34:LYS:HA	12:15:101:VAL:HA	2.02	0.41
16:19:55:GLN:HA	16:19:58:GLN:HG2	2.02	0.41
18:21:43:ALA:O	18:21:47:VAL:HG12	2.20	0.41
23:26:11:PRO:HG3	23:26:30:PRO:HD2	2.03	0.41
27:30:9:ARG:O	27:30:13:GLY:N	2.54	0.41
32:B:202:ASN:ND2	32:B:205:ALA:HB3	2.34	0.41
34:D:94:GLU:HA	34:D:99:ASN:HD22	1.83	0.41
35:E:86:GLY:O	35:E:138:ALA:HB1	2.21	0.41
39:I:89:TYR:HB3	39:I:93:LEU:CD1	2.51	0.41
41:K:15:VAL:HG22	41:K:16:SER:N	2.35	0.41
41:K:126:ARG:NH2	53:A:796:C:H4'	2.35	0.41
46:P:59:HIS:O	46:P:63:GLN:HG2	2.19	0.41
47:Q:52:CYS:SG	47:Q:74:LEU:HD22	2.61	0.41
48:R:13:THR:HG21	48:R:20:ILE:HD11	2.02	0.41
52:03:16:ASP:HB2	52:03:21:TYR:CE1	2.55	0.41
53:A:443:C:H2'	53:A:444:G:C8	2.56	0.41
53:A:785:G:H2'	53:A:786:G:H8	1.86	0.41
53:A:785:G:O2'	53:A:786:G:H5'	2.20	0.41
53:A:994:A:C5	53:A:1216:A:H4'	2.56	0.41
53:A:1468:A:O2'	53:A:1469:C:H5'	2.20	0.41
53:A:1497:G:O2'	53:A:1498:U:H5'	2.21	0.41
54:01:999:U:O2'	54:01:1000:A:H5'	2.21	0.41
54:01:1435:G:O2'	54:01:1436:G:H5'	2.20	0.41
54:01:1672:A:C2	54:01:2582:G:H5'	2.55	0.41
54:01:1837:C:H2'	54:01:1899:A:N6	2.34	0.41
54:01:2555:U:H2'	54:01:2556:C:H5'	2.02	0.41
58:Y:24:G:H2'	58:Y:25:C:O4'	2.21	0.41
5:08:101:VAL:HG22	5:08:115:GLN:HG3	2.02	0.41
8:11:10:LEU:HD11	54:01:1070:A:C2	2.56	0.41
13:16:38:LEU:HD11	13:16:42:LYS:HE2	2.03	0.41
16:19:113:LYS:O	16:19:117:ALA:N	2.54	0.41
21:24:23:ALA:O	21:24:25:LYS:HG3	2.20	0.41
36:F:48:ALA:HB1	48:R:68:PRO:HG3	2.02	0.41
36:F:69:GLU:HA	36:F:72:ASP:OD2	2.21	0.41
37:G:6:ILE:HD12	37:G:6:ILE:O	2.20	0.41
39:I:105:ARG:CZ	53:A:1117:A:H5''	2.51	0.41
41:K:90:PRO:HG2	41:K:91:GLY:H	1.84	0.41
42:L:14:LYS:HE3	53:A:562:U:H5	1.85	0.41
53:A:552:U:H2'	53:A:553:A:H8	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:1028:C:H2'	53:A:1029:U:O4'	2.20	0.41
53:A:1506:U:O2'	53:A:1507:A:H5'	2.20	0.41
54:01:464:U:H2'	54:01:465:G:O4'	2.21	0.41
54:01:948:C:H2'	54:01:949:G:C8	2.56	0.41
54:01:1739:A:H2'	54:01:1740:G:O4'	2.20	0.41
54:01:2093:G:H2'	54:01:2094:A:C8	2.55	0.41
54:01:2623:G:H2'	54:01:2624:G:C8	2.54	0.41
58:Y:61:C:H2'	58:Y:62:C:O4'	2.21	0.41
59:Z:28:THR:HG23	59:Z:78:HIS:CD2	2.56	0.41
3:06:23:PHE:CE1	3:06:28:VAL:HG21	2.56	0.41
8:11:38:CYS:O	8:11:41:PHE:HB3	2.20	0.41
9:12:81:ILE:HG23	9:12:82:GLY:N	2.36	0.41
9:12:101:ILE:O	9:12:105:VAL:HG23	2.20	0.41
11:14:77:ILE:N	11:14:77:ILE:HD12	2.35	0.41
13:16:3:HIS:O	13:16:4:ARG:HB2	2.21	0.41
16:19:91:ARG:NH1	54:01:997:G:H5''	2.31	0.41
27:30:39:ARG:HB3	27:30:40:HIS:ND1	2.36	0.41
28:31:7:LYS:HA	28:31:23:THR:HA	2.03	0.41
29:32:21:ARG:HH21	29:32:21:ARG:HG2	1.86	0.41
32:B:106:VAL:O	32:B:110:ILE:HG13	2.21	0.41
33:C:39:ARG:HH21	33:C:56:ILE:CG1	2.33	0.41
34:D:109:THR:HG21	53:A:408:A:OP1	2.21	0.41
43:M:89:ARG:HH21	43:M:95:PRO:HG2	1.85	0.41
45:O:80:LEU:O	45:O:84:LEU:HD13	2.20	0.41
49:S:57:VAL:HG13	49:S:57:VAL:O	2.21	0.41
52:03:185:LEU:HD23	52:03:188:ASN:HD22	1.86	0.41
53:A:34:C:H2'	53:A:35:G:C8	2.56	0.41
53:A:536:C:H2'	53:A:537:G:C8	2.56	0.41
53:A:1211:U:H4'	53:A:1213:A:N3	2.36	0.41
53:A:1498:U:H6	53:A:1499:A:H62	1.69	0.41
54:01:193:U:H4'	54:01:803:U:C4'	2.51	0.41
54:01:270:A:N1	54:01:369:U:H4'	2.36	0.41
54:01:615:U:H5''	54:01:616:A:OP2	2.21	0.41
54:01:976:G:H2'	54:01:977:G:C8	2.55	0.41
54:01:1794:A:H2'	54:01:1795:C:H6	1.85	0.41
54:01:2417:C:H2'	54:01:2418:A:C8	2.56	0.41
54:01:2809:A:H2'	54:01:2810:A:C8	2.55	0.41
59:Z:305:GLU:HA	59:Z:359:VAL:HA	2.02	0.41
59:Z:312:SER:O	59:Z:317:GLY:N	2.51	0.41
4:07:109:ARG:HE	43:M:2:ARG:NH1	2.19	0.41
6:09:129:GLU:OE2	6:09:141:LYS:HB3	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:12:95:ARG:HG3	9:12:95:ARG:NH1	2.34	0.41
12:15:41:LEU:HG	12:15:96:ILE:HG13	2.02	0.41
12:15:66:ARG:HG3	12:15:66:ARG:NH1	2.35	0.41
16:19:93:ILE:HG23	17:20:13:ARG:HB2	2.03	0.41
17:20:81:LYS:HD2	54:01:973:A:H5''	2.03	0.41
18:21:24:ILE:HD11	18:21:74:ILE:CD1	2.51	0.41
22:25:39:THR:HG21	54:01:2336:A:H61	1.86	0.41
23:26:39:VAL:HG12	23:26:42:GLU:H	1.86	0.41
27:30:7:PRO:HG2	54:01:1264:A:H5'	2.02	0.41
29:32:3:ARG:HD3	29:32:4:THR:H	1.86	0.41
32:B:65:LYS:HB3	32:B:89:PHE:CE2	2.53	0.41
34:D:18:LEU:HD22	34:D:63:ILE:HG12	2.03	0.41
34:D:141:VAL:HA	34:D:180:THR:HA	2.03	0.41
35:E:160:VAL:HG22	35:E:161:GLU:N	2.36	0.41
38:H:5:PRO:O	38:H:8:ASP:HB3	2.21	0.41
38:H:9:MET:HG3	38:H:26:MET:SD	2.61	0.41
39:I:48:ARG:O	39:I:52:GLU:HG2	2.21	0.41
43:M:58:GLU:OE2	43:M:61:LYS:HD2	2.20	0.41
45:O:25:GLU:H	45:O:25:GLU:CD	2.24	0.41
47:Q:65:PRO:O	53:A:264:C:O2'	2.37	0.41
52:03:176:GLY:HA3	52:03:180:PHE:CD2	2.56	0.41
53:A:320:A:H2'	53:A:321:A:C8	2.56	0.41
53:A:750:C:H2'	53:A:751:U:C6	2.55	0.41
53:A:981:U:H2'	53:A:982:U:C5	2.56	0.41
53:A:1390:U:H2'	53:A:1391:U:C6	2.55	0.41
54:01:534:U:H2'	54:01:535:G:C8	2.56	0.41
54:01:534:U:H2'	54:01:535:G:H8	1.85	0.41
54:01:662:G:O2'	54:01:663:G:H5'	2.21	0.41
54:01:744:U:H2'	54:01:745:G:O4'	2.21	0.41
54:01:1544:A:H2'	54:01:1545:A:C8	2.56	0.41
54:01:1596:A:H2'	54:01:1597:A:O4'	2.21	0.41
54:01:1605:C:H2'	54:01:1606:C:O4'	2.20	0.41
54:01:1911:U:H2'	54:01:1918:A:N1	2.36	0.41
54:01:2318:G:H2'	54:01:2319:G:O4'	2.20	0.41
54:01:2396:G:H2'	54:01:2397:G:H8	1.86	0.41
54:01:2687:U:H2'	54:01:2688:G:O4'	2.21	0.41
59:Z:102:ILE:CG2	59:Z:191:LEU:HD11	2.51	0.41
6:09:4:ILE:HB	6:09:39:ALA:HB2	2.03	0.41
6:09:57:LYS:HA	6:09:60:GLU:HB2	2.03	0.41
7:10:96:PHE:CE2	7:10:126:LEU:HB2	2.56	0.41
7:10:118:ILE:H	7:10:119:PRO:HD2	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:16:35:LYS:HD2	13:16:112:TYR:CE1	2.56	0.41
19:22:15:HIS:CE1	19:22:17:SER:HB3	2.56	0.41
35:E:151:MET:O	35:E:155:LYS:HG3	2.21	0.41
38:H:21:LYS:O	38:H:62:LEU:HD12	2.21	0.41
40:J:26:VAL:O	40:J:30:LYS:N	2.45	0.41
50:T:70:LYS:HE2	53:A:261:U:OP2	2.20	0.41
52:03:59:VAL:O	52:03:164:ARG:HA	2.21	0.41
53:A:463:U:H2'	53:A:464:U:O4'	2.21	0.41
53:A:858:G:O6	53:A:869:G:H3'	2.21	0.41
53:A:956:U:H2'	53:A:957:U:O4'	2.21	0.41
54:01:1001:A:H2'	54:01:1002:G:O4'	2.21	0.41
54:01:1732:C:O2'	54:01:1733:G:H5'	2.21	0.41
54:01:2047:C:H2'	54:01:2048:G:H8	1.85	0.41
59:Z:61:THR:HB	59:Z:82:PRO:HB3	2.02	0.41
1:04:86:ARG:HH12	1:04:155:ARG:HH21	1.69	0.40
3:06:131:THR:HG22	3:06:160:ALA:O	2.21	0.40
4:07:109:ARG:HE	43:M:2:ARG:CZ	2.34	0.40
5:08:122:ALA:HA	5:08:132:LEU:HA	2.03	0.40
6:09:54:LEU:O	6:09:58:LEU:HG	2.21	0.40
6:09:97:ARG:HG2	6:09:112:LYS:HD3	2.03	0.40
18:21:75:PHE:CD1	18:21:75:PHE:N	2.89	0.40
24:27:34:SER:OG	24:27:36:GLN:HG3	2.21	0.40
26:29:9:TYR:CE1	26:29:26:SER:HA	2.55	0.40
26:29:14:ALA:HB2	26:29:24:ILE:HG12	2.03	0.40
33:C:49:ALA:HB1	33:C:75:VAL:HG22	2.03	0.40
35:E:156:ARG:HH12	38:H:100:ILE:HG23	1.87	0.40
40:J:28:THR:CG2	40:J:86:ALA:HB1	2.51	0.40
46:P:67:ILE:HD12	46:P:67:ILE:N	2.33	0.40
53:A:938:A:C2	53:A:1376:U:H1'	2.56	0.40
53:A:982:U:H4'	53:A:983:A:O5'	2.21	0.40
53:A:1347:G:C2'	53:A:1348:U:OP2	2.69	0.40
53:A:1366:C:H2'	53:A:1367:C:C6	2.56	0.40
54:01:1086:A:N3	54:01:1086:A:H3'	2.36	0.40
54:01:1102:C:H2'	54:01:1103:A:O4'	2.21	0.40
54:01:2144:G:H1'	54:01:2147:A:N6	2.37	0.40
54:01:2238:G:N3	54:01:2238:G:H2'	2.36	0.40
54:01:2640:G:H2'	54:01:2641:G:H8	1.86	0.40
59:Z:212:LEU:HD21	59:Z:229:GLY:CA	2.50	0.40
5:08:173:ALA:C	5:08:175:LYS:H	2.25	0.40
16:19:64:ILE:HD13	16:19:94:LEU:HD22	2.01	0.40
31:34:17:VAL:HG12	31:34:19:ARG:HG3	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:J:83:THR:O	40:J:87:LEU:HG	2.20	0.40
41:K:86:LYS:HZ2	41:K:114:PRO:HD3	1.85	0.40
53:A:317:U:H2'	53:A:318:G:C8	2.56	0.40
53:A:372:C:N4	53:A:387:U:H2'	2.35	0.40
53:A:495:A:H4'	53:A:496:A:OP1	2.20	0.40
53:A:505:G:H4'	53:A:534:U:C4	2.57	0.40
53:A:620:C:H2'	53:A:621:A:O4'	2.21	0.40
53:A:715:A:H2'	53:A:716:A:H8	1.82	0.40
53:A:920:U:H2'	53:A:921:U:C6	2.56	0.40
54:01:174:U:H2'	54:01:175:G:C8	2.56	0.40
54:01:1318:U:H2'	54:01:1319:C:H6	1.86	0.40
54:01:1636:U:H2'	54:01:1637:A:C8	2.54	0.40
54:01:1637:A:H5'	54:01:1760:C:O2'	2.21	0.40
54:01:2693:G:O2'	54:01:2694:G:H5'	2.21	0.40
55:02:97:C:H2'	55:02:98:G:O4'	2.20	0.40
56:X:28:C:H2'	56:X:29:G:H8	1.86	0.40
56:W:9:G:N3	56:W:45:G:H2'	2.36	0.40
58:Y:21:A:H3'	58:Y:46:G:O6	2.21	0.40
59:Z:265:LEU:HD21	59:Z:268:GLY:HA2	2.03	0.40
1:04:153:LEU:HD11	1:04:181:ARG:HH21	1.83	0.40
2:05:23:PRO:HG2	54:01:2728:U:O2'	2.21	0.40
6:09:9:VAL:HG12	6:09:11:ASN:H	1.86	0.40
8:11:86:LYS:HD3	8:11:86:LYS:N	2.37	0.40
10:13:87:LEU:HB3	10:13:92:GLU:O	2.21	0.40
12:15:50:ARG:HG2	12:15:50:ARG:NH2	2.35	0.40
18:21:74:ILE:HG23	18:21:74:ILE:O	2.21	0.40
24:27:17:GLU:HB2	24:27:53:VAL:HG11	2.03	0.40
31:34:2:LYS:HZ3	54:01:2478:A:H5''	1.82	0.40
33:C:4:VAL:HB	53:A:1190:G:OP2	2.21	0.40
37:G:26:VAL:HG13	37:G:42:VAL:HG21	2.03	0.40
40:J:101:SER:C	40:J:102:LEU:HD12	2.41	0.40
43:M:89:ARG:NH2	43:M:94:LEU:HB3	2.37	0.40
47:Q:17:GLU:OE1	53:A:273:U:H1'	2.22	0.40
52:03:48:LEU:HD11	52:03:59:VAL:HG11	2.04	0.40
53:A:202:G:H2'	53:A:203:G:C8	2.57	0.40
53:A:666:G:H2'	53:A:667:G:H8	1.85	0.40
53:A:1019:A:H2'	53:A:1020:G:O4'	2.22	0.40
53:A:1105:A:H2'	53:A:1106:G:H8	1.86	0.40
53:A:1386:G:H2'	53:A:1387:G:C8	2.54	0.40
54:01:493:G:O2'	54:01:494:G:H5'	2.21	0.40
54:01:543:G:H2'	54:01:544:C:O4'	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:567:U:H2'	54:01:568:U:O4'	2.21	0.40
54:01:820:A:H2'	54:01:821:A:C8	2.56	0.40
54:01:864:G:H2'	54:01:865:C:C6	2.56	0.40
54:01:1443:U:H2'	54:01:1444:G:H8	1.83	0.40
54:01:1563:U:H2'	54:01:1564:C:C6	2.57	0.40
1:04:239:PHE:HE2	54:01:1902:C:H5''	1.87	0.40
6:09:40:THR:HG22	6:09:41:LYS:H	1.86	0.40
7:10:25:ALA:HB3	7:10:99:PHE:CE2	2.57	0.40
9:12:34:ARG:NH2	16:19:69:ARG:HD2	2.37	0.40
11:14:100:ILE:HG13	11:14:101:ILE:HG23	2.02	0.40
16:19:16:ILE:HG23	16:19:38:VAL:HG21	2.03	0.40
17:20:41:ILE:HD12	17:20:54:VAL:HG11	2.04	0.40
36:F:47:LEU:HD21	36:F:57:ALA:CB	2.51	0.40
39:I:53:LEU:HD21	39:I:100:ALA:HB2	2.03	0.40
39:I:105:ARG:HD3	39:I:105:ARG:O	2.21	0.40
40:J:53:ILE:HG12	53:A:1060:U:C5'	2.47	0.40
42:L:113:ARG:NH2	42:L:120:ARG:HG3	2.36	0.40
50:T:42:ASP:CB	50:T:45:ALA:HB3	2.51	0.40
52:03:60:ARG:CB	52:03:141:LYS:HG3	2.48	0.40
54:01:1045:C:H5'	54:01:1046:A:C5'	2.51	0.40
54:01:1396:U:H5''	54:01:1397:U:OP2	2.21	0.40
54:01:1427:A:H4'	54:01:1428:C:O4'	2.21	0.40
54:01:1473:G:H2'	54:01:1474:U:O4'	2.22	0.40
54:01:1635:A:H2'	54:01:1636:U:O4'	2.21	0.40
54:01:2052:A:H2'	54:01:2053:G:H8	1.87	0.40
54:01:2113:U:O5'	54:01:2113:U:H6	2.04	0.40
58:Y:8:U:H5'	58:Y:49:C:OP2	2.21	0.40
2:05:51:THR:OG1	2:05:76:GLY:HA3	2.22	0.40
2:05:61:THR:HB	2:05:63:PRO:HD2	2.03	0.40
2:05:82:PHE:HE1	2:05:202:ILE:HG23	1.86	0.40
3:06:40:ARG:NH2	54:01:1246:A:H4'	2.33	0.40
3:06:46:GLN:HB3	3:06:83:VAL:HG11	2.03	0.40
4:07:37:MET:HB3	4:07:86:CYS:SG	2.61	0.40
6:09:40:THR:H	6:09:43:ASN:HB2	1.87	0.40
7:10:118:ILE:H	7:10:119:PRO:CD	2.34	0.40
8:11:52:LEU:O	8:11:54:ILE:HG13	2.22	0.40
14:17:11:ALA:HB2	14:17:96:GLY:N	2.36	0.40
33:C:119:ILE:O	33:C:123:LEU:HG	2.21	0.40
43:M:97:ARG:HG2	43:M:97:ARG:NH1	2.37	0.40
43:M:113:LYS:H	43:M:114:PRO:HD2	1.85	0.40
50:T:20:ASN:HD21	50:T:65:LEU:CD1	2.34	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:03:79:THR:HB	52:03:80:GLN:H	1.76	0.40
53:A:243:A:H62	53:A:281:G:H1'	1.86	0.40
53:A:247:G:O2'	53:A:248:C:H5'	2.21	0.40
53:A:432:A:H2'	53:A:433:G:O4'	2.21	0.40
53:A:1278:G:OP1	53:A:1279:G:H5'	2.21	0.40
54:01:277:G:H1'	54:01:361:G:O6	2.21	0.40
54:01:517:C:H2'	54:01:518:G:O4'	2.21	0.40
54:01:1766:G:H2'	54:01:1767:G:H8	1.86	0.40
54:01:2086:U:H2'	54:01:2087:G:H8	1.84	0.40
54:01:2112:G:H2'	54:01:2113:U:H5'	2.03	0.40
54:01:2222:C:H2'	54:01:2223:G:O4'	2.22	0.40
54:01:2732:G:O2'	54:01:2733:A:H5'	2.22	0.40
56:W:62:C:H2'	56:W:63:G:C8	2.56	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	04	269/271 (99%)	241 (90%)	26 (10%)	2 (1%)	22	60
2	05	207/209 (99%)	185 (89%)	21 (10%)	1 (0%)	29	67
3	06	199/201 (99%)	174 (87%)	24 (12%)	1 (0%)	29	67
4	07	175/177 (99%)	155 (89%)	16 (9%)	4 (2%)	6	38
5	08	174/176 (99%)	157 (90%)	12 (7%)	5 (3%)	4	33
6	09	147/149 (99%)	124 (84%)	21 (14%)	2 (1%)	11	46
7	10	129/131 (98%)	95 (74%)	27 (21%)	7 (5%)	2	22
8	11	139/141 (99%)	111 (80%)	27 (19%)	1 (1%)	22	60
9	12	140/142 (99%)	130 (93%)	10 (7%)	0	100	100
10	13	120/122 (98%)	100 (83%)	18 (15%)	2 (2%)	9	43

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
11	14	141/143 (99%)	116 (82%)	21 (15%)	4 (3%)	5	34
12	15	134/136 (98%)	122 (91%)	10 (8%)	2 (2%)	10	45
13	16	118/120 (98%)	103 (87%)	15 (13%)	0	100	100
14	17	114/116 (98%)	105 (92%)	9 (8%)	0	100	100
15	18	112/114 (98%)	97 (87%)	15 (13%)	0	100	100
16	19	115/117 (98%)	110 (96%)	5 (4%)	0	100	100
17	20	101/103 (98%)	82 (81%)	18 (18%)	1 (1%)	15	52
18	21	108/110 (98%)	99 (92%)	9 (8%)	0	100	100
19	22	91/93 (98%)	80 (88%)	10 (11%)	1 (1%)	14	51
20	23	100/102 (98%)	84 (84%)	13 (13%)	3 (3%)	4	33
21	24	92/94 (98%)	86 (94%)	6 (6%)	0	100	100
22	25	73/75 (97%)	65 (89%)	8 (11%)	0	100	100
23	26	75/77 (97%)	68 (91%)	7 (9%)	0	100	100
24	27	61/63 (97%)	57 (93%)	4 (7%)	0	100	100
25	28	56/58 (97%)	52 (93%)	4 (7%)	0	100	100
26	29	64/66 (97%)	50 (78%)	14 (22%)	0	100	100
27	30	54/56 (96%)	51 (94%)	3 (6%)	0	100	100
28	31	48/50 (96%)	41 (85%)	7 (15%)	0	100	100
29	32	44/46 (96%)	40 (91%)	4 (9%)	0	100	100
30	33	62/64 (97%)	56 (90%)	4 (6%)	2 (3%)	4	32
31	34	36/38 (95%)	28 (78%)	6 (17%)	2 (6%)	2	21
32	B	216/218 (99%)	173 (80%)	40 (18%)	3 (1%)	11	46
33	C	204/206 (99%)	188 (92%)	16 (8%)	0	100	100
34	D	203/205 (99%)	174 (86%)	23 (11%)	6 (3%)	4	33
35	E	155/157 (99%)	119 (77%)	27 (17%)	9 (6%)	1	21
36	F	98/100 (98%)	73 (74%)	21 (21%)	4 (4%)	3	27
37	G	149/151 (99%)	127 (85%)	20 (13%)	2 (1%)	12	48
38	H	127/129 (98%)	117 (92%)	9 (7%)	1 (1%)	19	57
39	I	125/127 (98%)	103 (82%)	16 (13%)	6 (5%)	2	24
40	J	96/98 (98%)	78 (81%)	10 (10%)	8 (8%)	1	14
41	K	114/116 (98%)	95 (83%)	14 (12%)	5 (4%)	2	25

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
42	L	121/123 (98%)	93 (77%)	19 (16%)	9 (7%)	1	16
43	M	112/114 (98%)	95 (85%)	14 (12%)	3 (3%)	5	35
44	N	98/100 (98%)	83 (85%)	15 (15%)	0	100	100
45	O	86/88 (98%)	80 (93%)	4 (5%)	2 (2%)	6	38
46	P	80/82 (98%)	68 (85%)	11 (14%)	1 (1%)	12	48
47	Q	78/80 (98%)	66 (85%)	9 (12%)	3 (4%)	3	28
48	R	63/65 (97%)	56 (89%)	5 (8%)	2 (3%)	4	32
49	S	77/79 (98%)	65 (84%)	10 (13%)	2 (3%)	5	35
50	T	83/85 (98%)	79 (95%)	3 (4%)	1 (1%)	13	49
51	U	63/65 (97%)	43 (68%)	19 (30%)	1 (2%)	9	44
52	03	221/223 (99%)	193 (87%)	27 (12%)	1 (0%)	29	67
59	Z	390/392 (100%)	349 (90%)	39 (10%)	2 (0%)	29	67
All	All	6457/6563 (98%)	5581 (86%)	765 (12%)	111 (2%)	13	43

All (111) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	04	232	GLY
3	06	83	VAL
4	07	175	PRO
5	08	46	ASP
5	08	119	GLY
6	09	9	VAL
7	10	80	THR
10	13	35	VAL
12	15	58	LYS
17	20	54	VAL
20	23	6	ARG
20	23	98	ASN
31	34	37	GLN
35	E	25	LYS
35	E	122	VAL
35	E	160	VAL
36	F	53	LYS
36	F	54	LEU
36	F	94	HIS
38	H	47	ASP
39	I	57	VAL

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Mol	Chain	Res	Type
39	I	90	ASP
39	I	91	GLU
40	J	34	ALA
40	J	58	ASN
40	J	89	ARG
40	J	92	LEU
42	L	102	ASP
43	M	65	GLU
45	O	46	LYS
47	Q	49	ASN
48	R	19	GLU
51	U	8	ASN
4	07	149	ARG
5	08	45	ALA
5	08	175	LYS
6	09	12	LEU
7	10	81	LEU
11	14	31	GLY
30	33	27	ASN
32	B	87	ASP
35	E	11	GLN
35	E	89	THR
35	E	157	GLY
39	I	102	PHE
41	K	89	GLY
42	L	23	LEU
42	L	35	ARG
42	L	77	SER
46	P	79	ASN
47	Q	70	LYS
48	R	18	GLN
50	T	68	LYS
52	03	21	TYR
59	Z	295	PRO
7	10	4	ASN
10	13	93	GLN
11	14	29	LYS
19	22	38	ALA
34	D	23	GLY
34	D	29	THR
34	D	167	PRO
34	D	192	ALA

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Mol	Chain	Res	Type
37	G	64	ALA
39	I	12	LYS
40	J	35	GLN
40	J	93	ALA
41	K	125	LYS
42	L	32	VAL
42	L	75	GLU
43	M	4	ALA
47	Q	17	GLU
59	Z	42	ALA
1	04	233	GLY
4	07	20	ASN
4	07	174	PHE
30	33	31	ILE
31	34	34	LYS
34	D	152	SER
35	E	78	GLY
35	E	90	GLY
35	E	121	ASN
39	I	8	THR
41	K	13	LYS
42	L	34	THR
45	O	2	LEU
7	10	51	TYR
7	10	108	VAL
7	10	118	ILE
11	14	52	GLY
11	14	88	GLY
20	23	51	LEU
32	B	18	GLN
32	B	19	THR
34	D	120	LYS
36	F	93	LYS
37	G	18	GLY
42	L	43	LYS
49	S	3	SER
7	10	74	ASP
40	J	42	LEU
40	J	43	PRO
5	08	117	PRO
8	11	4	VAL
41	K	90	PRO

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Mol	Chain	Res	Type
41	K	77	GLY
42	L	27	PRO
43	M	111	PRO
49	S	7	GLY
2	05	153	GLY
12	15	69	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%)	210 (97%)	6 (3%)	43	66
2	05	164/164 (100%)	163 (99%)	1 (1%)	86	91
3	06	165/165 (100%)	164 (99%)	1 (1%)	86	91
4	07	148/148 (100%)	146 (99%)	2 (1%)	67	81
5	08	137/137 (100%)	136 (99%)	1 (1%)	84	90
6	09	114/114 (100%)	114 (100%)	0	100	100
7	10	100/100 (100%)	99 (99%)	1 (1%)	76	86
8	11	109/109 (100%)	107 (98%)	2 (2%)	59	77
9	12	116/116 (100%)	116 (100%)	0	100	100
10	13	103/103 (100%)	102 (99%)	1 (1%)	76	86
11	14	102/102 (100%)	102 (100%)	0	100	100
12	15	109/109 (100%)	109 (100%)	0	100	100
13	16	100/100 (100%)	99 (99%)	1 (1%)	76	86
14	17	86/86 (100%)	86 (100%)	0	100	100
15	18	99/99 (100%)	99 (100%)	0	100	100
16	19	89/89 (100%)	88 (99%)	1 (1%)	73	84
17	20	84/84 (100%)	83 (99%)	1 (1%)	71	83
18	21	93/93 (100%)	91 (98%)	2 (2%)	52	71
19	22	80/80 (100%)	78 (98%)	2 (2%)	47	69

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
20	23	83/83 (100%)	83 (100%)	0	100	100
21	24	78/78 (100%)	78 (100%)	0	100	100
22	25	57/57 (100%)	57 (100%)	0	100	100
23	26	67/67 (100%)	67 (100%)	0	100	100
24	27	55/55 (100%)	53 (96%)	2 (4%)	35	61
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%)	47 (100%)	0	100	100
28	31	45/45 (100%)	45 (100%)	0	100	100
29	32	38/38 (100%)	37 (97%)	1 (3%)	46	68
30	33	51/51 (100%)	51 (100%)	0	100	100
31	34	34/34 (100%)	34 (100%)	0	100	100
32	B	180/180 (100%)	177 (98%)	3 (2%)	60	78
33	C	170/170 (100%)	167 (98%)	3 (2%)	59	77
34	D	172/172 (100%)	169 (98%)	3 (2%)	60	78
35	E	119/119 (100%)	116 (98%)	3 (2%)	47	69
36	F	87/87 (100%)	87 (100%)	0	100	100
37	G	124/124 (100%)	124 (100%)	0	100	100
38	H	104/104 (100%)	104 (100%)	0	100	100
39	I	105/105 (100%)	105 (100%)	0	100	100
40	J	86/86 (100%)	86 (100%)	0	100	100
41	K	89/89 (100%)	88 (99%)	1 (1%)	73	84
42	L	103/103 (100%)	101 (98%)	2 (2%)	57	75
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
46	P	65/65 (100%)	62 (95%)	3 (5%)	27	55
47	Q	74/74 (100%)	74 (100%)	0	100	100
48	R	56/56 (100%)	55 (98%)	1 (2%)	59	77
49	S	70/70 (100%)	70 (100%)	0	100	100
50	T	65/65 (100%)	62 (95%)	3 (5%)	27	55

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
51	U	55/55 (100%)	54 (98%)	1 (2%)	59	77
52	03	174/174 (100%)	172 (99%)	2 (1%)	73	84
59	Z	324/325 (100%)	317 (98%)	7 (2%)	52	71
All	All	5349/5350 (100%)	5288 (99%)	61 (1%)	74	84

All (61) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	04	34	GLU
1	04	36	ASN
1	04	132	ARG
1	04	212	TRP
1	04	257	ARG
1	04	261	ARG
2	05	33	ARG
3	06	163	ASN
4	07	109	ARG
4	07	151	LEU
5	08	109	SER
7	10	3	LEU
8	11	18	ASN
8	11	95	ASP
10	13	49	ARG
13	16	2	ARG
16	19	27	ARG
17	20	11	GLN
18	21	57	ASN
18	21	62	ASP
19	22	52	GLU
19	22	59	ASN
24	27	7	ARG
24	27	29	ARG
25	28	15	ARG
29	32	28	ARG
32	B	18	GLN
32	B	23	ASN
32	B	94	ARG
33	C	24	ASN
33	C	106	ARG
33	C	156	LEU
34	D	28	ASP

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Mol	Chain	Res	Type
34	D	170	LEU
34	D	177	MET
35	E	69	ASN
35	E	111	ARG
35	E	156	ARG
41	K	124	LYS
42	L	34	THR
42	L	113	ARG
43	M	7	ASN
43	M	15	VAL
43	M	97	ARG
46	P	29	ASN
46	P	35	ARG
46	P	69	ASP
48	R	11	ARG
50	T	20	ASN
50	T	29	THR
50	T	53	MET
51	U	61	ARG
52	03	21	TYR
52	03	202	THR
59	Z	230	ARG
59	Z	237	LYS
59	Z	245	VAL
59	Z	269	ARG
59	Z	322	PHE
59	Z	357	LYS
59	Z	358	MET

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

Mol	Chain	Res	Type
1	04	36	ASN
1	04	85	ASN
1	04	114	GLN
1	04	196	ASN
1	04	238	ASN
2	05	150	GLN
3	06	41	GLN
3	06	92	HIS
3	06	94	GLN
3	06	163	ASN

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Mol	Chain	Res	Type
4	07	51	ASN
5	08	21	GLN
5	08	29	ASN
5	08	37	ASN
5	08	72	ASN
5	08	138	GLN
6	09	66	ASN
8	11	18	ASN
8	11	30	GLN
8	11	33	ASN
10	13	3	GLN
12	15	13	HIS
13	16	9	GLN
13	16	62	ASN
13	16	81	ASN
14	17	19	GLN
15	18	9	GLN
16	19	36	GLN
16	19	43	GLN
17	20	18	GLN
18	21	9	HIS
18	21	57	ASN
20	23	68	ASN
23	26	16	ASN
24	27	20	ASN
24	27	39	GLN
24	27	41	HIS
24	27	58	ASN
25	28	19	HIS
26	29	20	ASN
26	29	48	GLN
26	29	61	ASN
27	30	41	HIS
31	34	35	GLN
32	B	23	ASN
32	B	41	ASN
32	B	108	GLN
32	B	169	HIS
32	B	177	ASN
33	C	24	ASN
33	C	139	ASN
34	D	88	ASN

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Mol	Chain	Res	Type
34	D	197	HIS
35	E	69	ASN
35	E	145	ASN
36	F	11	HIS
36	F	55	HIS
37	G	27	ASN
38	H	15	ASN
38	H	17	GLN
38	H	75	GLN
39	I	36	GLN
39	I	49	GLN
39	I	125	GLN
40	J	20	GLN
42	L	45	ASN
44	N	42	ASN
45	O	36	ASN
46	P	79	ASN
47	Q	8	GLN
47	Q	30	HIS
48	R	51	GLN
49	S	68	HIS
50	T	20	ASN
50	T	51	ASN
50	T	60	GLN
52	03	67	HIS
52	03	148	ASN
52	03	165	ASN
52	03	188	ASN
59	Z	48	GLN
59	Z	97	GLN
59	Z	124	GLN
59	Z	273	ASN
59	Z	290	GLN
59	Z	329	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
53	A	1538/1539 (99%)	161 (10%)	10 (0%)
54	01	2902/2903 (99%)	355 (12%)	12 (0%)
55	02	119/120 (99%)	9 (7%)	1 (0%)

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Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
56	W	76/77 (98%)	7 (9%)	0
56	X	76/77 (98%)	11 (14%)	0
57	V	19/20 (95%)	2 (10%)	0
58	Y	75/76 (98%)	12 (16%)	0
All	All	4805/4812 (99%)	557 (11%)	23 (0%)

All (557) 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	31	G
53	A	32	A
53	A	39	G
53	A	51	A
53	A	71	A
53	A	82	G
53	A	86	G
53	A	87	C
53	A	94	G
53	A	95	C
53	A	100	G
53	A	121	U
53	A	130	A
53	A	183	C
53	A	184	G
53	A	197	A
53	A	209	U
53	A	210	C
53	A	226	G
53	A	240	G
53	A	247	G
53	A	251	G
53	A	253	A
53	A	266	G
53	A	267	C
53	A	281	G
53	A	289	G
53	A	306	A
53	A	328	C

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Mol	Chain	Res	Type
53	A	345	C
53	A	346	G
53	A	352	C
53	A	367	U
53	A	372	C
53	A	398	U
53	A	411	A
53	A	413	G
53	A	422	C
53	A	429	U
53	A	467	U
53	A	485	U
53	A	486	U
53	A	496	A
53	A	497	G
53	A	518	C
53	A	530	G
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	574	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	665	A
53	A	688	G
53	A	703	G
53	A	713	G
53	A	724	G
53	A	731	G
53	A	755	G
53	A	777	A
53	A	794	A
53	A	805	C
53	A	815	A

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Mol	Chain	Res	Type
53	A	817	C
53	A	818	G
53	A	819	A
53	A	820	U
53	A	821	G
53	A	832	G
53	A	842	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	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	1028	C
53	A	1030	U
53	A	1031	C
53	A	1033	G
53	A	1034	G
53	A	1053	G
53	A	1054	C
53	A	1094	G
53	A	1101	A
53	A	1129	C
53	A	1130	A
53	A	1137	C
53	A	1138	G
53	A	1139	G
53	A	1159	U

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Mol	Chain	Res	Type
53	A	1168	U
53	A	1182	G
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	1241	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	1302	C
53	A	1317	C
53	A	1346	A
53	A	1347	G
53	A	1348	U
53	A	1378	C
53	A	1395	C
53	A	1400	C
53	A	1446	A
53	A	1448	C
53	A	1451	U
53	A	1452	C
53	A	1492	A
53	A	1499	A
53	A	1503	A
53	A	1505	G
53	A	1506	U
53	A	1517	G
53	A	1519	A
53	A	1529	G

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Mol	Chain	Res	Type
53	A	1530	G
53	A	1534	A
54	01	10	A
54	01	12	U
54	01	34	U
54	01	35	G
54	01	46	G
54	01	51	G
54	01	63	A
54	01	71	A
54	01	74	A
54	01	75	G
54	01	119	A
54	01	120	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	228	C
54	01	242	G
54	01	243	U
54	01	248	G
54	01	249	C
54	01	255	A
54	01	266	G
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	324	A
54	01	329	G
54	01	330	A

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Mol	Chain	Res	Type
54	01	361	G
54	01	363	G
54	01	367	G
54	01	371	A
54	01	372	G
54	01	373	U
54	01	386	G
54	01	387	U
54	01	388	G
54	01	404	A
54	01	406	G
54	01	411	G
54	01	422	A
54	01	424	G
54	01	451	U
54	01	457	A
54	01	481	G
54	01	491	G
54	01	504	A
54	01	505	A
54	01	506	G
54	01	508	A
54	01	509	C
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
54	01	573	U
54	01	588	U
54	01	603	A
54	01	614	A
54	01	616	A
54	01	627	A
54	01	637	A
54	01	646	U
54	01	654	A
54	01	669	G
54	01	686	U

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Mol	Chain	Res	Type
54	01	687	C
54	01	695	G
54	01	730	A
54	01	747	C
54	01	752	A
54	01	764	A
54	01	775	G
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	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	859	G
54	01	860	U
54	01	878	A
54	01	885	C
54	01	886	A
54	01	888	C
54	01	891	G
54	01	896	A
54	01	910	A
54	01	932	U
54	01	941	A
54	01	946	C
54	01	961	C
54	01	974	G
54	01	975	A
54	01	983	A
54	01	985	C
54	01	995	C
54	01	996	A
54	01	1012	U
54	01	1013	C

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Mol	Chain	Res	Type
54	01	1021	A
54	01	1022	G
54	01	1026	G
54	01	1033	U
54	01	1045	C
54	01	1046	A
54	01	1054	A
54	01	1059	G
54	01	1060	U
54	01	1062	G
54	01	1065	U
54	01	1066	U
54	01	1070	A
54	01	1071	G
54	01	1075	C
54	01	1079	C
54	01	1084	A
54	01	1088	A
54	01	1103	A
54	01	1104	C
54	01	1106	G
54	01	1111	A
54	01	1131	G
54	01	1132	U
54	01	1133	A
54	01	1135	C
54	01	1157	G
54	01	1174	U
54	01	1175	A
54	01	1177	G
54	01	1180	U
54	01	1212	G
54	01	1238	G
54	01	1248	G
54	01	1251	C
54	01	1253	A
54	01	1256	G
54	01	1271	G
54	01	1272	A
54	01	1273	U
54	01	1301	A
54	01	1302	A

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Mol	Chain	Res	Type
54	01	1306	C
54	01	1321	A
54	01	1329	U
54	01	1332	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	1428	C
54	01	1454	C
54	01	1461	C
54	01	1482	G
54	01	1490	A
54	01	1491	G
54	01	1498	C
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	1559	U
54	01	1560	G
54	01	1569	A
54	01	1581	G
54	01	1584	U
54	01	1585	C
54	01	1608	A
54	01	1611	C
54	01	1616	A
54	01	1634	A
54	01	1647	U
54	01	1648	U
54	01	1651	G
54	01	1674	G
54	01	1694	C
54	01	1715	G

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Mol	Chain	Res	Type
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	1787	A
54	01	1800	C
54	01	1801	A
54	01	1808	A
54	01	1816	C
54	01	1821	A
54	01	1829	A
54	01	1833	C
54	01	1871	A
54	01	1901	A
54	01	1906	G
54	01	1907	G
54	01	1913	A
54	01	1914	C
54	01	1929	G
54	01	1930	G
54	01	1931	U
54	01	1937	A
54	01	1944	U
54	01	1955	U
54	01	1962	C
54	01	1963	U
54	01	1967	C
54	01	1970	A
54	01	1971	U
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	2030	A
54	01	2031	A
54	01	2036	C

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Mol	Chain	Res	Type
54	01	2043	C
54	01	2049	G
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	2093	G
54	01	2096	C
54	01	2108	A
54	01	2110	G
54	01	2111	U
54	01	2112	G
54	01	2116	G
54	01	2118	U
54	01	2119	A
54	01	2125	G
54	01	2127	G
54	01	2132	U
54	01	2133	G
54	01	2145	C
54	01	2147	A
54	01	2162	G
54	01	2164	C
54	01	2171	A
54	01	2172	U
54	01	2173	A
54	01	2189	U
54	01	2198	A
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	2266	A
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	2320	U
54	01	2325	G
54	01	2327	A
54	01	2334	U
54	01	2337	G
54	01	2350	C
54	01	2383	G
54	01	2385	C
54	01	2402	U
54	01	2406	A
54	01	2407	A
54	01	2423	U
54	01	2424	C
54	01	2429	G
54	01	2430	A
54	01	2435	A
54	01	2441	U
54	01	2447	G
54	01	2448	A
54	01	2476	A
54	01	2498	C
54	01	2502	G
54	01	2503	A
54	01	2505	G
54	01	2518	A
54	01	2520	C
54	01	2547	A
54	01	2554	U
54	01	2567	G
54	01	2572	A
54	01	2602	A
54	01	2609	U
54	01	2613	U
54	01	2655	G
54	01	2682	A
54	01	2689	U
54	01	2690	U
54	01	2713	U
54	01	2714	G

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Mol	Chain	Res	Type
54	01	2744	G
54	01	2748	A
54	01	2751	G
54	01	2764	A
54	01	2765	A
54	01	2778	A
54	01	2779	U
54	01	2791	G
54	01	2794	C
54	01	2797	U
54	01	2798	U
54	01	2799	A
54	01	2800	A
54	01	2801	G
54	01	2809	A
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	13	G
55	02	35	C
55	02	44	G
55	02	45	A
55	02	67	G
55	02	89	U
55	02	108	A
55	02	109	A
56	X	3	C
56	X	8	U
56	X	9	G
56	X	10	G
56	X	14	A
56	X	19	G
56	X	21	A
56	X	22	G
56	X	32	C
56	X	34	C
56	X	38	A
57	V	12	A

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Mol	Chain	Res	Type
57	V	19	U
56	W	9	G
56	W	18	G
56	W	19	G
56	W	20	U
56	W	21	A
56	W	47	U
56	W	48	C
58	Y	17	C
58	Y	18	G
58	Y	20	U
58	Y	21	A
58	Y	22	G
58	Y	44	G
58	Y	45	U
58	Y	46	G
58	Y	48	C
58	Y	53	G
58	Y	54	U
58	Y	61	C

All (23) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
53	A	70	U
53	A	246	A
53	A	280	C
53	A	495	A
53	A	531	U
53	A	960	U
53	A	1190	G
53	A	1201	A
53	A	1347	G
53	A	1399	C
54	01	242	G
54	01	372	G
54	01	421	C
54	01	490	C
54	01	858	G
54	01	859	G
54	01	1020	A
54	01	1130	U

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Mol	Chain	Res	Type
54	01	1378	A
54	01	1930	G
54	01	2296	U
54	01	2326	C
55	02	88	C

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

1 ligand 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
60	GCP	Z	401	-	27,34,34	2.03	8 (29%)	34,54,54	4.00	18 (52%)

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
60	GCP	Z	401	-	-	9/15/38/38	0/3/3/3

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
60	Z	401	GCP	O4'-C1'	4.68	1.47	1.41
60	Z	401	GCP	PB-O3A	-3.92	1.54	1.58
60	Z	401	GCP	C6-N1	3.84	1.39	1.33
60	Z	401	GCP	C5-C6	3.54	1.47	1.41
60	Z	401	GCP	C2'-C1'	2.97	1.58	1.53
60	Z	401	GCP	C2-N1	2.30	1.39	1.35
60	Z	401	GCP	C2'-C3'	2.22	1.59	1.53
60	Z	401	GCP	PB-O2B	-2.12	1.51	1.56

All (18) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
60	Z	401	GCP	C1'-N9-C4	13.35	150.09	126.64
60	Z	401	GCP	C5-C6-N1	-9.07	111.03	123.43
60	Z	401	GCP	O1G-PG-C3B	-7.45	95.19	111.24
60	Z	401	GCP	C2-N1-C6	6.79	126.72	115.93
60	Z	401	GCP	O4'-C1'-C2'	-6.74	97.07	106.93
60	Z	401	GCP	O5'-PA-O1A	-4.03	93.32	109.07
60	Z	401	GCP	C4-C5-C6	-3.99	116.99	120.80
60	Z	401	GCP	O2B-PB-O1B	3.65	122.25	110.07
60	Z	401	GCP	C2-N3-C4	-3.56	111.30	115.36
60	Z	401	GCP	O3'-C3'-C4'	-3.27	101.59	111.05
60	Z	401	GCP	PB-O3A-PA	3.25	142.87	132.56
60	Z	401	GCP	O3G-PG-O1G	2.96	120.21	112.39
60	Z	401	GCP	O2G-PG-C3B	2.95	113.55	106.40
60	Z	401	GCP	O4'-C4'-C5'	2.75	118.43	109.37
60	Z	401	GCP	N3-C2-N1	-2.55	123.83	127.22
60	Z	401	GCP	C4-C5-N7	2.52	112.03	109.40
60	Z	401	GCP	C3'-C2'-C1'	-2.23	97.63	100.98
60	Z	401	GCP	O2A-PA-O1A	2.14	122.81	112.24

There are no chirality outliers.

All (9) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
60	Z	401	GCP	PB-C3B-PG-O1G
60	Z	401	GCP	PB-C3B-PG-O2G
60	Z	401	GCP	PG-C3B-PB-O1B
60	Z	401	GCP	C5'-O5'-PA-O3A
60	Z	401	GCP	O4'-C4'-C5'-O5'
60	Z	401	GCP	C3'-C4'-C5'-O5'
60	Z	401	GCP	C5'-O5'-PA-O2A

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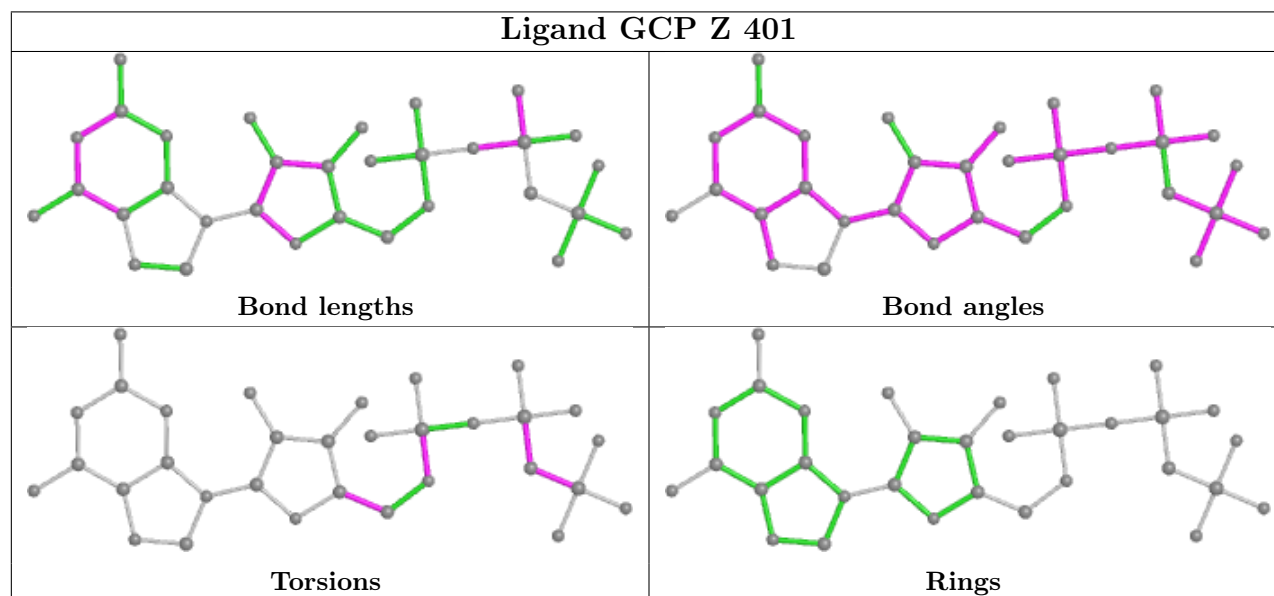
Mol	Chain	Res	Type	Atoms
60	Z	401	GCP	PB-C3B-PG-O3G
60	Z	401	GCP	C5'-O5'-PA-O1A

There are no ring outliers.

1 monomer is involved in 4 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
60	Z	401	GCP	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 ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

6 Map visualisation

This section contains visualisations of the EMDB entry EMD-8615. 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.