Full wwPDB EM Validation Report ⓘ

Nov 6, 2022 – 08:30 AM EST

PDB ID	:	6BU8
EMDB ID	:	EMD-7289
Title	:	70S ribosome with S1 domains 1 and 2 (Class 1)
Authors	:	Loveland, A.B.; Korostelev, A.A.
Deposited on	:	2017-12-08
Resolution	:	3.50 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:

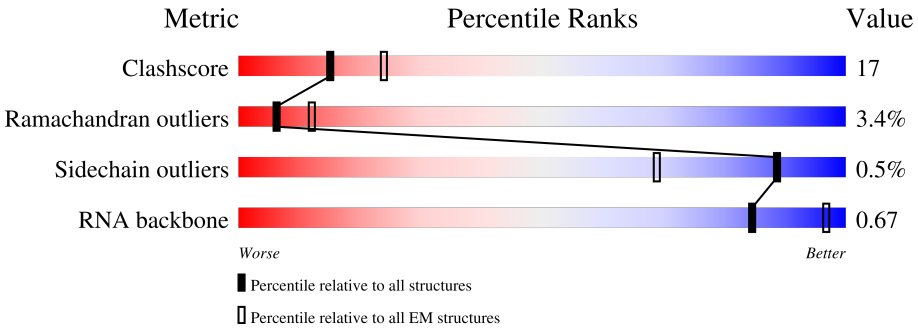
EMDB validation analysis	:	0.0.1.dev43
Mogul	:	1.8.5 (274361), CSD as541be (2020)
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (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 3.50 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 <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion < 40%). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	04	271	50% 48% ·
2	05	209	58% 42%
3	06	201	51% 48% ·
4	07	177	42% 57% ··
5	08	176	· 61% 38% ·
6	09	149	13% 50% 46% ·
7	10	131	26% 38% 58% ·

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Mol	Chain	Length	Quality of chain
8	11	141	26% 44% 55%
9	12	142	49% 49%
10	13	122	58% 41%
11	14	143	57% 42%
12	15	136	57% 40%
13	16	120	48% 50%
14	17	116	52% 45%
15	18	114	48% 48%
16	19	117	52% 45%
17	20	103	53% 45%
18	21	110	43% 55%
19	22	93	55% 45%
20	23	102	59% 40%
21	24	94	61% 37%
22	25	75	67% 33%
23	26	77	60% 39%
24	27	63	5% 52% 43% 5%
25	28	58	52% 48%
26	29	66	8% 59% 41%
27	30	56	39% 59%
28	31	50	60% 40%
29	32	46	50% 46%
30	33	64	55% 44%
31	34	38	47% 53%
32	B	225	64% 35%

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Mol	Chain	Length	Quality of chain
33	C	206	52% 45%
34	D	205	43% 51% 6%
35	E	157	40% 57%
36	F	126	18% 55% 43%
37	G	151	50% 48%
38	H	129	52% 47%
39	I	127	44% 52%
40	J	98	39% 57%
41	K	116	42% 55%
42	L	123	45% 52%
43	M	114	48% 48%
44	N	100	46% 51%
45	O	88	58% 41%
46	P	82	37% 61%
47	Q	80	48% 51%
48	R	65	42% 52% 6%
49	S	79	52% 47%
50	T	85	49% 49%
51	U	65	5% 29% 66% 5%
52	03	223	26% 34% 40%
53	A	1539	57% 38%
54	01	2903	54% 41% 5%
55	02	120	55% 37% 8%
56	W	77	69% 27%
56	X	77	60% 34% 6%

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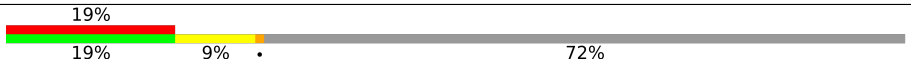
Mol	Chain	Length	Quality of chain
57	V	27	
58	Y	76	
59	Z	554	

2 Entry composition

There are 60 unique types of molecules in this entry. The entry contains 152151 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 892	C 552	N 178	O 162	0	0

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

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

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

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

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

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

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

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

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

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

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

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

- 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	225	Total	C	N	O	S	0	0
			1757	1111	315	323	8		

- 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	126	Total	C	N	O	S	0	0
			1028	638	189	194	7		

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
01	747	C	U	SEE REMARK 999	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		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
02	120	A	-	SEE REMARK 999	GB 1266961702

- 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	18	Total	C	N	O	P	0	0
			388	175	76	120	17		

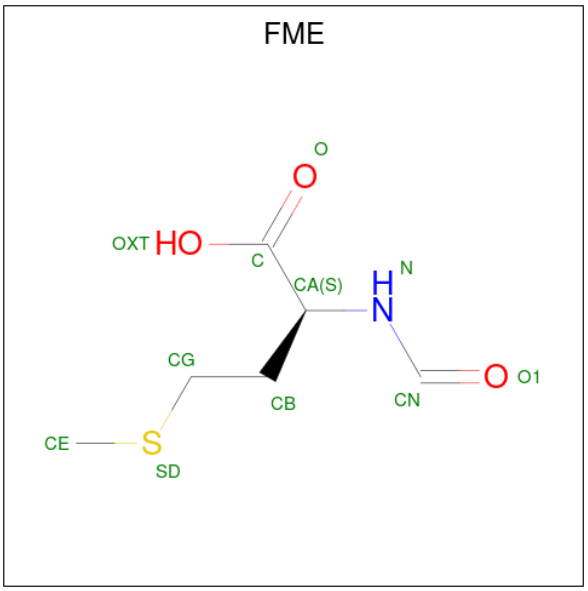
- Molecule 58 is a RNA chain called tRNAPhe.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	Y	76	Total	C	N	O	P	0	0
			1622	723	290	533	76		

- Molecule 59 is a protein called 30S ribosomal protein S1.

Mol	Chain	Residues	Atoms				AltConf	Trace
59	Z	156	Total	C	N	O	0	0
			1204	760	209	235		

- Molecule 60 is N-FORMYLMETHIONINE (three-letter code: FME) (formula: $C_6H_{11}NO_3S$).



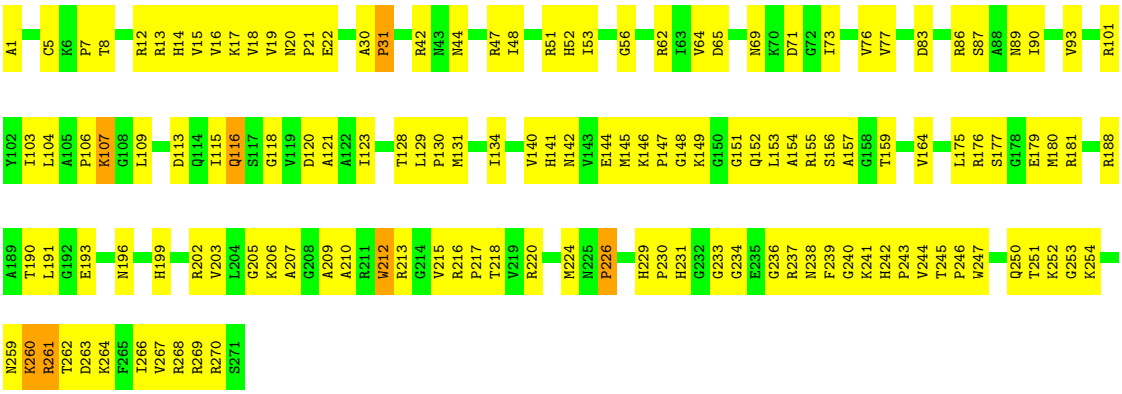
Mol	Chain	Residues	Atoms					AltConf
60	W	1	Total	C	N	O	S	0
			10	6	1	2	1	

3 Residue-property plots (i)

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

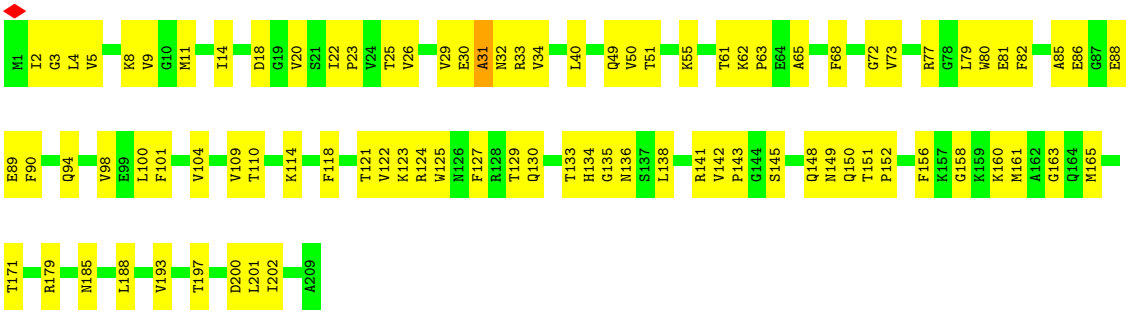
• Molecule 1: 50S ribosomal protein L2

Chain 04:



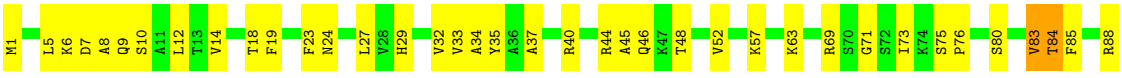
• Molecule 2: 50S ribosomal protein L3

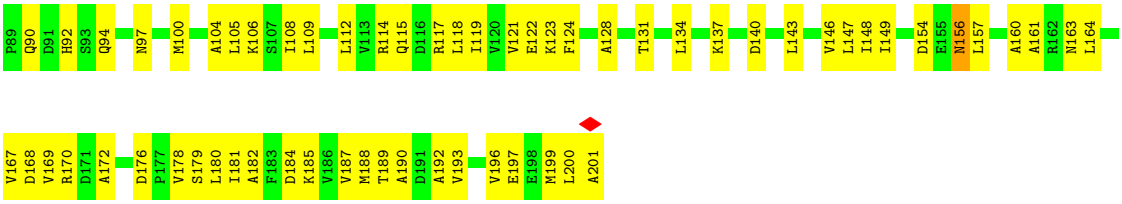
Chain 05:



• Molecule 3: 50S ribosomal protein L4

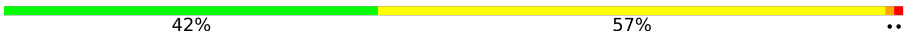
Chain 06:

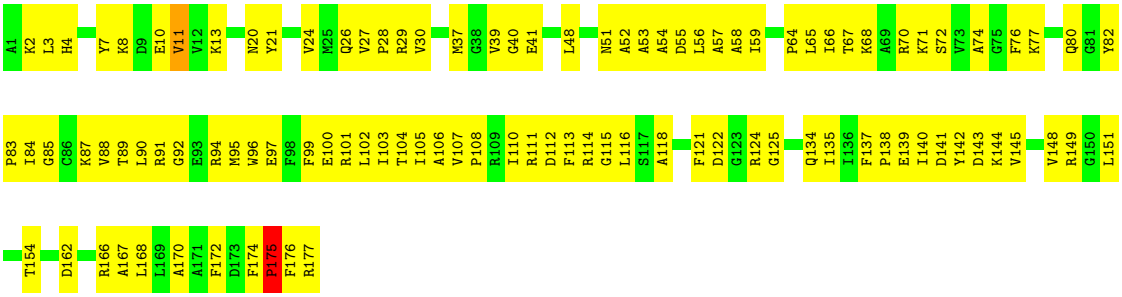




• Molecule 4: 50S ribosomal protein L5

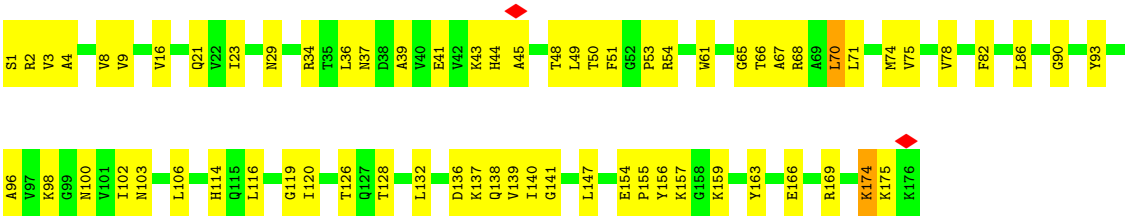
Chain 07:





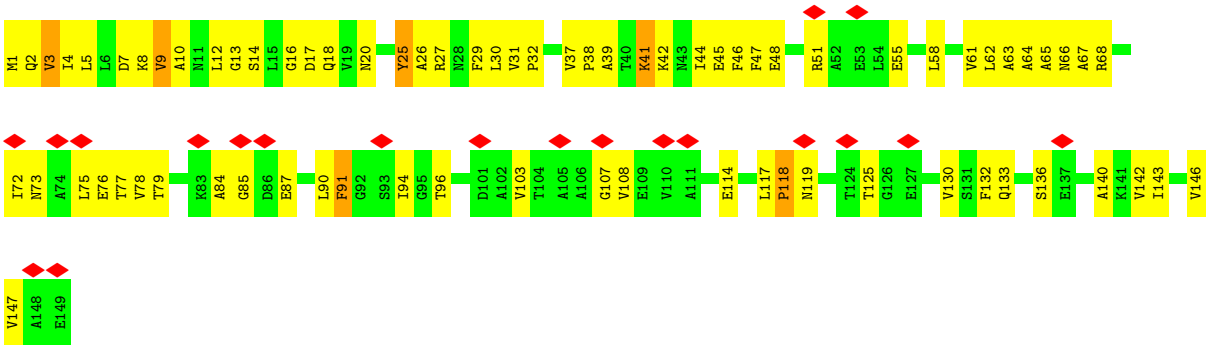
• Molecule 5: 50S ribosomal protein L6

Chain 08:



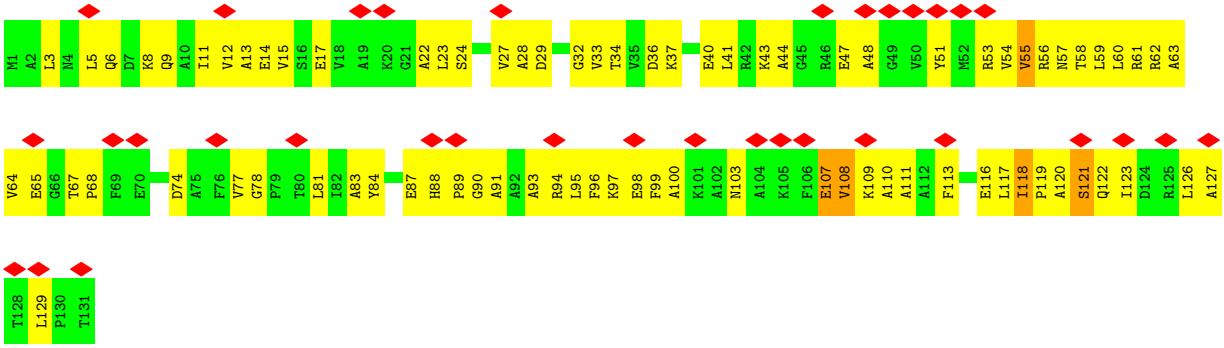
• Molecule 6: 50S ribosomal protein L9

Chain 09:

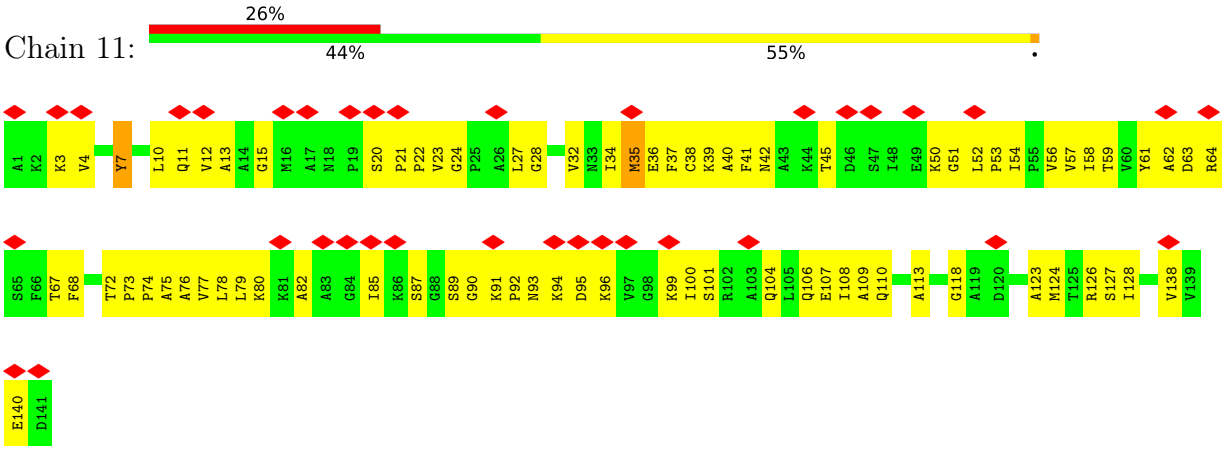


• Molecule 7: 50S ribosomal protein L10

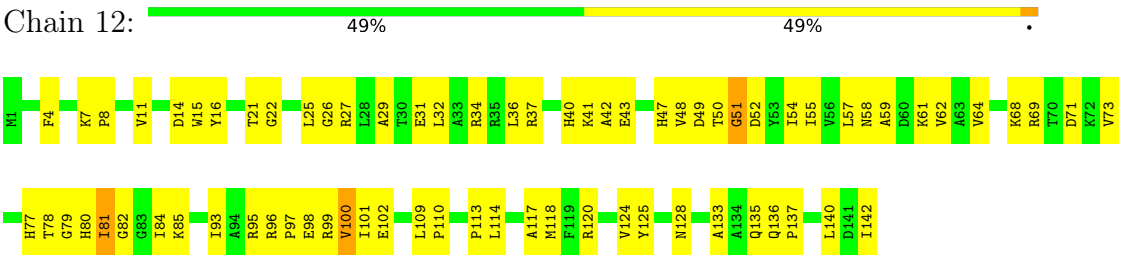
Chain 10:



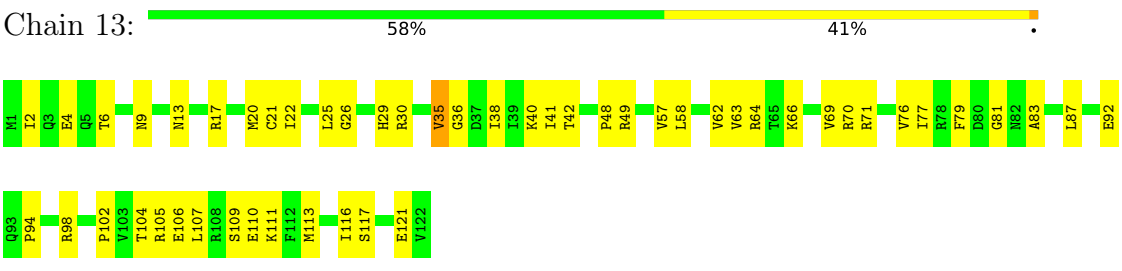
• Molecule 8: 50S ribosomal protein L11



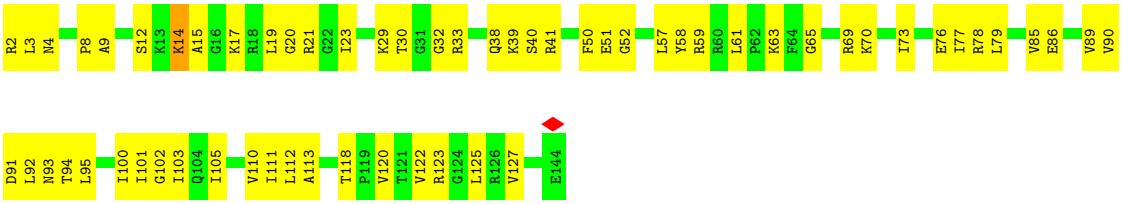
• Molecule 9: 50S ribosomal protein L13



• Molecule 10: 50S ribosomal protein L14

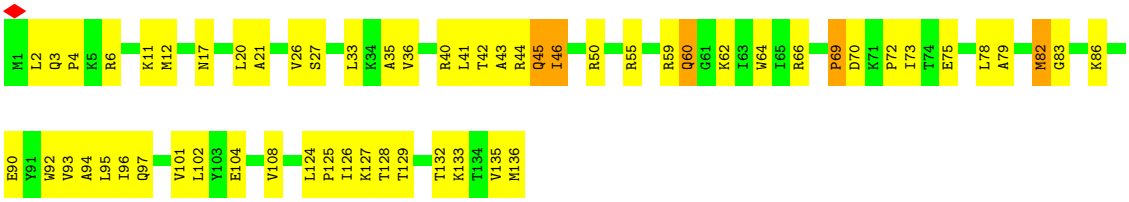


• Molecule 11: 50S ribosomal protein L15



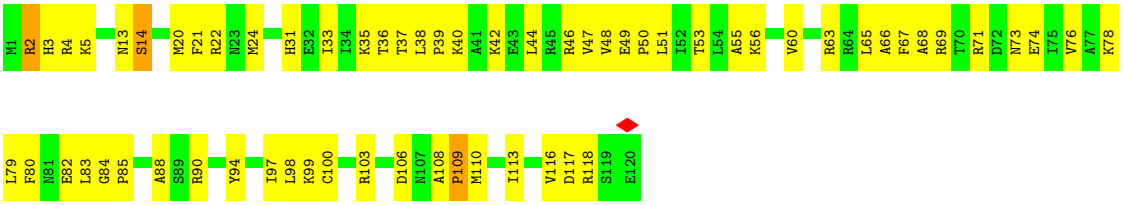
• Molecule 12: 50S ribosomal protein L16

Chain 15:



• Molecule 13: 50S ribosomal protein L17

Chain 16:

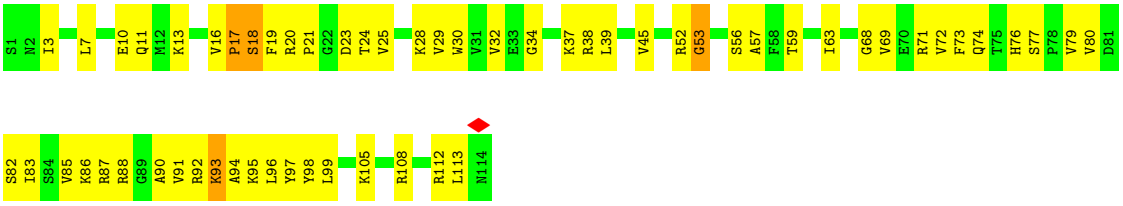


• Molecule 14: 50S ribosomal protein L18

Chain 17:

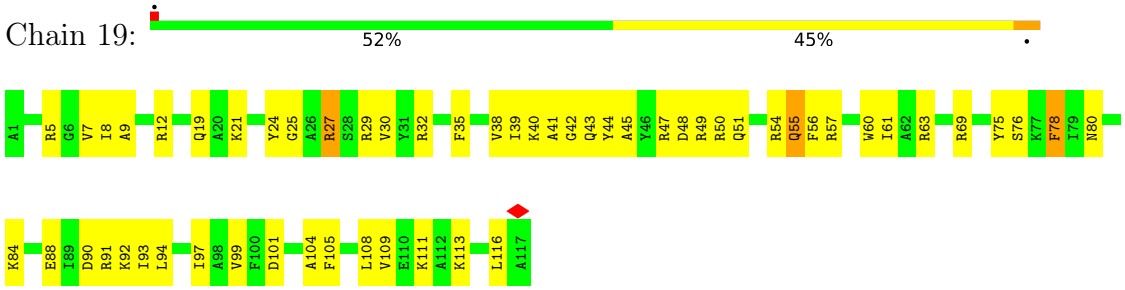
• Molecule 15: 50S ribosomal protein L19

Chain 18:



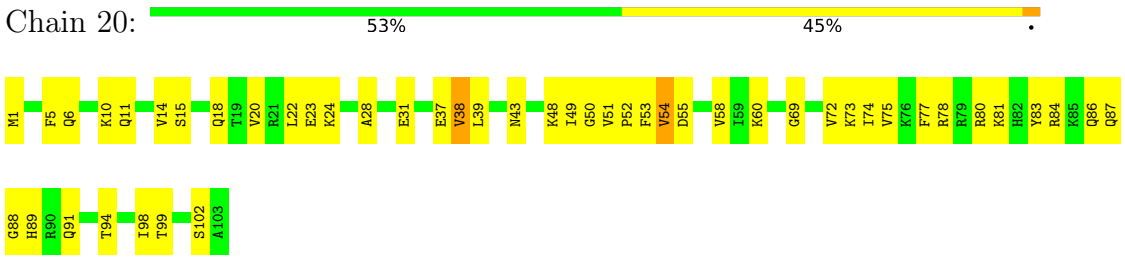
• Molecule 16: 50S ribosomal protein L20

Chain 19:



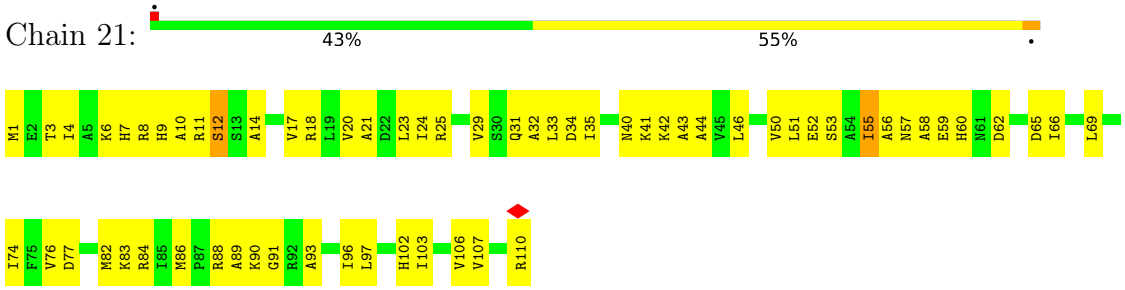
• Molecule 17: 50S ribosomal protein L21

Chain 20:



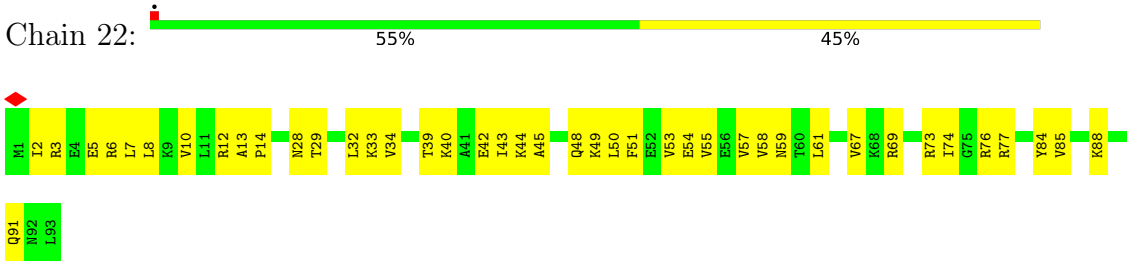
• Molecule 18: 50S ribosomal protein L22

Chain 21:



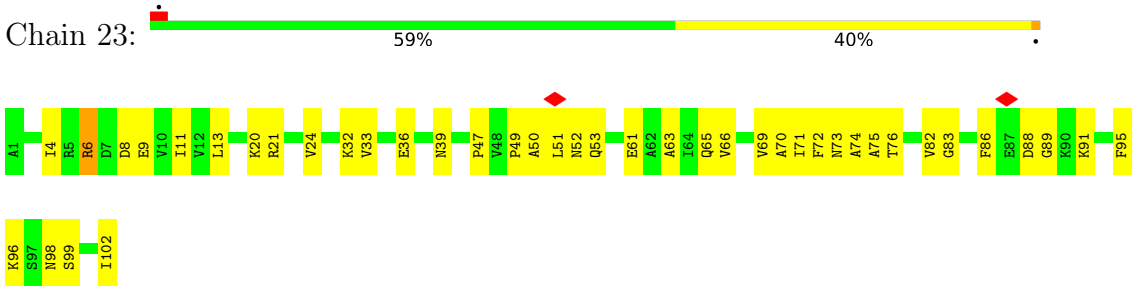
• Molecule 19: 50S ribosomal protein L23

Chain 22:



• Molecule 20: 50S ribosomal protein L24

Chain 23:

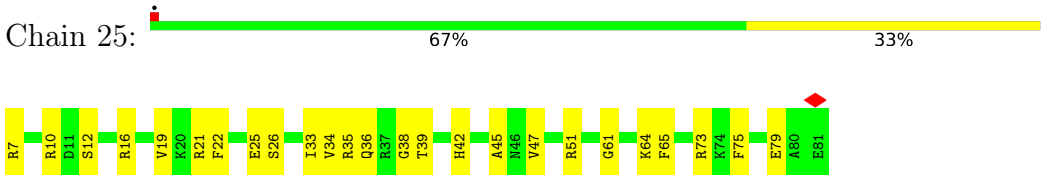


• Molecule 21: 50S ribosomal protein L25

Chain 24:

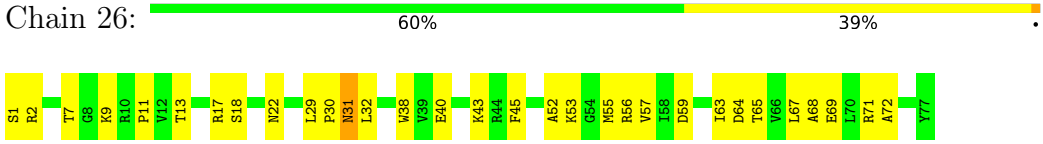
• Molecule 22: 50S ribosomal protein L27

Chain 25:



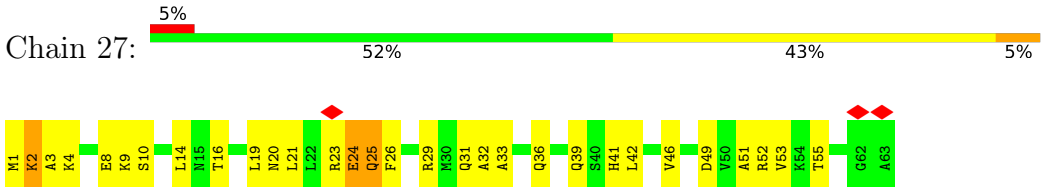
• Molecule 23: 50S ribosomal protein L28

Chain 26:



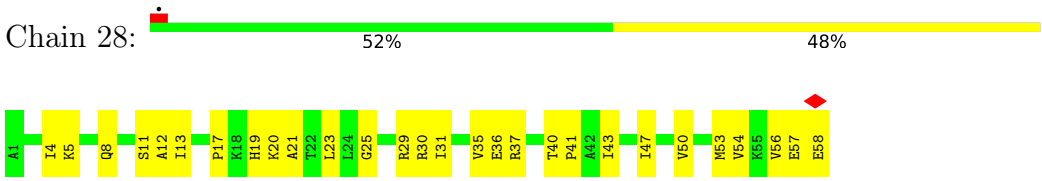
• Molecule 24: 50S ribosomal protein L29

Chain 27:



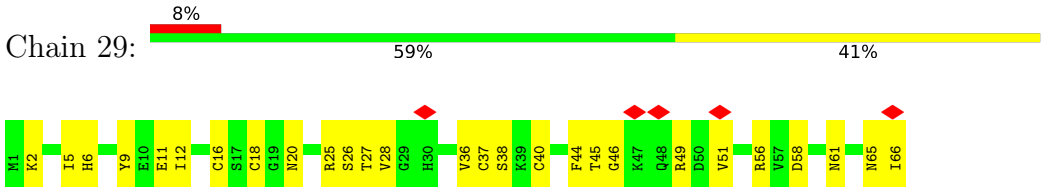
• Molecule 25: 50S ribosomal protein L30

Chain 28:



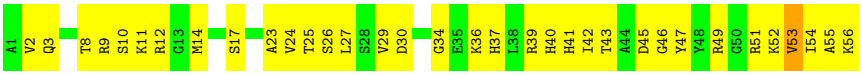
• Molecule 26: 50S ribosomal protein L31

Chain 29:



• Molecule 27: 50S ribosomal protein L32

Chain 30:

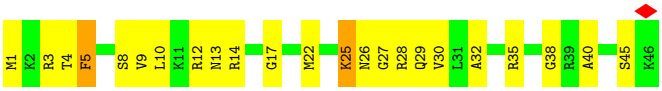


• Molecule 28: 50S ribosomal protein L33

Chain 31:

• Molecule 29: 50S ribosomal protein L34

Chain 32:

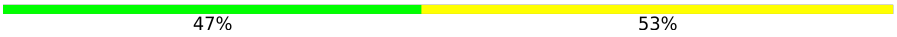


• Molecule 30: 50S ribosomal protein L35

Chain 33:

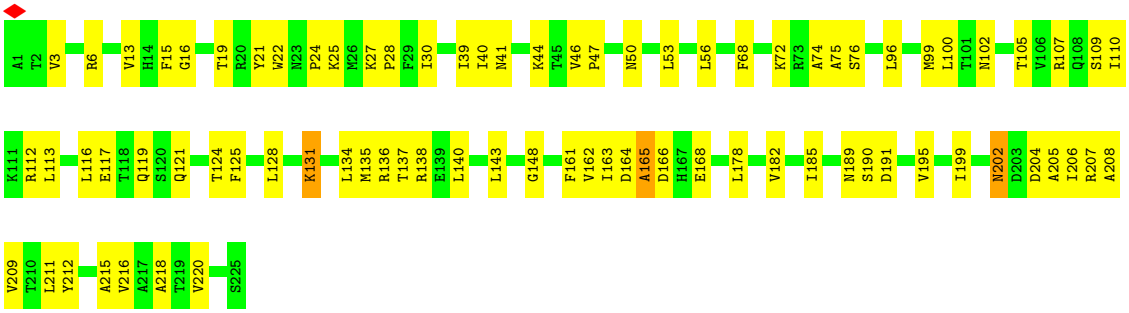
• Molecule 31: 50S ribosomal protein L36

Chain 34:



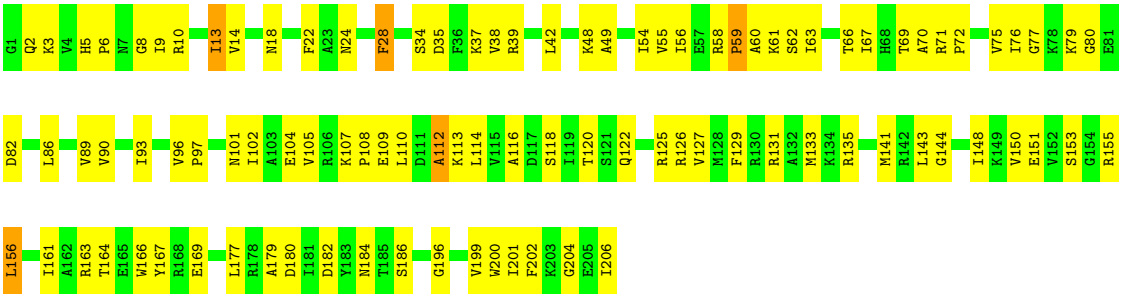
• Molecule 32: 30S ribosomal protein S2

Chain B:



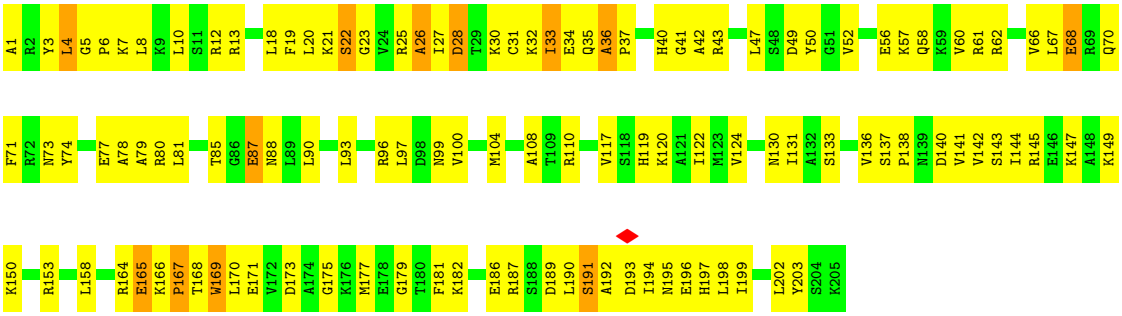
• Molecule 33: 30S ribosomal protein S3

Chain C:



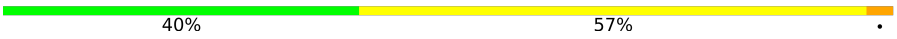
• Molecule 34: 30S ribosomal protein S4

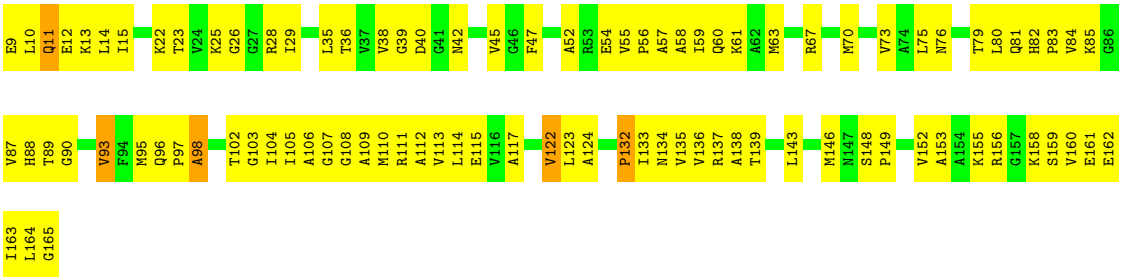
Chain D:



• Molecule 35: 30S ribosomal protein S5

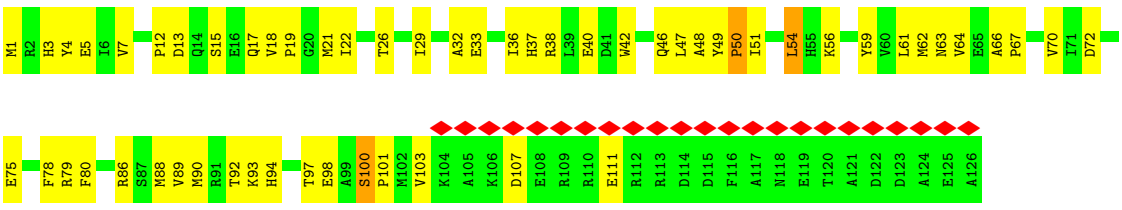
Chain E:





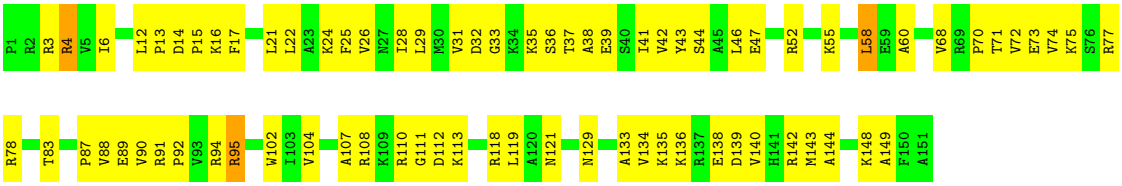
• Molecule 36: 30S ribosomal protein S6

Chain F:

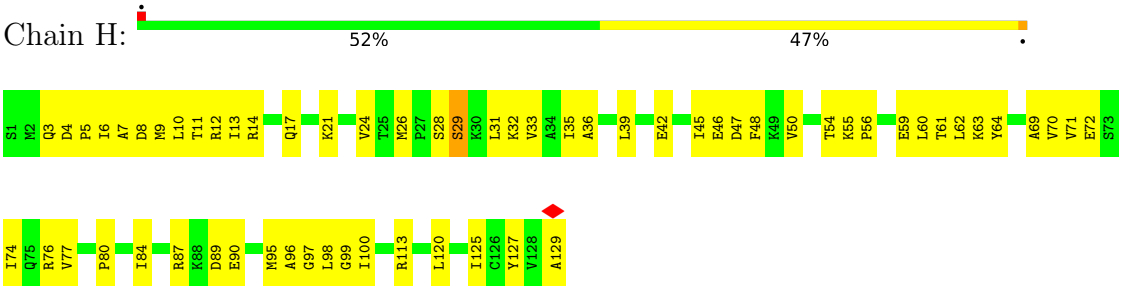


• Molecule 37: 30S ribosomal protein S7

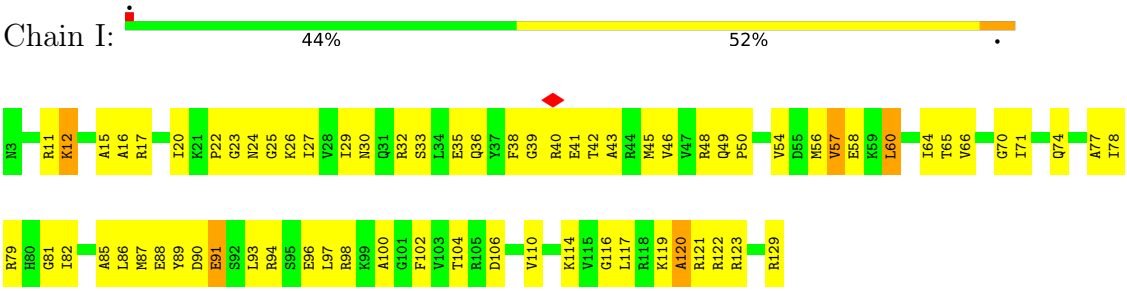
Chain G:



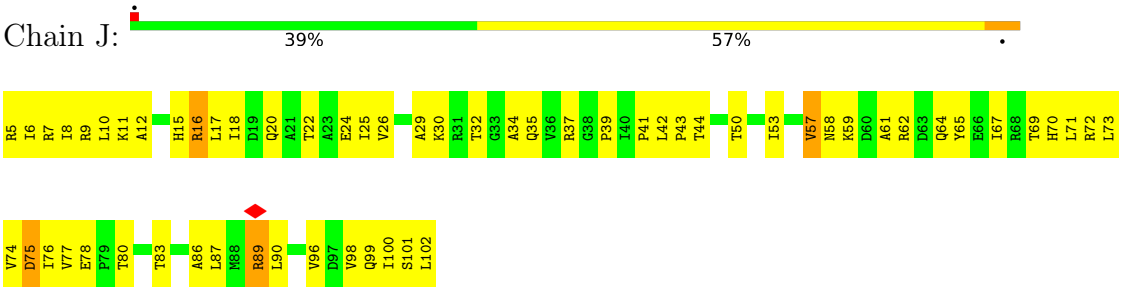
• Molecule 38: 30S ribosomal protein S8



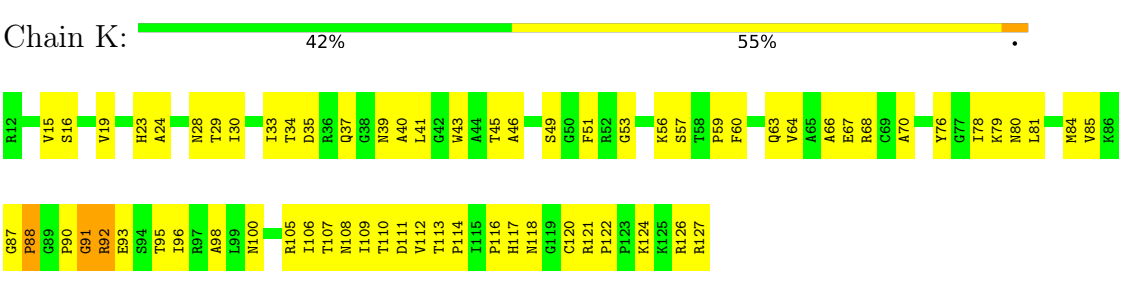
• Molecule 39: 30S ribosomal protein S9



• Molecule 40: 30S ribosomal protein S10

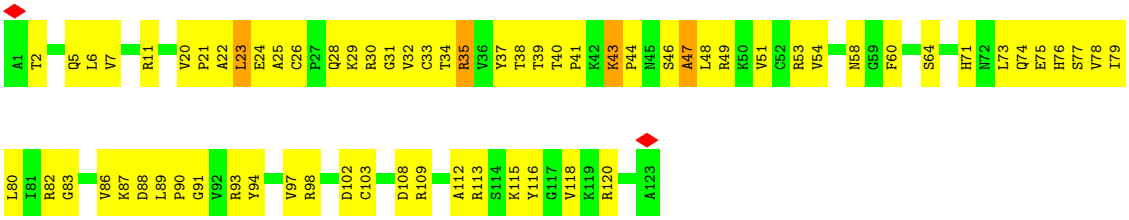


• Molecule 41: 30S ribosomal protein S11



• Molecule 42: 30S ribosomal protein S12

Chain L:

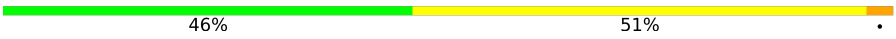


• Molecule 43: 30S ribosomal protein S13

Chain M:

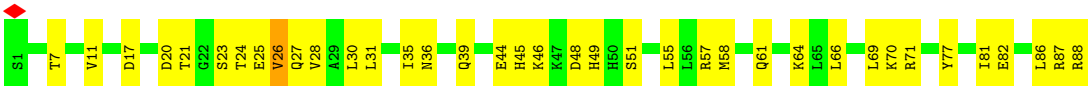
• Molecule 44: 30S ribosomal protein S14

Chain N:



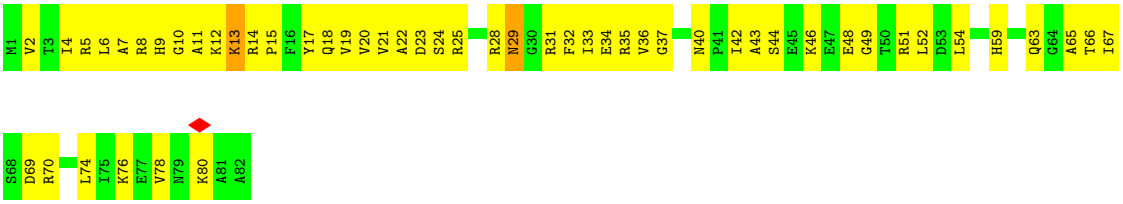
• Molecule 45: 30S ribosomal protein S15

Chain O:



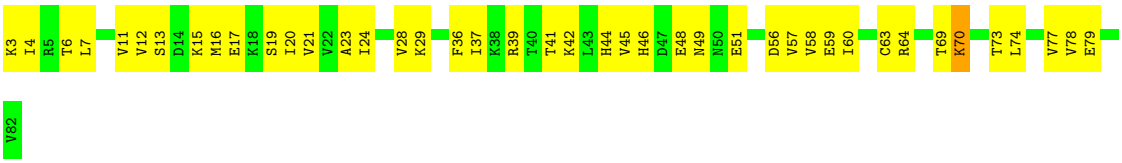
• Molecule 46: 30S ribosomal protein S16

Chain P:



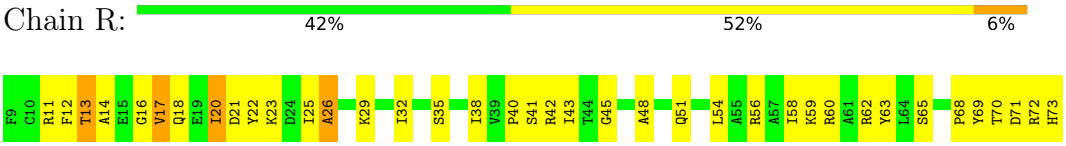
• Molecule 47: 30S ribosomal protein S17

Chain Q:



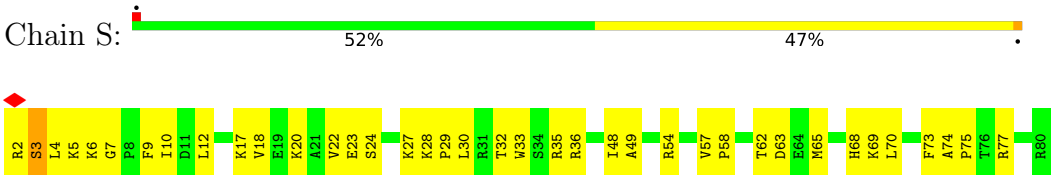
• Molecule 48: 30S ribosomal protein S18

Chain R:



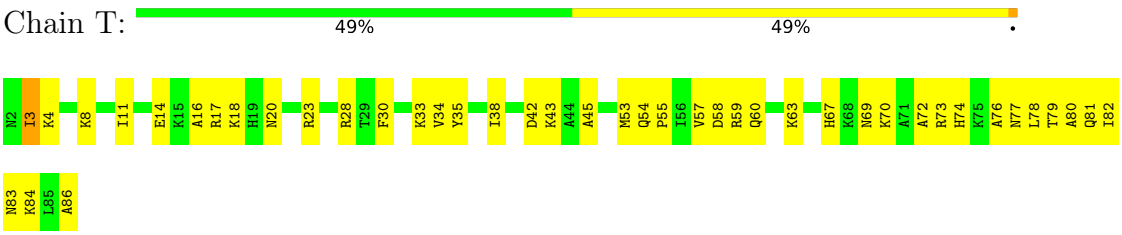
• Molecule 49: 30S ribosomal protein S19

Chain S:



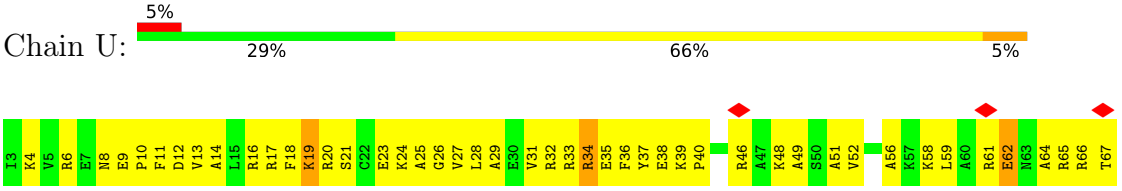
• Molecule 50: 30S ribosomal protein S20

Chain T:



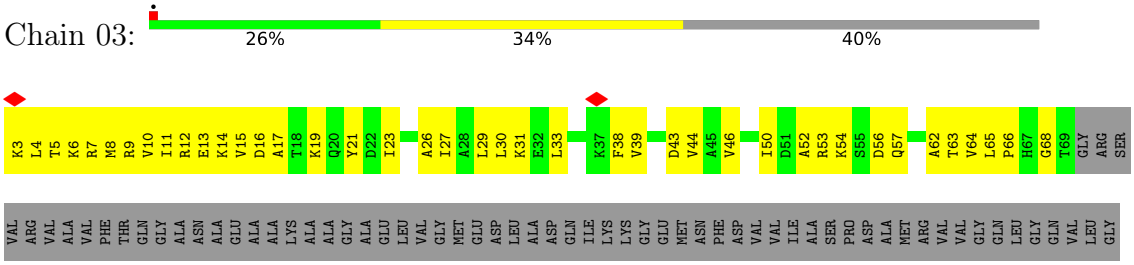
• Molecule 51: 30S ribosomal protein S21

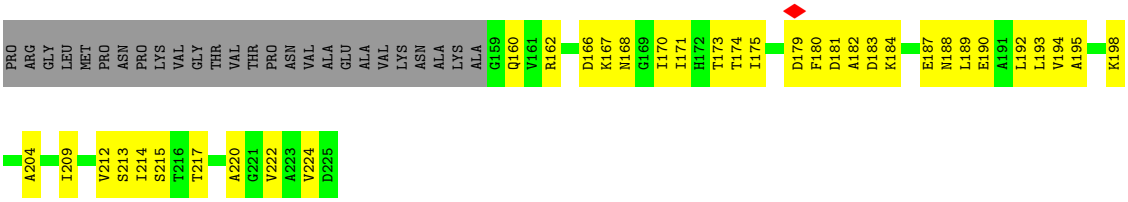
Chain U:



• Molecule 52: 50S ribosomal protein L1

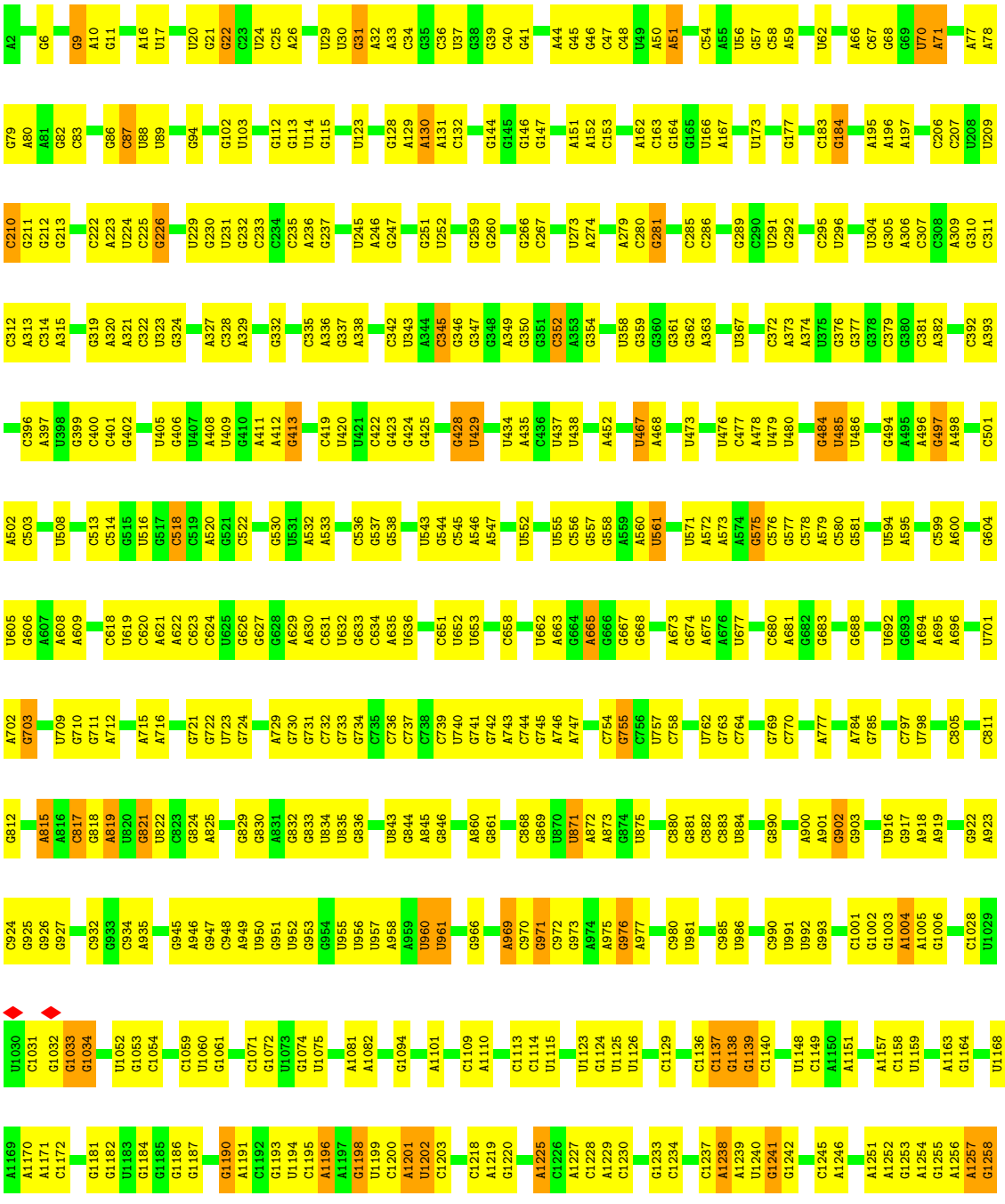
Chain 03:





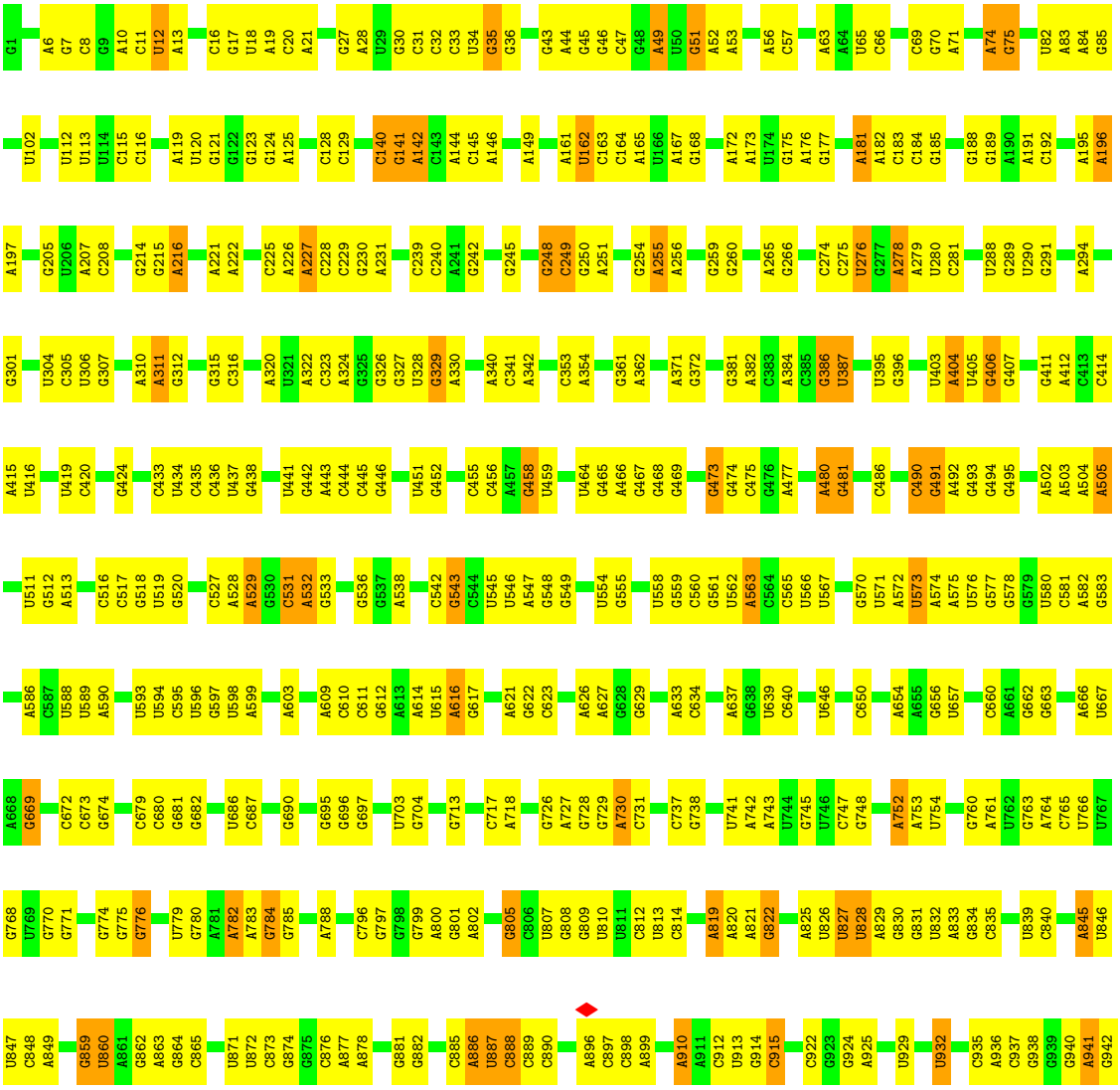
• Molecule 53: 16S ribosomal RNA

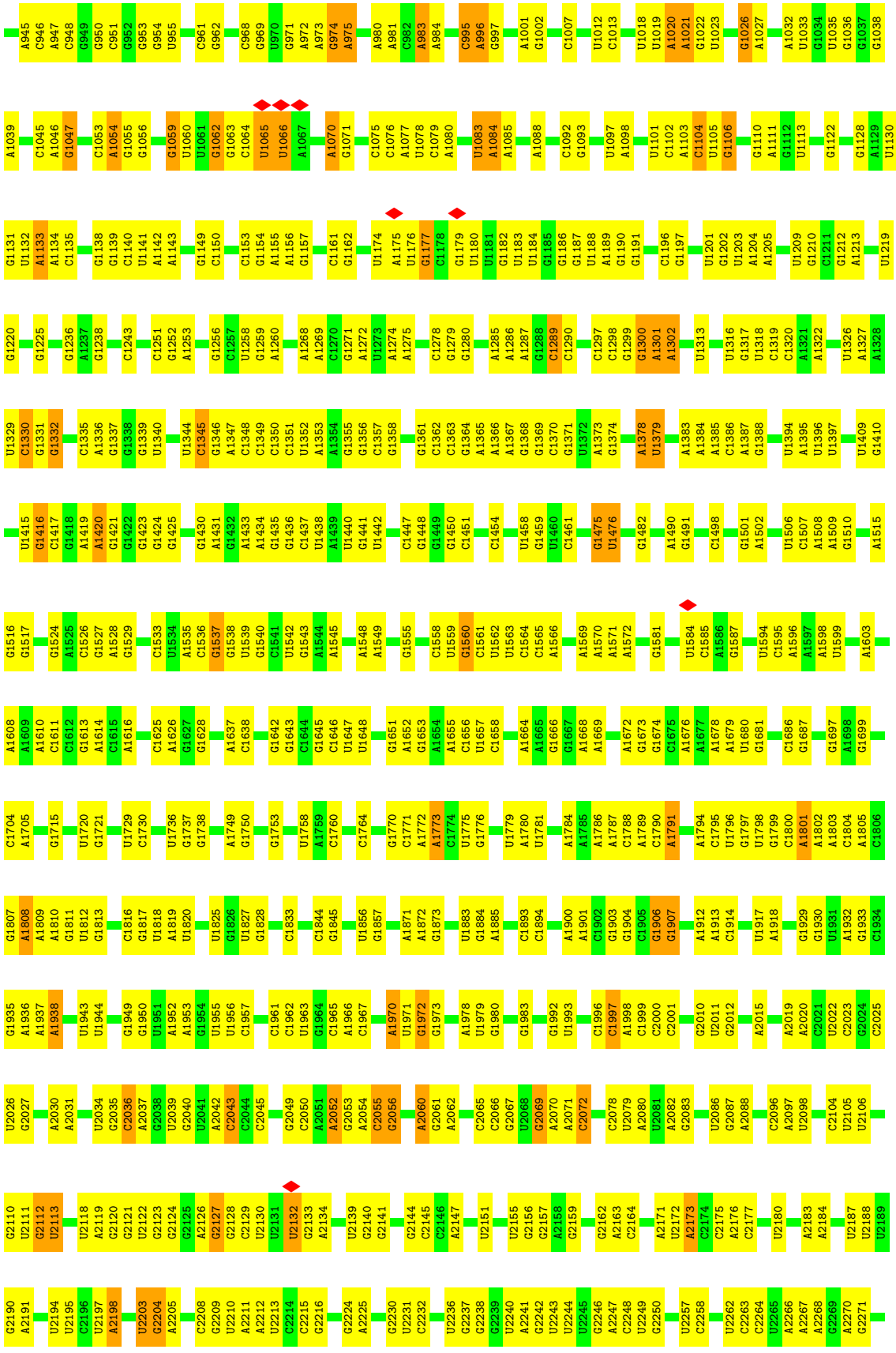
Chain A:

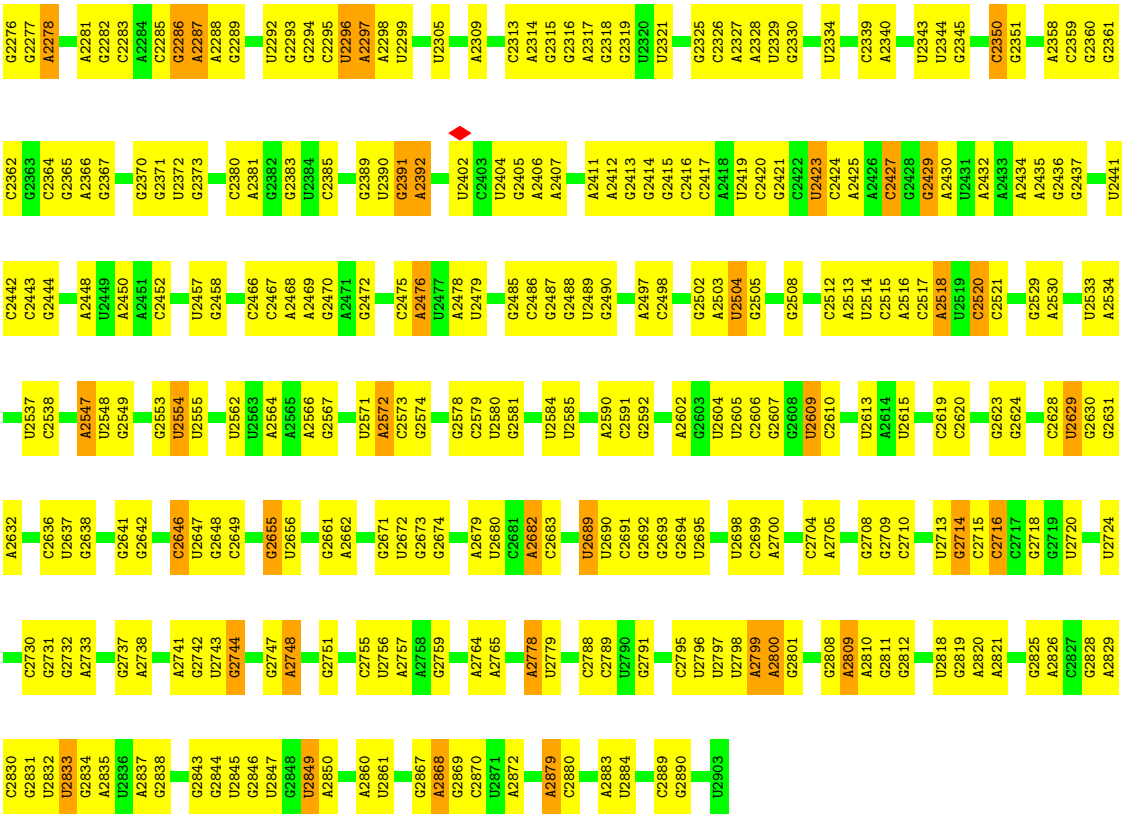


• Molecule 54: 23S ribosomal RNA

Chain 01:

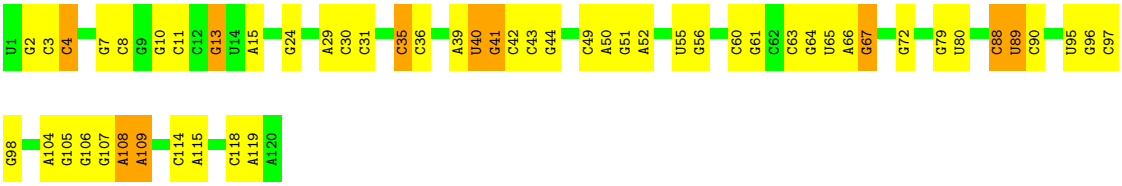






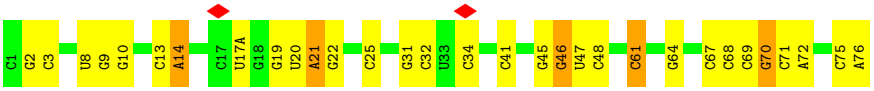
• Molecule 55: 5S ribosomal RNA

Chain 02:



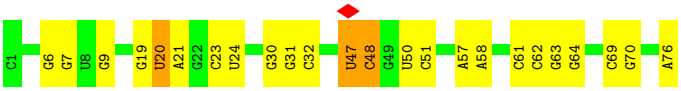
• Molecule 56: tRNAfMet

Chain X:



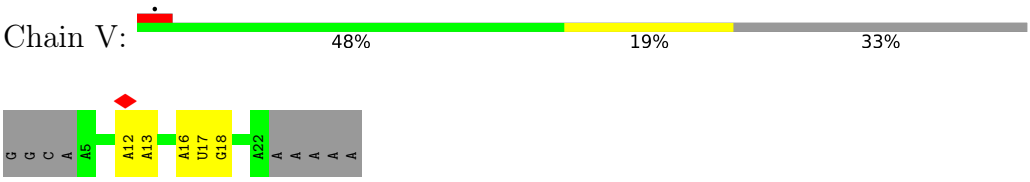
• Molecule 56: tRNAfMet

Chain W:



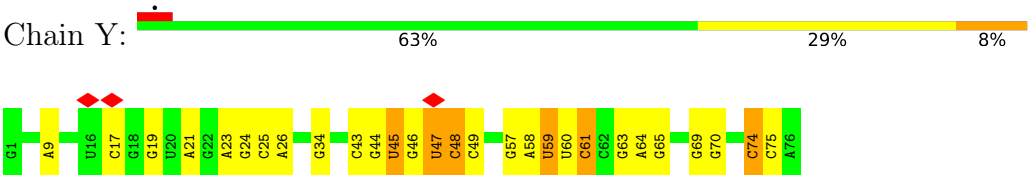
• Molecule 57: mRNA

Chain V:



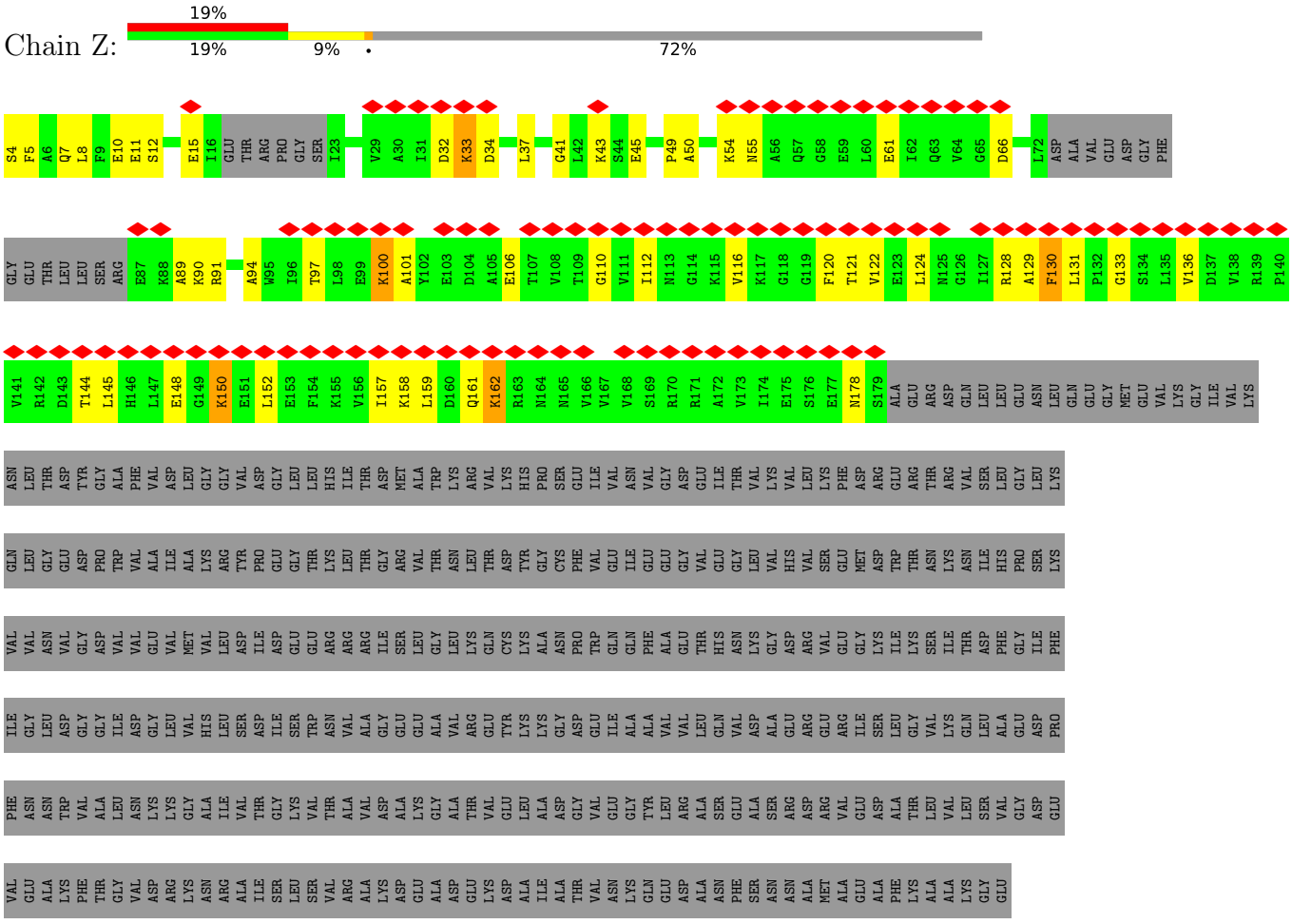
• Molecule 58: tRNAPhe

Chain Y:



• Molecule 59: 30S ribosomal protein S1

Chain Z:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	10289	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 ($e^-/Å^2$)	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
Maximum map value	0.062	Depositor
Minimum map value	-0.023	Depositor
Average map value	-0.001	Depositor
Map value standard deviation	0.005	Depositor
Recommended contour level	0.01	Depositor
Map size (Å)	393.6, 393.6, 393.6	wwPDB
Map dimensions	480, 480, 480	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.82, 0.82, 0.82	Depositor

5 Model quality (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: FME

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	0.26	0/2122	0.56	0/2852
2	05	0.29	0/1586	0.51	0/2134
3	06	0.28	0/1571	0.51	0/2113
4	07	0.30	0/1435	0.53	0/1926
5	08	0.26	0/1343	0.51	0/1816
6	09	0.29	0/1122	0.55	0/1515
7	10	0.30	0/1002	0.58	0/1350
8	11	0.28	0/1046	0.53	0/1410
9	12	0.27	0/1152	0.51	0/1551
10	13	0.26	0/948	0.55	0/1268
11	14	0.27	0/1054	0.52	0/1403
12	15	0.30	0/1093	0.53	0/1460
13	16	0.29	0/974	0.51	0/1301
14	17	0.27	0/902	0.47	0/1209
15	18	0.29	0/929	0.54	0/1242
16	19	0.30	0/960	0.46	0/1278
17	20	0.31	0/829	0.59	1/1107 (0.1%)
18	21	0.25	0/864	0.53	0/1156
19	22	0.26	0/745	0.51	0/994
20	23	0.29	0/788	0.51	0/1051
21	24	0.29	0/766	0.50	0/1025
22	25	0.32	0/582	0.51	0/769
23	26	0.29	0/635	0.53	0/848
24	27	0.27	0/510	0.44	0/677
25	28	0.27	0/453	0.55	0/605
26	29	0.31	0/532	0.54	0/709
27	30	0.26	0/450	0.52	0/599
28	31	0.31	0/417	0.52	0/554
29	32	0.31	0/380	0.49	0/498
30	33	0.30	0/513	0.53	0/676
31	34	0.26	0/303	0.51	0/397
32	B	0.29	0/1788	0.53	0/2408

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
33	C	0.27	0/1652	0.52	0/2225
34	D	0.27	0/1665	0.50	0/2227
35	E	0.28	0/1170	0.53	0/1573
36	F	0.38	0/1048	0.53	0/1413
37	G	0.26	0/1196	0.51	0/1602
38	H	0.27	0/989	0.53	0/1326
39	I	0.28	0/1034	0.53	0/1375
40	J	0.26	0/797	0.56	0/1077
41	K	0.28	0/886	0.54	0/1195
42	L	0.27	0/969	0.61	0/1300
43	M	0.24	0/893	0.50	0/1193
44	N	0.28	0/817	0.46	0/1088
45	O	0.27	0/722	0.47	0/964
46	P	0.31	0/659	0.50	0/884
47	Q	0.28	0/658	0.59	0/881
48	R	0.29	0/545	0.51	0/731
49	S	0.31	0/653	0.52	0/877
50	T	0.27	0/671	0.44	0/888
51	U	0.30	0/551	0.53	0/728
52	03	0.26	0/1034	0.51	0/1387
53	A	0.30	0/36963	0.66	0/57662
54	01	0.29	0/69796	0.65	0/108888
55	02	0.28	0/2872	0.66	0/4479
56	W	0.28	0/1832	0.65	0/2855
56	X	0.30	0/1832	0.65	0/2855
57	V	0.28	0/436	0.63	0/679
58	Y	0.34	0/1812	0.67	0/2823
59	Z	0.44	0/1215	0.45	0/1635
All	All	0.29	0/165161	0.62	1/246711 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
17	20	50	GLY	N-CA-C	-5.75	98.73	113.10

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	04	2083	0	2157	128	0
2	05	1565	0	1616	78	0
3	06	1552	0	1619	97	0
4	07	1411	0	1447	100	0
5	08	1323	0	1374	69	0
6	09	1111	0	1148	72	0
7	10	989	0	1025	82	0
8	11	1032	0	1088	83	0
9	12	1129	0	1162	77	0
10	13	939	0	1012	56	0
11	14	1045	0	1117	69	0
12	15	1074	0	1157	64	0
13	16	961	0	1000	57	0
14	17	892	0	923	49	0
15	18	917	0	965	68	0
16	19	947	0	1022	66	0
17	20	816	0	839	51	0
18	21	857	0	922	64	0
19	22	739	0	807	36	0
20	23	780	0	834	37	0
21	24	753	0	780	31	0
22	25	575	0	592	23	0
23	26	625	0	655	22	0
24	27	509	0	543	26	0
25	28	449	0	491	28	0
26	29	523	0	524	24	0
27	30	444	0	461	43	0
28	31	410	0	440	21	0
29	32	377	0	418	19	0
30	33	504	0	574	20	0
31	34	302	0	343	22	0
32	B	1757	0	1787	81	0
33	C	1625	0	1699	89	0
34	D	1643	0	1710	120	0
35	E	1157	0	1199	98	0
36	F	1028	0	1002	61	0
37	G	1182	0	1240	66	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
38	H	979	0	1034	63	0
39	I	1022	0	1070	69	0
40	J	787	0	828	61	0
41	K	870	0	878	64	0
42	L	955	0	1019	72	0
43	M	884	0	944	66	0
44	N	805	0	847	57	0
45	O	714	0	737	28	0
46	P	649	0	666	64	0
47	Q	649	0	691	45	0
48	R	536	0	552	39	0
49	S	638	0	665	33	0
50	T	665	0	714	39	0
51	U	545	0	579	62	0
52	03	1027	0	1092	68	0
53	A	33012	0	16618	507	0
54	01	62317	0	31346	1010	0
55	02	2568	0	1303	47	0
56	W	1640	0	836	12	0
56	X	1640	0	837	19	0
57	V	388	0	196	3	0
58	Y	1622	0	821	16	0
59	Z	1204	0	1221	59	0
60	W	10	0	10	0	0
All	All	152151	0	103196	4269	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 17.

All (4269) 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)
15:18:59:THR:HG22	15:18:72:VAL:HG12	1.33	1.10
54:01:45:G:H5"	54:01:46:G:H5'	1.22	1.09
14:17:29:HIS:HB3	14:17:36:TYR:HB2	1.37	1.04
52:03:174:THR:HG21	54:01:2124:G:H4'	1.39	1.04
43:M:97:ARG:HB2	43:M:99:GLN:HE22	1.23	1.03
34:D:33:ILE:HG13	34:D:34:GLU:H	1.24	1.02
54:01:275:C:H2'	54:01:276:U:H4'	1.41	1.02
1:04:20:ASN:HD21	1:04:22:GLU:HB2	1.26	1.01
56:X:13:C:H2'	56:X:14:A:H5"	1.38	1.01

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:I:104:THR:HG22	39:I:106:ASP:H	1.26	1.00
8:11:91:LYS:HB3	8:11:94:LYS:HB2	1.44	0.99
53:A:484:G:H4'	53:A:485:U:H5"	1.44	0.99
2:05:151:THR:HB	2:05:152:PRO:HD3	1.44	0.98
6:09:72:ILE:HB	6:09:108:VAL:HG22	1.43	0.98
39:I:20:ILE:HD11	39:I:60:LEU:HD22	1.43	0.97
8:11:15:GLY:HA2	8:11:50:LYS:HB3	1.44	0.97
53:A:1259:C:H3'	53:A:1260:G:H5"	1.47	0.96
40:J:57:VAL:HG22	40:J:58:ASN:H	1.28	0.95
33:C:59:PRO:HG2	33:C:62:SER:HB3	1.48	0.95
55:02:3:C:H2'	55:02:4:C:H5"	1.45	0.95
43:M:2:ARG:HE	43:M:8:ILE:HD11	1.31	0.94
41:K:34:THR:HG22	41:K:40:ALA:HA	1.46	0.94
37:G:12:LEU:HD11	39:I:49:GLN:HE22	1.32	0.94
43:M:113:LYS:H	43:M:114:PRO:HD2	1.31	0.93
54:01:2277:G:H2'	54:01:2278:A:H5"	1.51	0.93
43:M:15:VAL:HG23	43:M:16:ILE:HD12	1.50	0.92
32:B:202:ASN:HD21	32:B:205:ALA:HB2	1.34	0.92
11:14:101:ILE:HG13	11:14:102:GLY:H	1.32	0.91
35:E:133:ILE:HD12	35:E:133:ILE:H	1.32	0.91
35:E:80:LEU:HD13	35:E:122:VAL:HG11	1.49	0.91
49:S:27:LYS:HG2	49:S:28:LYS:H	1.34	0.91
12:15:20:LEU:HD23	21:24:81:PRO:HG2	1.54	0.90
47:Q:37:ILE:HD12	47:Q:39:ARG:HH21	1.37	0.90
54:01:821:A:H5"	54:01:822:G:H5"	1.54	0.89
24:27:2:LYS:HG3	24:27:3:ALA:H	1.36	0.89
4:07:104:THR:HA	26:29:38:SER:HB3	1.52	0.89
10:13:40:LYS:HE3	10:13:57:VAL:HG12	1.52	0.89
25:28:4:ILE:HD11	25:28:56:VAL:HG23	1.55	0.88
48:R:11:ARG:HD3	53:A:845:A:H4'	1.55	0.88
1:04:16:VAL:HB	1:04:203:VAL:HG22	1.54	0.88
46:P:48:GLU:HG3	46:P:49:GLY:H	1.39	0.88
12:15:60:GLN:HE21	12:15:108:VAL:HG12	1.38	0.88
32:B:202:ASN:HD21	32:B:205:ALA:CB	1.87	0.88
20:23:33:VAL:HG13	20:23:66:VAL:HG22	1.56	0.88
40:J:30:LYS:HA	40:J:34:ALA:HA	1.56	0.88
37:G:12:LEU:HD12	37:G:13:PRO:HD2	1.53	0.87
54:01:1664:A:H61	54:01:1996:C:H42	1.18	0.87
1:04:20:ASN:ND2	1:04:22:GLU:HB2	1.90	0.87
12:15:45:GLN:HE21	54:01:2485:G:H5"	1.39	0.87
20:23:39:ASN:O	20:23:61:GLU:HA	1.75	0.87

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:Z:162:LYS:N	59:Z:162:LYS:HE3	1.90	0.87
35:E:76:ASN:HB2	35:E:81:GLN:NE2	1.89	0.86
49:S:62:THR:HG22	49:S:63:ASP:H	1.40	0.86
8:11:59:THR:HB	8:11:67:THR:HB	1.55	0.86
56:X:47:U:H5"	56:X:48:C:H5'	1.58	0.86
35:E:107:GLY:HA3	53:A:9:G:H5'	1.55	0.86
6:09:73:ASN:ND2	6:09:76:GLU:HA	1.91	0.86
22:25:36:GLN:NE2	22:25:39:THR:HA	1.90	0.85
33:C:39:ARG:HG3	33:C:54:ILE:HD11	1.57	0.85
34:D:56:GLU:HG2	34:D:198:LEU:HB2	1.58	0.85
35:E:163:ILE:HD12	35:E:164:LEU:N	1.90	0.85
40:J:6:ILE:HB	40:J:76:ILE:HB	1.56	0.85
6:09:78:VAL:HG21	6:09:103:VAL:HG22	1.57	0.85
11:14:14:LYS:HA	11:14:14:LYS:HE3	1.59	0.85
44:N:8:ARG:HG2	44:N:12:ARG:HH12	1.40	0.85
5:08:21:GLN:HE21	5:08:36:LEU:HB2	1.41	0.85
13:16:24:MET:HE2	13:16:44:LEU:HD13	1.58	0.85
9:12:81:ILE:HG13	9:12:82:GLY:H	1.39	0.85
6:09:8:LYS:O	6:09:13:GLY:HA3	1.76	0.84
14:17:51:ALA:HB3	14:17:78:VAL:HG22	1.59	0.84
34:D:195:ASN:HD22	34:D:198:LEU:HG	1.43	0.84
54:01:1020:A:H1'	54:01:1021:A:OP2	1.78	0.84
47:Q:69:THR:HG22	47:Q:70:LYS:H	1.42	0.84
1:04:47:ARG:HH21	54:01:774:G:H5"	1.41	0.83
8:11:89:SER:HB3	54:01:1063:G:H2'	1.57	0.83
2:05:33:ARG:HD3	2:05:73:VAL:HB	1.59	0.83
7:10:27:VAL:HG23	7:10:110:ALA:HB1	1.59	0.83
20:23:73:ASN:HD22	20:23:76:THR:H	1.22	0.83
8:11:27:LEU:HD12	8:11:28:GLY:N	1.93	0.83
37:G:129:ASN:HA	37:G:134:VAL:HG11	1.60	0.83
40:J:59:LYS:HE2	40:J:62:ARG:HH21	1.44	0.83
7:10:3:LEU:HD12	7:10:6:GLN:H	1.41	0.83
20:23:82:VAL:HG12	20:23:83:GLY:H	1.40	0.83
44:N:92:ILE:H	44:N:92:ILE:HD12	1.42	0.83
51:U:49:ALA:O	51:U:52:VAL:HG12	1.77	0.83
42:L:39:THR:HG22	42:L:40:THR:H	1.42	0.83
54:01:1300:G:H4'	54:01:1301:A:H5'	1.61	0.83
34:D:131:ILE:H	34:D:131:ILE:HD12	1.44	0.83
46:P:28:ARG:HE	46:P:29:ASN:HD21	1.25	0.83
11:14:101:ILE:HB	11:14:105:ILE:HG13	1.61	0.82
41:K:121:ARG:NH2	51:U:35:GLU:HG2	1.94	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:05:34:VAL:HA	2:05:50:VAL:HG12	1.62	0.82
9:12:59:ALA:O	9:12:62:VAL:HG12	1.79	0.82
33:C:39:ARG:NH1	33:C:54:ILE:HG13	1.95	0.82
36:F:66:ALA:HB1	36:F:67:PRO:HD2	1.62	0.82
40:J:10:LEU:HD11	40:J:72:ARG:HB2	1.62	0.82
6:09:63:ALA:HA	6:09:66:ASN:HD22	1.43	0.81
53:A:1033:G:H2'	53:A:1034:G:H5"	1.62	0.81
54:01:215:G:H4'	54:01:216:A:H4'	1.61	0.81
15:18:3:ILE:H	15:18:3:ILE:HD12	1.44	0.81
33:C:112:ALA:HB2	33:C:182:ASP:HB3	1.60	0.81
33:C:6:PRO:HG2	33:C:200:TRP:HE1	1.43	0.81
34:D:36:ALA:H	34:D:37:PRO:HD3	1.45	0.81
33:C:96:VAL:HB	33:C:97:PRO:HD2	1.61	0.81
3:06:24:ASN:HD22	3:06:27:LEU:HB2	1.46	0.80
16:19:49:ARG:NH2	17:20:72:VAL:HG13	1.96	0.80
2:05:121:THR:HG21	2:05:143:PRO:HB3	1.64	0.80
12:15:12:MET:HA	54:01:910:A:H62	1.46	0.80
6:09:79:THR:HG23	6:09:147:VAL:HG21	1.64	0.80
31:34:23:ILE:HD13	54:01:1032:A:H1'	1.63	0.80
34:D:187:ARG:HH22	34:D:192:ALA:HA	1.44	0.80
54:01:1133:A:H4'	54:01:1134:A:H5"	1.63	0.80
2:05:110:THR:HB	2:05:202:ILE:HB	1.62	0.80
38:H:77:VAL:HG12	38:H:84:ILE:HD12	1.64	0.80
30:33:41:ARG:HA	30:33:44:ARG:HH12	1.46	0.80
54:01:807:U:H2'	54:01:808:G:H8	1.44	0.80
4:07:107:VAL:HB	4:07:108:PRO:HD3	1.63	0.80
32:B:15:PHE:HB3	59:Z:43:LYS:HB2	1.63	0.80
10:13:102:PRO:HB3	10:13:121:GLU:HB3	1.63	0.79
20:23:73:ASN:ND2	20:23:76:THR:H	1.79	0.79
1:04:234:GLY:HA2	1:04:238:ASN:HD22	1.44	0.79
4:07:52:ALA:HA	4:07:55:ASP:OD2	1.81	0.79
43:M:6:ILE:HG13	43:M:7:ASN:H	1.47	0.79
52:03:4:LEU:HD12	52:03:12:ARG:HD2	1.63	0.79
53:A:211:G:H2'	53:A:212:G:H5'	1.63	0.79
19:22:40:LYS:HD2	54:01:1598:A:H5"	1.64	0.79
46:P:19:VAL:HG13	46:P:36:VAL:O	1.82	0.79
11:14:63:LYS:HA	30:33:12:ARG:HG2	1.65	0.79
19:22:39:THR:OG1	19:22:42:GLU:HG3	1.82	0.79
35:E:54:GLU:HG2	35:E:56:PRO:HD2	1.64	0.79
40:J:20:GLN:O	40:J:24:GLU:HG3	1.83	0.79
4:07:64:PRO:HA	4:07:88:VAL:HG22	1.62	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:D:25:ARG:HH22	34:D:30:LYS:HZ1	1.31	0.79
53:A:1201:A:H1'	53:A:1202:U:OP2	1.81	0.79
53:A:112:G:H21	53:A:354:G:H5'	1.47	0.78
47:Q:13:SER:H	47:Q:21:VAL:HG13	1.46	0.78
54:01:742:A:H2'	54:01:743:A:H8	1.47	0.78
52:03:64:VAL:HG22	52:03:160:GLN:HG3	1.65	0.78
3:06:112:LEU:HB3	3:06:118:LEU:HB2	1.64	0.78
32:B:205:ALA:HA	59:Z:45:GLU:OE2	1.83	0.78
33:C:9:ILE:HD13	44:N:97:LYS:HD3	1.64	0.78
43:M:3:ILE:HD11	43:M:21:ILE:HD11	1.66	0.78
5:08:34:ARG:HE	5:08:70:LEU:HD13	1.48	0.78
13:16:100:CYS:HA	27:30:42:ILE:HG12	1.66	0.78
14:17:17:LYS:NZ	54:01:2380:C:H5'	1.98	0.78
44:N:25:GLU:HB2	44:N:29:ILE:HD12	1.66	0.78
33:C:131:ARG:HE	33:C:135:ARG:HH21	1.29	0.78
35:E:133:ILE:O	35:E:136:VAL:HG12	1.84	0.78
42:L:86:VAL:HG23	42:L:88:ASP:H	1.49	0.78
55:02:3:C:C2'	55:02:4:C:H5"	2.13	0.78
32:B:165:ALA:HB3	32:B:190:SER:HB3	1.65	0.78
9:12:78:THR:HG22	54:01:2641:G:H5"	1.66	0.78
18:21:82:MET:HB3	18:21:84:ARG:HH22	1.49	0.78
2:05:49:GLN:HE21	2:05:79:LEU:HD13	1.49	0.77
11:14:95:LEU:HD22	11:14:100:ILE:HD11	1.66	0.77
33:C:150:VAL:HG12	33:C:199:VAL:HG23	1.65	0.77
40:J:65:TYR:HB3	44:N:95:LEU:HD11	1.66	0.77
54:01:1668:A:H61	54:01:1676:A:H61	1.30	0.77
53:A:1513:A:H2'	53:A:1514:G:H8	1.48	0.77
16:19:8:ILE:HD12	16:19:9:ALA:N	2.00	0.77
44:N:7:ALA:O	44:N:10:VAL:HG12	1.84	0.77
46:P:28:ARG:HE	46:P:29:ASN:ND2	1.82	0.77
1:04:116:GLN:HE21	1:04:121:ALA:HA	1.49	0.77
4:07:92:GLY:O	4:07:95:MET:HG2	1.85	0.77
20:23:65:GLN:HE21	54:01:328:U:H4'	1.50	0.77
38:H:29:SER:HB3	38:H:32:LYS:HG2	1.67	0.77
31:34:26:ILE:HD12	31:34:26:ILE:O	1.84	0.77
1:04:86:ARG:HH12	54:01:1817:G:H5"	1.49	0.77
12:15:42:THR:OG1	12:15:45:GLN:HG3	1.85	0.77
43:M:27:THR:HA	43:M:30:LYS:HE2	1.65	0.77
52:03:10:VAL:HG12	52:03:14:LYS:HE3	1.66	0.77
54:01:1053:C:H2'	54:01:1054:A:H5"	1.67	0.77
34:D:124:VAL:HG23	34:D:141:VAL:O	1.84	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:G:6:ILE:HD12	37:G:6:ILE:O	1.85	0.76
42:L:23:LEU:HB3	42:L:26:CYS:SG	2.24	0.76
54:01:805:G:H22	54:01:828:U:H5"	1.48	0.76
1:04:260:LYS:HA	1:04:263:ASP:OD2	1.83	0.76
12:15:75:GLU:HB3	12:15:90:GLU:HG3	1.67	0.76
14:17:49:VAL:HG21	14:17:82:ALA:HA	1.65	0.76
35:E:89:THR:CG2	35:E:134:ASN:HD21	1.98	0.76
54:01:1141:U:H4'	54:01:1142:A:O4'	1.84	0.76
37:G:111:GLY:HA2	37:G:118:ARG:HD3	1.68	0.76
48:R:29:LYS:NZ	59:Z:145:LEU:HD21	1.99	0.76
35:E:148:SER:HB2	35:E:149:PRO:HD2	1.65	0.76
47:Q:45:VAL:HG21	47:Q:60:ILE:HD13	1.64	0.76
53:A:950:U:H2'	53:A:951:G:H8	1.50	0.76
40:J:100:ILE:HD12	40:J:100:ILE:O	1.86	0.76
41:K:87:GLY:H	41:K:113:THR:HG22	1.49	0.76
51:U:58:LYS:HG3	51:U:61:ARG:HE	1.51	0.76
9:12:31:GLU:HG2	9:12:142:ILE:HG12	1.65	0.76
9:12:64:VAL:HB	9:12:68:LYS:HE3	1.66	0.76
54:01:2296:U:H5"	54:01:2297:A:OP1	1.86	0.76
34:D:81:LEU:HD12	34:D:88:ASN:HB3	1.68	0.76
54:01:1906:G:H2'	54:01:1907:G:H5"	1.66	0.76
32:B:202:ASN:HA	59:Z:43:LYS:HZ1	1.48	0.76
44:N:26:LEU:HD23	44:N:47:LEU:HD13	1.68	0.75
8:11:20:SER:HB3	8:11:21:PRO:HD3	1.68	0.75
10:13:69:VAL:HG21	10:13:104:THR:HG21	1.67	0.75
21:24:75:GLN:HB2	21:24:92:VAL:HG23	1.69	0.75
25:28:4:ILE:HD11	25:28:56:VAL:CG2	2.15	0.75
46:P:14:ARG:HH12	53:A:618:C:H1'	1.51	0.75
52:03:52:ALA:HB1	52:03:167:LYS:HA	1.69	0.75
53:A:327:A:O2'	53:A:328:C:H4'	1.87	0.75
39:I:20:ILE:CD1	39:I:60:LEU:HD22	2.17	0.75
41:K:92:ARG:O	41:K:95:THR:HG22	1.87	0.75
4:07:28:PRO:HB2	4:07:168:LEU:HD13	1.69	0.75
8:11:34:ILE:HD12	8:11:34:ILE:H	1.51	0.75
8:11:100:ILE:HG22	8:11:101:SER:H	1.49	0.75
9:12:47:HIS:ND1	9:12:48:VAL:HG23	2.01	0.75
32:B:27:LYS:HB3	32:B:28:PRO:HD3	1.69	0.75
7:10:47:GLU:OE2	7:10:95:LEU:HD11	1.87	0.74
17:20:49:ILE:HB	17:20:51:VAL:O	1.87	0.74
39:I:91:GLU:HA	39:I:94:ARG:HB2	1.68	0.74
35:E:82:HIS:HD2	38:H:98:LEU:HD21	1.52	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:19:108:LEU:HA	17:20:48:LYS:HZ3	1.51	0.74
44:N:37:ASP:OD1	44:N:39:ASP:HB3	1.86	0.74
9:12:11:VAL:HG21	9:12:50:THR:HG22	1.69	0.74
33:C:156:LEU:HD12	33:C:156:LEU:O	1.87	0.74
35:E:164:LEU:HD12	35:E:165:GLY:N	2.03	0.74
42:L:77:SER:HB2	42:L:102:ASP:HB3	1.70	0.74
52:03:57:GLN:HE21	52:03:204:ALA:HA	1.51	0.74
27:30:51:ARG:HB2	27:30:51:ARG:NH2	2.02	0.74
51:U:8:ASN:HB3	51:U:9:GLU:OE1	1.87	0.74
52:03:6:LYS:HG3	52:03:7:ARG:H	1.52	0.74
52:03:195:ALA:HA	52:03:198:LYS:HD2	1.68	0.74
54:01:807:U:H2'	54:01:808:G:C8	2.22	0.74
54:01:1645:G:H5"	54:01:1646:C:H5'	1.68	0.74
56:X:13:C:C2'	56:X:14:A:H5"	2.14	0.74
36:F:89:VAL:HG12	36:F:90:MET:H	1.52	0.74
2:05:145:SER:HB2	54:01:2578:G:N7	2.02	0.74
3:06:117:ARG:HH21	3:06:184:ASP:HA	1.52	0.74
6:09:58:LEU:O	6:09:61:VAL:HG22	1.87	0.74
6:09:73:ASN:HB2	6:09:108:VAL:HG23	1.69	0.74
2:05:49:GLN:NE2	2:05:79:LEU:HD13	2.03	0.74
54:01:2553:G:H3'	54:01:2554:U:H5"	1.69	0.74
32:B:134:LEU:HG	32:B:138:ARG:HE	1.52	0.74
51:U:65:ARG:HB2	51:U:67:THR:HG22	1.69	0.74
54:01:742:A:H2'	54:01:743:A:C8	2.21	0.74
3:06:149:ILE:HG21	3:06:188:MET:HG2	1.70	0.73
5:08:102:ILE:HB	5:08:114:HIS:HB3	1.71	0.73
45:O:24:THR:HG21	45:O:69:LEU:HD13	1.69	0.73
48:R:29:LYS:HZ1	59:Z:145:LEU:HD21	1.52	0.73
53:A:1418:A:H3'	53:A:1419:G:H5"	1.68	0.73
9:12:80:HIS:ND1	9:12:81:ILE:HG22	2.02	0.73
54:01:2277:G:C2'	54:01:2278:A:H5"	2.18	0.73
54:01:2452:C:H42	54:01:2504:U:H3	1.33	0.73
1:04:77:VAL:HG21	1:04:109:LEU:HD11	1.70	0.73
53:A:405:U:H3'	53:A:406:G:H5'	1.70	0.73
43:M:113:LYS:N	43:M:114:PRO:HD2	2.04	0.73
13:16:79:LEU:HD23	13:16:83:LEU:HD12	1.70	0.73
16:19:108:LEU:HA	17:20:48:LYS:NZ	2.02	0.73
47:Q:16:MET:HG3	47:Q:19:SER:OG	1.88	0.73
2:05:81:GLU:HG2	2:05:82:PHE:H	1.53	0.73
4:07:90:LEU:HD12	4:07:90:LEU:O	1.89	0.73
12:15:45:GLN:NE2	54:01:2485:G:H5"	2.03	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:17:17:LYS:HZ1	54:01:2380:C:H5'	1.51	0.73
14:17:105:ALA:HA	14:17:108:ASP:OD2	1.89	0.73
33:C:10:ARG:HG2	33:C:177:LEU:HD23	1.69	0.73
34:D:70:GLN:HA	34:D:73:ASN:HD22	1.54	0.73
36:F:48:ALA:HB1	48:R:68:PRO:HG3	1.71	0.73
8:11:93:ASN:ND2	54:01:1077:A:H4'	2.04	0.73
33:C:122:GLN:HB3	33:C:127:VAL:HG11	1.71	0.73
10:13:21:CYS:HA	10:13:41:ILE:HG22	1.70	0.72
36:F:38:ARG:HB3	36:F:40:GLU:OE2	1.89	0.72
45:O:17:ASP:OD1	45:O:20:ASP:HB2	1.89	0.72
1:04:154:ALA:HA	1:04:159:THR:HG21	1.69	0.72
34:D:8:LEU:HD23	53:A:429:U:H5'	1.70	0.72
39:I:45:MET:HB3	39:I:48:ARG:HH21	1.52	0.72
42:L:31:GLY:O	42:L:78:VAL:HG13	1.89	0.72
4:07:137:PHE:HB2	4:07:140:ILE:HD13	1.71	0.72
8:11:21:PRO:HB2	8:11:22:PRO:HD3	1.71	0.72
10:13:76:VAL:HG12	15:18:72:VAL:CG2	2.19	0.72
12:15:69:PRO:HA	12:15:94:ALA:HB2	1.68	0.72
20:23:73:ASN:ND2	20:23:75:ALA:HB3	2.05	0.72
53:A:279:A:H5'	53:A:281:G:H5'	1.70	0.72
1:04:120:ASP:HA	6:09:91:PHE:HZ	1.53	0.72
1:04:266:ILE:HG21	1:04:269:ARG:HD2	1.71	0.72
50:T:11:ILE:O	50:T:14:GLU:HB2	1.89	0.72
9:12:58:ASN:HD21	9:12:128:ASN:HB2	1.54	0.72
27:30:24:VAL:HG13	27:30:25:THR:H	1.54	0.72
35:E:76:ASN:HB2	35:E:81:GLN:HE22	1.53	0.72
54:01:1906:G:C3'	54:01:1907:G:H5"	2.19	0.72
59:Z:110:GLY:HA3	59:Z:124:LEU:HD23	1.70	0.72
22:25:36:GLN:HE22	22:25:39:THR:HA	1.53	0.72
31:34:2:LYS:HB2	31:34:35:GLN:HB3	1.71	0.72
54:01:1807:G:H2'	54:01:1808:A:H5'	1.71	0.72
5:08:96:ALA:HB3	5:08:103:ASN:HB3	1.70	0.72
11:14:111:ILE:HD12	11:14:111:ILE:N	2.05	0.72
26:29:65:ASN:O	26:29:66:ILE:HB	1.89	0.72
49:S:32:THR:HG22	49:S:49:ALA:O	1.90	0.72
28:31:4:ILE:H	28:31:4:ILE:HD12	1.54	0.72
34:D:66:VAL:HG12	34:D:67:LEU:H	1.53	0.72
54:01:1060:U:H5'	54:01:1062:G:H5'	1.72	0.72
34:D:12:ARG:HG2	34:D:33:ILE:HD12	1.71	0.71
34:D:33:ILE:HG13	34:D:34:GLU:N	2.02	0.71
9:12:98:GLU:O	9:12:102:GLU:HG3	1.89	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:D:87:GLU:HG3	34:D:187:ARG:HD3	1.72	0.71
15:18:88:ARG:HE	15:18:112:ARG:HH21	1.35	0.71
42:L:22:ALA:HB2	42:L:94:TYR:CE1	2.26	0.71
1:04:86:ARG:NH1	54:01:1817:G:H5"	2.05	0.71
11:14:33:ARG:HD2	11:14:40:SER:HA	1.73	0.71
35:E:89:THR:HG21	35:E:134:ASN:HD21	1.55	0.71
44:N:40:ARG:HH22	49:S:6:LYS:HD2	1.54	0.71
5:08:138:GLN:HE22	54:01:2759:G:H21	1.39	0.71
42:L:71:HIS:HB2	42:L:73:LEU:HD13	1.72	0.71
8:11:4:VAL:HG22	8:11:7:TYR:HE2	1.56	0.71
8:11:85:ILE:HD12	8:11:85:ILE:O	1.91	0.71
19:22:29:THR:HG23	19:22:85:VAL:O	1.89	0.71
32:B:72:LYS:NZ	32:B:204:ASP:HA	2.06	0.71
31:34:2:LYS:HD2	31:34:4:ARG:HH12	1.55	0.71
32:B:72:LYS:HE2	32:B:74:ALA:HB3	1.71	0.71
3:06:149:ILE:HD11	3:06:172:ALA:HA	1.73	0.71
11:14:32:GLY:HA2	54:01:1190:G:H5"	1.73	0.71
35:E:40:ASP:OD2	35:E:42:ASN:HB3	1.90	0.71
42:L:31:GLY:HA3	42:L:54:VAL:CG1	2.20	0.71
24:27:2:LYS:HE2	54:01:102:U:H1'	1.73	0.71
53:A:29:U:O2'	53:A:30:U:H5'	1.91	0.71
54:01:2584:U:H2'	54:01:2585:U:H2'	1.73	0.71
26:29:58:ASP:HA	26:29:61:ASN:ND2	2.06	0.70
35:E:59:ILE:HD12	35:E:60:GLN:N	2.04	0.70
7:10:13:ALA:O	7:10:17:GLU:HG3	1.91	0.70
25:28:4:ILE:HG22	25:28:37:ARG:O	1.91	0.70
41:K:15:VAL:HG12	41:K:76:TYR:HB3	1.74	0.70
43:M:97:ARG:HB2	43:M:99:GLN:NE2	2.04	0.70
1:04:209:ALA:HA	1:04:212:TRP:CE2	2.27	0.70
3:06:46:GLN:HB3	3:06:83:VAL:HG21	1.72	0.70
54:01:2286:G:H5"	54:01:2287:A:OP1	1.92	0.70
26:29:56:ARG:HH22	49:S:68:HIS:HE1	1.38	0.70
34:D:23:GLY:HA2	34:D:108:ALA:HB1	1.74	0.70
20:23:4:ILE:HD12	20:23:4:ILE:N	2.07	0.70
49:S:30:LEU:HB2	49:S:48:ILE:HG22	1.73	0.70
53:A:70:U:H5"	53:A:71:A:OP1	1.91	0.70
36:F:5:GLU:HG2	36:F:61:LEU:HD11	1.74	0.70
13:16:38:LEU:HD11	13:16:42:LYS:HE2	1.74	0.70
34:D:36:ALA:N	34:D:37:PRO:HD3	2.06	0.70
51:U:36:PHE:HB3	51:U:40:PRO:HD3	1.72	0.70
8:11:76:ALA:O	8:11:80:LYS:HG3	1.92	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:19:88:GLU:OE1	17:20:52:PRO:HD3	1.92	0.70
55:02:65:U:H3'	55:02:108:A:H61	1.57	0.70
37:G:72:VAL:HG12	37:G:89:GLU:HA	1.72	0.70
21:24:76:ASP:H	21:24:90:ASP:HB2	1.55	0.69
43:M:15:VAL:HG23	43:M:16:ILE:H	1.57	0.69
51:U:25:ALA:HA	51:U:28:LEU:HB3	1.73	0.69
53:A:946:A:H2'	53:A:947:G:H8	1.57	0.69
54:01:679:C:H2'	54:01:680:C:C6	2.26	0.69
54:01:947:A:H2'	54:01:948:C:C6	2.27	0.69
54:01:971:G:H2'	54:01:972:A:O4'	1.92	0.69
54:01:1906:G:C2'	54:01:1907:G:H5"	2.22	0.69
52:03:16:ASP:OD2	52:03:19:LYS:HB2	1.92	0.69
11:14:111:ILE:HG22	11:14:112:LEU:H	1.58	0.69
14:17:89:ASP:HA	14:17:116:GLN:HB2	1.74	0.69
17:20:28:ALA:HB3	17:20:31:GLU:HB2	1.75	0.69
33:C:58:ARG:HG3	33:C:62:SER:O	1.92	0.69
40:J:44:THR:HG23	40:J:69:THR:O	1.93	0.69
43:M:3:ILE:HG12	43:M:7:ASN:HD22	1.56	0.69
43:M:97:ARG:CB	43:M:99:GLN:HE22	2.02	0.69
53:A:1513:A:H2'	53:A:1514:G:C8	2.26	0.69
38:H:10:LEU:HD22	38:H:74:ILE:HD11	1.75	0.69
38:H:36:ALA:HA	38:H:39:LEU:HD12	1.73	0.69
53:A:225:C:H2'	53:A:226:G:H5"	1.75	0.69
54:01:615:U:H5"	54:01:616:A:OP2	1.92	0.69
25:28:29:ARG:NE	54:01:1183:U:H5"	2.07	0.69
43:M:52:ILE:HG22	43:M:56:ARG:NH1	2.07	0.69
1:04:153:LEU:HD13	1:04:175:LEU:HD21	1.73	0.69
1:04:156:SER:OG	54:01:1818:U:H5'	1.92	0.69
10:13:76:VAL:HG12	15:18:72:VAL:HG21	1.73	0.69
24:27:21:LEU:HD23	24:27:25:GLN:HG2	1.74	0.69
51:U:64:ALA:C	51:U:66:ARG:H	1.96	0.69
52:03:46:VAL:HG22	52:03:212:VAL:HA	1.73	0.69
53:A:335:C:H2'	53:A:336:A:H8	1.57	0.69
8:11:4:VAL:HG22	8:11:7:TYR:CE2	2.28	0.69
52:03:26:ALA:HB1	52:03:214:ILE:HD11	1.74	0.69
54:01:310:A:C2'	54:01:311:A:H5"	2.21	0.69
7:10:11:ILE:O	7:10:15:VAL:HG23	1.93	0.69
39:I:24:ASN:ND2	39:I:26:LYS:HB3	2.08	0.69
50:T:59:ARG:NH1	53:A:177:G:H5'	2.07	0.69
45:O:21:THR:HG21	53:A:658:C:H1'	1.74	0.68
53:A:1379:G:O2'	53:A:1380:U:H5'	1.94	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:11:91:LYS:HG2	8:11:94:LYS:HE2	1.75	0.68
28:31:46:VAL:HG12	28:31:47:ILE:H	1.57	0.68
54:01:467:G:O2'	54:01:468:G:H5'	1.94	0.68
54:01:2086:U:H2'	54:01:2087:G:C8	2.28	0.68
1:04:229:HIS:HE2	1:04:246:PRO:HG3	1.58	0.68
7:10:34:THR:O	7:10:37:LYS:HG2	1.93	0.68
29:32:26:ASN:O	29:32:30:VAL:HG23	1.92	0.68
3:06:148:ILE:HB	3:06:169:VAL:HG22	1.74	0.68
18:21:11:ARG:HD3	54:01:1322:A:OP1	1.94	0.68
39:I:20:ILE:HD11	39:I:60:LEU:CD2	2.20	0.68
41:K:15:VAL:HG22	41:K:16:SER:H	1.59	0.68
46:P:10:GLY:HA2	53:A:624:C:H4'	1.74	0.68
53:A:950:U:H2'	53:A:951:G:C8	2.28	0.68
54:01:704:G:H2'	54:01:726:G:N2	2.09	0.68
53:A:1506:U:O2'	53:A:1507:A:H5'	1.93	0.68
32:B:182:VAL:HB	32:B:195:VAL:HG13	1.75	0.68
35:E:23:THR:HA	35:E:28:ARG:HA	1.76	0.68
42:L:109:ARG:NH1	53:A:537:G:H5"	2.08	0.68
43:M:16:ILE:HD12	43:M:16:ILE:H	1.57	0.68
1:04:149:LYS:HD3	54:01:2204:G:H4'	1.75	0.68
1:04:206:LYS:HD2	54:01:729:G:OP2	1.94	0.68
1:04:259:ASN:OD1	1:04:261:ARG:HG2	1.93	0.68
9:12:81:ILE:HG13	9:12:82:GLY:N	2.09	0.68
51:U:24:LYS:HG2	51:U:25:ALA:N	2.09	0.68
35:E:113:VAL:HG13	35:E:114:LEU:HD12	1.75	0.68
53:A:1218:C:H2'	53:A:1219:A:C8	2.28	0.68
54:01:1373:A:H5'	54:01:2212:A:H1'	1.76	0.68
3:06:149:ILE:HG23	3:06:188:MET:HA	1.76	0.67
27:30:51:ARG:HG2	27:30:53:VAL:HG13	1.74	0.67
3:06:105:LEU:HD23	3:06:108:ILE:HD12	1.76	0.67
7:10:116:GLU:O	7:10:119:PRO:HD2	1.94	0.67
10:13:40:LYS:HZ2	10:13:58:LEU:HA	1.59	0.67
27:30:24:VAL:HG22	27:30:26:SER:H	1.58	0.67
14:17:10:ARG:HD3	54:01:2295:C:OP2	1.95	0.67
43:M:65:GLU:HG3	43:M:66:GLY:H	1.59	0.67
46:P:28:ARG:NE	46:P:29:ASN:HD21	1.91	0.67
49:S:18:VAL:O	49:S:22:VAL:HG23	1.95	0.67
54:01:329:G:O4'	54:01:477:A:H1'	1.93	0.67
3:06:109:LEU:HG	3:06:112:LEU:HD12	1.75	0.67
11:14:111:ILE:HG22	11:14:112:LEU:N	2.09	0.67
52:03:7:ARG:NH2	52:03:11:ILE:HD11	2.10	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:05:5:VAL:H	2:05:32:ASN:HD21	1.43	0.67
8:11:7:TYR:HB3	8:11:59:THR:HA	1.77	0.67
20:23:73:ASN:HD21	20:23:75:ALA:HB3	1.59	0.67
35:E:96:GLN:HG2	35:E:97:PRO:HD2	1.77	0.67
38:H:98:LEU:HD12	38:H:99:GLY:N	2.10	0.67
59:Z:120:PHE:CE2	59:Z:136:VAL:HG11	2.29	0.67
32:B:6:ARG:HH12	59:Z:8:LEU:HD22	1.58	0.67
11:14:23:ILE:HD12	11:14:23:ILE:N	2.10	0.67
59:Z:7:GLN:O	59:Z:11:GLU:HG3	1.94	0.67
41:K:126:ARG:HH22	53:A:692:U:H5"	1.59	0.67
13:16:38:LEU:HB3	13:16:39:PRO:HD3	1.76	0.67
15:18:32:VAL:HG12	15:18:34:GLY:H	1.59	0.67
33:C:67:ILE:HB	33:C:102:ILE:HG22	1.76	0.67
54:01:466:A:H2'	54:01:467:G:H5'	1.77	0.67
23:26:56:ARG:O	23:26:59:ASP:HB3	1.95	0.67
35:E:133:ILE:H	35:E:133:ILE:CD1	2.06	0.67
53:A:50:A:H4'	53:A:51:A:H5'	1.76	0.67
53:A:411:A:C4	53:A:413:G:H1'	2.30	0.67
1:04:153:LEU:HD11	1:04:181:ARG:NH2	2.11	0.66
3:06:117:ARG:HH12	11:14:2:ARG:HB2	1.61	0.66
9:12:101:ILE:H	9:12:101:ILE:HD12	1.60	0.66
13:16:47:VAL:O	13:16:50:PRO:HD2	1.94	0.66
30:33:41:ARG:HA	30:33:44:ARG:NH1	2.10	0.66
54:01:1571:A:H2'	54:01:1572:A:C8	2.31	0.66
19:22:28:ASN:OD1	19:22:91:GLN:HG3	1.95	0.66
52:03:15:VAL:HG23	52:03:33:LEU:HD21	1.77	0.66
54:01:1105:U:H2'	54:01:1106:G:H5"	1.78	0.66
1:04:71:ASP:O	1:04:73:ILE:HG13	1.94	0.66
37:G:75:LYS:HD3	37:G:88:VAL:HG11	1.76	0.66
43:M:25:GLY:H	53:A:1329:A:H5"	1.61	0.66
33:C:110:LEU:HD21	33:C:144:GLY:O	1.95	0.66
53:A:1287:A:H2	53:A:1353:G:H1'	1.60	0.66
54:01:704:G:H2'	54:01:726:G:H22	1.60	0.66
7:10:37:LYS:O	7:10:41:LEU:HB2	1.95	0.66
31:34:13:ASN:OD1	31:34:29:ALA:HB2	1.96	0.66
53:A:1391:U:H2'	53:A:1392:G:H8	1.61	0.66
54:01:974:G:H1'	54:01:975:A:C8	2.31	0.66
54:01:1153:C:H2'	54:01:1154:G:O4'	1.96	0.66
54:01:1539:U:H2'	54:01:1540:G:H8	1.58	0.66
54:01:310:A:H2'	54:01:311:A:H5"	1.76	0.66
54:01:774:G:C2'	54:01:775:G:H5"	2.26	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:10:27:VAL:O	7:10:83:ALA:HB3	1.96	0.66
22:25:19:VAL:HG22	22:25:34:VAL:HG22	1.78	0.66
35:E:10:LEU:HD12	35:E:11:GLN:N	2.11	0.66
51:U:48:LYS:HA	51:U:51:ALA:HB3	1.77	0.66
18:21:31:GLN:O	18:21:35:ILE:HG13	1.95	0.66
23:26:31:ASN:HD22	23:26:52:ALA:HB2	1.59	0.66
32:B:72:LYS:HZ1	32:B:204:ASP:HA	1.59	0.66
38:H:29:SER:HB3	38:H:32:LYS:CG	2.26	0.66
46:P:18:GLN:NE2	46:P:35:ARG:HH21	1.92	0.66
54:01:435:C:H2'	54:01:436:C:H5'	1.77	0.66
30:33:57:VAL:HA	30:33:60:CYS:SG	2.36	0.66
31:34:1:MET:HB3	31:34:34:LYS:HE2	1.77	0.66
53:A:1512:U:H2'	53:A:1513:A:C8	2.30	0.66
2:05:3:GLY:C	2:05:4:LEU:HD12	2.16	0.66
3:06:178:VAL:HG13	3:06:179:SER:H	1.61	0.66
10:13:35:VAL:HG22	10:13:69:VAL:HG12	1.78	0.66
13:16:65:LEU:O	13:16:68:ALA:HB3	1.96	0.66
14:17:99:TYR:HA	14:17:103:VAL:HG21	1.78	0.66
21:24:42:LEU:O	21:24:42:LEU:HD12	1.97	0.66
41:K:126:ARG:NH2	53:A:692:U:H5"	2.11	0.66
6:09:37:VAL:O	6:09:39:ALA:N	2.28	0.65
8:11:107:GLU:O	8:11:110:GLN:HG2	1.96	0.65
15:18:3:ILE:HD12	15:18:3:ILE:N	2.12	0.65
15:18:20:ARG:HD3	15:18:112:ARG:HH12	1.61	0.65
38:H:17:GLN:HE21	38:H:71:VAL:HB	1.61	0.65
40:J:86:ALA:O	40:J:90:LEU:HB2	1.96	0.65
52:03:173:THR:HG21	52:03:192:LEU:HD21	1.78	0.65
54:01:45:G:C5'	54:01:46:G:H5'	2.14	0.65
9:12:29:ALA:HA	9:12:32:LEU:HD12	1.78	0.65
17:20:74:ILE:N	17:20:74:ILE:HD12	2.12	0.65
27:30:37:HIS:CD2	27:30:43:THR:HG22	2.31	0.65
34:D:131:ILE:HD12	34:D:131:ILE:N	2.10	0.65
49:S:17:LYS:HG2	49:S:30:LEU:HD23	1.78	0.65
2:05:81:GLU:HG2	2:05:82:PHE:N	2.11	0.65
3:06:154:ASP:OD1	3:06:157:LEU:HB3	1.95	0.65
8:11:91:LYS:HB2	8:11:95:ASP:OD1	1.96	0.65
17:20:39:LEU:O	17:20:49:ILE:HG23	1.97	0.65
31:34:23:ILE:CD1	54:01:1032:A:H1'	2.26	0.65
37:G:112:ASP:O	37:G:113:LYS:HD3	1.94	0.65
54:01:796:C:H2'	54:01:797:G:H8	1.61	0.65
55:02:66:A:H5"	55:02:67:G:OP1	1.95	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:19:50:ARG:HH11	16:19:50:ARG:HG3	1.62	0.65
53:A:245:U:O2'	53:A:246:A:H5'	1.96	0.65
3:06:90:GLN:HE21	3:06:92:HIS:CE1	2.14	0.65
13:16:22:ARG:HH22	54:01:2709:G:H5'	1.62	0.65
13:16:90:ARG:NE	13:16:116:VAL:HG11	2.11	0.65
16:19:91:ARG:HH11	16:19:91:ARG:HG3	1.62	0.65
38:H:8:ASP:O	38:H:11:THR:HG22	1.97	0.65
54:01:554:U:H2'	54:01:555:G:O4'	1.96	0.65
18:21:42:LYS:HB2	54:01:2010:G:H5"	1.76	0.65
35:E:96:GLN:CG	35:E:97:PRO:HD2	2.27	0.65
46:P:5:ARG:HH11	53:A:376:G:H4'	1.62	0.65
52:03:194:VAL:O	52:03:198:LYS:HG3	1.97	0.65
54:01:45:G:H5"	54:01:46:G:C5'	2.15	0.65
54:01:576:U:H2'	54:01:577:G:H8	1.62	0.65
5:08:132:LEU:HD12	5:08:132:LEU:O	1.97	0.65
13:16:35:LYS:HG2	13:16:110:MET:HE2	1.79	0.65
48:R:41:SER:O	48:R:45:GLY:N	2.30	0.65
2:05:133:THR:O	2:05:134:HIS:HB2	1.95	0.65
8:11:127:SER:HA	54:01:1080:A:H1'	1.79	0.65
19:22:61:LEU:C	19:22:61:LEU:HD12	2.17	0.65
54:01:2248:C:H2'	54:01:2249:U:H5'	1.78	0.65
15:18:90:ALA:HB2	15:18:112:ARG:HD3	1.79	0.65
32:B:206:ILE:HD12	59:Z:37:LEU:HD21	1.78	0.65
53:A:1391:U:H2'	53:A:1392:G:C8	2.32	0.65
54:01:2350:C:H2'	54:01:2351:G:O4'	1.97	0.65
2:05:9:VAL:O	2:05:26:VAL:HB	1.97	0.65
11:14:63:LYS:CA	30:33:12:ARG:HG2	2.26	0.65
27:30:24:VAL:HG13	27:30:25:THR:N	2.12	0.65
53:A:335:C:H2'	53:A:336:A:C8	2.32	0.65
54:01:2800:A:H3'	54:01:2801:G:H5'	1.78	0.65
39:I:117:LEU:HG	39:I:123:ARG:HD3	1.77	0.64
41:K:84:MET:HG2	41:K:110:THR:OG1	1.97	0.64
51:U:64:ALA:C	51:U:66:ARG:N	2.50	0.64
54:01:1053:C:C2'	54:01:1054:A:H5"	2.26	0.64
1:04:62:ARG:HH11	1:04:62:ARG:HG3	1.61	0.64
1:04:177:SER:HB2	54:01:1819:A:O2'	1.97	0.64
7:10:67:THR:HG23	7:10:74:ASP:HB2	1.78	0.64
9:12:114:LEU:O	9:12:117:ALA:HB3	1.97	0.64
31:34:37:GLN:HG3	31:34:38:GLY:H	1.62	0.64
39:I:35:GLU:O	39:I:40:ARG:HG3	1.98	0.64
54:01:814:C:H1'	54:01:1225:G:H21	1.61	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:04:16:VAL:CB	1:04:203:VAL:HG22	2.26	0.64
1:04:242:HIS:O	1:04:244:VAL:HG13	1.97	0.64
21:24:9:ARG:HG2	21:24:41:GLU:HB2	1.78	0.64
33:C:179:ALA:HB1	33:C:202:PHE:HE1	1.63	0.64
43:M:27:THR:HG21	53:A:1328:C:H5"	1.78	0.64
54:01:796:C:H2'	54:01:797:G:C8	2.32	0.64
54:01:2156:G:H2'	54:01:2157:G:H5'	1.78	0.64
54:01:2286:G:H4'	54:01:2287:A:O5'	1.97	0.64
13:16:33:ILE:HD12	13:16:118:ARG:HH22	1.62	0.64
18:21:6:LYS:HG3	54:01:494:G:H4'	1.79	0.64
32:B:68:PHE:HD1	32:B:161:PHE:HB3	1.62	0.64
52:03:62:ALA:HA	52:03:162:ARG:HA	1.79	0.64
54:01:703:U:H2'	54:01:704:G:O4'	1.96	0.64
54:01:1053:C:C3'	54:01:1054:A:H5"	2.28	0.64
54:01:1571:A:H2'	54:01:1572:A:H8	1.63	0.64
7:10:8:LYS:O	7:10:12:VAL:HG23	1.98	0.64
33:C:59:PRO:HD2	33:C:62:SER:O	1.98	0.64
54:01:197:A:H4'	54:01:2069:G:OP2	1.97	0.64
54:01:1300:G:H4'	54:01:1301:A:C5'	2.26	0.64
2:05:55:LYS:HD2	2:05:77:ARG:HA	1.77	0.64
11:14:59:ARG:HD2	54:01:250:G:H4'	1.80	0.64
14:17:52:SER:OG	14:17:54:VAL:HG12	1.96	0.64
34:D:131:ILE:H	34:D:131:ILE:CD1	2.11	0.64
37:G:139:ASP:O	37:G:143:MET:HG2	1.98	0.64
46:P:4:ILE:HG12	46:P:21:VAL:HG22	1.79	0.64
56:X:21:A:H61	56:X:46:G:H2'	1.62	0.64
56:W:6:G:O2'	56:W:7:G:H5'	1.98	0.64
59:Z:11:GLU:O	59:Z:15:GLU:HG3	1.98	0.64
3:06:178:VAL:HG13	3:06:179:SER:N	2.12	0.64
8:11:100:ILE:HG22	8:11:101:SER:N	2.13	0.64
8:11:123:ALA:HA	8:11:126:ARG:CZ	2.28	0.64
15:18:52:ARG:HE	54:01:2845:U:H4'	1.63	0.64
8:11:27:LEU:HD11	8:11:34:ILE:HG13	1.79	0.64
23:26:31:ASN:ND2	23:26:52:ALA:HB2	2.13	0.64
41:K:109:ILE:HG21	51:U:16:ARG:NH1	2.12	0.64
46:P:12:LYS:HG2	46:P:13:LYS:HG2	1.80	0.64
25:28:35:VAL:HG22	25:28:36:GLU:H	1.63	0.64
32:B:117:GLU:O	32:B:121:GLN:HG3	1.98	0.64
35:E:107:GLY:CA	53:A:9:G:H5'	2.25	0.64
35:E:149:PRO:HA	35:E:152:VAL:HG22	1.80	0.64
41:K:34:THR:HA	41:K:41:LEU:HG	1.80	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:N:27:LYS:O	44:N:31:SER:HB2	1.98	0.64
51:U:14:ALA:HB1	51:U:16:ARG:HG2	1.80	0.64
53:A:667:G:H2'	53:A:668:G:H8	1.63	0.64
54:01:69:C:O2'	54:01:70:G:H5'	1.98	0.64
54:01:2039:U:H2'	54:01:2040:G:H8	1.62	0.64
16:19:93:ILE:O	16:19:97:ILE:HG13	1.98	0.63
36:F:51:ILE:HD11	48:R:65:SER:HB2	1.79	0.63
54:01:2799:A:H2'	54:01:2800:A:H5'	1.80	0.63
4:07:116:LEU:HD22	4:07:174:PHE:HB3	1.79	0.63
6:09:9:VAL:HB	6:09:13:GLY:CA	2.29	0.63
18:21:57:ASN:OD1	54:01:495:G:H1'	1.97	0.63
35:E:98:ALA:HB2	35:E:123:LEU:HG	1.81	0.63
54:01:2423:U:O2'	54:01:2425:A:H2'	1.98	0.63
54:01:2537:U:H2'	54:01:2538:C:C6	2.34	0.63
53:A:501:C:H2'	53:A:502:A:C8	2.33	0.63
54:01:441:U:O2'	54:01:442:G:H5'	1.98	0.63
54:01:1872:A:H2'	54:01:1873:G:O4'	1.98	0.63
54:01:2508:G:H1	54:01:2580:U:H3	1.44	0.63
1:04:140:VAL:HG12	1:04:191:LEU:HD23	1.81	0.63
2:05:135:GLY:HA2	54:01:743:A:OP1	1.98	0.63
4:07:134:GLN:HB3	4:07:149:ARG:O	1.99	0.63
11:14:101:ILE:HG13	11:14:102:GLY:N	2.11	0.63
43:M:15:VAL:HG23	43:M:16:ILE:CD1	2.26	0.63
1:04:30:ALA:HB3	1:04:31:PRO:HD3	1.81	0.63
9:12:117:ALA:HA	9:12:120:ARG:NH2	2.12	0.63
16:19:40:LYS:HE3	54:01:563:A:H4'	1.79	0.63
18:21:51:LEU:O	18:21:55:ILE:HG13	1.97	0.63
34:D:7:LYS:NZ	34:D:21:LYS:HG3	2.14	0.63
54:01:679:C:H2'	54:01:680:C:H6	1.62	0.63
17:20:81:LYS:HD2	54:01:973:A:H5"	1.80	0.63
33:C:76:ILE:HB	33:C:80:GLY:HA2	1.79	0.63
40:J:10:LEU:CD1	40:J:72:ARG:HB2	2.27	0.63
47:Q:44:HIS:O	47:Q:70:LYS:HA	1.98	0.63
53:A:225:C:C3'	53:A:226:G:H5"	2.29	0.63
22:25:33:ILE:HG22	22:25:34:VAL:HG23	1.81	0.63
35:E:133:ILE:HD12	35:E:133:ILE:N	2.11	0.63
36:F:5:GLU:HA	36:F:63:ASN:HA	1.79	0.63
43:M:91:ARG:HD2	54:01:888:C:C5	2.34	0.63
46:P:33:ILE:N	46:P:33:ILE:HD12	2.14	0.63
46:P:51:ARG:C	46:P:52:LEU:HD12	2.18	0.63
52:03:10:VAL:O	52:03:14:LYS:HG3	1.99	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:211:G:C2'	53:A:212:G:H5'	2.28	0.63
54:01:1026:G:H2'	54:01:1027:A:H8	1.64	0.63
38:H:95:MET:SD	38:H:129:ALA:HB1	2.39	0.63
54:01:2743:U:C3'	54:01:2744:G:H5"	2.28	0.63
1:04:239:PHE:O	1:04:241:LYS:HG3	1.99	0.63
41:K:49:SER:OG	41:K:68:ARG:HD3	1.99	0.63
54:01:774:G:O2'	54:01:775:G:H5"	1.99	0.63
1:04:116:GLN:HE21	1:04:121:ALA:CA	2.12	0.62
13:16:2:ARG:HD2	54:01:1653:G:H3'	1.80	0.62
22:25:38:GLY:HA2	54:01:2330:G:H21	1.62	0.62
38:H:9:MET:HG3	38:H:26:MET:SD	2.39	0.62
49:S:27:LYS:HG2	49:S:28:LYS:N	2.10	0.62
52:03:5:THR:O	52:03:9:ARG:HG3	1.98	0.62
10:13:13:ASN:HD21	10:13:98:ARG:HB2	1.64	0.62
14:17:11:ALA:O	14:17:15:ARG:HG2	1.99	0.62
20:23:96:LYS:C	20:23:98:ASN:H	2.02	0.62
33:C:35:ASP:O	33:C:38:VAL:HG22	1.99	0.62
35:E:13:LYS:HE2	35:E:115:GLU:OE2	1.98	0.62
54:01:2130:U:H5'	54:01:2159:G:N2	2.13	0.62
5:08:71:LEU:HA	5:08:74:MET:HB2	1.80	0.62
11:14:110:VAL:HB	11:14:127:VAL:HG13	1.82	0.62
13:16:79:LEU:CD2	13:16:83:LEU:HD12	2.30	0.62
15:18:90:ALA:HB2	15:18:112:ARG:HB2	1.80	0.62
42:L:2:THR:CG2	42:L:5:GLN:HG3	2.29	0.62
42:L:39:THR:HG22	42:L:40:THR:N	2.13	0.62
42:L:51:VAL:HG23	42:L:64:SER:O	1.99	0.62
5:08:82:PHE:CE2	5:08:137:LYS:HB2	2.34	0.62
8:11:118:GLY:HA3	8:11:124:MET:HG2	1.81	0.62
9:12:36:LEU:O	9:12:51:GLY:HA3	1.99	0.62
14:17:70:ALA:O	14:17:74:VAL:HG23	2.00	0.62
17:20:51:VAL:HB	17:20:52:PRO:HD2	1.81	0.62
19:22:51:PHE:O	19:22:53:VAL:HG13	2.00	0.62
36:F:12:PRO:HG2	36:F:54:LEU:HD21	1.80	0.62
49:S:62:THR:HG22	49:S:63:ASP:N	2.11	0.62
53:A:1280:A:O2'	53:A:1281:C:H5'	2.00	0.62
54:01:1368:G:H2'	54:01:1369:G:H8	1.64	0.62
54:01:2743:U:H2'	54:01:2744:G:H5"	1.81	0.62
7:10:97:LYS:HE2	7:10:127:ALA:HA	1.81	0.62
28:31:4:ILE:HD12	28:31:4:ILE:N	2.13	0.62
34:D:66:VAL:HG12	34:D:67:LEU:N	2.13	0.62
42:L:23:LEU:HG	42:L:24:GLU:H	1.64	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:2329:U:H2'	54:01:2330:G:H8	1.64	0.62
24:27:42:LEU:O	24:27:46:VAL:HG23	1.99	0.62
36:F:12:PRO:O	36:F:15:SER:HB3	1.99	0.62
41:K:43:TRP:HZ3	41:K:45:THR:HG23	1.64	0.62
54:01:1972:G:H2'	54:01:1973:G:H8	1.65	0.62
1:04:48:ILE:HD11	1:04:51:ARG:HA	1.80	0.62
1:04:229:HIS:ND1	1:04:230:PRO:HD2	2.15	0.62
8:11:34:ILE:HD12	8:11:34:ILE:N	2.14	0.62
13:16:44:LEU:HD23	13:16:113:ILE:HD13	1.80	0.62
36:F:7:VAL:HG22	36:F:61:LEU:HD13	1.80	0.62
3:06:163:ASN:HB2	54:01:322:A:OP2	2.00	0.62
8:11:93:ASN:HD22	54:01:1077:A:H4'	1.64	0.62
20:23:32:LYS:HB3	20:23:63:ALA:HB1	1.80	0.62
32:B:15:PHE:CB	59:Z:43:LYS:HB2	2.29	0.62
34:D:144:ILE:HD12	34:D:144:ILE:N	2.14	0.62
34:D:164:ARG:HG2	34:D:165:GLU:H	1.65	0.62
41:K:111:ASP:OD1	41:K:113:THR:HG23	2.00	0.62
52:03:4:LEU:HD12	52:03:12:ARG:CD	2.29	0.62
35:E:35:LEU:HD22	35:E:133:ILE:HG13	1.80	0.62
35:E:75:LEU:O	35:E:75:LEU:HD12	1.99	0.62
48:R:25:ILE:C	48:R:25:ILE:HD12	2.20	0.62
7:10:94:ARG:O	7:10:98:GLU:HG2	2.00	0.62
13:16:33:ILE:HD12	13:16:118:ARG:NH2	2.14	0.62
20:23:4:ILE:HD12	20:23:4:ILE:H	1.65	0.62
35:E:15:ILE:HD13	35:E:36:THR:HA	1.82	0.62
35:E:88:HIS:CE1	35:E:89:THR:HG1	2.18	0.62
44:N:92:ILE:HD12	44:N:92:ILE:N	2.12	0.62
1:04:106:PRO:HD2	1:04:109:LEU:HD22	1.81	0.61
3:06:23:PHE:N	3:06:114:ARG:HH22	1.98	0.61
15:18:105:LYS:O	15:18:108:ARG:HG2	2.00	0.61
18:21:74:ILE:HG23	18:21:74:ILE:O	2.00	0.61
37:G:36:SER:HA	39:I:42:THR:HG21	1.81	0.61
47:Q:6:THR:C	47:Q:7:LEU:HD12	2.20	0.61
52:03:66:PRO:HD2	52:03:188:ASN:OD1	2.00	0.61
3:06:40:ARG:HD2	54:01:443:A:C6	2.35	0.61
4:07:90:LEU:HD13	4:07:95:MET:HA	1.82	0.61
8:11:11:GLN:HB2	8:11:56:VAL:HG12	1.81	0.61
14:17:18:LEU:HD21	14:17:25:ARG:HB2	1.81	0.61
19:22:32:LEU:HD12	19:22:32:LEU:O	2.00	0.61
33:C:107:LYS:HD3	33:C:110:LEU:HD12	1.80	0.61
38:H:95:MET:C	38:H:97:GLY:H	2.04	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:J:10:LEU:HD12	40:J:10:LEU:O	2.00	0.61
54:01:1367:A:H2'	54:01:1368:G:H5'	1.82	0.61
1:04:69:ASN:HA	1:04:188:ARG:HH12	1.66	0.61
5:08:100:ASN:HA	5:08:116:LEU:HD12	1.82	0.61
23:26:65:THR:O	23:26:69:GLU:HG3	2.00	0.61
33:C:109:GLU:HB2	33:C:143:LEU:CD2	2.30	0.61
34:D:100:VAL:HG21	34:D:136:VAL:HG21	1.81	0.61
53:A:452:A:H61	53:A:480:U:H3	1.48	0.61
53:A:918:A:H2'	53:A:919:A:C8	2.35	0.61
54:01:1657:U:H2'	54:01:1658:C:C6	2.35	0.61
2:05:8:LYS:HB2	2:05:201:LEU:HD11	1.80	0.61
11:14:76:GLU:C	11:14:77:ILE:HD12	2.21	0.61
32:B:96:LEU:O	32:B:99:MET:HG3	1.99	0.61
35:E:15:ILE:HD12	35:E:15:ILE:N	2.15	0.61
41:K:59:PRO:HD3	41:K:90:PRO:HB2	1.80	0.61
54:01:575:A:O2'	54:01:576:U:H5'	2.00	0.61
54:01:2248:C:C2'	54:01:2249:U:H5'	2.31	0.61
3:06:1:MET:N	3:06:14:VAL:O	2.33	0.61
15:18:29:VAL:CG1	15:18:79:VAL:HG22	2.30	0.61
24:27:1:MET:HA	24:27:4:LYS:NZ	2.15	0.61
27:30:10:SER:O	27:30:14:MET:HG3	1.99	0.61
38:H:64:TYR:HD1	38:H:69:ALA:HA	1.65	0.61
40:J:39:PRO:HA	40:J:73:LEU:O	1.99	0.61
44:N:27:LYS:HE2	53:A:1317:C:OP2	2.00	0.61
54:01:2243:U:H2'	54:01:2244:U:C6	2.34	0.61
8:11:38:CYS:O	8:11:41:PHE:HB3	2.01	0.61
10:13:41:ILE:C	10:13:41:ILE:HD12	2.20	0.61
15:18:95:LYS:HZ3	54:01:2847:U:P	2.24	0.61
29:32:1:MET:HG3	29:32:1:MET:O	1.99	0.61
54:01:2818:U:H2'	54:01:2819:G:H8	1.66	0.61
32:B:134:LEU:HG	32:B:138:ARG:NE	2.14	0.61
35:E:111:ARG:HH11	35:E:111:ARG:HG3	1.65	0.61
44:N:8:ARG:HG2	44:N:12:ARG:NH1	2.14	0.61
6:09:27:ARG:NH1	23:26:55:MET:HB3	2.15	0.61
8:11:11:GLN:HB2	8:11:56:VAL:CG1	2.29	0.61
35:E:14:LEU:HA	35:E:36:THR:HG22	1.82	0.61
53:A:1237:C:OP1	53:A:1238:A:H1'	2.00	0.61
54:01:310:A:O2'	54:01:311:A:H5"	2.01	0.61
3:06:104:ALA:O	3:06:108:ILE:HG13	2.01	0.61
9:12:101:ILE:HD12	9:12:101:ILE:N	2.15	0.61
14:17:29:HIS:CE1	55:02:7:G:H5'	2.36	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:19:80:ASN:ND2	16:19:84:LYS:HE3	2.16	0.61
42:L:109:ARG:HB2	42:L:118:VAL:HG21	1.82	0.61
44:N:80:ARG:O	44:N:83:VAL:HG12	2.01	0.61
53:A:346:G:H2'	53:A:347:G:H5'	1.81	0.61
53:A:1540:U:O2	53:A:1540:U:H3'	2.01	0.61
54:01:1001:A:H2'	54:01:1002:G:O4'	2.01	0.61
2:05:122:VAL:HG21	2:05:141:ARG:HB3	1.83	0.61
8:11:36:GLU:HA	8:11:39:LYS:HB2	1.82	0.61
16:19:56:PHE:CE2	54:01:536:G:H4'	2.36	0.61
23:26:11:PRO:HG3	23:26:30:PRO:HD2	1.82	0.61
35:E:82:HIS:HB2	35:E:83:PRO:HD2	1.82	0.61
52:03:6:LYS:HD2	54:01:2132:U:H5	1.65	0.61
54:01:1570:A:H2'	54:01:1571:A:C8	2.36	0.61
54:01:2039:U:H2'	54:01:2040:G:C8	2.35	0.61
8:11:101:SER:HB3	8:11:104:GLN:HG3	1.82	0.60
13:16:73:ASN:O	13:16:76:VAL:HG12	2.01	0.60
25:28:40:THR:OG1	25:28:41:PRO:HD2	2.01	0.60
32:B:39:ILE:HG22	32:B:40:ILE:H	1.66	0.60
34:D:32:LYS:HG3	53:A:413:G:O6	2.01	0.60
53:A:328:C:H5'	53:A:329:A:H5'	1.83	0.60
54:01:1105:U:C2'	54:01:1106:G:H5"	2.30	0.60
5:08:66:THR:OG1	54:01:2748:A:H1'	1.99	0.60
7:10:29:ASP:HB3	7:10:32:GLY:HA3	1.84	0.60
9:12:21:THR:HA	9:12:61:LYS:HB3	1.82	0.60
21:24:10:LYS:HG3	21:24:11:GLU:H	1.67	0.60
25:28:35:VAL:HG22	25:28:36:GLU:N	2.16	0.60
38:H:76:ARG:NH1	38:H:125:ILE:HG23	2.17	0.60
39:I:33:SER:HB3	39:I:36:GLN:HG2	1.83	0.60
40:J:57:VAL:HG22	40:J:58:ASN:N	2.07	0.60
43:M:48:SER:HB2	43:M:51:GLN:HG3	1.83	0.60
1:04:153:LEU:HD11	1:04:181:ARG:HH22	1.66	0.60
6:09:132:PHE:HB2	6:09:140:ALA:HB3	1.82	0.60
37:G:78:ARG:HB3	37:G:83:THR:HG23	1.83	0.60
53:A:946:A:H2'	53:A:947:G:C8	2.35	0.60
9:12:81:ILE:HG23	9:12:82:GLY:N	2.15	0.60
27:30:9:ARG:HG3	27:30:9:ARG:HH21	1.67	0.60
34:D:27:ILE:HD12	34:D:27:ILE:N	2.16	0.60
36:F:15:SER:HA	36:F:18:VAL:HG23	1.83	0.60
37:G:138:GLU:O	37:G:142:ARG:HG2	2.01	0.60
38:H:55:LYS:HE3	53:A:653:U:H1'	1.84	0.60
44:N:26:LEU:HD23	44:N:47:LEU:CD1	2.31	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:U:32:ARG:HG3	51:U:33:ARG:HG2	1.84	0.60
53:A:1230:C:H5'	56:W:30:G:H5"	1.83	0.60
54:01:633:A:H2'	54:01:634:C:H5'	1.82	0.60
53:A:516:U:H3	53:A:533:A:H62	1.50	0.60
54:01:1447:C:H2'	54:01:1448:G:H8	1.65	0.60
6:09:117:LEU:N	6:09:118:PRO:HD3	2.17	0.60
37:G:111:GLY:HA2	37:G:118:ARG:HH11	1.66	0.60
46:P:29:ASN:N	46:P:29:ASN:HD22	1.98	0.60
52:03:7:ARG:O	52:03:11:ILE:HG13	2.01	0.60
53:A:1512:U:H2'	53:A:1513:A:H8	1.65	0.60
54:01:473:G:O2'	54:01:474:G:H5'	2.01	0.60
54:01:2389:G:H5"	54:01:2390:U:O4'	2.02	0.60
8:11:128:ILE:N	8:11:128:ILE:HD12	2.16	0.60
9:12:93:ILE:HG23	9:12:97:PRO:HB3	1.83	0.60
26:29:44:PHE:CE1	26:29:45:THR:HG23	2.37	0.60
33:C:13:ILE:HD11	53:A:1113:C:H4'	1.82	0.60
53:A:112:G:N2	53:A:354:G:H5'	2.16	0.60
53:A:667:G:H2'	53:A:668:G:C8	2.36	0.60
53:A:1033:G:C2'	53:A:1034:G:H5"	2.29	0.60
54:01:2553:G:C3'	54:01:2554:U:H5"	2.31	0.60
56:X:69:C:H2'	56:X:70:G:H5'	1.84	0.60
11:14:79:LEU:HG	11:14:111:ILE:O	2.00	0.60
15:18:3:ILE:H	15:18:3:ILE:CD1	2.15	0.60
18:21:29:VAL:HG23	18:21:69:LEU:O	2.01	0.60
46:P:67:ILE:N	46:P:67:ILE:HD12	2.16	0.60
53:A:346:G:C2'	53:A:347:G:H5'	2.32	0.60
54:01:581:C:H2'	54:01:582:A:C8	2.37	0.60
24:27:52:ARG:NH2	24:27:52:ARG:HB2	2.16	0.60
33:C:62:SER:HA	33:C:97:PRO:HG2	1.83	0.60
38:H:28:SER:HB3	38:H:56:PRO:HB2	1.83	0.60
40:J:15:HIS:HB3	40:J:70:HIS:CE1	2.36	0.60
42:L:113:ARG:HE	42:L:120:ARG:HA	1.67	0.60
47:Q:28:VAL:HG22	47:Q:29:LYS:N	2.17	0.60
48:R:12:PHE:CD2	48:R:13:THR:HG22	2.36	0.60
50:T:82:ILE:HG13	50:T:83:ASN:N	2.17	0.60
54:01:582:A:H2'	54:01:583:G:C8	2.36	0.60
2:05:148:GLN:HE22	2:05:156:PHE:HE2	1.49	0.60
10:13:77:ILE:HG12	15:18:71:ARG:HG3	1.82	0.60
16:19:40:LYS:HG2	16:19:44:TYR:CE2	2.37	0.60
20:23:82:VAL:HG12	20:23:83:GLY:N	2.13	0.60
32:B:216:VAL:O	32:B:220:VAL:HG23	2.01	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:R:13:THR:O	48:R:17:VAL:N	2.35	0.60
53:A:31:G:H5'	53:A:306:A:C2	2.37	0.60
1:04:116:GLN:NE2	1:04:121:ALA:HA	2.16	0.59
4:07:102:LEU:HA	4:07:106:ALA:HB3	1.84	0.59
5:08:36:LEU:HD22	5:08:67:ALA:HB1	1.84	0.59
42:L:74:GLN:O	42:L:76:HIS:N	2.32	0.59
44:N:20:PHE:O	44:N:21:ALA:HB3	2.02	0.59
53:A:252:U:O2	53:A:252:U:H2'	2.01	0.59
54:01:215:G:C4'	54:01:216:A:H4'	2.31	0.59
3:06:134:LEU:HD21	3:06:161:ALA:HB2	1.83	0.59
4:07:140:ILE:HD12	4:07:140:ILE:N	2.18	0.59
12:15:40:ARG:NH1	12:15:73:ILE:HG13	2.17	0.59
15:18:113:LEU:HD12	15:18:113:LEU:O	2.01	0.59
16:19:105:PHE:HA	16:19:108:LEU:HD12	1.84	0.59
24:27:1:MET:HA	24:27:4:LYS:HE2	1.84	0.59
32:B:3:VAL:HG11	32:B:211:LEU:HD11	1.84	0.59
33:C:122:GLN:O	33:C:127:VAL:HG12	2.02	0.59
52:03:190:GLU:HA	52:03:193:LEU:HD12	1.83	0.59
54:01:161:A:H3'	54:01:162:U:H5"	1.84	0.59
26:29:46:GLY:HA2	26:29:49:ARG:HH21	1.67	0.59
38:H:6:ILE:HG21	38:H:76:ARG:NH1	2.16	0.59
46:P:24:SER:HB2	53:A:377:G:H5"	1.84	0.59
54:01:2156:G:C2'	54:01:2157:G:H5'	2.32	0.59
3:06:24:ASN:HD22	3:06:27:LEU:CB	2.15	0.59
10:13:79:PHE:HD1	15:18:69:VAL:HG22	1.67	0.59
11:14:70:LYS:O	11:14:73:ILE:HG12	2.02	0.59
11:14:77:ILE:HD12	11:14:77:ILE:N	2.17	0.59
52:03:8:MET:O	52:03:12:ARG:HG3	2.03	0.59
54:01:322:A:H5'	54:01:340:A:H1'	1.84	0.59
54:01:1900:A:H1'	54:01:1970:A:H2'	1.83	0.59
54:01:2019:A:H2	54:01:2035:G:H22	1.51	0.59
1:04:5:CYS:SG	1:04:17:LYS:HE2	2.43	0.59
1:04:129:LEU:HD11	1:04:134:ILE:HG12	1.84	0.59
4:07:91:ARG:HA	4:07:95:MET:HB3	1.85	0.59
12:15:36:VAL:HG23	12:15:128:THR:HA	1.82	0.59
54:01:729:G:H4'	54:01:763:G:H5'	1.83	0.59
54:01:825:A:H2'	54:01:826:U:C6	2.37	0.59
55:02:55:U:H2'	55:02:56:G:C8	2.38	0.59
3:06:6:LYS:HG3	3:06:7:ASP:H	1.66	0.59
7:10:24:SER:OG	7:10:117:LEU:HD12	2.02	0.59
7:10:29:ASP:H	7:10:56:ARG:HH22	1.48	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:18:96:LEU:HB3	15:18:99:LEU:HD13	1.83	0.59
41:K:43:TRP:CZ3	41:K:45:THR:HG23	2.37	0.59
41:K:121:ARG:HG3	51:U:35:GLU:OE1	2.02	0.59
52:03:26:ALA:HA	52:03:29:LEU:HB3	1.83	0.59
53:A:501:C:H2'	53:A:502:A:H8	1.66	0.59
54:01:2329:U:H2'	54:01:2330:G:C8	2.38	0.59
55:02:3:C:C3'	55:02:4:C:H5"	2.33	0.59
34:D:96:ARG:O	34:D:100:VAL:HG23	2.03	0.59
39:I:74:GLN:O	39:I:78:ILE:HG13	2.02	0.59
45:O:45:HIS:O	45:O:46:LYS:HB2	2.02	0.59
53:A:1238:A:H62	53:A:1301:U:H3	1.49	0.59
54:01:2210:U:H4'	54:01:2211:A:H2	1.67	0.59
56:X:71:C:H2'	56:X:72:A:C8	2.37	0.59
59:Z:100:LYS:HB2	59:Z:100:LYS:NZ	2.17	0.59
28:31:37:LYS:HB2	28:31:48:TYR:CE2	2.37	0.59
29:32:29:GLN:O	29:32:32:ALA:HB3	2.03	0.59
47:Q:46:HIS:HA	47:Q:70:LYS:HD2	1.84	0.59
50:T:74:HIS:O	50:T:78:LEU:HB2	2.01	0.59
53:A:824:G:H2'	53:A:825:A:H8	1.68	0.59
54:01:121:G:H4'	54:01:149:A:H5'	1.84	0.59
54:01:546:U:H2'	54:01:547:A:H4'	1.84	0.59
17:20:49:ILE:HG22	17:20:54:VAL:N	2.18	0.59
34:D:143:SER:C	34:D:144:ILE:HD12	2.23	0.59
37:G:42:VAL:O	37:G:46:LEU:HD13	2.02	0.59
53:A:102:G:H2'	53:A:103:U:C6	2.38	0.59
54:01:254:G:C2'	54:01:255:A:H5"	2.32	0.59
18:21:41:LYS:O	18:21:44:ALA:HB3	2.03	0.59
40:J:15:HIS:O	40:J:18:ILE:HG22	2.03	0.59
41:K:33:ILE:O	41:K:41:LEU:HB2	2.02	0.59
54:01:2837:A:H2'	54:01:2838:G:H8	1.66	0.59
5:08:44:HIS:CG	5:08:45:ALA:H	2.21	0.58
6:09:2:GLN:HE22	6:09:20:ASN:HB2	1.68	0.58
7:10:56:ARG:H	54:01:1084:A:H4'	1.68	0.58
28:31:47:ILE:HD12	28:31:47:ILE:N	2.18	0.58
54:01:1965:C:H5"	54:01:1966:A:H2'	1.84	0.58
13:16:55:ALA:HA	13:16:80:PHE:CE1	2.37	0.58
15:18:79:VAL:HG13	15:18:80:VAL:HG13	1.85	0.58
37:G:144:ALA:O	37:G:148:LYS:N	2.36	0.58
38:H:14:ARG:HD2	53:A:875:U:O2'	2.03	0.58
48:R:59:LYS:HD3	53:A:734:G:O2'	2.03	0.58
2:05:149:ASN:O	2:05:152:PRO:HD2	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:07:7:TYR:OH	4:07:29:ARG:HB3	2.04	0.58
8:11:75:ALA:HA	8:11:78:LEU:HB2	1.85	0.58
9:12:71:ASP:O	9:12:73:VAL:HG23	2.02	0.58
19:22:50:LEU:HD23	24:27:26:PHE:CE2	2.38	0.58
25:28:8:GLN:HB3	25:28:31:ILE:HA	1.85	0.58
27:30:8:THR:HG21	54:01:2020:A:H5'	1.84	0.58
29:32:4:THR:O	29:32:5:PHE:HB2	2.02	0.58
33:C:71:ARG:O	33:C:75:VAL:HG23	2.03	0.58
34:D:37:PRO:HD2	34:D:41:GLY:HA3	1.85	0.58
34:D:195:ASN:ND2	34:D:198:LEU:HG	2.15	0.58
35:E:136:VAL:HG13	35:E:137:ARG:N	2.18	0.58
39:I:25:GLY:O	39:I:27:ILE:HD12	2.03	0.58
46:P:20:VAL:HG23	46:P:34:GLU:O	2.03	0.58
52:03:9:ARG:O	52:03:13:GLU:HG3	2.03	0.58
53:A:225:C:C2'	53:A:226:G:H5"	2.33	0.58
53:A:1527:U:O2'	53:A:1528:U:H5'	2.04	0.58
54:01:1062:G:N2	54:01:1063:G:H21	1.99	0.58
54:01:2257:U:O2'	54:01:2258:C:H5'	2.04	0.58
54:01:2285:C:O2'	54:01:2287:A:H1'	2.02	0.58
3:06:147:LEU:HD12	3:06:168:ASP:O	2.04	0.58
5:08:86:LEU:HD22	5:08:147:LEU:HD12	1.85	0.58
8:11:53:PRO:HB2	8:11:77:VAL:HG11	1.84	0.58
17:20:49:ILE:HG22	17:20:54:VAL:HA	1.86	0.58
18:21:69:LEU:HG	18:21:107:VAL:HG22	1.86	0.58
37:G:71:THR:O	37:G:90:VAL:HG12	2.02	0.58
38:H:95:MET:O	38:H:98:LEU:HG	2.02	0.58
51:U:17:ARG:HA	51:U:20:ARG:HH11	1.69	0.58
53:A:59:A:H1'	53:A:354:G:N2	2.18	0.58
53:A:797:C:H2'	53:A:798:U:C6	2.38	0.58
1:04:210:ALA:O	1:04:213:ARG:HB3	2.03	0.58
24:27:2:LYS:HG3	24:27:3:ALA:N	2.15	0.58
46:P:20:VAL:HG22	46:P:21:VAL:N	2.19	0.58
52:03:174:THR:CG2	54:01:2124:G:H4'	2.23	0.58
54:01:741:U:H2'	54:01:742:A:H8	1.69	0.58
54:01:1936:A:H2	54:01:1943:U:H3	1.50	0.58
5:08:154:GLU:OE2	5:08:156:TYR:HB2	2.04	0.58
17:20:80:ARG:NH2	54:01:571:U:H3'	2.19	0.58
18:21:56:ALA:HA	18:21:59:GLU:HG2	1.84	0.58
19:22:54:GLU:HB3	19:22:88:LYS:HD2	1.86	0.58
35:E:93:VAL:HG13	35:E:110:MET:HE2	1.86	0.58
38:H:10:LEU:HD22	38:H:74:ILE:CD1	2.33	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:I:114:LYS:H	39:I:120:ALA:HA	1.68	0.58
42:L:82:ARG:HD3	42:L:97:VAL:HG22	1.85	0.58
56:W:69:C:H2'	56:W:70:G:H8	1.69	0.58
1:04:216:ARG:HG2	1:04:217:PRO:HD2	1.85	0.58
9:12:31:GLU:HG2	9:12:142:ILE:CG1	2.32	0.58
9:12:101:ILE:H	9:12:101:ILE:CD1	2.16	0.58
12:15:33:LEU:HD12	12:15:129:THR:O	2.03	0.58
36:F:3:HIS:O	36:F:92:THR:HG22	2.04	0.58
36:F:100:SER:HB3	36:F:101:PRO:HD3	1.85	0.58
40:J:37:ARG:HB3	40:J:75:ASP:HB3	1.84	0.58
51:U:49:ALA:HA	53:A:723:U:O4	2.03	0.58
52:03:54:LYS:HG2	52:03:56:ASP:OD1	2.03	0.58
53:A:665:A:C1'	53:A:733:G:H1'	2.34	0.58
53:A:811:C:H5	53:A:812:G:C6	2.21	0.58
53:A:1218:C:H2'	53:A:1219:A:H8	1.66	0.58
3:06:63:LYS:HD3	54:01:2443:C:OP1	2.04	0.58
5:08:102:ILE:HD12	5:08:114:HIS:HD2	1.69	0.58
53:A:952:U:H2'	53:A:953:G:H8	1.69	0.58
2:05:151:THR:HB	2:05:152:PRO:CD	2.26	0.58
6:09:75:LEU:HB3	6:09:77:THR:HG22	1.86	0.58
8:11:109:ALA:O	8:11:113:ALA:N	2.37	0.58
48:R:12:PHE:CG	48:R:13:THR:N	2.64	0.58
50:T:82:ILE:HG13	50:T:83:ASN:H	1.69	0.58
59:Z:150:LYS:NZ	59:Z:150:LYS:HB3	2.18	0.58
5:08:51:PHE:CE2	5:08:68:ARG:HA	2.38	0.58
9:12:7:LYS:O	9:12:11:VAL:HG23	2.03	0.58
12:15:83:GLY:HA2	54:01:2276:G:OP2	2.03	0.58
21:24:77:VAL:HG22	21:24:78:GLN:N	2.19	0.58
32:B:202:ASN:ND2	32:B:205:ALA:CB	2.63	0.58
33:C:39:ARG:HH12	33:C:54:ILE:HG13	1.68	0.58
34:D:191:SER:O	34:D:192:ALA:HB3	2.03	0.58
54:01:225:C:H2'	54:01:226:A:O4'	2.03	0.58
55:02:114:C:H2'	55:02:115:A:H8	1.69	0.58
21:24:65:VAL:HG13	21:24:68:LYS:HB2	1.85	0.57
24:27:51:ALA:O	24:27:55:THR:N	2.37	0.57
30:33:54:LEU:O	30:33:58:ILE:HG13	2.04	0.57
48:R:40:PRO:HG2	48:R:43:ILE:HG12	1.86	0.57
54:01:2139:U:H2'	54:01:2140:G:C8	2.39	0.57
15:18:91:VAL:HG21	15:18:96:LEU:HD11	1.84	0.57
16:19:49:ARG:HG2	16:19:49:ARG:HH11	1.68	0.57
18:21:77:ASP:OD1	18:21:102:HIS:HB2	2.04	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:B:162:VAL:HG12	32:B:163:ILE:N	2.19	0.57
32:B:202:ASN:CA	59:Z:43:LYS:HZ1	2.15	0.57
36:F:89:VAL:HG12	36:F:90:MET:N	2.17	0.57
54:01:2715:C:C3'	54:01:2716:C:H5"	2.34	0.57
54:01:2743:U:H3'	54:01:2744:G:H5"	1.86	0.57
11:14:33:ARG:CD	11:14:40:SER:HA	2.35	0.57
14:17:5:SER:HA	14:17:8:ILE:HD12	1.85	0.57
14:17:94:ARG:O	14:17:97:PHE:HB2	2.05	0.57
40:J:22:THR:O	40:J:25:ILE:HG22	2.04	0.57
44:N:7:ALA:HA	44:N:10:VAL:HG12	1.86	0.57
7:10:67:THR:HB	7:10:68:PRO:HD3	1.86	0.57
9:12:8:PRO:HG3	9:12:48:VAL:HG13	1.86	0.57
12:15:75:GLU:CB	12:15:90:GLU:HG3	2.33	0.57
17:20:49:ILE:HG22	17:20:54:VAL:CA	2.34	0.57
18:21:29:VAL:O	18:21:32:ALA:HB3	2.04	0.57
32:B:202:ASN:HB2	59:Z:43:LYS:NZ	2.19	0.57
34:D:96:ARG:NH1	34:D:133:SER:HA	2.19	0.57
51:U:13:VAL:HG22	51:U:14:ALA:N	2.19	0.57
54:01:573:U:O2'	54:01:574:A:H3'	2.04	0.57
3:06:18:THR:HG23	3:06:106:LYS:HG2	1.86	0.57
6:09:103:VAL:O	6:09:107:GLY:N	2.37	0.57
10:13:25:LEU:HD12	10:13:38:ILE:HG22	1.86	0.57
14:17:26:LEU:HD13	14:17:39:VAL:HG22	1.87	0.57
16:19:49:ARG:HH21	17:20:72:VAL:HG13	1.68	0.57
18:21:34:ASP:HB3	27:30:27:LEU:HD22	1.87	0.57
21:24:82:TYR:CE1	21:24:83:LYS:HG3	2.39	0.57
25:28:37:ARG:NH2	54:01:929:U:H4'	2.19	0.57
34:D:90:LEU:HD23	34:D:93:LEU:HD12	1.86	0.57
46:P:22:ALA:HA	46:P:33:ILE:HD13	1.85	0.57
53:A:1005:A:H2'	53:A:1006:G:O4'	2.05	0.57
54:01:2691:C:H2'	54:01:2692:G:H8	1.69	0.57
54:01:2825:G:H2'	54:01:2826:A:H5'	1.87	0.57
5:08:3:VAL:CG2	54:01:2751:G:H4'	2.35	0.57
5:08:71:LEU:O	5:08:75:VAL:HG23	2.04	0.57
8:11:79:LEU:HA	8:11:82:ALA:HB3	1.85	0.57
31:34:19:ARG:HD2	31:34:24:ARG:HD2	1.85	0.57
36:F:51:ILE:HD11	48:R:65:SER:CB	2.35	0.57
53:A:10:A:H2'	53:A:11:G:H8	1.67	0.57
53:A:224:U:H2'	53:A:225:C:C6	2.40	0.57
53:A:304:U:O2'	53:A:305:G:H5'	2.05	0.57
53:A:769:G:H4'	53:A:1513:A:H4'	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:937:C:H2'	54:01:938:G:H8	1.68	0.57
54:01:1101:U:H2'	54:01:1102:C:H6	1.69	0.57
54:01:1447:C:H2'	54:01:1448:G:C8	2.39	0.57
55:02:95:U:H2'	55:02:96:G:H8	1.69	0.57
1:04:65:ASP:CB	1:04:101:ARG:HD3	2.34	0.57
2:05:179:ARG:HB3	2:05:188:LEU:HD12	1.86	0.57
7:10:59:LEU:HB3	7:10:62:ARG:CB	2.35	0.57
11:14:92:LEU:HD23	11:14:125:LEU:HD12	1.85	0.57
23:26:2:ARG:HD2	23:26:29:LEU:HD22	1.86	0.57
24:27:21:LEU:HA	24:27:25:GLN:HB3	1.86	0.57
33:C:126:ARG:HG2	33:C:126:ARG:HH11	1.70	0.57
34:D:142:VAL:O	34:D:179:GLY:N	2.36	0.57
35:E:108:GLY:O	35:E:109:ALA:HB3	2.05	0.57
36:F:3:HIS:N	36:F:92:THR:HG22	2.19	0.57
52:03:3:LYS:O	52:03:4:LEU:HD23	2.04	0.57
53:A:437:U:H2'	53:A:438:U:O4'	2.04	0.57
53:A:518:C:H5'	53:A:530:G:O4'	2.04	0.57
54:01:2715:C:H2'	54:01:2716:C:H5"	1.86	0.57
56:W:69:C:H2'	56:W:70:G:C8	2.39	0.57
5:08:90:GLY:HA3	5:08:93:TYR:CE2	2.40	0.57
11:14:38:GLN:HG3	54:01:805:G:H5"	1.86	0.57
31:34:1:MET:CE	31:34:36:ARG:HB3	2.34	0.57
33:C:161:ILE:C	33:C:161:ILE:HD12	2.25	0.57
34:D:10:LEU:HD13	34:D:62:ARG:HD2	1.87	0.57
34:D:170:LEU:HD12	34:D:170:LEU:O	2.04	0.57
38:H:42:GLU:HG2	38:H:100:ILE:HD13	1.86	0.57
42:L:2:THR:HB	42:L:5:GLN:OE1	2.03	0.57
53:A:78:A:H2'	53:A:79:G:O4'	2.05	0.57
53:A:545:C:O2'	53:A:546:A:H5'	2.05	0.57
53:A:1412:C:H2'	53:A:1413:A:C8	2.39	0.57
54:01:49:A:H5'	54:01:51:G:O4'	2.05	0.57
54:01:1319:C:O2'	54:01:1320:C:H5'	2.05	0.57
54:01:2554:U:H2'	54:01:2555:U:C6	2.39	0.57
1:04:83:ASP:HB2	1:04:90:ILE:CD1	2.35	0.57
3:06:128:ALA:C	3:06:156:ASN:HD21	2.07	0.57
12:15:12:MET:HA	54:01:910:A:N6	2.19	0.57
15:18:95:LYS:N	15:18:95:LYS:HD2	2.20	0.57
23:26:68:ALA:O	23:26:71:ARG:HB3	2.04	0.57
32:B:15:PHE:O	59:Z:43:LYS:HG3	2.04	0.57
33:C:156:LEU:HD21	33:C:163:ARG:O	2.05	0.57
38:H:120:LEU:HD12	38:H:120:LEU:O	2.04	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:L:38:THR:HA	42:L:49:ARG:O	2.05	0.57
48:R:21:ASP:OD2	48:R:23:LYS:HB2	2.05	0.57
54:01:1796:U:H2'	54:01:1797:G:H8	1.68	0.57
54:01:2328:A:H2'	54:01:2329:U:C6	2.40	0.57
59:Z:112:ILE:HG12	59:Z:122:VAL:HG22	1.86	0.57
4:07:112:ASP:OD1	43:M:65:GLU:HG3	2.05	0.57
4:07:113:PHE:CZ	4:07:175:PRO:HG2	2.39	0.57
5:08:16:VAL:HG11	5:08:49:LEU:CD1	2.35	0.57
7:10:97:LYS:HZ1	7:10:129:LEU:HB2	1.70	0.57
15:18:38:ARG:HG2	15:18:39:LEU:N	2.19	0.57
18:21:33:LEU:HD23	18:21:51:LEU:HD23	1.87	0.57
27:30:46:GLY:HA3	27:30:54:ILE:HG21	1.87	0.57
39:I:15:ALA:O	39:I:66:VAL:HG23	2.04	0.57
39:I:79:ARG:HH12	39:I:102:PHE:HA	1.70	0.57
39:I:87:MET:HG3	39:I:88:GLU:N	2.20	0.57
43:M:104:ASN:O	43:M:105:ALA:HB3	2.04	0.57
54:01:184:C:H2'	54:01:185:G:H8	1.70	0.57
54:01:669:G:H2'	54:01:669:G:N3	2.19	0.57
54:01:2487:G:H2'	54:01:2488:G:H8	1.70	0.57
18:21:23:LEU:HD22	27:30:23:ALA:HB2	1.85	0.56
33:C:125:ARG:HH11	33:C:125:ARG:HB2	1.70	0.56
38:H:54:THR:HG23	38:H:55:LYS:HG3	1.87	0.56
38:H:64:TYR:CD1	38:H:69:ALA:HA	2.40	0.56
44:N:45:LEU:HG	49:S:12:LEU:HD21	1.87	0.56
51:U:16:ARG:NH2	51:U:19:LYS:HE2	2.20	0.56
1:04:52:HIS:HA	1:04:216:ARG:HB3	1.86	0.56
3:06:24:ASN:ND2	3:06:27:LEU:HB2	2.17	0.56
10:13:113:MET:O	10:13:116:ILE:HG13	2.06	0.56
16:19:51:GLN:HE22	16:19:54:ARG:NH1	2.04	0.56
21:24:20:LEU:HD12	21:24:21:ARG:N	2.20	0.56
33:C:109:GLU:HB2	33:C:143:LEU:HD22	1.86	0.56
37:G:37:THR:O	37:G:41:ILE:HG13	2.04	0.56
39:I:20:ILE:HD11	39:I:60:LEU:HD13	1.87	0.56
39:I:94:ARG:HA	39:I:97:LEU:HB3	1.86	0.56
51:U:58:LYS:HA	51:U:61:ARG:HD3	1.86	0.56
53:A:392:C:H2'	53:A:393:A:H8	1.69	0.56
1:04:123:ILE:HG21	36:F:80:PHE:CE1	2.40	0.56
2:05:118:PHE:CE1	2:05:163:GLY:HA2	2.41	0.56
7:10:28:ALA:HB1	7:10:81:LEU:HB3	1.86	0.56
10:13:87:LEU:HD22	10:13:92:GLU:O	2.05	0.56
15:18:52:ARG:O	15:18:56:SER:N	2.38	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:19:35:PHE:O	16:19:39:ILE:HG13	2.05	0.56
32:B:125:PHE:HE1	32:B:136:ARG:HB2	1.70	0.56
36:F:100:SER:H	36:F:101:PRO:HD2	1.71	0.56
38:H:54:THR:C	38:H:56:PRO:HD3	2.26	0.56
39:I:79:ARG:NH1	39:I:102:PHE:HA	2.21	0.56
40:J:67:ILE:HG22	44:N:95:LEU:HA	1.86	0.56
41:K:53:GLY:O	41:K:56:LYS:HB3	2.06	0.56
42:L:86:VAL:HG21	42:L:89:LEU:HD13	1.88	0.56
43:M:9:PRO:HG3	43:M:17:ALA:HB1	1.86	0.56
45:O:64:LYS:HD3	53:A:755:G:OP2	2.05	0.56
46:P:66:THR:C	46:P:67:ILE:HD12	2.25	0.56
52:03:7:ARG:HH22	52:03:11:ILE:HD11	1.70	0.56
53:A:711:G:O2'	53:A:712:A:H5'	2.03	0.56
53:A:924:C:H2'	53:A:925:G:C8	2.40	0.56
53:A:960:U:H4'	53:A:961:U:O5'	2.05	0.56
53:A:1517:G:H2'	53:A:1518:A:H5'	1.87	0.56
54:01:306:U:H3	54:01:310:A:H62	1.53	0.56
54:01:502:A:H2'	54:01:503:A:H5'	1.86	0.56
54:01:799:G:H5"	54:01:800:A:H2'	1.87	0.56
54:01:947:A:H2'	54:01:948:C:H6	1.68	0.56
3:06:7:ASP:CG	3:06:8:ALA:H	2.09	0.56
15:18:16:VAL:O	15:18:18:SER:N	2.37	0.56
18:21:4:ILE:HG22	18:21:106:VAL:HG22	1.88	0.56
40:J:70:HIS:C	40:J:71:LEU:HD12	2.26	0.56
54:01:1720:U:H2'	54:01:1721:G:O4'	2.04	0.56
1:04:216:ARG:CG	1:04:217:PRO:HD2	2.36	0.56
16:19:30:VAL:HG13	54:01:580:U:O3'	2.05	0.56
31:34:1:MET:HE2	31:34:36:ARG:HB3	1.88	0.56
31:34:32:LYS:HE3	54:01:2478:A:H5'	1.87	0.56
42:L:46:SER:O	42:L:47:ALA:HB2	2.06	0.56
46:P:59:HIS:O	46:P:63:GLN:HG2	2.05	0.56
52:03:39:VAL:HG13	52:03:179:ASP:OD2	2.06	0.56
53:A:70:U:H2'	53:A:94:G:O6	2.06	0.56
54:01:1775:U:H2'	54:01:1776:G:O4'	2.05	0.56
6:09:79:THR:CG2	6:09:147:VAL:HG21	2.36	0.56
10:13:63:VAL:HG23	10:13:64:ARG:N	2.20	0.56
11:14:19:LEU:N	11:14:19:LEU:HD12	2.21	0.56
16:19:91:ARG:HG3	16:19:91:ARG:NH1	2.17	0.56
33:C:141:MET:HG3	33:C:169:GLU:HG2	1.88	0.56
37:G:24:LYS:O	37:G:28:ILE:HG13	2.06	0.56
41:K:51:PHE:CE2	41:K:64:VAL:HG11	2.41	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:1060:U:H5'	54:01:1062:G:C5'	2.35	0.56
54:01:1796:U:H2'	54:01:1797:G:C8	2.41	0.56
3:06:146:VAL:HG12	3:06:185:LYS:HB2	1.88	0.56
8:11:34:ILE:O	8:11:37:PHE:HB3	2.06	0.56
10:13:109:SER:O	10:13:110:GLU:HB3	2.05	0.56
15:18:88:ARG:NE	15:18:112:ARG:HH21	2.04	0.56
16:19:24:TYR:CG	16:19:25:GLY:N	2.73	0.56
37:G:52:ARG:HH12	37:G:121:ASN:ND2	2.03	0.56
44:N:86:ALA:HB1	44:N:91:GLU:HB2	1.86	0.56
53:A:1401:G:H2'	53:A:1402:C:O4'	2.06	0.56
53:A:1412:C:H2'	53:A:1413:A:H8	1.71	0.56
53:A:1484:C:H2'	53:A:1485:U:C6	2.41	0.56
54:01:414:C:H2'	54:01:415:A:C8	2.41	0.56
54:01:565:C:H2'	54:01:566:U:C6	2.40	0.56
54:01:2709:G:H2'	54:01:2710:C:C6	2.40	0.56
56:W:31:G:H2'	56:W:32:C:H6	1.71	0.56
1:04:120:ASP:HA	6:09:91:PHE:CZ	2.37	0.56
7:10:60:LEU:O	7:10:64:VAL:HB	2.06	0.56
48:R:12:PHE:C	48:R:14:ALA:H	2.09	0.56
53:A:763:G:H2'	53:A:764:C:H6	1.71	0.56
54:01:1186:G:H2'	54:01:1187:G:O4'	2.05	0.56
6:09:84:ALA:HB2	6:09:90:LEU:HD12	1.86	0.56
17:20:75:VAL:HG22	17:20:86:GLN:OE1	2.05	0.56
53:A:40:C:H2'	53:A:41:G:H8	1.71	0.56
53:A:1282:C:H2'	53:A:1283:U:C6	2.40	0.56
54:01:752:A:O2'	54:01:1781:U:H5'	2.06	0.56
54:01:996:A:H2'	54:01:997:G:H8	1.71	0.56
54:01:2281:A:O2'	54:01:2282:G:H5'	2.06	0.56
3:06:40:ARG:HD2	54:01:443:A:C5	2.41	0.56
6:09:45:GLU:HA	6:09:48:GLU:OE2	2.06	0.56
9:12:26:GLY:HA3	54:01:1140:C:H5'	1.87	0.56
14:17:40:ILE:HD13	55:02:8:C:O2'	2.06	0.56
16:19:80:ASN:HD21	16:19:84:LYS:HE3	1.71	0.56
17:20:14:VAL:HG23	17:20:20:VAL:HG21	1.88	0.56
26:29:44:PHE:CD1	26:29:45:THR:HG23	2.40	0.56
37:G:29:LEU:HD23	37:G:29:LEU:O	2.05	0.56
41:K:110:THR:HG22	51:U:4:LYS:HG3	1.88	0.56
54:01:576:U:H2'	54:01:577:G:C8	2.41	0.56
54:01:1906:G:H3'	54:01:1907:G:H5"	1.87	0.56
59:Z:101:ALA:O	59:Z:106:GLU:HB2	2.06	0.56
9:12:47:HIS:CE1	9:12:48:VAL:HG23	2.40	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:22:40:LYS:HE3	54:01:1599:U:OP2	2.06	0.55
32:B:6:ARG:HH22	59:Z:8:LEU:HD21	1.72	0.55
33:C:82:ASP:O	33:C:86:LEU:HG	2.06	0.55
34:D:130:ASN:HD22	53:A:619:U:H3	1.52	0.55
42:L:28:GLN:O	42:L:29:LYS:HD2	2.05	0.55
53:A:235:C:H2'	53:A:236:A:C8	2.41	0.55
53:A:1318:A:H2'	53:A:1319:A:H5'	1.87	0.55
54:01:873:C:H2'	54:01:874:G:C8	2.41	0.55
54:01:2475:C:C2'	54:01:2476:A:H5'	2.36	0.55
55:02:88:C:H4'	55:02:89:U:OP1	2.06	0.55
3:06:149:ILE:HG23	3:06:149:ILE:O	2.05	0.55
5:08:86:LEU:N	5:08:86:LEU:HD12	2.20	0.55
7:10:87:GLU:HG2	7:10:95:LEU:HD12	1.87	0.55
9:12:37:ARG:HH21	9:12:37:ARG:HG3	1.71	0.55
10:13:21:CYS:HA	10:13:41:ILE:CG2	2.35	0.55
15:18:29:VAL:HG22	15:18:80:VAL:HG12	1.87	0.55
32:B:39:ILE:HG22	32:B:40:ILE:N	2.21	0.55
34:D:145:ARG:HD2	34:D:147:LYS:NZ	2.20	0.55
35:E:52:ALA:HB3	35:E:58:ALA:HB2	1.89	0.55
43:M:68:LEU:O	43:M:72:ILE:HG13	2.06	0.55
52:03:52:ALA:CB	52:03:167:LYS:HA	2.35	0.55
53:A:1060:U:O2'	53:A:1061:G:H5'	2.05	0.55
3:06:32:VAL:HG13	3:06:33:VAL:N	2.21	0.55
5:08:34:ARG:NE	5:08:70:LEU:HD13	2.21	0.55
7:10:57:ASN:HD22	7:10:62:ARG:HG2	1.71	0.55
10:13:116:ILE:HD12	10:13:117:SER:N	2.22	0.55
27:30:51:ARG:HB2	27:30:51:ARG:HH21	1.71	0.55
35:E:14:LEU:C	35:E:15:ILE:HD12	2.26	0.55
35:E:82:HIS:CD2	38:H:98:LEU:HD21	2.39	0.55
38:H:50:VAL:O	38:H:50:VAL:HG13	2.06	0.55
43:M:54:THR:O	43:M:57:ASP:OD1	2.24	0.55
45:O:23:SER:OG	45:O:26:VAL:HG23	2.06	0.55
50:T:54:GLN:N	50:T:55:PRO:HD2	2.22	0.55
53:A:1418:A:H3'	53:A:1419:G:C5'	2.35	0.55
54:01:639:U:H2'	54:01:640:C:C6	2.41	0.55
59:Z:159:LEU:HD23	59:Z:159:LEU:H	1.72	0.55
1:04:207:ALA:HB2	54:01:1790:C:O2'	2.07	0.55
3:06:6:LYS:HG3	3:06:7:ASP:N	2.21	0.55
7:10:14:GLU:HA	7:10:17:GLU:OE1	2.05	0.55
8:11:128:ILE:HD12	8:11:128:ILE:H	1.71	0.55
24:27:1:MET:HA	24:27:4:LYS:CE	2.37	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:33:14:LYS:HD3	30:33:22:LYS:CE	2.37	0.55
38:H:46:GLU:O	38:H:61:THR:HB	2.06	0.55
41:K:124:LYS:HE2	53:A:1524:C:OP2	2.05	0.55
54:01:2055:C:H5'	54:01:2056:G:O5'	2.06	0.55
54:01:2183:A:H2'	54:01:2184:A:C8	2.41	0.55
3:06:84:THR:HG21	54:01:586:A:H5'	1.89	0.55
28:31:46:VAL:HG12	28:31:47:ILE:N	2.21	0.55
30:33:33:THR:HG23	30:33:34:LYS:N	2.21	0.55
32:B:202:ASN:ND2	32:B:205:ALA:HB2	2.15	0.55
32:B:207:ARG:NH2	59:Z:41:GLY:HA2	2.22	0.55
35:E:93:VAL:HG13	35:E:110:MET:CE	2.36	0.55
37:G:3:ARG:HH22	53:A:932:C:H5"	1.70	0.55
37:G:52:ARG:HH12	37:G:121:ASN:HD21	1.53	0.55
43:M:1:ALA:N	43:M:52:ILE:HD13	2.22	0.55
52:03:44:VAL:HG21	52:03:175:ILE:HG23	1.89	0.55
53:A:236:A:H2'	53:A:237:G:C8	2.41	0.55
53:A:626:G:H2'	53:A:627:G:C8	2.41	0.55
53:A:1255:G:O2'	53:A:1258:G:H1'	2.06	0.55
53:A:1432:G:H1'	53:A:1468:A:N6	2.22	0.55
54:01:2238:G:N3	54:01:2238:G:H2'	2.21	0.55
54:01:2715:C:H3'	54:01:2716:C:H5"	1.89	0.55
1:04:260:LYS:O	1:04:263:ASP:N	2.29	0.55
4:07:65:LEU:HD22	55:02:42:C:C5	2.40	0.55
4:07:103:ILE:HG22	4:07:174:PHE:CE1	2.41	0.55
10:13:66:LYS:HG3	10:13:81:GLY:O	2.07	0.55
21:24:42:LEU:HD13	21:24:47:VAL:HG21	1.88	0.55
33:C:13:ILE:CD1	53:A:1113:C:H4'	2.35	0.55
41:K:35:ASP:OD2	41:K:37:GLN:HB2	2.06	0.55
41:K:121:ARG:CZ	51:U:35:GLU:HG2	2.37	0.55
42:L:30:ARG:HG2	42:L:78:VAL:HG11	1.87	0.55
54:01:1326:U:H2'	54:01:1327:A:H8	1.70	0.55
10:13:66:LYS:HD3	54:01:1666:G:OP1	2.07	0.55
11:14:90:VAL:HB	11:14:122:VAL:HG22	1.88	0.55
12:15:59:ARG:HG3	12:15:60:GLN:N	2.21	0.55
16:19:38:VAL:O	16:19:41:ALA:HB3	2.07	0.55
43:M:23:GLY:O	53:A:1329:A:H4'	2.07	0.55
53:A:715:A:H2'	53:A:716:A:H8	1.72	0.55
54:01:2427:C:H5"	54:01:2429:G:H5'	1.87	0.55
55:02:95:U:H2'	55:02:96:G:C8	2.41	0.55
1:04:253:GLY:O	54:01:1844:C:H5'	2.07	0.55
4:07:37:MET:SD	4:07:149:ARG:HD3	2.47	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:12:47:HIS:HD1	9:12:48:VAL:HG23	1.71	0.55
20:23:49:PRO:HA	20:23:53:GLN:OE1	2.07	0.55
34:D:7:LYS:HE2	53:A:408:A:OP2	2.07	0.55
37:G:92:PRO:O	37:G:95:ARG:HB3	2.06	0.55
37:G:140:VAL:O	37:G:143:MET:HB2	2.07	0.55
38:H:72:GLU:HB3	38:H:129:ALA:OXT	2.07	0.55
42:L:116:TYR:OH	53:A:522:C:H5"	2.07	0.55
46:P:33:ILE:HD12	46:P:33:ILE:H	1.72	0.55
49:S:2:ARG:O	49:S:3:SER:HB3	2.07	0.55
52:03:21:TYR:CD2	52:03:222:VAL:HG13	2.42	0.55
54:01:465:G:C6	54:01:466:A:N6	2.75	0.55
6:09:26:ALA:HA	6:09:30:LEU:HB2	1.86	0.55
34:D:8:LEU:HD21	34:D:31:CYS:HB2	1.88	0.55
36:F:32:ALA:CB	36:F:70:VAL:HG21	2.36	0.55
48:R:25:ILE:HD12	48:R:26:ALA:N	2.22	0.55
54:01:821:A:C5'	54:01:822:G:H5"	2.33	0.55
54:01:2105:U:H2'	54:01:2106:U:O4'	2.07	0.55
1:04:229:HIS:NE2	1:04:246:PRO:HG3	2.21	0.55
13:16:53:THR:O	13:16:56:LYS:HG3	2.07	0.55
46:P:2:VAL:HG23	46:P:65:ALA:HA	1.88	0.55
50:T:43:LYS:HB3	50:T:86:ALA:HB3	1.88	0.55
53:A:1256:A:H1'	53:A:1258:G:C5	2.42	0.55
54:01:27:G:N2	54:01:512:G:H1'	2.22	0.55
54:01:2141:G:H22	54:01:2151:U:H1'	1.72	0.55
4:07:39:VAL:HG12	4:07:84:ILE:O	2.06	0.54
7:10:59:LEU:HB3	7:10:62:ARG:HB3	1.88	0.54
11:14:17:LYS:HD3	54:01:663:G:H5"	1.89	0.54
13:16:47:VAL:C	13:16:50:PRO:HD2	2.27	0.54
15:18:92:ARG:O	15:18:93:LYS:HB2	2.06	0.54
25:28:23:LEU:HD11	25:28:53:MET:SD	2.47	0.54
27:30:45:ASP:O	27:30:54:ILE:HG21	2.07	0.54
34:D:71:PHE:HE1	34:D:93:LEU:HD21	1.72	0.54
38:H:17:GLN:OE1	38:H:62:LEU:HD13	2.07	0.54
42:L:112:ALA:HB2	53:A:503:C:OP2	2.07	0.54
54:01:1213:A:N6	54:01:1236:G:H1'	2.22	0.54
54:01:1912:A:H62	54:01:1917:U:H3	1.53	0.54
54:01:2623:G:H2'	54:01:2624:G:H8	1.72	0.54
59:Z:100:LYS:HB2	59:Z:100:LYS:HZ3	1.72	0.54
1:04:86:ARG:HH12	54:01:1817:G:C5'	2.18	0.54
4:07:7:TYR:HA	4:07:11:VAL:CG2	2.37	0.54
5:08:140:ILE:HG13	5:08:141:GLY:N	2.21	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:12:110:PRO:HB3	54:01:1007:C:O3'	2.08	0.54
10:13:116:ILE:HD12	10:13:116:ILE:C	2.27	0.54
32:B:16:GLY:HA2	59:Z:43:LYS:NZ	2.23	0.54
41:K:57:SER:O	41:K:90:PRO:HG3	2.07	0.54
41:K:114:PRO:O	41:K:116:PRO:HD3	2.06	0.54
53:A:715:A:H2'	53:A:716:A:C8	2.42	0.54
53:A:1199:U:H2'	53:A:1200:C:H5'	1.87	0.54
54:01:184:C:H2'	54:01:185:G:C8	2.42	0.54
4:07:113:PHE:HZ	4:07:175:PRO:HG2	1.73	0.54
5:08:138:GLN:HE22	54:01:2759:G:N2	2.04	0.54
7:10:94:ARG:O	7:10:97:LYS:HG2	2.07	0.54
22:25:22:PHE:CD2	54:01:922:C:H1'	2.43	0.54
27:30:29:VAL:HG22	27:30:36:LYS:HE2	1.89	0.54
38:H:6:ILE:HD11	38:H:31:LEU:HD23	1.89	0.54
42:L:113:ARG:HD2	42:L:118:VAL:O	2.08	0.54
58:Y:44:G:H2'	58:Y:45:U:O4'	2.07	0.54
1:04:145:MET:HG2	1:04:152:GLN:HG3	1.90	0.54
2:05:77:ARG:HH21	2:05:77:ARG:HG3	1.71	0.54
4:07:97:GLU:HG2	26:29:9:TYR:OH	2.07	0.54
7:10:56:ARG:HB3	54:01:1084:A:O4'	2.08	0.54
10:13:6:THR:O	10:13:20:MET:HA	2.06	0.54
16:19:93:ILE:HG22	16:19:97:ILE:HD11	1.89	0.54
37:G:87:PRO:HG3	37:G:148:LYS:HA	1.89	0.54
42:L:43:LYS:HB3	42:L:44:PRO:CD	2.38	0.54
52:03:4:LEU:HB3	52:03:8:MET:HB3	1.89	0.54
54:01:1138:G:H2'	54:01:1139:G:O4'	2.07	0.54
54:01:2130:U:H5'	54:01:2159:G:H22	1.72	0.54
54:01:2180:U:H4'	56:X:17(A):U:O4'	2.06	0.54
59:Z:130:PHE:C	59:Z:131:LEU:HD12	2.26	0.54
2:05:29:VAL:O	2:05:185:ASN:HB3	2.07	0.54
19:22:2:ILE:HD11	54:01:144:A:H4'	1.90	0.54
19:22:48:GLN:OE1	19:22:55:VAL:HG23	2.07	0.54
21:24:20:LEU:HD11	21:24:27:PRO:HD3	1.89	0.54
25:28:21:ALA:O	25:28:25:GLY:N	2.40	0.54
30:33:38:LYS:HA	30:33:41:ARG:HE	1.72	0.54
36:F:50:PRO:HD2	48:R:73:HIS:HB3	1.89	0.54
38:H:21:LYS:O	38:H:62:LEU:HD12	2.07	0.54
47:Q:3:LYS:HG2	47:Q:4:ILE:N	2.23	0.54
47:Q:23:ALA:HA	47:Q:42:LYS:HA	1.90	0.54
53:A:662:U:H2'	53:A:663:A:C8	2.42	0.54
54:01:1827:U:O2'	54:01:1828:G:H5'	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:05:142:VAL:HB	2:05:143:PRO:HD2	1.90	0.54
3:06:52:VAL:HG13	54:01:452:G:OP1	2.07	0.54
3:06:97:ASN:HB2	3:06:100:MET:SD	2.47	0.54
3:06:192:ALA:O	3:06:196:VAL:HG23	2.07	0.54
7:10:3:LEU:CD1	7:10:6:GLN:H	2.17	0.54
8:11:40:ALA:HB1	8:11:68:PHE:CE2	2.42	0.54
28:31:4:ILE:HG23	28:31:27:ARG:HD3	1.89	0.54
36:F:29:ILE:HG21	36:F:64:VAL:HG21	1.89	0.54
40:J:12:ALA:HB2	40:J:96:VAL:HG13	1.89	0.54
47:Q:23:ALA:HB2	47:Q:42:LYS:HG2	1.89	0.54
52:03:181:ASP:HB2	52:03:184:LYS:HG2	1.89	0.54
54:01:741:U:H2'	54:01:742:A:C8	2.43	0.54
54:01:1190:G:H2'	54:01:1191:G:H8	1.72	0.54
10:13:26:GLY:O	10:13:30:ARG:HD2	2.07	0.54
18:21:8:ARG:HB3	18:21:102:HIS:ND1	2.23	0.54
27:30:54:ILE:HG23	27:30:56:LYS:H	1.73	0.54
32:B:25:LYS:HD2	32:B:191:ASP:OD2	2.07	0.54
34:D:62:ARG:HG3	34:D:62:ARG:HH11	1.73	0.54
38:H:7:ALA:HB2	38:H:76:ARG:HG2	1.88	0.54
39:I:46:VAL:HA	39:I:49:GLN:HG3	1.90	0.54
43:M:96:VAL:N	53:A:1308:U:OP1	2.41	0.54
43:M:100:ARG:HH12	53:A:950:U:H3'	1.73	0.54
53:A:832:G:O2'	53:A:833:G:H5'	2.07	0.54
54:01:196:A:H61	54:01:831:G:H21	1.56	0.54
54:01:609:A:H2'	54:01:610:C:O4'	2.07	0.54
54:01:713:G:H21	54:01:718:A:H62	1.56	0.54
54:01:1386:C:H2'	54:01:1387:A:C8	2.43	0.54
54:01:1956:U:H2'	54:01:1957:C:H5'	1.90	0.54
54:01:2343:U:O2'	54:01:2344:U:H5'	2.08	0.54
59:Z:4:SER:OG	59:Z:7:GLN:HB2	2.06	0.54
6:09:73:ASN:HD21	6:09:76:GLU:HA	1.68	0.54
7:10:87:GLU:OE2	7:10:95:LEU:HB2	2.08	0.54
11:14:3:LEU:HD23	54:01:1203:U:H5'	1.90	0.54
17:20:89:HIS:HE1	17:20:91:GLN:HB2	1.73	0.54
18:21:93:ALA:HB2	54:01:1614:A:C2	2.43	0.54
25:28:37:ARG:HH21	54:01:929:U:H4'	1.73	0.54
34:D:77:GLU:OE2	34:D:80:ARG:HD3	2.07	0.54
37:G:149:ALA:HA	41:K:60:PHE:CD2	2.43	0.54
40:J:57:VAL:O	40:J:58:ASN:HB2	2.08	0.54
44:N:40:ARG:NH2	49:S:6:LYS:HD2	2.22	0.54
49:S:30:LEU:H	49:S:48:ILE:HA	1.72	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:U:38:GLU:HB2	53:A:1526:G:OP2	2.08	0.54
54:01:511:U:H2'	54:01:512:G:H5'	1.89	0.54
54:01:819:A:C2	54:01:820:A:C4	2.96	0.54
54:01:1669:A:O3'	54:01:2549:G:H5'	2.08	0.54
54:01:2747:G:H21	54:01:2757:A:H62	1.56	0.54
4:07:125:GLY:HA2	4:07:162:ASP:HA	1.90	0.54
32:B:44:LYS:O	32:B:47:PRO:HG2	2.08	0.54
32:B:72:LYS:CE	32:B:74:ALA:HB3	2.37	0.54
37:G:111:GLY:HA2	37:G:118:ARG:CD	2.38	0.54
39:I:121:ARG:HG3	53:A:1348:U:H4'	1.90	0.54
40:J:22:THR:O	40:J:26:VAL:HG23	2.07	0.54
43:M:26:LYS:O	43:M:30:LYS:HG3	2.08	0.54
53:A:67:C:H2'	53:A:68:G:C8	2.43	0.54
53:A:235:C:H2'	53:A:236:A:H8	1.73	0.54
53:A:945:G:H2'	53:A:945:G:N3	2.23	0.54
53:A:1137:C:H4'	53:A:1138:G:N2	2.23	0.54
53:A:1502:A:H5'	53:A:1504:G:N7	2.23	0.54
54:01:828:U:H2'	54:01:829:A:C8	2.42	0.54
4:07:24:VAL:O	4:07:27:VAL:HG12	2.07	0.54
4:07:118:ALA:HB1	4:07:166:ARG:HE	1.73	0.54
18:21:60:HIS:CD2	54:01:486:C:H4'	2.43	0.54
27:30:43:THR:HG23	27:30:47:TYR:O	2.08	0.54
37:G:12:LEU:HD11	39:I:49:GLN:NE2	2.13	0.54
37:G:71:THR:HA	37:G:95:ARG:NH1	2.22	0.54
41:K:93:GLU:O	41:K:96:ILE:HG12	2.07	0.54
43:M:16:ILE:HD12	43:M:16:ILE:N	2.23	0.54
47:Q:29:LYS:HB2	47:Q:36:PHE:CE1	2.43	0.54
51:U:38:GLU:C	51:U:40:PRO:HD2	2.28	0.54
54:01:776:G:H22	54:01:2072:C:H5'	1.73	0.54
7:10:118:ILE:HG22	7:10:118:ILE:O	2.07	0.53
16:19:75:TYR:O	16:19:78:PHE:HB3	2.08	0.53
18:21:3:THR:HG21	18:21:58:ALA:HA	1.90	0.53
18:21:97:LEU:HD12	18:21:97:LEU:N	2.24	0.53
35:E:67:ARG:O	35:E:70:MET:HG3	2.08	0.53
47:Q:57:VAL:HG12	47:Q:58:VAL:N	2.23	0.53
52:03:50:ILE:HG22	52:03:204:ALA:HB1	1.90	0.53
53:A:79:G:O2'	53:A:80:A:H5'	2.08	0.53
53:A:352:C:H4'	53:A:354:G:OP1	2.07	0.53
54:01:2737:G:H2'	54:01:2738:A:C8	2.43	0.53
55:02:30:C:H2'	55:02:31:C:O4'	2.08	0.53
56:X:68:C:H2'	56:X:69:C:O4'	2.07	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:06:63:LYS:NZ	54:01:2060:A:H3'	2.22	0.53
12:15:3:GLN:HE21	12:15:92:TRP:HE1	1.56	0.53
23:26:63:ILE:O	23:26:67:LEU:HD13	2.09	0.53
26:29:12:ILE:HD13	26:29:26:SER:HB3	1.90	0.53
36:F:38:ARG:HH21	36:F:100:SER:HB2	1.72	0.53
43:M:15:VAL:CG2	43:M:16:ILE:HD12	2.31	0.53
53:A:225:C:H3'	53:A:226:G:H5"	1.90	0.53
53:A:1273:C:H2'	53:A:1274:A:O4'	2.09	0.53
53:A:1346:A:H2'	53:A:1346:A:N3	2.23	0.53
54:01:1053:C:H3'	54:01:1054:A:H5"	1.90	0.53
55:02:114:C:H2'	55:02:115:A:C8	2.42	0.53
59:Z:161:GLN:C	59:Z:162:LYS:HE3	2.27	0.53
2:05:51:THR:HB	2:05:79:LEU:HD23	1.89	0.53
2:05:149:ASN:HB3	54:01:2572:A:OP2	2.08	0.53
5:08:21:GLN:NE2	5:08:36:LEU:HB2	2.19	0.53
16:19:90:ASP:OD2	16:19:92:LYS:HB3	2.08	0.53
36:F:4:TYR:O	36:F:63:ASN:HA	2.09	0.53
42:L:21:PRO:HD2	42:L:93:ARG:HH21	1.73	0.53
53:A:880:C:H2'	53:A:881:G:H8	1.72	0.53
54:01:466:A:C2'	54:01:467:G:H5'	2.38	0.53
4:07:70:ARG:HG2	4:07:70:ARG:HH21	1.74	0.53
5:08:68:ARG:HG2	5:08:68:ARG:HH11	1.74	0.53
13:16:2:ARG:HA	13:16:5:LYS:CD	2.38	0.53
34:D:56:GLU:O	34:D:60:VAL:HG23	2.08	0.53
35:E:80:LEU:HD21	35:E:95:MET:SD	2.49	0.53
35:E:110:MET:HG3	35:E:139:THR:HG21	1.90	0.53
36:F:90:MET:SD	48:R:22:TYR:HE2	2.30	0.53
39:I:91:GLU:C	39:I:93:LEU:N	2.57	0.53
41:K:15:VAL:HG22	41:K:16:SER:N	2.22	0.53
46:P:48:GLU:HG3	46:P:49:GLY:N	2.18	0.53
53:A:1219:A:H2'	53:A:1220:G:C8	2.44	0.53
54:01:542:C:H2'	54:01:543:G:H5"	1.90	0.53
16:19:24:TYR:HE1	54:01:17:G:H4'	1.73	0.53
17:20:78:ARG:HB2	17:20:83:TYR:HD2	1.74	0.53
18:21:24:ILE:HD11	18:21:74:ILE:CD1	2.39	0.53
37:G:15:PRO:HG2	37:G:43:TYR:OH	2.07	0.53
42:L:29:LYS:O	42:L:80:LEU:HD12	2.08	0.53
44:N:92:ILE:H	44:N:92:ILE:CD1	2.15	0.53
53:A:736:C:H2'	53:A:737:C:C6	2.43	0.53
54:01:2078:C:H2'	54:01:2079:U:C6	2.44	0.53
54:01:2404:U:H2'	54:01:2405:G:O4'	2.09	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:X:25:C:N4	56:X:45:G:H22	2.07	0.53
4:07:3:LEU:HG	4:07:100:GLU:OE1	2.08	0.53
7:10:57:ASN:O	7:10:59:LEU:N	2.41	0.53
21:24:27:PRO:O	21:24:88:HIS:HA	2.09	0.53
32:B:16:GLY:CA	59:Z:43:LYS:HD2	2.39	0.53
33:C:116:ALA:HB1	33:C:186:SER:OG	2.08	0.53
34:D:85:THR:HB	35:E:102:THR:HG21	1.90	0.53
35:E:159:SER:HB3	35:E:162:GLU:HG2	1.90	0.53
36:F:40:GLU:CD	36:F:61:LEU:HD23	2.29	0.53
54:01:1038:G:H2'	54:01:1039:A:C8	2.44	0.53
54:01:2036:C:H2'	54:01:2037:A:C8	2.43	0.53
54:01:2487:G:H2'	54:01:2488:G:C8	2.43	0.53
54:01:2834:G:H2'	54:01:2879:A:H61	1.74	0.53
3:06:149:ILE:CG2	3:06:188:MET:HG2	2.37	0.53
8:11:34:ILE:H	8:11:34:ILE:CD1	2.21	0.53
10:13:63:VAL:HG23	10:13:64:ARG:H	1.72	0.53
13:16:82:GLU:O	13:16:85:PRO:HG2	2.09	0.53
16:19:49:ARG:CZ	17:20:72:VAL:HG13	2.39	0.53
16:19:111:LYS:HG2	17:20:48:LYS:HD2	1.90	0.53
22:25:42:HIS:HB2	22:25:75:PHE:CE1	2.43	0.53
40:J:98:VAL:HG22	40:J:99:GLN:N	2.24	0.53
50:T:70:LYS:HA	50:T:73:ARG:HH12	1.74	0.53
53:A:229:U:H2'	53:A:230:G:C8	2.43	0.53
54:01:833:A:H2'	54:01:834:G:C8	2.43	0.53
3:06:73:ILE:O	3:06:73:ILE:HG12	2.08	0.53
9:12:27:ARG:HH11	9:12:27:ARG:HG3	1.74	0.53
9:12:99:ARG:HD2	9:12:102:GLU:OE1	2.09	0.53
10:13:76:VAL:HG12	15:18:72:VAL:HG22	1.90	0.53
13:16:2:ARG:HA	13:16:5:LYS:HE2	1.91	0.53
34:D:195:ASN:HD22	34:D:198:LEU:CG	2.17	0.53
35:E:39:GLY:HA3	35:E:45:VAL:HG12	1.91	0.53
48:R:11:ARG:HH21	48:R:11:ARG:HG2	1.73	0.53
53:A:82:G:H2'	53:A:83:C:O4'	2.09	0.53
53:A:1004:A:H2'	53:A:1005:A:O4'	2.08	0.53
54:01:765:C:H2'	54:01:766:U:C6	2.43	0.53
54:01:1196:C:H2'	54:01:1197:G:H8	1.72	0.53
54:01:1657:U:H2'	54:01:1658:C:H6	1.74	0.53
54:01:2743:U:C2'	54:01:2744:G:H5"	2.38	0.53
55:02:35:C:H2'	55:02:36:C:H5'	1.89	0.53
3:06:29:HIS:O	3:06:32:VAL:HG12	2.08	0.53
6:09:51:ARG:HG2	6:09:55:GLU:OE1	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:16:103:ARG:NH1	54:01:1287:A:H5'	2.24	0.53
16:19:24:TYR:O	16:19:27:ARG:HB2	2.09	0.53
17:20:6:GLN:HA	17:20:10:LYS:O	2.08	0.53
32:B:96:LEU:HB2	32:B:99:MET:HG3	1.90	0.53
34:D:119:HIS:ND1	53:A:438:U:H4'	2.24	0.53
42:L:79:ILE:C	42:L:79:ILE:HD12	2.29	0.53
43:M:2:ARG:NE	43:M:8:ILE:HD11	2.11	0.53
43:M:22:TYR:CE1	53:A:1330:U:H4'	2.44	0.53
53:A:1326:U:O2'	53:A:1327:C:H5'	2.08	0.53
54:01:11:C:H2'	54:01:12:U:H5"	1.91	0.53
57:V:17:U:O2'	57:V:18:G:H5'	2.07	0.53
3:06:19:PHE:HE1	3:06:109:LEU:HD23	1.74	0.53
8:11:35:MET:O	8:11:39:LYS:HG2	2.09	0.53
21:24:65:VAL:HG13	21:24:65:VAL:O	2.08	0.53
35:E:106:ALA:HB2	35:E:124:ALA:HB3	1.91	0.53
39:I:94:ARG:O	39:I:98:ARG:N	2.42	0.53
46:P:29:ASN:ND2	46:P:29:ASN:N	2.56	0.53
47:Q:4:ILE:HD12	47:Q:4:ILE:O	2.08	0.53
53:A:166:U:H2'	53:A:167:A:C8	2.44	0.53
53:A:626:G:H2'	53:A:627:G:H8	1.74	0.53
53:A:1464:U:H2'	53:A:1465:A:C8	2.44	0.53
54:01:84:A:H4'	54:01:85:G:O5'	2.09	0.53
54:01:115:C:O2'	54:01:116:C:H5'	2.09	0.53
54:01:546:U:H2'	54:01:547:A:C4'	2.40	0.53
54:01:1979:U:H2'	54:01:1980:G:C8	2.43	0.53
54:01:2629:U:O2'	54:01:2630:G:H5"	2.08	0.53
3:06:196:VAL:O	3:06:200:LEU:HD13	2.09	0.52
19:22:5:GLU:HA	19:22:8:LEU:HD12	1.89	0.52
33:C:108:PRO:HA	33:C:114:LEU:CD1	2.39	0.52
35:E:106:ALA:CB	35:E:124:ALA:HB3	2.39	0.52
41:K:41:LEU:HD13	41:K:78:ILE:HD11	1.91	0.52
42:L:33:CYS:HB2	42:L:79:ILE:HG13	1.90	0.52
54:01:760:G:H2'	54:01:761:A:O4'	2.08	0.52
59:Z:12:SER:HA	59:Z:15:GLU:OE1	2.09	0.52
2:05:121:THR:HB	2:05:127:PHE:CD2	2.44	0.52
2:05:136:ASN:HA	54:01:2579:C:O2'	2.09	0.52
6:09:4:ILE:H	6:09:39:ALA:HB2	1.74	0.52
12:15:132:THR:HG22	12:15:133:LYS:N	2.24	0.52
42:L:35:ARG:HG2	42:L:37:TYR:CD2	2.44	0.52
42:L:43:LYS:HB3	42:L:44:PRO:HD3	1.91	0.52
43:M:106:ARG:HE	43:M:112:ARG:HH21	1.57	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:O:7:THR:O	45:O:11:VAL:HG23	2.09	0.52
53:A:883:C:O2'	53:A:884:U:H5'	2.09	0.52
54:01:1297:C:OP1	54:01:2710:C:H4'	2.09	0.52
54:01:1437:C:H2'	54:01:1438:U:C6	2.44	0.52
54:01:2208:C:H2'	54:01:2209:G:C8	2.44	0.52
2:05:89:GLU:HG3	2:05:90:PHE:N	2.24	0.52
17:20:53:PHE:O	17:20:54:VAL:C	2.47	0.52
18:21:25:ARG:NH2	54:01:519:U:H5"	2.24	0.52
34:D:21:LYS:O	34:D:22:SER:C	2.48	0.52
38:H:45:ILE:HD13	38:H:60:LEU:HD13	1.90	0.52
50:T:8:LYS:O	50:T:11:ILE:HG12	2.09	0.52
50:T:57:VAL:HG13	50:T:58:ASP:N	2.24	0.52
53:A:312:C:H2'	53:A:313:A:H8	1.74	0.52
1:04:7:PRO:HB3	1:04:13:ARG:HA	1.92	0.52
1:04:196:ASN:ND2	1:04:199:HIS:HB2	2.24	0.52
3:06:137:LYS:HA	3:06:140:ASP:OD2	2.09	0.52
5:08:136:ASP:OD2	5:08:139:VAL:HG23	2.09	0.52
7:10:120:ALA:O	7:10:121:SER:HB2	2.09	0.52
10:13:2:ILE:HG23	10:13:6:THR:HG21	1.92	0.52
26:29:11:GLU:HA	26:29:25:ARG:HG2	1.90	0.52
34:D:79:ALA:HA	34:D:85:THR:HG23	1.92	0.52
39:I:64:ILE:HD13	39:I:78:ILE:HG23	1.92	0.52
53:A:77:A:H2'	53:A:78:A:C8	2.45	0.52
54:01:141:G:H3'	54:01:142:A:O4'	2.09	0.52
54:01:167:A:H2'	54:01:168:G:O4'	2.10	0.52
54:01:474:G:O2'	54:01:475:C:H5"	2.09	0.52
54:01:1367:A:C2'	54:01:1368:G:H5'	2.40	0.52
54:01:2277:G:C3'	54:01:2278:A:H5"	2.39	0.52
54:01:2391:G:H4'	54:01:2392:A:OP1	2.08	0.52
54:01:2515:C:H2'	54:01:2516:A:C8	2.43	0.52
54:01:2698:U:H2'	54:01:2699:C:C6	2.44	0.52
5:08:2:ARG:HD2	54:01:2751:G:OP2	2.09	0.52
5:08:4:ALA:HB2	5:08:65:GLY:HA2	1.92	0.52
5:08:43:LYS:HB2	5:08:50:THR:OG1	2.08	0.52
16:19:56:PHE:CZ	54:01:536:G:H4'	2.43	0.52
34:D:36:ALA:N	34:D:37:PRO:CD	2.73	0.52
35:E:105:ILE:HA	35:E:111:ARG:HH22	1.73	0.52
36:F:79:ARG:HG2	36:F:79:ARG:HH11	1.74	0.52
39:I:17:ARG:HH12	53:A:1129:C:H4'	1.75	0.52
52:03:46:VAL:O	52:03:171:ILE:HG22	2.09	0.52
53:A:952:U:H2'	53:A:953:G:C8	2.45	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:1298:C:H2'	54:01:1299:G:O4'	2.10	0.52
54:01:1424:G:H2'	54:01:1425:G:O4'	2.09	0.52
54:01:1527:G:H21	54:01:1545:A:H62	1.58	0.52
56:W:20:U:H3'	56:W:21:A:H5'	1.90	0.52
1:04:87:SER:O	1:04:157:ALA:HB2	2.10	0.52
4:07:54:ALA:O	4:07:57:ALA:HB3	2.10	0.52
11:14:86:GLU:O	11:14:89:VAL:HG12	2.10	0.52
12:15:11:LYS:HD3	12:15:86:LYS:HG2	1.92	0.52
32:B:113:LEU:O	32:B:117:GLU:HG3	2.09	0.52
35:E:160:VAL:HG13	35:E:161:GLU:N	2.24	0.52
37:G:71:THR:HG23	37:G:95:ARG:HH12	1.73	0.52
38:H:5:PRO:O	38:H:32:LYS:HE2	2.10	0.52
47:Q:13:SER:HB3	47:Q:21:VAL:HG11	1.91	0.52
51:U:58:LYS:O	51:U:61:ARG:HG2	2.09	0.52
53:A:1254:A:H2'	53:A:1255:G:C8	2.45	0.52
54:01:832:U:H2'	54:01:833:A:C8	2.45	0.52
54:01:1045:C:OP1	54:01:1047:G:H5'	2.10	0.52
54:01:2730:C:H2'	54:01:2731:G:C8	2.45	0.52
1:04:250:GLN:O	1:04:254:LYS:HB3	2.09	0.52
6:09:27:ARG:HD2	23:26:55:MET:HE2	1.92	0.52
7:10:88:HIS:N	7:10:89:PRO:HD2	2.24	0.52
8:11:21:PRO:CB	8:11:22:PRO:HD3	2.40	0.52
16:19:8:ILE:HD12	16:19:8:ILE:C	2.30	0.52
43:M:28:ARG:NH2	43:M:62:PHE:HB2	2.24	0.52
47:Q:4:ILE:HD12	47:Q:4:ILE:C	2.30	0.52
53:A:77:A:H2'	53:A:78:A:H8	1.75	0.52
53:A:513:C:H2'	53:A:514:C:C6	2.45	0.52
53:A:1219:A:H2'	53:A:1220:G:H8	1.74	0.52
54:01:885:C:N4	54:01:886:A:H62	2.07	0.52
54:01:1386:C:H2'	54:01:1387:A:H8	1.74	0.52
54:01:1417:C:H4'	54:01:1587:G:H21	1.73	0.52
54:01:1810:A:H2'	54:01:1811:G:O4'	2.10	0.52
54:01:2475:C:H2'	54:01:2476:A:H5'	1.92	0.52
54:01:2737:G:H2'	54:01:2738:A:H8	1.73	0.52
54:01:2837:A:H2'	54:01:2838:G:C8	2.44	0.52
59:Z:150:LYS:HG2	59:Z:152:LEU:HD23	1.92	0.52
6:09:96:THR:HG22	6:09:117:LEU:HD12	1.90	0.52
17:20:15:SER:O	17:20:18:GLN:HG2	2.10	0.52
19:22:67:VAL:HG22	19:22:76:ARG:HG3	1.90	0.52
22:25:45:ALA:O	22:25:47:VAL:HG23	2.09	0.52
32:B:166:ASP:OD2	32:B:190:SER:HA	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:K:80:ASN:HA	41:K:105:ARG:HB2	1.92	0.52
43:M:94:LEU:HB3	43:M:95:PRO:HD2	1.92	0.52
46:P:18:GLN:HE21	46:P:35:ARG:HH21	1.58	0.52
53:A:434:U:H2'	53:A:435:A:H8	1.73	0.52
53:A:673:A:H2'	53:A:674:G:C8	2.44	0.52
54:01:680:C:H2'	54:01:681:G:C8	2.45	0.52
54:01:1176:U:H2'	54:01:1177:G:C8	2.45	0.52
54:01:1278:C:H2'	54:01:1279:G:C8	2.45	0.52
54:01:1357:C:H2'	54:01:1358:G:O4'	2.10	0.52
3:06:88:ARG:O	3:06:90:GLN:N	2.42	0.52
5:08:155:PRO:HG3	54:01:2530:A:N6	2.25	0.52
6:09:9:VAL:HB	6:09:13:GLY:HA3	1.91	0.52
22:25:22:PHE:HD2	54:01:922:C:H1'	1.75	0.52
28:31:36:LYS:HG2	28:31:45:HIS:HB3	1.91	0.52
34:D:166:LYS:N	34:D:167:PRO:HD3	2.25	0.52
38:H:74:ILE:HG23	38:H:74:ILE:O	2.09	0.52
51:U:11:PHE:CD1	51:U:12:ASP:N	2.78	0.52
51:U:36:PHE:HB3	51:U:40:PRO:CD	2.39	0.52
53:A:422:C:H5'	53:A:423:G:C4	2.45	0.52
53:A:1238:A:H2'	53:A:1239:A:H5'	1.91	0.52
54:01:1278:C:H2'	54:01:1279:G:H8	1.73	0.52
54:01:1285:A:H2'	54:01:1286:A:H5'	1.92	0.52
54:01:1539:U:H2'	54:01:1540:G:C8	2.42	0.52
54:01:2293:G:H2'	54:01:2294:G:C8	2.45	0.52
1:04:175:LEU:HB2	1:04:179:GLU:HB3	1.92	0.52
3:06:143:LEU:HB3	3:06:146:VAL:HG11	1.92	0.52
5:08:174:LYS:HG2	5:08:175:LYS:N	2.25	0.52
8:11:7:TYR:HA	8:11:58:ILE:O	2.09	0.52
14:17:31:THR:HG22	14:17:33:ARG:H	1.75	0.52
25:28:12:ALA:HB2	25:28:23:LEU:HD12	1.91	0.52
25:28:17:PRO:HG2	54:01:968:C:H5"	1.91	0.52
31:34:4:ARG:HB3	54:01:2466:C:OP1	2.10	0.52
43:M:52:ILE:O	43:M:55:LEU:HB3	2.10	0.52
46:P:46:LYS:HZ2	46:P:48:GLU:HB3	1.75	0.52
53:A:423:G:H2'	53:A:424:G:H5'	1.91	0.52
53:A:916:U:H2'	53:A:917:G:H8	1.74	0.52
54:01:598:U:H2'	54:01:599:A:C8	2.45	0.52
54:01:1062:G:OP1	54:01:1070:A:H5"	2.10	0.52
3:06:197:GLU:O	3:06:201:ALA:N	2.37	0.51
4:07:102:LEU:O	4:07:107:VAL:HG23	2.10	0.51
4:07:115:GLY:C	4:07:116:LEU:HD12	2.31	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:07:135:ILE:C	4:07:135:ILE:HD12	2.30	0.51
7:10:40:GLU:O	7:10:43:LYS:HB3	2.10	0.51
20:23:66:VAL:O	20:23:69:VAL:HG22	2.10	0.51
36:F:61:LEU:HD12	36:F:62:MET:H	1.74	0.51
41:K:88:PRO:HD3	51:U:28:LEU:HD11	1.92	0.51
47:Q:63:CYS:SG	47:Q:73:THR:N	2.84	0.51
49:S:69:LYS:HE3	53:A:1319:A:H5"	1.93	0.51
50:T:67:HIS:ND1	50:T:67:HIS:O	2.43	0.51
53:A:16:A:O2'	53:A:17:U:H5'	2.09	0.51
54:01:145:C:H2'	54:01:146:A:C8	2.45	0.51
54:01:1790:C:H2'	54:01:1791:A:C5	2.45	0.51
54:01:2358:A:H2'	54:01:2359:C:O4'	2.10	0.51
54:01:2591:C:H2'	54:01:2592:G:C8	2.45	0.51
2:05:124:ARG:HA	2:05:165:MET:HE3	1.92	0.51
5:08:98:LYS:NZ	5:08:103:ASN:HD22	2.09	0.51
6:09:29:PHE:O	6:09:32:PRO:HG2	2.09	0.51
11:14:101:ILE:CG1	11:14:102:GLY:H	2.14	0.51
13:16:99:LYS:O	27:30:41:HIS:HA	2.09	0.51
17:20:14:VAL:HG22	17:20:15:SER:N	2.25	0.51
17:20:14:VAL:HG21	17:20:98:ILE:HG13	1.90	0.51
26:29:58:ASP:HA	26:29:61:ASN:HD22	1.72	0.51
27:30:54:ILE:HG23	27:30:55:ALA:N	2.24	0.51
54:01:1856:U:H2'	54:01:1857:G:O4'	2.10	0.51
54:01:2104:C:H2'	54:01:2105:U:C6	2.45	0.51
55:02:30:C:C2'	55:02:31:C:H5'	2.40	0.51
3:06:5:LEU:HD13	3:06:10:SER:O	2.10	0.51
4:07:142:TYR:O	4:07:145:VAL:HG22	2.11	0.51
8:11:99:LYS:HA	8:11:138:VAL:O	2.10	0.51
12:15:59:ARG:HG3	12:15:59:ARG:HH21	1.73	0.51
16:19:55:GLN:HE21	54:01:559:G:H1'	1.74	0.51
22:25:7:ARG:HG2	22:25:7:ARG:HH11	1.75	0.51
26:29:16:CYS:SG	26:29:20:ASN:HB3	2.50	0.51
31:34:25:VAL:HB	31:34:35:GLN:CG	2.40	0.51
34:D:68:GLU:HB3	53:A:546:A:P	2.50	0.51
34:D:169:TRP:HE1	34:D:170:LEU:HD23	1.75	0.51
35:E:155:LYS:HG3	35:E:156:ARG:HG2	1.93	0.51
36:F:92:THR:OG1	36:F:93:LYS:N	2.43	0.51
37:G:29:LEU:HD23	37:G:29:LEU:C	2.30	0.51
42:L:35:ARG:HG2	42:L:37:TYR:HD2	1.74	0.51
45:O:87:ARG:O	45:O:88:ARG:C	2.48	0.51
53:A:1200:C:H5"	53:A:1201:A:H3'	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:596:U:H2'	54:01:597:G:H8	1.73	0.51
54:01:1786:A:H1'	54:01:1938:A:N6	2.25	0.51
54:01:2163:A:H2'	54:01:2164:C:H5'	1.91	0.51
54:01:2360:G:H2'	54:01:2361:G:H5'	1.93	0.51
58:Y:25:C:H2'	58:Y:26:A:H8	1.76	0.51
2:05:148:GLN:HB2	2:05:152:PRO:HG2	1.91	0.51
4:07:4:HIS:CD2	4:07:8:LYS:HE3	2.46	0.51
12:15:35:ALA:HA	12:15:128:THR:HG22	1.93	0.51
18:21:40:ASN:O	18:21:41:LYS:HG2	2.09	0.51
27:30:49:ARG:HG2	54:01:2884:U:C6	2.45	0.51
29:32:26:ASN:CG	54:01:682:G:H5'	2.30	0.51
45:O:87:ARG:O	45:O:87:ARG:HG3	2.09	0.51
51:U:29:ALA:HA	51:U:32:ARG:HD3	1.92	0.51
53:A:312:C:H2'	53:A:313:A:C8	2.46	0.51
53:A:361:G:H2'	53:A:362:G:O4'	2.10	0.51
53:A:731:G:O2'	53:A:732:C:H5'	2.11	0.51
53:A:990:C:H2'	53:A:991:U:O4'	2.09	0.51
54:01:250:G:N1	54:01:251:A:C2	2.79	0.51
54:01:1289:C:H2'	54:01:1290:C:H6	1.75	0.51
1:04:1:ALA:N	1:04:19:VAL:O	2.43	0.51
1:04:224:MET:HG2	54:01:782:A:N3	2.25	0.51
4:07:141:ASP:C	4:07:143:ASP:H	2.14	0.51
17:20:58:VAL:O	17:20:102:SER:HB2	2.11	0.51
18:21:1:MET:N	18:21:110:ARG:HH11	2.09	0.51
47:Q:46:HIS:CA	47:Q:70:LYS:HD2	2.40	0.51
53:A:212:G:H2'	53:A:213:G:H8	1.76	0.51
53:A:477:C:H2'	53:A:478:A:C8	2.46	0.51
53:A:543:U:H2'	53:A:544:G:C8	2.45	0.51
53:A:985:C:H2'	53:A:986:U:C6	2.46	0.51
53:A:1071:C:H2'	53:A:1072:G:H8	1.76	0.51
53:A:1170:A:H2'	53:A:1171:A:O4'	2.10	0.51
54:01:833:A:H2'	54:01:834:G:H8	1.75	0.51
54:01:1506:U:H2'	54:01:1507:C:C6	2.45	0.51
54:01:2843:G:O2'	54:01:2844:G:H5'	2.11	0.51
1:04:62:ARG:HG3	1:04:62:ARG:NH1	2.26	0.51
33:C:113:LYS:N	33:C:184:ASN:ND2	2.59	0.51
35:E:113:VAL:HG13	35:E:114:LEU:CD1	2.40	0.51
42:L:2:THR:HG22	42:L:5:GLN:HG3	1.92	0.51
48:R:41:SER:HB3	48:R:51:GLN:HE21	1.75	0.51
50:T:79:THR:O	50:T:82:ILE:HG12	2.10	0.51
53:A:57:G:H2'	53:A:58:C:C6	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:1054:C:N3	58:Y:34:G:H1'	2.24	0.51
53:A:1517:G:C2'	53:A:1518:A:H5'	2.41	0.51
54:01:1900:A:O4'	54:01:1970:A:H5"	2.11	0.51
59:Z:7:GLN:O	59:Z:10:GLU:HB3	2.11	0.51
6:09:90:LEU:HD21	6:09:94:ILE:HG23	1.92	0.51
12:15:12:MET:HG2	12:15:72:PRO:HG2	1.93	0.51
15:18:24:THR:HA	15:18:45:VAL:HG22	1.93	0.51
32:B:102:ASN:ND2	32:B:105:THR:HB	2.25	0.51
35:E:22:LYS:HB3	35:E:29:ILE:CG2	2.41	0.51
46:P:5:ARG:NH1	46:P:28:ARG:HA	2.26	0.51
47:Q:13:SER:HB3	47:Q:21:VAL:CG1	2.41	0.51
53:A:1241:G:H2'	53:A:1242:G:H8	1.75	0.51
53:A:1306:A:N6	53:A:1331:G:H1'	2.25	0.51
54:01:503:A:H4'	54:01:505:A:H5"	1.93	0.51
54:01:827:U:H4'	54:01:828:U:C5	2.45	0.51
54:01:1387:A:H2'	54:01:1388:G:H8	1.75	0.51
54:01:1434:A:H2'	54:01:1435:G:C8	2.45	0.51
54:01:2443:C:H2'	54:01:2444:G:H8	1.75	0.51
17:20:49:ILE:HD12	17:20:52:PRO:N	2.26	0.51
21:24:44:HIS:NE2	21:24:85:LYS:HB2	2.26	0.51
27:30:11:LYS:HA	27:30:14:MET:HE3	1.92	0.51
38:H:87:ARG:HD2	38:H:89:ASP:OD1	2.10	0.51
39:I:30:ASN:C	39:I:32:ARG:H	2.14	0.51
44:N:84:ARG:NH2	53:A:1059:C:H4'	2.26	0.51
47:Q:11:VAL:CG1	47:Q:20:ILE:HD11	2.40	0.51
53:A:1287:A:C2	53:A:1353:G:H1'	2.44	0.51
54:01:737:C:O2'	54:01:738:G:H5'	2.11	0.51
54:01:1038:G:H2'	54:01:1039:A:H8	1.75	0.51
54:01:1563:U:H2'	54:01:1564:C:C6	2.46	0.51
54:01:2514:U:H2'	54:01:2515:C:C6	2.46	0.51
54:01:2636:C:H2'	54:01:2637:U:C6	2.45	0.51
12:15:102:LEU:HD11	12:15:126:ILE:HD11	1.92	0.51
15:18:108:ARG:HG2	15:18:108:ARG:HH21	1.76	0.51
18:21:11:ARG:O	18:21:12:SER:HB2	2.10	0.51
33:C:153:SER:HA	33:C:164:THR:HG22	1.92	0.51
34:D:61:ARG:HD2	34:D:67:LEU:HA	1.93	0.51
35:E:135:VAL:O	35:E:138:ALA:HB3	2.11	0.51
39:I:24:ASN:HD22	39:I:26:LYS:HB3	1.73	0.51
53:A:1429:A:H2'	53:A:1430:A:H8	1.76	0.51
54:01:226:A:H2'	54:01:227:A:O4'	2.11	0.51
54:01:1259:G:H2'	54:01:1260:A:H8	1.76	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:06:148:ILE:HD13	3:06:187:VAL:CG1	2.41	0.51
11:14:110:VAL:C	11:14:111:ILE:HD12	2.31	0.51
14:17:31:THR:HG23	14:17:32:PRO:HD2	1.93	0.51
34:D:26:ALA:C	34:D:27:ILE:HD12	2.32	0.51
34:D:31:CYS:SG	34:D:33:ILE:HB	2.51	0.51
53:A:323:U:H2'	53:A:324:G:O4'	2.10	0.51
54:01:717:C:H2'	54:01:718:A:H5'	1.92	0.51
54:01:1331:G:O2'	54:01:1332:G:H5"	2.10	0.51
1:04:264:LYS:HD2	54:01:2224:G:OP1	2.11	0.50
2:05:161:MET:HE1	54:01:2050:C:H1'	1.93	0.50
5:08:163:TYR:HB2	5:08:166:GLU:HB2	1.93	0.50
12:15:27:SER:N	12:15:104:GLU:OE2	2.44	0.50
12:15:82:MET:HG3	54:01:2250:G:C2	2.46	0.50
14:17:110:ALA:CB	14:17:117:PHE:HE2	2.23	0.50
21:24:60:VAL:HA	21:24:73:LYS:HG2	1.93	0.50
29:32:13:ASN:O	29:32:17:GLY:HA3	2.10	0.50
34:D:26:ALA:HB1	34:D:27:ILE:HD12	1.92	0.50
35:E:12:GLU:HA	35:E:38:VAL:HG12	1.92	0.50
36:F:5:GLU:HG3	36:F:63:ASN:HB2	1.93	0.50
36:F:40:GLU:OE2	36:F:61:LEU:HD23	2.10	0.50
37:G:21:LEU:HD23	37:G:21:LEU:C	2.31	0.50
39:I:12:LYS:O	39:I:12:LYS:HG2	2.10	0.50
53:A:1299:A:H2'	53:A:1300:G:H4'	1.93	0.50
54:01:1139:G:O2'	54:01:1140:C:H5'	2.12	0.50
54:01:2112:G:H2'	54:01:2113:U:H5'	1.93	0.50
2:05:114:LYS:HG3	54:01:2680:U:OP1	2.10	0.50
4:07:28:PRO:CB	4:07:168:LEU:HD22	2.40	0.50
8:11:52:LEU:O	8:11:54:ILE:HG13	2.12	0.50
9:12:57:LEU:O	9:12:58:ASN:HB2	2.11	0.50
20:23:61:GLU:OE1	20:23:61:GLU:N	2.44	0.50
32:B:116:LEU:HD12	32:B:143:LEU:HD12	1.92	0.50
44:N:2:LYS:HB2	44:N:5:MET:HG2	1.93	0.50
46:P:76:LYS:NZ	53:A:473:U:H5"	2.26	0.50
47:Q:3:LYS:HG2	47:Q:4:ILE:H	1.76	0.50
53:A:26:A:N6	53:A:558:G:H1'	2.27	0.50
54:01:616:A:H2'	54:01:617:G:O4'	2.11	0.50
54:01:730:A:O2'	54:01:731:C:H5'	2.11	0.50
3:06:34:ALA:O	3:06:37:ALA:HB3	2.11	0.50
3:06:71:GLY:HA3	54:01:674:G:OP1	2.11	0.50
4:07:30:VAL:HG13	4:07:30:VAL:O	2.12	0.50
8:11:7:TYR:CB	8:11:59:THR:HA	2.42	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:13:13:ASN:ND2	10:13:98:ARG:HB2	2.25	0.50
27:30:39:ARG:HH21	27:30:39:ARG:HG2	1.76	0.50
42:L:22:ALA:O	42:L:26:CYS:SG	2.69	0.50
53:A:163:C:H2'	53:A:164:G:O4'	2.10	0.50
54:01:594:U:H2'	54:01:595:C:C6	2.47	0.50
54:01:1344:U:H4'	54:01:1384:A:N7	2.27	0.50
54:01:1979:U:O2'	54:01:1980:G:H5'	2.11	0.50
54:01:2287:A:O2'	54:01:2288:A:H2'	2.11	0.50
54:01:2413:G:N2	54:01:2414:G:H1'	2.26	0.50
4:07:68:LYS:CD	4:07:83:PRO:HD3	2.42	0.50
6:09:25:TYR:O	6:09:30:LEU:HG	2.12	0.50
18:21:11:ARG:HH11	18:21:11:ARG:HG3	1.76	0.50
35:E:58:ALA:O	35:E:61:LYS:HB3	2.11	0.50
38:H:11:THR:HA	38:H:14:ARG:NH1	2.26	0.50
44:N:73:LEU:HD13	44:N:76:PHE:HD2	1.76	0.50
54:01:254:G:H2'	54:01:255:A:H5"	1.92	0.50
54:01:519:U:H2'	54:01:520:G:C8	2.47	0.50
54:01:2123:G:N2	54:01:2175:C:H42	2.08	0.50
54:01:2128:G:H21	54:01:2173:A:H1'	1.77	0.50
54:01:2704:C:H2'	54:01:2705:A:O4'	2.10	0.50
1:04:260:LYS:O	1:04:262:THR:N	2.44	0.50
7:10:61:ARG:C	7:10:65:GLU:HB2	2.31	0.50
13:16:13:ASN:O	13:16:14:SER:C	2.49	0.50
13:16:103:ARG:HD2	13:16:106:ASP:OD2	2.11	0.50
15:18:20:ARG:HD3	15:18:112:ARG:NH1	2.24	0.50
15:18:24:THR:HB	15:18:87:ARG:HB2	1.94	0.50
15:18:52:ARG:O	15:18:53:GLY:C	2.49	0.50
18:21:34:ASP:HB3	27:30:27:LEU:CD2	2.41	0.50
34:D:8:LEU:CD2	53:A:429:U:H5'	2.40	0.50
37:G:129:ASN:CA	37:G:134:VAL:HG11	2.38	0.50
38:H:98:LEU:HD12	38:H:98:LEU:C	2.31	0.50
39:I:119:LYS:HE2	53:A:1349:A:P	2.51	0.50
51:U:46:ARG:HA	51:U:49:ALA:HB3	1.93	0.50
52:03:15:VAL:HG13	52:03:21:TYR:HE2	1.75	0.50
54:01:278:A:H2'	54:01:278:A:N3	2.26	0.50
54:01:2485:G:O2'	54:01:2486:C:H5'	2.11	0.50
54:01:2808:G:H2'	54:01:2890:G:C6	2.47	0.50
7:10:88:HIS:H	7:10:89:PRO:HD2	1.75	0.50
12:15:21:ALA:HB2	12:15:97:GLN:O	2.11	0.50
13:16:49:GLU:HB2	13:16:50:PRO:HD3	1.94	0.50
15:18:17:PRO:O	15:18:18:SER:C	2.50	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:23:9:GLU:HG3	20:23:72:PHE:HB3	1.93	0.50
22:25:10:ARG:HH11	22:25:10:ARG:HG3	1.75	0.50
22:25:42:HIS:CD2	22:25:73:ARG:HD3	2.47	0.50
33:C:38:VAL:HG23	33:C:39:ARG:N	2.27	0.50
34:D:131:ILE:HG22	34:D:133:SER:H	1.76	0.50
34:D:164:ARG:HG2	34:D:165:GLU:N	2.25	0.50
41:K:127:ARG:HG2	41:K:127:ARG:HH11	1.77	0.50
53:A:868:C:H2'	53:A:869:G:O4'	2.11	0.50
54:01:492:A:H2'	54:01:493:G:O4'	2.11	0.50
54:01:1637:A:H5'	54:01:1760:C:O2'	2.11	0.50
54:01:2709:G:H2'	54:01:2710:C:H6	1.75	0.50
15:18:30:TRP:CE3	15:18:37:LYS:HE3	2.46	0.50
15:18:52:ARG:NE	54:01:2845:U:H4'	2.26	0.50
18:21:82:MET:HB3	18:21:84:ARG:NH2	2.21	0.50
27:30:9:ARG:HG3	27:30:9:ARG:NH2	2.27	0.50
28:31:4:ILE:H	28:31:4:ILE:CD1	2.21	0.50
29:32:27:GLY:O	29:32:30:VAL:HB	2.10	0.50
30:33:61:LEU:N	30:33:62:PRO:HD3	2.25	0.50
44:N:100:TRP:HZ2	53:A:1368:A:H5"	1.77	0.50
51:U:58:LYS:HG3	51:U:61:ARG:NE	2.25	0.50
54:01:581:C:H2'	54:01:582:A:H8	1.76	0.50
54:01:582:A:H2'	54:01:583:G:H8	1.75	0.50
54:01:1055:G:H2'	54:01:1056:G:O4'	2.11	0.50
54:01:2443:C:O2'	54:01:2444:G:H5'	2.12	0.50
54:01:2691:C:H2'	54:01:2692:G:C8	2.47	0.50
59:Z:101:ALA:HB1	59:Z:106:GLU:HG2	1.94	0.50
6:09:84:ALA:C	6:09:91:PHE:HB2	2.32	0.50
10:13:71:ARG:HH11	10:13:71:ARG:HG3	1.76	0.50
16:19:49:ARG:HG2	16:19:49:ARG:NH1	2.27	0.50
20:23:73:ASN:O	20:23:74:ALA:HB3	2.12	0.50
24:27:20:ASN:O	24:27:25:GLN:HB3	2.12	0.50
25:28:56:VAL:CG2	25:28:57:GLU:N	2.75	0.50
34:D:149:LYS:HG2	34:D:150:LYS:HG2	1.94	0.50
34:D:173:ASP:C	34:D:175:GLY:H	2.15	0.50
35:E:73:VAL:HG11	35:E:143:LEU:HB3	1.93	0.50
37:G:39:GLU:HB3	37:G:43:TYR:CE2	2.47	0.50
38:H:12:ARG:CD	38:H:26:MET:HB3	2.41	0.50
41:K:19:VAL:N	41:K:34:THR:O	2.44	0.50
47:Q:45:VAL:HG21	47:Q:60:ILE:CD1	2.37	0.50
51:U:28:LEU:O	51:U:32:ARG:HB3	2.11	0.50
52:03:214:ILE:O	52:03:214:ILE:HG13	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:423:G:C2'	53:A:424:G:H5'	2.42	0.50
53:A:1225:A:H2'	53:A:1225:A:N3	2.27	0.50
1:04:131:MET:HA	1:04:134:ILE:HD12	1.93	0.50
5:08:44:HIS:O	5:08:45:ALA:HB3	2.12	0.50
7:10:113:PHE:CD1	7:10:113:PHE:O	2.65	0.50
13:16:31:HIS:CD2	54:01:1279:G:H4'	2.47	0.50
29:32:12:ARG:HG3	29:32:12:ARG:HH21	1.77	0.50
34:D:58:GLN:O	34:D:62:ARG:HG2	2.12	0.50
34:D:171:GLU:HB2	34:D:182:LYS:HD2	1.93	0.50
38:H:28:SER:O	38:H:29:SER:HB2	2.12	0.50
46:P:40:ASN:HB3	46:P:43:ALA:HB2	1.92	0.50
54:01:406:G:H2'	54:01:407:G:C8	2.47	0.50
54:01:2082:A:H2'	54:01:2083:G:O4'	2.12	0.50
54:01:2293:G:H2'	54:01:2294:G:H8	1.77	0.50
54:01:2512:C:H2'	54:01:2513:A:O4'	2.12	0.50
59:Z:91:ARG:HA	59:Z:94:ALA:HB3	1.93	0.50
1:04:144:GLU:OE1	1:04:188:ARG:HB2	2.11	0.49
2:05:124:ARG:HA	2:05:165:MET:CE	2.41	0.49
9:12:31:GLU:OE2	9:12:34:ARG:HD3	2.12	0.49
10:13:105:ARG:O	10:13:107:LEU:N	2.45	0.49
11:14:89:VAL:HG13	11:14:89:VAL:O	2.12	0.49
26:29:2:LYS:HB2	26:29:5:ILE:CD1	2.42	0.49
34:D:7:LYS:HZ2	34:D:21:LYS:HG3	1.74	0.49
34:D:60:VAL:HG21	34:D:199:ILE:HD11	1.93	0.49
34:D:187:ARG:NH2	34:D:192:ALA:HA	2.22	0.49
40:J:86:ALA:HA	40:J:90:LEU:HD12	1.94	0.49
44:N:68:ARG:HG3	44:N:69:PRO:HD2	1.94	0.49
45:O:25:GLU:H	45:O:25:GLU:CD	2.14	0.49
46:P:6:LEU:HD13	46:P:17:TYR:HB3	1.93	0.49
53:A:762:U:H2'	53:A:763:G:H8	1.76	0.49
54:01:433:C:O2'	54:01:434:U:H5'	2.12	0.49
54:01:2419:U:H2'	54:01:2420:C:C6	2.47	0.49
3:06:131:THR:HG22	3:06:160:ALA:O	2.13	0.49
4:07:10:GLU:H	4:07:10:GLU:CD	2.14	0.49
7:10:56:ARG:HB3	54:01:1084:A:C1'	2.42	0.49
9:12:113:PRO:HD2	54:01:558:U:OP1	2.11	0.49
18:21:89:ALA:C	18:21:91:GLY:H	2.15	0.49
19:22:44:LYS:O	19:22:48:GLN:HG2	2.12	0.49
25:28:56:VAL:HG22	25:28:57:GLU:N	2.27	0.49
34:D:131:ILE:HG12	53:A:620:C:N3	2.27	0.49
36:F:22:ILE:O	36:F:26:THR:HG22	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:F:97:THR:O	36:F:98:GLU:HB2	2.12	0.49
42:L:20:VAL:C	42:L:22:ALA:H	2.16	0.49
52:03:43:ASP:HB2	52:03:215:SER:OG	2.13	0.49
53:A:769:G:O2'	53:A:770:C:H5'	2.12	0.49
53:A:969:A:H2'	53:A:970:C:O4'	2.12	0.49
53:A:1033:G:C3'	53:A:1034:G:H5"	2.42	0.49
54:01:30:G:H2'	54:01:31:C:C6	2.47	0.49
54:01:2128:G:H2'	54:01:2129:C:H5'	1.95	0.49
54:01:2529:G:H5"	54:01:2530:A:H5"	1.93	0.49
5:08:2:ARG:NH1	54:01:1113:U:H5'	2.27	0.49
7:10:23:LEU:HB3	7:10:87:GLU:OE1	2.11	0.49
9:12:16:TYR:CD1	9:12:140:LEU:HD22	2.47	0.49
21:24:10:LYS:HG3	21:24:11:GLU:N	2.26	0.49
32:B:96:LEU:HB2	32:B:99:MET:CG	2.43	0.49
32:B:202:ASN:OD1	59:Z:43:LYS:HG2	2.12	0.49
35:E:89:THR:HG21	35:E:134:ASN:ND2	2.26	0.49
40:J:9:ARG:HH12	40:J:11:LYS:HE3	1.76	0.49
42:L:89:LEU:O	42:L:91:GLY:N	2.45	0.49
48:R:41:SER:O	48:R:43:ILE:N	2.45	0.49
51:U:13:VAL:HG22	51:U:14:ALA:H	1.75	0.49
54:01:56:A:H2'	54:01:57:C:O4'	2.13	0.49
54:01:666:A:H2'	54:01:667:U:C6	2.48	0.49
54:01:937:C:H2'	54:01:938:G:C8	2.46	0.49
54:01:1370:C:H2'	54:01:1371:G:O4'	2.12	0.49
4:07:48:LEU:HA	4:07:51:ASN:HD22	1.78	0.49
4:07:151:LEU:C	4:07:151:LEU:HD12	2.33	0.49
5:08:8:VAL:O	5:08:48:THR:HB	2.11	0.49
8:11:74:PRO:HG2	8:11:77:VAL:HG22	1.94	0.49
11:14:93:ASN:C	11:14:95:LEU:H	2.14	0.49
15:18:52:ARG:HH11	15:18:52:ARG:HG3	1.77	0.49
16:19:61:ILE:HG23	16:19:75:TYR:CZ	2.46	0.49
18:21:8:ARG:HB3	18:21:102:HIS:CE1	2.48	0.49
24:27:39:GLN:HB3	24:27:41:HIS:CE1	2.47	0.49
26:29:5:ILE:HG13	26:29:6:HIS:N	2.27	0.49
32:B:110:ILE:O	32:B:113:LEU:HB3	2.12	0.49
49:S:28:LYS:HE3	49:S:29:PRO:HD2	1.95	0.49
51:U:27:VAL:O	51:U:31:VAL:HG12	2.12	0.49
54:01:435:C:C2'	54:01:436:C:H5'	2.41	0.49
54:01:633:A:C2'	54:01:634:C:H5'	2.43	0.49
54:01:770:G:H2'	54:01:771:G:H8	1.77	0.49
54:01:1558:C:H4'	54:01:1560:G:OP2	2.11	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:1998:A:H2'	54:01:1999:C:C6	2.48	0.49
54:01:2298:A:H2'	54:01:2299:U:O4'	2.12	0.49
58:Y:43:C:H2'	58:Y:44:G:C8	2.48	0.49
2:05:138:LEU:HD21	54:01:745:G:P	2.52	0.49
8:11:90:GLY:O	8:11:92:PRO:HD3	2.12	0.49
9:12:58:ASN:ND2	9:12:128:ASN:HB2	2.25	0.49
12:15:4:PRO:HG2	12:15:92:TRP:CE3	2.47	0.49
16:19:60:TRP:HZ2	54:01:995:C:H1'	1.77	0.49
28:31:36:LYS:HA	28:31:46:VAL:O	2.13	0.49
31:34:3:VAL:HG23	31:34:3:VAL:O	2.13	0.49
43:M:3:ILE:HG22	43:M:56:ARG:CZ	2.42	0.49
53:A:1074:G:H2'	53:A:1075:U:H6	1.76	0.49
54:01:181:A:H2'	54:01:182:A:C8	2.47	0.49
54:01:1595:C:H2'	54:01:1596:A:H8	1.78	0.49
54:01:2204:G:H2'	54:01:2205:A:H8	1.76	0.49
54:01:2286:G:H4'	54:01:2287:A:O4'	2.12	0.49
54:01:2799:A:C2'	54:01:2800:A:H5'	2.43	0.49
55:02:97:C:H2'	55:02:98:G:H5'	1.94	0.49
2:05:61:THR:HB	54:01:2811:G:OP1	2.13	0.49
5:08:102:ILE:HD11	5:08:116:LEU:CD2	2.43	0.49
7:10:108:VAL:HG12	7:10:109:LYS:N	2.27	0.49
19:22:45:ALA:O	19:22:49:LYS:HD3	2.12	0.49
19:22:74:ILE:HG13	19:22:74:ILE:O	2.12	0.49
23:26:7:THR:OG1	23:26:9:LYS:HG3	2.13	0.49
27:30:2:VAL:HG12	27:30:3:GLN:N	2.28	0.49
33:C:113:LYS:N	33:C:184:ASN:HD22	2.10	0.49
33:C:133:MET:CE	33:C:167:TYR:HB2	2.43	0.49
36:F:72:ASP:O	36:F:75:GLU:HB3	2.13	0.49
39:I:116:GLY:C	39:I:117:LEU:HD12	2.33	0.49
45:O:28:VAL:HG11	45:O:66:LEU:HD21	1.94	0.49
53:A:229:U:H2'	53:A:230:G:H8	1.76	0.49
53:A:721:G:H4'	53:A:722:G:O4'	2.12	0.49
53:A:1259:C:H3'	53:A:1260:G:C5'	2.29	0.49
54:01:458:G:O2'	54:01:459:U:H5	1.96	0.49
54:01:548:G:H2'	54:01:549:G:O4'	2.12	0.49
54:01:1409:U:H2'	54:01:1410:G:C8	2.47	0.49
54:01:1779:U:OP2	54:01:1784:A:N6	2.45	0.49
54:01:2648:G:H2'	54:01:2649:C:H6	1.78	0.49
55:02:30:C:H2'	55:02:31:C:H5'	1.95	0.49
1:04:89:ASN:N	1:04:89:ASN:HD22	2.10	0.49
9:12:25:LEU:HB3	54:01:1140:C:OP1	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:13:40:LYS:NZ	10:13:58:LEU:HA	2.27	0.49
11:14:78:ARG:HB3	11:14:113:ALA:HB2	1.95	0.49
15:18:19:PHE:CE2	15:18:83:ILE:HG21	2.48	0.49
15:18:74:GLN:HB2	15:18:77:SER:HB2	1.93	0.49
18:21:84:ARG:HB2	18:21:96:ILE:HG13	1.95	0.49
32:B:6:ARG:HG2	32:B:6:ARG:HH11	1.78	0.49
34:D:87:GLU:N	34:D:87:GLU:OE1	2.46	0.49
39:I:30:ASN:HD21	39:I:65:THR:HA	1.78	0.49
53:A:1487:G:O2'	53:A:1488:G:H5'	2.12	0.49
54:01:1373:A:C5'	54:01:2212:A:H1'	2.40	0.49
54:01:1971:U:H5'	54:01:1972:G:H5"	1.95	0.49
54:01:2190:G:H2'	54:01:2191:A:C8	2.48	0.49
1:04:83:ASP:HB2	1:04:90:ILE:HG12	1.94	0.49
3:06:134:LEU:CD2	3:06:161:ALA:HB2	2.42	0.49
4:07:167:ALA:O	4:07:170:ALA:HB3	2.13	0.49
6:09:1:MET:O	6:09:20:ASN:HA	2.13	0.49
7:10:28:ALA:HB2	7:10:81:LEU:O	2.13	0.49
8:11:57:VAL:O	8:11:68:PHE:HA	2.12	0.49
24:27:31:GLN:HG3	24:27:36:GLN:HB2	1.95	0.49
28:31:39:ASP:OD1	28:31:40:PRO:HD2	2.13	0.49
37:G:71:THR:HA	37:G:95:ARG:HH12	1.78	0.49
43:M:52:ILE:HG22	43:M:56:ARG:HH12	1.77	0.49
46:P:6:LEU:HD13	46:P:17:TYR:CB	2.42	0.49
49:S:20:LYS:HA	49:S:23:GLU:OE2	2.12	0.49
51:U:62:GLU:HG2	51:U:62:GLU:O	2.12	0.49
53:A:195:A:H2'	53:A:196:A:C8	2.48	0.49
53:A:880:C:H2'	53:A:881:G:C8	2.48	0.49
53:A:1259:C:C3'	53:A:1260:G:H5"	2.32	0.49
53:A:1368:A:O2'	53:A:1369:C:H5'	2.12	0.49
54:01:189:G:H2'	54:01:205:G:N2	2.28	0.49
54:01:437:U:H2'	54:01:438:G:H8	1.78	0.49
54:01:1409:U:H2'	54:01:1410:G:H8	1.78	0.49
54:01:1528:A:H2'	54:01:1529:G:O4'	2.12	0.49
54:01:2469:A:H2'	54:01:2470:G:O4'	2.13	0.49
4:07:68:LYS:HD3	4:07:83:PRO:HD3	1.95	0.49
8:11:7:TYR:C	8:11:7:TYR:CD1	2.86	0.49
8:11:13:ALA:HA	8:11:53:PRO:HA	1.95	0.49
12:15:66:ARG:HG3	12:15:66:ARG:HH11	1.78	0.49
17:20:22:LEU:HD12	17:20:23:GLU:O	2.12	0.49
18:21:6:LYS:HB2	18:21:103:ILE:O	2.13	0.49
20:23:95:PHE:CE2	20:23:102:ILE:HG12	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:24:26:PHE:CE1	21:24:42:LEU:HD11	2.47	0.49
27:30:2:VAL:HG22	54:01:2015:A:C2	2.48	0.49
30:33:25:HIS:HB3	30:33:43:LEU:HD22	1.93	0.49
34:D:140:ASP:H	34:D:181:PHE:HB3	1.78	0.49
39:I:17:ARG:O	39:I:64:ILE:HG23	2.11	0.49
40:J:67:ILE:HG23	44:N:95:LEU:HD13	1.94	0.49
50:T:23:ARG:HH22	50:T:63:LYS:NZ	2.09	0.49
51:U:48:LYS:HA	51:U:51:ALA:CB	2.42	0.49
52:03:183:ASP:O	52:03:187:GLU:HG2	2.13	0.49
53:A:437:U:O2'	53:A:438:U:H5'	2.12	0.49
53:A:902:G:H2'	53:A:903:G:H8	1.78	0.49
53:A:1349:A:H2'	53:A:1350:A:O4'	2.13	0.49
54:01:776:G:H1	54:01:2072:C:H5'	1.76	0.49
54:01:1259:G:H2'	54:01:1260:A:C8	2.48	0.49
54:01:1415:U:H2'	54:01:1416:G:H4'	1.95	0.49
54:01:2533:U:H2'	54:01:2534:A:O4'	2.13	0.49
54:01:2730:C:H2'	54:01:2731:G:H8	1.77	0.49
1:04:56:GLY:HA2	1:04:212:TRP:HA	1.95	0.49
2:05:9:VAL:HA	2:05:197:THR:HG23	1.95	0.49
3:06:105:LEU:HA	3:06:108:ILE:HD12	1.93	0.49
4:07:87:LYS:HD2	54:01:2313:C:H5"	1.95	0.49
5:08:3:VAL:HG21	54:01:2748:A:H5'	1.94	0.49
7:10:103:ASN:HA	7:10:107:GLU:OE1	2.13	0.49
29:32:22:MET:SD	29:32:28:ARG:HG2	2.53	0.49
32:B:100:LEU:HB3	32:B:178:LEU:HD12	1.95	0.49
32:B:185:ILE:HD13	32:B:199:ILE:HB	1.94	0.49
34:D:117:VAL:HG22	34:D:122:ILE:HG13	1.95	0.49
36:F:15:SER:HA	36:F:18:VAL:CG2	2.43	0.49
39:I:56:MET:O	39:I:57:VAL:C	2.50	0.49
39:I:114:LYS:HG2	39:I:120:ALA:O	2.13	0.49
42:L:73:LEU:N	42:L:73:LEU:HD12	2.27	0.49
52:03:6:LYS:HG3	52:03:7:ARG:N	2.26	0.49
53:A:1527:U:H2'	53:A:1528:U:C6	2.48	0.49
54:01:189:G:H2'	54:01:205:G:H22	1.78	0.49
54:01:543:G:H5'	54:01:543:G:H8	1.78	0.49
54:01:727:A:O2'	54:01:728:G:H5'	2.12	0.49
54:01:886:A:H2'	54:01:887:U:H4'	1.95	0.49
54:01:968:C:H2'	54:01:969:G:H8	1.78	0.49
54:01:1346:G:H2'	54:01:1347:A:H8	1.78	0.49
54:01:1704:C:H2'	54:01:1705:A:C8	2.47	0.49
54:01:2042:A:H2'	54:01:2043:C:H5'	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:2215:C:H2'	54:01:2216:G:C8	2.48	0.49
54:01:2267:A:H5"	54:01:2268:A:H5'	1.95	0.49
1:04:8:THR:HG21	54:01:727:A:H2	1.77	0.48
1:04:131:MET:HA	1:04:134:ILE:CD1	2.43	0.48
5:08:126:THR:HG22	5:08:128:THR:H	1.77	0.48
6:09:68:ARG:O	6:09:72:ILE:HG13	2.13	0.48
12:15:55:ARG:HD3	54:01:2469:A:H4'	1.95	0.48
14:17:68:LYS:HA	14:17:102:ARG:HG2	1.94	0.48
15:18:7:LEU:HA	15:18:10:GLU:OE2	2.13	0.48
16:19:101:ASP:OD2	16:19:104:ALA:HB2	2.13	0.48
26:29:37:CYS:HG	26:29:40:CYS:CB	2.26	0.48
35:E:80:LEU:HG	35:E:146:MET:SD	2.53	0.48
45:O:36:ASN:HA	45:O:39:GLN:HG2	1.95	0.48
45:O:86:LEU:C	45:O:86:LEU:HD12	2.33	0.48
53:A:1071:C:H2'	53:A:1072:G:C8	2.48	0.48
53:A:1074:G:H2'	53:A:1075:U:C6	2.48	0.48
54:01:1507:C:H2'	54:01:1508:A:O4'	2.13	0.48
54:01:2436:G:H2'	54:01:2437:G:H8	1.77	0.48
54:01:2450:A:OP1	54:01:2497:A:H2'	2.12	0.48
54:01:2694:G:H2'	54:01:2695:U:C6	2.47	0.48
54:01:2715:C:C2'	54:01:2716:C:H5"	2.43	0.48
55:02:63:C:H2'	55:02:64:G:H8	1.78	0.48
3:06:48:THR:O	3:06:52:VAL:HG23	2.13	0.48
6:09:18:GLN:HE22	6:09:44:ILE:HD13	1.77	0.48
9:12:41:LYS:HB3	9:12:43:GLU:OE1	2.13	0.48
14:17:34:HIS:HA	14:17:53:THR:OG1	2.13	0.48
14:17:101:GLY:O	14:17:104:GLN:N	2.46	0.48
31:34:31:PRO:O	31:34:34:LYS:HB3	2.12	0.48
35:E:22:LYS:HB3	35:E:29:ILE:HG23	1.94	0.48
39:I:96:GLU:N	39:I:96:GLU:OE1	2.46	0.48
40:J:53:ILE:HG22	40:J:61:ALA:O	2.13	0.48
52:03:213:SER:HA	52:03:222:VAL:O	2.13	0.48
53:A:33:A:H2'	53:A:34:C:C6	2.48	0.48
54:01:437:U:H2'	54:01:438:G:C8	2.48	0.48
54:01:1204:A:H4'	54:01:1205:A:H5"	1.95	0.48
54:01:1364:G:H5'	54:01:1809:A:H1'	1.95	0.48
54:01:1883:U:H2'	54:01:1884:G:O4'	2.13	0.48
55:02:79:G:H2'	55:02:80:U:O4'	2.13	0.48
58:Y:47:U:H3'	58:Y:48:C:H5"	1.95	0.48
1:04:42:ARG:HH11	1:04:42:ARG:HG3	1.78	0.48
1:04:237:ARG:HD2	54:01:2591:C:OP1	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:07:82:TYR:CD1	4:07:83:PRO:HD2	2.48	0.48
18:21:107:VAL:HG13	18:21:107:VAL:O	2.12	0.48
20:23:4:ILE:N	20:23:4:ILE:CD1	2.77	0.48
23:26:69:GLU:O	23:26:72:ALA:HB3	2.14	0.48
33:C:86:LEU:O	33:C:90:VAL:HG23	2.14	0.48
37:G:55:LYS:HB2	37:G:60:ALA:HB2	1.95	0.48
39:I:110:VAL:O	39:I:110:VAL:HG23	2.12	0.48
40:J:15:HIS:C	40:J:17:LEU:H	2.17	0.48
41:K:23:HIS:HB3	41:K:30:ILE:CG2	2.43	0.48
45:O:55:LEU:O	45:O:58:MET:HG2	2.13	0.48
50:T:23:ARG:HH21	50:T:60:GLN:HE22	1.60	0.48
53:A:1251:A:H2'	53:A:1252:A:C8	2.47	0.48
54:01:531:C:O2'	54:01:563:A:H5"	2.14	0.48
54:01:1219:U:H2'	54:01:1220:G:C8	2.48	0.48
54:01:2564:A:C2	54:01:2647:U:H4'	2.49	0.48
55:02:104:A:H2'	55:02:105:G:O4'	2.14	0.48
56:W:50:U:H2'	56:W:51:C:C6	2.47	0.48
1:04:12:ARG:HD3	1:04:15:VAL:HG21	1.95	0.48
6:09:117:LEU:O	6:09:119:ASN:N	2.44	0.48
13:16:73:ASN:HA	13:16:76:VAL:HG12	1.95	0.48
21:24:51:GLN:OE1	21:24:86:LEU:HD21	2.14	0.48
40:J:101:SER:C	40:J:102:LEU:HD12	2.33	0.48
42:L:28:GLN:HB3	42:L:80:LEU:HD11	1.94	0.48
42:L:86:VAL:CG2	42:L:89:LEU:H	2.26	0.48
46:P:14:ARG:NH2	46:P:42:ILE:HD12	2.28	0.48
51:U:36:PHE:O	51:U:37:TYR:HB3	2.12	0.48
53:A:128:G:O2'	53:A:129:A:H5'	2.13	0.48
53:A:206:C:H2'	53:A:207:C:O4'	2.14	0.48
53:A:236:A:H2'	53:A:237:G:H8	1.77	0.48
53:A:674:G:H2'	53:A:675:A:C8	2.48	0.48
7:10:54:VAL:HG22	7:10:54:VAL:O	2.12	0.48
22:25:42:HIS:HB2	22:25:75:PHE:CD1	2.48	0.48
27:30:52:LYS:HG3	27:30:52:LYS:O	2.13	0.48
32:B:212:TYR:O	32:B:216:VAL:HG23	2.12	0.48
33:C:38:VAL:O	33:C:42:LEU:HD13	2.14	0.48
35:E:163:ILE:HD12	35:E:163:ILE:C	2.34	0.48
36:F:86:ARG:NH2	53:A:673:A:O3'	2.46	0.48
37:G:44:SER:HA	37:G:47:GLU:OE1	2.13	0.48
37:G:135:LYS:O	37:G:138:GLU:HB2	2.14	0.48
40:J:53:ILE:HG23	53:A:1060:U:H4'	1.96	0.48
47:Q:39:ARG:HG3	47:Q:39:ARG:HH11	1.79	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:406:G:H2'	54:01:407:G:H8	1.77	0.48
54:01:542:C:H2'	54:01:543:G:C5'	2.44	0.48
54:01:572:A:H5"	54:01:573:U:OP2	2.13	0.48
54:01:1565:C:O2'	54:01:1566:A:H2'	2.14	0.48
54:01:1595:C:H2'	54:01:1596:A:C8	2.48	0.48
54:01:2415:G:H2'	54:01:2416:C:C6	2.49	0.48
54:01:2648:G:H2'	54:01:2649:C:C6	2.48	0.48
54:01:2718:G:H21	54:01:2847:U:H4'	1.78	0.48
55:02:72:G:H21	55:02:104:A:H62	1.61	0.48
4:07:99:PHE:O	4:07:103:ILE:HG23	2.14	0.48
4:07:141:ASP:O	4:07:142:TYR:HB3	2.13	0.48
5:08:9:VAL:O	5:08:9:VAL:HG13	2.13	0.48
8:11:124:MET:O	8:11:127:SER:HB3	2.13	0.48
13:16:99:LYS:HE2	27:30:40:HIS:O	2.14	0.48
14:17:17:LYS:HZ3	54:01:2380:C:H5'	1.77	0.48
15:18:96:LEU:O	15:18:98:TYR:N	2.46	0.48
32:B:47:PRO:HA	32:B:50:ASN:HD22	1.78	0.48
39:I:43:ALA:O	39:I:46:VAL:HG13	2.13	0.48
42:L:74:GLN:C	42:L:76:HIS:H	2.14	0.48
47:Q:13:SER:H	47:Q:21:VAL:CG1	2.24	0.48
53:A:1109:C:H2'	53:A:1110:A:O4'	2.13	0.48
54:01:2314:A:H2'	54:01:2315:G:C8	2.49	0.48
3:06:5:LEU:HD22	3:06:10:SER:HB3	1.94	0.48
5:08:3:VAL:HG22	54:01:2751:G:H4'	1.95	0.48
7:10:55:VAL:HA	54:01:1084:A:H5"	1.94	0.48
7:10:60:LEU:HG	7:10:78:GLY:HA3	1.95	0.48
32:B:202:ASN:HB2	59:Z:43:LYS:HZ1	1.76	0.48
36:F:51:ILE:HG23	36:F:86:ARG:HE	1.79	0.48
37:G:14:ASP:OD2	37:G:16:LYS:HB3	2.13	0.48
38:H:95:MET:C	38:H:97:GLY:N	2.67	0.48
50:T:54:GLN:O	50:T:57:VAL:HG12	2.14	0.48
53:A:1414:U:H2'	53:A:1415:G:H8	1.79	0.48
54:01:873:C:H2'	54:01:874:G:H8	1.77	0.48
54:01:2055:C:H2'	54:01:2504:U:H5'	1.96	0.48
54:01:2266:A:H4'	54:01:2267:A:N3	2.28	0.48
55:02:97:C:C2'	55:02:98:G:H5'	2.44	0.48
5:08:66:THR:HG23	54:01:2747:G:O2'	2.13	0.48
16:19:108:LEU:HD23	17:20:48:LYS:HZ3	1.79	0.48
17:20:37:GLU:O	17:20:38:VAL:C	2.52	0.48
20:23:50:ALA:C	20:23:52:ASN:H	2.17	0.48
26:29:36:VAL:HB	26:29:40:CYS:SG	2.53	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:D:170:LEU:HD12	34:D:170:LEU:C	2.34	0.48
37:G:102:TRP:CH2	37:G:140:VAL:HG21	2.49	0.48
42:L:32:VAL:O	42:L:33:CYS:HB3	2.13	0.48
42:L:34:THR:N	42:L:53:ARG:O	2.44	0.48
45:O:81:ILE:HG13	45:O:82:GLU:N	2.29	0.48
46:P:14:ARG:HH11	46:P:14:ARG:HG3	1.79	0.48
46:P:40:ASN:OD1	46:P:43:ALA:N	2.47	0.48
46:P:48:GLU:CG	46:P:49:GLY:H	2.16	0.48
50:T:70:LYS:HA	50:T:73:ARG:NH1	2.29	0.48
53:A:422:C:H5'	53:A:423:G:N3	2.28	0.48
53:A:580:C:H2'	53:A:581:G:O4'	2.14	0.48
53:A:608:A:H2'	53:A:609:A:C8	2.48	0.48
53:A:1171:A:H2'	53:A:1172:C:C6	2.49	0.48
54:01:611:C:H2'	54:01:612:G:O4'	2.14	0.48
54:01:2361:G:O2'	54:01:2362:C:H5'	2.13	0.48
55:02:49:C:H2'	55:02:50:A:H8	1.79	0.48
55:02:106:G:H2'	55:02:107:G:O4'	2.14	0.48
5:08:98:LYS:HZ2	5:08:103:ASN:HD22	1.62	0.48
6:09:31:VAL:N	6:09:32:PRO:HD2	2.28	0.48
11:14:58:TYR:CD1	11:14:59:ARG:N	2.82	0.48
12:15:41:LEU:HG	12:15:96:ILE:HG13	1.95	0.48
13:16:3:HIS:O	13:16:4:ARG:HB2	2.14	0.48
28:31:36:LYS:CG	28:31:45:HIS:HB3	2.43	0.48
29:32:10:LEU:O	29:32:14:ARG:HG2	2.13	0.48
39:I:129:ARG:HG2	39:I:129:ARG:HH11	1.78	0.48
43:M:6:ILE:HG13	43:M:7:ASN:N	2.21	0.48
46:P:8:ARG:HB3	46:P:28:ARG:CZ	2.44	0.48
51:U:39:LYS:N	51:U:40:PRO:CD	2.77	0.48
53:A:82:G:H1	53:A:87:C:H42	1.62	0.48
53:A:131:A:H2'	53:A:132:C:C6	2.49	0.48
53:A:744:C:H2'	53:A:745:G:H8	1.79	0.48
54:01:65:U:H2'	54:01:66:C:C6	2.49	0.48
54:01:304:U:H2'	54:01:305:C:C6	2.48	0.48
54:01:2086:U:H2'	54:01:2087:G:H8	1.78	0.48
59:Z:33:LYS:O	59:Z:34:ASP:HB2	2.14	0.48
1:04:104:LEU:HD12	1:04:142:ASN:HB2	1.95	0.48
6:09:125:THR:HG23	6:09:146:VAL:O	2.14	0.48
12:15:26:VAL:HA	12:15:104:GLU:OE2	2.14	0.48
15:18:23:ASP:O	15:18:25:VAL:HG23	2.14	0.48
18:21:21:ALA:O	18:21:25:ARG:HG2	2.14	0.48
25:28:30:ARG:HG2	25:28:30:ARG:HH11	1.79	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:B:16:GLY:C	59:Z:43:LYS:HD2	2.34	0.48
33:C:22:PHE:CE2	40:J:11:LYS:HG3	2.49	0.48
34:D:50:TYR:CD2	53:A:508:U:H4'	2.49	0.48
53:A:494:G:O2'	53:A:496:A:H1'	2.14	0.48
53:A:762:U:H2'	53:A:763:G:C8	2.49	0.48
54:01:230:G:O2'	54:01:231:A:H5'	2.14	0.48
54:01:248:G:H3'	54:01:249:C:C5'	2.44	0.48
54:01:2183:A:H2'	54:01:2184:A:H8	1.79	0.48
2:05:125:TRP:CG	2:05:160:LYS:HB3	2.49	0.47
4:07:101:ARG:HG3	4:07:105:ILE:HD11	1.96	0.47
4:07:122:ASP:OD2	4:07:124:ARG:HB3	2.14	0.47
11:14:93:ASN:O	11:14:94:THR:HB	2.14	0.47
15:18:59:THR:HG22	15:18:72:VAL:CG1	2.24	0.47
17:20:37:GLU:HA	17:20:53:PHE:CD1	2.49	0.47
25:28:57:GLU:HG3	25:28:57:GLU:O	2.14	0.47
34:D:5:GLY:O	34:D:7:LYS:N	2.47	0.47
35:E:54:GLU:HG2	35:E:56:PRO:CD	2.40	0.47
36:F:100:SER:HB3	36:F:101:PRO:CD	2.44	0.47
38:H:72:GLU:HB3	38:H:129:ALA:C	2.34	0.47
42:L:48:LEU:HB2	53:A:520:A:OP1	2.13	0.47
42:L:83:GLY:HA3	53:A:552:U:O3'	2.14	0.47
53:A:405:U:C3'	53:A:406:G:H5'	2.40	0.47
53:A:1052:U:H2'	53:A:1200:C:H41	1.78	0.47
54:01:1035:U:H2'	54:01:1036:G:H8	1.78	0.47
54:01:1387:A:H2'	54:01:1388:G:C8	2.49	0.47
54:01:2371:G:O2'	54:01:2372:U:H5'	2.14	0.47
54:01:2741:A:H2'	54:01:2742:G:O4'	2.14	0.47
56:W:47:U:H3'	56:W:48:C:C5'	2.44	0.47
58:Y:47:U:H3'	58:Y:48:C:C5'	2.44	0.47
2:05:150:GLN:HB2	54:01:2572:A:N7	2.30	0.47
6:09:132:PHE:N	6:09:140:ALA:O	2.47	0.47
8:11:74:PRO:O	8:11:77:VAL:HG22	2.14	0.47
18:21:1:MET:H2	18:21:110:ARG:HH11	1.62	0.47
30:33:33:THR:HG23	30:33:34:LYS:H	1.79	0.47
32:B:125:PHE:CE1	32:B:136:ARG:HB2	2.49	0.47
33:C:39:ARG:NH1	33:C:54:ILE:CG1	2.74	0.47
34:D:43:ARG:HG2	34:D:43:ARG:HH11	1.78	0.47
37:G:25:PHE:HA	37:G:28:ILE:HD12	1.97	0.47
41:K:28:ASN:OD1	41:K:46:ALA:HB3	2.14	0.47
41:K:67:GLU:O	41:K:70:ALA:HB3	2.13	0.47
42:L:89:LEU:HD12	42:L:89:LEU:N	2.29	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:M:27:THR:HG21	53:A:1328:C:OP1	2.14	0.47
46:P:7:ALA:O	46:P:17:TYR:HA	2.14	0.47
46:P:35:ARG:HH11	46:P:35:ARG:HG3	1.79	0.47
53:A:424:G:O2'	53:A:425:G:H5'	2.13	0.47
53:A:1394:A:H3'	53:A:1395:C:H5'	1.96	0.47
53:A:1437:A:H2'	53:A:1438:G:H8	1.79	0.47
54:01:596:U:H2'	54:01:597:G:C8	2.49	0.47
54:01:1020:A:C1'	54:01:1021:A:OP2	2.55	0.47
54:01:1097:U:H2'	54:01:1098:A:O4'	2.14	0.47
54:01:2673:G:H2'	54:01:2674:G:H8	1.77	0.47
7:10:56:ARG:HD2	54:01:1084:A:N3	2.30	0.47
7:10:96:PHE:HE2	7:10:126:LEU:HB2	1.79	0.47
8:11:74:PRO:O	8:11:78:LEU:HG	2.14	0.47
10:13:17:ARG:HG2	10:13:17:ARG:HH11	1.79	0.47
10:13:29:HIS:O	10:13:29:HIS:ND1	2.45	0.47
10:13:58:LEU:O	10:13:58:LEU:HD12	2.15	0.47
17:20:24:LYS:HA	17:20:94:THR:OG1	2.14	0.47
19:22:50:LEU:HD12	19:22:50:LEU:N	2.29	0.47
33:C:79:LYS:HG3	33:C:79:LYS:O	2.14	0.47
49:S:9:PHE:O	49:S:10:ILE:HG23	2.13	0.47
51:U:24:LYS:CG	51:U:25:ALA:N	2.73	0.47
52:03:220:ALA:HA	54:01:2176:A:C5'	2.44	0.47
53:A:1501:C:H5"	53:A:1502:A:OP2	2.14	0.47
54:01:863:A:H2'	54:01:864:G:C8	2.49	0.47
54:01:1775:U:C2'	54:01:1776:G:H5'	2.44	0.47
54:01:1972:G:H2'	54:01:1973:G:C8	2.46	0.47
54:01:2120:G:H2'	54:01:2121:G:C8	2.49	0.47
54:01:2297:A:N1	54:01:2321:U:H5	2.12	0.47
55:02:65:U:H3'	55:02:108:A:N6	2.24	0.47
59:Z:49:PRO:HD2	59:Z:90:LYS:HE2	1.96	0.47
1:04:215:VAL:HG12	1:04:216:ARG:N	2.29	0.47
2:05:25:THR:HG21	2:05:193:VAL:HG22	1.95	0.47
3:06:23:PHE:H	3:06:114:ARG:HH22	1.63	0.47
6:09:45:GLU:HA	6:09:48:GLU:HG2	1.95	0.47
7:10:47:GLU:CD	7:10:95:LEU:HD11	2.35	0.47
14:17:56:LYS:HA	14:17:59:ALA:HB3	1.95	0.47
14:17:94:ARG:O	14:17:97:PHE:N	2.47	0.47
18:21:33:LEU:CD2	18:21:51:LEU:HD23	2.44	0.47
41:K:122:PRO:HG2	51:U:35:GLU:HA	1.96	0.47
42:L:47:ALA:O	42:L:48:LEU:HD12	2.15	0.47
46:P:54:LEU:CD1	46:P:80:LYS:HA	2.45	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:T:34:VAL:O	50:T:38:ILE:HG13	2.15	0.47
53:A:24:U:H2'	53:A:25:C:C6	2.49	0.47
53:A:123:U:H5"	53:A:311:C:O2'	2.15	0.47
53:A:1123:U:O2'	53:A:1124:G:H5'	2.15	0.47
54:01:145:C:H2'	54:01:146:A:H8	1.79	0.47
54:01:2197:U:O2'	54:01:2198:A:H5"	2.14	0.47
3:06:181:ILE:HG23	11:14:2:ARG:HG3	1.95	0.47
8:11:106:GLN:O	8:11:109:ALA:HB3	2.14	0.47
13:16:78:LYS:HG3	13:16:82:GLU:OE1	2.15	0.47
18:21:43:ALA:HA	18:21:46:LEU:HB2	1.95	0.47
26:29:65:ASN:O	26:29:66:ILE:CB	2.58	0.47
30:33:2:LYS:HG3	54:01:242:G:C8	2.50	0.47
34:D:56:GLU:OE1	34:D:198:LEU:HD12	2.14	0.47
38:H:4:ASP:HB2	38:H:80:PRO:HG3	1.97	0.47
41:K:30:ILE:HG23	41:K:30:ILE:O	2.15	0.47
44:N:2:LYS:O	44:N:4:SER:N	2.47	0.47
48:R:32:ILE:HG22	48:R:38:ILE:HA	1.96	0.47
53:A:543:U:H2'	53:A:544:G:H8	1.78	0.47
54:01:813:U:H2'	54:01:814:C:C6	2.49	0.47
54:01:862:G:H2'	54:01:863:A:O4'	2.13	0.47
54:01:980:A:N7	54:01:981:A:C6	2.83	0.47
54:01:1788:C:O2'	54:01:1789:A:H5'	2.15	0.47
54:01:2036:C:H2'	54:01:2037:A:H8	1.79	0.47
54:01:2828:G:H2'	54:01:2829:A:H8	1.79	0.47
1:04:259:ASN:O	1:04:260:LYS:HB2	2.14	0.47
2:05:30:GLU:O	2:05:31:ALA:C	2.53	0.47
2:05:86:GLU:HG3	2:05:86:GLU:O	2.14	0.47
6:09:14:SER:OG	6:09:17:ASP:HB2	2.14	0.47
11:14:118:THR:O	11:14:120:VAL:HG23	2.14	0.47
12:15:62:LYS:HD2	12:15:64:TRP:CZ2	2.50	0.47
19:22:48:GLN:OE1	19:22:53:VAL:O	2.32	0.47
26:29:16:CYS:SG	26:29:18:CYS:HB2	2.54	0.47
35:E:89:THR:HG22	35:E:90:GLY:N	2.29	0.47
40:J:76:ILE:CD1	40:J:87:LEU:HD11	2.44	0.47
43:M:89:ARG:HH21	43:M:95:PRO:HG2	1.79	0.47
43:M:97:ARG:HH11	43:M:97:ARG:HG3	1.79	0.47
44:N:29:ILE:O	44:N:32:ASP:OD2	2.32	0.47
50:T:4:LYS:HG3	53:A:332:G:OP1	2.15	0.47
52:03:217:THR:HG23	54:01:2124:G:H21	1.78	0.47
53:A:955:U:H3	53:A:1225:A:H61	1.63	0.47
53:A:1228:C:H2'	53:A:1229:A:H8	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:290:U:H2'	54:01:291:G:C8	2.50	0.47
54:01:2155:U:H2'	54:01:2156:G:H5'	1.96	0.47
54:01:2572:A:OP1	54:01:2574:G:H4'	2.15	0.47
54:01:2606:C:H2'	54:01:2607:G:H8	1.79	0.47
2:05:158:GLY:HA3	9:12:80:HIS:HE2	1.79	0.47
3:06:147:LEU:HD13	3:06:168:ASP:HB3	1.96	0.47
5:08:44:HIS:CD2	5:08:45:ALA:H	2.32	0.47
7:10:33:VAL:HG22	7:10:36:ASP:OD2	2.15	0.47
11:14:14:LYS:O	11:14:14:LYS:HG3	2.14	0.47
14:17:27:VAL:HG13	14:17:95:SER:OG	2.15	0.47
15:18:52:ARG:NH2	54:01:2720:U:H5"	2.29	0.47
15:18:90:ALA:CB	15:18:112:ARG:HB2	2.44	0.47
16:19:50:ARG:HG3	16:19:50:ARG:NH1	2.26	0.47
19:22:69:ARG:HG3	19:22:74:ILE:HG22	1.96	0.47
29:32:25:LYS:HA	29:32:28:ARG:CZ	2.45	0.47
32:B:208:ALA:O	32:B:211:LEU:HB3	2.15	0.47
33:C:108:PRO:HA	33:C:114:LEU:HD12	1.95	0.47
34:D:10:LEU:HD22	34:D:62:ARG:NH1	2.30	0.47
40:J:8:ILE:HG12	40:J:100:ILE:HG22	1.97	0.47
42:L:49:ARG:HH22	53:A:522:C:H41	1.62	0.47
43:M:16:ILE:H	43:M:16:ILE:CD1	2.26	0.47
46:P:22:ALA:HA	46:P:33:ILE:CD1	2.44	0.47
51:U:33:ARG:NH1	51:U:34:ARG:HG2	2.30	0.47
52:03:15:VAL:HG13	52:03:21:TYR:CE2	2.49	0.47
53:A:411:A:N9	53:A:413:G:H1'	2.30	0.47
54:01:46:G:H2'	54:01:47:C:C6	2.50	0.47
54:01:274:C:H2'	54:01:275:C:O4'	2.15	0.47
54:01:1373:A:H2'	54:01:1374:G:O4'	2.15	0.47
54:01:1564:C:H2'	54:01:1565:C:O4'	2.14	0.47
54:01:2230:G:H2'	54:01:2231:U:C6	2.50	0.47
54:01:2416:C:H2'	54:01:2417:C:C6	2.50	0.47
54:01:2715:C:H2'	54:01:2716:C:O4'	2.15	0.47
58:Y:61:C:H6	58:Y:61:C:H5'	1.80	0.47
7:10:48:ALA:HB1	7:10:51:TYR:OH	2.15	0.47
11:14:51:GLU:O	54:01:833:A:H1'	2.15	0.47
12:15:6:ARG:HG3	12:15:6:ARG:O	2.14	0.47
12:15:59:ARG:HG3	12:15:59:ARG:NH2	2.30	0.47
19:22:6:ARG:HH12	19:22:10:VAL:HG22	1.80	0.47
19:22:59:ASN:HB2	19:22:84:TYR:HB2	1.96	0.47
24:27:16:THR:O	24:27:19:LEU:HB2	2.15	0.47
33:C:66:THR:HA	33:C:101:ASN:O	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:E:63:MET:O	35:E:67:ARG:HG2	2.15	0.47
35:E:111:ARG:HG3	35:E:111:ARG:NH1	2.28	0.47
37:G:4:ARG:HB3	37:G:6:ILE:HG13	1.97	0.47
48:R:16:GLY:O	48:R:18:GLN:HG2	2.15	0.47
48:R:48:ALA:O	48:R:51:GLN:HB3	2.15	0.47
53:A:665:A:H1'	53:A:733:G:H1'	1.96	0.47
53:A:744:C:H2'	53:A:745:G:C8	2.50	0.47
53:A:1330:U:H2'	53:A:1331:G:O4'	2.15	0.47
53:A:1356:G:H2'	53:A:1357:A:C8	2.49	0.47
54:01:832:U:H2'	54:01:833:A:H8	1.80	0.47
54:01:1268:A:H2'	54:01:1269:A:O4'	2.14	0.47
54:01:1352:U:O2'	54:01:1353:A:H5'	2.14	0.47
54:01:1435:G:H2'	54:01:1436:G:H8	1.80	0.47
54:01:1771:C:N4	54:01:1772:A:N6	2.63	0.47
54:01:2065:C:H2'	54:01:2066:C:C6	2.50	0.47
54:01:2270:A:H2'	54:01:2271:G:O4'	2.15	0.47
54:01:2591:C:H2'	54:01:2592:G:H8	1.79	0.47
54:01:2732:G:O2'	54:01:2733:A:H5'	2.15	0.47
56:X:71:C:H2'	56:X:72:A:H8	1.79	0.47
59:Z:110:GLY:HA3	59:Z:124:LEU:CD2	2.42	0.47
59:Z:133:GLY:HA2	59:Z:136:VAL:HB	1.96	0.47
1:04:14:HIS:O	1:04:203:VAL:HG21	2.15	0.47
1:04:18:VAL:CG2	1:04:202:ARG:HB2	2.45	0.47
4:07:102:LEU:HA	4:07:106:ALA:CB	2.45	0.47
6:09:63:ALA:HA	6:09:66:ASN:ND2	2.20	0.47
6:09:85:GLY:N	6:09:91:PHE:HB2	2.30	0.47
12:15:66:ARG:HB2	12:15:101:VAL:O	2.15	0.47
14:17:49:VAL:HG11	14:17:81:ARG:HG3	1.97	0.47
14:17:94:ARG:HB3	14:17:94:ARG:HH21	1.79	0.47
22:25:26:SER:HA	22:25:61:GLY:O	2.14	0.47
32:B:22:TRP:CE3	32:B:30:ILE:HD11	2.49	0.47
34:D:23:GLY:HA3	53:A:409:U:OP1	2.15	0.47
36:F:32:ALA:HB2	36:F:70:VAL:HG21	1.97	0.47
39:I:87:MET:HG3	39:I:88:GLU:H	1.80	0.47
40:J:32:THR:HG23	40:J:32:THR:O	2.15	0.47
48:R:12:PHE:O	48:R:14:ALA:N	2.48	0.47
51:U:24:LYS:CG	51:U:25:ALA:H	2.28	0.47
53:A:784:A:H2'	53:A:785:G:C8	2.49	0.47
53:A:1402:C:H2'	53:A:1403:C:O4'	2.15	0.47
53:A:1404:C:H2'	53:A:1405:G:C8	2.50	0.47
53:A:1477:U:H2'	53:A:1478:U:C6	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:290:U:H2'	54:01:291:G:H8	1.80	0.47
54:01:622:G:H2'	54:01:623:C:C6	2.50	0.47
2:05:77:ARG:NH2	2:05:200:ASP:OD1	2.48	0.47
2:05:98:VAL:HG23	2:05:101:PHE:HD2	1.80	0.47
3:06:115:GLN:HB3	3:06:117:ARG:HG3	1.96	0.47
4:07:102:LEU:O	4:07:106:ALA:HB3	2.15	0.47
5:08:102:ILE:HD11	5:08:116:LEU:HD21	1.96	0.47
6:09:42:LYS:HB3	6:09:46:PHE:CE2	2.50	0.47
6:09:77:THR:HA	6:09:143:ILE:O	2.14	0.47
9:12:4:PHE:CG	16:19:99:VAL:HG11	2.49	0.47
9:12:40:HIS:NE2	9:12:52:ASP:OD2	2.44	0.47
15:18:38:ARG:HD2	53:A:345:C:OP1	2.14	0.47
15:18:91:VAL:HG21	15:18:96:LEU:HD21	1.96	0.47
32:B:215:ALA:O	32:B:218:ALA:HB3	2.15	0.47
37:G:68:VAL:O	37:G:70:PRO:HD3	2.15	0.47
39:I:104:THR:HG22	39:I:106:ASP:N	2.10	0.47
40:J:9:ARG:HH12	40:J:11:LYS:CE	2.28	0.47
41:K:108:ASN:HB3	51:U:6:ARG:HG3	1.96	0.47
42:L:98:ARG:HD2	42:L:103:CYS:SG	2.55	0.47
53:A:401:C:H2'	53:A:402:G:H8	1.80	0.47
53:A:631:C:H3'	53:A:632:U:H5'	1.96	0.47
53:A:1195:C:H5"	53:A:1196:A:OP2	2.14	0.47
54:01:940:G:H2'	54:01:941:A:H5"	1.96	0.47
54:01:1344:U:H3'	54:01:1345:C:H5'	1.96	0.47
54:01:1802:A:H2'	54:01:1803:A:C8	2.50	0.47
54:01:2208:C:H2'	54:01:2209:G:H8	1.80	0.47
54:01:2472:G:H2'	54:01:2475:C:H42	1.80	0.47
54:01:2884:U:O2	54:01:2884:U:H3'	2.14	0.47
2:05:77:ARG:HG3	2:05:77:ARG:O	2.15	0.46
4:07:94:ARG:O	4:07:97:GLU:HB3	2.15	0.46
8:11:52:LEU:HD12	8:11:52:LEU:N	2.29	0.46
11:14:111:ILE:CG2	11:14:112:LEU:N	2.78	0.46
13:16:63:ARG:HD3	54:01:1454:C:O4'	2.15	0.46
16:19:29:ARG:HH12	27:30:9:ARG:NE	2.13	0.46
28:31:32:LYS:HD2	28:31:50:GLU:HB3	1.97	0.46
37:G:119:LEU:C	37:G:119:LEU:HD23	2.36	0.46
40:J:86:ALA:O	40:J:90:LEU:HD12	2.16	0.46
41:K:66:ALA:O	41:K:70:ALA:N	2.47	0.46
42:L:87:LYS:HG2	42:L:87:LYS:O	2.14	0.46
53:A:434:U:H2'	53:A:435:A:C8	2.50	0.46
53:A:922:G:H2'	53:A:923:A:C8	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:245:G:HO2'	54:01:384:A:H2	1.61	0.46
54:01:662:G:H2'	54:01:663:G:H8	1.79	0.46
54:01:680:C:H2'	54:01:681:G:H8	1.79	0.46
54:01:1903:G:H2'	54:01:1904:G:H8	1.79	0.46
54:01:2066:C:O2'	54:01:2067:G:H5'	2.15	0.46
54:01:2215:C:H2'	54:01:2216:G:H8	1.80	0.46
54:01:2860:A:H2'	54:01:2861:U:H5'	1.97	0.46
1:04:19:VAL:HG21	54:01:1565:C:OP1	2.15	0.46
1:04:115:ILE:O	1:04:116:GLN:HB3	2.15	0.46
8:11:24:GLY:O	8:11:27:LEU:HG	2.15	0.46
12:15:55:ARG:CD	54:01:2469:A:H4'	2.45	0.46
16:19:48:ASP:HA	16:19:51:GLN:HB2	1.98	0.46
18:21:6:LYS:CG	54:01:494:G:H4'	2.43	0.46
32:B:166:ASP:CG	32:B:190:SER:HA	2.36	0.46
32:B:202:ASN:ND2	32:B:205:ALA:HB3	2.29	0.46
34:D:8:LEU:HD21	34:D:31:CYS:CB	2.45	0.46
35:E:98:ALA:CB	35:E:123:LEU:HG	2.45	0.46
38:H:12:ARG:HD3	38:H:26:MET:HB3	1.95	0.46
39:I:114:LYS:HB2	39:I:117:LEU:HD22	1.96	0.46
40:J:53:ILE:HG13	44:N:84:ARG:CD	2.45	0.46
44:N:60:ARG:O	44:N:61:ASN:HB2	2.16	0.46
50:T:70:LYS:HG3	50:T:73:ARG:HH22	1.81	0.46
53:A:695:A:H2'	53:A:696:A:C8	2.51	0.46
54:01:871:U:H2'	54:01:872:U:C6	2.50	0.46
54:01:1196:C:H2'	54:01:1197:G:C8	2.50	0.46
54:01:1363:C:H2'	54:01:1364:G:H8	1.80	0.46
54:01:1642:G:O2'	54:01:1643:G:H5'	2.15	0.46
54:01:2001:C:H1'	54:01:2689:U:C4	2.50	0.46
54:01:2646:C:H2'	54:01:2647:U:O4'	2.15	0.46
2:05:90:PHE:HD1	2:05:94:GLN:NE2	2.13	0.46
4:07:70:ARG:NH2	4:07:71:LYS:HG2	2.31	0.46
5:08:100:ASN:CA	5:08:116:LEU:HD12	2.45	0.46
6:09:3:VAL:HG13	6:09:37:VAL:O	2.15	0.46
6:09:87:GLU:HG2	36:F:21:MET:CE	2.46	0.46
9:12:77:HIS:ND1	9:12:79:GLY:N	2.59	0.46
10:13:79:PHE:CD1	15:18:69:VAL:HG22	2.48	0.46
15:18:38:ARG:HH21	15:18:38:ARG:HG3	1.80	0.46
18:21:18:ARG:CZ	54:01:518:G:H4'	2.45	0.46
30:33:3:ILE:HG22	30:33:4:LYS:O	2.16	0.46
32:B:109:SER:O	32:B:112:ARG:HB3	2.15	0.46
39:I:30:ASN:ND2	39:I:65:THR:HA	2.29	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:J:41:PRO:O	40:J:42:LEU:HB2	2.13	0.46
44:N:2:LYS:O	44:N:5:MET:N	2.48	0.46
46:P:8:ARG:O	46:P:9:HIS:ND1	2.48	0.46
46:P:44:SER:C	46:P:46:LYS:H	2.18	0.46
53:A:62:U:O2'	53:A:379:C:H1'	2.16	0.46
53:A:285:C:H2'	53:A:286:C:C6	2.49	0.46
53:A:1032:G:H3'	53:A:1032:G:N3	2.31	0.46
53:A:1163:A:H2'	53:A:1164:G:C8	2.50	0.46
53:A:1201:A:C1'	53:A:1202:U:OP2	2.57	0.46
54:01:848:C:H2'	54:01:849:A:C8	2.50	0.46
54:01:1060:U:C5'	54:01:1062:G:H5'	2.44	0.46
54:01:1209:U:H2'	54:01:1210:G:H21	1.80	0.46
54:01:1637:A:H2'	54:01:1638:C:C6	2.51	0.46
54:01:2443:C:H2'	54:01:2444:G:C8	2.49	0.46
1:04:116:GLN:HG3	1:04:121:ALA:HB2	1.97	0.46
3:06:109:LEU:HD11	3:06:180:LEU:HD13	1.97	0.46
3:06:117:ARG:HH12	11:14:2:ARG:CB	2.27	0.46
4:07:66:ILE:HG12	55:02:41:G:H22	1.80	0.46
5:08:23:ILE:HG21	5:08:71:LEU:HD21	1.97	0.46
7:10:107:GLU:O	7:10:108:VAL:HB	2.16	0.46
13:16:94:TYR:O	13:16:116:VAL:HG23	2.16	0.46
16:19:47:ARG:HG3	54:01:1156:A:N6	2.30	0.46
17:20:38:VAL:O	17:20:38:VAL:HG13	2.14	0.46
21:24:60:VAL:HG22	21:24:73:LYS:HE3	1.98	0.46
26:29:2:LYS:HB2	26:29:5:ILE:HD13	1.96	0.46
27:30:14:MET:SD	54:01:2045:C:H5"	2.55	0.46
32:B:41:ASN:HA	59:Z:5:PHE:CE2	2.50	0.46
33:C:63:ILE:HG22	33:C:97:PRO:O	2.16	0.46
34:D:36:ALA:H	34:D:37:PRO:CD	2.23	0.46
34:D:49:ASP:O	34:D:52:VAL:HG22	2.15	0.46
34:D:193:ASP:OD1	34:D:194:ILE:HG23	2.16	0.46
35:E:76:ASN:O	35:E:79:THR:HG22	2.16	0.46
37:G:35:LYS:O	37:G:38:ALA:HB3	2.16	0.46
38:H:95:MET:O	38:H:97:GLY:N	2.48	0.46
40:J:5:ARG:N	40:J:77:VAL:O	2.49	0.46
43:M:2:ARG:HE	43:M:8:ILE:CD1	2.16	0.46
44:N:25:GLU:O	44:N:29:ILE:N	2.48	0.46
49:S:9:PHE:HE2	49:S:36:ARG:HE	1.64	0.46
49:S:65:MET:HG2	49:S:73:PHE:CZ	2.51	0.46
51:U:28:LEU:HD23	51:U:28:LEU:C	2.35	0.46
53:A:1316:G:H2'	53:A:1317:C:H5"	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:1355:G:H2'	54:01:1356:G:H8	1.81	0.46
54:01:2053:G:O2'	54:01:2054:A:H5'	2.14	0.46
54:01:2609:U:H5'	54:01:2610:C:OP2	2.14	0.46
7:10:56:ARG:HH21	7:10:83:ALA:HB2	1.78	0.46
9:12:27:ARG:NH2	54:01:1142:A:H4'	2.31	0.46
9:12:98:GLU:OE2	9:12:125:TYR:HA	2.15	0.46
11:14:61:LEU:O	30:33:12:ARG:HD3	2.16	0.46
18:21:69:LEU:HG	18:21:107:VAL:CG2	2.46	0.46
22:25:64:LYS:HB2	22:25:79:GLU:OE1	2.15	0.46
27:30:56:LYS:OXT	27:30:56:LYS:HG2	2.15	0.46
29:32:3:ARG:HD2	29:32:4:THR:H	1.80	0.46
31:34:25:VAL:HB	31:34:35:GLN:HG3	1.97	0.46
41:K:117:HIS:O	41:K:118:ASN:HB2	2.15	0.46
42:L:34:THR:O	42:L:53:ARG:HB3	2.14	0.46
42:L:76:HIS:O	42:L:77:SER:OG	2.30	0.46
46:P:2:VAL:HG23	46:P:2:VAL:O	2.15	0.46
50:T:20:ASN:HD22	53:A:323:U:H5"	1.80	0.46
51:U:56:ALA:O	51:U:59:LEU:HB3	2.16	0.46
53:A:1198:G:H5'	53:A:1198:G:H8	1.81	0.46
54:01:16:C:O2'	54:01:17:G:H5'	2.15	0.46
54:01:27:G:H22	54:01:512:G:H1'	1.79	0.46
54:01:140:C:H2'	54:01:141:G:H4'	1.97	0.46
54:01:176:A:O2'	54:01:177:G:H5'	2.14	0.46
54:01:1594:U:H2'	54:01:1595:C:C6	2.51	0.46
54:01:2134:A:C6	54:01:2157:G:H4'	2.49	0.46
55:02:88:C:C4'	55:02:89:U:OP1	2.63	0.46
1:04:48:ILE:O	1:04:48:ILE:HG23	2.15	0.46
5:08:67:ALA:O	5:08:70:LEU:HB2	2.16	0.46
14:17:17:LYS:HZ1	54:01:2380:C:C5'	2.23	0.46
20:23:88:ASP:CG	20:23:89:GLY:H	2.18	0.46
34:D:40:HIS:C	34:D:42:ALA:H	2.18	0.46
39:I:81:GLY:O	39:I:85:ALA:N	2.49	0.46
40:J:5:ARG:O	40:J:102:LEU:HA	2.15	0.46
47:Q:73:THR:HG22	47:Q:74:LEU:N	2.30	0.46
49:S:5:LYS:HG3	49:S:6:LYS:N	2.30	0.46
53:A:10:A:H2'	53:A:11:G:C8	2.49	0.46
53:A:337:G:H2'	53:A:338:A:C8	2.51	0.46
53:A:1296:C:H4'	53:A:1302:C:N4	2.31	0.46
54:01:558:U:H2'	54:01:559:G:H8	1.80	0.46
54:01:1423:G:H2'	54:01:1424:G:H8	1.79	0.46
54:01:1664:A:H61	54:01:1996:C:N4	1.99	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:2682:A:O2'	54:01:2683:C:H5'	2.16	0.46
55:02:2:G:H2'	55:02:3:C:C6	2.51	0.46
2:05:77:ARG:HG3	2:05:77:ARG:NH2	2.30	0.46
12:15:11:LYS:HD3	12:15:86:LYS:CG	2.45	0.46
14:17:31:THR:HG23	55:02:29:A:OP2	2.15	0.46
14:17:79:ALA:O	14:17:83:LEU:HG	2.15	0.46
16:19:19:GLN:HE22	17:20:73:LYS:HE2	1.80	0.46
18:21:43:ALA:HA	18:21:46:LEU:HD12	1.96	0.46
18:21:50:VAL:O	18:21:53:SER:HB3	2.16	0.46
19:22:54:GLU:OE1	19:22:54:GLU:N	2.48	0.46
28:31:50:GLU:CD	28:31:51:ALA:N	2.69	0.46
33:C:96:VAL:HB	33:C:97:PRO:CD	2.41	0.46
34:D:144:ILE:HD13	34:D:177:MET:HB3	1.97	0.46
35:E:122:VAL:HG23	35:E:122:VAL:O	2.16	0.46
44:N:63:CYS:HB2	44:N:79:SER:HB2	1.98	0.46
44:N:80:ARG:HA	44:N:83:VAL:HG12	1.98	0.46
47:Q:39:ARG:HA	53:A:280:C:O2	2.16	0.46
51:U:6:ARG:HH11	51:U:6:ARG:HB2	1.79	0.46
53:A:497:G:H2'	53:A:498:A:C8	2.51	0.46
53:A:1125:U:H2'	53:A:1126:U:H2'	1.98	0.46
54:01:468:G:H2'	54:01:469:G:O4'	2.16	0.46
54:01:656:G:O2'	54:01:657:U:H5'	2.16	0.46
54:01:1047:G:H2'	54:01:1110:G:N2	2.31	0.46
54:01:1396:U:H5"	54:01:1397:U:OP2	2.16	0.46
54:01:2231:U:H2'	54:01:2232:C:C6	2.50	0.46
54:01:2818:U:H2'	54:01:2819:G:C8	2.48	0.46
5:08:68:ARG:HG2	5:08:68:ARG:NH1	2.31	0.46
6:09:16:GLY:HA2	6:09:47:PHE:CZ	2.50	0.46
7:10:5:LEU:O	7:10:9:GLN:N	2.45	0.46
7:10:34:THR:HG23	54:01:1056:G:H5'	1.98	0.46
11:14:95:LEU:HD11	11:14:125:LEU:HD21	1.97	0.46
22:25:35:ARG:HH11	22:25:35:ARG:HG3	1.80	0.46
25:28:12:ALA:HB2	25:28:23:LEU:CD1	2.46	0.46
27:30:3:GLN:HA	54:01:2615:U:C2	2.50	0.46
37:G:31:VAL:C	37:G:33:GLY:H	2.18	0.46
39:I:89:TYR:HB3	39:I:93:LEU:HD12	1.98	0.46
48:R:12:PHE:C	48:R:14:ALA:N	2.69	0.46
48:R:21:ASP:OD2	48:R:23:LYS:HE2	2.15	0.46
48:R:51:GLN:O	48:R:54:LEU:HB3	2.15	0.46
51:U:37:TYR:CE2	53:A:1525:G:H5"	2.51	0.46
53:A:948:C:H2'	53:A:949:A:H8	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:43:G:H2'	54:01:44:A:O4'	2.16	0.46
54:01:809:G:C5	54:01:810:U:C4	3.04	0.46
54:01:1346:G:H2'	54:01:1347:A:C8	2.51	0.46
54:01:1420:A:H5'	54:01:1421:G:OP2	2.16	0.46
54:01:2442:C:O2'	54:01:2443:C:H5'	2.16	0.46
54:01:2489:U:C2'	54:01:2490:G:H5'	2.46	0.46
54:01:2655:G:O2'	54:01:2656:U:H5	1.98	0.46
54:01:2757:A:H2'	54:01:2757:A:N3	2.30	0.46
55:02:39:A:H2'	55:02:40:U:C5	2.50	0.46
1:04:252:LYS:NZ	54:01:1825:U:H1'	2.31	0.46
4:07:67:THR:N	4:07:85:GLY:O	2.40	0.46
4:07:95:MET:HG3	4:07:96:TRP:N	2.31	0.46
4:07:174:PHE:O	4:07:176:PHE:N	2.49	0.46
10:13:9:ASN:O	10:13:83:ALA:HA	2.16	0.46
11:14:69:ARG:HH11	11:14:69:ARG:HG3	1.81	0.46
33:C:49:ALA:HB1	33:C:75:VAL:HG22	1.98	0.46
33:C:131:ARG:HE	33:C:135:ARG:NH2	2.06	0.46
34:D:57:LYS:HD2	34:D:203:TYR:OH	2.15	0.46
36:F:51:ILE:CG2	36:F:86:ARG:HE	2.29	0.46
45:O:71:ARG:NH2	53:A:754:C:H5'	2.31	0.46
47:Q:57:VAL:HG12	47:Q:58:VAL:H	1.81	0.46
53:A:86:G:H4'	53:A:87:C:C6	2.51	0.46
54:01:7:G:H2'	54:01:8:C:C6	2.51	0.46
54:01:207:A:H2'	54:01:208:C:O4'	2.16	0.46
54:01:1188:U:O2'	54:01:1189:A:H5'	2.15	0.46
54:01:1258:U:H2'	54:01:1259:G:C8	2.51	0.46
54:01:1999:C:H2'	54:01:2000:C:C6	2.50	0.46
54:01:2564:A:OP1	54:01:2648:G:H4'	2.15	0.46
4:07:39:VAL:HG13	4:07:40:GLY:N	2.31	0.46
7:10:55:VAL:HG23	7:10:84:TYR:HB2	1.97	0.46
15:18:94:ALA:C	15:18:95:LYS:HD2	2.37	0.46
17:20:49:ILE:HD12	17:20:52:PRO:HA	1.98	0.46
17:20:84:ARG:HB2	17:20:84:ARG:HH21	1.81	0.46
21:24:82:TYR:CD1	21:24:83:LYS:HG3	2.51	0.46
22:25:21:ARG:HD2	22:25:25:GLU:CD	2.37	0.46
26:29:37:CYS:HG	26:29:40:CYS:HB3	1.80	0.46
38:H:29:SER:O	38:H:33:VAL:HG23	2.16	0.46
41:K:39:ASN:HD22	53:A:683:G:H21	1.64	0.46
41:K:100:ASN:ND2	41:K:106:ILE:HG13	2.31	0.46
46:P:46:LYS:NZ	46:P:48:GLU:HB3	2.31	0.46
53:A:86:G:H5"	53:A:87:C:OP1	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:399:G:H2'	53:A:400:C:C6	2.51	0.46
53:A:560:A:H4'	53:A:561:U:H5'	1.98	0.46
53:A:709:U:H2'	53:A:710:G:C8	2.50	0.46
53:A:763:G:H2'	53:A:764:C:C6	2.49	0.46
53:A:815:A:H5"	53:A:817:C:N4	2.31	0.46
53:A:860:A:H2'	53:A:861:G:O4'	2.17	0.46
53:A:881:G:O2'	53:A:882:C:H5'	2.16	0.46
53:A:882:C:O2'	53:A:883:C:H5'	2.15	0.46
53:A:1325:C:O2'	53:A:1326:U:H5'	2.15	0.46
53:A:1404:C:H2'	53:A:1405:G:H8	1.81	0.46
54:01:783:A:H2'	54:01:784:G:H4'	1.98	0.46
54:01:2631:G:O2'	54:01:2632:A:H5'	2.15	0.46
54:01:2795:C:H2'	54:01:2796:U:O4'	2.16	0.46
54:01:2798:U:H4'	54:01:2799:A:C4	2.51	0.46
12:15:66:ARG:HG3	12:15:66:ARG:NH1	2.31	0.45
12:15:78:LEU:HD23	12:15:78:LEU:C	2.37	0.45
13:16:67:PHE:C	13:16:69:ARG:H	2.19	0.45
23:26:63:ILE:HG23	23:26:64:ASP:N	2.31	0.45
27:30:11:LYS:HA	27:30:14:MET:CE	2.46	0.45
28:31:13:SER:OG	28:31:46:VAL:HG12	2.16	0.45
32:B:131:LYS:O	32:B:135:MET:N	2.39	0.45
32:B:202:ASN:CB	59:Z:43:LYS:HZ1	2.29	0.45
34:D:158:LEU:HD23	34:D:158:LEU:C	2.36	0.45
36:F:49:TYR:CE1	36:F:51:ILE:HG12	2.51	0.45
39:I:119:LYS:O	39:I:121:ARG:N	2.43	0.45
39:I:122:ARG:NH1	39:I:123:ARG:O	2.49	0.45
43:M:84:CYS:O	43:M:88:LEU:HD13	2.16	0.45
47:Q:11:VAL:HG13	47:Q:20:ILE:HD11	1.97	0.45
47:Q:48:GLU:O	47:Q:49:ASN:C	2.55	0.45
48:R:35:SER:O	48:R:70:THR:HA	2.16	0.45
53:A:86:G:H4'	53:A:87:C:C5	2.51	0.45
53:A:467:U:H5'	53:A:468:A:OP2	2.16	0.45
53:A:918:A:H2'	53:A:919:A:O4'	2.16	0.45
53:A:1484:C:H2'	53:A:1485:U:H6	1.79	0.45
54:01:863:A:H2'	54:01:864:G:H8	1.81	0.45
54:01:968:C:H2'	54:01:969:G:C8	2.51	0.45
54:01:1190:G:H2'	54:01:1191:G:C8	2.50	0.45
54:01:1430:G:H2'	54:01:1431:A:O4'	2.17	0.45
54:01:2246:G:H2'	54:01:2247:A:C8	2.51	0.45
54:01:2573:C:OP1	54:01:2574:G:H5"	2.16	0.45
54:01:2638:G:H1'	54:01:2778:A:H61	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:2699:C:O2'	54:01:2700:A:H5'	2.16	0.45
54:01:2798:U:H4'	54:01:2799:A:C5	2.50	0.45
1:04:175:LEU:HD12	1:04:179:GLU:HG2	1.99	0.45
15:18:113:LEU:O	15:18:113:LEU:CD1	2.64	0.45
20:23:13:LEU:HD11	20:23:70:ALA:HB2	1.98	0.45
25:28:40:THR:HG23	25:28:43:ILE:H	1.81	0.45
34:D:1:ALA:N	53:A:405:U:O4	2.44	0.45
34:D:25:ARG:HH22	34:D:30:LYS:NZ	2.08	0.45
38:H:47:ASP:O	38:H:48:PHE:HB3	2.16	0.45
39:I:26:LYS:C	39:I:27:ILE:HD12	2.37	0.45
40:J:17:LEU:O	40:J:20:GLN:HG2	2.15	0.45
41:K:90:PRO:HG2	41:K:91:GLY:H	1.81	0.45
43:M:100:ARG:HG3	53:A:950:U:OP2	2.15	0.45
46:P:7:ALA:HB3	46:P:18:GLN:HB2	1.98	0.45
50:T:53:MET:C	50:T:55:PRO:HD2	2.36	0.45
53:A:152:A:H2'	53:A:153:C:H5'	1.98	0.45
53:A:184:G:H4'	53:A:224:U:H4'	1.98	0.45
53:A:273:U:H2'	53:A:274:A:H5'	1.97	0.45
53:A:571:U:H4'	53:A:819:A:C6	2.51	0.45
53:A:692:U:H2'	53:A:694:A:OP2	2.16	0.45
53:A:1508:A:H2'	53:A:1509:C:C6	2.52	0.45
54:01:214:G:O2'	54:01:215:G:H5'	2.16	0.45
54:01:1279:G:H2'	54:01:1280:G:H8	1.81	0.45
54:01:2087:G:H2'	54:01:2088:A:C8	2.52	0.45
54:01:2318:G:H2'	54:01:2319:G:O4'	2.17	0.45
55:02:49:C:H2'	55:02:50:A:C8	2.50	0.45
59:Z:55:ASN:HD22	59:Z:61:GLU:HG3	1.80	0.45
59:Z:157:ILE:HG23	59:Z:158:LYS:N	2.31	0.45
1:04:42:ARG:O	54:01:1813:G:H4'	2.16	0.45
1:04:224:MET:HG2	54:01:782:A:C2	2.51	0.45
2:05:2:ILE:HD11	2:05:100:LEU:HD21	1.98	0.45
9:12:27:ARG:HG3	9:12:27:ARG:NH1	2.31	0.45
10:13:76:VAL:H	15:18:72:VAL:HG22	1.82	0.45
14:17:110:ALA:HB3	14:17:117:PHE:CE2	2.51	0.45
23:26:18:SER:HB2	54:01:2080:A:H5'	1.97	0.45
28:31:25:ASN:OD1	28:31:28:THR:HG23	2.16	0.45
33:C:109:GLU:HB2	33:C:143:LEU:HD23	1.97	0.45
35:E:55:VAL:O	35:E:58:ALA:HB3	2.17	0.45
36:F:49:TYR:O	36:F:51:ILE:HG13	2.16	0.45
40:J:17:LEU:HD23	40:J:17:LEU:C	2.37	0.45
41:K:120:CYS:SG	53:A:677:U:H1'	2.57	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:O:57:ARG:HG2	45:O:57:ARG:HH11	1.81	0.45
53:A:349:A:O2'	53:A:350:G:H5'	2.16	0.45
53:A:1352:C:H2'	53:A:1353:G:C8	2.51	0.45
53:A:1444:U:H2'	53:A:1445:U:C6	2.51	0.45
54:01:381:G:H2'	54:01:382:A:H8	1.82	0.45
54:01:745:G:O2'	54:01:748:G:H1'	2.17	0.45
54:01:765:C:H2'	54:01:766:U:H6	1.79	0.45
54:01:1348:C:H2'	54:01:1349:C:H5'	1.97	0.45
54:01:2263:C:O2'	54:01:2264:C:H5'	2.16	0.45
54:01:2516:A:O2'	54:01:2517:C:H5'	2.16	0.45
57:V:17:U:H2'	57:V:18:G:C8	2.52	0.45
1:04:180:MET:HB2	1:04:268:ARG:H	1.81	0.45
3:06:115:GLN:C	3:06:117:ARG:H	2.20	0.45
4:07:53:ALA:O	4:07:64:PRO:HG3	2.16	0.45
5:08:157:LYS:HB2	5:08:159:LYS:HG3	1.98	0.45
13:16:79:LEU:O	13:16:80:PHE:HB2	2.16	0.45
25:28:53:MET:HG3	25:28:54:VAL:HG13	1.99	0.45
34:D:169:TRP:CD1	34:D:170:LEU:N	2.84	0.45
35:E:45:VAL:HG11	35:E:117:ALA:HA	1.99	0.45
35:E:45:VAL:CG1	35:E:117:ALA:HA	2.47	0.45
35:E:88:HIS:CE1	35:E:89:THR:OG1	2.70	0.45
36:F:103:VAL:HG12	36:F:107:ASP:OD2	2.17	0.45
39:I:22:PRO:HA	39:I:60:LEU:HB3	1.98	0.45
40:J:30:LYS:HA	40:J:34:ALA:CA	2.38	0.45
41:K:34:THR:HB	41:K:39:ASN:O	2.16	0.45
43:M:113:LYS:N	43:M:114:PRO:CD	2.77	0.45
45:O:86:LEU:HD12	45:O:87:ARG:CB	2.46	0.45
51:U:24:LYS:HG2	51:U:25:ALA:H	1.80	0.45
54:01:326:G:H2'	54:01:327:G:H8	1.81	0.45
54:01:341:C:H2'	54:01:342:A:C8	2.52	0.45
54:01:1932:A:H2'	54:01:1933:G:O4'	2.16	0.45
54:01:2832:U:H1'	54:01:2834:G:C2	2.50	0.45
4:07:48:LEU:O	4:07:51:ASN:HB2	2.17	0.45
8:11:42:ASN:HA	8:11:45:THR:HB	1.98	0.45
9:12:34:ARG:HH21	16:19:69:ARG:HD2	1.80	0.45
9:12:136:GLN:N	9:12:137:PRO:CD	2.80	0.45
14:17:88:LYS:O	14:17:115:LEU:HD12	2.16	0.45
14:17:103:VAL:HG23	14:17:104:GLN:N	2.31	0.45
22:25:12:SER:OG	54:01:2262:U:H5	1.99	0.45
25:28:5:LYS:HB2	25:28:57:GLU:HG3	1.99	0.45
27:30:46:GLY:HA3	27:30:54:ILE:CG2	2.45	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:P:31:ARG:HB2	53:A:310:G:H5”	1.99	0.45
50:T:28:ARG:NH1	53:A:1437:A:H5”	2.32	0.45
51:U:9:GLU:HB2	51:U:10:PRO:HD3	1.99	0.45
54:01:809:G:H2’	54:01:810:U:C6	2.51	0.45
54:01:1065:U:H5’	54:01:1066:U:OP2	2.17	0.45
54:01:1155:A:O2’	54:01:1156:A:H2’	2.16	0.45
54:01:1450:G:O2’	54:01:1451:C:H5’	2.17	0.45
54:01:2287:A:N7	54:01:2289:G:C8	2.84	0.45
54:01:2515:C:H2’	54:01:2516:A:H8	1.80	0.45
1:04:51:ARG:O	1:04:53:ILE:HG13	2.17	0.45
2:05:5:VAL:HG11	2:05:80:TRP:CZ3	2.51	0.45
2:05:55:LYS:CD	2:05:77:ARG:HA	2.45	0.45
3:06:75:SER:OG	3:06:76:PRO:HD2	2.16	0.45
4:07:89:THR:O	55:02:43:C:H1’	2.17	0.45
8:11:101:SER:HB3	8:11:104:GLN:CG	2.46	0.45
9:12:78:THR:HG21	54:01:2642:G:P	2.56	0.45
9:12:93:ILE:O	9:12:97:PRO:HD3	2.17	0.45
16:19:105:PHE:O	16:19:109:VAL:HG23	2.17	0.45
18:21:20:VAL:HG21	18:21:43:ALA:HB3	1.97	0.45
33:C:180:ASP:HB3	33:C:204:GLY:HA3	1.99	0.45
34:D:79:ALA:HA	34:D:85:THR:CG2	2.47	0.45
34:D:169:TRP:HZ3	34:D:190:LEU:HB3	1.81	0.45
37:G:17:PHE:O	37:G:17:PHE:CD1	2.69	0.45
37:G:58:LEU:H	37:G:58:LEU:HD12	1.81	0.45
42:L:21:PRO:C	42:L:23:LEU:H	2.19	0.45
43:M:66:GLY:HA2	43:M:69:ARG:HB2	1.98	0.45
53:A:58:C:O2’	53:A:59:A:H5’	2.16	0.45
53:A:476:U:H2’	53:A:477:C:C6	2.52	0.45
53:A:604:G:H2’	53:A:605:U:O4’	2.16	0.45
53:A:971:G:H4’	53:A:972:C:H5’	1.98	0.45
53:A:1405:G:O2’	53:A:1406:U:H5’	2.17	0.45
54:01:32:C:H2’	54:01:33:C:C6	2.52	0.45
54:01:161:A:H62	54:01:165:A:H61	1.65	0.45
54:01:1772:A:H2’	54:01:1773:A:H4’	1.98	0.45
54:01:1917:U:O2’	54:01:1918:A:H5’	2.16	0.45
54:01:2122:U:H2’	54:01:2123:G:O4’	2.17	0.45
55:02:63:C:H2’	55:02:64:G:C8	2.52	0.45
1:04:141:HIS:CE1	1:04:190:THR:HG22	2.52	0.45
6:09:117:LEU:HD23	6:09:130:VAL:HG13	1.98	0.45
9:12:40:HIS:CE1	9:12:41:LYS:HG3	2.51	0.45
10:13:87:LEU:HA	10:13:94:PRO:HA	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:14:78:ARG:HB3	11:14:113:ALA:CB	2.46	0.45
12:15:125:PRO:HB3	54:01:2485:G:O3'	2.15	0.45
13:16:67:PHE:C	13:16:69:ARG:N	2.70	0.45
13:16:84:GLY:O	13:16:88:ALA:N	2.50	0.45
19:22:3:ARG:HH12	19:22:7:LEU:HD21	1.81	0.45
19:22:57:VAL:HG22	19:22:58:VAL:N	2.31	0.45
20:23:96:LYS:C	20:23:98:ASN:N	2.68	0.45
21:24:51:GLN:HA	21:24:56:PHE:CG	2.52	0.45
21:24:83:LYS:O	21:24:85:LYS:N	2.46	0.45
22:25:51:ARG:HH11	22:25:51:ARG:HG3	1.81	0.45
36:F:90:MET:SD	48:R:22:TYR:CE2	3.09	0.45
44:N:53:ASP:O	44:N:54:SER:HB3	2.16	0.45
46:P:19:VAL:HG12	46:P:37:GLY:C	2.37	0.45
53:A:20:U:H2'	53:A:21:G:O4'	2.17	0.45
53:A:392:C:H2'	53:A:393:A:C8	2.50	0.45
53:A:575:G:O2'	53:A:821:G:H5'	2.17	0.45
53:A:1329:A:O2'	53:A:1330:U:H5'	2.17	0.45
54:01:1289:C:H2'	54:01:1290:C:C6	2.51	0.45
54:01:2520:C:O2'	54:01:2521:C:H5'	2.17	0.45
54:01:2679:A:O2'	54:01:2680:U:H5'	2.17	0.45
59:Z:144:THR:O	59:Z:144:THR:HG23	2.16	0.45
9:12:7:LYS:HG2	54:01:538:A:H4'	1.99	0.45
12:15:50:ARG:HH21	12:15:50:ARG:HG2	1.82	0.45
17:20:1:MET:N	17:20:43:ASN:HA	2.31	0.45
24:27:29:ARG:O	24:27:32:ALA:HB3	2.17	0.45
26:29:37:CYS:SG	26:29:40:CYS:HB3	2.57	0.45
31:34:30:GLU:HA	31:34:31:PRO:HD3	1.87	0.45
34:D:7:LYS:HZ2	34:D:21:LYS:CG	2.30	0.45
38:H:11:THR:HA	38:H:14:ARG:HH12	1.81	0.45
41:K:30:ILE:HD13	41:K:45:THR:HG22	1.98	0.45
42:L:39:THR:CG2	42:L:40:THR:H	2.22	0.45
45:O:44:GLU:HG3	45:O:45:HIS:CD2	2.51	0.45
50:T:28:ARG:HH12	53:A:1437:A:H5"	1.82	0.45
51:U:58:LYS:HA	51:U:61:ARG:CD	2.46	0.45
53:A:321:A:H2'	53:A:322:C:C6	2.51	0.45
53:A:680:C:H2'	53:A:681:A:C8	2.52	0.45
53:A:902:G:H2'	53:A:903:G:C8	2.52	0.45
54:01:20:C:H2'	54:01:21:A:C8	2.51	0.45
54:01:112:U:H2'	54:01:113:U:H5'	1.98	0.45
3:06:12:LEU:CD1	3:06:190:ALA:HB1	2.47	0.45
3:06:190:ALA:HA	3:06:193:VAL:CG2	2.47	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:13:110:GLU:HA	10:13:113:MET:HB2	1.99	0.45
26:29:11:GLU:HA	26:29:25:ARG:HA	1.98	0.45
32:B:107:ARG:HA	32:B:110:ILE:HD12	1.98	0.45
33:C:72:PRO:HA	33:C:75:VAL:HB	1.99	0.45
35:E:9:GLU:HG2	35:E:10:LEU:N	2.31	0.45
41:K:51:PHE:O	41:K:56:LYS:HB2	2.16	0.45
46:P:20:VAL:CG2	46:P:21:VAL:N	2.80	0.45
49:S:62:THR:CG2	49:S:63:ASP:H	2.19	0.45
50:T:20:ASN:ND2	53:A:323:U:H5"	2.31	0.45
53:A:419:C:H2'	53:A:420:U:O4'	2.17	0.45
53:A:1463:U:H2'	53:A:1464:U:C6	2.52	0.45
54:01:859:G:C2'	54:01:860:U:OP2	2.65	0.45
54:01:1999:C:H2'	54:01:2000:C:H6	1.82	0.45
54:01:2025:C:H2'	54:01:2026:U:C6	2.51	0.45
1:04:52:HIS:CE1	1:04:218:THR:HA	2.52	0.45
2:05:62:LYS:HA	2:05:65:ALA:HB3	1.98	0.45
2:05:202:ILE:N	2:05:202:ILE:HD12	2.31	0.45
3:06:14:VAL:HG21	3:06:19:PHE:CD2	2.52	0.45
6:09:25:TYR:CE2	6:09:30:LEU:HD11	2.52	0.45
7:10:6:GLN:OE1	7:10:6:GLN:HA	2.17	0.45
8:11:110:GLN:HA	8:11:113:ALA:HB3	1.99	0.45
10:13:49:ARG:HG2	10:13:49:ARG:HH11	1.82	0.45
13:16:63:ARG:HH22	13:16:80:PHE:HB2	1.80	0.45
13:16:71:ARG:CZ	54:01:2708:G:H1'	2.47	0.45
14:17:4:LYS:O	14:17:8:ILE:HG13	2.17	0.45
14:17:116:GLN:O	14:17:117:PHE:HB3	2.17	0.45
17:20:22:LEU:HD12	17:20:22:LEU:C	2.37	0.45
21:24:65:VAL:HG12	21:24:68:LYS:O	2.16	0.45
23:26:1:SER:N	54:01:1364:G:C8	2.84	0.45
25:28:19:HIS:O	25:28:20:LYS:C	2.55	0.45
27:30:40:HIS:O	27:30:41:HIS:ND1	2.50	0.45
27:30:51:ARG:CG	27:30:53:VAL:HG13	2.43	0.45
33:C:61:LYS:O	33:C:96:VAL:HB	2.16	0.45
44:N:7:ALA:C	44:N:10:VAL:HG12	2.36	0.45
52:03:21:TYR:O	52:03:224:VAL:HA	2.17	0.45
52:03:65:LEU:HB2	52:03:68:GLY:HA2	1.98	0.45
53:A:1227:A:H2'	53:A:1228:C:H5'	1.98	0.45
53:A:1256:A:H1'	53:A:1258:G:C4	2.52	0.45
54:01:279:A:H2'	54:01:280:U:H5'	1.98	0.45
54:01:1441:G:H2'	54:01:1442:U:C6	2.52	0.45
54:01:1548:A:H2'	54:01:1549:A:H8	1.80	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:2432:A:H1'	56:X:75:C:C4'	2.47	0.45
55:02:30:C:H2'	55:02:31:C:C5'	2.47	0.45
1:04:69:ASN:HA	1:04:188:ARG:NH1	2.31	0.44
1:04:181:ARG:HB3	1:04:181:ARG:NH1	2.31	0.44
4:07:140:ILE:N	4:07:140:ILE:CD1	2.80	0.44
5:08:169:ARG:HH12	54:01:1093:G:C5'	2.29	0.44
8:11:100:ILE:O	8:11:140:GLU:HB3	2.17	0.44
11:14:111:ILE:CG2	11:14:112:LEU:H	2.28	0.44
14:17:68:LYS:HG3	55:02:50:A:OP1	2.17	0.44
14:17:76:LYS:HB2	14:17:109:ALA:HB1	1.99	0.44
20:23:6:ARG:O	20:23:24:VAL:HB	2.17	0.44
24:27:24:GLU:O	24:27:25:GLN:C	2.55	0.44
35:E:105:ILE:HD11	35:E:123:LEU:CD2	2.47	0.44
37:G:111:GLY:CA	37:G:118:ARG:HH11	2.30	0.44
40:J:35:GLN:HB3	40:J:78:GLU:OE2	2.16	0.44
53:A:381:C:H2'	53:A:382:A:O4'	2.16	0.44
53:A:1333:A:H2'	53:A:1334:G:O4'	2.17	0.44
54:01:123:G:H2'	54:01:124:G:O4'	2.17	0.44
54:01:255:A:H2'	54:01:256:A:O4'	2.17	0.44
54:01:562:U:H2'	54:01:572:A:O4'	2.17	0.44
54:01:753:A:H2'	54:01:754:U:C6	2.52	0.44
54:01:1440:U:H2'	54:01:1441:G:C8	2.51	0.44
54:01:2241:A:H2'	54:01:2242:G:C8	2.52	0.44
54:01:2849:U:H4'	54:01:2868:A:C2	2.52	0.44
1:04:90:ILE:O	1:04:90:ILE:HG13	2.17	0.44
1:04:205:GLY:O	54:01:1791:A:H1'	2.17	0.44
3:06:163:ASN:ND2	54:01:320:A:N3	2.65	0.44
3:06:189:THR:HB	3:06:192:ALA:HB3	1.99	0.44
7:10:77:VAL:HG22	7:10:116:GLU:OE2	2.17	0.44
9:12:95:ARG:HH11	9:12:95:ARG:HG3	1.82	0.44
9:12:135:GLN:HB2	9:12:137:PRO:HD3	1.98	0.44
12:15:40:ARG:HH12	12:15:73:ILE:CD1	2.30	0.44
16:19:7:VAL:HG13	16:19:8:ILE:N	2.32	0.44
21:24:26:PHE:CZ	21:24:42:LEU:HD11	2.52	0.44
33:C:153:SER:O	33:C:196:GLY:N	2.51	0.44
34:D:74:TYR:O	34:D:78:ALA:N	2.44	0.44
34:D:120:LYS:HE2	34:D:130:ASN:HD21	1.82	0.44
39:I:119:LYS:HE2	53:A:1349:A:OP1	2.16	0.44
44:N:40:ARG:O	44:N:43:ALA:HB3	2.17	0.44
50:T:3:ILE:O	50:T:4:LYS:HD2	2.17	0.44
53:A:730:G:H2'	53:A:731:G:H5'	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:1114:C:H2'	53:A:1115:U:C6	2.53	0.44
53:A:1202:U:H2'	53:A:1203:C:O4'	2.17	0.44
53:A:1271:A:H5'	53:A:1314:C:H5"	1.98	0.44
54:01:528:A:C2	54:01:2042:A:H2'	2.53	0.44
54:01:779:U:H2'	54:01:780:G:C8	2.52	0.44
54:01:1335:C:H2'	54:01:1336:A:H8	1.82	0.44
54:01:2246:G:H2'	54:01:2247:A:H8	1.81	0.44
54:01:2457:U:O2'	54:01:2458:G:H5'	2.17	0.44
56:X:69:C:C2'	56:X:70:G:H5'	2.47	0.44
58:Y:74:C:H2'	58:Y:75:C:H5'	2.00	0.44
59:Z:150:LYS:CG	59:Z:152:LEU:HD23	2.47	0.44
1:04:107:LYS:N	1:04:193:GLU:O	2.50	0.44
3:06:187:VAL:HG13	3:06:187:VAL:O	2.17	0.44
4:07:121:PHE:CG	4:07:162:ASP:HB2	2.53	0.44
4:07:149:ARG:NH1	4:07:149:ARG:HB2	2.32	0.44
8:11:89:SER:HB3	54:01:1063:G:C2'	2.37	0.44
15:18:63:ILE:HA	15:18:68:GLY:HA2	2.00	0.44
16:19:47:ARG:HG2	16:19:47:ARG:HH21	1.82	0.44
32:B:138:ARG:NH1	32:B:138:ARG:HB2	2.32	0.44
34:D:12:ARG:HD2	34:D:36:ALA:O	2.17	0.44
35:E:132:PRO:O	35:E:135:VAL:HG22	2.16	0.44
39:I:11:ARG:H	39:I:77:ALA:HB2	1.83	0.44
39:I:38:PHE:C	39:I:38:PHE:CD1	2.90	0.44
43:M:6:ILE:O	43:M:8:ILE:HG13	2.17	0.44
44:N:36:SER:HA	44:N:40:ARG:HD2	2.00	0.44
50:T:69:ASN:O	50:T:72:ALA:HB3	2.17	0.44
51:U:31:VAL:O	51:U:31:VAL:HG22	2.17	0.44
54:01:419:U:H2'	54:01:420:C:C6	2.53	0.44
54:01:560:C:H2'	54:01:561:G:O4'	2.17	0.44
1:04:270:ARG:CB	1:04:270:ARG:NH1	2.80	0.44
4:07:141:ASP:HB2	4:07:144:LYS:HD3	1.98	0.44
5:08:71:LEU:HD12	5:08:71:LEU:N	2.32	0.44
7:10:60:LEU:HD12	7:10:60:LEU:H	1.83	0.44
8:11:53:PRO:O	8:11:74:PRO:HD2	2.17	0.44
9:12:101:ILE:N	9:12:101:ILE:CD1	2.79	0.44
9:12:113:PRO:HG3	54:01:529:A:OP2	2.18	0.44
12:15:73:ILE:HG12	12:15:93:VAL:HG22	1.98	0.44
13:16:108:ALA:HA	13:16:109:PRO:HD3	1.88	0.44
23:26:31:ASN:HB2	54:01:2230:G:H1'	1.99	0.44
33:C:148:ILE:HG13	33:C:201:ILE:HG12	1.98	0.44
35:E:136:VAL:CG1	35:E:137:ARG:N	2.80	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:J:59:LYS:HE2	40:J:62:ARG:NH2	2.22	0.44
46:P:37:GLY:HA2	46:P:51:ARG:O	2.17	0.44
52:03:44:VAL:HB	52:03:173:THR:HG23	1.99	0.44
53:A:56:U:H2'	53:A:57:G:H8	1.82	0.44
53:A:948:C:H2'	53:A:949:A:C8	2.52	0.44
54:01:214:G:H2'	54:01:215:G:C8	2.52	0.44
54:01:490:C:O2'	54:01:491:G:P	2.76	0.44
54:01:1797:G:C6	54:01:1798:U:C4	3.05	0.44
54:01:2292:U:H2'	54:01:2293:G:C8	2.51	0.44
54:01:2411:A:H2'	54:01:2412:A:C8	2.52	0.44
54:01:2604:U:H2'	54:01:2605:U:C6	2.53	0.44
3:06:121:VAL:HG21	3:06:124:PHE:HB2	1.99	0.44
6:09:16:GLY:HA2	6:09:47:PHE:HZ	1.82	0.44
12:15:135:VAL:HG21	21:24:54:ALA:HB1	2.00	0.44
16:19:32:ARG:O	16:19:32:ARG:HG2	2.17	0.44
16:19:57:ARG:HG2	16:19:57:ARG:HH11	1.83	0.44
17:20:5:PHE:O	17:20:11:GLN:HA	2.17	0.44
17:20:60:LYS:HB2	17:20:99:THR:OG1	2.17	0.44
18:21:88:ARG:HG3	18:21:88:ARG:HH21	1.82	0.44
28:31:37:LYS:O	28:31:45:HIS:HA	2.18	0.44
33:C:18:ASN:O	33:C:55:VAL:HG13	2.17	0.44
33:C:105:VAL:O	33:C:105:VAL:HG13	2.17	0.44
36:F:66:ALA:HB1	36:F:67:PRO:CD	2.41	0.44
36:F:97:THR:O	36:F:98:GLU:CB	2.66	0.44
45:O:71:ARG:HH21	53:A:754:C:H5'	1.82	0.44
51:U:25:ALA:O	51:U:26:GLY:C	2.56	0.44
52:03:220:ALA:HA	54:01:2176:A:H5'	1.99	0.44
54:01:528:A:H2	54:01:2042:A:H2'	1.83	0.44
54:01:621:A:H2'	54:01:622:G:H5'	2.00	0.44
54:01:1219:U:H2'	54:01:1220:G:H8	1.80	0.44
54:01:1475:G:O2'	54:01:1476:U:H6	2.00	0.44
4:07:114:ARG:HG3	4:07:177:ARG:HD3	1.98	0.44
5:08:67:ALA:HA	5:08:70:LEU:HD12	2.00	0.44
10:13:20:MET:O	10:13:41:ILE:HB	2.18	0.44
18:21:42:LYS:NZ	18:21:46:LEU:HD11	2.32	0.44
21:24:5:ASN:HA	21:24:64:VAL:HB	1.99	0.44
33:C:155:ARG:O	33:C:156:LEU:C	2.55	0.44
37:G:6:ILE:HD12	37:G:6:ILE:C	2.37	0.44
40:J:10:LEU:CD1	40:J:18:ILE:HD11	2.48	0.44
43:M:109:LYS:HD2	53:A:1227:A:OP2	2.17	0.44
44:N:9:GLU:O	44:N:13:VAL:HG23	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:O:70:LYS:HD3	45:O:77:TYR:CE2	2.53	0.44
50:T:43:LYS:HD3	50:T:86:ALA:HB1	1.98	0.44
53:A:146:G:H2'	53:A:147:G:C8	2.53	0.44
54:01:415:A:H2'	54:01:416:U:C6	2.53	0.44
54:01:996:A:H2'	54:01:997:G:C8	2.51	0.44
54:01:1935:G:H2'	54:01:1962:C:H42	1.83	0.44
54:01:2467:C:H2'	54:01:2468:A:O4'	2.18	0.44
54:01:2661:G:H2'	54:01:2662:A:O4'	2.18	0.44
55:02:60:C:H2'	55:02:61:G:H8	1.82	0.44
7:10:99:PHE:O	7:10:103:ASN:N	2.50	0.44
8:11:23:VAL:HG11	8:11:27:LEU:HD23	2.00	0.44
8:11:72:THR:HG23	8:11:73:PRO:HD2	2.00	0.44
12:15:55:ARG:HG3	12:15:55:ARG:HH21	1.83	0.44
22:25:19:VAL:HG22	22:25:34:VAL:CG2	2.47	0.44
22:25:19:VAL:HG13	22:25:34:VAL:HG22	2.00	0.44
35:E:84:VAL:HG22	35:E:85:LYS:N	2.32	0.44
43:M:65:GLU:HG3	43:M:66:GLY:N	2.29	0.44
47:Q:24:ILE:N	47:Q:41:THR:O	2.51	0.44
49:S:23:GLU:HG3	49:S:24:SER:N	2.33	0.44
53:A:319:G:H2'	53:A:320:A:H8	1.82	0.44
53:A:620:C:H2'	53:A:621:A:O4'	2.18	0.44
53:A:622:A:H2'	53:A:623:C:H5'	2.00	0.44
54:01:480:A:H3'	54:01:481:G:H5"	2.00	0.44
54:01:727:A:C2'	54:01:728:G:H5'	2.48	0.44
54:01:876:C:H2'	54:01:877:A:O4'	2.17	0.44
54:01:1394:U:H4'	54:01:1603:A:H4'	2.00	0.44
58:Y:25:C:H2'	58:Y:26:A:C8	2.52	0.44
1:04:129:LEU:HD12	1:04:130:PRO:O	2.18	0.44
2:05:109:VAL:HG11	2:05:193:VAL:HB	2.00	0.44
7:10:3:LEU:H	7:10:6:GLN:HB2	1.83	0.44
7:10:55:VAL:HG13	54:01:1084:A:OP1	2.18	0.44
8:11:51:GLY:C	8:11:52:LEU:HD12	2.38	0.44
9:12:58:ASN:HD22	9:12:58:ASN:HA	1.62	0.44
9:12:84:ILE:HD12	9:12:85:LYS:N	2.33	0.44
10:13:25:LEU:CD2	54:01:2562:U:H4'	2.48	0.44
10:13:62:VAL:HG12	10:13:63:VAL:N	2.33	0.44
18:21:3:THR:HG21	18:21:58:ALA:CA	2.47	0.44
20:23:82:VAL:CG1	20:23:83:GLY:H	2.20	0.44
23:26:53:LYS:O	23:26:57:VAL:HG23	2.18	0.44
37:G:55:LYS:HB2	37:G:60:ALA:CB	2.47	0.44
38:H:11:THR:HG23	38:H:12:ARG:N	2.32	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:H:90:GLU:HG2	38:H:90:GLU:O	2.18	0.44
39:I:25:GLY:O	39:I:27:ILE:CD1	2.65	0.44
41:K:112:VAL:O	41:K:113:THR:C	2.55	0.44
42:L:47:ALA:C	42:L:48:LEU:HD12	2.37	0.44
42:L:73:LEU:HD12	42:L:73:LEU:H	1.82	0.44
45:O:86:LEU:O	45:O:87:ARG:HB3	2.18	0.44
50:T:14:GLU:C	50:T:16:ALA:N	2.71	0.44
53:A:342:C:O2'	53:A:343:U:H5'	2.18	0.44
53:A:824:G:H2'	53:A:825:A:C8	2.50	0.44
53:A:1001:C:H2'	53:A:1002:G:H8	1.83	0.44
53:A:1137:C:H5'	53:A:1138:G:H5'	2.00	0.44
53:A:1497:G:O2'	53:A:1498:U:H5'	2.18	0.44
54:01:181:A:H2'	54:01:182:A:H8	1.82	0.44
54:01:254:G:O2'	54:01:255:A:H5"	2.18	0.44
54:01:443:A:H5"	54:01:444:C:C5'	2.47	0.44
54:01:941:A:H2'	54:01:942:G:O4'	2.18	0.44
59:Z:101:ALA:HB1	59:Z:106:GLU:CG	2.47	0.44
2:05:40:LEU:N	2:05:40:LEU:HD12	2.33	0.44
2:05:101:PHE:HA	2:05:104:VAL:HG22	2.00	0.44
8:11:128:ILE:H	8:11:128:ILE:CD1	2.29	0.44
9:12:42:ALA:O	16:19:63:ARG:HD2	2.18	0.44
18:21:42:LYS:HB2	54:01:2010:G:C5'	2.47	0.44
29:32:8:SER:O	29:32:9:VAL:C	2.56	0.44
33:C:48:LYS:HD2	33:C:48:LYS:N	2.33	0.44
34:D:18:LEU:O	34:D:19:PHE:HB2	2.17	0.44
35:E:47:PHE:CZ	35:E:137:ARG:HG2	2.53	0.44
42:L:31:GLY:HA3	42:L:54:VAL:HG12	1.96	0.44
50:T:14:GLU:C	50:T:16:ALA:H	2.20	0.44
52:03:27:ILE:HD12	52:03:182:ALA:HB1	1.99	0.44
53:A:114:U:O2'	53:A:115:G:H5'	2.18	0.44
54:01:729:G:H2'	54:01:729:G:N3	2.33	0.44
54:01:2176:A:H2'	54:01:2177:C:C6	2.53	0.44
5:08:41:GLU:HB2	5:08:54:ARG:HB2	1.99	0.43
7:10:37:LYS:HB2	7:10:41:LEU:HD12	1.99	0.43
8:11:27:LEU:HD12	8:11:28:GLY:H	1.76	0.43
9:12:14:ASP:CG	9:12:15:TRP:H	2.22	0.43
12:15:42:THR:HA	12:15:93:VAL:HG12	2.00	0.43
13:16:2:ARG:HA	13:16:5:LYS:CE	2.48	0.43
13:16:90:ARG:CZ	13:16:116:VAL:HG11	2.48	0.43
17:20:49:ILE:HD12	17:20:52:PRO:CA	2.48	0.43
17:20:88:GLY:O	17:20:89:HIS:HB2	2.17	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:21:7:HIS:CD2	18:21:10:ALA:HB2	2.53	0.43
22:25:64:LYS:HG3	22:25:65:PHE:N	2.32	0.43
26:29:56:ARG:HH22	49:S:68:HIS:CE1	2.27	0.43
31:34:26:ILE:HD12	31:34:26:ILE:C	2.38	0.43
32:B:13:VAL:HG13	32:B:212:TYR:OH	2.18	0.43
33:C:9:ILE:CD1	44:N:97:LYS:HD3	2.43	0.43
33:C:24:ASN:O	33:C:28:PHE:HB2	2.18	0.43
33:C:72:PRO:HG3	33:C:104:GLU:CD	2.38	0.43
33:C:129:PHE:O	33:C:133:MET:N	2.44	0.43
51:U:66:ARG:HA	51:U:66:ARG:HD3	1.82	0.43
52:03:43:ASP:HA	52:03:174:THR:HG22	2.00	0.43
53:A:45:G:H5"	53:A:307:C:O2'	2.18	0.43
53:A:599:C:H2'	53:A:600:A:H8	1.83	0.43
53:A:740:U:O2'	53:A:741:G:H5'	2.18	0.43
53:A:742:G:O2'	53:A:743:A:H5'	2.18	0.43
53:A:757:U:H2'	53:A:758:C:O4'	2.17	0.43
54:01:52:A:O2'	54:01:53:A:H5'	2.18	0.43
54:01:288:U:H2'	54:01:289:G:H8	1.83	0.43
54:01:974:G:H2'	54:01:974:G:N3	2.32	0.43
2:05:110:THR:HG23	2:05:171:THR:OG1	2.18	0.43
3:06:109:LEU:HD12	3:06:109:LEU:N	2.32	0.43
7:10:97:LYS:O	7:10:100:ALA:HB3	2.18	0.43
15:18:13:LYS:HE3	15:18:76:HIS:HA	1.98	0.43
15:18:92:ARG:HD3	54:01:1753:G:OP1	2.17	0.43
16:19:60:TRP:CZ2	16:19:92:LYS:HG3	2.53	0.43
19:22:48:GLN:NE2	19:22:55:VAL:H	2.16	0.43
20:23:86:PHE:CE1	20:23:91:LYS:HE2	2.53	0.43
39:I:70:GLY:O	39:I:74:GLN:HG3	2.18	0.43
43:M:37:GLY:O	43:M:38:ILE:HD13	2.18	0.43
47:Q:21:VAL:HG13	47:Q:21:VAL:O	2.17	0.43
47:Q:58:VAL:HG22	47:Q:59:GLU:N	2.33	0.43
48:R:12:PHE:CE2	48:R:20:ILE:HD11	2.53	0.43
51:U:65:ARG:HB2	51:U:67:THR:CG2	2.46	0.43
53:A:651:C:H2'	53:A:652:U:C6	2.53	0.43
53:A:663:A:H5'	53:A:836:G:OP1	2.17	0.43
53:A:1138:G:H3'	53:A:1138:G:N3	2.33	0.43
53:A:1254:A:H2'	53:A:1255:G:H8	1.83	0.43
54:01:953:G:H2'	54:01:954:G:H8	1.83	0.43
54:01:1330:C:O2'	54:01:1331:G:H5'	2.17	0.43
54:01:2282:G:H4'	54:01:2389:G:O2'	2.18	0.43
54:01:2623:G:H2'	54:01:2624:G:C8	2.51	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:2756:U:H4'	54:01:2757:A:OP1	2.17	0.43
54:01:2833:U:O2'	54:01:2834:G:H5'	2.18	0.43
1:04:44:ASN:ND2	54:01:1812:U:H1'	2.32	0.43
1:04:62:ARG:O	1:04:64:VAL:HG23	2.18	0.43
1:04:109:LEU:HD12	1:04:113:ASP:OD2	2.18	0.43
1:04:216:ARG:NH2	54:01:690:G:O3'	2.51	0.43
3:06:7:ASP:O	3:06:9:GLN:HG3	2.17	0.43
4:07:10:GLU:O	4:07:13:LYS:HB3	2.19	0.43
4:07:56:LEU:HD23	4:07:59:ILE:HD12	2.00	0.43
5:08:37:ASN:HD22	5:08:39:ALA:HB3	1.83	0.43
5:08:137:LYS:HA	5:08:140:ILE:HD11	2.00	0.43
6:09:114:GLU:HB3	6:09:133:GLN:O	2.18	0.43
6:09:132:PHE:HE2	6:09:142:VAL:HB	1.84	0.43
7:10:96:PHE:CE2	7:10:126:LEU:HB2	2.53	0.43
9:12:54:ILE:HG22	9:12:55:ILE:N	2.34	0.43
12:15:45:GLN:HE21	54:01:2485:G:C5'	2.22	0.43
15:18:20:ARG:HB3	15:18:21:PRO:HD2	2.01	0.43
18:21:93:ALA:HB2	54:01:1614:A:N1	2.33	0.43
19:22:77:ARG:HH11	19:22:77:ARG:HG3	1.83	0.43
29:32:3:ARG:HG2	54:01:1613:G:H4'	2.00	0.43
33:C:131:ARG:NE	33:C:135:ARG:HH21	2.05	0.43
34:D:99:ASN:OD1	34:D:110:ARG:NH1	2.49	0.43
35:E:56:PRO:HG2	35:E:57:ALA:H	1.82	0.43
37:G:58:LEU:HD12	37:G:58:LEU:N	2.33	0.43
37:G:90:VAL:HG23	37:G:94:ARG:HD3	2.00	0.43
40:J:42:LEU:HD11	40:J:73:LEU:HG	2.00	0.43
41:K:35:ASP:OD1	41:K:39:ASN:HB2	2.18	0.43
44:N:20:PHE:C	44:N:22:LYS:H	2.20	0.43
45:O:48:ASP:O	45:O:51:SER:N	2.51	0.43
46:P:23:ASP:OD2	46:P:25:ARG:HB2	2.18	0.43
48:R:62:ARG:HB3	48:R:69:TYR:CE1	2.53	0.43
52:03:209:ILE:HG13	52:03:209:ILE:O	2.18	0.43
53:A:36:C:H2'	53:A:37:U:O4'	2.18	0.43
53:A:1258:G:H2'	53:A:1259:C:C6	2.54	0.43
54:01:12:U:H2'	54:01:13:A:H5'	2.00	0.43
54:01:801:G:H3'	54:01:802:A:H5'	2.00	0.43
54:01:1335:C:H2'	54:01:1336:A:C8	2.53	0.43
54:01:1893:C:H2'	54:01:1894:C:H5'	2.00	0.43
54:01:2581:G:H2'	54:01:2581:G:N3	2.33	0.43
56:W:62:C:H2'	56:W:63:G:H8	1.83	0.43
2:05:152:PRO:HD3	54:01:2571:U:O2'	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:06:23:PHE:HB2	3:06:114:ARG:NH2	2.33	0.43
3:06:84:THR:HG21	54:01:586:A:C5'	2.48	0.43
4:07:91:ARG:CA	4:07:95:MET:HB3	2.47	0.43
8:11:85:ILE:HD13	8:11:87:SER:OG	2.18	0.43
8:11:118:GLY:HA3	8:11:124:MET:CG	2.47	0.43
12:15:135:VAL:HG21	21:24:54:ALA:CB	2.48	0.43
15:18:28:LYS:HB2	15:18:82:SER:OG	2.18	0.43
15:18:52:ARG:HD3	54:01:2845:U:H5"	2.01	0.43
20:23:8:ASP:OD2	20:23:71:ILE:HG22	2.17	0.43
27:30:12:ARG:HH11	27:30:12:ARG:HG2	1.83	0.43
34:D:168:THR:O	34:D:170:LEU:N	2.51	0.43
39:I:64:ILE:HD13	39:I:78:ILE:CG2	2.49	0.43
46:P:33:ILE:H	46:P:33:ILE:CD1	2.32	0.43
53:A:45:G:H2'	53:A:46:G:C8	2.53	0.43
53:A:212:G:H2'	53:A:213:G:C8	2.53	0.43
53:A:1305:G:H1'	53:A:1332:A:N6	2.34	0.43
53:A:1490:U:O2'	53:A:1491:G:H5'	2.18	0.43
54:01:20:C:H2'	54:01:21:A:H8	1.83	0.43
54:01:542:C:C2'	54:01:543:G:H5"	2.48	0.43
54:01:774:G:H2'	54:01:775:G:H5"	1.98	0.43
54:01:864:G:O2'	54:01:865:C:H5'	2.18	0.43
54:01:1063:G:H3'	54:01:1063:G:H8	1.83	0.43
54:01:1652:A:C2'	54:01:1653:G:H5'	2.48	0.43
54:01:2606:C:H2'	54:01:2607:G:C8	2.53	0.43
54:01:2834:G:O2'	54:01:2835:A:H5'	2.19	0.43
59:Z:50:ALA:O	59:Z:54:LYS:HG3	2.18	0.43
1:04:154:ALA:HA	1:04:159:THR:CG2	2.45	0.43
2:05:109:VAL:O	2:05:171:THR:HG23	2.19	0.43
3:06:190:ALA:O	3:06:193:VAL:HB	2.19	0.43
4:07:105:ILE:HG13	4:07:106:ALA:N	2.33	0.43
5:08:163:TYR:HB2	5:08:166:GLU:CB	2.49	0.43
6:09:62:LEU:HA	6:09:65:ALA:HB3	2.01	0.43
6:09:117:LEU:C	6:09:119:ASN:H	2.21	0.43
7:10:59:LEU:HB3	7:10:62:ARG:HB2	1.99	0.43
9:12:37:ARG:HG3	9:12:37:ARG:NH2	2.33	0.43
10:13:4:GLU:HA	10:13:21:CYS:O	2.19	0.43
11:14:65:GLY:HA2	54:01:2415:G:O3'	2.18	0.43
12:15:17:ASN:HB2	12:15:95:LEU:HD22	2.01	0.43
13:16:97:ILE:O	13:16:98:LEU:HD23	2.18	0.43
17:20:6:GLN:O	17:20:37:GLU:HG3	2.18	0.43
18:21:25:ARG:HH11	18:21:25:ARG:HG3	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:C:61:LYS:O	33:C:97:PRO:HD2	2.18	0.43
36:F:17:GLN:O	36:F:21:MET:HG3	2.17	0.43
36:F:32:ALA:O	36:F:33:GLU:HB2	2.18	0.43
38:H:24:VAL:O	38:H:59:GLU:HA	2.19	0.43
42:L:26:CYS:SG	42:L:29:LYS:HD3	2.57	0.43
50:T:80:ALA:O	50:T:84:LYS:HB2	2.19	0.43
52:03:38:PHE:CE2	54:01:2127:G:H4'	2.53	0.43
53:A:21:G:H2'	53:A:22:G:C8	2.53	0.43
53:A:556:C:O2'	53:A:557:G:H5'	2.19	0.43
53:A:1081:A:O2'	53:A:1082:A:H5'	2.19	0.43
54:01:28:A:H1'	54:01:513:A:C2	2.53	0.43
54:01:341:C:H2'	54:01:342:A:H8	1.83	0.43
54:01:696:G:O2'	54:01:697:G:H5'	2.19	0.43
54:01:813:U:H2'	54:01:814:C:H6	1.83	0.43
54:01:912:C:O2'	54:01:913:U:H5'	2.19	0.43
54:01:1201:U:H2'	54:01:1202:G:H8	1.83	0.43
54:01:1316:U:H2'	54:01:1317:G:H8	1.83	0.43
54:01:1516:G:O2'	54:01:1517:G:H5'	2.19	0.43
54:01:1794:A:H2'	54:01:1795:C:H6	1.83	0.43
54:01:1917:U:C2'	54:01:1918:A:H5'	2.49	0.43
54:01:2846:G:H2'	54:01:2847:U:O4'	2.18	0.43
4:07:139:GLU:H	4:07:139:GLU:CD	2.22	0.43
4:07:148:VAL:HG12	4:07:148:VAL:O	2.19	0.43
6:09:12:LEU:C	6:09:12:LEU:HD12	2.38	0.43
9:12:95:ARG:HG2	9:12:96:ARG:HG3	2.01	0.43
14:17:56:LYS:O	14:17:60:GLU:HG3	2.19	0.43
15:18:23:ASP:OD1	15:18:88:ARG:HA	2.18	0.43
18:21:83:LYS:O	18:21:84:ARG:NH2	2.50	0.43
32:B:137:THR:O	32:B:140:LEU:HB3	2.19	0.43
34:D:193:ASP:OD1	34:D:194:ILE:N	2.52	0.43
34:D:202:LEU:HD23	34:D:202:LEU:C	2.38	0.43
38:H:29:SER:O	38:H:32:LYS:HB2	2.19	0.43
39:I:91:GLU:C	39:I:93:LEU:H	2.20	0.43
51:U:18:PHE:HA	51:U:21:SER:HB3	2.00	0.43
53:A:1256:A:H4'	53:A:1258:G:O4'	2.19	0.43
54:01:1092:C:H2'	54:01:1093:G:O4'	2.19	0.43
54:01:1344:U:O2	54:01:1385:A:H5'	2.19	0.43
54:01:1441:G:H4'	54:01:1628:G:H5'	2.01	0.43
54:01:1736:U:H2'	54:01:1737:G:O4'	2.19	0.43
54:01:2144:G:H1'	54:01:2147:A:H61	1.84	0.43
54:01:2590:A:O2'	54:01:2591:C:H5'	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:2628:C:H3'	54:01:2629:U:H5'	2.00	0.43
58:Y:59:U:C2'	58:Y:60:U:H5'	2.49	0.43
2:05:11:MET:HG2	2:05:25:THR:HA	2.01	0.43
2:05:85:ALA:O	2:05:86:GLU:HB3	2.17	0.43
11:14:57:LEU:HD22	30:33:53:ASP:HB3	2.00	0.43
15:18:52:ARG:HG3	15:18:52:ARG:NH1	2.33	0.43
20:23:4:ILE:H	20:23:4:ILE:CD1	2.29	0.43
33:C:28:PHE:CD2	44:N:75:LYS:HE2	2.53	0.43
33:C:118:SER:O	33:C:122:GLN:HG3	2.19	0.43
36:F:18:VAL:O	36:F:21:MET:N	2.52	0.43
39:I:16:ALA:HB2	39:I:66:VAL:CG2	2.48	0.43
40:J:15:HIS:CG	40:J:16:ARG:N	2.86	0.43
40:J:59:LYS:HD3	53:A:973:G:OP1	2.18	0.43
42:L:2:THR:HG21	42:L:5:GLN:HG3	1.98	0.43
43:M:71:GLU:O	43:M:74:MET:HB3	2.18	0.43
49:S:35:ARG:HH21	49:S:74:ALA:HB3	1.84	0.43
50:T:23:ARG:HH22	50:T:63:LYS:HZ3	1.65	0.43
52:03:30:LEU:HD12	52:03:31:LYS:N	2.32	0.43
53:A:976:G:N2	53:A:1362:A:H2'	2.34	0.43
53:A:1500:A:H5"	53:A:1508:A:H5"	2.00	0.43
54:01:182:A:O2'	54:01:183:C:H5'	2.17	0.43
54:01:239:C:H2'	54:01:240:C:O4'	2.18	0.43
54:01:395:U:H2'	54:01:396:G:C8	2.54	0.43
54:01:480:A:H2'	54:01:481:G:OP1	2.19	0.43
54:01:1279:G:H2'	54:01:1280:G:C8	2.54	0.43
54:01:1561:C:H2'	54:01:1562:U:C6	2.54	0.43
54:01:1678:A:H2'	54:01:1679:A:O4'	2.18	0.43
54:01:2713:U:H3'	54:01:2714:G:H5"	2.00	0.43
55:02:3:C:H3'	55:02:4:C:H5"	2.01	0.43
59:Z:122:VAL:HB	59:Z:129:ALA:HB3	1.99	0.43
1:04:76:VAL:HG12	1:04:77:VAL:N	2.34	0.43
1:04:93:VAL:HG21	1:04:103:ILE:CD1	2.49	0.43
1:04:267:VAL:HG12	1:04:268:ARG:NH1	2.33	0.43
3:06:149:ILE:CG2	3:06:188:MET:HA	2.45	0.43
7:10:22:ALA:HB1	7:10:91:ALA:HA	2.00	0.43
8:11:61:TYR:C	8:11:63:ASP:H	2.22	0.43
13:16:40:LYS:HG3	54:01:1651:G:OP1	2.19	0.43
13:16:63:ARG:O	13:16:66:ALA:HB3	2.19	0.43
15:18:57:ALA:HB1	15:18:73:PHE:O	2.19	0.43
16:19:30:VAL:HG13	54:01:581:C:OP1	2.19	0.43
20:23:96:LYS:O	20:23:98:ASN:N	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:B:119:GLN:HB3	32:B:124:THR:HB	2.01	0.43
33:C:206:ILE:OXT	33:C:206:ILE:HG12	2.19	0.43
34:D:100:VAL:O	34:D:104:MET:HG2	2.19	0.43
38:H:63:LYS:O	38:H:70:VAL:HG23	2.19	0.43
39:I:91:GLU:O	39:I:93:LEU:N	2.52	0.43
52:03:8:MET:HA	52:03:11:ILE:HD12	2.01	0.43
53:A:320:A:H2'	53:A:321:A:C8	2.54	0.43
53:A:578:C:H2'	53:A:579:A:C8	2.54	0.43
53:A:797:C:H2'	53:A:798:U:H6	1.81	0.43
54:01:516:C:H2'	54:01:517:C:C6	2.53	0.43
54:01:589:U:H2'	54:01:590:A:C8	2.54	0.43
54:01:799:G:C6	54:01:800:A:C6	3.06	0.43
54:01:914:G:H5'	54:01:915:C:OP2	2.18	0.43
54:01:1018:U:O2'	54:01:1019:U:H5'	2.18	0.43
54:01:2359:C:O2'	54:01:2360:G:H5'	2.19	0.43
54:01:2360:G:C2'	54:01:2361:G:H5'	2.49	0.43
55:02:13:G:O2'	55:02:15:A:H2'	2.18	0.43
55:02:108:A:H5'	55:02:109:A:O5'	2.19	0.43
1:04:146:LYS:O	1:04:148:GLY:N	2.52	0.43
1:04:181:ARG:CB	1:04:181:ARG:HH11	2.32	0.43
1:04:229:HIS:CE1	1:04:230:PRO:HD2	2.53	0.43
2:05:68:PHE:O	2:05:72:GLY:N	2.39	0.43
3:06:44:ARG:O	3:06:45:ALA:HB2	2.18	0.43
7:10:17:GLU:OE2	7:10:53:ARG:HG3	2.18	0.43
7:10:28:ALA:HB3	7:10:111:ALA:HB2	2.00	0.43
7:10:87:GLU:HB3	7:10:93:ALA:HB3	2.01	0.43
9:12:8:PRO:HG3	9:12:48:VAL:CG1	2.48	0.43
10:13:76:VAL:H	15:18:72:VAL:CG2	2.32	0.43
11:14:14:LYS:O	11:14:15:ALA:HB3	2.18	0.43
11:14:58:TYR:CE1	11:14:59:ARG:HG3	2.54	0.43
16:19:12:ARG:HH21	16:19:12:ARG:HG3	1.83	0.43
16:19:21:LYS:HG2	54:01:19:A:H5"	2.00	0.43
16:19:63:ARG:HH11	16:19:63:ARG:HG3	1.84	0.43
27:30:24:VAL:CG1	27:30:25:THR:H	2.28	0.43
27:30:54:ILE:HG13	27:30:56:LYS:HB3	2.00	0.43
33:C:54:ILE:HG13	33:C:54:ILE:O	2.19	0.43
33:C:125:ARG:CB	33:C:125:ARG:NH1	2.82	0.43
34:D:21:LYS:O	34:D:21:LYS:HG2	2.18	0.43
34:D:28:ASP:C	34:D:30:LYS:H	2.22	0.43
36:F:36:ILE:HG13	36:F:37:HIS:N	2.34	0.43
36:F:97:THR:HG23	36:F:98:GLU:HG2	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:G:73:GLU:HG3	37:G:74:VAL:N	2.33	0.43
37:G:133:ALA:O	37:G:136:LYS:HB3	2.19	0.43
41:K:49:SER:HA	41:K:68:ARG:HH11	1.83	0.43
41:K:91:GLY:O	41:K:92:ARG:C	2.57	0.43
52:03:43:ASP:O	52:03:215:SER:N	2.45	0.43
53:A:26:A:H61	53:A:558:G:H1'	1.82	0.43
53:A:273:U:C2'	53:A:274:A:H5'	2.49	0.43
53:A:319:G:H2'	53:A:320:A:C8	2.53	0.43
53:A:513:C:H2'	53:A:514:C:H6	1.81	0.43
53:A:605:U:H2'	53:A:606:G:C8	2.54	0.43
54:01:172:A:H2'	54:01:173:A:H8	1.84	0.43
54:01:195:A:H3'	54:01:196:A:H4'	2.01	0.43
54:01:315:G:H2'	54:01:316:C:O4'	2.19	0.43
54:01:1300:G:C4'	54:01:1301:A:C5'	2.96	0.43
54:01:1637:A:H5'	54:01:1760:C:HO2'	1.82	0.43
54:01:1801:A:H5"	54:01:2203:U:H2'	1.99	0.43
54:01:2808:G:H5'	54:01:2809:A:OP1	2.18	0.43
58:Y:23:A:H2'	58:Y:24:G:H8	1.84	0.43
58:Y:69:G:H2'	58:Y:70:G:C8	2.53	0.43
59:Z:150:LYS:HD3	59:Z:152:LEU:HD23	2.01	0.43
4:07:3:LEU:HD23	4:07:100:GLU:HG3	2.00	0.43
4:07:7:TYR:HA	4:07:11:VAL:HG21	2.00	0.43
11:14:30:THR:HB	11:14:33:ARG:HB3	2.01	0.43
12:15:135:VAL:O	12:15:136:MET:OXT	2.36	0.43
19:22:13:ALA:HB1	19:22:14:PRO:HD2	2.01	0.43
24:27:8:GLU:N	24:27:8:GLU:OE1	2.52	0.43
25:28:19:HIS:ND1	25:28:50:VAL:HG12	2.34	0.43
29:32:14:ARG:HD3	54:01:125:A:H5'	2.01	0.43
33:C:35:ASP:OD1	33:C:56:ILE:HG13	2.19	0.43
39:I:35:GLU:HA	39:I:39:GLY:HA3	2.00	0.43
41:K:107:THR:O	51:U:6:ARG:HG3	2.18	0.43
42:L:109:ARG:HH12	53:A:537:G:H5"	1.84	0.43
43:M:105:ALA:HA	53:A:948:C:OP1	2.19	0.43
53:A:70:U:H4'	53:A:71:A:H8	1.84	0.43
53:A:739:C:H2'	53:A:740:U:O4'	2.19	0.43
53:A:1228:C:H2'	53:A:1229:A:C8	2.53	0.43
54:01:768:G:N2	54:01:1379:U:H1'	2.34	0.43
54:01:935:C:H2'	54:01:936:A:H8	1.84	0.43
54:01:1274:A:N1	54:01:1302:A:C2	2.87	0.43
54:01:1775:U:H2'	54:01:1776:G:H5'	2.01	0.43
1:04:220:ARG:HG3	54:01:1789:A:OP1	2.18	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:07:4:HIS:NE2	4:07:8:LYS:HE3	2.34	0.42
6:09:84:ALA:HA	6:09:91:PHE:H	1.84	0.42
7:10:118:ILE:N	7:10:119:PRO:HD2	2.34	0.42
8:11:104:GLN:O	8:11:108:ILE:HG13	2.18	0.42
10:13:35:VAL:HG12	10:13:36:GLY:N	2.34	0.42
10:13:48:PRO:HG3	53:A:1422:G:H5'	2.00	0.42
11:14:4:ASN:O	54:01:1243:C:H1'	2.19	0.42
11:14:100:ILE:HG13	11:14:101:ILE:HG23	2.01	0.42
12:15:44:ARG:HG2	12:15:44:ARG:HH21	1.83	0.42
13:16:103:ARG:NH2	13:16:110:MET:HE3	2.34	0.42
18:21:59:GLU:OE2	18:21:66:ILE:HD11	2.18	0.42
33:C:110:LEU:HG	33:C:143:LEU:HD23	2.01	0.42
35:E:160:VAL:O	35:E:163:ILE:HG13	2.19	0.42
36:F:46:GLN:HG2	36:F:47:LEU:O	2.19	0.42
42:L:6:LEU:HD21	42:L:11:ARG:CZ	2.49	0.42
49:S:2:ARG:O	49:S:3:SER:CB	2.67	0.42
50:T:16:ALA:HB1	50:T:20:ASN:HD21	1.84	0.42
51:U:49:ALA:HA	53:A:723:U:C4	2.53	0.42
52:03:30:LEU:HD12	52:03:30:LEU:C	2.39	0.42
53:A:815:A:H4'	53:A:817:C:C4	2.53	0.42
53:A:925:G:C2	53:A:927:G:C8	3.06	0.42
53:A:980:C:H2'	53:A:981:U:H5'	2.01	0.42
53:A:1245:C:H2'	53:A:1246:A:C8	2.54	0.42
53:A:1429:A:H2'	53:A:1430:A:C8	2.54	0.42
54:01:250:G:C6	54:01:251:A:C6	3.06	0.42
54:01:414:C:H2'	54:01:415:A:H8	1.83	0.42
54:01:445:C:O2'	54:01:446:G:H5'	2.19	0.42
54:01:834:G:C2	54:01:835:C:C2	3.07	0.42
54:01:1366:A:H2'	54:01:1367:A:O4'	2.19	0.42
54:01:1686:C:H2'	54:01:1687:G:O4'	2.19	0.42
54:01:1804:C:O2'	54:01:1805:A:H5'	2.18	0.42
55:02:51:G:H2'	55:02:52:A:O4'	2.19	0.42
57:V:17:U:H2'	57:V:18:G:H8	1.84	0.42
1:04:270:ARG:NH1	1:04:270:ARG:HB3	2.34	0.42
3:06:83:VAL:O	3:06:84:THR:C	2.56	0.42
4:07:103:ILE:HG13	4:07:104:THR:N	2.34	0.42
4:07:176:PHE:O	4:07:177:ARG:C	2.57	0.42
5:08:169:ARG:HH12	54:01:1093:G:H5'	1.84	0.42
6:09:7:ASP:CG	6:09:8:LYS:H	2.23	0.42
7:10:67:THR:CG2	7:10:74:ASP:HB2	2.48	0.42
8:11:128:ILE:N	8:11:128:ILE:CD1	2.82	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:12:93:ILE:HD11	9:12:100:VAL:HG21	2.01	0.42
12:15:20:LEU:N	12:15:20:LEU:HD12	2.34	0.42
13:16:2:ARG:HA	13:16:5:LYS:HD2	2.01	0.42
13:16:63:ARG:NE	54:01:1454:C:H5'	2.33	0.42
14:17:106:LEU:HD23	14:17:106:LEU:C	2.38	0.42
16:19:45:ALA:O	16:19:49:ARG:HG3	2.19	0.42
16:19:60:TRP:CZ2	54:01:995:C:H1'	2.54	0.42
18:21:40:ASN:C	18:21:41:LYS:HG2	2.40	0.42
21:24:77:VAL:CG2	21:24:78:GLN:N	2.82	0.42
25:28:4:ILE:O	25:28:36:GLU:HA	2.19	0.42
27:30:30:ASP:HB3	27:30:34:GLY:H	1.84	0.42
29:32:25:LYS:O	29:32:28:ARG:N	2.52	0.42
30:33:6:VAL:O	30:33:8:GLY:N	2.52	0.42
32:B:124:THR:O	32:B:128:LEU:HD13	2.18	0.42
32:B:162:VAL:CG1	32:B:163:ILE:N	2.82	0.42
34:D:191:SER:O	34:D:192:ALA:CB	2.67	0.42
37:G:104:VAL:O	37:G:107:ALA:HB3	2.19	0.42
42:L:113:ARG:HH11	42:L:113:ARG:HG2	1.84	0.42
44:N:20:PHE:O	44:N:21:ALA:CB	2.67	0.42
44:N:81:ILE:HG21	53:A:1202:U:N3	2.34	0.42
52:03:180:PHE:HB3	52:03:184:LYS:HB2	2.01	0.42
52:03:195:ALA:HA	52:03:198:LYS:CD	2.45	0.42
53:A:358:U:H2'	53:A:359:G:H8	1.84	0.42
53:A:396:C:H2'	53:A:397:A:H5"	2.01	0.42
53:A:428:G:H4'	53:A:429:U:O5'	2.17	0.42
53:A:537:G:H2'	53:A:538:G:H8	1.85	0.42
53:A:555:U:H2'	53:A:556:C:C6	2.54	0.42
53:A:1163:A:H2'	53:A:1164:G:H8	1.84	0.42
53:A:1233:G:H2'	53:A:1234:C:C6	2.53	0.42
53:A:1484:C:O2'	54:01:1961:C:H5'	2.19	0.42
54:01:580:U:O2'	54:01:581:C:H5'	2.18	0.42
54:01:1625:C:H2'	54:01:1626:A:O4'	2.19	0.42
54:01:2370:G:H2'	54:01:2371:G:C8	2.54	0.42
54:01:2372:U:H2'	54:01:2373:G:H8	1.84	0.42
56:W:57:A:H2'	56:W:58:A:H5'	2.02	0.42
1:04:151:GLY:C	1:04:152:GLN:HG2	2.39	0.42
4:07:111:ARG:NH2	4:07:112:ASP:OD2	2.52	0.42
5:08:119:GLY:O	5:08:120:ILE:HD13	2.19	0.42
5:08:132:LEU:HD12	5:08:132:LEU:C	2.39	0.42
8:11:91:LYS:O	8:11:95:ASP:OD1	2.37	0.42
9:12:27:ARG:HH21	54:01:1142:A:H4'	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:17:27:VAL:HG21	14:17:40:ILE:HD12	2.01	0.42
15:18:95:LYS:N	15:18:95:LYS:CD	2.82	0.42
17:20:1:MET:HB2	17:20:43:ASN:ND2	2.35	0.42
19:22:13:ALA:HB1	24:27:33:ALA:HB3	2.01	0.42
32:B:6:ARG:HG2	32:B:6:ARG:NH1	2.33	0.42
33:C:14:VAL:HG11	33:C:180:ASP:HB2	2.01	0.42
33:C:77:GLY:HA3	33:C:82:ASP:OD2	2.19	0.42
35:E:153:ALA:O	35:E:158:LYS:HA	2.19	0.42
36:F:1:MET:SD	36:F:66:ALA:HA	2.60	0.42
37:G:142:ARG:HB3	56:X:41:C:H4'	2.01	0.42
41:K:63:GLN:HG3	41:K:98:ALA:HB2	2.02	0.42
41:K:105:ARG:HH11	41:K:105:ARG:HG3	1.84	0.42
42:L:39:THR:CG2	42:L:40:THR:N	2.82	0.42
42:L:115:LYS:O	42:L:116:TYR:HB2	2.19	0.42
47:Q:7:LEU:HD12	47:Q:7:LEU:N	2.33	0.42
48:R:12:PHE:CE2	48:R:13:THR:HG22	2.54	0.42
53:A:210:C:H4'	53:A:211:G:C2	2.55	0.42
53:A:709:U:H2'	53:A:710:G:H8	1.83	0.42
53:A:1256:A:O2'	53:A:1257:A:H5"	2.20	0.42
54:01:633:A:H2'	54:01:634:C:C5'	2.47	0.42
54:01:1023:U:O2'	54:01:1122:G:H5'	2.19	0.42
54:01:2187:U:H2'	54:01:2188:U:C6	2.53	0.42
55:02:55:U:H2'	55:02:56:G:H8	1.82	0.42
58:Y:57:G:C2'	58:Y:58:A:H5'	2.49	0.42
59:Z:150:LYS:HD3	59:Z:152:LEU:HB2	2.01	0.42
2:05:4:LEU:HD22	2:05:101:PHE:HE2	1.84	0.42
3:06:176:ASP:OD1	3:06:179:SER:HB2	2.19	0.42
6:09:2:GLN:NE2	6:09:20:ASN:HB2	2.34	0.42
6:09:4:ILE:HG13	6:09:5:LEU:N	2.34	0.42
6:09:41:LYS:O	6:09:45:GLU:HG3	2.19	0.42
10:13:25:LEU:O	10:13:30:ARG:HD3	2.20	0.42
12:15:12:MET:CA	54:01:910:A:H62	2.25	0.42
24:27:10:SER:O	24:27:14:LEU:HB2	2.19	0.42
29:32:3:ARG:HD2	29:32:3:ARG:HA	1.73	0.42
33:C:10:ARG:HG2	33:C:177:LEU:CD2	2.46	0.42
34:D:96:ARG:HH12	34:D:133:SER:HA	1.84	0.42
35:E:149:PRO:HA	35:E:152:VAL:CG2	2.49	0.42
44:N:7:ALA:CA	44:N:10:VAL:HG12	2.48	0.42
44:N:8:ARG:CG	44:N:12:ARG:HH12	2.21	0.42
49:S:77:ARG:HD2	53:A:960:U:H5	1.84	0.42
51:U:64:ALA:O	51:U:66:ARG:N	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:291:U:H2'	53:A:292:G:C8	2.54	0.42
53:A:1432:G:H1'	53:A:1468:A:H62	1.83	0.42
54:01:175:G:H2'	54:01:176:A:C8	2.53	0.42
54:01:1101:U:H2'	54:01:1102:C:C6	2.50	0.42
54:01:1149:G:H2'	54:01:1150:C:C6	2.55	0.42
54:01:1182:G:O2'	54:01:1183:U:H5'	2.20	0.42
54:01:1336:A:H2'	54:01:1337:G:H8	1.84	0.42
54:01:1370:C:H2'	54:01:1371:G:C8	2.54	0.42
59:Z:32:ASP:O	59:Z:33:LYS:C	2.57	0.42
2:05:14:ILE:HA	15:18:11:GLN:HE22	1.84	0.42
3:06:119:ILE:O	3:06:187:VAL:HA	2.20	0.42
3:06:170:ARG:HH21	3:06:170:ARG:HG3	1.83	0.42
4:07:72:SER:HB2	4:07:80:GLN:N	2.35	0.42
4:07:116:LEU:HD12	4:07:116:LEU:N	2.34	0.42
4:07:137:PHE:HA	4:07:138:PRO:HD3	1.89	0.42
4:07:172:PHE:HB2	4:07:174:PHE:CE2	2.54	0.42
9:12:99:ARG:HA	9:12:102:GLU:OE1	2.19	0.42
10:13:109:SER:OG	10:13:111:LYS:HG2	2.19	0.42
11:14:19:LEU:N	11:14:19:LEU:CD1	2.82	0.42
11:14:41:ARG:NH1	54:01:807:U:OP2	2.52	0.42
14:17:76:LYS:O	14:17:80:GLU:HG3	2.18	0.42
16:19:43:GLN:HE21	17:20:77:PHE:HB3	1.85	0.42
19:22:12:ARG:O	19:22:13:ALA:HB2	2.19	0.42
20:23:11:ILE:HG13	20:23:20:LYS:O	2.18	0.42
21:24:80:HIS:ND1	21:24:81:PRO:HD2	2.35	0.42
25:28:4:ILE:HG13	25:28:58:GLU:HA	2.02	0.42
34:D:32:LYS:HE3	53:A:413:G:C6	2.54	0.42
40:J:8:ILE:HB	40:J:74:VAL:HB	2.02	0.42
41:K:24:ALA:CB	41:K:29:THR:HG22	2.49	0.42
42:L:40:THR:HA	42:L:41:PRO:HD3	1.90	0.42
47:Q:45:VAL:CG2	47:Q:60:ILE:HD13	2.43	0.42
47:Q:64:ARG:HB3	47:Q:64:ARG:NH1	2.35	0.42
50:T:17:ARG:NH2	50:T:18:LYS:NZ	2.67	0.42
53:A:31:G:N2	53:A:47:C:H5"	2.35	0.42
53:A:259:G:O2'	53:A:260:G:H5'	2.19	0.42
53:A:1449:C:O2'	53:A:1450:U:H5'	2.20	0.42
54:01:889:C:H2'	54:01:890:C:O4'	2.20	0.42
54:01:1019:U:H3	54:01:1142:A:H62	1.67	0.42
54:01:2011:U:H2'	54:01:2012:G:O4'	2.20	0.42
54:01:2070:A:H2'	54:01:2071:A:C8	2.55	0.42
54:01:2869:G:H2'	54:01:2870:C:C6	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:Y:23:A:H2'	58:Y:24:G:C8	2.54	0.42
1:04:270:ARG:HH11	1:04:270:ARG:HB2	1.84	0.42
7:10:41:LEU:O	7:10:44:ALA:HB3	2.20	0.42
7:10:54:VAL:HA	7:10:84:TYR:O	2.19	0.42
7:10:122:GLN:HB3	7:10:123:ILE:H	1.68	0.42
8:11:85:ILE:HD12	8:11:85:ILE:C	2.38	0.42
12:15:78:LEU:HD23	12:15:79:ALA:HB2	2.01	0.42
13:16:103:ARG:HH11	54:01:1287:A:H5'	1.84	0.42
18:21:14:ALA:O	18:21:18:ARG:HG3	2.20	0.42
20:23:50:ALA:O	20:23:52:ASN:N	2.46	0.42
24:27:52:ARG:HB2	24:27:52:ARG:CZ	2.50	0.42
25:28:43:ILE:O	25:28:47:ILE:HG13	2.19	0.42
29:32:35:ARG:O	29:32:38:GLY:N	2.50	0.42
30:33:63:TYR:CE2	54:01:242:G:H5"	2.53	0.42
34:D:34:GLU:O	34:D:35:GLN:HG2	2.19	0.42
42:L:7:VAL:HG11	47:Q:37:ILE:HD11	2.00	0.42
42:L:20:VAL:HG23	42:L:20:VAL:O	2.19	0.42
44:N:2:LYS:O	44:N:3:GLN:C	2.57	0.42
53:A:834:U:H2'	53:A:835:U:C6	2.55	0.42
54:01:18:U:H2'	54:01:19:A:C8	2.55	0.42
54:01:288:U:H2'	54:01:289:G:C8	2.54	0.42
54:01:386:G:H3'	54:01:387:U:C5'	2.49	0.42
54:01:955:U:H3	54:01:962:G:H1	1.68	0.42
54:01:2236:U:H2'	54:01:2237:G:O4'	2.20	0.42
54:01:2297:A:N6	54:01:2319:G:H1'	2.35	0.42
54:01:2345:G:N3	54:01:2381:A:H2'	2.33	0.42
54:01:2364:C:H2'	54:01:2365:G:O4'	2.19	0.42
59:Z:120:PHE:HB2	59:Z:131:LEU:HB2	2.01	0.42
2:05:124:ARG:NH1	2:05:163:GLY:HA3	2.34	0.42
3:06:122:GLU:HG3	3:06:123:LYS:N	2.35	0.42
3:06:164:LEU:HD23	3:06:167:VAL:HG21	2.02	0.42
3:06:189:THR:O	3:06:193:VAL:HG23	2.19	0.42
5:08:86:LEU:HG	5:08:163:TYR:HD1	1.83	0.42
8:11:10:LEU:O	8:11:56:VAL:HG12	2.19	0.42
9:12:109:LEU:HD23	9:12:109:LEU:HA	1.89	0.42
10:13:48:PRO:HB3	53:A:1422:G:H4'	2.02	0.42
10:13:70:ARG:HG2	10:13:70:ARG:HH11	1.85	0.42
16:19:35:PHE:CZ	16:19:39:ILE:HD11	2.55	0.42
16:19:94:LEU:O	16:19:97:ILE:HB	2.20	0.42
18:21:52:GLU:HA	18:21:55:ILE:HD12	2.00	0.42
36:F:79:ARG:HG2	36:F:79:ARG:NH1	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:G:104:VAL:O	37:G:108:ARG:HG2	2.20	0.42
47:Q:39:ARG:HG3	47:Q:39:ARG:NH1	2.35	0.42
47:Q:69:THR:HG22	47:Q:70:LYS:N	2.21	0.42
53:A:54:C:H2'	53:A:352:C:H41	1.83	0.42
53:A:231:U:H2'	53:A:232:G:H8	1.84	0.42
53:A:309:A:H2'	53:A:310:G:H8	1.85	0.42
53:A:314:C:H2'	53:A:315:A:C8	2.54	0.42
53:A:1411:C:H2'	53:A:1412:C:C6	2.54	0.42
54:01:1105:U:H2'	54:01:1106:G:C5'	2.48	0.42
54:01:1362:C:H2'	54:01:1363:C:O4'	2.20	0.42
54:01:1423:G:H2'	54:01:1424:G:C8	2.53	0.42
54:01:1949:G:H2'	54:01:1950:G:C8	2.54	0.42
54:01:2673:G:H2'	54:01:2674:G:C8	2.54	0.42
55:02:10:G:H2'	55:02:11:C:O4'	2.19	0.42
1:04:89:ASN:N	1:04:89:ASN:ND2	2.67	0.42
1:04:179:GLU:HG2	54:01:1799:G:C8	2.55	0.42
2:05:22:ILE:HA	2:05:23:PRO:HD3	1.85	0.42
4:07:149:ARG:HB2	4:07:149:ARG:CZ	2.50	0.42
6:09:64:ALA:O	6:09:67:ALA:HB3	2.19	0.42
6:09:132:PHE:O	6:09:140:ALA:N	2.45	0.42
8:11:100:ILE:CG2	8:11:101:SER:H	2.26	0.42
9:12:117:ALA:HA	9:12:120:ARG:HH22	1.82	0.42
11:14:14:LYS:HA	11:14:14:LYS:CE	2.41	0.42
16:19:24:TYR:HB3	54:01:533:G:OP1	2.20	0.42
17:20:74:ILE:N	17:20:74:ILE:CD1	2.80	0.42
19:22:6:ARG:HG3	19:22:6:ARG:HH11	1.85	0.42
31:34:19:ARG:HD2	31:34:24:ARG:CD	2.50	0.42
34:D:144:ILE:N	34:D:144:ILE:CD1	2.82	0.42
35:E:87:VAL:O	35:E:87:VAL:HG13	2.20	0.42
37:G:31:VAL:HG22	37:G:32:ASP:N	2.34	0.42
38:H:77:VAL:HG21	38:H:127:TYR:CE2	2.55	0.42
45:O:86:LEU:HD12	45:O:87:ARG:N	2.35	0.42
47:Q:28:VAL:CG2	47:Q:29:LYS:N	2.82	0.42
50:T:42:ASP:HB3	50:T:45:ALA:HB3	2.02	0.42
52:03:63:THR:HG21	52:03:192:LEU:HD13	2.02	0.42
53:A:82:G:H1	53:A:87:C:N4	2.18	0.42
53:A:295:C:H2'	53:A:296:U:O4'	2.20	0.42
53:A:594:U:O2'	53:A:595:A:H5'	2.20	0.42
53:A:956:U:O2'	53:A:957:U:H5'	2.20	0.42
53:A:1238:A:H2'	53:A:1238:A:N3	2.34	0.42
53:A:1435:G:H2'	53:A:1436:U:C6	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:799:G:N1	54:01:800:A:N6	2.68	0.42
54:01:819:A:C4	54:01:1189:A:C2	3.07	0.42
54:01:839:U:H2'	54:01:840:C:C6	2.55	0.42
54:01:1704:C:H2'	54:01:1705:A:H8	1.84	0.42
54:01:1770:G:C6	54:01:1983:G:C6	3.08	0.42
54:01:2026:U:H2'	54:01:2027:G:C8	2.55	0.42
54:01:2811:G:O2'	54:01:2812:G:H5'	2.20	0.42
1:04:245:THR:C	1:04:247:TRP:N	2.73	0.42
4:07:107:VAL:O	4:07:110:ILE:HG13	2.19	0.42
7:10:3:LEU:HD12	7:10:3:LEU:C	2.40	0.42
8:11:100:ILE:CG2	8:11:101:SER:N	2.83	0.42
9:12:34:ARG:NH2	16:19:69:ARG:HD2	2.35	0.42
13:16:117:ASP:O	13:16:118:ARG:HB2	2.20	0.42
14:17:74:VAL:O	14:17:78:VAL:HG23	2.20	0.42
23:26:40:GLU:OE2	23:26:43:LYS:HG2	2.20	0.42
27:30:24:VAL:CG1	27:30:25:THR:N	2.82	0.42
44:N:53:ASP:HA	44:N:58:ARG:CD	2.50	0.42
47:Q:56:ASP:HB2	47:Q:79:GLU:O	2.20	0.42
50:T:77:ASN:O	50:T:81:GLN:HG2	2.20	0.42
53:A:56:U:H2'	53:A:57:G:C8	2.55	0.42
53:A:635:A:H2'	53:A:636:U:C6	2.55	0.42
53:A:746:A:H2'	53:A:747:A:C8	2.55	0.42
53:A:1346:A:O2'	53:A:1347:G:H4'	2.20	0.42
54:01:306:U:H2'	54:01:307:G:O4'	2.19	0.42
54:01:578:G:H21	54:01:1252:G:N2	2.17	0.42
54:01:1182:G:H2'	54:01:1183:U:O4'	2.20	0.42
54:01:1507:C:H2'	54:01:1508:A:C4'	2.50	0.42
54:01:1542:U:H2'	54:01:1543:G:O4'	2.20	0.42
54:01:2478:A:H2'	54:01:2479:U:O4'	2.20	0.42
55:02:79:G:O2'	55:02:80:U:H5'	2.20	0.42
2:05:98:VAL:O	2:05:98:VAL:HG22	2.20	0.42
4:07:103:ILE:HG22	4:07:174:PHE:CZ	2.55	0.42
7:10:59:LEU:O	7:10:63:ALA:N	2.52	0.42
8:11:62:ALA:C	8:11:64:ARG:H	2.22	0.42
9:12:81:ILE:HG23	9:12:82:GLY:H	1.83	0.42
10:13:22:ILE:HG12	10:13:41:ILE:HA	2.02	0.42
18:21:96:ILE:HG13	18:21:96:ILE:O	2.20	0.42
19:22:12:ARG:HB2	19:22:33:LYS:O	2.20	0.42
19:22:34:VAL:HG11	19:22:43:ILE:HD13	2.01	0.42
24:27:49:ASP:O	24:27:53:VAL:HG23	2.20	0.42
28:31:8:ILE:HD12	28:31:50:GLU:HG2	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:31:8:ILE:HD11	28:31:33:LEU:HD12	2.02	0.42
32:B:15:PHE:O	59:Z:43:LYS:NZ	2.32	0.42
32:B:164:ASP:O	32:B:168:GLU:HG2	2.20	0.42
33:C:2:GLN:HB2	53:A:1190:G:O2'	2.20	0.42
34:D:13:ARG:NH2	53:A:543:U:H5'	2.34	0.42
34:D:97:LEU:HD23	34:D:117:VAL:HG11	2.02	0.42
34:D:138:PRO:HA	34:D:181:PHE:CD2	2.55	0.42
35:E:160:VAL:HG13	35:E:161:GLU:H	1.85	0.42
37:G:142:ARG:HH11	37:G:142:ARG:HG3	1.84	0.42
39:I:29:ILE:O	39:I:29:ILE:HG23	2.20	0.42
41:K:109:ILE:HD13	51:U:16:ARG:HH11	1.84	0.42
43:M:76:ILE:HG22	43:M:80:MET:HE2	2.02	0.42
50:T:30:PHE:O	50:T:33:LYS:HB3	2.19	0.42
50:T:73:ARG:O	50:T:76:ALA:HB3	2.20	0.42
53:A:24:U:H2'	53:A:25:C:H6	1.84	0.42
53:A:33:A:H2'	53:A:34:C:H6	1.85	0.42
53:A:1001:C:H2'	53:A:1002:G:C8	2.55	0.42
53:A:1002:G:H2'	53:A:1003:G:O4'	2.19	0.42
53:A:1352:C:H2'	53:A:1353:G:H8	1.85	0.42
53:A:1496:C:H2'	53:A:1497:G:O4'	2.20	0.42
54:01:35:G:O2'	54:01:36:G:H5'	2.20	0.42
54:01:1368:G:H2'	54:01:1369:G:C8	2.50	0.42
54:01:2194:U:H2'	54:01:2195:U:C6	2.54	0.42
54:01:2292:U:H2'	54:01:2293:G:H8	1.84	0.42
56:X:67:C:H2'	56:X:68:C:C6	2.55	0.42
8:11:96:LYS:HD2	8:11:96:LYS:N	2.35	0.41
15:18:87:ARG:HB3	15:18:87:ARG:NH1	2.34	0.41
30:33:34:LYS:HE2	30:33:34:LYS:HB3	1.90	0.41
33:C:2:GLN:HG3	33:C:3:LYS:H	1.85	0.41
35:E:93:VAL:HG21	35:E:138:ALA:HB3	2.00	0.41
46:P:6:LEU:HD22	46:P:17:TYR:HB3	2.01	0.41
47:Q:51:GLU:O	47:Q:77:VAL:HG21	2.20	0.41
53:A:88:U:H2'	53:A:89:U:C6	2.55	0.41
53:A:222:C:H2'	53:A:223:A:H8	1.85	0.41
53:A:1074:G:O2'	53:A:1075:U:H5'	2.20	0.41
53:A:1148:U:H2'	53:A:1149:C:O4'	2.20	0.41
53:A:1193:G:O2'	53:A:1194:U:H5'	2.20	0.41
54:01:340:A:H2'	54:01:341:C:O4'	2.20	0.41
54:01:403:U:O3'	54:01:404:A:H4'	2.20	0.41
54:01:940:G:C3'	54:01:941:A:H5"	2.50	0.41
54:01:1844:C:H2'	54:01:1845:G:C8	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:W:23:C:H2'	56:W:24:U:C6	2.55	0.41
2:05:62:LYS:HB2	2:05:63:PRO:HD3	2.03	0.41
2:05:129:THR:HG22	2:05:130:GLN:O	2.20	0.41
3:06:69:ARG:HH11	54:01:674:G:H1'	1.86	0.41
3:06:148:ILE:HD13	3:06:187:VAL:HG11	2.02	0.41
4:07:39:VAL:HG22	4:07:41:GLU:H	1.85	0.41
4:07:102:LEU:HD12	4:07:106:ALA:CB	2.50	0.41
5:08:137:LYS:HA	5:08:140:ILE:CD1	2.50	0.41
6:09:4:ILE:HG22	6:09:37:VAL:O	2.20	0.41
7:10:77:VAL:O	7:10:77:VAL:HG12	2.20	0.41
10:13:20:MET:O	10:13:42:THR:HG22	2.20	0.41
11:14:90:VAL:HG12	11:14:91:ASP:N	2.35	0.41
33:C:34:SER:O	33:C:37:LYS:HB2	2.20	0.41
35:E:113:VAL:HG13	35:E:114:LEU:N	2.36	0.41
37:G:22:LEU:O	37:G:26:VAL:HG23	2.20	0.41
46:P:5:ARG:HB2	53:A:376:G:H5"	2.02	0.41
47:Q:28:VAL:HG22	47:Q:29:LYS:H	1.84	0.41
48:R:54:LEU:O	48:R:58:ILE:HG12	2.20	0.41
51:U:17:ARG:HG2	51:U:21:SER:HB2	2.01	0.41
53:A:373:A:H2'	53:A:374:A:H8	1.86	0.41
54:01:326:G:H2'	54:01:327:G:C8	2.55	0.41
54:01:443:A:H2'	54:01:443:A:N3	2.35	0.41
54:01:950:G:H2'	54:01:951:C:C6	2.55	0.41
54:01:1318:U:H2'	54:01:1319:C:C6	2.54	0.41
54:01:1749:A:H2'	54:01:1750:G:H8	1.86	0.41
54:01:1827:U:H2'	54:01:1828:G:O4'	2.20	0.41
54:01:1996:C:O2	54:01:1997:C:H1'	2.20	0.41
54:01:2049:G:O2'	54:01:2050:C:H5'	2.21	0.41
1:04:83:ASP:HB2	1:04:90:ILE:HD13	2.02	0.41
4:07:141:ASP:CB	4:07:144:LYS:HD3	2.51	0.41
5:08:44:HIS:CG	5:08:45:ALA:N	2.88	0.41
6:09:4:ILE:CG2	6:09:37:VAL:HB	2.51	0.41
6:09:9:VAL:HG11	6:09:12:LEU:HD11	2.01	0.41
13:16:48:VAL:O	13:16:51:LEU:HB2	2.19	0.41
19:22:6:ARG:O	19:22:10:VAL:HG23	2.19	0.41
33:C:107:LYS:HA	33:C:108:PRO:HD2	1.89	0.41
34:D:25:ARG:HH12	34:D:30:LYS:NZ	2.18	0.41
35:E:52:ALA:HB3	35:E:58:ALA:CB	2.50	0.41
38:H:3:GLN:OE1	38:H:3:GLN:HA	2.20	0.41
46:P:69:ASP:CG	46:P:70:ARG:H	2.23	0.41
53:A:66:A:H5'	53:A:173:U:O4	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:225:C:H2'	53:A:226:G:C5'	2.45	0.41
53:A:871:U:H5"	53:A:872:A:OP2	2.20	0.41
54:01:6:A:H2'	54:01:7:G:C8	2.55	0.41
54:01:74:A:H4'	54:01:75:G:O5'	2.20	0.41
54:01:191:A:H2'	54:01:192:C:C6	2.54	0.41
54:01:1697:G:H4'	54:01:1978:A:H5"	2.01	0.41
54:01:2636:C:H2'	54:01:2637:U:H6	1.86	0.41
54:01:2889:C:H2'	54:01:2890:G:O4'	2.20	0.41
56:X:21:A:H61	56:X:47:U:H5'	1.85	0.41
1:04:18:VAL:HG23	1:04:202:ARG:HB2	2.01	0.41
1:04:209:ALA:HA	1:04:212:TRP:CZ2	2.54	0.41
1:04:270:ARG:CB	1:04:270:ARG:HH11	2.34	0.41
3:06:29:HIS:NE2	11:14:8:PRO:HD3	2.35	0.41
5:08:29:ASN:HB3	5:08:78:VAL:HA	2.01	0.41
11:14:79:LEU:H	11:14:113:ALA:HB3	1.85	0.41
13:16:20:MET:HG3	13:16:21:PHE:N	2.35	0.41
13:16:36:THR:OG1	13:16:37:THR:N	2.51	0.41
20:23:9:GLU:OE2	20:23:21:ARG:HB3	2.20	0.41
23:26:38:TRP:HB2	23:26:45:PHE:CE1	2.55	0.41
24:27:16:THR:HA	24:27:19:LEU:HD12	2.02	0.41
32:B:102:ASN:HD21	32:B:105:THR:HB	1.86	0.41
33:C:151:GLU:HB2	33:C:166:TRP:HB3	2.03	0.41
39:I:23:GLY:N	39:I:60:LEU:HA	2.35	0.41
39:I:57:VAL:HG12	39:I:58:GLU:N	2.35	0.41
41:K:78:ILE:HG22	41:K:79:LYS:N	2.35	0.41
41:K:85:VAL:HG23	41:K:111:ASP:OD1	2.21	0.41
42:L:29:LYS:HA	53:A:363:A:OP1	2.20	0.41
49:S:33:TRP:O	49:S:35:ARG:HG3	2.20	0.41
53:A:629:A:H2'	53:A:630:A:O4'	2.21	0.41
54:01:464:U:C2	54:01:788:A:C6	3.08	0.41
54:01:776:G:H1	54:01:2072:C:C5'	2.34	0.41
54:01:802:A:H2'	54:01:802:A:N3	2.35	0.41
54:01:1537:G:N3	54:01:1537:G:H3'	2.35	0.41
54:01:2366:A:H2'	54:01:2367:G:O4'	2.20	0.41
56:X:13:C:C3'	56:X:14:A:H5"	2.50	0.41
58:Y:57:G:H2'	58:Y:58:A:H5'	2.02	0.41
58:Y:69:G:H2'	58:Y:70:G:H8	1.86	0.41
2:05:148:GLN:O	54:01:2052:A:H4'	2.20	0.41
6:09:25:TYR:CD2	6:09:30:LEU:HD11	2.55	0.41
12:15:45:GLN:O	12:15:46:ILE:C	2.57	0.41
12:15:60:GLN:HG3	12:15:108:VAL:HG12	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:19:113:LYS:O	16:19:116:LEU:HB3	2.20	0.41
17:20:6:GLN:HG2	17:20:11:GLN:HG3	2.01	0.41
17:20:72:VAL:O	17:20:74:ILE:HD12	2.20	0.41
20:23:86:PHE:CZ	20:23:91:LYS:HE2	2.54	0.41
29:32:12:ARG:HG3	29:32:12:ARG:NH2	2.35	0.41
37:G:91:ARG:HB3	37:G:92:PRO:HD2	2.02	0.41
38:H:13:ILE:O	38:H:17:GLN:HG2	2.21	0.41
43:M:66:GLY:O	43:M:69:ARG:N	2.54	0.41
44:N:86:ALA:HB3	44:N:92:ILE:HD11	2.02	0.41
45:O:58:MET:HA	45:O:61:GLN:HB3	2.03	0.41
46:P:20:VAL:HG21	46:P:32:PHE:HB2	2.02	0.41
53:A:829:G:O2'	53:A:830:G:H5'	2.20	0.41
53:A:1245:C:H2'	53:A:1246:A:H8	1.85	0.41
53:A:1504:G:OP1	53:A:1507:A:H4'	2.20	0.41
54:01:82:U:H2'	54:01:83:A:O4'	2.20	0.41
54:01:226:A:H2'	54:01:227:A:C8	2.55	0.41
54:01:593:U:H2'	54:01:594:U:C6	2.56	0.41
54:01:1316:U:H2'	54:01:1317:G:C8	2.56	0.41
54:01:1526:C:H2'	54:01:1527:G:O4'	2.21	0.41
54:01:1965:C:H3'	54:01:1966:A:C8	2.55	0.41
54:01:2830:C:O2'	54:01:2831:G:H5'	2.20	0.41
55:02:88:C:H5"	55:02:89:U:OP1	2.20	0.41
1:04:20:ASN:HA	1:04:21:PRO:HD2	1.93	0.41
4:07:149:ARG:NH1	4:07:149:ARG:CB	2.84	0.41
6:09:3:VAL:HA	6:09:39:ALA:HB3	2.02	0.41
7:10:88:HIS:O	7:10:90:GLY:N	2.53	0.41
9:12:49:ASP:CG	9:12:118:MET:HB3	2.41	0.41
11:14:23:ILE:N	11:14:23:ILE:CD1	2.79	0.41
11:14:118:THR:O	11:14:120:VAL:N	2.53	0.41
12:15:83:GLY:HA2	54:01:2276:G:P	2.61	0.41
16:19:108:LEU:CA	17:20:48:LYS:HZ3	2.29	0.41
20:23:102:ILE:OXT	20:23:102:ILE:HG22	2.20	0.41
33:C:125:ARG:HB2	33:C:125:ARG:NH1	2.33	0.41
38:H:28:SER:OG	38:H:29:SER:N	2.53	0.41
40:J:25:ILE:O	40:J:29:ALA:HB2	2.20	0.41
53:A:314:C:O2'	53:A:315:A:H5'	2.20	0.41
53:A:634:C:H2'	53:A:635:A:C8	2.56	0.41
54:01:259:G:O2'	54:01:260:G:H5'	2.20	0.41
54:01:1435:G:H2'	54:01:1436:G:C8	2.55	0.41
54:01:1935:G:O2'	54:01:1936:A:H5'	2.21	0.41
54:01:2087:G:H2'	54:01:2088:A:H8	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:04:176:ARG:HG2	54:01:1820:U:OP1	2.21	0.41
3:06:148:ILE:O	3:06:169:VAL:HA	2.21	0.41
4:07:166:ARG:O	4:07:170:ALA:N	2.53	0.41
8:11:75:ALA:HA	8:11:78:LEU:HD12	2.02	0.41
17:20:74:ILE:HB	17:20:87:GLN:O	2.20	0.41
19:22:73:ARG:NH1	54:01:456:C:H2'	2.35	0.41
23:26:17:ARG:HH11	23:26:17:ARG:HG3	1.85	0.41
23:26:30:PRO:O	23:26:32:LEU:HG	2.21	0.41
34:D:3:TYR:C	34:D:4:LEU:HG	2.41	0.41
34:D:197:HIS:HE1	35:E:103:GLY:HA2	1.86	0.41
44:N:43:ALA:C	44:N:45:LEU:H	2.22	0.41
46:P:11:ALA:HA	53:A:44:A:OP1	2.20	0.41
49:S:54:ARG:HB3	53:A:958:A:C2	2.56	0.41
53:A:151:A:H2'	53:A:152:A:O4'	2.21	0.41
54:01:279:A:C2'	54:01:280:U:H5'	2.50	0.41
54:01:570:G:O2'	54:01:571:U:H5'	2.21	0.41
54:01:898:C:H2'	54:01:899:A:O4'	2.19	0.41
54:01:1313:U:H2'	54:01:1610:A:C2	2.55	0.41
54:01:2315:G:H2'	54:01:2316:G:H8	1.85	0.41
54:01:2810:A:H2'	54:01:2811:G:O4'	2.20	0.41
1:04:243:PRO:O	1:04:251:THR:HG22	2.21	0.41
1:04:266:ILE:HG21	1:04:269:ARG:CD	2.46	0.41
4:07:103:ILE:HG22	4:07:174:PHE:HE1	1.84	0.41
11:14:50:PHE:CE2	11:14:52:GLY:HA2	2.56	0.41
16:19:42:GLY:O	16:19:45:ALA:HB3	2.21	0.41
18:21:42:LYS:CB	54:01:2010:G:H5"	2.45	0.41
33:C:113:LYS:H	33:C:184:ASN:ND2	2.19	0.41
36:F:66:ALA:CB	36:F:67:PRO:HD2	2.42	0.41
38:H:90:GLU:O	38:H:90:GLU:CG	2.68	0.41
40:J:50:THR:HG23	40:J:64:GLN:HG2	2.03	0.41
43:M:25:GLY:N	53:A:1329:A:H5"	2.31	0.41
43:M:33:LEU:HD23	43:M:40:GLU:HA	2.03	0.41
43:M:66:GLY:O	43:M:67:ASP:C	2.58	0.41
45:O:31:LEU:O	45:O:35:ILE:HG13	2.21	0.41
46:P:33:ILE:N	46:P:33:ILE:CD1	2.81	0.41
48:R:56:ARG:O	48:R:60:ARG:HG3	2.21	0.41
53:A:162:A:H2'	53:A:163:C:O4'	2.21	0.41
53:A:1139:G:H5"	53:A:1140:C:H5	1.85	0.41
53:A:1270:G:H2'	53:A:1271:A:H8	1.86	0.41
53:A:1326:U:H2'	53:A:1327:C:C6	2.55	0.41
53:A:1363:A:O2'	53:A:1364:U:H2'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:1453:G:H3'	53:A:1453:G:N3	2.36	0.41
53:A:1489:G:O2'	53:A:1490:U:H5'	2.20	0.41
54:01:395:U:H2'	54:01:396:G:H8	1.86	0.41
54:01:1787:A:H2'	54:01:1787:A:N3	2.35	0.41
54:01:2747:G:O6	54:01:2755:C:H5"	2.21	0.41
2:05:125:TRP:CD1	2:05:160:LYS:HB3	2.56	0.41
2:05:151:THR:HB	54:01:2571:U:O2'	2.21	0.41
3:06:118:LEU:O	3:06:119:ILE:HD13	2.21	0.41
3:06:178:VAL:CG1	3:06:179:SER:N	2.82	0.41
3:06:196:VAL:O	3:06:199:MET:HB3	2.21	0.41
4:07:21:TYR:CD1	4:07:26:GLN:NE2	2.89	0.41
4:07:74:ALA:C	4:07:77:LYS:H	2.24	0.41
5:08:1:SER:C	5:08:3:VAL:N	2.74	0.41
5:08:70:LEU:O	5:08:74:MET:HG3	2.20	0.41
6:09:125:THR:HA	6:09:146:VAL:HB	2.02	0.41
7:10:118:ILE:N	7:10:119:PRO:CD	2.84	0.41
9:12:101:ILE:HB	9:12:124:VAL:HG11	2.03	0.41
10:13:6:THR:HG23	54:01:1666:G:O3'	2.21	0.41
10:13:21:CYS:CA	10:13:41:ILE:HG22	2.47	0.41
11:14:103:ILE:CD1	54:01:259:G:H4'	2.51	0.41
12:15:4:PRO:HG2	12:15:70:ASP:HA	2.03	0.41
12:15:36:VAL:HB	12:15:127:LYS:O	2.21	0.41
12:15:102:LEU:HD13	12:15:124:LEU:HD13	2.03	0.41
13:16:2:ARG:CB	13:16:5:LYS:HD2	2.51	0.41
14:17:94:ARG:NH2	14:17:94:ARG:CB	2.84	0.41
18:21:9:HIS:H	18:21:102:HIS:CE1	2.39	0.41
23:26:13:THR:HG21	54:01:188:G:H5'	2.03	0.41
24:27:9:LYS:HG2	24:27:10:SER:N	2.36	0.41
28:31:10:LEU:HD23	28:31:50:GLU:HA	2.03	0.41
32:B:15:PHE:O	59:Z:43:LYS:CG	2.69	0.41
32:B:22:TRP:CZ3	32:B:24:PRO:HA	2.56	0.41
32:B:46:VAL:N	32:B:47:PRO:HD2	2.36	0.41
33:C:126:ARG:HG2	33:C:126:ARG:NH1	2.35	0.41
34:D:131:ILE:HG22	34:D:133:SER:N	2.34	0.41
35:E:148:SER:HB2	35:E:149:PRO:CD	2.44	0.41
36:F:12:PRO:O	36:F:15:SER:CB	2.66	0.41
36:F:75:GLU:O	36:F:78:PHE:HB2	2.21	0.41
38:H:35:ILE:O	38:H:39:LEU:HG	2.21	0.41
39:I:38:PHE:HA	39:I:41:GLU:OE1	2.20	0.41
39:I:82:ILE:O	39:I:86:LEU:HG	2.21	0.41
40:J:57:VAL:HG13	40:J:58:ASN:N	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:J:100:ILE:HD12	40:J:100:ILE:C	2.41	0.41
41:K:90:PRO:O	41:K:91:GLY:C	2.58	0.41
42:L:22:ALA:O	42:L:23:LEU:CB	2.69	0.41
42:L:58:ASN:OD1	42:L:60:PHE:N	2.51	0.41
42:L:73:LEU:H	42:L:73:LEU:CD1	2.34	0.41
46:P:76:LYS:HZ3	53:A:473:U:H5"	1.86	0.41
48:R:25:ILE:C	48:R:25:ILE:CD1	2.88	0.41
48:R:71:ASP:OD1	48:R:72:ARG:N	2.53	0.41
52:03:26:ALA:HB1	52:03:214:ILE:CD1	2.47	0.41
52:03:166:ASP:OD2	52:03:168:ASN:HB2	2.20	0.41
53:A:536:C:H2'	53:A:537:G:C8	2.56	0.41
53:A:594:U:H2'	53:A:595:A:O4'	2.21	0.41
53:A:605:U:H2'	53:A:606:G:H8	1.86	0.41
53:A:729:A:O2'	53:A:730:G:H5'	2.21	0.41
53:A:1157:A:C2	53:A:1181:G:C4	3.09	0.41
53:A:1158:C:H3'	53:A:1158:C:O2	2.21	0.41
53:A:1171:A:H2'	53:A:1172:C:H6	1.86	0.41
53:A:1186:G:O2'	53:A:1187:G:H5'	2.21	0.41
53:A:1471:U:O2'	53:A:1472:U:H5'	2.20	0.41
54:01:27:G:C2	54:01:512:G:N3	2.89	0.41
54:01:881:G:O2'	54:01:882:G:H5'	2.21	0.41
54:01:983:A:N6	54:01:984:A:C2	2.88	0.41
54:01:1103:A:H2'	54:01:1104:C:OP1	2.21	0.41
54:01:1128:G:C6	54:01:2518:A:C6	3.09	0.41
54:01:1378:A:H1'	54:01:1379:U:C5	2.56	0.41
54:01:1458:U:H4'	54:01:1459:G:C4	2.56	0.41
54:01:1501:G:O2'	54:01:1502:A:H5'	2.21	0.41
54:01:1844:C:H2'	54:01:1845:G:H8	1.85	0.41
54:01:2134:A:O2'	54:01:2159:G:H1'	2.21	0.41
54:01:2317:A:H2'	54:01:2318:G:O4'	2.21	0.41
54:01:2421:G:H2'	56:X:76:A:N6	2.36	0.41
54:01:2743:U:H2'	54:01:2744:G:C5'	2.48	0.41
56:W:63:G:H2'	56:W:64:G:H8	1.84	0.41
2:05:151:THR:CB	2:05:152:PRO:HD3	2.30	0.41
3:06:118:LEU:HD11	3:06:188:MET:SD	2.61	0.41
4:07:102:LEU:HD12	4:07:106:ALA:HB3	2.03	0.41
5:08:93:TYR:CD1	5:08:106:LEU:HA	2.56	0.41
6:09:77:THR:HG23	6:09:77:THR:O	2.21	0.41
6:09:132:PHE:CB	6:09:140:ALA:HB3	2.47	0.41
8:11:4:VAL:HG13	8:11:7:TYR:CE2	2.55	0.41
11:14:78:ARG:NH2	54:01:626:A:H2'	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:14:111:ILE:N	11:14:111:ILE:CD1	2.75	0.41
13:16:73:ASN:O	13:16:74:GLU:C	2.59	0.41
25:28:11:SER:OG	25:28:13:ILE:HG13	2.21	0.41
26:29:26:SER:OG	26:29:27:THR:N	2.53	0.41
27:30:39:ARG:HG2	27:30:39:ARG:NH2	2.36	0.41
32:B:21:TYR:O	32:B:189:ASN:HB2	2.21	0.41
33:C:89:VAL:O	33:C:93:ILE:HG13	2.21	0.41
35:E:155:LYS:HE2	38:H:70:VAL:HG13	2.03	0.41
40:J:7:ARG:HG2	40:J:7:ARG:HH11	1.85	0.41
41:K:84:MET:HA	41:K:110:THR:O	2.20	0.41
43:M:113:LYS:H	43:M:114:PRO:CD	2.17	0.41
52:03:15:VAL:CG2	52:03:33:LEU:HD21	2.49	0.41
52:03:170:ILE:HG21	54:01:2177:C:H1'	2.03	0.41
53:A:1441:A:H62	53:A:1461:G:H21	1.68	0.41
54:01:164:C:H2'	54:01:165:A:O4'	2.21	0.41
54:01:443:A:H5"	54:01:444:C:H5"	2.03	0.41
54:01:629:G:H5"	54:01:650:C:O2'	2.20	0.41
54:01:1326:U:H5'	54:01:2011:U:H1'	2.02	0.41
54:01:2070:A:H2'	54:01:2071:A:O4'	2.20	0.41
54:01:2671:G:H2'	54:01:2672:U:C6	2.56	0.41
1:04:64:VAL:HG21	1:04:86:ARG:HH21	1.85	0.40
4:07:58:ALA:O	4:07:59:ILE:C	2.60	0.40
7:10:56:ARG:H	54:01:1084:A:C4'	2.34	0.40
8:11:27:LEU:O	8:11:32:VAL:HB	2.21	0.40
8:11:74:PRO:HB3	54:01:1059:G:O3'	2.21	0.40
11:14:91:ASP:HA	11:14:123:ARG:O	2.20	0.40
14:17:51:ALA:HB2	14:17:81:ARG:HD2	2.02	0.40
18:21:86:MET:HB2	18:21:96:ILE:HD13	2.03	0.40
24:27:19:LEU:HD22	24:27:23:ARG:HE	1.86	0.40
30:33:23:HIS:HD2	30:33:49:VAL:HG22	1.86	0.40
32:B:75:ALA:HB1	32:B:209:VAL:HG11	2.03	0.40
35:E:15:ILE:N	35:E:15:ILE:CD1	2.82	0.40
35:E:55:VAL:N	35:E:56:PRO:HD2	2.36	0.40
37:G:75:LYS:NZ	37:G:77:ARG:HD3	2.36	0.40
39:I:49:GLN:HB2	39:I:50:PRO:CD	2.51	0.40
40:J:41:PRO:CB	53:A:1151:A:H1'	2.52	0.40
44:N:40:ARG:HH22	49:S:6:LYS:CD	2.27	0.40
49:S:65:MET:HG2	49:S:73:PHE:HZ	1.86	0.40
50:T:35:TYR:HA	50:T:38:ILE:HD12	2.03	0.40
50:T:73:ARG:HB2	50:T:73:ARG:HH11	1.86	0.40
53:A:232:G:O2'	53:A:233:C:H5'	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:1342:C:H2'	53:A:1343:G:C8	2.57	0.40
54:01:7:G:H2'	54:01:8:C:H6	1.86	0.40
54:01:353:C:H2'	54:01:354:A:H8	1.86	0.40
54:01:381:G:H2'	54:01:382:A:C8	2.55	0.40
54:01:859:G:H2'	54:01:860:U:OP2	2.20	0.40
54:01:1857:G:H1'	54:01:1885:A:N6	2.36	0.40
54:01:2619:C:O2'	54:01:2620:C:H5'	2.21	0.40
54:01:2742:G:O2'	54:01:2743:U:H5'	2.21	0.40
56:X:31:G:H2'	56:X:32:C:H5'	2.03	0.40
59:Z:97:THR:O	59:Z:97:THR:HG22	2.21	0.40
1:04:104:LEU:HD11	1:04:155:ARG:HG2	2.03	0.40
2:05:18:ASP:OD1	2:05:20:VAL:HG23	2.22	0.40
2:05:123:LYS:NZ	54:01:2724:U:H5"	2.35	0.40
4:07:28:PRO:HB2	4:07:168:LEU:HD22	2.02	0.40
6:09:8:LYS:C	6:09:13:GLY:HA3	2.38	0.40
9:12:29:ALA:O	9:12:32:LEU:HB2	2.21	0.40
9:12:113:PRO:HD2	54:01:558:U:P	2.61	0.40
12:15:2:LEU:HD12	12:15:2:LEU:N	2.36	0.40
12:15:12:MET:SD	12:15:72:PRO:HD2	2.61	0.40
13:16:69:ARG:HH21	13:16:69:ARG:HG3	1.86	0.40
14:17:33:ARG:O	14:17:34:HIS:HB2	2.21	0.40
20:23:73:ASN:C	20:23:75:ALA:H	2.25	0.40
22:25:16:ARG:HG3	54:01:2271:G:H5'	2.03	0.40
28:31:12:SER:HA	28:31:48:TYR:CD1	2.56	0.40
31:34:25:VAL:HB	31:34:35:GLN:HG2	2.04	0.40
34:D:62:ARG:HG3	34:D:62:ARG:NH1	2.35	0.40
35:E:75:LEU:HD12	35:E:75:LEU:C	2.42	0.40
35:E:108:GLY:C	35:E:110:MET:H	2.24	0.40
36:F:18:VAL:HB	36:F:19:PRO:HD3	2.02	0.40
37:G:134:VAL:O	37:G:138:GLU:HG2	2.21	0.40
39:I:46:VAL:HA	39:I:49:GLN:CG	2.51	0.40
44:N:21:ALA:H	44:N:24:ALA:HB2	1.85	0.40
44:N:41:TRP:O	44:N:45:LEU:HB2	2.20	0.40
46:P:74:LEU:O	46:P:78:VAL:HG12	2.21	0.40
48:R:41:SER:C	48:R:43:ILE:N	2.74	0.40
51:U:34:ARG:HD3	51:U:34:ARG:HA	1.90	0.40
53:A:40:C:H2'	53:A:41:G:C8	2.55	0.40
53:A:701:U:H5"	53:A:703:G:H1'	2.02	0.40
53:A:757:U:H4'	53:A:822:U:O2	2.21	0.40
53:A:815:A:H4'	53:A:817:C:C5	2.56	0.40
54:01:924:G:H2'	54:01:925:A:C8	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:01:1183:U:H2'	54:01:1184:U:C6	2.56	0.40
54:01:1361:G:H2'	54:01:1362:C:C6	2.56	0.40
54:01:1672:A:N6	54:01:1673:G:C6	2.89	0.40
54:01:1979:U:H2'	54:01:1980:G:H8	1.86	0.40
54:01:2097:A:H2'	54:01:2098:U:O4'	2.21	0.40
54:01:2715:C:H2'	54:01:2716:C:C5'	2.50	0.40
1:04:118:GLY:N	1:04:128:THR:O	2.54	0.40
1:04:226:PRO:HD3	1:04:233:GLY:HA2	2.02	0.40
3:06:94:GLN:NE2	54:01:660:C:H4'	2.36	0.40
5:08:53:PRO:HG3	5:08:61:TRP:CD2	2.57	0.40
14:17:110:ALA:HB1	14:17:117:PHE:HE2	1.85	0.40
15:18:85:VAL:HG12	15:18:86:LYS:N	2.35	0.40
16:19:5:ARG:HG3	16:19:5:ARG:O	2.21	0.40
19:22:73:ARG:HH12	54:01:456:C:H2'	1.87	0.40
32:B:206:ILE:HG13	59:Z:45:GLU:OE1	2.22	0.40
34:D:119:HIS:CG	53:A:438:U:H4'	2.56	0.40
35:E:96:GLN:HG2	35:E:97:PRO:CD	2.48	0.40
36:F:42:TRP:HB2	36:F:59:TYR:HB2	2.02	0.40
36:F:88:MET:SD	48:R:63:TYR:HD2	2.44	0.40
38:H:113:ARG:HG2	38:H:113:ARG:HH11	1.86	0.40
39:I:88:GLU:N	39:I:88:GLU:OE1	2.51	0.40
40:J:42:LEU:HB3	40:J:43:PRO:HD2	2.02	0.40
43:M:89:ARG:NH2	43:M:94:LEU:HB3	2.36	0.40
45:O:86:LEU:HD12	45:O:87:ARG:HB2	2.02	0.40
47:Q:12:VAL:HB	47:Q:21:VAL:HG13	2.03	0.40
49:S:57:VAL:HA	49:S:58:PRO:HD3	1.92	0.40
52:03:53:ARG:HD3	56:X:61:C:O2'	2.22	0.40
53:A:113:G:H2'	53:A:114:U:C6	2.56	0.40
53:A:537:G:H2'	53:A:538:G:C8	2.56	0.40
53:A:1289:A:H2'	53:A:1290:G:H5'	2.02	0.40
54:01:532:A:H2'	54:01:532:A:N3	2.37	0.40
54:01:845:A:H61	54:01:932:U:H3	1.70	0.40
54:01:1952:A:N6	54:01:1953:A:N1	2.69	0.40
54:01:2339:C:H2'	54:01:2340:A:C8	2.56	0.40
55:02:118:C:H2'	55:02:119:A:C8	2.56	0.40
1:04:250:GLN:HB3	1:04:254:LYS:HG2	2.03	0.40
2:05:33:ARG:O	2:05:33:ARG:HG3	2.22	0.40
3:06:57:LYS:HB2	54:01:797:G:OP2	2.22	0.40
4:07:76:PHE:O	4:07:77:LYS:HB2	2.21	0.40
4:07:115:GLY:HA2	4:07:175:PRO:HB2	2.04	0.40
7:10:117:LEU:O	7:10:118:ILE:HB	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:12:69:ARG:HH11	9:12:69:ARG:HG3	1.86	0.40
10:13:22:ILE:HB	54:01:1952:A:C2	2.56	0.40
11:14:20:GLY:O	11:14:21:ARG:HD3	2.21	0.40
11:14:33:ARG:HD2	11:14:39:LYS:O	2.22	0.40
12:15:78:LEU:HD23	12:15:79:ALA:CB	2.51	0.40
15:18:38:ARG:CG	15:18:39:LEU:N	2.83	0.40
18:21:17:VAL:HG12	18:21:76:VAL:HG21	2.03	0.40
21:24:23:ALA:O	21:24:24:ASN:HB2	2.21	0.40
32:B:72:LYS:O	32:B:76:SER:N	2.55	0.40
33:C:5:HIS:CG	44:N:88:MET:HB3	2.56	0.40
33:C:69:THR:OG1	33:C:70:ALA:N	2.55	0.40
34:D:186:GLU:O	34:D:189:ASP:HB2	2.22	0.40
35:E:108:GLY:O	35:E:109:ALA:CB	2.70	0.40
37:G:110:ARG:O	37:G:110:ARG:HG2	2.20	0.40
40:J:15:HIS:C	40:J:17:LEU:N	2.75	0.40
40:J:89:ARG:HG2	40:J:89:ARG:HH11	1.85	0.40
41:K:81:LEU:HD12	41:K:81:LEU:C	2.42	0.40
43:M:27:THR:CG2	53:A:1328:C:H5”	2.49	0.40
44:N:18:LYS:HE3	44:N:19:TYR:CZ	2.57	0.40
45:O:27:GLN:O	45:O:30:LEU:HB3	2.22	0.40
46:P:35:ARG:HG3	46:P:35:ARG:O	2.21	0.40
47:Q:58:VAL:HA	47:Q:78:VAL:HG22	2.03	0.40
49:S:36:ARG:H	49:S:36:ARG:HG2	1.70	0.40
53:A:578:C:H2’	53:A:579:A:H8	1.85	0.40
54:01:128:C:H2’	54:01:129:C:C6	2.56	0.40
54:01:527:C:H4’	54:01:528:A:O4’	2.22	0.40
54:01:1106:G:H5’	54:01:1106:G:H8	1.87	0.40
54:01:1336:A:H2’	54:01:1337:G:C8	2.57	0.40
54:01:1350:C:C2’	54:01:1351:C:H5’	2.52	0.40
54:01:1475:G:O2’	54:01:1476:U:C6	2.72	0.40
54:01:1509:A:H2’	54:01:1510:G:C8	2.56	0.40
54:01:1538:G:O2’	54:01:1539:U:H5’	2.22	0.40
54:01:1603:A:H2’	54:01:1603:A:N3	2.37	0.40
54:01:1655:A:H2’	54:01:1656:C:O4’	2.21	0.40
54:01:1900:A:C2	54:01:1970:A:C6	3.09	0.40
54:01:2204:G:H2’	54:01:2205:A:C8	2.56	0.40
54:01:2240:U:O2’	54:01:2241:A:H5’	2.21	0.40
54:01:2692:G:O2’	54:01:2693:G:H5’	2.21	0.40
54:01:2788:C:H2’	54:01:2789:C:C6	2.55	0.40
1:04:153:LEU:HD13	1:04:175:LEU:CD2	2.48	0.40
3:06:83:VAL:O	3:06:85:PHE:N	2.54	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:07:154:THR:HG21	54:01:2314:A:O4'	2.22	0.40
9:12:81:ILE:HD11	54:01:2514:U:H4'	2.04	0.40
11:14:9:ALA:HB3	11:14:12:SER:HB2	2.03	0.40
12:15:43:ALA:O	12:15:44:ARG:C	2.59	0.40
12:15:44:ARG:HG2	12:15:44:ARG:NH2	2.36	0.40
18:21:89:ALA:O	18:21:91:GLY:N	2.54	0.40
20:23:86:PHE:O	20:23:88:ASP:O	2.40	0.40
31:34:27:CYS:SG	31:34:30:GLU:N	2.95	0.40
32:B:53:LEU:HD23	32:B:56:LEU:HD12	2.02	0.40
34:D:27:ILE:O	34:D:28:ASP:C	2.60	0.40
34:D:137:SER:O	34:D:140:ASP:OD2	2.40	0.40
35:E:104:ILE:HG23	35:E:104:ILE:O	2.21	0.40
36:F:3:HIS:H	36:F:92:THR:HG22	1.83	0.40
38:H:4:ASP:HA	38:H:5:PRO:HD2	1.94	0.40
40:J:80:THR:HB	40:J:83:THR:OG1	2.20	0.40
41:K:127:ARG:HG2	41:K:127:ARG:NH1	2.36	0.40
43:M:1:ALA:H3	43:M:52:ILE:HD13	1.85	0.40
43:M:29:SER:O	43:M:32:ILE:HB	2.20	0.40
46:P:8:ARG:CZ	46:P:15:PRO:HB3	2.52	0.40
46:P:14:ARG:HH21	46:P:42:ILE:HD12	1.85	0.40
46:P:48:GLU:CG	46:P:49:GLY:N	2.83	0.40
51:U:23:GLU:HG3	51:U:24:LYS:N	2.37	0.40
52:03:63:THR:HG21	52:03:192:LEU:CD1	2.51	0.40
53:A:129:A:H1'	53:A:130:A:C8	2.57	0.40
53:A:502:A:H2'	53:A:503:C:O4'	2.21	0.40
53:A:900:A:H2'	53:A:901:A:C8	2.57	0.40
53:A:1326:U:H2'	53:A:1327:C:H6	1.86	0.40
54:01:566:U:H2'	54:01:567:U:O4'	2.22	0.40
54:01:672:C:O2'	54:01:673:C:H5'	2.22	0.40
54:01:819:A:C5	54:01:1189:A:C2	3.10	0.40
54:01:1083:U:H2'	54:01:1085:A:OP2	2.20	0.40
54:01:1161:C:H2'	54:01:1162:G:H8	1.86	0.40
54:01:1339:G:H2'	54:01:1340:U:O2	2.22	0.40
54:01:1433:A:O2'	54:01:1434:A:H5'	2.21	0.40
54:01:1680:U:C2'	54:01:1681:G:H5'	2.52	0.40
54:01:2547:A:H2'	54:01:2548:U:C6	2.56	0.40
59:Z:131:LEU:HD12	59:Z:131:LEU:N	2.36	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	04	269/271 (99%)	225 (84%)	33 (12%)	11 (4%)	3 23
2	05	207/209 (99%)	175 (84%)	31 (15%)	1 (0%)	29 68
3	06	199/201 (99%)	164 (82%)	29 (15%)	6 (3%)	4 30
4	07	175/177 (99%)	140 (80%)	31 (18%)	4 (2%)	6 36
5	08	174/176 (99%)	155 (89%)	17 (10%)	2 (1%)	14 52
6	09	147/149 (99%)	111 (76%)	27 (18%)	9 (6%)	1 15
7	10	129/131 (98%)	98 (76%)	25 (19%)	6 (5%)	2 20
8	11	139/141 (99%)	118 (85%)	18 (13%)	3 (2%)	6 37
9	12	140/142 (99%)	122 (87%)	13 (9%)	5 (4%)	3 26
10	13	120/122 (98%)	103 (86%)	15 (12%)	2 (2%)	9 42
11	14	141/143 (99%)	120 (85%)	19 (14%)	2 (1%)	11 46
12	15	134/136 (98%)	103 (77%)	26 (19%)	5 (4%)	3 26
13	16	118/120 (98%)	83 (70%)	30 (25%)	5 (4%)	3 23
14	17	114/116 (98%)	95 (83%)	14 (12%)	5 (4%)	2 21
15	18	112/114 (98%)	89 (80%)	18 (16%)	5 (4%)	2 21
16	19	115/117 (98%)	94 (82%)	17 (15%)	4 (4%)	3 27
17	20	101/103 (98%)	86 (85%)	11 (11%)	4 (4%)	3 24
18	21	108/110 (98%)	87 (81%)	17 (16%)	4 (4%)	3 26
19	22	91/93 (98%)	78 (86%)	13 (14%)	0	100 100
20	23	100/102 (98%)	81 (81%)	15 (15%)	4 (4%)	3 24
21	24	92/94 (98%)	78 (85%)	11 (12%)	3 (3%)	4 28
22	25	73/75 (97%)	65 (89%)	8 (11%)	0	100 100
23	26	75/77 (97%)	67 (89%)	7 (9%)	1 (1%)	12 48
24	27	61/63 (97%)	48 (79%)	10 (16%)	3 (5%)	2 19
25	28	56/58 (97%)	49 (88%)	7 (12%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
26	29	64/66 (97%)	53 (83%)	9 (14%)	2 (3%)	4 30
27	30	54/56 (96%)	46 (85%)	6 (11%)	2 (4%)	3 26
28	31	48/50 (96%)	42 (88%)	6 (12%)	0	100 100
29	32	44/46 (96%)	29 (66%)	11 (25%)	4 (9%)	1 8
30	33	62/64 (97%)	50 (81%)	7 (11%)	5 (8%)	1 9
31	34	36/38 (95%)	29 (81%)	7 (19%)	0	100 100
32	B	223/225 (99%)	193 (86%)	26 (12%)	4 (2%)	8 41
33	C	204/206 (99%)	167 (82%)	29 (14%)	8 (4%)	3 25
34	D	203/205 (99%)	157 (77%)	32 (16%)	14 (7%)	1 12
35	E	155/157 (99%)	123 (79%)	24 (16%)	8 (5%)	2 18
36	F	124/126 (98%)	101 (82%)	17 (14%)	6 (5%)	2 20
37	G	149/151 (99%)	125 (84%)	21 (14%)	3 (2%)	7 39
38	H	127/129 (98%)	109 (86%)	16 (13%)	2 (2%)	9 43
39	I	125/127 (98%)	101 (81%)	16 (13%)	8 (6%)	1 14
40	J	96/98 (98%)	82 (85%)	11 (12%)	3 (3%)	4 30
41	K	114/116 (98%)	92 (81%)	19 (17%)	3 (3%)	5 33
42	L	121/123 (98%)	93 (77%)	20 (16%)	8 (7%)	1 13
43	M	112/114 (98%)	88 (79%)	20 (18%)	4 (4%)	3 26
44	N	98/100 (98%)	70 (71%)	24 (24%)	4 (4%)	3 23
45	O	86/88 (98%)	64 (74%)	20 (23%)	2 (2%)	6 36
46	P	80/82 (98%)	62 (78%)	17 (21%)	1 (1%)	12 48
47	Q	78/80 (98%)	61 (78%)	14 (18%)	3 (4%)	3 25
48	R	63/65 (97%)	50 (79%)	8 (13%)	5 (8%)	1 10
49	S	77/79 (98%)	63 (82%)	9 (12%)	5 (6%)	1 14
50	T	83/85 (98%)	74 (89%)	8 (10%)	1 (1%)	13 50
51	U	63/65 (97%)	42 (67%)	19 (30%)	2 (3%)	4 29
52	03	130/223 (58%)	114 (88%)	13 (10%)	3 (2%)	6 36
59	Z	150/554 (27%)	126 (84%)	21 (14%)	3 (2%)	7 39
All	All	6159/6758 (91%)	5040 (82%)	912 (15%)	207 (3%)	6 28

All (207) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	04	261	ARG
3	06	84	THR
4	07	175	PRO
6	09	10	ALA
7	10	58	THR
7	10	118	ILE
11	14	85	VAL
13	16	14	SER
17	20	38	VAL
17	20	54	VAL
26	29	51	VAL
29	32	5	PHE
33	C	60	ALA
33	C	112	ALA
34	D	169	TRP
35	E	25	LYS
35	E	122	VAL
36	F	54	LEU
39	I	71	ILE
39	I	90	ASP
42	L	75	GLU
1	04	236	GLY
1	04	240	GLY
3	06	80	SER
4	07	20	ASN
6	09	9	VAL
6	09	91	PHE
6	09	118	PRO
7	10	108	VAL
8	11	3	LYS
8	11	12	VAL
9	12	22	GLY
9	12	81	ILE
9	12	100	VAL
10	13	106	GLU
13	16	2	ARG
14	17	15	ARG
15	18	53	GLY
15	18	93	LYS
15	18	97	TYR
17	20	69	GLY
18	21	12	SER
20	23	6	ARG

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Mol	Chain	Res	Type
24	27	2	LYS
24	27	24	GLU
24	27	25	GLN
27	30	53	VAL
30	33	7	ARG
34	D	26	ALA
34	D	68	GLU
34	D	191	SER
35	E	11	GLN
35	E	26	GLY
35	E	93	VAL
36	F	56	LYS
37	G	95	ARG
39	I	12	LYS
39	I	57	VAL
39	I	100	ALA
39	I	120	ALA
41	K	92	ARG
42	L	25	ALA
42	L	47	ALA
42	L	108	ASP
44	N	3	GLN
45	O	49	HIS
47	Q	70	LYS
48	R	13	THR
48	R	17	VAL
49	S	3	SER
49	S	7	GLY
52	03	17	ALA
52	03	189	LEU
59	Z	33	LYS
1	04	147	PRO
2	05	31	ALA
3	06	83	VAL
3	06	156	ASN
3	06	182	ALA
6	09	3	VAL
6	09	38	PRO
6	09	41	LYS
6	09	136	SER
7	10	107	GLU
7	10	121	SER

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Mol	Chain	Res	Type
9	12	51	GLY
12	15	45	GLN
12	15	82	MET
14	17	8	ILE
14	17	69	ASP
14	17	102	ARG
15	18	18	SER
18	21	65	ASP
21	24	15	GLY
23	26	31	ASN
29	32	40	ALA
30	33	62	PRO
32	B	19	THR
32	B	131	LYS
33	C	120	THR
33	C	156	LEU
34	D	22	SER
34	D	47	LEU
34	D	153	ARG
34	D	165	GLU
35	E	98	ALA
36	F	50	PRO
38	H	29	SER
40	J	89	ARG
42	L	23	LEU
43	M	15	VAL
44	N	43	ALA
47	Q	15	LYS
48	R	26	ALA
48	R	42	ARG
49	S	4	LEU
1	04	31	PRO
1	04	107	LYS
1	04	116	GLN
1	04	231	HIS
1	04	260	LYS
4	07	2	LYS
5	08	70	LEU
8	11	35	MET
10	13	35	VAL
11	14	29	LYS
12	15	60	GLN

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Mol	Chain	Res	Type
13	16	46	ARG
16	19	27	ARG
16	19	78	PHE
17	20	55	ASP
18	21	90	LYS
20	23	51	LEU
30	33	29	ARG
32	B	165	ALA
33	C	28	PHE
34	D	20	LEU
34	D	36	ALA
35	E	112	ALA
37	G	4	ARG
37	G	58	LEU
39	I	91	GLU
40	J	16	ARG
41	K	88	PRO
42	L	90	PRO
44	N	19	TYR
44	N	34	ASN
48	R	20	ILE
49	S	70	LEU
50	T	3	ILE
51	U	34	ARG
59	Z	116	VAL
1	04	164	VAL
1	04	226	PRO
5	08	174	LYS
6	09	25	TYR
12	15	69	PRO
16	19	55	GLN
20	23	99	SER
27	30	17	SER
29	32	25	LYS
29	32	45	SER
30	33	27	ASN
34	D	4	LEU
35	E	132	PRO
36	F	13	ASP
36	F	94	HIS
36	F	100	SER
38	H	96	ALA

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Mol	Chain	Res	Type
42	L	35	ARG
42	L	43	LYS
43	M	69	ARG
43	M	113	LYS
47	Q	17	GLU
51	U	19	LYS
52	03	23	ILE
59	Z	89	ALA
3	06	35	TYR
9	12	133	ALA
13	16	60	VAL
14	17	68	LYS
16	19	76	SER
26	29	28	VAL
33	C	13	ILE
43	M	7	ASN
46	P	13	LYS
7	10	55	VAL
15	18	17	PRO
33	C	8	GLY
34	D	167	PRO
41	K	91	GLY
12	15	46	ILE
13	16	109	PRO
20	23	47	PRO
21	24	84	PRO
32	B	148	GLY
4	07	11	VAL
18	21	55	ILE
30	33	31	ILE
33	C	59	PRO
34	D	6	PRO
21	24	81	PRO
39	I	54	VAL
40	J	57	VAL
45	O	26	VAL
49	S	75	PRO
34	D	33	ILE

5.3.2 Protein sidechains (i)

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%)	215 (100%)	1 (0%)	88 94
2	05	164/164 (100%)	163 (99%)	1 (1%)	86 94
3	06	165/165 (100%)	165 (100%)	0	100 100
4	07	148/148 (100%)	147 (99%)	1 (1%)	84 93
5	08	137/137 (100%)	137 (100%)	0	100 100
6	09	114/114 (100%)	114 (100%)	0	100 100
7	10	100/100 (100%)	100 (100%)	0	100 100
8	11	109/109 (100%)	108 (99%)	1 (1%)	78 90
9	12	116/116 (100%)	116 (100%)	0	100 100
10	13	103/103 (100%)	103 (100%)	0	100 100
11	14	102/102 (100%)	101 (99%)	1 (1%)	76 88
12	15	109/109 (100%)	109 (100%)	0	100 100
13	16	100/100 (100%)	100 (100%)	0	100 100
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%)	89 (100%)	0	100 100
17	20	84/84 (100%)	84 (100%)	0	100 100
18	21	93/93 (100%)	92 (99%)	1 (1%)	73 88
19	22	80/80 (100%)	80 (100%)	0	100 100
20	23	83/83 (100%)	82 (99%)	1 (1%)	71 87
21	24	78/78 (100%)	77 (99%)	1 (1%)	69 86
22	25	57/57 (100%)	57 (100%)	0	100 100
23	26	67/67 (100%)	66 (98%)	1 (2%)	65 84
24	27	55/55 (100%)	55 (100%)	0	100 100
25	28	48/48 (100%)	48 (100%)	0	100 100
26	29	59/59 (100%)	59 (100%)	0	100 100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
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%)	38 (100%)	0	100	100
30	33	51/51 (100%)	51 (100%)	0	100	100
31	34	34/34 (100%)	34 (100%)	0	100	100
32	B	186/186 (100%)	185 (100%)	1 (0%)	88	94
33	C	170/170 (100%)	170 (100%)	0	100	100
34	D	172/172 (100%)	169 (98%)	3 (2%)	60	82
35	E	119/119 (100%)	119 (100%)	0	100	100
36	F	108/108 (100%)	107 (99%)	1 (1%)	78	90
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%)	104 (99%)	1 (1%)	76	88
40	J	86/86 (100%)	85 (99%)	1 (1%)	71	87
41	K	89/89 (100%)	89 (100%)	0	100	100
42	L	103/103 (100%)	103 (100%)	0	100	100
43	M	92/92 (100%)	92 (100%)	0	100	100
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%)	64 (98%)	1 (2%)	65	84
47	Q	74/74 (100%)	74 (100%)	0	100	100
48	R	56/56 (100%)	56 (100%)	0	100	100
49	S	70/70 (100%)	70 (100%)	0	100	100
50	T	65/65 (100%)	65 (100%)	0	100	100
51	U	55/55 (100%)	54 (98%)	1 (2%)	59	81
52	03	110/174 (63%)	110 (100%)	0	100	100
59	Z	129/458 (28%)	120 (93%)	9 (7%)	15	46
All	All	5117/5510 (93%)	5090 (100%)	27 (0%)	89	94

All (27) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	04	212	TRP

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Mol	Chain	Res	Type
2	05	88	GLU
4	07	175	PRO
8	11	7	TYR
11	14	14	LYS
18	21	62	ASP
20	23	36	GLU
21	24	90	ASP
23	26	22	ASN
32	B	202	ASN
34	D	28	ASP
34	D	87	GLU
34	D	196	GLU
36	F	111	GLU
39	I	60	LEU
40	J	75	ASP
46	P	29	ASN
51	U	62	GLU
59	Z	66	ASP
59	Z	100	LYS
59	Z	121	THR
59	Z	128	ARG
59	Z	130	PHE
59	Z	148	GLU
59	Z	150	LYS
59	Z	162	LYS
59	Z	178	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (127) such sidechains are listed below:

Mol	Chain	Res	Type
1	04	20	ASN
1	04	44	ASN
1	04	45	ASN
1	04	52	HIS
1	04	59	GLN
1	04	85	ASN
1	04	89	ASN
1	04	116	GLN
1	04	127	ASN
1	04	133	ASN
1	04	196	ASN
1	04	238	ASN

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Mol	Chain	Res	Type
2	05	32	ASN
2	05	42	ASN
2	05	49	GLN
2	05	148	GLN
3	06	24	ASN
3	06	90	GLN
3	06	94	GLN
3	06	97	ASN
3	06	156	ASN
4	07	20	ASN
4	07	26	GLN
4	07	51	ASN
5	08	21	GLN
5	08	37	ASN
5	08	44	HIS
5	08	103	ASN
5	08	138	GLN
6	09	2	GLN
6	09	18	GLN
6	09	28	ASN
6	09	66	ASN
6	09	73	ASN
6	09	135	HIS
7	10	4	ASN
7	10	57	ASN
8	11	93	ASN
9	12	58	ASN
10	13	13	ASN
10	13	88	ASN
11	14	38	GLN
11	14	54	GLN
11	14	99	ASN
12	15	3	GLN
12	15	60	GLN
13	16	9	GLN
13	16	81	ASN
14	17	29	HIS
15	18	11	GLN
15	18	65	ASN
16	19	19	GLN
16	19	51	GLN
16	19	55	GLN

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Mol	Chain	Res	Type
16	19	80	ASN
17	20	18	GLN
17	20	89	HIS
18	21	40	ASN
19	22	59	ASN
20	23	68	ASN
20	23	73	ASN
20	23	98	ASN
21	24	24	ASN
23	26	22	ASN
23	26	31	ASN
24	27	27	ASN
25	28	8	GLN
26	29	61	ASN
27	30	3	GLN
27	30	18	HIS
31	34	35	GLN
32	B	17	HIS
32	B	38	HIS
32	B	50	ASN
32	B	57	ASN
32	B	167	HIS
32	B	176	ASN
32	B	177	ASN
32	B	202	ASN
33	C	18	ASN
33	C	24	ASN
33	C	31	ASN
33	C	139	ASN
33	C	184	ASN
34	D	39	GLN
34	D	53	GLN
34	D	73	ASN
34	D	88	ASN
34	D	125	ASN
34	D	151	GLN
34	D	195	ASN
34	D	197	HIS
35	E	81	GLN
35	E	120	HIS
36	F	55	HIS
36	F	118	ASN

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Mol	Chain	Res	Type
37	G	121	ASN
37	G	129	ASN
38	H	20	ASN
39	I	24	ASN
39	I	30	ASN
39	I	36	GLN
39	I	49	GLN
40	J	58	ASN
40	J	70	HIS
41	K	39	ASN
41	K	118	ASN
42	L	45	ASN
42	L	95	HIS
43	M	7	ASN
44	N	42	ASN
44	N	48	GLN
46	P	18	GLN
46	P	26	ASN
46	P	29	ASN
47	Q	8	GLN
48	R	30	ASN
48	R	51	GLN
48	R	53	GLN
49	S	68	HIS
50	T	20	ASN
50	T	51	ASN
50	T	60	GLN
52	03	57	GLN
52	03	58	ASN
52	03	168	ASN
59	Z	178	ASN

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
53	A	1538/1539 (99%)	135 (8%)	4 (0%)
54	01	2902/2903 (99%)	345 (11%)	10 (0%)
55	02	119/120 (99%)	12 (10%)	1 (0%)
56	W	76/77 (98%)	7 (9%)	0
56	X	76/77 (98%)	15 (19%)	0
57	V	17/27 (62%)	3 (17%)	0

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Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
58	Y	75/76 (98%)	14 (18%)	1 (1%)
All	All	4803/4819 (99%)	531 (11%)	16 (0%)

All (531) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
53	A	6	G
53	A	9	G
53	A	22	G
53	A	31	G
53	A	32	A
53	A	39	G
53	A	48	C
53	A	51	A
53	A	71	A
53	A	87	C
53	A	130	A
53	A	144	G
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	247	G
53	A	251	G
53	A	266	G
53	A	267	C
53	A	281	G
53	A	289	G
53	A	345	C
53	A	352	C
53	A	367	U
53	A	372	C
53	A	412	A
53	A	413	G
53	A	429	U
53	A	467	U
53	A	479	U
53	A	484	G
53	A	485	U
53	A	486	U

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Mol	Chain	Res	Type
53	A	497	G
53	A	518	C
53	A	532	A
53	A	547	A
53	A	561	U
53	A	572	A
53	A	573	A
53	A	575	G
53	A	576	C
53	A	577	G
53	A	633	G
53	A	665	A
53	A	688	G
53	A	702	A
53	A	703	G
53	A	724	G
53	A	755	G
53	A	777	A
53	A	805	C
53	A	815	A
53	A	817	C
53	A	818	G
53	A	819	A
53	A	821	G
53	A	843	U
53	A	844	G
53	A	846	G
53	A	871	U
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	971	G
53	A	975	A
53	A	976	G
53	A	977	A

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Mol	Chain	Res	Type
53	A	992	U
53	A	993	G
53	A	1004	A
53	A	1028	C
53	A	1031	C
53	A	1033	G
53	A	1034	G
53	A	1053	G
53	A	1094	G
53	A	1101	A
53	A	1136	C
53	A	1137	C
53	A	1138	G
53	A	1139	G
53	A	1159	U
53	A	1168	U
53	A	1182	G
53	A	1184	G
53	A	1191	A
53	A	1196	A
53	A	1198	G
53	A	1201	A
53	A	1202	U
53	A	1225	A
53	A	1238	A
53	A	1240	U
53	A	1241	G
53	A	1253	G
53	A	1257	A
53	A	1258	G
53	A	1260	G
53	A	1275	A
53	A	1278	G
53	A	1280	A
53	A	1282	C
53	A	1286	U
53	A	1287	A
53	A	1300	G
53	A	1317	C
53	A	1346	A
53	A	1347	G
53	A	1363	A

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Mol	Chain	Res	Type
53	A	1381	U
53	A	1395	C
53	A	1419	G
53	A	1446	A
53	A	1448	C
53	A	1452	C
53	A	1492	A
53	A	1502	A
53	A	1503	A
53	A	1506	U
53	A	1517	G
53	A	1529	G
53	A	1530	G
53	A	1533	C
53	A	1540	U
54	01	10	A
54	01	12	U
54	01	34	U
54	01	35	G
54	01	49	A
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	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	229	C
54	01	248	G
54	01	249	C
54	01	255	A

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Mol	Chain	Res	Type
54	01	265	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	312	G
54	01	323	C
54	01	324	A
54	01	329	G
54	01	330	A
54	01	361	G
54	01	362	A
54	01	371	A
54	01	372	G
54	01	386	G
54	01	387	U
54	01	404	A
54	01	405	U
54	01	406	G
54	01	411	G
54	01	412	A
54	01	424	G
54	01	451	U
54	01	455	C
54	01	458	G
54	01	473	G
54	01	480	A
54	01	481	G
54	01	491	G
54	01	504	A
54	01	505	A
54	01	529	A
54	01	531	C
54	01	532	A
54	01	543	G
54	01	545	U
54	01	563	A
54	01	573	U
54	01	588	U

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Mol	Chain	Res	Type
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
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	776	G
54	01	782	A
54	01	784	G
54	01	785	G
54	01	805	G
54	01	812	C
54	01	819	A
54	01	822	G
54	01	827	U
54	01	828	U
54	01	830	G
54	01	845	A
54	01	846	U
54	01	847	U
54	01	859	G
54	01	860	U
54	01	878	A
54	01	886	A
54	01	887	U
54	01	888	C
54	01	896	A
54	01	897	C
54	01	910	A
54	01	915	C
54	01	932	U
54	01	941	A
54	01	945	A

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Mol	Chain	Res	Type
54	01	946	C
54	01	961	C
54	01	974	G
54	01	975	A
54	01	983	A
54	01	995	C
54	01	996	A
54	01	1012	U
54	01	1013	C
54	01	1021	A
54	01	1022	G
54	01	1026	G
54	01	1033	U
54	01	1046	A
54	01	1047	G
54	01	1054	A
54	01	1059	G
54	01	1062	G
54	01	1064	C
54	01	1065	U
54	01	1066	U
54	01	1070	A
54	01	1071	G
54	01	1075	C
54	01	1076	C
54	01	1078	U
54	01	1079	C
54	01	1083	U
54	01	1084	A
54	01	1088	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	1143	A
54	01	1157	G
54	01	1174	U
54	01	1175	A
54	01	1177	G

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Mol	Chain	Res	Type
54	01	1179	G
54	01	1180	U
54	01	1212	G
54	01	1238	G
54	01	1251	C
54	01	1253	A
54	01	1256	G
54	01	1271	G
54	01	1272	A
54	01	1275	A
54	01	1289	C
54	01	1300	G
54	01	1301	A
54	01	1302	A
54	01	1329	U
54	01	1330	C
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	1461	C
54	01	1476	U
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	1537	G
54	01	1555	G
54	01	1559	U
54	01	1560	G
54	01	1569	A

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Mol	Chain	Res	Type
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	1647	U
54	01	1648	U
54	01	1674	G
54	01	1699	G
54	01	1715	G
54	01	1729	U
54	01	1730	C
54	01	1738	G
54	01	1758	U
54	01	1764	C
54	01	1773	A
54	01	1780	A
54	01	1791	A
54	01	1800	C
54	01	1801	A
54	01	1808	A
54	01	1816	C
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	1937	A
54	01	1938	A
54	01	1944	U
54	01	1955	U
54	01	1963	U
54	01	1967	C
54	01	1970	A
54	01	1972	G
54	01	1992	G
54	01	1993	U

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Mol	Chain	Res	Type
54	01	1997	C
54	01	2022	U
54	01	2023	C
54	01	2030	A
54	01	2031	A
54	01	2034	U
54	01	2036	C
54	01	2043	C
54	01	2052	A
54	01	2055	C
54	01	2056	G
54	01	2060	A
54	01	2061	G
54	01	2062	A
54	01	2069	G
54	01	2072	C
54	01	2096	C
54	01	2110	G
54	01	2111	U
54	01	2112	G
54	01	2113	U
54	01	2118	U
54	01	2119	A
54	01	2126	A
54	01	2127	G
54	01	2132	U
54	01	2133	G
54	01	2145	C
54	01	2162	G
54	01	2171	A
54	01	2172	U
54	01	2173	A
54	01	2198	A
54	01	2203	U
54	01	2204	G
54	01	2213	U
54	01	2225	A
54	01	2278	A
54	01	2283	C
54	01	2287	A
54	01	2297	A
54	01	2305	U

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Mol	Chain	Res	Type
54	01	2309	A
54	01	2325	G
54	01	2327	A
54	01	2334	U
54	01	2350	C
54	01	2383	G
54	01	2385	C
54	01	2392	A
54	01	2402	U
54	01	2406	A
54	01	2407	A
54	01	2423	U
54	01	2424	C
54	01	2427	C
54	01	2429	G
54	01	2430	A
54	01	2434	A
54	01	2435	A
54	01	2441	U
54	01	2448	A
54	01	2476	A
54	01	2498	C
54	01	2502	G
54	01	2503	A
54	01	2504	U
54	01	2505	G
54	01	2518	A
54	01	2520	C
54	01	2547	A
54	01	2554	U
54	01	2566	A
54	01	2567	G
54	01	2572	A
54	01	2602	A
54	01	2609	U
54	01	2613	U
54	01	2629	U
54	01	2646	C
54	01	2655	G
54	01	2682	A
54	01	2689	U
54	01	2690	U

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Mol	Chain	Res	Type
54	01	2714	G
54	01	2716	C
54	01	2744	G
54	01	2748	A
54	01	2764	A
54	01	2765	A
54	01	2778	A
54	01	2779	U
54	01	2791	G
54	01	2797	U
54	01	2799	A
54	01	2800	A
54	01	2809	A
54	01	2820	A
54	01	2821	A
54	01	2833	U
54	01	2849	U
54	01	2850	A
54	01	2867	G
54	01	2868	A
54	01	2872	A
54	01	2879	A
54	01	2880	C
54	01	2883	A
55	02	4	C
55	02	13	G
55	02	24	G
55	02	35	C
55	02	40	U
55	02	41	G
55	02	44	G
55	02	67	G
55	02	89	U
55	02	90	C
55	02	108	A
55	02	109	A
56	X	2	G
56	X	3	C
56	X	8	U
56	X	9	G
56	X	10	G
56	X	14	A

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Mol	Chain	Res	Type
56	X	19	G
56	X	20	U
56	X	21	A
56	X	22	G
56	X	34	C
56	X	46	G
56	X	61	C
56	X	64	G
56	X	70	G
57	V	12	A
57	V	13	A
57	V	16	A
56	W	9	G
56	W	19	G
56	W	20	U
56	W	47	U
56	W	48	C
56	W	61	C
56	W	76	A
58	Y	9	A
58	Y	17	C
58	Y	19	G
58	Y	21	A
58	Y	45	U
58	Y	46	G
58	Y	47	U
58	Y	48	C
58	Y	49	C
58	Y	59	U
58	Y	61	C
58	Y	64	A
58	Y	65	G
58	Y	74	C

All (16) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
53	A	70	U
53	A	428	G
53	A	1190	G
53	A	1201	A
54	01	227	A

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Mol	Chain	Res	Type
54	01	490	C
54	01	859	G
54	01	1020	A
54	01	1130	U
54	01	1475	G
54	01	2286	G
54	01	2296	U
54	01	2326	C
54	01	2391	G
55	02	88	C
58	Y	63	G

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

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

5.5 Carbohydrates (i)

There are no 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	FME	W	101	56	8,9,10	0.72	0	7,9,11	1.08	0

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
60	FME	W	101	56	-	1/7/9/11	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (1) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
60	W	101	FME	O-C-CA-CB

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

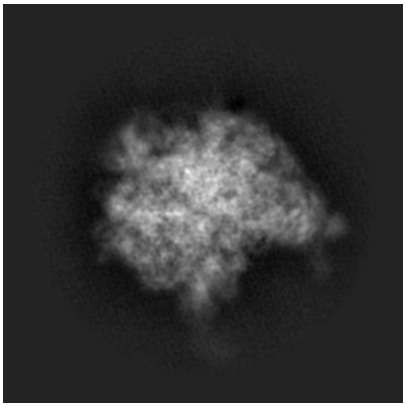
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-7289. These allow visual inspection of the internal detail of the map and identification of artifacts.

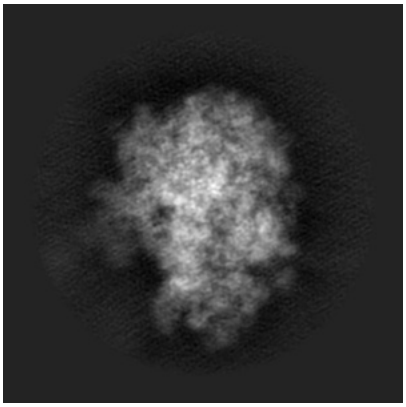
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

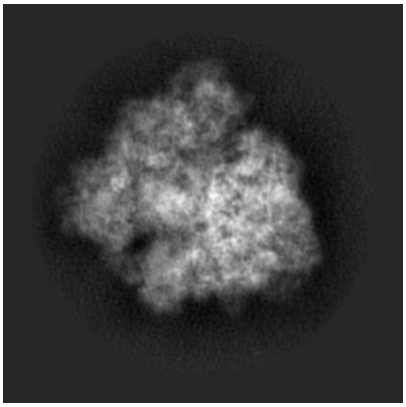
6.1.1 Primary map



X



Y

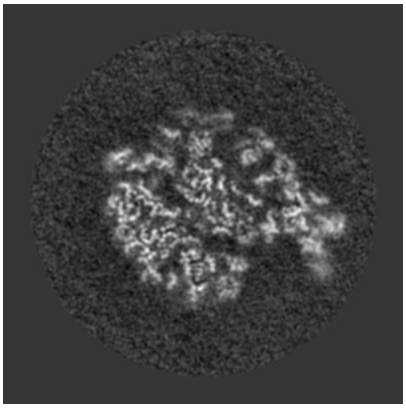


Z

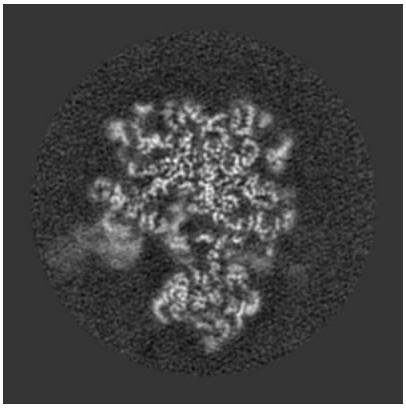
The images above show the map projected in three orthogonal directions.

6.2 Central slices

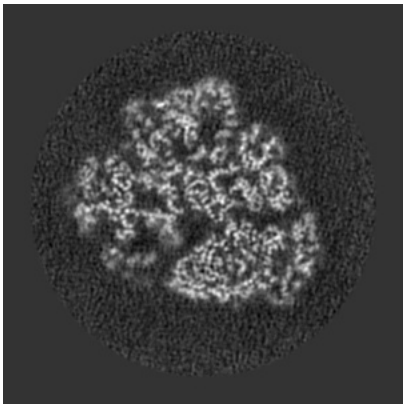
6.2.1 Primary map



X Index: 240



Y Index: 240

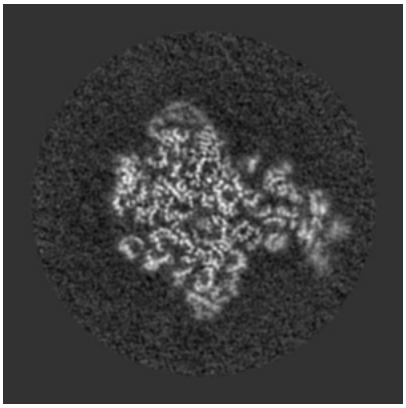


Z Index: 240

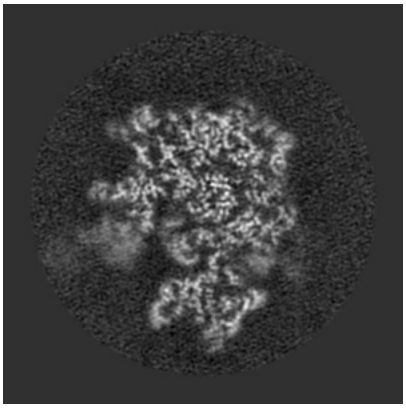
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

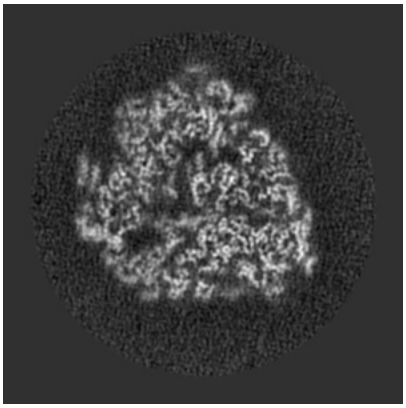
6.3.1 Primary map



X Index: 252



Y Index: 247



Z Index: 228

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

6.4 Orthogonal surface views (i)

6.4.1 Primary map

X

Y

Z

The images above show the 3D surface view of the map at the recommended contour level 0.01. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

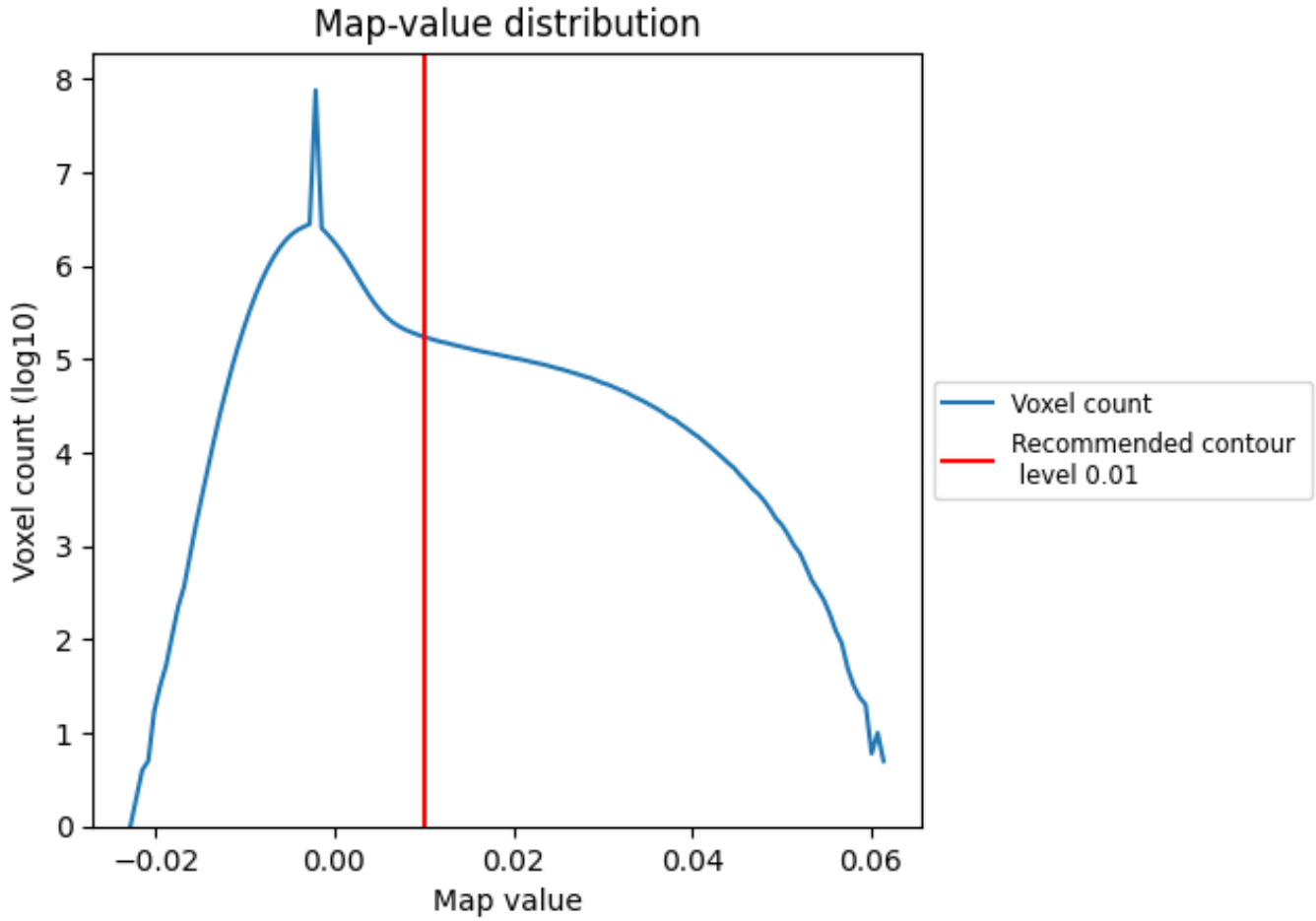
6.5 Mask visualisation (i)

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

7 Map analysis

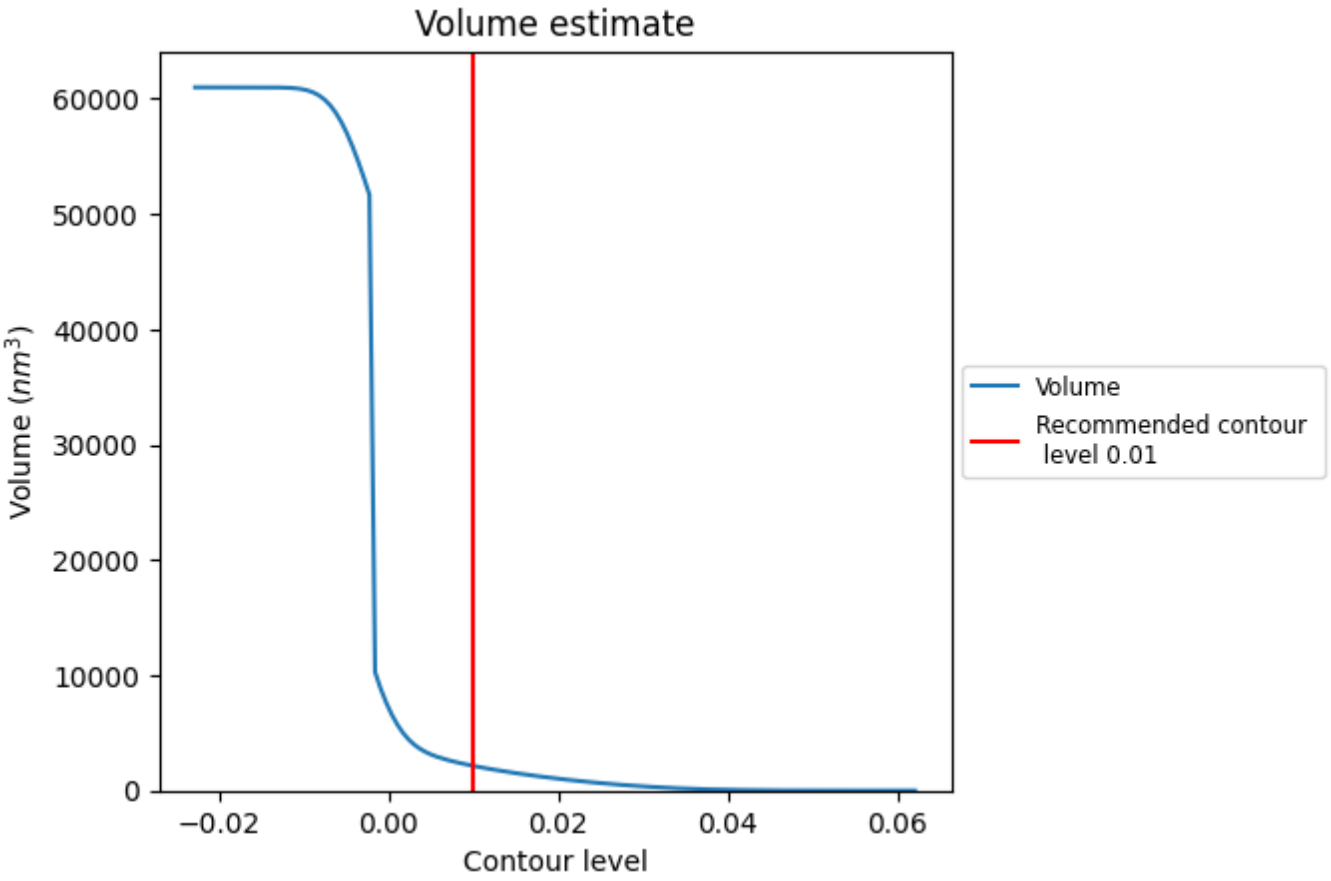
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

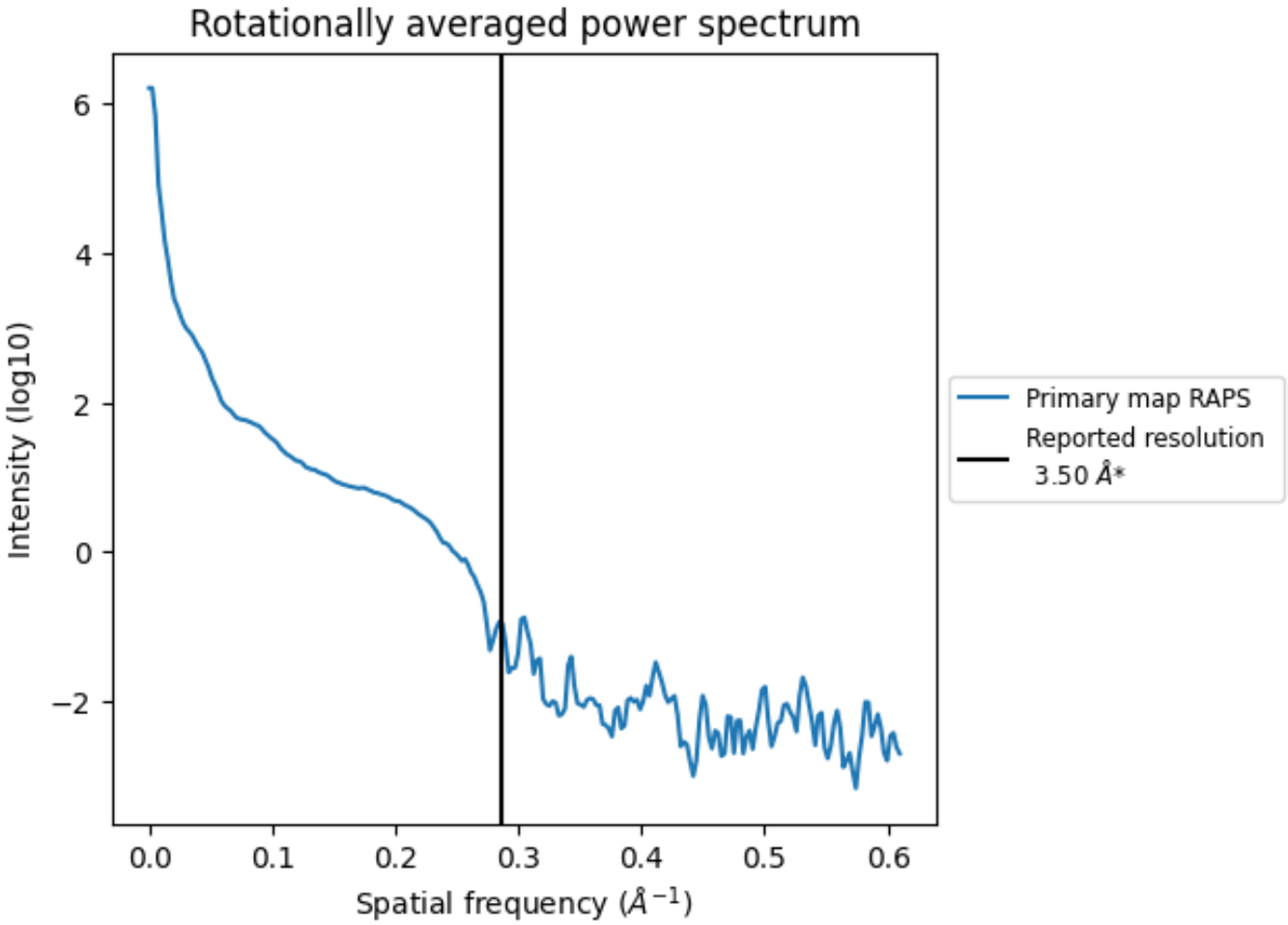
7.2 Volume estimate



The volume at the recommended contour level is 2139 nm^3; this corresponds to an approximate mass of 1932 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum (i)



*Reported resolution corresponds to spatial frequency of 0.286 $Å^{-1}$

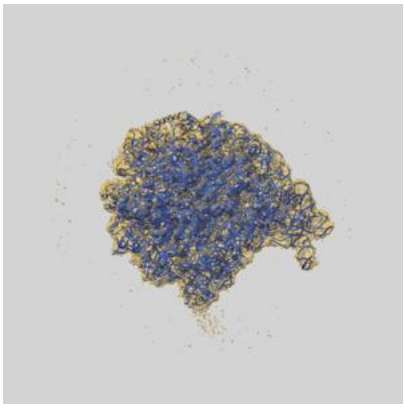
8 Fourier-Shell correlation

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

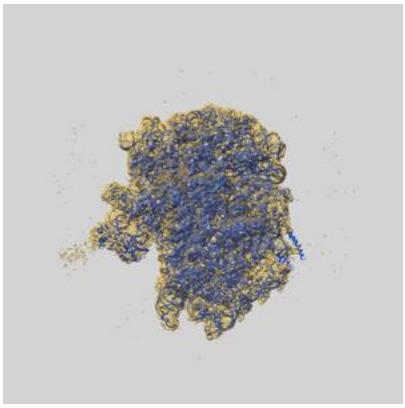
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-7289 and PDB model 6BU8. Per-residue inclusion information can be found in section 3 on page 16.

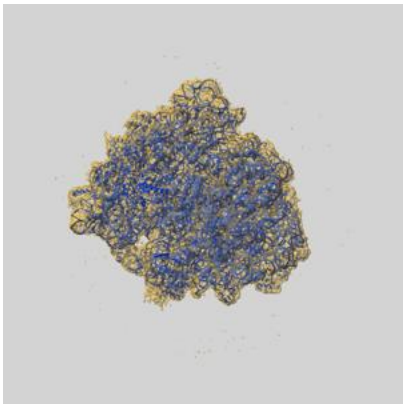
9.1 Map-model overlay



X



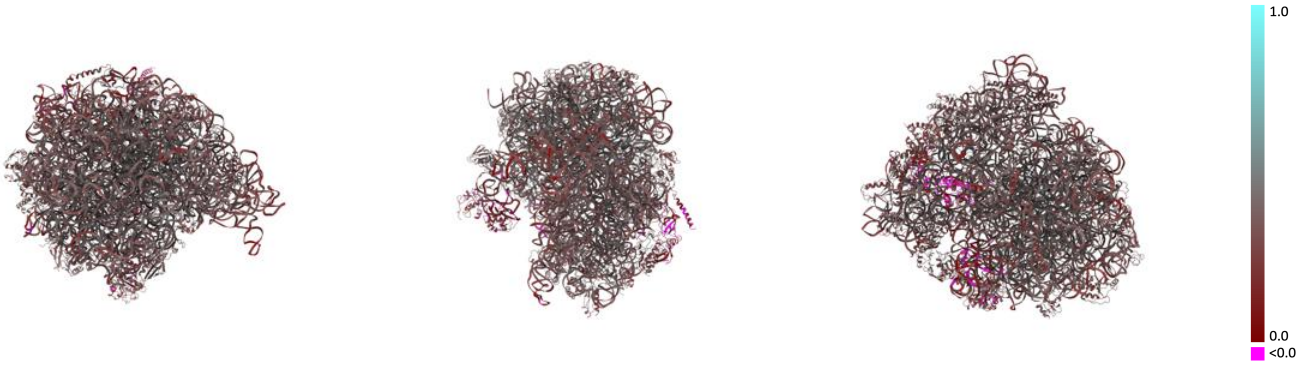
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.01 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

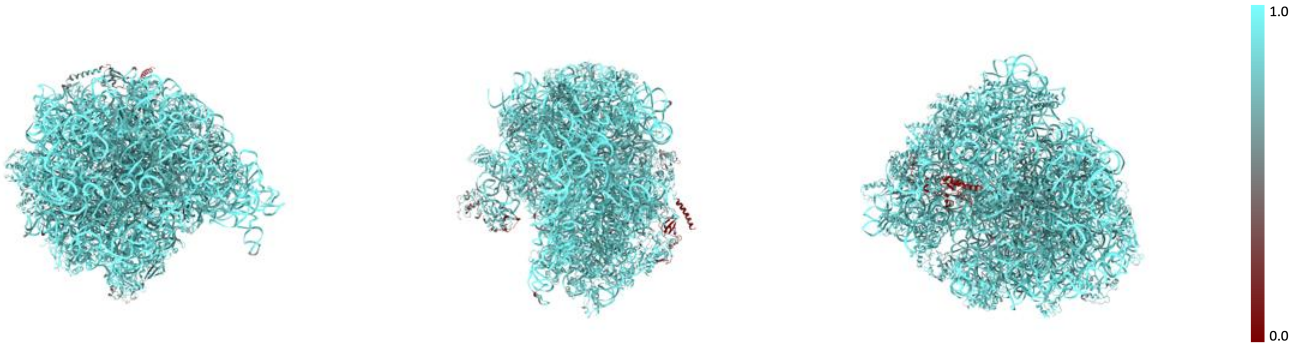
9.2 Q-score mapped to coordinate model (i)



X Y Z

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

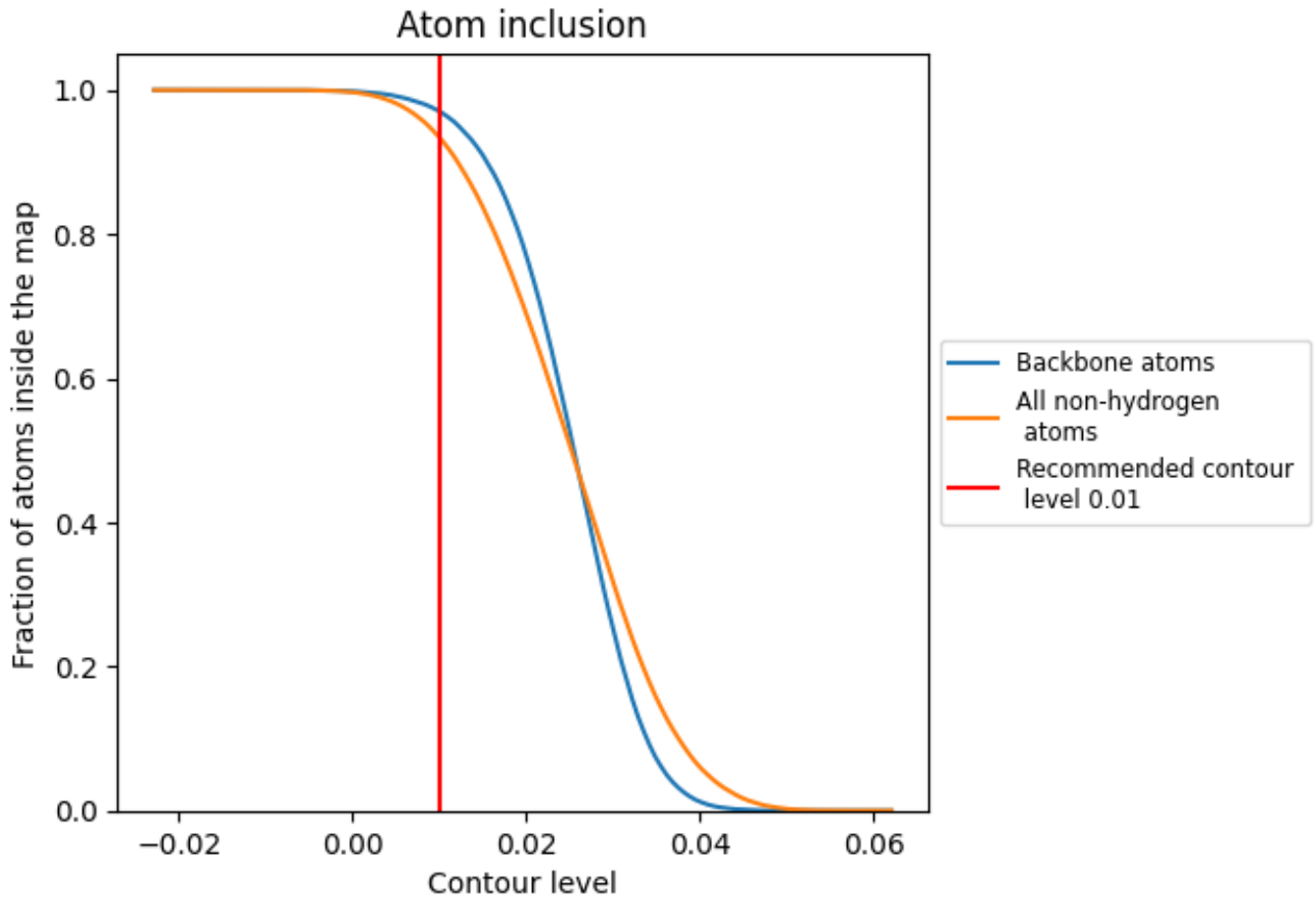
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.01).

9.4 Atom inclusion (i)



At the recommended contour level, 97% of all backbone atoms, 93% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.01) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9346	0.3600
01	0.9789	0.3740
02	0.9821	0.3500
03	0.8574	0.2350
04	0.8825	0.4170
05	0.8778	0.4050
06	0.8658	0.3690
07	0.8886	0.3370
08	0.8990	0.3530
09	0.7053	0.2910
10	0.5810	0.1830
11	0.6311	0.2060
12	0.8818	0.3750
13	0.8490	0.4110
14	0.8858	0.3910
15	0.8455	0.4040
16	0.9014	0.3760
17	0.9085	0.3530
18	0.8581	0.3900
19	0.8965	0.3830
20	0.8808	0.3820
21	0.8409	0.3890
22	0.8658	0.3670
23	0.9076	0.3540
24	0.8902	0.3790
25	0.9141	0.4020
26	0.8835	0.3980
27	0.8511	0.3030
28	0.9153	0.3890
29	0.8340	0.3230
30	0.9089	0.3970
31	0.8507	0.3810
32	0.8620	0.4010
33	0.8900	0.4120
34	0.9110	0.4000

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Chain	Atom inclusion	Q-score
A	0.9816	0.3640
B	0.8731	0.3330
C	0.8626	0.3740
D	0.8849	0.3370
E	0.8952	0.3830
F	0.7177	0.2920
G	0.8690	0.3430
H	0.8823	0.3850
I	0.8846	0.3570
J	0.8412	0.3470
K	0.8735	0.3790
L	0.8675	0.3790
M	0.9002	0.3420
N	0.8876	0.3710
O	0.8971	0.3520
P	0.9203	0.3550
Q	0.8768	0.3460
R	0.9068	0.3730
S	0.9164	0.3500
T	0.8954	0.3300
U	0.7741	0.3060
V	0.8222	0.2680
W	0.9352	0.3480
X	0.8646	0.1800
Y	0.9007	0.2770
Z	0.3094	0.0490