



Full wwPDB EM Validation Report ⓘ

Mar 5, 2026 – 07:24 PM UTC

PDB ID : 6OGI / pdb_00006ogi
EMDB ID : EMD-20058
Title : 70S termination complex with RF2 bound to the UAG codon. Rotated ribosome conformation (Structure V)
Authors : Svidritskiy, E.; Demo, G.; Loveland, A.B.; Xu, C.; Korostelev, A.A.
Deposited on : 2019-04-02
Resolution : 3.40 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.dev132
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDb archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

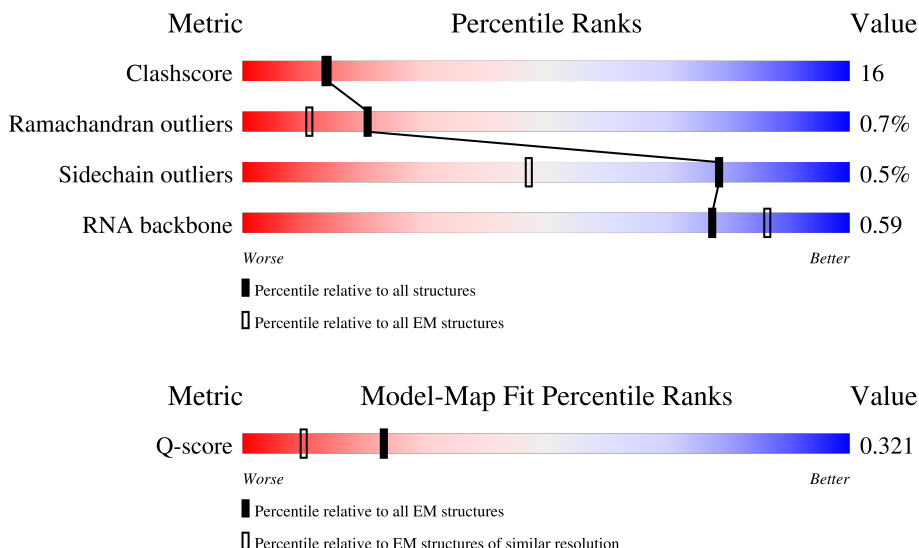
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.40 Å.

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



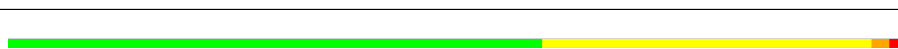
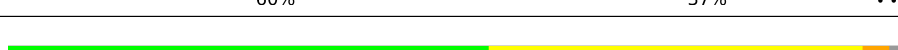
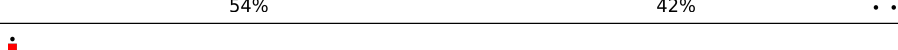
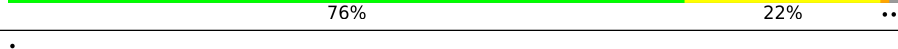
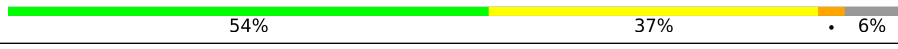
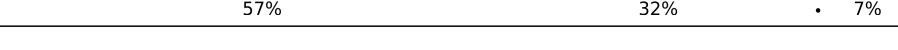
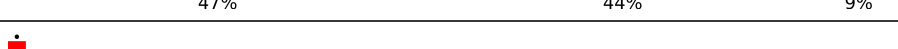
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	14717 (2.90 - 3.90)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	b	273	
2	c	209	
3	d	201	

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Mol	Chain	Length	Quality of chain
4	e	179	
5	f	177	
6	g	149	
7	j	142	
8	k	123	
9	l	144	
10	m	136	
11	n	127	
12	o	117	
13	p	115	
14	q	118	
15	r	103	
16	s	110	
17	t	100	
18	u	104	
19	v	94	
20	w	85	
21	x	78	
22	y	63	
23	z	59	
24	B	57	
25	C	55	
26	D	46	
27	E	65	
28	F	38	

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Mol	Chain	Length	Quality of chain
29	G	241	
30	H	233	
31	I	206	
32	J	167	
33	K	131	
34	L	156	
35	M	130	
36	N	130	
37	O	103	
38	P	129	
39	Q	124	
40	R	118	
41	S	101	
42	T	89	
43	U	82	
44	V	84	
45	W	75	
46	X	92	
47	Y	87	
48	Z	71	
49	a	234	
50	3	1539	
51	1	2903	
52	2	120	
53	5	77	

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Mol	Chain	Length	Quality of chain
54	4	27	

2 Entry composition

There are 54 unique types of molecules in this entry. The entry contains 144895 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	b	271	Total	C	N	O	S	0	0
			2082	1288	423	364	7		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
2	c	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	d	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	e	177	Total	C	N	O	S	0	0
			1410	899	249	256	6		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
5	f	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	g	149	Total	C	N	O	S	0	0
			1111	699	197	214	1		

- Molecule 7 is a protein called 50S ribosomal protein L13.

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

- Molecule 8 is a protein called 50S ribosomal protein L14.

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

- Molecule 9 is a protein called 50S ribosomal protein L15.

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

- Molecule 10 is a protein called 50S ribosomal protein L16.

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

- Molecule 11 is a protein called 50S ribosomal protein L17.

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

- Molecule 12 is a protein called 50S ribosomal protein L18.

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

- Molecule 13 is a protein called 50S ribosomal protein L19.

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

- Molecule 14 is a protein called 50S ribosomal protein L20.

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

- Molecule 15 is a protein called 50S ribosomal protein L21.

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

- Molecule 16 is a protein called 50S ribosomal protein L22.

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

- Molecule 17 is a protein called 50S ribosomal protein L23.

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

- Molecule 18 is a protein called 50S ribosomal protein L24.

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

- Molecule 19 is a protein called 50S ribosomal protein L25.

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

- Molecule 20 is a protein called 50S ribosomal protein L27.

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

- Molecule 21 is a protein called 50S ribosomal protein L28.

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

- Molecule 22 is a protein called 50S ribosomal protein L29.

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

- Molecule 23 is a protein called 50S ribosomal protein L30.

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

- Molecule 24 is a protein called 50S ribosomal protein L32.

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

- Molecule 25 is a protein called 50S ribosomal protein L33.

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

- Molecule 26 is a protein called 50S ribosomal protein L34.

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

- Molecule 27 is a protein called 50S ribosomal protein L35.

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

- Molecule 28 is a protein called 50S ribosomal protein L36.

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

- Molecule 29 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	G	225	Total	C	N	O	S	0	0
			1756	1111	315	322	8		

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

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

- Molecule 31 is a protein called 30S ribosomal protein S4.

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

- Molecule 32 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	J	157	Total	C	N	O	S	0	0
			1156	719	218	213	6		

- Molecule 33 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	K	101	Total	C	N	O	S	0	0
			824	520	149	149	6		

- Molecule 34 is a protein called 30S ribosomal protein S7.

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

- Molecule 35 is a protein called 30S ribosomal protein S8.

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

- Molecule 36 is a protein called 30S ribosomal protein S9.

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

- Molecule 37 is a protein called 30S ribosomal protein S10.

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

- Molecule 38 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	P	116	Total	C	N	O	S	0	0
			869	535	173	158	3		

- Molecule 39 is a protein called 30S ribosomal protein S12.

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

- Molecule 40 is a protein called 30S ribosomal protein S13.

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

- Molecule 41 is a protein called 30S ribosomal protein S14.

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

- Molecule 42 is a protein called 30S ribosomal protein S15.

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

- Molecule 43 is a protein called 30S ribosomal protein S16.

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

- Molecule 44 is a protein called 30S ribosomal protein S17.

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

- Molecule 45 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	W	65	Total	C	N	O	S	0	0
			535	339	100	95	1		

- Molecule 46 is a protein called 30S ribosomal protein S19.

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

- Molecule 47 is a protein called 30S ribosomal protein S20.

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

- Molecule 48 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	Z	65	Total	C	N	O	S	0	0
			544	335	117	91	1		

- Molecule 49 is a protein called 50S ribosomal protein L1.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	a	134	Total	C	N	O	S	0	0
			1026	645	186	193	2		

- Molecule 50 is a RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	3	1539	Total	C	N	O	P	0	0
			33012	14725	6052	10697	1538		

- Molecule 51 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	1	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
1	747	C	U	conflict	GB 1036415628

- Molecule 52 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	2	120	Total	C	N	O	P	0	0
			2568	1145	471	833	119		

- Molecule 53 is a RNA chain called tRNA^{fMet}.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	5	74	Total	C	N	O	P	0	0
			1578	704	286	515	73		

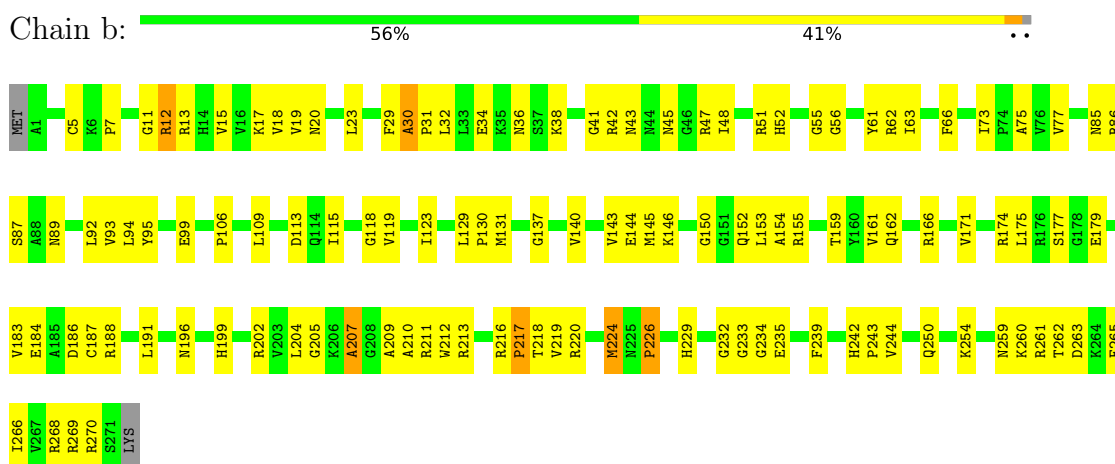
- Molecule 54 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	4	20	Total	C	N	O	P	0	0
			437	197	91	130	19		

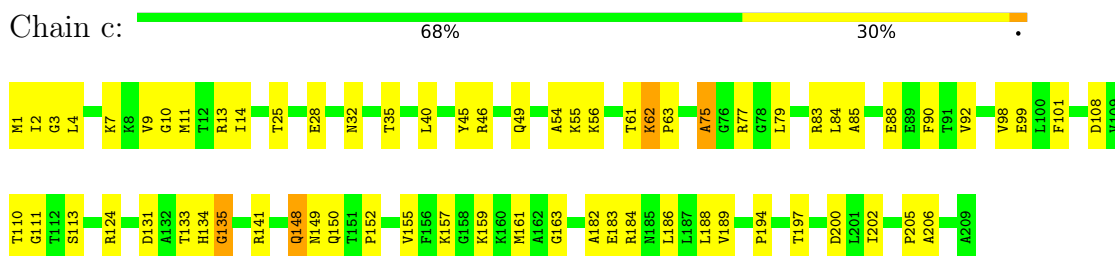
3 Residue-property plots [i](#)

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.

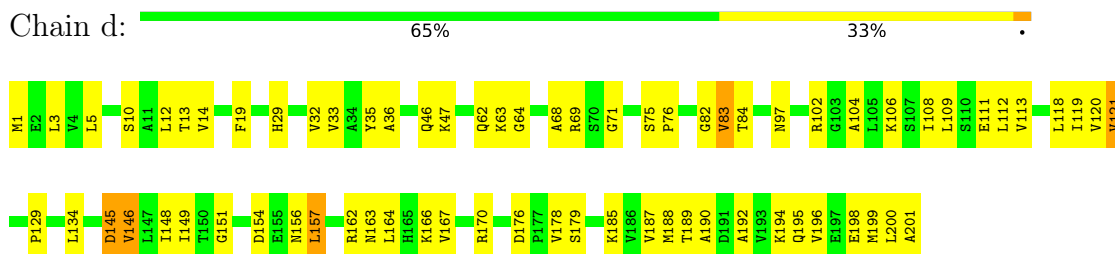
- Molecule 1: 50S ribosomal protein L2



- Molecule 2: 50S ribosomal protein L3

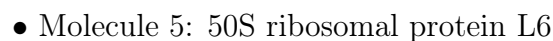


- Molecule 3: 50S ribosomal protein L4

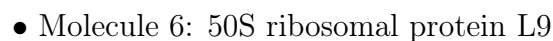


- Molecule 4: 50S ribosomal protein L5

Frequency	Percentage
Daily	34%
Weekly	54%
Monthly	11%



Frequency	Percentage
Daily	14%
Often	58%
Sometimes	38%



Government	Percentage
Current government	60%
Previous government	44%
Previous government	10%



Category	Percentage
Very bad	60%
Bad	37%



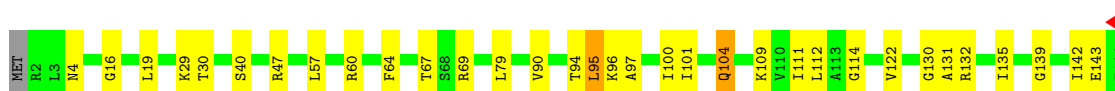
- Molecule 8: 50S ribosomal protein L14

Chain k: 54% 42% ..



- Molecule 9: 50S ribosomal protein L15

Chain l: 76% 22% ..



- Molecule 10: 50S ribosomal protein L16

Chain m: 55% 41% .



- Molecule 11: 50S ribosomal protein L17

Chain n: 54% 37% 6%



- Molecule 12: 50S ribosomal protein L18

Chain o: 51% 42% 6%





- Molecule 13: 50S ribosomal protein L19

Chain p: 61% 37% ..



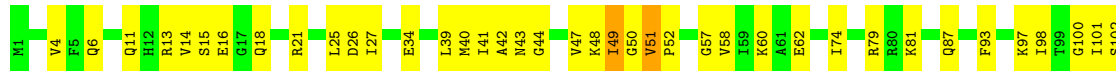
- Molecule 14: 50S ribosomal protein L20

Chain q: 56% 42% ..



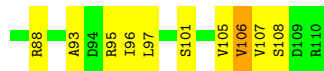
- Molecule 15: 50S ribosomal protein L21

Chain r: 62% 36% .



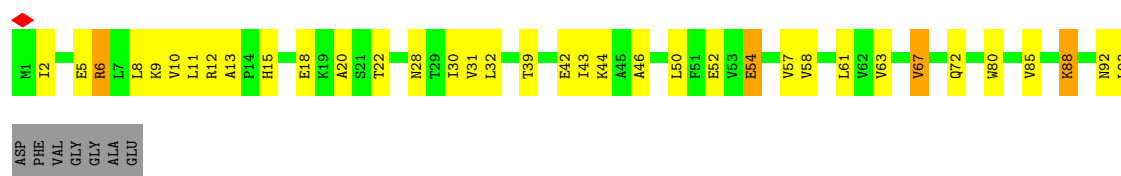
- Molecule 16: 50S ribosomal protein L22

Chain s: 57% 39% .



- Molecule 17: 50S ribosomal protein L23

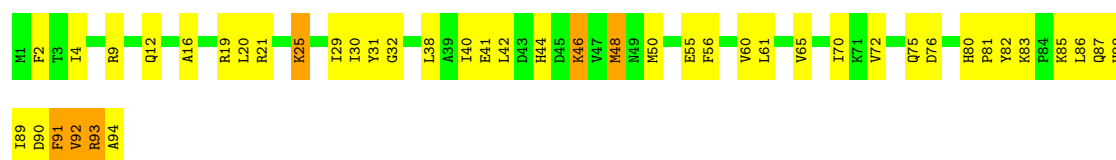
Chain t: 57% 32% 7%



- Molecule 18: 50S ribosomal protein L24



- Molecule 19: 50S ribosomal protein L25



- Molecule 20: 50S ribosomal protein L27



- Molecule 21: 50S ribosomal protein L28

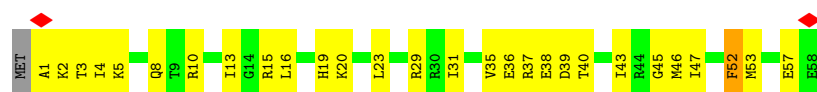


- Molecule 22: 50S ribosomal protein L29



- Molecule 23: 50S ribosomal protein L30





- Molecule 24: 50S ribosomal protein L32



- Molecule 25: 50S ribosomal protein L33



- Molecule 26: 50S ribosomal protein L34



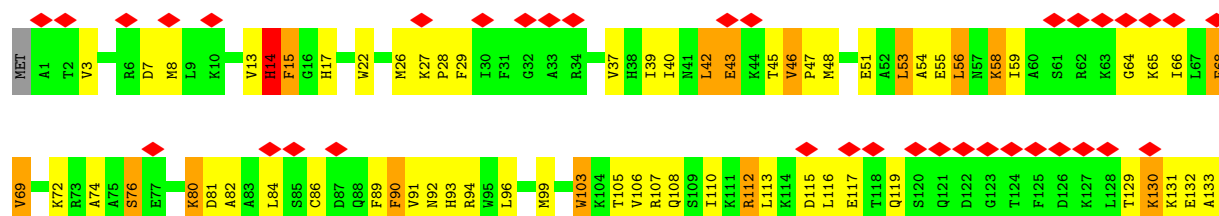
- Molecule 27: 50S ribosomal protein L35

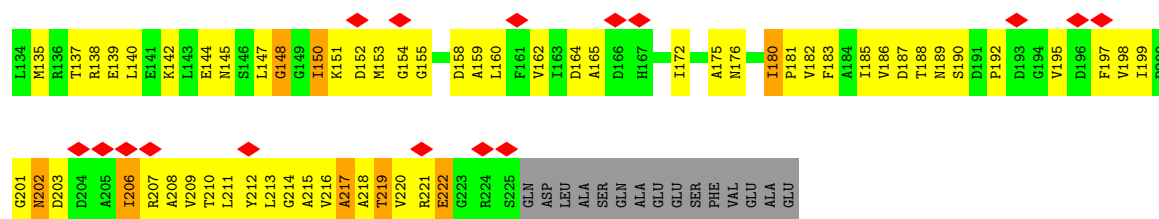


- Molecule 28: 50S ribosomal protein L36

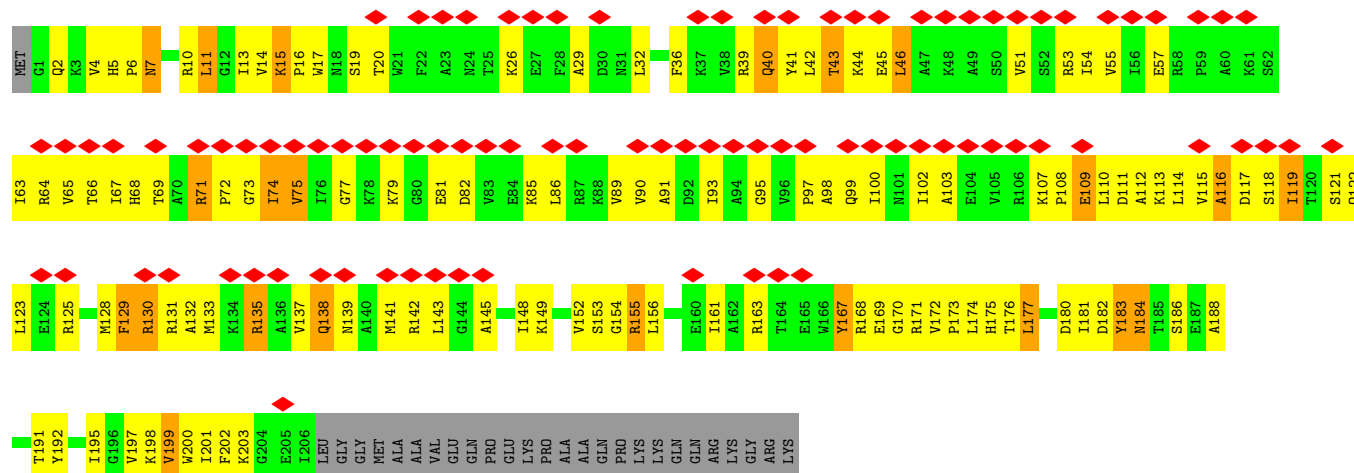


- Molecule 29: 30S ribosomal protein S2

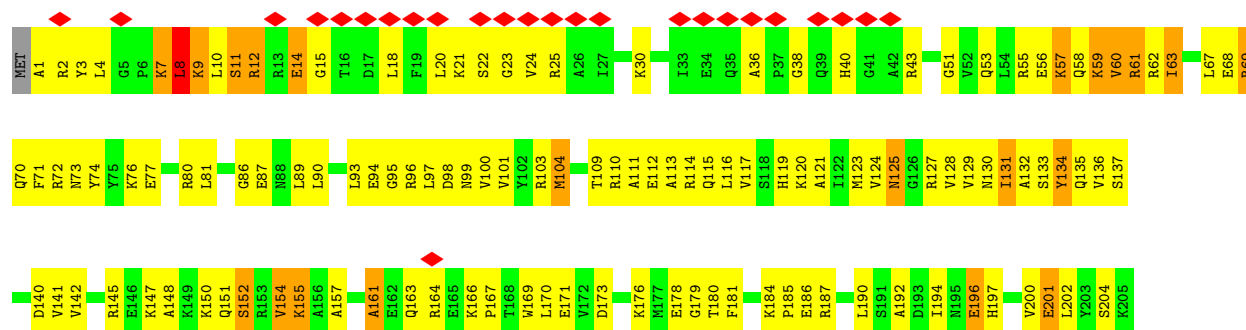




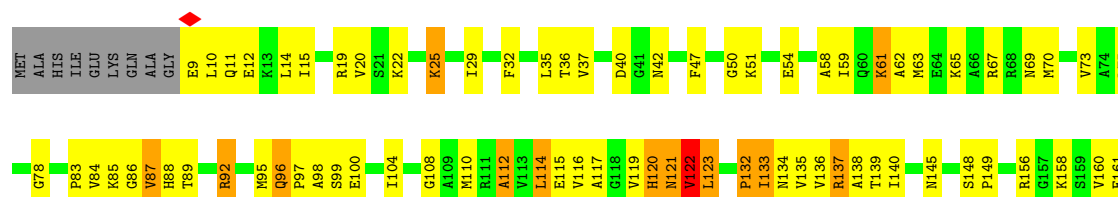
• Molecule 30: 30S ribosomal protein S3



• Molecule 31: 30S ribosomal protein S4

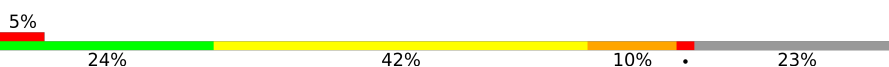


• Molecule 32: 30S ribosomal protein S5



E162
I163
L164
G165
LVS

• Molecule 33: 30S ribosomal protein S6

Chain K: 

M1 R2 R3 Y4 E5 I6 V7 F8 M9 E10 H11 P12 D13 Q14 S15 E16 Q17 V18 P19 G20 G21 M21 E22 E23 R24 Y25 T26 A27 A28 I29 T30 G31 A32

F67 Q68 E69 V70 I71 L74 E75 T76 R79 F80 M81 D82 A83 Q17 V84 I85 S86 S87 M88 E89 M90 R91 T92 K93 H94 A95 G96 V97 T98 E99 S100 P101 MET VAL LYS ALA LYS ASP GLU ARG ARG ARG ARG ASP PHE ALA ASN GLU THR ALA ASP ASP ALA GLY

ASP
SER
GLU

• Molecule 34: 30S ribosomal protein S7

Chain L: 

MET P1 R2 R3 R4 V5 I6 G7 Q8 R9 K10 I11 L12 P13 D14 P15 K16 F17 G18 S19 E20 L21 L22 A23 K24 N27 I28 L29 M30 V31 D32 G33 K34 K35 S36 T37 A38 A39 S40 I41 V42 Y43 S44 A45 E47 T48 L49 A50 Q51 R52 S53 G54 K55 S56 E57 L58 E59 A60

F61 E62 V63 A64 L65 E66 M67 V68 R69 P70 T71 V72 E73 V74 K75 S76 R77 R78 G80 G81 S82 T83 Y84 Q85 V86 P87 E88 E89 V90 R91 P92 V93 R94 R95 N96 A97 L98 A99 M100 R101 W102 I103 V104 E105 A106 A107 R108 K109 G110 D112 K113 S114 M115 A116 L117 R118 L119 A120

N121 E122 L123 S124 D125 A126 A127 N128 N129 K130 T132 A133 V134 K135 K136 E137 E138 D139 V140 H141 H142 M143 A144 E145 A146 N147 K148 A149 F150 A151 HIS TYR ARG TRP

• Molecule 35: 30S ribosomal protein S8

Chain M: 

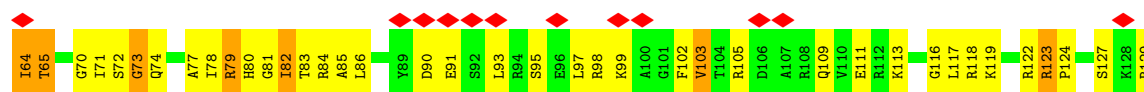
MET S1 S2 Q3 S124 D125 A126 A127 N128 N129 K130 T132 A133 V134 K135 K136 E137 E138 D139 V140 H141 H142 M143 A144 E145 A146 N147 K148 A149 F150 A151 HIS TYR ARG TRP

M95 L98 G99 I100 A101 V102 A114 A115 R116 Q117 A118 G119 L120 G121 G122 F123 I124 I125 C126 A129

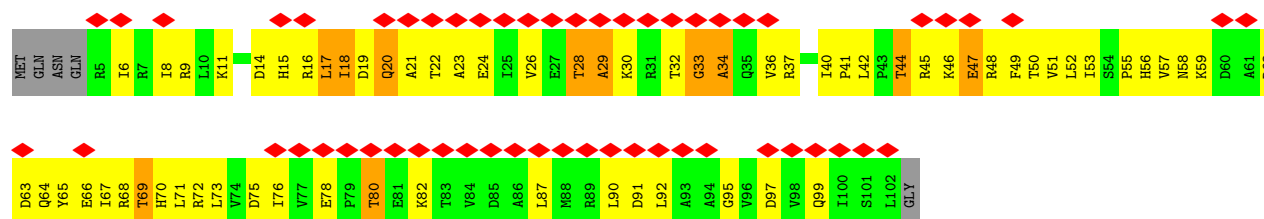
• Molecule 36: 30S ribosomal protein S9

Chain N: 

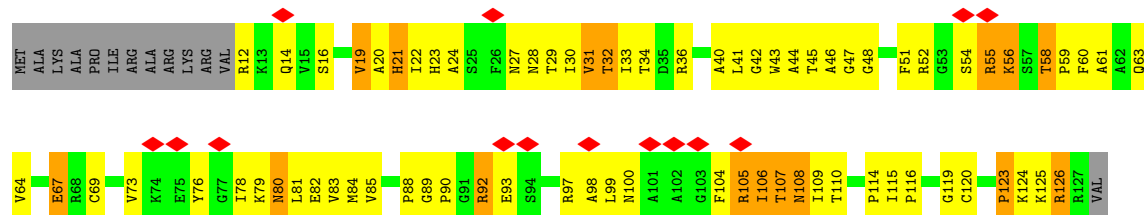
MET ALA GLU N3 Q4 T5 Y6 R10 R11 K12 A15 A16 R17 R18 V19 F19 I20 K21 P22 G23 G24 G25 K26 I27 V28 I29 N30 Q31 R32 S33 L34 E35 Q36 T37 F38 G39 R40 E41 T42 A43 V46 V47 R48 Q49 P50 L51 E52 L53 V54 D55 H56 V57 E58 K59 L60 D61 L62 W63



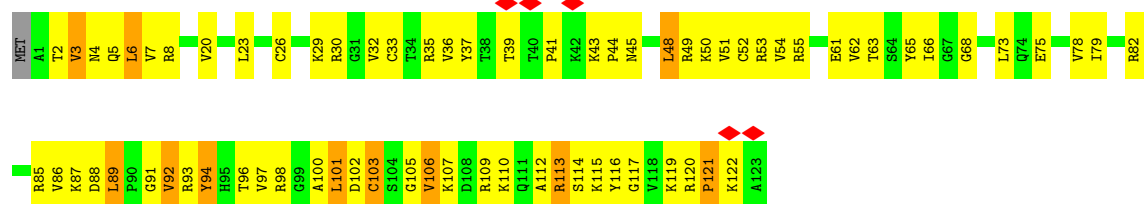
• Molecule 37: 30S ribosomal protein S10



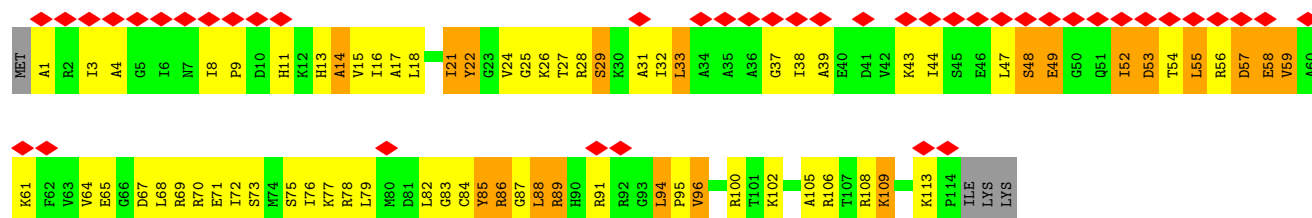
• Molecule 38: 30S ribosomal protein S11



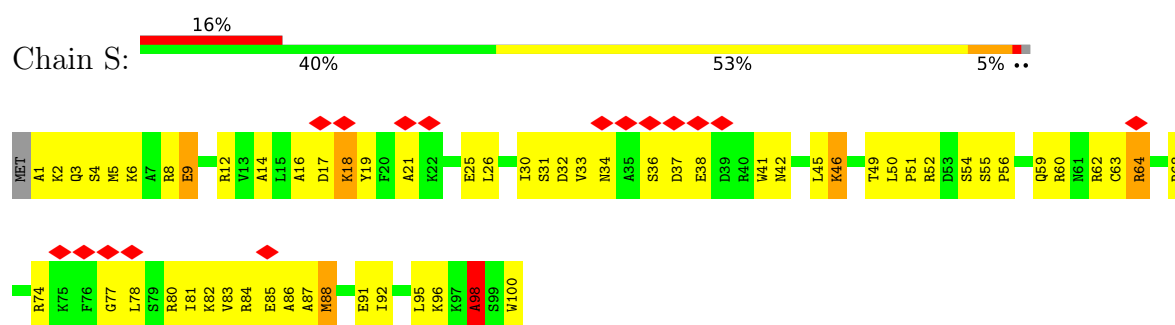
• Molecule 39: 30S ribosomal protein S12



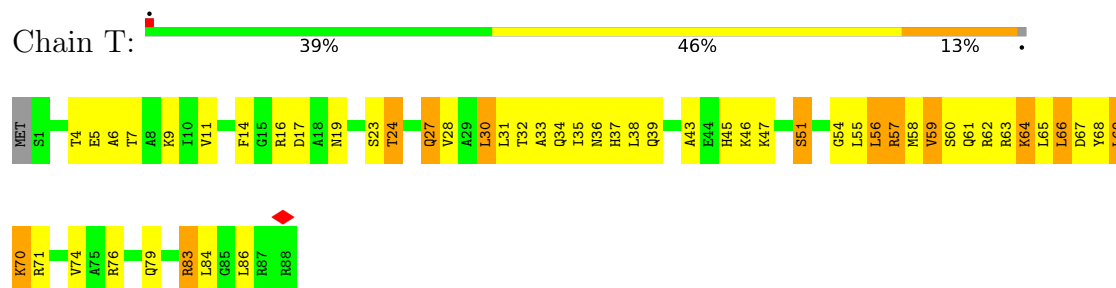
• Molecule 40: 30S ribosomal protein S13



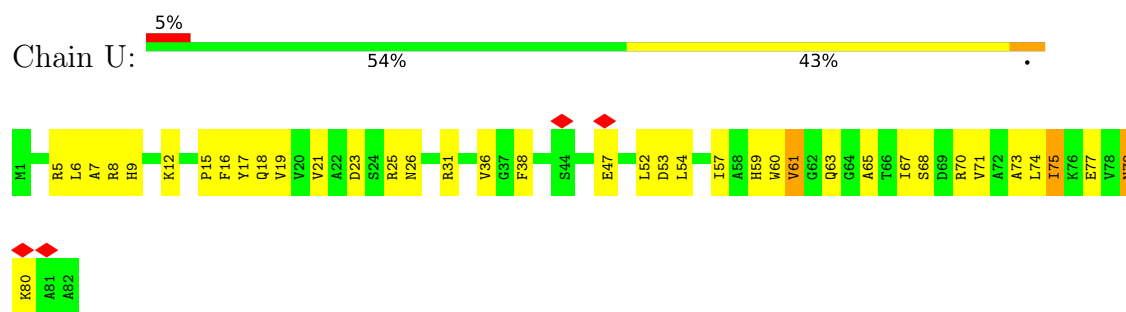
• Molecule 41: 30S ribosomal protein S14



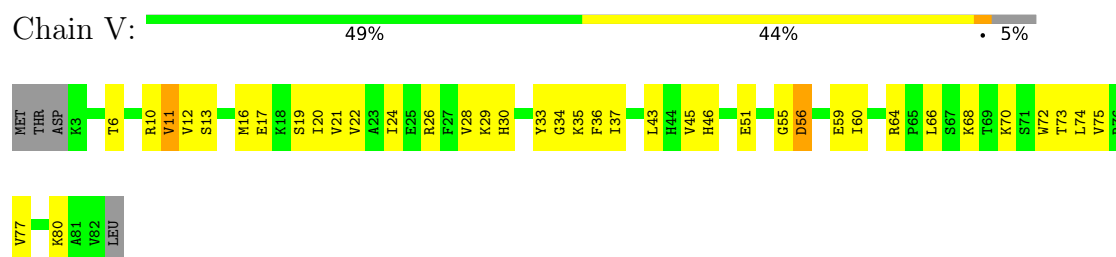
- Molecule 42: 30S ribosomal protein S15



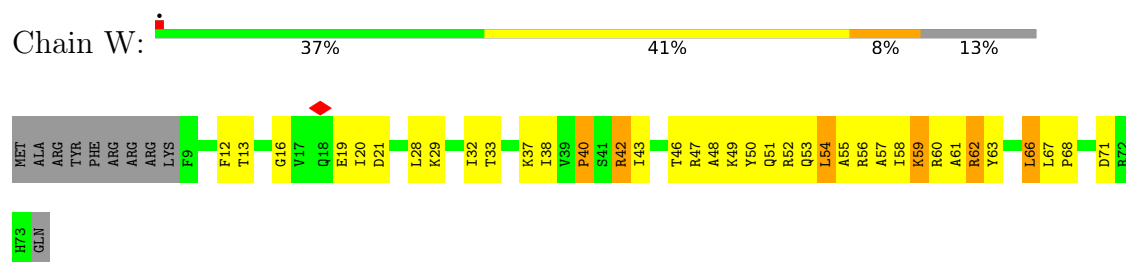
- Molecule 43: 30S ribosomal protein S16



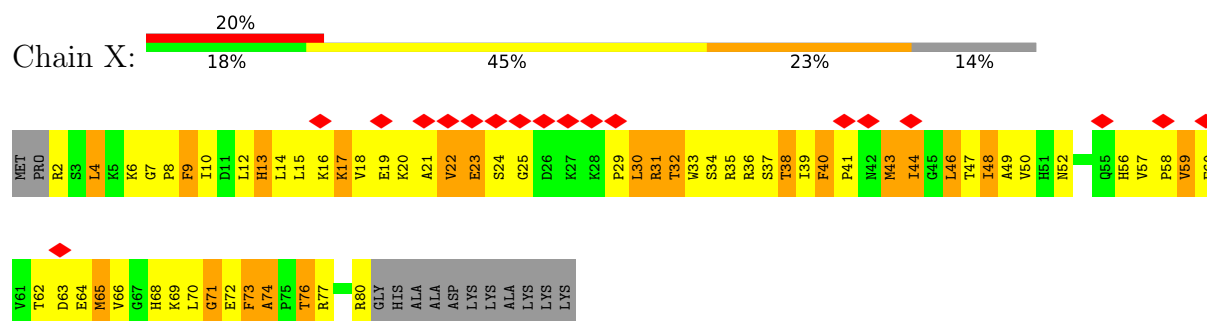
- Molecule 44: 30S ribosomal protein S17



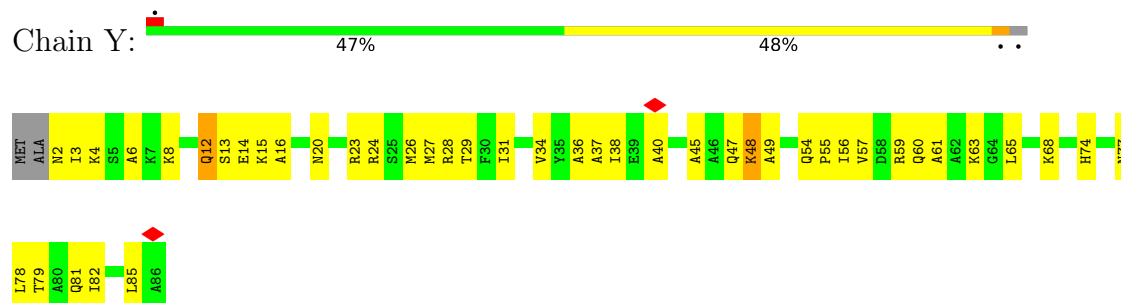
- Molecule 45: 30S ribosomal protein S18



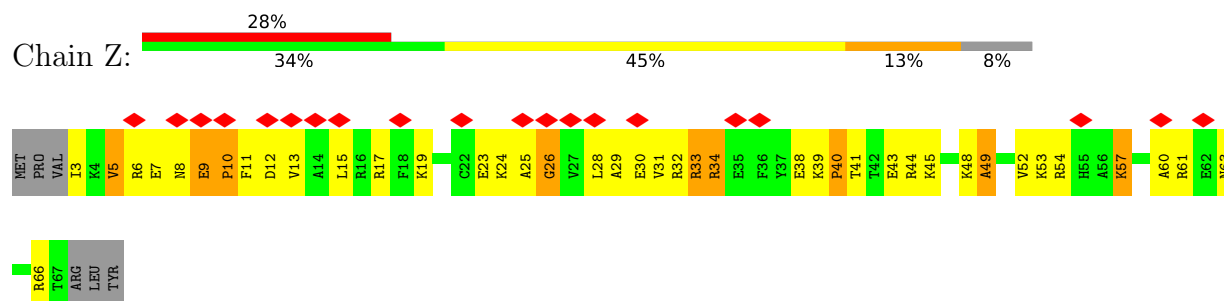
- Molecule 46: 30S ribosomal protein S19



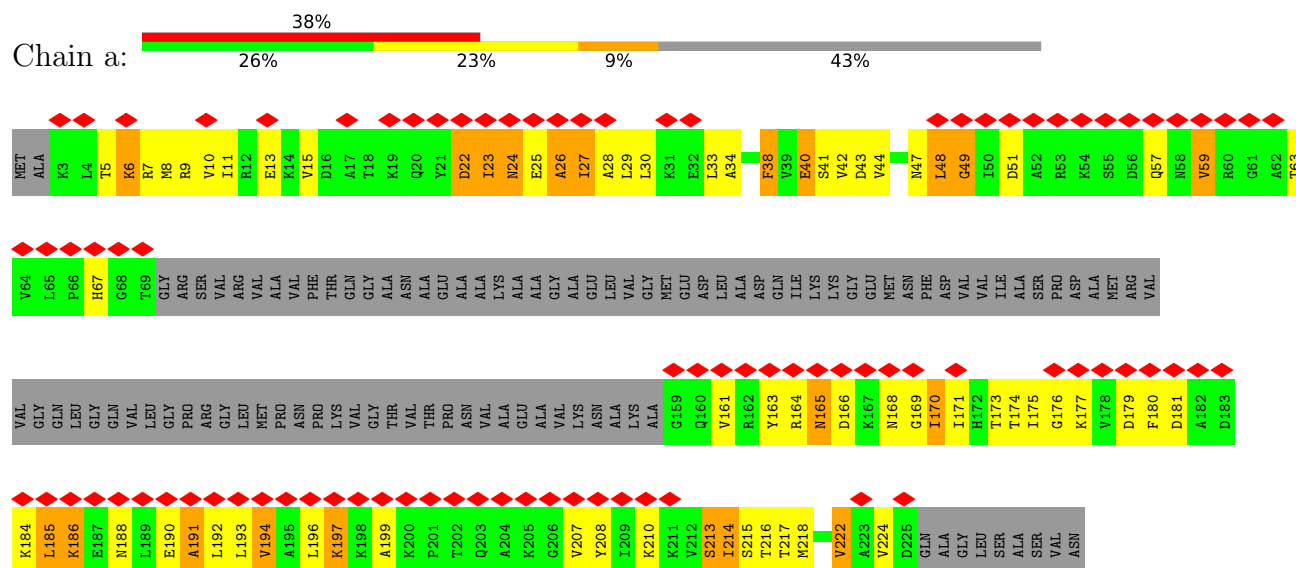
- Molecule 47: 30S ribosomal protein S20



- Molecule 48: 30S ribosomal protein S21

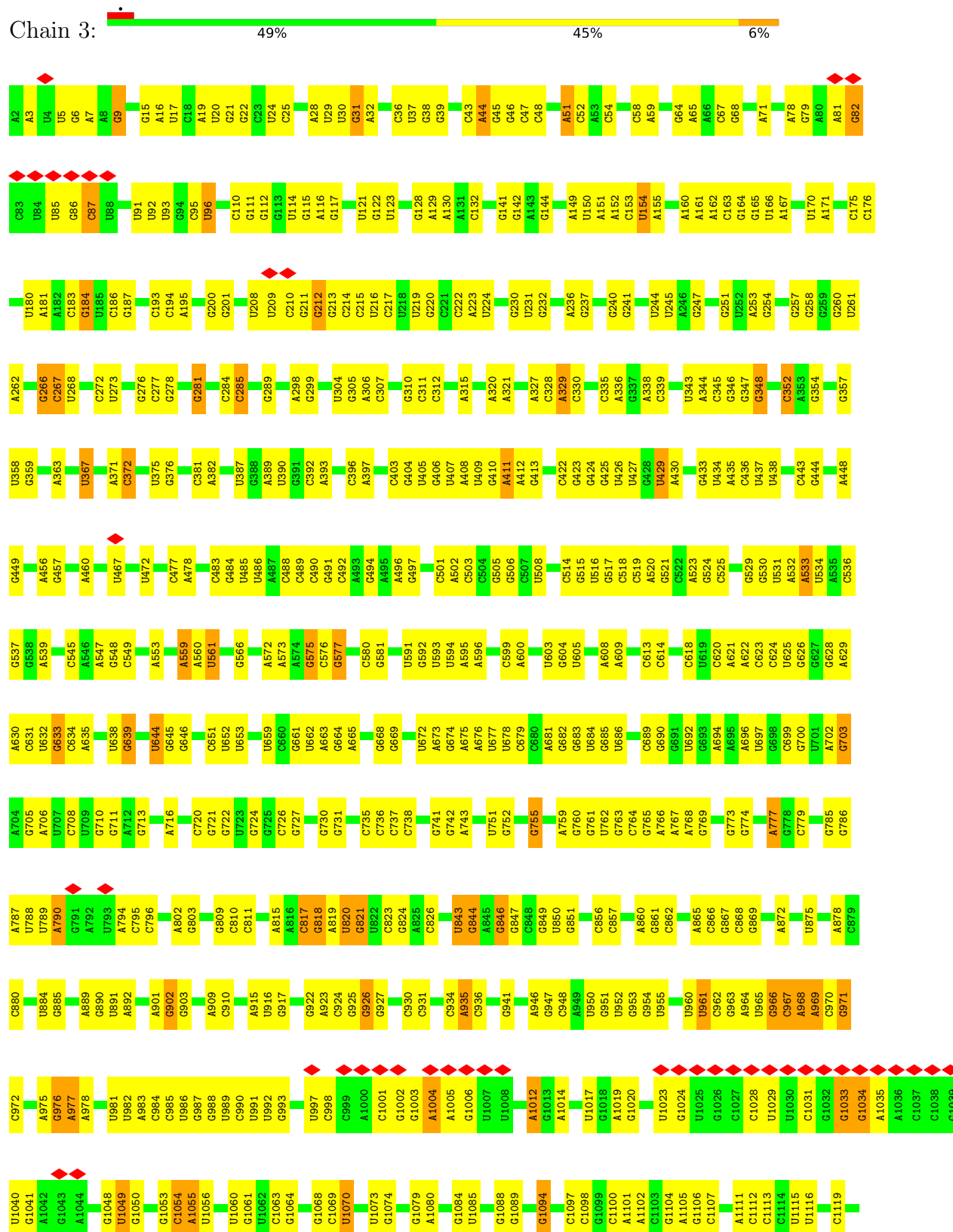


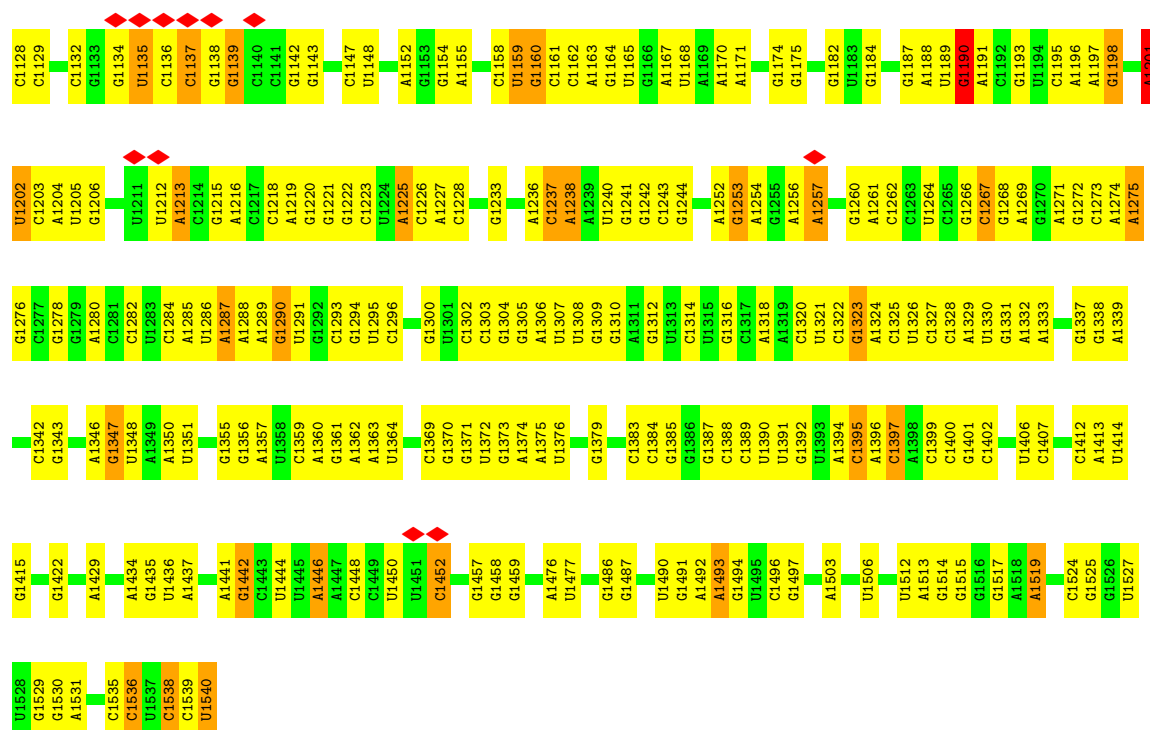
- Molecule 49: 50S ribosomal protein L1



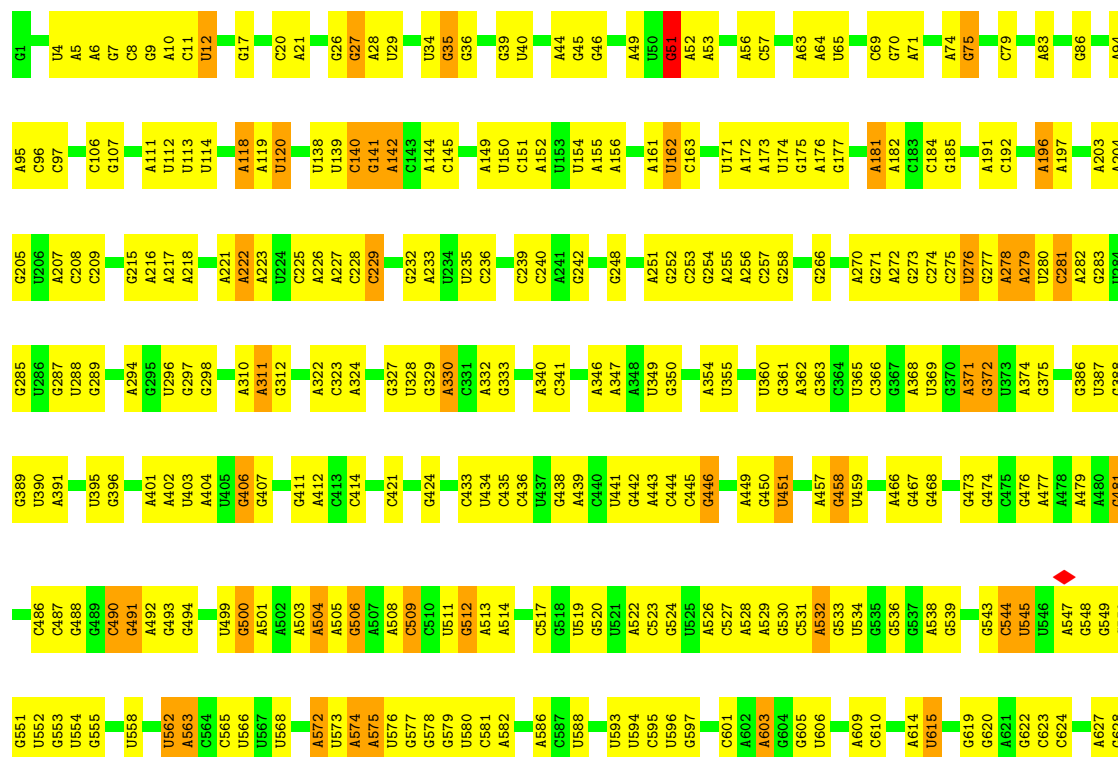
● Molecule 50: 16S ribosomal RNA

Chain 3:

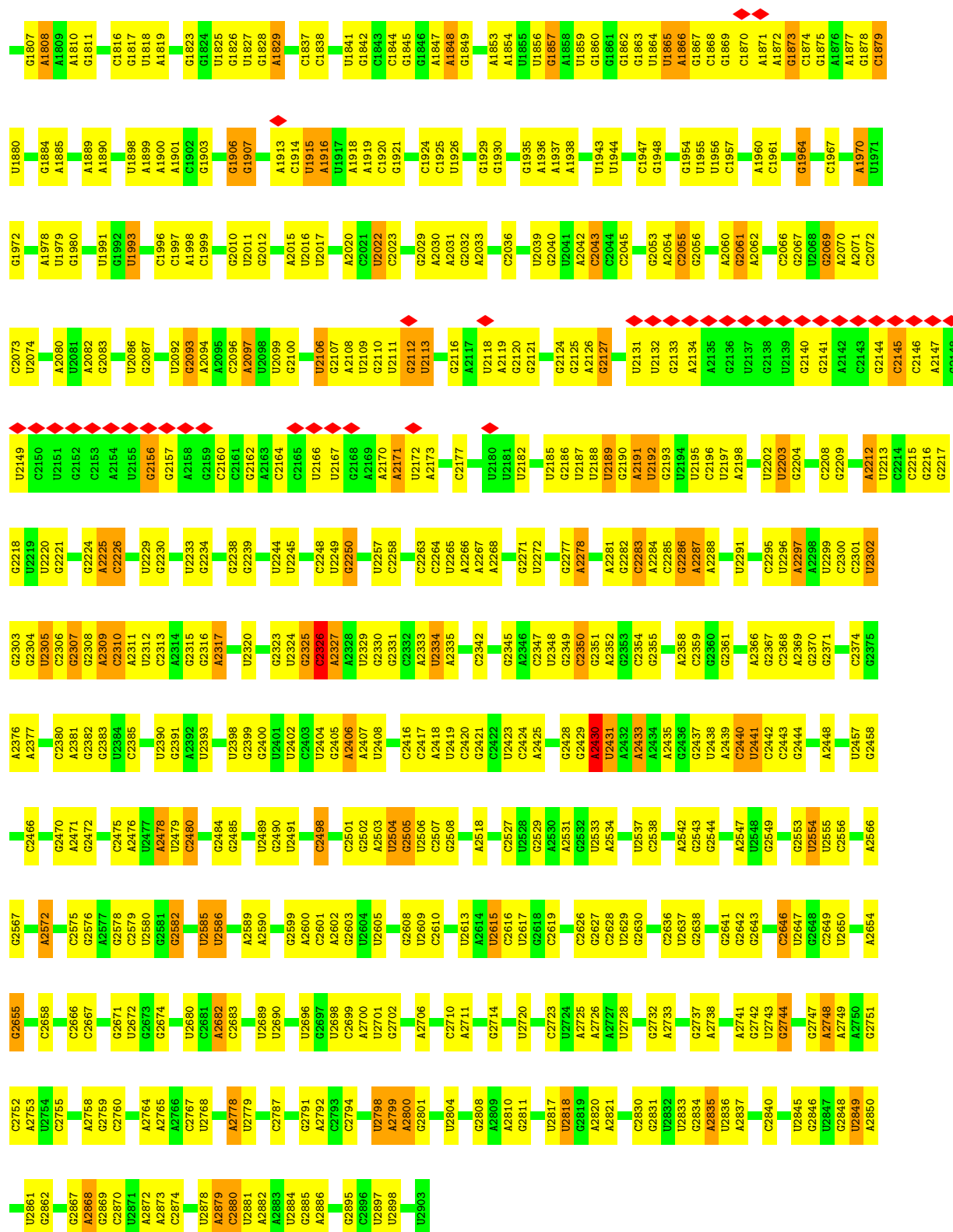


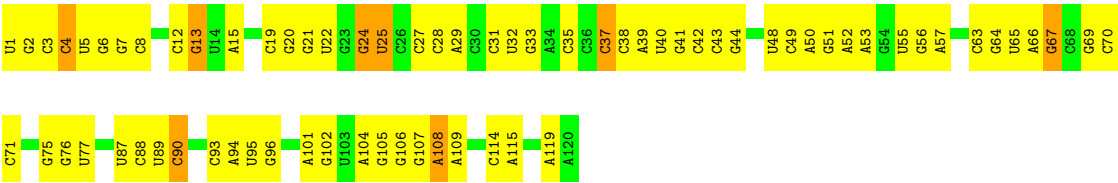


• Molecule 51: 23S ribosomal RNA

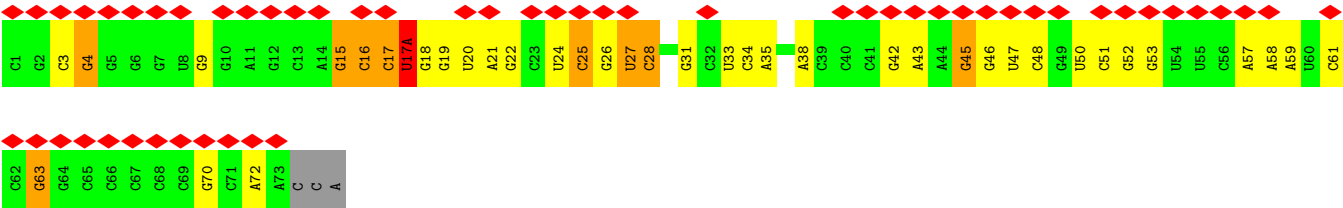




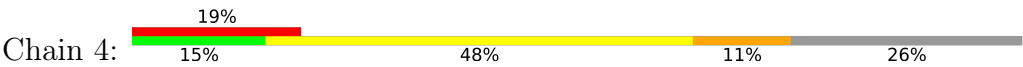




• Molecule 53: tRNAfMet



• Molecule 54: mRNA



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	63383	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	29.4	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	6.606	Depositor
Minimum map value	-1.704	Depositor
Average map value	0.005	Depositor
Map value standard deviation	0.400	Depositor
Recommended contour level	0.9	Depositor
Map size (Å)	416.208, 416.208, 416.208	wwPDB
Map dimensions	312, 312, 312	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.334, 1.334, 1.334	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

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	b	0.80	9/2121 (0.4%)	1.13	24/2852 (0.8%)
2	c	0.79	3/1586 (0.2%)	1.13	12/2134 (0.6%)
3	d	0.80	6/1571 (0.4%)	1.15	12/2113 (0.6%)
4	e	1.34	22/1434 (1.5%)	1.42	32/1926 (1.7%)
5	f	1.03	9/1343 (0.7%)	1.22	19/1816 (1.0%)
6	g	1.29	14/1122 (1.2%)	1.40	24/1515 (1.6%)
7	j	0.80	2/1152 (0.2%)	1.13	10/1551 (0.6%)
8	k	0.98	5/947 (0.5%)	1.28	14/1268 (1.1%)
9	l	0.80	3/1054 (0.3%)	1.17	9/1403 (0.6%)
10	m	0.84	7/1093 (0.6%)	1.14	14/1460 (1.0%)
11	n	0.82	3/973 (0.3%)	1.17	6/1301 (0.5%)
12	o	1.01	7/902 (0.8%)	1.14	4/1209 (0.3%)
13	p	0.71	4/929 (0.4%)	1.01	2/1242 (0.2%)
14	q	0.77	3/960 (0.3%)	1.23	2/1278 (0.2%)
15	r	0.69	0/829	1.10	3/1107 (0.3%)
16	s	0.98	7/864 (0.8%)	1.20	9/1156 (0.8%)
17	t	0.99	6/744 (0.8%)	1.16	4/994 (0.4%)
18	u	0.67	2/787 (0.3%)	1.01	4/1051 (0.4%)
19	v	0.78	3/766 (0.4%)	1.00	4/1025 (0.4%)
20	w	0.58	0/582	0.96	1/769 (0.1%)
21	x	0.85	5/635 (0.8%)	1.02	2/848 (0.2%)
22	y	1.11	4/510 (0.8%)	1.37	9/677 (1.3%)
23	z	0.78	2/453 (0.4%)	0.99	1/605 (0.2%)
24	B	0.74	1/450 (0.2%)	1.00	1/599 (0.2%)
25	C	0.77	2/416 (0.5%)	0.91	3/554 (0.5%)
26	D	0.74	1/380 (0.3%)	1.19	4/498 (0.8%)
27	E	0.77	1/513 (0.2%)	1.09	1/676 (0.1%)
28	F	0.82	1/303 (0.3%)	1.19	3/397 (0.8%)
29	G	1.31	27/1787 (1.5%)	1.39	27/2408 (1.1%)
30	H	1.31	21/1651 (1.3%)	1.34	27/2225 (1.2%)
31	I	1.15	20/1665 (1.2%)	1.36	28/2227 (1.3%)
32	J	1.14	15/1169 (1.3%)	1.44	26/1573 (1.7%)
33	K	1.47	15/843 (1.8%)	1.46	24/1140 (2.1%)
34	L	1.20	14/1195 (1.2%)	1.51	35/1602 (2.2%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
35	M	0.99	5/989 (0.5%)	1.23	14/1326 (1.1%)
36	N	1.25	13/1034 (1.3%)	1.39	25/1375 (1.8%)
37	O	1.29	11/796 (1.4%)	1.39	16/1077 (1.5%)
38	P	1.71	16/885 (1.8%)	1.61	27/1195 (2.3%)
39	Q	1.28	16/969 (1.7%)	1.42	18/1300 (1.4%)
40	R	1.45	15/892 (1.7%)	1.47	23/1193 (1.9%)
41	S	1.31	11/817 (1.3%)	1.42	16/1088 (1.5%)
42	T	1.06	6/722 (0.8%)	1.38	14/964 (1.5%)
43	U	0.59	0/659	1.04	4/884 (0.5%)
44	V	0.55	1/657 (0.2%)	0.93	1/881 (0.1%)
45	W	1.15	4/544 (0.7%)	1.24	9/731 (1.2%)
46	X	2.08	22/652 (3.4%)	2.05	39/877 (4.4%)
47	Y	1.21	7/671 (1.0%)	1.28	8/888 (0.9%)
48	Z	1.12	6/550 (1.1%)	1.54	15/728 (2.1%)
49	a	1.60	21/1033 (2.0%)	1.47	28/1387 (2.0%)
50	3	0.46	2/36963 (0.0%)	0.49	11/57662 (0.0%)
51	1	0.41	0/69796	0.51	5/108888 (0.0%)
52	2	0.42	0/2872	0.51	0/4479
53	5	0.47	0/1763	0.56	1/2748 (0.0%)
54	4	0.44	0/493	0.50	0/769
All	All	0.69	400/157486 (0.3%)	0.78	674/235639 (0.3%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
6	g	0	1
29	G	0	1
32	J	0	1
51	1	0	18
52	2	0	2
All	All	0	23

All (400) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
50	3	967	C	C3'-O3'	26.44	1.81	1.42
50	3	968	A	O3'-P	25.76	1.99	1.61
38	P	32	THR	C-O	22.10	1.50	1.23
39	Q	78	VAL	C-O	21.33	1.49	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
38	P	21	HIS	C-O	19.67	1.47	1.24
49	a	59	VAL	C-O	18.07	1.44	1.24
46	X	18	VAL	C-O	17.57	1.44	1.24
46	X	74	ALA	N-CA	16.85	1.62	1.46
49	a	208	TYR	C-O	15.36	1.43	1.24
33	K	29	ILE	C-O	15.13	1.41	1.24
4	e	82	TYR	C-O	15.07	1.43	1.24
46	X	19	GLU	C-O	14.17	1.42	1.24
30	H	90	VAL	C-O	13.98	1.39	1.23
38	P	123	PRO	C-O	13.70	1.41	1.24
46	X	66	VAL	C-O	13.39	1.39	1.23
29	G	91	VAL	C-O	13.36	1.38	1.24
11	n	78	LYS	C-O	13.12	1.40	1.24
45	W	40	PRO	C-O	13.07	1.39	1.23
46	X	22	VAL	N-CA	12.94	1.62	1.46
33	K	86	ARG	C-O	12.76	1.40	1.24
30	H	7	ASN	C-O	12.68	1.39	1.24
4	e	73	VAL	C-O	12.62	1.38	1.24
49	a	22	ASP	C-O	12.59	1.42	1.23
6	g	35	LYS	C-O	12.46	1.40	1.24
30	H	184	ASN	C-O	12.39	1.38	1.23
33	K	13	ASP	C-O	12.17	1.38	1.24
2	c	157	LYS	C-O	12.15	1.38	1.23
5	f	114	HIS	N-CA	12.09	1.59	1.45
40	R	49	GLU	C-O	12.05	1.39	1.24
36	N	79	ARG	C-O	11.78	1.37	1.24
46	X	21	ALA	C-O	11.56	1.37	1.24
4	e	99	PHE	C-O	11.53	1.37	1.24
4	e	90	LEU	C-O	11.46	1.37	1.24
33	K	59	TYR	C-O	11.37	1.38	1.24
31	I	56	GLU	C-O	11.37	1.37	1.24
49	a	23	ILE	C-O	11.27	1.39	1.24
41	S	77	GLY	C-O	11.22	1.39	1.24
38	P	107	THR	N-CA	11.05	1.59	1.46
40	R	85	TYR	C-O	11.05	1.36	1.24
46	X	48	ILE	C-O	11.05	1.35	1.24
30	H	199	VAL	C-O	10.96	1.37	1.23
34	L	34	LYS	C-O	10.92	1.38	1.23
29	G	37	VAL	C-O	10.90	1.35	1.24
32	J	78	GLY	C-O	10.90	1.39	1.24
30	H	97	PRO	C-O	10.84	1.36	1.23
8	k	88	ASN	N-CA	10.82	1.58	1.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
37	O	20	GLN	C-O	10.82	1.37	1.24
40	R	22	TYR	C-O	10.76	1.37	1.23
22	y	25	GLN	C-O	10.63	1.36	1.24
40	R	53	ASP	N-CA	10.58	1.59	1.46
34	L	96	ASN	C-O	10.45	1.36	1.24
37	O	69	THR	C-O	10.35	1.36	1.24
12	o	58	ILE	C-O	10.34	1.34	1.23
29	G	68	PHE	C-O	10.29	1.37	1.23
29	G	201	GLY	C-N	10.25	1.46	1.33
29	G	202	ASN	N-CA	10.24	1.59	1.45
29	G	80	LYS	C-O	10.20	1.36	1.24
40	R	54	THR	C-O	10.20	1.36	1.24
33	K	76	THR	C-O	10.16	1.36	1.24
34	L	99	ALA	C-O	10.15	1.37	1.24
36	N	64	ILE	C-O	10.13	1.37	1.24
4	e	87	LYS	C-O	10.10	1.36	1.23
36	N	33	SER	N-CA	10.09	1.59	1.45
47	Y	14	GLU	C-O	10.02	1.36	1.24
6	g	8	LYS	C-O	-9.97	1.10	1.24
35	M	124	ILE	C-O	9.94	1.35	1.24
17	t	88	LYS	C-O	9.92	1.35	1.23
49	a	190	GLU	C-O	9.88	1.36	1.24
47	Y	12	GLN	C-O	9.82	1.36	1.24
8	k	92	GLU	C-O	-9.72	1.06	1.24
39	Q	116	TYR	C-O	9.69	1.39	1.24
30	H	116	ALA	C-O	9.57	1.35	1.24
12	o	7	ARG	C-O	9.54	1.35	1.24
31	I	132	ALA	C-O	9.51	1.36	1.24
40	R	86	ARG	C-O	9.47	1.36	1.24
6	g	68	ARG	C-O	9.46	1.36	1.24
32	J	92	ARG	C-O	-9.41	1.11	1.24
37	O	21	ALA	C-O	9.35	1.35	1.24
31	I	8	LEU	C-O	9.31	1.37	1.24
4	e	97	GLU	C-O	9.29	1.34	1.24
29	G	42	LEU	C-O	9.29	1.34	1.24
38	P	58	THR	C-O	9.25	1.35	1.23
12	o	8	ILE	C-O	9.18	1.34	1.24
40	R	88	LEU	C-O	9.12	1.35	1.24
37	O	45	ARG	C-O	9.07	1.34	1.24
38	P	21	HIS	N-CA	9.03	1.57	1.46
16	s	31	GLN	C-O	9.00	1.34	1.24
47	Y	48	LYS	C-O	8.99	1.34	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
31	I	40	HIS	C-O	8.94	1.36	1.24
34	L	120	ALA	C-O	8.90	1.34	1.24
4	e	9	ASP	C-O	8.85	1.31	1.23
38	P	108	ASN	C-N	8.84	1.46	1.33
48	Z	5	VAL	C-O	8.75	1.34	1.24
4	e	69	ALA	N-CA	8.73	1.57	1.46
49	a	177	LYS	C-O	8.68	1.34	1.23
41	S	9	GLU	C-O	8.52	1.34	1.24
5	f	17	LYS	C-O	8.44	1.34	1.23
25	C	18	HIS	C-O	8.42	1.34	1.23
37	O	80	THR	C-O	8.40	1.33	1.24
33	K	9	MET	N-CA	8.38	1.56	1.45
3	d	176	ASP	C-O	8.37	1.31	1.24
41	S	36	SER	N-CA	8.37	1.57	1.46
31	I	61	ARG	C-O	8.30	1.33	1.24
31	I	69	ARG	C-O	8.28	1.33	1.24
6	g	13	GLY	C-O	-8.27	1.12	1.23
46	X	22	VAL	C-O	8.26	1.33	1.24
49	a	214	ILE	C-O	8.24	1.32	1.24
19	v	92	VAL	N-CA	8.22	1.56	1.46
5	f	61	TRP	C-O	8.22	1.34	1.24
35	M	63	LYS	C-O	8.21	1.33	1.23
36	N	95	SER	C-O	8.18	1.34	1.24
1	b	263	ASP	N-CA	8.18	1.57	1.46
30	H	180	ASP	C-O	8.16	1.33	1.23
46	X	17	LYS	C-O	8.16	1.34	1.24
29	G	69	VAL	C-O	8.15	1.33	1.24
31	I	57	LYS	C-O	8.15	1.33	1.24
28	F	4	ARG	C-O	8.11	1.36	1.23
31	I	154	VAL	C-N	8.11	1.44	1.33
47	Y	37	ALA	C-O	8.11	1.34	1.24
32	J	87	VAL	N-CA	8.10	1.56	1.46
45	W	54	LEU	C-O	8.05	1.34	1.24
40	R	58	GLU	N-CA	8.04	1.56	1.46
17	t	6	ARG	C-O	8.03	1.33	1.24
13	p	6	GLN	C-O	8.01	1.33	1.24
8	k	37	ASP	C-O	7.97	1.34	1.23
36	N	70	GLY	C-O	7.97	1.34	1.23
41	S	88	MET	C-O	7.92	1.33	1.24
31	I	87	GLU	C-O	7.90	1.34	1.24
30	H	184	ASN	N-CA	7.85	1.55	1.46
46	X	12	LEU	C-O	7.83	1.33	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
21	x	65	THR	C-O	7.82	1.33	1.24
46	X	73	PHE	C-N	7.80	1.39	1.33
38	P	32	THR	N-CA	7.76	1.55	1.45
4	e	55	ASP	C-O	7.72	1.34	1.24
36	N	62	LEU	C-O	7.72	1.33	1.23
38	P	19	VAL	C-O	7.69	1.33	1.24
30	H	72	PRO	C-O	7.65	1.33	1.24
49	a	47	ASN	C-O	7.64	1.33	1.23
46	X	32	THR	N-CA	7.59	1.55	1.46
6	g	99	ILE	C-O	7.58	1.34	1.24
29	G	215	ALA	C-O	7.57	1.33	1.24
6	g	72	ILE	N-CA	7.56	1.56	1.46
30	H	71	ARG	C-O	7.55	1.33	1.24
39	Q	92	VAL	N-CA	7.54	1.55	1.46
27	E	53	ASP	C-O	7.52	1.33	1.24
42	T	27	GLN	C-O	7.49	1.32	1.24
40	R	21	ILE	C-O	7.45	1.32	1.24
29	G	130	LYS	C-O	7.44	1.32	1.24
32	J	138	ALA	C-O	7.43	1.32	1.24
22	y	40	SER	C-O	7.43	1.33	1.24
36	N	38	PHE	C-O	7.42	1.33	1.24
38	P	16	SER	C-O	7.38	1.32	1.24
16	s	33	LEU	C-O	7.38	1.32	1.24
49	a	191	ALA	C-O	7.37	1.33	1.24
41	S	12	ARG	C-O	7.36	1.33	1.24
34	L	98	LEU	C-O	7.34	1.32	1.24
34	L	100	MET	C-O	7.33	1.33	1.24
6	g	97	ARG	C-O	7.30	1.32	1.24
48	Z	39	LYS	C-O	7.30	1.33	1.24
29	G	201	GLY	C-O	7.29	1.33	1.23
32	J	133	ILE	C-O	7.25	1.32	1.24
32	J	120	HIS	N-CA	7.23	1.57	1.46
4	e	78	ILE	C-O	7.20	1.32	1.24
33	K	67	PRO	C-O	7.19	1.32	1.23
40	R	77	LYS	C-O	7.18	1.32	1.24
41	S	96	LYS	C-O	7.18	1.32	1.23
6	g	49	ALA	C-O	7.17	1.32	1.24
45	W	55	ALA	C-O	7.16	1.32	1.24
16	s	16	LYS	C-O	7.13	1.32	1.24
9	l	47	ARG	C-O	7.11	1.33	1.23
41	S	78	LEU	C-O	7.10	1.32	1.24
2	c	189	VAL	N-CA	7.10	1.54	1.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	f	24	THR	C-O	7.04	1.33	1.23
29	G	91	VAL	N-CA	7.04	1.54	1.46
37	O	75	ASP	C-O	7.03	1.34	1.23
46	X	15	LEU	C-O	6.97	1.32	1.24
29	G	14	HIS	C-O	-6.97	1.15	1.24
16	s	30	SER	C-O	6.95	1.32	1.24
9	l	94	THR	C-O	-6.91	1.15	1.24
47	Y	49	ALA	C-O	6.89	1.32	1.24
5	f	72	ASN	C-O	6.88	1.32	1.24
4	e	67	THR	C-O	6.88	1.32	1.23
4	e	100	GLU	C-O	6.87	1.32	1.24
30	H	46	LEU	C-N	6.86	1.43	1.33
46	X	59	VAL	N-CA	6.85	1.53	1.46
4	e	103	ILE	N-CA	6.85	1.53	1.46
33	K	8	PHE	C-O	6.83	1.31	1.23
36	N	99	LYS	N-CA	6.81	1.54	1.46
6	g	145	ASN	C-O	6.79	1.32	1.23
1	b	19	VAL	N-CA	6.78	1.54	1.46
49	a	180	PHE	N-CA	6.78	1.54	1.45
42	T	70	LYS	C-O	6.75	1.32	1.24
6	g	114	GLU	C-O	6.74	1.32	1.24
29	G	148	GLY	C-O	6.70	1.32	1.23
32	J	65	LYS	C-O	6.70	1.32	1.24
38	P	80	ASN	C-O	6.69	1.31	1.23
49	a	213	SER	C-O	6.67	1.32	1.24
22	y	24	GLU	C-O	6.66	1.31	1.24
1	b	262	THR	C-N	6.66	1.43	1.33
30	H	40	GLN	C-O	6.65	1.32	1.24
44	V	56	ASP	C-O	6.64	1.32	1.23
40	R	55	LEU	C-O	6.63	1.32	1.24
39	Q	106	VAL	N-CA	6.59	1.54	1.46
3	d	121	VAL	N-CA	6.59	1.54	1.46
36	N	15	ALA	N-CA	6.58	1.54	1.46
48	Z	57	LYS	C-O	6.57	1.32	1.24
29	G	206	ILE	C-O	6.56	1.30	1.23
14	q	50	ARG	C-O	6.54	1.32	1.24
42	T	56	LEU	C-O	6.53	1.32	1.24
31	I	60	VAL	C-O	6.51	1.32	1.24
13	p	8	GLU	C-O	6.50	1.32	1.24
4	e	65	LEU	C-O	6.49	1.31	1.23
6	g	13	GLY	C-N	-6.47	1.24	1.33
41	S	14	ALA	C-O	6.44	1.31	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
49	a	165	ASN	N-CA	6.42	1.54	1.45
46	X	13	HIS	C-O	6.38	1.32	1.24
39	Q	65	TYR	C-O	6.37	1.31	1.24
35	M	87	ARG	C-O	6.36	1.32	1.23
40	R	59	VAL	N-CA	6.36	1.54	1.46
1	b	224	MET	C-O	6.35	1.30	1.23
46	X	24	SER	C-N	6.35	1.41	1.33
36	N	33	SER	CA-C	6.33	1.61	1.52
48	Z	43	GLU	N-CA	6.33	1.54	1.46
33	K	80	PHE	N-CA	6.33	1.54	1.46
38	P	105	ARG	C-O	6.33	1.32	1.23
35	M	102	VAL	C-O	6.32	1.31	1.24
49	a	27	ILE	N-CA	6.32	1.54	1.46
4	e	161	SER	C-O	6.32	1.30	1.23
30	H	167	TYR	C-O	6.32	1.32	1.23
4	e	98	PHE	C-O	6.30	1.32	1.24
29	G	217	ALA	C-O	6.30	1.32	1.24
29	G	129	THR	C-O	6.29	1.31	1.23
12	o	67	ASN	C-O	6.27	1.32	1.23
21	x	52	ALA	C-O	6.27	1.31	1.24
8	k	91	SER	N-CA	6.26	1.54	1.46
31	I	155	LYS	N-CA	6.26	1.53	1.46
19	v	46	LYS	C-O	6.24	1.31	1.24
32	J	123	LEU	N-CA	6.22	1.53	1.46
4	e	33	ILE	C-O	6.21	1.30	1.24
38	P	109	ILE	C-O	6.18	1.31	1.24
39	Q	39	THR	C-O	6.16	1.31	1.23
38	P	61	ALA	C-O	6.15	1.31	1.24
49	a	49	GLY	N-CA	6.13	1.54	1.45
39	Q	30	ARG	C-O	6.12	1.31	1.23
29	G	208	ALA	C-O	6.12	1.31	1.24
49	a	40	GLU	C-O	6.11	1.33	1.24
29	G	46	VAL	N-CA	6.11	1.54	1.46
5	f	113	ASP	CA-C	-6.10	1.45	1.52
39	Q	89	LEU	C-O	6.09	1.32	1.23
42	T	51	SER	C-O	6.09	1.31	1.24
29	G	69	VAL	C-N	6.09	1.42	1.33
10	m	120	ALA	C-O	6.06	1.31	1.24
31	I	164	ARG	N-CA	6.05	1.53	1.46
29	G	142	LYS	C-O	6.03	1.31	1.24
46	X	38	THR	C-N	6.02	1.41	1.33
11	n	47	VAL	C-O	6.02	1.31	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
25	C	33	LEU	C-O	6.01	1.31	1.24
46	X	23	GLU	N-CA	6.01	1.54	1.46
47	Y	13	SER	C-O	6.01	1.31	1.24
7	j	140	LEU	N-CA	6.00	1.53	1.46
12	o	51	ALA	C-O	6.00	1.31	1.23
40	R	89	ARG	N-CA	5.96	1.53	1.46
5	f	1	SER	C-O	5.96	1.35	1.23
21	x	63	ILE	C-O	5.96	1.31	1.24
23	z	46	MET	C-O	5.95	1.31	1.24
12	o	56	LYS	C-O	5.94	1.31	1.24
4	e	54	ALA	C-O	5.94	1.31	1.24
42	T	57	ARG	C-O	5.93	1.31	1.24
36	N	27	ILE	C-O	5.93	1.30	1.24
30	H	43	THR	C-O	5.92	1.31	1.24
18	u	31	GLY	C-O	5.91	1.31	1.24
46	X	41	PRO	C-O	5.91	1.31	1.24
8	k	9	ASN	C-O	5.91	1.31	1.24
33	K	17	GLN	C-N	5.90	1.40	1.33
37	O	46	LYS	N-CA	5.88	1.53	1.46
29	G	56	LEU	C-O	5.85	1.31	1.24
30	H	73	GLY	C-O	5.83	1.30	1.24
30	H	202	PHE	C-O	5.82	1.31	1.24
21	x	67	LEU	C-O	5.82	1.31	1.24
24	B	13	GLY	C-O	5.81	1.31	1.23
37	O	47	GLU	C-O	5.79	1.30	1.24
30	H	199	VAL	N-CA	5.77	1.52	1.46
1	b	210	ALA	C-O	5.77	1.31	1.24
21	x	62	GLY	C-O	5.77	1.31	1.23
49	a	194	VAL	N-CA	5.76	1.53	1.46
16	s	15	GLN	C-O	5.76	1.30	1.24
38	P	54	SER	C-O	5.75	1.31	1.24
41	S	18	LYS	N-CA	5.72	1.53	1.46
34	L	71	THR	C-O	5.72	1.31	1.24
36	N	30	ASN	N-CA	5.72	1.53	1.46
10	m	35	ALA	C-O	5.71	1.31	1.23
49	a	25	GLU	C-O	5.71	1.31	1.24
32	J	70	MET	N-CA	5.71	1.53	1.46
4	e	34	THR	C-O	5.71	1.30	1.24
4	e	84	ILE	C-O	5.70	1.30	1.23
39	Q	94	TYR	C-O	5.69	1.30	1.23
46	X	46	LEU	C-O	5.69	1.30	1.23
34	L	37	THR	C-O	5.69	1.30	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
29	G	81	ASP	C-O	5.69	1.31	1.24
2	c	55	LYS	N-CA	5.67	1.53	1.45
19	v	25	LYS	C-O	5.65	1.31	1.23
39	Q	6	LEU	N-CA	5.64	1.53	1.46
6	g	56	ALA	C-O	5.64	1.31	1.24
17	t	54	GLU	C-O	5.63	1.30	1.24
31	I	161	ALA	C-O	5.62	1.31	1.24
6	g	67	ALA	C-O	5.58	1.31	1.24
47	Y	16	ALA	N-CA	5.57	1.53	1.46
30	H	91	ALA	C-O	5.57	1.31	1.24
4	e	12	VAL	C-N	5.57	1.41	1.33
31	I	201	GLU	C-O	5.56	1.31	1.24
9	l	130	GLY	C-O	5.56	1.30	1.23
32	J	137	ARG	C-O	5.56	1.31	1.24
32	J	164	LEU	C-N	5.55	1.41	1.33
33	K	20	GLY	C-O	5.54	1.30	1.23
41	S	98	ALA	N-CA	5.54	1.53	1.46
1	b	207	ALA	C-O	5.51	1.31	1.24
5	f	142	GLN	C-O	5.48	1.30	1.24
29	G	76	SER	N-CA	5.48	1.52	1.46
36	N	17	ARG	C-O	5.46	1.30	1.23
34	L	103	ILE	N-CA	5.44	1.53	1.46
39	Q	105	GLY	C-O	5.44	1.28	1.23
30	H	130	ARG	C-O	5.43	1.30	1.24
40	R	53	ASP	CA-C	5.43	1.60	1.52
49	a	222	VAL	C-O	5.43	1.31	1.24
40	R	48	SER	C-O	5.42	1.30	1.23
46	X	66	VAL	N-CA	5.41	1.54	1.46
22	y	19	LEU	C-O	5.40	1.30	1.24
17	t	44	LYS	C-O	5.40	1.30	1.24
1	b	260	LYS	C-O	-5.39	1.17	1.24
3	d	145	ASP	C-O	5.39	1.30	1.24
17	t	88	LYS	CA-C	5.39	1.60	1.53
34	L	135	LYS	C-O	5.39	1.31	1.24
42	T	7	THR	C-O	5.38	1.30	1.24
49	a	22	ASP	CA-C	5.37	1.60	1.53
3	d	35	TYR	C-O	5.35	1.30	1.24
48	Z	34	ARG	N-CA	5.35	1.53	1.46
33	K	12	PRO	C-O	5.34	1.30	1.24
39	Q	101	LEU	C-O	-5.34	1.17	1.24
14	q	96	ASP	C-O	5.33	1.30	1.24
3	d	157	LEU	C-O	5.33	1.30	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
16	s	88	ARG	C-O	5.32	1.31	1.23
31	I	152	SER	C-O	-5.31	1.17	1.24
32	J	87	VAL	CA-C	5.30	1.59	1.52
39	Q	103	CYS	C-O	5.30	1.30	1.24
45	W	59	LYS	C-O	5.29	1.30	1.24
31	I	141	VAL	C-O	5.27	1.30	1.24
31	I	181	PHE	C-O	5.27	1.30	1.23
33	K	75	GLU	C-O	5.26	1.30	1.24
39	Q	113	ARG	C-O	5.26	1.30	1.24
6	g	57	LYS	C-O	5.26	1.30	1.24
39	Q	101	LEU	C-N	-5.25	1.26	1.33
49	a	170	ILE	C-O	5.25	1.29	1.24
37	O	29	ALA	C-O	-5.24	1.18	1.24
3	d	36	ALA	C-O	5.23	1.30	1.24
39	Q	98	ARG	N-CA	5.21	1.52	1.46
5	f	138	GLN	C-O	5.20	1.30	1.24
13	p	105	LYS	C-O	5.18	1.30	1.24
33	K	17	GLN	N-CA	5.18	1.53	1.46
14	q	53	LYS	C-O	5.17	1.30	1.24
12	o	55	GLU	C-O	5.17	1.30	1.24
34	L	24	LYS	C-O	5.17	1.30	1.24
48	Z	31	VAL	N-CA	5.16	1.51	1.46
10	m	51	ARG	C-O	5.16	1.30	1.24
26	D	26	ASN	C-O	5.16	1.30	1.24
34	L	148	LYS	N-CA	5.15	1.52	1.46
29	G	207	ARG	C-O	5.13	1.30	1.24
31	I	9	LYS	C-O	5.13	1.30	1.24
11	n	17	ARG	C-O	5.13	1.30	1.24
34	L	135	LYS	C-N	5.13	1.41	1.33
30	H	155	ARG	C-O	5.12	1.30	1.24
35	M	86	LYS	C-O	5.11	1.30	1.23
1	b	41	GLY	C-O	5.11	1.31	1.24
37	O	69	THR	N-CA	5.11	1.52	1.46
13	p	1	SER	C-O	5.11	1.33	1.23
33	K	71	ILE	C-O	5.11	1.30	1.24
10	m	93	VAL	C-O	5.10	1.29	1.24
46	X	32	THR	CA-C	5.10	1.58	1.52
16	s	41	LYS	C-O	5.10	1.30	1.23
4	e	66	ILE	C-N	5.09	1.40	1.33
31	I	14	GLU	C-N	5.09	1.41	1.33
38	P	108	ASN	C-O	5.08	1.29	1.23
18	u	41	VAL	C-O	5.08	1.29	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
31	I	43	ARG	N-CA	5.08	1.51	1.46
32	J	132	PRO	C-O	5.07	1.30	1.24
7	j	102	GLU	C-O	5.05	1.30	1.24
1	b	92	LEU	C-O	5.04	1.30	1.24
17	t	46	ALA	C-O	5.04	1.30	1.24
30	H	11	LEU	N-CA	5.04	1.52	1.46
29	G	58	LYS	C-O	5.03	1.30	1.24
10	m	119	LEU	C-O	5.02	1.30	1.24
29	G	53	LEU	C-O	5.02	1.30	1.24
49	a	163	TYR	C-O	5.02	1.30	1.23
32	J	96	GLN	C-O	5.02	1.30	1.24
10	m	73	ILE	C-O	5.02	1.29	1.24
37	O	24	GLU	N-CA	5.02	1.52	1.46
10	m	53	MET	C-O	5.01	1.30	1.24
41	S	25	GLU	C-O	5.01	1.30	1.24
32	J	67	ARG	C-O	5.00	1.30	1.24
23	z	20	LYS	C-O	5.00	1.30	1.24
34	L	99	ALA	N-CA	5.00	1.52	1.46

All (674) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
46	X	73	PHE	CA-C-N	-16.84	102.98	122.52
46	X	73	PHE	C-N-CA	-16.84	102.98	122.52
50	3	967	C	C4'-C3'-O3'	-14.27	91.59	113.00
46	X	21	ALA	CA-C-N	-12.13	103.19	120.42
46	X	21	ALA	C-N-CA	-12.13	103.19	120.42
38	P	20	ALA	CA-C-N	-12.08	106.06	122.72
38	P	20	ALA	C-N-CA	-12.08	106.06	122.72
29	G	201	GLY	CA-C-N	-11.18	100.62	120.97
29	G	201	GLY	C-N-CA	-11.18	100.62	120.97
29	G	150	ILE	N-CA-C	-11.04	103.23	113.71
6	g	13	GLY	CA-C-N	10.93	142.42	121.54
6	g	13	GLY	C-N-CA	10.93	142.42	121.54
36	N	31	GLN	CA-C-O	10.86	131.40	119.78
6	g	13	GLY	O-C-N	-10.49	113.88	123.42
48	Z	34	ARG	N-CA-C	10.43	124.05	111.02
31	I	15	GLY	N-CA-C	10.42	137.88	113.18
31	I	154	VAL	CA-C-N	-10.41	106.48	120.63
31	I	154	VAL	C-N-CA	-10.41	106.48	120.63
8	k	87	LEU	CA-C-N	-10.40	105.98	122.73
8	k	87	LEU	C-N-CA	-10.40	105.98	122.73

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
15	r	51	VAL	CA-C-N	-10.37	109.14	120.14
15	r	51	VAL	C-N-CA	-10.37	109.14	120.14
38	P	32	THR	N-CA-C	-10.36	93.48	109.95
31	I	7	LYS	N-CA-C	10.24	122.45	111.28
5	f	112	VAL	O-C-N	-9.84	111.11	122.72
48	Z	31	VAL	N-CA-C	-9.34	101.98	111.88
30	H	129	PHE	N-CA-C	9.31	121.51	111.36
41	S	34	ASN	CA-C-O	9.28	129.13	118.55
38	P	108	ASN	CA-C-N	-9.23	110.18	123.10
38	P	108	ASN	C-N-CA	-9.23	110.18	123.10
32	J	145	ASN	N-CA-C	-9.20	101.60	112.92
4	e	68	LYS	CA-C-N	-9.03	110.40	122.42
4	e	68	LYS	C-N-CA	-9.03	110.40	122.42
32	J	87	VAL	N-CA-C	9.02	128.11	109.34
50	3	967	C	P-O3'-C3'	-8.91	106.83	120.20
22	y	26	PHE	N-CA-C	8.91	120.76	111.14
39	Q	101	LEU	CA-C-N	8.81	138.38	121.54
39	Q	101	LEU	C-N-CA	8.81	138.38	121.54
34	L	136	LYS	N-CA-C	-8.79	102.33	113.23
31	I	24	VAL	N-CA-C	-8.76	104.76	112.12
46	X	19	GLU	CA-C-O	8.76	130.12	119.79
40	R	52	ILE	CA-C-N	-8.55	107.96	120.28
40	R	52	ILE	C-N-CA	-8.55	107.96	120.28
39	Q	91	GLY	CA-C-N	-8.48	109.95	121.66
39	Q	91	GLY	C-N-CA	-8.48	109.95	121.66
1	b	262	THR	CA-C-N	-8.41	104.52	121.18
1	b	262	THR	C-N-CA	-8.41	104.52	121.18
34	L	120	ALA	N-CA-C	-8.40	102.07	111.14
29	G	103	TRP	N-CA-C	8.37	120.48	111.36
50	3	968	A	P-O3'-C3'	-8.34	107.69	120.20
46	X	22	VAL	CA-C-N	-8.31	106.60	122.06
46	X	22	VAL	C-N-CA	-8.31	106.60	122.06
6	g	7	ASP	N-CA-C	8.31	119.22	108.34
33	K	29	ILE	CA-C-N	-8.26	106.69	122.06
33	K	29	ILE	C-N-CA	-8.26	106.69	122.06
2	c	113	SER	N-CA-C	8.26	121.25	110.43
34	L	135	LYS	N-CA-C	-8.24	102.68	112.89
4	e	54	ALA	N-CA-C	-8.23	103.03	113.23
34	L	59	GLU	N-CA-C	-8.16	103.92	114.04
40	R	14	ALA	N-CA-C	8.15	121.19	111.33
38	P	105	ARG	CA-C-O	8.08	131.20	121.99
32	J	163	ILE	N-CA-C	-8.07	105.15	112.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
19	v	91	PHE	CA-C-N	-8.04	110.05	120.98
19	v	91	PHE	C-N-CA	-8.04	110.05	120.98
38	P	106	ILE	CA-C-N	-7.96	108.98	120.29
38	P	106	ILE	C-N-CA	-7.96	108.98	120.29
34	L	135	LYS	CA-C-N	-7.95	107.67	121.66
34	L	135	LYS	C-N-CA	-7.95	107.67	121.66
41	S	63	CYS	N-CA-C	7.94	120.18	110.41
41	S	34	ASN	O-C-N	-7.92	113.71	122.10
36	N	99	LYS	N-CA-C	7.83	120.80	111.33
48	Z	61	ARG	N-CA-C	7.80	119.42	111.07
34	L	133	ALA	O-C-N	-7.76	113.89	122.12
16	s	38	TYR	CA-C-N	-7.74	111.68	123.14
16	s	38	TYR	C-N-CA	-7.74	111.68	123.14
41	S	21	ALA	N-CA-C	-7.72	105.02	114.75
36	N	103	VAL	N-CA-C	-7.69	105.27	112.96
48	Z	39	LYS	N-CA-C	7.65	126.72	109.81
29	G	90	PHE	CA-C-N	-7.65	109.82	122.67
29	G	90	PHE	C-N-CA	-7.65	109.82	122.67
33	K	13	ASP	CA-C-O	7.64	128.51	120.42
9	l	95	LEU	N-CA-C	-7.61	104.12	113.41
34	L	22	LEU	N-CA-C	-7.61	103.79	113.23
42	T	24	THR	N-CA-C	7.60	120.23	111.11
35	M	14	ARG	N-CA-C	-7.59	102.66	112.23
34	L	125	ASP	N-CA-C	-7.58	103.03	111.82
6	g	71	LYS	CA-C-N	-7.58	107.87	120.30
6	g	71	LYS	C-N-CA	-7.58	107.87	120.30
30	H	93	ILE	CA-C-N	-7.55	110.37	122.23
30	H	93	ILE	C-N-CA	-7.55	110.37	122.23
40	R	88	LEU	CA-C-N	-7.55	109.56	120.29
40	R	88	LEU	C-N-CA	-7.55	109.56	120.29
7	j	81	ILE	N-CA-C	7.54	125.02	109.34
40	R	71	GLU	N-CA-C	-7.50	103.12	111.82
46	X	30	LEU	CA-C-O	7.50	129.73	121.56
16	s	60	HIS	CA-C-N	-7.49	109.82	122.11
16	s	60	HIS	C-N-CA	-7.49	109.82	122.11
37	O	29	ALA	N-CA-C	-7.45	105.37	114.75
35	M	46	GLU	N-CA-C	-7.44	98.65	109.59
33	K	8	PHE	CA-C-N	-7.42	110.48	122.36
33	K	8	PHE	C-N-CA	-7.42	110.48	122.36
38	P	31	VAL	CA-C-N	-7.41	110.94	122.87
38	P	31	VAL	C-N-CA	-7.41	110.94	122.87
36	N	31	GLN	O-C-N	-7.40	111.67	122.04

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
34	L	99	ALA	CA-C-N	-7.39	108.20	121.14
34	L	99	ALA	C-N-CA	-7.39	108.20	121.14
30	H	198	LYS	CA-C-N	-7.38	112.85	122.51
30	H	198	LYS	C-N-CA	-7.38	112.85	122.51
5	f	112	VAL	CA-C-O	7.36	129.87	121.11
37	O	44	THR	CA-C-N	-7.36	112.56	122.72
37	O	44	THR	C-N-CA	-7.36	112.56	122.72
46	X	25	GLY	N-CA-C	7.36	120.53	112.29
49	a	186	LYS	N-CA-C	-7.35	102.97	112.23
9	l	97	ALA	N-CA-C	-7.34	103.79	112.89
32	J	164	LEU	CA-C-N	-7.33	108.51	121.70
32	J	164	LEU	C-N-CA	-7.33	108.51	121.70
5	f	114	HIS	N-CA-C	7.31	121.75	110.42
40	R	57	ASP	CA-C-N	-7.31	109.01	122.09
40	R	57	ASP	C-N-CA	-7.31	109.01	122.09
49	a	179	ASP	CA-C-N	-7.28	111.38	122.81
49	a	179	ASP	C-N-CA	-7.28	111.38	122.81
36	N	98	ARG	N-CA-C	-7.28	103.37	112.90
10	m	71	LYS	CA-C-O	7.28	125.27	119.59
33	K	27	ALA	N-CA-C	-7.25	103.10	112.23
49	a	165	ASN	N-CA-C	7.22	120.35	109.95
37	O	18	ILE	N-CA-C	-7.21	104.99	113.42
39	Q	114	SER	N-CA-C	-7.15	103.42	111.14
22	y	22	LEU	CA-C-N	-7.14	111.18	122.17
22	y	22	LEU	C-N-CA	-7.14	111.18	122.17
46	X	66	VAL	N-CA-C	7.13	118.19	111.48
46	X	30	LEU	O-C-N	-7.11	114.47	122.86
34	L	147	ASN	CA-C-N	-7.11	111.41	121.72
34	L	147	ASN	C-N-CA	-7.11	111.41	121.72
46	X	23	GLU	CA-C-N	-7.10	109.97	122.26
46	X	23	GLU	C-N-CA	-7.10	109.97	122.26
34	L	98	LEU	CA-C-N	-7.10	108.61	120.68
34	L	98	LEU	C-N-CA	-7.10	108.61	120.68
9	l	139	GLY	CA-C-O	7.09	126.89	119.02
26	D	7	PRO	N-CA-C	7.09	122.49	111.21
36	N	103	VAL	CA-C-O	7.08	125.24	119.29
46	X	71	GLY	O-C-N	-7.08	114.63	122.84
49	a	48	LEU	CA-C-N	-7.04	107.61	121.41
49	a	48	LEU	C-N-CA	-7.04	107.61	121.41
49	a	22	ASP	CA-C-O	7.04	130.12	121.60
4	e	83	PRO	CA-C-N	-7.01	116.00	123.08
4	e	83	PRO	C-N-CA	-7.01	116.00	123.08

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
46	X	22	VAL	N-CA-C	7.01	117.80	110.72
6	g	121	VAL	N-CA-C	7.01	117.16	111.62
39	Q	96	THR	CA-C-N	-6.99	114.29	122.95
39	Q	96	THR	C-N-CA	-6.99	114.29	122.95
28	F	37	GLN	CA-C-N	6.98	134.27	121.70
28	F	37	GLN	C-N-CA	6.98	134.27	121.70
46	X	38	THR	CA-C-N	-6.96	114.56	123.19
46	X	38	THR	C-N-CA	-6.96	114.56	123.19
31	I	11	SER	CA-C-N	-6.96	108.96	121.14
31	I	11	SER	C-N-CA	-6.96	108.96	121.14
18	u	50	ALA	N-CA-C	-6.95	103.09	112.26
26	D	4	THR	N-CA-C	6.93	118.52	110.97
29	G	217	ALA	CA-C-N	-6.91	108.93	120.68
29	G	217	ALA	C-N-CA	-6.91	108.93	120.68
32	J	92	ARG	CA-C-O	-6.87	111.60	119.78
2	c	131	ASP	N-CA-C	6.87	120.45	110.42
31	I	152	SER	O-C-N	-6.86	113.47	122.59
37	O	23	ALA	CA-C-N	-6.86	110.55	120.29
37	O	23	ALA	C-N-CA	-6.86	110.55	120.29
39	Q	43	LYS	N-CA-C	6.86	124.97	109.81
5	f	92	GLY	N-CA-C	-6.85	105.73	114.37
1	b	13	ARG	N-CA-C	6.85	118.44	110.97
33	K	98	GLU	N-CA-C	-6.85	95.95	107.80
46	X	65	MET	CA-C-N	-6.85	116.26	122.97
46	X	65	MET	C-N-CA	-6.85	116.26	122.97
27	E	33	THR	N-CA-C	-6.84	106.82	114.62
3	d	145	ASP	CA-C-N	-6.82	113.10	122.92
3	d	145	ASP	C-N-CA	-6.82	113.10	122.92
8	k	90	ASN	CA-C-N	-6.82	111.29	122.54
8	k	90	ASN	C-N-CA	-6.82	111.29	122.54
31	I	104	MET	N-CA-C	-6.82	104.71	113.16
46	X	44	ILE	N-CA-C	6.81	118.57	109.37
22	y	27	ASN	CA-C-N	-6.81	109.96	120.31
22	y	27	ASN	C-N-CA	-6.81	109.96	120.31
42	T	69	LEU	N-CA-C	-6.80	103.66	112.23
32	J	122	VAL	CA-C-N	-6.78	113.15	122.30
32	J	122	VAL	C-N-CA	-6.78	113.15	122.30
37	O	95	GLY	N-CA-C	-6.77	106.63	114.69
32	J	70	MET	N-CA-C	6.74	120.00	109.96
16	s	33	LEU	CA-C-N	-6.71	109.27	120.68
16	s	33	LEU	C-N-CA	-6.71	109.27	120.68
50	3	1201	A	C2'-C3'-O3'	6.68	119.52	109.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	l	96	LYS	N-CA-C	-6.67	104.08	111.82
41	S	77	GLY	CA-C-O	6.67	126.57	119.04
53	5	17(A)	U	C2'-C3'-O3'	6.67	119.50	109.50
32	J	69	ASN	CA-C-N	-6.66	111.16	121.02
32	J	69	ASN	C-N-CA	-6.66	111.16	121.02
32	J	162	GLU	CA-C-N	-6.66	112.77	122.69
32	J	162	GLU	C-N-CA	-6.66	112.77	122.69
34	L	120	ALA	CA-C-N	-6.66	111.35	120.28
34	L	120	ALA	C-N-CA	-6.66	111.35	120.28
4	e	53	ALA	CA-C-N	-6.65	109.95	121.66
4	e	53	ALA	C-N-CA	-6.65	109.95	121.66
31	I	154	VAL	N-CA-C	-6.65	104.03	113.07
33	K	22	ILE	N-CA-C	-6.65	104.01	110.72
4	e	12	VAL	N-CA-C	-6.64	104.29	110.53
46	X	24	SER	CA-C-N	-6.61	107.62	122.04
46	X	24	SER	C-N-CA	-6.61	107.62	122.04
32	J	122	VAL	N-CA-C	6.61	123.09	109.34
46	X	9	PHE	N-CA-C	6.61	119.17	108.34
37	O	68	ARG	CA-C-N	-6.60	113.89	123.00
37	O	68	ARG	C-N-CA	-6.60	113.89	123.00
30	H	95	GLY	CA-C-N	-6.59	117.59	123.33
30	H	95	GLY	C-N-CA	-6.59	117.59	123.33
3	d	119	ILE	O-C-N	-6.57	116.23	123.20
10	m	71	LYS	CA-C-N	-6.57	113.17	120.14
10	m	71	LYS	C-N-CA	-6.57	113.17	120.14
41	S	17	ASP	CA-C-N	-6.56	110.58	121.92
41	S	17	ASP	C-N-CA	-6.56	110.58	121.92
4	e	64	PRO	CA-C-N	-6.55	111.69	122.11
4	e	64	PRO	C-N-CA	-6.55	111.69	122.11
3	d	119	ILE	CA-C-O	6.55	127.20	120.39
32	J	61	LYS	N-CA-C	-6.55	103.98	112.23
46	X	24	SER	N-CA-C	-6.55	105.32	113.38
34	L	42	VAL	N-CA-C	-6.53	103.42	112.50
46	X	18	VAL	CA-C-O	6.53	126.78	119.92
4	e	102	LEU	CA-C-N	-6.50	111.13	121.34
4	e	102	LEU	C-N-CA	-6.50	111.13	121.34
47	Y	26	MET	N-CA-C	-6.50	104.12	111.14
8	k	88	ASN	N-CA-C	6.50	120.13	112.72
45	W	66	LEU	N-CA-C	-6.49	104.39	112.90
49	a	26	ALA	N-CA-C	6.48	118.35	111.28
32	J	86	GLY	O-C-N	6.48	131.12	122.70
4	e	35	LEU	CA-C-N	-6.47	113.81	122.42

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	e	35	LEU	C-N-CA	-6.47	113.81	122.42
30	H	7	ASN	CA-C-N	-6.46	112.89	120.00
30	H	7	ASN	C-N-CA	-6.46	112.89	120.00
48	Z	60	ALA	CA-C-N	-6.46	112.04	120.44
48	Z	60	ALA	C-N-CA	-6.46	112.04	120.44
18	u	98	ASN	N-CA-C	-6.46	106.61	114.75
32	J	114	LEU	CA-C-N	-6.46	110.75	121.92
32	J	114	LEU	C-N-CA	-6.46	110.75	121.92
39	Q	117	GLY	CA-C-N	-6.46	112.17	122.50
39	Q	117	GLY	C-N-CA	-6.46	112.17	122.50
40	R	58	GLU	CA-C-N	-6.46	110.05	120.64
40	R	58	GLU	C-N-CA	-6.46	110.05	120.64
37	O	28	THR	N-CA-C	-6.45	106.13	112.97
36	N	17	ARG	CA-C-N	-6.44	115.20	123.19
36	N	17	ARG	C-N-CA	-6.44	115.20	123.19
46	X	43	MET	CA-C-N	-6.44	112.07	120.63
46	X	43	MET	C-N-CA	-6.44	112.07	120.63
2	c	111	GLY	O-C-N	-6.43	117.73	123.65
22	y	61	ALA	N-CA-C	-6.42	100.48	110.17
30	H	119	ILE	CA-C-N	-6.42	109.77	120.68
30	H	119	ILE	C-N-CA	-6.42	109.77	120.68
35	M	45	ILE	N-CA-C	6.41	117.74	107.73
43	U	61	VAL	N-CA-C	-6.41	102.85	111.44
1	b	217	PRO	N-CA-C	6.40	121.26	111.15
44	V	11	VAL	N-CA-C	6.40	117.30	109.30
4	e	82	TYR	CA-C-O	6.39	126.28	119.50
30	H	46	LEU	CA-C-N	-6.37	110.08	120.72
30	H	46	LEU	C-N-CA	-6.37	110.08	120.72
39	Q	48	LEU	CA-C-N	-6.37	112.67	122.09
39	Q	48	LEU	C-N-CA	-6.37	112.67	122.09
50	3	967	C	O3'-P-O5'	6.37	113.55	104.00
39	Q	105	GLY	CA-C-N	-6.34	110.56	121.97
39	Q	105	GLY	C-N-CA	-6.34	110.56	121.97
38	P	67	GLU	N-CA-C	-6.32	104.27	112.23
6	g	72	ILE	N-CA-C	6.32	118.98	111.09
3	d	179	SER	N-CA-C	-6.29	105.09	112.89
51	1	2326	C	C2'-C3'-O3'	6.28	118.92	109.50
46	X	30	LEU	N-CA-C	6.27	119.34	110.50
30	H	135	ARG	N-CA-C	-6.26	105.12	112.89
38	P	97	ARG	CA-C-N	-6.25	110.20	121.14
38	P	97	ARG	C-N-CA	-6.25	110.20	121.14
40	R	22	TYR	N-CA-C	6.25	119.68	110.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
46	X	71	GLY	CA-C-O	6.24	127.13	119.01
1	b	18	VAL	CA-C-N	-6.23	114.33	122.37
1	b	18	VAL	C-N-CA	-6.23	114.33	122.37
36	N	71	ILE	N-CA-C	6.23	116.39	110.53
17	t	10	VAL	N-CA-C	6.22	118.83	111.05
4	e	9	ASP	CA-C-O	6.22	127.55	120.71
45	W	57	ALA	CA-C-N	-6.22	112.72	120.56
45	W	57	ALA	C-N-CA	-6.22	112.72	120.56
33	K	97	THR	N-CA-C	6.22	119.69	108.69
36	N	79	ARG	CA-C-O	6.20	127.08	120.70
46	X	32	THR	N-CA-C	6.20	118.51	108.41
29	G	138	ARG	N-CA-C	-6.19	104.44	112.23
34	L	143	MET	CA-C-N	-6.18	108.47	121.64
34	L	143	MET	C-N-CA	-6.18	108.47	121.64
8	k	48	PRO	N-CA-C	6.18	121.63	114.03
48	Z	30	GLU	CA-C-N	-6.18	110.95	122.69
48	Z	30	GLU	C-N-CA	-6.18	110.95	122.69
33	K	15	SER	CA-C-N	-6.18	111.58	122.26
33	K	15	SER	C-N-CA	-6.18	111.58	122.26
4	e	70	ARG	N-CA-C	6.17	118.09	111.36
34	L	21	LEU	CA-C-N	-6.17	110.80	121.66
34	L	21	LEU	C-N-CA	-6.17	110.80	121.66
1	b	11	GLY	N-CA-C	-6.17	106.60	114.37
3	d	119	ILE	CA-C-N	-6.16	115.11	123.12
3	d	119	ILE	C-N-CA	-6.16	115.11	123.12
47	Y	15	LYS	CA-C-N	-6.16	110.44	120.72
47	Y	15	LYS	C-N-CA	-6.16	110.44	120.72
45	W	62	ARG	N-CA-C	-6.16	104.68	111.82
6	g	15	LEU	N-CA-C	6.15	118.11	110.91
32	J	117	ALA	N-CA-C	-6.15	104.12	111.69
40	R	29	SER	N-CA-C	-6.14	104.13	111.69
45	W	42	ARG	CA-C-N	-6.14	116.32	122.77
45	W	42	ARG	C-N-CA	-6.14	116.32	122.77
30	H	177	LEU	N-CA-C	6.14	120.38	113.01
9	l	67	THR	CA-C-O	6.14	127.07	120.32
33	K	30	THR	N-CA-C	-6.13	105.80	113.28
29	G	201	GLY	O-C-N	6.13	130.67	122.70
5	f	64	ALA	CA-C-N	-6.12	109.89	120.79
5	f	64	ALA	C-N-CA	-6.12	109.89	120.79
11	n	89	SER	CA-C-N	-6.12	112.75	121.50
11	n	89	SER	C-N-CA	-6.12	112.75	121.50
34	L	133	ALA	CA-C-O	6.11	127.02	120.55

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
33	K	59	TYR	O-C-N	6.11	131.17	123.23
40	R	94	LEU	O-C-N	-6.09	117.59	121.85
14	q	79	ILE	N-CA-C	-6.09	104.36	111.00
31	I	196	GLU	N-CA-C	6.05	118.67	111.71
43	U	79	ASN	N-CA-C	6.05	118.86	109.60
46	X	76	THR	CA-C-O	6.05	125.80	119.14
10	m	76	LYS	N-CA-C	-6.05	102.03	109.65
6	g	35	LYS	O-C-N	6.03	130.78	122.46
38	P	78	ILE	N-CA-C	6.03	117.47	108.54
49	a	185	LEU	CA-C-N	-6.03	110.43	120.68
49	a	185	LEU	C-N-CA	-6.03	110.43	120.68
7	j	46	PRO	N-CA-C	6.03	122.55	113.81
2	c	188	LEU	CA-C-N	-6.01	113.67	122.68
2	c	188	LEU	C-N-CA	-6.01	113.67	122.68
30	H	75	VAL	CA-C-N	-6.01	114.50	121.71
30	H	75	VAL	C-N-CA	-6.01	114.50	121.71
2	c	157	LYS	O-C-N	6.00	130.31	122.93
38	P	105	ARG	CA-C-N	-6.00	115.75	123.19
38	P	105	ARG	C-N-CA	-6.00	115.75	123.19
29	G	112	ARG	N-CA-C	-5.99	104.69	112.23
35	M	101	ALA	CA-C-N	-5.98	115.40	122.93
35	M	101	ALA	C-N-CA	-5.98	115.40	122.93
8	k	41	ILE	N-CA-C	5.97	117.44	108.96
31	I	12	ARG	CA-C-N	-5.97	111.37	122.60
31	I	12	ARG	C-N-CA	-5.97	111.37	122.60
34	L	119	LEU	N-CA-C	-5.97	105.95	113.18
38	P	69	CYS	N-CA-C	-5.95	105.68	113.12
38	P	61	ALA	CA-C-N	-5.95	111.26	120.31
38	P	61	ALA	C-N-CA	-5.95	111.26	120.31
8	k	11	ALA	N-CA-C	5.95	119.80	111.30
49	a	185	LEU	N-CA-C	-5.95	104.74	112.23
49	a	191	ALA	N-CA-C	-5.95	105.52	112.89
30	H	15	LYS	N-CA-C	5.94	118.90	110.40
42	T	68	TYR	CA-C-N	-5.94	110.58	120.68
42	T	68	TYR	C-N-CA	-5.94	110.58	120.68
1	b	265	PHE	CA-C-N	-5.93	114.95	122.37
1	b	265	PHE	C-N-CA	-5.93	114.95	122.37
42	T	64	LYS	N-CA-C	-5.90	104.79	112.23
4	e	32	LYS	CA-C-N	-5.89	112.77	122.67
4	e	32	LYS	C-N-CA	-5.89	112.77	122.67
39	Q	116	TYR	N-CA-C	5.89	120.04	112.86
33	K	40	GLU	N-CA-C	5.88	123.33	110.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
40	R	113	LYS	N-CA-C	5.87	122.78	109.81
49	a	164	ARG	CA-C-N	-5.86	112.43	123.27
49	a	164	ARG	C-N-CA	-5.86	112.43	123.27
32	J	119	VAL	CA-C-N	-5.85	114.44	122.87
32	J	119	VAL	C-N-CA	-5.85	114.44	122.87
26	D	26	ASN	CA-C-N	-5.85	112.97	120.34
26	D	26	ASN	C-N-CA	-5.85	112.97	120.34
39	Q	121	PRO	N-CA-C	-5.85	101.97	110.80
30	H	74	ILE	CA-C-N	-5.84	113.39	122.09
30	H	74	ILE	C-N-CA	-5.84	113.39	122.09
42	T	30	LEU	N-CA-C	-5.84	104.51	111.69
42	T	83	ARG	N-CA-C	-5.84	104.88	112.23
33	K	94	HIS	N-CA-C	5.83	118.31	111.02
30	H	40	GLN	N-CA-C	-5.83	105.06	111.82
29	G	202	ASN	N-CA-C	5.82	118.22	110.53
10	m	99	GLY	CA-C-N	-5.82	113.98	122.19
10	m	99	GLY	C-N-CA	-5.82	113.98	122.19
41	S	64	ARG	N-CA-C	5.82	117.70	111.36
4	e	94	ARG	N-CA-C	-5.82	105.07	111.82
48	Z	8	ASN	N-CA-C	5.81	123.18	110.80
5	f	140	ILE	CA-C-N	-5.81	113.02	120.34
5	f	140	ILE	C-N-CA	-5.81	113.02	120.34
29	G	42	LEU	N-CA-C	5.80	117.60	111.28
38	P	105	ARG	O-C-N	-5.79	115.59	122.65
1	b	30	ALA	N-CA-C	5.77	122.56	109.81
37	O	50	THR	CA-C-N	-5.77	115.27	123.17
37	O	50	THR	C-N-CA	-5.77	115.27	123.17
1	b	260	LYS	O-C-N	-5.76	114.93	122.59
20	w	30	GLY	CA-C-O	5.75	125.37	119.10
36	N	27	ILE	CA-C-N	-5.74	115.69	123.10
36	N	27	ILE	C-N-CA	-5.74	115.69	123.10
5	f	80	GLU	N-CA-C	-5.73	105.38	112.72
49	a	208	TYR	O-C-N	5.73	130.22	122.59
4	e	12	VAL	CA-C-N	-5.72	111.44	120.60
4	e	12	VAL	C-N-CA	-5.72	111.44	120.60
32	J	121	ASN	N-CA-C	5.72	122.98	110.80
37	O	44	THR	CA-C-O	5.70	126.65	120.43
6	g	52	ALA	CA-C-N	-5.70	113.40	122.29
6	g	52	ALA	C-N-CA	-5.70	113.40	122.29
10	m	116	ALA	N-CA-C	-5.70	105.15	111.36
10	m	58	LYS	N-CA-C	5.69	122.92	110.80
29	G	39	ILE	CA-C-N	-5.69	113.81	121.66

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
29	G	39	ILE	C-N-CA	-5.69	113.81	121.66
33	K	16	GLU	CA-C-N	-5.68	112.43	122.26
33	K	16	GLU	C-N-CA	-5.68	112.43	122.26
49	a	59	VAL	O-C-N	5.68	128.22	122.71
38	P	19	VAL	CA-C-O	5.67	128.06	120.69
41	S	46	LYS	N-CA-C	-5.66	105.09	112.23
32	J	112	ALA	CA-C-N	-5.66	110.56	120.29
32	J	112	ALA	C-N-CA	-5.66	110.56	120.29
31	I	163	GLN	CA-C-N	-5.66	110.74	121.54
31	I	163	GLN	C-N-CA	-5.66	110.74	121.54
35	M	20	ASN	N-CA-C	5.65	118.08	111.02
29	G	219	THR	N-CA-C	5.65	117.52	111.36
10	m	60	GLN	N-CA-C	5.64	118.87	109.96
41	S	12	ARG	CA-C-N	-5.64	112.20	121.34
41	S	12	ARG	C-N-CA	-5.64	112.20	121.34
41	S	63	CYS	CA-C-N	-5.63	112.29	120.29
41	S	63	CYS	C-N-CA	-5.63	112.29	120.29
49	a	25	GLU	CA-C-N	-5.63	112.74	120.28
49	a	25	GLU	C-N-CA	-5.63	112.74	120.28
24	B	17	SER	N-CA-C	5.62	117.10	110.97
30	H	183	TYR	CA-C-N	-5.61	111.35	121.62
30	H	183	TYR	C-N-CA	-5.61	111.35	121.62
40	R	94	LEU	CA-C-O	5.61	125.63	119.91
36	N	31	GLN	CA-C-N	-5.60	114.02	122.81
36	N	31	GLN	C-N-CA	-5.60	114.02	122.81
31	I	56	GLU	CA-C-O	5.59	126.46	120.70
36	N	57	VAL	N-CA-C	5.59	120.97	109.34
38	P	55	ARG	CA-C-N	-5.59	112.35	120.29
38	P	55	ARG	C-N-CA	-5.59	112.35	120.29
37	O	34	ALA	N-CA-C	5.58	122.69	110.80
17	t	67	VAL	CA-C-N	-5.58	115.02	122.72
17	t	67	VAL	C-N-CA	-5.58	115.02	122.72
40	R	109	LYS	CA-C-N	-5.56	113.14	121.87
40	R	109	LYS	C-N-CA	-5.56	113.14	121.87
29	G	46	VAL	N-CA-C	5.56	120.88	108.88
10	m	79	ALA	CA-C-N	-5.55	115.95	123.10
10	m	79	ALA	C-N-CA	-5.55	115.95	123.10
22	y	17	GLU	N-CA-C	-5.54	105.32	111.36
41	S	82	LYS	N-CA-C	-5.54	105.39	111.82
45	W	48	ALA	N-CA-C	5.53	117.39	111.36
40	R	96	VAL	N-CA-C	5.53	120.84	109.34
11	n	79	LEU	N-CA-C	-5.53	102.58	110.59

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
35	M	101	ALA	CA-C-O	5.51	126.92	120.80
35	M	32	LYS	CA-C-N	-5.51	111.61	120.64
35	M	32	LYS	C-N-CA	-5.51	111.61	120.64
19	v	46	LYS	CA-C-O	5.51	126.26	120.42
7	j	25	LEU	N-CA-C	5.50	120.39	111.37
18	u	76	THR	N-CA-C	-5.50	106.93	113.97
5	f	129	GLU	CA-C-N	-5.50	116.01	123.10
5	f	129	GLU	C-N-CA	-5.50	116.01	123.10
34	L	109	LYS	N-CA-C	-5.50	102.04	109.95
50	3	965	U	O3'-P-O5'	5.49	112.24	104.00
4	e	11	VAL	N-CA-C	-5.49	105.18	110.72
6	g	56	ALA	N-CA-C	-5.49	105.40	111.71
4	e	16	MET	N-CA-C	-5.48	104.95	111.69
34	L	96	ASN	CA-C-O	5.47	126.22	120.42
6	g	6	LEU	CA-C-N	-5.46	113.43	122.39
6	g	6	LEU	C-N-CA	-5.46	113.43	122.39
34	L	133	ALA	CA-C-N	-5.45	115.37	121.85
34	L	133	ALA	C-N-CA	-5.45	115.37	121.85
51	1	1178	C	N1-C1'-C2'	5.45	120.17	112.00
4	e	137	PHE	N-CA-C	-5.45	101.36	109.42
7	j	18	VAL	CA-C-O	5.45	126.05	120.39
12	o	12	THR	N-CA-C	5.44	117.92	111.33
1	b	85	ASN	CA-C-N	-5.43	112.30	122.73
1	b	85	ASN	C-N-CA	-5.43	112.30	122.73
1	b	146	LYS	N-CA-C	-5.43	103.32	110.39
3	d	162	ARG	N-CA-C	5.43	119.02	112.93
4	e	73	VAL	CA-C-O	5.43	126.46	120.48
14	q	116	LEU	N-CA-C	-5.43	105.38	112.23
43	U	75	ILE	N-CA-C	-5.43	104.95	112.50
38	P	98	ALA	N-CA-C	-5.43	106.15	112.89
15	r	49	ILE	N-CA-C	5.43	120.64	109.34
40	R	33	LEU	N-CA-C	-5.42	106.17	112.89
11	n	66	ALA	N-CA-C	-5.42	106.44	113.16
49	a	6	LYS	N-CA-C	5.42	116.88	110.97
1	b	262	THR	O-C-N	5.42	128.70	122.25
29	G	22	TRP	N-CA-C	5.41	118.49	110.48
22	y	43	LEU	CA-C-N	-5.41	113.04	120.28
22	y	43	LEU	C-N-CA	-5.41	113.04	120.28
30	H	138	GLN	N-CA-C	-5.41	105.47	111.36
42	T	66	LEU	CA-C-N	-5.41	112.57	121.92
42	T	66	LEU	C-N-CA	-5.41	112.57	121.92
31	I	14	GLU	CA-C-N	-5.40	110.82	121.41

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
31	I	14	GLU	C-N-CA	-5.40	110.82	121.41
34	L	37	THR	CA-C-N	-5.40	110.48	121.18
34	L	37	THR	C-N-CA	-5.40	110.48	121.18
46	X	17	LYS	N-CA-C	5.40	117.92	111.71
31	I	131	ILE	N-CA-C	5.40	115.36	108.12
48	Z	40	PRO	N-CA-C	5.40	123.60	112.47
1	b	232	GLY	N-CA-C	5.40	124.64	112.01
1	b	41	GLY	O-C-N	5.39	128.23	122.41
32	J	115	GLU	N-CA-C	-5.39	106.87	113.50
42	T	43	ALA	N-CA-C	-5.39	106.21	112.89
42	T	74	VAL	N-CA-C	5.38	116.11	110.62
35	M	69	ALA	CA-C-N	-5.38	113.69	121.65
35	M	69	ALA	C-N-CA	-5.38	113.69	121.65
29	G	76	SER	N-CA-C	5.37	116.83	110.97
48	Z	33	ARG	CA-C-N	-5.37	114.61	122.78
48	Z	33	ARG	C-N-CA	-5.37	114.61	122.78
29	G	107	ARG	N-CA-C	-5.37	105.59	111.82
51	1	1328	A	N9-C1'-C2'	5.37	120.06	112.00
2	c	75	ALA	N-CA-C	5.37	118.22	110.28
38	P	126	ARG	N-CA-C	-5.36	104.63	110.91
1	b	12	ARG	N-CA-C	-5.36	107.11	113.97
29	G	14	HIS	O-C-N	-5.36	115.16	122.33
9	l	40	SER	CA-C-N	-5.35	113.25	123.32
9	l	40	SER	C-N-CA	-5.35	113.25	123.32
5	f	45	ALA	N-CA-C	5.35	122.20	110.80
29	G	180	ILE	N-CA-C	5.35	114.00	109.02
28	F	30	GLU	N-CA-C	5.35	118.78	108.45
42	T	59	VAL	CA-C-N	-5.35	113.17	120.44
42	T	59	VAL	C-N-CA	-5.35	113.17	120.44
43	U	65	ALA	CA-C-O	5.35	126.78	120.58
46	X	64	GLU	CA-C-N	-5.34	115.23	123.14
46	X	64	GLU	C-N-CA	-5.34	115.23	123.14
34	L	89	GLU	CA-C-N	-5.34	113.96	122.50
34	L	89	GLU	C-N-CA	-5.34	113.96	122.50
2	c	135	GLY	CA-C-N	-5.33	113.13	121.02
2	c	135	GLY	C-N-CA	-5.33	113.13	121.02
4	e	9	ASP	CA-C-N	-5.33	113.83	121.98
4	e	9	ASP	C-N-CA	-5.33	113.83	121.98
3	d	146	VAL	N-CA-C	5.32	116.57	108.80
32	J	110	MET	N-CA-C	-5.31	105.54	112.23
29	G	222	GLU	N-CA-C	-5.31	106.65	113.02
31	I	59	LYS	CA-C-N	-5.30	112.10	120.47

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
31	I	59	LYS	C-N-CA	-5.30	112.10	120.47
8	k	106	GLU	CA-C-N	-5.30	111.34	121.94
8	k	106	GLU	C-N-CA	-5.30	111.34	121.94
46	X	33	TRP	N-CA-C	-5.30	106.66	113.23
6	g	50	ARG	N-CA-C	5.29	118.90	112.23
46	X	4	LEU	N-CA-C	5.29	122.07	110.80
50	3	1190	G	C2'-C3'-O3'	5.29	117.44	109.50
48	Z	49	ALA	N-CA-C	-5.29	105.69	111.82
4	e	66	ILE	CA-C-N	-5.28	113.94	122.81
4	e	66	ILE	C-N-CA	-5.28	113.94	122.81
31	I	63	ILE	CA-C-N	-5.28	112.24	122.06
31	I	63	ILE	C-N-CA	-5.28	112.24	122.06
51	1	1071	G	N9-C1'-C2'	5.28	119.92	112.00
7	j	22	GLY	CA-C-N	-5.28	112.63	121.39
7	j	22	GLY	C-N-CA	-5.28	112.63	121.39
8	k	9	ASN	CA-C-N	-5.28	113.58	120.91
8	k	9	ASN	C-N-CA	-5.28	113.58	120.91
29	G	80	LYS	CA-C-O	5.28	126.01	120.42
34	L	39	GLU	N-CA-C	-5.28	105.61	111.36
11	n	100	CYS	N-CA-C	5.28	119.22	111.04
48	Z	26	GLY	N-CA-C	5.28	125.68	113.18
25	C	13	SER	N-CA-C	-5.27	106.36	112.89
45	W	13	THR	O-C-N	5.27	128.21	122.20
29	G	132	GLU	CA-C-N	-5.27	112.81	120.29
29	G	132	GLU	C-N-CA	-5.27	112.81	120.29
49	a	199	ALA	CA-C-N	-5.26	110.94	120.94
49	a	199	ALA	C-N-CA	-5.26	110.94	120.94
1	b	270	ARG	N-CA-C	-5.26	102.49	110.28
30	H	109	GLU	CA-C-N	-5.26	113.11	122.42
30	H	109	GLU	C-N-CA	-5.26	113.11	122.42
13	p	16	VAL	N-CA-C	5.26	114.10	108.95
11	n	67	PHE	N-CA-C	-5.25	107.04	113.50
12	o	70	ALA	CA-C-N	-5.25	112.83	120.29
12	o	70	ALA	C-N-CA	-5.25	112.83	120.29
49	a	28	ALA	N-CA-C	-5.25	106.38	112.89
3	d	178	VAL	CA-C-N	-5.24	111.96	121.14
3	d	178	VAL	C-N-CA	-5.24	111.96	121.14
47	Y	6	ALA	CA-C-N	-5.24	111.97	121.14
47	Y	6	ALA	C-N-CA	-5.24	111.97	121.14
41	S	96	LYS	CA-C-O	5.23	127.23	121.11
6	g	32	PRO	CA-C-N	-5.23	112.91	122.38
6	g	32	PRO	C-N-CA	-5.23	112.91	122.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	b	202	ARG	CA-C-N	-5.23	116.71	123.19
1	b	202	ARG	C-N-CA	-5.23	116.71	123.19
6	g	59	ALA	CA-C-N	-5.22	112.38	120.31
6	g	59	ALA	C-N-CA	-5.22	112.38	120.31
23	z	52	PHE	N-CA-C	-5.22	106.71	114.64
18	u	48	VAL	N-CA-C	5.22	114.20	108.05
31	I	184	LYS	CA-C-O	5.21	125.01	119.80
50	3	966	G	O5'-P-OP1	-5.21	92.37	108.00
40	R	53	ASP	N-CA-C	5.21	117.70	111.71
1	b	177	SER	N-CA-C	-5.20	106.46	114.16
7	j	34	ARG	N-CA-C	-5.20	106.44	112.89
49	a	38	PHE	O-C-N	-5.20	117.46	123.33
36	N	43	ALA	N-CA-C	5.20	117.52	111.02
1	b	137	GLY	N-CA-C	-5.19	107.84	114.85
10	m	120	ALA	CA-C-N	-5.19	112.30	120.60
10	m	120	ALA	C-N-CA	-5.19	112.30	120.60
46	X	66	VAL	CB-CA-C	-5.19	107.30	111.71
5	f	113	ASP	CA-C-N	-5.19	113.30	122.74
5	f	113	ASP	C-N-CA	-5.19	113.30	122.74
12	o	76	LYS	N-CA-C	-5.18	105.70	112.23
48	Z	5	VAL	CA-C-O	5.18	127.25	120.78
36	N	82	ILE	N-CA-C	-5.18	105.36	111.00
2	c	62	LYS	N-CA-C	5.17	119.78	112.75
50	3	967	C	C2'-C3'-O3'	5.17	121.46	113.70
5	f	118	ALA	N-CA-C	5.17	116.27	108.46
6	g	9	VAL	N-CA-C	5.16	120.08	109.34
50	3	968	A	O3'-P-O5'	5.16	111.73	104.00
6	g	11	ASN	N-CA-C	5.15	121.78	110.80
10	m	57	VAL	N-CA-C	-5.15	106.06	113.07
39	Q	65	TYR	N-CA-C	5.15	117.15	108.96
33	K	10	VAL	N-CA-C	5.15	115.32	108.27
51	1	2430	A	C2'-C3'-O3'	5.14	121.42	113.70
39	Q	113	ARG	N-CA-C	5.14	119.18	113.01
49	a	24	ASN	CA-C-N	-5.14	114.17	122.23
49	a	24	ASN	C-N-CA	-5.14	114.17	122.23
21	x	65	THR	CA-C-N	-5.13	112.12	120.64
21	x	65	THR	C-N-CA	-5.13	112.12	120.64
34	L	79	VAL	N-CA-C	-5.13	106.04	113.07
9	l	104	GLN	CA-C-N	-5.13	114.30	122.50
9	l	104	GLN	C-N-CA	-5.13	114.30	122.50
4	e	153	ILE	CA-C-N	-5.12	114.62	122.87
4	e	153	ILE	C-N-CA	-5.12	114.62	122.87

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
34	L	112	ASP	N-CA-C	5.12	116.67	111.14
40	R	21	ILE	CA-C-O	5.12	126.64	120.65
46	X	31	ARG	CA-C-N	-5.12	115.78	123.00
46	X	31	ARG	C-N-CA	-5.12	115.78	123.00
16	s	106	VAL	CA-C-N	-5.12	116.44	123.14
16	s	106	VAL	C-N-CA	-5.12	116.44	123.14
7	j	37	ARG	N-CA-C	-5.11	107.21	113.50
33	K	32	ALA	CA-C-N	-5.11	118.84	126.86
33	K	32	ALA	C-N-CA	-5.11	118.84	126.86
36	N	73	GLY	CA-C-N	-5.11	112.54	120.31
36	N	73	GLY	C-N-CA	-5.11	112.54	120.31
8	k	61	VAL	CA-C-N	-5.10	114.12	122.33
8	k	61	VAL	C-N-CA	-5.10	114.12	122.33
31	I	134	TYR	N-CA-C	5.09	117.08	109.59
5	f	112	VAL	CA-C-N	-5.09	114.85	122.39
5	f	112	VAL	C-N-CA	-5.09	114.85	122.39
5	f	13	GLY	CA-C-N	-5.09	116.82	122.27
5	f	13	GLY	C-N-CA	-5.09	116.82	122.27
16	s	77	ASP	CA-C-O	5.09	126.10	120.71
40	R	58	GLU	N-CA-C	5.09	119.61	113.41
35	M	122	GLY	CA-C-O	5.08	124.42	120.91
40	R	61	LYS	N-CA-C	-5.07	107.48	113.97
29	G	221	ARG	N-CA-C	-5.07	105.85	112.23
42	T	76	ARG	N-CA-C	-5.06	105.94	111.82
36	N	82	ILE	CA-C-N	-5.06	112.27	120.72
36	N	82	ILE	C-N-CA	-5.06	112.27	120.72
31	I	176	LYS	N-CA-C	-5.06	107.11	113.28
35	M	92	PRO	N-CA-C	5.06	119.00	111.41
41	S	55	SER	N-CA-C	5.06	116.42	108.23
1	b	87	SER	N-CA-C	-5.05	107.50	113.97
2	c	200	ASP	CA-C-N	-5.05	114.74	122.62
2	c	200	ASP	C-N-CA	-5.05	114.74	122.62
47	Y	36	ALA	N-CA-C	-5.05	105.85	111.36
49	a	197	LYS	N-CA-C	-5.05	105.86	112.23
30	H	199	VAL	O-C-N	5.05	128.32	122.82
35	M	8	ASP	N-CA-C	-5.05	105.85	111.36
13	p	80	VAL	N-CA-C	-5.05	104.55	110.05
37	O	20	GLN	CA-C-N	-5.04	111.96	120.58
37	O	20	GLN	C-N-CA	-5.04	111.96	120.58
33	K	58	HIS	CA-C-N	-5.04	115.38	122.94
33	K	58	HIS	C-N-CA	-5.04	115.38	122.94
19	v	48	MET	N-CA-C	-5.04	105.98	111.82

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
50	3	967	C	OP1-P-O3'	-5.03	92.91	108.00
6	g	45	GLU	CA-C-N	-5.03	112.34	121.14
6	g	45	GLU	C-N-CA	-5.03	112.34	121.14
33	K	42	TRP	CA-C-N	-5.03	111.55	121.41
33	K	42	TRP	C-N-CA	-5.03	111.55	121.41
3	d	189	THR	N-CA-C	-5.02	102.85	110.28
31	I	125	ASN	N-CA-C	5.02	118.37	111.54
36	N	123	ARG	CA-C-N	-5.02	114.78	119.85
36	N	123	ARG	C-N-CA	-5.02	114.78	119.85
49	a	213	SER	CA-C-N	-5.02	116.14	123.06
49	a	213	SER	C-N-CA	-5.02	116.14	123.06
31	I	135	GLN	CA-C-O	5.01	126.39	120.98
36	N	40	ARG	CA-C-N	-5.01	115.04	122.56
36	N	40	ARG	C-N-CA	-5.01	115.04	122.56
45	W	38	ILE	N-CA-C	-5.01	103.03	109.30
47	Y	40	ALA	CA-C-N	-5.01	114.23	122.20
47	Y	40	ALA	C-N-CA	-5.01	114.23	122.20
7	j	109	LEU	CA-C-N	-5.01	114.79	119.85
7	j	109	LEU	C-N-CA	-5.01	114.79	119.85
17	t	52	GLU	N-CA-C	5.01	121.47	110.80
38	P	56	LYS	CA-C-N	-5.00	114.67	122.73
38	P	56	LYS	C-N-CA	-5.00	114.67	122.73
25	C	11	VAL	CA-C-N	-5.00	111.87	120.97
25	C	11	VAL	C-N-CA	-5.00	111.87	120.97

There are no chirality outliers.

All (23) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
51	1	1204	A	Sidechain
51	1	1301	A	Sidechain
51	1	1328	A	Sidechain
51	1	1438	U	Sidechain
51	1	1647	U	Sidechain
51	1	1722	A	Sidechain
51	1	27	G	Sidechain
51	1	279	A	Sidechain
51	1	446	G	Sidechain
51	1	450	G	Sidechain
51	1	476	G	Sidechain
51	1	477	A	Sidechain
51	1	500	G	Sidechain

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Mol	Chain	Res	Type	Group
51	1	501	A	Sidechain
51	1	506	G	Sidechain
51	1	51	G	Sidechain
51	1	512	G	Sidechain
51	1	775	G	Sidechain
52	2	119	A	Sidechain
52	2	24	G	Sidechain
29	G	14	HIS	Mainchain
32	J	92	ARG	Mainchain
6	g	8	LYS	Mainchain

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	b	2082	0	2157	88	0
2	c	1565	0	1616	49	0
3	d	1552	0	1619	48	0
4	e	1410	0	1447	106	0
5	f	1323	0	1374	42	0
6	g	1111	0	1147	69	0
7	j	1129	0	1162	47	0
8	k	938	0	1012	50	0
9	l	1045	0	1117	28	0
10	m	1074	0	1157	43	0
11	n	960	0	1000	44	0
12	o	892	0	923	48	0
13	p	917	0	965	43	0
14	q	947	0	1022	43	0
15	r	816	0	839	38	0
16	s	857	0	922	30	0
17	t	738	0	807	35	0
18	u	779	0	834	23	0
19	v	753	0	780	44	0
20	w	575	0	592	19	0
21	x	625	0	655	20	0
22	y	509	0	543	25	0
23	z	449	0	491	27	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
24	B	444	0	461	28	0
25	C	409	0	440	16	0
26	D	377	0	418	14	0
27	E	504	0	574	14	0
28	F	302	0	343	16	0
29	G	1756	0	1787	95	0
30	H	1624	0	1699	117	0
31	I	1643	0	1710	123	0
32	J	1156	0	1199	49	0
33	K	824	0	815	60	0
34	L	1181	0	1240	66	0
35	M	979	0	1034	49	0
36	N	1022	0	1070	66	0
37	O	786	0	828	61	0
38	P	869	0	878	68	0
39	Q	955	0	1019	62	0
40	R	883	0	944	81	0
41	S	805	0	847	55	0
42	T	714	0	737	47	0
43	U	649	0	666	40	0
44	V	648	0	691	34	0
45	W	535	0	552	36	0
46	X	637	0	665	61	0
47	Y	665	0	714	29	0
48	Z	544	0	579	37	0
49	a	1026	0	1092	60	0
50	3	33012	0	16618	709	0
51	1	62317	0	31346	1065	0
52	2	2568	0	1303	72	0
53	5	1578	0	804	27	0
54	4	437	0	219	15	0
All	All	144895	0	97473	3806	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 16.

All (3806) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:967:C:C3'	50:3:967:C:O3'	1.81	1.25
50:3:968:A:O3'	50:3:969:A:P	1.99	1.20

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:783:A:H2'	51:1:784:G:H4'	1.22	1.14
50:3:405:U:H3'	50:3:406:G:H5'	1.31	1.08
52:2:3:C:H3'	52:2:4:C:H5''	1.36	1.08
53:5:27:U:H2'	53:5:28:C:H5''	1.34	1.06
34:L:41:ILE:HG21	34:L:115:MET:HB3	1.44	0.97
51:1:275:C:H2'	51:1:276:U:H4'	1.47	0.96
51:1:2277:G:H2'	51:1:2278:A:H5''	1.48	0.95
51:1:1093:G:H21	51:1:1098:A:H62	1.10	0.94
51:1:1645:G:H5''	51:1:1646:C:H5'	1.47	0.94
51:1:1402:U:H2'	51:1:1403:A:H5''	1.46	0.93
6:g:121:VAL:HB	6:g:123:ARG:HG3	1.51	0.93
51:1:1728:C:H2'	51:1:1729:U:H5''	1.49	0.93
53:5:3:C:H3'	53:5:4:G:H5''	1.48	0.93
35:M:10:LEU:HB3	35:M:14:ARG:HH12	1.33	0.92
51:1:1515:A:H3'	51:1:1516:G:H5''	1.51	0.92
50:3:1268:G:H1'	50:3:1327:C:H5'	1.51	0.92
36:N:56:MET:HG3	36:N:57:VAL:H	1.34	0.92
38:P:29:THR:HG23	38:P:90:PRO:HD2	1.53	0.90
49:a:165:ASN:HD22	49:a:169:GLY:HA2	1.36	0.90
38:P:114:PRO:HB2	50:3:676:A:H5''	1.54	0.90
41:S:26:LEU:HA	41:S:30:ILE:HD12	1.54	0.89
4:e:91:ARG:HB2	52:2:43:C:O2'	1.73	0.89
51:1:955:U:H3	51:1:962:G:H1	1.16	0.89
36:N:123:ARG:HB3	50:3:1343:G:H4'	1.55	0.88
41:S:50:LEU:HG	41:S:51:PRO:HD2	1.54	0.88
28:F:3:VAL:HG22	28:F:36:ARG:HD3	1.54	0.88
50:3:153:C:H2'	50:3:154:U:H5''	1.54	0.88
4:e:61:GLY:HA3	4:e:90:LEU:HD21	1.56	0.87
54:4:14:A:H3'	54:4:15:A:H5''	1.56	0.87
50:3:769:G:H4'	50:3:1513:A:H4'	1.57	0.87
6:g:63:ALA:HA	6:g:66:ASN:HD22	1.36	0.87
7:j:7:LYS:HB2	7:j:10:THR:HG22	1.57	0.87
7:j:17:VAL:HG23	7:j:137:PRO:HB2	1.57	0.87
11:n:44:LEU:HD23	11:n:113:ILE:HD13	1.57	0.87
1:b:20:ASN:HD22	1:b:23:LEU:HG	1.38	0.86
38:P:28:ASN:ND2	38:P:46:ALA:H	1.73	0.86
51:1:1103:A:H3'	51:1:1104:C:H5''	1.55	0.86
51:1:1527:G:H21	51:1:1545:A:H62	1.23	0.86
51:1:2191:A:H3'	51:1:2192:U:H5''	1.58	0.85
2:c:49:GLN:NE2	2:c:79:LEU:HD13	1.90	0.85
46:X:62:THR:HG22	46:X:63:ASP:H	1.40	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:511:U:H2'	51:1:512:G:H5'	1.56	0.85
34:L:51:GLN:NE2	34:L:52:ARG:HG3	1.91	0.85
34:L:24:LYS:NZ	34:L:97:ALA:HA	1.92	0.85
29:G:96:LEU:O	29:G:99:MET:HG3	1.77	0.85
37:O:14:ASP:HB3	37:O:17:LEU:HG	1.59	0.85
51:1:548:G:H2'	51:1:549:G:O4'	1.76	0.84
44:V:45:VAL:HG13	44:V:60:ILE:HD13	1.57	0.84
38:P:28:ASN:HD21	38:P:46:ALA:H	1.24	0.84
19:v:80:HIS:HA	19:v:87:GLN:HE22	1.42	0.84
13:p:59:THR:HG22	13:p:72:VAL:HG12	1.58	0.84
15:r:14:VAL:HG21	15:r:98:ILE:HG13	1.59	0.84
6:g:134:VAL:HB	6:g:138:VAL:HB	1.60	0.84
37:O:56:HIS:ND1	37:O:57:VAL:HG13	1.93	0.83
25:C:22:THR:HG22	25:C:23:THR:H	1.40	0.83
36:N:12:LYS:HG3	36:N:105:ARG:HH22	1.43	0.83
1:b:266:ILE:HG21	1:b:269:ARG:HH21	1.42	0.83
50:3:1195:C:H2'	50:3:1197:A:H5'	1.61	0.83
39:Q:5:GLN:HA	39:Q:8:ARG:HG2	1.59	0.82
40:R:11:HIS:HA	40:R:43:LYS:HD3	1.61	0.82
31:I:8:LEU:HD22	50:3:429:U:H5'	1.61	0.82
52:2:3:C:C3'	52:2:4:C:H5''	2.09	0.82
38:P:12:ARG:HB3	38:P:14:GLN:NE2	1.95	0.82
12:o:26:LEU:HD13	12:o:39:VAL:HG22	1.62	0.81
50:3:1306:A:N6	50:3:1331:G:H1'	1.94	0.81
37:O:17:LEU:HA	37:O:20:GLN:HG2	1.60	0.81
51:1:2112:G:H2'	51:1:2113:U:H5'	1.63	0.81
17:t:54:GLU:HG3	17:t:88:LYS:HD2	1.63	0.81
51:1:2585:U:O2'	51:1:2586:U:H5'	1.80	0.81
51:1:1141:U:H4'	51:1:1142:A:O4'	1.81	0.81
38:P:123:PRO:HA	50:3:779:C:H4'	1.61	0.81
10:m:42:THR:HG22	10:m:93:VAL:HG12	1.62	0.80
51:1:783:A:C2'	51:1:784:G:H4'	2.07	0.80
49:a:5:THR:HG21	49:a:8:MET:HE3	1.64	0.79
40:R:25:GLY:H	50:3:1329:A:H5''	1.47	0.79
38:P:123:PRO:HB3	50:3:779:C:H5''	1.65	0.79
50:3:112:G:H21	50:3:354:G:H5'	1.48	0.79
42:T:63:ARG:HD2	42:T:66:LEU:HD12	1.64	0.79
51:1:2249:U:O2'	51:1:2250:G:H5'	1.83	0.78
6:g:22:LYS:HE2	6:g:22:LYS:HA	1.65	0.78
37:O:53:ILE:HG23	50:3:1060:U:H4'	1.64	0.78
51:1:2277:G:C2'	51:1:2278:A:H5''	2.13	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:e:121:PHE:HB2	4:e:162:ASP:OD1	1.83	0.78
51:1:543:G:H3'	51:1:544:C:H5''	1.66	0.78
51:1:2504:U:H2'	51:1:2505:G:H5''	1.66	0.78
28:F:31:PRO:HB3	51:1:2527:C:H5''	1.63	0.78
49:a:170:ILE:HG21	51:1:2177:C:H1'	1.66	0.77
50:3:1306:A:H61	50:3:1331:G:H1'	1.48	0.77
6:g:47:PHE:HA	6:g:51:ARG:HB2	1.66	0.77
6:g:80:ILE:HD12	6:g:94:ILE:HD11	1.66	0.77
13:p:38:ARG:HH22	50:3:346:G:H1'	1.49	0.77
36:N:21:LYS:HB2	36:N:61:ASP:OD1	1.83	0.77
38:P:12:ARG:HB3	38:P:14:GLN:HE22	1.49	0.77
51:1:1394:U:H4'	51:1:1603:A:H4'	1.64	0.77
1:b:140:VAL:HG12	1:b:191:LEU:HD23	1.67	0.77
4:e:147:ARG:HA	4:e:147:ARG:HH11	1.49	0.77
51:1:1874:C:H2'	51:1:1875:G:O4'	1.85	0.77
51:1:2055:C:H2'	51:1:2504:U:H4'	1.67	0.77
16:s:25:ARG:HH22	51:1:519:U:H5''	1.50	0.77
3:d:109:LEU:HD23	3:d:112:LEU:HD12	1.66	0.77
50:3:1321:U:H3'	50:3:1322:C:H2'	1.65	0.77
51:1:203:A:H3'	51:1:204:A:H5''	1.67	0.77
32:J:96:GLN:HE21	32:J:97:PRO:HD2	1.50	0.76
51:1:1744:A:H3'	51:1:1745:A:H8	1.50	0.76
40:R:25:GLY:N	50:3:1329:A:H5''	2.00	0.76
46:X:40:PHE:HB2	46:X:43:MET:HG3	1.67	0.76
50:3:1286:U:H2'	50:3:1287:A:H5'	1.67	0.76
18:u:28:LEU:HD12	18:u:32:LYS:HB2	1.67	0.76
34:L:24:LYS:HZ1	34:L:97:ALA:HA	1.49	0.76
51:1:2553:G:H3'	51:1:2554:U:H5''	1.68	0.76
37:O:40:ILE:HD12	37:O:73:LEU:HD23	1.68	0.76
16:s:29:VAL:HG23	16:s:69:LEU:O	1.86	0.76
36:N:17:ARG:HB2	36:N:65:THR:HG23	1.68	0.76
31:I:103:ARG:HH21	31:I:167:PRO:HG2	1.50	0.76
30:H:176:THR:HA	50:3:1111:A:H61	1.52	0.75
50:3:95:C:H3'	50:3:96:U:H5''	1.68	0.75
5:f:95:ALA:HB2	5:f:104:LEU:HD13	1.68	0.75
30:H:53:ARG:HG2	30:H:68:HIS:HB2	1.67	0.75
30:H:57:GLU:HB2	30:H:64:ARG:HB3	1.67	0.75
51:1:1433:A:H2'	51:1:1434:A:H8	1.49	0.75
1:b:77:VAL:HG21	1:b:109:LEU:HD11	1.67	0.75
29:G:14:HIS:O	29:G:15:PHE:O	2.04	0.75
30:H:75:VAL:HG21	30:H:102:ILE:HG21	1.67	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1496:A:H2'	51:1:1498:C:C5	2.21	0.75
6:g:75:LEU:HD23	6:g:75:LEU:H	1.50	0.75
31:I:70:GLN:HA	31:I:73:ASN:HD22	1.51	0.75
27:E:18:LYS:HG3	51:1:651:G:H5'	1.68	0.75
50:3:967:C:C3'	50:3:968:A:P	2.75	0.75
6:g:126:GLY:H	6:g:146:VAL:HG23	1.52	0.75
34:L:70:PRO:HG3	34:L:98:LEU:HD23	1.68	0.75
31:I:190:LEU:HD12	31:I:192:ALA:H	1.52	0.75
41:S:2:LYS:HD2	50:3:1049:U:O2'	1.86	0.75
51:1:2092:U:H4'	51:1:2093:G:H5''	1.68	0.75
11:n:114:GLU:HB2	11:n:118:ARG:HD2	1.69	0.74
33:K:48:ALA:HB1	45:W:68:PRO:HG3	1.67	0.74
51:1:1326:U:H2'	51:1:1327:A:H8	1.51	0.74
35:M:80:PRO:HG2	50:3:878:A:C5'	2.17	0.74
36:N:12:LYS:HZ2	36:N:109:GLN:HA	1.51	0.74
40:R:24:VAL:HG13	40:R:28:ARG:HG3	1.68	0.74
53:5:26:G:H3'	53:5:27:U:H5''	1.68	0.74
38:P:119:GLY:HA2	50:3:716:A:N3	2.02	0.74
51:1:1050:A:H61	51:1:1109:C:H42	1.36	0.74
41:S:52:ARG:HE	50:3:1219:A:H5''	1.53	0.74
51:1:1460:U:H3'	51:1:1461:C:H5'	1.68	0.74
9:l:95:LEU:HD22	9:l:100:ILE:HD11	1.69	0.74
50:3:967:C:C3'	50:3:968:A:OP1	2.36	0.74
53:5:27:U:C2'	53:5:28:C:H5''	2.15	0.74
44:V:16:MET:HE2	50:3:276:G:H5''	1.68	0.74
40:R:52:ILE:HD12	40:R:55:LEU:HD12	1.69	0.73
50:3:1497:G:H21	50:3:1519:A:H2	1.37	0.73
51:1:1547:C:H2'	51:1:1548:A:C8	2.23	0.73
51:1:1791:A:N1	51:1:1829:A:H4'	2.03	0.73
51:1:1093:G:N2	51:1:1098:A:H62	1.86	0.73
1:b:106:PRO:HD2	1:b:109:LEU:HD22	1.71	0.73
4:e:101:ARG:O	4:e:105:ILE:HG22	1.89	0.73
31:I:171:GLU:HB3	31:I:180:THR:HB	1.69	0.73
43:U:5:ARG:HB2	50:3:376:G:H5''	1.69	0.73
50:3:692:U:H4'	50:3:796:C:O2'	1.89	0.73
1:b:204:LEU:HD12	51:1:1791:A:H5''	1.71	0.72
51:1:1900:A:H1'	51:1:1970:A:H2'	1.71	0.72
31:I:131:ILE:HG21	50:3:620:C:H1'	1.71	0.72
35:M:98:LEU:HD12	35:M:99:GLY:N	2.04	0.72
41:S:68:ARG:HD3	50:3:1202:U:H1'	1.71	0.72
50:3:153:C:C2'	50:3:154:U:H5''	2.20	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:I:90:LEU:HD13	31:I:190:LEU:HD21	1.71	0.72
1:b:118:GLY:HA2	1:b:188:ARG:HH22	1.54	0.72
13:p:52:ARG:NH2	51:1:2720:U:H5''	2.04	0.72
18:u:33:VAL:HG13	18:u:66:VAL:HG22	1.72	0.72
29:G:86:CYS:HB2	29:G:220:VAL:HG23	1.72	0.72
51:1:1720:U:H2'	51:1:1721:G:O4'	1.90	0.72
10:m:22:GLN:HB3	51:1:907:G:OP1	1.89	0.72
54:4:7:G:H3'	54:4:8:A:H5''	1.70	0.72
9:l:90:VAL:HG13	9:l:95:LEU:HD21	1.72	0.72
40:R:82:LEU:HD12	46:X:65:MET:HE3	1.72	0.72
50:3:1163:A:H2'	50:3:1164:G:H5'	1.72	0.72
51:1:2156:G:H2'	51:1:2157:G:H5'	1.72	0.72
28:F:22:VAL:HG13	28:F:37:GLN:HB2	1.72	0.71
31:I:109:THR:H	31:I:112:GLU:HB3	1.54	0.71
39:Q:36:VAL:H	39:Q:75:GLU:HG2	1.55	0.71
39:Q:120:ARG:HB3	39:Q:121:PRO:HD2	1.70	0.71
51:1:388:G:H2'	51:1:390:U:H5	1.54	0.71
51:1:1597:A:H5''	51:1:1598:A:H5'	1.72	0.71
6:g:7:ASP:CG	6:g:8:LYS:H	1.98	0.71
32:J:83:PRO:HB3	32:J:97:PRO:HD3	1.71	0.71
42:T:17:ASP:OD2	42:T:19:ASN:HB2	1.90	0.71
51:1:2191:A:C3'	51:1:2192:U:H5''	2.20	0.71
10:m:20:LEU:HD13	19:v:81:PRO:HG2	1.73	0.71
42:T:6:ALA:HA	42:T:9:LYS:HD3	1.71	0.71
50:3:1135:U:H2'	50:3:1137:C:OP2	1.89	0.71
34:L:28:ILE:HB	34:L:104:VAL:HG21	1.73	0.71
39:Q:53:ARG:HH11	39:Q:63:THR:HG23	1.53	0.71
50:3:1492:A:H2'	50:3:1493:A:H4'	1.71	0.71
51:1:1817:G:N2	51:1:1818:U:H1'	2.06	0.71
4:e:62:GLN:C	4:e:63:LYS:HD3	2.14	0.71
29:G:186:VAL:HB	29:G:192:PRO:HG3	1.73	0.71
35:M:80:PRO:HG2	50:3:878:A:H5''	1.72	0.71
3:d:200:LEU:HD12	3:d:201:ALA:N	2.04	0.71
19:v:44:HIS:NE2	19:v:85:LYS:HA	2.06	0.71
37:O:44:THR:HG23	37:O:69:THR:O	1.91	0.71
52:2:28:C:H2'	52:2:29:A:C8	2.26	0.71
51:1:2682:A:H61	51:1:2728:U:H1'	1.53	0.71
2:c:10:GLY:H	2:c:197:THR:HG23	1.56	0.71
41:S:60:ARG:HD3	50:3:981:U:H1'	1.72	0.71
2:c:3:GLY:C	2:c:4:LEU:HD12	2.15	0.71
5:f:116:LEU:HD11	5:f:120:ILE:HB	1.71	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:G:113:LEU:O	29:G:117:GLU:HG3	1.91	0.71
51:1:572:A:H61	51:1:2029:G:H21	1.37	0.71
51:1:1043:C:O2	51:1:1112:G:N2	2.23	0.71
51:1:1448:G:H2'	51:1:1449:G:H8	1.54	0.71
40:R:13:HIS:NE2	50:3:1296:C:H5'	2.06	0.70
40:R:49:GLU:O	40:R:52:ILE:HG22	1.91	0.70
50:3:968:A:C3'	50:3:969:A:P	2.78	0.70
50:3:1134:G:H3'	50:3:1135:U:H5''	1.72	0.70
29:G:29:PHE:HB3	29:G:40:ILE:HG23	1.71	0.70
51:1:2190:G:H2'	51:1:2191:A:C8	2.26	0.70
36:N:11:ARG:HD2	36:N:105:ARG:HH12	1.56	0.70
6:g:40:THR:O	6:g:44:ILE:HG13	1.92	0.70
40:R:83:GLY:HA2	40:R:91:ARG:HH12	1.55	0.70
37:O:29:ALA:HB1	37:O:36:VAL:HG21	1.73	0.70
51:1:1664:A:H61	51:1:1996:C:H42	1.37	0.70
50:3:967:C:O3'	50:3:967:C:C4'	2.40	0.70
51:1:1496:A:H2'	51:1:1498:C:H5	1.54	0.70
51:1:1584:U:H2'	51:1:1585:C:H5'	1.73	0.70
8:k:101:GLY:HA2	13:p:65:ASN:OD1	1.92	0.70
42:T:86:LEU:HD23	42:T:86:LEU:H	1.57	0.70
43:U:25:ARG:NH1	43:U:25:ARG:HB2	2.06	0.70
1:b:207:ALA:HB2	51:1:1790:C:O2'	1.91	0.70
2:c:40:LEU:HD23	2:c:45:TYR:HA	1.72	0.70
5:f:101:VAL:HG12	5:f:115:GLN:HG3	1.72	0.70
17:t:9:LYS:HA	22:y:29:ARG:HH12	1.57	0.70
28:F:5:ALA:HB3	51:1:2466:C:H5'	1.74	0.70
31:I:20:LEU:HD12	31:I:21:LYS:N	2.07	0.70
49:a:6:LYS:O	49:a:10:VAL:HG23	1.92	0.70
50:3:692:U:H2'	50:3:694:A:OP2	1.92	0.70
50:3:1189:U:H2'	50:3:1190:G:H5'	1.72	0.70
51:1:2301:C:C3'	51:1:2302:U:H5''	2.21	0.70
54:4:7:G:C3'	54:4:8:A:H5''	2.21	0.70
14:q:40:LYS:HG2	14:q:44:TYR:CE2	2.27	0.70
24:B:5:ASN:ND2	51:1:2020:A:H62	1.90	0.70
51:1:322:A:H5'	51:1:340:A:H1'	1.73	0.70
51:1:1460:U:H3'	51:1:1461:C:C5'	2.20	0.70
7:j:8:PRO:HG3	7:j:48:VAL:HG13	1.74	0.70
22:y:42:LEU:O	22:y:46:VAL:HG23	1.91	0.70
29:G:153:MET:HG3	29:G:154:GLY:H	1.57	0.70
46:X:49:ALA:HB1	46:X:56:HIS:HB3	1.73	0.70
4:e:119:LYS:HG3	51:1:2303:G:O2'	1.92	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:M:91:LEU:HD12	35:M:116:ARG:HD3	1.74	0.69
35:M:120:LEU:HA	50:3:600:A:H5'	1.73	0.69
43:U:7:ALA:HB3	43:U:18:GLN:HB2	1.73	0.69
6:g:132:PHE:HB2	6:g:140:ALA:HB3	1.74	0.69
36:N:6:TYR:CE2	50:3:1147:C:H4'	2.27	0.69
8:k:48:PRO:CG	50:3:1422:G:H5'	2.22	0.69
51:1:544:C:H2'	51:1:545:U:C6	2.27	0.69
30:H:42:LEU:HA	30:H:46:LEU:HD13	1.73	0.69
35:M:3:GLN:HE22	50:3:755:G:H22	1.38	0.69
50:3:181:A:H3'	50:3:194:C:H42	1.57	0.69
51:1:1516:G:H2'	51:1:1517:G:H5'	1.74	0.69
51:1:1869:G:H3'	51:1:1870:C:C5'	2.23	0.69
11:n:29:VAL:HG13	11:n:83:LEU:HD11	1.74	0.69
9:l:30:THR:HG23	51:1:810:U:H3	1.58	0.69
13:p:52:ARG:HH22	51:1:2720:U:H5''	1.55	0.69
15:r:48:LYS:HG2	15:r:49:ILE:H	1.57	0.69
35:M:10:LEU:HB3	35:M:14:ARG:NH1	2.06	0.69
51:1:898:C:H2'	51:1:899:A:C8	2.28	0.69
51:1:1742:U:H2'	51:1:1743:G:H5'	1.74	0.69
3:d:3:LEU:HD12	3:d:3:LEU:O	1.93	0.69
4:e:69:ALA:HB1	51:1:2312:U:H5''	1.73	0.69
36:N:119:LYS:HG2	36:N:122:ARG:HB3	1.73	0.69
37:O:42:LEU:HD11	37:O:73:LEU:HB2	1.75	0.69
40:R:16:ILE:H	40:R:16:ILE:HD12	1.57	0.69
49:a:7:ARG:HH12	49:a:218:MET:HE1	1.57	0.69
51:1:1373:A:H5'	51:1:2212:A:H1'	1.73	0.69
51:1:1448:G:H2'	51:1:1449:G:C8	2.27	0.69
51:1:1450:G:H21	51:1:1452:G:H1	1.39	0.69
27:E:44:ARG:HH22	51:1:2349:G:H5''	1.58	0.69
50:3:1399:C:H4'	50:3:1400:C:H3'	1.75	0.69
12:o:66:GLY:HA2	12:o:102:ARG:NH2	2.08	0.69
48:Z:48:LYS:O	48:Z:52:VAL:HG23	1.92	0.69
49:a:174:THR:HG21	51:1:2124:G:H4'	1.74	0.69
8:k:76:VAL:H	13:p:72:VAL:HG22	1.57	0.68
12:o:4:LYS:O	12:o:8:ILE:HG13	1.92	0.68
19:v:75:GLN:HB2	19:v:92:VAL:HG13	1.75	0.68
40:R:87:GLY:O	40:R:91:ARG:HG3	1.93	0.68
42:T:57:ARG:HD2	42:T:58:MET:HE2	1.73	0.68
31:I:187:ARG:HH12	31:I:194:ILE:HG12	1.59	0.68
50:3:1012:A:H61	50:3:1017:U:H3	1.39	0.68
37:O:40:ILE:HB	37:O:73:LEU:HB3	1.76	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:25:C:H6	53:5:25:C:H5'	1.59	0.68
4:e:3:LEU:HA	4:e:6:TYR:HB3	1.76	0.68
4:e:43:ILE:HD11	4:e:77:LYS:HD2	1.74	0.68
7:j:27:ARG:HH22	51:1:1142:A:H4'	1.59	0.68
17:t:2:ILE:HD11	51:1:144:A:H5''	1.76	0.68
31:I:11:SER:HB2	31:I:20:LEU:HD21	1.76	0.68
51:1:310:A:C2'	51:1:311:A:H5''	2.23	0.68
51:1:1028:A:H2'	51:1:1029:A:C8	2.29	0.68
31:I:120:LYS:HG2	31:I:130:ASN:OD1	1.94	0.68
38:P:105:ARG:HG2	48:Z:11:PHE:CZ	2.29	0.68
53:5:47:U:H2'	53:5:50:U:OP1	1.94	0.68
51:1:2166:U:H2'	51:1:2167:U:H5'	1.76	0.68
40:R:15:VAL:HG23	40:R:29:SER:HB2	1.75	0.68
40:R:102:LYS:HA	50:3:1228:C:N4	2.09	0.68
51:1:275:C:H2'	51:1:276:U:C4'	2.22	0.68
48:Z:32:ARG:HG3	48:Z:33:ARG:HG2	1.75	0.68
49:a:216:THR:HG22	49:a:217:THR:H	1.59	0.68
19:v:16:ALA:HA	19:v:19:ARG:NH1	2.09	0.67
40:R:22:TYR:CE1	50:3:1330:U:H4'	2.29	0.67
43:U:23:ASP:HB3	43:U:26:ASN:ND2	2.10	0.67
50:3:1266:G:H2'	50:3:1267:C:H5''	1.76	0.67
51:1:362:A:H3'	51:1:363:G:H8	1.60	0.67
51:1:1402:U:C2'	51:1:1403:A:H5''	2.21	0.67
51:1:2347:C:H5	51:1:2382:G:H1'	1.59	0.67
36:N:30:ASN:O	36:N:31:GLN:HG2	1.94	0.67
48:Z:28:LEU:HD12	48:Z:29:ALA:N	2.08	0.67
2:c:108:ASP:OD2	2:c:206:ALA:HA	1.93	0.67
4:e:62:GLN:O	4:e:63:LYS:HD3	1.94	0.67
32:J:75:LEU:HD23	32:J:75:LEU:H	1.59	0.67
50:3:1330:U:H2'	50:3:1331:G:O4'	1.94	0.67
51:1:279:A:H2'	51:1:280:U:O4'	1.94	0.67
51:1:863:A:H2'	51:1:864:G:C8	2.29	0.67
1:b:5:CYS:SG	1:b:17:LYS:HE2	2.34	0.67
48:Z:54:ARG:HA	48:Z:57:LYS:HE3	1.77	0.67
49:a:166:ASP:OD2	49:a:168:ASN:HB2	1.94	0.67
50:3:1049:U:H5'	50:3:1201:A:H5''	1.75	0.67
50:3:1069:C:H2'	50:3:1070:U:H5''	1.76	0.67
31:I:59:LYS:O	31:I:63:ILE:HG13	1.94	0.67
38:P:23:HIS:HB2	50:3:706:A:O3'	1.94	0.67
38:P:84:MET:HA	38:P:110:THR:HG23	1.76	0.67
38:P:124:LYS:HA	48:Z:34:ARG:HD3	1.76	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:g:90:LEU:HG	6:g:92:GLY:H	1.59	0.67
50:3:817:C:H4'	50:3:818:G:H5''	1.77	0.67
51:1:1138:G:H2'	51:1:1139:G:O4'	1.94	0.67
38:P:45:THR:HG22	38:P:47:GLY:H	1.60	0.67
45:W:47:ARG:HB2	45:W:50:TYR:HD2	1.60	0.67
5:f:15:ASP:HB3	5:f:26:LYS:HB2	1.75	0.67
6:g:2:GLN:HG3	6:g:39:ALA:HB3	1.77	0.67
2:c:149:ASN:HB3	51:1:2572:A:OP2	1.94	0.67
30:H:119:ILE:HG21	30:H:197:VAL:HG11	1.77	0.67
39:Q:44:PRO:HG2	39:Q:45:ASN:OD1	1.94	0.67
48:Z:66:ARG:HG2	50:3:1088:G:H21	1.60	0.67
8:k:76:VAL:O	13:p:71:ARG:HG3	1.95	0.66
12:o:67:ASN:HA	52:2:50:A:OP2	1.94	0.66
34:L:1:PRO:HD2	50:3:935:A:H62	1.60	0.66
51:1:729:G:H4'	51:1:763:G:H5'	1.76	0.66
2:c:1:MET:HB3	2:c:205:PRO:HG3	1.75	0.66
39:Q:63:THR:O	39:Q:92:VAL:HG23	1.95	0.66
50:3:1346:A:H2'	50:3:1347:G:H4'	1.76	0.66
51:1:144:A:H2'	51:1:145:C:C6	2.30	0.66
8:k:98:ARG:HE	50:3:339:C:H5	1.42	0.66
37:O:26:VAL:O	37:O:30:LYS:HG3	1.95	0.66
48:Z:41:THR:HA	48:Z:44:ARG:HE	1.60	0.66
50:3:64:G:H4'	50:3:65:A:H3'	1.78	0.66
14:q:61:ILE:HD11	14:q:91:ARG:HD3	1.77	0.66
31:I:53:GLN:HG2	31:I:202:LEU:HG	1.77	0.66
51:1:1130:U:H4'	51:1:1131:G:OP1	1.93	0.66
19:v:21:ARG:HA	19:v:25:LYS:O	1.96	0.66
27:E:3:ILE:HG22	27:E:4:LYS:O	1.96	0.66
51:1:1423:G:H5'	51:1:1492:G:H21	1.60	0.66
51:1:1841:U:H2'	51:1:1842:G:H8	1.60	0.66
5:f:51:PHE:CZ	5:f:71:LEU:HD22	2.30	0.66
18:u:27:VAL:HG12	18:u:33:VAL:HG12	1.76	0.66
30:H:155:ARG:C	30:H:156:LEU:HD23	2.21	0.66
50:3:663:A:H2'	50:3:664:G:C8	2.31	0.66
51:1:745:G:O2'	51:1:748:G:H1'	1.96	0.66
52:2:66:A:H4'	52:2:67:G:C8	2.31	0.66
13:p:20:ARG:HB2	13:p:23:ASP:OD2	1.96	0.66
18:u:36:GLU:HA	18:u:61:GLU:HG2	1.76	0.66
44:V:60:ILE:HD11	44:V:72:TRP:HB3	1.77	0.66
50:3:1203:C:H2'	50:3:1204:A:C8	2.30	0.66
11:n:47:VAL:O	11:n:50:PRO:HD2	1.96	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:r:49:ILE:HD12	15:r:51:VAL:O	1.95	0.66
23:z:2:LYS:HZ2	23:z:4:ILE:HA	1.60	0.66
24:B:2:VAL:HG12	24:B:3:GLN:H	1.60	0.66
40:R:28:ARG:O	40:R:32:ILE:HG12	1.95	0.66
51:1:1745:A:H2'	51:1:1746:A:H8	1.60	0.66
6:g:126:GLY:N	6:g:146:VAL:HG23	2.10	0.66
41:S:2:LYS:HD3	41:S:5:MET:SD	2.36	0.66
51:1:940:G:H2'	51:1:941:A:H5''	1.78	0.66
53:5:15:G:H3'	53:5:16:C:C5'	2.26	0.66
46:X:9:PHE:HE2	46:X:36:ARG:HB2	1.60	0.65
6:g:12:LEU:HD12	6:g:13:GLY:N	2.11	0.65
14:q:10:ARG:O	14:q:14:LYS:HG3	1.95	0.65
20:w:11:ASP:CG	20:w:12:SER:H	2.04	0.65
26:D:24:THR:HG23	26:D:27:GLY:H	1.61	0.65
40:R:96:VAL:HG23	50:3:1308:U:P	2.36	0.65
47:Y:79:THR:HG21	50:3:187:G:H4'	1.78	0.65
49:a:67:HIS:CD2	49:a:184:LYS:HD2	2.31	0.65
50:3:968:A:OP1	50:3:968:A:H8	1.79	0.65
51:1:1070:A:H3'	51:1:1071:G:H5''	1.76	0.65
51:1:1499:C:H2'	51:1:1500:G:H8	1.62	0.65
3:d:146:VAL:HG12	3:d:185:LYS:HB2	1.78	0.65
16:s:62:ASP:OD2	16:s:64:ALA:HB2	1.96	0.65
19:v:72:VAL:HA	19:v:94:ALA:H	1.61	0.65
33:K:42:TRP:HE1	33:K:61:LEU:HD22	1.60	0.65
40:R:83:GLY:CA	40:R:91:ARG:HH22	2.09	0.65
20:w:33:ILE:HG22	20:w:34:VAL:HG23	1.77	0.65
36:N:53:LEU:HD23	36:N:53:LEU:H	1.61	0.65
40:R:72:ILE:O	40:R:76:ILE:HG13	1.95	0.65
50:3:679:C:H42	50:3:711:G:H1	1.43	0.65
50:3:1266:G:C2'	50:3:1267:C:H5''	2.26	0.65
5:f:89:VAL:HG11	5:f:162:ARG:HH11	1.61	0.65
29:G:105:THR:HG21	50:3:1104:G:H1'	1.79	0.65
41:S:1:ALA:HB3	50:3:1048:G:OP1	1.96	0.65
51:1:1877:A:H2'	51:1:1878:G:H5'	1.77	0.65
6:g:4:ILE:HG22	6:g:18:GLN:OE1	1.95	0.65
9:l:132:ARG:HG3	9:l:142:ILE:HD12	1.79	0.65
39:Q:101:LEU:HD23	39:Q:101:LEU:H	1.61	0.65
40:R:85:TYR:OH	46:X:76:THR:HG22	1.96	0.65
49:a:23:ILE:HG12	49:a:186:LYS:HE2	1.77	0.65
50:3:95:C:C3'	50:3:96:U:H5''	2.26	0.65
50:3:1496:C:H2'	50:3:1497:G:H8	1.62	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1278:C:H2'	51:1:1279:G:H8	1.62	0.65
51:1:2533:U:H2'	51:1:2534:A:O4'	1.97	0.65
38:P:21:HIS:CD2	50:3:708:C:H5'	2.32	0.65
51:1:288:U:H2'	51:1:289:G:C8	2.32	0.65
15:r:43:ASN:CG	15:r:44:GLY:H	2.05	0.65
31:I:73:ASN:HA	31:I:76:LYS:HE2	1.79	0.65
38:P:28:ASN:HD21	38:P:46:ALA:N	1.92	0.65
46:X:72:GLU:CD	50:3:1320:C:H4'	2.22	0.65
4:e:67:THR:HG21	4:e:87:LYS:HG2	1.77	0.65
9:l:30:THR:HG23	51:1:810:U:N3	2.11	0.65
37:O:6:ILE:HB	37:O:76:ILE:HB	1.76	0.65
46:X:44:ILE:HD12	46:X:63:ASP:HA	1.78	0.65
48:Z:66:ARG:HG3	50:3:1167:A:C2	2.32	0.65
49:a:165:ASN:ND2	49:a:169:GLY:HA2	2.09	0.65
50:3:1162:C:H2'	50:3:1163:A:H8	1.62	0.65
34:L:113:LYS:HD3	34:L:117:LEU:HD13	1.78	0.65
36:N:40:ARG:HG3	36:N:41:GLU:OE2	1.97	0.65
45:W:59:LYS:HD3	50:3:735:C:H5'	1.78	0.65
50:3:947:G:H5'	50:3:1333:A:O2'	1.96	0.65
51:1:1877:A:C2'	51:1:1878:G:H5'	2.27	0.65
51:1:2267:A:H5''	51:1:2268:A:H5'	1.79	0.65
36:N:123:ARG:HD2	50:3:1343:G:H5''	1.79	0.64
49:a:63:THR:HG23	49:a:192:LEU:HD21	1.77	0.64
1:b:224:MET:HE2	51:1:782:A:N1	2.11	0.64
7:j:99:ARG:O	7:j:103:ILE:HG13	1.97	0.64
13:p:92:ARG:O	51:1:2848:G:H2'	1.98	0.64
16:s:83:LYS:HD2	16:s:95:ARG:NH1	2.12	0.64
41:S:8:ARG:HH12	50:3:1218:C:H41	1.43	0.64
43:U:25:ARG:HB2	43:U:25:ARG:HH11	1.62	0.64
51:1:1866:A:H8	51:1:1875:G:H21	1.46	0.64
12:o:15:ARG:HH12	52:2:8:C:H5''	1.61	0.64
19:v:4:ILE:HG12	19:v:50:MET:HE1	1.80	0.64
34:L:39:GLU:O	34:L:42:VAL:HG12	1.97	0.64
50:3:426:U:H2'	50:3:427:U:C6	2.31	0.64
51:1:2310:C:H2'	51:1:2311:A:H5''	1.78	0.64
11:n:69:ARG:HG3	11:n:70:THR:HG23	1.78	0.64
31:I:90:LEU:HD21	31:I:194:ILE:HD11	1.78	0.64
36:N:17:ARG:HD2	50:3:1148:U:H1'	1.80	0.64
51:1:543:G:H2'	51:1:544:C:H4'	1.78	0.64
29:G:26:MET:HG3	29:G:188:THR:HA	1.80	0.64
29:G:69:VAL:HB	29:G:162:VAL:HA	1.77	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:M:68:LYS:HG3	35:M:69:ALA:H	1.63	0.64
51:1:554:U:H2'	51:1:555:G:O4'	1.96	0.64
26:D:34:ARG:NH2	26:D:39:ARG:HD2	2.12	0.64
40:R:64:VAL:HB	40:R:67:ASP:OD2	1.98	0.64
51:1:1139:G:O2'	51:1:1140:C:H5'	1.98	0.64
7:j:57:LEU:HD23	7:j:57:LEU:H	1.62	0.64
13:p:101:GLU:OE2	13:p:102:ARG:HG3	1.97	0.64
30:H:112:ALA:HB1	30:H:184:ASN:HB2	1.79	0.64
50:3:328:C:H4'	50:3:329:A:H5''	1.80	0.64
51:1:1127:A:H2'	51:1:1128:G:H5''	1.78	0.64
51:1:2286:G:C8	51:1:2286:G:H5'	2.32	0.64
51:1:2350:C:H2'	51:1:2351:G:O4'	1.98	0.64
24:B:24:VAL:HG13	24:B:25:THR:H	1.63	0.64
27:E:14:LYS:HD3	27:E:22:LYS:HD3	1.80	0.64
51:1:2600:A:O2'	51:1:2601:C:H5'	1.98	0.64
39:Q:3:VAL:O	39:Q:7:VAL:HG23	1.98	0.64
1:b:30:ALA:HB3	1:b:31:PRO:HD3	1.79	0.64
21:x:63:ILE:O	21:x:67:LEU:HD13	1.97	0.64
31:l:187:ARG:HH12	31:l:194:ILE:CG1	2.10	0.64
49:a:169:GLY:C	49:a:170:ILE:HD12	2.23	0.64
50:3:884:U:H4'	50:3:885:G:H5''	1.80	0.64
50:3:1293:C:H2'	50:3:1294:G:C8	2.32	0.64
50:3:1486:G:H2'	50:3:1487:G:C8	2.33	0.64
51:1:1826:G:H2'	51:1:1827:U:C6	2.32	0.64
30:H:116:ALA:HB1	30:H:186:SER:HB2	1.80	0.63
36:N:54:VAL:HG13	36:N:55:ASP:H	1.62	0.63
50:3:163:C:H2'	50:3:164:G:C8	2.33	0.63
50:3:1201:A:H1'	50:3:1202:U:OP2	1.96	0.63
42:T:30:LEU:HD12	42:T:31:LEU:N	2.14	0.63
48:Z:54:ARG:HD3	54:4:6:G:H5'	1.79	0.63
8:k:10:VAL:HG21	8:k:16:ALA:HB3	1.81	0.63
47:Y:34:VAL:O	47:Y:38:ILE:HG13	1.98	0.63
51:1:1499:C:H2'	51:1:1500:G:C8	2.33	0.63
3:d:118:LEU:HD11	3:d:188:MET:SD	2.39	0.63
32:J:15:ILE:HD12	32:J:35:LEU:HG	1.79	0.63
33:K:100:SER:HB3	33:K:101:PRO:HD3	1.80	0.63
36:N:10:ARG:HH22	50:3:1119:C:H5	1.46	0.63
41:S:92:ILE:O	41:S:95:LEU:HD13	1.98	0.63
42:T:61:GLN:O	42:T:65:LEU:HD23	1.98	0.63
50:3:410:G:H2'	50:3:429:U:C4	2.32	0.63
51:1:310:A:O2'	51:1:311:A:H5''	1.98	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1434:A:H2'	51:1:1435:G:C8	2.33	0.63
11:n:47:VAL:C	11:n:50:PRO:HD2	2.23	0.63
34:L:45:ALA:CB	34:L:119:LEU:HD23	2.29	0.63
35:M:8:ASP:O	35:M:11:THR:HG22	1.99	0.63
51:1:511:U:C2'	51:1:512:G:H5'	2.29	0.63
29:G:172:ILE:HG22	29:G:176:ASN:HD22	1.63	0.63
30:H:79:LYS:HE2	30:H:79:LYS:HA	1.80	0.63
50:3:381:C:H2'	50:3:382:A:O4'	1.98	0.63
50:3:889:A:H5'	50:3:891:U:H1'	1.80	0.63
50:3:1253:G:N2	50:3:1355:G:H4'	2.13	0.63
51:1:1744:A:H3'	51:1:1745:A:C8	2.34	0.63
1:b:12:ARG:HH21	51:1:728:G:H4'	1.63	0.63
3:d:129:PRO:HG3	3:d:156:ASN:HA	1.81	0.63
46:X:32:THR:HG23	46:X:50:VAL:HA	1.81	0.63
51:1:2126:A:H2'	51:1:2162:G:H21	1.62	0.63
51:1:2431:U:H5	51:1:2433:A:H62	1.47	0.63
29:G:116:LEU:HB3	29:G:140:LEU:HD21	1.80	0.63
50:3:1033:G:H2'	50:3:1034:G:H5''	1.81	0.63
51:1:492:A:H2'	51:1:493:G:O4'	1.99	0.63
51:1:1520:U:H2'	51:1:1521:G:C8	2.34	0.63
51:1:2277:G:C3'	51:1:2278:A:H5''	2.29	0.63
24:B:3:GLN:HA	51:1:2615:U:C2	2.33	0.63
31:I:173:ASP:OD2	31:I:178:GLU:HB3	1.98	0.63
43:U:67:ILE:HD13	43:U:75:ILE:HD12	1.80	0.63
44:V:12:VAL:HB	44:V:21:VAL:HG13	1.79	0.63
50:3:1539:C:O2'	50:3:1540:U:H5'	1.99	0.63
51:1:1737:G:C8	51:1:1738:G:H1'	2.34	0.63
51:1:867:C:H2'	51:1:868:U:H5'	1.81	0.62
1:b:95:TYR:HB2	1:b:99:GLU:HB3	1.81	0.62
1:b:154:ALA:HB2	1:b:161:VAL:HG23	1.80	0.62
31:I:57:LYS:HB3	31:I:202:LEU:HD12	1.81	0.62
50:3:43:C:H2'	50:3:44:A:H5''	1.80	0.62
52:2:28:C:H2'	52:2:29:A:H8	1.63	0.62
52:2:66:A:H2'	52:2:107:G:O6	1.99	0.62
2:c:61:THR:HB	51:1:2811:G:OP1	1.99	0.62
12:o:51:ALA:HB3	12:o:78:VAL:HG12	1.81	0.62
16:s:42:LYS:HB2	51:1:2010:G:H5''	1.81	0.62
45:W:40:PRO:HB3	50:3:720:C:H5''	1.81	0.62
51:1:1539:U:H2'	51:1:1540:G:H8	1.63	0.62
9:l:16:GLY:HA2	51:1:662:G:O3'	1.99	0.62
16:s:25:ARG:NH2	51:1:519:U:H5''	2.14	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:B:2:VAL:HG11	51:1:2016:U:H1'	1.79	0.62
33:K:85:ILE:HG22	33:K:86:ARG:HD3	1.81	0.62
1:b:259:ASN:OD1	1:b:261:ARG:HG2	1.99	0.62
8:k:76:VAL:HG22	13:p:72:VAL:HG22	1.81	0.62
35:M:3:GLN:NE2	50:3:755:G:H22	1.97	0.62
50:3:443:C:H2'	50:3:444:G:C8	2.35	0.62
30:H:42:LEU:HD22	30:H:54:ILE:HG21	1.80	0.62
51:1:2347:C:C5	51:1:2382:G:H1'	2.35	0.62
1:b:94:LEU:HD11	51:1:1501:G:H4'	1.81	0.62
30:H:156:LEU:HD21	30:H:163:ARG:HH11	1.64	0.62
50:3:673:A:H2'	50:3:674:G:C8	2.35	0.62
51:1:441:U:O2'	51:1:442:G:H5'	2.00	0.62
51:1:1697:G:H4'	51:1:1978:A:H5''	1.82	0.62
8:k:30:ARG:HD2	51:1:2674:G:H4'	1.82	0.62
32:J:84:VAL:HG22	32:J:85:LYS:H	1.63	0.62
11:n:40:LYS:NZ	51:1:1277:G:H5''	2.14	0.62
16:s:78:GLU:OE2	51:1:517:C:H1'	2.00	0.62
33:K:9:MET:HE1	33:K:51:ILE:HD12	1.82	0.62
33:K:18:VAL:N	33:K:19:PRO:CD	2.63	0.62
39:Q:53:ARG:HG3	39:Q:61:GLU:OE2	2.00	0.62
19:v:9:ARG:HG2	19:v:41:GLU:HB2	1.82	0.62
24:B:40:HIS:HA	24:B:48:TYR:OH	2.00	0.62
50:3:1450:U:H2'	50:3:1452:C:H5'	1.82	0.62
51:1:2156:G:C2'	51:1:2157:G:H5'	2.30	0.62
3:d:12:LEU:HD23	3:d:13:THR:N	2.15	0.61
4:e:130:GLY:HA3	51:1:2305:U:C2	2.34	0.61
31:I:8:LEU:HD22	50:3:429:U:C5'	2.30	0.61
42:T:23:SER:O	42:T:27:GLN:HG3	2.00	0.61
50:3:54:C:H2'	50:3:352:C:H41	1.64	0.61
6:g:115:VAL:HG22	6:g:132:PHE:HE1	1.65	0.61
17:t:8:LEU:HD13	22:y:21:LEU:HB3	1.81	0.61
23:z:43:ILE:O	23:z:47:ILE:HG13	2.00	0.61
30:H:55:VAL:HB	30:H:66:THR:OG1	2.00	0.61
37:O:91:ASP:C	37:O:92:LEU:HD12	2.25	0.61
4:e:110:ILE:HG21	4:e:113:PHE:HD1	1.65	0.61
50:3:29:U:O2'	50:3:30:U:H5'	2.00	0.61
50:3:536:C:H2'	50:3:537:G:C8	2.35	0.61
53:5:3:C:C3'	53:5:4:G:H5''	2.28	0.61
4:e:23:SER:HB2	52:2:56:G:H5'	1.81	0.61
21:x:17:ARG:HE	21:x:23:ALA:HB2	1.63	0.61
42:T:34:GLN:O	42:T:38:LEU:HD23	1.99	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:889:C:H2'	51:1:890:C:O4'	1.99	0.61
51:1:974:G:H1'	51:1:975:A:C8	2.35	0.61
51:1:2039:U:H2'	51:1:2040:G:H8	1.65	0.61
51:1:2295:C:H2'	51:1:2296:U:O4'	2.01	0.61
10:m:13:HIS:HE1	51:1:2265:U:H4'	1.64	0.61
20:w:55:LEU:HD12	20:w:76:ILE:HD12	1.83	0.61
40:R:84:CYS:O	40:R:88:LEU:HG	2.00	0.61
41:S:33:VAL:HG11	50:3:1271:A:O2'	2.00	0.61
1:b:106:PRO:HG2	1:b:109:LEU:HB2	1.83	0.61
6:g:114:GLU:OE1	6:g:134:VAL:HA	2.01	0.61
29:G:147:LEU:HB3	29:G:150:ILE:HG22	1.82	0.61
30:H:32:LEU:HD23	30:H:32:LEU:O	2.00	0.61
35:M:6:ILE:HG21	35:M:76:ARG:NH1	2.16	0.61
37:O:18:ILE:HD12	37:O:70:HIS:HB3	1.83	0.61
45:W:33:THR:HG22	45:W:37:LYS:O	2.00	0.61
49:a:193:LEU:O	49:a:197:LYS:HG3	2.01	0.61
50:3:212:G:H2'	50:3:213:G:H8	1.65	0.61
50:3:405:U:C3'	50:3:406:G:H5'	2.20	0.61
50:3:1134:G:C3'	50:3:1135:U:H5''	2.31	0.61
4:e:42:ALA:HA	4:e:48:LEU:HD23	1.82	0.61
33:K:18:VAL:O	33:K:22:ILE:HG13	2.01	0.61
46:X:37:SER:HB3	46:X:70:LEU:HD12	1.83	0.61
47:Y:29:THR:HG21	50:3:1457:G:H5''	1.82	0.61
51:1:807:U:H2'	51:1:808:G:H8	1.66	0.61
4:e:38:GLY:HA2	4:e:85:GLY:HA3	1.81	0.61
10:m:69:PRO:HA	10:m:94:ALA:HB2	1.83	0.61
13:p:63:ILE:HA	13:p:68:GLY:HA2	1.83	0.61
25:C:37:LYS:HB3	25:C:48:TYR:CD2	2.36	0.61
37:O:33:GLY:HA2	37:O:80:THR:HG21	1.83	0.61
39:Q:113:ARG:HD2	50:3:501:C:OP1	2.01	0.61
48:Z:9:GLU:HB2	48:Z:10:PRO:HD3	1.82	0.61
51:1:1432:G:H2'	51:1:1433:A:C8	2.35	0.61
51:1:2301:C:H3'	51:1:2302:U:H5''	1.81	0.61
51:1:297:G:H2'	51:1:298:G:O4'	2.00	0.61
51:1:2248:C:H2'	51:1:2249:U:H5'	1.82	0.61
51:1:2263:C:H4'	51:1:2329:U:H4'	1.83	0.61
5:f:19:ASN:HB2	5:f:22:VAL:HG23	1.82	0.61
32:J:73:VAL:HG13	32:J:75:LEU:HD22	1.82	0.61
50:3:632:U:H3'	50:3:633:G:H5'	1.82	0.61
51:1:1035:U:H2'	51:1:1036:G:H8	1.66	0.61
51:1:1555:G:H2'	51:1:1556:C:O4'	2.00	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2792:A:H61	51:1:2804:U:H3	1.49	0.61
51:1:2817:U:H3'	51:1:2818:U:H5''	1.83	0.61
5:f:59:ASP:O	5:f:63:GLN:HG2	2.01	0.60
5:f:136:ASP:HB3	5:f:139:VAL:HG12	1.83	0.60
7:j:26:GLY:HA3	51:1:1140:C:H5'	1.82	0.60
8:k:65:THR:HG22	8:k:67:LYS:H	1.66	0.60
51:1:310:A:O2'	51:1:311:A:H2'	2.01	0.60
51:1:2189:U:H2'	51:1:2190:G:O4'	2.01	0.60
30:H:39:ARG:HA	30:H:42:LEU:HG	1.82	0.60
37:O:90:LEU:HD12	37:O:90:LEU:O	2.02	0.60
38:P:45:THR:HG22	38:P:48:GLY:H	1.66	0.60
42:T:31:LEU:O	42:T:31:LEU:HD23	2.01	0.60
43:U:18:GLN:HA	43:U:38:PHE:HA	1.83	0.60
50:3:593:U:H2'	50:3:594:U:C6	2.36	0.60
50:3:1395:C:O2'	50:3:1396:A:H5'	2.00	0.60
51:1:161:A:H3'	51:1:162:U:H5''	1.82	0.60
51:1:340:A:H2'	51:1:341:C:O4'	2.01	0.60
31:I:170:LEU:HD12	31:I:170:LEU:O	2.01	0.60
44:V:37:ILE:H	44:V:37:ILE:HD12	1.64	0.60
49:a:42:VAL:HA	49:a:216:THR:HA	1.82	0.60
50:3:1306:A:H2'	50:3:1307:U:O4'	2.02	0.60
51:1:1454:C:H2'	51:1:1455:G:H5'	1.81	0.60
6:g:5:LEU:HD13	6:g:13:GLY:HA3	1.83	0.60
29:G:209:VAL:HA	29:G:212:TYR:HD2	1.65	0.60
39:Q:3:VAL:HG12	39:Q:6:LEU:HD12	1.82	0.60
50:3:184:G:H4'	50:3:224:U:O3'	2.02	0.60
50:3:403:C:H2'	50:3:404:G:C8	2.35	0.60
51:1:912:C:O2'	51:1:913:U:H5'	2.02	0.60
3:d:192:ALA:O	3:d:196:VAL:HG23	2.01	0.60
5:f:120:ILE:HD12	5:f:134:GLY:HA3	1.83	0.60
50:3:603:U:H2'	50:3:604:G:H8	1.66	0.60
50:3:1221:G:H2'	50:3:1222:G:H8	1.66	0.60
51:1:435:C:H2'	51:1:436:C:H5'	1.82	0.60
52:2:19:C:H2'	52:2:20:G:C8	2.36	0.60
13:p:21:PRO:HD3	13:p:49:ILE:HD12	1.84	0.60
16:s:74:ILE:HD13	16:s:105:VAL:HG22	1.83	0.60
35:M:77:VAL:HG23	35:M:126:CYS:HA	1.82	0.60
37:O:11:LYS:HG2	37:O:71:LEU:HD22	1.83	0.60
50:3:425:G:H2'	50:3:426:U:O4'	2.02	0.60
51:1:1571:A:H2'	51:1:1572:A:C8	2.36	0.60
3:d:195:GLN:O	3:d:199:MET:HG2	2.01	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:G:68:PHE:CE1	29:G:216:VAL:HG11	2.37	0.60
43:U:52:LEU:O	43:U:52:LEU:HD12	2.01	0.60
51:1:360:U:H2'	51:1:361:G:C8	2.35	0.60
1:b:184:GLU:HG3	1:b:186:ASP:H	1.66	0.60
4:e:12:VAL:O	4:e:16:MET:HG3	2.00	0.60
11:n:56:LYS:HD2	11:n:94:TYR:OH	2.01	0.60
29:G:103:TRP:HA	29:G:106:VAL:HG22	1.83	0.60
29:G:185:ILE:HA	29:G:199:ILE:HB	1.82	0.60
31:I:104:MET:SD	31:I:170:LEU:HB2	2.42	0.60
35:M:83:ARG:HH12	50:3:644:U:H4'	1.67	0.60
50:3:181:A:N6	50:3:194:C:H2'	2.17	0.60
50:3:1323:G:H21	50:3:1362:A:H5'	1.67	0.60
53:5:15:G:H3'	53:5:16:C:H5'	1.82	0.60
13:p:26:GLU:HG2	13:p:43:GLU:HB2	1.84	0.60
16:s:15:GLN:NE2	24:B:16:ARG:HH12	2.00	0.60
50:3:591:U:H2'	50:3:592:G:C8	2.37	0.60
51:1:362:A:H3'	51:1:363:G:C8	2.37	0.60
51:1:2055:C:H2'	51:1:2504:U:C4'	2.32	0.60
51:1:2420:C:O2'	51:1:2421:G:H5'	2.01	0.60
51:1:680:C:H2'	51:1:681:G:C8	2.37	0.60
30:H:51:VAL:HG11	30:H:54:ILE:CD1	2.32	0.59
30:H:201:ILE:HG22	30:H:203:LYS:HG2	1.84	0.59
34:L:59:GLU:O	34:L:63:VAL:HG23	2.02	0.59
46:X:62:THR:HG22	46:X:63:ASP:N	2.15	0.59
51:1:69:C:O2'	51:1:70:G:H5'	2.02	0.59
52:2:32:U:H2'	52:2:33:G:H8	1.67	0.59
2:c:110:THR:HB	2:c:202:ILE:HB	1.83	0.59
3:d:149:ILE:CG2	3:d:188:MET:HG2	2.32	0.59
6:g:63:ALA:HA	6:g:66:ASN:ND2	2.12	0.59
9:l:60:ARG:HH21	51:1:2428:G:H21	1.50	0.59
10:m:33:LEU:HB2	10:m:117:PHE:CD1	2.37	0.59
18:u:6:ARG:NH2	18:u:26:ASN:HB3	2.16	0.59
19:v:46:LYS:HE2	19:v:46:LYS:HA	1.83	0.59
30:H:41:TYR:CE1	30:H:45:GLU:HG3	2.37	0.59
52:2:24:G:H4'	52:2:25:U:H5	1.67	0.59
54:4:14:A:C3'	54:4:15:A:H5''	2.31	0.59
6:g:40:THR:H	6:g:43:ASN:HB2	1.67	0.59
13:p:28:LYS:HD3	13:p:39:LEU:HD21	1.83	0.59
31:I:113:ALA:O	31:I:117:VAL:HG23	2.02	0.59
47:Y:47:GLN:HE21	47:Y:82:ILE:HD13	1.68	0.59
50:3:730:G:H2'	50:3:731:G:H5'	1.83	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1118:C:C3'	51:1:1119:U:H5''	2.32	0.59
51:1:917:A:H5''	51:1:2268:A:H61	1.67	0.59
51:1:1118:C:H3'	51:1:1119:U:H5''	1.85	0.59
23:z:23:LEU:HD21	23:z:53:MET:HE2	1.85	0.59
30:H:125:ARG:HH21	30:H:135:ARG:NH2	2.00	0.59
41:S:50:LEU:HG	41:S:51:PRO:CD	2.31	0.59
44:V:35:LYS:O	44:V:37:ILE:HD12	2.03	0.59
3:d:5:LEU:HD13	3:d:10:SER:O	2.02	0.59
13:p:105:LYS:HA	13:p:108:ARG:HH22	1.68	0.59
29:G:147:LEU:HB3	29:G:150:ILE:CG2	2.33	0.59
30:H:53:ARG:NH1	30:H:55:VAL:HG21	2.17	0.59
33:K:14:GLN:O	33:K:18:VAL:HG23	2.02	0.59
44:V:13:SER:H	44:V:21:VAL:HG13	1.68	0.59
51:1:1547:C:H2'	51:1:1548:A:H8	1.68	0.59
4:e:149:ARG:NH1	4:e:149:ARG:HB2	2.17	0.59
34:L:49:LEU:HD13	34:L:123:LEU:HB3	1.85	0.59
36:N:113:LYS:HG3	36:N:119:LYS:HA	1.84	0.59
39:Q:48:LEU:HB2	50:3:520:A:OP1	2.02	0.59
45:W:53:GLN:HG3	45:W:56:ARG:HH21	1.66	0.59
51:1:1935:G:H1'	51:1:1964:G:N2	2.18	0.59
4:e:151:LEU:HD23	4:e:152:ASP:N	2.17	0.59
20:w:55:LEU:CD1	20:w:76:ILE:HD12	2.33	0.59
51:1:1837:C:H2'	51:1:1899:A:N6	2.18	0.59
1:b:73:ILE:HD12	1:b:73:ILE:N	2.18	0.59
4:e:106:ALA:HB1	4:e:136:ILE:HD12	1.84	0.59
28:F:19:ARG:HD2	28:F:24:ARG:HD2	1.85	0.59
29:G:54:ALA:O	29:G:58:LYS:HG3	2.02	0.59
30:H:138:GLN:NE2	30:H:142:ARG:HD2	2.17	0.59
31:I:109:THR:CG2	50:3:408:A:H5''	2.33	0.59
34:L:24:LYS:HZ2	34:L:97:ALA:HA	1.68	0.59
51:1:910:A:H1'	51:1:2264:C:O2'	2.02	0.59
38:P:19:VAL:HA	38:P:82:GLU:HB2	1.83	0.59
38:P:43:TRP:CD1	50:3:686:U:HO2'	2.20	0.59
39:Q:120:ARG:HG3	50:3:37:U:H5'	1.84	0.59
41:S:41:TRP:CZ3	46:X:8:PRO:HB2	2.38	0.59
50:3:514:C:H2'	50:3:515:G:H8	1.68	0.59
51:1:1872:A:H2'	51:1:1873:G:O4'	2.03	0.59
6:g:97:ARG:NH2	51:1:2220:U:H4'	2.18	0.58
25:C:5:ARG:HG2	25:C:23:THR:OG1	2.02	0.58
30:H:26:LYS:HE3	50:3:1257:A:OP1	2.03	0.58
31:I:9:LYS:HE2	31:I:9:LYS:HA	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:K:3:HIS:O	33:K:92:THR:HA	2.03	0.58
46:X:31:ARG:HA	46:X:49:ALA:HB3	1.85	0.58
50:3:955:U:H3	50:3:1225:A:H61	1.50	0.58
50:3:1305:G:N2	50:3:1331:G:H2'	2.18	0.58
51:1:1920:C:H2'	51:1:1921:G:C8	2.38	0.58
4:e:67:THR:H	4:e:86:CYS:HA	1.68	0.58
30:H:40:GLN:O	30:H:44:LYS:HG2	2.03	0.58
44:V:77:VAL:HG12	44:V:80:LYS:HG2	1.85	0.58
45:W:58:ILE:O	45:W:62:ARG:HG3	2.02	0.58
50:3:962:C:H2'	50:3:963:G:C8	2.37	0.58
51:1:2144:G:H4'	51:1:2145:C:H5	1.68	0.58
1:b:15:VAL:HG22	1:b:205:GLY:HA3	1.85	0.58
16:s:29:VAL:HG11	16:s:55:ILE:HG21	1.84	0.58
24:B:2:VAL:HG22	51:1:2015:A:C2	2.38	0.58
50:3:357:G:OP1	50:3:367:U:H5''	2.03	0.58
50:3:1204:A:H2'	50:3:1205:U:H5'	1.85	0.58
51:1:1268:A:H2'	51:1:1269:A:O4'	2.03	0.58
51:1:1920:C:H2'	51:1:1921:G:H8	1.69	0.58
3:d:104:ALA:O	3:d:108:ILE:HG13	2.02	0.58
33:K:19:PRO:HA	33:K:22:ILE:HD12	1.85	0.58
51:1:1571:A:H2'	51:1:1572:A:H8	1.68	0.58
3:d:76:PRO:HA	3:d:82:GLY:HA2	1.84	0.58
16:s:20:VAL:HG21	16:s:43:ALA:HB3	1.84	0.58
51:1:75:G:H2'	51:1:75:G:N3	2.18	0.58
51:1:389:G:C2'	51:1:390:U:H5'	2.33	0.58
51:1:1745:A:H2'	51:1:1746:A:C8	2.38	0.58
51:1:2628:C:H3'	51:1:2629:U:H5'	1.86	0.58
4:e:170:ALA:HA	4:e:176:PHE:HE2	1.68	0.58
29:G:68:PHE:HE1	29:G:216:VAL:HG11	1.68	0.58
48:Z:7:GLU:HB2	48:Z:11:PHE:HB3	1.85	0.58
49:a:7:ARG:O	49:a:11:ILE:HG13	2.02	0.58
51:1:52:A:H2'	51:1:53:A:H8	1.68	0.58
14:q:111:LYS:HD3	15:r:48:LYS:HE3	1.85	0.58
42:T:5:GLU:O	42:T:9:LYS:HG3	2.04	0.58
43:U:31:ARG:HB2	50:3:310:G:H5''	1.84	0.58
47:Y:56:ILE:HG22	47:Y:60:GLN:HE21	1.68	0.58
50:3:505:G:H5'	50:3:534:U:H2'	1.85	0.58
50:3:790:A:H5'	53:5:38:A:H4'	1.84	0.58
50:3:1002:G:H2'	50:3:1003:G:O4'	2.04	0.58
10:m:62:LYS:HD3	10:m:64:TRP:CZ2	2.39	0.58
30:H:15:LYS:HE3	30:H:16:PRO:HD2	1.86	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:J:84:VAL:HG12	32:J:95:MET:SD	2.44	0.58
36:N:12:LYS:HG3	36:N:105:ARG:NH2	2.17	0.58
45:W:19:GLU:HB3	45:W:21:ASP:OD2	2.04	0.58
45:W:32:ILE:HG21	45:W:67:LEU:HD11	1.84	0.58
4:e:116:LEU:H	4:e:176:PHE:HA	1.67	0.58
7:j:108:MET:HE2	51:1:1138:G:H21	1.69	0.58
23:z:37:ARG:HH21	51:1:929:U:H4'	1.68	0.58
38:P:73:VAL:HA	38:P:76:TYR:CD2	2.39	0.58
45:W:49:LYS:HD2	50:3:663:A:H4'	1.85	0.58
50:3:986:U:O2'	50:3:987:G:H5'	2.04	0.58
51:1:1545:A:H2'	51:1:1546:G:H5'	1.86	0.58
51:1:2220:U:H2'	51:1:2221:G:H8	1.69	0.58
35:M:80:PRO:HG2	50:3:878:A:H5'	1.84	0.58
40:R:106:ARG:HB2	50:3:947:G:OP1	2.03	0.58
44:V:30:HIS:HB3	44:V:34:GLY:H	1.68	0.58
50:3:424:G:H2'	50:3:425:G:H8	1.69	0.58
50:3:514:C:H2'	50:3:515:G:C8	2.39	0.58
51:1:1074:G:H2'	51:1:1075:C:C4'	2.34	0.58
51:1:1841:U:H2'	51:1:1842:G:C8	2.38	0.58
3:d:62:GLN:HE22	3:d:69:ARG:HD2	1.68	0.57
23:z:15:ARG:HE	23:z:52:PHE:HE1	1.50	0.57
29:G:42:LEU:O	29:G:45:THR:HG22	2.04	0.57
30:H:5:HIS:CE1	30:H:7:ASN:HB3	2.39	0.57
32:J:32:PHE:HD2	32:J:54:GLU:HA	1.69	0.57
44:V:30:HIS:HD2	44:V:33:TYR:H	1.52	0.57
50:3:1339:A:H2	53:5:31:G:H1'	1.69	0.57
50:3:1395:C:H6	50:3:1395:C:H5'	1.69	0.57
51:1:387:U:H4'	51:1:388:G:O4'	2.03	0.57
51:1:1478:G:H2'	51:1:1479:G:O4'	2.04	0.57
51:1:1775:U:H2'	51:1:1776:G:O4'	2.04	0.57
5:f:51:PHE:HZ	5:f:71:LEU:HD22	1.68	0.57
36:N:129:ARG:NE	53:5:31:G:H5'	2.19	0.57
41:S:52:ARG:NE	50:3:1219:A:H5''	2.19	0.57
51:1:1402:U:H2'	51:1:1403:A:C5'	2.29	0.57
51:1:1731:G:O2'	51:1:1733:G:H1'	2.04	0.57
51:1:2192:U:H2'	51:1:2193:G:C8	2.39	0.57
51:1:2646:C:H2'	51:1:2647:U:O4'	2.04	0.57
14:q:105:PHE:O	14:q:109:VAL:HG23	2.04	0.57
18:u:35:VAL:HG13	18:u:38:ILE:HG13	1.87	0.57
44:V:59:GLU:O	44:V:74:LEU:HD12	2.05	0.57
51:1:388:G:H2'	51:1:390:U:C5	2.36	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:740:C:H5'	51:1:1784:A:H2'	1.84	0.57
2:c:4:LEU:HD13	2:c:101:PHE:CE2	2.39	0.57
36:N:47:VAL:HG23	36:N:48:ARG:HG3	1.86	0.57
38:P:19:VAL:HG21	38:P:36:ARG:HB2	1.86	0.57
38:P:40:ALA:C	38:P:41:LEU:HD12	2.28	0.57
39:Q:20:VAL:HG21	50:3:553:A:H5''	1.87	0.57
46:X:69:LYS:HD2	46:X:69:LYS:N	2.19	0.57
47:Y:27:MET:O	47:Y:31:ILE:HG13	2.03	0.57
54:4:14:A:H3'	54:4:15:A:C5'	2.32	0.57
3:d:146:VAL:HG23	3:d:148:ILE:HD11	1.87	0.57
11:n:106:ASP:OD2	11:n:108:ALA:HB2	2.04	0.57
36:N:86:LEU:CD2	36:N:97:LEU:HD21	2.35	0.57
42:T:84:LEU:HB3	42:T:86:LEU:HD22	1.86	0.57
50:3:31:G:H5'	50:3:306:A:C2	2.39	0.57
51:1:677:A:O2'	51:1:2071:A:H5'	2.05	0.57
51:1:703:U:H2'	51:1:704:G:O4'	2.04	0.57
51:1:864:G:O2'	51:1:865:C:H5'	2.04	0.57
51:1:1411:U:H2'	51:1:1412:U:C6	2.38	0.57
51:1:2654:A:O3'	51:1:2655:G:H4'	2.04	0.57
10:m:8:LYS:HG3	10:m:9:PHE:H	1.69	0.57
12:o:70:ALA:O	12:o:74:VAL:HG23	2.05	0.57
29:G:66:ILE:N	29:G:66:ILE:HD12	2.18	0.57
30:H:42:LEU:HD12	30:H:43:THR:N	2.19	0.57
33:K:48:ALA:HB1	45:W:68:PRO:CG	2.34	0.57
49:a:27:ILE:N	49:a:27:ILE:HD12	2.20	0.57
50:3:1342:C:H2'	50:3:1343:G:H8	1.70	0.57
51:1:1524:G:H2'	51:1:1525:A:H8	1.69	0.57
10:m:66:ARG:HD2	10:m:104:GLU:OE1	2.05	0.57
12:o:71:ALA:HB1	12:o:106:LEU:HB2	1.86	0.57
14:q:20:ALA:HA	14:q:23:TYR:CE2	2.40	0.57
14:q:78:PHE:O	14:q:82:LEU:HD13	2.04	0.57
29:G:69:VAL:HG21	29:G:162:VAL:HG22	1.87	0.57
50:3:1129:C:H42	50:3:1143:G:H1	1.52	0.57
51:1:690:G:H2'	51:1:691:C:C6	2.40	0.57
53:5:26:G:C3'	53:5:27:U:H5''	2.32	0.57
1:b:62:ARG:HG3	1:b:62:ARG:HH11	1.70	0.57
1:b:224:MET:SD	1:b:229:HIS:HB2	2.45	0.57
2:c:148:GLN:HB2	2:c:152:PRO:HG3	1.86	0.57
5:f:2:ARG:HB2	51:1:2751:G:H5'	1.86	0.57
5:f:159:LYS:HE2	51:1:2658:C:H5'	1.86	0.57
31:I:96:ARG:NH1	31:I:133:SER:HA	2.20	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:L:45:ALA:HB1	34:L:119:LEU:HD23	1.84	0.57
36:N:17:ARG:HD2	50:3:1148:U:C1'	2.34	0.57
50:3:811:C:H4'	50:3:901:A:H61	1.69	0.57
51:1:593:U:H2'	51:1:594:U:C6	2.40	0.57
4:e:117:SER:HB2	51:1:2304:G:H4'	1.87	0.57
6:g:8:LYS:O	6:g:9:VAL:O	2.23	0.57
11:n:103:ARG:HD2	51:1:1287:A:H5'	1.85	0.57
30:H:10:ARG:HG3	30:H:10:ARG:HH11	1.69	0.57
37:O:53:ILE:HG12	50:3:1060:U:C5'	2.34	0.57
51:1:275:C:C2'	51:1:276:U:H4'	2.28	0.57
8:k:22:ILE:HD11	8:k:40:LYS:HG3	1.87	0.57
19:v:70:ILE:HD13	19:v:93:ARG:HH12	1.70	0.57
23:z:40:THR:OG1	23:z:43:ILE:HG12	2.05	0.57
31:I:23:GLY:HA2	50:3:408:A:O3'	2.04	0.57
36:N:12:LYS:HD2	36:N:109:GLN:HG2	1.85	0.57
50:3:1221:G:H2'	50:3:1222:G:C8	2.40	0.57
51:1:792:A:H2'	51:1:2440:C:N3	2.19	0.57
51:1:1630:A:H2'	51:1:1631:G:O4'	2.05	0.57
51:1:2287:A:O2'	51:1:2288:A:H2'	2.05	0.57
51:1:2701:U:H3	51:1:2706:A:H61	1.51	0.57
2:c:7:LYS:HD2	2:c:28:GLU:OE1	2.05	0.56
3:d:148:ILE:N	3:d:148:ILE:HD12	2.20	0.56
4:e:65:LEU:HD21	52:2:42:C:H4'	1.87	0.56
4:e:109:ARG:HE	4:e:136:ILE:HA	1.70	0.56
6:g:133:GLN:HG2	6:g:139:PHE:CE1	2.40	0.56
14:q:34:ALA:O	14:q:38:VAL:HG23	2.03	0.56
23:z:8:GLN:HE22	23:z:23:LEU:HD13	1.69	0.56
34:L:72:VAL:HG22	34:L:73:GLU:N	2.19	0.56
47:Y:27:MET:HA	47:Y:27:MET:HE3	1.86	0.56
50:3:59:A:H5''	50:3:387:U:H5''	1.87	0.56
50:3:941:G:H4'	50:3:1350:A:H4'	1.86	0.56
50:3:1294:G:H2'	50:3:1295:U:O4'	2.05	0.56
51:1:543:G:H3'	51:1:544:C:C5'	2.34	0.56
51:1:603:A:N6	51:1:655:A:H5'	2.20	0.56
51:1:705:A:H2'	51:1:706:A:H8	1.68	0.56
51:1:1127:A:C2'	51:1:1128:G:H5''	2.35	0.56
51:1:1791:A:C2	51:1:1829:A:H4'	2.39	0.56
51:1:1807:G:H2'	51:1:1808:A:H5'	1.87	0.56
4:e:15:LEU:HD22	4:e:19:PHE:CE2	2.40	0.56
7:j:7:LYS:HB2	7:j:10:THR:CG2	2.33	0.56
35:M:54:THR:HG23	35:M:55:LYS:HG3	1.85	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:R:18:LEU:HD23	40:R:21:ILE:HD12	1.86	0.56
50:3:638:U:C3'	50:3:639:G:H5''	2.35	0.56
50:3:1225:A:H5'	50:3:1226:C:OP2	2.04	0.56
51:1:1213:A:N6	51:1:1236:G:H1'	2.21	0.56
52:2:48:U:H2'	52:2:49:C:C6	2.41	0.56
1:b:29:PHE:CD2	1:b:32:LEU:HD13	2.40	0.56
4:e:37:MET:HB2	4:e:56:LEU:HD21	1.87	0.56
5:f:95:ALA:HB2	5:f:104:LEU:CD1	2.34	0.56
9:l:4:ASN:O	51:1:1243:C:H1'	2.05	0.56
14:q:56:PHE:CZ	51:1:536:G:H4'	2.40	0.56
23:z:8:GLN:NE2	23:z:23:LEU:HD13	2.21	0.56
23:z:29:ARG:NE	51:1:1183:U:H5''	2.20	0.56
31:I:196:GLU:O	31:I:200:VAL:HG23	2.05	0.56
34:L:119:LEU:HD12	34:L:122:GLU:HB2	1.87	0.56
46:X:48:ILE:O	46:X:58:PRO:HA	2.05	0.56
50:3:163:C:H2'	50:3:164:G:H8	1.70	0.56
50:3:926:G:OP2	50:3:927:G:H5''	2.05	0.56
50:3:946:A:H2'	50:3:947:G:C8	2.40	0.56
50:3:1001:C:H2'	50:3:1002:G:C8	2.39	0.56
51:1:907:G:H2'	51:1:908:C:H5'	1.87	0.56
51:1:1049:C:O2	51:1:1049:C:H2'	2.04	0.56
51:1:1803:A:H2	51:1:1823:G:H1'	1.70	0.56
51:1:2257:U:O2'	51:1:2258:C:H5'	2.05	0.56
51:1:2747:G:O6	51:1:2755:C:H5''	2.05	0.56
52:2:66:A:H5''	52:2:67:G:OP1	2.05	0.56
4:e:73:VAL:HG11	51:1:2310:C:O2'	2.05	0.56
4:e:126:ASN:HD22	51:1:2315:G:H1'	1.71	0.56
30:H:13:ILE:HG22	30:H:14:VAL:HG13	1.87	0.56
30:H:121:SER:O	30:H:125:ARG:HG3	2.05	0.56
38:P:33:ILE:HG13	38:P:42:GLY:O	2.05	0.56
41:S:100:TRP:H	41:S:100:TRP:CD1	2.22	0.56
50:3:1342:C:H2'	50:3:1343:G:C8	2.40	0.56
51:1:191:A:H2'	51:1:192:C:C6	2.40	0.56
51:1:1747:U:H2'	51:1:1748:C:C6	2.40	0.56
1:b:153:LEU:HD13	1:b:175:LEU:HD21	1.87	0.56
16:s:10:ALA:HB3	16:s:101:SER:HB2	1.88	0.56
16:s:96:ILE:C	16:s:97:LEU:HD12	2.30	0.56
17:t:9:LYS:HA	22:y:29:ARG:NH1	2.21	0.56
31:I:109:THR:HG23	50:3:408:A:H5''	1.87	0.56
32:J:156:ARG:HA	32:J:158:LYS:HZ2	1.70	0.56
46:X:13:HIS:CD2	50:3:1014:A:H4'	2.41	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:Y:54:GLN:HA	47:Y:57:VAL:HG12	1.88	0.56
50:3:25:C:H5'	50:3:524:G:H1'	1.86	0.56
50:3:1305:G:H22	50:3:1331:G:H2'	1.71	0.56
51:1:365:U:H2'	51:1:366:C:C6	2.39	0.56
51:1:1433:A:H2'	51:1:1434:A:C8	2.35	0.56
51:1:2349:G:H3'	51:1:2350:C:H5''	1.88	0.56
3:d:109:LEU:O	3:d:113:VAL:HG23	2.05	0.56
31:I:60:VAL:HA	31:I:63:ILE:HD12	1.88	0.56
31:I:71:PHE:HE1	31:I:93:LEU:HD11	1.70	0.56
46:X:9:PHE:CD2	50:3:1318:A:H4'	2.41	0.56
49:a:5:THR:CG2	49:a:8:MET:HE3	2.35	0.56
50:3:335:C:H2'	50:3:336:A:H8	1.70	0.56
50:3:664:G:H22	50:3:741:G:H1	1.53	0.56
50:3:820:U:H3'	50:3:821:G:C5'	2.35	0.56
50:3:1346:A:C2'	50:3:1347:G:H4'	2.35	0.56
8:k:87:LEU:HD22	8:k:92:GLU:O	2.05	0.56
9:l:64:PHE:HB2	51:1:2416:C:OP1	2.06	0.56
35:M:120:LEU:HD23	35:M:120:LEU:H	1.71	0.56
37:O:15:HIS:O	37:O:18:ILE:HG22	2.05	0.56
41:S:4:SER:OG	50:3:1216:A:H5''	2.05	0.56
44:V:64:ARG:HD3	50:3:130:A:O4'	2.04	0.56
45:W:49:LYS:CE	50:3:663:A:H4'	2.36	0.56
51:1:876:C:H2'	51:1:877:A:H5'	1.88	0.56
51:1:1528:A:H62	51:1:1543:G:H21	1.52	0.56
42:T:35:ILE:HG23	42:T:55:LEU:HD11	1.87	0.56
47:Y:3:ILE:H	47:Y:3:ILE:HD12	1.69	0.56
47:Y:8:LYS:O	47:Y:12:GLN:HG3	2.06	0.56
50:3:664:G:N2	50:3:741:G:H1	2.04	0.56
51:1:280:U:H2'	51:1:281:C:C6	2.41	0.56
52:2:19:C:H2'	52:2:20:G:H8	1.71	0.56
6:g:143:ILE:HD12	6:g:143:ILE:N	2.21	0.56
24:B:11:LYS:HD3	24:B:14:MET:HE3	1.88	0.56
38:P:23:HIS:ND1	50:3:706:A:H5''	2.21	0.56
42:T:31:LEU:HD11	42:T:58:MET:O	2.06	0.56
46:X:16:LYS:C	46:X:20:LYS:HZ2	2.14	0.56
50:3:603:U:H2'	50:3:604:G:C8	2.41	0.56
51:1:222:A:H61	51:1:232:G:H1'	1.71	0.56
51:1:288:U:H2'	51:1:289:G:H8	1.70	0.56
51:1:1509:A:H2'	51:1:1510:G:C8	2.41	0.56
51:1:2039:U:H2'	51:1:2040:G:C8	2.40	0.56
51:1:2284:A:H1'	51:1:2325:G:N1	2.21	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:209:ALA:HA	1:b:212:TRP:CE2	2.40	0.56
2:c:35:THR:O	2:c:92:VAL:HG13	2.06	0.56
3:d:145:ASP:HA	3:d:166:LYS:HB3	1.88	0.56
28:F:1:MET:SD	28:F:2:LYS:HE3	2.46	0.56
29:G:72:LYS:NZ	29:G:74:ALA:HB3	2.20	0.56
34:L:113:LYS:HB3	34:L:117:LEU:HD12	1.87	0.56
36:N:64:ILE:HD12	36:N:64:ILE:N	2.20	0.56
39:Q:119:LYS:HB2	39:Q:122:LYS:HZ2	1.70	0.56
50:3:952:U:H5'	50:3:972:C:N4	2.20	0.56
51:1:828:U:H4'	51:1:831:G:N1	2.21	0.56
51:1:1316:U:H2'	51:1:1317:G:H8	1.70	0.56
51:1:2791:G:H2'	51:1:2792:A:H8	1.70	0.56
10:m:11:LYS:HD3	10:m:86:LYS:HG2	1.88	0.55
10:m:16:ARG:HG2	10:m:16:ARG:HH11	1.70	0.55
15:r:40:MET:HE3	15:r:42:ALA:HB2	1.87	0.55
25:C:8:ILE:HD13	25:C:24:LYS:HB2	1.88	0.55
29:G:82:ALA:HB2	29:G:213:LEU:HD22	1.88	0.55
31:I:7:LYS:HG2	50:3:430:A:OP2	2.06	0.55
37:O:53:ILE:CD1	50:3:1060:U:H5''	2.36	0.55
17:t:12:ARG:HE	22:y:29:ARG:NH2	2.03	0.55
50:3:211:G:C2'	50:3:212:G:H5'	2.36	0.55
51:1:446:G:H4'	51:1:449:A:N3	2.21	0.55
51:1:466:A:H2'	51:1:467:G:H5'	1.88	0.55
8:k:6:THR:HG23	51:1:1666:G:H4'	1.88	0.55
9:l:104:GLN:HE21	9:l:104:GLN:HA	1.71	0.55
30:H:149:LYS:HG3	30:H:167:TYR:O	2.06	0.55
31:I:129:VAL:HG12	31:I:131:ILE:H	1.71	0.55
39:Q:82:ARG:HD3	39:Q:97:VAL:HG22	1.88	0.55
40:R:89:ARG:HB3	40:R:94:LEU:HB2	1.88	0.55
50:3:123:U:OP1	50:3:312:C:H5'	2.07	0.55
50:3:1388:C:H2'	50:3:1389:C:C6	2.41	0.55
51:1:150:U:H2'	51:1:151:C:C6	2.41	0.55
51:1:1856:U:H2'	51:1:1857:G:O4'	2.05	0.55
30:H:119:ILE:HD13	30:H:197:VAL:HG11	1.88	0.55
33:K:25:TYR:O	33:K:29:ILE:HG13	2.06	0.55
40:R:24:VAL:HG13	40:R:28:ARG:CG	2.36	0.55
49:a:11:ILE:O	49:a:15:VAL:HG23	2.07	0.55
50:3:1034:G:H2'	50:3:1035:A:H5'	1.88	0.55
51:1:654:A:H3'	51:1:654:A:N3	2.20	0.55
51:1:807:U:H2'	51:1:808:G:C8	2.41	0.55
52:2:32:U:H2'	52:2:33:G:C8	2.42	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:n:49:GLU:HB2	11:n:50:PRO:HD3	1.89	0.55
23:z:2:LYS:HZ2	23:z:4:ILE:HD12	1.70	0.55
31:I:7:LYS:HG2	50:3:430:A:P	2.47	0.55
31:I:61:ARG:NH2	31:I:62:ARG:HE	2.04	0.55
31:I:131:ILE:HD13	50:3:620:C:O4'	2.07	0.55
32:J:19:ARG:HB2	32:J:32:PHE:CE1	2.41	0.55
33:K:91:ARG:HG3	50:3:737:C:OP1	2.06	0.55
50:3:1001:C:H2'	50:3:1002:G:H8	1.71	0.55
50:3:1289:A:H2'	50:3:1290:G:H5'	1.88	0.55
51:1:1074:G:H2'	51:1:1075:C:H4'	1.88	0.55
51:1:2061:G:H2'	51:1:2501:C:O2'	2.07	0.55
51:1:2248:C:C2'	51:1:2249:U:H5'	2.37	0.55
52:2:24:G:H4'	52:2:25:U:C5	2.41	0.55
17:t:28:ASN:ND2	17:t:88:LYS:O	2.40	0.55
29:G:80:LYS:HG3	29:G:90:PHE:CD1	2.41	0.55
31:I:111:ALA:HB1	50:3:407:U:H5''	1.87	0.55
33:K:5:GLU:HA	33:K:63:ASN:HA	1.86	0.55
36:N:20:ILE:HG13	36:N:62:LEU:HD23	1.87	0.55
47:Y:3:ILE:HD12	47:Y:3:ILE:N	2.21	0.55
49:a:217:THR:HG22	49:a:217:THR:O	2.06	0.55
50:3:257:G:H2'	50:3:258:G:C8	2.42	0.55
50:3:662:U:H2'	50:3:663:A:C8	2.41	0.55
51:1:225:C:H2'	51:1:226:A:O4'	2.06	0.55
51:1:1149:G:H2'	51:1:1150:C:C6	2.41	0.55
51:1:2398:U:H2'	51:1:2399:G:C8	2.42	0.55
4:e:67:THR:HG21	4:e:87:LYS:CG	2.37	0.55
6:g:7:ASP:CG	6:g:8:LYS:N	2.64	0.55
15:r:15:SER:O	15:r:18:GLN:HG2	2.07	0.55
20:w:70:PRO:HA	52:2:13:G:OP2	2.07	0.55
29:G:183:PHE:HD1	29:G:197:PHE:HB2	1.72	0.55
33:K:49:TYR:OH	33:K:86:ARG:NH2	2.40	0.55
39:Q:112:ALA:HB1	39:Q:115:LYS:NZ	2.21	0.55
49:a:48:LEU:HD11	49:a:171:ILE:HG23	1.89	0.55
51:1:458:G:O2'	51:1:459:U:H5	1.89	0.55
51:1:1700:A:H2'	51:1:1701:A:H5'	1.89	0.55
51:1:1859:U:H2'	51:1:1860:G:C8	2.42	0.55
51:1:1954:G:N2	51:1:1956:U:H3	2.04	0.55
52:2:55:U:H2'	52:2:56:G:C8	2.41	0.55
30:H:128:MET:HG3	30:H:131:ARG:HB3	1.89	0.55
39:Q:68:GLY:HA2	39:Q:106:VAL:HG22	1.87	0.55
40:R:16:ILE:HG12	50:3:1302:C:C6	2.41	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:U:36:VAL:HG12	43:U:53:ASP:H	1.72	0.55
50:3:335:C:H2'	50:3:336:A:C8	2.42	0.55
51:1:1524:G:H2'	51:1:1525:A:C8	2.42	0.55
51:1:2310:C:C3'	51:1:2311:A:H5''	2.37	0.55
51:1:2751:G:O2'	51:1:2752:C:H5'	2.06	0.55
17:t:15:HIS:H	17:t:32:LEU:HA	1.72	0.55
19:v:12:GLN:NE2	52:2:75:G:H5''	2.22	0.55
31:I:110:ARG:O	31:I:114:ARG:HG3	2.06	0.55
36:N:54:VAL:HG13	36:N:55:ASP:N	2.20	0.55
37:O:14:ASP:HB3	37:O:17:LEU:CG	2.35	0.55
50:3:211:G:H2'	50:3:212:G:H5'	1.89	0.55
50:3:1253:G:H21	50:3:1355:G:H4'	1.70	0.55
51:1:222:A:N6	51:1:232:G:H1'	2.22	0.55
51:1:1564:C:H2'	51:1:1565:C:O4'	2.06	0.55
51:1:2106:U:H2'	51:1:2107:G:H8	1.72	0.55
2:c:40:LEU:HD23	2:c:45:TYR:CA	2.37	0.55
2:c:150:GLN:NE2	51:1:574:A:H2	2.05	0.55
27:E:41:ARG:HG2	27:E:41:ARG:HH21	1.72	0.55
31:I:3:TYR:OH	31:I:10:LEU:HD21	2.07	0.55
41:S:81:ILE:O	41:S:85:GLU:HG3	2.06	0.55
45:W:47:ARG:HB2	45:W:50:TYR:CD2	2.42	0.55
46:X:36:ARG:HB3	50:3:1318:A:O2'	2.07	0.55
50:3:392:C:H2'	50:3:393:A:C8	2.42	0.55
50:3:483:C:H2'	50:3:484:G:C8	2.42	0.55
50:3:867:G:H2'	50:3:868:C:C6	2.42	0.55
51:1:1869:G:H3'	51:1:1870:C:H5'	1.88	0.55
51:1:1954:G:H21	51:1:1956:U:H3	1.55	0.55
51:1:2553:G:C3'	51:1:2554:U:H5''	2.36	0.55
7:j:102:GLU:HG3	7:j:119:PHE:HZ	1.71	0.54
7:j:116:ARG:NH2	51:1:528:A:H3'	2.21	0.54
11:n:38:LEU:HB3	11:n:39:PRO:HD3	1.88	0.54
17:t:8:LEU:HD13	22:y:21:LEU:CB	2.36	0.54
30:H:109:GLU:HG3	30:H:139:ASN:HB3	1.88	0.54
31:I:97:LEU:HD23	31:I:97:LEU:C	2.31	0.54
33:K:10:VAL:HG21	33:K:18:VAL:HG21	1.87	0.54
35:M:54:THR:OG1	50:3:652:U:H4'	2.07	0.54
48:Z:40:PRO:O	48:Z:44:ARG:HG3	2.08	0.54
50:3:689:C:H2'	50:3:690:G:H5'	1.88	0.54
50:3:952:U:H2'	50:3:953:G:H8	1.71	0.54
51:1:908:C:H2'	51:1:909:A:O4'	2.07	0.54
51:1:2834:G:H2'	51:1:2879:A:N6	2.22	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:n:94:TYR:C	11:n:116:VAL:HG23	2.31	0.54
30:H:154:GLY:HA3	30:H:195:ILE:HG23	1.87	0.54
38:P:58:THR:HG22	38:P:60:PHE:H	1.73	0.54
49:a:30:LEU:HD22	49:a:42:VAL:HG11	1.88	0.54
50:3:1227:A:H2'	50:3:1228:C:H5'	1.88	0.54
51:1:64:A:H2'	51:1:65:U:C6	2.42	0.54
51:1:1877:A:H2'	51:1:1878:G:C5'	2.37	0.54
2:c:135:GLY:HA2	51:1:743:A:OP1	2.07	0.54
8:k:48:PRO:C	8:k:49:ARG:HD2	2.33	0.54
12:o:79:ALA:O	12:o:83:LEU:HD23	2.08	0.54
16:s:59:GLU:OE2	16:s:60:HIS:HB2	2.06	0.54
17:t:13:ALA:HB1	22:y:33:ALA:HB2	1.89	0.54
23:z:5:LYS:HB2	23:z:57:GLU:HB2	1.88	0.54
31:I:51:GLY:O	31:I:55:ARG:HG2	2.07	0.54
42:T:4:THR:HG22	50:3:659:U:OP1	2.06	0.54
50:3:1492:A:C2	50:3:1493:A:H1'	2.42	0.54
51:1:690:G:H2'	51:1:691:C:H6	1.71	0.54
9:l:29:LYS:O	9:l:30:THR:OG1	2.24	0.54
13:p:29:VAL:HG23	13:p:79:VAL:HG12	1.89	0.54
16:s:69:LEU:HG	16:s:107:VAL:HG22	1.88	0.54
17:t:61:LEU:N	17:t:61:LEU:HD23	2.23	0.54
30:H:174:LEU:HA	30:H:181:ILE:HD12	1.89	0.54
31:I:14:GLU:CB	31:I:59:LYS:HD3	2.37	0.54
38:P:22:ILE:HD12	38:P:83:VAL:HG13	1.89	0.54
51:1:4:U:H2'	51:1:5:A:C8	2.42	0.54
51:1:656:G:H2'	51:1:657:U:C6	2.43	0.54
51:1:1740:G:H2'	51:1:1741:C:O4'	2.07	0.54
24:B:12:ARG:HH11	24:B:16:ARG:HH21	1.54	0.54
31:I:190:LEU:HD12	31:I:192:ALA:N	2.20	0.54
40:R:3:ILE:HD11	40:R:52:ILE:HD11	1.88	0.54
51:1:280:U:H2'	51:1:281:C:N1	2.22	0.54
51:1:2849:U:H4'	51:1:2868:A:C2	2.42	0.54
1:b:34:GLU:HG3	1:b:63:ILE:HD11	1.88	0.54
2:c:11:MET:HE2	2:c:25:THR:HG22	1.89	0.54
3:d:29:HIS:O	3:d:33:VAL:HG23	2.08	0.54
12:o:32:PRO:HD2	52:2:29:A:OP2	2.08	0.54
18:u:73:ASN:OD1	18:u:75:ALA:HB3	2.07	0.54
24:B:5:ASN:HD22	51:1:2020:A:H62	1.55	0.54
29:G:56:LEU:HD21	29:G:216:VAL:HG13	1.89	0.54
29:G:65:LYS:HD3	29:G:158:ASP:OD2	2.06	0.54
32:J:160:VAL:HG23	32:J:161:GLU:OE2	2.08	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:L:1:PRO:HG2	50:3:936:C:H42	1.72	0.54
37:O:55:PRO:HD2	50:3:1198:G:N2	2.22	0.54
41:S:92:ILE:HB	41:S:95:LEU:HD11	1.88	0.54
48:Z:17:ARG:HH11	48:Z:17:ARG:HG3	1.73	0.54
50:3:802:A:H2'	50:3:803:G:O4'	2.07	0.54
50:3:1296:C:H4'	50:3:1302:C:H42	1.73	0.54
51:1:119:A:H4'	51:1:120:U:H5'	1.90	0.54
51:1:971:G:H2'	51:1:972:A:O4'	2.08	0.54
51:1:1544:A:H2'	51:1:1545:A:C8	2.43	0.54
7:j:17:VAL:CG2	7:j:137:PRO:HB2	2.33	0.54
10:m:66:ARG:HD2	10:m:104:GLU:CD	2.33	0.54
12:o:75:GLY:HA3	12:o:109:ALA:HB3	1.90	0.54
15:r:16:GLU:HB2	15:r:101:ILE:HG12	1.88	0.54
16:s:28:LYS:HB2	16:s:31:GLN:HG2	1.89	0.54
19:v:56:PHE:CE1	19:v:61:LEU:HD21	2.43	0.54
21:x:2:ARG:HH12	51:1:1364:G:H5''	1.73	0.54
24:B:24:VAL:HG13	24:B:25:THR:N	2.22	0.54
35:M:79:ARG:HB3	50:3:878:A:OP1	2.07	0.54
38:P:92:ARG:HH22	48:Z:19:LYS:HE3	1.72	0.54
39:Q:23:LEU:HD23	39:Q:29:LYS:HD3	1.89	0.54
44:V:60:ILE:HG13	44:V:72:TRP:HE3	1.73	0.54
50:3:681:A:H2'	50:3:682:G:C8	2.43	0.54
50:3:1375:A:H2'	50:3:1376:U:O4'	2.08	0.54
51:1:322:A:H5'	51:1:340:A:C1'	2.38	0.54
51:1:458:G:HO2'	51:1:459:U:H5	1.56	0.54
51:1:2543:G:H2'	51:1:2544:G:C8	2.43	0.54
51:1:2629:U:O2'	51:1:2630:G:H5''	2.07	0.54
1:b:23:LEU:HD21	1:b:89:ASN:ND2	2.23	0.54
4:e:21:TYR:CD1	4:e:26:GLN:HB3	2.42	0.54
5:f:11:PRO:HG2	5:f:14:VAL:HG22	1.89	0.54
6:g:4:ILE:HG12	6:g:37:VAL:O	2.07	0.54
8:k:43:ILE:HD12	8:k:43:ILE:N	2.23	0.54
19:v:82:TYR:HE1	19:v:83:LYS:HE3	1.72	0.54
31:I:69:ARG:HB3	31:I:70:GLN:NE2	2.22	0.54
33:K:29:ILE:HG23	33:K:64:VAL:HG21	1.89	0.54
33:K:90:MET:SD	33:K:91:ARG:N	2.81	0.54
37:O:18:ILE:HD11	37:O:72:ARG:HG3	1.88	0.54
45:W:71:ASP:OD2	48:Z:3:ILE:HG21	2.07	0.54
50:3:43:C:C3'	50:3:44:A:H5''	2.38	0.54
50:3:371:A:H2'	50:3:372:C:O4'	2.08	0.54
50:3:424:G:H2'	50:3:425:G:C8	2.42	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:860:A:H2'	50:3:861:G:O4'	2.07	0.54
50:3:982:U:H5'	50:3:983:A:C8	2.43	0.54
50:3:1073:U:H2'	50:3:1074:G:C8	2.43	0.54
50:3:1084:G:H21	50:3:1102:A:H62	1.56	0.54
51:1:181:A:H2'	51:1:182:A:C8	2.43	0.54
51:1:310:A:H2'	51:1:311:A:H5''	1.89	0.54
51:1:796:C:H2'	51:1:797:G:C8	2.43	0.54
51:1:2140:G:H2'	51:1:2141:G:O4'	2.08	0.54
51:1:2146:C:H4'	51:1:2147:A:C5	2.43	0.54
2:c:159:LYS:HB3	2:c:161:MET:HE3	1.90	0.54
33:K:40:GLU:HB2	33:K:61:LEU:HB2	1.90	0.54
34:L:51:GLN:HE22	34:L:52:ARG:HG3	1.72	0.54
42:T:69:LEU:HD12	42:T:70:LYS:N	2.22	0.54
43:U:54:LEU:HD13	43:U:80:LYS:HD3	1.89	0.54
50:3:347:G:H2'	50:3:348:G:H5''	1.90	0.54
51:1:223:A:H1'	51:1:421:C:H1'	1.89	0.54
51:1:1431:A:H2'	51:1:1432:G:C8	2.43	0.54
51:1:1866:A:N6	51:1:1875:G:O2'	2.41	0.54
1:b:48:ILE:HD11	1:b:51:ARG:HA	1.89	0.54
7:j:89:PHE:HE1	7:j:100:VAL:HG11	1.73	0.54
13:p:2:ASN:O	13:p:6:GLN:HG3	2.07	0.54
24:B:2:VAL:HG12	24:B:3:GLN:N	2.22	0.54
32:J:132:PRO:O	32:J:135:VAL:HG22	2.08	0.54
36:N:78:ILE:O	36:N:82:ILE:HG13	2.08	0.54
42:T:31:LEU:HD22	42:T:62:ARG:HB2	1.90	0.54
47:Y:61:ALA:HB1	47:Y:68:LYS:HD3	1.90	0.54
50:3:560:A:C4'	50:3:561:U:H5'	2.38	0.54
50:3:638:U:H3'	50:3:639:G:H5''	1.90	0.54
51:1:722:A:H2'	51:1:723:C:C6	2.43	0.54
51:1:2185:U:H2'	51:1:2186:G:H8	1.71	0.54
51:1:2310:C:C2'	51:1:2311:A:H5''	2.38	0.54
52:2:56:G:H4'	52:2:57:A:H8	1.74	0.54
4:e:12:VAL:HB	4:e:16:MET:SD	2.48	0.53
9:l:135:ILE:HD12	9:l:142:ILE:HD11	1.90	0.53
11:n:52:ILE:O	11:n:56:LYS:HG3	2.08	0.53
19:v:32:GLY:O	19:v:93:ARG:HD2	2.09	0.53
29:G:182:VAL:HG23	29:G:195:VAL:HA	1.89	0.53
33:K:70:VAL:HG22	33:K:74:LEU:HD13	1.90	0.53
50:3:78:A:H2'	50:3:79:G:O4'	2.07	0.53
51:1:438:G:H2'	51:1:439:A:C8	2.42	0.53
51:1:1525:A:H2'	51:1:1526:C:H5'	1.88	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:j:78:THR:HG22	51:1:2641:G:H5''	1.89	0.53
12:o:38:GLN:HE22	52:2:7:G:H1'	1.73	0.53
24:B:12:ARG:NH1	24:B:16:ARG:HE	2.06	0.53
29:G:17:HIS:HE1	29:G:189:ASN:ND2	2.06	0.53
30:H:4:VAL:HG22	30:H:5:HIS:N	2.23	0.53
30:H:130:ARG:HA	30:H:133:MET:HE3	1.90	0.53
49:a:38:PHE:HB3	51:1:2127:G:H4'	1.90	0.53
51:1:44:A:H2'	51:1:45:G:O4'	2.08	0.53
51:1:1297:C:OP1	51:1:2710:C:H4'	2.07	0.53
51:1:2423:U:H2'	51:1:2424:C:O4'	2.09	0.53
51:1:2732:G:O2'	51:1:2733:A:H5'	2.07	0.53
5:f:103:ASN:O	5:f:104:LEU:HD22	2.09	0.53
29:G:213:LEU:HD12	29:G:214:GLY:N	2.23	0.53
44:V:26:ARG:HH12	44:V:28:VAL:HB	1.73	0.53
48:Z:66:ARG:HG3	50:3:1167:A:N3	2.24	0.53
50:3:410:G:H1'	50:3:433:G:H22	1.72	0.53
50:3:924:C:H2'	50:3:925:G:C8	2.43	0.53
50:3:967:C:H3'	50:3:968:A:OP1	2.09	0.53
50:3:1288:A:H2	50:3:1371:G:H21	1.56	0.53
50:3:1412:C:H2'	50:3:1413:A:C8	2.43	0.53
51:1:222:A:N1	51:1:233:A:H5''	2.23	0.53
51:1:473:G:O2'	51:1:474:G:H5'	2.08	0.53
51:1:2430:A:H3'	51:1:2430:A:N3	2.24	0.53
51:1:2470:G:H2'	51:1:2471:A:C8	2.42	0.53
1:b:204:LEU:HB2	51:1:1791:A:H4'	1.89	0.53
4:e:113:PHE:HD2	4:e:177:ARG:HH22	1.56	0.53
14:q:87:VAL:HG13	15:r:49:ILE:HD11	1.90	0.53
30:H:161:ILE:HA	50:3:1056:U:OP1	2.07	0.53
33:K:67:PRO:O	33:K:70:VAL:HG12	2.08	0.53
50:3:762:U:H2'	50:3:763:G:C8	2.43	0.53
50:3:952:U:H2'	50:3:953:G:C8	2.44	0.53
51:1:1065:U:C5'	51:1:1066:U:H5''	2.38	0.53
51:1:1519:G:H2'	51:1:1520:U:H5'	1.90	0.53
8:k:8:LEU:HB2	8:k:19:VAL:HG23	1.91	0.53
28:F:7:VAL:HG21	28:F:23:ILE:HG21	1.90	0.53
30:H:191:THR:C	50:3:1206:G:H4'	2.33	0.53
40:R:68:LEU:O	40:R:72:ILE:HG13	2.07	0.53
45:W:42:ARG:NH1	45:W:43:ILE:HD11	2.22	0.53
50:3:681:A:H2'	50:3:682:G:H8	1.73	0.53
50:3:1085:U:H4'	50:3:1094:G:H1'	1.91	0.53
51:1:1183:U:H2'	51:1:1184:U:C6	2.43	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:p:29:VAL:CG2	13:p:79:VAL:HG12	2.38	0.53
42:T:79:GLN:OE1	42:T:83:ARG:HD2	2.09	0.53
50:3:358:U:H2'	50:3:359:G:H8	1.74	0.53
50:3:443:C:H2'	50:3:444:G:H8	1.73	0.53
51:1:863:A:H2'	51:1:864:G:H8	1.68	0.53
10:m:16:ARG:HB3	52:2:90:C:OP2	2.09	0.53
29:G:27:LYS:HB3	29:G:28:PRO:HD3	1.91	0.53
34:L:52:ARG:HH12	34:L:121:ASN:HA	1.73	0.53
44:V:29:LYS:HB2	44:V:36:PHE:CE1	2.44	0.53
50:3:112:G:N2	50:3:354:G:H5'	2.20	0.53
50:3:631:C:H3'	50:3:632:U:H5'	1.90	0.53
50:3:1197:A:H2'	50:3:1198:G:H5'	1.89	0.53
51:1:527:C:H4'	51:1:528:A:O4'	2.09	0.53
51:1:1415:U:O2'	51:1:1416:G:H4'	2.09	0.53
51:1:1488:C:H2'	51:1:1489:C:O4'	2.07	0.53
51:1:2215:C:H2'	51:1:2216:G:C8	2.44	0.53
51:1:2345:G:N3	51:1:2381:A:H2'	2.24	0.53
4:e:43:ILE:HD13	4:e:77:LYS:HB3	1.90	0.53
4:e:121:PHE:HB3	4:e:127:TYR:CE1	2.44	0.53
4:e:149:ARG:HB2	4:e:149:ARG:HH11	1.74	0.53
6:g:5:LEU:HD12	6:g:17:ASP:HB2	1.91	0.53
33:K:15:SER:O	33:K:19:PRO:HD3	2.09	0.53
37:O:9:ARG:HD2	37:O:99:GLN:OE1	2.09	0.53
37:O:15:HIS:HA	37:O:18:ILE:HG22	1.91	0.53
38:P:81:LEU:HD23	38:P:81:LEU:H	1.74	0.53
39:Q:53:ARG:NH1	39:Q:63:THR:HG23	2.24	0.53
50:3:91:U:H2'	50:3:92:U:O4'	2.08	0.53
51:1:349:U:H2'	51:1:350:G:C8	2.43	0.53
51:1:526:A:N6	51:1:2626:C:H4'	2.24	0.53
51:1:1585:C:H2'	51:1:1586:A:H5'	1.91	0.53
51:1:2086:U:H2'	51:1:2087:G:C8	2.43	0.53
4:e:48:LEU:HA	4:e:51:ASN:HB2	1.90	0.53
6:g:75:LEU:H	6:g:75:LEU:CD2	2.21	0.53
12:o:77:ALA:O	12:o:81:ARG:HG2	2.08	0.53
19:v:2:PHE:HZ	19:v:55:GLU:HG3	1.74	0.53
20:w:39:THR:H	51:1:2331:G:H4'	1.74	0.53
26:D:31:LEU:HB3	26:D:35:ARG:HH12	1.73	0.53
30:H:169:GLU:HG2	30:H:170:GLY:N	2.24	0.53
31:I:72:ARG:O	31:I:76:LYS:HG3	2.08	0.53
31:I:104:MET:HE3	31:I:179:GLY:C	2.34	0.53
40:R:106:ARG:NH1	40:R:109:LYS:HZ3	2.07	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:257:C:H2'	51:1:258:G:O4'	2.09	0.53
51:1:669:G:H2'	51:1:669:G:N3	2.23	0.53
51:1:696:G:O2'	51:1:697:G:H5'	2.09	0.53
52:2:2:G:H2'	52:2:3:C:C6	2.43	0.53
8:k:35:VAL:HG21	8:k:104:THR:HG21	1.91	0.53
9:l:60:ARG:HH21	51:1:2428:G:N2	2.06	0.53
13:p:59:THR:CG2	13:p:72:VAL:HG12	2.36	0.53
21:x:2:ARG:O	21:x:11:PRO:HD3	2.09	0.53
31:l:90:LEU:HD21	31:l:194:ILE:CD1	2.39	0.53
50:3:983:A:H1'	50:3:1049:U:O2	2.08	0.53
50:3:1158:C:H2'	50:3:1159:U:H4'	1.90	0.53
50:3:1243:C:H2'	50:3:1244:G:C8	2.44	0.53
51:1:948:C:H2'	51:1:949:G:H8	1.74	0.53
53:5:45:G:O2'	53:5:46:G:H5'	2.09	0.53
4:e:35:LEU:HD12	4:e:35:LEU:N	2.24	0.52
5:f:3:VAL:HG21	51:1:2748:A:H5'	1.91	0.52
11:n:54:LEU:HD23	11:n:66:ALA:HB2	1.89	0.52
14:q:93:ILE:O	14:q:97:ILE:HG13	2.09	0.52
29:G:198:VAL:C	29:G:199:ILE:HD12	2.34	0.52
31:l:57:LYS:CB	31:l:202:LEU:HD12	2.38	0.52
45:W:51:GLN:HA	45:W:54:LEU:HD12	1.90	0.52
51:1:4:U:H2'	51:1:5:A:H8	1.74	0.52
51:1:184:C:H4'	51:1:217:A:C2	2.44	0.52
51:1:1906:G:H2'	51:1:1907:G:C8	2.44	0.52
14:q:111:LYS:HE3	15:r:50:GLY:HA2	1.90	0.52
16:s:93:ALA:HB2	51:1:1614:A:C2	2.45	0.52
18:u:5:ARG:HG3	18:u:5:ARG:HH21	1.74	0.52
36:N:27:ILE:HG13	36:N:27:ILE:O	2.09	0.52
41:S:52:ARG:HG2	41:S:52:ARG:HH11	1.74	0.52
44:V:10:ARG:C	44:V:22:VAL:HG13	2.33	0.52
48:Z:33:ARG:HH11	48:Z:34:ARG:HG2	1.74	0.52
50:3:634:C:H2'	50:3:635:A:C8	2.44	0.52
50:3:924:C:H2'	50:3:925:G:H8	1.74	0.52
50:3:952:U:H4'	50:3:964:A:H61	1.74	0.52
50:3:961:U:OP2	50:3:1223:C:H4'	2.10	0.52
50:3:1316:G:N2	50:3:1318:A:H3'	2.23	0.52
51:1:660:C:H2'	51:1:661:A:C8	2.45	0.52
51:1:1015:U:H2'	51:1:1016:G:C8	2.44	0.52
51:1:1132:U:H2'	51:1:1133:A:C8	2.44	0.52
51:1:1319:C:O2'	51:1:1320:C:H5'	2.08	0.52
51:1:1866:A:H2'	51:1:1867:G:O4'	2.08	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1878:G:O2'	51:1:1879:C:H6	1.92	0.52
4:e:50:ASP:O	4:e:54:ALA:N	2.41	0.52
5:f:86:LEU:HD12	5:f:130:ILE:HB	1.90	0.52
16:s:73:LYS:HB2	16:s:106:VAL:HB	1.90	0.52
31:I:89:LEU:C	31:I:89:LEU:HD23	2.34	0.52
40:R:83:GLY:N	40:R:91:ARG:HH22	2.06	0.52
50:3:214:C:H2'	50:3:215:C:C6	2.44	0.52
50:3:1284:C:H2'	50:3:1285:A:C8	2.45	0.52
51:1:203:A:H3'	51:1:204:A:C5'	2.36	0.52
51:1:1021:A:H2'	51:1:1022:G:H4'	1.91	0.52
51:1:1328:A:H2'	51:1:1330:C:C4	2.45	0.52
51:1:1558:C:H4'	51:1:1559:U:H3'	1.92	0.52
51:1:1721:G:H22	51:1:1738:G:H2'	1.75	0.52
51:1:1862:G:H2'	51:1:1863:G:C8	2.44	0.52
51:1:1864:U:H3'	51:1:1865:U:H5''	1.91	0.52
1:b:179:GLU:OE2	1:b:266:ILE:HG23	2.10	0.52
1:b:220:ARG:HG3	51:1:1789:A:OP1	2.09	0.52
19:v:76:ASP:HB2	19:v:90:ASP:OD2	2.09	0.52
25:C:4:ILE:N	25:C:4:ILE:HD12	2.24	0.52
29:G:94:ARG:HH22	50:3:1102:A:H4'	1.75	0.52
33:K:86:ARG:HG2	33:K:86:ARG:HH11	1.75	0.52
35:M:6:ILE:O	35:M:10:LEU:HG	2.09	0.52
37:O:59:LYS:HE2	37:O:62:ARG:HH21	1.74	0.52
39:Q:73:LEU:HD21	39:Q:103:CYS:HA	1.91	0.52
50:3:638:U:H2'	50:3:639:G:H5''	1.91	0.52
50:3:955:U:H3	50:3:1225:A:N6	2.07	0.52
50:3:1187:G:H2'	50:3:1188:A:H8	1.74	0.52
50:3:1202:U:H2'	50:3:1203:C:O4'	2.10	0.52
50:3:1289:A:H3'	50:3:1290:G:H8	1.75	0.52
50:3:1303:C:H2'	50:3:1304:G:H5'	1.92	0.52
51:1:140:C:H2'	51:1:141:G:H4'	1.92	0.52
51:1:227:A:H1'	51:1:229:C:N4	2.24	0.52
51:1:1436:G:H2'	51:1:1437:C:C6	2.43	0.52
51:1:2190:G:H2'	51:1:2191:A:H8	1.74	0.52
6:g:58:LEU:O	6:g:62:LEU:HD23	2.10	0.52
25:C:34:GLU:OE1	25:C:49:LYS:HG2	2.10	0.52
30:H:107:LYS:HE3	30:H:143:LEU:HD21	1.92	0.52
40:R:3:ILE:HG21	40:R:59:VAL:HG21	1.92	0.52
40:R:8:ILE:HG23	40:R:8:ILE:O	2.10	0.52
40:R:102:LYS:HE2	50:3:1226:C:N4	2.24	0.52
44:V:24:ILE:HD12	44:V:43:LEU:HD12	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:577:G:H2'	51:1:578:G:C8	2.44	0.52
51:1:727:A:O2'	51:1:728:G:H5'	2.10	0.52
51:1:948:C:H2'	51:1:949:G:C8	2.44	0.52
51:1:2220:U:H2'	51:1:2221:G:C8	2.45	0.52
5:f:46:ASP:CG	5:f:47:ASN:H	2.16	0.52
6:g:82:SER:HB2	6:g:92:GLY:HA3	1.92	0.52
15:r:34:GLU:OE2	15:r:60:LYS:HA	2.10	0.52
15:r:49:ILE:HG13	15:r:50:GLY:H	1.74	0.52
19:v:60:VAL:HG13	19:v:94:ALA:O	2.09	0.52
29:G:186:VAL:CB	29:G:192:PRO:HG3	2.40	0.52
31:I:2:ARG:HB3	31:I:2:ARG:NH1	2.25	0.52
38:P:100:ASN:HD21	38:P:106:ILE:HG12	1.74	0.52
43:U:5:ARG:HD2	50:3:376:G:H4'	1.90	0.52
50:3:726:C:H2'	50:3:727:G:H8	1.74	0.52
51:1:633:A:H2'	51:1:634:C:O4'	2.10	0.52
51:1:907:G:C2'	51:1:908:C:H5'	2.39	0.52
51:1:1258:U:H2'	51:1:1259:G:C8	2.45	0.52
51:1:1669:A:O3'	51:1:2549:G:H5'	2.08	0.52
51:1:2404:U:H2'	51:1:2405:G:O4'	2.09	0.52
4:e:12:VAL:HG23	4:e:13:LYS:N	2.25	0.52
4:e:116:LEU:HD12	4:e:176:PHE:CE1	2.45	0.52
8:k:97:THR:O	8:k:118:LEU:HD13	2.10	0.52
9:l:30:THR:HG23	51:1:810:U:C4	2.44	0.52
38:P:12:ARG:HD3	38:P:76:TYR:HD1	1.74	0.52
38:P:33:ILE:HB	38:P:42:GLY:H	1.74	0.52
46:X:50:VAL:HB	46:X:74:ALA:HB2	1.90	0.52
50:3:697:U:H3	50:3:785:G:H21	1.56	0.52
50:3:1225:A:H2'	50:3:1225:A:N3	2.25	0.52
50:3:1538:C:H2'	50:3:1539:C:H5'	1.91	0.52
51:1:792:A:H4'	51:1:793:A:O5'	2.09	0.52
51:1:1666:G:C2'	51:1:1667:G:H5'	2.40	0.52
51:1:1936:A:H2	51:1:1943:U:H3	1.56	0.52
51:1:2302:U:H2'	51:1:2303:G:C8	2.44	0.52
51:1:2504:U:C2'	51:1:2505:G:H5''	2.36	0.52
2:c:2:ILE:HD13	2:c:90:PHE:CE2	2.44	0.52
3:d:102:ARG:O	3:d:106:LYS:HG3	2.10	0.52
13:p:88:ARG:HH11	13:p:113:LEU:HA	1.75	0.52
20:w:45:ALA:O	20:w:47:VAL:HG23	2.09	0.52
30:H:108:PRO:HA	30:H:114:LEU:HD13	1.92	0.52
30:H:113:LYS:HB2	30:H:184:ASN:ND2	2.25	0.52
31:I:104:MET:HE3	31:I:179:GLY:CA	2.40	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:J:98:ALA:CB	32:J:121:ASN:HB3	2.39	0.52
36:N:93:LEU:O	36:N:97:LEU:HG	2.09	0.52
46:X:43:MET:O	46:X:46:LEU:HD13	2.09	0.52
50:3:608:A:H2'	50:3:609:A:O4'	2.10	0.52
51:1:2306:C:H3'	51:1:2307:G:H2'	1.92	0.52
4:e:45:ASP:OD2	4:e:48:LEU:HB2	2.09	0.52
4:e:90:LEU:HD23	4:e:95:MET:HA	1.91	0.52
4:e:105:ILE:O	4:e:109:ARG:HD3	2.09	0.52
11:n:53:THR:OG1	51:1:2840:C:H5''	2.09	0.52
23:z:2:LYS:NZ	23:z:4:ILE:HA	2.23	0.52
23:z:13:ILE:HD12	51:1:988:A:C8	2.45	0.52
36:N:80:HIS:CE1	36:N:84:ARG:HH11	2.27	0.52
44:V:16:MET:HB3	44:V:19:SER:HB2	1.90	0.52
4:e:107:VAL:HB	4:e:108:PRO:HD3	1.92	0.52
30:H:112:ALA:HB2	30:H:182:ASP:HB3	1.91	0.52
35:M:102:VAL:HG13	35:M:125:ILE:HB	1.91	0.52
40:R:47:LEU:CD1	40:R:55:LEU:HD11	2.40	0.52
43:U:6:LEU:HD13	43:U:17:TYR:CD2	2.45	0.52
43:U:67:ILE:HD13	43:U:75:ILE:CD1	2.40	0.52
46:X:35:ARG:NH2	46:X:52:ASN:HA	2.25	0.52
51:1:532:A:H2'	51:1:532:A:N3	2.24	0.52
51:1:2471:A:H2'	51:1:2472:G:O4'	2.09	0.52
2:c:13:ARG:HH11	13:p:55:HIS:HA	1.74	0.51
2:c:184:ARG:HH12	13:p:6:GLN:HB3	1.75	0.51
7:j:53:TYR:CE1	7:j:121:LYS:HG2	2.45	0.51
14:q:80:ASN:HD22	14:q:116:LEU:CD1	2.23	0.51
28:F:5:ALA:HB3	51:1:2466:C:C5'	2.40	0.51
29:G:110:ILE:HD11	29:G:151:LYS:HA	1.92	0.51
32:J:84:VAL:HG22	32:J:85:LYS:N	2.24	0.51
34:L:73:GLU:HB2	34:L:90:VAL:HB	1.91	0.51
35:M:120:LEU:HA	50:3:600:A:C5'	2.39	0.51
42:T:36:ASN:HA	42:T:39:GLN:HG2	1.93	0.51
50:3:759:A:H2'	50:3:760:G:H5'	1.91	0.51
51:1:49:A:O5'	51:1:51:G:H5'	2.09	0.51
51:1:374:A:H2'	51:1:375:G:O4'	2.10	0.51
51:1:680:C:H2'	51:1:681:G:H8	1.74	0.51
51:1:969:G:H2'	51:1:970:U:C6	2.45	0.51
31:I:12:ARG:HH11	31:I:12:ARG:HG3	1.74	0.51
31:I:58:GLN:O	31:I:62:ARG:HD3	2.10	0.51
32:J:25:LYS:HG2	50:3:922:G:H5'	1.91	0.51
36:N:12:LYS:NZ	36:N:109:GLN:HA	2.23	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:N:83:THR:HB	36:N:103:VAL:HG22	1.92	0.51
39:Q:33:CYS:HB2	39:Q:79:ILE:HG12	1.92	0.51
49:a:216:THR:HG22	49:a:217:THR:N	2.25	0.51
50:3:1295:U:H2'	50:3:1296:C:C6	2.45	0.51
50:3:1514:G:H2'	50:3:1515:G:H8	1.75	0.51
51:1:1357:C:H2'	51:1:1358:G:O4'	2.11	0.51
51:1:1838:C:N4	51:1:1898:U:H2'	2.25	0.51
31:I:18:LEU:HD13	31:I:63:ILE:HG12	1.93	0.51
31:I:71:PHE:HA	31:I:74:TYR:CD2	2.46	0.51
31:I:169:TRP:CG	31:I:185:PRO:HG3	2.45	0.51
34:L:66:GLU:HG3	34:L:67:ASN:ND2	2.26	0.51
39:Q:87:LYS:HD2	50:3:525:C:OP1	2.10	0.51
42:T:86:LEU:HD23	42:T:86:LEU:N	2.22	0.51
49:a:38:PHE:CE1	49:a:40:GLU:HG3	2.45	0.51
50:3:43:C:C2'	50:3:44:A:H5''	2.41	0.51
50:3:343:U:O2'	50:3:344:A:H2'	2.11	0.51
51:1:1230:A:H2'	51:1:1231:U:C6	2.46	0.51
51:1:2758:A:H2'	51:1:2759:G:O4'	2.10	0.51
51:1:2881:U:H2'	51:1:2882:A:H8	1.75	0.51
52:2:39:A:H2'	52:2:40:U:C5	2.45	0.51
4:e:79:ARG:NH1	4:e:82:TYR:HB2	2.25	0.51
6:g:5:LEU:HD13	6:g:13:GLY:CA	2.40	0.51
12:o:116:GLN:HE21	12:o:116:GLN:H	1.57	0.51
15:r:41:ILE:O	15:r:47:VAL:HB	2.10	0.51
24:B:27:LEU:HD23	24:B:38:LEU:HD23	1.91	0.51
34:L:1:PRO:HD2	50:3:935:A:N6	2.24	0.51
34:L:110:ARG:O	34:L:118:ARG:HG2	2.10	0.51
39:Q:35:ARG:HD2	39:Q:75:GLU:OE2	2.11	0.51
40:R:57:ASP:HB3	40:R:58:GLU:OE2	2.10	0.51
41:S:45:LEU:HD23	41:S:45:LEU:O	2.10	0.51
43:U:53:ASP:O	43:U:57:ILE:HG13	2.10	0.51
50:3:548:G:H2'	50:3:549:C:O4'	2.10	0.51
3:d:47:LYS:O	3:d:83:VAL:HG13	2.10	0.51
14:q:36:GLN:O	14:q:39:ILE:HG22	2.11	0.51
20:w:16:ARG:N	20:w:16:ARG:HD2	2.25	0.51
25:C:20:TYR:OH	51:1:2348:U:H5'	2.11	0.51
26:D:10:LEU:HD23	51:1:770:G:H5''	1.92	0.51
29:G:80:LYS:HA	29:G:90:PHE:HB2	1.93	0.51
30:H:110:LEU:C	30:H:110:LEU:HD23	2.36	0.51
37:O:18:ILE:HG12	37:O:72:ARG:CD	2.41	0.51
39:Q:110:LYS:HD2	50:3:539:A:OP1	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:S:86:ALA:HB1	41:S:91:GLU:HG3	1.93	0.51
41:S:87:ALA:HA	41:S:95:LEU:HD23	1.91	0.51
46:X:43:MET:C	46:X:46:LEU:HD13	2.35	0.51
5:f:116:LEU:HD23	5:f:117:PRO:N	2.26	0.51
15:r:87:GLN:HG3	51:1:1224:U:O2'	2.11	0.51
23:z:2:LYS:NZ	23:z:4:ILE:HD12	2.25	0.51
35:M:62:LEU:N	35:M:62:LEU:HD12	2.26	0.51
35:M:95:MET:O	35:M:98:LEU:HG	2.10	0.51
50:3:916:U:H2'	50:3:917:G:H8	1.76	0.51
51:1:395:U:H2'	51:1:396:G:C8	2.46	0.51
51:1:1601:G:O2'	51:1:1602:U:H5'	2.11	0.51
51:1:2638:G:H1'	51:1:2778:A:H61	1.75	0.51
51:1:2798:U:H5'	51:1:2799:A:C2	2.45	0.51
12:o:79:ALA:HB3	12:o:113:ALA:HB3	1.92	0.51
14:q:57:ARG:HA	14:q:60:TRP:CE3	2.46	0.51
27:E:35:LYS:O	27:E:40:LYS:HE3	2.10	0.51
29:G:165:ALA:HB3	29:G:190:SER:HB3	1.92	0.51
34:L:113:LYS:HB3	34:L:117:LEU:CD1	2.41	0.51
37:O:72:ARG:HG2	37:O:72:ARG:HH11	1.76	0.51
38:P:21:HIS:O	38:P:31:VAL:HG23	2.11	0.51
39:Q:35:ARG:HG3	39:Q:37:TYR:CD2	2.46	0.51
39:Q:101:LEU:HD23	39:Q:101:LEU:N	2.26	0.51
45:W:29:LYS:O	45:W:32:ILE:HG12	2.11	0.51
46:X:10:ILE:HG12	46:X:37:SER:OG	2.10	0.51
47:Y:60:GLN:OE1	47:Y:65:LEU:HD23	2.11	0.51
51:1:445:C:C2'	51:1:446:G:H5'	2.41	0.51
51:1:871:U:H2'	51:1:872:U:C6	2.45	0.51
51:1:1464:G:O2'	51:1:1465:G:H5'	2.11	0.51
51:1:2333:A:O4'	51:1:2335:A:H1'	2.11	0.51
51:1:2743:U:H2'	51:1:2744:G:H5''	1.93	0.51
53:5:26:G:H3'	53:5:27:U:C5'	2.40	0.51
54:4:7:G:H3'	54:4:8:A:C5'	2.38	0.51
1:b:43:ASN:ND2	1:b:45:ASN:H	2.07	0.51
4:e:116:LEU:HG	4:e:175:PRO:O	2.11	0.51
12:o:106:LEU:C	12:o:106:LEU:HD23	2.36	0.51
31:I:77:GLU:O	31:I:81:LEU:HG	2.11	0.51
40:R:15:VAL:HB	40:R:33:LEU:HD22	1.93	0.51
45:W:28:LEU:HD23	45:W:66:LEU:HD13	1.92	0.51
47:Y:81:GLN:O	47:Y:85:LEU:HD13	2.11	0.51
49:a:63:THR:HB	49:a:161:VAL:CG2	2.40	0.51
50:3:684:U:H2'	50:3:685:G:C8	2.45	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1105:A:H2'	50:3:1106:G:H8	1.75	0.51
51:1:197:A:H4'	51:1:2069:G:OP1	2.10	0.51
51:1:519:U:H2'	51:1:520:G:C8	2.46	0.51
51:1:909:A:H2'	51:1:911:A:OP2	2.11	0.51
51:1:1344:U:H3'	51:1:1345:C:H5'	1.92	0.51
51:1:2233:U:H2'	51:1:2234:G:C8	2.46	0.51
52:2:1:U:H2'	52:2:2:G:C8	2.46	0.51
52:2:39:A:H2'	52:2:40:U:C6	2.46	0.51
10:m:33:LEU:HB2	10:m:117:PHE:CE1	2.46	0.51
13:p:87:ARG:HB3	13:p:111:GLU:OE1	2.11	0.51
29:G:96:LEU:HB2	29:G:99:MET:HG2	1.91	0.51
34:L:113:LYS:CD	34:L:117:LEU:HD13	2.41	0.51
35:M:60:LEU:HD23	35:M:61:THR:N	2.26	0.51
38:P:32:THR:O	38:P:34:THR:HG23	2.11	0.51
39:Q:112:ALA:HB2	50:3:503:C:OP2	2.11	0.51
41:S:84:ARG:C	41:S:84:ARG:HD3	2.35	0.51
47:Y:74:HIS:O	47:Y:78:LEU:HG	2.11	0.51
50:3:628:G:H2'	50:3:629:A:C8	2.45	0.51
51:1:718:A:H3'	51:1:719:C:H6	1.75	0.51
51:1:1728:C:C2'	51:1:1729:U:H5''	2.31	0.51
51:1:2096:C:H2'	51:1:2097:A:H5''	1.93	0.51
51:1:2187:U:H2'	51:1:2188:U:O4'	2.11	0.51
4:e:115:GLY:HA3	4:e:177:ARG:HB2	1.93	0.51
7:j:84:ILE:HG23	7:j:84:ILE:O	2.11	0.51
11:n:6:SER:HB2	11:n:46:ARG:HH22	1.76	0.51
20:w:11:ASP:CG	20:w:12:SER:N	2.69	0.51
31:I:167:PRO:HD2	31:I:170:LEU:HD11	1.91	0.51
33:K:9:MET:HE2	33:K:85:ILE:CD1	2.41	0.51
50:3:536:C:H2'	50:3:537:G:H8	1.76	0.51
52:2:51:G:H2'	52:2:52:A:O4'	2.10	0.51
4:e:134:GLN:O	4:e:140:ILE:HG13	2.11	0.50
5:f:25:ILE:HD13	5:f:74:MET:HG2	1.91	0.50
22:y:44:LYS:HE3	22:y:48:ARG:HH21	1.76	0.50
23:z:4:ILE:HG22	23:z:37:ARG:O	2.11	0.50
30:H:64:ARG:HA	30:H:99:GLN:HB2	1.93	0.50
30:H:137:VAL:HG13	30:H:148:ILE:HG21	1.93	0.50
31:I:71:PHE:HA	31:I:74:TYR:HD2	1.76	0.50
33:K:37:HIS:ND1	33:K:96:VAL:HG13	2.26	0.50
41:S:87:ALA:HA	41:S:95:LEU:CD2	2.41	0.50
49:a:22:ASP:HA	49:a:224:VAL:HG23	1.93	0.50
50:3:1063:C:H2'	50:3:1064:G:C8	2.46	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1369:C:H2'	50:3:1370:G:C8	2.46	0.50
51:1:568:U:H4'	51:1:945:A:N6	2.26	0.50
51:1:1316:U:H2'	51:1:1317:G:C8	2.46	0.50
51:1:2092:U:C4'	51:1:2093:G:H5''	2.41	0.50
3:d:97:ASN:HD22	3:d:97:ASN:N	2.07	0.50
6:g:81:ALA:HB1	6:g:149:GLU:HB3	1.93	0.50
13:p:102:ARG:NH2	13:p:106:ALA:HB1	2.26	0.50
21:x:53:LYS:O	21:x:57:VAL:HG23	2.11	0.50
34:L:37:THR:HG23	50:3:1290:G:H5''	1.92	0.50
37:O:64:GLN:HE21	41:S:98:ALA:HB3	1.76	0.50
38:P:92:ARG:HG3	38:P:93:GLU:HG3	1.93	0.50
47:Y:54:GLN:N	47:Y:55:PRO:HD2	2.26	0.50
48:Z:49:ALA:O	48:Z:53:LYS:HG3	2.12	0.50
51:1:543:G:H2'	51:1:544:C:C4'	2.41	0.50
22:y:45:GLN:NE2	22:y:49:ASP:OD2	2.44	0.50
30:H:51:VAL:HG11	30:H:54:ILE:HD11	1.93	0.50
34:L:15:PRO:HD2	34:L:43:TYR:OH	2.11	0.50
34:L:131:GLY:O	34:L:135:LYS:HG3	2.11	0.50
37:O:6:ILE:HG22	37:O:8:ILE:HG12	1.93	0.50
37:O:42:LEU:HD12	37:O:72:ARG:C	2.37	0.50
50:3:1338:G:H2'	50:3:1339:A:H8	1.77	0.50
50:3:1512:U:H2'	50:3:1513:A:C8	2.47	0.50
51:1:406:G:H2'	51:1:407:G:C8	2.46	0.50
51:1:1723:G:H2'	51:1:1724:G:H5'	1.93	0.50
51:1:2710:C:H2'	51:1:2711:A:C8	2.47	0.50
3:d:1:MET:N	3:d:14:VAL:O	2.42	0.50
3:d:75:SER:OG	3:d:76:PRO:HD2	2.11	0.50
31:I:150:LYS:HA	31:I:154:VAL:HG22	1.92	0.50
33:K:1:MET:HA	33:K:67:PRO:HA	1.93	0.50
38:P:100:ASN:ND2	48:Z:11:PHE:HE1	2.09	0.50
50:3:580:C:H2'	50:3:581:G:O4'	2.12	0.50
51:1:1444:G:H2'	51:1:1445:G:C8	2.46	0.50
51:1:1947:C:H2'	51:1:1948:G:H8	1.76	0.50
54:4:16:A:H2'	54:4:17:U:C6	2.47	0.50
2:c:99:GLU:OE2	2:c:182:ALA:HB2	2.11	0.50
4:e:149:ARG:HH11	4:e:149:ARG:CB	2.24	0.50
6:g:4:ILE:HD11	6:g:37:VAL:HB	1.93	0.50
14:q:111:LYS:HB2	15:r:48:LYS:NZ	2.27	0.50
26:D:31:LEU:HB3	26:D:35:ARG:NH1	2.26	0.50
29:G:7:ASP:OD1	29:G:8:MET:HG3	2.11	0.50
30:H:36:PHE:O	30:H:40:GLN:N	2.44	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:H:132:ALA:HA	30:H:135:ARG:HG2	1.94	0.50
37:O:51:VAL:HG22	37:O:52:LEU:N	2.26	0.50
40:R:52:ILE:O	40:R:56:ARG:HG3	2.11	0.50
50:3:751:U:C2'	50:3:752:G:H5'	2.42	0.50
51:1:499:U:H2'	51:1:500:G:O4'	2.11	0.50
1:b:29:PHE:HD2	1:b:32:LEU:HD13	1.75	0.50
1:b:224:MET:HE2	51:1:782:A:C6	2.46	0.50
3:d:3:LEU:HD22	3:d:120:VAL:HG21	1.94	0.50
4:e:12:VAL:O	4:e:16:MET:N	2.44	0.50
4:e:145:VAL:HG22	4:e:147:ARG:H	1.77	0.50
5:f:132:LEU:C	5:f:132:LEU:HD12	2.36	0.50
12:o:28:VAL:O	12:o:28:VAL:HG23	2.12	0.50
30:H:183:TYR:HD1	30:H:199:VAL:O	1.95	0.50
36:N:80:HIS:CD2	36:N:105:ARG:HA	2.46	0.50
36:N:118:ARG:NH1	50:3:1233:G:H5'	2.26	0.50
37:O:49:PHE:HB2	37:O:65:TYR:HB2	1.92	0.50
43:U:8:ARG:HH11	43:U:8:ARG:HG3	1.76	0.50
43:U:25:ARG:HH11	43:U:25:ARG:CB	2.23	0.50
46:X:30:LEU:HD23	46:X:30:LEU:H	1.77	0.50
50:3:489:C:H2'	50:3:490:C:C6	2.47	0.50
50:3:1084:G:H5'	50:3:1102:A:OP2	2.12	0.50
50:3:1084:G:H4'	50:3:1102:A:H5''	1.93	0.50
50:3:1355:G:H2'	50:3:1356:G:H8	1.76	0.50
51:1:858:G:O2'	51:1:859:G:OP1	2.27	0.50
51:1:1716:U:H2'	51:1:1717:A:C8	2.45	0.50
51:1:2626:C:H2'	51:1:2627:G:C8	2.47	0.50
52:2:101:A:H2'	52:2:102:G:O4'	2.11	0.50
4:e:64:PRO:HB3	4:e:88:VAL:CG2	2.42	0.50
6:g:30:LEU:HB3	6:g:36:ALA:HB3	1.93	0.50
12:o:7:ARG:HD2	12:o:97:PHE:CZ	2.47	0.50
24:B:54:ILE:HG23	24:B:56:LYS:H	1.76	0.50
29:G:13:VAL:HG13	29:G:42:LEU:HD22	1.93	0.50
29:G:105:THR:CG2	50:3:1104:G:HI'	2.40	0.50
31:I:12:ARG:HD3	31:I:36:ALA:O	2.12	0.50
31:I:124:VAL:HG12	31:I:125:ASN:ND2	2.27	0.50
32:J:37:VAL:HA	32:J:47:PHE:HA	1.94	0.50
32:J:88:HIS:CE1	32:J:137:ARG:HE	2.30	0.50
33:K:9:MET:HE2	33:K:85:ILE:HD13	1.94	0.50
40:R:78:ARG:NH1	40:R:82:LEU:HD22	2.26	0.50
45:W:66:LEU:O	45:W:66:LEU:HD23	2.12	0.50
46:X:35:ARG:HH21	46:X:52:ASN:HA	1.77	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:128:G:O2'	50:3:129:A:H5'	2.12	0.50
50:3:320:A:H2'	50:3:321:A:C8	2.47	0.50
50:3:604:G:H2'	50:3:605:U:O4'	2.11	0.50
50:3:764:C:H2'	50:3:765:G:O4'	2.12	0.50
51:1:389:G:H2'	51:1:390:U:H5'	1.94	0.50
51:1:1118:C:H2'	51:1:1119:U:H5''	1.94	0.50
51:1:2217:G:O2'	51:1:2218:G:H5'	2.11	0.50
53:5:3:C:H3'	53:5:4:G:C5'	2.33	0.50
1:b:216:ARG:HH11	1:b:216:ARG:HG3	1.77	0.50
4:e:131:VAL:HB	4:e:151:LEU:HB3	1.94	0.50
6:g:128:HIS:HD2	6:g:146:VAL:HG21	1.76	0.50
7:j:134:ALA:HB3	7:j:135:GLN:HE22	1.77	0.50
27:E:31:ILE:O	27:E:31:ILE:HG13	2.11	0.50
29:G:183:PHE:CD1	29:G:197:PHE:HB2	2.46	0.50
31:I:9:LYS:HE2	31:I:9:LYS:CA	2.42	0.50
33:K:68:GLN:OE1	50:3:738:C:H5''	2.11	0.50
34:L:12:LEU:HB2	34:L:35:LYS:HE3	1.94	0.50
37:O:34:ALA:HB1	37:O:78:GLU:OE2	2.12	0.50
51:1:5:A:H2'	51:1:6:A:H8	1.77	0.50
51:1:870:U:O2'	51:1:871:U:H5'	2.12	0.50
7:j:76:HIS:CE1	7:j:85:LYS:HB2	2.46	0.50
7:j:114:LEU:HG	7:j:118:MET:CE	2.41	0.50
10:m:42:THR:HG23	10:m:45:GLN:NE2	2.27	0.50
15:r:25:LEU:HB3	15:r:27:ILE:HD13	1.94	0.50
17:t:20:ALA:HA	17:t:31:VAL:HG21	1.94	0.50
29:G:14:HIS:O	29:G:15:PHE:C	2.54	0.50
29:G:72:LYS:HD2	29:G:164:ASP:OD2	2.12	0.50
30:H:110:LEU:CD1	30:H:203:LYS:HE2	2.42	0.50
30:H:114:LEU:HA	30:H:117:ASP:OD1	2.11	0.50
30:H:148:ILE:HD12	30:H:201:ILE:HG12	1.94	0.50
41:S:31:SER:HB3	46:X:6:LYS:HB3	1.93	0.50
48:Z:5:VAL:HG23	48:Z:5:VAL:O	2.12	0.50
50:3:1132:C:H42	50:3:1139:G:H1	1.60	0.50
50:3:1406:U:H2'	50:3:1407:C:O4'	2.11	0.50
51:1:506:G:H5''	51:1:509:C:O2'	2.12	0.50
51:1:1558:C:H5''	51:1:1559:U:C6	2.47	0.50
51:1:1837:C:H2'	51:1:1899:A:H61	1.77	0.50
51:1:2349:G:C3'	51:1:2350:C:H5''	2.42	0.50
1:b:175:LEU:HD12	1:b:179:GLU:OE1	2.11	0.49
3:d:63:LYS:HG3	3:d:64:GLY:N	2.27	0.49
5:f:68:ARG:NH1	5:f:72:ASN:HD21	2.09	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:k:65:THR:HG22	8:k:67:LYS:N	2.27	0.49
15:r:58:VAL:N	15:r:102:SER:OG	2.38	0.49
17:t:30:ILE:HG22	17:t:85:VAL:HB	1.93	0.49
24:B:37:HIS:CD2	24:B:43:THR:HG22	2.47	0.49
29:G:94:ARG:NH2	50:3:1102:A:H4'	2.27	0.49
35:M:87:ARG:HA	50:3:599:C:H5''	1.93	0.49
40:R:85:TYR:HB3	50:3:1321:U:H5'	1.94	0.49
45:W:56:ARG:O	45:W:60:ARG:HG3	2.12	0.49
51:1:251:A:H2'	51:1:252:G:O4'	2.11	0.49
51:1:287:G:H2'	51:1:288:U:C6	2.47	0.49
51:1:857:G:H2'	51:1:858:G:O4'	2.12	0.49
51:1:1558:C:H4'	51:1:1559:U:O5'	2.12	0.49
51:1:1879:C:H2'	51:1:1880:U:O4'	2.11	0.49
51:1:2834:G:H2'	51:1:2879:A:H61	1.77	0.49
4:e:154:THR:C	4:e:155:ILE:HD12	2.37	0.49
6:g:3:VAL:HA	6:g:39:ALA:H	1.77	0.49
7:j:47:HIS:ND1	7:j:48:VAL:HG23	2.27	0.49
16:s:83:LYS:HD2	16:s:95:ARG:HH11	1.76	0.49
32:J:9:GLU:HG2	32:J:10:LEU:HG	1.94	0.49
34:L:142:ARG:NE	34:L:142:ARG:HA	2.27	0.49
40:R:83:GLY:HA2	40:R:91:ARG:HH22	1.77	0.49
42:T:32:THR:OG1	42:T:84:LEU:HD21	2.12	0.49
46:X:72:GLU:HG2	50:3:1320:C:H4'	1.93	0.49
50:3:1305:G:H1'	50:3:1332:A:N6	2.27	0.49
50:3:1390:U:H2'	50:3:1391:U:C6	2.47	0.49
51:1:278:A:N1	51:1:361:G:N2	2.60	0.49
51:1:503:A:H4'	51:1:504:A:H5'	1.93	0.49
51:1:596:U:H2'	51:1:597:G:C8	2.46	0.49
51:1:1278:C:H2'	51:1:1279:G:C8	2.44	0.49
51:1:1683:U:H2'	51:1:1684:G:C8	2.46	0.49
1:b:7:PRO:O	51:1:1695:G:H1'	2.11	0.49
7:j:95:ARG:HG2	7:j:96:ARG:HG3	1.93	0.49
28:F:10:LEU:O	28:F:10:LEU:HD23	2.12	0.49
29:G:187:ASP:OD2	29:G:202:ASN:HA	2.12	0.49
31:I:14:GLU:HB2	31:I:59:LYS:HD3	1.94	0.49
31:I:137:SER:HB3	31:I:140:ASP:OD2	2.12	0.49
35:M:45:ILE:HD12	35:M:60:LEU:HD11	1.93	0.49
45:W:12:PHE:O	45:W:16:GLY:N	2.45	0.49
48:Z:17:ARG:HH21	50:3:1539:C:H4'	1.77	0.49
51:1:106:C:H2'	51:1:107:G:H8	1.77	0.49
51:1:813:U:H2'	51:1:814:C:C6	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:940:G:C2'	51:1:941:A:H5''	2.42	0.49
51:1:1406:U:H2'	51:1:1407:G:C8	2.46	0.49
51:1:1848:A:H2'	51:1:1849:G:C8	2.47	0.49
1:b:73:ILE:HG13	51:1:1490:A:N3	2.27	0.49
2:c:194:PRO:HA	51:1:2680:U:H5'	1.95	0.49
4:e:40:GLY:HA3	51:1:2311:A:H2	1.77	0.49
11:n:39:PRO:HG2	51:1:1651:G:H4'	1.94	0.49
15:r:41:ILE:HD11	15:r:57:GLY:HA3	1.95	0.49
28:F:4:ARG:HB3	51:1:2466:C:OP1	2.12	0.49
29:G:135:MET:O	29:G:139:GLU:HG3	2.13	0.49
34:L:53:SER:HB2	34:L:55:LYS:HE2	1.94	0.49
34:L:72:VAL:HG22	34:L:73:GLU:H	1.77	0.49
40:R:25:GLY:O	40:R:29:SER:N	2.43	0.49
42:T:57:ARG:HH11	42:T:58:MET:CE	2.25	0.49
50:3:1162:C:H2'	50:3:1163:A:C8	2.45	0.49
51:1:1336:A:H2'	51:1:1337:G:H8	1.78	0.49
51:1:1581:G:H2'	51:1:1582:C:C6	2.46	0.49
53:5:17:C:H5''	53:5:17(A):U:H5'	1.94	0.49
1:b:235:GLU:HG2	51:1:2599:G:N7	2.28	0.49
7:j:47:HIS:CE1	7:j:48:VAL:HG23	2.47	0.49
16:s:42:LYS:CB	51:1:2010:G:H5''	2.42	0.49
18:u:38:ILE:HG22	18:u:39:ASN:ND2	2.27	0.49
29:G:94:ARG:HG3	50:3:1100:C:H5	1.77	0.49
32:J:96:GLN:O	32:J:122:VAL:HG13	2.12	0.49
34:L:52:ARG:HH11	34:L:124:SER:HB3	1.76	0.49
39:Q:86:VAL:HG21	39:Q:89:LEU:HD13	1.93	0.49
39:Q:107:LYS:O	39:Q:109:ARG:HG3	2.12	0.49
50:3:689:C:C2'	50:3:690:G:H5'	2.42	0.49
50:3:916:U:H2'	50:3:917:G:C8	2.47	0.49
51:1:272:A:H2'	51:1:273:G:H8	1.78	0.49
51:1:438:G:H2'	51:1:439:A:H8	1.77	0.49
51:1:1035:U:H2'	51:1:1036:G:C8	2.45	0.49
51:1:1465:G:H2'	51:1:1466:U:C6	2.47	0.49
51:1:1491:G:H2'	51:1:1492:G:C8	2.47	0.49
51:1:1827:U:O2'	51:1:1828:G:H5'	2.12	0.49
1:b:162:GLN:HB3	1:b:174:ARG:HB3	1.94	0.49
4:e:126:ASN:ND2	51:1:2315:G:H1'	2.28	0.49
6:g:8:LYS:HG2	6:g:15:LEU:HD11	1.95	0.49
7:j:27:ARG:NH2	51:1:1142:A:H4'	2.25	0.49
7:j:105:VAL:O	7:j:109:LEU:HG	2.13	0.49
15:r:4:VAL:O	15:r:39:LEU:N	2.45	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:y:28:LEU:HD22	22:y:37:LEU:HD13	1.95	0.49
22:y:58:ASN:ND2	51:1:112:U:H5'	2.27	0.49
30:H:85:LYS:O	30:H:89:VAL:HG22	2.12	0.49
31:I:89:LEU:HD23	31:I:89:LEU:O	2.11	0.49
33:K:48:ALA:C	45:W:68:PRO:HG3	2.37	0.49
34:L:2:ARG:NE	50:3:935:A:H61	2.10	0.49
41:S:16:ALA:HA	41:S:54:SER:HA	1.94	0.49
43:U:59:HIS:O	43:U:63:GLN:HG2	2.12	0.49
44:V:37:ILE:HD12	44:V:37:ILE:N	2.27	0.49
49:a:170:ILE:HD12	49:a:170:ILE:N	2.28	0.49
50:3:149:A:H1'	50:3:1446:A:C2	2.47	0.49
50:3:560:A:H4'	50:3:561:U:H5'	1.93	0.49
50:3:1261:A:H2'	50:3:1262:C:H5'	1.94	0.49
51:1:635:C:H2'	51:1:636:G:C8	2.48	0.49
51:1:869:G:H2'	51:1:870:U:O4'	2.12	0.49
51:1:1114:C:H2'	51:1:1115:G:C8	2.48	0.49
51:1:2749:A:OP2	51:1:2751:G:H5''	2.13	0.49
51:1:2800:A:C4	51:1:2895:G:H1'	2.46	0.49
52:2:63:C:H2'	52:2:64:G:C8	2.47	0.49
1:b:143:VAL:HG12	1:b:144:GLU:O	2.12	0.49
46:X:48:ILE:CD1	46:X:70:LEU:HD22	2.43	0.49
49:a:34:ALA:HB1	49:a:40:GLU:CD	2.38	0.49
50:3:253:A:H2'	50:3:254:G:C8	2.47	0.49
50:3:266:G:H1'	50:3:268:U:OP2	2.13	0.49
50:3:787:A:H2'	50:3:788:U:C6	2.47	0.49
50:3:1370:G:H2'	50:3:1371:G:H8	1.77	0.49
51:1:114:U:O2	51:1:114:U:H2'	2.13	0.49
51:1:278:A:H3'	51:1:278:A:N3	2.27	0.49
51:1:603:A:H61	51:1:655:A:H5'	1.76	0.49
51:1:1015:U:H2'	51:1:1016:G:H8	1.76	0.49
51:1:1378:A:H1'	51:1:1379:U:C5	2.47	0.49
51:1:1731:G:C2'	51:1:1733:G:H1'	2.43	0.49
51:1:2366:A:H2'	51:1:2367:G:O4'	2.11	0.49
2:c:62:LYS:HB2	2:c:63:PRO:HD3	1.94	0.49
6:g:75:LEU:HD23	6:g:75:LEU:N	2.24	0.49
11:n:14:SER:HA	11:n:17:ARG:CZ	2.42	0.49
20:w:19:VAL:HG21	51:1:857:G:O2'	2.13	0.49
33:K:18:VAL:O	33:K:22:ILE:N	2.45	0.49
33:K:54:LEU:HG	33:K:55:HIS:H	1.77	0.49
34:L:28:ILE:HD13	34:L:101:ARG:HA	1.94	0.49
38:P:24:ALA:HA	38:P:29:THR:HA	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:Q:23:LEU:HG	39:Q:26:CYS:SG	2.52	0.49
40:R:47:LEU:HD23	40:R:48:SER:O	2.12	0.49
50:3:892:A:O2'	50:3:1415:G:H4'	2.13	0.49
50:3:1128:C:H4'	50:3:1148:U:H3	1.78	0.49
50:3:1203:C:H2'	50:3:1204:A:H8	1.76	0.49
50:3:1496:C:H2'	50:3:1497:G:C8	2.45	0.49
51:1:8:C:H2'	51:1:9:G:O4'	2.12	0.49
4:e:51:ASN:O	4:e:55:ASP:HB2	2.12	0.49
4:e:151:LEU:HD23	4:e:152:ASP:C	2.38	0.49
26:D:5:PHE:CZ	26:D:7:PRO:HB3	2.48	0.49
31:I:123:MET:HA	31:I:128:VAL:HA	1.95	0.49
35:M:10:LEU:HD22	35:M:74:ILE:HG13	1.94	0.49
36:N:80:HIS:O	36:N:84:ARG:HG2	2.13	0.49
37:O:18:ILE:HG12	37:O:72:ARG:NE	2.28	0.49
39:Q:29:LYS:HA	50:3:363:A:OP1	2.12	0.49
51:1:26:G:H2'	51:1:27:G:O4'	2.13	0.49
51:1:414:C:H4'	51:1:1879:C:O2	2.13	0.49
51:1:2110:G:H2'	51:1:2120:G:OP1	2.12	0.49
3:d:194:LYS:O	3:d:198:GLU:HG3	2.13	0.49
14:q:89:ILE:HD12	14:q:89:ILE:N	2.28	0.49
22:y:15:ASN:O	22:y:19:LEU:HG	2.13	0.49
24:B:8:THR:OG1	51:1:2020:A:H5'	2.13	0.49
31:I:76:LYS:O	31:I:80:ARG:HG2	2.13	0.49
31:I:86:GLY:O	31:I:90:LEU:HG	2.13	0.49
31:I:145:ARG:NE	31:I:147:LYS:HB2	2.27	0.49
32:J:75:LEU:H	32:J:75:LEU:CD2	2.23	0.49
33:K:61:LEU:O	33:K:62:MET:HE2	2.12	0.49
39:Q:20:VAL:HG23	39:Q:20:VAL:O	2.12	0.49
40:R:83:GLY:HA2	40:R:91:ARG:NH1	2.27	0.49
47:Y:23:ARG:HH11	47:Y:23:ARG:HG3	1.76	0.49
48:Z:9:GLU:HB2	48:Z:10:PRO:CD	2.42	0.49
50:3:25:C:H41	50:3:559:A:H61	1.61	0.49
50:3:36:C:H2'	50:3:37:U:O4'	2.12	0.49
50:3:175:C:O2'	50:3:176:C:H5'	2.13	0.49
50:3:846:G:H2'	50:3:847:G:H8	1.78	0.49
50:3:1269:A:H4'	50:3:1326:U:H4'	1.94	0.49
51:1:184:C:H2'	51:1:185:G:H8	1.78	0.49
51:1:662:G:O2'	51:1:663:G:H5'	2.13	0.49
51:1:1343:G:O4'	51:1:1597:A:H2'	2.13	0.49
51:1:1666:G:H2'	51:1:1667:G:H5'	1.94	0.49
51:1:1747:U:H2'	51:1:1748:C:H6	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2737:G:H2'	51:1:2738:A:C8	2.48	0.49
51:1:2836:U:H2'	51:1:2837:A:C8	2.48	0.49
52:2:24:G:H1'	52:2:27:C:H42	1.77	0.49
1:b:155:ARG:NH1	51:1:1818:U:H5	2.11	0.48
4:e:93:GLU:HA	4:e:96:TRP:HB2	1.95	0.48
17:t:39:THR:OG1	17:t:42:GLU:HG3	2.13	0.48
19:v:25:LYS:HD2	19:v:41:GLU:OE2	2.12	0.48
23:z:45:GLY:HA3	51:1:852:U:H5'	1.94	0.48
31:I:96:ARG:O	31:I:100:VAL:HG23	2.13	0.48
32:J:75:LEU:HD23	32:J:75:LEU:N	2.28	0.48
33:K:14:GLN:NE2	33:K:83:ALA:HB1	2.27	0.48
35:M:10:LEU:CB	35:M:14:ARG:HH12	2.16	0.48
40:R:105:ALA:HA	50:3:948:C:P	2.53	0.48
47:Y:74:HIS:HA	47:Y:77:ASN:HD21	1.78	0.48
50:3:990:C:H2'	50:3:991:U:O4'	2.13	0.48
51:1:184:C:H2'	51:1:185:G:C8	2.47	0.48
51:1:226:A:H2'	51:1:227:A:C8	2.48	0.48
51:1:280:U:H2'	51:1:281:C:C2	2.47	0.48
51:1:675:A:H2'	51:1:676:A:C8	2.47	0.48
51:1:974:G:N3	51:1:974:G:H2'	2.28	0.48
51:1:2301:C:C2'	51:1:2302:U:H5''	2.43	0.48
51:1:2743:U:C3'	51:1:2744:G:H5''	2.42	0.48
10:m:31:PHE:HB3	10:m:130:PHE:HE1	1.78	0.48
14:q:40:LYS:HE3	51:1:563:A:H4'	1.94	0.48
18:u:65:GLN:HG3	51:1:328:U:O3'	2.12	0.48
20:w:20:LYS:O	20:w:21:ARG:HD2	2.13	0.48
30:H:177:LEU:HB2	50:3:1112:C:N3	2.27	0.48
35:M:33:VAL:HG12	35:M:58:LEU:HD13	1.94	0.48
50:3:272:C:H2'	50:3:273:U:C6	2.48	0.48
50:3:1003:G:H2'	50:3:1004:A:H4'	1.93	0.48
51:1:154:U:H2'	51:1:155:A:C8	2.48	0.48
51:1:532:A:H4'	51:1:533:G:C8	2.48	0.48
51:1:1440:U:H2'	51:1:1441:G:C8	2.48	0.48
7:j:7:LYS:HB3	7:j:9:GLU:OE1	2.13	0.48
30:H:199:VAL:HG22	30:H:200:TRP:N	2.27	0.48
31:I:18:LEU:HD12	31:I:59:LYS:HE3	1.94	0.48
31:I:96:ARG:HH12	31:I:133:SER:HA	1.76	0.48
49:a:49:GLY:HA3	49:a:210:LYS:HE3	1.94	0.48
50:3:491:G:O2'	50:3:492:C:H5'	2.13	0.48
51:1:5:A:H2'	51:1:6:A:C8	2.48	0.48
51:1:905:A:H2'	51:1:906:U:H5'	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1515:A:H3'	51:1:1516:G:C5'	2.34	0.48
51:1:2022:U:O2'	51:1:2617:U:H5'	2.14	0.48
51:1:2110:G:H2'	51:1:2120:G:P	2.53	0.48
51:1:2508:G:H1	51:1:2580:U:H5	1.59	0.48
51:1:2582:G:H5'	51:1:2582:G:H8	1.77	0.48
1:b:38:LYS:NZ	1:b:55:GLY:O	2.46	0.48
4:e:56:LEU:HD12	4:e:86:CYS:SG	2.54	0.48
6:g:79:THR:HG22	6:g:145:ASN:HB2	1.96	0.48
7:j:30:THR:HG21	51:1:1005:C:O2'	2.13	0.48
13:p:88:ARG:NH1	13:p:113:LEU:HA	2.29	0.48
19:v:31:TYR:O	19:v:93:ARG:HG3	2.13	0.48
25:C:5:ARG:NE	51:1:2285:C:C5	2.82	0.48
26:D:43:THR:HG23	26:D:45:SER:H	1.77	0.48
46:X:52:ASN:OD1	46:X:74:ALA:HB1	2.12	0.48
48:Z:33:ARG:HG3	48:Z:34:ARG:HG2	1.95	0.48
50:3:769:G:N2	50:3:811:C:H1'	2.28	0.48
50:3:1170:A:H2'	50:3:1171:A:H5'	1.94	0.48
50:3:1237:C:OP1	50:3:1238:A:H1'	2.14	0.48
50:3:1328:C:H2'	50:3:1329:A:C8	2.48	0.48
51:1:52:A:H2'	51:1:53:A:C8	2.47	0.48
51:1:1791:A:N1	51:1:1829:A:C4'	2.75	0.48
51:1:2637:U:H2'	51:1:2638:G:O4'	2.13	0.48
7:j:36:LEU:HG	7:j:54:ILE:HD12	1.95	0.48
7:j:49:ASP:OD2	7:j:118:MET:HB3	2.14	0.48
14:q:60:TRP:O	14:q:64:ILE:HG13	2.13	0.48
16:s:6:LYS:HG3	51:1:494:G:H4'	1.95	0.48
19:v:12:GLN:HE21	52:2:75:G:H5''	1.77	0.48
21:x:34:SER:HA	21:x:49:ARG:HA	1.96	0.48
23:z:4:ILE:N	23:z:37:ARG:O	2.46	0.48
29:G:3:VAL:HG12	29:G:53:LEU:HD11	1.96	0.48
31:I:60:VAL:HA	31:I:63:ILE:CD1	2.43	0.48
31:I:116:LEU:HD23	31:I:121:ALA:HB3	1.95	0.48
32:J:40:ASP:OD2	32:J:42:ASN:HB3	2.14	0.48
35:M:74:ILE:HG23	35:M:74:ILE:O	2.14	0.48
36:N:73:GLY:N	50:3:1372:U:OP1	2.46	0.48
38:P:81:LEU:HD23	38:P:81:LEU:N	2.29	0.48
40:R:96:VAL:H	50:3:1308:U:P	2.36	0.48
41:S:81:ILE:O	41:S:85:GLU:N	2.46	0.48
41:S:98:ALA:HB1	41:S:100:TRP:NE1	2.28	0.48
43:U:25:ARG:HH22	50:3:230:G:H4'	1.78	0.48
43:U:54:LEU:HD23	43:U:57:ILE:HD12	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:W:61:ALA:HB1	45:W:66:LEU:HB3	1.95	0.48
47:Y:60:GLN:HB3	47:Y:65:LEU:HB3	1.95	0.48
50:3:114:U:O2'	50:3:115:G:H5'	2.13	0.48
50:3:151:A:H2'	50:3:152:A:O4'	2.13	0.48
50:3:437:U:H2'	50:3:438:U:O4'	2.14	0.48
50:3:976:G:N1	50:3:1362:A:H2'	2.28	0.48
50:3:1220:G:H2'	50:3:1221:G:O4'	2.13	0.48
50:3:1271:A:OP1	50:3:1314:C:H4'	2.14	0.48
51:1:174:U:H2'	51:1:175:G:C8	2.49	0.48
51:1:740:C:H5'	51:1:1784:A:C2'	2.44	0.48
51:1:1422:G:H2'	51:1:1423:G:H8	1.78	0.48
51:1:1542:U:H2'	51:1:1543:G:C8	2.48	0.48
51:1:2438:U:C2'	51:1:2439:A:H5''	2.43	0.48
54:4:7:G:H2'	54:4:8:A:H5''	1.96	0.48
5:f:156:TYR:CD1	51:1:2531:A:H4'	2.47	0.48
6:g:94:ILE:HD12	6:g:98:ASP:OD2	2.14	0.48
11:n:59:SER:O	11:n:63:ARG:HG3	2.13	0.48
14:q:24:TYR:CE1	51:1:17:G:H4'	2.49	0.48
21:x:18:SER:HB2	51:1:2080:A:H5'	1.94	0.48
38:P:114:PRO:CB	50:3:676:A:H5''	2.36	0.48
49:a:63:THR:HB	49:a:161:VAL:HG22	1.95	0.48
50:3:766:A:H2'	50:3:767:A:O4'	2.13	0.48
50:3:1105:A:H2'	50:3:1106:G:C8	2.48	0.48
51:1:619:G:H3'	51:1:620:G:H21	1.77	0.48
51:1:2301:C:H2'	51:1:2302:U:H5''	1.94	0.48
52:2:3:C:H3'	52:2:4:C:C5'	2.25	0.48
2:c:77:ARG:HG3	2:c:77:ARG:O	2.14	0.48
4:e:69:ALA:HA	51:1:2313:C:OP1	2.14	0.48
15:r:26:ASP:C	15:r:27:ILE:HD12	2.39	0.48
25:C:27:ARG:HG2	25:C:27:ARG:HH11	1.79	0.48
30:H:110:LEU:HD11	30:H:203:LYS:HE2	1.95	0.48
30:H:123:LEU:HD21	30:H:129:PHE:HB3	1.95	0.48
31:I:150:LYS:HA	31:I:154:VAL:CG2	2.44	0.48
36:N:4:GLN:HG2	36:N:21:LYS:HG2	1.94	0.48
50:3:278:G:O3'	50:3:281:G:H5'	2.13	0.48
50:3:515:G:H2'	50:3:516:U:O4'	2.13	0.48
50:3:1005:A:H2'	50:3:1006:G:O4'	2.14	0.48
50:3:1264:U:H3	50:3:1271:A:H61	1.59	0.48
50:3:1338:G:H2'	50:3:1339:A:C8	2.49	0.48
51:1:481:G:H1'	51:1:506:G:N2	2.29	0.48
51:1:1422:G:N2	51:1:1498:C:H1'	2.29	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1428:C:O2'	51:1:1429:G:H5'	2.13	0.48
51:1:1719:G:H2'	51:1:1720:U:C5	2.48	0.48
51:1:2112:G:C2'	51:1:2113:U:H5'	2.41	0.48
52:2:76:G:H2'	52:2:77:U:H6	1.78	0.48
2:c:133:THR:O	2:c:134:HIS:HB2	2.13	0.48
4:e:39:VAL:HG23	4:e:40:GLY:N	2.29	0.48
8:k:62:VAL:HG23	8:k:62:VAL:O	2.14	0.48
13:p:52:ARG:HG2	13:p:52:ARG:HH11	1.77	0.48
19:v:2:PHE:CE2	19:v:56:PHE:HA	2.48	0.48
30:H:107:LYS:HB2	30:H:143:LEU:HD21	1.95	0.48
31:I:22:SER:HB2	31:I:109:THR:HG22	1.96	0.48
34:L:43:TYR:O	34:L:47:GLU:HG3	2.13	0.48
40:R:47:LEU:HD11	40:R:55:LEU:HD11	1.95	0.48
41:S:42:ASN:O	41:S:46:LYS:N	2.46	0.48
49:a:181:ASP:O	49:a:185:LEU:HG	2.13	0.48
50:3:976:G:H1	50:3:1362:A:H2'	1.78	0.48
50:3:1383:C:H2'	50:3:1384:C:C6	2.47	0.48
51:1:1458:U:H4'	51:1:1459:G:C4	2.48	0.48
51:1:2216:G:H2'	51:1:2217:G:H8	1.78	0.48
51:1:2457:U:O2'	51:1:2458:G:H5'	2.14	0.48
1:b:123:ILE:HG23	1:b:191:LEU:HD13	1.94	0.48
1:b:145:MET:HE3	1:b:152:GLN:NE2	2.28	0.48
4:e:148:VAL:O	4:e:148:VAL:HG22	2.14	0.48
5:f:116:LEU:HD23	5:f:116:LEU:C	2.39	0.48
14:q:93:ILE:HG21	15:r:4:VAL:HG11	1.95	0.48
19:v:42:LEU:N	19:v:42:LEU:HD23	2.29	0.48
21:x:39:VAL:HG22	21:x:42:GLU:H	1.79	0.48
29:G:17:HIS:CE1	29:G:189:ASN:ND2	2.81	0.48
29:G:172:ILE:HG22	29:G:176:ASN:ND2	2.29	0.48
30:H:5:HIS:HB2	41:S:88:MET:HB3	1.95	0.48
30:H:107:LYS:HB2	30:H:143:LEU:HD11	1.95	0.48
33:K:8:PHE:CZ	33:K:60:VAL:HB	2.49	0.48
36:N:30:ASN:O	36:N:31:GLN:CG	2.62	0.48
38:P:123:PRO:CA	50:3:779:C:H4'	2.37	0.48
51:1:1924:C:H2'	51:1:1925:C:C6	2.49	0.48
51:1:2283:C:H2'	51:1:2284:A:O4'	2.14	0.48
53:5:50:U:H2'	53:5:51:C:C6	2.49	0.48
1:b:239:PHE:HB3	51:1:1903:G:OP1	2.14	0.48
2:c:56:LYS:NZ	51:1:2830:C:H5''	2.29	0.48
2:c:124:ARG:NH1	2:c:163:GLY:HA3	2.28	0.48
8:k:13:ASN:OD1	8:k:97:THR:N	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:s:36:LEU:HD13	16:s:48:LYS:HA	1.96	0.48
17:t:11:LEU:HD12	17:t:11:LEU:O	2.14	0.48
17:t:92:ASN:ND2	17:t:93:LEU:HG	2.28	0.48
23:z:38:GLU:O	23:z:43:ILE:HG13	2.14	0.48
27:E:16:THR:HG21	27:E:48:MET:HE1	1.96	0.48
30:H:177:LEU:HB2	50:3:1112:C:C2	2.49	0.48
31:I:201:GLU:HA	31:I:204:SER:OG	2.14	0.48
32:J:135:VAL:O	32:J:139:THR:HG23	2.13	0.48
35:M:73:SER:N	35:M:129:ALA:O	2.45	0.48
37:O:37:ARG:HG2	37:O:37:ARG:HH11	1.78	0.48
42:T:63:ARG:HA	42:T:66:LEU:HD12	1.95	0.48
43:U:25:ARG:HH22	50:3:230:G:C4'	2.26	0.48
46:X:14:LEU:HD22	46:X:34:SER:HB3	1.95	0.48
50:3:327:A:O2'	50:3:328:C:H4'	2.13	0.48
50:3:408:A:H61	50:3:434:U:H3	1.62	0.48
50:3:884:U:H4'	50:3:885:G:C5'	2.44	0.48
50:3:1040:U:H2'	50:3:1041:G:O4'	2.14	0.48
51:1:327:G:O2'	51:1:328:U:H5'	2.14	0.48
51:1:1906:G:H2'	51:1:1907:G:H8	1.79	0.48
1:b:52:HIS:CE1	1:b:218:THR:HA	2.49	0.47
2:c:4:LEU:HB3	2:c:32:ASN:HD21	1.77	0.47
10:m:4:PRO:HG2	10:m:70:ASP:HA	1.96	0.47
29:G:72:LYS:O	29:G:76:SER:N	2.47	0.47
29:G:108:GLN:O	29:G:112:ARG:N	2.48	0.47
30:H:54:ILE:HD13	30:H:67:ILE:HG23	1.95	0.47
30:H:188:ALA:HB3	30:H:195:ILE:HB	1.96	0.47
31:I:7:LYS:HD2	31:I:21:LYS:HG3	1.96	0.47
33:K:48:ALA:HB1	45:W:68:PRO:CD	2.44	0.47
33:K:70:VAL:O	33:K:74:LEU:HD13	2.13	0.47
34:L:108:ARG:HG2	34:L:108:ARG:HH11	1.78	0.47
35:M:77:VAL:HG12	35:M:84:ILE:HD12	1.96	0.47
36:N:27:ILE:HD12	36:N:34:LEU:HB3	1.96	0.47
37:O:53:ILE:CG2	50:3:1060:U:H4'	2.40	0.47
39:Q:51:VAL:HG22	39:Q:52:CYS:N	2.28	0.47
42:T:32:THR:HG21	42:T:84:LEU:HD23	1.96	0.47
50:3:520:A:H2'	50:3:521:G:O4'	2.14	0.47
51:1:784:G:O2'	51:1:785:G:H8	1.97	0.47
51:1:1336:A:H2'	51:1:1337:G:C8	2.49	0.47
51:1:1750:G:O2'	51:1:1751:U:H5'	2.14	0.47
51:1:2354:C:H2'	51:1:2355:G:C8	2.48	0.47
53:5:42:G:H2'	53:5:43:A:O4'	2.13	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:k:49:ARG:HD2	8:k:49:ARG:N	2.28	0.47
50:3:786:G:H1	50:3:796:C:H42	1.62	0.47
51:1:1758:U:C5	51:1:2696:U:H5'	2.50	0.47
4:e:37:MET:HG2	4:e:39:VAL:HG13	1.95	0.47
37:O:53:ILE:HG12	50:3:1060:U:H5'	1.94	0.47
37:O:66:GLU:O	37:O:67:ILE:HD13	2.15	0.47
39:Q:106:VAL:HG12	39:Q:107:LYS:H	1.79	0.47
40:R:75:SER:O	40:R:79:LEU:HG	2.14	0.47
42:T:35:ILE:HG22	42:T:39:GLN:NE2	2.29	0.47
49:a:27:ILE:HD12	49:a:27:ILE:H	1.78	0.47
51:1:1179:G:H3'	51:1:1180:U:H4'	1.95	0.47
51:1:1443:U:H2'	51:1:1444:G:C8	2.49	0.47
51:1:1510:G:H2'	51:1:1511:G:O4'	2.15	0.47
51:1:2885:G:C5	51:1:2886:A:H1'	2.49	0.47
52:2:24:G:C6	52:2:56:G:N2	2.83	0.47
4:e:122:ASP:HB2	4:e:126:ASN:OD1	2.14	0.47
5:f:9:VAL:HG23	5:f:9:VAL:O	2.14	0.47
8:k:40:LYS:HE3	8:k:57:VAL:HB	1.95	0.47
19:v:29:ILE:HG22	19:v:88:HIS:CE1	2.49	0.47
30:H:71:ARG:O	30:H:74:ILE:HG22	2.15	0.47
30:H:133:MET:O	30:H:137:VAL:HG23	2.14	0.47
42:T:56:LEU:O	42:T:59:VAL:HG22	2.14	0.47
43:U:36:VAL:CG1	43:U:53:ASP:H	2.28	0.47
50:3:923:A:H8	50:3:923:A:O5'	1.98	0.47
50:3:1213:A:H2'	50:3:1215:G:N7	2.29	0.47
50:3:1289:A:H5''	50:3:1290:G:C8	2.49	0.47
51:1:154:U:H2'	51:1:155:A:H8	1.79	0.47
51:1:277:G:H5'	51:1:278:A:H5'	1.95	0.47
51:1:388:G:C2'	51:1:390:U:H5	2.25	0.47
51:1:729:G:H4'	51:1:763:G:C5'	2.42	0.47
51:1:1258:U:H2'	51:1:1259:G:H8	1.79	0.47
51:1:1680:U:C2'	51:1:1681:G:H5'	2.44	0.47
51:1:2791:G:H2'	51:1:2792:A:C8	2.48	0.47
51:1:2810:A:H2'	51:1:2811:G:O4'	2.14	0.47
54:4:7:G:C2'	54:4:8:A:H5''	2.44	0.47
4:e:15:LEU:HD22	4:e:19:PHE:HE2	1.78	0.47
6:g:56:ALA:O	6:g:60:GLU:HG2	2.15	0.47
8:k:16:ALA:HA	8:k:46:ALA:HA	1.96	0.47
25:C:22:THR:HG22	25:C:23:THR:N	2.19	0.47
29:G:219:THR:HA	29:G:222:GLU:HG2	1.97	0.47
31:I:94:GLU:OE2	31:I:103:ARG:HG3	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:L:80:GLY:C	54:4:11:U:H4'	2.40	0.47
35:M:114:ALA:O	35:M:118:ALA:N	2.47	0.47
41:S:5:MET:CE	50:3:982:U:H3'	2.44	0.47
43:U:68:SER:HB3	43:U:71:VAL:HG23	1.96	0.47
50:3:396:C:C3'	50:3:397:A:H5''	2.45	0.47
50:3:817:C:H4'	50:3:818:G:C5'	2.43	0.47
51:1:296:U:H2'	51:1:297:G:H8	1.80	0.47
51:1:296:U:H2'	51:1:297:G:C8	2.49	0.47
7:j:80:HIS:CD2	51:1:2642:G:H5'	2.48	0.47
7:j:89:PHE:O	7:j:93:ILE:HG12	2.15	0.47
22:y:21:LEU:HA	22:y:25:GLN:HB3	1.97	0.47
30:H:42:LEU:HD12	30:H:42:LEU:C	2.40	0.47
31:I:152:SER:HA	31:I:155:LYS:HE2	1.97	0.47
32:J:51:LYS:HE2	50:3:1080:A:OP1	2.14	0.47
36:N:80:HIS:CE1	36:N:84:ARG:HG3	2.49	0.47
38:P:27:ASN:HD21	38:P:56:LYS:HG2	1.80	0.47
38:P:88:PRO:HG2	38:P:89:GLY:H	1.80	0.47
50:3:44:A:H2'	50:3:45:G:O4'	2.14	0.47
50:3:1322:C:H4'	50:3:1323:G:OP1	2.14	0.47
50:3:1535:C:H5''	50:3:1536:C:H5	1.79	0.47
51:1:768:G:H22	51:1:1379:U:H1'	1.79	0.47
51:1:1196:C:H2'	51:1:1197:G:C8	2.49	0.47
51:1:1401:G:H2'	51:1:1402:U:C6	2.50	0.47
51:1:1675:C:H2'	51:1:1676:A:O4'	2.14	0.47
51:1:2479:U:H2'	51:1:2480:C:O4'	2.15	0.47
53:5:57:A:C2'	53:5:58:A:H5'	2.44	0.47
1:b:166:ARG:HG3	1:b:171:VAL:HG22	1.97	0.47
4:e:116:LEU:HB2	4:e:176:PHE:CD1	2.50	0.47
4:e:155:ILE:HD12	4:e:155:ILE:N	2.30	0.47
6:g:10:ALA:O	6:g:12:LEU:N	2.48	0.47
7:j:9:GLU:H	7:j:9:GLU:CD	2.23	0.47
8:k:110:GLU:H	8:k:110:GLU:CD	2.23	0.47
15:r:39:LEU:O	15:r:49:ILE:HD13	2.14	0.47
16:s:97:LEU:HD12	16:s:97:LEU:N	2.28	0.47
18:u:98:ASN:ND2	18:u:100:GLU:CG	2.78	0.47
19:v:29:ILE:HD12	19:v:38:LEU:O	2.14	0.47
22:y:55:THR:O	22:y:59:GLU:N	2.47	0.47
23:z:16:LEU:HD12	23:z:19:HIS:CE1	2.49	0.47
26:D:4:THR:O	51:1:687:C:H5'	2.15	0.47
29:G:46:VAL:HG23	29:G:47:PRO:HD3	1.97	0.47
29:G:131:LYS:O	29:G:135:MET:HG2	2.13	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:H:11:LEU:HD13	30:H:17:TRP:NE1	2.30	0.47
32:J:98:ALA:CB	32:J:121:ASN:HD22	2.28	0.47
32:J:136:VAL:O	32:J:140:ILE:HG12	2.14	0.47
36:N:18:VAL:HB	36:N:85:ALA:HB2	1.96	0.47
36:N:56:MET:HA	36:N:56:MET:HE3	1.97	0.47
37:O:11:LYS:HB2	37:O:97:ASP:OD2	2.15	0.47
42:T:79:GLN:O	42:T:83:ARG:N	2.48	0.47
49:a:26:ALA:HB1	49:a:214:ILE:HD11	1.95	0.47
50:3:58:C:H2'	50:3:59:A:H8	1.80	0.47
50:3:624:C:H2'	50:3:625:U:O4'	2.15	0.47
50:3:969:A:O2'	50:3:970:C:H5'	2.14	0.47
50:3:1187:G:H2'	50:3:1188:A:C8	2.50	0.47
50:3:1513:A:H2'	50:3:1514:G:C8	2.48	0.47
51:1:112:U:H2'	51:1:113:U:H5'	1.96	0.47
51:1:138:U:H2'	51:1:141:G:H22	1.80	0.47
51:1:141:G:H3'	51:1:142:A:O4'	2.15	0.47
51:1:207:A:H2'	51:1:208:C:O4'	2.13	0.47
51:1:406:G:H2'	51:1:407:G:H8	1.78	0.47
51:1:572:A:H61	51:1:2029:G:N2	2.10	0.47
51:1:596:U:H2'	51:1:597:G:H8	1.79	0.47
51:1:660:C:H2'	51:1:661:A:H8	1.78	0.47
51:1:859:G:H1'	51:1:860:U:H5	1.80	0.47
51:1:1260:A:O2'	51:1:1261:C:H5'	2.14	0.47
51:1:1451:C:H4'	51:1:1452:G:O4'	2.13	0.47
51:1:1466:U:H1'	51:1:1545:A:C2	2.50	0.47
51:1:1516:G:H1	51:1:1732:C:H42	1.61	0.47
51:1:1844:C:H2'	51:1:1845:G:H8	1.78	0.47
51:1:2743:U:H2'	51:1:2744:G:O4'	2.15	0.47
52:2:55:U:O2'	52:2:56:G:H5'	2.15	0.47
52:2:65:U:H3'	52:2:108:A:H61	1.79	0.47
52:2:66:A:N1	52:2:107:G:H3'	2.30	0.47
1:b:179:GLU:HG2	1:b:268:ARG:O	2.14	0.47
3:d:188:MET:HE1	3:d:196:VAL:HG21	1.96	0.47
5:f:88:LEU:HD13	5:f:128:THR:O	2.15	0.47
6:g:99:ILE:HG21	6:g:130:VAL:HG21	1.96	0.47
7:j:11:VAL:HG13	7:j:13:ARG:NH2	2.30	0.47
17:t:39:THR:O	17:t:43:ILE:HG13	2.15	0.47
23:z:3:THR:HA	23:z:38:GLU:HA	1.97	0.47
31:I:2:ARG:HB3	31:I:2:ARG:HH11	1.79	0.47
33:K:7:VAL:HG12	33:K:61:LEU:HG	1.97	0.47
38:P:106:ILE:H	48:Z:11:PHE:HZ	1.62	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:T:35:ILE:HG22	42:T:39:GLN:HE21	1.78	0.47
44:V:10:ARG:HA	44:V:56:ASP:O	2.15	0.47
45:W:50:TYR:O	45:W:54:LEU:HG	2.15	0.47
49:a:161:VAL:HG23	49:a:161:VAL:O	2.14	0.47
50:3:186:C:H2'	50:3:187:G:O4'	2.14	0.47
51:1:270:A:OP1	51:1:271:G:H2'	2.15	0.47
51:1:738:G:O2'	51:1:739:A:H5'	2.15	0.47
51:1:940:G:C3'	51:1:941:A:H5''	2.45	0.47
51:1:1186:G:H2'	51:1:1187:G:O4'	2.14	0.47
52:2:37:C:H6	52:2:37:C:H5'	1.80	0.47
2:c:1:MET:SD	2:c:2:ILE:N	2.88	0.47
3:d:19:PHE:CE1	3:d:109:LEU:HD13	2.50	0.47
11:n:40:LYS:HZ2	51:1:1277:G:H5''	1.78	0.47
12:o:38:GLN:NE2	52:2:7:G:H1'	2.29	0.47
17:t:11:LEU:HD11	22:y:26:PHE:CE1	2.50	0.47
17:t:57:VAL:HG22	17:t:58:VAL:N	2.30	0.47
31:I:187:ARG:NH2	31:I:194:ILE:O	2.48	0.47
32:J:14:LEU:HD13	32:J:36:THR:HG22	1.97	0.47
37:O:92:LEU:HD12	37:O:92:LEU:N	2.30	0.47
41:S:3:GLN:HA	41:S:6:LYS:HD3	1.97	0.47
46:X:72:GLU:CG	50:3:1320:C:H4'	2.45	0.47
49:a:192:LEU:O	49:a:196:LEU:HD13	2.15	0.47
51:1:75:G:H22	51:1:111:A:H2	1.63	0.47
51:1:1416:G:H2'	51:1:1417:C:C6	2.49	0.47
51:1:2642:G:O2'	51:1:2643:G:H5'	2.15	0.47
2:c:9:VAL:HG23	2:c:9:VAL:O	2.15	0.47
2:c:56:LYS:HE3	51:1:2831:G:P	2.54	0.47
7:j:81:ILE:HG13	7:j:82:GLY:H	1.79	0.47
10:m:12:MET:HA	51:1:910:A:H62	1.79	0.47
10:m:18:ARG:HG2	52:2:90:C:H5'	1.96	0.47
17:t:72:GLN:OE1	17:t:72:GLN:N	2.48	0.47
19:v:80:HIS:HA	19:v:87:GLN:NE2	2.21	0.47
36:N:46:VAL:HA	36:N:49:GLN:HB2	1.97	0.47
50:3:347:G:H2'	50:3:348:G:C5'	2.45	0.47
50:3:488:C:H2'	50:3:489:C:O4'	2.15	0.47
50:3:496:A:H5'	50:3:497:G:OP2	2.14	0.47
50:3:1069:C:C2'	50:3:1070:U:H5''	2.43	0.47
50:3:1350:A:H2'	50:3:1351:U:O4'	2.15	0.47
51:1:504:A:H2'	51:1:504:A:N3	2.30	0.47
51:1:867:C:C2'	51:1:868:U:H5'	2.45	0.47
51:1:1170:C:H2'	51:1:1171:G:C8	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1783:A:H5'	51:1:2608:G:H4'	1.97	0.47
51:1:2156:G:H2'	51:1:2157:G:C5'	2.43	0.47
51:1:2215:C:H2'	51:1:2216:G:H8	1.80	0.47
51:1:2700:A:O2'	51:1:2701:U:H5'	2.15	0.47
1:b:48:ILE:HG23	1:b:48:ILE:O	2.16	0.46
10:m:11:LYS:HD3	10:m:86:LYS:CG	2.44	0.46
11:n:28:LEU:HD23	11:n:48:VAL:HG11	1.97	0.46
12:o:24:THR:HG22	12:o:42:PRO:HD3	1.97	0.46
14:q:30:VAL:HG13	51:1:580:U:O3'	2.15	0.46
15:r:79:ARG:O	15:r:81:LYS:HG2	2.15	0.46
19:v:30:ILE:CD1	19:v:40:ILE:HG13	2.45	0.46
30:H:111:ASP:HB3	30:H:114:LEU:HD12	1.98	0.46
32:J:54:GLU:O	32:J:58:ALA:N	2.48	0.46
32:J:134:ASN:ND2	50:3:19:A:OP1	2.48	0.46
35:M:49:LYS:HB2	35:M:59:GLU:HB3	1.97	0.46
42:T:67:ASP:HB2	42:T:71:ARG:HH21	1.80	0.46
50:3:166:U:H2'	50:3:167:A:C8	2.49	0.46
50:3:231:U:H2'	50:3:232:G:H8	1.80	0.46
50:3:710:G:H2'	50:3:711:G:H8	1.79	0.46
50:3:742:G:H2'	50:3:743:A:H8	1.80	0.46
50:3:1325:C:H2'	50:3:1326:U:H5'	1.96	0.46
51:1:155:A:H2'	51:1:156:A:C8	2.50	0.46
51:1:838:C:H2'	51:1:839:U:C6	2.50	0.46
51:1:1098:A:H2'	51:1:1099:G:H5'	1.97	0.46
51:1:1285:A:H2'	51:1:1286:A:H5'	1.98	0.46
51:1:1454:C:C2'	51:1:1455:G:H5'	2.44	0.46
51:1:1542:U:H2'	51:1:1543:G:H8	1.80	0.46
54:4:21:A:H1'	54:4:22:A:H5'	1.97	0.46
4:e:10:GLU:O	4:e:14:LYS:N	2.46	0.46
6:g:78:VAL:HG23	6:g:144:VAL:HG23	1.97	0.46
11:n:66:ALA:HB3	11:n:80:PHE:HE2	1.81	0.46
12:o:31:THR:HG21	52:2:28:C:P	2.54	0.46
13:p:38:ARG:HH22	50:3:346:G:C1'	2.22	0.46
15:r:21:ARG:HG3	15:r:93:PHE:HB2	1.96	0.46
31:I:157:ALA:O	31:I:161:ALA:N	2.47	0.46
35:M:31:LEU:N	35:M:31:LEU:HD12	2.29	0.46
42:T:24:THR:O	42:T:28:VAL:HG23	2.14	0.46
50:3:668:G:H2'	50:3:669:G:H8	1.79	0.46
50:3:696:A:H1'	50:3:786:G:O2'	2.15	0.46
50:3:1490:U:H2'	50:3:1491:G:C8	2.50	0.46
51:1:196:A:O2'	51:1:197:A:H5'	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1549:A:H2'	51:1:1550:C:O4'	2.15	0.46
51:1:1683:U:H2'	51:1:1684:G:H8	1.81	0.46
51:1:1721:G:N2	51:1:1738:G:H2'	2.29	0.46
51:1:2576:G:H5'	51:1:2578:G:N7	2.30	0.46
4:e:16:MET:HE2	4:e:24:VAL:HA	1.97	0.46
5:f:136:ASP:OD2	5:f:138:GLN:HB3	2.14	0.46
8:k:86:LEU:HD12	8:k:86:LEU:N	2.30	0.46
9:l:57:LEU:HD22	27:E:53:ASP:HB3	1.97	0.46
12:o:29:HIS:HB3	12:o:36:TYR:HB2	1.97	0.46
29:G:7:ASP:OD1	29:G:211:LEU:HD21	2.14	0.46
30:H:141:MET:SD	30:H:142:ARG:N	2.89	0.46
31:I:38:GLY:C	50:3:426:U:H4'	2.41	0.46
31:I:69:ARG:O	31:I:72:ARG:HG2	2.15	0.46
31:I:148:ALA:HA	31:I:151:GLN:HG3	1.98	0.46
32:J:158:LYS:N	32:J:158:LYS:HD2	2.30	0.46
34:L:108:ARG:HG2	34:L:108:ARG:NH1	2.30	0.46
41:S:80:ARG:HG3	41:S:81:ILE:HG23	1.97	0.46
45:W:49:LYS:HD2	50:3:663:A:H5''	1.96	0.46
47:Y:2:ASN:HD22	47:Y:4:LYS:HE2	1.80	0.46
50:3:231:U:H2'	50:3:232:G:C8	2.50	0.46
50:3:1399:C:H5'	50:3:1401:G:H5'	1.98	0.46
51:1:467:G:O2'	51:1:468:G:H5'	2.16	0.46
51:1:479:A:O2'	51:1:481:G:H5'	2.15	0.46
51:1:869:G:C2	51:1:870:U:H1'	2.50	0.46
51:1:2164:C:H41	51:1:2171:A:H61	1.62	0.46
4:e:3:LEU:O	4:e:7:TYR:N	2.46	0.46
4:e:133:GLU:CD	4:e:136:ILE:HG23	2.40	0.46
11:n:52:ILE:HD12	11:n:94:TYR:HB2	1.98	0.46
12:o:116:GLN:HE21	12:o:116:GLN:N	2.12	0.46
13:p:105:LYS:HA	13:p:108:ARG:NH2	2.31	0.46
14:q:63:ARG:HH11	14:q:63:ARG:HG3	1.81	0.46
17:t:2:ILE:O	17:t:6:ARG:N	2.46	0.46
28:F:24:ARG:HG2	28:F:24:ARG:HH21	1.81	0.46
31:I:109:THR:O	31:I:113:ALA:N	2.49	0.46
36:N:11:ARG:CD	36:N:105:ARG:HH12	2.28	0.46
37:O:40:ILE:HG23	37:O:41:PRO:HD2	1.98	0.46
38:P:52:ARG:HG2	38:P:56:LYS:NZ	2.30	0.46
40:R:86:ARG:HH22	46:X:2:ARG:NH2	2.13	0.46
50:3:352:C:H4'	50:3:354:G:OP1	2.16	0.46
50:3:456:A:H2'	50:3:457:G:C8	2.50	0.46
51:1:1198:U:H2'	51:1:1199:U:C6	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2743:U:H2'	51:1:2744:G:C4'	2.46	0.46
52:2:2:G:H2'	52:2:3:C:H6	1.79	0.46
52:2:48:U:H2'	52:2:49:C:H6	1.78	0.46
1:b:77:VAL:HG23	1:b:113:ASP:O	2.14	0.46
3:d:68:ALA:HA	51:1:1255:U:C5	2.50	0.46
6:g:146:VAL:HG23	6:g:146:VAL:O	2.15	0.46
8:k:71:ARG:HH11	8:k:77:ILE:HD11	1.81	0.46
10:m:42:THR:O	10:m:46:ILE:HG13	2.15	0.46
12:o:108:ASP:O	12:o:112:GLU:HG3	2.15	0.46
18:u:1:ALA:HB2	51:1:83:A:OP1	2.14	0.46
29:G:13:VAL:CG1	29:G:42:LEU:HD22	2.46	0.46
30:H:110:LEU:HG	30:H:203:LYS:HE2	1.96	0.46
31:I:30:LYS:HE3	50:3:411:A:H2'	1.97	0.46
38:P:58:THR:HG23	38:P:59:PRO:HD2	1.97	0.46
47:Y:61:ALA:CB	47:Y:68:LYS:HD3	2.45	0.46
50:3:260:G:H2'	50:3:261:U:C6	2.50	0.46
50:3:352:C:H42	50:3:357:G:H22	1.64	0.46
50:3:953:G:H2'	50:3:954:G:O4'	2.15	0.46
51:1:562:U:O4'	51:1:2036:C:H5'	2.16	0.46
51:1:581:C:H2'	51:1:582:A:H8	1.81	0.46
51:1:813:U:H2'	51:1:814:C:H6	1.81	0.46
51:1:820:A:H2'	51:1:821:A:C8	2.50	0.46
51:1:1001:A:H2'	51:1:1002:G:O4'	2.15	0.46
51:1:1794:A:H2'	51:1:1795:C:C6	2.51	0.46
51:1:2126:A:H2'	51:1:2162:G:N2	2.29	0.46
51:1:2316:G:H2'	51:1:2317:A:C8	2.50	0.46
51:1:2861:U:H2'	51:1:2862:G:C8	2.51	0.46
53:5:57:A:H2'	53:5:58:A:H5'	1.96	0.46
1:b:209:ALA:O	1:b:213:ARG:HG3	2.16	0.46
2:c:11:MET:O	51:1:2682:A:H5'	2.16	0.46
4:e:65:LEU:HD21	52:2:42:C:O5'	2.16	0.46
5:f:36:LEU:N	5:f:36:LEU:HD12	2.30	0.46
11:n:80:PHE:C	11:n:81:ASN:HD22	2.23	0.46
19:v:20:LEU:HD23	19:v:20:LEU:C	2.40	0.46
31:I:67:LEU:HB2	31:I:70:GLN:OE1	2.15	0.46
31:I:100:VAL:O	31:I:104:MET:HG2	2.15	0.46
31:I:131:ILE:HD13	50:3:620:C:C1'	2.45	0.46
31:I:145:ARG:HD2	31:I:147:LYS:HE3	1.97	0.46
36:N:55:ASP:HB2	36:N:59:LYS:HG2	1.97	0.46
37:O:26:VAL:O	37:O:30:LYS:N	2.48	0.46
38:P:45:THR:HG23	50:3:705:G:N2	2.31	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:W:42:ARG:HG3	45:W:43:ILE:HG12	1.96	0.46
45:W:49:LYS:CD	50:3:663:A:H4'	2.46	0.46
50:3:180:U:H2'	50:3:181:A:O4'	2.15	0.46
50:3:1084:G:H2'	50:3:1085:U:C5	2.50	0.46
51:1:444:C:O2'	51:1:445:C:H5'	2.15	0.46
51:1:1273:U:H4'	51:1:1275:A:OP1	2.16	0.46
51:1:1367:A:H2'	51:1:1368:G:H5'	1.98	0.46
52:2:114:C:H2'	52:2:115:A:C8	2.50	0.46
1:b:204:LEU:HD22	1:b:213:ARG:HE	1.81	0.46
2:c:54:ALA:HA	2:c:75:ALA:O	2.15	0.46
4:e:116:LEU:HD11	4:e:174:PHE:HD1	1.81	0.46
9:l:104:GLN:HA	9:l:104:GLN:NE2	2.31	0.46
11:n:14:SER:HA	11:n:17:ARG:NH2	2.31	0.46
14:q:91:ARG:HG3	14:q:91:ARG:HH11	1.80	0.46
17:t:30:ILE:CG2	17:t:85:VAL:HB	2.45	0.46
28:F:30:GLU:HA	28:F:31:PRO:HD3	1.84	0.46
28:F:31:PRO:HB2	51:1:2527:C:O3'	2.16	0.46
30:H:115:VAL:CG2	30:H:199:VAL:HG11	2.46	0.46
31:I:25:ARG:NE	50:3:410:G:OP1	2.48	0.46
44:V:20:ILE:HG23	44:V:45:VAL:HB	1.97	0.46
47:Y:45:ALA:HA	47:Y:48:LYS:HZ3	1.81	0.46
50:3:621:A:H2'	50:3:622:A:C8	2.51	0.46
51:1:1479:G:O2'	51:1:1480:C:H5'	2.15	0.46
51:1:1847:A:H2'	51:1:1848:A:C8	2.50	0.46
52:2:106:G:H2'	52:2:107:G:O4'	2.16	0.46
1:b:47:ARG:HH22	51:1:774:G:H5''	1.80	0.46
3:d:84:THR:HG21	51:1:586:A:H5'	1.98	0.46
6:g:33:GLN:HB3	6:g:35:LYS:HD3	1.98	0.46
12:o:107:ALA:O	12:o:111:ARG:HG3	2.16	0.46
17:t:11:LEU:HD12	17:t:11:LEU:C	2.41	0.46
27:E:2:LYS:HG3	51:1:242:G:C8	2.50	0.46
29:G:113:LEU:O	29:G:117:GLU:N	2.48	0.46
31:I:20:LEU:HD12	31:I:21:LYS:HB2	1.97	0.46
34:L:142:ARG:HA	34:L:142:ARG:HE	1.81	0.46
40:R:72:ILE:O	40:R:76:ILE:N	2.49	0.46
44:V:11:VAL:HB	44:V:55:GLY:H	1.81	0.46
45:W:12:PHE:CZ	45:W:46:THR:HA	2.51	0.46
47:Y:59:ARG:HG2	47:Y:63:LYS:HG2	1.98	0.46
50:3:338:A:O2'	50:3:339:C:H5'	2.16	0.46
50:3:502:A:H2'	50:3:503:C:O4'	2.15	0.46
51:1:876:C:C2'	51:1:877:A:H5'	2.46	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1370:C:H2'	51:1:1371:G:O4'	2.16	0.46
51:1:1418:G:O6	51:1:1578:U:H5''	2.15	0.46
51:1:1999:C:H5''	51:1:2723:C:O2'	2.16	0.46
51:1:2202:U:H5''	51:1:2203:U:H5	1.81	0.46
51:1:2216:G:H2'	51:1:2217:G:C8	2.51	0.46
51:1:2310:C:H2'	51:1:2311:A:C5'	2.43	0.46
53:5:24:U:H2'	53:5:25:C:C5'	2.46	0.46
6:g:117:LEU:HD23	6:g:122:LEU:HD13	1.98	0.46
8:k:48:PRO:HB2	8:k:49:ARG:HD2	1.96	0.46
10:m:50:ARG:O	10:m:54:THR:HG23	2.15	0.46
12:o:31:THR:HG23	12:o:32:PRO:HD2	1.98	0.46
14:q:82:LEU:HD12	14:q:112:ALA:HB2	1.97	0.46
17:t:67:VAL:HG23	17:t:67:VAL:O	2.16	0.46
30:H:118:SER:O	30:H:122:GLN:HG3	2.16	0.46
30:H:182:ASP:OD2	30:H:203:LYS:HB2	2.16	0.46
34:L:1:PRO:HG2	50:3:936:C:N4	2.30	0.46
42:T:60:SER:O	42:T:64:LYS:N	2.48	0.46
44:V:45:VAL:CG1	44:V:60:ILE:HD13	2.39	0.46
49:a:175:ILE:HG22	49:a:192:LEU:CD1	2.46	0.46
50:3:494:G:H2'	50:3:496:A:H1'	1.98	0.46
50:3:668:G:H2'	50:3:669:G:C8	2.51	0.46
50:3:1268:G:H1'	50:3:1327:C:C5'	2.35	0.46
50:3:1374:A:H2'	50:3:1375:A:C8	2.50	0.46
51:1:2333:A:H5''	51:1:2334:U:OP1	2.16	0.46
7:j:57:LEU:HD23	7:j:57:LEU:N	2.30	0.46
12:o:15:ARG:NH1	52:2:8:C:H5''	2.28	0.46
29:G:45:THR:C	29:G:47:PRO:HD2	2.41	0.46
29:G:209:VAL:HA	29:G:212:TYR:CD2	2.49	0.46
33:K:48:ALA:CB	45:W:68:PRO:HG3	2.42	0.46
35:M:91:LEU:HB2	35:M:116:ARG:HD2	1.98	0.46
37:O:57:VAL:HB	37:O:58:ASN:H	1.60	0.46
40:R:85:TYR:HB3	50:3:1321:U:H4'	1.98	0.46
42:T:35:ILE:O	42:T:39:GLN:HG2	2.15	0.46
47:Y:24:ARG:O	47:Y:28:ARG:HG2	2.15	0.46
49:a:30:LEU:HA	49:a:33:LEU:HD12	1.97	0.46
50:3:529:G:C2'	50:3:530:G:H5'	2.46	0.46
50:3:638:U:C2'	50:3:639:G:H5''	2.46	0.46
50:3:915:A:C2'	50:3:916:U:H5'	2.46	0.46
50:3:982:U:H4'	50:3:983:A:O5'	2.16	0.46
50:3:1401:G:H2'	50:3:1402:C:O4'	2.15	0.46
51:1:312:G:OP1	51:1:332:A:H4'	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:402:A:H2'	51:1:403:U:O4'	2.15	0.46
51:1:742:A:H2'	51:1:743:A:C8	2.51	0.46
51:1:1022:G:H22	51:1:1142:A:H2	1.64	0.46
51:1:1635:A:H2'	51:1:1636:U:O4'	2.16	0.46
51:1:2323:G:H2'	51:1:2324:U:O4'	2.16	0.46
51:1:2649:C:H2'	51:1:2650:U:C6	2.51	0.46
2:c:63:PRO:HG3	51:1:2787:C:H1'	1.98	0.45
3:d:148:ILE:HA	3:d:187:VAL:HG23	1.99	0.45
4:e:32:LYS:HD3	4:e:91:ARG:NH1	2.31	0.45
4:e:107:VAL:HB	4:e:108:PRO:CD	2.46	0.45
6:g:15:LEU:N	6:g:15:LEU:HD12	2.31	0.45
7:j:134:ALA:HB3	7:j:135:GLN:NE2	2.30	0.45
17:t:32:LEU:N	17:t:32:LEU:HD23	2.31	0.45
26:D:34:ARG:CZ	26:D:39:ARG:HD2	2.46	0.45
29:G:202:ASN:OD1	29:G:203:ASP:N	2.49	0.45
29:G:206:ILE:O	29:G:210:THR:HG23	2.16	0.45
36:N:72:SER:HB3	50:3:1373:G:OP2	2.15	0.45
50:3:195:A:H1'	50:3:222:C:O2'	2.16	0.45
50:3:410:G:H1'	50:3:433:G:N2	2.31	0.45
50:3:721:G:H4'	50:3:722:G:O4'	2.15	0.45
50:3:762:U:H2'	50:3:763:G:H8	1.80	0.45
50:3:823:C:H2'	50:3:824:G:C8	2.51	0.45
50:3:1073:U:H2'	50:3:1074:G:H8	1.79	0.45
50:3:1115:U:H2'	50:3:1116:U:C6	2.51	0.45
50:3:1324:A:H2'	50:3:1325:C:C6	2.52	0.45
51:1:549:G:H2'	51:1:550:C:H6	1.81	0.45
51:1:910:A:H1'	51:1:2264:C:HO2'	1.81	0.45
51:1:941:A:O2'	51:1:1190:G:H4'	2.16	0.45
51:1:1526:C:H2'	51:1:1527:G:C8	2.51	0.45
51:1:1755:A:H2'	51:1:1756:G:H5'	1.98	0.45
51:1:2329:U:H2'	51:1:2330:G:C8	2.50	0.45
52:2:69:G:H2'	52:2:70:C:O4'	2.16	0.45
12:o:52:SER:OG	12:o:53:THR:N	2.47	0.45
15:r:62:GLU:HB3	15:r:97:LYS:HB3	1.99	0.45
23:z:1:ALA:N	23:z:39:ASP:O	2.39	0.45
29:G:56:LEU:HD23	29:G:219:THR:OG1	2.16	0.45
29:G:103:TRP:HA	29:G:106:VAL:CG2	2.44	0.45
29:G:147:LEU:HD22	29:G:150:ILE:HG21	1.99	0.45
32:J:50:GLY:HA3	32:J:62:ALA:HB2	1.99	0.45
43:U:7:ALA:HB1	43:U:9:HIS:CE1	2.52	0.45
50:3:20:U:H2'	50:3:21:G:O4'	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1450:U:C2'	50:3:1452:C:H5'	2.46	0.45
50:3:1458:G:H2'	50:3:1459:G:O4'	2.17	0.45
51:1:49:A:C5'	51:1:51:G:H5'	2.46	0.45
51:1:519:U:H2'	51:1:520:G:H8	1.80	0.45
51:1:851:C:H2'	51:1:852:U:C6	2.51	0.45
51:1:1689:A:H2'	51:1:1690:A:H8	1.80	0.45
51:1:2537:U:H2'	51:1:2538:C:C6	2.51	0.45
51:1:2555:U:H2'	51:1:2556:C:H5'	1.98	0.45
1:b:23:LEU:HD11	1:b:89:ASN:HD21	1.81	0.45
4:e:87:LYS:HE3	52:2:42:C:N3	2.31	0.45
5:f:27:GLY:HA3	5:f:78:VAL:HB	1.99	0.45
6:g:4:ILE:CD1	6:g:51:ARG:HH11	2.28	0.45
8:k:64:ARG:HB2	8:k:83:ALA:HB3	1.98	0.45
12:o:30:ARG:HG2	12:o:30:ARG:HH11	1.81	0.45
19:v:30:ILE:HD12	19:v:40:ILE:HG13	1.98	0.45
20:w:14:ALA:O	20:w:16:ARG:NH1	2.49	0.45
23:z:4:ILE:HG13	23:z:5:LYS:N	2.32	0.45
24:B:12:ARG:HH11	24:B:16:ARG:HE	1.63	0.45
24:B:54:ILE:HG23	24:B:56:LYS:N	2.30	0.45
33:K:10:VAL:HG13	33:K:58:HIS:HB3	1.98	0.45
34:L:29:LEU:C	34:L:29:LEU:HD12	2.41	0.45
34:L:100:MET:O	34:L:104:VAL:HG23	2.16	0.45
36:N:11:ARG:HH11	36:N:11:ARG:HG3	1.82	0.45
37:O:19:ASP:OD1	50:3:1152:A:H4'	2.16	0.45
37:O:28:THR:O	37:O:28:THR:HG22	2.17	0.45
37:O:87:LEU:C	37:O:87:LEU:HD12	2.41	0.45
40:R:28:ARG:HB2	50:3:1328:C:O3'	2.16	0.45
43:U:17:TYR:CE2	50:3:375:U:H4'	2.51	0.45
43:U:73:ALA:O	43:U:77:GLU:N	2.49	0.45
46:X:30:LEU:H	46:X:30:LEU:CD2	2.29	0.45
48:Z:45:LYS:O	48:Z:49:ALA:N	2.45	0.45
50:3:1538:C:C2'	50:3:1539:C:H5'	2.47	0.45
51:1:253:C:H2'	51:1:254:G:O4'	2.16	0.45
51:1:256:A:O2'	51:1:257:C:H5'	2.15	0.45
51:1:371:A:H61	51:1:401:A:H3'	1.81	0.45
51:1:884:U:O5'	51:1:884:U:H6	2.00	0.45
51:1:1689:A:H2'	51:1:1690:A:C8	2.51	0.45
51:1:1853:A:H2'	51:1:1854:A:C8	2.51	0.45
51:1:2553:G:H2'	51:1:2554:U:C4'	2.47	0.45
52:2:104:A:H2'	52:2:105:G:O4'	2.17	0.45
4:e:48:LEU:O	4:e:52:ALA:N	2.49	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:g:82:SER:OG	6:g:90:LEU:HD11	2.17	0.45
11:n:79:LEU:HD23	11:n:83:LEU:HD12	1.98	0.45
17:t:2:ILE:HD11	51:1:144:A:C5'	2.44	0.45
19:v:80:HIS:ND1	19:v:81:PRO:HD2	2.32	0.45
20:w:14:ALA:HB1	51:1:2271:G:OP1	2.16	0.45
29:G:59:ILE:HG13	29:G:64:GLY:HA3	1.99	0.45
29:G:159:ALA:C	29:G:160:LEU:HD22	2.41	0.45
29:G:213:LEU:HD12	29:G:213:LEU:C	2.42	0.45
30:H:13:ILE:HG12	50:3:1113:C:H4'	1.98	0.45
30:H:111:ASP:HB3	30:H:114:LEU:HB2	1.97	0.45
39:Q:41:PRO:HB3	39:Q:88:ASP:HB3	1.98	0.45
40:R:29:SER:O	40:R:33:LEU:N	2.45	0.45
50:3:304:U:O2'	50:3:305:G:H5'	2.16	0.45
50:3:405:U:H3'	50:3:406:G:C5'	2.22	0.45
51:1:150:U:H2'	51:1:151:C:H6	1.79	0.45
51:1:581:C:H2'	51:1:582:A:C8	2.52	0.45
51:1:2053:G:O2'	51:1:2054:A:H5'	2.16	0.45
51:1:2303:G:C2'	51:1:2304:G:O5'	2.64	0.45
51:1:2438:U:H2'	51:1:2439:A:H5''	1.97	0.45
52:2:38:C:H2'	52:2:39:A:C8	2.50	0.45
2:c:135:GLY:O	51:1:2580:U:H5''	2.17	0.45
14:q:29:ARG:HH11	14:q:29:ARG:HG3	1.80	0.45
19:v:29:ILE:O	19:v:91:PHE:HB2	2.16	0.45
20:w:17:LEU:HD13	20:w:37:ARG:HB2	1.99	0.45
21:x:2:ARG:NH1	51:1:1364:G:H5''	2.31	0.45
31:I:68:GLU:OE1	50:3:545:C:H5''	2.17	0.45
32:J:104:ILE:HD11	32:J:114:LEU:HD12	1.99	0.45
33:K:8:PHE:HE1	33:K:62:MET:HE3	1.81	0.45
36:N:79:ARG:HG2	36:N:79:ARG:HH11	1.82	0.45
38:P:120:CYS:HG	50:3:777:A:H2	1.64	0.45
39:Q:50:LYS:H	39:Q:50:LYS:HD3	1.80	0.45
39:Q:85:ARG:HA	39:Q:93:ARG:HA	1.98	0.45
42:T:33:ALA:O	42:T:37:HIS:N	2.48	0.45
50:3:16:A:O2'	50:3:17:U:H5'	2.16	0.45
50:3:407:U:H2'	50:3:408:A:H8	1.82	0.45
50:3:742:G:H2'	50:3:743:A:C8	2.51	0.45
50:3:1069:C:H2'	50:3:1070:U:C5'	2.45	0.45
51:1:832:U:H2'	51:1:833:A:C8	2.51	0.45
51:1:1050:A:H8	51:1:1050:A:O5'	1.99	0.45
51:1:1167:C:H2'	51:1:1168:G:H8	1.81	0.45
51:1:1360:G:H2'	51:1:1361:G:H5'	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1789:A:H2'	51:1:1790:C:O4'	2.17	0.45
51:1:1867:G:H2'	51:1:1868:C:C6	2.51	0.45
51:1:2191:A:H3'	51:1:2192:U:C5'	2.38	0.45
51:1:2224:G:H4'	51:1:2226:C:O2	2.17	0.45
6:g:7:ASP:C	6:g:15:LEU:HG	2.42	0.45
7:j:57:LEU:O	7:j:58:ASN:HB2	2.15	0.45
8:k:49:ARG:HH11	8:k:49:ARG:HG3	1.81	0.45
10:m:24:THR:HG22	10:m:99:GLY:O	2.17	0.45
13:p:67:GLU:OE1	13:p:67:GLU:N	2.50	0.45
18:u:83:GLY:HA3	18:u:96:LYS:HD3	1.99	0.45
27:E:15:LYS:HD2	27:E:64:ALA:O	2.16	0.45
32:J:19:ARG:HG2	32:J:19:ARG:HH11	1.82	0.45
36:N:57:VAL:HG13	36:N:58:GLU:N	2.31	0.45
39:Q:54:VAL:N	39:Q:62:VAL:O	2.50	0.45
44:V:17:GLU:HG2	50:3:254:G:H21	1.81	0.45
50:3:423:G:H2'	50:3:424:G:H5'	1.99	0.45
50:3:651:C:H2'	50:3:652:U:O4'	2.17	0.45
50:3:968:A:H3'	50:3:969:A:P	2.56	0.45
50:3:1097:C:H2'	50:3:1098:C:O4'	2.15	0.45
50:3:1356:G:H2'	50:3:1357:A:C8	2.52	0.45
50:3:1441:A:H2'	50:3:1442:G:H5'	1.98	0.45
51:1:96:C:H2'	51:1:97:C:H6	1.82	0.45
51:1:433:C:O2'	51:1:434:U:H5'	2.17	0.45
51:1:796:C:H2'	51:1:797:G:H8	1.80	0.45
51:1:1117:C:H2'	51:1:1118:C:C6	2.52	0.45
51:1:1295:C:H2'	51:1:1296:G:H8	1.80	0.45
3:d:149:ILE:HG21	3:d:188:MET:HG2	1.99	0.45
4:e:33:ILE:CD1	4:e:95:MET:HG3	2.47	0.45
5:f:10:VAL:HG21	5:f:44:HIS:HE1	1.82	0.45
6:g:59:ALA:O	6:g:63:ALA:N	2.50	0.45
9:l:131:ALA:O	9:l:135:ILE:HG13	2.17	0.45
10:m:82:MET:HA	10:m:82:MET:HE2	1.99	0.45
12:o:56:LYS:O	12:o:60:GLU:HG3	2.17	0.45
12:o:81:ARG:O	12:o:85:LYS:HG2	2.16	0.45
14:q:91:ARG:HG3	14:q:91:ARG:NH1	2.31	0.45
14:q:111:LYS:HE3	15:r:50:GLY:CA	2.47	0.45
30:H:171:ARG:HG2	30:H:173:PRO:HD3	1.98	0.45
39:Q:5:GLN:CA	39:Q:8:ARG:HG2	2.40	0.45
42:T:11:VAL:HG22	42:T:17:ASP:O	2.17	0.45
42:T:62:ARG:O	42:T:66:LEU:HG	2.17	0.45
48:Z:13:VAL:HG23	48:Z:15:LEU:HB2	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:358:U:H2'	50:3:359:G:C8	2.50	0.45
50:3:577:G:N2	50:3:765:G:H1'	2.32	0.45
50:3:672:U:H2'	50:3:673:A:C8	2.52	0.45
51:1:714:U:H2'	51:1:716:A:OP2	2.16	0.45
51:1:825:A:H2'	51:1:826:U:C6	2.52	0.45
51:1:1065:U:H5'	51:1:1066:U:H5''	1.98	0.45
51:1:1152:C:H2'	51:1:1153:C:H6	1.81	0.45
51:1:1864:U:C3'	51:1:1865:U:H5''	2.46	0.45
51:1:2743:U:H3'	51:1:2744:G:H5''	1.98	0.45
7:j:98:GLU:HB2	7:j:124:VAL:CG2	2.46	0.45
7:j:114:LEU:O	7:j:118:MET:HG2	2.16	0.45
10:m:72:PRO:HB2	10:m:89:VAL:HG13	1.99	0.45
12:o:68:LYS:HA	12:o:102:ARG:HG2	1.97	0.45
13:p:102:ARG:CZ	13:p:106:ALA:HB1	2.47	0.45
14:q:24:TYR:HE1	51:1:17:G:H4'	1.82	0.45
25:C:6:GLU:OE2	25:C:26:LYS:HD3	2.16	0.45
29:G:158:ASP:O	29:G:181:PRO:HD2	2.16	0.45
30:H:46:LEU:N	30:H:46:LEU:HD12	2.31	0.45
37:O:29:ALA:CB	37:O:36:VAL:HG21	2.45	0.45
40:R:88:LEU:HD23	40:R:91:ARG:NH1	2.32	0.45
42:T:30:LEU:HD12	42:T:30:LEU:C	2.41	0.45
44:V:46:HIS:HA	44:V:70:LYS:CE	2.47	0.45
46:X:80:ARG:HH11	46:X:80:ARG:H	1.64	0.45
50:3:208:U:H1'	50:3:212:G:H22	1.82	0.45
50:3:240:G:H2'	50:3:241:G:H8	1.82	0.45
51:1:346:A:H2'	51:1:347:A:O4'	2.16	0.45
51:1:458:G:O2'	51:1:459:U:C5	2.67	0.45
51:1:615:U:O5'	51:1:615:U:H6	1.98	0.45
51:1:838:C:H2'	51:1:839:U:H6	1.81	0.45
51:1:1422:G:H2'	51:1:1423:G:C8	2.51	0.45
51:1:1862:G:H2'	51:1:1863:G:H8	1.82	0.45
51:1:1956:U:H2'	51:1:1957:C:H5'	1.99	0.45
52:2:31:C:H1'	52:2:53:A:H61	1.82	0.45
2:c:184:ARG:HB3	2:c:186:LEU:HG	1.98	0.45
4:e:64:PRO:HB3	4:e:88:VAL:HG21	1.98	0.45
8:k:10:VAL:HG21	8:k:16:ALA:CB	2.45	0.45
8:k:86:LEU:O	8:k:94:PRO:HA	2.16	0.45
14:q:51:GLN:OE1	14:q:54:ARG:HD2	2.17	0.45
15:r:43:ASN:CG	15:r:44:GLY:N	2.74	0.45
30:H:110:LEU:HD23	30:H:110:LEU:O	2.16	0.45
31:I:124:VAL:HG22	31:I:142:VAL:HG23	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:L:32:ASP:HB3	34:L:34:LYS:NZ	2.31	0.45
38:P:12:ARG:HA	38:P:76:TYR:HA	1.99	0.45
38:P:92:ARG:HH21	48:Z:19:LYS:HG3	1.82	0.45
39:Q:119:LYS:HD3	39:Q:119:LYS:N	2.32	0.45
41:S:2:LYS:H	50:3:1048:G:H5''	1.81	0.45
42:T:45:HIS:O	42:T:47:LYS:N	2.50	0.45
50:3:153:C:C3'	50:3:154:U:H5''	2.47	0.45
50:3:1164:G:H2'	50:3:1165:U:C6	2.52	0.45
50:3:1252:A:H2'	50:3:1253:G:O4'	2.16	0.45
51:1:7:G:H2'	51:1:8:C:C6	2.52	0.45
51:1:49:A:P	51:1:51:G:H5'	2.57	0.45
51:1:176:A:H3'	51:1:177:G:N2	2.32	0.45
51:1:575:A:O2'	51:1:576:U:H5'	2.16	0.45
51:1:639:U:H2'	51:1:640:C:C6	2.52	0.45
51:1:825:A:H4'	51:1:2428:G:N7	2.31	0.45
51:1:2016:U:H2'	51:1:2017:U:C6	2.51	0.45
1:b:106:PRO:HD2	1:b:109:LEU:CD2	2.43	0.45
1:b:129:LEU:N	1:b:129:LEU:HD23	2.32	0.45
15:r:27:ILE:HD12	15:r:27:ILE:N	2.32	0.45
19:v:21:ARG:HB2	19:v:21:ARG:CZ	2.47	0.45
20:w:64:LYS:CG	20:w:79:GLU:HG2	2.47	0.45
30:H:7:ASN:OD1	30:H:15:LYS:HE2	2.17	0.45
33:K:42:TRP:NE1	33:K:61:LEU:HD22	2.27	0.45
34:L:27:ASN:HD22	34:L:27:ASN:N	2.14	0.45
38:P:108:ASN:HA	48:Z:6:ARG:HG3	1.99	0.45
44:V:11:VAL:CG1	44:V:20:ILE:HD11	2.46	0.45
45:W:52:ARG:O	45:W:56:ARG:HG3	2.16	0.45
50:3:1492:A:H2'	50:3:1493:A:C4'	2.42	0.45
51:1:96:C:H2'	51:1:97:C:C6	2.52	0.45
51:1:705:A:H2'	51:1:706:A:C8	2.50	0.45
51:1:1182:G:H2'	51:1:1183:U:O4'	2.17	0.45
51:1:1299:G:H4'	51:1:1301:A:C8	2.52	0.45
51:1:2303:G:H3'	51:1:2309:A:OP1	2.16	0.45
51:1:2869:G:H2'	51:1:2870:C:O4'	2.17	0.45
2:c:62:LYS:HD2	51:1:2810:A:H4'	1.99	0.44
2:c:85:ALA:HB3	2:c:88:GLU:OE1	2.18	0.44
4:e:102:LEU:HB3	4:e:107:VAL:HG23	1.99	0.44
5:f:137:LYS:HD3	51:1:2747:G:OP1	2.17	0.44
8:k:2:ILE:HB	8:k:33:ALA:HB3	1.98	0.44
13:p:30:TRP:CE3	13:p:37:LYS:HE2	2.51	0.44
14:q:16:ILE:HG13	14:q:31:TYR:HE1	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:H:10:ARG:HG3	30:H:10:ARG:NH1	2.31	0.44
30:H:39:ARG:HH11	30:H:39:ARG:HG3	1.82	0.44
35:M:68:LYS:HG3	35:M:69:ALA:N	2.31	0.44
38:P:40:ALA:O	50:3:685:G:H5'	2.17	0.44
39:Q:106:VAL:HG12	39:Q:107:LYS:N	2.32	0.44
41:S:2:LYS:H	50:3:1048:G:C5'	2.30	0.44
41:S:9:GLU:HG2	41:S:62:ARG:HG3	2.00	0.44
41:S:46:LYS:HA	41:S:49:THR:HG23	1.99	0.44
41:S:74:ARG:HE	50:3:1359:C:H5	1.64	0.44
43:U:21:VAL:HG21	43:U:60:TRP:CD1	2.52	0.44
50:3:123:U:H5''	50:3:311:C:O2'	2.17	0.44
50:3:200:G:H2'	50:3:201:G:C8	2.52	0.44
50:3:631:C:H5''	50:3:632:U:O4'	2.17	0.44
50:3:810:C:O2'	50:3:811:C:H5'	2.16	0.44
51:1:2626:C:H2'	51:1:2627:G:H8	1.81	0.44
51:1:2636:C:H2'	51:1:2637:U:C6	2.52	0.44
51:1:2873:A:O2'	51:1:2874:C:H5'	2.17	0.44
53:5:63:G:H8	53:5:63:G:H5'	1.82	0.44
1:b:254:LYS:O	51:1:1797:G:H4'	2.17	0.44
1:b:266:ILE:HD13	1:b:269:ARG:NH2	2.32	0.44
5:f:2:ARG:HB3	51:1:2751:G:O4'	2.17	0.44
6:g:133:GLN:HG2	6:g:139:PHE:HE1	1.79	0.44
10:m:75:GLU:OE2	51:1:957:C:H5'	2.16	0.44
12:o:111:ARG:NH1	51:1:2376:A:N3	2.64	0.44
18:u:35:VAL:CG1	18:u:38:ILE:HG13	2.46	0.44
19:v:70:ILE:HG22	19:v:72:VAL:HG13	1.99	0.44
31:I:186:GLU:HG3	31:I:187:ARG:N	2.32	0.44
33:K:54:LEU:HG	33:K:55:HIS:N	2.31	0.44
36:N:29:ILE:HG23	36:N:29:ILE:O	2.17	0.44
36:N:111:GLU:HG3	50:3:1348:U:OP1	2.18	0.44
39:Q:100:ALA:HB1	39:Q:101:LEU:HD23	1.98	0.44
40:R:1:ALA:HA	40:R:8:ILE:HA	1.99	0.44
40:R:33:LEU:O	40:R:37:GLY:N	2.46	0.44
43:U:38:PHE:CE2	50:3:626:G:H4'	2.52	0.44
46:X:4:LEU:HD21	46:X:7:GLY:O	2.17	0.44
49:a:51:ASP:HB3	49:a:57:GLN:NE2	2.32	0.44
50:3:175:C:C2'	50:3:176:C:H5'	2.48	0.44
50:3:477:C:H2'	50:3:478:A:C8	2.52	0.44
50:3:632:U:H3'	50:3:633:G:C5'	2.47	0.44
50:3:1514:G:H2'	50:3:1515:G:C8	2.51	0.44
51:1:947:A:H2'	51:1:948:C:C6	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:995:C:H6	51:1:995:C:H5'	1.82	0.44
51:1:1826:G:H2'	51:1:1827:U:H6	1.80	0.44
51:1:2042:A:H2'	51:1:2043:C:H5'	1.99	0.44
51:1:2666:C:H2'	51:1:2667:C:O4'	2.17	0.44
10:m:4:PRO:CG	10:m:70:ASP:HA	2.48	0.44
10:m:11:LYS:HD3	10:m:86:LYS:HB3	1.98	0.44
12:o:110:ALA:HB3	12:o:117:PHE:HZ	1.82	0.44
21:x:11:PRO:HG3	21:x:30:PRO:HD2	2.00	0.44
26:D:11:LYS:HD2	51:1:770:G:OP2	2.16	0.44
30:H:11:LEU:HD13	30:H:17:TRP:HE1	1.81	0.44
30:H:112:ALA:CB	30:H:184:ASN:HB2	2.46	0.44
30:H:143:LEU:O	30:H:143:LEU:HD23	2.17	0.44
30:H:172:VAL:C	50:3:1107:C:H5''	2.43	0.44
39:Q:36:VAL:N	39:Q:75:GLU:HG2	2.29	0.44
40:R:83:GLY:H	40:R:91:ARG:HH22	1.65	0.44
41:S:45:LEU:HD23	41:S:45:LEU:C	2.41	0.44
41:S:56:PRO:HG3	50:3:1316:G:H5''	1.98	0.44
41:S:59:GLN:HB3	50:3:1360:A:OP1	2.17	0.44
43:U:70:ARG:HB2	50:3:375:U:OP1	2.17	0.44
49:a:40:GLU:N	49:a:40:GLU:OE1	2.51	0.44
50:3:154:U:H2'	50:3:155:A:C8	2.52	0.44
50:3:1524:C:H2'	50:3:1525:G:C8	2.52	0.44
50:3:1535:C:H3'	50:3:1536:C:C5	2.52	0.44
51:1:371:A:N6	51:1:401:A:H3'	2.33	0.44
51:1:678:C:H2'	51:1:679:C:C6	2.52	0.44
51:1:2498:C:H6	51:1:2498:C:H5'	1.82	0.44
2:c:149:ASN:O	2:c:152:PRO:HD2	2.17	0.44
4:e:24:VAL:HG23	4:e:25:MET:HE3	1.99	0.44
27:E:63:TYR:CE2	51:1:242:G:H5''	2.52	0.44
35:M:76:ARG:NH1	35:M:125:ILE:HG23	2.32	0.44
38:P:41:LEU:HD12	38:P:41:LEU:N	2.33	0.44
40:R:9:PRO:CG	40:R:44:ILE:HG13	2.47	0.44
40:R:27:THR:O	40:R:31:ALA:N	2.49	0.44
49:a:43:ASP:N	49:a:215:SER:O	2.42	0.44
50:3:86:G:H4'	50:3:87:C:C5	2.52	0.44
50:3:160:A:H2'	50:3:161:A:O4'	2.17	0.44
50:3:519:C:H5	50:3:529:G:H21	1.65	0.44
50:3:685:G:H1	50:3:703:G:H3'	1.82	0.44
50:3:930:C:H2'	50:3:931:C:C6	2.51	0.44
50:3:1275:A:H2'	50:3:1276:G:O4'	2.17	0.44
51:1:278:A:H2	51:1:279:A:C8	2.35	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:522:A:H2'	51:1:523:C:C6	2.52	0.44
51:1:528:A:C2	51:1:2042:A:H2'	2.53	0.44
51:1:609:A:H2'	51:1:610:C:O4'	2.17	0.44
51:1:657:U:H2'	51:1:658:U:C6	2.52	0.44
51:1:1593:A:H2'	51:1:1594:U:C6	2.50	0.44
51:1:1947:C:H2'	51:1:1948:G:C8	2.53	0.44
51:1:2407:A:H2'	51:1:2408:U:C6	2.53	0.44
6:g:95:GLY:O	6:g:99:ILE:HG12	2.18	0.44
14:q:95:ALA:O	14:q:99:VAL:HG23	2.18	0.44
19:v:65:VAL:O	19:v:65:VAL:HG13	2.17	0.44
24:B:11:LYS:HA	24:B:14:MET:HE3	2.00	0.44
24:B:39:ARG:HG2	24:B:39:ARG:HH21	1.82	0.44
29:G:66:ILE:HG13	29:G:159:ALA:HB3	1.99	0.44
30:H:123:LEU:CD2	30:H:129:PHE:HB3	2.48	0.44
32:J:156:ARG:HD2	35:M:44:PHE:CZ	2.52	0.44
33:K:9:MET:O	33:K:85:ILE:HB	2.18	0.44
35:M:12:ARG:HG2	50:3:826:C:H4'	1.99	0.44
35:M:125:ILE:HG22	35:M:126:CYS:SG	2.58	0.44
42:T:54:GLY:O	42:T:58:MET:HG2	2.18	0.44
50:3:200:G:H2'	50:3:201:G:H8	1.82	0.44
50:3:236:A:H2'	50:3:237:G:C8	2.53	0.44
50:3:773:G:H2'	50:3:774:G:O4'	2.18	0.44
50:3:962:C:O5'	50:3:962:C:H6	2.00	0.44
50:3:1360:A:H2'	50:3:1361:G:O4'	2.18	0.44
50:3:1434:A:H2'	50:3:1435:G:O4'	2.18	0.44
51:1:368:A:H2'	51:1:369:U:O4'	2.17	0.44
51:1:876:C:H2'	51:1:877:A:C5'	2.46	0.44
51:1:979:A:H2'	51:1:982:C:H42	1.82	0.44
51:1:1184:U:O2'	51:1:1185:G:H5'	2.18	0.44
51:1:1440:U:H2'	51:1:1441:G:H8	1.82	0.44
52:2:66:A:H4'	52:2:67:G:H8	1.82	0.44
1:b:62:ARG:HG3	1:b:62:ARG:NH1	2.32	0.44
3:d:47:LYS:HE3	51:1:451:U:H4'	1.99	0.44
4:e:116:LEU:HD11	4:e:174:PHE:CD1	2.52	0.44
8:k:4:GLU:CD	8:k:4:GLU:H	2.24	0.44
8:k:58:LEU:C	8:k:58:LEU:HD12	2.42	0.44
15:r:13:ARG:HD2	15:r:13:ARG:O	2.17	0.44
21:x:37:PHE:HB3	21:x:63:ILE:HD11	1.99	0.44
21:x:63:ILE:HG23	21:x:64:ASP:N	2.32	0.44
31:I:2:ARG:HD3	50:3:405:U:OP2	2.17	0.44
38:P:28:ASN:ND2	38:P:46:ALA:N	2.51	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:X:13:HIS:HA	46:X:16:LYS:NZ	2.33	0.44
46:X:71:GLY:HA3	50:3:1320:C:O2	2.17	0.44
46:X:77:ARG:HH21	50:3:1223:C:P	2.41	0.44
50:3:682:G:O2'	50:3:683:G:H5'	2.18	0.44
50:3:1296:C:H4'	50:3:1302:C:N4	2.32	0.44
51:1:579:G:H2'	51:1:580:U:C6	2.52	0.44
1:b:145:MET:HE3	1:b:152:GLN:CD	2.43	0.44
1:b:234:GLY:HA2	51:1:2599:G:OP2	2.18	0.44
9:l:122:VAL:O	9:l:143:GLU:OE2	2.36	0.44
12:o:116:GLN:N	12:o:116:GLN:NE2	2.65	0.44
14:q:23:TYR:CD1	51:1:533:G:H5'	2.53	0.44
14:q:80:ASN:OD1	51:1:1151:A:H4'	2.18	0.44
32:J:22:LYS:HB3	32:J:29:ILE:HD11	1.99	0.44
33:K:45:ARG:HB2	33:K:59:TYR:HE2	1.83	0.44
48:Z:25:ALA:O	48:Z:28:LEU:HG	2.18	0.44
50:3:24:U:H2'	50:3:25:C:C6	2.53	0.44
50:3:575:G:O2'	50:3:821:G:H5'	2.17	0.44
50:3:577:G:H22	50:3:765:G:H1'	1.82	0.44
50:3:634:C:H2'	50:3:635:A:H8	1.81	0.44
50:3:1414:U:H2'	50:3:1415:G:H8	1.83	0.44
51:1:106:C:H2'	51:1:107:G:C8	2.52	0.44
51:1:776:G:H8	51:1:776:G:OP2	2.01	0.44
51:1:792:A:H2'	51:1:2440:C:C2	2.52	0.44
51:1:1065:U:H5''	51:1:1066:U:H5''	2.00	0.44
51:1:1463:C:H5'	51:1:2702:G:O2'	2.17	0.44
51:1:2082:A:H2'	51:1:2083:G:O4'	2.17	0.44
51:1:2475:C:H42	51:1:2529:G:N2	2.16	0.44
51:1:2741:A:H2'	51:1:2742:G:O4'	2.17	0.44
51:1:2752:C:H2'	51:1:2753:A:O4'	2.18	0.44
1:b:242:HIS:O	1:b:244:VAL:HG13	2.18	0.44
4:e:133:GLU:OE1	4:e:135:ILE:HB	2.18	0.44
5:f:19:ASN:O	5:f:22:VAL:HG22	2.18	0.44
5:f:154:GLU:OE1	5:f:159:LYS:HB2	2.17	0.44
21:x:10:ARG:HH11	21:x:10:ARG:HB2	1.83	0.44
30:H:174:LEU:HD23	30:H:181:ILE:CD1	2.47	0.44
39:Q:35:ARG:HA	39:Q:75:GLU:HG2	1.99	0.44
41:S:37:ASP:CG	41:S:38:GLU:H	2.26	0.44
47:Y:45:ALA:HA	47:Y:48:LYS:NZ	2.32	0.44
47:Y:59:ARG:O	47:Y:63:LYS:N	2.49	0.44
50:3:132:C:H5'	50:3:262:A:O2'	2.18	0.44
50:3:448:A:H3'	50:3:449:G:C8	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1242:G:O2'	50:3:1303:C:H5''	2.17	0.44
51:1:1103:A:C3'	51:1:1104:C:H5''	2.39	0.44
51:1:2191:A:C2'	51:1:2192:U:H5''	2.47	0.44
51:1:2725:A:O2'	51:1:2726:A:C8	2.70	0.44
2:c:46:ARG:HB2	2:c:84:LEU:HD12	2.00	0.44
3:d:121:VAL:O	3:d:190:ALA:N	2.50	0.44
3:d:134:LEU:HD23	3:d:164:LEU:HD12	1.99	0.44
6:g:23:ALA:HB1	6:g:27:ARG:HH12	1.83	0.44
7:j:109:LEU:HB3	7:j:110:PRO:HD2	2.00	0.44
10:m:26:VAL:HB	10:m:133:LYS:HA	2.00	0.44
10:m:65:ILE:HG23	10:m:103:TYR:HE1	1.83	0.44
14:q:47:ARG:HG2	14:q:47:ARG:HH21	1.82	0.44
19:v:16:ALA:HA	19:v:19:ARG:HH11	1.82	0.44
19:v:82:TYR:CE1	19:v:83:LYS:HE3	2.52	0.44
24:B:30:ASP:HB3	24:B:34:GLY:H	1.82	0.44
31:I:169:TRP:CD2	31:I:185:PRO:HG3	2.53	0.44
36:N:116:GLY:HA2	37:O:62:ARG:NH1	2.32	0.44
37:O:32:THR:HG23	37:O:82:LYS:HE2	2.00	0.44
43:U:79:ASN:CG	43:U:80:LYS:H	2.26	0.44
49:a:11:ILE:HG23	49:a:33:LEU:HD22	1.98	0.44
50:3:284:C:H2'	50:3:285:C:C6	2.52	0.44
50:3:763:G:H2'	50:3:764:C:C6	2.53	0.44
51:1:226:A:H5''	51:1:257:C:O2'	2.16	0.44
51:1:443:A:H5''	51:1:444:C:C5'	2.48	0.44
51:1:941:A:H2'	51:1:942:G:O4'	2.17	0.44
51:1:1525:A:C2'	51:1:1526:C:H5'	2.48	0.44
51:1:1744:A:H2'	51:1:1745:A:O4'	2.18	0.44
51:1:2263:C:H2'	51:1:2264:C:O4'	2.18	0.44
51:1:2291:U:H5''	51:1:2380:C:O2'	2.18	0.44
52:2:13:G:N7	52:2:70:C:H4'	2.33	0.44
53:5:34:C:H2'	53:5:35:A:C8	2.53	0.44
3:d:19:PHE:HE1	3:d:109:LEU:HD13	1.83	0.43
7:j:108:MET:HE2	51:1:1138:G:N2	2.31	0.43
14:q:104:ALA:O	14:q:108:LEU:HG	2.18	0.43
15:r:6:GLN:HB3	15:r:11:GLN:HG2	2.00	0.43
18:u:39:ASN:HB3	18:u:62:ALA:HB3	1.99	0.43
22:y:1:MET:HB2	22:y:52:ARG:HH21	1.83	0.43
30:H:174:LEU:HD23	30:H:181:ILE:HD12	2.00	0.43
33:K:29:ILE:CG2	33:K:64:VAL:HG21	2.48	0.43
34:L:45:ALA:HA	34:L:48:THR:HG22	2.00	0.43
34:L:92:PRO:HA	34:L:95:ARG:HB3	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:N:6:TYR:OH	50:3:1148:U:H5'	2.18	0.43
39:Q:20:VAL:HB	39:Q:94:TYR:HE1	1.83	0.43
50:3:51:A:H4'	50:3:52:C:H5''	1.99	0.43
50:3:110:C:H2'	50:3:111:G:O4'	2.18	0.43
50:3:767:A:H2'	50:3:768:A:O4'	2.18	0.43
51:1:112:U:C2'	51:1:113:U:H5'	2.48	0.43
51:1:181:A:H2'	51:1:182:A:H8	1.82	0.43
51:1:742:A:H2'	51:1:743:A:H8	1.83	0.43
51:1:1405:U:H2'	51:1:1406:U:C6	2.52	0.43
51:1:1801:A:O4'	51:1:2203:U:H2'	2.17	0.43
51:1:1979:U:O2'	51:1:1980:G:H5'	2.18	0.43
52:2:5:U:H2'	52:2:6:G:H8	1.81	0.43
52:2:5:U:H2'	52:2:6:G:C8	2.53	0.43
3:d:111:GLU:OE1	3:d:111:GLU:HA	2.18	0.43
4:e:114:ARG:HD3	4:e:114:ARG:C	2.43	0.43
7:j:113:PRO:HD2	51:1:558:U:P	2.58	0.43
11:n:63:ARG:HH21	11:n:63:ARG:HG2	1.83	0.43
11:n:96:ARG:HH12	24:B:51:ARG:HH11	1.65	0.43
13:p:92:ARG:HH11	13:p:92:ARG:HG3	1.83	0.43
19:v:56:PHE:CZ	19:v:61:LEU:HD21	2.53	0.43
23:z:2:LYS:HD2	23:z:2:LYS:C	2.43	0.43
26:D:27:GLY:O	26:D:31:LEU:HD23	2.18	0.43
30:H:145:ALA:HA	30:H:203:LYS:HD3	2.00	0.43
31:I:4:LEU:HD11	50:3:405:U:C4	2.53	0.43
35:M:4:ASP:OD2	35:M:80:PRO:HD3	2.17	0.43
36:N:53:LEU:HD23	36:N:53:LEU:N	2.31	0.43
37:O:72:ARG:HG2	37:O:72:ARG:NH1	2.32	0.43
39:Q:101:LEU:H	39:Q:101:LEU:CD2	2.28	0.43
50:3:699:C:H2'	50:3:700:G:C8	2.53	0.43
51:1:20:C:H2'	51:1:21:A:C8	2.53	0.43
51:1:727:A:H2'	51:1:728:G:C8	2.53	0.43
51:1:768:G:N2	51:1:1379:U:H1'	2.33	0.43
51:1:1335:C:H2'	51:1:1336:A:C8	2.53	0.43
51:1:1444:G:H2'	51:1:1445:G:H8	1.83	0.43
51:1:1844:C:H2'	51:1:1845:G:C8	2.52	0.43
51:1:2011:U:H2'	51:1:2012:G:O4'	2.18	0.43
51:1:2310:C:H2'	51:1:2311:A:C4'	2.48	0.43
2:c:133:THR:HG22	51:1:1993:U:H4'	2.00	0.43
4:e:128:SER:OG	51:1:2303:G:N1	2.52	0.43
4:e:134:GLN:HB2	4:e:140:ILE:HD11	2.00	0.43
6:g:114:GLU:OE2	6:g:132:PHE:HB3	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:o:29:HIS:CE1	52:2:7:G:H5'	2.52	0.43
13:p:113:LEU:N	13:p:113:LEU:HD12	2.33	0.43
16:s:60:HIS:CD2	51:1:486:C:H4'	2.54	0.43
29:G:80:LYS:O	29:G:84:LEU:HD23	2.19	0.43
31:I:1:ALA:N	50:3:404:G:N7	2.66	0.43
31:I:95:GLY:O	31:I:136:VAL:HG22	2.18	0.43
33:K:19:PRO:HA	33:K:22:ILE:CD1	2.48	0.43
33:K:90:MET:HE1	33:K:93:LYS:HG3	2.00	0.43
37:O:18:ILE:O	37:O:22:THR:HG22	2.19	0.43
38:P:125:LYS:O	38:P:126:ARG:HB3	2.19	0.43
40:R:100:ARG:NH2	50:3:951:G:N7	2.66	0.43
43:U:17:TYR:HE2	50:3:375:U:H4'	1.83	0.43
45:W:20:ILE:HB	45:W:53:GLN:NE2	2.33	0.43
46:X:22:VAL:HG13	46:X:23:GLU:N	2.33	0.43
51:1:1915:U:H3'	51:1:1916:A:H5'	2.00	0.43
51:1:2144:G:N2	51:1:2146:C:H1'	2.33	0.43
51:1:2229:U:H2'	51:1:2230:G:C8	2.54	0.43
6:g:51:ARG:HA	6:g:55:GLU:HG3	2.00	0.43
29:G:182:VAL:CG2	29:G:195:VAL:HA	2.48	0.43
31:I:4:LEU:HD21	50:3:405:U:N3	2.33	0.43
33:K:3:HIS:H	33:K:92:THR:HG22	1.83	0.43
33:K:5:GLU:HB3	33:K:90:MET:HB3	2.01	0.43
35:M:10:LEU:HD12	35:M:76:ARG:HB2	2.00	0.43
44:V:30:HIS:CD2	44:V:33:TYR:H	2.33	0.43
48:Z:19:LYS:HB3	48:Z:24:LYS:HA	2.00	0.43
49:a:6:LYS:O	49:a:10:VAL:N	2.51	0.43
50:3:1158:C:H3'	50:3:1158:C:O2	2.18	0.43
50:3:1291:U:O5'	50:3:1291:U:H6	2.01	0.43
50:3:1535:C:H3'	50:3:1536:C:C6	2.53	0.43
51:1:239:C:H2'	51:1:240:C:O4'	2.19	0.43
51:1:1563:U:H2'	51:1:1564:C:C6	2.53	0.43
51:1:1791:A:P	51:1:1791:A:H8	2.41	0.43
51:1:2358:A:H2'	51:1:2359:C:O4'	2.18	0.43
52:2:93:C:H2'	52:2:94:A:H8	1.84	0.43
8:k:112:PHE:O	8:k:116:ILE:HG12	2.18	0.43
11:n:45:ARG:O	11:n:49:GLU:HG3	2.18	0.43
21:x:73:ARG:HD2	21:x:75:GLU:CG	2.49	0.43
22:y:49:ASP:O	22:y:53:VAL:HG23	2.18	0.43
23:z:35:VAL:HG22	23:z:36:GLU:N	2.33	0.43
30:H:82:ASP:O	30:H:86:LEU:HG	2.18	0.43
32:J:108:GLY:H	50:3:9:G:H5'	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:K:18:VAL:HG22	33:K:84:VAL:HG22	2.00	0.43
36:N:74:GLN:O	36:N:78:ILE:HG13	2.19	0.43
38:P:22:ILE:HB	38:P:85:VAL:HA	1.99	0.43
40:R:4:ALA:HB1	40:R:65:GLU:OE1	2.18	0.43
41:S:52:ARG:HG2	41:S:52:ARG:NH1	2.34	0.43
49:a:9:ARG:O	49:a:13:GLU:HG3	2.18	0.43
50:3:141:G:H2'	50:3:142:G:H8	1.83	0.43
50:3:1054:C:H4'	50:3:1055:A:H5''	1.99	0.43
50:3:1142:G:H2'	50:3:1143:G:O4'	2.17	0.43
51:1:389:G:O2'	51:1:390:U:H5'	2.19	0.43
51:1:565:C:H2'	51:1:566:U:C6	2.53	0.43
51:1:902:C:O2	51:1:902:C:H2'	2.18	0.43
51:1:1925:C:O2'	51:1:1926:U:H5'	2.19	0.43
51:1:2579:C:O2'	51:1:2580:U:H5'	2.19	0.43
52:2:63:C:H2'	52:2:64:G:H8	1.83	0.43
1:b:42:ARG:HH11	1:b:42:ARG:HG3	1.83	0.43
1:b:75:ALA:HB3	1:b:115:ILE:HG13	2.01	0.43
3:d:164:LEU:HB2	3:d:167:VAL:HG22	2.00	0.43
8:k:20:MET:O	8:k:42:THR:HG22	2.19	0.43
9:l:69:ARG:HG2	9:l:69:ARG:HH11	1.83	0.43
10:m:14:LYS:HB2	10:m:14:LYS:HE3	1.83	0.43
15:r:74:ILE:N	15:r:87:GLN:O	2.50	0.43
19:v:86:LEU:HD13	19:v:89:ILE:HD11	2.00	0.43
22:y:20:ASN:OD1	22:y:24:GLU:OE2	2.36	0.43
29:G:93:HIS:ND1	29:G:145:ASN:HB3	2.34	0.43
29:G:144:GLU:O	29:G:148:GLY:N	2.49	0.43
32:J:99:SER:O	32:J:100:GLU:HB2	2.19	0.43
33:K:46:GLN:HA	33:K:56:LYS:HA	2.00	0.43
37:O:17:LEU:HA	37:O:20:GLN:CG	2.41	0.43
39:Q:4:ASN:ND2	50:3:880:C:OP1	2.52	0.43
39:Q:89:LEU:HD12	39:Q:89:LEU:N	2.34	0.43
46:X:35:ARG:O	46:X:71:GLY:N	2.52	0.43
48:Z:23:GLU:HB3	48:Z:26:GLY:HA3	2.00	0.43
49:a:29:LEU:O	49:a:33:LEU:HG	2.19	0.43
50:3:219:U:O2'	50:3:220:G:H5'	2.19	0.43
50:3:257:G:H2'	50:3:258:G:H8	1.82	0.43
50:3:849:G:O2'	50:3:850:U:H5'	2.18	0.43
50:3:1023:U:H2'	50:3:1024:G:H5'	2.00	0.43
50:3:1154:G:O2'	50:3:1155:A:H5'	2.19	0.43
50:3:1170:A:C2'	50:3:1171:A:H5'	2.49	0.43
50:3:1413:A:H2	50:3:1487:G:H22	1.66	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:354:A:H2'	51:1:355:U:O4'	2.17	0.43
51:1:910:A:H2'	51:1:911:A:C8	2.53	0.43
51:1:968:C:H2'	51:1:969:G:H8	1.84	0.43
51:1:970:U:H2'	51:1:971:G:C8	2.53	0.43
51:1:1118:C:C2'	51:1:1119:U:H5''	2.48	0.43
51:1:2093:G:H2'	51:1:2094:A:H8	1.84	0.43
51:1:2881:U:H2'	51:1:2882:A:C8	2.53	0.43
4:e:43:ILE:CD1	4:e:77:LYS:HD2	2.47	0.43
10:m:6:ARG:HD2	10:m:6:ARG:O	2.18	0.43
11:n:72:ASP:O	11:n:76:VAL:HG12	2.19	0.43
13:p:47:ILE:HG22	13:p:99:LEU:HD12	2.00	0.43
14:q:1:ALA:HA	51:1:445:C:OP1	2.17	0.43
14:q:71:ASN:OD1	14:q:109:VAL:HG21	2.19	0.43
21:x:60:LYS:HG2	51:1:372:G:O4'	2.19	0.43
33:K:24:ARG:HG2	33:K:24:ARG:HH11	1.83	0.43
43:U:15:PRO:HB2	43:U:17:TYR:CE1	2.54	0.43
43:U:67:ILE:HG22	43:U:68:SER:N	2.34	0.43
45:W:49:LYS:HD2	50:3:663:A:C5'	2.49	0.43
46:X:38:THR:HG22	46:X:69:LYS:HE3	2.01	0.43
46:X:39:ILE:HD11	46:X:73:PHE:CZ	2.54	0.43
49:a:42:VAL:HB	49:a:175:ILE:HG12	2.01	0.43
49:a:174:THR:CG2	51:1:2124:G:H4'	2.46	0.43
50:3:54:C:H2'	50:3:352:C:N4	2.33	0.43
50:3:184:G:O2'	50:3:224:U:H5''	2.18	0.43
50:3:505:G:H2'	50:3:506:G:H8	1.84	0.43
50:3:902:G:H2'	50:3:903:G:H8	1.82	0.43
51:1:26:G:H1'	51:1:514:A:H61	1.82	0.43
51:1:176:A:O2'	51:1:177:G:H5'	2.19	0.43
51:1:594:U:H2'	51:1:595:C:C6	2.53	0.43
51:1:1889:A:H2'	51:1:1890:A:O4'	2.19	0.43
1:b:243:PRO:O	1:b:250:GLN:NE2	2.52	0.43
3:d:46:GLN:HB3	3:d:83:VAL:HG11	1.99	0.43
4:e:71:LYS:HD3	51:1:2312:U:OP2	2.19	0.43
4:e:94:ARG:HD3	4:e:94:ARG:N	2.33	0.43
4:e:134:GLN:HE21	4:e:145:VAL:HG11	1.83	0.43
5:f:143:VAL:O	5:f:147:LEU:HD23	2.18	0.43
6:g:97:ARG:HD2	6:g:112:LYS:HD2	2.00	0.43
8:k:2:ILE:HG13	8:k:62:VAL:HG11	2.01	0.43
11:n:98:LEU:HB2	11:n:112:TYR:HB2	2.00	0.43
14:q:92:LYS:HD2	51:1:996:A:OP2	2.19	0.43
19:v:80:HIS:CG	19:v:83:LYS:HB2	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:G:115:ASP:O	29:G:119:GLN:HG3	2.19	0.43
34:L:49:LEU:HD22	34:L:123:LEU:HD13	2.01	0.43
35:M:15:ASN:HD21	50:3:875:U:H1'	1.83	0.43
39:Q:120:ARG:HB3	39:Q:121:PRO:CD	2.45	0.43
41:S:5:MET:HE3	50:3:982:U:H3'	2.00	0.43
42:T:84:LEU:HB3	42:T:86:LEU:CD2	2.48	0.43
49:a:30:LEU:C	49:a:30:LEU:HD12	2.44	0.43
51:1:155:A:H2'	51:1:156:A:H8	1.84	0.43
51:1:635:C:H2'	51:1:636:G:H8	1.84	0.43
51:1:2073:C:O2'	51:1:2074:U:H5'	2.19	0.43
1:b:216:ARG:HG3	1:b:216:ARG:NH1	2.33	0.43
4:e:4:HIS:O	4:e:7:TYR:HB3	2.18	0.43
4:e:71:LYS:HB3	51:1:2312:U:P	2.59	0.43
8:k:76:VAL:HG22	13:p:72:VAL:CG2	2.46	0.43
12:o:10:ARG:HD2	12:o:96:GLY:O	2.18	0.43
16:s:82:MET:HB3	16:s:84:ARG:HH22	1.84	0.43
22:y:1:MET:N	22:y:4:LYS:HE2	2.34	0.43
37:O:66:GLU:OE1	41:S:98:ALA:HB2	2.19	0.43
40:R:1:ALA:H1	40:R:9:PRO:HD2	1.84	0.43
43:U:19:VAL:HG23	43:U:19:VAL:O	2.19	0.43
49:a:188:ASN:O	49:a:192:LEU:HG	2.19	0.43
50:3:116:A:H2'	50:3:117:G:O4'	2.19	0.43
50:3:240:G:H2'	50:3:241:G:C8	2.54	0.43
50:3:1019:A:H2'	50:3:1020:G:O4'	2.19	0.43
51:1:20:C:H2'	51:1:21:A:H8	1.84	0.43
51:1:387:U:OP1	51:1:387:U:H3'	2.19	0.43
51:1:473:G:C2'	51:1:474:G:H5'	2.49	0.43
51:1:538:A:H2'	51:1:539:G:O4'	2.18	0.43
51:1:1865:U:O2'	51:1:1875:G:N2	2.52	0.43
4:e:33:ILE:HD11	4:e:90:LEU:HB2	2.01	0.43
5:f:86:LEU:HD23	5:f:163:TYR:HB3	2.00	0.43
8:k:7:MET:C	8:k:8:LEU:HD22	2.43	0.43
9:l:79:LEU:HG	9:l:111:ILE:O	2.19	0.43
11:n:63:ARG:HH12	11:n:81:ASN:HD21	1.67	0.43
13:p:28:LYS:HB2	13:p:82:SER:OG	2.19	0.43
17:t:63:VAL:HG11	17:t:80:TRP:CZ2	2.53	0.43
21:x:54:GLY:O	21:x:58:ILE:HG13	2.19	0.43
28:F:2:LYS:HE2	51:1:2479:U:OP1	2.19	0.43
30:H:86:LEU:HB3	30:H:100:ILE:HD13	1.99	0.43
32:J:88:HIS:ND1	32:J:89:THR:HG22	2.34	0.43
33:K:51:ILE:C	33:K:53:LYS:H	2.25	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:L:134:VAL:O	34:L:138:GLU:N	2.51	0.43
40:R:82:LEU:HD21	46:X:68:HIS:CD2	2.54	0.43
48:Z:17:ARG:NH2	50:3:1539:C:H4'	2.34	0.43
49:a:59:VAL:O	49:a:59:VAL:HG23	2.17	0.43
50:3:298:A:H2'	50:3:299:G:O4'	2.19	0.43
51:1:172:A:H2'	51:1:173:A:H8	1.84	0.43
51:1:441:U:H2'	51:1:442:G:C8	2.54	0.43
51:1:745:G:C2'	51:1:746:U:H5'	2.48	0.43
51:1:1189:A:H2'	51:1:1190:G:H5'	2.01	0.43
51:1:1318:U:H2'	51:1:1319:C:C6	2.54	0.43
51:1:1585:C:C2'	51:1:1586:A:H5'	2.49	0.43
52:2:114:C:H2'	52:2:115:A:H8	1.84	0.43
6:g:40:THR:O	6:g:44:ILE:N	2.52	0.42
8:k:5:GLN:HG3	51:1:1669:A:H1'	2.01	0.42
18:u:35:VAL:HG13	18:u:38:ILE:CG1	2.48	0.42
22:y:27:ASN:HD22	22:y:27:ASN:N	2.16	0.42
30:H:155:ARG:NH1	30:H:192:TYR:O	2.51	0.42
30:H:175:HIS:NE2	50:3:1190:G:H4'	2.34	0.42
34:L:49:LEU:HB2	34:L:123:LEU:HD13	2.01	0.42
34:L:63:VAL:HA	34:L:66:GLU:HG2	2.01	0.42
34:L:78:ARG:HG2	34:L:83:THR:HA	2.01	0.42
39:Q:5:GLN:HE21	50:3:880:C:H3'	1.84	0.42
39:Q:36:VAL:HG13	39:Q:66:ILE:HG13	2.01	0.42
40:R:16:ILE:HG23	50:3:1302:C:H5'	2.00	0.42
40:R:38:ILE:HG22	40:R:39:ALA:N	2.35	0.42
50:3:164:G:O2'	50:3:165:G:H5'	2.19	0.42
51:1:1439:A:H62	51:1:1552:A:H2	1.66	0.42
51:1:1680:U:H2'	51:1:1681:G:H5'	2.01	0.42
51:1:2266:A:H1'	51:1:2272:U:O4	2.19	0.42
52:2:66:A:C2	52:2:107:G:H2'	2.54	0.42
1:b:242:HIS:HB3	1:b:250:GLN:HE22	1.84	0.42
6:g:114:GLU:HG3	6:g:133:GLN:O	2.19	0.42
7:j:18:VAL:O	7:j:57:LEU:HD23	2.19	0.42
7:j:68:LYS:HD3	51:1:1022:G:N7	2.34	0.42
30:H:41:TYR:CZ	30:H:45:GLU:HG3	2.53	0.42
30:H:107:LYS:CB	30:H:143:LEU:HD11	2.49	0.42
30:H:154:GLY:HA3	30:H:195:ILE:HG12	2.01	0.42
31:I:116:LEU:HD23	31:I:116:LEU:C	2.43	0.42
31:I:116:LEU:HD23	31:I:116:LEU:O	2.19	0.42
34:L:121:ASN:O	34:L:125:ASP:N	2.51	0.42
37:O:48:ARG:NH2	41:S:100:TRP:HH2	2.16	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:X:62:THR:CG2	46:X:63:ASP:H	2.21	0.42
50:3:861:G:H2'	50:3:862:C:O4'	2.19	0.42
50:3:1492:A:N3	50:3:1493:A:H1'	2.34	0.42
51:1:445:C:O2'	51:1:446:G:H5'	2.18	0.42
51:1:805:G:H22	51:1:828:U:H5''	1.84	0.42
51:1:816:C:H2'	51:1:817:C:H6	1.84	0.42
51:1:1409:U:H2'	51:1:1410:G:H8	1.84	0.42
51:1:2229:U:H2'	51:1:2230:G:H8	1.84	0.42
52:2:3:C:C3'	52:2:4:C:C5'	2.90	0.42
52:2:65:U:H3'	52:2:108:A:N6	2.35	0.42
4:e:117:SER:CB	51:1:2304:G:H4'	2.48	0.42
6:g:47:PHE:CE1	6:g:52:ALA:HB2	2.54	0.42
8:k:22:ILE:HD11	8:k:40:LYS:CG	2.48	0.42
12:o:11:ALA:O	12:o:15:ARG:HG3	2.20	0.42
14:q:90:ASP:O	14:q:94:LEU:HG	2.20	0.42
21:x:36:ARG:HA	21:x:47:THR:HA	1.99	0.42
31:I:97:LEU:N	31:I:134:TYR:O	2.51	0.42
31:I:99:ASN:O	31:I:103:ARG:HG2	2.18	0.42
34:L:30:MET:SD	50:3:1373:G:H4'	2.59	0.42
36:N:117:LEU:HD12	36:N:117:LEU:N	2.34	0.42
38:P:33:ILE:HD12	38:P:42:GLY:HA3	2.00	0.42
38:P:99:LEU:HG	38:P:104:PHE:HB2	2.00	0.42
39:Q:32:VAL:HB	39:Q:55:ARG:HB3	2.00	0.42
39:Q:53:ARG:HH12	50:3:1412:C:H5''	1.84	0.42
40:R:65:GLU:O	40:R:69:ARG:HG3	2.19	0.42
40:R:95:PRO:HA	50:3:1308:U:OP1	2.19	0.42
47:Y:20:ASN:O	47:Y:24:ARG:N	2.48	0.42
49:a:38:PHE:CB	51:1:2127:G:H4'	2.50	0.42
50:3:67:C:H2'	50:3:68:G:C8	2.53	0.42
50:3:631:C:OP1	50:3:632:U:H4'	2.19	0.42
50:3:736:C:H2'	50:3:737:C:C6	2.55	0.42
50:3:769:G:H22	50:3:811:C:H1'	1.83	0.42
51:1:56:A:H2'	51:1:57:C:O4'	2.18	0.42
51:1:2195:U:H2'	51:1:2196:C:C6	2.53	0.42
1:b:47:ARG:NH2	51:1:774:G:H5''	2.35	0.42
1:b:131:MET:CE	1:b:187:CYS:HB2	2.49	0.42
2:c:183:GLU:H	2:c:183:GLU:CD	2.28	0.42
4:e:147:ARG:HA	4:e:147:ARG:NH1	2.27	0.42
7:j:27:ARG:HH11	7:j:27:ARG:HG3	1.84	0.42
9:l:79:LEU:HD12	9:l:114:GLY:H	1.84	0.42
13:p:55:HIS:HB3	51:1:2683:C:H5''	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:s:70:LYS:N	16:s:108:SER:O	2.49	0.42
20:w:51:ARG:HH11	20:w:51:ARG:HG3	1.84	0.42
29:G:40:ILE:HD11	29:G:188:THR:HG23	2.02	0.42
31:I:80:ARG:HG3	31:I:80:ARG:HH11	1.84	0.42
36:N:77:ALA:O	36:N:81:GLY:N	2.47	0.42
38:P:51:PHE:HE2	38:P:64:VAL:HG21	1.84	0.42
43:U:52:LEU:HD12	43:U:52:LEU:C	2.44	0.42
48:Z:38:GLU:CD	50:3:1527:U:H5	2.27	0.42
49:a:213:SER:HA	49:a:222:VAL:O	2.19	0.42
50:3:436:C:H2'	50:3:437:U:O4'	2.18	0.42
50:3:1486:G:H2'	50:3:1487:G:H8	1.82	0.42
51:1:39:G:H2'	51:1:40:U:C6	2.55	0.42
51:1:970:U:H2'	51:1:971:G:H8	1.85	0.42
51:1:1074:G:H3'	51:1:1075:C:H5''	2.02	0.42
51:1:1386:C:H2'	51:1:1387:A:H8	1.84	0.42
51:1:1761:C:H2'	51:1:1762:A:O4'	2.19	0.42
51:1:2244:U:H2'	51:1:2245:U:O4'	2.19	0.42
51:1:2845:U:H2'	51:1:2846:G:H8	1.83	0.42
52:2:37:C:H2'	52:2:38:C:H5'	2.02	0.42
9:l:132:ARG:HG3	9:l:142:ILE:CD1	2.47	0.42
10:m:22:GLN:HB3	51:1:907:G:P	2.59	0.42
10:m:71:LYS:HB3	10:m:93:VAL:O	2.20	0.42
12:o:16:ARG:HD3	12:o:16:ARG:HA	1.93	0.42
15:r:74:ILE:HD12	51:1:993:G:OP1	2.19	0.42
16:s:43:ALA:O	16:s:47:VAL:HG12	2.18	0.42
17:t:18:GLU:O	17:t:22:THR:HG23	2.19	0.42
19:v:29:ILE:HG22	19:v:88:HIS:HE1	1.84	0.42
22:y:27:ASN:O	22:y:31:GLN:HG3	2.19	0.42
29:G:213:LEU:O	29:G:217:ALA:N	2.49	0.42
32:J:59:ILE:O	32:J:63:MET:HG3	2.19	0.42
34:L:8:GLN:HA	34:L:8:GLN:NE2	2.35	0.42
37:O:16:ARG:O	37:O:20:GLN:HG2	2.20	0.42
39:Q:73:LEU:HD12	39:Q:73:LEU:N	2.34	0.42
44:V:60:ILE:HD12	44:V:73:THR:O	2.20	0.42
47:Y:74:HIS:HA	47:Y:77:ASN:ND2	2.34	0.42
48:Z:38:GLU:CD	50:3:1527:U:C5	2.98	0.42
50:3:222:C:H2'	50:3:223:A:C8	2.55	0.42
50:3:304:U:H2'	50:3:305:G:C8	2.54	0.42
50:3:794:A:O2'	50:3:795:C:H5'	2.19	0.42
50:3:1476:A:H2'	50:3:1477:U:O4'	2.20	0.42
51:1:282:A:H2'	51:1:283:G:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:818:G:H5'	51:1:839:U:OP1	2.20	0.42
51:1:968:C:H2'	51:1:969:G:C8	2.54	0.42
51:1:1164:C:H2'	51:1:1165:A:H8	1.84	0.42
51:1:1529:G:H2'	51:1:1530:G:O4'	2.20	0.42
51:1:1591:A:H2'	51:1:1592:C:C6	2.54	0.42
51:1:1825:U:H2'	51:1:1826:G:C8	2.54	0.42
51:1:2029:G:O6	51:1:2032:G:H5''	2.19	0.42
51:1:2589:A:H2'	51:1:2590:A:C8	2.55	0.42
51:1:2836:U:O5'	51:1:2836:U:H6	2.02	0.42
5:f:174:LYS:HG3	51:1:2531:A:OP2	2.19	0.42
6:g:8:LYS:HA	6:g:15:LEU:HD11	1.99	0.42
14:q:30:VAL:HB	14:q:33:VAL:HG12	2.02	0.42
17:t:2:ILE:HG22	17:t:5:GLU:OE1	2.20	0.42
18:u:95:PHE:HD2	18:u:100:GLU:HB2	1.84	0.42
20:w:64:LYS:HG3	20:w:79:GLU:HG2	2.01	0.42
22:y:28:LEU:O	22:y:32:ALA:N	2.53	0.42
25:C:16:THR:OG1	25:C:41:VAL:HG21	2.19	0.42
27:E:37:THR:HG21	51:1:2348:U:OP2	2.19	0.42
29:G:55:GLU:HG2	29:G:197:PHE:HE2	1.84	0.42
29:G:187:ASP:H	29:G:190:SER:HB2	1.85	0.42
29:G:218:ALA:O	29:G:222:GLU:HG2	2.18	0.42
32:J:148:SER:OG	32:J:149:PRO:HD2	2.19	0.42
33:K:6:ILE:HB	33:K:62:MET:HB2	2.00	0.42
34:L:113:LYS:O	34:L:118:ARG:NE	2.50	0.42
35:M:50:VAL:O	35:M:50:VAL:HG12	2.19	0.42
36:N:49:GLN:N	36:N:50:PRO:HD2	2.35	0.42
36:N:113:LYS:HE3	36:N:118:ARG:O	2.20	0.42
41:S:1:ALA:N	50:3:1203:C:OP1	2.51	0.42
50:3:594:U:C2'	50:3:595:A:H5'	2.50	0.42
50:3:622:A:H2'	50:3:623:C:H5'	2.01	0.42
50:3:726:C:H2'	50:3:727:G:C8	2.54	0.42
50:3:730:G:C2'	50:3:731:G:H5'	2.47	0.42
50:3:856:C:H2'	50:3:857:C:C6	2.55	0.42
50:3:865:A:O2'	50:3:866:C:H5'	2.20	0.42
50:3:984:C:H2'	50:3:985:C:C6	2.55	0.42
51:1:1163:G:O2'	51:1:1164:C:H5'	2.20	0.42
51:1:1199:U:H2'	51:1:1200:C:C6	2.55	0.42
51:1:2281:A:O2'	51:1:2282:G:H5'	2.19	0.42
53:5:25:C:H2'	53:5:26:G:H8	1.83	0.42
2:c:141:ARG:HH11	2:c:141:ARG:HG2	1.85	0.42
3:d:62:GLN:HE22	3:d:69:ARG:CD	2.33	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:g:55:GLU:O	6:g:59:ALA:N	2.51	0.42
11:n:55:ALA:HA	11:n:80:PHE:CE1	2.55	0.42
13:p:30:TRP:CE3	13:p:37:LYS:HG2	2.55	0.42
26:D:10:LEU:O	26:D:14:ARG:HG3	2.19	0.42
29:G:175:ALA:HB1	29:G:180:ILE:HB	2.02	0.42
32:J:133:ILE:HD13	50:3:1079:G:H4'	2.01	0.42
38:P:31:VAL:CG1	38:P:44:ALA:HB3	2.50	0.42
39:Q:93:ARG:HH11	39:Q:93:ARG:HG3	1.85	0.42
45:W:49:LYS:HE3	50:3:663:A:H4'	2.01	0.42
48:Z:40:PRO:O	48:Z:44:ARG:N	2.49	0.42
49:a:11:ILE:CG2	49:a:33:LEU:HD22	2.49	0.42
49:a:175:ILE:HG22	49:a:192:LEU:HD11	2.02	0.42
50:3:843:U:C5'	50:3:844:G:H5''	2.50	0.42
50:3:1309:G:H2'	50:3:1310:G:C8	2.55	0.42
50:3:1384:C:H2'	50:3:1385:G:O4'	2.20	0.42
50:3:1391:U:H2'	50:3:1392:G:C8	2.55	0.42
50:3:1513:A:H2'	50:3:1514:G:H8	1.84	0.42
51:1:95:A:H2'	51:1:96:C:O4'	2.18	0.42
51:1:171:U:H2'	51:1:172:A:C8	2.54	0.42
51:1:330:A:H8	51:1:1210:G:C6	2.38	0.42
51:1:487:C:H2'	51:1:488:G:O4'	2.20	0.42
51:1:622:G:H2'	51:1:623:C:C6	2.54	0.42
51:1:640:C:H2'	51:1:641:U:C6	2.55	0.42
51:1:1074:G:H2'	51:1:1075:C:O4'	2.19	0.42
51:1:2093:G:N7	51:1:2225:A:H2'	2.35	0.42
51:1:2299:U:C2'	51:1:2300:C:H5'	2.49	0.42
51:1:2310:C:H3'	51:1:2311:A:H5''	2.01	0.42
51:1:2342:C:O2'	51:1:2374:C:H5''	2.19	0.42
2:c:98:VAL:HG22	2:c:98:VAL:O	2.19	0.42
10:m:66:ARG:HH11	10:m:66:ARG:HG2	1.85	0.42
11:n:103:ARG:HB2	11:n:110:MET:HG3	2.01	0.42
12:o:11:ALA:HB2	12:o:96:GLY:N	2.34	0.42
14:q:90:ASP:OD2	14:q:92:LYS:HB3	2.20	0.42
15:r:51:VAL:HG22	15:r:52:PRO:N	2.35	0.42
15:r:57:GLY:HA2	15:r:102:SER:OG	2.19	0.42
23:z:23:LEU:HD11	23:z:53:MET:HE1	2.02	0.42
29:G:130:LYS:N	29:G:130:LYS:HD2	2.35	0.42
29:G:133:ALA:O	29:G:137:THR:HG23	2.19	0.42
31:I:166:LYS:HD3	31:I:166:LYS:N	2.35	0.42
34:L:49:LEU:HG	34:L:60:ALA:HB1	2.01	0.42
36:N:79:ARG:HH11	36:N:102:PHE:HA	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:O:53:ILE:HB	37:O:63:ASP:OD2	2.20	0.42
38:P:120:CYS:SG	50:3:777:A:H2	2.43	0.42
50:3:596:A:H61	50:3:644:U:H3	1.66	0.42
50:3:760:G:H2'	50:3:761:G:O4'	2.20	0.42
50:3:1012:A:N6	50:3:1017:U:H3	2.12	0.42
50:3:1436:U:H2'	50:3:1437:A:C8	2.55	0.42
51:1:443:A:H5''	51:1:444:C:H5''	2.02	0.42
51:1:623:C:H2'	51:1:624:C:C6	2.55	0.42
51:1:694:U:OP1	51:1:1569:A:H1'	2.20	0.42
51:1:1555:G:H5'	51:1:1555:G:H8	1.84	0.42
51:1:2368:C:H2'	51:1:2369:A:H8	1.84	0.42
2:c:155:VAL:O	51:1:2619:C:H5'	2.20	0.42
3:d:29:HIS:O	3:d:32:VAL:HG12	2.20	0.42
6:g:121:VAL:CB	6:g:123:ARG:HG3	2.35	0.42
11:n:17:ARG:O	11:n:20:MET:HG3	2.19	0.42
11:n:103:ARG:HD2	51:1:1287:A:C5'	2.49	0.42
16:s:31:GLN:O	16:s:35:ILE:HG13	2.19	0.42
20:w:7:ARG:HD3	20:w:7:ARG:HA	1.84	0.42
29:G:153:MET:HG3	29:G:155:GLY:H	1.85	0.42
29:G:195:VAL:HB	29:G:198:VAL:HG12	2.02	0.42
30:H:29:ALA:HB1	41:S:64:ARG:HH22	1.83	0.42
30:H:110:LEU:CG	30:H:203:LYS:HE2	2.50	0.42
30:H:116:ALA:HB1	30:H:186:SER:CB	2.49	0.42
31:I:169:TRP:CD1	31:I:185:PRO:HG3	2.55	0.42
31:I:197:HIS:NE2	32:J:120:HIS:HD2	2.17	0.42
33:K:22:ILE:O	33:K:26:THR:HG23	2.19	0.42
35:M:120:LEU:HD23	35:M:120:LEU:N	2.33	0.42
36:N:56:MET:HG3	36:N:57:VAL:N	2.16	0.42
38:P:30:ILE:HB	50:3:706:A:H4'	2.02	0.42
38:P:79:LYS:HG2	38:P:104:PHE:HD1	1.84	0.42
40:R:53:ASP:HA	40:R:56:ARG:HD2	2.02	0.42
42:T:14:PHE:CE1	42:T:83:ARG:HG2	2.55	0.42
44:V:68:LYS:HB3	50:3:254:G:OP1	2.19	0.42
46:X:52:ASN:HD21	46:X:74:ALA:HB1	1.84	0.42
50:3:613:C:H2'	50:3:614:C:C6	2.55	0.42
50:3:971:G:OP1	50:3:971:G:H3'	2.19	0.42
50:3:1060:U:H2'	50:3:1061:G:C8	2.54	0.42
50:3:1327:C:H2'	50:3:1328:C:C6	2.55	0.42
51:1:490:C:H4'	51:1:491:G:OP2	2.19	0.42
51:1:817:C:O2'	51:1:839:U:H5''	2.19	0.42
51:1:906:U:H2'	51:1:907:G:O4'	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1720:U:H3'	51:1:1721:G:C8	2.55	0.42
51:1:2196:C:O2'	51:1:2197:U:H5'	2.20	0.42
51:1:2743:U:H2'	51:1:2744:G:C5'	2.50	0.42
1:b:38:LYS:NZ	1:b:56:GLY:C	2.78	0.42
1:b:154:ALA:HB2	1:b:161:VAL:CG2	2.49	0.42
2:c:35:THR:N	2:c:49:GLN:O	2.48	0.42
2:c:149:ASN:HD22	51:1:2575:C:H5''	1.84	0.42
3:d:151:GLY:HA3	3:d:195:GLN:OE1	2.20	0.42
8:k:48:PRO:HG2	50:3:1422:G:H5'	2.01	0.42
17:t:30:ILE:HG12	17:t:31:VAL:N	2.35	0.42
17:t:63:VAL:HG21	17:t:80:TRP:CH2	2.55	0.42
20:w:25:GLU:HG2	51:1:923:G:H1'	2.02	0.42
30:H:75:VAL:CG2	30:H:102:ILE:HG21	2.45	0.42
39:Q:49:ARG:NH1	50:3:523:A:H62	2.17	0.42
40:R:100:ARG:NH2	40:R:102:LYS:NZ	2.67	0.42
41:S:80:ARG:O	41:S:83:VAL:HG22	2.20	0.42
42:T:36:ASN:HA	42:T:39:GLN:CG	2.49	0.42
43:U:16:PHE:CD2	50:3:625:U:H5''	2.55	0.42
51:1:524:G:H5'	51:1:539:G:N2	2.35	0.42
51:1:758:C:O2	51:1:758:C:H2'	2.20	0.42
51:1:953:G:O2'	51:1:954:G:H5'	2.20	0.42
51:1:1859:U:H2'	51:1:1860:G:H8	1.84	0.42
51:1:2070:A:O2'	51:1:2071:A:H5'	2.20	0.42
51:1:2406:A:H2'	51:1:2406:A:N3	2.34	0.42
52:2:21:G:O2'	52:2:22:U:H5'	2.20	0.42
8:k:61:VAL:HG11	8:k:107:LEU:HD11	2.02	0.41
12:o:39:VAL:HB	12:o:49:VAL:HB	2.02	0.41
13:p:29:VAL:HG13	13:p:40:GLN:HB3	2.02	0.41
15:r:51:VAL:HG22	15:r:52:PRO:CD	2.50	0.41
32:J:123:LEU:HD13	50:3:7:A:C8	2.55	0.41
34:L:2:ARG:CZ	50:3:935:A:H61	2.32	0.41
37:O:59:LYS:HE2	37:O:62:ARG:NH2	2.34	0.41
38:P:115:ILE:HD12	38:P:116:PRO:HD2	2.02	0.41
42:T:51:SER:HA	50:3:741:G:H4'	2.01	0.41
46:X:35:ARG:HD3	46:X:71:GLY:HA2	2.02	0.41
46:X:77:ARG:NH1	50:3:1225:A:H4'	2.35	0.41
50:3:1387:G:O2'	50:3:1388:C:H5'	2.19	0.41
51:1:172:A:H2'	51:1:173:A:C8	2.55	0.41
51:1:1645:G:H5''	51:1:1646:C:C5'	2.34	0.41
51:1:1794:A:H2'	51:1:1795:C:H6	1.84	0.41
51:1:1866:A:H2'	51:1:1867:G:C5'	2.50	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2489:U:O2'	51:1:2490:G:H5'	2.20	0.41
10:m:127:LYS:HG2	10:m:128:THR:N	2.34	0.41
12:o:78:VAL:HA	12:o:81:ARG:HG2	2.01	0.41
18:u:48:VAL:HA	18:u:49:PRO:HD3	1.89	0.41
21:x:6:VAL:O	21:x:73:ARG:NH2	2.52	0.41
24:B:3:GLN:OE1	24:B:6:LYS:HA	2.21	0.41
24:B:48:TYR:HB3	24:B:53:VAL:HG11	2.02	0.41
30:H:19:SER:HB3	41:S:91:GLU:O	2.20	0.41
35:M:10:LEU:CD1	35:M:76:ARG:HB2	2.50	0.41
40:R:14:ALA:HA	40:R:17:ALA:HB3	2.02	0.41
40:R:49:GLU:OE1	40:R:49:GLU:HA	2.20	0.41
46:X:13:HIS:NE2	46:X:34:SER:HB2	2.35	0.41
50:3:950:U:H2'	50:3:951:G:H8	1.85	0.41
50:3:1272:G:H2'	50:3:1273:C:H5'	2.02	0.41
51:1:648:G:C5'	51:1:2352:A:H5'	2.50	0.41
51:1:1373:A:H2'	51:1:1374:G:O4'	2.20	0.41
51:1:1403:A:H2'	51:1:1404:C:C6	2.55	0.41
51:1:1682:G:H2'	51:1:1683:U:C6	2.55	0.41
51:1:2897:U:H2'	51:1:2898:U:C6	2.54	0.41
1:b:119:VAL:HG12	1:b:130:PRO:HD2	2.01	0.41
1:b:183:VAL:HG22	1:b:184:GLU:N	2.36	0.41
4:e:87:LYS:HD3	51:1:2313:C:C5'	2.50	0.41
4:e:128:SER:HG	51:1:2303:G:H1	1.65	0.41
8:k:38:ILE:HD13	8:k:61:VAL:HG22	2.01	0.41
9:l:95:LEU:HB2	9:l:101:ILE:CD1	2.50	0.41
11:n:96:ARG:NH1	24:B:51:ARG:HH11	2.18	0.41
29:G:47:PRO:HG2	29:G:48:MET:H	1.84	0.41
30:H:2:GLN:HG3	50:3:1190:G:O2'	2.21	0.41
31:I:23:GLY:HA3	50:3:409:U:OP1	2.19	0.41
40:R:82:LEU:HA	46:X:65:MET:HE3	2.02	0.41
41:S:4:SER:CB	50:3:1216:A:H5''	2.51	0.41
42:T:64:LYS:HD2	50:3:755:G:OP2	2.20	0.41
50:3:7:A:H4'	50:3:298:A:OP1	2.21	0.41
50:3:676:A:H2'	50:3:677:U:C5	2.56	0.41
50:3:1132:C:N4	50:3:1139:G:H1	2.18	0.41
50:3:1346:A:O2'	50:3:1347:G:H4'	2.20	0.41
51:1:1044:C:O5'	51:1:1044:C:H6	2.03	0.41
51:1:1450:G:O2'	51:1:1451:C:H5'	2.20	0.41
51:1:2283:C:C2'	51:1:2284:A:H5'	2.51	0.41
51:1:2835:A:H61	51:1:2878:U:H2'	1.85	0.41
1:b:93:VAL:HG11	1:b:115:ILE:HD11	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:94:LEU:HD11	51:1:1501:G:C4'	2.49	0.41
1:b:211:ARG:HD3	1:b:217:PRO:HD3	2.01	0.41
5:f:18:ILE:HD12	5:f:42:VAL:HG21	2.01	0.41
6:g:55:GLU:HA	6:g:58:LEU:HB3	2.03	0.41
8:k:38:ILE:HD12	8:k:87:LEU:HD11	2.02	0.41
13:p:59:THR:HG22	13:p:72:VAL:CG1	2.40	0.41
15:r:14:VAL:CG2	15:r:98:ILE:HG13	2.38	0.41
16:s:46:LEU:O	16:s:50:VAL:HG23	2.20	0.41
23:z:29:ARG:HE	51:1:1183:U:H5''	1.84	0.41
29:G:93:HIS:CG	29:G:145:ASN:HB3	2.56	0.41
30:H:63:ILE:HG13	30:H:98:ALA:HA	2.02	0.41
31:I:125:ASN:HB2	31:I:127:ARG:HH21	1.85	0.41
34:L:77:ARG:NH1	34:L:78:ARG:O	2.54	0.41
38:P:80:ASN:HD22	38:P:107:THR:HG1	1.67	0.41
39:Q:112:ALA:HB1	39:Q:115:LYS:HZ1	1.83	0.41
40:R:70:ARG:HE	40:R:73:SER:CB	2.33	0.41
40:R:108:ARG:HH21	50:3:1308:U:H5'	1.85	0.41
49:a:191:ALA:O	49:a:194:VAL:HG12	2.19	0.41
50:3:45:G:H5''	50:3:307:C:O2'	2.20	0.41
50:3:216:U:H2'	50:3:217:C:C6	2.55	0.41
50:3:403:C:H2'	50:3:404:G:H8	1.83	0.41
50:3:434:U:H2'	50:3:435:A:H8	1.86	0.41
50:3:909:A:H2'	50:3:910:C:O4'	2.21	0.41
50:3:1273:C:H2'	50:3:1274:A:H5'	2.02	0.41
51:1:35:G:H2'	51:1:36:G:O4'	2.20	0.41
51:1:151:C:H2'	51:1:152:A:H8	1.86	0.41
51:1:1176:U:H2'	51:1:1177:G:C8	2.54	0.41
51:1:1339:G:H2'	51:1:1340:U:O2	2.19	0.41
51:1:1915:U:H3'	51:1:1916:A:C5'	2.50	0.41
51:1:2370:G:H2'	51:1:2371:G:O4'	2.21	0.41
51:1:2399:G:H2'	51:1:2400:G:H8	1.85	0.41
51:1:2419:U:H2'	51:1:2420:C:C6	2.55	0.41
51:1:2478:A:H2'	51:1:2479:U:O4'	2.21	0.41
51:1:2767:C:H2'	51:1:2768:U:C6	2.55	0.41
51:1:2845:U:H2'	51:1:2846:G:C8	2.55	0.41
1:b:66:PHE:HB3	1:b:150:GLY:O	2.21	0.41
7:j:89:PHE:CE1	7:j:93:ILE:HD11	2.55	0.41
11:n:5:LYS:HE3	11:n:5:LYS:HB2	1.90	0.41
11:n:28:LEU:O	11:n:32:GLU:N	2.47	0.41
25:C:5:ARG:NE	51:1:2285:C:H5	2.18	0.41
29:G:80:LYS:HE3	29:G:92:ASN:HB3	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:H:111:ASP:HB3	30:H:114:LEU:CG	2.50	0.41
31:I:101:VAL:HG13	31:I:113:ALA:HB1	2.02	0.41
34:L:94:ARG:O	34:L:98:LEU:N	2.53	0.41
35:M:80:PRO:CG	50:3:878:A:H5'	2.50	0.41
38:P:63:GLN:O	38:P:67:GLU:HG2	2.20	0.41
43:U:57:ILE:O	43:U:61:VAL:HG23	2.19	0.41
45:W:49:LYS:HD2	50:3:663:A:C4'	2.51	0.41
49:a:175:ILE:HG13	49:a:176:GLY:N	2.35	0.41
50:3:997:U:H2'	50:3:998:C:H5'	2.02	0.41
51:1:8:C:O2'	51:1:9:G:H5'	2.20	0.41
51:1:28:A:H2'	51:1:29:U:C6	2.54	0.41
51:1:79:C:O2'	51:1:346:A:H1'	2.20	0.41
51:1:171:U:H2'	51:1:172:A:H8	1.85	0.41
51:1:513:A:O2'	51:1:514:A:H5'	2.20	0.41
51:1:827:U:H4'	51:1:828:U:C5	2.55	0.41
51:1:1164:C:H2'	51:1:1165:A:C8	2.55	0.41
51:1:1373:A:H5'	51:1:2212:A:C1'	2.48	0.41
51:1:1402:U:C3'	51:1:1403:A:H5''	2.50	0.41
51:1:1998:A:H2'	51:1:1999:C:C6	2.56	0.41
51:1:2303:G:H2'	51:1:2304:G:O5'	2.20	0.41
51:1:2441:U:O2'	51:1:2442:C:H5'	2.19	0.41
1:b:36:ASN:HB2	1:b:61:TYR:HB2	2.02	0.41
1:b:86:ARG:HG2	1:b:86:ARG:HH11	1.85	0.41
1:b:226:PRO:HD3	1:b:233:GLY:CA	2.51	0.41
5:f:17:LYS:O	5:f:23:ILE:HG23	2.21	0.41
7:j:65:THR:O	7:j:68:LYS:HE2	2.20	0.41
8:k:13:ASN:OD1	8:k:98:ARG:N	2.53	0.41
10:m:65:ILE:HG23	10:m:103:TYR:CE1	2.56	0.41
12:o:110:ALA:HB3	12:o:117:PHE:CZ	2.55	0.41
19:v:38:LEU:CD2	19:v:40:ILE:HD11	2.51	0.41
24:B:14:MET:SD	51:1:2045:C:H5''	2.61	0.41
26:D:26:ASN:CG	51:1:682:G:H5'	2.45	0.41
26:D:26:ASN:O	26:D:30:VAL:HG23	2.21	0.41
30:H:6:PRO:O	30:H:10:ARG:NH1	2.53	0.41
30:H:69:THR:HG22	30:H:103:ALA:O	2.20	0.41
30:H:77:GLY:HA3	30:H:81:GLU:HB3	2.02	0.41
30:H:163:ARG:HH11	30:H:163:ARG:HG2	1.85	0.41
31:I:62:ARG:N	31:I:62:ARG:HD2	2.35	0.41
32:J:10:LEU:HA	32:J:40:ASP:HA	2.02	0.41
32:J:20:VAL:HG11	50:3:1080:A:H4'	2.03	0.41
33:K:19:PRO:HA	33:K:22:ILE:CG1	2.51	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:915:A:H2'	50:3:916:U:H5'	2.03	0.41
50:3:978:A:H4'	50:3:1322:C:N3	2.36	0.41
50:3:1174:G:O2'	50:3:1175:G:H5'	2.20	0.41
51:1:11:C:C2'	51:1:12:U:H5'	2.51	0.41
51:1:273:G:H2'	51:1:274:C:O4'	2.21	0.41
51:1:816:C:H2'	51:1:817:C:C6	2.56	0.41
51:1:1429:G:H2'	51:1:1430:G:H8	1.85	0.41
51:1:1690:A:H2'	51:1:1691:C:O4'	2.21	0.41
51:1:2376:A:H2'	51:1:2377:A:O4'	2.21	0.41
1:b:94:LEU:HD21	51:1:1501:G:H5''	2.02	0.41
3:d:12:LEU:HD23	3:d:12:LEU:C	2.46	0.41
3:d:149:ILE:HD12	3:d:170:ARG:O	2.20	0.41
3:d:154:ASP:OD2	3:d:157:LEU:HB2	2.21	0.41
4:e:88:VAL:HG12	4:e:89:THR:N	2.35	0.41
8:k:111:LYS:HE3	8:k:112:PHE:CZ	2.56	0.41
9:l:60:ARG:O	51:1:2393:U:H5'	2.19	0.41
9:l:135:ILE:HD12	9:l:142:ILE:CD1	2.50	0.41
10:m:8:LYS:HG3	10:m:9:PHE:N	2.34	0.41
15:r:60:LYS:HB2	15:r:100:GLY:HA3	2.01	0.41
18:u:64:ILE:HG12	18:u:65:GLN:N	2.35	0.41
25:C:7:LYS:HD3	27:E:33:THR:HG21	2.02	0.41
25:C:12:SER:HB3	25:C:48:TYR:CE1	2.56	0.41
38:P:45:THR:CG2	38:P:48:GLY:H	2.32	0.41
43:U:23:ASP:CB	43:U:26:ASN:ND2	2.83	0.41
43:U:68:SER:HB3	43:U:71:VAL:CG2	2.51	0.41
46:X:30:LEU:HD23	46:X:30:LEU:N	2.35	0.41
46:X:46:LEU:HB3	46:X:48:ILE:HG23	2.02	0.41
50:3:162:A:H2'	50:3:163:C:O4'	2.21	0.41
50:3:408:A:H2'	50:3:409:U:O4'	2.21	0.41
50:3:988:G:H2'	50:3:989:U:O4'	2.20	0.41
50:3:1290:G:H2'	50:3:1291:U:C6	2.56	0.41
50:3:1414:U:H2'	50:3:1415:G:C8	2.55	0.41
51:1:506:G:H4'	51:1:509:C:O2	2.20	0.41
51:1:606:U:H4'	51:1:658:U:O2'	2.21	0.41
51:1:1437:C:H5''	51:1:1552:A:H62	1.84	0.41
51:1:1790:C:H2'	51:1:1791:A:C8	2.56	0.41
51:1:2144:G:H1'	51:1:2147:A:H61	1.85	0.41
51:1:2170:A:H2'	51:1:2171:A:H4'	2.03	0.41
51:1:2296:U:H5''	51:1:2297:A:OP1	2.19	0.41
5:f:125:PRO:HG2	5:f:126:THR:H	1.86	0.41
6:g:3:VAL:HG13	6:g:37:VAL:O	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:g:31:VAL:N	6:g:32:PRO:HD2	2.36	0.41
10:m:45:GLN:OE1	10:m:125:PRO:HD3	2.21	0.41
11:n:63:ARG:HG2	11:n:63:ARG:NH2	2.36	0.41
12:o:111:ARG:HH12	51:1:2376:A:H1'	1.85	0.41
17:t:61:LEU:HD12	51:1:1340:U:H2'	2.02	0.41
30:H:65:VAL:HB	30:H:100:ILE:HG12	2.02	0.41
31:I:2:ARG:HH11	31:I:2:ARG:CB	2.33	0.41
33:K:76:THR:HA	33:K:79:ARG:HG3	2.02	0.41
39:Q:2:THR:O	39:Q:4:ASN:N	2.54	0.41
42:T:16:ARG:HG3	42:T:16:ARG:HH11	1.86	0.41
44:V:10:ARG:O	44:V:22:VAL:HG13	2.21	0.41
47:Y:23:ARG:HG3	47:Y:23:ARG:NH1	2.35	0.41
50:3:276:G:H2'	50:3:277:C:O4'	2.21	0.41
50:3:677:U:H2'	50:3:678:U:H5'	2.02	0.41
50:3:684:U:H2'	50:3:685:G:H8	1.85	0.41
50:3:1273:C:C2'	50:3:1274:A:H5'	2.50	0.41
51:1:94:A:O2'	51:1:95:A:H5'	2.21	0.41
51:1:934:U:H2'	51:1:935:C:C6	2.56	0.41
51:1:2108:A:H2'	51:1:2109:U:O4'	2.20	0.41
51:1:2345:G:H5'	51:1:2347:C:H5'	2.02	0.41
51:1:2698:U:H2'	51:1:2699:C:C6	2.56	0.41
52:2:70:C:O2'	52:2:71:C:H5'	2.19	0.41
3:d:71:GLY:N	51:1:674:G:H5''	2.36	0.41
4:e:129:MET:HG2	51:1:2304:G:O2'	2.20	0.41
4:e:130:GLY:HA3	51:1:2305:U:N1	2.35	0.41
8:k:48:PRO:CB	50:3:1422:G:H5'	2.51	0.41
10:m:63:ILE:HG12	10:m:105:MET:HE2	2.03	0.41
12:o:51:ALA:HB2	12:o:81:ARG:NH2	2.36	0.41
14:q:90:ASP:N	15:r:11:GLN:HE22	2.18	0.41
18:u:10:VAL:HG12	18:u:71:ILE:HA	2.02	0.41
28:F:24:ARG:HG2	28:F:24:ARG:NH2	2.36	0.41
30:H:168:ARG:HD2	30:H:168:ARG:C	2.46	0.41
31:I:115:GLN:HE22	50:3:406:G:H1'	1.86	0.41
32:J:10:LEU:HB2	32:J:12:GLU:OE2	2.20	0.41
32:J:98:ALA:HB3	32:J:121:ASN:HD22	1.85	0.41
33:K:85:ILE:CG2	33:K:86:ARG:HD3	2.49	0.41
36:N:34:LEU:HD11	36:N:38:PHE:HE1	1.85	0.41
37:O:17:LEU:HD23	37:O:17:LEU:N	2.36	0.41
40:R:15:VAL:HG13	40:R:16:ILE:N	2.36	0.41
40:R:84:CYS:HB2	46:X:72:GLU:CD	2.46	0.41
43:U:12:LYS:HE2	50:3:43:C:OP2	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:V:68:LYS:HG3	50:3:267:C:OP1	2.21	0.41
50:3:15:G:H4'	54:4:23:A:N1	2.36	0.41
50:3:81:A:H2'	50:3:82:G:C8	2.56	0.41
50:3:222:C:H2'	50:3:223:A:H8	1.86	0.41
50:3:423:G:C3'	50:3:424:G:H5'	2.51	0.41
50:3:645:G:H2'	50:3:646:G:C8	2.55	0.41
50:3:736:C:H2'	50:3:737:C:C5	2.56	0.41
50:3:977:A:N3	50:3:977:A:H3'	2.36	0.41
50:3:1323:G:O2'	50:3:1324:A:H5'	2.21	0.41
50:3:1397:C:N4	54:4:22:A:H2'	2.36	0.41
51:1:235:U:H2'	51:1:236:C:C6	2.56	0.41
51:1:533:G:H2'	51:1:534:U:C6	2.55	0.41
51:1:648:G:H5''	51:1:2352:A:C5'	2.50	0.41
51:1:723:C:H2'	51:1:724:U:C6	2.56	0.41
51:1:728:G:H3'	51:1:729:G:C5'	2.50	0.41
51:1:814:C:H1'	51:1:1225:G:H21	1.86	0.41
51:1:904:G:H2'	51:1:905:A:H8	1.84	0.41
51:1:1099:G:O2'	51:1:1100:C:H5'	2.21	0.41
51:1:1473:G:H2'	51:1:1474:U:C6	2.55	0.41
51:1:1510:G:O2'	51:1:1511:G:H5'	2.20	0.41
51:1:1878:G:O2'	51:1:1879:C:O5'	2.37	0.41
51:1:2326:C:H4'	51:1:2327:A:OP1	2.20	0.41
51:1:2417:C:H2'	51:1:2418:A:C8	2.56	0.41
51:1:2759:G:O2'	51:1:2760:C:H5'	2.21	0.41
52:2:106:G:C2	52:2:107:G:H1'	2.56	0.41
54:4:20:G:H2'	54:4:21:A:H5'	2.03	0.41
1:b:219:VAL:HG21	51:1:782:A:N7	2.36	0.41
2:c:14:ILE:HA	13:p:11:GLN:HE22	1.85	0.41
3:d:97:ASN:N	3:d:97:ASN:ND2	2.68	0.41
4:e:67:THR:CG2	4:e:87:LYS:HG2	2.45	0.41
6:g:122:LEU:HD12	6:g:122:LEU:N	2.35	0.41
9:l:109:LYS:HD2	51:1:636:G:O6	2.20	0.41
16:s:8:ARG:HD2	51:1:494:G:OP1	2.21	0.41
18:u:81:ARG:HH21	18:u:81:ARG:HG3	1.86	0.41
29:G:43:GLU:H	29:G:43:GLU:CD	2.29	0.41
29:G:66:ILE:HD12	29:G:66:ILE:H	1.82	0.41
30:H:20:THR:HG23	30:H:20:THR:O	2.20	0.41
32:J:61:LYS:HE2	50:3:1073:U:OP2	2.21	0.41
37:O:47:GLU:HG2	50:3:1254:A:OP1	2.21	0.41
37:O:48:ARG:NH2	41:S:100:TRP:CH2	2.88	0.41
38:P:55:ARG:N	38:P:55:ARG:HD3	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:R:78:ARG:HH12	40:R:82:LEU:HD22	1.85	0.41
41:S:18:LYS:HG3	41:S:19:TYR:CD2	2.56	0.41
42:T:16:ARG:HG3	42:T:16:ARG:NH1	2.36	0.41
46:X:29:PRO:HB3	46:X:47:THR:OG1	2.20	0.41
49:a:22:ASP:HB2	49:a:24:ASN:OD1	2.21	0.41
50:3:37:U:H2'	50:3:38:G:H8	1.86	0.41
50:3:193:C:H2'	50:3:194:C:C6	2.56	0.41
50:3:1106:G:O2'	50:3:1107:C:H5'	2.21	0.41
50:3:1339:A:C2	53:5:31:G:H1'	2.53	0.41
50:3:1370:G:O2'	50:3:1371:G:H5'	2.20	0.41
51:1:551:G:O2'	51:1:552:U:H5'	2.21	0.41
51:1:553:G:H2'	51:1:554:U:O4'	2.20	0.41
51:1:1422:G:H21	51:1:1498:C:H1'	1.85	0.41
51:1:1960:A:O2'	51:1:1961:C:H5'	2.21	0.41
51:1:2072:C:H42	51:1:2437:G:H1	1.68	0.41
52:2:95:U:H2'	52:2:96:G:C8	2.56	0.41
1:b:94:LEU:HD11	51:1:1501:G:C5'	2.51	0.40
4:e:92:GLY:O	4:e:95:MET:HB3	2.21	0.40
10:m:40:ARG:NH1	51:1:958:U:O5'	2.54	0.40
11:n:2:ARG:HG3	11:n:2:ARG:HH11	1.86	0.40
11:n:54:LEU:CD2	11:n:66:ALA:HB2	2.51	0.40
11:n:118:ARG:HB3	11:n:118:ARG:NH2	2.37	0.40
13:p:48:ALA:HB3	13:p:59:THR:OG1	2.21	0.40
17:t:11:LEU:HD11	22:y:26:PHE:HE1	1.84	0.40
18:u:37:GLY:HA2	18:u:40:LEU:HD21	2.03	0.40
21:x:10:ARG:HB2	21:x:10:ARG:NH1	2.36	0.40
23:z:10:ARG:O	23:z:31:ILE:HG12	2.21	0.40
29:G:8:MET:O	29:G:13:VAL:HG12	2.21	0.40
38:P:84:MET:HG3	38:P:110:THR:HG23	2.02	0.40
39:Q:4:ASN:HD22	50:3:880:C:P	2.44	0.40
39:Q:50:LYS:HD3	39:Q:50:LYS:N	2.36	0.40
39:Q:53:ARG:HH11	39:Q:63:THR:CG2	2.27	0.40
40:R:106:ARG:NH1	40:R:109:LYS:NZ	2.68	0.40
41:S:52:ARG:HE	50:3:1219:A:C5'	2.30	0.40
49:a:30:LEU:HD11	49:a:185:LEU:HD13	2.03	0.40
50:3:46:G:OP1	50:3:307:C:H4'	2.22	0.40
50:3:128:G:H2'	50:3:129:A:C8	2.56	0.40
50:3:560:A:H5'	50:3:566:G:N2	2.36	0.40
51:1:217:A:H2'	51:1:218:A:O4'	2.21	0.40
51:1:937:C:H2'	51:1:938:G:H8	1.85	0.40
51:1:1307:A:C2'	51:1:1308:A:H5'	2.52	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1857:G:O2'	51:1:1885:A:N6	2.54	0.40
51:1:2554:U:H2'	51:1:2555:U:C6	2.55	0.40
51:1:2616:C:H2'	51:1:2617:U:C6	2.56	0.40
9:l:19:LEU:N	9:l:19:LEU:HD12	2.36	0.40
9:l:111:ILE:HG22	9:l:112:LEU:H	1.86	0.40
19:v:29:ILE:HG13	19:v:30:ILE:N	2.36	0.40
29:G:89:PHE:HE1	29:G:152:ASP:HB2	1.86	0.40
30:H:171:ARG:HA	50:3:1106:G:H4'	2.03	0.40
31:I:166:LYS:N	31:I:167:PRO:HD3	2.36	0.40
31:I:187:ARG:HH22	31:I:194:ILE:H	1.69	0.40
32:J:112:ALA:O	32:J:116:VAL:HG22	2.22	0.40
34:L:29:LEU:HD12	34:L:30:MET:N	2.36	0.40
34:L:29:LEU:HD13	34:L:38:ALA:HB1	2.04	0.40
34:L:111:GLY:HA2	34:L:118:ARG:NE	2.36	0.40
34:L:123:LEU:O	34:L:127:ALA:N	2.54	0.40
36:N:127:SER:OG	36:N:129:ARG:HG2	2.21	0.40
40:R:73:SER:HA	40:R:76:ILE:HD12	2.02	0.40
40:R:86:ARG:HH22	46:X:2:ARG:CZ	2.34	0.40
42:T:60:SER:CB	50:3:581:G:H5''	2.52	0.40
44:V:64:ARG:HG2	44:V:66:LEU:HD12	2.03	0.40
48:Z:54:ARG:HG3	48:Z:57:LYS:HE3	2.03	0.40
49:a:44:VAL:HB	49:a:173:THR:HG23	2.03	0.40
50:3:674:G:H2'	50:3:675:A:C8	2.56	0.40
50:3:868:C:H2'	50:3:869:G:O4'	2.21	0.40
50:3:961:U:P	50:3:1223:C:H4'	2.61	0.40
50:3:1069:C:C3'	50:3:1070:U:H5''	2.52	0.40
50:3:1160:G:O2'	50:3:1161:C:H5'	2.20	0.40
50:3:1254:A:H4'	50:3:1356:G:H4'	2.03	0.40
51:1:809:G:O2'	51:1:810:U:H5'	2.21	0.40
51:1:969:G:H2'	51:1:970:U:H6	1.85	0.40
51:1:1431:A:H2'	51:1:1432:G:H8	1.85	0.40
51:1:1545:A:O5'	51:1:1545:A:H8	2.04	0.40
51:1:1601:G:C2'	51:1:1602:U:H5'	2.50	0.40
51:1:1810:A:H2'	51:1:1811:G:O4'	2.21	0.40
51:1:2671:G:H2'	51:1:2672:U:O4'	2.21	0.40
1:b:38:LYS:HZ2	1:b:56:GLY:C	2.29	0.40
1:b:196:ASN:ND2	1:b:199:HIS:HB2	2.36	0.40
10:m:16:ARG:HG2	10:m:16:ARG:NH1	2.34	0.40
17:t:12:ARG:NE	22:y:29:ARG:NH2	2.69	0.40
21:x:7:THR:OG1	21:x:9:LYS:HG3	2.22	0.40
28:F:25:VAL:HB	28:F:35:GLN:HG3	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:H:5:HIS:HE1	30:H:7:ASN:HB3	1.84	0.40
30:H:152:VAL:HG22	30:H:153:SER:N	2.37	0.40
31:I:70:GLN:HA	31:I:73:ASN:ND2	2.27	0.40
33:K:38:ARG:HB3	33:K:40:GLU:HG3	2.03	0.40
36:N:50:PRO:HG3	36:N:82:ILE:HD12	2.02	0.40
36:N:123:ARG:CG	36:N:124:PRO:HD2	2.52	0.40
40:R:9:PRO:HG2	40:R:44:ILE:HG13	2.03	0.40
42:T:31:LEU:HD23	42:T:31:LEU:C	2.46	0.40
46:X:14:LEU:HD12	46:X:17:LYS:HB2	2.03	0.40
46:X:16:LYS:O	46:X:20:LYS:HG2	2.22	0.40
46:X:57:VAL:HA	46:X:58:PRO:HD3	1.86	0.40
46:X:59:VAL:HG22	46:X:60:PHE:N	2.36	0.40
50:3:28:A:O2'	50:3:29:U:H5'	2.21	0.40
50:3:423:G:C2'	50:3:424:G:H5'	2.51	0.40
50:3:423:G:H3'	50:3:424:G:O4'	2.21	0.40
50:3:460:A:H2	50:3:472:U:H3	1.68	0.40
50:3:629:A:H2'	50:3:630:A:O4'	2.21	0.40
51:1:118:A:H2'	51:1:120:U:O4	2.21	0.40
51:1:209:C:H4'	51:1:681:G:H4'	2.03	0.40
51:1:601:C:O2'	51:1:605:G:H5''	2.21	0.40
51:1:880:G:H2'	51:1:881:G:H8	1.86	0.40
51:1:2443:C:H2'	51:1:2444:G:C8	2.56	0.40
51:1:2443:C:H2'	51:1:2444:G:H8	1.86	0.40
1:b:266:ILE:HG21	1:b:269:ARG:NH2	2.23	0.40
8:k:42:THR:C	8:k:43:ILE:HD12	2.47	0.40
12:o:31:THR:CG2	12:o:32:PRO:HD2	2.50	0.40
12:o:90:VAL:HG23	12:o:115:LEU:HD11	2.03	0.40
17:t:50:LEU:HD13	22:y:26:PHE:CZ	2.56	0.40
25:C:38:PHE:HA	25:C:45:HIS:HA	2.03	0.40
30:H:71:ARG:HB2	30:H:74:ILE:HG22	2.03	0.40
31:I:119:HIS:CG	50:3:438:U:H4'	2.56	0.40
34:L:134:VAL:HG23	34:L:137:ARG:CZ	2.52	0.40
36:N:36:GLN:HA	36:N:36:GLN:HE21	1.86	0.40
40:R:70:ARG:HA	40:R:73:SER:HB2	2.03	0.40
44:V:24:ILE:CD1	44:V:43:LEU:HD12	2.51	0.40
46:X:9:PHE:CG	50:3:1318:A:H4'	2.56	0.40
46:X:52:ASN:ND2	46:X:74:ALA:HB1	2.36	0.40
49:a:207:VAL:HG23	49:a:210:LYS:HE2	2.03	0.40
50:3:150:U:H3	50:3:171:A:H62	1.70	0.40
50:3:389:A:H2'	50:3:390:U:H5'	2.04	0.40
50:3:532:A:H3'	50:3:533:A:H5'	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1355:G:H2'	50:3:1356:G:C8	2.56	0.40
51:1:622:G:H2'	51:1:623:C:H6	1.86	0.40
51:1:749:A:H4'	51:1:1271:G:N3	2.35	0.40
51:1:1183:U:H2'	51:1:1184:U:H6	1.84	0.40
51:1:1273:U:H5''	51:1:1646:C:N4	2.36	0.40
51:1:1721:G:H2'	51:1:1722:A:C8	2.57	0.40
51:1:1807:G:C2'	51:1:1808:A:H5'	2.51	0.40
51:1:2066:C:O2'	51:1:2067:G:H5'	2.21	0.40
51:1:2208:C:O2'	51:1:2209:G:H5'	2.21	0.40
51:1:2585:U:C2'	51:1:2586:U:H5'	2.49	0.40
1:b:159:THR:HG21	51:1:1819:A:H5''	2.03	0.40
5:f:123:GLU:O	5:f:131:VAL:HG22	2.21	0.40
7:j:81:ILE:HG13	7:j:82:GLY:N	2.36	0.40
8:k:61:VAL:HG21	8:k:112:PHE:CE1	2.57	0.40
10:m:36:VAL:HG12	10:m:127:LYS:C	2.45	0.40
12:o:109:ALA:HA	12:o:112:GLU:HB2	2.03	0.40
18:u:6:ARG:HH22	18:u:26:ASN:HB3	1.84	0.40
19:v:31:TYR:O	19:v:93:ARG:N	2.48	0.40
19:v:44:HIS:CE1	19:v:48:MET:HB2	2.56	0.40
31:I:98:ASP:O	31:I:101:VAL:HG12	2.22	0.40
33:K:88:MET:HB2	45:W:63:TYR:CD2	2.56	0.40
37:O:57:VAL:HG21	50:3:1198:G:H1'	2.03	0.40
38:P:21:HIS:HD2	38:P:84:MET:SD	2.44	0.40
44:V:6:THR:HG23	44:V:75:VAL:HG21	2.03	0.40
50:3:43:C:H3'	50:3:44:A:H5''	2.03	0.40
50:3:630:A:H2'	50:3:631:C:O4'	2.22	0.40
50:3:1204:A:C2'	50:3:1205:U:H5'	2.50	0.40
51:1:26:G:H1'	51:1:514:A:N6	2.35	0.40
51:1:594:U:H2'	51:1:595:C:H6	1.86	0.40
51:1:2470:G:H2'	51:1:2471:A:H8	1.84	0.40
51:1:2880:C:O5'	51:1:2880:C:H6	2.04	0.40
53:5:52:G:O2'	53:5:53:G:H5'	2.22	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

entries.

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	b	269/273 (98%)	244 (91%)	24 (9%)	1 (0%)	30	59
2	c	207/209 (99%)	192 (93%)	15 (7%)	0	100	100
3	d	199/201 (99%)	184 (92%)	14 (7%)	1 (0%)	24	54
4	e	175/179 (98%)	150 (86%)	24 (14%)	1 (1%)	21	50
5	f	174/177 (98%)	154 (88%)	18 (10%)	2 (1%)	11	38
6	g	147/149 (99%)	118 (80%)	25 (17%)	4 (3%)	4	20
7	j	140/142 (99%)	132 (94%)	7 (5%)	1 (1%)	18	47
8	k	120/123 (98%)	110 (92%)	9 (8%)	1 (1%)	16	44
9	l	141/144 (98%)	128 (91%)	13 (9%)	0	100	100
10	m	134/136 (98%)	117 (87%)	14 (10%)	3 (2%)	5	24
11	n	118/127 (93%)	102 (86%)	16 (14%)	0	100	100
12	o	114/117 (97%)	106 (93%)	8 (7%)	0	100	100
13	p	112/115 (97%)	97 (87%)	15 (13%)	0	100	100
14	q	115/118 (98%)	113 (98%)	2 (2%)	0	100	100
15	r	101/103 (98%)	88 (87%)	13 (13%)	0	100	100
16	s	108/110 (98%)	100 (93%)	8 (7%)	0	100	100
17	t	91/100 (91%)	85 (93%)	6 (7%)	0	100	100
18	u	100/104 (96%)	87 (87%)	12 (12%)	1 (1%)	12	40
19	v	92/94 (98%)	87 (95%)	4 (4%)	1 (1%)	11	38
20	w	73/85 (86%)	68 (93%)	5 (7%)	0	100	100
21	x	75/78 (96%)	70 (93%)	5 (7%)	0	100	100
22	y	61/63 (97%)	59 (97%)	2 (3%)	0	100	100
23	z	56/59 (95%)	53 (95%)	3 (5%)	0	100	100
24	B	54/57 (95%)	50 (93%)	4 (7%)	0	100	100
25	C	48/55 (87%)	46 (96%)	2 (4%)	0	100	100
26	D	44/46 (96%)	43 (98%)	1 (2%)	0	100	100
27	E	62/65 (95%)	56 (90%)	5 (8%)	1 (2%)	7	29
28	F	36/38 (95%)	30 (83%)	5 (14%)	1 (3%)	4	19
29	G	223/241 (92%)	193 (86%)	28 (13%)	2 (1%)	14	42

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
30	H	204/233 (88%)	187 (92%)	17 (8%)	0	100	100
31	I	203/206 (98%)	184 (91%)	19 (9%)	0	100	100
32	J	155/167 (93%)	128 (83%)	23 (15%)	4 (3%)	4	21
33	K	99/131 (76%)	81 (82%)	14 (14%)	4 (4%)	2	15
34	L	149/156 (96%)	135 (91%)	14 (9%)	0	100	100
35	M	127/130 (98%)	118 (93%)	8 (6%)	1 (1%)	16	44
36	N	125/130 (96%)	99 (79%)	23 (18%)	3 (2%)	4	22
37	O	96/103 (93%)	79 (82%)	16 (17%)	1 (1%)	12	40
38	P	114/129 (88%)	93 (82%)	20 (18%)	1 (1%)	14	42
39	Q	121/124 (98%)	95 (78%)	24 (20%)	2 (2%)	7	28
40	R	112/118 (95%)	101 (90%)	10 (9%)	1 (1%)	14	42
41	S	98/101 (97%)	84 (86%)	13 (13%)	1 (1%)	12	40
42	T	86/89 (97%)	80 (93%)	5 (6%)	1 (1%)	10	35
43	U	80/82 (98%)	73 (91%)	7 (9%)	0	100	100
44	V	78/84 (93%)	67 (86%)	11 (14%)	0	100	100
45	W	63/75 (84%)	58 (92%)	5 (8%)	0	100	100
46	X	77/92 (84%)	68 (88%)	9 (12%)	0	100	100
47	Y	83/87 (95%)	81 (98%)	2 (2%)	0	100	100
48	Z	63/71 (89%)	37 (59%)	23 (36%)	3 (5%)	2	11
49	a	130/234 (56%)	120 (92%)	10 (8%)	0	100	100
All	All	5652/6050 (93%)	5030 (89%)	580 (10%)	42 (1%)	20	47

All (42) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	d	83	VAL
6	g	9	VAL
6	g	11	ASN
18	u	18	LYS
27	E	31	ILE
29	G	15	PHE
32	J	87	VAL
32	J	122	VAL
33	K	92	THR
36	N	90	ASP

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Mol	Chain	Res	Type
39	Q	102	ASP
42	T	46	LYS
10	m	70	ASP
33	K	86	ARG
33	K	99	ALA
36	N	57	VAL
39	Q	3	VAL
28	F	37	GLN
32	J	25	LYS
4	e	126	ASN
6	g	14	SER
32	J	11	GLN
36	N	91	GLU
38	P	92	ARG
41	S	98	ALA
7	j	81	ILE
10	m	58	LYS
10	m	59	ARG
29	G	43	GLU
33	K	40	GLU
35	M	78	SER
48	Z	9	GLU
5	f	45	ALA
5	f	117	PRO
8	k	108	ARG
19	v	93	ARG
40	R	26	LYS
48	Z	12	ASP
48	Z	10	PRO
37	O	33	GLY
1	b	226	PRO
6	g	134	VAL

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	b	216/218 (99%)	216 (100%)	0	100	100
2	c	164/164 (100%)	162 (99%)	2 (1%)	63	72
3	d	165/165 (100%)	164 (99%)	1 (1%)	78	80
4	e	148/150 (99%)	145 (98%)	3 (2%)	48	65
5	f	137/138 (99%)	136 (99%)	1 (1%)	76	78
6	g	114/114 (100%)	114 (100%)	0	100	100
7	j	116/116 (100%)	116 (100%)	0	100	100
8	k	103/104 (99%)	103 (100%)	0	100	100
9	l	102/103 (99%)	102 (100%)	0	100	100
10	m	109/109 (100%)	109 (100%)	0	100	100
11	n	100/104 (96%)	100 (100%)	0	100	100
12	o	86/87 (99%)	85 (99%)	1 (1%)	63	72
13	p	99/100 (99%)	99 (100%)	0	100	100
14	q	89/90 (99%)	89 (100%)	0	100	100
15	r	84/84 (100%)	84 (100%)	0	100	100
16	s	93/93 (100%)	92 (99%)	1 (1%)	65	74
17	t	80/84 (95%)	80 (100%)	0	100	100
18	u	83/85 (98%)	83 (100%)	0	100	100
19	v	78/78 (100%)	78 (100%)	0	100	100
20	w	57/63 (90%)	57 (100%)	0	100	100
21	x	67/68 (98%)	67 (100%)	0	100	100
22	y	55/55 (100%)	55 (100%)	0	100	100
23	z	48/49 (98%)	48 (100%)	0	100	100
24	B	47/48 (98%)	47 (100%)	0	100	100
25	C	45/49 (92%)	45 (100%)	0	100	100
26	D	38/38 (100%)	38 (100%)	0	100	100
27	E	51/52 (98%)	51 (100%)	0	100	100
28	F	34/34 (100%)	34 (100%)	0	100	100
29	G	186/199 (94%)	185 (100%)	1 (0%)	81	81
30	H	170/190 (90%)	170 (100%)	0	100	100
31	I	172/173 (99%)	171 (99%)	1 (1%)	78	80
32	J	119/126 (94%)	119 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
33	K	88/112 (79%)	87 (99%)	1 (1%)	65	74
34	L	124/129 (96%)	124 (100%)	0	100	100
35	M	104/105 (99%)	103 (99%)	1 (1%)	68	75
36	N	105/107 (98%)	103 (98%)	2 (2%)	50	66
37	O	86/90 (96%)	85 (99%)	1 (1%)	63	72
38	P	89/99 (90%)	89 (100%)	0	100	100
39	Q	103/104 (99%)	103 (100%)	0	100	100
40	R	92/96 (96%)	92 (100%)	0	100	100
41	S	83/84 (99%)	82 (99%)	1 (1%)	63	72
42	T	76/77 (99%)	76 (100%)	0	100	100
43	U	65/65 (100%)	63 (97%)	2 (3%)	35	59
44	V	74/78 (95%)	73 (99%)	1 (1%)	59	70
45	W	56/65 (86%)	56 (100%)	0	100	100
46	X	70/79 (89%)	69 (99%)	1 (1%)	59	70
47	Y	65/66 (98%)	65 (100%)	0	100	100
48	Z	55/61 (90%)	54 (98%)	1 (2%)	51	67
49	a	110/181 (61%)	109 (99%)	1 (1%)	70	76
All	All	4700/4928 (95%)	4677 (100%)	23 (0%)	78	81

All (23) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	c	83	ARG
2	c	148	GLN
3	d	163	ASN
4	e	10	GLU
4	e	122	ASP
4	e	163	GLU
5	f	129	GLU
12	o	116	GLN
16	s	67	ASP
29	G	51	GLU
31	I	8	LEU
33	K	101	PRO
35	M	61	THR
36	N	58	GLU

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Mol	Chain	Res	Type
36	N	65	THR
37	O	17	LEU
41	S	32	ASP
43	U	47	GLU
43	U	74	LEU
44	V	51	GLU
46	X	40	PHE
48	Z	63	ASN
49	a	41	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (129) such sidechains are listed below:

Mol	Chain	Res	Type
1	b	20	ASN
1	b	45	ASN
1	b	52	HIS
1	b	85	ASN
1	b	152	GLN
1	b	196	ASN
1	b	199	HIS
1	b	225	ASN
1	b	238	ASN
1	b	242	HIS
1	b	250	GLN
2	c	32	ASN
2	c	36	GLN
2	c	49	GLN
2	c	130	GLN
2	c	150	GLN
2	c	164	GLN
2	c	185	ASN
3	d	62	GLN
3	d	97	ASN
3	d	163	ASN
4	e	126	ASN
5	f	37	ASN
5	f	72	ASN
5	f	100	ASN
5	f	103	ASN
6	g	66	ASN
6	g	128	HIS
7	j	58	ASN

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Mol	Chain	Res	Type
7	j	128	ASN
7	j	135	GLN
8	k	3	GLN
8	k	88	ASN
9	l	38	GLN
9	l	54	GLN
9	l	104	GLN
10	m	13	HIS
10	m	17	ASN
10	m	22	GLN
10	m	60	GLN
11	n	9	GLN
11	n	13	ASN
11	n	23	ASN
11	n	62	ASN
11	n	81	ASN
11	n	107	ASN
12	o	116	GLN
13	p	9	GLN
13	p	11	GLN
13	p	76	HIS
14	q	55	GLN
14	q	80	ASN
16	s	15	GLN
16	s	40	ASN
18	u	39	ASN
18	u	68	ASN
18	u	98	ASN
19	v	51	GLN
19	v	78	GLN
20	w	42	HIS
22	y	15	ASN
22	y	20	ASN
22	y	27	ASN
22	y	31	GLN
22	y	45	GLN
24	B	5	ASN
24	B	18	HIS
24	B	37	HIS
28	F	37	GLN
29	G	17	HIS
29	G	41	ASN

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Mol	Chain	Res	Type
29	G	108	GLN
29	G	176	ASN
29	G	189	ASN
29	G	202	ASN
30	H	99	GLN
30	H	138	GLN
30	H	139	ASN
30	H	184	ASN
31	I	39	GLN
31	I	125	ASN
31	I	151	GLN
32	J	96	GLN
32	J	120	HIS
32	J	131	ASN
33	K	3	HIS
33	K	17	GLN
33	K	58	HIS
33	K	81	ASN
33	K	94	HIS
34	L	8	GLN
34	L	67	ASN
34	L	96	ASN
34	L	129	ASN
34	L	147	ASN
35	M	3	GLN
35	M	15	ASN
35	M	20	ASN
35	M	66	GLN
36	N	36	GLN
36	N	80	HIS
36	N	109	GLN
37	O	15	HIS
37	O	35	GLN
37	O	58	ASN
37	O	64	GLN
38	P	14	GLN
38	P	28	ASN
38	P	108	ASN
38	P	118	ASN
39	Q	111	GLN
40	R	7	ASN
40	R	51	GLN

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Mol	Chain	Res	Type
41	S	70	HIS
43	U	18	GLN
43	U	26	ASN
43	U	29	ASN
44	V	30	HIS
45	W	53	GLN
46	X	55	GLN
47	Y	2	ASN
47	Y	20	ASN
47	Y	47	GLN
47	Y	51	ASN
47	Y	54	GLN
47	Y	83	ASN
48	Z	8	ASN
49	a	20	GLN
49	a	57	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
50	3	1538/1539 (99%)	189 (12%)	2 (0%)
51	1	2902/2903 (99%)	422 (14%)	8 (0%)
52	2	119/120 (99%)	16 (13%)	0
53	5	73/77 (94%)	22 (30%)	1 (1%)
54	4	19/27 (70%)	7 (36%)	0
All	All	4651/4666 (99%)	656 (14%)	11 (0%)

All (656) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
50	3	3	A
50	3	5	U
50	3	6	G
50	3	9	G
50	3	22	G
50	3	31	G
50	3	32	A
50	3	39	G
50	3	44	A
50	3	47	C
50	3	48	C

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Mol	Chain	Res	Type
50	3	51	A
50	3	71	A
50	3	82	G
50	3	85	U
50	3	87	C
50	3	93	U
50	3	96	U
50	3	121	U
50	3	122	G
50	3	144	G
50	3	154	U
50	3	170	U
50	3	183	C
50	3	184	G
50	3	209	U
50	3	210	C
50	3	212	G
50	3	244	U
50	3	245	U
50	3	247	G
50	3	251	G
50	3	266	G
50	3	267	C
50	3	281	G
50	3	285	C
50	3	289	G
50	3	315	A
50	3	329	A
50	3	330	C
50	3	345	C
50	3	348	G
50	3	352	C
50	3	367	U
50	3	372	C
50	3	411	A
50	3	412	A
50	3	413	G
50	3	422	C
50	3	429	U
50	3	467	U
50	3	485	U
50	3	486	U

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Mol	Chain	Res	Type
50	3	508	U
50	3	517	G
50	3	518	C
50	3	531	U
50	3	533	A
50	3	547	A
50	3	559	A
50	3	561	U
50	3	572	A
50	3	573	A
50	3	575	G
50	3	576	C
50	3	577	G
50	3	618	C
50	3	633	G
50	3	639	G
50	3	644	U
50	3	653	U
50	3	661	G
50	3	665	A
50	3	702	A
50	3	703	G
50	3	713	G
50	3	724	G
50	3	755	G
50	3	777	A
50	3	789	U
50	3	790	A
50	3	809	G
50	3	815	A
50	3	817	C
50	3	818	G
50	3	819	A
50	3	820	U
50	3	821	G
50	3	843	U
50	3	844	G
50	3	846	G
50	3	851	G
50	3	872	A
50	3	890	G
50	3	902	G

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Mol	Chain	Res	Type
50	3	926	G
50	3	934	C
50	3	935	A
50	3	960	U
50	3	961	U
50	3	966	G
50	3	969	A
50	3	971	G
50	3	975	A
50	3	976	G
50	3	977	A
50	3	992	U
50	3	993	G
50	3	1004	A
50	3	1012	A
50	3	1028	C
50	3	1029	U
50	3	1031	C
50	3	1033	G
50	3	1034	G
50	3	1049	U
50	3	1050	G
50	3	1053	G
50	3	1054	C
50	3	1055	A
50	3	1068	G
50	3	1070	U
50	3	1089	G
50	3	1094	G
50	3	1101	A
50	3	1135	U
50	3	1136	C
50	3	1137	C
50	3	1138	G
50	3	1139	G
50	3	1159	U
50	3	1160	G
50	3	1168	U
50	3	1182	G
50	3	1184	G
50	3	1191	A
50	3	1193	G

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Mol	Chain	Res	Type
50	3	1196	A
50	3	1198	G
50	3	1201	A
50	3	1202	U
50	3	1212	U
50	3	1213	A
50	3	1225	A
50	3	1236	A
50	3	1237	C
50	3	1238	A
50	3	1240	U
50	3	1241	G
50	3	1253	G
50	3	1256	A
50	3	1257	A
50	3	1260	G
50	3	1267	C
50	3	1275	A
50	3	1278	G
50	3	1280	A
50	3	1282	C
50	3	1287	A
50	3	1290	G
50	3	1300	G
50	3	1312	G
50	3	1323	G
50	3	1337	G
50	3	1347	G
50	3	1363	A
50	3	1364	U
50	3	1379	G
50	3	1394	A
50	3	1395	C
50	3	1397	C
50	3	1429	A
50	3	1442	G
50	3	1444	U
50	3	1446	A
50	3	1448	C
50	3	1452	C
50	3	1493	A
50	3	1494	G

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Mol	Chain	Res	Type
50	3	1503	A
50	3	1506	U
50	3	1517	G
50	3	1519	A
50	3	1529	G
50	3	1530	G
50	3	1531	A
50	3	1536	C
50	3	1538	C
50	3	1540	U
51	1	10	A
51	1	12	U
51	1	34	U
51	1	35	G
51	1	46	G
51	1	51	G
51	1	63	A
51	1	71	A
51	1	74	A
51	1	75	G
51	1	86	G
51	1	118	A
51	1	120	U
51	1	139	U
51	1	140	C
51	1	141	G
51	1	142	A
51	1	149	A
51	1	162	U
51	1	163	C
51	1	181	A
51	1	196	A
51	1	205	G
51	1	215	G
51	1	216	A
51	1	221	A
51	1	222	A
51	1	228	C
51	1	229	C
51	1	248	G
51	1	255	A
51	1	266	G

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Mol	Chain	Res	Type
51	1	276	U
51	1	278	A
51	1	281	C
51	1	285	G
51	1	294	A
51	1	311	A
51	1	323	C
51	1	324	A
51	1	329	G
51	1	330	A
51	1	333	G
51	1	371	A
51	1	372	G
51	1	386	G
51	1	391	A
51	1	404	A
51	1	406	G
51	1	411	G
51	1	412	A
51	1	424	G
51	1	451	U
51	1	457	A
51	1	458	G
51	1	481	G
51	1	491	G
51	1	504	A
51	1	505	A
51	1	508	A
51	1	509	C
51	1	529	A
51	1	530	G
51	1	531	C
51	1	532	A
51	1	544	C
51	1	545	U
51	1	547	A
51	1	562	U
51	1	563	A
51	1	572	A
51	1	573	U
51	1	574	A
51	1	575	A

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Mol	Chain	Res	Type
51	1	588	U
51	1	603	A
51	1	614	A
51	1	615	U
51	1	627	A
51	1	628	G
51	1	637	A
51	1	645	C
51	1	646	U
51	1	654	A
51	1	669	G
51	1	686	U
51	1	695	G
51	1	730	A
51	1	747	C
51	1	752	A
51	1	764	A
51	1	776	G
51	1	777	G
51	1	782	A
51	1	784	G
51	1	785	G
51	1	792	A
51	1	793	A
51	1	805	G
51	1	812	C
51	1	819	A
51	1	822	G
51	1	827	U
51	1	828	U
51	1	846	U
51	1	847	U
51	1	859	G
51	1	860	U
51	1	878	A
51	1	885	C
51	1	886	A
51	1	887	U
51	1	892	A
51	1	896	A
51	1	897	C
51	1	906	U

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Mol	Chain	Res	Type
51	1	910	A
51	1	932	U
51	1	941	A
51	1	946	C
51	1	958	U
51	1	959	A
51	1	961	C
51	1	974	G
51	1	983	A
51	1	995	C
51	1	996	A
51	1	1012	U
51	1	1013	C
51	1	1022	G
51	1	1026	G
51	1	1033	U
51	1	1042	G
51	1	1045	C
51	1	1046	A
51	1	1047	G
51	1	1060	U
51	1	1062	G
51	1	1064	C
51	1	1065	U
51	1	1066	U
51	1	1070	A
51	1	1071	G
51	1	1072	C
51	1	1075	C
51	1	1078	U
51	1	1079	C
51	1	1084	A
51	1	1085	A
51	1	1087	G
51	1	1088	A
51	1	1098	A
51	1	1104	C
51	1	1111	A
51	1	1119	U
51	1	1130	U
51	1	1131	G
51	1	1133	A

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Mol	Chain	Res	Type
51	1	1134	A
51	1	1135	C
51	1	1157	G
51	1	1175	A
51	1	1177	G
51	1	1179	G
51	1	1180	U
51	1	1186	G
51	1	1206	G
51	1	1211	C
51	1	1212	G
51	1	1250	G
51	1	1253	A
51	1	1256	G
51	1	1271	G
51	1	1272	A
51	1	1273	U
51	1	1275	A
51	1	1289	C
51	1	1300	G
51	1	1301	A
51	1	1321	A
51	1	1329	U
51	1	1330	C
51	1	1332	G
51	1	1345	C
51	1	1365	A
51	1	1378	A
51	1	1379	U
51	1	1383	A
51	1	1398	C
51	1	1403	A
51	1	1416	G
51	1	1419	A
51	1	1421	G
51	1	1428	C
51	1	1436	G
51	1	1455	G
51	1	1458	U
51	1	1461	C
51	1	1468	U
51	1	1482	G

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Mol	Chain	Res	Type
51	1	1483	G
51	1	1490	A
51	1	1491	G
51	1	1493	C
51	1	1494	A
51	1	1497	U
51	1	1498	C
51	1	1516	G
51	1	1524	G
51	1	1535	A
51	1	1536	C
51	1	1546	G
51	1	1547	C
51	1	1554	U
51	1	1555	G
51	1	1559	U
51	1	1569	A
51	1	1584	U
51	1	1585	C
51	1	1587	G
51	1	1588	G
51	1	1607	C
51	1	1608	A
51	1	1611	C
51	1	1616	A
51	1	1647	U
51	1	1648	U
51	1	1674	G
51	1	1711	A
51	1	1714	U
51	1	1715	G
51	1	1716	U
51	1	1729	U
51	1	1730	C
51	1	1731	G
51	1	1732	C
51	1	1733	G
51	1	1738	G
51	1	1743	G
51	1	1758	U
51	1	1764	C
51	1	1773	A

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Mol	Chain	Res	Type
51	1	1800	C
51	1	1801	A
51	1	1802	A
51	1	1808	A
51	1	1816	C
51	1	1829	A
51	1	1848	A
51	1	1857	G
51	1	1865	U
51	1	1866	A
51	1	1871	A
51	1	1873	G
51	1	1879	C
51	1	1884	G
51	1	1901	A
51	1	1906	G
51	1	1907	G
51	1	1913	A
51	1	1914	C
51	1	1915	U
51	1	1916	A
51	1	1918	A
51	1	1919	A
51	1	1929	G
51	1	1930	G
51	1	1937	A
51	1	1938	A
51	1	1944	U
51	1	1955	U
51	1	1964	G
51	1	1967	C
51	1	1970	A
51	1	1972	G
51	1	1991	U
51	1	1993	U
51	1	1997	C
51	1	2022	U
51	1	2023	C
51	1	2030	A
51	1	2031	A
51	1	2033	A
51	1	2043	C

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Mol	Chain	Res	Type
51	1	2055	C
51	1	2056	G
51	1	2060	A
51	1	2061	G
51	1	2062	A
51	1	2069	G
51	1	2093	G
51	1	2097	A
51	1	2099	U
51	1	2100	G
51	1	2106	U
51	1	2111	U
51	1	2112	G
51	1	2113	U
51	1	2116	G
51	1	2118	U
51	1	2119	A
51	1	2121	G
51	1	2125	G
51	1	2127	G
51	1	2131	U
51	1	2132	U
51	1	2133	G
51	1	2134	A
51	1	2145	C
51	1	2149	U
51	1	2156	G
51	1	2160	C
51	1	2171	A
51	1	2172	U
51	1	2173	A
51	1	2182	U
51	1	2189	U
51	1	2191	A
51	1	2192	U
51	1	2198	A
51	1	2203	U
51	1	2204	G
51	1	2212	A
51	1	2213	U
51	1	2225	A
51	1	2226	C

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Mol	Chain	Res	Type
51	1	2238	G
51	1	2239	G
51	1	2250	G
51	1	2278	A
51	1	2283	C
51	1	2287	A
51	1	2297	A
51	1	2302	U
51	1	2305	U
51	1	2307	G
51	1	2308	G
51	1	2309	A
51	1	2310	C
51	1	2317	A
51	1	2320	U
51	1	2325	G
51	1	2327	A
51	1	2334	U
51	1	2350	C
51	1	2361	G
51	1	2383	G
51	1	2385	C
51	1	2390	U
51	1	2391	G
51	1	2402	U
51	1	2406	A
51	1	2425	A
51	1	2429	G
51	1	2430	A
51	1	2431	U
51	1	2433	A
51	1	2435	A
51	1	2440	C
51	1	2441	U
51	1	2448	A
51	1	2476	A
51	1	2478	A
51	1	2480	C
51	1	2484	G
51	1	2485	G
51	1	2491	U
51	1	2498	C

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Mol	Chain	Res	Type
51	1	2502	G
51	1	2503	A
51	1	2504	U
51	1	2505	G
51	1	2506	U
51	1	2507	C
51	1	2518	A
51	1	2542	A
51	1	2547	A
51	1	2554	U
51	1	2566	A
51	1	2567	G
51	1	2572	A
51	1	2582	G
51	1	2585	U
51	1	2586	U
51	1	2602	A
51	1	2603	G
51	1	2605	U
51	1	2609	U
51	1	2610	C
51	1	2613	U
51	1	2615	U
51	1	2646	C
51	1	2655	G
51	1	2682	A
51	1	2689	U
51	1	2690	U
51	1	2714	G
51	1	2744	G
51	1	2748	A
51	1	2764	A
51	1	2765	A
51	1	2778	A
51	1	2779	U
51	1	2794	C
51	1	2798	U
51	1	2799	A
51	1	2800	A
51	1	2801	G
51	1	2808	G
51	1	2818	U

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Mol	Chain	Res	Type
51	1	2820	A
51	1	2821	A
51	1	2833	U
51	1	2835	A
51	1	2849	U
51	1	2850	A
51	1	2867	G
51	1	2868	A
51	1	2872	A
51	1	2879	A
51	1	2880	C
51	1	2884	U
52	2	4	C
52	2	12	C
52	2	13	G
52	2	15	A
52	2	25	U
52	2	35	C
52	2	37	C
52	2	41	G
52	2	44	G
52	2	67	G
52	2	87	U
52	2	88	C
52	2	89	U
52	2	90	C
52	2	108	A
52	2	109	A
53	5	4	G
53	5	9	G
53	5	15	G
53	5	16	C
53	5	17	C
53	5	17(A)	U
53	5	18	G
53	5	19	G
53	5	20	U
53	5	21	A
53	5	22	G
53	5	25	C
53	5	27	U
53	5	28	C

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Mol	Chain	Res	Type
53	5	33	U
53	5	45	G
53	5	48	C
53	5	59	A
53	5	61	C
53	5	63	G
53	5	70	G
53	5	72	A
54	4	8	A
54	4	12	A
54	4	13	A
54	4	15	A
54	4	19	U
54	4	22	A
54	4	24	A

All (11) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
50	3	1190	G
50	3	1201	A
51	1	490	C
51	1	784	G
51	1	858	G
51	1	859	G
51	1	1130	U
51	1	2286	G
51	1	2326	C
51	1	2430	A
53	5	17(A)	U

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
50	3	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	3	968:A	O3'	969:A	P	1.99

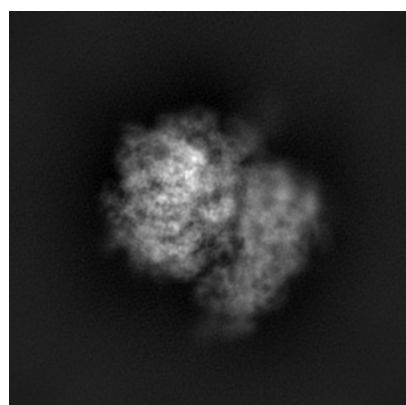
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-20058. These allow visual inspection of the internal detail of the map and identification of artifacts.

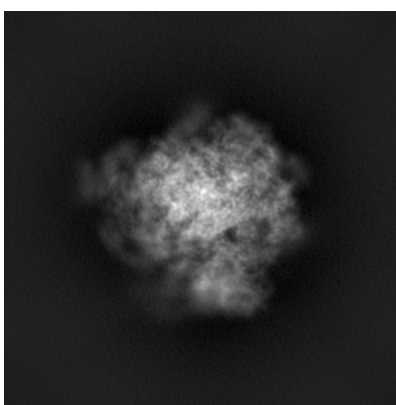
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

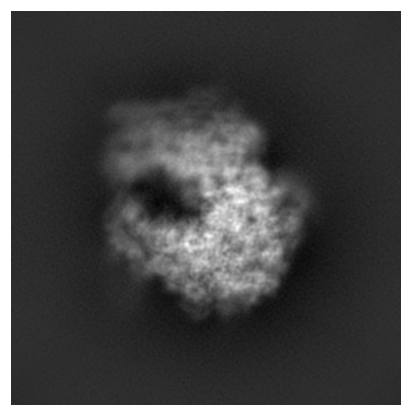
6.1.1 Primary map



X



Y

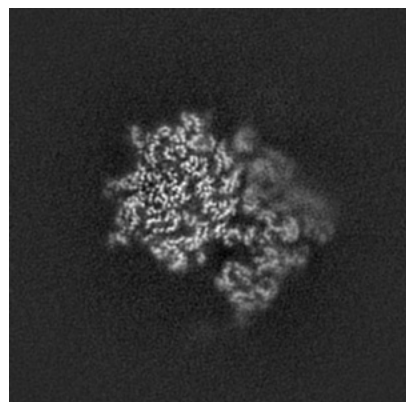


Z

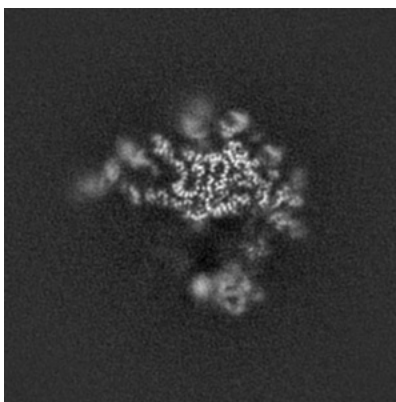
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

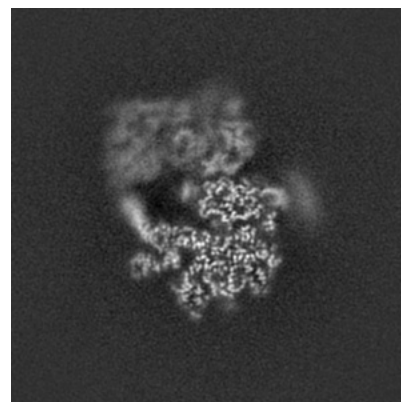
6.2.1 Primary map



X Index: 156



Y Index: 156

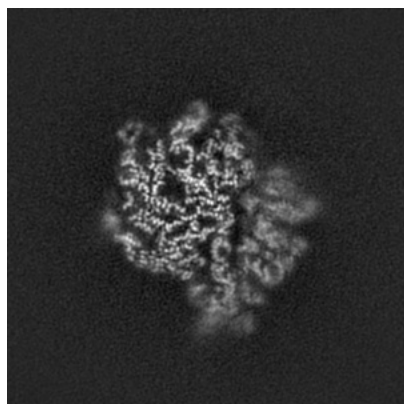


Z Index: 156

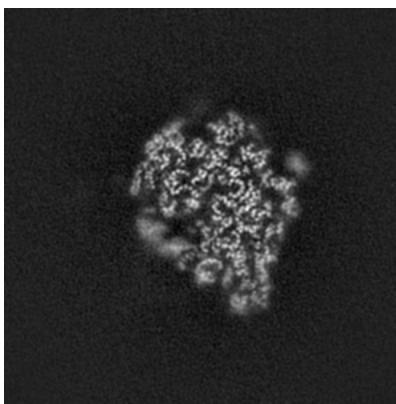
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

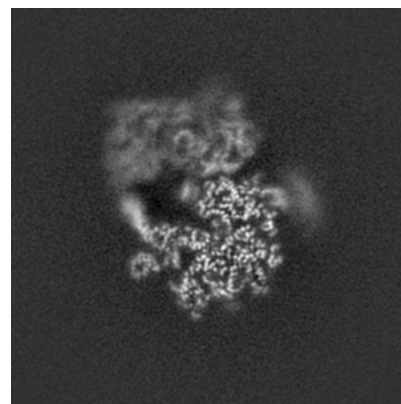
6.3.1 Primary map



X Index: 176



Y Index: 139

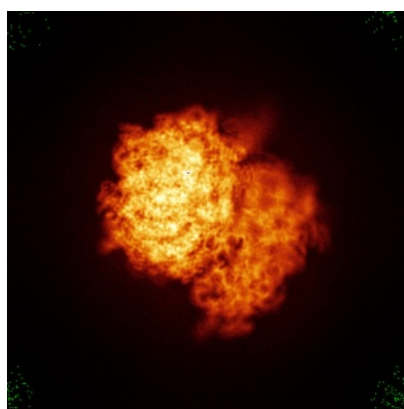


Z Index: 155

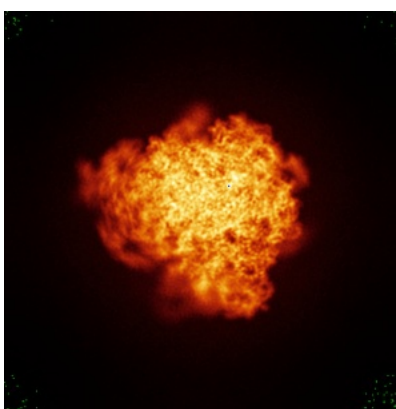
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1 Primary map



X



Y



Z

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

6.5 Orthogonal surface views

This section was not generated.

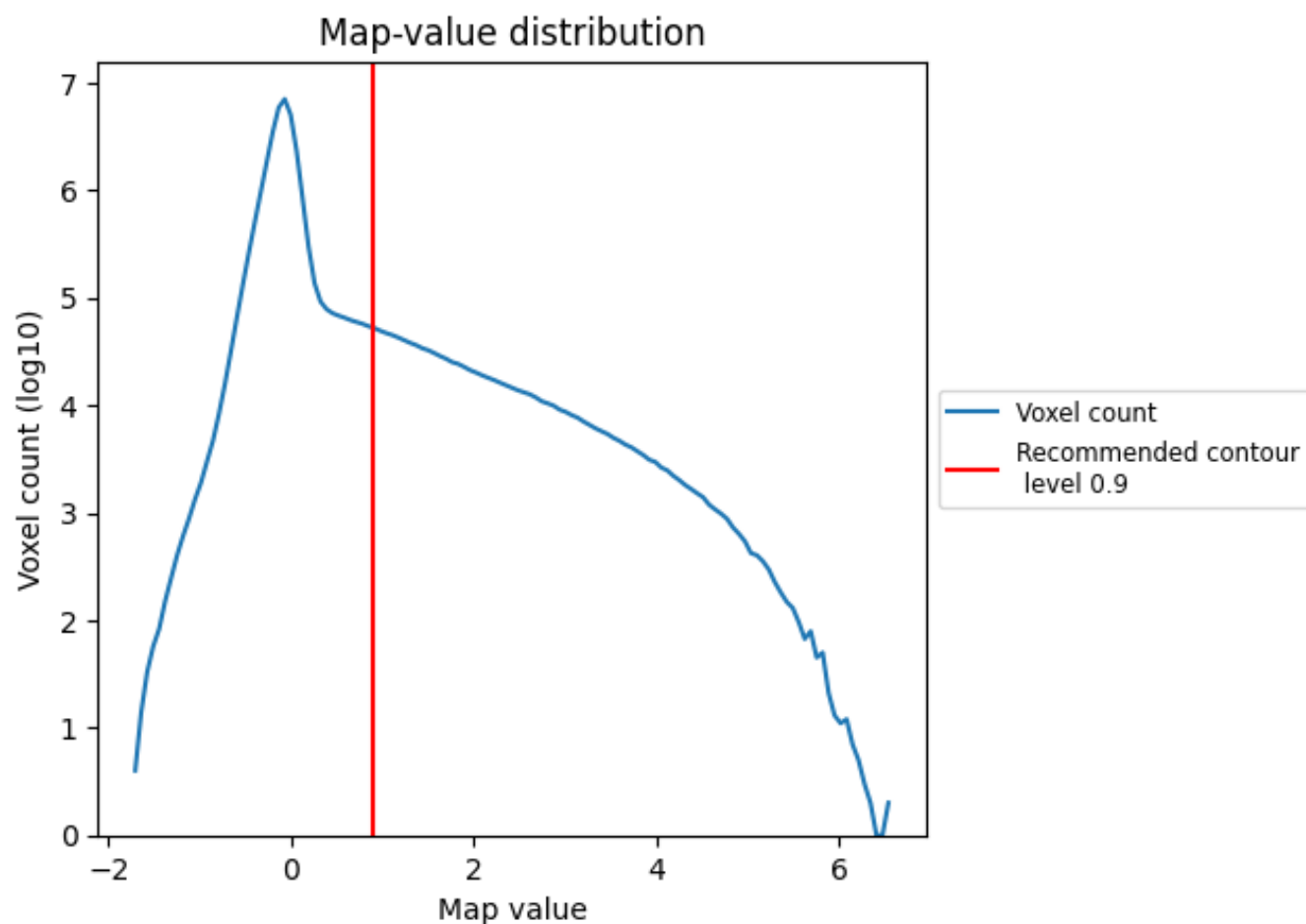
6.6 Mask visualisation

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

7 Map analysis [i](#)

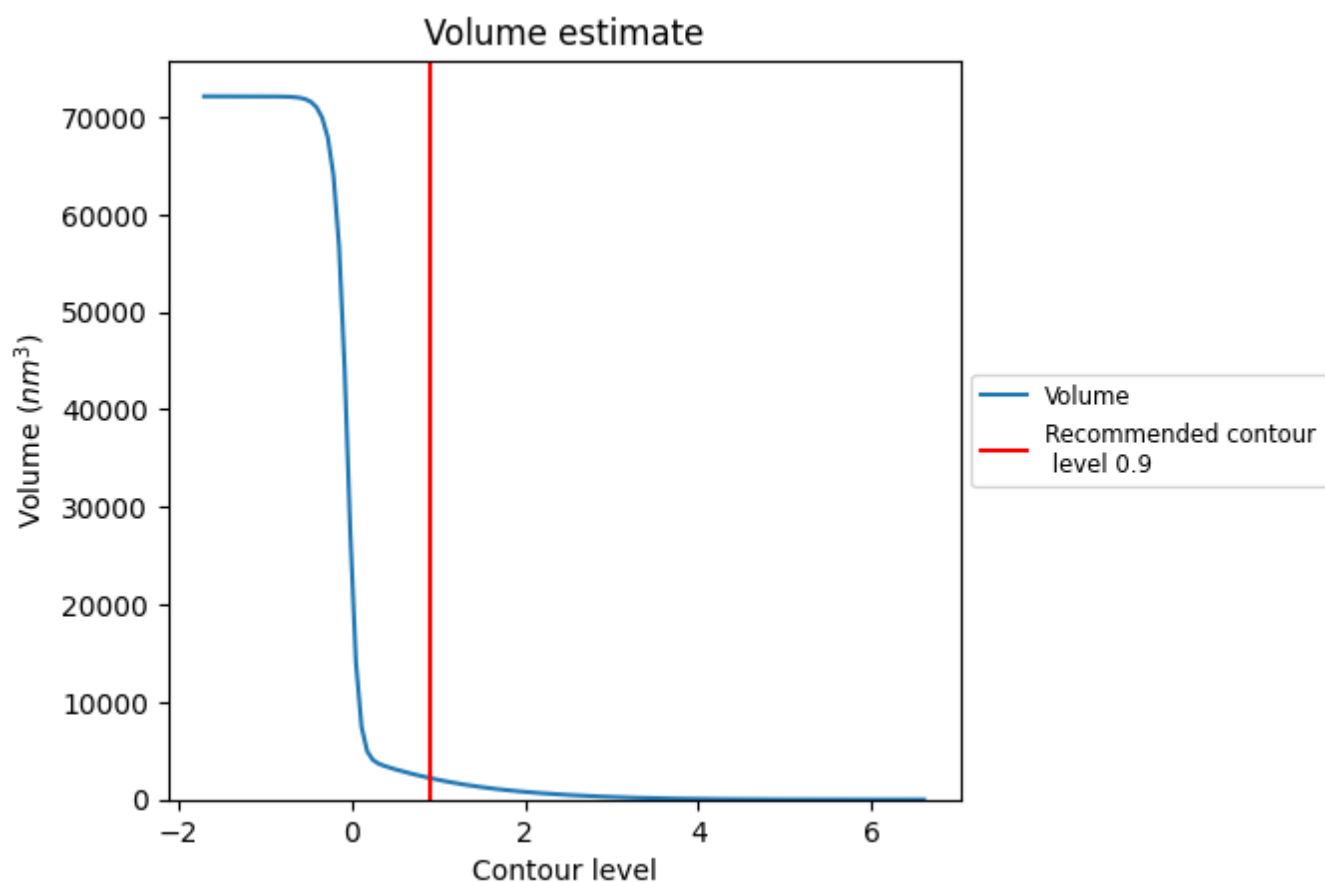
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

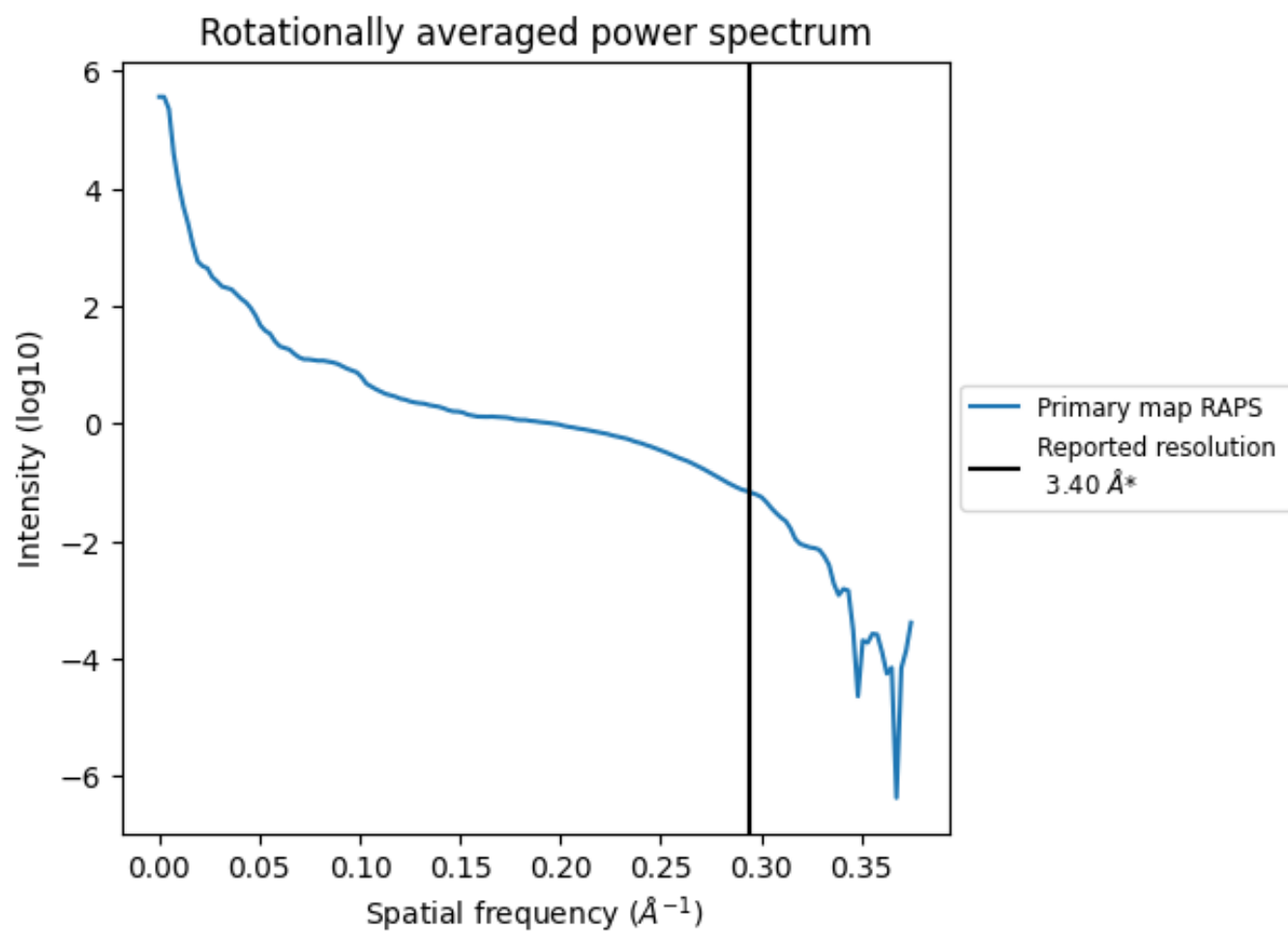
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 2210 nm³; this corresponds to an approximate mass of 1996 kDa.

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

7.3 Rotationally averaged power spectrum ⓘ



*Reported resolution corresponds to spatial frequency of 0.294 Å⁻¹

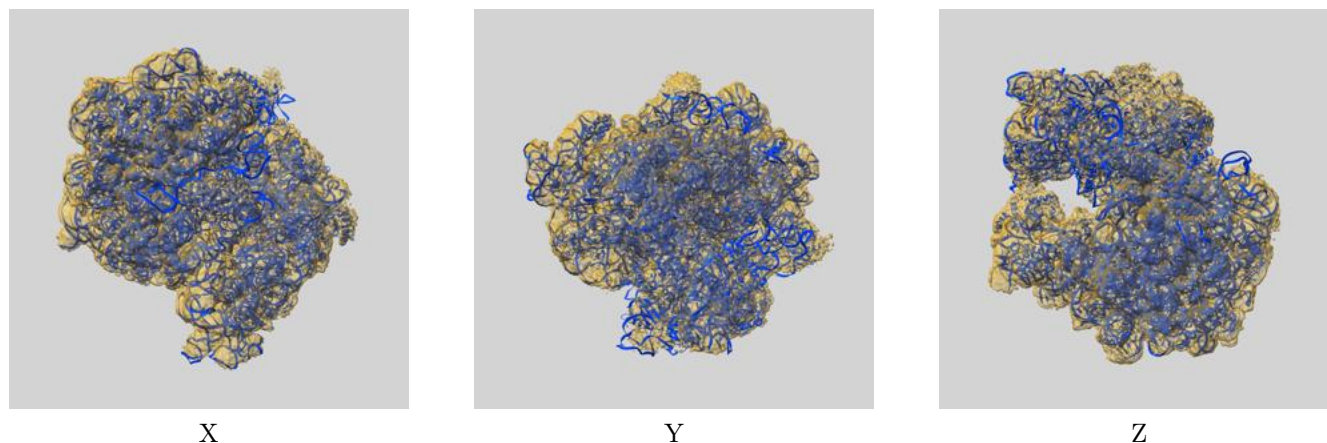
8 Fourier-Shell correlation ⓘ

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

9 Map-model fit [i](#)

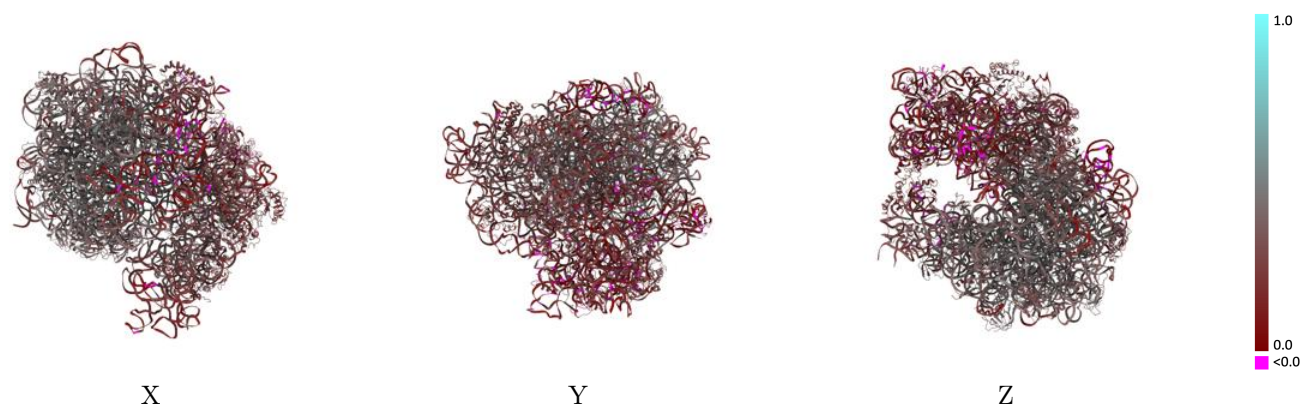
This section contains information regarding the fit between EMDB map EMD-20058 and PDB model 6OGI. Per-residue inclusion information can be found in section [3](#) on page [14](#).

9.1 Map-model overlay [i](#)



The images above show the 3D surface view of the map at the recommended contour level 0.9 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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

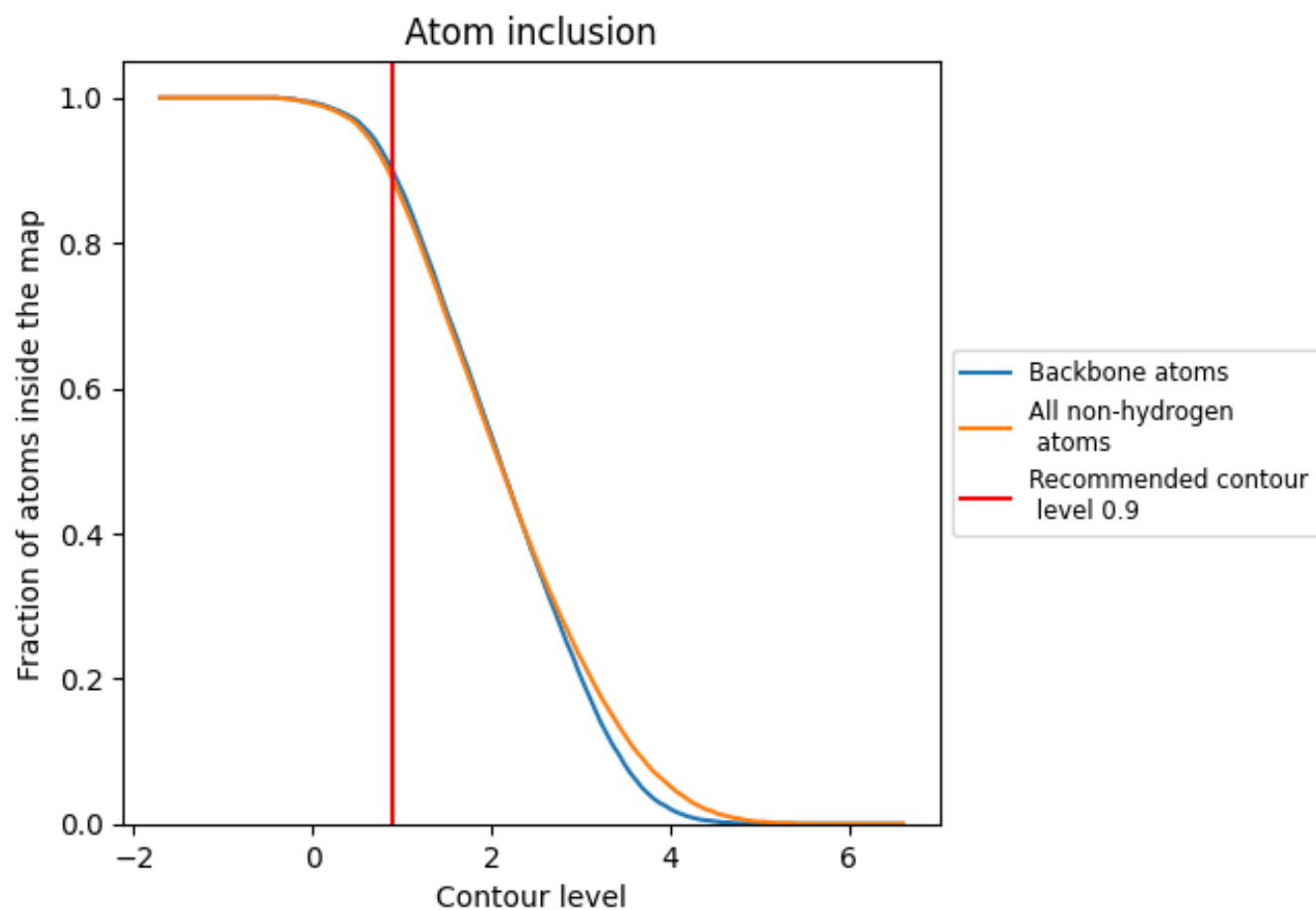


The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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](#)

This section was not generated.

9.4 Atom inclusion [i](#)



At the recommended contour level, 90% of all backbone atoms, 89% 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 (0.9) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8870	 0.3210
1	 0.9260	 0.3610
2	 0.9890	 0.3200
3	 0.9310	 0.2560
4	 0.7090	 0.1790
5	 0.2810	 0.0870
B	 0.9460	 0.4210
C	 0.9130	 0.3840
D	 0.9380	 0.4220
E	 0.9410	 0.4210
F	 0.9800	 0.3400
G	 0.6230	 0.2520
H	 0.4820	 0.2280
I	 0.7680	 0.2470
J	 0.9030	 0.2940
K	 0.8620	 0.2430
L	 0.4440	 0.2240
M	 0.9150	 0.2840
N	 0.6840	 0.1970
O	 0.4010	 0.2210
P	 0.8010	 0.2200
Q	 0.8520	 0.3090
R	 0.6130	 0.1960
S	 0.7660	 0.2030
T	 0.8880	 0.2510
U	 0.8990	 0.3420
V	 0.9430	 0.3250
W	 0.9420	 0.2780
X	 0.7250	 0.1720
Y	 0.8710	 0.2600
Z	 0.6020	 0.2070
a	 0.3000	 0.1960
b	 0.9440	 0.4120
c	 0.9650	 0.4340
d	 0.9260	 0.3970



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Chain	Atom inclusion	Q-score
e	 0.9070	 0.2310
f	 0.7140	 0.2940
g	 0.3640	 0.3010
j	 0.9440	 0.4160
k	 0.9450	 0.4250
l	 0.9460	 0.4170
m	 0.9530	 0.4110
n	 0.9570	 0.4260
o	 0.9540	 0.3270
p	 0.9370	 0.4030
q	 0.9550	 0.4160
r	 0.9330	 0.4150
s	 0.9320	 0.4260
t	 0.9350	 0.4000
u	 0.9520	 0.3920
v	 0.9540	 0.3610
w	 0.9500	 0.4320
x	 0.9330	 0.3970
y	 0.9030	 0.3250
z	 0.9340	 0.4070