



Full wwPDB EM Validation Report ⓘ

Mar 9, 2026 – 12:13 PM UTC

PDB ID : 7K50 / pdb_00007k50
EMDB ID : EMD-22669
Title : Pre-translocation non-frameshifting(CCA-A) complex (Structure I)
Authors : Demo, G.; Loveland, A.B.; Svidritskiy, E.; Gamper, H.B.; Hou, Y.M.; Korostelev, A.A.
Deposited on : 2020-09-16
Resolution : 3.40 Å(reported)
Based on initial models : 6ENJ, 5UYM

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
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
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

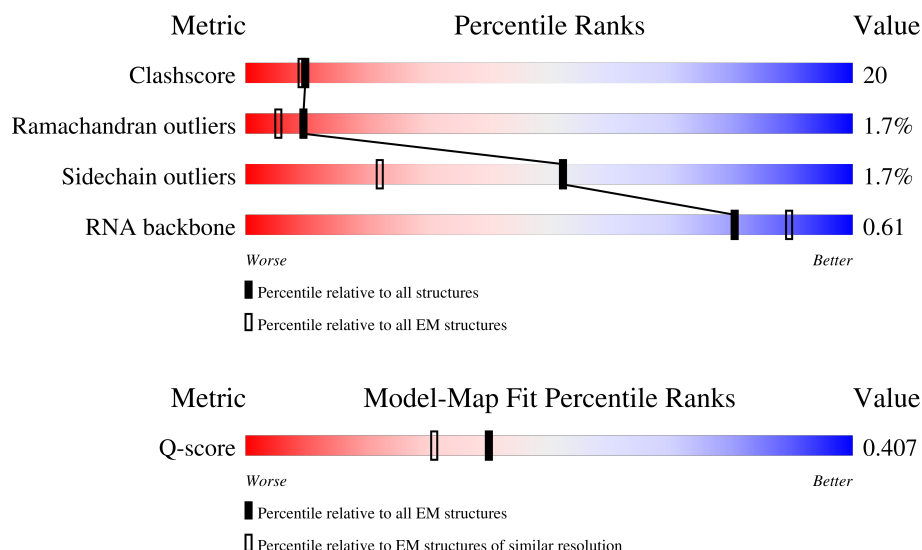
1 Overall quality at a glance

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	271	
2	c	209	
3	d	201	

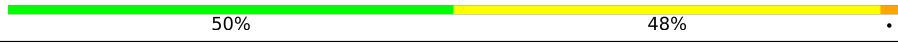
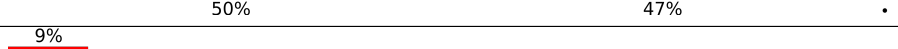
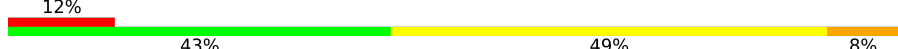
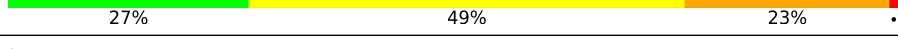
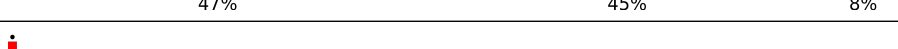
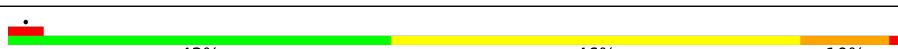
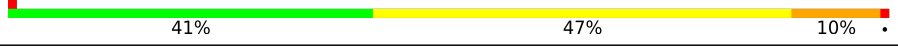
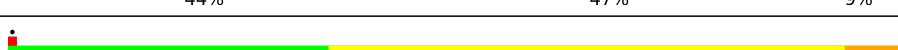
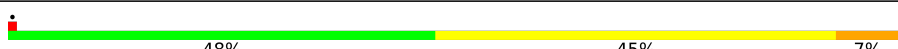
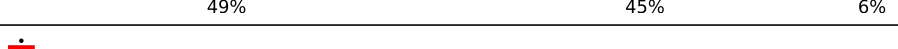
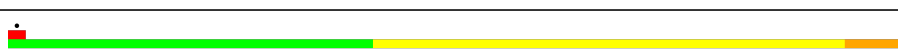
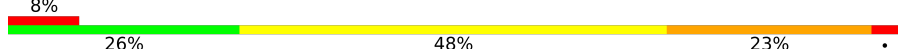
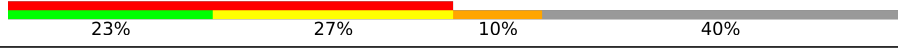
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Mol	Chain	Length	Quality of chain
4	e	177	
5	f	176	
6	g	149	
7	h	131	
8	i	141	
9	j	142	
10	k	122	
11	l	143	
12	m	136	
13	n	120	
14	o	116	
15	p	114	
16	q	117	
17	r	103	
18	s	110	
19	t	93	
20	u	102	
21	v	94	
22	w	75	
23	x	77	
24	y	63	
25	z	58	
26	A	66	
27	B	56	
28	C	50	

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Mol	Chain	Length	Quality of chain
29	D	46	
30	E	64	
31	F	38	
32	G	225	
33	H	206	
34	I	205	
35	J	157	
36	K	100	
37	L	151	
38	M	129	
39	N	127	
40	O	98	
41	P	116	
42	Q	123	
43	R	114	
44	S	100	
45	T	88	
46	U	82	
47	V	80	
48	W	65	
49	X	79	
50	Y	85	
51	Z	65	
52	a	223	
53	3	1539	

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Mol	Chain	Length	Quality of chain
54	1	2903	43%49%8%
55	2	120	51%42%7%
56	5	77	55%38%8%
56	6	77	74%23%60%16%
57	4	18	6%44%33%17%6%
58	7	77	51%34%14%

2 Entry composition

There are 59 unique types of molecules in this entry. The entry contains 149700 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
			2083	1288	423	365	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
			1411	899	249	257	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	125	Total	C	N	O	S	0	0
			936	590	166	179	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
7	h	84	Total	C	N	O	S	0	0
			633	397	114	118	4		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
8	i	74	Total	C	N	O	S	0	0
			551	358	91	99	3		

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
53	3	1539	Total	C	N	O	P	0	0
			33012	14725	6052	10697	1538		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
54	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 802133627

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

Mol	Chain	Residues	Atoms					AltConf	Trace
55	2	120	Total	C	N	O	P	0	0
			2568	1145	471	833	119		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
2	120	A	-	insertion	GB 1266961702

- Molecule 56 is a RNA chain called tRNAfMet.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	5	77	Total	C	N	O	P	0	0
			1640	732	297	535	76		
56	6	77	Total	C	N	O	P	0	0
			1640	732	297	535	76		

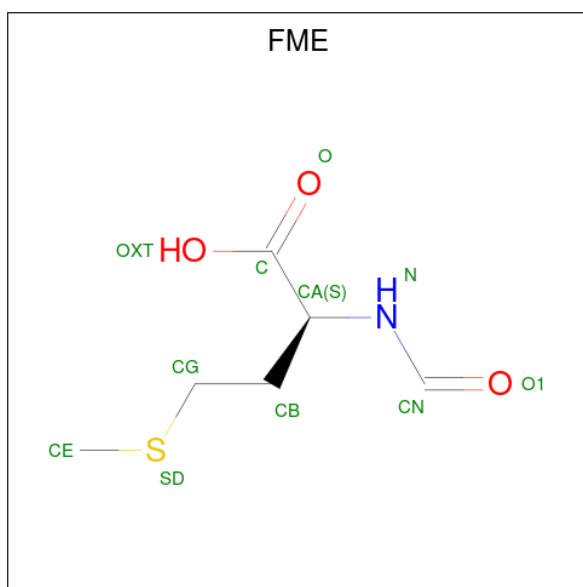
- Molecule 57 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	4	18	Total	C	N	O	P	0	0
			390	176	80	117	17		

- Molecule 58 is a RNA chain called tRNAPro.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	7	77	Total	C	N	O	P	0	0
			1647	733	295	542	77		

- Molecule 59 is N-FORMYLMETHIONINE (CCD ID: FME) (formula: C₆H₁₁NO₃S) (labeled as "Ligand of Interest" by depositor).

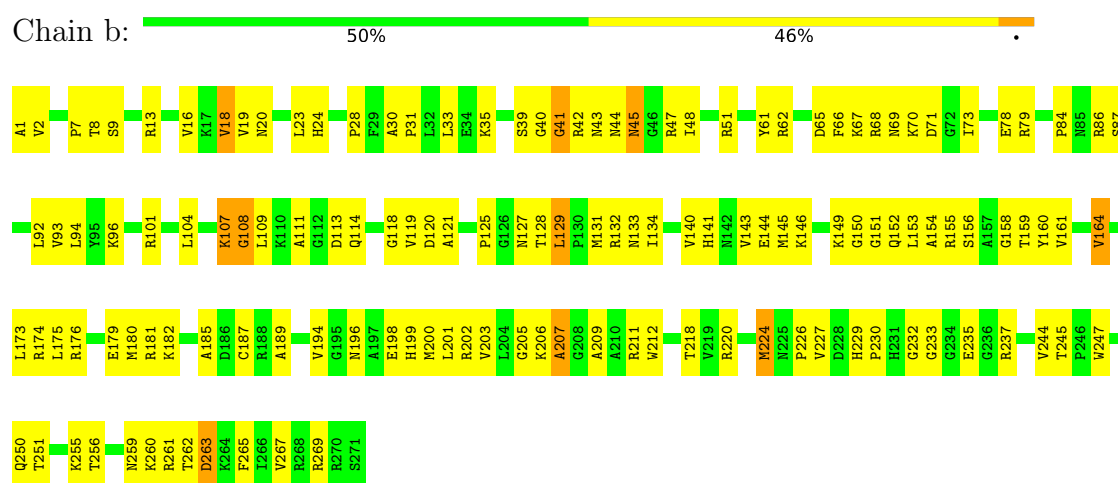


Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	S	
59	5	1	10	6	1	2	1	0

3 Residue-property plots

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

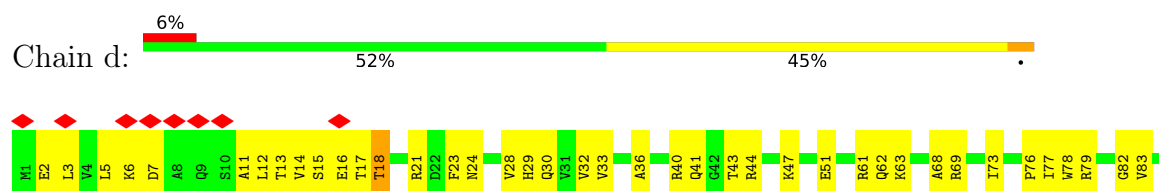
• Molecule 1: 50S ribosomal protein L2

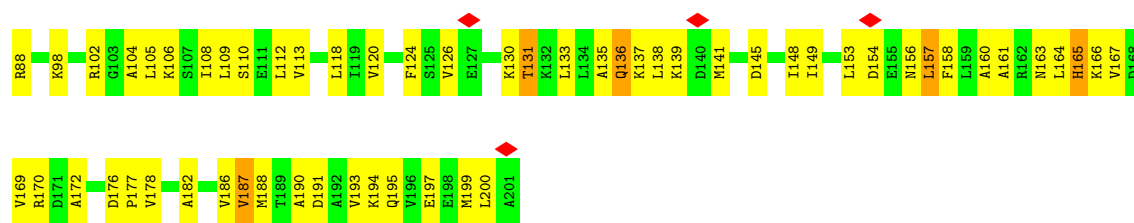


• Molecule 2: 50S ribosomal protein L3

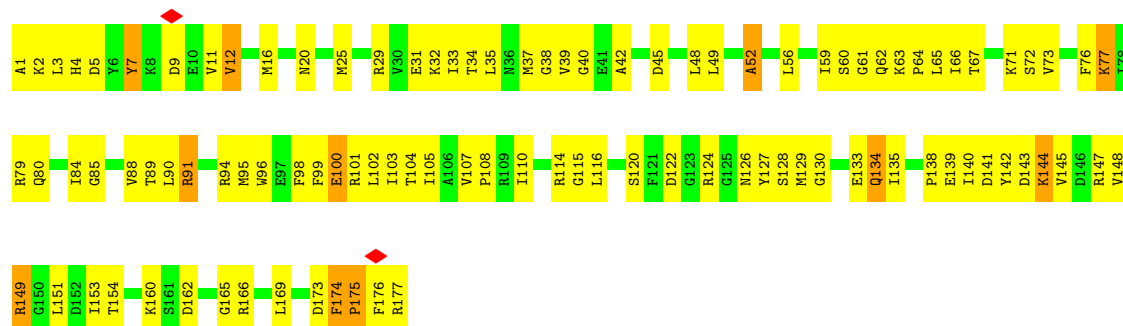


• Molecule 3: 50S ribosomal protein L4

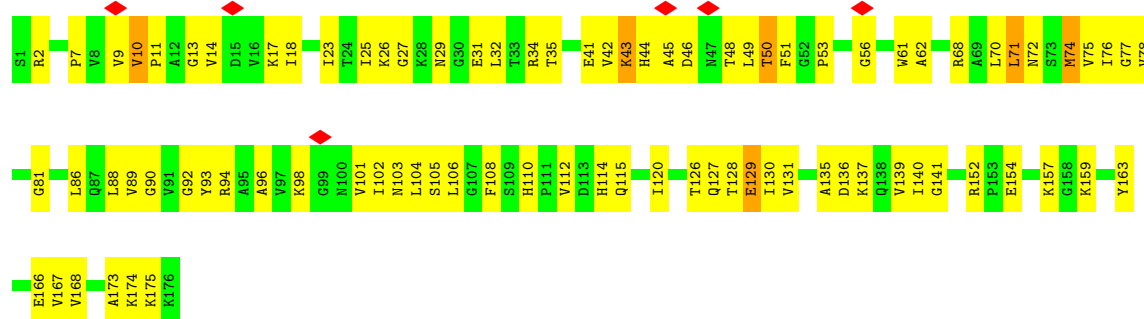




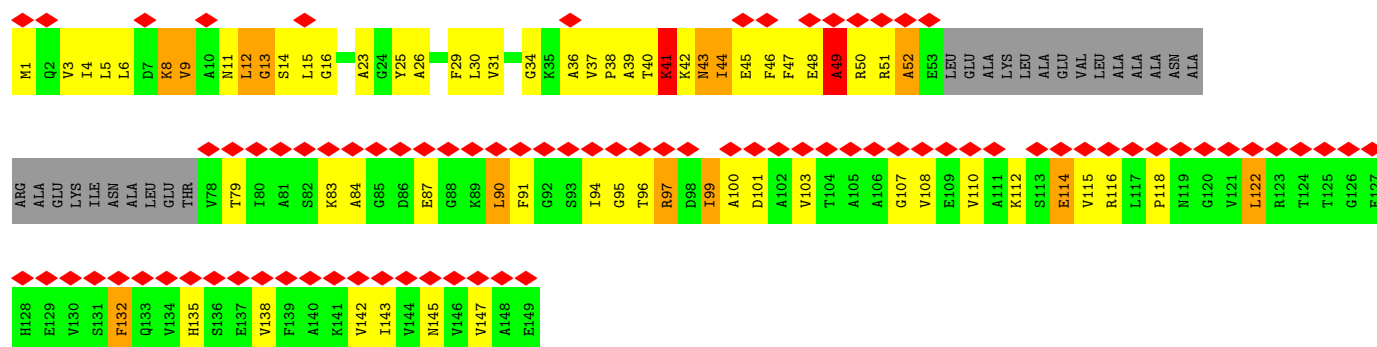
• Molecule 4: 50S ribosomal protein L5



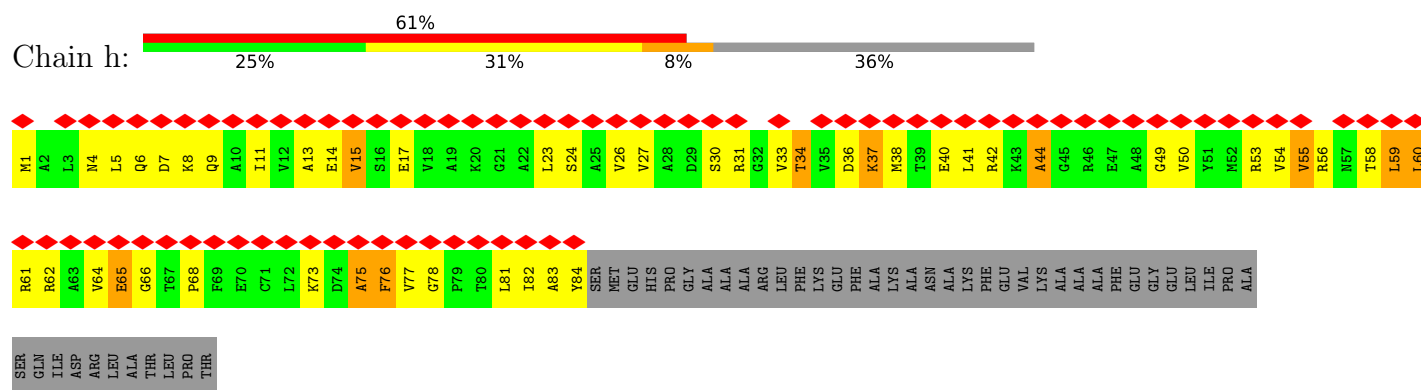
• Molecule 5: 50S ribosomal protein L6



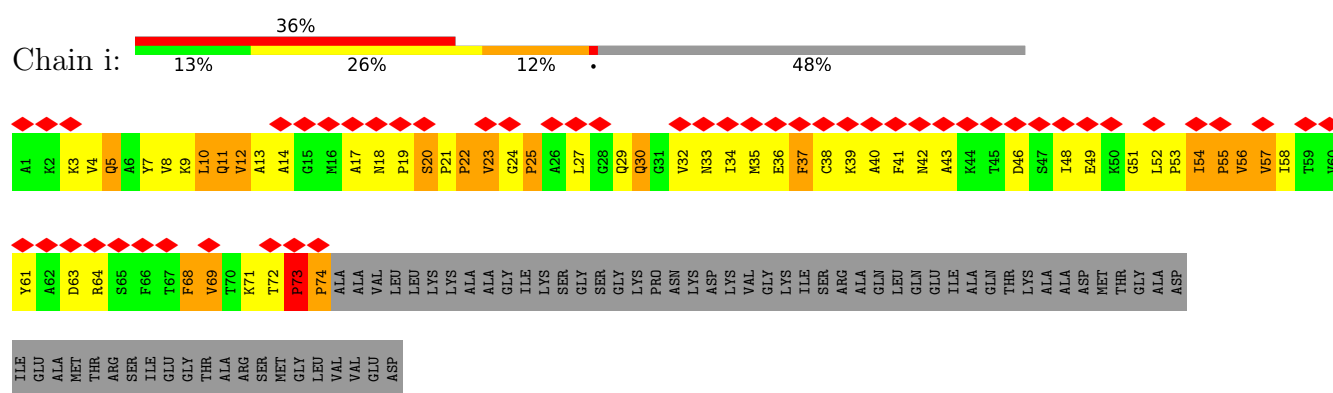
• Molecule 6: 50S ribosomal protein L9



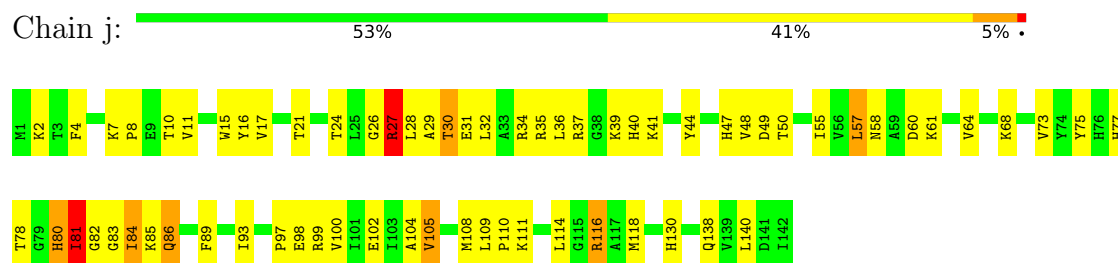
- Molecule 7: 50S ribosomal protein L10



- Molecule 8: 50S ribosomal protein L11



- Molecule 9: 50S ribosomal protein L13

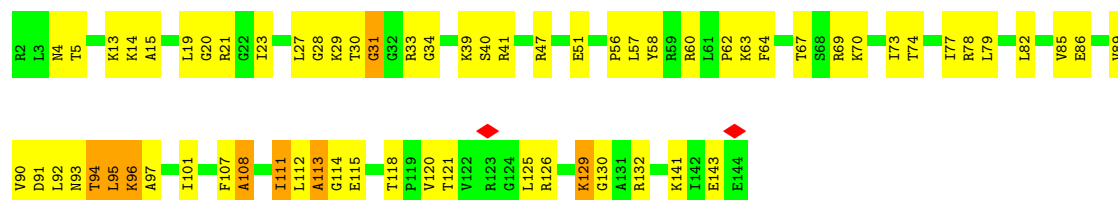


- Molecule 10: 50S ribosomal protein L14

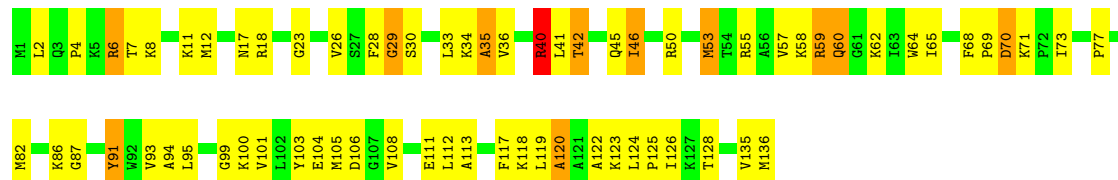


- Molecule 11: 50S ribosomal protein L15

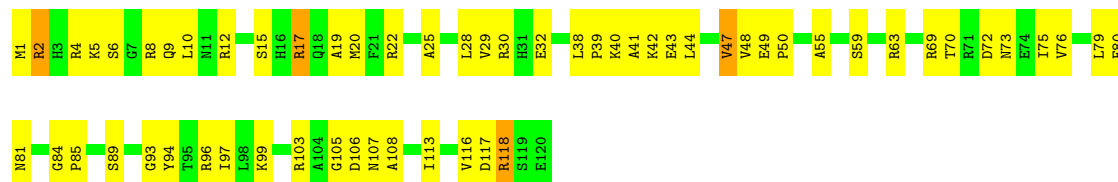




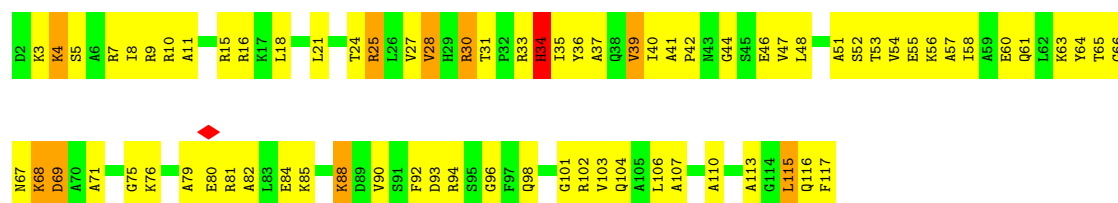
• Molecule 12: 50S ribosomal protein L16



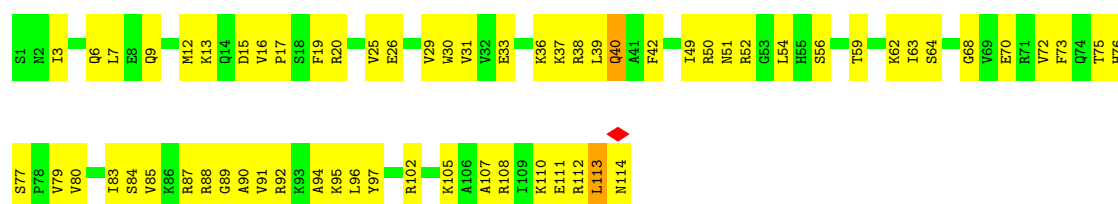
• Molecule 13: 50S ribosomal protein L17



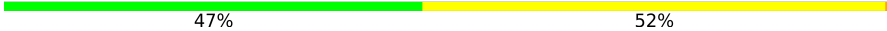
• Molecule 14: 50S ribosomal protein L18

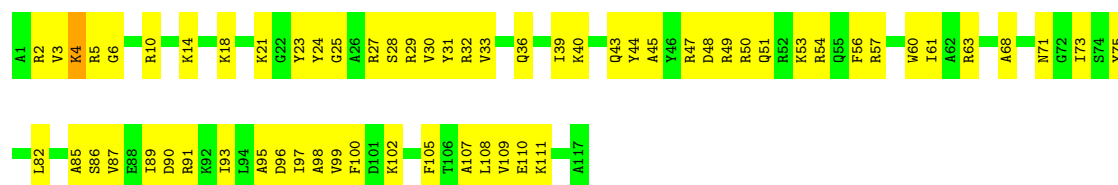


• Molecule 15: 50S ribosomal protein L19



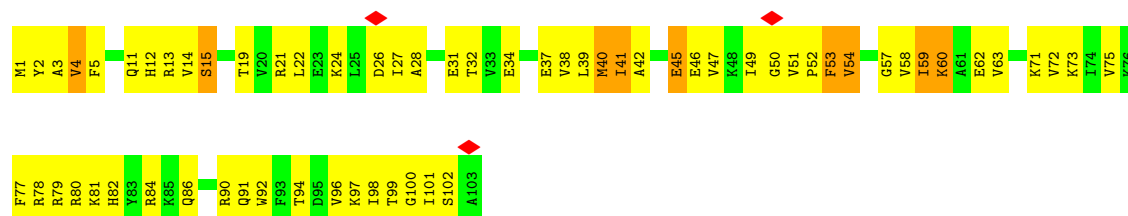
• Molecule 16: 50S ribosomal protein L20

Chain q: 



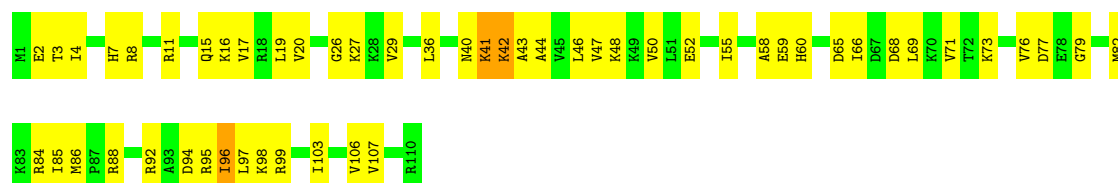
• Molecule 17: 50S ribosomal protein L21

Chain r: 



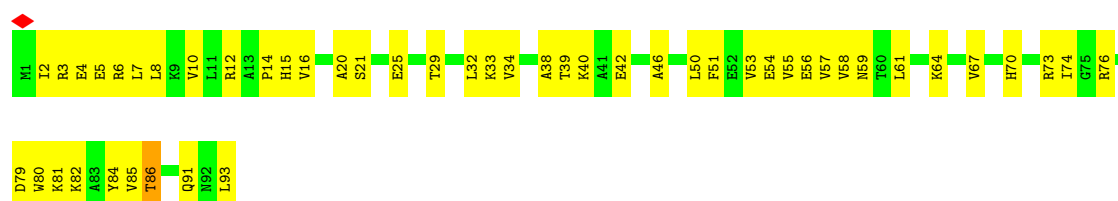
• Molecule 18: 50S ribosomal protein L22

Chain s: 



• Molecule 19: 50S ribosomal protein L23

Chain t: 



• Molecule 20: 50S ribosomal protein L24

Chain u: 

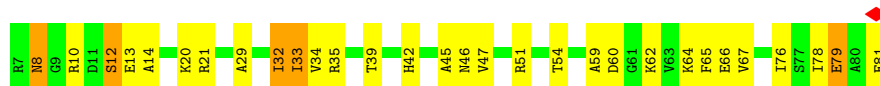




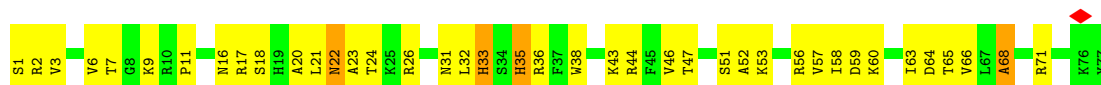
- Molecule 21: 50S ribosomal protein L25



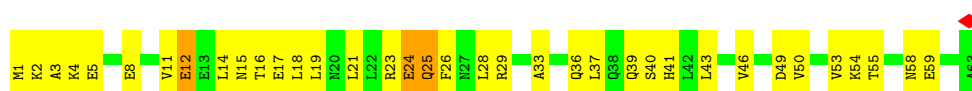
- Molecule 22: 50S ribosomal protein L27



- Molecule 23: 50S ribosomal protein L28



- Molecule 24: 50S ribosomal protein L29



- Molecule 25: 50S ribosomal protein L30

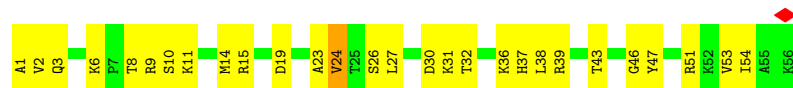


- Molecule 26: 50S ribosomal protein L31





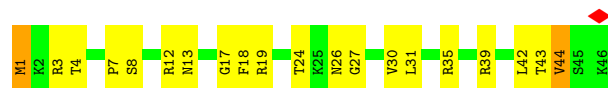
- Molecule 27: 50S ribosomal protein L32



- Molecule 28: 50S ribosomal protein L33



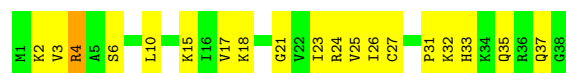
- Molecule 29: 50S ribosomal protein L34



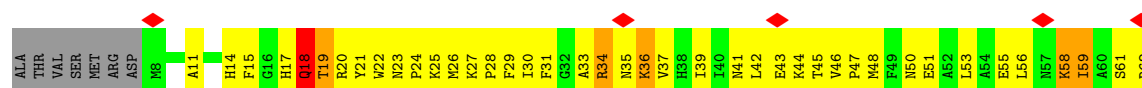
- Molecule 30: 50S ribosomal protein L35

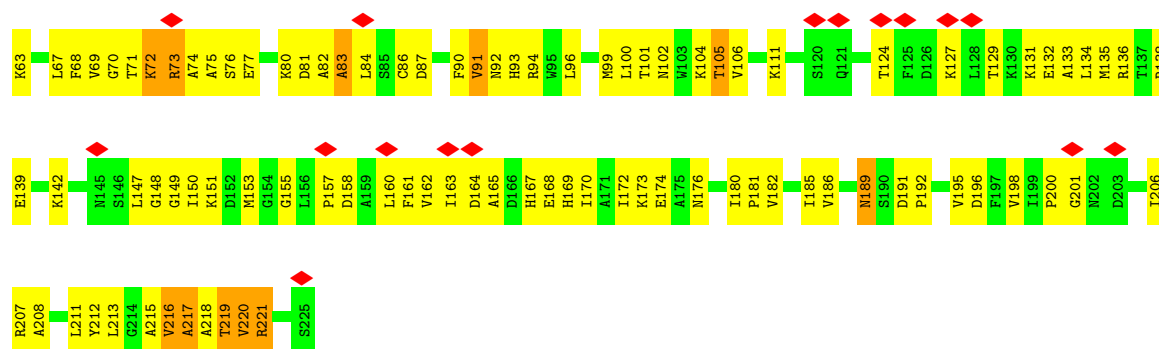


- Molecule 31: 50S ribosomal protein L36



- Molecule 32: 30S ribosomal protein S2





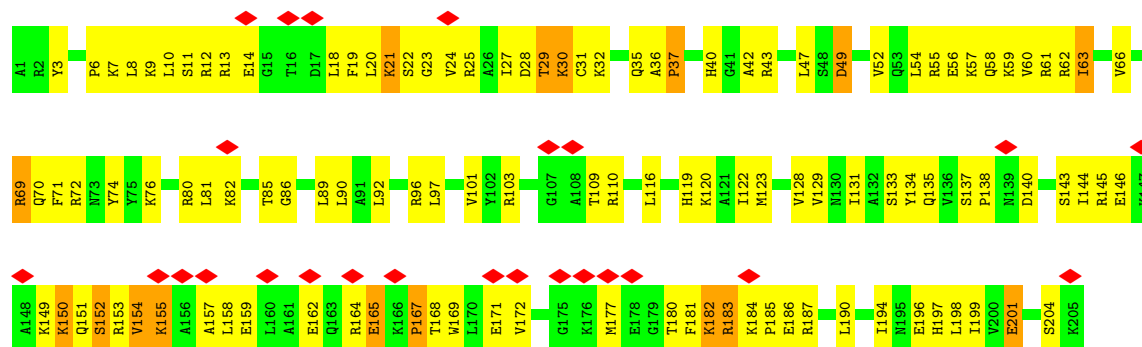
- Molecule 33: 30S ribosomal protein S3

Chain H: 49% 47%



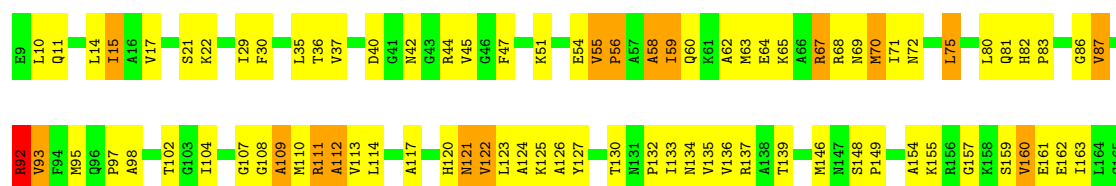
- Molecule 34: 30S ribosomal protein S4

Chain I: 12% 43% 49% 8%

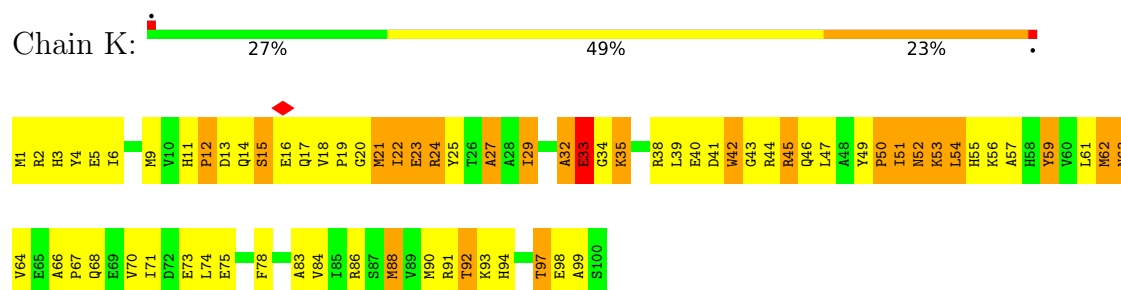


- Molecule 35: 30S ribosomal protein S5

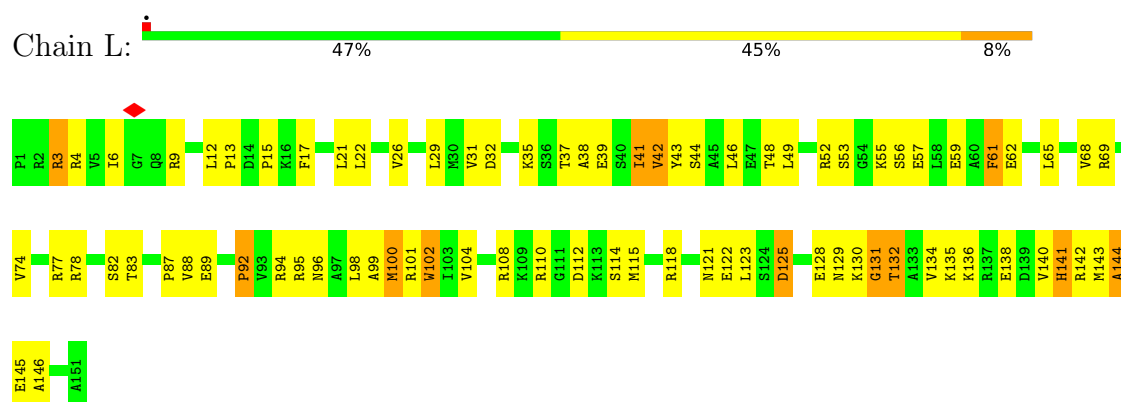
Chain J: 46% 43% 10%



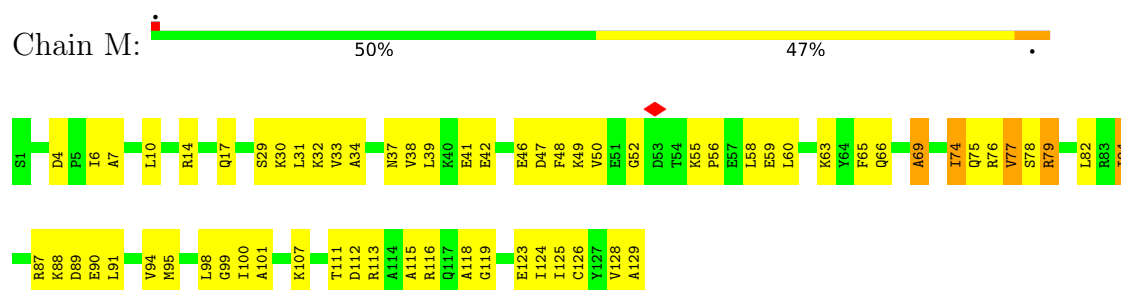
- Molecule 36: 30S ribosomal protein S6



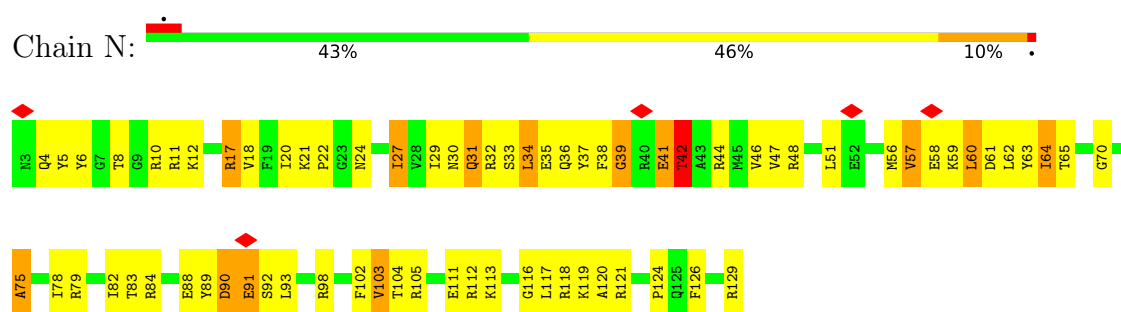
- Molecule 37: 30S ribosomal protein S7



- Molecule 38: 30S ribosomal protein S8

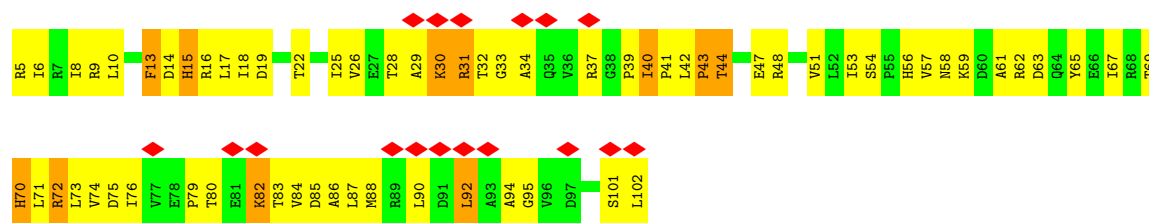


- Molecule 39: 30S ribosomal protein S9

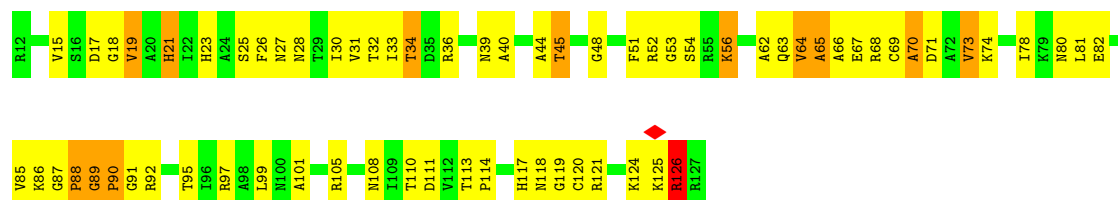


- Molecule 40: 30S ribosomal protein S10

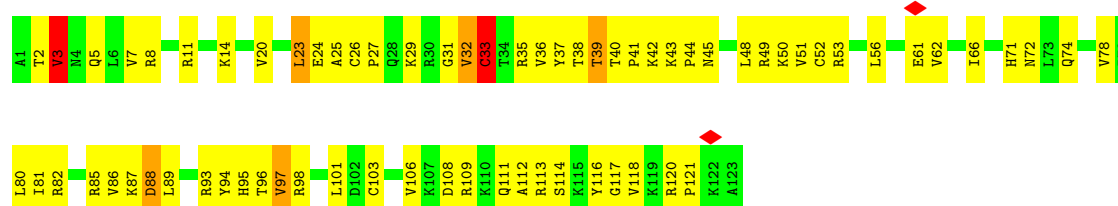




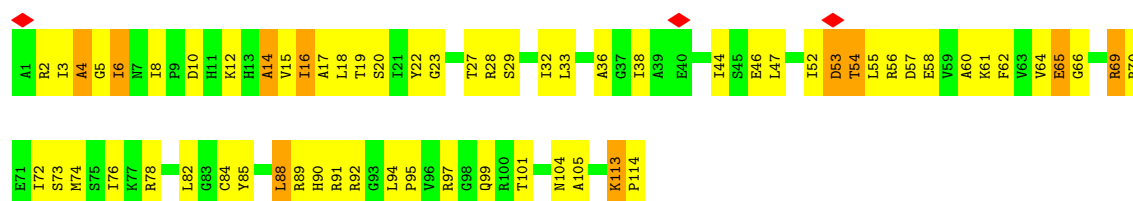
• Molecule 41: 30S ribosomal protein S11



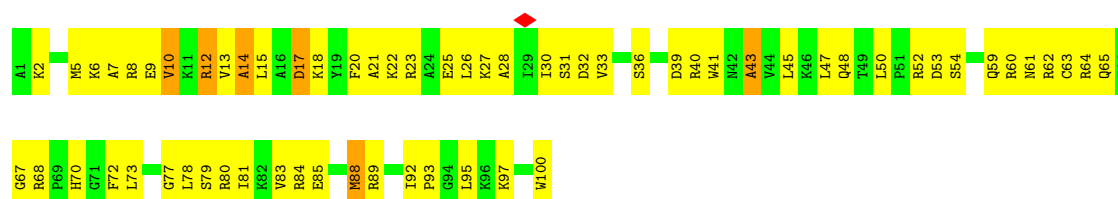
• Molecule 42: 30S ribosomal protein S12



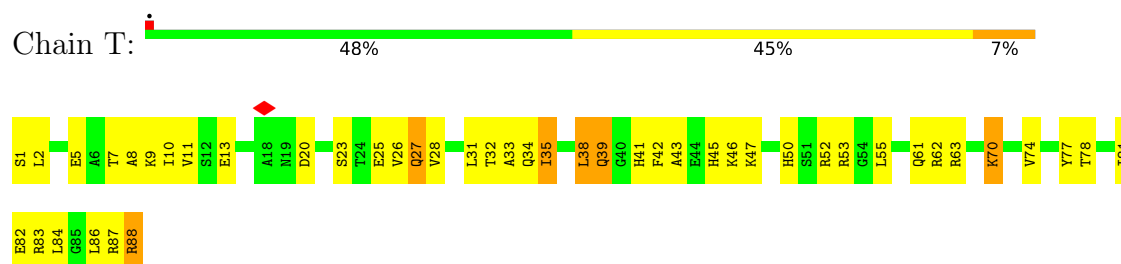
• Molecule 43: 30S ribosomal protein S13



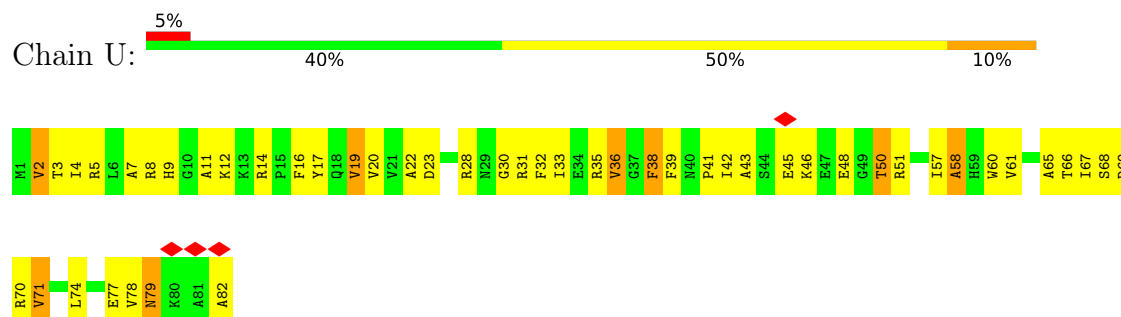
• Molecule 44: 30S ribosomal protein S14



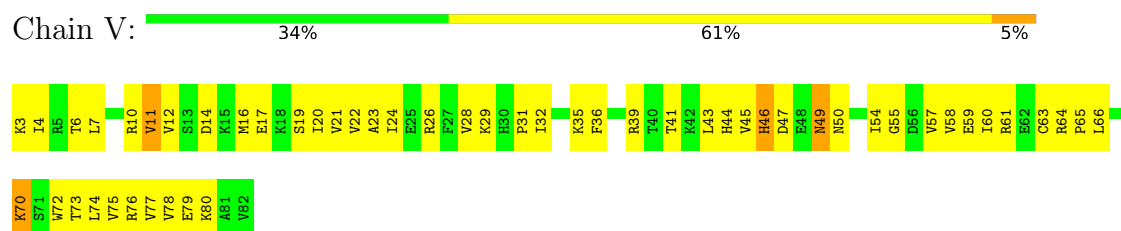
- Molecule 45: 30S ribosomal protein S15



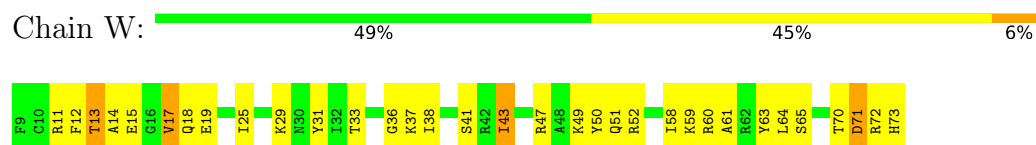
- Molecule 46: 30S ribosomal protein S16



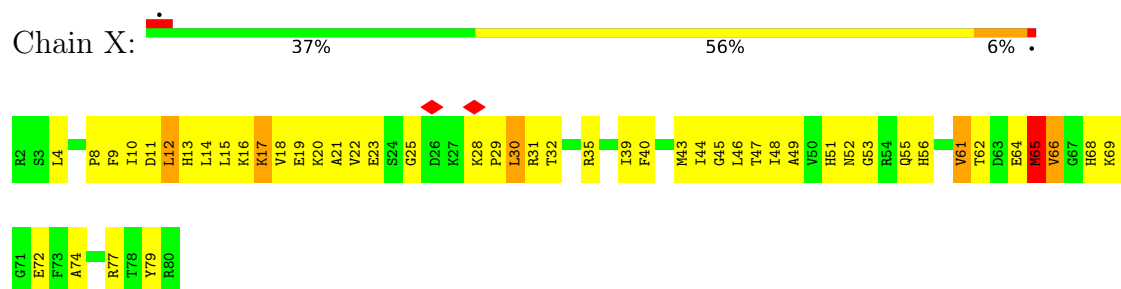
- Molecule 47: 30S ribosomal protein S17



- Molecule 48: 30S ribosomal protein S18

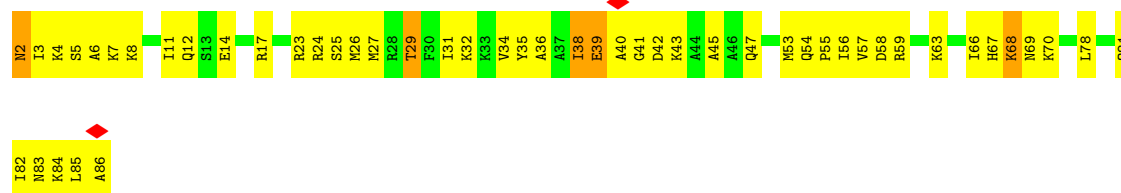


- Molecule 49: 30S ribosomal protein S19

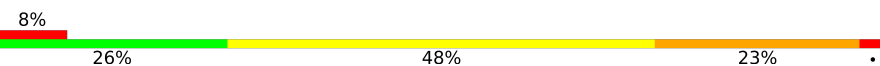


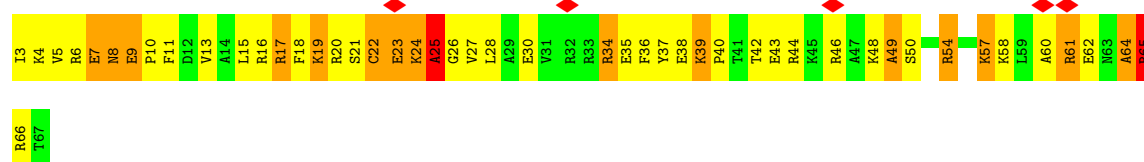
- Molecule 50: 30S ribosomal protein S20

Chain Y: 

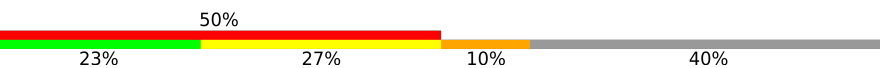


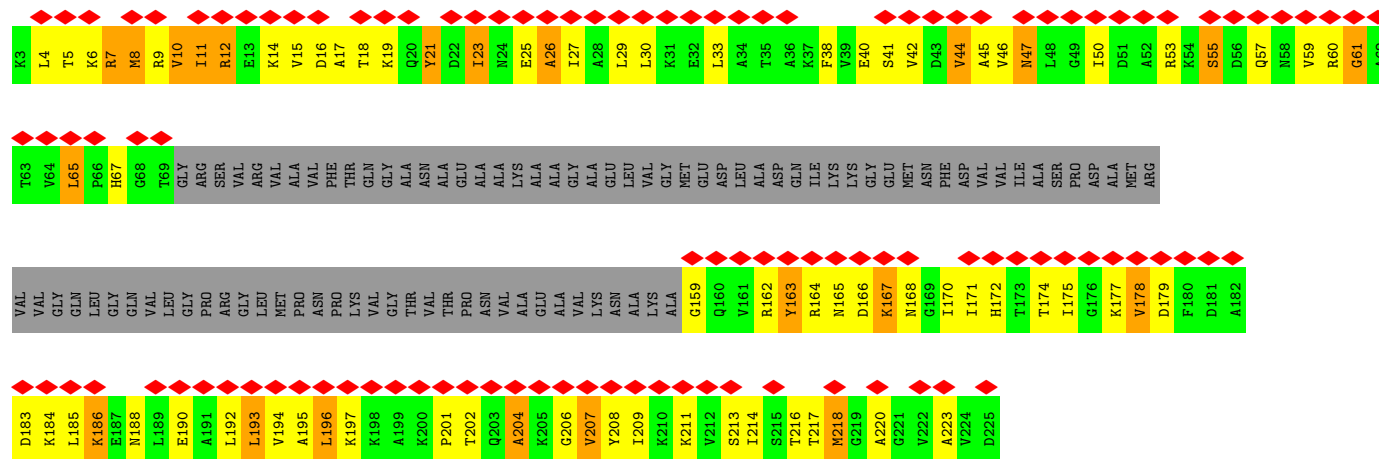
- Molecule 51: 30S ribosomal protein S21

Chain Z: 



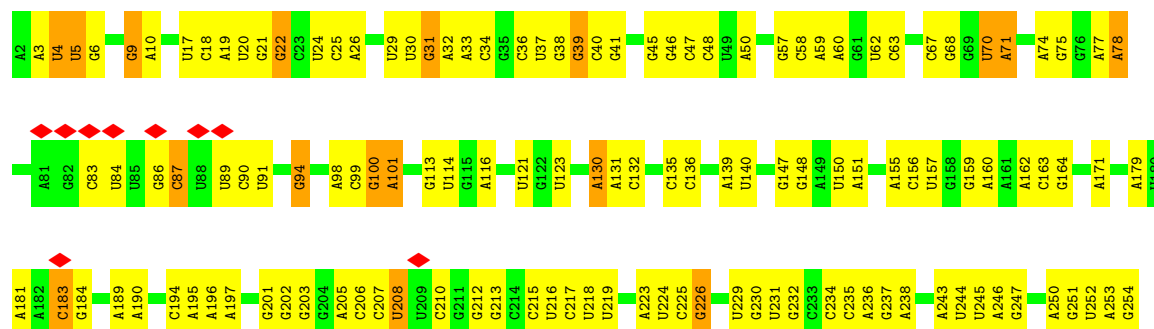
- Molecule 52: 50S ribosomal protein L1

Chain a: 



- Molecule 53: 16S ribosomal RNA

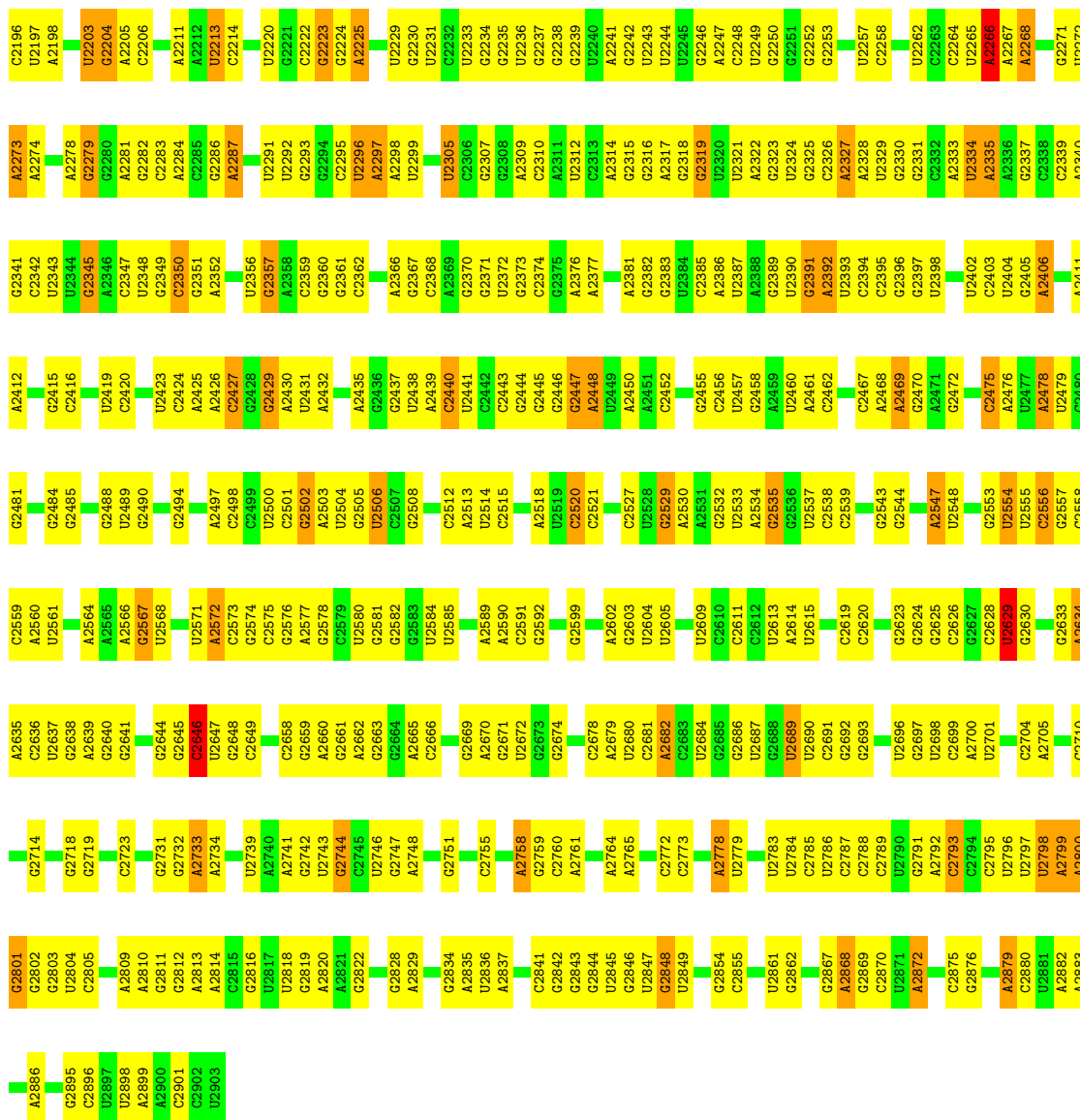
Chain 3: 



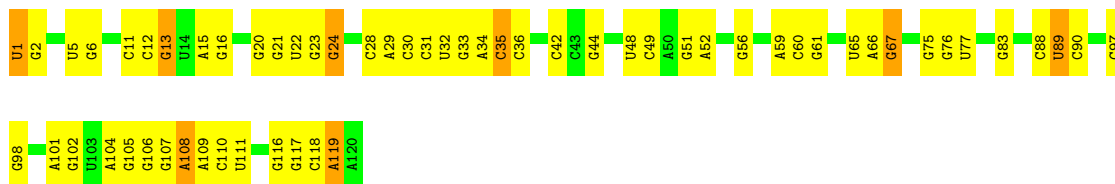
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G424	G425	U426	U427	A428	G429	A430	A431	A432	G433	U436	U437	U438	U439	C440	A441	G442	A451	A452	U458	A459	A460	A461	A466	U467	A468	U472	U473	A478	U479	U480	C483	G484	U485	U486	C490	G491	C492	A496	G497	G500	C501	A502	C503	C504	G505	G506	A509								
A510	C511	U512	C513	C514	G515	U516	G517	C518	C519	A520	G524	C525	C526	G527	C528	A441	G529	G530	U531	A532	A533	A534	A535	G538	A539	G540	G541	U543	C544	C545	A546	A547	G548	C549	G550	U551	U552	A553	A554	U555	C556	G557	G558	A559	U561	U562	A563	C564	U565	G566	A572	A573	A574	G575	C576
G577	C578	A579	C580	G581	U593	U594	A595	A596	G597	U598	C599	A600	A601	A602	U603	G604	U605	A608	A609	C613	C614	G615	G624	U625	U626	G627	G628	A629	G633	C634	A635	U636	C637	A640	U641	C651	U652	U653	U662	A663	G664	A665	G666	G667	A673	G674	A675	A676							
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G755	C756	U757	G760	G761	U762	G763	G764	G765	A766	A767	A768	G769	C770	G771	U772	G773	A777	G778	A780	A784	U788	U789	A794	C795	G796	C797	U798	G803	U804	C805	C806	A807	C811	G812	U813	A814	C817	G818	A819	U820	G821	G824	A825	C826	U827	U842	U843	G844							
A845	G846	G847	C848	C849	C856	C857	C858	C859	A860	C861	C862	A865	C866	C867	C868	C869	A872	A873	C879	C880	C881	C882	C883	U884	C885	C886	C887	G889	U891	A892	C893	G894	C898	C899	A900	A901	G902	A908	A909	C912	A913	A914	A915	U916	C917	A918	A919	U920	U921	G922					
A923	C924	G925	G926	C932	G933	C934	U935	C936	A937	A938	G939	G945	A946	G947	C948	A949	U950	G951	U955	U960	U961	C962	G966	A969	C970	G971	C972	G973	A974	A975	G976	A977	U981	U982	A983	C984	C985	C990	U991	U992	G993	A994	C1001	U1002	G1003	A1004	A1005	G1006	A1014						
G1015	A1016	A1019	G1020	U1023	G1024	U1025	C1026	C1027	A1028	U1029	U1030	C1031	G1032	G1033	U1034	A1035	U1040	G1041	G1047	U1048	U1049	G1050	C1051	U1052	C1053	A1055	G1057	C1058	C1059	U1060	G1061	U1062	C1063	C1071	U1072	U1073	G1074	G1077	U1078	G1079	A1080	A1081	U1086	G1087	G1088	G1094	U1095	C1096	C1097						
A1101	A1102	G1106	C1107	G1108	U1118	C1119	C1120	U1121	U1122	U1123	G1124	U1125	G1128	C1129	A1130	C1136	C1137	G1138	G1139	G1144	A1145	A1146	C1147	U1148	U1151	A1155	G1156	U1159	A1167	U1168	A1169	A1170	A1171	G1174	G1175	A1176	G1177	G1178	A1179	A1180	G1181	G1182	U1183	G1184	A1188	A1191									
C1195	A1196	A1197	U1198	U1199	C1200	A1201	U1202	C1203	A1204	U1205	U1211	U1212	A1213	C1218	A1219	G1220	G1221	G1222	A1225	C1226	A1227	C1228	A1229	C1230	G1233	C1234	U1235	A1236	C1237	A1238	U1239	G1240	G1241	C1242	G1243	G1244	C1245	A1248	C1249	A1250	A1251	A1252	G1253	A1254	G1258	C1259	G1260	C1273	A1274	A1275	G1276				
C1277	G1278	A1280	C1281	C1282	A1285	U1286	C1287	A1288	A1289	U1295	U1296	C1296	G1300	U1301	C1302	C1303	G1304	U1305	U1306	U1307	U1308	G1309	G1310	C1314	C1315	U1316	C1317	A1318	A1319	C1320	G1323	A1324	C1325	U1326	C1327	C1328	A1329	U1330	G1331	A1332	A1333	G1334	G1337	C1342	G1343	A1346	G1347	U1348	A1349	A1350	U1351				
C1352	G1353	U1354	U1364	G1365	C1366	C1367	A1368	C1369	G1370	G1371	U1372	G1373	A1374	G1379	U1380	U1381	C1382	U1390	U1391	G1392	U1393	A1394	C1395	A1396	C1397	G1403	C1404	A1408	A1409	A1410	C1411	C1412	A1413	U1414	G1415	G1416	G1417	G1422	G1432	G1435	U1436	A1437	G1438	G1442	C1443	A1446	U1447	A1448	C1449	U1450					
C1452	C1453	A1456	G1457	G1458	C1459	G1460	G1461	A1468	U1477	U1478	U1481	G1482	A1483	C1484	U1																																								



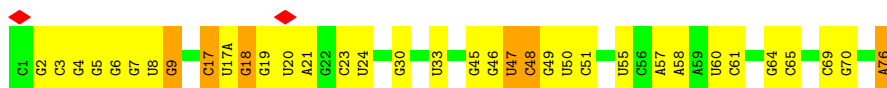
U2132	C2066	G1811	G1741	G1686	A1569	G1483	G1401	C1315	G1225	C1153	G1074
G2133	G2067	U1812	U1742	A1669	A1570	U1484	U1402	U1316	G1225	C1153	C1075
A2134	U2068	C1816	G1743	A1669	A1571	U1485	A1403	G1317	C1229	G1154	C1076
A2135	G2069	C1817	A1744	C1670	A1572	U1486	C1404	U1318	C1229	A1155	U1077
G2136	A2070	U1818	A1745	U1671	A1583	U1487	U1405	C1319	U1231	A1156	U1078
U2137	C2072	A1819	U1747	G1672	U1584	U1488	U1406	A1321	G1232	C1181	C1079
G2138	G2073	U1820	C1748	G1673	C1585	C1489	G1410	A1322	G1233	G1182	A1080
U2139	U2074	G1906	A1749	G1674	A1586	U1491	U1411	U1326	U1234	G1183	U1081
U2140	A2075	G1907	G1750	A1676	A1590	G1492	A1412	U1327	U1234	C1184	U1082
G2141	A2009	A1912	U1751	A1677	A1591	C1493	A1413	A1328	A1241	A1165	U1083
A2142	G2010	A1913	G1752	A1678	A1592	C1498	G1416	U1329	G1248	G1166	A1084
C2143	U2011	U1915	A1754	U1680	C1593	C1499	G1416	A1329	G1249	C1167	A1085
G2144	G2012	U1916	G1756	G1681	A1597	A1503	A1419	U1330	U1250	G1168	A1086
C2145	A2013	A1917	U1757	U1683	A1598	A1504	A1420	G1341	C1251	A1189	A1087
G2146	A2014	G1832	U1758	G1684	U1599	U1506	G1426	U1345	A1252	G1171	U1088
A2147	A2015	U1834	G1759	C1685	C1600	C1507	A1427	C1345	A1253	C1172	A1089
U2151	G2018	U1837	C1760	C1686	G1601	U1508	G1430	A1353	U1254	U1173	A1090
G2152	A2019	C1838	C1761	U1688	U1602	A1509	A1431	A1354	U1255	U1174	G1091
C2153	A2020	U1838	A1762	U1688	A1603	U1510	G1432	G1355	U1257	U1176	C1092
U2154	C2021	G1842	G1763	A1690	A1608	G1511	A1434	G1357	G1259	G1177	A1096
G2155	G2022	U1844	C1764	G1695	C1611	A1516	G1435	C1358	G1259	G1179	G1099
A2156	G2023	G1845	A1773	G1696	C1611	G1516	G1435	G1361	A1262	U1180	C1102
G2157	U2026	U1846	C1774	G1697	A1616	G1516	U1438	G1362	A1265	U1181	A1103
U2158	G2027	A1847	G1776	A1698	U1621	A1522	A1439	C1363	A1265	G1182	C1104
C2159	U2028	G1848	U1777	G1702	U1622	G1526	U1440	G1364	A1269	U1183	U1105
G2160	G2029	G1849	U1778	G1703	G1622	G1527	G1441	A1365	C1270	U1184	G1106
C2161	A2030	G1857	U1779	C1704	U1624	G1528	U1442	A1366	G1271	G1185	G1107
A2162	A2031	U1781	A1780	G1704	U1624	G1529	U1443	A1367	A1272	U1186	C1108
G2163	G2032	G1781	U1781	G1704	U1624	G1529	U1444	G1368	G1272	G1187	C1109
A2164	A2033	A1784	A1784	U1709	A1630	A1535	G1445	G1369	A1275	G1190	G1110
U2167	G2037	G1788	C1788	U1710	G1631	C1536	G1449	C1370	A1276	G1191	A1111
G2168	U2038	A1866	A1789	U1712	G1631	G1537	G1450	U1371	G1277	G1192	A1112
A2169	G2039	G1867	U1790	A1713	U1636	G1538	G1451	U1372	C1278	G1193	U1113
U2170	U2041	C1868	A1791	G1715	A1637	U1539	G1452	A1373	G1279	A1194	U1119
A2171	A2042	G1869	G1792	U1716	C1638	G1540	A1453	U1379	G1280	G1197	G1120
C2172	C2043	C1870	C1793	U1717	A1641	C1541	C1454	U1379	G1281	U1198	C1121
U2113	C2044	A1871	A1794	G1718	G1642	U1542	C1461	A1383	A1287	U1199	G1122
G2115	G2045	A1872	C1795	G1719	G1645	A1548	G1464	A1384	C1288	C1200	U1130
C2116	G2046	C1873	U1796	U1720	G1645	A1549	G1465	A1385	C1289	U1203	G1131
A2117	C2047	G1875	G1797	A1722	U1647	G1555	G1466	C1386	G1292	A1204	U1132
U2118	G2048	G1878	G1799	G1723	U1648	G1558	U1467	A1387	C1293	A1205	A1133
C2177	A2051	C1879	C1800	G1724	U1649	C1559	U1468	G1388	G1296	G1206	A1134
A2178	A2052	U1879	A1801	U1729	G1653	U1560	A1469	U1390	C1297	C1211	G1135
G2179	G2053	C1881	A1802	C1730	A1654	C1561	A1470	U1391	G1300	G1212	G1139
U2180	A2054	C1882	C1804	G1731	A1655	U1562	U1474	A1392	A1301	A1213	C1140
U2181	C2055	A1883	A1805	C1732	C1556	U1563	G1475	U1394	A1302	A1214	U1141
G2124	G2056	C1884	C1806	G1733	U1567	C1564	G1479	A1395	G1309	G1215	A1142
U2184	A2060	G1887	G1807	G1738	C1567	U1565	G1479	U1396	G1309	G1216	C1146
U2185	G2061	A1889	A1808	A1739	A1664	U1566	U1480	U1397	U1313	U1217	A1147
G2186	U2127	U1889	A1809	G1739	A1664	U1567	U1480	U1397	U1313	U1218	U1148
U2187	C2129	U2130	A1810	G1740	A1665	G1568	G1482	U1400	C1314	G1220	G1149
U2188	U2131	U2131	A1810	G1740	A1665	G1568	G1482	U1400	C1314	G1220	C1150



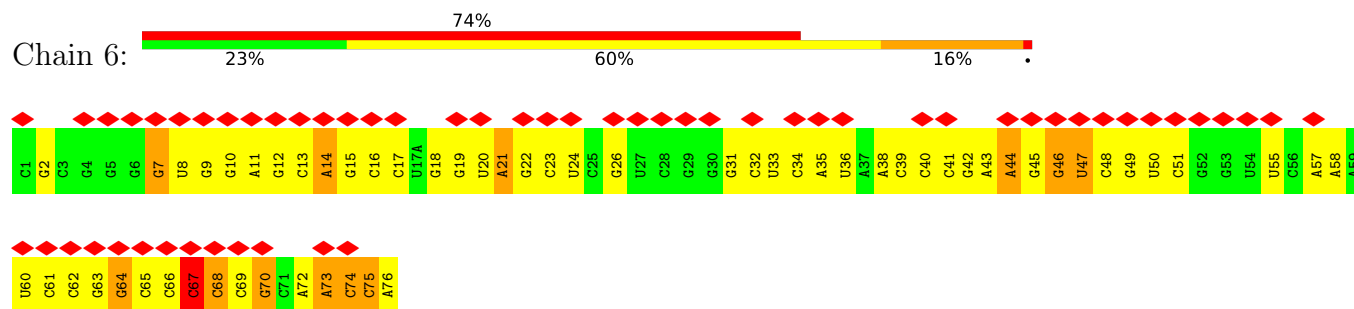
- Molecule 55: 5S ribosomal RNA



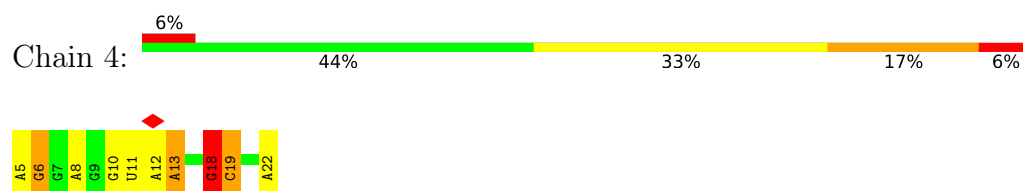
- Molecule 56: tRNA^{fMet}



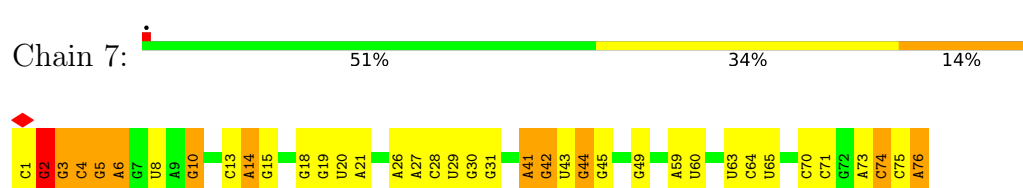
- Molecule 56: tRNA^{fMet}



- Molecule 57: mRNA



- Molecule 58: tRNA^{Pro}



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	4263	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 ($e^-/\text{\AA}^2$)	47.5	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	130000	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	22.510	Depositor
Minimum map value	-7.018	Depositor
Average map value	0.018	Depositor
Map value standard deviation	1.404	Depositor
Recommended contour level	3.7	Depositor
Map size (Å)	419.99997, 419.99997, 419.99997	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.05, 1.05, 1.05	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

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

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	b	0.85	8/2122 (0.4%)	1.12	9/2852 (0.3%)
2	c	0.95	8/1586 (0.5%)	1.13	9/2134 (0.4%)
3	d	1.07	15/1571 (1.0%)	1.18	13/2113 (0.6%)
4	e	0.91	8/1435 (0.6%)	1.09	9/1926 (0.5%)
5	f	0.94	8/1343 (0.6%)	1.13	8/1816 (0.4%)
6	g	1.35	17/946 (1.8%)	1.51	22/1275 (1.7%)
7	h	1.34	10/638 (1.6%)	1.36	10/860 (1.2%)
8	i	2.18	24/564 (4.3%)	1.93	30/768 (3.9%)
9	j	1.10	11/1152 (1.0%)	1.12	13/1551 (0.8%)
10	k	1.01	8/948 (0.8%)	1.30	11/1268 (0.9%)
11	l	0.76	4/1054 (0.4%)	1.02	6/1403 (0.4%)
12	m	1.18	13/1093 (1.2%)	1.22	15/1460 (1.0%)
13	n	0.81	3/974 (0.3%)	1.03	6/1301 (0.5%)
14	o	1.26	14/902 (1.6%)	1.20	7/1209 (0.6%)
15	p	0.67	1/929 (0.1%)	0.95	4/1242 (0.3%)
16	q	0.79	3/960 (0.3%)	1.04	3/1278 (0.2%)
17	r	1.00	6/829 (0.7%)	1.29	11/1107 (1.0%)
18	s	0.92	5/864 (0.6%)	1.07	5/1156 (0.4%)
19	t	0.89	3/745 (0.4%)	0.99	5/994 (0.5%)
20	u	0.69	1/788 (0.1%)	0.98	2/1051 (0.2%)
21	v	0.77	2/766 (0.3%)	0.96	4/1025 (0.4%)
22	w	0.84	2/582 (0.3%)	1.01	0/769
23	x	0.76	2/635 (0.3%)	0.98	1/848 (0.1%)
24	y	1.16	6/510 (1.2%)	1.25	6/677 (0.9%)
25	z	0.86	2/453 (0.4%)	0.98	2/605 (0.3%)
26	A	0.82	3/532 (0.6%)	0.98	2/709 (0.3%)
27	B	0.60	1/450 (0.2%)	0.87	0/599
28	C	0.92	4/417 (1.0%)	1.01	3/554 (0.5%)
29	D	0.65	0/380	0.90	0/498
30	E	0.84	3/513 (0.6%)	0.90	0/676
31	F	0.83	1/303 (0.3%)	0.93	0/397
32	G	1.16	15/1736 (0.9%)	1.20	16/2338 (0.7%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	H	1.03	12/1652 (0.7%)	1.10	13/2225 (0.6%)
34	I	0.99	14/1665 (0.8%)	1.22	16/2227 (0.7%)
35	J	0.95	8/1170 (0.7%)	1.18	9/1573 (0.6%)
36	K	1.76	22/836 (2.6%)	1.57	21/1128 (1.9%)
37	L	1.03	10/1196 (0.8%)	1.17	7/1602 (0.4%)
38	M	1.17	9/989 (0.9%)	1.20	9/1326 (0.7%)
39	N	0.85	6/1034 (0.6%)	1.14	6/1375 (0.4%)
40	O	0.97	5/797 (0.6%)	1.22	10/1077 (0.9%)
41	P	0.97	7/886 (0.8%)	1.20	9/1195 (0.8%)
42	Q	0.88	3/969 (0.3%)	1.15	8/1300 (0.6%)
43	R	1.08	9/893 (1.0%)	1.24	7/1193 (0.6%)
44	S	1.03	8/817 (1.0%)	1.05	4/1088 (0.4%)
45	T	0.93	7/722 (1.0%)	1.15	4/964 (0.4%)
46	U	0.95	4/659 (0.6%)	0.97	0/884
47	V	0.66	1/658 (0.2%)	1.04	4/881 (0.5%)
48	W	0.91	1/545 (0.2%)	1.09	3/731 (0.4%)
49	X	1.00	6/653 (0.9%)	1.13	4/877 (0.5%)
50	Y	1.17	4/671 (0.6%)	1.16	7/888 (0.8%)
51	Z	1.48	11/551 (2.0%)	1.50	12/728 (1.6%)
52	a	1.59	26/1034 (2.5%)	1.43	26/1387 (1.9%)
53	3	0.48	0/36963	0.55	3/57662 (0.0%)
54	1	0.48	0/69796	0.57	18/108888 (0.0%)
55	2	0.46	0/2872	0.58	1/4479 (0.0%)
56	5	0.45	0/1832	0.54	0/2855
56	6	0.52	0/1832	0.63	2/2855 (0.1%)
57	4	0.51	0/439	0.64	1/684 (0.1%)
58	7	0.48	0/1840	0.62	3/2868 (0.1%)
All	All	0.69	384/162691 (0.2%)	0.77	439/243399 (0.2%)

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	2
35	J	0	1
53	3	0	11
54	1	0	45
55	2	0	3
All	All	0	62

All (384) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
36	K	13	ASP	C-O	18.60	1.47	1.24
36	K	17	GLN	N-CA	16.38	1.65	1.46
12	m	119	LEU	C-O	16.32	1.43	1.24
9	j	27	ARG	C-O	16.23	1.43	1.24
32	G	59	ILE	C-O	16.21	1.43	1.24
8	i	36	GLU	C-O	15.87	1.44	1.24
8	i	39	LYS	C-O	15.77	1.42	1.24
7	h	75	ALA	C-O	14.76	1.43	1.24
1	b	185	ALA	C-O	14.21	1.40	1.24
6	g	97	ARG	C-O	13.60	1.41	1.24
50	Y	36	ALA	C-O	13.60	1.40	1.24
52	a	192	LEU	C-O	13.15	1.39	1.24
8	i	54	ILE	C-O	12.95	1.40	1.24
8	i	69	VAL	C-O	12.94	1.38	1.24
2	c	121	THR	C-O	12.64	1.39	1.24
36	K	12	PRO	C-O	12.57	1.40	1.24
32	G	217	ALA	C-O	12.44	1.38	1.24
52	a	195	ALA	C-O	12.36	1.38	1.24
36	K	51	ILE	N-CA	12.35	1.60	1.46
51	Z	19	LYS	C-O	12.33	1.38	1.24
33	H	97	PRO	C-O	12.07	1.37	1.23
38	M	84	ILE	C-O	12.05	1.36	1.24
51	Z	25	ALA	C-O	11.85	1.39	1.24
32	G	216	VAL	C-O	11.48	1.37	1.24
32	G	218	ALA	C-O	11.30	1.37	1.24
44	S	14	ALA	C-O	11.28	1.37	1.24
14	o	58	ILE	C-O	11.19	1.35	1.23
52	a	8	MET	C-O	11.16	1.37	1.24
14	o	25	ARG	C-O	10.89	1.37	1.23
6	g	52	ALA	C-N	10.75	1.48	1.33
38	M	79	ARG	C-O	10.73	1.37	1.23
42	Q	51	VAL	C-O	10.70	1.34	1.24
48	W	61	ALA	C-O	10.68	1.36	1.24
2	c	157	LYS	C-O	10.67	1.36	1.24
24	y	55	THR	C-O	10.59	1.36	1.24
8	i	55	PRO	C-O	10.41	1.35	1.23
38	M	124	ILE	C-O	10.16	1.34	1.23
8	i	57	VAL	C-O	10.05	1.35	1.24
8	i	34	ILE	C-O	10.02	1.35	1.24
3	d	14	VAL	N-CA	10.00	1.57	1.46
43	R	16	ILE	C-O	10.00	1.35	1.24
32	G	58	LYS	C-O	9.99	1.35	1.24
30	E	9	ALA	C-O	9.65	1.35	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
36	K	59	TYR	C-O	9.54	1.35	1.23
46	U	58	ALA	C-O	9.49	1.35	1.24
51	Z	18	PHE	C-O	9.43	1.35	1.24
33	H	133	MET	C-O	9.30	1.34	1.24
52	a	11	ILE	C-O	9.30	1.34	1.24
6	g	99	ILE	C-O	9.25	1.34	1.24
38	M	42	GLU	C-O	9.24	1.36	1.24
36	K	24	ARG	C-O	9.22	1.34	1.24
51	Z	49	ALA	C-O	9.21	1.34	1.24
52	a	59	VAL	C-O	9.16	1.33	1.24
14	o	16	ARG	C-O	9.13	1.34	1.24
7	h	62	ARG	C-O	9.11	1.35	1.23
12	m	120	ALA	C-O	9.11	1.35	1.24
12	m	42	THR	N-CA	9.07	1.57	1.46
37	L	44	SER	C-O	9.05	1.34	1.24
43	R	69	ARG	C-O	9.03	1.34	1.24
3	d	145	ASP	C-O	9.01	1.35	1.23
52	a	65	LEU	N-CA	9.01	1.59	1.46
33	H	88	LYS	C-O	9.00	1.35	1.24
44	S	6	LYS	C-O	8.96	1.34	1.24
37	L	100	MET	C-O	8.96	1.34	1.24
8	i	42	ASN	C-O	8.95	1.35	1.24
38	M	124	ILE	N-CA	8.93	1.56	1.46
50	Y	23	ARG	C-O	8.87	1.34	1.24
7	h	59	LEU	C-O	8.67	1.34	1.23
3	d	154	ASP	C-O	8.63	1.34	1.23
52	a	186	LYS	C-O	8.61	1.34	1.24
36	K	16	GLU	N-CA	8.61	1.57	1.46
11	l	130	GLY	C-O	8.60	1.33	1.23
36	K	20	GLY	C-O	8.55	1.34	1.23
31	F	4	ARG	C-O	8.52	1.35	1.23
12	m	123	LYS	N-CA	8.51	1.57	1.46
6	g	108	VAL	C-O	8.48	1.33	1.24
35	J	55	VAL	C-O	8.46	1.35	1.24
52	a	196	LEU	N-CA	8.37	1.56	1.46
34	I	201	GLU	C-O	8.34	1.34	1.24
46	U	19	VAL	C-O	8.34	1.33	1.24
26	A	46	GLY	C-O	8.33	1.34	1.23
17	r	2	TYR	C-O	8.31	1.34	1.24
52	a	196	LEU	C-O	8.30	1.33	1.24
4	e	52	ALA	C-O	8.28	1.33	1.24
6	g	132	PHE	C-O	8.27	1.35	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
39	N	75	ALA	C-O	8.26	1.33	1.24
41	P	63	GLN	C-O	8.25	1.33	1.24
8	i	36	GLU	C-N	8.24	1.45	1.34
51	Z	57	LYS	C-O	8.23	1.34	1.24
8	i	40	ALA	C-O	8.20	1.34	1.24
34	I	154	VAL	C-N	8.19	1.44	1.33
8	i	23	VAL	C-O	8.16	1.35	1.24
37	L	102	TRP	C-O	8.15	1.33	1.24
52	a	206	GLY	C-O	-8.14	1.19	1.24
7	h	78	GLY	N-CA	8.13	1.55	1.44
37	L	125	ASP	C-O	8.13	1.33	1.24
40	O	15	HIS	N-CA	8.12	1.56	1.46
37	L	132	THR	C-O	8.10	1.33	1.24
32	G	83	ALA	C-O	8.07	1.34	1.24
34	I	155	LYS	N-CA	8.05	1.55	1.46
10	k	112	PHE	C-O	8.01	1.34	1.24
3	d	136	GLN	C-O	8.01	1.33	1.24
6	g	44	ILE	C-O	7.97	1.33	1.24
39	N	17	ARG	C-O	7.96	1.34	1.24
18	s	42	LYS	C-O	7.95	1.33	1.24
28	C	33	LEU	C-O	7.95	1.33	1.24
18	s	41	LYS	C-O	7.92	1.33	1.23
42	Q	78	VAL	C-O	7.89	1.33	1.24
10	k	113	MET	N-CA	7.88	1.55	1.46
4	e	7	TYR	C-O	7.88	1.33	1.24
37	L	61	PHE	C-O	7.83	1.34	1.24
3	d	36	ALA	C-O	7.81	1.33	1.24
9	j	31	GLU	N-CA	7.78	1.55	1.46
18	s	96	ILE	C-O	7.77	1.32	1.24
12	m	23	GLY	C-O	7.77	1.34	1.23
34	I	171	GLU	C-O	7.76	1.33	1.23
3	d	191	ASP	C-O	7.74	1.33	1.24
33	H	43	THR	C-O	7.74	1.32	1.24
51	Z	22	CYS	N-CA	7.72	1.57	1.46
14	o	75	GLY	C-O	7.71	1.33	1.23
13	n	47	VAL	C-O	7.70	1.33	1.24
14	o	82	ALA	C-O	7.70	1.33	1.24
52	a	47	ASN	C-O	7.70	1.33	1.24
9	j	83	GLY	C-O	7.67	1.34	1.23
10	k	112	PHE	C-N	7.65	1.44	1.33
42	Q	88	ASP	C-O	7.64	1.34	1.23
13	n	19	ALA	C-O	7.62	1.33	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
36	K	57	ALA	C-O	7.62	1.32	1.23
35	J	109	ALA	C-O	-7.61	1.14	1.24
8	i	57	VAL	N-CA	7.57	1.55	1.46
8	i	10	LEU	C-O	7.56	1.33	1.24
2	c	52	THR	C-O	7.51	1.32	1.23
36	K	29	ILE	C-O	7.51	1.32	1.24
8	i	43	ALA	N-CA	7.48	1.56	1.46
5	f	17	LYS	C-O	7.48	1.32	1.24
44	S	12	ARG	C-O	7.46	1.33	1.24
4	e	9	ASP	C-O	7.44	1.34	1.24
3	d	138	LEU	C-O	7.41	1.33	1.24
14	o	68	LYS	C-O	7.39	1.33	1.24
14	o	88	LYS	C-O	7.38	1.33	1.24
8	i	37	PHE	C-O	7.38	1.33	1.24
12	m	53	MET	C-O	7.37	1.33	1.23
9	j	30	THR	C-O	7.36	1.32	1.24
23	x	35	HIS	N-CA	7.34	1.54	1.45
34	I	69	ARG	C-O	7.31	1.32	1.24
36	K	73	GLU	C-O	7.31	1.32	1.24
36	K	45	ARG	C-O	7.28	1.32	1.24
36	K	25	TYR	C-O	7.27	1.32	1.24
33	H	7	ASN	C-O	7.23	1.32	1.24
51	Z	39	LYS	C-O	-7.21	1.18	1.24
33	H	68	HIS	C-O	7.20	1.32	1.24
34	I	49	ASP	C-O	7.18	1.32	1.24
32	G	14	HIS	C-O	7.16	1.32	1.24
14	o	30	ARG	N-CA	7.15	1.55	1.45
37	L	144	ALA	N-CA	7.11	1.55	1.46
12	m	46	ILE	C-O	7.10	1.32	1.24
6	g	52	ALA	C-O	7.06	1.32	1.24
32	G	111	LYS	C-O	7.06	1.32	1.24
2	c	146	ILE	N-CA	7.06	1.55	1.46
41	P	45	THR	C-O	7.06	1.32	1.23
47	V	46	HIS	C-O	7.03	1.32	1.24
9	j	57	LEU	C-N	7.00	1.43	1.33
28	C	25	ASN	C-O	6.99	1.32	1.24
9	j	29	ALA	C-O	6.97	1.32	1.24
14	o	4	LYS	C-O	6.97	1.32	1.24
34	I	22	SER	N-CA	6.96	1.54	1.46
33	H	134	LYS	C-O	6.94	1.32	1.24
38	M	30	LYS	C-O	6.94	1.32	1.24
41	P	64	VAL	C-O	6.91	1.33	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	l	94	THR	C-O	-6.90	1.15	1.24
34	I	180	THR	C-O	6.89	1.32	1.23
32	G	91	VAL	C-O	6.87	1.31	1.24
6	g	114	GLU	C-O	6.87	1.33	1.23
43	R	53	ASP	C-O	6.86	1.32	1.24
6	g	96	THR	C-O	6.86	1.32	1.24
9	j	28	LEU	C-O	6.85	1.32	1.24
35	J	92	ARG	C-O	-6.84	1.15	1.24
14	o	69	ASP	C-O	6.83	1.32	1.24
33	H	202	PHE	C-O	6.81	1.32	1.24
9	j	80	HIS	C-O	6.80	1.32	1.23
9	j	57	LEU	C-O	6.80	1.32	1.23
25	z	42	ALA	C-O	6.78	1.32	1.24
7	h	34	THR	C-O	6.77	1.32	1.24
17	r	15	SER	C-O	6.75	1.32	1.23
36	K	22	ILE	C-O	6.75	1.31	1.24
16	q	102	LYS	N-CA	6.73	1.54	1.46
18	s	16	LYS	C-O	6.72	1.31	1.24
26	A	56	ARG	C-O	6.72	1.33	1.23
49	X	12	LEU	C-O	6.66	1.31	1.24
52	a	201	PRO	C-O	6.65	1.32	1.24
5	f	62	ALA	C-O	6.63	1.31	1.24
5	f	11	PRO	C-O	6.63	1.32	1.24
43	R	3	ILE	C-O	6.63	1.30	1.23
3	d	165	HIS	N-CA	6.60	1.54	1.46
16	q	96	ASP	C-O	6.59	1.32	1.24
28	C	11	VAL	C-O	6.59	1.32	1.24
3	d	176	ASP	C-O	6.57	1.32	1.24
37	L	92	PRO	C-O	6.56	1.32	1.24
49	X	66	VAL	C-O	6.55	1.31	1.24
6	g	143	ILE	C-O	6.54	1.32	1.24
36	K	13	ASP	CA-C	6.54	1.61	1.52
8	i	74	PRO	C-O	6.52	1.36	1.23
49	X	47	THR	N-CA	6.51	1.54	1.46
12	m	77	PRO	C-O	6.51	1.31	1.23
30	E	11	LYS	C-O	6.49	1.32	1.24
52	a	165	ASN	N-CA	6.46	1.54	1.45
8	i	25	PRO	C-O	6.46	1.32	1.24
8	i	58	ILE	C-O	6.43	1.30	1.24
41	P	34	THR	N-CA	6.40	1.54	1.45
8	i	33	ASN	C-O	6.39	1.31	1.23
34	I	155	LYS	C-O	6.39	1.31	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
52	a	159	GLY	C-O	6.39	1.36	1.23
6	g	100	ALA	N-CA	6.39	1.54	1.46
43	R	54	THR	C-O	6.33	1.32	1.24
32	G	221	ARG	N-CA	6.32	1.54	1.46
45	T	27	GLN	C-O	6.32	1.31	1.24
8	i	34	ILE	CA-C	6.31	1.60	1.52
36	K	62	MET	C-O	6.31	1.32	1.23
24	y	11	VAL	C-O	6.29	1.31	1.24
45	T	35	ILE	C-O	6.26	1.31	1.24
7	h	37	LYS	C-O	6.25	1.31	1.24
11	l	108	ALA	C-O	6.25	1.31	1.23
32	G	134	LEU	C-O	6.23	1.31	1.24
22	w	33	ILE	C-O	6.22	1.30	1.24
52	a	55	SER	C-O	6.22	1.31	1.24
3	d	187	VAL	C-O	6.21	1.31	1.24
10	k	41	ILE	N-CA	6.20	1.53	1.46
50	Y	29	THR	C-O	6.17	1.31	1.24
8	i	11	GLN	C-N	-6.17	1.26	1.33
32	G	142	LYS	C-O	6.16	1.31	1.24
4	e	91	ARG	N-CA	6.16	1.53	1.45
41	P	21	HIS	N-CA	6.16	1.53	1.45
52	a	26	ALA	C-O	6.16	1.31	1.24
4	e	145	VAL	N-CA	6.14	1.53	1.46
12	m	111	GLU	C-O	6.13	1.31	1.24
52	a	193	LEU	C-O	6.11	1.31	1.24
24	y	43	LEU	C-O	6.08	1.31	1.24
24	y	25	GLN	C-O	6.08	1.31	1.24
52	a	16	ASP	C-O	6.07	1.31	1.23
45	T	25	GLU	C-O	6.06	1.31	1.24
39	N	27	ILE	C-O	6.05	1.30	1.24
5	f	50	THR	C-O	6.05	1.31	1.23
52	a	163	TYR	C-O	6.04	1.31	1.23
36	K	14	GLN	C-O	6.03	1.31	1.24
12	m	118	LYS	C-O	6.03	1.31	1.24
5	f	43	LYS	C-O	6.01	1.30	1.24
25	z	41	PRO	C-O	6.00	1.31	1.24
52	a	44	VAL	C-O	5.99	1.31	1.23
35	J	29	ILE	C-O	5.96	1.31	1.24
35	J	87	VAL	N-CA	5.96	1.53	1.46
51	Z	61	ARG	N-CA	5.96	1.53	1.46
6	g	43	ASN	C-N	5.96	1.41	1.33
43	R	66	GLY	C-O	5.95	1.31	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
23	x	68	ALA	C-O	5.94	1.31	1.24
33	H	20	THR	C-O	5.94	1.31	1.23
1	b	263	ASP	N-CA	5.93	1.54	1.46
28	C	18	HIS	C-O	5.93	1.31	1.23
19	t	86	THR	C-O	5.93	1.31	1.24
18	s	15	GLN	C-O	5.92	1.31	1.24
19	t	20	ALA	C-O	5.92	1.31	1.24
4	e	100	GLU	C-O	5.91	1.31	1.24
50	Y	35	TYR	C-O	5.91	1.31	1.24
1	b	19	VAL	N-CA	5.91	1.53	1.46
6	g	49	ALA	C-O	5.89	1.31	1.23
19	t	21	SER	C-O	5.87	1.30	1.24
40	O	40	ILE	C-O	5.87	1.31	1.24
52	a	7	ARG	C-O	5.84	1.31	1.24
35	J	59	ILE	N-CA	5.84	1.53	1.46
22	w	79	GLU	N-CA	5.83	1.53	1.45
7	h	78	GLY	CA-C	5.82	1.60	1.51
8	i	69	VAL	N-CA	5.82	1.53	1.46
24	y	12	GLU	C-O	5.78	1.30	1.24
10	k	14	SER	C-O	5.75	1.31	1.24
9	j	105	VAL	C-O	5.75	1.30	1.24
49	X	17	LYS	C-O	5.74	1.30	1.24
7	h	66	GLY	N-CA	5.74	1.52	1.45
43	R	64	VAL	C-O	5.72	1.30	1.24
37	L	141	HIS	C-O	-5.71	1.17	1.24
45	T	33	ALA	C-O	5.71	1.30	1.24
14	o	5	SER	C-O	5.71	1.30	1.24
38	M	4	ASP	C-O	5.70	1.32	1.24
49	X	32	THR	C-O	5.70	1.30	1.23
5	f	74	MET	C-O	5.70	1.30	1.24
17	r	75	VAL	N-CA	5.68	1.53	1.46
2	c	177	VAL	N-CA	5.67	1.52	1.46
52	a	23	ILE	C-O	5.66	1.30	1.24
14	o	3	LYS	C-O	5.66	1.30	1.24
2	c	39	ASP	C-O	5.65	1.31	1.23
20	u	8	ASP	N-CA	5.65	1.53	1.45
33	H	139	ASN	C-O	5.65	1.30	1.24
32	G	105	THR	C-O	5.65	1.31	1.24
39	N	33	SER	C-O	5.65	1.31	1.23
46	U	71	VAL	C-O	5.64	1.30	1.24
52	a	197	LYS	C-O	5.63	1.30	1.24
3	d	15	SER	C-O	5.62	1.30	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
8	i	40	ALA	N-CA	5.57	1.53	1.46
32	G	62	ARG	N-CA	5.56	1.53	1.46
46	U	38	PHE	C-O	5.56	1.29	1.24
1	b	92	LEU	C-O	5.56	1.31	1.23
12	m	35	ALA	C-O	5.55	1.30	1.23
32	G	215	ALA	C-O	5.55	1.30	1.24
10	k	65	THR	C-O	5.55	1.31	1.24
7	h	40	GLU	C-O	5.54	1.30	1.24
34	I	154	VAL	C-O	5.54	1.30	1.24
24	y	59	GLU	N-CA	5.53	1.53	1.46
6	g	49	ALA	CA-C	5.52	1.56	1.52
21	v	42	LEU	C-O	5.50	1.30	1.23
44	S	43	ALA	C-O	5.48	1.30	1.24
52	a	183	ASP	C-O	5.48	1.30	1.24
36	K	16	GLU	C-O	5.47	1.30	1.24
27	B	46	GLY	C-O	5.46	1.31	1.23
37	L	131	GLY	C-O	5.46	1.28	1.23
36	K	35	LYS	N-CA	5.46	1.52	1.46
2	c	97	SER	N-CA	5.46	1.53	1.46
5	f	71	LEU	C-O	5.46	1.30	1.24
51	Z	23	GLU	C-O	5.46	1.30	1.24
12	m	119	LEU	CA-C	5.43	1.59	1.52
17	r	40	MET	N-CA	5.42	1.52	1.46
4	e	12	VAL	C-N	5.41	1.41	1.34
45	T	39	GLN	N-CA	5.41	1.53	1.46
30	E	38	LYS	C-O	5.40	1.30	1.24
6	g	97	ARG	CA-C	5.39	1.59	1.52
1	b	224	MET	C-O	5.38	1.30	1.23
4	e	31	GLU	N-CA	5.38	1.52	1.46
39	N	33	SER	N-CA	5.37	1.52	1.45
40	O	70	HIS	C-O	5.37	1.30	1.23
41	P	65	ALA	C-O	5.35	1.30	1.24
41	P	54	SER	C-O	5.34	1.30	1.24
40	O	40	ILE	N-CA	5.33	1.53	1.46
9	j	85	LYS	C-O	5.33	1.30	1.23
14	o	51	ALA	C-O	5.32	1.29	1.23
52	a	61	GLY	C-O	5.32	1.31	1.23
17	r	60	LYS	N-CA	5.32	1.52	1.46
13	n	15	SER	C-O	5.30	1.30	1.24
21	v	64	VAL	N-CA	5.29	1.52	1.46
35	J	56	PRO	C-O	5.29	1.30	1.24
10	k	121	GLU	C-O	5.28	1.30	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
34	I	61	ARG	C-O	5.26	1.30	1.24
1	b	207	ALA	C-O	5.26	1.30	1.24
43	R	20	SER	N-CA	5.25	1.52	1.46
44	S	18	LYS	N-CA	5.25	1.52	1.46
51	Z	57	LYS	C-N	5.25	1.41	1.34
11	l	129	LYS	C-O	5.24	1.30	1.24
51	Z	17	ARG	C-O	5.23	1.30	1.24
49	X	61	VAL	C-O	5.22	1.29	1.23
2	c	140	HIS	C-O	5.21	1.30	1.24
3	d	177	PRO	C-O	5.21	1.30	1.24
3	d	30	GLN	C-O	5.21	1.30	1.24
34	I	171	GLU	N-CA	5.21	1.52	1.46
44	S	88	MET	C-O	5.21	1.30	1.24
6	g	43	ASN	C-O	5.21	1.30	1.24
7	h	75	ALA	CA-C	5.20	1.59	1.52
40	O	72	ARG	C-O	5.20	1.30	1.23
14	o	104	GLN	C-O	5.19	1.30	1.24
36	K	21	MET	C-O	5.17	1.30	1.24
6	g	101	ASP	C-O	5.17	1.30	1.24
34	I	71	PHE	C-O	5.16	1.30	1.24
1	b	41	GLY	C-O	5.16	1.30	1.23
38	M	125	ILE	C-O	5.16	1.30	1.24
45	T	70	LYS	C-O	5.13	1.30	1.24
52	a	19	LYS	N-CA	5.13	1.52	1.45
5	f	131	VAL	C-O	5.12	1.29	1.24
38	M	63	LYS	C-O	5.12	1.30	1.24
15	p	73	PHE	C-O	5.11	1.29	1.23
39	N	63	TYR	C-O	5.11	1.30	1.24
35	J	160	VAL	C-O	5.09	1.29	1.24
43	R	65	GLU	C-O	5.09	1.30	1.24
33	H	111	ASP	C-O	5.09	1.30	1.24
45	T	10	ILE	C-O	5.09	1.30	1.24
44	S	6	LYS	N-CA	5.08	1.52	1.46
3	d	131	THR	C-O	5.08	1.30	1.24
10	k	72	PRO	C-O	5.07	1.30	1.24
17	r	100	GLY	C-O	5.07	1.30	1.23
36	K	53	LYS	C-O	-5.07	1.17	1.24
34	I	22	SER	CA-C	5.06	1.59	1.52
44	S	10	VAL	N-CA	5.06	1.52	1.46
1	b	9	SER	C-O	5.06	1.29	1.24
8	i	20	SER	C-O	5.05	1.29	1.24
12	m	124	LEU	N-CA	5.03	1.53	1.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
16	q	95	ALA	C-O	5.01	1.29	1.24
33	H	11	LEU	N-CA	5.01	1.52	1.46
36	K	63	ASN	C-O	5.01	1.30	1.23
3	d	190	ALA	C-O	5.00	1.30	1.24
26	A	43	PHE	C-O	5.00	1.29	1.24

All (439) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
36	K	50	PRO	CA-C-N	-12.70	110.89	122.96
36	K	50	PRO	C-N-CA	-12.70	110.89	122.96
2	c	144	GLY	O-C-N	-12.23	114.47	123.52
34	I	154	VAL	CA-C-N	-12.12	104.65	120.65
34	I	154	VAL	C-N-CA	-12.12	104.65	120.65
10	k	112	PHE	CA-C-N	-11.89	104.35	120.28
10	k	112	PHE	C-N-CA	-11.89	104.35	120.28
6	g	52	ALA	CA-C-N	-11.57	100.87	121.70
6	g	52	ALA	C-N-CA	-11.57	100.87	121.70
8	i	11	GLN	CA-C-N	11.23	135.48	120.77
8	i	11	GLN	C-N-CA	11.23	135.48	120.77
36	K	13	ASP	CA-C-O	10.97	132.50	120.10
7	h	76	PHE	CA-C-N	-10.80	109.55	122.95
7	h	76	PHE	C-N-CA	-10.80	109.55	122.95
36	K	16	GLU	CA-C-N	-10.51	105.96	122.67
36	K	16	GLU	C-N-CA	-10.51	105.96	122.67
8	i	36	GLU	CA-C-N	-10.41	104.49	120.31
8	i	36	GLU	C-N-CA	-10.41	104.49	120.31
41	P	73	VAL	N-CA-C	-9.82	104.38	113.71
55	2	1	U	N1-C1'-C2'	9.72	126.58	112.00
1	b	164	VAL	N-CA-C	9.72	119.30	111.62
51	Z	21	SER	CA-C-N	-9.70	103.65	121.41
51	Z	21	SER	C-N-CA	-9.70	103.65	121.41
2	c	146	ILE	N-CA-C	9.68	121.84	111.58
8	i	56	VAL	CA-C-N	-9.56	110.88	122.93
8	i	56	VAL	C-N-CA	-9.56	110.88	122.93
12	m	119	LEU	CA-C-O	9.15	130.25	120.55
6	g	99	ILE	CA-C-N	-9.03	105.32	120.68
6	g	99	ILE	C-N-CA	-9.03	105.32	120.68
52	a	195	ALA	CA-C-N	-8.91	108.33	120.28
52	a	195	ALA	C-N-CA	-8.91	108.33	120.28
47	V	63	CYS	CA-C-N	8.67	132.44	120.39
47	V	63	CYS	C-N-CA	8.67	132.44	120.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	g	41	LYS	O-C-N	-8.52	111.26	122.59
5	f	56	GLY	CA-C-O	8.47	127.58	119.20
52	a	167	LYS	N-CA-C	8.16	120.98	111.02
9	j	30	THR	CA-C-N	-8.15	109.21	120.38
9	j	30	THR	C-N-CA	-8.15	109.21	120.38
24	y	14	LEU	N-CA-C	-8.08	102.47	111.28
37	L	143	MET	CA-C-N	-7.98	106.94	120.58
37	L	143	MET	C-N-CA	-7.98	106.94	120.58
32	G	34	ARG	N-CA-C	7.95	120.03	111.36
42	Q	114	SER	N-CA-C	-7.87	102.69	111.82
32	G	59	ILE	CA-C-O	7.87	129.19	120.85
41	P	126	ARG	N-CA-C	7.85	120.09	110.91
6	g	97	ARG	CA-C-O	7.81	131.68	120.51
39	N	31	GLN	CA-C-O	7.79	126.79	119.00
1	b	262	THR	CA-C-N	-7.77	107.74	120.72
1	b	262	THR	C-N-CA	-7.77	107.74	120.72
37	L	42	VAL	N-CA-C	-7.75	102.55	111.00
17	r	59	ILE	CA-C-N	-7.71	111.89	122.30
17	r	59	ILE	C-N-CA	-7.71	111.89	122.30
6	g	44	ILE	CA-C-N	-7.65	110.50	120.44
6	g	44	ILE	C-N-CA	-7.65	110.50	120.44
1	b	185	ALA	N-CA-C	7.64	119.24	111.07
38	M	50	VAL	CA-C-O	7.59	126.98	120.22
8	i	22	PRO	CA-C-N	-7.49	112.31	122.72
8	i	22	PRO	C-N-CA	-7.49	112.31	122.72
51	Z	17	ARG	N-CA-C	-7.44	104.33	113.41
48	W	43	ILE	N-CA-C	-7.42	105.98	113.47
49	X	9	PHE	N-CA-C	7.37	122.04	110.32
1	b	18	VAL	CA-C-N	-7.29	114.15	123.19
1	b	18	VAL	C-N-CA	-7.29	114.15	123.19
52	a	12	ARG	N-CA-C	7.24	121.97	113.20
52	a	165	ASN	N-CA-C	7.23	119.31	110.41
7	h	15	VAL	N-CA-C	-7.23	103.42	110.72
34	I	152	SER	O-C-N	-7.20	113.01	122.59
42	Q	117	GLY	N-CA-C	7.19	124.90	115.40
35	J	87	VAL	N-CA-C	7.17	124.26	109.34
38	M	50	VAL	O-C-N	-7.17	116.52	122.97
40	O	82	LYS	N-CA-C	-7.14	105.75	114.75
54	l	1130	U	C2'-C3'-O3'	7.13	120.19	109.50
10	k	112	PHE	N-CA-C	-7.11	104.17	112.92
34	I	165	GLU	N-CA-C	7.10	121.54	113.02
3	d	12	LEU	N-CA-C	7.08	121.20	109.95

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
12	m	100	LYS	CA-C-N	-7.06	111.92	121.66
12	m	100	LYS	C-N-CA	-7.06	111.92	121.66
8	i	68	PHE	CA-C-N	-7.02	114.00	123.12
8	i	68	PHE	C-N-CA	-7.02	114.00	123.12
17	r	73	LYS	CA-C-O	7.01	128.52	120.60
7	h	75	ALA	CA-C-O	7.01	128.00	119.38
6	g	44	ILE	N-CA-C	-6.97	103.40	111.00
37	L	3	ARG	CA-C-O	6.97	127.32	118.54
6	g	52	ALA	CA-C-O	-6.97	113.17	120.55
11	l	96	LYS	N-CA-C	-6.97	103.70	111.71
4	e	12	VAL	CA-C-N	-6.95	110.27	120.28
4	e	12	VAL	C-N-CA	-6.95	110.27	120.28
38	M	123	GLU	CA-C-N	-6.94	112.15	122.01
38	M	123	GLU	C-N-CA	-6.94	112.15	122.01
39	N	103	VAL	CA-C-O	6.93	125.11	119.29
25	z	44	ARG	CA-C-N	-6.92	112.25	119.94
25	z	44	ARG	C-N-CA	-6.92	112.25	119.94
11	l	113	ALA	N-CA-C	-6.91	103.52	112.23
50	Y	39	GLU	CA-C-N	-6.87	111.28	120.63
50	Y	39	GLU	C-N-CA	-6.87	111.28	120.63
35	J	58	ALA	CA-C-N	-6.86	111.07	120.46
35	J	58	ALA	C-N-CA	-6.86	111.07	120.46
10	k	110	GLU	O-C-N	-6.82	113.52	122.59
8	i	23	VAL	N-CA-C	-6.80	106.50	113.10
33	H	10	ARG	CA-C-N	-6.79	111.08	120.38
33	H	10	ARG	C-N-CA	-6.79	111.08	120.38
9	j	27	ARG	CA-C-O	6.77	128.51	120.92
43	R	113	LYS	N-CA-C	6.77	124.77	109.81
40	O	31	ARG	CA-C-N	-6.75	109.69	120.70
40	O	31	ARG	C-N-CA	-6.75	109.69	120.70
28	C	50	GLU	N-CA-C	6.75	119.44	110.53
7	h	77	VAL	N-CA-C	6.73	117.11	106.88
45	T	38	LEU	CA-C-N	-6.71	110.62	120.28
45	T	38	LEU	C-N-CA	-6.71	110.62	120.28
33	H	62	SER	CA-C-N	-6.70	113.62	122.94
33	H	62	SER	C-N-CA	-6.70	113.62	122.94
6	g	122	LEU	N-CA-C	6.65	119.33	111.02
11	l	97	ALA	N-CA-C	-6.65	103.86	112.23
43	R	69	ARG	CA-C-N	-6.64	109.39	120.68
43	R	69	ARG	C-N-CA	-6.64	109.39	120.68
8	i	69	VAL	O-C-N	6.64	130.87	123.10
8	i	25	PRO	CA-C-N	-6.63	109.41	120.68

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
8	i	25	PRO	C-N-CA	-6.63	109.41	120.68
4	e	89	THR	CA-C-O	6.63	127.67	120.58
12	m	40	ARG	O-C-N	-6.61	114.57	123.10
43	R	3	ILE	N-CA-C	6.61	117.97	107.98
10	k	11	ALA	N-CA-C	6.59	119.44	111.40
42	Q	97	VAL	N-CA-C	6.57	117.20	107.15
35	J	111	ARG	N-CA-C	-6.55	103.36	111.75
43	R	4	ALA	N-CA-C	6.55	124.74	110.80
34	I	168	THR	N-CA-C	6.53	119.36	111.40
8	i	55	PRO	CA-C-N	-6.52	114.80	122.11
8	i	55	PRO	C-N-CA	-6.52	114.80	122.11
6	g	43	ASN	CA-C-N	-6.52	110.12	120.55
6	g	43	ASN	C-N-CA	-6.52	110.12	120.55
24	y	58	ASN	CA-C-N	-6.51	111.56	120.28
24	y	58	ASN	C-N-CA	-6.51	111.56	120.28
4	e	144	LYS	CA-C-N	-6.51	110.65	122.43
4	e	144	LYS	C-N-CA	-6.51	110.65	122.43
34	I	183	ARG	N-CA-C	6.51	119.81	109.65
3	d	194	LYS	CA-C-N	-6.50	111.60	120.44
3	d	194	LYS	C-N-CA	-6.50	111.60	120.44
35	J	111	ARG	CA-C-N	-6.49	111.08	120.29
35	J	111	ARG	C-N-CA	-6.49	111.08	120.29
5	f	129	GLU	CA-C-N	-6.46	114.68	123.14
5	f	129	GLU	C-N-CA	-6.46	114.68	123.14
18	s	60	HIS	CA-C-N	-6.45	112.42	122.42
18	s	60	HIS	C-N-CA	-6.45	112.42	122.42
12	m	60	GLN	N-CA-C	6.44	119.56	110.23
11	l	95	LEU	N-CA-C	-6.42	105.09	113.12
8	i	39	LYS	CA-C-N	-6.41	109.08	121.58
8	i	39	LYS	C-N-CA	-6.41	109.08	121.58
54	1	1103	A	N9-C1'-C2'	6.40	121.60	112.00
10	k	41	ILE	N-CA-C	6.39	118.03	108.96
56	6	67	C	N1-C1'-C2'	6.39	121.58	112.00
52	a	164	ARG	CA-C-N	-6.37	109.08	121.06
52	a	164	ARG	C-N-CA	-6.37	109.08	121.06
12	m	122	ALA	CA-C-N	-6.37	109.20	121.94
12	m	122	ALA	C-N-CA	-6.37	109.20	121.94
44	S	10	VAL	N-CA-C	6.32	117.07	110.62
51	Z	57	LYS	CA-C-N	-6.31	110.72	120.31
51	Z	57	LYS	C-N-CA	-6.31	110.72	120.31
8	i	23	VAL	CA-C-O	6.29	124.86	119.38
53	3	496	A	N9-C1'-C2'	6.29	121.44	112.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
20	u	53	GLN	N-CA-C	6.27	123.67	109.81
58	7	2	G	C2'-C3'-O3'	6.27	118.90	109.50
15	p	107	ALA	CA-C-N	-6.26	112.98	122.81
15	p	107	ALA	C-N-CA	-6.26	112.98	122.81
34	I	182	LYS	N-CA-C	6.26	120.71	112.13
9	j	81	ILE	N-CA-C	6.26	122.36	109.34
21	v	62	THR	CA-C-N	-6.25	114.89	122.90
21	v	62	THR	C-N-CA	-6.25	114.89	122.90
12	m	123	LYS	N-CA-C	6.25	120.76	113.20
51	Z	19	LYS	CA-C-O	6.21	127.90	121.07
4	e	31	GLU	N-CA-C	6.19	121.04	111.56
38	M	7	ALA	CA-C-N	-6.17	112.01	120.28
38	M	7	ALA	C-N-CA	-6.17	112.01	120.28
35	J	112	ALA	N-CA-C	-6.17	104.64	111.36
6	g	14	SER	N-CA-C	6.17	117.84	110.44
45	T	43	ALA	N-CA-C	-6.16	104.68	111.82
40	O	13	PHE	CA-C-O	6.16	126.64	119.32
52	a	18	THR	CA-C-N	-6.14	112.15	122.29
52	a	18	THR	C-N-CA	-6.14	112.15	122.29
52	a	10	VAL	CA-C-N	-6.13	112.83	120.56
52	a	10	VAL	C-N-CA	-6.13	112.83	120.56
6	g	43	ASN	N-CA-C	-6.13	104.90	112.38
37	L	41	ILE	CA-C-N	-6.13	110.75	120.55
37	L	41	ILE	C-N-CA	-6.13	110.75	120.55
3	d	12	LEU	CA-C-O	6.11	128.07	121.16
32	G	220	VAL	CA-C-N	-6.10	110.53	120.72
32	G	220	VAL	C-N-CA	-6.10	110.53	120.72
52	a	8	MET	CA-C-O	6.10	126.88	120.42
4	e	29	ARG	CA-C-O	6.09	127.59	120.89
8	i	5	GLN	N-CA-C	-6.09	104.25	113.51
42	Q	23	LEU	N-CA-C	-6.08	103.23	110.41
8	i	42	ASN	O-C-N	6.08	129.74	122.27
15	p	89	GLY	N-CA-C	6.07	119.97	112.14
41	P	32	THR	CA-C-O	6.07	127.06	120.32
3	d	197	GLU	N-CA-C	-6.05	105.39	112.89
32	G	189	ASN	CA-C-N	-6.04	111.89	121.86
32	G	189	ASN	C-N-CA	-6.04	111.89	121.86
3	d	13	THR	CA-C-N	-6.04	113.14	122.68
3	d	13	THR	C-N-CA	-6.04	113.14	122.68
53	3	413	G	N9-C1'-C2'	6.03	121.04	112.00
6	g	52	ALA	O-C-N	6.02	128.50	122.12
34	I	22	SER	N-CA-C	6.01	117.70	111.03

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
19	t	25	GLU	N-CA-C	6.00	117.51	110.97
17	r	91	GLN	CA-C-O	5.99	126.91	120.38
2	c	99	GLU	N-CA-C	5.98	119.41	111.75
36	K	32	ALA	CA-C-N	-5.98	114.72	123.93
36	K	32	ALA	C-N-CA	-5.98	114.72	123.93
40	O	87	LEU	N-CA-C	-5.98	106.60	114.31
7	h	78	GLY	N-CA-C	5.96	124.49	112.34
12	m	99	GLY	CA-C-N	-5.94	114.88	122.77
12	m	99	GLY	C-N-CA	-5.94	114.88	122.77
8	i	39	LYS	CA-C-O	5.93	127.23	121.00
17	r	53	PHE	N-CA-C	-5.93	103.97	110.91
47	V	11	VAL	N-CA-C	5.93	116.67	108.84
52	a	10	VAL	N-CA-C	-5.92	104.59	110.62
36	K	16	GLU	O-C-N	5.91	128.94	122.20
32	G	18	GLN	N-CA-C	5.91	123.38	110.80
54	1	2180	U	N1-C1'-C2'	5.91	120.86	112.00
52	a	204	ALA	N-CA-C	5.90	119.00	109.86
3	d	163	ASN	CA-C-O	5.90	126.46	119.56
7	h	44	ALA	N-CA-C	-5.89	106.05	113.18
36	K	68	GLN	N-CA-C	5.89	117.39	110.97
32	G	87	ASP	N-CA-C	-5.88	104.60	113.89
54	1	1020	A	C2'-C3'-O3'	5.87	118.30	109.50
40	O	44	THR	N-CA-C	5.85	119.63	110.32
18	s	40	ASN	N-CA-C	5.85	118.92	107.57
26	A	46	GLY	N-CA-C	-5.84	105.54	113.37
53	3	813	U	N1-C1'-C2'	5.84	120.75	112.00
40	O	30	LYS	O-C-N	5.83	129.23	122.17
35	J	70	MET	N-CA-C	5.83	118.46	110.24
52	a	12	ARG	CA-C-N	-5.83	111.45	120.31
52	a	12	ARG	C-N-CA	-5.83	111.45	120.31
6	g	100	ALA	CA-C-N	-5.80	111.91	120.38
6	g	100	ALA	C-N-CA	-5.80	111.91	120.38
42	Q	43	LYS	N-CA-C	5.80	122.62	109.81
17	r	73	LYS	CA-C-N	-5.79	115.59	123.12
17	r	73	LYS	C-N-CA	-5.79	115.59	123.12
37	L	144	ALA	N-CA-C	-5.79	104.56	111.69
34	I	204	SER	N-CA-C	-5.79	105.11	111.82
12	m	40	ARG	CA-C-O	5.78	128.55	121.56
43	R	46	GLU	CA-C-N	-5.77	111.88	120.94
43	R	46	GLU	C-N-CA	-5.77	111.88	120.94
51	Z	64	ALA	N-CA-C	-5.74	104.26	112.13
8	i	35	MET	N-CA-C	5.74	117.34	111.14

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	f	14	VAL	N-CA-C	5.74	117.01	109.21
40	O	13	PHE	O-C-N	-5.73	115.31	122.24
28	C	48	TYR	N-CA-C	5.72	117.93	108.49
54	1	1074	G	N9-C1'-C2'	5.71	120.57	112.00
50	Y	36	ALA	CA-C-O	5.71	126.60	120.55
21	v	64	VAL	N-CA-C	5.70	116.95	108.23
16	q	100	PHE	CA-C-O	5.70	126.67	119.78
34	I	21	LYS	CA-C-N	-5.70	112.89	120.63
34	I	21	LYS	C-N-CA	-5.70	112.89	120.63
6	g	97	ARG	O-C-N	-5.68	115.04	122.59
34	I	63	ILE	N-CA-C	-5.67	104.99	110.72
41	P	19	VAL	CA-C-O	5.67	126.64	120.57
41	P	32	THR	O-C-N	-5.66	116.69	123.31
9	j	84	ILE	CA-C-N	-5.66	114.10	122.41
9	j	84	ILE	C-N-CA	-5.66	114.10	122.41
52	a	218	MET	N-CA-C	-5.65	103.66	110.44
32	G	219	THR	CA-C-N	-5.63	112.74	120.46
32	G	219	THR	C-N-CA	-5.63	112.74	120.46
44	S	17	ASP	CA-C-N	-5.62	112.03	122.60
44	S	17	ASP	C-N-CA	-5.62	112.03	122.60
36	K	99	ALA	N-CA-C	5.61	117.47	110.91
54	1	2343	U	N1-C1'-C2'	5.60	120.40	112.00
33	H	49	ALA	CA-C-N	-5.59	114.58	122.63
33	H	49	ALA	C-N-CA	-5.59	114.58	122.63
36	K	50	PRO	N-CA-C	5.59	119.99	111.15
36	K	35	LYS	N-CA-C	5.59	117.85	108.96
3	d	157	LEU	CA-C-N	-5.58	112.37	120.29
3	d	157	LEU	C-N-CA	-5.58	112.37	120.29
41	P	56	LYS	CA-C-N	-5.58	115.19	123.11
41	P	56	LYS	C-N-CA	-5.58	115.19	123.11
42	Q	108	ASP	N-CA-C	5.58	118.93	111.24
8	i	56	VAL	O-C-N	5.57	128.47	122.67
54	1	2629	U	N1-C1'-C2'	5.57	120.36	112.00
10	k	113	MET	N-CA-C	5.57	117.35	111.28
7	h	55	VAL	N-CA-C	5.57	116.39	107.98
54	1	1328	A	N9-C1'-C2'	5.57	120.35	112.00
51	Z	54	ARG	N-CA-C	-5.56	105.37	111.82
10	k	39	ILE	CA-C-O	5.55	127.12	121.63
54	1	477	A	N9-C1'-C2'	5.55	120.32	112.00
13	n	2	ARG	N-CA-C	5.54	121.26	113.56
8	i	23	VAL	CA-C-N	-5.54	113.18	121.87
8	i	23	VAL	C-N-CA	-5.54	113.18	121.87

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
36	K	42	TRP	CA-C-N	-5.52	112.99	122.21
36	K	42	TRP	C-N-CA	-5.52	112.99	122.21
38	M	69	ALA	CA-C-N	-5.52	117.31	122.66
38	M	69	ALA	C-N-CA	-5.52	117.31	122.66
2	c	144	GLY	N-CA-C	5.51	116.74	111.67
42	Q	96	THR	CA-C-N	-5.51	115.59	122.48
42	Q	96	THR	C-N-CA	-5.51	115.59	122.48
39	N	42	THR	N-CA-C	5.51	122.54	110.80
6	g	13	GLY	N-CA-C	-5.50	105.60	111.93
40	O	37	ARG	N-CA-C	5.50	116.96	110.97
50	Y	38	ILE	CA-C-N	-5.50	111.96	120.31
50	Y	38	ILE	C-N-CA	-5.50	111.96	120.31
8	i	46	ASP	N-CA-C	5.49	119.47	112.34
56	6	44	A	N9-C1'-C2'	5.48	120.22	112.00
16	q	98	ALA	CA-C-N	-5.47	115.89	122.35
16	q	98	ALA	C-N-CA	-5.47	115.89	122.35
15	p	75	THR	N-CA-C	5.47	117.95	111.33
17	r	41	ILE	CA-C-N	-5.47	113.30	121.72
17	r	41	ILE	C-N-CA	-5.47	113.30	121.72
52	a	172	HIS	CA-C-N	-5.45	112.72	122.32
52	a	172	HIS	C-N-CA	-5.45	112.72	122.32
54	l	1395	A	N9-C1'-C2'	5.45	120.17	112.00
9	j	29	ALA	CA-C-N	-5.45	113.03	120.44
9	j	29	ALA	C-N-CA	-5.45	113.03	120.44
4	e	29	ARG	O-C-N	-5.45	117.38	123.48
9	j	60	ASP	N-CA-C	-5.45	105.65	114.09
58	7	41	A	C2'-C3'-O3'	5.43	121.84	113.70
39	N	64	ILE	N-CA-C	5.43	116.40	108.53
5	f	23	ILE	CA-C-N	-5.42	115.34	122.99
5	f	23	ILE	C-N-CA	-5.42	115.34	122.99
39	N	34	LEU	N-CA-C	5.42	117.61	111.11
34	I	172	VAL	N-CA-C	5.41	115.91	108.12
1	b	41	GLY	O-C-N	5.41	129.03	122.32
54	l	1419	A	N9-C1'-C2'	5.39	120.09	112.00
36	K	15	SER	CA-C-N	-5.38	112.52	120.38
36	K	15	SER	C-N-CA	-5.38	112.52	120.38
54	l	1313	U	N1-C1'-C2'	5.38	120.06	112.00
33	H	11	LEU	N-CA-C	5.37	117.83	111.33
14	o	28	VAL	O-C-N	-5.37	115.86	122.57
23	x	33	HIS	O-C-N	-5.37	116.93	123.10
33	H	57	GLU	CA-C-N	-5.36	116.56	123.16
33	H	57	GLU	C-N-CA	-5.36	116.56	123.16

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
57	4	18	G	C2'-C3'-O3'	5.36	121.75	113.70
1	b	87	SER	N-CA-C	-5.36	106.69	113.18
10	k	61	VAL	CA-C-N	-5.36	113.67	121.71
10	k	61	VAL	C-N-CA	-5.36	113.67	121.71
5	f	13	GLY	CA-C-N	-5.36	113.67	121.71
5	f	13	GLY	C-N-CA	-5.36	113.67	121.71
8	i	36	GLU	O-C-N	5.36	128.86	122.27
51	Z	21	SER	O-C-N	5.35	128.48	122.22
13	n	105	GLY	N-CA-C	5.34	119.14	112.73
54	l	421	C	N1-C1'-C2'	5.34	120.02	112.00
12	m	29	GLY	CA-C-N	-5.34	113.18	122.36
12	m	29	GLY	C-N-CA	-5.34	113.18	122.36
2	c	95	SER	CA-C-N	-5.33	116.35	122.95
2	c	95	SER	C-N-CA	-5.33	116.35	122.95
32	G	63	LYS	CA-C-N	-5.32	114.37	122.04
32	G	63	LYS	C-N-CA	-5.32	114.37	122.04
49	X	64	GLU	N-CA-C	5.32	116.76	111.07
18	s	44	ALA	CA-C-N	-5.32	113.75	120.56
18	s	44	ALA	C-N-CA	-5.32	113.75	120.56
54	l	310	A	N9-C1'-C2'	5.32	119.97	112.00
6	g	49	ALA	N-CA-C	-5.31	102.95	111.02
1	b	205	GLY	N-CA-C	5.29	116.54	111.67
19	t	56	GLU	CA-C-N	-5.29	116.18	122.11
19	t	56	GLU	C-N-CA	-5.29	116.18	122.11
54	l	1064	C	N1-C1'-C2'	5.29	119.93	112.00
24	y	17	GLU	N-CA-C	-5.28	105.69	111.82
50	Y	26	MET	CA-C-N	-5.28	113.20	120.28
50	Y	26	MET	C-N-CA	-5.28	113.20	120.28
54	l	1075	C	N1-C1'-C2'	5.28	119.92	112.00
2	c	144	GLY	CA-C-O	5.27	129.80	120.15
3	d	12	LEU	O-C-N	-5.27	116.52	123.16
28	C	12	SER	N-CA-C	5.27	117.66	110.55
3	d	79	ARG	N-CA-C	-5.26	101.71	109.86
17	r	75	VAL	N-CA-C	5.25	115.55	107.77
38	M	42	GLU	CA-C-O	5.25	125.43	119.18
19	t	55	VAL	N-CA-C	5.25	115.52	108.17
17	r	4	VAL	O-C-N	5.25	128.72	123.10
10	k	39	ILE	O-C-N	-5.25	117.09	123.02
13	n	17	ARG	CA-C-N	-5.24	111.97	121.14
13	n	17	ARG	C-N-CA	-5.24	111.97	121.14
44	S	6	LYS	CA-C-O	5.24	126.10	120.55
20	u	54	PRO	N-CA-C	5.23	123.25	112.47

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
8	i	69	VAL	CA-C-O	-5.22	114.94	120.53
36	K	17	GLN	N-CA-C	5.22	118.96	112.59
48	W	31	TYR	CA-C-N	-5.21	115.69	122.94
48	W	31	TYR	C-N-CA	-5.21	115.69	122.94
2	c	113	SER	N-CA-C	5.20	117.24	110.43
13	n	89	SER	CA-C-O	5.19	124.38	118.47
36	K	52	ASN	N-CA-C	-5.19	105.78	113.40
19	t	91	GLN	N-CA-C	5.19	116.62	109.15
36	K	27	ALA	CA-C-N	-5.15	113.43	120.44
36	K	27	ALA	C-N-CA	-5.15	113.43	120.44
7	h	65	GLU	CA-C-N	-5.15	109.34	122.78
7	h	65	GLU	C-N-CA	-5.15	109.34	122.78
32	G	218	ALA	CA-C-N	-5.14	113.39	120.28
32	G	218	ALA	C-N-CA	-5.14	113.39	120.28
33	H	203	LYS	CA-C-N	-5.14	117.62	122.66
33	H	203	LYS	C-N-CA	-5.14	117.62	122.66
49	X	45	GLY	CA-C-O	5.14	129.51	120.57
4	e	89	THR	O-C-N	-5.13	116.78	122.93
32	G	36	LYS	N-CA-C	-5.12	102.86	113.31
41	P	70	ALA	N-CA-C	-5.12	105.78	111.36
12	m	41	LEU	CA-C-N	-5.12	113.44	120.71
12	m	41	LEU	C-N-CA	-5.12	113.44	120.71
36	K	33	GLU	CA-C-O	5.12	127.43	119.96
14	o	39	VAL	CA-C-N	-5.11	112.77	121.97
14	o	39	VAL	C-N-CA	-5.11	112.77	121.97
14	o	115	LEU	CA-C-N	-5.11	115.20	122.77
14	o	115	LEU	C-N-CA	-5.11	115.20	122.77
58	7	44	G	N9-C1'-C2'	5.11	119.67	112.00
34	I	184	LYS	CA-C-O	5.11	123.10	119.32
54	1	2501	C	N1-C1'-C2'	5.11	119.67	112.00
21	v	62	THR	CA-C-O	5.11	125.77	120.30
35	J	75	LEU	O-C-N	-5.10	117.76	123.48
39	N	41	GLU	N-CA-C	5.10	117.05	108.73
24	y	36	GLN	CA-C-N	-5.09	113.64	120.82
24	y	36	GLN	C-N-CA	-5.09	113.64	120.82
52	a	11	ILE	CA-C-N	-5.08	111.78	121.94
52	a	11	ILE	C-N-CA	-5.08	111.78	121.94
51	Z	23	GLU	N-CA-C	5.07	121.61	110.80
51	Z	27	VAL	CA-C-N	-5.07	111.91	120.58
51	Z	27	VAL	C-N-CA	-5.07	111.91	120.58
34	I	150	LYS	N-CA-C	5.07	116.84	110.91
33	H	142	ARG	CA-C-N	-5.07	112.07	120.68

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
33	H	142	ARG	C-N-CA	-5.07	112.07	120.68
40	O	29	ALA	N-CA-C	-5.06	105.46	111.69
9	j	116	ARG	N-CA-C	-5.06	105.84	111.36
13	n	89	SER	N-CA-C	-5.06	108.38	114.75
41	P	118	ASN	N-CA-C	5.05	116.82	110.91
52	a	196	LEU	N-CA-C	5.05	116.78	111.28
52	a	207	VAL	N-CA-C	-5.05	107.83	112.83
14	o	71	ALA	CA-C-N	-5.04	113.78	120.63
14	o	71	ALA	C-N-CA	-5.04	113.78	120.63
52	a	53	ARG	N-CA-C	-5.04	105.68	111.07
26	A	51	VAL	N-CA-C	5.04	115.18	110.30
47	V	70	LYS	N-CA-C	5.03	117.85	110.30
49	X	65	MET	N-CA-C	5.03	116.68	108.63
32	G	220	VAL	N-CA-C	5.03	115.75	110.62
9	j	30	THR	O-C-N	5.03	127.52	122.09
45	T	10	ILE	N-CA-C	5.02	115.75	110.62
3	d	163	ASN	O-C-N	-5.02	116.31	122.34
9	j	77	HIS	CA-C-N	-5.02	113.92	122.56
9	j	77	HIS	C-N-CA	-5.02	113.92	122.56
52	a	197	LYS	CA-C-N	-5.02	112.36	121.14
52	a	197	LYS	C-N-CA	-5.02	112.36	121.14
11	l	63	LYS	CA-C-N	-5.02	114.33	122.36
11	l	63	LYS	C-N-CA	-5.02	114.33	122.36
6	g	90	LEU	N-CA-C	5.01	118.06	110.64
34	I	37	PRO	N-CA-C	-5.01	108.09	114.35
2	c	95	SER	CA-C-O	5.00	126.03	120.43
8	i	73	PRO	N-CA-C	5.00	116.80	110.70
54	1	1834	U	N1-C1'-C2'	5.00	119.50	112.00

There are no chirality outliers.

All (62) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
54	1	1028	A	Sidechain
54	1	1064	C	Sidechain
54	1	1074	G	Sidechain
54	1	1103	A	Sidechain
54	1	119	A	Sidechain
54	1	1241	A	Sidechain
54	1	1251	C	Sidechain
54	1	1328	A	Sidechain
54	1	1432	G	Sidechain

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Mol	Chain	Res	Type	Group
54	1	1647	U	Sidechain
54	1	1775	U	Sidechain
54	1	1828	G	Sidechain
54	1	1937	A	Sidechain
54	1	196	A	Sidechain
54	1	1996	C	Sidechain
54	1	2061	G	Sidechain
54	1	2109	U	Sidechain
54	1	2180	U	Sidechain
54	1	221	A	Sidechain
54	1	2266	A	Sidechain
54	1	2273	A	Sidechain
54	1	2319	G	Sidechain
54	1	232	G	Sidechain
54	1	2382	G	Sidechain
54	1	2447	G	Sidechain
54	1	2475	C	Sidechain
54	1	2529	G	Sidechain
54	1	2532	G	Sidechain
54	1	2629	U	Sidechain
54	1	2646	C	Sidechain
54	1	2848	G	Sidechain
54	1	328	U	Sidechain
54	1	421	C	Sidechain
54	1	446	G	Sidechain
54	1	450	G	Sidechain
54	1	476	G	Sidechain
54	1	477	A	Sidechain
54	1	500	G	Sidechain
54	1	501	A	Sidechain
54	1	512	G	Sidechain
54	1	562	U	Sidechain
54	1	683	U	Sidechain
54	1	727	A	Sidechain
54	1	800	A	Sidechain
54	1	975	A	Sidechain
55	2	1	U	Sidechain
55	2	119	A	Sidechain
55	2	24	G	Sidechain
53	3	1316	G	Sidechain
53	3	159	G	Sidechain
53	3	411	A	Sidechain

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Mol	Chain	Res	Type	Group
53	3	438	U	Sidechain
53	3	496	A	Sidechain
53	3	532	A	Sidechain
53	3	827	U	Sidechain
53	3	872	A	Sidechain
53	3	898	G	Sidechain
53	3	938	A	Sidechain
53	3	94	G	Sidechain
35	J	92	ARG	Mainchain
6	g	41	LYS	Mainchain
6	g	49	ALA	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	2083	0	2157	134	0
2	c	1565	0	1616	96	0
3	d	1552	0	1619	78	0
4	e	1411	0	1447	93	0
5	f	1323	0	1374	70	0
6	g	936	0	961	73	0
7	h	633	0	666	57	0
8	i	551	0	577	62	0
9	j	1129	0	1162	61	0
10	k	939	0	1012	89	0
11	l	1045	0	1117	69	0
12	m	1074	0	1157	53	0
13	n	961	0	1000	54	0
14	o	892	0	923	62	0
15	p	917	0	965	58	0
16	q	947	0	1022	66	0
17	r	816	0	839	65	0
18	s	857	0	922	47	0
19	t	739	0	807	42	0
20	u	780	0	834	49	0
21	v	753	0	780	55	0
22	w	575	0	592	38	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
23	x	625	0	655	32	0
24	y	509	0	543	33	0
25	z	449	0	491	23	0
26	A	523	0	524	31	0
27	B	444	0	461	32	0
28	C	410	0	440	21	0
29	D	377	0	418	21	0
30	E	504	0	574	36	0
31	F	302	0	343	21	0
32	G	1705	0	1732	121	0
33	H	1625	0	1699	84	0
34	I	1643	0	1710	113	0
35	J	1157	0	1199	83	0
36	K	818	0	808	81	0
37	L	1182	0	1240	70	0
38	M	979	0	1034	51	0
39	N	1022	0	1070	79	0
40	O	787	0	828	73	0
41	P	870	0	878	66	0
42	Q	955	0	1019	76	0
43	R	884	0	944	57	0
44	S	805	0	847	71	0
45	T	714	0	737	45	0
46	U	649	0	666	52	0
47	V	649	0	691	59	0
48	W	536	0	552	37	0
49	X	638	0	665	48	0
50	Y	665	0	714	44	0
51	Z	545	0	579	51	0
52	a	1027	0	1092	77	0
53	3	33012	0	16618	723	0
54	1	62317	0	31346	1400	0
55	2	2568	0	1303	44	0
56	5	1640	0	836	24	0
56	6	1640	0	837	49	0
57	4	390	0	198	8	0
58	7	1647	0	832	32	0
59	5	10	0	10	1	0
All	All	149700	0	100682	4908	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 20.

All (4908) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:1063:G:H1	54:1:1075:C:N4	1.40	1.17
54:1:1300:G:H4'	54:1:1301:A:H5''	1.28	1.15
6:g:9:VAL:HG12	6:g:11:ASN:H	0.97	1.11
42:Q:23:LEU:HD22	42:Q:29:LYS:HD3	1.33	1.06
36:K:3:HIS:H	36:K:92:THR:HG22	1.24	1.02
6:g:9:VAL:HG12	6:g:11:ASN:N	1.75	1.02
14:o:67:ASN:ND2	14:o:69:ASP:HB3	1.74	1.02
45:T:88:ARG:HH22	54:1:714:U:H5''	1.24	1.02
10:k:108:ARG:HA	10:k:113:MET:HE1	1.42	1.00
40:O:51:VAL:HG13	44:S:80:ARG:HB2	1.43	1.00
42:Q:23:LEU:HB3	42:Q:26:CYS:HB3	1.43	1.00
53:3:405:U:H3'	53:3:406:G:H5'	1.43	1.00
54:1:134:G:H2'	54:1:135:U:H5''	1.42	0.99
54:1:45:G:H5''	54:1:46:G:H5'	1.43	0.98
3:d:148:ILE:HD13	3:d:187:VAL:HG21	1.46	0.98
1:b:237:ARG:HH12	54:1:2590:A:H5''	1.28	0.98
53:3:1026:G:H1	53:3:1035:A:H61	1.13	0.97
8:i:20:SER:HB3	8:i:21:PRO:HD3	1.45	0.96
32:G:31:PHE:HB2	32:G:39:ILE:HB	1.45	0.96
34:I:32:LYS:HB3	34:I:35:GLN:HE21	1.28	0.96
56:6:13:C:H2'	56:6:14:A:H5''	1.48	0.96
54:1:1869:G:H3'	54:1:1870:C:H5'	1.48	0.95
25:z:12:ALA:HB2	25:z:53:MET:HE1	1.47	0.95
54:1:1141:U:H4'	54:1:1142:A:O4'	1.67	0.94
34:I:164:ARG:HD2	34:I:165:GLU:H	1.31	0.94
2:c:48:ILE:HG23	2:c:84:LEU:HD21	1.50	0.94
18:s:42:LYS:HB2	54:1:2010:G:H5''	1.49	0.93
33:H:69:THR:HG21	33:H:75:VAL:HG21	1.47	0.93
7:h:60:LEU:HD12	7:h:61:ARG:HG2	1.50	0.93
47:V:46:HIS:HB2	47:V:70:LYS:HD2	1.50	0.92
58:7:13:C:H2'	58:7:14:A:H5''	1.49	0.92
37:L:128:GLU:HG3	37:L:130:LYS:HE2	1.50	0.92
53:3:212:G:H2'	53:3:213:G:H8	1.31	0.91
2:c:47:ALA:HA	2:c:84:LEU:HD23	1.50	0.91
30:E:14:LYS:HD3	30:E:22:LYS:HD3	1.52	0.91
36:K:3:HIS:N	36:K:92:THR:HG22	1.86	0.91
33:H:107:LYS:HD3	33:H:110:LEU:HD12	1.51	0.91
11:l:96:LYS:HG3	11:l:101:ILE:HD11	1.53	0.91
36:K:29:ILE:HD11	36:K:74:LEU:HD22	1.53	0.91
53:3:1259:C:H3'	53:3:1260:G:H5''	1.53	0.91

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:P:28:ASN:ND2	41:P:56:LYS:HD2	1.85	0.90
15:p:90:ALA:HB3	15:p:110:LYS:HB2	1.52	0.90
15:p:59:THR:HG22	15:p:72:VAL:HG12	1.53	0.90
58:7:26:A:N6	58:7:44:G:H1	1.69	0.90
13:n:44:LEU:HD23	13:n:113:ILE:HD13	1.51	0.90
14:o:67:ASN:HD21	14:o:69:ASP:HB3	1.36	0.90
39:N:51:LEU:HB3	39:N:56:MET:HG2	1.53	0.89
4:e:130:GLY:HA3	54:1:2305:U:H5''	1.53	0.89
6:g:6:LEU:HD11	6:g:37:VAL:HG23	1.55	0.89
53:3:412:A:H62	53:3:431:A:H61	1.19	0.89
54:1:1063:G:H22	54:1:1075:C:H5	1.20	0.88
58:7:26:A:H61	58:7:44:G:H1	0.90	0.88
56:6:38:A:H2'	56:6:39:C:H5'	1.55	0.88
1:b:244:VAL:HG12	1:b:250:GLN:HA	1.55	0.87
21:v:72:VAL:HG12	21:v:93:ARG:HA	1.56	0.87
54:1:1061:U:H3'	54:1:1062:G:H5'	1.55	0.87
28:C:5:ARG:HG2	28:C:23:THR:HB	1.55	0.87
23:x:16:ASN:ND2	23:x:26:ARG:HB3	1.89	0.86
54:1:1300:G:H4'	54:1:1301:A:C5'	2.05	0.86
7:h:33:VAL:HG23	7:h:36:ASP:H	1.40	0.86
42:Q:120:ARG:HG3	42:Q:121:PRO:HD2	1.57	0.86
35:J:67:ARG:HH11	35:J:67:ARG:HB2	1.41	0.86
38:M:10:LEU:HD22	38:M:74:ILE:HD11	1.56	0.85
53:3:1502:A:H8	53:3:1505:G:H22	1.18	0.85
5:f:86:LEU:HB2	5:f:130:ILE:HB	1.56	0.85
27:B:53:VAL:HG13	27:B:54:ILE:HD12	1.56	0.85
34:I:32:LYS:HB3	34:I:35:GLN:NE2	1.92	0.85
18:s:4:ILE:HG22	18:s:106:VAL:HG22	1.59	0.85
53:3:1397:C:H42	57:4:22:A:H3'	1.42	0.85
54:1:1300:G:C4'	54:1:1301:A:H5''	2.05	0.85
9:j:26:GLY:HA3	54:1:1140:C:H5'	1.58	0.85
41:P:21:HIS:ND1	53:3:707:U:H4'	1.91	0.85
11:l:85:VAL:HG13	11:l:86:GLU:H	1.41	0.84
35:J:137:ARG:HH12	53:3:1078:U:H4'	1.42	0.84
5:f:34:ARG:HD2	5:f:74:MET:HE3	1.57	0.84
48:W:15:GLU:HG2	53:3:845:A:H5''	1.58	0.84
54:1:1906:G:H2'	54:1:1907:G:H5''	1.59	0.84
10:k:22:ILE:HD11	10:k:40:LYS:HG2	1.57	0.84
54:1:1645:G:H5''	54:1:1646:C:H5'	1.59	0.84
16:q:18:LYS:HA	16:q:21:LYS:NZ	1.93	0.83
54:1:2633:G:H2'	54:1:2634:A:H5''	1.59	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:2297:A:N1	54:1:2321:U:H5	1.77	0.83
53:3:714:G:H2'	53:3:715:A:C8	2.14	0.83
54:1:581:C:H2'	54:1:582:A:C8	2.13	0.83
52:a:23:ILE:HG21	52:a:186:LYS:HG3	1.61	0.82
54:1:1912:A:H62	54:1:1917:U:H3	1.26	0.82
53:3:479:U:H2'	53:3:480:U:H5''	1.59	0.82
53:3:1236:A:H4'	53:3:1304:G:H4'	1.61	0.82
54:1:2508:G:H5'	58:7:74:C:H42	1.44	0.82
36:K:3:HIS:H	36:K:92:THR:CG2	1.93	0.82
54:1:1597:A:H5''	54:1:1598:A:H5'	1.61	0.82
6:g:135:HIS:HB3	6:g:138:VAL:HG22	1.60	0.82
7:h:58:THR:HG21	7:h:82:ILE:H	1.45	0.81
33:H:13:ILE:HG13	33:H:14:VAL:HG23	1.62	0.81
52:a:5:THR:H	52:a:8:MET:HB2	1.45	0.81
54:1:1936:A:H2	54:1:1943:U:H3	1.28	0.81
42:Q:113:ARG:HB2	42:Q:118:VAL:HB	1.62	0.81
43:R:27:THR:HG21	53:3:1328:C:H5''	1.60	0.81
2:c:176:ASP:HB3	2:c:190:LYS:HB3	1.62	0.81
31:F:23:ILE:H	31:F:23:ILE:HD12	1.46	0.81
54:1:2222:C:H2'	54:1:2223:G:H5''	1.60	0.81
55:2:13:G:H21	55:2:16:G:H1'	1.44	0.81
5:f:120:ILE:HD11	5:f:139:VAL:HG12	1.61	0.81
54:1:134:G:C2'	54:1:135:U:H5''	2.11	0.81
42:Q:38:THR:HG22	42:Q:50:LYS:HA	1.61	0.81
8:i:56:VAL:HG21	8:i:68:PHE:HB2	1.63	0.80
3:d:113:VAL:HG22	3:d:118:LEU:HD22	1.61	0.80
6:g:5:LEU:HD21	6:g:9:VAL:HG23	1.61	0.80
53:3:664:G:H22	53:3:741:G:H1	1.27	0.80
23:x:58:ILE:HG12	23:x:66:VAL:HG21	1.63	0.80
49:X:39:ILE:HD13	49:X:65:MET:HB3	1.61	0.80
2:c:108:ASP:OD2	2:c:206:ALA:HA	1.81	0.80
34:I:149:LYS:HG2	34:I:150:LYS:HG3	1.63	0.80
45:T:28:VAL:HG13	45:T:62:ARG:HG3	1.63	0.80
16:q:10:ARG:NH1	16:q:14:LYS:HG3	1.97	0.80
53:3:231:U:H2'	53:3:232:G:H8	1.46	0.80
56:6:74:C:H2'	56:6:75:C:H5''	1.63	0.80
35:J:133:ILE:H	35:J:133:ILE:HD12	1.46	0.80
14:o:64:TYR:HD2	14:o:66:GLY:H	1.29	0.80
30:E:35:LYS:HG2	30:E:39:ARG:HH11	1.47	0.80
51:Z:13:VAL:HG13	51:Z:15:LEU:HG	1.64	0.80
1:b:237:ARG:NH1	54:1:2590:A:H5''	1.97	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:t:12:ARG:HA	24:y:29:ARG:HH12	1.45	0.79
50:Y:56:ILE:HA	50:Y:59:ARG:HH12	1.45	0.79
34:I:149:LYS:HD2	34:I:150:LYS:HE2	1.64	0.79
11:l:29:LYS:HD3	11:l:30:THR:HG23	1.64	0.79
5:f:98:LYS:HG3	5:f:101:VAL:HB	1.63	0.79
24:y:2:LYS:HG3	24:y:3:ALA:H	1.46	0.79
49:X:15:LEU:HD12	49:X:16:LYS:N	1.96	0.79
3:d:131:THR:HG23	54:1:321:U:H5''	1.65	0.78
16:q:54:ARG:HD3	54:1:1155:A:H5''	1.65	0.78
36:K:21:MET:HA	36:K:24:ARG:HD3	1.64	0.78
54:1:2800:A:H3'	54:1:2801:G:H5'	1.65	0.78
3:d:5:LEU:HD13	3:d:11:ALA:HA	1.66	0.78
3:d:112:LEU:HD13	3:d:186:VAL:HG11	1.63	0.78
9:j:27:ARG:HH21	54:1:1142:A:H4'	1.48	0.78
2:c:61:THR:HB	2:c:63:PRO:HD2	1.64	0.78
5:f:136:ASP:HB3	5:f:139:VAL:HG23	1.66	0.78
34:I:144:ILE:HD13	34:I:177:MET:HB3	1.66	0.78
6:g:9:VAL:HG21	6:g:13:GLY:HA3	1.64	0.78
29:D:1:MET:HE1	29:D:3:ARG:HD2	1.65	0.78
54:1:1780:A:H3'	54:1:1781:U:H2'	1.66	0.78
24:y:37:LEU:HD21	24:y:40:SER:HA	1.65	0.78
54:1:858:G:H5'	54:1:859:G:OP2	1.83	0.78
54:1:2246:G:H2'	54:1:2247:A:C8	2.18	0.78
8:i:55:PRO:HG2	8:i:71:LYS:HB2	1.64	0.78
35:J:159:SER:HB2	35:J:162:GLU:HB2	1.66	0.78
43:R:16:ILE:H	43:R:16:ILE:HD12	1.49	0.78
6:g:47:PHE:HA	6:g:51:ARG:HB2	1.64	0.78
39:N:83:THR:HG21	39:N:102:PHE:HB3	1.64	0.78
54:1:2567:G:H2'	54:1:2568:U:C6	2.18	0.78
51:Z:9:GLU:HB2	51:Z:10:PRO:HD3	1.64	0.78
54:1:2446:G:H2'	54:1:2447:G:H5''	1.66	0.77
56:6:46:G:H2'	56:6:47:U:H5'	1.64	0.77
2:c:149:ASN:O	2:c:152:PRO:HD2	1.85	0.77
27:B:27:LEU:HD13	27:B:36:LYS:HE3	1.65	0.77
15:p:77:SER:HB3	15:p:80:VAL:HG23	1.66	0.77
53:3:212:G:H2'	53:3:213:G:C8	2.18	0.77
54:1:655:A:H4'	54:1:656:G:H5'	1.65	0.77
54:1:488:G:H22	54:1:491:G:H5''	1.49	0.77
50:Y:66:ILE:HD12	50:Y:70:LYS:HD3	1.66	0.77
1:b:206:LYS:HB2	54:1:729:G:N7	2.00	0.77
54:1:2391:G:H2'	54:1:2424:C:H41	1.49	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:k:76:VAL:H	15:p:72:VAL:HG22	1.49	0.77
32:G:11:ALA:HB3	32:G:211:LEU:HD22	1.67	0.76
35:J:132:PRO:HG2	35:J:133:ILE:HD12	1.67	0.76
54:1:2439:A:H4'	54:1:2440:C:H5'	1.67	0.76
9:j:109:LEU:HD22	9:j:118:MET:HE2	1.66	0.76
17:r:62:GLU:HB3	17:r:97:LYS:HB3	1.67	0.76
42:Q:53:ARG:NH1	42:Q:53:ARG:HB2	2.01	0.76
53:3:1218:C:H2'	53:3:1219:A:C8	2.19	0.76
1:b:255:LYS:HE3	1:b:269:ARG:HH12	1.49	0.76
50:Y:7:LYS:HD2	50:Y:8:LYS:N	2.01	0.76
54:1:1827:U:H2'	54:1:1828:G:H5'	1.67	0.76
54:1:1857:G:N2	54:1:1884:G:H2'	2.00	0.76
8:i:27:LEU:HB3	8:i:32:VAL:HB	1.67	0.76
36:K:5:GLU:HA	36:K:63:ASN:HA	1.67	0.76
21:v:86:LEU:HD23	21:v:86:LEU:H	1.50	0.76
45:T:63:ARG:HH12	45:T:87:ARG:NH1	1.84	0.76
53:3:960:U:H4'	53:3:961:U:O5'	1.85	0.76
8:i:55:PRO:HD3	8:i:74:PRO:HD3	1.67	0.76
45:T:88:ARG:HG3	54:1:714:U:H5	1.49	0.76
52:a:46:VAL:HB	52:a:171:ILE:HG23	1.67	0.76
41:P:23:HIS:HB3	41:P:30:ILE:HG23	1.68	0.76
46:U:33:ILE:H	46:U:33:ILE:HD12	1.49	0.76
54:1:845:A:N7	54:1:847:U:H1'	2.01	0.76
5:f:34:ARG:HG2	5:f:35:THR:H	1.50	0.75
22:w:8:ASN:HD22	22:w:8:ASN:N	1.81	0.75
37:L:41:ILE:HG21	37:L:115:MET:HE2	1.68	0.75
54:1:593:U:H2'	54:1:594:U:C6	2.21	0.75
54:1:2799:A:H2'	54:1:2800:A:H5'	1.68	0.75
23:x:36:ARG:HG2	23:x:47:THR:HG22	1.67	0.75
42:Q:98:ARG:HE	42:Q:106:VAL:HG22	1.51	0.75
54:1:1053:C:H2'	54:1:1054:A:H5''	1.67	0.75
54:1:1361:G:H2'	54:1:1362:C:C6	2.22	0.75
43:R:84:CYS:O	43:R:88:LEU:HD23	1.86	0.75
43:R:114:PRO:HG3	53:3:1227:A:H2'	1.68	0.75
8:i:29:GLN:NE2	54:1:1096:A:H61	1.85	0.75
29:D:7:PRO:HB2	54:1:1309:G:H4'	1.68	0.75
43:R:58:GLU:HA	43:R:61:LYS:HZ3	1.51	0.75
12:m:69:PRO:HA	12:m:94:ALA:HB2	1.68	0.75
32:G:173:LYS:HA	32:G:176:ASN:ND2	2.00	0.75
54:1:2071:A:H2'	54:1:2072:C:C6	2.21	0.75
54:1:2074:U:H2'	54:1:2075:U:C6	2.22	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:i:8:VAL:HG12	8:i:10:LEU:HD22	1.69	0.75
19:t:64:LYS:HA	19:t:79:ASP:OD2	1.87	0.75
32:G:101:THR:HG22	32:G:174:GLU:OE2	1.87	0.75
54:1:2553:G:H3'	54:1:2554:U:H5''	1.69	0.75
54:1:2834:G:H2'	54:1:2879:A:H61	1.51	0.75
53:3:1305:G:H22	53:3:1331:G:H2'	1.52	0.74
9:j:80:HIS:ND1	9:j:81:ILE:HG12	2.02	0.74
6:g:97:ARG:HD2	54:1:2220:U:H4'	1.67	0.74
7:h:26:VAL:HB	7:h:82:ILE:HD12	1.70	0.74
24:y:54:LYS:NZ	54:1:72:U:H5'	2.02	0.74
4:e:64:PRO:HA	4:e:88:VAL:HG22	1.69	0.74
11:l:108:ALA:HB3	11:l:125:LEU:HD11	1.70	0.74
56:6:58:A:H1'	56:6:60:U:OP2	1.87	0.74
54:1:1697:G:H3'	54:1:1698:A:H5''	1.67	0.74
54:1:1817:G:N2	54:1:1818:U:H1'	2.01	0.74
55:2:65:U:H3'	55:2:108:A:H61	1.51	0.74
12:m:40:ARG:HB3	12:m:40:ARG:HH21	1.51	0.74
27:B:11:LYS:HA	27:B:14:MET:HE3	1.68	0.74
37:L:132:THR:O	37:L:135:LYS:HG2	1.88	0.74
44:S:9:GLU:O	44:S:13:VAL:HG23	1.88	0.74
44:S:25:GLU:HA	44:S:28:ALA:HB3	1.70	0.74
12:m:136:MET:HE1	21:v:76:ASP:HA	1.69	0.74
53:3:252:U:O2	53:3:252:U:H2'	1.88	0.74
54:1:1508:A:H2'	54:1:1509:A:O4'	1.88	0.74
7:h:50:VAL:HG13	54:1:1082:U:OP1	1.87	0.74
32:G:173:LYS:HA	32:G:176:ASN:HD22	1.52	0.74
37:L:140:VAL:O	37:L:144:ALA:N	2.20	0.74
50:Y:41:GLY:HA2	50:Y:85:LEU:HD21	1.68	0.74
47:V:20:ILE:HG23	47:V:45:VAL:HB	1.70	0.74
5:f:88:LEU:HB2	5:f:128:THR:HB	1.71	0.73
35:J:113:VAL:HG13	35:J:114:LEU:HD22	1.70	0.73
54:1:1539:U:H2'	54:1:1540:G:H8	1.53	0.73
7:h:37:LYS:HD2	7:h:37:LYS:C	2.13	0.73
15:p:20:ARG:HB2	15:p:112:ARG:HH12	1.53	0.73
17:r:78:ARG:HH12	54:1:990:A:H61	1.35	0.73
20:u:39:ASN:HB3	20:u:62:ALA:HB3	1.69	0.73
32:G:135:MET:HE3	32:G:138:ARG:HB2	1.68	0.73
51:Z:49:ALA:HA	53:3:723:U:O4	1.88	0.73
24:y:50:VAL:HG12	24:y:54:LYS:HE2	1.70	0.73
48:W:47:ARG:HB2	48:W:50:TYR:HD2	1.53	0.73
28:C:8:ILE:HD12	28:C:50:GLU:HG3	1.69	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:T:20:ASP:OD2	45:T:23:SER:HB3	1.89	0.73
45:T:32:THR:HG21	45:T:84:LEU:HD11	1.70	0.73
56:6:46:G:C2'	56:6:47:U:H5'	2.18	0.73
34:I:6:PRO:HG3	53:3:430:A:H4'	1.70	0.73
54:1:1326:U:H2'	54:1:1327:A:H8	1.52	0.73
21:v:35:GLU:HB2	21:v:93:ARG:NH1	2.02	0.73
53:3:1477:U:H2'	53:3:1478:U:C6	2.23	0.73
56:6:11:A:H2'	56:6:12:G:C8	2.23	0.73
13:n:63:ARG:HH22	54:1:1454:C:H5'	1.54	0.73
17:r:28:ALA:HB3	17:r:31:GLU:HB2	1.69	0.73
52:a:11:ILE:HA	52:a:33:LEU:HD22	1.69	0.73
54:1:1857:G:H22	54:1:1884:G:H2'	1.53	0.73
54:1:2700:A:H2'	54:1:2701:U:C6	2.23	0.73
54:1:2731:G:H2'	54:1:2732:G:C8	2.24	0.73
19:t:67:VAL:HG22	19:t:76:ARG:HG3	1.70	0.73
34:I:97:LEU:O	34:I:101:VAL:HG23	1.88	0.73
37:L:68:VAL:HG23	37:L:99:ALA:HB1	1.71	0.73
50:Y:56:ILE:HA	50:Y:59:ARG:NH1	2.04	0.73
9:j:57:LEU:HD21	9:j:130:HIS:HB3	1.69	0.73
19:t:70:HIS:HB3	19:t:73:ARG:HB3	1.70	0.73
1:b:107:LYS:HG3	1:b:108:GLY:H	1.53	0.72
16:q:57:ARG:HA	16:q:60:TRP:CE3	2.24	0.72
31:F:31:PRO:HB3	54:1:2527:C:H5''	1.71	0.72
33:H:133:MET:HG3	33:H:150:VAL:HG21	1.69	0.72
42:Q:85:ARG:HG2	42:Q:87:LYS:H	1.54	0.72
27:B:51:ARG:NH2	27:B:53:VAL:HB	2.04	0.72
46:U:67:ILE:H	46:U:67:ILE:HD12	1.54	0.72
53:3:46:G:OP1	53:3:307:C:H4'	1.88	0.72
53:3:614:C:H2'	53:3:615:G:H5''	1.69	0.72
53:3:1306:A:H61	53:3:1331:G:H1'	1.55	0.72
17:r:71:LYS:HA	17:r:90:ARG:HG2	1.69	0.72
35:J:10:LEU:HD12	35:J:11:GLN:N	2.04	0.72
53:3:1323:G:H2'	53:3:1324:A:C8	2.24	0.72
17:r:81:LYS:HA	17:r:81:LYS:HE2	1.71	0.72
36:K:46:GLN:HA	36:K:56:LYS:HG2	1.70	0.72
2:c:35:THR:HG22	2:c:73:VAL:HG21	1.71	0.72
30:E:41:ARG:HA	30:E:44:ARG:HH12	1.54	0.72
54:1:2591:C:H2'	54:1:2592:G:H8	1.54	0.72
2:c:40:LEU:HD12	2:c:41:ALA:N	2.04	0.72
57:4:18:G:H4'	57:4:19:C:H5'	1.71	0.72
12:m:55:ARG:HE	54:1:2469:A:H4'	1.53	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:O:14:ASP:HB2	40:O:17:LEU:HB3	1.69	0.72
40:O:86:ALA:O	40:O:90:LEU:HD12	1.90	0.72
54:1:799:G:H5''	54:1:800:A:H2'	1.72	0.72
53:3:40:C:H2'	53:3:41:G:C8	2.25	0.72
53:3:45:G:H2'	53:3:46:G:C8	2.24	0.72
54:1:528:A:N1	54:1:2042:A:H2'	2.04	0.72
54:1:1564:C:H2'	54:1:1565:C:C6	2.25	0.72
54:1:1702:G:H2'	54:1:1703:G:H5''	1.71	0.72
1:b:156:SER:HB2	54:1:1818:U:H5'	1.71	0.72
14:o:41:ALA:HB2	14:o:46:GLU:OE2	1.90	0.72
42:Q:98:ARG:HB2	42:Q:116:TYR:HA	1.71	0.72
54:1:2849:U:H4'	54:1:2868:A:C2	2.24	0.72
53:3:207:C:H3'	53:3:208:U:H5''	1.72	0.71
9:j:37:ARG:NH2	9:j:110:PRO:HG3	2.05	0.71
53:3:572:A:H5''	53:3:917:G:H4'	1.72	0.71
53:3:1347:G:H22	53:3:1373:G:H2'	1.55	0.71
1:b:44:ASN:ND2	54:1:1812:U:H1'	2.05	0.71
1:b:227:VAL:HG21	54:1:784:G:C6	2.25	0.71
1:b:244:VAL:HA	1:b:251:THR:HG22	1.71	0.71
45:T:88:ARG:HH22	54:1:714:U:C5'	2.02	0.71
54:1:1906:G:C2'	54:1:1907:G:H5''	2.19	0.71
3:d:149:ILE:HD11	3:d:172:ALA:HA	1.72	0.71
3:d:195:GLN:O	3:d:199:MET:HG3	1.90	0.71
25:z:9:THR:HG21	25:z:55:LYS:HG3	1.72	0.71
33:H:19:SER:HB3	33:H:21:TRP:HE1	1.54	0.71
35:J:54:GLU:HG2	35:J:56:PRO:HD2	1.71	0.71
42:Q:3:VAL:O	42:Q:7:VAL:HG23	1.90	0.71
54:1:1341:G:H5''	54:1:1397:U:O2	1.90	0.71
39:N:58:GLU:H	39:N:59:LYS:HZ3	1.37	0.71
54:1:1469:A:H2'	54:1:1470:A:C8	2.25	0.71
58:7:3:G:H4'	58:7:4:C:OP1	1.90	0.71
21:v:68:LYS:HE2	21:v:68:LYS:HA	1.72	0.71
51:Z:66:ARG:HG3	53:3:1167:A:C6	2.26	0.71
53:3:946:A:H2'	53:3:947:G:H8	1.54	0.71
21:v:32:GLY:HA3	21:v:93:ARG:HB3	1.73	0.71
34:I:8:LEU:HD11	34:I:21:LYS:HD3	1.72	0.71
12:m:12:MET:HA	54:1:910:A:H62	1.54	0.71
15:p:91:VAL:HG21	15:p:96:LEU:HD21	1.73	0.71
54:1:1104:C:H2'	54:1:1105:U:C6	2.25	0.71
54:1:1278:C:H2'	54:1:1279:G:C8	2.26	0.71
39:N:8:THR:OG1	39:N:84:ARG:HD2	1.91	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:f:44:HIS:HA	5:f:49:LEU:HD23	1.73	0.70
6:g:112:LYS:NZ	54:1:2220:U:H5''	2.05	0.70
29:D:24:THR:HG23	29:D:27:GLY:H	1.56	0.70
34:I:59:LYS:O	34:I:63:ILE:HG13	1.90	0.70
38:M:10:LEU:HD12	38:M:76:ARG:HB2	1.73	0.70
54:1:1859:U:H2'	54:1:1860:G:H8	1.55	0.70
17:r:79:ARG:HG2	17:r:80:ARG:HD3	1.73	0.70
20:u:93:ARG:HD2	20:u:102:ILE:HD12	1.73	0.70
32:G:153:MET:HE1	32:G:157:PRO:HG3	1.73	0.70
43:R:101:THR:HG21	53:3:1226:C:OP2	1.91	0.70
46:U:9:HIS:O	46:U:16:PHE:HB3	1.91	0.70
58:7:13:C:C2'	58:7:14:A:H5''	2.21	0.70
32:G:185:ILE:HD11	32:G:201:GLY:HA3	1.72	0.70
40:O:28:THR:HA	40:O:31:ARG:HG2	1.73	0.70
54:1:1801:A:H5''	54:1:2203:U:H2'	1.72	0.70
17:r:79:ARG:HG2	17:r:80:ARG:HE	1.57	0.70
24:y:23:ARG:HB3	24:y:24:GLU:OE1	1.91	0.70
34:I:24:VAL:H	53:3:409:U:H5''	1.56	0.70
54:1:1672:A:C2	54:1:2582:G:H5'	2.27	0.70
54:1:2222:C:C2'	54:1:2223:G:H5''	2.21	0.70
19:t:12:ARG:HA	24:y:29:ARG:NH1	2.07	0.70
54:1:2066:C:O2'	54:1:2067:G:H5'	1.90	0.70
54:1:2811:G:H2'	54:1:2812:G:H8	1.56	0.70
21:v:48:MET:O	21:v:51:GLN:HG2	1.92	0.70
39:N:129:ARG:NH2	56:5:33:U:H3'	2.06	0.70
54:1:1278:C:H2'	54:1:1279:G:H8	1.56	0.70
12:m:105:MET:HE1	12:m:108:VAL:HG21	1.72	0.70
16:q:10:ARG:HH12	16:q:14:LYS:HG3	1.57	0.70
42:Q:72:ASN:HD21	42:Q:103:CYS:HA	1.56	0.70
43:R:28:ARG:HG2	43:R:62:PHE:CD2	2.27	0.70
54:1:1186:G:H2'	54:1:1187:G:O4'	1.91	0.70
42:Q:23:LEU:HB2	42:Q:29:LYS:HG3	1.72	0.70
45:T:84:LEU:HD22	45:T:86:LEU:HD23	1.74	0.70
54:1:969:G:H2'	54:1:970:U:C6	2.26	0.70
29:D:12:ARG:HE	29:D:44:VAL:HG21	1.56	0.69
37:L:78:ARG:HH11	53:3:1382:C:H5'	1.57	0.69
38:M:6:ILE:HD11	38:M:31:LEU:HD11	1.73	0.69
7:h:27:VAL:HG13	7:h:83:ALA:HB3	1.72	0.69
7:h:37:LYS:HG2	7:h:41:LEU:HD12	1.74	0.69
17:r:80:ARG:HG2	17:r:80:ARG:HH11	1.57	0.69
53:3:1218:C:H2'	53:3:1219:A:H8	1.57	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:2508:G:H1	54:1:2580:U:H3	1.38	0.69
54:1:2811:G:H2'	54:1:2812:G:C8	2.28	0.69
22:w:62:LYS:HG3	22:w:81:GLU:HG3	1.73	0.69
54:1:121:G:H4'	54:1:149:A:H5'	1.74	0.69
54:1:2345:G:N3	54:1:2381:A:H2'	2.07	0.69
56:6:73:A:H3'	56:6:74:C:H5''	1.74	0.69
12:m:45:GLN:CD	12:m:125:PRO:HD3	2.17	0.69
19:t:39:THR:HG23	19:t:42:GLU:H	1.58	0.69
41:P:36:ARG:NH1	41:P:36:ARG:HB3	2.06	0.69
54:1:878:A:H2'	54:1:879:G:O4'	1.92	0.69
54:1:2278:A:H3'	54:1:2279:G:H5''	1.74	0.69
4:e:1:ALA:HB1	4:e:4:HIS:HB3	1.73	0.69
9:j:17:VAL:HA	9:j:55:ILE:HG23	1.72	0.69
11:l:13:LYS:HA	11:l:13:LYS:HE2	1.75	0.69
24:y:46:VAL:O	24:y:50:VAL:HG23	1.93	0.69
32:G:17:HIS:CG	32:G:18:GLN:H	2.11	0.69
42:Q:45:ASN:HB2	53:3:529:G:O6	1.91	0.69
52:a:11:ILE:HG23	52:a:33:LEU:HD13	1.75	0.69
53:3:1251:A:O2'	53:3:1370:G:H5'	1.93	0.69
53:3:1347:G:N2	53:3:1373:G:H2'	2.08	0.69
54:1:807:U:H2'	54:1:808:G:H8	1.55	0.69
5:f:18:ILE:HG13	5:f:44:HIS:HB2	1.74	0.69
9:j:21:THR:HG23	9:j:61:LYS:HG2	1.74	0.69
16:q:49:ARG:HH22	17:r:72:VAL:HG12	1.56	0.69
34:I:25:ARG:HH22	34:I:30:LYS:HD3	1.57	0.69
44:S:47:LEU:HD21	53:3:1317:C:H4'	1.74	0.69
54:1:2223:G:H2'	54:1:2224:G:H5'	1.72	0.69
54:1:2356:U:H2'	54:1:2357:G:H5''	1.75	0.69
1:b:20:ASN:HB3	1:b:23:LEU:HD23	1.74	0.69
10:k:104:THR:O	10:k:107:LEU:HD23	1.92	0.69
30:E:61:LEU:HD12	30:E:61:LEU:O	1.92	0.69
36:K:49:TYR:CE1	48:W:65:SER:HA	2.28	0.69
46:U:12:LYS:HD2	53:3:393:A:OP2	1.92	0.69
53:3:205:A:H2'	53:3:206:C:O4'	1.92	0.69
54:1:2834:G:O2'	54:1:2835:A:H5'	1.92	0.69
2:c:4:LEU:HD11	2:c:100:LEU:HD21	1.74	0.69
2:c:123:LYS:HG2	2:c:165:MET:HE1	1.72	0.69
17:r:38:VAL:HB	17:r:59:ILE:HD11	1.74	0.69
4:e:114:ARG:HH11	43:R:70:ARG:HD3	1.56	0.69
20:u:31:GLY:O	20:u:66:VAL:HG23	1.93	0.69
33:H:2:GLN:HG3	53:3:1191:A:OP1	1.93	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:1105:U:H2'	54:1:1106:G:H8	1.57	0.69
4:e:122:ASP:OD2	4:e:126:ASN:HB2	1.92	0.68
49:X:18:VAL:O	49:X:22:VAL:HG23	1.93	0.68
54:1:371:A:H61	54:1:401:A:H3'	1.58	0.68
54:1:740:C:H6	54:1:740:C:H5'	1.57	0.68
4:e:37:MET:HE1	4:e:52:ALA:HB1	1.74	0.68
26:A:57:VAL:HA	49:X:66:VAL:HG21	1.75	0.68
54:1:2246:G:H2'	54:1:2247:A:H8	1.58	0.68
2:c:7:LYS:HD3	2:c:77:ARG:HH22	1.57	0.68
54:1:2800:A:H3'	54:1:2801:G:C5'	2.23	0.68
53:3:57:G:H2'	53:3:58:C:H6	1.58	0.68
54:1:1020:A:H1'	54:1:1021:A:OP2	1.94	0.68
1:b:28:PRO:HG2	1:b:33:LEU:HD11	1.75	0.68
40:O:47:GLU:HG3	53:3:1254:A:OP1	1.94	0.68
54:1:971:G:H2'	54:1:972:A:O4'	1.92	0.68
35:J:64:GLU:HB3	35:J:68:ARG:HH12	1.59	0.68
51:Z:39:LYS:HG2	51:Z:43:GLU:HB3	1.75	0.68
53:3:352:C:H4'	53:3:354:G:OP1	1.93	0.68
6:g:8:LYS:O	6:g:9:VAL:HG23	1.94	0.68
8:i:10:LEU:HD12	8:i:23:VAL:HG12	1.74	0.68
36:K:75:GLU:HA	36:K:78:PHE:HD2	1.58	0.68
50:Y:29:THR:HG21	53:3:1457:G:H5''	1.74	0.68
54:1:2452:C:H42	54:1:2504:U:H3	1.41	0.68
58:7:43:U:H2'	58:7:44:G:C8	2.28	0.68
4:e:1:ALA:O	4:e:5:ASP:N	2.22	0.68
11:l:85:VAL:HG13	11:l:86:GLU:N	2.08	0.68
32:G:33:ALA:HB3	32:G:37:VAL:HG13	1.75	0.68
37:L:110:ARG:HD2	37:L:122:GLU:OE2	1.94	0.68
44:S:5:MET:HE3	44:S:8:ARG:HB3	1.74	0.68
53:3:207:C:H2'	53:3:208:U:H4'	1.75	0.68
54:1:1469:A:H2'	54:1:1470:A:H8	1.59	0.68
2:c:101:PHE:HD1	2:c:104:VAL:HG21	1.59	0.68
17:r:14:VAL:HG21	17:r:98:ILE:HG13	1.76	0.68
35:J:37:VAL:HG11	35:J:113:VAL:HG23	1.75	0.68
34:I:54:LEU:HD23	34:I:55:ARG:HH12	1.59	0.68
43:R:52:ILE:HG22	43:R:56:ARG:HH12	1.57	0.68
54:1:1536:C:H4'	54:1:1537:G:C2	2.28	0.68
13:n:106:ASP:OD1	13:n:108:ALA:HB2	1.93	0.67
37:L:56:SER:HB3	37:L:59:GLU:OE1	1.93	0.67
43:R:78:ARG:O	43:R:82:LEU:HG	1.93	0.67
54:1:1872:A:H2'	54:1:1873:G:O4'	1.94	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:d:131:THR:HG22	3:d:160:ALA:HA	1.76	0.67
4:e:162:ASP:O	4:e:166:ARG:HG3	1.93	0.67
9:j:27:ARG:NH2	54:1:1142:A:H4'	2.09	0.67
18:s:29:VAL:HG23	18:s:69:LEU:O	1.93	0.67
54:1:2070:A:H2'	54:1:2071:A:H8	1.59	0.67
4:e:35:LEU:HD22	4:e:60:SER:HB2	1.76	0.67
37:L:112:ASP:HB2	37:L:118:ARG:HG2	1.77	0.67
40:O:54:SER:OG	40:O:58:ASN:HB2	1.94	0.67
53:3:1275:A:H2'	53:3:1276:G:O4'	1.93	0.67
54:1:1837:C:H2'	54:1:1899:A:H61	1.59	0.67
11:l:69:ARG:HB3	11:l:69:ARG:NH1	2.09	0.67
14:o:9:ARG:HD2	14:o:10:ARG:N	2.09	0.67
51:Z:24:LYS:HG3	51:Z:25:ALA:H	1.59	0.67
8:i:14:ALA:HB1	8:i:38:CYS:SG	2.34	0.67
12:m:28:PHE:HB2	12:m:104:GLU:OE1	1.95	0.67
15:p:6:GLN:O	15:p:9:GLN:HG2	1.94	0.67
16:q:45:ALA:O	16:q:49:ARG:HD2	1.95	0.67
17:r:27:ILE:HG21	17:r:63:VAL:HG21	1.76	0.67
18:s:95:ARG:C	18:s:96:ILE:HD12	2.20	0.67
39:N:18:VAL:HG11	39:N:82:ILE:HD13	1.76	0.67
44:S:15:LEU:HD12	44:S:53:ASP:HB2	1.76	0.67
53:3:235:C:H2'	53:3:236:A:H8	1.60	0.67
54:1:528:A:C2	54:1:2042:A:H2'	2.30	0.67
51:Z:5:VAL:HG12	51:Z:16:ARG:HH11	1.59	0.67
54:1:1045:C:H5'	54:1:1046:A:H5'	1.77	0.67
54:1:2502:G:H5'	54:1:2503:A:H5''	1.77	0.67
14:o:80:GLU:O	14:o:84:GLU:HG3	1.95	0.67
40:O:65:TYR:HD1	44:S:97:LYS:HA	1.60	0.67
35:J:45:VAL:O	35:J:70:MET:HE3	1.94	0.67
56:6:38:A:C2'	56:6:39:C:H5'	2.23	0.67
13:n:8:ARG:HB3	13:n:43:GLU:CD	2.20	0.67
50:Y:2:ASN:HB3	50:Y:3:ILE:HD12	1.77	0.67
53:3:915:A:H2'	53:3:916:U:H5'	1.77	0.67
55:2:65:U:H3'	55:2:108:A:N6	2.10	0.67
3:d:47:LYS:HE3	3:d:51:GLU:HB3	1.75	0.66
20:u:5:ARG:HD2	20:u:93:ARG:HH12	1.60	0.66
37:L:94:ARG:HG2	37:L:98:LEU:HD13	1.76	0.66
37:L:96:ASN:HD22	37:L:100:MET:HE3	1.59	0.66
37:L:104:VAL:O	37:L:108:ARG:HG2	1.94	0.66
51:Z:65:ARG:NE	53:3:1088:G:H4'	2.10	0.66
54:1:612:G:C2	54:1:614:A:H1'	2.30	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:2875:C:H2'	54:1:2876:G:H8	1.60	0.66
9:j:97:PRO:HG2	9:j:98:GLU:OE1	1.95	0.66
15:p:63:ILE:HA	15:p:68:GLY:HA2	1.78	0.66
32:G:124:THR:HA	32:G:127:LYS:HG2	1.76	0.66
35:J:132:PRO:O	35:J:136:VAL:HG23	1.96	0.66
47:V:60:ILE:HG23	47:V:72:TRP:HB3	1.77	0.66
53:3:350:G:H2'	53:3:351:G:C8	2.30	0.66
1:b:256:THR:HG22	54:1:1798:U:H5'	1.76	0.66
35:J:14:LEU:HA	35:J:36:THR:HG22	1.77	0.66
18:s:3:THR:HG22	18:s:58:ALA:HA	1.77	0.66
54:1:2391:G:H2'	54:1:2424:C:N4	2.10	0.66
8:i:3:LYS:HG3	8:i:4:VAL:H	1.60	0.66
17:r:79:ARG:HG2	17:r:80:ARG:NE	2.11	0.66
53:3:57:G:H2'	53:3:58:C:C6	2.29	0.66
53:3:479:U:C2'	53:3:480:U:H5''	2.26	0.66
54:1:708:G:H2'	54:1:709:U:C6	2.31	0.66
54:1:2070:A:H2'	54:1:2071:A:C8	2.30	0.66
6:g:11:ASN:ND2	6:g:12:LEU:H	1.94	0.66
17:r:63:VAL:HA	17:r:96:VAL:HG12	1.78	0.66
30:E:6:VAL:HG23	30:E:60:CYS:O	1.95	0.66
33:H:5:HIS:HB3	44:S:88:MET:HE3	1.77	0.66
43:R:28:ARG:HH21	43:R:62:PHE:HB2	1.61	0.66
54:1:581:C:H2'	54:1:582:A:H8	1.58	0.66
54:1:947:A:H2'	54:1:948:C:C6	2.30	0.66
17:r:21:ARG:C	17:r:22:LEU:HD12	2.21	0.66
53:3:40:C:H2'	53:3:41:G:H8	1.59	0.66
54:1:2508:G:H5'	58:7:74:C:N4	2.10	0.66
9:j:47:HIS:CD2	54:1:536:G:H21	2.14	0.66
24:y:2:LYS:HG3	24:y:3:ALA:N	2.11	0.66
36:K:38:ARG:O	36:K:39:LEU:HD22	1.95	0.66
45:T:5:GLU:O	45:T:9:LYS:HG3	1.96	0.66
54:1:644:A:H2'	54:1:645:C:C4'	2.26	0.66
3:d:130:LYS:HA	3:d:130:LYS:HE2	1.78	0.66
7:h:4:ASN:HA	7:h:7:ASP:OD2	1.96	0.66
16:q:57:ARG:NH1	16:q:61:ILE:HD11	2.11	0.66
29:D:26:ASN:O	29:D:30:VAL:HG23	1.95	0.66
37:L:129:ASN:HA	37:L:134:VAL:HG21	1.77	0.66
50:Y:66:ILE:HG23	50:Y:70:LYS:HB3	1.77	0.66
58:7:27:A:H2'	58:7:28:C:C6	2.31	0.66
19:t:40:LYS:NZ	54:1:1598:A:H5''	2.11	0.65
12:m:40:ARG:HH21	12:m:40:ARG:CB	2.09	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:o:56:LYS:HD2	14:o:57:ALA:N	2.11	0.65
14:o:60:GLU:HG3	14:o:61:GLN:HG3	1.78	0.65
34:I:164:ARG:HD2	34:I:165:GLU:N	2.06	0.65
54:1:690:G:H2'	54:1:691:C:H6	1.61	0.65
54:1:2248:C:C2'	54:1:2249:U:H5'	2.26	0.65
56:6:32:C:O2'	56:6:33:U:H5'	1.97	0.65
1:b:16:VAL:HB	1:b:203:VAL:HG12	1.78	0.65
1:b:119:VAL:HG13	1:b:133:ASN:OD1	1.96	0.65
4:e:72:SER:OG	4:e:79:ARG:HA	1.96	0.65
18:s:85:ILE:HG23	18:s:94:ASP:O	1.97	0.65
32:G:46:VAL:HG12	32:G:50:ASN:HD21	1.60	0.65
38:M:88:LYS:HG3	38:M:89:ASP:N	2.10	0.65
47:V:31:PRO:HG2	47:V:32:ILE:HD12	1.78	0.65
53:3:355:C:H3'	53:3:356:A:H5''	1.77	0.65
54:1:1684:G:H2'	54:1:1685:C:C6	2.31	0.65
1:b:39:SER:O	1:b:41:GLY:N	2.29	0.65
35:J:67:ARG:HB2	35:J:67:ARG:NH1	2.12	0.65
53:3:1513:A:H2'	53:3:1514:G:H8	1.62	0.65
56:6:51:C:H42	56:6:63:G:H22	1.44	0.65
4:e:141:ASP:O	4:e:142:TYR:HB3	1.96	0.65
6:g:110:VAL:HG21	6:g:114:GLU:HB2	1.77	0.65
12:m:125:PRO:HG2	12:m:126:ILE:HG13	1.78	0.65
13:n:2:ARG:HG2	13:n:2:ARG:O	1.95	0.65
43:R:113:LYS:HG3	43:R:114:PRO:HD3	1.79	0.65
54:1:2297:A:N1	54:1:2321:U:C5	2.63	0.65
53:3:29:U:O2'	53:3:30:U:H5'	1.96	0.65
18:s:11:ARG:HD3	54:1:1322:A:OP1	1.97	0.65
22:w:32:ILE:HD12	22:w:32:ILE:N	2.12	0.65
35:J:110:MET:HE1	35:J:126:ALA:HB2	1.77	0.65
35:J:154:ALA:O	35:J:155:LYS:HG2	1.95	0.65
39:N:6:TYR:OH	53:3:1148:U:H5'	1.95	0.65
53:3:505:G:H2'	53:3:506:G:C8	2.31	0.65
42:Q:11:ARG:NH2	53:3:564:C:OP2	2.30	0.65
48:W:12:PHE:CD2	48:W:13:THR:HG22	2.31	0.65
54:1:1132:U:H2'	54:1:1133:A:C8	2.32	0.65
54:1:2122:U:H3	54:1:2176:A:H61	1.44	0.65
1:b:159:THR:HG22	1:b:176:ARG:HG2	1.78	0.65
4:e:147:ARG:HG3	4:e:148:VAL:H	1.60	0.65
7:h:41:LEU:HD22	7:h:54:VAL:HG11	1.79	0.65
22:w:14:ALA:HB1	54:1:2271:G:H5''	1.79	0.65
44:S:5:MET:HE2	44:S:62:ARG:HE	1.62	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:2051:A:H5'	54:1:2578:G:O4'	1.97	0.65
54:1:2591:C:H2'	54:1:2592:G:C8	2.31	0.65
56:6:66:C:H2'	56:6:67:C:H4'	1.79	0.65
12:m:40:ARG:HB3	12:m:40:ARG:NH2	2.11	0.65
34:I:129:VAL:HG13	34:I:131:ILE:HG12	1.79	0.65
47:V:28:VAL:HG22	47:V:29:LYS:H	1.62	0.65
49:X:44:ILE:HG23	49:X:61:VAL:O	1.96	0.65
54:1:274:C:H2'	54:1:275:C:O4'	1.96	0.65
54:1:1503:A:C3'	54:1:1504:A:H5''	2.26	0.65
54:1:1539:U:H2'	54:1:1540:G:C8	2.32	0.65
14:o:4:LYS:HE2	14:o:8:ILE:HD11	1.79	0.64
14:o:90:VAL:HG23	14:o:117:PHE:HB3	1.78	0.64
17:r:79:ARG:HG2	17:r:80:ARG:CD	2.27	0.64
34:I:24:VAL:CG2	53:3:409:U:H4'	2.27	0.64
38:M:14:ARG:HH11	38:M:14:ARG:HG3	1.63	0.64
50:Y:8:LYS:O	50:Y:11:ILE:HG12	1.96	0.64
52:a:163:TYR:HB2	52:a:171:ILE:HD11	1.78	0.64
54:1:1883:U:H2'	54:1:1884:G:O4'	1.97	0.64
2:c:173:GLN:HE22	2:c:208:LYS:HE3	1.62	0.64
21:v:63:ILE:HD12	21:v:72:VAL:HG21	1.78	0.64
24:y:39:GLN:HB3	24:y:41:HIS:CE1	2.32	0.64
26:A:16:CYS:SG	26:A:37:CYS:HB3	2.38	0.64
34:I:151:GLN:HB2	53:3:437:U:H5''	1.79	0.64
40:O:53:ILE:HG13	44:S:84:ARG:NE	2.12	0.64
45:T:23:SER:HA	53:3:751:U:H4'	1.79	0.64
49:X:52:ASN:CG	49:X:53:GLY:H	2.04	0.64
53:3:1349:A:H1'	53:3:1374:A:N6	2.11	0.64
54:1:275:C:H3'	54:1:276:U:H5''	1.79	0.64
54:1:886:A:H2'	54:1:887:U:H4'	1.78	0.64
54:1:1807:G:H2'	54:1:1808:A:H5'	1.79	0.64
54:1:2222:C:C3'	54:1:2223:G:H5''	2.26	0.64
1:b:174:ARG:HE	1:b:180:MET:CE	2.11	0.64
10:k:113:MET:O	10:k:116:ILE:HG12	1.96	0.64
19:t:6:ARG:O	19:t:10:VAL:HG23	1.98	0.64
5:f:29:ASN:HB3	5:f:78:VAL:HA	1.78	0.64
6:g:79:THR:HG21	6:g:147:VAL:HG23	1.78	0.64
9:j:99:ARG:HH11	9:j:99:ARG:HG3	1.62	0.64
54:1:287:G:H2'	54:1:288:U:C6	2.32	0.64
54:1:1061:U:H3'	54:1:1062:G:C5'	2.25	0.64
54:1:1681:G:N3	54:1:1762:A:H2'	2.13	0.64
54:1:2432:A:H1'	56:6:75:C:H4'	1.79	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:2455:G:H2'	54:1:2456:C:C6	2.33	0.64
56:6:49:G:H1	56:6:65:C:H42	1.43	0.64
41:P:111:ASP:HB3	51:Z:3:ILE:HG23	1.79	0.64
54:1:2051:A:H8	54:1:2051:A:OP2	1.79	0.64
54:1:2281:A:O2'	54:1:2282:G:H5'	1.97	0.64
54:1:2633:G:C2'	54:1:2634:A:H5''	2.28	0.64
1:b:199:HIS:ND1	1:b:202:ARG:HD2	2.12	0.64
26:A:37:CYS:SG	26:A:40:CYS:HB3	2.38	0.64
34:I:8:LEU:HB2	53:3:430:A:OP1	1.97	0.64
34:I:14:GLU:OE1	34:I:58:GLN:HG2	1.96	0.64
36:K:66:ALA:HB1	36:K:67:PRO:HD2	1.78	0.64
40:O:65:TYR:HB3	44:S:95:LEU:HD11	1.80	0.64
52:a:40:GLU:O	52:a:178:VAL:HG23	1.98	0.64
54:1:2393:U:H2'	54:1:2394:C:O4'	1.97	0.64
54:1:2875:C:H2'	54:1:2876:G:C8	2.33	0.64
4:e:115:GLY:C	4:e:177:ARG:HG3	2.23	0.64
19:t:40:LYS:HZ3	54:1:1598:A:H5''	1.61	0.64
19:t:58:VAL:HG13	19:t:85:VAL:HG22	1.79	0.64
42:Q:87:LYS:O	42:Q:87:LYS:HD3	1.98	0.64
44:S:47:LEU:HD12	44:S:50:LEU:HD12	1.78	0.64
28:C:37:LYS:HB2	28:C:48:TYR:CE2	2.32	0.64
54:1:639:U:H2'	54:1:640:C:C6	2.33	0.64
54:1:786:C:O2'	54:1:787:C:H5'	1.98	0.64
54:1:1796:U:H2'	54:1:1797:G:H8	1.63	0.64
3:d:137:LYS:O	3:d:141:MET:HG3	1.98	0.64
20:u:32:LYS:HB3	20:u:63:ALA:HB1	1.79	0.64
25:z:4:ILE:HD11	25:z:58:GLU:HG2	1.79	0.64
53:3:551:U:H2'	53:3:552:U:C6	2.33	0.64
54:1:1353:A:H2'	54:1:1354:A:C8	2.33	0.64
56:6:66:C:C2	56:6:67:C:H1'	2.33	0.64
2:c:43:ASP:OD1	54:1:2784:U:H4'	1.98	0.64
28:C:12:SER:HA	28:C:48:TYR:HD1	1.63	0.64
39:N:10:ARG:HG3	39:N:105:ARG:HH21	1.62	0.64
39:N:47:VAL:HG23	39:N:48:ARG:H	1.63	0.64
39:N:105:ARG:O	39:N:105:ARG:HD3	1.98	0.64
45:T:38:LEU:HD23	45:T:42:PHE:HE2	1.63	0.64
54:1:1869:G:H3'	54:1:1870:C:C5'	2.26	0.64
56:6:67:C:O2	56:6:67:C:H2'	1.98	0.64
5:f:154:GLU:OE1	5:f:157:LYS:HB2	1.98	0.63
21:v:86:LEU:H	21:v:86:LEU:CD2	2.11	0.63
32:G:29:PHE:O	32:G:30:ILE:HG23	1.97	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:G:46:VAL:HG12	32:G:50:ASN:ND2	2.12	0.63
53:3:1040:U:H2'	53:3:1041:G:H8	1.63	0.63
54:1:1173:U:H1'	54:1:1177:G:N2	2.13	0.63
10:k:87:LEU:HB2	10:k:92:GLU:O	1.99	0.63
19:t:12:ARG:CZ	24:y:29:ARG:HH11	2.10	0.63
26:A:64:PHE:CE1	49:X:8:PRO:HD2	2.34	0.63
54:1:473:G:O2'	54:1:474:G:H5'	1.98	0.63
4:e:3:LEU:HD11	4:e:103:ILE:HD11	1.80	0.63
5:f:10:VAL:HG23	5:f:48:THR:HA	1.80	0.63
46:U:5:ARG:HB2	53:3:376:G:H5''	1.79	0.63
54:1:1361:G:H2'	54:1:1362:C:H6	1.62	0.63
3:d:18:THR:HA	3:d:106:LYS:HG3	1.80	0.63
8:i:56:VAL:HG23	8:i:69:VAL:O	1.97	0.63
33:H:55:VAL:HB	33:H:66:THR:HB	1.81	0.63
33:H:145:ALA:HA	33:H:203:LYS:NZ	2.13	0.63
49:X:15:LEU:O	49:X:19:GLU:HG2	1.97	0.63
51:Z:19:LYS:HG3	51:Z:20:ARG:N	2.14	0.63
53:3:235:C:H2'	53:3:236:A:C8	2.33	0.63
54:1:2373:G:H2'	54:1:2374:C:C6	2.34	0.63
19:t:14:PRO:HD2	24:y:33:ALA:HB1	1.79	0.63
20:u:3:LYS:C	20:u:4:ILE:HD12	2.24	0.63
20:u:86:PHE:CE1	20:u:91:LYS:HG2	2.34	0.63
25:z:56:VAL:HG22	25:z:58:GLU:HG3	1.81	0.63
31:F:23:ILE:HD12	31:F:23:ILE:N	2.14	0.63
35:J:15:ILE:HD12	35:J:15:ILE:N	2.12	0.63
48:W:11:ARG:HG3	48:W:47:ARG:HH12	1.63	0.63
34:I:164:ARG:CD	34:I:165:GLU:H	2.10	0.63
39:N:74:GLN:O	39:N:78:ILE:HG13	1.98	0.63
46:U:38:PHE:CE1	46:U:51:ARG:HB3	2.33	0.63
53:3:4:U:H5''	53:3:5:U:OP1	1.98	0.63
53:3:848:C:H2'	53:3:849:G:H5''	1.81	0.63
53:3:865:A:H2'	53:3:866:C:C6	2.34	0.63
54:1:215:G:H4'	54:1:216:A:H4'	1.79	0.63
54:1:577:G:H2'	54:1:578:G:C8	2.33	0.63
2:c:116:LYS:HD2	13:n:1:MET:HE1	1.80	0.63
2:c:149:ASN:HB3	54:1:2572:A:OP2	1.98	0.63
4:e:42:ALA:HB2	4:e:49:LEU:HB2	1.81	0.63
53:3:662:U:H2'	53:3:663:A:C8	2.34	0.63
54:1:2404:U:H2'	54:1:2405:G:O4'	1.98	0.63
1:b:174:ARG:HE	1:b:180:MET:HE2	1.62	0.63
22:w:10:ARG:HD2	54:1:2279:G:N7	2.14	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:y:15:ASN:O	24:y:19:LEU:HG	1.99	0.63
33:H:200:TRP:C	33:H:201:ILE:HD12	2.24	0.63
35:J:40:ASP:OD2	35:J:42:ASN:HB3	1.99	0.63
36:K:46:GLN:HB2	36:K:56:LYS:HE2	1.80	0.63
53:3:505:G:H2'	53:3:506:G:H8	1.63	0.63
54:1:1744:A:H3'	54:1:1745:A:H8	1.63	0.63
1:b:164:VAL:HG21	1:b:174:ARG:HG3	1.80	0.63
13:n:10:LEU:O	13:n:12:ARG:HG3	1.98	0.63
41:P:110:THR:HG22	51:Z:4:LYS:HG3	1.79	0.63
54:1:503:A:H4'	54:1:505:A:H5''	1.79	0.63
54:1:1503:A:H3'	54:1:1504:A:H5''	1.79	0.63
6:g:132:PHE:CD2	6:g:142:VAL:HG21	2.34	0.62
15:p:112:ARG:HG2	15:p:114:ASN:ND2	2.14	0.62
53:3:1392:G:H2'	53:3:1393:U:C6	2.33	0.62
55:2:23:G:H2'	55:2:24:G:C8	2.34	0.62
7:h:33:VAL:HA	54:1:1055:G:H4'	1.80	0.62
10:k:17:ARG:HB3	10:k:45:GLU:HG3	1.81	0.62
26:A:46:GLY:HA2	26:A:49:ARG:HH21	1.62	0.62
39:N:35:GLU:HA	39:N:39:GLY:HA3	1.80	0.62
41:P:124:LYS:HE3	53:3:780:A:H5''	1.80	0.62
53:3:335:C:H2'	53:3:336:A:H8	1.65	0.62
54:1:2333:A:H5'	54:1:2335:A:H1'	1.81	0.62
8:i:14:ALA:HA	8:i:17:ALA:HB3	1.80	0.62
8:i:54:ILE:HG13	8:i:71:LYS:O	2.00	0.62
10:k:69:VAL:HG23	10:k:77:ILE:HD13	1.81	0.62
11:l:58:TYR:O	30:E:12:ARG:HD2	1.99	0.62
39:N:17:ARG:HH22	53:3:1129:C:H4'	1.64	0.62
41:P:126:ARG:HH21	53:3:692:U:H5''	1.65	0.62
42:Q:86:VAL:HG23	42:Q:88:ASP:H	1.61	0.62
50:Y:59:ARG:O	50:Y:63:LYS:HG2	1.98	0.62
53:3:946:A:H2'	53:3:947:G:C8	2.33	0.62
53:3:1040:U:H2'	53:3:1041:G:C8	2.35	0.62
7:h:13:ALA:O	7:h:17:GLU:HG3	1.99	0.62
16:q:87:VAL:HG12	16:q:89:ILE:HG22	1.81	0.62
20:u:10:VAL:HG12	20:u:71:ILE:HA	1.81	0.62
25:z:35:VAL:HG22	25:z:36:GLU:H	1.64	0.62
36:K:32:ALA:O	36:K:33:GLU:HB2	2.00	0.62
42:Q:23:LEU:HB3	42:Q:26:CYS:CB	2.24	0.62
46:U:39:PHE:CE2	46:U:41:PRO:HB3	2.34	0.62
53:3:406:G:H2'	53:3:407:U:C6	2.35	0.62
53:3:412:A:N6	53:3:431:A:H61	1.93	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:917:A:H5''	54:1:2268:A:H61	1.65	0.62
54:1:1028:A:H2'	54:1:1029:A:C8	2.34	0.62
54:1:2230:G:H2'	54:1:2231:U:C6	2.34	0.62
54:1:2392:A:H3'	54:1:2392:A:OP2	1.99	0.62
55:2:60:C:H2'	55:2:61:G:H8	1.64	0.62
1:b:65:ASP:HB2	1:b:101:ARG:HD3	1.81	0.62
13:n:99:LYS:HE2	54:1:2816:G:O3'	1.99	0.62
31:F:25:VAL:HB	31:F:35:GLN:HG2	1.82	0.62
33:H:87:ARG:NH1	33:H:99:GLN:HA	2.14	0.62
42:Q:11:ARG:HD2	53:3:562:U:H1'	1.82	0.62
53:3:406:G:H2'	53:3:407:U:H6	1.63	0.62
54:1:2174:C:O2	54:1:2174:C:H2'	2.00	0.62
56:6:39:C:H2'	56:6:40:C:C6	2.34	0.62
9:j:34:ARG:HB2	9:j:39:LYS:HB2	1.82	0.62
22:w:33:ILE:HD12	22:w:33:ILE:N	2.15	0.62
25:z:40:THR:HG23	25:z:43:ILE:H	1.64	0.62
34:I:110:ARG:HG2	34:I:110:ARG:HH11	1.65	0.62
40:O:83:THR:HA	40:O:86:ALA:HB3	1.81	0.62
51:Z:17:ARG:HD2	53:3:1539:C:H5''	1.80	0.62
54:1:118:A:OP2	54:1:119:A:H5''	2.00	0.62
1:b:42:ARG:HH12	54:1:691:C:H1'	1.65	0.62
1:b:207:ALA:HB2	54:1:1790:C:O2'	2.00	0.62
12:m:46:ILE:HD12	12:m:69:PRO:HG3	1.80	0.62
16:q:93:ILE:HD12	17:r:13:ARG:HB2	1.82	0.62
32:G:68:PHE:HD2	32:G:83:ALA:HB2	1.65	0.62
34:I:66:VAL:HG13	34:I:70:GLN:OE1	1.99	0.62
45:T:5:GLU:HG3	45:T:9:LYS:HE3	1.81	0.62
53:3:459:A:H2'	53:3:460:A:H8	1.63	0.62
54:1:310:A:C2'	54:1:311:A:H5''	2.30	0.62
54:1:2243:U:H2'	54:1:2244:U:C6	2.34	0.62
4:e:59:ILE:HD11	4:e:140:ILE:HD11	1.81	0.62
5:f:90:GLY:HA3	5:f:93:TYR:CD2	2.34	0.62
9:j:30:THR:HG21	54:1:1005:C:O2'	1.99	0.62
53:3:772:U:H2'	53:3:773:G:C8	2.35	0.62
54:1:1669:A:H2'	54:1:1670:C:H5'	1.81	0.62
56:6:36:U:H3	57:4:13:A:H61	1.48	0.62
1:b:62:ARG:NH1	1:b:84:PRO:HD2	2.14	0.62
6:g:25:TYR:O	6:g:30:LEU:HD13	2.00	0.62
7:h:38:MET:O	7:h:42:ARG:HB2	2.00	0.62
18:s:103:ILE:HD12	18:s:103:ILE:N	2.15	0.62
20:u:94:PHE:HE2	20:u:96:LYS:HD3	1.65	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:B:31:LYS:HG3	27:B:32:THR:N	2.14	0.62
32:G:206:ILE:HG13	32:G:207:ARG:H	1.65	0.62
37:L:141:HIS:O	37:L:145:GLU:HG3	1.99	0.62
41:P:124:LYS:O	51:Z:34:ARG:NE	2.33	0.62
53:3:1019:A:H2'	53:3:1020:G:O4'	2.00	0.62
4:e:2:LYS:HE2	4:e:100:GLU:OE1	2.00	0.62
7:h:56:ARG:H	54:1:1084:A:H5''	1.64	0.62
21:v:21:ARG:HG3	21:v:21:ARG:HH11	1.63	0.62
32:G:35:ASN:O	32:G:36:LYS:HB2	2.00	0.62
33:H:59:PRO:HG2	33:H:62:SER:HB3	1.81	0.62
34:I:90:LEU:HD13	34:I:194:ILE:HD11	1.80	0.62
40:O:9:ARG:HH12	53:3:1279:G:H5''	1.65	0.62
54:1:189:G:H2'	54:1:205:G:N2	2.14	0.62
54:1:222:A:H61	54:1:232:G:H1'	1.65	0.62
54:1:2792:A:H3'	54:1:2793:C:H5''	1.80	0.62
56:5:17:C:H5''	56:5:17(A):U:H2'	1.81	0.62
6:g:11:ASN:CG	6:g:12:LEU:H	2.08	0.61
21:v:18:ARG:HH11	21:v:18:ARG:HG3	1.64	0.61
34:I:119:HIS:HA	53:3:439:U:H5'	1.82	0.61
34:I:187:ARG:HD2	34:I:190:LEU:HD12	1.81	0.61
48:W:33:THR:HG23	48:W:36:GLY:H	1.65	0.61
48:W:60:ARG:O	48:W:64:LEU:HD23	2.00	0.61
54:1:548:G:H2'	54:1:549:G:O4'	1.99	0.61
54:1:894:U:H2'	54:1:895:U:C6	2.35	0.61
54:1:1019:U:H3	54:1:1142:A:H62	1.46	0.61
54:1:2282:G:H21	54:1:2390:U:H3	1.47	0.61
54:1:2533:U:H2'	54:1:2534:A:O4'	2.00	0.61
17:r:38:VAL:HG11	17:r:57:GLY:HA3	1.82	0.61
22:w:46:ASN:HB3	22:w:59:ALA:HB3	1.82	0.61
34:I:123:MET:HA	34:I:128:VAL:HA	1.82	0.61
39:N:89:TYR:HB3	39:N:93:LEU:HD23	1.81	0.61
40:O:44:THR:HG23	40:O:69:THR:O	2.00	0.61
43:R:28:ARG:HE	43:R:62:PHE:HB2	1.65	0.61
53:3:355:C:C3'	53:3:356:A:H5''	2.30	0.61
53:3:947:G:H2'	53:3:948:C:C6	2.35	0.61
54:1:1746:A:H2'	54:1:1747:U:C6	2.35	0.61
56:6:73:A:C3'	56:6:74:C:H5''	2.30	0.61
4:e:140:ILE:HG22	4:e:142:TYR:H	1.62	0.61
8:i:4:VAL:HG11	54:1:1099:G:OP1	2.00	0.61
10:k:76:VAL:H	15:p:72:VAL:CG2	2.13	0.61
34:I:85:THR:HB	35:J:102:THR:HG21	1.82	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:L:102:TRP:CD1	37:L:136:LYS:HG2	2.35	0.61
45:T:88:ARG:HG3	54:1:714:U:C5	2.34	0.61
46:U:70:ARG:NH2	53:3:451:A:H5'	2.15	0.61
46:U:70:ARG:NH1	53:3:452:A:H1'	2.15	0.61
53:3:1502:A:H5'	53:3:1504:G:N7	2.14	0.61
54:1:322:A:H5'	54:1:340:A:H1'	1.82	0.61
54:1:614:A:O2'	54:1:615:U:H5''	2.00	0.61
54:1:2567:G:H2'	54:1:2568:U:H6	1.64	0.61
2:c:170:VAL:HG21	54:1:2679:A:H5'	1.81	0.61
11:l:78:ARG:CZ	11:l:113:ALA:HB1	2.31	0.61
17:r:1:MET:O	17:r:1:MET:HE3	1.99	0.61
20:u:36:GLU:HA	20:u:61:GLU:HG2	1.82	0.61
33:H:145:ALA:HA	33:H:203:LYS:HZ3	1.65	0.61
40:O:39:PRO:HA	40:O:73:LEU:O	2.00	0.61
54:1:419:U:H2'	54:1:420:C:C6	2.35	0.61
54:1:1802:A:H2'	54:1:1803:A:C8	2.35	0.61
54:1:2273:A:H2'	54:1:2274:A:C8	2.35	0.61
54:1:2556:C:H2'	54:1:2557:G:O4'	2.00	0.61
4:e:124:ARG:NH2	54:1:2316:G:H4'	2.16	0.61
36:K:40:GLU:HB3	36:K:61:LEU:HD23	1.82	0.61
36:K:67:PRO:HG2	36:K:70:VAL:HB	1.81	0.61
53:3:518:C:H4'	53:3:519:C:H5''	1.82	0.61
54:1:1430:G:H2'	54:1:1431:A:C8	2.36	0.61
54:1:1474:U:H2'	54:1:1475:G:H5'	1.81	0.61
3:d:21:ARG:HD2	3:d:106:LYS:HE3	1.81	0.61
8:i:18:ASN:N	8:i:19:PRO:HD3	2.14	0.61
9:j:7:LYS:O	9:j:11:VAL:HG23	2.00	0.61
29:D:31:LEU:HG	29:D:42:LEU:HD21	1.82	0.61
39:N:90:ASP:CG	39:N:91:GLU:H	2.09	0.61
54:1:1906:G:C3'	54:1:1907:G:H5''	2.30	0.61
3:d:24:ASN:O	3:d:28:VAL:HG23	2.01	0.61
28:C:12:SER:HA	28:C:48:TYR:CD1	2.34	0.61
30:E:14:LYS:HB3	30:E:22:LYS:CG	2.30	0.61
35:J:108:GLY:O	35:J:109:ALA:HB3	1.99	0.61
47:V:11:VAL:HG22	47:V:20:ILE:HD11	1.83	0.61
52:a:26:ALA:HB1	52:a:214:ILE:HD11	1.83	0.61
53:3:131:A:H2'	53:3:132:C:C6	2.35	0.61
53:3:516:U:H3	53:3:533:A:H62	1.49	0.61
37:L:9:ARG:NH1	37:L:9:ARG:HB2	2.16	0.61
47:V:39:ARG:HH21	53:3:280:C:H1'	1.65	0.61
53:3:955:U:H3	53:3:1225:A:H61	1.46	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:1810:A:H2'	54:1:1811:G:O4'	2.01	0.61
54:1:1838:C:N4	54:1:1898:U:H2'	2.16	0.61
1:b:237:ARG:HD2	54:1:2591:C:OP1	2.01	0.61
6:g:40:THR:H	6:g:43:ASN:HB2	1.66	0.61
16:q:4:LYS:O	16:q:5:ARG:HG2	2.01	0.61
22:w:35:ARG:HD2	22:w:54:THR:HG22	1.82	0.61
32:G:217:ALA:O	32:G:220:VAL:HG22	2.00	0.61
47:V:16:MET:HE2	53:3:276:G:H5'	1.83	0.61
53:3:1342:C:H2'	53:3:1343:G:H8	1.64	0.61
54:1:340:A:H2'	54:1:341:C:O4'	2.01	0.61
54:1:2861:U:H2'	54:1:2862:G:H8	1.66	0.61
1:b:145:MET:HG3	1:b:152:GLN:OE1	2.01	0.61
5:f:103:ASN:C	5:f:104:LEU:HD12	2.25	0.61
25:z:52:PHE:CD2	55:2:83:G:H4'	2.35	0.61
27:B:15:ARG:HH11	54:1:1265:A:H3'	1.66	0.61
32:G:99:MET:HA	32:G:106:VAL:HG21	1.83	0.61
45:T:88:ARG:NH2	54:1:714:U:H5''	2.07	0.60
49:X:69:LYS:HD2	53:3:1320:C:OP1	2.01	0.60
53:3:335:C:H2'	53:3:336:A:C8	2.35	0.60
53:3:458:U:H2'	53:3:459:A:C8	2.36	0.60
53:3:769:G:H4'	53:3:1513:A:H4'	1.83	0.60
54:1:672:C:O2'	54:1:673:C:H5'	2.01	0.60
54:1:2339:C:H2'	54:1:2340:A:H8	1.66	0.60
54:1:2758:A:H2'	54:1:2759:G:H5'	1.83	0.60
44:S:7:ALA:O	44:S:10:VAL:HG12	2.00	0.60
52:a:38:PHE:HB3	54:1:2127:G:H5'	1.84	0.60
52:a:65:LEU:HD13	52:a:188:ASN:OD1	2.01	0.60
53:3:38:G:H1	53:3:397:A:H5'	1.65	0.60
53:3:651:C:H2'	53:3:652:U:C6	2.36	0.60
54:1:488:G:N2	54:1:491:G:H5''	2.16	0.60
54:1:704:G:H1'	54:1:727:A:H61	1.66	0.60
54:1:969:G:H2'	54:1:970:U:H6	1.67	0.60
54:1:2469:A:H8	54:1:2469:A:H5'	1.65	0.60
1:b:144:GLU:HA	1:b:151:GLY:HA2	1.83	0.60
5:f:163:TYR:HB2	5:f:166:GLU:HB3	1.83	0.60
8:i:12:VAL:HA	8:i:53:PRO:HB3	1.83	0.60
13:n:72:ASP:OD2	13:n:75:ILE:HG12	2.01	0.60
36:K:29:ILE:HD12	36:K:29:ILE:H	1.66	0.60
38:M:29:SER:O	38:M:33:VAL:HG23	2.01	0.60
53:3:459:A:H2'	53:3:460:A:C8	2.36	0.60
53:3:1274:A:O2'	53:3:1275:A:H5''	2.01	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:742:A:H2'	54:1:743:A:H8	1.66	0.60
1:b:141:HIS:CD2	1:b:194:VAL:HG22	2.36	0.60
2:c:194:PRO:HA	54:1:2680:U:H5'	1.81	0.60
3:d:40:ARG:HG2	54:1:443:A:N7	2.16	0.60
11:l:70:LYS:HD2	54:1:633:A:H5''	1.83	0.60
19:t:51:PHE:O	19:t:53:VAL:HG13	2.02	0.60
22:w:62:LYS:O	22:w:78:ILE:HG23	2.01	0.60
32:G:19:THR:HG23	32:G:20:ARG:N	2.16	0.60
52:a:47:ASN:OD1	52:a:170:ILE:HG12	2.01	0.60
5:f:101:VAL:HG13	5:f:114:HIS:O	2.01	0.60
11:l:79:LEU:HG	11:l:111:ILE:O	2.02	0.60
13:n:107:ASN:ND2	54:1:2009:A:H4'	2.17	0.60
16:q:32:ARG:NH2	54:1:1252:G:H1'	2.17	0.60
21:v:76:ASP:H	21:v:90:ASP:HB2	1.67	0.60
33:H:90:VAL:HA	33:H:93:ILE:HD12	1.82	0.60
37:L:92:PRO:O	37:L:95:ARG:HG2	2.01	0.60
37:L:142:ARG:HH11	37:L:142:ARG:HG3	1.67	0.60
50:Y:43:LYS:HG2	50:Y:86:ALA:HB3	1.82	0.60
53:3:502:A:H2'	53:3:503:C:C6	2.36	0.60
54:1:687:C:H6	54:1:687:C:H5'	1.65	0.60
11:l:23:ILE:HD12	11:l:23:ILE:N	2.17	0.60
38:M:95:MET:HE2	38:M:99:GLY:HA3	1.83	0.60
44:S:41:TRP:HE1	49:X:10:ILE:HD11	1.66	0.60
53:3:422:C:H4'	53:3:423:G:C2	2.36	0.60
53:3:1435:G:H2'	53:3:1436:U:C6	2.36	0.60
53:3:1513:A:H2'	53:3:1514:G:C8	2.36	0.60
54:1:720:U:H2'	54:1:721:A:H8	1.66	0.60
54:1:1590:A:H2'	54:1:1591:A:H8	1.65	0.60
54:1:2704:C:H2'	54:1:2705:A:O4'	2.01	0.60
18:s:19:LEU:HD11	27:B:19:ASP:O	2.01	0.60
21:v:79:ARG:HA	21:v:86:LEU:HA	1.84	0.60
47:V:58:VAL:HG12	47:V:77:VAL:HG12	1.84	0.60
50:Y:53:MET:O	50:Y:57:VAL:HG23	2.02	0.60
52:a:4:LEU:HB3	52:a:9:ARG:HG3	1.83	0.60
52:a:4:LEU:HD11	52:a:12:ARG:HH21	1.67	0.60
53:3:505:G:H5'	53:3:534:U:H2'	1.82	0.60
54:1:522:A:H2'	54:1:523:C:C6	2.37	0.60
11:l:125:LEU:HG	11:l:126:ARG:H	1.67	0.60
16:q:32:ARG:HH22	54:1:1252:G:H1'	1.66	0.60
33:H:87:ARG:HH12	33:H:99:GLN:HA	1.66	0.60
45:T:7:THR:O	45:T:11:VAL:HG23	2.02	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:V:17:GLU:OE1	53:3:273:U:H1'	2.02	0.60
47:V:35:LYS:HG3	47:V:36:PHE:H	1.67	0.60
54:1:1035:U:H2'	54:1:1036:G:H8	1.67	0.60
54:1:1258:U:H2'	54:1:1259:G:H8	1.67	0.60
54:1:2329:U:H2'	54:1:2330:G:C8	2.37	0.60
54:1:2339:C:H2'	54:1:2340:A:C8	2.37	0.60
54:1:2743:U:H2'	54:1:2744:G:H5''	1.83	0.60
2:c:11:MET:CE	54:1:2681:C:H4'	2.32	0.60
10:k:102:PRO:HB3	10:k:121:GLU:HB3	1.84	0.60
37:L:65:LEU:O	37:L:69:ARG:HG3	2.02	0.60
52:a:17:ALA:HB1	54:1:2105:U:C5'	2.32	0.60
54:1:1353:A:H2'	54:1:1354:A:H8	1.66	0.60
55:2:66:A:H5''	55:2:67:G:OP1	2.02	0.60
7:h:30:SER:O	54:1:1054:A:H4'	2.02	0.60
14:o:63:LYS:NZ	55:2:51:G:H5'	2.16	0.60
39:N:98:ARG:HG3	39:N:103:VAL:HG21	1.84	0.60
42:Q:113:ARG:HH21	42:Q:121:PRO:CD	2.14	0.60
49:X:30:LEU:HD11	49:X:46:LEU:HD13	1.84	0.60
54:1:833:A:H2'	54:1:834:G:H8	1.66	0.60
56:6:55:U:H2'	56:6:57:A:OP2	2.01	0.60
8:i:29:GLN:HE22	54:1:1096:A:H61	1.49	0.59
13:n:8:ARG:HB3	13:n:43:GLU:OE2	2.00	0.59
14:o:94:ARG:NH2	54:1:2293:G:H5''	2.17	0.59
36:K:18:VAL:CG1	36:K:19:PRO:HD3	2.32	0.59
54:1:1432:G:H2'	54:1:1433:A:C8	2.36	0.59
16:q:63:ARG:HH11	16:q:63:ARG:HG3	1.67	0.59
21:v:73:LYS:HB3	21:v:92:VAL:HG13	1.84	0.59
53:3:77:A:H2'	53:3:78:A:C8	2.36	0.59
54:1:365:U:H2'	54:1:366:C:C6	2.37	0.59
6:g:97:ARG:HA	6:g:112:LYS:CD	2.32	0.59
25:z:35:VAL:HG22	25:z:36:GLU:N	2.17	0.59
33:H:102:ILE:HD12	33:H:102:ILE:N	2.18	0.59
52:a:7:ARG:HA	52:a:10:VAL:HG23	1.83	0.59
53:3:918:A:H2'	53:3:919:A:C8	2.37	0.59
53:3:1369:C:H2'	53:3:1370:G:C8	2.37	0.59
54:1:680:C:H2'	54:1:681:G:C8	2.37	0.59
10:k:97:THR:O	10:k:118:LEU:HD13	2.03	0.59
14:o:33:ARG:HB2	55:2:52:A:N6	2.17	0.59
25:z:37:ARG:NH2	54:1:929:U:H4'	2.17	0.59
34:I:92:LEU:HD12	34:I:135:GLN:HE21	1.67	0.59
52:a:23:ILE:CG2	52:a:186:LYS:HG3	2.32	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:265:G:H2'	53:3:267:C:H5	1.67	0.59
54:1:306:U:H2'	54:1:307:G:O4'	2.02	0.59
54:1:825:A:H2'	54:1:826:U:C6	2.37	0.59
54:1:1484:U:H2'	54:1:1485:U:C6	2.37	0.59
54:1:1859:U:H2'	54:1:1860:G:C8	2.37	0.59
54:1:2662:A:H2'	54:1:2663:G:O4'	2.01	0.59
21:v:77:VAL:HG23	21:v:89:ILE:HG12	1.84	0.59
32:G:47:PRO:O	32:G:51:GLU:HG3	2.02	0.59
40:O:101:SER:C	40:O:102:LEU:HD12	2.28	0.59
15:p:51:ASN:O	54:1:2845:U:H5''	2.02	0.59
16:q:49:ARG:HD2	16:q:49:ARG:H	1.67	0.59
39:N:79:ARG:O	39:N:83:THR:HG23	2.01	0.59
35:J:67:ARG:HH11	35:J:67:ARG:CB	2.14	0.59
40:O:6:ILE:HG23	40:O:101:SER:O	2.02	0.59
44:S:45:LEU:HD12	44:S:48:GLN:NE2	2.17	0.59
53:3:26:A:N6	53:3:558:G:H1'	2.17	0.59
54:1:1384:A:H1'	54:1:1405:U:H1'	1.84	0.59
54:1:1426:G:H1'	54:1:1572:A:N6	2.18	0.59
54:1:1817:G:C2	54:1:1818:U:H1'	2.37	0.59
54:1:2557:G:H2'	54:1:2558:C:C6	2.37	0.59
2:c:125:TRP:CD1	2:c:160:LYS:HB3	2.38	0.59
4:e:107:VAL:O	4:e:110:ILE:HG22	2.02	0.59
16:q:49:ARG:HH22	17:r:72:VAL:CG1	2.15	0.59
33:H:89:VAL:O	33:H:93:ILE:HG13	2.02	0.59
52:a:213:SER:HA	52:a:223:ALA:HA	1.85	0.59
53:3:731:G:OP1	53:3:766:A:H1'	2.03	0.59
54:1:189:G:H2'	54:1:205:G:H22	1.68	0.59
54:1:404:A:H1'	54:1:406:G:C4	2.37	0.59
54:1:1999:C:H1'	54:1:2687:U:O2'	2.02	0.59
19:t:33:LYS:HE3	19:t:80:TRP:CE3	2.37	0.59
32:G:17:HIS:CE1	32:G:18:GLN:HG2	2.38	0.59
34:I:40:HIS:NE2	53:3:511:C:O2'	2.26	0.59
51:Z:34:ARG:HH11	51:Z:34:ARG:HG3	1.68	0.59
54:1:155:A:H2'	54:1:156:A:H8	1.68	0.59
54:1:2298:A:H2'	54:1:2299:U:O4'	2.01	0.59
1:b:256:THR:CG2	54:1:1798:U:H5'	2.32	0.59
16:q:24:TYR:HE1	54:1:17:G:H4'	1.68	0.59
51:Z:58:LYS:HD3	57:4:6:G:OP1	2.03	0.59
52:a:7:ARG:HA	52:a:10:VAL:CG2	2.32	0.59
54:1:958:U:H2'	55:2:89:U:O2	2.03	0.59
2:c:124:ARG:NH1	2:c:163:GLY:HA3	2.18	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:i:18:ASN:N	8:i:19:PRO:CD	2.65	0.58
10:k:77:ILE:HD12	10:k:77:ILE:N	2.18	0.58
16:q:24:TYR:CE1	54:1:17:G:H4'	2.38	0.58
22:w:12:SER:HB3	54:1:2262:U:H5	1.66	0.58
22:w:33:ILE:HG22	22:w:34:VAL:HG23	1.85	0.58
33:H:38:VAL:O	33:H:42:LEU:HD13	2.03	0.58
53:3:26:A:H61	53:3:558:G:H1'	1.67	0.58
54:1:2248:C:H2'	54:1:2249:U:H5'	1.84	0.58
5:f:93:TYR:HA	5:f:105:SER:O	2.03	0.58
9:j:11:VAL:HG11	9:j:50:THR:HG22	1.85	0.58
15:p:49:ILE:HD12	15:p:49:ILE:N	2.18	0.58
33:H:137:VAL:HG21	33:H:167:TYR:HD2	1.68	0.58
34:I:59:LYS:HE3	34:I:194:ILE:HG22	1.85	0.58
53:3:31:G:N2	53:3:47:C:H5''	2.18	0.58
53:3:1496:C:H2'	53:3:1497:G:O4'	2.03	0.58
1:b:145:MET:C	1:b:146:LYS:HD2	2.29	0.58
10:k:19:VAL:HB	10:k:41:ILE:HD12	1.85	0.58
15:p:38:ARG:NH2	15:p:40:GLN:HB3	2.16	0.58
33:H:9:ILE:HG13	33:H:9:ILE:O	2.03	0.58
34:I:24:VAL:HG23	53:3:409:U:H4'	1.86	0.58
37:L:39:GLU:OE1	39:N:42:THR:HA	2.04	0.58
38:M:107:LYS:HZ1	53:3:640:A:H4'	1.69	0.58
47:V:70:LYS:HE2	53:3:254:G:H5''	1.85	0.58
54:1:2196:C:O2'	54:1:2197:U:H5'	2.03	0.58
2:c:157:LYS:HE3	54:1:2619:C:OP1	2.03	0.58
8:i:12:VAL:HG13	54:1:1061:U:N3	2.19	0.58
49:X:49:ALA:HB1	49:X:56:HIS:HB3	1.85	0.58
53:3:555:U:H2'	53:3:556:C:H6	1.68	0.58
53:3:1170:A:H2'	53:3:1171:A:O4'	2.03	0.58
54:1:590:A:H2'	54:1:591:U:C6	2.38	0.58
54:1:2443:C:O2'	54:1:2444:G:H5'	2.04	0.58
2:c:121:THR:HB	2:c:127:PHE:CD2	2.38	0.58
4:e:160:LYS:H	4:e:160:LYS:HD3	1.69	0.58
20:u:57:ILE:HD11	54:1:483:A:N3	2.19	0.58
23:x:56:ARG:O	23:x:59:ASP:HB3	2.03	0.58
26:A:46:GLY:HA2	26:A:49:ARG:NH2	2.19	0.58
32:G:72:LYS:HE2	32:G:167:HIS:HB2	1.85	0.58
37:L:101:ARG:NH1	53:3:939:G:H5'	2.19	0.58
44:S:20:PHE:HD2	44:S:54:SER:O	1.87	0.58
48:W:59:LYS:CD	53:3:735:C:H5'	2.34	0.58
52:a:5:THR:OG1	52:a:8:MET:HE3	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:720:U:H2'	54:1:721:A:C8	2.38	0.58
54:1:2156:G:H2'	54:1:2157:G:H5'	1.85	0.58
2:c:173:GLN:OE1	54:1:2772:C:H5'	2.03	0.58
6:g:3:VAL:HG13	6:g:38:PRO:HA	1.86	0.58
20:u:94:PHE:CE2	20:u:96:LYS:HD3	2.38	0.58
35:J:148:SER:HB2	35:J:149:PRO:HD2	1.85	0.58
41:P:124:LYS:CE	53:3:780:A:H5''	2.33	0.58
51:Z:17:ARG:HH11	51:Z:17:ARG:HG3	1.68	0.58
52:a:41:SER:HB3	54:1:2124:G:O2'	2.03	0.58
54:1:149:A:H2'	54:1:150:U:C6	2.39	0.58
1:b:206:LYS:HD2	54:1:729:G:C8	2.39	0.58
3:d:18:THR:HG23	3:d:200:LEU:HD22	1.84	0.58
3:d:149:ILE:HG22	3:d:187:VAL:O	2.04	0.58
10:k:115:ILE:HD12	10:k:115:ILE:N	2.19	0.58
16:q:47:ARG:O	16:q:51:GLN:HG2	2.02	0.58
24:y:54:LYS:HZ2	54:1:72:U:H5'	1.66	0.58
54:1:1758:U:C5	54:1:2696:U:H5'	2.38	0.58
54:1:2373:G:H2'	54:1:2374:C:H6	1.69	0.58
54:1:2446:G:C2'	54:1:2447:G:H5''	2.34	0.58
1:b:107:LYS:O	1:b:109:LEU:N	2.35	0.58
5:f:32:LEU:HD11	5:f:135:ALA:HB1	1.85	0.58
6:g:9:VAL:CG2	6:g:13:GLY:HA3	2.32	0.58
6:g:94:ILE:HD12	6:g:122:LEU:HB2	1.85	0.58
16:q:40:LYS:HG2	16:q:44:TYR:HE1	1.67	0.58
24:y:54:LYS:HZ1	54:1:72:U:H5'	1.69	0.58
35:J:14:LEU:HD12	35:J:14:LEU:O	2.03	0.58
35:J:125:LYS:HG2	35:J:127:TYR:CZ	2.39	0.58
36:K:92:THR:OG1	36:K:93:LYS:N	2.37	0.58
37:L:115:MET:HA	37:L:118:ARG:HE	1.69	0.58
41:P:26:PHE:HB2	41:P:88:PRO:HG2	1.85	0.58
53:3:501:C:H2'	53:3:502:A:C8	2.38	0.58
54:1:844:A:C3'	54:1:845:A:H5''	2.34	0.58
54:1:1048:A:N7	54:1:1049:C:H5	2.02	0.58
4:e:35:LEU:CD2	4:e:60:SER:HB2	2.33	0.58
10:k:87:LEU:HD12	10:k:92:GLU:HB2	1.86	0.58
11:l:77:ILE:O	11:l:111:ILE:HD12	2.03	0.58
15:p:20:ARG:HD3	15:p:112:ARG:NH1	2.19	0.58
24:y:16:THR:HA	24:y:19:LEU:HD12	1.86	0.58
33:H:21:TRP:HA	40:O:95:GLY:HA2	1.84	0.58
36:K:86:ARG:CZ	53:3:673:A:H4'	2.34	0.58
49:X:30:LEU:N	49:X:30:LEU:HD12	2.19	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:363:A:H2'	53:3:364:A:O4'	2.04	0.58
53:3:458:U:H2'	53:3:459:A:H8	1.69	0.58
53:3:990:C:H2'	53:3:991:U:O4'	2.04	0.58
53:3:1086:U:H2'	53:3:1087:G:H8	1.69	0.58
54:1:511:U:H2'	54:1:512:G:H5'	1.85	0.58
54:1:662:G:O2'	54:1:663:G:H5'	2.03	0.58
54:1:708:G:H2'	54:1:709:U:H6	1.68	0.58
54:1:1430:G:H2'	54:1:1431:A:H8	1.69	0.58
54:1:1827:U:C2'	54:1:1828:G:H5'	2.33	0.58
54:1:2802:G:H2'	54:1:2803:G:H8	1.69	0.58
2:c:4:LEU:HD13	2:c:101:PHE:CE2	2.38	0.58
5:f:2:ARG:HG2	54:1:2751:G:C8	2.39	0.58
8:i:51:GLY:C	8:i:52:LEU:HD12	2.29	0.58
11:l:29:LYS:HB3	17:r:82:HIS:CE1	2.38	0.58
53:3:554:A:H2'	53:3:555:U:C6	2.39	0.58
54:1:543:G:H3'	54:1:544:C:H5''	1.85	0.58
54:1:2151:U:H2'	54:1:2152:G:C8	2.38	0.58
54:1:2572:A:OP1	54:1:2574:G:H4'	2.04	0.58
56:5:21:A:H61	56:5:46:G:H2'	1.69	0.58
7:h:53:ARG:HA	54:1:1083:U:H5'	1.85	0.57
10:k:71:ARG:HG2	10:k:71:ARG:HH11	1.69	0.57
16:q:36:GLN:O	16:q:39:ILE:HG22	2.04	0.57
21:v:55:GLU:H	21:v:55:GLU:CD	2.12	0.57
32:G:212:TYR:O	32:G:216:VAL:HG23	2.04	0.57
47:V:60:ILE:CG2	47:V:72:TRP:HB3	2.33	0.57
53:3:355:C:H2'	53:3:356:A:O4'	2.04	0.57
53:3:555:U:H2'	53:3:556:C:C6	2.39	0.57
54:1:182:A:H2'	54:1:183:C:H6	1.69	0.57
54:1:394:C:H2'	54:1:395:U:O4'	2.04	0.57
54:1:543:G:C3'	54:1:544:C:H5''	2.34	0.57
54:1:1316:U:H2'	54:1:1317:G:H8	1.69	0.57
2:c:27:ILE:HB	2:c:187:LEU:HB3	1.86	0.57
16:q:40:LYS:HG2	16:q:44:TYR:CE1	2.39	0.57
26:A:42:PRO:HB2	26:A:45:THR:HB	1.86	0.57
31:F:15:LYS:HB3	31:F:26:ILE:CG1	2.34	0.57
36:K:52:ASN:O	36:K:53:LYS:HB2	2.02	0.57
40:O:80:THR:HG22	40:O:82:LYS:HG2	1.85	0.57
42:Q:53:ARG:HB2	42:Q:53:ARG:HH11	1.69	0.57
54:1:1063:G:N1	54:1:1075:C:N4	2.19	0.57
54:1:1837:C:H2'	54:1:1899:A:N6	2.19	0.57
2:c:121:THR:HB	2:c:127:PHE:HD2	1.69	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:j:73:VAL:HG11	9:j:75:TYR:CE1	2.39	0.57
15:p:33:GLU:CG	15:p:36:LYS:HB2	2.34	0.57
17:r:59:ILE:HD12	17:r:59:ILE:N	2.19	0.57
36:K:78:PHE:HD1	36:K:84:VAL:HG11	1.69	0.57
51:Z:19:LYS:HG3	51:Z:20:ARG:H	1.69	0.57
53:3:1198:G:H2'	53:3:1199:U:C6	2.39	0.57
53:3:1309:G:H2'	53:3:1310:G:H8	1.69	0.57
54:1:195:A:H61	54:1:198:C:H3'	1.69	0.57
54:1:2792:A:C3'	54:1:2793:C:H5''	2.35	0.57
10:k:65:THR:HG23	10:k:68:GLY:H	1.69	0.57
43:R:22:TYR:CE1	53:3:1330:U:H4'	2.39	0.57
44:S:92:ILE:N	44:S:92:ILE:HD12	2.19	0.57
46:U:39:PHE:HD1	46:U:50:THR:HB	1.69	0.57
53:3:256:U:H2'	53:3:257:G:C8	2.40	0.57
54:1:1068:G:H2'	54:1:1069:A:C4'	2.34	0.57
54:1:2296:U:H5''	54:1:2297:A:OP1	2.04	0.57
6:g:48:GLU:HA	6:g:52:ALA:HB3	1.87	0.57
10:k:48:PRO:CG	53:3:1422:G:H5'	2.34	0.57
26:A:42:PRO:O	26:A:46:GLY:N	2.37	0.57
38:M:34:ALA:O	38:M:38:VAL:HG23	2.05	0.57
46:U:78:VAL:O	46:U:78:VAL:HG12	2.05	0.57
53:3:1033:G:H2'	53:3:1034:G:H5''	1.85	0.57
54:1:2371:G:O2'	54:1:2372:U:H5'	2.05	0.57
10:k:58:LEU:HD12	10:k:58:LEU:O	2.04	0.57
11:l:112:LEU:O	11:l:112:LEU:HD23	2.04	0.57
18:s:82:MET:HB2	18:s:98:LYS:HB2	1.85	0.57
20:u:10:VAL:HA	20:u:72:PHE:H	1.69	0.57
40:O:15:HIS:HA	40:O:18:ILE:HG22	1.86	0.57
52:a:30:LEU:HD21	52:a:42:VAL:HG13	1.87	0.57
54:1:1170:C:H2'	54:1:1171:G:N7	2.18	0.57
54:1:2286:G:H4'	54:1:2287:A:O4'	2.04	0.57
54:1:2443:C:H2'	54:1:2444:G:H8	1.68	0.57
1:b:132:ARG:HG3	1:b:133:ASN:ND2	2.19	0.57
17:r:45:GLU:CD	17:r:46:GLU:H	2.13	0.57
18:s:88:ARG:HH21	18:s:88:ARG:HG3	1.70	0.57
19:t:34:VAL:HG23	19:t:81:LYS:HB3	1.87	0.57
26:A:11:GLU:HA	26:A:25:ARG:HA	1.87	0.57
29:D:3:ARG:HA	29:D:3:ARG:HE	1.70	0.57
32:G:158:ASP:O	32:G:180:ILE:HG23	2.05	0.57
35:J:107:GLY:HA3	53:3:9:G:H5'	1.86	0.57
36:K:29:ILE:HD12	36:K:29:ILE:N	2.19	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:K:42:TRP:HB2	36:K:59:TYR:HB2	1.85	0.57
39:N:27:ILE:N	39:N:27:ILE:HD12	2.19	0.57
42:Q:29:LYS:O	42:Q:80:LEU:HD12	2.04	0.57
43:R:15:VAL:HG22	43:R:33:LEU:CD2	2.34	0.57
52:a:6:LYS:HG3	52:a:7:ARG:H	1.67	0.57
52:a:217:THR:HG23	54:1:2124:G:N2	2.20	0.57
54:1:955:U:H3	54:1:962:G:H1	1.53	0.57
54:1:1258:U:H2'	54:1:1259:G:C8	2.40	0.57
54:1:2619:C:O2'	54:1:2620:C:H5'	2.05	0.57
54:1:2834:G:H2'	54:1:2879:A:N6	2.20	0.57
10:k:18:ARG:HB2	10:k:45:GLU:HB3	1.87	0.57
13:n:72:ASP:O	13:n:76:VAL:HG23	2.03	0.57
18:s:2:GLU:OE1	18:s:4:ILE:HG12	2.05	0.57
34:I:60:VAL:HA	34:I:63:ILE:HD12	1.87	0.57
36:K:4:TYR:CE2	36:K:71:ILE:HG21	2.40	0.57
37:L:138:GLU:O	37:L:142:ARG:HG2	2.04	0.57
41:P:68:ARG:HG3	41:P:68:ARG:HH11	1.69	0.57
42:Q:120:ARG:CG	42:Q:121:PRO:HD2	2.32	0.57
43:R:18:LEU:HD23	43:R:29:SER:OG	2.05	0.57
49:X:14:LEU:O	49:X:18:VAL:HG23	2.04	0.57
53:3:1333:A:H2'	53:3:1334:G:O4'	2.04	0.57
53:3:1342:C:H2'	53:3:1343:G:C8	2.40	0.57
54:1:807:U:H2'	54:1:808:G:C8	2.39	0.57
54:1:1199:U:H2'	54:1:1200:C:C6	2.40	0.57
1:b:141:HIS:HD2	1:b:194:VAL:HG22	1.67	0.57
4:e:104:THR:O	4:e:108:PRO:HG2	2.05	0.57
10:k:63:VAL:HG23	10:k:64:ARG:N	2.20	0.57
10:k:115:ILE:HD12	10:k:115:ILE:H	1.69	0.57
40:O:61:ALA:HB2	53:3:1061:G:H5''	1.86	0.57
53:3:320:A:H2'	53:3:321:A:C8	2.40	0.57
53:3:1370:G:O2'	53:3:1371:G:H5'	2.04	0.57
55:2:28:C:H2'	55:2:29:A:C8	2.40	0.57
55:2:106:G:H2'	55:2:107:G:O4'	2.04	0.57
56:5:47:U:H3'	56:5:48:C:C5'	2.35	0.57
2:c:115:GLY:HA2	2:c:166:GLY:HA3	1.87	0.57
4:e:56:LEU:HD13	4:e:88:VAL:HG23	1.85	0.57
20:u:60:LYS:HG2	20:u:61:GLU:N	2.20	0.57
30:E:30:HIS:HE2	54:1:2392:A:P	2.28	0.57
31:F:18:LYS:NZ	31:F:21:GLY:HA2	2.20	0.57
38:M:49:LYS:HB2	38:M:59:GLU:HG3	1.86	0.57
47:V:41:THR:HG22	47:V:43:LEU:HG	1.85	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1379:G:O2'	53:3:1380:U:H5'	2.05	0.57
53:3:1391:U:H2'	53:3:1392:G:C8	2.40	0.57
54:1:155:A:H2'	54:1:156:A:C8	2.39	0.57
54:1:191:A:O2'	54:1:192:C:H5'	2.04	0.57
54:1:1111:A:H2'	54:1:1112:G:H4'	1.86	0.57
54:1:2122:U:H2'	54:1:2123:G:O4'	2.05	0.57
3:d:161:ALA:HB3	3:d:169:VAL:HG23	1.86	0.56
4:e:76:PHE:O	4:e:77:LYS:HG2	2.05	0.56
7:h:55:VAL:HG23	7:h:84:TYR:HB2	1.87	0.56
10:k:41:ILE:HD11	10:k:86:LEU:HD21	1.87	0.56
15:p:31:VAL:HG12	15:p:38:ARG:O	2.04	0.56
17:r:11:GLN:O	17:r:12:HIS:ND1	2.38	0.56
33:H:72:PRO:O	33:H:76:ILE:HG12	2.05	0.56
41:P:108:ASN:HB2	51:Z:6:ARG:HG2	1.86	0.56
52:a:23:ILE:O	52:a:27:ILE:HG12	2.04	0.56
54:1:2047:C:H2'	54:1:2048:G:H8	1.69	0.56
6:g:115:VAL:HG13	6:g:132:PHE:CE1	2.40	0.56
46:U:57:ILE:O	46:U:61:VAL:HG23	2.05	0.56
1:b:152:GLN:HB3	54:1:1818:U:C4	2.40	0.56
6:g:46:PHE:HA	6:g:49:ALA:HB3	1.87	0.56
12:m:58:LYS:O	12:m:59:ARG:HG2	2.05	0.56
13:n:59:SER:O	13:n:63:ARG:HG2	2.04	0.56
14:o:30:ARG:HG2	14:o:30:ARG:HH11	1.69	0.56
15:p:94:ALA:HB2	54:1:2848:G:C8	2.40	0.56
19:t:33:LYS:HG2	19:t:80:TRP:CZ3	2.39	0.56
33:H:19:SER:HB3	33:H:21:TRP:NE1	2.20	0.56
34:I:143:SER:C	34:I:144:ILE:HD12	2.30	0.56
36:K:3:HIS:O	36:K:92:THR:HA	2.06	0.56
36:K:6:ILE:H	36:K:6:ILE:HD12	1.70	0.56
37:L:114:SER:O	37:L:118:ARG:HG3	2.06	0.56
41:P:126:ARG:N	41:P:126:ARG:HH11	2.03	0.56
43:R:72:ILE:O	43:R:76:ILE:HG13	2.05	0.56
46:U:12:LYS:HG3	53:3:392:C:H5'	1.86	0.56
47:V:6:THR:C	47:V:7:LEU:HD12	2.29	0.56
48:W:25:ILE:O	48:W:29:LYS:N	2.38	0.56
51:Z:24:LYS:O	51:Z:25:ALA:C	2.48	0.56
53:3:33:A:H2'	53:3:34:C:C6	2.40	0.56
53:3:67:C:H2'	53:3:68:G:C8	2.40	0.56
53:3:155:A:H2'	53:3:156:C:C6	2.41	0.56
54:1:1230:A:H2'	54:1:1231:U:C6	2.40	0.56
1:b:48:ILE:HD11	1:b:51:ARG:HA	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:g:5:LEU:HD12	6:g:36:ALA:HB2	1.87	0.56
7:h:81:LEU:HA	54:1:1107:G:H4'	1.87	0.56
11:l:85:VAL:CG1	11:l:86:GLU:H	2.14	0.56
21:v:58:SER:N	21:v:73:LYS:HZ3	2.03	0.56
32:G:23:ASN:H	32:G:189:ASN:HA	1.69	0.56
36:K:51:ILE:O	36:K:52:ASN:HB2	2.05	0.56
40:O:40:ILE:HD11	53:3:1124:G:H4'	1.88	0.56
42:Q:23:LEU:CD2	42:Q:29:LYS:HD3	2.23	0.56
47:V:16:MET:HG2	47:V:17:GLU:H	1.71	0.56
53:3:17:U:H2'	53:3:18:C:C6	2.40	0.56
53:3:417:G:H2'	53:3:418:C:C6	2.40	0.56
54:1:2415:G:H2'	54:1:2416:C:C6	2.40	0.56
55:2:29:A:H2'	55:2:30:C:O4'	2.06	0.56
3:d:113:VAL:HG22	3:d:118:LEU:CD2	2.34	0.56
5:f:41:GLU:HG2	5:f:43:LYS:HD2	1.87	0.56
6:g:87:GLU:OE1	36:K:24:ARG:HD2	2.05	0.56
10:k:22:ILE:HB	54:1:1952:A:C2	2.40	0.56
33:H:71:ARG:HE	33:H:74:ILE:HD11	1.70	0.56
35:J:47:PHE:HZ	35:J:137:ARG:HE	1.52	0.56
38:M:87:ARG:H	38:M:90:GLU:HB2	1.71	0.56
40:O:40:ILE:HD13	53:3:1125:U:C6	2.40	0.56
52:a:6:LYS:O	52:a:10:VAL:HG23	2.05	0.56
53:3:678:U:H2'	53:3:679:C:H6	1.70	0.56
54:1:1637:A:H2'	54:1:1638:C:C6	2.41	0.56
54:1:2077:A:H5'	54:1:2077:A:H8	1.71	0.56
54:1:2230:G:H2'	54:1:2231:U:H6	1.69	0.56
6:g:97:ARG:HA	6:g:112:LYS:HD3	1.88	0.56
10:k:2:ILE:N	10:k:2:ILE:HD12	2.20	0.56
12:m:73:ILE:HG12	12:m:93:VAL:HG22	1.88	0.56
36:K:38:ARG:HD3	36:K:97:THR:HA	1.88	0.56
37:L:59:GLU:HA	37:L:62:GLU:HB3	1.87	0.56
38:M:88:LYS:HG3	38:M:89:ASP:H	1.69	0.56
40:O:41:PRO:HB3	53:3:1151:A:O4'	2.06	0.56
53:3:70:U:H4'	53:3:71:A:H8	1.70	0.56
53:3:436:C:H2'	53:3:437:U:C6	2.41	0.56
53:3:1306:A:N6	53:3:1331:G:H1'	2.21	0.56
54:1:2153:C:H2'	54:1:2154:A:H5'	1.86	0.56
34:I:23:GLY:HA3	53:3:409:U:OP1	2.06	0.56
41:P:88:PRO:HG2	41:P:89:GLY:H	1.71	0.56
42:Q:113:ARG:HH21	42:Q:121:PRO:HD3	1.71	0.56
49:X:62:THR:HG22	49:X:65:MET:HE1	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:a:14:LYS:O	52:a:29:LEU:HD21	2.05	0.56
53:3:163:C:H2'	53:3:164:G:O4'	2.05	0.56
53:3:460:A:H2'	53:3:461:A:C8	2.40	0.56
53:3:1504:G:OP1	53:3:1507:A:H4'	2.06	0.56
54:1:2478:A:H2'	54:1:2479:U:O4'	2.05	0.56
58:7:8:U:H5'	58:7:49:G:H5'	1.87	0.56
1:b:131:MET:HE3	1:b:187:CYS:C	2.30	0.56
2:c:35:THR:O	2:c:92:VAL:HG13	2.06	0.56
4:e:37:MET:CE	4:e:52:ALA:HB1	2.35	0.56
7:h:60:LEU:CD1	7:h:61:ARG:HG2	2.32	0.56
12:m:55:ARG:NE	54:1:2469:A:H4'	2.20	0.56
16:q:57:ARG:HA	16:q:60:TRP:HE3	1.69	0.56
20:u:39:ASN:ND2	20:u:63:ALA:O	2.39	0.56
28:C:13:SER:OG	28:C:46:VAL:HB	2.06	0.56
31:F:10:LEU:HD12	31:F:33:HIS:CD2	2.40	0.56
33:H:35:ASP:O	33:H:38:VAL:HG22	2.05	0.56
38:M:100:ILE:HG12	38:M:111:THR:HB	1.88	0.56
48:W:14:ALA:HA	48:W:50:TYR:CZ	2.41	0.56
53:3:59:A:H5''	53:3:387:U:H5''	1.88	0.56
53:3:620:C:H2'	53:3:621:A:O4'	2.06	0.56
54:1:173:A:H2'	54:1:174:U:C6	2.40	0.56
54:1:362:A:H3'	54:1:363:G:H8	1.71	0.56
54:1:545:U:C2	54:1:546:U:H1'	2.41	0.56
54:1:657:U:H2'	54:1:658:U:C6	2.40	0.56
54:1:2243:U:H2'	54:1:2244:U:H6	1.70	0.56
54:1:2512:C:H2'	54:1:2513:A:O4'	2.06	0.56
13:n:73:ASN:HB3	54:1:1453:A:N7	2.21	0.56
53:3:678:U:H4'	53:3:778:G:OP1	2.05	0.56
54:1:2629:U:O2'	54:1:2630:G:H5''	2.06	0.56
1:b:67:LYS:HD3	1:b:69:ASN:HD21	1.70	0.56
13:n:5:LYS:HG2	13:n:6:SER:H	1.70	0.56
20:u:101:THR:HG22	20:u:102:ILE:N	2.21	0.56
30:E:30:HIS:ND1	30:E:31:ILE:N	2.54	0.56
32:G:19:THR:HG23	32:G:20:ARG:HG2	1.87	0.56
40:O:32:THR:O	40:O:82:LYS:HE2	2.06	0.56
53:3:1096:C:H2'	53:3:1097:C:C6	2.41	0.56
54:1:310:A:H2'	54:1:311:A:H5''	1.88	0.56
54:1:1474:U:C2'	54:1:1475:G:H5'	2.34	0.56
55:2:2:G:C6	55:2:119:A:N3	2.74	0.56
10:k:21:CYS:HA	10:k:41:ILE:HG22	1.88	0.55
35:J:40:ASP:CG	35:J:42:ASN:H	2.14	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:J:59:ILE:O	35:J:63:MET:HG2	2.06	0.55
38:M:65:PHE:CD2	38:M:66:GLN:HG2	2.40	0.55
41:P:33:ILE:N	41:P:33:ILE:HD12	2.21	0.55
41:P:87:GLY:H	41:P:113:THR:HG22	1.70	0.55
47:V:14:ASP:OD1	47:V:20:ILE:HB	2.06	0.55
50:Y:14:GLU:O	50:Y:17:ARG:HG3	2.04	0.55
53:3:423:G:H3'	53:3:423:G:N3	2.21	0.55
53:3:1350:A:H2'	53:3:1351:U:C6	2.40	0.55
54:1:543:G:H2'	54:1:544:C:C4'	2.35	0.55
54:1:1507:C:H2'	54:1:1508:A:O4'	2.06	0.55
54:1:1904:G:O2'	54:1:1905:C:H5'	2.05	0.55
54:1:2798:U:H5'	54:1:2799:A:N3	2.21	0.55
4:e:33:ILE:HD12	4:e:95:MET:HG3	1.87	0.55
8:i:24:GLY:HA2	8:i:27:LEU:HD12	1.87	0.55
9:j:16:TYR:HB3	9:j:140:LEU:HB2	1.88	0.55
10:k:10:VAL:HG21	10:k:16:ALA:C	2.31	0.55
11:l:85:VAL:HG11	11:l:90:VAL:HG22	1.88	0.55
12:m:42:THR:HA	12:m:93:VAL:HG12	1.87	0.55
13:n:25:ALA:O	13:n:29:VAL:HG23	2.06	0.55
16:q:49:ARG:HG2	16:q:49:ARG:HH11	1.71	0.55
33:H:155:ARG:HE	33:H:160:GLU:HA	1.72	0.55
40:O:33:GLY:HA2	40:O:80:THR:HG21	1.88	0.55
42:Q:8:ARG:HB3	42:Q:8:ARG:HH11	1.70	0.55
42:Q:23:LEU:HD22	42:Q:29:LYS:CD	2.23	0.55
42:Q:98:ARG:HA	42:Q:103:CYS:SG	2.46	0.55
43:R:16:ILE:HD12	43:R:16:ILE:N	2.20	0.55
45:T:31:LEU:O	45:T:35:ILE:HG13	2.07	0.55
47:V:11:VAL:HB	47:V:55:GLY:N	2.21	0.55
53:3:627:G:H2'	53:3:628:G:O4'	2.06	0.55
54:1:5:A:H2'	54:1:6:A:C8	2.42	0.55
54:1:680:C:H2'	54:1:681:G:H8	1.71	0.55
54:1:2123:G:H2'	54:1:2124:G:C8	2.41	0.55
55:2:28:C:H2'	55:2:29:A:H8	1.70	0.55
2:c:47:ALA:CA	2:c:84:LEU:HD23	2.29	0.55
3:d:68:ALA:HA	54:1:1255:U:C5	2.41	0.55
14:o:79:ALA:HB2	14:o:110:ALA:HA	1.87	0.55
19:t:73:ARG:HD2	54:1:65:U:H4'	1.88	0.55
33:H:122:GLN:HB3	33:H:127:VAL:HG11	1.88	0.55
33:H:175:HIS:ND1	53:3:1108:G:H5'	2.21	0.55
37:L:41:ILE:HG21	37:L:115:MET:CE	2.37	0.55
38:M:107:LYS:NZ	53:3:640:A:H4'	2.20	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:181:A:H62	53:3:194:C:H2'	1.70	0.55
53:3:389:A:H3'	53:3:390:U:H6	1.71	0.55
54:1:182:A:H2'	54:1:183:C:C6	2.42	0.55
54:1:1069:A:H5'	54:1:1070:A:OP1	2.07	0.55
54:1:1086:A:H4'	54:1:1087:G:C8	2.41	0.55
54:1:1319:C:O2'	54:1:1320:C:H5'	2.07	0.55
54:1:2093:G:N7	54:1:2225:A:H2'	2.22	0.55
2:c:142:VAL:HB	2:c:143:PRO:HD2	1.87	0.55
5:f:25:ILE:HD11	5:f:74:MET:HB3	1.88	0.55
13:n:48:VAL:HG23	13:n:49:GLU:N	2.21	0.55
18:s:4:ILE:CG2	18:s:106:VAL:HG22	2.36	0.55
23:x:16:ASN:HB2	23:x:24:THR:HB	1.89	0.55
34:I:12:ARG:HG2	34:I:37:PRO:HG3	1.87	0.55
36:K:38:ARG:C	36:K:39:LEU:HD22	2.31	0.55
47:V:79:GLU:CD	47:V:80:LYS:H	2.14	0.55
53:3:1138:G:H3'	53:3:1138:G:N3	2.22	0.55
54:1:750:A:H2'	54:1:751:A:H5''	1.89	0.55
54:1:845:A:C5	54:1:847:U:H1'	2.42	0.55
54:1:995:C:H6	54:1:995:C:H5'	1.71	0.55
54:1:1064:C:N4	54:1:1069:A:H5''	2.21	0.55
1:b:206:LYS:HB2	54:1:729:G:C5	2.41	0.55
6:g:6:LEU:HD12	6:g:34:GLY:O	2.06	0.55
6:g:6:LEU:HG	6:g:36:ALA:HA	1.89	0.55
16:q:49:ARG:O	16:q:53:LYS:HG3	2.07	0.55
18:s:8:ARG:HB3	18:s:8:ARG:NH1	2.21	0.55
34:I:131:ILE:HG13	34:I:134:TYR:HB2	1.87	0.55
37:L:29:LEU:HD11	37:L:115:MET:HE3	1.87	0.55
38:M:55:LYS:HE3	53:3:653:U:H1'	1.89	0.55
48:W:18:GLN:HG3	48:W:19:GLU:H	1.71	0.55
53:3:701:U:H5''	53:3:703:G:H1'	1.88	0.55
54:1:225:C:H2'	54:1:226:A:O4'	2.07	0.55
54:1:1528:A:H2'	54:1:1529:G:O4'	2.07	0.55
54:1:1859:U:H3	54:1:1883:U:H3	1.53	0.55
55:2:104:A:H2'	55:2:105:G:O4'	2.06	0.55
8:i:12:VAL:HG12	8:i:53:PRO:HB3	1.87	0.55
20:u:53:GLN:N	20:u:54:PRO:HD2	2.22	0.55
32:G:80:LYS:HG3	32:G:84:LEU:CD1	2.36	0.55
46:U:68:SER:OG	46:U:71:VAL:HG23	2.07	0.55
48:W:59:LYS:HD2	53:3:735:C:H5'	1.88	0.55
54:1:644:A:H2'	54:1:645:C:C5'	2.36	0.55
54:1:742:A:H2'	54:1:743:A:C8	2.41	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:1778:U:H2'	54:1:1784:A:H62	1.70	0.55
54:1:2189:U:H2'	54:1:2190:G:H8	1.71	0.55
2:c:25:THR:HG21	2:c:193:VAL:HG22	1.88	0.55
2:c:57:ALA:O	2:c:60:VAL:HG12	2.06	0.55
9:j:81:ILE:HG13	9:j:82:GLY:N	2.22	0.55
11:l:23:ILE:HG13	17:r:82:HIS:CD2	2.42	0.55
17:r:49:ILE:HG13	17:r:50:GLY:H	1.71	0.55
32:G:148:GLY:O	32:G:151:LYS:HG2	2.07	0.55
36:K:44:ARG:HH11	36:K:56:LYS:HD3	1.71	0.55
40:O:65:TYR:CD1	44:S:97:LYS:HA	2.42	0.55
53:3:1211:U:H4'	53:3:1213:A:N3	2.22	0.55
54:1:150:U:H2'	54:1:151:C:C6	2.42	0.55
54:1:594:U:H2'	54:1:595:C:C6	2.42	0.55
54:1:727:A:H2'	54:1:728:G:C8	2.42	0.55
2:c:15:PHE:HE2	15:p:54:LEU:HD11	1.71	0.55
6:g:84:ALA:HA	6:g:90:LEU:HA	1.87	0.55
12:m:62:LYS:HE3	12:m:64:TRP:CZ2	2.41	0.55
18:s:76:VAL:HG12	18:s:103:ILE:HA	1.88	0.55
20:u:48:VAL:HG22	20:u:50:ALA:H	1.72	0.55
24:y:5:GLU:HA	24:y:8:GLU:OE1	2.07	0.55
26:A:64:PHE:CD1	49:X:8:PRO:HD2	2.41	0.55
30:E:54:LEU:O	30:E:58:ILE:HG13	2.07	0.55
32:G:18:GLN:HA	32:G:18:GLN:NE2	2.22	0.55
37:L:110:ARG:HH11	37:L:121:ASN:HB3	1.72	0.55
38:M:39:LEU:HD21	38:M:128:VAL:HG11	1.88	0.55
38:M:98:LEU:HD12	38:M:99:GLY:N	2.21	0.55
42:Q:53:ARG:HG2	42:Q:61:GLU:OE2	2.06	0.55
43:R:15:VAL:HG22	43:R:33:LEU:HD21	1.87	0.55
44:S:20:PHE:C	44:S:22:LYS:H	2.15	0.55
46:U:4:ILE:HG22	46:U:71:VAL:HG11	1.87	0.55
52:a:17:ALA:HB1	54:1:2105:U:H5''	1.89	0.55
53:3:20:U:H2'	53:3:21:G:O4'	2.07	0.55
53:3:207:C:H2'	53:3:208:U:C4'	2.36	0.55
53:3:441:A:H2'	53:3:442:G:H5'	1.89	0.55
53:3:483:C:H3'	53:3:484:G:H2'	1.88	0.55
53:3:1514:G:O2'	53:3:1515:G:H5'	2.07	0.55
54:1:690:G:H2'	54:1:691:C:C6	2.41	0.55
54:1:1183:U:H2'	54:1:1184:U:H6	1.71	0.55
1:b:218:THR:O	54:1:1789:A:H5''	2.07	0.55
2:c:127:PHE:CD1	54:1:2512:C:H5''	2.42	0.55
4:e:140:ILE:N	4:e:140:ILE:HD12	2.21	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:g:84:ALA:HA	6:g:91:PHE:H	1.70	0.55
7:h:55:VAL:HA	54:l:1084:A:OP1	2.07	0.55
11:l:90:VAL:HG13	11:l:95:LEU:HD21	1.89	0.55
12:m:17:ASN:ND2	12:m:95:LEU:HB3	2.22	0.55
17:r:4:VAL:HG22	17:r:13:ARG:HA	1.89	0.55
19:t:61:LEU:HD21	19:t:82:LYS:HD2	1.88	0.55
21:v:72:VAL:HA	21:v:94:ALA:H	1.72	0.55
24:y:49:ASP:O	24:y:53:VAL:HG23	2.07	0.55
27:B:8:THR:HG21	54:l:2021:C:OP1	2.07	0.55
30:E:41:ARG:HA	30:E:44:ARG:NH1	2.21	0.55
30:E:41:ARG:HD3	54:l:2350:C:H5''	1.88	0.55
33:H:69:THR:OG1	33:H:70:ALA:N	2.39	0.55
53:3:314:C:O2'	53:3:315:A:H5'	2.06	0.55
17:r:49:ILE:HB	17:r:51:VAL:O	2.07	0.55
33:H:6:PRO:HD2	33:H:183:TYR:CD2	2.41	0.55
40:O:8:ILE:HB	40:O:74:VAL:HB	1.89	0.55
45:T:86:LEU:HD12	45:T:87:ARG:N	2.22	0.55
52:a:30:LEU:HD11	52:a:42:VAL:HG22	1.89	0.55
53:3:484:G:C5	53:3:486:U:H1'	2.42	0.55
53:3:551:U:H2'	53:3:552:U:H6	1.72	0.55
53:3:893:C:H2'	53:3:894:G:C8	2.42	0.55
54:1:873:C:H2'	54:1:874:G:H8	1.71	0.55
54:1:1083:U:H2'	54:1:1085:A:OP2	2.06	0.55
54:1:1900:A:H1'	54:1:1970:A:O2'	2.06	0.55
54:1:1934:C:O2'	54:1:1935:G:H5'	2.06	0.55
54:1:2590:A:H2'	54:1:2591:C:C6	2.42	0.55
56:5:60:U:H2'	56:5:61:C:H5	1.72	0.55
58:7:29:U:H2'	58:7:30:G:H8	1.72	0.55
9:j:35:ARG:HH22	9:j:140:LEU:HD11	1.71	0.54
10:k:59:LYS:HE2	10:k:89:ASN:O	2.06	0.54
13:n:49:GLU:HB3	13:n:50:PRO:HD3	1.89	0.54
34:l:8:LEU:HD22	53:3:429:U:H3'	1.89	0.54
39:N:70:GLY:HA3	53:3:1371:G:O3'	2.08	0.54
53:3:711:G:O2'	53:3:712:A:H5'	2.07	0.54
53:3:1219:A:H2'	53:3:1220:G:C8	2.42	0.54
53:3:1416:G:H2'	53:3:1417:G:O4'	2.07	0.54
54:1:554:U:H2'	54:1:555:G:O4'	2.07	0.54
54:1:1821:A:H2'	54:1:1822:C:C6	2.41	0.54
54:1:2278:A:C3'	54:1:2279:G:H5''	2.37	0.54
54:1:2329:U:H2'	54:1:2330:G:H8	1.72	0.54
3:d:105:LEU:O	3:d:109:LEU:HD23	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:e:39:VAL:HG21	4:e:48:LEU:HD21	1.88	0.54
8:i:20:SER:CB	8:i:21:PRO:HD3	2.28	0.54
32:G:206:ILE:HG13	32:G:207:ARG:N	2.22	0.54
36:K:3:HIS:ND1	36:K:92:THR:HB	2.21	0.54
39:N:46:VAL:HG21	39:N:75:ALA:HB1	1.89	0.54
41:P:34:THR:HG22	41:P:40:ALA:HA	1.89	0.54
54:1:2760:C:O2'	54:1:2761:A:H5'	2.07	0.54
1:b:61:TYR:HE1	1:b:86:ARG:HH12	1.55	0.54
3:d:149:ILE:HG21	3:d:188:MET:SD	2.47	0.54
4:e:3:LEU:HD13	4:e:100:GLU:HA	1.87	0.54
28:C:24:LYS:HG2	28:C:25:ASN:N	2.21	0.54
32:G:153:MET:HE2	32:G:155:GLY:O	2.06	0.54
34:I:49:ASP:O	34:I:52:VAL:HG22	2.08	0.54
36:K:15:SER:O	36:K:18:VAL:HG12	2.07	0.54
39:N:47:VAL:HG23	39:N:48:ARG:N	2.22	0.54
46:U:8:ARG:NH1	53:3:391:G:H5''	2.23	0.54
47:V:28:VAL:HG22	47:V:29:LYS:N	2.21	0.54
53:3:626:G:H2'	53:3:627:G:C8	2.43	0.54
55:2:12:C:H4'	55:2:15:A:H61	1.71	0.54
3:d:21:ARG:HH21	3:d:106:LYS:HE3	1.72	0.54
4:e:65:LEU:HD22	55:2:42:C:C4	2.42	0.54
5:f:53:PRO:HG3	5:f:61:TRP:CD1	2.43	0.54
8:i:29:GLN:HB3	8:i:30:GLN:NE2	2.22	0.54
9:j:99:ARG:HG3	9:j:99:ARG:NH1	2.22	0.54
13:n:116:VAL:O	13:n:116:VAL:HG12	2.07	0.54
15:p:6:GLN:HA	15:p:9:GLN:HG2	1.89	0.54
29:D:42:LEU:HD23	29:D:42:LEU:C	2.32	0.54
32:G:44:LYS:O	32:G:48:MET:HG2	2.06	0.54
37:L:74:VAL:HA	37:L:87:PRO:HA	1.89	0.54
39:N:18:VAL:HG22	39:N:64:ILE:HD12	1.89	0.54
39:N:29:ILE:HG21	39:N:37:TYR:CD2	2.41	0.54
47:V:3:LYS:HD3	47:V:4:ILE:O	2.08	0.54
53:3:869:G:H4'	53:3:872:A:C8	2.43	0.54
53:3:1060:U:O2'	53:3:1061:G:H5'	2.07	0.54
54:1:792:A:H3'	54:1:793:A:H5'	1.89	0.54
54:1:1149:G:H2'	54:1:1150:C:C6	2.42	0.54
54:1:2361:G:O2'	54:1:2362:C:H5'	2.08	0.54
54:1:2646:C:H2'	54:1:2647:U:O4'	2.06	0.54
54:1:2813:A:H2'	54:1:2814:A:C8	2.43	0.54
2:c:164:GLN:NE2	54:1:2822:G:H5''	2.22	0.54
3:d:63:LYS:HD2	54:1:2444:G:OP2	2.08	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:l:69:ARG:HB3	11:l:69:ARG:CZ	2.38	0.54
36:K:49:TYR:HE1	48:W:65:SER:HA	1.72	0.54
44:S:85:GLU:OE2	44:S:89:ARG:HG3	2.07	0.54
51:Z:36:PHE:O	51:Z:38:GLU:N	2.40	0.54
53:3:1023:U:H2'	53:3:1024:G:O4'	2.06	0.54
54:1:712:G:H2'	54:1:713:G:O4'	2.07	0.54
54:1:1676:A:N6	54:1:1677:A:C6	2.76	0.54
54:1:2802:G:H2'	54:1:2803:G:C8	2.42	0.54
5:f:51:PHE:CE2	5:f:68:ARG:HA	2.43	0.54
6:g:39:ALA:HB1	6:g:44:ILE:HG22	1.88	0.54
9:j:21:THR:HA	9:j:61:LYS:HB3	1.89	0.54
11:l:29:LYS:C	11:l:30:THR:HG23	2.33	0.54
16:q:40:LYS:HE3	16:q:44:TYR:CE1	2.42	0.54
17:r:1:MET:N	17:r:42:ALA:O	2.40	0.54
32:G:132:GLU:O	32:G:136:ARG:HG3	2.06	0.54
38:M:52:GLY:HA3	38:M:56:PRO:HA	1.88	0.54
47:V:31:PRO:HG2	47:V:32:ILE:CD1	2.37	0.54
53:3:920:U:H2'	53:3:921:U:C6	2.42	0.54
53:3:1487:G:O2'	53:3:1488:G:H5'	2.08	0.54
54:1:644:A:H2'	54:1:645:C:H5''	1.90	0.54
54:1:1071:G:H1'	54:1:1089:A:C8	2.42	0.54
54:1:1091:G:H2'	54:1:1092:C:C6	2.43	0.54
54:1:1386:C:H2'	54:1:1387:A:H8	1.73	0.54
54:1:1394:U:H4'	54:1:1603:A:H4'	1.89	0.54
54:1:2233:U:H2'	54:1:2234:G:H8	1.71	0.54
54:1:2264:C:H2'	54:1:2265:U:O4'	2.08	0.54
55:2:30:C:H2'	55:2:31:C:O4'	2.07	0.54
1:b:158:GLY:H	1:b:194:VAL:HB	1.73	0.54
7:h:38:MET:HA	7:h:42:ARG:HD3	1.88	0.54
10:k:30:ARG:HG2	10:k:30:ARG:HH11	1.72	0.54
13:n:22:ARG:HD2	13:n:70:THR:H	1.72	0.54
22:w:29:ALA:HB1	54:1:2352:A:H2	1.73	0.54
36:K:45:ARG:NH1	36:K:45:ARG:HB3	2.23	0.54
49:X:28:LYS:HB3	49:X:29:PRO:HD2	1.89	0.54
49:X:51:HIS:HA	49:X:55:GLN:O	2.08	0.54
52:a:44:VAL:HA	52:a:214:ILE:HA	1.88	0.54
52:a:177:LYS:HE2	52:a:179:ASP:HB3	1.90	0.54
53:3:1397:C:N4	57:4:22:A:H3'	2.17	0.54
54:1:2047:C:H2'	54:1:2048:G:C8	2.43	0.54
54:1:2529:G:OP2	54:1:2530:A:H5''	2.08	0.54
54:1:2700:A:H2'	54:1:2701:U:H6	1.72	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:1:ALA:O	1:b:18:VAL:HA	2.07	0.54
4:e:25:MET:HE3	4:e:25:MET:HA	1.90	0.54
11:l:85:VAL:HG22	11:l:94:THR:HG22	1.89	0.54
16:q:23:TYR:O	54:1:18:U:H5''	2.07	0.54
17:r:24:LYS:HA	17:r:94:THR:OG1	2.07	0.54
23:x:60:LYS:HD3	54:1:372:G:C5	2.42	0.54
30:E:14:LYS:HB3	30:E:22:LYS:HG3	1.89	0.54
41:P:80:ASN:HA	41:P:105:ARG:HB3	1.90	0.54
47:V:11:VAL:CG2	47:V:20:ILE:HD11	2.38	0.54
53:3:576:C:H3'	53:3:577:G:H5''	1.90	0.54
54:1:1074:G:N2	54:1:1075:C:H42	2.05	0.54
54:1:2184:A:H2'	54:1:2185:U:C6	2.43	0.54
54:1:2356:U:C2'	54:1:2357:G:H5''	2.38	0.54
54:1:2386:A:H2'	54:1:2387:U:C6	2.43	0.54
55:2:60:C:H2'	55:2:61:G:C8	2.43	0.54
58:7:2:G:H1'	58:7:3:G:OP1	2.08	0.54
3:d:148:ILE:HD13	3:d:187:VAL:CG2	2.27	0.54
5:f:108:PHE:C	5:f:110:HIS:H	2.16	0.54
6:g:1:MET:HG3	6:g:23:ALA:HA	1.90	0.54
10:k:35:VAL:HG21	10:k:69:VAL:CG1	2.37	0.54
15:p:20:ARG:HB2	15:p:112:ARG:NH1	2.22	0.54
16:q:57:ARG:HH12	16:q:61:ILE:HD11	1.73	0.54
23:x:1:SER:H1	54:1:1364:G:H8	1.53	0.54
24:y:50:VAL:HG12	24:y:54:LYS:CE	2.37	0.54
32:G:220:VAL:HG23	32:G:221:ARG:HD3	1.89	0.54
36:K:38:ARG:NH1	36:K:98:GLU:O	2.40	0.54
41:P:30:ILE:HD13	41:P:45:THR:HB	1.89	0.54
42:Q:109:ARG:HG3	53:3:538:G:OP1	2.07	0.54
45:T:13:GLU:HB3	45:T:83:ARG:HH22	1.73	0.54
49:X:52:ASN:HB3	49:X:74:ALA:HB1	1.90	0.54
53:3:21:G:H2'	53:3:22:G:C8	2.43	0.54
53:3:684:U:H2'	53:3:685:G:O4'	2.08	0.54
53:3:865:A:H2'	53:3:866:C:H6	1.73	0.54
54:1:397:U:H2'	54:1:398:C:C6	2.43	0.54
54:1:435:C:H2'	54:1:436:C:H5'	1.89	0.54
54:1:2019:A:H2	54:1:2035:G:H22	1.54	0.54
54:1:2163:A:H3'	54:1:2163:A:N3	2.23	0.54
54:1:2437:G:H2'	54:1:2438:U:C6	2.42	0.54
54:1:2590:A:H2'	54:1:2591:C:H6	1.71	0.54
54:1:2625:G:H2'	54:1:2626:C:O4'	2.07	0.54
56:6:11:A:H2'	56:6:12:G:H8	1.69	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:42:ARG:HH12	54:l:691:C:C1'	2.21	0.54
2:c:3:GLY:C	2:c:4:LEU:HD12	2.33	0.54
6:g:44:ILE:HG13	6:g:45:GLU:N	2.22	0.54
14:o:7:ARG:HA	14:o:10:ARG:HG2	1.90	0.54
16:q:48:ASP:HA	16:q:51:GLN:CG	2.38	0.54
18:s:3:THR:OG1	18:s:107:VAL:O	2.26	0.54
21:v:80:HIS:CG	21:v:83:LYS:HB2	2.43	0.54
23:x:20:ALA:O	23:x:21:LEU:HB2	2.07	0.54
30:E:48:MET:HE2	30:E:48:MET:HA	1.90	0.54
32:G:18:GLN:HA	32:G:18:GLN:HE21	1.73	0.54
35:J:160:VAL:O	35:J:163:ILE:HG12	2.08	0.54
39:N:24:ASN:HA	39:N:58:GLU:HG2	1.90	0.54
46:U:8:ARG:HH12	53:3:391:G:H5''	1.72	0.54
53:3:273:U:O2'	53:3:274:A:H5'	2.08	0.54
53:3:678:U:H2'	53:3:679:C:C6	2.43	0.54
54:1:974:G:N3	54:1:974:G:H2'	2.23	0.54
54:1:1796:U:H2'	54:1:1797:G:C8	2.42	0.54
54:1:2233:U:H2'	54:1:2234:G:C8	2.43	0.54
54:1:2292:U:H2'	54:1:2293:G:C8	2.43	0.54
54:1:2543:G:H2'	54:1:2544:G:C8	2.43	0.54
54:1:2555:U:H2'	54:1:2556:C:H5'	1.90	0.54
56:6:46:G:C3'	56:6:47:U:H5'	2.37	0.54
3:d:135:ALA:O	3:d:139:LYS:N	2.40	0.53
10:k:6:THR:HG23	54:1:1666:G:O3'	2.07	0.53
12:m:57:VAL:HB	12:m:60:GLN:HB3	1.90	0.53
16:q:18:LYS:HA	16:q:21:LYS:HZ2	1.74	0.53
23:x:32:LEU:HD23	23:x:51:SER:HA	1.89	0.53
27:B:1:ALA:N	54:1:2056:G:N2	2.56	0.53
32:G:169:HIS:HA	32:G:172:ILE:HD12	1.89	0.53
33:H:57:GLU:O	33:H:63:ILE:HG13	2.09	0.53
36:K:86:ARG:NH1	53:3:673:A:H4'	2.23	0.53
44:S:63:CYS:HB3	44:S:67:GLY:H	1.72	0.53
53:3:613:C:H2'	53:3:614:C:C6	2.43	0.53
54:1:967:U:H2'	54:1:968:C:C6	2.43	0.53
54:1:1038:G:H2'	54:1:1039:A:C8	2.43	0.53
54:1:1257:C:O5'	54:1:1257:C:H6	1.90	0.53
54:1:1548:A:H2'	54:1:1549:A:C8	2.43	0.53
54:1:1889:A:H2'	54:1:1890:A:C8	2.42	0.53
54:1:2000:C:O2'	54:1:2001:C:H5'	2.07	0.53
56:6:61:C:O2'	56:6:62:C:H5'	2.08	0.53
4:e:114:ARG:O	4:e:177:ARG:HG2	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:n:47:VAL:O	13:n:50:PRO:HD2	2.09	0.53
17:r:31:GLU:CD	17:r:32:THR:H	2.17	0.53
18:s:82:MET:HB3	18:s:84:ARG:NH2	2.22	0.53
19:t:2:ILE:HB	19:t:5:GLU:HB3	1.88	0.53
35:J:107:GLY:CA	53:3:9:G:H5'	2.38	0.53
40:O:41:PRO:HB3	53:3:1151:A:C1'	2.38	0.53
45:T:88:ARG:NH2	54:1:714:U:C6	2.76	0.53
53:3:183:C:H5'	53:3:184:G:OP2	2.08	0.53
54:1:161:A:H3'	54:1:162:U:H5''	1.88	0.53
1:b:30:ALA:HB3	1:b:31:PRO:HD3	1.91	0.53
2:c:115:GLY:HA2	2:c:167:ASN:H	1.74	0.53
4:e:66:ILE:N	4:e:66:ILE:HD12	2.22	0.53
9:j:26:GLY:HA3	54:1:1140:C:C5'	2.36	0.53
21:v:75:GLN:HB2	21:v:92:VAL:HB	1.90	0.53
34:I:186:GLU:CD	34:I:187:ARG:H	2.16	0.53
36:K:2:ARG:HD2	36:K:91:ARG:HE	1.74	0.53
39:N:34:LEU:HD23	39:N:34:LEU:C	2.33	0.53
43:R:85:TYR:H	49:X:72:GLU:HG2	1.73	0.53
53:3:548:G:H2'	53:3:549:C:H6	1.74	0.53
54:1:1744:A:H3'	54:1:1745:A:C8	2.43	0.53
54:1:2236:U:H2'	54:1:2237:G:O4'	2.08	0.53
11:l:20:GLY:HA2	11:l:28:GLY:HA2	1.89	0.53
11:l:62:PRO:HD3	30:E:26:ALA:HB2	1.89	0.53
13:n:9:GLN:HG2	54:1:1653:G:C6	2.43	0.53
16:q:93:ILE:O	16:q:97:ILE:HG13	2.08	0.53
32:G:80:LYS:HD2	32:G:90:PHE:CZ	2.42	0.53
33:H:171:ARG:HG2	53:3:1106:G:H5''	1.88	0.53
36:K:44:ARG:NH1	36:K:56:LYS:HD3	2.23	0.53
38:M:94:VAL:HG12	38:M:95:MET:SD	2.48	0.53
46:U:5:ARG:HE	46:U:22:ALA:HB3	1.73	0.53
53:3:150:U:H2'	53:3:151:A:O4'	2.09	0.53
53:3:478:A:H2'	53:3:479:U:O4'	2.08	0.53
53:3:825:A:H2'	53:3:826:C:C6	2.44	0.53
54:1:845:A:N3	54:1:845:A:H3'	2.24	0.53
54:1:1161:C:H2'	54:1:1162:G:H8	1.74	0.53
54:1:1709:U:H2'	54:1:1710:G:C8	2.44	0.53
56:5:64:G:H2'	56:5:65:C:C6	2.44	0.53
2:c:61:THR:CB	2:c:63:PRO:HD2	2.36	0.53
2:c:150:GLN:CD	54:1:2572:A:H62	2.16	0.53
13:n:38:LEU:HG	13:n:42:LYS:HE2	1.90	0.53
16:q:68:ALA:HB1	16:q:73:ILE:HG23	1.89	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:w:64:LYS:O	22:w:76:ILE:HG23	2.08	0.53
24:y:15:ASN:O	24:y:18:LEU:HB3	2.08	0.53
32:G:77:GLU:O	32:G:80:LYS:HB3	2.08	0.53
37:L:135:LYS:HA	37:L:138:GLU:HB2	1.88	0.53
45:T:35:ILE:HG23	45:T:55:LEU:HD11	1.90	0.53
53:3:98:A:H2'	53:3:99:C:C6	2.44	0.53
53:3:229:U:H2'	53:3:230:G:C8	2.44	0.53
56:5:5:G:H2'	56:5:6:G:H8	1.73	0.53
15:p:13:LYS:HG2	15:p:76:HIS:ND1	2.24	0.53
19:t:29:THR:HG23	19:t:85:VAL:O	2.09	0.53
32:G:26:MET:HE2	32:G:192:PRO:HB3	1.90	0.53
33:H:13:ILE:HG13	33:H:14:VAL:N	2.24	0.53
34:I:149:LYS:HG2	34:I:150:LYS:N	2.22	0.53
35:J:110:MET:HA	35:J:113:VAL:HG12	1.90	0.53
45:T:2:LEU:HG	45:T:7:THR:HG22	1.89	0.53
47:V:16:MET:HG2	47:V:17:GLU:N	2.24	0.53
47:V:74:LEU:HD12	47:V:75:VAL:N	2.24	0.53
53:3:429:U:H4'	53:3:430:A:O5'	2.08	0.53
53:3:594:U:O2'	53:3:595:A:H5'	2.09	0.53
53:3:947:G:H2'	53:3:948:C:H6	1.73	0.53
53:3:1273:C:H2'	53:3:1274:A:O4'	2.08	0.53
54:1:760:G:H2'	54:1:761:A:O4'	2.09	0.53
54:1:1183:U:H2'	54:1:1184:U:C6	2.43	0.53
54:1:2190:G:H2'	54:1:2191:A:C8	2.43	0.53
56:5:47:U:H3'	56:5:48:C:H5'	1.89	0.53
6:g:112:LYS:HZ1	54:1:2220:U:H5''	1.71	0.53
8:i:4:VAL:HG21	54:1:1099:G:H5''	1.90	0.53
21:v:21:ARG:HG3	21:v:21:ARG:NH1	2.22	0.53
47:V:57:VAL:HB	47:V:79:GLU:HB2	1.89	0.53
50:Y:58:ASP:OD2	53:3:194:C:H1'	2.09	0.53
53:3:273:U:C2'	53:3:274:A:H5'	2.39	0.53
53:3:379:C:H2'	53:3:380:G:O4'	2.09	0.53
53:3:529:G:H4'	53:3:533:A:C2	2.44	0.53
54:1:143:C:H2'	54:1:144:A:C8	2.44	0.53
54:1:302:C:H2'	54:1:303:G:H8	1.72	0.53
54:1:2033:A:H1'	54:1:2035:G:OP2	2.08	0.53
54:1:2671:G:H2'	54:1:2672:U:C6	2.44	0.53
54:1:2799:A:C2'	54:1:2800:A:H5'	2.37	0.53
3:d:178:VAL:O	3:d:182:ALA:N	2.41	0.53
4:e:39:VAL:HG21	4:e:48:LEU:CD2	2.38	0.53
4:e:48:LEU:C	4:e:48:LEU:HD23	2.34	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:f:68:ARG:HD3	5:f:68:ARG:C	2.34	0.53
9:j:57:LEU:HD11	9:j:130:HIS:HD2	1.74	0.53
13:n:9:GLN:O	13:n:10:LEU:HB2	2.09	0.53
32:G:208:ALA:O	32:G:211:LEU:HG	2.08	0.53
35:J:45:VAL:C	35:J:70:MET:HE3	2.34	0.53
53:3:225:C:H2'	53:3:226:G:H5''	1.90	0.53
53:3:237:G:H2'	53:3:238:A:C8	2.43	0.53
54:1:356:G:H2'	54:1:357:C:C6	2.44	0.53
54:1:1845:G:O2'	54:1:1846:G:H5'	2.08	0.53
54:1:1917:U:O2'	54:1:1918:A:H5'	2.08	0.53
54:1:2307:G:H8	54:1:2307:G:OP1	1.92	0.53
13:n:38:LEU:HD21	13:n:99:LYS:HE3	1.90	0.53
21:v:70:ILE:HG22	21:v:72:VAL:HG13	1.89	0.53
27:B:51:ARG:HH21	27:B:53:VAL:HB	1.74	0.53
34:I:154:VAL:HA	34:I:157:ALA:HB3	1.90	0.53
42:Q:52:CYS:HB2	42:Q:66:ILE:HD11	1.90	0.53
48:W:12:PHE:O	48:W:14:ALA:N	2.42	0.53
49:X:17:LYS:HA	49:X:20:LYS:HE2	1.91	0.53
53:3:113:G:H1'	53:3:354:G:C5'	2.39	0.53
53:3:1412:C:H2'	53:3:1413:A:C8	2.44	0.53
54:1:629:G:H5''	54:1:650:C:O2'	2.07	0.53
54:1:974:G:H8	54:1:990:A:H62	1.57	0.53
54:1:1139:G:O2'	54:1:1140:C:H5'	2.09	0.53
54:1:1316:U:H2'	54:1:1317:G:C8	2.43	0.53
54:1:1842:G:H2'	54:1:1843:C:H6	1.72	0.53
3:d:158:PHE:HA	3:d:169:VAL:HG21	1.90	0.53
6:g:5:LEU:HD21	6:g:9:VAL:CG2	2.36	0.53
7:h:34:THR:O	7:h:37:LYS:HB3	2.10	0.53
12:m:34:LYS:HA	12:m:101:VAL:HA	1.91	0.53
12:m:36:VAL:HG23	12:m:128:THR:HA	1.90	0.53
12:m:112:LEU:HD12	12:m:113:ALA:N	2.24	0.53
14:o:34:HIS:ND1	14:o:65:THR:HB	2.24	0.53
32:G:90:PHE:CE1	32:G:149:GLY:HA2	2.44	0.53
36:K:1:MET:HG2	36:K:67:PRO:HA	1.89	0.53
41:P:19:VAL:HG23	41:P:36:ARG:HA	1.91	0.53
43:R:14:ALA:HA	43:R:17:ALA:HB3	1.91	0.53
51:Z:40:PRO:O	51:Z:44:ARG:HB2	2.08	0.53
52:a:167:LYS:HG3	52:a:168:ASN:N	2.24	0.53
53:3:62:U:H2'	53:3:63:C:C6	2.44	0.53
53:3:1228:C:H2'	53:3:1229:A:H8	1.74	0.53
54:1:864:G:O2'	54:1:865:C:H5'	2.09	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:1297:C:OP1	54:1:2710:C:H4'	2.09	0.53
54:1:1675:C:H2'	54:1:1676:A:O4'	2.09	0.53
54:1:1821:A:H2'	54:1:1822:C:H6	1.74	0.53
21:v:35:GLU:HB2	21:v:93:ARG:HH12	1.73	0.52
23:x:58:ILE:O	23:x:58:ILE:HG22	2.08	0.52
35:J:133:ILE:HD12	35:J:133:ILE:N	2.22	0.52
39:N:61:ASP:O	39:N:62:LEU:HD23	2.09	0.52
39:N:111:GLU:HG2	53:3:1348:U:OP1	2.09	0.52
40:O:43:PRO:HA	53:3:1151:A:H5'	1.91	0.52
41:P:92:ARG:NH1	51:Z:24:LYS:HD2	2.24	0.52
52:a:27:ILE:HD12	52:a:185:LEU:HB2	1.90	0.52
53:3:1309:G:H2'	53:3:1310:G:C8	2.43	0.52
54:1:723:C:H2'	54:1:724:U:O4'	2.09	0.52
54:1:1091:G:H2'	54:1:1092:C:H6	1.74	0.52
54:1:2185:U:H2'	54:1:2186:G:C8	2.44	0.52
54:1:2788:C:H2'	54:1:2789:C:C6	2.44	0.52
56:5:6:G:H2'	56:5:7:G:H8	1.73	0.52
58:7:29:U:H2'	58:7:30:G:C8	2.43	0.52
1:b:65:ASP:OD2	1:b:68:ARG:HG2	2.09	0.52
5:f:42:VAL:C	5:f:43:LYS:HD3	2.34	0.52
5:f:136:ASP:HB3	5:f:139:VAL:CG2	2.39	0.52
7:h:33:VAL:HG23	7:h:36:ASP:N	2.16	0.52
8:i:19:PRO:HB2	8:i:22:PRO:HB2	1.91	0.52
10:k:7:MET:HG2	10:k:18:ARG:NH2	2.23	0.52
13:n:28:LEU:C	13:n:28:LEU:HD23	2.35	0.52
28:C:5:ARG:CG	28:C:23:THR:HB	2.33	0.52
34:I:169:TRP:HB3	34:I:183:ARG:CZ	2.39	0.52
42:Q:113:ARG:HG2	42:Q:113:ARG:HH11	1.73	0.52
54:1:1131:G:C8	54:1:2025:C:H4'	2.44	0.52
54:1:2037:A:H2'	54:1:2038:G:C8	2.44	0.52
55:2:116:G:H2'	55:2:117:G:C8	2.44	0.52
10:k:24:VAL:HA	10:k:39:ILE:HG22	1.92	0.52
34:I:12:ARG:CD	34:I:37:PRO:HA	2.39	0.52
36:K:18:VAL:O	36:K:22:ILE:HG13	2.09	0.52
36:K:42:TRP:HB3	36:K:45:ARG:HH22	1.74	0.52
39:N:58:GLU:H	39:N:59:LYS:NZ	2.07	0.52
40:O:5:ARG:N	40:O:76:ILE:O	2.43	0.52
49:X:31:ARG:HE	49:X:56:HIS:CD2	2.27	0.52
54:1:1526:C:H2'	54:1:1527:G:O4'	2.10	0.52
54:1:1702:G:C2'	54:1:1703:G:H5''	2.39	0.52
54:1:1858:A:HI'	54:1:1885:A:C2	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:2292:U:H2'	54:1:2293:G:H8	1.75	0.52
54:1:2315:G:H2'	54:1:2316:G:H8	1.73	0.52
54:1:2389:G:H5''	54:1:2390:U:O4'	2.09	0.52
8:i:9:LYS:HD3	54:1:1059:G:OP1	2.09	0.52
8:i:29:GLN:HB3	8:i:30:GLN:HE22	1.74	0.52
9:j:81:ILE:HG13	9:j:82:GLY:H	1.74	0.52
13:n:84:GLY:N	13:n:85:PRO:HD2	2.25	0.52
22:w:66:GLU:HG2	22:w:67:VAL:N	2.25	0.52
23:x:21:LEU:O	23:x:23:ALA:N	2.42	0.52
37:L:17:PHE:HE2	37:L:22:LEU:HD22	1.74	0.52
40:O:72:ARG:HG2	40:O:72:ARG:HH11	1.74	0.52
43:R:2:ARG:O	43:R:2:ARG:HD3	2.10	0.52
53:3:3:A:H5''	53:3:4:U:OP1	2.10	0.52
53:3:695:A:H2'	53:3:696:A:C8	2.44	0.52
53:3:742:G:H2'	53:3:743:A:H8	1.74	0.52
54:1:704:G:H2'	54:1:726:G:H22	1.74	0.52
54:1:2341:G:H2'	54:1:2342:C:C6	2.44	0.52
1:b:155:ARG:HH21	54:1:1818:U:H5	1.57	0.52
3:d:187:VAL:O	3:d:187:VAL:HG23	2.08	0.52
4:e:59:ILE:HD12	4:e:59:ILE:N	2.25	0.52
8:i:9:LYS:HD3	54:1:1059:G:P	2.50	0.52
11:l:82:LEU:HD11	11:l:90:VAL:HG21	1.92	0.52
27:B:39:ARG:HD3	54:1:2886:A:N1	2.24	0.52
38:M:87:ARG:HB2	38:M:90:GLU:OE1	2.10	0.52
41:P:25:SER:C	41:P:27:ASN:H	2.17	0.52
41:P:45:THR:HG23	41:P:48:GLY:H	1.74	0.52
43:R:97:ARG:HG2	43:R:97:ARG:HH11	1.75	0.52
47:V:64:ARG:HD3	53:3:264:C:O2'	2.09	0.52
53:3:309:A:H2'	53:3:310:G:H8	1.75	0.52
53:3:1219:A:H2'	53:3:1220:G:H8	1.74	0.52
54:1:74:A:H4'	54:1:75:G:O5'	2.09	0.52
56:5:6:G:H2'	56:5:7:G:C8	2.45	0.52
56:6:64:G:H2'	56:6:65:C:O4'	2.09	0.52
2:c:11:MET:HE3	54:1:2682:A:C8	2.45	0.52
6:g:83:LYS:O	6:g:91:PHE:N	2.42	0.52
9:j:37:ARG:HH21	9:j:37:ARG:HG3	1.75	0.52
14:o:94:ARG:HH22	54:1:2293:G:H5''	1.74	0.52
27:B:3:GLN:HA	54:1:2615:U:C2	2.44	0.52
37:L:37:THR:O	37:L:41:ILE:HG12	2.10	0.52
37:L:38:ALA:O	37:L:42:VAL:HG23	2.09	0.52
39:N:6:TYR:CE1	39:N:17:ARG:HB2	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:T:88:ARG:NH2	54:1:714:U:H6	2.07	0.52
46:U:2:VAL:HA	46:U:23:ASP:HA	1.90	0.52
51:Z:36:PHE:C	51:Z:38:GLU:H	2.17	0.52
53:3:38:G:H22	53:3:397:A:C5'	2.22	0.52
54:1:302:C:H2'	54:1:303:G:C8	2.45	0.52
54:1:1068:G:H2'	54:1:1069:A:H4'	1.92	0.52
56:6:16:C:O2'	56:6:17:C:H5'	2.10	0.52
6:g:4:ILE:HG22	6:g:37:VAL:O	2.10	0.52
12:m:33:LEU:HD13	12:m:117:PHE:HB3	1.91	0.52
34:I:153:ARG:C	34:I:155:LYS:N	2.68	0.52
41:P:52:ARG:HA	41:P:52:ARG:HE	1.74	0.52
41:P:108:ASN:CB	51:Z:6:ARG:HG2	2.40	0.52
44:S:52:ARG:HD2	53:3:1317:C:C4	2.45	0.52
50:Y:32:LYS:NZ	53:3:1438:G:H5''	2.24	0.52
53:3:405:U:C3'	53:3:406:G:H5'	2.30	0.52
53:3:878:A:H2'	53:3:879:C:C6	2.45	0.52
53:3:1314:C:H2'	53:3:1315:U:C6	2.43	0.52
54:1:804:A:H2'	54:1:806:C:N4	2.24	0.52
54:1:828:U:H2'	54:1:829:A:C8	2.43	0.52
54:1:2092:U:H4'	54:1:2093:G:H5''	1.91	0.52
54:1:2842:G:O2'	54:1:2843:G:H5'	2.10	0.52
1:b:66:PHE:HE1	1:b:104:LEU:HD11	1.75	0.52
2:c:151:THR:HB	54:1:2571:U:O2'	2.10	0.52
7:h:5:LEU:HA	7:h:8:LYS:HG2	1.90	0.52
10:k:107:LEU:O	10:k:112:PHE:HB2	2.10	0.52
14:o:36:TYR:HB3	14:o:52:SER:HA	1.90	0.52
15:p:33:GLU:HG3	15:p:36:LYS:HB2	1.90	0.52
31:F:15:LYS:HB3	31:F:26:ILE:HG13	1.91	0.52
31:F:18:LYS:HD2	31:F:21:GLY:O	2.10	0.52
34:I:11:SER:OG	34:I:20:LEU:HD12	2.09	0.52
46:U:41:PRO:HG2	46:U:42:ILE:H	1.75	0.52
52:a:41:SER:HA	52:a:177:LYS:HA	1.91	0.52
53:3:1227:A:H2'	53:3:1228:C:H5'	1.91	0.52
54:1:28:A:H2'	54:1:29:U:H6	1.75	0.52
54:1:28:A:H1'	54:1:513:A:C2	2.45	0.52
54:1:1654:A:H2'	54:1:1655:A:H8	1.75	0.52
6:g:6:LEU:HD11	6:g:37:VAL:CG2	2.32	0.52
8:i:4:VAL:HA	8:i:7:TYR:HB3	1.92	0.52
14:o:52:SER:HB2	14:o:54:VAL:HG12	1.92	0.52
39:N:4:GLN:NE2	39:N:5:TYR:O	2.43	0.52
39:N:6:TYR:HE1	39:N:17:ARG:HB2	1.74	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:P:36:ARG:HB3	41:P:36:ARG:HH11	1.73	0.52
49:X:30:LEU:HD12	49:X:30:LEU:H	1.74	0.52
51:Z:50:SER:O	51:Z:54:ARG:HG2	2.09	0.52
52:a:21:TYR:N	52:a:21:TYR:CD1	2.78	0.52
53:3:1517:G:H2'	53:3:1518:A:H5'	1.91	0.52
53:3:1522:U:H2'	53:3:1523:G:H8	1.74	0.52
54:1:227:A:H1'	54:1:229:C:N4	2.24	0.52
54:1:805:G:H22	54:1:828:U:H5''	1.74	0.52
54:1:1292:G:O2'	54:1:1293:C:H5'	2.10	0.52
4:e:3:LEU:O	4:e:3:LEU:HD23	2.10	0.52
6:g:50:ARG:N	6:g:50:ARG:HD2	2.25	0.52
6:g:94:ILE:HG23	6:g:99:ILE:HD11	1.91	0.52
7:h:73:LYS:HD2	7:h:76:PHE:CD2	2.44	0.52
14:o:18:LEU:HD21	14:o:25:ARG:HB3	1.91	0.52
14:o:30:ARG:HD2	14:o:102:ARG:HH11	1.75	0.52
19:t:39:THR:HG22	19:t:42:GLU:HG3	1.92	0.52
21:v:86:LEU:HD23	21:v:86:LEU:N	2.22	0.52
22:w:46:ASN:HB2	22:w:78:ILE:HB	1.90	0.52
28:C:37:LYS:HB2	28:C:48:TYR:CD2	2.45	0.52
39:N:29:ILE:HD13	39:N:64:ILE:HB	1.91	0.52
44:S:20:PHE:O	44:S:21:ALA:HB3	2.10	0.52
49:X:30:LEU:HB2	49:X:48:ILE:HG22	1.91	0.52
53:3:597:G:H2'	53:3:598:U:H5'	1.92	0.52
53:3:924:C:H2'	53:3:925:G:C8	2.45	0.52
54:1:287:G:H2'	54:1:288:U:H6	1.73	0.52
54:1:900:A:H2'	54:1:901:C:H5'	1.91	0.52
54:1:1301:A:O2'	54:1:1302:A:H3'	2.10	0.52
54:1:2318:G:H2'	54:1:2319:G:O4'	2.10	0.52
54:1:2345:G:H21	54:1:2381:A:H3'	1.75	0.52
6:g:29:PHE:CD2	6:g:30:LEU:HD12	2.45	0.51
8:i:41:PHE:HE1	8:i:68:PHE:CE2	2.29	0.51
14:o:36:TYR:CB	14:o:52:SER:HA	2.40	0.51
16:q:40:LYS:HE3	16:q:44:TYR:HE1	1.75	0.51
17:r:81:LYS:HE2	17:r:81:LYS:CA	2.39	0.51
19:t:12:ARG:NE	24:y:29:ARG:HH11	2.08	0.51
21:v:38:LEU:HD23	21:v:39:ALA:N	2.25	0.51
34:I:28:ASP:HB2	34:I:31:CYS:SG	2.49	0.51
44:S:36:SER:HA	44:S:40:ARG:HD3	1.92	0.51
46:U:39:PHE:CD2	46:U:41:PRO:HD3	2.45	0.51
47:V:11:VAL:HB	47:V:55:GLY:H	1.74	0.51
53:3:491:G:H2'	53:3:492:C:C6	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:509:A:H8	53:3:509:A:H5'	1.74	0.51
53:3:614:C:C2'	53:3:615:G:H5''	2.39	0.51
53:3:1120:C:H2'	53:3:1121:U:C6	2.45	0.51
53:3:1167:A:H2'	53:3:1167:A:N3	2.25	0.51
54:1:833:A:H2'	54:1:834:G:C8	2.44	0.51
54:1:1558:C:H4'	54:1:1560:G:OP2	2.10	0.51
54:1:2180:U:H2'	54:1:2181:U:O4'	2.09	0.51
54:1:2393:U:O2'	54:1:2394:C:H5'	2.10	0.51
56:5:76:A:H5'	59:5:101:FME:O	2.10	0.51
56:6:43:A:O2'	56:6:44:A:H5'	2.10	0.51
1:b:182:LYS:NZ	1:b:267:VAL:HG22	2.24	0.51
2:c:100:LEU:HD12	2:c:101:PHE:N	2.25	0.51
7:h:33:VAL:CG2	7:h:36:ASP:H	2.16	0.51
9:j:40:HIS:HE1	9:j:41:LYS:HE3	1.75	0.51
11:l:91:ASP:CG	11:l:92:LEU:H	2.17	0.51
13:n:63:ARG:NH2	54:1:1454:C:H5'	2.23	0.51
14:o:30:ARG:HG2	14:o:31:THR:N	2.24	0.51
16:q:44:TYR:HD2	54:1:533:G:H21	1.57	0.51
18:s:96:ILE:HG23	54:1:2012:G:O3'	2.11	0.51
34:I:3:TYR:CZ	34:I:10:LEU:HD11	2.45	0.51
36:K:6:ILE:HD12	36:K:6:ILE:N	2.25	0.51
39:N:78:ILE:O	39:N:82:ILE:HG12	2.10	0.51
46:U:33:ILE:H	46:U:33:ILE:CD1	2.22	0.51
47:V:77:VAL:O	47:V:79:GLU:N	2.43	0.51
54:1:515:A:H2'	54:1:516:C:H5'	1.92	0.51
54:1:2133:G:H2'	54:1:2158:A:C2	2.45	0.51
54:1:2547:A:H2'	54:1:2548:U:C6	2.45	0.51
54:1:2553:G:C3'	54:1:2554:U:H5''	2.38	0.51
54:1:2747:G:O6	54:1:2755:C:H5''	2.10	0.51
1:b:152:GLN:HB3	54:1:1818:U:N3	2.25	0.51
5:f:110:HIS:ND1	5:f:110:HIS:O	2.42	0.51
12:m:11:LYS:HD3	12:m:86:LYS:HG2	1.92	0.51
15:p:62:LYS:HE3	15:p:64:SER:HB3	1.92	0.51
32:G:158:ASP:O	32:G:181:PRO:HD2	2.10	0.51
40:O:71:LEU:O	40:O:72:ARG:NH1	2.40	0.51
44:S:2:LYS:O	44:S:5:MET:N	2.40	0.51
50:Y:34:VAL:O	50:Y:38:ILE:HG13	2.10	0.51
50:Y:66:ILE:CG2	50:Y:70:LYS:HB3	2.38	0.51
53:3:256:U:H2'	53:3:257:G:H8	1.76	0.51
53:3:1241:G:H2'	53:3:1242:G:H8	1.74	0.51
1:b:256:THR:HG21	54:1:1803:A:O2'	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:c:35:THR:HG23	2:c:51:THR:HG22	1.91	0.51
5:f:88:LEU:HB2	5:f:128:THR:CB	2.39	0.51
6:g:49:ALA:C	6:g:50:ARG:HD2	2.36	0.51
6:g:103:VAL:O	6:g:107:GLY:N	2.43	0.51
7:h:33:VAL:HG12	54:l:1055:G:H5''	1.93	0.51
9:j:49:ASP:OD1	9:j:118:MET:HG3	2.10	0.51
15:p:12:MET:SD	15:p:54:LEU:HA	2.51	0.51
16:q:71:ASN:HD22	16:q:71:ASN:N	2.08	0.51
20:u:5:ARG:HB2	54:l:85:G:OP1	2.11	0.51
21:v:82:TYR:HE1	21:v:83:LYS:HZ2	1.58	0.51
23:x:18:SER:OG	23:x:22:ASN:HB2	2.10	0.51
35:J:80:LEU:HD12	35:J:122:VAL:HG11	1.92	0.51
37:L:39:GLU:O	37:L:43:TYR:HB2	2.10	0.51
38:M:10:LEU:CD1	38:M:76:ARG:HB2	2.40	0.51
40:O:5:ARG:HD3	40:O:79:PRO:HD3	1.92	0.51
53:3:1390:U:H2'	53:3:1391:U:C6	2.46	0.51
54:1:69:C:O2'	54:1:70:G:H5'	2.10	0.51
54:1:387:U:H5'	54:1:387:U:H6	1.74	0.51
54:1:1664:A:H61	54:1:1996:C:H42	1.59	0.51
54:1:2106:U:C2'	54:1:2107:G:H5'	2.40	0.51
54:1:2520:C:O2'	54:1:2521:C:H5'	2.10	0.51
54:1:2785:C:H2'	54:1:2786:U:C6	2.45	0.51
56:6:23:C:H2'	56:6:24:U:C6	2.45	0.51
20:u:27:VAL:HG12	20:u:33:VAL:HG12	1.91	0.51
43:R:5:GLY:C	43:R:6:ILE:HG13	2.35	0.51
53:3:135:C:H2'	53:3:136:C:H5'	1.92	0.51
53:3:883:C:O2'	53:3:884:U:H5'	2.10	0.51
53:3:1410:A:H2'	53:3:1411:C:H6	1.76	0.51
54:1:256:A:H2'	54:1:257:C:H6	1.76	0.51
54:1:256:A:H2'	54:1:257:C:C6	2.45	0.51
54:1:492:A:H2'	54:1:493:G:O4'	2.11	0.51
54:1:1027:A:C2	54:1:2488:G:H5'	2.45	0.51
58:7:27:A:H2'	58:7:28:C:H6	1.74	0.51
1:b:86:ARG:NH2	54:1:1817:G:OP1	2.43	0.51
1:b:260:LYS:HA	1:b:263:ASP:OD2	2.10	0.51
14:o:24:THR:HG21	14:o:40:ILE:O	2.10	0.51
17:r:80:ARG:O	17:r:81:LYS:HE2	2.10	0.51
18:s:26:GLY:HA2	18:s:71:VAL:O	2.11	0.51
33:H:71:ARG:HD3	33:H:74:ILE:HD12	1.92	0.51
53:3:33:A:H2'	53:3:34:C:H6	1.76	0.51
53:3:548:G:H2'	53:3:549:C:C6	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1096:C:H2'	53:3:1097:C:H6	1.74	0.51
53:3:1137:C:H5'	53:3:1138:G:H5'	1.92	0.51
54:1:75:G:H2'	54:1:75:G:N3	2.25	0.51
54:1:634:C:O5'	54:1:634:C:H6	1.94	0.51
54:1:2376:A:H2'	54:1:2377:A:O4'	2.10	0.51
2:c:116:LYS:CD	13:n:1:MET:HE1	2.40	0.51
3:d:77:ILE:CD1	54:1:673:C:H4'	2.41	0.51
9:j:57:LEU:O	9:j:58:ASN:HB2	2.11	0.51
10:k:22:ILE:HG12	10:k:40:LYS:O	2.10	0.51
14:o:88:LYS:HE2	14:o:116:GLN:HG2	1.92	0.51
17:r:77:PHE:HD1	17:r:84:ARG:HB3	1.75	0.51
25:z:23:LEU:HD13	25:z:28:LEU:HD12	1.93	0.51
33:H:13:ILE:HG13	33:H:14:VAL:H	1.76	0.51
38:M:58:LEU:HD23	38:M:58:LEU:C	2.36	0.51
40:O:63:ASP:OD2	44:S:97:LYS:HE2	2.10	0.51
42:Q:74:GLN:OE1	42:Q:74:GLN:N	2.44	0.51
51:Z:6:ARG:O	51:Z:7:GLU:C	2.53	0.51
53:3:216:U:H2'	53:3:217:C:C6	2.46	0.51
53:3:460:A:H2'	53:3:461:A:H8	1.75	0.51
53:3:479:U:C3'	53:3:480:U:H5''	2.39	0.51
53:3:515:G:H2'	53:3:516:U:C6	2.46	0.51
53:3:640:A:O2'	53:3:641:U:H5'	2.10	0.51
53:3:825:A:H2'	53:3:826:C:H6	1.76	0.51
53:3:1259:C:H3'	53:3:1260:G:C5'	2.34	0.51
54:1:2156:G:C2'	54:1:2157:G:H5'	2.41	0.51
3:d:18:THR:O	3:d:110:SER:OG	2.28	0.51
7:h:1:MET:SD	54:1:1105:U:H5''	2.51	0.51
9:j:4:PHE:CD2	16:q:99:VAL:HG11	2.45	0.51
18:s:92:ARG:HB3	18:s:92:ARG:HH11	1.76	0.51
21:v:75:GLN:N	21:v:90:ASP:O	2.44	0.51
33:H:59:PRO:HD2	33:H:63:ILE:HA	1.93	0.51
34:I:60:VAL:HG21	34:I:199:ILE:HD11	1.92	0.51
41:P:88:PRO:O	41:P:92:ARG:HD2	2.10	0.51
42:Q:8:ARG:HB3	42:Q:8:ARG:NH1	2.26	0.51
42:Q:66:ILE:HG21	42:Q:71:HIS:HB3	1.92	0.51
53:3:824:G:H2'	53:3:825:A:H8	1.76	0.51
53:3:948:C:H5'	53:3:1306:A:O2'	2.10	0.51
54:1:689:A:H2'	54:1:690:G:H8	1.75	0.51
54:1:1686:C:H2'	54:1:1687:G:O4'	2.11	0.51
54:1:2223:G:H2'	54:1:2224:G:C5'	2.40	0.51
55:2:2:G:O6	55:2:119:A:N3	2.44	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:c:15:PHE:CE2	15:p:54:LEU:HD11	2.45	0.51
10:k:88:ASN:N	10:k:92:GLU:O	2.44	0.51
14:o:94:ARG:NH1	14:o:98:GLN:OE1	2.44	0.51
16:q:36:GLN:OE1	54:1:564:C:H1'	2.10	0.51
17:r:80:ARG:C	17:r:81:LYS:HE2	2.36	0.51
29:D:19:ARG:HB2	54:1:126:A:OP2	2.11	0.51
30:E:30:HIS:NE2	54:1:2392:A:P	2.84	0.51
30:E:63:TYR:CZ	54:1:242:G:H5''	2.46	0.51
37:L:49:LEU:HD22	37:L:123:LEU:HD13	1.92	0.51
44:S:84:ARG:O	44:S:88:MET:HG2	2.11	0.51
48:W:38:ILE:HD12	48:W:38:ILE:N	2.25	0.51
53:3:231:U:H2'	53:3:232:G:C8	2.36	0.51
53:3:1432:G:H1'	53:3:1468:A:H62	1.75	0.51
54:1:404:A:H1'	54:1:406:G:C5	2.46	0.51
54:1:873:C:H2'	54:1:874:G:C8	2.46	0.51
4:e:73:VAL:HG23	4:e:76:PHE:HB2	1.93	0.51
6:g:6:LEU:O	6:g:15:LEU:HD12	2.11	0.51
11:l:93:ASN:C	11:l:95:LEU:H	2.19	0.51
14:o:92:PHE:HB2	14:o:117:PHE:CD2	2.47	0.51
22:w:45:ALA:O	22:w:47:VAL:HG23	2.11	0.51
34:I:28:ASP:O	34:I:30:LYS:N	2.44	0.51
35:J:137:ARG:NH1	53:3:1078:U:H4'	2.21	0.51
37:L:110:ARG:NH1	37:L:121:ASN:HB3	2.26	0.51
46:U:33:ILE:HD12	46:U:33:ILE:N	2.21	0.51
47:V:79:GLU:C	47:V:80:LYS:HD3	2.36	0.51
50:Y:67:HIS:C	50:Y:69:ASN:H	2.19	0.51
54:1:1108:U:O5'	54:1:1108:U:H6	1.93	0.51
54:1:1465:G:H2'	54:1:1466:U:O4'	2.11	0.51
54:1:1486:U:H2'	54:1:1487:U:C6	2.46	0.51
54:1:1773:A:H2'	54:1:1774:C:O4'	2.11	0.51
54:1:2328:A:H2'	54:1:2329:U:C6	2.45	0.51
1:b:161:VAL:CG1	1:b:173:LEU:HB3	2.42	0.50
3:d:148:ILE:HA	3:d:187:VAL:CG2	2.41	0.50
10:k:69:VAL:CG2	10:k:77:ILE:HD13	2.40	0.50
13:n:117:ASP:O	13:n:118:ARG:HB2	2.11	0.50
16:q:111:LYS:HE2	16:q:111:LYS:HA	1.93	0.50
21:v:3:THR:HA	21:v:62:THR:OG1	2.10	0.50
25:z:10:ARG:HB3	25:z:53:MET:HB2	1.93	0.50
29:D:35:ARG:HH11	29:D:35:ARG:HG3	1.76	0.50
32:G:26:MET:HB3	32:G:29:PHE:CZ	2.46	0.50
35:J:59:ILE:HG13	35:J:60:GLN:N	2.25	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:O:85:ASP:HA	40:O:88:MET:HE3	1.93	0.50
41:P:117:HIS:ND1	53:3:675:A:H1'	2.26	0.50
52:a:44:VAL:HG12	52:a:45:ALA:N	2.26	0.50
53:3:86:G:H4'	53:3:87:C:C6	2.46	0.50
53:3:425:G:O2'	53:3:426:U:H5'	2.11	0.50
53:3:673:A:H2'	53:3:674:G:C8	2.46	0.50
53:3:1211:U:H4'	53:3:1213:A:C4	2.46	0.50
53:3:1251:A:H2'	53:3:1252:A:C8	2.46	0.50
54:1:1103:A:H5''	54:1:1104:C:H5	1.75	0.50
54:1:2137:U:H2'	54:1:2138:G:C8	2.45	0.50
54:1:2186:G:O2'	54:1:2187:U:H5'	2.11	0.50
54:1:2543:G:H2'	54:1:2544:G:H8	1.75	0.50
55:2:97:C:H2'	55:2:98:G:H5'	1.93	0.50
58:7:14:A:H2'	58:7:15:G:O4'	2.12	0.50
4:e:169:LEU:N	4:e:169:LEU:HD12	2.27	0.50
10:k:88:ASN:HB2	10:k:91:SER:O	2.11	0.50
11:l:89:VAL:HA	11:l:121:THR:HB	1.92	0.50
21:v:30:ILE:HG23	21:v:40:ILE:HG13	1.93	0.50
32:G:185:ILE:HD11	32:G:201:GLY:CA	2.40	0.50
36:K:18:VAL:HG13	36:K:19:PRO:HD3	1.93	0.50
42:Q:31:GLY:HA2	42:Q:56:LEU:HA	1.93	0.50
44:S:15:LEU:CD1	44:S:53:ASP:HB2	2.40	0.50
50:Y:25:SER:HB3	53:3:1458:G:H5''	1.92	0.50
51:Z:22:CYS:HB2	51:Z:23:GLU:CD	2.36	0.50
54:1:1111:A:H2'	54:1:1111:A:N3	2.26	0.50
54:1:2898:U:H2'	54:1:2899:A:C8	2.46	0.50
58:7:44:G:O2'	58:7:45:G:H5'	2.11	0.50
2:c:186:LEU:HD21	15:p:3:ILE:HG21	1.94	0.50
4:e:40:GLY:HA2	4:e:84:ILE:HD12	1.93	0.50
7:h:73:LYS:HD2	7:h:76:PHE:HD2	1.76	0.50
13:n:96:ARG:HG3	54:1:2882:A:H5'	1.92	0.50
20:u:4:ILE:HD12	20:u:4:ILE:N	2.26	0.50
27:B:8:THR:HG23	27:B:11:LYS:H	1.77	0.50
31:F:17:VAL:HG23	31:F:24:ARG:HB2	1.93	0.50
33:H:115:VAL:O	33:H:119:ILE:HG12	2.10	0.50
36:K:46:GLN:NE2	36:K:47:LEU:O	2.44	0.50
38:M:31:LEU:C	38:M:31:LEU:HD12	2.37	0.50
43:R:104:ASN:O	43:R:105:ALA:HB3	2.11	0.50
50:Y:43:LYS:HD3	50:Y:43:LYS:H	1.77	0.50
54:1:17:G:H2'	54:1:18:U:C6	2.46	0.50
54:1:149:A:H2'	54:1:150:U:H6	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:783:A:H2'	54:1:784:G:H4'	1.93	0.50
54:1:1063:G:C6	54:1:1075:C:N4	2.78	0.50
54:1:1080:A:H2'	54:1:1081:U:O4'	2.11	0.50
54:1:1081:U:H3'	54:1:1082:U:C6	2.46	0.50
54:1:1444:G:H2'	54:1:1445:G:C8	2.46	0.50
54:1:2698:U:H2'	54:1:2699:C:C6	2.46	0.50
2:c:135:GLY:HA2	54:1:743:A:OP1	2.11	0.50
5:f:72:ASN:O	5:f:76:ILE:HG12	2.12	0.50
6:g:99:ILE:O	6:g:103:VAL:HG23	2.10	0.50
7:h:75:ALA:O	7:h:76:PHE:C	2.53	0.50
14:o:110:ALA:HB1	14:o:115:LEU:HD22	1.93	0.50
32:G:47:PRO:HB2	32:G:48:MET:HE2	1.93	0.50
34:I:69:ARG:HE	34:I:72:ARG:HD3	1.77	0.50
34:I:116:LEU:C	34:I:116:LEU:HD23	2.37	0.50
36:K:35:LYS:HG3	36:K:35:LYS:O	2.11	0.50
49:X:79:TYR:CZ	53:3:1226:C:H4'	2.46	0.50
54:1:572:A:H5''	54:1:573:U:OP2	2.11	0.50
54:1:647:G:H21	54:1:2351:G:H5'	1.76	0.50
54:1:1102:C:O2	54:1:1103:A:H1'	2.12	0.50
54:1:1732:C:O2'	54:1:1733:G:H5'	2.11	0.50
54:1:2391:G:H5'	54:1:2392:A:OP1	2.12	0.50
1:b:196:ASN:HA	1:b:198:GLU:OE1	2.11	0.50
1:b:200:MET:HG2	54:1:1820:U:C2	2.46	0.50
3:d:98:LYS:O	3:d:102:ARG:HG3	2.11	0.50
3:d:149:ILE:HD12	3:d:170:ARG:O	2.12	0.50
7:h:41:LEU:CD2	7:h:54:VAL:HG11	2.41	0.50
10:k:71:ARG:HG2	10:k:71:ARG:NH1	2.26	0.50
14:o:18:LEU:CD2	14:o:25:ARG:HB3	2.40	0.50
19:t:29:THR:HG23	19:t:85:VAL:C	2.36	0.50
20:u:101:THR:CG2	20:u:102:ILE:N	2.74	0.50
27:B:10:SER:O	27:B:14:MET:HG3	2.11	0.50
32:G:70:GLY:HA2	32:G:168:GLU:OE1	2.12	0.50
34:I:120:LYS:HB2	34:I:128:VAL:CG2	2.42	0.50
36:K:92:THR:C	36:K:94:HIS:H	2.19	0.50
43:R:94:LEU:HB3	43:R:95:PRO:HD2	1.94	0.50
50:Y:53:MET:HE3	50:Y:78:LEU:CD2	2.41	0.50
50:Y:82:ILE:HG13	50:Y:83:ASN:N	2.27	0.50
53:3:803:G:H2'	53:3:804:U:C6	2.46	0.50
53:3:1410:A:H2'	53:3:1411:C:C6	2.46	0.50
54:1:2116:G:O2'	54:1:2117:A:H5'	2.12	0.50
54:1:2679:A:O2'	54:1:2680:U:H5'	2.10	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:201:LEU:N	1:b:201:LEU:HD12	2.27	0.50
10:k:9:ASN:O	10:k:83:ALA:HA	2.12	0.50
17:r:3:ALA:HA	17:r:40:MET:O	2.12	0.50
18:s:17:VAL:CG1	18:s:76:VAL:HG11	2.42	0.50
19:t:3:ARG:HH21	54:1:143:C:H4'	1.76	0.50
19:t:57:VAL:HG12	19:t:86:THR:OG1	2.12	0.50
21:v:80:HIS:ND1	21:v:81:PRO:HD2	2.26	0.50
36:K:49:TYR:OH	36:K:86:ARG:NH1	2.45	0.50
38:M:100:ILE:HG13	38:M:101:ALA:N	2.26	0.50
39:N:58:GLU:C	39:N:59:LYS:HD3	2.36	0.50
45:T:81:ILE:HG13	45:T:82:GLU:N	2.26	0.50
49:X:77:ARG:NH1	53:3:1222:G:OP1	2.44	0.50
52:a:167:LYS:HZ1	54:1:2121:G:C1'	2.24	0.50
53:3:1530:G:H2'	53:3:1531:A:H8	1.76	0.50
54:1:545:U:N3	54:1:546:U:H1'	2.27	0.50
54:1:688:U:H2'	54:1:689:A:H8	1.76	0.50
54:1:1400:U:H2'	54:1:1401:G:C8	2.46	0.50
54:1:2356:U:C3'	54:1:2357:G:H5''	2.41	0.50
10:k:60:ALA:HA	10:k:87:LEU:HD23	1.94	0.50
13:n:40:LYS:NZ	54:1:1277:G:H5''	2.27	0.50
18:s:92:ARG:HB3	18:s:92:ARG:NH1	2.27	0.50
19:t:32:LEU:HD12	19:t:32:LEU:O	2.12	0.50
25:z:40:THR:OG1	25:z:41:PRO:HD2	2.12	0.50
27:B:38:LEU:HD12	27:B:38:LEU:N	2.27	0.50
35:J:65:LYS:O	35:J:69:ASN:ND2	2.45	0.50
36:K:67:PRO:O	36:K:71:ILE:HG22	2.11	0.50
41:P:95:THR:O	41:P:99:LEU:HD13	2.10	0.50
45:T:45:HIS:O	45:T:47:LYS:N	2.44	0.50
49:X:12:LEU:O	49:X:15:LEU:HG	2.12	0.50
49:X:52:ASN:CG	49:X:53:GLY:N	2.69	0.50
50:Y:11:ILE:HG13	50:Y:12:GLN:N	2.26	0.50
50:Y:27:MET:O	50:Y:31:ILE:HG13	2.12	0.50
53:3:577:G:H2'	53:3:578:C:C6	2.47	0.50
53:3:1027:C:H2'	53:3:1034:G:O6	2.11	0.50
53:3:1486:G:H2'	53:3:1487:G:O4'	2.11	0.50
54:1:289:G:H2'	54:1:290:U:O4'	2.12	0.50
54:1:898:C:H2'	54:1:899:A:O4'	2.12	0.50
54:1:2584:U:H2'	54:1:2585:U:H2'	1.93	0.50
58:7:10:G:N2	58:7:26:A:H1'	2.26	0.50
11:l:13:LYS:HE2	11:l:13:LYS:CA	2.41	0.50
13:n:1:MET:HE3	54:1:2723:C:H5''	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:o:28:VAL:HG21	14:o:103:VAL:HG12	1.94	0.50
14:o:92:PHE:HB2	14:o:117:PHE:HD2	1.77	0.50
26:A:2:LYS:O	26:A:5:ILE:HG12	2.11	0.50
39:N:5:TYR:CE2	39:N:88:GLU:HG3	2.47	0.50
43:R:58:GLU:HA	43:R:61:LYS:NZ	2.25	0.50
52:a:167:LYS:HE2	54:1:2120:G:O2'	2.11	0.50
53:3:842:U:H3'	53:3:843:U:H4'	1.94	0.50
53:3:848:C:H2'	53:3:849:G:C5'	2.41	0.50
54:1:1197:G:H2'	54:1:1198:U:H6	1.77	0.50
54:1:2327:A:H2'	54:1:2328:A:C8	2.47	0.50
54:1:2813:A:H2'	54:1:2814:A:H8	1.76	0.50
9:j:40:HIS:CE1	9:j:41:LYS:HE3	2.47	0.50
9:j:93:ILE:HD13	9:j:100:VAL:HG21	1.93	0.50
11:l:4:ASN:OD1	11:l:5:THR:HG23	2.11	0.50
30:E:3:ILE:HD12	54:1:666:A:H1'	1.94	0.50
32:G:147:LEU:O	32:G:151:LYS:N	2.45	0.50
33:H:96:VAL:HB	33:H:97:PRO:HD2	1.94	0.50
33:H:176:THR:HG22	33:H:179:ALA:H	1.77	0.50
42:Q:42:LYS:HG3	42:Q:44:PRO:HD2	1.94	0.50
53:3:160:A:H1'	53:3:344:A:C8	2.47	0.50
53:3:417:G:H2'	53:3:418:C:H6	1.77	0.50
53:3:543:U:H2'	53:3:544:G:H8	1.77	0.50
53:3:1101:A:H4'	53:3:1102:A:O5'	2.12	0.50
54:1:1193:G:O2'	54:1:1194:A:H5'	2.11	0.50
54:1:1569:A:H2'	54:1:1570:A:C8	2.47	0.50
54:1:1832:C:H2'	54:1:1833:C:O4'	2.12	0.50
54:1:2415:G:H2'	54:1:2416:C:H6	1.76	0.50
54:1:2564:A:C2	54:1:2647:U:H4'	2.47	0.50
5:f:152:ARG:HB3	5:f:152:ARG:HH21	1.76	0.49
7:h:4:ASN:O	7:h:8:LYS:HG2	2.11	0.49
11:l:41:ARG:NH2	54:1:806:C:C5	2.79	0.49
14:o:76:LYS:O	14:o:80:GLU:HG3	2.12	0.49
27:B:24:VAL:HG22	27:B:26:SER:O	2.12	0.49
33:H:119:ILE:HD11	33:H:136:ALA:HB2	1.94	0.49
36:K:46:GLN:CA	36:K:56:LYS:HG2	2.41	0.49
40:O:53:ILE:HG23	53:3:1060:U:H4'	1.92	0.49
44:S:73:LEU:HD12	44:S:83:VAL:HG11	1.94	0.49
53:3:1005:A:H2'	53:3:1006:G:O4'	2.12	0.49
53:3:1516:G:H2'	53:3:1518:A:OP2	2.12	0.49
54:1:851:C:H2'	54:1:852:U:C6	2.47	0.49
54:1:859:G:H1'	54:1:860:U:H5	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:1060:U:H4'	54:1:1062:G:OP2	2.11	0.49
54:1:1623:G:O2'	54:1:1624:U:H5'	2.11	0.49
54:1:1833:C:H2'	54:1:1834:U:C6	2.46	0.49
54:1:1951:U:H2'	54:1:1953:A:OP2	2.12	0.49
54:1:2391:G:HO2'	54:1:2392:A:H8	1.58	0.49
1:b:43:ASN:HD21	1:b:45:ASN:CB	2.24	0.49
4:e:102:LEU:O	4:e:107:VAL:HG23	2.12	0.49
5:f:126:THR:HG22	5:f:127:GLN:N	2.27	0.49
7:h:11:ILE:O	7:h:15:VAL:HG23	2.12	0.49
7:h:54:VAL:O	7:h:54:VAL:HG13	2.12	0.49
15:p:25:VAL:HG13	15:p:85:VAL:HA	1.93	0.49
15:p:26:GLU:HB3	15:p:84:SER:OG	2.12	0.49
18:s:36:LEU:HD13	18:s:47:VAL:HG13	1.93	0.49
23:x:60:LYS:HE2	54:1:372:G:H5''	1.94	0.49
26:A:2:LYS:HB2	26:A:5:ILE:HD11	1.93	0.49
30:E:31:ILE:HG21	30:E:34:LYS:HE3	1.93	0.49
32:G:17:HIS:CG	32:G:18:GLN:N	2.80	0.49
33:H:113:LYS:HD3	33:H:184:ASN:OD1	2.12	0.49
36:K:4:TYR:HB3	36:K:6:ILE:CD1	2.41	0.49
38:M:100:ILE:HD11	38:M:113:ARG:H	1.77	0.49
50:Y:3:ILE:HD12	50:Y:3:ILE:N	2.26	0.49
53:3:1494:G:O2'	53:3:1495:U:H5'	2.12	0.49
54:1:419:U:H2'	54:1:420:C:H6	1.76	0.49
54:1:1167:C:H2'	54:1:1168:G:H8	1.77	0.49
54:1:1216:G:O2'	54:1:1217:U:H5'	2.12	0.49
54:1:1590:A:H2'	54:1:1591:A:C8	2.47	0.49
54:1:2103:C:H2'	54:1:2104:C:C6	2.46	0.49
54:1:2205:A:H2'	54:1:2206:C:C6	2.46	0.49
54:1:2534:A:H2'	54:1:2535:G:O4'	2.11	0.49
54:1:2783:U:H2'	54:1:2784:U:C6	2.46	0.49
1:b:119:VAL:HB	6:g:91:PHE:CE1	2.47	0.49
5:f:9:VAL:HA	5:f:48:THR:HG22	1.94	0.49
5:f:96:ALA:O	5:f:102:ILE:HG23	2.13	0.49
9:j:114:LEU:HD23	9:j:114:LEU:C	2.37	0.49
10:k:40:LYS:HA	10:k:59:LYS:HA	1.95	0.49
14:o:27:VAL:O	14:o:37:ALA:HB1	2.11	0.49
15:p:38:ARG:HH22	15:p:40:GLN:HB3	1.77	0.49
18:s:7:HIS:HB3	18:s:103:ILE:HD13	1.93	0.49
20:u:12:VAL:HG22	20:u:20:LYS:O	2.12	0.49
21:v:80:HIS:HB2	21:v:85:LYS:O	2.12	0.49
25:z:13:ILE:HD11	54:1:989:G:O5'	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:H:35:ASP:OD1	33:H:56:ILE:HG21	2.11	0.49
33:H:151:GLU:HB3	33:H:198:LYS:HB2	1.94	0.49
48:W:38:ILE:HD12	48:W:38:ILE:H	1.77	0.49
48:W:47:ARG:HG2	48:W:47:ARG:HH11	1.76	0.49
52:a:163:TYR:HD2	52:a:171:ILE:HD11	1.77	0.49
53:3:513:C:H2'	53:3:514:C:C6	2.47	0.49
53:3:604:G:H2'	53:3:605:U:C6	2.48	0.49
53:3:626:G:H2'	53:3:627:G:H8	1.77	0.49
53:3:1177:G:H2'	53:3:1178:G:O4'	2.13	0.49
53:3:1517:G:C2'	53:3:1518:A:H5'	2.42	0.49
54:1:28:A:H2'	54:1:29:U:C6	2.46	0.49
54:1:543:G:H2'	54:1:544:C:O4'	2.12	0.49
54:1:753:A:H2'	54:1:754:U:C6	2.47	0.49
54:1:796:C:H2'	54:1:797:G:C8	2.48	0.49
54:1:1229:C:H2'	54:1:1230:A:C8	2.47	0.49
54:1:1794:A:H2'	54:1:1795:C:H6	1.78	0.49
54:1:2078:C:O2'	54:1:2079:U:H5'	2.12	0.49
1:b:129:LEU:N	1:b:129:LEU:HD23	2.27	0.49
2:c:11:MET:HE2	54:1:2681:C:H4'	1.92	0.49
4:e:67:THR:HG21	54:1:2312:U:O2'	2.12	0.49
4:e:116:LEU:O	4:e:176:PHE:HA	2.13	0.49
6:g:26:ALA:O	6:g:31:VAL:HG23	2.12	0.49
8:i:4:VAL:O	8:i:5:GLN:HB3	2.12	0.49
18:s:27:LYS:O	18:s:71:VAL:HG12	2.12	0.49
22:w:39:THR:HG22	22:w:42:HIS:CE1	2.46	0.49
26:A:18:CYS:SG	26:A:40:CYS:HB3	2.53	0.49
32:G:148:GLY:HA2	32:G:151:LYS:HD3	1.93	0.49
34:I:28:ASP:CG	34:I:29:THR:H	2.20	0.49
36:K:88:MET:HG2	48:W:63:TYR:CE2	2.46	0.49
37:L:61:PHE:O	37:L:65:LEU:HD13	2.13	0.49
42:Q:41:PRO:HB3	42:Q:88:ASP:OD1	2.12	0.49
43:R:28:ARG:NH2	43:R:62:PHE:HB2	2.28	0.49
49:X:39:ILE:HG13	49:X:68:HIS:O	2.13	0.49
53:3:100:G:N3	53:3:100:G:H2'	2.27	0.49
53:3:432:A:H3'	53:3:433:G:H8	1.78	0.49
53:3:543:U:H2'	53:3:544:G:C8	2.47	0.49
53:3:709:U:H2'	53:3:710:G:C8	2.47	0.49
53:3:1202:U:H2'	53:3:1203:C:O4'	2.11	0.49
53:3:1490:U:O2'	53:3:1491:G:H5'	2.12	0.49
54:1:1068:G:H2'	54:1:1069:A:O4'	2.12	0.49
54:1:2366:A:H2'	54:1:2367:G:O4'	2.11	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:2637:U:H2'	54:1:2638:G:O4'	2.13	0.49
54:1:2758:A:C2'	54:1:2759:G:H5'	2.42	0.49
56:6:13:C:C2'	56:6:14:A:H5''	2.31	0.49
1:b:47:ARG:HD2	54:1:778:G:H5''	1.94	0.49
4:e:95:MET:O	4:e:99:PHE:N	2.37	0.49
6:g:41:LYS:O	6:g:44:ILE:HG12	2.13	0.49
6:g:135:HIS:HB3	6:g:138:VAL:CG2	2.37	0.49
7:h:14:GLU:HA	7:h:17:GLU:HB2	1.94	0.49
12:m:4:PRO:HG3	12:m:68:PHE:CE2	2.48	0.49
12:m:108:VAL:HG23	12:m:113:ALA:HB2	1.94	0.49
14:o:106:LEU:C	14:o:106:LEU:HD23	2.37	0.49
18:s:88:ARG:HG3	18:s:88:ARG:NH2	2.27	0.49
27:B:30:ASP:HB2	27:B:37:HIS:CD2	2.47	0.49
27:B:54:ILE:HD12	27:B:54:ILE:N	2.28	0.49
33:H:78:LYS:O	33:H:79:LYS:HG2	2.13	0.49
37:L:78:ARG:HH21	37:L:83:THR:CG2	2.25	0.49
37:L:110:ARG:O	37:L:118:ARG:HD2	2.13	0.49
40:O:25:ILE:HD13	40:O:74:VAL:HG21	1.95	0.49
40:O:92:LEU:N	40:O:92:LEU:HD23	2.27	0.49
43:R:28:ARG:HE	43:R:62:PHE:CB	2.25	0.49
47:V:59:GLU:HB2	47:V:76:ARG:H	1.77	0.49
52:a:6:LYS:HG3	52:a:7:ARG:N	2.26	0.49
53:3:484:G:H4'	53:3:485:U:H5''	1.93	0.49
54:1:1109:C:H2'	54:1:1110:G:O4'	2.13	0.49
54:1:1179:G:C4	54:1:1180:U:H1'	2.48	0.49
1:b:224:MET:HG2	54:1:782:A:C2	2.48	0.49
4:e:160:LYS:HD3	4:e:160:LYS:N	2.27	0.49
8:i:11:GLN:O	8:i:54:ILE:O	2.31	0.49
10:k:21:CYS:SG	10:k:39:ILE:HD12	2.53	0.49
10:k:30:ARG:HG2	10:k:30:ARG:NH1	2.27	0.49
13:n:103:ARG:HE	54:1:1287:A:H5'	1.77	0.49
35:J:82:HIS:CE1	35:J:146:MET:HG3	2.48	0.49
35:J:133:ILE:H	35:J:133:ILE:CD1	2.23	0.49
40:O:59:LYS:HB2	53:3:972:C:H4'	1.94	0.49
44:S:30:ILE:HG22	44:S:30:ILE:O	2.12	0.49
47:V:64:ARG:HH11	47:V:66:LEU:HA	1.77	0.49
50:Y:53:MET:HE3	50:Y:78:LEU:HD22	1.95	0.49
53:3:70:U:H4'	53:3:71:A:C8	2.47	0.49
53:3:1062:U:H2'	53:3:1063:C:C6	2.48	0.49
53:3:1095:U:H2'	53:3:1096:C:C6	2.47	0.49
54:1:543:G:H2'	54:1:544:C:H5''	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:l:77:ILE:HD13	11:l:95:LEU:HD13	1.93	0.49
12:m:135:VAL:O	12:m:136:MET:HG2	2.12	0.49
23:x:35:HIS:ND1	23:x:36:ARG:N	2.60	0.49
27:B:6:LYS:HE2	54:1:1262:A:C2	2.47	0.49
31:F:23:ILE:H	31:F:23:ILE:CD1	2.22	0.49
33:H:201:ILE:HD12	33:H:201:ILE:N	2.27	0.49
39:N:4:GLN:NE2	39:N:20:ILE:N	2.60	0.49
43:R:73:SER:HA	43:R:76:ILE:HD12	1.95	0.49
45:T:52:ARG:HH11	45:T:52:ARG:HG3	1.77	0.49
53:3:113:G:H1'	53:3:354:G:H5''	1.95	0.49
53:3:490:C:H2'	53:3:491:G:C8	2.48	0.49
53:3:1527:U:O2'	53:3:1528:U:H5'	2.13	0.49
54:1:740:C:O2'	54:1:741:U:H5'	2.13	0.49
54:1:753:A:H2'	54:1:754:U:H6	1.76	0.49
54:1:1754:A:H2'	54:1:1755:A:C8	2.47	0.49
54:1:2078:C:H2'	54:1:2079:U:C6	2.47	0.49
54:1:2235:G:O2'	54:1:2236:U:H5'	2.13	0.49
54:1:2628:C:H3'	54:1:2629:U:H5'	1.95	0.49
54:1:2636:C:H2'	54:1:2637:U:C6	2.47	0.49
5:f:70:LEU:HB3	5:f:74:MET:HE1	1.95	0.49
9:j:7:LYS:HB2	9:j:10:THR:OG1	2.12	0.49
9:j:130:HIS:ND1	9:j:130:HIS:O	2.46	0.49
11:l:14:LYS:HG3	11:l:15:ALA:H	1.78	0.49
13:n:49:GLU:OE1	13:n:93:GLY:HA2	2.13	0.49
15:p:30:TRP:CG	15:p:37:LYS:HE3	2.48	0.49
27:B:37:HIS:CD2	27:B:43:THR:HG22	2.48	0.49
39:N:20:ILE:HD11	39:N:60:LEU:CG	2.43	0.49
43:R:76:ILE:HG23	43:R:90:HIS:CD2	2.46	0.49
53:3:594:U:H2'	53:3:595:A:O4'	2.13	0.49
53:3:1477:U:H2'	53:3:1478:U:H6	1.71	0.49
54:1:638:G:H2'	54:1:639:U:C6	2.48	0.49
54:1:1937:A:O2'	54:1:1938:A:H3'	2.11	0.49
54:1:2340:A:H2'	54:1:2341:G:H8	1.78	0.49
54:1:2665:A:O2'	54:1:2666:C:H5'	2.12	0.49
1:b:146:LYS:HD2	1:b:146:LYS:N	2.28	0.49
3:d:148:ILE:CD1	3:d:187:VAL:HG21	2.32	0.49
4:e:110:ILE:HG23	4:e:110:ILE:O	2.13	0.49
4:e:134:GLN:NE2	4:e:149:ARG:HB3	2.27	0.49
14:o:63:LYS:HZ1	55:2:51:G:H5'	1.75	0.49
19:t:12:ARG:HD2	24:y:29:ARG:NH1	2.28	0.49
30:E:44:ARG:N	30:E:45:PRO:HD2	2.27	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:J:71:ILE:HG22	35:J:72:ASN:N	2.28	0.49
37:L:142:ARG:HG3	37:L:142:ARG:NH1	2.27	0.49
40:O:67:ILE:HG13	40:O:67:ILE:O	2.13	0.49
42:Q:2:THR:O	42:Q:5:GLN:N	2.45	0.49
46:U:67:ILE:HD12	46:U:67:ILE:N	2.25	0.49
49:X:13:HIS:NE2	53:3:1014:A:H4'	2.28	0.49
51:Z:57:LYS:HE2	51:Z:57:LYS:HA	1.94	0.49
53:3:1488:G:O2'	53:3:1489:G:H5'	2.12	0.49
54:1:134:G:C3'	54:1:135:U:H5''	2.42	0.49
54:1:593:U:H2'	54:1:594:U:H6	1.73	0.49
54:1:794:A:H2'	54:1:795:C:C6	2.47	0.49
54:1:1010:A:H1'	54:1:1153:C:H1'	1.95	0.49
54:1:1404:C:O2'	54:1:1405:U:H5'	2.13	0.49
5:f:26:LYS:HA	5:f:31:GLU:HA	1.95	0.49
6:g:39:ALA:HA	6:g:43:ASN:HB2	1.94	0.49
6:g:79:THR:HG23	6:g:145:ASN:O	2.12	0.49
7:h:37:LYS:HZ1	54:1:1057:A:H2	1.59	0.49
12:m:73:ILE:HB	12:m:91:TYR:CE1	2.48	0.49
13:n:22:ARG:HH21	13:n:22:ARG:HG3	1.78	0.49
15:p:95:LYS:C	15:p:96:LEU:HD12	2.37	0.49
17:r:26:ASP:O	17:r:27:ILE:HD13	2.13	0.49
28:C:37:LYS:HD3	54:1:2345:G:OP2	2.13	0.49
39:N:113:LYS:HZ1	53:3:1367:C:P	2.36	0.49
47:V:32:ILE:HD12	47:V:32:ILE:N	2.28	0.49
51:Z:44:ARG:O	51:Z:48:LYS:HE2	2.12	0.49
52:a:60:ARG:HG3	52:a:61:GLY:H	1.78	0.49
53:3:1408:A:H2'	53:3:1409:C:C6	2.48	0.49
54:1:143:C:H2'	54:1:144:A:H8	1.77	0.49
54:1:467:G:O2'	54:1:468:G:H5'	2.12	0.49
54:1:813:U:H2'	54:1:814:C:H6	1.78	0.49
54:1:871:U:H2'	54:1:872:U:C6	2.47	0.49
54:1:1438:U:O2'	54:1:1439:A:H5'	2.12	0.49
54:1:1601:G:O2'	54:1:1602:U:H5'	2.13	0.49
54:1:1870:C:H5''	54:1:1871:A:OP1	2.13	0.49
54:1:2229:U:H2'	54:1:2230:G:H8	1.77	0.49
55:2:76:G:O2'	55:2:77:U:H5'	2.12	0.49
3:d:29:HIS:CE1	3:d:33:VAL:HG21	2.48	0.48
4:e:107:VAL:HB	4:e:108:PRO:HD3	1.95	0.48
15:p:52:ARG:HG2	15:p:52:ARG:HH11	1.77	0.48
16:q:50:ARG:HG2	54:1:1156:A:C8	2.48	0.48
17:r:38:VAL:HG13	17:r:54:VAL:HG23	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:A:47:LYS:O	26:A:51:VAL:HG23	2.13	0.48
26:A:58:ASP:O	26:A:62:LYS:HG2	2.13	0.48
34:I:96:ARG:HH12	34:I:133:SER:HB3	1.77	0.48
37:L:122:GLU:HA	37:L:125:ASP:OD2	2.13	0.48
39:N:38:PHE:HA	39:N:41:GLU:OE1	2.13	0.48
40:O:102:LEU:HD12	40:O:102:LEU:N	2.27	0.48
41:P:92:ARG:HH12	51:Z:24:LYS:HD2	1.77	0.48
41:P:126:ARG:NH1	41:P:126:ARG:HG2	2.28	0.48
43:R:97:ARG:HG2	43:R:97:ARG:NH1	2.27	0.48
44:S:5:MET:HE3	44:S:5:MET:O	2.13	0.48
45:T:74:VAL:O	45:T:78:THR:HG23	2.12	0.48
53:3:491:G:H2'	53:3:492:C:H6	1.78	0.48
53:3:784:A:H4'	54:1:1837:C:OP1	2.12	0.48
53:3:1028:C:H2'	53:3:1029:U:O4'	2.13	0.48
54:1:215:G:C4'	54:1:216:A:H4'	2.41	0.48
54:1:408:G:O2'	54:1:409:G:H5'	2.13	0.48
54:1:872:U:H2'	54:1:873:C:C6	2.48	0.48
54:1:1548:A:H2'	54:1:1549:A:H8	1.78	0.48
54:1:1684:G:H2'	54:1:1685:C:H6	1.77	0.48
58:7:43:U:H2'	58:7:44:G:H8	1.73	0.48
2:c:171:THR:HG21	54:1:2772:C:H4'	1.95	0.48
3:d:164:LEU:N	3:d:164:LEU:HD12	2.28	0.48
15:p:92:ARG:HD3	54:1:1753:G:OP1	2.13	0.48
20:u:18:LYS:HD2	54:1:310:A:OP1	2.13	0.48
38:M:91:LEU:HB3	38:M:112:ASP:OD1	2.13	0.48
44:S:60:ARG:HD3	53:3:981:U:O2'	2.13	0.48
46:U:31:ARG:HB2	53:3:310:G:H5''	1.94	0.48
49:X:39:ILE:CD1	49:X:65:MET:HB3	2.36	0.48
53:3:710:G:O2'	53:3:711:G:H5'	2.12	0.48
54:1:435:C:C2'	54:1:436:C:H5'	2.42	0.48
54:1:534:U:H2'	54:1:535:G:C8	2.48	0.48
54:1:540:C:O2'	54:1:541:A:H5'	2.13	0.48
54:1:796:C:H2'	54:1:797:G:H8	1.77	0.48
54:1:804:A:H2'	54:1:806:C:C4	2.47	0.48
54:1:1287:A:O2'	54:1:1288:G:H5'	2.14	0.48
54:1:2135:A:H1'	54:1:2160:C:H5'	1.95	0.48
54:1:2484:G:O2'	54:1:2485:G:H5'	2.13	0.48
4:e:71:LYS:CG	4:e:72:SER:H	2.26	0.48
6:g:110:VAL:CG2	6:g:114:GLU:HB2	2.42	0.48
17:r:34:GLU:HA	17:r:59:ILE:O	2.13	0.48
22:w:13:GLU:HG3	22:w:14:ALA:O	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:x:60:LYS:HD3	54:1:372:G:C4	2.49	0.48
30:E:3:ILE:CD1	54:1:666:A:H1'	2.43	0.48
32:G:72:LYS:O	32:G:75:ALA:N	2.30	0.48
33:H:42:LEU:HD23	33:H:54:ILE:HG21	1.96	0.48
33:H:173:PRO:O	33:H:181:ILE:HD11	2.13	0.48
35:J:44:ARG:HH21	35:J:70:MET:HG2	1.77	0.48
36:K:11:HIS:ND1	36:K:12:PRO:HD2	2.28	0.48
37:L:22:LEU:O	37:L:26:VAL:HG23	2.13	0.48
38:M:14:ARG:HG3	38:M:14:ARG:NH1	2.29	0.48
42:Q:23:LEU:HB2	42:Q:29:LYS:CG	2.42	0.48
43:R:89:ARG:NH2	43:R:94:LEU:HB3	2.28	0.48
50:Y:3:ILE:HD12	50:Y:3:ILE:H	1.77	0.48
51:Z:5:VAL:CG1	51:Z:16:ARG:HH11	2.26	0.48
53:3:31:G:H5'	53:3:306:A:C2	2.48	0.48
53:3:797:C:H2'	53:3:798:U:C6	2.48	0.48
53:3:1228:C:H2'	53:3:1229:A:C8	2.47	0.48
53:3:1413:A:H2	53:3:1487:G:H22	1.62	0.48
54:1:413:C:H2'	54:1:414:C:C6	2.49	0.48
54:1:812:C:H5''	54:1:1250:G:O2'	2.13	0.48
54:1:880:G:H2'	54:1:881:G:H8	1.76	0.48
54:1:1826:G:H2'	54:1:1827:U:C6	2.48	0.48
54:1:2098:U:H2'	54:1:2099:U:O4'	2.13	0.48
54:1:2419:U:H2'	54:1:2420:C:C6	2.47	0.48
55:2:48:U:H2'	55:2:49:C:H6	1.78	0.48
3:d:102:ARG:HH21	3:d:102:ARG:HG2	1.77	0.48
5:f:173:ALA:C	5:f:175:LYS:H	2.20	0.48
7:h:44:ALA:O	7:h:49:GLY:N	2.44	0.48
8:i:29:GLN:NE2	54:1:1096:A:N6	2.59	0.48
19:t:4:GLU:O	19:t:8:LEU:HG	2.14	0.48
20:u:48:VAL:O	20:u:53:GLN:HA	2.14	0.48
27:B:30:ASP:HB2	27:B:37:HIS:HD2	1.78	0.48
29:D:39:ARG:NH2	54:1:468:G:N7	2.62	0.48
31:F:37:GLN:OE1	31:F:37:GLN:HA	2.14	0.48
32:G:51:GLU:O	32:G:55:GLU:HG3	2.13	0.48
39:N:118:ARG:HH12	39:N:124:PRO:HA	1.78	0.48
40:O:9:ARG:NH1	53:3:1279:G:H5''	2.29	0.48
44:S:45:LEU:HA	44:S:48:GLN:NE2	2.28	0.48
47:V:58:VAL:HA	47:V:77:VAL:HA	1.95	0.48
52:a:47:ASN:OD1	52:a:170:ILE:HG23	2.13	0.48
53:3:415:A:H2'	53:3:416:G:O4'	2.13	0.48
53:3:490:C:H2'	53:3:491:G:H8	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:945:G:H2'	53:3:945:G:N3	2.28	0.48
54:1:544:C:H2'	54:1:545:U:C6	2.48	0.48
9:j:17:VAL:HA	9:j:55:ILE:CG2	2.42	0.48
11:l:79:LEU:HD12	11:l:114:GLY:H	1.79	0.48
21:v:23:ALA:O	21:v:25:LYS:HG3	2.13	0.48
34:l:24:VAL:H	53:3:409:U:C5'	2.23	0.48
36:K:50:PRO:HD2	48:W:73:HIS:HB3	1.94	0.48
38:M:75:GLN:O	38:M:126:CYS:HB2	2.13	0.48
39:N:116:GLY:C	39:N:117:LEU:HD12	2.39	0.48
44:S:77:GLY:C	44:S:78:LEU:HD22	2.39	0.48
47:V:10:ARG:C	47:V:22:VAL:HG13	2.39	0.48
52:a:6:LYS:HD2	54:1:2130:U:OP2	2.14	0.48
52:a:67:HIS:CD2	52:a:188:ASN:HB2	2.49	0.48
52:a:166:ASP:OD2	52:a:170:ILE:HB	2.14	0.48
53:3:572:A:C5'	53:3:917:G:H4'	2.43	0.48
53:3:879:C:H2'	53:3:880:C:H6	1.78	0.48
54:1:112:U:H2'	54:1:113:U:H5'	1.94	0.48
54:1:206:U:O2'	54:1:207:A:H5'	2.14	0.48
54:1:506:G:H4'	54:1:509:C:O2	2.13	0.48
54:1:1585:C:H2'	54:1:1586:A:O4'	2.14	0.48
54:1:2696:U:H2'	54:1:2697:G:C8	2.48	0.48
1:b:18:VAL:CG2	1:b:202:ARG:HG3	2.44	0.48
3:d:126:VAL:HG21	3:d:133:LEU:CB	2.44	0.48
5:f:157:LYS:HD2	54:1:2659:G:P	2.53	0.48
11:l:29:LYS:HD3	11:l:29:LYS:O	2.14	0.48
12:m:71:LYS:HB3	12:m:93:VAL:O	2.13	0.48
16:q:18:LYS:O	16:q:21:LYS:HG2	2.13	0.48
21:v:56:PHE:CD1	21:v:61:LEU:HD21	2.48	0.48
24:y:41:HIS:CE1	54:1:96:C:H4'	2.49	0.48
28:C:10:LEU:HB3	28:C:48:TYR:HB3	1.95	0.48
32:G:96:LEU:HB2	32:G:99:MET:HE2	1.96	0.48
32:G:163:ILE:HA	32:G:185:ILE:HG22	1.96	0.48
35:J:137:ARG:HG3	35:J:137:ARG:HH11	1.78	0.48
38:M:77:VAL:C	38:M:84:ILE:HD11	2.39	0.48
41:P:126:ARG:HH11	41:P:126:ARG:CA	2.26	0.48
42:Q:32:VAL:O	42:Q:33:CYS:HB2	2.12	0.48
53:3:31:G:H21	53:3:47:C:H5''	1.78	0.48
54:1:870:U:O2'	54:1:871:U:H5'	2.13	0.48
54:1:935:C:H2'	54:1:936:A:H8	1.77	0.48
54:1:1794:A:H2'	54:1:1795:C:C6	2.49	0.48
54:1:2691:C:H5'	54:1:2872:A:O4'	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:2861:U:H2'	54:1:2862:G:C8	2.47	0.48
4:e:35:LEU:HD11	4:e:90:LEU:HD12	1.95	0.48
4:e:61:GLY:HA3	4:e:94:ARG:HH21	1.78	0.48
7:h:64:VAL:O	7:h:68:PRO:HD3	2.13	0.48
8:i:21:PRO:HD2	8:i:22:PRO:HD3	1.95	0.48
11:l:4:ASN:ND2	54:1:1203:U:O2'	2.47	0.48
16:q:63:ARG:HG3	16:q:63:ARG:NH1	2.28	0.48
25:z:13:ILE:HG23	54:1:989:G:N7	2.29	0.48
32:G:211:LEU:C	32:G:211:LEU:HD12	2.39	0.48
42:Q:23:LEU:HD13	42:Q:29:LYS:HE2	1.95	0.48
45:T:53:ARG:HG2	45:T:53:ARG:HH11	1.79	0.48
46:U:60:TRP:HB3	46:U:65:ALA:HB2	1.94	0.48
49:X:77:ARG:HD2	53:3:1225:A:H1'	1.95	0.48
53:3:113:G:H2'	53:3:114:U:C6	2.49	0.48
53:3:515:G:H2'	53:3:516:U:H6	1.77	0.48
54:1:371:A:N6	54:1:401:A:H3'	2.28	0.48
54:1:547:A:H3'	54:1:547:A:N3	2.28	0.48
54:1:1164:C:H2'	54:1:1165:A:C8	2.49	0.48
58:7:1:C:H6	58:7:1:C:O5'	1.96	0.48
58:7:2:G:O2'	58:7:3:G:H2'	2.13	0.48
3:d:3:LEU:HB3	3:d:120:VAL:HG21	1.94	0.48
3:d:76:PRO:HA	3:d:82:GLY:HA2	1.94	0.48
3:d:148:ILE:HA	3:d:187:VAL:HG23	1.96	0.48
4:e:147:ARG:HG3	4:e:148:VAL:N	2.28	0.48
7:h:31:ARG:HG3	7:h:31:ARG:HH11	1.79	0.48
8:i:12:VAL:HG13	54:1:1061:U:C2	2.48	0.48
8:i:20:SER:HB3	8:i:21:PRO:CD	2.32	0.48
11:l:79:LEU:HB2	11:l:114:GLY:H	1.79	0.48
13:n:75:ILE:O	13:n:79:LEU:HD12	2.14	0.48
14:o:115:LEU:HD23	14:o:117:PHE:CE1	2.49	0.48
20:u:8:ASP:O	20:u:24:VAL:HG23	2.13	0.48
35:J:35:LEU:CD2	35:J:132:PRO:HB2	2.43	0.48
35:J:134:ASN:ND2	53:3:19:A:OP1	2.46	0.48
38:M:98:LEU:HD12	38:M:98:LEU:C	2.38	0.48
38:M:115:ALA:HA	38:M:118:ALA:HB3	1.96	0.48
39:N:30:ASN:O	39:N:31:GLN:HB2	2.14	0.48
39:N:90:ASP:O	39:N:92:SER:N	2.47	0.48
40:O:10:LEU:HD23	40:O:10:LEU:H	1.77	0.48
44:S:5:MET:CE	44:S:8:ARG:HB3	2.43	0.48
44:S:73:LEU:O	44:S:77:GLY:N	2.43	0.48
45:T:5:GLU:O	45:T:9:LYS:N	2.45	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:514:C:H2'	53:3:515:G:H8	1.78	0.48
53:3:580:C:H2'	53:3:581:G:O4'	2.13	0.48
53:3:634:C:H2'	53:3:635:A:C8	2.49	0.48
53:3:720:C:H2'	53:3:721:G:C8	2.48	0.48
54:1:538:A:H2'	54:1:539:G:O4'	2.13	0.48
54:1:1599:U:H2'	54:1:1600:C:C6	2.49	0.48
54:1:2315:G:H2'	54:1:2316:G:C8	2.49	0.48
54:1:2432:A:H1'	56:6:75:C:C4'	2.43	0.48
56:5:50:U:H2'	56:5:51:C:C6	2.49	0.48
8:i:30:GLN:HE21	8:i:30:GLN:N	2.12	0.48
11:l:23:ILE:HG13	17:r:82:HIS:NE2	2.29	0.48
14:o:30:ARG:HG2	14:o:30:ARG:NH1	2.29	0.48
16:q:23:TYR:HB3	16:q:27:ARG:HB2	1.95	0.48
32:G:82:ALA:HB2	32:G:213:LEU:HD13	1.95	0.48
33:H:18:ASN:ND2	44:S:89:ARG:O	2.47	0.48
44:S:80:ARG:O	44:S:83:VAL:HG22	2.13	0.48
53:3:915:A:C2'	53:3:916:U:H5'	2.40	0.48
53:3:950:U:H2'	53:3:951:G:H8	1.78	0.48
53:3:1307:U:H2'	53:3:1308:U:C6	2.49	0.48
53:3:1330:U:H2'	53:3:1331:G:O4'	2.14	0.48
54:1:1695:G:N2	54:1:1696:G:C8	2.82	0.48
1:b:143:VAL:HB	1:b:153:LEU:HB2	1.94	0.48
1:b:182:LYS:HZ1	1:b:267:VAL:HG22	1.79	0.48
1:b:199:HIS:CE1	1:b:202:ARG:HD2	2.48	0.48
1:b:256:THR:HG23	54:1:1803:A:H4'	1.96	0.48
2:c:102:ALA:HA	2:c:180:VAL:HG11	1.96	0.48
4:e:143:ASP:O	4:e:144:LYS:HE2	2.14	0.48
9:j:75:TYR:HE1	9:j:86:GLN:HB3	1.79	0.48
17:r:80:ARG:HG2	17:r:80:ARG:NH1	2.28	0.48
18:s:84:ARG:HG3	18:s:98:LYS:HD2	1.96	0.48
28:C:37:LYS:HZ2	54:1:2347:C:H5'	1.79	0.48
37:L:46:LEU:HD21	37:L:57:GLU:HB2	1.95	0.48
37:L:102:TRP:NE1	37:L:136:LYS:HG2	2.29	0.48
47:V:10:ARG:HH11	47:V:10:ARG:HG3	1.78	0.48
51:Z:22:CYS:HB2	51:Z:23:GLU:OE1	2.14	0.48
53:3:237:G:H2'	53:3:238:A:H8	1.78	0.48
53:3:756:C:H2'	53:3:757:U:C6	2.49	0.48
53:3:880:C:H2'	53:3:881:G:H8	1.79	0.48
53:3:1250:A:H2'	53:3:1251:A:C8	2.49	0.48
54:1:1442:U:H2'	54:1:1443:U:C6	2.48	0.48
54:1:1948:G:O2'	54:1:1949:G:H5'	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:5:9:G:N3	56:5:45:G:H2'	2.29	0.48
2:c:149:ASN:HD22	54:1:2575:C:H5'	1.79	0.47
3:d:62:GLN:OE1	54:1:675:A:H4'	2.14	0.47
10:k:18:ARG:H	10:k:45:GLU:HB3	1.79	0.47
11:l:129:LYS:C	11:l:129:LYS:HD3	2.38	0.47
12:m:57:VAL:O	12:m:58:LYS:HB2	2.14	0.47
14:o:41:ALA:HB2	14:o:46:GLU:HG3	1.96	0.47
17:r:49:ILE:HG13	17:r:50:GLY:N	2.29	0.47
32:G:80:LYS:HG3	32:G:84:LEU:HD12	1.96	0.47
32:G:124:THR:HA	32:G:127:LYS:CG	2.43	0.47
32:G:211:LEU:HD12	32:G:212:TYR:N	2.29	0.47
33:H:84:GLU:HA	33:H:87:ARG:HB3	1.95	0.47
37:L:35:LYS:O	37:L:39:GLU:HG3	2.14	0.47
37:L:77:ARG:HG3	37:L:77:ARG:O	2.12	0.47
37:L:101:ARG:HH12	53:3:939:G:H5'	1.79	0.47
39:N:88:GLU:H	39:N:88:GLU:CD	2.21	0.47
41:P:86:LYS:NZ	41:P:114:PRO:HD3	2.29	0.47
43:R:91:ARG:HD3	54:1:888:C:OP2	2.13	0.47
46:U:3:THR:HG21	53:3:377:G:OP1	2.14	0.47
46:U:7:ALA:HB2	46:U:20:VAL:HG21	1.94	0.47
47:V:21:VAL:HG22	47:V:44:HIS:CD2	2.49	0.47
53:3:882:C:O2'	53:3:883:C:H5'	2.14	0.47
54:1:1086:A:H5'	54:1:1103:A:H2	1.78	0.47
54:1:2743:U:H2'	54:1:2744:G:C5'	2.43	0.47
3:d:21:ARG:CD	3:d:106:LYS:HE3	2.43	0.47
3:d:148:ILE:HG21	3:d:157:LEU:HD21	1.96	0.47
3:d:188:MET:HE3	3:d:193:VAL:HA	1.96	0.47
7:h:33:VAL:HG22	7:h:36:ASP:HB2	1.96	0.47
10:k:8:LEU:N	10:k:19:VAL:O	2.40	0.47
16:q:18:LYS:HA	16:q:21:LYS:HZ3	1.77	0.47
19:t:8:LEU:HD13	24:y:21:LEU:HB2	1.97	0.47
37:L:41:ILE:HG13	37:L:115:MET:HE2	1.95	0.47
40:O:30:LYS:C	40:O:30:LYS:HD3	2.39	0.47
40:O:47:GLU:HB2	40:O:67:ILE:CG1	2.44	0.47
44:S:12:ARG:HH12	44:S:59:GLN:HA	1.79	0.47
44:S:63:CYS:HB3	44:S:67:GLY:N	2.30	0.47
49:X:17:LYS:HA	49:X:20:LYS:CE	2.44	0.47
51:Z:64:ALA:O	51:Z:66:ARG:N	2.47	0.47
53:3:17:U:H2'	53:3:18:C:H6	1.79	0.47
53:3:545:C:O2'	53:3:546:A:H5'	2.14	0.47
54:1:108:G:H2'	54:1:109:C:O4'	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:414:C:H2'	54:1:415:A:C8	2.49	0.47
54:1:538:A:N6	54:1:555:G:O2'	2.47	0.47
54:1:1030:C:O2'	54:1:1031:G:H5'	2.14	0.47
54:1:1486:U:H2'	54:1:1487:U:H6	1.79	0.47
54:1:1788:C:H2'	54:1:1789:A:O4'	2.14	0.47
1:b:93:VAL:HG12	1:b:94:LEU:N	2.29	0.47
1:b:131:MET:HA	1:b:134:ILE:HD12	1.95	0.47
1:b:149:LYS:HD3	54:1:2204:G:H4'	1.96	0.47
2:c:164:GLN:HE22	54:1:2822:G:H5''	1.79	0.47
11:l:74:THR:HA	11:l:107:PHE:O	2.13	0.47
14:o:52:SER:OG	14:o:55:GLU:HG3	2.15	0.47
15:p:30:TRP:CD2	15:p:37:LYS:HE3	2.49	0.47
18:s:103:ILE:HD12	18:s:103:ILE:H	1.76	0.47
21:v:73:LYS:HB3	21:v:92:VAL:CG1	2.43	0.47
23:x:53:LYS:HA	23:x:56:ARG:HD3	1.96	0.47
29:D:24:THR:CG2	29:D:27:GLY:H	2.25	0.47
32:G:26:MET:C	32:G:28:PRO:HD2	2.38	0.47
36:K:23:GLU:HG2	36:K:24:ARG:N	2.29	0.47
38:M:37:ASN:O	38:M:41:GLU:N	2.43	0.47
42:Q:53:ARG:HH11	42:Q:53:ARG:CB	2.27	0.47
46:U:14:ARG:HH11	46:U:14:ARG:HG3	1.79	0.47
53:3:502:A:H2'	53:3:503:C:H6	1.77	0.47
53:3:634:C:H2'	53:3:635:A:H8	1.79	0.47
53:3:761:G:O2'	53:3:762:U:H5'	2.14	0.47
53:3:900:A:H2'	53:3:901:A:C8	2.48	0.47
53:3:1530:G:H2'	53:3:1531:A:C8	2.49	0.47
54:1:176:A:O2'	54:1:177:G:H5'	2.14	0.47
54:1:191:A:H2'	54:1:192:C:H6	1.79	0.47
54:1:863:A:H2'	54:1:864:G:C8	2.49	0.47
54:1:1682:G:H2'	54:1:1683:U:C6	2.49	0.47
54:1:1788:C:H2'	54:1:1789:A:C8	2.49	0.47
54:1:2455:G:H2'	54:1:2456:C:H6	1.76	0.47
54:1:2699:C:H2'	54:1:2700:A:H8	1.78	0.47
56:6:7:G:H2'	56:6:49:G:O4'	2.14	0.47
3:d:104:ALA:O	3:d:108:ILE:HG13	2.14	0.47
11:l:39:LYS:HG2	54:1:832:U:OP1	2.14	0.47
15:p:3:ILE:O	15:p:7:LEU:HD13	2.14	0.47
15:p:29:VAL:C	15:p:39:LEU:HD12	2.40	0.47
20:u:57:ILE:N	20:u:57:ILE:HD12	2.29	0.47
34:I:69:ARG:NE	34:I:69:ARG:HA	2.29	0.47
34:I:197:HIS:O	34:I:201:GLU:HG3	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:J:58:ALA:O	35:J:62:ALA:N	2.47	0.47
36:K:24:ARG:O	36:K:27:ALA:HB3	2.14	0.47
38:M:91:LEU:HD13	38:M:112:ASP:OD1	2.15	0.47
39:N:121:ARG:HB2	53:3:1348:U:O3'	2.15	0.47
45:T:1:SER:HA	45:T:34:GLN:HE22	1.80	0.47
49:X:21:ALA:O	49:X:25:GLY:N	2.48	0.47
50:Y:53:MET:HE2	50:Y:57:VAL:HG21	1.95	0.47
53:3:598:U:H2'	53:3:599:C:C6	2.50	0.47
53:3:772:U:H2'	53:3:773:G:H8	1.77	0.47
53:3:1325:C:O2'	53:3:1326:U:H5'	2.14	0.47
53:3:1329:A:O2'	53:3:1330:U:H5'	2.14	0.47
54:1:409:G:O2'	54:1:410:G:H5'	2.14	0.47
54:1:1965:C:H5''	54:1:1966:A:H2'	1.95	0.47
54:1:2555:U:H2'	54:1:2556:C:C5'	2.44	0.47
56:6:21:A:N6	56:6:47:U:H4'	2.30	0.47
1:b:120:ASP:H	6:g:91:PHE:HE1	1.61	0.47
2:c:157:LYS:HA	54:1:2619:C:H5''	1.97	0.47
4:e:173:ASP:O	4:e:174:PHE:C	2.58	0.47
5:f:34:ARG:HG2	5:f:35:THR:N	2.25	0.47
6:g:79:THR:CG2	6:g:147:VAL:HG23	2.42	0.47
11:l:51:GLU:HG3	11:l:56:PRO:HA	1.96	0.47
27:B:31:LYS:HG3	27:B:32:THR:H	1.76	0.47
32:G:169:HIS:CE1	32:G:170:ILE:HD13	2.48	0.47
34:I:28:ASP:OD1	34:I:29:THR:N	2.41	0.47
42:Q:113:ARG:HH21	42:Q:121:PRO:HD2	1.79	0.47
52:a:167:LYS:NZ	54:1:2121:G:H1'	2.30	0.47
53:3:45:G:H2'	53:3:46:G:H8	1.75	0.47
53:3:70:U:H5''	53:3:71:A:OP1	2.14	0.47
53:3:89:U:H2'	53:3:90:C:O4'	2.14	0.47
53:3:542:G:O2'	53:3:543:U:H5'	2.15	0.47
53:3:971:G:H1'	53:3:1365:G:O2'	2.13	0.47
53:3:1452:C:H4'	53:3:1453:G:N1	2.30	0.47
54:1:170:U:H2'	54:1:171:U:C6	2.49	0.47
54:1:518:G:H2'	54:1:519:U:C6	2.49	0.47
54:1:813:U:H2'	54:1:814:C:C6	2.48	0.47
54:1:987:C:H2'	54:1:988:A:O4'	2.14	0.47
54:1:1802:A:H2'	54:1:1803:A:H8	1.80	0.47
54:1:2323:G:O2'	54:1:2324:U:H5'	2.14	0.47
54:1:2534:A:H2'	54:1:2535:G:C4'	2.44	0.47
54:1:2557:G:H2'	54:1:2558:C:H6	1.78	0.47
1:b:7:PRO:HB3	1:b:13:ARG:HG3	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:128:THR:C	1:b:129:LEU:HD23	2.40	0.47
10:k:61:VAL:CG1	10:k:85:VAL:HB	2.45	0.47
12:m:7:THR:OG1	12:m:8:LYS:N	2.48	0.47
14:o:53:THR:HG21	14:o:65:THR:HA	1.96	0.47
16:q:23:TYR:HB2	16:q:28:SER:HB3	1.97	0.47
16:q:61:ILE:HG23	16:q:75:TYR:CE1	2.50	0.47
17:r:14:VAL:HG22	17:r:15:SER:N	2.30	0.47
20:u:15:GLY:C	20:u:17:ASP:H	2.23	0.47
26:A:8:LYS:HB3	26:A:10:GLU:OE1	2.14	0.47
34:I:8:LEU:HD11	34:I:21:LYS:CD	2.42	0.47
38:M:100:ILE:O	38:M:128:VAL:HG23	2.15	0.47
41:P:30:ILE:HD12	41:P:31:VAL:H	1.80	0.47
46:U:28:ARG:NH1	53:3:375:U:H1'	2.30	0.47
49:X:30:LEU:H	49:X:30:LEU:CD1	2.27	0.47
52:a:44:VAL:HG21	52:a:175:ILE:HG23	1.96	0.47
53:3:635:A:H2'	53:3:636:U:C6	2.50	0.47
54:1:466:A:H1'	54:1:683:U:H4'	1.97	0.47
54:1:851:C:H2'	54:1:852:U:H6	1.79	0.47
54:1:1068:G:C2'	54:1:1069:A:H4'	2.45	0.47
54:1:1751:U:O2'	54:1:1752:C:H5'	2.15	0.47
54:1:2229:U:H2'	54:1:2230:G:C8	2.49	0.47
54:1:2282:G:H4'	54:1:2389:G:O2'	2.15	0.47
54:1:2895:G:H2'	54:1:2896:C:C6	2.49	0.47
1:b:44:ASN:HD21	54:1:1812:U:H1'	1.77	0.47
1:b:67:LYS:HG3	1:b:69:ASN:OD1	2.14	0.47
1:b:127:ASN:OD1	1:b:129:LEU:HD22	2.15	0.47
2:c:100:LEU:HD12	2:c:100:LEU:C	2.39	0.47
2:c:152:PRO:O	2:c:154:LYS:HG2	2.14	0.47
2:c:161:MET:HE3	54:1:2619:C:O2'	2.15	0.47
2:c:194:PRO:HA	54:1:2680:U:C5'	2.45	0.47
2:c:194:PRO:HG3	54:1:2679:A:O2'	2.14	0.47
2:c:202:ILE:HD12	2:c:202:ILE:N	2.29	0.47
4:e:98:PHE:HA	4:e:101:ARG:HG2	1.96	0.47
4:e:151:LEU:C	4:e:151:LEU:HD12	2.39	0.47
8:i:56:VAL:HG22	8:i:57:VAL:N	2.30	0.47
10:k:35:VAL:HG13	10:k:63:VAL:O	2.15	0.47
11:l:78:ARG:HB3	11:l:113:ALA:CB	2.45	0.47
18:s:73:LYS:HB2	18:s:106:VAL:HB	1.97	0.47
19:t:15:HIS:ND1	19:t:16:VAL:N	2.63	0.47
30:E:63:TYR:CE2	54:1:242:G:H5''	2.50	0.47
32:G:102:ASN:O	32:G:105:THR:HG22	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:J:108:GLY:O	35:J:109:ALA:CB	2.62	0.47
39:N:29:ILE:HG22	39:N:30:ASN:ND2	2.30	0.47
39:N:79:ARG:HD2	39:N:102:PHE:CD1	2.50	0.47
40:O:59:LYS:HE2	40:O:62:ARG:HH22	1.79	0.47
46:U:8:ARG:HA	46:U:17:TYR:CD1	2.49	0.47
47:V:12:VAL:HG22	47:V:23:ALA:HB2	1.96	0.47
49:X:65:MET:N	49:X:65:MET:SD	2.88	0.47
52:a:67:HIS:HB2	52:a:188:ASN:HD22	1.80	0.47
53:3:603:U:H2'	53:3:604:G:C8	2.50	0.47
53:3:1288:A:H2'	53:3:1289:A:O4'	2.15	0.47
54:1:440:C:H2'	54:1:441:U:C6	2.50	0.47
54:1:543:G:H2'	54:1:544:C:C5'	2.45	0.47
54:1:794:A:H2'	54:1:795:C:H6	1.80	0.47
54:1:1056:G:H8	54:1:1056:G:O5'	1.98	0.47
54:1:1386:C:H2'	54:1:1387:A:C8	2.50	0.47
54:1:1930:G:H1'	54:1:1931:U:H5	1.79	0.47
54:1:2186:G:H2'	54:1:2187:U:O4'	2.15	0.47
54:1:2633:G:C3'	54:1:2634:A:H5''	2.45	0.47
2:c:1:MET:SD	2:c:2:ILE:O	2.73	0.47
4:e:140:ILE:HD12	4:e:140:ILE:H	1.79	0.47
9:j:35:ARG:HA	9:j:40:HIS:HD2	1.80	0.47
12:m:50:ARG:HG2	12:m:50:ARG:HH21	1.79	0.47
21:v:18:ARG:HG3	21:v:18:ARG:NH1	2.27	0.47
21:v:57:TYR:C	21:v:73:LYS:NZ	2.73	0.47
23:x:3:VAL:HA	23:x:9:LYS:O	2.14	0.47
34:I:92:LEU:HD12	34:I:135:GLN:NE2	2.29	0.47
34:I:110:ARG:HG2	34:I:110:ARG:NH1	2.28	0.47
40:O:8:ILE:HD12	40:O:8:ILE:N	2.30	0.47
42:Q:37:TYR:HD1	42:Q:37:TYR:H	1.62	0.47
47:V:10:ARG:O	47:V:22:VAL:HG13	2.15	0.47
47:V:39:ARG:NH2	53:3:280:C:H1'	2.30	0.47
53:3:1323:G:H2'	53:3:1324:A:H8	1.77	0.47
54:1:179:C:O2'	54:1:180:G:H5'	2.15	0.47
54:1:691:C:O2'	54:1:692:C:H5'	2.15	0.47
54:1:828:U:H4'	54:1:831:G:N1	2.29	0.47
54:1:1032:A:H2	54:1:1122:G:H1	1.62	0.47
54:1:1068:G:H2'	54:1:1069:A:C1'	2.44	0.47
54:1:1074:G:N2	54:1:1075:C:N4	2.62	0.47
54:1:2066:C:H2'	54:1:2067:G:C8	2.49	0.47
54:1:2156:G:H2'	54:1:2157:G:C4'	2.44	0.47
5:f:25:ILE:HD11	5:f:74:MET:CB	2.44	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:i:22:PRO:HB3	54:l:1068:G:OP1	2.15	0.47
10:k:108:ARG:HH12	10:k:116:ILE:CD1	2.27	0.47
19:t:4:GLU:HA	19:t:7:LEU:HD12	1.97	0.47
32:G:100:LEU:HB2	32:G:174:GLU:CD	2.39	0.47
32:G:133:ALA:HA	32:G:136:ARG:CD	2.45	0.47
34:l:12:ARG:HD3	34:l:37:PRO:HA	1.96	0.47
35:J:95:MET:HG2	35:J:124:ALA:HB2	1.96	0.47
41:P:90:PRO:HG2	41:P:91:GLY:H	1.79	0.47
44:S:68:ARG:HH12	44:S:70:HIS:HB2	1.80	0.47
45:T:38:LEU:HD22	45:T:55:LEU:HD13	1.97	0.47
48:W:11:ARG:HH21	53:3:845:A:H1'	1.79	0.47
51:Z:54:ARG:O	51:Z:58:LYS:HG2	2.15	0.47
53:3:1054:C:OP2	53:3:1197:A:OP2	2.33	0.47
54:1:173:A:H2'	54:1:174:U:H6	1.80	0.47
54:1:226:A:H2'	54:1:227:A:O4'	2.14	0.47
54:1:441:U:H2'	54:1:442:G:C8	2.50	0.47
54:1:1689:A:H2'	54:1:1690:A:C8	2.50	0.47
54:1:2073:C:O2'	54:1:2074:U:H5'	2.15	0.47
54:1:2156:G:H2'	54:1:2157:G:C5'	2.45	0.47
54:1:2658:C:H2'	54:1:2659:G:O4'	2.15	0.47
54:1:2741:A:H2'	54:1:2742:G:O4'	2.15	0.47
55:2:118:C:H2'	55:2:119:A:O4'	2.15	0.47
56:5:6:G:O2'	56:5:7:G:H5'	2.15	0.47
3:d:164:LEU:HD22	3:d:167:VAL:HG21	1.96	0.47
10:k:71:ARG:O	10:k:73:ASP:N	2.38	0.47
22:w:62:LYS:CG	22:w:81:GLU:HG3	2.45	0.47
23:x:31:ASN:ND2	23:x:33:HIS:NE2	2.63	0.47
23:x:53:LYS:O	23:x:57:VAL:HG23	2.14	0.47
29:D:3:ARG:HA	29:D:3:ARG:NE	2.30	0.47
31:F:26:ILE:HG13	31:F:26:ILE:O	2.13	0.47
32:G:163:ILE:HA	32:G:185:ILE:CG2	2.45	0.47
36:K:51:ILE:O	36:K:52:ASN:CB	2.63	0.47
39:N:119:LYS:HD3	53:3:1350:A:OP2	2.15	0.47
46:U:35:ARG:HD2	46:U:36:VAL:N	2.30	0.47
51:Z:39:LYS:O	51:Z:43:GLU:HG2	2.15	0.47
53:3:924:C:H2'	53:3:925:G:H8	1.80	0.47
53:3:984:C:O2'	53:3:985:C:H5'	2.15	0.47
54:1:28:A:O2'	54:1:29:U:H5'	2.15	0.47
54:1:947:A:H2'	54:1:948:C:H6	1.77	0.47
54:1:962:G:H21	54:1:2250:G:H1	1.63	0.47
54:1:1630:A:H2'	54:1:1631:G:O4'	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:1698:A:H8	54:1:1698:A:OP1	1.98	0.47
54:1:2026:U:H2'	54:1:2027:G:O4'	2.14	0.47
54:1:2111:U:OP1	54:1:2119:A:H5''	2.14	0.47
54:1:2828:G:O2'	54:1:2829:A:H5'	2.15	0.47
57:4:10:G:O5'	57:4:10:G:H8	1.98	0.47
1:b:47:ARG:NH2	54:1:774:G:H5''	2.30	0.46
1:b:160:TYR:HE1	1:b:176:ARG:HH11	1.63	0.46
2:c:148:GLN:CD	2:c:148:GLN:N	2.73	0.46
4:e:2:LYS:HE3	26:A:22:MET:HE3	1.97	0.46
5:f:126:THR:HB	5:f:129:GLU:HG2	1.98	0.46
6:g:5:LEU:HB3	6:g:16:GLY:H	1.80	0.46
9:j:78:THR:CG2	54:1:2641:G:H5''	2.45	0.46
17:r:31:GLU:CD	17:r:32:THR:N	2.73	0.46
23:x:31:ASN:HD22	23:x:52:ALA:HB2	1.79	0.46
32:G:22:TRP:CZ3	32:G:24:PRO:HA	2.49	0.46
33:H:46:LEU:HB3	33:H:49:ALA:HB3	1.96	0.46
34:I:57:LYS:HD2	34:I:57:LYS:C	2.39	0.46
35:J:45:VAL:HG12	35:J:117:ALA:HA	1.97	0.46
39:N:104:THR:HG23	53:3:1180:A:H5'	1.96	0.46
42:Q:87:LYS:HE3	53:3:526:C:OP2	2.15	0.46
47:V:61:ARG:HG2	47:V:73:THR:HB	1.97	0.46
53:3:748:G:H2'	53:3:749:A:H8	1.80	0.46
54:1:794:A:O2'	54:1:795:C:H5'	2.14	0.46
54:1:848:C:H2'	54:1:849:A:H8	1.80	0.46
54:1:1199:U:H2'	54:1:1200:C:H6	1.78	0.46
54:1:1367:A:H2'	54:1:1368:G:H5'	1.96	0.46
54:1:2036:C:H2'	54:1:2037:A:C8	2.50	0.46
54:1:2457:U:O2'	54:1:2458:G:H5'	2.14	0.46
56:6:14:A:H2'	56:6:15:G:C8	2.50	0.46
2:c:62:LYS:HD2	54:1:2810:A:H5''	1.98	0.46
8:i:48:ILE:HG22	8:i:49:GLU:O	2.15	0.46
8:i:72:THR:CG2	8:i:73:PRO:HD2	2.45	0.46
12:m:69:PRO:O	12:m:70:ASP:OD1	2.33	0.46
17:r:19:THR:HG23	17:r:96:VAL:O	2.16	0.46
17:r:21:ARG:O	17:r:22:LEU:HD12	2.15	0.46
30:E:44:ARG:NH1	30:E:44:ARG:HB2	2.30	0.46
35:J:80:LEU:HB3	35:J:146:MET:SD	2.55	0.46
39:N:111:GLU:OE2	39:N:120:ALA:HB1	2.15	0.46
39:N:121:ARG:HG3	53:3:1348:U:H4'	1.96	0.46
41:P:68:ARG:HG3	41:P:68:ARG:NH1	2.30	0.46
42:Q:120:ARG:HB2	53:3:37:U:H5''	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:R:82:LEU:HD12	43:R:84:CYS:H	1.80	0.46
51:Z:39:LYS:N	51:Z:40:PRO:CD	2.78	0.46
52:a:44:VAL:HG13	52:a:214:ILE:HG22	1.96	0.46
53:3:1435:G:H2'	53:3:1436:U:H6	1.77	0.46
53:3:1522:U:H2'	53:3:1523:G:C8	2.50	0.46
54:1:326:G:H2'	54:1:327:G:H8	1.79	0.46
54:1:633:A:H2'	54:1:634:C:O4'	2.15	0.46
54:1:746:U:H1'	54:1:748:G:N2	2.30	0.46
54:1:962:G:H2'	54:1:963:U:C6	2.51	0.46
54:1:1045:C:H5'	54:1:1046:A:C5'	2.44	0.46
54:1:1989:G:H2'	54:1:1990:C:O4'	2.14	0.46
1:b:44:ASN:ND2	54:1:1812:U:C1'	2.77	0.46
7:h:42:ARG:HG2	7:h:42:ARG:HH11	1.80	0.46
11:l:64:PHE:HB3	30:E:24:LYS:HD2	1.97	0.46
14:o:4:LYS:O	14:o:8:ILE:HG13	2.16	0.46
14:o:39:VAL:O	14:o:48:LEU:N	2.49	0.46
26:A:12:ILE:HG12	26:A:24:ILE:O	2.15	0.46
27:B:38:LEU:HD12	27:B:38:LEU:H	1.81	0.46
31:F:24:ARG:HH21	31:F:24:ARG:HG3	1.80	0.46
34:I:13:ARG:HD3	34:I:13:ARG:O	2.15	0.46
34:I:18:LEU:HD13	34:I:63:ILE:HG12	1.97	0.46
36:K:18:VAL:HG12	36:K:19:PRO:HD3	1.97	0.46
37:L:112:ASP:OD2	37:L:118:ARG:HA	2.15	0.46
51:Z:24:LYS:O	51:Z:26:GLY:N	2.49	0.46
54:1:1709:U:H2'	54:1:1710:G:H8	1.80	0.46
54:1:1867:G:H2'	54:1:1868:C:C6	2.51	0.46
54:1:2636:C:H2'	54:1:2637:U:H6	1.79	0.46
54:1:2733:A:H2'	54:1:2734:A:H8	1.81	0.46
5:f:26:LYS:HD2	5:f:26:LYS:C	2.40	0.46
5:f:96:ALA:O	5:f:102:ILE:HA	2.16	0.46
15:p:97:TYR:HD2	54:1:2718:G:H5''	1.80	0.46
19:t:50:LEU:HD23	24:y:26:PHE:CZ	2.50	0.46
20:u:83:GLY:HA3	20:u:94:PHE:CZ	2.50	0.46
31:F:27:CYS:HB2	31:F:33:HIS:HB2	1.96	0.46
32:G:69:VAL:HG22	32:G:168:GLU:OE2	2.16	0.46
34:I:23:GLY:HA3	53:3:409:U:P	2.55	0.46
46:U:74:LEU:HA	46:U:77:GLU:HB3	1.97	0.46
48:W:12:PHE:CG	48:W:13:THR:N	2.80	0.46
50:Y:4:LYS:O	50:Y:6:ALA:N	2.48	0.46
53:3:1352:C:H2'	53:3:1353:G:C8	2.50	0.46
54:1:191:A:H2'	54:1:192:C:C6	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:853:C:O2'	54:1:854:C:H5'	2.16	0.46
54:1:1062:G:OP2	54:1:1062:G:H8	1.99	0.46
54:1:1198:U:H2'	54:1:1199:U:C6	2.51	0.46
54:1:1509:A:H2'	54:1:1510:G:C8	2.51	0.46
54:1:1664:A:H2'	54:1:1664:A:N3	2.30	0.46
54:1:1748:C:H2'	54:1:1749:A:C8	2.50	0.46
54:1:1867:G:H2'	54:1:1868:C:H6	1.80	0.46
54:1:2087:G:H2'	54:1:2088:A:C8	2.50	0.46
54:1:2411:A:H2'	54:1:2412:A:C8	2.50	0.46
20:u:93:ARG:CD	20:u:102:ILE:HD12	2.44	0.46
22:w:21:ARG:HA	22:w:21:ARG:NE	2.31	0.46
22:w:32:ILE:HD12	22:w:32:ILE:H	1.78	0.46
24:y:37:LEU:CD2	24:y:40:SER:HA	2.41	0.46
37:L:48:THR:O	37:L:52:ARG:HG2	2.15	0.46
37:L:101:ARG:CZ	53:3:939:G:H5'	2.45	0.46
38:M:6:ILE:CD1	38:M:31:LEU:HD11	2.45	0.46
38:M:78:SER:N	38:M:84:ILE:HD11	2.31	0.46
39:N:39:GLY:C	39:N:44:ARG:HD3	2.40	0.46
41:P:124:LYS:O	41:P:124:LYS:HD2	2.16	0.46
44:S:64:ARG:HH11	44:S:64:ARG:HG3	1.80	0.46
49:X:11:ASP:O	49:X:14:LEU:HB3	2.15	0.46
50:Y:32:LYS:HZ1	53:3:1438:G:H5''	1.80	0.46
53:3:404:G:H2'	53:3:405:U:C6	2.51	0.46
54:1:138:U:H3'	54:1:139:U:H5'	1.98	0.46
54:1:755:U:H2'	54:1:756:A:C8	2.50	0.46
54:1:1035:U:H2'	54:1:1036:G:C8	2.47	0.46
54:1:1444:G:H2'	54:1:1445:G:H8	1.80	0.46
54:1:1641:A:H2'	54:1:1642:G:O4'	2.16	0.46
54:1:1777:U:O2'	54:1:1778:U:H5'	2.15	0.46
54:1:2024:G:OP2	54:1:2034:U:H4'	2.15	0.46
54:1:2786:U:O2'	54:1:2787:C:H5'	2.16	0.46
54:1:2843:G:O2'	54:1:2844:G:H5'	2.16	0.46
56:5:57:A:H2'	56:5:58:A:H5'	1.96	0.46
56:5:64:G:H2'	56:5:65:C:H6	1.78	0.46
1:b:209:ALA:HA	1:b:212:TRP:CE2	2.50	0.46
3:d:17:THR:O	3:d:106:LYS:HD2	2.15	0.46
4:e:39:VAL:HG13	4:e:40:GLY:N	2.30	0.46
10:k:105:ARG:NH1	10:k:108:ARG:HH21	2.14	0.46
12:m:18:ARG:CB	12:m:18:ARG:HH21	2.29	0.46
12:m:65:ILE:HG13	12:m:65:ILE:O	2.15	0.46
14:o:92:PHE:CE1	14:o:107:ALA:HB2	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:r:37:GLU:HB3	17:r:53:PHE:CD1	2.51	0.46
19:t:7:LEU:HD22	19:t:46:ALA:HB2	1.97	0.46
20:u:97:SER:O	20:u:98:ASN:HB3	2.16	0.46
21:v:30:ILE:HG13	21:v:93:ARG:HH21	1.80	0.46
31:F:18:LYS:HZ2	31:F:21:GLY:HA2	1.79	0.46
32:G:18:GLN:O	32:G:19:THR:HB	2.14	0.46
34:I:25:ARG:NH2	34:I:30:LYS:HD3	2.27	0.46
39:N:117:LEU:HD12	39:N:117:LEU:N	2.31	0.46
41:P:45:THR:HG23	41:P:48:GLY:N	2.30	0.46
42:Q:86:VAL:HG23	42:Q:89:LEU:H	1.81	0.46
45:T:23:SER:HA	53:3:751:U:C4'	2.44	0.46
54:1:169:G:H2'	54:1:170:U:C6	2.51	0.46
54:1:310:A:O2'	54:1:311:A:H5''	2.16	0.46
54:1:621:A:H2'	54:1:622:G:H5'	1.97	0.46
54:1:689:A:H2'	54:1:690:G:C8	2.51	0.46
54:1:1174:U:H4'	54:1:1176:U:O2	2.15	0.46
54:1:1541:C:O2'	54:1:1542:U:H5'	2.16	0.46
54:1:2190:G:H2'	54:1:2191:A:H8	1.79	0.46
54:1:2392:A:H2'	54:1:2393:U:H6	1.79	0.46
54:1:2443:C:H2'	54:1:2444:G:C8	2.50	0.46
54:1:2573:C:H5''	54:1:2574:G:H5''	1.97	0.46
55:2:11:C:H2'	55:2:12:C:O4'	2.16	0.46
55:2:12:C:H4'	55:2:15:A:N6	2.30	0.46
56:6:21:A:H62	56:6:47:U:H4'	1.80	0.46
56:6:58:A:H4'	56:6:60:U:C5	2.51	0.46
1:b:121:ALA:HB1	1:b:127:ASN:OD1	2.16	0.46
5:f:92:GLY:HA2	5:f:94:ARG:NH1	2.31	0.46
9:j:32:LEU:O	9:j:36:LEU:HG	2.16	0.46
10:k:30:ARG:HD3	54:1:2674:G:H4'	1.98	0.46
13:n:79:LEU:C	13:n:81:ASN:H	2.23	0.46
15:p:96:LEU:HD12	15:p:96:LEU:N	2.31	0.46
24:y:29:ARG:O	24:y:33:ALA:N	2.49	0.46
28:C:9:LYS:HD3	28:C:52:LYS:O	2.15	0.46
31:F:25:VAL:HB	31:F:35:GLN:CG	2.44	0.46
32:G:27:LYS:N	32:G:28:PRO:CD	2.78	0.46
34:I:201:GLU:OE2	35:J:104:ILE:HG23	2.14	0.46
35:J:132:PRO:O	35:J:135:VAL:HG22	2.15	0.46
38:M:17:GLN:NE2	38:M:69:ALA:HB1	2.31	0.46
38:M:112:ASP:O	38:M:116:ARG:N	2.45	0.46
40:O:57:VAL:HG23	53:3:972:C:H1'	1.97	0.46
42:Q:80:LEU:O	42:Q:81:ILE:HD13	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:Q:111:GLN:HB2	53:3:538:G:OP2	2.15	0.46
50:Y:56:ILE:HD13	50:Y:59:ARG:HH12	1.80	0.46
51:Z:7:GLU:CB	51:Z:11:PHE:HB3	2.46	0.46
53:3:252:U:O2	53:3:252:U:C2'	2.60	0.46
54:1:318:C:O2'	54:1:319:G:H5'	2.15	0.46
54:1:464:U:H2'	54:1:465:G:O4'	2.16	0.46
54:1:578:G:H21	54:1:1252:G:H21	1.62	0.46
54:1:1190:G:H2'	54:1:1191:G:H8	1.81	0.46
54:1:1665:A:O2'	54:1:1666:G:H5'	2.15	0.46
54:1:1868:C:H2'	54:1:1869:G:O4'	2.15	0.46
54:1:2004:G:H2'	54:1:2005:A:O4'	2.16	0.46
54:1:2053:G:O2'	54:1:2054:A:H5'	2.16	0.46
54:1:2169:A:H2'	54:1:2170:A:O4'	2.16	0.46
54:1:2698:U:H2'	54:1:2699:C:H6	1.81	0.46
5:f:7:PRO:HB3	5:f:50:THR:HG22	1.98	0.46
7:h:60:LEU:HD11	54:1:1047:G:N7	2.31	0.46
8:i:37:PHE:O	8:i:41:PHE:HB2	2.16	0.46
8:i:72:THR:HG23	8:i:73:PRO:HD2	1.97	0.46
13:n:41:ALA:HB1	13:n:97:ILE:HD12	1.98	0.46
19:t:54:GLU:H	19:t:54:GLU:CD	2.24	0.46
24:y:37:LEU:HD11	24:y:39:GLN:O	2.15	0.46
32:G:101:THR:O	53:3:1074:G:H4'	2.16	0.46
33:H:59:PRO:HB3	40:O:94:ALA:HB2	1.97	0.46
33:H:155:ARG:NE	33:H:160:GLU:HA	2.29	0.46
36:K:21:MET:HE1	36:K:83:ALA:HB3	1.96	0.46
36:K:45:ARG:HB3	36:K:45:ARG:HH11	1.80	0.46
36:K:88:MET:HE3	36:K:90:MET:CE	2.46	0.46
36:K:91:ARG:HG2	36:K:91:ARG:HH11	1.81	0.46
40:O:15:HIS:O	40:O:18:ILE:HG22	2.16	0.46
43:R:44:ILE:O	43:R:47:LEU:HD23	2.15	0.46
52:a:14:LYS:HB3	52:a:29:LEU:HD11	1.98	0.46
53:3:848:C:H2'	53:3:849:G:C4'	2.46	0.46
53:3:1248:A:O2'	53:3:1249:C:H5'	2.16	0.46
54:1:1792:G:O2'	54:1:1793:C:H5'	2.15	0.46
54:1:2024:G:H2'	54:1:2025:C:O4'	2.16	0.46
54:1:2314:A:H2'	54:1:2315:G:C8	2.50	0.46
54:1:2785:C:H2'	54:1:2786:U:H6	1.81	0.46
1:b:203:VAL:HG13	1:b:203:VAL:O	2.15	0.46
2:c:105:LYS:O	2:c:177:VAL:HG12	2.16	0.46
5:f:71:LEU:O	5:f:75:VAL:HG23	2.16	0.46
5:f:106:LEU:HD12	5:f:112:VAL:HG21	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:g:26:ALA:HA	6:g:30:LEU:HB2	1.97	0.46
9:j:37:ARG:HB2	9:j:118:MET:HE1	1.98	0.46
19:t:38:ALA:HA	19:t:42:GLU:OE1	2.15	0.46
20:u:27:VAL:HG12	20:u:33:VAL:CG1	2.45	0.46
21:v:51:GLN:HE22	21:v:86:LEU:HD22	1.81	0.46
33:H:153:SER:O	33:H:195:ILE:HG23	2.15	0.46
41:P:81:LEU:C	41:P:81:LEU:HD12	2.41	0.46
43:R:10:ASP:O	43:R:12:LYS:HG3	2.16	0.46
44:S:39:ASP:O	44:S:43:ALA:N	2.47	0.46
46:U:4:ILE:O	46:U:71:VAL:HG21	2.16	0.46
51:Z:5:VAL:HG12	51:Z:16:ARG:NH1	2.28	0.46
52:a:25:GLU:O	52:a:29:LEU:N	2.39	0.46
53:3:9:G:H2'	53:3:10:A:H8	1.81	0.46
53:3:401:C:H2'	53:3:402:G:C8	2.51	0.46
53:3:424:G:O2'	53:3:425:G:H5'	2.15	0.46
53:3:1456:A:H2'	53:3:1457:G:O4'	2.16	0.46
54:1:52:A:C5	54:1:118:A:C2	3.04	0.46
54:1:222:A:N6	54:1:232:G:H1'	2.29	0.46
54:1:745:G:H2'	54:1:746:U:O4'	2.16	0.46
54:1:974:G:H1'	54:1:975:A:C8	2.51	0.46
54:1:1670:C:O5'	54:1:1670:C:H6	1.98	0.46
54:1:1703:G:H2'	54:1:1704:C:C6	2.50	0.46
54:1:2392:A:H2'	54:1:2393:U:C6	2.51	0.46
54:1:2589:A:O2'	54:1:2590:A:H5'	2.16	0.46
54:1:2772:C:H2'	54:1:2773:C:C6	2.50	0.46
55:2:33:G:O2'	55:2:34:A:H5'	2.16	0.46
56:5:69:C:H2'	56:5:70:G:H8	1.81	0.46
1:b:47:ARG:HH11	1:b:47:ARG:HG3	1.81	0.46
2:c:18:ASP:OD2	2:c:20:VAL:HG23	2.15	0.46
5:f:163:TYR:HB2	5:f:166:GLU:CB	2.45	0.46
6:g:44:ILE:CG1	6:g:45:GLU:N	2.79	0.46
6:g:97:ARG:HA	6:g:112:LYS:HD2	1.97	0.46
8:i:3:LYS:HG3	8:i:4:VAL:N	2.28	0.46
8:i:14:ALA:HB3	8:i:41:PHE:CD2	2.51	0.46
9:j:102:GLU:O	9:j:105:VAL:HG12	2.16	0.46
10:k:18:ARG:HB2	10:k:45:GLU:CB	2.45	0.46
11:l:79:LEU:O	11:l:82:LEU:HB3	2.16	0.46
11:l:90:VAL:N	11:l:121:THR:O	2.49	0.46
14:o:15:ARG:HG3	14:o:15:ARG:HH11	1.80	0.46
14:o:30:ARG:HH11	14:o:102:ARG:NH1	2.13	0.46
17:r:98:ILE:CG2	17:r:101:ILE:HD11	2.45	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:u:6:ARG:O	20:u:24:VAL:HB	2.16	0.46
30:E:23:HIS:CE1	30:E:47:ALA:HB3	2.51	0.46
34:I:29:THR:O	34:I:29:THR:HG22	2.16	0.46
34:I:103:ARG:HD3	34:I:167:PRO:HG2	1.98	0.46
36:K:29:ILE:HG23	36:K:66:ALA:HB2	1.98	0.46
39:N:56:MET:SD	39:N:57:VAL:N	2.89	0.46
41:P:52:ARG:HA	41:P:52:ARG:NE	2.31	0.46
42:Q:20:VAL:HB	42:Q:94:TYR:CE1	2.51	0.46
46:U:79:ASN:O	46:U:82:ALA:N	2.48	0.46
49:X:35:ARG:HH21	49:X:74:ALA:HB3	1.81	0.46
53:3:628:G:O2'	53:3:629:A:H5'	2.15	0.46
53:3:859:G:H2'	53:3:860:A:C8	2.51	0.46
53:3:1052:U:H2'	53:3:1200:C:H41	1.81	0.46
54:1:5:A:H2'	54:1:6:A:H8	1.80	0.46
54:1:212:G:O2'	54:1:213:A:H5'	2.16	0.46
54:1:329:G:H1'	54:1:477:A:H1'	1.97	0.46
54:1:552:U:O2'	54:1:553:G:H5'	2.16	0.46
54:1:595:C:H2'	54:1:596:U:H6	1.80	0.46
54:1:1935:G:H1'	54:1:1964:G:N2	2.31	0.46
54:1:2086:U:H2'	54:1:2087:G:C8	2.51	0.46
54:1:2359:C:O2'	54:1:2360:G:H5'	2.16	0.46
54:1:2514:U:H2'	54:1:2515:C:C6	2.51	0.46
1:b:120:ASP:N	6:g:91:PHE:HE1	2.13	0.45
4:e:34:THR:OG1	4:e:154:THR:HB	2.16	0.45
4:e:38:GLY:HA2	4:e:85:GLY:HA3	1.98	0.45
10:k:70:ARG:HG2	10:k:76:VAL:HG12	1.98	0.45
15:p:52:ARG:H	15:p:56:SER:HB3	1.82	0.45
15:p:87:ARG:HG2	15:p:88:ARG:N	2.31	0.45
32:G:165:ALA:HB2	32:G:186:VAL:HG12	1.98	0.45
34:I:55:ARG:O	34:I:59:LYS:N	2.47	0.45
35:J:75:LEU:O	35:J:75:LEU:HD12	2.15	0.45
44:S:23:ARG:HA	44:S:25:GLU:OE2	2.16	0.45
52:a:190:GLU:O	52:a:194:VAL:HG23	2.16	0.45
53:3:382:A:O2'	53:3:383:A:H5'	2.16	0.45
53:3:1195:C:H5''	53:3:1196:A:OP2	2.16	0.45
53:3:1524:C:H2'	53:3:1525:G:C8	2.52	0.45
54:1:774:G:C2'	54:1:775:G:H5''	2.46	0.45
54:1:1657:U:H2'	54:1:1658:C:H6	1.80	0.45
54:1:2041:U:H2'	54:1:2042:A:C8	2.50	0.45
54:1:2078:C:H2'	54:1:2079:U:H6	1.81	0.45
54:1:2686:G:H2'	54:1:2687:U:O4'	2.15	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:6:69:C:H2'	56:6:70:G:C5'	2.46	0.45
4:e:66:ILE:HD12	4:e:66:ILE:H	1.78	0.45
5:f:174:LYS:HG2	5:f:175:LYS:HG2	1.98	0.45
8:i:12:VAL:HG13	54:1:1061:U:H3	1.79	0.45
9:j:84:ILE:HG23	9:j:84:ILE:O	2.15	0.45
10:k:19:VAL:CB	10:k:41:ILE:HD12	2.46	0.45
12:m:18:ARG:NH2	12:m:18:ARG:HB3	2.32	0.45
16:q:108:LEU:HD11	17:r:40:MET:HE1	1.98	0.45
17:r:37:GLU:O	17:r:39:LEU:HD12	2.15	0.45
19:t:2:ILE:O	19:t:5:GLU:N	2.49	0.45
21:v:9:ARG:HB3	21:v:41:GLU:HB2	1.97	0.45
32:G:20:ARG:HH11	32:G:20:ARG:HG3	1.81	0.45
34:I:12:ARG:HD2	34:I:37:PRO:HA	1.98	0.45
34:I:119:HIS:CG	53:3:438:U:H4'	2.51	0.45
37:L:88:VAL:HG22	37:L:89:GLU:N	2.31	0.45
38:M:100:ILE:HD11	38:M:112:ASP:N	2.30	0.45
39:N:112:ARG:HH11	39:N:112:ARG:HG3	1.81	0.45
47:V:12:VAL:HG23	47:V:22:VAL:C	2.40	0.45
53:3:512:U:H2'	53:3:513:C:C6	2.51	0.45
53:3:539:A:H2'	53:3:540:G:C8	2.51	0.45
53:3:981:U:H2'	53:3:982:U:C5	2.52	0.45
54:1:132:G:H2'	54:1:133:U:C6	2.52	0.45
54:1:578:G:H21	54:1:1252:G:N2	2.14	0.45
54:1:825:A:H2'	54:1:826:U:H6	1.77	0.45
54:1:1387:A:H5'	54:1:1469:A:H1'	1.98	0.45
54:1:1536:C:H5''	54:1:1537:G:C4	2.50	0.45
54:1:1569:A:H2'	54:1:1570:A:H8	1.81	0.45
54:1:1779:U:H5	54:1:1784:A:N7	2.14	0.45
54:1:2082:A:H2'	54:1:2083:G:O4'	2.16	0.45
4:e:3:LEU:CD1	4:e:100:GLU:HA	2.46	0.45
13:n:17:ARG:O	13:n:20:MET:HG2	2.14	0.45
14:o:28:VAL:HG12	14:o:93:ASP:O	2.15	0.45
14:o:68:LYS:HZ3	14:o:101:GLY:C	2.24	0.45
16:q:25:GLY:O	16:q:29:ARG:NH1	2.49	0.45
18:s:46:LEU:O	18:s:50:VAL:HG23	2.17	0.45
18:s:59:GLU:CD	18:s:66:ILE:HD11	2.42	0.45
25:z:9:THR:HB	25:z:55:LYS:HZ3	1.81	0.45
33:H:141:MET:O	33:H:144:GLY:N	2.50	0.45
34:I:153:ARG:C	34:I:155:LYS:H	2.25	0.45
34:I:158:LEU:O	34:I:162:GLU:HG2	2.16	0.45
35:J:81:GLN:NE2	35:J:149:PRO:HD2	2.30	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:K:93:LYS:O	36:K:94:HIS:CG	2.70	0.45
37:L:65:LEU:O	37:L:69:ARG:N	2.49	0.45
41:P:66:ALA:O	41:P:70:ALA:N	2.40	0.45
41:P:119:GLY:HA2	53:3:716:A:H1'	1.98	0.45
42:Q:39:THR:O	42:Q:49:ARG:N	2.49	0.45
47:V:74:LEU:HD12	47:V:75:VAL:H	1.82	0.45
52:a:30:LEU:HA	52:a:33:LEU:HD12	1.99	0.45
52:a:167:LYS:NZ	54:1:2121:G:C1'	2.79	0.45
53:3:162:A:H2'	53:3:163:C:H5'	1.98	0.45
53:3:517:G:H2'	53:3:531:U:C5	2.52	0.45
54:1:575:A:O2'	54:1:576:U:H5'	2.17	0.45
54:1:1182:G:H2'	54:1:1183:U:C6	2.52	0.45
54:1:1389:G:O2'	54:1:1390:U:H5'	2.16	0.45
54:1:1645:G:H5''	54:1:1646:C:C5'	2.40	0.45
54:1:1826:G:H2'	54:1:1827:U:H6	1.81	0.45
54:1:2037:A:H2'	54:1:2038:G:H8	1.81	0.45
54:1:2102:G:O2'	54:1:2103:C:H5'	2.17	0.45
2:c:94:GLN:NE2	2:c:95:SER:O	2.50	0.45
2:c:133:THR:HG23	2:c:134:HIS:CD2	2.51	0.45
3:d:106:LYS:HB2	3:d:200:LEU:HD21	1.99	0.45
4:e:120:SER:HB2	4:e:127:TYR:CE1	2.50	0.45
7:h:55:VAL:HG23	7:h:84:TYR:CB	2.46	0.45
10:k:108:ARG:CA	10:k:113:MET:HE1	2.30	0.45
14:o:63:LYS:HD3	14:o:64:TYR:HB2	1.97	0.45
20:u:12:VAL:HA	20:u:69:VAL:HG12	1.97	0.45
21:v:76:ASP:N	21:v:90:ASP:HB2	2.31	0.45
23:x:44:ARG:HH12	23:x:46:VAL:HG22	1.82	0.45
32:G:76:SER:O	32:G:80:LYS:N	2.46	0.45
34:I:120:LYS:HB2	34:I:128:VAL:HG22	1.98	0.45
36:K:88:MET:HG2	48:W:63:TYR:HE2	1.82	0.45
37:L:9:ARG:HB2	37:L:9:ARG:HH11	1.80	0.45
39:N:17:ARG:HG2	39:N:65:THR:OG1	2.17	0.45
40:O:16:ARG:HD2	40:O:16:ARG:O	2.16	0.45
49:X:48:ILE:HD11	49:X:70:LEU:HD22	1.98	0.45
53:3:184:G:H4'	53:3:224:U:O3'	2.17	0.45
53:3:409:U:H2'	53:3:410:G:C8	2.51	0.45
53:3:526:C:H2'	53:3:527:G:H4'	1.99	0.45
53:3:945:G:C2	53:3:946:A:C8	3.04	0.45
53:3:1030:U:H5	53:3:1033:G:H21	1.64	0.45
53:3:1168:U:H5''	53:3:1169:A:OP2	2.16	0.45
53:3:1353:G:O2'	53:3:1354:U:H5'	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:150:U:H2'	54:1:151:C:H6	1.81	0.45
54:1:964:C:O2	54:1:2273:A:H2	1.99	0.45
54:1:1635:A:H2'	54:1:1636:U:O4'	2.17	0.45
54:1:2110:G:H5'	54:1:2118:U:O2'	2.17	0.45
54:1:2222:C:H3'	54:1:2223:G:H5''	1.96	0.45
55:2:59:A:H2'	55:2:60:C:O4'	2.16	0.45
1:b:145:MET:HE1	1:b:181:ARG:NH2	2.31	0.45
3:d:77:ILE:HD11	54:1:673:C:H4'	1.98	0.45
10:k:12:ASP:OD2	10:k:96:GLY:HA3	2.17	0.45
11:l:111:ILE:HD12	11:l:111:ILE:N	2.31	0.45
13:n:8:ARG:HH21	13:n:43:GLU:HG3	1.81	0.45
15:p:30:TRP:HB2	15:p:79:VAL:HG23	1.99	0.45
28:C:39:ASP:OD2	28:C:42:VAL:HG22	2.15	0.45
28:C:52:LYS:HD3	28:C:52:LYS:N	2.32	0.45
32:G:56:LEU:HD23	32:G:59:ILE:HD11	1.99	0.45
32:G:129:THR:HG22	32:G:131:LYS:H	1.81	0.45
32:G:186:VAL:HG21	32:G:198:VAL:HG23	1.99	0.45
36:K:29:ILE:HG22	36:K:34:GLY:O	2.17	0.45
40:O:6:ILE:O	40:O:75:ASP:HA	2.15	0.45
44:S:28:ALA:O	44:S:32:ASP:OD2	2.34	0.45
47:V:35:LYS:HG3	47:V:36:PHE:N	2.30	0.45
48:W:33:THR:HG22	48:W:37:LYS:H	1.82	0.45
51:Z:42:THR:HG23	51:Z:46:ARG:CZ	2.47	0.45
52:a:15:VAL:HG11	52:a:220:ALA:HB3	1.98	0.45
53:3:224:U:H2'	53:3:225:C:C6	2.51	0.45
53:3:518:C:H5''	53:3:519:C:C6	2.51	0.45
53:3:1137:C:H4'	53:3:1138:G:N2	2.31	0.45
54:1:279:A:H2'	54:1:280:U:H5'	1.98	0.45
54:1:702:U:H2'	54:1:703:U:O4'	2.17	0.45
54:1:723:C:O2'	54:1:724:U:H5'	2.17	0.45
54:1:1042:G:H2'	54:1:1043:C:C6	2.51	0.45
55:2:110:C:H2'	55:2:111:U:O4'	2.16	0.45
56:5:5:G:H2'	56:5:6:G:C8	2.50	0.45
56:6:73:A:H2'	56:6:74:C:H5''	1.98	0.45
2:c:178:VAL:O	2:c:179:ARG:HG3	2.16	0.45
3:d:2:GLU:HG3	3:d:11:ALA:HB1	1.99	0.45
3:d:69:ARG:HH11	3:d:69:ARG:HG3	1.81	0.45
9:j:64:VAL:CG2	9:j:68:LYS:HB2	2.47	0.45
10:k:106:GLU:C	10:k:107:LEU:HD22	2.41	0.45
18:s:66:ILE:HG22	18:s:66:ILE:O	2.17	0.45
20:u:12:VAL:HG12	20:u:69:VAL:HG12	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:x:6:VAL:HG12	23:x:7:THR:HG23	1.98	0.45
34:I:56:GLU:HG2	34:I:198:LEU:CB	2.47	0.45
45:T:32:THR:CG2	45:T:84:LEU:HD11	2.43	0.45
48:W:71:ASP:OD1	48:W:72:ARG:HG3	2.16	0.45
49:X:4:LEU:HD13	53:3:1316:G:O6	2.17	0.45
53:3:399:G:H2'	53:3:400:C:C6	2.51	0.45
53:3:765:G:C6	53:3:812:G:C4	3.04	0.45
54:1:1678:A:H2'	54:1:1679:A:O4'	2.16	0.45
54:1:2333:A:H5''	54:1:2334:U:OP1	2.17	0.45
54:1:2391:G:O2'	54:1:2429:G:N2	2.49	0.45
54:1:2639:A:H2'	54:1:2640:G:O4'	2.17	0.45
4:e:76:PHE:HE2	54:1:2310:C:H2'	1.81	0.45
12:m:30:SER:H	12:m:106:ASP:HB2	1.82	0.45
22:w:32:ILE:N	22:w:32:ILE:CD1	2.79	0.45
26:A:23:LYS:HD3	26:A:23:LYS:N	2.32	0.45
35:J:81:GLN:H	35:J:146:MET:CE	2.30	0.45
44:S:61:ASN:ND2	44:S:72:PHE:CE2	2.83	0.45
46:U:65:ALA:O	46:U:67:ILE:HD12	2.16	0.45
50:Y:24:ARG:O	50:Y:27:MET:HG3	2.17	0.45
53:3:346:G:C2'	53:3:347:G:H5'	2.47	0.45
53:3:418:C:H2'	53:3:419:C:H6	1.81	0.45
54:1:522:A:H2'	54:1:523:C:H6	1.80	0.45
54:1:616:A:H2'	54:1:617:G:O4'	2.17	0.45
54:1:640:C:H2'	54:1:641:U:C6	2.51	0.45
54:1:2223:G:C2'	54:1:2224:G:H5'	2.43	0.45
54:1:2370:G:H2'	54:1:2371:G:C8	2.52	0.45
54:1:2506:U:H1'	58:7:76:A:O3'	2.17	0.45
54:1:2841:C:H2'	54:1:2842:G:C8	2.51	0.45
8:i:9:LYS:HD2	54:1:1061:U:OP1	2.17	0.45
9:j:16:TYR:HB3	9:j:140:LEU:CB	2.46	0.45
11:l:62:PRO:HG3	54:1:2393:U:H5''	1.97	0.45
12:m:108:VAL:HB	12:m:112:LEU:HD11	1.99	0.45
13:n:55:ALA:HA	13:n:80:PHE:CE1	2.52	0.45
16:q:48:ASP:HA	16:q:51:GLN:HG3	1.99	0.45
25:z:11:SER:OG	54:1:988:A:H3'	2.16	0.45
25:z:40:THR:CG2	25:z:43:ILE:HG12	2.47	0.45
32:G:162:VAL:HG12	32:G:164:ASP:H	1.80	0.45
34:I:81:LEU:HD12	34:I:82:LYS:H	1.82	0.45
35:J:55:VAL:HB	35:J:56:PRO:HD3	1.98	0.45
38:M:55:LYS:HE3	53:3:653:U:C1'	2.46	0.45
40:O:28:THR:HA	40:O:31:ARG:CG	2.44	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:S:5:MET:HE1	44:S:8:ARG:HD2	1.99	0.45
44:S:97:LYS:NZ	53:3:1188:A:H4'	2.32	0.45
46:U:8:ARG:HA	46:U:17:TYR:HD1	1.82	0.45
53:3:286:C:H2'	53:3:287:U:C6	2.52	0.45
53:3:1053:G:N7	53:3:1199:U:H3'	2.31	0.45
53:3:1326:U:O2'	53:3:1327:C:H5'	2.17	0.45
54:1:844:A:H2'	54:1:845:A:H5''	1.99	0.45
54:1:1198:U:H2'	54:1:1199:U:H6	1.82	0.45
54:1:1441:G:H2'	54:1:1442:U:C6	2.50	0.45
54:1:1599:U:H2'	54:1:1600:C:H6	1.82	0.45
54:1:1848:A:H2'	54:1:1849:G:C8	2.51	0.45
54:1:1869:G:H2'	54:1:1869:G:N3	2.32	0.45
54:1:2248:C:H2'	54:1:2249:U:C5'	2.45	0.45
55:2:21:G:O2'	55:2:22:U:H5'	2.17	0.45
56:5:23:C:H2'	56:5:24:U:C6	2.52	0.45
1:b:24:HIS:CG	1:b:79:ARG:HD2	2.52	0.45
1:b:66:PHE:CZ	1:b:155:ARG:NH1	2.85	0.45
2:c:180:VAL:HG23	2:c:180:VAL:O	2.17	0.45
3:d:73:ILE:HG22	3:d:78:TRP:CZ3	2.52	0.45
12:m:11:LYS:HE3	12:m:87:GLY:O	2.17	0.45
19:t:70:HIS:N	19:t:73:ARG:O	2.49	0.45
26:A:32:LEU:HD12	26:A:33:ASN:H	1.82	0.45
29:D:26:ASN:CG	54:1:682:G:H5'	2.41	0.45
37:L:78:ARG:HA	37:L:82:SER:O	2.16	0.45
39:N:11:ARG:NH1	39:N:12:LYS:HE3	2.32	0.45
42:Q:48:LEU:HB2	53:3:520:A:OP1	2.17	0.45
44:S:72:PHE:CZ	44:S:77:GLY:HA2	2.52	0.45
49:X:31:ARG:HE	49:X:56:HIS:CE1	2.35	0.45
53:3:291:U:O2'	53:3:292:G:H5'	2.16	0.45
53:3:432:A:H2'	53:3:433:G:O4'	2.17	0.45
54:1:1713:A:C6	54:1:1716:U:H1'	2.51	0.45
54:1:2538:C:H2'	54:1:2539:C:H6	1.81	0.45
54:1:2699:C:H2'	54:1:2700:A:C8	2.52	0.45
54:1:2898:U:H2'	54:1:2899:A:H8	1.80	0.45
7:h:37:LYS:HD3	54:1:1082:U:O2'	2.16	0.45
10:k:109:SER:O	10:k:111:LYS:N	2.49	0.45
10:k:112:PHE:HA	10:k:115:ILE:HD13	1.97	0.45
11:l:70:LYS:O	11:l:73:ILE:HG12	2.17	0.45
14:o:24:THR:OG1	14:o:42:PRO:HG3	2.17	0.45
14:o:30:ARG:HG2	14:o:31:THR:H	1.82	0.45
25:z:5:LYS:HB2	25:z:57:GLU:HG3	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:H:39:ARG:NH1	33:H:54:ILE:HG13	2.32	0.45
34:I:9:LYS:NZ	53:3:427:U:OP1	2.50	0.45
35:J:95:MET:HG2	35:J:124:ALA:CB	2.47	0.45
38:M:76:ARG:HG3	38:M:76:ARG:HH11	1.81	0.45
39:N:4:GLN:NE2	39:N:20:ILE:H	2.15	0.45
45:T:23:SER:O	45:T:27:GLN:HG3	2.17	0.45
48:W:59:LYS:HD3	53:3:735:C:H5'	1.98	0.45
52:a:30:LEU:HD22	52:a:216:THR:OG1	2.17	0.45
53:3:202:G:H2'	53:3:203:G:H8	1.80	0.45
53:3:312:C:H2'	53:3:313:A:C8	2.51	0.45
53:3:936:C:H2'	53:3:937:A:O4'	2.16	0.45
53:3:1366:C:O2'	53:3:1367:C:H5'	2.17	0.45
54:1:100:U:H4'	54:1:101:A:O4'	2.17	0.45
54:1:841:G:O2'	54:1:842:U:H5'	2.17	0.45
54:1:857:G:H2'	54:1:858:G:O4'	2.17	0.45
54:1:940:G:H2'	54:1:941:A:H5''	1.99	0.45
54:1:2291:U:H2'	54:1:2292:U:C6	2.52	0.45
55:2:13:G:O2'	55:2:15:A:H2'	2.17	0.45
1:b:18:VAL:HG23	1:b:202:ARG:HG3	1.99	0.44
2:c:71:ALA:HB1	2:c:92:VAL:HG11	2.00	0.44
5:f:27:GLY:HA3	5:f:78:VAL:HB	1.98	0.44
10:k:22:ILE:HG12	10:k:41:ILE:HA	1.98	0.44
14:o:94:ARG:HH11	14:o:98:GLN:HA	1.81	0.44
24:y:1:MET:HA	24:y:4:LYS:HD2	1.98	0.44
32:G:41:ASN:OD1	32:G:43:GLU:N	2.50	0.44
32:G:42:LEU:HA	32:G:45:THR:HB	1.98	0.44
33:H:101:ASN:C	33:H:102:ILE:HD12	2.42	0.44
33:H:174:LEU:HB2	53:3:1108:G:OP1	2.17	0.44
34:I:90:LEU:CD1	34:I:194:ILE:HD11	2.47	0.44
39:N:92:SER:C	39:N:93:LEU:HD22	2.42	0.44
41:P:73:VAL:HB	41:P:78:ILE:HD12	1.97	0.44
42:Q:26:CYS:SG	53:3:363:A:C5	3.09	0.44
43:R:70:ARG:O	43:R:74:MET:HG2	2.17	0.44
44:S:68:ARG:HB3	44:S:79:SER:OG	2.17	0.44
51:Z:23:GLU:HB3	51:Z:24:LYS:H	1.28	0.44
52:a:60:ARG:HH21	52:a:162:ARG:HD3	1.82	0.44
52:a:174:THR:HB	54:1:2124:G:H4'	1.98	0.44
53:3:847:G:H2'	53:3:848:C:C6	2.52	0.44
53:3:1047:G:O2'	53:3:1048:G:H5'	2.17	0.44
53:3:1128:C:O2'	53:3:1129:C:H5'	2.16	0.44
54:1:455:C:O2	54:1:472:A:H2'	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:558:U:H2'	54:1:559:G:H8	1.82	0.44
54:1:685:A:H5''	54:1:788:A:H62	1.81	0.44
54:1:753:A:O2'	54:1:754:U:H5'	2.17	0.44
54:1:1874:C:H2'	54:1:1875:G:O4'	2.17	0.44
1:b:179:GLU:OE2	1:b:180:MET:C	2.60	0.44
1:b:237:ARG:HG3	1:b:237:ARG:HH11	1.82	0.44
6:g:40:THR:O	6:g:42:LYS:N	2.42	0.44
7:h:11:ILE:HD11	7:h:65:GLU:HB3	1.99	0.44
11:l:47:ARG:NH1	54:1:196:A:OP2	2.51	0.44
11:l:118:THR:OG1	11:l:120:VAL:HG13	2.17	0.44
15:p:90:ALA:HB2	15:p:111:GLU:C	2.42	0.44
32:G:35:ASN:O	32:G:36:LYS:CB	2.64	0.44
33:H:56:ILE:CD1	33:H:65:VAL:HG13	2.47	0.44
34:I:74:TYR:CE1	34:I:92:LEU:HB3	2.52	0.44
34:I:183:ARG:H	34:I:183:ARG:HD3	1.81	0.44
35:J:86:GLY:N	35:J:93:VAL:O	2.49	0.44
35:J:97:PRO:HA	35:J:122:VAL:HG12	1.99	0.44
37:L:99:ALA:HA	37:L:102:TRP:HE3	1.82	0.44
38:M:29:SER:HB3	38:M:32:LYS:HB2	1.99	0.44
39:N:32:ARG:HB3	39:N:36:GLN:HG3	1.98	0.44
42:Q:24:GLU:O	42:Q:25:ALA:HB3	2.17	0.44
43:R:105:ALA:HA	53:3:948:C:OP1	2.17	0.44
44:S:33:VAL:O	44:S:33:VAL:HG23	2.16	0.44
46:U:4:ILE:HB	46:U:67:ILE:HA	1.98	0.44
53:3:665:A:H1'	53:3:733:G:H5'	1.97	0.44
53:3:1305:G:N2	53:3:1331:G:H2'	2.25	0.44
53:3:1409:C:H4'	54:1:1915:U:O4	2.16	0.44
53:3:1489:G:O2'	53:3:1490:U:H5'	2.17	0.44
54:1:256:A:O2'	54:1:257:C:H5'	2.17	0.44
54:1:515:A:C2'	54:1:516:C:H5'	2.48	0.44
54:1:1842:G:H2'	54:1:1843:C:C6	2.52	0.44
54:1:2248:C:H2'	54:1:2249:U:O4'	2.17	0.44
54:1:2644:G:O2'	54:1:2645:G:H5'	2.17	0.44
55:2:48:U:H2'	55:2:49:C:C6	2.53	0.44
1:b:33:LEU:CD2	1:b:62:ARG:HG2	2.48	0.44
2:c:62:LYS:HD2	54:1:2810:A:H4'	1.99	0.44
3:d:124:PHE:HE1	3:d:137:LYS:HG3	1.82	0.44
4:e:73:VAL:HG11	54:1:2310:C:O2'	2.17	0.44
8:i:12:VAL:HG12	8:i:53:PRO:CB	2.47	0.44
8:i:17:ALA:HA	8:i:19:PRO:HD3	1.99	0.44
9:j:116:ARG:HH11	9:j:116:ARG:HG3	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:k:17:ARG:O	10:k:18:ARG:HD2	2.17	0.44
11:l:85:VAL:CG2	11:l:94:THR:HG22	2.47	0.44
14:o:25:ARG:HG2	14:o:25:ARG:HH21	1.82	0.44
32:G:68:PHE:CD2	32:G:83:ALA:HB2	2.50	0.44
33:H:5:HIS:HB3	44:S:88:MET:CE	2.45	0.44
34:I:56:GLU:HG2	34:I:198:LEU:HB2	1.99	0.44
35:J:109:ALA:CB	35:J:135:VAL:HG21	2.47	0.44
37:L:21:LEU:C	37:L:21:LEU:HD23	2.42	0.44
53:3:346:G:H2'	53:3:347:G:H5'	2.00	0.44
53:3:756:C:H2'	53:3:757:U:O4'	2.17	0.44
53:3:891:U:O2'	53:3:892:A:H5'	2.17	0.44
53:3:1448:C:H2'	53:3:1449:C:H6	1.82	0.44
54:1:406:G:H2'	54:1:407:G:C8	2.52	0.44
54:1:2087:G:H2'	54:1:2088:A:H8	1.81	0.44
54:1:2341:G:H2'	54:1:2342:C:H6	1.82	0.44
2:c:207:VAL:HG13	2:c:208:LYS:N	2.32	0.44
14:o:18:LEU:HD12	14:o:21:LEU:HD12	2.00	0.44
14:o:40:ILE:HD12	14:o:44:GLY:HA2	1.99	0.44
28:C:10:LEU:HD13	28:C:35:LEU:HD12	1.99	0.44
30:E:41:ARG:CA	30:E:44:ARG:HH12	2.27	0.44
30:E:55:GLY:HA2	30:E:58:ILE:HD12	1.98	0.44
38:M:115:ALA:O	38:M:119:GLY:N	2.50	0.44
39:N:93:LEU:HD22	39:N:93:LEU:N	2.32	0.44
41:P:71:ASP:HB2	41:P:74:LYS:HE3	1.99	0.44
44:S:14:ALA:HA	44:S:17:ASP:OD2	2.17	0.44
44:S:15:LEU:HD12	44:S:53:ASP:CB	2.45	0.44
53:3:390:U:H2'	53:3:391:G:C8	2.53	0.44
53:3:401:C:H2'	53:3:402:G:H8	1.82	0.44
53:3:1499:A:O2'	53:3:1500:A:H5'	2.16	0.44
54:1:146:A:H2'	54:1:147:C:C6	2.52	0.44
54:1:355:U:H2'	54:1:356:G:H8	1.82	0.44
54:1:727:A:H2'	54:1:728:G:O4'	2.16	0.44
54:1:817:C:H2'	54:1:818:G:O4'	2.17	0.44
54:1:1592:C:H2'	54:1:1593:A:H8	1.81	0.44
54:1:2110:G:OP2	54:1:2118:U:H2'	2.18	0.44
54:1:2252:G:O2'	54:1:2253:G:H5'	2.18	0.44
54:1:2403:C:O2'	54:1:2404:U:H5'	2.17	0.44
54:1:2488:G:H2'	54:1:2489:U:C6	2.53	0.44
54:1:2559:C:O2'	54:1:2560:A:H5'	2.18	0.44
54:1:2671:G:H2'	54:1:2672:U:H6	1.82	0.44
1:b:247:TRP:CE2	54:1:1805:A:H5"	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:d:68:ALA:HA	54:l:1255:U:C6	2.53	0.44
4:e:63:LYS:H	26:A:6:HIS:CE1	2.35	0.44
5:f:104:LEU:HD12	5:f:104:LEU:N	2.33	0.44
8:i:3:LYS:CG	8:i:4:VAL:H	2.28	0.44
10:k:87:LEU:HD12	10:k:92:GLU:CB	2.47	0.44
16:q:2:ARG:HH22	54:l:449:A:C1'	2.30	0.44
17:r:62:GLU:N	17:r:97:LYS:O	2.41	0.44
19:t:93:LEU:HD23	19:t:93:LEU:C	2.43	0.44
21:v:80:HIS:HA	21:v:87:GLN:HE22	1.82	0.44
23:x:1:SER:N	54:l:1364:G:C8	2.84	0.44
34:I:10:LEU:HD23	34:I:62:ARG:HB3	2.00	0.44
40:O:10:LEU:HD23	40:O:10:LEU:N	2.33	0.44
41:P:15:VAL:HG22	41:P:17:ASP:O	2.17	0.44
43:R:85:TYR:O	43:R:89:ARG:HG2	2.17	0.44
47:V:54:ILE:HG12	47:V:55:GLY:N	2.33	0.44
53:3:201:G:H2'	53:3:202:G:C8	2.52	0.44
53:3:230:G:O2'	53:3:231:U:H5'	2.18	0.44
53:3:715:A:H2'	53:3:716:A:C8	2.52	0.44
53:3:794:A:H2'	53:3:795:C:C6	2.53	0.44
54:l:654:A:H3'	54:l:654:A:N3	2.32	0.44
54:l:1179:G:C5	54:l:1180:U:H1'	2.52	0.44
54:l:1280:G:O2'	54:l:1281:G:H5'	2.17	0.44
54:l:2669:G:H2'	54:l:2670:A:H8	1.83	0.44
1:b:23:LEU:HD22	1:b:23:LEU:N	2.32	0.44
1:b:181:ARG:HG2	1:b:265:PHE:O	2.18	0.44
1:b:220:ARG:NH2	54:l:1788:C:OP1	2.50	0.44
4:e:33:ILE:CD1	4:e:95:MET:HG3	2.48	0.44
5:f:104:LEU:HD22	5:f:106:LEU:HD11	1.99	0.44
10:k:30:ARG:NE	10:k:32:TYR:O	2.50	0.44
17:r:49:ILE:C	17:r:51:VAL:H	2.25	0.44
23:x:17:ARG:HD3	23:x:17:ARG:HA	1.68	0.44
27:B:2:VAL:O	54:l:2615:U:C4	2.71	0.44
28:C:25:ASN:C	28:C:27:ARG:H	2.25	0.44
32:G:80:LYS:HE3	32:G:84:LEU:HD11	1.99	0.44
34:I:137:SER:O	34:I:140:ASP:OD2	2.36	0.44
36:K:86:ARG:NH2	53:3:673:A:H5''	2.33	0.44
42:Q:106:VAL:CG2	42:Q:116:TYR:HB3	2.48	0.44
43:R:54:THR:O	43:R:57:ASP:HB2	2.17	0.44
44:S:80:ARG:HH12	44:S:81:ILE:HD11	1.83	0.44
46:U:43:ALA:HB1	46:U:46:LYS:HD2	1.99	0.44
46:U:46:LYS:HG3	46:U:48:GLU:H	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:a:15:VAL:HA	52:a:21:TYR:OH	2.18	0.44
53:3:24:U:H2'	53:3:25:C:H6	1.83	0.44
53:3:184:G:O4'	53:3:224:U:H4'	2.18	0.44
53:3:390:U:H2'	53:3:391:G:H8	1.83	0.44
53:3:1032:G:H3'	53:3:1032:G:N3	2.32	0.44
53:3:1280:A:O2'	53:3:1281:C:H5'	2.17	0.44
53:3:1289:A:H2	53:3:1372:U:O4'	2.01	0.44
54:1:206:U:H3'	54:1:206:U:OP2	2.18	0.44
54:1:297:G:H2'	54:1:298:G:O4'	2.18	0.44
54:1:487:C:H2'	54:1:488:G:O4'	2.17	0.44
54:1:646:U:O4	54:1:2368:C:H1'	2.18	0.44
54:1:740:C:H5'	54:1:740:C:C6	2.45	0.44
54:1:863:A:H2'	54:1:864:G:H8	1.81	0.44
54:1:979:A:H2'	54:1:982:C:H42	1.82	0.44
54:1:1164:C:H2'	54:1:1165:A:H8	1.81	0.44
54:1:1318:U:H2'	54:1:1319:C:C6	2.53	0.44
54:1:1372:U:O2'	54:1:1373:A:H5'	2.18	0.44
54:1:2222:C:H2'	54:1:2223:G:C5'	2.38	0.44
54:1:2469:A:H2'	54:1:2470:G:O4'	2.18	0.44
54:1:2758:A:H2'	54:1:2759:G:C5'	2.48	0.44
54:1:2836:U:H2'	54:1:2837:A:H8	1.82	0.44
3:d:61:ARG:HH21	3:d:61:ARG:HG3	1.83	0.44
12:m:82:MET:HE2	12:m:82:MET:N	2.33	0.44
14:o:81:ARG:O	14:o:85:LYS:HG2	2.17	0.44
17:r:81:LYS:HD3	54:1:973:A:H5''	1.99	0.44
30:E:35:LYS:HG2	30:E:39:ARG:NH1	2.25	0.44
31:F:27:CYS:CB	31:F:33:HIS:HB2	2.48	0.44
32:G:69:VAL:HG12	32:G:161:PHE:O	2.17	0.44
34:I:138:PRO:HA	34:I:181:PHE:CD2	2.53	0.44
35:J:92:ARG:O	35:J:93:VAL:C	2.61	0.44
36:K:71:ILE:O	36:K:74:LEU:HB3	2.18	0.44
37:L:53:SER:HB2	37:L:55:LYS:HE2	1.98	0.44
50:Y:39:GLU:HG2	50:Y:40:ALA:N	2.32	0.44
53:3:500:G:H2'	53:3:501:C:C6	2.52	0.44
53:3:519:C:O2'	53:3:520:A:H5'	2.17	0.44
53:3:813:U:O2	53:3:813:U:H2'	2.16	0.44
53:3:868:C:H2'	53:3:869:G:O4'	2.18	0.44
54:1:275:C:C3'	54:1:276:U:H5''	2.46	0.44
54:1:406:G:H2'	54:1:407:G:H8	1.82	0.44
54:1:444:C:O2'	54:1:445:C:H5'	2.17	0.44
54:1:1806:C:H2'	54:1:1807:G:O4'	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:2001:C:H1'	54:1:2689:U:C4	2.52	0.44
54:1:2460:U:C2	54:1:2461:A:C8	3.06	0.44
56:6:68:C:H2'	56:6:69:C:O4'	2.18	0.44
56:6:73:A:C2'	56:6:74:C:H5''	2.48	0.44
1:b:113:ASP:OD1	1:b:114:GLN:N	2.50	0.44
2:c:124:ARG:HD2	2:c:163:GLY:H	1.83	0.44
17:r:58:VAL:HG23	17:r:102:SER:OG	2.18	0.44
18:s:65:ASP:CG	18:s:68:ASP:H	2.26	0.44
19:t:74:ILE:HG13	19:t:74:ILE:O	2.18	0.44
32:G:25:LYS:HD2	32:G:191:ASP:OD1	2.17	0.44
32:G:135:MET:HE2	32:G:139:GLU:OE2	2.16	0.44
33:H:111:ASP:O	33:H:115:VAL:HG23	2.17	0.44
34:I:6:PRO:CG	53:3:430:A:H4'	2.45	0.44
34:I:10:LEU:HG	34:I:62:ARG:HD2	1.98	0.44
35:J:104:ILE:HA	35:J:121:ASN:O	2.17	0.44
42:Q:14:LYS:HB2	53:3:562:U:C6	2.52	0.44
44:S:23:ARG:O	44:S:26:LEU:HD13	2.17	0.44
47:V:16:MET:SD	47:V:19:SER:HB2	2.58	0.44
47:V:49:ASN:OD1	47:V:50:ASN:N	2.51	0.44
51:Z:24:LYS:HG3	51:Z:25:ALA:N	2.30	0.44
52:a:218:MET:HG3	52:a:218:MET:O	2.18	0.44
53:3:512:U:H2'	53:3:513:C:H6	1.83	0.44
53:3:788:U:H2'	53:3:789:U:O4'	2.17	0.44
53:3:908:A:H2'	53:3:909:A:C8	2.53	0.44
53:3:1123:U:O2'	53:3:1124:G:H5'	2.18	0.44
53:3:1518:A:H2'	53:3:1519:A:C8	2.53	0.44
54:1:533:G:H2'	54:1:534:U:C6	2.52	0.44
54:1:945:A:C5	54:1:2448:A:C2	3.06	0.44
54:1:2238:G:H2'	54:1:2238:G:N3	2.33	0.44
54:1:2461:A:H2'	54:1:2462:C:C6	2.53	0.44
54:1:2489:U:O2'	54:1:2490:G:H5'	2.17	0.44
54:1:2576:G:OP1	54:1:2576:G:H3'	2.18	0.44
54:1:2678:C:H2'	54:1:2679:A:C8	2.53	0.44
55:2:5:U:H2'	55:2:6:G:C8	2.53	0.44
1:b:78:GLU:O	1:b:111:ALA:HB1	2.18	0.44
1:b:96:LYS:HD3	54:1:1490:A:N6	2.33	0.44
1:b:211:ARG:HG3	54:1:764:A:O4'	2.18	0.44
1:b:245:THR:C	1:b:247:TRP:H	2.25	0.44
3:d:6:LYS:HG3	3:d:7:ASP:OD1	2.18	0.44
4:e:79:ARG:HG2	4:e:80:GLN:H	1.83	0.44
12:m:11:LYS:HD3	12:m:86:LYS:CG	2.47	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:p:42:PHE:HE1	15:p:62:LYS:NZ	2.16	0.44
19:t:2:ILE:HB	19:t:5:GLU:CB	2.48	0.44
20:u:45:GLN:HB2	20:u:58:VAL:HG23	2.00	0.44
21:v:63:ILE:CD1	21:v:72:VAL:HG21	2.46	0.44
23:x:68:ALA:O	23:x:71:ARG:HB2	2.18	0.44
34:I:76:LYS:O	34:I:80:ARG:HB2	2.17	0.44
37:L:12:LEU:HB2	37:L:13:PRO:HD2	2.00	0.44
40:O:83:THR:HG23	40:O:86:ALA:HB3	2.00	0.44
47:V:26:ARG:HH12	47:V:39:ARG:HG3	1.82	0.44
53:3:313:A:H2'	53:3:314:C:C6	2.53	0.44
53:3:513:C:H2'	53:3:514:C:H6	1.82	0.44
53:3:514:C:H2'	53:3:515:G:C8	2.52	0.44
53:3:722:G:C8	53:3:724:G:H1'	2.53	0.44
54:1:684:G:C2	54:1:774:G:N2	2.86	0.44
54:1:844:A:C2'	54:1:845:A:H5''	2.47	0.44
54:1:1300:G:C3'	54:1:1301:A:H5''	2.47	0.44
54:1:1750:G:O2'	54:1:1751:U:H5'	2.18	0.44
54:1:2472:G:H2'	54:1:2475:C:H42	1.82	0.44
56:6:15:G:H8	56:6:15:G:O5'	2.00	0.44
3:d:5:LEU:CD1	3:d:11:ALA:HA	2.42	0.43
4:e:40:GLY:HA2	4:e:84:ILE:CD1	2.48	0.43
5:f:44:HIS:HA	5:f:49:LEU:CD2	2.46	0.43
5:f:167:VAL:HG22	5:f:168:VAL:O	2.17	0.43
11:l:129:LYS:O	11:l:132:ARG:HB3	2.18	0.43
13:n:48:VAL:CG2	13:n:49:GLU:N	2.80	0.43
16:q:91:ARG:HG3	16:q:91:ARG:HH11	1.83	0.43
22:w:65:PHE:CD1	22:w:76:ILE:HG12	2.53	0.43
30:E:23:HIS:ND1	30:E:23:HIS:C	2.75	0.43
32:G:167:HIS:ND1	32:G:167:HIS:O	2.51	0.43
33:H:19:SER:HB2	44:S:93:PRO:HG3	1.99	0.43
36:K:12:PRO:HD3	36:K:54:LEU:HD21	2.00	0.43
37:L:4:ARG:NH2	53:3:933:G:OP2	2.50	0.43
40:O:42:LEU:HD21	40:O:73:LEU:HG	1.99	0.43
44:S:22:LYS:O	44:S:25:GLU:OE1	2.36	0.43
45:T:23:SER:OG	45:T:26:VAL:HG23	2.17	0.43
52:a:44:VAL:HG22	52:a:214:ILE:HG22	2.00	0.43
52:a:184:LYS:N	52:a:184:LYS:HD2	2.34	0.43
53:3:206:C:H2'	53:3:207:C:O4'	2.18	0.43
53:3:726:C:O2'	53:3:727:G:H5'	2.17	0.43
53:3:921:U:H2'	53:3:922:G:O4'	2.17	0.43
53:3:1174:G:O2'	53:3:1175:G:H5'	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1220:G:O2'	53:3:1221:G:H5'	2.17	0.43
53:3:1540:U:O2	53:3:1540:U:H3'	2.18	0.43
54:1:239:C:H1'	54:1:621:A:H2	1.82	0.43
54:1:1053:C:C2'	54:1:1054:A:H5''	2.43	0.43
54:1:1565:C:O2'	54:1:1566:A:C8	2.71	0.43
54:1:1637:A:H5'	54:1:1760:C:O2'	2.18	0.43
54:1:2316:G:O2'	54:1:2317:A:H5'	2.18	0.43
54:1:2804:U:H2'	54:1:2805:C:C6	2.53	0.43
3:d:98:LYS:HE3	3:d:102:ARG:NH1	2.33	0.43
10:k:3:GLN:HG3	10:k:4:GLU:N	2.33	0.43
10:k:109:SER:C	10:k:111:LYS:H	2.26	0.43
10:k:121:GLU:OE1	15:p:64:SER:HB2	2.18	0.43
18:s:26:GLY:H	18:s:71:VAL:HG13	1.83	0.43
19:t:59:ASN:O	19:t:84:TYR:N	2.51	0.43
33:H:11:LEU:HD13	33:H:17:TRP:NE1	2.33	0.43
33:H:119:ILE:O	33:H:123:LEU:HG	2.18	0.43
33:H:129:PHE:HD1	33:H:129:PHE:H	1.62	0.43
33:H:149:LYS:O	33:H:200:TRP:HE3	2.00	0.43
34:I:86:GLY:HA3	34:I:196:GLU:OE1	2.17	0.43
40:O:42:LEU:CD2	40:O:73:LEU:HG	2.48	0.43
41:P:81:LEU:HD12	41:P:81:LEU:O	2.18	0.43
41:P:125:LYS:HD3	53:3:797:C:OP1	2.17	0.43
46:U:5:ARG:HG3	46:U:20:VAL:HG23	2.00	0.43
52:a:162:ARG:HG2	52:a:163:TYR:N	2.33	0.43
53:3:542:G:H2'	53:3:543:U:H6	1.84	0.43
53:3:675:A:H2'	53:3:676:A:O4'	2.17	0.43
53:3:848:C:C2'	53:3:849:G:H5''	2.47	0.43
54:1:414:C:H2'	54:1:415:A:H8	1.83	0.43
54:1:2109:U:H2'	54:1:2110:G:H5''	1.99	0.43
54:1:2457:U:H3	54:1:2494:G:H1	1.66	0.43
54:1:2692:G:O2'	54:1:2693:G:H5'	2.18	0.43
55:2:66:A:N1	55:2:107:G:H2'	2.33	0.43
10:k:43:ILE:O	10:k:55:GLY:N	2.46	0.43
16:q:40:LYS:O	16:q:44:TYR:HD1	2.01	0.43
20:u:37:GLY:H	20:u:61:GLU:HG2	1.84	0.43
23:x:63:ILE:HG23	23:x:64:ASP:N	2.33	0.43
29:D:13:ASN:O	29:D:17:GLY:N	2.49	0.43
29:D:39:ARG:HD3	54:1:458:G:O2'	2.19	0.43
30:E:51:LYS:HG3	30:E:52:GLY:N	2.33	0.43
32:G:101:THR:H	32:G:174:GLU:CD	2.27	0.43
34:I:47:LEU:CD2	34:I:47:LEU:H	2.32	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:J:22:LYS:HE3	53:3:1081:A:H5'	1.99	0.43
35:J:120:HIS:O	35:J:121:ASN:ND2	2.52	0.43
38:M:94:VAL:HB	38:M:99:GLY:C	2.43	0.43
40:O:22:THR:O	40:O:26:VAL:HG23	2.18	0.43
41:P:126:ARG:HH22	53:3:797:C:P	2.42	0.43
42:Q:72:ASN:ND2	42:Q:103:CYS:HA	2.29	0.43
42:Q:93:ARG:HG3	42:Q:93:ARG:HH11	1.82	0.43
43:R:28:ARG:O	43:R:32:ILE:HG12	2.18	0.43
44:S:83:VAL:HG23	44:S:84:ARG:N	2.33	0.43
52:a:60:ARG:HH21	52:a:162:ARG:NE	2.17	0.43
53:3:24:U:H2'	53:3:25:C:C6	2.53	0.43
53:3:287:U:O2'	53:3:288:A:H5'	2.19	0.43
53:3:355:C:H2'	53:3:356:A:H5''	1.99	0.43
53:3:542:G:H2'	53:3:543:U:C6	2.54	0.43
53:3:760:G:H2'	53:3:761:G:H5'	2.00	0.43
53:3:972:C:O2'	53:3:973:G:H5'	2.19	0.43
53:3:1015:G:O2'	53:3:1016:A:H5'	2.17	0.43
54:1:65:U:H2'	54:1:66:C:C6	2.54	0.43
54:1:355:U:H2'	54:1:356:G:C8	2.53	0.43
54:1:1833:C:H2'	54:1:1834:U:H6	1.84	0.43
54:1:2403:C:H2'	54:1:2404:U:O4'	2.19	0.43
54:1:2450:A:OP1	54:1:2497:A:H2'	2.18	0.43
56:6:74:C:C2'	56:6:75:C:H5''	2.39	0.43
58:7:5:G:O2'	58:7:6:A:O5'	2.33	0.43
1:b:62:ARG:HH22	54:1:1568:G:P	2.41	0.43
1:b:259:ASN:C	1:b:261:ARG:H	2.26	0.43
5:f:53:PRO:HG3	5:f:61:TRP:NE1	2.33	0.43
6:g:9:VAL:C	6:g:11:ASN:H	2.24	0.43
7:h:7:ASP:O	7:h:11:ILE:HG12	2.19	0.43
7:h:23:LEU:HD12	7:h:24:SER:N	2.33	0.43
10:k:115:ILE:H	10:k:115:ILE:CD1	2.30	0.43
22:w:66:GLU:HG2	22:w:67:VAL:H	1.82	0.43
25:z:44:ARG:HH21	25:z:44:ARG:HG3	1.84	0.43
27:B:6:LYS:HE2	54:1:1262:A:H2	1.82	0.43
32:G:34:ARG:HA	32:G:34:ARG:NE	2.33	0.43
33:H:109:GLU:OE1	33:H:143:LEU:HB2	2.18	0.43
35:J:137:ARG:NH1	35:J:137:ARG:HG3	2.34	0.43
37:L:142:ARG:O	37:L:146:ALA:HB2	2.19	0.43
43:R:15:VAL:O	43:R:19:THR:HG23	2.18	0.43
44:S:27:LYS:HA	44:S:31:SER:HB2	2.01	0.43
47:V:24:ILE:CG2	47:V:41:THR:HB	2.49	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:V:47:ASP:HB3	47:V:74:LEU:HB3	2.00	0.43
52:a:167:LYS:HZ2	54:1:2121:G:H1'	1.82	0.43
53:3:155:A:H2'	53:3:156:C:H6	1.83	0.43
53:3:337:G:H2'	53:3:338:A:C8	2.54	0.43
53:3:577:G:H2'	53:3:578:C:H6	1.83	0.43
54:1:275:C:H2'	54:1:276:U:H4'	2.01	0.43
54:1:381:G:O2'	54:1:382:A:H5'	2.18	0.43
54:1:1022:G:H4'	54:1:1023:U:C5'	2.48	0.43
54:1:1102:C:H2'	54:1:1103:A:O4'	2.18	0.43
54:1:1265:A:H8	54:1:1265:A:OP1	2.01	0.43
54:1:1778:U:H3'	54:1:1784:A:N6	2.33	0.43
54:1:1935:G:N2	54:1:1964:G:C4	2.87	0.43
1:b:70:LYS:HD2	1:b:73:ILE:HD12	2.01	0.43
2:c:4:LEU:HD13	2:c:101:PHE:HE2	1.82	0.43
2:c:116:LYS:H	2:c:166:GLY:HA3	1.82	0.43
4:e:142:TYR:CD1	4:e:142:TYR:C	2.96	0.43
7:h:59:LEU:N	54:1:1107:G:OP1	2.52	0.43
9:j:2:LYS:HA	54:1:995:C:N3	2.33	0.43
10:k:113:MET:N	10:k:113:MET:HE2	2.33	0.43
11:l:77:ILE:CD1	11:l:95:LEU:HD13	2.48	0.43
12:m:46:ILE:CD1	12:m:69:PRO:HG3	2.47	0.43
20:u:42:LYS:HD2	20:u:42:LYS:N	2.34	0.43
26:A:2:LYS:HB2	26:A:5:ILE:CD1	2.48	0.43
36:K:90:MET:HE1	48:W:60:ARG:HD3	2.01	0.43
38:M:95:MET:CB	38:M:98:LEU:HG	2.49	0.43
50:Y:43:LYS:HD3	50:Y:43:LYS:N	2.34	0.43
50:Y:67:HIS:O	50:Y:69:ASN:N	2.51	0.43
52:a:11:ILE:CG2	52:a:33:LEU:HD13	2.44	0.43
53:3:234:C:H2'	53:3:235:C:C6	2.54	0.43
53:3:560:A:H5'	53:3:566:G:H21	1.82	0.43
53:3:664:G:H2'	53:3:666:G:OP1	2.18	0.43
53:3:1259:C:C3'	53:3:1260:G:H5''	2.37	0.43
53:3:1285:A:H8	53:3:1285:A:OP1	2.01	0.43
54:1:46:G:H2'	54:1:47:C:C6	2.53	0.43
54:1:303:G:H2'	54:1:304:U:C6	2.53	0.43
54:1:543:G:C2'	54:1:544:C:H5''	2.48	0.43
54:1:1882:U:O2'	54:1:1883:U:H5'	2.18	0.43
54:1:1930:G:H2'	54:1:1968:G:H1	1.84	0.43
54:1:2055:C:H5'	54:1:2056:G:O5'	2.19	0.43
54:1:2194:U:H2'	54:1:2195:U:C6	2.53	0.43
54:1:2439:A:H4'	54:1:2440:C:C5'	2.43	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:2467:C:O2'	54:1:2468:A:H5'	2.18	0.43
54:1:2577:A:H2'	54:1:2614:A:N6	2.34	0.43
54:1:2801:G:H2'	54:1:2802:G:H8	1.83	0.43
3:d:47:LYS:HB3	3:d:51:GLU:HB2	2.01	0.43
4:e:101:ARG:NH1	4:e:139:GLU:OE2	2.52	0.43
4:e:129:MET:SD	4:e:153:ILE:HB	2.58	0.43
5:f:26:LYS:HD2	5:f:27:GLY:N	2.33	0.43
5:f:104:LEU:HB3	5:f:106:LEU:HG	1.99	0.43
5:f:137:LYS:HB3	54:1:2746:U:H4'	2.00	0.43
7:h:27:VAL:O	7:h:83:ALA:N	2.51	0.43
11:l:27:LEU:O	11:l:31:GLY:HA2	2.18	0.43
12:m:59:ARG:HG2	12:m:59:ARG:HH21	1.83	0.43
13:n:117:ASP:O	13:n:118:ARG:CB	2.67	0.43
18:s:96:ILE:HD12	18:s:96:ILE:N	2.32	0.43
20:u:88:ASP:C	20:u:90:LYS:H	2.26	0.43
22:w:13:GLU:HG3	22:w:14:ALA:N	2.34	0.43
32:G:33:ALA:HB2	32:G:39:ILE:HD11	2.00	0.43
32:G:43:GLU:O	32:G:47:PRO:HG2	2.17	0.43
32:G:67:LEU:HD23	32:G:160:LEU:CD1	2.48	0.43
33:H:131:ARG:O	33:H:135:ARG:HB2	2.19	0.43
39:N:21:LYS:HG3	39:N:22:PRO:HD2	2.00	0.43
40:O:53:ILE:HG13	44:S:84:ARG:HE	1.81	0.43
41:P:44:ALA:HB3	41:P:69:CYS:SG	2.59	0.43
42:Q:27:PRO:HD2	53:3:363:A:C2	2.54	0.43
42:Q:50:LYS:HD2	42:Q:50:LYS:N	2.34	0.43
43:R:97:ARG:HD3	53:3:1308:U:OP2	2.18	0.43
44:S:25:GLU:CD	44:S:25:GLU:H	2.26	0.43
48:W:18:GLN:HG3	48:W:19:GLU:N	2.31	0.43
52:a:60:ARG:HH21	52:a:162:ARG:HE	1.66	0.43
53:3:113:G:H2'	53:3:114:U:H6	1.83	0.43
53:3:608:A:H2'	53:3:609:A:O4'	2.19	0.43
53:3:856:C:O2'	53:3:857:C:H5'	2.19	0.43
54:1:37:C:O2'	54:1:38:A:H5'	2.18	0.43
54:1:141:G:H3'	54:1:142:A:O4'	2.17	0.43
54:1:296:U:H2'	54:1:297:G:C8	2.53	0.43
54:1:544:C:H2'	54:1:545:U:H6	1.83	0.43
54:1:1065:U:H5'	54:1:1066:U:OP2	2.19	0.43
54:1:1269:A:H2'	54:1:1270:C:C6	2.54	0.43
54:1:1401:G:H2'	54:1:1402:U:C6	2.53	0.43
54:1:1778:U:H2'	54:1:1784:A:N6	2.34	0.43
54:1:1848:A:H2'	54:1:1849:G:H8	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:2044:C:O2'	54:1:2045:C:H5'	2.18	0.43
54:1:2348:U:O2'	54:1:2349:G:H5'	2.18	0.43
58:7:59:A:O2'	58:7:60:U:H5'	2.19	0.43
2:c:154:LYS:HE2	54:1:2024:G:O3'	2.19	0.43
5:f:43:LYS:HD3	5:f:43:LYS:N	2.34	0.43
5:f:88:LEU:HD12	5:f:88:LEU:N	2.34	0.43
6:g:49:ALA:HB1	6:g:50:ARG:HD2	2.00	0.43
6:g:94:ILE:HG23	6:g:99:ILE:CD1	2.48	0.43
10:k:58:LEU:HD12	10:k:58:LEU:C	2.43	0.43
10:k:105:ARG:C	10:k:107:LEU:H	2.26	0.43
12:m:117:PHE:O	12:m:120:ALA:N	2.52	0.43
16:q:43:GLN:NE2	17:r:77:PHE:CD2	2.87	0.43
27:B:47:TYR:HA	27:B:51:ARG:O	2.19	0.43
29:D:8:SER:HB3	54:1:686:U:O2	2.18	0.43
32:G:102:ASN:HD21	32:G:105:THR:HG21	1.84	0.43
36:K:29:ILE:HG23	36:K:34:GLY:HA3	2.00	0.43
36:K:38:ARG:HD3	36:K:97:THR:CA	2.48	0.43
41:P:21:HIS:CE1	53:3:707:U:H4'	2.51	0.43
42:Q:81:ILE:CG2	42:Q:94:TYR:HB3	2.48	0.43
44:S:45:LEU:HD12	44:S:48:GLN:HE22	1.81	0.43
45:T:84:LEU:HD23	45:T:84:LEU:C	2.43	0.43
53:3:243:A:H4'	53:3:244:U:H3'	2.00	0.43
53:3:1118:U:H2'	53:3:1119:C:H6	1.83	0.43
53:3:1204:A:C2	53:3:1205:U:H1'	2.54	0.43
54:1:250:G:O2'	54:1:251:A:H5'	2.18	0.43
54:1:375:G:O2'	54:1:376:G:H5'	2.19	0.43
54:1:665:U:H2'	54:1:666:A:C8	2.54	0.43
54:1:673:C:O2'	54:1:674:G:H5'	2.17	0.43
54:1:820:A:O2'	54:1:821:A:H5'	2.19	0.43
54:1:1003:G:H2'	54:1:1004:U:C6	2.54	0.43
54:1:1592:C:H2'	54:1:1593:A:C8	2.53	0.43
54:1:2163:A:H5''	54:1:2164:C:OP2	2.18	0.43
1:b:65:ASP:OD2	1:b:68:ARG:HA	2.18	0.43
6:g:132:PHE:CE2	6:g:142:VAL:HG11	2.54	0.43
8:i:3:LYS:HG3	8:i:4:VAL:HG22	2.01	0.43
8:i:54:ILE:O	8:i:54:ILE:HG23	2.18	0.43
12:m:2:LEU:HD12	12:m:2:LEU:N	2.34	0.43
16:q:105:PHE:O	16:q:109:VAL:HG23	2.19	0.43
17:r:38:VAL:CG1	17:r:57:GLY:HA3	2.49	0.43
17:r:41:ILE:HB	17:r:47:VAL:HB	2.00	0.43
27:B:24:VAL:HG21	27:B:27:LEU:HD11	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:N:17:ARG:HH22	53:3:1129:C:C4'	2.31	0.43
40:O:48:ARG:HD3	44:S:100:TRP:CH2	2.54	0.43
40:O:72:ARG:HG2	40:O:72:ARG:NH1	2.34	0.43
47:V:22:VAL:O	47:V:43:LEU:N	2.49	0.43
47:V:64:ARG:HD2	47:V:64:ARG:C	2.43	0.43
47:V:64:ARG:NH1	47:V:66:LEU:HA	2.34	0.43
50:Y:43:LYS:O	50:Y:47:GLN:N	2.45	0.43
50:Y:54:GLN:N	50:Y:55:PRO:HD2	2.34	0.43
53:3:1448:C:H2'	53:3:1449:C:C6	2.54	0.43
53:3:1526:G:O2'	53:3:1527:U:H5'	2.18	0.43
54:1:92:U:H2'	54:1:93:G:H5'	2.01	0.43
54:1:368:A:C2'	54:1:369:U:H5'	2.49	0.43
54:1:519:U:H2'	54:1:520:G:C8	2.54	0.43
54:1:861:A:H2'	54:1:862:G:O4'	2.19	0.43
54:1:1161:C:H2'	54:1:1162:G:C8	2.54	0.43
54:1:1400:U:H2'	54:1:1401:G:H8	1.82	0.43
54:1:1450:G:O2'	54:1:1451:C:H5'	2.19	0.43
54:1:1730:C:H6	54:1:1731:G:C6	2.37	0.43
54:1:1881:C:H2'	54:1:1882:U:O4'	2.19	0.43
54:1:2809:A:H2'	54:1:2810:A:C8	2.54	0.43
56:6:58:A:H4'	56:6:60:U:H5	1.82	0.43
58:7:63:U:O2'	58:7:64:C:H5'	2.19	0.43
58:7:70:C:H2'	58:7:71:C:C6	2.54	0.43
1:b:244:VAL:CA	1:b:251:THR:HG22	2.44	0.43
7:h:23:LEU:HD12	7:h:24:SER:H	1.83	0.43
9:j:109:LEU:O	9:j:111:LYS:HD3	2.19	0.43
12:m:29:GLY:H	12:m:104:GLU:CD	2.26	0.43
12:m:45:GLN:NE2	54:1:2485:G:H4'	2.33	0.43
22:w:21:ARG:HE	22:w:21:ARG:CA	2.31	0.43
22:w:33:ILE:HD12	22:w:33:ILE:H	1.81	0.43
24:y:19:LEU:O	24:y:23:ARG:HB2	2.18	0.43
24:y:28:LEU:HD12	24:y:46:VAL:HG21	2.01	0.43
32:G:80:LYS:HG3	32:G:84:LEU:HD11	2.00	0.43
33:H:11:LEU:HD13	33:H:17:TRP:CD1	2.54	0.43
37:L:31:VAL:HG22	37:L:32:ASP:CG	2.44	0.43
39:N:5:TYR:HB2	39:N:20:ILE:CG2	2.49	0.43
41:P:19:VAL:CG2	41:P:36:ARG:HA	2.49	0.43
44:S:20:PHE:C	44:S:22:LYS:N	2.77	0.43
45:T:70:LYS:HE2	45:T:77:TYR:CZ	2.54	0.43
48:W:33:THR:HG22	48:W:37:LYS:N	2.33	0.43
53:3:74:A:H2'	53:3:75:G:O4'	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:162:A:H2'	53:3:163:C:O4'	2.18	0.43
53:3:749:A:H2'	53:3:750:C:C6	2.54	0.43
53:3:1204:A:H2'	53:3:1205:U:O4'	2.19	0.43
53:3:1295:U:H2'	53:3:1296:C:C6	2.53	0.43
53:3:1318:A:H2'	53:3:1319:A:H5'	2.01	0.43
53:3:1442:G:H2'	53:3:1443:C:C6	2.53	0.43
54:1:326:G:H2'	54:1:327:G:C8	2.54	0.43
54:1:503:A:C4'	54:1:505:A:H5''	2.48	0.43
54:1:1056:G:H1'	54:1:1103:A:H62	1.83	0.43
54:1:1057:A:H61	54:1:1081:U:H3	1.66	0.43
54:1:1464:G:H2'	54:1:1465:G:H8	1.84	0.43
54:1:2836:U:H2'	54:1:2837:A:C8	2.54	0.43
1:b:16:VAL:H	1:b:203:VAL:CG1	2.31	0.43
1:b:94:LEU:HD23	1:b:94:LEU:C	2.43	0.43
2:c:172:VAL:O	2:c:172:VAL:HG23	2.18	0.43
4:e:12:VAL:O	4:e:16:MET:HG2	2.18	0.43
4:e:162:ASP:C	4:e:165:GLY:H	2.26	0.43
7:h:37:LYS:HD2	7:h:37:LYS:O	2.19	0.43
7:h:81:LEU:HB2	54:1:1107:G:O4'	2.19	0.43
14:o:34:HIS:HA	14:o:65:THR:O	2.19	0.43
22:w:14:ALA:HB2	54:1:2272:U:OP2	2.19	0.43
26:A:37:CYS:N	26:A:40:CYS:SG	2.88	0.43
31:F:32:LYS:HE3	54:1:2478:A:OP1	2.19	0.43
45:T:38:LEU:HD23	45:T:42:PHE:CE2	2.50	0.43
51:Z:6:ARG:HH11	51:Z:6:ARG:HG3	1.84	0.43
53:3:355:C:H2'	53:3:356:A:C4'	2.49	0.43
53:3:858:G:O6	53:3:869:G:H3'	2.19	0.43
53:3:1411:C:O2'	53:3:1412:C:H5'	2.19	0.43
54:1:848:C:H2'	54:1:849:A:C8	2.54	0.43
54:1:1146:C:H2'	54:1:1147:A:H8	1.84	0.43
54:1:1355:G:O2'	54:1:1356:G:H5'	2.19	0.43
54:1:1434:A:H2'	54:1:1435:G:H8	1.84	0.43
54:1:1746:A:H2'	54:1:1747:U:H6	1.81	0.43
54:1:2846:G:H2'	54:1:2847:U:O4'	2.19	0.43
55:2:101:A:H2'	55:2:102:G:O4'	2.19	0.43
58:7:42:G:H2'	58:7:43:U:C6	2.54	0.43
1:b:16:VAL:H	1:b:203:VAL:HG13	1.83	0.42
1:b:66:PHE:HB3	1:b:150:GLY:O	2.19	0.42
1:b:224:MET:SD	1:b:229:HIS:HB2	2.59	0.42
2:c:181:ASP:OD2	2:c:184:ARG:HB2	2.19	0.42
4:e:96:TRP:O	4:e:100:GLU:HG2	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:l:19:LEU:HB2	54:l:587:C:O2'	2.19	0.42
11:l:57:LEU:HA	11:l:60:ARG:HG2	2.00	0.42
16:q:107:ALA:O	16:q:110:GLU:HB2	2.18	0.42
21:v:35:GLU:HB2	21:v:93:ARG:HH11	1.79	0.42
22:w:12:SER:HB3	54:l:2262:U:C5	2.51	0.42
23:x:2:ARG:O	23:x:11:PRO:HD3	2.19	0.42
23:x:9:LYS:HE3	23:x:53:LYS:HE2	2.01	0.42
32:G:72:LYS:O	32:G:74:ALA:N	2.52	0.42
35:J:10:LEU:HD12	35:J:11:GLN:H	1.81	0.42
35:J:51:LYS:O	35:J:51:LYS:HG3	2.19	0.42
37:L:12:LEU:HD23	37:L:12:LEU:H	1.84	0.42
38:M:95:MET:HE1	38:M:129:ALA:HA	2.01	0.42
45:T:41:HIS:CG	45:T:41:HIS:O	2.72	0.42
46:U:32:PHE:N	46:U:32:PHE:CD1	2.86	0.42
52:a:163:TYR:CD2	52:a:171:ILE:HD11	2.54	0.42
53:3:156:C:H2'	53:3:157:U:O4'	2.19	0.42
53:3:223:A:H2'	53:3:224:U:C6	2.54	0.42
53:3:1048:G:H2'	53:3:1050:G:H8	1.83	0.42
54:1:401:A:H2'	54:1:402:A:C8	2.54	0.42
54:1:441:U:O2'	54:1:442:G:H5'	2.18	0.42
54:1:493:G:O2'	54:1:494:G:H5'	2.19	0.42
54:1:685:A:C8	54:1:773:U:C4	3.06	0.42
54:1:859:G:OP2	54:1:859:G:C8	2.72	0.42
54:1:992:C:O2'	54:1:993:G:H5'	2.18	0.42
54:1:1062:G:H5''	54:1:1063:G:OP2	2.18	0.42
54:1:1719:G:H2'	54:1:1720:U:C6	2.54	0.42
54:1:2097:A:H2'	54:1:2098:U:O4'	2.19	0.42
54:1:2257:U:H2'	54:1:2258:C:C6	2.54	0.42
54:1:2585:U:O4	58:7:76:A:H2'	2.18	0.42
56:5:18:G:H1	56:5:55:U:H6	1.67	0.42
56:6:48:C:H5''	56:6:50:U:OP2	2.18	0.42
3:d:41:GLN:HG2	3:d:43:THR:OG1	2.19	0.42
3:d:63:LYS:HD3	54:1:2443:C:OP1	2.19	0.42
5:f:9:VAL:HG13	5:f:9:VAL:O	2.19	0.42
10:k:71:ARG:HG3	10:k:77:ILE:HD11	2.01	0.42
10:k:78:ARG:N	15:p:70:GLU:O	2.46	0.42
17:r:24:LYS:HB2	17:r:92:TRP:HB3	2.01	0.42
22:w:8:ASN:N	22:w:8:ASN:ND2	2.52	0.42
30:E:5:THR:HG23	30:E:7:ARG:HD2	2.00	0.42
35:J:110:MET:C	35:J:112:ALA:N	2.76	0.42
39:N:20:ILE:HD11	39:N:60:LEU:HB2	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:Q:56:LEU:HD12	42:Q:56:LEU:N	2.33	0.42
48:W:38:ILE:H	48:W:38:ILE:CD1	2.32	0.42
50:Y:81:GLN:HA	50:Y:81:GLN:HE21	1.84	0.42
53:3:245:U:O2'	53:3:246:A:H5'	2.19	0.42
53:3:437:U:O2'	53:3:438:U:H5'	2.19	0.42
53:3:962:C:H1'	53:3:1201:A:C6	2.54	0.42
53:3:1252:A:O2'	53:3:1253:G:H5'	2.19	0.42
53:3:1308:U:H2'	53:3:1309:G:H8	1.84	0.42
54:1:3:U:H2'	54:1:4:U:C6	2.55	0.42
54:1:58:G:H2'	54:1:59:U:C6	2.54	0.42
54:1:511:U:C2'	54:1:512:G:H5'	2.48	0.42
54:1:532:A:H4'	54:1:533:G:C8	2.54	0.42
54:1:601:C:O2'	54:1:605:G:H5''	2.19	0.42
54:1:1213:A:O2'	54:1:1214:A:H5'	2.19	0.42
54:1:1442:U:H2'	54:1:1443:U:H6	1.85	0.42
54:1:1796:U:O2'	54:1:1797:G:H5'	2.19	0.42
54:1:1826:G:O2'	54:1:1971:U:OP2	2.36	0.42
54:1:2105:U:O2	54:1:2184:A:H2	2.03	0.42
2:c:1:MET:HE1	2:c:100:LEU:HD22	2.01	0.42
2:c:38:LYS:O	2:c:46:ARG:HA	2.19	0.42
3:d:161:ALA:HA	3:d:164:LEU:HD13	2.00	0.42
4:e:62:GLN:HB3	26:A:1:MET:HE1	2.01	0.42
11:l:111:ILE:HD12	11:l:111:ILE:H	1.83	0.42
29:D:42:LEU:HD23	29:D:43:THR:N	2.34	0.42
37:L:101:ARG:NH2	53:3:939:G:H5'	2.34	0.42
43:R:53:ASP:OD1	43:R:54:THR:N	2.52	0.42
46:U:70:ARG:NH2	53:3:451:A:OP2	2.48	0.42
53:3:25:C:H5'	53:3:524:G:H1'	2.01	0.42
53:3:259:G:H2'	53:3:260:G:H8	1.84	0.42
53:3:633:G:H2'	53:3:634:C:C6	2.54	0.42
53:3:1155:A:H2'	53:3:1156:G:O4'	2.19	0.42
54:1:123:G:O2'	54:1:124:G:H5'	2.19	0.42
54:1:639:U:H2'	54:1:640:C:H6	1.84	0.42
54:1:2397:G:O2'	54:1:2398:U:H5'	2.18	0.42
54:1:2625:G:H2'	54:1:2626:C:C6	2.54	0.42
54:1:2718:G:H2'	54:1:2719:G:H8	1.84	0.42
1:b:48:ILE:HG22	54:1:779:U:OP1	2.19	0.42
1:b:229:HIS:ND1	1:b:230:PRO:HD2	2.34	0.42
8:i:56:VAL:CG2	8:i:57:VAL:N	2.82	0.42
10:k:76:VAL:HG22	15:p:72:VAL:CG2	2.49	0.42
12:m:26:VAL:HG13	12:m:104:GLU:OE2	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:u:21:ARG:HH11	20:u:21:ARG:HG3	1.85	0.42
32:G:150:ILE:O	32:G:150:ILE:HG12	2.18	0.42
34:I:42:ALA:HB3	34:I:43:ARG:HH11	1.84	0.42
34:I:122:ILE:HD13	34:I:144:ILE:HG13	2.01	0.42
35:J:97:PRO:O	35:J:98:ALA:C	2.62	0.42
42:Q:120:ARG:HB2	53:3:37:U:C5'	2.49	0.42
43:R:74:MET:O	43:R:78:ARG:N	2.47	0.42
44:S:65:GLN:HG3	44:S:78:LEU:HD11	2.00	0.42
45:T:63:ARG:HH12	45:T:87:ARG:HH11	1.63	0.42
48:W:11:ARG:NE	48:W:47:ARG:HH22	2.17	0.42
50:Y:4:LYS:O	50:Y:7:LYS:N	2.40	0.42
50:Y:11:ILE:CG1	50:Y:12:GLN:N	2.82	0.42
51:Z:9:GLU:CB	51:Z:10:PRO:HD3	2.39	0.42
51:Z:35:GLU:O	51:Z:36:PHE:HB2	2.20	0.42
53:3:377:G:H2'	53:3:378:G:C8	2.55	0.42
53:3:594:U:C2'	53:3:595:A:H5'	2.49	0.42
54:1:145:C:H2'	54:1:146:A:C8	2.54	0.42
54:1:270:A:H1'	54:1:370:G:N2	2.34	0.42
54:1:393:C:O2'	54:1:394:C:H5'	2.19	0.42
54:1:594:U:H2'	54:1:595:C:H6	1.83	0.42
54:1:635:C:H2'	54:1:636:G:O4'	2.19	0.42
54:1:1565:C:O2'	54:1:1566:A:H8	2.02	0.42
54:1:2648:G:H2'	54:1:2649:C:H6	1.85	0.42
55:2:97:C:C2'	55:2:98:G:H5'	2.49	0.42
56:5:69:C:H2'	56:5:70:G:C8	2.55	0.42
56:6:72:A:H2'	56:6:73:A:C5'	2.50	0.42
58:7:30:G:O2'	58:7:31:G:H5'	2.18	0.42
3:d:131:THR:HG23	54:1:321:U:C5'	2.45	0.42
8:i:24:GLY:N	8:i:25:PRO:CD	2.82	0.42
13:n:69:ARG:C	13:n:70:THR:HG23	2.44	0.42
16:q:56:PHE:CZ	54:1:536:G:H4'	2.54	0.42
18:s:65:ASP:OD2	18:s:68:ASP:HB2	2.20	0.42
24:y:1:MET:HA	24:y:4:LYS:HB2	2.02	0.42
25:z:6:ILE:HG22	25:z:7:THR:N	2.33	0.42
32:G:29:PHE:CE2	32:G:200:PRO:HB3	2.55	0.42
32:G:86:CYS:HA	32:G:221:ARG:HH11	1.84	0.42
32:G:92:ASN:ND2	32:G:93:HIS:ND1	2.68	0.42
33:H:21:TRP:HB3	33:H:58:ARG:HB2	2.01	0.42
33:H:86:LEU:O	33:H:90:VAL:HG23	2.18	0.42
34:I:12:ARG:HD3	34:I:37:PRO:CA	2.50	0.42
36:K:47:LEU:HD11	36:K:55:HIS:HA	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:N:12:LYS:HG2	53:3:1371:G:OP1	2.19	0.42
43:R:57:ASP:O	43:R:60:ALA:HB3	2.18	0.42
49:X:30:LEU:N	49:X:30:LEU:CD1	2.83	0.42
53:3:355:C:C2'	53:3:356:A:H5''	2.50	0.42
53:3:357:G:O2'	53:3:358:U:H5'	2.20	0.42
53:3:405:U:O5'	53:3:405:U:H6	2.03	0.42
53:3:593:U:H2'	53:3:594:U:C6	2.54	0.42
53:3:744:C:H2'	53:3:745:G:H8	1.83	0.42
53:3:916:U:H2'	53:3:917:G:H8	1.84	0.42
53:3:1436:U:H2'	53:3:1437:A:C8	2.54	0.42
54:1:207:A:C8	54:1:208:C:C5	3.08	0.42
54:1:571:U:C4	54:1:2030:A:C6	3.08	0.42
54:1:1120:G:H2'	54:1:1121:C:O4'	2.19	0.42
54:1:1314:C:H2'	54:1:1314:C:O2	2.19	0.42
54:1:1364:G:H2'	54:1:1365:A:H5'	2.00	0.42
54:1:1410:G:H2'	54:1:1411:U:C6	2.54	0.42
54:1:1676:A:N6	54:1:1677:A:N1	2.66	0.42
54:1:1878:G:H2'	54:1:1879:C:O4'	2.18	0.42
54:1:2636:C:O2'	54:1:2637:U:H5'	2.19	0.42
54:1:2795:C:H2'	54:1:2796:U:O4'	2.19	0.42
2:c:138:LEU:HD23	54:1:744:U:OP1	2.19	0.42
3:d:29:HIS:O	3:d:32:VAL:HG12	2.20	0.42
3:d:77:ILE:HD11	54:1:673:C:C4'	2.49	0.42
6:g:42:LYS:C	6:g:44:ILE:N	2.76	0.42
8:i:12:VAL:HG23	8:i:13:ALA:H	1.85	0.42
9:j:89:PHE:CZ	9:j:93:ILE:HD11	2.54	0.42
10:k:60:ALA:HA	10:k:87:LEU:CD2	2.49	0.42
15:p:15:ASP:O	15:p:16:VAL:C	2.63	0.42
19:t:61:LEU:CD2	19:t:82:LYS:HB3	2.50	0.42
20:u:85:ARG:NH1	20:u:99:SER:HB2	2.34	0.42
21:v:29:ILE:O	21:v:91:PHE:HB2	2.20	0.42
28:C:52:LYS:HD3	28:C:52:LYS:H	1.85	0.42
30:E:44:ARG:NH1	30:E:44:ARG:CB	2.83	0.42
32:G:81:ASP:HA	32:G:84:LEU:HB2	2.01	0.42
32:G:163:ILE:O	32:G:185:ILE:HG23	2.20	0.42
34:I:54:LEU:HD23	34:I:55:ARG:NH1	2.31	0.42
34:I:182:LYS:N	34:I:182:LYS:HD3	2.34	0.42
35:J:80:LEU:CD1	35:J:122:VAL:HG11	2.50	0.42
36:K:62:MET:HB3	36:K:64:VAL:HG13	2.01	0.42
40:O:56:HIS:CD2	53:3:1199:U:H4'	2.55	0.42
41:P:64:VAL:HA	41:P:67:GLU:HG2	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:R:23:GLY:O	53:3:1329:A:H4'	2.19	0.42
43:R:28:ARG:NE	43:R:62:PHE:HB2	2.32	0.42
46:U:67:ILE:H	46:U:67:ILE:CD1	2.26	0.42
52:a:162:ARG:HB2	52:a:162:ARG:NH2	2.33	0.42
53:3:203:G:H1'	53:3:466:A:H2	1.84	0.42
53:3:265:G:H2'	53:3:267:C:C5	2.50	0.42
53:3:376:G:O2'	53:3:377:G:H5'	2.20	0.42
53:3:518:C:H5''	53:3:519:C:C5	2.55	0.42
53:3:736:C:H2'	53:3:737:C:C6	2.55	0.42
53:3:1370:G:C2	53:3:1371:G:C8	3.07	0.42
53:3:1540:U:O4	57:4:5:A:N1	2.52	0.42
54:1:230:G:O2'	54:1:231:A:H5'	2.19	0.42
54:1:671:C:H2'	54:1:672:C:C6	2.54	0.42
54:1:704:G:H2'	54:1:726:G:N2	2.33	0.42
54:1:713:G:H21	54:1:718:A:H62	1.66	0.42
54:1:818:G:N7	54:1:1187:G:C6	2.87	0.42
54:1:962:G:H2'	54:1:963:U:H6	1.84	0.42
54:1:1742:U:H2'	54:1:1743:G:O4'	2.20	0.42
54:1:2537:U:H2'	54:1:2538:C:C6	2.54	0.42
54:1:2818:U:H2'	54:1:2819:G:H8	1.84	0.42
1:b:71:ASP:HB3	1:b:118:GLY:HA2	2.01	0.42
2:c:48:ILE:O	2:c:48:ILE:HG13	2.19	0.42
2:c:85:ALA:HB3	2:c:88:GLU:OE2	2.19	0.42
11:l:115:GLU:CD	11:l:115:GLU:N	2.77	0.42
15:p:50:ARG:HG2	15:p:52:ARG:HG2	2.02	0.42
17:r:86:GLN:O	54:1:1225:G:H4'	2.20	0.42
18:s:19:LEU:HD23	18:s:41:LYS:NZ	2.35	0.42
21:v:80:HIS:HB3	21:v:83:LYS:O	2.20	0.42
22:w:51:ARG:HH11	22:w:51:ARG:HG3	1.85	0.42
23:x:44:ARG:HH11	23:x:44:ARG:HG3	1.83	0.42
35:J:80:LEU:CG	35:J:122:VAL:HG11	2.49	0.42
35:J:110:MET:HG2	35:J:139:THR:HG21	2.00	0.42
39:N:60:LEU:N	39:N:60:LEU:HD23	2.34	0.42
40:O:84:VAL:HG13	40:O:85:ASP:N	2.35	0.42
42:Q:29:LYS:HD2	42:Q:29:LYS:HA	1.83	0.42
51:Z:8:ASN:HB3	51:Z:9:GLU:OE1	2.19	0.42
52:a:27:ILE:HG21	52:a:185:LEU:HB3	2.02	0.42
53:3:624:C:H2'	53:3:625:U:H6	1.85	0.42
53:3:1057:G:H2'	53:3:1058:G:O4'	2.20	0.42
54:1:337:C:H2'	54:1:338:G:O4'	2.19	0.42
54:1:623:C:H2'	54:1:624:C:C6	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:728:G:O2'	54:1:730:A:H8	2.02	0.42
54:1:863:A:O2'	54:1:864:G:H5'	2.18	0.42
54:1:1412:U:H2'	54:1:1413:A:C8	2.54	0.42
54:1:1571:A:H2'	54:1:1572:A:C8	2.55	0.42
54:1:1922:G:H2'	54:1:1923:U:C6	2.55	0.42
56:6:61:C:C2'	56:6:62:C:H5'	2.49	0.42
58:7:13:C:C3'	58:7:14:A:H5''	2.49	0.42
2:c:203:VAL:HG12	2:c:204:LYS:N	2.35	0.42
3:d:3:LEU:O	3:d:5:LEU:HD12	2.20	0.42
4:e:105:ILE:C	4:e:108:PRO:HD2	2.44	0.42
10:k:76:VAL:C	10:k:77:ILE:HD12	2.44	0.42
10:k:93:GLN:HA	10:k:94:PRO:HD2	1.80	0.42
10:k:114:LYS:O	10:k:118:LEU:HG	2.19	0.42
11:l:141:LYS:NZ	11:l:143:GLU:HA	2.35	0.42
16:q:31:TYR:HE2	54:1:1252:G:H5'	1.84	0.42
16:q:49:ARG:HD2	16:q:49:ARG:N	2.35	0.42
17:r:60:LYS:HB3	17:r:99:THR:OG1	2.19	0.42
33:H:171:ARG:CG	53:3:1106:G:H5''	2.50	0.42
34:I:7:LYS:O	34:I:20:LEU:HD13	2.20	0.42
36:K:50:PRO:HB3	36:K:53:LYS:HA	2.01	0.42
41:P:85:VAL:HG23	41:P:111:ASP:OD1	2.19	0.42
43:R:8:ILE:HD12	43:R:8:ILE:N	2.35	0.42
46:U:30:GLY:O	46:U:32:PHE:HD1	2.03	0.42
46:U:58:ALA:HA	46:U:61:VAL:HG23	2.01	0.42
47:V:79:GLU:CD	47:V:80:LYS:N	2.77	0.42
48:W:38:ILE:HD11	48:W:58:ILE:HG21	2.00	0.42
48:W:47:ARG:HG2	48:W:47:ARG:NH1	2.34	0.42
53:3:286:C:H2'	53:3:287:U:H6	1.84	0.42
53:3:312:C:H2'	53:3:313:A:H8	1.85	0.42
53:3:355:C:H1'	53:3:388:G:H1'	2.02	0.42
53:3:636:U:H2'	53:3:637:C:C6	2.54	0.42
53:3:1212:U:H5'	53:3:1213:A:C8	2.55	0.42
53:3:1236:A:H2'	53:3:1237:C:C6	2.55	0.42
53:3:1372:U:H2'	53:3:1373:G:O4'	2.20	0.42
53:3:1484:C:H2'	53:3:1485:U:O4'	2.20	0.42
54:1:7:G:H2'	54:1:8:C:C6	2.55	0.42
54:1:170:U:H2'	54:1:171:U:H6	1.85	0.42
54:1:441:U:H2'	54:1:442:G:H8	1.85	0.42
54:1:622:G:O2'	54:1:623:C:H5'	2.19	0.42
54:1:874:G:O2'	54:1:875:G:H5'	2.20	0.42
54:1:1405:U:H2'	54:1:1406:U:C6	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:1468:U:H2'	54:1:1522:A:N6	2.35	0.42
54:1:1858:A:H1'	54:1:1885:A:N1	2.34	0.42
54:1:2018:G:H2'	54:1:2019:A:C8	2.55	0.42
54:1:2052:A:O2'	54:1:2053:G:H5'	2.20	0.42
54:1:2295:C:O2'	54:1:2296:U:H5'	2.18	0.42
54:1:2478:A:O2'	54:1:2479:U:H5'	2.20	0.42
54:1:2611:C:O2	54:1:2611:C:H2'	2.20	0.42
56:5:3:C:H2'	56:5:4:G:C8	2.55	0.42
3:d:23:PHE:HE1	3:d:108:ILE:HA	1.83	0.42
3:d:126:VAL:HG21	3:d:133:LEU:HB3	2.01	0.42
4:e:7:TYR:HA	4:e:11:VAL:HB	2.02	0.42
4:e:52:ALA:HB2	4:e:149:ARG:NH1	2.34	0.42
4:e:128:SER:HB3	4:e:154:THR:HG23	2.01	0.42
6:g:29:PHE:HD2	6:g:30:LEU:HD12	1.82	0.42
7:h:56:ARG:HB2	54:1:1084:A:O4'	2.20	0.42
8:i:73:PRO:HA	8:i:74:PRO:HD3	1.83	0.42
9:j:24:THR:HB	9:j:27:ARG:HB2	2.02	0.42
10:k:49:ARG:HA	10:k:49:ARG:HE	1.85	0.42
12:m:70:ASP:OD1	12:m:70:ASP:C	2.62	0.42
13:n:30:ARG:HB2	13:n:30:ARG:HH11	1.84	0.42
20:u:33:VAL:O	20:u:64:ILE:HG22	2.20	0.42
21:v:55:GLU:HA	21:v:58:SER:OG	2.20	0.42
22:w:29:ALA:HB2	22:w:60:ASP:OD2	2.19	0.42
27:B:27:LEU:HB2	27:B:36:LYS:HE3	2.02	0.42
32:G:29:PHE:CD1	32:G:29:PHE:N	2.88	0.42
32:G:153:MET:HE1	32:G:157:PRO:CG	2.46	0.42
33:H:155:ARG:O	33:H:156:LEU:C	2.63	0.42
34:I:36:ALA:N	34:I:37:PRO:HD3	2.34	0.42
35:J:56:PRO:O	35:J:59:ILE:HG12	2.20	0.42
36:K:47:LEU:O	36:K:47:LEU:HD12	2.20	0.42
37:L:96:ASN:HD22	37:L:100:MET:CE	2.30	0.42
37:L:125:ASP:HB3	37:L:131:GLY:HA3	2.01	0.42
39:N:113:LYS:HA	39:N:120:ALA:HB2	2.02	0.42
41:P:51:PHE:HE2	41:P:64:VAL:HG11	1.84	0.42
42:Q:106:VAL:HG23	42:Q:116:TYR:HB3	2.02	0.42
43:R:69:ARG:HH11	43:R:69:ARG:HG3	1.84	0.42
44:S:45:LEU:HA	44:S:48:GLN:HE21	1.83	0.42
53:3:271:C:H2'	53:3:272:C:H6	1.84	0.42
53:3:399:G:H2'	53:3:400:C:H6	1.85	0.42
53:3:412:A:H3'	53:3:413:G:H4'	2.02	0.42
53:3:811:C:C5	53:3:812:G:C6	3.08	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1324:A:O2'	53:3:1325:C:H5'	2.19	0.42
53:3:1391:U:H2'	53:3:1392:G:H8	1.82	0.42
54:1:510:C:H2'	54:1:511:U:O4'	2.20	0.42
54:1:2266:A:H4'	54:1:2267:A:N3	2.35	0.42
54:1:2741:A:H2'	54:1:2742:G:C5'	2.49	0.42
56:6:40:C:H2'	56:6:41:C:O4'	2.20	0.42
1:b:43:ASN:HD21	1:b:45:ASN:HB2	1.83	0.42
2:c:124:ARG:NH1	2:c:163:GLY:CA	2.83	0.42
3:d:153:LEU:HD11	3:d:158:PHE:HB2	2.02	0.42
3:d:165:HIS:HB3	3:d:166:LYS:HD2	2.01	0.42
5:f:140:ILE:HG13	5:f:141:GLY:N	2.35	0.42
8:i:4:VAL:O	8:i:5:GLN:CB	2.67	0.42
15:p:25:VAL:HG11	15:p:83:ILE:HG23	2.01	0.42
15:p:29:VAL:O	15:p:39:LEU:HD12	2.18	0.42
15:p:102:ARG:NH2	54:1:1754:A:H4'	2.34	0.42
15:p:111:GLU:O	15:p:113:LEU:HG	2.19	0.42
16:q:30:VAL:HG12	16:q:33:VAL:H	1.84	0.42
16:q:39:ILE:HG23	16:q:40:LYS:N	2.34	0.42
18:s:79:GLY:HA2	54:1:25:U:H5'	2.02	0.42
20:u:73:ASN:HB2	20:u:80:ASP:OD2	2.19	0.42
20:u:81:ARG:HB3	20:u:96:LYS:HG3	2.01	0.42
20:u:94:PHE:HB2	20:u:99:SER:HB2	2.02	0.42
22:w:20:LYS:C	22:w:21:ARG:HE	2.28	0.42
28:C:4:ILE:HB	54:1:2284:A:OP1	2.20	0.42
28:C:13:SER:HB3	28:C:47:ILE:HB	2.00	0.42
32:G:80:LYS:O	32:G:84:LEU:HG	2.19	0.42
32:G:196:ASP:OD2	32:G:196:ASP:N	2.51	0.42
35:J:83:PRO:HD3	35:J:97:PRO:HG3	2.02	0.42
39:N:126:PHE:CD1	39:N:126:PHE:C	2.98	0.42
40:O:56:HIS:ND1	40:O:57:VAL:N	2.57	0.42
41:P:52:ARG:HH21	41:P:56:LYS:HD3	1.84	0.42
42:Q:62:VAL:HG11	42:Q:94:TYR:CE2	2.55	0.42
42:Q:85:ARG:HG2	42:Q:86:VAL:N	2.34	0.42
45:T:28:VAL:CG1	45:T:62:ARG:HG3	2.43	0.42
46:U:42:ILE:O	46:U:42:ILE:HG23	2.20	0.42
47:V:11:VAL:HG11	47:V:54:ILE:HA	2.01	0.42
53:3:259:G:H2'	53:3:260:G:C8	2.55	0.42
53:3:505:G:OP2	53:3:535:A:H5'	2.20	0.42
53:3:554:A:H2'	53:3:555:U:H6	1.83	0.42
53:3:765:G:H2'	53:3:812:G:N2	2.35	0.42
53:3:861:G:O2'	53:3:862:C:H5'	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1120:C:H2'	53:3:1121:U:H6	1.84	0.42
54:1:917:A:H5''	54:1:2268:A:N6	2.33	0.42
54:1:1441:G:H2'	54:1:1442:U:H6	1.84	0.42
54:1:1515:A:H2'	54:1:1516:G:O4'	2.20	0.42
54:1:1809:A:H2'	54:1:1810:A:C8	2.54	0.42
54:1:2067:G:C6	54:1:2069:G:N7	2.87	0.42
54:1:2321:U:H5''	54:1:2322:A:OP2	2.20	0.42
54:1:2469:A:N6	54:1:2481:G:O2'	2.51	0.42
58:7:10:G:C2	58:7:26:A:H1'	2.55	0.42
3:d:44:ARG:NH1	54:1:1248:G:OP1	2.53	0.41
5:f:70:LEU:HD11	54:1:2758:A:N1	2.35	0.41
11:l:21:ARG:HD3	11:l:21:ARG:HA	1.81	0.41
15:p:52:ARG:HG2	15:p:52:ARG:NH1	2.34	0.41
18:s:86:MET:HE2	18:s:88:ARG:HD3	2.02	0.41
18:s:92:ARG:HD3	54:1:747:C:O2'	2.20	0.41
22:w:14:ALA:CB	54:1:2271:G:H5''	2.48	0.41
26:A:25:ARG:HH11	26:A:25:ARG:HG3	1.84	0.41
32:G:34:ARG:HG2	32:G:34:ARG:HH11	1.84	0.41
35:J:64:GLU:HA	35:J:67:ARG:HH12	1.84	0.41
36:K:88:MET:HE3	36:K:90:MET:HE2	2.01	0.41
37:L:3:ARG:HD2	53:3:932:C:OP1	2.20	0.41
44:S:47:LEU:CD2	53:3:1317:C:H4'	2.47	0.41
46:U:74:LEU:O	46:U:78:VAL:N	2.52	0.41
51:Z:48:LYS:HB3	53:3:723:U:C5	2.55	0.41
53:3:383:A:H2'	53:3:384:G:O4'	2.20	0.41
53:3:614:C:H2'	53:3:615:G:C5'	2.43	0.41
53:3:918:A:H2'	53:3:919:A:O4'	2.20	0.41
54:1:673:C:C2'	54:1:674:G:H5'	2.49	0.41
54:1:1055:G:H2'	54:1:1056:G:O4'	2.19	0.41
54:1:1233:C:H2'	54:1:1234:U:C6	2.54	0.41
54:1:1510:G:H2'	54:1:1511:G:O4'	2.20	0.41
54:1:1967:C:C4	54:1:1968:G:C5	3.07	0.41
54:1:2581:G:H2'	54:1:2581:G:N3	2.35	0.41
54:1:2732:G:H3'	54:1:2733:A:C5'	2.50	0.41
55:2:66:A:H4'	55:2:67:G:C8	2.55	0.41
2:c:81:GLU:HG3	54:1:2635:A:O2'	2.20	0.41
5:f:174:LYS:O	5:f:175:LYS:HG2	2.20	0.41
8:i:9:LYS:NZ	8:i:57:VAL:HG22	2.34	0.41
17:r:5:PHE:HE1	17:r:14:VAL:HG12	1.84	0.41
21:v:30:ILE:CD1	21:v:93:ARG:HH21	2.33	0.41
21:v:57:TYR:C	21:v:73:LYS:HZ3	2.27	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:E:30:HIS:ND1	30:E:31:ILE:HG13	2.34	0.41
32:G:53:LEU:HD22	32:G:219:THR:CG2	2.50	0.41
32:G:104:LYS:HD3	53:3:1073:U:O2'	2.20	0.41
32:G:135:MET:O	32:G:138:ARG:N	2.53	0.41
32:G:182:VAL:O	32:G:196:ASP:OD2	2.39	0.41
40:O:5:ARG:HH11	40:O:5:ARG:HG3	1.85	0.41
41:P:126:ARG:HH11	41:P:126:ARG:H	1.68	0.41
42:Q:109:ARG:HH21	42:Q:112:ALA:HB3	1.84	0.41
44:S:62:ARG:HH22	53:3:982:U:P	2.42	0.41
49:X:30:LEU:CD1	49:X:46:LEU:HD13	2.49	0.41
49:X:79:TYR:CD1	53:3:1226:C:H5'	2.54	0.41
52:a:50:ILE:HG22	52:a:57:GLN:CG	2.50	0.41
52:a:202:THR:O	52:a:204:ALA:N	2.48	0.41
53:3:139:A:H2'	53:3:140:U:C6	2.54	0.41
53:3:250:A:H4'	53:3:252:U:C6	2.56	0.41
53:3:505:G:C8	53:3:535:A:C8	3.07	0.41
53:3:525:C:H2'	53:3:526:C:C6	2.55	0.41
53:3:528:C:N4	53:3:529:G:C6	2.87	0.41
53:3:741:G:O2'	53:3:742:G:H5'	2.19	0.41
53:3:1233:G:H2'	53:3:1234:C:C6	2.56	0.41
53:3:1432:G:O2'	53:3:1468:A:N6	2.53	0.41
53:3:1481:U:H2'	53:3:1482:G:C8	2.55	0.41
54:1:358:U:H2'	54:1:359:G:H8	1.84	0.41
54:1:2036:C:H2'	54:1:2037:A:H8	1.85	0.41
1:b:154:ALA:CB	1:b:161:VAL:HG23	2.50	0.41
1:b:179:GLU:OE2	1:b:181:ARG:HB2	2.20	0.41
1:b:181:ARG:HG3	1:b:181:ARG:NH1	2.36	0.41
1:b:227:VAL:HG21	54:1:784:G:C5	2.55	0.41
2:c:31:ALA:O	2:c:33:ARG:HD3	2.20	0.41
4:e:138:PRO:HB3	26:A:32:LEU:HD21	2.02	0.41
5:f:96:ALA:HB3	5:f:103:ASN:HB3	2.01	0.41
5:f:101:VAL:HG22	5:f:115:GLN:OE1	2.20	0.41
7:h:81:LEU:HD13	54:1:1107:G:O4'	2.20	0.41
8:i:64:ARG:HG3	8:i:64:ARG:O	2.20	0.41
11:l:91:ASP:CG	11:l:92:LEU:N	2.77	0.41
16:q:82:LEU:HA	16:q:85:ALA:HB3	2.01	0.41
18:s:79:GLY:HA2	54:1:25:U:C5'	2.49	0.41
23:x:36:ARG:HG2	23:x:47:THR:CG2	2.44	0.41
32:G:48:MET:HE2	32:G:48:MET:N	2.36	0.41
33:H:129:PHE:HA	33:H:132:ALA:HB3	2.02	0.41
33:H:182:ASP:HB2	33:H:201:ILE:HB	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:I:3:TYR:CE1	34:I:10:LEU:HD11	2.55	0.41
34:I:13:ARG:HH21	34:I:37:PRO:HB2	1.85	0.41
34:I:32:LYS:O	34:I:35:GLN:HG3	2.20	0.41
39:N:83:THR:CG2	39:N:102:PHE:HB3	2.43	0.41
40:O:41:PRO:HB3	53:3:1151:A:H1'	2.01	0.41
40:O:47:GLU:HB2	40:O:67:ILE:HD11	2.01	0.41
40:O:48:ARG:HD3	44:S:100:TRP:CZ3	2.56	0.41
41:P:30:ILE:CD1	41:P:45:THR:HB	2.50	0.41
41:P:120:CYS:O	41:P:121:ARG:C	2.64	0.41
42:Q:39:THR:HB	42:Q:40:THR:H	1.77	0.41
47:V:17:GLU:CD	53:3:254:G:H21	2.28	0.41
50:Y:4:LYS:HD2	53:3:60:A:H3'	2.02	0.41
50:Y:42:ASP:HB2	50:Y:45:ALA:HB3	2.02	0.41
53:3:1304:G:H2'	53:3:1305:G:C1'	2.50	0.41
54:1:185:G:H2'	54:1:186:G:H8	1.84	0.41
54:1:558:U:H2'	54:1:559:G:C8	2.56	0.41
54:1:677:A:O2'	54:1:2071:A:H5'	2.21	0.41
54:1:1219:U:H2'	54:1:1220:G:C8	2.55	0.41
54:1:1562:U:H2'	54:1:1563:U:O4'	2.19	0.41
54:1:1674:G:N2	54:1:1677:A:N1	2.66	0.41
54:1:1689:A:H2'	54:1:1690:A:H8	1.84	0.41
54:1:1749:A:H2'	54:1:1750:G:C8	2.55	0.41
2:c:129:THR:HG22	2:c:130:GLN:O	2.20	0.41
3:d:165:HIS:HB2	54:1:1205:A:C6	2.55	0.41
9:j:99:ARG:HA	9:j:102:GLU:OE1	2.20	0.41
12:m:35:ALA:HA	12:m:128:THR:HG22	2.02	0.41
12:m:53:MET:HE1	12:m:103:TYR:CG	2.55	0.41
17:r:62:GLU:HB2	17:r:99:THR:CG2	2.50	0.41
20:u:39:ASN:ND2	20:u:64:ILE:HB	2.36	0.41
22:w:66:GLU:CG	22:w:67:VAL:N	2.83	0.41
29:D:19:ARG:HG2	29:D:19:ARG:HH21	1.86	0.41
33:H:71:ARG:O	33:H:75:VAL:HG23	2.21	0.41
41:P:18:GLY:O	41:P:81:LEU:HA	2.21	0.41
43:R:16:ILE:H	43:R:16:ILE:CD1	2.23	0.41
43:R:36:ALA:HB1	43:R:38:ILE:HG12	2.01	0.41
45:T:87:ARG:HD2	45:T:87:ARG:HA	1.83	0.41
53:3:39:G:O2'	53:3:40:C:H5'	2.21	0.41
53:3:130:A:O2'	53:3:264:C:H5'	2.21	0.41
53:3:189:A:H2'	53:3:190:A:O4'	2.21	0.41
53:3:311:C:H2'	53:3:312:C:C6	2.56	0.41
53:3:428:G:H8	53:3:428:G:OP1	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:636:U:H2'	53:3:637:C:H6	1.84	0.41
53:3:770:C:O2'	53:3:771:G:H5'	2.19	0.41
53:3:1058:G:H2'	53:3:1059:C:C6	2.55	0.41
54:1:1060:U:H5'	54:1:1062:G:O4'	2.20	0.41
54:1:1391:U:H2'	54:1:1393:A:OP2	2.20	0.41
54:1:1930:G:H1'	54:1:1931:U:C5	2.56	0.41
55:2:32:U:H2'	55:2:33:G:C8	2.55	0.41
2:c:1:MET:SD	2:c:2:ILE:N	2.94	0.41
2:c:62:LYS:CE	54:1:2810:A:H5''	2.50	0.41
6:g:5:LEU:O	6:g:16:GLY:HA2	2.20	0.41
6:g:49:ALA:CB	6:g:50:ARG:HD2	2.50	0.41
6:g:116:ARG:O	6:g:118:PRO:HD3	2.21	0.41
9:j:75:TYR:CE1	9:j:86:GLN:HB3	2.55	0.41
9:j:111:LYS:HD3	9:j:111:LYS:H	1.84	0.41
11:l:33:ARG:NH2	11:l:40:SER:O	2.49	0.41
13:n:38:LEU:HB3	13:n:39:PRO:HD3	2.01	0.41
14:o:35:ILE:HD11	14:o:106:LEU:HD12	2.01	0.41
18:s:97:LEU:CD1	18:s:99:ARG:HH21	2.34	0.41
23:x:38:TRP:CZ2	23:x:43:LYS:HA	2.55	0.41
32:G:162:VAL:HG12	32:G:163:ILE:N	2.36	0.41
34:I:169:TRP:CZ3	34:I:185:PRO:HB3	2.56	0.41
40:O:83:THR:HA	40:O:86:ALA:CB	2.50	0.41
43:R:88:LEU:HA	43:R:91:ARG:HB3	2.02	0.41
48:W:38:ILE:HG22	53:3:720:C:H4'	2.02	0.41
50:Y:84:LYS:HE3	50:Y:84:LYS:HB3	1.93	0.41
53:3:123:U:OP1	53:3:312:C:H5'	2.20	0.41
53:3:147:G:O2'	53:3:148:G:H5'	2.20	0.41
53:3:271:C:H2'	53:3:272:C:C6	2.56	0.41
53:3:413:G:N3	53:3:413:G:H2'	2.35	0.41
54:1:588:U:O4	54:1:670:A:H1'	2.21	0.41
54:1:799:G:C6	54:1:800:A:C6	3.08	0.41
54:1:842:U:O2'	54:1:843:G:H5'	2.20	0.41
54:1:941:A:H2'	54:1:942:G:C8	2.56	0.41
54:1:1515:A:H3'	54:1:1516:G:H8	1.86	0.41
54:1:1682:G:C2	54:1:1757:A:H1'	2.55	0.41
54:1:1697:G:C3'	54:1:1698:A:H5''	2.44	0.41
54:1:2128:G:C2	54:1:2173:A:H1'	2.55	0.41
54:1:2194:U:H2'	54:1:2195:U:H6	1.85	0.41
54:1:2427:C:H5'	54:1:2429:G:H5'	2.02	0.41
54:1:2648:G:H2'	54:1:2649:C:C6	2.56	0.41
54:1:2741:A:H2'	54:1:2742:G:H5'	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:35:LYS:NZ	54:1:1353:A:H5''	2.35	0.41
7:h:6:GLN:HA	7:h:9:GLN:HB3	2.02	0.41
9:j:15:TRP:HH2	54:1:7:G:H4'	1.86	0.41
10:k:10:VAL:HG23	10:k:17:ARG:C	2.46	0.41
10:k:13:ASN:HD22	10:k:13:ASN:C	2.26	0.41
13:n:4:ARG:HA	13:n:4:ARG:HD2	1.89	0.41
13:n:30:ARG:O	13:n:32:GLU:OE2	2.39	0.41
13:n:63:ARG:HD2	13:n:80:PHE:CE2	2.56	0.41
14:o:56:LYS:O	14:o:60:GLU:HG2	2.20	0.41
16:q:4:LYS:C	16:q:6:GLY:N	2.77	0.41
18:s:95:ARG:HH21	18:s:95:ARG:HG2	1.86	0.41
21:v:35:GLU:CB	21:v:93:ARG:NH1	2.78	0.41
22:w:21:ARG:HA	22:w:21:ARG:HE	1.86	0.41
26:A:14:ALA:HB1	26:A:34:LEU:HD12	2.02	0.41
33:H:137:VAL:HG21	33:H:167:TYR:CD2	2.52	0.41
34:I:27:ILE:HG22	34:I:29:THR:OG1	2.20	0.41
38:M:46:GLU:OE2	38:M:47:ASP:HB2	2.20	0.41
39:N:20:ILE:HD11	39:N:60:LEU:HG	2.03	0.41
39:N:119:LYS:O	39:N:120:ALA:HB3	2.21	0.41
39:N:129:ARG:HH21	56:5:33:U:H3'	1.81	0.41
43:R:92:ARG:O	43:R:94:LEU:HG	2.20	0.41
46:U:69:ASP:CG	46:U:70:ARG:H	2.28	0.41
53:3:576:C:H3'	53:3:577:G:C5'	2.49	0.41
53:3:1118:U:H2'	53:3:1119:C:C6	2.56	0.41
53:3:1517:G:H2'	53:3:1518:A:C5'	2.51	0.41
54:1:26:G:H2'	54:1:27:G:O4'	2.21	0.41
54:1:192:C:H2'	54:1:193:U:H5'	2.03	0.41
54:1:441:U:HO2'	54:1:442:G:H5'	1.85	0.41
54:1:501:A:H2'	54:1:502:A:O4'	2.20	0.41
54:1:644:A:H2'	54:1:645:C:H4'	2.02	0.41
54:1:792:A:C3'	54:1:793:A:H5'	2.50	0.41
54:1:919:U:H2'	54:1:920:A:O4'	2.21	0.41
54:1:1488:C:O2'	54:1:1489:C:H5'	2.20	0.41
54:1:1583:A:H1'	54:1:1585:C:N4	2.34	0.41
54:1:2213:U:H5''	54:1:2214:C:OP2	2.21	0.41
54:1:2395:C:H2'	54:1:2396:G:H8	1.85	0.41
54:1:2660:A:H2'	54:1:2661:G:O4'	2.19	0.41
54:1:2869:G:O2'	54:1:2870:C:H5'	2.20	0.41
56:6:26:G:H1	56:6:44:A:H2	1.67	0.41
56:6:31:G:H2'	56:6:32:C:H5'	2.02	0.41
1:b:160:TYR:HE1	1:b:176:ARG:NH1	2.18	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:175:LEU:HD12	1:b:179:GLU:OE1	2.20	0.41
11:l:29:LYS:O	11:l:30:THR:HG23	2.20	0.41
16:q:29:ARG:HH11	16:q:29:ARG:HG3	1.85	0.41
21:v:32:GLY:CA	21:v:93:ARG:HB3	2.46	0.41
31:F:2:LYS:HB3	31:F:4:ARG:HD3	2.03	0.41
31:F:4:ARG:NH1	31:F:6:SER:OG	2.53	0.41
32:G:72:LYS:O	32:G:73:ARG:C	2.63	0.41
34:I:8:LEU:HD13	53:3:430:A:OP1	2.21	0.41
34:I:47:LEU:H	34:I:47:LEU:HD22	1.84	0.41
34:I:89:LEU:HD21	34:I:199:ILE:HG21	2.01	0.41
34:I:149:LYS:CG	34:I:150:LYS:HG3	2.42	0.41
34:I:152:SER:H	34:I:155:LYS:HE2	1.85	0.41
39:N:118:ARG:NH1	39:N:124:PRO:HA	2.36	0.41
41:P:97:ARG:O	41:P:101:ALA:N	2.52	0.41
48:W:49:LYS:O	48:W:52:ARG:N	2.53	0.41
49:X:19:GLU:O	49:X:23:GLU:HG2	2.20	0.41
52:a:162:ARG:CB	52:a:162:ARG:HH21	2.33	0.41
53:3:422:C:H4'	53:3:423:G:C4	2.56	0.41
53:3:492:C:H2'	53:3:493:A:C8	2.55	0.41
53:3:753:A:H4'	53:3:754:C:O5'	2.21	0.41
54:1:248:G:C4	54:1:2431:U:H4'	2.55	0.41
54:1:353:C:H2'	54:1:354:A:H8	1.86	0.41
54:1:1171:G:H2'	54:1:1172:C:C4'	2.51	0.41
54:1:1558:C:O4'	54:1:1560:G:C8	2.74	0.41
54:1:1838:C:H41	54:1:1898:U:H2'	1.84	0.41
54:1:2818:U:H2'	54:1:2819:G:C8	2.56	0.41
1:b:2:VAL:HG13	1:b:2:VAL:O	2.21	0.41
4:e:3:LEU:HD23	4:e:3:LEU:C	2.46	0.41
4:e:32:LYS:HD3	4:e:91:ARG:NH2	2.36	0.41
4:e:133:GLU:HB3	4:e:135:ILE:HG12	2.03	0.41
5:f:89:VAL:O	5:f:159:LYS:HA	2.21	0.41
6:g:83:LYS:HB3	6:g:91:PHE:HB3	2.02	0.41
6:g:95:GLY:O	6:g:99:ILE:HG12	2.21	0.41
9:j:44:TYR:O	16:q:63:ARG:NE	2.48	0.41
9:j:64:VAL:CG2	9:j:68:LYS:HE3	2.51	0.41
10:k:2:ILE:HG23	10:k:6:THR:HB	2.03	0.41
12:m:18:ARG:CB	12:m:18:ARG:NH2	2.84	0.41
16:q:90:ASP:OD2	54:1:996:A:H4'	2.20	0.41
18:s:20:VAL:HG21	18:s:43:ALA:HB3	2.02	0.41
23:x:65:THR:O	23:x:68:ALA:HB3	2.21	0.41
29:D:18:PHE:HB2	29:D:43:THR:HG21	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:G:53:LEU:HD22	32:G:219:THR:HG21	2.03	0.41
36:K:9:MET:HE3	36:K:86:ARG:HB3	2.02	0.41
37:L:104:VAL:O	37:L:108:ARG:N	2.54	0.41
45:T:50:HIS:CE1	53:3:667:G:H4'	2.55	0.41
47:V:12:VAL:N	47:V:21:VAL:O	2.49	0.41
48:W:41:SER:C	48:W:43:ILE:H	2.28	0.41
53:3:218:U:H2'	53:3:219:U:H6	1.85	0.41
53:3:252:U:O2	53:3:253:A:N7	2.53	0.41
53:3:598:U:H2'	53:3:599:C:H6	1.86	0.41
53:3:893:C:H2'	53:3:894:G:H8	1.83	0.41
53:3:1001:C:H2'	53:3:1002:G:H8	1.84	0.41
54:1:226:A:H2'	54:1:227:A:C8	2.56	0.41
54:1:255:A:H2'	54:1:256:A:O4'	2.21	0.41
54:1:679:C:H2'	54:1:680:C:C6	2.55	0.41
54:1:820:A:H2'	54:1:821:A:O4'	2.21	0.41
54:1:857:G:H2'	54:1:858:G:C1'	2.51	0.41
54:1:1107:G:H2'	54:1:1108:U:C6	2.56	0.41
54:1:1799:G:H4'	54:1:1800:C:H6	1.86	0.41
54:1:1933:G:H2'	54:1:1934:C:C6	2.56	0.41
54:1:2014:A:H2'	54:1:2015:A:C8	2.56	0.41
1:b:128:THR:HG23	1:b:189:ALA:O	2.21	0.41
1:b:140:VAL:N	1:b:161:VAL:O	2.48	0.41
1:b:235:GLU:HG2	54:1:2599:G:C8	2.56	0.41
2:c:51:THR:HB	2:c:79:LEU:HD23	2.03	0.41
2:c:173:GLN:NE2	2:c:208:LYS:HE3	2.33	0.41
2:c:207:VAL:HG13	2:c:208:LYS:H	1.84	0.41
7:h:31:ARG:HG3	7:h:31:ARG:NH1	2.36	0.41
7:h:61:ARG:HD2	54:1:1046:A:O2'	2.21	0.41
8:i:61:TYR:C	8:i:63:ASP:H	2.29	0.41
9:j:11:VAL:CG1	9:j:50:THR:HG22	2.50	0.41
10:k:105:ARG:HE	15:p:31:VAL:HG23	1.86	0.41
11:l:67:THR:HB	54:1:245:G:OP1	2.21	0.41
13:n:28:LEU:O	13:n:32:GLU:N	2.50	0.41
15:p:13:LYS:HE2	15:p:13:LYS:HB3	1.85	0.41
16:q:86:SER:O	17:r:52:PRO:HD3	2.20	0.41
18:s:8:ARG:HD3	54:1:494:G:OP1	2.21	0.41
18:s:47:VAL:HG13	18:s:48:LYS:N	2.35	0.41
20:u:12:VAL:HG11	20:u:38:ILE:HG21	2.03	0.41
22:w:13:GLU:CG	22:w:14:ALA:N	2.84	0.41
25:z:12:ALA:C	25:z:15:ARG:HG2	2.46	0.41
26:A:56:ARG:HH22	49:X:68:HIS:CE1	2.39	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:B:3:GLN:HA	54:1:2615:U:N1	2.36	0.41
30:E:30:HIS:NE2	54:1:2392:A:OP2	2.53	0.41
32:G:46:VAL:CG1	32:G:50:ASN:HD21	2.32	0.41
32:G:58:LYS:O	32:G:61:SER:HB2	2.20	0.41
32:G:94:ARG:HH11	32:G:94:ARG:HG3	1.85	0.41
32:G:165:ALA:HA	32:G:172:ILE:HD11	2.03	0.41
33:H:38:VAL:HG23	33:H:39:ARG:N	2.35	0.41
34:I:72:ARG:O	34:I:76:LYS:HG2	2.21	0.41
34:I:155:LYS:O	34:I:159:GLU:HG3	2.21	0.41
35:J:21:SER:HB3	35:J:30:PHE:HA	2.02	0.41
35:J:80:LEU:HG	35:J:122:VAL:HG11	2.02	0.41
35:J:159:SER:O	35:J:163:ILE:HG23	2.21	0.41
36:K:2:ARG:CD	36:K:91:ARG:HE	2.34	0.41
39:N:18:VAL:HG13	39:N:64:ILE:HD11	2.03	0.41
39:N:98:ARG:HH12	53:3:1178:G:H3'	1.86	0.41
41:P:52:ARG:HG3	41:P:53:GLY:N	2.36	0.41
43:R:89:ARG:HH21	43:R:94:LEU:HB3	1.86	0.41
46:U:11:ALA:HB3	46:U:14:ARG:HB2	2.03	0.41
48:W:47:ARG:O	48:W:51:GLN:N	2.51	0.41
52:a:208:TYR:CD2	52:a:209:ILE:HG23	2.56	0.41
53:3:37:U:O2'	53:3:38:G:H5'	2.20	0.41
53:3:194:C:O2'	53:3:195:A:H5'	2.21	0.41
53:3:218:U:H2'	53:3:219:U:C6	2.55	0.41
53:3:408:A:H2'	53:3:409:U:C6	2.56	0.41
53:3:504:C:H2'	53:3:511:C:C5	2.56	0.41
53:3:912:C:H2'	53:3:913:A:C8	2.56	0.41
53:3:1403:C:H2'	53:3:1404:C:C6	2.56	0.41
53:3:1460:C:H2'	53:3:1461:G:H8	1.86	0.41
54:1:118:A:H2'	54:1:120:U:O4	2.21	0.41
54:1:123:G:H2'	54:1:124:G:O4'	2.20	0.41
54:1:327:G:O2'	54:1:328:U:H5'	2.19	0.41
54:1:368:A:H2'	54:1:369:U:H5'	2.03	0.41
54:1:589:U:H2'	54:1:590:A:C8	2.55	0.41
54:1:623:C:H2'	54:1:624:C:H6	1.85	0.41
54:1:941:A:H2'	54:1:942:G:O4'	2.20	0.41
54:1:1197:G:H2'	54:1:1198:U:C6	2.55	0.41
54:1:1216:G:H2'	54:1:1217:U:C6	2.55	0.41
54:1:1315:C:H2'	54:1:1316:U:C6	2.56	0.41
54:1:1479:G:O2'	54:1:1480:C:H5'	2.20	0.41
54:1:1722:A:C2'	54:1:1723:G:H5'	2.50	0.41
54:1:1828:G:H4'	54:1:1829:A:OP1	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:1988:G:O2'	54:1:1989:G:H5'	2.21	0.41
54:1:2135:A:O2'	54:1:2160:C:H4'	2.21	0.41
54:1:2141:G:H2'	54:1:2142:A:O4'	2.21	0.41
54:1:2623:G:H2'	54:1:2624:G:H8	1.85	0.41
54:1:2718:G:H2'	54:1:2719:G:C8	2.56	0.41
54:1:2788:C:H2'	54:1:2789:C:H6	1.86	0.41
56:6:72:A:H2'	56:6:73:A:H5''	2.03	0.41
1:b:155:ARG:CZ	54:1:1818:U:OP2	2.68	0.41
1:b:229:HIS:CE1	1:b:230:PRO:HD2	2.56	0.41
3:d:178:VAL:HG12	3:d:182:ALA:HB2	2.03	0.41
4:e:45:ASP:HB2	4:e:48:LEU:HB2	2.03	0.41
4:e:141:ASP:C	4:e:143:ASP:H	2.29	0.41
5:f:152:ARG:HH21	5:f:152:ARG:CB	2.33	0.41
9:j:8:PRO:HG3	9:j:48:VAL:HG13	2.02	0.41
10:k:121:GLU:HG2	10:k:122:VAL:N	2.36	0.41
12:m:6:ARG:O	54:1:870:U:H5''	2.21	0.41
15:p:17:PRO:O	15:p:19:PHE:HD1	2.04	0.41
18:s:52:GLU:O	18:s:55:ILE:HG12	2.21	0.41
20:u:13:LEU:O	20:u:18:LYS:HG3	2.21	0.41
26:A:56:ARG:NH2	49:X:68:HIS:CE1	2.89	0.41
29:D:12:ARG:HE	29:D:44:VAL:CG2	2.28	0.41
32:G:71:THR:O	32:G:72:LYS:C	2.64	0.41
32:G:195:VAL:HG12	32:G:196:ASP:N	2.36	0.41
33:H:129:PHE:CD1	33:H:129:PHE:N	2.89	0.41
35:J:81:GLN:HG2	35:J:146:MET:HE3	2.02	0.41
38:M:48:PHE:HB2	38:M:60:LEU:HD23	2.03	0.41
42:Q:23:LEU:O	42:Q:24:GLU:C	2.64	0.41
42:Q:82:ARG:HB3	42:Q:97:VAL:HG22	2.02	0.41
42:Q:86:VAL:CG2	42:Q:89:LEU:H	2.34	0.41
45:T:42:PHE:CE2	45:T:55:LEU:HD22	2.56	0.41
45:T:61:GLN:HA	45:T:61:GLN:OE1	2.21	0.41
47:V:70:LYS:HZ1	53:3:255:G:P	2.43	0.41
51:Z:60:ALA:C	51:Z:62:GLU:H	2.29	0.41
52:a:171:ILE:HG23	52:a:171:ILE:O	2.21	0.41
53:3:68:G:H5'	53:3:171:A:O2'	2.21	0.41
53:3:472:U:H2'	53:3:473:U:C6	2.55	0.41
53:3:600:A:H2'	53:3:601:G:H8	1.84	0.41
53:3:1023:U:O2'	53:3:1024:G:H5'	2.20	0.41
53:3:1130:A:H61	53:3:1144:G:H1'	1.86	0.41
53:3:1204:A:H2'	53:3:1205:U:H5'	2.03	0.41
53:3:1349:A:H3'	53:3:1350:A:H8	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1503:A:OP1	53:3:1531:A:H4'	2.21	0.41
53:3:1534:A:H61	57:4:11:U:H3	1.69	0.41
54:1:279:A:H2'	54:1:280:U:O4'	2.22	0.41
54:1:570:G:H2'	54:1:2030:A:N7	2.36	0.41
54:1:640:C:O2'	54:1:641:U:H5'	2.21	0.41
54:1:854:C:H2'	54:1:855:G:H8	1.85	0.41
54:1:935:C:H2'	54:1:936:A:C8	2.55	0.41
54:1:1275:A:N6	54:1:1296:G:H4'	2.36	0.41
54:1:1289:C:O2'	54:1:1330:C:H4'	2.21	0.41
54:1:1702:G:H2'	54:1:1703:G:O4'	2.21	0.41
54:1:1717:A:H2'	54:1:1718:G:O4'	2.20	0.41
54:1:2028:U:O2'	54:1:2029:G:H5'	2.21	0.41
54:1:2103:C:H2'	54:1:2104:C:H6	1.85	0.41
54:1:2153:C:C2'	54:1:2154:A:H5'	2.51	0.41
54:1:2638:G:H1'	54:1:2778:A:H61	1.85	0.41
55:2:75:G:H2'	55:2:76:G:O4'	2.21	0.41
3:d:88:ARG:NH2	3:d:88:ARG:HB3	2.35	0.40
3:d:133:LEU:O	3:d:136:GLN:HB3	2.20	0.40
5:f:44:HIS:O	5:f:46:ASP:N	2.55	0.40
9:j:86:GLN:H	9:j:86:GLN:HG3	1.75	0.40
14:o:79:ALA:HB1	14:o:113:ALA:HB3	2.02	0.40
24:y:24:GLU:O	24:y:25:GLN:C	2.64	0.40
26:A:41:HIS:ND1	26:A:42:PRO:N	2.69	0.40
30:E:44:ARG:CB	30:E:44:ARG:HH11	2.34	0.40
30:E:46:LYS:HA	30:E:46:LYS:HD3	1.94	0.40
32:G:100:LEU:HB2	32:G:174:GLU:OE1	2.21	0.40
33:H:21:TRP:CB	33:H:58:ARG:HB2	2.51	0.40
33:H:69:THR:HG1	33:H:70:ALA:H	1.68	0.40
35:J:55:VAL:HB	35:J:56:PRO:CD	2.51	0.40
40:O:18:ILE:HG23	40:O:19:ASP:N	2.36	0.40
41:P:30:ILE:HD12	41:P:31:VAL:N	2.35	0.40
41:P:126:ARG:HH11	41:P:126:ARG:CG	2.34	0.40
42:Q:62:VAL:HG11	42:Q:94:TYR:HE2	1.86	0.40
42:Q:113:ARG:HG2	42:Q:113:ARG:NH1	2.35	0.40
52:a:196:LEU:HD22	52:a:196:LEU:N	2.36	0.40
53:3:253:A:N6	53:3:274:A:N1	2.69	0.40
53:3:600:A:H2'	53:3:601:G:C8	2.55	0.40
53:3:1071:C:H2'	53:3:1072:G:H8	1.86	0.40
53:3:1415:G:O2'	53:3:1416:G:H5'	2.21	0.40
54:1:465:G:H2'	54:1:466:A:C8	2.56	0.40
54:1:565:C:H2'	54:1:566:U:C6	2.55	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:1:1190:G:H2'	54:1:1191:G:C8	2.56	0.40
54:1:1710:G:H2'	54:1:1711:A:C8	2.56	0.40
54:1:2241:A:H2'	54:1:2242:G:C8	2.56	0.40
58:7:74:C:H5'	58:7:75:C:OP2	2.21	0.40
9:j:104:ALA:O	9:j:108:MET:HE3	2.21	0.40
10:k:3:GLN:CG	10:k:4:GLU:H	2.34	0.40
13:n:69:ARG:HG3	13:n:69:ARG:HH21	1.86	0.40
14:o:67:ASN:N	14:o:102:ARG:HD3	2.36	0.40
16:q:40:LYS:HE3	16:q:44:TYR:OH	2.21	0.40
17:r:79:ARG:HD3	54:1:564:C:OP2	2.21	0.40
21:v:20:LEU:HD22	21:v:25:LYS:HE3	2.03	0.40
27:B:14:MET:SD	54:1:2045:C:H5''	2.61	0.40
33:H:112:ALA:CB	33:H:184:ASN:HB2	2.51	0.40
35:J:109:ALA:HB1	35:J:135:VAL:HG21	2.03	0.40
36:K:41:ASP:OD2	36:K:43:GLY:N	2.49	0.40
42:Q:66:ILE:HD12	42:Q:66:ILE:N	2.35	0.40
42:Q:86:VAL:HG12	42:Q:95:HIS:CE1	2.56	0.40
47:V:31:PRO:C	47:V:32:ILE:HD12	2.46	0.40
53:3:806:C:H2'	53:3:807:A:C8	2.57	0.40
53:3:1524:C:H2'	53:3:1525:G:H8	1.86	0.40
54:1:322:A:H5'	54:1:340:A:C1'	2.50	0.40
54:1:323:C:H5'	54:1:324:A:OP1	2.21	0.40
54:1:413:C:H2'	54:1:414:C:H6	1.84	0.40
54:1:532:A:H2'	54:1:532:A:N3	2.36	0.40
54:1:862:G:H2'	54:1:863:A:O4'	2.22	0.40
54:1:1233:C:H2'	54:1:1234:U:H6	1.85	0.40
54:1:1449:G:O2'	54:1:1450:G:H5'	2.21	0.40
54:1:1485:U:H3	54:1:1504:A:H61	1.69	0.40
54:1:1489:C:O2'	54:1:1490:A:H5''	2.20	0.40
54:1:1621:U:O5'	54:1:1621:U:H6	2.04	0.40
54:1:1739:A:H2'	54:1:1740:G:O4'	2.21	0.40
58:7:49:G:H1	58:7:65:U:H3	1.68	0.40
1:b:8:THR:HG21	54:1:727:A:H2	1.86	0.40
1:b:16:VAL:HB	1:b:203:VAL:CG1	2.50	0.40
2:c:40:LEU:HA	2:c:45:TYR:N	2.37	0.40
4:e:33:ILE:HG13	4:e:95:MET:SD	2.61	0.40
4:e:35:LEU:HB2	4:e:88:VAL:HB	2.03	0.40
4:e:139:GLU:HA	26:A:28:VAL:HG22	2.03	0.40
4:e:144:LYS:HE2	4:e:144:LYS:HA	2.03	0.40
8:i:12:VAL:CG1	54:1:1061:U:H3	2.34	0.40
9:j:16:TYR:CD2	9:j:140:LEU:HD22	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:k:48:PRO:HG3	53:3:1422:G:H5'	2.03	0.40
14:o:11:ALA:HB2	14:o:96:GLY:N	2.37	0.40
17:r:13:ARG:HG2	17:r:13:ARG:HH11	1.85	0.40
20:u:13:LEU:N	20:u:13:LEU:HD12	2.36	0.40
27:B:8:THR:OG1	27:B:9:ARG:N	2.54	0.40
28:C:20:TYR:HD2	28:C:48:TYR:CE2	2.40	0.40
33:H:22:PHE:HD1	40:O:13:PHE:CZ	2.39	0.40
35:J:160:VAL:HG13	35:J:161:GLU:H	1.86	0.40
37:L:65:LEU:C	37:L:69:ARG:HG3	2.47	0.40
38:M:79:ARG:HG3	38:M:82:LEU:HB3	2.03	0.40
41:P:62:ALA:O	41:P:65:ALA:HB3	2.22	0.40
41:P:82:GLU:OE1	41:P:82:GLU:N	2.55	0.40
43:R:52:ILE:O	43:R:55:LEU:HB3	2.21	0.40
45:T:7:THR:OG1	45:T:8:ALA:N	2.53	0.40
46:U:8:ARG:O	46:U:9:HIS:ND1	2.54	0.40
50:Y:68:LYS:O	50:Y:68:LYS:HG2	2.21	0.40
51:Z:28:LEU:C	51:Z:30:GLU:H	2.29	0.40
52:a:193:LEU:HD23	52:a:193:LEU:O	2.21	0.40
53:3:100:G:H3'	53:3:101:A:H8	1.86	0.40
53:3:916:U:H2'	53:3:917:G:C8	2.56	0.40
54:1:53:A:H2'	54:1:54:G:O4'	2.21	0.40
54:1:133:U:H2'	54:1:134:G:C8	2.55	0.40
54:1:807:U:C2	54:1:808:G:C8	3.10	0.40
54:1:1048:A:C5	54:1:1049:C:H5	2.38	0.40
54:1:1172:C:H2'	54:1:1173:U:H5''	2.02	0.40
54:1:1710:G:H2'	54:1:1711:A:H8	1.86	0.40
54:1:1795:C:H2'	54:1:1796:U:C6	2.57	0.40
54:1:2560:A:H2'	54:1:2561:U:C6	2.56	0.40
54:1:2733:A:H2'	54:1:2734:A:C8	2.56	0.40
55:2:20:G:O2'	55:2:21:G:H5'	2.21	0.40
56:6:14:A:H2'	56:6:15:G:O4'	2.22	0.40
1:b:7:PRO:O	54:1:1695:G:H8	2.05	0.40
1:b:226:PRO:HD3	1:b:233:GLY:H	1.87	0.40
2:c:52:THR:O	2:c:76:GLY:HA3	2.21	0.40
2:c:115:GLY:HA2	2:c:167:ASN:N	2.35	0.40
3:d:29:HIS:O	3:d:33:VAL:HG23	2.21	0.40
4:e:176:PHE:O	4:e:177:ARG:C	2.65	0.40
11:l:69:ARG:NH2	54:1:2406:A:N6	2.70	0.40
13:n:94:TYR:C	13:n:116:VAL:HG23	2.47	0.40
15:p:94:ALA:HB2	54:1:2848:G:N7	2.35	0.40
15:p:105:LYS:CA	15:p:108:ARG:HH21	2.34	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:v:21:ARG:HA	21:v:25:LYS:O	2.21	0.40
21:v:73:LYS:HD2	21:v:73:LYS:HA	1.90	0.40
21:v:83:LYS:HE3	54:1:1119:U:OP1	2.22	0.40
22:w:35:ARG:HD2	22:w:54:THR:CG2	2.49	0.40
25:z:40:THR:O	25:z:44:ARG:HG2	2.21	0.40
33:H:68:HIS:HA	33:H:103:ALA:O	2.21	0.40
33:H:119:ILE:HD11	33:H:136:ALA:CB	2.52	0.40
34:I:120:LYS:HG3	34:I:145:ARG:HH21	1.87	0.40
37:L:15:PRO:HB2	39:N:44:ARG:HH12	1.87	0.40
39:N:121:ARG:CG	53:3:1348:U:H4'	2.51	0.40
40:O:19:ASP:O	40:O:22:THR:HB	2.21	0.40
40:O:83:THR:CA	40:O:86:ALA:HB3	2.50	0.40
52:a:211:LYS:NZ	54:1:2177:C:H5''	2.36	0.40
53:3:36:C:H2'	53:3:37:U:O4'	2.22	0.40
53:3:86:G:H4'	53:3:87:C:C5	2.56	0.40
53:3:90:C:O2'	53:3:91:U:H5'	2.22	0.40
53:3:179:A:H61	53:3:196:A:H62	1.70	0.40
53:3:318:G:O2'	53:3:319:G:H5'	2.21	0.40
53:3:418:C:H2'	53:3:419:C:C6	2.55	0.40
53:3:766:A:H2'	53:3:767:A:O4'	2.21	0.40
53:3:920:U:H2'	53:3:921:U:H6	1.85	0.40
53:3:1071:C:O2'	53:3:1072:G:H5'	2.22	0.40
53:3:1077:G:N2	53:3:1080:A:OP2	2.47	0.40
54:1:1218:G:O2'	54:1:1219:U:H5'	2.22	0.40
54:1:1357:C:H2'	54:1:1358:G:O4'	2.21	0.40
54:1:1370:C:H2'	54:1:1371:G:O4'	2.21	0.40
54:1:1505:A:O2'	54:1:1506:U:H5'	2.21	0.40
54:1:1655:A:C8	54:1:1656:C:C5	3.10	0.40
54:1:2604:U:H2'	54:1:2605:U:C6	2.57	0.40
1:b:42:ARG:HD2	1:b:48:ILE:HA	2.04	0.40
5:f:77:GLY:HA2	5:f:81:GLY:HA2	2.04	0.40
6:g:11:ASN:CG	6:g:12:LEU:N	2.77	0.40
10:k:35:VAL:HG21	10:k:69:VAL:HG13	2.03	0.40
10:k:87:LEU:HA	10:k:95:ILE:HG13	2.03	0.40
11:l:23:ILE:N	11:l:23:ILE:CD1	2.83	0.40
11:l:85:VAL:CG1	11:l:86:GLU:N	2.76	0.40
13:n:106:ASP:OD2	54:1:1649:G:O2'	2.36	0.40
21:v:76:ASP:HB3	21:v:90:ASP:OD2	2.22	0.40
25:z:12:ALA:HA	25:z:15:ARG:HG2	2.04	0.40
27:B:24:VAL:HG13	27:B:26:SER:N	2.37	0.40
32:G:67:LEU:HD11	32:G:91:VAL:HG23	2.04	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:I:19:PHE:O	34:I:109:THR:HG22	2.22	0.40
34:I:201:GLU:CD	35:J:111:ARG:HH12	2.30	0.40
35:J:160:VAL:HG13	35:J:161:GLU:N	2.37	0.40
36:K:29:ILE:CD1	36:K:74:LEU:HD22	2.37	0.40
38:M:95:MET:CE	38:M:99:GLY:HA3	2.50	0.40
40:O:15:HIS:HB3	40:O:70:HIS:CD2	2.55	0.40
44:S:78:LEU:HD22	44:S:78:LEU:N	2.36	0.40
46:U:70:ARG:O	46:U:74:LEU:HG	2.22	0.40
48:W:60:ARG:O	48:W:64:LEU:CD2	2.69	0.40
49:X:40:PHE:O	49:X:43:MET:HG3	2.20	0.40
51:Z:7:GLU:HB2	51:Z:11:PHE:HB3	2.04	0.40
51:Z:38:GLU:HB2	53:3:1526:G:OP2	2.21	0.40
53:3:215:C:H2'	53:3:216:U:O4'	2.22	0.40
53:3:1144:G:H2'	53:3:1145:A:C8	2.57	0.40
53:3:1230:C:H5'	56:5:30:G:H5''	2.03	0.40
53:3:1244:G:H2'	53:3:1245:C:C6	2.56	0.40
54:1:69:C:H2'	54:1:70:G:C8	2.57	0.40
54:1:184:C:H2'	54:1:185:G:C8	2.56	0.40
54:1:207:A:H2'	54:1:208:C:O4'	2.22	0.40
54:1:282:A:H2'	54:1:283:G:H8	1.86	0.40
54:1:554:U:C2'	54:1:555:G:H5'	2.51	0.40
54:1:1112:G:H2'	54:1:1113:U:O4'	2.22	0.40
54:1:1146:C:H2'	54:1:1147:A:C8	2.57	0.40
54:1:1498:C:H2'	54:1:1499:C:H6	1.87	0.40
54:1:1723:G:H2'	54:1:1724:G:O4'	2.21	0.40
54:1:2077:A:H5'	54:1:2077:A:C8	2.54	0.40
54:1:2500:U:C2'	54:1:2504:U:H5	2.35	0.40
54:1:2796:U:O2'	54:1:2797:U:H3'	2.22	0.40
54:1:2854:G:O2'	54:1:2855:C:H5'	2.21	0.40
55:2:35:C:H2'	55:2:36:C:O4'	2.22	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	b	269/271 (99%)	235 (87%)	30 (11%)	4 (2%)	8	30
2	c	207/209 (99%)	182 (88%)	22 (11%)	3 (1%)	9	31
3	d	199/201 (99%)	176 (88%)	22 (11%)	1 (0%)	24	54
4	e	175/177 (99%)	152 (87%)	18 (10%)	5 (3%)	3	19
5	f	174/176 (99%)	148 (85%)	25 (14%)	1 (1%)	21	50
6	g	121/149 (81%)	99 (82%)	19 (16%)	3 (2%)	4	21
7	h	82/131 (63%)	62 (76%)	19 (23%)	1 (1%)	10	35
8	i	72/141 (51%)	56 (78%)	15 (21%)	1 (1%)	9	31
9	j	140/142 (99%)	124 (89%)	15 (11%)	1 (1%)	18	47
10	k	120/122 (98%)	99 (82%)	17 (14%)	4 (3%)	3	17
11	l	141/143 (99%)	121 (86%)	18 (13%)	2 (1%)	9	31
12	m	134/136 (98%)	123 (92%)	8 (6%)	3 (2%)	5	24
13	n	118/120 (98%)	98 (83%)	19 (16%)	1 (1%)	16	44
14	o	114/116 (98%)	99 (87%)	14 (12%)	1 (1%)	14	42
15	p	112/114 (98%)	96 (86%)	15 (13%)	1 (1%)	14	42
16	q	115/117 (98%)	106 (92%)	7 (6%)	2 (2%)	7	28
17	r	101/103 (98%)	85 (84%)	15 (15%)	1 (1%)	12	40
18	s	108/110 (98%)	95 (88%)	13 (12%)	0	100	100
19	t	91/93 (98%)	80 (88%)	11 (12%)	0	100	100
20	u	100/102 (98%)	81 (81%)	18 (18%)	1 (1%)	12	40
21	v	92/94 (98%)	85 (92%)	7 (8%)	0	100	100
22	w	73/75 (97%)	65 (89%)	7 (10%)	1 (1%)	9	31
23	x	75/77 (97%)	67 (89%)	7 (9%)	1 (1%)	9	33
24	y	61/63 (97%)	53 (87%)	7 (12%)	1 (2%)	7	29
25	z	56/58 (97%)	50 (89%)	4 (7%)	2 (4%)	2	16
26	A	64/66 (97%)	59 (92%)	5 (8%)	0	100	100
27	B	54/56 (96%)	44 (82%)	8 (15%)	2 (4%)	2	16
28	C	48/50 (96%)	42 (88%)	6 (12%)	0	100	100
29	D	44/46 (96%)	38 (86%)	6 (14%)	0	100	100
30	E	62/64 (97%)	53 (86%)	8 (13%)	1 (2%)	7	29

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
31	F	36/38 (95%)	31 (86%)	5 (14%)	0	100	100
32	G	216/225 (96%)	178 (82%)	34 (16%)	4 (2%)	6	26
33	H	204/206 (99%)	189 (93%)	15 (7%)	0	100	100
34	I	203/205 (99%)	165 (81%)	36 (18%)	2 (1%)	12	40
35	J	155/157 (99%)	132 (85%)	18 (12%)	5 (3%)	3	17
36	K	98/100 (98%)	78 (80%)	18 (18%)	2 (2%)	6	25
37	L	149/151 (99%)	123 (83%)	25 (17%)	1 (1%)	18	47
38	M	127/129 (98%)	111 (87%)	16 (13%)	0	100	100
39	N	125/127 (98%)	106 (85%)	15 (12%)	4 (3%)	3	17
40	O	96/98 (98%)	77 (80%)	17 (18%)	2 (2%)	5	24
41	P	114/116 (98%)	90 (79%)	21 (18%)	3 (3%)	4	21
42	Q	121/123 (98%)	92 (76%)	23 (19%)	6 (5%)	1	10
43	R	112/114 (98%)	92 (82%)	16 (14%)	4 (4%)	2	16
44	S	98/100 (98%)	82 (84%)	16 (16%)	0	100	100
45	T	86/88 (98%)	75 (87%)	10 (12%)	1 (1%)	10	35
46	U	80/82 (98%)	68 (85%)	10 (12%)	2 (2%)	4	21
47	V	78/80 (98%)	63 (81%)	12 (15%)	3 (4%)	2	15
48	W	63/65 (97%)	49 (78%)	11 (18%)	3 (5%)	2	11
49	X	77/79 (98%)	63 (82%)	14 (18%)	0	100	100
50	Y	83/85 (98%)	78 (94%)	3 (4%)	2 (2%)	4	22
51	Z	63/65 (97%)	40 (64%)	14 (22%)	9 (14%)	0	0
52	a	130/223 (58%)	105 (81%)	24 (18%)	1 (1%)	16	44
All	All	5836/6178 (94%)	4960 (85%)	778 (13%)	98 (2%)	9	28

All (98) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	b	108	GLY
2	c	77	ARG
3	d	83	VAL
4	e	175	PRO
6	g	9	VAL
17	r	54	VAL
23	x	22	ASN

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Mol	Chain	Res	Type
30	E	31	ILE
32	G	18	GLN
34	I	29	THR
35	J	87	VAL
35	J	122	VAL
36	K	54	LEU
36	K	92	THR
39	N	91	GLU
45	T	46	LYS
48	W	13	THR
48	W	17	VAL
51	Z	8	ASN
51	Z	24	LYS
51	Z	37	TYR
1	b	40	GLY
1	b	107	LYS
4	e	149	ARG
5	f	45	ALA
6	g	8	LYS
9	j	81	ILE
12	m	70	ASP
14	o	34	HIS
16	q	4	LYS
22	w	12	SER
24	y	24	GLU
32	G	19	THR
32	G	72	LYS
32	G	73	ARG
35	J	157	GLY
39	N	90	ASP
41	P	89	GLY
43	R	4	ALA
43	R	6	ILE
47	V	78	VAL
50	Y	5	SER
51	Z	34	ARG
51	Z	65	ARG
2	c	167	ASN
10	k	92	GLU
12	m	59	ARG
13	n	118	ARG
15	p	113	LEU

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Mol	Chain	Res	Type
25	z	12	ALA
27	B	23	ALA
35	J	93	VAL
40	O	43	PRO
42	Q	35	ARG
42	Q	101	LEU
43	R	65	GLU
51	Z	7	GLU
51	Z	25	ALA
51	Z	61	ARG
4	e	20	ASN
4	e	77	LYS
10	k	110	GLU
12	m	6	ARG
42	Q	32	VAL
42	Q	33	CYS
46	U	79	ASN
47	V	49	ASN
48	W	71	ASP
52	a	55	SER
1	b	232	GLY
4	e	174	PHE
6	g	12	LEU
7	h	60	LEU
10	k	93	GLN
16	q	3	VAL
20	u	101	THR
25	z	11	SER
35	J	121	ASN
39	N	57	VAL
40	O	34	ALA
41	P	90	PRO
42	Q	3	VAL
43	R	14	ALA
46	U	45	GLU
50	Y	68	LYS
51	Z	9	GLU
10	k	48	PRO
27	B	24	VAL
37	L	6	ILE
2	c	98	VAL
11	l	34	GLY

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Mol	Chain	Res	Type
34	I	167	PRO
42	Q	36	VAL
11	l	31	GLY
39	N	39	GLY
47	V	65	PRO
8	i	73	PRO
41	P	88	PRO

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	b	216/216 (100%)	213 (99%)	3 (1%)	59	70
2	c	164/164 (100%)	160 (98%)	4 (2%)	43	62
3	d	165/165 (100%)	162 (98%)	3 (2%)	51	67
4	e	148/148 (100%)	146 (99%)	2 (1%)	59	70
5	f	137/137 (100%)	136 (99%)	1 (1%)	76	78
6	g	98/114 (86%)	98 (100%)	0	100	100
7	h	66/100 (66%)	66 (100%)	0	100	100
8	i	60/109 (55%)	57 (95%)	3 (5%)	22	49
9	j	116/116 (100%)	113 (97%)	3 (3%)	40	61
10	k	103/103 (100%)	101 (98%)	2 (2%)	50	66
11	l	102/102 (100%)	101 (99%)	1 (1%)	68	75
12	m	109/109 (100%)	107 (98%)	2 (2%)	51	67
13	n	100/100 (100%)	100 (100%)	0	100	100
14	o	86/86 (100%)	84 (98%)	2 (2%)	44	63
15	p	99/99 (100%)	98 (99%)	1 (1%)	68	75
16	q	89/89 (100%)	89 (100%)	0	100	100
17	r	84/84 (100%)	83 (99%)	1 (1%)	63	72
18	s	93/93 (100%)	92 (99%)	1 (1%)	65	74

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
19	t	80/80 (100%)	80 (100%)	0	100	100
20	u	83/83 (100%)	82 (99%)	1 (1%)	63	72
21	v	78/78 (100%)	76 (97%)	2 (3%)	40	61
22	w	57/57 (100%)	54 (95%)	3 (5%)	20	47
23	x	67/67 (100%)	67 (100%)	0	100	100
24	y	55/55 (100%)	54 (98%)	1 (2%)	51	67
25	z	48/48 (100%)	47 (98%)	1 (2%)	47	64
26	A	59/59 (100%)	58 (98%)	1 (2%)	53	67
27	B	47/47 (100%)	47 (100%)	0	100	100
28	C	45/45 (100%)	44 (98%)	1 (2%)	45	63
29	D	38/38 (100%)	35 (92%)	3 (8%)	11	36
30	E	51/51 (100%)	51 (100%)	0	100	100
31	F	34/34 (100%)	33 (97%)	1 (3%)	37	60
32	G	180/186 (97%)	178 (99%)	2 (1%)	65	74
33	H	170/170 (100%)	169 (99%)	1 (1%)	78	80
34	I	172/172 (100%)	170 (99%)	2 (1%)	63	72
35	J	119/119 (100%)	114 (96%)	5 (4%)	26	52
36	K	87/87 (100%)	83 (95%)	4 (5%)	24	50
37	L	124/124 (100%)	124 (100%)	0	100	100
38	M	104/104 (100%)	102 (98%)	2 (2%)	50	66
39	N	105/105 (100%)	103 (98%)	2 (2%)	50	66
40	O	86/86 (100%)	85 (99%)	1 (1%)	63	72
41	P	89/89 (100%)	87 (98%)	2 (2%)	45	63
42	Q	103/103 (100%)	100 (97%)	3 (3%)	37	60
43	R	92/92 (100%)	90 (98%)	2 (2%)	45	63
44	S	83/83 (100%)	83 (100%)	0	100	100
45	T	76/76 (100%)	74 (97%)	2 (3%)	40	61
46	U	65/65 (100%)	60 (92%)	5 (8%)	12	37
47	V	74/74 (100%)	74 (100%)	0	100	100
48	W	56/56 (100%)	54 (96%)	2 (4%)	31	56
49	X	70/70 (100%)	68 (97%)	2 (3%)	37	60

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
50	Y	65/65 (100%)	64 (98%)	1 (2%)	57	69
51	Z	55/55 (100%)	54 (98%)	1 (2%)	51	67
52	a	110/174 (63%)	107 (97%)	3 (3%)	39	60
All	All	4862/5031 (97%)	4777 (98%)	85 (2%)	52	67

All (85) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	b	45	ASN
1	b	125	PRO
1	b	129	LEU
2	c	64	GLU
2	c	138	LEU
2	c	151	THR
2	c	175	LEU
3	d	16	GLU
3	d	18	THR
3	d	156	ASN
4	e	134	GLN
4	e	175	PRO
5	f	10	VAL
8	i	12	VAL
8	i	30	GLN
8	i	73	PRO
9	j	27	ARG
9	j	86	GLN
9	j	138	GLN
10	k	13	ASN
10	k	37	ASP
11	l	111	ILE
12	m	40	ARG
12	m	91	TYR
14	o	34	HIS
14	o	47	VAL
15	p	40	GLN
17	r	45	GLU
18	s	77	ASP
20	u	73	ASN
21	v	12	GLN
21	v	86	LEU
22	w	8	ASN

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Mol	Chain	Res	Type
22	w	32	ILE
22	w	79	GLU
24	y	12	GLU
25	z	56	VAL
26	A	35	ASP
28	C	7	LYS
29	D	1	MET
29	D	4	THR
29	D	44	VAL
31	F	3	VAL
32	G	15	PHE
32	G	21	TYR
33	H	169	GLU
34	I	30	LYS
34	I	146	GLU
35	J	15	ILE
35	J	17	VAL
35	J	67	ARG
35	J	123	LEU
35	J	130	THR
36	K	23	GLU
36	K	33	GLU
36	K	88	MET
36	K	97	THR
38	M	74	ILE
38	M	77	VAL
39	N	42	THR
39	N	60	LEU
40	O	92	LEU
41	P	39	ASN
41	P	126	ARG
42	Q	3	VAL
42	Q	33	CYS
42	Q	39	THR
43	R	88	LEU
43	R	99	GLN
45	T	39	GLN
45	T	88	ARG
46	U	2	VAL
46	U	19	VAL
46	U	36	VAL
46	U	50	THR

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Mol	Chain	Res	Type
46	U	66	THR
48	W	17	VAL
48	W	70	THR
49	X	30	LEU
49	X	65	MET
50	Y	2	ASN
51	Z	65	ARG
52	a	21	TYR
52	a	178	VAL
52	a	207	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (66) such sidechains are listed below:

Mol	Chain	Res	Type
1	b	43	ASN
1	b	52	HIS
1	b	57	HIS
1	b	114	GLN
1	b	133	ASN
1	b	142	ASN
1	b	259	ASN
2	c	136	ASN
2	c	173	GLN
3	d	41	GLN
3	d	195	GLN
5	f	19	ASN
5	f	63	GLN
6	g	11	ASN
6	g	18	GLN
6	g	28	ASN
8	i	29	GLN
8	i	30	GLN
8	i	42	ASN
9	j	47	HIS
9	j	135	GLN
10	k	89	ASN
11	l	38	GLN
12	m	45	GLN
13	n	9	GLN
13	n	31	HIS
14	o	29	HIS
14	o	104	GLN

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Mol	Chain	Res	Type
15	p	40	GLN
16	q	43	GLN
17	r	82	HIS
17	r	86	GLN
21	v	49	ASN
22	w	8	ASN
22	w	72	ASN
24	y	41	HIS
27	B	4	GLN
32	G	50	ASN
32	G	57	ASN
32	G	92	ASN
32	G	102	ASN
32	G	169	HIS
32	G	176	ASN
32	G	189	ASN
34	I	35	GLN
34	I	39	GLN
34	I	135	GLN
34	I	151	GLN
35	J	88	HIS
35	J	134	ASN
36	K	68	GLN
36	K	94	HIS
37	L	96	ASN
39	N	4	GLN
39	N	31	GLN
40	O	64	GLN
42	Q	72	ASN
48	W	73	HIS
49	X	68	HIS
50	Y	20	ASN
50	Y	51	ASN
50	Y	60	GLN
50	Y	69	ASN
52	a	67	HIS
52	a	168	ASN
52	a	172	HIS

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
53	3	1538/1539 (99%)	168 (10%)	2 (0%)
54	1	2902/2903 (99%)	367 (12%)	11 (0%)
55	2	119/120 (99%)	10 (8%)	0
56	5	76/77 (98%)	11 (14%)	0
56	6	76/77 (98%)	25 (32%)	0
57	4	17/18 (94%)	5 (29%)	1 (5%)
58	7	76/77 (98%)	15 (19%)	3 (3%)
All	All	4804/4811 (99%)	601 (12%)	17 (0%)

All (601) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
53	3	4	U
53	3	5	U
53	3	6	G
53	3	9	G
53	3	22	G
53	3	31	G
53	3	32	A
53	3	39	G
53	3	48	C
53	3	50	A
53	3	71	A
53	3	78	A
53	3	83	C
53	3	84	U
53	3	87	C
53	3	94	G
53	3	100	G
53	3	101	A
53	3	116	A
53	3	121	U
53	3	130	A
53	3	183	C
53	3	197	A
53	3	208	U
53	3	210	C
53	3	226	G
53	3	247	G
53	3	251	G
53	3	266	G
53	3	267	C
53	3	281	G

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Mol	Chain	Res	Type
53	3	289	G
53	3	328	C
53	3	345	C
53	3	346	G
53	3	352	C
53	3	356	A
53	3	367	U
53	3	372	C
53	3	392	C
53	3	397	A
53	3	412	A
53	3	413	G
53	3	422	C
53	3	423	G
53	3	429	U
53	3	431	A
53	3	467	U
53	3	468	A
53	3	480	U
53	3	484	G
53	3	485	U
53	3	486	U
53	3	497	G
53	3	509	A
53	3	510	A
53	3	518	C
53	3	527	G
53	3	547	A
53	3	559	A
53	3	561	U
53	3	564	C
53	3	572	A
53	3	573	A
53	3	575	G
53	3	576	C
53	3	577	G
53	3	615	G
53	3	633	G
53	3	665	A
53	3	688	G
53	3	703	G
53	3	724	G

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Mol	Chain	Res	Type
53	3	731	G
53	3	755	G
53	3	763	G
53	3	777	A
53	3	813	U
53	3	814	A
53	3	817	C
53	3	818	G
53	3	819	A
53	3	821	G
53	3	842	U
53	3	843	U
53	3	844	G
53	3	845	A
53	3	846	G
53	3	849	G
53	3	873	A
53	3	885	G
53	3	887	G
53	3	890	G
53	3	902	G
53	3	926	G
53	3	934	C
53	3	935	A
53	3	960	U
53	3	961	U
53	3	966	G
53	3	969	A
53	3	975	A
53	3	976	G
53	3	977	A
53	3	992	U
53	3	993	G
53	3	994	A
53	3	1004	A
53	3	1026	G
53	3	1028	C
53	3	1031	C
53	3	1033	G
53	3	1034	G
53	3	1053	G
53	3	1055	A

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Mol	Chain	Res	Type
53	3	1086	U
53	3	1094	G
53	3	1095	U
53	3	1101	A
53	3	1130	A
53	3	1136	C
53	3	1137	C
53	3	1138	G
53	3	1139	G
53	3	1146	A
53	3	1159	U
53	3	1168	U
53	3	1182	G
53	3	1184	G
53	3	1196	A
53	3	1201	A
53	3	1202	U
53	3	1225	A
53	3	1226	C
53	3	1227	A
53	3	1238	A
53	3	1240	U
53	3	1241	G
53	3	1258	G
53	3	1260	G
53	3	1275	A
53	3	1278	G
53	3	1280	A
53	3	1282	C
53	3	1286	U
53	3	1287	A
53	3	1300	G
53	3	1302	C
53	3	1305	G
53	3	1317	C
53	3	1337	G
53	3	1346	A
53	3	1364	U
53	3	1395	C
53	3	1432	G
53	3	1446	A
53	3	1448	C

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Mol	Chain	Res	Type
53	3	1452	C
53	3	1492	A
53	3	1503	A
53	3	1506	U
53	3	1507	A
53	3	1517	G
53	3	1519	A
53	3	1529	G
53	3	1530	G
53	3	1534	A
53	3	1540	U
54	1	10	A
54	1	12	U
54	1	35	G
54	1	46	G
54	1	51	G
54	1	55	G
54	1	63	A
54	1	71	A
54	1	74	A
54	1	75	G
54	1	98	G
54	1	102	U
54	1	103	A
54	1	119	A
54	1	120	U
54	1	125	A
54	1	135	U
54	1	139	U
54	1	140	C
54	1	141	G
54	1	162	U
54	1	163	C
54	1	196	A
54	1	216	A
54	1	219	A
54	1	221	A
54	1	222	A
54	1	228	C
54	1	229	C
54	1	233	A
54	1	248	G

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Mol	Chain	Res	Type
54	1	249	C
54	1	250	G
54	1	255	A
54	1	266	G
54	1	276	U
54	1	281	C
54	1	285	G
54	1	294	A
54	1	311	A
54	1	323	C
54	1	324	A
54	1	329	G
54	1	330	A
54	1	346	A
54	1	353	C
54	1	361	G
54	1	362	A
54	1	371	A
54	1	372	G
54	1	386	G
54	1	387	U
54	1	404	A
54	1	406	G
54	1	411	G
54	1	412	A
54	1	424	G
54	1	451	U
54	1	455	C
54	1	481	G
54	1	491	G
54	1	504	A
54	1	505	A
54	1	529	A
54	1	530	G
54	1	531	C
54	1	532	A
54	1	544	C
54	1	563	A
54	1	573	U
54	1	574	A
54	1	575	A
54	1	588	U

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Mol	Chain	Res	Type
54	1	603	A
54	1	614	A
54	1	627	A
54	1	637	A
54	1	646	U
54	1	654	A
54	1	686	U
54	1	687	C
54	1	695	G
54	1	730	A
54	1	740	C
54	1	747	C
54	1	748	G
54	1	764	A
54	1	775	G
54	1	776	G
54	1	782	A
54	1	784	G
54	1	785	G
54	1	805	G
54	1	812	C
54	1	819	A
54	1	827	U
54	1	828	U
54	1	830	G
54	1	845	A
54	1	846	U
54	1	847	U
54	1	858	G
54	1	859	G
54	1	860	U
54	1	877	A
54	1	878	A
54	1	885	C
54	1	886	A
54	1	887	U
54	1	896	A
54	1	910	A
54	1	932	U
54	1	941	A
54	1	946	C
54	1	959	A

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Mol	Chain	Res	Type
54	1	961	C
54	1	974	G
54	1	983	A
54	1	985	C
54	1	995	C
54	1	996	A
54	1	1012	U
54	1	1013	C
54	1	1021	A
54	1	1022	G
54	1	1023	U
54	1	1033	U
54	1	1045	C
54	1	1046	A
54	1	1047	G
54	1	1054	A
54	1	1057	A
54	1	1058	U
54	1	1062	G
54	1	1063	G
54	1	1065	U
54	1	1066	U
54	1	1070	A
54	1	1071	G
54	1	1073	A
54	1	1074	G
54	1	1075	C
54	1	1076	C
54	1	1078	U
54	1	1079	C
54	1	1082	U
54	1	1083	U
54	1	1084	A
54	1	1088	A
54	1	1103	A
54	1	1104	C
54	1	1111	A
54	1	1131	G
54	1	1133	A
54	1	1135	C
54	1	1143	A
54	1	1172	C

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Mol	Chain	Res	Type
54	1	1173	U
54	1	1175	A
54	1	1177	G
54	1	1180	U
54	1	1205	A
54	1	1206	G
54	1	1211	C
54	1	1212	G
54	1	1251	C
54	1	1253	A
54	1	1254	A
54	1	1256	G
54	1	1271	G
54	1	1272	A
54	1	1300	G
54	1	1301	A
54	1	1321	A
54	1	1341	G
54	1	1345	C
54	1	1365	A
54	1	1378	A
54	1	1379	U
54	1	1383	A
54	1	1395	A
54	1	1416	G
54	1	1419	A
54	1	1420	A
54	1	1427	A
54	1	1452	G
54	1	1453	A
54	1	1461	C
54	1	1482	G
54	1	1490	A
54	1	1491	G
54	1	1493	C
54	1	1504	A
54	1	1515	A
54	1	1535	A
54	1	1536	C
54	1	1537	G
54	1	1555	G
54	1	1560	G

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Mol	Chain	Res	Type
54	1	1569	A
54	1	1608	A
54	1	1611	C
54	1	1616	A
54	1	1647	U
54	1	1648	U
54	1	1674	G
54	1	1698	A
54	1	1703	G
54	1	1715	G
54	1	1729	U
54	1	1730	C
54	1	1738	G
54	1	1758	U
54	1	1764	C
54	1	1773	A
54	1	1780	A
54	1	1800	C
54	1	1801	A
54	1	1808	A
54	1	1816	C
54	1	1857	G
54	1	1865	U
54	1	1870	C
54	1	1871	A
54	1	1901	A
54	1	1906	G
54	1	1907	G
54	1	1913	A
54	1	1914	C
54	1	1929	G
54	1	1931	U
54	1	1937	A
54	1	1955	U
54	1	1966	A
54	1	1967	C
54	1	1972	G
54	1	1991	U
54	1	1992	G
54	1	1993	U
54	1	1996	C
54	1	1997	C

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Mol	Chain	Res	Type
54	1	2020	A
54	1	2022	U
54	1	2023	C
54	1	2031	A
54	1	2036	C
54	1	2043	C
54	1	2051	A
54	1	2055	C
54	1	2056	G
54	1	2060	A
54	1	2061	G
54	1	2069	G
54	1	2072	C
54	1	2077	A
54	1	2093	G
54	1	2096	C
54	1	2098	U
54	1	2100	G
54	1	2108	A
54	1	2110	G
54	1	2111	U
54	1	2118	U
54	1	2119	A
54	1	2128	G
54	1	2131	U
54	1	2132	U
54	1	2133	G
54	1	2134	A
54	1	2141	G
54	1	2162	G
54	1	2164	C
54	1	2172	U
54	1	2173	A
54	1	2178	C
54	1	2192	U
54	1	2198	A
54	1	2203	U
54	1	2204	G
54	1	2211	A
54	1	2213	U
54	1	2223	G
54	1	2225	A

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Mol	Chain	Res	Type
54	1	2239	G
54	1	2266	A
54	1	2268	A
54	1	2279	G
54	1	2283	C
54	1	2287	A
54	1	2297	A
54	1	2305	U
54	1	2309	A
54	1	2325	G
54	1	2327	A
54	1	2331	G
54	1	2334	U
54	1	2335	A
54	1	2337	G
54	1	2345	G
54	1	2350	C
54	1	2357	G
54	1	2383	G
54	1	2385	C
54	1	2392	A
54	1	2402	U
54	1	2406	A
54	1	2423	U
54	1	2425	A
54	1	2426	A
54	1	2427	C
54	1	2429	G
54	1	2430	A
54	1	2435	A
54	1	2440	C
54	1	2441	U
54	1	2445	G
54	1	2448	A
54	1	2469	A
54	1	2476	A
54	1	2478	A
54	1	2498	C
54	1	2502	G
54	1	2505	G
54	1	2506	U
54	1	2518	A

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Mol	Chain	Res	Type
54	1	2520	C
54	1	2535	G
54	1	2547	A
54	1	2554	U
54	1	2556	C
54	1	2566	A
54	1	2567	G
54	1	2572	A
54	1	2602	A
54	1	2603	G
54	1	2609	U
54	1	2613	U
54	1	2634	A
54	1	2646	C
54	1	2682	A
54	1	2684	U
54	1	2689	U
54	1	2690	U
54	1	2714	G
54	1	2733	A
54	1	2739	U
54	1	2744	G
54	1	2748	A
54	1	2758	A
54	1	2764	A
54	1	2765	A
54	1	2778	A
54	1	2779	U
54	1	2791	G
54	1	2793	C
54	1	2798	U
54	1	2799	A
54	1	2800	A
54	1	2801	G
54	1	2820	A
54	1	2867	G
54	1	2868	A
54	1	2872	A
54	1	2879	A
54	1	2880	C
54	1	2883	A
54	1	2901	C

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Mol	Chain	Res	Type
55	2	13	G
55	2	35	C
55	2	44	G
55	2	56	G
55	2	67	G
55	2	88	C
55	2	89	U
55	2	90	C
55	2	108	A
55	2	109	A
56	5	2	G
56	5	8	U
56	5	9	G
56	5	17	C
56	5	18	G
56	5	19	G
56	5	20	U
56	5	47	U
56	5	48	C
56	5	49	G
56	5	76	A
56	6	2	G
56	6	7	G
56	6	8	U
56	6	9	G
56	6	10	G
56	6	14	A
56	6	18	G
56	6	19	G
56	6	20	U
56	6	21	A
56	6	22	G
56	6	34	C
56	6	35	A
56	6	42	G
56	6	45	G
56	6	46	G
56	6	47	U
56	6	64	G
56	6	67	C
56	6	68	C
56	6	70	G

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Mol	Chain	Res	Type
56	6	73	A
56	6	74	C
56	6	75	C
56	6	76	A
57	4	6	G
57	4	8	A
57	4	12	A
57	4	13	A
57	4	19	C
58	7	3	G
58	7	4	C
58	7	5	G
58	7	6	A
58	7	10	G
58	7	14	A
58	7	18	G
58	7	19	G
58	7	20	U
58	7	21	A
58	7	41	A
58	7	42	G
58	7	73	A
58	7	74	C
58	7	76	A

All (17) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
53	3	70	U
53	3	960	U
54	1	227	A
54	1	490	C
54	1	858	G
54	1	859	G
54	1	1020	A
54	1	1130	U
54	1	1930	G
54	1	2061	G
54	1	2296	U
54	1	2326	C
54	1	2391	G
57	4	18	G

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Mol	Chain	Res	Type
58	7	2	G
58	7	3	G
58	7	41	A

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](#)

1 ligand is modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
59	FME	5	101	56	8,9,10	0.73	0	8,9,11	1.08	1 (12%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
59	FME	5	101	56	-	1/7/9/11	-

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
59	5	101	FME	O-C-CA	-2.59	118.11	124.77

There are no chirality outliers.

All (1) torsion outliers are listed below:

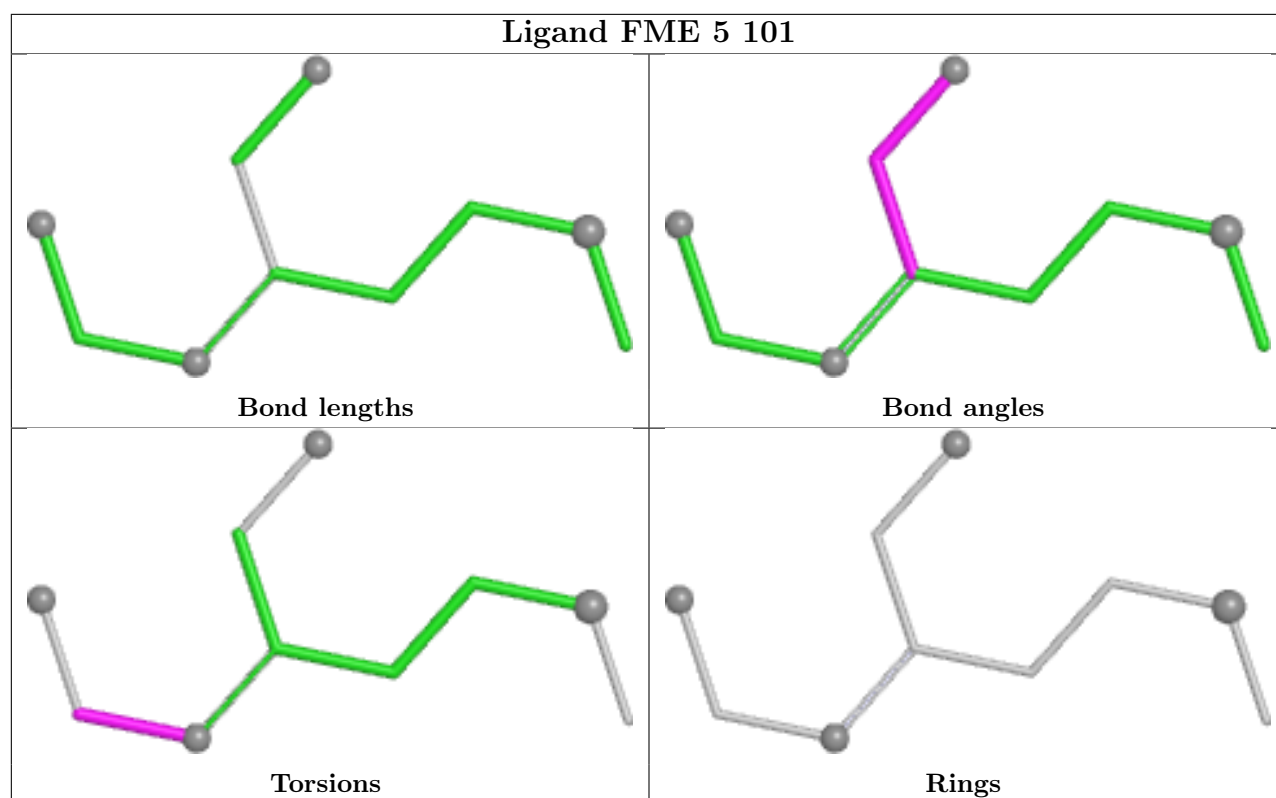
Mol	Chain	Res	Type	Atoms
59	5	101	FME	O1-CN-N-CA

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
59	5	101	FME	1	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

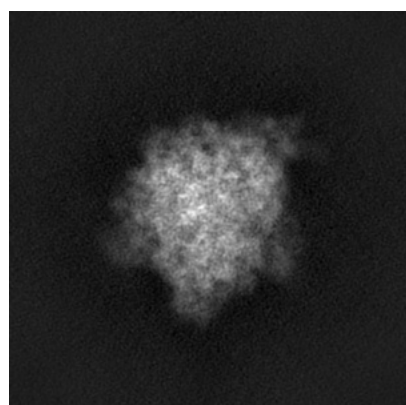
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-22669. These allow visual inspection of the internal detail of the map and identification of artifacts.

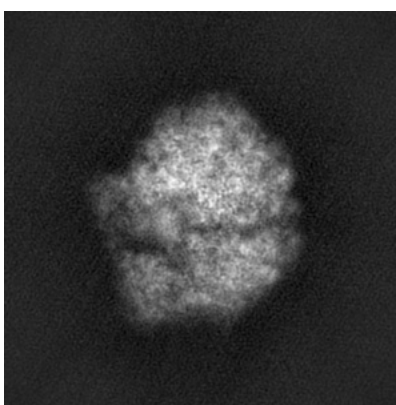
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

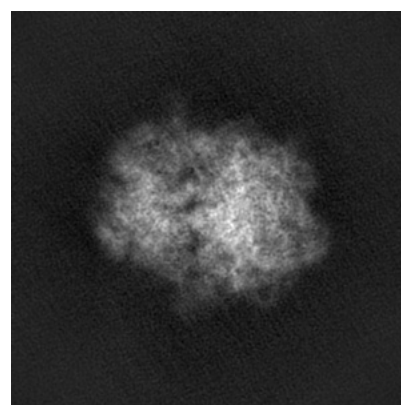
6.1.1 Primary map



X



Y

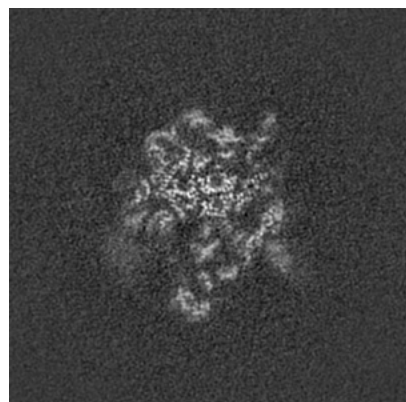


Z

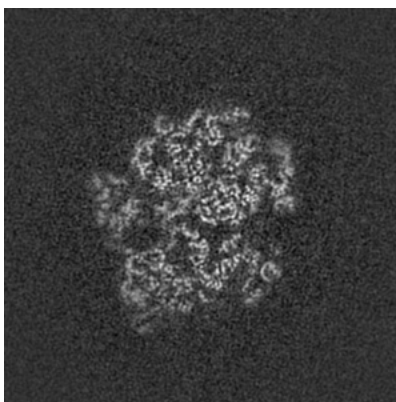
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

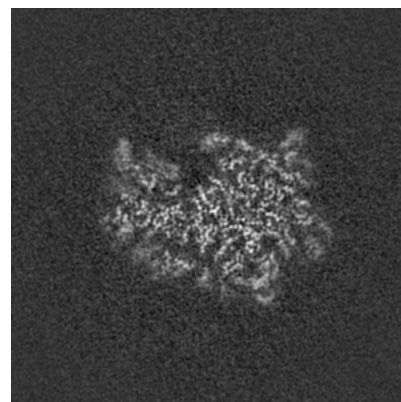
6.2.1 Primary map



X Index: 200



Y Index: 200

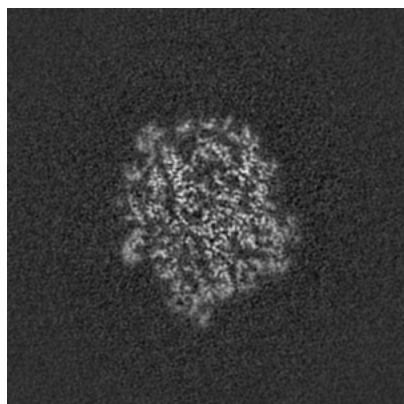


Z Index: 200

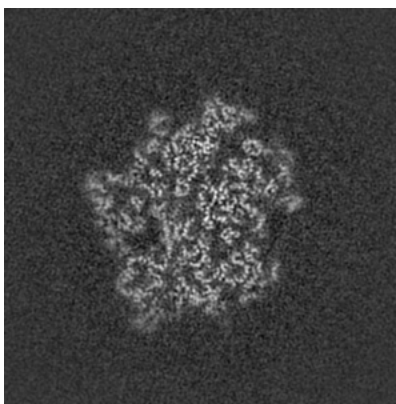
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

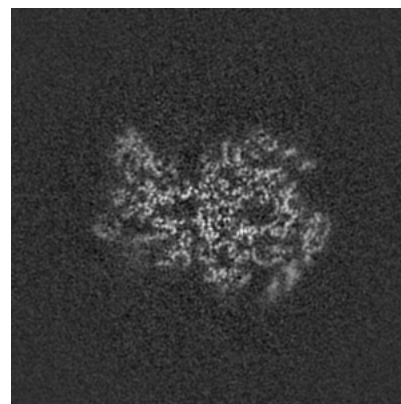
6.3.1 Primary map



X Index: 226



Y Index: 193

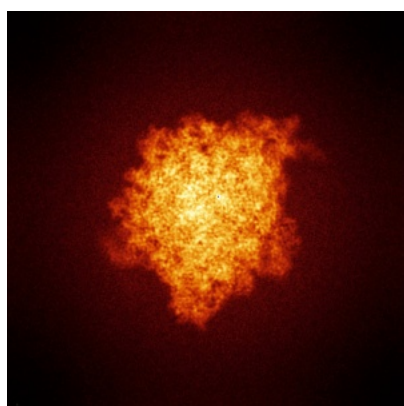


Z Index: 214

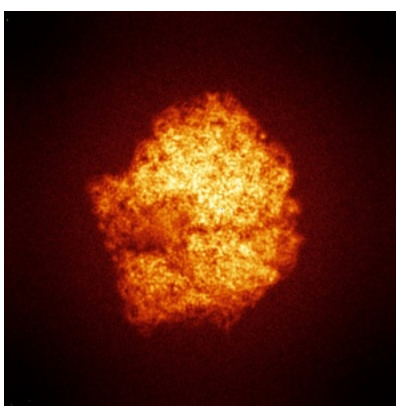
The images above show the largest variance slices of the map in three orthogonal directions.

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

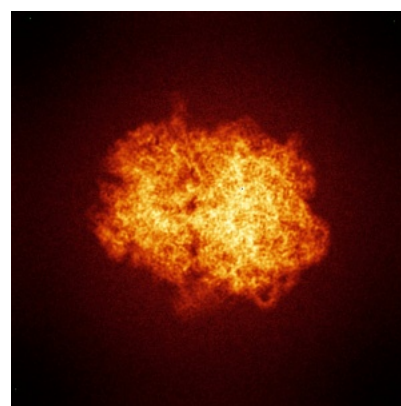
6.4.1 Primary map



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 [i](#)

6.5.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 3.7. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

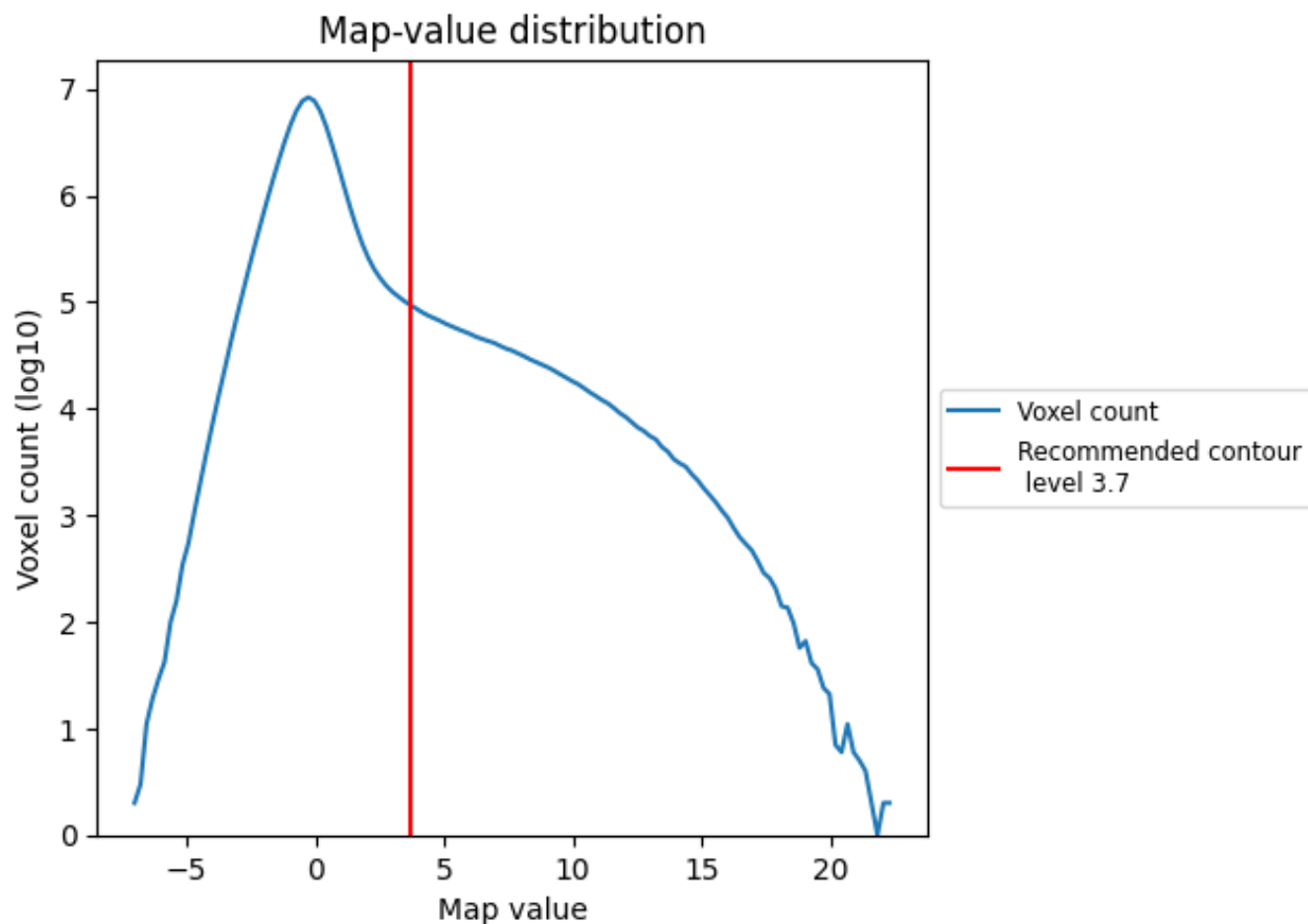
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

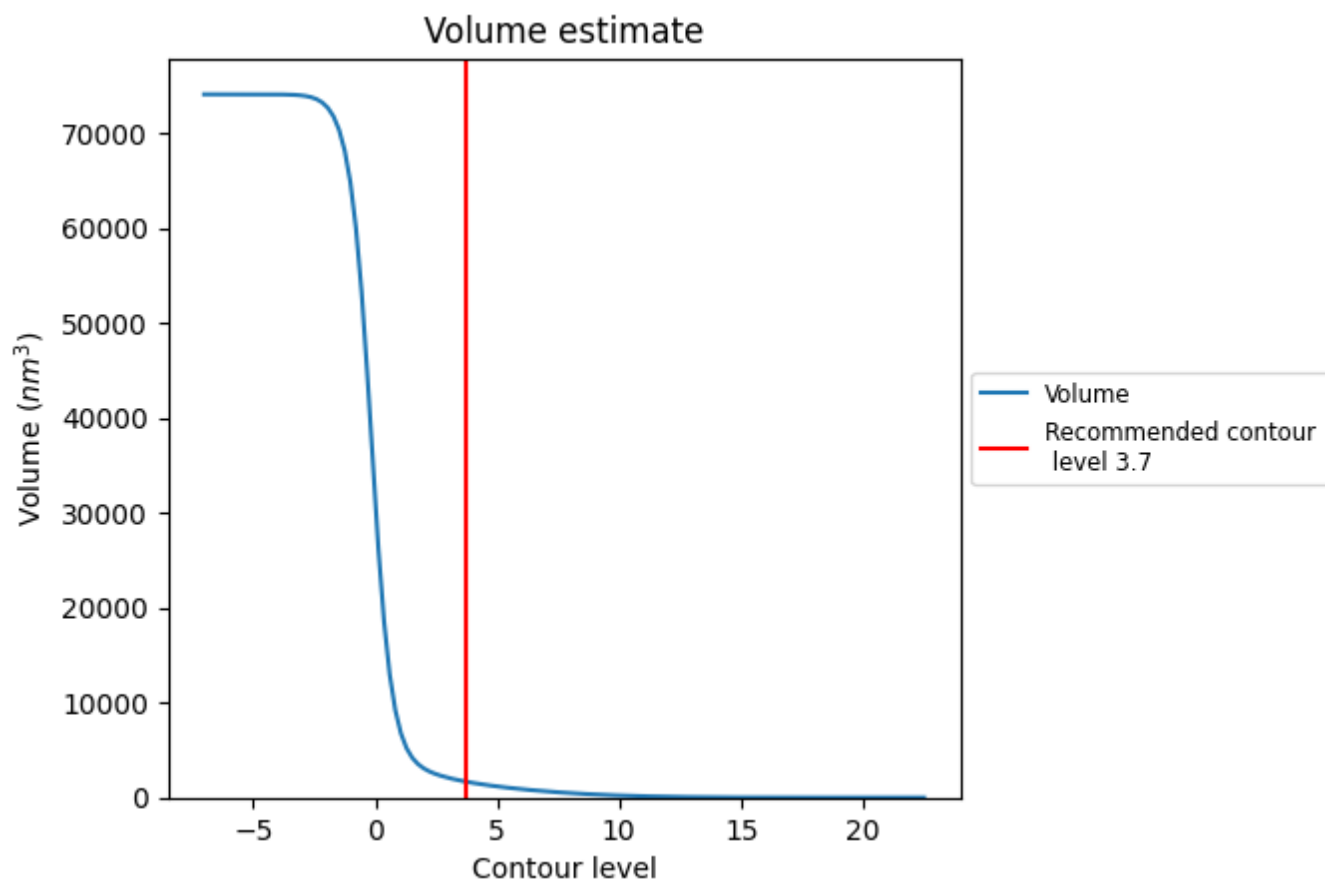
This section contains the results of statistical analysis of the map.

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.

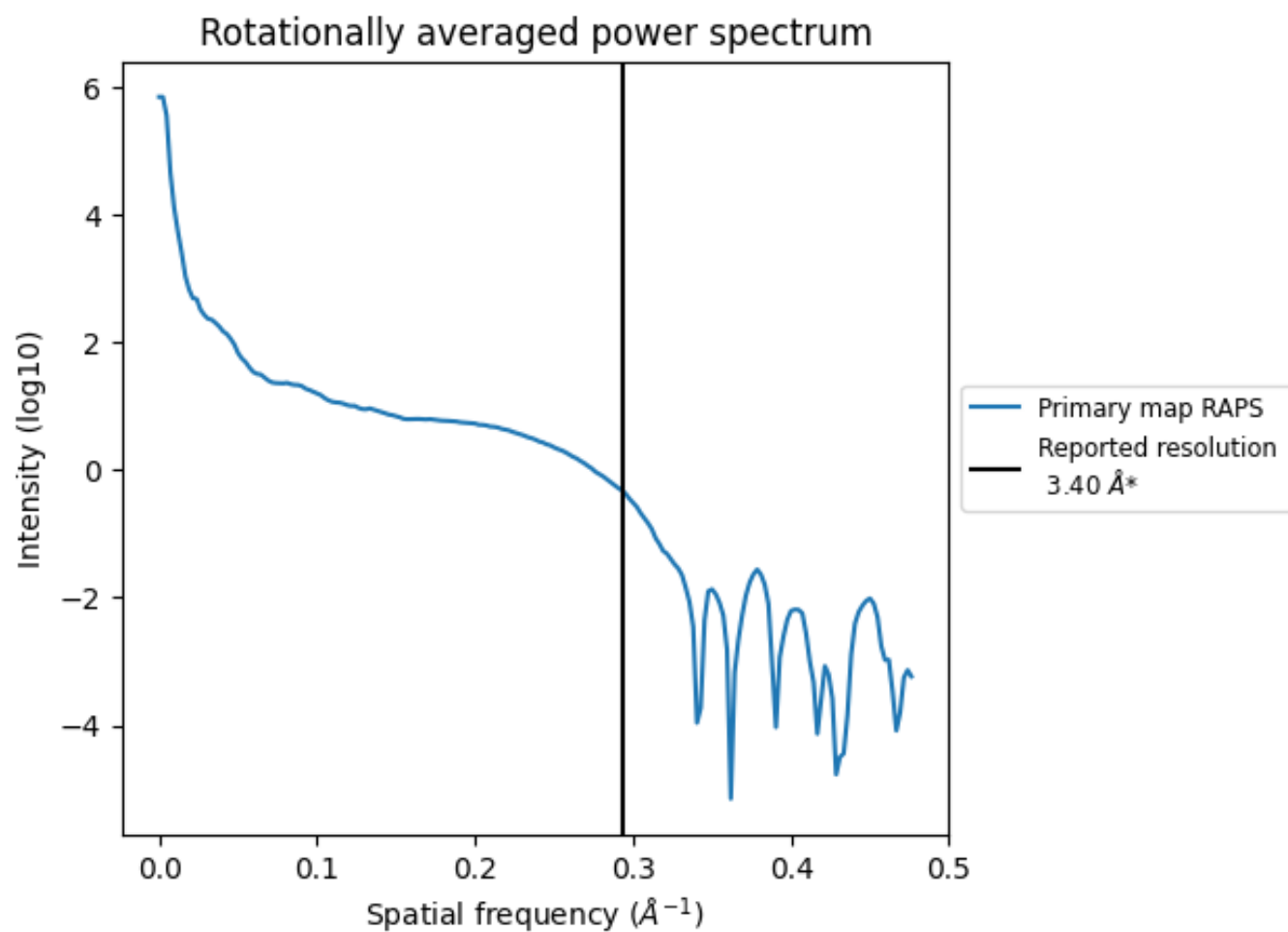
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1687 nm³; this corresponds to an approximate mass of 1524 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

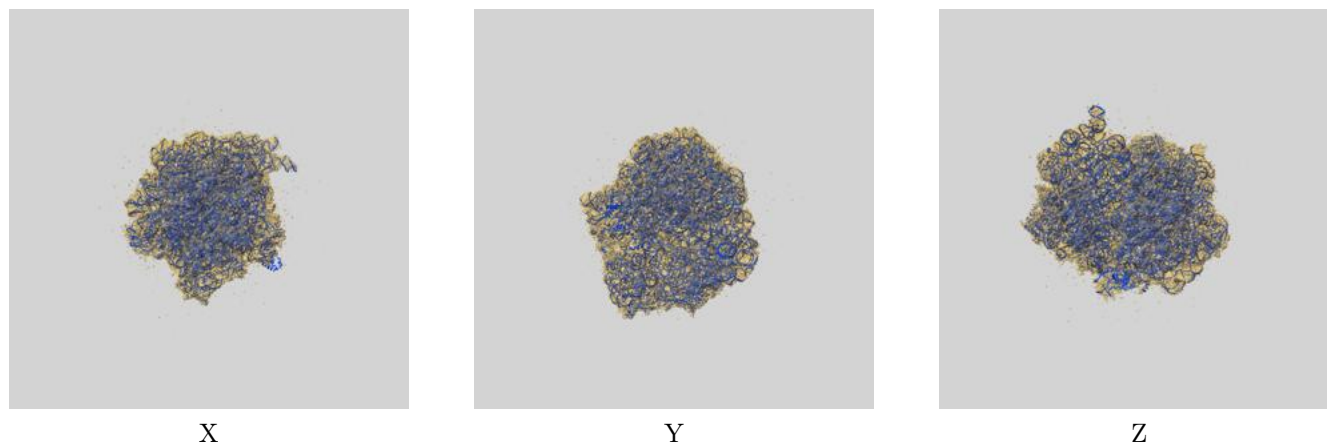
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

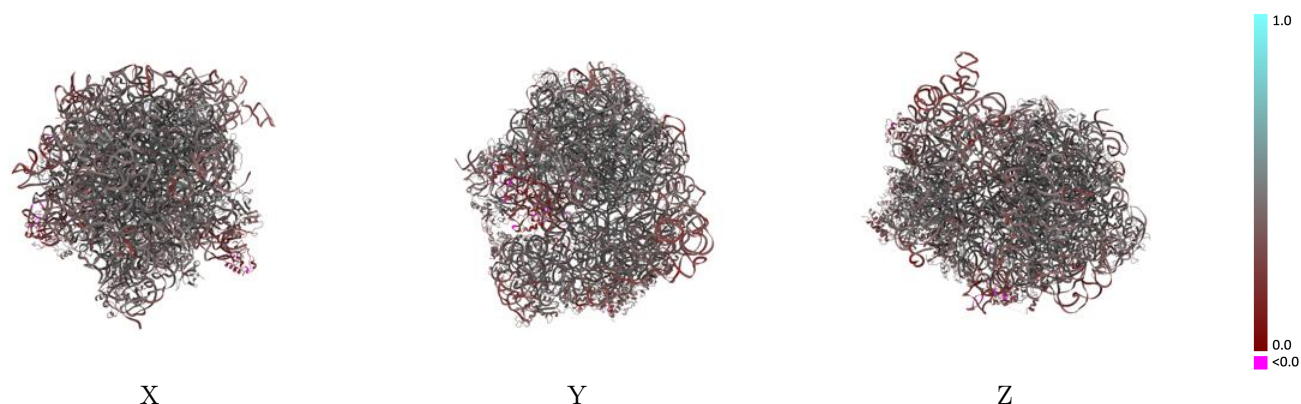
This section contains information regarding the fit between EMDB map EMD-22669 and PDB model 7K50. Per-residue inclusion information can be found in section [3](#) on page [16](#).

9.1 Map-model overlay [i](#)



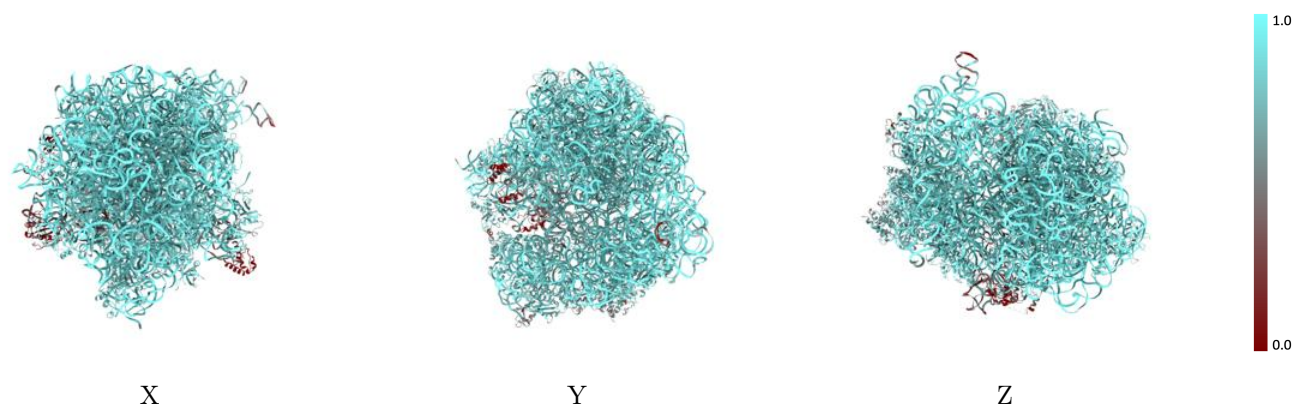
The images above show the 3D surface view of the map at the recommended contour level 3.7 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



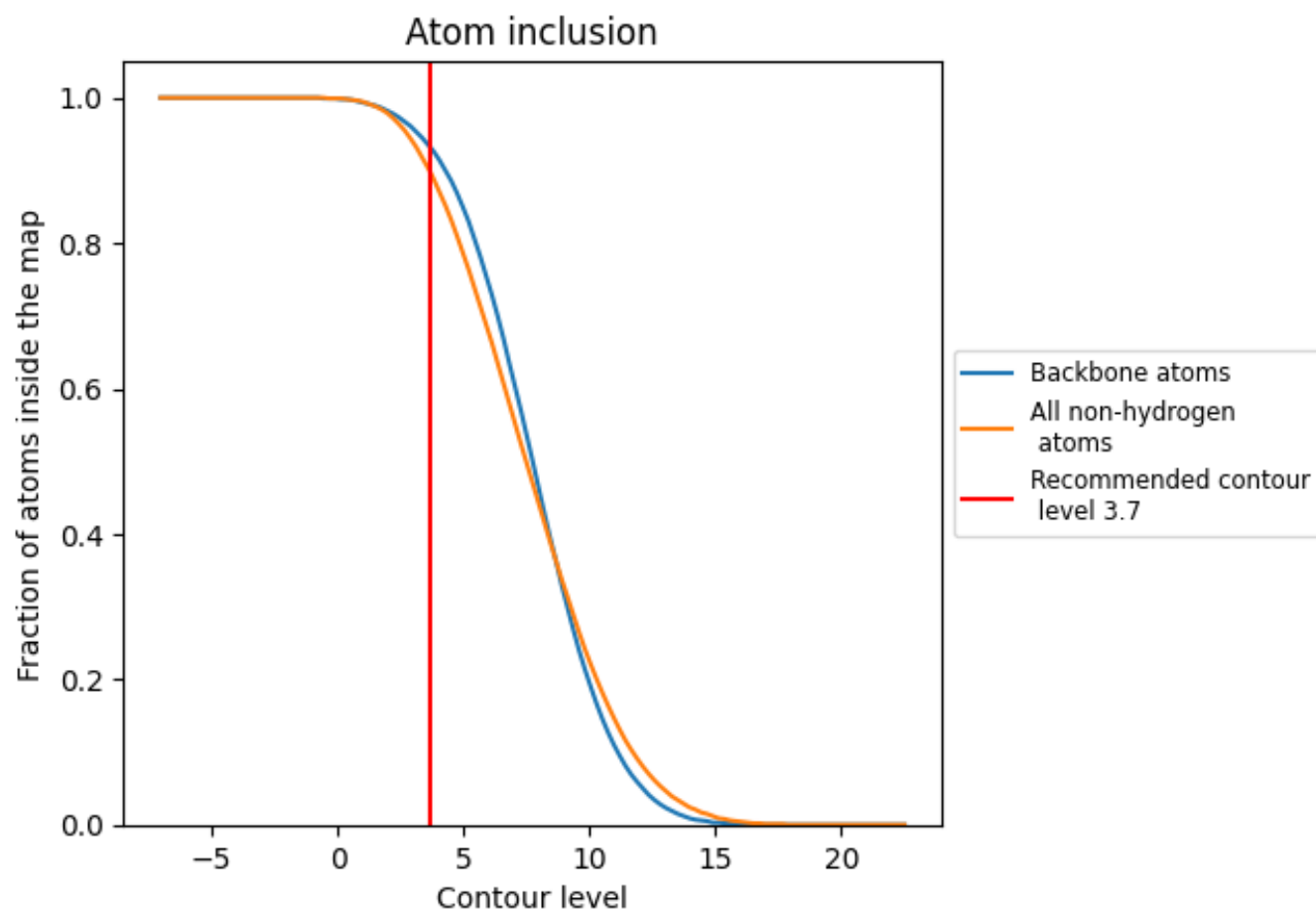
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (3.7).

9.4 Atom inclusion [i](#)



At the recommended contour level, 93% of all backbone atoms, 90% 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 (3.7) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8970	 0.4070
1	 0.9590	 0.4180
2	 0.9640	 0.4020
3	 0.9520	 0.4030
4	 0.8280	 0.3170
5	 0.9420	 0.3770
6	 0.3010	 0.2080
7	 0.8300	 0.2860
A	 0.7320	 0.3540
B	 0.8810	 0.4490
C	 0.6720	 0.4250
D	 0.9300	 0.4570
E	 0.9160	 0.4720
F	 0.8560	 0.4570
G	 0.6520	 0.3740
H	 0.8000	 0.4180
I	 0.7470	 0.3540
J	 0.8750	 0.4390
K	 0.8560	 0.4070
L	 0.8150	 0.3830
M	 0.8480	 0.4320
N	 0.7760	 0.3930
O	 0.6420	 0.3920
P	 0.8690	 0.4210
Q	 0.8640	 0.3970
R	 0.8070	 0.3910
S	 0.8170	 0.4060
T	 0.8840	 0.4210
U	 0.8310	 0.3960
V	 0.8470	 0.4070
W	 0.8470	 0.4020
X	 0.7940	 0.3880
Y	 0.8140	 0.3810
Z	 0.7200	 0.3420
a	 0.1940	 0.2500



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Chain	Atom inclusion	Q-score
b	 0.9230	 0.4750
c	 0.8990	 0.4600
d	 0.7970	 0.4240
e	 0.8130	 0.3980
f	 0.8060	 0.3840
g	 0.2960	 0.3170
h	 0.0990	 0.1940
i	 0.2810	 0.2320
j	 0.8940	 0.4480
k	 0.8650	 0.4570
l	 0.8800	 0.4470
m	 0.8800	 0.4610
n	 0.9020	 0.4470
o	 0.8370	 0.3910
p	 0.8770	 0.4530
q	 0.8910	 0.4430
r	 0.8370	 0.4260
s	 0.8550	 0.4430
t	 0.8480	 0.4330
u	 0.8480	 0.4130
v	 0.8350	 0.4140
w	 0.8750	 0.4680
x	 0.8880	 0.4510
y	 0.7990	 0.3680
z	 0.8400	 0.4300