



Full wwPDB EM Validation Report ⓘ

Apr 15, 2026 – 11:20 AM UTC

PDB ID : 7JSZ / pdb_00007jsz
EMDB ID : EMD-22464
Title : ArfB Rescue of a 70S Ribosome stalled on truncated mRNA with a partial A-site codon (+2-IV)
Authors : Carbone, C.E.; Korostelev, A.A.
Deposited on : 2020-08-16
Resolution : 3.70 Å(reported)

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

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

A user guide is available at

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

The types of validation reports are described at

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

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

EMDB validation analysis : 0.0.1.dev132
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

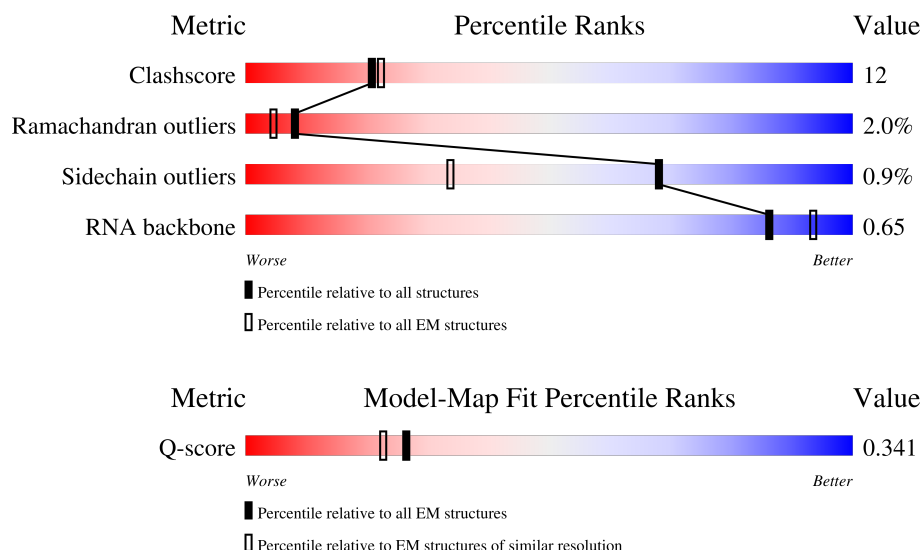
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.70 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.



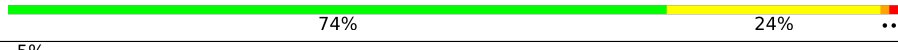
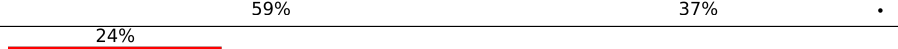
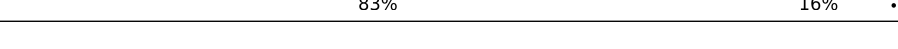
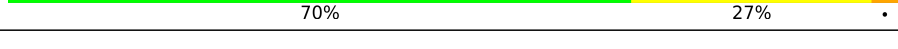
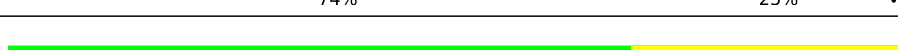
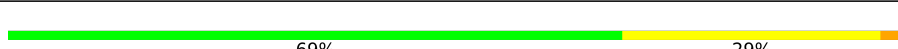
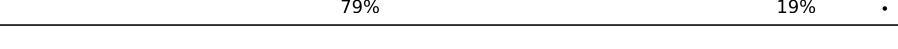
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	11569 (3.20 - 4.20)

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	

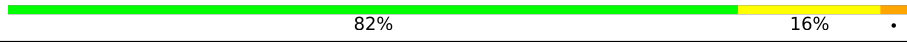
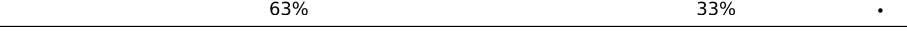
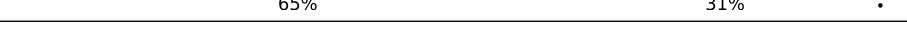
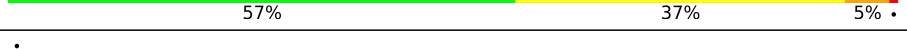
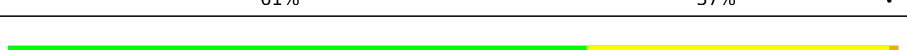
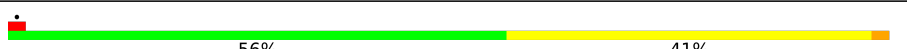
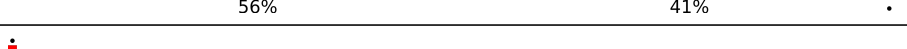
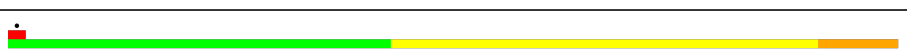
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Mol	Chain	Length	Quality of chain
4	e	177	
5	f	176	
6	g	149	
7	h	165	
8	i	142	
9	j	142	
10	k	122	
11	l	143	
12	m	136	
13	n	120	
14	o	116	
15	p	114	
16	q	117	
17	r	103	
18	s	110	
19	t	93	
20	u	102	
21	v	94	
22	w	75	
23	x	77	
24	y	63	
25	z	58	
26	B	56	
27	C	50	
28	D	46	

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Mol	Chain	Length	Quality of chain
29	E	64	
30	F	38	
31	G	225	
32	H	206	
33	I	205	
34	J	157	
35	K	100	
36	L	151	
37	M	129	
38	N	127	
39	O	98	
40	P	116	
41	Q	123	
42	R	114	
43	S	100	
44	T	88	
45	U	82	
46	V	80	
47	W	65	
48	X	79	
49	Y	85	
50	Z	65	
51	a	234	
52	3	1539	
53	1	2903	

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Mol	Chain	Length	Quality of chain
54	2	120	47% 48% 6%
55	5	77	42% 52% 6%
56	4	16	25% 75%
57	8	132	45% 41% 6% 8%

2 Entry composition

There are 57 unique types of molecules in this entry. The entry contains 147860 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	149	Total	C	N	O	S	0	0
			1111	699	197	214	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
7	h	131	Total	C	N	O	S	0	0
			988	625	175	183	5		

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
9	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
			917	574	179	163	1	0

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

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

- 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
			816	516	153	145	2	0

- 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
			857	532	166	156	3	0

- 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
			739	466	139	132	2	0

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

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

- 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 L32.

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

- Molecule 27 is a protein called 50S ribosomal protein L33.

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

- Molecule 28 is a protein called 50S ribosomal protein L34.

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

- Molecule 29 is a protein called 50S ribosomal protein L35.

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

- Molecule 30 is a protein called 50S ribosomal protein L36.

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

- Molecule 31 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	G	225	Total	C	N	O	S	0	0
			1757	1111	315	323	8		

- Molecule 32 is a protein called 30S ribosomal protein S3.

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

- Molecule 33 is a protein called 30S ribosomal protein S4.

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

- Molecule 34 is a protein called 30S ribosomal protein S5.

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

- Molecule 35 is a protein called 30S ribosomal protein S6.

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

- Molecule 36 is a protein called 30S ribosomal protein S7.

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

- Molecule 37 is a protein called 30S ribosomal protein S8.

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

- Molecule 38 is a protein called 30S ribosomal protein S9.

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

- Molecule 39 is a protein called 30S ribosomal protein S10.

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

- Molecule 40 is a protein called 30S ribosomal protein S11.

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

- Molecule 41 is a protein called 30S ribosomal protein S12.

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

- Molecule 42 is a protein called 30S ribosomal protein S13.

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

- Molecule 43 is a protein called 30S ribosomal protein S14.

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

- Molecule 44 is a protein called 30S ribosomal protein S15.

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

- Molecule 45 is a protein called 30S ribosomal protein S16.

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

- Molecule 46 is a protein called 30S ribosomal protein S17.

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

- Molecule 47 is a protein called 30S ribosomal protein S18.

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

- Molecule 48 is a protein called 30S ribosomal protein S19.

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

- Molecule 49 is a protein called 30S ribosomal protein S20.

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

- Molecule 50 is a protein called 30S ribosomal protein S21.

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

- Molecule 51 is a protein called 50S ribosomal protein L1.

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

- Molecule 52 is a RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	3	1539	Total	C	N	O	P	0	0
			33012	14725	6053	10696	1538		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
3	1490	C	U	conflict	GB 1789840096

- Molecule 53 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	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 54 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	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 55 is a RNA chain called tRNAfMet.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	5	77	Total	C	N	O	P	0	0
			1640	732	297	535	76		

- Molecule 56 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	4	16	Total	C	N	O	P	0	0
			353	158	74	105	16		

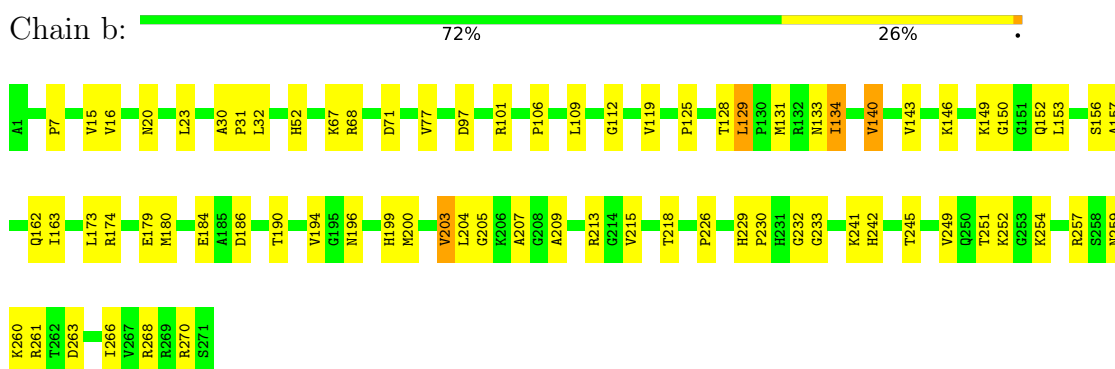
- Molecule 57 is a protein called Peptidyl-tRNA hydrolase ArfB.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	8	121	Total	C	N	O	S	0	0
			955	594	187	172	2		

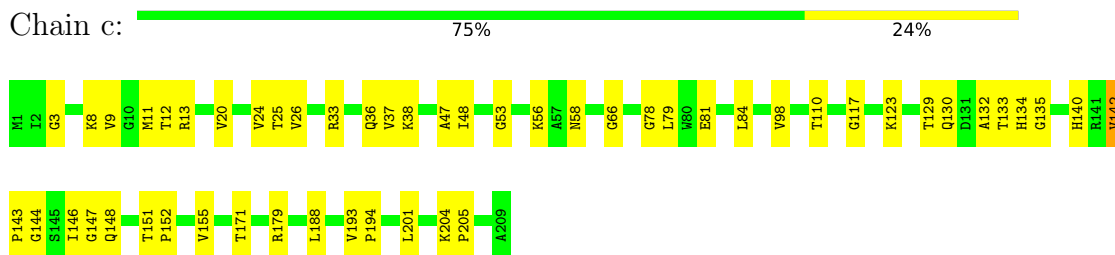
3 Residue-property plots

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.

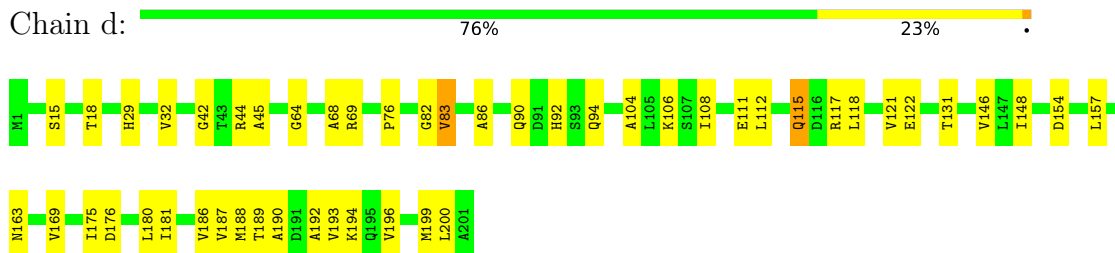
- Molecule 1: 50S ribosomal protein L2



- Molecule 2: 50S ribosomal protein L3

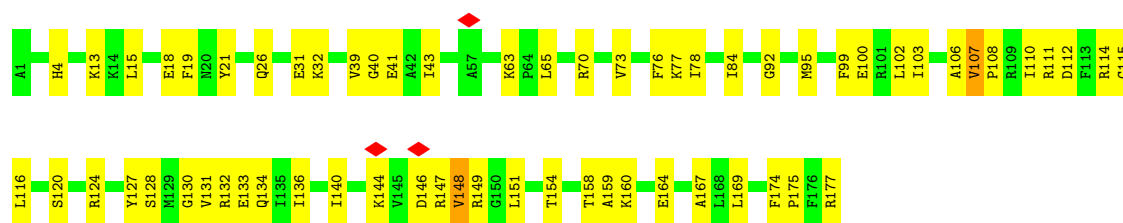


- Molecule 3: 50S ribosomal protein L4



- Molecule 4: 50S ribosomal protein L5





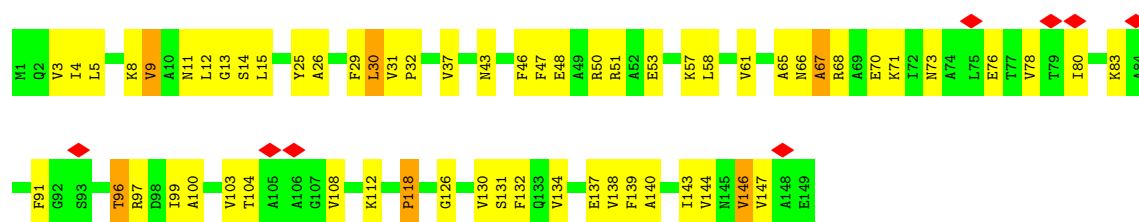
• Molecule 5: 50S ribosomal protein L6

Chain f: 74% 24% ..



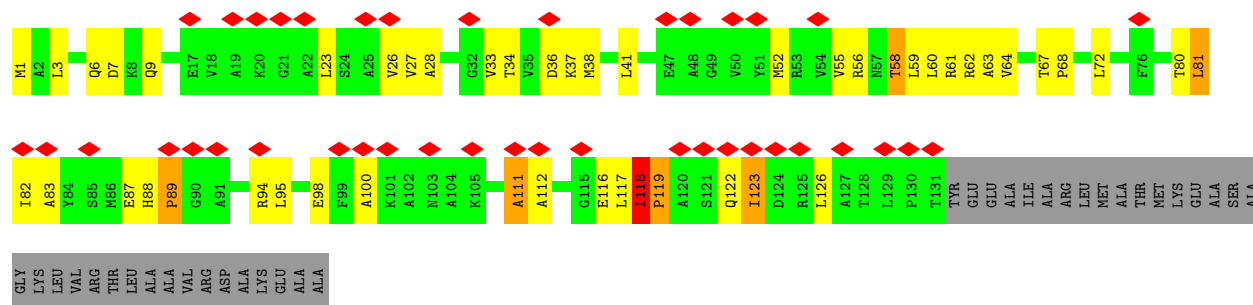
• Molecule 6: 50S ribosomal protein L9

Chain g: 5% 59% 37% .



• Molecule 7: 50S ribosomal protein L10

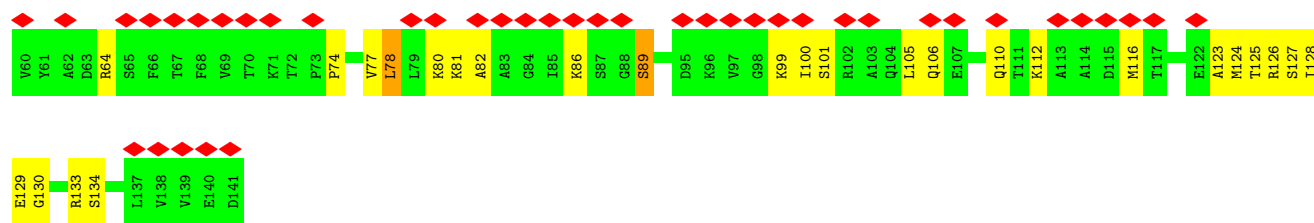
Chain h: 24% 50% 25% 21% ..



• Molecule 8: 50S ribosomal protein L11

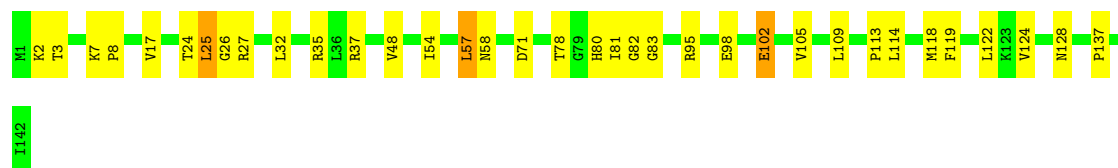
Chain i: 66% 68% 29% ..





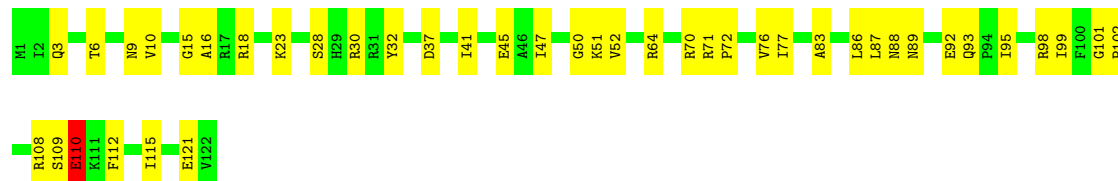
• Molecule 9: 50S ribosomal protein L13

Chain j: 75% 23%



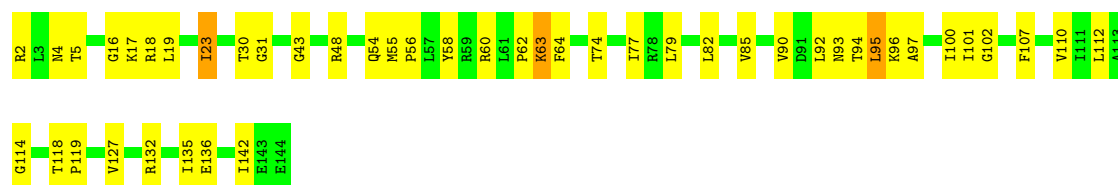
• Molecule 10: 50S ribosomal protein L14

Chain k: 66% 34%



• Molecule 11: 50S ribosomal protein L15

Chain l: 68% 30%



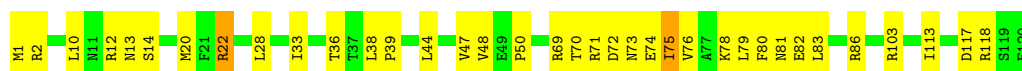
• Molecule 12: 50S ribosomal protein L16

Chain m: 83% 16%



• Molecule 13: 50S ribosomal protein L17

Chain n: 70% 28%



- Molecule 14: 50S ribosomal protein L18

Chain o: 71% 26% . .



- Molecule 15: 50S ribosomal protein L19

Chain p: 75% 23% .



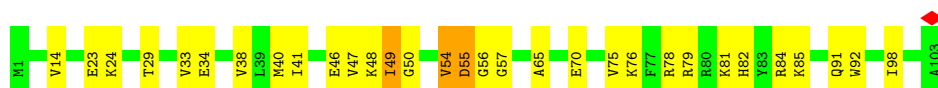
- Molecule 16: 50S ribosomal protein L20

Chain q: 82% 18%



- Molecule 17: 50S ribosomal protein L21

Chain r: 70% 27% .



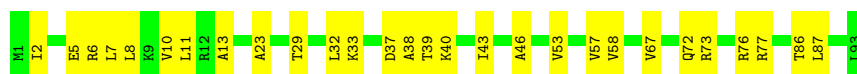
- Molecule 18: 50S ribosomal protein L22

Chain s: 74% 25% .



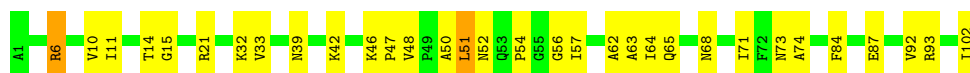
- Molecule 19: 50S ribosomal protein L23

Chain t: 70% 30%

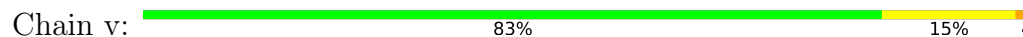


- Molecule 20: 50S ribosomal protein L24

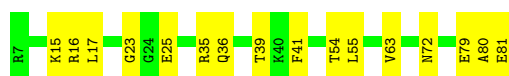
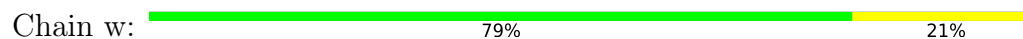
Chain u: 69% 29% .



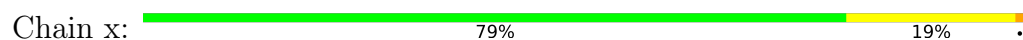
- Molecule 21: 50S ribosomal protein L25



- Molecule 22: 50S ribosomal protein L27



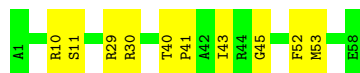
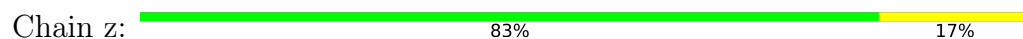
- Molecule 23: 50S ribosomal protein L28



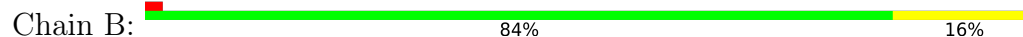
- Molecule 24: 50S ribosomal protein L29



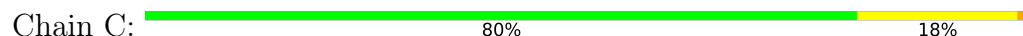
- Molecule 25: 50S ribosomal protein L30



- Molecule 26: 50S ribosomal protein L32

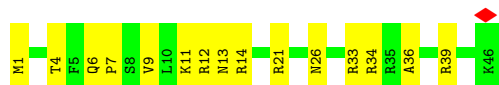


- Molecule 27: 50S ribosomal protein L33

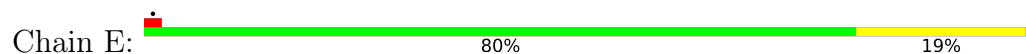




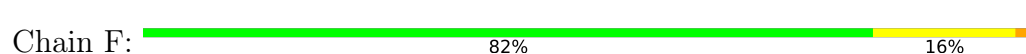
- Molecule 28: 50S ribosomal protein L34



- Molecule 29: 50S ribosomal protein L35



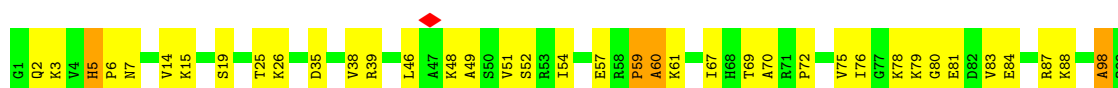
- Molecule 30: 50S ribosomal protein L36



- Molecule 31: 30S ribosomal protein S2



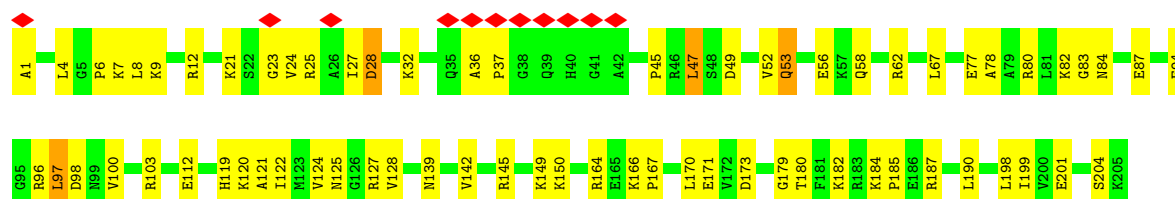
- Molecule 32: 30S ribosomal protein S3



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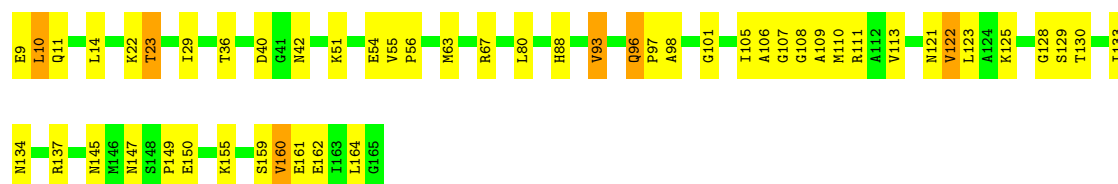
- Molecule 33: 30S ribosomal protein S4

Chain I:  5% 66% 32% .



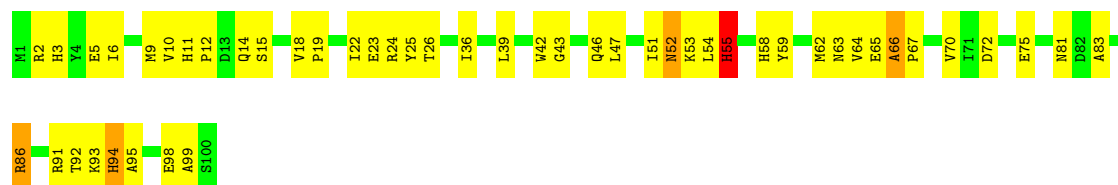
- Molecule 34: 30S ribosomal protein S5

Chain J:  68% 29% .



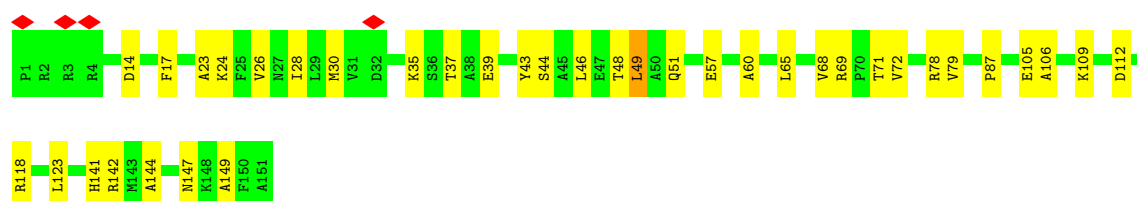
- Molecule 35: 30S ribosomal protein S6

Chain K:  51% 44% . .



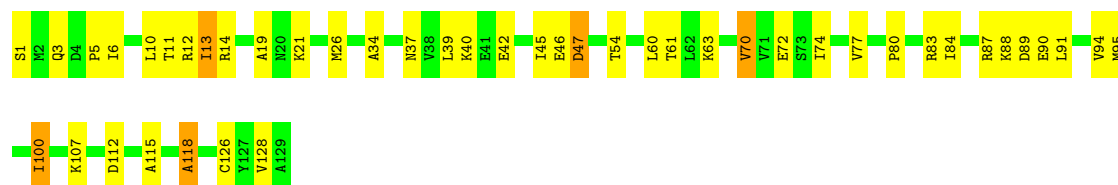
- Molecule 36: 30S ribosomal protein S7

Chain L:  75% 24% .

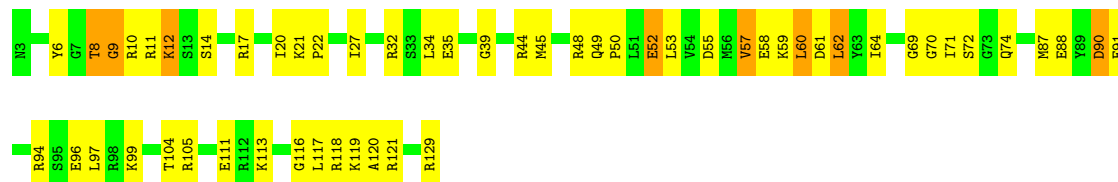


- Molecule 37: 30S ribosomal protein S8

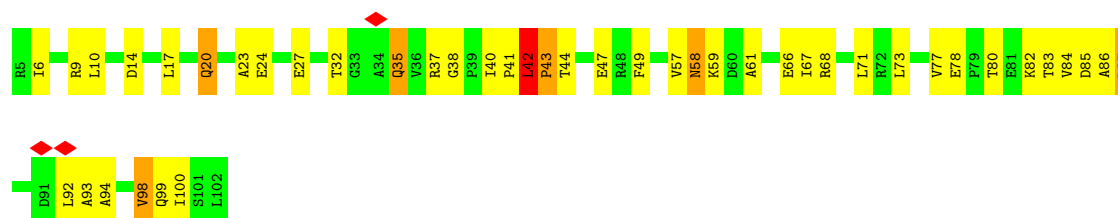
Chain M:  65% 31% .



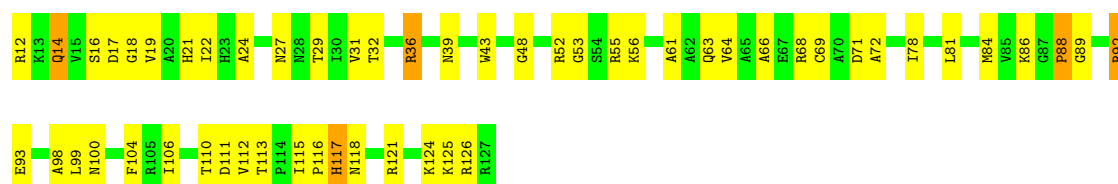
• Molecule 38: 30S ribosomal protein S9



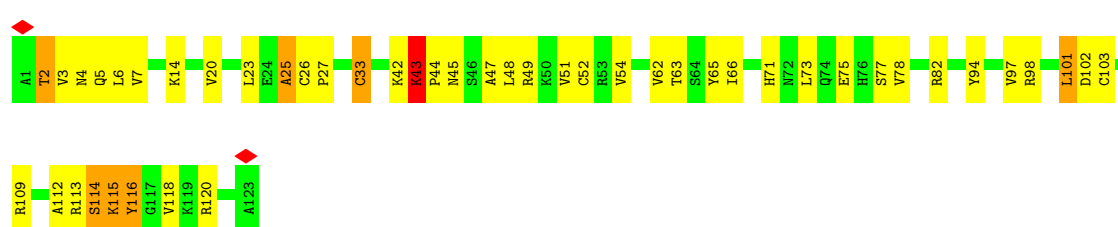
• Molecule 39: 30S ribosomal protein S10



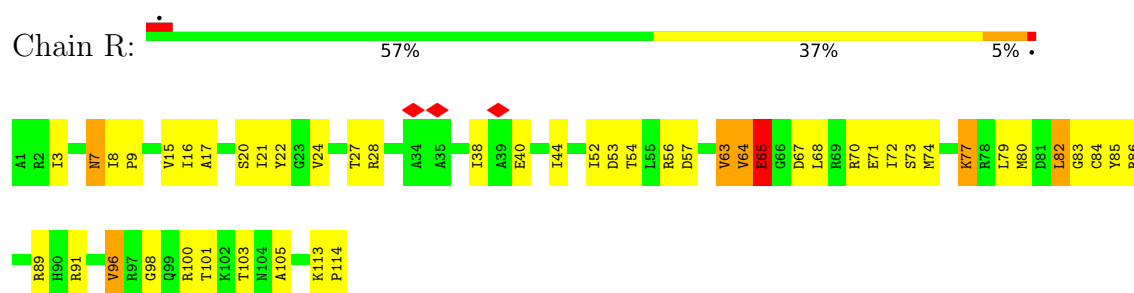
• Molecule 40: 30S ribosomal protein S11



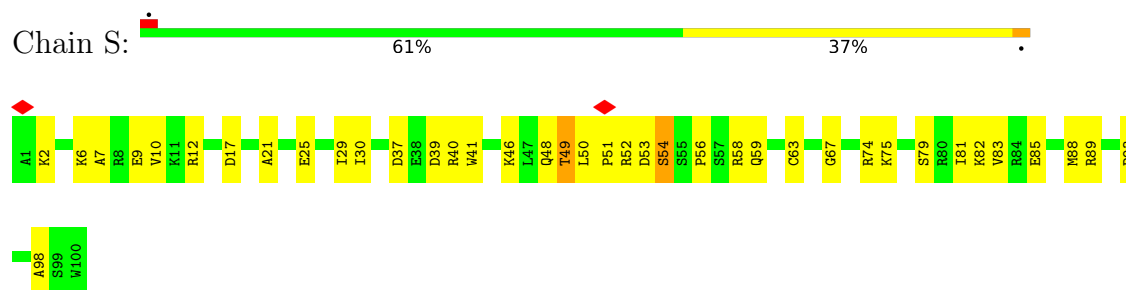
• Molecule 41: 30S ribosomal protein S12



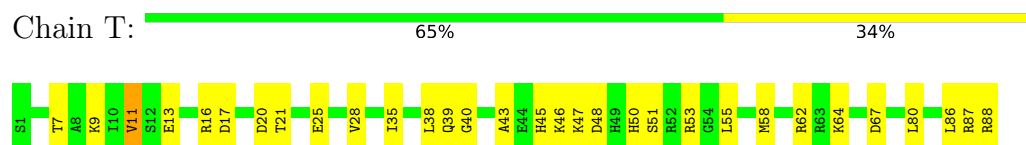
• Molecule 42: 30S ribosomal protein S13



- Molecule 43: 30S ribosomal protein S14



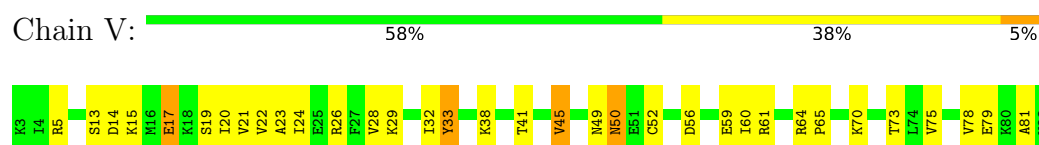
- Molecule 44: 30S ribosomal protein S15



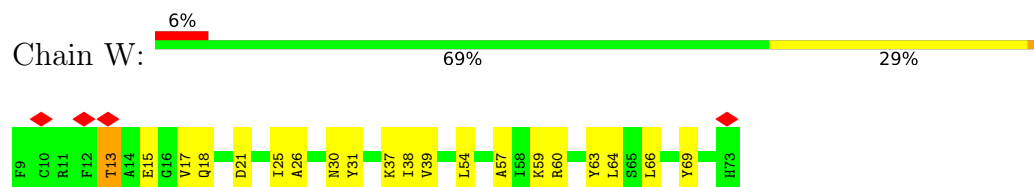
- Molecule 45: 30S ribosomal protein S16



- Molecule 46: 30S ribosomal protein S17



- Molecule 47: 30S ribosomal protein S18



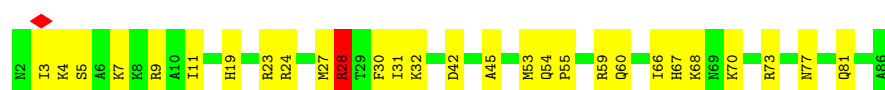
- Molecule 48: 30S ribosomal protein S19

Chain X: 



- Molecule 49: 30S ribosomal protein S20

Chain Y: 



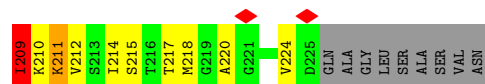
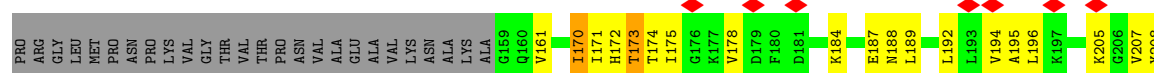
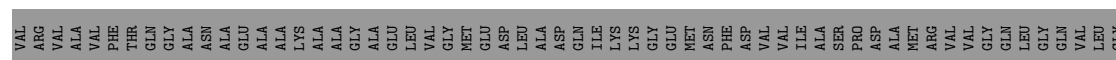
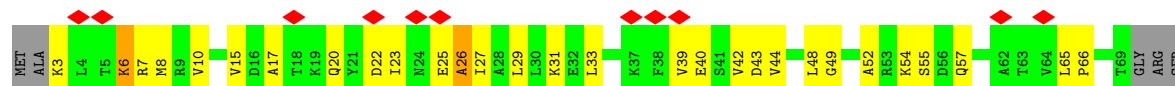
- Molecule 50: 30S ribosomal protein S21

Chain Z: 



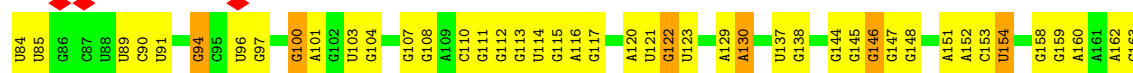
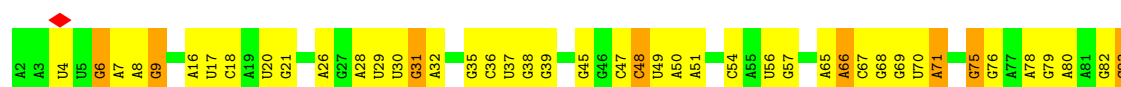
- Molecule 51: 50S ribosomal protein L1

Chain a: 



- Molecule 52: 16S ribosomal RNA

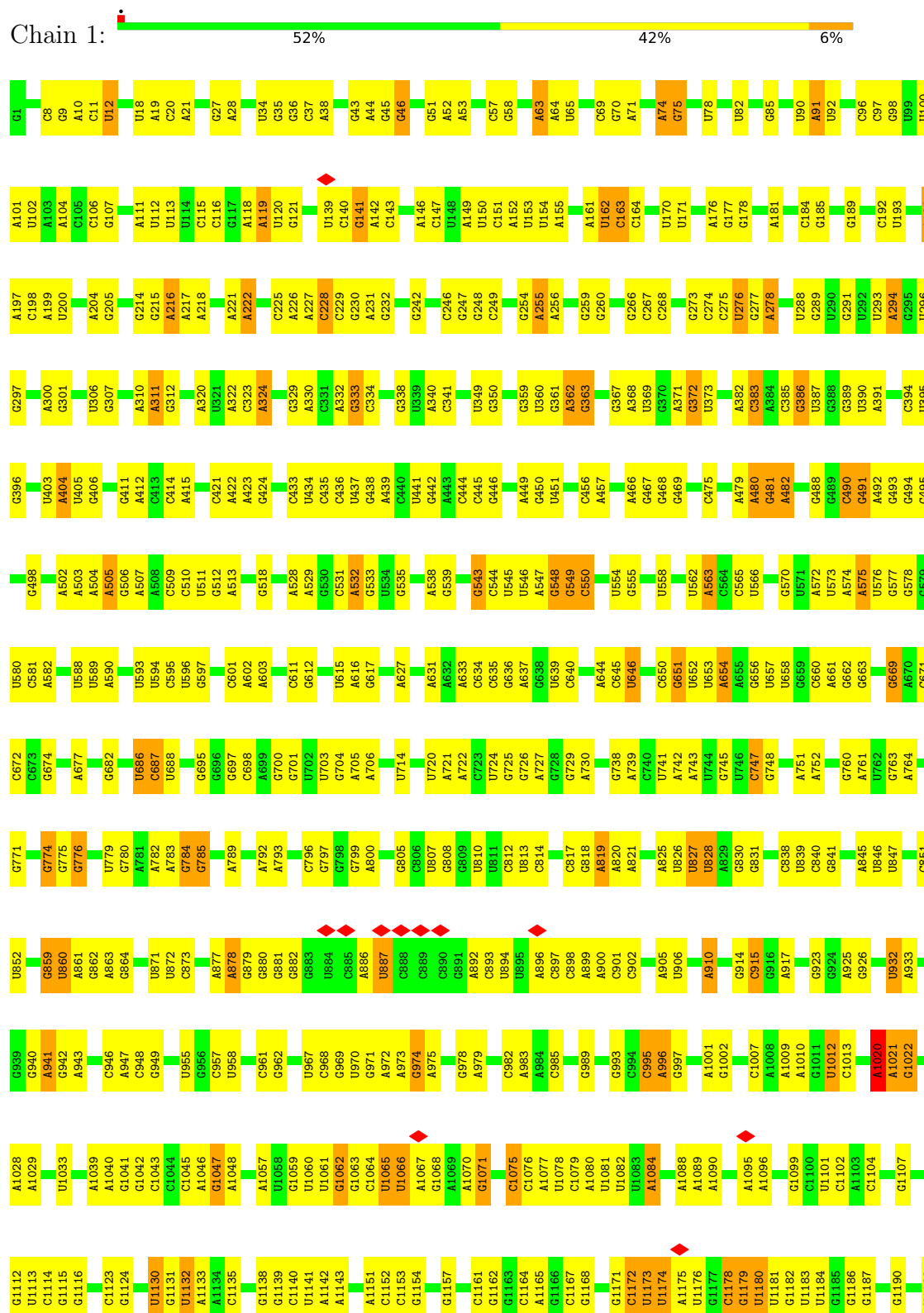
Chain 3: 



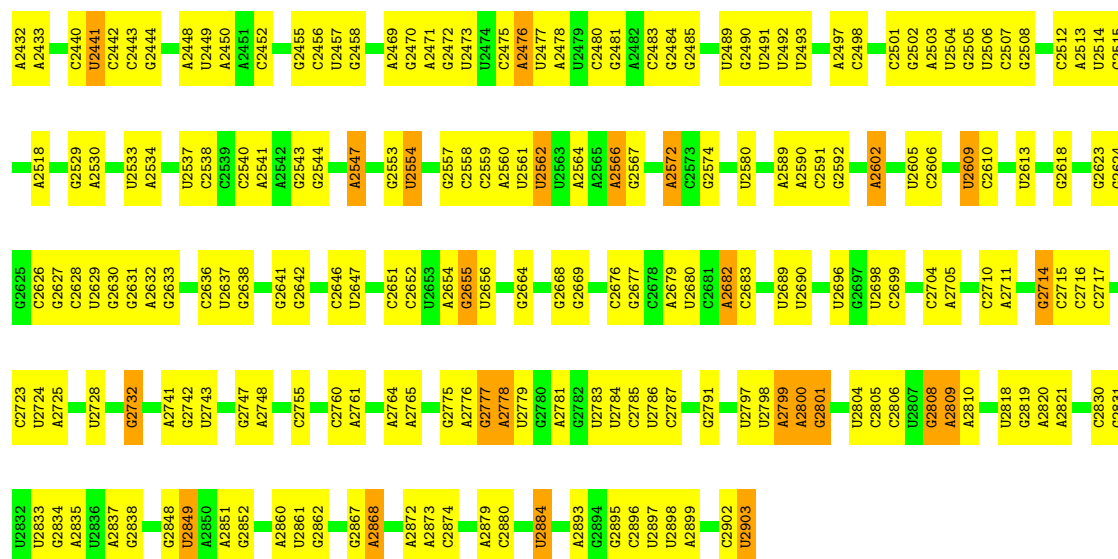
G1383	U1391	A1225	G1039	G969	G683	G577	U486	U420	G324	A243	U166
C1384	G1392	G1226	U1040	U870	U686	C578	A487	U421	C328	U244	U167
G1385	G1393	A1227	G1041	A871	A687	A579	C488	C422	C329	U245	G168
G1386	A1310	C1228	A1042	A872	G688	C580	C489	G423	A246	A246	G169
	A1311					G581	G491	G424	G247	G247	U170
	U1391	G1237	C1045	U875	U682	G585	A495	U426	G332	G251	U173
	G1316	A1238	G1048	C876	G693	C586		U427	C334	U252	U174
	C1317	A974		G877	G694	G587		C428	C335	A253	C175
	A1318	A975		A694	A695	G588	C501	U429	A336	G254	C176
	A1155	G976		C879	A696		A502	A430	A337	G255	
	U1052	A977		C880		A596	C503	A431	A338	U256	G177
	G1053						C504	A432	C339	G257	C178
	C1054	U982		C883	U701		G505	G433	U340	G258	A179
	A1055	A983		U884	A702	A600	G506	G434	C341	G259	U180
					G703	G601		U435	C342	A181	A182
	U1060	U986		G894	A704	G604	C514	U436	U343	U261	C183
	G1061	G987		C895	G705	U605	G515	U437	A262	A262	G184
	A1163	G988			A706		U516	U438	C345	C264	
	G1164			G902	U707	A621	G517	U439		G265	G187
						A622	C518		G350	G266	C188
	U1078	U991		A908	G710	C624		G446	G351	C267	A189
	A1081	U992		A909	G711		C528	G447	C352		A190
	A1170	A994		C910	A712		G529	A448	A353	C271	G191
	C995	C995		C912	G713	G628	G530	G449	G354	C272	C193
					A715	A629	U531	G450		U273	A192
	C998			G917	G716	A630	A532	A451	U367	A274	C194
	C1096	A1000		A918	U717	A633	A533	A452		G275	A195
	C1097	C1001		A919	G718	U632	U534	G453	A371		A196
	C1098	G1002			A719	G633		G454	C372		A197
	G1099	G1003		G926	C720	C634	G537	G455		A279	
	G1100	A1004			G721	A635	G538	A456	U375	C280	
	A1005	A1005		G929	G722	U636	A539	A457	G376	G202	
	A1006	G1006		C930	U723		G540	U458	G377	G203	
	C1007	U1007		C931	G724	A642		A459		G204	
	U1008	U1008		C932		C643	G544	A460	A389	C290	
	U1009	C933		C933	G730	U644	C545	A461	U390	U291	
	U1010	C934		A935	G731	C651	A546	G462	C391	G292	A205
	C1011	A1012		A936	G732	U652	A547	U463	C392		C210
	A1015			C937	G733	U653	A553	U464	A393	G212	G211
				A938	G734		U554	A465		G213	G213
	A1019	G1015		C939	G735	C658	U555	A466	U398	U216	
	G1020	A1019		G939	G736		C556	U467	G399	G302	
	A1021	G1021		G945	G737	G664	G557	A468	C400	U303	
	U1023	A1023		A946	G741	A685	C558	U471	U405	C221	
	G1024	U1024		G947	G742	G666	A559	U472	G406	C222	
	U1025	G1025		C948	A743	G667	A560	U473	A306	A223	
				A949		G668	U561	G474	U407	U224	
	C1028	U1028		U950	G750		U562	U475	A408	C225	
	U1029	A1029		G951	U751	U672	A563	G410	U409	G226	
	C1031	U1030		U952	G752	A673	C564	A411	G310	G227	
	G1032	C1031		U955	A753	G674	A565	A412	C311	A228	
	G1033	G1033		A958	G754	G675	U566	A478	A313	U229	
	G1034	A1035		U960	G755	A676	G566	U479	G413	G230	
				A959		U677	A572	U480	A414	U231	
	C1038			U966	G758	U678	A573	G481	A415	G232	
						U679	A574	A482	G416		
						G682	A575	G483	G417	G237	
							G576	G484	C322	A238	
								U485	C419	U323	



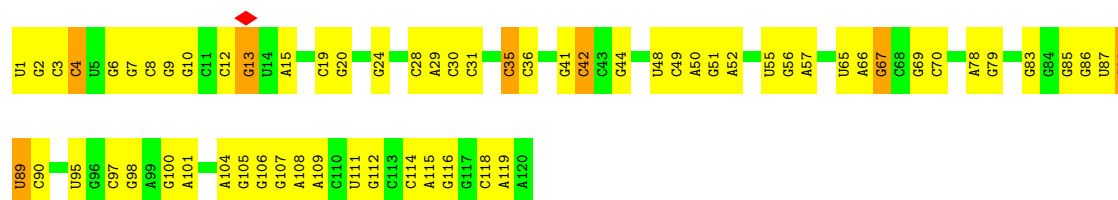
• Molecule 53: 23S ribosomal RNA







• Molecule 54: 5S ribosomal RNA



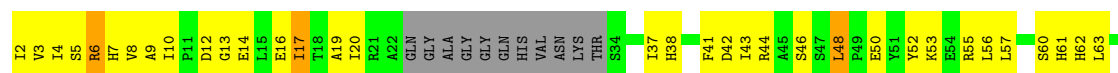
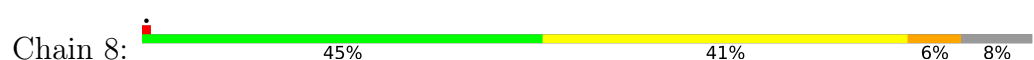
• Molecule 55: tRNA^{fMet}

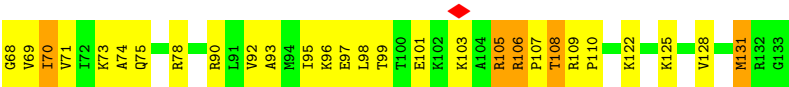


• Molecule 56: mRNA



• Molecule 57: Peptidyl-tRNA hydrolase ArfB





4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	12528	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING ONLY	Depositor
Microscope	FEI TALOS ARCTICA	Depositor
Voltage (kV)	200	Depositor
Electron dose ($e^-/\text{\AA}^2$)	30.5	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	11.938	Depositor
Minimum map value	-6.179	Depositor
Average map value	0.095	Depositor
Map value standard deviation	0.613	Depositor
Recommended contour level	0.8	Depositor
Map size ($\text{\AA}$)	389.76, 389.76, 389.76	wwPDB
Map dimensions	448, 448, 448	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	0.87, 0.87, 0.87	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	b	0.28	0/2122	0.88	4/2852 (0.1%)
2	c	0.30	0/1586	0.88	2/2134 (0.1%)
3	d	0.28	0/1571	0.87	4/2113 (0.2%)
4	e	0.30	0/1435	0.91	5/1926 (0.3%)
5	f	0.31	0/1343	0.91	5/1816 (0.3%)
6	g	0.32	0/1122	0.95	3/1515 (0.2%)
7	h	0.32	0/1001	1.05	7/1350 (0.5%)
8	i	0.36	0/1046	0.95	3/1410 (0.2%)
9	j	0.30	0/1152	0.89	6/1551 (0.4%)
10	k	0.29	0/948	0.95	3/1268 (0.2%)
11	l	0.28	0/1054	1.00	7/1403 (0.5%)
12	m	0.28	0/1093	0.82	0/1460
13	n	0.29	0/974	0.91	5/1301 (0.4%)
14	o	0.29	0/902	0.92	6/1209 (0.5%)
15	p	0.29	0/929	0.86	4/1242 (0.3%)
16	q	0.30	0/960	0.88	2/1278 (0.2%)
17	r	0.30	0/829	1.02	7/1107 (0.6%)
18	s	0.28	0/864	0.86	0/1156
19	t	0.27	0/745	0.86	0/994
20	u	0.27	0/788	0.86	0/1051
21	v	0.28	0/766	0.86	2/1025 (0.2%)
22	w	0.27	0/582	0.83	0/769
23	x	0.27	0/635	0.87	1/848 (0.1%)
24	y	0.27	0/510	0.93	2/677 (0.3%)
25	z	0.27	0/453	0.77	0/605
26	B	0.27	0/450	0.67	0/599
27	C	0.29	0/417	0.75	0/554
28	D	0.30	0/380	1.01	4/498 (0.8%)
29	E	0.30	0/513	0.81	0/676
30	F	0.32	0/303	0.94	0/397
31	G	0.31	0/1788	0.95	9/2408 (0.4%)
32	H	0.30	0/1652	0.91	9/2225 (0.4%)
33	I	0.29	0/1665	0.97	6/2227 (0.3%)
34	J	0.31	0/1170	0.96	4/1573 (0.3%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
35	K	0.32	0/836	1.00	3/1128 (0.3%)
36	L	0.29	0/1196	0.93	5/1602 (0.3%)
37	M	0.30	0/989	0.96	4/1326 (0.3%)
38	N	0.29	0/1034	1.04	11/1375 (0.8%)
39	O	0.32	0/797	1.08	9/1077 (0.8%)
40	P	0.32	0/886	0.98	7/1195 (0.6%)
41	Q	0.30	0/969	0.96	5/1300 (0.4%)
42	R	0.32	0/893	1.05	5/1193 (0.4%)
43	S	0.29	0/817	0.98	3/1088 (0.3%)
44	T	0.31	0/722	1.06	6/964 (0.6%)
45	U	0.32	0/659	1.03	4/884 (0.5%)
46	V	0.27	0/658	0.85	2/881 (0.2%)
47	W	0.31	0/545	0.87	3/731 (0.4%)
48	X	0.31	0/653	0.98	2/877 (0.2%)
49	Y	0.30	0/671	0.95	2/888 (0.2%)
50	Z	0.31	0/551	1.06	4/728 (0.5%)
51	a	0.31	0/1033	1.04	4/1387 (0.3%)
52	3	0.38	0/36963	0.47	0/57662
53	1	0.37	0/69796	0.48	2/108888 (0.0%)
54	2	0.38	0/2872	0.47	0/4479
55	5	0.38	0/1832	0.49	0/2855
56	4	0.44	0/398	0.64	0/620
57	8	0.33	0/965	1.10	7/1293 (0.5%)
All	All	0.35	0/160483	0.64	198/239638 (0.1%)

There are no bond length outliers.

All (198) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
44	T	43	ALA	N-CA-C	-11.19	98.31	113.30
57	8	13	GLY	N-CA-C	-9.09	102.58	114.85
45	U	33	ILE	N-CA-C	-8.95	103.17	111.67
50	Z	23	GLU	N-CA-C	8.77	121.77	109.31
33	I	204	SER	N-CA-C	-8.47	101.56	112.23
43	S	49	THR	N-CA-C	-8.34	102.36	112.54
42	R	82	LEU	N-CA-C	-8.28	100.95	112.45
36	L	79	VAL	N-CA-C	-8.17	104.53	113.43
31	G	177	ASN	N-CA-C	-8.10	102.02	112.23
45	U	62	GLY	N-CA-C	-7.76	105.03	114.66
17	r	46	GLU	N-CA-C	7.71	122.27	109.46
39	O	20	GLN	N-CA-C	-7.60	104.04	113.38
41	Q	114	SER	N-CA-C	-7.46	103.08	111.14

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
57	8	4	ILE	N-CA-C	7.45	118.11	108.12
33	I	78	ALA	N-CA-C	-7.42	104.37	113.50
28	D	4	THR	N-CA-C	7.40	119.34	111.28
40	P	36	ARG	N-CA-C	-7.27	104.41	113.28
35	K	66	ALA	N-CA-C	7.27	114.54	108.07
39	O	86	ALA	N-CA-C	-7.17	104.34	113.23
11	l	95	LEU	N-CA-C	-7.05	103.66	112.90
50	Z	11	PHE	N-CA-C	7.05	118.93	110.19
44	T	39	GLN	N-CA-C	-6.88	103.57	112.23
57	8	71	VAL	N-CA-C	6.86	118.00	107.99
38	N	53	LEU	N-CA-C	-6.83	104.42	112.89
33	I	97	LEU	N-CA-C	6.83	119.35	111.02
11	l	92	LEU	N-CA-C	-6.79	103.95	111.82
40	P	117	HIS	N-CA-C	-6.79	102.30	111.87
7	h	100	ALA	N-CA-C	-6.76	103.71	112.23
42	R	77	LYS	N-CA-C	-6.73	103.75	112.23
7	h	118	ILE	N-CA-C	6.73	123.42	108.88
40	P	69	CYS	N-CA-C	-6.70	105.02	113.72
39	O	77	VAL	N-CA-C	6.70	116.82	110.53
17	r	55	ASP	N-CA-C	6.66	124.97	110.80
5	f	173	ALA	N-CA-C	6.65	120.02	112.97
43	S	50	LEU	N-CA-C	-6.65	101.69	109.93
32	H	125	ARG	N-CA-C	-6.62	104.82	113.17
38	N	60	LEU	N-CA-C	6.61	120.27	109.24
49	Y	5	SER	N-CA-C	-6.59	104.99	113.16
47	W	66	LEU	N-CA-C	-6.58	105.08	113.23
51	a	194	VAL	N-CA-C	6.54	113.21	106.21
53	l	1130	U	C2'-C3'-O3'	6.53	119.29	109.50
38	N	44	ARG	N-CA-C	6.53	120.50	112.54
6	g	67	ALA	N-CA-C	-6.51	104.02	112.23
51	a	209	ILE	N-CA-C	6.50	122.86	109.34
44	T	53	ARG	N-CA-C	-6.47	104.31	111.36
50	Z	7	GLU	N-CA-C	-6.45	103.03	111.74
6	g	30	LEU	N-CA-C	6.44	118.18	111.03
41	Q	115	LYS	N-CA-C	-6.44	99.52	109.76
9	j	119	PHE	N-CA-C	-6.33	105.39	113.23
42	R	7	ASN	N-CA-C	6.32	119.81	109.76
35	K	55	HIS	N-CA-C	6.30	118.25	109.31
8	i	64	ARG	N-CA-C	6.28	118.87	111.02
41	Q	43	LYS	N-CA-C	6.25	123.61	109.81
1	b	71	ASP	N-CA-C	6.18	119.31	110.10
57	8	60	SER	N-CA-C	-6.14	102.35	111.81

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
57	8	105	ARG	N-CA-C	6.14	118.90	108.90
39	O	98	VAL	N-CA-C	6.13	118.81	109.12
33	I	94	GLU	N-CA-C	-6.12	105.77	113.18
40	P	99	LEU	N-CA-C	-6.11	105.31	112.89
10	k	47	ILE	CA-C-N	6.09	127.45	119.84
10	k	47	ILE	C-N-CA	6.09	127.45	119.84
35	K	24	ARG	N-CA-C	-6.07	104.23	111.69
7	h	118	ILE	CA-C-N	-6.05	112.28	119.84
7	h	118	ILE	C-N-CA	-6.05	112.28	119.84
42	R	72	ILE	N-CA-C	6.02	116.80	110.72
31	G	222	GLU	N-CA-C	-6.00	105.96	113.28
14	o	116	GLN	N-CA-C	5.92	118.09	108.63
17	r	50	GLY	N-CA-C	-5.91	99.19	113.18
10	k	112	PHE	N-CA-C	-5.90	104.28	112.30
36	L	44	SER	N-CA-C	-5.88	104.99	111.82
15	p	106	ALA	N-CA-C	-5.88	105.94	113.23
57	8	6	ARG	N-CA-C	5.87	117.54	111.03
2	c	132	ALA	N-CA-C	5.85	120.04	113.02
38	N	87	MET	N-CA-C	-5.85	106.48	113.97
7	h	112	ALA	N-CA-C	5.82	118.30	111.02
40	P	61	ALA	N-CA-C	-5.81	105.08	111.82
48	X	71	GLY	N-CA-C	5.81	121.43	113.99
42	R	64	VAL	N-CA-C	5.79	117.18	108.96
4	e	167	ALA	N-CA-C	-5.79	105.11	111.82
7	h	119	PRO	N-CA-C	-5.78	100.56	112.47
43	S	54	SER	N-CA-C	5.76	118.22	111.02
3	d	115	GLN	N-CA-C	-5.74	104.85	112.94
4	e	158	THR	N-CA-C	-5.71	105.62	112.59
33	I	23	GLY	N-CA-C	5.71	122.72	114.67
41	Q	75	GLU	N-CA-C	5.70	117.95	111.11
11	l	23	ILE	N-CA-C	-5.70	108.30	113.71
32	H	112	ALA	N-CA-C	5.70	118.22	111.33
38	N	90	ASP	N-CA-C	5.68	122.89	110.80
11	l	82	LEU	N-CA-C	-5.67	106.32	113.18
31	G	174	GLU	N-CA-C	-5.67	105.47	112.90
24	y	58	ASN	N-CA-C	-5.66	105.09	112.23
5	f	72	ASN	N-CA-C	-5.66	105.02	111.07
38	N	61	ASP	N-CA-C	-5.65	100.18	109.40
45	U	14	ARG	CA-C-N	5.63	125.61	120.21
45	U	14	ARG	C-N-CA	5.63	125.61	120.21
46	V	33	TYR	N-CA-C	5.62	118.49	111.24
38	N	6	TYR	N-CA-C	5.61	118.36	109.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
50	Z	41	THR	N-CA-C	-5.61	105.32	111.82
1	b	119	VAL	N-CA-C	-5.56	106.91	113.42
13	n	2	ARG	N-CA-C	5.53	119.61	112.86
34	J	101	GLY	N-CA-C	-5.52	107.48	114.16
37	M	54	THR	N-CA-C	-5.50	106.62	113.38
34	J	96	GLN	CA-C-N	5.49	126.70	119.84
34	J	96	GLN	C-N-CA	5.49	126.70	119.84
37	M	13	ILE	N-CA-C	-5.49	104.98	113.16
39	O	87	LEU	N-CA-C	-5.49	105.45	111.82
6	g	48	GLU	N-CA-C	5.48	117.69	111.11
13	n	75	ILE	N-CA-C	-5.48	105.02	111.00
53	l	1020	A	C2'-C3'-O3'	5.48	117.71	109.50
3	d	194	LYS	N-CA-C	-5.45	105.36	112.23
13	n	22	ARG	N-CA-C	-5.45	105.26	111.14
34	J	160	VAL	N-CA-C	5.43	115.57	110.30
14	o	16	ARG	N-CA-C	-5.41	105.04	111.69
28	D	7	PRO	N-CA-C	5.41	119.72	111.34
40	P	93	GLU	N-CA-C	5.40	117.25	111.36
51	a	17	ALA	N-CA-C	5.40	120.54	113.30
28	D	6	GLN	CA-C-N	5.40	125.70	119.92
28	D	6	GLN	C-N-CA	5.40	125.70	119.92
31	G	223	GLY	N-CA-C	-5.40	107.97	114.66
16	q	70	GLN	N-CA-C	-5.38	106.22	112.89
23	x	71	ARG	N-CA-C	-5.37	105.51	111.36
48	X	39	ILE	N-CA-C	5.37	116.91	109.29
16	q	28	SER	N-CA-C	-5.37	105.77	114.09
44	T	11	VAL	N-CA-C	-5.35	105.50	110.53
33	I	53	GLN	N-CA-C	-5.33	105.51	112.23
32	H	107	LYS	CA-C-N	5.32	124.77	119.24
32	H	107	LYS	C-N-CA	5.32	124.77	119.24
15	p	100	ARG	N-CA-C	-5.30	105.55	112.23
14	o	54	VAL	N-CA-C	-5.30	106.70	112.80
9	j	71	ASP	N-CA-C	5.29	119.43	112.92
32	H	100	ILE	N-CA-C	5.29	115.52	108.11
37	M	118	ALA	N-CA-C	-5.29	105.19	111.69
44	T	40	GLY	N-CA-C	-5.29	106.29	113.37
14	o	75	GLY	N-CA-C	-5.28	106.01	112.77
39	O	85	ASP	N-CA-C	-5.28	106.84	113.28
39	O	100	ILE	N-CA-C	5.27	117.13	108.97
32	H	5	HIS	CA-C-N	5.26	124.44	118.97
32	H	5	HIS	C-N-CA	5.26	124.44	118.97
5	f	13	GLY	N-CA-C	-5.26	107.64	113.79

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
37	M	70	VAL	N-CA-C	-5.26	104.93	112.35
13	n	71	ARG	N-CA-C	5.26	122.00	110.80
17	r	14	VAL	N-CA-C	5.26	115.85	108.17
5	f	15	ASP	N-CA-C	5.26	117.32	109.59
4	e	164	GLU	N-CA-C	-5.25	105.62	112.23
32	H	98	ALA	N-CA-C	5.24	117.95	109.40
2	c	117	GLY	N-CA-C	-5.24	106.27	111.56
21	v	40	ILE	N-CA-C	5.23	116.01	108.48
36	L	105	GLU	N-CA-C	-5.22	105.67	111.36
31	G	13	VAL	N-CA-C	-5.21	106.35	111.77
11	l	96	LYS	N-CA-C	-5.21	105.66	112.23
5	f	76	ILE	N-CA-C	5.21	115.94	110.62
11	l	43	GLY	N-CA-C	-5.21	105.90	114.76
1	b	213	ARG	N-CA-C	-5.20	106.78	113.23
38	N	62	LEU	N-CA-C	5.20	117.15	108.99
14	o	12	THR	N-CA-C	5.19	116.63	111.07
3	d	176	ASP	CA-C-N	5.19	125.24	119.32
3	d	176	ASP	C-N-CA	5.19	125.24	119.32
8	i	78	LEU	N-CA-C	-5.18	105.72	111.36
9	j	102	GLU	N-CA-C	-5.18	105.72	111.36
8	i	101	SER	N-CA-C	5.17	117.20	110.43
38	N	52	GLU	N-CA-C	-5.17	107.00	113.72
39	O	42	LEU	CA-C-N	5.15	126.28	119.84
39	O	42	LEU	C-N-CA	5.15	126.28	119.84
47	W	25	ILE	N-CA-C	-5.15	107.40	113.42
44	T	62	ARG	N-CA-C	-5.14	105.76	111.36
51	a	214	ILE	N-CA-C	5.13	115.35	108.17
21	v	29	ILE	N-CA-C	5.12	115.29	108.27
40	P	100	ASN	N-CA-C	-5.12	105.88	111.82
14	o	85	LYS	N-CA-C	-5.12	105.78	112.23
32	H	129	PHE	N-CA-C	5.12	116.86	111.28
11	l	63	LYS	N-CA-C	-5.11	102.91	110.48
36	L	142	ARG	N-CA-C	-5.11	105.41	111.69
15	p	22	GLY	N-CA-C	-5.11	108.12	113.58
13	n	14	SER	N-CA-C	5.10	117.23	111.11
4	e	4	HIS	N-CA-C	-5.10	105.80	111.36
41	Q	25	ALA	N-CA-C	5.10	119.45	113.23
7	h	72	LEU	N-CA-C	5.09	121.65	110.80
47	W	69	TYR	N-CA-C	-5.09	105.38	111.03
1	b	215	VAL	N-CA-C	5.08	115.41	107.99
31	G	50	ASN	N-CA-C	-5.08	105.82	111.36
57	8	131	MET	N-CA-C	5.08	121.62	110.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	j	7	LYS	CA-C-N	5.08	125.11	119.32
9	j	7	LYS	C-N-CA	5.08	125.11	119.32
38	N	88	GLU	N-CA-C	-5.07	105.94	111.82
46	V	45	VAL	N-CA-C	5.07	115.88	108.53
38	N	97	LEU	N-CA-C	-5.06	106.95	113.23
4	e	134	GLN	N-CA-C	-5.06	106.85	112.57
17	r	49	ILE	N-CA-C	5.04	115.84	108.58
17	r	65	ALA	N-CA-C	5.04	116.72	108.76
24	y	24	GLU	N-CA-C	5.04	118.20	111.75
31	G	111	LYS	N-CA-C	-5.03	105.89	112.23
36	L	49	LEU	N-CA-C	-5.03	105.50	111.69
17	r	23	GLU	N-CA-C	5.02	116.59	110.41
49	Y	28	ARG	N-CA-C	5.02	117.41	111.33
15	p	25	VAL	N-CA-C	5.02	115.71	108.48
31	G	78	ALA	N-CA-C	-5.01	105.89	111.36
31	G	14	HIS	N-CA-C	5.01	118.32	109.80
9	j	95	ARG	N-CA-C	5.01	116.55	111.14

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	b	2083	0	2157	52	0
2	c	1565	0	1616	37	0
3	d	1552	0	1619	39	0
4	e	1411	0	1447	53	0
5	f	1323	0	1374	28	0
6	g	1111	0	1148	40	0
7	h	988	0	1025	34	0
8	i	1032	0	1088	50	0
9	j	1129	0	1162	27	0
10	k	939	0	1012	27	0
11	l	1045	0	1117	33	0
12	m	1074	0	1157	20	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
13	n	961	0	1000	28	0
14	o	892	0	923	27	0
15	p	917	0	965	20	0
16	q	947	0	1022	22	0
17	r	816	0	839	20	0
18	s	857	0	922	24	0
19	t	739	0	807	25	0
20	u	780	0	834	18	0
21	v	753	0	780	9	0
22	w	575	0	592	10	0
23	x	625	0	655	16	0
24	y	509	0	543	19	0
25	z	449	0	491	9	0
26	B	444	0	461	5	0
27	C	410	0	440	7	0
28	D	377	0	418	13	0
29	E	504	0	574	15	0
30	F	302	0	343	5	0
31	G	1757	0	1787	59	0
32	H	1625	0	1699	54	0
33	I	1643	0	1710	56	0
34	J	1157	0	1199	42	0
35	K	818	0	808	43	0
36	L	1182	0	1240	18	0
37	M	979	0	1034	47	0
38	N	1022	0	1070	40	0
39	O	787	0	828	36	0
40	P	870	0	878	47	0
41	Q	955	0	1019	37	0
42	R	884	0	944	48	0
43	S	805	0	847	28	0
44	T	714	0	737	18	0
45	U	649	0	666	34	0
46	V	649	0	691	27	0
47	W	536	0	552	14	0
48	X	638	0	665	28	0
49	Y	665	0	714	28	0
50	Z	545	0	579	35	0
51	a	1026	0	1092	45	0
52	3	33012	0	16619	673	0
53	1	62317	0	31346	1088	0
54	2	2568	0	1303	56	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
55	5	1640	0	837	34	0
56	4	353	0	175	12	0
57	8	955	0	1014	44	0
All	All	147860	0	100584	2968	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 12.

All (2968) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1259:C:H3'	52:3:1260:G:H5''	1.26	1.13
50:Z:25:ALA:HB1	56:4:9:G:H4'	1.24	1.11
19:t:73:ARG:HH12	53:1:65:U:H1'	1.15	1.10
53:1:1300:G:H4'	53:1:1301:A:H5''	1.11	1.08
45:U:41:PRO:HB2	52:3:450:G:H4'	1.34	1.06
34:J:107:GLY:HA3	52:3:9:G:H5'	1.34	1.04
12:m:12:MET:HA	53:1:910:A:H62	1.22	1.04
57:8:106:ARG:H	57:8:107:PRO:HA	1.20	1.01
53:1:1906:G:H2'	53:1:1907:G:H5''	1.42	1.01
52:3:813:U:H2'	52:3:814:A:H5''	1.42	0.99
53:1:1645:G:H5''	53:1:1646:C:H5'	1.43	0.98
54:2:3:C:H2'	54:2:4:C:H5''	1.44	0.98
33:I:120:LYS:HE2	52:3:439:U:H5''	1.44	0.98
53:1:2310:C:H2'	53:1:2311:A:H4'	1.42	0.97
34:J:108:GLY:H	52:3:9:G:H4'	1.27	0.96
52:3:992:U:H4'	52:3:993:G:H5''	1.48	0.95
53:1:45:G:H5''	53:1:46:G:H5'	1.45	0.95
4:e:130:GLY:HA3	53:1:2305:U:H5''	1.46	0.95
4:e:65:LEU:HD11	54:2:41:G:H21	1.32	0.94
52:3:405:U:H3'	52:3:406:G:H5'	1.50	0.93
53:1:783:A:H2'	53:1:784:G:H4'	1.47	0.92
53:1:2561:U:H2'	53:1:2562:U:H5''	1.51	0.92
53:1:2800:A:H3'	53:1:2801:G:H5'	1.51	0.92
52:3:1130:A:H61	52:3:1144:G:H1'	1.34	0.92
52:3:184:G:H4'	52:3:224:U:H4'	1.50	0.91
42:R:96:VAL:HG22	52:3:1308:U:H5''	1.51	0.91
1:b:20:ASN:HD22	1:b:23:LEU:HG	1.37	0.90
52:3:473:U:H3'	52:3:474:G:H5''	1.51	0.89
52:3:1428:A:H2'	52:3:1429:A:H5''	1.53	0.89
53:1:1470:A:H62	53:1:1521:G:H21	1.20	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:K:10:VAL:HG23	35:K:58:HIS:HB3	1.55	0.88
53:1:1300:G:C4'	53:1:1301:A:H5''	2.00	0.88
37:M:12:ARG:NH2	52:3:826:C:H5'	1.89	0.87
19:t:73:ARG:NH1	53:1:65:U:H1'	1.91	0.86
31:G:15:PHE:HD1	31:G:16:GLY:H	1.22	0.86
4:e:147:ARG:HG3	4:e:148:VAL:HG12	1.58	0.86
52:3:68:G:H1	52:3:101:A:H61	1.22	0.85
52:3:216:U:H4'	52:3:464:U:H4'	1.59	0.84
53:1:1936:A:H2	53:1:1943:U:H3	1.24	0.84
16:q:55:GLN:HE22	53:1:535:G:H21	1.19	0.84
30:F:36:ARG:HG2	30:F:37:GLN:H	1.42	0.83
53:1:1300:G:H4'	53:1:1301:A:C5'	2.02	0.83
52:3:75:G:H2'	52:3:76:G:H5'	1.61	0.82
52:3:1259:C:H3'	52:3:1260:G:C5'	2.08	0.82
37:M:12:ARG:HH21	52:3:826:C:H5'	1.44	0.82
53:1:1141:U:H4'	53:1:1142:A:O4'	1.78	0.82
47:W:13:THR:HG22	47:W:17:VAL:HA	1.60	0.82
53:1:121:G:H4'	53:1:149:A:H5'	1.62	0.82
53:1:2139:U:H2'	53:1:2140:G:H5'	1.61	0.82
23:x:17:ARG:HE	23:x:23:ALA:HB2	1.45	0.81
19:t:72:GLN:NE2	53:1:456:C:H41	1.79	0.81
53:1:215:G:H4'	53:1:216:A:H4'	1.62	0.81
45:U:41:PRO:HG2	45:U:42:ILE:HD12	1.62	0.81
31:G:15:PHE:HA	31:G:39:ILE:HA	1.60	0.81
53:1:2553:G:H3'	53:1:2554:U:H5''	1.63	0.81
53:1:1168:G:H1	53:1:1181:U:H3	1.28	0.80
52:3:148:G:H1	52:3:174:A:H61	1.27	0.80
21:v:9:ARG:HG2	21:v:41:GLU:HG2	1.64	0.80
32:H:113:LYS:HE2	32:H:184:ASN:HD21	1.45	0.80
53:1:1807:G:H2'	53:1:1808:A:H5'	1.62	0.80
14:o:76:LYS:O	14:o:80:GLU:HG3	1.81	0.80
46:V:61:ARG:HB2	46:V:75:VAL:HG22	1.63	0.80
53:1:2389:G:H5''	53:1:2390:U:H5'	1.64	0.80
46:V:24:ILE:HB	46:V:41:THR:HG23	1.64	0.80
37:M:46:GLU:HG2	37:M:61:THR:HB	1.63	0.79
53:1:2475:C:H2'	53:1:2476:A:H5'	1.64	0.79
48:X:2:ARG:NH1	52:3:1311:A:H62	1.79	0.79
33:I:1:ALA:HA	33:I:67:LEU:HD23	1.64	0.79
45:U:41:PRO:CB	52:3:450:G:H4'	2.12	0.79
52:3:1300:G:H1	52:3:1334:G:H3'	1.48	0.79
53:1:1906:G:C2'	53:1:1907:G:H5''	2.13	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:1:1469:A:H62	53:1:1522:A:H62	1.30	0.79
57:8:106:ARG:H	57:8:107:PRO:CA	1.96	0.79
9:j:27:ARG:HH22	53:1:1142:A:H4'	1.47	0.78
38:N:17:ARG:NH2	52:3:1129:C:H5''	1.97	0.78
42:R:113:LYS:HB2	42:R:114:PRO:HD3	1.65	0.78
32:H:170:GLY:O	52:3:1106:G:H4'	1.84	0.78
35:K:91:ARG:HG3	35:K:92:THR:H	1.48	0.78
53:1:1020:A:H1'	53:1:1021:A:OP2	1.83	0.78
49:Y:67:HIS:HD2	52:3:262:A:H5'	1.47	0.78
33:I:145:ARG:HH22	52:3:490:C:H5''	1.48	0.78
54:2:3:C:C2'	54:2:4:C:H5''	2.14	0.77
35:K:47:LEU:HB2	35:K:55:HIS:HB3	1.67	0.77
51:a:20:GLN:HE22	51:a:211:LYS:H	1.32	0.77
53:1:2572:A:H5'	53:1:2574:G:H4'	1.67	0.77
53:1:1179:G:H2'	53:1:1180:U:H4'	1.65	0.77
8:i:126:ARG:HB3	53:1:1080:A:H4'	1.67	0.76
2:c:142:VAL:HG13	2:c:144:GLY:H	1.49	0.76
3:d:69:ARG:HH12	53:1:2060:A:H62	1.32	0.76
36:L:112:ASP:HB2	36:L:118:ARG:HG2	1.65	0.76
39:O:14:ASP:HB3	39:O:17:LEU:HB3	1.67	0.76
52:3:813:U:C2'	52:3:814:A:H5''	2.16	0.76
4:e:43:ILE:HB	4:e:77:LYS:HE3	1.68	0.76
31:G:172:ILE:HG21	31:G:195:VAL:HG12	1.66	0.76
52:3:1428:A:C2'	52:3:1429:A:H5''	2.14	0.75
33:I:119:HIS:CG	52:3:438:U:H4'	2.21	0.75
16:q:36:GLN:HE21	53:1:1252:G:H22	1.32	0.75
4:e:107:VAL:HG12	4:e:108:PRO:HD3	1.69	0.75
8:i:134:SER:HG	53:1:1077:A:H2	1.34	0.75
43:S:6:LYS:O	43:S:9:GLU:HG2	1.87	0.75
53:1:881:G:H2'	53:1:882:G:H8	1.49	0.75
53:1:1728:C:H2'	53:1:1729:U:H5''	1.66	0.75
7:h:3:LEU:HB3	7:h:6:GLN:HB2	1.67	0.75
8:i:9:LYS:HE3	53:1:1061:U:OP1	1.86	0.74
18:s:86:MET:HB3	18:s:94:ASP:HB3	1.69	0.74
22:w:39:THR:H	53:1:2331:G:H4'	1.51	0.74
6:g:97:ARG:NH2	53:1:2220:U:H4'	2.03	0.74
19:t:72:GLN:HE21	53:1:456:C:H41	1.33	0.74
53:1:11:C:H2'	53:1:12:U:H5''	1.70	0.74
53:1:2800:A:H3'	53:1:2801:G:C5'	2.17	0.74
2:c:142:VAL:HG22	2:c:143:PRO:HD2	1.69	0.74
32:H:109:GLU:HG3	32:H:139:ASN:HB3	1.69	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:Z:25:ALA:CB	56:4:9:G:H4'	2.12	0.73
51:a:172:HIS:HB2	53:1:2122:U:O2'	1.86	0.73
53:1:1171:G:H2'	53:1:1172:C:H4'	1.69	0.73
7:h:27:VAL:HG13	7:h:83:ALA:HB3	1.70	0.73
38:N:35:GLU:HA	38:N:39:GLY:HA3	1.69	0.73
52:3:70:U:H4'	52:3:71:A:C8	2.23	0.73
52:3:1397:C:N4	57:8:122:LYS:HG3	2.03	0.73
53:1:774:G:O2'	53:1:775:G:H5''	1.88	0.73
51:a:3:LYS:HE3	53:1:2175:C:OP2	1.88	0.72
53:1:481:G:H1'	53:1:506:G:N2	2.04	0.72
34:J:107:GLY:CA	52:3:9:G:H5'	2.17	0.72
52:3:1457:G:H2'	52:3:1458:G:H8	1.54	0.72
37:M:6:ILE:HD12	37:M:6:ILE:H	1.54	0.72
52:3:328:C:H4'	52:3:329:A:H5'	1.71	0.72
49:Y:67:HIS:CD2	52:3:262:A:H5'	2.23	0.72
11:l:74:THR:HG22	11:l:107:PHE:HB2	1.71	0.72
35:K:36:ILE:HG13	35:K:64:VAL:HG22	1.72	0.72
11:l:62:PRO:HG3	53:1:2393:U:H5''	1.72	0.72
52:3:245:U:O2'	52:3:246:A:H5'	1.89	0.72
53:1:45:G:C5'	53:1:46:G:H5'	2.20	0.72
57:8:106:ARG:N	57:8:107:PRO:HA	2.00	0.72
31:G:22:TRP:HZ2	52:3:829:G:H4'	1.55	0.72
53:1:548:G:N7	53:1:549:G:H1'	2.05	0.72
52:3:153:C:H2'	52:3:154:U:H5''	1.72	0.71
53:1:1367:A:H2'	53:1:1368:G:H5'	1.71	0.71
53:1:2155:U:H2'	53:1:2156:G:H5'	1.72	0.71
40:P:110:THR:HG22	50:Z:4:LYS:HG3	1.73	0.71
43:S:85:GLU:HG3	43:S:89:ARG:HH21	1.55	0.71
52:3:1261:A:H2'	52:3:1262:C:H5'	1.73	0.71
53:1:2329:U:H2'	53:1:2330:G:C8	2.25	0.71
53:1:2682:A:H61	53:1:2728:U:H1'	1.55	0.71
15:p:52:ARG:HB2	15:p:55:HIS:HB2	1.71	0.71
9:j:17:VAL:HG23	9:j:137:PRO:HB2	1.71	0.71
53:1:2561:U:C2'	53:1:2562:U:H5''	2.21	0.70
53:1:784:G:HO2'	53:1:785:G:H8	1.36	0.70
7:h:58:THR:HG21	7:h:82:ILE:HB	1.73	0.70
7:h:59:LEU:HD23	7:h:61:ARG:H	1.55	0.70
51:a:65:LEU:HD11	51:a:175:ILE:HG23	1.72	0.70
8:i:126:ARG:HE	53:1:1080:A:H5''	1.56	0.70
44:T:35:ILE:HG13	44:T:58:MET:HE1	1.72	0.70
49:Y:27:MET:SD	49:Y:60:GLN:HG3	2.31	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:1:1539:U:H2'	53:1:1540:G:H8	1.57	0.70
38:N:8:THR:HG23	38:N:9:GLY:H	1.55	0.70
48:X:27:LYS:HG2	48:X:28:LYS:H	1.55	0.70
4:e:84:ILE:HG21	53:1:2312:U:H4'	1.74	0.70
52:3:1019:A:H2'	52:3:1020:G:O4'	1.92	0.70
6:g:132:PHE:HB2	6:g:140:ALA:HB3	1.73	0.70
52:3:1296:C:H4'	52:3:1302:C:N4	2.06	0.70
53:1:644:A:H2'	53:1:645:C:H5''	1.73	0.70
6:g:31:VAL:HG23	6:g:32:PRO:HD3	1.74	0.70
53:1:481:G:H1'	53:1:506:G:H21	1.57	0.70
53:1:1900:A:H1'	53:1:1970:A:H2'	1.74	0.70
57:8:73:LYS:HG2	57:8:75:GLN:HG3	1.72	0.70
35:K:15:SER:O	35:K:18:VAL:HG22	1.91	0.70
53:1:322:A:H5'	53:1:340:A:H1'	1.74	0.70
42:R:9:PRO:HB2	42:R:44:ILE:HG12	1.75	0.69
50:Z:9:GLU:HB3	50:Z:10:PRO:HD3	1.73	0.69
35:K:5:GLU:HG2	35:K:63:ASN:HA	1.73	0.69
39:O:9:ARG:HH12	52:3:1279:G:H5''	1.57	0.69
47:W:38:ILE:H	47:W:38:ILE:HD12	1.56	0.69
51:a:48:LEU:HD11	51:a:171:ILE:HG13	1.75	0.69
53:1:310:A:C2'	53:1:311:A:H5''	2.22	0.69
8:i:133:ARG:HH12	53:1:1078:U:H4'	1.54	0.69
10:k:64:ARG:HH12	10:k:101:GLY:HA3	1.56	0.69
52:3:179:A:H61	52:3:196:A:H62	1.37	0.69
52:3:431:A:H2'	52:3:432:A:H8	1.57	0.69
52:3:1397:C:H41	57:8:122:LYS:HG3	1.56	0.69
53:1:1476:U:H3	53:1:1515:A:H62	1.38	0.69
2:c:151:THR:HB	2:c:152:PRO:HD3	1.75	0.69
53:1:2189:U:H2'	53:1:2190:G:H8	1.58	0.69
1:b:30:ALA:HB3	1:b:31:PRO:HD3	1.74	0.69
52:3:130:A:H1'	52:3:264:C:H5'	1.74	0.69
54:2:65:U:H3'	54:2:108:A:H61	1.58	0.69
13:n:38:LEU:HB3	13:n:39:PRO:HD3	1.74	0.69
15:p:24:THR:HG23	15:p:86:LYS:HB2	1.75	0.69
37:M:45:ILE:HD13	37:M:60:LEU:HD12	1.75	0.69
39:O:41:PRO:HG3	52:3:1150:A:N3	2.07	0.69
18:s:42:LYS:HB2	53:1:2010:G:H5''	1.75	0.69
16:q:55:GLN:HE22	53:1:535:G:N2	1.91	0.68
45:U:41:PRO:HB2	52:3:450:G:C4'	2.17	0.68
14:o:12:THR:HB	53:1:2334:U:H4'	1.74	0.68
52:3:243:A:H4'	52:3:244:U:H3'	1.76	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:2:1:U:H3	54:2:119:A:H61	1.42	0.68
2:c:130:GLN:HE22	2:c:142:VAL:HG12	1.58	0.68
34:J:98:ALA:HA	52:3:6:G:O6	1.92	0.68
40:P:66:ALA:HB3	40:P:98:ALA:HB3	1.76	0.68
52:3:1127:G:H1	52:3:1145:A:H61	1.39	0.68
33:I:149:LYS:HG2	33:I:150:LYS:HG2	1.76	0.68
53:1:275:C:H3'	53:1:276:U:C5'	2.23	0.68
6:g:103:VAL:HG12	6:g:108:VAL:HB	1.74	0.68
42:R:64:VAL:HG22	42:R:65:GLU:H	1.59	0.68
31:G:142:LYS:HD3	52:3:1098:C:OP2	1.93	0.67
7:h:38:MET:HG2	53:1:1082:U:H1'	1.74	0.67
57:8:42:ASP:HB3	57:8:70:ILE:HD11	1.76	0.67
33:I:171:GLU:HB2	33:I:180:THR:HB	1.76	0.67
53:1:902:C:O2	53:1:902:C:H2'	1.93	0.67
53:1:1394:U:H4'	53:1:1603:A:H4'	1.75	0.67
54:2:66:A:H4'	54:2:67:G:C8	2.30	0.67
55:5:21:A:H61	55:5:46:G:H2'	1.59	0.67
5:f:163:TYR:HB2	5:f:166:GLU:HB2	1.76	0.67
40:P:22:ILE:HG23	40:P:31:VAL:HG22	1.75	0.67
4:e:39:VAL:HG22	4:e:41:GLU:H	1.59	0.67
33:I:120:LYS:HE2	52:3:439:U:C5'	2.22	0.67
6:g:112:LYS:HE2	53:1:2220:U:OP1	1.95	0.67
17:r:49:ILE:HG22	17:r:54:VAL:HG13	1.75	0.67
42:R:86:ARG:HA	42:R:96:VAL:HB	1.77	0.67
50:Z:39:LYS:N	50:Z:40:PRO:HD2	2.09	0.67
52:3:1205:U:H2'	52:3:1206:G:H8	1.60	0.67
53:1:161:A:H3'	53:1:162:U:H5''	1.76	0.67
33:I:164:ARG:HH11	33:I:166:LYS:HD3	1.57	0.67
52:3:482:A:H2'	52:3:483:C:H5'	1.77	0.67
3:d:76:PRO:HA	3:d:82:GLY:HA2	1.76	0.66
36:L:49:LEU:HD13	36:L:123:LEU:HD13	1.77	0.66
53:1:1664:A:H61	53:1:1996:C:H42	1.44	0.66
52:3:1384:C:H2'	52:3:1385:G:C8	2.30	0.66
53:1:650:C:H3'	53:1:651:G:H5''	1.77	0.66
53:1:917:A:H5''	53:1:2268:A:H61	1.59	0.66
57:8:16:GLU:HB2	57:8:41:PHE:HB2	1.76	0.66
40:P:86:LYS:HD3	52:3:707:U:OP1	1.94	0.66
33:I:45:PRO:HG2	33:I:47:LEU:HD22	1.77	0.66
38:N:57:VAL:HG23	38:N:58:GLU:H	1.60	0.66
39:O:9:ARG:HD3	39:O:71:LEU:HD11	1.77	0.66
46:V:17:GLU:HG3	52:3:254:G:H21	1.60	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:1:2287:A:O2'	53:1:2288:A:H2'	1.95	0.66
7:h:81:LEU:HD13	53:1:1107:G:H5'	1.78	0.66
8:i:127:SER:OG	53:1:1080:A:H1'	1.95	0.66
46:V:78:VAL:HG12	46:V:79:GLU:HG3	1.77	0.66
47:W:59:LYS:HD3	52:3:735:C:H5'	1.77	0.66
52:3:1540:U:H3	56:4:6:G:H1	1.42	0.66
52:3:713:G:H2'	52:3:714:G:C8	2.30	0.66
52:3:730:G:H2'	52:3:731:G:H5'	1.76	0.66
53:1:784:G:O2'	53:1:785:G:H8	1.78	0.66
53:1:2139:U:C2'	53:1:2140:G:H5'	2.25	0.66
44:T:9:LYS:O	44:T:13:GLU:HG3	1.96	0.66
54:2:87:U:H5''	54:2:88:C:OP2	1.96	0.66
9:j:24:THR:HG23	9:j:27:ARG:HB2	1.78	0.66
10:k:87:LEU:HD22	10:k:92:GLU:O	1.95	0.66
52:3:75:G:C2'	52:3:76:G:H5'	2.25	0.66
53:1:2285:C:O2'	53:1:2287:A:H1'	1.95	0.66
7:h:28:ALA:HB3	7:h:111:ALA:HB3	1.77	0.66
12:m:64:TRP:HE1	53:1:873:C:H4'	1.60	0.66
37:M:80:PRO:HG2	52:3:878:A:H5''	1.78	0.66
12:m:4:PRO:HG3	12:m:68:PHE:HE2	1.62	0.65
42:R:100:ARG:HH12	52:3:950:U:H3'	1.60	0.65
53:1:742:A:H2'	53:1:743:A:C8	2.31	0.65
33:I:145:ARG:NH2	52:3:490:C:H5''	2.10	0.65
54:2:35:C:H2'	54:2:36:C:H5'	1.77	0.65
8:i:130:GLY:HA3	53:1:1079:C:H1'	1.78	0.65
31:G:166:ASP:HB2	31:G:190:SER:HA	1.77	0.65
32:H:2:GLN:HB3	52:3:1062:U:O4	1.96	0.65
35:K:23:GLU:HA	35:K:26:THR:HG22	1.76	0.65
12:m:69:PRO:HA	12:m:94:ALA:HB2	1.78	0.65
52:3:1273:C:H2'	52:3:1274:A:O4'	1.97	0.65
32:H:26:LYS:NZ	52:3:1278:G:N7	2.35	0.65
53:1:1326:U:H2'	53:1:1327:A:H8	1.61	0.65
54:2:12:C:H1'	54:2:15:A:C4	2.32	0.65
32:H:128:MET:HE1	32:H:130:ARG:HB3	1.77	0.65
39:O:59:LYS:HE2	52:3:972:C:OP1	1.97	0.65
44:T:47:LYS:HB2	52:3:668:G:H4'	1.79	0.65
53:1:2452:C:H42	53:1:2504:U:H3	1.43	0.65
2:c:9:VAL:HB	2:c:26:VAL:HG13	1.77	0.65
40:P:124:LYS:HD3	50:Z:35:GLU:HB3	1.77	0.65
45:U:73:ALA:HB1	52:3:452:A:H1'	1.78	0.65
53:1:1434:A:H2'	53:1:1435:G:C8	2.32	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1428:A:C3'	52:3:1429:A:H5''	2.27	0.65
52:3:103:U:H2'	52:3:104:G:O4'	1.97	0.65
53:1:1045:C:OP1	53:1:1047:G:H5'	1.97	0.65
53:1:2286:G:H5''	53:1:2287:A:OP1	1.97	0.65
57:8:92:VAL:O	57:8:95:ILE:HG22	1.97	0.64
50:Z:36:PHE:HB3	50:Z:39:LYS:HB2	1.80	0.64
52:3:153:C:C3'	52:3:154:U:H5''	2.26	0.64
24:y:41:HIS:CD2	53:1:96:C:H4'	2.32	0.64
53:1:1583:A:H4'	53:1:1585:C:C4	2.32	0.64
53:1:2475:C:C2'	53:1:2476:A:H5'	2.26	0.64
3:d:69:ARG:HH12	53:1:2060:A:N6	1.94	0.64
19:t:40:LYS:HD2	19:t:58:VAL:HG13	1.80	0.64
52:3:1300:G:N2	52:3:1334:G:H2'	2.12	0.64
53:1:1111:A:H2'	53:1:1112:G:H4'	1.79	0.64
53:1:2799:A:H2'	53:1:2800:A:H5'	1.79	0.64
8:i:74:PRO:HB2	8:i:77:VAL:HG23	1.79	0.64
32:H:78:LYS:O	32:H:79:LYS:HG3	1.96	0.64
38:N:96:GLU:HA	38:N:99:LYS:HE2	1.80	0.64
48:X:2:ARG:HH11	52:3:1311:A:H62	1.45	0.64
52:3:279:A:H5'	52:3:281:G:H5'	1.79	0.64
53:1:2183:A:H2'	53:1:2184:A:C8	2.33	0.64
57:8:17:ILE:HD12	57:8:17:ILE:H	1.62	0.64
53:1:1912:A:H62	53:1:1917:U:H3	1.46	0.64
19:t:11:LEU:HD22	19:t:32:LEU:HD11	1.79	0.64
49:Y:24:ARG:HA	49:Y:27:MET:HE2	1.80	0.64
53:1:1065:U:H3'	53:1:1066:U:H5''	1.79	0.64
53:1:1645:G:H5''	53:1:1646:C:C5'	2.21	0.64
53:1:90:U:H3'	53:1:91:A:H2'	1.80	0.64
53:1:100:U:H4'	53:1:101:A:O4'	1.98	0.64
53:1:1213:A:N6	53:1:1236:G:H1'	2.13	0.64
53:1:2818:U:H2'	53:1:2819:G:H8	1.63	0.64
9:j:3:THR:HG23	53:1:995:C:O2	1.98	0.63
52:3:1412:C:H2'	52:3:1413:A:C8	2.33	0.63
53:1:215:G:C4'	53:1:216:A:H4'	2.28	0.63
1:b:67:LYS:HG2	1:b:150:GLY:HA2	1.80	0.63
1:b:77:VAL:HG13	1:b:112:GLY:H	1.63	0.63
3:d:68:ALA:HA	53:1:1255:U:C5	2.33	0.63
45:U:63:GLN:HE21	52:3:228:A:H5'	1.64	0.63
51:a:15:VAL:HG22	51:a:29:LEU:HD23	1.79	0.63
11:l:17:LYS:HG3	53:1:663:G:H5''	1.79	0.63
18:s:10:ALA:HB1	18:s:46:LEU:HD21	1.81	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:P:22:ILE:HG13	40:P:31:VAL:HG13	1.81	0.63
51:a:6:LYS:HG3	51:a:7:ARG:H	1.62	0.63
53:1:1065:U:H3'	53:1:1066:U:C5'	2.28	0.63
39:O:40:ILE:HB	39:O:73:LEU:HB3	1.80	0.63
42:R:100:ARG:NH1	52:3:950:U:H3'	2.13	0.63
53:1:1597:A:H5''	53:1:1598:A:H5'	1.81	0.63
16:q:61:ILE:HD11	16:q:91:ARG:HD3	1.79	0.63
35:K:98:GLU:HG3	35:K:99:ALA:H	1.64	0.63
39:O:61:ALA:HB2	52:3:1061:G:H5'	1.80	0.63
52:3:868:C:H2'	52:3:869:G:O4'	1.99	0.63
52:3:1384:C:H2'	52:3:1385:G:H8	1.63	0.63
53:1:2297:A:N1	53:1:2321:U:H5	1.96	0.63
1:b:156:SER:OG	53:1:1819:A:H5''	1.98	0.63
5:f:8:VAL:HB	5:f:49:LEU:HB2	1.81	0.63
34:J:54:GLU:HB3	34:J:56:PRO:HD2	1.79	0.63
41:Q:62:VAL:HG22	41:Q:63:THR:H	1.64	0.63
52:3:212:G:H2'	52:3:213:G:H8	1.63	0.63
48:X:49:ALA:HA	48:X:58:PRO:HA	1.80	0.63
52:3:252:U:O2	52:3:252:U:H2'	1.99	0.63
53:1:310:A:H2'	53:1:311:A:H5''	1.80	0.63
53:1:503:A:H4'	53:1:505:A:H5''	1.81	0.63
53:1:2114:A:H61	53:1:2117:A:H62	1.45	0.63
54:2:66:A:H2'	54:2:107:G:O6	1.99	0.63
1:b:129:LEU:HD13	1:b:133:ASN:HB2	1.81	0.63
53:1:2476:A:H2'	53:1:2477:U:H5'	1.81	0.63
18:s:86:MET:HE1	53:1:1325:U:H3	1.64	0.62
25:z:11:SER:HB2	53:1:989:G:OP2	1.98	0.62
52:3:1486:G:H2'	52:3:1487:G:C8	2.33	0.62
53:1:1179:G:C2'	53:1:1180:U:H4'	2.29	0.62
28:D:11:LYS:NZ	53:1:686:U:H5''	2.15	0.62
32:H:35:ASP:O	32:H:38:VAL:HG12	1.99	0.62
33:I:127:ARG:HH22	52:3:489:C:H5''	1.63	0.62
53:1:1278:C:H2'	53:1:1279:G:H8	1.63	0.62
53:1:2628:C:H3'	53:1:2629:U:H5'	1.81	0.62
31:G:56:LEU:HD22	31:G:219:THR:HG22	1.80	0.62
53:1:995:C:H6	53:1:995:C:H5'	1.63	0.62
53:1:1412:U:H2'	53:1:1413:A:C8	2.35	0.62
53:1:2902:C:H3'	53:1:2903:U:H5''	1.81	0.62
55:5:48:C:H2'	55:5:59:A:H4'	1.80	0.62
31:G:96:LEU:HB2	31:G:99:MET:HG3	1.81	0.62
40:P:48:GLY:HA2	52:3:688:G:H5'	1.80	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:1:1527:G:H21	53:1:1545:A:H62	1.47	0.62
53:1:2118:U:C5	53:1:2148:G:H1'	2.34	0.62
18:s:13:SER:HB3	18:s:16:LYS:HG2	1.81	0.62
37:M:115:ALA:HA	37:M:118:ALA:HB3	1.79	0.62
49:Y:9:ARG:HD2	52:3:107:G:O6	1.99	0.62
53:1:940:G:H2'	53:1:941:A:H5''	1.80	0.62
53:1:2427:C:H5''	53:1:2429:G:H5'	1.80	0.62
11:l:2:ARG:O	11:l:5:THR:HG22	1.99	0.62
53:1:2561:U:H2'	53:1:2562:U:C5'	2.29	0.62
7:h:94:ARG:O	7:h:98:GLU:HG3	1.99	0.62
52:3:335:C:H2'	52:3:336:A:C8	2.35	0.62
53:1:488:G:H22	53:1:491:G:H5''	1.64	0.62
53:1:974:G:H1'	53:1:975:A:C8	2.33	0.62
32:H:72:PRO:O	32:H:75:VAL:HG12	1.99	0.62
48:X:61:VAL:HG23	48:X:65:MET:HB3	1.81	0.62
52:3:153:C:C2'	52:3:154:U:H5''	2.29	0.62
53:1:69:C:O2'	53:1:70:G:H5'	2.00	0.62
53:1:548:G:H3'	53:1:549:G:H4'	1.81	0.62
54:2:28:C:H2'	54:2:29:A:C8	2.34	0.62
4:e:63:LYS:HB2	54:2:42:C:H4'	1.80	0.62
19:t:72:GLN:HG3	19:t:73:ARG:HD3	1.82	0.62
46:V:5:ARG:HD2	52:3:636:U:H5''	1.82	0.62
48:X:36:ARG:HD2	52:3:1318:A:H1'	1.82	0.62
52:3:231:U:H2'	52:3:232:G:H8	1.65	0.62
33:l:127:ARG:HH21	33:l:128:VAL:HB	1.65	0.61
45:U:10:GLY:HA2	52:3:624:C:H4'	1.82	0.61
53:1:1510:G:H2'	53:1:1511:G:O4'	2.00	0.61
2:c:179:ARG:HB3	2:c:188:LEU:HD12	1.81	0.61
4:e:15:LEU:HD13	4:e:18:GLU:HB3	1.81	0.61
4:e:114:ARG:HD3	4:e:177:ARG:HD3	1.83	0.61
13:n:86:ARG:HH21	13:n:117:ASP:HB3	1.64	0.61
20:u:48:VAL:HG12	20:u:50:ALA:H	1.65	0.61
52:3:1436:U:H2'	52:3:1437:A:C8	2.34	0.61
53:1:141:G:H3'	53:1:142:A:O4'	2.00	0.61
53:1:217:A:H2'	53:1:218:A:O4'	2.00	0.61
53:1:435:C:H2'	53:1:436:C:H5'	1.81	0.61
11:l:4:ASN:O	53:1:1243:C:H1'	2.00	0.61
11:l:95:LEU:HD22	11:l:100:ILE:HD11	1.82	0.61
44:T:28:VAL:HG11	44:T:80:LEU:HD21	1.81	0.61
52:3:988:G:H1'	52:3:1015:G:H22	1.64	0.61
53:1:1451:C:H4'	53:1:1452:G:C8	2.35	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:1:2391:G:H4'	53:1:2392:A:OP1	2.00	0.61
33:I:24:VAL:HG21	52:3:409:U:O3'	2.01	0.61
48:X:76:THR:HG21	52:3:1221:G:H4'	1.82	0.61
53:1:1585:C:H2'	53:1:1586:A:O4'	2.01	0.61
2:c:13:ARG:HH11	15:p:55:HIS:HA	1.65	0.61
32:H:178:ARG:HD3	52:3:1112:C:O2'	2.00	0.61
52:3:211:G:H3'	52:3:212:G:O4'	2.01	0.61
52:3:398:U:H2'	52:3:399:G:C8	2.36	0.61
52:3:478:A:H2'	52:3:479:U:H4'	1.81	0.61
53:1:278:A:H3'	53:1:278:A:N3	2.15	0.61
53:1:881:G:H2'	53:1:882:G:C8	2.33	0.61
4:e:39:VAL:HG13	4:e:40:GLY:H	1.64	0.61
8:i:127:SER:HG	53:1:1080:A:H1'	1.64	0.61
16:q:27:ARG:HH22	53:1:532:A:H5'	1.65	0.61
37:M:10:LEU:O	37:M:13:ILE:HG12	2.01	0.61
53:1:2233:U:H2'	53:1:2234:G:H8	1.65	0.61
2:c:123:LYS:HE2	13:n:1:MET:HE1	1.82	0.61
10:k:102:PRO:HB3	10:k:121:GLU:HB2	1.81	0.61
31:G:22:TRP:CZ2	52:3:829:G:H4'	2.35	0.61
31:G:185:ILE:HD12	31:G:199:ILE:O	2.01	0.61
16:q:55:GLN:NE2	53:1:535:G:H21	1.96	0.61
52:3:1158:C:H2'	52:3:1159:U:H4'	1.83	0.61
1:b:184:GLU:HG3	1:b:186:ASP:H	1.65	0.61
20:u:46:LYS:HD2	20:u:47:PRO:HD2	1.83	0.61
53:1:1076:C:H2'	53:1:1077:A:C8	2.36	0.61
16:q:36:GLN:NE2	53:1:1252:G:H22	1.99	0.61
52:3:152:A:H2'	52:3:153:C:O4'	2.00	0.61
40:P:21:HIS:ND1	52:3:707:U:H4'	2.16	0.60
51:a:173:THR:HG22	51:a:174:THR:H	1.66	0.60
52:3:1300:G:H22	52:3:1334:G:H2'	1.66	0.60
53:1:704:G:H1'	53:1:727:A:H61	1.65	0.60
53:1:1040:A:H2	53:1:1115:G:H22	1.48	0.60
53:1:2345:G:N3	53:1:2381:A:H2'	2.15	0.60
5:f:94:ARG:HB3	5:f:105:SER:HB3	1.82	0.60
33:I:184:LYS:HD3	33:I:185:PRO:HD2	1.83	0.60
53:1:441:U:O2'	53:1:442:G:H5'	2.01	0.60
53:1:2307:G:N2	53:1:2311:A:H2'	2.15	0.60
57:8:2:ILE:HA	57:8:12:ASP:HB2	1.83	0.60
2:c:20:VAL:HG12	10:k:72:PRO:HB2	1.83	0.60
27:C:7:LYS:HD2	53:1:2420:C:H5''	1.82	0.60
42:R:113:LYS:NZ	52:3:1227:A:H4'	2.15	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:15:VAL:HG22	1:b:205:GLY:HA3	1.82	0.60
32:H:113:LYS:CE	32:H:184:ASN:HD21	2.13	0.60
53:1:511:U:H2'	53:1:512:G:H5'	1.82	0.60
53:1:704:G:H2'	53:1:726:G:N2	2.16	0.60
53:1:2533:U:H2'	53:1:2534:A:O4'	2.01	0.60
53:1:2112:G:H2'	53:1:2112:G:N3	2.16	0.60
6:g:118:PRO:HD3	6:g:130:VAL:HG23	1.82	0.60
6:g:143:ILE:H	6:g:143:ILE:HD12	1.65	0.60
7:h:67:THR:OG1	7:h:68:PRO:HD3	2.00	0.60
18:s:65:ASP:O	18:s:69:LEU:HG	2.00	0.60
51:a:189:LEU:HD21	51:a:224:VAL:HG11	1.83	0.60
52:3:457:G:H2'	52:3:458:U:H5'	1.84	0.60
52:3:664:G:H22	52:3:741:G:H1	1.47	0.60
53:1:310:A:O2'	53:1:311:A:H5''	2.01	0.60
53:1:1856:U:H2'	53:1:1857:G:O4'	2.01	0.60
14:o:15:ARG:HH12	54:2:8:C:H5''	1.67	0.60
48:X:11:ASP:HB3	48:X:14:LEU:HB2	1.84	0.60
53:1:611:C:H2'	53:1:612:G:O4'	2.02	0.60
38:N:129:ARG:NH2	55:5:35:A:H5''	2.17	0.60
43:S:41:TRP:CZ3	48:X:8:PRO:HD2	2.37	0.60
52:3:147:G:H2'	52:3:148:G:C8	2.37	0.60
52:3:212:G:H2'	52:3:213:G:C8	2.37	0.60
52:3:314:C:O2'	52:3:315:A:H5'	2.01	0.60
53:1:222:A:H61	53:1:232:G:H1'	1.65	0.60
1:b:16:VAL:HB	1:b:203:VAL:HG12	1.83	0.60
3:d:69:ARG:HD3	53:1:674:G:H1'	1.83	0.60
3:d:163:ASN:HB2	53:1:322:A:OP2	2.02	0.60
18:s:86:MET:HB2	18:s:96:ILE:HG12	1.84	0.60
21:v:75:GLN:HB2	21:v:92:VAL:HG13	1.82	0.60
52:3:1412:C:H2'	52:3:1413:A:H8	1.65	0.60
5:f:37:ASN:HD22	5:f:40:VAL:HG23	1.66	0.60
7:h:34:THR:OG1	53:1:1057:A:H1'	2.01	0.60
9:j:25:LEU:HB3	53:1:1140:C:OP1	2.01	0.60
49:Y:59:ARG:NH1	52:3:177:G:H5'	2.17	0.60
50:Z:16:ARG:NH2	50:Z:19:LYS:HZ3	2.00	0.60
52:3:222:C:H2'	52:3:223:A:C8	2.37	0.60
52:3:530:G:H2'	52:3:530:G:N3	2.17	0.60
52:3:1060:U:H2'	52:3:1061:G:H8	1.67	0.60
2:c:11:MET:O	53:1:2682:A:H5'	2.02	0.59
39:O:47:GLU:HB2	39:O:67:ILE:HB	1.84	0.59
52:3:398:U:H2'	52:3:399:G:H8	1.67	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:1:74:A:H4'	53:1:75:G:O5'	2.02	0.59
53:1:1837:C:H2'	53:1:1899:A:N6	2.16	0.59
13:n:28:LEU:HD23	13:n:48:VAL:HG21	1.84	0.59
52:3:29:U:O2'	52:3:30:U:H5'	2.01	0.59
54:2:114:C:H2'	54:2:115:A:C8	2.38	0.59
51:a:218:MET:HG3	53:1:2124:G:H21	1.67	0.59
40:P:66:ALA:CB	40:P:98:ALA:HB3	2.32	0.59
10:k:109:SER:O	10:k:110:GLU:HG3	2.01	0.59
19:t:2:ILE:HG22	19:t:5:GLU:HB2	1.85	0.59
53:1:1138:G:H2'	53:1:1139:G:O4'	2.02	0.59
53:1:1357:C:H2'	53:1:1358:G:O4'	2.03	0.59
14:o:15:ARG:NH1	54:2:8:C:H5''	2.18	0.59
37:M:11:THR:HG21	52:3:876:C:H1'	1.84	0.59
52:3:673:A:H2'	52:3:674:G:C8	2.37	0.59
53:1:2443:C:H2'	53:1:2444:G:H8	1.67	0.59
2:c:81:GLU:CD	53:1:2636:C:H4'	2.27	0.59
3:d:181:ILE:HD11	11:l:2:ARG:HD3	1.83	0.59
52:3:1218:C:H2'	52:3:1219:A:C8	2.37	0.59
53:1:898:C:H2'	53:1:899:A:H5'	1.83	0.59
53:1:2170:A:H2'	53:1:2171:A:C5'	2.33	0.59
4:e:110:ILE:HD13	4:e:136:ILE:HG21	1.83	0.59
39:O:59:LYS:HE2	52:3:972:C:P	2.42	0.59
52:3:1195:C:H5''	52:3:1196:A:OP2	2.02	0.59
52:3:1296:C:H4'	52:3:1302:C:H42	1.65	0.59
53:1:742:A:H2'	53:1:743:A:H8	1.66	0.59
53:1:1447:C:H2'	53:1:1448:G:C8	2.38	0.59
53:1:1817:G:N2	53:1:1818:U:H1'	2.17	0.59
53:1:2747:G:O6	53:1:2755:C:H5''	2.02	0.59
15:p:102:ARG:HD3	15:p:106:ALA:O	2.03	0.59
40:P:17:ASP:HB3	40:P:36:ARG:HH11	1.68	0.59
52:3:54:C:H2'	52:3:352:C:H41	1.68	0.59
52:3:860:A:H2'	52:3:861:G:O4'	2.01	0.59
53:1:650:C:C3'	53:1:651:G:H5''	2.32	0.59
53:1:2189:U:H2'	53:1:2190:G:C8	2.38	0.59
55:5:62:C:H2'	55:5:63:G:C8	2.38	0.59
9:j:98:GLU:O	9:j:102:GLU:HG3	2.03	0.59
40:P:88:PRO:HD3	50:Z:24:LYS:HD2	1.85	0.59
42:R:96:VAL:CG2	52:3:1308:U:H5''	2.30	0.59
51:a:54:LYS:HG2	51:a:55:SER:H	1.68	0.59
52:3:1245:C:H2'	52:3:1246:A:H8	1.68	0.59
8:i:20:SER:O	8:i:24:GLY:HA3	2.02	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:i:21:PRO:HB2	8:i:22:PRO:HD3	1.83	0.58
33:I:8:LEU:HB3	52:3:429:U:H5'	1.84	0.58
53:1:1111:A:C2'	53:1:1112:G:H4'	2.33	0.58
53:1:1367:A:C2'	53:1:1368:G:H5'	2.33	0.58
11:l:30:THR:HG22	53:1:810:U:O4	2.02	0.58
15:p:105:LYS:O	15:p:108:ARG:HG2	2.01	0.58
22:w:23:GLY:HA2	22:w:63:VAL:HG23	1.86	0.58
52:3:431:A:H2'	52:3:432:A:C8	2.37	0.58
52:3:986:U:H2'	52:3:987:G:C8	2.38	0.58
53:1:2339:C:H2'	53:1:2340:A:C8	2.38	0.58
8:i:116:MET:HE2	8:i:124:MET:HE2	1.84	0.58
38:N:11:ARG:HG3	38:N:12:LYS:HG2	1.85	0.58
51:a:217:THR:HB	53:1:2124:G:C2	2.39	0.58
53:1:577:G:H2'	53:1:578:G:C8	2.39	0.58
53:1:1827:U:H5'	53:1:1971:U:H5''	1.86	0.58
10:k:76:VAL:HG22	15:p:72:VAL:HG12	1.85	0.58
50:Z:3:ILE:HD13	50:Z:19:LYS:HE2	1.86	0.58
53:1:971:G:H2'	53:1:972:A:O4'	2.04	0.58
53:1:1186:G:H2'	53:1:1187:G:O4'	2.03	0.58
53:1:2019:A:H2	53:1:2035:G:H22	1.51	0.58
1:b:200:MET:HG3	53:1:1820:U:C2	2.38	0.58
6:g:67:ALA:O	6:g:70:GLU:HB3	2.02	0.58
17:r:98:ILE:N	17:r:98:ILE:HD12	2.19	0.58
33:I:53:GLN:HE21	33:I:198:LEU:HD22	1.66	0.58
34:J:133:ILE:HD11	52:3:18:C:H5''	1.85	0.58
42:R:63:VAL:HG23	42:R:67:ASP:HB3	1.84	0.58
53:1:2457:U:O2'	53:1:2458:G:H5'	2.04	0.58
46:V:45:VAL:HG21	46:V:60:ILE:HD12	1.85	0.58
53:1:1415:U:O3'	53:1:1416:G:H4'	2.03	0.58
13:n:39:PRO:HG2	53:1:1651:G:H5'	1.85	0.58
52:3:1346:A:O2'	52:3:1347:G:H4'	2.04	0.58
53:1:2412:A:H2'	53:1:2413:G:O4'	2.03	0.58
2:c:12:THR:HG22	2:c:13:ARG:H	1.68	0.58
11:l:135:ILE:HD11	11:l:142:ILE:HG13	1.85	0.58
31:G:46:VAL:HG23	31:G:47:PRO:HD3	1.86	0.58
35:K:11:HIS:ND1	35:K:12:PRO:HD2	2.18	0.58
52:3:137:U:H2'	52:3:138:G:H8	1.69	0.58
52:3:1138:G:H3'	52:3:1138:G:N3	2.18	0.58
53:1:362:A:H5''	53:1:363:G:N7	2.18	0.58
53:1:581:C:H2'	53:1:582:A:C8	2.39	0.58
53:1:1167:C:H2'	53:1:1168:G:C8	2.39	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:e:169:LEU:HD22	4:e:174:PHE:HE2	1.69	0.58
5:f:14:VAL:HG11	5:f:75:VAL:HG13	1.84	0.58
5:f:132:LEU:N	5:f:132:LEU:HD23	2.19	0.58
52:3:67:C:H2'	52:3:68:G:C8	2.39	0.58
52:3:221:C:O2'	52:3:222:C:H5'	2.04	0.58
53:1:433:C:O2'	53:1:434:U:H5'	2.04	0.58
53:1:2282:G:H4'	53:1:2389:G:O2'	2.04	0.58
6:g:126:GLY:H	6:g:146:VAL:HG13	1.66	0.57
37:M:19:ALA:HB1	37:M:21:LYS:HE2	1.85	0.57
52:3:180:U:H2'	52:3:181:A:O4'	2.04	0.57
52:3:422:C:H4'	52:3:423:G:C2	2.38	0.57
53:1:2800:A:C4	53:1:2895:G:H1'	2.38	0.57
2:c:47:ALA:HA	2:c:84:LEU:HG	1.86	0.57
11:l:55:MET:HE3	53:1:2392:A:C2	2.39	0.57
53:1:958:U:H2'	54:2:89:U:H1'	1.86	0.57
53:1:1063:G:H22	53:1:1075:C:H42	1.51	0.57
42:R:70:ARG:O	42:R:74:MET:HB3	2.03	0.57
52:3:223:A:H2'	52:3:224:U:O4'	2.03	0.57
53:1:703:U:H2'	53:1:704:G:O4'	2.04	0.57
53:1:1810:A:H2'	53:1:1811:G:O4'	2.03	0.57
53:1:2440:C:C5	53:1:2441:U:H1'	2.39	0.57
53:1:2543:G:H2'	53:1:2544:G:C8	2.38	0.57
54:2:28:C:H2'	54:2:29:A:H8	1.68	0.57
1:b:152:GLN:C	1:b:153:LEU:HD22	2.29	0.57
3:d:199:MET:HG3	3:d:200:LEU:HD22	1.86	0.57
38:N:48:ARG:O	38:N:52:GLU:HG2	2.04	0.57
41:Q:23:LEU:HD23	41:Q:26:CYS:SG	2.45	0.57
53:1:968:C:H2'	53:1:969:G:C8	2.39	0.57
53:1:1848:A:H2'	53:1:1849:G:C8	2.40	0.57
3:d:45:ALA:HB3	53:1:38:A:H4'	1.84	0.57
11:l:79:LEU:HB2	11:l:114:GLY:O	2.04	0.57
17:r:76:LYS:HB2	17:r:85:LYS:HB3	1.85	0.57
39:O:32:THR:O	39:O:82:LYS:HB3	2.05	0.57
52:3:229:U:H2'	52:3:230:G:C8	2.39	0.57
53:1:1412:U:H2'	53:1:1413:A:H8	1.70	0.57
1:b:203:VAL:HG23	53:1:1792:G:H5'	1.87	0.57
2:c:24:VAL:HG21	2:c:188:LEU:HB3	1.86	0.57
7:h:6:GLN:O	7:h:9:GLN:HG3	2.04	0.57
14:o:17:LYS:NZ	53:1:2380:C:H5'	2.20	0.57
29:E:55:GLY:O	29:E:58:ILE:HG22	2.05	0.57
34:J:155:LYS:HD2	37:M:70:VAL:HG13	1.87	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:a:196:LEU:O	51:a:196:LEU:HD23	2.03	0.57
52:3:946:A:H2'	52:3:947:G:C8	2.40	0.57
53:1:192:C:H2'	53:1:193:U:H5'	1.87	0.57
53:1:528:A:C2	53:1:2042:A:H2'	2.40	0.57
53:1:2350:C:H2'	53:1:2351:G:O4'	2.04	0.57
53:1:2902:C:H2'	53:1:2903:U:H4'	1.87	0.57
6:g:134:VAL:HB	6:g:138:VAL:HG23	1.85	0.57
37:M:94:VAL:HG12	37:M:95:MET:HG2	1.86	0.57
41:Q:45:ASN:CG	52:3:528:C:H41	2.13	0.57
52:3:1472:U:H2'	52:3:1473:G:C8	2.40	0.57
52:3:1496:C:H2'	52:3:1497:G:O4'	2.05	0.57
53:1:277:G:H3'	53:1:277:G:N3	2.19	0.57
24:y:6:LEU:HD13	24:y:56:LEU:HD11	1.86	0.57
25:z:10:ARG:HB2	25:z:53:MET:HB2	1.86	0.57
48:X:45:GLY:H	48:X:61:VAL:HG13	1.70	0.57
53:1:1152:C:H2'	53:1:1153:C:H6	1.69	0.57
53:1:2469:A:H2'	53:1:2470:G:O4'	2.05	0.57
53:1:2636:C:H2'	53:1:2637:U:C6	2.40	0.57
14:o:52:SER:HB3	14:o:54:VAL:HG22	1.87	0.57
40:P:88:PRO:HB3	50:Z:24:LYS:HG3	1.85	0.57
52:3:151:A:H2'	52:3:152:A:O4'	2.05	0.57
53:1:8:C:H2'	53:1:9:G:O4'	2.05	0.57
53:1:64:A:H2'	53:1:65:U:C6	2.39	0.57
53:1:1796:U:H2'	53:1:1797:G:H8	1.68	0.57
53:1:2834:G:H2'	53:1:2879:A:H61	1.70	0.57
33:I:49:ASP:HA	33:I:52:VAL:HG22	1.87	0.57
52:3:96:U:H2'	52:3:97:G:H8	1.70	0.57
52:3:1171:A:H2'	52:3:1172:C:C6	2.39	0.57
53:1:405:U:H5''	53:1:406:G:C8	2.40	0.57
53:1:2776:A:H4'	53:1:2778:A:OP1	2.05	0.57
3:d:94:GLN:HB2	53:1:660:C:OP1	2.05	0.56
8:i:106:GLN:HE21	8:i:110:GLN:HE21	1.53	0.56
8:i:134:SER:OG	53:1:1077:A:H2	1.87	0.56
14:o:102:ARG:HG3	54:2:49:C:OP1	2.04	0.56
20:u:6:ARG:N	53:1:85:G:OP1	2.37	0.56
33:I:56:GLU:HG2	33:I:198:LEU:HB2	1.86	0.56
34:J:93:VAL:HG21	34:J:110:MET:SD	2.45	0.56
38:N:10:ARG:HD2	52:3:1118:U:OP1	2.05	0.56
42:R:16:ILE:HG21	52:3:1302:C:C5	2.40	0.56
50:Z:23:GLU:OE2	50:Z:24:LYS:HB2	2.05	0.56
52:3:129:A:O2'	52:3:130:A:H5''	2.05	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:955:U:H3	52:3:1225:A:H61	1.52	0.56
52:3:1252:A:H2'	52:3:1253:G:O4'	2.04	0.56
53:1:189:G:H2'	53:1:205:G:N2	2.20	0.56
53:1:1947:C:H2'	53:1:1948:G:H8	1.70	0.56
53:1:2215:C:H2'	53:1:2216:G:H8	1.70	0.56
29:E:31:ILE:HG23	29:E:31:ILE:O	2.05	0.56
31:G:56:LEU:O	31:G:56:LEU:HD23	2.05	0.56
33:I:119:HIS:HB3	52:3:438:U:C5'	2.35	0.56
40:P:43:TRP:HZ2	52:3:686:U:HO2'	1.51	0.56
41:Q:109:ARG:HB2	41:Q:118:VAL:HG21	1.86	0.56
52:3:465:A:H2'	52:3:465:A:N3	2.20	0.56
52:3:692:U:H2'	52:3:694:A:OP2	2.04	0.56
53:1:741:U:H2'	53:1:742:A:C8	2.40	0.56
53:1:1447:C:H2'	53:1:1448:G:H8	1.70	0.56
57:8:46:SER:O	57:8:48:LEU:HD13	2.05	0.56
2:c:129:THR:OG1	2:c:140:HIS:O	2.23	0.56
8:i:133:ARG:HH12	53:1:1078:U:C4'	2.18	0.56
9:j:3:THR:HG21	16:q:60:TRP:HE1	1.70	0.56
32:H:145:ALA:HB3	32:H:148:ILE:HD11	1.86	0.56
33:I:27:ILE:HG23	33:I:28:ASP:H	1.69	0.56
40:P:106:ILE:H	40:P:106:ILE:HD12	1.70	0.56
42:R:64:VAL:HG22	42:R:65:GLU:N	2.19	0.56
52:3:107:G:H2'	52:3:108:G:O4'	2.06	0.56
52:3:714:G:H2'	52:3:715:A:C8	2.39	0.56
52:3:945:G:H2'	52:3:945:G:N3	2.21	0.56
52:3:1170:A:H2'	52:3:1171:A:O4'	2.05	0.56
53:1:383:C:H41	53:1:385:C:H2'	1.70	0.56
53:1:479:A:O2'	53:1:481:G:H5'	2.05	0.56
53:1:669:G:H2'	53:1:669:G:N3	2.21	0.56
53:1:1311:G:H21	53:1:1603:A:H62	1.53	0.56
53:1:2170:A:H2'	53:1:2171:A:H5''	1.86	0.56
53:1:2329:U:H2'	53:1:2330:G:H8	1.66	0.56
55:5:5:G:H2'	55:5:6:G:C8	2.41	0.56
57:8:8:VAL:HG21	57:8:48:LEU:HD12	1.88	0.56
37:M:40:LYS:NZ	37:M:47:ASP:H	2.03	0.56
38:N:20:ILE:HD11	38:N:60:LEU:HD22	1.86	0.56
38:N:121:ARG:HG3	52:3:1348:U:H4'	1.86	0.56
52:3:1512:U:H2'	52:3:1513:A:C8	2.40	0.56
53:1:738:G:O2'	53:1:739:A:H5'	2.05	0.56
9:j:35:ARG:HB2	9:j:54:ILE:HD11	1.88	0.56
31:G:71:THR:C	31:G:72:LYS:HD2	2.29	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:G:219:THR:O	31:G:222:GLU:HG2	2.05	0.56
44:T:64:LYS:HA	44:T:67:ASP:OD1	2.05	0.56
52:3:389:A:H3'	52:3:390:U:H6	1.70	0.56
53:1:2120:G:H2'	53:1:2121:G:C8	2.40	0.56
55:5:34:C:H2'	55:5:35:A:C8	2.40	0.56
5:f:154:GLU:HG2	5:f:156:TYR:H	1.71	0.56
38:N:70:GLY:O	38:N:74:GLN:HG3	2.06	0.56
52:3:335:C:H2'	52:3:336:A:H8	1.69	0.56
52:3:1118:U:H2'	52:3:1119:C:C6	2.40	0.56
53:1:878:A:H2'	53:1:879:G:H8	1.71	0.56
53:1:1914:C:H6	57:8:108:THR:HG1	1.54	0.56
53:1:2849:U:H4'	53:1:2868:A:C2	2.39	0.56
18:s:73:LYS:HB2	18:s:106:VAL:HB	1.88	0.56
33:I:119:HIS:HB3	52:3:438:U:H5'	1.87	0.56
36:L:23:ALA:O	36:L:26:VAL:HG12	2.06	0.56
53:1:414:C:H2'	53:1:415:A:C8	2.41	0.56
53:1:475:C:H4'	53:1:510:C:H5'	1.88	0.56
53:1:776:G:H2'	53:1:776:G:N3	2.21	0.56
7:h:117:LEU:O	7:h:118:ILE:HG12	2.05	0.56
52:3:1237:C:OP1	52:3:1238:A:H1'	2.06	0.56
53:1:878:A:H2'	53:1:879:G:C8	2.41	0.56
3:d:190:ALA:O	3:d:193:VAL:HG12	2.06	0.56
53:1:549:G:H2'	53:1:550:C:C5	2.41	0.56
53:1:861:A:H2'	53:1:862:G:O4'	2.06	0.56
53:1:1167:C:H2'	53:1:1168:G:H8	1.71	0.56
40:P:88:PRO:HG2	40:P:89:GLY:H	1.71	0.56
52:3:56:U:H2'	52:3:57:G:H8	1.70	0.56
52:3:67:C:H2'	52:3:68:G:H8	1.71	0.56
52:3:436:C:H2'	52:3:437:U:C6	2.41	0.56
52:3:539:A:H2'	52:3:540:G:C8	2.41	0.56
52:3:587:G:O2'	52:3:588:G:H5'	2.05	0.56
52:3:1130:A:N6	52:3:1144:G:H1'	2.15	0.56
2:c:148:GLN:HB2	2:c:152:PRO:HG2	1.86	0.55
6:g:53:GLU:O	6:g:57:LYS:HG2	2.06	0.55
15:p:77:SER:O	15:p:80:VAL:HG12	2.06	0.55
31:G:15:PHE:HD1	31:G:16:GLY:N	1.99	0.55
52:3:437:U:O2'	52:3:438:U:H5'	2.06	0.55
52:3:1162:C:H2'	52:3:1163:A:C8	2.41	0.55
53:1:1179:G:C3'	53:1:1180:U:H4'	2.36	0.55
53:1:2082:A:H2'	53:1:2083:G:O4'	2.06	0.55
53:1:2443:C:H2'	53:1:2444:G:C8	2.40	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:1:2808:G:H5'	53:1:2809:A:OP1	2.06	0.55
33:I:6:PRO:HG2	52:3:428:G:OP1	2.06	0.55
34:J:22:LYS:HB3	34:J:29:ILE:HG23	1.87	0.55
35:K:9:MET:HE1	47:W:64:LEU:HD22	1.87	0.55
52:3:831:A:H3'	52:3:832:G:H5''	1.87	0.55
53:1:403:U:O3'	53:1:404:A:H4'	2.06	0.55
53:1:2602:A:H2'	55:5:75:C:OP1	2.06	0.55
57:8:48:LEU:HB2	57:8:53:LYS:HB3	1.87	0.55
26:B:39:ARG:HA	53:1:2884:U:O4	2.07	0.55
38:N:55:ASP:HB3	38:N:59:LYS:HE3	1.87	0.55
52:3:946:A:H2'	52:3:947:G:H8	1.71	0.55
53:1:273:G:H2'	53:1:274:C:C6	2.41	0.55
7:h:58:THR:HA	7:h:63:ALA:HB3	1.88	0.55
40:P:12:ARG:N	40:P:14:GLN:HE21	2.05	0.55
52:3:66:A:H61	52:3:103:U:H3	1.54	0.55
52:3:516:U:H3	52:3:533:A:H62	1.54	0.55
52:3:604:G:H2'	52:3:605:U:O4'	2.07	0.55
57:8:14:GLU:OE1	57:8:46:SER:HB2	2.07	0.55
6:g:25:TYR:HB2	53:1:2093:G:H4'	1.87	0.55
22:w:72:ASN:HD21	54:2:13:G:P	2.30	0.55
32:H:52:SER:HA	32:H:113:LYS:HG2	1.88	0.55
52:3:304:U:O2'	52:3:305:G:H5'	2.06	0.55
53:1:1872:A:H2'	53:1:1873:G:H5'	1.87	0.55
53:1:1914:C:O2	53:1:1914:C:H3'	2.05	0.55
53:1:2102:G:H2'	53:1:2103:C:H5'	1.88	0.55
57:8:106:ARG:N	57:8:107:PRO:CA	2.66	0.55
33:I:6:PRO:HB2	33:I:9:LYS:HG2	1.88	0.55
53:1:1935:G:H1'	53:1:1964:G:N2	2.21	0.55
57:8:44:ARG:HD2	57:8:68:GLY:HA3	1.89	0.55
13:n:44:LEU:HD23	13:n:113:ILE:HD13	1.89	0.55
52:3:555:U:H2'	52:3:556:C:C6	2.42	0.55
53:1:414:C:H2'	53:1:415:A:H8	1.72	0.55
53:1:1752:C:H2'	53:1:1753:G:C8	2.42	0.55
53:1:2213:U:H5''	53:1:2214:C:OP2	2.07	0.55
53:1:2295:C:O2'	53:1:2296:U:H5'	2.07	0.55
15:p:91:VAL:HG11	15:p:96:LEU:HD11	1.89	0.55
47:W:59:LYS:CD	52:3:735:C:H5'	2.37	0.55
52:3:302:G:H2'	52:3:303:A:C8	2.42	0.55
52:3:411:A:H61	52:3:430:A:H62	1.54	0.55
53:1:382:A:H3'	53:1:383:C:H5''	1.88	0.55
53:1:404:A:O2'	53:1:406:G:H1'	2.06	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:1:554:U:H2'	53:1:555:G:O4'	2.07	0.55
53:1:1278:C:H2'	53:1:1279:G:C8	2.41	0.55
53:1:1954:G:H21	53:1:1956:U:H3	1.54	0.55
55:5:5:G:H2'	55:5:6:G:H8	1.71	0.55
3:d:189:THR:HG23	3:d:192:ALA:H	1.71	0.55
4:e:40:GLY:HA2	4:e:84:ILE:HD11	1.89	0.55
23:x:67:LEU:HB3	23:x:77:TYR:HD2	1.72	0.55
39:O:44:THR:HG23	52:3:1151:A:H5''	1.88	0.55
52:3:1339:A:H2'	52:3:1340:A:O4'	2.06	0.55
53:1:63:A:H2'	53:1:64:A:C8	2.42	0.55
53:1:1111:A:H2'	53:1:1112:G:C4'	2.36	0.55
32:H:46:LEU:HB3	32:H:49:ALA:HB3	1.89	0.55
40:P:117:HIS:HB2	52:3:674:G:N2	2.22	0.55
45:U:5:ARG:HD2	52:3:376:G:O3'	2.07	0.55
47:W:59:LYS:HD3	52:3:734:G:O2'	2.07	0.55
52:3:825:A:H2'	52:3:826:C:C6	2.42	0.55
52:3:917:G:H2'	52:3:918:A:C8	2.42	0.55
53:1:1319:C:O2'	53:1:1320:C:H5'	2.07	0.55
53:1:1477:A:H2'	53:1:1478:G:O4'	2.06	0.55
53:1:1954:G:N2	53:1:1956:U:H3	2.05	0.55
53:1:2196:C:O2'	53:1:2197:U:H5'	2.07	0.55
27:C:20:TYR:OH	53:1:2348:U:H5'	2.06	0.54
36:L:71:THR:HG23	36:L:72:VAL:HG13	1.89	0.54
38:N:129:ARG:HH21	55:5:35:A:H5''	1.72	0.54
52:3:291:U:O2'	52:3:292:G:H5'	2.08	0.54
52:3:302:G:H2'	52:3:303:A:H8	1.71	0.54
52:3:501:C:H2'	52:3:502:A:C8	2.41	0.54
53:1:1268:A:H2'	53:1:1269:A:O4'	2.06	0.54
53:1:1542:U:H2'	53:1:1543:G:O4'	2.07	0.54
53:1:1801:A:H5''	53:1:2203:U:H2'	1.89	0.54
54:2:35:C:C2'	54:2:36:C:H5'	2.37	0.54
26:B:30:ASP:HB3	26:B:34:GLY:H	1.72	0.54
40:P:117:HIS:HB2	52:3:674:G:H21	1.73	0.54
41:Q:51:VAL:HG22	41:Q:52:CYS:H	1.71	0.54
46:V:17:GLU:HG3	52:3:254:G:N2	2.22	0.54
51:a:52:ALA:HA	51:a:57:GLN:HB3	1.89	0.54
53:1:1511:G:H2'	53:1:1512:C:C6	2.41	0.54
4:e:76:PHE:O	4:e:77:LYS:HG3	2.08	0.54
18:s:18:ARG:HE	53:1:518:G:H4'	1.71	0.54
24:y:20:ASN:O	24:y:24:GLU:HG2	2.07	0.54
28:D:21:ARG:NH1	53:1:466:A:H5'	2.22	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:K:6:ILE:HB	35:K:62:MET:SD	2.47	0.54
39:O:57:VAL:O	39:O:58:ASN:HB2	2.06	0.54
52:3:120:A:H1'	52:3:122:G:N7	2.23	0.54
52:3:1030:U:H3'	52:3:1031:C:H5'	1.89	0.54
53:1:2039:U:H2'	53:1:2040:G:H8	1.72	0.54
53:1:2106:U:H2'	53:1:2107:G:C8	2.42	0.54
53:1:2193:G:H2'	53:1:2194:U:C6	2.43	0.54
4:e:40:GLY:HA2	4:e:84:ILE:CD1	2.37	0.54
38:N:119:LYS:HB2	52:3:1349:A:OP1	2.08	0.54
42:R:7:ASN:ND2	42:R:20:SER:HB2	2.22	0.54
45:U:47:GLU:CD	45:U:48:GLU:HG2	2.33	0.54
51:a:3:LYS:NZ	53:1:2174:C:OP1	2.40	0.54
52:3:1096:C:H2'	52:3:1097:C:C6	2.43	0.54
53:1:2039:U:H2'	53:1:2040:G:C8	2.42	0.54
53:1:2101:A:H2'	53:1:2102:G:H8	1.73	0.54
1:b:129:LEU:HD11	1:b:134:ILE:HG13	1.89	0.54
31:G:100:LEU:HG	31:G:101:THR:HG23	1.88	0.54
32:H:102:ILE:HD12	32:H:102:ILE:N	2.22	0.54
39:O:37:ARG:HH21	52:3:1124:G:H3'	1.71	0.54
52:3:96:U:H2'	52:3:97:G:C8	2.42	0.54
53:1:275:C:H3'	53:1:276:U:H5''	1.90	0.54
53:1:275:C:C5	53:1:276:U:H1'	2.42	0.54
53:1:1443:U:H2'	53:1:1444:G:C8	2.43	0.54
53:1:1736:U:H2'	53:1:1737:G:H5'	1.88	0.54
53:1:1827:U:O2'	53:1:1828:G:H5'	2.07	0.54
4:e:140:ILE:N	4:e:140:ILE:HD12	2.23	0.54
10:k:3:GLN:HE21	53:1:1666:G:H1'	1.72	0.54
52:3:501:C:H2'	52:3:502:A:H8	1.73	0.54
52:3:926:G:H22	56:4:15:A:H2'	1.73	0.54
53:1:466:A:H2'	53:1:467:G:H5'	1.89	0.54
54:2:55:U:O2'	54:2:56:G:H5'	2.06	0.54
32:H:102:ILE:HD12	32:H:102:ILE:H	1.72	0.54
36:L:78:ARG:HH21	52:3:1382:C:H1'	1.72	0.54
45:U:6:LEU:HD12	52:3:375:U:O3'	2.06	0.54
52:3:1346:A:H2'	52:3:1346:A:N3	2.22	0.54
53:1:2097:A:H2'	53:1:2098:U:C6	2.43	0.54
53:1:2389:G:C5'	53:1:2390:U:H5'	2.36	0.54
54:2:104:A:H2'	54:2:105:G:O4'	2.07	0.54
4:e:131:VAL:HG12	4:e:151:LEU:H	1.73	0.54
26:B:12:ARG:NH1	26:B:16:ARG:HH12	2.05	0.54
31:G:27:LYS:HB3	31:G:28:PRO:HD3	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:H:156:LEU:H	32:H:156:LEU:HD12	1.72	0.54
52:3:189:A:O2'	52:3:190:A:H5'	2.07	0.54
52:3:1197:A:H2'	52:3:1198:G:H5''	1.88	0.54
52:3:1256:A:H4'	52:3:1258:G:C4	2.42	0.54
53:1:291:G:H1	53:1:349:U:H3	1.55	0.54
53:1:1420:A:H3'	53:1:1421:G:H5'	1.90	0.54
53:1:2798:U:H4'	53:1:2799:A:C5	2.43	0.54
54:2:78:A:H2'	54:2:79:G:O4'	2.08	0.54
16:q:23:TYR:CD1	53:1:533:G:H5'	2.43	0.54
18:s:86:MET:HE1	53:1:1325:U:N3	2.22	0.54
31:G:72:LYS:H	31:G:76:SER:HB2	1.71	0.54
34:J:93:VAL:O	34:J:93:VAL:HG13	2.08	0.54
52:3:419:C:O2'	52:3:420:U:H5'	2.07	0.54
52:3:423:G:H2'	52:3:424:G:H5'	1.90	0.54
52:3:813:U:H2'	52:3:814:A:C5'	2.27	0.54
53:1:828:U:H4'	53:1:831:G:N1	2.23	0.54
53:1:979:A:H2'	53:1:982:C:H42	1.73	0.54
53:1:1139:G:O2'	53:1:1140:C:H5'	2.08	0.54
53:1:1680:U:C2'	53:1:1681:G:H5'	2.38	0.54
53:1:2215:C:H2'	53:1:2216:G:C8	2.42	0.54
53:1:2553:G:C3'	53:1:2554:U:H5''	2.34	0.54
3:d:44:ARG:NH2	53:1:1248:G:OP1	2.41	0.54
33:I:58:GLN:O	33:I:62:ARG:HD3	2.08	0.54
35:K:91:ARG:HG3	35:K:92:THR:N	2.19	0.54
37:M:40:LYS:HZ1	37:M:47:ASP:H	1.56	0.54
37:M:46:GLU:CG	37:M:61:THR:HB	2.35	0.54
37:M:60:LEU:HD23	37:M:60:LEU:H	1.72	0.54
53:1:367:G:H2'	53:1:368:A:O4'	2.09	0.54
53:1:2698:U:H2'	53:1:2699:C:C6	2.42	0.54
6:g:66:ASN:ND2	6:g:134:VAL:HG12	2.23	0.53
10:k:76:VAL:H	15:p:72:VAL:HG12	1.72	0.53
31:G:82:ALA:HB3	31:G:213:LEU:HD23	1.90	0.53
52:3:1402:C:H2'	52:3:1403:C:O4'	2.08	0.53
52:3:1431:A:H2'	52:3:1432:G:O4'	2.08	0.53
53:1:2050:C:H2'	53:1:2051:A:O4'	2.08	0.53
53:1:2233:U:H2'	53:1:2234:G:C8	2.43	0.53
9:j:114:LEU:HG	9:j:118:MET:HE3	1.89	0.53
12:m:6:ARG:HG2	12:m:6:ARG:HH11	1.73	0.53
24:y:9:LYS:HZ2	24:y:11:VAL:HG23	1.72	0.53
35:K:42:TRP:HB2	35:K:59:TYR:HB2	1.90	0.53
36:L:49:LEU:HG	36:L:60:ALA:HB3	1.89	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:R:100:ARG:HA	52:3:1225:A:OP1	2.07	0.53
52:3:17:U:H2'	52:3:18:C:C6	2.43	0.53
52:3:68:G:H1	52:3:101:A:N6	2.01	0.53
53:1:382:A:C3'	53:1:383:C:H5''	2.38	0.53
4:e:39:VAL:HG13	4:e:40:GLY:N	2.23	0.53
14:o:17:LYS:HZ3	53:1:2380:C:H5'	1.73	0.53
37:M:80:PRO:HG2	52:3:878:A:C5'	2.38	0.53
41:Q:115:LYS:O	41:Q:116:TYR:HB2	2.09	0.53
42:R:54:THR:O	42:R:57:ASP:OD1	2.26	0.53
45:U:14:ARG:N	45:U:15:PRO:HD3	2.24	0.53
45:U:38:PHE:CE1	45:U:51:ARG:HB3	2.43	0.53
52:3:341:C:O2'	52:3:342:C:H5'	2.08	0.53
52:3:1030:U:H3'	52:3:1031:C:C5'	2.38	0.53
53:1:2248:C:H2'	53:1:2249:U:H5'	1.88	0.53
53:1:2360:G:H2'	53:1:2361:G:H5'	1.91	0.53
54:2:48:U:H2'	54:2:49:C:C6	2.44	0.53
14:o:29:HIS:HB3	14:o:36:TYR:HB2	1.89	0.53
33:I:201:GLU:O	52:3:8:A:N6	2.42	0.53
37:M:39:LEU:HA	37:M:42:GLU:HG2	1.90	0.53
41:Q:51:VAL:HG22	41:Q:52:CYS:N	2.23	0.53
52:3:713:G:H2'	52:3:714:G:H8	1.72	0.53
53:1:288:U:H2'	53:1:289:G:C8	2.44	0.53
7:h:38:MET:CG	53:1:1082:U:H1'	2.38	0.53
16:q:80:ASN:OD1	53:1:1151:A:H4'	2.08	0.53
22:w:79:GLU:O	22:w:81:GLU:HG2	2.09	0.53
31:G:20:ARG:CZ	52:3:831:A:H5''	2.38	0.53
34:J:160:VAL:HG13	34:J:161:GLU:H	1.73	0.53
53:1:2243:U:H2'	53:1:2244:U:H6	1.73	0.53
53:1:2710:C:H2'	53:1:2711:A:C8	2.43	0.53
34:J:129:SER:OG	52:3:20:U:OP2	2.26	0.53
37:M:34:ALA:HA	37:M:37:ASN:HD22	1.73	0.53
41:Q:4:ASN:O	41:Q:7:VAL:HG22	2.07	0.53
52:3:162:A:H2'	52:3:163:C:H5'	1.88	0.53
52:3:1251:A:H2'	52:3:1252:A:C8	2.43	0.53
53:1:704:G:H2'	53:1:726:G:H22	1.71	0.53
53:1:1213:A:H62	53:1:1236:G:H1'	1.74	0.53
53:1:1581:G:H2'	53:1:1582:C:C6	2.43	0.53
53:1:1680:U:H2'	53:1:1681:G:H5'	1.91	0.53
53:1:2636:C:H2'	53:1:2637:U:H6	1.74	0.53
16:q:80:ASN:CG	53:1:1151:A:H4'	2.33	0.53
21:v:14:LYS:HB2	54:2:98:G:H1	1.73	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:H:54:ILE:HD12	32:H:54:ILE:N	2.23	0.53
43:S:81:ILE:HG21	52:3:1202:U:N3	2.22	0.53
49:Y:66:ILE:HG23	49:Y:70:LYS:HD3	1.91	0.53
52:3:437:U:H3	52:3:495:A:H62	1.56	0.53
57:8:63:LEU:HD11	57:8:90:ARG:HH21	1.74	0.53
11:l:16:GLY:HA2	53:1:662:G:O3'	2.09	0.53
49:Y:27:MET:O	49:Y:31:ILE:HG12	2.09	0.53
52:3:153:C:H3'	52:3:154:U:H5''	1.91	0.53
52:3:184:G:C4'	52:3:224:U:H4'	2.30	0.53
52:3:223:A:O2'	52:3:224:U:H5'	2.09	0.53
52:3:406:G:H2'	52:3:407:U:C6	2.44	0.53
53:1:2248:C:C2'	53:1:2249:U:H5'	2.39	0.53
53:1:2637:U:H2'	53:1:2638:G:O4'	2.08	0.53
6:g:137:GLU:OE2	6:g:138:VAL:HG13	2.09	0.53
24:y:47:ARG:O	24:y:50:VAL:HG12	2.07	0.53
32:H:5:HIS:HB3	43:S:88:MET:HE3	1.90	0.53
32:H:69:THR:OG1	32:H:70:ALA:N	2.42	0.53
49:Y:11:ILE:H	49:Y:11:ILE:HD12	1.74	0.53
52:3:758:C:H4'	52:3:880:C:H4'	1.90	0.53
52:3:1264:U:H2'	52:3:1265:C:C6	2.43	0.53
52:3:1280:A:O2'	52:3:1281:C:H5'	2.09	0.53
53:1:91:A:H4'	53:1:92:U:O4'	2.08	0.53
53:1:226:A:H2'	53:1:227:A:O4'	2.08	0.53
53:1:1464:G:H2'	53:1:1465:G:C8	2.44	0.53
53:1:1883:U:H2'	53:1:1884:G:O4'	2.09	0.53
53:1:2155:U:C2'	53:1:2156:G:H5'	2.39	0.53
6:g:143:ILE:HD12	6:g:143:ILE:N	2.24	0.53
15:p:74:GLN:HB2	15:p:77:SER:HB2	1.90	0.53
52:3:779:C:H2'	52:3:780:A:O4'	2.09	0.53
52:3:1006:G:OP1	52:3:1038:C:H4'	2.09	0.53
52:3:1293:C:H2'	52:3:1294:G:C8	2.43	0.53
52:3:1493:A:H2'	56:4:20:A:OP2	2.09	0.53
53:1:293:U:H2'	53:1:294:A:H5''	1.90	0.53
53:1:1874:C:H2'	53:1:1875:G:O4'	2.09	0.53
53:1:1889:A:H2'	53:1:1890:A:C8	2.43	0.53
53:1:2591:C:H2'	53:1:2592:G:H8	1.74	0.53
57:8:19:ALA:HB2	57:8:38:HIS:CE1	2.43	0.53
57:8:43:ILE:HG23	57:8:46:SER:HB3	1.91	0.53
34:J:23:THR:HG21	52:3:1396:A:H2	1.73	0.52
35:K:3:HIS:HA	35:K:65:GLU:HA	1.91	0.52
45:U:31:ARG:HB2	52:3:310:G:H5''	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:110:C:H2'	52:3:111:G:O4'	2.09	0.52
52:3:819:A:H5'	52:3:820:U:C5	2.45	0.52
52:3:1502:A:H8	52:3:1505:G:H22	1.51	0.52
53:1:1915:U:H2'	53:1:1916:A:O4'	2.08	0.52
55:5:43:A:H2'	55:5:44:A:C8	2.44	0.52
57:8:17:ILE:HD12	57:8:17:ILE:N	2.23	0.52
26:B:10:SER:O	26:B:14:MET:HG3	2.09	0.52
40:P:121:ARG:HD2	52:3:778:G:H21	1.75	0.52
46:V:13:SER:HB2	46:V:21:VAL:CG2	2.39	0.52
52:3:1453:G:C2	52:3:1454:G:H1'	2.43	0.52
53:1:572:A:H61	53:1:2029:G:H21	1.57	0.52
53:1:796:C:H2'	53:1:797:G:C8	2.44	0.52
53:1:2286:G:C5'	53:1:2287:A:O4'	2.58	0.52
8:i:126:ARG:HG2	53:1:1080:A:H5'	1.92	0.52
33:I:121:ALA:C	33:I:122:ILE:HD12	2.34	0.52
51:a:6:LYS:HE3	53:1:2130:U:OP2	2.10	0.52
52:3:1040:U:H2'	52:3:1041:G:C8	2.45	0.52
53:1:437:U:H2'	53:1:438:G:C8	2.44	0.52
53:1:441:U:H2'	53:1:442:G:C8	2.44	0.52
53:1:783:A:H2'	53:1:784:G:C4'	2.29	0.52
53:1:2066:C:O2'	53:1:2067:G:H5'	2.10	0.52
53:1:2818:U:H2'	53:1:2819:G:C8	2.42	0.52
28:D:26:ASN:CG	53:1:682:G:H5'	2.35	0.52
31:G:107:ARG:O	31:G:110:ILE:HG22	2.09	0.52
34:J:110:MET:O	34:J:113:VAL:HG12	2.09	0.52
40:P:18:GLY:O	40:P:81:LEU:HB2	2.10	0.52
42:R:38:ILE:HD12	42:R:38:ILE:N	2.23	0.52
42:R:85:TYR:CD2	52:3:1321:U:H5''	2.44	0.52
52:3:1527:U:O2'	52:3:1528:U:H5'	2.10	0.52
53:1:1173:U:H2'	53:1:1174:U:H4'	1.90	0.52
53:1:1326:U:H2'	53:1:1327:A:C8	2.43	0.52
53:1:1440:U:H2'	53:1:1441:G:C8	2.45	0.52
53:1:2398:U:H2'	53:1:2399:G:C8	2.44	0.52
53:1:2591:C:H2'	53:1:2592:G:C8	2.44	0.52
2:c:66:GLY:HA3	53:1:2787:C:H5'	1.90	0.52
6:g:73:ASN:O	6:g:76:GLU:HG3	2.10	0.52
8:i:126:ARG:O	8:i:129:GLU:HG3	2.10	0.52
10:k:99:ILE:HD11	10:k:115:ILE:HD11	1.90	0.52
13:n:22:ARG:HG3	13:n:70:THR:HA	1.90	0.52
16:q:23:TYR:CE1	53:1:533:G:H5'	2.45	0.52
36:L:46:LEU:HD22	36:L:57:GLU:HB2	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:1:9:G:H2'	53:1:2629:U:O4	2.09	0.52
53:1:394:C:H2'	53:1:395:U:O4'	2.10	0.52
53:1:1443:U:H2'	53:1:1444:G:H8	1.74	0.52
53:1:2609:U:H5'	53:1:2610:C:OP2	2.10	0.52
53:1:2646:C:H2'	53:1:2647:U:O4'	2.09	0.52
5:f:86:LEU:HD12	5:f:86:LEU:O	2.10	0.52
25:z:52:PHE:CD2	54:2:83:G:H4'	2.44	0.52
52:3:1219:A:H2'	52:3:1220:G:H8	1.75	0.52
53:1:1914:C:H6	57:8:108:THR:OG1	1.92	0.52
1:b:200:MET:HE2	53:1:1820:U:C4	2.44	0.52
10:k:41:ILE:HD11	10:k:86:LEU:HD22	1.92	0.52
16:q:25:GLY:O	16:q:29:ARG:NH1	2.41	0.52
45:U:13:LYS:C	45:U:15:PRO:HD3	2.34	0.52
52:3:817:C:H5'	52:3:820:U:OP2	2.10	0.52
53:1:225:C:H2'	53:1:226:A:O4'	2.09	0.52
53:1:1890:A:H2'	53:1:1891:G:O4'	2.10	0.52
54:2:3:C:C3'	54:2:4:C:H5''	2.39	0.52
5:f:86:LEU:HD11	5:f:130:ILE:HB	1.91	0.52
23:x:4:CYS:HB3	23:x:9:LYS:H	1.75	0.52
23:x:30:PRO:HG2	23:x:32:LEU:HD23	1.92	0.52
31:G:185:ILE:HA	31:G:199:ILE:HB	1.92	0.52
52:3:83:C:O2'	52:3:85:U:H5'	2.10	0.52
53:1:580:U:H2'	53:1:581:C:C6	2.44	0.52
53:1:594:U:H2'	53:1:595:C:C6	2.44	0.52
53:1:845:A:N3	53:1:845:A:H3'	2.25	0.52
7:h:117:LEU:O	7:h:119:PRO:HD3	2.10	0.52
36:L:106:ALA:HA	36:L:109:LYS:HG2	1.92	0.52
41:Q:113:ARG:HB2	41:Q:118:VAL:HB	1.91	0.52
51:a:26:ALA:CB	51:a:224:VAL:HB	2.40	0.52
51:a:184:LYS:HZ2	51:a:187:GLU:HG3	1.75	0.52
52:3:1516:G:H2'	52:3:1518:A:OP2	2.10	0.52
53:1:1048:A:N6	53:1:1111:A:H1'	2.25	0.52
53:1:1979:U:O2'	53:1:1980:G:H5'	2.10	0.52
53:1:2029:G:O6	53:1:2032:G:H5''	2.09	0.52
57:8:42:ASP:CB	57:8:70:ILE:HD11	2.40	0.52
34:J:160:VAL:HG13	34:J:161:GLU:N	2.25	0.52
41:Q:82:ARG:HD3	41:Q:97:VAL:HG22	1.92	0.52
45:U:19:VAL:HG22	45:U:37:GLY:C	2.35	0.52
52:3:1060:U:H2'	52:3:1061:G:C8	2.44	0.52
53:1:948:C:H2'	53:1:949:G:H8	1.74	0.52
53:1:1433:A:H2'	53:1:1434:A:H8	1.75	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:e:140:ILE:HG23	4:e:144:LYS:HZ3	1.76	0.51
14:o:33:ARG:HB2	54:2:52:A:H62	1.74	0.51
43:S:40:ARG:HE	48:X:6:LYS:HZ3	1.58	0.51
47:W:57:ALA:HA	47:W:60:ARG:HD2	1.92	0.51
52:3:210:C:H5'	52:3:211:G:N2	2.26	0.51
52:3:1436:U:H2'	52:3:1437:A:H8	1.74	0.51
53:1:362:A:H5''	53:1:363:G:C8	2.45	0.51
53:1:548:G:C5	53:1:549:G:H1'	2.45	0.51
53:1:2286:G:H5'	53:1:2287:A:O4'	2.11	0.51
55:5:20:U:H2'	55:5:21:A:H5''	1.91	0.51
4:e:146:ASP:OD2	4:e:149:ARG:NH2	2.43	0.51
27:C:26:LYS:HG3	27:C:27:ARG:HD2	1.92	0.51
29:E:32:LEU:HB3	29:E:40:LYS:HE2	1.92	0.51
52:3:437:U:C2'	52:3:438:U:H5'	2.40	0.51
52:3:642:A:H2'	52:3:642:A:N3	2.25	0.51
52:3:730:G:C2'	52:3:731:G:H5'	2.41	0.51
53:1:18:U:H2'	53:1:19:A:C8	2.44	0.51
53:1:488:G:N2	53:1:491:G:H5''	2.25	0.51
53:1:492:A:H2'	53:1:493:G:O4'	2.10	0.51
53:1:1112:G:H2'	53:1:1113:U:C6	2.45	0.51
53:1:1132:U:H2'	53:1:1133:A:C8	2.45	0.51
53:1:1947:C:H2'	53:1:1948:G:C8	2.45	0.51
53:1:2169:A:H2'	53:1:2170:A:O4'	2.09	0.51
52:3:191:G:H2'	52:3:192:A:H8	1.75	0.51
52:3:1094:G:N3	52:3:1094:G:H2'	2.25	0.51
52:3:1202:U:H2'	52:3:1203:C:O4'	2.10	0.51
53:1:150:U:H2'	53:1:151:C:C6	2.45	0.51
53:1:646:U:O4	53:1:2368:C:H1'	2.10	0.51
53:1:1022:G:H22	53:1:1142:A:H2	1.58	0.51
12:m:125:PRO:HB3	53:1:2485:G:O3'	2.09	0.51
15:p:52:ARG:CB	15:p:55:HIS:HB2	2.39	0.51
32:H:79:LYS:HE3	32:H:81:GLU:HB3	1.93	0.51
38:N:17:ARG:HH22	52:3:1129:C:H5''	1.74	0.51
52:3:1379:G:O2'	52:3:1380:U:H5'	2.10	0.51
53:1:796:C:H2'	53:1:797:G:H8	1.75	0.51
53:1:1726:C:O2'	53:1:1727:C:H5'	2.10	0.51
53:1:2150:C:C2'	53:1:2151:U:H5'	2.40	0.51
53:1:2396:G:O2'	53:1:2397:G:H5'	2.11	0.51
6:g:47:PHE:HA	6:g:51:ARG:HD2	1.92	0.51
32:H:123:LEU:HD11	32:H:129:PHE:HB3	1.92	0.51
35:K:43:GLY:HA2	35:K:58:HIS:CE1	2.45	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:Y:32:LYS:HZ3	52:3:1439:G:P	2.33	0.51
50:Z:9:GLU:HB3	50:Z:10:PRO:CD	2.40	0.51
52:3:265:G:N2	52:3:267:C:H5'	2.26	0.51
53:1:467:G:O2'	53:1:468:G:H5'	2.10	0.51
53:1:1564:C:H2'	53:1:1565:C:O4'	2.11	0.51
53:1:1837:C:H2'	53:1:1899:A:H61	1.75	0.51
53:1:2529:G:H5''	53:1:2530:A:H5''	1.91	0.51
4:e:40:GLY:HA3	53:1:2307:G:O6	2.10	0.51
5:f:37:ASN:HB3	5:f:40:VAL:HB	1.92	0.51
10:k:121:GLU:OE1	15:p:65:ASN:ND2	2.40	0.51
15:p:54:LEU:HA	15:p:76:HIS:HD2	1.74	0.51
28:D:14:ARG:HD2	53:1:771:G:OP1	2.10	0.51
31:G:75:ALA:O	31:G:79:VAL:HG23	2.11	0.51
53:1:968:C:H2'	53:1:969:G:H8	1.76	0.51
53:1:1683:U:H2'	53:1:1684:G:C8	2.45	0.51
53:1:1758:U:C5	53:1:2696:U:H5'	2.45	0.51
2:c:58:ASN:HD21	53:1:2831:G:P	2.32	0.51
5:f:116:LEU:H	5:f:116:LEU:HD23	1.76	0.51
14:o:67:ASN:HA	54:2:50:A:OP2	2.10	0.51
16:q:91:ARG:HA	16:q:94:LEU:HB2	1.92	0.51
48:X:39:ILE:HG13	48:X:40:PHE:H	1.74	0.51
51:a:25:GLU:O	51:a:26:ALA:HB2	2.10	0.51
53:1:700:G:O2'	53:1:701:G:H5'	2.10	0.51
53:1:1114:C:H2'	53:1:1115:G:C8	2.46	0.51
53:1:1732:C:O2'	53:1:1733:G:H5'	2.11	0.51
53:1:1935:G:O2'	53:1:1936:A:H5'	2.10	0.51
53:1:2559:C:H2'	53:1:2560:A:C8	2.46	0.51
57:8:109:ARG:HD2	57:8:110:PRO:HD2	1.92	0.51
3:d:131:THR:HG21	53:1:320:A:H2'	1.93	0.51
8:i:78:LEU:O	8:i:81:LYS:HG3	2.10	0.51
31:G:72:LYS:HD2	31:G:72:LYS:N	2.26	0.51
33:I:167:PRO:HB2	33:I:170:LEU:HG	1.92	0.51
41:Q:47:ALA:C	41:Q:48:LEU:HD12	2.35	0.51
52:3:473:U:H3'	52:3:474:G:C5'	2.32	0.51
53:1:184:C:H2'	53:1:185:G:H8	1.76	0.51
53:1:395:U:H2'	53:1:396:G:C8	2.45	0.51
53:1:851:C:H2'	53:1:852:U:C6	2.46	0.51
53:1:1367:A:H2'	53:1:1368:G:C5'	2.40	0.51
53:1:1725:U:H2'	53:1:1726:C:C6	2.46	0.51
53:1:2281:A:O2'	53:1:2282:G:H5'	2.11	0.51
53:1:2559:C:H2'	53:1:2560:A:H8	1.76	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:i:77:VAL:HA	8:i:80:LYS:HD2	1.92	0.51
33:I:27:ILE:HG23	33:I:28:ASP:N	2.26	0.51
38:N:45:MET:O	38:N:49:GLN:HG2	2.10	0.51
45:U:8:ARG:NH2	45:U:15:PRO:HG3	2.26	0.51
51:a:184:LYS:HE3	51:a:188:ASN:HD21	1.76	0.51
52:3:419:C:H2'	52:3:420:U:O4'	2.11	0.51
52:3:721:G:H4'	52:3:722:G:O4'	2.10	0.51
52:3:1474:U:H2'	52:3:1475:G:C8	2.45	0.51
53:1:163:C:H2'	53:1:164:C:O4'	2.11	0.51
53:1:1825:U:H2'	53:1:1826:G:C8	2.44	0.51
53:1:2104:C:H42	53:1:2185:U:H3	1.56	0.51
53:1:2327:A:H2'	53:1:2328:A:C8	2.46	0.51
2:c:81:GLU:OE2	53:1:2636:C:H4'	2.11	0.51
10:k:70:ARG:HG2	10:k:76:VAL:HG12	1.93	0.51
18:s:3:THR:HB	18:s:107:VAL:HG13	1.93	0.51
33:I:170:LEU:HD12	33:I:170:LEU:O	2.11	0.51
51:a:44:VAL:HG11	51:a:212:VAL:HG12	1.93	0.51
52:3:191:G:H2'	52:3:192:A:C8	2.45	0.51
52:3:211:G:C2	52:3:212:G:H1'	2.46	0.51
52:3:1254:A:H2'	52:3:1255:G:C8	2.46	0.51
52:3:1298:U:H5'	52:3:1299:A:N3	2.25	0.51
53:1:112:U:H2'	53:1:113:U:H5'	1.93	0.51
53:1:581:C:H2'	53:1:582:A:H8	1.76	0.51
53:1:729:G:H4'	53:1:763:G:H5'	1.92	0.51
53:1:1048:A:H61	53:1:1111:A:H1'	1.76	0.51
53:1:2561:U:C3'	53:1:2562:U:H5''	2.41	0.51
8:i:9:LYS:O	8:i:9:LYS:HD3	2.11	0.50
11:l:77:ILE:HD12	11:l:77:ILE:N	2.26	0.50
31:G:187:ASP:H	31:G:190:SER:HB3	1.76	0.50
35:K:19:PRO:O	35:K:22:ILE:HG12	2.10	0.50
37:M:14:ARG:NH2	37:M:74:ILE:O	2.44	0.50
42:R:113:LYS:CE	52:3:1227:A:H4'	2.41	0.50
51:a:22:ASP:OD2	51:a:23:ILE:HD12	2.11	0.50
52:3:216:U:H4'	52:3:464:U:C4'	2.37	0.50
52:3:865:A:H2'	52:3:866:C:C6	2.46	0.50
52:3:1011:C:H2'	52:3:1012:A:H8	1.76	0.50
52:3:1502:A:H5'	52:3:1504:G:N7	2.26	0.50
53:1:546:U:O2'	53:1:547:A:H4'	2.11	0.50
53:1:589:U:H2'	53:1:590:A:C8	2.47	0.50
53:1:1917:U:O2'	53:1:1918:A:H5'	2.11	0.50
53:1:2267:A:H5''	53:1:2268:A:H5'	1.91	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:32:LEU:HD11	1:b:101:ARG:HA	1.93	0.50
4:e:128:SER:HB2	4:e:154:THR:HG23	1.94	0.50
12:m:75:GLU:OE1	53:1:957:C:H5'	2.12	0.50
16:q:113:LYS:HA	16:q:116:LEU:HB2	1.93	0.50
32:H:80:GLY:O	32:H:83:VAL:HG12	2.10	0.50
41:Q:98:ARG:HB2	41:Q:116:TYR:HA	1.93	0.50
53:1:1420:A:H3'	53:1:1421:G:C5'	2.41	0.50
53:1:2328:A:H2'	53:1:2329:U:C6	2.47	0.50
53:1:2629:U:O2'	53:1:2630:G:H5''	2.11	0.50
53:1:2837:A:H2'	53:1:2838:G:C8	2.47	0.50
4:e:70:ARG:HH11	53:1:2312:U:P	2.34	0.50
35:K:6:ILE:N	35:K:6:ILE:HD12	2.26	0.50
36:L:87:PRO:HD3	36:L:147:ASN:ND2	2.26	0.50
38:N:57:VAL:HG23	38:N:58:GLU:N	2.26	0.50
50:Z:41:THR:O	50:Z:44:ARG:HG3	2.12	0.50
52:3:672:U:O2'	52:3:673:A:H5'	2.11	0.50
52:3:1254:A:H5'	52:3:1356:G:H4'	1.94	0.50
52:3:1451:U:H3'	52:3:1452:C:C5'	2.41	0.50
53:1:118:A:OP2	53:1:119:A:H5''	2.11	0.50
53:1:214:G:O2'	53:1:215:G:H5'	2.11	0.50
53:1:859:G:H1'	53:1:860:U:H5	1.76	0.50
53:1:947:A:H2'	53:1:948:C:C6	2.46	0.50
57:8:61:HIS:CD2	57:8:62:HIS:H	2.29	0.50
5:f:175:LYS:C	5:f:176:LYS:HD2	2.37	0.50
12:m:75:GLU:CD	53:1:957:C:H5'	2.37	0.50
17:r:54:VAL:O	17:r:56:GLY:N	2.39	0.50
37:M:6:ILE:HD12	37:M:6:ILE:N	2.24	0.50
37:M:12:ARG:HH11	37:M:26:MET:HB3	1.76	0.50
39:O:38:GLY:HA3	52:3:1123:U:O3'	2.11	0.50
41:Q:20:VAL:HG21	52:3:553:A:OP1	2.11	0.50
49:Y:19:HIS:O	49:Y:23:ARG:HG2	2.12	0.50
50:Z:45:LYS:O	50:Z:49:ALA:HB3	2.10	0.50
52:3:628:G:H2'	52:3:629:A:H8	1.76	0.50
53:1:27:G:N2	53:1:512:G:H1'	2.27	0.50
53:1:154:U:H2'	53:1:155:A:C8	2.47	0.50
53:1:704:G:H1'	53:1:727:A:N6	2.26	0.50
53:1:774:G:C2'	53:1:775:G:H5''	2.41	0.50
53:1:1418:G:O6	53:1:1578:U:H5''	2.11	0.50
53:1:1464:G:H2'	53:1:1465:G:H8	1.76	0.50
53:1:2818:U:H4'	53:1:2837:A:H4'	1.93	0.50
9:j:114:LEU:O	9:j:118:MET:HG2	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:n:103:ARG:HD2	53:1:1287:A:H5'	1.93	0.50
36:L:24:LYS:O	36:L:28:ILE:HG13	2.11	0.50
39:O:66:GLU:OE1	39:O:68:ARG:HG3	2.12	0.50
45:U:73:ALA:HB1	52:3:452:A:C1'	2.42	0.50
52:3:865:A:H5'	52:3:1078:U:O4	2.11	0.50
52:3:929:G:H5''	52:3:1534:A:O2'	2.11	0.50
52:3:1173:U:H2'	52:3:1174:G:C8	2.47	0.50
53:1:382:A:H2'	53:1:383:C:H5''	1.94	0.50
53:1:1746:A:H2'	53:1:1747:U:C6	2.47	0.50
53:1:2557:G:H2'	53:1:2558:C:C6	2.46	0.50
3:d:18:THR:HG22	3:d:106:LYS:HE3	1.93	0.50
3:d:112:LEU:HD22	3:d:117:ARG:HD2	1.94	0.50
4:e:120:SER:HB3	4:e:127:TYR:CE1	2.47	0.50
13:n:69:ARG:O	13:n:70:THR:OG1	2.29	0.50
14:o:24:THR:HG22	14:o:42:PRO:HD3	1.93	0.50
23:x:60:LYS:HZ2	53:1:372:G:C4'	2.24	0.50
31:G:70:GLY:HA2	31:G:72:LYS:HZ3	1.77	0.50
38:N:105:ARG:NE	52:3:1117:A:O3'	2.41	0.50
39:O:20:GLN:O	39:O:24:GLU:HG3	2.12	0.50
40:P:19:VAL:HG23	40:P:36:ARG:HD2	1.93	0.50
41:Q:71:HIS:HB2	41:Q:73:LEU:HD23	1.94	0.50
42:R:85:TYR:OH	42:R:89:ARG:NH1	2.44	0.50
52:3:1501:C:H5''	52:3:1502:A:OP2	2.12	0.50
53:1:644:A:H2'	53:1:645:C:C5'	2.40	0.50
53:1:1258:U:H2'	53:1:1259:G:C8	2.47	0.50
53:1:1630:A:H2'	53:1:1631:G:O4'	2.12	0.50
8:i:8:VAL:HB	8:i:58:ILE:HG23	1.93	0.50
8:i:99:LYS:C	8:i:100:ILE:HD12	2.36	0.50
10:k:28:SER:OG	53:1:2566:A:N1	2.44	0.50
12:m:93:VAL:HG22	12:m:94:ALA:N	2.27	0.50
13:n:118:ARG:HG2	13:n:118:ARG:HH21	1.77	0.50
23:x:32:LEU:HD12	23:x:49:ARG:HG2	1.93	0.50
25:z:40:THR:OG1	25:z:41:PRO:HD2	2.11	0.50
37:M:14:ARG:HH12	52:3:876:C:H4'	1.77	0.50
40:P:84:MET:HE3	40:P:112:VAL:HG21	1.94	0.50
46:V:49:ASN:O	46:V:50:ASN:HB2	2.11	0.50
50:Z:50:SER:HA	50:Z:53:LYS:HE2	1.94	0.50
53:1:2391:G:H2'	53:1:2424:C:N4	2.26	0.50
53:1:2860:A:H2'	53:1:2861:U:H5'	1.93	0.50
3:d:104:ALA:O	3:d:108:ILE:HG13	2.12	0.50
12:m:13:HIS:HE1	53:1:2265:U:H4'	1.77	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:M:14:ARG:HD3	52:3:875:U:O2'	2.12	0.50
40:P:22:ILE:N	40:P:22:ILE:HD12	2.26	0.50
41:Q:43:LYS:NZ	56:4:20:A:H3'	2.26	0.50
42:R:22:TYR:HE1	52:3:1330:U:H4'	1.77	0.50
46:V:61:ARG:HB2	46:V:75:VAL:CG2	2.40	0.50
48:X:36:ARG:HA	48:X:69:LYS:HD3	1.93	0.50
52:3:166:U:H2'	52:3:167:A:C8	2.47	0.50
52:3:911:U:H2'	52:3:912:C:C6	2.46	0.50
52:3:1245:C:H2'	52:3:1246:A:C8	2.46	0.50
52:3:1497:G:C2'	52:3:1498:U:H5'	2.42	0.50
53:1:745:G:O2'	53:1:748:G:H1'	2.12	0.50
53:1:1505:A:H2'	53:1:1506:U:H5'	1.93	0.50
53:1:2070:A:O2'	53:1:2071:A:H5'	2.11	0.50
53:1:2343:U:O2'	53:1:2344:U:H5'	2.11	0.50
11:l:63:LYS:HB3	29:E:12:ARG:HE	1.76	0.50
16:q:27:ARG:HH12	53:1:532:A:H5''	1.77	0.50
52:3:80:A:H2	52:3:89:U:H3	1.60	0.50
52:3:279:A:H5'	52:3:281:G:C5'	2.42	0.50
52:3:596:A:H61	52:3:644:U:H3	1.60	0.50
52:3:1171:A:H2'	52:3:1172:C:H6	1.76	0.50
53:1:538:A:H2'	53:1:539:G:O4'	2.12	0.50
53:1:1558:C:H4'	53:1:1559:U:O5'	2.12	0.50
53:1:2243:U:H2'	53:1:2244:U:C6	2.46	0.50
1:b:199:HIS:HB3	53:1:1820:U:O2	2.12	0.49
8:i:133:ARG:NH1	53:1:1078:U:H4'	2.26	0.49
13:n:79:LEU:HD23	13:n:83:LEU:HD12	1.94	0.49
16:q:47:ARG:NH2	16:q:51:GLN:OE1	2.43	0.49
29:E:32:LEU:HD12	53:1:2419:U:H5''	1.94	0.49
41:Q:78:VAL:O	41:Q:102:ASP:HB2	2.12	0.49
48:X:52:ASN:HD21	48:X:55:GLN:HB2	1.77	0.49
52:3:68:G:C2	52:3:69:G:H1'	2.47	0.49
53:1:275:C:H3'	53:1:276:U:H4'	1.94	0.49
53:1:2128:G:H2'	53:1:2129:C:H5'	1.94	0.49
53:1:2197:U:O2'	53:1:2198:A:H5''	2.11	0.49
2:c:146:ILE:HG13	2:c:147:GLY:H	1.77	0.49
32:H:87:ARG:HD2	32:H:98:ALA:O	2.12	0.49
34:J:123:LEU:HD23	52:3:7:A:C8	2.47	0.49
45:U:6:LEU:HD22	45:U:17:TYR:HB3	1.93	0.49
52:3:129:A:H1'	52:3:130:A:C8	2.45	0.49
53:1:1726:C:H2'	53:1:1727:C:O4'	2.12	0.49
53:1:2783:U:H2'	53:1:2784:U:C6	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:5:47:U:H3'	55:5:48:C:C5'	2.41	0.49
55:5:57:A:H2'	55:5:58:A:H5'	1.95	0.49
37:M:40:LYS:NZ	37:M:47:ASP:N	2.61	0.49
38:N:129:ARG:NH1	55:5:34:C:H5'	2.27	0.49
41:Q:98:ARG:HD2	41:Q:103:CYS:SG	2.52	0.49
42:R:21:ILE:H	42:R:21:ILE:HD12	1.77	0.49
48:X:39:ILE:HG13	48:X:40:PHE:N	2.28	0.49
50:Z:57:LYS:HA	50:Z:60:ALA:HB3	1.95	0.49
53:1:494:G:H2'	53:1:495:G:C8	2.47	0.49
53:1:2508:G:H1	53:1:2580:U:H3	1.61	0.49
4:e:111:ARG:O	4:e:112:ASP:HB2	2.10	0.49
22:w:36:GLN:HE22	22:w:41:PHE:H	1.61	0.49
38:N:21:LYS:HD2	38:N:22:PRO:HD2	1.93	0.49
50:Z:54:ARG:O	50:Z:58:LYS:HG2	2.12	0.49
50:Z:65:ARG:HG3	52:3:1099:G:H1'	1.95	0.49
52:3:123:U:H5''	52:3:311:C:O2'	2.12	0.49
52:3:1255:G:H2'	52:3:1279:G:H1	1.77	0.49
52:3:1346:A:H1'	52:3:1348:U:C1'	2.42	0.49
53:1:2514:U:H2'	53:1:2515:C:C6	2.47	0.49
53:1:2704:C:H2'	53:1:2705:A:O4'	2.13	0.49
1:b:203:VAL:HG23	53:1:1792:G:C5'	2.42	0.49
12:m:4:PRO:HG2	12:m:70:ASP:HA	1.94	0.49
21:v:19:ARG:NH2	54:2:95:U:OP2	2.45	0.49
41:Q:49:ARG:HB3	41:Q:65:TYR:HE1	1.78	0.49
42:R:80:MET:HG2	42:R:91:ARG:HE	1.78	0.49
50:Z:39:LYS:O	50:Z:43:GLU:HG3	2.12	0.49
51:a:161:VAL:HG11	51:a:174:THR:HB	1.94	0.49
52:3:94:G:H8	52:3:94:G:OP2	1.96	0.49
52:3:211:G:N2	52:3:212:G:H1'	2.27	0.49
52:3:751:U:H2'	52:3:752:G:H5'	1.93	0.49
52:3:1040:U:H2'	52:3:1041:G:H8	1.77	0.49
53:1:437:U:H2'	53:1:438:G:H8	1.78	0.49
53:1:1637:A:H5'	53:1:1760:C:O2'	2.13	0.49
53:1:1688:U:H2'	53:1:1698:A:N6	2.28	0.49
55:5:35:A:H2'	55:5:36:U:C6	2.48	0.49
5:f:8:VAL:HG22	5:f:72:ASN:ND2	2.27	0.49
9:j:78:THR:OG1	9:j:83:GLY:HA3	2.12	0.49
11:l:54:GLN:OE1	53:1:825:A:H1'	2.12	0.49
28:D:9:VAL:HG12	53:1:1309:G:OP1	2.13	0.49
40:P:24:ALA:HA	40:P:29:THR:HA	1.93	0.49
52:3:153:C:H3'	52:3:154:U:C5'	2.42	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:878:A:H2'	52:3:879:C:C6	2.47	0.49
52:3:1524:C:H2'	52:3:1525:G:C8	2.48	0.49
53:1:368:A:C2'	53:1:369:U:H5'	2.42	0.49
53:1:1020:A:C1'	53:1:1021:A:OP2	2.57	0.49
53:1:1101:U:H2'	53:1:1102:C:H6	1.77	0.49
53:1:1199:U:H2'	53:1:1200:C:C6	2.47	0.49
53:1:1405:U:H2'	53:1:1406:U:C6	2.47	0.49
53:1:1851:U:H2'	53:1:1852:U:O4'	2.12	0.49
53:1:2473:U:H5	53:1:2529:G:N2	2.09	0.49
55:5:48:C:C2'	55:5:59:A:H4'	2.42	0.49
1:b:68:ARG:HD3	1:b:128:THR:HG21	1.94	0.49
3:d:186:VAL:O	3:d:186:VAL:HG13	2.12	0.49
5:f:41:GLU:HG3	5:f:54:ARG:HH21	1.77	0.49
31:G:100:LEU:C	31:G:102:ASN:H	2.19	0.49
32:H:14:VAL:HG23	32:H:15:LYS:H	1.76	0.49
33:I:96:ARG:HG3	33:I:98:ASP:OD1	2.13	0.49
35:K:72:ASP:O	35:K:75:GLU:HG3	2.12	0.49
43:S:82:LYS:HE2	52:3:1202:U:O2	2.12	0.49
52:3:350:G:H2'	52:3:351:G:C8	2.48	0.49
52:3:460:A:H2'	52:3:461:A:C8	2.47	0.49
52:3:651:C:H2'	52:3:652:U:C6	2.47	0.49
52:3:675:A:H2'	52:3:676:A:C8	2.47	0.49
52:3:1024:G:O2'	52:3:1025:U:H5'	2.12	0.49
53:1:1882:U:H2'	53:1:1883:U:C6	2.47	0.49
14:o:94:ARG:NH1	53:1:2377:A:N1	2.61	0.49
33:I:199:ILE:H	33:I:199:ILE:HD12	1.77	0.49
34:J:88:HIS:CE1	34:J:137:ARG:HD2	2.47	0.49
40:P:16:SER:HA	40:P:78:ILE:HA	1.95	0.49
41:Q:62:VAL:HG22	41:Q:63:THR:N	2.26	0.49
43:S:48:GLN:HB3	48:X:12:LEU:HD22	1.94	0.49
52:3:423:G:C2'	52:3:424:G:H5'	2.43	0.49
52:3:1137:C:H4'	52:3:1138:G:C2	2.48	0.49
53:1:1161:C:H2'	53:1:1162:G:H8	1.78	0.49
53:1:2339:C:H2'	53:1:2340:A:H8	1.78	0.49
53:1:2896:C:H2'	53:1:2897:U:C6	2.47	0.49
57:8:44:ARG:HG3	57:8:57:LEU:HD13	1.95	0.49
1:b:252:LYS:HZ2	53:1:1795:C:H1'	1.77	0.49
1:b:259:ASN:ND2	1:b:261:ARG:HG2	2.27	0.49
4:e:26:GLN:O	4:e:26:GLN:HG2	2.13	0.49
4:e:84:ILE:CG2	53:1:2312:U:H4'	2.43	0.49
12:m:50:ARG:HD3	12:m:65:ILE:HD11	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:C:7:LYS:HA	27:C:23:THR:HA	1.95	0.49
34:J:22:LYS:HB3	34:J:29:ILE:CG2	2.43	0.49
35:K:6:ILE:HD12	35:K:6:ILE:H	1.77	0.49
51:a:42:VAL:HG22	51:a:178:VAL:HG22	1.93	0.49
51:a:220:ALA:O	53:1:2176:A:H4'	2.12	0.49
52:3:20:U:H2'	52:3:21:G:O4'	2.13	0.49
53:1:1152:C:H2'	53:1:1153:C:C6	2.46	0.49
53:1:1809:A:H2'	53:1:1810:A:C8	2.48	0.49
53:1:2062:A:H4'	53:1:2442:C:OP2	2.13	0.49
53:1:2798:U:H4'	53:1:2799:A:C6	2.47	0.49
2:c:48:ILE:HG23	2:c:84:LEU:HD21	1.95	0.49
4:e:131:VAL:HG22	4:e:132:ARG:H	1.77	0.49
5:f:85:LYS:HB2	5:f:164:ALA:HB2	1.93	0.49
8:i:127:SER:HB3	53:1:1059:G:N2	2.27	0.49
32:H:76:ILE:HB	32:H:80:GLY:HA2	1.94	0.49
36:L:65:LEU:O	36:L:69:ARG:HG3	2.13	0.49
39:O:9:ARG:C	39:O:10:LEU:HD22	2.38	0.49
42:R:15:VAL:HG11	42:R:40:GLU:OE1	2.13	0.49
52:3:665:A:N3	52:3:732:C:H2'	2.28	0.49
52:3:1512:U:H2'	52:3:1513:A:H8	1.77	0.49
53:1:296:U:H2'	53:1:297:G:H8	1.78	0.49
53:1:1889:A:H2'	53:1:1890:A:H8	1.77	0.49
53:1:2323:G:H2'	53:1:2324:U:O4'	2.13	0.49
2:c:155:VAL:HG21	53:1:2618:G:H21	1.78	0.48
3:d:199:MET:HG3	3:d:200:LEU:CD2	2.42	0.48
8:i:123:ALA:HB1	53:1:1081:U:H5'	1.94	0.48
32:H:151:GLU:HG2	32:H:166:TRP:HB3	1.95	0.48
34:J:159:SER:OG	34:J:162:GLU:HB2	2.13	0.48
35:K:36:ILE:HA	35:K:64:VAL:HG13	1.95	0.48
48:X:54:ARG:NH1	48:X:55:GLN:OE1	2.39	0.48
52:3:751:U:C2'	52:3:752:G:H5'	2.42	0.48
52:3:1477:U:H2'	52:3:1478:U:C6	2.48	0.48
53:1:310:A:O2'	53:1:311:A:H2'	2.13	0.48
53:1:940:G:C2'	53:1:941:A:H5''	2.43	0.48
53:1:1344:U:H3'	53:1:1345:C:H5'	1.94	0.48
53:1:2266:A:H4'	53:1:2267:A:N3	2.28	0.48
53:1:2298:A:H62	53:1:2318:G:H21	1.61	0.48
53:1:2506:U:O2'	53:1:2507:C:H5'	2.13	0.48
53:1:2760:C:O2'	53:1:2761:A:H5'	2.12	0.48
8:i:89:SER:HB3	53:1:1063:G:N3	2.28	0.48
11:l:18:ARG:HH12	53:1:1249:U:H2'	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:l:132:ARG:O	11:l:136:GLU:HG3	2.13	0.48
41:Q:109:ARG:NH1	52:3:537:G:H5''	2.27	0.48
53:1:28:A:H1'	53:1:513:A:C2	2.48	0.48
53:1:75:G:H22	53:1:111:A:H2	1.60	0.48
53:1:662:G:O2'	53:1:663:G:H5'	2.13	0.48
53:1:1438:U:H2'	53:1:1439:A:C8	2.48	0.48
55:5:70:G:H2'	55:5:71:C:C6	2.48	0.48
1:b:156:SER:O	1:b:194:VAL:HG21	2.13	0.48
10:k:15:GLY:HA3	10:k:50:GLY:HA3	1.94	0.48
11:l:101:ILE:HG13	11:l:102:GLY:N	2.27	0.48
28:D:9:VAL:HG22	28:D:13:ASN:HD21	1.77	0.48
35:K:92:THR:O	35:K:93:LYS:HG2	2.12	0.48
50:Z:16:ARG:NH2	50:Z:19:LYS:NZ	2.61	0.48
52:3:711:G:O2'	52:3:712:A:H5'	2.14	0.48
53:1:543:G:H8	53:1:543:G:H5'	1.77	0.48
53:1:1917:U:C2'	53:1:1918:A:H5'	2.42	0.48
53:1:2101:A:H2'	53:1:2102:G:C8	2.48	0.48
53:1:2143:C:H2'	53:1:2144:G:H5'	1.94	0.48
53:1:2564:A:C2	53:1:2647:U:H4'	2.48	0.48
8:i:4:VAL:HA	8:i:7:TYR:HB3	1.96	0.48
8:i:126:ARG:NE	53:1:1080:A:H5''	2.27	0.48
10:k:108:ARG:HH22	52:3:345:C:H3'	1.77	0.48
14:o:12:THR:HG21	53:1:2334:U:H5'	1.96	0.48
14:o:33:ARG:O	14:o:34:HIS:CB	2.61	0.48
34:J:10:LEU:N	34:J:10:LEU:HD23	2.28	0.48
38:N:27:ILE:N	38:N:27:ILE:HD12	2.28	0.48
38:N:27:ILE:HB	38:N:34:LEU:HB2	1.94	0.48
52:3:575:G:O2'	52:3:821:G:H5'	2.13	0.48
53:1:1071:G:OP1	53:1:1071:G:H3'	2.12	0.48
53:1:2679:A:O2'	53:1:2680:U:H5'	2.13	0.48
35:K:11:HIS:HB3	35:K:14:GLN:HG2	1.94	0.48
35:K:52:ASN:O	35:K:53:LYS:HG2	2.14	0.48
37:M:45:ILE:HG21	37:M:60:LEU:HB2	1.96	0.48
42:R:22:TYR:CE1	52:3:1330:U:H4'	2.48	0.48
52:3:175:C:O2'	52:3:176:C:H5'	2.13	0.48
52:3:1457:G:H2'	52:3:1458:G:C8	2.41	0.48
53:1:2398:U:H2'	53:1:2399:G:H8	1.78	0.48
1:b:252:LYS:NZ	53:1:1795:C:H1'	2.28	0.48
3:d:45:ALA:CB	53:1:38:A:H4'	2.44	0.48
33:I:100:VAL:HA	33:I:103:ARG:HB2	1.95	0.48
33:I:112:GLU:HA	52:3:407:U:O2'	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:a:26:ALA:HB3	51:a:224:VAL:HB	1.95	0.48
52:3:715:A:H2'	52:3:716:A:C8	2.49	0.48
52:3:802:A:H2'	52:3:803:G:O4'	2.13	0.48
53:1:996:A:H2'	53:1:997:G:H8	1.78	0.48
53:1:2492:U:H2'	53:1:2493:U:C6	2.48	0.48
55:5:21:A:N6	55:5:46:G:H2'	2.28	0.48
57:8:125:LYS:O	57:8:128:VAL:HG12	2.14	0.48
5:f:38:ASP:OD2	5:f:38:ASP:N	2.47	0.48
5:f:51:PHE:HZ	5:f:71:LEU:HG	1.79	0.48
32:H:5:HIS:CE1	32:H:7:ASN:HB3	2.48	0.48
51:a:10:VAL:HG12	51:a:33:LEU:HD11	1.94	0.48
52:3:371:A:H2'	52:3:372:C:O4'	2.13	0.48
53:1:482:A:H1'	53:1:498:G:N2	2.28	0.48
53:1:893:C:H2'	53:1:894:U:O4'	2.13	0.48
53:1:2241:A:H2'	53:1:2242:G:C8	2.49	0.48
54:2:111:U:H2'	54:2:112:G:H8	1.78	0.48
1:b:257:ARG:HH21	1:b:266:ILE:HD12	1.78	0.48
5:f:137:LYS:O	5:f:140:ILE:HG22	2.13	0.48
37:M:88:LYS:HG2	37:M:89:ASP:N	2.29	0.48
48:X:13:HIS:O	48:X:17:LYS:HG3	2.14	0.48
51:a:170:ILE:HD13	53:1:2177:C:O2'	2.13	0.48
52:3:82:G:H3'	52:3:83:C:C5'	2.44	0.48
52:3:731:G:O2'	52:3:732:C:H5'	2.14	0.48
52:3:742:G:O2'	52:3:743:A:H5'	2.14	0.48
52:3:1288:A:O2'	52:3:1353:G:H5'	2.14	0.48
52:3:1356:G:H2'	52:3:1357:A:C8	2.48	0.48
52:3:1443:C:H2'	52:3:1444:U:O4'	2.13	0.48
53:1:438:G:H2'	53:1:439:A:C8	2.49	0.48
53:1:654:A:H3'	53:1:654:A:N3	2.29	0.48
53:1:2087:G:H2'	53:1:2088:A:H8	1.79	0.48
53:1:2638:G:H22	53:1:2775:G:H2'	1.79	0.48
4:e:124:ARG:HD2	4:e:159:ALA:O	2.13	0.48
22:w:15:LYS:HB2	22:w:17:LEU:HD11	1.95	0.48
29:E:2:LYS:HG3	53:1:242:G:N7	2.29	0.48
32:H:135:ARG:O	32:H:138:GLN:NE2	2.47	0.48
37:M:5:PRO:HG2	37:M:6:ILE:HD12	1.94	0.48
38:N:10:ARG:O	38:N:105:ARG:NH2	2.47	0.48
43:S:17:ASP:HA	43:S:21:ALA:HB2	1.96	0.48
52:3:399:G:H2'	52:3:400:C:C6	2.49	0.48
53:1:940:G:H2'	53:1:941:A:C5'	2.43	0.48
53:1:1683:U:H2'	53:1:1684:G:H8	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:1:1744:A:H3'	53:1:1745:A:H8	1.79	0.48
53:1:1765:U:H2'	53:1:1766:G:H8	1.79	0.48
57:8:3:VAL:O	57:8:9:ALA:O	2.32	0.48
7:h:117:LEU:C	7:h:119:PRO:CD	2.87	0.48
31:G:30:ILE:HG13	31:G:31:PHE:H	1.78	0.48
33:I:119:HIS:CD2	52:3:438:U:H4'	2.48	0.48
52:3:1128:C:O2'	52:3:1129:C:H5'	2.13	0.48
52:3:1219:A:H2'	52:3:1220:G:C8	2.49	0.48
53:1:1101:U:H2'	53:1:1102:C:C6	2.49	0.48
53:1:1847:A:H2'	53:1:1848:A:H8	1.78	0.48
53:1:2061:G:H2'	53:1:2501:C:O2'	2.14	0.48
57:8:56:LEU:HD23	57:8:98:LEU:HD12	1.96	0.48
1:b:251:THR:HG23	1:b:252:LYS:HG2	1.96	0.47
2:c:129:THR:OG1	2:c:130:GLN:N	2.47	0.47
3:d:188:MET:HE2	3:d:192:ALA:C	2.39	0.47
14:o:34:HIS:C	14:o:35:ILE:HD12	2.39	0.47
30:F:19:ARG:HH12	30:F:26:ILE:HD13	1.78	0.47
32:H:3:LYS:NZ	52:3:1192:C:OP2	2.47	0.47
38:N:11:ARG:CZ	38:N:12:LYS:HZ1	2.26	0.47
39:O:14:ASP:HB3	39:O:17:LEU:CB	2.41	0.47
40:P:115:ILE:O	52:3:675:A:O2'	2.32	0.47
46:V:20:ILE:HG21	46:V:52:CYS:SG	2.54	0.47
52:3:1471:U:O2'	52:3:1472:U:H5'	2.14	0.47
53:1:222:A:N6	53:1:232:G:H1'	2.29	0.47
53:1:255:A:H2'	53:1:256:A:O4'	2.13	0.47
53:1:2004:G:H2'	53:1:2005:A:O4'	2.14	0.47
53:1:2246:G:H2'	53:1:2247:A:C8	2.49	0.47
8:i:123:ALA:HB1	53:1:1081:U:H4'	1.96	0.47
10:k:30:ARG:NH2	10:k:37:ASP:OD2	2.47	0.47
14:o:12:THR:HB	53:1:2334:U:C4'	2.42	0.47
28:D:11:LYS:HZ3	53:1:686:U:H5''	1.79	0.47
31:G:26:MET:HE3	31:G:192:PRO:HB3	1.95	0.47
36:L:14:ASP:HB3	36:L:17:PHE:O	2.13	0.47
36:L:39:GLU:HG2	36:L:43:TYR:CE2	2.49	0.47
45:U:61:VAL:HA	45:U:65:ALA:H	1.79	0.47
49:Y:55:PRO:O	49:Y:59:ARG:HG3	2.15	0.47
52:3:831:A:C3'	52:3:832:G:H5''	2.44	0.47
53:1:506:G:H4'	53:1:509:C:O2	2.14	0.47
53:1:1857:G:H1'	53:1:1885:A:N6	2.29	0.47
53:1:2440:C:C4	53:1:2441:U:H1'	2.49	0.47
53:1:2543:G:H2'	53:1:2544:G:H8	1.78	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:c:3:GLY:HA3	2:c:204:LYS:HB3	1.97	0.47
12:m:53:MET:HE3	12:m:105:MET:HE2	1.95	0.47
32:H:80:GLY:O	32:H:84:GLU:HG2	2.15	0.47
35:K:10:VAL:CG2	35:K:58:HIS:HB3	2.36	0.47
40:P:52:ARG:HD3	40:P:53:GLY:H	1.79	0.47
42:R:84:CYS:HA	48:X:72:GLU:O	2.13	0.47
49:Y:42:ASP:HB3	49:Y:45:ALA:HB3	1.95	0.47
52:3:477:C:H2'	52:3:478:A:C8	2.49	0.47
52:3:1148:U:H2'	52:3:1149:C:H5'	1.95	0.47
53:1:296:U:H2'	53:1:297:G:C8	2.49	0.47
53:1:300:A:H2'	53:1:334:C:H1'	1.96	0.47
53:1:549:G:H2'	53:1:550:C:C6	2.49	0.47
53:1:925:A:H2'	53:1:926:G:C8	2.49	0.47
53:1:2389:G:H5''	53:1:2390:U:C5'	2.39	0.47
53:1:2724:U:H2'	53:1:2725:A:C8	2.49	0.47
54:2:85:G:H2'	54:2:86:G:C8	2.50	0.47
54:2:118:C:H2'	54:2:119:A:H8	1.80	0.47
1:b:140:VAL:HG12	1:b:190:THR:O	2.15	0.47
6:g:58:LEU:HA	6:g:61:VAL:HG12	1.97	0.47
32:H:46:LEU:HD13	32:H:51:VAL:HG11	1.95	0.47
32:H:109:GLU:HG3	32:H:139:ASN:CB	2.42	0.47
33:I:139:ASN:HA	33:I:182:LYS:HA	1.96	0.47
35:K:51:ILE:O	35:K:52:ASN:CG	2.58	0.47
38:N:104:THR:HG23	52:3:1180:A:H5'	1.96	0.47
49:Y:73:ARG:CZ	52:3:261:U:H5	2.27	0.47
51:a:27:ILE:O	51:a:31:LYS:HE3	2.14	0.47
52:3:406:G:H2'	52:3:407:U:H6	1.79	0.47
52:3:982:U:H4'	52:3:983:A:O5'	2.15	0.47
52:3:1211:U:H4'	52:3:1213:A:C4	2.49	0.47
53:1:445:C:O2'	53:1:446:G:H5'	2.14	0.47
53:1:657:U:H2'	53:1:658:U:C6	2.49	0.47
53:1:828:U:H4'	53:1:831:G:C2	2.48	0.47
53:1:2450:A:OP1	53:1:2497:A:H2'	2.14	0.47
53:1:2537:U:H2'	53:1:2538:C:C6	2.49	0.47
53:1:2605:U:H2'	53:1:2606:C:C6	2.50	0.47
53:1:2785:C:H2'	53:1:2786:U:C6	2.49	0.47
10:k:6:THR:HG23	53:1:1666:G:H4'	1.97	0.47
20:u:11:ILE:HA	20:u:21:ARG:HA	1.96	0.47
24:y:2:LYS:NZ	53:1:102:U:H1'	2.30	0.47
31:G:143:LEU:O	31:G:143:LEU:HD23	2.15	0.47
40:P:71:ASP:O	40:P:72:ALA:HB3	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:P:113:THR:C	40:P:115:ILE:H	2.23	0.47
42:R:84:CYS:SG	42:R:85:TYR:N	2.87	0.47
50:Z:48:LYS:HG3	52:3:723:U:C5	2.49	0.47
52:3:1011:C:H2'	52:3:1012:A:C8	2.49	0.47
52:3:1097:C:H2'	52:3:1098:C:C6	2.49	0.47
53:1:799:G:H5''	53:1:800:A:H2'	1.96	0.47
53:1:1010:A:H1'	53:1:1153:C:H1'	1.97	0.47
53:1:2317:A:H2'	53:1:2318:G:O4'	2.15	0.47
8:i:74:PRO:HB2	8:i:77:VAL:CG2	2.44	0.47
8:i:89:SER:OG	53:1:1064:C:H4'	2.15	0.47
11:l:94:THR:HA	11:l:97:ALA:HB3	1.96	0.47
17:r:85:LYS:NZ	53:1:1187:G:OP1	2.48	0.47
22:w:16:ARG:N	22:w:16:ARG:HD2	2.30	0.47
24:y:48:ARG:HH12	53:1:75:G:H4'	1.79	0.47
28:D:11:LYS:HZ1	53:1:686:U:H5''	1.79	0.47
47:W:13:THR:CG2	47:W:18:GLN:H	2.28	0.47
52:3:47:C:H4'	52:3:48:C:C5'	2.45	0.47
52:3:846:G:H2'	52:3:846:G:N3	2.28	0.47
52:3:1256:A:H4'	52:3:1258:G:N9	2.29	0.47
53:1:2150:C:H2'	53:1:2151:U:H5'	1.96	0.47
53:1:2394:C:H42	53:1:2422:C:H41	1.61	0.47
1:b:140:VAL:HG12	1:b:190:THR:C	2.40	0.47
1:b:180:MET:HB2	1:b:268:ARG:HB3	1.97	0.47
2:c:133:THR:O	2:c:135:GLY:N	2.46	0.47
4:e:92:GLY:O	4:e:95:MET:HG2	2.15	0.47
6:g:12:LEU:HD23	6:g:12:LEU:H	1.80	0.47
13:n:47:VAL:C	13:n:50:PRO:HD2	2.39	0.47
14:o:56:LYS:O	14:o:60:GLU:HG3	2.15	0.47
29:E:7:ARG:NH2	53:1:254:G:H22	2.12	0.47
31:G:15:PHE:CD1	31:G:16:GLY:N	2.76	0.47
31:G:116:LEU:HB3	31:G:140:LEU:HD13	1.95	0.47
33:I:112:GLU:HB2	52:3:408:A:H5'	1.96	0.47
38:N:11:ARG:HA	38:N:105:ARG:HH12	1.79	0.47
41:Q:113:ARG:HE	41:Q:120:ARG:HB2	1.79	0.47
45:U:1:MET:HE3	45:U:2:VAL:H	1.79	0.47
52:3:271:C:H2'	52:3:272:C:C6	2.49	0.47
52:3:405:U:C3'	52:3:406:G:H5'	2.33	0.47
52:3:560:A:H5'	52:3:566:G:N2	2.29	0.47
52:3:1323:G:H2'	52:3:1324:A:C8	2.49	0.47
52:3:1366:C:H2'	52:3:1367:C:C6	2.50	0.47
52:3:1497:G:O2'	52:3:1498:U:H5'	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:1:687:C:H2'	53:1:688:U:O4'	2.15	0.47
53:1:862:G:H2'	53:1:863:A:O4'	2.15	0.47
53:1:902:C:O2	53:1:902:C:C2'	2.62	0.47
53:1:974:G:N3	53:1:974:G:H2'	2.29	0.47
53:1:1259:G:H2'	53:1:1260:A:C8	2.50	0.47
53:1:2162:G:H1'	53:1:2173:A:N1	2.30	0.47
53:1:2217:G:HO2'	53:1:2218:G:H5'	1.80	0.47
1:b:251:THR:OG1	1:b:252:LYS:N	2.45	0.47
9:j:32:LEU:HD22	9:j:54:ILE:HG21	1.97	0.47
14:o:108:ASP:O	14:o:112:GLU:HG3	2.14	0.47
37:M:100:ILE:H	37:M:100:ILE:HD12	1.79	0.47
43:S:74:ARG:HB2	52:3:1358:U:OP1	2.15	0.47
52:3:246:A:H62	52:3:281:G:N2	2.12	0.47
53:1:827:U:H4'	53:1:828:U:C5	2.49	0.47
53:1:955:U:H3	53:1:962:G:H1	1.62	0.47
53:1:2240:U:O2'	53:1:2241:A:H5'	2.14	0.47
53:1:2676:C:H2'	53:1:2677:G:H8	1.80	0.47
53:1:2837:A:H2'	53:1:2838:G:H8	1.78	0.47
2:c:38:LYS:HB2	2:c:47:ALA:H	1.80	0.47
5:f:148:ARG:HA	5:f:161:VAL:HG13	1.97	0.47
7:h:117:LEU:C	7:h:118:ILE:HG12	2.39	0.47
33:I:173:ASP:OD1	33:I:173:ASP:N	2.48	0.47
39:O:17:LEU:O	39:O:20:GLN:HG2	2.15	0.47
39:O:38:GLY:O	39:O:40:ILE:HD12	2.15	0.47
42:R:77:LYS:HA	42:R:80:MET:HE3	1.97	0.47
42:R:103:THR:HG21	52:3:950:U:C4	2.50	0.47
45:U:70:ARG:HD3	52:3:375:U:OP1	2.15	0.47
51:a:205:LYS:HD3	53:1:1861:G:OP1	2.14	0.47
52:3:482:A:C2'	52:3:483:C:H5'	2.44	0.47
52:3:1006:G:H2'	52:3:1007:U:C6	2.50	0.47
52:3:1458:G:H2'	52:3:1459:G:H8	1.80	0.47
52:3:1534:A:N6	56:4:12:A:C6	2.83	0.47
53:1:52:A:H2'	53:1:53:A:C8	2.49	0.47
53:1:395:U:H2'	53:1:396:G:H8	1.80	0.47
53:1:616:A:H2'	53:1:617:G:O4'	2.15	0.47
53:1:914:G:H5'	53:1:915:C:OP2	2.14	0.47
53:1:948:C:H2'	53:1:949:G:C8	2.50	0.47
4:e:116:LEU:HD12	4:e:174:PHE:HB3	1.95	0.47
7:h:116:GLU:C	7:h:119:PRO:HD2	2.40	0.47
28:D:9:VAL:HG22	28:D:13:ASN:ND2	2.29	0.47
34:J:108:GLY:O	34:J:109:ALA:HB3	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:824:G:H2'	52:3:825:A:H8	1.80	0.47
52:3:894:G:H2'	52:3:895:G:H8	1.80	0.47
52:3:1472:U:H2'	52:3:1473:G:H8	1.79	0.47
53:1:813:U:H2'	53:1:814:C:C6	2.50	0.47
53:1:932:U:H5'	53:1:933:A:C8	2.50	0.47
53:1:1077:A:H2'	53:1:1078:U:H5'	1.95	0.47
53:1:1736:U:C2'	53:1:1737:G:H5'	2.45	0.47
9:j:26:GLY:HA3	53:1:1140:C:H5'	1.97	0.46
16:q:75:TYR:HE2	53:1:1153:C:H5'	1.79	0.46
34:J:51:LYS:NZ	52:3:1081:A:OP2	2.48	0.46
40:P:125:LYS:HB3	40:P:126:ARG:H	1.60	0.46
43:S:7:ALA:O	43:S:10:VAL:HG12	2.15	0.46
44:T:50:HIS:CE1	52:3:667:G:H4'	2.50	0.46
46:V:26:ARG:NH1	52:3:237:G:H4'	2.30	0.46
52:3:31:G:N2	52:3:47:C:H5''	2.31	0.46
52:3:1434:A:H2'	52:3:1435:G:O4'	2.14	0.46
52:3:1449:C:H2'	52:3:1450:U:H5'	1.97	0.46
53:1:532:A:H2'	53:1:532:A:N3	2.29	0.46
53:1:1571:A:H2'	53:1:1572:A:C8	2.49	0.46
53:1:1571:A:H2'	53:1:1572:A:H8	1.79	0.46
53:1:2322:A:H2'	53:1:2323:G:O4'	2.14	0.46
53:1:2623:G:H2'	53:1:2624:G:H8	1.80	0.46
54:2:114:C:H2'	54:2:115:A:H8	1.77	0.46
8:i:39:LYS:HA	8:i:42:ASN:HD21	1.81	0.46
11:l:48:ARG:HD2	29:E:59:ALA:O	2.15	0.46
13:n:78:LYS:O	13:n:82:GLU:HB2	2.16	0.46
22:w:35:ARG:HA	22:w:54:THR:HG23	1.96	0.46
33:I:187:ARG:O	33:I:190:LEU:HG	2.16	0.46
35:K:12:PRO:O	35:K:15:SER:HB2	2.15	0.46
37:M:83:ARG:NH2	52:3:587:G:OP1	2.49	0.46
40:P:117:HIS:CB	52:3:674:G:H21	2.28	0.46
40:P:121:ARG:HD2	52:3:778:G:N2	2.30	0.46
50:Z:5:VAL:HG22	50:Z:7:GLU:H	1.79	0.46
53:1:306:U:H2'	53:1:307:G:O4'	2.16	0.46
53:1:1287:A:C2	53:1:1649:G:H4'	2.51	0.46
53:1:1786:A:H1'	53:1:1938:A:N6	2.31	0.46
53:1:2270:A:H2'	53:1:2271:G:O4'	2.15	0.46
57:8:78:ARG:O	57:8:78:ARG:HD3	2.16	0.46
9:j:98:GLU:HB2	9:j:124:VAL:CG2	2.46	0.46
10:k:32:TYR:HH	53:1:1996:C:H5	1.63	0.46
20:u:10:VAL:HG12	20:u:71:ILE:HA	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:Z:39:LYS:N	50:Z:40:PRO:CD	2.73	0.46
52:3:455:G:H2'	52:3:456:A:H8	1.80	0.46
52:3:475:C:H2'	52:3:476:U:C6	2.50	0.46
52:3:675:A:H2'	52:3:676:A:H8	1.80	0.46
52:3:736:C:H2'	52:3:737:C:H6	1.79	0.46
52:3:1391:U:H2'	52:3:1392:G:C8	2.50	0.46
53:1:176:A:O2'	53:1:177:G:H5'	2.15	0.46
53:1:705:A:H2'	53:1:706:A:H8	1.79	0.46
53:1:807:U:H2'	53:1:808:G:H8	1.80	0.46
53:1:2026:U:H2'	53:1:2027:G:C8	2.50	0.46
53:1:2310:C:H2'	53:1:2311:A:C4'	2.29	0.46
32:H:57:GLU:HG3	32:H:59:PRO:HD3	1.96	0.46
33:I:49:ASP:O	33:I:52:VAL:HG22	2.16	0.46
35:K:92:THR:C	35:K:93:LYS:HG2	2.40	0.46
37:M:77:VAL:HG23	37:M:126:CYS:HA	1.97	0.46
52:3:196:A:O2'	52:3:197:A:H2'	2.16	0.46
52:3:769:G:H4'	52:3:1513:A:H4'	1.97	0.46
52:3:1144:G:H2'	52:3:1145:A:C8	2.50	0.46
52:3:1507:A:H2'	52:3:1508:A:C8	2.50	0.46
53:1:1474:U:H2'	53:1:1475:G:O4'	2.16	0.46
53:1:1704:C:H2'	53:1:1705:A:C8	2.51	0.46
53:1:1722:A:H2'	53:1:1723:G:C8	2.51	0.46
53:1:1775:U:C2'	53:1:1776:G:H5'	2.46	0.46
53:1:1796:U:H2'	53:1:1797:G:C8	2.49	0.46
53:1:2368:C:H2'	53:1:2369:A:H8	1.78	0.46
53:1:2623:G:H2'	53:1:2624:G:C8	2.49	0.46
57:8:55:ARG:HD3	57:8:99:THR:HA	1.98	0.46
3:d:29:HIS:O	3:d:32:VAL:HG12	2.15	0.46
3:d:68:ALA:HA	53:1:1255:U:C6	2.51	0.46
5:f:120:ILE:HD11	5:f:139:VAL:HG13	1.97	0.46
6:g:43:ASN:HA	6:g:46:PHE:CD2	2.51	0.46
6:g:65:ALA:O	6:g:68:ARG:HB3	2.16	0.46
9:j:58:ASN:HD21	9:j:128:ASN:ND2	2.14	0.46
35:K:46:GLN:NE2	35:K:47:LEU:O	2.48	0.46
37:M:19:ALA:CB	37:M:21:LYS:HE2	2.45	0.46
41:Q:120:ARG:HD3	52:3:37:U:H5''	1.97	0.46
42:R:21:ILE:HB	42:R:24:VAL:CG1	2.46	0.46
45:U:5:ARG:HB2	52:3:376:G:H5''	1.96	0.46
48:X:53:GLY:HA3	52:3:958:A:N1	2.31	0.46
52:3:227:G:H2'	52:3:228:A:C8	2.51	0.46
52:3:831:A:H2'	52:3:832:G:O4'	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1473:G:H2'	52:3:1474:U:O4'	2.16	0.46
53:1:75:G:H2'	53:1:75:G:N3	2.31	0.46
53:1:2170:A:H2'	53:1:2171:A:H4'	1.98	0.46
53:1:2638:G:H1'	53:1:2778:A:H61	1.81	0.46
54:2:30:C:H1'	54:2:57:A:H61	1.80	0.46
54:2:65:U:H3'	54:2:108:A:N6	2.28	0.46
3:d:146:VAL:HG13	3:d:187:VAL:HG22	1.97	0.46
9:j:78:THR:HB	53:1:2641:G:H5''	1.98	0.46
17:r:81:LYS:HD2	53:1:973:A:H5''	1.98	0.46
19:t:10:VAL:HG13	19:t:38:ALA:HB2	1.97	0.46
28:D:34:ARG:NH2	28:D:39:ARG:HD2	2.31	0.46
48:X:5:LYS:NZ	48:X:6:LYS:HE3	2.30	0.46
52:3:321:A:O2'	52:3:322:C:H5'	2.15	0.46
52:3:1002:G:H2'	52:3:1003:G:O4'	2.16	0.46
52:3:1273:C:C2'	52:3:1274:A:H5'	2.45	0.46
53:1:230:G:O2'	53:1:231:A:H5'	2.16	0.46
53:1:391:A:H2'	53:1:391:A:N3	2.30	0.46
53:1:593:U:H2'	53:1:594:U:C6	2.50	0.46
53:1:871:U:H2'	53:1:872:U:C6	2.50	0.46
53:1:978:G:O4'	53:1:1001:A:H2	1.99	0.46
53:1:1458:U:H4'	53:1:1459:G:O4'	2.15	0.46
53:1:1550:C:H5'	53:1:1740:G:N2	2.31	0.46
8:i:123:ALA:HB1	53:1:1081:U:C5'	2.46	0.46
14:o:68:LYS:HE3	54:2:49:C:H5''	1.97	0.46
20:u:73:ASN:O	20:u:74:ALA:HB3	2.15	0.46
38:N:72:SER:OG	52:3:1373:G:OP2	2.30	0.46
41:Q:33:CYS:HA	41:Q:54:VAL:HA	1.98	0.46
50:Z:49:ALA:HA	52:3:723:U:O4	2.16	0.46
50:Z:66:ARG:HB3	52:3:1167:A:C5	2.50	0.46
51:a:20:GLN:HE22	51:a:211:LYS:N	2.05	0.46
52:3:464:U:C2	52:3:466:A:H5''	2.50	0.46
52:3:1316:G:H2'	52:3:1317:C:H5''	1.97	0.46
53:1:859:G:O2'	53:1:860:U:C6	2.64	0.46
53:1:942:G:H2'	53:1:943:A:O4'	2.15	0.46
53:1:1001:A:H2'	53:1:1002:G:O4'	2.16	0.46
53:1:1039:A:H2	53:1:1116:G:H22	1.63	0.46
53:1:1675:C:H2'	53:1:1676:A:O4'	2.15	0.46
53:1:2372:U:H2'	53:1:2373:G:H8	1.80	0.46
1:b:174:ARG:HG3	1:b:180:MET:HG2	1.97	0.46
5:f:85:LYS:HB2	5:f:164:ALA:CB	2.46	0.46
19:t:57:VAL:HG22	19:t:58:VAL:H	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:y:41:HIS:CG	53:1:96:C:H4'	2.50	0.46
31:G:100:LEU:O	31:G:102:ASN:N	2.49	0.46
31:G:130:LYS:HA	31:G:133:ALA:HB3	1.98	0.46
34:J:80:LEU:HB3	34:J:97:PRO:HA	1.98	0.46
38:N:14:SER:OG	38:N:69:GLY:HA3	2.16	0.46
40:P:111:ASP:HB2	50:Z:16:ARG:NH2	2.31	0.46
45:U:58:ALA:HA	45:U:61:VAL:HG22	1.97	0.46
52:3:37:U:H2'	52:3:38:G:O4'	2.16	0.46
52:3:580:C:H2'	52:3:581:G:O4'	2.16	0.46
52:3:695:A:H2'	52:3:696:A:C8	2.50	0.46
53:1:18:U:H2'	53:1:19:A:H8	1.81	0.46
53:1:333:G:H2'	53:1:333:G:N3	2.31	0.46
53:1:817:C:H2'	53:1:818:G:O4'	2.16	0.46
5:f:28:LYS:HG2	5:f:79:THR:HA	1.98	0.46
18:s:4:ILE:O	53:1:495:G:H4'	2.15	0.46
31:G:168:GLU:O	31:G:172:ILE:HD12	2.16	0.46
35:K:92:THR:HG22	35:K:94:HIS:H	1.81	0.46
51:a:23:ILE:HD12	51:a:23:ILE:H	1.81	0.46
52:3:664:G:N2	52:3:741:G:H1	2.13	0.46
52:3:1238:A:H2	52:3:1241:G:N3	2.14	0.46
53:1:146:A:H2'	53:1:147:C:C6	2.51	0.46
53:1:940:G:C3'	53:1:941:A:H5''	2.45	0.46
53:1:1161:C:H2'	53:1:1162:G:C8	2.51	0.46
54:2:69:G:H2'	54:2:70:C:H5'	1.97	0.46
1:b:20:ASN:ND2	1:b:23:LEU:HG	2.18	0.46
34:J:105:ILE:HD11	34:J:123:LEU:HG	1.96	0.46
41:Q:25:ALA:O	41:Q:27:PRO:HD3	2.16	0.46
52:3:419:C:C2'	52:3:420:U:H5'	2.45	0.46
52:3:545:C:H2'	52:3:546:A:O4'	2.16	0.46
52:3:918:A:H2'	52:3:919:A:O4'	2.16	0.46
53:1:267:C:H2'	53:1:268:C:H6	1.81	0.46
53:1:650:C:H2'	53:1:651:G:C4'	2.46	0.46
53:1:826:U:H5''	53:1:2429:G:P	2.56	0.46
53:1:892:A:H2'	53:1:893:C:C6	2.51	0.46
53:1:1872:A:C2'	53:1:1873:G:H5'	2.46	0.46
53:1:2055:C:H5'	53:1:2056:G:O5'	2.15	0.46
54:2:105:G:H2'	54:2:106:G:C8	2.51	0.46
1:b:16:VAL:H	1:b:203:VAL:HG13	1.81	0.45
1:b:106:PRO:HG2	1:b:109:LEU:HB2	1.98	0.45
7:h:87:GLU:HG2	7:h:95:LEU:HD12	1.98	0.45
8:i:80:LYS:HB3	8:i:86:LYS:HD3	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:w:55:LEU:HD22	22:w:55:LEU:N	2.31	0.45
24:y:42:LEU:HA	24:y:45:GLN:HG2	1.97	0.45
37:M:46:GLU:OE1	37:M:63:LYS:HG3	2.16	0.45
38:N:10:ARG:NH2	52:3:1148:U:OP1	2.49	0.45
43:S:46:LYS:NZ	43:S:49:THR:HG21	2.31	0.45
43:S:51:PRO:O	43:S:52:ARG:NE	2.49	0.45
52:3:180:U:H2'	52:3:181:A:C4'	2.46	0.45
53:1:288:U:H2'	53:1:289:G:H8	1.79	0.45
53:1:479:A:H1'	53:1:481:G:H5''	1.98	0.45
53:1:1592:C:H2'	53:1:1593:A:H8	1.81	0.45
53:1:1751:U:H2'	53:1:1752:C:C6	2.50	0.45
53:1:2126:A:H1'	53:1:2173:A:H61	1.81	0.45
1:b:7:PRO:O	53:1:1695:G:H1'	2.16	0.45
1:b:152:GLN:NE2	53:1:1801:A:OP2	2.49	0.45
4:e:160:LYS:HD2	4:e:160:LYS:N	2.32	0.45
18:s:74:ILE:HG23	18:s:74:ILE:O	2.15	0.45
32:H:60:ALA:O	32:H:61:LYS:HG3	2.17	0.45
40:P:118:ASN:HB2	52:3:718:A:H5'	1.98	0.45
52:3:678:U:H2'	52:3:679:C:C6	2.51	0.45
52:3:883:C:O2'	52:3:884:U:H5'	2.17	0.45
52:3:1502:A:C8	52:3:1505:G:N2	2.75	0.45
53:1:43:G:H2'	53:1:44:A:O4'	2.17	0.45
53:1:940:G:H2'	53:1:941:A:C4'	2.46	0.45
53:1:2547:A:H1'	53:1:2566:A:C6	2.52	0.45
53:1:2589:A:O2'	53:1:2590:A:H5'	2.17	0.45
55:5:25:C:O2'	55:5:26:G:H5'	2.15	0.45
6:g:4:ILE:HG23	6:g:37:VAL:HG12	1.98	0.45
10:k:71:ARG:HD2	10:k:77:ILE:HD11	1.99	0.45
11:l:23:ILE:HD13	17:r:84:ARG:HG3	1.99	0.45
20:u:102:ILE:HD12	20:u:102:ILE:N	2.31	0.45
32:H:19:SER:OG	43:S:93:PRO:HD3	2.16	0.45
33:I:77:GLU:HA	33:I:80:ARG:HD2	1.98	0.45
34:J:106:ALA:HB3	34:J:111:ARG:HB3	1.99	0.45
38:N:116:GLY:C	38:N:117:LEU:HD22	2.41	0.45
39:O:99:GLN:NE2	52:3:1279:G:OP1	2.47	0.45
52:3:129:A:H1'	52:3:130:A:N7	2.32	0.45
52:3:254:G:O2'	52:3:255:G:H5'	2.17	0.45
52:3:994:A:C2'	52:3:995:C:H5'	2.47	0.45
53:1:118:A:N3	53:1:178:G:H1'	2.32	0.45
53:1:184:C:H2'	53:1:185:G:C8	2.50	0.45
53:1:639:U:H2'	53:1:640:C:C6	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:1:2655:G:O2'	53:1:2656:U:H5	1.99	0.45
3:d:111:GLU:O	3:d:115:GLN:HG2	2.16	0.45
6:g:5:LEU:HD22	6:g:13:GLY:HA2	1.97	0.45
8:i:133:ARG:NH1	53:1:1078:U:H5'	2.31	0.45
29:E:7:ARG:HG2	53:1:246:C:N4	2.31	0.45
33:I:7:LYS:HE2	33:I:21:LYS:HZ2	1.80	0.45
33:I:124:VAL:HG13	33:I:124:VAL:O	2.17	0.45
52:3:113:G:H1'	52:3:354:G:H5''	1.98	0.45
52:3:162:A:C2'	52:3:163:C:H5'	2.47	0.45
52:3:176:C:H2'	52:3:177:G:N3	2.30	0.45
52:3:938:A:C2	52:3:1376:U:H1'	2.52	0.45
52:3:1009:U:O2'	52:3:1010:U:H5'	2.15	0.45
52:3:1163:A:H2'	52:3:1164:G:H8	1.80	0.45
53:1:548:G:C3'	53:1:549:G:H4'	2.47	0.45
53:1:1060:U:H4'	53:1:1061:U:H5''	1.97	0.45
20:u:102:ILE:HD12	20:u:102:ILE:H	1.82	0.45
33:I:164:ARG:NH1	33:I:166:LYS:HA	2.31	0.45
35:K:86:ARG:HD3	47:W:63:TYR:CE1	2.51	0.45
40:P:117:HIS:CD2	52:3:674:G:H21	2.35	0.45
42:R:86:ARG:HD3	52:3:1309:G:OP1	2.16	0.45
43:S:81:ILE:H	43:S:81:ILE:HD12	1.81	0.45
52:3:653:U:H5	52:3:753:A:H61	1.64	0.45
52:3:1007:U:H2'	52:3:1008:U:H6	1.80	0.45
52:3:1097:C:H2'	52:3:1098:C:H6	1.81	0.45
53:1:1539:U:H2'	53:1:1540:G:C8	2.45	0.45
53:1:1657:U:H2'	53:1:1658:C:H6	1.82	0.45
53:1:2632:A:O2'	53:1:2633:G:H5'	2.17	0.45
54:2:105:G:H2'	54:2:106:G:H8	1.82	0.45
2:c:78:GLY:C	2:c:79:LEU:HD12	2.42	0.45
4:e:100:GLU:HA	4:e:103:ILE:HG12	1.99	0.45
13:n:12:ARG:CZ	13:n:20:MET:HE1	2.47	0.45
18:s:56:ALA:O	18:s:59:GLU:HG3	2.17	0.45
32:H:179:ALA:HB1	32:H:202:PHE:HE1	1.80	0.45
40:P:124:LYS:HD2	50:Z:34:ARG:HB3	1.99	0.45
43:S:2:LYS:HA	52:3:1048:G:H5''	1.98	0.45
43:S:37:ASP:OD1	43:S:39:ASP:HB3	2.17	0.45
52:3:181:A:N3	52:3:181:A:H2'	2.31	0.45
52:3:487:A:H2'	52:3:488:C:H5'	1.99	0.45
52:3:736:C:H2'	52:3:737:C:C6	2.51	0.45
52:3:1241:G:H2'	52:3:1242:G:H8	1.81	0.45
53:1:2156:G:H2'	53:1:2157:G:H5'	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:4:17:U:O2'	56:4:18:G:H5'	2.16	0.45
1:b:162:GLN:OE1	1:b:174:ARG:NH2	2.49	0.45
2:c:110:THR:HB	2:c:171:THR:HG23	1.99	0.45
5:f:140:ILE:HG23	5:f:141:GLY:N	2.32	0.45
6:g:80:ILE:O	6:g:147:VAL:HG22	2.17	0.45
17:r:38:VAL:HG21	17:r:57:GLY:O	2.16	0.45
31:G:46:VAL:HG23	31:G:47:PRO:CD	2.47	0.45
32:H:46:LEU:O	32:H:48:LYS:N	2.45	0.45
34:J:147:ASN:ND2	37:M:72:GLU:OE2	2.50	0.45
37:M:6:ILE:H	37:M:6:ILE:CD1	2.28	0.45
38:N:32:ARG:NH2	52:3:1248:A:H4'	2.31	0.45
42:R:27:THR:HG21	52:3:1328:C:OP1	2.16	0.45
51:a:43:ASP:O	51:a:215:SER:N	2.46	0.45
52:3:931:C:O2'	52:3:932:C:H5'	2.17	0.45
52:3:1424:U:H2'	52:3:1425:U:C6	2.52	0.45
52:3:1468:A:H2'	52:3:1469:C:O4'	2.16	0.45
52:3:1506:U:O2'	52:3:1507:A:H5'	2.17	0.45
53:1:139:U:H5'	53:1:140:C:H5'	1.99	0.45
53:1:967:U:H2'	53:1:968:C:C6	2.51	0.45
53:1:1423:G:H2'	53:1:1424:G:H8	1.82	0.45
53:1:2368:C:H2'	53:1:2369:A:C8	2.51	0.45
55:5:23:C:H2'	55:5:24:U:C6	2.52	0.45
3:d:15:SER:HB3	3:d:18:THR:OG1	2.17	0.45
8:i:133:ARG:HH22	53:1:1078:U:H4'	1.81	0.45
9:j:8:PRO:HG3	9:j:48:VAL:HG13	1.98	0.45
10:k:10:VAL:HG11	10:k:16:ALA:O	2.17	0.45
14:o:17:LYS:CE	53:1:2380:C:H5'	2.47	0.45
19:t:53:VAL:HG11	19:t:87:LEU:HD13	1.98	0.45
31:G:72:LYS:O	31:G:73:ARG:HB3	2.17	0.45
35:K:51:ILE:C	35:K:53:LYS:H	2.25	0.45
38:N:129:ARG:NH1	55:5:34:C:C5'	2.80	0.45
41:Q:42:LYS:HG3	41:Q:44:PRO:HD2	1.98	0.45
42:R:114:PRO:HD2	52:3:1228:C:H5''	1.99	0.45
52:3:35:G:H2'	52:3:36:C:C6	2.51	0.45
52:3:197:A:N6	52:3:221:C:H4'	2.32	0.45
52:3:505:G:H2'	52:3:506:G:C8	2.51	0.45
53:1:368:A:H2'	53:1:369:U:H5'	1.99	0.45
53:1:1123:C:H2'	53:1:1124:G:C8	2.51	0.45
53:1:1713:A:H61	53:1:1745:A:H61	1.64	0.45
53:1:2247:A:H2'	53:1:2248:C:C6	2.52	0.45
55:5:44:A:O2'	55:5:45:G:H5'	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:e:133:GLU:OE2	4:e:148:VAL:HG23	2.17	0.45
5:f:9:VAL:HG13	5:f:9:VAL:O	2.16	0.45
15:p:26:GLU:HB2	15:p:86:LYS:HD3	1.98	0.45
20:u:14:THR:OG1	53:1:310:A:H5''	2.17	0.45
41:Q:115:LYS:O	41:Q:116:TYR:CB	2.64	0.45
49:Y:54:GLN:HB3	49:Y:55:PRO:CD	2.47	0.45
50:Z:11:PHE:O	50:Z:12:ASP:HB2	2.17	0.45
52:3:273:U:H2'	52:3:274:A:H5'	1.99	0.45
52:3:452:A:H3'	52:3:452:A:N3	2.31	0.45
52:3:486:U:H2'	52:3:487:A:C8	2.51	0.45
52:3:682:G:O2'	52:3:683:G:H5'	2.17	0.45
52:3:1052:U:H2'	52:3:1200:C:H41	1.82	0.45
52:3:1248:A:O2'	52:3:1249:C:H5'	2.17	0.45
53:1:404:A:HO2'	53:1:406:G:H1'	1.82	0.45
53:1:1077:A:C2'	53:1:1078:U:H5'	2.47	0.45
53:1:1654:A:O2'	53:1:1655:A:H5'	2.17	0.45
53:1:2805:C:H2'	53:1:2806:C:C6	2.51	0.45
54:2:19:C:H2'	54:2:20:G:C8	2.52	0.45
55:5:24:U:H2'	55:5:25:C:O4'	2.17	0.45
56:4:5:A:H2'	56:4:6:G:C8	2.52	0.45
57:8:6:ARG:HG3	57:8:7:HIS:ND1	2.31	0.45
57:8:20:ILE:O	57:8:37:ILE:HB	2.16	0.45
13:n:10:LEU:O	13:n:12:ARG:HG3	2.17	0.45
19:t:57:VAL:O	19:t:86:THR:HG22	2.17	0.45
21:v:51:GLN:HG2	21:v:86:LEU:HD11	1.98	0.45
30:F:9:LYS:HG2	30:F:11:CYS:O	2.17	0.45
33:I:24:VAL:HG13	33:I:25:ARG:HG2	1.99	0.45
35:K:14:GLN:HE22	35:K:83:ALA:C	2.24	0.45
35:K:66:ALA:HB1	35:K:67:PRO:HD2	1.99	0.45
42:R:68:LEU:O	42:R:71:GLU:HB3	2.17	0.45
51:a:49:GLY:HA3	51:a:207:VAL:HG12	1.99	0.45
52:3:258:G:H2'	52:3:259:G:O4'	2.17	0.45
53:1:204:A:O3'	53:1:205:G:H4'	2.17	0.45
53:1:1028:A:H2'	53:1:1029:A:C8	2.52	0.45
53:1:1028:A:H2'	53:1:1029:A:H8	1.81	0.45
53:1:1065:U:OP2	53:1:1066:U:H5''	2.17	0.45
53:1:1153:C:H2'	53:1:1154:G:O4'	2.16	0.45
53:1:1825:U:H2'	53:1:1826:G:H8	1.82	0.45
54:2:100:G:H2'	54:2:101:A:O4'	2.17	0.45
1:b:241:LYS:HG3	1:b:242:HIS:H	1.83	0.44
6:g:26:ALA:HA	6:g:30:LEU:HD12	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:i:29:GLN:CD	53:1:1096:A:N6	2.75	0.44
12:m:26:VAL:O	12:m:133:LYS:HG3	2.17	0.44
23:x:71:ARG:NH1	23:x:71:ARG:O	2.50	0.44
31:G:217:ALA:O	31:G:220:VAL:HG12	2.17	0.44
49:Y:4:LYS:HG3	52:3:332:G:OP1	2.18	0.44
52:3:100:G:H2'	52:3:101:A:H5'	1.99	0.44
52:3:514:C:H2'	52:3:515:G:C8	2.52	0.44
52:3:1256:A:H4'	52:3:1258:G:C1'	2.47	0.44
53:1:441:U:H2'	53:1:442:G:H8	1.79	0.44
53:1:532:A:H4'	53:1:533:G:C8	2.51	0.44
53:1:747:C:H42	53:1:2014:A:H2	1.65	0.44
53:1:1700:A:H2'	53:1:1701:A:H5'	1.99	0.44
53:1:2287:A:C2'	53:1:2288:A:H2'	2.46	0.44
53:1:2394:C:H42	53:1:2422:C:N4	2.16	0.44
53:1:2676:C:H2'	53:1:2677:G:C8	2.52	0.44
55:5:50:U:H2'	55:5:51:C:C6	2.52	0.44
2:c:36:GLN:NE2	2:c:37:VAL:O	2.51	0.44
3:d:148:ILE:HG23	3:d:169:VAL:HG23	1.97	0.44
4:e:84:ILE:HG21	53:1:2312:U:C4'	2.46	0.44
17:r:78:ARG:NH2	53:1:974:G:OP2	2.50	0.44
19:t:13:ALA:O	19:t:33:LYS:N	2.48	0.44
31:G:116:LEU:HD12	31:G:119:GLN:HE22	1.81	0.44
32:H:67:ILE:O	32:H:67:ILE:HG13	2.17	0.44
33:I:122:ILE:HD12	33:I:122:ILE:N	2.33	0.44
40:P:92:ARG:HH11	50:Z:24:LYS:HG2	1.82	0.44
52:3:257:G:H2'	52:3:258:G:H8	1.81	0.44
52:3:432:A:H2'	52:3:433:G:O4'	2.17	0.44
52:3:456:A:H61	52:3:476:U:H3	1.64	0.44
52:3:471:U:H2'	52:3:472:U:O4'	2.18	0.44
52:3:734:G:H2'	52:3:735:C:C6	2.51	0.44
52:3:819:A:H5'	52:3:820:U:H5	1.82	0.44
52:3:825:A:H2'	52:3:826:C:H6	1.79	0.44
53:1:807:U:H2'	53:1:808:G:C8	2.52	0.44
53:1:1239:G:H2'	53:1:1240:U:O4'	2.17	0.44
53:1:1259:G:H2'	53:1:1260:A:H8	1.82	0.44
53:1:1779:U:H5	53:1:1784:A:N7	2.15	0.44
9:j:81:ILE:HG23	9:j:82:GLY:N	2.33	0.44
14:o:52:SER:OG	14:o:53:THR:N	2.51	0.44
17:r:85:LYS:HE3	17:r:85:LYS:HB2	1.86	0.44
19:t:39:THR:O	19:t:43:ILE:HG13	2.17	0.44
24:y:1:MET:HE2	24:y:49:ASP:OD2	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:C:22:THR:HG22	27:C:23:THR:H	1.82	0.44
31:G:59:ILE:HD12	31:G:183:PHE:HZ	1.81	0.44
31:G:91:VAL:O	31:G:91:VAL:HG13	2.16	0.44
35:K:47:LEU:HD22	35:K:55:HIS:HA	1.99	0.44
37:M:100:ILE:HB	37:M:128:VAL:HG13	2.00	0.44
42:R:16:ILE:HG21	52:3:1302:C:C6	2.51	0.44
45:U:73:ALA:HB1	52:3:452:A:C2'	2.47	0.44
51:a:40:GLU:HB2	53:1:2125:G:P	2.57	0.44
52:3:26:A:H61	52:3:558:G:H1'	1.81	0.44
52:3:90:C:H2'	52:3:91:U:H5'	1.99	0.44
52:3:195:A:H2'	52:3:196:A:C8	2.53	0.44
52:3:490:C:H2'	52:3:491:G:H8	1.82	0.44
52:3:994:A:N1	52:3:1216:A:H4'	2.32	0.44
52:3:1041:G:O2'	52:3:1042:A:H5'	2.17	0.44
53:1:656:G:H2'	53:1:657:U:C6	2.51	0.44
53:1:2186:G:O2'	53:1:2187:U:H5'	2.18	0.44
1:b:52:HIS:CG	1:b:218:THR:HG22	2.52	0.44
4:e:15:LEU:HA	4:e:18:GLU:HB2	1.98	0.44
9:j:27:ARG:HD3	53:1:1012:U:N3	2.32	0.44
14:o:33:ARG:O	14:o:34:HIS:HB2	2.16	0.44
21:v:20:LEU:HB2	21:v:25:LYS:HB2	1.99	0.44
30:F:36:ARG:HG2	30:F:37:GLN:N	2.22	0.44
31:G:19:THR:HA	31:G:38:HIS:ND1	2.32	0.44
34:J:133:ILE:HG13	34:J:134:ASN:N	2.31	0.44
37:M:91:LEU:CD2	37:M:112:ASP:HB2	2.47	0.44
40:P:32:THR:HA	40:P:43:TRP:HA	1.99	0.44
42:R:100:ARG:NH1	52:3:951:G:OP2	2.51	0.44
51:a:211:LYS:HZ3	53:1:2178:C:P	2.41	0.44
53:1:189:G:H2'	53:1:205:G:H22	1.79	0.44
53:1:481:G:H2'	53:1:507:A:N1	2.32	0.44
53:1:660:C:H2'	53:1:661:A:H8	1.83	0.44
53:1:1433:A:H2'	53:1:1434:A:C8	2.52	0.44
53:1:1507:C:H2'	53:1:1508:A:C4'	2.47	0.44
53:1:1826:G:H2'	53:1:1827:U:C6	2.53	0.44
53:1:2241:A:H2'	53:1:2242:G:H8	1.82	0.44
53:1:2257:U:O2'	53:1:2258:C:H5'	2.17	0.44
53:1:2372:U:H2'	53:1:2373:G:C8	2.52	0.44
53:1:2441:U:H2'	53:1:2442:C:H6	1.82	0.44
57:8:93:ALA:O	57:8:97:GLU:HG3	2.17	0.44
57:8:95:ILE:O	57:8:99:THR:HG23	2.17	0.44
3:d:148:ILE:HA	3:d:187:VAL:HG23	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:g:9:VAL:HG12	6:g:11:ASN:H	1.82	0.44
6:g:31:VAL:CG2	6:g:32:PRO:HD3	2.44	0.44
11:l:112:LEU:HD23	11:l:112:LEU:C	2.42	0.44
23:x:46:VAL:HG13	23:x:46:VAL:O	2.17	0.44
31:G:24:PRO:HB3	52:3:828:U:H2'	2.00	0.44
31:G:156:LEU:HD23	31:G:156:LEU:C	2.42	0.44
33:I:8:LEU:CB	52:3:429:U:H5'	2.47	0.44
33:I:9:LYS:HA	33:I:12:ARG:HE	1.83	0.44
37:M:87:ARG:HB2	37:M:90:GLU:OE1	2.18	0.44
40:P:104:PHE:O	40:P:106:ILE:HD12	2.16	0.44
42:R:113:LYS:HE3	52:3:1227:A:O2'	2.18	0.44
52:3:114:U:O2'	52:3:115:G:H5'	2.18	0.44
52:3:710:G:O2'	52:3:711:G:H5'	2.18	0.44
52:3:1478:U:H2'	52:3:1479:C:H6	1.83	0.44
53:1:1061:U:H3'	53:1:1062:G:C5'	2.48	0.44
53:1:2291:U:H2'	53:1:2292:U:C6	2.52	0.44
53:1:2376:A:H2'	53:1:2377:A:O4'	2.17	0.44
1:b:207:ALA:HB2	53:1:1790:C:O2'	2.18	0.44
2:c:8:LYS:HB2	2:c:201:LEU:HD11	1.99	0.44
4:e:73:VAL:HB	4:e:78:ILE:HD13	2.00	0.44
4:e:76:PHE:HB2	4:e:78:ILE:HD11	1.99	0.44
6:g:70:GLU:OE2	6:g:71:LYS:HE2	2.17	0.44
13:n:72:ASP:HB3	13:n:75:ILE:HG12	2.00	0.44
17:r:41:ILE:HB	17:r:47:VAL:HB	1.98	0.44
19:t:8:LEU:HD13	24:y:21:LEU:C	2.43	0.44
29:E:4:LYS:HE2	53:1:242:G:C6	2.53	0.44
32:H:149:LYS:HG3	32:H:168:ARG:HB3	2.00	0.44
51:a:184:LYS:O	51:a:184:LYS:HG3	2.17	0.44
52:3:723:U:H1'	52:3:855:U:H4'	2.00	0.44
52:3:935:A:H2'	52:3:936:C:C6	2.53	0.44
52:3:1007:U:H3	52:3:1022:A:H61	1.65	0.44
52:3:1241:G:H2'	52:3:1242:G:C8	2.51	0.44
53:1:277:G:H2'	53:1:359:G:OP2	2.18	0.44
53:1:349:U:H2'	53:1:350:G:C8	2.52	0.44
53:1:468:G:H2'	53:1:469:G:O4'	2.17	0.44
53:1:479:A:H4'	53:1:480:A:H5'	2.00	0.44
53:1:697:G:H2'	53:1:698:C:C6	2.53	0.44
53:1:1512:C:H2'	53:1:1513:U:O4'	2.18	0.44
53:1:1605:C:H2'	53:1:1606:C:H5'	1.99	0.44
53:1:1900:A:O4'	53:1:1970:A:H5''	2.18	0.44
53:1:2655:G:HO2'	53:1:2656:U:H5	1.66	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:c:194:PRO:HA	53:1:2680:U:H5'	1.99	0.44
7:h:56:ARG:HD2	53:1:1084:A:C2	2.53	0.44
14:o:51:ALA:HB3	14:o:78:VAL:HG12	1.98	0.44
15:p:12:MET:O	15:p:14:GLN:NE2	2.50	0.44
17:r:81:LYS:HE3	53:1:973:A:OP2	2.17	0.44
34:J:108:GLY:C	34:J:110:MET:H	2.26	0.44
35:K:2:ARG:HD3	35:K:91:ARG:NH2	2.33	0.44
37:M:107:LYS:HD3	37:M:107:LYS:HA	1.79	0.44
46:V:28:VAL:HG22	46:V:29:LYS:N	2.33	0.44
46:V:32:ILE:H	46:V:32:ILE:HD12	1.82	0.44
52:3:158:G:H2'	52:3:159:G:C8	2.53	0.44
53:1:652:U:H2'	53:1:653:U:C6	2.53	0.44
53:1:1040:A:H2'	53:1:1041:G:C8	2.53	0.44
53:1:1258:U:H2'	53:1:1259:G:H8	1.82	0.44
53:1:1417:C:H2'	53:1:1418:G:O4'	2.18	0.44
53:1:1930:G:O2'	53:1:1931:U:C5	2.70	0.44
53:1:2742:G:O2'	53:1:2743:U:H5'	2.17	0.44
53:1:2819:G:H2'	53:1:2821:A:N7	2.32	0.44
1:b:143:VAL:HB	1:b:153:LEU:HB2	2.00	0.44
5:f:132:LEU:HD23	5:f:132:LEU:H	1.81	0.44
10:k:98:ARG:NH2	52:3:338:A:H3'	2.33	0.44
16:q:18:LYS:NZ	53:1:1219:U:OP2	2.50	0.44
17:r:48:LYS:HG2	17:r:49:ILE:H	1.83	0.44
34:J:14:LEU:HA	34:J:36:THR:HG22	1.99	0.44
37:M:1:SER:OG	37:M:3:GLN:NE2	2.51	0.44
41:Q:3:VAL:HA	41:Q:6:LEU:HD12	2.00	0.44
43:S:30:ILE:O	43:S:30:ILE:HG13	2.17	0.44
44:T:50:HIS:ND1	52:3:667:G:H4'	2.33	0.44
45:U:63:GLN:NE2	52:3:228:A:H5'	2.31	0.44
47:W:26:ALA:O	47:W:30:ASN:ND2	2.51	0.44
49:Y:54:GLN:HB3	49:Y:55:PRO:HD3	1.98	0.44
52:3:16:A:O2'	52:3:17:U:H5'	2.18	0.44
52:3:298:A:H2'	52:3:299:G:O4'	2.18	0.44
52:3:533:A:O2'	52:3:534:U:H5''	2.18	0.44
52:3:560:A:H4'	52:3:561:U:H5'	2.00	0.44
52:3:785:G:O2'	52:3:786:G:H5'	2.18	0.44
52:3:948:C:H2'	52:3:949:A:H8	1.83	0.44
52:3:1133:G:H2'	52:3:1134:G:C8	2.52	0.44
52:3:1376:U:O2'	52:3:1377:A:H5'	2.17	0.44
52:3:1385:G:O2'	52:3:1386:G:H5'	2.17	0.44
52:3:1444:U:O2'	52:3:1445:U:H5'	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:1:677:A:O2'	53:1:2071:A:H5'	2.16	0.44
53:1:1765:U:H2'	53:1:1766:G:C8	2.53	0.44
53:1:2011:U:H2'	53:1:2012:G:O4'	2.18	0.44
53:1:2540:C:H2'	53:1:2541:A:O4'	2.18	0.44
57:8:101:GLU:O	57:8:105:ARG:HG2	2.18	0.44
5:f:54:ARG:O	5:f:55:ASP:HB3	2.17	0.44
12:m:54:THR:HA	12:m:57:VAL:HG22	1.99	0.44
31:G:46:VAL:N	31:G:47:PRO:HD2	2.33	0.44
37:M:84:ILE:HD12	37:M:84:ILE:N	2.33	0.44
39:O:80:THR:HB	39:O:83:THR:HG22	2.00	0.44
46:V:59:GLU:OE1	46:V:78:VAL:HG23	2.18	0.44
49:Y:24:ARG:HB3	49:Y:28:ARG:HH21	1.83	0.44
52:3:994:A:H2'	52:3:995:C:H5'	1.99	0.44
52:3:1163:A:H2'	52:3:1164:G:C8	2.52	0.44
52:3:1256:A:H4'	52:3:1258:G:H1'	1.99	0.44
52:3:1460:C:H2'	52:3:1461:G:C8	2.52	0.44
52:3:1513:A:H2'	52:3:1514:G:C8	2.53	0.44
53:1:106:C:H2'	53:1:107:G:H8	1.83	0.44
53:1:494:G:H2'	53:1:495:G:H8	1.83	0.44
53:1:892:A:H2'	53:1:893:C:H6	1.83	0.44
53:1:1209:U:H2'	53:1:1210:G:H21	1.82	0.44
53:1:1386:C:H2'	53:1:1387:A:H8	1.83	0.44
53:1:1437:C:H2'	53:1:1438:U:C6	2.53	0.44
53:1:2480:C:H2'	53:1:2481:G:O4'	2.17	0.44
53:1:2809:A:H2'	53:1:2810:A:C8	2.52	0.44
1:b:157:ALA:HB1	1:b:196:ASN:O	2.18	0.43
7:h:37:LYS:O	7:h:41:LEU:HB2	2.17	0.43
8:i:9:LYS:HD3	8:i:9:LYS:C	2.43	0.43
10:k:18:ARG:HB2	10:k:45:GLU:HB2	2.00	0.43
12:m:6:ARG:HG2	12:m:6:ARG:NH1	2.32	0.43
32:H:59:PRO:HB3	39:O:94:ALA:HB1	1.99	0.43
33:I:142:VAL:HG12	33:I:179:GLY:O	2.18	0.43
34:J:145:ASN:HD22	34:J:145:ASN:HA	1.63	0.43
38:N:32:ARG:HH22	52:3:1248:A:C5'	2.31	0.43
39:O:66:GLU:HB2	43:S:98:ALA:HB2	2.00	0.43
41:Q:114:SER:HB2	52:3:35:G:H21	1.82	0.43
52:3:145:G:H2'	52:3:146:G:O4'	2.17	0.43
52:3:352:C:H4'	52:3:354:G:OP1	2.18	0.43
52:3:664:G:H2'	52:3:666:G:OP1	2.18	0.43
52:3:1425:U:H2'	52:3:1426:G:H8	1.83	0.43
53:1:360:U:H3'	53:1:361:G:C8	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:1:1183:U:H2'	53:1:1184:U:C6	2.53	0.43
53:1:1557:C:H2'	53:1:1558:C:C5	2.53	0.43
53:1:1999:C:H5''	53:1:2723:C:O2'	2.18	0.43
53:1:2150:C:H2'	53:1:2151:U:O4'	2.18	0.43
53:1:2902:C:C3'	53:1:2903:U:H5''	2.48	0.43
1:b:226:PRO:HD3	1:b:233:GLY:CA	2.48	0.43
20:u:51:LEU:HG	20:u:52:ASN:H	1.83	0.43
29:E:7:ARG:HG3	29:E:11:LYS:HE3	2.00	0.43
31:G:192:PRO:O	31:G:193:ASP:C	2.61	0.43
32:H:5:HIS:HA	32:H:6:PRO:HD3	1.87	0.43
33:I:7:LYS:H	52:3:430:A:P	2.41	0.43
39:O:6:ILE:H	39:O:6:ILE:HD12	1.83	0.43
40:P:63:GLN:OE1	40:P:98:ALA:HB2	2.17	0.43
46:V:22:VAL:HG22	46:V:23:ALA:N	2.33	0.43
49:Y:77:ASN:O	49:Y:81:GLN:HG3	2.16	0.43
52:3:169:C:H2'	52:3:170:U:C6	2.53	0.43
52:3:312:C:H2'	52:3:313:A:C8	2.53	0.43
52:3:634:C:H2'	52:3:635:A:H8	1.83	0.43
52:3:1294:G:H2'	52:3:1295:U:C6	2.54	0.43
53:1:82:U:H3	53:1:104:A:H61	1.66	0.43
53:1:170:U:H2'	53:1:171:U:C6	2.53	0.43
53:1:544:C:H2'	53:1:545:U:C6	2.52	0.43
53:1:937:C:H2'	53:1:938:G:C8	2.53	0.43
53:1:1316:U:H2'	53:1:1317:G:H8	1.83	0.43
53:1:2345:G:H21	53:1:2381:A:H3'	1.82	0.43
53:1:2631:G:O2'	53:1:2632:A:H5'	2.18	0.43
1:b:257:ARG:HD3	53:1:1799:G:OP1	2.18	0.43
19:t:77:ARG:HA	53:1:64:A:H5''	1.99	0.43
23:x:2:ARG:HD2	53:1:1365:A:P	2.58	0.43
23:x:17:ARG:NE	23:x:23:ALA:HB2	2.25	0.43
31:G:63:LYS:HE3	31:G:63:LYS:HB2	1.88	0.43
33:I:4:LEU:HD23	52:3:406:G:H5''	2.00	0.43
35:K:91:ARG:CG	35:K:92:THR:H	2.25	0.43
40:P:27:ASN:O	40:P:56:LYS:HG2	2.19	0.43
43:S:56:PRO:O	43:S:59:GLN:HG2	2.18	0.43
44:T:45:HIS:O	44:T:47:LYS:N	2.51	0.43
46:V:20:ILE:HD13	46:V:52:CYS:SG	2.58	0.43
49:Y:3:ILE:HD12	49:Y:3:ILE:N	2.34	0.43
52:3:416:G:H2'	52:3:417:G:H8	1.83	0.43
52:3:474:G:H2'	52:3:475:C:C6	2.52	0.43
52:3:766:A:H2'	52:3:767:A:O4'	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1001:C:H2'	52:3:1002:G:C8	2.53	0.43
52:3:1106:G:H2'	52:3:1107:C:C6	2.53	0.43
53:1:90:U:H2'	53:1:91:A:C8	2.53	0.43
53:1:197:A:H2'	53:1:198:C:H5'	1.99	0.43
53:1:449:A:H2'	53:1:450:G:O4'	2.18	0.43
53:1:575:A:O2'	53:1:576:U:H5'	2.18	0.43
53:1:813:U:H2'	53:1:814:C:H6	1.83	0.43
53:1:820:A:H2'	53:1:821:A:C8	2.53	0.43
53:1:1370:C:H2'	53:1:1371:G:O4'	2.18	0.43
53:1:1469:A:H2'	53:1:1470:A:H8	1.83	0.43
53:1:1558:C:H5''	53:1:1559:U:C6	2.54	0.43
53:1:1775:U:H2'	53:1:1776:G:H5'	1.99	0.43
57:8:5:SER:HB3	57:8:9:ALA:HA	2.01	0.43
3:d:69:ARG:HD3	53:1:674:G:C1'	2.46	0.43
4:e:151:LEU:N	4:e:151:LEU:HD23	2.33	0.43
6:g:100:ALA:O	6:g:104:THR:HG23	2.18	0.43
11:l:58:TYR:O	29:E:12:ARG:NH2	2.52	0.43
12:m:69:PRO:O	12:m:70:ASP:OD2	2.36	0.43
14:o:43:ASN:ND2	14:o:46:GLU:OE1	2.49	0.43
15:p:113:LEU:HD23	15:p:113:LEU:O	2.18	0.43
18:s:18:ARG:NE	53:1:518:G:H4'	2.33	0.43
19:t:6:ARG:O	19:t:10:VAL:HG23	2.18	0.43
42:R:79:LEU:HD13	42:R:86:ARG:HG3	2.00	0.43
42:R:80:MET:O	42:R:91:ARG:NH2	2.49	0.43
44:T:20:ASP:HA	52:3:750:C:H4'	2.00	0.43
44:T:88:ARG:NE	53:1:714:U:C5	2.85	0.43
52:3:705:G:H2'	52:3:706:A:H5'	2.00	0.43
52:3:1062:U:H2'	52:3:1063:C:C6	2.53	0.43
52:3:1252:A:N3	52:3:1253:G:H1'	2.34	0.43
52:3:1449:C:C2'	52:3:1450:U:H5'	2.47	0.43
52:3:1494:G:H1'	53:1:1913:A:H2'	2.01	0.43
53:1:705:A:C2	53:1:727:A:H1'	2.54	0.43
53:1:1180:U:H2'	53:1:1181:U:C6	2.54	0.43
53:1:1463:C:H2'	53:1:1464:G:C8	2.53	0.43
53:1:1573:G:H2'	53:1:1574:C:H5'	1.99	0.43
53:1:1607:C:H3'	53:1:1608:A:H5'	2.01	0.43
53:1:1842:G:H2'	53:1:1843:C:C6	2.54	0.43
3:d:121:VAL:HG22	3:d:122:GLU:H	1.83	0.43
9:j:2:LYS:HB3	53:1:995:C:H42	1.84	0.43
10:k:16:ALA:HB2	10:k:52:VAL:HG21	2.00	0.43
11:l:85:VAL:HG21	11:l:90:VAL:HG12	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:y:44:LYS:NZ	24:y:48:ARG:HH21	2.15	0.43
28:D:12:ARG:HD3	53:1:686:U:O4	2.18	0.43
31:G:131:LYS:NZ	52:3:1159:U:H5'	2.34	0.43
31:G:176:ASN:ND2	31:G:194:GLY:O	2.51	0.43
32:H:113:LYS:HE2	32:H:184:ASN:ND2	2.24	0.43
32:H:119:ILE:HD11	32:H:136:ALA:HB2	2.01	0.43
32:H:149:LYS:HB3	32:H:200:TRP:HB2	2.00	0.43
36:L:141:HIS:HA	36:L:144:ALA:HB2	2.00	0.43
44:T:25:GLU:O	44:T:28:VAL:HG12	2.18	0.43
45:U:73:ALA:HB1	52:3:452:A:O2'	2.19	0.43
52:3:455:G:H2'	52:3:456:A:C8	2.54	0.43
52:3:870:U:H4'	52:3:872:A:OP2	2.19	0.43
52:3:1405:G:O2'	52:3:1406:U:H5'	2.17	0.43
53:1:340:A:H2'	53:1:341:C:O4'	2.19	0.43
53:1:444:C:O2'	53:1:445:C:H5'	2.18	0.43
53:1:1229:C:H2'	53:1:1230:A:C8	2.53	0.43
53:1:1440:U:H2'	53:1:1441:G:H8	1.84	0.43
55:5:70:G:H2'	55:5:71:C:H6	1.84	0.43
4:e:31:GLU:OE1	4:e:32:LYS:HG2	2.18	0.43
8:i:116:MET:HE2	8:i:124:MET:CE	2.47	0.43
11:l:48:ARG:NH2	29:E:4:LYS:O	2.52	0.43
20:u:65:GLN:HB2	20:u:68:ASN:OD1	2.18	0.43
24:y:4:LYS:HA	24:y:7:ARG:NH1	2.33	0.43
27:C:17:GLY:HA3	53:1:2400:G:H4'	2.01	0.43
43:S:12:ARG:HD3	43:S:58:ARG:HD3	2.01	0.43
52:3:49:U:O2'	52:3:50:A:H2'	2.17	0.43
52:3:56:U:H2'	52:3:57:G:C8	2.53	0.43
52:3:237:G:H2'	52:3:238:A:C8	2.54	0.43
52:3:856:C:O2'	52:3:857:C:H5'	2.19	0.43
52:3:1491:G:H2'	52:3:1492:A:C1'	2.48	0.43
53:1:373:U:O2'	53:1:423:A:H1'	2.18	0.43
53:1:562:U:O4'	53:1:2036:C:H5'	2.18	0.43
53:1:1239:G:O2'	53:1:1240:U:H5'	2.19	0.43
7:h:26:VAL:HG23	7:h:82:ILE:HG23	2.01	0.43
31:G:30:ILE:HG13	31:G:31:PHE:N	2.33	0.43
43:S:40:ARG:HG2	43:S:40:ARG:HH11	1.83	0.43
52:3:392:C:H2'	52:3:393:A:H8	1.84	0.43
52:3:1458:G:H2'	52:3:1459:G:C8	2.54	0.43
53:1:660:C:H2'	53:1:661:A:C8	2.53	0.43
53:1:932:U:H5'	53:1:933:A:N7	2.33	0.43
53:1:1182:G:H2'	53:1:1183:U:O4'	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:1:1507:C:H2'	53:1:1508:A:H4'	2.00	0.43
53:1:1742:U:H2'	53:1:1743:G:C8	2.54	0.43
53:1:2204:G:H2'	53:1:2205:A:H8	1.84	0.43
53:1:2246:G:H2'	53:1:2247:A:H8	1.84	0.43
53:1:2286:G:H4'	53:1:2287:A:C4	2.53	0.43
53:1:2428:G:H5''	53:1:2429:G:O5'	2.19	0.43
53:1:2714:G:O2'	53:1:2715:C:H5'	2.19	0.43
57:8:69:VAL:O	57:8:70:ILE:C	2.62	0.43
6:g:78:VAL:HB	6:g:144:VAL:HA	2.01	0.43
23:x:2:ARG:HD2	53:1:1365:A:OP1	2.18	0.43
24:y:44:LYS:HE3	24:y:48:ARG:HE	1.84	0.43
31:G:162:VAL:HG11	31:G:172:ILE:HD11	2.01	0.43
38:N:91:GLU:OE2	38:N:94:ARG:HD2	2.19	0.43
51:a:211:LYS:HD3	53:1:2178:C:OP1	2.19	0.43
52:3:424:G:O2'	52:3:425:G:H5'	2.18	0.43
53:1:259:G:O2'	53:1:260:G:H5'	2.18	0.43
53:1:650:C:H2'	53:1:651:G:H5''	2.00	0.43
53:1:1172:C:H2'	53:1:1173:U:C6	2.54	0.43
53:1:2093:G:O2'	53:1:2094:A:H5'	2.19	0.43
53:1:2229:U:H2'	53:1:2230:G:C8	2.53	0.43
53:1:2286:G:H4'	53:1:2287:A:N3	2.34	0.43
53:1:2333:A:H1'	53:1:2335:A:C8	2.54	0.43
4:e:102:LEU:HA	4:e:106:ALA:HB3	1.99	0.43
7:h:117:LEU:C	7:h:119:PRO:HD2	2.44	0.43
7:h:122:GLN:HE21	7:h:123:ILE:HG13	1.84	0.43
10:k:23:LYS:HG2	53:1:2561:U:O2'	2.18	0.43
32:H:171:ARG:HB2	52:3:1107:C:OP1	2.19	0.43
41:Q:20:VAL:HG13	41:Q:94:TYR:CE1	2.54	0.43
45:U:59:HIS:O	45:U:63:GLN:HG2	2.18	0.43
52:3:415:A:H2'	52:3:416:G:O4'	2.19	0.43
52:3:502:A:H2'	52:3:503:C:C6	2.54	0.43
52:3:631:C:OP1	52:3:632:U:H4'	2.17	0.43
52:3:1448:C:H2'	52:3:1449:C:C6	2.54	0.43
52:3:1455:G:H2'	52:3:1456:A:C8	2.54	0.43
53:1:724:U:H2'	53:1:725:G:O4'	2.19	0.43
53:1:886:A:H5''	53:1:887:U:OP2	2.19	0.43
53:1:1925:C:O2'	53:1:1926:U:H5'	2.19	0.43
53:1:2074:U:H2'	53:1:2075:U:C6	2.54	0.43
53:1:2682:A:O2'	53:1:2683:C:H5'	2.18	0.43
57:8:38:HIS:HB2	57:8:74:ALA:HB3	1.99	0.43
8:i:126:ARG:HG2	53:1:1080:A:C5'	2.49	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:w:25:GLU:OE2	53:1:923:G:H4'	2.18	0.43
30:F:36:ARG:CG	30:F:37:GLN:H	2.15	0.43
32:H:188:ALA:HB3	32:H:195:ILE:HB	2.01	0.43
38:N:62:LEU:HD12	38:N:62:LEU:O	2.19	0.43
41:Q:2:THR:OG1	41:Q:5:GLN:HG3	2.19	0.43
45:U:52:LEU:HD23	45:U:52:LEU:H	1.83	0.43
46:V:19:SER:HB2	46:V:70:LYS:NZ	2.34	0.43
52:3:252:U:O2	52:3:252:U:C2'	2.66	0.43
52:3:313:A:H2'	52:3:314:C:C6	2.53	0.43
53:1:107:G:O4'	53:1:294:A:H4'	2.19	0.43
53:1:840:C:H2'	53:1:841:G:H8	1.83	0.43
53:1:1229:C:H2'	53:1:1230:A:H8	1.83	0.43
53:1:1496:A:H2'	53:1:1498:C:N4	2.34	0.43
53:1:1972:G:H2'	53:1:1973:G:H8	1.82	0.43
53:1:2053:G:O2'	53:1:2054:A:H5'	2.18	0.43
53:1:2143:C:C2'	53:1:2144:G:H5'	2.48	0.43
53:1:2297:A:N3	53:1:2297:A:H2'	2.33	0.43
53:1:2489:U:O2'	53:1:2490:G:H5'	2.19	0.43
53:1:2654:A:O3'	53:1:2655:G:H4'	2.19	0.43
53:1:2716:C:O2'	53:1:2717:C:H5'	2.19	0.43
2:c:146:ILE:HG13	2:c:147:GLY:N	2.34	0.42
6:g:29:PHE:HB2	53:1:2198:A:N3	2.34	0.42
8:i:4:VAL:HG11	53:1:1099:G:OP1	2.18	0.42
13:n:73:ASN:HB2	53:1:1454:C:H42	1.84	0.42
18:s:14:ALA:O	18:s:18:ARG:HG3	2.19	0.42
18:s:90:LYS:HA	53:1:751:A:O4'	2.20	0.42
34:J:55:VAL:HG22	34:J:56:PRO:HD3	2.01	0.42
39:O:35:GLN:CB	39:O:78:GLU:HB3	2.49	0.42
42:R:24:VAL:HG23	42:R:28:ARG:HG3	1.99	0.42
45:U:4:ILE:HD12	45:U:21:VAL:HG22	2.01	0.42
49:Y:4:LYS:O	49:Y:7:LYS:HG2	2.18	0.42
51:a:208:TYR:O	51:a:210:LYS:N	2.44	0.42
52:3:123:U:OP1	52:3:312:C:H5'	2.19	0.42
52:3:1007:U:H2'	52:3:1008:U:C6	2.54	0.42
52:3:1008:U:H3	52:3:1021:A:H61	1.66	0.42
52:3:1167:A:H2'	52:3:1167:A:N3	2.34	0.42
52:3:1478:U:H2'	52:3:1479:C:C6	2.53	0.42
53:1:57:C:H2'	53:1:58:G:O4'	2.19	0.42
53:1:154:U:H2'	53:1:155:A:H8	1.84	0.42
53:1:227:A:H2'	53:1:228:C:H4'	2.01	0.42
53:1:445:C:C2'	53:1:446:G:H5'	2.49	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:1:905:A:O2'	53:1:906:U:H5'	2.19	0.42
53:1:1077:A:H2'	53:1:1078:U:O4'	2.19	0.42
53:1:1749:A:H2'	53:1:1750:G:C8	2.54	0.42
53:1:1800:C:C6	53:1:1802:A:H1'	2.54	0.42
53:1:2366:A:H2'	53:1:2367:G:O4'	2.19	0.42
54:2:12:C:O2'	54:2:13:G:H4'	2.19	0.42
55:5:1:C:H2'	55:5:2:G:H8	1.83	0.42
6:g:96:THR:HG23	6:g:97:ARG:N	2.34	0.42
8:i:25:PRO:HB3	53:1:1095:A:N1	2.34	0.42
11:l:19:LEU:HD11	11:l:31:GLY:O	2.19	0.42
11:l:23:ILE:HG13	17:r:82:HIS:CE1	2.54	0.42
12:m:51:ARG:NH2	53:1:2483:C:O2'	2.52	0.42
13:n:12:ARG:NE	13:n:20:MET:HE1	2.33	0.42
15:p:12:MET:HG3	15:p:76:HIS:CE1	2.54	0.42
39:O:84:VAL:O	39:O:87:LEU:HB3	2.19	0.42
50:Z:38:GLU:HB3	52:3:1526:G:P	2.59	0.42
51:a:7:ARG:O	51:a:8:MET:HE2	2.19	0.42
52:3:600:A:H2'	52:3:601:G:C8	2.54	0.42
53:1:1297:C:OP1	53:1:2710:C:H4'	2.19	0.42
53:1:1455:G:N3	53:1:1455:G:H2'	2.34	0.42
53:1:1965:C:H5''	53:1:1966:A:H2'	2.02	0.42
54:2:30:C:C2'	54:2:31:C:H5'	2.50	0.42
54:2:115:A:H2'	54:2:116:G:C8	2.54	0.42
56:4:11:U:C5	56:4:12:A:N6	2.87	0.42
6:g:83:LYS:HD3	6:g:91:PHE:CD2	2.53	0.42
10:k:88:ASN:N	10:k:93:GLN:O	2.52	0.42
13:n:72:ASP:O	13:n:76:VAL:HG23	2.20	0.42
13:n:79:LEU:CD2	13:n:83:LEU:HD12	2.50	0.42
19:t:57:VAL:HG22	19:t:58:VAL:N	2.34	0.42
32:H:39:ARG:NE	32:H:54:ILE:HB	2.34	0.42
32:H:105:VAL:HG22	32:H:106:ARG:N	2.33	0.42
33:I:124:VAL:O	33:I:125:ASN:HB2	2.20	0.42
34:J:149:PRO:HG2	34:J:150:GLU:OE1	2.19	0.42
42:R:8:ILE:N	42:R:9:PRO:HD3	2.33	0.42
52:3:407:U:H3	52:3:435:A:H2	1.64	0.42
52:3:579:A:H2'	52:3:580:C:C6	2.55	0.42
52:3:1470:U:H2'	52:3:1471:U:C6	2.55	0.42
53:1:760:G:H2'	53:1:761:A:O4'	2.19	0.42
53:1:1592:C:H2'	53:1:1593:A:C8	2.54	0.42
53:1:1847:A:H61	53:1:1892:C:H41	1.68	0.42
53:1:1934:C:O2'	53:1:1935:G:H5'	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:1:2512:C:H2'	53:1:2513:A:O4'	2.19	0.42
53:1:2741:A:H2'	53:1:2742:G:H5'	2.00	0.42
3:d:90:GLN:HG3	3:d:92:HIS:CE1	2.53	0.42
11:l:30:THR:O	53:1:1190:G:OP1	2.37	0.42
11:l:64:PHE:HE2	53:1:631:A:H5'	1.85	0.42
23:x:60:LYS:HZ2	53:1:372:G:H5''	1.84	0.42
32:H:137:VAL:HG11	32:H:167:TYR:HD2	1.84	0.42
34:J:164:LEU:C	34:J:164:LEU:HD23	2.43	0.42
37:M:11:THR:HA	37:M:14:ARG:HD2	2.00	0.42
45:U:70:ARG:HH12	45:U:74:LEU:HD22	1.84	0.42
46:V:38:LYS:HE2	52:3:585:G:OP1	2.19	0.42
47:W:31:TYR:HB2	47:W:54:LEU:HD21	2.02	0.42
52:3:116:A:H2'	52:3:117:G:O4'	2.19	0.42
52:3:202:G:H2'	52:3:203:G:C8	2.54	0.42
52:3:631:C:H5''	52:3:632:U:O4'	2.19	0.42
52:3:1342:C:H2'	52:3:1343:G:H8	1.85	0.42
53:1:149:A:H2'	53:1:150:U:C6	2.54	0.42
53:1:389:G:O2'	53:1:390:U:H5'	2.20	0.42
53:1:565:C:H2'	53:1:566:U:O4'	2.20	0.42
53:1:792:A:H3'	53:1:793:A:H5'	2.00	0.42
53:1:1545:A:H2'	53:1:1546:G:H5'	2.01	0.42
53:1:2423:U:H5'	53:1:2424:C:OP1	2.19	0.42
53:1:2785:C:H2'	53:1:2786:U:H6	1.84	0.42
53:1:2861:U:H2'	53:1:2862:G:H8	1.85	0.42
54:2:6:G:H2'	54:2:7:G:H8	1.83	0.42
54:2:51:G:O2'	54:2:52:A:H5'	2.19	0.42
54:2:111:U:H2'	54:2:112:G:C8	2.54	0.42
56:4:16:A:O2'	56:4:17:U:H5'	2.20	0.42
5:f:136:ASP:HB3	5:f:139:VAL:HG12	2.01	0.42
9:j:57:LEU:O	9:j:58:ASN:HB2	2.19	0.42
12:m:75:GLU:N	12:m:90:GLU:OE1	2.53	0.42
16:q:80:ASN:HB2	53:1:1151:A:O2'	2.19	0.42
31:G:14:HIS:HB2	31:G:15:PHE:H	1.61	0.42
32:H:25:THR:HG22	43:S:75:LYS:NZ	2.34	0.42
33:I:82:LYS:O	33:I:84:ASN:N	2.52	0.42
34:J:40:ASP:OD2	34:J:42:ASN:HB2	2.19	0.42
39:O:49:PHE:HE2	39:O:67:ILE:HG13	1.84	0.42
47:W:31:TYR:O	47:W:39:VAL:HG22	2.18	0.42
52:3:187:G:N2	52:3:189:A:H3'	2.35	0.42
52:3:951:G:H2'	52:3:952:U:C6	2.54	0.42
53:1:818:G:C2'	53:1:819:A:H5''	2.49	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:1:838:C:H2'	53:1:839:U:C6	2.54	0.42
53:1:2120:G:N2	53:1:2179:C:H1'	2.34	0.42
1:b:260:LYS:O	1:b:263:ASP:OD1	2.37	0.42
5:f:97:VAL:HG23	5:f:124:CYS:HB2	2.02	0.42
7:h:59:LEU:HB3	7:h:62:ARG:HB2	2.01	0.42
16:q:84:LYS:HE2	16:q:84:LYS:HB3	1.91	0.42
33:I:36:ALA:HA	33:I:37:PRO:HD3	1.90	0.42
37:M:13:ILE:HD11	37:M:74:ILE:HD13	2.01	0.42
51:a:39:VAL:HG11	51:a:178:VAL:H	1.85	0.42
52:3:273:U:C2'	52:3:274:A:H5'	2.49	0.42
52:3:323:U:H2'	52:3:324:G:O4'	2.20	0.42
52:3:432:A:H3'	52:3:433:G:H8	1.84	0.42
52:3:621:A:H2'	52:3:622:A:C8	2.54	0.42
53:1:2041:U:O2'	53:1:2042:A:H5'	2.19	0.42
53:1:2061:G:H4'	53:1:2061:G:OP1	2.18	0.42
53:1:2204:G:H2'	53:1:2205:A:C8	2.55	0.42
53:1:2408:U:H2'	53:1:2409:G:C8	2.54	0.42
53:1:2655:G:H2'	53:1:2664:G:N1	2.35	0.42
53:1:2777:G:H5'	53:1:2781:A:H1'	2.02	0.42
3:d:175:ILE:HG22	3:d:180:LEU:HD11	2.02	0.42
4:e:19:PHE:HB2	4:e:21:TYR:CZ	2.55	0.42
6:g:99:ILE:HG23	6:g:100:ALA:N	2.35	0.42
7:h:23:LEU:HD12	7:h:126:LEU:HD13	2.01	0.42
7:h:55:VAL:HG12	53:1:1084:A:H4'	2.00	0.42
9:j:113:PRO:HD2	53:1:558:U:P	2.60	0.42
11:l:93:ASN:C	11:l:95:LEU:H	2.27	0.42
17:r:79:ARG:HH22	53:1:572:A:C5'	2.33	0.42
19:t:67:VAL:HG22	19:t:76:ARG:HD3	2.01	0.42
28:D:1:MET:SD	28:D:1:MET:N	2.85	0.42
34:J:55:VAL:N	34:J:56:PRO:HD2	2.34	0.42
36:L:37:THR:HG22	52:3:1291:U:P	2.60	0.42
52:3:451:A:N6	52:3:480:U:H2'	2.34	0.42
52:3:457:G:C2'	52:3:458:U:H5'	2.50	0.42
52:3:1323:G:H2'	52:3:1324:A:H8	1.85	0.42
53:1:1341:G:O2'	53:1:1342:A:H5'	2.19	0.42
54:2:97:C:H2'	54:2:98:G:O4'	2.20	0.42
6:g:3:VAL:HG22	6:g:4:ILE:N	2.34	0.42
21:v:7:GLU:HB2	21:v:41:GLU:HB2	2.01	0.42
24:y:2:LYS:HD2	53:1:78:U:OP2	2.20	0.42
31:G:12:GLY:HA3	31:G:208:ALA:HB2	2.01	0.42
32:H:87:ARG:HH21	32:H:88:LYS:HZ1	1.67	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:I:87:GLU:OE2	33:I:87:GLU:N	2.52	0.42
52:3:193:C:O2'	52:3:194:C:H5'	2.19	0.42
52:3:1451:U:H3'	52:3:1452:C:H5'	2.02	0.42
53:1:52:A:H2'	53:1:53:A:H8	1.85	0.42
53:1:196:A:O2'	53:1:197:A:H5'	2.20	0.42
53:1:349:U:H2'	53:1:350:G:H8	1.85	0.42
53:1:491:G:H2'	53:1:491:G:N3	2.35	0.42
53:1:1285:A:H2'	53:1:1286:A:H5'	2.01	0.42
53:1:2162:G:H1'	53:1:2173:A:C2	2.55	0.42
53:1:2626:C:O2'	53:1:2627:G:H5'	2.20	0.42
53:1:2851:A:H2'	53:1:2852:G:O4'	2.20	0.42
1:b:106:PRO:HA	1:b:194:VAL:HA	2.02	0.42
13:n:118:ARG:HG2	13:n:118:ARG:NH2	2.34	0.42
15:p:94:ALA:HB2	53:1:2848:G:C8	2.54	0.42
17:r:79:ARG:NH2	53:1:563:A:OP2	2.50	0.42
44:T:7:THR:O	44:T:11:VAL:HG23	2.20	0.42
52:3:26:A:N6	52:3:558:G:H1'	2.35	0.42
52:3:790:A:H5'	55:5:39:C:H5'	2.02	0.42
52:3:1273:C:O2'	52:3:1274:A:H5'	2.20	0.42
52:3:1346:A:H1'	52:3:1348:U:H1'	2.01	0.42
53:1:382:A:C2'	53:1:383:C:H5''	2.49	0.42
53:1:840:C:H2'	53:1:841:G:C8	2.54	0.42
53:1:880:G:H2'	53:1:881:G:C8	2.55	0.42
53:1:1298:C:H2'	53:1:1299:G:O4'	2.20	0.42
53:1:1545:A:H2'	53:1:1546:G:O4'	2.20	0.42
53:1:1614:A:H2'	53:1:1615:C:H5'	2.02	0.42
53:1:1642:G:O2'	53:1:1643:G:H5'	2.20	0.42
53:1:1827:U:C2'	53:1:1828:G:H5'	2.49	0.42
53:1:2170:A:H2'	53:1:2171:A:C4'	2.49	0.42
53:1:2276:G:O2'	53:1:2277:G:H5'	2.18	0.42
53:1:2651:C:O2'	53:1:2652:C:H5'	2.19	0.42
54:2:106:G:H2'	54:2:107:G:O4'	2.20	0.42
55:5:7:G:O2'	55:5:49:G:H5'	2.20	0.42
4:e:107:VAL:O	4:e:110:ILE:HG12	2.20	0.42
8:i:112:LYS:HD3	8:i:124:MET:HG2	2.02	0.42
24:y:2:LYS:HZ2	53:1:102:U:H1'	1.85	0.42
39:O:92:LEU:O	39:O:93:ALA:HB3	2.20	0.42
42:R:70:ARG:NH2	42:R:73:SER:OG	2.53	0.42
51:a:192:LEU:HD23	51:a:192:LEU:H	1.84	0.42
51:a:211:LYS:NZ	53:1:2178:C:P	2.93	0.42
52:3:463:U:OP2	52:3:464:U:H5	2.03	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:1435:G:H2'	52:3:1436:U:C6	2.54	0.42
52:3:1513:A:H2'	52:3:1514:G:H8	1.84	0.42
53:1:502:A:H2'	53:1:503:A:H5'	2.02	0.42
53:1:1664:A:H2'	53:1:1664:A:N3	2.35	0.42
53:1:1794:A:H2'	53:1:1795:C:C6	2.55	0.42
7:h:80:THR:O	7:h:81:LEU:C	2.63	0.41
12:m:40:ARG:HB3	12:m:93:VAL:HG21	2.02	0.41
13:n:36:THR:HG22	53:1:1278:C:OP1	2.20	0.41
13:n:39:PRO:HG2	53:1:1651:G:C5'	2.49	0.41
13:n:76:VAL:HG13	13:n:80:PHE:CE2	2.54	0.41
18:s:10:ALA:O	18:s:12:SER:N	2.53	0.41
31:G:22:TRP:NE1	52:3:829:G:O2'	2.52	0.41
34:J:9:GLU:HG2	34:J:9:GLU:O	2.20	0.41
34:J:96:GLN:O	34:J:122:VAL:HG23	2.20	0.41
38:N:111:GLU:OE2	38:N:120:ALA:HB3	2.20	0.41
42:R:83:GLY:O	48:X:73:PHE:HA	2.19	0.41
47:W:15:GLU:OE1	52:3:842:U:H4'	2.19	0.41
52:3:823:C:H2'	52:3:824:G:C8	2.55	0.41
52:3:1300:G:N1	52:3:1334:G:H3'	2.26	0.41
52:3:1372:U:H2'	52:3:1373:G:O4'	2.19	0.41
53:1:64:A:H2'	53:1:65:U:C5	2.55	0.41
53:1:671:C:H2'	53:1:672:C:C6	2.55	0.41
53:1:1695:G:H2'	53:1:1696:G:O4'	2.20	0.41
53:1:1744:A:H3'	53:1:1745:A:C8	2.55	0.41
53:1:2455:G:H2'	53:1:2456:C:C6	2.54	0.41
53:1:2484:G:O2'	53:1:2485:G:H5'	2.20	0.41
55:5:42:G:O2'	55:5:43:A:H5'	2.20	0.41
1:b:229:HIS:HA	1:b:230:PRO:HD3	1.93	0.41
4:e:95:MET:O	4:e:99:PHE:HB2	2.19	0.41
7:h:1:MET:HB3	7:h:7:ASP:HB2	2.02	0.41
8:i:133:ARG:NH1	53:1:1077:A:O2'	2.54	0.41
9:j:80:HIS:CD2	53:1:2642:G:H5'	2.55	0.41
11:l:56:PRO:O	11:l:60:ARG:HG2	2.20	0.41
13:n:13:ASN:OD1	13:n:13:ASN:N	2.50	0.41
19:t:73:ARG:NH1	53:1:456:C:N3	2.67	0.41
20:u:84:PHE:HE1	20:u:93:ARG:HG2	1.85	0.41
31:G:26:MET:HA	31:G:26:MET:HE2	2.01	0.41
35:K:10:VAL:HG21	35:K:18:VAL:HG11	2.01	0.41
44:T:86:LEU:HG	44:T:87:ARG:HG2	2.02	0.41
49:Y:70:LYS:HG3	49:Y:73:ARG:NH2	2.35	0.41
52:3:78:A:H2'	52:3:79:G:O4'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:425:G:O2'	52:3:426:U:H5'	2.20	0.41
53:1:1416:G:H2'	53:1:1417:C:C6	2.55	0.41
53:1:1449:G:O2'	53:1:1450:G:H5'	2.21	0.41
53:1:1578:U:O2'	53:1:1579:A:H5'	2.20	0.41
53:1:2150:C:H2'	53:1:2151:U:C5'	2.49	0.41
53:1:2710:C:H2'	53:1:2711:A:H8	1.83	0.41
54:2:13:G:O2'	54:2:15:A:H2'	2.19	0.41
4:e:114:ARG:HD2	4:e:115:GLY:N	2.35	0.41
7:h:1:MET:HG3	7:h:3:LEU:H	1.84	0.41
9:j:105:VAL:HG11	9:j:122:LEU:HD13	2.01	0.41
10:k:51:LYS:HD2	10:k:95:ILE:HG22	2.02	0.41
14:o:33:ARG:HA	14:o:65:THR:O	2.20	0.41
18:s:29:VAL:HG22	18:s:69:LEU:O	2.20	0.41
18:s:93:ALA:HB2	53:1:1614:A:C2	2.55	0.41
20:u:87:GLU:HG2	20:u:92:VAL:HG11	2.01	0.41
23:x:60:LYS:NZ	53:1:372:G:H5''	2.34	0.41
25:z:29:ARG:HB3	25:z:30:ARG:HD3	2.02	0.41
37:M:80:PRO:HA	37:M:83:ARG:NH2	2.35	0.41
39:O:40:ILE:HD12	39:O:40:ILE:N	2.35	0.41
41:Q:14:LYS:HD2	52:3:562:U:C5	2.55	0.41
42:R:70:ARG:HA	42:R:70:ARG:NE	2.36	0.41
52:3:160:A:H1'	52:3:344:A:C6	2.55	0.41
52:3:629:A:H2'	52:3:630:A:O4'	2.20	0.41
52:3:1303:C:H2'	52:3:1304:G:O4'	2.21	0.41
53:1:570:G:H2'	53:1:2030:A:N7	2.36	0.41
53:1:741:U:H2'	53:1:742:A:H8	1.84	0.41
53:1:1022:G:N2	53:1:1142:A:H2	2.17	0.41
53:1:1198:U:H2'	53:1:1199:U:C6	2.54	0.41
53:1:1554:U:O2'	53:1:1555:G:H5''	2.20	0.41
53:1:2070:A:H2'	53:1:2071:A:H8	1.85	0.41
53:1:2360:G:C2'	53:1:2361:G:H5'	2.50	0.41
54:2:66:A:H5''	54:2:67:G:OP1	2.20	0.41
6:g:131:SER:HB2	6:g:139:PHE:HB3	2.02	0.41
23:x:40:GLU:OE1	23:x:40:GLU:N	2.54	0.41
31:G:160:LEU:HB2	31:G:182:VAL:HG12	2.02	0.41
36:L:48:THR:HA	36:L:51:GLN:HB3	2.03	0.41
43:S:79:SER:O	43:S:83:VAL:HG23	2.21	0.41
46:V:22:VAL:HG22	46:V:23:ALA:H	1.85	0.41
52:3:31:G:H21	52:3:47:C:H5''	1.85	0.41
52:3:38:G:H4'	52:3:547:A:C6	2.55	0.41
52:3:490:C:H2'	52:3:491:G:C8	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:1:493:G:O2'	53:1:494:G:H5'	2.21	0.41
53:1:1343:G:N3	53:1:1343:G:H2'	2.35	0.41
53:1:1424:G:H2'	53:1:1425:G:O4'	2.21	0.41
53:1:1821:A:H2'	53:1:1822:C:C6	2.55	0.41
53:1:1951:U:H2'	53:1:1953:A:OP2	2.20	0.41
53:1:2432:A:H2'	53:1:2433:A:H5'	2.02	0.41
57:8:101:GLU:O	57:8:101:GLU:HG2	2.21	0.41
3:d:45:ALA:HB3	53:1:38:A:C4'	2.50	0.41
4:e:131:VAL:HG22	4:e:132:ARG:N	2.35	0.41
7:h:33:VAL:HB	7:h:36:ASP:HB2	2.02	0.41
8:i:19:PRO:HB2	8:i:22:PRO:HD2	2.03	0.41
13:n:117:ASP:O	13:n:118:ARG:C	2.64	0.41
19:t:2:ILE:CG2	19:t:5:GLU:HB2	2.50	0.41
24:y:9:LYS:HG3	24:y:11:VAL:H	1.85	0.41
34:J:106:ALA:HB1	34:J:110:MET:HG3	2.02	0.41
35:K:3:HIS:HB2	35:K:92:THR:HA	2.02	0.41
41:Q:6:LEU:HB3	46:V:33:TYR:CZ	2.55	0.41
41:Q:112:ALA:HB2	52:3:503:C:OP2	2.19	0.41
43:S:53:ASP:HB2	43:S:54:SER:H	1.63	0.41
45:U:38:PHE:HE1	45:U:51:ARG:HD3	1.85	0.41
46:V:45:VAL:HG13	46:V:73:THR:HA	2.02	0.41
50:Z:64:ALA:O	50:Z:67:THR:HG22	2.21	0.41
52:3:112:G:H21	52:3:354:G:H5'	1.85	0.41
52:3:939:G:N3	52:3:1375:A:H2	2.18	0.41
52:3:998:C:H2'	52:3:999:C:H6	1.86	0.41
52:3:1238:A:H2'	52:3:1238:A:N3	2.36	0.41
53:1:275:C:H3'	53:1:276:U:C4'	2.50	0.41
53:1:633:A:H2'	53:1:634:C:H5'	2.02	0.41
53:1:937:C:H2'	53:1:938:G:H8	1.85	0.41
53:1:1042:G:H2'	53:1:1043:C:O4'	2.20	0.41
53:1:1442:U:H2'	53:1:1443:U:C6	2.55	0.41
53:1:1686:C:H2'	53:1:1687:G:O4'	2.20	0.41
55:5:4:G:O2'	55:5:5:G:H5'	2.21	0.41
55:5:41:C:H2'	55:5:42:G:C8	2.55	0.41
55:5:55:U:H2'	55:5:57:A:OP2	2.21	0.41
6:g:12:LEU:HG	6:g:12:LEU:O	2.20	0.41
6:g:46:PHE:O	6:g:50:ARG:HB2	2.20	0.41
7:h:60:LEU:HA	7:h:64:VAL:HG21	2.02	0.41
25:z:52:PHE:CZ	54:2:83:G:H5'	2.55	0.41
29:E:16:THR:OG1	29:E:17:GLY:N	2.53	0.41
32:H:171:ARG:O	32:H:173:PRO:HD3	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:P:68:ARG:HD2	40:P:68:ARG:HA	1.88	0.41
42:R:53:ASP:OD1	42:R:53:ASP:N	2.53	0.41
43:S:63:CYS:HB3	43:S:67:GLY:H	1.86	0.41
44:T:88:ARG:CD	53:1:714:U:H5	2.33	0.41
49:Y:59:ARG:CZ	52:3:177:G:H5'	2.51	0.41
52:3:337:G:H2'	52:3:338:A:C8	2.55	0.41
52:3:389:A:H3'	52:3:390:U:C6	2.51	0.41
52:3:412:A:H3'	52:3:413:G:H4'	2.02	0.41
52:3:1355:G:H2'	52:3:1356:G:C8	2.56	0.41
53:1:161:A:N7	53:1:162:U:H5	2.19	0.41
53:1:192:C:C2'	53:1:193:U:H5'	2.50	0.41
53:1:601:C:O2'	53:1:602:A:H5'	2.21	0.41
53:1:877:A:H2	53:1:901:C:N4	2.19	0.41
53:1:1123:C:H2'	53:1:1124:G:H8	1.86	0.41
53:1:1706:C:C2	53:1:1757:A:H5'	2.55	0.41
1:b:106:PRO:HD2	1:b:109:LEU:HD22	2.03	0.41
8:i:10:LEU:HB3	8:i:11:GLN:H	1.58	0.41
15:p:29:VAL:CG2	15:p:79:VAL:HG22	2.51	0.41
18:s:71:VAL:HG13	18:s:71:VAL:O	2.21	0.41
19:t:72:GLN:HG3	19:t:73:ARG:CD	2.50	0.41
20:u:39:ASN:HB3	20:u:62:ALA:HB3	2.02	0.41
20:u:42:LYS:HE3	20:u:57:ILE:HG22	2.02	0.41
25:z:45:GLY:HA3	53:1:852:U:H5'	2.03	0.41
31:G:159:ALA:C	31:G:160:LEU:HD12	2.46	0.41
34:J:125:LYS:NZ	52:3:8:A:OP1	2.47	0.41
39:O:9:ARG:CD	39:O:71:LEU:HD11	2.49	0.41
39:O:23:ALA:O	39:O:27:GLU:HG2	2.21	0.41
39:O:40:ILE:HD12	39:O:40:ILE:H	1.85	0.41
44:T:17:ASP:OD2	44:T:17:ASP:N	2.53	0.41
44:T:38:LEU:HD22	44:T:55:LEU:HD21	2.02	0.41
45:U:47:GLU:OE2	45:U:48:GLU:HG2	2.21	0.41
47:W:37:LYS:HG2	52:3:719:C:O2	2.21	0.41
52:3:153:C:C3'	52:3:154:U:C5'	2.96	0.41
52:3:338:A:O2'	52:3:339:C:H5'	2.20	0.41
52:3:762:U:H2'	52:3:763:G:H8	1.86	0.41
52:3:1155:A:H2'	52:3:1156:G:O4'	2.21	0.41
52:3:1502:A:H8	52:3:1505:G:N2	2.15	0.41
53:1:20:C:H2'	53:1:21:A:C8	2.56	0.41
53:1:644:A:C2'	53:1:645:C:H5''	2.47	0.41
53:1:650:C:H2'	53:1:651:G:C5'	2.50	0.41
53:1:863:A:H2'	53:1:864:G:C8	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:1:1609:A:H1'	53:1:1616:A:C1'	2.51	0.41
53:1:2668:G:O2'	53:1:2669:G:H5'	2.21	0.41
2:c:56:LYS:NZ	53:1:2830:C:H5''	2.36	0.41
4:e:65:LEU:HD11	54:2:41:G:N2	2.16	0.41
11:l:118:THR:HA	11:l:119:PRO:HD3	1.84	0.41
13:n:33:ILE:HG23	13:n:33:ILE:O	2.20	0.41
17:r:24:LYS:HD2	17:r:92:TRP:HB3	2.03	0.41
19:t:7:LEU:HD22	19:t:46:ALA:HB2	2.03	0.41
23:x:60:LYS:HD3	53:1:372:G:H5''	2.01	0.41
35:K:53:LYS:HB3	35:K:54:LEU:H	1.72	0.41
38:N:49:GLN:N	38:N:50:PRO:HD2	2.36	0.41
41:Q:2:THR:HG23	41:Q:2:THR:O	2.21	0.41
41:Q:52:CYS:HB3	41:Q:66:ILE:HD11	2.03	0.41
46:V:13:SER:HB2	46:V:21:VAL:HG22	2.02	0.41
46:V:64:ARG:HG2	46:V:65:PRO:HD2	2.02	0.41
48:X:22:VAL:HG23	48:X:23:GLU:OE1	2.21	0.41
50:Z:58:LYS:HE3	50:Z:61:ARG:NH2	2.36	0.41
52:3:229:U:H2'	52:3:230:G:H8	1.83	0.41
52:3:237:G:H2'	52:3:238:A:H8	1.86	0.41
52:3:879:C:O2'	52:3:880:C:H5'	2.21	0.41
53:1:382:A:H2'	53:1:383:C:C5'	2.50	0.41
53:1:589:U:H2'	53:1:590:A:H8	1.86	0.41
53:1:596:U:H2'	53:1:597:G:H8	1.85	0.41
53:1:779:U:H2'	53:1:780:G:O4'	2.20	0.41
53:1:1431:A:H2'	53:1:1432:G:C8	2.56	0.41
53:1:2183:A:H2'	53:1:2184:A:H8	1.81	0.41
54:2:2:G:H2'	54:2:3:C:O4'	2.20	0.41
1:b:131:MET:HA	1:b:134:ILE:HD12	2.02	0.41
1:b:179:GLU:OE2	1:b:270:ARG:N	2.54	0.41
1:b:245:THR:HG23	1:b:249:VAL:O	2.21	0.41
2:c:33:ARG:NH1	2:c:53:GLY:O	2.51	0.41
3:d:117:ARG:HG2	3:d:186:VAL:HG12	2.03	0.41
4:e:107:VAL:CG1	4:e:108:PRO:HD3	2.43	0.41
4:e:120:SER:HB3	4:e:127:TYR:CD1	2.55	0.41
7:h:88:HIS:HB2	7:h:89:PRO:HD3	2.03	0.41
8:i:125:THR:O	8:i:128:ILE:HG22	2.21	0.41
10:k:9:ASN:O	10:k:83:ALA:HA	2.20	0.41
14:o:81:ARG:O	14:o:85:LYS:HG2	2.20	0.41
16:q:83:LYS:HD3	16:q:83:LYS:HA	1.87	0.41
17:r:40:MET:SD	17:r:41:ILE:N	2.94	0.41
18:s:8:ARG:HD2	53:1:494:G:OP1	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:t:23:ALA:HB1	19:t:29:THR:OG1	2.20	0.41
21:v:20:LEU:HD12	21:v:25:LYS:O	2.20	0.41
23:x:21:LEU:O	53:1:200:U:H5''	2.21	0.41
24:y:21:LEU:HA	24:y:25:GLN:HB3	2.03	0.41
24:y:48:ARG:NH1	53:1:75:G:O2'	2.53	0.41
26:B:35:GLU:OE2	26:B:43:THR:HB	2.21	0.41
27:C:24:LYS:HG2	27:C:25:ASN:N	2.36	0.41
29:E:2:LYS:HG3	53:1:242:G:C8	2.56	0.41
31:G:103:TRP:HA	31:G:106:VAL:HG22	2.03	0.41
33:I:58:GLN:HG3	52:3:544:G:OP1	2.21	0.41
34:J:63:MET:O	34:J:67:ARG:HG3	2.21	0.41
39:O:42:LEU:HA	39:O:43:PRO:HD2	1.72	0.41
40:P:106:ILE:HD12	40:P:106:ILE:N	2.36	0.41
44:T:21:THR:HG21	52:3:658:C:H1'	2.02	0.41
46:V:14:ASP:C	46:V:15:LYS:HG2	2.46	0.41
48:X:21:ALA:HA	48:X:27:LYS:HE3	2.02	0.41
48:X:50:VAL:HG12	48:X:57:VAL:O	2.21	0.41
49:Y:9:ARG:HD3	52:3:108:G:N1	2.36	0.41
49:Y:27:MET:CE	49:Y:60:GLN:HG3	2.50	0.41
52:3:75:G:C3'	52:3:76:G:H5'	2.50	0.41
52:3:188:C:H2'	52:3:189:A:O4'	2.21	0.41
52:3:224:U:O2'	52:3:225:C:H5'	2.21	0.41
52:3:321:A:H2'	52:3:322:C:C6	2.56	0.41
52:3:332:G:O2'	52:3:333:U:H5'	2.20	0.41
52:3:1195:C:H2'	52:3:1197:A:O4'	2.21	0.41
52:3:1354:U:H2'	52:3:1355:G:C8	2.56	0.41
52:3:1394:A:H3'	52:3:1395:C:H5'	2.02	0.41
53:1:142:A:H2'	53:1:143:C:O4'	2.21	0.41
53:1:543:G:H5'	53:1:543:G:C8	2.56	0.41
53:1:563:A:OP2	53:1:572:A:H4'	2.20	0.41
53:1:644:A:H2'	53:1:645:C:C4'	2.51	0.41
53:1:941:A:H2'	53:1:942:G:O4'	2.21	0.41
53:1:1022:G:N2	53:1:1142:A:C2	2.88	0.41
53:1:1178:C:O2	53:1:1178:C:H2'	2.21	0.41
53:1:1585:C:C2'	53:1:1586:A:H5'	2.51	0.41
53:1:1949:G:H2'	53:1:1950:G:C8	2.55	0.41
53:1:2229:U:H2'	53:1:2230:G:H8	1.86	0.41
53:1:2238:G:H2'	53:1:2238:G:N3	2.36	0.41
53:1:2364:C:H2'	53:1:2365:G:O4'	2.20	0.41
55:5:37:A:H2'	55:5:38:A:C8	2.56	0.41
57:8:14:GLU:CD	57:8:46:SER:HB2	2.45	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:8:96:LYS:HD2	57:8:96:LYS:HA	1.84	0.41
3:d:154:ASP:OD2	3:d:157:LEU:HB2	2.21	0.41
4:e:13:LYS:HA	4:e:13:LYS:HD3	1.85	0.41
6:g:8:LYS:HG2	6:g:15:LEU:H	1.86	0.41
8:i:105:LEU:HD12	8:i:105:LEU:HA	1.94	0.41
9:j:27:ARG:HD3	53:1:1012:U:H3	1.84	0.41
9:j:105:VAL:HG22	9:j:109:LEU:HD23	2.02	0.41
11:l:110:VAL:HB	11:l:127:VAL:HG12	2.01	0.41
25:z:30:ARG:HD3	25:z:30:ARG:N	2.35	0.41
34:J:88:HIS:NE2	34:J:137:ARG:HD2	2.36	0.41
35:K:22:ILE:HG13	35:K:23:GLU:N	2.35	0.41
40:P:39:ASN:HA	52:3:683:G:N2	2.36	0.41
41:Q:43:LYS:HZ3	56:4:20:A:H3'	1.84	0.41
46:V:15:LYS:HE2	52:3:275:G:O5'	2.21	0.41
52:3:376:G:O2'	52:3:377:G:H5'	2.21	0.41
52:3:412:A:H5'	52:3:413:G:OP2	2.21	0.41
52:3:482:A:H2'	52:3:483:C:C5'	2.47	0.41
52:3:908:A:H2'	52:3:909:A:H8	1.86	0.41
52:3:974:A:H5''	52:3:975:A:H3'	2.01	0.41
52:3:1115:U:O2'	52:3:1116:U:H5'	2.21	0.41
52:3:1251:A:H1'	52:3:1369:C:O2'	2.20	0.41
53:1:1351:C:H2'	53:1:1352:U:C6	2.56	0.41
53:1:1433:A:O2'	53:1:1434:A:H5'	2.21	0.41
53:1:2080:A:H2'	53:1:2081:U:C6	2.56	0.41
1:b:146:LYS:HB2	1:b:149:LYS:HB2	2.03	0.40
2:c:25:THR:HG21	2:c:193:VAL:HG12	2.02	0.40
4:e:174:PHE:HA	4:e:175:PRO:HD3	1.89	0.40
15:p:93:LYS:HE2	53:1:1754:A:OP1	2.21	0.40
17:r:91:GLN:HE21	53:1:993:G:H1'	1.85	0.40
18:s:1:MET:HB3	18:s:2:GLU:H	1.59	0.40
19:t:73:ARG:HD3	19:t:73:ARG:H	1.86	0.40
20:u:32:LYS:HB3	20:u:63:ALA:HB1	2.02	0.40
36:L:65:LEU:O	36:L:68:VAL:HG12	2.21	0.40
37:M:87:ARG:HB3	52:3:600:A:OP1	2.22	0.40
39:O:92:LEU:HD12	39:O:93:ALA:H	1.86	0.40
40:P:64:VAL:O	40:P:68:ARG:HG2	2.21	0.40
40:P:124:LYS:HD3	50:Z:35:GLU:H	1.86	0.40
42:R:7:ASN:ND2	42:R:17:ALA:O	2.45	0.40
42:R:52:ILE:O	42:R:56:ARG:HG3	2.21	0.40
42:R:101:THR:HA	42:R:105:ALA:HB2	2.01	0.40
43:S:25:GLU:O	43:S:29:ILE:HG12	2.20	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:V:56:ASP:HB2	46:V:79:GLU:O	2.21	0.40
49:Y:24:ARG:HB3	49:Y:28:ARG:NH2	2.35	0.40
51:a:20:GLN:NE2	51:a:211:LYS:H	2.10	0.40
52:3:1417:G:H2'	52:3:1482:G:N2	2.36	0.40
53:1:36:G:O2'	53:1:37:C:H5'	2.21	0.40
53:1:97:C:H2'	53:1:98:G:O4'	2.22	0.40
53:1:115:C:O2'	53:1:116:C:H5'	2.21	0.40
53:1:151:C:H2'	53:1:152:A:H8	1.86	0.40
53:1:490:C:O2'	53:1:491:G:P	2.80	0.40
53:1:565:C:H4'	53:1:1253:A:C6	2.56	0.40
53:1:635:C:H2'	53:1:636:G:O4'	2.21	0.40
53:1:650:C:C2'	53:1:651:G:H5''	2.50	0.40
53:1:1285:A:H2	53:1:1328:A:H5''	1.86	0.40
53:1:1444:G:H2'	53:1:1445:G:C8	2.57	0.40
53:1:2111:U:H5'	53:1:2112:G:OP2	2.21	0.40
53:1:2166:U:O2'	53:1:2167:U:H5'	2.21	0.40
53:1:2244:U:H2'	53:1:2245:U:O4'	2.21	0.40
55:5:73:A:H3'	55:5:74:C:H5'	2.02	0.40
2:c:142:VAL:CG2	2:c:143:PRO:HD2	2.46	0.40
3:d:196:VAL:HA	3:d:199:MET:HG2	2.03	0.40
7:h:41:LEU:HD22	7:h:52:MET:HE1	2.02	0.40
13:n:79:LEU:C	13:n:81:ASN:H	2.29	0.40
40:P:55:ARG:N	40:P:55:ARG:HD2	2.36	0.40
44:T:48:ASP:HB3	44:T:51:SER:OG	2.22	0.40
45:U:20:VAL:HG22	45:U:21:VAL:N	2.36	0.40
49:Y:68:LYS:HD3	49:Y:68:LYS:N	2.36	0.40
52:3:204:G:H1	52:3:465:A:N6	2.19	0.40
52:3:853:C:H2'	52:3:854:U:C6	2.56	0.40
52:3:869:G:H4'	52:3:872:A:C8	2.56	0.40
53:1:153:U:O2'	53:1:154:U:H5'	2.21	0.40
53:1:721:A:H2'	53:1:722:A:C8	2.56	0.40
53:1:917:A:H5''	53:1:2268:A:N6	2.32	0.40
53:1:1060:U:C4'	53:1:1061:U:H5''	2.51	0.40
53:1:1266:G:N2	53:1:2012:G:H2'	2.35	0.40
53:1:1427:A:H4'	53:1:1428:C:C5'	2.52	0.40
53:1:2217:G:O2'	53:1:2218:G:H5'	2.21	0.40
53:1:2804:U:H2'	53:1:2805:C:C6	2.56	0.40
53:1:2873:A:O2'	53:1:2874:C:H5'	2.21	0.40
3:d:83:VAL:HG11	3:d:86:ALA:HA	2.04	0.40
3:d:118:LEU:HA	3:d:186:VAL:HG13	2.03	0.40
8:i:24:GLY:N	8:i:25:PRO:CD	2.85	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:r:33:VAL:HG22	17:r:34:GLU:N	2.36	0.40
20:u:14:THR:OG1	20:u:15:GLY:N	2.54	0.40
28:D:33:ARG:O	28:D:36:ALA:HB3	2.21	0.40
35:K:63:ASN:HD21	35:K:95:ALA:HA	1.85	0.40
35:K:67:PRO:O	35:K:70:VAL:HG12	2.21	0.40
36:L:30:MET:HG2	36:L:35:LYS:HA	2.03	0.40
37:M:40:LYS:HZ3	37:M:47:ASP:N	2.19	0.40
38:N:62:LEU:HD13	38:N:64:ILE:HG12	2.03	0.40
38:N:113:LYS:NZ	38:N:118:ARG:O	2.50	0.40
39:O:10:LEU:CD1	39:O:98:VAL:HG22	2.52	0.40
41:Q:101:LEU:HG	41:Q:102:ASP:N	2.35	0.40
43:S:41:TRP:HZ3	48:X:8:PRO:HD2	1.82	0.40
51:a:65:LEU:HA	51:a:66:PRO:HD3	1.96	0.40
52:3:28:A:O2'	52:3:29:U:H5'	2.22	0.40
52:3:256:U:H2'	52:3:257:G:C8	2.56	0.40
52:3:1354:U:H2'	52:3:1355:G:H8	1.86	0.40
53:1:247:G:H4'	53:1:386:G:C6	2.57	0.40
53:1:466:A:C2'	53:1:467:G:H5'	2.51	0.40
53:1:634:C:H2'	53:1:635:C:C6	2.57	0.40
53:1:720:U:H2'	53:1:721:A:C8	2.57	0.40
53:1:1505:A:C2'	53:1:1506:U:H5'	2.51	0.40
53:1:1833:C:H2'	53:1:1834:U:O4'	2.22	0.40
53:1:2014:A:H2'	53:1:2015:A:C8	2.57	0.40
53:1:2489:U:C2'	53:1:2490:G:H5'	2.51	0.40
53:1:2514:U:H2'	53:1:2515:C:H6	1.85	0.40
53:1:2723:C:H2'	53:1:2724:U:O4'	2.22	0.40
54:2:9:G:H2'	54:2:10:G:H8	1.85	0.40
1:b:163:ILE:HG12	1:b:173:LEU:HD22	2.02	0.40
3:d:121:VAL:HG22	3:d:122:GLU:N	2.37	0.40
6:g:29:PHE:HB2	53:1:2198:A:C2	2.56	0.40
8:i:81:LYS:HG3	8:i:82:ALA:H	1.86	0.40
18:s:93:ALA:HB2	53:1:1614:A:H2	1.87	0.40
31:G:54:ALA:HA	31:G:57:ASN:HD22	1.86	0.40
33:I:8:LEU:N	52:3:430:A:OP1	2.46	0.40
35:K:25:TYR:OH	35:K:81:ASN:ND2	2.54	0.40
37:M:26:MET:N	37:M:26:MET:SD	2.94	0.40
45:U:78:VAL:O	45:U:79:ASN:C	2.63	0.40
48:X:14:LEU:HD12	48:X:32:THR:HG22	2.02	0.40
52:3:45:G:H5''	52:3:307:C:O2'	2.22	0.40
52:3:416:G:H2'	52:3:417:G:C8	2.55	0.40
52:3:701:U:H4'	52:3:703:G:H1'	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:3:936:C:O2'	52:3:937:A:H5'	2.21	0.40
53:1:242:G:N2	53:1:254:G:H2'	2.36	0.40
53:1:324:A:H62	53:1:338:G:H21	1.68	0.40
53:1:969:G:H2'	53:1:970:U:C6	2.56	0.40
53:1:2308:G:H2'	53:1:2309:A:H5'	2.03	0.40
53:1:2471:A:H2'	53:1:2472:G:O4'	2.20	0.40
53:1:2898:U:H2'	53:1:2899:A:C8	2.57	0.40
1:b:204:LEU:HB3	1:b:209:ALA:HB3	2.03	0.40
2:c:56:LYS:NZ	53:1:2830:C:O3'	2.51	0.40
4:e:148:VAL:O	4:e:148:VAL:HG13	2.21	0.40
9:j:37:ARG:HH22	53:1:1007:C:H5''	1.87	0.40
20:u:33:VAL:HG22	20:u:64:ILE:O	2.22	0.40
21:v:29:ILE:HD11	21:v:37:PRO:HB3	2.02	0.40
25:z:40:THR:HG23	25:z:43:ILE:H	1.87	0.40
32:H:105:VAL:HG22	32:H:106:ARG:H	1.85	0.40
34:J:122:VAL:HG13	34:J:122:VAL:O	2.22	0.40
48:X:7:GLY:HA2	48:X:8:PRO:HD3	1.93	0.40
49:Y:30:PHE:HB3	49:Y:53:MET:HB3	2.02	0.40
50:Z:44:ARG:HH11	50:Z:45:LYS:HE2	1.87	0.40
52:3:223:A:C2'	52:3:224:U:H5'	2.52	0.40
52:3:418:C:H2'	52:3:419:C:O4'	2.21	0.40
53:1:312:G:OP1	53:1:332:A:H4'	2.21	0.40
53:1:1164:C:H2'	53:1:1165:A:H8	1.87	0.40
53:1:2185:U:H2'	53:1:2186:G:C8	2.56	0.40
53:1:2732:G:H8	53:1:2732:G:OP2	2.05	0.40
53:1:2849:U:H4'	53:1:2868:A:N1	2.37	0.40
57:8:62:HIS:O	57:8:63:LEU:HB2	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%)	232 (86%)	34 (13%)	3 (1%)	11	42
2	c	207/209 (99%)	188 (91%)	17 (8%)	2 (1%)	12	43
3	d	199/201 (99%)	183 (92%)	13 (6%)	3 (2%)	8	36
4	e	175/177 (99%)	151 (86%)	23 (13%)	1 (1%)	21	52
5	f	174/176 (99%)	158 (91%)	15 (9%)	1 (1%)	21	52
6	g	147/149 (99%)	125 (85%)	18 (12%)	4 (3%)	4	27
7	h	129/165 (78%)	96 (74%)	27 (21%)	6 (5%)	2	18
8	i	139/142 (98%)	119 (86%)	18 (13%)	2 (1%)	9	37
9	j	140/142 (99%)	128 (91%)	11 (8%)	1 (1%)	18	50
10	k	120/122 (98%)	104 (87%)	14 (12%)	2 (2%)	7	34
11	l	141/143 (99%)	127 (90%)	14 (10%)	0	100	100
12	m	134/136 (98%)	122 (91%)	11 (8%)	1 (1%)	18	50
13	n	118/120 (98%)	99 (84%)	19 (16%)	0	100	100
14	o	114/116 (98%)	103 (90%)	9 (8%)	2 (2%)	6	34
15	p	112/114 (98%)	102 (91%)	9 (8%)	1 (1%)	14	45
16	q	115/117 (98%)	110 (96%)	5 (4%)	0	100	100
17	r	101/103 (98%)	89 (88%)	10 (10%)	2 (2%)	6	32
18	s	108/110 (98%)	98 (91%)	8 (7%)	2 (2%)	6	33
19	t	91/93 (98%)	78 (86%)	12 (13%)	1 (1%)	11	42
20	u	100/102 (98%)	84 (84%)	12 (12%)	4 (4%)	2	21
21	v	92/94 (98%)	86 (94%)	5 (5%)	1 (1%)	11	42
22	w	73/75 (97%)	68 (93%)	4 (6%)	1 (1%)	9	37
23	x	75/77 (97%)	67 (89%)	7 (9%)	1 (1%)	9	38
24	y	61/63 (97%)	60 (98%)	1 (2%)	0	100	100
25	z	56/58 (97%)	51 (91%)	5 (9%)	0	100	100
26	B	54/56 (96%)	49 (91%)	5 (9%)	0	100	100
27	C	48/50 (96%)	45 (94%)	3 (6%)	0	100	100
28	D	44/46 (96%)	42 (96%)	2 (4%)	0	100	100
29	E	62/64 (97%)	55 (89%)	6 (10%)	1 (2%)	7	35
30	F	36/38 (95%)	32 (89%)	2 (6%)	2 (6%)	1	16
31	G	223/225 (99%)	185 (83%)	27 (12%)	11 (5%)	1	17
32	H	204/206 (99%)	186 (91%)	16 (8%)	2 (1%)	12	43

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
33	I	203/205 (99%)	172 (85%)	27 (13%)	4 (2%)	6	32
34	J	155/157 (99%)	125 (81%)	24 (16%)	6 (4%)	2	21
35	K	98/100 (98%)	78 (80%)	16 (16%)	4 (4%)	2	20
36	L	149/151 (99%)	132 (89%)	16 (11%)	1 (1%)	18	50
37	M	127/129 (98%)	117 (92%)	9 (7%)	1 (1%)	16	48
38	N	125/127 (98%)	108 (86%)	11 (9%)	6 (5%)	2	17
39	O	96/98 (98%)	81 (84%)	11 (12%)	4 (4%)	2	20
40	P	114/116 (98%)	91 (80%)	19 (17%)	4 (4%)	3	24
41	Q	121/123 (98%)	101 (84%)	14 (12%)	6 (5%)	1	17
42	R	112/114 (98%)	97 (87%)	12 (11%)	3 (3%)	4	27
43	S	98/100 (98%)	83 (85%)	15 (15%)	0	100	100
44	T	86/88 (98%)	72 (84%)	12 (14%)	2 (2%)	5	30
45	U	80/82 (98%)	68 (85%)	10 (12%)	2 (2%)	4	29
46	V	78/80 (98%)	61 (78%)	14 (18%)	3 (4%)	2	22
47	W	63/65 (97%)	55 (87%)	8 (13%)	0	100	100
48	X	77/79 (98%)	69 (90%)	7 (9%)	1 (1%)	9	38
49	Y	83/85 (98%)	81 (98%)	2 (2%)	0	100	100
50	Z	63/65 (97%)	43 (68%)	17 (27%)	3 (5%)	2	17
51	a	130/234 (56%)	100 (77%)	24 (18%)	6 (5%)	2	18
57	8	117/132 (89%)	98 (84%)	12 (10%)	7 (6%)	1	15
All	All	6036/6290 (96%)	5254 (87%)	662 (11%)	120 (2%)	8	32

All (120) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	b	232	GLY
3	d	83	VAL
6	g	9	VAL
7	h	81	LEU
7	h	118	ILE
7	h	123	ILE
14	o	34	HIS
17	r	55	ASP
29	E	31	ILE
30	F	37	GLN

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Mol	Chain	Res	Type
31	G	15	PHE
31	G	103	TRP
33	I	83	GLY
34	J	11	GLN
34	J	93	VAL
35	K	86	ARG
35	K	94	HIS
37	M	47	ASP
38	N	57	VAL
38	N	90	ASP
40	P	14	GLN
40	P	92	ARG
41	Q	33	CYS
41	Q	77	SER
41	Q	101	LEU
42	R	3	ILE
42	R	65	GLU
44	T	16	ARG
44	T	46	LYS
45	U	79	ASN
45	U	80	LYS
46	V	50	ASN
50	Z	34	ARG
51	a	26	ALA
51	a	170	ILE
51	a	195	ALA
51	a	209	ILE
51	a	211	LYS
57	8	50	GLU
57	8	70	ILE
57	8	131	MET
2	c	134	HIS
5	f	45	ALA
7	h	58	THR
7	h	111	ALA
17	r	70	GLU
18	s	64	ALA
19	t	37	ASP
20	u	56	GLY
22	w	80	ALA
31	G	101	THR
33	I	28	ASP

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Mol	Chain	Res	Type
34	J	121	ASN
34	J	122	VAL
34	J	128	GLY
38	N	71	ILE
40	P	88	PRO
48	X	7	GLY
50	Z	24	LYS
57	8	108	THR
3	d	64	GLY
6	g	118	PRO
9	j	25	LEU
20	u	51	LEU
21	v	81	PRO
23	x	31	ASN
31	G	10	LYS
31	G	12	GLY
31	G	33	ALA
31	G	43	GLU
31	G	193	ASP
36	L	149	ALA
39	O	43	PRO
39	O	58	ASN
41	Q	2	THR
41	Q	116	TYR
50	Z	8	ASN
51	a	6	LYS
3	d	42	GLY
4	e	148	VAL
6	g	96	THR
8	i	89	SER
10	k	110	GLU
20	u	6	ARG
31	G	35	ASN
31	G	148	GLY
31	G	192	PRO
32	H	60	ALA
35	K	39	LEU
35	K	52	ASN
39	O	35	GLN
41	Q	43	LYS
46	V	81	ALA
57	8	10	ILE

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Mol	Chain	Res	Type
57	8	103	LYS
1	b	125	PRO
1	b	254	LYS
2	c	205	PRO
6	g	14	SER
8	i	22	PRO
10	k	89	ASN
20	u	54	PRO
32	H	59	PRO
33	I	32	LYS
38	N	8	THR
38	N	12	LYS
39	O	42	LEU
46	V	17	GLU
12	m	69	PRO
15	p	93	LYS
33	I	47	LEU
34	J	23	THR
57	8	106	ARG
14	o	66	GLY
7	h	89	PRO
30	F	31	PRO
38	N	9	GLY
18	s	74	ILE
42	R	98	GLY
40	P	116	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%)	211 (98%)	5 (2%)	44	62
2	c	164/164 (100%)	162 (99%)	2 (1%)	63	72
3	d	165/165 (100%)	165 (100%)	0	100	100
4	e	148/148 (100%)	147 (99%)	1 (1%)	76	77

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
5	f	137/137 (100%)	135 (98%)	2 (2%)	57	68
6	g	114/114 (100%)	113 (99%)	1 (1%)	70	75
7	h	100/123 (81%)	100 (100%)	0	100	100
8	i	109/110 (99%)	108 (99%)	1 (1%)	70	75
9	j	116/116 (100%)	115 (99%)	1 (1%)	70	75
10	k	103/103 (100%)	102 (99%)	1 (1%)	68	74
11	l	102/102 (100%)	102 (100%)	0	100	100
12	m	109/109 (100%)	109 (100%)	0	100	100
13	n	100/100 (100%)	99 (99%)	1 (1%)	68	74
14	o	86/86 (100%)	85 (99%)	1 (1%)	63	72
15	p	99/99 (100%)	99 (100%)	0	100	100
16	q	89/89 (100%)	89 (100%)	0	100	100
17	r	84/84 (100%)	81 (96%)	3 (4%)	31	54
18	s	93/93 (100%)	93 (100%)	0	100	100
19	t	80/80 (100%)	80 (100%)	0	100	100
20	u	83/83 (100%)	83 (100%)	0	100	100
21	v	78/78 (100%)	76 (97%)	2 (3%)	40	60
22	w	57/57 (100%)	57 (100%)	0	100	100
23	x	67/67 (100%)	67 (100%)	0	100	100
24	y	55/55 (100%)	55 (100%)	0	100	100
25	z	48/48 (100%)	48 (100%)	0	100	100
26	B	47/47 (100%)	47 (100%)	0	100	100
27	C	45/45 (100%)	43 (96%)	2 (4%)	25	50
28	D	38/38 (100%)	38 (100%)	0	100	100
29	E	51/51 (100%)	51 (100%)	0	100	100
30	F	34/34 (100%)	34 (100%)	0	100	100
31	G	186/186 (100%)	184 (99%)	2 (1%)	65	73
32	H	170/170 (100%)	169 (99%)	1 (1%)	78	79
33	I	172/172 (100%)	171 (99%)	1 (1%)	78	79
34	J	119/119 (100%)	117 (98%)	2 (2%)	53	67
35	K	87/87 (100%)	86 (99%)	1 (1%)	65	73

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
36	L	124/124 (100%)	124 (100%)	0	100	100
37	M	104/104 (100%)	103 (99%)	1 (1%)	68	74
38	N	105/105 (100%)	105 (100%)	0	100	100
39	O	86/86 (100%)	86 (100%)	0	100	100
40	P	89/89 (100%)	89 (100%)	0	100	100
41	Q	103/103 (100%)	103 (100%)	0	100	100
42	R	92/92 (100%)	88 (96%)	4 (4%)	26	50
43	S	83/83 (100%)	83 (100%)	0	100	100
44	T	76/76 (100%)	76 (100%)	0	100	100
45	U	65/65 (100%)	65 (100%)	0	100	100
46	V	74/74 (100%)	74 (100%)	0	100	100
47	W	56/56 (100%)	54 (96%)	2 (4%)	31	54
48	X	70/70 (100%)	69 (99%)	1 (1%)	59	70
49	Y	65/65 (100%)	64 (98%)	1 (2%)	57	68
50	Z	55/55 (100%)	55 (100%)	0	100	100
51	a	110/181 (61%)	108 (98%)	2 (2%)	51	67
57	8	101/108 (94%)	98 (97%)	3 (3%)	36	57
All	All	5009/5111 (98%)	4965 (99%)	44 (1%)	68	75

All (44) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	b	97	ASP
1	b	129	LEU
1	b	134	ILE
1	b	140	VAL
1	b	203	VAL
2	c	98	VAL
2	c	142	VAL
4	e	107	VAL
5	f	72	ASN
5	f	132	LEU
6	g	146	VAL
8	i	23	VAL
9	j	57	LEU
10	k	110	GLU

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Mol	Chain	Res	Type
13	n	74	GLU
14	o	12	THR
17	r	29	THR
17	r	54	VAL
17	r	75	VAL
21	v	20	LEU
21	v	45	ASP
27	C	22	THR
27	C	31	GLU
31	G	185	ILE
31	G	222	GLU
32	H	102	ILE
33	I	97	LEU
34	J	10	LEU
34	J	130	THR
35	K	55	HIS
37	M	100	ILE
42	R	63	VAL
42	R	65	GLU
42	R	82	LEU
42	R	96	VAL
47	W	13	THR
47	W	21	ASP
48	X	23	GLU
49	Y	28	ARG
51	a	173	THR
51	a	209	ILE
57	8	17	ILE
57	8	48	LEU
57	8	52	TYR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (137) such sidechains are listed below:

Mol	Chain	Res	Type
1	b	20	ASN
1	b	52	HIS
1	b	259	ASN
2	c	32	ASN
2	c	36	GLN
2	c	42	ASN
2	c	130	GLN
2	c	148	GLN

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Mol	Chain	Res	Type
2	c	164	GLN
3	d	9	GLN
3	d	90	GLN
3	d	92	HIS
3	d	97	ASN
3	d	136	GLN
3	d	163	ASN
3	d	165	HIS
3	d	195	GLN
4	e	26	GLN
4	e	36	ASN
5	f	19	ASN
5	f	37	ASN
5	f	72	ASN
5	f	103	ASN
5	f	110	HIS
5	f	115	GLN
6	g	28	ASN
6	g	33	GLN
6	g	66	ASN
6	g	135	HIS
6	g	145	ASN
7	h	57	ASN
7	h	88	HIS
7	h	103	ASN
7	h	122	GLN
8	i	18	ASN
8	i	42	ASN
8	i	104	GLN
8	i	110	GLN
9	j	58	ASN
10	k	3	GLN
10	k	82	ASN
10	k	88	ASN
12	m	13	HIS
12	m	22	GLN
12	m	45	GLN
13	n	62	ASN
14	o	104	GLN
15	p	11	GLN
15	p	14	GLN
15	p	51	ASN

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Mol	Chain	Res	Type
15	p	55	HIS
16	q	19	GLN
16	q	36	GLN
16	q	43	GLN
16	q	55	GLN
16	q	65	ASN
17	r	12	HIS
17	r	18	GLN
17	r	43	ASN
17	r	82	HIS
18	s	7	HIS
19	t	59	ASN
19	t	72	GLN
20	u	26	ASN
20	u	73	ASN
21	v	49	ASN
21	v	78	GLN
21	v	87	GLN
22	w	72	ASN
23	x	5	GLN
24	y	15	ASN
24	y	20	ASN
24	y	25	GLN
24	y	36	GLN
26	B	5	ASN
28	D	13	ASN
31	G	50	ASN
31	G	57	ASN
31	G	119	GLN
31	G	121	GLN
31	G	176	ASN
32	H	31	ASN
32	H	99	GLN
32	H	101	ASN
32	H	122	GLN
32	H	184	ASN
33	I	53	GLN
33	I	70	GLN
33	I	125	ASN
33	I	130	ASN
34	J	11	GLN
34	J	96	GLN

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Mol	Chain	Res	Type
34	J	145	ASN
35	K	46	GLN
35	K	55	HIS
35	K	81	ASN
36	L	8	GLN
36	L	27	ASN
36	L	51	GLN
36	L	141	HIS
37	M	15	ASN
37	M	37	ASN
37	M	117	GLN
38	N	4	GLN
38	N	74	GLN
39	O	20	GLN
39	O	58	ASN
40	P	108	ASN
40	P	117	HIS
41	Q	4	ASN
41	Q	5	GLN
41	Q	111	GLN
43	S	42	ASN
43	S	48	GLN
44	T	19	ASN
44	T	27	GLN
44	T	34	GLN
44	T	36	ASN
44	T	79	GLN
45	U	9	HIS
45	U	18	GLN
45	U	26	ASN
45	U	40	ASN
45	U	63	GLN
46	V	46	HIS
47	W	30	ASN
47	W	51	GLN
47	W	53	GLN
48	X	51	HIS
49	Y	47	GLN
49	Y	51	ASN
49	Y	54	GLN
49	Y	60	GLN
49	Y	67	HIS

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Mol	Chain	Res	Type
49	Y	77	ASN
51	a	188	ASN
57	8	38	HIS

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
52	3	1538/1539 (99%)	170 (11%)	0
53	1	2902/2903 (99%)	341 (11%)	9 (0%)
54	2	119/120 (99%)	11 (9%)	0
55	5	76/77 (98%)	10 (13%)	0
56	4	15/16 (93%)	2 (13%)	0
All	All	4650/4655 (99%)	534 (11%)	9 (0%)

All (534) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
52	3	4	U
52	3	6	G
52	3	9	G
52	3	31	G
52	3	32	A
52	3	39	G
52	3	48	C
52	3	51	A
52	3	65	A
52	3	66	A
52	3	71	A
52	3	75	G
52	3	83	C
52	3	84	U
52	3	94	G
52	3	100	G
52	3	121	U
52	3	122	G
52	3	130	A
52	3	144	G
52	3	146	G
52	3	154	U
52	3	173	U
52	3	177	G

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Mol	Chain	Res	Type
52	3	183	C
52	3	184	G
52	3	210	C
52	3	211	G
52	3	212	G
52	3	246	A
52	3	247	G
52	3	251	G
52	3	253	A
52	3	266	G
52	3	267	C
52	3	280	C
52	3	281	G
52	3	289	G
52	3	316	C
52	3	328	C
52	3	345	C
52	3	352	C
52	3	367	U
52	3	372	C
52	3	398	U
52	3	413	G
52	3	422	C
52	3	423	G
52	3	428	G
52	3	429	U
52	3	446	G
52	3	448	A
52	3	452	A
52	3	453	G
52	3	468	A
52	3	474	G
52	3	479	U
52	3	480	U
52	3	484	G
52	3	485	U
52	3	486	U
52	3	518	C
52	3	532	A
52	3	547	A
52	3	561	U
52	3	564	C

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Mol	Chain	Res	Type
52	3	572	A
52	3	573	A
52	3	575	G
52	3	576	C
52	3	577	G
52	3	633	G
52	3	665	A
52	3	687	A
52	3	703	G
52	3	713	G
52	3	724	G
52	3	755	G
52	3	777	A
52	3	794	A
52	3	814	A
52	3	817	C
52	3	818	G
52	3	819	A
52	3	821	G
52	3	832	G
52	3	842	U
52	3	843	U
52	3	844	G
52	3	845	A
52	3	846	G
52	3	871	U
52	3	872	A
52	3	902	G
52	3	934	C
52	3	935	A
52	3	960	U
52	3	966	G
52	3	968	A
52	3	969	A
52	3	975	A
52	3	976	G
52	3	977	A
52	3	991	U
52	3	992	U
52	3	993	G
52	3	1004	A
52	3	1029	U

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Mol	Chain	Res	Type
52	3	1031	C
52	3	1032	G
52	3	1033	G
52	3	1045	C
52	3	1053	G
52	3	1054	C
52	3	1055	A
52	3	1094	G
52	3	1101	A
52	3	1109	C
52	3	1136	C
52	3	1137	C
52	3	1138	G
52	3	1139	G
52	3	1159	U
52	3	1168	U
52	3	1182	G
52	3	1184	G
52	3	1196	A
52	3	1198	G
52	3	1201	A
52	3	1202	U
52	3	1212	U
52	3	1213	A
52	3	1225	A
52	3	1238	A
52	3	1240	U
52	3	1241	G
52	3	1256	A
52	3	1258	G
52	3	1260	G
52	3	1275	A
52	3	1278	G
52	3	1280	A
52	3	1287	A
52	3	1300	G
52	3	1317	C
52	3	1331	G
52	3	1337	G
52	3	1346	A
52	3	1347	G
52	3	1363	A

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Mol	Chain	Res	Type
52	3	1378	C
52	3	1379	G
52	3	1395	C
52	3	1398	A
52	3	1429	A
52	3	1446	A
52	3	1448	C
52	3	1451	U
52	3	1452	C
52	3	1475	G
52	3	1492	A
52	3	1502	A
52	3	1503	A
52	3	1506	U
52	3	1507	A
52	3	1517	G
52	3	1529	G
52	3	1530	G
52	3	1533	C
52	3	1535	C
53	1	10	A
53	1	12	U
53	1	34	U
53	1	35	G
53	1	46	G
53	1	51	G
53	1	63	A
53	1	71	A
53	1	74	A
53	1	75	G
53	1	91	A
53	1	119	A
53	1	120	U
53	1	141	G
53	1	162	U
53	1	163	C
53	1	181	A
53	1	196	A
53	1	199	A
53	1	216	A
53	1	221	A
53	1	222	A

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Mol	Chain	Res	Type
53	1	228	C
53	1	229	C
53	1	248	G
53	1	249	C
53	1	255	A
53	1	266	G
53	1	276	U
53	1	278	A
53	1	294	A
53	1	301	G
53	1	311	A
53	1	323	C
53	1	324	A
53	1	329	G
53	1	330	A
53	1	333	G
53	1	362	A
53	1	363	G
53	1	371	A
53	1	372	G
53	1	383	C
53	1	386	G
53	1	387	U
53	1	404	A
53	1	411	G
53	1	412	A
53	1	422	A
53	1	424	G
53	1	451	U
53	1	457	A
53	1	480	A
53	1	481	G
53	1	482	A
53	1	491	G
53	1	504	A
53	1	505	A
53	1	529	A
53	1	531	C
53	1	532	A
53	1	543	G
53	1	548	G
53	1	549	G

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Mol	Chain	Res	Type
53	1	550	C
53	1	563	A
53	1	573	U
53	1	574	A
53	1	575	A
53	1	588	U
53	1	603	A
53	1	615	U
53	1	627	A
53	1	637	A
53	1	646	U
53	1	651	G
53	1	654	A
53	1	669	G
53	1	686	U
53	1	687	C
53	1	695	G
53	1	730	A
53	1	747	C
53	1	752	A
53	1	764	A
53	1	774	G
53	1	776	G
53	1	782	A
53	1	784	G
53	1	785	G
53	1	789	A
53	1	805	G
53	1	812	C
53	1	819	A
53	1	827	U
53	1	828	U
53	1	830	G
53	1	846	U
53	1	847	U
53	1	859	G
53	1	860	U
53	1	878	A
53	1	887	U
53	1	896	A
53	1	897	C
53	1	900	A

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Mol	Chain	Res	Type
53	1	910	A
53	1	915	C
53	1	932	U
53	1	941	A
53	1	946	C
53	1	961	C
53	1	974	G
53	1	983	A
53	1	985	C
53	1	995	C
53	1	996	A
53	1	1009	A
53	1	1012	U
53	1	1013	C
53	1	1021	A
53	1	1022	G
53	1	1033	U
53	1	1046	A
53	1	1047	G
53	1	1062	G
53	1	1065	U
53	1	1066	U
53	1	1067	A
53	1	1068	G
53	1	1070	A
53	1	1071	G
53	1	1075	C
53	1	1084	A
53	1	1088	A
53	1	1089	A
53	1	1090	A
53	1	1104	C
53	1	1111	A
53	1	1131	G
53	1	1132	U
53	1	1135	C
53	1	1143	A
53	1	1157	G
53	1	1172	C
53	1	1173	U
53	1	1174	U
53	1	1175	A

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Mol	Chain	Res	Type
53	1	1176	U
53	1	1178	C
53	1	1179	G
53	1	1180	U
53	1	1206	G
53	1	1211	C
53	1	1212	G
53	1	1250	G
53	1	1251	C
53	1	1253	A
53	1	1256	G
53	1	1271	G
53	1	1272	A
53	1	1301	A
53	1	1332	G
53	1	1345	C
53	1	1365	A
53	1	1378	A
53	1	1379	U
53	1	1383	A
53	1	1398	C
53	1	1416	G
53	1	1419	A
53	1	1421	G
53	1	1456	G
53	1	1457	U
53	1	1461	C
53	1	1482	G
53	1	1490	A
53	1	1498	C
53	1	1515	A
53	1	1524	G
53	1	1535	A
53	1	1538	G
53	1	1555	G
53	1	1559	U
53	1	1560	G
53	1	1569	A
53	1	1607	C
53	1	1608	A
53	1	1611	C
53	1	1616	A

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Mol	Chain	Res	Type
53	1	1647	U
53	1	1648	U
53	1	1674	G
53	1	1699	G
53	1	1714	U
53	1	1715	G
53	1	1729	U
53	1	1730	C
53	1	1738	G
53	1	1758	U
53	1	1764	C
53	1	1773	A
53	1	1780	A
53	1	1791	A
53	1	1800	C
53	1	1801	A
53	1	1802	A
53	1	1808	A
53	1	1816	C
53	1	1829	A
53	1	1833	C
53	1	1866	A
53	1	1901	A
53	1	1906	G
53	1	1907	G
53	1	1913	A
53	1	1914	C
53	1	1915	U
53	1	1929	G
53	1	1930	G
53	1	1937	A
53	1	1938	A
53	1	1944	U
53	1	1955	U
53	1	1963	U
53	1	1967	C
53	1	1970	A
53	1	1972	G
53	1	1991	U
53	1	1993	U
53	1	1997	C
53	1	2022	U

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Mol	Chain	Res	Type
53	1	2023	C
53	1	2030	A
53	1	2031	A
53	1	2036	C
53	1	2043	C
53	1	2055	C
53	1	2056	G
53	1	2060	A
53	1	2061	G
53	1	2062	A
53	1	2069	G
53	1	2072	C
53	1	2092	U
53	1	2096	C
53	1	2110	G
53	1	2111	U
53	1	2112	G
53	1	2113	U
53	1	2118	U
53	1	2119	A
53	1	2128	G
53	1	2131	U
53	1	2132	U
53	1	2133	G
53	1	2136	G
53	1	2137	U
53	1	2146	C
53	1	2147	A
53	1	2171	A
53	1	2172	U
53	1	2173	A
53	1	2174	C
53	1	2175	C
53	1	2176	A
53	1	2182	U
53	1	2198	A
53	1	2204	G
53	1	2212	A
53	1	2213	U
53	1	2225	A
53	1	2238	G
53	1	2269	G

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Mol	Chain	Res	Type
53	1	2283	C
53	1	2287	A
53	1	2305	U
53	1	2309	A
53	1	2325	G
53	1	2327	A
53	1	2334	U
53	1	2335	A
53	1	2383	G
53	1	2385	C
53	1	2392	A
53	1	2402	U
53	1	2406	A
53	1	2423	U
53	1	2424	C
53	1	2429	G
53	1	2430	A
53	1	2441	U
53	1	2448	A
53	1	2449	U
53	1	2476	A
53	1	2478	A
53	1	2491	U
53	1	2498	C
53	1	2502	G
53	1	2503	A
53	1	2505	G
53	1	2518	A
53	1	2547	A
53	1	2554	U
53	1	2562	U
53	1	2566	A
53	1	2567	G
53	1	2572	A
53	1	2602	A
53	1	2609	U
53	1	2613	U
53	1	2655	G
53	1	2682	A
53	1	2689	U
53	1	2690	U
53	1	2714	G

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Mol	Chain	Res	Type
53	1	2732	G
53	1	2748	A
53	1	2764	A
53	1	2765	A
53	1	2777	G
53	1	2778	A
53	1	2779	U
53	1	2791	G
53	1	2797	U
53	1	2799	A
53	1	2800	A
53	1	2801	G
53	1	2808	G
53	1	2809	A
53	1	2820	A
53	1	2833	U
53	1	2835	A
53	1	2849	U
53	1	2867	G
53	1	2868	A
53	1	2872	A
53	1	2880	C
53	1	2884	U
53	1	2893	A
53	1	2903	U
54	2	4	C
54	2	13	G
54	2	24	G
54	2	35	C
54	2	42	C
54	2	44	G
54	2	67	G
54	2	88	C
54	2	89	U
54	2	90	C
54	2	109	A
55	5	8	U
55	5	9	G
55	5	10	G
55	5	19	G
55	5	20	U
55	5	34	C

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Mol	Chain	Res	Type
55	5	35	A
55	5	47	U
55	5	48	C
55	5	76	A
56	4	14	A
56	4	19	A

All (9) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
53	1	421	C
53	1	481	G
53	1	490	C
53	1	859	G
53	1	1020	A
53	1	1130	U
53	1	2286	G
53	1	2326	C
53	1	2391	G

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

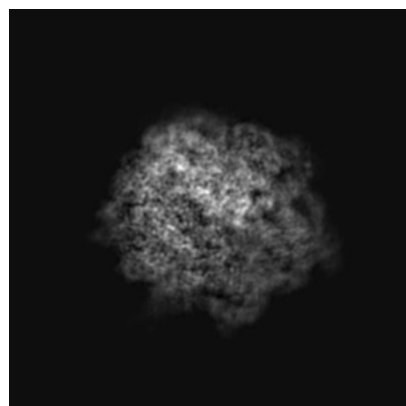
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-22464. These allow visual inspection of the internal detail of the map and identification of artifacts.

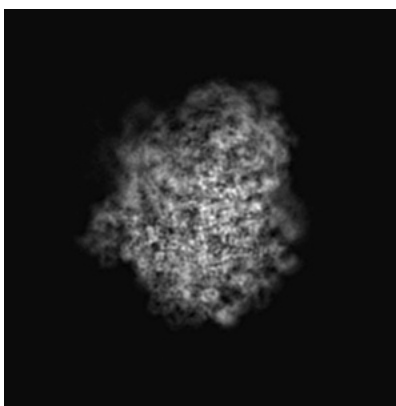
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

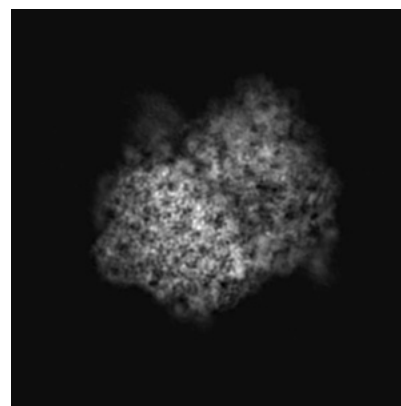
6.1.1 Primary map



X

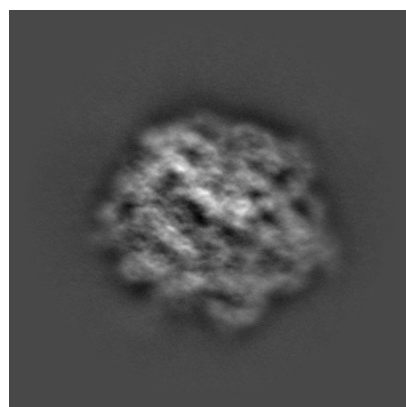


Y

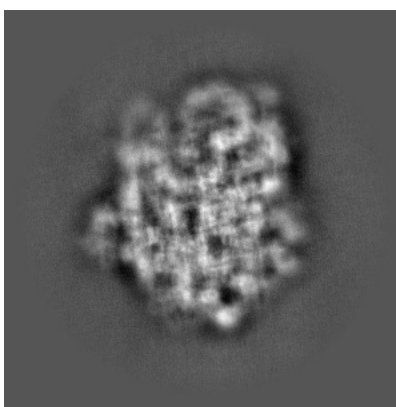


Z

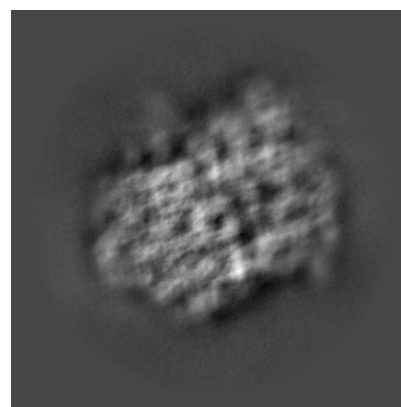
6.1.2 Raw map



X



Y

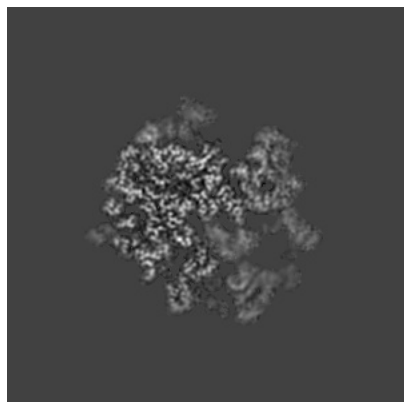


Z

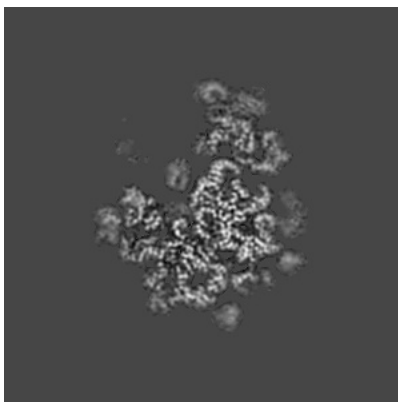
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

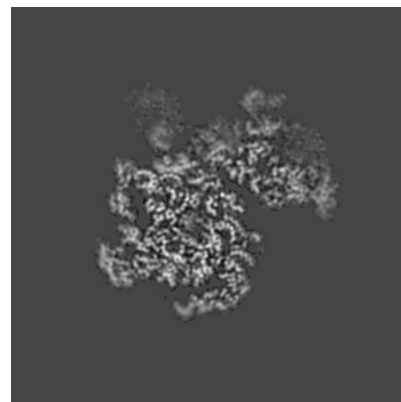
6.2.1 Primary map



X Index: 224

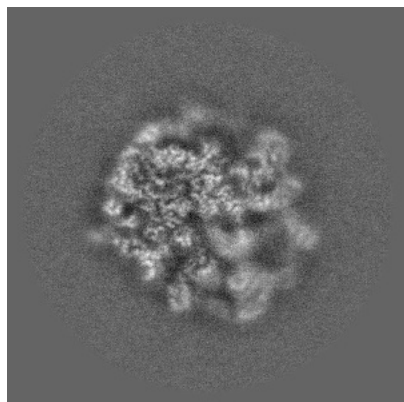


Y Index: 224

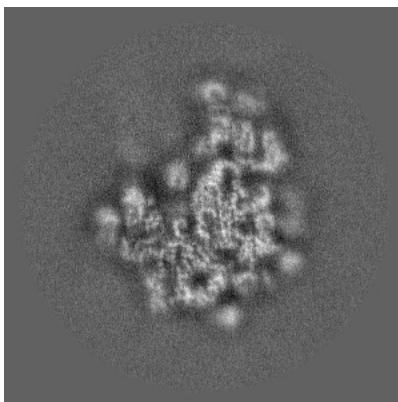


Z Index: 224

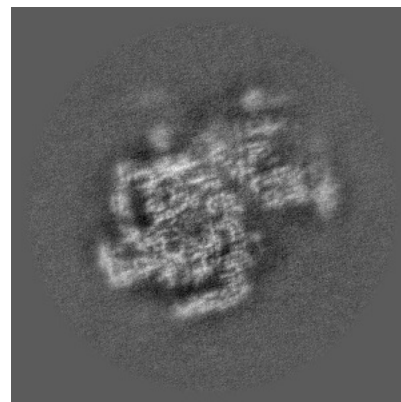
6.2.2 Raw map



X Index: 224



Y Index: 224

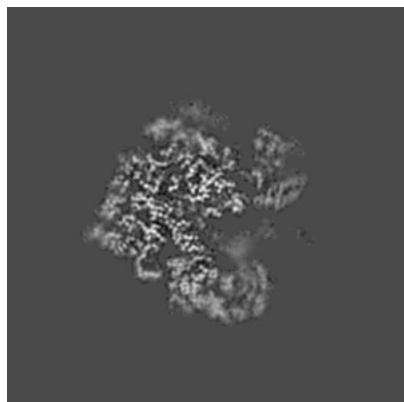


Z Index: 224

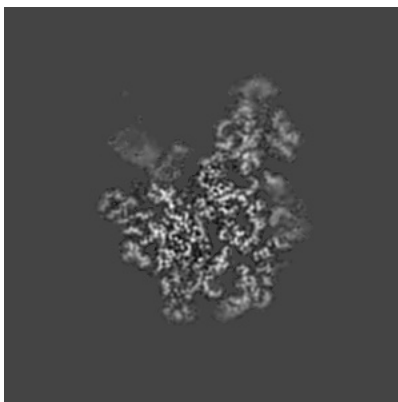
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

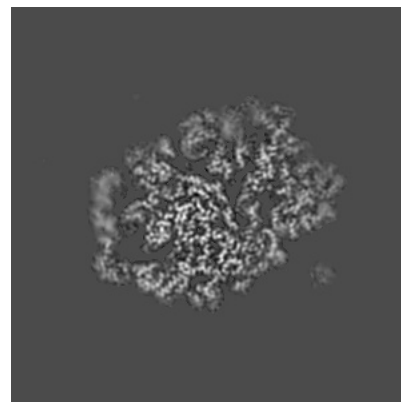
6.3.1 Primary map



X Index: 214

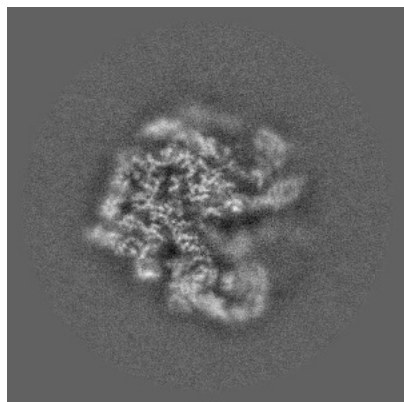


Y Index: 192

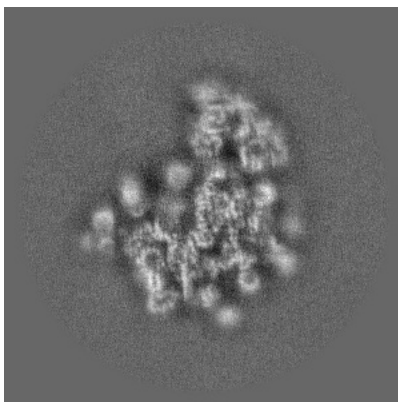


Z Index: 246

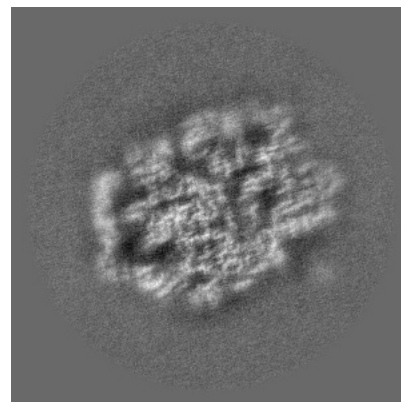
6.3.2 Raw map



X Index: 214



Y Index: 234

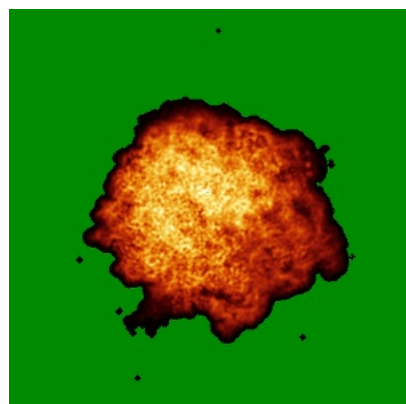


Z Index: 247

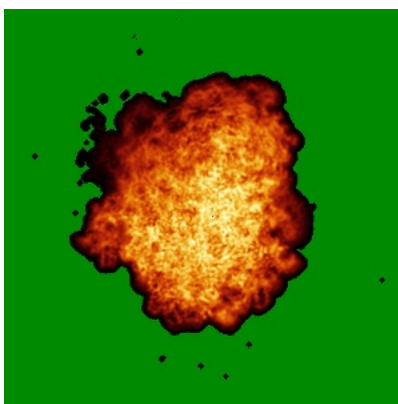
The images above show the largest variance slices of the map in three orthogonal directions.

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

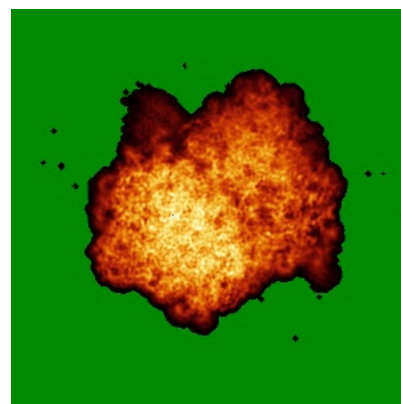
6.4.1 Primary map



X

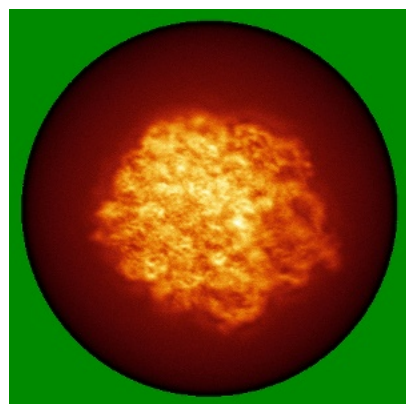


Y

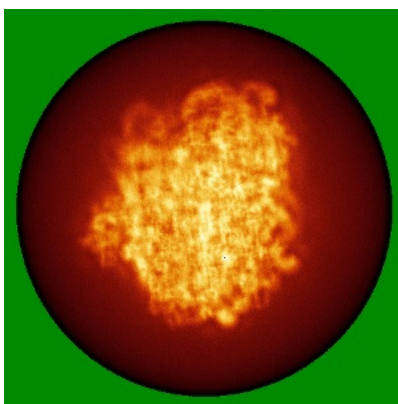


Z

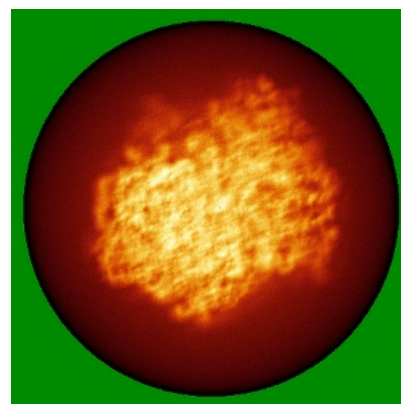
6.4.2 Raw map



X



Y

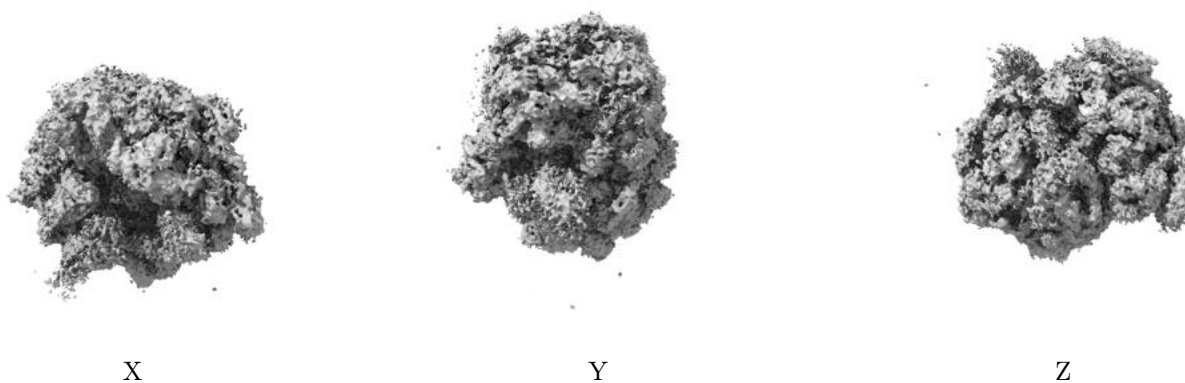


Z

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.

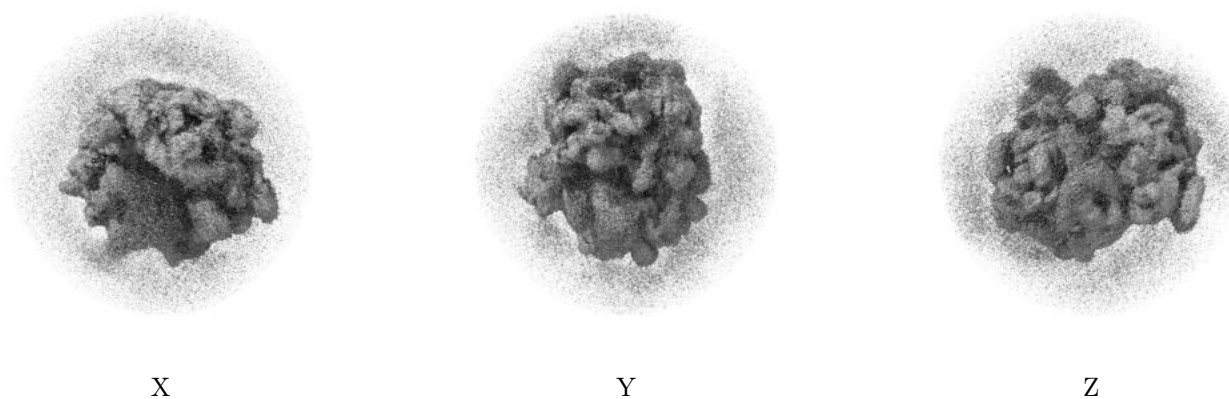
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.8. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

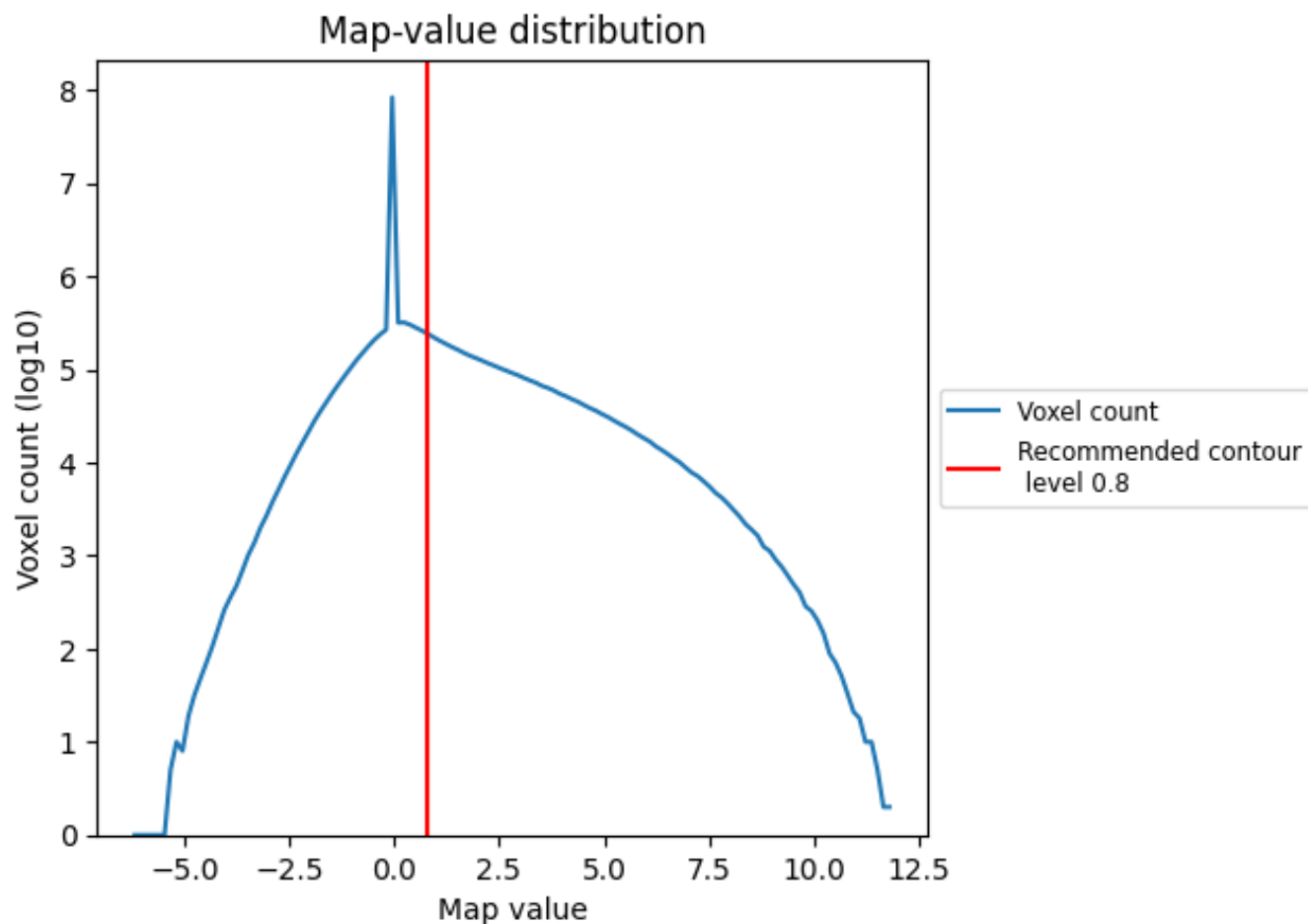
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

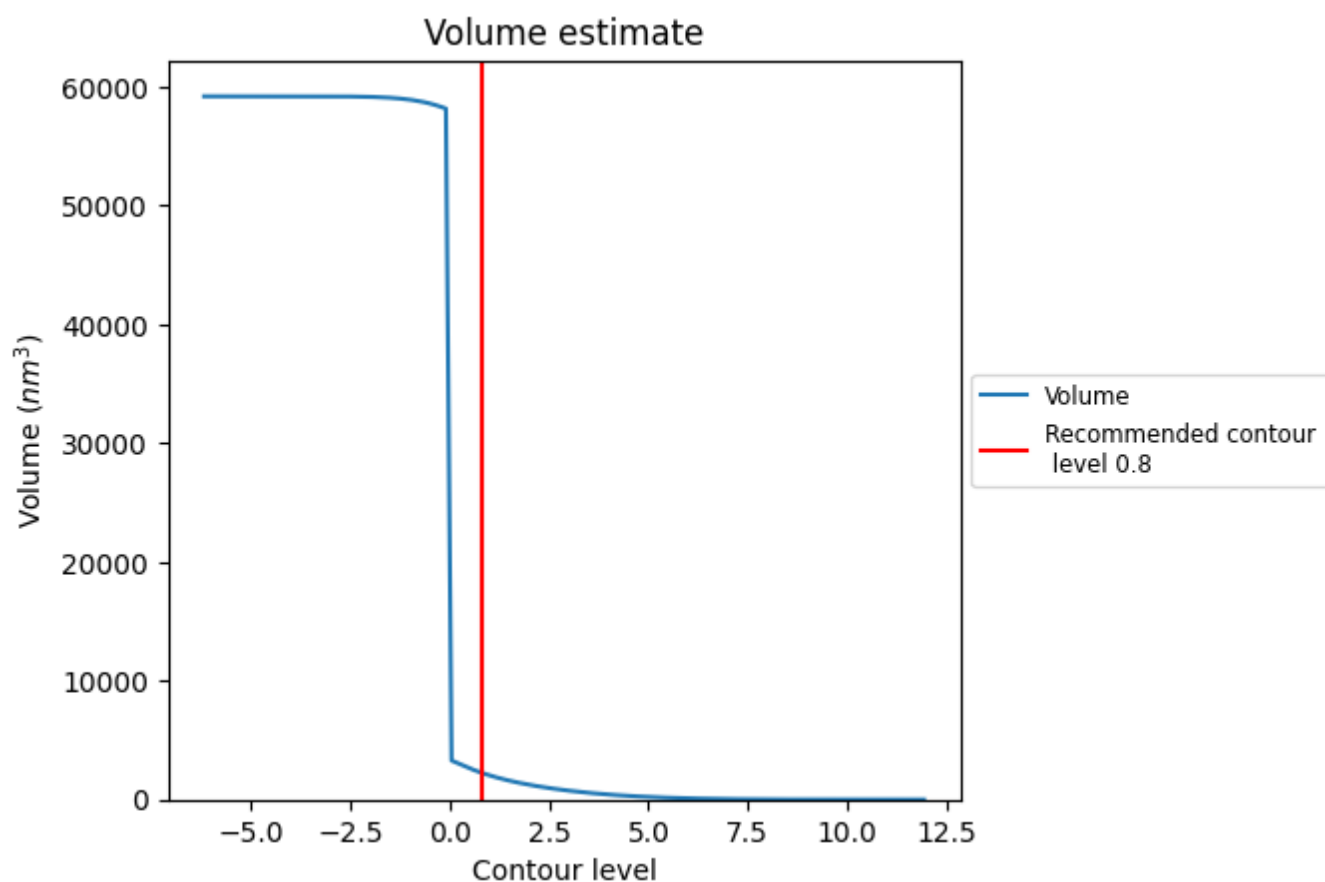
This section contains the results of statistical analysis of the map.

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.

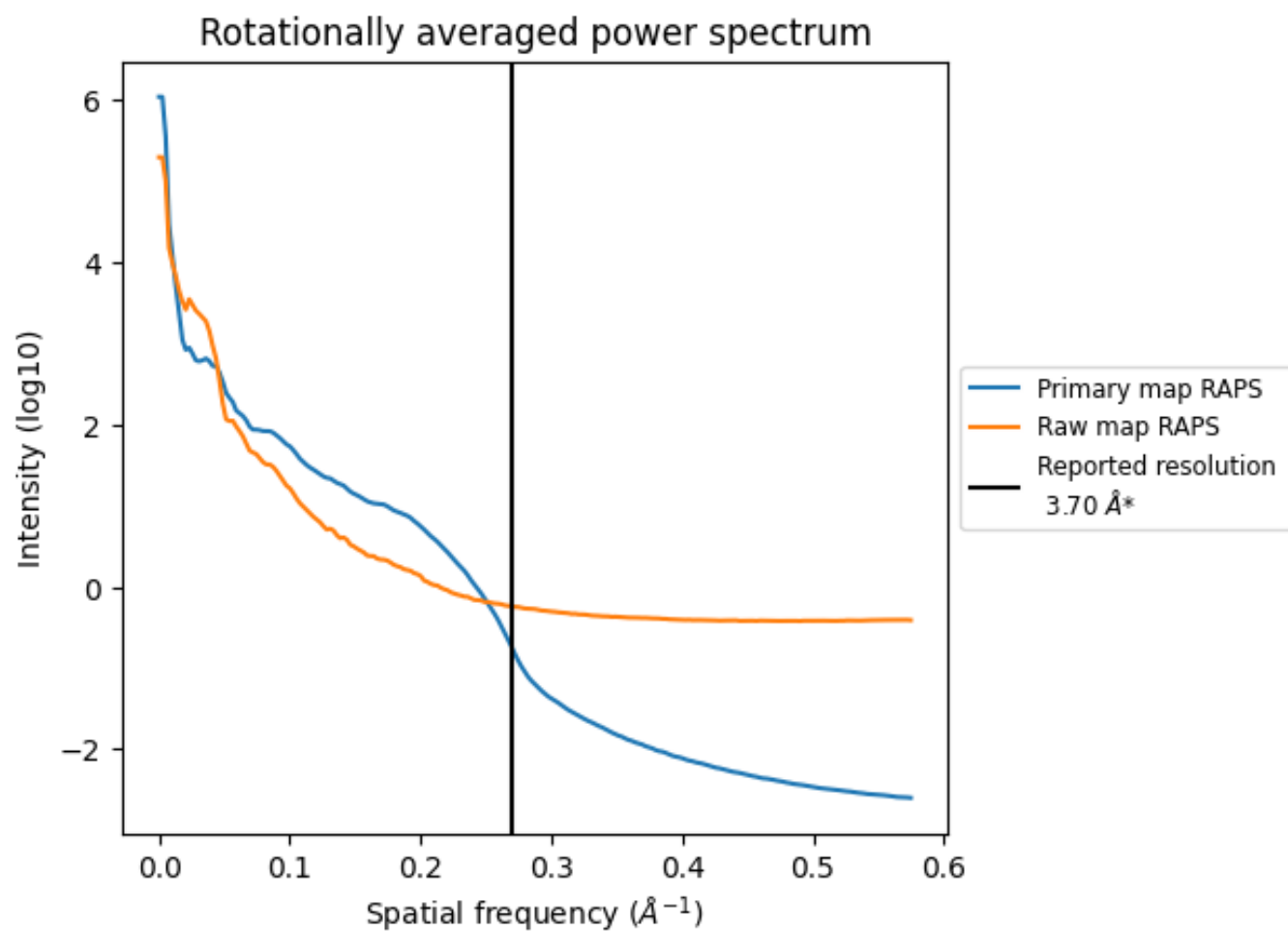
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 2261 nm³; this corresponds to an approximate mass of 2042 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 ⓘ

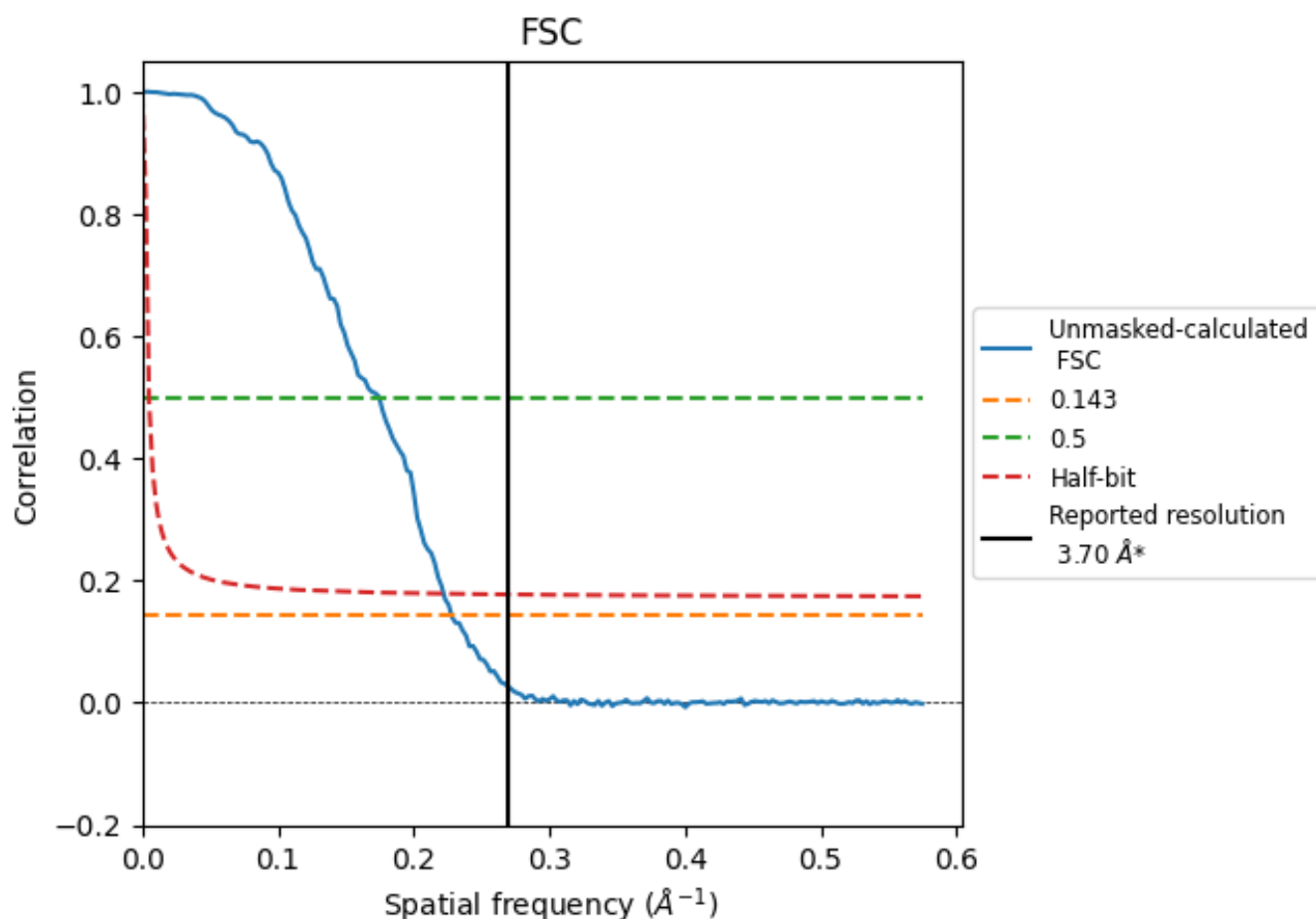


*Reported resolution corresponds to spatial frequency of 0.270 $\text{\AA}^{-1}$

8 Fourier-Shell correlation [i](#)

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.270 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

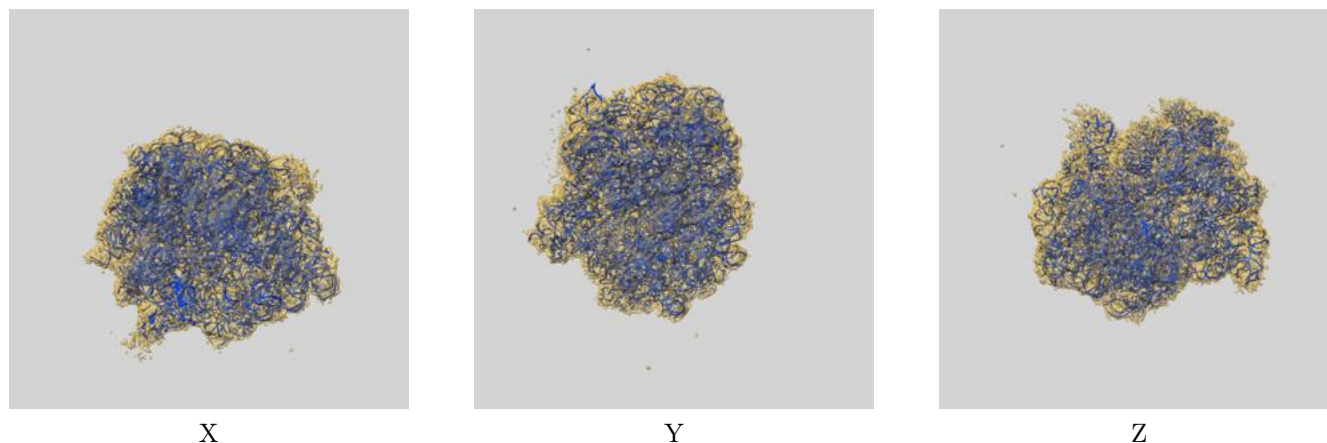
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.70	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	4.39	5.73	4.50

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.39 differs from the reported value 3.7 by more than 10 %

9 Map-model fit [i](#)

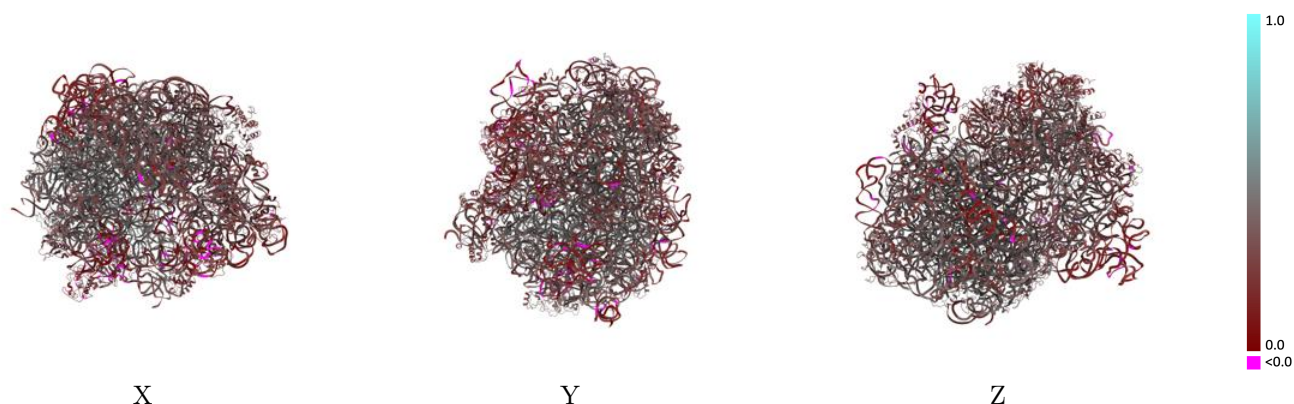
This section contains information regarding the fit between EMDB map EMD-22464 and PDB model 7JSZ. Per-residue inclusion information can be found in section 3 on page 15.

9.1 Map-model overlay [i](#)



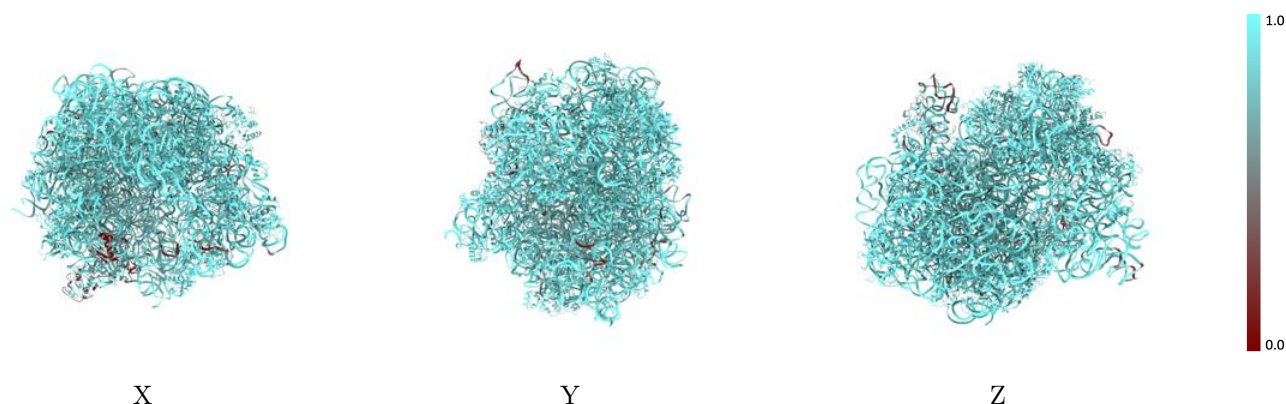
The images above show the 3D surface view of the map at the recommended contour level 0.8 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



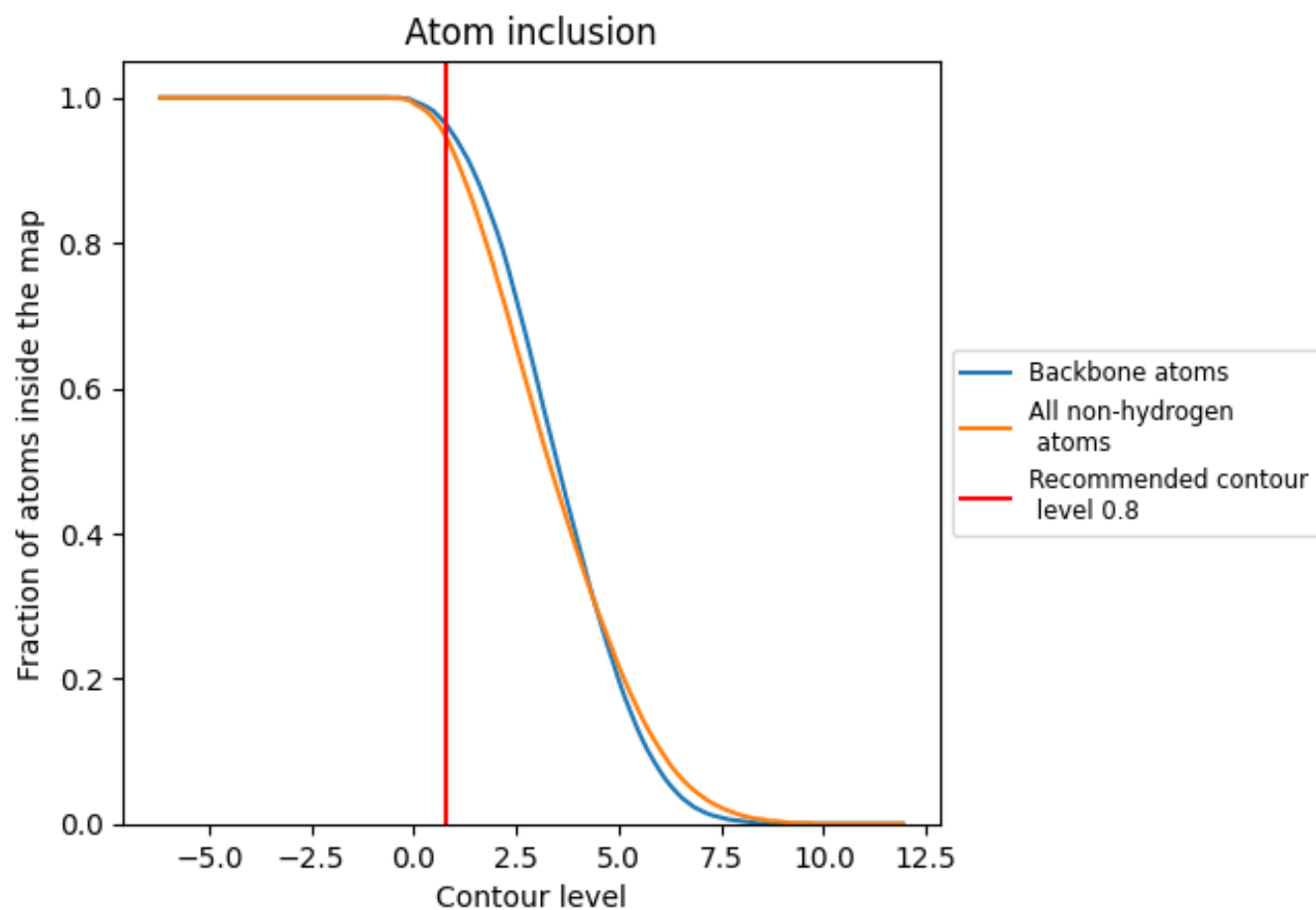
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.8).

9.4 Atom inclusion [i](#)



At the recommended contour level, 96% of all backbone atoms, 94% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.8) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9450	 0.3410
1	 0.9680	 0.3630
2	 0.9860	 0.3090
3	 0.9680	 0.3160
4	 0.9630	 0.2550
5	 0.9050	 0.1990
8	 0.9080	 0.2470
B	 0.9490	 0.4000
C	 0.9430	 0.3830
D	 0.9010	 0.4250
E	 0.9270	 0.4370
F	 0.9280	 0.3730
G	 0.9070	 0.3000
H	 0.9070	 0.3290
I	 0.8840	 0.2900
J	 0.9290	 0.3710
K	 0.9270	 0.2800
L	 0.9140	 0.2680
M	 0.9300	 0.3400
N	 0.9120	 0.2690
O	 0.8350	 0.2850
P	 0.9360	 0.3010
Q	 0.9370	 0.4060
R	 0.9170	 0.2470
S	 0.8720	 0.2770
T	 0.9330	 0.3020
U	 0.9250	 0.3340
V	 0.9590	 0.3650
W	 0.8620	 0.2680
X	 0.9660	 0.2220
Y	 0.9120	 0.3210
Z	 0.8780	 0.2710
a	 0.7280	 0.1850
b	 0.9400	 0.4240
c	 0.9370	 0.4270



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Chain	Atom inclusion	Q-score
d	 0.9300	 0.3850
e	 0.9260	 0.2220
f	 0.9370	 0.3190
g	 0.8220	 0.2840
h	 0.5640	 0.1770
i	 0.3000	 0.1280
j	 0.9460	 0.4160
k	 0.9230	 0.4290
l	 0.9350	 0.4110
m	 0.9380	 0.4150
n	 0.9330	 0.4220
o	 0.9300	 0.3220
p	 0.9530	 0.4210
q	 0.9320	 0.4060
r	 0.9460	 0.4180
s	 0.9310	 0.4210
t	 0.9350	 0.3830
u	 0.9560	 0.3690
v	 0.9500	 0.3750
w	 0.9320	 0.4320
x	 0.9570	 0.3870
y	 0.9280	 0.3060
z	 0.9410	 0.4110