



Full wwPDB EM Validation Report ⓘ

Mar 6, 2026 – 06:52 AM UTC

PDB ID : 7JT1 / pdb_00007jt1
EMDB ID : EMD-22466
Title : 70S ribosome stalled on long mRNA with ArfB-1 and ArfB-2 bound (+9-III)
Authors : Carbone, C.E.; Korostelev, A.A.
Deposited on : 2020-08-16
Resolution : 3.30 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

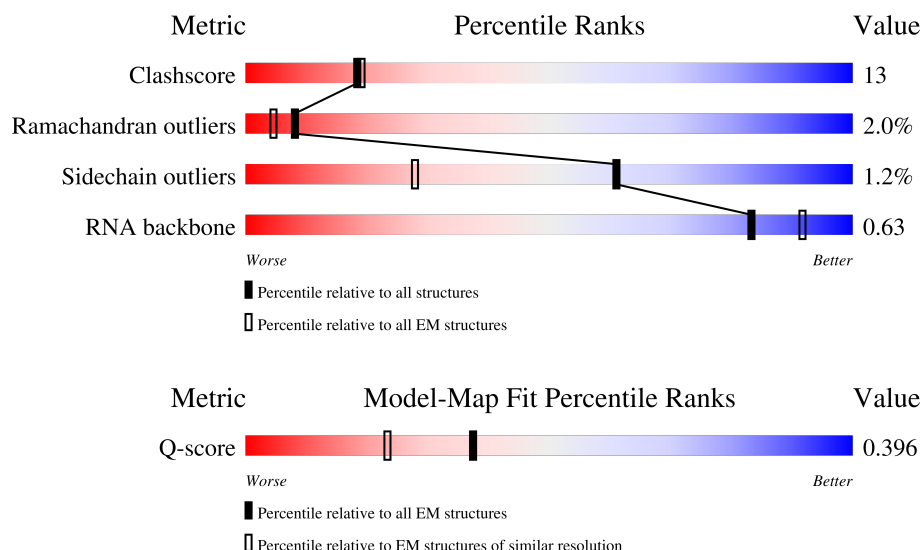
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.30 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.



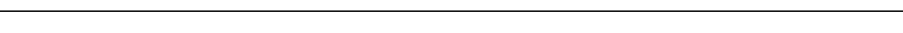
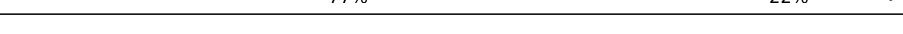
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	15087 (2.80 - 3.80)

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	j	142	
8	k	122	
9	l	143	
10	m	136	
11	n	120	
12	o	116	
13	p	114	
14	q	117	
15	r	103	
16	s	110	
17	t	93	
18	u	102	
19	v	94	
20	w	75	
21	x	77	
22	y	63	
23	z	58	
24	B	56	
25	C	50	
26	D	46	
27	E	64	
28	F	38	

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Mol	Chain	Length	Quality of chain
29	G	225	
30	H	206	
31	I	205	
32	J	157	
33	K	100	
34	L	151	
35	M	129	
36	N	127	
37	O	98	
38	P	116	
39	Q	123	
40	R	114	
41	S	100	
42	T	88	
43	U	82	
44	V	80	
45	W	65	
46	X	79	
47	Y	85	
48	Z	65	
49	3	1539	
50	1	2903	
51	2	120	
52	5	77	
53	4	20	

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Mol	Chain	Length	Quality of chain
54	8	130	29% 65% 6%
54	9	130	38% 18% 5% 38%

2 Entry composition

There are 54 unique types of molecules in this entry. The entry contains 145600 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 L13.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

- Molecule 49 is a RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	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 50 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	1	2903	Total	C	N	O	P	0	0
			62315	27801	11468	20144	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 51 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	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 52 is a RNA chain called tRNA^{fMet}.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	5	77	Total	C	N	O	P	0	0
			1640	732	297	535	76		

- Molecule 53 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	4	20	Total	C	N	O	P	0	0
			439	197	91	131	20		

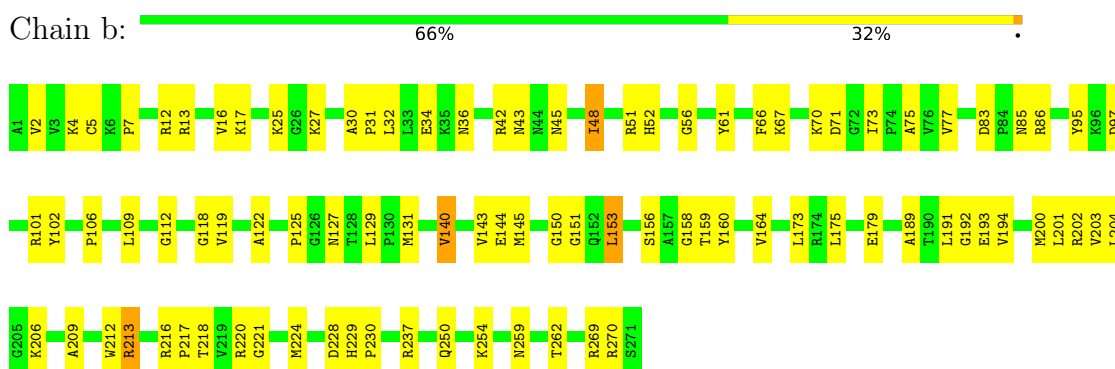
- Molecule 54 is a protein called Peptidyl-tRNA hydrolase ArfB.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	8	130	Total	C	N	O	S	0	0
			1016	627	202	185	2		
54	9	81	Total	C	N	O	S	0	0
			641	405	116	119	1		

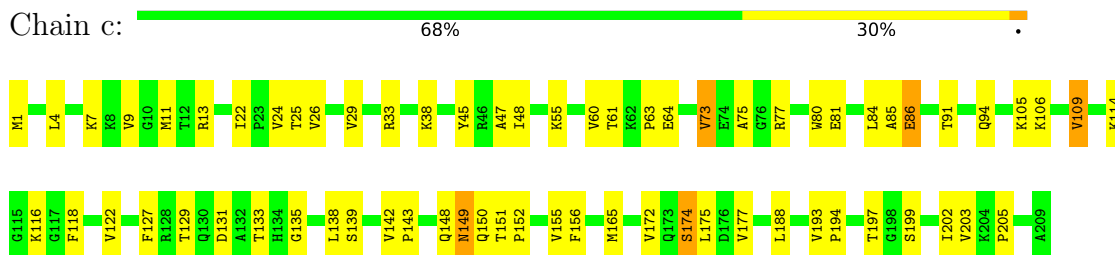
3 Residue-property plots

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.

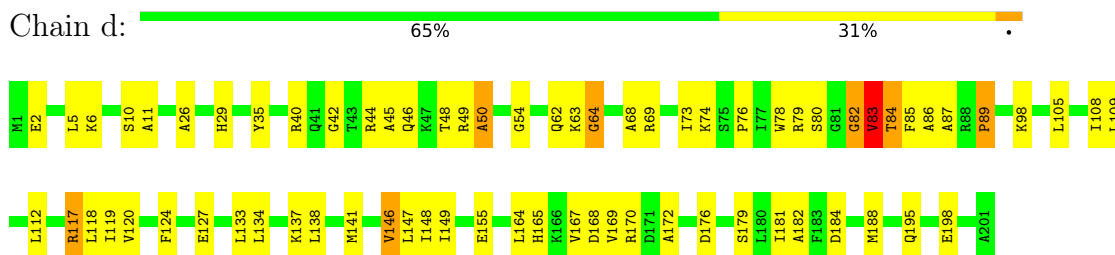
- Molecule 1: 50S ribosomal protein L2



- Molecule 2: 50S ribosomal protein L3

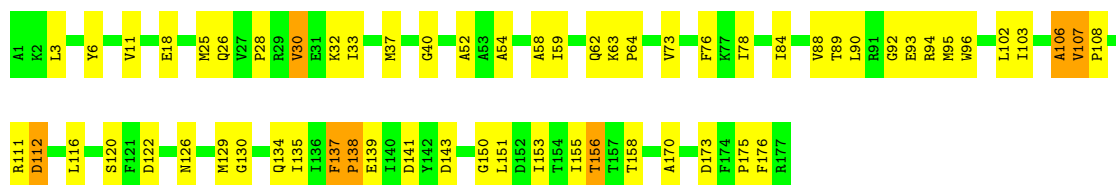


- Molecule 3: 50S ribosomal protein L4



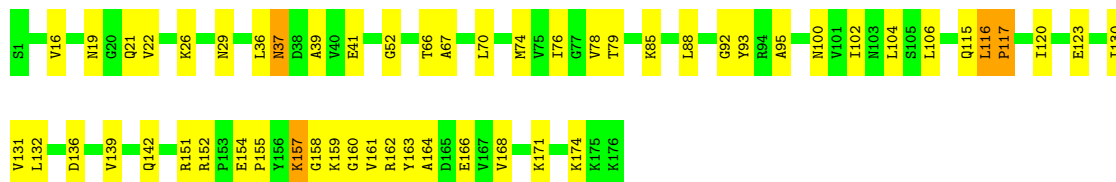
- Molecule 4: 50S ribosomal protein L5





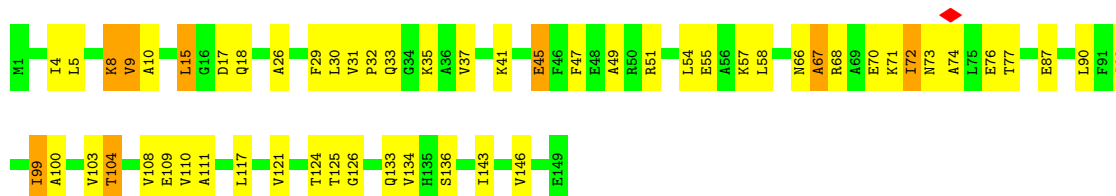
• Molecule 5: 50S ribosomal protein L6

Chain f: 69% 28% .



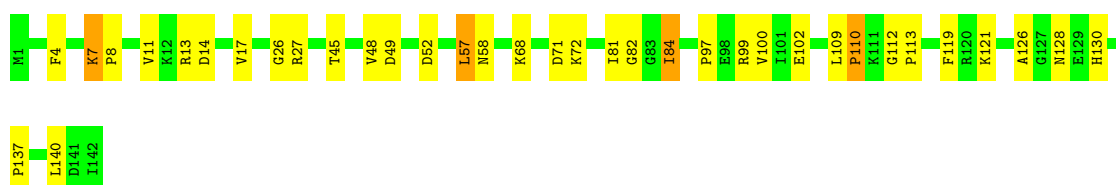
• Molecule 6: 50S ribosomal protein L9

Chain g: 62% 32% 5% .



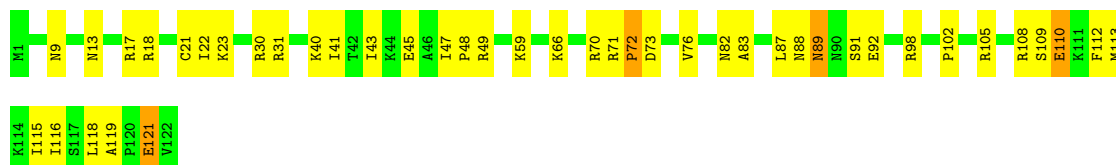
• Molecule 7: 50S ribosomal protein L13

Chain j: 75% 23% .



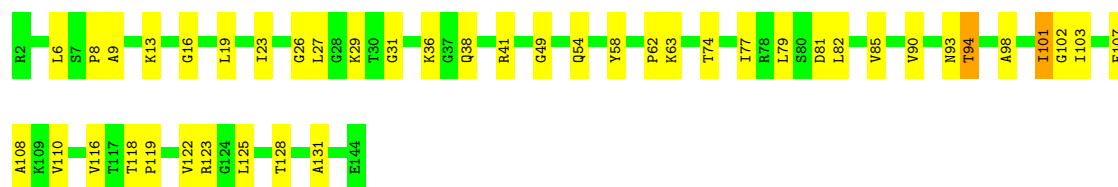
• Molecule 8: 50S ribosomal protein L14

Chain k: 65% 32% .



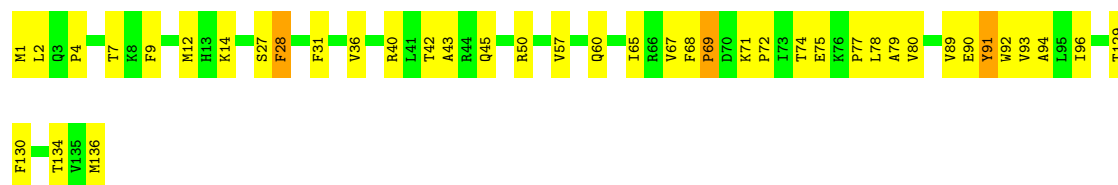
• Molecule 9: 50S ribosomal protein L15

Chain l:  70% 29% .



• Molecule 10: 50S ribosomal protein L16

Chain m:  70% 28% .



• Molecule 11: 50S ribosomal protein L17

Chain n:  73% 24% ..



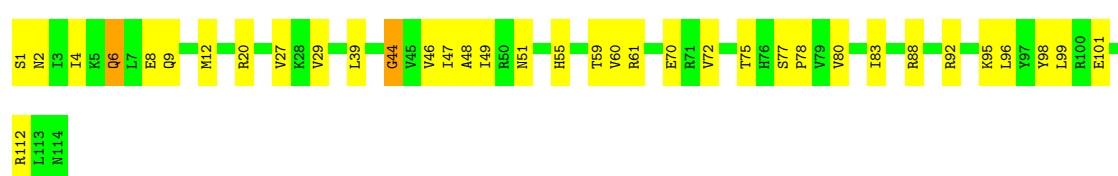
• Molecule 12: 50S ribosomal protein L18

Chain o:  74% 25% .



• Molecule 13: 50S ribosomal protein L19

Chain p:  68% 30% .



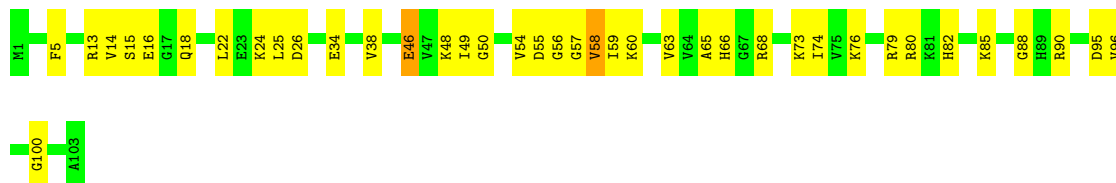
• Molecule 14: 50S ribosomal protein L20

Chain q:  75% 24% .



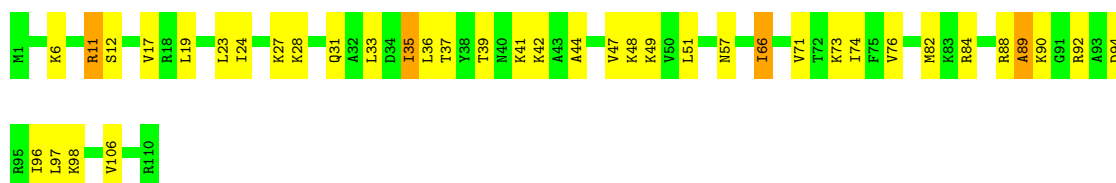
- Molecule 15: 50S ribosomal protein L21

Chain r:  62% 36%



- Molecule 16: 50S ribosomal protein L22

Chain s:  65% 32%



- Molecule 17: 50S ribosomal protein L23

Chain t:  70% 28%



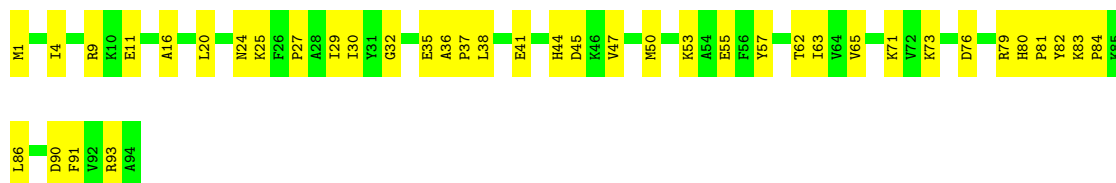
- Molecule 18: 50S ribosomal protein L24

Chain u:  77% 22%



- Molecule 19: 50S ribosomal protein L25

Chain v:  57% 43%

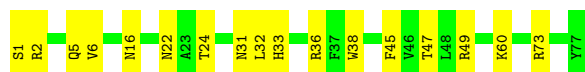
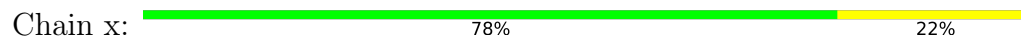


- Molecule 20: 50S ribosomal protein L27

Chain w:  80% 20%



- Molecule 21: 50S ribosomal protein L28



- Molecule 22: 50S ribosomal protein L29



- Molecule 23: 50S ribosomal protein L30



- Molecule 24: 50S ribosomal protein L32



- Molecule 25: 50S ribosomal protein L33

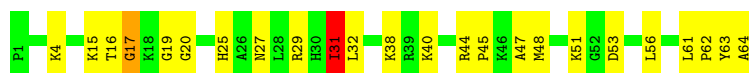


- Molecule 26: 50S ribosomal protein L34



- Molecule 27: 50S ribosomal protein L35





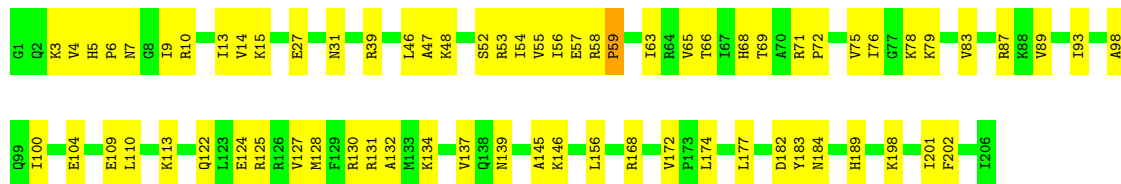
- Molecule 28: 50S ribosomal protein L36



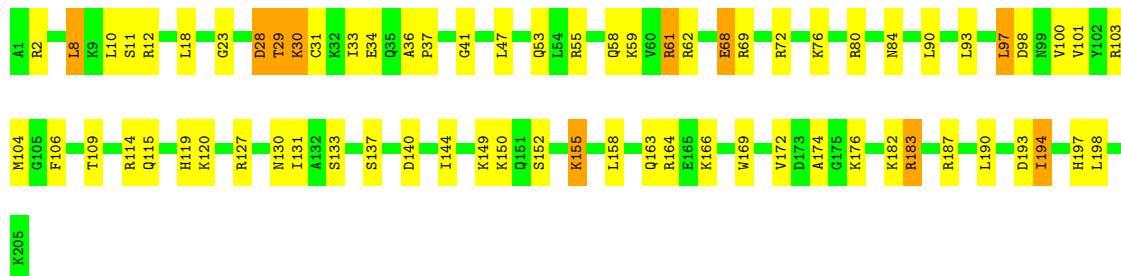
- Molecule 29: 30S ribosomal protein S2



- Molecule 30: 30S ribosomal protein S3

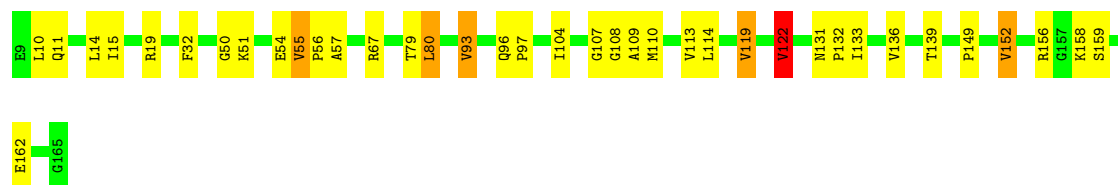


- Molecule 31: 30S ribosomal protein S4



- Molecule 32: 30S ribosomal protein S5





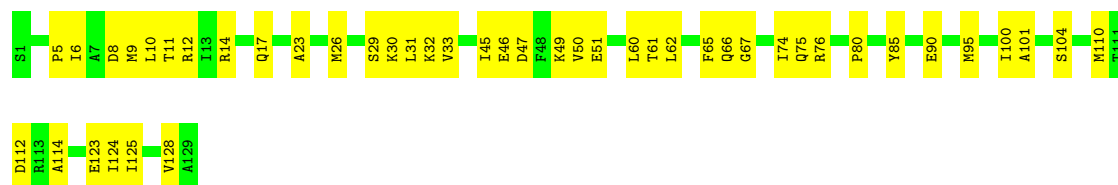
- Molecule 33: 30S ribosomal protein S6



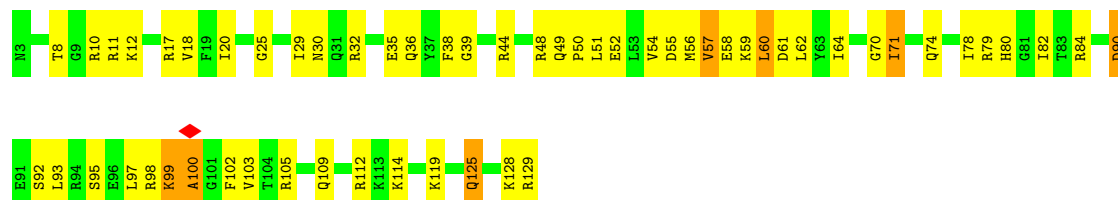
- Molecule 34: 30S ribosomal protein S7



- Molecule 35: 30S ribosomal protein S8

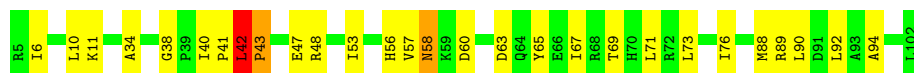


- Molecule 36: 30S ribosomal protein S9



- Molecule 37: 30S ribosomal protein S10

Chain O:  71% 26% ..



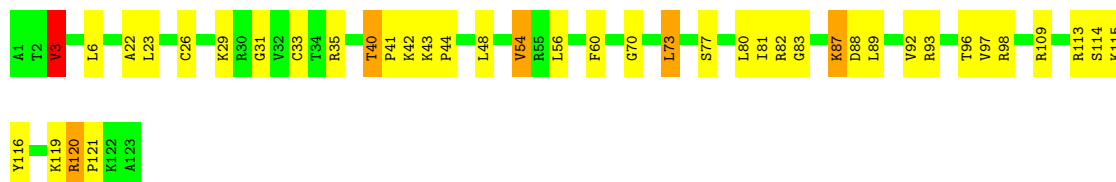
- Molecule 38: 30S ribosomal protein S11

Chain P:  59% 38% .



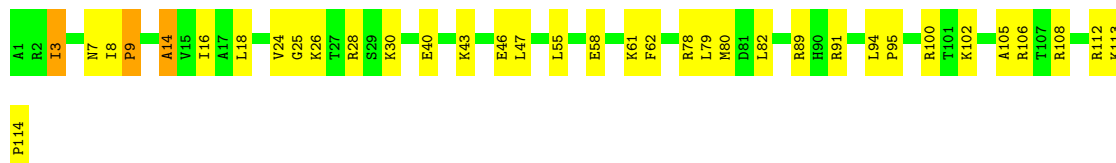
- Molecule 39: 30S ribosomal protein S12

Chain Q:  67% 28% ..



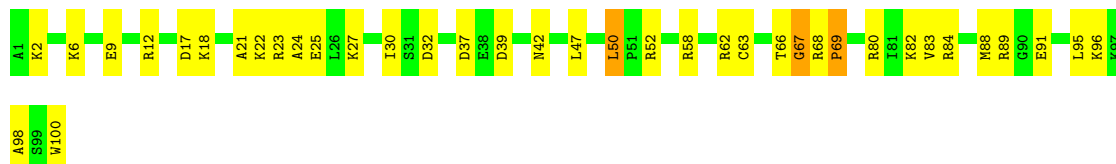
- Molecule 40: 30S ribosomal protein S13

Chain R:  68% 29% .



- Molecule 41: 30S ribosomal protein S14

Chain S:  62% 35% .



- Molecule 42: 30S ribosomal protein S15

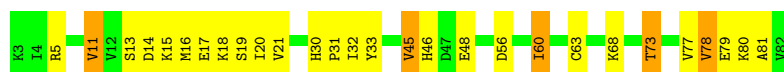
Chain T:  74% 26%



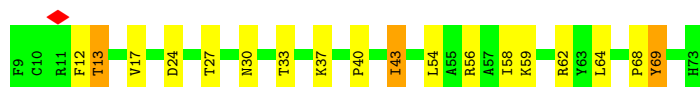
- Molecule 43: 30S ribosomal protein S16



- Molecule 44: 30S ribosomal protein S17



- Molecule 45: 30S ribosomal protein S18



- Molecule 46: 30S ribosomal protein S19



- Molecule 47: 30S ribosomal protein S20



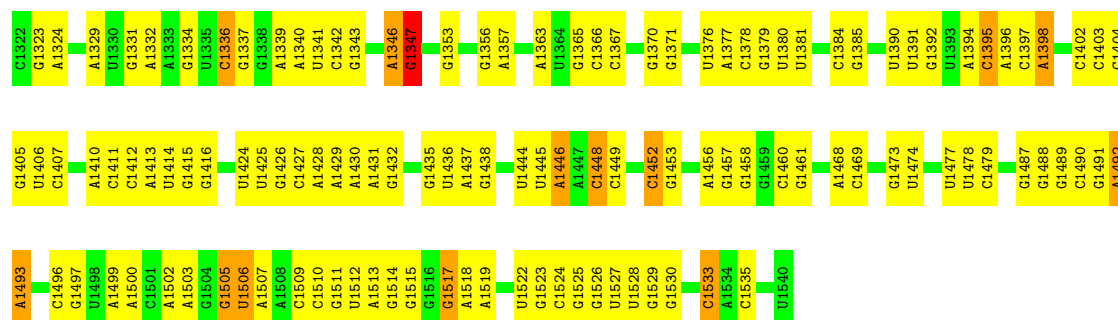
- Molecule 48: 30S ribosomal protein S21



- Molecule 49: 16S ribosomal RNA

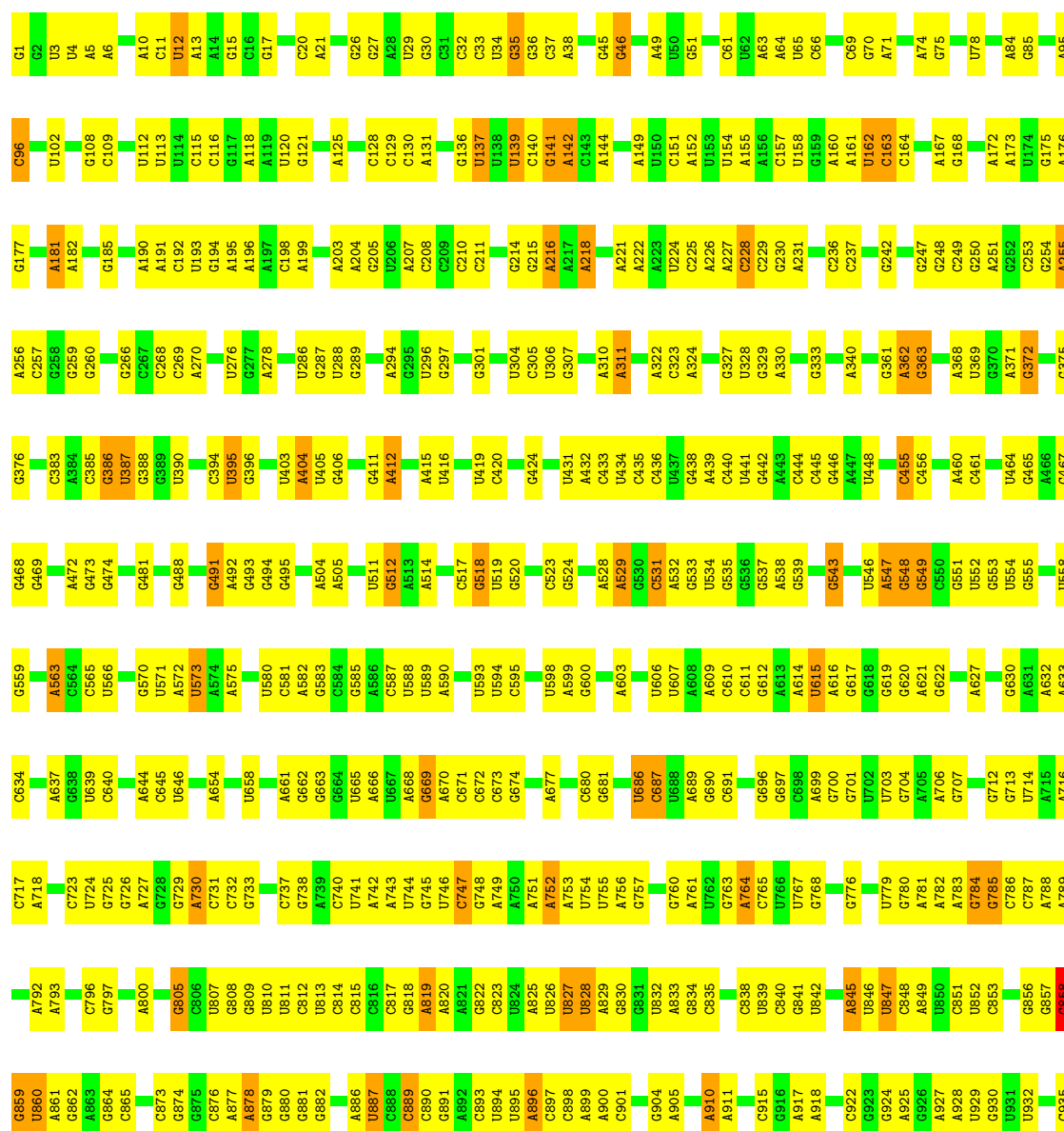


U1240	C1241	A1245	A1246	A1250	A1251	A1252	G1253	A1254	G1255	A1256	A1257	G1258	C1259	A1260	A1261	C1262	C1263	U1264	G1265	G1267	G1268	C1273	A1274	A1275	G1276	G1277	G1278	G1279	A1280	C1281	C1282	A1287	A1288	C1296	U1297	U1298	G1300	U1301	C1302	G1305	A1306	U1307	U1308	U1313	G1316	C1317	A1318	A1319	C1320	U1321		
G1241	A1163	G1164	A1167	U1168	A1169	A1170	A1171	C1172	A1176	G1177	G1178	A1179	A1180	G1181	G1182	U1183	G1184	G1185	G1186	G1187	G1189	A1190	A1191	C1192	G1193	U1194	G1195	A1196	U1197	G1198	U1199	C1200	A1201	U1202	C1203	A1204	U1205	U1211	U1212	A1213	C1218	A1219	A1227	C1228	C1230	A1236	C1237	A1239	U1240			
C1054	G1057	G1058	U1059	U1060	G1061	U1062	G1063	G1064	C1071	G1072	U1073	A1081	G1088	G1094	C1097	C1098	G1099	C1100	A1101	A1102	C1107	G1108	C1112	A1117	U1118	C1119	G1127	G1128	C1129	A1130	U1135	C1136	C1137	G1138	G1139	G1142	G1143	G1144	A1145	A1146	C1147	U1148	C1149	A1150	U1159							
A969	C970	G971	A975	G976	A977	C980	U981	U982	C984	A983	C985	U986	G987	G988	U992	G993	A994	C995	A996	U997	C998	C999	A1000	C1001	G1002	G1003	A1004	A1005	G1006	U1007	U1008	U1009	U1010	C1011	A1012	G1015	A1016	G1024	C1028	U1029	U1030	C1031	G1032	G1033	G1034	C1038	G1039	G1048	U1052	G1053		
C882	C883	U884	G887	G888	A889	G890	G894	U891	G894	U892	C895	G896	G902	A906	A907	A908	A909	C910	U911	C912	A913	A918	A919	U920	U921	G922	G926	C934	A935	G939	C940	G941	G942	G945	A946	G947	C948	A949	U950	G951	U952	G953	G954	U955	U956	U960	U961	C962	G963	G966		
C810	C811	G812	U813	A814	C817	G818	A819	U820	G821	G824	A825	C826	G829	G830	A831	G832	G833	U834	U835	C839	C840	C841	U842	U843	G844	A845	G846	C847	C848	G849	U855	C856	C857	G858	G859	G861	A865	C866	G867	C868	G869	U870	U871	A872	U875	C876	U877	C878	G881			
A635	A642	C643	U644	G645	U646	A663	G664	A665	G666	G667	G668	A673	C674	G675	G676	U678	C679	C680	A681	U686	A687	G688	C689	G690	G691	U692	A693	A694	A695	A696	U697	C698	U701	A702	G703	A704	G705	C708	U709	G710	A711	G712	G713	G714	A715	A716	C719	G720	G721	G722	U723	G725
C726	A729	G730	G731	G732	G733	G734	C735	G736	C737	C738	G741	C744	G745	C750	G755	C756	U757	C758	U762	G763	C764	G765	U692	A767	A768	G769	C770	G771	U772	G773	G774	G775	G776	A777	A784	G785	G786	A787	U788	U789	C797	U798	U801	A802	G803	U804	C805	C806	A807			
A539	G540	U543	C544	C545	A546	A547	U551	U552	U555	C556	G557	G558	A559	A560	U561	U565	G566	A572	A573	A574	G575	C576	G577	C578	A579	C580	G581	C582	A583	G584	U603	G604	U605	G606	A609	U610	C614	U619	C620	A621	A622	C623	G626	G627	G628	A629	G633	C634				
A451	A452	A456	A457	U458	A459	A460	U463	C469	C470	U471	U472	C475	U476	C477	A478	U480	C483	G484	U485	U486	U405	G406	U407	A408	U409	A412	G413	A414	A415	G416	C422	G423	G424	U425	U426	U427	G428	U429	A430	A431	A435	C436	U437	U438	U439	C440	A441	G447	A448			
G82	C83	C87	U88	A8	C90	U91	G100	U103	G104	G105	C106	G107	G21	A109	G112	G113	U123	C124	U125	G126	G127	A128	C129	A130	G144	G145	G146	G147	G148	A149	U150	A151	A152	A160	A161	A162	C163	U170	C58	A171	A172	C176	U179	U180	A181	A182	C183	G184	U185	G79		
G187	C188	A189	G190	U89	C90	U91	G100	U103	G104	G105	C106	G107	G21	A109	G112	G113	U123	C124	U125	G126	G127	A128	C129	A130	G144	G145	G146	G147	G148	A149	U150	A151	A152	A160	A161	A162	C163	U170	C58	A171	A172	C176	U179	U180	A181	A182	C183	G184	U185	G79		
A270	C271	C272	G272	A273	A274	C280	G281	C285	C286	G289	C295	U296	G297	A298	G299	A300	A303	U304	G305	A306	A309	G310	C311	C312	A313	C314	A315	C316	A320	A321	C322	U323	G324	A325	G326	C327	A329	G332	C335	A336	C337	A338	C339	C345	G351	C352	A353					
G354	G357	G361	U273	G362	U367	C370	A371	C372	A373	A374	U375	G376	G377	U387	C392	A393	C396	A397	U405	G406	U407	A408	U409	A412	G413	A414	A415	G416	C422	G423	G424	U425	U426	U427	G428	U429	A430	A431	A435	C436	U437	U438	U439	C440	A441	G447	A448					
A451	A452	A456	A457	U458	A459	A460	U463	C469	C470	U471	U472	C475	U476	C477	A478	U480	C483	G484	U485	U486	U405	G406	U407	A408	U409	A412	G413	A414	A415	G416	C422	G423	G424	U425	U426	U427	G428	U429	A430	A431	A435	C436	U437	U438	U439	C440	A441	G447	A448			

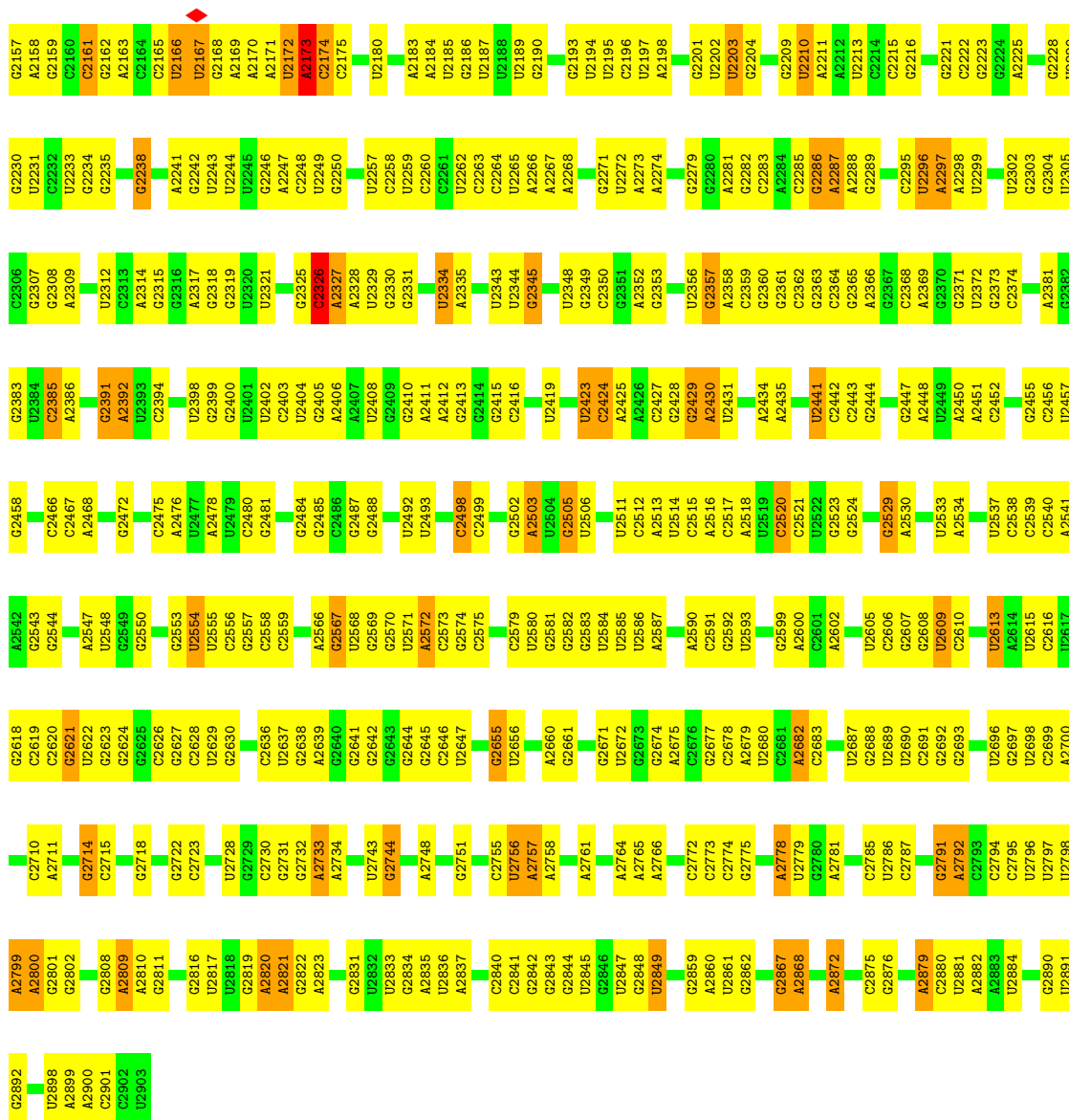


• Molecule 50: 23S ribosomal RNA

Chain 1: 46% 47% 7%

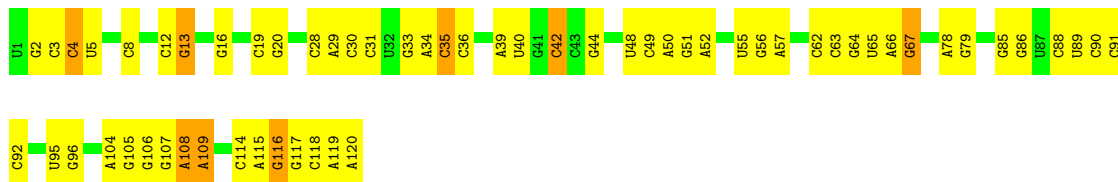


G2093	C1947	U1856	A1773	G1682	A1593	C1498	A1413	A1321	C1251	G1168	A1086	U1012	A936
A2094	G1948	G1857	C1774	U1683	U1594	C1499	G1416	A1322	G1252	C1172	G1087	C1013	C937
C2095	G1949	A1866	U1778	C1684	A1596	C1500	G1417	U1325	A1253	U1173	A1088	A1020	G938
A2096	U2028	C1867	U1779	C1685	A1597	U1506	G1418	U1326	U1254	U1174	A1089	A1021	G939
U2097	G1950	C1868	A1780	C1686	A1603	U1507	G1419	A1327	U1255	U1175	C1092	G1022	G940
U2098	A1951	G1869	U1781	C1687	C1604	U1508	A1420	U1328	C1257	U1176	G1093	U1023	A941
U2099	A1952	C1870	U1782	A1689	C1605	A1509	G1421	U1329	U1258	U1177	A1096	G1026	G942
G2100	A1953	C1871	U1783	A1690	A1608	G1510	G1422	C1330	U1259	C1178	A1097	A1027	A943
A2101	U1954	A1871	A1784	A1691	A1609	A1515	G1423	G1331	C1260	U1179	C1100	A1028	C946
G2102	U1955	A1872	A1785	U1692	A1610	A1522	G1424	G1332	C1261	U1180	C1101	A1029	C947
C2103	C1957	G1873	A1786	U1693	C1611	U1523	G1425	G1333	C1268	U1181	C1102	U1033	C948
C2104	C1958	A1876	A1791	C1694	A1616	G1524	G1426	U1334	A1269	U1182	C1103	G1036	C949
U2105	G1959	A1877	G1792	G1695	C1617	G1524	G1430	C1335	A1289	U1183	C1104	G1037	G953
U2106	C1960	C1881	C1793	A1701	A1618	A1528	A1431	A1336	G1271	U1184	G1104	G1038	G956
G2107	A1961	U1882	A1794	G1702	C1618	A1529	A1432	G1337	U1272	U1185	G1110	A1039	C961
U2110	G1962	U1883	C1795	U1709	A1618	A1530	A1433	G1338	U1273	U1186	G1111	A1040	G962
G2111	C1963	G1884	U1796	G1710	C1625	A1535	A1434	G1342	A1274	U1187	U1112	G1041	C961
G2112	A1964	C1885	U1797	C1715	A1626	C1536	G1435	G1343	A1275	U1188	U1113	A1042	C962
U2113	U1970	G1891	U1798	U1716	A1630	G1537	G1436	G1344	A1276	U1189	G1114	G1043	U967
A2114	U1971	C1892	G1799	U1717	G1631	U1542	U1437	C1345	U1277	U1193	G1115	G1044	C968
G2115	G1972	C1893	C1800	A1718	A1632	U1543	U1438	G1351	G1278	U1194	G1116	G1045	C969
C2116	U1979	C1894	A1801	G1715	G1637	G1543	G1441	C1352	G1279	U1195	G1117	G1046	U970
U2117	G1980	U1898	A1805	U1716	A1637	U1544	U1442	A1353	G1280	U1196	G1118	G1047	C971
U2118	C1981	A1899	C1806	A1717	C1638	A1548	U1443	A1354	G1281	U1197	G1119	A1050	A972
A2119	G1982	U1900	G1807	G1718	A1641	A1549	U1444	G1355	U1282	U1198	A1126	G1051	G977
G2123	C1983	A1901	A1808	U1719	G1642	A1550	G1445	G1356	G1283	U1199	G1120	G1052	U978
G2124	U1984	G1902	A1809	G1720	A1643	A1551	G1446	C1357	A1284	U1200	U1130	G1053	C981
G2125	A1985	C1903	A1810	U1721	G1644	A1552	G1447	G1358	A1285	C1200	G1131	G1054	A973
A2126	G1986	C1904	G1811	U1725	C1645	A1553	G1448	G1359	A1286	U1209	G1132	A1055	G977
G2127	C1987	C1905	G1812	C1726	G1646	A1554	G1449	A1365	A1287	U1210	U1133	G1056	G978
U2128	U1988	G1906	A1813	C1727	G1647	A1555	G1450	A1366	G1288	C1211	A1134	G1057	A979
C2129	G1989	C1907	C1816	C1728	U1647	U1559	G1451	A1367	C1289	U1212	G1135	U1068	C982
U2130	U1990	A1913	G1817	U1729	U1648	G1560	G1452	G1368	G1291	U1222	G1137	U1069	A983
U2131	C1991	C1914	C1817	C1730	G1653	C1564	A1453	A1378	G1292	U1223	G1138	U1060	A984
U2132	U1992	U1917	U1820	G1733	A1654	C1565	C1454	U1379	C1293	U1224	G1139	U1061	C985
G2133	C1993	A1918	A1821	G1734	A1655	C1566	U1458	G1380	U1294	U1225	U1140	G1062	C986
A2134	U1994	A1919	C1822	G1735	A1656	G1567	U1459	G1381	C1295	G1226	A1141	G1063	C987
G2135	C1995	C1920	G1823	U1736	C1657	G1568	U1460	G1382	C1296	U1227	A1142	C1064	A988
G2136	C2000	G1921	U1825	G1737	U1658	A1569	C1461	G1383	C1297	G1228	U1148	U1065	G989
U2139	C2001	G1922	G1826	G1738	G1659	A1570	G1462	A1383	G1298	C1229	G1149	U1066	A990
G2140	U2007	G1923	U1827	C1739	G1660	A1571	U1468	C1386	G1299	A1230	C1150	G1067	G993
G2141	C2008	G1924	U1828	U1746	G1661	A1572	A1469	A1387	G1300	U1231	C1151	G1068	C994
A2142	A2009	U1930	A1829	U1747	U1662	G1573	A1470	G1388	A1301	U1240	A1152	A1069	C995
C2143	G2010	U1931	C1837	C1748	A1664	C1574	U1475	U1391	A1302	U1241	G1153	A1070	C996
U2144	U2011	A1932	U1838	G1753	G1665	C1575	G1476	A1392	G1303	U1242	A1154	G1071	A996
C2145	G2012	G1933	C1839	C1754	A1666	U1576	U1477	A1393	C1305	G1243	A1155	C1072	C997
U2146	A2013	C1934	C1843	U1757	A1667	C1577	A1478	A1394	G1306	U1244	U1156	G1073	C998
A2147	A2014	G1935	G1844	U1758	C1670	U1578	G1479	U1395	A1307	U1245	U1159	C1074	U999
U2148	A2015	A1936	G1845	A1759	A1671	U1579	G1480	A1396	A1308	G1246	G1160	A1077	A1000
C2149	U2016	U1937	U1846	C1760	A1672	C1584	U1481	U1397	G1309	C1247	C1161	U1078	A1001
U2150	G2017	A1938	G1847	C1761	G1673	C1585	G1482	U1398	U1316	G1248	G1162	C1079	G1002
U2151	U2018	U1939	A1847	C1762	G1674	U1589	U1483	U1405	G1317	A1249	G1163	U1080	G1003
U2152	C2018	U1940	A1853	C1763	C1675	A1590	U1484	U1406	C1318	U1250	C1164	G1164	U1004
C2153	A2019	U1941	G1854	U1765	A1676	A1591	C1485	U1407	C1319	G1251	G1165	A1083	A1009
U2154	U2022	G1942	A1854	G1766	A1677	C1592	C1489	U1412	C1320	A1252	A1166	A1084	A1010
U2155	C2023	U1943	U1855	C1767	A1678	C1592	A1490	U1412	C1320	U1253	C1167	A1085	G1011



• Molecule 51: 5S ribosomal RNA

Chain 2: 50% 43% 7%



• Molecule 52: tRNA^{fMet}

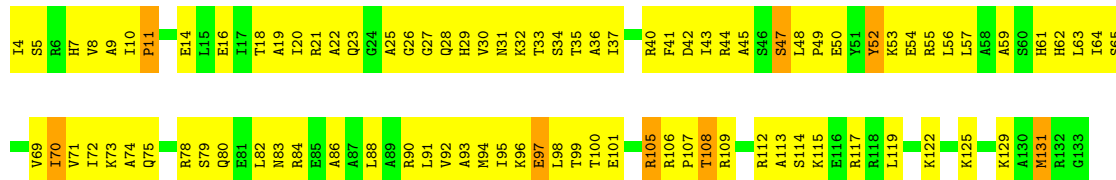
Chain 5: 47% 48% 5%



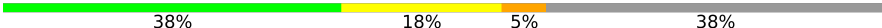
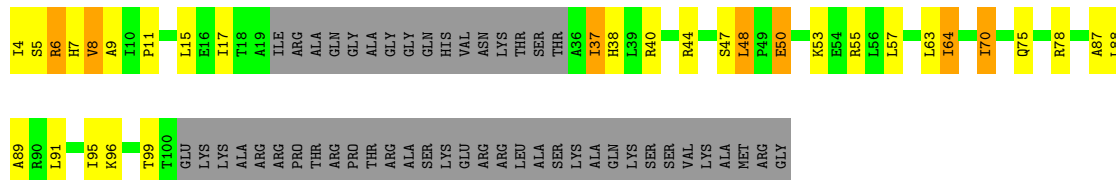
● Molecule 53: mRNA

Chain 4:  45% 40% 15%

● Molecule 54: Peptidyl-tRNA hydrolase ArfB

Chain 8:  29% 65% 6%

● Molecule 54: Peptidyl-tRNA hydrolase ArfB

Chain 9:  38% 18% 5% 38%

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	14367	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING ONLY	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	49.6	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	12.124	Depositor
Minimum map value	-4.894	Depositor
Average map value	0.097	Depositor
Map value standard deviation	0.600	Depositor
Recommended contour level	0.6	Depositor
Map size ($\text{\AA}$)	375.12003, 375.12003, 375.12003	wwPDB
Map dimensions	360, 360, 360	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	1.042, 1.042, 1.042	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	0.37	0/2122	0.95	6/2852 (0.2%)
2	c	0.38	0/1586	0.92	2/2134 (0.1%)
3	d	0.34	0/1571	0.93	10/2113 (0.5%)
4	e	0.40	1/1435 (0.1%)	1.00	10/1926 (0.5%)
5	f	0.35	0/1343	0.93	7/1816 (0.4%)
6	g	0.37	0/1122	1.10	7/1515 (0.5%)
7	j	0.36	0/1152	0.94	6/1551 (0.4%)
8	k	0.42	0/948	0.97	5/1268 (0.4%)
9	l	0.38	0/1054	1.03	4/1403 (0.3%)
10	m	0.40	0/1093	0.88	1/1460 (0.1%)
11	n	0.40	0/974	0.97	5/1301 (0.4%)
12	o	0.31	0/902	0.95	3/1209 (0.2%)
13	p	0.36	0/929	0.86	2/1242 (0.2%)
14	q	0.36	0/960	0.94	2/1278 (0.2%)
15	r	0.37	0/829	0.97	2/1107 (0.2%)
16	s	0.37	0/864	1.03	6/1156 (0.5%)
17	t	0.32	0/745	0.83	1/994 (0.1%)
18	u	0.33	0/788	0.86	0/1051
19	v	0.32	0/766	0.87	2/1025 (0.2%)
20	w	0.34	0/582	0.86	1/769 (0.1%)
21	x	0.37	0/635	0.90	0/848
22	y	0.30	0/510	0.96	2/677 (0.3%)
23	z	0.33	0/453	0.81	0/605
24	B	0.38	0/450	0.88	0/599
25	C	0.37	0/417	0.90	3/554 (0.5%)
26	D	0.43	0/380	1.19	5/498 (1.0%)
27	E	0.39	0/513	0.82	1/676 (0.1%)
28	F	0.35	0/303	0.92	1/397 (0.3%)
29	G	0.35	0/1788	1.06	9/2408 (0.4%)
30	H	0.35	0/1652	0.93	6/2225 (0.3%)
31	I	0.36	0/1665	1.05	14/2227 (0.6%)
32	J	0.39	0/1170	0.95	3/1573 (0.2%)
33	K	0.37	0/836	0.96	5/1128 (0.4%)
34	L	0.33	0/1196	0.91	4/1602 (0.2%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
35	M	0.34	0/989	0.96	1/1326 (0.1%)
36	N	0.34	0/1034	1.08	5/1375 (0.4%)
37	O	0.40	0/797	0.96	3/1077 (0.3%)
38	P	0.39	0/886	1.01	8/1195 (0.7%)
39	Q	0.34	0/969	1.07	6/1300 (0.5%)
40	R	0.36	0/893	0.97	2/1193 (0.2%)
41	S	0.31	0/817	0.96	3/1088 (0.3%)
42	T	0.33	0/722	1.08	7/964 (0.7%)
43	U	0.35	0/659	0.96	3/884 (0.3%)
44	V	0.33	0/658	0.97	4/881 (0.5%)
45	W	0.38	0/545	1.03	4/731 (0.5%)
46	X	0.36	0/653	0.94	2/877 (0.2%)
47	Y	0.32	0/671	1.03	3/888 (0.3%)
48	Z	0.39	0/551	1.06	4/728 (0.5%)
49	3	0.43	0/36963	0.49	2/57662 (0.0%)
50	1	0.44	0/69794	0.51	6/108883 (0.0%)
51	2	0.44	0/2872	0.47	0/4479
52	5	0.43	0/1832	0.47	0/2855
53	4	0.49	0/495	0.62	0/771
54	8	0.34	0/1028	0.91	2/1378 (0.1%)
54	9	0.38	0/649	1.19	8/875 (0.9%)
All	All	0.42	1/158210 (0.0%)	0.66	208/236597 (0.1%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
50	1	0	1

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	e	107	VAL	CA-CB	6.22	1.58	1.53

All (208) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
29	G	32	GLY	N-CA-C	18.33	132.49	112.33
54	9	63	LEU	N-CA-C	-10.89	99.51	113.12
36	N	97	LEU	N-CA-C	-10.54	100.16	113.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	c	149	ASN	N-CA-C	9.73	124.48	109.60
6	g	8	LYS	N-CA-C	-9.34	100.01	111.40
6	g	72	ILE	N-CA-C	-9.33	99.43	111.09
36	N	103	VAL	N-CA-C	-9.10	104.28	113.47
54	9	38	HIS	N-CA-C	9.08	123.40	110.23
45	W	69	TYR	N-CA-C	-8.49	101.61	111.03
31	I	28	ASP	N-CA-C	8.36	122.41	109.96
29	G	33	ALA	N-CA-C	8.34	128.57	110.80
11	n	68	ALA	N-CA-C	-8.30	102.32	111.36
11	n	22	ARG	N-CA-C	-8.29	101.83	111.03
13	p	44	GLY	N-CA-C	8.15	123.18	112.25
5	f	157	LYS	N-CA-C	-8.07	105.41	114.62
44	V	68	LYS	N-CA-C	-7.92	102.64	111.82
17	t	67	VAL	N-CA-C	7.89	114.66	106.21
42	T	43	ALA	N-CA-C	-7.80	102.40	112.23
29	G	221	ARG	N-CA-C	-7.75	103.28	112.89
37	O	42	LEU	CA-C-N	7.69	129.46	119.84
37	O	42	LEU	C-N-CA	7.69	129.46	119.84
14	q	49	ARG	N-CA-C	-7.65	103.68	113.16
5	f	174	LYS	N-CA-C	7.54	120.21	111.02
4	e	106	ALA	N-CA-C	7.52	120.20	111.02
38	P	70	ALA	N-CA-C	-7.51	103.18	111.36
26	D	6	GLN	CA-C-N	7.48	127.49	119.78
26	D	6	GLN	C-N-CA	7.48	127.49	119.78
3	d	120	VAL	N-CA-C	7.47	118.64	107.51
4	e	137	PHE	CA-C-N	7.45	129.16	119.84
4	e	137	PHE	C-N-CA	7.45	129.16	119.84
54	8	52	TYR	N-CA-C	-7.45	103.99	113.23
39	Q	120	ARG	N-CA-C	7.40	118.97	109.65
31	I	97	LEU	N-CA-C	7.37	118.95	111.07
19	v	24	ASN	N-CA-C	7.30	119.46	110.91
4	e	170	ALA	N-CA-C	-7.24	103.92	112.89
7	j	119	PHE	N-CA-C	-7.22	104.73	113.97
40	R	3	ILE	N-CA-C	7.22	120.03	109.63
26	D	45	SER	N-CA-C	-7.19	104.49	113.55
9	l	101	ILE	N-CA-C	7.16	117.26	110.53
12	o	13	ARG	N-CA-C	-7.14	103.19	110.97
12	o	54	VAL	N-CA-C	-7.09	106.09	112.90
54	9	48	LEU	CA-C-N	7.01	128.61	119.84
54	9	48	LEU	C-N-CA	7.01	128.61	119.84
41	S	50	LEU	N-CA-C	-7.00	100.84	109.65
22	y	8	GLU	N-CA-C	6.97	119.33	110.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	g	15	LEU	N-CA-C	6.93	120.05	110.35
39	Q	54	VAL	N-CA-C	6.79	117.68	108.17
4	e	26	GLN	N-CA-C	-6.77	104.83	113.23
6	g	67	ALA	N-CA-C	-6.77	103.70	112.23
9	l	82	LEU	N-CA-C	-6.75	105.05	113.28
26	D	7	PRO	N-CA-C	6.66	121.81	111.21
46	X	24	SER	N-CA-C	-6.64	104.40	113.30
30	H	71	ARG	CA-C-N	6.64	126.42	119.05
30	H	71	ARG	C-N-CA	6.64	126.42	119.05
5	f	92	GLY	N-CA-C	-6.63	105.71	115.72
28	F	33	HIS	N-CA-C	-6.62	105.03	113.23
2	c	22	ILE	N-CA-C	6.61	114.67	107.60
25	C	27	ARG	N-CA-C	-6.59	107.11	114.62
39	Q	114	SER	N-CA-C	-6.57	104.20	111.36
39	Q	22	ALA	N-CA-C	-6.56	103.75	111.03
42	T	38	LEU	N-CA-C	-6.46	106.61	114.75
38	P	117	HIS	N-CA-C	-6.45	102.08	111.30
33	K	92	THR	N-CA-C	6.43	124.50	110.80
14	q	50	ARG	N-CA-C	-6.38	105.50	113.55
3	d	198	GLU	N-CA-C	-6.35	105.01	112.89
26	D	4	THR	N-CA-C	6.35	118.29	111.36
12	o	84	GLU	N-CA-C	-6.35	104.23	112.23
35	M	67	GLY	N-CA-C	-6.34	104.87	113.37
1	b	213	ARG	N-CA-C	-6.30	105.23	113.17
30	H	13	ILE	N-CA-C	6.30	117.00	111.90
48	Z	54	ARG	N-CA-C	-6.27	103.97	111.69
19	v	45	ASP	N-CA-C	6.25	118.60	111.11
50	l	1178	C	N1-C1'-C2'	6.25	121.37	112.00
42	T	61	GLN	N-CA-C	-6.23	104.57	111.36
25	C	39	ASP	CA-C-N	6.20	125.88	119.56
25	C	39	ASP	C-N-CA	6.20	125.88	119.56
34	L	106	ALA	N-CA-C	-6.17	104.81	112.90
15	r	50	GLY	N-CA-C	-6.16	98.58	113.18
32	J	122	VAL	N-CA-C	6.15	122.14	109.34
32	J	152	VAL	N-CA-C	-6.13	105.68	113.22
11	n	67	PHE	N-CA-C	-6.12	105.97	113.50
3	d	82	GLY	N-CA-C	6.10	127.64	113.18
20	w	52	ASP	N-CA-C	-6.09	105.78	112.72
31	I	68	GLU	N-CA-C	6.09	117.59	111.07
54	9	88	LEU	N-CA-C	-6.09	105.34	112.89
16	s	11	ARG	N-CA-C	6.08	118.44	111.02
47	Y	19	HIS	N-CA-C	6.06	117.58	110.97

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
31	I	163	GLN	N-CA-C	-6.05	105.55	113.17
33	K	68	GLN	N-CA-C	6.04	119.75	112.38
29	G	19	THR	N-CA-C	5.99	123.56	110.80
29	G	177	ASN	N-CA-C	-5.95	105.51	112.89
8	k	121	GLU	N-CA-C	5.93	118.88	109.81
8	k	47	ILE	CA-C-N	5.92	127.25	119.84
8	k	47	ILE	C-N-CA	5.92	127.25	119.84
9	l	103	ILE	N-CA-C	5.91	116.69	110.72
49	3	1190	G	C2'-C3'-O3'	5.86	118.29	109.50
43	U	71	VAL	N-CA-C	5.86	115.98	110.30
30	H	87	ARG	N-CA-C	-5.85	104.86	112.23
3	d	155	GLU	N-CA-C	5.84	117.64	111.28
3	d	50	ALA	N-CA-C	-5.81	106.84	114.04
1	b	145	MET	N-CA-C	-5.79	106.13	113.43
38	P	65	ALA	N-CA-C	-5.79	104.57	111.69
16	s	12	SER	N-CA-C	5.78	117.99	110.53
33	K	73	GLU	N-CA-C	-5.77	105.07	111.36
46	X	48	ILE	N-CA-C	5.77	116.50	108.89
29	G	162	VAL	N-CA-C	5.76	116.23	108.17
47	Y	59	ARG	N-CA-C	-5.75	104.62	111.69
47	Y	33	LYS	N-CA-C	-5.75	105.16	111.82
44	V	11	VAL	N-CA-C	5.74	116.48	109.30
1	b	191	LEU	N-CA-C	5.67	117.86	110.43
31	I	61	ARG	N-CA-C	5.66	117.12	111.07
31	I	69	ARG	N-CA-C	5.62	117.85	111.11
50	l	1020	A	C2'-C3'-O3'	5.61	117.91	109.50
31	I	182	LYS	N-CA-C	5.61	119.81	112.13
10	m	96	ILE	N-CA-C	5.60	115.93	107.75
5	f	37	ASN	N-CA-C	-5.60	100.58	109.76
16	s	66	ILE	N-CA-C	5.59	120.97	109.34
31	I	30	LYS	N-CA-C	-5.59	105.89	114.16
6	g	104	THR	N-CA-C	-5.58	105.97	112.89
42	T	53	ARG	N-CA-C	-5.56	105.37	111.82
7	j	71	ASP	N-CA-C	5.56	121.95	113.61
3	d	73	ILE	N-CA-C	-5.54	105.48	113.07
48	Z	8	ASN	N-CA-C	5.54	122.61	110.80
32	J	93	VAL	N-CA-C	5.53	120.84	109.34
54	9	50	GLU	N-CA-C	5.52	122.56	110.80
34	L	141	HIS	N-CA-C	-5.51	105.29	112.23
38	P	97	ARG	N-CA-C	-5.50	105.44	111.82
54	8	97	GLU	N-CA-C	-5.49	106.63	113.38
40	R	47	LEU	N-CA-C	5.48	118.39	110.28

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	b	153	LEU	N-CA-C	5.48	118.39	110.28
45	W	13	THR	N-CA-C	5.44	122.38	110.80
31	I	194	ILE	N-CA-C	5.43	115.72	108.11
42	T	24	THR	N-CA-C	5.42	117.64	111.02
44	V	60	ILE	N-CA-C	5.41	116.37	108.53
4	e	103	ILE	N-CA-C	5.40	116.17	110.72
50	l	2173	A	N9-C1'-C2'	5.40	120.10	112.00
36	N	125	GLN	N-CA-C	5.40	117.91	110.35
30	H	124	GLU	N-CA-C	-5.38	106.77	113.38
29	G	11	ALA	N-CA-C	-5.37	106.89	113.50
48	Z	9	GLU	N-CA-C	5.37	121.67	109.81
31	I	155	LYS	N-CA-C	-5.37	105.47	112.23
11	n	116	VAL	N-CA-C	5.37	120.50	109.34
39	Q	3	VAL	N-CA-C	5.36	120.49	109.34
33	K	98	GLU	N-CA-C	5.36	118.42	109.96
3	d	78	TRP	N-CA-C	5.35	117.77	110.55
41	S	67	GLY	N-CA-C	-5.34	107.17	115.67
41	S	98	ALA	N-CA-C	5.34	117.58	110.53
50	l	858	G	N9-C1'-C2'	5.33	120.00	112.00
31	I	197	HIS	N-CA-C	5.33	116.77	111.07
36	N	93	LEU	N-CA-C	-5.31	106.65	113.23
16	s	28	LYS	N-CA-C	-5.30	101.14	109.25
5	f	160	GLY	N-CA-C	-5.30	104.18	111.76
38	P	82	GLU	N-CA-C	-5.29	101.90	110.32
8	k	59	LYS	N-CA-C	5.29	116.75	110.19
54	9	87	ALA	N-CA-C	-5.29	106.33	112.89
36	N	119	LYS	N-CA-C	5.28	116.51	107.28
11	n	66	ALA	N-CA-C	-5.27	106.80	113.18
50	l	2326	C	C2'-C3'-O3'	5.27	121.61	113.70
7	j	7	LYS	CA-C-N	5.26	124.71	119.24
7	j	7	LYS	C-N-CA	5.26	124.71	119.24
30	H	132	ALA	N-CA-C	-5.25	105.62	112.23
39	Q	40	THR	N-CA-C	5.24	116.43	109.93
31	I	133	SER	N-CA-C	5.24	118.49	112.57
31	I	183	ARG	N-CA-C	5.24	118.17	109.94
33	K	31	GLY	N-CA-C	-5.23	106.07	112.77
6	g	99	ILE	N-CA-C	-5.23	104.56	111.09
29	G	31	PHE	N-CA-C	-5.23	99.67	110.80
43	U	62	GLY	N-CA-C	-5.22	108.19	114.66
31	I	36	ALA	N-CA-C	5.21	117.61	108.75
50	l	974	G	N9-C1'-C2'	5.19	121.79	114.00
4	e	96	TRP	N-CA-C	-5.18	107.09	113.41

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
44	V	45	VAL	N-CA-C	5.17	115.93	108.48
54	9	89	ALA	N-CA-C	-5.17	105.72	112.23
7	j	112	GLY	CA-C-N	5.16	124.60	119.24
7	j	112	GLY	C-N-CA	5.16	124.60	119.24
15	r	46	GLU	N-CA-C	5.15	116.80	108.41
5	f	116	LEU	CA-C-N	5.15	126.27	119.84
5	f	116	LEU	C-N-CA	5.15	126.27	119.84
22	y	14	LEU	N-CA-C	-5.15	105.85	111.82
16	s	89	ALA	N-CA-C	5.14	117.54	110.35
16	s	35	ILE	N-CA-C	-5.14	105.70	110.53
45	W	56	ARG	N-CA-C	-5.13	105.60	111.14
3	d	117	ARG	N-CA-C	-5.13	106.87	113.23
34	L	60	ALA	N-CA-C	-5.13	105.76	112.23
42	T	52	ARG	N-CA-C	-5.13	106.53	112.89
37	O	90	LEU	N-CA-C	-5.12	106.97	114.39
42	T	37	HIS	N-CA-C	-5.12	106.79	112.57
38	P	68	ARG	N-CA-C	-5.11	105.89	111.82
38	P	87	GLY	CA-C-N	5.10	126.21	119.84
38	P	87	GLY	C-N-CA	5.10	126.21	119.84
49	3	1347	G	N9-C1'-C2'	5.08	119.62	112.00
1	b	164	VAL	N-CA-C	5.07	116.16	111.45
3	d	146	VAL	N-CA-C	5.05	116.88	108.99
4	e	11	VAL	N-CA-C	5.05	115.27	110.42
13	p	75	THR	N-CA-C	5.04	116.47	110.97
3	d	35	TYR	N-CA-C	-5.04	105.88	112.23
45	W	43	ILE	N-CA-C	-5.04	107.94	113.43
34	L	45	ALA	N-CA-C	-5.04	106.98	113.23
48	Z	62	GLU	N-CA-C	5.04	119.19	113.19
4	e	18	GLU	N-CA-C	5.04	120.32	113.37
6	g	45	GLU	N-CA-C	-5.04	105.87	111.36
8	k	119	ALA	N-CA-C	-5.03	103.36	110.31
4	e	54	ALA	N-CA-C	-5.03	106.65	112.89
43	U	36	VAL	N-CA-C	5.02	115.59	111.62
27	E	38	LYS	N-CA-C	-5.02	105.89	111.36
1	b	202	ARG	N-CA-C	5.02	116.37	109.15
9	l	98	ALA	N-CA-C	-5.01	106.95	113.16
29	G	102	ASN	N-CA-C	-5.01	104.81	111.87

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
50	1	512	G	Sidechain

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	b	2083	0	2157	78	0
2	c	1565	0	1616	55	0
3	d	1552	0	1619	51	0
4	e	1411	0	1447	42	0
5	f	1323	0	1374	37	0
6	g	1111	0	1148	38	0
7	j	1129	0	1162	27	0
8	k	939	0	1012	29	0
9	l	1045	0	1117	28	0
10	m	1074	0	1157	31	0
11	n	961	0	1000	24	0
12	o	892	0	923	22	0
13	p	917	0	965	25	0
14	q	947	0	1022	32	0
15	r	816	0	839	33	0
16	s	857	0	922	27	0
17	t	739	0	807	26	0
18	u	780	0	834	15	0
19	v	753	0	780	25	0
20	w	575	0	592	14	0
21	x	625	0	655	12	0
22	y	509	0	543	13	0
23	z	449	0	491	13	0
24	B	444	0	461	23	0
25	C	410	0	440	8	0
26	D	377	0	418	15	0
27	E	504	0	574	19	0
28	F	302	0	343	11	0
29	G	1757	0	1787	64	0
30	H	1625	0	1699	46	0
31	I	1643	0	1710	49	0
32	J	1157	0	1199	26	0
33	K	818	0	808	36	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
34	L	1182	0	1240	23	0
35	M	979	0	1034	32	0
36	N	1022	0	1070	49	0
37	O	787	0	828	25	0
38	P	870	0	878	29	0
39	Q	955	0	1019	32	0
40	R	884	0	944	29	0
41	S	805	0	847	28	0
42	T	714	0	737	11	0
43	U	649	0	666	27	0
44	V	649	0	691	23	0
45	W	536	0	552	10	0
46	X	638	0	665	16	0
47	Y	665	0	714	25	0
48	Z	545	0	579	37	0
49	3	33012	0	16619	672	0
50	1	62315	0	31346	1273	0
51	2	2568	0	1303	61	0
52	5	1640	0	837	31	0
53	4	439	0	218	11	0
54	8	1016	0	1067	101	0
54	9	641	0	659	26	0
All	All	145600	0	98134	3192	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 13.

All (3192) 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)
3:d:76:PRO:HA	3:d:82:GLY:HA2	1.20	1.11
44:V:5:ARG:NH2	49:3:128:G:H5'	1.71	1.06
50:1:45:G:H5''	50:1:46:G:H5'	1.31	1.06
50:1:2092:U:H4'	50:1:2093:G:H5''	1.36	1.03
54:8:40:ARG:HH22	54:8:91:LEU:HB2	1.22	1.01
36:N:17:ARG:HH22	49:3:1129:C:H4'	1.23	1.00
50:1:1177:G:H2'	50:1:1178:C:H4'	1.43	1.00
54:8:122:LYS:HA	54:8:125:LYS:HD3	1.39	1.00
49:3:440:C:H2'	49:3:441:A:H5''	1.42	0.98
50:1:1300:G:H4'	50:1:1301:A:H5''	1.45	0.98
5:f:106:LEU:HD21	5:f:151:ARG:HB2	1.43	0.97

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:225:C:H2'	49:3:226:G:H5''	1.47	0.97
50:1:1063:G:H22	50:1:1075:C:H42	1.01	0.97
50:1:1060:U:H4'	50:1:1061:U:H5'	1.48	0.96
32:J:107:GLY:HA3	49:3:9:G:H5'	1.45	0.96
34:L:93:VAL:HG23	34:L:94:ARG:HD3	1.47	0.96
50:1:1906:G:H2'	50:1:1907:G:H5''	1.47	0.95
13:p:88:ARG:HD3	13:p:112:ARG:HD3	1.47	0.94
49:3:1137:C:H5'	49:3:1138:G:H5'	1.47	0.94
44:V:5:ARG:HH22	49:3:128:G:H5'	1.25	0.94
50:1:1173:U:H2'	50:1:1174:U:H4'	1.51	0.93
44:V:5:ARG:HH22	49:3:128:G:C5'	1.82	0.93
49:3:82:G:H3'	49:3:83:C:H5'	1.48	0.92
4:e:63:LYS:HG3	51:2:42:C:H4'	1.50	0.92
10:m:12:MET:HA	50:1:910:A:H62	1.34	0.91
49:3:1033:G:H2'	49:3:1034:G:H5''	1.53	0.90
49:3:405:U:H3'	49:3:406:G:H5'	1.55	0.89
50:1:1869:G:H3'	50:1:1870:C:C5'	2.03	0.89
10:m:45:GLN:HE21	50:1:2485:G:H5''	1.37	0.89
17:t:77:ARG:CZ	50:1:63:A:H4'	2.03	0.89
53:4:23:A:H2'	53:4:24:A:H8	1.38	0.89
54:8:48:LEU:HB2	54:8:49:PRO:HD3	1.55	0.89
37:O:6:ILE:HG23	37:O:76:ILE:HG13	1.53	0.88
49:3:1296:C:H4'	49:3:1302:C:H42	1.38	0.88
54:8:44:ARG:HH11	54:8:57:LEU:HD21	1.39	0.87
49:3:842:U:H3'	49:3:843:U:H5''	1.56	0.87
37:O:47:GLU:HB2	37:O:67:ILE:HG13	1.57	0.86
50:1:2129:C:H2'	50:1:2130:U:H5'	1.57	0.86
36:N:17:ARG:HH22	49:3:1129:C:C4'	1.87	0.86
50:1:2209:G:H3'	50:1:2210:U:H5''	1.59	0.85
50:1:1869:G:H3'	50:1:1870:C:H5'	1.56	0.85
2:c:1:MET:HG2	2:c:205:PRO:HG2	1.57	0.84
50:1:1645:G:H5''	50:1:1646:C:H5'	1.58	0.84
50:1:1664:A:H61	50:1:1996:C:H42	1.26	0.84
50:1:322:A:H5'	50:1:340:A:H1'	1.58	0.84
17:t:1:MET:HE1	50:1:137:U:H1'	1.59	0.83
44:V:32:ILE:H	44:V:32:ILE:HD12	1.41	0.83
49:3:1107:C:H3'	49:3:1108:G:H5''	1.57	0.83
1:b:140:VAL:HG11	1:b:189:ALA:HB1	1.60	0.83
8:k:71:ARG:HH11	8:k:72:PRO:HD2	1.41	0.83
54:8:40:ARG:NH2	54:8:91:LEU:HB2	1.91	0.83
36:N:71:ILE:H	36:N:71:ILE:HD12	1.44	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:784:G:H5'	50:1:785:G:OP1	1.78	0.83
50:1:2391:G:H2'	50:1:2424:C:N4	1.93	0.82
36:N:125:GLN:HE22	49:3:942:G:H21	1.27	0.82
50:1:1906:G:C2'	50:1:1907:G:H5''	2.09	0.82
54:8:20:ILE:HD11	54:8:73:LYS:HE3	1.60	0.82
50:1:192:C:H2'	50:1:193:U:H5'	1.62	0.81
4:e:84:ILE:HD13	50:1:2312:U:H5'	1.60	0.81
51:2:3:C:H2'	51:2:4:C:H5''	1.61	0.81
34:L:113:LYS:HB2	49:3:1297:G:H21	1.46	0.81
50:1:2682:A:H61	50:1:2728:U:H1'	1.45	0.81
43:U:67:ILE:H	43:U:67:ILE:HD12	1.45	0.81
49:3:1412:C:H2'	49:3:1413:A:H8	1.46	0.81
50:1:2834:G:H2'	50:1:2879:A:H61	1.45	0.80
50:1:1728:C:H2'	50:1:1729:U:H5''	1.63	0.80
51:2:65:U:H3'	51:2:108:A:H61	1.46	0.80
50:1:1300:G:H4'	50:1:1301:A:C5'	2.10	0.80
50:1:704:G:H2'	50:1:726:G:H22	1.44	0.80
35:M:17:GLN:NE2	35:M:62:LEU:HD13	1.97	0.80
50:1:215:G:H4'	50:1:216:A:H4'	1.62	0.79
52:5:21:A:H61	52:5:46:G:H2'	1.48	0.79
50:1:1300:G:C4'	50:1:1301:A:H5''	2.13	0.79
51:2:3:C:H42	51:2:117:G:H1	1.30	0.78
49:3:211:G:H2'	49:3:212:G:H5'	1.65	0.78
36:N:51:LEU:HD13	36:N:56:MET:HG3	1.66	0.78
34:L:23:ALA:O	34:L:26:VAL:HG12	1.82	0.78
38:P:30:ILE:HD11	49:3:705:G:H21	1.46	0.78
31:I:150:LYS:HD2	31:I:155:LYS:HZ1	1.48	0.78
49:3:440:C:C2'	49:3:441:A:H5''	2.14	0.78
49:3:1412:C:H2'	49:3:1413:A:C8	2.18	0.78
50:1:704:G:H2'	50:1:726:G:N2	1.99	0.78
23:z:26:LEU:HD22	23:z:46:MET:HE2	1.64	0.77
49:3:225:C:C2'	49:3:226:G:H5''	2.13	0.77
1:b:16:VAL:HG22	1:b:203:VAL:H	1.50	0.77
20:w:39:THR:H	50:1:2331:G:H4'	1.48	0.77
50:1:1020:A:H1'	50:1:1021:A:OP2	1.83	0.77
49:3:1296:C:H4'	49:3:1302:C:N4	2.00	0.76
50:1:1168:G:H1	50:1:1181:U:H3	1.32	0.76
6:g:8:LYS:HA	6:g:15:LEU:HB2	1.67	0.76
50:1:1100:C:H3'	50:1:1101:U:H5''	1.66	0.76
20:w:34:VAL:HG12	20:w:55:LEU:HB2	1.66	0.76
49:3:1395:C:H6	49:3:1395:C:H5'	1.49	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:859:G:H1'	50:1:860:U:H5	1.51	0.76
50:1:2243:U:H2'	50:1:2244:U:C6	2.19	0.76
36:N:49:GLN:HG3	36:N:50:PRO:HD3	1.67	0.76
49:3:197:A:C6	49:3:221:C:H4'	2.21	0.76
50:1:2183:A:H2'	50:1:2184:A:C8	2.21	0.76
4:e:62:GLN:HG2	4:e:94:ARG:HH22	1.50	0.76
49:3:113:G:H1'	49:3:354:G:H5''	1.68	0.76
50:1:2156:G:H2'	50:1:2157:G:H5'	1.68	0.76
50:1:121:G:H4'	50:1:149:A:H5'	1.69	0.75
47:Y:4:LYS:HG3	47:Y:6:ALA:H	1.51	0.75
49:3:1033:G:C2'	49:3:1034:G:H5''	2.16	0.75
50:1:886:A:H4'	50:1:890:C:H41	1.50	0.75
48:Z:44:ARG:NH2	49:3:722:G:H21	1.85	0.75
50:1:191:A:H2'	50:1:192:C:C6	2.20	0.75
54:8:44:ARG:NH1	54:8:57:LEU:HD21	2.00	0.75
3:d:76:PRO:CA	3:d:82:GLY:HA2	2.11	0.75
10:m:12:MET:HE2	10:m:71:LYS:HG3	1.68	0.75
50:1:2286:G:H5''	50:1:2287:A:OP1	1.87	0.75
32:J:109:ALA:O	32:J:113:VAL:HG23	1.87	0.74
50:1:1936:A:H2	50:1:1943:U:H3	1.34	0.74
48:Z:44:ARG:NH2	49:3:722:G:H5''	2.02	0.74
50:1:644:A:H2'	50:1:645:C:C4'	2.17	0.74
1:b:221:GLY:HA2	1:b:224:MET:HE3	1.67	0.74
14:q:108:LEU:HD13	15:r:48:LYS:HD3	1.68	0.74
28:F:36:ARG:HG2	28:F:37:GLN:H	1.51	0.74
43:U:5:ARG:HB2	49:3:376:G:H5''	1.69	0.74
53:4:23:A:H2'	53:4:24:A:C8	2.23	0.74
43:U:75:ILE:HG22	43:U:80:LYS:HB3	1.69	0.74
50:1:1675:C:H2'	50:1:1676:A:O4'	1.88	0.73
2:c:151:THR:HB	2:c:152:PRO:HD3	1.69	0.73
50:1:1394:U:H4'	50:1:1603:A:H4'	1.69	0.73
49:3:1513:A:H2'	49:3:1514:G:H8	1.54	0.73
50:1:1326:U:H2'	50:1:1327:A:H8	1.52	0.73
49:3:181:A:H62	49:3:194:C:H2'	1.52	0.73
49:3:825:A:H2'	49:3:826:C:C6	2.23	0.73
50:1:2585:U:H4'	50:1:2586:U:H5'	1.68	0.73
50:1:1779:U:H5	50:1:1784:A:N7	1.86	0.73
51:2:86:G:C6	51:2:88:C:H1'	2.24	0.73
26:D:34:ARG:HE	26:D:39:ARG:HD2	1.54	0.73
50:1:517:C:H2'	50:1:518:G:H5''	1.70	0.73
50:1:1103:A:H3'	50:1:1104:C:H5''	1.71	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:R:25:GLY:H	49:3:1329:A:H5''	1.52	0.72
48:Z:44:ARG:CZ	49:3:722:G:H21	2.01	0.72
4:e:107:VAL:HG13	4:e:108:PRO:HD3	1.71	0.72
37:O:40:ILE:HB	37:O:73:LEU:HB2	1.70	0.72
49:3:75:G:H2'	49:3:76:G:H5'	1.70	0.72
50:1:1990:C:H2'	50:1:1991:U:C6	2.24	0.72
16:s:6:LYS:O	50:1:494:G:H4'	1.89	0.72
43:U:19:VAL:HG23	43:U:36:VAL:HG13	1.70	0.72
50:1:898:C:H2'	50:1:899:A:H5'	1.70	0.72
49:3:478:A:H2'	49:3:479:U:H4'	1.71	0.72
49:3:664:G:H22	49:3:741:G:H1	1.38	0.72
50:1:2297:A:N6	50:1:2319:G:H1'	2.04	0.72
50:1:2636:C:H2'	50:1:2637:U:H6	1.55	0.71
53:4:19:U:H6	53:4:19:U:H5'	1.53	0.71
13:p:61:ARG:HG3	13:p:70:GLU:HG3	1.72	0.71
50:1:2019:A:H2	50:1:2035:G:H22	1.34	0.71
50:1:2328:A:H2'	50:1:2329:U:C6	2.25	0.71
54:8:96:LYS:HE3	54:9:5:SER:HB2	1.71	0.71
49:3:560:A:H5'	49:3:566:G:N2	2.05	0.71
50:1:1295:C:H2'	50:1:1296:G:H8	1.56	0.71
50:1:2092:U:C4'	50:1:2093:G:H5''	2.17	0.71
54:8:11:PRO:HB2	54:8:14:GLU:HB3	1.71	0.71
50:1:1172:C:H2'	50:1:1173:U:H5''	1.71	0.71
50:1:548:G:H2'	50:1:549:G:H4'	1.71	0.71
36:N:109:GLN:HE22	49:3:1117:A:H5'	1.56	0.71
38:P:71:ASP:HA	38:P:74:LYS:HE2	1.72	0.71
14:q:36:GLN:HE21	50:1:1252:G:H22	1.36	0.71
30:H:55:VAL:HB	30:H:66:THR:HB	1.72	0.71
50:1:1295:C:H2'	50:1:1296:G:C8	2.26	0.71
37:O:57:VAL:O	37:O:58:ASN:HB2	1.91	0.71
50:1:1179:G:H2'	50:1:1180:U:H4'	1.71	0.71
50:1:1304:A:H2'	50:1:1305:C:H5''	1.72	0.71
10:m:77:PRO:O	10:m:80:VAL:HG22	1.91	0.70
50:1:45:G:H5''	50:1:46:G:C5'	2.17	0.70
50:1:2710:C:H2'	50:1:2711:A:C8	2.26	0.70
40:R:89:ARG:HE	40:R:94:LEU:HB2	1.56	0.70
50:1:1801:A:H5''	50:1:2203:U:H2'	1.74	0.70
50:1:310:A:C2'	50:1:311:A:H5''	2.21	0.70
54:8:112:ARG:HA	54:8:115:LYS:HD3	1.73	0.70
54:8:79:SER:HB3	54:8:82:LEU:HD12	1.72	0.70
43:U:5:ARG:HD2	49:3:376:G:H4'	1.71	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:1379:G:O2'	49:3:1380:U:H5'	1.91	0.70
50:1:2391:G:H2'	50:1:2424:C:H41	1.56	0.70
49:3:730:G:H2'	49:3:731:G:H5'	1.73	0.70
50:1:2514:U:H2'	50:1:2515:C:C6	2.27	0.70
54:8:56:LEU:HD23	54:8:98:LEU:HD23	1.72	0.70
6:g:9:VAL:HG13	6:g:10:ALA:N	2.06	0.70
28:F:22:VAL:HG23	28:F:37:GLN:HB3	1.74	0.70
54:8:62:HIS:HD2	54:8:63:LEU:HD13	1.57	0.70
1:b:16:VAL:HG22	1:b:203:VAL:HG22	1.73	0.70
50:1:1943:U:H5'	54:8:63:LEU:HD11	1.73	0.70
3:d:83:VAL:O	3:d:85:PHE:N	2.25	0.69
50:1:996:A:H2'	50:1:997:G:H8	1.56	0.69
50:1:2265:U:H3'	50:1:2266:A:H5''	1.73	0.69
50:1:2800:A:H3'	50:1:2801:G:H5'	1.74	0.69
54:8:37:ILE:HG23	54:8:74:ALA:O	1.92	0.69
4:e:33:ILE:HG23	4:e:90:LEU:HB2	1.73	0.69
11:n:20:MET:HE1	50:1:1277:G:H5'	1.74	0.69
33:K:92:THR:HG23	33:K:93:LYS:H	1.56	0.69
49:3:575:G:O2'	49:3:821:G:H5'	1.92	0.69
49:3:817:C:H4'	49:3:818:G:H5''	1.74	0.69
50:1:2243:U:H2'	50:1:2244:U:H6	1.57	0.69
50:1:546:U:H2'	50:1:547:A:H4'	1.74	0.69
31:I:23:GLY:HA3	49:3:409:U:OP1	1.92	0.69
46:X:65:MET:HG2	46:X:73:PHE:HZ	1.57	0.69
50:1:668:A:H2'	50:1:670:A:H62	1.57	0.69
50:1:687:C:H6	50:1:687:C:H5'	1.58	0.69
36:N:17:ARG:NH2	49:3:1129:C:H4'	2.02	0.69
46:X:62:THR:H	46:X:65:MET:HE1	1.58	0.69
49:3:1524:C:H2'	49:3:1525:G:C8	2.27	0.69
39:Q:31:GLY:HA3	39:Q:54:VAL:CG2	2.22	0.69
40:R:3:ILE:HG23	40:R:7:ASN:HB3	1.72	0.69
50:1:764:A:O2'	50:1:765:C:H5'	1.93	0.69
1:b:179:GLU:HG3	1:b:269:ARG:HA	1.75	0.69
12:o:31:THR:HG21	51:2:28:C:OP1	1.93	0.69
40:R:43:LYS:HB2	40:R:46:GLU:HG2	1.72	0.69
12:o:12:THR:OG1	50:1:2334:U:H4'	1.92	0.69
50:1:1807:G:H2'	50:1:1808:A:H5'	1.75	0.68
50:1:2145:C:H3'	50:1:2146:C:H5'	1.75	0.68
50:1:2679:A:O2'	50:1:2680:U:H5'	1.92	0.68
54:8:92:VAL:O	54:8:96:LYS:HB2	1.93	0.68
50:1:1069:A:H4'	50:1:1096:A:H4'	1.75	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:c:149:ASN:O	2:c:152:PRO:HD2	1.94	0.68
49:3:1052:U:H2'	49:3:1200:C:H41	1.57	0.68
2:c:122:VAL:HA	2:c:127:PHE:H	1.58	0.68
36:N:70:GLY:HA3	49:3:1371:G:O3'	1.94	0.68
49:3:440:C:H2'	49:3:441:A:C5'	2.19	0.68
49:3:842:U:H3'	49:3:843:U:C5'	2.22	0.68
50:1:677:A:O2'	50:1:2071:A:H5'	1.94	0.68
54:8:22:ALA:HB2	54:8:37:ILE:HG13	1.76	0.68
1:b:36:ASN:HB2	1:b:61:TYR:HB2	1.76	0.68
50:1:2285:C:O2'	50:1:2287:A:H1'	1.93	0.68
48:Z:61:ARG:HD2	48:Z:61:ARG:O	1.92	0.68
50:1:962:G:H21	50:1:2250:G:H22	1.41	0.68
50:1:985:C:H3'	50:1:985:C:OP2	1.94	0.68
52:5:21:A:N6	52:5:46:G:H2'	2.09	0.68
1:b:259:ASN:ND2	1:b:262:THR:H	1.92	0.68
14:q:55:GLN:HA	14:q:58:GLN:HE21	1.59	0.68
29:G:108:GLN:HA	29:G:111:LYS:HD2	1.75	0.68
50:1:2620:C:H2'	50:1:2621:G:O4'	1.94	0.68
2:c:109:VAL:HG11	2:c:193:VAL:HG12	1.76	0.68
6:g:8:LYS:O	6:g:9:VAL:HG12	1.93	0.68
49:3:82:G:H3'	49:3:83:C:C5'	2.22	0.68
50:1:11:C:H2'	50:1:12:U:H5''	1.75	0.68
50:1:2364:C:H2'	50:1:2365:G:O4'	1.94	0.68
14:q:36:GLN:NE2	50:1:1252:G:H22	1.92	0.67
19:v:20:LEU:HD11	19:v:27:PRO:HD3	1.76	0.67
41:S:52:ARG:HB3	41:S:58:ARG:HH22	1.58	0.67
49:3:484:G:H4'	49:3:485:U:C5'	2.23	0.67
25:C:7:LYS:HA	25:C:23:THR:HA	1.75	0.67
30:H:5:HIS:HB3	41:S:88:MET:HE3	1.76	0.67
49:3:722:G:H1	49:3:733:G:H1	1.43	0.67
50:1:1893:C:H2'	50:1:1894:C:H5'	1.76	0.67
54:8:122:LYS:CA	54:8:125:LYS:HD3	2.21	0.67
4:e:32:LYS:HZ1	4:e:89:THR:HB	1.59	0.67
31:I:131:ILE:HD13	49:3:620:C:H1'	1.76	0.67
49:3:413:G:H5'	49:3:414:A:H5'	1.77	0.67
50:1:2819:G:H2'	50:1:2821:A:N7	2.08	0.67
54:8:23:GLN:HG3	54:8:75:GLN:HE22	1.58	0.67
28:F:32:LYS:HE3	50:1:2478:A:H5'	1.77	0.67
50:1:310:A:O2'	50:1:311:A:H5''	1.95	0.67
19:v:29:ILE:HD12	19:v:38:LEU:O	1.95	0.67
50:1:383:C:H2'	50:1:385:C:H41	1.59	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:947:A:H2'	50:1:948:C:C6	2.29	0.66
54:8:65:SER:OG	54:8:69:VAL:HG22	1.95	0.66
1:b:216:ARG:HB3	1:b:217:PRO:HD2	1.77	0.66
33:K:48:ALA:HB1	45:W:68:PRO:HG3	1.77	0.66
35:M:101:ALA:HB3	35:M:112:ASP:HB2	1.77	0.66
52:5:8:U:H3	52:5:14:A:H62	1.42	0.66
7:j:26:GLY:HA3	50:1:1140:C:H5'	1.76	0.66
49:3:1513:A:H2'	49:3:1514:G:C8	2.31	0.66
54:8:10:ILE:H	54:9:4:ILE:HA	1.60	0.66
32:J:55:VAL:HG23	32:J:56:PRO:HD3	1.78	0.66
34:L:115:MET:HB2	49:3:1240:U:OP1	1.96	0.66
47:Y:28:ARG:O	47:Y:31:ILE:HG22	1.96	0.66
54:9:17:ILE:HG12	54:9:40:ARG:HE	1.59	0.66
48:Z:34:ARG:HB3	48:Z:36:PHE:CE2	2.30	0.66
24:B:54:ILE:HG23	24:B:56:LYS:H	1.61	0.66
29:G:213:LEU:HA	29:G:216:VAL:HG22	1.78	0.66
43:U:19:VAL:HG23	43:U:37:GLY:H	1.61	0.66
30:H:109:GLU:HG2	30:H:139:ASN:HD21	1.61	0.66
40:R:80:MET:HE2	40:R:91:ARG:HG2	1.78	0.66
49:3:112:G:H21	49:3:354:G:H5'	1.59	0.66
50:1:2296:U:H5''	50:1:2297:A:OP1	1.96	0.66
1:b:48:ILE:HD11	1:b:51:ARG:HA	1.77	0.66
2:c:11:MET:HG2	2:c:25:THR:HG22	1.77	0.66
50:1:2537:U:H2'	50:1:2538:C:C6	2.30	0.66
50:1:2606:C:H2'	50:1:2607:G:H8	1.59	0.66
13:p:27:VAL:HG22	13:p:83:ILE:HG22	1.78	0.66
17:t:69:ARG:HH22	50:1:1334:G:H5''	1.61	0.66
11:n:9:GLN:HB3	50:1:1653:G:C6	2.31	0.65
49:3:769:G:H4'	49:3:1513:A:H4'	1.78	0.65
50:1:2273:A:H2'	50:1:2274:A:C8	2.31	0.65
11:n:4:ARG:HA	50:1:2820:A:OP1	1.96	0.65
50:1:742:A:H2'	50:1:743:A:C8	2.31	0.65
50:1:1609:A:H1'	50:1:1616:A:C1'	2.27	0.65
54:8:7:HIS:HE1	54:9:6:ARG:HD2	1.60	0.65
10:m:75:GLU:HB2	10:m:90:GLU:HG3	1.78	0.65
50:1:1060:U:C1'	50:1:1062:G:H5'	2.27	0.65
15:r:46:GLU:HB3	15:r:48:LYS:HE3	1.78	0.65
50:1:394:C:H2'	50:1:395:U:O4'	1.96	0.65
11:n:38:LEU:HB3	11:n:39:PRO:HD3	1.79	0.65
50:1:1173:U:C2'	50:1:1174:U:H4'	2.24	0.65
50:1:1269:A:H61	50:1:2011:U:H3	1.43	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:c:148:GLN:CG	2:c:152:PRO:HG2	2.27	0.65
6:g:67:ALA:O	6:g:70:GLU:HB3	1.97	0.65
12:o:33:ARG:HE	51:2:52:A:N6	1.94	0.65
44:V:30:HIS:HD2	44:V:33:TYR:H	1.42	0.65
50:1:1177:G:C5	50:1:1178:C:H1'	2.32	0.65
1:b:200:MET:HB2	50:1:1820:U:C2	2.32	0.65
22:y:38:GLN:NE2	22:y:39:GLN:HG3	2.11	0.65
50:1:1213:A:N6	50:1:1236:G:H1'	2.12	0.65
32:J:108:GLY:H	49:3:9:G:H4'	1.61	0.64
50:1:1063:G:H22	50:1:1075:C:N4	1.84	0.64
50:1:2113:U:H2'	50:1:2114:A:H5''	1.79	0.64
31:I:97:LEU:HD12	31:I:131:ILE:O	1.98	0.64
47:Y:48:LYS:O	47:Y:52:GLU:HG3	1.97	0.64
50:1:2189:U:H2'	50:1:2190:G:H8	1.61	0.64
54:8:62:HIS:CD2	54:8:63:LEU:HD13	2.31	0.64
3:d:45:ALA:HB2	3:d:89:PRO:HD3	1.79	0.64
39:Q:119:LYS:HE3	49:3:37:U:OP2	1.96	0.64
49:3:1414:U:H2'	49:3:1415:G:H8	1.62	0.64
50:1:310:A:H2'	50:1:311:A:H5''	1.79	0.64
50:1:2698:U:H2'	50:1:2699:C:C6	2.32	0.64
51:2:65:U:H3'	51:2:108:A:N6	2.11	0.64
3:d:76:PRO:HA	3:d:82:GLY:CA	2.12	0.64
54:8:30:VAL:HA	54:8:34:SER:HB2	1.79	0.64
3:d:85:PHE:CE2	50:1:587:C:H5'	2.33	0.64
50:1:717:C:H2'	50:1:718:A:H5'	1.79	0.64
50:1:2014:A:H2'	50:1:2015:A:C8	2.32	0.64
54:8:28:GLN:HA	54:8:31:ASN:OD1	1.98	0.64
2:c:55:LYS:HD3	2:c:77:ARG:HB3	1.79	0.64
29:G:53:LEU:HD12	29:G:219:THR:HG21	1.79	0.64
50:1:807:U:H2'	50:1:808:G:H8	1.61	0.64
50:1:2849:U:H4'	50:1:2868:A:C2	2.33	0.64
38:P:30:ILE:HD11	49:3:705:G:N2	2.13	0.64
49:3:673:A:H2'	49:3:674:G:C8	2.33	0.64
50:1:760:G:H2'	50:1:761:A:O4'	1.98	0.64
53:4:16:A:O2'	53:4:17:U:H5'	1.98	0.64
44:V:63:CYS:SG	44:V:73:THR:HG23	2.38	0.64
49:3:327:A:O2'	49:3:328:C:H4'	1.97	0.64
17:t:67:VAL:HG22	17:t:76:ARG:HD2	1.78	0.63
17:t:73:ARG:HH11	50:1:65:U:H1'	1.63	0.63
17:t:77:ARG:NH2	50:1:63:A:H4'	2.12	0.63
18:u:48:VAL:HG22	18:u:50:ALA:H	1.62	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:20:U:H2'	49:3:21:G:O4'	1.98	0.63
49:3:370:C:H2'	49:3:371:A:H8	1.64	0.63
50:1:2644:G:H3'	50:1:2645:G:N2	2.12	0.63
50:1:2799:A:H2'	50:1:2800:A:H5'	1.81	0.63
11:n:53:THR:HG21	50:1:2840:C:H5''	1.78	0.63
6:g:110:VAL:HG22	6:g:111:ALA:H	1.62	0.63
49:3:1225:A:H5'	49:3:1226:C:OP2	1.99	0.63
50:1:2743:U:H2'	50:1:2744:G:H5''	1.81	0.63
49:3:1219:A:H2'	49:3:1220:G:C8	2.33	0.63
50:1:1458:U:H4'	50:1:1459:G:C4	2.33	0.63
5:f:19:ASN:HB2	5:f:22:VAL:HG23	1.80	0.63
26:D:10:LEU:HD11	50:1:125:A:C5	2.33	0.63
27:E:61:LEU:HD12	27:E:61:LEU:O	1.99	0.63
50:1:1179:G:C3'	50:1:1180:U:H4'	2.29	0.63
29:G:192:PRO:HG2	29:G:193:ASP:H	1.64	0.63
33:K:29:ILE:HG22	33:K:34:GLY:HA3	1.79	0.63
49:3:696:A:H2'	49:3:697:U:C6	2.34	0.63
8:k:76:VAL:H	13:p:72:VAL:HG12	1.63	0.63
33:K:6:ILE:H	33:K:6:ILE:HD12	1.64	0.63
52:5:36:U:H4'	53:4:21:A:P	2.38	0.63
1:b:106:PRO:HD2	1:b:109:LEU:HD22	1.79	0.63
27:E:56:LEU:HD11	50:1:834:G:H5'	1.81	0.63
38:P:24:ALA:HB1	38:P:89:GLY:HA2	1.79	0.63
50:1:639:U:H2'	50:1:640:C:C6	2.33	0.63
50:1:1815:A:O4'	50:1:1817:G:H1'	1.99	0.63
50:1:1900:A:H1'	50:1:1970:A:H2'	1.79	0.63
5:f:152:ARG:HB2	5:f:152:ARG:NH2	2.14	0.62
8:k:30:ARG:HD2	50:1:2674:G:H4'	1.81	0.62
8:k:43:ILE:HD12	8:k:43:ILE:N	2.14	0.62
22:y:38:GLN:HE21	22:y:39:GLN:HG3	1.64	0.62
33:K:61:LEU:HD23	33:K:62:MET:N	2.13	0.62
50:1:445:C:O2'	50:1:446:G:H5'	1.98	0.62
50:1:1054:A:H2'	50:1:1055:G:H8	1.64	0.62
50:1:2345:G:N3	50:1:2381:A:H2'	2.14	0.62
51:2:3:C:C2'	51:2:4:C:H5''	2.29	0.62
43:U:54:LEU:HD21	43:U:75:ILE:HG21	1.81	0.62
1:b:5:CYS:SG	1:b:12:ARG:NH1	2.72	0.62
46:X:27:LYS:HG2	46:X:28:LYS:H	1.65	0.62
49:3:505:G:H5'	49:3:534:U:H2'	1.80	0.62
39:Q:43:LYS:HE3	49:3:1492:A:H5'	1.81	0.62
50:1:269:C:H2'	50:1:270:A:H8	1.63	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:690:G:O2'	50:1:691:C:H5'	1.99	0.62
54:8:48:LEU:CB	54:8:49:PRO:HD3	2.29	0.62
1:b:77:VAL:HG13	1:b:112:GLY:H	1.64	0.62
1:b:250:GLN:HB2	1:b:254:LYS:HG3	1.82	0.62
9:l:108:ALA:HB3	9:l:125:LEU:HD22	1.82	0.62
32:J:55:VAL:HG23	32:J:56:PRO:CD	2.29	0.62
35:M:80:PRO:HG2	49:3:878:A:H5''	1.80	0.62
49:3:1202:U:H2'	49:3:1203:C:O4'	2.00	0.62
50:1:1199:U:H2'	50:1:1200:C:C6	2.34	0.62
50:1:2287:A:O2'	50:1:2288:A:H2'	1.99	0.62
54:8:5:SER:O	54:9:8:VAL:HG23	1.99	0.62
20:w:39:THR:N	50:1:2331:G:H4'	2.13	0.62
34:L:145:GLU:HA	34:L:148:LYS:HB2	1.80	0.62
49:3:883:C:O2'	49:3:884:U:H5'	1.99	0.62
49:3:1413:A:H2	49:3:1487:G:H22	1.47	0.62
50:1:745:G:H2'	50:1:746:U:H5'	1.81	0.62
50:1:796:C:H2'	50:1:797:G:C8	2.35	0.62
50:1:2785:C:H2'	50:1:2786:U:C6	2.35	0.62
51:2:119:A:C2	51:2:120:A:H1'	2.34	0.62
51:2:119:A:H2'	51:2:120:A:H4'	1.81	0.62
37:O:43:PRO:HG3	49:3:1150:A:H4'	1.80	0.62
50:1:1100:C:H2'	50:1:1101:U:H4'	1.80	0.62
50:1:1060:U:H1'	50:1:1062:G:H5'	1.82	0.62
50:1:2572:A:H5'	50:1:2574:G:H4'	1.82	0.62
1:b:16:VAL:CG2	1:b:203:VAL:H	2.13	0.62
1:b:131:MET:HE1	1:b:173:LEU:HD11	1.81	0.62
43:U:67:ILE:HD12	43:U:67:ILE:N	2.15	0.62
43:U:70:ARG:HG2	49:3:375:U:H5''	1.81	0.62
50:1:594:U:H2'	50:1:595:C:C6	2.35	0.62
50:1:2195:U:O2'	50:1:2196:C:H5'	1.99	0.62
49:3:1170:A:H2'	49:3:1171:A:O4'	2.00	0.62
50:1:864:G:O2'	50:1:865:C:H5'	1.99	0.61
50:1:2834:G:O2'	50:1:2835:A:H5'	2.00	0.61
8:k:70:ARG:HD2	8:k:76:VAL:HG12	1.82	0.61
22:y:47:ARG:O	22:y:50:VAL:HG12	2.00	0.61
36:N:105:ARG:HG3	49:3:1118:U:H5'	1.81	0.61
50:1:669:G:H2'	50:1:669:G:N3	2.16	0.61
50:1:2360:G:H2'	50:1:2361:G:H5'	1.82	0.61
2:c:4:LEU:HB3	2:c:203:VAL:HG23	1.81	0.61
49:3:321:A:H61	49:3:332:G:H1	1.49	0.61
50:1:895:U:H4'	50:1:896:A:H5'	1.81	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:2086:U:H2'	50:1:2087:G:C8	2.35	0.61
50:1:2698:U:H2'	50:1:2699:C:H6	1.65	0.61
50:1:2794:C:H2'	50:1:2795:C:C6	2.36	0.61
8:k:13:ASN:ND2	8:k:98:ARG:HB2	2.15	0.61
50:1:858:G:H5'	50:1:859:G:OP2	2.01	0.61
50:1:1609:A:H1'	50:1:1616:A:H1'	1.81	0.61
50:1:2136:G:H2'	50:1:2136:G:N3	2.14	0.61
2:c:155:VAL:HG21	50:1:2618:G:H21	1.64	0.61
36:N:57:VAL:HG23	36:N:58:GLU:H	1.65	0.61
50:1:1179:G:C2'	50:1:1180:U:H4'	2.30	0.61
49:3:335:C:H2'	49:3:336:A:C8	2.36	0.61
50:1:1251:C:O2'	50:1:1252:G:H3'	2.00	0.61
50:1:2101:A:H2'	50:1:2102:G:H8	1.65	0.61
50:1:548:G:H3'	50:1:549:G:H5''	1.81	0.61
37:O:53:ILE:HG12	49:3:1060:U:H5''	1.82	0.61
50:1:2011:U:H2'	50:1:2012:G:O4'	2.00	0.61
50:1:2262:U:O2'	50:1:2263:C:H5'	2.01	0.61
15:r:25:LEU:HD23	15:r:25:LEU:H	1.65	0.61
49:3:328:C:H5'	49:3:329:A:H5'	1.83	0.61
50:1:2590:A:H2'	50:1:2591:C:C6	2.35	0.61
12:o:29:HIS:HB3	12:o:36:TYR:HB2	1.83	0.61
38:P:45:THR:HG23	38:P:48:GLY:H	1.65	0.61
49:3:82:G:H1	49:3:89:U:H1'	1.65	0.61
50:1:644:A:H2'	50:1:645:C:H4'	1.83	0.61
50:1:2641:G:H2'	50:1:2642:G:H8	1.65	0.61
54:8:40:ARG:HH21	54:8:72:ILE:HD12	1.66	0.61
49:3:1028:C:H3'	49:3:1029:U:C5'	2.31	0.60
9:l:128:THR:HG23	9:l:131:ALA:H	1.65	0.60
47:Y:2:ASN:ND2	47:Y:4:LYS:HB2	2.16	0.60
49:3:352:C:H4'	49:3:354:G:OP1	2.00	0.60
3:d:137:LYS:HG2	3:d:141:MET:HE2	1.83	0.60
12:o:77:ALA:O	12:o:80:GLU:HG3	2.01	0.60
49:3:145:G:H2'	49:3:146:G:C4'	2.32	0.60
50:1:467:G:O2'	50:1:468:G:H5'	2.00	0.60
52:5:6:G:O2'	52:5:7:G:H5'	2.01	0.60
39:Q:113:ARG:HH22	39:Q:120:ARG:HH11	1.48	0.60
49:3:320:A:H2'	49:3:321:A:O4'	2.01	0.60
46:X:40:PHE:HB2	46:X:43:MET:HE1	1.83	0.60
47:Y:67:HIS:HB3	49:3:262:A:H5'	1.83	0.60
49:3:415:A:H2'	49:3:416:G:H8	1.66	0.60
50:1:754:U:H2'	50:1:755:U:C6	2.37	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:1906:G:C3'	50:1:1907:G:H5''	2.31	0.60
1:b:270:ARG:O	1:b:270:ARG:HD2	2.02	0.60
2:c:24:VAL:HG21	2:c:188:LEU:HB3	1.84	0.60
10:m:40:ARG:HB3	10:m:93:VAL:HG11	1.84	0.60
16:s:88:ARG:HD3	16:s:94:ASP:HB2	1.83	0.60
48:Z:54:ARG:HA	48:Z:57:LYS:HE3	1.83	0.60
49:3:225:C:C3'	49:3:226:G:H5''	2.31	0.60
49:3:887:G:H2'	49:3:888:G:H5'	1.84	0.60
50:1:161:A:H3'	50:1:162:U:H5''	1.82	0.60
50:1:1138:G:H2'	50:1:1139:G:O4'	2.01	0.60
54:8:84:ARG:O	54:8:88:LEU:HG	2.01	0.60
47:Y:4:LYS:HE3	49:3:332:G:OP1	2.02	0.60
49:3:696:A:H2'	49:3:697:U:H6	1.66	0.60
50:1:215:G:C4'	50:1:216:A:H4'	2.29	0.60
50:1:2101:A:H2'	50:1:2102:G:C8	2.36	0.60
30:H:78:LYS:O	30:H:79:LYS:HG2	2.02	0.60
38:P:80:ASN:HA	38:P:105:ARG:HB3	1.84	0.60
49:3:1060:U:H3	49:3:1197:A:H61	1.49	0.60
49:3:1512:U:H2'	49:3:1513:A:C8	2.37	0.60
54:8:40:ARG:HH12	54:8:88:LEU:HA	1.65	0.60
13:p:1:SER:HA	50:1:2876:G:H5'	1.84	0.60
35:M:17:GLN:HE22	35:M:62:LEU:HD13	1.65	0.60
50:1:2078:C:H2'	50:1:2079:U:C6	2.36	0.60
54:9:64:ILE:HD13	54:9:70:ILE:HG12	1.83	0.60
1:b:56:GLY:HA2	1:b:212:TRP:HA	1.84	0.60
1:b:106:PRO:HG2	1:b:109:LEU:HB2	1.84	0.60
9:l:93:ASN:O	9:l:94:THR:HG22	2.02	0.60
50:1:744:U:H2'	50:1:745:G:H5'	1.84	0.60
50:1:1079:C:H2'	50:1:1080:A:C8	2.37	0.60
50:1:2538:C:H2'	50:1:2539:C:H6	1.66	0.60
4:e:107:VAL:CG1	4:e:108:PRO:HD3	2.32	0.59
12:o:10:ARG:HD3	50:1:2295:C:OP2	2.01	0.59
49:3:1245:C:H2'	49:3:1246:A:H8	1.67	0.59
50:1:1565:C:O2'	50:1:1566:A:H2'	2.01	0.59
54:8:49:PRO:HG2	54:8:52:TYR:HD2	1.66	0.59
6:g:9:VAL:HG13	6:g:10:ALA:H	1.66	0.59
12:o:24:THR:HG23	12:o:90:VAL:HG23	1.83	0.59
19:v:44:HIS:HE1	19:v:86:LEU:H	1.50	0.59
49:3:560:A:H4'	49:3:561:U:H5'	1.83	0.59
7:j:17:VAL:HG23	7:j:137:PRO:HB2	1.82	0.59
49:3:814:A:H5''	49:3:1511:G:H4'	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:24:U:H2'	52:5:25:C:C6	2.37	0.59
1:b:153:LEU:HD13	1:b:175:LEU:HD21	1.85	0.59
7:j:58:ASN:HD21	7:j:128:ASN:HB2	1.68	0.59
35:M:85:TYR:CE1	35:M:123:GLU:HB2	2.38	0.59
49:3:880:C:H2'	49:3:881:G:H8	1.67	0.59
50:1:572:A:H5''	50:1:573:U:OP2	2.03	0.59
26:D:34:ARG:NE	26:D:39:ARG:HD2	2.16	0.59
49:3:456:A:H2'	49:3:457:G:H8	1.67	0.59
49:3:839:C:H2'	49:3:840:C:C6	2.38	0.59
50:1:1319:C:O2'	50:1:1320:C:H5'	2.02	0.59
2:c:148:GLN:HG3	2:c:152:PRO:HG2	1.85	0.59
5:f:95:ALA:HB1	5:f:130:ILE:HD11	1.84	0.59
6:g:100:ALA:O	6:g:103:VAL:HG12	2.02	0.59
11:n:110:MET:HE2	11:n:110:MET:HA	1.84	0.59
49:3:715:A:H2'	49:3:716:A:C8	2.37	0.59
49:3:721:G:H4'	49:3:722:G:O4'	2.01	0.59
49:3:736:C:H2'	49:3:737:C:C6	2.37	0.59
50:1:1304:A:C3'	50:1:1305:C:H5''	2.33	0.59
23:z:16:LEU:HD12	23:z:17:PRO:HD2	1.84	0.59
27:E:15:LYS:HG2	27:E:64:ALA:HB1	1.84	0.59
49:3:887:G:C2'	49:3:888:G:H5'	2.33	0.59
50:1:27:G:N2	50:1:512:G:H1'	2.17	0.59
50:1:2016:U:H2'	50:1:2017:U:C6	2.38	0.59
48:Z:23:GLU:C	48:Z:25:ALA:H	2.11	0.59
49:3:484:G:H4'	49:3:485:U:H5''	1.84	0.59
49:3:555:U:H2'	49:3:556:C:C6	2.38	0.59
49:3:1346:A:H2'	49:3:1346:A:N3	2.17	0.59
50:1:1983:G:H4'	50:1:2606:C:H4'	1.83	0.59
54:8:69:VAL:HG23	54:8:71:VAL:HG23	1.85	0.59
38:P:24:ALA:HB1	38:P:90:PRO:HD2	1.85	0.59
47:Y:43:LYS:O	47:Y:47:GLN:HG3	2.03	0.59
49:3:604:G:H2'	49:3:605:U:O4'	2.03	0.59
49:3:1088:G:H21	49:3:1167:A:H61	1.49	0.59
49:3:1135:U:H2'	49:3:1137:C:OP2	2.03	0.59
5:f:104:LEU:H	5:f:104:LEU:HD23	1.67	0.59
11:n:63:ARG:NH2	50:1:1454:C:H5'	2.17	0.59
31:I:149:LYS:HD3	31:I:176:LYS:HG3	1.85	0.59
49:3:871:U:H5''	49:3:872:A:OP2	2.03	0.59
50:1:1536:C:H4'	50:1:1537:G:C2	2.38	0.59
15:r:79:ARG:HD2	15:r:80:ARG:NH2	2.18	0.58
21:x:60:LYS:HE3	50:1:372:G:H5''	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:J:96:GLN:HG2	32:J:97:PRO:HD2	1.85	0.58
36:N:32:ARG:HD3	36:N:36:GLN:HG2	1.85	0.58
49:3:75:G:C2'	49:3:76:G:H5'	2.33	0.58
49:3:988:G:H1'	49:3:1015:G:H22	1.67	0.58
49:3:1138:G:H3'	49:3:1138:G:N3	2.18	0.58
50:1:740:C:H5''	50:1:1784:A:OP1	2.03	0.58
50:1:2281:A:O2'	50:1:2282:G:H5'	2.03	0.58
50:1:2636:C:H2'	50:1:2637:U:C6	2.36	0.58
33:K:18:VAL:HG12	33:K:19:PRO:HD3	1.83	0.58
41:S:63:CYS:HB2	41:S:67:GLY:H	1.67	0.58
43:U:79:ASN:HB2	43:U:82:ALA:HB3	1.86	0.58
49:3:1052:U:H2'	49:3:1200:C:N4	2.18	0.58
50:1:582:A:H2'	50:1:583:G:C8	2.38	0.58
50:1:1141:U:H4'	50:1:1142:A:O4'	2.03	0.58
50:1:2710:C:H2'	50:1:2711:A:H8	1.67	0.58
8:k:23:LYS:NZ	50:1:2548:U:H1'	2.18	0.58
13:p:47:ILE:HD11	13:p:61:ARG:HB2	1.85	0.58
18:u:11:ILE:HG22	18:u:21:ARG:HG2	1.84	0.58
30:H:3:LYS:HE2	49:3:1191:A:H5''	1.85	0.58
34:L:117:LEU:O	34:L:121:ASN:HB2	2.03	0.58
50:1:441:U:O2'	50:1:442:G:H5'	2.03	0.58
50:1:464:U:H2'	50:1:465:G:O4'	2.03	0.58
50:1:873:C:H2'	50:1:874:G:C8	2.39	0.58
50:1:2875:C:H2'	50:1:2876:G:C8	2.37	0.58
2:c:13:ARG:HH11	13:p:55:HIS:HA	1.67	0.58
32:J:149:PRO:HA	32:J:152:VAL:HG12	1.85	0.58
49:3:31:G:H5'	49:3:306:A:C2	2.38	0.58
50:1:1178:C:O2	50:1:1178:C:H2'	2.01	0.58
2:c:148:GLN:O	50:1:2052:A:H4'	2.04	0.58
30:H:113:LYS:HE2	30:H:184:ASN:HD21	1.68	0.58
35:M:11:THR:HG21	49:3:876:C:H1'	1.85	0.58
49:3:314:C:O2'	49:3:315:A:H5'	2.04	0.58
50:1:741:U:H2'	50:1:742:A:H8	1.67	0.58
50:1:1197:G:H2'	50:1:1198:U:C6	2.38	0.58
50:1:1437:C:H2'	50:1:1438:U:C6	2.38	0.58
50:1:1810:A:H2'	50:1:1811:G:O4'	2.01	0.58
50:1:2743:U:C3'	50:1:2744:G:H5''	2.33	0.58
2:c:116:LYS:HG3	2:c:165:MET:HE2	1.85	0.58
7:j:11:VAL:HG23	7:j:13:ARG:HH21	1.69	0.58
17:t:2:ILE:HG13	50:1:144:A:H4'	1.86	0.58
26:D:34:ARG:HD3	50:1:467:G:OP2	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:I:158:LEU:HD11	31:I:174:ALA:HB1	1.85	0.58
35:M:14:ARG:HD2	49:3:875:U:O2'	2.03	0.58
50:1:192:C:C2'	50:1:193:U:H5'	2.32	0.58
50:1:886:A:H3'	50:1:887:U:H4'	1.86	0.58
50:1:1725:U:H3	50:1:1735:A:H61	1.50	0.58
50:1:2128:G:H22	50:1:2173:A:H2	1.50	0.58
54:8:117:ARG:NH2	54:8:117:ARG:HB3	2.18	0.58
29:G:46:VAL:N	29:G:47:PRO:HD2	2.18	0.58
29:G:69:VAL:HA	29:G:91:VAL:HG23	1.84	0.58
49:3:123:U:OP1	49:3:312:C:H5'	2.03	0.58
49:3:1287:A:H2	49:3:1353:G:H1'	1.67	0.58
50:1:1728:C:C2'	50:1:1729:U:H5''	2.34	0.58
50:1:1825:U:H2'	50:1:1826:G:C8	2.39	0.58
35:M:80:PRO:HG2	49:3:878:A:C5'	2.34	0.58
49:3:1512:U:H2'	49:3:1513:A:H8	1.68	0.58
3:d:44:ARG:HE	3:d:87:ALA:HB3	1.68	0.58
17:t:15:HIS:H	17:t:32:LEU:HA	1.68	0.58
49:3:950:U:H2'	49:3:951:G:H8	1.69	0.58
49:3:1404:C:H2'	49:3:1405:G:C8	2.39	0.58
50:1:669:G:H5''	50:1:670:A:OP2	2.04	0.58
50:1:968:C:H2'	50:1:969:G:C8	2.38	0.58
50:1:2028:U:H2'	50:1:2029:G:O4'	2.03	0.58
51:2:66:A:N1	51:2:107:G:H2'	2.18	0.58
3:d:84:THR:HG23	3:d:85:PHE:N	2.18	0.58
9:l:26:GLY:C	9:l:27:LEU:HD22	2.29	0.58
49:3:357:G:OP1	49:3:367:U:H5''	2.04	0.58
49:3:414:A:H62	49:3:430:A:H61	1.52	0.58
32:J:14:LEU:HD23	32:J:15:ILE:N	2.19	0.57
49:3:57:G:H2'	49:3:58:C:C6	2.39	0.57
2:c:11:MET:O	50:1:2682:A:H5'	2.04	0.57
20:w:21:ARG:HE	20:w:27:VAL:HG12	1.67	0.57
50:1:1304:A:C2'	50:1:1305:C:H5''	2.32	0.57
1:b:16:VAL:CG2	1:b:203:VAL:HG22	2.34	0.57
49:3:908:A:H2'	49:3:909:A:C8	2.39	0.57
50:1:546:U:H1'	50:1:548:G:O6	2.03	0.57
50:1:1367:A:H2'	50:1:1368:G:H5'	1.85	0.57
50:1:1932:A:H2'	50:1:1933:G:O4'	2.03	0.57
50:1:1936:A:H3'	50:1:1937:A:H5'	1.87	0.57
50:1:2134:A:H1'	50:1:2158:A:H4'	1.86	0.57
31:I:101:VAL:HG22	31:I:106:PHE:HB2	1.87	0.57
36:N:112:ARG:HE	41:S:100:TRP:NE1	2.02	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:29:U:O2'	49:3:30:U:H5'	2.03	0.57
50:1:1573:G:H2'	50:1:1574:C:H5'	1.86	0.57
50:1:2821:A:H2'	50:1:2822:G:C8	2.39	0.57
6:g:54:LEU:HA	6:g:57:LYS:HE2	1.87	0.57
7:j:68:LYS:HG2	7:j:72:LYS:HB2	1.86	0.57
31:I:137:SER:O	31:I:140:ASP:HB2	2.05	0.57
50:1:128:C:H2'	50:1:129:C:C6	2.40	0.57
50:1:917:A:H5''	50:1:2268:A:H61	1.69	0.57
1:b:48:ILE:HG22	50:1:779:U:OP1	2.04	0.57
3:d:118:LEU:HD11	3:d:188:MET:HE2	1.86	0.57
21:x:16:ASN:HB3	21:x:24:THR:HG23	1.86	0.57
49:3:422:C:H4'	49:3:423:G:C2	2.39	0.57
50:1:873:C:H2'	50:1:874:G:H8	1.69	0.57
50:1:968:C:H2'	50:1:969:G:H8	1.69	0.57
50:1:1827:U:O2'	50:1:1828:G:H5'	2.05	0.57
31:I:53:GLN:HG2	31:I:198:LEU:HB3	1.87	0.57
37:O:42:LEU:HD23	37:O:71:LEU:HD21	1.87	0.57
49:3:372:C:N4	49:3:387:U:H2'	2.20	0.57
50:1:2699:C:H2'	50:1:2700:A:C8	2.40	0.57
42:T:45:HIS:O	42:T:47:LYS:N	2.38	0.57
49:3:715:A:H2'	49:3:716:A:H8	1.70	0.57
50:1:1213:A:H62	50:1:1236:G:H1'	1.69	0.57
50:1:1701:A:H2'	50:1:1702:G:H5'	1.86	0.57
50:1:1837:C:H2'	50:1:1899:A:H61	1.70	0.57
52:5:69:C:H2'	52:5:70:G:H8	1.69	0.57
1:b:156:SER:O	1:b:194:VAL:HG21	2.05	0.57
5:f:163:TYR:HB2	5:f:166:GLU:HB2	1.87	0.57
31:I:29:THR:HG23	31:I:30:LYS:HG3	1.86	0.57
39:Q:93:ARG:HH12	49:3:911:U:P	2.28	0.57
39:Q:109:ARG:HH22	49:3:537:G:H5''	1.69	0.57
50:1:593:U:H2'	50:1:594:U:C6	2.39	0.57
50:1:745:G:C2'	50:1:746:U:H5'	2.34	0.57
50:1:1583:A:H4'	50:1:1585:C:N4	2.20	0.57
50:1:2619:C:H2'	50:1:2620:C:H6	1.70	0.57
54:9:17:ILE:HA	54:9:40:ARG:HB2	1.85	0.57
6:g:68:ARG:HH11	6:g:72:ILE:HD11	1.70	0.57
8:k:109:SER:O	8:k:110:GLU:HG3	2.05	0.57
36:N:54:VAL:HG23	36:N:55:ASP:H	1.70	0.57
49:3:50:A:H4'	49:3:51:A:H5'	1.87	0.57
49:3:1107:C:C3'	49:3:1108:G:H5''	2.32	0.57
8:k:21:CYS:HA	8:k:41:ILE:HG22	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:664:G:N2	49:3:741:G:H1	2.01	0.56
49:3:1402:C:H2'	49:3:1403:C:O4'	2.04	0.56
50:1:2314:A:H2'	50:1:2315:G:C8	2.39	0.56
50:1:2731:G:H2'	50:1:2732:G:C8	2.40	0.56
5:f:106:LEU:HD21	5:f:151:ARG:CB	2.27	0.56
49:3:539:A:H2'	49:3:540:G:C8	2.39	0.56
50:1:970:U:O2'	50:1:984:A:H4'	2.04	0.56
50:1:2423:U:H5'	50:1:2424:C:C5'	2.34	0.56
54:8:47:SER:OG	54:8:53:LYS:HE2	2.05	0.56
54:8:96:LYS:HE3	54:9:5:SER:CB	2.35	0.56
2:c:150:GLN:HB3	50:1:2032:G:N2	2.20	0.56
3:d:109:LEU:HD12	3:d:112:LEU:HD12	1.87	0.56
6:g:26:ALA:O	6:g:31:VAL:HG22	2.05	0.56
7:j:113:PRO:HD2	50:1:558:U:OP1	2.05	0.56
11:n:22:ARG:HE	11:n:70:THR:H	1.53	0.56
18:u:46:LYS:HD2	18:u:47:PRO:HD2	1.88	0.56
48:Z:44:ARG:NH1	49:3:722:G:H21	2.03	0.56
49:3:405:U:H1'	49:3:498:A:H2'	1.87	0.56
49:3:772:U:O2'	49:3:773:G:H5'	2.06	0.56
49:3:785:G:O2'	49:3:786:G:H5'	2.05	0.56
49:3:908:A:H2'	49:3:909:A:H8	1.70	0.56
49:3:1211:U:H4'	49:3:1213:A:C4	2.40	0.56
49:3:1230:C:H5'	52:5:30:G:H5''	1.87	0.56
50:1:26:G:H1'	50:1:514:A:N6	2.19	0.56
50:1:796:C:H2'	50:1:797:G:H8	1.68	0.56
50:1:878:A:N6	50:1:899:A:H1'	2.20	0.56
50:1:1072:C:N4	50:1:1093:G:H22	2.03	0.56
50:1:2070:A:H2'	50:1:2071:A:O4'	2.04	0.56
50:1:2831:G:OP1	50:1:2834:G:H4'	2.05	0.56
17:t:8:LEU:HD13	22:y:21:LEU:HB3	1.87	0.56
49:3:1318:A:H2'	49:3:1319:A:H5'	1.86	0.56
49:3:1356:G:H2'	49:3:1357:A:C8	2.41	0.56
53:4:19:U:H5'	53:4:19:U:C6	2.38	0.56
26:D:12:ARG:HH11	26:D:44:VAL:HB	1.70	0.56
49:3:68:G:H5'	49:3:171:A:O2'	2.06	0.56
49:3:463:U:H3	49:3:469:C:H42	1.51	0.56
49:3:1288:A:O2'	49:3:1353:G:H5'	2.05	0.56
50:1:1689:A:H2'	50:1:1690:A:C8	2.41	0.56
50:1:2215:C:H2'	50:1:2216:G:C8	2.40	0.56
1:b:83:ASP:OD1	1:b:86:ARG:NH1	2.39	0.56
3:d:62:GLN:HE22	3:d:69:ARG:HB3	1.71	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:U:44:SER:H	43:U:46:LYS:HE3	1.69	0.56
49:3:946:A:H2'	49:3:947:G:C8	2.41	0.56
49:3:1514:G:O2'	49:3:1515:G:H5'	2.05	0.56
50:1:492:A:H2'	50:1:493:G:O4'	2.06	0.56
20:w:36:GLN:NE2	20:w:39:THR:HA	2.21	0.56
25:C:17:GLY:HA3	50:1:2400:G:H4'	1.87	0.56
38:P:53:GLY:O	38:P:55:ARG:N	2.36	0.56
44:V:5:ARG:NH2	49:3:128:G:C5'	2.49	0.56
50:1:63:A:H2'	50:1:64:A:C8	2.41	0.56
50:1:890:C:H2'	50:1:891:G:H5'	1.88	0.56
50:1:917:A:H5''	50:1:2268:A:N6	2.21	0.56
50:1:1387:A:H2'	50:1:1388:G:C8	2.40	0.56
34:L:101:ARG:NH1	49:3:939:G:H4'	2.21	0.56
39:Q:89:LEU:O	39:Q:92:VAL:HG22	2.06	0.56
49:3:483:C:H2'	49:3:484:G:C8	2.40	0.56
49:3:1342:C:H2'	49:3:1343:G:H8	1.70	0.56
50:1:1355:G:O2'	50:1:1356:G:H5'	2.05	0.56
50:1:2024:G:OP2	50:1:2034:U:H4'	2.05	0.56
50:1:2606:C:H2'	50:1:2607:G:C8	2.40	0.56
54:8:10:ILE:HG23	54:8:10:ILE:O	2.06	0.56
4:e:102:LEU:HD12	4:e:106:ALA:HB3	1.88	0.56
13:p:20:ARG:HG2	50:1:2867:G:O6	2.06	0.56
19:v:4:ILE:HG22	19:v:63:ILE:HG22	1.88	0.56
19:v:80:HIS:CG	19:v:81:PRO:HD2	2.41	0.56
49:3:694:A:H2'	49:3:695:A:H5'	1.87	0.56
49:3:1517:G:H2'	49:3:1518:A:H5'	1.88	0.56
50:1:744:U:C2'	50:1:745:G:H5'	2.35	0.56
50:1:2087:G:H2'	50:1:2088:A:H8	1.70	0.56
50:1:2533:U:H2'	50:1:2534:A:O4'	2.06	0.56
51:2:55:U:H2'	51:2:56:G:C8	2.40	0.56
26:D:12:ARG:HG2	50:1:686:U:O4	2.06	0.56
49:3:145:G:H3'	49:3:146:G:H5''	1.88	0.56
49:3:285:C:H2'	49:3:286:C:C6	2.41	0.56
50:1:1173:U:H1'	50:1:1177:G:O6	2.06	0.56
50:1:1550:C:H2'	50:1:1551:A:H8	1.70	0.56
50:1:2427:C:H5''	50:1:2429:G:H5'	1.88	0.56
50:1:2568:U:H2'	50:1:2569:G:O4'	2.06	0.56
2:c:9:VAL:HB	2:c:26:VAL:HG13	1.88	0.55
6:g:9:VAL:CG1	6:g:10:ALA:N	2.68	0.55
12:o:43:ASN:ND2	12:o:45:SER:OG	2.39	0.55
39:Q:115:LYS:O	39:Q:116:TYR:HB2	2.06	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:R:58:GLU:HA	40:R:61:LYS:HE3	1.89	0.55
48:Z:65:ARG:NH2	49:3:1100:C:H4'	2.20	0.55
49:3:1218:C:H2'	49:3:1219:A:C8	2.40	0.55
50:1:528:A:N1	50:1:2042:A:H2'	2.22	0.55
50:1:1054:A:H2'	50:1:1055:G:C8	2.41	0.55
50:1:1167:C:H2'	50:1:1168:G:H8	1.71	0.55
50:1:1441:G:H2'	50:1:1442:U:C6	2.41	0.55
50:1:2196:C:O2'	50:1:2197:U:H5'	2.06	0.55
54:8:61:HIS:HE1	54:8:94:MET:HG3	1.71	0.55
54:8:83:ASN:HA	54:8:86:ALA:HB3	1.87	0.55
54:8:96:LYS:CE	54:9:5:SER:HB2	2.35	0.55
6:g:9:VAL:CG1	6:g:10:ALA:H	2.19	0.55
18:u:16:LYS:O	18:u:16:LYS:HD3	2.07	0.55
33:K:42:TRP:HB2	33:K:59:TYR:HB2	1.87	0.55
39:Q:31:GLY:HA3	39:Q:54:VAL:HG23	1.86	0.55
45:W:40:PRO:O	45:W:43:ILE:HG22	2.06	0.55
49:3:731:G:O2'	49:3:732:C:H5'	2.06	0.55
50:1:1967:C:H2'	50:1:1968:G:H5'	1.88	0.55
51:2:3:C:H3'	51:2:4:C:C5'	2.35	0.55
16:s:36:LEU:HD13	16:s:47:VAL:HG13	1.88	0.55
17:t:51:PHE:O	17:t:52:GLU:HG3	2.06	0.55
36:N:80:HIS:CE1	36:N:84:ARG:HE	2.23	0.55
38:P:119:GLY:HA2	49:3:716:A:N3	2.22	0.55
49:3:407:U:H2'	49:3:408:A:C8	2.41	0.55
50:1:1047:G:H2'	50:1:1110:G:N2	2.21	0.55
50:1:1268:A:H2'	50:1:1269:A:O4'	2.06	0.55
50:1:1998:A:H2'	50:1:1999:C:C6	2.42	0.55
37:O:88:MET:O	37:O:89:ARG:HG2	2.06	0.55
38:P:86:LYS:HB2	38:P:112:VAL:HB	1.88	0.55
46:X:65:MET:N	46:X:65:MET:SD	2.80	0.55
49:3:451:A:N6	49:3:480:U:H2'	2.22	0.55
49:3:1346:A:O2'	49:3:1347:G:H4'	2.06	0.55
49:3:1492:A:O3'	49:3:1493:A:H2'	2.07	0.55
50:1:139:U:H5'	50:1:140:C:O4'	2.05	0.55
50:1:983:A:C6	50:1:984:A:C2	2.94	0.55
50:1:1246:A:H2'	50:1:1247:A:O4'	2.05	0.55
50:1:1583:A:H5'	50:1:1584:U:H5	1.71	0.55
50:1:1655:A:H2'	50:1:1656:C:O4'	2.06	0.55
14:q:107:ALA:HB3	15:r:48:LYS:HZ2	1.71	0.55
49:3:405:U:C3'	49:3:406:G:H5'	2.32	0.55
49:3:945:G:N2	49:3:1334:G:H4'	2.22	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:1197:A:H2'	49:3:1198:G:H5'	1.89	0.55
50:1:2156:G:C2'	50:1:2157:G:H5'	2.35	0.55
47:Y:59:ARG:O	47:Y:63:LYS:HG2	2.06	0.55
49:3:879:C:O2'	49:3:880:C:H5'	2.05	0.55
50:1:185:G:H4'	50:1:218:A:O2'	2.07	0.55
50:1:1647:U:H3'	50:1:1647:U:P	2.47	0.55
50:1:1843:C:H2'	50:1:1844:C:C6	2.42	0.55
50:1:2841:C:H2'	50:1:2842:G:H8	1.71	0.55
54:8:43:ILE:HG13	54:8:44:ARG:N	2.21	0.55
2:c:148:GLN:HB2	50:1:2574:G:O2'	2.06	0.55
3:d:147:LEU:HD12	3:d:168:ASP:O	2.06	0.55
19:v:1:MET:HE2	19:v:1:MET:H1	1.72	0.55
22:y:2:LYS:HD3	50:1:78:U:OP1	2.07	0.55
24:B:9:ARG:H	24:B:9:ARG:HD2	1.72	0.55
30:H:128:MET:HE3	30:H:130:ARG:HB2	1.89	0.55
44:V:13:SER:HB3	44:V:21:VAL:CG2	2.36	0.55
49:3:335:C:H2'	49:3:336:A:H8	1.69	0.55
49:3:603:U:H2'	49:3:604:G:C8	2.41	0.55
49:3:1193:G:O2'	49:3:1194:U:H5'	2.06	0.55
50:1:987:C:H2'	50:1:988:A:O4'	2.07	0.55
50:1:2455:G:H2'	50:1:2456:C:C6	2.42	0.55
52:5:44:A:H2'	52:5:45:G:O4'	2.07	0.55
54:8:54:GLU:OE2	54:8:55:ARG:HG3	2.07	0.55
4:e:58:ALA:O	4:e:139:GLU:HG2	2.07	0.55
14:q:103:VAL:O	14:q:106:THR:HG22	2.06	0.55
26:D:31:LEU:HD22	26:D:42:LEU:HD21	1.88	0.55
29:G:107:ARG:HG2	29:G:111:LYS:HE3	1.89	0.55
37:O:11:LYS:HB3	37:O:71:LEU:HD13	1.88	0.55
48:Z:28:LEU:HA	48:Z:31:VAL:HG22	1.88	0.55
49:3:407:U:H2'	49:3:408:A:H8	1.72	0.55
49:3:1477:U:H2'	49:3:1478:U:C6	2.41	0.55
50:1:493:G:O2'	50:1:494:G:H5'	2.07	0.55
50:1:817:C:H2'	50:1:818:G:O4'	2.07	0.55
50:1:1167:C:H2'	50:1:1168:G:C8	2.42	0.55
50:1:2714:G:O2'	50:1:2715:C:H5'	2.06	0.55
50:1:2143:C:H2'	50:1:2144:G:O4'	2.07	0.55
50:1:2655:G:O2'	50:1:2656:U:H5	1.88	0.55
2:c:105:LYS:O	2:c:177:VAL:HG12	2.06	0.55
8:k:105:ARG:H	8:k:105:ARG:HD3	1.72	0.55
15:r:24:LYS:HD2	15:r:66:HIS:CE1	2.42	0.55
15:r:76:LYS:HB2	15:r:85:LYS:HB3	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:I:33:ILE:O	31:I:34:GLU:HB2	2.07	0.55
33:K:72:ASP:HA	33:K:75:GLU:OE1	2.07	0.55
49:3:149:A:H1'	49:3:1446:A:H2	1.70	0.55
49:3:151:A:H2'	49:3:152:A:O4'	2.07	0.55
49:3:437:U:O2'	49:3:438:U:H5'	2.07	0.55
50:1:112:U:H2'	50:1:113:U:H5'	1.88	0.55
50:1:225:C:H2'	50:1:226:A:O4'	2.06	0.55
50:1:819:A:C4	50:1:1189:A:C2	2.95	0.55
50:1:2317:A:H2'	50:1:2318:G:O4'	2.07	0.55
51:2:117:G:C2'	51:2:118:C:H5'	2.37	0.55
35:M:17:GLN:HE22	35:M:62:LEU:HD22	1.72	0.54
49:3:1517:G:C2'	49:3:1518:A:H5'	2.37	0.54
50:1:1272:A:N7	50:1:1618:A:H1'	2.22	0.54
50:1:1326:U:H2'	50:1:1327:A:C8	2.39	0.54
50:1:2078:C:H2'	50:1:2079:U:H6	1.72	0.54
50:1:2139:U:H3	50:1:2152:G:H1	1.53	0.54
50:1:2692:G:O2'	50:1:2693:G:H5'	2.07	0.54
1:b:4:LYS:HG2	1:b:5:CYS:H	1.72	0.54
49:3:456:A:H2'	49:3:457:G:C8	2.42	0.54
50:1:511:U:H2'	50:1:512:G:H5'	1.90	0.54
50:1:1444:G:H2'	50:1:1445:G:H8	1.72	0.54
50:1:2585:U:H4'	50:1:2586:U:C5'	2.36	0.54
50:1:2801:G:H2'	50:1:2802:G:H8	1.72	0.54
54:8:34:SER:C	54:8:36:ALA:H	2.14	0.54
12:o:64:TYR:HB3	12:o:67:ASN:HD22	1.72	0.54
36:N:49:GLN:HG3	36:N:50:PRO:CD	2.37	0.54
36:N:98:ARG:O	36:N:100:ALA:N	2.39	0.54
46:X:65:MET:HB3	46:X:68:HIS:HB2	1.90	0.54
49:3:695:A:H2'	49:3:696:A:C8	2.42	0.54
49:3:1298:U:H4'	49:3:1299:A:O4'	2.07	0.54
50:1:362:A:H5''	50:1:363:G:N7	2.22	0.54
50:1:419:U:H2'	50:1:420:C:C6	2.43	0.54
50:1:546:U:H2'	50:1:547:A:C4'	2.37	0.54
50:1:554:U:H2'	50:1:555:G:O4'	2.07	0.54
50:1:967:U:H2'	50:1:968:C:C6	2.42	0.54
50:1:1230:A:H2'	50:1:1231:U:C6	2.42	0.54
50:1:2233:U:H2'	50:1:2234:G:C8	2.43	0.54
54:8:8:VAL:HA	54:9:5:SER:HA	1.88	0.54
2:c:61:THR:OG1	2:c:63:PRO:HD2	2.07	0.54
7:j:81:ILE:HG13	7:j:82:GLY:H	1.72	0.54
21:x:36:ARG:HA	21:x:47:THR:HA	1.90	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:M:110:MET:HE2	35:M:114:ALA:HB1	1.89	0.54
49:3:252:U:O2	49:3:252:U:H2'	2.05	0.54
49:3:1429:A:H2'	49:3:1430:A:C8	2.41	0.54
50:1:1506:U:H2'	50:1:1507:C:C6	2.43	0.54
50:1:2385:C:H2'	50:1:2386:A:C8	2.42	0.54
54:8:18:THR:HG22	54:8:19:ALA:N	2.22	0.54
8:k:18:ARG:H	8:k:45:GLU:HB3	1.71	0.54
17:t:58:VAL:HG22	17:t:85:VAL:HG13	1.88	0.54
18:u:3:LYS:HG2	18:u:82:VAL:HG23	1.90	0.54
19:v:30:ILE:HG22	19:v:91:PHE:HB2	1.88	0.54
26:D:31:LEU:HD22	26:D:42:LEU:CD2	2.38	0.54
39:Q:73:LEU:N	39:Q:73:LEU:HD23	2.23	0.54
49:3:971:G:H1'	49:3:1365:G:HO2'	1.71	0.54
49:3:1323:G:H2'	49:3:1324:A:C8	2.43	0.54
50:1:1278:C:H2'	50:1:1279:G:H8	1.72	0.54
50:1:2620:C:H3'	50:1:2621:G:H5''	1.88	0.54
51:2:104:A:H2'	51:2:105:G:O4'	2.07	0.54
6:g:4:ILE:HG13	6:g:37:VAL:HG23	1.88	0.54
26:D:5:PHE:CZ	26:D:7:PRO:HB3	2.43	0.54
27:E:31:ILE:HG23	27:E:31:ILE:O	2.07	0.54
35:M:29:SER:HB3	35:M:32:LYS:HG3	1.88	0.54
43:U:3:THR:HG21	49:3:377:G:OP1	2.08	0.54
49:3:220:G:O2'	49:3:221:C:H5'	2.08	0.54
49:3:764:C:H2'	49:3:765:G:O4'	2.07	0.54
49:3:868:C:H2'	49:3:869:G:O4'	2.08	0.54
49:3:1306:A:N6	49:3:1331:G:H1'	2.21	0.54
50:1:833:A:H2'	50:1:834:G:C8	2.42	0.54
50:1:1114:C:H2'	50:1:1115:G:C8	2.42	0.54
50:1:1444:G:H2'	50:1:1445:G:C8	2.42	0.54
51:2:115:A:H2'	51:2:116:G:C8	2.43	0.54
13:p:9:GLN:HA	13:p:12:MET:HE2	1.89	0.54
28:F:3:VAL:HG11	50:1:2539:C:H5'	1.90	0.54
29:G:206:ILE:O	29:G:209:VAL:HG12	2.07	0.54
30:H:27:GLU:N	30:H:27:GLU:OE2	2.41	0.54
31:I:131:ILE:CD1	49:3:620:C:H1'	2.38	0.54
49:3:303:A:H2'	49:3:304:U:O4'	2.07	0.54
49:3:1169:A:H2'	49:3:1170:A:C8	2.42	0.54
49:3:1273:C:H2'	49:3:1274:A:H5'	1.90	0.54
50:1:1664:A:H61	50:1:1996:C:N4	1.99	0.54
50:1:2691:C:H2'	50:1:2692:G:C8	2.43	0.54
52:5:47:U:H3'	52:5:48:C:C5'	2.38	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:l:79:LEU:HD22	9:l:116:VAL:HG21	1.88	0.54
31:I:98:ASP:OD1	31:I:114:ARG:HG3	2.08	0.54
48:Z:44:ARG:NH2	49:3:722:G:N2	2.54	0.54
49:3:1305:G:H22	49:3:1331:G:H2'	1.73	0.54
49:3:1305:G:H1'	49:3:1332:A:N6	2.22	0.54
50:1:1913:A:H3'	50:1:1913:A:OP2	2.08	0.54
14:q:48:ASP:HA	14:q:51:GLN:HB2	1.89	0.54
29:G:118:THR:O	29:G:121:GLN:NE2	2.35	0.54
30:H:172:VAL:O	30:H:174:LEU:HD12	2.08	0.54
39:Q:109:ARG:NH2	49:3:537:G:H5''	2.23	0.54
50:1:662:G:O2'	50:1:663:G:H5'	2.07	0.54
52:5:52:G:H2'	52:5:53:G:H8	1.73	0.54
5:f:131:VAL:C	5:f:132:LEU:HD12	2.33	0.54
23:z:23:LEU:HD11	23:z:53:MET:HE2	1.90	0.54
29:G:116:LEU:HG	29:G:140:LEU:HD13	1.90	0.54
32:J:79:THR:OG1	32:J:80:LEU:N	2.41	0.54
47:Y:50:PHE:HZ	47:Y:75:LYS:HG3	1.72	0.54
49:3:1524:C:H2'	49:3:1525:G:H8	1.72	0.54
50:1:20:C:H2'	50:1:21:A:H8	1.73	0.54
50:1:847:U:O2	50:1:847:U:H2'	2.06	0.54
50:1:1947:C:O2'	50:1:1948:G:H5'	2.08	0.54
54:8:106:ARG:HB3	54:8:107:PRO:HA	1.90	0.54
15:r:65:ALA:HB3	15:r:95:ASP:HB3	1.90	0.53
29:G:14:HIS:O	29:G:15:PHE:O	2.26	0.53
31:I:33:ILE:HG23	31:I:34:GLU:HG2	1.90	0.53
35:M:17:GLN:CD	35:M:62:LEU:HD13	2.33	0.53
44:V:14:ASP:HA	44:V:20:ILE:HG13	1.90	0.53
48:Z:28:LEU:O	48:Z:32:ARG:HG3	2.08	0.53
49:3:621:A:H2'	49:3:622:A:C8	2.43	0.53
49:3:1127:G:H5'	49:3:1280:A:O2'	2.08	0.53
50:1:1609:A:C1'	50:1:1616:A:H1'	2.38	0.53
50:1:2638:G:H1'	50:1:2778:A:H61	1.72	0.53
8:k:31:ARG:HH12	50:1:2675:A:H5''	1.73	0.53
8:k:98:ARG:NH2	49:3:339:C:OP2	2.42	0.53
16:s:90:LYS:O	16:s:92:ARG:NH1	2.41	0.53
38:P:54:SER:HB3	49:3:694:A:H5''	1.90	0.53
49:3:512:U:H2'	49:3:513:C:C6	2.43	0.53
50:1:1450:G:O2'	50:1:1451:C:H5'	2.08	0.53
50:1:1815:A:H8	50:1:1815:A:OP1	1.92	0.53
50:1:2795:C:H2'	50:1:2796:U:O4'	2.07	0.53
52:5:4:G:H2'	52:5:5:G:C8	2.42	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:8:99:THR:O	54:8:101:GLU:HG2	2.07	0.53
30:H:109:GLU:HG2	30:H:139:ASN:ND2	2.22	0.53
46:X:5:LYS:HB3	49:3:1313:U:OP2	2.08	0.53
49:3:697:U:H2'	49:3:698:G:H5'	1.90	0.53
50:1:732:C:H2'	50:1:733:G:O4'	2.07	0.53
50:1:845:A:N3	50:1:845:A:H3'	2.23	0.53
50:1:1542:U:H2'	50:1:1543:G:O4'	2.09	0.53
50:1:1967:C:C2'	50:1:1968:G:H5'	2.38	0.53
50:1:2215:C:H2'	50:1:2216:G:H8	1.73	0.53
50:1:2619:C:H2'	50:1:2620:C:C6	2.43	0.53
18:u:73:ASN:ND2	18:u:75:ALA:HB3	2.23	0.53
49:3:56:U:H2'	49:3:57:G:H8	1.74	0.53
49:3:701:U:H4'	49:3:703:G:H1'	1.88	0.53
49:3:1005:A:H2'	49:3:1006:G:O4'	2.08	0.53
50:1:581:C:H2'	50:1:582:A:C8	2.44	0.53
50:1:724:U:H2'	50:1:725:G:O4'	2.09	0.53
50:1:1794:A:H2'	50:1:1795:C:C6	2.44	0.53
50:1:2641:G:H2'	50:1:2642:G:C8	2.44	0.53
3:d:127:GLU:HB3	3:d:133:LEU:HD21	1.91	0.53
20:w:45:ALA:HB3	20:w:77:SER:HG	1.74	0.53
30:H:198:LYS:HE3	49:3:1058:G:OP1	2.07	0.53
49:3:692:U:H2'	49:3:694:A:OP2	2.07	0.53
49:3:704:A:H2'	49:3:705:G:O4'	2.08	0.53
50:1:517:C:C2'	50:1:518:G:H5''	2.38	0.53
50:1:1172:C:C2'	50:1:1173:U:H5''	2.38	0.53
50:1:2609:U:H5'	50:1:2610:C:OP2	2.08	0.53
51:2:119:A:H2'	51:2:120:A:C4'	2.39	0.53
4:e:40:GLY:HA2	4:e:84:ILE:HG13	1.90	0.53
5:f:85:LYS:HB3	5:f:164:ALA:HB2	1.90	0.53
7:j:81:ILE:HG13	7:j:82:GLY:N	2.24	0.53
8:k:112:PHE:O	8:k:115:ILE:HG22	2.08	0.53
49:3:427:U:H2'	49:3:428:G:C8	2.44	0.53
49:3:662:U:H2'	49:3:663:A:C8	2.44	0.53
49:3:784:A:H2'	49:3:785:G:H8	1.73	0.53
49:3:1487:G:O2'	49:3:1488:G:H5'	2.09	0.53
50:1:741:U:H2'	50:1:742:A:C8	2.43	0.53
50:1:2360:G:C2'	50:1:2361:G:H5'	2.39	0.53
50:1:2875:C:H2'	50:1:2876:G:H8	1.73	0.53
6:g:73:ASN:O	6:g:76:GLU:HG3	2.09	0.53
33:K:30:THR:HA	33:K:34:GLY:H	1.74	0.53
37:O:48:ARG:HH21	49:3:1253:G:H5'	1.73	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:Q:73:LEU:HD23	39:Q:73:LEU:H	1.73	0.53
49:3:1191:A:H2'	49:3:1191:A:N3	2.23	0.53
50:1:2102:G:H2'	50:1:2103:C:O4'	2.09	0.53
50:1:2696:U:O2'	50:1:2697:G:H5'	2.08	0.53
50:1:2743:U:C2'	50:1:2744:G:H5''	2.39	0.53
4:e:3:LEU:HA	4:e:6:TYR:HB3	1.90	0.53
6:g:110:VAL:HG22	6:g:111:ALA:N	2.23	0.53
16:s:49:LYS:HD2	50:1:488:G:H4'	1.90	0.53
24:B:3:GLN:OE1	24:B:6:LYS:HA	2.08	0.53
30:H:72:PRO:HD3	30:H:104:GLU:OE1	2.09	0.53
30:H:134:LYS:HA	30:H:137:VAL:HG12	1.90	0.53
49:3:245:U:O2'	49:3:246:A:H5'	2.07	0.53
49:3:304:U:O2'	49:3:305:G:H5'	2.08	0.53
49:3:817:C:H4'	49:3:818:G:C5'	2.37	0.53
50:1:1965:C:H5''	50:1:1966:A:H2'	1.91	0.53
54:9:91:LEU:O	54:9:95:ILE:HG12	2.09	0.53
5:f:155:PRO:HB2	5:f:171:LYS:HG3	1.91	0.53
38:P:52:ARG:NH2	49:3:690:G:O6	2.41	0.53
40:R:26:LYS:HG3	40:R:30:LYS:HE3	1.90	0.53
41:S:52:ARG:HB3	41:S:58:ARG:NH2	2.24	0.53
49:3:145:G:H2'	49:3:146:G:H4'	1.91	0.53
49:3:309:A:H2'	49:3:310:G:C8	2.44	0.53
50:1:598:U:H2'	50:1:599:A:C8	2.44	0.53
50:1:841:G:O2'	50:1:842:U:H5'	2.08	0.53
50:1:1026:G:H2'	50:1:1027:A:C8	2.44	0.53
50:1:2786:U:H2'	50:1:2787:C:H6	1.73	0.53
52:5:15:G:H22	52:5:48:C:H42	1.56	0.53
54:8:42:ASP:HB3	54:8:70:ILE:HB	1.90	0.53
3:d:164:LEU:HG	3:d:167:VAL:HG22	1.91	0.53
3:d:170:ARG:NH2	3:d:176:ASP:OD2	2.42	0.53
6:g:103:VAL:HG22	6:g:108:VAL:HB	1.91	0.53
34:L:67:ASN:HD21	34:L:129:ASN:HD22	1.55	0.53
49:3:191:G:H2'	49:3:192:A:H8	1.73	0.53
49:3:309:A:H2'	49:3:310:G:H8	1.73	0.53
49:3:1148:U:H2'	49:3:1149:C:O4'	2.10	0.53
49:3:1427:C:H2'	49:3:1428:A:C8	2.44	0.53
49:3:1456:A:H2'	49:3:1457:G:O4'	2.08	0.53
50:1:1059:G:H2'	50:1:1060:U:C5	2.43	0.53
50:1:1891:G:H2'	50:1:1892:C:C6	2.44	0.53
50:1:2821:A:H2'	50:1:2822:G:H8	1.72	0.53
11:n:103:ARG:HD2	50:1:1287:A:H5'	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:E:53:ASP:HA	27:E:56:LEU:HD13	1.91	0.52
27:E:56:LEU:HD11	50:1:834:G:C5'	2.38	0.52
30:H:31:ASN:HB3	30:H:58:ARG:HH22	1.75	0.52
36:N:98:ARG:C	36:N:100:ALA:H	2.16	0.52
43:U:67:ILE:H	43:U:67:ILE:CD1	2.20	0.52
49:3:405:U:H3'	49:3:406:G:C5'	2.35	0.52
49:3:477:C:H2'	49:3:478:A:C8	2.44	0.52
49:3:1342:C:H2'	49:3:1343:G:C8	2.44	0.52
50:1:581:C:H2'	50:1:582:A:H8	1.73	0.52
50:1:1321:A:H3'	50:1:1322:A:H8	1.75	0.52
50:1:2540:C:H2'	50:1:2541:A:O4'	2.08	0.52
16:s:73:LYS:HB2	16:s:106:VAL:HB	1.91	0.52
29:G:5:MET:HE3	29:G:43:GLU:OE2	2.09	0.52
47:Y:75:LYS:HE3	49:3:186:C:O4'	2.08	0.52
50:1:1417:C:H2'	50:1:1418:G:O4'	2.09	0.52
50:1:2039:U:H2'	50:1:2040:G:H8	1.74	0.52
52:5:50:U:H2'	52:5:51:C:C6	2.45	0.52
4:e:25:MET:HB3	51:2:57:A:C4	2.44	0.52
10:m:134:THR:OG1	19:v:79:ARG:NH1	2.42	0.52
20:w:45:ALA:HB3	20:w:77:SER:OG	2.09	0.52
29:G:133:ALA:O	29:G:137:THR:HG23	2.09	0.52
39:Q:42:LYS:HG3	39:Q:44:PRO:HD2	1.91	0.52
43:U:5:ARG:HD2	49:3:376:G:C4'	2.37	0.52
48:Z:66:ARG:CZ	49:3:1167:A:H1'	2.39	0.52
49:3:1097:C:H2'	49:3:1098:C:C6	2.44	0.52
49:3:1477:U:H2'	49:3:1478:U:H6	1.75	0.52
50:1:996:A:H2'	50:1:997:G:C8	2.39	0.52
50:1:1469:A:H2'	50:1:1470:A:C8	2.45	0.52
50:1:1971:U:H5'	50:1:1972:G:H5''	1.91	0.52
54:8:114:SER:N	54:8:117:ARG:HH22	2.08	0.52
1:b:122:ALA:HB3	1:b:127:ASN:ND2	2.24	0.52
4:e:92:GLY:HA2	4:e:95:MET:HE2	1.92	0.52
6:g:66:ASN:OD1	6:g:134:VAL:HG12	2.09	0.52
20:w:22:PHE:CD2	50:1:922:C:H1'	2.45	0.52
21:x:60:LYS:CE	50:1:372:G:H5''	2.38	0.52
27:E:16:THR:HG22	27:E:20:GLY:C	2.33	0.52
45:W:27:THR:O	45:W:30:ASN:ND2	2.43	0.52
49:3:711:G:O2'	49:3:712:A:H5'	2.10	0.52
49:3:971:G:H1'	49:3:1365:G:O2'	2.08	0.52
50:1:26:G:H1'	50:1:514:A:H61	1.74	0.52
50:1:704:G:H1'	50:1:727:A:H61	1.75	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:969:G:H2'	50:1:970:U:C6	2.45	0.52
50:1:1827:U:H2'	50:1:1828:G:O4'	2.08	0.52
50:1:1917:U:O2'	50:1:1918:A:H5'	2.08	0.52
50:1:2123:G:H2'	50:1:2124:G:C8	2.45	0.52
50:1:2772:C:H2'	50:1:2773:C:C6	2.45	0.52
54:8:21:ARG:HD2	54:8:31:ASN:O	2.10	0.52
3:d:68:ALA:HA	50:1:1255:U:C5	2.43	0.52
4:e:73:VAL:HG12	4:e:76:PHE:H	1.75	0.52
33:K:6:ILE:HD12	33:K:6:ILE:N	2.24	0.52
49:3:90:C:H2'	49:3:91:U:C6	2.44	0.52
49:3:1236:A:H2'	49:3:1237:C:O4'	2.10	0.52
49:3:1366:C:H2'	49:3:1367:C:C6	2.45	0.52
50:1:890:C:C2'	50:1:891:G:H5'	2.39	0.52
50:1:2679:A:HO2'	50:1:2680:U:H5'	1.74	0.52
51:2:78:A:H2'	51:2:79:G:O4'	2.09	0.52
11:n:79:LEU:HD23	11:n:83:LEU:HB2	1.92	0.52
24:B:54:ILE:HG23	24:B:56:LYS:N	2.23	0.52
29:G:96:LEU:HD22	29:G:96:LEU:N	2.25	0.52
31:I:149:LYS:O	31:I:150:LYS:HB3	2.09	0.52
39:Q:82:ARG:HD2	49:3:552:U:H4'	1.92	0.52
44:V:11:VAL:HB	44:V:56:ASP:H	1.73	0.52
44:V:80:LYS:HG2	44:V:81:ALA:H	1.75	0.52
49:3:1144:G:H21	49:3:1146:A:H62	1.57	0.52
50:1:95:A:H3'	50:1:96:C:H5''	1.92	0.52
50:1:825:A:H2'	50:1:826:U:C6	2.45	0.52
50:1:859:G:H1'	50:1:860:U:C5	2.37	0.52
50:1:1139:G:O2'	50:1:1140:C:H5'	2.10	0.52
15:r:16:GLU:HG3	15:r:100:GLY:HA2	1.91	0.52
28:F:2:LYS:HB2	28:F:35:GLN:HG2	1.91	0.52
39:Q:56:LEU:HD12	39:Q:60:PHE:HB2	1.92	0.52
50:1:64:A:H2'	50:1:65:U:C6	2.45	0.52
1:b:228:ASP:CG	50:1:780:G:H1	2.17	0.52
8:k:17:ARG:HB3	8:k:45:GLU:HG2	1.92	0.52
46:X:52:ASN:HB3	46:X:74:ALA:HB1	1.92	0.52
49:3:1028:C:H3'	49:3:1029:U:H5''	1.89	0.52
49:3:1038:C:H2'	49:3:1039:G:C8	2.45	0.52
49:3:1499:A:H3'	49:3:1499:A:OP2	2.10	0.52
50:1:255:A:H2'	50:1:256:A:O4'	2.08	0.52
50:1:1177:G:C2'	50:1:1178:C:H4'	2.29	0.52
50:1:1271:G:N7	50:1:1325:U:H5	2.08	0.52
50:1:1273:U:H5''	50:1:1646:C:N4	2.25	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:1671:U:H2'	50:1:1673:G:OP2	2.10	0.52
50:1:2027:G:O2'	50:1:2028:U:H5'	2.10	0.52
50:1:2766:A:N3	50:1:2766:A:H2'	2.24	0.52
31:I:100:VAL:HG22	31:I:104:MET:HE1	1.91	0.52
32:J:159:SER:HB3	32:J:162:GLU:OE1	2.10	0.52
44:V:5:ARG:HH22	49:3:128:G:H5''	1.73	0.52
46:X:38:THR:HA	46:X:69:LYS:HA	1.92	0.52
50:1:672:C:O2'	50:1:673:C:H5'	2.10	0.52
50:1:755:U:H2'	50:1:756:A:H8	1.75	0.52
50:1:786:C:O2'	50:1:787:C:H5'	2.10	0.52
50:1:2010:G:O2'	50:1:2011:U:H5'	2.10	0.52
50:1:2073:C:O2'	50:1:2074:U:H5'	2.10	0.52
50:1:2326:C:H6	50:1:2326:C:H5''	1.75	0.52
54:8:86:ALA:O	54:8:90:ARG:HG3	2.10	0.52
1:b:2:VAL:HG21	1:b:201:LEU:HD12	1.91	0.52
1:b:5:CYS:SG	1:b:12:ARG:HG3	2.50	0.52
1:b:95:TYR:HE2	1:b:101:ARG:HD2	1.75	0.52
2:c:131:ASP:HA	50:1:1994:C:OP1	2.10	0.52
30:H:59:PRO:HB3	37:O:94:ALA:HA	1.92	0.52
34:L:36:SER:O	34:L:39:GLU:HG2	2.10	0.52
35:M:46:GLU:HB2	35:M:61:THR:HG23	1.92	0.52
50:1:288:U:H2'	50:1:289:G:H8	1.74	0.52
50:1:1351:C:H2'	50:1:1352:U:C6	2.45	0.52
50:1:1509:A:H2'	50:1:1510:G:C8	2.45	0.52
50:1:2327:A:H2'	50:1:2328:A:C8	2.45	0.52
54:8:18:THR:HG22	54:8:19:ALA:H	1.74	0.52
7:j:7:LYS:HG2	50:1:538:A:H4'	1.91	0.51
7:j:97:PRO:O	7:j:100:VAL:HG22	2.10	0.51
15:r:54:VAL:HG23	15:r:55:ASP:H	1.75	0.51
17:t:59:ASN:HB3	50:1:1341:G:H1'	1.92	0.51
17:t:67:VAL:HG22	17:t:76:ARG:CD	2.40	0.51
31:I:55:ARG:HH21	31:I:58:GLN:HG3	1.74	0.51
50:1:755:U:H2'	50:1:756:A:C8	2.45	0.51
50:1:1028:A:N6	50:1:1125:G:H2'	2.24	0.51
50:1:2048:G:H2'	50:1:2049:G:O4'	2.10	0.51
50:1:2628:C:H3'	50:1:2629:U:H5'	1.92	0.51
54:8:44:ARG:HH11	54:8:57:LEU:CD2	2.18	0.51
12:o:11:ALA:HB3	12:o:15:ARG:HH21	1.75	0.51
12:o:68:LYS:HA	12:o:102:ARG:HG2	1.92	0.51
13:p:48:ALA:CB	13:p:95:LYS:HD2	2.40	0.51
16:s:36:LEU:HA	16:s:39:THR:HG22	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:x:32:LEU:HD13	21:x:49:ARG:HE	1.74	0.51
26:D:37:LYS:HZ3	26:D:39:ARG:HH21	1.56	0.51
33:K:50:PRO:HG3	33:K:55:HIS:CE1	2.44	0.51
48:Z:46:ARG:HH12	48:Z:50:SER:HB3	1.75	0.51
49:3:758:C:H4'	49:3:880:C:H4'	1.92	0.51
50:1:1316:U:H2'	50:1:1317:G:H8	1.74	0.51
11:n:2:ARG:O	11:n:2:ARG:HD3	2.10	0.51
12:o:31:THR:HG22	12:o:33:ARG:H	1.75	0.51
15:r:14:VAL:HG23	15:r:18:GLN:HE21	1.74	0.51
22:y:44:LYS:HE2	50:1:61:C:OP1	2.10	0.51
29:G:75:ALA:O	29:G:79:VAL:HG23	2.10	0.51
50:1:1180:U:H2'	50:1:1181:U:C5	2.46	0.51
50:1:1186:G:H2'	50:1:1187:G:O4'	2.11	0.51
50:1:1914:C:C6	54:8:105:ARG:HG3	2.45	0.51
50:1:2362:C:O2'	50:1:2363:G:H5'	2.09	0.51
50:1:2655:G:O2'	50:1:2656:U:C5	2.62	0.51
51:2:30:C:H2'	51:2:31:C:O4'	2.10	0.51
52:5:62:C:H2'	52:5:63:G:C8	2.46	0.51
5:f:29:ASN:HB2	5:f:78:VAL:HA	1.91	0.51
5:f:120:ILE:HD11	5:f:139:VAL:HG13	1.93	0.51
7:j:45:THR:HB	7:j:48:VAL:CG1	2.41	0.51
23:z:50:VAL:O	23:z:54:VAL:HG22	2.11	0.51
33:K:9:MET:HE1	45:W:64:LEU:HD22	1.91	0.51
49:3:887:G:H2'	49:3:888:G:C5'	2.41	0.51
50:1:974:G:H8	50:1:990:A:H62	1.56	0.51
50:1:2265:U:H3'	50:1:2266:A:C5'	2.39	0.51
50:1:2457:U:O2'	50:1:2458:G:H5'	2.11	0.51
50:1:2691:C:H2'	50:1:2692:G:H8	1.75	0.51
50:1:2733:A:O2'	50:1:2734:A:H5'	2.11	0.51
34:L:16:LYS:HE3	34:L:17:PHE:HE1	1.76	0.51
36:N:61:ASP:C	36:N:62:LEU:HD22	2.34	0.51
42:T:66:LEU:HD23	42:T:87:ARG:HH21	1.76	0.51
49:3:21:G:H2'	49:3:22:G:C8	2.45	0.51
49:3:438:U:O4	49:3:493:A:H2'	2.11	0.51
49:3:769:G:O2'	49:3:770:C:H5'	2.11	0.51
50:1:700:G:O2'	50:1:701:G:H5'	2.10	0.51
50:1:1141:U:H5''	50:1:1142:A:H5'	1.93	0.51
50:1:1935:G:H1'	50:1:1964:G:N2	2.26	0.51
50:1:2106:U:O2'	50:1:2107:G:H5'	2.10	0.51
50:1:2314:A:H2'	50:1:2315:G:H8	1.75	0.51
50:1:2743:U:H3'	50:1:2744:G:H5''	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:2:48:U:H2'	51:2:49:C:C6	2.46	0.51
11:n:13:ASN:ND2	11:n:15:SER:OG	2.43	0.51
24:B:12:ARG:NH2	50:1:517:C:OP1	2.43	0.51
33:K:3:HIS:HB2	33:K:92:THR:HB	1.92	0.51
40:R:105:ALA:HA	49:3:948:C:OP1	2.10	0.51
48:Z:50:SER:HA	48:Z:53:LYS:HG2	1.93	0.51
50:1:1:G:N3	50:1:1:G:H2'	2.24	0.51
50:1:861:A:H2'	50:1:862:G:O4'	2.11	0.51
50:1:1854:A:H2'	50:1:1855:U:H5'	1.93	0.51
12:o:39:VAL:O	12:o:47:VAL:HG23	2.11	0.51
40:R:78:ARG:O	40:R:82:LEU:HG	2.09	0.51
49:3:513:C:H2'	49:3:514:C:C6	2.45	0.51
49:3:667:G:H2'	49:3:668:G:H8	1.75	0.51
50:1:269:C:H2'	50:1:270:A:C8	2.45	0.51
50:1:729:G:H4'	50:1:763:G:H5'	1.92	0.51
50:1:1478:G:H2'	50:1:1479:G:H8	1.75	0.51
50:1:1528:A:H2'	50:1:1529:G:O4'	2.11	0.51
50:1:2047:C:H2'	50:1:2048:G:H8	1.76	0.51
50:1:2570:G:H2'	50:1:2571:U:O4'	2.11	0.51
1:b:143:VAL:CG2	1:b:153:LEU:HB2	2.39	0.51
2:c:114:LYS:HD3	50:1:2723:C:OP1	2.11	0.51
5:f:136:ASP:HB3	5:f:139:VAL:HG12	1.93	0.51
14:q:108:LEU:N	15:r:48:LYS:HZ3	2.09	0.51
35:M:9:MET:HG3	35:M:26:MET:SD	2.51	0.51
37:O:53:ILE:HG23	49:3:1060:U:H4'	1.93	0.51
40:R:16:ILE:HG21	49:3:1302:C:C6	2.46	0.51
49:3:191:G:H2'	49:3:192:A:C8	2.45	0.51
49:3:218:U:H2'	49:3:219:U:C6	2.45	0.51
49:3:580:C:H2'	49:3:581:G:O4'	2.11	0.51
50:1:1028:A:H2'	50:1:1029:A:C8	2.45	0.51
50:1:1188:U:O2'	50:1:1189:A:H5'	2.11	0.51
50:1:1773:A:H2'	50:1:1774:C:H5'	1.92	0.51
54:9:9:ALA:O	54:9:11:PRO:HD3	2.10	0.51
13:p:2:ASN:HB2	13:p:6:GLN:HE22	1.76	0.51
32:J:107:GLY:HA2	49:3:8:A:H1'	1.93	0.51
49:3:188:C:H2'	49:3:189:A:O4'	2.11	0.51
49:3:784:A:H4'	50:1:1837:C:OP1	2.11	0.51
50:1:2030:A:C2	50:1:2499:C:H5''	2.46	0.51
1:b:200:MET:HB2	50:1:1820:U:O2	2.10	0.51
7:j:113:PRO:HD3	50:1:529:A:OP2	2.11	0.51
13:p:48:ALA:H	13:p:59:THR:HG1	1.59	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:s:17:VAL:HB	16:s:76:VAL:HG11	1.93	0.51
25:C:21:THR:HG21	50:1:2419:U:H4'	1.93	0.51
25:C:34:GLU:HG2	25:C:34:GLU:O	2.11	0.51
27:E:16:THR:HG21	27:E:48:MET:HE1	1.91	0.51
49:3:146:G:H2'	49:3:147:G:C8	2.46	0.51
49:3:848:C:H2'	49:3:849:G:O4'	2.11	0.51
49:3:950:U:H2'	49:3:951:G:C8	2.46	0.51
49:3:1305:G:N2	49:3:1331:G:H2'	2.25	0.51
49:3:1437:A:H2'	49:3:1438:G:H8	1.75	0.51
50:1:12:U:O2	50:1:2626:C:H4'	2.11	0.51
50:1:661:A:O2'	50:1:662:G:H5'	2.11	0.51
50:1:1434:A:H2'	50:1:1435:G:C8	2.46	0.51
50:1:2836:U:H2'	50:1:2837:A:C8	2.46	0.51
51:2:108:A:H5'	51:2:109:A:O5'	2.11	0.51
2:c:24:VAL:HG22	2:c:25:THR:N	2.25	0.50
29:G:153:MET:HE2	29:G:155:GLY:O	2.11	0.50
31:I:172:VAL:HG22	31:I:174:ALA:H	1.76	0.50
49:3:579:A:H2'	49:3:580:C:C6	2.46	0.50
49:3:1227:A:H2'	49:3:1228:C:H5'	1.93	0.50
49:3:1499:A:H2'	49:3:1500:A:H8	1.76	0.50
50:1:881:G:O2'	50:1:882:G:H5'	2.11	0.50
50:1:1682:G:C4	50:1:1757:A:H1'	2.46	0.50
50:1:2129:C:C2'	50:1:2130:U:H5'	2.36	0.50
50:1:2442:C:H2'	50:1:2443:C:C6	2.46	0.50
50:1:2579:C:O2'	50:1:2580:U:H5'	2.11	0.50
5:f:41:GLU:HG2	5:f:52:GLY:O	2.11	0.50
7:j:57:LEU:HD22	7:j:130:HIS:CD2	2.47	0.50
14:q:3:VAL:HG22	50:1:1199:U:H1'	1.92	0.50
30:H:113:LYS:CE	30:H:184:ASN:HD21	2.23	0.50
37:O:65:TYR:HB3	41:S:95:LEU:HD11	1.92	0.50
43:U:28:ARG:HH11	43:U:29:ASN:HD21	1.59	0.50
48:Z:39:LYS:N	48:Z:40:PRO:CD	2.75	0.50
49:3:946:A:H2'	49:3:947:G:H8	1.74	0.50
50:1:440:C:H2'	50:1:441:U:C6	2.45	0.50
50:1:813:U:H2'	50:1:814:C:C6	2.47	0.50
50:1:1825:U:H2'	50:1:1826:G:H8	1.76	0.50
50:1:2039:U:H2'	50:1:2040:G:C8	2.46	0.50
2:c:148:GLN:N	2:c:148:GLN:OE1	2.44	0.50
4:e:32:LYS:HB3	4:e:156:THR:HG23	1.93	0.50
5:f:157:LYS:HE3	5:f:159:LYS:HG3	1.93	0.50
16:s:41:LYS:O	16:s:44:ALA:HB3	2.10	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:t:29:THR:HG22	17:t:86:THR:HA	1.93	0.50
37:O:10:LEU:O	37:O:71:LEU:HD12	2.11	0.50
48:Z:38:GLU:HB2	49:3:1526:G:OP2	2.10	0.50
49:3:730:G:C2'	49:3:731:G:H5'	2.41	0.50
49:3:1493:A:H2	54:8:108:THR:HB	1.76	0.50
50:1:37:C:O2'	50:1:38:A:H5'	2.12	0.50
50:1:1160:G:H2'	50:1:1161:C:C6	2.46	0.50
50:1:1182:G:H2'	50:1:1183:U:O4'	2.11	0.50
50:1:2257:U:O2'	50:1:2258:C:H5'	2.11	0.50
6:g:32:PRO:HG2	6:g:33:GLN:OE1	2.12	0.50
24:B:12:ARG:HH11	24:B:16:ARG:NH1	2.10	0.50
29:G:29:PHE:HB3	29:G:40:ILE:HD11	1.92	0.50
31:I:119:HIS:HB3	49:3:438:U:H4'	1.93	0.50
34:L:91:ARG:HB2	34:L:94:ARG:HE	1.77	0.50
35:M:65:PHE:CD2	35:M:66:GLN:HG2	2.47	0.50
49:3:644:U:H2'	49:3:645:G:H8	1.76	0.50
49:3:762:U:H2'	49:3:763:G:C8	2.47	0.50
49:3:1254:A:H2'	49:3:1255:G:C8	2.47	0.50
49:3:1435:G:H2'	49:3:1436:U:C6	2.46	0.50
50:1:940:G:H2'	50:1:941:A:H5''	1.92	0.50
50:1:993:G:O2'	50:1:994:C:H5'	2.11	0.50
50:1:1062:G:H2'	50:1:1063:G:C8	2.46	0.50
50:1:1179:G:H3'	50:1:1180:U:H4'	1.92	0.50
50:1:1881:C:H2'	50:1:1882:U:O4'	2.12	0.50
50:1:2149:U:H2'	50:1:2150:C:O4'	2.11	0.50
50:1:2843:G:O2'	50:1:2844:G:H5'	2.11	0.50
52:5:69:C:H2'	52:5:70:G:C8	2.46	0.50
54:8:4:ILE:HB	54:9:9:ALA:HA	1.93	0.50
1:b:52:HIS:CG	1:b:218:THR:HG22	2.46	0.50
3:d:98:LYS:HE2	50:1:607:U:H5''	1.93	0.50
28:F:4:ARG:HB2	50:1:2466:C:OP1	2.12	0.50
36:N:18:VAL:HG22	36:N:64:ILE:HD12	1.92	0.50
44:V:30:HIS:HD2	44:V:33:TYR:N	2.10	0.50
49:3:45:G:H2'	49:3:46:G:H8	1.75	0.50
49:3:737:C:H2'	49:3:738:C:C6	2.45	0.50
49:3:1509:C:O2'	49:3:1510:C:H5'	2.11	0.50
50:1:717:C:C2'	50:1:718:A:H5'	2.40	0.50
50:1:792:A:H5''	50:1:793:A:H5'	1.92	0.50
50:1:1011:G:H1'	50:1:1013:C:O4'	2.11	0.50
51:2:33:G:H2'	51:2:34:A:O4'	2.12	0.50
1:b:175:LEU:HD13	50:1:1799:G:C5	2.47	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:j:17:VAL:HG13	7:j:57:LEU:HD21	1.93	0.50
9:l:79:LEU:HB3	9:l:116:VAL:HG23	1.94	0.50
38:P:38:GLY:HA3	49:3:708:C:H4'	1.92	0.50
41:S:6:LYS:O	41:S:9:GLU:HG2	2.12	0.50
41:S:68:ARG:HD3	49:3:1202:U:H4'	1.92	0.50
49:3:784:A:H2'	49:3:785:G:C8	2.47	0.50
50:1:1609:A:O2'	50:1:1610:A:H5'	2.11	0.50
50:1:1773:A:C2'	50:1:1774:C:H5'	2.42	0.50
50:1:2498:C:O2'	50:1:2499:C:H5'	2.11	0.50
53:4:19:U:H4'	53:4:20:A:C4	2.46	0.50
3:d:2:GLU:HB3	3:d:11:ALA:HB1	1.94	0.50
16:s:57:ASN:OD1	50:1:495:G:H1'	2.12	0.50
32:J:107:GLY:HA3	49:3:9:G:C5'	2.31	0.50
38:P:43:TRP:HZ2	49:3:686:U:HO2'	1.59	0.50
41:S:52:ARG:HE	49:3:1219:A:H5''	1.76	0.50
49:3:583:A:H2'	49:3:584:G:O4'	2.12	0.50
50:1:704:G:H1'	50:1:727:A:N6	2.26	0.50
50:1:2391:G:C2'	50:1:2424:C:H41	2.25	0.50
1:b:213:ARG:NH2	50:1:1566:A:H5'	2.27	0.50
7:j:99:ARG:HD2	7:j:102:GLU:OE2	2.12	0.50
10:m:57:VAL:O	10:m:60:GLN:HG2	2.12	0.50
14:q:50:ARG:HG2	50:1:1156:A:C8	2.47	0.50
31:I:103:ARG:HD3	31:I:164:ARG:HH22	1.76	0.50
50:1:733:G:C8	50:1:761:A:N6	2.80	0.50
50:1:1270:C:H5''	50:1:1271:G:O5'	2.12	0.50
50:1:1801:A:H5''	50:1:2203:U:C2'	2.39	0.50
50:1:2029:G:O6	50:1:2032:G:H5''	2.12	0.50
50:1:2233:U:H2'	50:1:2234:G:H8	1.76	0.50
50:1:2405:G:H2'	50:1:2411:A:H62	1.76	0.50
50:1:2834:G:H2'	50:1:2879:A:N6	2.21	0.50
4:e:120:SER:OG	50:1:2304:G:H5'	2.12	0.50
24:B:24:VAL:O	24:B:25:THR:HG22	2.12	0.50
31:I:97:LEU:HA	31:I:100:VAL:HG12	1.94	0.50
33:K:12:PRO:O	33:K:15:SER:OG	2.23	0.50
36:N:98:ARG:O	36:N:99:LYS:HG3	2.12	0.50
41:S:37:ASP:OD1	41:S:37:ASP:N	2.45	0.50
41:S:39:ASP:O	41:S:42:ASN:OD1	2.30	0.50
49:3:440:C:C3'	49:3:441:A:H5''	2.42	0.50
49:3:844:G:H2'	49:3:846:G:H1'	1.93	0.50
50:1:253:C:H2'	50:1:254:G:O4'	2.12	0.50
50:1:1430:G:H2'	50:1:1431:A:C8	2.47	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:2238:G:H2'	50:1:2238:G:N3	2.26	0.50
50:1:2553:G:H1'	50:1:2582:G:H21	1.77	0.50
51:2:106:G:H2'	51:2:107:G:O4'	2.12	0.50
18:u:10:VAL:HG12	18:u:71:ILE:HA	1.94	0.49
40:R:14:ALA:HB3	40:R:40:GLU:O	2.12	0.49
41:S:25:GLU:O	41:S:30:ILE:HD12	2.12	0.49
49:3:424:G:O2'	49:3:425:G:H5'	2.11	0.49
49:3:810:C:H2'	49:3:811:C:O4'	2.11	0.49
49:3:1287:A:C2	49:3:1353:G:H1'	2.46	0.49
49:3:1496:C:H2'	49:3:1497:G:O4'	2.11	0.49
50:1:268:C:H2'	50:1:269:C:C6	2.47	0.49
50:1:751:A:C6	50:1:789:A:C5	3.00	0.49
50:1:1637:A:H2'	50:1:1638:C:H6	1.77	0.49
50:1:1872:A:H2'	50:1:1873:G:O4'	2.12	0.49
50:1:2131:U:H5'	50:1:2132:U:H5'	1.95	0.49
3:d:46:GLN:CB	3:d:83:VAL:HG11	2.42	0.49
5:f:88:LEU:CD2	5:f:93:TYR:HB3	2.41	0.49
7:j:45:THR:HB	7:j:48:VAL:HG12	1.95	0.49
29:G:205:ALA:HB3	29:G:208:ALA:HB3	1.93	0.49
31:I:144:ILE:HB	31:I:149:LYS:HE2	1.93	0.49
44:V:32:ILE:HD12	44:V:32:ILE:N	2.18	0.49
49:3:406:G:H2'	49:3:407:U:C6	2.47	0.49
49:3:744:C:H2'	49:3:745:G:C8	2.47	0.49
50:1:181:A:H2'	50:1:182:A:C8	2.47	0.49
50:1:1570:A:H2'	50:1:1571:A:C8	2.47	0.49
50:1:2302:U:H2'	50:1:2303:G:C8	2.47	0.49
50:1:2520:C:O2'	50:1:2521:C:H5'	2.13	0.49
10:m:50:ARG:HD3	10:m:65:ILE:HD11	1.93	0.49
41:S:47:LEU:HA	41:S:50:LEU:HD12	1.95	0.49
49:3:45:G:H2'	49:3:46:G:C8	2.47	0.49
49:3:1493:A:H5'	54:8:113:ALA:HB2	1.94	0.49
50:1:167:A:H2'	50:1:168:G:O4'	2.12	0.49
50:1:1367:A:C2'	50:1:1368:G:H5'	2.42	0.49
50:1:1507:C:H2'	50:1:1508:A:O4'	2.11	0.49
9:l:74:THR:HG22	9:l:107:PHE:HB2	1.94	0.49
14:q:5:ARG:NH1	50:1:585:G:N7	2.60	0.49
16:s:37:THR:HG22	16:s:48:LYS:HZ3	1.77	0.49
24:B:2:VAL:HG22	24:B:3:GLN:H	1.78	0.49
29:G:192:PRO:O	29:G:194:GLY:N	2.45	0.49
36:N:79:ARG:HH12	36:N:102:PHE:HA	1.77	0.49
40:R:102:LYS:NZ	49:3:1226:C:H42	2.11	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:U:74:LEU:O	43:U:78:VAL:HG22	2.13	0.49
50:1:807:U:H2'	50:1:808:G:C8	2.44	0.49
50:1:2209:G:C3'	50:1:2210:U:H5''	2.34	0.49
50:1:2221:G:O2'	50:1:2222:C:H5'	2.12	0.49
50:1:2443:C:H2'	50:1:2444:G:H8	1.77	0.49
50:1:2615:U:O2'	50:1:2616:C:H5'	2.12	0.49
51:2:51:G:H2'	51:2:52:A:O4'	2.11	0.49
1:b:95:TYR:HB2	1:b:97:ASP:OD1	2.13	0.49
1:b:204:LEU:HB3	1:b:209:ALA:CB	2.43	0.49
3:d:5:LEU:HD13	3:d:10:SER:O	2.13	0.49
12:o:32:PRO:HD2	51:2:29:A:OP2	2.13	0.49
13:p:4:ILE:O	13:p:8:GLU:HG3	2.11	0.49
25:C:47:ILE:N	25:C:47:ILE:HD12	2.27	0.49
29:G:27:LYS:HG3	29:G:28:PRO:HD3	1.93	0.49
31:I:131:ILE:HD13	49:3:620:C:C1'	2.42	0.49
40:R:28:ARG:HH21	40:R:62:PHE:HB2	1.76	0.49
44:V:78:VAL:HG23	44:V:79:GLU:H	1.78	0.49
48:Z:16:ARG:H	48:Z:20:ARG:HH12	1.60	0.49
49:3:211:G:C2'	49:3:212:G:H5'	2.38	0.49
49:3:1033:G:H2'	49:3:1034:G:C5'	2.36	0.49
49:3:1251:A:O2'	49:3:1370:G:H5'	2.13	0.49
50:1:589:U:H2'	50:1:590:A:C8	2.47	0.49
50:1:1297:C:H2'	50:1:1298:C:H6	1.78	0.49
50:1:1726:C:H2'	50:1:1727:C:C6	2.48	0.49
50:1:1853:A:H2'	50:1:1854:A:C8	2.47	0.49
50:1:2104:C:H42	50:1:2185:U:H3	1.61	0.49
50:1:2786:U:H2'	50:1:2787:C:C6	2.48	0.49
50:1:2891:U:H2'	50:1:2892:G:C8	2.48	0.49
54:8:92:VAL:HA	54:9:4:ILE:HD11	1.94	0.49
1:b:220:ARG:HD3	50:1:1828:G:O6	2.11	0.49
9:l:23:ILE:HG13	15:r:82:HIS:CD2	2.46	0.49
22:y:24:GLU:O	22:y:28:LEU:HD12	2.12	0.49
42:T:88:ARG:H	42:T:88:ARG:HD3	1.76	0.49
49:3:1275:A:H2'	49:3:1276:G:O4'	2.13	0.49
50:1:455:C:H5''	50:1:456:C:OP2	2.12	0.49
50:1:1857:G:H22	50:1:1884:G:H2'	1.78	0.49
50:1:1945:G:H2'	50:1:1946:U:C6	2.47	0.49
50:1:2066:C:O2'	50:1:2067:G:H5'	2.12	0.49
50:1:2118:U:H1'	50:1:2147:A:N6	2.27	0.49
2:c:131:ASP:OD2	2:c:133:THR:O	2.31	0.49
32:J:54:GLU:HG3	32:J:56:PRO:HD2	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:N:129:ARG:NH2	52:5:33:U:OP2	2.44	0.49
48:Z:36:PHE:HB2	48:Z:40:PRO:HD3	1.95	0.49
49:3:56:U:H2'	49:3:57:G:C8	2.47	0.49
50:1:468:G:H2'	50:1:469:G:O4'	2.12	0.49
50:1:1661:G:O2'	50:1:1662:U:H5'	2.13	0.49
50:1:1747:U:H2'	50:1:1748:C:C6	2.47	0.49
50:1:2487:G:O2'	50:1:2488:G:H5'	2.12	0.49
50:1:2584:U:H2'	50:1:2585:U:H2'	1.95	0.49
50:1:2816:G:O2'	50:1:2817:U:H5'	2.13	0.49
52:5:62:C:H2'	52:5:63:G:H8	1.77	0.49
53:4:16:A:H2'	53:4:17:U:O4'	2.13	0.49
9:l:122:VAL:HG21	9:l:125:LEU:HB2	1.95	0.49
29:G:41:ASN:HB3	29:G:44:LYS:HE2	1.95	0.49
38:P:62:ALA:HB1	38:P:95:THR:HB	1.93	0.49
49:3:219:U:H2'	49:3:220:G:O4'	2.12	0.49
49:3:1238:A:H2	49:3:1241:G:N3	2.11	0.49
49:3:1406:U:C2'	49:3:1407:C:H5'	2.43	0.49
50:1:288:U:H2'	50:1:289:G:C8	2.48	0.49
50:1:538:A:H2'	50:1:539:G:O4'	2.13	0.49
50:1:753:A:H2'	50:1:754:U:C6	2.46	0.49
50:1:784:G:C5'	50:1:785:G:OP1	2.56	0.49
50:1:877:A:H1'	50:1:901:C:H42	1.77	0.49
50:1:1736:U:H2'	50:1:1737:G:O4'	2.12	0.49
50:1:2047:C:H2'	50:1:2048:G:C8	2.47	0.49
50:1:2112:G:H5''	50:1:2113:U:H5	1.77	0.49
50:1:2118:U:H1'	50:1:2147:A:H62	1.77	0.49
50:1:2210:U:H6	50:1:2210:U:OP1	1.95	0.49
50:1:2573:C:H5''	50:1:2574:G:H5''	1.93	0.49
50:1:2898:U:H2'	50:1:2899:A:C8	2.47	0.49
2:c:4:LEU:HD21	2:c:29:VAL:HG11	1.95	0.49
6:g:51:ARG:HA	6:g:55:GLU:HB3	1.94	0.49
29:G:7:ASP:HA	29:G:10:LYS:HE2	1.94	0.49
31:I:10:LEU:HD13	31:I:62:ARG:HD3	1.95	0.49
42:T:79:GLN:O	42:T:83:ARG:HG3	2.12	0.49
43:U:51:ARG:C	43:U:52:LEU:HD12	2.37	0.49
49:3:1460:C:H2'	49:3:1461:G:H8	1.77	0.49
50:1:176:A:O2'	50:1:177:G:H5'	2.13	0.49
50:1:1222:U:H2'	50:1:1223:G:C8	2.47	0.49
50:1:2751:G:H2'	50:1:2751:G:N3	2.28	0.49
11:n:47:VAL:C	11:n:50:PRO:HD2	2.38	0.49
22:y:6:LEU:HD23	22:y:6:LEU:O	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:H:31:ASN:HB3	30:H:58:ARG:NH2	2.27	0.49
36:N:8:THR:O	36:N:84:ARG:HD2	2.12	0.49
36:N:109:GLN:NE2	49:3:1117:A:H5'	2.26	0.49
49:3:1448:C:H2'	49:3:1449:C:C6	2.48	0.49
50:1:1691:C:O2'	50:1:1692:U:H5'	2.13	0.49
50:1:1765:U:H2'	50:1:1766:G:H8	1.77	0.49
50:1:1948:G:O2'	50:1:1949:G:H5'	2.13	0.49
3:d:146:VAL:HG22	3:d:147:LEU:N	2.28	0.48
4:e:129:MET:SD	4:e:130:GLY:N	2.86	0.48
16:s:19:LEU:HD22	24:B:20:ALA:HA	1.95	0.48
29:G:8:MET:HE3	29:G:13:VAL:HG21	1.94	0.48
40:R:7:ASN:OD1	40:R:9:PRO:HD3	2.13	0.48
49:3:16:A:O2'	49:3:17:U:H5'	2.13	0.48
49:3:202:G:H2'	49:3:203:G:O4'	2.13	0.48
49:3:437:U:H3	49:3:495:A:H62	1.59	0.48
50:1:1133:A:H4'	50:1:1134:A:H5''	1.95	0.48
50:1:1282:U:H2'	50:1:1283:G:O4'	2.13	0.48
50:1:1478:G:H2'	50:1:1479:G:C8	2.47	0.48
50:1:1823:G:O2'	50:1:1824:G:H5'	2.13	0.48
50:1:1845:G:O2'	50:1:1846:G:H5'	2.13	0.48
50:1:2639:A:H1'	50:1:2778:A:C2	2.48	0.48
52:5:43:A:H2'	52:5:44:A:C8	2.48	0.48
50:1:2480:C:H2'	50:1:2481:G:O4'	2.13	0.48
14:q:2:ARG:HA	50:1:1248:G:O2'	2.13	0.48
15:r:38:VAL:HG21	15:r:57:GLY:O	2.13	0.48
39:Q:88:ASP:OD2	49:3:523:A:N6	2.43	0.48
49:3:181:A:N6	49:3:194:C:H2'	2.25	0.48
49:3:680:C:H2'	49:3:681:A:C8	2.48	0.48
49:3:801:U:H2'	49:3:802:A:H8	1.78	0.48
49:3:805:C:H2'	49:3:806:C:H6	1.78	0.48
49:3:843:U:H5'	49:3:844:G:C8	2.48	0.48
49:3:1163:A:H2'	49:3:1164:G:C8	2.48	0.48
50:1:783:A:H2'	50:1:784:G:C5'	2.44	0.48
50:1:1045:C:OP1	50:1:1047:G:H5'	2.14	0.48
50:1:1637:A:H2'	50:1:1638:C:C6	2.48	0.48
50:1:1999:C:H5''	50:1:2723:C:O2'	2.13	0.48
54:8:22:ALA:HA	54:8:75:GLN:HE21	1.77	0.48
2:c:33:ARG:HG2	2:c:73:VAL:HG11	1.94	0.48
3:d:148:ILE:HB	3:d:169:VAL:HG12	1.95	0.48
21:x:60:LYS:HE2	50:1:372:G:O4'	2.14	0.48
23:z:21:ALA:O	23:z:24:LEU:HB3	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:H:14:VAL:HG13	30:H:15:LYS:H	1.78	0.48
49:3:107:G:H2'	49:3:108:G:O4'	2.14	0.48
49:3:144:G:H2'	49:3:145:G:C8	2.48	0.48
49:3:224:U:H2'	49:3:225:C:C6	2.48	0.48
49:3:921:U:H2'	49:3:922:G:O4'	2.13	0.48
49:3:1179:A:H2'	49:3:1180:A:O4'	2.13	0.48
50:1:154:U:H2'	50:1:155:A:C8	2.48	0.48
50:1:157:C:H2'	50:1:158:U:O4'	2.13	0.48
50:1:1092:C:H2'	50:1:1093:G:O4'	2.13	0.48
50:1:1594:U:H2'	50:1:1595:C:C6	2.49	0.48
50:1:2307:G:H5'	50:1:2308:G:N3	2.27	0.48
51:2:13:G:H21	51:2:16:G:H1'	1.77	0.48
51:2:66:A:H5''	51:2:67:G:OP1	2.12	0.48
1:b:16:VAL:HG13	1:b:203:VAL:CG2	2.43	0.48
4:e:63:LYS:HE3	51:2:42:C:O3'	2.12	0.48
13:p:29:VAL:O	13:p:39:LEU:HD12	2.13	0.48
30:H:69:THR:HG21	30:H:75:VAL:HG21	1.93	0.48
31:I:166:LYS:HD2	31:I:166:LYS:N	2.28	0.48
35:M:45:ILE:HG12	35:M:60:LEU:HD12	1.94	0.48
49:3:452:A:H61	49:3:480:U:H3	1.61	0.48
50:1:822:G:H2'	50:1:823:C:C6	2.49	0.48
50:1:1002:G:H2'	50:1:1003:G:O4'	2.14	0.48
50:1:1026:G:H2'	50:1:1027:A:H8	1.78	0.48
50:1:1045:C:H4'	50:1:1047:G:O4'	2.13	0.48
50:1:1605:C:H5'	50:1:1610:A:N6	2.28	0.48
50:1:2297:A:H61	50:1:2319:G:H1'	1.78	0.48
50:1:2861:U:H2'	50:1:2862:G:H8	1.78	0.48
2:c:106:LYS:HD2	2:c:174:SER:OG	2.14	0.48
4:e:59:ILE:HD13	4:e:139:GLU:HB2	1.95	0.48
29:G:21:TYR:O	29:G:189:ASN:HB3	2.12	0.48
40:R:100:ARG:HE	40:R:102:LYS:HB3	1.79	0.48
41:S:62:ARG:NH2	41:S:69:PRO:HG3	2.29	0.48
41:S:89:ARG:HB2	41:S:91:GLU:OE1	2.13	0.48
49:3:737:C:H2'	49:3:738:C:H6	1.79	0.48
49:3:829:G:O2'	49:3:830:G:H5'	2.14	0.48
49:3:895:G:O2'	49:3:896:C:H5'	2.13	0.48
50:1:1050:A:H1'	50:1:2751:G:N2	2.28	0.48
50:1:1709:U:H2'	50:1:1710:G:C8	2.48	0.48
13:p:46:VAL:HG11	13:p:49:ILE:HD11	1.96	0.48
15:r:56:GLY:O	15:r:58:VAL:HG23	2.13	0.48
24:B:8:THR:OG1	24:B:9:ARG:N	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:P:83:VAL:HG13	38:P:109:ILE:HA	1.95	0.48
40:R:112:ARG:HD3	49:3:1229:A:OP1	2.14	0.48
46:X:5:LYS:HG3	46:X:6:LYS:HG3	1.96	0.48
47:Y:23:ARG:HH12	49:3:176:C:H5''	1.79	0.48
49:3:14:U:H2'	49:3:16:A:OP2	2.13	0.48
49:3:123:U:H5''	49:3:311:C:O2'	2.14	0.48
49:3:1137:C:C5'	49:3:1138:G:H5'	2.33	0.48
49:3:1253:G:H2'	49:3:1254:A:H8	1.79	0.48
50:1:69:C:O2'	50:1:70:G:H5'	2.14	0.48
50:1:1917:U:C2'	50:1:1918:A:H5'	2.43	0.48
50:1:2016:U:H2'	50:1:2017:U:H6	1.79	0.48
50:1:2246:G:H2'	50:1:2247:A:C8	2.49	0.48
50:1:2798:U:H4'	50:1:2799:A:N7	2.29	0.48
51:2:55:U:O2'	51:2:56:G:H5'	2.14	0.48
54:9:37:ILE:HD12	54:9:75:GLN:HB3	1.96	0.48
1:b:17:LYS:HZ1	50:1:1565:C:H5'	1.79	0.48
1:b:67:LYS:HD2	1:b:150:GLY:HA2	1.94	0.48
2:c:129:THR:HG22	50:1:1997:C:P	2.54	0.48
11:n:67:PHE:O	11:n:71:ARG:HD2	2.14	0.48
23:z:12:ALA:HB2	23:z:53:MET:HE1	1.96	0.48
29:G:14:HIS:O	29:G:40:ILE:HG22	2.14	0.48
30:H:9:ILE:HG23	30:H:10:ARG:HG3	1.95	0.48
31:I:72:ARG:HG2	31:I:76:LYS:HE2	1.94	0.48
49:3:37:U:H2'	49:3:38:G:O4'	2.13	0.48
49:3:813:U:H2'	49:3:814:A:H5'	1.96	0.48
49:3:1015:G:O2'	49:3:1016:A:H5'	2.14	0.48
49:3:1395:C:O2'	49:3:1396:A:H5'	2.13	0.48
50:1:162:U:O2'	50:1:163:C:H5'	2.13	0.48
50:1:1071:G:H1'	50:1:1089:A:N7	2.28	0.48
50:1:2104:C:H2'	50:1:2105:U:C6	2.48	0.48
50:1:2682:A:O2'	50:1:2683:C:H5'	2.14	0.48
2:c:85:ALA:O	2:c:86:GLU:HG2	2.14	0.48
8:k:23:LYS:HZ2	50:1:2548:U:H1'	1.78	0.48
10:m:91:TYR:N	10:m:91:TYR:CD1	2.81	0.48
23:z:17:PRO:HD3	50:1:969:G:OP1	2.14	0.48
27:E:62:PRO:HG2	27:E:63:TYR:CD2	2.48	0.48
32:J:96:GLN:HE22	49:3:6:G:N2	2.12	0.48
35:M:8:ASP:O	35:M:12:ARG:HG3	2.14	0.48
40:R:55:LEU:O	40:R:58:GLU:HB2	2.14	0.48
42:T:10:ILE:HD11	42:T:29:ALA:HB1	1.95	0.48
49:3:694:A:C2'	49:3:695:A:H5'	2.43	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:395:U:H2'	50:1:396:G:C8	2.49	0.48
50:1:1669:A:H5''	50:1:2550:G:OP1	2.13	0.48
50:1:2484:G:O2'	50:1:2485:G:H5'	2.14	0.48
50:1:2553:G:H2'	50:1:2554:U:O4'	2.14	0.48
1:b:43:ASN:HD21	1:b:45:ASN:HB2	1.78	0.48
1:b:144:GLU:HG2	1:b:151:GLY:N	2.28	0.48
1:b:158:GLY:HA3	50:1:1820:U:C4	2.49	0.48
35:M:23:ALA:HA	35:M:61:THR:HA	1.95	0.48
47:Y:20:ASN:HD21	49:3:323:U:H5''	1.79	0.48
49:3:1478:U:O2'	49:3:1479:C:H5'	2.14	0.48
50:1:3:U:H2'	50:1:4:U:C6	2.49	0.48
50:1:1609:A:H1'	50:1:1616:A:O4'	2.14	0.48
50:1:1930:G:C2'	50:1:1931:U:OP2	2.62	0.48
10:m:9:PHE:HZ	50:1:911:A:H2'	1.79	0.47
10:m:36:VAL:HG21	10:m:129:THR:HG23	1.94	0.47
16:s:88:ARG:NE	16:s:94:ASP:OD2	2.43	0.47
27:E:56:LEU:HD12	27:E:56:LEU:H	1.78	0.47
36:N:114:LYS:HD2	49:3:1187:G:C5'	2.44	0.47
49:3:297:G:H4'	49:3:557:G:H4'	1.95	0.47
49:3:744:C:H2'	49:3:745:G:H8	1.79	0.47
49:3:1137:C:H5'	49:3:1138:G:C5'	2.33	0.47
49:3:1245:C:H2'	49:3:1246:A:C8	2.47	0.47
50:1:834:G:H2'	50:1:835:C:C6	2.49	0.47
50:1:1185:G:H5''	50:1:1186:G:OP1	2.14	0.47
50:1:2093:G:O2'	50:1:2094:A:H5'	2.13	0.47
50:1:2150:C:H2'	50:1:2151:U:O4'	2.13	0.47
50:1:2391:G:H4'	50:1:2392:A:OP1	2.14	0.47
50:1:2620:C:C3'	50:1:2621:G:H5''	2.43	0.47
52:5:51:C:H2'	52:5:52:G:C8	2.49	0.47
53:4:22:A:O2'	53:4:23:A:O4'	2.31	0.47
1:b:4:LYS:HG2	1:b:5:CYS:N	2.30	0.47
1:b:30:ALA:HB3	1:b:31:PRO:HD3	1.96	0.47
1:b:143:VAL:HG22	1:b:153:LEU:HB2	1.96	0.47
11:n:63:ARG:HD2	50:1:1454:C:O4'	2.13	0.47
29:G:114:LYS:O	29:G:117:GLU:HG3	2.14	0.47
39:Q:3:VAL:HA	39:Q:6:LEU:HD12	1.95	0.47
41:S:24:ALA:HA	41:S:27:LYS:NZ	2.29	0.47
41:S:84:ARG:NH2	49:3:1060:U:OP1	2.48	0.47
44:V:30:HIS:CD2	44:V:33:TYR:H	2.29	0.47
49:3:125:U:H2'	49:3:126:G:C8	2.50	0.47
49:3:955:U:H2'	49:3:956:U:C6	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:1490:C:O2'	49:3:1491:G:H5'	2.14	0.47
50:1:543:G:H8	50:1:543:G:H5'	1.78	0.47
50:1:1413:A:H61	50:1:1589:U:H3	1.62	0.47
50:1:1727:C:O2'	50:1:1728:C:H5'	2.14	0.47
50:1:2087:G:H2'	50:1:2088:A:C8	2.48	0.47
50:1:2329:U:H2'	50:1:2330:G:C8	2.49	0.47
50:1:2623:G:H2'	50:1:2624:G:H8	1.79	0.47
9:l:41:ARG:NH1	50:1:807:U:OP2	2.47	0.47
11:n:63:ARG:CZ	50:1:1454:C:H5'	2.44	0.47
36:N:10:ARG:NH2	49:3:1119:C:OP2	2.47	0.47
49:3:9:G:O2'	49:3:10:A:H5'	2.14	0.47
49:3:235:C:H2'	49:3:236:A:C8	2.49	0.47
49:3:634:C:H2'	49:3:635:A:H8	1.78	0.47
49:3:1073:U:H3	49:3:1102:A:H61	1.61	0.47
49:3:1506:U:O2'	49:3:1507:A:H5'	2.14	0.47
50:1:689:A:H2'	50:1:690:G:C8	2.49	0.47
50:1:706:A:H2'	50:1:707:G:O4'	2.14	0.47
50:1:893:C:H2'	50:1:894:U:C6	2.49	0.47
50:1:1782:U:H1'	50:1:2609:U:O4'	2.15	0.47
50:1:2372:U:H2'	50:1:2373:G:C8	2.49	0.47
50:1:2584:U:H5''	54:8:25:ALA:HA	1.95	0.47
52:5:4:G:H2'	52:5:5:G:H8	1.79	0.47
4:e:62:GLN:CG	4:e:94:ARG:HH22	2.24	0.47
31:I:59:LYS:HD3	31:I:194:ILE:HD13	1.97	0.47
36:N:74:GLN:O	36:N:78:ILE:HG13	2.14	0.47
38:P:124:LYS:O	48:Z:34:ARG:NH2	2.47	0.47
48:Z:34:ARG:HD3	48:Z:36:PHE:HZ	1.80	0.47
49:3:323:U:H2'	49:3:324:G:O4'	2.14	0.47
49:3:834:U:H2'	49:3:835:U:C6	2.50	0.47
50:1:435:C:H2'	50:1:436:C:H5'	1.96	0.47
50:1:917:A:C2	50:1:918:A:H1'	2.49	0.47
50:1:1100:C:H3'	50:1:1101:U:C5'	2.41	0.47
50:1:2248:C:C2'	50:1:2249:U:H5'	2.44	0.47
50:1:2423:U:H5'	50:1:2424:C:H5'	1.96	0.47
50:1:2472:G:H2'	50:1:2475:C:H42	1.79	0.47
50:1:2646:C:H2'	50:1:2647:U:O4'	2.15	0.47
54:8:40:ARG:HH11	54:8:88:LEU:HD23	1.79	0.47
54:8:93:ALA:O	54:8:97:GLU:HB2	2.14	0.47
1:b:34:GLU:OE1	50:1:1816:C:N4	2.48	0.47
6:g:104:THR:HG22	6:g:109:GLU:HA	1.97	0.47
10:m:136:MET:SD	19:v:57:TYR:HB3	2.54	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:t:58:VAL:HG13	17:t:85:VAL:HG22	1.97	0.47
48:Z:23:GLU:O	48:Z:25:ALA:N	2.42	0.47
49:3:55:A:H2'	49:3:55:A:N3	2.28	0.47
49:3:1256:A:H4'	49:3:1258:G:N9	2.29	0.47
50:1:431:U:O2'	50:1:432:A:H5'	2.13	0.47
50:1:889:C:H2'	50:1:890:C:H5'	1.95	0.47
50:1:1164:C:H2'	50:1:1165:A:H8	1.79	0.47
50:1:1304:A:H2'	50:1:1305:C:C5'	2.44	0.47
50:1:2112:G:H5''	50:1:2113:U:C5	2.49	0.47
50:1:2523:G:O2'	50:1:2524:G:H5'	2.14	0.47
3:d:63:LYS:HD3	50:1:2444:G:OP2	2.15	0.47
12:o:100:HIS:HD2	51:2:48:U:H4'	1.80	0.47
33:K:3:HIS:HD2	33:K:65:GLU:HB2	1.79	0.47
44:V:46:HIS:HB3	44:V:73:THR:HG22	1.96	0.47
49:3:857:C:H2'	49:3:858:G:O4'	2.14	0.47
49:3:1473:G:O2'	49:3:1474:U:H5'	2.13	0.47
50:1:20:C:H2'	50:1:21:A:C8	2.50	0.47
50:1:95:A:C3'	50:1:96:C:H5''	2.45	0.47
50:1:528:A:C2	50:1:2042:A:H2'	2.49	0.47
50:1:904:G:H2'	50:1:905:A:H8	1.79	0.47
50:1:999:U:H5''	50:1:1154:G:O6	2.14	0.47
50:1:2246:G:H2'	50:1:2247:A:H8	1.79	0.47
50:1:2791:G:H2'	50:1:2792:A:C8	2.49	0.47
50:1:2801:G:H2'	50:1:2802:G:C8	2.49	0.47
54:9:5:SER:O	54:9:6:ARG:C	2.57	0.47
2:c:61:THR:CG2	2:c:64:GLU:HG2	2.45	0.47
2:c:194:PRO:HA	50:1:2680:U:C5'	2.45	0.47
14:q:23:TYR:CD1	50:1:533:G:H5'	2.50	0.47
15:r:79:ARG:HD2	15:r:80:ARG:HH21	1.78	0.47
24:B:14:MET:HB3	50:1:2045:C:H4'	1.97	0.47
29:G:100:LEU:C	29:G:102:ASN:H	2.22	0.47
30:H:110:LEU:HD22	30:H:145:ALA:HB2	1.97	0.47
31:I:187:ARG:HA	31:I:190:LEU:HD22	1.97	0.47
37:O:57:VAL:O	37:O:58:ASN:CB	2.61	0.47
49:3:149:A:H1'	49:3:1446:A:C2	2.49	0.47
49:3:766:A:H2'	49:3:767:A:O4'	2.14	0.47
49:3:948:C:H2'	49:3:949:A:H8	1.80	0.47
49:3:993:G:H21	49:3:996:A:N6	2.13	0.47
49:3:1263:C:H2'	49:3:1264:U:C6	2.49	0.47
49:3:1406:U:H2'	49:3:1407:C:H5'	1.97	0.47
50:1:438:G:H2'	50:1:439:A:C8	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:630:G:N2	50:1:632:A:H3'	2.30	0.47
50:1:768:G:N2	50:1:1379:U:H1'	2.29	0.47
50:1:1111:A:O2'	50:1:1112:G:H4'	2.15	0.47
50:1:1177:G:C4	50:1:1178:C:H1'	2.49	0.47
50:1:1535:A:H3'	50:1:1536:C:C5'	2.44	0.47
50:1:1550:C:H2'	50:1:1551:A:C8	2.49	0.47
50:1:1594:U:H2'	50:1:1595:C:H6	1.80	0.47
50:1:1827:U:C2'	50:1:1828:G:H5'	2.45	0.47
50:1:2082:A:H2'	50:1:2083:G:O4'	2.14	0.47
50:1:2116:G:H2'	50:1:2117:A:C4	2.49	0.47
50:1:2172:U:P	50:1:2173:A:H5''	2.55	0.47
50:1:2248:C:H2'	50:1:2249:U:H5'	1.96	0.47
50:1:2408:U:O5'	50:1:2408:U:H6	1.97	0.47
50:1:2743:U:H2'	50:1:2744:G:C5'	2.44	0.47
52:5:68:C:H2'	52:5:69:C:C6	2.50	0.47
54:8:22:ALA:HB2	54:8:37:ILE:CG1	2.43	0.47
2:c:148:GLN:HG2	2:c:152:PRO:HG2	1.97	0.47
9:l:16:GLY:HA2	50:1:662:G:O3'	2.15	0.47
20:w:12:SER:HB3	50:1:2262:U:H5	1.79	0.47
33:K:33:GLU:HB2	33:K:35:LYS:NZ	2.30	0.47
36:N:25:GLY:H	36:N:58:GLU:HA	1.79	0.47
42:T:88:ARG:HD3	42:T:88:ARG:N	2.29	0.47
49:3:846:G:H2'	49:3:846:G:N3	2.29	0.47
49:3:1258:G:H2'	49:3:1259:C:C6	2.50	0.47
50:1:537:G:H22	50:1:555:G:H2'	1.79	0.47
50:1:606:U:H4'	50:1:658:U:H4'	1.97	0.47
50:1:828:U:H2'	50:1:829:A:C8	2.50	0.47
50:1:1535:A:H3'	50:1:1536:C:H5'	1.96	0.47
50:1:1792:G:O2'	50:1:1793:C:H5'	2.14	0.47
50:1:1805:A:H2'	50:1:1806:C:C6	2.50	0.47
50:1:2228:G:H2'	50:1:2229:U:C6	2.49	0.47
50:1:2352:A:H2'	50:1:2353:G:H5'	1.96	0.47
51:2:117:G:O2'	51:2:118:C:H5'	2.14	0.47
52:5:15:G:H2'	52:5:16:C:H5'	1.97	0.47
54:8:105:ARG:O	54:8:106:ARG:HD2	2.14	0.47
1:b:229:HIS:CG	1:b:230:PRO:HD2	2.49	0.47
12:o:33:ARG:HE	51:2:52:A:H62	1.60	0.47
14:q:80:ASN:ND2	50:1:1151:A:H4'	2.30	0.47
31:I:28:ASP:OD2	31:I:33:ILE:HG22	2.15	0.47
50:1:488:G:N2	50:1:491:G:H5''	2.29	0.47
50:1:570:G:O2'	50:1:571:U:H5'	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:983:A:C6	50:1:984:A:N1	2.83	0.47
50:1:1805:A:H2'	50:1:1806:C:H6	1.80	0.47
50:1:2169:A:H2'	50:1:2170:A:O4'	2.14	0.47
54:8:20:ILE:O	54:8:35:THR:HA	2.14	0.47
54:8:83:ASN:HD22	54:8:83:ASN:N	2.12	0.47
4:e:32:LYS:NZ	4:e:89:THR:HB	2.28	0.47
30:H:4:VAL:HG22	30:H:5:HIS:H	1.79	0.47
30:H:53:ARG:HB2	30:H:68:HIS:HB2	1.96	0.47
31:I:68:GLU:HB3	49:3:546:A:OP1	2.14	0.47
40:R:7:ASN:O	40:R:8:ILE:HD13	2.15	0.47
49:3:579:A:H2'	49:3:580:C:H6	1.80	0.47
49:3:770:C:O2'	49:3:771:G:H5'	2.15	0.47
49:3:962:C:H1'	49:3:1201:A:N6	2.29	0.47
50:1:852:U:H2'	50:1:853:C:C6	2.50	0.47
50:1:1057:A:H2'	50:1:1057:A:N3	2.29	0.47
50:1:1366:A:H2'	50:1:1367:A:O4'	2.14	0.47
50:1:1937:A:O2'	50:1:1938:A:H3'	2.14	0.47
50:1:2007:U:H2'	50:1:2008:C:H6	1.81	0.47
50:1:2556:C:H2'	50:1:2557:G:O4'	2.15	0.47
11:n:24:MET:HE1	11:n:40:LYS:HD3	1.96	0.46
24:B:9:ARG:O	24:B:13:GLY:N	2.40	0.46
46:X:69:LYS:HZ1	49:3:1319:A:H3'	1.80	0.46
49:3:109:A:C6	49:3:326:G:C6	3.03	0.46
49:3:439:U:H2'	49:3:440:C:O4'	2.15	0.46
49:3:517:G:H4'	49:3:519:C:C2	2.50	0.46
49:3:680:C:H2'	49:3:681:A:H8	1.81	0.46
49:3:1527:U:O2'	49:3:1528:U:H5'	2.15	0.46
50:1:227:A:O2'	50:1:228:C:H4'	2.15	0.46
50:1:296:U:H2'	50:1:297:G:H8	1.79	0.46
50:1:1040:A:H2	50:1:1115:G:H22	1.63	0.46
50:1:1164:C:H2'	50:1:1165:A:C8	2.50	0.46
50:1:1998:A:H2'	50:1:1999:C:H6	1.79	0.46
50:1:2030:A:N3	50:1:2499:C:H5''	2.31	0.46
50:1:2450:A:O2'	50:1:2451:A:H5'	2.15	0.46
54:8:30:VAL:CA	54:8:34:SER:HB2	2.46	0.46
3:d:164:LEU:H	3:d:164:LEU:HD23	1.80	0.46
4:e:134:GLN:OE1	4:e:134:GLN:N	2.48	0.46
6:g:33:GLN:HB3	6:g:35:LYS:HE3	1.98	0.46
10:m:69:PRO:HA	10:m:94:ALA:HB2	1.96	0.46
14:q:36:GLN:HE21	50:1:1252:G:N2	2.09	0.46
19:v:20:LEU:HD12	19:v:25:LYS:O	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:y:20:ASN:O	22:y:24:GLU:HB2	2.15	0.46
29:G:69:VAL:HG12	29:G:162:VAL:HA	1.96	0.46
29:G:216:VAL:O	29:G:219:THR:HG22	2.14	0.46
36:N:90:ASP:OD1	36:N:92:SER:OG	2.33	0.46
38:P:125:LYS:O	48:Z:34:ARG:NH2	2.48	0.46
43:U:70:ARG:NE	49:3:375:U:OP1	2.46	0.46
48:Z:50:SER:HA	48:Z:53:LYS:HE3	1.97	0.46
49:3:832:G:O2'	49:3:833:G:H5'	2.16	0.46
49:3:1251:A:H2'	49:3:1252:A:O4'	2.14	0.46
49:3:1306:A:H62	49:3:1331:G:H1'	1.79	0.46
50:1:464:U:C2	50:1:788:A:C6	3.03	0.46
50:1:699:A:H2'	50:1:700:G:O4'	2.15	0.46
50:1:2105:U:H2'	50:1:2106:U:O4'	2.15	0.46
50:1:2183:A:H2'	50:1:2184:A:H8	1.79	0.46
50:1:2398:U:H2'	50:1:2399:G:C8	2.50	0.46
50:1:2795:C:C2'	50:1:2796:U:H5'	2.45	0.46
4:e:92:GLY:O	4:e:94:ARG:N	2.41	0.46
19:v:32:GLY:HA3	19:v:93:ARG:HB3	1.98	0.46
29:G:34:ARG:O	29:G:37:VAL:HG22	2.15	0.46
31:I:150:LYS:O	31:I:150:LYS:HG3	2.16	0.46
32:J:104:ILE:HD11	32:J:119:VAL:O	2.15	0.46
32:J:110:MET:HG3	32:J:139:THR:HG21	1.97	0.46
48:Z:44:ARG:HH22	49:3:722:G:N2	2.12	0.46
49:3:1431:A:H2	49:3:1469:C:N4	2.13	0.46
50:1:473:G:O2'	50:1:474:G:H5'	2.14	0.46
50:1:712:G:H2'	50:1:713:G:O4'	2.15	0.46
50:1:935:C:H2'	50:1:936:A:C8	2.50	0.46
50:1:1316:U:H2'	50:1:1317:G:C8	2.50	0.46
50:1:2329:U:H2'	50:1:2330:G:H8	1.80	0.46
50:1:2592:G:H2'	50:1:2593:U:O4'	2.16	0.46
52:5:25:C:O2'	52:5:26:G:H5'	2.16	0.46
52:5:52:G:H2'	52:5:53:G:C8	2.51	0.46
52:5:55:U:H2'	52:5:57:A:OP2	2.15	0.46
54:8:40:ARG:NH1	54:8:88:LEU:HD23	2.31	0.46
54:8:43:ILE:HG13	54:8:44:ARG:H	1.79	0.46
29:G:46:VAL:N	29:G:47:PRO:CD	2.78	0.46
30:H:39:ARG:NH1	30:H:54:ILE:HB	2.31	0.46
38:P:18:GLY:O	38:P:81:LEU:HD12	2.16	0.46
47:Y:35:TYR:HA	47:Y:38:ILE:HG12	1.96	0.46
49:3:475:C:H2'	49:3:476:U:C6	2.50	0.46
49:3:605:U:H2'	49:3:606:G:C8	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:801:U:H2'	49:3:802:A:C8	2.49	0.46
49:3:855:U:H2'	49:3:856:C:C6	2.50	0.46
49:3:1192:C:H6	49:3:1192:C:O5'	1.99	0.46
49:3:1499:A:OP2	49:3:1500:A:OP2	2.33	0.46
50:1:460:A:H2'	50:1:461:C:O4'	2.15	0.46
50:1:1468:U:H2'	50:1:1522:A:N6	2.31	0.46
50:1:1709:U:H2'	50:1:1710:G:H8	1.79	0.46
50:1:1945:G:H2'	50:1:1946:U:H6	1.80	0.46
50:1:2298:A:H2'	50:1:2299:U:O4'	2.16	0.46
50:1:2505:G:H21	50:1:2506:U:H5	1.62	0.46
51:2:35:C:H2'	51:2:36:C:H5'	1.97	0.46
51:2:119:A:C2'	51:2:120:A:H4'	2.45	0.46
5:f:104:LEU:HD23	5:f:104:LEU:N	2.30	0.46
18:u:13:LEU:HD11	18:u:70:ALA:HB2	1.97	0.46
23:z:41:PRO:HA	23:z:44:ARG:HB2	1.97	0.46
29:G:72:LYS:O	29:G:73:ARG:HG2	2.15	0.46
29:G:202:ASN:ND2	29:G:203:ASP:H	2.14	0.46
48:Z:46:ARG:NH1	48:Z:50:SER:HB3	2.31	0.46
49:3:25:C:H2'	49:3:26:A:H8	1.79	0.46
49:3:113:G:H1'	49:3:354:G:C5'	2.42	0.46
49:3:1062:U:H2'	49:3:1063:C:C6	2.51	0.46
49:3:1237:C:H4'	49:3:1334:G:N2	2.30	0.46
50:1:198:C:O2'	50:1:199:A:H5'	2.15	0.46
50:1:519:U:H2'	50:1:520:G:H8	1.81	0.46
50:1:743:A:O2'	50:1:744:U:H5'	2.15	0.46
50:1:856:G:H2'	50:1:857:G:C8	2.50	0.46
50:1:1821:A:H2'	50:1:1822:C:C6	2.51	0.46
50:1:1967:C:H2'	50:1:1968:G:C5'	2.46	0.46
50:1:1994:C:O2'	50:1:1995:U:H5'	2.16	0.46
50:1:2356:U:H2'	50:1:2357:G:O4'	2.16	0.46
50:1:2687:U:H2'	50:1:2688:G:O4'	2.16	0.46
54:8:62:HIS:O	54:8:64:ILE:HG22	2.16	0.46
2:c:24:VAL:HG22	2:c:25:THR:H	1.81	0.46
2:c:61:THR:OG1	50:1:2811:G:H5''	2.16	0.46
4:e:150:GLY:C	4:e:151:LEU:HD22	2.41	0.46
17:t:33:LYS:HG2	17:t:80:TRP:CZ3	2.50	0.46
19:v:9:ARG:HG3	19:v:41:GLU:HB2	1.97	0.46
24:B:5:ASN:ND2	50:1:2019:A:N7	2.63	0.46
32:J:96:GLN:HE22	49:3:6:G:H22	1.62	0.46
32:J:132:PRO:O	32:J:136:VAL:HG23	2.16	0.46
37:O:38:GLY:O	37:O:40:ILE:HD12	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:S:17:ASP:O	41:S:21:ALA:HB3	2.16	0.46
44:V:16:MET:HG3	44:V:19:SER:C	2.41	0.46
49:3:665:A:C1'	49:3:733:G:H1'	2.46	0.46
49:3:767:A:H2'	49:3:768:A:C8	2.51	0.46
50:1:1183:U:H2'	50:1:1184:U:C6	2.50	0.46
50:1:1475:G:O2'	50:1:1476:U:H6	1.98	0.46
50:1:2257:U:H2'	50:1:2258:C:C6	2.50	0.46
50:1:2297:A:N1	50:1:2321:U:H5	2.13	0.46
50:1:2591:C:H2'	50:1:2592:G:H8	1.80	0.46
5:f:100:ASN:HD21	5:f:115:GLN:HE21	1.63	0.46
12:o:12:THR:O	12:o:16:ARG:HB2	2.15	0.46
14:q:60:TRP:O	14:q:64:ILE:HG12	2.15	0.46
15:r:24:LYS:HD2	15:r:66:HIS:HE1	1.79	0.46
15:r:34:GLU:HG3	15:r:60:LYS:HA	1.98	0.46
16:s:31:GLN:O	16:s:35:ILE:HG13	2.16	0.46
31:I:109:THR:HG21	49:3:408:A:H5''	1.97	0.46
38:P:38:GLY:HA3	49:3:708:C:C4'	2.46	0.46
49:3:373:A:H5'	49:3:480:U:O2'	2.14	0.46
49:3:644:U:H2'	49:3:645:G:C8	2.50	0.46
49:3:802:A:H2'	49:3:803:G:O4'	2.16	0.46
49:3:1211:U:H4'	49:3:1213:A:N3	2.31	0.46
49:3:1297:G:H1'	49:3:1298:U:H5	1.81	0.46
49:3:1397:C:H4'	49:3:1398:A:O5'	2.16	0.46
50:1:204:A:O3'	50:1:205:G:H4'	2.16	0.46
50:1:247:G:H4'	50:1:386:G:C5	2.50	0.46
50:1:368:A:C2'	50:1:369:U:H5'	2.46	0.46
50:1:1387:A:H2'	50:1:1388:G:H8	1.80	0.46
50:1:1805:A:O2'	50:1:1806:C:H5'	2.16	0.46
50:1:1999:C:H2'	50:1:2000:C:C6	2.50	0.46
50:1:2059:A:N6	50:1:2503:A:H2'	2.31	0.46
50:1:2543:G:H2'	50:1:2544:G:C8	2.50	0.46
51:2:65:U:O4	51:2:108:A:H2'	2.15	0.46
6:g:125:THR:OG1	6:g:126:GLY:N	2.49	0.46
15:r:68:ARG:HB2	15:r:90:ARG:HH21	1.80	0.46
15:r:80:ARG:NH2	50:1:572:A:OP2	2.48	0.46
16:s:82:MET:HE1	50:1:1322:A:C5'	2.46	0.46
29:G:169:HIS:HA	29:G:172:ILE:HD13	1.98	0.46
36:N:48:ARG:O	36:N:52:GLU:HG2	2.16	0.46
48:Z:54:ARG:NH2	53:4:7:G:OP2	2.49	0.46
49:3:146:G:H2'	49:3:147:G:H8	1.80	0.46
49:3:230:G:O2'	49:3:231:U:H5'	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:463:U:H3	49:3:469:C:N4	2.14	0.46
49:3:634:C:H2'	49:3:635:A:C8	2.51	0.46
49:3:729:A:H2'	49:3:730:G:O4'	2.16	0.46
49:3:961:U:O5'	49:3:961:U:H6	1.99	0.46
50:1:745:G:O2'	50:1:748:G:H1'	2.15	0.46
50:1:1307:A:H2'	50:1:1308:A:O4'	2.15	0.46
50:1:1343:G:N3	50:1:1343:G:H2'	2.30	0.46
50:1:1432:G:H2'	50:1:1433:A:C8	2.51	0.46
50:1:1451:C:H4'	50:1:1452:G:C4	2.51	0.46
50:1:1783:A:C2	50:1:2587:A:C5	3.04	0.46
50:1:2033:A:H1'	50:1:2035:G:OP2	2.16	0.46
50:1:2372:U:H2'	50:1:2373:G:H8	1.80	0.46
50:1:2441:U:O2'	50:1:2442:C:H5'	2.16	0.46
50:1:2899:A:H2'	50:1:2900:A:C8	2.50	0.46
51:2:3:C:C3'	51:2:4:C:H5''	2.45	0.46
51:2:91:C:O2'	51:2:92:C:H5'	2.16	0.46
52:5:15:G:N2	52:5:48:C:H42	2.13	0.46
6:g:17:ASP:OD1	6:g:18:GLN:N	2.49	0.46
11:n:4:ARG:HD2	50:1:2820:A:N3	2.31	0.46
18:u:14:THR:OG1	18:u:15:GLY:N	2.49	0.46
31:I:8:LEU:HD11	31:I:31:CYS:HB3	1.98	0.46
33:K:81:ASN:HB3	33:K:84:VAL:HG22	1.98	0.46
43:U:1:MET:HE3	43:U:3:THR:HG22	1.97	0.46
49:3:406:G:H2'	49:3:407:U:H6	1.80	0.46
49:3:609:A:H2'	49:3:610:U:O4'	2.16	0.46
49:3:626:G:H2'	49:3:627:G:H8	1.81	0.46
49:3:1162:C:H2'	49:3:1163:A:H8	1.81	0.46
50:1:29:U:H2'	50:1:30:G:C8	2.51	0.46
50:1:582:A:H2'	50:1:583:G:H8	1.80	0.46
50:1:680:C:H2'	50:1:681:G:H8	1.80	0.46
50:1:723:C:H2'	50:1:724:U:O4'	2.16	0.46
50:1:827:U:O4	50:1:2430:A:C2	2.68	0.46
50:1:894:U:H2'	50:1:895:U:O4'	2.16	0.46
50:1:1857:G:N2	50:1:1884:G:H2'	2.30	0.46
50:1:2267:A:H5''	50:1:2268:A:H5'	1.97	0.46
50:1:2358:A:H2'	50:1:2359:C:O4'	2.16	0.46
6:g:71:LYS:HE3	6:g:74:ALA:HA	1.98	0.46
14:q:2:ARG:HH12	50:1:446:G:H5''	1.80	0.46
14:q:107:ALA:HB3	15:r:46:GLU:HG2	1.98	0.46
33:K:2:ARG:HD3	33:K:91:ARG:CZ	2.45	0.46
35:M:74:ILE:HD12	35:M:74:ILE:N	2.30	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:O:56:HIS:CE1	49:3:963:G:H21	2.34	0.46
43:U:19:VAL:CG2	43:U:36:VAL:HG13	2.43	0.46
49:3:1162:C:H2'	49:3:1163:A:C8	2.51	0.46
50:1:172:A:H2'	50:1:173:A:H8	1.80	0.46
50:1:307:G:N1	50:1:310:A:OP2	2.49	0.46
50:1:1287:A:O2'	50:1:1288:G:H5'	2.16	0.46
50:1:1893:C:C2'	50:1:1894:C:H5'	2.46	0.46
50:1:2247:A:O2'	50:1:2248:C:H5'	2.17	0.46
50:1:2492:U:O2'	50:1:2493:U:H5'	2.16	0.46
50:1:2733:A:H2'	50:1:2734:A:H8	1.81	0.46
50:1:2860:A:H2'	50:1:2861:U:H5'	1.97	0.46
54:8:40:ARG:NH1	54:8:88:LEU:HA	2.31	0.46
54:9:64:ILE:CD1	54:9:70:ILE:HG12	2.44	0.46
30:H:76:ILE:HA	30:H:83:VAL:HG23	1.97	0.45
31:I:152:SER:OG	49:3:436:C:H4'	2.16	0.45
33:K:86:ARG:NH2	49:3:673:A:O3'	2.49	0.45
34:L:69:ARG:HH21	34:L:95:ARG:HB3	1.82	0.45
41:S:80:ARG:O	41:S:83:VAL:HG12	2.16	0.45
49:3:171:A:H2'	49:3:172:A:C8	2.51	0.45
49:3:522:C:H2'	49:3:523:A:C8	2.51	0.45
49:3:775:G:H2'	49:3:776:G:O4'	2.16	0.45
49:3:1255:G:H1	49:3:1282:C:H42	1.63	0.45
49:3:1429:A:H2'	49:3:1430:A:H8	1.81	0.45
49:3:1452:C:H4'	49:3:1453:G:N2	2.31	0.45
50:1:12:U:H2'	50:1:13:A:H5'	1.97	0.45
50:1:214:G:O2'	50:1:215:G:H5'	2.17	0.45
50:1:226:A:H5''	50:1:257:C:O2'	2.15	0.45
50:1:247:G:H4'	50:1:386:G:C4	2.51	0.45
50:1:386:G:H3'	50:1:387:U:C5'	2.46	0.45
50:1:531:C:C5	50:1:2035:G:C2	3.04	0.45
50:1:1148:U:O2'	50:1:1149:G:H5'	2.16	0.45
50:1:1576:U:O2'	50:1:1577:C:H5'	2.16	0.45
50:1:2124:G:H1	50:1:2174:C:H42	1.64	0.45
1:b:66:PHE:HB3	1:b:150:GLY:O	2.15	0.45
2:c:45:TYR:HH	50:1:2636:C:HO2'	1.63	0.45
3:d:117:ARG:HH21	3:d:184:ASP:HA	1.82	0.45
3:d:124:PHE:CZ	3:d:141:MET:HE1	2.51	0.45
5:f:102:ILE:HG22	5:f:104:LEU:HD22	1.97	0.45
30:H:57:GLU:O	30:H:63:ILE:HD12	2.16	0.45
33:K:3:HIS:HB2	33:K:92:THR:CB	2.46	0.45
35:M:60:LEU:HD23	35:M:60:LEU:H	1.79	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:779:U:H2'	50:1:780:G:O4'	2.16	0.45
50:1:971:G:H2'	50:1:972:A:O4'	2.15	0.45
50:1:1810:A:C2'	50:1:1811:G:H5'	2.46	0.45
50:1:1999:C:H2'	50:1:2000:C:H6	1.80	0.45
50:1:2098:U:H2'	50:1:2099:U:H6	1.82	0.45
50:1:2186:G:H2'	50:1:2187:U:O4'	2.15	0.45
50:1:2241:A:O2'	50:1:2242:G:H5'	2.16	0.45
50:1:2412:A:H2'	50:1:2413:G:O4'	2.17	0.45
51:2:66:A:H4'	51:2:67:G:C8	2.51	0.45
52:5:76:A:H5'	54:8:27:GLY:HA3	1.99	0.45
54:8:9:ALA:H	54:9:4:ILE:C	2.24	0.45
1:b:7:PRO:HB2	1:b:13:ARG:NH1	2.31	0.45
19:v:80:HIS:CE1	19:v:81:PRO:HG2	2.52	0.45
30:H:128:MET:HG3	30:H:131:ARG:H	1.80	0.45
31:I:120:LYS:HG3	31:I:130:ASN:HD22	1.82	0.45
38:P:111:ASP:H	48:Z:3:ILE:HG23	1.81	0.45
40:R:89:ARG:NH2	40:R:95:PRO:O	2.50	0.45
47:Y:66:ILE:HG23	47:Y:70:LYS:HE3	1.99	0.45
49:3:376:G:H2'	49:3:377:G:H8	1.80	0.45
49:3:543:U:H2'	49:3:544:G:C8	2.51	0.45
49:3:1502:A:C8	49:3:1505:G:N2	2.85	0.45
50:1:108:G:O2'	50:1:109:C:H5'	2.16	0.45
50:1:115:C:O2'	50:1:116:C:H5'	2.16	0.45
50:1:226:A:H2'	50:1:227:A:O4'	2.16	0.45
50:1:304:U:H2'	50:1:305:C:C6	2.51	0.45
50:1:565:C:O2'	50:1:566:U:H5'	2.16	0.45
50:1:703:U:H2'	50:1:704:G:O4'	2.16	0.45
50:1:809:G:O2'	50:1:810:U:H5'	2.16	0.45
50:1:886:A:H4'	50:1:890:C:N4	2.26	0.45
50:1:935:C:H2'	50:1:936:A:H8	1.80	0.45
50:1:1641:A:H2'	50:1:1642:G:O4'	2.16	0.45
50:1:2074:U:H2'	50:1:2075:U:C6	2.52	0.45
50:1:2134:A:H2	50:1:2135:A:H62	1.63	0.45
50:1:2142:A:H2'	50:1:2143:C:O4'	2.16	0.45
51:2:119:A:N3	51:2:120:A:H1'	2.31	0.45
54:8:29:HIS:CD2	54:8:78:ARG:HH12	2.33	0.45
5:f:70:LEU:O	5:f:74:MET:HG3	2.17	0.45
9:l:122:VAL:HG22	9:l:123:ARG:N	2.32	0.45
10:m:42:THR:OG1	10:m:45:GLN:HG3	2.16	0.45
34:L:78:ARG:HD3	34:L:81:GLY:H	1.81	0.45
36:N:71:ILE:H	36:N:71:ILE:CD1	2.20	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:R:113:LYS:HB2	40:R:114:PRO:HD3	1.99	0.45
49:3:25:C:H2'	49:3:26:A:C8	2.52	0.45
49:3:945:G:H2'	49:3:945:G:N3	2.31	0.45
50:1:473:G:C2'	50:1:474:G:H5'	2.46	0.45
50:1:838:C:O2'	50:1:839:U:H5'	2.16	0.45
50:1:1271:G:O3'	50:1:1272:A:H4'	2.16	0.45
50:1:1344:U:H3'	50:1:1345:C:H5'	1.99	0.45
50:1:2558:C:O2'	50:1:2559:C:H5'	2.17	0.45
50:1:2841:C:H2'	50:1:2842:G:C8	2.51	0.45
1:b:159:THR:O	1:b:193:GLU:HB2	2.15	0.45
10:m:67:VAL:HG22	10:m:68:PHE:N	2.32	0.45
29:G:70:GLY:HA3	29:G:79:VAL:HG21	1.98	0.45
31:I:11:SER:HA	31:I:18:LEU:HD22	1.98	0.45
44:V:30:HIS:HB3	44:V:33:TYR:O	2.16	0.45
44:V:45:VAL:HG21	44:V:60:ILE:HD12	1.99	0.45
47:Y:74:HIS:O	47:Y:78:LEU:HD13	2.17	0.45
49:3:396:C:H2'	49:3:397:A:H5''	1.97	0.45
49:3:805:C:H2'	49:3:806:C:C6	2.52	0.45
49:3:880:C:H2'	49:3:881:G:C8	2.49	0.45
50:1:26:G:H2'	50:1:27:G:O4'	2.16	0.45
50:1:296:U:H2'	50:1:297:G:C8	2.51	0.45
50:1:1297:C:H2'	50:1:1298:C:C6	2.52	0.45
50:1:1701:A:C2'	50:1:1702:G:H5'	2.46	0.45
50:1:1746:A:H2'	50:1:1747:U:C6	2.51	0.45
50:1:2698:U:C2	50:1:2699:C:C5	3.04	0.45
2:c:60:VAL:HG11	2:c:75:ALA:HB1	1.99	0.45
10:m:45:GLN:NE2	50:1:2485:G:H5''	2.18	0.45
14:q:88:GLU:H	15:r:49:ILE:HD11	1.81	0.45
19:v:11:GLU:HG3	19:v:16:ALA:CB	2.47	0.45
27:E:40:LYS:NZ	50:1:2419:U:OP1	2.49	0.45
30:H:189:HIS:HD2	49:3:1205:U:H4'	1.81	0.45
41:S:12:ARG:NH1	49:3:980:C:O2'	2.47	0.45
44:V:18:LYS:NZ	44:V:48:GLU:O	2.43	0.45
49:3:1008:U:H2'	49:3:1009:U:O4'	2.16	0.45
50:1:130:C:H2'	50:1:131:A:O4'	2.17	0.45
50:1:362:A:H3'	50:1:363:G:C8	2.52	0.45
50:1:840:C:H2'	50:1:841:G:H8	1.82	0.45
50:1:1951:U:H2'	50:1:1953:A:OP2	2.16	0.45
50:1:2134:A:C5	50:1:2157:G:H4'	2.51	0.45
50:1:2194:U:H2'	50:1:2195:U:C6	2.52	0.45
54:9:44:ARG:HE	54:9:57:LEU:HD11	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:32:LEU:HD13	1:b:102:TYR:CD2	2.51	0.45
9:l:85:VAL:HG11	9:l:90:VAL:HG22	1.97	0.45
20:w:14:ALA:HB1	50:1:2271:G:OP1	2.17	0.45
39:Q:120:ARG:HA	39:Q:121:PRO:HD3	1.87	0.45
49:3:195:A:H2'	49:3:196:A:C8	2.52	0.45
50:1:136:G:H2'	50:1:137:U:C6	2.52	0.45
50:1:882:G:H21	50:1:896:A:H62	1.63	0.45
50:1:1020:A:C1'	50:1:1021:A:OP2	2.59	0.45
50:1:1023:U:O2'	50:1:1122:G:H5'	2.16	0.45
50:1:1356:G:H2'	50:1:1357:C:C6	2.52	0.45
50:1:1720:U:H2'	50:1:1721:G:O4'	2.16	0.45
50:1:2403:C:H2'	50:1:2404:U:C6	2.52	0.45
50:1:2881:U:H2'	50:1:2882:A:C8	2.52	0.45
1:b:204:LEU:HB3	1:b:209:ALA:HB1	1.99	0.45
14:q:108:LEU:N	15:r:48:LYS:NZ	2.65	0.45
15:r:49:ILE:HG22	15:r:54:VAL:HG13	1.99	0.45
22:y:39:GLN:NE2	50:1:96:C:OP1	2.48	0.45
27:E:25:HIS:NE2	27:E:47:ALA:HB2	2.31	0.45
36:N:29:ILE:HG22	36:N:30:ASN:HD22	1.82	0.45
37:O:42:LEU:HD23	37:O:71:LEU:CD2	2.47	0.45
49:3:123:U:H2'	49:3:124:C:C6	2.52	0.45
49:3:918:A:H2'	49:3:919:A:O4'	2.17	0.45
49:3:1142:G:H3'	49:3:1143:G:H8	1.82	0.45
50:1:151:C:H2'	50:1:152:A:C8	2.51	0.45
50:1:558:U:H2'	50:1:559:G:H8	1.81	0.45
50:1:2368:C:H2'	50:1:2369:A:H8	1.81	0.45
50:1:2538:C:H2'	50:1:2539:C:C6	2.51	0.45
50:1:2785:C:H2'	50:1:2786:U:H6	1.79	0.45
51:2:95:U:H2'	51:2:96:G:H8	1.82	0.45
54:8:7:HIS:CE1	54:9:6:ARG:HB3	2.52	0.45
1:b:229:HIS:CE1	1:b:230:PRO:HG2	2.52	0.45
3:d:146:VAL:HG22	3:d:147:LEU:H	1.80	0.45
12:o:33:ARG:NE	51:2:52:A:N6	2.63	0.45
12:o:35:ILE:CG2	12:o:53:THR:HG21	2.47	0.45
29:G:31:PHE:HB2	29:G:41:ASN:HB2	1.97	0.45
38:P:24:ALA:HA	38:P:29:THR:HA	1.99	0.45
49:3:543:U:H2'	49:3:544:G:H8	1.81	0.45
49:3:993:G:H21	49:3:996:A:H61	1.64	0.45
49:3:1253:G:H2'	49:3:1254:A:C8	2.52	0.45
49:3:1460:C:H2'	49:3:1461:G:C8	2.52	0.45
50:1:937:C:H2'	50:1:938:G:C8	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:1172:C:C3'	50:1:1173:U:H5''	2.47	0.45
50:1:1292:G:H2'	50:1:1293:C:C6	2.52	0.45
50:1:1783:A:H5'	50:1:2608:G:H4'	1.99	0.45
50:1:2410:G:H2'	50:1:2411:A:O4'	2.17	0.45
50:1:2511:U:O4	50:1:2575:C:N3	2.49	0.45
50:1:2644:G:H3'	50:1:2645:G:H21	1.82	0.45
3:d:68:ALA:HA	50:1:1255:U:C6	2.52	0.45
7:j:140:LEU:C	7:j:140:LEU:HD12	2.42	0.45
11:n:28:LEU:HD13	11:n:34:ILE:HG12	1.98	0.45
30:H:58:ARG:HG3	30:H:63:ILE:HD13	1.99	0.45
31:I:90:LEU:HD23	31:I:90:LEU:O	2.17	0.45
37:O:53:ILE:HG12	49:3:1060:U:C5'	2.47	0.45
38:P:28:ASN:ND2	49:3:689:C:OP1	2.50	0.45
49:3:17:U:H2'	49:3:18:C:C6	2.52	0.45
49:3:414:A:N3	49:3:414:A:H2'	2.32	0.45
49:3:622:A:H2'	49:3:623:C:H5'	2.00	0.45
49:3:1144:G:O2'	49:3:1145:A:H5'	2.17	0.45
49:3:1340:A:O2'	49:3:1341:U:H5'	2.17	0.45
50:1:112:U:C2'	50:1:113:U:H5'	2.47	0.45
50:1:565:C:H4'	50:1:1253:A:C6	2.52	0.45
50:1:566:U:H4'	50:1:809:G:P	2.56	0.45
50:1:1430:G:H2'	50:1:1431:A:H8	1.80	0.45
50:1:1654:A:O4'	50:1:2823:A:H5'	2.17	0.45
50:1:1670:C:H2'	50:1:1671:U:O4'	2.17	0.45
50:1:1810:A:H2'	50:1:1811:G:H5'	1.99	0.45
50:1:2264:C:O2'	50:1:2265:U:H5'	2.16	0.45
50:1:2452:C:OP1	54:8:33:THR:HG21	2.17	0.45
2:c:142:VAL:HB	2:c:143:PRO:HD2	1.98	0.44
5:f:152:ARG:HB2	5:f:152:ARG:HH21	1.79	0.44
6:g:99:ILE:N	6:g:99:ILE:HD12	2.32	0.44
25:C:38:PHE:O	25:C:40:PRO:HD3	2.17	0.44
36:N:84:ARG:HH22	49:3:1118:U:H4'	1.82	0.44
40:R:114:PRO:HG2	49:3:1228:C:H4'	1.98	0.44
49:3:471:U:H2'	49:3:472:U:C6	2.52	0.44
49:3:514:C:H2'	49:3:515:G:C8	2.52	0.44
49:3:573:A:O2'	49:3:574:A:H5'	2.16	0.44
49:3:724:G:O2'	49:3:725:G:H5'	2.17	0.44
50:1:876:C:H2'	50:1:877:A:O4'	2.17	0.44
50:1:1654:A:H2'	50:1:1655:A:H8	1.82	0.44
50:1:1957:C:H2'	50:1:1958:C:H6	1.82	0.44
50:1:2112:G:H3'	50:1:2112:G:N3	2.32	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:g:26:ALA:HA	6:g:30:LEU:HB2	1.99	0.44
10:m:72:PRO:HD3	10:m:92:TRP:CZ3	2.51	0.44
31:I:58:GLN:NE2	49:3:544:G:OP1	2.50	0.44
31:I:101:VAL:CG2	31:I:106:PHE:HB2	2.47	0.44
34:L:58:LEU:O	34:L:62:GLU:HG3	2.17	0.44
36:N:128:LYS:HB3	36:N:129:ARG:NH1	2.32	0.44
45:W:54:LEU:O	45:W:58:ILE:HG12	2.17	0.44
49:3:160:A:H2'	49:3:161:A:O4'	2.16	0.44
49:3:285:C:H2'	49:3:286:C:H6	1.80	0.44
49:3:501:C:H2'	49:3:502:A:C8	2.52	0.44
49:3:797:C:O2'	49:3:798:U:H5'	2.17	0.44
49:3:894:G:O2'	49:3:895:G:H5'	2.17	0.44
49:3:1063:C:H2'	49:3:1064:G:C8	2.53	0.44
50:1:375:G:O2'	50:1:376:G:H5'	2.16	0.44
50:1:551:G:O2'	50:1:552:U:H5'	2.17	0.44
50:1:609:A:H2'	50:1:610:C:O4'	2.16	0.44
50:1:2286:G:H4'	50:1:2287:A:O4'	2.17	0.44
50:1:2443:C:O2'	50:1:2444:G:H5'	2.17	0.44
50:1:2543:G:H2'	50:1:2544:G:H8	1.81	0.44
3:d:179:SER:HA	3:d:182:ALA:HB3	1.99	0.44
4:e:25:MET:HG2	51:2:57:A:C6	2.51	0.44
31:I:115:GLN:NE2	49:3:406:G:H1'	2.32	0.44
50:1:35:G:H2'	50:1:36:G:O4'	2.17	0.44
50:1:194:G:H2'	50:1:195:A:O4'	2.17	0.44
50:1:207:A:H2'	50:1:208:C:O4'	2.17	0.44
50:1:744:U:H4'	50:1:1658:C:H4'	1.99	0.44
50:1:749:A:H1'	50:1:1618:A:C8	2.52	0.44
50:1:898:C:C2'	50:1:899:A:H5'	2.43	0.44
50:1:1087:G:H5''	50:1:1088:A:OP2	2.18	0.44
50:1:1630:A:H2'	50:1:1631:G:O4'	2.17	0.44
50:1:1844:C:H2'	50:1:1845:G:C8	2.51	0.44
50:1:1930:G:H2'	50:1:1968:G:O6	2.17	0.44
50:1:2404:U:H2'	50:1:2405:G:O4'	2.17	0.44
50:1:2582:G:H2'	50:1:2583:G:H5'	1.98	0.44
50:1:2900:A:H2'	50:1:2901:C:O4'	2.18	0.44
4:e:112:ASP:OD2	4:e:112:ASP:C	2.61	0.44
8:k:88:ASN:HB2	8:k:91:SER:OG	2.18	0.44
8:k:110:GLU:HA	8:k:113:MET:HE2	1.98	0.44
16:s:11:ARG:HH22	16:s:98:LYS:HB3	1.82	0.44
18:u:73:ASN:HD21	18:u:75:ALA:HB3	1.80	0.44
32:J:10:LEU:HD21	32:J:67:ARG:HD3	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:N:20:ILE:HD11	36:N:60:LEU:HD22	1.98	0.44
49:3:1305:G:H1'	49:3:1332:A:H62	1.83	0.44
49:3:1391:U:H2'	49:3:1392:G:C8	2.51	0.44
50:1:175:G:H2'	50:1:176:A:C8	2.52	0.44
50:1:327:G:O2'	50:1:328:U:H5'	2.17	0.44
50:1:534:U:H2'	50:1:535:G:H8	1.82	0.44
50:1:580:U:H2'	50:1:581:C:C6	2.52	0.44
50:1:1076:C:H2'	50:1:1077:A:C8	2.52	0.44
50:1:1187:G:O5'	50:1:1187:G:H8	2.00	0.44
50:1:1210:G:P	50:1:1212:G:H5'	2.58	0.44
50:1:1271:G:N7	50:1:1325:U:C5	2.85	0.44
50:1:1304:A:H3'	50:1:1305:C:H5''	1.98	0.44
50:1:1396:U:H5''	50:1:1397:U:OP2	2.18	0.44
50:1:2808:G:H2'	50:1:2890:G:C6	2.53	0.44
51:2:62:C:H2'	51:2:63:C:C6	2.52	0.44
2:c:118:PHE:HB2	50:1:2823:A:OP1	2.16	0.44
7:j:82:GLY:HA2	50:1:1131:G:OP1	2.17	0.44
8:k:66:LYS:N	8:k:82:ASN:OD1	2.49	0.44
10:m:31:PHE:HB3	10:m:130:PHE:HE1	1.82	0.44
15:r:63:VAL:HG22	15:r:96:VAL:HG12	1.99	0.44
35:M:50:VAL:HG22	35:M:50:VAL:O	2.18	0.44
36:N:112:ARG:HE	41:S:100:TRP:CD1	2.36	0.44
39:Q:48:LEU:HB2	49:3:520:A:OP1	2.18	0.44
39:Q:81:ILE:HD13	39:Q:96:THR:HA	2.00	0.44
46:X:51:HIS:HB2	46:X:56:HIS:NE2	2.32	0.44
49:3:170:U:O2'	49:3:171:A:H5'	2.18	0.44
49:3:376:G:H2'	49:3:377:G:C8	2.52	0.44
49:3:882:C:O2'	49:3:883:C:H5'	2.18	0.44
50:1:151:C:H2'	50:1:152:A:H8	1.82	0.44
50:1:415:A:H2'	50:1:416:U:C6	2.53	0.44
50:1:672:C:HO2'	50:1:673:C:H5'	1.82	0.44
50:1:1289:C:H2'	50:1:1290:C:C6	2.53	0.44
50:1:1412:U:H2'	50:1:1413:A:H8	1.83	0.44
50:1:1469:A:H2'	50:1:1470:A:H8	1.82	0.44
50:1:1625:C:H2'	50:1:1626:A:O4'	2.18	0.44
50:1:1717:A:H2'	50:1:1718:G:O4'	2.17	0.44
50:1:2189:U:H2'	50:1:2190:G:C8	2.48	0.44
1:b:70:LYS:HD2	1:b:73:ILE:HG13	1.99	0.44
4:e:37:MET:HE1	4:e:52:ALA:HB1	2.00	0.44
8:k:108:ARG:HD2	8:k:116:ILE:HD13	1.99	0.44
20:w:36:GLN:HE22	20:w:41:PHE:H	1.66	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:x:31:ASN:OD1	21:x:33:HIS:HE1	1.99	0.44
25:C:9:LYS:HG3	25:C:51:ALA:HB3	2.00	0.44
30:H:6:PRO:HD2	30:H:183:TYR:CD2	2.53	0.44
30:H:56:ILE:HG23	30:H:63:ILE:HD11	1.98	0.44
35:M:104:SER:HB3	35:M:125:ILE:HD11	2.00	0.44
41:S:18:LYS:O	41:S:22:LYS:HE3	2.18	0.44
43:U:3:THR:OG1	43:U:5:ARG:NH1	2.49	0.44
47:Y:55:PRO:O	47:Y:59:ARG:HG3	2.18	0.44
49:3:58:C:O2'	49:3:59:A:H5'	2.17	0.44
49:3:459:A:H2'	49:3:460:A:C8	2.52	0.44
49:3:945:G:H21	49:3:1334:G:H4'	1.82	0.44
49:3:1237:C:H4'	49:3:1334:G:H21	1.82	0.44
50:1:236:C:H2'	50:1:237:C:C6	2.53	0.44
50:1:767:U:O2'	50:1:768:G:H5'	2.16	0.44
50:1:2098:U:H2'	50:1:2099:U:C6	2.53	0.44
54:8:23:GLN:NE2	54:8:75:GLN:OE1	2.51	0.44
1:b:259:ASN:HD21	1:b:262:THR:H	1.63	0.44
10:m:12:MET:HA	50:1:910:A:N6	2.15	0.44
17:t:13:ALA:O	17:t:33:LYS:N	2.51	0.44
24:B:2:VAL:HG22	24:B:3:GLN:N	2.33	0.44
33:K:5:GLU:HB2	33:K:90:MET:HB2	2.00	0.44
33:K:50:PRO:HG3	33:K:55:HIS:NE2	2.33	0.44
36:N:49:GLN:N	36:N:50:PRO:HD2	2.33	0.44
49:3:37:U:O2'	49:3:38:G:H5'	2.17	0.44
49:3:112:G:N2	49:3:354:G:H5'	2.30	0.44
49:3:254:G:O2'	49:3:255:G:H5'	2.18	0.44
49:3:1424:U:H2'	49:3:1425:U:O4'	2.18	0.44
50:1:619:G:H3'	50:1:620:G:H21	1.82	0.44
50:1:668:A:H2'	50:1:670:A:N6	2.28	0.44
50:1:1004:U:H3	50:1:1151:A:H61	1.66	0.44
50:1:1979:U:O2'	50:1:1980:G:H5'	2.18	0.44
50:1:2048:G:H3'	50:1:2049:G:H5''	1.98	0.44
50:1:2201:G:H2'	50:1:2202:U:O4'	2.18	0.44
50:1:2230:G:H2'	50:1:2231:U:C6	2.52	0.44
50:1:2281:A:C2'	50:1:2282:G:H5'	2.46	0.44
3:d:79:ARG:NE	50:1:448:U:O4'	2.51	0.44
4:e:116:LEU:H	4:e:175:PRO:HB2	1.83	0.44
5:f:88:LEU:HD21	5:f:93:TYR:HB3	2.00	0.44
6:g:117:LEU:HD22	6:g:121:VAL:HA	1.99	0.44
13:p:98:TYR:O	13:p:101:GLU:HG2	2.18	0.44
29:G:39:ILE:HD12	29:G:39:ILE:N	2.33	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:G:64:GLY:HA2	29:G:158:ASP:OD2	2.18	0.44
29:G:182:VAL:HG23	29:G:195:VAL:HG13	1.99	0.44
38:P:92:ARG:NH2	38:P:111:ASP:OD2	2.50	0.44
41:S:66:THR:HG21	41:S:82:LYS:HG3	2.00	0.44
49:3:1288:A:HO2'	49:3:1353:G:H5'	1.80	0.44
49:3:1427:C:H2'	49:3:1428:A:H8	1.83	0.44
50:1:818:G:N1	50:1:1188:U:OP2	2.48	0.44
50:1:1193:G:O2'	50:1:1194:A:H5'	2.18	0.44
50:1:1423:G:H2'	50:1:1424:G:H8	1.82	0.44
50:1:1733:G:O2'	50:1:1734:G:H5'	2.18	0.44
50:1:2585:U:OP1	54:8:25:ALA:HB1	2.18	0.44
50:1:2623:G:H2'	50:1:2624:G:C8	2.53	0.44
50:1:2798:U:H4'	50:1:2799:A:C5	2.53	0.44
50:1:2861:U:H2'	50:1:2862:G:C8	2.52	0.44
54:9:50:GLU:HA	54:9:53:LYS:HB3	2.00	0.44
2:c:48:ILE:HG23	2:c:84:LEU:HD21	1.99	0.44
10:m:1:MET:SD	10:m:43:ALA:HB3	2.58	0.44
19:v:35:GLU:HB2	19:v:93:ARG:NH1	2.33	0.44
28:F:10:LEU:HD12	28:F:33:HIS:CD2	2.53	0.44
36:N:105:ARG:O	36:N:105:ARG:HD3	2.18	0.44
38:P:98:ALA:O	38:P:102:ALA:HB2	2.18	0.44
39:Q:73:LEU:N	39:Q:73:LEU:CD2	2.81	0.44
48:Z:48:LYS:HG2	49:3:723:U:H5	1.83	0.44
49:3:478:A:H2'	49:3:479:U:C4'	2.46	0.44
49:3:539:A:H2'	49:3:540:G:H8	1.81	0.44
49:3:1171:A:O2'	49:3:1172:C:H5'	2.18	0.44
49:3:1517:G:C5	49:3:1518:A:C2	3.06	0.44
50:1:1965:C:H5'	50:1:1966:A:OP2	2.18	0.44
50:1:2591:C:H2'	50:1:2592:G:C8	2.53	0.44
50:1:2629:U:O2'	50:1:2630:G:H5''	2.17	0.44
52:5:73:A:H5''	52:5:74:C:O4'	2.18	0.44
54:8:43:ILE:HG13	54:8:45:ALA:H	1.82	0.44
1:b:61:TYR:HA	1:b:85:ASN:OD1	2.18	0.43
8:k:115:ILE:CG2	8:k:116:ILE:N	2.81	0.43
16:s:82:MET:HE1	50:1:1322:A:H5''	2.00	0.43
17:t:61:LEU:CD2	17:t:82:LYS:HB3	2.47	0.43
21:x:1:SER:OG	21:x:2:ARG:N	2.50	0.43
22:y:9:LYS:HB3	22:y:12:GLU:HB2	2.00	0.43
26:D:1:MET:HE3	50:1:752:A:H5'	1.99	0.43
29:G:100:LEU:O	29:G:102:ASN:N	2.50	0.43
33:K:3:HIS:ND1	33:K:94:HIS:O	2.51	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:K:11:HIS:NE2	33:K:13:ASP:OD2	2.51	0.43
34:L:132:THR:HA	34:L:135:LYS:HB2	1.99	0.43
47:Y:2:ASN:ND2	49:3:332:G:OP2	2.51	0.43
48:Z:53:LYS:O	48:Z:57:LYS:HG2	2.18	0.43
49:3:300:A:H1'	49:3:565:U:O2	2.18	0.43
49:3:878:A:H2'	49:3:879:C:C6	2.53	0.43
49:3:1250:A:H2'	49:3:1251:A:C8	2.52	0.43
50:1:250:G:H2'	50:1:251:A:C8	2.52	0.43
50:1:672:C:H2'	50:1:673:C:H6	1.83	0.43
50:1:848:C:H2'	50:1:849:A:C8	2.53	0.43
50:1:1280:G:O2'	50:1:1281:G:H5'	2.18	0.43
50:1:1596:A:O2'	50:1:1597:A:H5'	2.18	0.43
50:1:1685:C:H2'	50:1:1686:C:C6	2.52	0.43
50:1:2071:A:C5	50:1:2072:C:C4	3.06	0.43
50:1:2385:C:H2'	50:1:2386:A:H8	1.80	0.43
2:c:80:TRP:CD1	2:c:202:ILE:HD11	2.52	0.43
3:d:83:VAL:CG1	3:d:86:ALA:HB2	2.48	0.43
4:e:137:PHE:HA	4:e:138:PRO:HD3	1.74	0.43
6:g:58:LEU:O	6:g:58:LEU:HD23	2.17	0.43
7:j:49:ASP:OD2	7:j:121:LYS:NZ	2.46	0.43
9:l:54:GLN:NE2	50:1:2428:G:C2	2.86	0.43
27:E:16:THR:OG1	27:E:17:GLY:N	2.42	0.43
34:L:105:GLU:HA	34:L:108:ARG:HG2	2.00	0.43
49:3:408:A:H2'	49:3:409:U:O4'	2.17	0.43
49:3:575:G:HO2'	49:3:821:G:H5'	1.81	0.43
49:3:824:G:O2'	49:3:825:A:H5'	2.18	0.43
49:3:984:C:H2'	49:3:985:C:H6	1.83	0.43
49:3:1415:G:H2'	49:3:1416:G:H8	1.84	0.43
50:1:587:C:C5	50:1:671:C:H1'	2.53	0.43
50:1:827:U:H5'	50:1:828:U:O5'	2.18	0.43
50:1:1224:U:H2'	50:1:1225:G:C8	2.53	0.43
50:1:2098:U:H2'	50:1:2099:U:O4'	2.18	0.43
50:1:2415:G:H2'	50:1:2416:C:C6	2.52	0.43
1:b:144:GLU:OE2	1:b:150:GLY:N	2.46	0.43
2:c:172:VAL:HG12	2:c:175:LEU:HD11	1.99	0.43
4:e:73:VAL:HB	4:e:78:ILE:HB	2.00	0.43
9:l:101:ILE:HG13	9:l:102:GLY:N	2.33	0.43
10:m:4:PRO:O	10:m:7:THR:HG23	2.17	0.43
10:m:36:VAL:HG13	19:v:82:TYR:CD2	2.53	0.43
19:v:47:VAL:HA	19:v:50:MET:HB2	1.98	0.43
30:H:46:LEU:O	30:H:48:LYS:N	2.51	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:J:54:GLU:HB3	32:J:57:ALA:HB3	1.99	0.43
33:K:19:PRO:O	33:K:22:ILE:HG22	2.18	0.43
34:L:136:LYS:O	34:L:139:ASP:OD1	2.36	0.43
38:P:34:THR:HA	38:P:40:ALA:HA	2.00	0.43
40:R:108:ARG:HH21	49:3:1308:U:H5'	1.82	0.43
43:U:8:ARG:CZ	43:U:15:PRO:HB3	2.48	0.43
49:3:429:U:H3	49:3:431:A:H62	1.66	0.43
49:3:1518:A:H2'	49:3:1519:A:C8	2.54	0.43
50:1:65:U:H2'	50:1:66:C:C6	2.54	0.43
50:1:611:C:H2'	50:1:612:G:O4'	2.17	0.43
50:1:1197:G:H2'	50:1:1198:U:H6	1.81	0.43
50:1:1569:A:C6	50:1:1570:A:C6	3.06	0.43
50:1:2193:G:H2'	50:1:2194:U:C6	2.53	0.43
50:1:2581:G:H4'	50:1:2582:G:C8	2.52	0.43
50:1:2590:A:H2'	50:1:2591:C:H6	1.82	0.43
3:d:69:ARG:HD3	50:1:674:G:H1'	2.00	0.43
9:l:36:LYS:HB2	9:l:41:ARG:NH1	2.33	0.43
14:q:2:ARG:HH22	50:1:446:G:P	2.41	0.43
14:q:93:ILE:HG23	15:r:13:ARG:HB2	2.00	0.43
16:s:37:THR:HA	16:s:48:LYS:NZ	2.34	0.43
24:B:10:SER:OG	50:1:17:G:H5'	2.18	0.43
26:D:25:LYS:HA	26:D:28:ARG:HH12	1.83	0.43
48:Z:46:ARG:NH2	49:3:1533:C:N4	2.66	0.43
49:3:5:U:H4'	49:3:6:G:C8	2.53	0.43
49:3:1426:G:H2'	49:3:1427:C:O4'	2.19	0.43
50:1:190:A:C5	50:1:207:A:C2	3.05	0.43
50:1:412:A:N7	50:1:2411:A:H2	2.17	0.43
50:1:1677:A:C2	50:1:1678:A:C4	3.06	0.43
50:1:2529:G:OP2	50:1:2530:A:H5''	2.19	0.43
50:1:2621:G:H2'	50:1:2622:U:O4'	2.19	0.43
52:5:25:C:H2'	52:5:26:G:O4'	2.18	0.43
4:e:25:MET:CE	51:2:55:U:H1'	2.49	0.43
8:k:71:ARG:NH1	8:k:72:PRO:HD2	2.22	0.43
33:K:92:THR:CG2	33:K:93:LYS:H	2.23	0.43
49:3:545:C:O2'	49:3:546:A:H5'	2.18	0.43
49:3:1001:C:H2'	49:3:1002:G:C8	2.53	0.43
49:3:1384:C:H2'	49:3:1385:G:C8	2.54	0.43
50:1:388:G:N7	50:1:390:U:H2'	2.34	0.43
50:1:614:A:H5'	50:1:615:U:OP1	2.17	0.43
50:1:1447:C:H2'	50:1:1448:G:C8	2.53	0.43
50:1:1930:G:H22	50:1:1969:A:P	2.41	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:2166:U:H3'	50:1:2167:U:C5'	2.48	0.43
51:2:95:U:H2'	51:2:96:G:C8	2.53	0.43
54:8:49:PRO:HB2	54:8:52:TYR:HB3	2.00	0.43
1:b:13:ARG:NH2	50:1:1693:U:H1'	2.34	0.43
2:c:194:PRO:HA	50:1:2680:U:H5''	2.00	0.43
3:d:48:THR:C	3:d:50:ALA:H	2.27	0.43
3:d:172:ALA:HB3	3:d:195:GLN:OE1	2.18	0.43
6:g:5:LEU:H	6:g:5:LEU:HD12	1.84	0.43
10:m:78:LEU:HD23	10:m:79:ALA:N	2.34	0.43
16:s:89:ALA:HB3	50:1:747:C:O3'	2.18	0.43
19:v:20:LEU:HB2	19:v:25:LYS:HE2	2.00	0.43
27:E:32:LEU:HB3	27:E:40:LYS:HD3	1.99	0.43
34:L:101:ARG:HH12	49:3:939:G:H4'	1.83	0.43
40:R:102:LYS:HZ3	49:3:1226:C:H42	1.67	0.43
49:3:67:C:H2'	49:3:68:G:C8	2.53	0.43
49:3:856:C:O2'	49:3:857:C:H5'	2.18	0.43
50:1:172:A:H2'	50:1:173:A:C8	2.52	0.43
50:1:210:C:H2'	50:1:211:C:C6	2.53	0.43
50:1:433:C:O2'	50:1:434:U:H5'	2.19	0.43
50:1:1065:U:H5'	50:1:1066:U:OP2	2.19	0.43
50:1:1229:C:H2'	50:1:1230:A:C8	2.53	0.43
50:1:1258:U:H2'	50:1:1259:G:H8	1.83	0.43
50:1:1591:A:H2'	50:1:1592:C:C6	2.54	0.43
50:1:2512:C:H2'	50:1:2513:A:O4'	2.18	0.43
54:8:22:ALA:CB	54:8:37:ILE:HG13	2.47	0.43
3:d:48:THR:O	3:d:50:ALA:N	2.50	0.43
3:d:79:ARG:O	3:d:80:SER:HB2	2.18	0.43
3:d:105:LEU:HA	3:d:108:ILE:HG22	2.00	0.43
5:f:142:GLN:NE2	50:1:2761:A:H4'	2.34	0.43
14:q:5:ARG:NH2	50:1:1251:C:OP2	2.45	0.43
19:v:76:ASP:HB3	19:v:90:ASP:HB2	2.00	0.43
24:B:40:HIS:ND1	50:1:2816:G:O4'	2.51	0.43
29:G:29:PHE:O	29:G:30:ILE:HG23	2.19	0.43
29:G:65:LYS:HB2	29:G:157:PRO:HA	1.99	0.43
30:H:127:VAL:HG22	30:H:128:MET:H	1.83	0.43
42:T:88:ARG:H	42:T:88:ARG:CD	2.32	0.43
47:Y:33:LYS:HD3	47:Y:33:LYS:HA	1.89	0.43
47:Y:45:ALA:HA	47:Y:48:LYS:HD3	2.01	0.43
49:3:210:C:H5'	49:3:211:G:C2	2.54	0.43
49:3:1251:A:H1'	49:3:1370:G:H4'	1.99	0.43
49:3:1267:C:H2'	49:3:1268:G:O4'	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:286:U:H2'	50:1:287:G:C8	2.54	0.43
50:1:587:C:C6	50:1:671:C:H1'	2.53	0.43
50:1:840:C:H2'	50:1:841:G:C8	2.54	0.43
50:1:858:G:C5	50:1:2268:A:C2	3.07	0.43
50:1:995:C:H6	50:1:995:C:H5'	1.84	0.43
50:1:1487:U:H2'	50:1:1488:C:C6	2.54	0.43
50:1:2582:G:C2'	50:1:2583:G:H5'	2.49	0.43
50:1:2697:G:H2'	50:1:2698:U:O4'	2.19	0.43
50:1:2730:C:H2'	50:1:2731:G:C8	2.54	0.43
54:8:61:HIS:CE1	54:8:94:MET:HG3	2.52	0.43
4:e:64:PRO:HB3	4:e:88:VAL:HG22	2.01	0.43
5:f:157:LYS:HE3	5:f:157:LYS:HB2	1.80	0.43
14:q:7:VAL:HG13	14:q:8:ILE:N	2.33	0.43
17:t:2:ILE:HD11	50:1:144:A:O2'	2.18	0.43
21:x:38:TRP:HB2	21:x:45:PHE:CE1	2.53	0.43
23:z:26:LEU:CD2	23:z:46:MET:HE2	2.42	0.43
23:z:46:MET:HG3	50:1:851:C:O4'	2.19	0.43
29:G:27:LYS:N	29:G:28:PRO:CD	2.82	0.43
31:I:103:ARG:HD3	31:I:103:ARG:HA	1.81	0.43
32:J:108:GLY:O	32:J:109:ALA:HB3	2.19	0.43
32:J:114:LEU:HD13	32:J:122:VAL:HG11	2.01	0.43
35:M:31:LEU:HD23	35:M:31:LEU:O	2.19	0.43
35:M:49:LYS:HE3	35:M:51:GLU:OE2	2.19	0.43
40:R:114:PRO:CG	49:3:1228:C:H4'	2.49	0.43
46:X:38:THR:OG1	46:X:39:ILE:N	2.52	0.43
48:Z:53:LYS:HA	48:Z:56:ALA:HB3	2.00	0.43
49:3:59:A:H1'	49:3:354:G:N2	2.33	0.43
49:3:128:G:H2'	49:3:129:A:C8	2.53	0.43
49:3:244:U:O4	49:3:906:A:H1'	2.18	0.43
49:3:860:A:H2'	49:3:861:G:O4'	2.19	0.43
49:3:1339:A:H2'	49:3:1340:A:H5'	2.00	0.43
49:3:1402:C:C2'	49:3:1403:C:H5'	2.48	0.43
49:3:1444:U:H2'	49:3:1445:U:C6	2.54	0.43
50:1:445:C:C2'	50:1:446:G:H5'	2.48	0.43
50:1:680:C:H2'	50:1:681:G:C8	2.53	0.43
50:1:764:A:C2	50:1:781:A:C2	3.07	0.43
50:1:924:G:H2'	50:1:925:A:C8	2.54	0.43
50:1:948:C:H2'	50:1:949:G:H8	1.83	0.43
50:1:1876:A:H2'	50:1:1877:A:O4'	2.18	0.43
50:1:1967:C:H2'	50:1:1968:G:O4'	2.18	0.43
50:1:2241:A:H2'	50:1:2242:G:C8	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:2318:G:H2'	50:1:2319:G:O4'	2.18	0.43
50:1:2567:G:H2'	50:1:2568:U:C6	2.53	0.43
50:1:2774:C:H2'	50:1:2775:G:O4'	2.18	0.43
3:d:46:GLN:HB3	3:d:83:VAL:HG11	2.01	0.43
4:e:25:MET:HE3	51:2:55:U:H1'	2.01	0.43
5:f:158:GLY:O	5:f:162:ARG:NH1	2.48	0.43
6:g:124:THR:OG1	6:g:125:THR:N	2.49	0.43
8:k:87:LEU:HD22	8:k:92:GLU:O	2.18	0.43
30:H:5:HIS:CE1	30:H:7:ASN:HB2	2.54	0.43
35:M:6:ILE:O	35:M:10:LEU:HD13	2.18	0.43
37:O:63:ASP:OD1	37:O:63:ASP:N	2.52	0.43
49:3:27:G:H2'	49:3:28:A:O4'	2.18	0.43
49:3:183:C:H5'	49:3:184:G:OP2	2.18	0.43
50:1:1786:A:H1'	50:1:1938:A:N6	2.34	0.43
50:1:2102:G:C2'	50:1:2103:C:H5'	2.49	0.43
1:b:25:LYS:HA	50:1:1567:G:H22	1.83	0.43
2:c:155:VAL:O	50:1:2619:C:H5'	2.18	0.43
9:l:38:GLN:HE21	50:1:805:G:H5''	1.83	0.43
23:z:30:ARG:HD3	23:z:30:ARG:H	1.83	0.43
24:B:40:HIS:HD1	50:1:2816:G:C4'	2.32	0.43
30:H:52:SER:HA	30:H:113:LYS:HG2	2.00	0.43
34:L:110:ARG:HA	34:L:110:ARG:HD2	1.89	0.43
36:N:35:GLU:HA	36:N:39:GLY:HA2	2.00	0.43
40:R:25:GLY:N	49:3:1329:A:H5''	2.26	0.43
41:S:23:ARG:HA	41:S:23:ARG:HD2	1.81	0.43
49:3:270:A:H2'	49:3:271:C:C6	2.53	0.43
49:3:734:G:H2'	49:3:735:C:C6	2.54	0.43
49:3:1186:G:O2'	49:3:1187:G:H5'	2.19	0.43
49:3:1225:A:H2'	49:3:1225:A:N3	2.34	0.43
49:3:1255:G:H2'	49:3:1279:G:H1	1.83	0.43
49:3:1370:G:O2'	49:3:1371:G:H5'	2.19	0.43
50:1:32:C:H2'	50:1:33:C:C6	2.54	0.43
50:1:979:A:H2'	50:1:982:C:H42	1.84	0.43
50:1:1163:G:O2'	50:1:1164:C:H5'	2.19	0.43
50:1:1196:C:H2'	50:1:1197:G:O4'	2.19	0.43
50:1:1498:C:O2'	50:1:1499:C:H5'	2.18	0.43
50:1:1794:A:H2'	50:1:1795:C:H6	1.84	0.43
1:b:160:TYR:HB3	1:b:193:GLU:HB3	2.01	0.42
4:e:111:ARG:O	4:e:112:ASP:OD2	2.37	0.42
8:k:9:ASN:O	8:k:83:ALA:HA	2.19	0.42
8:k:71:ARG:HB3	8:k:73:ASP:OD1	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:H:146:LYS:HG3	30:H:202:PHE:CD2	2.54	0.42
31:I:2:ARG:HE	31:I:114:ARG:HD3	1.83	0.42
33:K:74:LEU:HG	33:K:78:PHE:CE2	2.53	0.42
36:N:38:PHE:HE2	36:N:44:ARG:HA	1.84	0.42
36:N:105:ARG:HG3	49:3:1118:U:C5'	2.48	0.42
38:P:126:ARG:HB3	48:Z:33:ARG:HH11	1.85	0.42
47:Y:65:LEU:HD22	47:Y:66:ILE:HD12	2.00	0.42
49:3:88:U:H2'	49:3:89:U:C5	2.54	0.42
49:3:701:U:C4'	49:3:703:G:H1'	2.49	0.42
49:3:756:C:H2'	49:3:757:U:O4'	2.19	0.42
49:3:858:G:O6	49:3:869:G:H3'	2.18	0.42
50:1:128:C:H2'	50:1:129:C:H6	1.82	0.42
50:1:523:C:O2'	50:1:524:G:H5'	2.18	0.42
50:1:742:A:H2'	50:1:743:A:H8	1.82	0.42
50:1:1365:A:N3	50:1:1365:A:H2'	2.34	0.42
50:1:1642:G:O2'	50:1:1643:G:H5'	2.19	0.42
50:1:1891:G:H2'	50:1:1892:C:H6	1.83	0.42
50:1:2128:G:H2'	50:1:2129:C:O4'	2.19	0.42
50:1:2134:A:H1'	50:1:2158:A:C4'	2.48	0.42
50:1:2467:C:H2'	50:1:2468:A:O4'	2.18	0.42
51:2:3:C:C3'	51:2:4:C:C5'	2.97	0.42
54:8:109:ARG:HH11	54:8:109:ARG:HG3	1.83	0.42
54:9:15:LEU:HB2	54:9:17:ILE:HG13	2.01	0.42
5:f:154:GLU:OE2	5:f:158:GLY:N	2.52	0.42
6:g:41:LYS:O	6:g:45:GLU:HG3	2.18	0.42
7:j:27:ARG:HA	7:j:27:ARG:HD3	1.93	0.42
8:k:102:PRO:HB3	8:k:121:GLU:HB2	2.01	0.42
12:o:40:ILE:HD13	51:2:8:C:O2'	2.19	0.42
16:s:23:LEU:O	16:s:27:LYS:NZ	2.51	0.42
28:F:13:ASN:HD22	28:F:29:ALA:HB2	1.84	0.42
31:I:12:ARG:HG2	31:I:33:ILE:HG13	2.01	0.42
33:K:33:GLU:HB2	33:K:35:LYS:HZ3	1.84	0.42
43:U:8:ARG:NH2	43:U:15:PRO:HB3	2.33	0.42
46:X:65:MET:HG2	46:X:73:PHE:CZ	2.45	0.42
49:3:232:G:H2'	49:3:233:C:C6	2.54	0.42
49:3:678:U:H2'	49:3:679:C:C6	2.54	0.42
49:3:887:G:O2'	49:3:888:G:H5'	2.18	0.42
49:3:910:C:O2'	49:3:911:U:H5'	2.19	0.42
49:3:1011:C:H2'	49:3:1012:A:C8	2.54	0.42
49:3:1176:A:H2'	49:3:1177:G:C8	2.54	0.42
50:1:1846:G:H2'	50:1:1847:A:O4'	2.18	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:2348:U:O2'	50:1:2349:G:H5'	2.19	0.42
50:1:2755:C:O5'	50:1:2755:C:H6	2.03	0.42
51:2:4:C:H6	51:2:4:C:H5'	1.83	0.42
51:2:85:G:O2'	51:2:86:G:H5'	2.20	0.42
54:8:22:ALA:HA	54:8:75:GLN:NE2	2.34	0.42
1:b:27:LYS:NZ	50:1:1568:G:N7	2.66	0.42
1:b:75:ALA:HB2	1:b:95:TYR:CD1	2.54	0.42
4:e:116:LEU:HB3	4:e:176:PHE:H	1.85	0.42
8:k:22:ILE:HD11	8:k:40:LYS:HG3	2.00	0.42
17:t:51:PHE:O	17:t:53:VAL:HG13	2.19	0.42
29:G:94:ARG:NH1	29:G:95:TRP:O	2.52	0.42
35:M:124:ILE:H	35:M:124:ILE:HD12	1.84	0.42
36:N:114:LYS:HD2	49:3:1187:G:H5''	2.02	0.42
39:Q:113:ARG:HH12	39:Q:120:ARG:HG3	1.83	0.42
47:Y:70:LYS:HG3	47:Y:73:ARG:HH22	1.83	0.42
49:3:806:C:O2'	49:3:807:A:H5'	2.20	0.42
49:3:865:A:H2'	49:3:866:C:O4'	2.19	0.42
50:1:84:A:H4'	50:1:85:G:O5'	2.19	0.42
50:1:744:U:H2'	50:1:745:G:C5'	2.48	0.42
50:1:832:U:H2'	50:1:833:A:C8	2.54	0.42
50:1:977:G:O2'	50:1:978:G:H5'	2.19	0.42
50:1:1275:A:N6	50:1:1296:G:H4'	2.34	0.42
50:1:1433:A:H2'	50:1:1434:A:C8	2.54	0.42
50:1:1759:A:H2'	50:1:1760:C:O4'	2.19	0.42
50:1:2628:C:O2'	50:1:2781:A:H2'	2.19	0.42
52:5:72:A:H2'	52:5:73:A:O4'	2.19	0.42
54:8:64:ILE:HG23	54:8:64:ILE:O	2.19	0.42
5:f:123:GLU:O	5:f:131:VAL:HG12	2.19	0.42
9:l:62:PRO:HB2	27:E:29:ARG:NH1	2.33	0.42
10:m:67:VAL:HG22	10:m:68:PHE:H	1.84	0.42
13:p:95:LYS:NZ	50:1:2847:U:OP1	2.47	0.42
29:G:96:LEU:HD22	29:G:96:LEU:H	1.84	0.42
29:G:185:ILE:HD13	29:G:199:ILE:HB	2.01	0.42
30:H:89:VAL:O	30:H:93:ILE:HG13	2.20	0.42
30:H:127:VAL:HG22	30:H:128:MET:N	2.33	0.42
36:N:78:ILE:O	36:N:82:ILE:HG12	2.19	0.42
47:Y:54:GLN:N	47:Y:55:PRO:HD2	2.33	0.42
49:3:1005:A:N6	49:3:1024:G:H1'	2.34	0.42
49:3:1517:G:O2'	49:3:1518:A:H5'	2.20	0.42
50:1:141:G:H2'	50:1:142:A:H5'	2.01	0.42
50:1:668:A:C2	50:1:670:A:C6	3.08	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:730:A:O2'	50:1:731:C:H5'	2.20	0.42
50:1:1178:C:O2	50:1:1178:C:C2'	2.66	0.42
50:1:1725:U:H2'	50:1:1726:C:C6	2.54	0.42
50:1:1986:C:O2'	50:1:1987:A:H5'	2.20	0.42
50:1:2606:C:O2'	50:1:2607:G:H5'	2.18	0.42
50:1:2699:C:H2'	50:1:2700:A:H8	1.84	0.42
54:8:4:ILE:N	54:9:9:ALA:HA	2.33	0.42
2:c:127:PHE:CD1	50:1:2512:C:H5''	2.54	0.42
3:d:46:GLN:HB2	3:d:86:ALA:HB1	2.01	0.42
5:f:88:LEU:HG	5:f:93:TYR:HB3	2.00	0.42
9:l:101:ILE:HG13	9:l:102:GLY:H	1.84	0.42
13:p:44:GLY:HA3	13:p:60:VAL:HB	2.00	0.42
15:r:46:GLU:CD	15:r:46:GLU:N	2.77	0.42
20:w:56:PHE:CZ	50:1:2366:A:H5'	2.54	0.42
22:y:56:LEU:HD12	22:y:60:LYS:NZ	2.35	0.42
29:G:80:LYS:HE2	29:G:84:LEU:HD11	2.02	0.42
34:L:113:LYS:HB3	49:3:1298:U:O4	2.19	0.42
49:3:67:C:H2'	49:3:68:G:H8	1.84	0.42
49:3:162:A:H2'	49:3:163:C:O4'	2.19	0.42
49:3:513:C:H2'	49:3:514:C:H6	1.84	0.42
49:3:556:C:O2'	49:3:557:G:H5'	2.19	0.42
49:3:1144:G:N2	49:3:1146:A:H62	2.16	0.42
49:3:1432:G:O2'	49:3:1468:A:N6	2.52	0.42
50:1:27:G:H22	50:1:512:G:H1'	1.85	0.42
50:1:553:G:H2'	50:1:554:U:O4'	2.19	0.42
50:1:1287:A:C2'	50:1:1288:G:H5'	2.50	0.42
50:1:1443:U:H2'	50:1:1444:G:H8	1.84	0.42
50:1:1564:C:H2'	50:1:1565:C:O4'	2.20	0.42
50:1:2373:G:H2'	50:1:2374:C:C6	2.53	0.42
50:1:2626:C:O2'	50:1:2627:G:H5'	2.19	0.42
50:1:2671:G:H2'	50:1:2672:U:C6	2.54	0.42
3:d:84:THR:HG23	3:d:85:PHE:H	1.81	0.42
4:e:33:ILE:HD11	4:e:153:ILE:HG23	2.00	0.42
4:e:62:GLN:NE2	51:2:42:C:O2'	2.53	0.42
10:m:14:LYS:HE2	50:1:956:G:O6	2.19	0.42
10:m:74:THR:HA	10:m:89:VAL:HA	2.01	0.42
11:n:73:ASN:HB3	50:1:1453:A:C6	2.55	0.42
16:s:11:ARG:NH2	16:s:98:LYS:HB3	2.35	0.42
17:t:59:ASN:HB2	17:t:84:TYR:HB2	2.01	0.42
18:u:10:VAL:HA	18:u:72:PHE:H	1.84	0.42
21:x:22:ASN:ND2	50:1:2079:U:O2'	2.44	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:z:45:GLY:HA3	50:1:851:C:O2'	2.20	0.42
31:I:61:ARG:HH12	49:3:545:C:P	2.43	0.42
43:U:40:ASN:HB3	43:U:43:ALA:HB2	2.01	0.42
45:W:62:ARG:HD3	45:W:69:TYR:CD1	2.54	0.42
46:X:54:ARG:HA	49:3:986:U:H1'	2.00	0.42
48:Z:20:ARG:HA	48:Z:24:LYS:HB3	2.02	0.42
49:3:35:G:H2'	49:3:36:C:C6	2.54	0.42
49:3:1384:C:H2'	49:3:1385:G:H8	1.85	0.42
50:1:162:U:C2'	50:1:163:C:H5'	2.49	0.42
50:1:616:A:H2'	50:1:617:G:O4'	2.20	0.42
50:1:723:C:O2'	50:1:724:U:H5'	2.19	0.42
50:1:814:C:H2'	50:1:815:C:C6	2.55	0.42
50:1:1357:C:H2'	50:1:1358:G:O4'	2.19	0.42
50:1:1386:C:H2'	50:1:1387:A:C8	2.55	0.42
50:1:2352:A:C2'	50:1:2353:G:H5'	2.50	0.42
50:1:2581:G:H2'	50:1:2581:G:N3	2.34	0.42
50:1:2756:U:H4'	50:1:2757:A:OP1	2.18	0.42
54:8:113:ALA:C	54:8:117:ARG:HH22	2.28	0.42
1:b:229:HIS:ND1	1:b:230:PRO:HD2	2.35	0.42
5:f:66:THR:OG1	5:f:67:ALA:N	2.53	0.42
6:g:90:LEU:HD23	6:g:92:GLY:N	2.35	0.42
10:m:2:LEU:HD23	10:m:2:LEU:HA	1.94	0.42
11:n:79:LEU:C	11:n:81:ASN:H	2.28	0.42
12:o:67:ASN:OD1	12:o:70:ALA:N	2.53	0.42
14:q:57:ARG:O	14:q:61:ILE:HG12	2.20	0.42
14:q:91:ARG:HH22	50:1:998:C:P	2.42	0.42
20:w:36:GLN:HE21	20:w:39:THR:HA	1.84	0.42
22:y:21:LEU:HA	22:y:25:GLN:HB3	2.01	0.42
27:E:51:LYS:HD3	50:1:937:C:OP1	2.19	0.42
28:F:30:GLU:HB3	28:F:32:LYS:HG2	2.02	0.42
32:J:156:ARG:C	32:J:158:LYS:H	2.28	0.42
40:R:79:LEU:HD23	40:R:82:LEU:HD12	2.02	0.42
49:3:33:A:H2'	49:3:34:C:C6	2.54	0.42
49:3:603:U:H2'	49:3:604:G:H8	1.84	0.42
49:3:1318:A:C2'	49:3:1319:A:H5'	2.50	0.42
50:1:717:C:H2'	50:1:718:A:C5'	2.47	0.42
50:1:1351:C:H2'	50:1:1352:U:H6	1.85	0.42
50:1:1570:A:C6	50:1:1571:A:C6	3.07	0.42
50:1:1657:U:H2'	50:1:1658:C:C6	2.54	0.42
50:1:2343:U:H2'	50:1:2344:U:C6	2.54	0.42
50:1:2427:C:C5'	50:1:2429:G:H5'	2.49	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:2660:A:H2'	50:1:2661:G:O4'	2.19	0.42
51:2:39:A:H2'	51:2:40:U:C6	2.54	0.42
54:8:96:LYS:HA	54:8:96:LYS:HD3	1.81	0.42
11:n:9:GLN:HB3	50:1:1653:G:O6	2.18	0.42
11:n:61:ALA:O	11:n:64:ARG:HB2	2.19	0.42
18:u:6:ARG:O	18:u:24:VAL:HB	2.19	0.42
24:B:39:ARG:O	24:B:40:HIS:HB2	2.20	0.42
30:H:177:LEU:HD23	49:3:1112:C:C4	2.55	0.42
36:N:59:LYS:HB2	36:N:60:LEU:HD12	2.01	0.42
39:Q:70:GLY:O	39:Q:98:ARG:NH2	2.53	0.42
43:U:33:ILE:N	43:U:33:ILE:HD12	2.33	0.42
48:Z:24:LYS:HE3	53:4:9:G:C4'	2.50	0.42
49:3:273:U:H2'	49:3:274:A:H5'	2.02	0.42
50:1:819:A:C2	50:1:820:A:C4	3.08	0.42
50:1:900:A:H2'	50:1:901:C:O4'	2.19	0.42
50:1:2286:G:C5'	50:1:2287:A:O4'	2.68	0.42
50:1:2391:G:O2'	50:1:2429:G:N2	2.53	0.42
54:8:35:THR:C	54:8:37:ILE:H	2.28	0.42
1:b:71:ASP:OD1	1:b:118:GLY:HA2	2.19	0.42
1:b:206:LYS:HB2	50:1:729:G:C5	2.54	0.42
2:c:47:ALA:HA	2:c:84:LEU:HG	2.02	0.42
2:c:150:GLN:NE2	50:1:2032:G:C4	2.88	0.42
4:e:107:VAL:HG13	4:e:108:PRO:CD	2.47	0.42
5:f:157:LYS:HD2	5:f:159:LYS:HE2	2.02	0.42
7:j:7:LYS:HA	7:j:8:PRO:HD3	1.89	0.42
13:p:92:ARG:HD3	50:1:1753:G:H5''	2.02	0.42
16:s:24:ILE:HD13	16:s:36:LEU:HD11	2.01	0.42
17:t:89:GLU:OE2	17:t:89:GLU:N	2.44	0.42
19:v:11:GLU:HG3	19:v:16:ALA:HB1	2.00	0.42
21:x:5:GLN:O	21:x:73:ARG:NH2	2.53	0.42
21:x:16:ASN:HB3	21:x:24:THR:CG2	2.50	0.42
29:G:110:ILE:O	29:G:114:LYS:HG2	2.19	0.42
30:H:63:ILE:O	30:H:98:ALA:HA	2.20	0.42
33:K:23:GLU:HA	33:K:26:THR:HG22	2.02	0.42
35:M:75:GLN:NE2	35:M:76:ARG:O	2.53	0.42
43:U:30:GLY:HA2	49:3:310:G:OP1	2.19	0.42
49:3:709:U:H2'	49:3:710:G:C8	2.54	0.42
49:3:735:C:O2'	49:3:736:C:H5'	2.20	0.42
49:3:911:U:H2'	49:3:912:C:C6	2.54	0.42
49:3:1071:C:H2'	49:3:1072:G:H8	1.85	0.42
50:1:633:A:H2'	50:1:634:C:H5'	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:880:G:H2'	50:1:881:G:O4'	2.19	0.42
50:1:1039:A:H2'	50:1:1040:A:H8	1.85	0.42
50:1:1083:U:H2'	50:1:1085:A:OP2	2.19	0.42
50:1:1921:G:H2'	50:1:1922:G:H8	1.84	0.42
50:1:2161:C:H2'	50:1:2162:G:O4'	2.19	0.42
50:1:2307:G:H5'	50:1:2308:G:C4	2.55	0.42
50:1:2636:C:O2'	50:1:2637:U:H5'	2.20	0.42
51:2:4:C:H2'	51:2:5:U:C6	2.54	0.42
54:9:96:LYS:HA	54:9:99:THR:OG1	2.19	0.42
1:b:209:ALA:HA	1:b:212:TRP:NE1	2.35	0.42
3:d:29:HIS:CE1	9:l:8:PRO:HB3	2.54	0.42
3:d:54:GLY:HA3	3:d:74:LYS:HD3	2.02	0.42
9:l:118:THR:HA	9:l:119:PRO:HD3	1.86	0.42
16:s:84:ARG:HB2	16:s:96:ILE:HG23	2.02	0.42
27:E:27:ASN:ND2	50:1:2361:G:O3'	2.53	0.42
29:G:13:VAL:HG12	29:G:208:ALA:HB1	2.02	0.42
34:L:113:LYS:HD2	49:3:1298:U:C5	2.55	0.42
36:N:17:ARG:HH22	49:3:1129:C:C3'	2.31	0.42
39:Q:40:THR:HA	39:Q:41:PRO:HD3	1.89	0.42
49:3:103:U:H2'	49:3:104:G:O4'	2.20	0.42
50:1:598:U:H2'	50:1:599:A:H8	1.82	0.42
50:1:621:A:H2'	50:1:622:G:O4'	2.20	0.42
50:1:747:C:C4	50:1:2613:U:C4	3.07	0.42
50:1:859:G:O2'	50:1:860:U:P	2.78	0.42
50:1:927:A:H2'	50:1:928:A:C8	2.55	0.42
50:1:929:U:H2'	50:1:930:G:C8	2.54	0.42
50:1:1285:A:H2'	50:1:1286:A:H5'	2.00	0.42
50:1:1844:C:H2'	50:1:1845:G:H8	1.85	0.42
50:1:1900:A:C2	50:1:1970:A:C5	3.07	0.42
54:8:21:ARG:HA	54:8:34:SER:O	2.20	0.42
4:e:28:PRO:HA	4:e:158:THR:HG23	2.02	0.41
14:q:19:GLN:HE21	15:r:73:LYS:HE2	1.85	0.41
18:u:14:THR:OG1	50:1:310:A:H5''	2.19	0.41
27:E:44:ARG:N	27:E:45:PRO:HD2	2.35	0.41
29:G:170:ILE:HG23	49:3:1101:A:N7	2.34	0.41
30:H:182:ASP:HB2	30:H:201:ILE:HB	2.00	0.41
31:I:127:ARG:NH2	49:3:619:U:H4'	2.34	0.41
47:Y:66:ILE:HD12	47:Y:66:ILE:N	2.35	0.41
49:3:415:A:H2'	49:3:416:G:C8	2.50	0.41
49:3:484:G:H4'	49:3:485:U:H5'	2.00	0.41
49:3:495:A:H4'	49:3:496:A:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:626:G:H2'	49:3:627:G:C8	2.55	0.41
49:3:1064:G:H1'	49:3:1190:G:N2	2.35	0.41
50:1:230:G:O2'	50:1:231:A:H5'	2.19	0.41
50:1:570:G:C5	50:1:2030:A:C6	3.07	0.41
50:1:700:G:C2'	50:1:701:G:H5'	2.50	0.41
50:1:1196:C:H2'	50:1:1197:G:C8	2.54	0.41
50:1:1242:U:H2'	50:1:1243:C:C6	2.55	0.41
50:1:1866:A:H2'	50:1:1867:G:O4'	2.20	0.41
54:8:16:GLU:HB3	54:8:41:PHE:HB2	2.01	0.41
54:9:55:ARG:HA	54:9:55:ARG:HD3	1.89	0.41
3:d:134:LEU:O	3:d:138:LEU:HD23	2.20	0.41
6:g:77:THR:HG23	6:g:143:ILE:HG23	2.01	0.41
10:m:74:THR:HG22	10:m:89:VAL:HA	2.01	0.41
25:C:44:GLN:HG2	25:C:45:HIS:H	1.84	0.41
29:G:116:LEU:HD21	29:G:140:LEU:HA	2.01	0.41
33:K:20:GLY:O	33:K:23:GLU:HG3	2.20	0.41
33:K:53:LYS:HD3	33:K:53:LYS:HA	1.88	0.41
37:O:67:ILE:HG23	41:S:95:LEU:HD13	2.02	0.41
47:Y:20:ASN:ND2	49:3:323:U:H5''	2.34	0.41
49:3:756:C:H2'	49:3:757:U:C6	2.55	0.41
50:1:250:G:C6	50:1:251:A:C6	3.09	0.41
50:1:517:C:H2'	50:1:518:G:O4'	2.19	0.41
50:1:665:U:H2'	50:1:666:A:C8	2.55	0.41
50:1:1336:A:H2'	50:1:1337:G:H8	1.85	0.41
50:1:1590:A:H2'	50:1:1591:A:H8	1.85	0.41
50:1:1918:A:H2	50:1:1919:A:H62	1.67	0.41
50:1:2022:U:P	50:1:2022:U:H3'	2.59	0.41
50:1:2071:A:C6	50:1:2072:C:N4	2.88	0.41
50:1:2605:U:H2'	50:1:2606:C:C6	2.54	0.41
1:b:129:LEU:N	1:b:129:LEU:HD23	2.35	0.41
3:d:84:THR:CG2	3:d:85:PHE:N	2.82	0.41
4:e:30:VAL:HG23	4:e:155:ILE:HD11	2.02	0.41
4:e:141:ASP:HB2	4:e:143:ASP:OD1	2.19	0.41
6:g:99:ILE:HD12	6:g:99:ILE:H	1.84	0.41
28:F:36:ARG:CG	28:F:37:GLN:H	2.23	0.41
29:G:34:ARG:H	29:G:39:ILE:HD13	1.86	0.41
29:G:37:VAL:HG23	29:G:39:ILE:HD11	2.01	0.41
29:G:59:ILE:HD12	29:G:59:ILE:HA	1.96	0.41
32:J:131:ASN:OD1	32:J:133:ILE:HG22	2.20	0.41
42:T:55:LEU:O	42:T:59:VAL:HG23	2.19	0.41
44:V:80:LYS:HG2	44:V:81:ALA:N	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:W:33:THR:HB	48:Z:18:PHE:HZ	1.85	0.41
46:X:7:GLY:HA2	46:X:8:PRO:HD3	1.92	0.41
47:Y:20:ASN:OD1	47:Y:21:ALA:N	2.53	0.41
49:3:78:A:H2'	49:3:79:G:C8	2.56	0.41
49:3:216:U:H2'	49:3:217:C:C6	2.55	0.41
49:3:436:C:H2'	49:3:437:U:C6	2.55	0.41
50:1:696:G:O2'	50:1:697:G:H5'	2.20	0.41
50:1:814:C:H2'	50:1:815:C:H6	1.85	0.41
50:1:1904:G:N2	50:1:1905:C:H1'	2.35	0.41
50:1:2097:A:H2'	50:1:2098:U:C6	2.56	0.41
50:1:2452:C:H4'	54:8:32:LYS:HG2	2.01	0.41
50:1:2677:G:H2'	50:1:2678:C:C6	2.55	0.41
54:8:117:ARG:HB3	54:8:117:ARG:CZ	2.51	0.41
2:c:156:PHE:HB3	7:j:81:ILE:HG22	2.02	0.41
6:g:90:LEU:HD23	6:g:92:GLY:H	1.85	0.41
6:g:146:VAL:HG13	6:g:146:VAL:O	2.20	0.41
7:j:84:ILE:HG23	7:j:84:ILE:O	2.21	0.41
14:q:61:ILE:CD1	14:q:91:ARG:HD3	2.50	0.41
30:H:168:ARG:HD2	30:H:168:ARG:C	2.46	0.41
31:I:80:ARG:NH2	49:3:614:C:OP2	2.54	0.41
31:I:90:LEU:HG	31:I:93:LEU:HD23	2.02	0.41
39:Q:93:ARG:NH1	49:3:911:U:OP2	2.53	0.41
40:R:7:ASN:HD21	40:R:18:LEU:HA	1.85	0.41
49:3:392:C:H2'	49:3:393:A:H8	1.85	0.41
49:3:551:U:O2'	49:3:552:U:H5'	2.20	0.41
50:1:259:G:O2'	50:1:260:G:H5'	2.19	0.41
50:1:730:A:OP2	50:1:731:C:OP2	2.38	0.41
50:1:737:C:H2'	50:1:738:G:O4'	2.20	0.41
50:1:942:G:H2'	50:1:943:A:H8	1.83	0.41
50:1:1677:A:C6	50:1:1678:A:C6	3.08	0.41
50:1:1964:G:H4'	50:1:1965:C:OP2	2.20	0.41
50:1:2089:C:O2'	50:1:2090:A:H5'	2.20	0.41
50:1:2234:G:O2'	50:1:2235:G:H5'	2.19	0.41
50:1:2371:G:O2'	50:1:2372:U:H5'	2.20	0.41
1:b:16:VAL:HG22	1:b:203:VAL:CG2	2.46	0.41
2:c:7:LYS:HA	2:c:199:SER:O	2.19	0.41
14:q:51:GLN:OE1	14:q:54:ARG:NH1	2.53	0.41
17:t:75:GLY:HA3	50:1:64:A:H4'	2.01	0.41
20:w:55:LEU:HD22	20:w:55:LEU:N	2.36	0.41
24:B:31:LYS:HB3	24:B:31:LYS:HE2	1.89	0.41
33:K:51:ILE:C	33:K:53:LYS:H	2.28	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:N:95:SER:HB2	36:N:98:ARG:HH21	1.84	0.41
37:O:11:LYS:HB3	37:O:71:LEU:CD1	2.50	0.41
48:Z:46:ARG:NH1	48:Z:46:ARG:O	2.54	0.41
49:3:7:A:H5'	49:3:298:A:H5'	2.02	0.41
49:3:295:C:C2'	49:3:296:U:H5'	2.50	0.41
49:3:415:A:O2'	49:3:416:G:H5'	2.20	0.41
49:3:984:C:H2'	49:3:985:C:C6	2.56	0.41
49:3:1057:G:H2'	49:3:1058:G:O4'	2.21	0.41
49:3:1410:A:H2'	49:3:1411:C:C6	2.55	0.41
49:3:1518:A:H2'	49:3:1519:A:O4'	2.20	0.41
50:1:5:A:H2'	50:1:6:A:C8	2.54	0.41
50:1:517:C:C3'	50:1:518:G:H5''	2.50	0.41
50:1:528:A:C2	50:1:2043:C:H5'	2.55	0.41
50:1:599:A:H2'	50:1:600:G:H8	1.85	0.41
50:1:1140:C:H2'	50:1:1141:U:H5'	2.03	0.41
50:1:1447:C:H2'	50:1:1448:G:H8	1.86	0.41
50:1:2757:A:H2'	50:1:2757:A:N3	2.36	0.41
50:1:2881:U:H2'	50:1:2882:A:H8	1.85	0.41
54:8:20:ILE:O	54:8:37:ILE:HB	2.21	0.41
6:g:29:PHE:O	6:g:33:GLN:HB2	2.20	0.41
10:m:78:LEU:O	10:m:79:ALA:HB3	2.21	0.41
15:r:5:PHE:HB3	15:r:59:ILE:HD12	2.02	0.41
29:G:192:PRO:C	29:G:194:GLY:H	2.27	0.41
31:I:37:PRO:HD2	31:I:41:GLY:HA3	2.02	0.41
41:S:96:LYS:H	41:S:96:LYS:HG2	1.74	0.41
44:V:32:ILE:H	44:V:32:ILE:CD1	2.17	0.41
49:3:236:A:H2'	49:3:237:G:C8	2.56	0.41
49:3:502:A:H2'	49:3:503:C:C6	2.56	0.41
49:3:1197:A:H2'	49:3:1198:G:C5'	2.50	0.41
49:3:1406:U:H2'	49:3:1407:C:C5'	2.51	0.41
50:1:383:C:H2'	50:1:385:C:N4	2.31	0.41
50:1:714:U:H2'	50:1:716:A:N7	2.36	0.41
50:1:1101:U:H2'	50:1:1102:C:C6	2.55	0.41
50:1:1183:U:H2'	50:1:1184:U:H6	1.86	0.41
50:1:1318:U:H2'	50:1:1319:C:C6	2.56	0.41
50:1:1425:G:H2'	50:1:1426:G:O4'	2.20	0.41
50:1:2287:A:C6	50:1:2289:G:C5	3.08	0.41
50:1:2302:U:H2'	50:1:2303:G:H8	1.83	0.41
50:1:2423:U:O2'	50:1:2425:A:H2'	2.21	0.41
51:2:114:C:H2'	51:2:115:A:C8	2.55	0.41
51:2:117:G:H2'	51:2:118:C:H5'	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:8:119:LEU:N	54:8:119:LEU:HD12	2.36	0.41
1:b:42:ARG:HH12	50:1:691:C:H4'	1.85	0.41
8:k:17:ARG:HB3	8:k:45:GLU:CG	2.49	0.41
9:l:41:ARG:HD2	50:1:805:G:OP2	2.21	0.41
19:v:36:ALA:HA	19:v:37:PRO:HD3	1.95	0.41
23:z:44:ARG:HD3	23:z:44:ARG:HA	1.86	0.41
32:J:51:LYS:NZ	49:3:1081:A:OP2	2.53	0.41
35:M:74:ILE:HD12	35:M:74:ILE:H	1.84	0.41
36:N:60:LEU:HD12	36:N:60:LEU:N	2.36	0.41
39:Q:82:ARG:NH1	39:Q:83:GLY:O	2.54	0.41
40:R:24:VAL:HG23	40:R:28:ARG:HB3	2.02	0.41
41:S:2:LYS:HA	49:3:1048:G:OP1	2.20	0.41
49:3:788:U:C2'	49:3:789:U:H5'	2.51	0.41
49:3:1316:G:H2'	49:3:1317:C:H5''	2.01	0.41
50:1:563:A:C6	50:1:2018:G:C4	3.09	0.41
50:1:845:A:C5	50:1:847:U:H1'	2.56	0.41
50:1:1036:G:O2'	50:1:1037:G:H5'	2.21	0.41
50:1:1159:U:O2'	50:1:1160:G:H5'	2.18	0.41
50:1:1548:A:H2'	50:1:1549:A:C8	2.56	0.41
50:1:2007:U:H2'	50:1:2008:C:C6	2.56	0.41
50:1:2553:G:H3'	50:1:2554:U:H5''	2.01	0.41
50:1:2799:A:C2'	50:1:2800:A:H5'	2.50	0.41
54:8:95:ILE:HD12	54:9:4:ILE:HD13	2.02	0.41
54:8:113:ALA:C	54:8:117:ARG:NH2	2.79	0.41
1:b:13:ARG:HH21	50:1:1693:U:H1'	1.85	0.41
7:j:14:ASP:H	7:j:52:ASP:CG	2.29	0.41
9:l:77:ILE:HG23	9:l:110:VAL:HA	2.02	0.41
10:m:27:SER:OG	10:m:28:PHE:N	2.52	0.41
13:p:77:SER:HA	13:p:78:PRO:HD3	1.95	0.41
15:r:74:ILE:N	15:r:74:ILE:HD12	2.35	0.41
16:s:33:LEU:HD12	16:s:51:LEU:HD23	2.03	0.41
24:B:10:SER:O	24:B:14:MET:HG3	2.21	0.41
29:G:37:VAL:O	29:G:39:ILE:HD12	2.21	0.41
29:G:68:PHE:HB3	29:G:79:VAL:HG13	2.03	0.41
33:K:18:VAL:CG1	33:K:19:PRO:HD3	2.50	0.41
34:L:4:ARG:HH21	34:L:6:ILE:HD12	1.85	0.41
39:Q:26:CYS:SG	39:Q:29:LYS:HE2	2.61	0.41
41:S:66:THR:CG2	41:S:82:LYS:HG3	2.51	0.41
42:T:22:GLY:HA3	49:3:750:C:O2	2.21	0.41
45:W:59:LYS:HD3	49:3:735:C:H5'	2.03	0.41
49:3:633:G:O2'	49:3:634:C:H5'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:993:G:N3	49:3:993:G:H2'	2.34	0.41
49:3:1227:A:C2'	49:3:1228:C:H5'	2.50	0.41
49:3:1457:G:O2'	49:3:1458:G:H5'	2.21	0.41
49:3:1499:A:O2'	49:3:1500:A:H5'	2.20	0.41
50:1:519:U:H2'	50:1:520:G:C8	2.56	0.41
50:1:1239:G:H2'	50:1:1240:U:O4'	2.20	0.41
50:1:1854:A:C2'	50:1:1855:U:H5'	2.50	0.41
51:2:49:C:H2'	51:2:50:A:C8	2.55	0.41
1:b:237:ARG:HD2	50:1:2591:C:OP1	2.20	0.41
2:c:135:GLY:HA2	50:1:743:A:OP1	2.21	0.41
3:d:40:ARG:NH2	50:1:444:C:OP1	2.53	0.41
4:e:122:ASP:OD1	4:e:126:ASN:HB2	2.21	0.41
5:f:26:LYS:HD2	5:f:26:LYS:HA	1.96	0.41
9:l:49:GLY:HA3	9:l:58:TYR:HE1	1.86	0.41
9:l:63:LYS:HE2	50:1:2394:C:H5''	2.02	0.41
12:o:100:HIS:CD2	51:2:48:U:H4'	2.56	0.41
13:p:70:GLU:OE1	13:p:70:GLU:N	2.54	0.41
13:p:92:ARG:HD3	50:1:1753:G:OP1	2.21	0.41
17:t:63:VAL:HG21	17:t:80:TRP:CZ2	2.56	0.41
18:u:6:ARG:NH2	18:u:7:ASP:OD2	2.54	0.41
18:u:16:LYS:HD3	18:u:16:LYS:C	2.46	0.41
19:v:62:THR:HG22	19:v:71:LYS:HG2	2.03	0.41
19:v:73:LYS:HA	19:v:73:LYS:HD2	1.93	0.41
24:B:49:ARG:HG2	50:1:2884:U:C6	2.55	0.41
26:D:10:LEU:HD13	26:D:10:LEU:HA	1.88	0.41
26:D:37:LYS:NZ	26:D:39:ARG:HH21	2.19	0.41
28:F:15:LYS:HE2	28:F:15:LYS:HB3	1.96	0.41
29:G:67:LEU:HD23	29:G:157:PRO:HB3	2.03	0.41
29:G:125:PHE:CE1	29:G:136:ARG:HG3	2.56	0.41
31:I:169:TRP:HB3	31:I:183:ARG:NH1	2.36	0.41
36:N:11:ARG:NH2	49:3:1347:G:O6	2.53	0.41
39:Q:23:LEU:HD22	39:Q:29:LYS:CE	2.50	0.41
39:Q:113:ARG:HH21	49:3:501:C:P	2.44	0.41
40:R:106:ARG:HD3	40:R:106:ARG:HA	1.91	0.41
42:T:69:LEU:HD13	42:T:69:LEU:HA	1.92	0.41
49:3:105:G:H2'	49:3:106:C:C6	2.56	0.41
49:3:370:C:H2'	49:3:371:A:C8	2.49	0.41
49:3:407:U:H3	49:3:435:A:H61	1.69	0.41
49:3:425:G:O2'	49:3:426:U:H5'	2.20	0.41
49:3:628:G:H2'	49:3:629:A:O4'	2.21	0.41
49:3:865:A:O2'	49:3:866:C:H5'	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:981:U:H2'	49:3:982:U:C5	2.56	0.41
49:3:1256:A:H5'	49:3:1258:G:H1'	2.03	0.41
49:3:1488:G:H2'	49:3:1489:G:H8	1.85	0.41
50:1:403:U:O3'	50:1:404:A:H4'	2.21	0.41
50:1:783:A:H2'	50:1:784:G:H4'	2.02	0.41
50:1:811:U:C2	50:1:1251:C:C5	3.08	0.41
50:1:879:G:H1	50:1:898:C:H42	1.69	0.41
50:1:1177:G:H2'	50:1:1178:C:C4'	2.32	0.41
50:1:1209:U:H2'	50:1:1210:G:H21	1.85	0.41
50:1:1412:U:H2'	50:1:1413:A:C8	2.55	0.41
50:1:1551:A:H2'	50:1:1552:A:O4'	2.20	0.41
50:1:1838:C:N4	50:1:1898:U:H2'	2.35	0.41
50:1:2000:C:O2'	50:1:2001:C:H5'	2.21	0.41
50:1:2368:C:H2'	50:1:2369:A:C8	2.55	0.41
50:1:2516:A:O2'	50:1:2517:C:H5'	2.21	0.41
50:1:2607:G:C6	50:1:2608:G:C6	3.08	0.41
50:1:2795:C:H2'	50:1:2796:U:H5'	2.02	0.41
50:1:2809:A:H2'	50:1:2810:A:C8	2.56	0.41
50:1:2848:G:O2'	50:1:2867:G:N2	2.54	0.41
54:8:20:ILE:C	54:8:35:THR:HA	2.45	0.41
54:8:129:LYS:HA	54:8:131:MET:HE3	2.01	0.41
1:b:125:PRO:HB3	1:b:192:GLY:HA3	2.02	0.41
1:b:143:VAL:HG12	1:b:189:ALA:CB	2.51	0.41
2:c:197:THR:HB	50:1:2820:A:N1	2.35	0.41
5:f:16:VAL:HG13	5:f:16:VAL:O	2.20	0.41
5:f:116:LEU:HA	5:f:117:PRO:HD3	1.82	0.41
13:p:96:LEU:HB3	13:p:99:LEU:HD13	2.03	0.41
19:v:83:LYS:HA	19:v:84:PRO:HD3	1.92	0.41
24:B:9:ARG:HD2	24:B:9:ARG:N	2.34	0.41
33:K:29:ILE:HG21	33:K:64:VAL:HG21	2.03	0.41
39:Q:98:ARG:HB2	39:Q:116:TYR:HA	2.03	0.41
43:U:1:MET:HE1	43:U:66:THR:OG1	2.20	0.41
49:3:337:G:H2'	49:3:338:A:C8	2.55	0.41
49:3:447:G:H22	49:3:486:U:H5''	1.86	0.41
49:3:940:C:H2'	49:3:941:G:C8	2.56	0.41
49:3:1426:G:O2'	49:3:1427:C:H5'	2.21	0.41
49:3:1522:U:H2'	49:3:1523:G:C8	2.56	0.41
50:1:203:A:C8	50:1:204:A:C8	3.09	0.41
50:1:438:G:H2'	50:1:439:A:H8	1.86	0.41
50:1:1042:G:H2'	50:1:1043:C:C6	2.56	0.41
50:1:1330:C:H2'	50:1:1331:G:C8	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:1353:A:H2'	50:1:1354:A:C8	2.56	0.41
50:1:1430:G:H2'	50:1:1431:A:O4'	2.21	0.41
50:1:1589:U:H2'	50:1:1590:A:C8	2.56	0.41
50:1:1669:A:H2'	50:1:1670:C:H5'	2.02	0.41
50:1:1682:G:H2'	50:1:1683:U:C6	2.56	0.41
50:1:1778:U:C5	50:1:1784:A:C2	3.09	0.41
50:1:1807:G:C2'	50:1:1808:A:H5'	2.49	0.41
50:1:2599:G:O2'	50:1:2600:A:H5'	2.21	0.41
51:2:19:C:H2'	51:2:20:G:C8	2.56	0.41
2:c:38:LYS:HE3	2:c:81:GLU:OE1	2.21	0.40
3:d:26:ALA:HB2	9:l:9:ALA:HB2	2.02	0.40
3:d:63:LYS:O	3:d:64:GLY:C	2.64	0.40
5:f:171:LYS:NZ	50:1:2530:A:N7	2.65	0.40
7:j:4:PHE:O	14:q:63:ARG:NH1	2.48	0.40
7:j:109:LEU:HA	7:j:110:PRO:HD3	1.95	0.40
9:l:13:LYS:NZ	50:1:1245:G:OP1	2.53	0.40
15:r:14:VAL:HG22	15:r:15:SER:N	2.36	0.40
16:s:42:LYS:HB2	50:1:2010:G:H5''	2.04	0.40
16:s:88:ARG:HE	16:s:94:ASP:CG	2.29	0.40
30:H:65:VAL:HB	30:H:100:ILE:CD1	2.51	0.40
33:K:54:LEU:HA	33:K:54:LEU:HD13	1.88	0.40
34:L:22:LEU:HD21	34:L:43:TYR:HE1	1.85	0.40
37:O:53:ILE:O	49:3:1060:U:H5'	2.20	0.40
39:Q:80:LEU:HB3	39:Q:97:VAL:HB	2.02	0.40
42:T:31:LEU:HD22	42:T:58:MET:HB2	2.03	0.40
49:3:788:U:H2'	49:3:789:U:H5'	2.03	0.40
49:3:889:A:H61	49:3:907:A:H5''	1.86	0.40
49:3:953:G:H2'	49:3:954:G:O4'	2.21	0.40
49:3:1527:U:H2'	49:3:1528:U:C6	2.56	0.40
50:1:163:C:O2'	50:1:164:C:H5'	2.21	0.40
50:1:528:A:H2	50:1:2043:C:H5'	1.86	0.40
50:1:848:C:H2'	50:1:849:A:H8	1.86	0.40
50:1:1304:A:H2'	50:1:1305:C:O4'	2.21	0.40
50:1:2250:G:H8	50:1:2250:G:O5'	2.04	0.40
50:1:2259:U:H2'	50:1:2260:C:H6	1.87	0.40
50:1:2691:C:H5'	50:1:2872:A:O4'	2.21	0.40
54:8:36:ALA:HB1	54:8:80:GLN:HB2	2.03	0.40
2:c:91:THR:HB	2:c:94:GLN:HB2	2.03	0.40
5:f:21:GLN:C	5:f:36:LEU:HD13	2.46	0.40
6:g:133:GLN:NE2	6:g:136:SER:O	2.55	0.40
11:n:53:THR:HA	11:n:56:LYS:HD3	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:q:108:LEU:CA	15:r:48:LYS:HZ3	2.34	0.40
19:v:53:LYS:HE2	19:v:55:GLU:HB2	2.03	0.40
24:B:28:SER:HB3	24:B:39:ARG:HD3	2.03	0.40
29:G:115:ASP:O	29:G:119:GLN:HG3	2.21	0.40
29:G:207:ARG:O	29:G:210:THR:HG22	2.21	0.40
33:K:92:THR:OG1	33:K:93:LYS:N	2.51	0.40
35:M:30:LYS:O	35:M:33:VAL:HG12	2.21	0.40
38:P:61:ALA:HA	38:P:64:VAL:HG22	2.02	0.40
49:3:257:G:H2'	49:3:258:G:H8	1.87	0.40
49:3:361:G:H2'	49:3:362:G:O4'	2.22	0.40
49:3:730:G:H2'	49:3:731:G:C5'	2.48	0.40
49:3:847:G:O2'	49:3:848:C:H5'	2.20	0.40
49:3:912:C:H2'	49:3:913:A:C8	2.56	0.40
49:3:1320:C:O2'	49:3:1321:U:H5'	2.21	0.40
49:3:1415:G:H2'	49:3:1416:G:C8	2.56	0.40
50:1:154:U:H2'	50:1:155:A:H8	1.86	0.40
50:1:455:C:O2	50:1:472:A:H2'	2.21	0.40
50:1:999:U:O2'	50:1:1000:A:H5'	2.21	0.40
50:1:1260:A:O2'	50:1:1261:C:H5'	2.21	0.40
50:1:1301:A:O2'	50:1:1302:A:H3'	2.21	0.40
50:1:1391:U:H2'	50:1:1393:A:OP2	2.22	0.40
50:1:1796:U:H2'	50:1:1797:G:H8	1.86	0.40
50:1:2272:U:H5''	50:1:2273:A:OP1	2.22	0.40
50:1:2412:A:C2'	50:1:2413:G:H5'	2.51	0.40
50:1:2714:G:C2'	50:1:2715:C:H5'	2.52	0.40
54:8:53:LYS:HD2	54:8:53:LYS:C	2.46	0.40
54:8:55:ARG:O	54:8:59:ALA:HB2	2.22	0.40
1:b:216:ARG:NH2	50:1:781:A:OP1	2.54	0.40
3:d:6:LYS:HD2	3:d:119:ILE:CG2	2.50	0.40
3:d:112:LEU:HB3	3:d:118:LEU:HB2	2.03	0.40
3:d:149:ILE:HD12	3:d:149:ILE:HA	1.98	0.40
5:f:37:ASN:ND2	50:1:2758:A:H1'	2.36	0.40
5:f:76:ILE:HA	5:f:79:THR:HG22	2.03	0.40
8:k:48:PRO:C	8:k:49:ARG:HD2	2.46	0.40
13:p:77:SER:O	13:p:80:VAL:HG12	2.20	0.40
17:t:44:LYS:HE3	17:t:44:LYS:HB2	1.90	0.40
29:G:86:CYS:SG	29:G:220:VAL:HG23	2.62	0.40
29:G:104:LYS:NZ	49:3:1073:U:O2'	2.53	0.40
32:J:19:ARG:HG2	32:J:32:PHE:CD1	2.57	0.40
37:O:40:ILE:HD12	37:O:40:ILE:N	2.36	0.40
37:O:42:LEU:CD2	37:O:71:LEU:HD21	2.51	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:W:37:LYS:HE2	49:3:719:C:O2'	2.20	0.40
49:3:1376:U:H2'	49:3:1377:A:C8	2.56	0.40
49:3:1390:U:H2'	49:3:1391:U:C6	2.57	0.40
49:3:1432:G:H1'	49:3:1468:A:N6	2.35	0.40
50:1:589:U:H2'	50:1:590:A:H8	1.85	0.40
50:1:897:C:C4	50:1:898:C:N4	2.89	0.40
50:1:1210:G:O5'	50:1:1212:G:H5'	2.21	0.40
50:1:1405:U:H2'	50:1:1406:U:C6	2.56	0.40
50:1:1593:A:H2'	50:1:1594:U:C6	2.56	0.40
50:1:2238:G:N3	50:1:2238:G:C2'	2.84	0.40
50:1:2492:U:H2'	50:1:2493:U:C6	2.56	0.40
50:1:2555:U:H2'	50:1:2556:C:O4'	2.21	0.40
51:2:63:C:H2'	51:2:64:G:C8	2.57	0.40
13:p:51:ASN:O	50:1:2845:U:H5''	2.21	0.40
17:t:73:ARG:HD3	17:t:73:ARG:H	1.86	0.40
30:H:4:VAL:HG22	30:H:5:HIS:N	2.36	0.40
30:H:122:GLN:HG2	30:H:125:ARG:HH21	1.86	0.40
30:H:122:GLN:O	30:H:127:VAL:HG12	2.21	0.40
35:M:12:ARG:NH2	49:3:826:C:H5'	2.36	0.40
45:W:59:LYS:HE2	49:3:719:C:N4	2.37	0.40
49:3:82:G:H5''	49:3:83:C:O4'	2.22	0.40
49:3:258:G:O2'	49:3:259:G:H5'	2.22	0.40
49:3:295:C:O2'	49:3:296:U:H5'	2.21	0.40
49:3:869:G:H4'	49:3:872:A:C8	2.56	0.40
49:3:998:C:H2'	49:3:999:C:C6	2.56	0.40
50:1:333:G:H2'	50:1:333:G:N3	2.35	0.40
50:1:689:A:H2'	50:1:690:G:H8	1.85	0.40
50:1:1223:G:C6	50:1:1227:G:C6	3.10	0.40
50:1:1330:C:H2'	50:1:1331:G:H8	1.86	0.40
50:1:1331:G:O2'	50:1:1332:G:H5''	2.21	0.40
50:1:1381:G:O2'	50:1:1382:G:H5'	2.21	0.40
50:1:1685:C:H2'	50:1:1686:C:H6	1.86	0.40
50:1:2743:U:H2'	50:1:2744:G:C4'	2.50	0.40
1:b:83:ASP:OD1	1:b:86:ARG:HG2	2.21	0.40
1:b:229:HIS:ND1	1:b:230:PRO:CD	2.85	0.40
2:c:139:SER:HB3	2:c:142:VAL:HG21	2.03	0.40
7:j:26:GLY:HA3	50:1:1140:C:C5'	2.46	0.40
9:l:19:LEU:HD23	9:l:27:LEU:HB3	2.03	0.40
14:q:2:ARG:NH2	50:1:445:C:O3'	2.49	0.40
15:r:88:GLY:O	50:1:1224:U:H4'	2.20	0.40
16:s:74:ILE:O	16:s:74:ILE:HG23	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:D:10:LEU:HD11	50:1:125:A:C6	2.56	0.40
27:E:4:LYS:HE2	50:1:242:G:C6	2.56	0.40
29:G:44:LYS:C	29:G:47:PRO:HD2	2.46	0.40
35:M:5:PRO:O	35:M:8:ASP:HB3	2.21	0.40
35:M:100:ILE:HB	35:M:128:VAL:HG13	2.04	0.40
38:P:60:PHE:HA	38:P:63:GLN:NE2	2.37	0.40
39:Q:87:LYS:HE2	39:Q:87:LYS:HB2	1.96	0.40
49:3:130:A:O2'	49:3:264:C:H5'	2.20	0.40
49:3:179:A:H2'	49:3:180:U:C6	2.56	0.40
49:3:704:A:C2	49:3:705:G:H1'	2.57	0.40
49:3:725:G:H2'	49:3:726:C:C6	2.55	0.40
49:3:1201:A:H4'	49:3:1203:C:OP2	2.22	0.40
49:3:1336:C:H5'	49:3:1337:G:C2	2.56	0.40
50:1:160:A:H2'	50:1:161:A:C8	2.56	0.40
50:1:203:A:N7	50:1:204:A:C5	2.90	0.40
50:1:306:U:H2'	50:1:307:G:O4'	2.22	0.40
50:1:553:G:O2'	50:1:554:U:H5'	2.22	0.40
50:1:671:C:H2'	50:1:672:C:C6	2.57	0.40
50:1:1071:G:N3	50:1:1071:G:H2'	2.36	0.40
50:1:1173:U:C3'	50:1:1174:U:H4'	2.52	0.40
50:1:1308:A:N6	50:1:1309:G:C2	2.89	0.40
50:1:1870:C:H5''	50:1:1871:A:OP1	2.21	0.40
50:1:2051:A:H8	50:1:2051:A:OP2	2.05	0.40
50:1:2859:G:H2'	50:1:2860:A:C8	2.56	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%)	244 (91%)	25 (9%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	c	207/209 (99%)	192 (93%)	12 (6%)	3 (1%)	9	33
3	d	199/201 (99%)	182 (92%)	11 (6%)	6 (3%)	3	20
4	e	175/177 (99%)	156 (89%)	15 (9%)	4 (2%)	5	25
5	f	174/176 (99%)	160 (92%)	12 (7%)	2 (1%)	11	39
6	g	147/149 (99%)	119 (81%)	24 (16%)	4 (3%)	4	22
7	j	140/142 (99%)	126 (90%)	12 (9%)	2 (1%)	9	33
8	k	120/122 (98%)	104 (87%)	13 (11%)	3 (2%)	4	23
9	l	141/143 (99%)	120 (85%)	18 (13%)	3 (2%)	5	26
10	m	134/136 (98%)	118 (88%)	14 (10%)	2 (2%)	8	32
11	n	118/120 (98%)	103 (87%)	14 (12%)	1 (1%)	16	45
12	o	114/116 (98%)	104 (91%)	10 (9%)	0	100	100
13	p	112/114 (98%)	97 (87%)	15 (13%)	0	100	100
14	q	115/117 (98%)	109 (95%)	5 (4%)	1 (1%)	14	43
15	r	101/103 (98%)	84 (83%)	15 (15%)	2 (2%)	6	27
16	s	108/110 (98%)	96 (89%)	11 (10%)	1 (1%)	14	43
17	t	91/93 (98%)	84 (92%)	7 (8%)	0	100	100
18	u	100/102 (98%)	88 (88%)	9 (9%)	3 (3%)	3	20
19	v	92/94 (98%)	80 (87%)	12 (13%)	0	100	100
20	w	73/75 (97%)	66 (90%)	6 (8%)	1 (1%)	9	33
21	x	75/77 (97%)	69 (92%)	5 (7%)	1 (1%)	9	35
22	y	61/63 (97%)	57 (93%)	4 (7%)	0	100	100
23	z	56/58 (97%)	49 (88%)	7 (12%)	0	100	100
24	B	54/56 (96%)	51 (94%)	2 (4%)	1 (2%)	6	28
25	C	48/50 (96%)	46 (96%)	2 (4%)	0	100	100
26	D	44/46 (96%)	38 (86%)	6 (14%)	0	100	100
27	E	62/64 (97%)	52 (84%)	7 (11%)	3 (5%)	2	12
28	F	36/38 (95%)	32 (89%)	4 (11%)	0	100	100
29	G	223/225 (99%)	190 (85%)	27 (12%)	6 (3%)	4	22
30	H	204/206 (99%)	188 (92%)	14 (7%)	2 (1%)	12	40
31	I	203/205 (99%)	175 (86%)	24 (12%)	4 (2%)	6	27
32	J	155/157 (99%)	132 (85%)	18 (12%)	5 (3%)	3	19

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
33	K	98/100 (98%)	75 (76%)	19 (19%)	4 (4%)	2	15
34	L	149/151 (99%)	138 (93%)	10 (7%)	1 (1%)	18	49
35	M	127/129 (98%)	113 (89%)	13 (10%)	1 (1%)	16	45
36	N	125/127 (98%)	101 (81%)	18 (14%)	6 (5%)	2	12
37	O	96/98 (98%)	75 (78%)	16 (17%)	5 (5%)	1	11
38	P	114/116 (98%)	92 (81%)	17 (15%)	5 (4%)	2	13
39	Q	121/123 (98%)	98 (81%)	18 (15%)	5 (4%)	2	15
40	R	112/114 (98%)	97 (87%)	13 (12%)	2 (2%)	6	29
41	S	98/100 (98%)	84 (86%)	13 (13%)	1 (1%)	12	40
42	T	86/88 (98%)	76 (88%)	9 (10%)	1 (1%)	10	37
43	U	80/82 (98%)	72 (90%)	7 (9%)	1 (1%)	9	35
44	V	78/80 (98%)	56 (72%)	18 (23%)	4 (5%)	1	11
45	W	63/65 (97%)	56 (89%)	4 (6%)	3 (5%)	2	12
46	X	77/79 (98%)	66 (86%)	11 (14%)	0	100	100
47	Y	83/85 (98%)	79 (95%)	3 (4%)	1 (1%)	10	37
48	Z	63/65 (97%)	42 (67%)	16 (25%)	5 (8%)	1	5
54	8	128/130 (98%)	103 (80%)	18 (14%)	7 (6%)	1	10
54	9	77/130 (59%)	55 (71%)	17 (22%)	5 (6%)	1	8
All	All	5726/5877 (97%)	4989 (87%)	620 (11%)	117 (2%)	8	27

All (117) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	d	49	ARG
3	d	84	THR
6	g	9	VAL
9	l	31	GLY
10	m	28	PHE
24	B	25	THR
29	G	15	PHE
29	G	193	ASP
32	J	11	GLN
32	J	93	VAL
36	N	57	VAL
36	N	99	LYS
37	O	58	ASN

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Mol	Chain	Res	Type
39	Q	3	VAL
39	Q	87	LYS
42	T	46	LYS
43	U	79	ASN
44	V	15	LYS
44	V	17	GLU
45	W	13	THR
48	Z	25	ALA
54	9	47	SER
54	9	70	ILE
54	9	78	ARG
2	c	86	GLU
2	c	138	LEU
2	c	174	SER
3	d	64	GLY
3	d	83	VAL
4	e	135	ILE
5	f	39	ALA
5	f	117	PRO
6	g	87	GLU
8	k	110	GLU
11	n	116	VAL
15	r	26	ASP
16	s	66	ILE
18	u	6	ARG
20	w	9	GLY
27	E	31	ILE
29	G	73	ARG
31	I	47	LEU
33	K	40	GLU
33	K	54	LEU
35	M	47	ASP
36	N	12	LYS
36	N	90	ASP
36	N	100	ALA
37	O	34	ALA
38	P	54	SER
38	P	92	ARG
39	Q	77	SER
40	R	14	ALA
44	V	78	VAL
48	Z	24	LYS

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Mol	Chain	Res	Type
54	8	47	SER
54	8	100	THR
4	e	173	ASP
6	g	49	ALA
7	j	126	ALA
9	l	29	LYS
10	m	69	PRO
27	E	19	GLY
29	G	192	PRO
32	J	80	LEU
33	K	86	ARG
33	K	92	THR
37	O	43	PRO
38	P	125	LYS
39	Q	33	CYS
48	Z	34	ARG
54	8	131	MET
54	9	6	ARG
6	g	47	PHE
9	l	94	THR
29	G	101	THR
30	H	47	ALA
45	W	12	PHE
47	Y	68	LYS
48	Z	8	ASN
48	Z	15	LEU
54	8	26	GLY
54	8	70	ILE
54	9	48	LEU
3	d	89	PRO
4	e	93	GLU
4	e	138	PRO
8	k	72	PRO
8	k	89	ASN
18	u	30	SER
31	I	29	THR
31	I	84	ASN
32	J	50	GLY
32	J	122	VAL
37	O	42	LEU
54	8	105	ARG
7	j	110	PRO

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Mol	Chain	Res	Type
14	q	27	ARG
27	E	17	GLY
31	I	193	ASP
34	L	18	GLY
39	Q	35	ARG
41	S	69	PRO
15	r	58	VAL
21	x	6	VAL
29	G	194	GLY
38	P	89	GLY
40	R	9	PRO
45	W	17	VAL
54	8	11	PRO
3	d	42	GLY
44	V	31	PRO
30	H	59	PRO
36	N	71	ILE
37	O	41	PRO
18	u	54	PRO
38	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%)	213 (99%)	3 (1%)	59	73
2	c	164/164 (100%)	162 (99%)	2 (1%)	63	75
3	d	165/165 (100%)	162 (98%)	3 (2%)	51	70
4	e	148/148 (100%)	145 (98%)	3 (2%)	48	68
5	f	137/137 (100%)	135 (98%)	2 (2%)	57	72
6	g	114/114 (100%)	114 (100%)	0	100	100
7	j	116/116 (100%)	114 (98%)	2 (2%)	53	71
8	k	103/103 (100%)	101 (98%)	2 (2%)	50	68

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
9	l	102/102 (100%)	100 (98%)	2 (2%)	48	68
10	m	109/109 (100%)	108 (99%)	1 (1%)	70	78
11	n	100/100 (100%)	99 (99%)	1 (1%)	68	76
12	o	86/86 (100%)	85 (99%)	1 (1%)	63	75
13	p	99/99 (100%)	98 (99%)	1 (1%)	68	76
14	q	89/89 (100%)	89 (100%)	0	100	100
15	r	84/84 (100%)	83 (99%)	1 (1%)	63	75
16	s	93/93 (100%)	91 (98%)	2 (2%)	45	66
17	t	80/80 (100%)	79 (99%)	1 (1%)	61	74
18	u	83/83 (100%)	83 (100%)	0	100	100
19	v	78/78 (100%)	77 (99%)	1 (1%)	61	74
20	w	57/57 (100%)	57 (100%)	0	100	100
21	x	67/67 (100%)	67 (100%)	0	100	100
22	y	55/55 (100%)	55 (100%)	0	100	100
23	z	48/48 (100%)	48 (100%)	0	100	100
24	B	47/47 (100%)	47 (100%)	0	100	100
25	C	45/45 (100%)	45 (100%)	0	100	100
26	D	38/38 (100%)	36 (95%)	2 (5%)	20	49
27	E	51/51 (100%)	50 (98%)	1 (2%)	48	68
28	F	34/34 (100%)	33 (97%)	1 (3%)	37	62
29	G	186/186 (100%)	184 (99%)	2 (1%)	65	76
30	H	170/170 (100%)	169 (99%)	1 (1%)	78	81
31	I	172/172 (100%)	171 (99%)	1 (1%)	78	81
32	J	119/119 (100%)	117 (98%)	2 (2%)	53	71
33	K	87/87 (100%)	87 (100%)	0	100	100
34	L	124/124 (100%)	124 (100%)	0	100	100
35	M	104/104 (100%)	102 (98%)	2 (2%)	50	68
36	N	105/105 (100%)	104 (99%)	1 (1%)	68	76
37	O	86/86 (100%)	83 (96%)	3 (4%)	32	58
38	P	89/89 (100%)	89 (100%)	0	100	100
39	Q	103/103 (100%)	102 (99%)	1 (1%)	68	76

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
40	R	92/92 (100%)	92 (100%)	0	100	100
41	S	83/83 (100%)	82 (99%)	1 (1%)	63	75
42	T	76/76 (100%)	76 (100%)	0	100	100
43	U	65/65 (100%)	63 (97%)	2 (3%)	35	60
44	V	74/74 (100%)	72 (97%)	2 (3%)	39	63
45	W	56/56 (100%)	55 (98%)	1 (2%)	51	70
46	X	70/70 (100%)	70 (100%)	0	100	100
47	Y	65/65 (100%)	65 (100%)	0	100	100
48	Z	55/55 (100%)	55 (100%)	0	100	100
54	8	106/106 (100%)	104 (98%)	2 (2%)	50	68
54	9	68/106 (64%)	64 (94%)	4 (6%)	18	46
All	All	4763/4801 (99%)	4706 (99%)	57 (1%)	61	75

All (57) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	b	48	ILE
1	b	119	VAL
1	b	140	VAL
2	c	73	VAL
2	c	109	VAL
3	d	83	VAL
3	d	165	HIS
3	d	181	ILE
4	e	30	VAL
4	e	112	ASP
4	e	156	THR
5	f	161	VAL
5	f	168	VAL
7	j	57	LEU
7	j	84	ILE
8	k	89	ASN
8	k	118	LEU
9	l	6	LEU
9	l	81	ASP
10	m	91	TYR
11	n	116	VAL
12	o	47	VAL

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Mol	Chain	Res	Type
13	p	6	GLN
15	r	22	LEU
16	s	71	VAL
16	s	97	LEU
17	t	2	ILE
19	v	65	VAL
26	D	9	VAL
26	D	42	LEU
27	E	31	ILE
28	F	22	VAL
29	G	91	VAL
29	G	150	ILE
30	H	156	LEU
31	I	8	LEU
32	J	55	VAL
32	J	119	VAL
35	M	90	GLU
35	M	95	MET
36	N	60	LEU
37	O	60	ASP
37	O	69	THR
37	O	92	LEU
39	Q	73	LEU
41	S	32	ASP
43	U	36	VAL
43	U	67	ILE
44	V	73	THR
44	V	77	VAL
45	W	24	ASP
54	8	50	GLU
54	8	108	THR
54	9	7	HIS
54	9	8	VAL
54	9	37	ILE
54	9	64	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (120) such sidechains are listed below:

Mol	Chain	Res	Type
1	b	44	ASN
1	b	45	ASN
1	b	57	HIS

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Mol	Chain	Res	Type
1	b	89	ASN
1	b	114	GLN
1	b	162	GLN
1	b	250	GLN
1	b	259	ASN
3	d	41	GLN
3	d	62	GLN
3	d	97	ASN
3	d	115	GLN
3	d	136	GLN
4	e	36	ASN
4	e	51	ASN
5	f	100	ASN
5	f	103	ASN
6	g	145	ASN
7	j	40	HIS
7	j	67	ASN
7	j	80	HIS
7	j	130	HIS
7	j	135	GLN
7	j	136	GLN
8	k	89	ASN
8	k	93	GLN
9	l	38	GLN
9	l	93	ASN
9	l	104	GLN
10	m	13	HIS
11	n	3	HIS
11	n	9	GLN
11	n	13	ASN
11	n	23	ASN
11	n	31	HIS
11	n	62	ASN
12	o	100	HIS
13	p	6	GLN
13	p	40	GLN
13	p	51	ASN
13	p	114	ASN
14	q	36	GLN
14	q	58	GLN
15	r	12	HIS
15	r	18	GLN

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Mol	Chain	Res	Type
15	r	66	HIS
15	r	82	HIS
16	s	61	ASN
17	t	70	HIS
17	t	92	ASN
18	u	39	ASN
18	u	65	GLN
18	u	73	ASN
19	v	12	GLN
19	v	24	ASN
19	v	44	HIS
19	v	49	ASN
20	w	36	GLN
21	x	5	GLN
21	x	15	ASN
21	x	33	HIS
22	y	15	ASN
24	B	41	HIS
26	D	26	ASN
27	E	27	ASN
27	E	42	HIS
28	F	13	ASN
29	G	17	HIS
29	G	93	HIS
29	G	202	ASN
30	H	31	ASN
30	H	40	GLN
30	H	139	ASN
30	H	184	ASN
30	H	189	HIS
31	I	70	GLN
31	I	88	ASN
31	I	119	HIS
31	I	125	ASN
31	I	130	ASN
31	I	195	ASN
32	J	96	GLN
33	K	17	GLN
33	K	46	GLN
33	K	58	HIS
34	L	129	ASN
35	M	3	GLN

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Mol	Chain	Res	Type
35	M	17	GLN
35	M	20	ASN
35	M	75	GLN
36	N	74	GLN
36	N	125	GLN
37	O	58	ASN
38	P	21	HIS
38	P	23	HIS
38	P	37	GLN
38	P	63	GLN
39	Q	4	ASN
41	S	3	GLN
42	T	27	GLN
42	T	61	GLN
43	U	18	GLN
43	U	29	ASN
44	V	30	HIS
45	W	51	GLN
46	X	68	HIS
47	Y	2	ASN
47	Y	74	HIS
47	Y	77	ASN
47	Y	83	ASN
48	Z	63	ASN
54	8	7	HIS
54	8	23	GLN
54	8	61	HIS
54	8	62	HIS
54	8	75	GLN
54	8	83	ASN
54	8	124	GLN
54	9	75	GLN
54	9	80	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
49	3	1538/1539 (99%)	155 (10%)	1 (0%)
50	1	2902/2903 (99%)	378 (13%)	10 (0%)
51	2	119/120 (99%)	13 (10%)	0
52	5	76/77 (98%)	9 (11%)	0

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Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
53	4	19/20 (95%)	4 (21%)	0
All	All	4654/4659 (99%)	559 (12%)	11 (0%)

All (559) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
49	3	6	G
49	3	9	G
49	3	22	G
49	3	31	G
49	3	32	A
49	3	39	G
49	3	48	C
49	3	49	U
49	3	51	A
49	3	71	A
49	3	82	G
49	3	83	C
49	3	87	C
49	3	100	G
49	3	144	G
49	3	146	G
49	3	183	C
49	3	210	C
49	3	212	G
49	3	226	G
49	3	247	G
49	3	251	G
49	3	266	G
49	3	267	C
49	3	280	C
49	3	281	G
49	3	289	G
49	3	316	C
49	3	345	C
49	3	351	G
49	3	352	C
49	3	367	U
49	3	372	C
49	3	412	A
49	3	422	C
49	3	423	G

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Mol	Chain	Res	Type
49	3	429	U
49	3	441	A
49	3	448	A
49	3	480	U
49	3	486	U
49	3	518	C
49	3	524	G
49	3	533	A
49	3	547	A
49	3	559	A
49	3	561	U
49	3	566	G
49	3	572	A
49	3	573	A
49	3	575	G
49	3	576	C
49	3	577	G
49	3	633	G
49	3	642	A
49	3	665	A
49	3	687	A
49	3	688	G
49	3	703	G
49	3	713	G
49	3	724	G
49	3	755	G
49	3	777	A
49	3	814	A
49	3	817	C
49	3	818	G
49	3	819	A
49	3	821	G
49	3	842	U
49	3	843	U
49	3	844	G
49	3	845	A
49	3	846	G
49	3	847	G
49	3	890	G
49	3	902	G
49	3	926	G
49	3	934	C

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Mol	Chain	Res	Type
49	3	935	A
49	3	960	U
49	3	961	U
49	3	966	G
49	3	969	A
49	3	971	G
49	3	975	A
49	3	976	G
49	3	977	A
49	3	992	U
49	3	993	G
49	3	994	A
49	3	1004	A
49	3	1029	U
49	3	1030	U
49	3	1031	C
49	3	1032	G
49	3	1033	G
49	3	1034	G
49	3	1053	G
49	3	1054	C
49	3	1094	G
49	3	1101	A
49	3	1108	G
49	3	1130	A
49	3	1136	C
49	3	1137	C
49	3	1138	G
49	3	1139	G
49	3	1159	U
49	3	1168	U
49	3	1182	G
49	3	1184	G
49	3	1191	A
49	3	1196	A
49	3	1198	G
49	3	1201	A
49	3	1202	U
49	3	1212	U
49	3	1213	A
49	3	1225	A
49	3	1227	A

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Mol	Chain	Res	Type
49	3	1238	A
49	3	1241	G
49	3	1256	A
49	3	1258	G
49	3	1261	A
49	3	1275	A
49	3	1278	G
49	3	1280	A
49	3	1287	A
49	3	1299	A
49	3	1300	G
49	3	1317	C
49	3	1320	C
49	3	1336	C
49	3	1346	A
49	3	1347	G
49	3	1363	A
49	3	1378	C
49	3	1381	U
49	3	1394	A
49	3	1395	C
49	3	1398	A
49	3	1446	A
49	3	1448	C
49	3	1452	C
49	3	1492	A
49	3	1493	A
49	3	1503	A
49	3	1505	G
49	3	1506	U
49	3	1517	G
49	3	1529	G
49	3	1530	G
49	3	1533	C
49	3	1535	C
50	1	10	A
50	1	12	U
50	1	15	G
50	1	34	U
50	1	35	G
50	1	46	G
50	1	49	A

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Mol	Chain	Res	Type
50	1	51	G
50	1	71	A
50	1	74	A
50	1	75	G
50	1	96	C
50	1	102	U
50	1	118	A
50	1	120	U
50	1	137	U
50	1	139	U
50	1	141	G
50	1	142	A
50	1	162	U
50	1	163	C
50	1	181	A
50	1	196	A
50	1	216	A
50	1	218	A
50	1	221	A
50	1	222	A
50	1	224	U
50	1	228	C
50	1	229	C
50	1	248	G
50	1	249	C
50	1	255	A
50	1	266	G
50	1	276	U
50	1	278	A
50	1	294	A
50	1	301	G
50	1	311	A
50	1	323	C
50	1	324	A
50	1	329	G
50	1	330	A
50	1	361	G
50	1	362	A
50	1	363	G
50	1	371	A
50	1	372	G
50	1	386	G

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Mol	Chain	Res	Type
50	1	387	U
50	1	395	U
50	1	404	A
50	1	405	U
50	1	406	G
50	1	411	G
50	1	412	A
50	1	424	G
50	1	455	C
50	1	481	G
50	1	491	G
50	1	504	A
50	1	505	A
50	1	518	G
50	1	529	A
50	1	531	C
50	1	532	A
50	1	543	G
50	1	547	A
50	1	548	G
50	1	549	G
50	1	563	A
50	1	573	U
50	1	575	A
50	1	588	U
50	1	603	A
50	1	615	U
50	1	627	A
50	1	637	A
50	1	646	U
50	1	654	A
50	1	669	G
50	1	686	U
50	1	687	C
50	1	730	A
50	1	747	C
50	1	752	A
50	1	757	G
50	1	764	A
50	1	776	G
50	1	782	A
50	1	784	G

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Mol	Chain	Res	Type
50	1	785	G
50	1	800	A
50	1	805	G
50	1	812	C
50	1	819	A
50	1	827	U
50	1	828	U
50	1	830	G
50	1	845	A
50	1	846	U
50	1	847	U
50	1	858	G
50	1	860	U
50	1	878	A
50	1	887	U
50	1	889	C
50	1	896	A
50	1	910	A
50	1	915	C
50	1	932	U
50	1	941	A
50	1	946	C
50	1	953	G
50	1	961	C
50	1	962	G
50	1	974	G
50	1	983	A
50	1	985	C
50	1	995	C
50	1	996	A
50	1	1009	A
50	1	1012	U
50	1	1013	C
50	1	1021	A
50	1	1022	G
50	1	1026	G
50	1	1033	U
50	1	1045	C
50	1	1046	A
50	1	1047	G
50	1	1060	U
50	1	1062	G

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Mol	Chain	Res	Type
50	1	1066	U
50	1	1068	G
50	1	1070	A
50	1	1071	G
50	1	1072	C
50	1	1075	C
50	1	1076	C
50	1	1084	A
50	1	1088	A
50	1	1101	U
50	1	1104	C
50	1	1111	A
50	1	1126	A
50	1	1130	U
50	1	1132	U
50	1	1135	C
50	1	1136	G
50	1	1156	A
50	1	1172	C
50	1	1173	U
50	1	1174	U
50	1	1176	U
50	1	1178	C
50	1	1179	G
50	1	1180	U
50	1	1181	U
50	1	1211	C
50	1	1212	G
50	1	1247	A
50	1	1248	G
50	1	1251	C
50	1	1253	A
50	1	1256	G
50	1	1271	G
50	1	1272	A
50	1	1301	A
50	1	1302	A
50	1	1305	C
50	1	1321	A
50	1	1329	U
50	1	1330	C
50	1	1332	G

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Mol	Chain	Res	Type
50	1	1345	C
50	1	1365	A
50	1	1378	A
50	1	1379	U
50	1	1383	A
50	1	1416	G
50	1	1419	A
50	1	1420	A
50	1	1421	G
50	1	1454	C
50	1	1461	C
50	1	1476	U
50	1	1482	G
50	1	1490	A
50	1	1498	C
50	1	1515	A
50	1	1524	G
50	1	1535	A
50	1	1536	C
50	1	1537	G
50	1	1555	G
50	1	1559	U
50	1	1560	G
50	1	1569	A
50	1	1608	A
50	1	1611	C
50	1	1616	A
50	1	1617	C
50	1	1647	U
50	1	1648	U
50	1	1660	G
50	1	1674	G
50	1	1695	G
50	1	1713	A
50	1	1715	G
50	1	1729	U
50	1	1730	C
50	1	1738	G
50	1	1758	U
50	1	1764	C
50	1	1773	A
50	1	1780	A

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Mol	Chain	Res	Type
50	1	1782	U
50	1	1791	A
50	1	1800	C
50	1	1801	A
50	1	1808	A
50	1	1816	C
50	1	1829	A
50	1	1847	A
50	1	1871	A
50	1	1901	A
50	1	1906	G
50	1	1907	G
50	1	1913	A
50	1	1929	G
50	1	1930	G
50	1	1931	U
50	1	1936	A
50	1	1937	A
50	1	1938	A
50	1	1944	U
50	1	1955	U
50	1	1966	A
50	1	1967	C
50	1	1970	A
50	1	1971	U
50	1	1972	G
50	1	1991	U
50	1	1992	G
50	1	1997	C
50	1	2022	U
50	1	2023	C
50	1	2030	A
50	1	2031	A
50	1	2036	C
50	1	2043	C
50	1	2049	G
50	1	2055	C
50	1	2056	G
50	1	2060	A
50	1	2061	G
50	1	2062	A
50	1	2069	G

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Mol	Chain	Res	Type
50	1	2072	C
50	1	2093	G
50	1	2096	C
50	1	2104	C
50	1	2110	G
50	1	2111	U
50	1	2112	G
50	1	2113	U
50	1	2114	A
50	1	2118	U
50	1	2119	A
50	1	2126	A
50	1	2130	U
50	1	2131	U
50	1	2132	U
50	1	2133	G
50	1	2135	A
50	1	2136	G
50	1	2140	G
50	1	2145	C
50	1	2147	A
50	1	2154	A
50	1	2159	G
50	1	2161	C
50	1	2163	A
50	1	2165	C
50	1	2166	U
50	1	2167	U
50	1	2168	G
50	1	2171	A
50	1	2172	U
50	1	2173	A
50	1	2174	C
50	1	2175	C
50	1	2180	U
50	1	2198	A
50	1	2203	U
50	1	2204	G
50	1	2210	U
50	1	2211	A
50	1	2213	U
50	1	2223	G

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Mol	Chain	Res	Type
50	1	2225	A
50	1	2238	G
50	1	2279	G
50	1	2283	C
50	1	2287	A
50	1	2297	A
50	1	2305	U
50	1	2309	A
50	1	2325	G
50	1	2327	A
50	1	2334	U
50	1	2335	A
50	1	2345	G
50	1	2350	C
50	1	2357	G
50	1	2383	G
50	1	2385	C
50	1	2392	A
50	1	2402	U
50	1	2406	A
50	1	2423	U
50	1	2424	C
50	1	2429	G
50	1	2430	A
50	1	2431	U
50	1	2434	A
50	1	2435	A
50	1	2441	U
50	1	2447	G
50	1	2448	A
50	1	2476	A
50	1	2498	C
50	1	2502	G
50	1	2503	A
50	1	2505	G
50	1	2518	A
50	1	2520	C
50	1	2529	G
50	1	2547	A
50	1	2554	U
50	1	2566	A
50	1	2567	G

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Mol	Chain	Res	Type
50	1	2572	A
50	1	2602	A
50	1	2609	U
50	1	2613	U
50	1	2621	G
50	1	2655	G
50	1	2682	A
50	1	2689	U
50	1	2690	U
50	1	2714	G
50	1	2718	G
50	1	2722	G
50	1	2733	A
50	1	2744	G
50	1	2748	A
50	1	2757	A
50	1	2764	A
50	1	2765	A
50	1	2778	A
50	1	2779	U
50	1	2791	G
50	1	2792	A
50	1	2797	U
50	1	2799	A
50	1	2800	A
50	1	2809	A
50	1	2820	A
50	1	2821	A
50	1	2833	U
50	1	2849	U
50	1	2867	G
50	1	2868	A
50	1	2872	A
50	1	2879	A
50	1	2880	C
51	2	2	G
51	2	4	C
51	2	12	C
51	2	13	G
51	2	35	C
51	2	42	C
51	2	44	G

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Mol	Chain	Res	Type
51	2	67	G
51	2	89	U
51	2	90	C
51	2	108	A
51	2	109	A
51	2	116	G
52	5	9	G
52	5	19	G
52	5	20	U
52	5	21	A
52	5	22	G
52	5	47	U
52	5	48	C
52	5	61	C
52	5	76	A
53	4	13	A
53	4	19	U
53	4	20	A
53	4	21	A

All (11) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
49	3	1190	G
50	1	784	G
50	1	859	G
50	1	1020	A
50	1	1475	G
50	1	1930	G
50	1	2286	G
50	1	2296	U
50	1	2326	C
50	1	2391	G
50	1	2756	U

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

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.

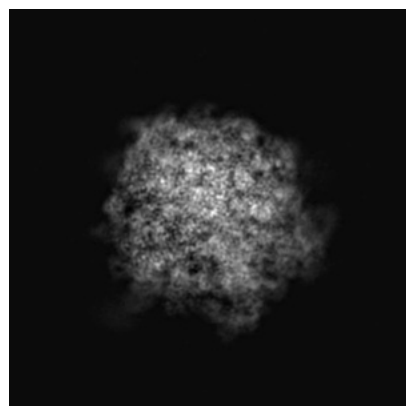
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-22466. These allow visual inspection of the internal detail of the map and identification of artifacts.

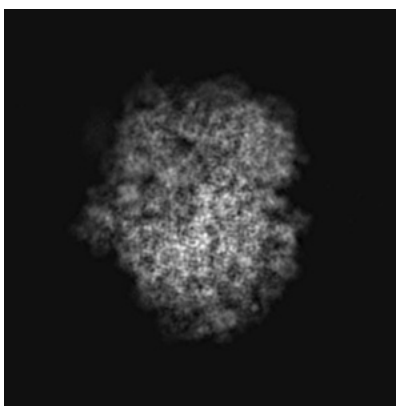
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

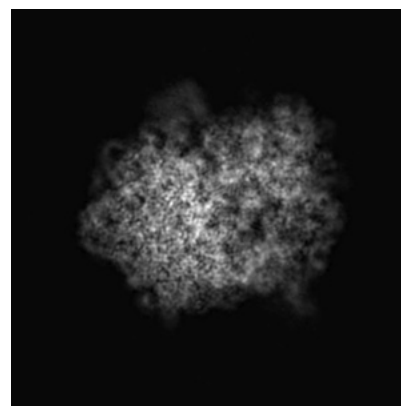
6.1.1 Primary map



X

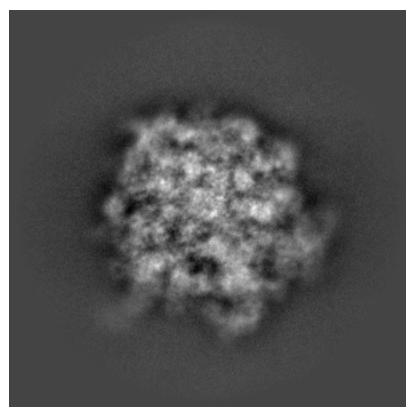


Y

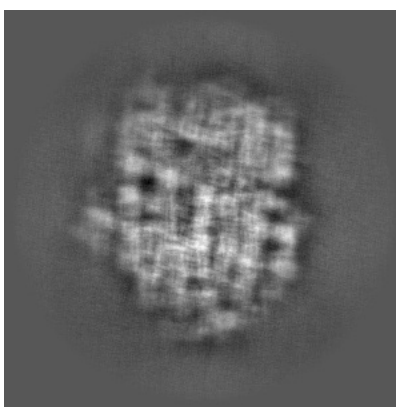


Z

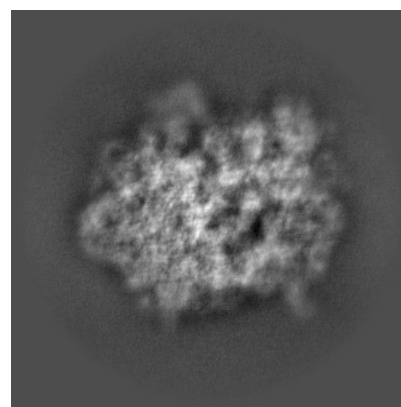
6.1.2 Raw map



X



Y

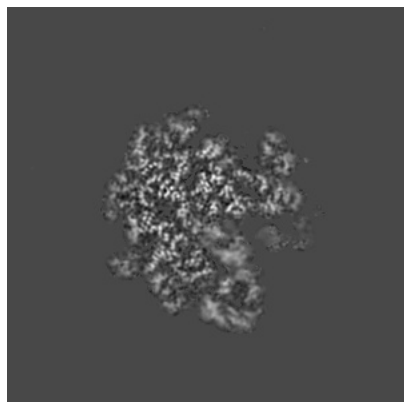


Z

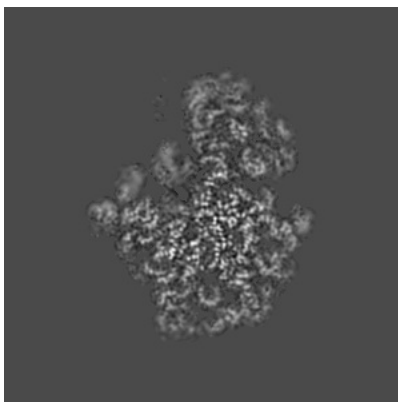
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

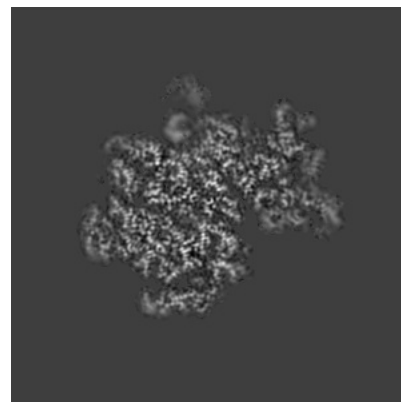
6.2.1 Primary map



X Index: 180

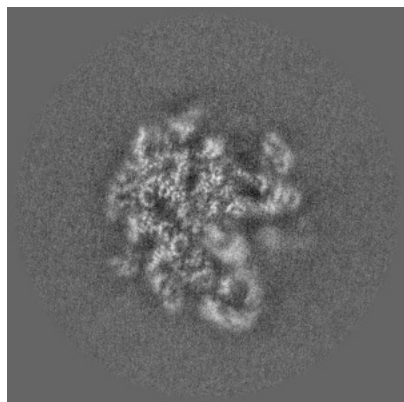


Y Index: 180

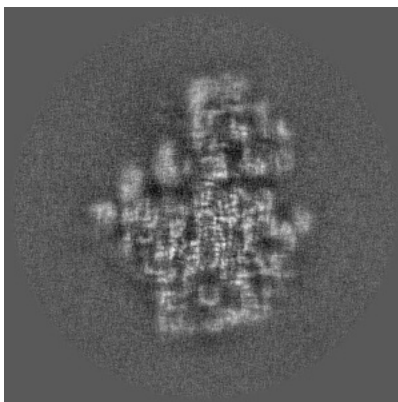


Z Index: 180

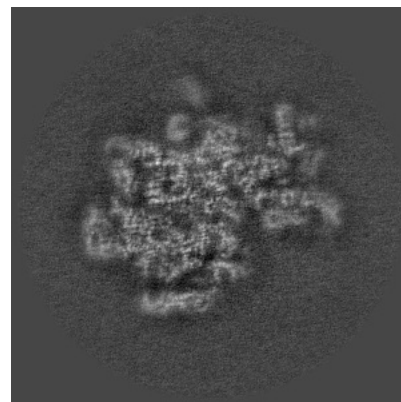
6.2.2 Raw map



X Index: 180



Y Index: 180

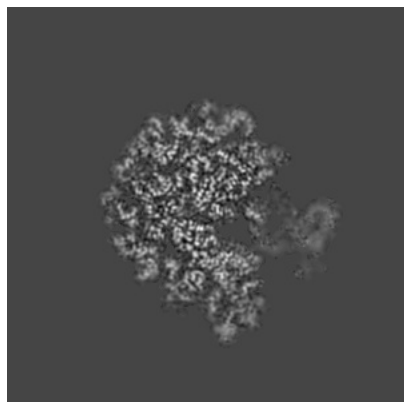


Z Index: 180

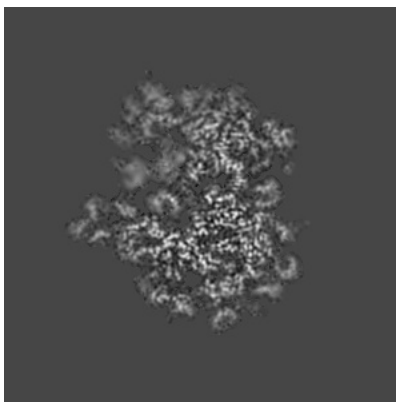
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

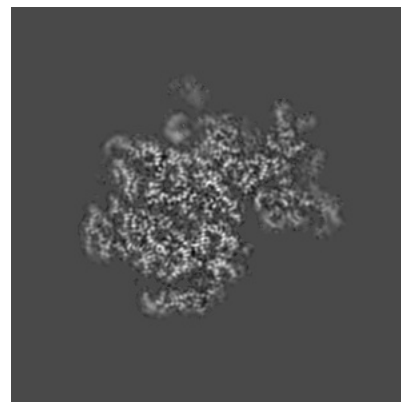
6.3.1 Primary map



X Index: 162

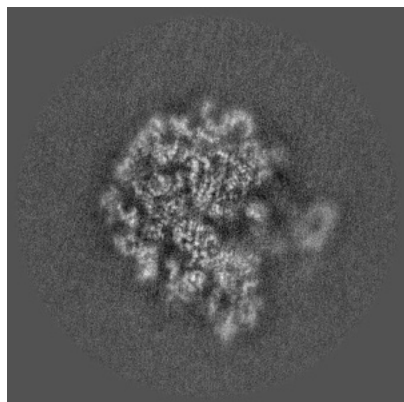


Y Index: 192

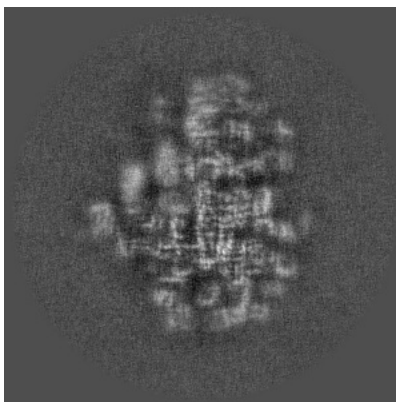


Z Index: 181

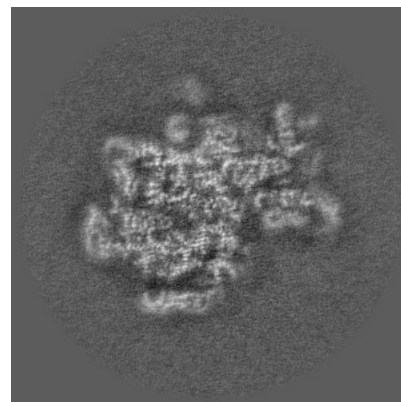
6.3.2 Raw map



X Index: 162



Y Index: 184

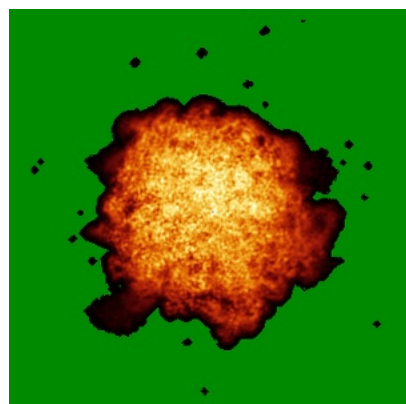


Z Index: 181

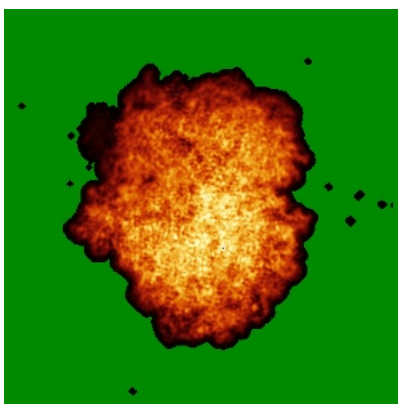
The images above show the largest variance slices of the map in three orthogonal directions.

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

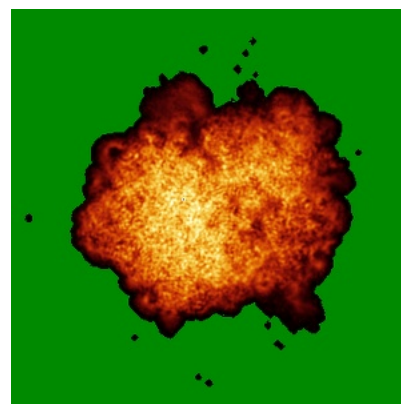
6.4.1 Primary map



X

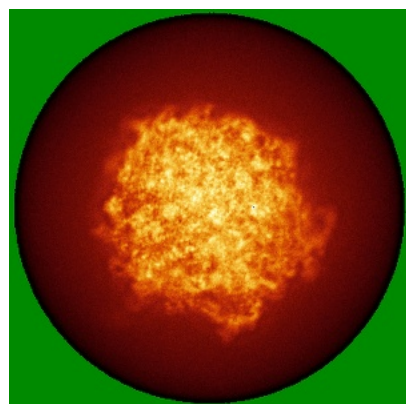


Y

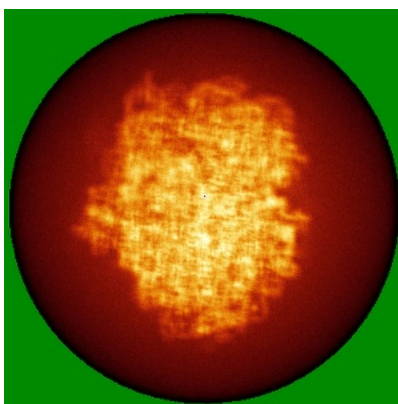


Z

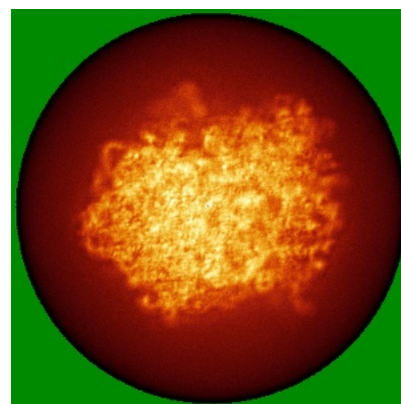
6.4.2 Raw map



X



Y

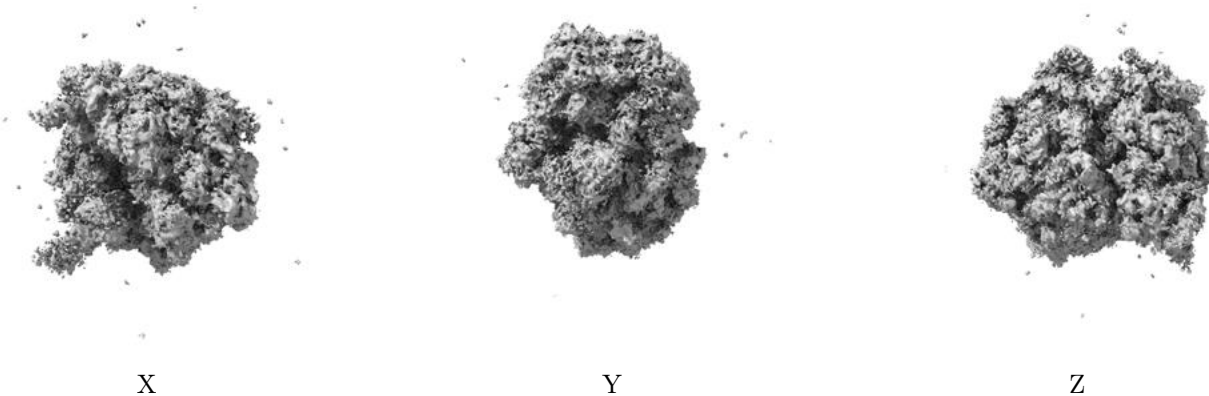


Z

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.

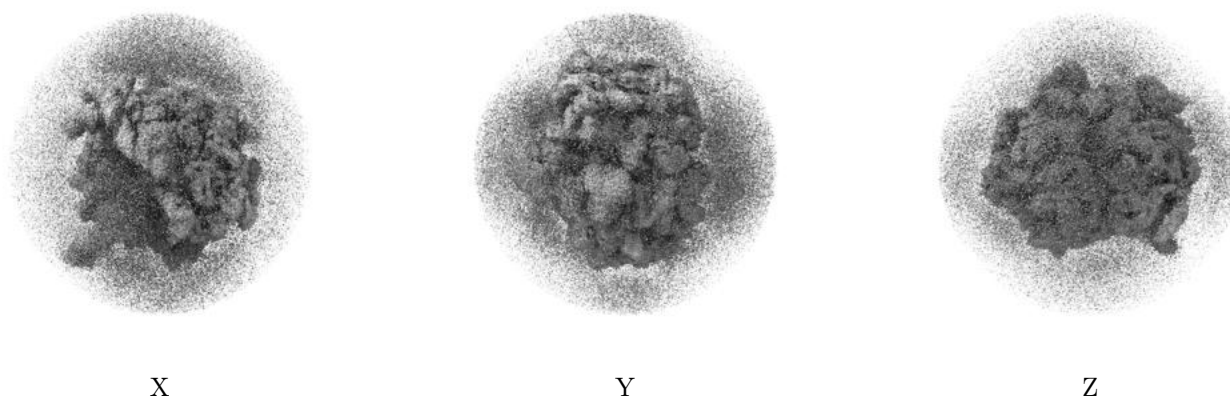
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.6. 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.

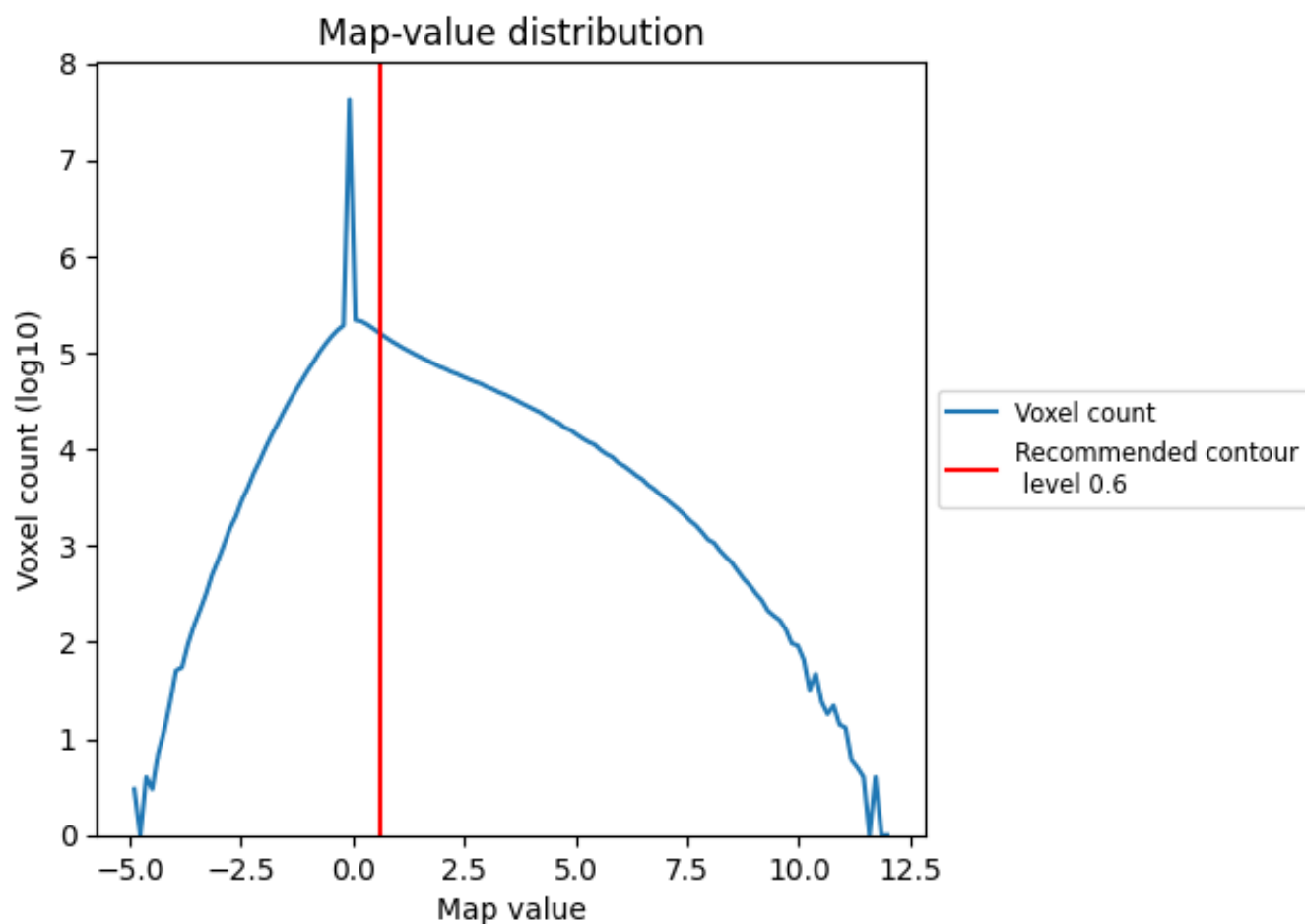
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

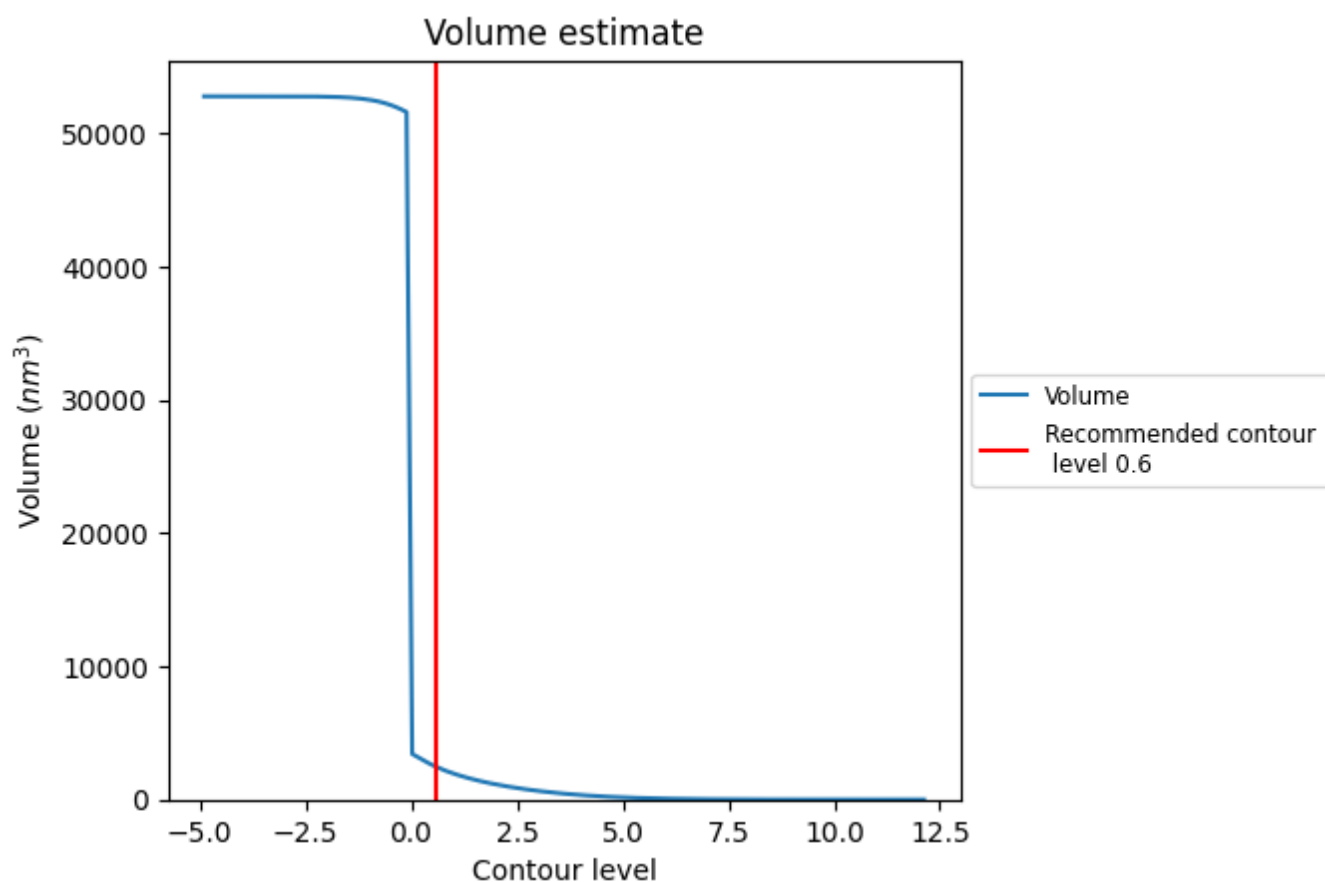
This section contains the results of statistical analysis of the map.

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.

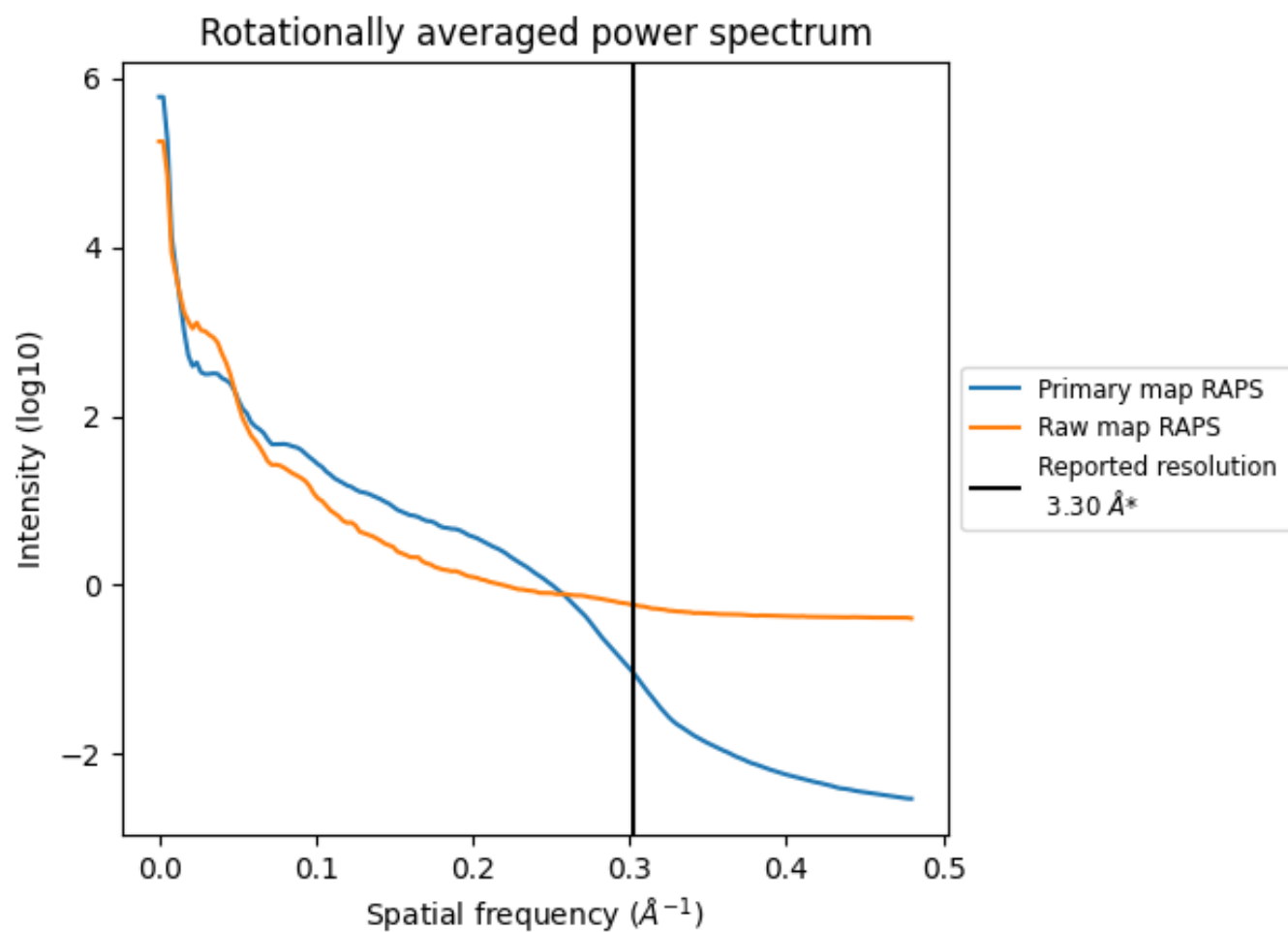
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 2449 nm^3 ; this corresponds to an approximate mass of 2212 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 ⓘ

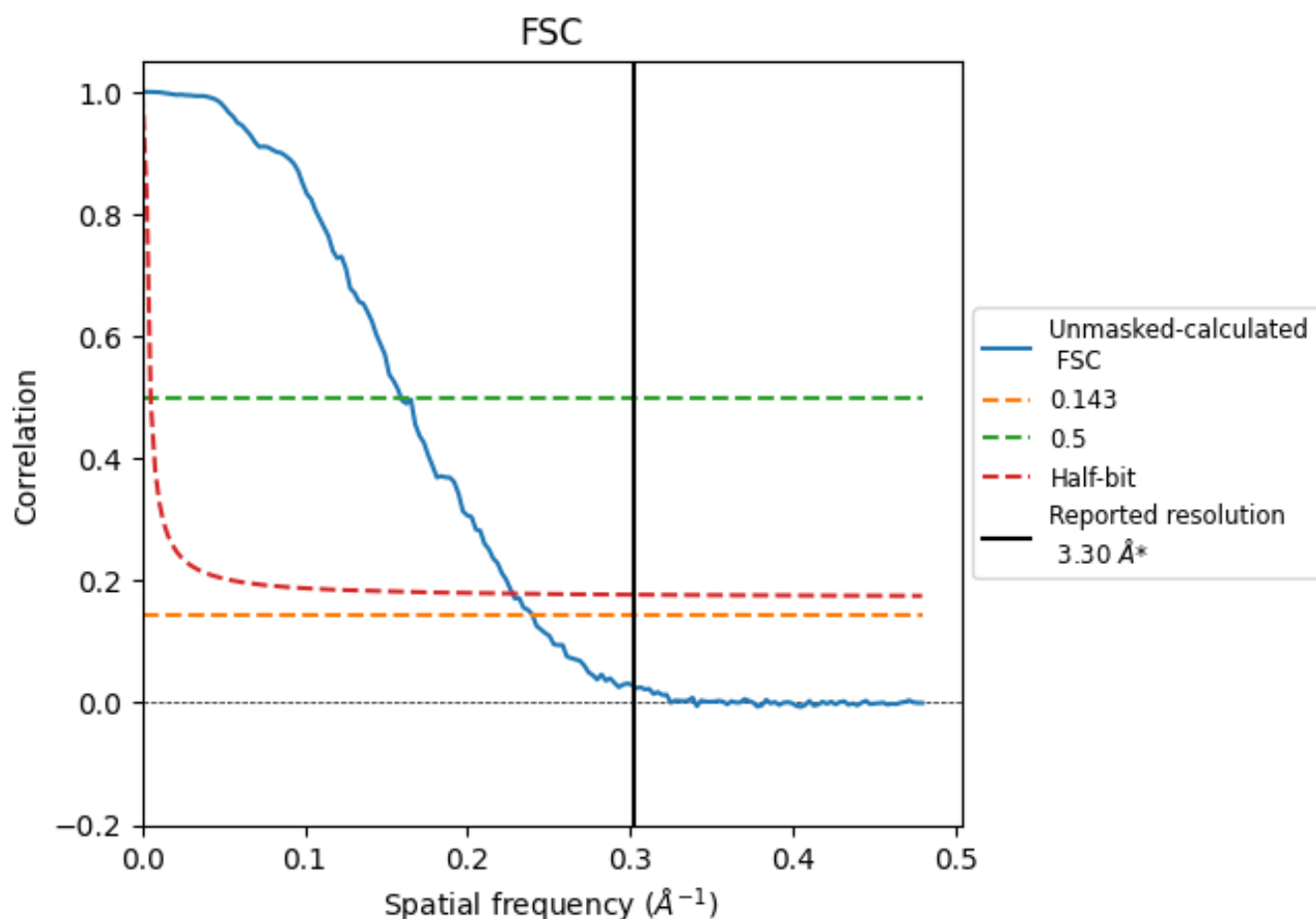


*Reported resolution corresponds to spatial frequency of $0.303 \text{ \AA}^{-1}$

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 0.303 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

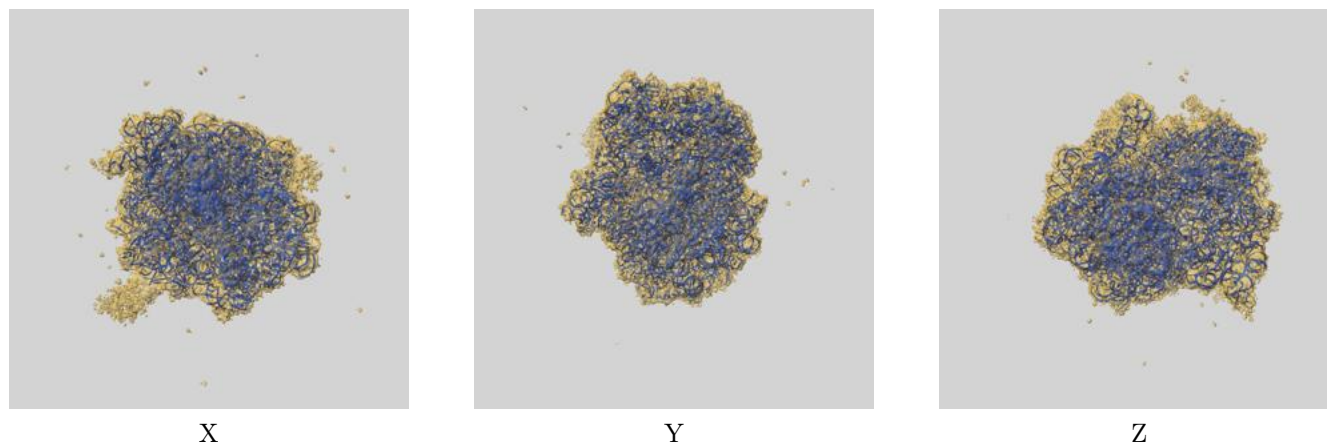
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.30	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	4.16	6.28	4.39

*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 4.16 differs from the reported value 3.3 by more than 10 %

9 Map-model fit [i](#)

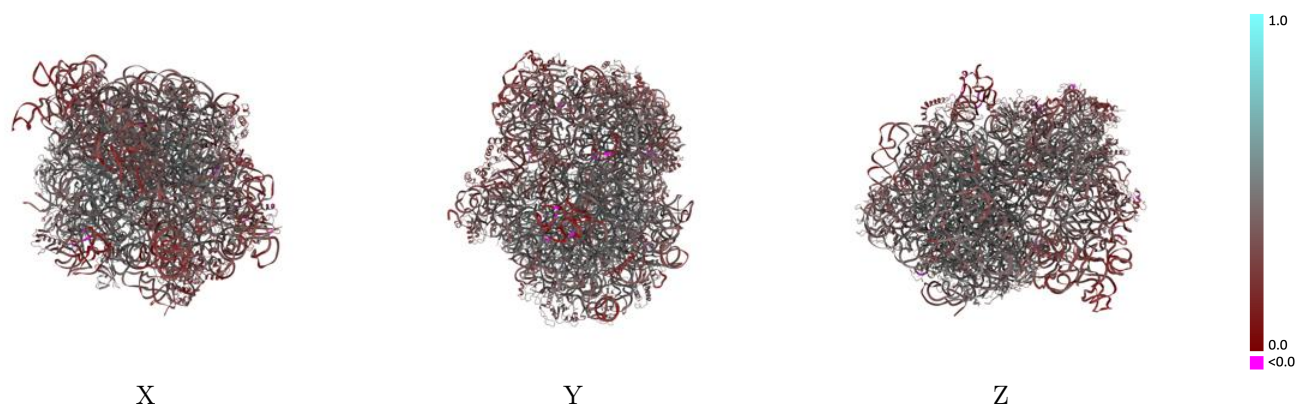
This section contains information regarding the fit between EMDB map EMD-22466 and PDB model 7JT1. Per-residue inclusion information can be found in [section 3](#) on [page 15](#).

9.1 Map-model overlay [i](#)



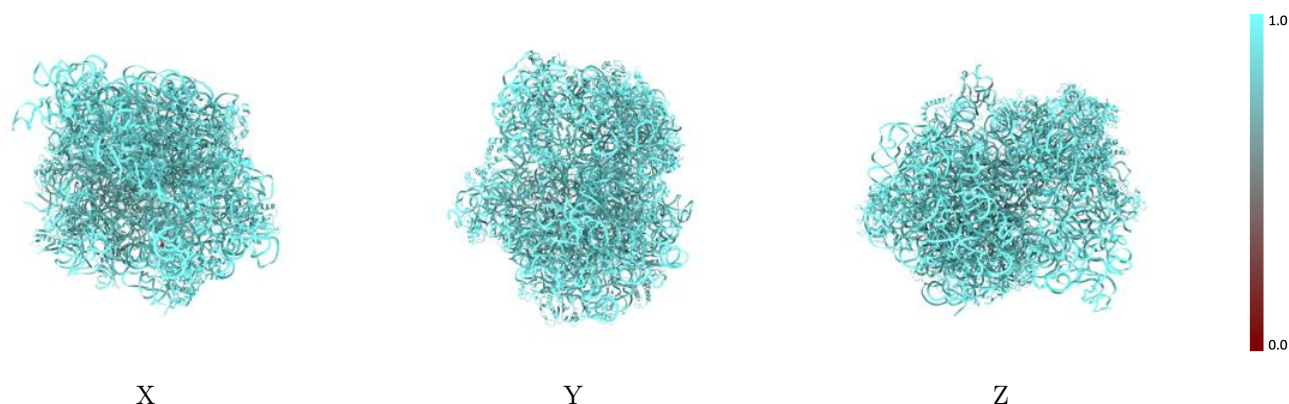
The images above show the 3D surface view of the map at the recommended contour level 0.6 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



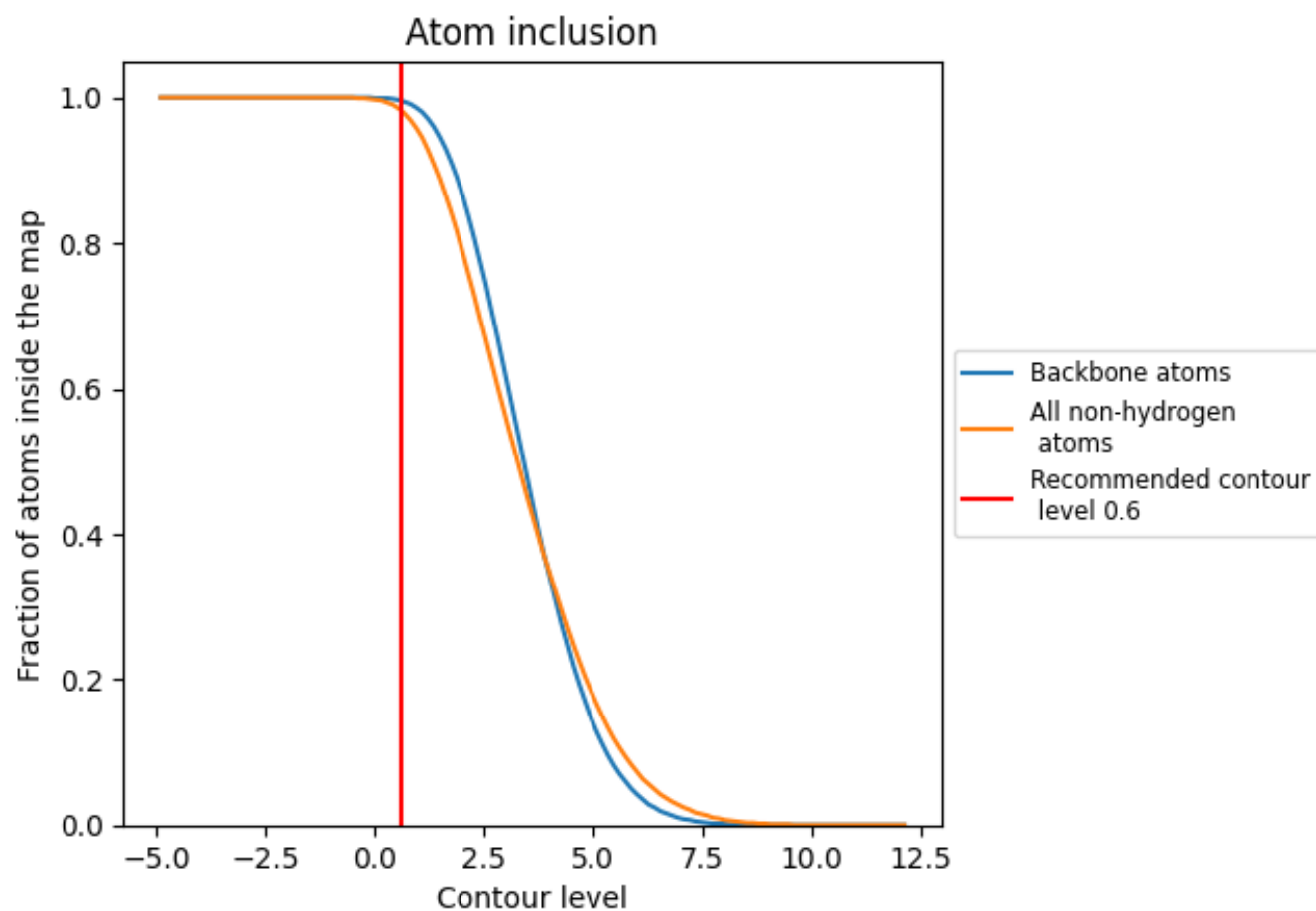
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.6).

9.4 Atom inclusion ⓘ



At the recommended contour level, 100% of all backbone atoms, 98% 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 (0.6) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9830	 0.3960
1	 0.9940	 0.4180
2	 0.9900	 0.3500
3	 0.9900	 0.3710
4	 0.9800	 0.2550
5	 0.9860	 0.3370
8	 0.9380	 0.3490
9	 0.9870	 0.2550
B	 0.9670	 0.4460
C	 0.9700	 0.4240
D	 0.9720	 0.4720
E	 0.9610	 0.4730
F	 0.9450	 0.4360
G	 0.9500	 0.3450
H	 0.9530	 0.3850
I	 0.9530	 0.3130
J	 0.9630	 0.4060
K	 0.9670	 0.3810
L	 0.9730	 0.3280
M	 0.9660	 0.4100
N	 0.9330	 0.3420
O	 0.9000	 0.3360
P	 0.9650	 0.3960
Q	 0.9760	 0.3980
R	 0.9640	 0.3070
S	 0.9590	 0.3540
T	 0.9610	 0.3760
U	 0.9520	 0.3440
V	 0.9760	 0.3750
W	 0.9220	 0.3540
X	 0.9580	 0.3300
Y	 0.9250	 0.3030
Z	 0.9250	 0.3090
b	 0.9750	 0.4730
c	 0.9580	 0.4520



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Chain	Atom inclusion	Q-score
d	 0.9650	 0.4070
e	 0.9690	 0.3080
f	 0.9740	 0.3720
g	 0.9680	 0.3230
j	 0.9590	 0.4370
k	 0.9750	 0.4590
l	 0.9700	 0.4370
m	 0.9560	 0.4410
n	 0.9650	 0.4500
o	 0.9650	 0.3740
p	 0.9810	 0.4290
q	 0.9600	 0.4450
r	 0.9740	 0.4260
s	 0.9690	 0.4550
t	 0.9570	 0.4290
u	 0.9750	 0.4060
v	 0.9700	 0.4030
w	 0.9620	 0.4490
x	 0.9820	 0.4530
y	 0.9600	 0.3630
z	 0.9700	 0.4440