



## Full wwPDB EM Validation Report ⓘ

Oct 6, 2025 – 08:54 PM JST

PDB ID : 9V24 / pdb\_00009v24  
EMDB ID : EMD-64716  
Title : Cryo- EM structure of 75S ribosome with A/P- & P/E- tRNAs from Entamoeba histolytica  
Authors : Sharma, S.; Mishra, S.; Gourinath, S.; Kaushal, P.S.  
Deposited on : 2025-05-19  
Resolution : 3.10 Å(reported)  
Based on initial model : .

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

We welcome your comments at [validation@mail.wwpdb.org](mailto: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>.

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

EMDB validation analysis : 0.0.1.dev129  
MolProbity : 4-5-2 with Phenix2.0  
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)  
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) : 2.46

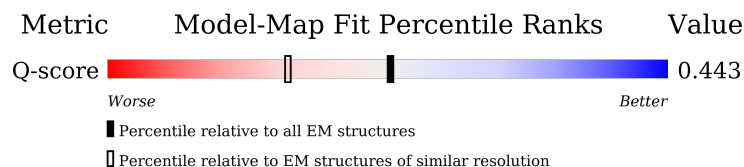
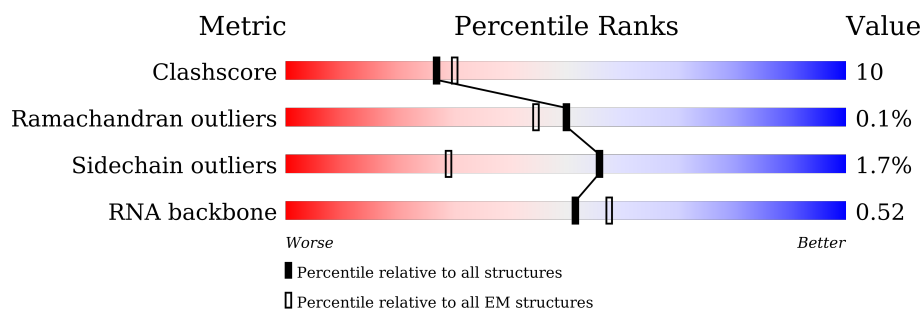
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 3.10 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.













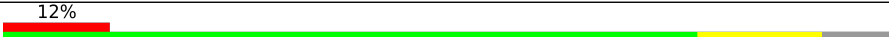


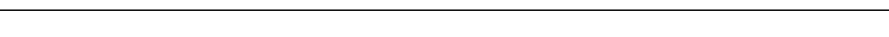
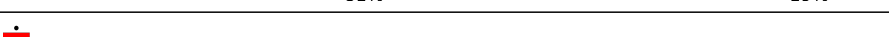
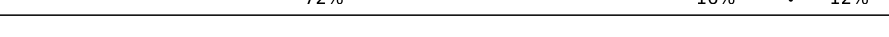



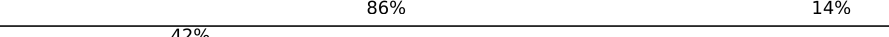





Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
RNA backbone	6643	2191	-
Q-score	-	25397	14724 ( 2.60 - 3.60 )

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  $\geq 3$ , 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	1A	3503	
2	1B	155	
3	1C	117	













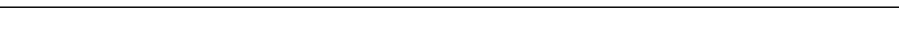

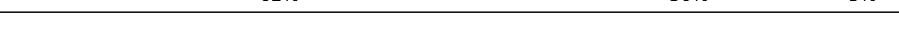

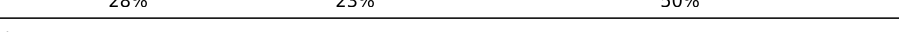







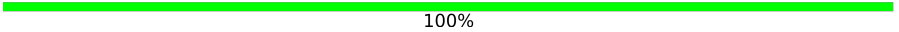
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Mol	Chain	Length	Quality of chain
4	ID	257	
5	IE	402	
6	IF	431	
7	IG	286	
8	IH	204	
9	II	230	
10	IJ	286	
11	IK	197	
12	IL	210	
13	IM	174	
14	IN	291	
15	IO	205	
16	IP	135	
17	IQ	205	
18	IR	179	
19	IS	168	
20	IT	173	
21	IU	198	
22	IV	166	
23	IW	137	
24	IX	140	
25	IY	121	
26	IZ	163	
27	la	213	
28	lb	139	

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Mol	Chain	Length	Quality of chain
29	lc	149	
30	ld	64	
31	le	109	
32	lf	150	
33	lg	134	
34	lh	137	
35	li	122	
36	lj	108	
37	lk	104	
38	ll	77	
39	lm	93	
40	ln	77	
41	lo	51	
42	lp	56	
43	lq	98	
44	sA	137	
45	sB	144	
46	sC	84	
47	sD	69	
48	sE	56	
49	sH	4	
50	sI	76	
51	sJ	77	
52	sK	10	
53	sa	1947	

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Mol	Chain	Length	Quality of chain
54	sb	254	
55	sc	255	
56	sd	244	
57	se	256	
58	sf	326	
59	sg	206	
60	sh	266	
61	si	201	
62	sj	237	
63	sk	185	
64	sl	127	
65	sm	156	
66	so	151	
67	sp	146	
68	sq	144	
69	sr	130	
70	ss	158	
71	st	117	
72	su	155	
73	sv	155	
74	sw	118	
75	sx	86	
76	sy	141	
77	sz	140	

## 2 Entry composition

There are 77 unique types of molecules in this entry. The entry contains 185725 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 RNA chain called 25S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	1A	3145	Total	C	N	O	P	0	0
			67215	30134	12203	21733	3145		

- Molecule 2 is a RNA chain called 5.8S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	1B	145	Total	C	N	O	P	0	0
			3097	1390	560	1002	145		

- Molecule 3 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	1C	117	Total	C	N	O	P	0	0
			2477	1108	425	827	117		

- Molecule 4 is a protein called Large ribosomal subunit protein uL2.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	1D	246	Total	C	N	O	S	0	0
			1881	1165	382	326	8		

- Molecule 5 is a protein called 60S ribosomal protein L3, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	1E	387	Total	C	N	O	S	0	0
			3076	1956	578	527	15		

- Molecule 6 is a protein called 60S ribosomal protein L4, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	1F	424	Total	C	N	O	S	0	0
			3253	2069	619	551	14		

- Molecule 7 is a protein called 60S ribosomal protein L5, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	lG	282	Total	C	N	O	S	0	0
			2245	1434	405	398	8		

- Molecule 8 is a protein called Large ribosomal subunit protein eL6.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	lH	203	Total	C	N	O	S	0	0
			1608	1054	272	278	4		

- Molecule 9 is a protein called 60S ribosomal protein L7, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	lI	210	Total	C	N	O	S	0	0
			1658	1067	301	282	8		

- Molecule 10 is a protein called 60S ribosomal protein L7a.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	lJ	213	Total	C	N	O	S	0	0
			1727	1114	317	291	5		

- Molecule 11 is a protein called 60S ribosomal protein L9, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	lK	193	Total	C	N	O	S	0	0
			1538	974	279	279	6		

- Molecule 12 is a protein called Ribosomal protein L10, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	lL	200	Total	C	N	O	S	0	0
			1597	1017	302	264	14		

- Molecule 13 is a protein called 60S ribosomal protein L11, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	lM	170	Total	C	N	O	S	0	0
			1350	857	243	245	5		

- Molecule 14 is a protein called 60S ribosomal protein L13, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	lN	267	Total	C	N	O	S	0	0
			2122	1352	410	352	8		

- Molecule 15 is a protein called 60S ribosomal protein L13, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	lO	204	Total	C	N	O	S	0	0
			1616	1030	302	275	9		

- Molecule 16 is a protein called 60S ribosomal protein L14, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	lP	130	Total	C	N	O	S	0	0
			1020	654	188	174	4		

- Molecule 17 is a protein called Ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	lQ	204	Total	C	N	O	S	0	0
			1676	1051	356	264	5		

- Molecule 18 is a protein called 60S ribosomal protein L17, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	lR	158	Total	C	N	O	S	0	0
			1232	779	238	210	5		

- Molecule 19 is a protein called 60S ribosomal protein L18, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	lS	167	Total	C	N	O	S	0	0
			1316	832	257	218	9		

- Molecule 20 is a protein called 60S ribosomal protein L18a.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	lT	173	Total	C	N	O	S	0	0
			1413	910	259	235	9		

- Molecule 21 is a protein called Ribosomal protein L19.



Mol	Chain	Residues	Atoms					AltConf	Trace
21	IU	150	Total	C	N	O	S	0	0
			1235	787	246	197	5		

- Molecule 22 is a protein called 60S ribosomal protein L21, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	IV	165	Total	C	N	O	S	0	0
			1320	846	254	217	3		

- Molecule 23 is a protein called Large ribosomal subunit protein eL22.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	IW	93	Total	C	N	O	S	0	0
			761	491	132	133	5		

- Molecule 24 is a protein called 60S ribosomal protein L23, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	IX	133	Total	C	N	O	S	0	0
			1015	629	196	182	8		

- Molecule 25 is a protein called Ribosomal protein L23A, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	IY	116	Total	C	N	O	S	0	0
			926	597	166	159	4		

- Molecule 26 is a protein called 60S ribosomal protein L24, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	IZ	57	Total	C	N	O	S	0	0
			481	318	88	73	2		

- Molecule 27 is a protein called 60S ribosomal protein L26, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	la	210	Total	C	N	O	S	0	0
			1651	1055	304	285	7		

- Molecule 28 is a protein called 60S ribosomal protein L27, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	lb	137	Total	C	N	O	S	0	0
			1094	707	196	187	4		

- Molecule 29 is a protein called Large ribosomal subunit protein uL15A.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	lc	148	Total	C	N	O	S	0	0
			1192	757	236	194	5		

- Molecule 30 is a protein called 60S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	ld	60	Total	C	N	O	S	0	0
			478	297	97	82	2		

- Molecule 31 is a protein called 60S ribosomal protein L30, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	le	103	Total	C	N	O	S	0	0
			768	486	131	149	2		

- Molecule 32 is a protein called 60S ribosomal protein L31, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	lf	146	Total	C	N	O	S	0	0
			1184	759	219	200	6		

- Molecule 33 is a protein called 60S ribosomal protein L32, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	lg	129	Total	C	N	O	S	0	0
			1058	672	209	172	5		

- Molecule 34 is a protein called 60S ribosomal protein L34, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	lh	105	Total	C	N	O	S	0	0
			820	512	169	133	6		

- Molecule 35 is a protein called uL29.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	li	122	Total	C	N	O	S	0	0
			974	620	188	162	4		

- Molecule 36 is a protein called 60S ribosomal protein L35a, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	lj	106	Total	C	N	O	S	0	0
			841	545	158	135	3		

- Molecule 37 is a protein called 60S ribosomal protein L36, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	lk	89	Total	C	N	O	S	0	0
			712	447	144	116	5		

- Molecule 38 is a protein called 60S ribosomal protein L37-A, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	ll	72	Total	C	N	O	S	0	0
			591	361	132	91	7		

- Molecule 39 is a protein called 60S ribosomal protein L37a, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	lm	90	Total	C	N	O	S	0	0
			688	428	135	119	6		

- Molecule 40 is a protein called 60S ribosomal protein L38 putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	ln	73	Total	C	N	O	S	0	0
			584	378	104	100	2		

- Molecule 41 is a protein called Ribosomal protein L39, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	lo	50	Total	C	N	O	S	0	0
			432	275	91	63	3		

- Molecule 42 is a protein called 60S ribosomal protein L40, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	lp	53	Total	C	N	O	S	0	0
			420	259	86	69	6		

- Molecule 43 is a protein called 60S ribosomal protein L44, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	lq	92	Total	C	N	O	S	0	0
			756	480	148	122	6		

- Molecule 44 is a protein called 40S ribosomal protein S25.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	sA	69	Total	C	N	O	S	0	0
			548	356	92	96	4		

- Molecule 45 is a protein called 40S ribosomal protein S26.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	sB	98	Total	C	N	O	S	0	0
			787	478	169	134	6		

- Molecule 46 is a protein called Small ribosomal subunit protein eS27.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	sC	33	Total	C	N	O	S	0	0
			257	167	43	46	1		

- Molecule 47 is a protein called 40S ribosomal protein S28, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	sD	60	Total	C	N	O	S	0	0
			468	289	93	84	2		

- Molecule 48 is a protein called Ribosomal protein S29, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	sE	55	Total	C	N	O	S	0	0
			442	273	90	75	4		

- Molecule 49 is a protein called Unknown peptide.

Mol	Chain	Residues	Atoms				AltConf	Trace
49	sH	2	Total	C	N	O	0	0
			9	6	2	1		

- Molecule 50 is a RNA chain called A/P-tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	sI	72	Total	C	N	O	P	0	0
			1533	685	278	499	71		

- Molecule 51 is a RNA chain called P/E-tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	sJ	77	Total	C	N	O	P	0	0
			1630	728	282	543	77		

- Molecule 52 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	sK	10	Total	C	N	O	P	0	0
			215	97	41	67	10		

- Molecule 53 is a RNA chain called 17S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	sa	1434	Total	C	N	O	P	0	0
			30685	13734	5586	9931	1434		

- Molecule 54 is a protein called Small ribosomal subunit protein uS2.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	sb	205	Total	C	N	O	S	0	0
			1626	1029	286	296	15		

- Molecule 55 is a protein called Small ribosomal subunit protein uS5.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	sc	215	Total	C	N	O	S	0	0
			1642	1052	291	291	8		

- Molecule 56 is a protein called 40S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	sd	219	Total	C	N	O	S	0	0
			1696	1072	310	303	11		

- Molecule 57 is a protein called Small ribosomal subunit protein eS1.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	se	163	Total	C	N	O	S	0	0
			1329	853	237	232	7		

- Molecule 58 is a protein called 40S ribosomal protein S4, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	sf	256	Total	C	N	O	S	0	0
			2031	1297	378	345	11		

- Molecule 59 is a protein called Small ribosomal subunit protein uS7.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	sg	181	Total	C	N	O	S	0	0
			1440	908	261	260	11		

- Molecule 60 is a protein called 40S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	sh	119	Total	C	N	O	S	0	0
			944	588	194	157	5		

- Molecule 61 is a protein called 40S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	si	110	Total	C	N	O	S	0	0
			854	559	152	142	1		

- Molecule 62 is a protein called 40S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	sj	127	Total	C	N	O	S	0	0
			990	611	198	177	4		

- Molecule 63 is a protein called Small ribosomal subunit protein uS4.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	sk	162	Total	C	N	O	S	0	0
			1323	845	251	221	6		

- Molecule 64 is a protein called 40S ribosomal protein S10, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	sl	91	Total	C	N	O	S	0	0
			729	475	122	123	9		

- Molecule 65 is a protein called 40S ribosomal protein S11, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	sm	141	Total	C	N	O	S	0	0
			1161	735	224	196	6		

- Molecule 66 is a protein called 40S ribosomal protein S13, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	so	76	Total	C	N	O	S	0	0
			644	410	123	108	3		

- Molecule 67 is a protein called Ribosomal protein S14, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
67	sp	133	Total	C	N	O	S	0	0
			999	615	192	186	6		

- Molecule 68 is a protein called 40S ribosomal protein S15, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	sq	105	Total	C	N	O	S	0	0
			842	543	150	144	5		

- Molecule 69 is a protein called 40S ribosomal protein S15a, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	sr	129	Total	C	N	O	S	0	0
			1022	650	186	181	5		

- Molecule 70 is a protein called 40S ribosomal protein S16, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	ss	141	Total	C	N	O	S	0	0
			1104	713	198	189	4		

- Molecule 71 is a protein called 40S ribosomal protein S17, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	st	81	Total	C	N	O	S	0	0
			676	424	135	116	1		

- Molecule 72 is a protein called Small ribosomal subunit protein uS13.

Mol	Chain	Residues	Atoms					AltConf	Trace
72	su	135	Total	C	N	O	S	0	0
			1096	681	224	185	6		

- Molecule 73 is a protein called Small ribosomal subunit protein eS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
73	sv	151	Total	C	N	O	S	0	0
			1214	777	218	212	7		

- Molecule 74 is a protein called 40S ribosomal protein S20, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
74	sw	98	Total	C	N	O	S	0	0
			766	486	133	142	5		

- Molecule 75 is a protein called 40S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	sx	83	Total	C	N	O	S	0	0
			651	412	117	119	3		

- Molecule 76 is a protein called 40S ribosomal protein S23, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	sy	106	Total	C	N	O	S	0	0
			836	522	169	142	3		

- Molecule 77 is a protein called 40S ribosomal protein S24, putative.

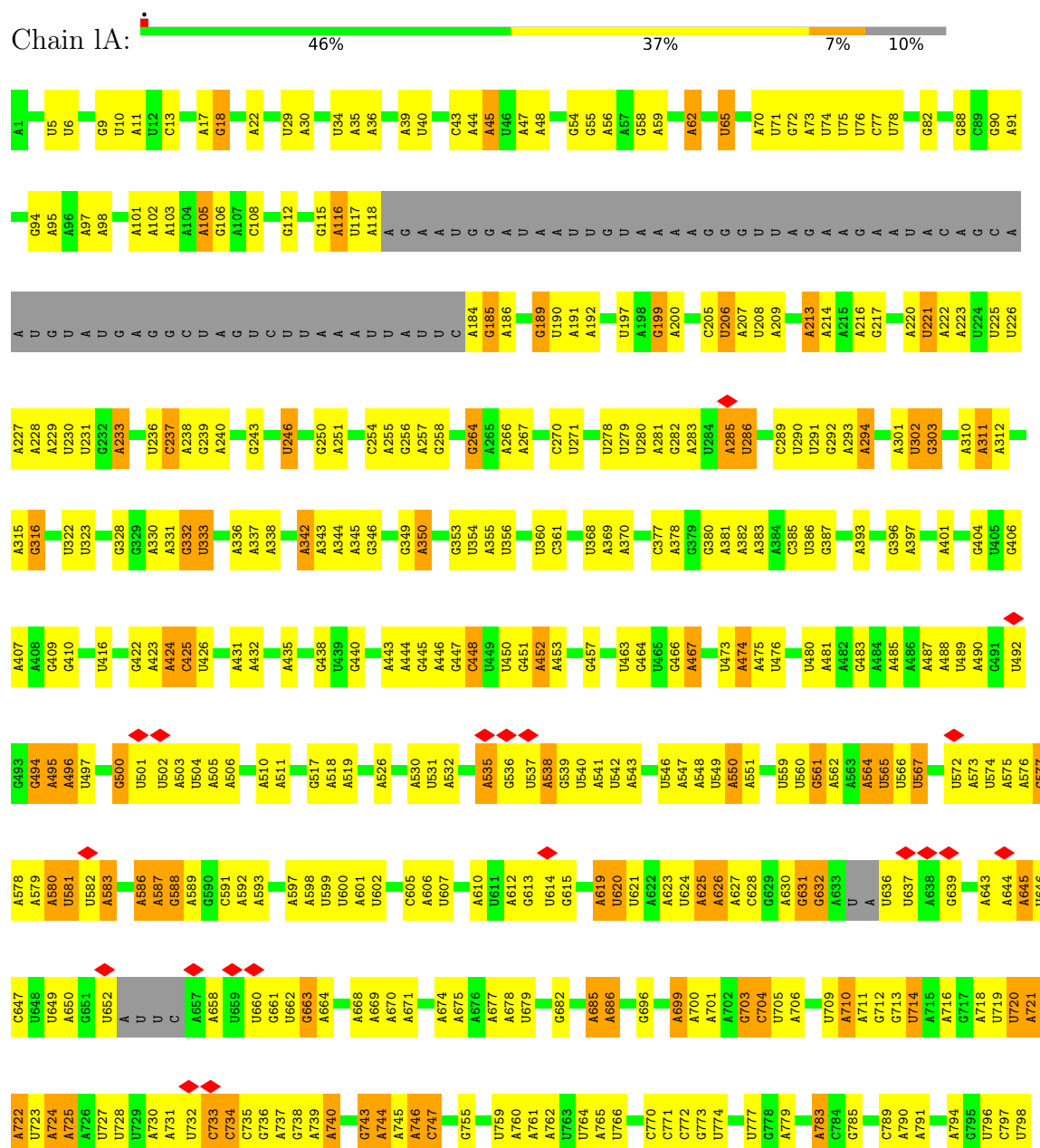


Mol	Chain	Residues	Atoms					AltConf	Trace
77	SZ	56	Total	C	N	O	S	0	0
			438	288	74	75	1		

### 3 Residue-property plots

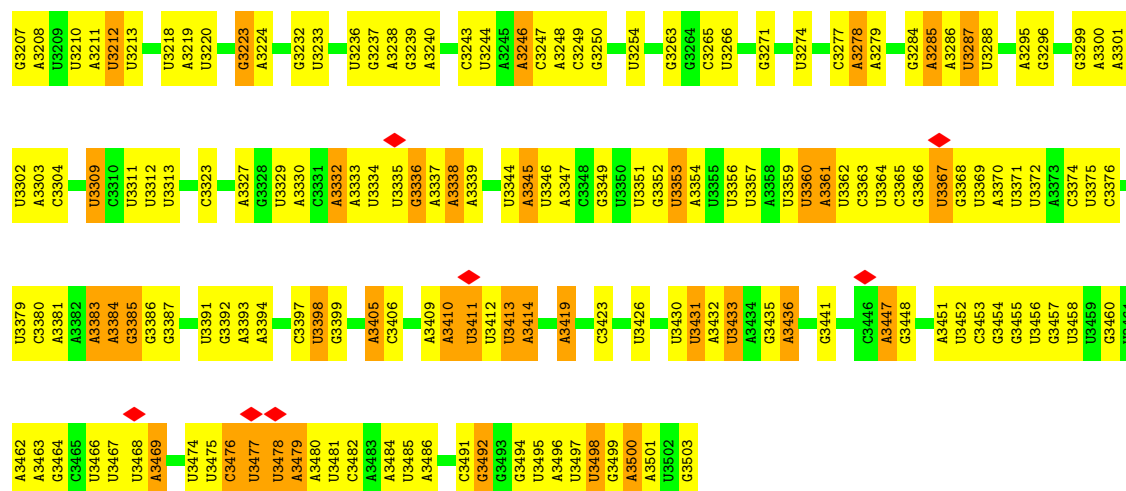
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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: 25S rRNA

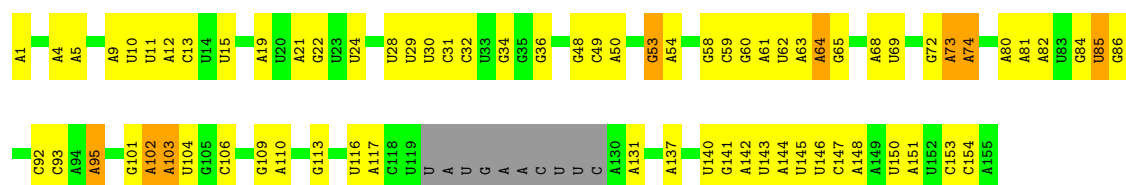




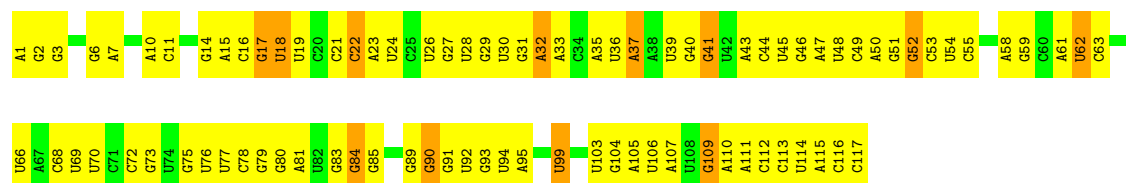
WORLDWIDE  
**PDB**  
PROTEIN DATA BANK



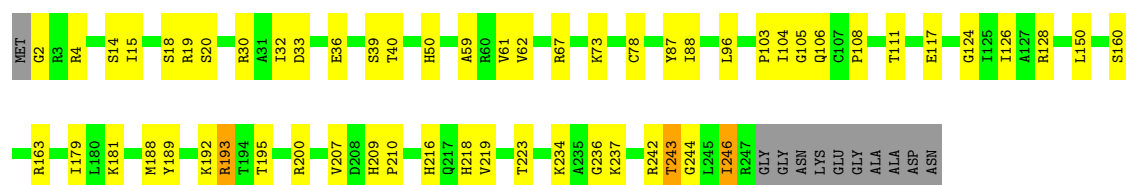
- Molecule 2: 5.8S rRNA



- Molecule 3: 5S rRNA

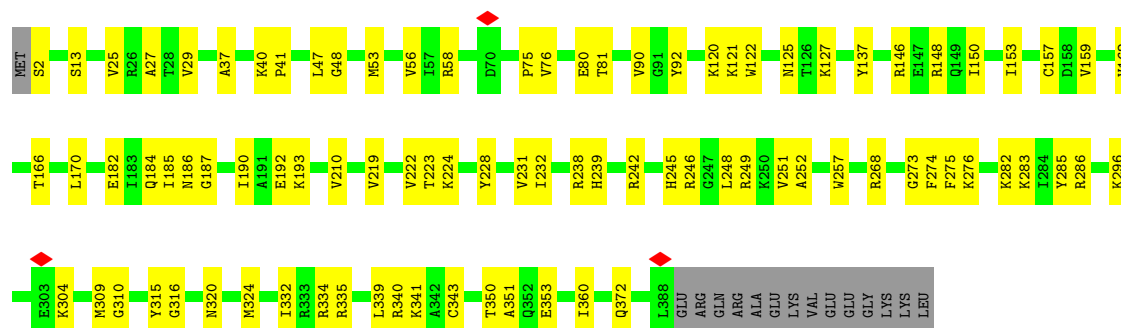


- Molecule 4: Large ribosomal subunit protein uL2



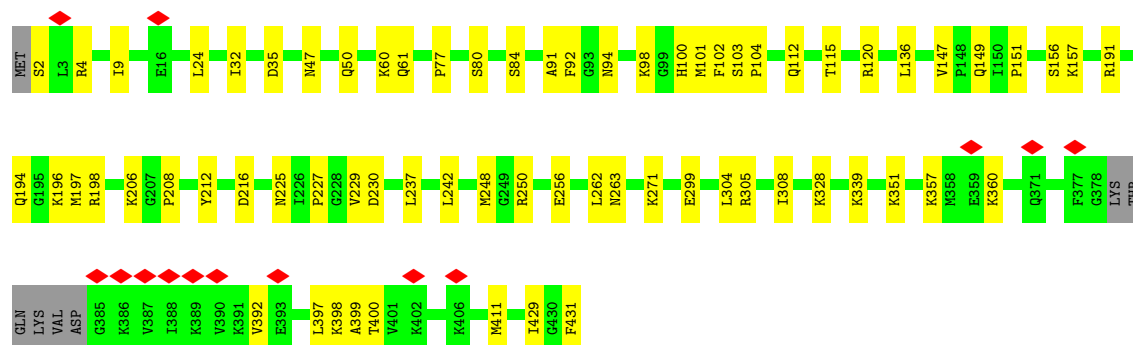
- Molecule 5: 60S ribosomal protein L3, putative





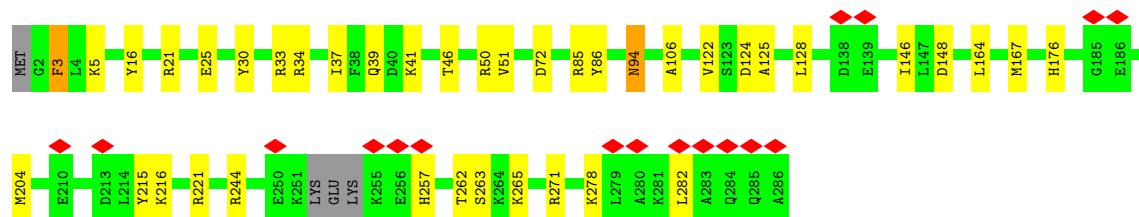
- Molecule 6: 60S ribosomal protein L4, putative

Chain 1F: 82% 16%



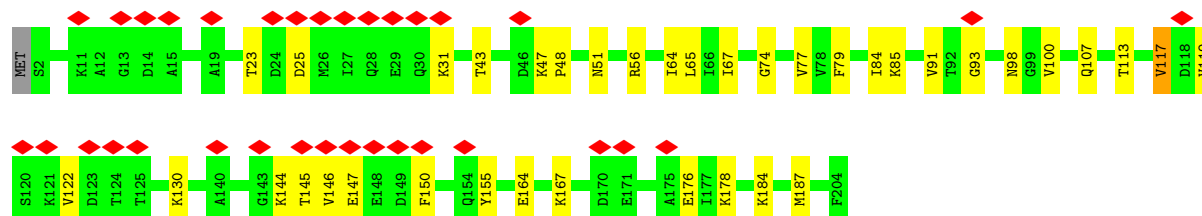
- Molecule 7: 60S ribosomal protein L5, putative

Chain 1G: 6% 85% 13%




- Molecule 8: Large ribosomal subunit protein eL6

Chain 1H: 16% 81% 18%



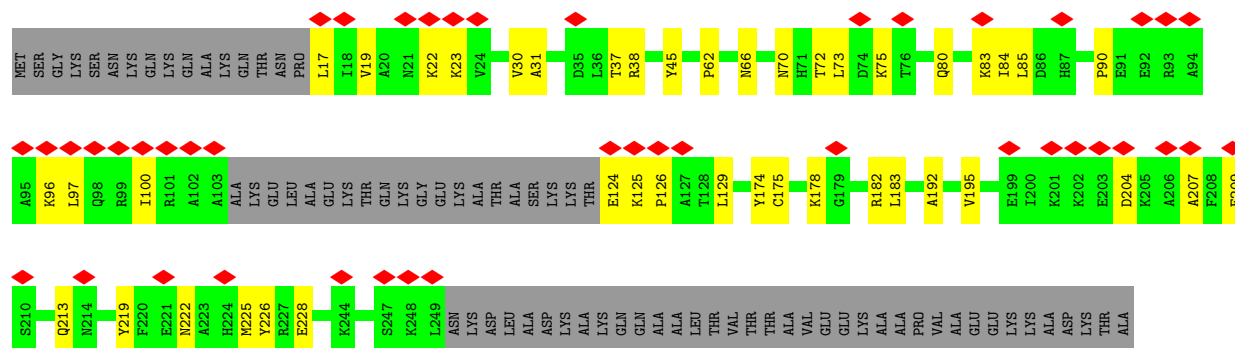
- Molecule 9: 60S ribosomal protein L7, putative

Chain II: 



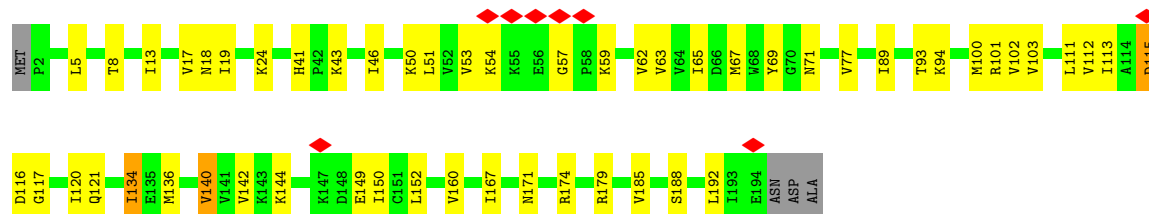
- Molecule 10: 60S ribosomal protein L7a

Chain IJ: 




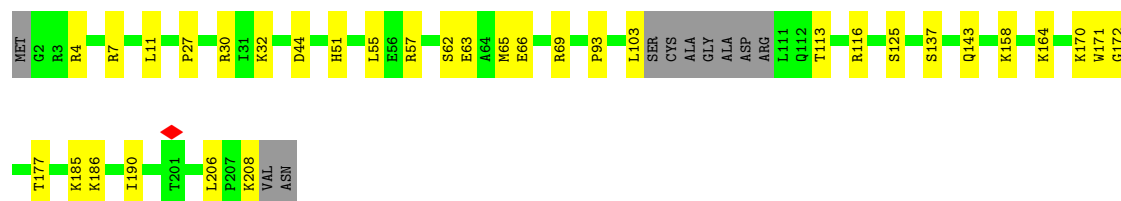
- Molecule 11: 60S ribosomal protein L9, putative

Chain IK: 




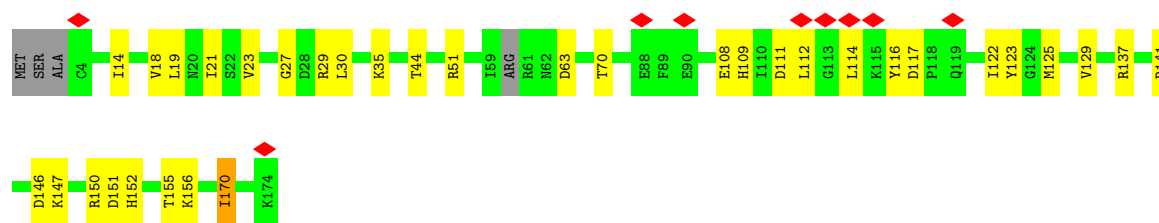
- Molecule 12: Ribosomal protein L10, putative

Chain IL: 

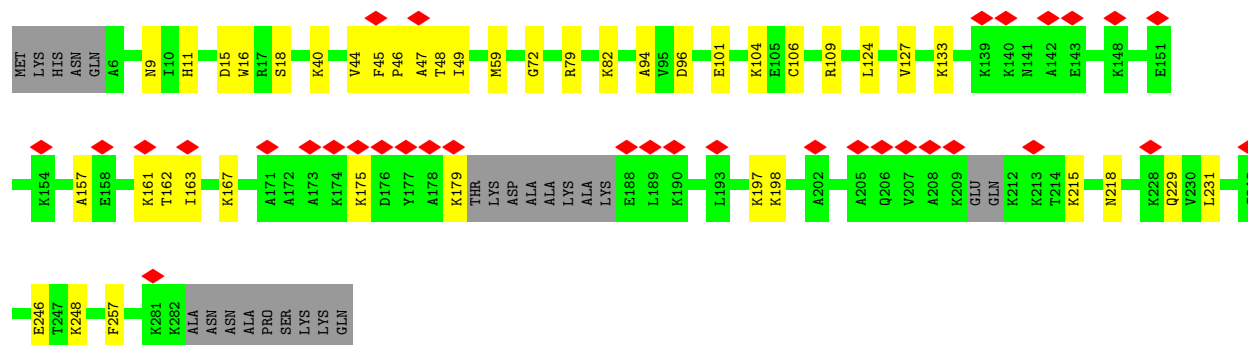
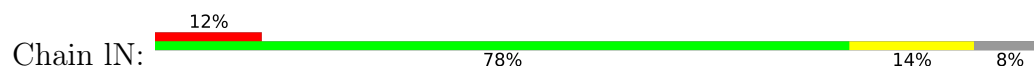


- Molecule 13: 60S ribosomal protein L11, putative

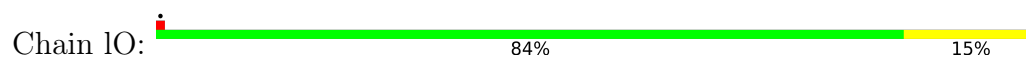
Chain IM: 



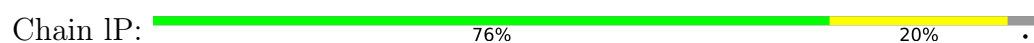
- Molecule 14: 60S ribosomal protein L13, putative



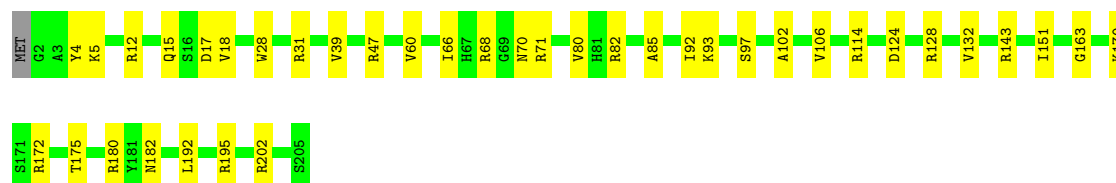
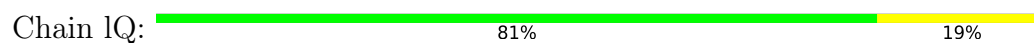
- Molecule 15: 60S ribosomal protein L13, putative



- Molecule 16: 60S ribosomal protein L14, putative



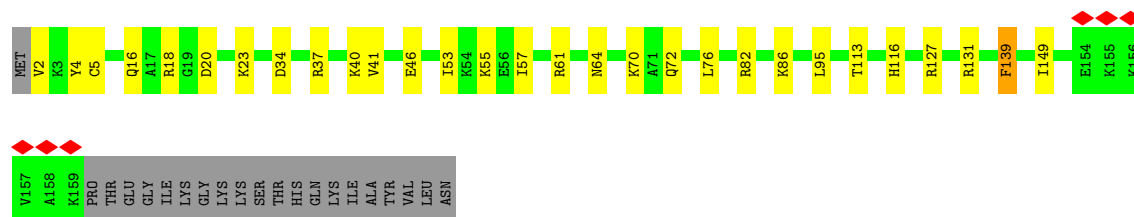
- Molecule 17: Ribosomal protein L15



- Molecule 18: 60S ribosomal protein L17, putative







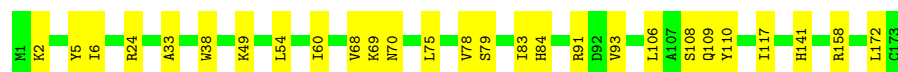
- Molecule 19: 60S ribosomal protein L18, putative

Chain IS: 81% 18% ..



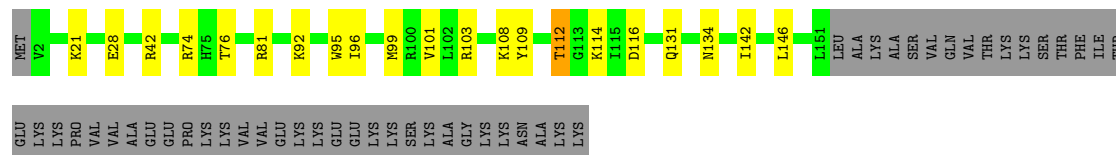
- Molecule 20: 60S ribosomal protein L18a

Chain IT: 84% 16%



- Molecule 21: Ribosomal protein L19

Chain IU: 65% 10% 24%



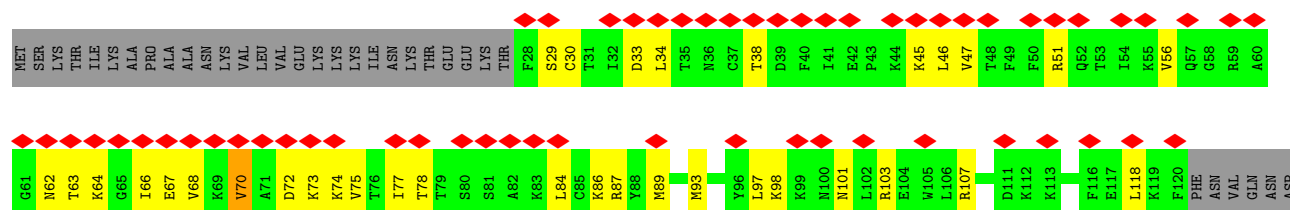
- Molecule 22: 60S ribosomal protein L21, putative

Chain IV: 86% 14%



- Molecule 23: Large ribosomal subunit protein eL22

Chain IW: 42% 43% 24% 32%



GLU  
GLU  
GLU  
VAL  
ARG  
ALA  
GLU  
GLU  
THR  
ASN  
ALA  
GLN

- Molecule 24: 60S ribosomal protein L23, putative

Chain IX: 79% 16% 5%

MET PRO ARG GLY GLY GLY GLY GLY G8 R15 V16 T17 C18 N21 N22 K71 A23 S24 I40 S41 V42 K43 L52 F53 R54 M60 V61 R83 Q84 R85 R86 T87 R88 R89 Y97 M108 T118 K123 V140

- Molecule 25: Ribosomal protein L23A, putative

Chain IY: 83% 12% . .

MET ALA THR LYS R6 K17 R27 D57 A69 N70 K71 T72 K75 K76 G83 V84 K85 V86 L95 K99 D108 V109 E110 A111 M112 E113 K117 L120 F121

- Molecule 26: 60S ribosomal protein L24, putative

Chain IZ: 29% 6% 65%

MET SER ILE THR Q6 S11 R21 R25 F31 T54 A55 I56 Q59 L60 N61 K62 LYS GLY GLN GLN ASN GLU LEU VAL GLU LYS LYS THR ARG ARG VAL ILE LYS VAL ASN ARG GLY TYR SER GLY ILE SER SER ALA ALA GLU LEU PRO ILE ALA LYS ARG LYS GLN THR

PHE  
ASN  
SER  
ARG

- Molecule 27: 60S ribosomal protein L26, putative

Chain Ia: 80% 18% .

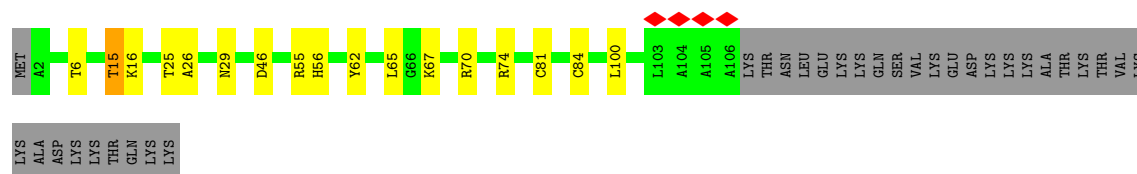
M1 K2 A21 N22 R26 S31 A32 R33 K36 E37 L38 Y42 P48 D52 K59 Q60 K63 K67 R73 S74 K75 Y76 V77 D81 K82 K85 T86 K87 A88 N89 I95 L109 R113 E114 S123 V145 N150 I153 T162

- Molecule 28: 60S ribosomal protein L27, putative

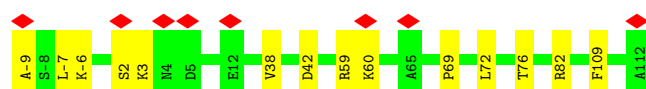
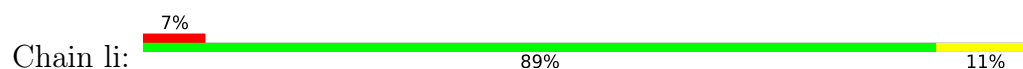
Chain Ib: 19% 74% 24% . .

MET SER K3 V10 V11 R17 G20 A23 T33 K34 D35 R36 K37 Y38 V43 V46 E47 R48 A49 P50 I53 T54 R55 K56 A59 K60 V61 Q62 E63 M64 V68 K69 N78 P82 T83 N88 L89 E90 Q91 F92 N93 I94 I95 K96 Q97 V98 K99

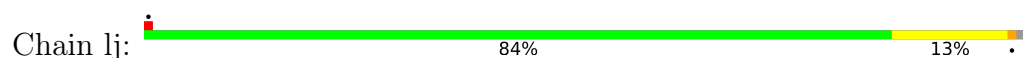




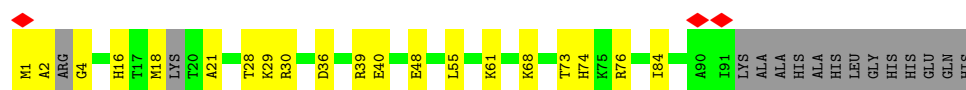
• Molecule 35: uL29



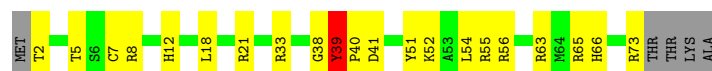
• Molecule 36: 60S ribosomal protein L35a, putative



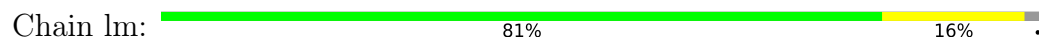
• Molecule 37: 60S ribosomal protein L36, putative



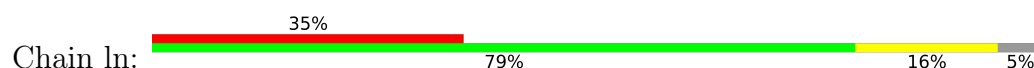
• Molecule 38: 60S ribosomal protein L37-A, putative

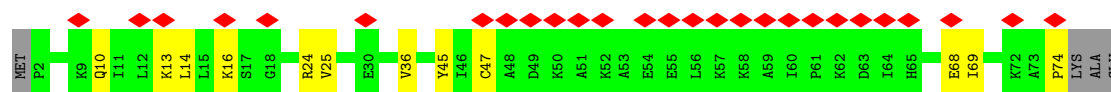


• Molecule 39: 60S ribosomal protein L37a, putative



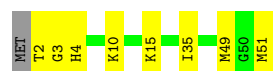
• Molecule 40: 60S ribosomal protein L38 putative





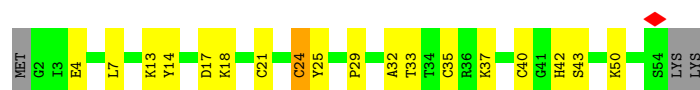
- Molecule 41: Ribosomal protein L39, putative

Chain lo: 82% 16%



- Molecule 42: 60S ribosomal protein L40, putative

Chain lp: 62% 30% 5%



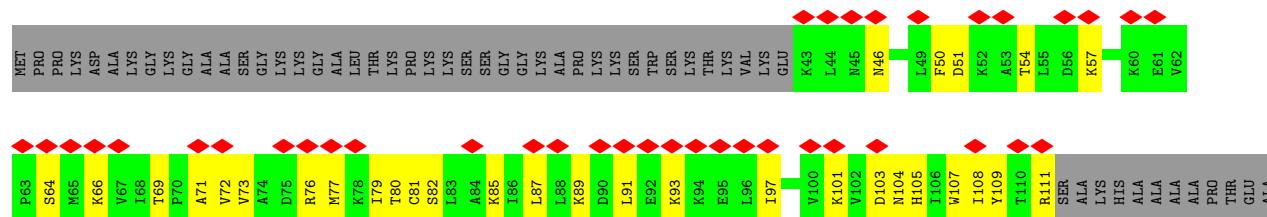
- Molecule 43: 60S ribosomal protein L44, putative

Chain lq: 79% 15% 6%



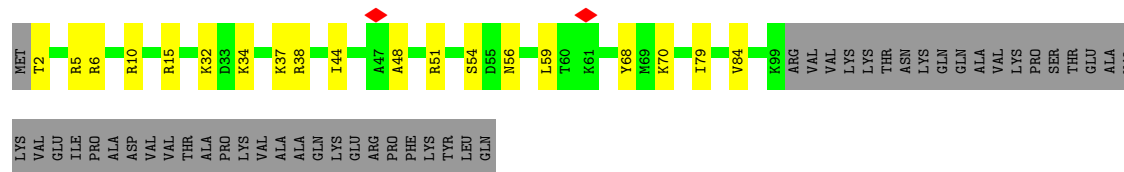
- Molecule 44: 40S ribosomal protein S25

Chain sA: 28% 28% 23% 50%

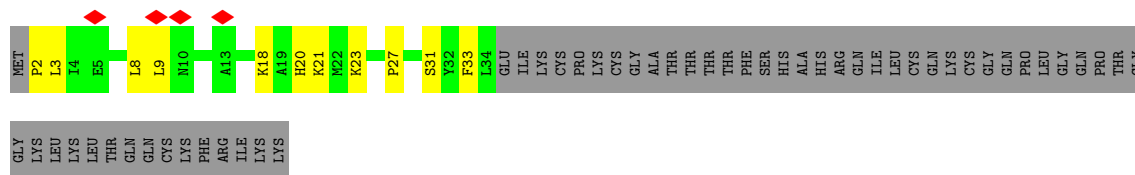


- Molecule 45: 40S ribosomal protein S26

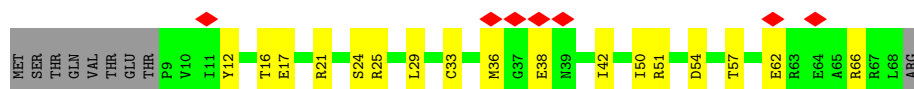
Chain sB: 55% 13% 32%



- Molecule 46: Small ribosomal subunit protein eS27



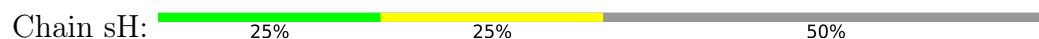
- Molecule 47: 40S ribosomal protein S28, putative



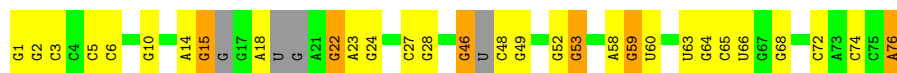
- Molecule 48: Ribosomal protein S29, putative



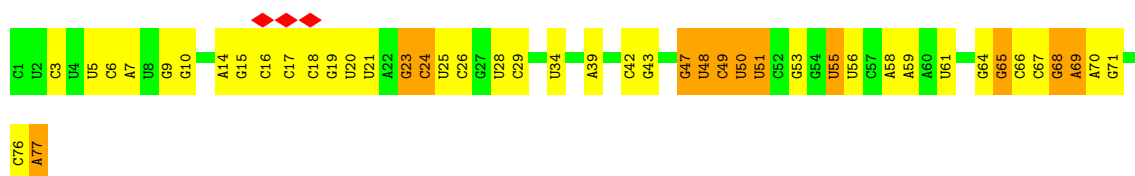
- Molecule 49: Unknown peptide



- Molecule 50: A/P-tRNA



- Molecule 51: P/E-tRNA

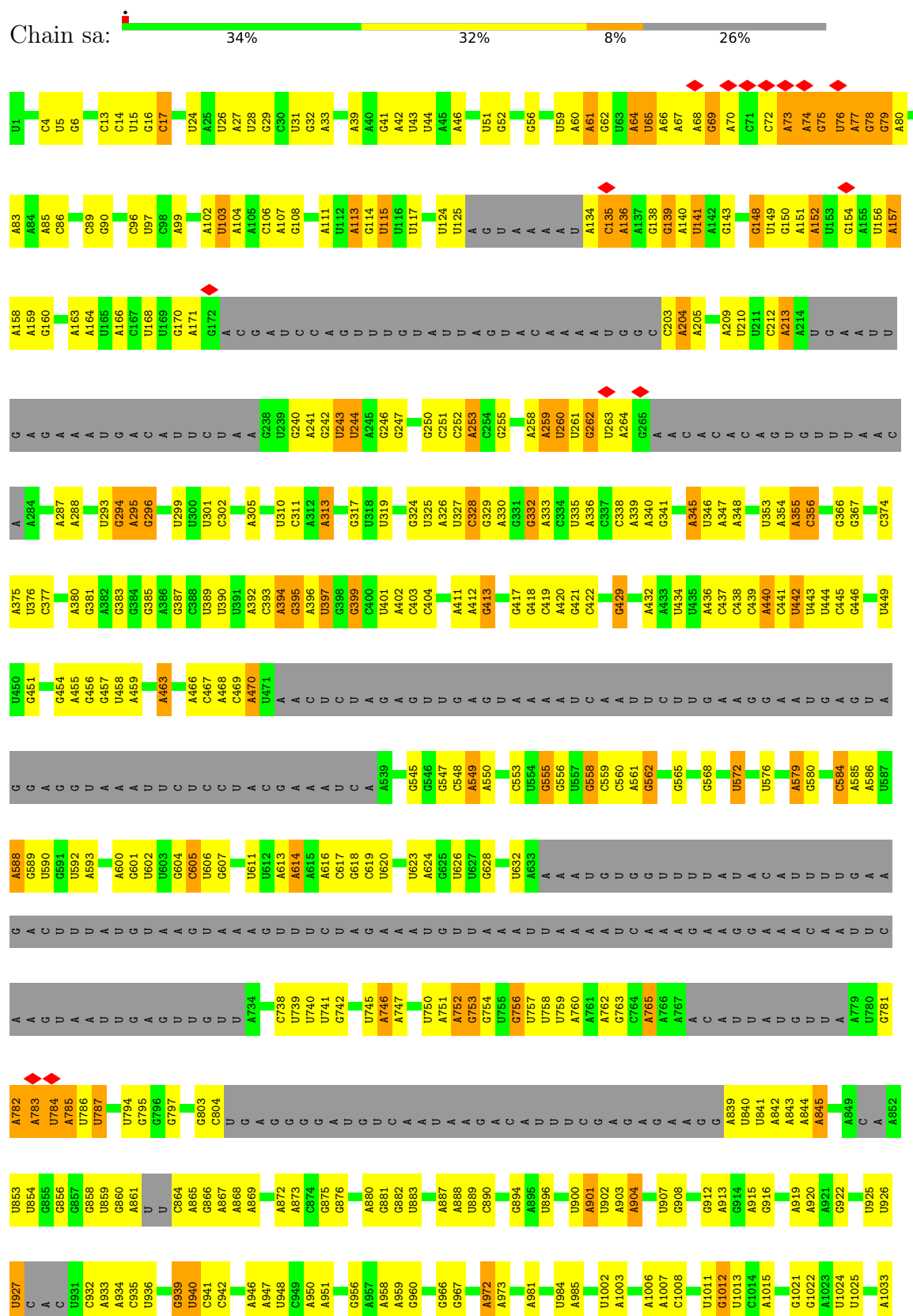


- Molecule 52: mRNA



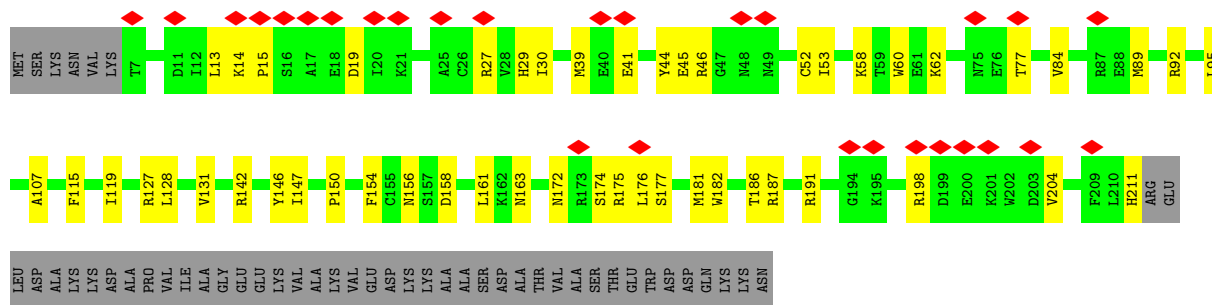
There are no outlier residues recorded for this chain.

• Molecule 53: 17S rRNA

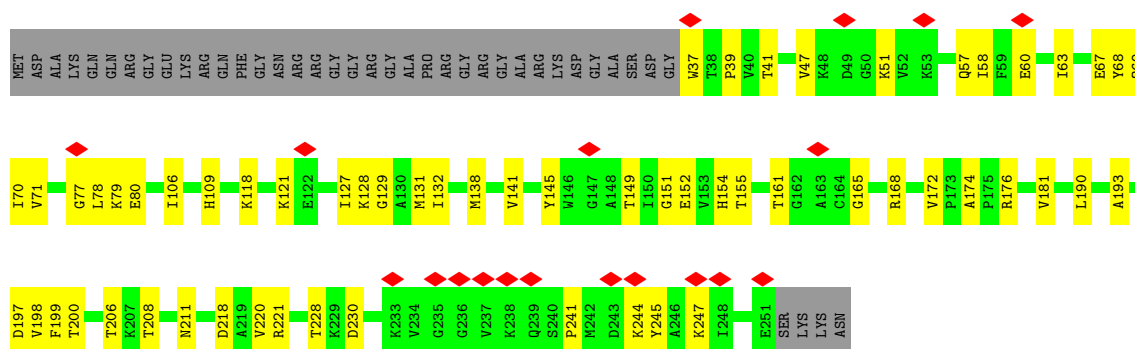




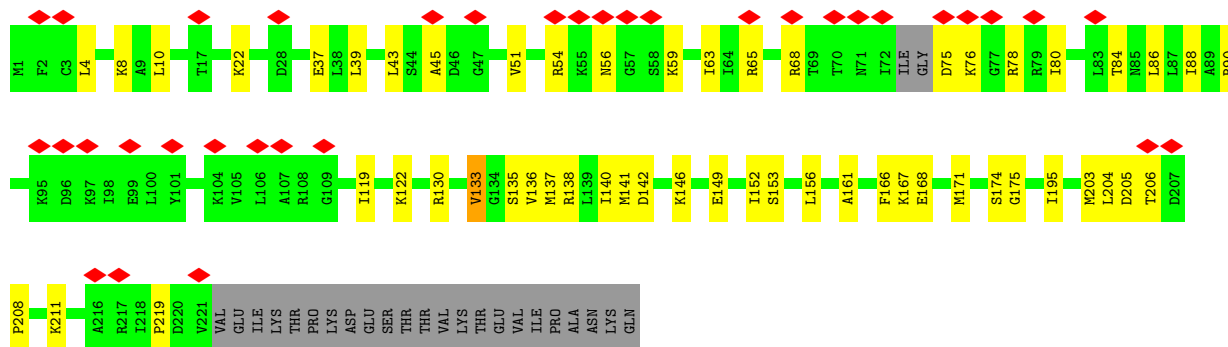




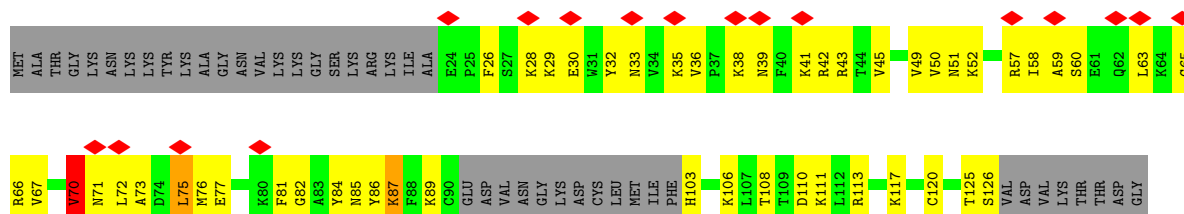
• Molecule 55: Small ribosomal subunit protein uS5



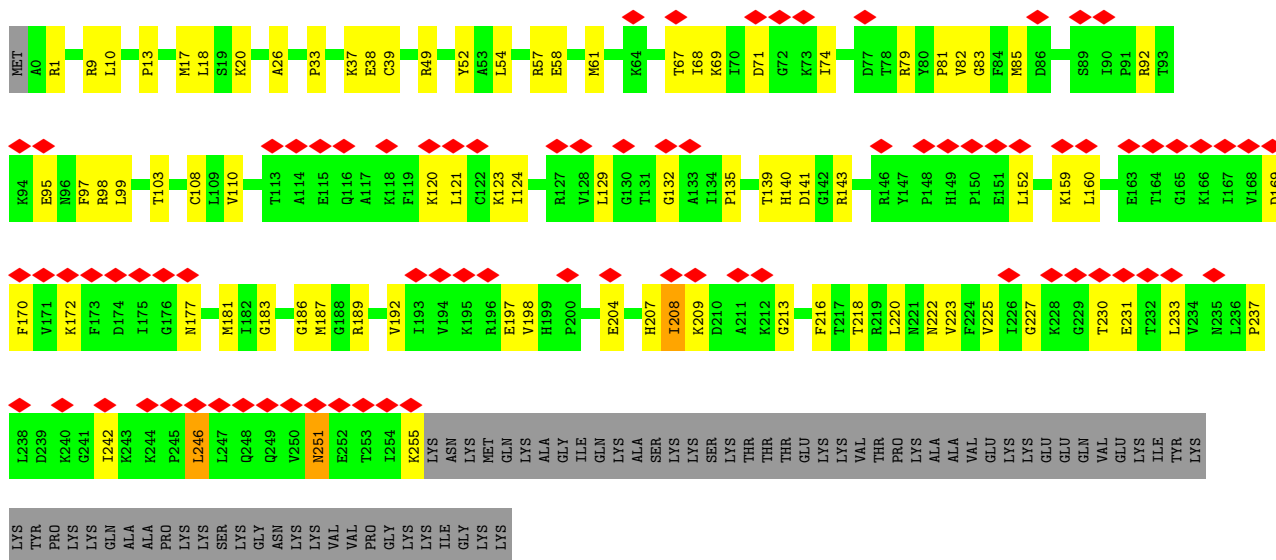
• Molecule 56: 40S ribosomal protein S3



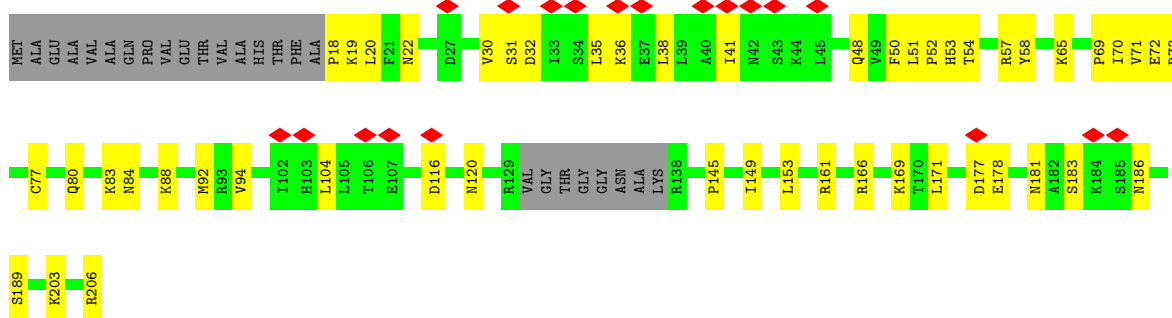
• Molecule 57: Small ribosomal subunit protein eS1



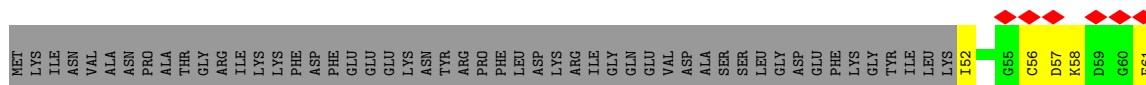
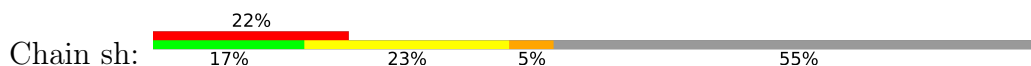
- Molecule 58: 40S ribosomal protein S4, putative



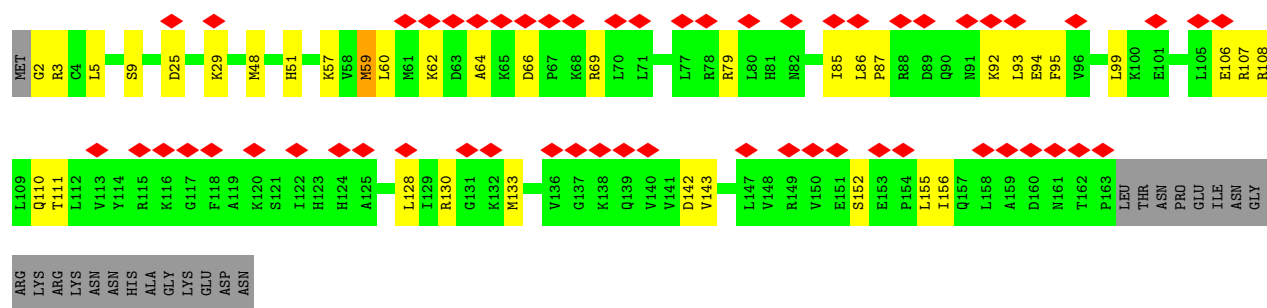
- Molecule 59: Small ribosomal subunit protein uS7



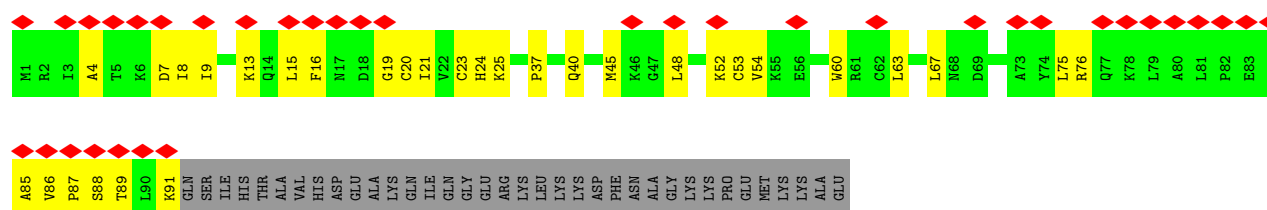
- Molecule 60: 40S ribosomal protein S6



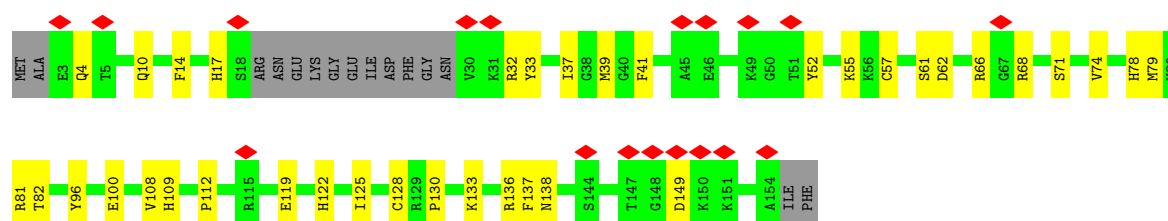




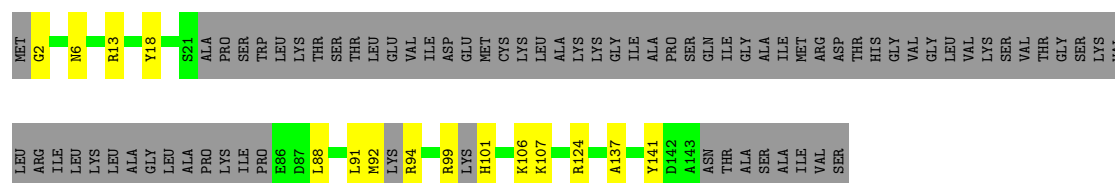
- Molecule 64: 40S ribosomal protein S10, putative



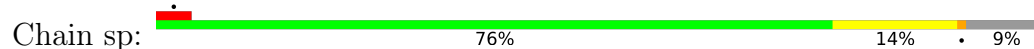
- Molecule 65: 40S ribosomal protein S11, putative

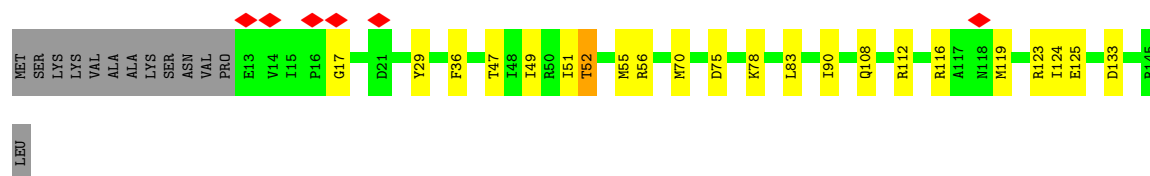


- Molecule 66: 40S ribosomal protein S13, putative

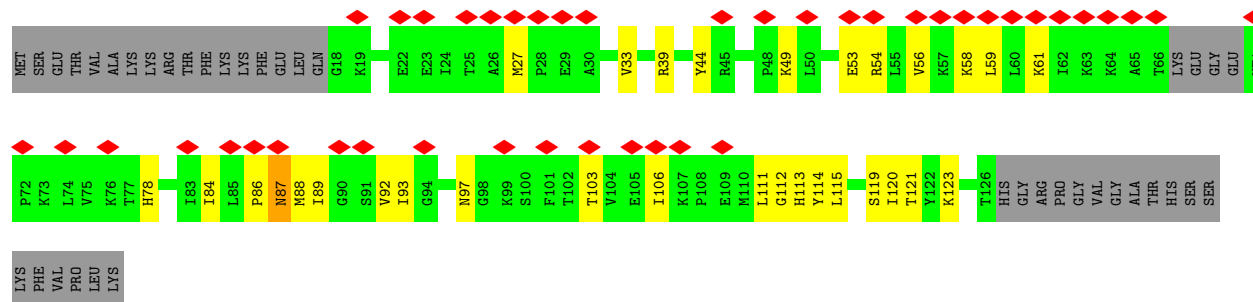


- Molecule 67: Ribosomal protein S14, putative

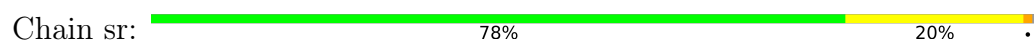




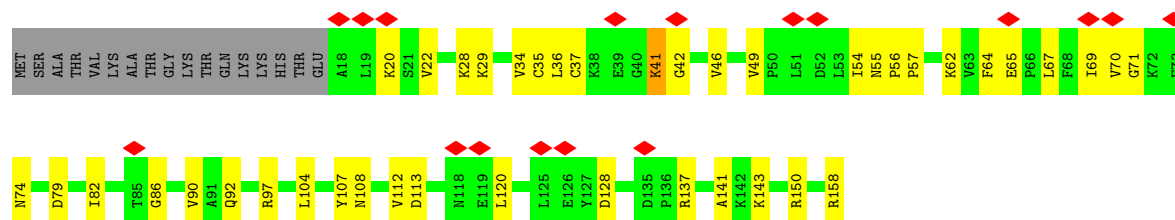
- Molecule 68: 40S ribosomal protein S15, putative



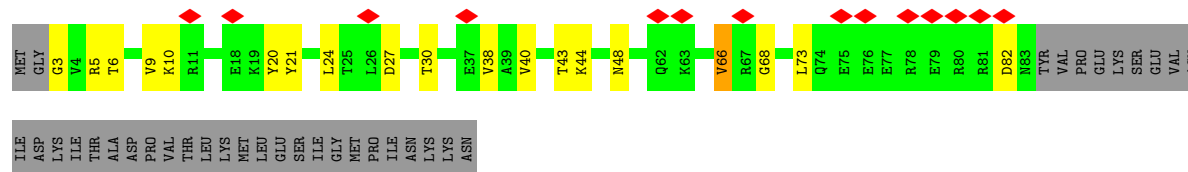
- Molecule 69: 40S ribosomal protein S15a, putative



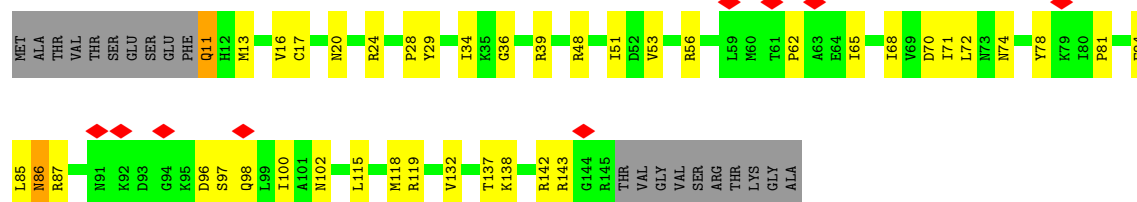
- Molecule 70: 40S ribosomal protein S16, putative



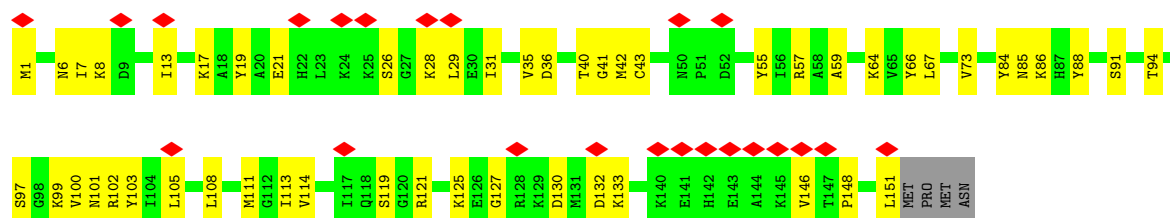
- Molecule 71: 40S ribosomal protein S17, putative



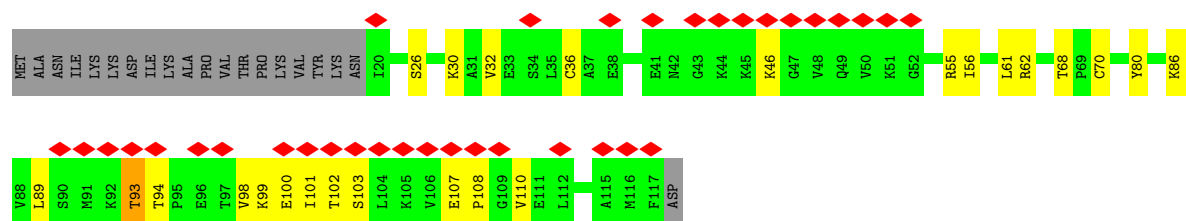
- Molecule 72: Small ribosomal subunit protein uS13



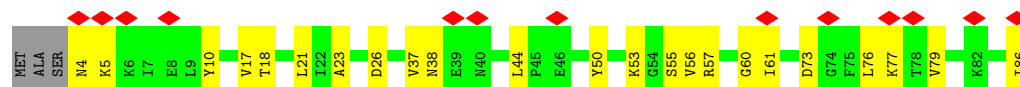
• Molecule 73: Small ribosomal subunit protein eS19



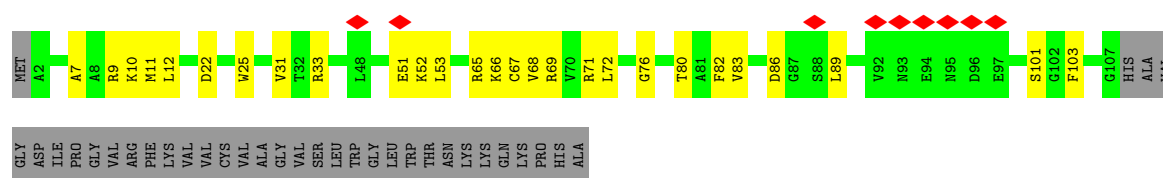
• Molecule 74: 40S ribosomal protein S20, putative



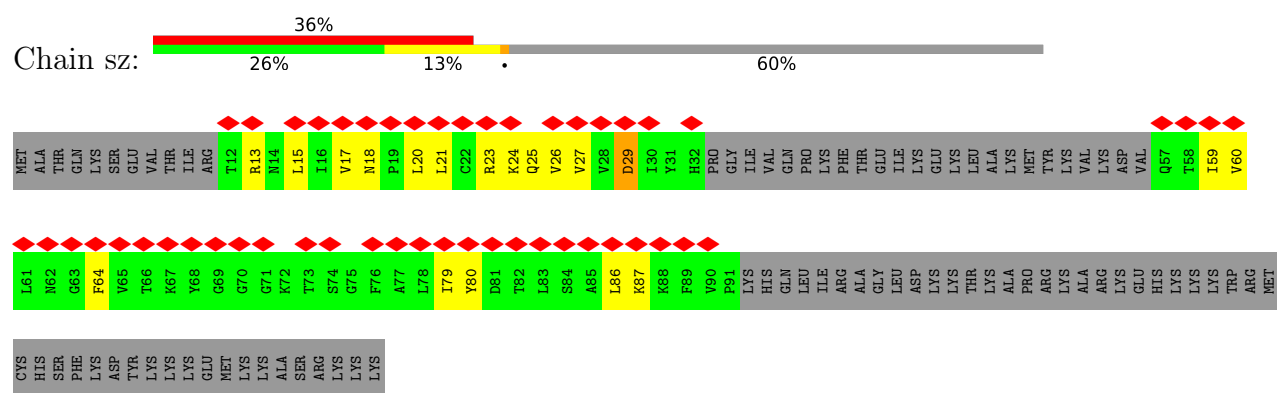
• Molecule 75: 40S ribosomal protein S21



• Molecule 76: 40S ribosomal protein S23, putative



• Molecule 77: 40S ribosomal protein S24, putative



## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	39958	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	1.106	Depositor
Minimum defocus (nm)	1800	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	75000	Depositor
Image detector	FEI FALCON III (4k x 4k)	Depositor
Maximum map value	18.910	Depositor
Minimum map value	-5.957	Depositor
Average map value	0.000	Depositor
Map value standard deviation	1.000	Depositor
Recommended contour level	2.8	Depositor
Map size (Å)	428.00003, 428.00003, 428.00003	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.07, 1.07, 1.07	Depositor



## 5 Model quality [i](#)

### 5.1 Standard geometry [i](#)

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	lA	0.12	0/75319	0.28	0/117329
2	lB	0.11	0/3470	0.27	0/5401
3	lC	0.12	0/2765	0.35	2/4303 (0.0%)
4	lD	0.10	0/1920	0.25	0/2582
5	lE	0.09	0/3140	0.25	0/4216
6	lF	0.09	0/3311	0.26	0/4446
7	lG	0.10	0/2284	0.26	0/3059
8	lH	0.09	0/1640	0.27	0/2204
9	lI	0.08	0/1680	0.23	0/2252
10	lJ	0.09	0/1757	0.26	0/2360
11	lK	0.07	0/1562	0.21	0/2103
12	lL	0.09	0/1633	0.23	0/2184
13	lM	0.08	0/1369	0.23	0/1834
14	lN	0.09	0/2150	0.23	0/2867
15	lO	0.09	0/1646	0.23	0/2209
16	lP	0.08	0/1032	0.21	0/1388
17	lQ	0.09	0/1707	0.22	0/2276
18	lR	0.08	0/1251	0.23	0/1675
19	lS	0.09	0/1337	0.23	0/1789
20	lT	0.09	0/1445	0.26	0/1946
21	lU	0.09	0/1253	0.23	0/1666
22	lV	0.10	0/1351	0.25	0/1819
23	lW	0.12	0/772	0.29	0/1028
24	lX	0.09	0/1030	0.23	0/1384
25	lY	0.08	0/941	0.21	0/1262
26	lZ	0.09	0/492	0.23	0/656
27	la	0.08	0/1673	0.23	0/2236
28	lb	0.09	0/1112	0.26	0/1489
29	lc	0.09	0/1223	0.23	0/1636
30	ld	0.10	0/485	0.25	0/639
31	le	0.08	0/776	0.29	0/1044
32	lf	0.10	0/1205	0.25	0/1609
33	lg	0.09	0/1075	0.23	0/1434
34	lh	0.09	0/833	0.22	0/1115

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
35	li	0.07	0/984	0.21	0/1310
36	lj	0.11	0/862	0.25	0/1163
37	lk	0.07	0/721	0.20	0/955
38	ll	0.11	0/602	0.28	0/797
39	lm	0.09	0/696	0.23	0/928
40	ln	0.10	0/592	0.27	0/789
41	lo	0.09	0/444	0.20	0/587
42	lp	0.13	0/425	0.42	1/563 (0.2%)
43	lq	0.09	0/770	0.22	0/1019
44	sA	0.13	0/555	0.37	0/749
45	sB	0.09	0/797	0.23	0/1062
46	sC	0.08	0/263	0.25	0/357
47	sD	0.10	0/470	0.25	0/630
48	sE	0.15	0/449	0.37	0/595
50	sI	0.13	0/1710	0.28	0/2657
51	sJ	0.09	0/1818	0.24	0/2827
52	sK	0.07	0/241	0.20	0/373
53	sa	0.11	0/34364	0.28	0/53526
54	sb	0.08	0/1659	0.22	0/2243
55	sc	0.11	0/1673	0.29	0/2257
56	sd	0.08	0/1716	0.24	0/2297
57	se	0.41	0/1346	0.95	6/1793 (0.3%)
58	sf	0.10	0/2072	0.28	0/2792
59	sg	0.08	0/1460	0.25	0/1960
60	sh	0.19	0/952	0.54	0/1265
61	si	0.11	0/868	0.30	0/1166
62	sj	0.08	0/1002	0.22	0/1341
63	sk	0.07	0/1344	0.22	0/1800
64	sl	0.08	0/745	0.24	0/1007
65	sm	0.08	0/1187	0.24	0/1586
66	so	0.07	0/654	0.20	0/866
67	sp	0.09	0/1013	0.22	0/1361
68	sq	0.11	0/856	0.37	0/1143
69	sr	0.10	0/1040	0.28	0/1404
70	ss	0.08	0/1121	0.23	0/1503
71	st	0.10	0/684	0.30	0/914
72	su	0.13	0/1113	0.37	0/1491
73	sv	0.09	0/1239	0.23	0/1665
74	sw	0.10	0/776	0.31	0/1044
75	sx	0.10	0/663	0.28	0/898
76	sy	0.07	0/848	0.24	0/1131
77	sz	0.09	0/445	0.24	0/601
All	All	0.11	0/199878	0.28	9/293855 (0.0%)

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
38	ll	0	1
48	sE	0	1
57	se	0	2
60	sh	0	2
68	sq	0	1
All	All	0	7

There are no bond length outliers.

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
57	se	70	VAL	N-CA-C	-21.55	81.78	109.58
3	lC	62	U	OP2-P-O3'	-8.82	81.54	108.00
3	lC	62	U	OP1-P-O3'	-8.48	82.56	108.00
57	se	39	ASN	CA-C-N	-6.54	110.65	122.54
57	se	39	ASN	C-N-CA	-6.54	110.65	122.54
42	lp	24	CYS	CA-CB-SG	6.12	128.48	114.40
57	se	75	LEU	CA-CB-CG	5.51	135.60	116.30
57	se	70	VAL	CA-C-N	-5.46	114.38	122.56
57	se	70	VAL	C-N-CA	-5.46	114.38	122.56

There are no chirality outliers.

All (7) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
38	ll	39	TYR	Peptide
48	sE	15	GLY	Peptide
57	se	176	LYS	Peptide
57	se	195	LEU	Peptide
60	sh	199	ALA	Peptide
60	sh	200	LYS	Peptide
68	sq	87	ASN	Peptide

## 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	lA	67215	0	33720	1093	0
2	lB	3097	0	1552	46	0
3	lC	2477	0	1252	87	0
4	lD	1881	0	1928	43	0
5	lE	3076	0	3209	60	0
6	lF	3253	0	3444	56	0
7	lG	2245	0	2325	33	0
8	lH	1608	0	1728	29	0
9	lI	1658	0	1802	21	0
10	lJ	1727	0	1849	27	0
11	lK	1538	0	1598	39	0
12	lL	1597	0	1654	21	0
13	lM	1350	0	1390	25	0
14	lN	2122	0	2316	32	0
15	lO	1616	0	1700	19	0
16	lP	1020	0	1104	19	0
17	lQ	1676	0	1777	33	0
18	lR	1232	0	1307	22	0
19	lS	1316	0	1420	23	0
20	lT	1413	0	1479	18	0
21	lU	1235	0	1369	18	0
22	lV	1320	0	1406	18	0
23	lW	761	0	811	23	0
24	lX	1015	0	1054	17	0
25	lY	926	0	997	12	0
26	lZ	481	0	518	7	0
27	la	1651	0	1822	26	0
28	lb	1094	0	1174	24	0
29	lc	1192	0	1205	19	0
30	ld	478	0	507	15	0
31	le	768	0	810	15	0
32	lf	1184	0	1270	22	0
33	lg	1058	0	1140	15	0
34	lh	820	0	864	15	0
35	li	974	0	1093	8	0
36	lj	841	0	878	11	0
37	lk	712	0	755	19	0
38	ll	591	0	617	16	0
39	lm	688	0	726	12	0
40	ln	584	0	643	8	0
41	lo	432	0	444	8	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
42	lp	420	0	450	19	0
43	lq	756	0	821	12	0
44	sA	548	0	604	25	0
45	sB	787	0	833	16	0
46	sC	257	0	270	9	0
47	sD	468	0	500	14	0
48	sE	442	0	444	17	0
49	sH	9	0	4	1	0
50	sI	1533	0	785	22	0
51	sJ	1630	0	829	31	0
52	sK	215	0	108	0	0
53	sa	30685	0	15419	589	0
54	sb	1626	0	1627	30	0
55	sc	1642	0	1721	39	0
56	sd	1696	0	1794	41	0
57	se	1329	0	1420	54	0
58	sf	2031	0	2145	59	0
59	sg	1440	0	1506	32	0
60	sh	944	0	1023	81	0
61	si	854	0	928	20	0
62	sj	990	0	1031	34	0
63	sk	1323	0	1420	31	0
64	sl	729	0	760	24	0
65	sm	1161	0	1181	35	0
66	so	644	0	664	13	0
67	sp	999	0	1024	18	0
68	sq	842	0	913	22	0
69	sr	1022	0	1051	20	0
70	ss	1104	0	1185	33	0
71	st	676	0	718	14	0
72	su	1096	0	1143	30	0
73	sv	1214	0	1254	41	0
74	sw	766	0	829	20	0
75	sx	651	0	668	16	0
76	sy	836	0	885	19	0
77	sz	438	0	465	11	0
All	All	185725	0	137079	3057	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 10.

All (3057) 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)
1:lA:511:A:H62	1:lA:561:G:H21	1.01	0.95
53:sa:389:U:H3	53:sa:396:A:H62	1.07	0.95
3:lC:27:G:H1	3:lC:50:A:H61	1.12	0.94
57:se:72:LEU:HB3	57:se:81:PHE:HB3	1.52	0.91
3:lC:79:G:H1	3:lC:95:A:H2	1.13	0.91
50:sI:15:G:H22	50:sI:48:C:H42	1.18	0.90
1:lA:1841:G:H22	1:lA:1975:G:H1	1.18	0.89
68:sq:97:ASN:HB3	68:sq:119:SER:HB2	1.54	0.89
1:lA:3474:U:H3	1:lA:3480:A:H62	1.21	0.87
53:sa:1824:G:H1	53:sa:1890:U:H3	0.88	0.86
1:lA:511:A:H62	1:lA:561:G:N2	1.73	0.86
1:lA:737:A:H3'	1:lA:738:G:H21	1.43	0.83
3:lC:27:G:H1	3:lC:50:A:N6	1.76	0.83
51:sJ:55:U:O2	51:sJ:59:A:N7	2.11	0.83
1:lA:511:A:N6	1:lA:561:G:H21	1.76	0.82
1:lA:2269:U:H5'	1:lA:2270:G:H5'	1.61	0.82
3:lC:52:G:N2	3:lC:54:U:O4	2.13	0.82
1:lA:225:U:H3	1:lA:282:G:H1	1.27	0.82
3:lC:69:U:H3	3:lC:104:G:H1	1.28	0.81
1:lA:3454:G:H1	1:lA:3501:A:H2	1.25	0.81
1:lA:3475:U:H3	1:lA:3479:A:N6	1.79	0.81
53:sa:876:G:N2	53:sa:896:U:O4	2.14	0.81
1:lA:2098:A:H61	1:lA:2415:C:H42	1.29	0.79
1:lA:3431:U:H3	1:lA:3441:G:H1	1.30	0.79
65:sm:128:CYS:SG	65:sm:138:ASN:ND2	2.54	0.79
50:sI:15:G:H22	50:sI:48:C:N4	1.80	0.79
60:sh:186:THR:OG1	60:sh:189:ARG:NH2	2.15	0.79
53:sa:150:G:H21	53:sa:152:A:H8	1.31	0.78
50:sI:15:G:N2	50:sI:48:C:H42	1.80	0.78
57:se:71:ASN:OD1	57:se:75:LEU:HD23	1.83	0.78
23:IW:70:VAL:HG22	23:IW:72:ASP:H	1.49	0.78
53:sa:1758:G:H2'	53:sa:1759:A:H8	1.49	0.78
1:lA:206:U:H3	1:lA:303:G:H1	1.32	0.78
1:lA:541:A:H2'	1:lA:542:U:H6	1.49	0.77
1:lA:668:A:H2'	1:lA:669:A:H8	1.48	0.77
3:lC:79:G:N1	3:lC:95:A:C2	2.47	0.77
43:lq:72:CYS:HB3	43:lq:77:TYR:H	1.50	0.76
1:lA:668:A:H2'	1:lA:669:A:C8	2.20	0.76
1:lA:703:G:N1	1:lA:744:A:N6	2.33	0.76
47:sD:62:GLU:HG2	67:sp:116:ARG:HH21	1.51	0.76
53:sa:104:A:H62	53:sa:305:A:H2	1.32	0.75
72:su:11:GLN:N	72:su:11:GLN:HE21	1.82	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:3455:G:N1	1:lA:3500:A:C2	2.50	0.75
1:lA:2236:A:H61	1:lA:2250:C:H42	1.34	0.75
1:lA:3038:C:O2'	42:lp:25:TYR:O	2.05	0.75
1:lA:3455:G:H1	1:lA:3500:A:H2	1.29	0.75
68:sq:78:HIS:ND1	68:sq:78:HIS:O	2.20	0.75
1:lA:3469:A:N6	1:lA:3485:U:H3	1.85	0.75
54:sb:191:ARG:HD3	54:sb:198:ARG:HG2	1.69	0.74
60:sh:200:LYS:HG3	60:sh:204:LYS:HD2	1.68	0.74
1:lA:1818:C:OP2	34:lh:74:ARG:NH2	2.20	0.74
1:lA:2865:A:O2'	1:lA:2866:C:O4'	2.05	0.74
57:se:26:PHE:HA	57:se:29:LYS:HE3	1.69	0.74
57:se:65:GLY:HA3	57:se:89:LYS:HA	1.67	0.74
53:sa:103:U:OP2	53:sa:305:A:N6	2.21	0.74
1:lA:3456:U:H3	1:lA:3496:A:H2	1.36	0.74
11:lK:43:LYS:HE3	15:lO:132:PRO:HG2	1.68	0.74
1:lA:774:U:OP1	29:lc:21:ARG:NH2	2.21	0.74
60:sh:184:LEU:HB3	60:sh:186:THR:HG23	1.70	0.74
33:lg:41:ASN:HB3	33:lg:44:ARG:HG2	1.70	0.73
1:lA:3457:G:H1	1:lA:3495:U:H3	1.37	0.73
3:lC:6:G:OP1	7:lG:33:ARG:NH1	2.22	0.73
32:lf:11:VAL:HG13	32:lf:15:ARG:HE	1.54	0.73
53:sa:866:G:N2	67:sp:133:ASP:O	2.22	0.73
1:lA:2213:U:OP2	1:lA:2218:A:N6	2.19	0.73
1:lA:2669:A:H2'	1:lA:2670:U:H6	1.53	0.73
60:sh:162:VAL:O	60:sh:175:ARG:N	2.22	0.73
1:lA:213:A:H5'	14:lN:133:LYS:H	1.53	0.73
1:lA:1118:A:H2	1:lA:1165:A:H62	1.36	0.73
22:IV:80:VAL:HG12	22:IV:81:ASN:H	1.54	0.73
3:lC:59:G:H5'	7:lG:265:LYS:HG2	1.70	0.73
34:lh:81:CYS:SG	34:lh:84:CYS:N	2.60	0.73
53:sa:562:G:N7	76:sy:65:ARG:NH2	2.37	0.73
1:lA:3467:U:H3	1:lA:3486:A:H2	1.35	0.72
1:lA:310:A:N1	1:lA:2873:G:O2'	2.22	0.72
1:lA:2233:G:H4'	1:lA:2234:A:H5'	1.71	0.72
53:sa:1591:G:H21	53:sa:1772:A:H1'	1.55	0.72
53:sa:1096:U:H2'	53:sa:1097:C:H6	1.54	0.72
53:sa:163:A:H5'	60:sh:140:HIS:HB3	1.72	0.72
57:se:42:ARG:HB2	57:se:75:LEU:HD12	1.70	0.72
1:lA:2098:A:H61	1:lA:2415:C:N4	1.88	0.72
53:sa:1364:C:O2'	53:sa:1366:A:N7	2.21	0.72
53:sa:1170:U:H2'	53:sa:1171:U:C6	2.24	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:sa:1750:G:N2	53:sa:1776:G:O2'	2.23	0.72
1:1A:920:A:OP1	29:lc:27:LYS:NZ	2.23	0.71
5:1E:125:ASN:HD22	5:1E:127:LYS:H	1.38	0.71
68:sq:93:ILE:HG22	68:sq:106:ILE:HD11	1.72	0.71
1:1A:1661:G:O2'	1:1A:1751:A:N6	2.22	0.71
53:sa:763:G:H21	53:sa:765:A:H1'	1.56	0.71
60:sh:200:LYS:HA	60:sh:204:LYS:HB2	1.72	0.71
2:1B:30:U:H2'	2:1B:31:C:H6	1.55	0.71
5:1E:58:ARG:NH1	5:1E:353:GLU:OE2	2.23	0.71
24:1X:22:ASN:ND2	24:1X:40:ILE:O	2.24	0.71
53:sa:389:U:O4	53:sa:396:A:N7	2.23	0.71
1:1A:494:G:N2	1:1A:578:A:OP2	2.24	0.71
3:1C:27:G:N2	3:1C:50:A:N1	2.38	0.71
34:lh:25:THR:HG22	34:lh:26:ALA:H	1.56	0.71
53:sa:972:A:O2'	53:sa:1932:U:O2	2.08	0.71
1:1A:1944:C:OP1	23:1W:107:ARG:NH2	2.23	0.71
3:1C:28:U:H3'	3:1C:29:G:H21	1.55	0.71
53:sa:1820:G:O3'	53:sa:1821:A:H8	1.73	0.71
54:sb:174:SER:HG	54:sb:177:SER:HG	1.38	0.71
59:sg:120:ASN:ND2	59:sg:183:SER:O	2.23	0.71
53:sa:1661:C:H2'	53:sa:1662:G:H8	1.56	0.71
53:sa:1694:A:H5'	70:ss:57:PRO:HG2	1.72	0.71
58:sf:33:PRO:HD2	58:sf:81:PRO:HG2	1.72	0.71
1:1A:3452:U:H3	1:1A:3503:G:H22	1.34	0.70
6:1F:101:MET:HE2	6:1F:104:PRO:HA	1.73	0.70
60:sh:193:LYS:HE3	60:sh:197:LEU:HD12	1.73	0.70
1:1A:816:G:N2	1:1A:829:G:OP2	2.24	0.70
60:sh:153:VAL:HG12	60:sh:155:LYS:HE2	1.70	0.70
53:sa:1760:G:OP2	53:sa:1762:C:N4	2.25	0.70
53:sa:866:G:H2'	53:sa:867:A:H8	1.56	0.70
2:1B:60:G:O6	38:1l:63:ARG:NH2	2.24	0.70
1:1A:353:G:H2'	1:1A:354:U:C6	2.27	0.70
53:sa:783:A:H3'	53:sa:784:U:H4'	1.74	0.70
60:sh:64:MET:HB2	60:sh:67:VAL:HG12	1.72	0.70
57:se:42:ARG:CB	57:se:75:LEU:HD12	2.21	0.70
1:1A:836:C:H2'	1:1A:837:A:H8	1.57	0.70
1:1A:1072:U:OP1	30:ld:12:GLN:NE2	2.24	0.70
53:sa:880:A:H3'	53:sa:881:G:H21	1.56	0.70
62:sj:208:ARG:HD3	62:sj:211:GLN:HG3	1.74	0.70
1:1A:3136:U:H2'	1:1A:3137:C:C6	2.27	0.69
53:sa:438:C:O2	53:sa:440:A:N6	2.26	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:sa:839:A:H8	61:si:119:PRO:HA	1.56	0.69
62:sj:11:ARG:O	65:sm:133:LYS:NZ	2.24	0.69
1:lA:331:A:OP2	43:lq:39:ARG:NH1	2.25	0.69
15:lO:202:PHE:HB3	16:lP:107:MET:HE2	1.74	0.69
46:sC:3:LEU:HG	75:sx:61:ILE:HD11	1.73	0.69
12:lL:66:GLU:OE1	12:lL:69:ARG:NH2	2.26	0.69
60:sh:56:CYS:HA	60:sh:62:PRO:HA	1.75	0.69
1:lA:586:A:N6	8:lH:43:THR:O	2.25	0.69
4:lD:192:LYS:HD3	4:lD:193:ARG:HH21	1.57	0.69
53:sa:134:A:H4'	53:sa:135:C:H4'	1.74	0.69
2:lB:141:G:H5''	17:lQ:60:VAL:HG11	1.75	0.69
3:lC:3:G:H1	3:lC:114:U:H3	1.39	0.69
65:sm:149:ASP:HB2	66:so:137:ALA:HB3	1.73	0.69
53:sa:1824:G:O6	53:sa:1890:U:O4	2.10	0.69
53:sa:1391:C:H2'	53:sa:1392:A:H8	1.56	0.69
60:sh:207:MET:N	60:sh:207:MET:SD	2.66	0.69
1:lA:685:A:O4'	1:lA:1450:A:N6	2.26	0.69
38:ll:7:CYS:SG	38:ll:8:ARG:NH1	2.66	0.69
50:sI:58:A:O2'	50:sI:60:U:OP2	2.10	0.69
53:sa:1758:G:H2'	53:sa:1759:A:C8	2.28	0.69
58:sf:139:THR:OG1	58:sf:141:ASP:OD1	2.11	0.69
11:lK:136:MET:HE1	11:lK:152:LEU:HD23	1.76	0.68
60:sh:195:GLN:HA	60:sh:199:ALA:HB2	1.75	0.68
3:lC:26:U:H3	3:lC:51:G:H22	1.38	0.68
53:sa:750:U:O4	53:sa:751:A:N6	2.27	0.68
57:se:72:LEU:HB3	57:se:81:PHE:CB	2.23	0.68
1:lA:3141:A:N3	1:lA:3143:A:N6	2.41	0.68
1:lA:559:U:H2'	1:lA:560:U:H6	1.59	0.68
1:lA:2381:G:N2	1:lA:2381:G:OP2	2.26	0.68
48:sE:17:GLY:HA2	48:sE:27:ARG:HE	1.56	0.68
53:sa:157:A:H5'	60:sh:62:PRO:HB3	1.75	0.68
1:lA:3091:C:OP1	5:lE:246:ARG:NH1	2.27	0.68
2:lB:11:U:H2'	2:lB:12:A:H8	1.58	0.68
44:sA:107:TRP:HB3	44:sA:109:TYR:HE1	1.58	0.68
53:sa:1588:C:OP2	73:sv:64:LYS:NZ	2.26	0.68
1:lA:628:C:O2'	20:lT:141:HIS:NE2	2.26	0.68
62:sj:83:TYR:HB3	62:sj:101:ILE:HB	1.75	0.68
1:lA:625:A:O2'	1:lA:664:A:N6	2.26	0.68
60:sh:62:PRO:HB2	60:sh:83:CYS:SG	2.34	0.68
19:lS:73:HIS:HB3	19:lS:76:GLU:HG3	1.76	0.68
1:lA:409:G:OP2	38:ll:56:ARG:NH2	2.26	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:2416:U:O2'	1:lA:3246:A:N1	2.26	0.68
1:lA:2468:C:O2'	5:lE:268:ARG:NH1	2.26	0.68
1:lA:2939:G:N7	43:lq:61:LYS:NZ	2.42	0.68
1:lA:2979:C:H5	1:lA:2995:C:H42	1.42	0.68
44:sA:104:ASN:HB2	53:sa:1696:G:H21	1.59	0.68
53:sa:1679:G:H21	53:sa:1685:C:H1'	1.59	0.68
55:sc:155:THR:HG22	55:sc:197:ASP:HB2	1.75	0.68
57:se:176:LYS:O	57:se:177:GLU:HG3	1.94	0.68
1:lA:789:C:H2'	1:lA:790:A:H8	1.59	0.67
53:sa:90:G:OP1	53:sa:392:A:N6	2.27	0.67
1:lA:3107:G:N2	1:lA:3110:A:OP2	2.25	0.67
1:lA:660:U:H2'	1:lA:661:G:H8	1.59	0.67
53:sa:1383:C:H5	53:sa:1389:G:H1	1.43	0.67
53:sa:1439:C:H5'	71:st:48:ASN:HB3	1.75	0.67
1:lA:530:A:H2'	1:lA:531:U:H6	1.59	0.67
39:lm:51:ALA:HB3	39:lm:54:ILE:HD12	1.75	0.67
53:sa:1281:A:H4'	53:sa:1282:U:H5'	1.76	0.67
53:sa:1668:G:H22	53:sa:1673:A:H2	1.43	0.67
1:lA:541:A:H2'	1:lA:542:U:C6	2.30	0.67
1:lA:1605:A:H2	1:lA:3430:U:H3	1.41	0.67
53:sa:15:U:O2'	53:sa:614:A:N6	2.28	0.67
55:sc:151:GLY:O	55:sc:176:ARG:NH2	2.28	0.67
1:lA:682:G:H5'	20:IT:2:LYS:HD3	1.77	0.67
1:lA:896:A:O2'	1:lA:2790:U:OP1	2.13	0.67
1:lA:2907:C:H2'	1:lA:2908:U:H6	1.59	0.67
33:lg:130:GLN:HG3	33:lg:134:GLN:HG2	1.76	0.67
1:lA:720:U:H2'	1:lA:721:A:H8	1.60	0.67
53:sa:332:G:O2'	62:sj:10:LYS:NZ	2.28	0.67
53:sa:1262:G:N1	53:sa:1274:U:O4	2.27	0.67
59:sg:203:LYS:HA	59:sg:206:ARG:HE	1.59	0.67
1:lA:1252:G:N2	1:lA:1255:A:OP2	2.26	0.67
1:lA:1892:C:H2'	1:lA:1893:A:H8	1.60	0.67
53:sa:293:U:H2'	53:sa:294:G:H2'	1.75	0.67
53:sa:866:G:H2'	53:sa:867:A:C8	2.30	0.67
74:sw:99:LYS:HB2	74:sw:102:THR:HG22	1.75	0.67
1:lA:699:A:H5''	1:lA:746:A:H62	1.59	0.67
1:lA:3475:U:H3	1:lA:3479:A:H61	1.42	0.67
53:sa:262:G:OP2	60:sh:191:GLN:NE2	2.27	0.67
58:sf:181:MET:HE1	58:sf:223:VAL:HA	1.76	0.67
60:sh:138:ALA:N	60:sh:182:GLN:O	2.28	0.67
1:lA:500:G:H1	1:lA:572:U:H3	1.40	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:sI:65:C:H2'	50:sI:66:U:H6	1.60	0.66
1:lA:98:A:H4'	14:lN:59:MET:HE2	1.78	0.66
1:lA:2738:A:OP2	13:lM:51:ARG:NH2	2.28	0.66
1:lA:467:A:N1	1:lA:2438:C:O2'	2.28	0.66
44:sA:101:LYS:HB3	44:sA:108:ILE:HB	1.78	0.66
1:lA:2214:A:HO2'	38:ll:2:THR:N	1.93	0.66
1:lA:1728:A:N7	1:lA:1729:G:N2	2.43	0.66
3:lC:112:C:H2'	3:lC:113:C:C6	2.31	0.66
11:lK:93:THR:HG22	11:lK:94:LYS:HG3	1.78	0.66
53:sa:1581:G:H2'	53:sa:1582:G:H8	1.61	0.66
70:ss:35:CYS:SG	70:ss:36:LEU:N	2.69	0.66
1:lA:221:U:H2'	1:lA:222:A:H8	1.61	0.65
1:lA:1744:A:H2'	1:lA:1745:A:H8	1.61	0.65
45:sB:32:LYS:O	45:sB:37:LYS:NZ	2.29	0.65
53:sa:115:U:O2'	53:sa:328:C:O2	2.10	0.65
61:si:163:VAL:HG22	61:si:198:PRO:HG3	1.78	0.65
1:lA:500:G:N2	1:lA:572:U:O2	2.28	0.65
14:lN:44:VAL:HG13	14:lN:47:ALA:HB2	1.78	0.65
1:lA:457:G:N2	18:lR:5:CYS:SG	2.69	0.65
1:lA:1883:A:H62	1:lA:1931:U:H3	1.43	0.65
53:sa:394:A:OP1	62:sj:49:ARG:NH2	2.29	0.65
45:sB:15:ARG:NH2	53:sa:916:G:N7	2.38	0.65
1:lA:1744:A:H2'	1:lA:1745:A:C8	2.30	0.65
1:lA:1813:G:N7	28:lb:17:ARG:NH2	2.44	0.65
3:lC:15:A:OP1	13:lM:147:LYS:NZ	2.28	0.65
40:ln:13:LYS:HD2	40:ln:16:LYS:HE2	1.78	0.65
53:sa:1595:G:H3'	53:sa:1682:A:H61	1.62	0.65
53:sa:1661:C:H2'	53:sa:1662:G:C8	2.31	0.65
3:lC:79:G:N1	3:lC:95:A:H2	1.86	0.65
53:sa:209:A:N6	53:sa:250:G:O6	2.30	0.65
53:sa:1595:G:O2'	53:sa:1661:C:O2	2.14	0.65
72:su:87:ARG:HB3	72:su:97:SER:HA	1.78	0.65
1:lA:3309:U:OP1	32:lf:15:ARG:NH2	2.30	0.65
5:lE:340:ARG:HH21	5:lE:343:CYS:HB2	1.62	0.65
45:sB:79:ILE:HD11	53:sa:1942:U:H5'	1.79	0.65
73:sv:105:LEU:HD13	73:sv:121:ARG:HG3	1.79	0.65
1:lA:3458:U:H3	1:lA:3494:G:H1	1.42	0.65
3:lC:47:A:OP2	7:lG:94:ASN:ND2	2.28	0.65
8:lH:56:ARG:NH2	8:lH:107:GLN:O	2.29	0.65
72:su:48:ARG:NH1	73:sv:36:ASP:OD2	2.30	0.65
73:sv:43:CYS:SG	73:sv:94:THR:OG1	2.54	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:700:A:OP2	1:lA:745:A:N6	2.30	0.65
1:lA:1528:A:OP1	33:lg:126:ARG:NH2	2.30	0.65
64:sl:25:LYS:HD3	64:sl:63:LEU:HD11	1.79	0.65
53:sa:864:C:H2'	53:sa:865:A:H8	1.62	0.65
53:sa:1096:U:H2'	53:sa:1097:C:C6	2.32	0.65
53:sa:1579:A:H4'	53:sa:1580:U:H5'	1.79	0.65
1:lA:1648:U:OP2	1:lA:2081:A:O2'	2.15	0.64
53:sa:39:A:H4'	63:sk:3:ARG:HB2	1.78	0.64
53:sa:902:U:H2'	53:sa:903:A:C8	2.33	0.64
10:lJ:174:TYR:HH	10:lJ:226:TYR:HH	1.42	0.64
64:sl:86:VAL:HG12	64:sl:88:SER:H	1.62	0.64
53:sa:783:A:N7	53:sa:784:U:O2'	2.29	0.64
76:sy:71:ARG:HE	76:sy:76:GLY:HA2	1.60	0.64
1:lA:732:U:O2'	1:lA:733:C:O5'	2.12	0.64
1:lA:1335:U:O2	20:lT:109:GLN:NE2	2.27	0.64
53:sa:467:C:O2'	53:sa:760:A:N3	2.30	0.64
1:lA:1763:C:H2'	1:lA:1764:A:H8	1.62	0.64
1:lA:2064:G:N1	1:lA:2067:A:OP2	2.30	0.64
1:lA:3263:G:OP2	42:lp:37:LYS:NZ	2.28	0.64
38:ll:39:TYR:O	38:ll:41:ASP:N	2.31	0.64
57:se:198:GLU:N	57:se:198:GLU:OE2	2.28	0.64
56:sd:122:LYS:NZ	56:sd:135:SER:OG	2.31	0.64
53:sa:335:U:H2'	53:sa:336:A:H8	1.63	0.64
53:sa:1376:U:H2'	53:sa:1377:U:C6	2.32	0.64
1:lA:3367:U:H2'	1:lA:3368:G:C8	2.32	0.64
53:sa:440:A:OP2	58:sf:57:ARG:NH2	2.31	0.64
57:se:173:LEU:HD21	57:se:199:ILE:HG12	1.79	0.64
1:lA:1313:U:O2'	1:lA:1315:A:N7	2.30	0.64
18:lR:34:ASP:OD1	18:lR:37:ARG:NH1	2.31	0.64
32:lf:48:ARG:NH1	32:lf:144:THR:OG1	2.30	0.64
1:lA:1209:U:OP1	1:lA:1211:A:O2'	2.16	0.63
38:ll:21:ARG:NH2	38:ll:38:GLY:O	2.31	0.63
53:sa:565:G:N2	53:sa:592:U:OP1	2.31	0.63
57:se:70:VAL:HG21	67:sp:123:ARG:HD2	1.79	0.63
68:sq:58:LYS:HA	68:sq:61:LYS:HE3	1.80	0.63
3:lC:22:C:H2'	3:lC:23:A:H8	1.63	0.63
3:lC:54:U:H4'	13:lM:152:HIS:HB2	1.81	0.63
51:sJ:34:U:OP2	70:ss:158:ARG:NH2	2.32	0.63
26:lZ:25:ARG:HE	26:lZ:31:PHE:HE2	1.46	0.63
65:sm:71:SER:OG	65:sm:122:HIS:NE2	2.32	0.63
9:ll:21:CYS:SG	9:ll:22:LYS:N	2.68	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:lQ:68:ARG:HD3	17:lQ:128:ARG:HB2	1.80	0.63
53:sa:1432:A:H1'	74:sw:55:ARG:HD2	1.79	0.63
1:lA:1760:A:OP1	40:ln:24:ARG:NH2	2.31	0.63
53:sa:1585:U:OP1	73:sv:40:THR:OG1	2.12	0.63
66:so:99:ARG:O	66:so:101:HIS:N	2.31	0.63
1:lA:797:C:H2'	1:lA:798:U:H6	1.62	0.63
1:lA:1408:C:O2'	1:lA:3271:G:N2	2.30	0.63
18:lR:16:GLN:HG2	18:lR:149:ILE:HG12	1.81	0.63
38:ll:33:ARG:NH2	38:ll:41:ASP:OD2	2.31	0.63
53:sa:797:G:OP2	53:sa:797:G:N2	2.21	0.63
53:sa:1126:G:H1'	69:sr:76:SER:HB3	1.79	0.63
59:sg:30:VAL:HB	59:sg:36:LYS:HG2	1.79	0.63
23:lW:30:CYS:HB3	23:lW:77:ILE:HD13	1.81	0.63
61:si:171:LYS:HE2	61:si:175:LYS:HD3	1.81	0.63
73:sv:8:LYS:HE3	73:sv:67:LEU:HD22	1.81	0.63
75:sx:76:LEU:HD13	75:sx:79:VAL:HG21	1.81	0.63
53:sa:170:G:H22	53:sa:259:A:H5'	1.62	0.62
53:sa:1287:U:H2'	53:sa:1288:G:C8	2.33	0.62
1:lA:2480:A:N7	1:lA:3015:A:N6	2.47	0.62
10:lJ:17:LEU:N	28:lb:126:ARG:O	2.32	0.62
23:lW:34:LEU:O	23:lW:38:THR:OG1	2.17	0.62
53:sa:366:G:N2	53:sa:606:U:O2	2.32	0.62
53:sa:865:A:H2'	53:sa:866:G:C8	2.34	0.62
53:sa:1322:G:N2	53:sa:1325:A:OP2	2.30	0.62
1:lA:858:A:O2'	1:lA:1185:A:N7	2.31	0.62
1:lA:2883:A:H2'	1:lA:2884:U:H6	1.65	0.62
1:lA:3150:A:H2'	1:lA:3151:A:H8	1.64	0.62
9:ll:87:ILE:HG23	9:ll:118:VAL:HG12	1.81	0.62
53:sa:584:C:H2'	53:sa:585:A:H8	1.63	0.62
53:sa:841:U:O2'	53:sa:842:A:O4'	2.17	0.62
1:lA:410:G:OP2	38:ll:52:LYS:NZ	2.30	0.62
1:lA:3204:C:O2	24:IX:89:ARG:NH1	2.32	0.62
53:sa:560:C:OP2	53:sa:1902:A:N6	2.33	0.62
57:se:72:LEU:O	57:se:81:PHE:HB2	1.98	0.62
1:lA:809:C:OP2	19:lS:101:LYS:NZ	2.29	0.62
1:lA:1292:A:H61	1:lA:1457:A:H61	1.45	0.62
1:lA:3497:U:H4'	1:lA:3498:U:H5'	1.80	0.62
3:lC:18:U:H3	3:lC:58:A:H61	1.47	0.62
16:lP:12:VAL:O	16:lP:60:THR:OG1	2.17	0.62
53:sa:1437:G:N7	71:st:44:LYS:NZ	2.42	0.62
1:lA:699:A:OP2	1:lA:746:A:N6	2.32	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:IK:134:ILE:HG21	11:IK:167:ILE:HG12	1.79	0.62
19:IS:152:VAL:HA	19:IS:159:ALA:H	1.65	0.62
1:IA:1508:U:H2'	1:IA:1509:A:H8	1.65	0.62
3:IC:44:C:H2'	3:IC:45:U:C6	2.35	0.62
74:sw:93:THR:HG21	74:sw:98:VAL:HG23	1.81	0.62
1:IA:1269:U:OP2	33:lg:44:ARG:NH2	2.33	0.62
1:IA:1555:U:H2'	1:IA:1556:G:H8	1.62	0.62
1:IA:3193:G:H2'	1:IA:3194:U:H6	1.62	0.62
3:IC:84:G:H1	3:IC:91:G:H22	1.48	0.62
8:IH:98:ASN:ND2	8:IH:187:MET:O	2.31	0.62
1:IA:2972:U:C2	1:IA:2973:G:C8	2.88	0.62
1:IA:3042:C:N3	11:IK:179:ARG:NH1	2.48	0.62
11:IK:115:ASP:OD1	11:IK:115:ASP:N	2.33	0.62
36:lj:5:ARG:NH1	36:lj:7:HIS:O	2.33	0.62
39:lm:36:LYS:HG2	39:lm:48:ARG:HE	1.63	0.62
1:IA:1523:U:OP1	33:lg:105:LYS:NZ	2.32	0.62
61:si:135:MET:HE1	61:si:185:TYR:HB2	1.82	0.62
1:IA:393:A:O3'	6:IF:98:LYS:NZ	2.32	0.61
3:IC:43:A:OP2	13:IM:137:ARG:NH1	2.31	0.61
20:IT:69:LYS:NZ	20:IT:93:VAL:O	2.32	0.61
53:sa:1382:C:H2'	53:sa:1383:C:O2	1.99	0.61
53:sa:1577:C:O2'	53:sa:1703:A:N1	2.33	0.61
66:so:92:MET:O	66:so:94:ARG:N	2.32	0.61
6:IF:77:PRO:HB2	6:IF:91:ALA:HB3	1.82	0.61
53:sa:457:G:H2'	53:sa:458:U:H6	1.65	0.61
58:sf:71:ASP:OD2	58:sf:143:ARG:NH2	2.33	0.61
68:sq:93:ILE:HD13	68:sq:115:LEU:HD11	1.81	0.61
1:IA:2272:C:O2'	1:IA:2346:A:N3	2.31	0.61
73:sv:85:ASN:HB3	73:sv:91:SER:HB3	1.81	0.61
1:IA:440:G:N1	1:IA:443:A:OP2	2.29	0.61
1:IA:2098:A:N6	1:IA:2415:C:H42	1.97	0.61
1:IA:2688:G:O2'	1:IA:3008:U:OP1	2.14	0.61
51:sJ:20:U:H5''	51:sJ:21:U:H5'	1.82	0.61
53:sa:440:A:H5''	58:sf:57:ARG:HH21	1.65	0.61
53:sa:441:C:H41	53:sa:456:G:H21	1.48	0.61
1:IA:1555:U:H2'	1:IA:1556:G:C8	2.36	0.61
1:IA:3500:A:H2'	1:IA:3501:A:C8	2.35	0.61
6:IF:61:GLN:OE1	38:IL:55:ARG:NH2	2.29	0.61
53:sa:1124:A:OP1	55:sc:161:THR:OG1	2.18	0.61
32:lf:62:SER:HB2	32:lf:65:LYS:HD3	1.83	0.61
43:lq:72:CYS:SG	43:lq:75:CYS:N	2.73	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:IC:80:G:H1	3:IC:94:U:H3	1.49	0.61
8:IH:23:THR:OG1	8:IH:25:ASP:OD1	2.19	0.61
53:sa:1838:A:H2'	53:sa:1839:A:C8	2.36	0.61
1:IA:1513:A:H5'	6:IF:206:LYS:HG2	1.82	0.61
1:IA:2114:U:N3	1:IA:2198:G:OP2	2.31	0.61
3:IC:112:C:H2'	3:IC:113:C:H6	1.64	0.61
53:sa:864:C:H2'	53:sa:865:A:C8	2.35	0.61
70:ss:71:GLY:O	70:ss:74:ASN:ND2	2.33	0.61
74:sw:68:THR:OG1	74:sw:70:CYS:O	2.18	0.61
1:IA:1502:A:N6	19:IS:15:SER:OG	2.29	0.61
1:IA:1846:A:H2'	1:IA:1847:A:C8	2.36	0.61
1:IA:2829:A:H5''	1:IA:2830:C:H5'	1.83	0.61
27:la:52:ASP:O	27:la:67:LYS:NZ	2.34	0.61
62:sj:79:LEU:HD13	62:sj:104:ILE:HA	1.82	0.61
1:IA:535:A:N1	14:IN:218:ASN:ND2	2.33	0.61
1:IA:1561:U:OP2	29:lc:4:ARG:NH1	2.31	0.61
10:IJ:66:ASN:OD1	10:IJ:70:ASN:ND2	2.32	0.61
13:IM:21:ILE:HD11	13:IM:125:MET:HE2	1.83	0.61
58:sf:197:GLU:OE1	58:sf:207:HIS:NE2	2.30	0.61
72:su:28:PRO:HG2	72:su:53:VAL:HG13	1.82	0.61
9:II:66:GLU:O	22:IV:142:ARG:NH1	2.34	0.60
32:lf:119:GLU:N	32:lf:119:GLU:OE2	2.31	0.60
53:sa:601:G:H4'	53:sa:604:G:H21	1.66	0.60
53:sa:1689:A:N6	53:sa:1774:A:O4'	2.34	0.60
1:IA:1809:A:O2'	1:IA:1810:A:N7	2.33	0.60
1:IA:3476:C:H5''	1:IA:3477:U:C5	2.36	0.60
1:IA:199:G:N1	1:IA:311:A:OP2	2.32	0.60
23:IW:62:ASN:O	23:IW:64:LYS:NZ	2.34	0.60
48:sE:56:ASP:O	74:sw:62:ARG:NH2	2.34	0.60
1:IA:1634:G:N2	1:IA:1634:G:OP2	2.34	0.60
2:IB:11:U:H2'	2:IB:12:A:C8	2.36	0.60
53:sa:1376:U:H2'	53:sa:1377:U:H6	1.66	0.60
59:sg:52:PRO:HG2	59:sg:92:MET:HG2	1.83	0.60
1:IA:1476:G:O2'	1:IA:1477:A:H5'	2.01	0.60
49:sH:101:UNK:N	50:sI:76:A:O3'	2.33	0.60
1:IA:189:G:OP1	17:IQ:4:TYR:OH	2.17	0.60
1:IA:3103:C:H2'	1:IA:3104:G:H8	1.67	0.60
3:IC:94:U:H2'	3:IC:95:A:C8	2.37	0.60
10:IJ:90:PRO:HD3	10:IJ:129:LEU:HD12	1.84	0.60
42:lp:29:PRO:HG2	42:lp:32:ALA:HB2	1.83	0.60
1:IA:231:U:H4'	27:la:123:SER:HB3	1.84	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:3463:A:H3'	1:lA:3464:G:H21	1.66	0.60
1:lA:58:G:H22	1:lA:75:U:H4'	1.67	0.60
1:lA:302:U:OP1	14:lN:79:ARG:NH2	2.34	0.60
1:lA:425:C:H2'	1:lA:426:U:H6	1.66	0.60
1:lA:2062:A:O2'	1:lA:3220:U:OP1	2.17	0.60
1:lA:3455:G:N1	1:lA:3500:A:H2	1.97	0.60
2:lB:101:G:OP2	2:lB:103:A:O2'	2.19	0.60
24:lX:83:ARG:NH2	24:lX:118:THR:O	2.33	0.60
1:lA:530:A:H2'	1:lA:531:U:C6	2.37	0.60
29:lc:146:GLU:HB3	37:lk:1:MET:HE1	1.82	0.60
53:sa:782:A:H2	58:sf:246:LEU:HD11	1.67	0.60
53:sa:1254:G:N2	53:sa:1280:G:O2'	2.34	0.60
1:lA:1117:G:N3	1:lA:1120:A:N6	2.50	0.60
1:lA:2079:A:H2'	1:lA:2080:A:O4'	2.01	0.60
1:lA:3128:C:H2'	1:lA:3129:U:H6	1.67	0.60
2:lB:141:G:H2'	2:lB:142:A:H8	1.67	0.60
12:lL:171:TRP:CD1	12:lL:172:GLY:H	2.19	0.60
54:sb:92:ARG:NH2	71:st:82:ASP:O	2.33	0.60
63:sk:25:ASP:OD1	63:sk:25:ASP:N	2.34	0.60
1:lA:779:A:O2'	1:lA:783:A:N6	2.35	0.59
1:lA:1198:U:H3	1:lA:1204:A:H62	1.50	0.59
1:lA:1640:A:H2'	1:lA:1641:A:H8	1.67	0.59
1:lA:1992:A:H2'	1:lA:1993:G:H8	1.66	0.59
16:lP:11:ARG:NH1	16:lP:60:THR:O	2.34	0.59
32:lf:63:PHE:HB3	32:lf:103:ARG:HG2	1.83	0.59
77:sz:13:ARG:HG2	77:sz:27:VAL:HB	1.84	0.59
1:lA:1822:U:HO2'	34:lh:67:LYS:HZ2	1.47	0.59
1:lA:2261:G:O2'	1:lA:2390:U:OP2	2.18	0.59
1:lA:3170:A:H2'	1:lA:3171:A:H8	1.67	0.59
1:lA:3476:C:N4	1:lA:3478:U:O3'	2.35	0.59
51:sJ:39:A:O2'	53:sa:981:A:OP1	2.14	0.59
53:sa:295:A:H61	58:sf:38:GLU:HG2	1.66	0.59
53:sa:328:C:H2'	53:sa:329:G:C8	2.37	0.59
57:se:57:ARG:HE	57:se:59:ALA:HB3	1.67	0.59
1:lA:873:U:H2'	1:lA:874:A:C8	2.37	0.59
1:lA:1325:C:H42	1:lA:3000:C:H5''	1.68	0.59
1:lA:1864:C:OP1	23:lW:98:LYS:NZ	2.35	0.59
12:lL:206:LEU:O	12:lL:208:LYS:NZ	2.35	0.59
51:sJ:64:G:N1	51:sJ:65:G:O6	2.35	0.59
53:sa:1596:U:O2'	53:sa:1681:A:N6	2.35	0.59
60:sh:74:ARG:HB2	60:sh:94:ARG:HG2	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:IL:51:HIS:ND1	12:IL:137:SER:OG	2.34	0.59
53:sa:356:C:N4	53:sa:374:C:OP1	2.36	0.59
55:sc:79:LYS:HG3	55:sc:109:HIS:HE1	1.67	0.59
72:su:11:GLN:N	72:su:11:GLN:NE2	2.49	0.59
1:IA:2318:U:H5''	4:ID:244:GLY:HA3	1.84	0.59
1:IA:2499:U:H2'	1:IA:2500:A:H8	1.67	0.59
25:IY:75:LYS:NZ	25:IY:86:VAL:O	2.32	0.59
53:sa:934:A:H2'	53:sa:935:C:C6	2.38	0.59
53:sa:1816:U:H2'	53:sa:1817:A:C8	2.36	0.59
57:se:29:LYS:HB3	57:se:50:VAL:O	2.03	0.59
58:sf:159:LYS:HB3	58:sf:169:ASP:H	1.67	0.59
61:si:185:TYR:O	61:si:189:THR:OG1	2.20	0.59
8:IH:64:ILE:O	8:IH:113:THR:OG1	2.20	0.59
44:sA:77:MET:HG2	44:sA:79:ILE:HG23	1.82	0.59
57:se:187:VAL:HG12	57:se:189:TYR:H	1.68	0.59
1:IA:1342:U:H2'	1:IA:1343:A:H4'	1.85	0.59
11:IK:101:ARG:HG3	11:IK:188:SER:HB3	1.83	0.59
53:sa:1566:C:OP2	72:su:137:THR:OG1	2.17	0.59
53:sa:1820:G:O3'	53:sa:1821:A:C8	2.55	0.59
63:sk:86:LEU:HD13	63:sk:99:LEU:HD21	1.84	0.59
65:sm:108:VAL:HG12	65:sm:137:PHE:HB2	1.84	0.59
1:IA:1312:A:H62	1:IA:1441:U:H3	1.51	0.59
1:IA:1345:U:H4'	1:IA:1346:G:H5'	1.84	0.59
53:sa:78:G:OP1	60:sh:178:ALA:HB3	2.03	0.59
64:sl:4:ALA:HB3	64:sl:7:ASP:HB2	1.85	0.59
1:IA:662:U:H2'	1:IA:663:G:O4'	2.03	0.59
1:IA:760:A:H2'	1:IA:761:A:H8	1.66	0.59
1:IA:1814:G:N2	1:IA:1817:A:OP2	2.33	0.59
8:IH:145:THR:OG1	8:IH:146:VAL:N	2.35	0.59
33:lg:75:PHE:HZ	33:lg:85:MET:HE2	1.68	0.59
43:lq:54:PRO:O	51:sJ:76:C:O2'	2.16	0.59
72:su:24:ARG:O	72:su:56:ARG:NH1	2.36	0.59
1:IA:559:U:H2'	1:IA:560:U:C6	2.36	0.59
4:ID:117:GLU:OE2	4:ID:163:ARG:NH2	2.36	0.59
17:IQ:31:ARG:NH1	17:IQ:124:ASP:OD2	2.36	0.59
53:sa:1678:A:H3'	53:sa:1679:G:H8	1.68	0.59
1:IA:1639:U:H2'	1:IA:1640:A:H8	1.68	0.58
18:IR:23:LYS:O	18:IR:86:LYS:NZ	2.35	0.58
24:IX:22:ASN:HB3	24:IX:52:LEU:HD22	1.85	0.58
53:sa:619:C:H2'	53:sa:620:U:C6	2.38	0.58
53:sa:960:G:H4'	53:sa:1923:A:H4'	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:926:A:H62	1:lA:1053:G:H1	1.50	0.58
26:lZ:11:SER:HA	26:lZ:54:THR:HG23	1.85	0.58
53:sa:1823:U:OP1	53:sa:1824:G:O2'	2.20	0.58
53:sa:1827:U:H2'	53:sa:1828:A:H8	1.68	0.58
67:sp:52:THR:H	67:sp:55:MET:HG3	1.67	0.58
1:lA:322:U:H2'	1:lA:323:U:H6	1.68	0.58
1:lA:333:U:O2'	17:lQ:180:ARG:O	2.22	0.58
1:lA:489:U:H3	1:lA:583:A:H61	1.50	0.58
1:lA:703:G:C6	1:lA:744:A:N6	2.71	0.58
1:lA:2669:A:H2'	1:lA:2670:U:C6	2.37	0.58
1:lA:3329:U:H4'	1:lA:3411:U:H4'	1.85	0.58
1:lA:3397:C:OP2	1:lA:3398:U:O2'	2.21	0.58
75:sx:53:LYS:NZ	75:sx:55:SER:OG	2.34	0.58
1:lA:789:C:H2'	1:lA:790:A:C8	2.39	0.58
1:lA:1086:G:H1	1:lA:1240:C:H5	1.51	0.58
3:lC:68:C:H42	3:lC:105:A:H61	1.51	0.58
3:lC:75:G:H1	3:lC:99:U:H5	1.51	0.58
4:lD:19:ARG:NH1	4:lD:189:TYR:O	2.35	0.58
8:lH:56:ARG:NH1	36:lj:108:ILE:O	2.36	0.58
9:ll:220:LEU:O	9:ll:223:ASN:ND2	2.36	0.58
53:sa:330:A:O2'	65:sm:130:PRO:O	2.20	0.58
53:sa:956:G:N1	53:sa:1003:A:O2'	2.31	0.58
69:sr:36:GLU:HB2	69:sr:110:ILE:HD12	1.85	0.58
1:lA:960:G:O2'	21:lU:131:GLN:OE1	2.20	0.58
45:sB:34:LYS:NZ	53:sa:1940:G:O6	2.36	0.58
53:sa:1886:U:O4	53:sa:1887:A:N6	2.36	0.58
73:sv:19:TYR:OH	73:sv:130:ASP:OD2	2.12	0.58
1:lA:3346:U:C2	1:lA:3347:A:C8	2.92	0.58
6:lF:194:GLN:HG3	6:lF:197:MET:HE3	1.84	0.58
53:sa:840:U:H2'	53:sa:841:U:C6	2.39	0.58
2:lB:30:U:H2'	2:lB:31:C:C6	2.38	0.58
3:lC:29:G:O6	3:lC:46:G:O6	2.21	0.58
56:sd:137:MET:HA	56:sd:140:ILE:HD12	1.86	0.58
60:sh:57:ASP:OD1	60:sh:58:LYS:N	2.36	0.58
1:lA:1640:A:H2'	1:lA:1641:A:C8	2.39	0.58
1:lA:1763:C:H2'	1:lA:1764:A:C8	2.39	0.58
13:lM:151:ASP:N	13:lM:151:ASP:OD1	2.36	0.58
24:lX:18:CYS:HB2	24:lX:54:ARG:HB3	1.86	0.58
53:sa:579:A:H2'	53:sa:580:G:H8	1.66	0.58
65:sm:4:GLN:NE2	65:sm:10:GLN:O	2.31	0.58
73:sv:113:ILE:HG23	73:sv:114:VAL:HG13	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:3148:C:H2'	1:1A:3149:A:H8	1.68	0.58
3:1C:109:G:H2'	3:1C:110:A:C8	2.39	0.58
4:1D:242:ARG:NH1	4:1D:243:THR:O	2.37	0.58
53:sa:1729:G:H4'	73:sv:42:MET:HE1	1.84	0.58
53:sa:1827:U:H2'	53:sa:1828:A:C8	2.38	0.58
56:sd:54:ARG:HG3	56:sd:63:ILE:HD13	1.86	0.58
57:se:117:LYS:HG3	57:se:120:CYS:HB2	1.86	0.58
62:sj:56:ARG:NH1	62:sj:210:GLY:O	2.33	0.58
1:1A:78:U:H1'	1:1A:817:A:H8	1.69	0.58
1:1A:492:U:H3	1:1A:580:A:H61	1.51	0.58
1:1A:897:A:O2'	1:1A:899:A:N1	2.33	0.58
53:sa:65:U:H1'	60:sh:177:LYS:HG3	1.84	0.58
53:sa:1748:U:O2	53:sa:1780:A:N6	2.36	0.58
64:sl:76:ARG:HH22	64:sl:86:VAL:HG22	1.69	0.58
70:ss:62:LYS:HG3	70:ss:97:ARG:HD3	1.86	0.58
1:1A:336:A:H5''	17:1Q:97:SER:HB3	1.85	0.57
1:1A:1003:A:OP1	38:ll:5:THR:OG1	2.19	0.57
1:1A:1841:G:N2	1:1A:1975:G:H1	1.97	0.57
1:1A:2239:U:OP2	4:1D:234:LYS:NZ	2.35	0.57
1:1A:3136:U:H2'	1:1A:3137:C:H6	1.68	0.57
53:sa:632:U:OP2	69:sr:32:LYS:NZ	2.37	0.57
53:sa:887:A:H2'	53:sa:888:A:C8	2.39	0.57
1:1A:1293:U:H5'	9:II:199:LYS:HD3	1.85	0.57
1:1A:3248:A:OP2	24:IX:15:ARG:NH2	2.33	0.57
28:lb:10:VAL:O	28:lb:83:THR:OG1	2.22	0.57
29:lc:6:ARG:HB2	29:lc:8:THR:HG22	1.86	0.57
48:sE:21:CYS:HB3	48:sE:25:GLY:H	1.69	0.57
56:sd:45:ALA:O	56:sd:68:ARG:NH1	2.37	0.57
66:so:99:ARG:NH2	66:so:141:TYR:OH	2.37	0.57
77:sz:17:VAL:HG13	77:sz:24:LYS:HG2	1.85	0.57
1:1A:1994:G:OP1	28:lb:136:LYS:NZ	2.36	0.57
1:1A:2418:U:OP1	1:1A:3243:C:O2'	2.22	0.57
1:1A:2432:A:H61	1:1A:3126:C:H5	1.52	0.57
33:lg:36:PRO:HG2	33:lg:44:ARG:HB3	1.86	0.57
53:sa:258:A:OP1	60:sh:204:LYS:NZ	2.37	0.57
53:sa:1440:A:N6	53:sa:1519:G:O2'	2.37	0.57
56:sd:22:LYS:HG2	74:sw:61:LEU:HD11	1.86	0.57
1:1A:772:C:N4	1:1A:773:G:O6	2.38	0.57
1:1A:2721:G:H1	1:1A:2941:C:H5	1.51	0.57
1:1A:2778:U:H2'	1:1A:2779:C:H6	1.69	0.57
1:1A:3129:U:C2	1:1A:3130:A:C8	2.92	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:3149:A:H2'	1:1A:3150:A:C8	2.39	0.57
72:su:81:PRO:HG2	72:su:84:PHE:HB2	1.85	0.57
1:1A:9:G:H22	25:1Y:17:LYS:HE3	1.68	0.57
1:1A:1107:G:H2'	1:1A:1108:A:C8	2.40	0.57
1:1A:3426:U:O4	5:1E:121:LYS:NZ	2.37	0.57
8:1H:43:THR:OG1	8:1H:85:LYS:NZ	2.37	0.57
47:sD:62:GLU:HB3	67:sp:70:MET:HE1	1.87	0.57
53:sa:919:A:H2'	53:sa:920:A:C8	2.39	0.57
53:sa:936:U:OP1	53:sa:1097:C:O2'	2.22	0.57
1:1A:1071:A:H4'	1:1A:1087:G:N2	2.20	0.57
1:1A:1090:A:H2'	1:1A:1091:A:C8	2.40	0.57
1:1A:1611:U:H2'	1:1A:1612:C:H6	1.68	0.57
1:1A:1841:G:N2	1:1A:1975:G:H22	2.02	0.57
2:1B:49:C:O2'	2:1B:63:A:O2'	2.19	0.57
32:lf:25:LYS:HA	32:lf:28:LYS:HE3	1.86	0.57
53:sa:584:C:H2'	53:sa:585:A:C8	2.39	0.57
53:sa:1389:G:H2'	53:sa:1390:A:H8	1.69	0.57
58:sf:183:GLY:HA3	58:sf:222:ASN:ND2	2.19	0.57
1:1A:213:A:H2'	14:1N:127:VAL:HG21	1.87	0.57
1:1A:1086:G:H2'	1:1A:1087:G:H8	1.69	0.57
1:1A:1538:G:N2	1:1A:1541:A:OP2	2.31	0.57
1:1A:3243:C:OP1	5:1E:224:LYS:NZ	2.36	0.57
53:sa:932:C:H2'	53:sa:933:A:C8	2.39	0.57
1:1A:826:A:O2'	1:1A:828:A:N7	2.37	0.57
16:1P:25:ALA:HA	16:1P:40:GLY:HA3	1.85	0.57
51:sJ:23:G:N7	51:sJ:47:G:O6	2.38	0.57
53:sa:387:G:OP1	53:sa:1876:U:O2'	2.22	0.57
53:sa:1382:C:H4'	73:sv:125:LYS:HD3	1.86	0.57
70:ss:141:ALA:O	70:ss:143:LYS:NZ	2.38	0.57
1:1A:322:U:H2'	1:1A:323:U:C6	2.40	0.57
1:1A:1293:U:O4	1:1A:1454:G:O2'	2.19	0.57
1:1A:3212:U:OP1	32:lf:55:HIS:NE2	2.37	0.57
53:sa:1751:U:H3	53:sa:1777:A:H2	1.52	0.57
57:se:73:ALA:HB2	57:se:82:GLY:HA2	1.87	0.57
74:sw:26:SER:HB2	74:sw:110:VAL:HG13	1.87	0.57
1:1A:2415:C:OP1	24:1X:54:ARG:NH2	2.37	0.57
1:1A:2489:A:H2'	1:1A:2490:G:H8	1.69	0.57
3:1C:2:G:O2'	3:1C:24:U:O2	2.22	0.56
11:1K:101:ARG:NH1	11:1K:149:GLU:OE1	2.38	0.56
37:lk:2:ALA:O	37:lk:4:GLY:N	2.37	0.56
53:sa:1581:G:H2'	53:sa:1582:G:C8	2.39	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:sd:219:PRO:O	71:st:20:TYR:OH	2.22	0.56
58:sf:98:ARG:HB3	58:sf:110:VAL:HG22	1.87	0.56
1:lA:1639:U:H2'	1:lA:1640:A:C8	2.41	0.56
1:lA:2395:C:O2	1:lA:2397:C:N4	2.29	0.56
5:lE:92:TYR:HB2	5:lE:159:VAL:HB	1.86	0.56
12:lL:170:LYS:HA	12:lL:177:THR:HA	1.87	0.56
28:lb:20:GLY:HA3	28:lb:139:PHE:HZ	1.70	0.56
53:sa:203:C:H5	53:sa:255:G:H21	1.54	0.56
53:sa:1221:A:OP2	53:sa:1571:G:N2	2.33	0.56
63:sk:130:ARG:NH1	63:sk:142:ASP:O	2.31	0.56
1:lA:445:G:H5''	1:lA:448:C:H1'	1.88	0.56
1:lA:907:U:H2'	1:lA:908:A:H8	1.70	0.56
1:lA:2257:G:OP1	4:lD:193:ARG:NH2	2.38	0.56
1:lA:2732:A:H2'	1:lA:2733:A:H8	1.69	0.56
1:lA:3211:A:H2	1:lA:3239:G:H21	1.53	0.56
1:lA:3476:C:N4	1:lA:3479:A:OP1	2.38	0.56
3:lC:29:G:N7	3:lC:46:G:N1	2.50	0.56
6:lF:230:ASP:OD1	6:lF:250:ARG:NH2	2.38	0.56
9:lI:109:ALA:HB2	22:lV:139:LYS:HB3	1.87	0.56
53:sa:1182:C:H2'	53:sa:1183:A:H8	1.70	0.56
56:sd:133:VAL:HG21	56:sd:152:ILE:HD11	1.86	0.56
72:su:34:ILE:HG22	72:su:36:GLY:H	1.69	0.56
1:lA:59:A:N3	1:lA:74:U:O2'	2.33	0.56
1:lA:316:G:OP1	17:lQ:47:ARG:NE	2.35	0.56
1:lA:705:U:N3	1:lA:743:G:N7	2.54	0.56
1:lA:797:C:H2'	1:lA:798:U:C6	2.40	0.56
1:lA:2971:G:OP2	12:lL:7:ARG:NH2	2.38	0.56
3:lC:81:A:H2	3:lC:93:G:H1	1.53	0.56
16:lP:49:ARG:NH2	16:lP:71:MET:O	2.34	0.56
53:sa:1002:U:O4	53:sa:1003:A:N6	2.37	0.56
53:sa:1134:G:OP2	53:sa:1134:G:N2	2.33	0.56
73:sv:31:ILE:HG23	73:sv:35:VAL:HG11	1.87	0.56
1:lA:1871:C:C2	1:lA:1872:U:C5	2.94	0.56
27:la:21:ALA:O	27:la:26:ARG:NH1	2.36	0.56
44:sA:85:LYS:NZ	53:sa:1698:A:OP1	2.39	0.56
53:sa:69:G:H21	53:sa:80:A:H62	1.54	0.56
53:sa:1719:G:N1	53:sa:1722:A:OP2	2.38	0.56
57:se:30:GLU:HB3	57:se:32:TYR:CE1	2.40	0.56
1:lA:828:A:OP1	17:lQ:202:ARG:NH2	2.39	0.56
1:lA:868:A:H2'	1:lA:869:G:C8	2.40	0.56
1:lA:3024:C:H2'	1:lA:3025:U:C6	2.40	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:ID:193:ARG:HB2	4:ID:195:THR:HG23	1.88	0.56
7:IG:50:ARG:NH1	7:IG:148:ASP:OD2	2.38	0.56
10:IJ:96:LYS:HE3	10:IJ:100:ILE:HD11	1.88	0.56
53:sa:858:G:H2'	53:sa:859:U:H6	1.71	0.56
53:sa:1172:G:H2'	53:sa:1173:A:C8	2.40	0.56
55:sc:47:VAL:HG21	55:sc:70:ILE:HG23	1.87	0.56
3:IC:2:G:H2'	3:IC:3:G:H8	1.69	0.56
13:IM:117:ASP:OD1	13:IM:117:ASP:N	2.37	0.56
17:IQ:106:VAL:HG21	17:IQ:132:VAL:HG21	1.87	0.56
53:sa:65:U:O2	60:sh:177:LYS:HB3	2.06	0.56
53:sa:158:A:H2'	53:sa:159:A:H8	1.70	0.56
53:sa:367:G:O2'	53:sa:605:C:N3	2.33	0.56
53:sa:401:U:H2'	53:sa:402:A:H8	1.69	0.56
53:sa:1589:U:O2'	70:ss:92:GLN:OE1	2.20	0.56
58:sf:67:THR:HG23	58:sf:92:ARG:HE	1.70	0.56
72:su:36:GLY:HA3	72:su:100:ILE:HA	1.87	0.56
1:IA:1220:A:H2'	1:IA:1220:A:N3	2.20	0.56
1:IA:1846:A:H2'	1:IA:1847:A:H8	1.70	0.56
1:IA:2173:A:H2'	1:IA:2174:U:C6	2.40	0.56
1:IA:3414:A:OP1	36:Ij:57:LYS:NZ	2.38	0.56
1:IA:3469:A:N6	1:IA:3485:U:N3	2.51	0.56
9:II:78:ARG:HH22	9:II:206:LYS:HG2	1.70	0.56
51:sJ:47:G:O2'	51:sJ:48:U:O4'	2.24	0.56
53:sa:13:C:H4'	53:sa:1323:U:H3	1.71	0.56
53:sa:1558:U:H2'	53:sa:1559:U:H6	1.71	0.56
54:sb:89:MET:HE3	54:sb:211:HIS:HB2	1.86	0.56
1:IA:587:A:HO2'	1:IA:588:G:P	2.28	0.56
1:IA:2958:G:N2	1:IA:2961:U:O2	2.37	0.56
2:IB:93:C:OP1	38:Il:73:ARG:NH1	2.39	0.56
4:ID:39:SER:OG	4:ID:40:THR:N	2.39	0.56
45:sB:37:LYS:O	45:sB:38:ARG:NH1	2.38	0.56
57:se:50:VAL:HG23	57:se:51:ASN:O	2.05	0.56
1:IA:246:U:OP1	27:la:59:LYS:NZ	2.38	0.56
1:IA:2731:G:H2'	1:IA:2732:A:H8	1.70	0.56
12:IL:93:PRO:HB2	12:IL:125:SER:HB3	1.87	0.56
28:lb:53:ILE:HD12	28:lb:62:GLN:HB3	1.88	0.56
28:lb:92:PHE:HB3	28:lb:95:ILE:HD12	1.88	0.56
51:sJ:23:G:O2'	51:sJ:24:C:OP1	2.22	0.56
53:sa:752:A:OP1	63:sk:51:HIS:NE2	2.33	0.56
53:sa:1188:A:N3	53:sa:1779:U:O2'	2.35	0.56
60:sh:181:ILE:HB	60:sh:186:THR:HG21	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
73:sv:108:LEU:HD22	73:sv:113:ILE:HG21	1.87	0.56
1:lA:502:U:H2'	1:lA:503:A:H8	1.71	0.55
1:lA:764:U:H2'	1:lA:765:A:H8	1.70	0.55
1:lA:1508:U:H2'	1:lA:1509:A:C8	2.40	0.55
1:lA:3476:C:H4'	1:lA:3476:C:OP1	2.06	0.55
39:lm:85:ARG:NH2	53:sa:904:A:OP1	2.29	0.55
53:sa:1594:A:H2'	53:sa:1595:G:C8	2.41	0.55
70:ss:64:PHE:HA	70:ss:67:LEU:HD23	1.88	0.55
1:lA:2767:A:H2'	1:lA:2768:G:C8	2.41	0.55
8:lH:178:LYS:HE2	8:lH:184:LYS:HE3	1.87	0.55
50:sI:15:G:N2	50:sI:59:G:N7	2.54	0.55
53:sa:251:C:O2	62:sj:64:ASN:ND2	2.39	0.55
53:sa:1356:A:H61	56:sd:175:GLY:HA2	1.72	0.55
57:se:200:VAL:O	57:se:204:SER:OG	2.18	0.55
68:sq:120:ILE:HD12	68:sq:121:THR:H	1.70	0.55
1:lA:312:A:OP2	37:lk:28:THR:OG1	2.20	0.55
1:lA:643:A:OP1	16:lP:91:LYS:NZ	2.37	0.55
1:lA:822:C:H2'	1:lA:823:A:C8	2.41	0.55
1:lA:2289:A:H2'	1:lA:2290:A:C8	2.41	0.55
9:lI:63:LEU:HB2	22:lV:147:ILE:HB	1.88	0.55
13:lM:14:ILE:HD12	13:lM:129:VAL:HG13	1.88	0.55
30:ld:36:ASN:HB3	30:ld:39:VAL:HB	1.87	0.55
45:sB:5:ARG:NH2	53:sa:1942:U:OP2	2.39	0.55
53:sa:136:A:N6	60:sh:192:HIS:HB3	2.22	0.55
60:sh:78:ASP:OD1	60:sh:78:ASP:N	2.38	0.55
70:ss:65:GLU:OE1	70:ss:97:ARG:NH1	2.39	0.55
1:lA:191:A:H2'	1:lA:192:A:H8	1.70	0.55
1:lA:836:C:H2'	1:lA:837:A:C8	2.40	0.55
1:lA:2178:A:O2'	1:lA:2179:U:H6	1.88	0.55
1:lA:2904:U:H2'	1:lA:2905:U:C6	2.41	0.55
3:lC:22:C:H2'	3:lC:23:A:C8	2.40	0.55
53:sa:1182:C:H2'	53:sa:1183:A:C8	2.42	0.55
1:lA:760:A:H2'	1:lA:761:A:C8	2.40	0.55
1:lA:873:U:H2'	1:lA:874:A:H8	1.72	0.55
4:lD:108:PRO:O	4:lD:111:THR:OG1	2.24	0.55
5:lE:232:ILE:HG13	5:lE:249:ARG:HB3	1.89	0.55
8:lH:65:LEU:HD11	8:lH:79:PHE:HB2	1.88	0.55
16:lP:39:ASP:OD2	16:lP:49:ARG:NH2	2.34	0.55
53:sa:604:G:O2'	53:sa:607:G:O2'	2.20	0.55
53:sa:1196:A:H2'	53:sa:1197:G:C8	2.41	0.55
1:lA:547:A:H2'	1:lA:548:A:H8	1.72	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:979:G:C5	4:1D:181:LYS:HB3	2.42	0.55
1:1A:2179:U:H2'	1:1A:2180:C:H6	1.72	0.55
1:1A:2230:U:H2'	1:1A:2231:C:C6	2.42	0.55
1:1A:3405:A:N6	8:1H:164:GLU:OE1	2.40	0.55
7:1G:33:ARG:CZ	7:1G:37:ILE:HD11	2.36	0.55
45:sB:2:THR:OG1	53:sa:1168:A:OP1	2.21	0.55
47:sD:66:ARG:NE	47:sD:66:ARG:O	2.40	0.55
53:sa:1227:A:N6	53:sa:1564:C:O5'	2.39	0.55
73:sv:21:GLU:CD	73:sv:21:GLU:H	2.14	0.55
1:1A:1112:G:O2'	1:1A:1172:G:O6	2.24	0.55
1:1A:2433:A:H2'	1:1A:2434:A:C8	2.42	0.55
21:1U:108:LYS:O	21:1U:112:THR:OG1	2.21	0.55
54:sb:154:PHE:O	54:sb:172:ASN:ND2	2.35	0.55
60:sh:138:ALA:HB1	60:sh:142:ARG:N	2.22	0.55
60:sh:138:ALA:HB2	60:sh:181:ILE:HG22	1.88	0.55
1:1A:2236:A:H2'	1:1A:2237:A:C8	2.42	0.55
19:1S:35:LEU:O	19:1S:39:THR:OG1	2.22	0.55
21:1U:28:GLU:OE2	21:1U:28:GLU:N	2.40	0.55
53:sa:324:G:H5''	62:sj:98:LYS:HB3	1.89	0.55
72:su:72:LEU:HD22	72:su:100:ILE:HG21	1.89	0.55
1:1A:315:A:N7	17:1Q:12:ARG:NH1	2.55	0.55
1:1A:965:A:H2'	1:1A:966:A:O4'	2.07	0.55
1:1A:1474:A:OP2	19:1S:30:ARG:NH2	2.40	0.55
1:1A:1520:A:H4'	1:1A:1521:A:O5'	2.07	0.55
1:1A:2433:A:H2'	1:1A:2434:A:H8	1.71	0.55
29:1c:85:ASP:OD1	29:1c:85:ASP:N	2.38	0.55
53:sa:1302:G:OP1	56:sd:153:SER:OG	2.24	0.55
58:sf:183:GLY:N	58:sf:187:MET:HB2	2.22	0.55
1:1A:1974:A:H2'	1:1A:1975:G:C8	2.41	0.55
1:1A:3103:C:H2'	1:1A:3104:G:C8	2.42	0.55
4:1D:33:ASP:OD2	4:1D:67:ARG:NH2	2.35	0.55
13:1M:141:ARG:NH2	13:1M:146:ASP:OD2	2.40	0.55
53:sa:31:U:O2'	53:sa:588:A:N1	2.36	0.55
53:sa:429:G:N1	53:sa:432:A:OP2	2.37	0.55
54:sb:41:GLU:O	54:sb:58:LYS:NZ	2.36	0.55
61:si:136:LEU:O	61:si:139:VAL:N	2.41	0.55
71:st:5:ARG:HB2	71:st:10:LYS:HE3	1.89	0.55
1:1A:699:A:H2'	1:1A:700:A:C8	2.42	0.54
1:1A:869:G:C5	1:1A:870:A:H1'	2.42	0.54
1:1A:2236:A:H61	1:1A:2250:C:N4	2.04	0.54
2:1B:21:A:H2'	2:1B:22:G:C8	2.42	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1B:141:G:H2'	2:1B:142:A:C8	2.42	0.54
11:1K:94:LYS:HE3	11:1K:192:LEU:HD22	1.89	0.54
30:1d:7:ARG:NH2	30:1d:9:SER:OG	2.40	0.54
57:se:72:LEU:HD22	57:se:76:MET:HG3	1.89	0.54
3:1C:48:U:OP2	7:1G:221:ARG:NH2	2.40	0.54
4:1D:36:GLU:OE1	4:1D:163:ARG:NH1	2.41	0.54
11:1K:71:ASN:OD1	11:1K:71:ASN:N	2.40	0.54
53:sa:151:A:H2'	53:sa:152:A:O4'	2.07	0.54
53:sa:754:G:OP2	63:sk:79:ARG:NH2	2.40	0.54
59:sg:177:ASP:O	59:sg:181:ASN:ND2	2.40	0.54
65:sm:100:GLU:OE1	76:sy:9:ARG:NH2	2.41	0.54
1:1A:40:U:H5''	17:1Q:85:ALA:HB2	1.89	0.54
1:1A:1105:U:OP1	9:1I:113:LYS:NZ	2.40	0.54
1:1A:1675:A:H2'	1:1A:1676:A:C8	2.42	0.54
1:1A:1892:C:H2'	1:1A:1893:A:C8	2.42	0.54
1:1A:802:A:H2'	1:1A:803:U:C6	2.42	0.54
1:1A:983:C:C2	1:1A:984:A:C8	2.95	0.54
1:1A:2846:U:H2'	1:1A:2847:A:H8	1.72	0.54
1:1A:2958:G:O2'	1:1A:2959:G:OP1	2.24	0.54
2:1B:21:A:H2'	2:1B:22:G:H8	1.72	0.54
45:sB:48:ALA:O	67:sp:112:ARG:NH2	2.41	0.54
45:sB:56:ASN:ND2	67:sp:119:MET:O	2.40	0.54
60:sh:106:ILE:O	60:sh:108:VAL:N	2.41	0.54
1:1A:221:U:H2'	1:1A:222:A:C8	2.41	0.54
1:1A:1823:C:H2'	1:1A:1824:A:C4	2.42	0.54
3:1C:11:C:OP2	3:1C:66:U:O2'	2.26	0.54
11:1K:101:ARG:HE	42:lp:7:LEU:HD11	1.72	0.54
53:sa:338:C:H2'	53:sa:339:A:H8	1.72	0.54
53:sa:947:A:OP2	66:so:124:ARG:NH2	2.41	0.54
53:sa:1292:A:HO2'	53:sa:1555:A:HO2'	1.53	0.54
54:sb:77:THR:OG1	54:sb:127:ARG:NH2	2.40	0.54
1:1A:1115:A:O2'	3:1C:76:U:O2	2.26	0.54
1:1A:1430:G:O6	1:1A:2442:C:O2'	2.24	0.54
1:1A:2123:A:H2'	1:1A:2124:A:C8	2.42	0.54
1:1A:2349:G:O2'	1:1A:2387:G:O6	2.23	0.54
3:1C:104:G:H2'	3:1C:105:A:H8	1.72	0.54
6:1F:212:TYR:HB2	6:1F:216:ASP:HB2	1.88	0.54
11:1K:50:LYS:HB3	11:1K:59:LYS:HD3	1.90	0.54
18:1R:53:ILE:HG13	18:1R:55:LYS:HG2	1.89	0.54
53:sa:111:A:O2'	65:sm:66:ARG:NH1	2.40	0.54
53:sa:948:U:OP1	53:sa:1013:U:O2'	2.26	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:sa:1699:C:H4'	53:sa:1705:A:N6	2.23	0.54
73:sv:113:ILE:HG13	73:sv:127:GLY:HA2	1.89	0.54
1:lA:487:A:H2'	1:lA:488:A:C8	2.43	0.54
1:lA:3410:A:H1'	1:lA:3411:U:H5	1.72	0.54
1:lA:3476:C:H5''	1:lA:3477:U:H5	1.73	0.54
48:sE:34:TYR:OH	53:sa:1594:A:OP1	2.22	0.54
53:sa:111:A:H4'	65:sm:66:ARG:HB3	1.89	0.54
55:sc:39:PRO:HG3	55:sc:69:GLN:HE22	1.73	0.54
72:su:71:ILE:HG13	72:su:78:TYR:CD2	2.42	0.54
1:lA:996:C:O2'	1:lA:999:G:O2'	2.21	0.54
3:lC:35:A:H2	3:lC:40:G:H22	1.54	0.54
6:lF:147:VAL:O	27:la:164:LYS:NZ	2.37	0.54
11:lK:13:ILE:HD11	11:lK:63:VAL:HG23	1.89	0.54
53:sa:389:U:H2'	53:sa:390:U:C6	2.43	0.54
53:sa:1820:G:O2'	53:sa:1821:A:C8	2.51	0.54
63:sk:60:LEU:HD11	63:sk:94:GLU:HG3	1.90	0.54
74:sw:93:THR:OG1	74:sw:94:THR:N	2.39	0.54
1:lA:705:U:H2'	1:lA:706:A:H8	1.72	0.54
1:lA:1177:A:H2'	1:lA:1178:A:C8	2.42	0.54
1:lA:1929:G:H2'	1:lA:1930:C:H6	1.73	0.54
5:lE:222:VAL:O	5:lE:335:ARG:NH1	2.39	0.54
8:lH:98:ASN:HD21	8:lH:187:MET:C	2.15	0.54
27:la:109:LEU:HB2	27:la:114:GLU:OE2	2.08	0.54
53:sa:1811:G:C2	53:sa:1812:C:C5	2.96	0.54
59:sg:53:HIS:HB2	59:sg:92:MET:SD	2.48	0.54
72:su:97:SER:OG	72:su:98:GLN:N	2.41	0.54
1:lA:1086:G:H2'	1:lA:1087:G:C8	2.43	0.54
1:lA:3193:G:H2'	1:lA:3194:U:C6	2.43	0.54
6:lF:32:ILE:HG22	6:lF:248:MET:HE1	1.88	0.54
18:lR:18:ARG:NH1	18:lR:20:ASP:OD1	2.39	0.54
42:lp:21:CYS:HB3	42:lp:24:CYS:HB2	1.90	0.54
60:sh:184:LEU:HG	60:sh:185:VAL:H	1.73	0.54
62:sj:96:LEU:HD13	62:sj:215:VAL:HG21	1.89	0.54
77:sz:29:ASP:OD1	77:sz:29:ASP:N	2.39	0.54
1:lA:1019:G:H1'	1:lA:1737:A:N6	2.23	0.53
1:lA:1090:A:H2'	1:lA:1091:A:H8	1.72	0.53
1:lA:1582:U:OP1	18:lR:82:ARG:NH2	2.38	0.53
1:lA:2767:A:H2'	1:lA:2768:G:H8	1.73	0.53
1:lA:3393:A:H2'	1:lA:3394:A:C8	2.43	0.53
17:lQ:17:ASP:OD1	17:lQ:17:ASP:N	2.36	0.53
27:la:87:LYS:O	27:la:89:ASN:N	2.42	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:sJ:42:C:H2'	51:sJ:43:G:H8	1.72	0.53
53:sa:74:A:O2'	53:sa:75:G:O4'	2.19	0.53
53:sa:1214:A:N3	53:sa:1219:A:O2'	2.38	0.53
59:sg:94:VAL:HG11	59:sg:171:LEU:HD23	1.89	0.53
62:sj:60:LEU:HD12	62:sj:215:VAL:HG23	1.90	0.53
72:su:86:ASN:OD1	72:su:86:ASN:N	2.29	0.53
1:lA:409:G:O2'	6:lF:80:SER:O	2.25	0.53
1:lA:435:A:OP1	18:lR:4:TYR:OH	2.24	0.53
1:lA:796:U:H2'	1:lA:797:C:C6	2.43	0.53
1:lA:2207:A:N6	39:lm:17:ARG:O	2.37	0.53
1:lA:2944:A:O2'	1:lA:2945:A:H2'	2.08	0.53
53:sa:64:A:H2	53:sa:83:A:H62	1.56	0.53
58:sf:181:MET:SD	58:sf:218:THR:HG21	2.48	0.53
76:sy:66:LYS:HB3	76:sy:89:LEU:HD22	1.91	0.53
1:lA:2632:A:O2'	28:lb:139:PHE:O	2.24	0.53
1:lA:2701:U:H2'	1:lA:2702:G:H8	1.72	0.53
1:lA:2857:A:H1'	1:lA:2858:A:H5''	1.91	0.53
1:lA:3462:A:O4'	1:lA:3492:G:N2	2.41	0.53
15:lO:13:HIS:ND1	15:lO:41:ASP:OD2	2.42	0.53
1:lA:43:C:OP2	1:lA:44:A:O2'	2.17	0.53
1:lA:220:A:H2'	1:lA:221:U:C6	2.43	0.53
1:lA:452:A:C2	2:lB:19:A:H1'	2.42	0.53
1:lA:759:U:H2'	1:lA:760:A:H8	1.72	0.53
1:lA:1553:A:OP1	2:lB:22:G:O2'	2.24	0.53
1:lA:3205:U:H2'	1:lA:3206:G:H8	1.74	0.53
27:la:109:LEU:HA	27:la:113:ARG:HG3	1.89	0.53
50:sI:22:G:N7	50:sI:46:G:N2	2.46	0.53
53:sa:376:U:H2'	53:sa:377:C:H6	1.73	0.53
53:sa:458:U:C2	53:sa:459:A:C8	2.96	0.53
63:sk:85:ILE:HD13	63:sk:107:ARG:HG3	1.89	0.53
1:lA:2346:A:H2'	1:lA:2347:A:C8	2.43	0.53
12:lL:62:SER:HA	12:lL:65:MET:HG3	1.89	0.53
17:lQ:143:ARG:NH2	35:li:82:ARG:O	2.39	0.53
18:lR:57:ILE:HB	18:lR:72:GLN:HB2	1.90	0.53
51:sJ:50:U:O2'	51:sJ:51:U:OP1	2.25	0.53
53:sa:96:C:H2'	53:sa:97:U:C6	2.43	0.53
77:sz:59:ILE:HG22	77:sz:79:ILE:HG22	1.90	0.53
1:lA:336:A:H2	17:lQ:93:LYS:HD3	1.72	0.53
1:lA:3453:C:H2'	1:lA:3454:G:C8	2.43	0.53
7:lG:50:ARG:NH2	7:lG:72:ASP:OD2	2.42	0.53
14:lN:82:LYS:NZ	14:lN:215:LYS:O	2.35	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:IP:29:GLU:HG2	20:IT:68:VAL:HG21	1.90	0.53
32:If:16:GLU:O	32:If:20:ALA:N	2.41	0.53
53:sa:745:U:N3	53:sa:787:U:O4	2.37	0.53
53:sa:1196:A:H2'	53:sa:1197:G:H8	1.73	0.53
73:sv:29:LEU:HD12	73:sv:111:MET:HE1	1.91	0.53
1:lA:703:G:H1	1:lA:744:A:N6	2.07	0.53
1:lA:2745:C:OP2	1:lA:2746:A:O2'	2.27	0.53
50:sI:2:G:H2'	50:sI:3:C:H6	1.74	0.53
51:sJ:70:A:H2'	51:sJ:71:G:H8	1.72	0.53
53:sa:623:U:C2	53:sa:624:A:C8	2.96	0.53
54:sb:27:ARG:HD2	54:sb:30:ILE:HG13	1.91	0.53
55:sc:118:LYS:HG2	55:sc:129:GLY:HA3	1.89	0.53
57:se:106:LYS:HG3	57:se:216:LYS:HE2	1.90	0.53
63:sk:59:MET:HA	63:sk:62:LYS:HE3	1.90	0.53
1:lA:526:A:H5''	1:lA:538:A:N1	2.24	0.53
2:lB:31:C:C2	2:lB:32:C:C5	2.96	0.53
9:II:161:LEU:HD21	9:II:189:LYS:HG3	1.90	0.53
10:IJ:72:THR:HG21	10:IJ:178:LYS:HG3	1.90	0.53
14:lN:257:PHE:O	29:lc:139:LYS:NZ	2.39	0.53
44:sA:64:SER:O	44:sA:111:ARG:NH2	2.42	0.53
45:sB:44:ILE:O	67:sp:108:GLN:NE2	2.35	0.53
53:sa:746:A:H2'	53:sa:747:A:C8	2.44	0.53
57:se:72:LEU:CB	57:se:81:PHE:HB3	2.30	0.53
1:lA:842:G:H2'	1:lA:843:A:C8	2.44	0.53
1:lA:875:C:H2'	1:lA:876:A:H8	1.74	0.53
20:IT:79:SER:OG	20:IT:84:HIS:NE2	2.33	0.53
60:sh:184:LEU:O	60:sh:189:ARG:NH1	2.42	0.53
1:lA:236:U:O4'	27:la:33:ARG:NH1	2.42	0.53
1:lA:2179:U:H2'	1:lA:2180:C:C6	2.43	0.53
1:lA:2730:U:H2'	1:lA:2731:G:H8	1.73	0.53
4:ID:117:GLU:HG2	4:ID:124:GLY:H	1.72	0.53
13:IM:116:TYR:O	72:su:102:ASN:ND2	2.42	0.53
48:sE:41:ARG:O	53:sa:1540:G:N2	2.41	0.53
53:sa:1594:A:H2'	53:sa:1595:G:H8	1.73	0.53
57:se:108:THR:OG1	67:sp:125:GLU:OE1	2.27	0.53
1:lA:208:U:H2'	1:lA:209:A:C8	2.44	0.52
1:lA:382:A:N3	6:lF:50:GLN:NE2	2.56	0.52
1:lA:1475:A:HO2'	27:la:185:ARG:HH22	1.56	0.52
1:lA:1856:G:H2'	1:lA:1857:A:H8	1.74	0.52
15:lO:2:SER:O	36:lj:98:ASN:ND2	2.36	0.52
19:lS:36:ALA:HB1	19:lS:45:LYS:HG2	1.90	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:sA:71:ALA:HB1	59:sg:169:LYS:HA	1.90	0.52
53:sa:1754:U:O4	53:sa:1755:A:N6	2.42	0.52
60:sh:149:GLN:HB2	60:sh:185:VAL:HG22	1.92	0.52
68:sq:86:PRO:HA	68:sq:89:ILE:HB	1.91	0.52
70:ss:41:LYS:NZ	70:ss:79:ASP:OD2	2.42	0.52
1:lA:65:U:O2'	1:lA:97:A:O2'	2.27	0.52
1:lA:233:A:N3	1:lA:254:C:O2'	2.40	0.52
1:lA:2443:A:H2'	1:lA:2444:A:C8	2.44	0.52
10:lJ:80:GLN:HE22	10:lJ:207:ALA:HB1	1.73	0.52
62:sj:36:THR:O	62:sj:96:LEU:N	2.39	0.52
1:lA:3329:U:H2'	1:lA:3330:A:C8	2.44	0.52
2:lB:148:A:N3	10:lJ:45:TYR:OH	2.36	0.52
22:IV:88:ARG:NH2	30:ld:28:ALA:O	2.30	0.52
25:lY:57:ASP:OD1	25:lY:57:ASP:N	2.34	0.52
54:sb:46:ARG:NH1	54:sb:52:CYS:SG	2.82	0.52
55:sc:127:ILE:HG22	55:sc:131:MET:HE2	1.91	0.52
55:sc:190:LEU:HD13	55:sc:198:VAL:HG11	1.91	0.52
58:sf:39:CYS:HA	58:sf:83:GLY:HA2	1.90	0.52
63:sk:133:MET:SD	63:sk:133:MET:N	2.81	0.52
65:sm:74:VAL:HG12	65:sm:119:GLU:HA	1.90	0.52
70:ss:20:LYS:NZ	70:ss:107:TYR:OH	2.38	0.52
1:lA:550:A:H2'	1:lA:551:A:C8	2.44	0.52
1:lA:886:A:H4'	30:ld:27:SER:HB2	1.92	0.52
1:lA:2666:G:H2'	1:lA:2667:A:C8	2.45	0.52
1:lA:3008:U:O2'	1:lA:3009:C:OP1	2.22	0.52
3:lC:17:G:H1	3:lC:59:G:H22	1.57	0.52
3:lC:33:A:N1	3:lC:45:U:O2'	2.41	0.52
6:lF:136:LEU:HD11	27:la:178:LEU:HD12	1.90	0.52
57:se:71:ASN:ND2	57:se:86:TYR:CG	2.78	0.52
60:sh:69:THR:HG21	60:sh:73:VAL:HG22	1.92	0.52
1:lA:703:G:H3'	1:lA:704:C:H6	1.75	0.52
1:lA:2257:G:H5''	4:ld:193:ARG:NH1	2.25	0.52
2:lB:145:U:H2'	2:lB:146:U:C6	2.45	0.52
53:sa:125:U:O2'	53:sa:203:C:O2	2.27	0.52
53:sa:1722:A:OP1	68:sq:114:TYR:OH	2.27	0.52
53:sa:1776:G:N7	70:ss:29:LYS:NZ	2.57	0.52
63:sk:106:GLU:O	63:sk:111:THR:OG1	2.21	0.52
64:sl:88:SER:O	64:sl:88:SER:OG	2.26	0.52
1:lA:2073:U:C2	1:lA:2074:U:C5	2.98	0.52
1:lA:2904:U:H2'	1:lA:2905:U:H6	1.74	0.52
1:lA:3302:U:H2'	1:lA:3303:A:H8	1.75	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:1E:162:VAL:HG13	5:1E:185:ILE:HD11	1.90	0.52
44:sA:80:THR:HG22	44:sA:82:SER:H	1.74	0.52
51:sJ:15:G:N2	51:sJ:49:C:O2	2.43	0.52
53:sa:387:G:OP1	62:sj:2:GLY:N	2.42	0.52
53:sa:592:U:H2'	53:sa:593:A:H8	1.74	0.52
53:sa:1819:C:H2'	53:sa:1820:G:O4'	2.10	0.52
1:1A:227:A:H2'	1:1A:228:A:C8	2.45	0.52
1:1A:713:G:H3'	1:1A:714:U:C5'	2.40	0.52
1:1A:908:A:H2'	1:1A:909:A:C8	2.45	0.52
1:1A:948:C:O2'	1:1A:949:G:N7	2.43	0.52
1:1A:2419:C:H2'	1:1A:2420:U:H6	1.75	0.52
16:1P:84:ALA:O	16:1P:88:ARG:HG3	2.09	0.52
17:1Q:80:VAL:HB	17:1Q:82:ARG:HD2	1.90	0.52
22:1V:124:LYS:HD3	22:1V:124:LYS:N	2.25	0.52
27:1a:60:GLY:O	27:1a:63:LYS:NZ	2.41	0.52
29:1c:51:ASP:OD1	29:1c:51:ASP:N	2.40	0.52
53:sa:243:U:OP1	65:sm:33:TYR:OH	2.22	0.52
53:sa:1241:C:O2'	53:sa:1551:A:N6	2.29	0.52
53:sa:1666:U:OP1	73:sv:121:ARG:NH1	2.43	0.52
71:st:27:ASP:OD2	71:st:30:THR:HG23	2.10	0.52
1:1A:703:G:H3'	1:1A:704:C:C6	2.45	0.52
1:1A:777:U:O2'	1:1A:1278:A:N1	2.35	0.52
1:1A:1208:U:H4'	30:1d:43:THR:HG23	1.92	0.52
1:1A:1253:U:OP1	12:1L:4:ARG:NH1	2.40	0.52
1:1A:2250:C:OP2	4:1D:18:SER:OG	2.26	0.52
1:1A:3336:G:O2'	15:1O:115:LYS:O	2.28	0.52
6:1F:360:LYS:HB3	6:1F:400:THR:HG21	1.92	0.52
8:1H:117:VAL:HG22	8:1H:176:GLU:HG3	1.91	0.52
53:sa:78:G:P	60:sh:159:ARG:HH12	2.31	0.52
55:sc:58:ILE:HG23	55:sc:63:ILE:HB	1.92	0.52
58:sf:20:LYS:NZ	63:sk:5:LEU:O	2.34	0.52
60:sh:153:VAL:HB	60:sh:156:PHE:HB2	1.92	0.52
1:1A:505:A:H2'	1:1A:506:A:C8	2.44	0.52
35:1i:-7:LEU:HD22	35:1i:42:ASP:HB3	1.92	0.52
50:sI:63:U:H2'	50:sI:64:G:H8	1.74	0.52
55:sc:228:THR:OG1	55:sc:230:ASP:OD1	2.26	0.52
1:1A:542:U:C2	1:1A:543:A:C8	2.98	0.52
1:1A:1490:U:C2	1:1A:1491:A:C8	2.98	0.52
1:1A:3383:A:OP2	5:1E:148:ARG:NH2	2.31	0.52
69:sr:102:LEU:HB2	69:sr:113:ASN:HB3	1.91	0.52
1:1A:639:G:H1	1:1A:650:A:H2	1.58	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:720:U:H2'	1:1A:721:A:C8	2.42	0.51
1:1A:2228:A:H2'	1:1A:2229:U:H6	1.75	0.51
1:1A:3146:U:H4'	1:1A:3147:U:H5''	1.91	0.51
5:1E:41:PRO:HA	5:1E:187:GLY:HA3	1.91	0.51
5:1E:285:TYR:HB2	5:1E:324:MET:HB3	1.92	0.51
6:1F:35:ASP:OD1	6:1F:35:ASP:N	2.40	0.51
6:1F:237:LEU:HD22	6:1F:242:LEU:HD21	1.92	0.51
20:1T:75:LEU:HD13	20:1T:117:ILE:HG23	1.92	0.51
53:sa:1305:C:H2'	53:sa:1306:G:H8	1.75	0.51
53:sa:1662:G:N2	53:sa:1679:G:H22	2.08	0.51
55:sc:79:LYS:HG3	55:sc:109:HIS:CE1	2.44	0.51
60:sh:138:ALA:HB3	60:sh:184:LEU:HD22	1.91	0.51
1:1A:1105:U:H2'	1:1A:1106:U:C6	2.44	0.51
5:1E:47:LEU:HD22	5:1E:166:THR:HG21	1.92	0.51
7:1G:51:VAL:N	7:1G:146:ILE:O	2.36	0.51
11:1K:51:LEU:HB3	11:1K:62:VAL:HG21	1.92	0.51
32:1f:84:THR:OG1	32:1f:127:THR:OG1	2.29	0.51
40:ln:10:GLN:O	40:ln:14:LEU:N	2.39	0.51
53:sa:107:A:H2'	53:sa:108:G:C8	2.44	0.51
53:sa:781:G:H4'	53:sa:782:A:H4'	1.91	0.51
53:sa:1024:U:C2	53:sa:1025:U:C5	2.99	0.51
53:sa:1327:U:C2	53:sa:1328:U:C5	2.98	0.51
57:se:42:ARG:HB3	57:se:75:LEU:HD12	1.93	0.51
72:su:138:LYS:O	72:su:142:ARG:NH2	2.42	0.51
1:1A:473:U:O3'	36:lj:89:ASN:ND2	2.43	0.51
1:1A:502:U:H2'	1:1A:503:A:C8	2.45	0.51
1:1A:1093:G:OP1	19:1S:19:ARG:NH1	2.34	0.51
1:1A:1121:A:N1	1:1A:1168:C:O2'	2.40	0.51
1:1A:2946:A:H5'	43:1q:57:LYS:HE3	1.92	0.51
1:1A:3129:U:N3	1:1A:3130:A:N7	2.58	0.51
1:1A:3218:U:H2'	1:1A:3219:A:H8	1.74	0.51
1:1A:3455:G:O6	1:1A:3500:A:N1	2.43	0.51
1:1A:3463:A:H3'	1:1A:3464:G:N2	2.26	0.51
2:1B:29:U:H2'	2:1B:30:U:C6	2.46	0.51
18:1R:41:VAL:HG23	18:1R:95:LEU:HD22	1.92	0.51
23:1W:29:SER:HA	23:1W:78:THR:HA	1.92	0.51
23:1W:46:LEU:HD12	23:1W:75:VAL:HG21	1.91	0.51
60:sh:149:GLN:HG2	60:sh:150:LYS:HD3	1.90	0.51
61:si:101:ARG:HD2	61:si:122:ARG:HD3	1.90	0.51
1:1A:547:A:H2'	1:1A:548:A:C8	2.44	0.51
1:1A:626:A:N6	1:1A:663:G:O2'	2.37	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:1905:C:OP2	21:lU:103:ARG:NH1	2.43	0.51
1:lA:2297:G:N7	37:lk:61:LYS:NZ	2.57	0.51
1:lA:3432:A:O2'	1:lA:3433:U:OP1	2.28	0.51
4:lD:61:VAL:HG11	4:lD:88:ILE:HD11	1.92	0.51
10:lJ:97:LEU:HD23	10:lJ:100:ILE:HD12	1.92	0.51
53:sa:753:G:OP2	63:sk:79:ARG:NH2	2.43	0.51
53:sa:1353:G:OP1	56:sd:174:SER:N	2.39	0.51
53:sa:1892:G:H2'	53:sa:1893:A:C8	2.45	0.51
53:sa:1907:G:H1'	53:sa:1928:A:H2	1.75	0.51
1:lA:724:A:O2'	1:lA:725:A:H5''	2.10	0.51
1:lA:2846:U:H2'	1:lA:2847:A:C8	2.45	0.51
1:lA:2937:G:H5'	51:sJ:77:A:H62	1.76	0.51
1:lA:3300:A:H2'	1:lA:3301:A:H8	1.76	0.51
9:II:86:LYS:HE3	9:II:117:LEU:HD13	1.91	0.51
14:IN:9:ASN:HB2	19:IS:165:LYS:HB2	1.91	0.51
51:sJ:42:C:H2'	51:sJ:43:G:C8	2.45	0.51
57:se:201:ALA:O	57:se:202:LYS:HB2	2.11	0.51
72:su:13:MET:SD	72:su:20:ASN:HB3	2.50	0.51
73:sv:119:SER:O	73:sv:119:SER:OG	2.25	0.51
76:sy:69:ARG:NH1	76:sy:80:THR:OG1	2.44	0.51
1:lA:909:A:H2'	1:lA:910:A:H8	1.76	0.51
1:lA:2112:C:C2	1:lA:2113:A:C8	2.99	0.51
3:IC:79:G:O6	3:IC:95:A:N1	2.43	0.51
50:sI:15:G:N1	50:sI:48:C:N3	2.52	0.51
53:sa:210:U:H5''	65:sm:17:HIS:HE1	1.75	0.51
53:sa:422:C:O2'	53:sa:454:G:N3	2.42	0.51
53:sa:585:A:H2'	53:sa:586:A:C8	2.45	0.51
53:sa:1756:U:H2'	53:sa:1757:C:H6	1.75	0.51
1:lA:718:A:H2'	1:lA:719:U:C6	2.45	0.51
1:lA:1611:U:H2'	1:lA:1612:C:C6	2.45	0.51
1:lA:3498:U:H5''	32:lf:56:ALA:HB1	1.93	0.51
9:II:68:ASP:HB3	22:IV:141:PRO:HB3	1.91	0.51
19:IS:17:THR:OG1	19:IS:26:LYS:NZ	2.42	0.51
51:sJ:5:U:H2'	51:sJ:6:C:C6	2.46	0.51
51:sJ:68:G:O2'	51:sJ:69:A:O5'	2.26	0.51
53:sa:1253:G:O2'	53:sa:1254:G:OP1	2.28	0.51
53:sa:1789:C:C2	53:sa:1790:C:C5	2.99	0.51
58:sf:9:ARG:HD2	58:sf:26:ALA:HB2	1.92	0.51
60:sh:186:THR:HB	60:sh:187:PRO:HD2	1.93	0.51
1:lA:487:A:H2'	1:lA:488:A:H8	1.76	0.51
1:lA:1690:A:H2'	1:lA:1691:U:H6	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:2499:U:H2'	1:1A:2500:A:C8	2.44	0.51
3:1C:84:G:H22	3:1C:91:G:N2	2.08	0.51
53:sa:250:G:H21	62:sj:73:THR:HG21	1.75	0.51
53:sa:301:U:H2'	53:sa:302:C:C6	2.46	0.51
53:sa:319:U:OP1	65:sm:133:LYS:NZ	2.34	0.51
53:sa:1107:A:H2'	53:sa:1108:G:H8	1.75	0.51
53:sa:1711:A:OP1	72:su:132:VAL:N	2.43	0.51
64:sl:21:ILE:HG21	64:sl:45:MET:HE1	1.93	0.51
64:sl:23:CYS:SG	64:sl:24:HIS:N	2.84	0.51
69:sr:102:LEU:HD23	69:sr:128:PHE:HB3	1.93	0.51
72:su:85:LEU:HG	72:su:97:SER:HB3	1.93	0.51
1:1A:732:U:O2'	1:1A:733:C:H6	1.94	0.51
1:1A:897:A:H8	1:1A:898:U:O2'	1.94	0.51
1:1A:1593:A:H2'	1:1A:1594:A:H8	1.76	0.51
1:1A:1847:A:H2'	1:1A:1848:A:H8	1.75	0.51
1:1A:3083:A:OP2	5:1E:2:SER:N	2.43	0.51
2:1B:84:G:OP1	2:1B:85:U:O2'	2.18	0.51
3:1C:14:G:H2'	3:1C:15:A:H8	1.74	0.51
17:1Q:163:GLY:O	17:1Q:172:ARG:NH1	2.35	0.51
53:sa:5:U:H2'	53:sa:6:G:H8	1.76	0.51
53:sa:751:A:N1	53:sa:785:A:N6	2.59	0.51
53:sa:933:A:H2'	53:sa:934:A:C8	2.46	0.51
1:1A:1524:A:OP1	33:lg:102:SER:OG	2.22	0.51
1:1A:1887:A:H2'	1:1A:1888:A:C8	2.45	0.51
1:1A:2303:U:H2'	1:1A:2304:A:H8	1.75	0.51
4:1D:216:HIS:O	4:1D:218:HIS:ND1	2.38	0.51
6:1F:149:GLN:HB3	6:1F:151:PRO:HD2	1.92	0.51
11:1K:120:ILE:HG12	11:1K:121:GLN:H	1.75	0.51
53:sa:401:U:H2'	53:sa:402:A:C8	2.45	0.51
53:sa:926:U:HO2'	53:sa:927:U:H6	1.56	0.51
53:sa:1175:G:O2'	53:sa:1177:A:OP1	2.28	0.51
53:sa:1870:U:H2'	53:sa:1871:G:H8	1.76	0.51
75:sx:50:TYR:OH	75:sx:73:ASP:OD2	2.23	0.51
1:1A:65:U:HO2'	1:1A:97:A:HO2'	1.55	0.50
1:1A:76:U:H2'	1:1A:77:C:H6	1.76	0.50
1:1A:598:A:H2'	1:1A:599:U:C6	2.47	0.50
1:1A:2732:A:H2'	1:1A:2733:A:C8	2.45	0.50
1:1A:2815:G:N2	1:1A:2818:A:OP2	2.36	0.50
1:1A:2865:A:O2'	1:1A:2866:C:OP1	2.29	0.50
1:1A:2972:U:N3	1:1A:2973:G:N7	2.59	0.50
4:1D:2:GLY:HA2	4:1D:207:VAL:HG23	1.92	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:lE:223:THR:OG1	5:lE:273:GLY:O	2.30	0.50
16:lP:29:GLU:HB3	16:lP:37:LEU:HB3	1.93	0.50
33:lg:97:ILE:HD12	33:lg:122:ASN:HB2	1.93	0.50
44:sA:66:LYS:HE3	59:sg:104:LEU:HB3	1.94	0.50
53:sa:1718:U:O2'	53:sa:1763:A:N3	2.36	0.50
64:sl:19:GLY:HA2	64:sl:67:LEU:HD12	1.93	0.50
76:sy:101:SER:O	76:sy:101:SER:OG	2.27	0.50
1:lA:537:U:O2	1:lA:2861:U:N3	2.45	0.50
1:lA:1479:A:H4'	1:lA:1480:U:O5'	2.10	0.50
1:lA:1533:U:O2'	1:lA:1534:U:OP1	2.27	0.50
8:lH:146:VAL:HG23	8:lH:147:GLU:H	1.77	0.50
28:lb:48:ARG:HB3	28:lb:69:LYS:HB3	1.93	0.50
53:sa:390:U:H3	53:sa:394:A:H62	1.59	0.50
53:sa:1287:U:H2'	53:sa:1288:G:H8	1.76	0.50
53:sa:1533:C:H3'	53:sa:1534:A:H4'	1.91	0.50
58:sf:181:MET:HB3	58:sf:187:MET:HA	1.92	0.50
1:lA:816:G:H22	1:lA:829:G:P	2.33	0.50
1:lA:2236:A:H2'	1:lA:2237:A:H8	1.76	0.50
1:lA:2241:U:OP1	4:lD:4:ARG:NH2	2.40	0.50
1:lA:2395:C:O2'	1:lA:2396:A:H8	1.93	0.50
1:lA:3041:G:OP2	11:lK:179:ARG:NH1	2.40	0.50
1:lA:3148:C:H2'	1:lA:3149:A:C8	2.46	0.50
1:lA:3474:U:H3	1:lA:3480:A:N6	1.99	0.50
5:lE:146:ARG:O	5:lE:150:ILE:HG12	2.11	0.50
7:lG:122:VAL:O	7:lG:244:ARG:NH2	2.45	0.50
11:lK:41:HIS:HE1	11:lK:67:MET:HE1	1.75	0.50
44:sA:69:THR:HG22	44:sA:72:VAL:HG12	1.93	0.50
48:sE:14:TYR:HB3	53:sa:1763:A:C8	2.46	0.50
53:sa:148:G:N2	60:sh:56:CYS:SG	2.84	0.50
53:sa:327:U:OP1	62:sj:31:ARG:NH1	2.37	0.50
53:sa:1433:A:H2'	53:sa:1434:A:C8	2.45	0.50
53:sa:1776:G:OP1	59:sg:53:HIS:NE2	2.40	0.50
53:sa:1822:U:H5'	53:sa:1823:U:H5''	1.93	0.50
60:sh:76:LEU:HD23	60:sh:76:LEU:H	1.76	0.50
1:lA:1749:U:OP2	21:lU:42:ARG:NH2	2.44	0.50
1:lA:1764:A:H2'	1:lA:1765:A:C8	2.46	0.50
1:lA:3168:A:H2'	1:lA:3169:C:C6	2.46	0.50
1:lA:3249:C:H2'	1:lA:3250:G:H8	1.76	0.50
13:lM:155:THR:HG22	13:lM:156:LYS:H	1.77	0.50
37:lk:48:GLU:HG2	37:lk:84:ILE:HD11	1.92	0.50
53:sa:345:A:H5''	53:sa:346:U:H3'	1.91	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:sa:1015:A:OP1	66:so:2:GLY:N	2.45	0.50
53:sa:1439:C:H2'	53:sa:1440:A:H4'	1.93	0.50
53:sa:1838:A:H2'	53:sa:1839:A:H8	1.75	0.50
60:sh:145:PHE:CG	60:sh:145:PHE:O	2.64	0.50
1:lA:882:C:O2	19:lS:137:ARG:NE	2.38	0.50
1:lA:974:U:H4'	21:lU:95:TRP:CE2	2.47	0.50
1:lA:1027:G:H4'	1:lA:1028:G:O5'	2.11	0.50
1:lA:2183:A:H2'	1:lA:2184:A:H8	1.76	0.50
1:lA:3287:U:C2	1:lA:3288:U:C5	3.00	0.50
7:lG:39:GLN:NE2	7:lG:46:THR:O	2.45	0.50
53:sa:1845:G:H21	53:sa:1869:A:H62	1.59	0.50
55:sc:78:LEU:HD13	55:sc:106:ILE:HD12	1.93	0.50
56:sd:149:GLU:OE1	56:sd:167:LYS:NZ	2.45	0.50
58:sf:124:ILE:HA	58:sf:139:THR:HA	1.94	0.50
64:sl:48:LEU:HB3	64:sl:54:VAL:HG22	1.93	0.50
1:lA:191:A:H2'	1:lA:192:A:C8	2.47	0.50
1:lA:2414:C:OP1	5:lE:238:ARG:NH1	2.36	0.50
1:lA:2880:C:H1'	37:lk:29:LYS:HD3	1.94	0.50
47:sD:25:ARG:HG2	53:sa:1785:C:C4	2.46	0.50
50:sI:1:G:H1	50:sI:72:C:H42	1.60	0.50
53:sa:1241:C:HO2'	53:sa:1551:A:H62	1.54	0.50
53:sa:1301:U:OP1	56:sd:161:ALA:N	2.39	0.50
53:sa:1862:U:H2'	53:sa:1863:A:C8	2.46	0.50
54:sb:128:LEU:HD12	54:sb:150:PRO:HG2	1.93	0.50
1:lA:564:A:H1'	1:lA:565:U:OP2	2.11	0.50
1:lA:721:A:H2'	1:lA:722:A:H8	1.77	0.50
1:lA:838:U:O2'	1:lA:907:U:OP1	2.28	0.50
1:lA:1403:C:H2'	1:lA:1404:C:C6	2.47	0.50
1:lA:1871:C:H2'	1:lA:1872:U:H6	1.75	0.50
1:lA:2178:A:HO2'	1:lA:2179:U:H6	1.57	0.50
1:lA:3285:A:C6	1:lA:3287:U:H1'	2.46	0.50
37:lk:1:MET:HE3	37:lk:2:ALA:H	1.76	0.50
44:sA:103:ASP:OD1	44:sA:105:HIS:N	2.35	0.50
53:sa:1669:A:N1	53:sa:1673:A:N6	2.59	0.50
53:sa:1701:U:H4'	53:sa:1702:G:O5'	2.11	0.50
55:sc:154:HIS:CD2	55:sc:155:THR:HG23	2.47	0.50
70:ss:46:VAL:HG22	70:ss:82:ILE:HD12	1.93	0.50
1:lA:504:U:H2'	1:lA:505:A:H8	1.77	0.50
1:lA:817:A:H2'	1:lA:818:A:C8	2.47	0.50
1:lA:918:G:O2'	14:lN:16:TRP:NE1	2.42	0.50
1:lA:1186:G:H21	1:lA:1220:A:H61	1.58	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:1303:A:N3	1:lA:1453:U:O2'	2.44	0.50
1:lA:1483:U:O2'	9:lI:149:MET:SD	2.69	0.50
3:lC:28:U:C2	3:lC:29:G:C2	2.99	0.50
3:lC:78:C:H2'	3:lC:79:G:H8	1.77	0.50
14:lN:106:CYS:SG	14:lN:109:ARG:NH2	2.85	0.50
42:lp:24:CYS:HA	42:lp:40:CYS:HB3	1.94	0.50
47:sD:16:THR:OG1	47:sD:17:GLU:OE1	2.24	0.50
48:sE:2:GLY:N	53:sa:1259:A:OP1	2.45	0.50
53:sa:1876:U:O2'	62:sj:2:GLY:N	2.45	0.50
1:lA:500:G:O6	1:lA:573:A:N6	2.45	0.50
1:lA:1244:C:H2'	1:lA:1245:A:H8	1.77	0.50
1:lA:1593:A:OP1	32:lf:75:ARG:NH2	2.35	0.50
1:lA:3129:U:O2	1:lA:3130:A:C8	2.64	0.50
1:lA:3452:U:H3	1:lA:3503:G:N2	2.07	0.50
53:sa:1381:G:H2'	53:sa:1382:C:C6	2.46	0.50
53:sa:1390:A:H2'	53:sa:1391:C:H6	1.77	0.50
53:sa:1688:A:H2'	53:sa:1689:A:H5''	1.94	0.50
65:sm:108:VAL:HG11	65:sm:125:ILE:HG21	1.93	0.50
67:sp:49:ILE:HD11	67:sp:51:ILE:HD11	1.94	0.50
1:lA:338:A:OP1	17:lQ:68:ARG:NH1	2.42	0.49
1:lA:495:A:N7	1:lA:577:G:O2'	2.42	0.49
1:lA:677:A:H2'	1:lA:678:A:H8	1.77	0.49
1:lA:709:U:O2'	1:lA:710:A:OP1	2.29	0.49
1:lA:2863:A:H1'	1:lA:2864:A:C8	2.47	0.49
3:lC:109:G:H2'	3:lC:110:A:H8	1.77	0.49
40:ln:45:TYR:HE1	40:ln:47:CYS:HB3	1.76	0.49
50:sI:14:A:H3'	50:sI:15:G:H8	1.77	0.49
53:sa:134:A:O4'	53:sa:136:A:H5''	2.12	0.49
73:sv:7:ILE:HG12	73:sv:66:TYR:CE1	2.47	0.49
73:sv:26:SER:HB3	73:sv:28:LYS:HE2	1.94	0.49
1:lA:1534:U:H2'	1:lA:1535:A:C8	2.47	0.49
1:lA:3207:G:H2'	1:lA:3208:A:C8	2.47	0.49
3:lC:21:C:N4	3:lC:52:G:O2'	2.43	0.49
3:lC:32:A:H2'	3:lC:33:A:C8	2.47	0.49
22:IV:148:LYS:H	22:IV:148:LYS:HD2	1.76	0.49
45:sB:6:ARG:NH1	53:sa:1115:C:OP1	2.45	0.49
53:sa:295:A:N6	58:sf:38:GLU:HG2	2.26	0.49
53:sa:1021:G:H2'	53:sa:1022:G:C8	2.46	0.49
56:sd:4:LEU:HD12	64:sl:37:PRO:HB3	1.94	0.49
76:sy:65:ARG:HB3	76:sy:82:PHE:HE1	1.77	0.49
1:lA:466:G:O2'	1:lA:2441:U:OP2	2.21	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:811:A:N1	1:lA:839:G:O2'	2.41	0.49
1:lA:884:A:H2'	1:lA:885:U:C6	2.47	0.49
1:lA:1466:U:H2'	1:lA:1467:U:H6	1.76	0.49
1:lA:1634:G:O6	41:lo:2:THR:N	2.45	0.49
1:lA:2766:A:H2'	1:lA:2767:A:C8	2.46	0.49
1:lA:2865:A:H4'	37:lk:21:ALA:HA	1.94	0.49
2:lB:153:C:O2'	10:lJ:182:ARG:NH1	2.40	0.49
47:sD:21:ARG:HG3	47:sD:29:LEU:HG	1.94	0.49
51:sJ:70:A:C2	51:sJ:71:G:C5	3.00	0.49
53:sa:78:G:OP2	60:sh:159:ARG:NH1	2.41	0.49
53:sa:1381:G:O6	53:sa:1392:A:N6	2.46	0.49
53:sa:1391:C:H2'	53:sa:1392:A:C8	2.43	0.49
53:sa:1392:A:C2	53:sa:1393:G:C5	3.00	0.49
53:sa:1775:U:H5'	70:ss:90:VAL:HB	1.92	0.49
54:sb:19:ASP:OD2	54:sb:187:ARG:NH2	2.40	0.49
1:lA:116:A:N6	10:lJ:124:GLU:O	2.44	0.49
1:lA:1206:A:H2'	1:lA:1207:C:C6	2.46	0.49
1:lA:1554:C:OP2	6:lF:196:LYS:NZ	2.42	0.49
1:lA:1736:A:C6	41:lo:4:HIS:HB3	2.48	0.49
1:lA:2670:U:C2	1:lA:2671:A:C8	3.00	0.49
1:lA:2701:U:H2'	1:lA:2702:G:C8	2.47	0.49
3:lC:80:G:H22	3:lC:94:U:H3	1.60	0.49
10:lJ:222:ASN:HB3	10:lJ:225:MET:HB3	1.94	0.49
14:lN:45:PHE:CD1	14:lN:229:GLN:HB3	2.47	0.49
28:lb:78:ASN:OD1	31:le:39:ARG:NH2	2.46	0.49
53:sa:301:U:H5''	65:sm:136:ARG:HD2	1.95	0.49
53:sa:1196:A:O2'	53:sa:1736:A:N3	2.42	0.49
55:sc:218:ASP:OD1	55:sc:221:ARG:NH1	2.46	0.49
56:sd:54:ARG:HG2	74:sw:108:PRO:HG3	1.93	0.49
1:lA:330:A:N6	29:lc:61:PHE:HB3	2.28	0.49
1:lA:580:A:C4	1:lA:581:U:C5	3.00	0.49
1:lA:671:A:H5''	6:lF:399:ALA:HB2	1.93	0.49
1:lA:721:A:H2'	1:lA:722:A:C8	2.47	0.49
1:lA:1921:A:H2'	1:lA:1922:U:O2	2.12	0.49
1:lA:2632:A:OP2	4:lD:87:TYR:OH	2.23	0.49
1:lA:2839:A:H5''	43:lq:78:LYS:HD2	1.94	0.49
1:lA:3090:G:N3	5:lE:252:ALA:HB1	2.27	0.49
1:lA:3369:U:H2'	1:lA:3370:A:H8	1.77	0.49
4:lD:126:ILE:HG21	4:lD:150:LEU:HD22	1.94	0.49
5:lE:190:ILE:HD13	5:lE:193:LYS:HE3	1.93	0.49
14:lN:248:LYS:NZ	29:lc:146:GLU:OE2	2.43	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:IW:56:VAL:HG11	23:IW:66:ILE:HD11	1.94	0.49
44:sA:73:VAL:HG22	44:sA:77:MET:HE1	1.94	0.49
53:sa:941:C:C2	53:sa:942:C:C5	3.01	0.49
53:sa:1171:U:C2	53:sa:1172:G:C8	3.00	0.49
53:sa:1863:A:H2'	53:sa:1864:G:C8	2.48	0.49
59:sg:178:GLU:OE2	59:sg:189:SER:OG	2.29	0.49
72:su:62:PRO:HA	72:su:65:ILE:HG12	1.95	0.49
76:sy:53:LEU:N	76:sy:67:CYS:O	2.40	0.49
1:lA:5:U:H2'	1:lA:6:U:C6	2.47	0.49
1:lA:17:A:H2	2:lB:137:A:H61	1.60	0.49
1:lA:227:A:H2'	1:lA:228:A:H8	1.77	0.49
1:lA:301:A:H2'	1:lA:302:U:C6	2.47	0.49
1:lA:765:A:H2'	1:lA:766:U:C6	2.48	0.49
1:lA:1467:U:H2'	1:lA:1468:A:C8	2.47	0.49
1:lA:1830:U:H2'	1:lA:1831:U:C6	2.47	0.49
1:lA:1844:U:H2'	1:lA:1845:G:H8	1.77	0.49
1:lA:2721:G:H5''	1:lA:2722:U:O4'	2.13	0.49
5:lE:184:GLN:NE2	5:lE:186:ASN:OD1	2.44	0.49
9:lI:185:GLU:OE1	9:lI:185:GLU:N	2.42	0.49
10:lJ:219:TYR:HD1	10:lJ:225:MET:HE1	1.76	0.49
25:lY:72:THR:O	25:lY:76:LYS:HG3	2.12	0.49
44:sA:97:ILE:HG12	44:sA:109:TYR:HB3	1.95	0.49
50:sI:2:G:H2'	50:sI:3:C:C6	2.46	0.49
50:sI:52:G:HO2'	50:sI:53:G:H8	1.59	0.49
53:sa:375:A:C6	63:sk:2:GLY:HA3	2.46	0.49
53:sa:1591:G:H2'	53:sa:1592:A:C8	2.47	0.49
55:sc:154:HIS:CE1	55:sc:176:ARG:HG2	2.48	0.49
57:se:38:LYS:HA	57:se:43:ARG:HD3	1.95	0.49
59:sg:18:PRO:HG2	59:sg:48:GLN:HB3	1.94	0.49
61:si:163:VAL:HA	61:si:198:PRO:HD3	1.94	0.49
1:lA:686:A:H5'	9:lI:134:LYS:HE3	1.94	0.49
1:lA:1859:G:N7	23:IW:87:ARG:NH2	2.60	0.49
1:lA:2907:C:C2	1:lA:2908:U:C5	3.00	0.49
1:lA:3124:U:OP2	5:lE:246:ARG:NH2	2.46	0.49
1:lA:3198:A:H4'	5:lE:13:SER:HB2	1.95	0.49
2:lB:12:A:H2'	2:lB:13:C:C6	2.47	0.49
5:lE:224:LYS:HB2	5:lE:332:ILE:HG23	1.94	0.49
6:lF:305:ARG:NH1	19:lS:37:ARG:O	2.46	0.49
14:lN:40:LYS:HD3	14:lN:48:THR:HB	1.95	0.49
53:sa:242:G:O2'	53:sa:243:U:OP1	2.26	0.49
54:sb:115:PHE:HB3	54:sb:147:ILE:HD13	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
71:st:20:TYR:O	71:st:24:LEU:HG	2.13	0.49
74:sw:56:ILE:HB	74:sw:86:LYS:HB3	1.94	0.49
1:lA:332:G:C6	43:lq:43:ARG:HD3	2.48	0.49
1:lA:538:A:OP2	14:lN:167:LYS:NZ	2.39	0.49
1:lA:1157:A:H5'	7:lG:5:LYS:HE2	1.95	0.49
1:lA:1476:G:O2'	1:lA:1477:A:N3	2.44	0.49
3:lC:2:G:H2'	3:lC:3:G:C8	2.47	0.49
5:lE:137:TYR:O	5:lE:146:ARG:NH2	2.45	0.49
53:sa:959:A:H4'	53:sa:1933:G:N2	2.28	0.49
58:sf:95:GLU:HG3	58:sf:97:PHE:HE1	1.77	0.49
1:lA:103:A:O2'	1:lA:370:A:N3	2.41	0.49
1:lA:764:U:H2'	1:lA:765:A:C8	2.47	0.49
1:lA:1745:A:H2'	1:lA:1746:G:C8	2.48	0.49
1:lA:2205:C:H2'	1:lA:2206:G:H8	1.77	0.49
1:lA:2378:G:N2	53:sa:1892:G:N2	2.61	0.49
1:lA:3356:U:OP2	1:lA:3357:U:O2'	2.28	0.49
5:lE:48:GLY:HA3	5:lE:81:THR:HG22	1.94	0.49
9:II:225:LEU:HD11	9:II:229:MET:HE3	1.94	0.49
10:IJ:83:LYS:HE3	10:IJ:84:ILE:HG13	1.94	0.49
22:IV:4:SER:O	22:IV:9:ARG:HD3	2.12	0.49
24:IX:123:LYS:N	24:IX:140:VAL:O	2.44	0.49
28:lb:11:VAL:HG12	28:lb:82:PRO:HA	1.94	0.49
53:sa:1558:U:H2'	53:sa:1559:U:C6	2.48	0.49
54:sb:15:PRO:HG3	54:sb:60:TRP:CD1	2.48	0.49
54:sb:142:ARG:NH1	54:sb:146:TYR:OH	2.45	0.49
57:se:30:GLU:HB3	57:se:32:TYR:HE1	1.78	0.49
65:sm:130:PRO:HB3	65:sm:136:ARG:HH11	1.78	0.49
75:sx:38:ASN:HB3	75:sx:44:LEU:HD21	1.94	0.49
1:lA:2137:G:H2'	1:lA:2138:A:H8	1.77	0.49
1:lA:2991:G:OP1	42:lp:25:TYR:OH	2.31	0.49
3:lC:103:U:H2'	3:lC:104:G:C8	2.48	0.49
23:IW:33:ASP:HA	23:IW:74:LYS:HD2	1.95	0.49
27:la:38:LEU:HD22	27:la:42:TYR:HE2	1.77	0.49
28:lb:23:ALA:HB1	28:lb:43:VAL:HB	1.95	0.49
48:sE:30:LEU:HA	48:sE:39:CYS:HA	1.94	0.49
50:sI:27:C:H2'	50:sI:28:G:H8	1.77	0.49
60:sh:149:GLN:HG2	60:sh:150:LYS:N	2.28	0.49
68:sq:88:MET:N	68:sq:88:MET:SD	2.86	0.49
1:lA:404:G:N2	1:lA:407:A:OP2	2.31	0.48
1:lA:677:A:OP1	6:lF:351:LYS:NZ	2.45	0.48
1:lA:1327:A:H2'	1:lA:1328:A:C8	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:2780:A:H2'	1:1A:2781:U:C6	2.48	0.48
1:1A:2955:C:H2'	1:1A:2956:A:H8	1.78	0.48
18:1R:61:ARG:O	18:1R:64:ASN:ND2	2.46	0.48
27:1a:81:ASP:OD1	27:1a:82:LYS:N	2.46	0.48
53:sa:1305:C:H2'	53:sa:1306:G:C8	2.48	0.48
54:sb:44:TYR:CD1	54:sb:45:GLU:HB2	2.48	0.48
59:sg:38:LEU:HD12	59:sg:145:PRO:HB2	1.95	0.48
69:sr:86:PHE:O	69:sr:90:GLU:HG2	2.13	0.48
1:1A:804:G:H2'	1:1A:805:G:C8	2.48	0.48
1:1A:1633:G:H1'	1:1A:2044:C:H5''	1.94	0.48
1:1A:2445:G:H2'	1:1A:2446:G:C8	2.48	0.48
1:1A:3025:U:H2'	1:1A:3026:U:C6	2.48	0.48
1:1A:3349:G:OP2	16:1P:5:ARG:NH2	2.39	0.48
2:1B:48:G:OP2	41:1o:15:LYS:NZ	2.39	0.48
27:1a:22:ASN:N	27:1a:22:ASN:OD1	2.40	0.48
53:sa:324:G:H2'	53:sa:325:U:H6	1.78	0.48
53:sa:444:U:H2'	53:sa:445:C:C6	2.48	0.48
58:sf:129:LEU:HA	58:sf:135:PRO:HA	1.95	0.48
59:sg:19:LYS:HB2	59:sg:22:ASN:HA	1.94	0.48
74:sw:101:ILE:HG22	74:sw:103:SER:HB2	1.95	0.48
76:sy:22:ASP:HB3	76:sy:25:TRP:HB3	1.95	0.48
1:1A:101:A:C2	1:1A:102:A:N7	2.81	0.48
1:1A:1414:A:H2'	1:1A:1415:A:H8	1.76	0.48
1:1A:2660:U:H2'	1:1A:2661:U:C6	2.48	0.48
1:1A:3074:U:H5''	24:1X:43:LYS:HD3	1.95	0.48
3:1C:76:U:H2'	3:1C:77:U:O4'	2.13	0.48
14:1N:44:VAL:HG22	14:1N:46:PRO:HD2	1.94	0.48
25:1Y:95:LEU:HD22	41:1o:10:LYS:HE3	1.94	0.48
53:sa:902:U:H2'	53:sa:903:A:H8	1.74	0.48
53:sa:1693:A:HO2'	53:sa:1694:A:P	2.35	0.48
60:sh:191:GLN:O	60:sh:196:LYS:HD2	2.14	0.48
68:sq:56:VAL:HA	68:sq:59:LEU:HB2	1.94	0.48
1:1A:835:A:H2'	1:1A:836:C:O4'	2.13	0.48
1:1A:1847:A:H2'	1:1A:1848:A:C8	2.47	0.48
1:1A:2236:A:N6	1:1A:2250:C:H42	2.07	0.48
1:1A:2731:G:H2'	1:1A:2732:A:C8	2.48	0.48
1:1A:2864:A:C4	1:1A:2865:A:C2	3.00	0.48
5:1E:122:TRP:CZ2	5:1E:127:LYS:HG2	2.48	0.48
42:lp:4:GLU:OE2	42:lp:4:GLU:N	2.35	0.48
51:sJ:25:U:H2'	51:sJ:26:C:C6	2.49	0.48
53:sa:752:A:P	63:sk:51:HIS:HE2	2.35	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:sa:1863:A:H2'	53:sa:1864:G:H8	1.78	0.48
54:sb:156:ASN:HB2	54:sb:172:ASN:HD21	1.78	0.48
76:sy:31:VAL:HA	76:sy:33:ARG:HH21	1.79	0.48
1:lA:573:A:H2'	1:lA:574:U:C6	2.47	0.48
1:lA:674:A:OP1	6:lF:357:LYS:NZ	2.46	0.48
1:lA:1569:A:H5''	1:lA:1570:U:O5'	2.14	0.48
3:lC:6:G:O3'	7:lG:33:ARG:NH2	2.47	0.48
6:lF:156:SER:OG	6:lF:256:GLU:OE1	2.25	0.48
8:lH:67:ILE:O	8:lH:74:GLY:N	2.35	0.48
10:lJ:209:GLU:O	10:lJ:213:GLN:NE2	2.46	0.48
18:lR:127:ARG:HB2	18:lR:139:PHE:HB3	1.95	0.48
24:lX:87:THR:HG21	26:lZ:21:ARG:HD3	1.94	0.48
31:le:22:THR:HG22	31:le:27:TYR:HE2	1.79	0.48
44:sA:104:ASN:HB2	53:sa:1696:G:N2	2.26	0.48
51:sJ:55:U:C2	51:sJ:59:A:N7	2.82	0.48
53:sa:399:G:O2'	60:sh:91:GLU:OE2	2.31	0.48
55:sc:165:GLY:O	55:sc:168:ARG:NH1	2.46	0.48
60:sh:154:LYS:NZ	60:sh:187:PRO:HG3	2.28	0.48
65:sm:32:ARG:NH2	65:sm:52:TYR:O	2.46	0.48
69:sr:94:LEU:HD22	69:sr:100:GLY:HA3	1.96	0.48
72:su:143:ARG:HD3	72:su:143:ARG:HA	1.68	0.48
1:lA:453:A:N3	1:lA:789:C:O2'	2.38	0.48
1:lA:1107:G:H2'	1:lA:1108:A:H8	1.78	0.48
1:lA:1247:G:H1	3:lC:92:U:H5	1.61	0.48
1:lA:1404:C:C2	1:lA:1405:U:C5	3.01	0.48
1:lA:1535:A:H2'	1:lA:1536:A:H8	1.79	0.48
1:lA:2129:G:C8	39:lm:16:THR:HB	2.48	0.48
3:lC:1:A:H61	3:lC:116:C:H42	1.62	0.48
53:sa:17:C:O2'	53:sa:1163:A:N1	2.43	0.48
57:se:41:LYS:HE3	57:se:191:ARG:HH22	1.78	0.48
57:se:202:LYS:HB2	57:se:202:LYS:HE2	1.61	0.48
69:sr:69:LEU:HD11	69:sr:129:PHE:HB2	1.95	0.48
1:lA:1593:A:H2'	1:lA:1594:A:C8	2.49	0.48
1:lA:1596:A:H2'	1:lA:1597:A:C8	2.49	0.48
1:lA:3128:C:H2'	1:lA:3129:U:C6	2.47	0.48
4:lD:209:HIS:CD2	4:lD:210:PRO:HD2	2.48	0.48
15:lO:85:VAL:HG11	15:lO:103:LEU:HD22	1.95	0.48
36:lj:61:ASN:OD1	36:lj:61:ASN:N	2.46	0.48
53:sa:43:U:OP2	53:sa:432:A:N6	2.45	0.48
53:sa:301:U:O2	65:sm:68:ARG:NH2	2.35	0.48
53:sa:562:G:H4'	76:sy:86:ASP:HB2	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:sa:1516:G:N2	53:sa:1519:G:OP2	2.47	0.48
65:sm:55:LYS:O	65:sm:61:SER:OG	2.30	0.48
1:lA:425:C:H2'	1:lA:426:U:C6	2.46	0.48
1:lA:489:U:H2'	1:lA:490:A:C8	2.48	0.48
1:lA:1848:A:H2'	1:lA:1849:A:H8	1.79	0.48
1:lA:2488:G:H2'	1:lA:2489:A:C8	2.49	0.48
1:lA:2753:U:H2'	1:lA:2754:C:C6	2.49	0.48
7:lG:216:LYS:HE3	7:lG:216:LYS:HB3	1.62	0.48
14:lN:163:ILE:HG22	14:lN:167:LYS:HD2	1.95	0.48
23:lW:63:THR:HA	23:lW:66:ILE:HD13	1.96	0.48
46:sC:21:LYS:NZ	66:so:13:ARG:O	2.39	0.48
53:sa:5:U:OP2	55:sc:206:THR:OG1	2.29	0.48
53:sa:746:A:H2'	53:sa:747:A:H8	1.79	0.48
53:sa:860:G:OP1	66:so:107:LYS:NZ	2.41	0.48
53:sa:1662:G:H1	53:sa:1679:G:H1	1.60	0.48
53:sa:1891:A:O3'	53:sa:1892:G:H8	1.96	0.48
56:sd:141:MET:HG3	56:sd:168:GLU:HG2	1.96	0.48
69:sr:119:LYS:HE3	69:sr:119:LYS:HB2	1.59	0.48
1:lA:907:U:H2'	1:lA:908:A:C8	2.48	0.48
1:lA:1485:A:H2'	1:lA:1486:C:O4'	2.14	0.48
1:lA:2041:U:H4'	1:lA:2042:A:H5''	1.96	0.48
1:lA:3149:A:H2'	1:lA:3150:A:H8	1.77	0.48
2:lB:24:U:OP2	6:lF:197:MET:HG2	2.14	0.48
60:sh:188:ARG:HD3	60:sh:190:LEU:H	1.77	0.48
1:lA:239:G:H2'	1:lA:240:A:C8	2.49	0.48
1:lA:401:A:N1	6:lF:84:SER:HB3	2.28	0.48
1:lA:503:A:H2'	1:lA:504:U:C6	2.48	0.48
1:lA:842:G:H2'	1:lA:843:A:H8	1.79	0.48
1:lA:1434:G:HO2'	1:lA:2456:U:HO2'	1.48	0.48
1:lA:3150:A:H2'	1:lA:3151:A:C8	2.46	0.48
14:lN:246:GLU:HG2	29:lc:101:VAL:HB	1.95	0.48
53:sa:469:C:H2'	53:sa:470:A:H5''	1.95	0.48
53:sa:592:U:H2'	53:sa:593:A:C8	2.49	0.48
53:sa:868:A:H2'	53:sa:869:A:C8	2.48	0.48
53:sa:1223:G:OP1	53:sa:1224:G:O2'	2.22	0.48
53:sa:1283:U:H1'	53:sa:1284:U:H5	1.78	0.48
58:sf:85:MET:HB2	58:sf:98:ARG:HE	1.78	0.48
71:st:21:TYR:HE2	71:st:73:LEU:HD23	1.79	0.48
1:lA:315:A:OP2	17:lQ:12:ARG:NH2	2.47	0.47
1:lA:1071:A:H4'	1:lA:1087:G:H21	1.78	0.47
1:lA:1476:G:H2'	1:lA:1476:G:N3	2.28	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:2085:A:OP1	32:lf:72:LYS:NZ	2.47	0.47
1:lA:3102:C:H2'	1:lA:3103:C:H6	1.79	0.47
1:lA:3386:G:H2'	1:lA:3387:G:H8	1.78	0.47
25:lY:70:ASN:OD1	25:lY:70:ASN:N	2.47	0.47
53:sa:32:G:H22	53:sa:463:A:H5'	1.79	0.47
59:sg:80:GLN:O	59:sg:84:ASN:ND2	2.35	0.47
75:sx:4:ASN:OD1	75:sx:5:LYS:NZ	2.34	0.47
1:lA:1877:A:H2'	1:lA:1878:A:C8	2.49	0.47
1:lA:3384:A:O2'	1:lA:3385:G:O5'	2.31	0.47
7:lG:21:ARG:NH1	7:lG:25:GLU:OE2	2.47	0.47
18:lR:116:HIS:HB3	18:lR:149:ILE:HB	1.96	0.47
34:lh:67:LYS:HD3	34:lh:70:ARG:NH2	2.29	0.47
36:lj:48:VAL:HG22	36:lj:101:VAL:HG22	1.96	0.47
39:lm:47:VAL:HG11	39:lm:71:LEU:HD22	1.95	0.47
53:sa:1007:A:OP1	53:sa:1936:G:O2'	2.31	0.47
53:sa:1425:A:H8	53:sa:1425:A:O5'	1.97	0.47
55:sc:208:THR:HG22	55:sc:211:ASN:H	1.78	0.47
73:sv:41:GLY:HA2	73:sv:97:SER:HB2	1.96	0.47
74:sw:107:GLU:N	74:sw:107:GLU:OE2	2.48	0.47
1:lA:205:C:H3'	1:lA:206:U:H5''	1.96	0.47
1:lA:623:A:H2'	1:lA:624:U:C6	2.49	0.47
1:lA:804:G:H22	1:lA:911:U:H3	1.62	0.47
1:lA:920:A:P	29:lc:27:LYS:HZ1	2.37	0.47
1:lA:1414:A:H2'	1:lA:1415:A:C8	2.50	0.47
1:lA:2101:G:O2'	1:lA:2410:U:O4	2.24	0.47
1:lA:2633:C:H2'	1:lA:2634:A:O4'	2.14	0.47
1:lA:3481:U:H2'	1:lA:3482:C:H6	1.79	0.47
10:lJ:30:VAL:HG12	10:lJ:31:ALA:H	1.79	0.47
13:lM:111:ASP:HB3	13:lM:112:LEU:H	1.47	0.47
24:lX:43:LYS:HE3	24:lX:108:MET:HE3	1.96	0.47
53:sa:395:G:H5''	62:sj:25:LYS:HA	1.96	0.47
53:sa:934:A:OP1	66:so:6:ASN:ND2	2.47	0.47
60:sh:189:ARG:HD3	60:sh:192:HIS:HB2	1.95	0.47
64:sl:76:ARG:NH2	64:sl:85:ALA:O	2.40	0.47
1:lA:940:U:H2'	1:lA:941:A:H8	1.79	0.47
1:lA:1631:A:O2'	38:ll:12:HIS:O	2.25	0.47
1:lA:1649:U:OP1	18:lR:127:ARG:NH2	2.33	0.47
1:lA:2779:C:H2'	1:lA:2780:A:H8	1.79	0.47
1:lA:3165:A:N1	1:lA:3197:C:O2'	2.42	0.47
3:lC:44:C:H2'	3:lC:45:U:H6	1.79	0.47
11:lK:102:VAL:HG21	11:lK:111:LEU:HD11	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:IW:97:LEU:HD22	23:IW:103:ARG:HA	1.95	0.47
27:la:31:SER:HA	27:la:48:PRO:HA	1.97	0.47
53:sa:412:A:H4'	53:sa:413:G:O5'	2.14	0.47
53:sa:558:G:C5	53:sa:572:U:H1'	2.50	0.47
53:sa:750:U:C4	53:sa:751:A:N6	2.82	0.47
54:sb:175:ARG:HG3	54:sb:176:LEU:HD22	1.96	0.47
58:sf:69:LYS:HG2	58:sf:74:ILE:HB	1.96	0.47
61:si:53:LYS:HG3	61:si:65:VAL:HB	1.95	0.47
1:lA:735:C:H2'	1:lA:736:G:O4'	2.15	0.47
1:lA:761:A:H2'	1:lA:762:A:C8	2.50	0.47
1:lA:1466:U:H2'	1:lA:1467:U:C6	2.49	0.47
1:lA:1982:U:H2'	4:lD:50:HIS:CD2	2.50	0.47
1:lA:3364:U:H2'	1:lA:3365:C:C6	2.50	0.47
3:lC:103:U:H2'	3:lC:104:G:H8	1.79	0.47
6:lF:429:ILE:O	20:lT:24:ARG:NH1	2.46	0.47
31:le:14:VAL:HA	31:le:17:LYS:HB2	1.95	0.47
40:ln:45:TYR:CE1	40:ln:47:CYS:HB3	2.49	0.47
53:sa:1112:A:H2'	53:sa:1113:A:C8	2.50	0.47
53:sa:1574:C:O2'	73:sv:88:TYR:O	2.27	0.47
1:lA:450:U:H4'	1:lA:1550:G:H4'	1.97	0.47
1:lA:3265:C:H2'	1:lA:3266:U:C6	2.49	0.47
2:lB:58:G:H2'	2:lB:59:C:O4'	2.14	0.47
13:lM:108:GLU:HG2	13:lM:122:ILE:HD12	1.95	0.47
28:lb:46:VAL:HG13	28:lb:68:VAL:HG13	1.96	0.47
53:sa:1231:U:OP2	53:sa:1232:U:O2'	2.29	0.47
53:sa:1266:A:H1'	68:sq:78:HIS:HB3	1.96	0.47
53:sa:1357:C:OP1	71:st:43:THR:HG21	2.15	0.47
54:sb:163:ASN:O	75:sx:57:ARG:NH2	2.46	0.47
64:sl:9:ILE:O	64:sl:13:LYS:HG2	2.14	0.47
1:lA:496:A:H2'	1:lA:497:U:O4'	2.15	0.47
1:lA:574:U:H2'	1:lA:575:A:C8	2.50	0.47
1:lA:1346:G:N2	1:lA:1409:G:O2'	2.42	0.47
1:lA:2141:A:H2'	1:lA:2142:G:H8	1.79	0.47
1:lA:2483:C:H2'	1:lA:2484:U:H6	1.80	0.47
1:lA:3170:A:H2'	1:lA:3171:A:C8	2.48	0.47
12:lL:27:PRO:HA	50:sI:64:G:H4'	1.96	0.47
16:lP:108:THR:H	16:lP:111:ASP:HB2	1.80	0.47
28:lb:20:GLY:HA3	28:lb:139:PHE:CZ	2.48	0.47
53:sa:619:C:H2'	53:sa:620:U:H6	1.79	0.47
53:sa:1170:U:H2'	53:sa:1171:U:H6	1.73	0.47
53:sa:1246:A:N6	53:sa:1247:G:O6	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:sa:1356:A:H61	56:sd:175:GLY:CA	2.28	0.47
53:sa:1394:A:O2'	53:sa:1395:A:O4'	2.33	0.47
56:sd:75:ASP:OD1	56:sd:75:ASP:N	2.47	0.47
57:se:125:THR:OG1	57:se:126:SER:N	2.48	0.47
58:sf:208:ILE:HB	58:sf:216:PHE:CE1	2.50	0.47
72:su:100:ILE:H	72:su:100:ILE:HD12	1.79	0.47
1:lA:732:U:HO2'	1:lA:733:C:P	2.36	0.47
1:lA:1006:A:H2'	1:lA:1007:C:C6	2.50	0.47
1:lA:1686:G:N2	1:lA:1689:A:OP2	2.48	0.47
1:lA:2304:A:H2'	1:lA:2305:C:C6	2.50	0.47
1:lA:2348:G:N2	1:lA:2348:G:OP2	2.45	0.47
1:lA:3196:U:H2'	1:lA:3197:C:C6	2.49	0.47
1:lA:3223:G:C2	1:lA:3224:A:C8	3.03	0.47
11:lK:19:ILE:HD11	11:lK:89:ILE:HD11	1.95	0.47
12:lL:30:ARG:HG3	12:lL:63:GLU:HG3	1.97	0.47
17:lQ:70:ASN:ND2	17:lQ:92:ILE:O	2.29	0.47
24:lX:42:VAL:HG22	24:lX:61:VAL:HG12	1.96	0.47
44:sA:50:PHE:CE2	44:sA:87:LEU:HD21	2.50	0.47
57:se:84:TYR:O	57:se:85:ASN:ND2	2.45	0.47
60:sh:154:LYS:H	60:sh:154:LYS:HD2	1.80	0.47
70:ss:55:ASN:O	70:ss:57:PRO:HD3	2.15	0.47
1:lA:208:U:H2'	1:lA:209:A:H8	1.80	0.47
1:lA:386:U:OP2	6:lF:198:ARG:NH2	2.33	0.47
1:lA:2504:U:H2'	1:lA:2505:A:C8	2.49	0.47
1:lA:2900:G:O2'	1:lA:2901:U:OP1	2.28	0.47
1:lA:3303:A:H2'	1:lA:3304:C:C6	2.50	0.47
1:lA:3412:U:H5''	1:lA:3413:U:OP2	2.15	0.47
3:lC:30:U:H2'	3:lC:31:G:C8	2.50	0.47
3:lC:85:G:H22	3:lC:90:G:H1	1.63	0.47
6:lF:115:THR:HB	6:lF:120:ARG:HD2	1.97	0.47
13:lM:35:LYS:HA	13:lM:35:LYS:HD2	1.66	0.47
19:lS:18:ALA:HB3	19:lS:26:LYS:HD3	1.97	0.47
27:la:2:LYS:HE3	27:la:2:LYS:HB3	1.64	0.47
35:li:69:PRO:HD2	35:li:72:LEU:HD12	1.96	0.47
53:sa:96:C:H2'	53:sa:97:U:H6	1.80	0.47
53:sa:900:U:O2'	53:sa:901:A:OP1	2.30	0.47
53:sa:903:A:H2'	53:sa:904:A:C8	2.50	0.47
53:sa:1734:G:H4'	53:sa:1735:A:O5'	2.13	0.47
53:sa:1880:U:H2'	53:sa:1881:C:H6	1.79	0.47
56:sd:152:ILE:HD12	56:sd:166:PHE:HE1	1.80	0.47
63:sk:66:ASP:OD2	63:sk:69:ARG:N	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:1105:U:H2'	1:1A:1106:U:H6	1.79	0.47
1:1A:1534:U:H2'	1:1A:1535:A:H8	1.78	0.47
1:1A:3447:A:H2'	1:1A:3448:G:O4'	2.15	0.47
3:1C:26:U:O2	3:1C:52:G:N2	2.45	0.47
3:1C:84:G:H1	3:1C:91:G:N2	2.12	0.47
8:1H:98:ASN:HB3	8:1H:100:VAL:HG23	1.97	0.47
17:1Q:66:ILE:HD12	17:1Q:102:ALA:HB2	1.96	0.47
17:1Q:114:ARG:HD3	17:1Q:151:ILE:HG12	1.96	0.47
20:1T:78:VAL:HG22	20:1T:83:ILE:HG12	1.97	0.47
40:1n:13:LYS:HA	40:1n:16:LYS:HG2	1.97	0.47
44:sA:54:THR:HA	44:sA:57:LYS:HG2	1.97	0.47
53:sa:389:U:H3	53:sa:396:A:N6	1.91	0.47
53:sa:392:A:OP2	62:sj:47:ARG:NH2	2.43	0.47
53:sa:1355:G:C2	53:sa:1356:A:H1'	2.50	0.47
53:sa:1438:A:N6	53:sa:1516:G:H21	2.13	0.47
53:sa:1512:A:H2'	53:sa:1513:A:C8	2.50	0.47
57:se:33:ASN:ND2	57:se:35:LYS:HE2	2.30	0.47
67:sp:90:ILE:HB	67:sp:124:ILE:HG23	1.97	0.47
1:1A:1519:A:H5'	1:1A:1521:A:H61	1.79	0.46
1:1A:2091:G:OP1	5:1E:248:LEU:N	2.38	0.46
1:1A:3040:A:H5''	42:lp:50:LYS:HG3	1.98	0.46
1:1A:3370:A:H2'	1:1A:3371:U:C6	2.50	0.46
6:1F:2:SER:O	6:1F:2:SER:OG	2.28	0.46
9:1I:163:ASP:OD1	9:1I:163:ASP:N	2.48	0.46
13:1M:18:VAL:HG13	13:1M:70:THR:HG22	1.96	0.46
53:sa:1892:G:N2	53:sa:1893:A:H62	2.13	0.46
69:sr:32:LYS:O	69:sr:36:GLU:HG2	2.15	0.46
73:sv:57:ARG:NH1	73:sv:101:ASN:OD1	2.45	0.46
1:1A:343:A:H62	17:1Q:12:ARG:HH12	1.62	0.46
1:1A:381:A:H2'	1:1A:382:A:H8	1.79	0.46
1:1A:2230:U:H2'	1:1A:2231:C:H6	1.79	0.46
1:1A:2383:G:O2'	1:1A:2386:U:OP2	2.33	0.46
1:1A:3274:U:H4'	42:lp:29:PRO:HG3	1.96	0.46
1:1A:3369:U:H2'	1:1A:3370:A:C8	2.50	0.46
1:1A:3372:U:O2'	1:1A:3374:C:OP2	2.26	0.46
6:1F:100:HIS:ND1	6:1F:101:MET:O	2.38	0.46
6:1F:398:LYS:HA	6:1F:398:LYS:HD3	1.80	0.46
11:1K:174:ARG:HA	11:1K:174:ARG:HD3	1.79	0.46
19:1S:16:LYS:HE3	19:1S:16:LYS:HB2	1.75	0.46
22:1V:117:LYS:O	22:1V:120:ILE:HG12	2.15	0.46
32:1f:118:ILE:HD12	32:1f:124:LYS:HB3	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:ll:18:LEU:HD11	41:lo:51:MET:HE3	1.96	0.46
50:sI:27:C:H2'	50:sI:28:G:C8	2.50	0.46
53:sa:335:U:H2'	53:sa:336:A:C8	2.45	0.46
53:sa:1195:G:C2	53:sa:1196:A:C8	3.03	0.46
53:sa:1204:G:H21	53:sa:1567:A:H62	1.61	0.46
55:sc:181:VAL:O	55:sc:200:THR:OG1	2.30	0.46
56:sd:56:ASN:HD21	56:sd:59:LYS:HB3	1.80	0.46
70:ss:65:GLU:O	70:ss:69:ILE:HG12	2.15	0.46
76:sy:51:GLU:O	76:sy:69:ARG:N	2.40	0.46
1:lA:1403:C:H2'	1:lA:1404:C:H6	1.81	0.46
1:lA:1512:G:OP2	6:lF:191:ARG:NH1	2.48	0.46
1:lA:1940:A:H2'	1:lA:1941:A:H8	1.80	0.46
1:lA:2287:U:OP1	51:sJ:3:C:O2'	2.34	0.46
1:lA:2427:U:H2'	1:lA:2428:A:H8	1.80	0.46
1:lA:3156:U:O2'	5:lE:182:GLU:OE2	2.25	0.46
1:lA:3356:U:H5'	15:lO:6:LYS:HG3	1.98	0.46
1:lA:3360:U:OP1	16:lP:120:ARG:NH1	2.49	0.46
42:lp:14:TYR:O	42:lp:18:LYS:NZ	2.47	0.46
53:sa:328:C:C5	62:sj:49:ARG:HD2	2.50	0.46
53:sa:1536:G:H2'	53:sa:1537:U:C6	2.50	0.46
53:sa:1756:U:H2'	53:sa:1757:C:C6	2.51	0.46
56:sd:39:LEU:HB2	56:sd:43:LEU:HD13	1.96	0.46
57:se:73:ALA:HB2	57:se:82:GLY:CA	2.45	0.46
60:sh:98:ARG:HH21	60:sh:105:ASP:HB2	1.81	0.46
77:sz:24:LYS:HD2	77:sz:79:ILE:HD11	1.97	0.46
1:lA:587:A:O2'	1:lA:588:G:O5'	2.30	0.46
1:lA:2482:C:H2'	1:lA:2483:C:H6	1.80	0.46
1:lA:3332:A:H1'	1:lA:3375:U:O2'	2.16	0.46
5:lE:40:LYS:HD3	5:lE:41:PRO:N	2.30	0.46
31:le:13:GLY:O	31:le:16:SER:N	2.48	0.46
53:sa:1391:C:C2	53:sa:1392:A:N7	2.84	0.46
53:sa:1690:A:O2'	53:sa:1691:A:H8	1.98	0.46
55:sc:71:VAL:HG11	55:sc:138:MET:HE3	1.97	0.46
62:sj:57:ALA:HB1	62:sj:60:LEU:HD21	1.97	0.46
1:lA:866:G:H2'	1:lA:867:U:C6	2.50	0.46
1:lA:1406:A:H2'	1:lA:1407:U:C6	2.50	0.46
1:lA:1752:U:H2'	1:lA:1753:A:O4'	2.15	0.46
1:lA:1888:A:H2'	1:lA:1889:U:C6	2.51	0.46
1:lA:2978:C:H2'	1:lA:2979:C:O2	2.15	0.46
1:lA:3091:C:H5''	5:lE:245:HIS:HB3	1.98	0.46
1:lA:3481:U:H2'	1:lA:3482:C:C6	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:1F:101:MET:HG3	6:1F:102:PHE:O	2.15	0.46
6:1F:305:ARG:HE	6:1F:308:ILE:HG13	1.79	0.46
14:1N:101:GLU:HB3	37:1k:18:MET:HE2	1.97	0.46
15:1O:107:GLU:H	15:1O:107:GLU:HG2	1.56	0.46
31:1e:47:ILE:HG12	31:1e:72:VAL:HB	1.97	0.46
53:sa:853:U:H2'	53:sa:854:U:C6	2.50	0.46
53:sa:1749:U:H5''	70:ss:150:ARG:HH22	1.80	0.46
53:sa:1776:G:H5''	59:sg:88:LYS:HB2	1.97	0.46
53:sa:1815:C:H2'	53:sa:1816:U:C6	2.50	0.46
56:sd:138:ARG:NH2	56:sd:142:ASP:OD2	2.47	0.46
58:sf:121:LEU:HD21	58:sf:233:LEU:HD22	1.97	0.46
1:1A:739:A:H2'	1:1A:740:A:H8	1.80	0.46
1:1A:1474:A:O2'	27:1a:176:GLU:OE2	2.29	0.46
1:1A:2225:A:O2'	4:1D:179:ILE:O	2.28	0.46
1:1A:2590:A:OP2	1:1A:2591:U:H5	1.98	0.46
1:1A:3455:G:C6	1:1A:3500:A:N1	2.84	0.46
3:1C:106:U:H2'	3:1C:107:A:H8	1.80	0.46
7:1G:106:ALA:HB2	7:1G:167:MET:HA	1.97	0.46
11:1K:100:MET:HE1	11:1K:167:ILE:HB	1.98	0.46
18:1R:46:GLU:OE1	18:1R:46:GLU:N	2.48	0.46
31:1e:40:ASP:HB2	31:1e:42:LYS:HG2	1.98	0.46
53:sa:5:U:H2'	53:sa:6:G:C8	2.50	0.46
53:sa:887:A:H2'	53:sa:888:A:H8	1.79	0.46
53:sa:1391:C:C2	53:sa:1392:A:C8	3.04	0.46
53:sa:1682:A:H4'	53:sa:1684:A:N7	2.31	0.46
57:se:38:LYS:H	57:se:38:LYS:HD2	1.81	0.46
58:sf:251:ASN:OD1	58:sf:251:ASN:N	2.49	0.46
60:sh:199:ALA:HB3	60:sh:203:HIS:HB2	1.97	0.46
1:1A:564:A:H4'	1:1A:565:U:O5'	2.16	0.46
1:1A:1057:C:OP2	29:1c:26:ARG:NH1	2.45	0.46
1:1A:1605:A:H2	1:1A:3430:U:N3	2.12	0.46
1:1A:2505:A:H2'	1:1A:2506:U:C6	2.51	0.46
1:1A:3033:C:O2'	1:1A:3076:A:N3	2.41	0.46
1:1A:3323:C:O2'	1:1A:3419:A:N1	2.47	0.46
3:1C:61:A:OP1	7:1G:271:ARG:HG3	2.16	0.46
4:1D:105:GLY:HA3	4:1D:160:SER:HB2	1.97	0.46
10:1J:125:LYS:HD2	10:1J:126:PRO:HD2	1.96	0.46
11:1K:100:MET:HE2	11:1K:152:LEU:HD11	1.98	0.46
21:1U:92:LYS:O	21:1U:96:ILE:HG13	2.16	0.46
36:1j:34:VAL:HG13	36:1j:39:ASP:HB2	1.98	0.46
48:sE:52:PHE:HB3	74:sw:80:TYR:HB3	1.96	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:sa:443:U:H2'	53:sa:444:U:C6	2.51	0.46
53:sa:1115:C:N4	53:sa:1116:U:O4	2.49	0.46
53:sa:1441:C:O2'	53:sa:1442:A:O5'	2.30	0.46
59:sg:51:LEU:HD12	70:ss:62:LYS:HB2	1.97	0.46
70:ss:54:ILE:HG12	70:ss:56:PRO:HD2	1.97	0.46
1:lA:255:A:H4'	1:lA:257:A:N7	2.30	0.46
1:lA:548:A:H2'	1:lA:549:U:C6	2.51	0.46
1:lA:1985:A:H2'	1:lA:1986:A:C8	2.51	0.46
1:lA:2209:U:O4	1:lA:2223:A:H2	1.99	0.46
1:lA:2601:U:O2'	1:lA:2659:A:OP1	2.30	0.46
1:lA:2863:A:N1	37:lk:16:HIS:HB3	2.30	0.46
1:lA:3278:A:C2	1:lA:3279:A:C8	3.04	0.46
2:lB:143:U:H2'	2:lB:144:A:C8	2.51	0.46
3:lC:14:G:H2'	3:lC:15:A:C8	2.51	0.46
5:lE:80:GLU:OE1	5:lE:315:TYR:OH	2.31	0.46
6:lF:4:ARG:NH2	6:lF:263:ASN:HD21	2.14	0.46
30:ld:2:SER:O	30:ld:2:SER:OG	2.26	0.46
45:sB:51:ARG:O	45:sB:54:SER:OG	2.25	0.46
53:sa:5:U:O2'	53:sa:547:G:H4'	2.16	0.46
53:sa:69:G:N2	53:sa:80:A:H62	2.13	0.46
53:sa:466:A:O2'	63:sk:9:SER:O	2.26	0.46
53:sa:1731:U:H2'	53:sa:1732:U:C6	2.51	0.46
60:sh:138:ALA:O	60:sh:142:ARG:HB2	2.16	0.46
63:sk:57:LYS:HB2	63:sk:57:LYS:HE3	1.67	0.46
66:so:18:TYR:OH	69:sr:54:ASP:OD2	2.25	0.46
69:sr:28:ARG:HB3	69:sr:29:PRO:HD3	1.98	0.46
1:lA:243:G:O2'	1:lA:264:G:N2	2.49	0.46
1:lA:662:U:HO2'	1:lA:663:G:P	2.39	0.46
1:lA:1809:A:C6	28:lb:64:MET:HE3	2.50	0.46
1:lA:1922:U:H2'	1:lA:1923:U:C6	2.51	0.46
1:lA:3500:A:H2'	1:lA:3501:A:H8	1.80	0.46
24:lX:60:MET:HE3	24:lX:108:MET:HE2	1.97	0.46
28:lb:91:GLN:HG2	28:lb:129:LYS:HE3	1.98	0.46
53:sa:64:A:OP1	60:sh:182:GLN:NE2	2.34	0.46
53:sa:253:A:H2'	53:sa:253:A:N3	2.30	0.46
53:sa:390:U:O4	53:sa:394:A:N7	2.49	0.46
53:sa:1931:C:H2'	53:sa:1932:U:C6	2.51	0.46
69:sr:82:THR:HG22	69:sr:84:SER:H	1.81	0.46
73:sv:99:LYS:NZ	73:sv:103:TYR:HB2	2.30	0.46
1:lA:18:G:H1'	2:lB:102:A:N3	2.31	0.46
1:lA:871:A:H2'	1:lA:872:A:O4'	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:1840:A:H2'	1:1A:1841:G:C8	2.51	0.46
1:1A:1922:U:H2'	1:1A:1923:U:H6	1.81	0.46
1:1A:2276:U:C2	1:1A:2277:G:C8	3.04	0.46
1:1A:3026:U:H2'	1:1A:3027:C:H6	1.81	0.46
3:1C:69:U:H2'	3:1C:70:U:C6	2.51	0.46
19:1S:156:LYS:HD2	19:1S:156:LYS:HA	1.78	0.46
19:1S:160:LYS:HD3	19:1S:160:LYS:HA	1.57	0.46
24:1X:85:ARG:HE	24:1X:85:ARG:HB2	1.62	0.46
33:lg:38:GLY:O	33:lg:44:ARG:HD3	2.16	0.46
33:lg:88:MET:SD	33:lg:88:MET:N	2.82	0.46
42:lp:4:GLU:H	42:lp:4:GLU:CD	2.22	0.46
42:lp:33:THR:O	42:lp:33:THR:OG1	2.33	0.46
48:sE:20:THR:HG22	48:sE:27:ARG:HD3	1.98	0.46
53:sa:14:C:H2'	53:sa:15:U:C6	2.51	0.46
53:sa:73:A:H1'	53:sa:74:A:C8	2.52	0.46
53:sa:1690:A:N1	53:sa:1774:A:H1'	2.31	0.46
53:sa:1882:U:H2'	53:sa:1883:C:C6	2.51	0.46
56:sd:205:ASP:O	56:sd:208:PRO:HD2	2.16	0.46
58:sf:67:THR:HG21	77:sz:20:LEU:HD11	1.98	0.46
63:sk:64:ALA:HA	63:sk:69:ARG:HD3	1.97	0.46
76:sy:52:LYS:HA	76:sy:68:VAL:HA	1.98	0.46
77:sz:18:ASN:OD1	77:sz:25:GLN:NE2	2.47	0.46
1:1A:255:A:N3	6:1F:225:ASN:ND2	2.61	0.45
1:1A:542:U:H2'	1:1A:543:A:H8	1.81	0.45
1:1A:832:A:O2'	1:1A:833:U:OP1	2.30	0.45
1:1A:2205:C:H2'	1:1A:2206:G:C8	2.51	0.45
1:1A:3352:G:H4'	1:1A:3353:U:H5''	1.97	0.45
11:1K:136:MET:HE3	11:1K:136:MET:HB3	1.75	0.45
27:la:85:LYS:HB2	27:la:95:ILE:HD11	1.98	0.45
34:lh:46:ASP:OD1	34:lh:46:ASP:N	2.49	0.45
38:ll:51:TYR:HA	38:ll:54:LEU:HD12	1.99	0.45
53:sa:243:U:H4'	53:sa:244:U:OP2	2.16	0.45
53:sa:1364:C:O2	53:sa:1366:A:N6	2.50	0.45
53:sa:1374:G:H2'	53:sa:1375:U:H6	1.81	0.45
53:sa:1545:G:H2'	53:sa:1546:C:H6	1.81	0.45
63:sk:69:ARG:HE	63:sk:93:LEU:HD12	1.81	0.45
68:sq:92:VAL:HG13	68:sq:103:THR:HG23	1.97	0.45
1:1A:480:U:H2'	1:1A:481:A:O4'	2.16	0.45
1:1A:874:A:H2'	1:1A:875:C:C6	2.52	0.45
1:1A:993:U:N3	1:1A:3121:U:OP1	2.27	0.45
1:1A:1131:G:H2'	1:1A:1132:U:C6	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:1627:G:H21	34:lh:6:THR:HG22	1.81	0.45
1:lA:1756:U:C2	1:lA:1757:C:C5	3.03	0.45
1:lA:2637:A:H2'	1:lA:2638:A:H8	1.81	0.45
1:lA:3008:U:HO2'	1:lA:3009:C:P	2.39	0.45
1:lA:3223:G:N3	1:lA:3224:A:C8	2.85	0.45
2:lB:143:U:H2'	2:lB:144:A:H8	1.81	0.45
3:lC:36:U:H2'	3:lC:37:A:C8	2.51	0.45
5:lE:286:ARG:NH2	5:lE:296:LYS:O	2.49	0.45
11:lK:113:ILE:HG12	11:lK:120:ILE:HG13	1.98	0.45
12:lL:32:LYS:HB3	12:lL:32:LYS:HE3	1.81	0.45
53:sa:403:C:C2	53:sa:404:C:C5	3.04	0.45
53:sa:840:U:H2'	53:sa:841:U:H6	1.81	0.45
53:sa:1433:A:OP1	74:sw:87:ARG:NH2	2.33	0.45
57:se:192:GLU:OE2	57:se:196:PRO:HD3	2.15	0.45
71:st:82:ASP:OD1	71:st:82:ASP:N	2.47	0.45
72:su:96:ASP:OD1	72:su:97:SER:N	2.50	0.45
1:lA:228:A:H2'	1:lA:229:A:C8	2.51	0.45
1:lA:1047:U:H2'	1:lA:1048:A:C8	2.51	0.45
2:lB:73:A:H5'	27:la:73:ARG:HH22	1.82	0.45
6:lF:411:MET:HE3	6:lF:411:MET:HB3	1.81	0.45
11:lK:94:LYS:HE3	11:lK:94:LYS:HB2	1.82	0.45
28:lb:124:GLU:OE1	28:lb:129:LYS:HD3	2.16	0.45
48:sE:14:TYR:HB3	53:sa:1763:A:H8	1.80	0.45
48:sE:17:GLY:N	53:sa:1230:C:O2	2.48	0.45
53:sa:1662:G:O2'	53:sa:1687:C:N4	2.44	0.45
56:sd:37:GLU:OE1	64:sl:60:TRP:NE1	2.39	0.45
57:se:50:VAL:HG21	57:se:58:ILE:HG23	1.98	0.45
57:se:108:THR:HG23	57:se:111:LYS:H	1.81	0.45
73:sv:6:ASN:HB2	73:sv:66:TYR:OH	2.16	0.45
1:lA:661:G:H2'	1:lA:662:U:C6	2.51	0.45
1:lA:709:U:HO2'	1:lA:710:A:P	2.38	0.45
1:lA:1071:A:H5''	30:ld:15:LYS:HD3	1.99	0.45
1:lA:2297:G:N2	1:lA:2300:A:OP2	2.44	0.45
1:lA:3332:A:H2'	1:lA:3333:A:C8	2.52	0.45
11:lK:140:VAL:HG13	11:lK:160:VAL:HG22	1.98	0.45
14:lN:72:GLY:HA2	14:lN:94:ALA:C	2.41	0.45
14:lN:72:GLY:HA3	14:lN:96:ASP:HB2	1.98	0.45
14:lN:124:LEU:HD21	35:li:109:PHE:HE1	1.81	0.45
28:lb:33:THR:OG1	28:lb:35:ASP:OD1	2.30	0.45
31:le:8:LYS:HA	31:le:8:LYS:HD2	1.53	0.45
42:lp:35:CYS:O	42:lp:42:HIS:HA	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:sI:63:U:H2'	50:sI:64:G:C8	2.51	0.45
53:sa:77:A:H4'	60:sh:159:ARG:HH22	1.81	0.45
53:sa:1377:U:H2'	53:sa:1378:U:H6	1.82	0.45
72:su:68:ILE:O	72:su:71:ILE:HG22	2.16	0.45
1:lA:258:G:C8	6:lF:227:PRO:HG3	2.51	0.45
1:lA:1310:A:N3	20:lT:108:SER:OG	2.47	0.45
1:lA:2482:C:H2'	1:lA:2483:C:C6	2.51	0.45
1:lA:3026:U:H2'	1:lA:3027:C:C6	2.52	0.45
3:lC:79:G:C6	3:lC:95:A:N1	2.84	0.45
14:lN:15:ASP:OD2	14:lN:18:SER:OG	2.30	0.45
23:lW:47:VAL:HA	23:lW:68:VAL:HG11	1.97	0.45
47:sD:33:CYS:O	47:sD:42:ILE:N	2.44	0.45
53:sa:60:A:H2'	53:sa:61:A:H5''	1.99	0.45
53:sa:1590:A:H2'	53:sa:1591:G:C8	2.51	0.45
56:sd:8:LYS:HG2	64:sl:24:HIS:CD2	2.52	0.45
57:se:66:ARG:NH2	57:se:87:LYS:HE2	2.31	0.45
75:sx:23:ALA:HB3	75:sx:26:ASP:HB2	1.99	0.45
1:lA:34:U:H2'	1:lA:35:A:O4'	2.17	0.45
1:lA:97:A:H2'	1:lA:98:A:O4'	2.16	0.45
1:lA:797:C:C2	1:lA:798:U:C5	3.04	0.45
1:lA:2593:U:H5	1:lA:2659:A:N1	2.15	0.45
4:lD:59:ALA:HB2	4:lD:78:CYS:SG	2.57	0.45
37:lk:73:THR:HB	37:lk:76:ARG:HB2	1.99	0.45
46:sC:20:HIS:HB3	46:sC:23:LYS:HG3	1.98	0.45
53:sa:164:A:C4	53:sa:166:A:C8	3.05	0.45
53:sa:889:U:C2	53:sa:890:C:C5	3.04	0.45
53:sa:1374:G:H2'	53:sa:1375:U:C6	2.52	0.45
56:sd:119:ILE:HD11	56:sd:136:VAL:HG11	1.98	0.45
60:sh:98:ARG:HH22	60:sh:103:ALA:HB3	1.81	0.45
65:sm:57:CYS:O	65:sm:61:SER:HB3	2.17	0.45
73:sv:29:LEU:HD22	73:sv:55:TYR:HE1	1.82	0.45
73:sv:97:SER:HB3	73:sv:100:VAL:HG22	1.97	0.45
77:sz:21:LEU:HD12	77:sz:23:ARG:HE	1.80	0.45
1:lA:10:U:H2'	1:lA:11:A:H8	1.82	0.45
1:lA:424:A:OP2	1:lA:438:G:H1'	2.17	0.45
1:lA:631:G:N2	1:lA:632:G:N3	2.64	0.45
1:lA:670:A:H2	6:lF:397:LEU:HD23	1.81	0.45
1:lA:2835:C:O3'	43:lq:37:GLY:HA3	2.16	0.45
1:lA:2857:A:H4'	1:lA:2858:A:OP1	2.17	0.45
1:lA:3455:G:H21	5:lE:310:GLY:HA2	1.82	0.45
7:lG:30:TYR:O	7:lG:34:ARG:HG3	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:lH:167:LYS:HA	8:lH:167:LYS:HD2	1.61	0.45
21:lU:109:TYR:HD2	21:lU:142:ILE:HD13	1.82	0.45
42:lp:37:LYS:HA	42:lp:37:LYS:HD3	1.83	0.45
50:sI:23:A:H2'	50:sI:24:G:C8	2.52	0.45
53:sa:76:U:O2	60:sh:159:ARG:NH1	2.50	0.45
53:sa:555:G:H2'	53:sa:556:G:C8	2.52	0.45
53:sa:1818:C:H2'	53:sa:1819:C:C6	2.51	0.45
54:sb:177:SER:O	54:sb:181:MET:HG2	2.17	0.45
56:sd:76:LYS:HE2	56:sd:76:LYS:HB2	1.80	0.45
1:lA:342:A:OP2	17:lQ:15:GLN:NE2	2.48	0.45
1:lA:579:A:H2'	1:lA:580:A:O4'	2.17	0.45
1:lA:1091:A:H2'	1:lA:1092:A:H8	1.82	0.45
1:lA:1912:A:N6	39:lm:42:CYS:HA	2.31	0.45
1:lA:2669:A:C4	1:lA:2670:U:C5	3.05	0.45
1:lA:2730:U:H2'	1:lA:2731:G:C8	2.50	0.45
1:lA:2841:A:O2'	1:lA:2842:U:OP2	2.29	0.45
1:lA:2890:A:H2'	1:lA:2891:G:C8	2.51	0.45
1:lA:3312:U:H2'	1:lA:3313:U:C6	2.52	0.45
6:lF:47:ASN:HA	6:lF:112:GLN:HG3	1.99	0.45
10:lJ:183:LEU:HB2	10:lJ:192:ALA:HB3	1.98	0.45
32:lf:58:LEU:HD11	32:lf:70:ALA:HB2	1.99	0.45
42:lp:13:LYS:HA	42:lp:17:ASP:HB2	1.99	0.45
42:lp:40:CYS:O	42:lp:43:SER:OG	2.35	0.45
44:sA:51:ASP:N	44:sA:51:ASP:OD1	2.49	0.45
53:sa:294:G:H1'	53:sa:296:G:C8	2.52	0.45
53:sa:839:A:N3	53:sa:839:A:H2'	2.32	0.45
53:sa:1880:U:H2'	53:sa:1881:C:C6	2.52	0.45
55:sc:121:LYS:HE2	55:sc:121:LYS:HB2	1.77	0.45
55:sc:155:THR:HG21	55:sc:174:ALA:O	2.17	0.45
60:sh:63:MET:HA	60:sh:98:ARG:HB3	1.98	0.45
76:sy:72:LEU:H	76:sy:72:LEU:HD12	1.82	0.45
1:lA:619:A:O2'	1:lA:620:U:O5'	2.33	0.45
1:lA:1244:C:H2'	1:lA:1245:A:C8	2.51	0.45
1:lA:1831:U:H2'	1:lA:1832:U:C6	2.52	0.45
1:lA:1886:A:H2'	1:lA:1887:A:C8	2.51	0.45
1:lA:2429:G:H5''	18:lR:86:LYS:HB2	1.97	0.45
1:lA:2486:U:H5	1:lA:2944:A:N1	2.14	0.45
1:lA:2666:G:H2'	1:lA:2667:A:H8	1.82	0.45
1:lA:2774:A:O2'	1:lA:2775:A:O5'	2.32	0.45
1:lA:2847:A:H61	1:lA:2912:U:H3	1.64	0.45
7:lG:282:LEU:HD23	7:lG:282:LEU:HA	1.77	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:IN:104:LYS:HB2	37:lk:16:HIS:HB2	1.99	0.45
34:lh:16:LYS:HA	34:lh:16:LYS:HD3	1.69	0.45
53:sa:28:U:H2'	53:sa:29:G:H8	1.81	0.45
53:sa:403:C:H2'	53:sa:404:C:H6	1.82	0.45
53:sa:794:U:H2'	53:sa:795:G:H8	1.81	0.45
53:sa:1173:A:O2'	53:sa:1802:C:OP2	2.34	0.45
53:sa:1185:A:H2'	53:sa:1186:C:C6	2.52	0.45
53:sa:1319:G:C6	53:sa:1320:G:N7	2.84	0.45
53:sa:1864:G:H2'	53:sa:1865:A:C8	2.52	0.45
55:sc:247:LYS:HA	55:sc:247:LYS:HD2	1.73	0.45
57:se:45:VAL:HG22	57:se:75:LEU:HD13	1.99	0.45
59:sg:35:LEU:HD22	59:sg:149:ILE:HD11	1.99	0.45
70:ss:69:ILE:HG22	70:ss:70:VAL:HG13	1.98	0.45
1:lA:713:G:H3'	1:lA:714:U:H5''	1.98	0.45
1:lA:733:C:O2'	1:lA:734:C:OP1	2.29	0.45
1:lA:1482:U:H2'	1:lA:1483:U:C6	2.52	0.45
1:lA:1858:A:OP2	23:IW:87:ARG:NH1	2.48	0.45
1:lA:2368:U:H2'	1:lA:2369:C:C6	2.51	0.45
1:lA:2432:A:H2	18:IR:131:ARG:HH22	1.65	0.45
1:lA:3207:G:H2'	1:lA:3208:A:H8	1.82	0.45
1:lA:3361:A:H2'	1:lA:3362:U:C6	2.51	0.45
1:lA:3468:U:H3'	1:lA:3469:A:C5'	2.46	0.45
2:IB:48:G:N3	2:IB:63:A:H2	2.15	0.45
6:IF:94:ASN:HA	6:IF:100:HIS:O	2.16	0.45
14:IN:175:LYS:HE2	14:IN:175:LYS:HB2	1.75	0.45
51:sJ:24:C:H2'	51:sJ:25:U:C6	2.52	0.45
53:sa:1301:U:H5'	56:sd:161:ALA:HB2	1.99	0.45
53:sa:1308:U:OP2	53:sa:1309:C:O2'	2.19	0.45
53:sa:1545:G:H2'	53:sa:1546:C:C6	2.52	0.45
63:sk:152:SER:HA	63:sk:155:LEU:HD12	1.98	0.45
70:ss:97:ARG:NH2	70:ss:128:ASP:OD2	2.50	0.45
1:lA:518:A:H2'	1:lA:519:A:O4'	2.18	0.44
1:lA:606:A:H2'	1:lA:607:U:C6	2.52	0.44
1:lA:857:U:H2'	1:lA:858:A:H8	1.82	0.44
1:lA:1876:U:H2'	1:lA:1936:A:H61	1.82	0.44
1:lA:2303:U:H2'	1:lA:2304:A:C8	2.52	0.44
1:lA:2913:A:H2'	1:lA:2914:A:C8	2.52	0.44
5:IE:153:ILE:O	5:IE:157:CYS:HB2	2.18	0.44
13:IM:63:ASP:OD1	13:IM:63:ASP:N	2.36	0.44
47:sD:51:ARG:HG3	47:sD:54:ASP:OD1	2.16	0.44
53:sa:605:C:H5'	76:sy:11:MET:HE3	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:sa:1097:C:H2'	53:sa:1098:A:C8	2.52	0.44
58:sf:13:PRO:HG3	58:sf:37:LYS:HG2	1.99	0.44
64:sl:52:LYS:HD2	64:sl:52:LYS:HA	1.78	0.44
67:sp:29:TYR:HB3	67:sp:36:PHE:HB2	1.98	0.44
70:ss:108:ASN:HA	70:ss:112:VAL:HB	1.98	0.44
74:sw:98:VAL:HG13	74:sw:99:LYS:N	2.32	0.44
1:lA:184:A:H2'	1:lA:185:G:O4'	2.17	0.44
1:lA:230:U:H2'	1:lA:231:U:C6	2.53	0.44
1:lA:467:A:C2	1:lA:2439:A:H4'	2.52	0.44
1:lA:720:U:O2'	1:lA:721:A:OP1	2.31	0.44
1:lA:919:G:H22	6:lF:103:SER:HA	1.81	0.44
1:lA:1095:A:H2	1:lA:1099:A:H2	1.66	0.44
1:lA:1569:A:H4'	1:lA:1570:U:OP2	2.18	0.44
1:lA:1681:C:C2	1:lA:1682:A:C8	3.05	0.44
1:lA:1858:A:H2'	1:lA:1859:G:C8	2.52	0.44
1:lA:2414:C:O2	24:lX:21:ASN:ND2	2.35	0.44
1:lA:2416:U:OP2	5:lE:239:HIS:ND1	2.50	0.44
1:lA:2730:U:OP1	1:lA:2820:G:O2'	2.36	0.44
1:lA:3243:C:H2'	1:lA:3244:U:O4'	2.17	0.44
2:lB:9:A:H2'	2:lB:10:U:C6	2.52	0.44
4:lD:219:VAL:HG11	4:lD:223:THR:HG22	1.99	0.44
13:lM:27:GLY:O	13:lM:29:ARG:N	2.51	0.44
20:lT:38:TRP:CE2	20:lT:49:LYS:HG3	2.53	0.44
22:lV:62:GLY:HA3	22:lV:76:VAL:HG12	1.99	0.44
31:le:49:SER:OG	31:le:50:SER:N	2.50	0.44
53:sa:1848:U:C2'	53:sa:1849:U:H5'	2.47	0.44
53:sa:1850:C:H2'	53:sa:1851:U:C6	2.52	0.44
53:sa:1864:G:H2'	53:sa:1865:A:H8	1.81	0.44
53:sa:1892:G:H8	53:sa:1892:G:P	2.40	0.44
69:sr:87:ASP:OD1	69:sr:87:ASP:N	2.51	0.44
1:lA:228:A:H2'	1:lA:229:A:H8	1.82	0.44
1:lA:1883:A:N6	1:lA:1931:U:H3	2.12	0.44
1:lA:2257:G:H5''	4:lD:193:ARG:HH12	1.81	0.44
1:lA:2739:U:H2'	1:lA:2740:G:H8	1.82	0.44
3:lC:16:C:H2'	3:lC:17:G:O4'	2.17	0.44
3:lC:17:G:H1	3:lC:59:G:N2	2.16	0.44
47:sD:12:TYR:HB2	47:sD:36:MET:HE1	1.98	0.44
53:sa:89:C:O2'	53:sa:446:G:H5''	2.17	0.44
53:sa:1426:C:H6	53:sa:1426:C:O5'	2.00	0.44
53:sa:1660:C:H2'	53:sa:1661:C:C5	2.52	0.44
56:sd:78:ARG:HB2	64:sl:89:THR:HB	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:sf:160:LEU:HD23	58:sf:160:LEU:HA	1.81	0.44
59:sg:77:CYS:O	59:sg:161:ARG:NH2	2.46	0.44
60:sh:155:LYS:HD3	60:sh:155:LYS:H	1.82	0.44
1:lA:82:G:O2'	1:lA:94:G:O6	2.27	0.44
1:lA:222:A:H2'	1:lA:223:A:H8	1.83	0.44
1:lA:531:U:H2'	1:lA:532:A:C8	2.52	0.44
1:lA:953:U:H2'	1:lA:954:G:O4'	2.17	0.44
1:lA:1035:G:H5'	1:lA:1036:A:OP1	2.18	0.44
1:lA:1207:C:H2'	1:lA:1208:U:O4'	2.17	0.44
1:lA:1343:A:H2'	1:lA:1410:A:H2	1.82	0.44
1:lA:1624:G:C8	1:lA:1626:G:C8	3.05	0.44
1:lA:1745:A:H2'	1:lA:1746:G:H8	1.82	0.44
1:lA:2273:C:H4'	1:lA:2274:A:O5'	2.18	0.44
1:lA:2353:C:H5'	1:lA:2393:A:H4'	1.99	0.44
2:lB:116:U:H2'	2:lB:117:A:H8	1.83	0.44
20:lT:5:TYR:HB2	20:lT:60:ILE:HD11	1.99	0.44
21:lU:108:LYS:HE3	21:lU:108:LYS:HB3	1.80	0.44
34:lh:65:LEU:O	34:lh:70:ARG:NH1	2.50	0.44
53:sa:27:A:H2'	53:sa:28:U:C6	2.52	0.44
53:sa:79:G:N7	60:sh:175:ARG:NH1	2.60	0.44
53:sa:138:G:H2'	53:sa:139:G:C8	2.52	0.44
53:sa:375:A:H2'	53:sa:375:A:N3	2.32	0.44
53:sa:403:C:N3	53:sa:404:C:C5	2.85	0.44
53:sa:457:G:C5	53:sa:458:U:C5	3.05	0.44
54:sb:39:MET:HE2	54:sb:161:LEU:HD11	1.98	0.44
58:sf:9:ARG:HD2	58:sf:9:ARG:HA	1.85	0.44
1:lA:207:A:H2'	1:lA:208:U:H6	1.82	0.44
1:lA:239:G:H2'	1:lA:240:A:H8	1.81	0.44
1:lA:397:A:N6	41:lo:35:ILE:HG23	2.33	0.44
1:lA:503:A:H2'	1:lA:504:U:H6	1.82	0.44
1:lA:711:A:H2'	1:lA:712:G:O4'	2.17	0.44
1:lA:875:C:H2'	1:lA:876:A:C8	2.52	0.44
1:lA:1340:C:H2'	1:lA:1341:A:H8	1.83	0.44
1:lA:1451:A:H2'	1:lA:1452:C:O4'	2.18	0.44
1:lA:1670:A:OP2	1:lA:1740:G:N2	2.45	0.44
1:lA:2294:A:H2'	1:lA:2295:A:H8	1.83	0.44
5:lE:29:VAL:HG11	5:lE:340:ARG:HD3	1.99	0.44
17:lQ:170:LYS:HG2	17:lQ:175:THR:HG22	1.98	0.44
18:lR:70:LYS:HA	18:lR:70:LYS:HD3	1.77	0.44
27:la:75:LYS:HB2	27:la:77:VAL:HG22	2.00	0.44
47:sD:24:SER:OG	47:sD:25:ARG:N	2.49	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:sa:104:A:OP1	62:sj:12:ARG:NE	2.50	0.44
53:sa:449:U:O2	58:sf:61:MET:HA	2.17	0.44
53:sa:1391:C:O2	53:sa:1392:A:C8	2.71	0.44
53:sa:1671:A:N3	53:sa:1729:G:O2'	2.43	0.44
53:sa:1699:C:H4'	53:sa:1705:A:C6	2.53	0.44
54:sb:29:HIS:HD2	54:sb:53:ILE:HG23	1.82	0.44
68:sq:86:PRO:HA	68:sq:89:ILE:HD13	1.99	0.44
1:lA:678:A:H2'	1:lA:679:U:C6	2.52	0.44
1:lA:1544:U:H2'	1:lA:1545:A:C8	2.53	0.44
1:lA:2224:U:H2'	1:lA:2225:A:C8	2.53	0.44
1:lA:2983:C:H2'	1:lA:2984:G:O4'	2.18	0.44
1:lA:3139:G:H1'	2:lB:1:A:H2	1.82	0.44
7:lG:278:LYS:HB2	7:lG:278:LYS:HE3	1.75	0.44
8:lH:48:PRO:HA	8:lH:84:ILE:HB	2.00	0.44
9:lI:143:LYS:HB2	9:lI:143:LYS:HE3	1.76	0.44
10:lJ:22:LYS:HB3	10:lJ:22:LYS:HE3	1.76	0.44
10:lJ:23:LYS:HA	10:lJ:23:LYS:HD2	1.66	0.44
11:lK:41:HIS:CE1	11:lK:77:VAL:HG11	2.52	0.44
12:lL:55:LEU:HD21	12:lL:164:LYS:HE2	1.98	0.44
17:lQ:71:ARG:HD3	17:lQ:71:ARG:HA	1.83	0.44
39:lm:24:LYS:HA	39:lm:24:LYS:HD3	1.81	0.44
48:sE:22:ARG:NH1	48:sE:36:LEU:O	2.51	0.44
53:sa:468:A:H2'	53:sa:469:C:O4'	2.18	0.44
53:sa:1776:G:P	59:sg:53:HIS:HE2	2.41	0.44
57:se:42:ARG:HG2	57:se:77:GLU:OE2	2.17	0.44
58:sf:181:MET:HA	58:sf:181:MET:HE2	1.99	0.44
72:su:16:VAL:HG22	72:su:17:CYS:SG	2.58	0.44
1:lA:62:A:N6	1:lA:72:G:H1'	2.33	0.44
1:lA:285:A:H4'	1:lA:286:U:C5'	2.47	0.44
1:lA:601:A:H2'	1:lA:602:U:C6	2.53	0.44
1:lA:645:A:H61	16:lP:82:GLN:HA	1.83	0.44
1:lA:730:A:C2	1:lA:731:A:C5	3.06	0.44
1:lA:1219:A:H4'	1:lA:1220:A:H5'	2.00	0.44
1:lA:1688:A:H2'	1:lA:1689:A:C8	2.53	0.44
1:lA:1980:C:OP2	39:lm:49:ARG:NH2	2.34	0.44
1:lA:2100:G:O2'	24:lX:24:SER:OG	2.27	0.44
1:lA:3033:C:H2'	1:lA:3034:A:C8	2.52	0.44
2:lB:28:U:H2'	2:lB:29:U:C6	2.53	0.44
5:lE:273:GLY:O	5:lE:275:PHE:N	2.50	0.44
13:lM:125:MET:HE2	13:lM:125:MET:HB2	1.91	0.44
28:lb:36:ARG:HG3	28:lb:38:TYR:CZ	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:lf:15:ARG:HD3	32:lf:15:ARG:HA	1.65	0.44
53:sa:548:C:H1'	53:sa:549:A:N7	2.33	0.44
53:sa:1342:C:H2'	53:sa:1343:G:O4'	2.18	0.44
53:sa:1578:A:OP1	59:sg:166:ARG:NH1	2.50	0.44
53:sa:1662:G:H22	53:sa:1679:G:H22	1.65	0.44
53:sa:1691:A:C8	53:sa:1692:G:C8	3.05	0.44
53:sa:1693:A:H2'	53:sa:1694:A:C8	2.53	0.44
55:sc:106:ILE:HD11	55:sc:138:MET:HE1	2.00	0.44
64:sl:54:VAL:HG12	64:sl:67:LEU:HA	2.00	0.44
75:sx:77:LYS:HA	75:sx:77:LYS:HD3	1.77	0.44
1:lA:94:G:N7	14:lN:11:HIS:NE2	2.58	0.44
1:lA:270:C:H2'	1:lA:271:U:C6	2.52	0.44
1:lA:859:U:H2'	1:lA:860:G:O4'	2.18	0.44
1:lA:1502:A:H3'	1:lA:1502:A:N3	2.33	0.44
1:lA:1855:G:H2'	1:lA:1856:G:O4'	2.17	0.44
1:lA:2504:U:H2'	1:lA:2505:A:H8	1.83	0.44
3:lC:7:A:H5''	22:lV:27:THR:HB	2.00	0.44
38:ll:52:LYS:O	38:ll:56:ARG:HG3	2.18	0.44
53:sa:77:A:H5'	60:sh:154:LYS:HZ2	1.83	0.44
53:sa:380:A:H2'	53:sa:381:G:C8	2.53	0.44
53:sa:586:A:O2'	53:sa:590:U:OP1	2.36	0.44
58:sf:177:ASN:HD22	58:sf:225:VAL:HG22	1.82	0.44
59:sg:20:LEU:HD21	59:sg:71:VAL:HG21	1.99	0.44
67:sp:56:ARG:HA	67:sp:56:ARG:HD3	1.68	0.44
72:su:115:LEU:HA	72:su:118:MET:HG2	2.00	0.44
1:lA:336:A:C2	17:lQ:93:LYS:HD3	2.51	0.44
1:lA:349:G:H5''	1:lA:350:A:H5''	1.98	0.44
1:lA:504:U:H2'	1:lA:505:A:C8	2.53	0.44
1:lA:586:A:H5''	8:lH:130:LYS:HB3	2.00	0.44
1:lA:982:U:H2'	1:lA:983:C:H6	1.82	0.44
1:lA:1327:A:H2'	1:lA:1328:A:H8	1.83	0.44
1:lA:2034:G:O2'	41:lo:3:GLY:O	2.36	0.44
1:lA:2959:G:N7	1:lA:3013:C:H5'	2.33	0.44
1:lA:3309:U:P	32:lf:15:ARG:HH22	2.41	0.44
3:lC:85:G:N2	3:lC:90:G:H22	2.14	0.44
51:sJ:50:U:HO2'	51:sJ:51:U:P	2.41	0.44
53:sa:106:C:H2'	53:sa:107:A:C8	2.53	0.44
53:sa:908:G:O2'	53:sa:925:U:H5'	2.18	0.44
53:sa:1250:G:H21	53:sa:1255:A:H1'	1.83	0.44
57:se:28:LYS:O	67:sp:17:GLY:HA2	2.18	0.44
59:sg:58:TYR:HB3	59:sg:65:LYS:HA	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:sk:48:MET:HE2	63:sk:48:MET:HA	2.00	0.44
70:ss:42:GLY:O	73:sv:1:MET:N	2.51	0.44
73:sv:130:ASP:HA	73:sv:133:LYS:HZ1	1.82	0.44
1:lA:592:A:H2'	1:lA:593:A:C8	2.53	0.43
1:lA:2443:A:H2'	1:lA:2444:A:H8	1.83	0.43
1:lA:2869:A:H61	1:lA:2884:U:H3	1.64	0.43
1:lA:2887:G:H2'	1:lA:2888:U:O4'	2.18	0.43
1:lA:3300:A:H2'	1:lA:3301:A:C8	2.52	0.43
30:ld:38:GLN:NE2	30:ld:42:ASN:OD1	2.49	0.43
37:lk:55:LEU:HD12	37:lk:84:ILE:HG22	2.00	0.43
51:sJ:70:A:H2'	51:sJ:71:G:C8	2.52	0.43
53:sa:1511:A:H2'	53:sa:1512:A:N3	2.32	0.43
58:sf:192:VAL:HG21	58:sf:230:THR:HG22	2.00	0.43
60:sh:98:ARG:NH1	60:sh:101:ILE:O	2.51	0.43
68:sq:33:VAL:HG11	68:sq:44:TYR:CD1	2.52	0.43
1:lA:112:G:OP1	17:lQ:5:LYS:HB3	2.18	0.43
1:lA:431:A:H2'	1:lA:432:A:C8	2.53	0.43
1:lA:2183:A:C2	1:lA:2184:A:C5	3.06	0.43
1:lA:2419:C:H2'	1:lA:2420:U:C6	2.53	0.43
1:lA:2876:U:O2'	1:lA:2877:U:O4'	2.30	0.43
2:lB:15:U:H5'	18:lR:2:VAL:HG13	2.00	0.43
9:lI:21:CYS:HG	9:lI:22:LYS:H	1.65	0.43
14:lN:157:ALA:O	14:lN:161:LYS:HG3	2.18	0.43
15:lO:50:MET:O	15:lO:54:GLN:HG2	2.17	0.43
25:lY:69:ALA:O	25:lY:99:LYS:NZ	2.41	0.43
28:lb:34:LYS:HD3	28:lb:34:LYS:HA	1.79	0.43
44:sA:85:LYS:O	44:sA:89:LYS:HG2	2.18	0.43
44:sA:91:LEU:HB3	44:sA:97:ILE:HG22	2.00	0.43
50:sI:65:C:H2'	50:sI:66:U:C6	2.46	0.43
53:sa:85:A:H1'	53:sa:143:G:H1'	1.98	0.43
53:sa:156:U:OP1	60:sh:85:LYS:HG2	2.19	0.43
53:sa:753:G:P	63:sk:79:ARG:HH22	2.41	0.43
53:sa:1514:A:H2'	53:sa:1515:G:C8	2.54	0.43
55:sc:39:PRO:HG3	55:sc:69:GLN:NE2	2.32	0.43
57:se:32:TYR:OH	57:se:58:ILE:HG21	2.19	0.43
58:sf:209:LYS:NZ	58:sf:213:GLY:O	2.51	0.43
73:sv:148:PRO:HG2	73:sv:151:LEU:HD12	2.00	0.43
1:lA:220:A:H2'	1:lA:221:U:H6	1.82	0.43
1:lA:328:G:O6	17:lQ:182:ASN:ND2	2.41	0.43
1:lA:869:G:N2	1:lA:872:A:C5	2.86	0.43
1:lA:940:U:H2'	1:lA:941:A:C8	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:1452:C:H2'	1:1A:1453:U:H6	1.83	0.43
1:1A:2079:A:H3'	1:1A:2079:A:N3	2.33	0.43
1:1A:2150:G:H5'	21:1U:101:VAL:HG11	2.00	0.43
1:1A:2848:A:N1	1:1A:2911:U:H5	2.17	0.43
1:1A:3345:A:C5	1:1A:3346:U:C5	3.06	0.43
2:1B:68:A:H2'	2:1B:69:U:C6	2.53	0.43
7:1G:41:LYS:HD2	7:1G:41:LYS:HA	1.73	0.43
16:1P:89:PHE:HZ	16:1P:98:ILE:HD12	1.83	0.43
21:1U:116:ASP:OD1	21:1U:116:ASP:N	2.40	0.43
27:1a:75:LYS:HB3	27:1a:75:LYS:HE3	1.80	0.43
32:1f:146:GLU:OE1	32:1f:146:GLU:N	2.51	0.43
35:1i:2:SER:OG	35:1i:3:LYS:N	2.51	0.43
53:sa:85:A:H2'	53:sa:86:C:H6	1.82	0.43
53:sa:1757:C:H2'	53:sa:1758:G:H8	1.84	0.43
53:sa:1843:U:H2'	53:sa:1844:A:C8	2.54	0.43
55:sc:41:THR:OG1	55:sc:67:GLU:OE2	2.32	0.43
58:sf:52:TYR:OH	58:sf:95:GLU:OE2	2.27	0.43
61:si:53:LYS:HE3	61:si:53:LYS:HB2	1.72	0.43
61:si:128:HIS:ND1	61:si:191:GLU:OE2	2.51	0.43
65:sm:96:TYR:HE2	76:sy:12:LEU:HD13	1.82	0.43
1:1A:540:U:O4	1:1A:541:A:N6	2.51	0.43
1:1A:813:U:O2	1:1A:907:U:O2'	2.34	0.43
1:1A:1278:A:H2'	1:1A:1279:A:C8	2.54	0.43
1:1A:1848:A:H2'	1:1A:1849:A:C8	2.54	0.43
1:1A:2207:A:C8	1:1A:2264:A:C8	3.06	0.43
2:1B:73:A:H4'	2:1B:74:A:H5'	2.01	0.43
3:1C:16:C:OP1	13:1M:150:ARG:NH1	2.48	0.43
6:1F:299:GLU:HG2	6:1F:304:LEU:HD12	2.01	0.43
15:1O:33:LYS:HA	15:1O:102:ASN:HB3	2.01	0.43
26:1Z:62:LYS:HE3	26:1Z:62:LYS:HB3	1.73	0.43
53:sa:626:U:H4'	76:sy:7:ALA:HB2	2.00	0.43
53:sa:907:U:O2	67:sp:133:ASP:HB2	2.18	0.43
53:sa:1375:U:H2'	53:sa:1376:U:H6	1.83	0.43
53:sa:1381:G:C6	53:sa:1392:A:C6	3.06	0.43
53:sa:1507:A:H2'	53:sa:1508:A:C8	2.53	0.43
53:sa:1668:G:N7	73:sv:102:ARG:NH2	2.65	0.43
60:sh:72:ARG:NH1	60:sh:105:ASP:OD2	2.52	0.43
60:sh:199:ALA:C	60:sh:202:LEU:HB3	2.43	0.43
1:1A:207:A:H2'	1:1A:208:U:C6	2.53	0.43
1:1A:2142:G:H2'	1:1A:2143:C:H6	1.84	0.43
1:1A:2466:G:N2	5:1E:228:TYR:OH	2.27	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:IK:112:VAL:HB	11:IK:121:GLN:HB2	2.01	0.43
12:IL:186:LYS:HE2	12:IL:186:LYS:HB3	1.79	0.43
20:IT:106:LEU:HD13	20:IT:110:TYR:HD2	1.82	0.43
21:IU:74:ARG:HD3	21:IU:74:ARG:HA	1.75	0.43
30:ld:7:ARG:HG2	30:ld:8:SER:N	2.32	0.43
33:lg:41:ASN:O	33:lg:45:ARG:HG3	2.19	0.43
37:lk:68:LYS:HD3	37:lk:74:HIS:HA	2.01	0.43
48:sE:37:ASP:OD1	48:sE:37:ASP:N	2.52	0.43
53:sa:113:A:N1	53:sa:241:A:H2'	2.33	0.43
53:sa:138:G:P	60:sh:142:ARG:HH21	2.41	0.43
54:sb:14:LYS:HE3	54:sb:14:LYS:HB3	1.75	0.43
55:sc:145:TYR:CZ	55:sc:149:THR:HG23	2.54	0.43
62:sj:83:TYR:O	62:sj:101:ILE:N	2.51	0.43
66:so:91:LEU:HD12	66:so:91:LEU:HA	1.84	0.43
74:sw:30:LYS:HE3	74:sw:30:LYS:HB2	1.81	0.43
1:IA:336:A:H2'	1:IA:337:A:C8	2.54	0.43
1:IA:377:C:H2'	1:IA:378:A:H8	1.84	0.43
1:IA:559:U:C2	1:IA:560:U:C5	3.05	0.43
1:IA:719:U:O2'	1:IA:720:U:OP1	2.29	0.43
1:IA:1177:A:H4'	1:IA:2708:A:C4	2.53	0.43
1:IA:2438:C:H2'	1:IA:2439:A:O4'	2.18	0.43
1:IA:2681:U:H2'	1:IA:2682:U:C6	2.53	0.43
3:IC:89:G:H4'	12:IL:11:LEU:HD22	2.00	0.43
3:IC:117:C:N3	7:IG:257:HIS:HB2	2.34	0.43
8:IH:77:VAL:HB	8:IH:91:VAL:HB	1.99	0.43
48:sE:21:CYS:HB3	48:sE:25:GLY:N	2.34	0.43
53:sa:397:U:OP1	58:sf:1:ARG:NH2	2.52	0.43
53:sa:782:A:O2'	53:sa:783:A:OP1	2.32	0.43
53:sa:1317:G:H2'	53:sa:1318:U:C6	2.54	0.43
53:sa:1730:U:H2'	53:sa:1731:U:C6	2.54	0.43
58:sf:172:LYS:HB3	58:sf:172:LYS:HE3	1.68	0.43
58:sf:204:GLU:HB2	58:sf:220:LEU:HD22	2.01	0.43
59:sg:31:SER:OG	59:sg:32:ASP:N	2.52	0.43
59:sg:69:PRO:HB2	59:sg:72:GLU:HB2	2.00	0.43
62:sj:28:THR:O	62:sj:28:THR:OG1	2.36	0.43
65:sm:37:ILE:HD12	65:sm:37:ILE:HA	1.83	0.43
68:sq:53:GLU:HA	68:sq:56:VAL:HG22	2.01	0.43
74:sw:46:LYS:HE3	74:sw:46:LYS:HB2	1.78	0.43
75:sx:76:LEU:HD23	75:sx:76:LEU:HA	1.88	0.43
1:IA:76:U:H2'	1:IA:77:C:C6	2.52	0.43
1:IA:311:A:H5'	37:lk:30:ARG:HB2	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:575:A:H3'	1:lA:576:A:H8	1.84	0.43
1:lA:721:A:O2'	1:lA:722:A:OP1	2.36	0.43
1:lA:1440:A:OP2	15:lO:134:ARG:HD3	2.17	0.43
1:lA:1491:A:H4'	29:lc:21:ARG:HG3	2.00	0.43
1:lA:2452:G:H2'	1:lA:2453:G:C8	2.54	0.43
1:lA:2806:A:O2'	22:lV:68:ASN:ND2	2.52	0.43
1:lA:3176:G:O2'	1:lA:3185:G:O6	2.32	0.43
2:lB:140:U:H2'	2:lB:141:G:C8	2.53	0.43
14:lN:45:PHE:CG	14:lN:229:GLN:HB3	2.54	0.43
15:lO:77:PRO:O	15:lO:81:VAL:HG23	2.19	0.43
34:lh:55:ARG:O	34:lh:62:TYR:OH	2.34	0.43
46:sC:27:PRO:HG2	69:sr:57:ARG:NH2	2.33	0.43
53:sa:940:U:H2'	53:sa:941:C:H6	1.84	0.43
53:sa:1835:U:H2'	53:sa:1836:G:O4'	2.19	0.43
54:sb:62:LYS:HD2	54:sb:62:LYS:HA	1.72	0.43
58:sf:208:ILE:HD11	58:sf:218:THR:HG22	2.00	0.43
61:si:63:ALA:HA	61:si:94:PRO:HD2	1.99	0.43
62:sj:98:LYS:HG3	62:sj:206:SER:HA	2.00	0.43
68:sq:87:ASN:OD1	68:sq:88:MET:HE1	2.19	0.43
73:sv:66:TYR:HD1	73:sv:67:LEU:HD23	1.83	0.43
73:sv:105:LEU:HD23	73:sv:105:LEU:HA	1.86	0.43
1:lA:565:U:H2'	1:lA:566:U:C6	2.53	0.43
1:lA:591:C:H2'	1:lA:592:A:H8	1.84	0.43
1:lA:723:U:O2'	1:lA:724:A:H5'	2.19	0.43
1:lA:1219:A:H4'	1:lA:1220:A:OP2	2.18	0.43
1:lA:1869:U:H2'	1:lA:1870:U:C6	2.54	0.43
1:lA:2251:A:N7	4:lD:20:SER:OG	2.35	0.43
1:lA:2259:A:O2'	4:lD:236:GLY:N	2.52	0.43
6:lF:431:PHE:HE1	20:lT:5:TYR:HE1	1.66	0.43
10:lJ:225:MET:HE2	10:lJ:226:TYR:CZ	2.54	0.43
31:le:57:ARG:O	31:le:61:GLU:HG2	2.18	0.43
35:li:-9:ALA:HA	35:li:38:VAL:HG13	2.01	0.43
43:lq:61:LYS:HD2	43:lq:85:ARG:NH2	2.33	0.43
53:sa:16:G:H2'	53:sa:17:C:C6	2.54	0.43
53:sa:260:U:H2'	53:sa:261:U:C6	2.53	0.43
53:sa:1200:U:H2'	53:sa:1201:G:C8	2.53	0.43
53:sa:1512:A:H2'	53:sa:1513:A:H8	1.84	0.43
62:sj:43:VAL:HG22	62:sj:57:ALA:HA	2.01	0.43
63:sk:156:ILE:H	63:sk:156:ILE:HD12	1.84	0.43
72:su:68:ILE:HA	72:su:71:ILE:HG22	2.01	0.43
1:lA:474:A:H2'	1:lA:475:A:H8	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:566:U:H2'	1:lA:567:U:C6	2.54	0.43
1:lA:1857:A:OP1	23:lW:86:LYS:HB2	2.19	0.43
1:lA:3203:A:C6	5:lE:75:PRO:HB3	2.54	0.43
5:lE:170:LEU:O	5:lE:320:ASN:ND2	2.49	0.43
11:lK:144:LYS:HA	11:lK:150:ILE:HG22	1.99	0.43
15:lO:45:CYS:HB2	15:lO:130:PHE:CZ	2.54	0.43
16:lP:124:ALA:O	16:lP:128:ILE:HG12	2.19	0.43
21:lU:114:LYS:HE2	21:lU:114:LYS:HB3	1.83	0.43
25:lY:108:ASP:OD1	25:lY:108:ASP:N	2.51	0.43
26:lZ:61:ASN:OD1	26:lZ:61:ASN:N	2.52	0.43
33:lg:92:LYS:HD3	33:lg:93:TYR:CE2	2.54	0.43
53:sa:601:G:N1	53:sa:607:G:H5'	2.34	0.43
53:sa:841:U:H2'	53:sa:842:A:C5	2.53	0.43
53:sa:859:U:H2'	53:sa:860:G:H8	1.84	0.43
53:sa:912:G:OP2	57:se:157:TYR:OH	2.29	0.43
53:sa:1310:U:H1'	53:sa:1311:U:OP2	2.17	0.43
53:sa:1344:G:H2'	53:sa:1345:U:O4'	2.19	0.43
53:sa:1346:A:H4'	53:sa:1347:A:O5'	2.18	0.43
53:sa:1802:C:O2	53:sa:1912:A:N6	2.51	0.43
54:sb:161:LEU:O	75:sx:60:GLY:HA2	2.17	0.43
58:sf:120:LYS:NZ	58:sf:141:ASP:OD2	2.41	0.43
60:sh:57:ASP:HB3	60:sh:61:PHE:HB2	2.00	0.43
60:sh:150:LYS:HD3	60:sh:150:LYS:H	1.83	0.43
62:sj:95:THR:HG22	62:sj:97:VAL:HG13	2.00	0.43
75:sx:17:VAL:HG12	75:sx:18:THR:HG23	2.00	0.43
1:lA:58:G:N2	1:lA:75:U:H4'	2.33	0.43
1:lA:292:G:H1'	1:lA:294:A:N6	2.33	0.43
1:lA:406:G:N3	1:lA:933:U:O2'	2.51	0.43
1:lA:983:C:N3	1:lA:984:A:N7	2.67	0.43
1:lA:1434:G:O2'	1:lA:2456:U:O2'	2.22	0.43
1:lA:2485:G:O2'	1:lA:2487:U:H5''	2.19	0.43
1:lA:2634:A:O2'	10:lJ:30:VAL:HG13	2.18	0.43
1:lA:2864:A:O2'	1:lA:2865:A:O5'	2.36	0.43
1:lA:3391:U:H2'	1:lA:3392:G:C8	2.54	0.43
1:lA:3476:C:H6	1:lA:3476:C:H2'	1.54	0.43
2:lB:58:G:H21	2:lB:64:A:H5'	1.84	0.43
7:lG:204:MET:HB3	7:lG:215:TYR:HE1	1.84	0.43
29:lc:36:GLY:HA3	29:lc:40:HIS:CE1	2.53	0.43
44:sA:46:ASN:O	44:sA:79:ILE:HA	2.19	0.43
44:sA:50:PHE:CZ	44:sA:87:LEU:HD21	2.53	0.43
51:sJ:24:C:H2'	51:sJ:25:U:H6	1.82	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:sa:341:G:H5'	65:sm:78:HIS:HB3	2.01	0.43
53:sa:966:G:H2'	53:sa:967:G:O4'	2.19	0.43
53:sa:1378:U:H2'	53:sa:1379:C:H6	1.84	0.43
63:sk:29:LYS:HE2	63:sk:29:LYS:HB2	1.81	0.43
63:sk:108:ARG:NH2	63:sk:110:GLN:HG3	2.34	0.43
77:sz:80:TYR:HB3	77:sz:86:LEU:HB2	2.00	0.43
1:lA:222:A:H2'	1:lA:223:A:C8	2.54	0.42
1:lA:237:C:H2'	1:lA:238:A:H8	1.83	0.42
1:lA:661:G:H2'	1:lA:662:U:H6	1.84	0.42
1:lA:1203:U:H3'	1:lA:1204:A:H2	1.83	0.42
1:lA:1266:C:O2'	1:lA:1278:A:N3	2.48	0.42
1:lA:1690:A:H2'	1:lA:1691:U:C6	2.53	0.42
1:lA:1889:U:H2'	1:lA:1890:U:C6	2.53	0.42
1:lA:2489:A:H2'	1:lA:2490:G:C8	2.53	0.42
1:lA:2907:C:N3	1:lA:2908:U:C5	2.86	0.42
1:lA:3236:U:H2'	1:lA:3237:G:H8	1.83	0.42
1:lA:3475:U:N3	1:lA:3479:A:N6	2.58	0.42
3:lC:17:G:H22	3:lC:59:G:N2	2.17	0.42
3:lC:104:G:H2'	3:lC:105:A:C8	2.52	0.42
8:lH:43:THR:HB	8:lH:47:LYS:HD3	2.01	0.42
14:lN:179:LYS:HA	14:lN:179:LYS:HD2	1.72	0.42
31:le:94:LEU:HD21	31:le:96:ILE:HD11	2.00	0.42
51:sJ:25:U:H2'	51:sJ:26:C:H6	1.83	0.42
53:sa:859:U:H2'	53:sa:860:G:C8	2.53	0.42
53:sa:1359:G:H2'	53:sa:1360:A:H8	1.83	0.42
53:sa:1395:A:H2'	53:sa:1396:A:O4'	2.18	0.42
57:se:52:LYS:HA	57:se:58:ILE:HD11	2.01	0.42
57:se:66:ARG:HH12	57:se:103:HIS:CE1	2.37	0.42
58:sf:99:LEU:HD12	58:sf:99:LEU:HA	1.81	0.42
59:sg:54:THR:HG22	59:sg:72:GLU:HG3	2.01	0.42
70:ss:104:LEU:HD21	70:ss:120:LEU:HD13	2.01	0.42
1:lA:542:U:H2'	1:lA:543:A:C8	2.54	0.42
1:lA:867:U:H2'	1:lA:868:A:O4'	2.18	0.42
1:lA:979:G:H3'	1:lA:979:G:N3	2.33	0.42
1:lA:1235:U:H2'	1:lA:1236:G:O4'	2.19	0.42
1:lA:1524:A:O2'	1:lA:1552:A:N1	2.48	0.42
1:lA:3079:A:H2'	1:lA:3080:G:C8	2.54	0.42
1:lA:3084:A:H8	1:lA:3084:A:OP2	2.02	0.42
2:lB:10:U:H2'	2:lB:11:U:C6	2.54	0.42
27:la:174:MET:O	27:la:178:LEU:HG	2.19	0.42
28:lb:109:TYR:CD1	28:lb:110:PRO:HD2	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:sa:149:U:H2'	53:sa:150:G:C8	2.54	0.42
53:sa:845:A:OP1	69:sr:28:ARG:NH2	2.49	0.42
53:sa:1107:A:H2'	53:sa:1108:G:C8	2.54	0.42
53:sa:1513:A:H2'	53:sa:1514:A:H8	1.84	0.42
56:sd:146:LYS:HD3	56:sd:146:LYS:HA	1.86	0.42
1:lA:475:A:H2'	1:lA:476:U:C6	2.54	0.42
1:lA:1251:G:N2	12:lL:116:ARG:HH12	2.18	0.42
1:lA:1641:A:C4	1:lA:1642:A:C8	3.07	0.42
1:lA:1856:G:H2'	1:lA:1857:A:C8	2.53	0.42
1:lA:2492:U:H2'	1:lA:2493:U:C6	2.54	0.42
1:lA:3154:A:H5''	5:lE:120:LYS:HE3	2.02	0.42
1:lA:3361:A:H2'	1:lA:3362:U:H6	1.84	0.42
1:lA:3501:A:O3'	5:lE:316:GLY:HA2	2.19	0.42
7:lG:124:ASP:OD1	7:lG:124:ASP:N	2.50	0.42
13:lM:29:ARG:NE	13:lM:123:TYR:OH	2.51	0.42
13:lM:109:HIS:CE1	13:lM:123:TYR:H	2.36	0.42
21:lU:99:MET:HE2	21:lU:99:MET:HB3	1.83	0.42
24:lX:87:THR:HA	24:lX:97:TYR:HB3	2.01	0.42
48:sE:8:ASN:HB3	56:sd:4:LEU:HD21	2.00	0.42
53:sa:240:G:C2	65:sm:39:MET:HE2	2.54	0.42
54:sb:13:LEU:H	54:sb:13:LEU:HD12	1.83	0.42
58:sf:9:ARG:HE	58:sf:18:LEU:HB3	1.84	0.42
61:si:154:LYS:HB2	61:si:154:LYS:HE3	1.67	0.42
72:su:70:ASP:OD1	72:su:74:ASN:ND2	2.53	0.42
1:lA:45:A:H5'	17:lQ:192:LEU:HD21	2.01	0.42
1:lA:606:A:H2'	1:lA:607:U:H6	1.85	0.42
1:lA:773:G:OP1	33:lg:41:ASN:ND2	2.44	0.42
1:lA:1205:C:H2'	1:lA:1206:A:H8	1.83	0.42
1:lA:1494:G:P	29:lc:10:ARG:HH22	2.42	0.42
1:lA:2304:A:H2'	1:lA:2305:C:H6	1.84	0.42
1:lA:2395:C:O2'	1:lA:2396:A:O5'	2.34	0.42
1:lA:2779:C:H2'	1:lA:2780:A:C8	2.53	0.42
1:lA:2865:A:OP2	37:lk:21:ALA:HB2	2.18	0.42
1:lA:3169:C:H2'	1:lA:3170:A:H8	1.84	0.42
6:lF:157:LYS:HE3	27:la:145:VAL:HG12	2.01	0.42
15:lO:55:TRP:NE1	15:lO:59:GLN:OE1	2.52	0.42
16:lP:8:GLU:OE2	16:lP:11:ARG:NH2	2.45	0.42
19:lS:78:ALA:HB1	19:lS:136:ILE:HD12	2.02	0.42
21:lU:146:LEU:HD23	21:lU:146:LEU:HA	1.93	0.42
29:lc:138:ILE:O	29:lc:141:VAL:HG12	2.18	0.42
30:ld:32:THR:O	30:ld:32:THR:OG1	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:ln:69:ILE:HG23	40:ln:74:PRO:HD3	2.00	0.42
53:sa:392:A:H2'	53:sa:393:C:C6	2.53	0.42
53:sa:1199:C:O2'	53:sa:1221:A:N6	2.52	0.42
53:sa:1243:A:N1	53:sa:1551:A:H2'	2.34	0.42
55:sc:57:GLN:NE2	55:sc:241:PRO:HG3	2.35	0.42
73:sv:99:LYS:HD2	73:sv:99:LYS:HA	1.72	0.42
75:sx:61:ILE:HD13	75:sx:61:ILE:HA	1.78	0.42
1:lA:95:A:OP1	17:lQ:195:ARG:NH1	2.42	0.42
1:lA:464:G:OP2	1:lA:464:G:N2	2.35	0.42
1:lA:597:A:N3	8:lH:51:ASN:ND2	2.66	0.42
1:lA:1310:A:H2'	1:lA:1311:C:C6	2.55	0.42
1:lA:1320:U:O2'	3:lC:83:G:N2	2.52	0.42
1:lA:1757:C:H2'	1:lA:1758:U:C6	2.54	0.42
1:lA:1904:U:O2'	1:lA:1906:A:N7	2.45	0.42
1:lA:1978:U:H2'	1:lA:1979:U:C6	2.54	0.42
1:lA:2590:A:H5'	17:lQ:28:TRP:HE1	1.84	0.42
1:lA:2779:C:C2	1:lA:2780:A:N7	2.87	0.42
1:lA:3484:A:H3'	1:lA:3485:U:H6	1.84	0.42
2:lB:154:C:OP1	10:lJ:75:LYS:HE3	2.20	0.42
4:lD:96:LEU:HD23	39:lm:83:VAL:HG13	2.00	0.42
25:lY:72:THR:HG22	25:lY:76:LYS:HE3	2.02	0.42
32:lf:144:THR:HG22	32:lf:146:GLU:OE1	2.19	0.42
35:li:60:LYS:HE2	35:li:60:LYS:HB2	1.83	0.42
47:sD:29:LEU:HD22	47:sD:50:ILE:HG22	2.01	0.42
53:sa:124:U:H2'	53:sa:125:U:C6	2.54	0.42
53:sa:325:U:H2'	53:sa:326:A:C8	2.54	0.42
53:sa:740:U:H2'	53:sa:741:U:C6	2.55	0.42
53:sa:1392:A:C2	53:sa:1393:G:N7	2.88	0.42
53:sa:1668:G:H2'	53:sa:1669:A:H5'	2.01	0.42
53:sa:1722:A:H2'	68:sq:39:ARG:HH21	1.84	0.42
55:sc:68:TYR:HB3	55:sc:132:ILE:HG23	2.02	0.42
55:sc:244:LYS:HB2	55:sc:244:LYS:HE3	1.66	0.42
56:sd:130:ARG:HB3	56:sd:130:ARG:HH11	1.84	0.42
60:sh:69:THR:H	60:sh:99:GLY:HA3	1.85	0.42
60:sh:138:ALA:N	60:sh:184:LEU:HB2	2.34	0.42
60:sh:197:LEU:O	60:sh:197:LEU:HD13	2.19	0.42
62:sj:105:ASP:OD1	62:sj:105:ASP:N	2.39	0.42
65:sm:14:PHE:HD2	65:sm:33:TYR:CZ	2.38	0.42
1:lA:487:A:OP2	1:lA:588:G:N2	2.37	0.42
1:lA:531:U:H2'	1:lA:532:A:H8	1.84	0.42
1:lA:580:A:C5	1:lA:581:U:C5	3.08	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:lA:1261:A:OP1	30:ld:7:ARG:NH1	2.48	0.42
1:lA:2274:A:C2	1:lA:2275:G:C8	3.08	0.42
1:lA:2495:A:H2'	1:lA:2496:C:C6	2.55	0.42
1:lA:2974:G:H2'	1:lA:2975:C:C6	2.55	0.42
25:lY:84:VAL:HG12	25:lY:109:VAL:HG11	2.01	0.42
43:lq:11:TYR:OH	43:lq:16:ASP:OD1	2.29	0.42
45:sB:10:ARG:NH1	53:sa:1937:A:OP1	2.50	0.42
53:sa:204:A:H3'	53:sa:205:A:H8	1.83	0.42
53:sa:1906:C:H2'	53:sa:1907:G:C8	2.55	0.42
55:sc:172:VAL:HB	55:sc:199:PHE:HB2	2.00	0.42
59:sg:83:LYS:HB2	59:sg:83:LYS:HE3	1.62	0.42
59:sg:181:ASN:OD1	59:sg:186:ASN:ND2	2.52	0.42
60:sh:74:ARG:HA	60:sh:95:LYS:O	2.20	0.42
62:sj:22:GLN:HG2	62:sj:23:LYS:O	2.20	0.42
65:sm:81:ARG:HE	65:sm:112:PRO:HG3	1.84	0.42
1:lA:90:G:H2'	1:lA:91:A:C8	2.55	0.42
1:lA:355:A:H2'	1:lA:356:U:C6	2.55	0.42
1:lA:474:A:H2'	1:lA:475:A:C8	2.55	0.42
1:lA:581:U:H2'	1:lA:582:U:C6	2.54	0.42
1:lA:598:A:H2'	1:lA:599:U:H6	1.81	0.42
1:lA:1249:C:H2'	1:lA:1250:U:C6	2.53	0.42
1:lA:1495:A:H1'	29:lc:5:PHE:O	2.20	0.42
1:lA:1930:C:C2	1:lA:1931:U:C5	3.07	0.42
1:lA:2357:A:H8	1:lA:3117:U:H1'	1.84	0.42
1:lA:2505:A:H2'	1:lA:2506:U:H6	1.85	0.42
1:lA:2583:U:H2'	1:lA:2584:U:C6	2.55	0.42
1:lA:3024:C:H2'	1:lA:3025:U:H6	1.85	0.42
2:lB:29:U:H2'	2:lB:30:U:H6	1.83	0.42
3:lC:114:U:H2'	3:lC:115:A:N3	2.35	0.42
11:lK:116:ASP:OD1	11:lK:117:GLY:N	2.53	0.42
20:lT:6:ILE:HD11	20:lT:33:ALA:HB1	2.02	0.42
20:lT:70:ASN:OD1	20:lT:91:ARG:NH1	2.50	0.42
23:lW:67:GLU:OE1	23:lW:67:GLU:N	2.53	0.42
23:lW:93:MET:HE1	23:lW:118:LEU:HD11	2.01	0.42
25:lY:112:MET:HE3	25:lY:112:MET:HB3	1.91	0.42
31:le:101:ASP:N	31:le:101:ASP:OD1	2.53	0.42
37:lk:39:ARG:HA	37:lk:39:ARG:HD3	1.78	0.42
53:sa:325:U:C2	53:sa:326:A:C8	3.08	0.42
53:sa:1381:G:H2'	53:sa:1382:C:H6	1.85	0.42
53:sa:1590:A:H4'	70:ss:86:GLY:HA2	2.02	0.42
53:sa:1804:G:H2'	53:sa:1805:C:O4'	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:sa:1932:U:H2'	53:sa:1933:G:H8	1.85	0.42
58:sf:79:ARG:HE	58:sf:79:ARG:HB2	1.57	0.42
60:sh:149:GLN:HG2	60:sh:150:LYS:H	1.84	0.42
68:sq:54:ARG:O	68:sq:58:LYS:HG3	2.20	0.42
69:sr:78:ARG:HB3	69:sr:124:ARG:HB3	2.00	0.42
76:sy:66:LYS:HB2	76:sy:83:VAL:HG21	2.01	0.42
77:sz:15:LEU:HG	77:sz:26:VAL:HG23	2.02	0.42
1:lA:118:A:N6	1:lA:189:G:O2'	2.44	0.42
1:lA:605:C:H2'	1:lA:606:A:H8	1.84	0.42
1:lA:873:U:O2'	1:lA:874:A:O5'	2.30	0.42
1:lA:3104:G:H2'	1:lA:3105:U:C6	2.54	0.42
1:lA:3460:G:H8	1:lA:3460:G:OP2	2.02	0.42
3:lC:6:G:H1	3:lC:111:A:H2	1.68	0.42
3:lC:10:A:N6	7:lG:16:TYR:O	2.51	0.42
5:lE:37:ALA:HA	5:lE:187:GLY:O	2.19	0.42
8:lH:187:MET:HE3	8:lH:187:MET:HB3	1.82	0.42
21:lU:76:THR:O	21:lU:76:THR:OG1	2.36	0.42
36:lj:3:LYS:HD3	36:lj:3:LYS:HA	1.92	0.42
53:sa:51:U:H2'	53:sa:52:G:C8	2.55	0.42
53:sa:69:G:H21	53:sa:80:A:N6	2.15	0.42
53:sa:135:C:O4'	60:sh:193:LYS:NZ	2.51	0.42
53:sa:293:U:O2'	53:sa:294:G:C8	2.71	0.42
53:sa:340:A:H1'	53:sa:341:G:C8	2.55	0.42
53:sa:1290:G:H2'	53:sa:1291:U:O4'	2.19	0.42
53:sa:1373:A:H2'	53:sa:1374:G:C8	2.55	0.42
54:sb:182:TRP:O	54:sb:186:THR:OG1	2.26	0.42
56:sd:63:ILE:HG22	56:sd:65:ARG:HD3	2.00	0.42
62:sj:41:ILE:HD13	62:sj:60:LEU:HA	2.01	0.42
74:sw:32:VAL:O	74:sw:36:CYS:N	2.50	0.42
75:sx:17:VAL:HG11	75:sx:56:VAL:HG11	2.01	0.42
1:lA:105:A:N1	1:lA:368:U:O2'	2.49	0.42
1:lA:546:U:H2'	1:lA:547:A:C8	2.54	0.42
1:lA:624:U:H2'	1:lA:625:A:O4'	2.20	0.42
1:lA:841:A:H4'	1:lA:842:G:H5'	2.02	0.42
1:lA:1348:C:H2'	1:lA:1349:A:H8	1.85	0.42
1:lA:1469:A:H2'	1:lA:1470:A:H8	1.85	0.42
1:lA:1871:C:H2'	1:lA:1872:U:C6	2.53	0.42
1:lA:1889:U:H2'	1:lA:1890:U:H6	1.84	0.42
1:lA:2866:C:O2'	1:lA:2867:A:H2	2.03	0.42
1:lA:3380:C:H2'	1:lA:3381:A:O4'	2.20	0.42
2:lB:50:A:O2'	2:lB:53:G:N2	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:IC:80:G:H2'	3:IC:81:A:C8	2.55	0.42
4:ID:32:ILE:HD12	4:ID:36:GLU:HB3	2.02	0.42
4:ID:62:VAL:HG22	4:ID:73:LYS:HG2	2.01	0.42
5:IE:304:LYS:NZ	5:IE:372:GLN:OE1	2.52	0.42
6:IF:9:ILE:HD13	6:IF:256:GLU:HG3	2.00	0.42
6:IF:208:PRO:HG2	6:IF:229:VAL:HG22	2.02	0.42
8:IH:144:LYS:HA	8:IH:144:LYS:HD2	1.77	0.42
13:IM:23:VAL:HG22	13:IM:30:LEU:HD13	2.02	0.42
15:IO:62:ARG:HD2	15:IO:67:PRO:HB3	2.01	0.42
18:IR:55:LYS:HA	18:IR:55:LYS:HD3	1.87	0.42
19:IS:81:VAL:HG22	19:IS:120:PHE:CZ	2.55	0.42
23:IW:72:ASP:HB3	23:IW:73:LYS:H	1.67	0.42
42:lp:25:TYR:HD1	42:lp:25:TYR:HA	1.77	0.42
45:sB:37:LYS:HG3	45:sB:70:LYS:HE3	2.02	0.42
46:sC:2:PRO:HB2	46:sC:3:LEU:H	1.74	0.42
53:sa:383:G:OP2	53:sa:418:G:O2'	2.38	0.42
53:sa:444:U:H2'	53:sa:445:C:H6	1.85	0.42
53:sa:1288:G:H2'	53:sa:1289:G:O4'	2.20	0.42
53:sa:1375:U:H2'	53:sa:1376:U:C6	2.55	0.42
53:sa:1669:A:H62	73:sv:102:ARG:HH12	1.67	0.42
53:sa:1821:A:N6	53:sa:1892:G:C6	2.88	0.42
53:sa:1866:A:H2'	53:sa:1867:A:O4'	2.20	0.42
55:sc:60:GLU:HG2	75:sx:10:TYR:CD2	2.55	0.42
58:sf:103:THR:HG21	58:sf:242:ILE:O	2.20	0.42
61:si:175:LYS:HB2	61:si:175:LYS:HE3	1.85	0.42
62:sj:59:ARG:O	62:sj:60:LEU:HD23	2.20	0.42
65:sm:37:ILE:HG21	65:sm:41:PHE:HB2	2.02	0.42
65:sm:81:ARG:O	65:sm:109:HIS:ND1	2.53	0.42
71:st:66:VAL:HG22	71:st:68:GLY:H	1.85	0.42
1:IA:387:G:OP2	6:IF:194:GLN:NE2	2.44	0.42
1:IA:451:G:OP1	1:IA:1549:U:O2'	2.34	0.42
1:IA:1292:A:N6	1:IA:1457:A:H61	2.13	0.42
1:IA:1627:G:N2	34:lh:6:THR:HG22	2.35	0.42
1:IA:2118:U:H2'	1:IA:2119:C:H6	1.84	0.42
1:IA:2142:G:H2'	1:IA:2143:C:C6	2.55	0.42
1:IA:2253:U:H2'	4:ID:128:ARG:HB2	2.01	0.42
1:IA:2588:U:H1'	1:IA:2589:C:H2'	2.02	0.42
1:IA:2649:G:OP2	1:IA:2650:A:O2'	2.32	0.42
1:IA:2966:G:C4	1:IA:2967:G:C8	3.08	0.42
4:ID:104:ILE:HD12	4:ID:104:ILE:HA	1.89	0.42
5:IE:25:VAL:HG22	5:IE:274:PHE:HZ	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:IE:53:MET:HG2	5:IE:76:VAL:O	2.19	0.42
5:IE:315:TYR:HD1	5:IE:334:ARG:HG2	1.84	0.42
11:IK:46:ILE:HG23	11:IK:65:ILE:HG13	2.02	0.42
15:IO:63:VAL:HG23	15:IO:70:GLY:HA2	2.02	0.42
30:ld:23:LYS:HB2	30:ld:23:LYS:HE3	1.71	0.42
44:sa:81:CYS:SG	53:sa:1700:A:O2'	2.58	0.42
46:sC:18:LYS:O	53:sa:1095:U:O2'	2.38	0.42
51:sJ:6:C:H2'	51:sJ:7:A:C8	2.55	0.42
53:sa:159:A:N3	53:sa:160:G:C8	2.88	0.42
53:sa:159:A:H2'	53:sa:160:G:H8	1.85	0.42
53:sa:376:U:H2'	53:sa:377:C:C6	2.53	0.42
53:sa:1668:G:N2	53:sa:1673:A:H2	2.15	0.42
58:sf:186:GLY:O	58:sf:189:ARG:HB2	2.19	0.42
59:sg:50:PHE:HD2	70:ss:65:GLU:HG2	1.85	0.42
68:sq:123:LYS:HE2	68:sq:123:LYS:HB3	1.84	0.42
70:ss:46:VAL:O	70:ss:49:VAL:HG22	2.20	0.42
1:IA:206:U:O4	1:IA:303:G:O6	2.37	0.41
1:IA:463:U:O2'	1:IA:464:G:H5'	2.20	0.41
1:IA:739:A:H2'	1:IA:740:A:C8	2.55	0.41
1:IA:857:U:C2	1:IA:887:G:N2	2.88	0.41
1:IA:1157:A:H4'	7:IG:5:LYS:H	1.85	0.41
1:IA:1186:G:N2	1:IA:1220:A:H61	2.18	0.41
1:IA:2114:U:H2'	1:IA:2115:A:O4'	2.19	0.41
5:IE:283:LYS:NZ	5:IE:351:ALA:O	2.42	0.41
6:IF:271:LYS:HB2	6:IF:271:LYS:HE3	1.81	0.41
8:IH:93:GLY:O	8:IH:98:ASN:HB2	2.20	0.41
10:IJ:73:LEU:HD22	10:IJ:175:CYS:HB2	2.02	0.41
11:IK:13:ILE:HG22	11:IK:17:VAL:HG23	2.02	0.41
21:IU:21:LYS:HA	21:IU:21:LYS:HD3	1.89	0.41
31:le:64:ALA:O	31:le:68:LYS:N	2.53	0.41
32:lf:51:THR:HG22	32:lf:110:ARG:HD2	2.01	0.41
32:lf:142:THR:O	32:lf:142:THR:OG1	2.38	0.41
46:sC:31:SER:O	53:sa:939:G:N2	2.53	0.41
53:sa:164:A:OP1	60:sh:139:SER:HB3	2.20	0.41
53:sa:313:A:O2'	53:sa:348:A:N1	2.49	0.41
53:sa:738:C:H2'	53:sa:739:U:O4'	2.21	0.41
53:sa:1111:A:H2'	53:sa:1112:A:C8	2.55	0.41
53:sa:1189:G:H2'	53:sa:1190:G:H8	1.86	0.41
56:sd:219:PRO:HD2	71:st:38:VAL:O	2.20	0.41
57:se:71:ASN:ND2	57:se:86:TYR:CD2	2.89	0.41
58:sf:227:GLY:HA3	58:sf:231:GLU:O	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:sk:92:LYS:HE3	63:sk:95:PHE:CE2	2.55	0.41
63:sk:94:GLU:OE1	63:sk:94:GLU:N	2.49	0.41
1:lA:270:C:H2'	1:lA:271:U:H6	1.85	0.41
1:lA:747:C:H1'	8:lH:51:ASN:HD22	1.85	0.41
1:lA:941:A:H2'	1:lA:942:C:C6	2.55	0.41
1:lA:1882:A:H1'	1:lA:1883:A:H2	1.85	0.41
1:lA:2150:G:C2	1:lA:2176:G:C2	3.08	0.41
1:lA:2779:C:C2	1:lA:2780:A:C8	3.08	0.41
1:lA:3476:C:C4	1:lA:3477:U:H1'	2.55	0.41
4:lD:188:MET:HE3	4:lD:188:MET:HB2	1.75	0.41
10:lJ:37:THR:HG22	10:lJ:38:ARG:H	1.85	0.41
12:lL:44:ASP:OD1	12:lL:44:ASP:C	2.63	0.41
20:lT:158:ARG:O	36:lj:35:ASN:ND2	2.47	0.41
20:lT:172:LEU:HD23	20:lT:172:LEU:HA	1.89	0.41
26:lZ:55:ALA:O	26:lZ:59:GLN:HG2	2.21	0.41
44:sA:77:MET:SD	44:sA:79:ILE:HG12	2.60	0.41
53:sa:301:U:OP1	65:sm:136:ARG:NE	2.51	0.41
56:sd:10:LEU:HD12	56:sd:90:ARG:HD2	2.01	0.41
57:se:58:ILE:C	57:se:60:SER:H	2.28	0.41
58:sf:54:LEU:N	58:sf:58:GLU:OE1	2.48	0.41
62:sj:81:VAL:HA	62:sj:102:ILE:HG22	2.01	0.41
67:sp:55:MET:O	67:sp:56:ARG:NH1	2.50	0.41
1:lA:206:U:H2'	1:lA:207:A:H8	1.85	0.41
1:lA:360:U:H2'	1:lA:361:C:C6	2.54	0.41
1:lA:485:A:OP2	8:lH:31:LYS:NZ	2.36	0.41
1:lA:714:U:OP1	6:lF:339:LYS:NZ	2.52	0.41
1:lA:1030:C:OP1	4:lD:14:SER:OG	2.37	0.41
1:lA:1181:A:H5''	1:lA:1182:A:H5'	2.01	0.41
1:lA:2670:U:H2'	1:lA:2671:A:H8	1.85	0.41
1:lA:2883:A:H2'	1:lA:2884:U:C6	2.49	0.41
1:lA:3047:U:H2'	1:lA:3048:U:H6	1.85	0.41
1:lA:3168:A:H2'	1:lA:3169:C:H6	1.84	0.41
4:lD:103:PRO:HG2	4:lD:106:GLN:HG2	2.01	0.41
5:lE:231:VAL:HG11	5:lE:251:VAL:HG23	2.02	0.41
8:lH:146:VAL:HG23	8:lH:147:GLU:N	2.34	0.41
23:lW:45:LYS:HB2	23:lW:45:LYS:HE3	1.69	0.41
46:sC:9:LEU:HD12	46:sC:9:LEU:HA	1.88	0.41
47:sD:21:ARG:HD3	53:sa:1782:G:O2'	2.20	0.41
51:sJ:48:U:H5'	51:sJ:49:C:OP1	2.21	0.41
53:sa:353:U:O2'	53:sa:355:A:OP1	2.37	0.41
53:sa:1245:C:H2'	53:sa:1246:A:C8	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:sa:1377:U:H2'	53:sa:1378:U:C6	2.55	0.41
53:sa:1510:A:OP1	71:st:3:GLY:N	2.54	0.41
55:sc:51:LYS:HB3	55:sc:245:TYR:CD2	2.56	0.41
58:sf:17:MET:HB2	58:sf:49:ARG:HH12	1.84	0.41
62:sj:107:ALA:HB3	62:sj:108:PRO:HD3	2.02	0.41
1:lA:380:G:H2'	1:lA:381:A:C8	2.55	0.41
1:lA:785:G:H4'	1:lA:1570:U:H5''	2.02	0.41
1:lA:860:G:O2'	1:lA:1097:U:OP1	2.38	0.41
1:lA:1406:A:H2'	1:lA:1407:U:H6	1.84	0.41
1:lA:1571:C:O2	1:lA:1571:C:H2'	2.20	0.41
1:lA:1850:U:O2'	1:lA:2061:G:OP1	2.28	0.41
1:lA:2118:U:H2'	1:lA:2119:C:C6	2.55	0.41
1:lA:3287:U:H2'	1:lA:3288:U:C6	2.55	0.41
2:lB:95:A:OP1	35:li:59:ARG:NH2	2.42	0.41
5:lE:257:TRP:CD1	5:lE:257:TRP:C	2.99	0.41
15:lO:185:LYS:HE3	15:lO:185:LYS:HB3	1.92	0.41
19:lS:148:HIS:ND1	19:lS:160:LYS:HB3	2.34	0.41
51:sJ:28:U:H2'	51:sJ:29:C:C6	2.55	0.41
53:sa:77:A:N7	60:sh:187:PRO:HG2	2.35	0.41
53:sa:156:U:O3'	60:sh:62:PRO:HG3	2.20	0.41
54:sb:158:ASP:OD1	54:sb:158:ASP:N	2.53	0.41
55:sc:141:VAL:HG11	55:sc:193:ALA:HB1	2.01	0.41
58:sf:67:THR:HB	58:sf:68:ILE:HD12	2.02	0.41
58:sf:123:LYS:O	58:sf:140:HIS:N	2.53	0.41
61:si:123:THR:HG23	61:si:126:ALA:H	1.84	0.41
69:sr:76:SER:O	69:sr:77:PRO:C	2.64	0.41
73:sv:19:TYR:OH	73:sv:113:ILE:HD11	2.20	0.41
1:lA:581:U:H2'	1:lA:582:U:H6	1.84	0.41
1:lA:819:U:H2'	1:lA:820:A:H8	1.86	0.41
1:lA:889:A:H5'	30:ld:44:LYS:HE3	2.02	0.41
1:lA:1074:U:OP1	30:ld:7:ARG:HG3	2.21	0.41
1:lA:1678:U:H2'	1:lA:1679:U:C6	2.55	0.41
1:lA:2109:C:O2	5:lE:242:ARG:NH2	2.51	0.41
1:lA:2778:U:H2'	1:lA:2779:C:C6	2.52	0.41
1:lA:2844:U:H2'	1:lA:2845:U:C6	2.55	0.41
1:lA:2996:G:O2'	12:lL:158:LYS:O	2.35	0.41
1:lA:3311:U:H2'	1:lA:3312:U:C6	2.55	0.41
1:lA:3362:U:H2'	1:lA:3363:C:H6	1.85	0.41
3:lC:39:U:H2'	3:lC:41:G:N7	2.35	0.41
12:lL:103:LEU:HB3	12:lL:113:THR:HG21	2.02	0.41
19:lS:25:MET:HE3	19:lS:25:MET:HB3	1.84	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:IS:132:LYS:HA	19:IS:132:LYS:HD2	1.87	0.41
38:IL:65:ARG:HD2	38:IL:66:HIS:NE2	2.35	0.41
53:sa:412:A:H5'	53:sa:413:G:C4	2.55	0.41
53:sa:443:U:H2'	53:sa:444:U:H6	1.85	0.41
53:sa:1011:U:H4'	53:sa:1012:G:OP2	2.20	0.41
53:sa:1129:C:H2'	53:sa:1130:U:C6	2.56	0.41
53:sa:1668:G:C2'	53:sa:1669:A:H5'	2.51	0.41
60:sh:186:THR:HG1	60:sh:189:ARG:NH2	2.17	0.41
63:sk:86:LEU:HD12	63:sk:87:PRO:HD2	2.01	0.41
1:IA:197:U:H3	1:IA:302:U:H5'	1.84	0.41
1:IA:237:C:H2'	1:IA:238:A:C8	2.55	0.41
1:IA:301:A:O2'	1:IA:302:U:O5'	2.32	0.41
1:IA:743:G:H3'	1:IA:743:G:N3	2.36	0.41
1:IA:968:C:H2'	1:IA:969:U:C6	2.55	0.41
1:IA:1206:A:OP1	22:IV:35:LYS:NZ	2.46	0.41
1:IA:2264:A:C5	1:IA:2265:U:C5	3.09	0.41
1:IA:2395:C:HO2'	1:IA:2396:A:P	2.43	0.41
1:IA:3129:U:C2	1:IA:3130:A:N7	2.89	0.41
3:IC:79:G:H22	3:IC:95:A:H2	1.68	0.41
7:IG:85:ARG:NH2	7:IG:86:TYR:OH	2.54	0.41
18:IR:40:LYS:HA	18:IR:113:THR:HA	2.02	0.41
28:lb:94:LEU:O	28:lb:97:GLN:NE2	2.36	0.41
29:lc:75:VAL:HG22	29:lc:115:LYS:H	1.86	0.41
53:sa:240:G:N2	65:sm:39:MET:HE2	2.35	0.41
53:sa:756:G:O2'	53:sa:758:U:H4'	2.20	0.41
53:sa:872:A:H2'	53:sa:873:A:C8	2.55	0.41
53:sa:1565:G:N3	53:sa:1565:G:H2'	2.36	0.41
53:sa:1807:C:H2'	53:sa:1808:G:C8	2.56	0.41
54:sb:95:LEU:HD21	54:sb:107:ALA:HB2	2.03	0.41
65:sm:39:MET:HE3	65:sm:41:PHE:HE2	1.85	0.41
72:su:29:TYR:HE1	72:su:39:ARG:HD3	1.86	0.41
73:sv:13:ILE:HG13	73:sv:17:LYS:HE3	2.02	0.41
1:IA:216:A:H2'	1:IA:217:G:O4'	2.21	0.41
1:IA:765:A:C2	36:lj:92:PRO:HG2	2.56	0.41
1:IA:796:U:H2'	1:IA:797:C:H6	1.86	0.41
1:IA:941:A:H2'	1:IA:942:C:H6	1.86	0.41
1:IA:1091:A:H2'	1:IA:1092:A:C8	2.56	0.41
1:IA:2137:G:H2'	1:IA:2138:A:C8	2.55	0.41
1:IA:2299:A:H2'	1:IA:2300:A:C8	2.55	0.41
1:IA:2308:A:H2'	1:IA:2309:A:C8	2.56	0.41
1:IA:2508:A:H5''	1:IA:2509:U:OP2	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:3154:A:H2'	1:1A:3155:U:C6	2.55	0.41
1:1A:3464:G:N2	1:1A:3464:G:OP2	2.48	0.41
5:1E:219:VAL:HG12	5:1E:339:LEU:HD23	2.03	0.41
7:1G:41:LYS:HB2	22:1V:68:ASN:O	2.21	0.41
13:1M:112:LEU:HD21	13:1M:114:LEU:HB2	2.01	0.41
18:1R:61:ARG:HH22	18:1R:76:LEU:HB3	1.86	0.41
31:1e:53:PRO:HA	31:1e:54:PRO:HD3	1.96	0.41
32:1f:21:ARG:O	32:1f:25:LYS:HG2	2.21	0.41
53:sa:139:G:O6	53:sa:140:A:N6	2.54	0.41
53:sa:203:C:N4	53:sa:255:G:O2'	2.53	0.41
53:sa:436:A:H2'	53:sa:437:C:C6	2.55	0.41
53:sa:549:A:H1'	53:sa:584:C:O2'	2.20	0.41
53:sa:900:U:H4'	57:se:66:ARG:HD3	2.02	0.41
53:sa:1224:G:OP1	53:sa:1225:G:H8	2.04	0.41
53:sa:1350:A:C2	53:sa:1351:A:C8	3.09	0.41
53:sa:1548:C:H2'	53:sa:1549:U:H6	1.85	0.41
53:sa:1708:G:O2'	53:sa:1709:A:OP2	2.36	0.41
59:sg:70:ILE:HD13	59:sg:70:ILE:HA	1.87	0.41
64:sl:15:LEU:HD13	64:sl:21:ILE:HG22	2.03	0.41
64:sl:76:ARG:NH2	64:sl:86:VAL:HG22	2.36	0.41
65:sm:62:ASP:O	65:sm:62:ASP:CG	2.64	0.41
66:so:88:LEU:O	66:so:92:MET:HG3	2.21	0.41
1:1A:226:U:H2'	1:1A:227:A:C8	2.56	0.41
1:1A:250:G:H2'	1:1A:251:A:C8	2.56	0.41
1:1A:621:U:H4'	6:1F:392:VAL:HB	2.02	0.41
1:1A:957:G:N7	39:1m:4:ARG:NH2	2.66	0.41
1:1A:1158:U:H2'	1:1A:1159:C:C6	2.55	0.41
1:1A:1483:U:H2'	1:1A:1484:A:C8	2.56	0.41
1:1A:1830:U:H2'	1:1A:1831:U:H6	1.86	0.41
1:1A:1912:A:H5'	31:1e:31:THR:HG22	2.03	0.41
1:1A:2250:C:OP1	4:1D:193:ARG:NH1	2.54	0.41
1:1A:2378:G:O2'	53:sa:1821:A:C4	2.70	0.41
1:1A:2379:A:O4'	53:sa:1821:A:H2	2.03	0.41
1:1A:2503:U:H2'	1:1A:2504:U:C6	2.55	0.41
1:1A:3379:U:H2'	1:1A:3380:C:C6	2.56	0.41
3:1C:85:G:N2	3:1C:90:G:H1	2.19	0.41
7:1G:164:LEU:HD21	7:1G:176:HIS:CG	2.56	0.41
9:1I:30:LYS:HD3	9:1I:30:LYS:HA	1.72	0.41
10:1J:62:PRO:HG2	17:1Q:18:VAL:HA	2.03	0.41
12:1L:185:LYS:HA	12:1L:190:ILE:HB	2.02	0.41
13:1M:170:ILE:H	13:1M:170:ILE:HG13	1.58	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:sB:68:TYR:HB2	57:se:113:ARG:HB3	2.03	0.41
46:sC:8:LEU:HD12	69:sr:24:GLN:HG3	2.02	0.41
47:sD:38:GLU:OE1	47:sD:38:GLU:N	2.53	0.41
51:sJ:9:G:O2'	51:sJ:10:G:N7	2.46	0.41
53:sa:247:G:OP1	58:sf:132:GLY:N	2.34	0.41
53:sa:436:A:H2'	53:sa:437:C:H6	1.86	0.41
53:sa:550:A:N3	53:sa:584:C:H1'	2.36	0.41
53:sa:875:G:H21	67:sp:47:THR:HG21	1.84	0.41
55:sc:128:LYS:O	55:sc:131:MET:HB2	2.20	0.41
56:sd:86:LEU:HG	64:sl:20:CYS:SG	2.60	0.41
57:se:57:ARG:HG2	57:se:59:ALA:H	1.85	0.41
57:se:66:ARG:HH12	57:se:103:HIS:CG	2.39	0.41
61:si:101:ARG:HD3	61:si:102:VAL:H	1.85	0.41
64:sl:37:PRO:HG2	64:sl:40:GLN:HG3	2.02	0.41
64:sl:48:LEU:O	64:sl:53:CYS:N	2.52	0.41
68:sq:49:LYS:HA	68:sq:49:LYS:HD3	1.92	0.41
70:ss:28:LYS:HG3	70:ss:29:LYS:H	1.85	0.41
1:lA:13:C:OP1	25:lY:27:ARG:NH2	2.50	0.41
1:lA:773:G:H2'	1:lA:774:U:O4'	2.21	0.41
1:lA:823:A:H2'	1:lA:824:G:H2'	2.03	0.41
1:lA:846:A:H2'	1:lA:847:A:C8	2.56	0.41
1:lA:1407:U:H2'	1:lA:1408:C:O4'	2.21	0.41
1:lA:1437:A:O3'	15:lO:18:GLY:HA3	2.21	0.41
1:lA:1858:A:H2'	1:lA:1859:G:H8	1.84	0.41
1:lA:1872:U:C2	1:lA:1873:U:C5	3.09	0.41
1:lA:2262:U:OP2	4:lD:200:ARG:HD2	2.20	0.41
1:lA:2591:U:C2	1:lA:2592:U:C5	3.09	0.41
1:lA:2660:U:H2'	1:lA:2661:U:H6	1.85	0.41
1:lA:2747:G:H2'	1:lA:2747:G:N3	2.36	0.41
1:lA:2955:C:H2'	1:lA:2956:A:C8	2.56	0.41
1:lA:3295:A:H2'	1:lA:3296:G:O4'	2.21	0.41
1:lA:3338:A:H2'	1:lA:3339:A:C8	2.56	0.41
3:lC:48:U:OP1	7:lG:221:ARG:HB2	2.21	0.41
5:lE:185:ILE:O	5:lE:193:LYS:HD3	2.20	0.41
6:lF:102:PHE:O	6:lF:103:SER:C	2.63	0.41
10:lJ:204:ASP:OD1	10:lJ:204:ASP:N	2.52	0.41
11:lK:5:LEU:HA	11:lK:69:TYR:HD1	1.86	0.41
11:lK:24:LYS:HB2	11:lK:24:LYS:HE2	1.87	0.41
11:lK:134:ILE:HD13	11:lK:167:ILE:HG23	2.02	0.41
13:lM:30:LEU:HD12	13:lM:30:LEU:HA	1.87	0.41
14:lN:197:LYS:HB3	14:lN:197:LYS:HE2	1.77	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:IV:34:TYR:HB2	22:IV:72:ILE:HD12	2.03	0.41
22:IV:124:LYS:HD3	22:IV:124:LYS:H	1.84	0.41
26:IZ:54:THR:HG22	26:IZ:56:ILE:H	1.86	0.41
27:la:150:ASN:O	27:la:153:ILE:HG12	2.21	0.41
31:le:38:ILE:HG21	31:le:63:TYR:HB3	2.02	0.41
34:lh:62:TYR:O	34:lh:70:ARG:NH1	2.54	0.41
53:sa:117:U:H1'	62:sj:50:TYR:CD1	2.56	0.41
53:sa:601:G:H4'	53:sa:604:G:N2	2.33	0.41
53:sa:867:A:H2'	53:sa:868:A:C8	2.56	0.41
53:sa:958:A:H2'	53:sa:959:A:O4'	2.21	0.41
53:sa:1133:A:H2'	53:sa:1134:G:N3	2.36	0.41
53:sa:1212:U:H2'	53:sa:1213:G:H8	1.86	0.41
53:sa:1265:U:H2'	53:sa:1266:A:H5''	2.03	0.41
53:sa:1350:A:C2	53:sa:1351:A:N7	2.89	0.41
53:sa:1358:U:H2'	53:sa:1359:G:H8	1.86	0.41
53:sa:1383:C:O2'	73:sv:132:ASP:OD2	2.39	0.41
54:sb:119:ILE:HD13	54:sb:119:ILE:HA	1.86	0.41
55:sc:77:GLY:O	55:sc:79:LYS:NZ	2.53	0.41
55:sc:154:HIS:CG	55:sc:155:THR:HG23	2.56	0.41
56:sd:39:LEU:HD11	56:sd:51:VAL:HG22	2.02	0.41
56:sd:204:LEU:HD13	56:sd:208:PRO:HG2	2.02	0.41
57:se:70:VAL:CG2	67:sp:123:ARG:HD2	2.50	0.41
59:sg:57:ARG:HD3	70:ss:137:ARG:HD3	2.02	0.41
60:sh:75:LEU:O	60:sh:77:LEU:HG	2.21	0.41
61:si:54:LYS:HE2	61:si:54:LYS:HB3	1.84	0.41
61:si:140:GLU:H	61:si:165:VAL:C	2.29	0.41
63:sk:59:MET:SD	63:sk:69:ARG:HA	2.60	0.41
64:sl:16:PHE:CD2	64:sl:75:LEU:HB3	2.56	0.41
65:sm:79:MET:HE3	65:sm:82:THR:HG22	2.03	0.41
68:sq:84:ILE:H	68:sq:84:ILE:HG13	1.57	0.41
73:sv:19:TYR:HB3	73:sv:59:ALA:HB1	2.02	0.41
1:lA:101:A:N3	1:lA:102:A:C8	2.89	0.41
1:lA:290:U:H2'	1:lA:291:U:C6	2.56	0.41
1:lA:1845:G:N2	1:lA:1924:U:O2'	2.54	0.41
1:lA:1933:U:H2'	1:lA:1934:G:H8	1.85	0.41
1:lA:2485:G:H3'	1:lA:2486:U:H4'	2.03	0.41
1:lA:3237:G:H2'	1:lA:3238:A:C8	2.56	0.41
2:lB:4:A:H8	2:lB:4:A:OP2	2.03	0.41
6:lF:60:LYS:HA	6:lF:92:PHE:HD1	1.85	0.41
7:lG:125:ALA:HA	7:lG:128:LEU:HG	2.03	0.41
11:lK:54:LYS:HB3	11:lK:57:GLY:HA3	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:IW:51:ARG:O	23:IW:63:THR:OG1	2.22	0.41
34:lh:25:THR:N	34:lh:29:ASN:O	2.54	0.41
41:lo:49:MET:HG3	41:lo:51:MET:HG2	2.02	0.41
47:sD:21:ARG:NH1	47:sD:29:LEU:HD11	2.36	0.41
53:sa:136:A:H61	60:sh:192:HIS:HB3	1.84	0.41
53:sa:212:C:H2'	53:sa:213:A:O4'	2.21	0.41
53:sa:860:G:H2'	53:sa:861:A:C8	2.56	0.41
53:sa:1349:G:C6	53:sa:1350:A:N7	2.88	0.41
53:sa:1712:A:O2'	53:sa:1713:A:OP1	2.32	0.41
74:sw:36:CYS:SG	74:sw:89:LEU:HD21	2.61	0.41
1:lA:943:U:H2'	1:lA:944:U:C6	2.56	0.40
1:lA:1168:C:H2'	1:lA:1169:U:C6	2.55	0.40
1:lA:1186:G:H21	1:lA:1220:A:N6	2.19	0.40
1:lA:1469:A:H2'	1:lA:1470:A:C8	2.56	0.40
1:lA:3456:U:H5''	5:lE:309:MET:HE2	2.03	0.40
4:lD:242:ARG:NH2	4:lD:246:ILE:HG12	2.36	0.40
7:lG:262:THR:OG1	7:lG:263:SER:N	2.53	0.40
11:lK:111:LEU:O	11:lK:144:LYS:NZ	2.37	0.40
17:lQ:102:ALA:O	17:lQ:106:VAL:HG23	2.21	0.40
51:sJ:34:U:P	70:ss:158:ARG:HH22	2.44	0.40
53:sa:140:A:HO2'	53:sa:141:U:H6	1.66	0.40
53:sa:442:U:H2'	53:sa:443:U:C6	2.56	0.40
53:sa:611:U:H5'	53:sa:1011:U:O4'	2.21	0.40
53:sa:747:A:H1'	58:sf:10:LEU:O	2.21	0.40
53:sa:1173:A:H2'	53:sa:1174:C:C6	2.57	0.40
53:sa:1315:U:H2'	53:sa:1316:G:C2	2.56	0.40
53:sa:1441:C:HO2'	53:sa:1442:A:C5'	2.33	0.40
55:sc:37:TRP:N	55:sc:69:GLN:OE1	2.54	0.40
58:sf:255:LYS:HE2	58:sf:255:LYS:HB2	1.79	0.40
60:sh:61:PHE:HB3	60:sh:97:VAL:HA	2.02	0.40
60:sh:157:VAL:HG21	60:sh:181:ILE:HD12	2.03	0.40
61:si:140:GLU:OE2	61:si:142:ALA:HB2	2.21	0.40
69:sr:66:ASN:N	69:sr:66:ASN:OD1	2.54	0.40
72:su:115:LEU:O	72:su:119:ARG:N	2.54	0.40
75:sx:21:LEU:HD23	75:sx:21:LEU:HA	1.88	0.40
1:lA:47:A:C4	1:lA:48:A:C8	3.09	0.40
1:lA:101:A:C2	1:lA:102:A:C5	3.09	0.40
1:lA:190:U:C2	1:lA:191:A:C8	3.10	0.40
1:lA:360:U:H2'	1:lA:361:C:H6	1.85	0.40
1:lA:381:A:H2'	1:lA:382:A:C8	2.55	0.40
1:lA:1156:C:H1'	7:lG:3:PHE:HD1	1.85	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:1308:A:OP1	16:1P:55:ASN:ND2	2.53	0.40
1:1A:1842:U:H2'	1:1A:1843:G:H8	1.85	0.40
1:1A:2116:G:N2	21:1U:81:ARG:O	2.42	0.40
1:1A:2792:A:OP1	19:1S:156:LYS:NZ	2.54	0.40
1:1A:2837:U:H2'	1:1A:2838:A:H8	1.85	0.40
1:1A:3057:G:N3	1:1A:3077:A:H2	2.18	0.40
1:1A:3287:U:H2'	1:1A:3288:U:H6	1.85	0.40
1:1A:3370:A:H2'	1:1A:3371:U:H6	1.86	0.40
1:1A:3435:G:H2'	1:1A:3436:A:H5''	2.02	0.40
5:1E:27:ALA:HB1	5:1E:276:LYS:HD2	2.03	0.40
6:1F:328:LYS:NZ	9:1I:152:THR:O	2.54	0.40
11:1K:171:ASN:HD22	11:1K:185:VAL:HG23	1.86	0.40
23:1W:101:ASN:OD1	23:1W:101:ASN:N	2.54	0.40
34:1h:15:THR:HG22	34:1h:16:LYS:H	1.86	0.40
53:sa:102:A:H4'	53:sa:103:U:O5'	2.22	0.40
53:sa:584:C:C2	53:sa:585:A:N7	2.88	0.40
53:sa:882:G:H2'	53:sa:883:U:C6	2.57	0.40
53:sa:1172:G:H2'	53:sa:1173:A:H8	1.84	0.40
53:sa:1444:U:H2'	53:sa:1445:U:C6	2.55	0.40
54:sb:84:VAL:HG22	54:sb:131:VAL:HG12	2.02	0.40
56:sd:84:THR:O	56:sd:88:ILE:HG12	2.20	0.40
58:sf:152:LEU:HD21	58:sf:170:PHE:HB2	2.03	0.40
64:sl:87:PRO:HB3	64:sl:91:LYS:HB2	2.01	0.40
1:1A:662:U:H3'	1:1A:663:G:H8	1.86	0.40
1:1A:790:A:H2'	1:1A:791:A:C8	2.56	0.40
1:1A:1030:C:H5''	4:1D:15:ILE:HD13	2.03	0.40
1:1A:1618:A:H2'	1:1A:1619:C:C6	2.56	0.40
1:1A:1968:U:H2'	1:1A:1969:U:C6	2.56	0.40
1:1A:2128:A:H2'	39:1m:7:LYS:HE3	2.03	0.40
1:1A:2759:A:N3	1:1A:2759:A:H2'	2.35	0.40
1:1A:3061:G:C2	1:1A:3062:A:N7	2.89	0.40
1:1A:3090:G:OP2	1:1A:3090:G:H4'	2.21	0.40
1:1A:3469:A:H62	1:1A:3485:U:H3	1.66	0.40
14:1N:49:ILE:HA	14:1N:231:LEU:O	2.20	0.40
14:1N:198:LYS:HB3	14:1N:198:LYS:HE3	1.81	0.40
15:1O:63:VAL:HG12	15:1O:66:ASN:H	1.86	0.40
16:1P:12:VAL:HG22	16:1P:26:VAL:HG22	2.03	0.40
23:1W:84:LEU:HD12	23:1W:89:MET:HE1	2.04	0.40
27:1a:181:LYS:HB2	27:1a:182:PRO:HD3	2.02	0.40
28:1b:50:PRO:HD3	28:1b:68:VAL:HG22	2.02	0.40
34:1h:67:LYS:H	34:1h:67:LYS:HG2	1.59	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:ln:25:VAL:HG23	40:ln:68:GLU:OE2	2.21	0.40
44:sA:93:LYS:HE3	44:sA:93:LYS:HA	2.02	0.40
45:sB:84:VAL:HB	53:sa:1944:A:N6	2.36	0.40
53:sa:159:A:C2	53:sa:160:G:C8	3.10	0.40
53:sa:579:A:H2'	53:sa:580:G:C8	2.52	0.40
53:sa:1096:U:C2	53:sa:1097:C:C5	3.09	0.40
60:sh:141:ILE:HD11	60:sh:180:LYS:HZ3	1.87	0.40
61:si:61:LYS:HB3	61:si:61:LYS:HE3	1.89	0.40
65:sm:61:SER:OG	65:sm:62:ASP:N	2.55	0.40
70:ss:22:VAL:HG23	70:ss:37:CYS:HB3	2.04	0.40
1:lA:278:U:H2'	1:lA:279:U:H6	1.86	0.40
1:lA:805:G:O6	1:lA:806:A:N6	2.54	0.40
1:lA:897:A:H4'	1:lA:898:U:OP1	2.22	0.40
1:lA:1544:U:H2'	1:lA:1545:A:H8	1.87	0.40
1:lA:1940:A:H2'	1:lA:1941:A:C8	2.57	0.40
1:lA:2497:U:O2'	43:lq:50:GLY:HA3	2.20	0.40
1:lA:3004:U:H2'	1:lA:3005:U:O4'	2.21	0.40
6:lF:4:ARG:NE	6:lF:24:LEU:O	2.45	0.40
6:lF:262:LEU:HD23	6:lF:262:LEU:HA	1.92	0.40
7:lG:5:LYS:HA	7:lG:5:LYS:HD3	1.71	0.40
22:IV:123:LYS:HD2	22:IV:124:LYS:NZ	2.35	0.40
28:lb:91:GLN:O	28:lb:91:GLN:NE2	2.54	0.40
33:lg:127:ILE:HG23	33:lg:128:LYS:O	2.22	0.40
37:lk:55:LEU:HD23	37:lk:55:LEU:HA	1.90	0.40
50:sI:5:C:H2'	50:sI:6:C:C6	2.57	0.40
53:sa:1277:C:N4	53:sa:1278:A:H62	2.20	0.40
53:sa:1350:A:N3	53:sa:1351:A:C8	2.89	0.40
53:sa:1429:C:H1'	70:ss:34:VAL:HG21	2.03	0.40
53:sa:1758:G:C4	53:sa:1759:A:C8	3.08	0.40
53:sa:1824:G:O6	53:sa:1890:U:C4	2.75	0.40
53:sa:1905:U:N3	53:sa:1906:C:C5	2.89	0.40
56:sd:171:MET:HG3	56:sd:203:MET:HB2	2.04	0.40
66:so:106:LYS:HE2	66:so:106:LYS:HB2	1.78	0.40
73:sv:36:ASP:OD1	73:sv:36:ASP:N	2.51	0.40
1:lA:280:U:H2'	1:lA:281:A:C8	2.56	0.40
1:lA:1194:A:O2'	1:lA:1195:G:H5'	2.21	0.40
1:lA:2393:A:H2'	1:lA:2394:U:O4'	2.21	0.40
1:lA:3375:U:H2'	1:lA:3376:C:H6	1.86	0.40
1:lA:3457:G:N2	1:lA:3495:U:O2	2.48	0.40
3:lC:90:G:H4'	12:IL:57:ARG:HB3	2.03	0.40
5:lE:56:VAL:HG12	5:lE:360:ILE:HA	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:IE:210:VAL:O	5:IE:341:LYS:NZ	2.43	0.40
5:IE:219:VAL:HG22	5:IE:282:LYS:HG3	2.04	0.40
8:IH:147:GLU:HA	8:IH:150:PHE:HE1	1.87	0.40
11:IK:103:VAL:HG22	42:lp:7:LEU:HG	2.04	0.40
19:IS:6:ASP:OD1	19:IS:6:ASP:N	2.54	0.40
37:lk:36:ASP:O	37:lk:40:GLU:HG2	2.21	0.40
44:sA:72:VAL:HG22	44:sA:76:ARG:HH21	1.86	0.40
48:sE:12:ARG:NH2	53:sa:1558:U:OP1	2.52	0.40
53:sa:782:A:C2	58:sf:246:LEU:HD11	2.50	0.40
53:sa:1359:G:H2'	53:sa:1360:A:C8	2.56	0.40
53:sa:1590:A:N3	53:sa:1773:G:O2'	2.50	0.40
53:sa:1779:U:OP1	59:sg:73:ARG:NH2	2.49	0.40
56:sd:56:ASN:O	74:sw:103:SER:OG	2.33	0.40
56:sd:211:LYS:NZ	71:st:40:VAL:HG13	2.36	0.40
58:sf:108:CYS:SG	58:sf:237:PRO:HB3	2.61	0.40
62:sj:208:ARG:HH11	62:sj:211:GLN:HG3	1.86	0.40
63:sk:128:LEU:HA	63:sk:133:MET:HG2	2.04	0.40
68:sq:111:LEU:O	68:sq:113:HIS:N	2.55	0.40
70:ss:70:VAL:O	70:ss:74:ASN:ND2	2.46	0.40
73:sv:84:TYR:CE1	73:sv:86:LYS:HG3	2.56	0.40
76:sy:10:LYS:HB2	76:sy:10:LYS:HE2	1.92	0.40
77:sz:87:LYS:HD2	77:sz:87:LYS:HA	1.74	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	
4	ID	244/257 (95%)	233 (96%)	11 (4%)	0	100	100
5	IE	385/402 (96%)	378 (98%)	7 (2%)	0	100	100
6	IF	420/431 (97%)	400 (95%)	20 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
7	IG	278/286 (97%)	261 (94%)	17 (6%)	0	100	100
8	IH	201/204 (98%)	181 (90%)	19 (10%)	1 (0%)	25	58
9	II	208/230 (90%)	203 (98%)	5 (2%)	0	100	100
10	IJ	209/286 (73%)	199 (95%)	10 (5%)	0	100	100
11	IK	191/197 (97%)	185 (97%)	5 (3%)	1 (0%)	25	58
12	IL	196/210 (93%)	187 (95%)	9 (5%)	0	100	100
13	IM	166/174 (95%)	160 (96%)	6 (4%)	0	100	100
14	IN	261/291 (90%)	252 (97%)	9 (3%)	0	100	100
15	IO	202/205 (98%)	196 (97%)	6 (3%)	0	100	100
16	IP	128/135 (95%)	126 (98%)	2 (2%)	0	100	100
17	IQ	202/205 (98%)	195 (96%)	7 (4%)	0	100	100
18	IR	156/179 (87%)	153 (98%)	3 (2%)	0	100	100
19	IS	165/168 (98%)	152 (92%)	13 (8%)	0	100	100
20	IT	171/173 (99%)	165 (96%)	6 (4%)	0	100	100
21	IU	148/198 (75%)	146 (99%)	2 (1%)	0	100	100
22	IV	163/166 (98%)	158 (97%)	5 (3%)	0	100	100
23	IW	91/137 (66%)	84 (92%)	7 (8%)	0	100	100
24	IX	131/140 (94%)	126 (96%)	5 (4%)	0	100	100
25	IY	114/121 (94%)	111 (97%)	3 (3%)	0	100	100
26	IZ	55/163 (34%)	54 (98%)	1 (2%)	0	100	100
27	la	208/213 (98%)	202 (97%)	6 (3%)	0	100	100
28	lb	135/139 (97%)	134 (99%)	1 (1%)	0	100	100
29	lc	146/149 (98%)	141 (97%)	5 (3%)	0	100	100
30	ld	58/64 (91%)	54 (93%)	4 (7%)	0	100	100
31	le	101/109 (93%)	92 (91%)	9 (9%)	0	100	100
32	lf	144/150 (96%)	137 (95%)	7 (5%)	0	100	100
33	lg	127/134 (95%)	120 (94%)	7 (6%)	0	100	100
34	lh	103/137 (75%)	100 (97%)	3 (3%)	0	100	100
35	li	120/122 (98%)	117 (98%)	2 (2%)	1 (1%)	16	48
36	lj	104/108 (96%)	100 (96%)	4 (4%)	0	100	100
37	lk	83/104 (80%)	83 (100%)	0	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
38	ll	70/77 (91%)	64 (91%)	4 (6%)	2 (3%)	3	20
39	lm	88/93 (95%)	83 (94%)	5 (6%)	0	100	100
40	ln	71/77 (92%)	67 (94%)	4 (6%)	0	100	100
41	lo	48/51 (94%)	47 (98%)	1 (2%)	0	100	100
42	lp	51/56 (91%)	50 (98%)	1 (2%)	0	100	100
43	lq	90/98 (92%)	89 (99%)	1 (1%)	0	100	100
44	sA	67/137 (49%)	62 (92%)	5 (8%)	0	100	100
45	sB	96/144 (67%)	94 (98%)	2 (2%)	0	100	100
46	sC	31/84 (37%)	30 (97%)	1 (3%)	0	100	100
47	sD	58/69 (84%)	54 (93%)	4 (7%)	0	100	100
48	sE	53/56 (95%)	49 (92%)	4 (8%)	0	100	100
54	sb	203/254 (80%)	193 (95%)	10 (5%)	0	100	100
55	sc	213/255 (84%)	205 (96%)	7 (3%)	1 (0%)	25	58
56	sd	215/244 (88%)	202 (94%)	13 (6%)	0	100	100
57	se	155/256 (60%)	127 (82%)	27 (17%)	1 (1%)	22	53
58	sf	254/326 (78%)	243 (96%)	11 (4%)	0	100	100
59	sg	177/206 (86%)	168 (95%)	9 (5%)	0	100	100
60	sh	113/266 (42%)	88 (78%)	22 (20%)	3 (3%)	4	21
61	si	102/201 (51%)	96 (94%)	5 (5%)	1 (1%)	13	42
62	sj	123/237 (52%)	120 (98%)	3 (2%)	0	100	100
63	sk	160/185 (86%)	158 (99%)	2 (1%)	0	100	100
64	sl	89/127 (70%)	87 (98%)	2 (2%)	0	100	100
65	sm	137/156 (88%)	126 (92%)	11 (8%)	0	100	100
66	so	68/151 (45%)	68 (100%)	0	0	100	100
67	sp	131/146 (90%)	125 (95%)	6 (5%)	0	100	100
68	sq	101/144 (70%)	90 (89%)	10 (10%)	1 (1%)	13	42
69	sr	127/130 (98%)	116 (91%)	11 (9%)	0	100	100
70	ss	139/158 (88%)	134 (96%)	5 (4%)	0	100	100
71	st	79/117 (68%)	79 (100%)	0	0	100	100
72	su	133/155 (86%)	121 (91%)	12 (9%)	0	100	100
73	sv	149/155 (96%)	144 (97%)	5 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
74	sw	96/118 (81%)	93 (97%)	1 (1%)	2 (2%)	5	25
75	sx	81/86 (94%)	80 (99%)	1 (1%)	0	100	100
76	sy	104/141 (74%)	99 (95%)	5 (5%)	0	100	100
77	sz	52/140 (37%)	49 (94%)	3 (6%)	0	100	100
All	All	9738/11683 (83%)	9285 (95%)	439 (4%)	14 (0%)	50	79

All (14) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
38	ll	40	PRO
60	sh	107	SER
60	sh	149	GLN
60	sh	202	LEU
74	sw	93	THR
57	se	202	LYS
35	li	-6	LYS
55	sc	152	GLU
38	ll	39	TYR
8	lH	119	VAL
11	lK	134	ILE
61	si	163	VAL
74	sw	100	GLU
68	sq	112	GLY

### 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	
4	ID	195/201 (97%)	190 (97%)	5 (3%)	41	68
5	IE	330/343 (96%)	327 (99%)	3 (1%)	75	88
6	IF	332/345 (96%)	332 (100%)	0	100	100
7	IG	227/231 (98%)	225 (99%)	2 (1%)	75	88
8	IH	172/173 (99%)	169 (98%)	3 (2%)	56	78

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
9	II	178/195 (91%)	176 (99%)	2 (1%)	70	84
10	IJ	186/242 (77%)	182 (98%)	4 (2%)	47	71
11	IK	171/174 (98%)	165 (96%)	6 (4%)	31	61
12	IL	169/176 (96%)	168 (99%)	1 (1%)	84	91
13	IM	144/147 (98%)	141 (98%)	3 (2%)	48	72
14	IN	222/243 (91%)	221 (100%)	1 (0%)	86	92
15	IO	167/168 (99%)	164 (98%)	3 (2%)	54	76
16	IP	113/118 (96%)	112 (99%)	1 (1%)	75	88
17	IQ	171/172 (99%)	170 (99%)	1 (1%)	84	91
18	IR	129/147 (88%)	128 (99%)	1 (1%)	79	89
19	IS	141/143 (99%)	138 (98%)	3 (2%)	48	72
20	IT	156/156 (100%)	155 (99%)	1 (1%)	84	91
21	IU	132/174 (76%)	130 (98%)	2 (2%)	60	80
22	IV	144/145 (99%)	142 (99%)	2 (1%)	62	81
23	IW	85/125 (68%)	84 (99%)	1 (1%)	67	83
24	IX	109/113 (96%)	108 (99%)	1 (1%)	75	88
25	IY	99/102 (97%)	97 (98%)	2 (2%)	50	74
26	IZ	52/137 (38%)	52 (100%)	0	100	100
27	la	177/179 (99%)	173 (98%)	4 (2%)	45	70
28	lb	121/123 (98%)	120 (99%)	1 (1%)	79	89
29	lc	120/121 (99%)	119 (99%)	1 (1%)	79	89
30	ld	50/54 (93%)	50 (100%)	0	100	100
31	le	86/92 (94%)	85 (99%)	1 (1%)	67	83
32	lf	125/128 (98%)	124 (99%)	1 (1%)	79	89
33	lg	112/116 (97%)	110 (98%)	2 (2%)	54	76
34	lh	86/116 (74%)	83 (96%)	3 (4%)	31	61
35	li	103/103 (100%)	102 (99%)	1 (1%)	73	86
36	lj	89/91 (98%)	87 (98%)	2 (2%)	47	71
37	lk	71/82 (87%)	71 (100%)	0	100	100
38	ll	60/64 (94%)	60 (100%)	0	100	100
39	lm	72/75 (96%)	72 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
40	ln	63/66 (96%)	62 (98%)	1 (2%)	58	79
41	lo	44/45 (98%)	44 (100%)	0	100	100
42	lp	45/48 (94%)	45 (100%)	0	100	100
43	lq	85/91 (93%)	84 (99%)	1 (1%)	67	83
44	sA	64/112 (57%)	64 (100%)	0	100	100
45	sB	87/127 (68%)	86 (99%)	1 (1%)	70	84
46	sC	29/73 (40%)	28 (97%)	1 (3%)	32	62
47	sD	50/59 (85%)	49 (98%)	1 (2%)	50	74
48	sE	45/46 (98%)	44 (98%)	1 (2%)	47	71
54	sb	178/218 (82%)	177 (99%)	1 (1%)	84	91
55	sc	172/199 (86%)	170 (99%)	2 (1%)	67	83
56	sd	183/206 (89%)	178 (97%)	5 (3%)	40	67
57	se	149/225 (66%)	140 (94%)	9 (6%)	16	44
58	sf	223/283 (79%)	218 (98%)	5 (2%)	47	71
59	sg	162/178 (91%)	159 (98%)	3 (2%)	52	75
60	sh	101/220 (46%)	87 (86%)	14 (14%)	3	12
61	si	93/167 (56%)	90 (97%)	3 (3%)	34	63
62	sj	106/205 (52%)	103 (97%)	3 (3%)	38	66
63	sk	144/164 (88%)	142 (99%)	2 (1%)	62	81
64	sl	81/111 (73%)	80 (99%)	1 (1%)	67	83
65	sm	126/138 (91%)	126 (100%)	0	100	100
66	so	68/129 (53%)	68 (100%)	0	100	100
67	sp	103/114 (90%)	99 (96%)	4 (4%)	27	58
68	sq	94/127 (74%)	93 (99%)	1 (1%)	70	84
69	sr	112/113 (99%)	110 (98%)	2 (2%)	54	76
70	ss	114/128 (89%)	112 (98%)	2 (2%)	54	76
71	st	73/106 (69%)	70 (96%)	3 (4%)	26	57
72	su	114/130 (88%)	111 (97%)	3 (3%)	41	68
73	sv	128/132 (97%)	126 (98%)	2 (2%)	58	79
74	sw	89/107 (83%)	89 (100%)	0	100	100
75	sX	75/77 (97%)	73 (97%)	2 (3%)	40	67

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
76	sy	86/114 (75%)	85 (99%)	1 (1%)	67 83
77	sz	49/125 (39%)	46 (94%)	3 (6%)	15 43
All	All	8431/9897 (85%)	8290 (98%)	141 (2%)	56 78

All (141) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	ID	30	ARG
4	ID	193	ARG
4	ID	237	LYS
4	ID	243	THR
4	ID	246	ILE
5	IE	90	VAL
5	IE	192	GLU
5	IE	350	THR
7	IG	3	PHE
7	IG	94	ASN
8	IH	117	VAL
8	IH	122	VAL
8	IH	155	TYR
9	II	130	GLU
9	II	207	ILE
10	IJ	19	VAL
10	IJ	85	LEU
10	IJ	195	VAL
10	IJ	228	GLU
11	IK	8	THR
11	IK	18	ASN
11	IK	53	VAL
11	IK	115	ASP
11	IK	140	VAL
11	IK	142	VAL
12	IL	143	GLN
13	IM	19	LEU
13	IM	44	THR
13	IM	170	ILE
14	IN	162	THR
15	IO	5	ASN
15	IO	133	THR
15	IO	172	LYS
16	IP	94	THR

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Mol	Chain	Res	Type
17	lQ	39	VAL
18	lR	139	PHE
19	lS	10	VAL
19	lS	17	THR
19	lS	56	VAL
20	lT	54	LEU
21	lU	112	THR
21	lU	134	ASN
22	lV	46	SER
22	lV	129	LEU
23	lW	70	VAL
24	lX	17	THR
25	lY	70	ASN
25	lY	120	LEU
27	la	36	LYS
27	la	109	LEU
27	la	162	THR
27	la	194	HIS
28	lb	64	MET
29	lc	141	VAL
31	le	40	ASP
32	lf	46	ILE
33	lg	15	THR
33	lg	88	MET
34	lh	15	THR
34	lh	56	HIS
34	lh	100	LEU
35	li	76	THR
36	lj	36	THR
36	lj	61	ASN
40	ln	36	VAL
43	lq	73	THR
45	sB	59	LEU
46	sC	33	PHE
47	sD	57	THR
48	sE	36	LEU
54	sb	204	VAL
55	sc	80	GLU
55	sc	220	VAL
56	sd	80	ILE
56	sd	133	VAL
56	sd	156	LEU

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Mol	Chain	Res	Type
56	sd	195	ILE
56	sd	206	THR
57	se	36	VAL
57	se	49	VAL
57	se	63	LEU
57	se	67	VAL
57	se	70	VAL
57	se	87	LYS
57	se	110	ASP
57	se	195	LEU
57	se	207	PHE
58	sf	82	VAL
58	sf	198	VAL
58	sf	208	ILE
58	sf	246	LEU
58	sf	251	ASN
59	sg	41	ILE
59	sg	116	ASP
59	sg	153	LEU
60	sh	52	ILE
60	sh	63	MET
60	sh	106	ILE
60	sh	150	LYS
60	sh	154	LYS
60	sh	160	ARG
60	sh	162	VAL
60	sh	176	SER
60	sh	177	LYS
60	sh	181	ILE
60	sh	182	GLN
60	sh	189	ARG
60	sh	201	LYS
60	sh	207	MET
61	si	136	LEU
61	si	140	GLU
61	si	160	THR
62	sj	28	THR
62	sj	29	MET
62	sj	52	ILE
63	sk	59	MET
63	sk	143	VAL
64	sl	8	ILE

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Mol	Chain	Res	Type
67	sp	52	THR
67	sp	75	ASP
67	sp	78	LYS
67	sp	83	LEU
68	sq	27	MET
69	sr	65	LEU
69	sr	87	ASP
70	ss	41	LYS
70	ss	113	ASP
71	st	6	THR
71	st	9	VAL
71	st	66	VAL
72	su	11	GLN
72	su	51	ILE
72	su	86	ASN
73	sv	73	VAL
73	sv	146	VAL
75	sx	37	VAL
75	sx	86	ILE
76	sy	103	PHE
77	sz	29	ASP
77	sz	60	VAL
77	sz	64	PHE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (62) such sidechains are listed below:

Mol	Chain	Res	Type
4	ID	140	ASN
6	IF	342	GLN
6	IF	347	GLN
7	IG	94	ASN
8	IH	98	ASN
8	IH	115	GLN
9	II	98	GLN
9	II	145	ASN
9	II	174	HIS
10	IJ	144	GLN
10	IJ	185	GLN
10	IJ	234	ASN
10	IJ	238	HIS
11	IK	41	HIS
11	IK	171	ASN

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Mol	Chain	Res	Type
14	lN	35	GLN
14	lN	268	ASN
18	lR	21	ASN
19	lS	9	HIS
19	lS	96	ASN
20	lT	16	ASN
20	lT	18	ASN
20	lT	101	GLN
20	lT	118	GLN
20	lT	136	HIS
21	lU	134	ASN
22	lV	32	HIS
22	lV	121	GLN
27	la	198	ASN
30	ld	10	HIS
34	lh	11	HIS
34	lh	40	ASN
34	lh	82	HIS
35	li	7	ASN
35	li	102	HIS
36	lj	76	HIS
37	lk	50	HIS
41	lo	18	HIS
42	lp	15	ASN
43	lq	36	GLN
43	lq	88	HIS
47	sD	41	GLN
48	sE	13	ASN
55	sc	69	GLN
55	sc	73	HIS
55	sc	91	GLN
55	sc	109	HIS
55	sc	201	GLN
55	sc	222	GLN
56	sd	40	GLN
56	sd	56	ASN
57	se	47	GLN
58	sf	155	ASN
58	sf	199	HIS
58	sf	221	ASN
64	sl	40	GLN
65	sm	97	GLN

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Mol	Chain	Res	Type
65	sm	116	GLN
65	sm	138	ASN
71	st	31	ASN
72	su	98	GLN
73	sv	68	ASN

### 5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	lA	3131/3503 (89%)	564 (18%)	0
2	lB	143/155 (92%)	30 (20%)	0
3	lC	116/117 (99%)	19 (16%)	0
50	sI	68/76 (89%)	11 (16%)	0
51	sJ	76/77 (98%)	23 (30%)	0
52	sK	9/10 (90%)	0	0
53	sa	1417/1947 (72%)	308 (21%)	0
All	All	4960/5885 (84%)	955 (19%)	0

All (955) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	lA	18	G
1	lA	22	A
1	lA	29	U
1	lA	30	A
1	lA	36	A
1	lA	39	A
1	lA	45	A
1	lA	54	G
1	lA	55	G
1	lA	56	A
1	lA	62	A
1	lA	65	U
1	lA	70	A
1	lA	71	U
1	lA	73	A
1	lA	88	G
1	lA	105	A
1	lA	106	G
1	lA	108	C
1	lA	115	G

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Mol	Chain	Res	Type
1	lA	116	A
1	lA	117	U
1	lA	185	G
1	lA	186	A
1	lA	189	G
1	lA	199	G
1	lA	200	A
1	lA	206	U
1	lA	213	A
1	lA	214	A
1	lA	221	U
1	lA	233	A
1	lA	237	C
1	lA	246	U
1	lA	256	G
1	lA	264	G
1	lA	266	A
1	lA	267	A
1	lA	283	A
1	lA	285	A
1	lA	286	U
1	lA	289	C
1	lA	293	A
1	lA	294	A
1	lA	302	U
1	lA	303	G
1	lA	311	A
1	lA	316	G
1	lA	332	G
1	lA	333	U
1	lA	342	A
1	lA	344	A
1	lA	345	A
1	lA	346	G
1	lA	350	A
1	lA	369	A
1	lA	383	A
1	lA	385	C
1	lA	396	G
1	lA	416	U
1	lA	422	G
1	lA	423	A

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Mol	Chain	Res	Type
1	lA	424	A
1	lA	425	C
1	lA	444	A
1	lA	446	A
1	lA	447	G
1	lA	448	C
1	lA	452	A
1	lA	467	A
1	lA	474	A
1	lA	483	G
1	lA	494	G
1	lA	495	A
1	lA	496	A
1	lA	500	G
1	lA	501	U
1	lA	510	A
1	lA	517	G
1	lA	535	A
1	lA	536	G
1	lA	538	A
1	lA	539	G
1	lA	550	A
1	lA	561	G
1	lA	562	A
1	lA	564	A
1	lA	565	U
1	lA	567	U
1	lA	577	G
1	lA	580	A
1	lA	581	U
1	lA	583	A
1	lA	586	A
1	lA	587	A
1	lA	588	G
1	lA	589	A
1	lA	600	U
1	lA	610	A
1	lA	612	A
1	lA	613	G
1	lA	614	U
1	lA	615	G
1	lA	619	A

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Mol	Chain	Res	Type
1	lA	620	U
1	lA	625	A
1	lA	626	A
1	lA	627	A
1	lA	630	A
1	lA	631	G
1	lA	632	G
1	lA	636	U
1	lA	637	U
1	lA	644	A
1	lA	645	A
1	lA	646	U
1	lA	647	C
1	lA	649	U
1	lA	652	U
1	lA	658	A
1	lA	663	G
1	lA	675	A
1	lA	685	A
1	lA	686	A
1	lA	696	G
1	lA	699	A
1	lA	701	A
1	lA	703	G
1	lA	704	C
1	lA	710	A
1	lA	714	U
1	lA	716	A
1	lA	720	U
1	lA	721	A
1	lA	722	A
1	lA	724	A
1	lA	725	A
1	lA	727	U
1	lA	728	U
1	lA	733	C
1	lA	734	C
1	lA	740	A
1	lA	743	G
1	lA	744	A
1	lA	746	A
1	lA	747	C

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Mol	Chain	Res	Type
1	lA	755	G
1	lA	770	C
1	lA	771	C
1	lA	783	A
1	lA	794	A
1	lA	811	A
1	lA	816	G
1	lA	817	A
1	lA	818	A
1	lA	825	G
1	lA	833	U
1	lA	834	A
1	lA	841	A
1	lA	843	A
1	lA	849	C
1	lA	853	A
1	lA	855	A
1	lA	871	A
1	lA	872	A
1	lA	874	A
1	lA	875	C
1	lA	881	G
1	lA	882	C
1	lA	889	A
1	lA	898	U
1	lA	904	A
1	lA	905	A
1	lA	911	U
1	lA	918	G
1	lA	925	A
1	lA	934	G
1	lA	936	A
1	lA	964	G
1	lA	968	C
1	lA	980	A
1	lA	993	U
1	lA	994	A
1	lA	998	U
1	lA	1013	A
1	lA	1026	G
1	lA	1028	G
1	lA	1033	A

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Mol	Chain	Res	Type
1	lA	1035	G
1	lA	1036	A
1	lA	1042	C
1	lA	1043	G
1	lA	1056	G
1	lA	1063	C
1	lA	1073	A
1	lA	1078	C
1	lA	1079	U
1	lA	1092	A
1	lA	1096	U
1	lA	1097	U
1	lA	1098	A
1	lA	1099	A
1	lA	1112	G
1	lA	1119	U
1	lA	1120	A
1	lA	1123	G
1	lA	1154	A
1	lA	1156	C
1	lA	1166	A
1	lA	1168	C
1	lA	1183	G
1	lA	1184	A
1	lA	1210	C
1	lA	1211	A
1	lA	1219	A
1	lA	1220	A
1	lA	1221	A
1	lA	1222	U
1	lA	1242	G
1	lA	1248	U
1	lA	1256	G
1	lA	1275	A
1	lA	1278	A
1	lA	1284	A
1	lA	1292	A
1	lA	1306	A
1	lA	1312	A
1	lA	1315	A
1	lA	1316	C
1	lA	1325	C

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Mol	Chain	Res	Type
1	lA	1343	A
1	lA	1344	U
1	lA	1345	U
1	lA	1347	A
1	lA	1409	G
1	lA	1410	A
1	lA	1411	A
1	lA	1417	G
1	lA	1431	G
1	lA	1433	U
1	lA	1437	A
1	lA	1440	A
1	lA	1441	U
1	lA	1443	A
1	lA	1447	C
1	lA	1450	A
1	lA	1455	A
1	lA	1474	A
1	lA	1475	A
1	lA	1476	G
1	lA	1477	A
1	lA	1478	C
1	lA	1480	U
1	lA	1495	A
1	lA	1499	G
1	lA	1500	A
1	lA	1503	U
1	lA	1505	G
1	lA	1516	A
1	lA	1517	C
1	lA	1518	A
1	lA	1521	A
1	lA	1522	G
1	lA	1527	A
1	lA	1534	U
1	lA	1553	A
1	lA	1568	G
1	lA	1570	U
1	lA	1571	C
1	lA	1580	A
1	lA	1584	G
1	lA	1602	A

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Mol	Chain	Res	Type
1	lA	1603	A
1	lA	1606	A
1	lA	1622	A
1	lA	1624	G
1	lA	1636	U
1	lA	1649	U
1	lA	1664	G
1	lA	1674	U
1	lA	1690	A
1	lA	1729	G
1	lA	1735	A
1	lA	1737	A
1	lA	1738	G
1	lA	1744	A
1	lA	1752	U
1	lA	1753	A
1	lA	1754	G
1	lA	1766	G
1	lA	1810	A
1	lA	1818	C
1	lA	1821	A
1	lA	1822	U
1	lA	1823	C
1	lA	1864	C
1	lA	1865	U
1	lA	1897	A
1	lA	1898	A
1	lA	1907	A
1	lA	1913	G
1	lA	1925	A
1	lA	1926	U
1	lA	1928	G
1	lA	1936	A
1	lA	1937	A
1	lA	1938	G
1	lA	1958	A
1	lA	1959	U
1	lA	1961	G
1	lA	1965	U
1	lA	1972	G
1	lA	1975	G
1	lA	1984	A

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Mol	Chain	Res	Type
1	lA	1995	G
1	lA	2040	A
1	lA	2043	A
1	lA	2044	C
1	lA	2050	C
1	lA	2051	A
1	lA	2067	A
1	lA	2079	A
1	lA	2080	A
1	lA	2081	A
1	lA	2083	A
1	lA	2095	G
1	lA	2108	G
1	lA	2110	A
1	lA	2129	G
1	lA	2150	G
1	lA	2178	A
1	lA	2179	U
1	lA	2190	A
1	lA	2193	G
1	lA	2197	G
1	lA	2198	G
1	lA	2207	A
1	lA	2210	G
1	lA	2216	U
1	lA	2218	A
1	lA	2234	A
1	lA	2235	U
1	lA	2236	A
1	lA	2245	A
1	lA	2246	G
1	lA	2252	U
1	lA	2263	G
1	lA	2274	A
1	lA	2281	U
1	lA	2282	G
1	lA	2285	U
1	lA	2286	G
1	lA	2299	A
1	lA	2334	U
1	lA	2340	U
1	lA	2341	C

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Mol	Chain	Res	Type
1	lA	2342	U
1	lA	2343	C
1	lA	2344	U
1	lA	2346	A
1	lA	2349	G
1	lA	2350	U
1	lA	2352	G
1	lA	2360	C
1	lA	2374	U
1	lA	2383	G
1	lA	2384	C
1	lA	2386	U
1	lA	2389	A
1	lA	2390	U
1	lA	2391	G
1	lA	2395	C
1	lA	2396	A
1	lA	2410	U
1	lA	2411	G
1	lA	2412	U
1	lA	2423	A
1	lA	2439	A
1	lA	2441	U
1	lA	2449	A
1	lA	2450	C
1	lA	2451	G
1	lA	2461	G
1	lA	2462	G
1	lA	2470	G
1	lA	2473	A
1	lA	2478	A
1	lA	2479	G
1	lA	2480	A
1	lA	2487	U
1	lA	2494	G
1	lA	2509	U
1	lA	2589	C
1	lA	2590	A
1	lA	2594	C
1	lA	2595	G
1	lA	2596	U
1	lA	2597	U

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Mol	Chain	Res	Type
1	lA	2598	A
1	lA	2629	A
1	lA	2637	A
1	lA	2651	A
1	lA	2655	G
1	lA	2656	G
1	lA	2659	A
1	lA	2663	A
1	lA	2676	G
1	lA	2677	G
1	lA	2684	G
1	lA	2689	G
1	lA	2696	A
1	lA	2715	G
1	lA	2722	U
1	lA	2726	A
1	lA	2727	A
1	lA	2744	A
1	lA	2747	G
1	lA	2759	A
1	lA	2761	A
1	lA	2764	A
1	lA	2766	A
1	lA	2773	U
1	lA	2784	G
1	lA	2791	G
1	lA	2797	A
1	lA	2798	G
1	lA	2799	U
1	lA	2805	C
1	lA	2811	C
1	lA	2822	U
1	lA	2823	G
1	lA	2825	C
1	lA	2832	A
1	lA	2836	C
1	lA	2842	U
1	lA	2843	U
1	lA	2858	A
1	lA	2859	U
1	lA	2860	U
1	lA	2861	U

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Mol	Chain	Res	Type
1	lA	2862	A
1	lA	2864	A
1	lA	2865	A
1	lA	2866	C
1	lA	2867	A
1	lA	2868	U
1	lA	2889	G
1	lA	2890	A
1	lA	2901	U
1	lA	2902	G
1	lA	2903	A
1	lA	2905	U
1	lA	2907	C
1	lA	2920	U
1	lA	2921	A
1	lA	2925	A
1	lA	2926	U
1	lA	2931	C
1	lA	2939	G
1	lA	2940	U
1	lA	2943	G
1	lA	2944	A
1	lA	2945	A
1	lA	2946	A
1	lA	2951	A
1	lA	2953	C
1	lA	2959	G
1	lA	2960	A
1	lA	2977	G
1	lA	2985	C
1	lA	2988	A
1	lA	2993	G
1	lA	3009	C
1	lA	3015	A
1	lA	3018	U
1	lA	3030	A
1	lA	3032	C
1	lA	3041	G
1	lA	3047	U
1	lA	3066	U
1	lA	3070	C
1	lA	3073	U

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Mol	Chain	Res	Type
1	lA	3078	U
1	lA	3079	A
1	lA	3084	A
1	lA	3085	C
1	lA	3090	G
1	lA	3114	A
1	lA	3126	C
1	lA	3133	G
1	lA	3141	A
1	lA	3142	G
1	lA	3143	A
1	lA	3144	U
1	lA	3147	U
1	lA	3151	A
1	lA	3159	G
1	lA	3166	G
1	lA	3200	G
1	lA	3210	U
1	lA	3212	U
1	lA	3213	U
1	lA	3223	G
1	lA	3232	G
1	lA	3233	U
1	lA	3240	A
1	lA	3246	A
1	lA	3247	C
1	lA	3254	U
1	lA	3277	C
1	lA	3278	A
1	lA	3284	G
1	lA	3285	A
1	lA	3286	A
1	lA	3287	U
1	lA	3299	G
1	lA	3309	U
1	lA	3327	A
1	lA	3332	A
1	lA	3334	U
1	lA	3335	U
1	lA	3336	G
1	lA	3337	A
1	lA	3338	A

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Mol	Chain	Res	Type
1	lA	3344	U
1	lA	3345	A
1	lA	3351	U
1	lA	3353	U
1	lA	3354	A
1	lA	3359	U
1	lA	3360	U
1	lA	3361	A
1	lA	3366	G
1	lA	3367	U
1	lA	3383	A
1	lA	3384	A
1	lA	3385	G
1	lA	3398	U
1	lA	3399	G
1	lA	3405	A
1	lA	3406	C
1	lA	3409	A
1	lA	3410	A
1	lA	3411	U
1	lA	3413	U
1	lA	3414	A
1	lA	3419	A
1	lA	3423	C
1	lA	3431	U
1	lA	3433	U
1	lA	3436	A
1	lA	3447	A
1	lA	3451	A
1	lA	3466	U
1	lA	3469	A
1	lA	3476	C
1	lA	3477	U
1	lA	3478	U
1	lA	3479	A
1	lA	3491	C
1	lA	3492	G
1	lA	3498	U
1	lA	3499	G
1	lA	3500	A
2	lB	5	A
2	lB	34	G

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Mol	Chain	Res	Type
2	1B	36	G
2	1B	53	G
2	1B	54	A
2	1B	61	A
2	1B	62	U
2	1B	64	A
2	1B	65	G
2	1B	72	G
2	1B	73	A
2	1B	74	A
2	1B	80	A
2	1B	81	A
2	1B	82	A
2	1B	85	U
2	1B	86	G
2	1B	92	C
2	1B	95	A
2	1B	102	A
2	1B	103	A
2	1B	104	U
2	1B	106	C
2	1B	109	G
2	1B	110	A
2	1B	113	G
2	1B	131	A
2	1B	147	C
2	1B	150	U
2	1B	151	A
3	1C	17	G
3	1C	18	U
3	1C	19	U
3	1C	22	C
3	1C	32	A
3	1C	37	A
3	1C	41	G
3	1C	49	C
3	1C	52	G
3	1C	53	C
3	1C	55	C
3	1C	62	U
3	1C	63	C
3	1C	72	C

*Continued on next page...*

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Mol	Chain	Res	Type
3	lC	73	G
3	lC	84	G
3	lC	90	G
3	lC	99	U
3	lC	109	G
50	sI	10	G
50	sI	15	G
50	sI	18	A
50	sI	22	G
50	sI	46	G
50	sI	49	G
50	sI	53	G
50	sI	59	G
50	sI	68	G
50	sI	74	C
50	sI	76	A
51	sJ	14	A
51	sJ	16	C
51	sJ	17	C
51	sJ	18	C
51	sJ	19	G
51	sJ	23	G
51	sJ	24	C
51	sJ	47	G
51	sJ	48	U
51	sJ	49	C
51	sJ	50	U
51	sJ	51	U
51	sJ	53	G
51	sJ	55	U
51	sJ	56	U
51	sJ	58	A
51	sJ	61	U
51	sJ	65	G
51	sJ	66	C
51	sJ	67	C
51	sJ	68	G
51	sJ	69	A
51	sJ	77	A
53	sa	4	C
53	sa	17	C
53	sa	24	U

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Mol	Chain	Res	Type
53	sa	26	U
53	sa	33	A
53	sa	41	G
53	sa	42	A
53	sa	44	U
53	sa	46	A
53	sa	56	G
53	sa	59	U
53	sa	61	A
53	sa	62	G
53	sa	64	A
53	sa	65	U
53	sa	66	A
53	sa	67	A
53	sa	68	A
53	sa	69	G
53	sa	70	A
53	sa	72	C
53	sa	73	A
53	sa	74	A
53	sa	75	G
53	sa	76	U
53	sa	77	A
53	sa	78	G
53	sa	79	G
53	sa	99	A
53	sa	103	U
53	sa	113	A
53	sa	114	G
53	sa	115	U
53	sa	135	C
53	sa	136	A
53	sa	139	G
53	sa	141	U
53	sa	148	G
53	sa	152	A
53	sa	154	G
53	sa	157	A
53	sa	168	U
53	sa	171	A
53	sa	204	A
53	sa	213	A

*Continued on next page...*

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Mol	Chain	Res	Type
53	sa	243	U
53	sa	244	U
53	sa	246	G
53	sa	252	C
53	sa	253	A
53	sa	259	A
53	sa	260	U
53	sa	262	G
53	sa	263	U
53	sa	264	A
53	sa	287	A
53	sa	288	A
53	sa	294	G
53	sa	295	A
53	sa	296	G
53	sa	299	U
53	sa	310	U
53	sa	311	C
53	sa	313	A
53	sa	317	G
53	sa	328	C
53	sa	332	G
53	sa	333	A
53	sa	345	A
53	sa	347	A
53	sa	354	A
53	sa	355	A
53	sa	356	C
53	sa	385	G
53	sa	394	A
53	sa	395	G
53	sa	397	U
53	sa	399	G
53	sa	411	A
53	sa	413	G
53	sa	417	G
53	sa	419	C
53	sa	420	A
53	sa	421	G
53	sa	429	G
53	sa	434	U
53	sa	439	C

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Mol	Chain	Res	Type
53	sa	440	A
53	sa	442	U
53	sa	451	G
53	sa	455	A
53	sa	463	A
53	sa	470	A
53	sa	545	G
53	sa	549	A
53	sa	553	C
53	sa	555	G
53	sa	558	G
53	sa	559	C
53	sa	561	A
53	sa	562	G
53	sa	568	G
53	sa	572	U
53	sa	576	U
53	sa	579	A
53	sa	584	C
53	sa	588	A
53	sa	589	G
53	sa	600	A
53	sa	602	U
53	sa	605	C
53	sa	613	A
53	sa	614	A
53	sa	616	A
53	sa	617	C
53	sa	618	G
53	sa	628	G
53	sa	742	G
53	sa	746	A
53	sa	752	A
53	sa	753	G
53	sa	756	G
53	sa	757	U
53	sa	759	U
53	sa	762	A
53	sa	765	A
53	sa	782	A
53	sa	783	A
53	sa	784	U

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Mol	Chain	Res	Type
53	sa	785	A
53	sa	786	U
53	sa	787	U
53	sa	803	G
53	sa	804	C
53	sa	843	A
53	sa	844	A
53	sa	845	A
53	sa	856	G
53	sa	894	G
53	sa	901	A
53	sa	904	A
53	sa	913	A
53	sa	915	A
53	sa	922	G
53	sa	927	U
53	sa	939	G
53	sa	940	U
53	sa	946	A
53	sa	950	A
53	sa	951	A
53	sa	972	A
53	sa	973	A
53	sa	984	U
53	sa	985	A
53	sa	1006	A
53	sa	1008	C
53	sa	1012	G
53	sa	1033	A
53	sa	1091	C
53	sa	1101	A
53	sa	1106	A
53	sa	1118	G
53	sa	1122	U
53	sa	1123	U
53	sa	1135	G
53	sa	1140	G
53	sa	1164	A
53	sa	1169	A
53	sa	1176	G
53	sa	1177	A
53	sa	1184	C

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Mol	Chain	Res	Type
53	sa	1185	A
53	sa	1188	A
53	sa	1192	G
53	sa	1210	U
53	sa	1219	A
53	sa	1221	A
53	sa	1224	G
53	sa	1225	G
53	sa	1227	A
53	sa	1232	U
53	sa	1239	A
53	sa	1242	G
53	sa	1243	A
53	sa	1253	G
53	sa	1254	G
53	sa	1260	C
53	sa	1266	A
53	sa	1269	A
53	sa	1270	G
53	sa	1271	U
53	sa	1276	U
53	sa	1277	C
53	sa	1281	A
53	sa	1282	U
53	sa	1283	U
53	sa	1284	U
53	sa	1287	U
53	sa	1290	G
53	sa	1299	C
53	sa	1310	U
53	sa	1311	U
53	sa	1312	A
53	sa	1316	G
53	sa	1317	G
53	sa	1323	U
53	sa	1326	U
53	sa	1331	C
53	sa	1332	A
53	sa	1337	A
53	sa	1339	U
53	sa	1346	A
53	sa	1365	U

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Mol	Chain	Res	Type
53	sa	1369	A
53	sa	1379	C
53	sa	1383	C
53	sa	1388	A
53	sa	1389	G
53	sa	1395	A
53	sa	1396	A
53	sa	1438	A
53	sa	1440	A
53	sa	1442	A
53	sa	1520	C
53	sa	1522	U
53	sa	1534	A
53	sa	1540	G
53	sa	1543	A
53	sa	1551	A
53	sa	1552	G
53	sa	1553	A
53	sa	1565	G
53	sa	1566	C
53	sa	1567	A
53	sa	1578	A
53	sa	1580	U
53	sa	1581	G
53	sa	1588	C
53	sa	1597	A
53	sa	1669	A
53	sa	1671	A
53	sa	1676	U
53	sa	1678	A
53	sa	1683	A
53	sa	1687	C
53	sa	1689	A
53	sa	1690	A
53	sa	1691	A
53	sa	1694	A
53	sa	1696	G
53	sa	1697	U
53	sa	1700	A
53	sa	1701	U
53	sa	1702	G
53	sa	1703	A

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Mol	Chain	Res	Type
53	sa	1706	G
53	sa	1708	G
53	sa	1712	A
53	sa	1713	A
53	sa	1714	U
53	sa	1717	U
53	sa	1723	U
53	sa	1725	A
53	sa	1735	A
53	sa	1736	A
53	sa	1750	G
53	sa	1767	A
53	sa	1773	G
53	sa	1775	U
53	sa	1777	A
53	sa	1780	A
53	sa	1781	C
53	sa	1782	G
53	sa	1785	C
53	sa	1788	G
53	sa	1797	A
53	sa	1800	C
53	sa	1801	A
53	sa	1809	U
53	sa	1821	A
53	sa	1822	U
53	sa	1824	G
53	sa	1825	A
53	sa	1831	G
53	sa	1832	A
53	sa	1846	G
53	sa	1849	U
53	sa	1850	C
53	sa	1852	G
53	sa	1863	A
53	sa	1883	C
53	sa	1885	U
53	sa	1887	A
53	sa	1893	A
53	sa	1894	G
53	sa	1902	A
53	sa	1904	G

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Mol	Chain	Res	Type
53	sa	1907	G
53	sa	1909	A
53	sa	1916	U
53	sa	1927	G
53	sa	1929	A
53	sa	1930	C
53	sa	1939	G
53	sa	1940	G
53	sa	1941	A
53	sa	1942	U
53	sa	1943	C

There are no RNA pucker outliers to report.

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

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

#### 5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

#### 5.6 Ligand geometry [i](#)

There are no ligands in this entry.

#### 5.7 Other polymers [i](#)

There are no such residues in this entry.

#### 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

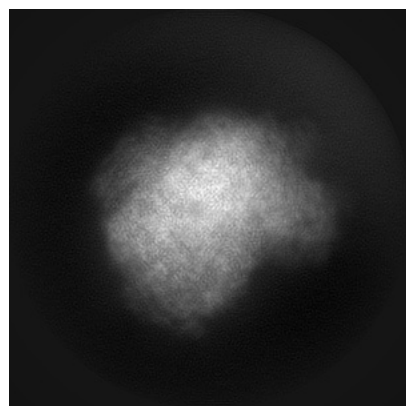
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-64716. These allow visual inspection of the internal detail of the map and identification of artifacts.

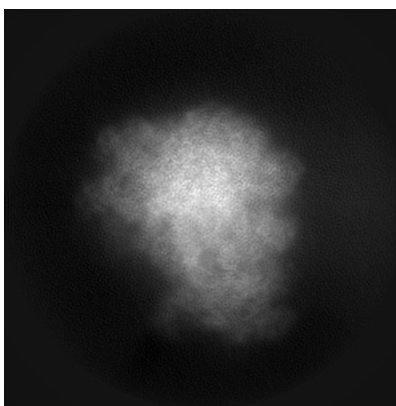
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

### 6.1 Orthogonal projections [i](#)

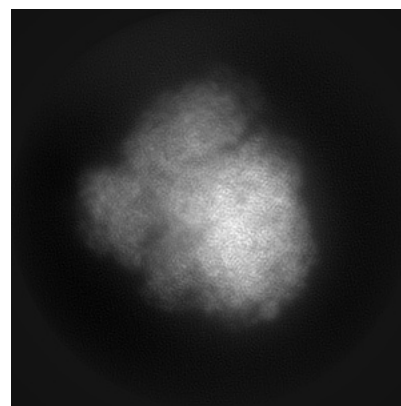
#### 6.1.1 Primary map



X

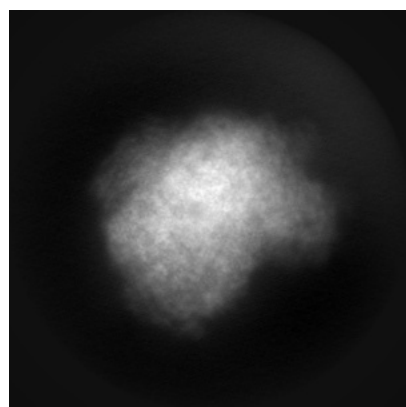


Y

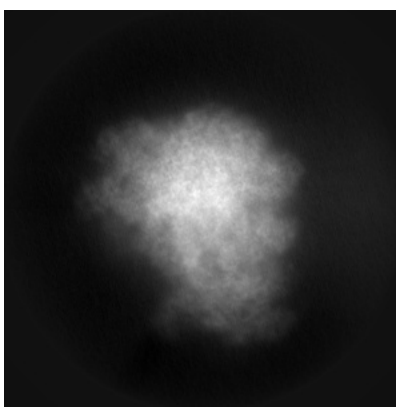


Z

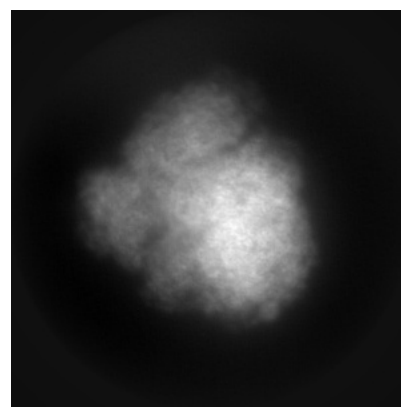
#### 6.1.2 Raw map



X



Y

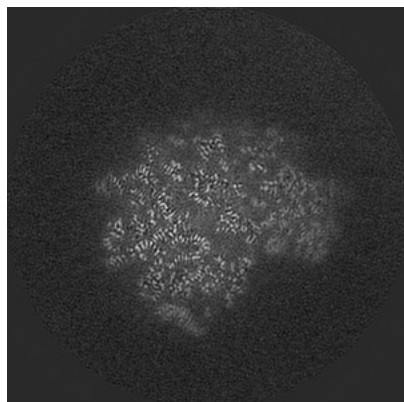


Z

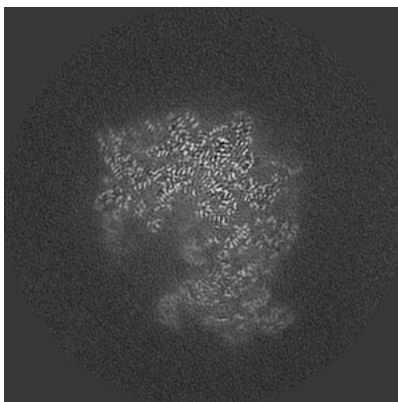
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices [i](#)

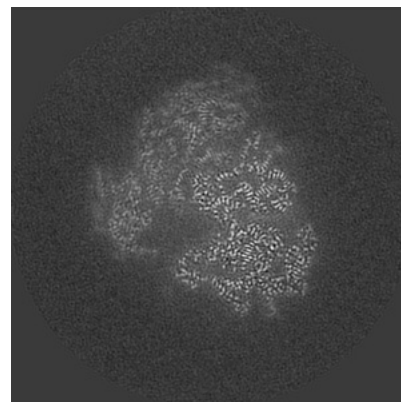
### 6.2.1 Primary map



X Index: 200

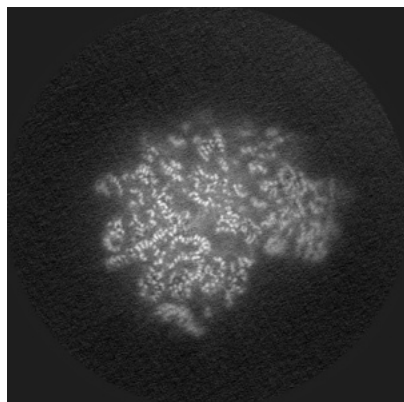


Y Index: 200

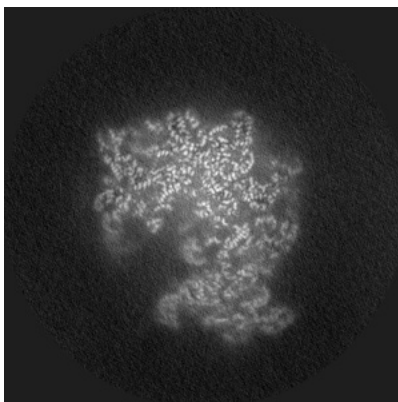


Z Index: 200

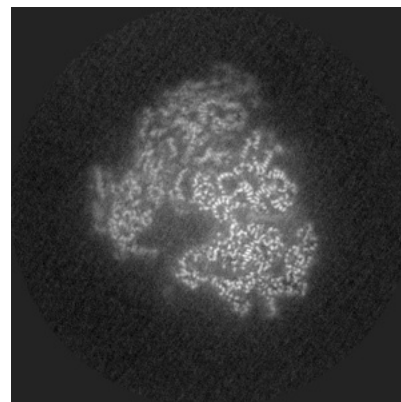
### 6.2.2 Raw map



X Index: 200



Y Index: 200

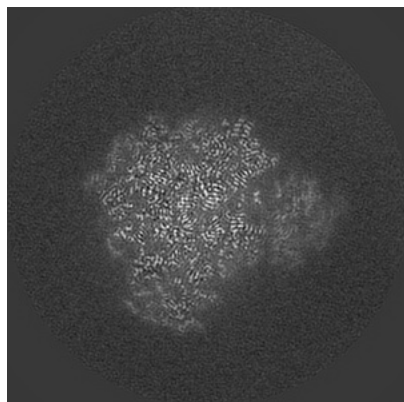


Z Index: 200

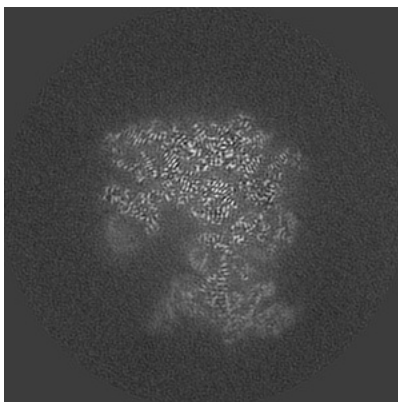
The images above show central slices of the map in three orthogonal directions.

## 6.3 Largest variance slices [i](#)

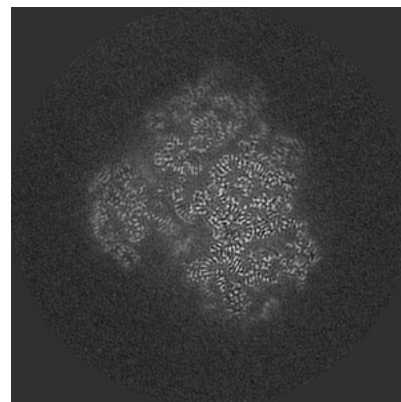
### 6.3.1 Primary map



X Index: 221

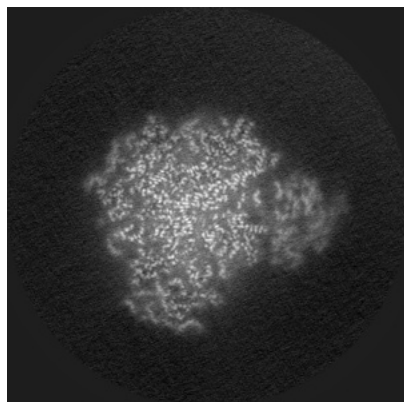


Y Index: 208

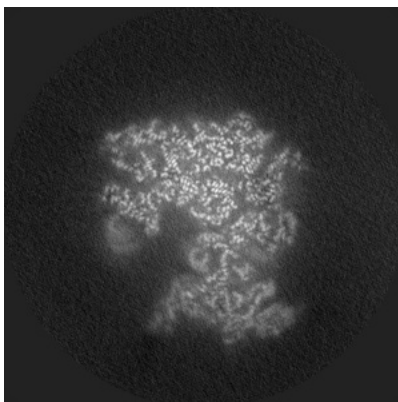


Z Index: 213

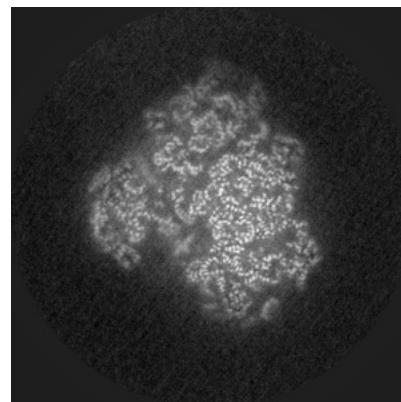
### 6.3.2 Raw map



X Index: 220



Y Index: 208



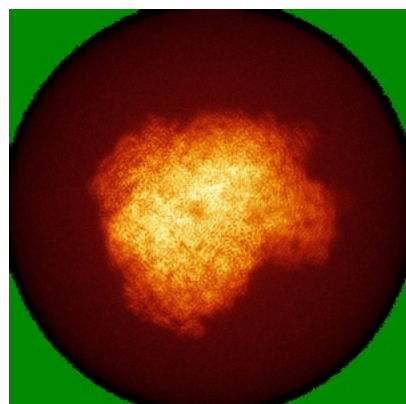
Z Index: 213

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

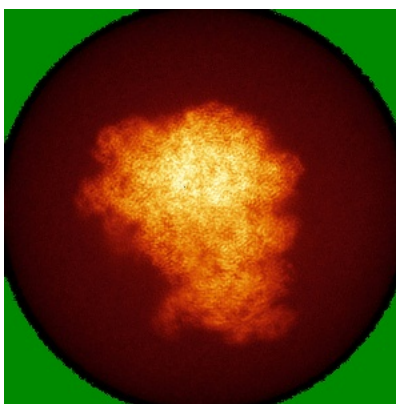


## 6.4 Orthogonal standard-deviation projections (False-color) [i](#)

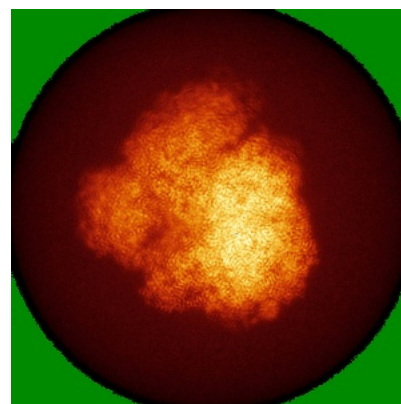
### 6.4.1 Primary map



X

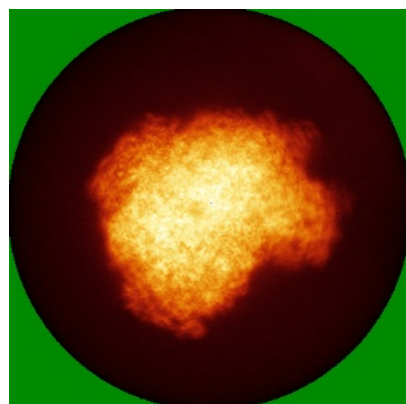


Y

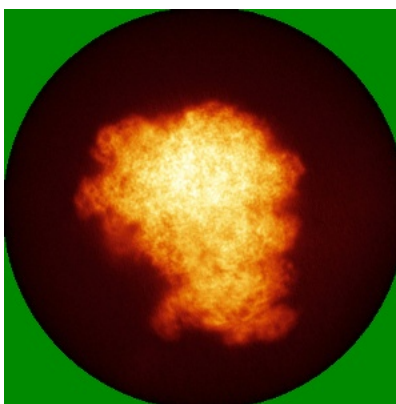


Z

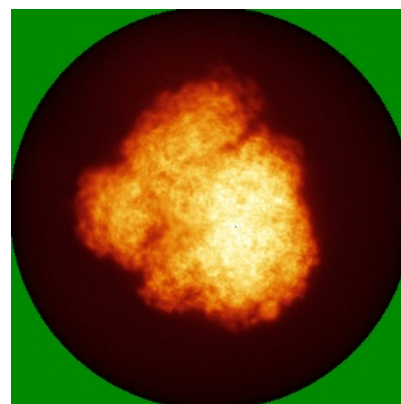
### 6.4.2 Raw map



X



Y

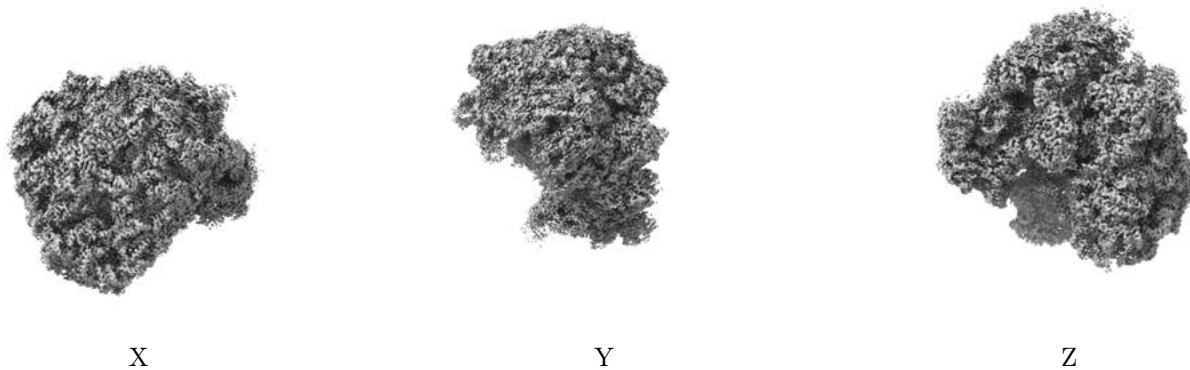


Z

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 2.8. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

### 6.5.2 Raw map



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

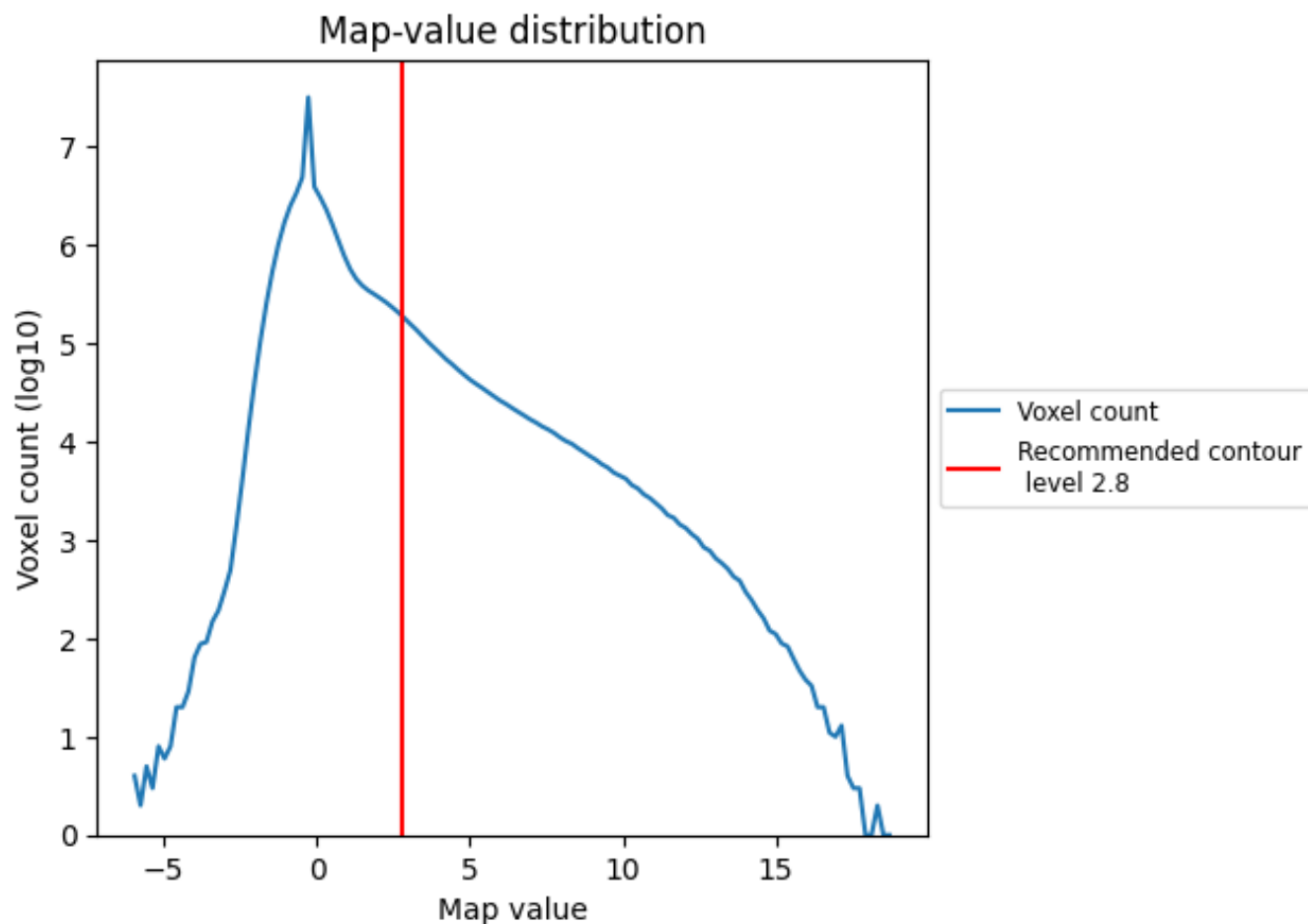
## 6.6 Mask visualisation [i](#)

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

## 7 Map analysis [i](#)

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

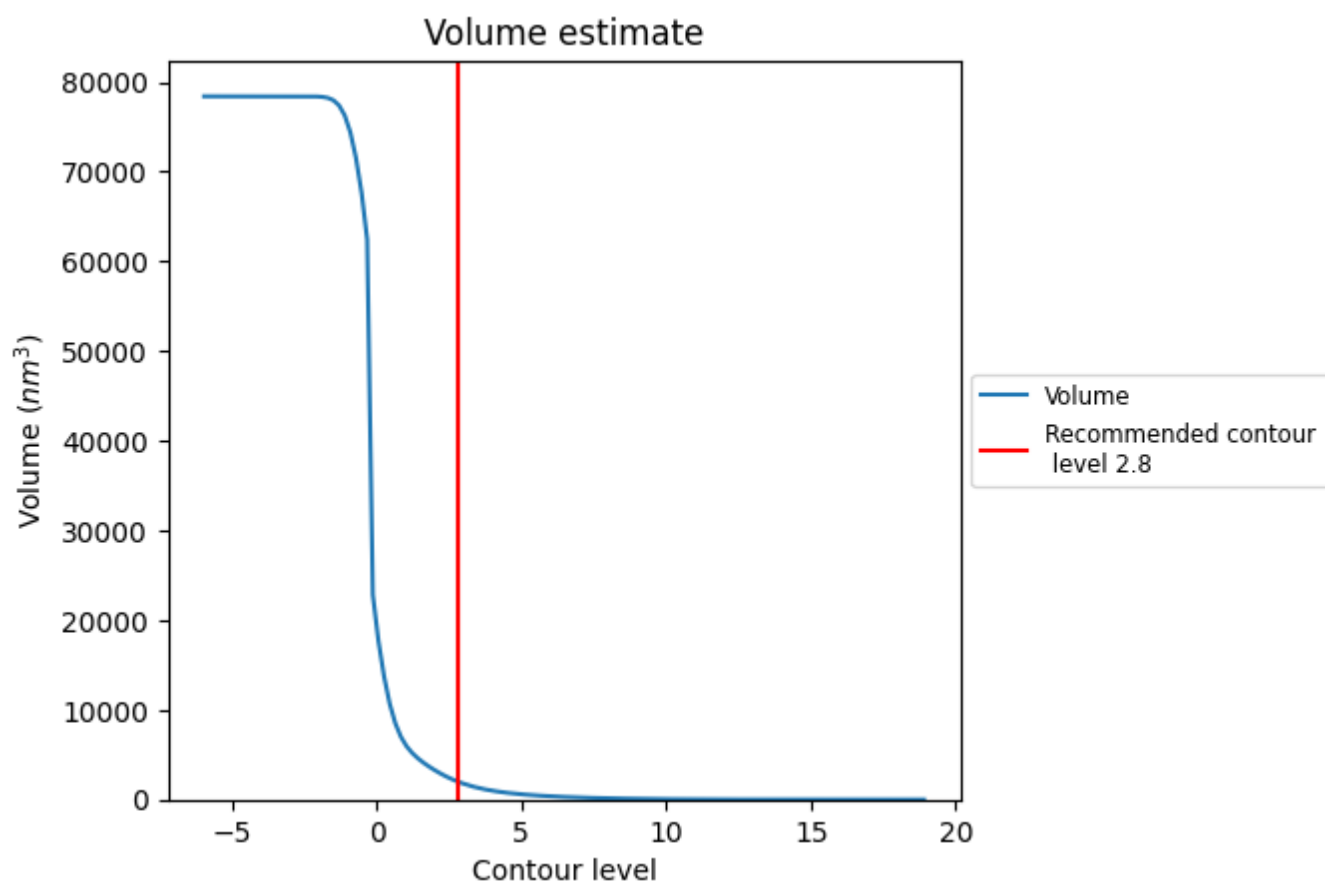
### 7.1 Map-value distribution [i](#)



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



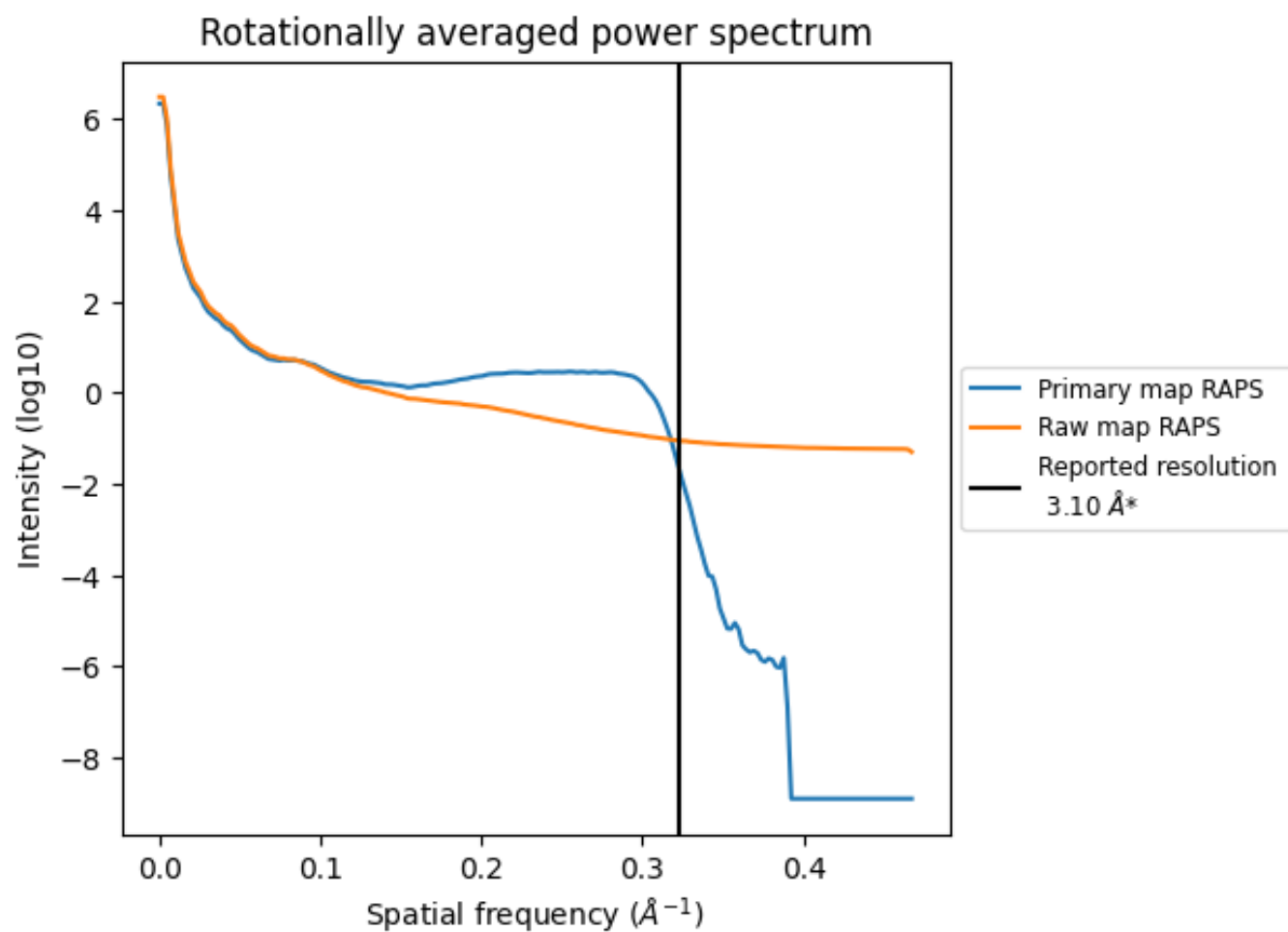
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 2011  $\text{nm}^3$ ; this corresponds to an approximate mass of 1817 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 ⓘ

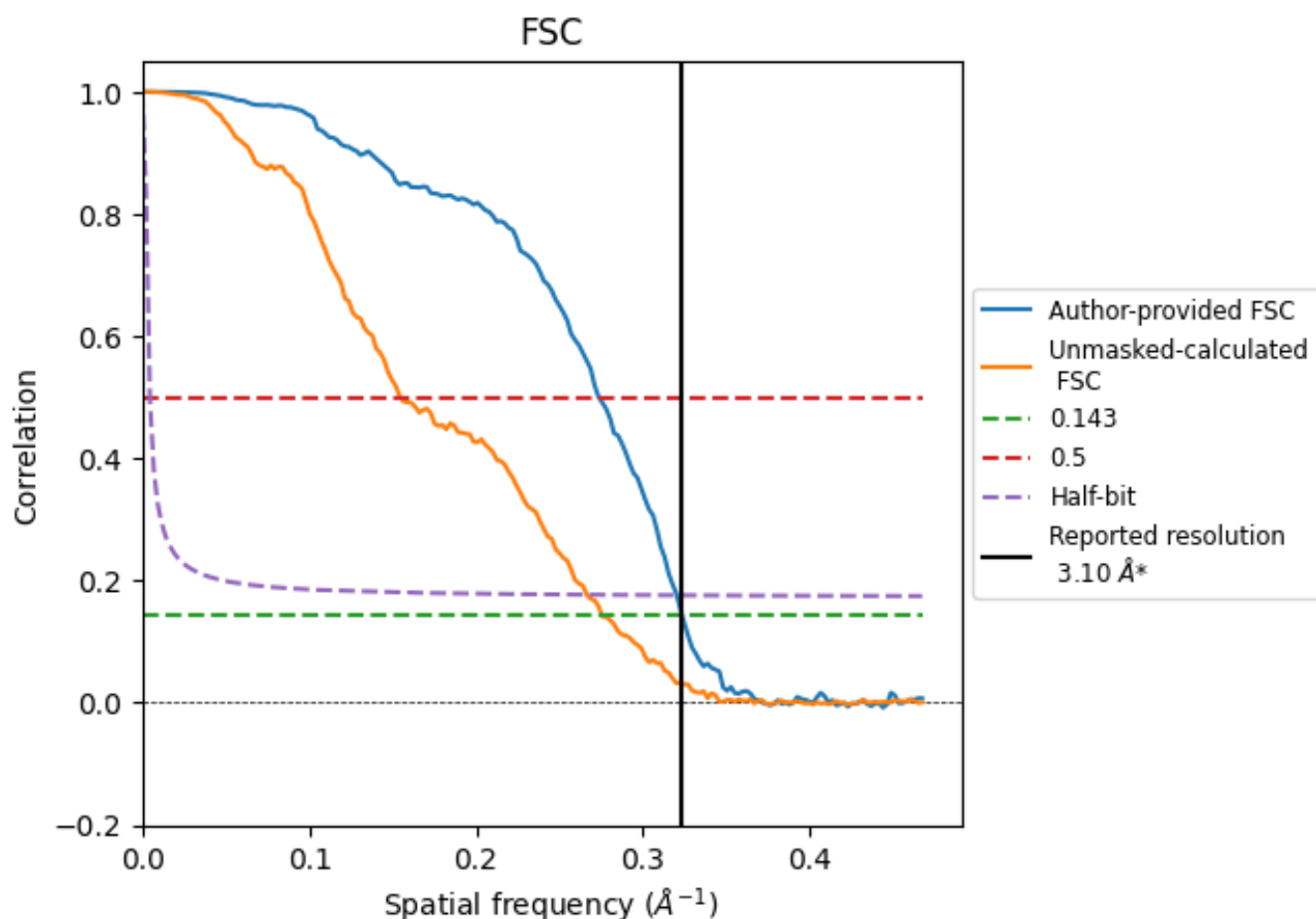


\*Reported resolution corresponds to spatial frequency of  $0.323 \text{ \AA}^{-1}$

## 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 0.323  $\text{\AA}^{-1}$

## 8.2 Resolution estimates [i](#)

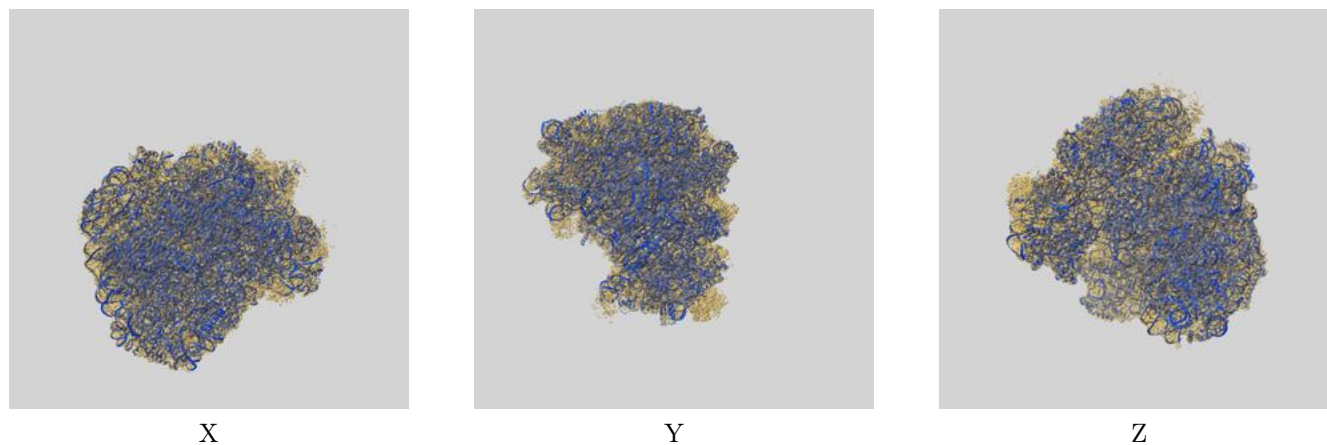
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.10	-	-
Author-provided FSC curve	3.09	3.65	3.12
Unmasked-calculated*	3.63	6.46	3.76

\*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 3.63 differs from the reported value 3.1 by more than 10 %

## 9 Map-model fit [i](#)

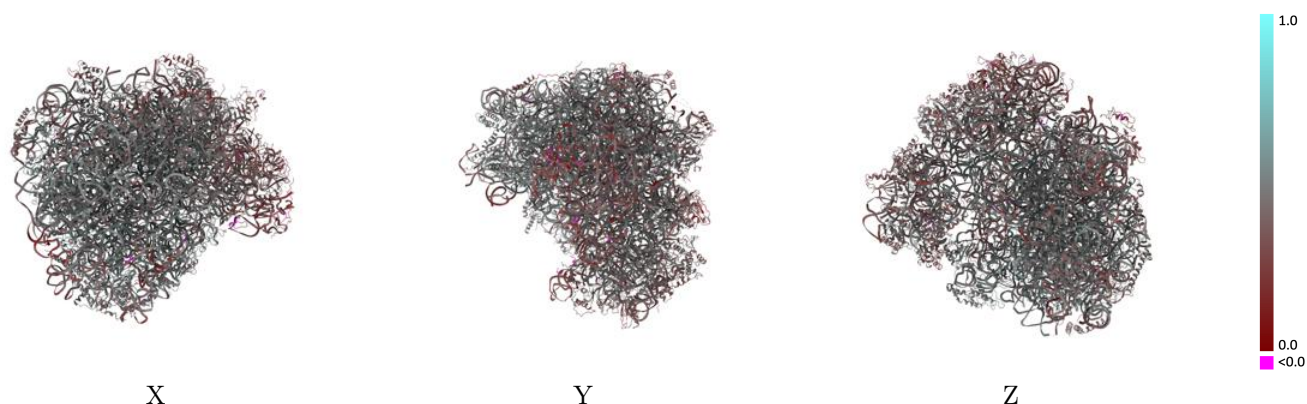
This section contains information regarding the fit between EMDB map EMD-64716 and PDB model 9V24. Per-residue inclusion information can be found in [section 3](#) on [page 18](#).

### 9.1 Map-model overlay [i](#)



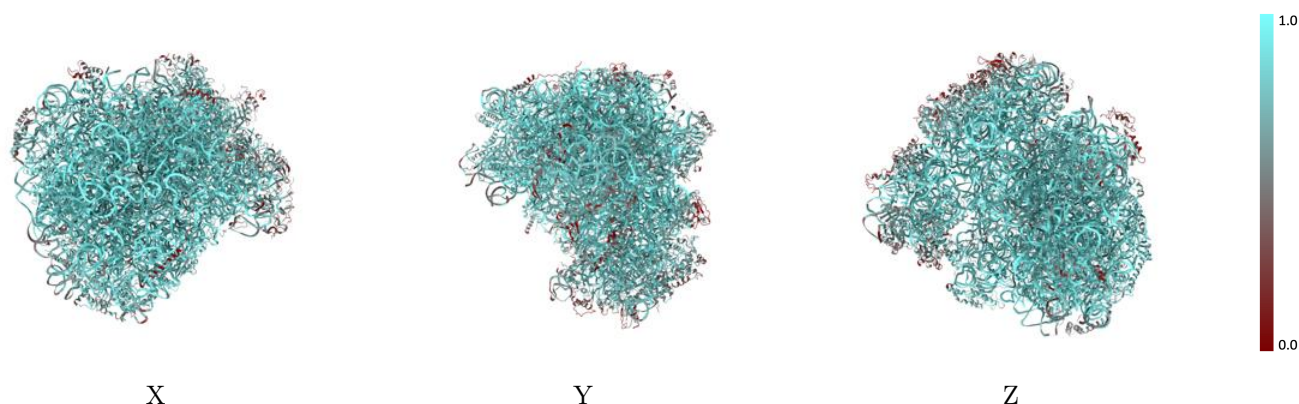
The images above show the 3D surface view of the map at the recommended contour level 2.8 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



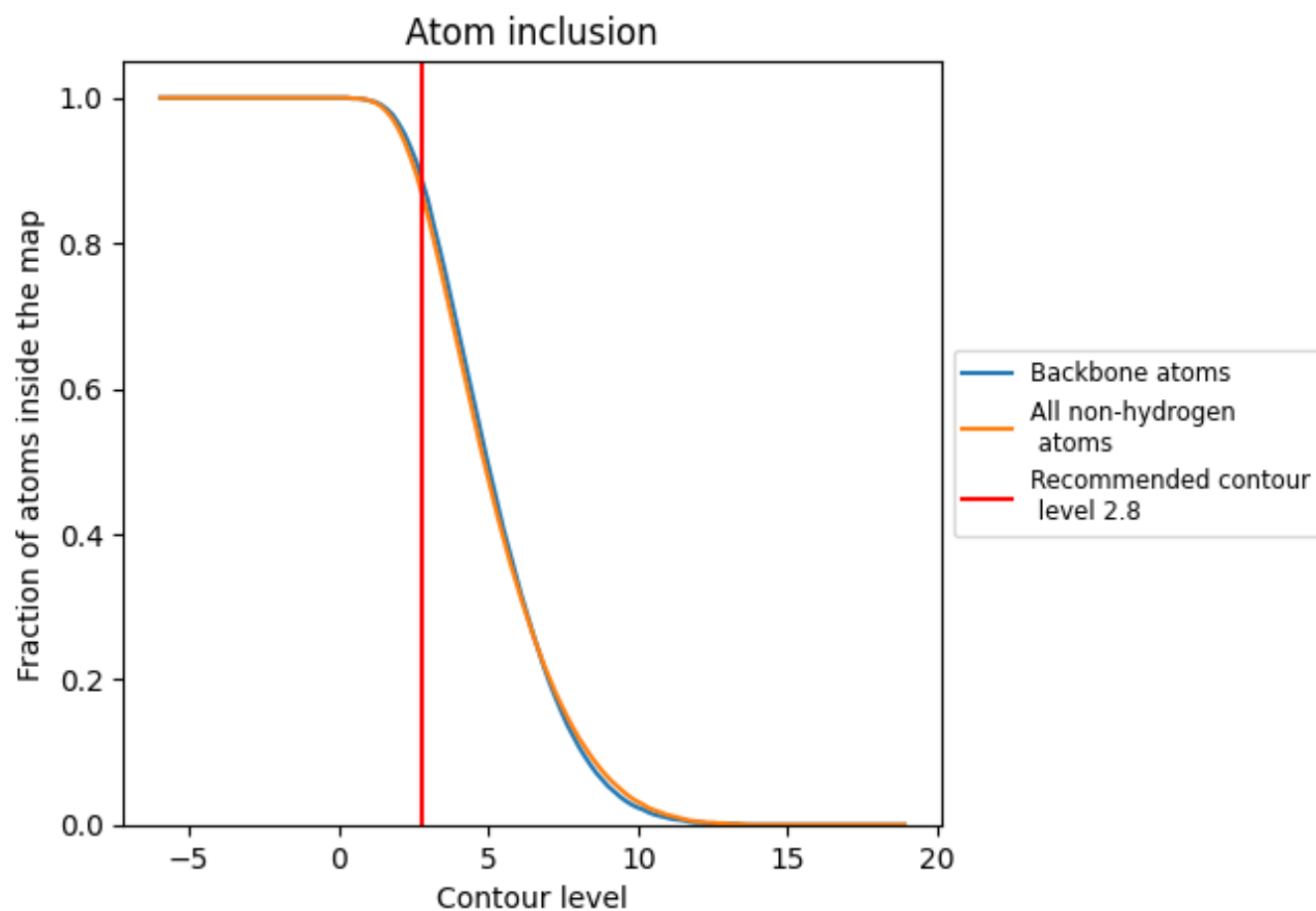
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

## 9.3 Atom inclusion mapped to coordinate model [i](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (2.8).






































































## 9.4 Atom inclusion [i](#)



At the recommended contour level, 88% of all backbone atoms, 86% 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 (2.8) and Q-score for the entire model and for each chain.





















































































Chain	Atom inclusion	Q-score
All	 0.8650	 0.4430
1A	 0.9340	 0.4630
1B	 0.9440	 0.4660
1C	 0.9550	 0.4640
1D	 0.9470	 0.4750
1E	 0.9000	 0.4810
1F	 0.8670	 0.4890
1G	 0.8040	 0.4900
1H	 0.6910	 0.4490
1I	 0.9180	 0.5080
1J	 0.6770	 0.4250
1K	 0.8130	 0.4780
1L	 0.9350	 0.4840
1M	 0.8100	 0.4610
1N	 0.7580	 0.4590
1O	 0.9010	 0.4930
1P	 0.8480	 0.4950
1Q	 0.9590	 0.4940
1R	 0.8950	 0.4630
1S	 0.9520	 0.5010
1T	 0.9370	 0.5120
1U	 0.8670	 0.4430
1V	 0.9220	 0.5130
1W	 0.3630	 0.2860
1X	 0.9450	 0.4770
1Y	 0.8070	 0.4380
1Z	 0.9190	 0.4670
1a	 0.8150	 0.4580
1b	 0.6130	 0.3670
1c	 0.9460	 0.5100
1d	 0.9550	 0.5110
1e	 0.7030	 0.4170
1f	 0.6710	 0.3970
1g	 0.8870	 0.4830
1h	 0.8750	 0.4510



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Chain	Atom inclusion	Q-score
li	 0.8010	 0.4450
lj	 0.9310	 0.5040
lk	 0.8620	 0.4760
ll	 0.9820	 0.4880
lm	 0.9320	 0.4580
ln	 0.5160	 0.3580
lo	 0.9830	 0.4880
lp	 0.9060	 0.4860
lq	 0.9580	 0.5010
sA	 0.4060	 0.3350
sB	 0.8830	 0.4620
sC	 0.7240	 0.4080
sD	 0.6730	 0.3820
sE	 0.8740	 0.4390
sH	 0.8890	 0.2080
sI	 0.9460	 0.3250
sJ	 0.9100	 0.3970
sK	 0.9810	 0.4740
sa	 0.9060	 0.4150
sb	 0.6630	 0.4110
sc	 0.7930	 0.4550
sd	 0.6500	 0.4050
se	 0.6980	 0.3690
sf	 0.5440	 0.3320
sg	 0.7250	 0.4120
sh	 0.4340	 0.2000
si	 0.3500	 0.3040
sj	 0.7580	 0.3860
sk	 0.5370	 0.3630
sl	 0.5290	 0.3930
sm	 0.7510	 0.3760
so	 0.8490	 0.4170
sp	 0.8470	 0.4580
sq	 0.4960	 0.2260
sr	 0.8450	 0.4470
ss	 0.6830	 0.4280
st	 0.6570	 0.3770
su	 0.7660	 0.4450
sv	 0.6680	 0.4240
sw	 0.5580	 0.3530
sx	 0.6760	 0.4200
sy	 0.7580	 0.4080

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Chain	Atom inclusion	Q-score
sz	 0.1580	 0.2410