



Full wwPDB EM Validation Report ⓘ

Mar 30, 2026 – 01:39 PM UTC

PDB ID : 8Z70 / pdb_00008z70
EMDB ID : EMD-38656
Title : State 1 (S1) of yeast 80S ribosome bound to 2 tRNAs during mRNA decoding
Authors : Cheng, J.; Wu, C.L.; Li, J.X.; Zhang, X.Z.
Deposited on : 2024-04-19
Resolution : 3.20 Å(reported)

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

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

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

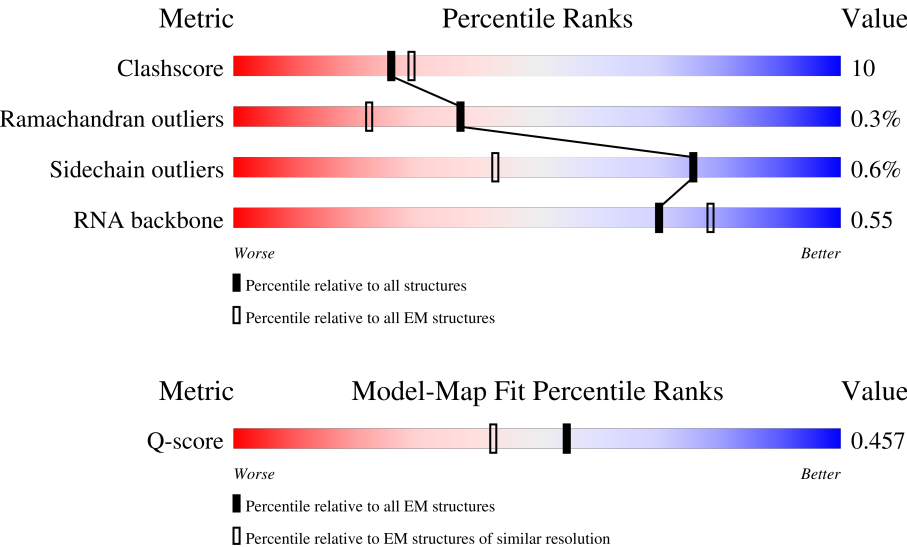
EMDB validation analysis : 0.0.1.dev132
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh &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

1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY

The reported resolution of this entry is 3.20 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	15020 (2.70 - 3.70)

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

Mol	Chain	Length	Quality of chain
1	2	1799	9% 56% 35% 8% .
2	SA	222	15% 76% 24%
3	SB	206	7% 67% 31% ..

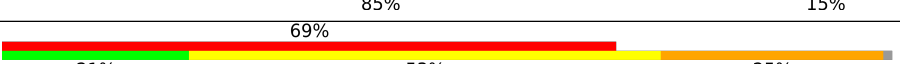
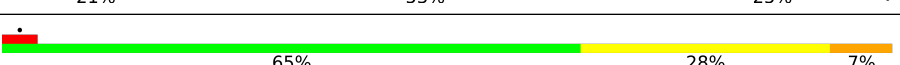
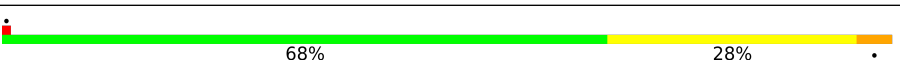
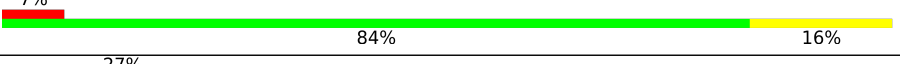
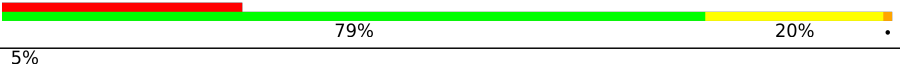
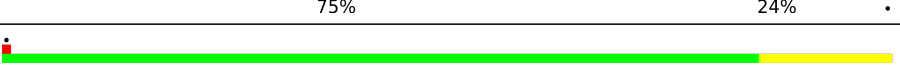
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Mol	Chain	Length	Quality of chain
4	SC	92	
5	SD	121	
6	SE	117	
7	SF	141	
8	SG	121	
9	SH	145	
10	SI	143	
11	SJ	100	
12	SK	108	
13	SL	63	
14	SM	53	
15	SN	73	
16	SO	312	
17	SP	206	
18	SQ	232	
19	SR	216	
20	SS	258	
21	ST	228	
22	SU	184	
23	SV	200	
24	SW	184	
25	SX	142	
26	SY	150	
27	SZ	127	
28	Sa	87	

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Mol	Chain	Length	Quality of chain
29	Sb	129	
30	Sc	144	
31	Sd	134	
32	Se	94	
33	Sf	81	
34	Sg	60	
35	s	77	
36	t	75	
37	B	121	
38	C	158	
39	T	188	
40	Y	126	
41	A	3394	
42	D	251	
43	E	386	
44	F	361	
45	G	294	
46	H	175	
47	I	223	
48	J	233	
49	K	191	
50	L	218	
51	M	169	
52	N	193	
53	O	136	

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Mol	Chain	Length	Quality of chain
54	P	203	
55	Q	197	
56	R	183	
57	S	185	
58	U	171	
59	V	159	
60	W	100	
61	X	136	
62	Z	121	
63	a	125	
64	b	135	
65	c	148	
66	d	58	
67	e	96	
68	f	109	
69	g	127	
70	h	106	
71	i	112	
72	j	119	
73	k	99	
74	l	81	
75	m	77	
76	n	50	
77	o	52	
78	p	25	

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Mol	Chain	Length	Quality of chain
79	q	103	85% 15%
80	r	91	74% 26%
81	x	462	89% 65% 27% • • 5%

2 Entry composition

There are 81 unique types of molecules in this entry. The entry contains 206049 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 18S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	2	1771	Total	C	N	O	P	0	0
			37739	16872	6683	12413	1771		

- Molecule 2 is a protein called Small ribosomal subunit protein uS3.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	SA	222	Total	C	N	O	S	0	0
			1729	1098	312	313	6		

- Molecule 3 is a protein called Small ribosomal subunit protein uS7.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	SB	206	Total	C	N	O	S	0	0
			1605	1005	299	298	3		

- Molecule 4 is a protein called Small ribosomal subunit protein eS10A.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	SC	92	Total	C	N	O	S	0	0
			752	487	122	141	2		

- Molecule 5 is a protein called Small ribosomal subunit protein eS12.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	SD	121	Total	C	N	O	S	0	0
			875	551	153	169	2		

- Molecule 6 is a protein called Small ribosomal subunit protein uS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	SE	117	Total	C	N	O	S	0	0
			916	583	171	155	7		

- Molecule 7 is a protein called Small ribosomal subunit protein uS9A.

Mol	Chain	Residues	Atoms				AltConf	Trace
7	SF	141	Total	C	N	O	0	0
			1105	708	203	194		

- Molecule 8 is a protein called Small ribosomal subunit protein eS17A.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	SG	121	Total	C	N	O	S	0	0
			961	599	182	178	2		

- Molecule 9 is a protein called Small ribosomal subunit protein uS13A.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	SH	145	Total	C	N	O	S	0	0
			1188	741	237	208	2		

- Molecule 10 is a protein called Small ribosomal subunit protein eS19A.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	SI	143	Total	C	N	O	S	0	0
			1112	694	208	208	2		

- Molecule 11 is a protein called Small ribosomal subunit protein uS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	SJ	100	Total	C	N	O	S	0	0
			797	506	144	146	1		

- Molecule 12 is a protein called Small ribosomal subunit protein eS25A.

Mol	Chain	Residues	Atoms				AltConf	Trace
12	SK	82	Total	C	N	O	0	0
			651	416	123	112		

- Molecule 13 is a protein called Small ribosomal subunit protein eS28A.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	SL	63	Total	C	N	O	S	0	0
			491	303	96	91	1		

- Molecule 14 is a protein called Small ribosomal subunit protein uS14A.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	SM	53	Total	C	N	O	S	0	0
			442	274	92	72	4		

- Molecule 15 is a protein called Small ribosomal subunit protein eS31.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	SN	73	Total	C	N	O	S	0	0
			556	352	105	95	4		

- Molecule 16 is a protein called Small ribosomal subunit protein RACK1.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	SO	312	Total	C	N	O	S	0	0
			2383	1514	409	452	8		

- Molecule 17 is a protein called Small ribosomal subunit protein uS2A.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	SP	206	Total	C	N	O	S	0	0
			1603	1030	284	287	2		

- Molecule 18 is a protein called Small ribosomal subunit protein eS1A.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	SQ	226	Total	C	N	O	S	0	0
			1798	1139	330	325	4		

- Molecule 19 is a protein called Small ribosomal subunit protein uS5.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	SR	216	Total	C	N	O	S	0	0
			1626	1042	287	295	2		

- Molecule 20 is a protein called Small ribosomal subunit protein eS4A.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	SS	258	Total	C	N	O	S	0	0
			2056	1308	387	358	3		

- Molecule 21 is a protein called Small ribosomal subunit protein eS6A.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	ST	228	Total	C	N	O	S	0	0
			1815	1138	351	323	3		

- Molecule 22 is a protein called Small ribosomal subunit protein eS7A.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	SU	184	Total	C	N	O		0	0
			1473	946	263	264			

- Molecule 23 is a protein called Small ribosomal subunit protein eS8A.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	SV	187	Total	C	N	O	S	0	0
			1476	916	295	263	2		

- Molecule 24 is a protein called Small ribosomal subunit protein uS4A.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	SW	184	Total	C	N	O	S	0	0
			1479	935	285	258	1		

- Molecule 25 is a protein called Small ribosomal subunit protein uS17A.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	SX	142	Total	C	N	O	S	0	0
			1142	733	217	189	3		

- Molecule 26 is a protein called Small ribosomal subunit protein uS15.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	SY	150	Total	C	N	O	S	0	0
			1192	759	224	207	2		

- Molecule 27 is a protein called Small ribosomal subunit protein uS11B.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	SZ	127	Total	C	N	O	S	0	0
			891	545	182	163	1		

- Molecule 28 is a protein called Small ribosomal subunit protein eS21A.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	Sa	87	Total	C	N	O	S	0	0
			673	415	125	131	2		

- Molecule 29 is a protein called Small ribosomal subunit protein uS8A.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	Sb	129	Total	C	N	O	S	0	0
			1021	650	188	180	3		

- Molecule 30 is a protein called Small ribosomal subunit protein uS12A.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	Sc	144	Total	C	N	O	S	0	0
			1121	708	220	191	2		

- Molecule 31 is a protein called Small ribosomal subunit protein eS24A.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	Sd	134	Total	C	N	O	S	0	0
			1073	676	208	189			

- Molecule 32 is a protein called Small ribosomal subunit protein eS26A.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	Se	94	Total	C	N	O	S	0	0
			750	462	157	126	5		

- Molecule 33 is a protein called Small ribosomal subunit protein eS27A.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	Sf	81	Total	C	N	O	S	0	0
			610	382	110	113	5		

- Molecule 34 is a protein called Small ribosomal subunit protein eS30A.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	Sg	60	Total	C	N	O	S	0	0
			472	298	97	76	1		

- Molecule 35 is a RNA chain called tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	s	76	Total	C	N	O	P	0	0
			1616	723	291	527	75		

- Molecule 36 is a RNA chain called tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	t	75	Total	C	N	O	P	0	0
			1606	716	297	518	75		

- Molecule 37 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	B	121	Total	C	N	O	P	0	0
			2579	1152	461	845	121		

- Molecule 38 is a RNA chain called 5.8S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	C	158	Total	C	N	O	P	0	0
			3353	1500	586	1109	158		

- Molecule 39 is a protein called Large ribosomal subunit protein eL19A.

Mol	Chain	Residues	Atoms				AltConf	Trace
39	T	188	Total	C	N	O	0	0
			1515	932	323	260		

- Molecule 40 is a protein called Large ribosomal subunit protein eL24A.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	Y	126	Total	C	N	O	S	0	0
			836	525	165	145	1		

- Molecule 41 is a RNA chain called 25S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	A	3187	Total	C	N	O	P	0	0
			68170	30449	12289	22245	3187		

- Molecule 42 is a protein called Large ribosomal subunit protein uL2A.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	D	251	Total	C	N	O	S	0	0
			1899	1182	385	331	1		

- Molecule 43 is a protein called Large ribosomal subunit protein uL3.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	E	386	Total	C	N	O	S	0	0
			3075	1950	584	533	8		

- Molecule 44 is a protein called Large ribosomal subunit protein uL4A.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	F	361	Total	C	N	O	S	0	0
			2748	1729	522	494	3		

- Molecule 45 is a protein called Large ribosomal subunit protein uL18.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	G	294	Total	C	N	O	S	0	0
			2351	1484	410	455	2		

- Molecule 46 is a protein called Large ribosomal subunit protein eL6B.

Mol	Chain	Residues	Atoms				AltConf	Trace
46	H	167	Total	C	N	O	0	0
			1307	843	234	230		

- Molecule 47 is a protein called Large ribosomal subunit protein uL30A.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	I	222	Total	C	N	O	S	0	0
			1784	1151	324	308	1		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
I	22	ILE	THR	conflict	UNP P05737

- Molecule 48 is a protein called Large ribosomal subunit protein eL8A.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	J	233	Total	C	N	O	S	0	0
			1804	1151	323	327	3		

- Molecule 49 is a protein called Large ribosomal subunit protein uL6A.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	K	191	Total	C	N	O	S	0	0
			1508	957	274	273	4		

- Molecule 50 is a protein called Large ribosomal subunit protein uL16.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	L	218	Total	C	N	O	S	0	0
			1764	1117	334	306	7		

- Molecule 51 is a protein called Large ribosomal subunit protein uL5B.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	M	169	Total	C	N	O	S	0	0
			1346	843	252	247	4		

- Molecule 52 is a protein called Large ribosomal subunit protein eL13A.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	N	193	Total	C	N	O		0	0
			1543	962	315	266			

- Molecule 53 is a protein called Large ribosomal subunit protein eL14A.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	O	136	Total	C	N	O	S	0	0
			1053	675	199	177	2		

- Molecule 54 is a protein called Large ribosomal subunit protein eL15A.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	P	203	Total	C	N	O	S	0	0
			1720	1077	361	281	1		

- Molecule 55 is a protein called Large ribosomal subunit protein uL13A.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	Q	197	Total	C	N	O	S	197	0
			1555	1003	289	262	1		

- Molecule 56 is a protein called Large ribosomal subunit protein uL22A.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	R	183	Total	C	N	O		0	0
			1416	879	284	253			

- Molecule 57 is a protein called Large ribosomal subunit protein eL18A.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	S	185	Total	C	N	O	S	0	0
			1441	908	290	241	2		

- Molecule 58 is a protein called Large ribosomal subunit protein eL20A.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	U	171	Total	C	N	O	S	0	0
			1437	925	266	243	3		

- Molecule 59 is a protein called Large ribosomal subunit protein eL21A.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	V	159	Total	C	N	O	S	0	0
			1272	802	245	221	4		

- Molecule 60 is a protein called Large ribosomal subunit protein eL22A.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	W	100	Total	C	N	O		0	0
			796	516	131	149			

- Molecule 61 is a protein called Large ribosomal subunit protein uL14A.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	X	136	Total	C	N	O	S	0	0
			1003	628	189	179	7		

- Molecule 62 is a protein called Large ribosomal subunit protein uL23.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	Z	121	Total	C	N	O	S	0	0
			964	620	169	173	2		

- Molecule 63 is a protein called Large ribosomal subunit protein uL24A.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	a	125	Total	C	N	O		0	0
			984	620	191	173			

- Molecule 64 is a protein called Large ribosomal subunit protein eL27A.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	b	135	Total	C	N	O		0	0
			1080	701	199	180			

- Molecule 65 is a protein called Large ribosomal subunit protein uL15.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	c	148	Total	C	N	O	S	0	0
			1169	747	231	188	3		

- Molecule 66 is a protein called Large ribosomal subunit protein eL29.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	d	58	Total	C	N	O		0	0
			462	289	100	73			

- Molecule 67 is a protein called Large ribosomal subunit protein eL30.

Mol	Chain	Residues	Atoms					AltConf	Trace
67	e	96	Total	C	N	O	S	0	0
			737	476	123	137	1		

- Molecule 68 is a protein called Large ribosomal subunit protein eL31A.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	f	109	Total	C	N	O	S	0	0
			876	556	167	152	1		

- Molecule 69 is a protein called Large ribosomal subunit protein eL32.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	g	127	Total	C	N	O	S	0	0
			1013	642	205	165	1		

- Molecule 70 is a protein called Large ribosomal subunit protein eL33A.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	h	106	Total	C	N	O	S	0	0
			850	540	165	144	1		

- Molecule 71 is a protein called Large ribosomal subunit protein eL34A.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	i	112	Total	C	N	O	S	0	0
			880	545	179	152	4		

- Molecule 72 is a protein called Large ribosomal subunit protein uL29A.

Mol	Chain	Residues	Atoms					AltConf	Trace
72	j	119	Total	C	N	O	S	0	0
			969	615	186	167	1		

- Molecule 73 is a protein called Large ribosomal subunit protein eL36A.

Mol	Chain	Residues	Atoms					AltConf	Trace
73	k	99	Total	C	N	O	S	0	0
			766	478	154	132	2		

- Molecule 74 is a protein called Large ribosomal subunit protein eL37A.

Mol	Chain	Residues	Atoms					AltConf	Trace
74	l	81	Total	C	N	O	S	0	0
			645	393	141	106	5		

- Molecule 75 is a protein called Large ribosomal subunit protein eL38.

Mol	Chain	Residues	Atoms				AltConf	Trace
75	m	77	Total	C	N	O	0	0
			612	391	115	106		

- Molecule 76 is a protein called Large ribosomal subunit protein eL39.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	n	50	Total	C	N	O	S	0	0
			436	272	97	65	2		

- Molecule 77 is a protein called Large ribosomal subunit protein eL40A.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	o	52	Total	C	N	O	S	0	0
			410	254	86	65	5		

- Molecule 78 is a protein called Large ribosomal subunit protein eL41A.

Mol	Chain	Residues	Atoms					AltConf	Trace
78	p	25	Total	C	N	O	S	0	0
			229	139	62	27	1		

- Molecule 79 is a protein called Large ribosomal subunit protein eL42A.

Mol	Chain	Residues	Atoms					AltConf	Trace
79	q	103	Total	C	N	O	S	0	0
			824	517	167	135	5		

- Molecule 80 is a protein called Large ribosomal subunit protein eL43A.

Mol	Chain	Residues	Atoms					AltConf	Trace
80	r	91	Total	C	N	O	S	0	0
			694	429	138	121	6		

- Molecule 81 is a protein called Elongation factor 1-alpha 1.

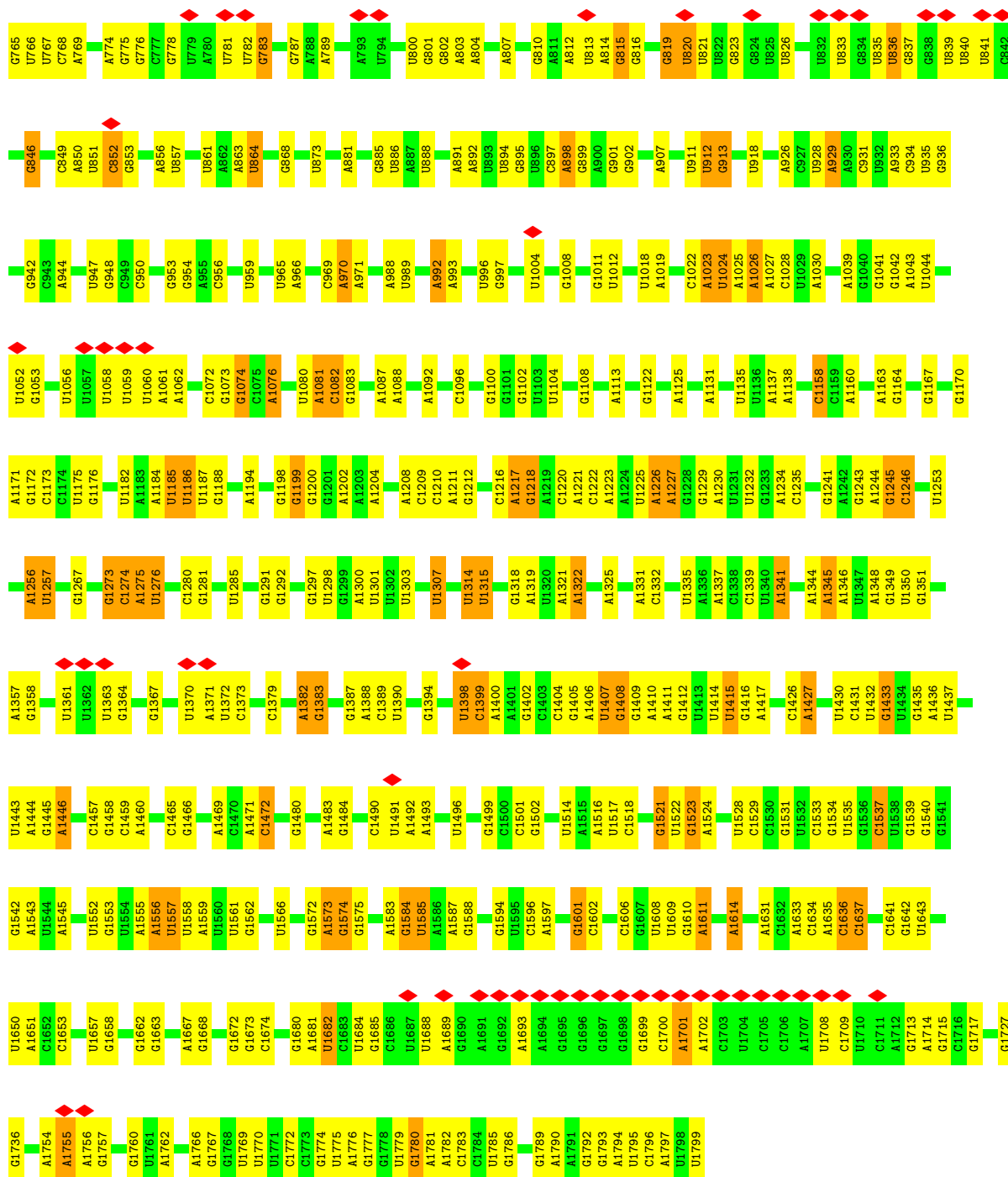
Mol	Chain	Residues	Atoms					AltConf	Trace
81	x	441	Total	C	N	O	S	0	0
			3379	2148	581	633	17		

3 Residue-property plots [i](#)

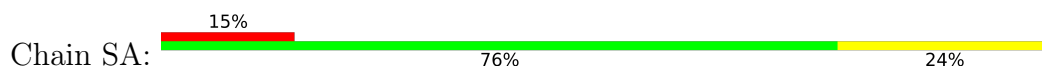
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

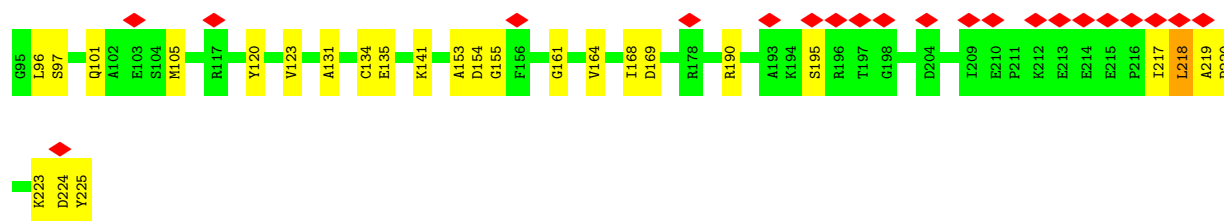
• Molecule 1: 18S rRNA



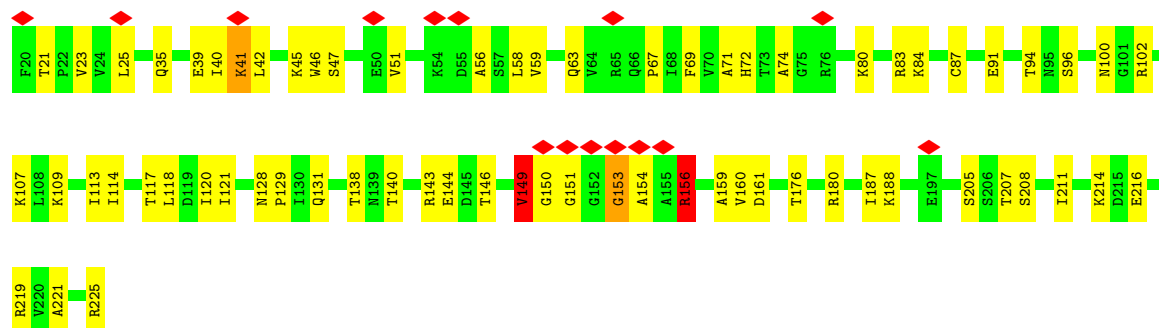


• Molecule 2: Small ribosomal subunit protein uS3





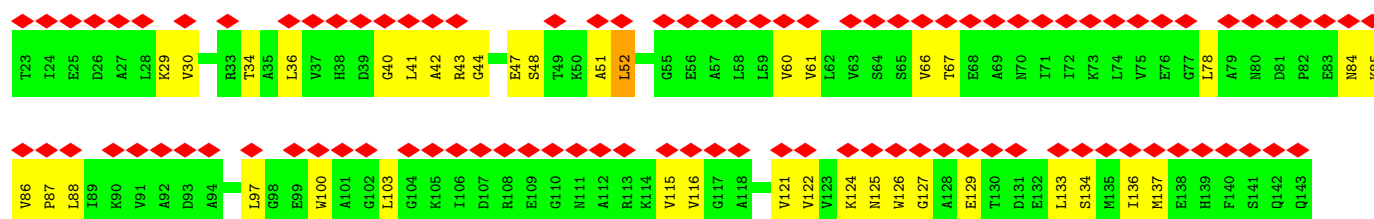
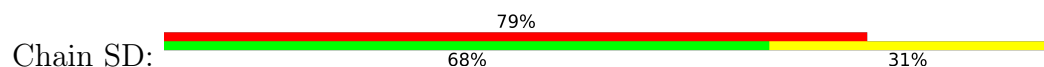
- Molecule 3: Small ribosomal subunit protein uS7



- Molecule 4: Small ribosomal subunit protein eS10A

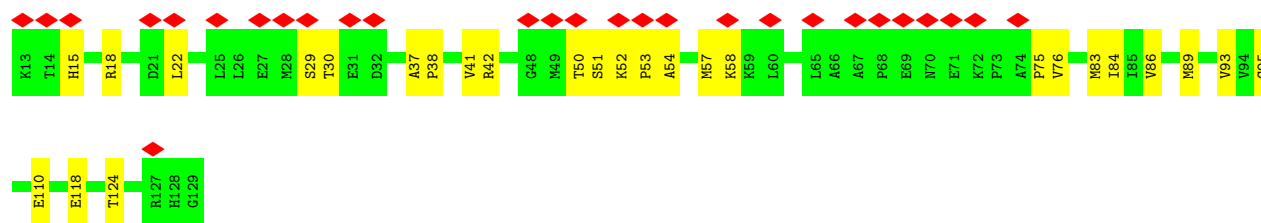


- Molecule 5: Small ribosomal subunit protein eS12

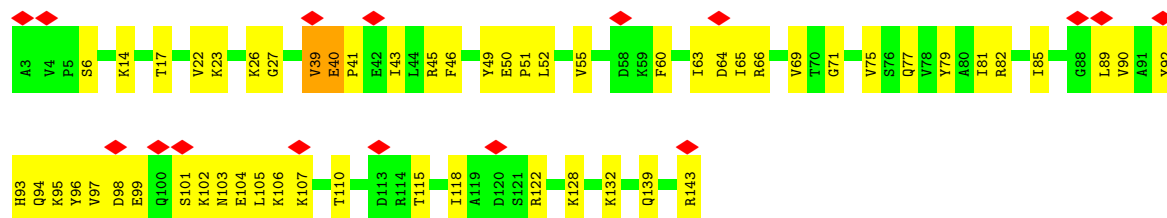


- Molecule 6: Small ribosomal subunit protein uS19

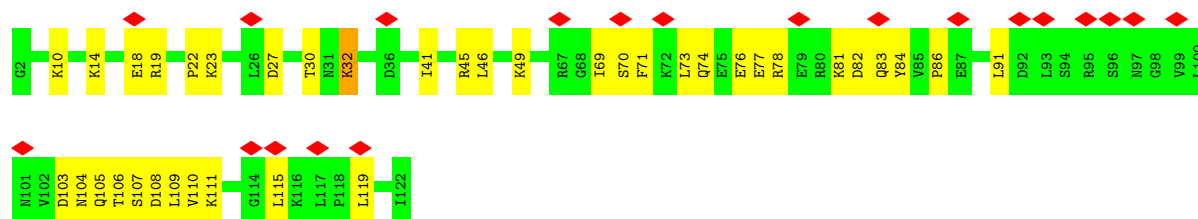




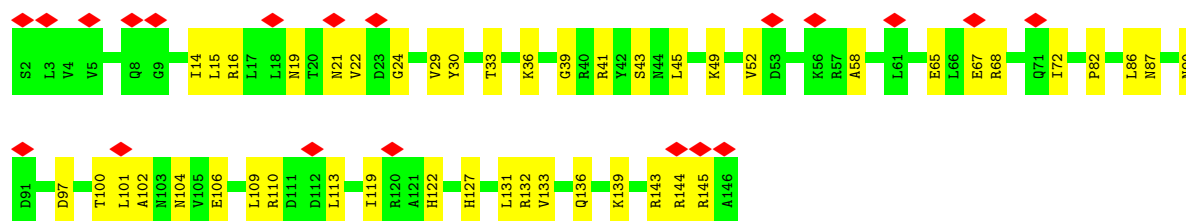
- Molecule 7: Small ribosomal subunit protein uS9A



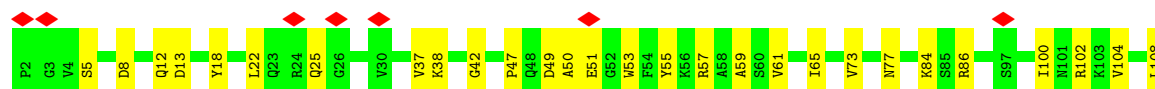
- Molecule 8: Small ribosomal subunit protein eS17A

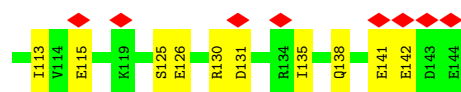


- Molecule 9: Small ribosomal subunit protein uS13A

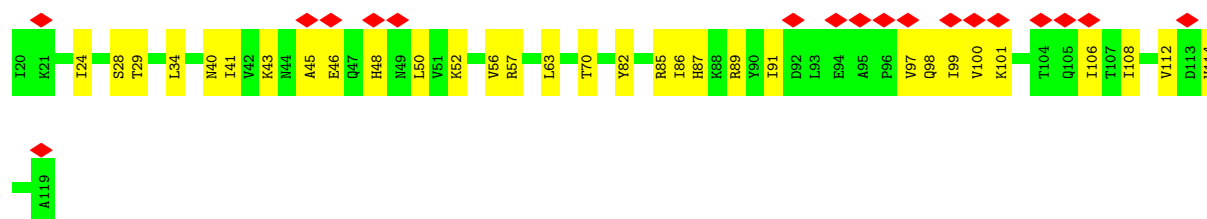


- Molecule 10: Small ribosomal subunit protein eS19A

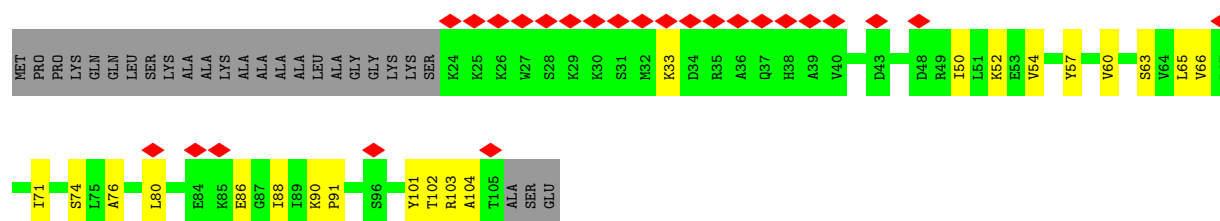




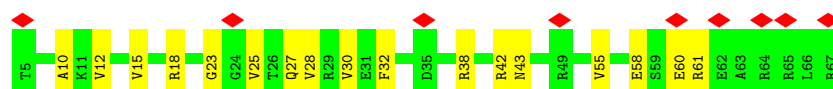
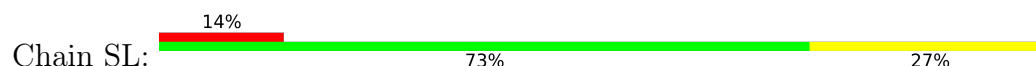
- Molecule 11: Small ribosomal subunit protein uS10



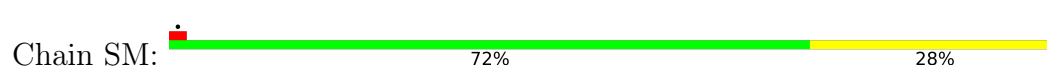
- Molecule 12: Small ribosomal subunit protein eS25A



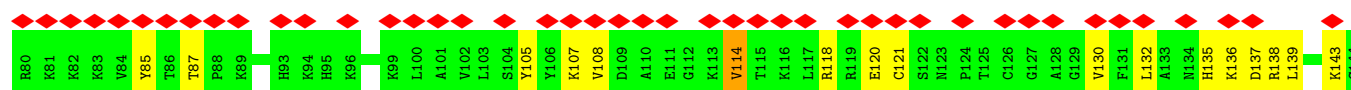
- Molecule 13: Small ribosomal subunit protein eS28A

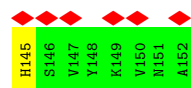


- Molecule 14: Small ribosomal subunit protein uS14A

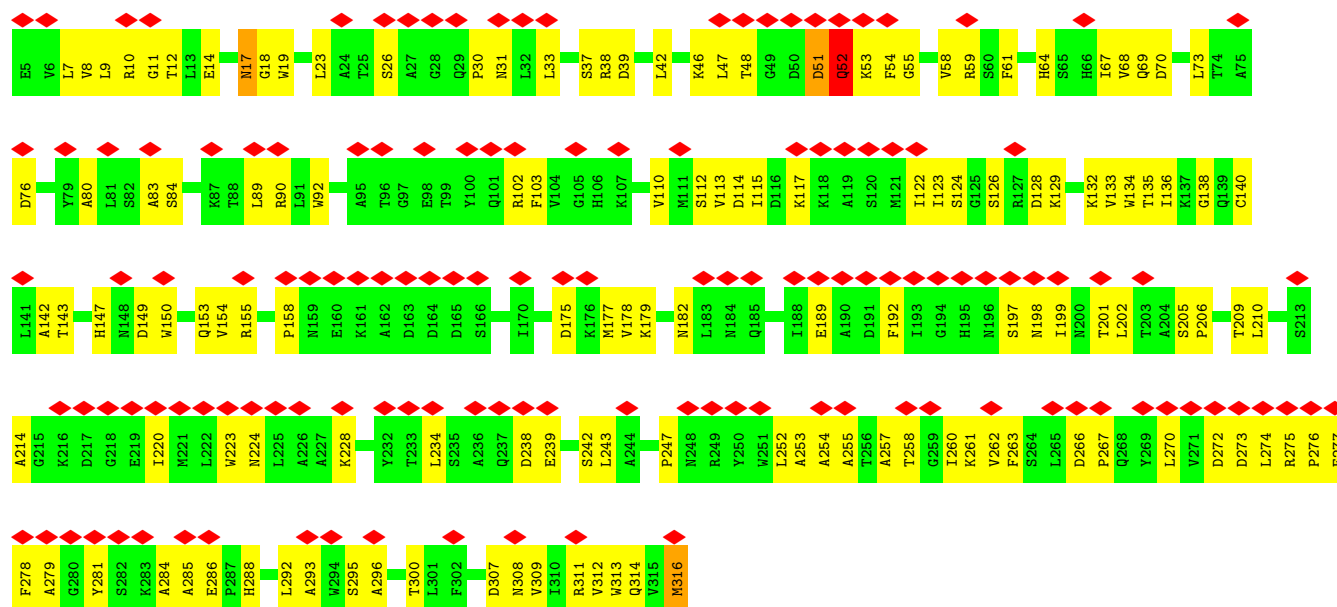


- Molecule 15: Small ribosomal subunit protein eS31

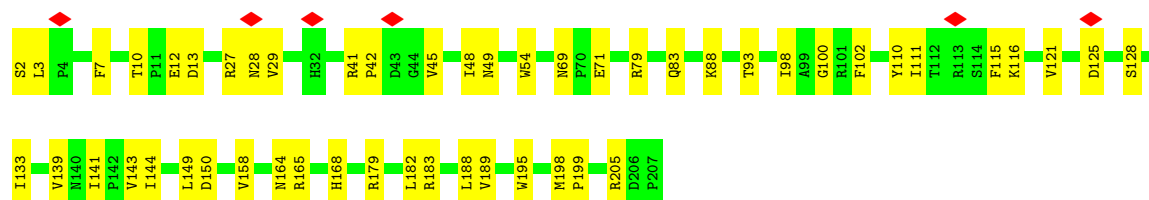
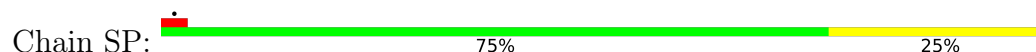




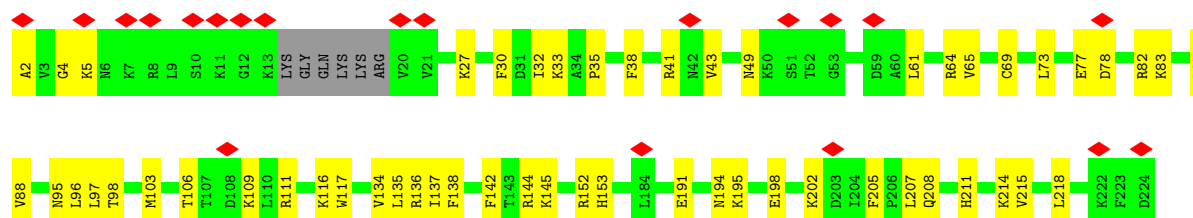
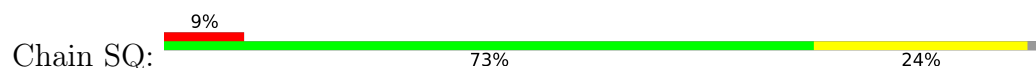
• Molecule 16: Small ribosomal subunit protein RACK1

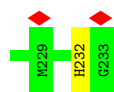


• Molecule 17: Small ribosomal subunit protein uS2A



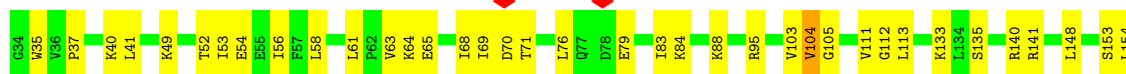
• Molecule 18: Small ribosomal subunit protein eS1A





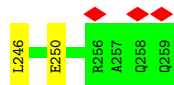
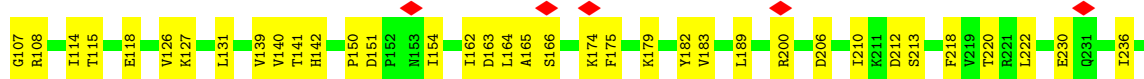
- Molecule 19: Small ribosomal subunit protein uS5

Chain SR: 71% 28%



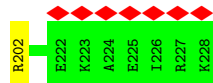
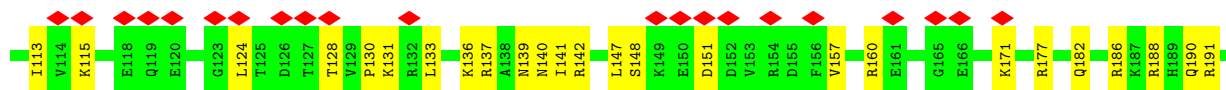
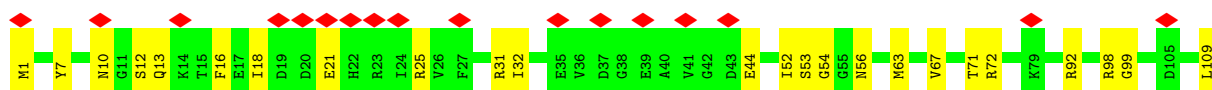
- Molecule 20: Small ribosomal subunit protein eS4A

Chain SS: 6% 74% 26%



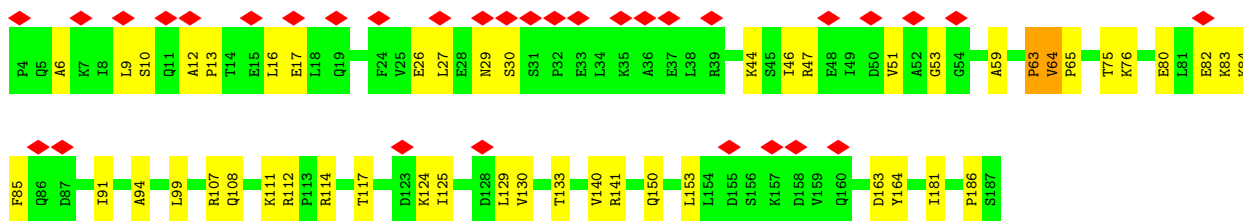
- Molecule 21: Small ribosomal subunit protein eS6A

Chain ST: 20% 78% 22%

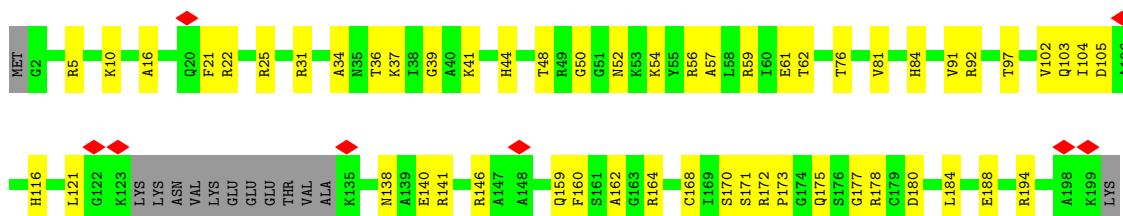


- Molecule 22: Small ribosomal subunit protein eS7A

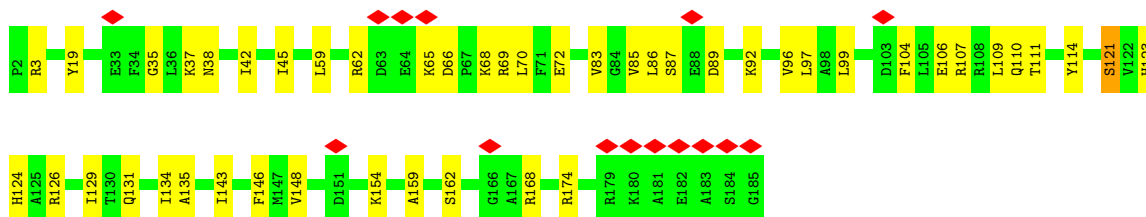
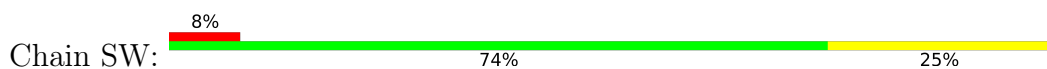
Chain SU: 17% 73% 26%



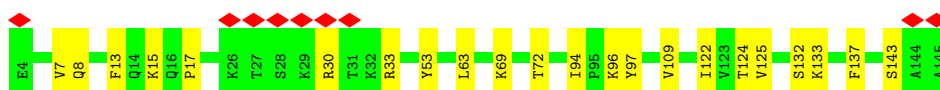
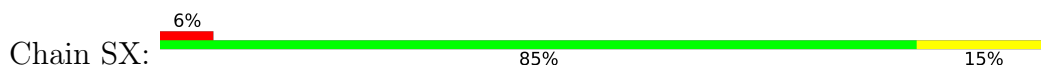
- Molecule 23: Small ribosomal subunit protein eS8A



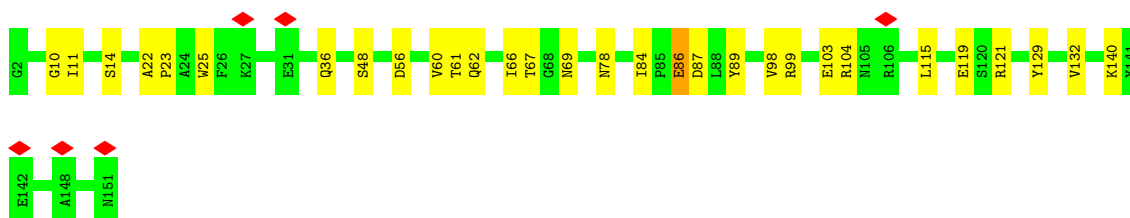
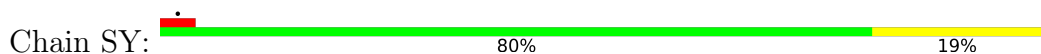
- Molecule 24: Small ribosomal subunit protein uS4A



- Molecule 25: Small ribosomal subunit protein uS17A

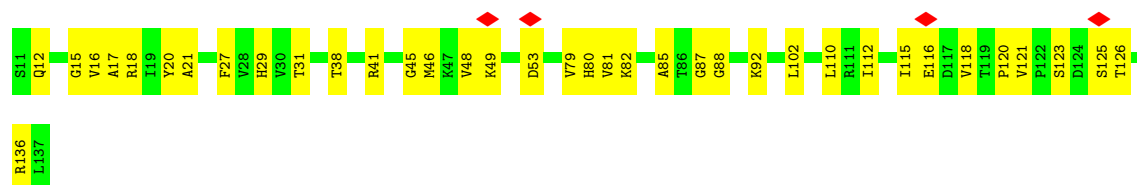


- Molecule 26: Small ribosomal subunit protein uS15



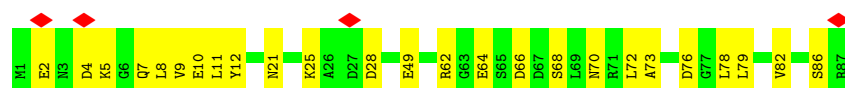
- Molecule 27: Small ribosomal subunit protein uS11B

Chain SZ:  71% 29%



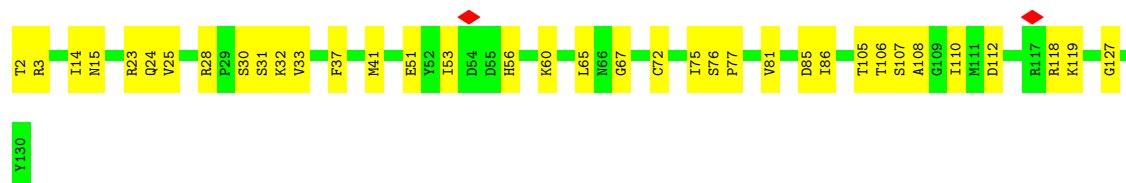
- Molecule 28: Small ribosomal subunit protein eS21A

Chain Sa:  5% 71% 29%



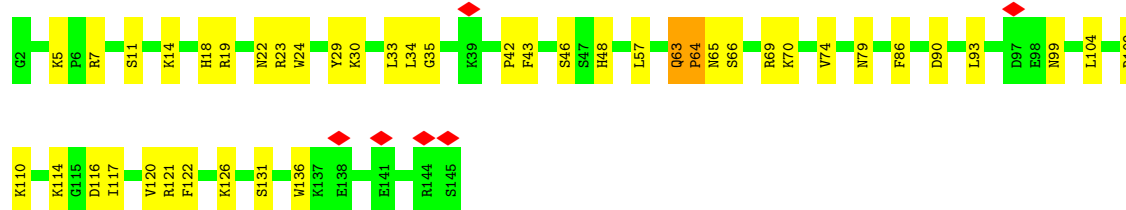
- Molecule 29: Small ribosomal subunit protein uS8A

Chain Sb:  72% 28%



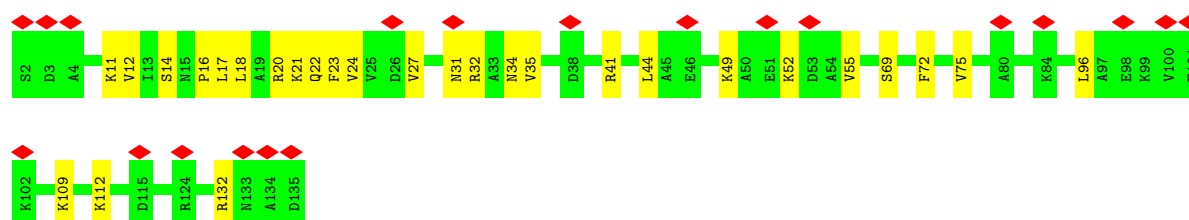
- Molecule 30: Small ribosomal subunit protein uS12A

Chain Sc:  70% 28%

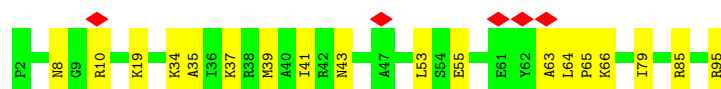
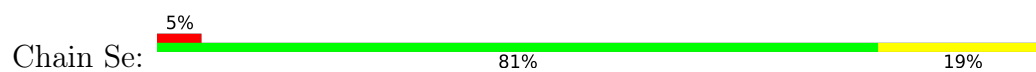


- Molecule 31: Small ribosomal subunit protein eS24A

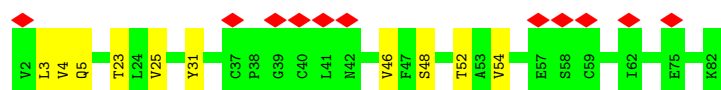
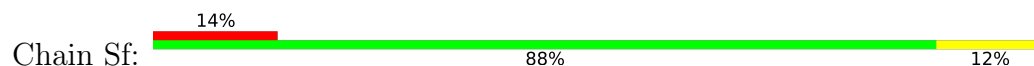
Chain Sd:  15% 79% 21%



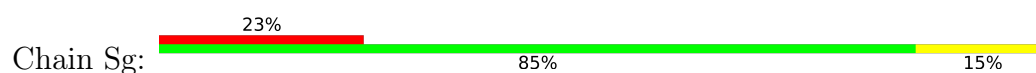
- Molecule 32: Small ribosomal subunit protein eS26A



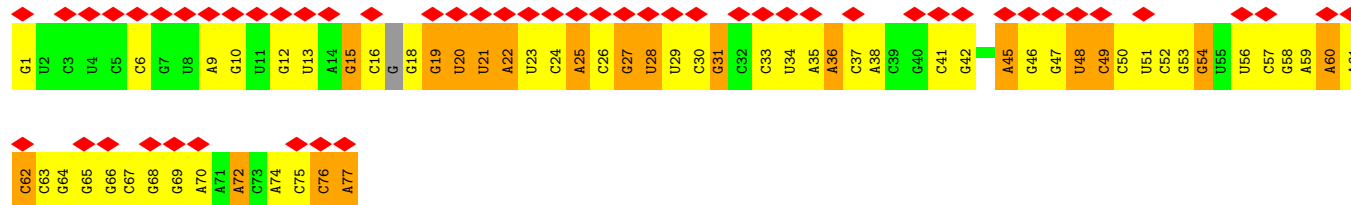
- Molecule 33: Small ribosomal subunit protein eS27A



- Molecule 34: Small ribosomal subunit protein eS30A



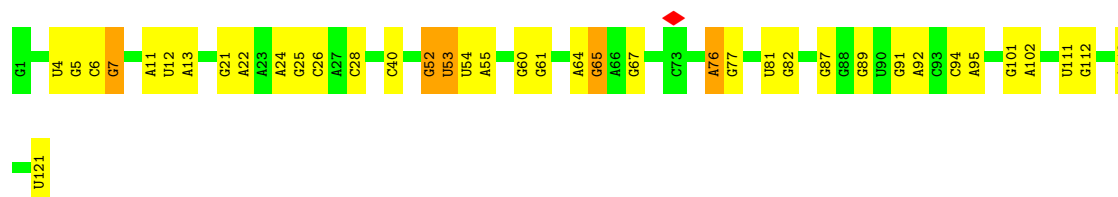
- Molecule 35: tRNA



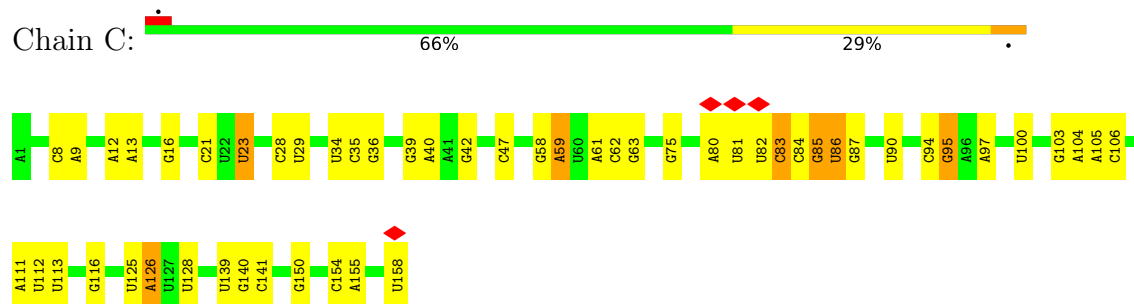
- Molecule 36: tRNA



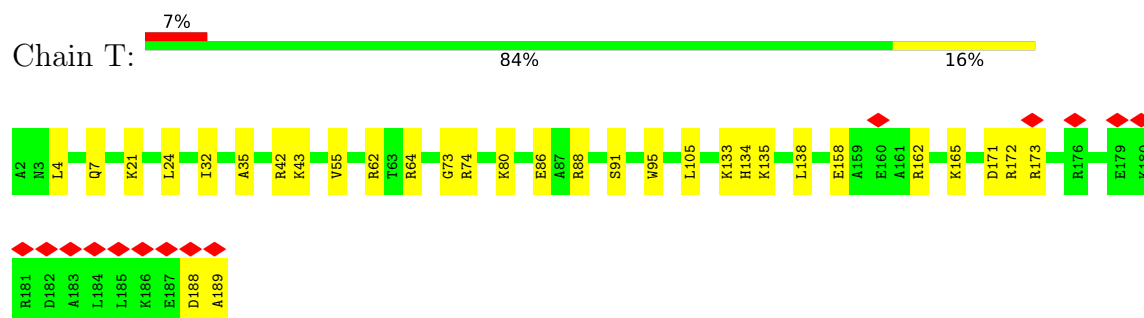
- Molecule 37: 5S rRNA



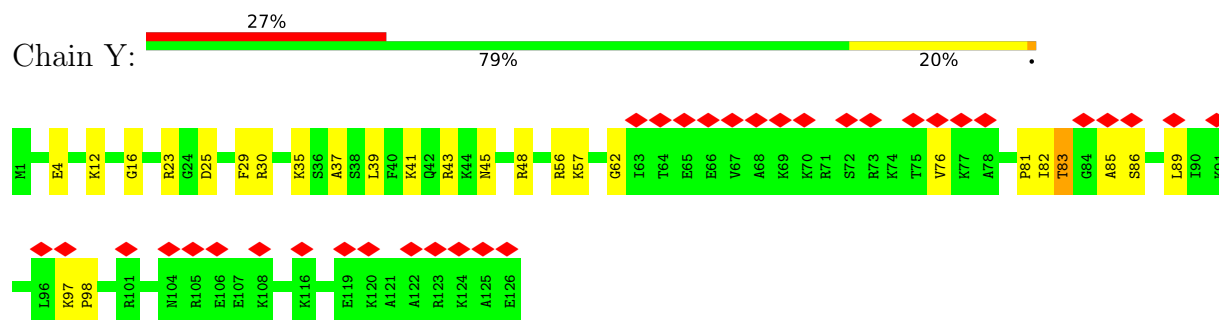
- Molecule 38: 5.8S rRNA



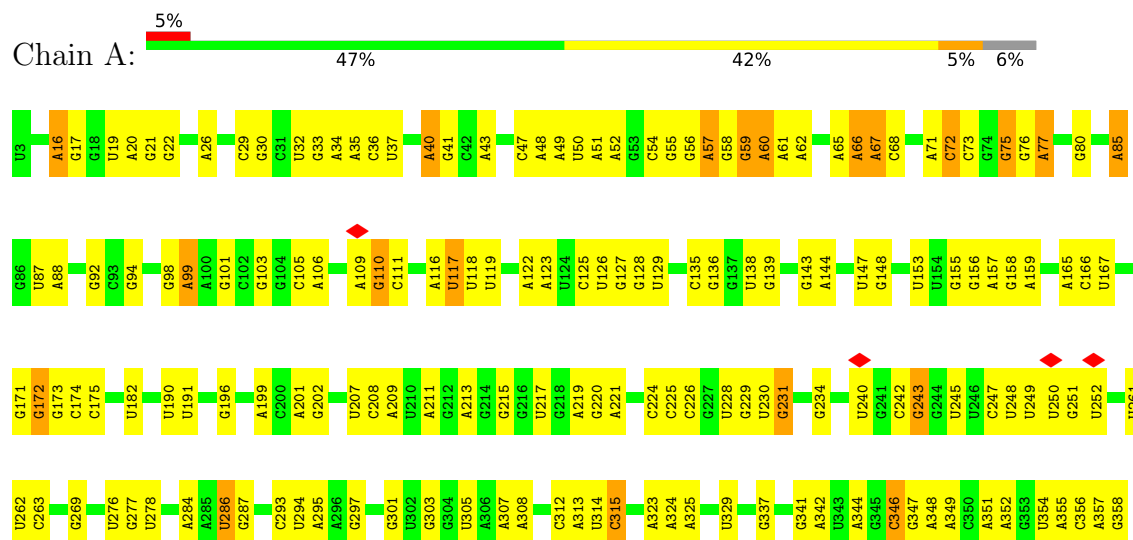
- Molecule 39: Large ribosomal subunit protein eL19A

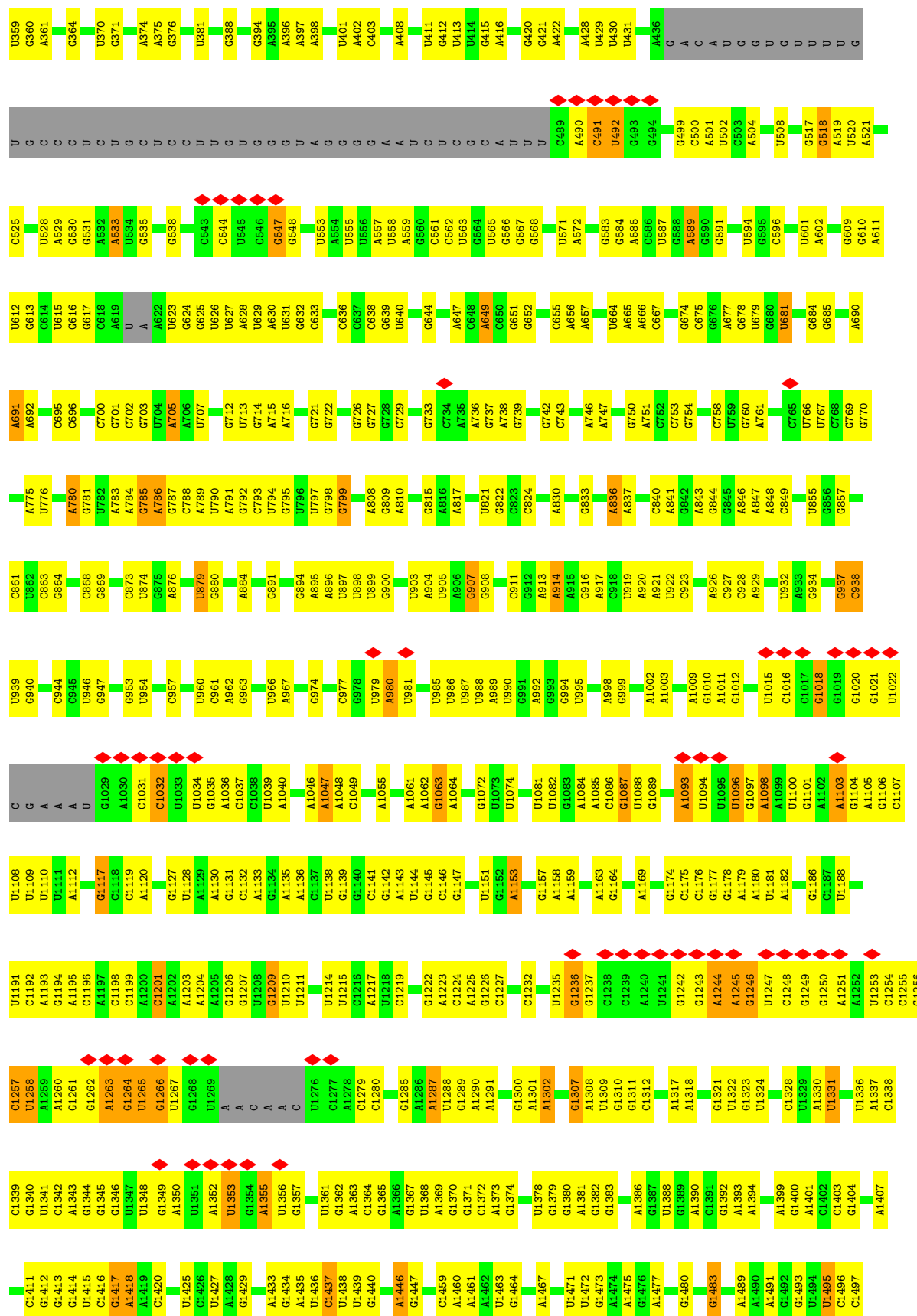


- Molecule 40: Large ribosomal subunit protein eL24A

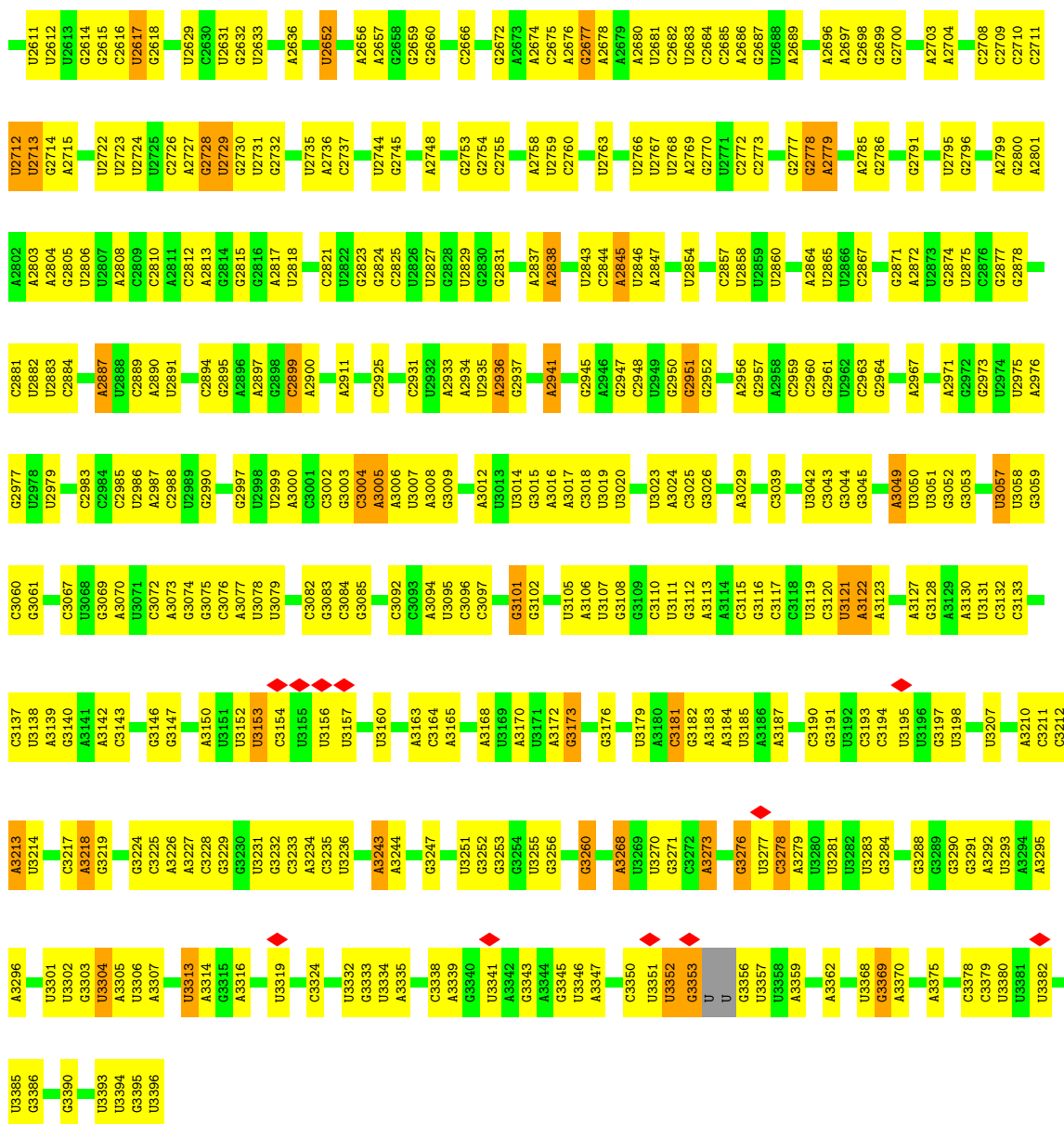


- Molecule 41: 25S rRNA



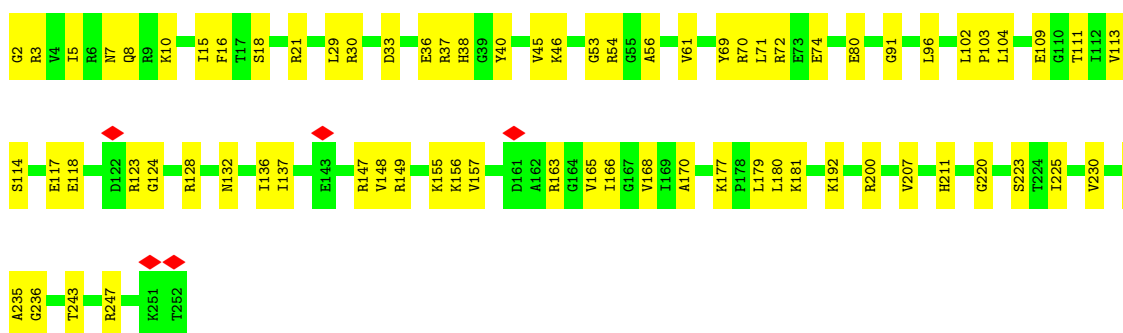






- Molecule 42: Large ribosomal subunit protein uL2A

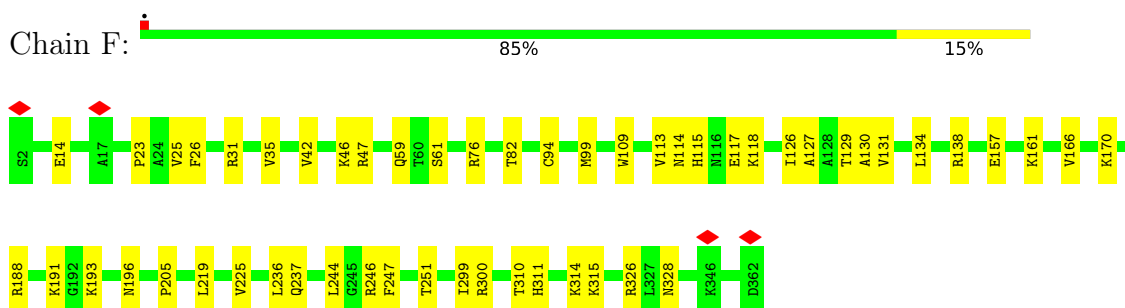
Chain D:



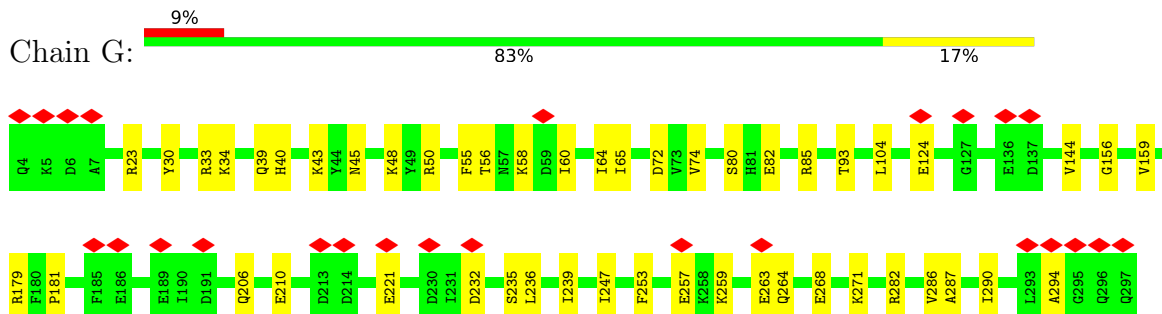
- Molecule 43: Large ribosomal subunit protein uL3



- Molecule 44: Large ribosomal subunit protein uL4A



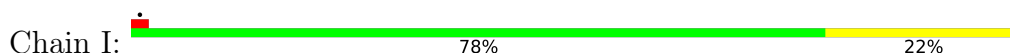
- Molecule 45: Large ribosomal subunit protein uL18

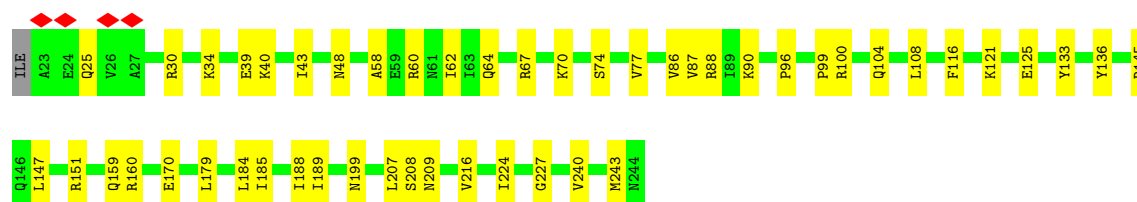


- Molecule 46: Large ribosomal subunit protein eL6B

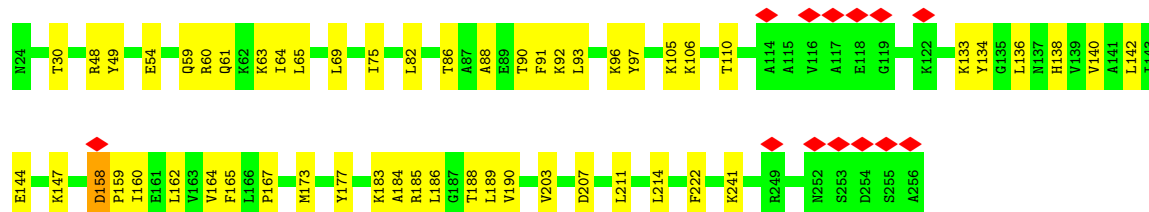
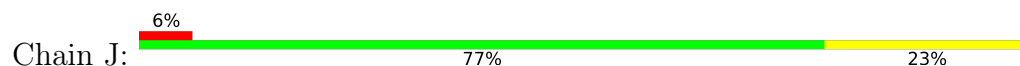


- Molecule 47: Large ribosomal subunit protein uL30A

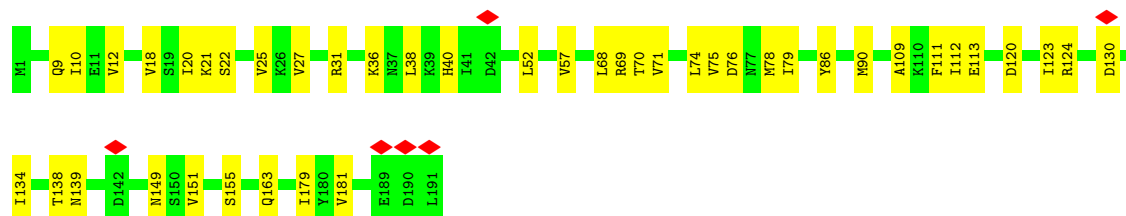
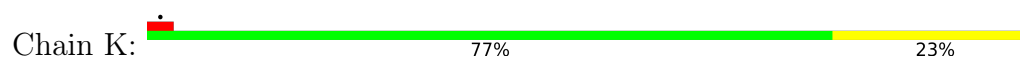




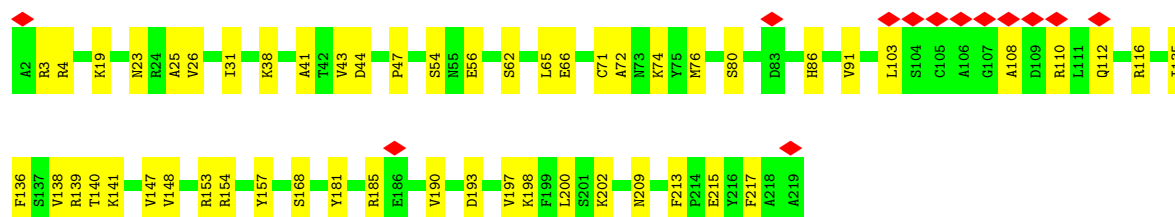
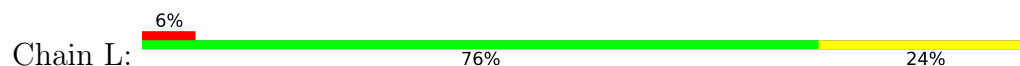
- Molecule 48: Large ribosomal subunit protein eL8A



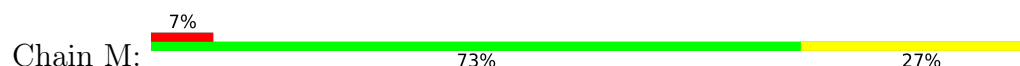
- Molecule 49: Large ribosomal subunit protein uL6A

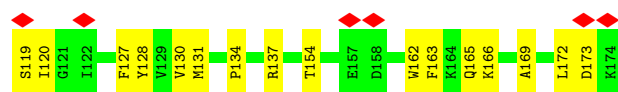


- Molecule 50: Large ribosomal subunit protein uL16

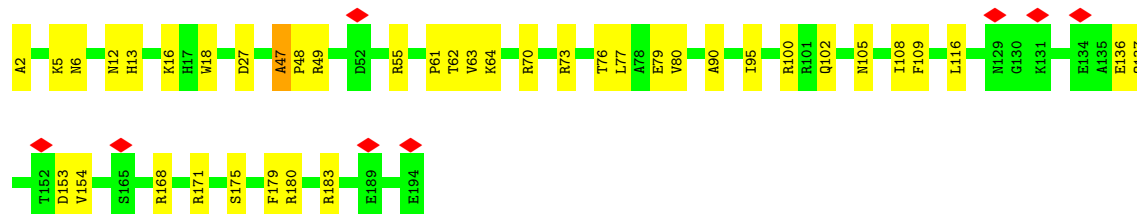
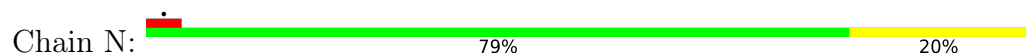


- Molecule 51: Large ribosomal subunit protein uL5B

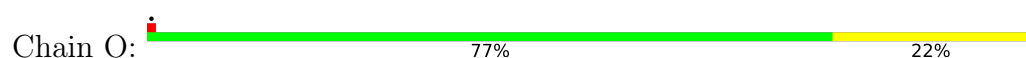




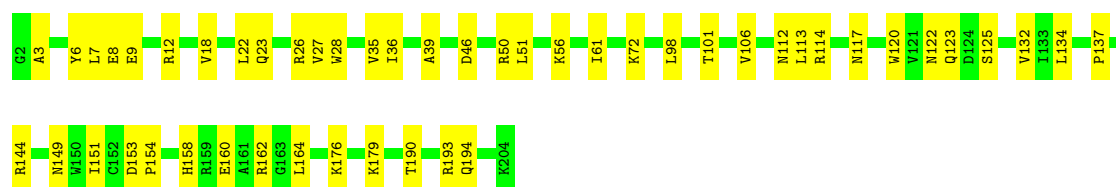
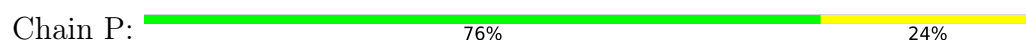
- Molecule 52: Large ribosomal subunit protein eL13A



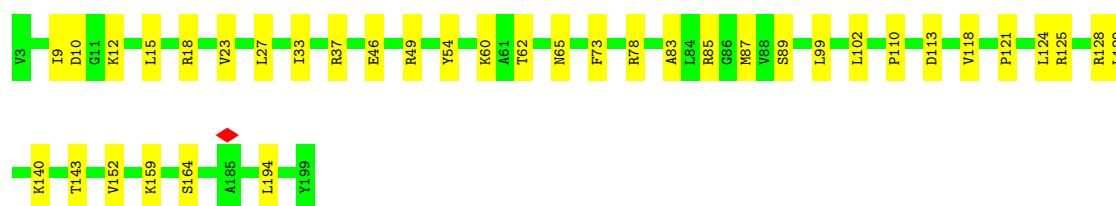
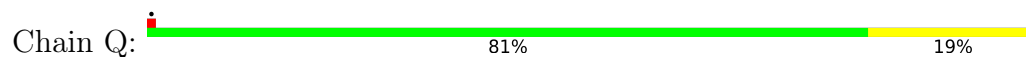
- Molecule 53: Large ribosomal subunit protein eL14A



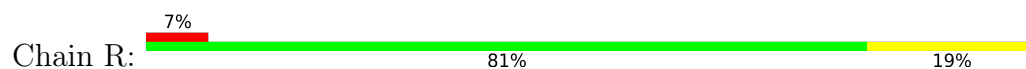
- Molecule 54: Large ribosomal subunit protein eL15A



- Molecule 55: Large ribosomal subunit protein uL13A



- Molecule 56: Large ribosomal subunit protein uL22A





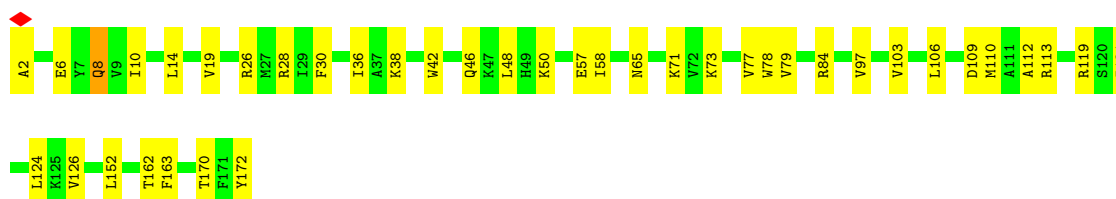
- Molecule 57: Large ribosomal subunit protein eL18A

Chain S: 79% 21%



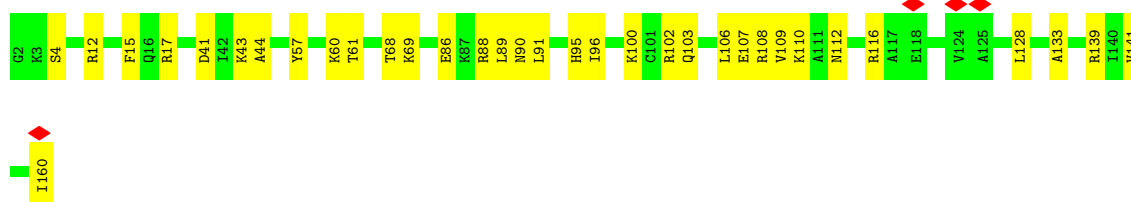
- Molecule 58: Large ribosomal subunit protein eL20A

Chain U: 77% 23%



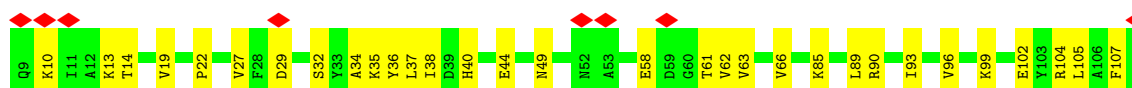
- Molecule 59: Large ribosomal subunit protein eL21A

Chain V: 79% 21%



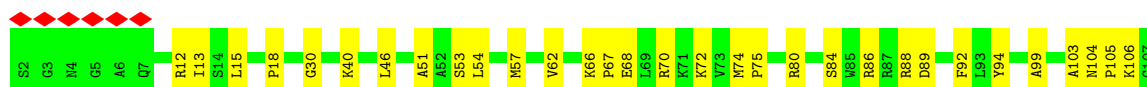
- Molecule 60: Large ribosomal subunit protein eL22A

Chain W: 8% 69% 31%



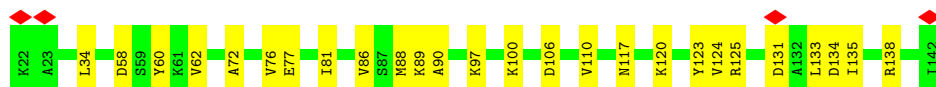
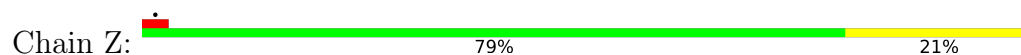
- Molecule 61: Large ribosomal subunit protein uL14A

Chain X: 72% 28%

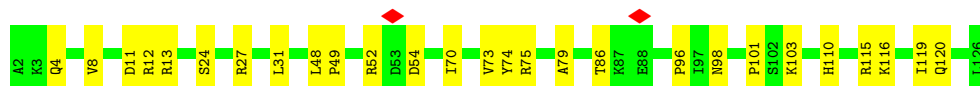
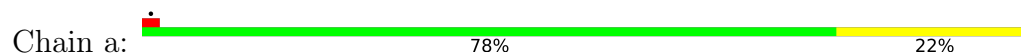




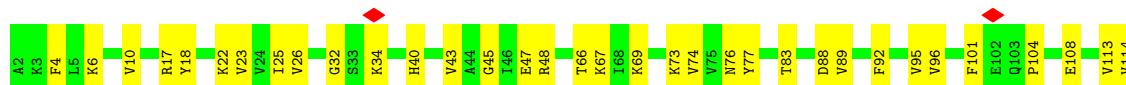
- Molecule 62: Large ribosomal subunit protein uL23



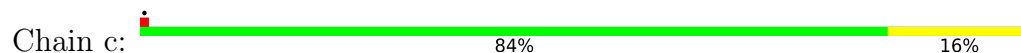
- Molecule 63: Large ribosomal subunit protein uL24A



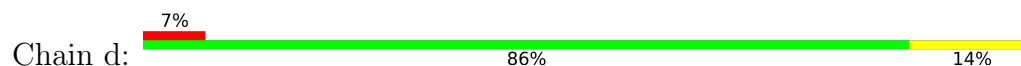
- Molecule 64: Large ribosomal subunit protein eL27A



- Molecule 65: Large ribosomal subunit protein uL15



- Molecule 66: Large ribosomal subunit protein eL29

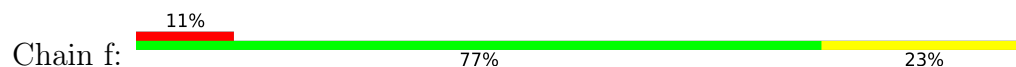


- Molecule 67: Large ribosomal subunit protein eL30

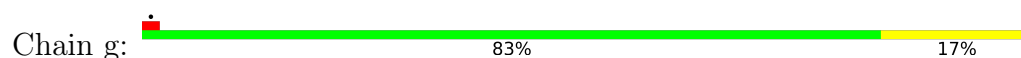




- Molecule 68: Large ribosomal subunit protein eL31A



- Molecule 69: Large ribosomal subunit protein eL32



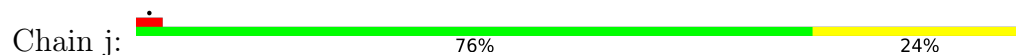
- Molecule 70: Large ribosomal subunit protein eL33A



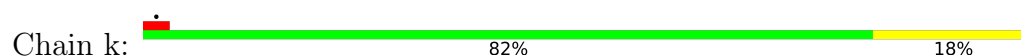
- Molecule 71: Large ribosomal subunit protein eL34A



- Molecule 72: Large ribosomal subunit protein uL29A

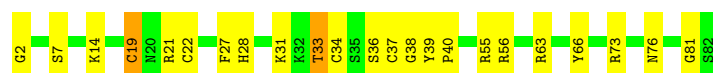


- Molecule 73: Large ribosomal subunit protein eL36A



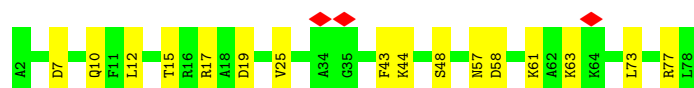
- Molecule 74: Large ribosomal subunit protein eL37A

Chain l:  72% 26%



- Molecule 75: Large ribosomal subunit protein eL38

Chain m:  79% 21%



- Molecule 76: Large ribosomal subunit protein eL39

Chain n:  84% 16%



- Molecule 77: Large ribosomal subunit protein eL40A

Chain o:  83% 17%



- Molecule 78: Large ribosomal subunit protein eL41A

Chain p:  60% 40%



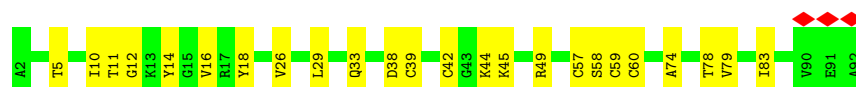
- Molecule 79: Large ribosomal subunit protein eL42A

Chain q:  85% 15%



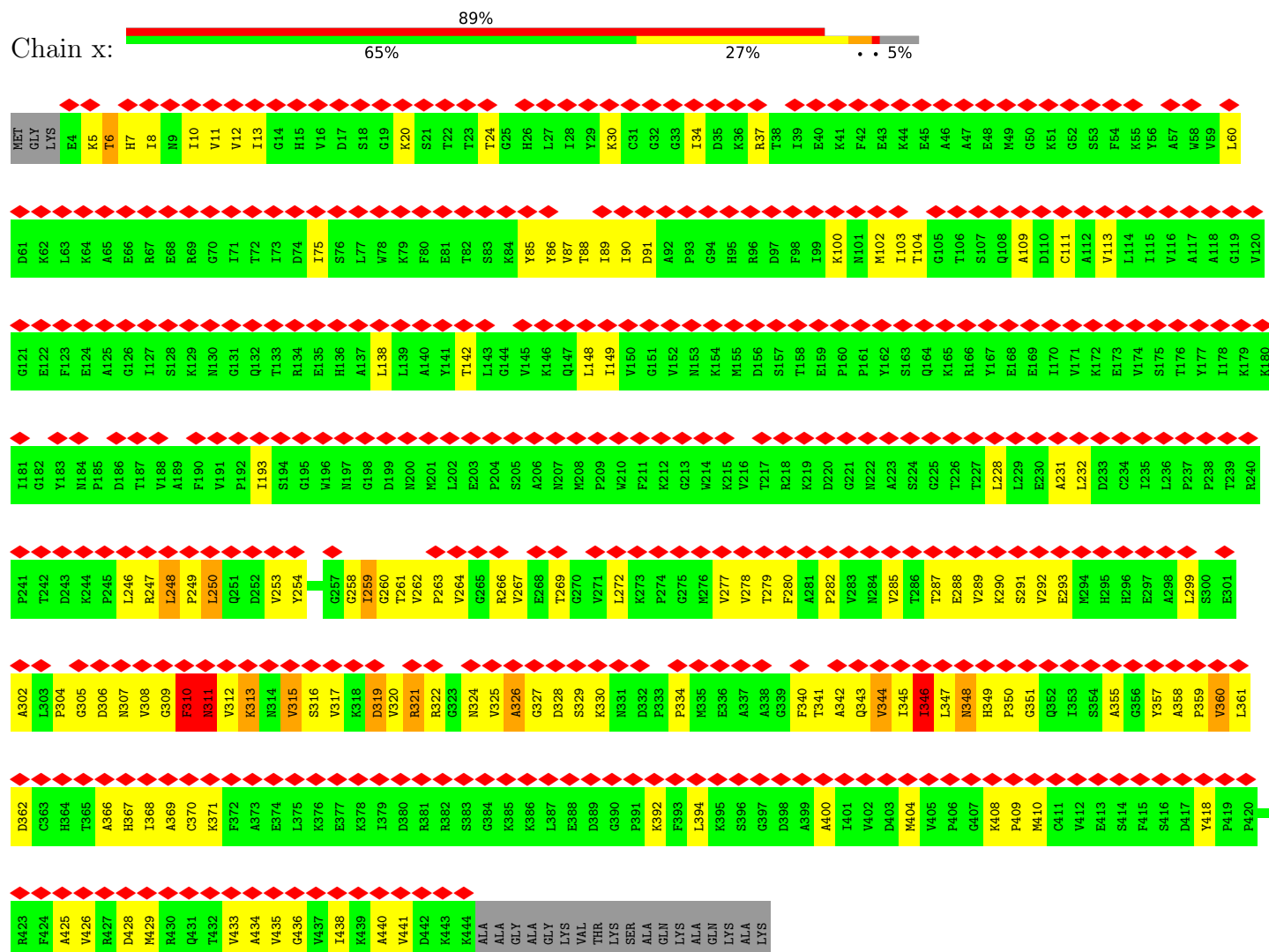
- Molecule 80: Large ribosomal subunit protein eL43A

Chain r:  74% 26%



• Molecule 81: Elongation factor 1-alpha 1

Chain x:



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	150024	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	Not provided	
Image detector	GATAN K2 QUANTUM (4k x 4k)	Depositor
Maximum map value	1.974	Depositor
Minimum map value	-1.157	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.073	Depositor
Recommended contour level	0.23	Depositor
Map size ($\text{\AA}$)	528.0, 528.0, 528.0	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	1.32, 1.32, 1.32	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# $ Z > 5$	RMSZ	# $ Z > 5$
1	2	0.07	0/42211	0.17	0/65773
2	SA	0.16	0/1754	0.39	0/2361
3	SB	0.20	0/1625	0.42	0/2197
4	SC	0.12	0/769	0.35	0/1039
5	SD	0.15	0/883	0.49	0/1199
6	SE	0.13	0/936	0.36	0/1259
7	SF	0.18	0/1125	0.45	0/1510
8	SG	0.14	0/971	0.45	0/1303
9	SH	0.16	0/1207	0.39	1/1623 (0.1%)
10	SI	0.12	0/1130	0.34	0/1517
11	SJ	0.14	0/807	0.55	1/1091 (0.1%)
12	SK	0.17	0/661	0.54	0/888
13	SL	0.10	0/493	0.28	0/663
14	SM	0.12	0/452	0.36	0/600
15	SN	0.18	0/567	0.49	0/764
16	SO	0.18	0/2436	0.50	2/3318 (0.1%)
17	SP	0.11	0/1644	0.31	0/2249
18	SQ	0.14	0/1823	0.37	0/2447
19	SR	0.12	0/1656	0.35	0/2251
20	SS	0.11	0/2097	0.33	0/2823
21	ST	0.11	0/1839	0.32	0/2460
22	SU	0.17	0/1498	0.41	1/2019 (0.0%)
23	SV	0.13	0/1501	0.32	0/2006
24	SW	0.10	0/1504	0.30	0/2016
25	SX	0.10	0/1168	0.30	0/1575
26	SY	0.10	0/1215	0.27	0/1638
27	SZ	0.13	0/901	0.35	0/1217
28	Sa	0.13	0/682	0.42	0/921
29	Sb	0.10	0/1038	0.29	0/1395
30	Sc	0.16	0/1139	0.34	0/1518
31	Sd	0.12	0/1087	0.33	0/1449
32	Se	0.12	0/761	0.39	0/1016
33	Sf	0.09	0/620	0.28	0/838
34	Sg	0.10	0/480	0.28	0/639

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
35	s	0.11	0/1805	0.27	2/2809 (0.1%)
36	t	0.07	0/1796	0.16	0/2799
37	B	0.05	0/2883	0.11	0/4491
38	C	0.05	0/3746	0.12	0/5832
39	T	0.09	0/1532	0.29	0/2043
40	Y	0.10	0/850	0.30	0/1152
41	A	0.08	0/76303	0.19	0/118956
42	D	0.09	0/1933	0.26	0/2598
43	E	0.09	0/3146	0.26	0/4228
44	F	0.09	0/2800	0.26	0/3790
45	G	0.11	0/2400	0.30	0/3239
46	H	0.14	0/1329	0.35	0/1794
47	I	0.11	0/1821	0.27	0/2451
48	J	0.13	0/1836	0.34	0/2481
49	K	0.13	0/1529	0.34	0/2060
50	L	0.11	0/1801	0.29	0/2416
51	M	0.13	0/1367	0.38	0/1834
52	N	0.12	0/1568	0.29	0/2106
53	O	0.09	0/1068	0.22	0/1438
54	P	0.08	0/1757	0.22	0/2354
55	Q	0.13	0/1585	0.28	0/2128
56	R	0.14	0/1439	0.29	0/1938
57	S	0.10	0/1465	0.25	0/1965
58	U	0.09	0/1473	0.27	0/1980
59	V	0.11	0/1296	0.30	0/1739
60	W	0.13	0/812	0.42	0/1099
61	X	0.14	0/1018	0.33	0/1369
62	Z	0.10	0/979	0.32	0/1321
63	a	0.10	0/995	0.26	0/1329
64	b	0.12	0/1106	0.31	0/1485
65	c	0.09	0/1200	0.27	0/1607
66	d	0.09	0/473	0.24	0/629
67	e	0.12	0/745	0.33	0/1001
68	f	0.09	0/890	0.25	0/1196
69	g	0.07	0/1034	0.21	0/1385
70	h	0.10	0/868	0.26	0/1168
71	i	0.11	0/890	0.29	0/1189
72	j	0.15	0/978	0.36	1/1301 (0.1%)
73	k	0.10	0/772	0.28	0/1026
74	l	0.36	1/660 (0.2%)	0.47	0/875
75	m	0.14	0/618	0.34	0/826
76	n	0.09	0/443	0.24	0/588
77	o	0.12	0/416	0.34	0/553

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
78	p	0.13	0/230	0.36	0/296
79	q	0.09	0/836	0.26	0/1104
80	r	0.17	0/701	0.40	0/934
81	x	0.54	0/3449	0.82	5/4667 (0.1%)
All	All	0.12	1/221321 (0.0%)	0.27	13/325151 (0.0%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
74	l	33	THR	C-N	5.71	1.41	1.33

All (13) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
81	x	311	ASN	CA-C-N	-7.95	107.66	121.97
81	x	311	ASN	C-N-CA	-7.95	107.66	121.97
11	SJ	101	LYS	N-CA-C	-7.19	103.71	114.64
35	s	76	C	C4'-C3'-O3'	6.83	119.65	109.40
16	SO	52	GLN	CA-C-N	-6.26	111.80	120.38
16	SO	52	GLN	C-N-CA	-6.26	111.80	120.38
81	x	319	ASP	N-CA-C	-6.06	104.75	111.36
81	x	321	ARG	N-CA-C	6.05	117.73	108.42
35	s	76	C	O3'-P-O5'	6.04	113.07	104.00
9	SH	82	PRO	CA-N-CD	-6.00	103.61	112.00
22	SU	63	PRO	CA-N-CD	-5.94	103.68	112.00
81	x	311	ASN	N-CA-C	-5.51	99.28	108.32
72	j	84	LYS	CB-CA-C	-5.33	110.41	116.54

There are no chirality outliers.

There are no planarity outliers.

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	2	37739	0	18988	436	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	SA	1729	0	1812	39	0
3	SB	1605	0	1669	52	0
4	SC	752	0	719	29	0
5	SD	875	0	878	27	0
6	SE	916	0	941	19	0
7	SF	1105	0	1166	64	0
8	SG	961	0	999	39	0
9	SH	1188	0	1218	28	0
10	SI	1112	0	1124	26	0
11	SJ	797	0	863	27	0
12	SK	651	0	682	15	0
13	SL	491	0	524	13	0
14	SM	442	0	432	12	0
15	SN	556	0	549	15	0
16	SO	2383	0	2332	115	0
17	SP	1603	0	1610	35	0
18	SQ	1798	0	1890	40	0
19	SR	1626	0	1715	41	0
20	SS	2056	0	2140	47	0
21	ST	1815	0	1894	44	0
22	SU	1473	0	1555	35	0
23	SV	1476	0	1501	47	0
24	SW	1479	0	1556	37	0
25	SX	1142	0	1209	13	0
26	SY	1192	0	1255	21	0
27	SZ	891	0	883	29	0
28	Sa	673	0	662	21	0
29	Sb	1021	0	1060	30	0
30	Sc	1121	0	1196	37	0
31	Sd	1073	0	1132	23	0
32	Se	750	0	799	18	0
33	Sf	610	0	633	8	0
34	Sg	472	0	521	9	0
35	s	1616	0	824	82	0
36	t	1606	0	816	9	0
37	B	2579	0	1304	28	0
38	C	3353	0	1695	33	0
39	T	1515	0	1606	29	0
40	Y	836	0	706	16	0
41	A	68170	0	34260	1138	0
42	D	1899	0	1957	57	0
43	E	3075	0	3142	70	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
44	F	2748	0	2859	40	0
45	G	2351	0	2294	33	0
46	H	1307	0	1377	39	0
47	I	1784	0	1862	33	0
48	J	1804	0	1877	40	0
49	K	1508	0	1572	27	0
50	L	1764	0	1804	42	0
51	M	1346	0	1370	34	0
52	N	1543	0	1608	30	0
53	O	1053	0	1149	26	0
54	P	1720	0	1779	41	0
55	Q	1555	0	1659	29	0
56	R	1416	0	1433	27	0
57	S	1441	0	1543	30	0
58	U	1437	0	1475	32	0
59	V	1272	0	1312	29	0
60	W	796	0	812	22	0
61	X	1003	0	1048	22	0
62	Z	964	0	1025	20	0
63	a	984	0	1075	20	0
64	b	1080	0	1122	31	0
65	c	1169	0	1211	19	0
66	d	462	0	491	7	0
67	e	737	0	792	18	0
68	f	876	0	912	14	0
69	g	1013	0	1077	19	0
70	h	850	0	880	21	0
71	i	880	0	945	23	0
72	j	969	0	1078	20	0
73	k	766	0	844	11	0
74	l	645	0	649	29	0
75	m	612	0	682	12	0
76	n	436	0	475	7	0
77	o	410	0	446	8	0
78	p	229	0	273	10	0
79	q	824	0	892	12	0
80	r	694	0	738	20	0
81	x	3379	0	3433	287	0
All	All	206049	0	152290	3519	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 (3519) 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)
81:x:280:PHE:HB3	81:x:324:ASN:CG	1.48	1.35
35:s:77:A:C5	81:x:293:GLU:HG3	1.76	1.20
81:x:346:ILE:HA	81:x:434:ALA:CA	1.72	1.18
81:x:280:PHE:CD1	81:x:324:ASN:HB2	1.80	1.16
30:Sc:63:GLN:HB3	30:Sc:64:PRO:HD2	1.23	1.14
35:s:77:A:H4'	81:x:264:VAL:HG21	1.30	1.13
35:s:77:A:H2	81:x:291:SER:C	1.56	1.12
81:x:358:ALA:HA	81:x:370:CYS:O	1.48	1.10
1:2:430:G:H5''	81:x:290:LYS:HE3	1.34	1.08
81:x:325:VAL:HB	81:x:334:PRO:HG3	1.16	1.08
81:x:346:ILE:HA	81:x:434:ALA:HA	1.09	1.07
81:x:262:VAL:HA	81:x:311:ASN:CA	1.83	1.06
74:l:22:CYS:HB2	74:l:37:CYS:SG	1.96	1.05
81:x:262:VAL:HG22	81:x:311:ASN:HB2	1.40	1.04
81:x:280:PHE:HD1	81:x:324:ASN:HB2	0.90	1.03
35:s:77:A:C4	81:x:293:GLU:HG3	1.93	1.03
81:x:7:HIS:CD2	81:x:86:TYR:CD1	2.47	1.03
81:x:262:VAL:CA	81:x:311:ASN:HA	1.87	1.03
81:x:250:LEU:HD11	81:x:310:PHE:HZ	1.25	1.00
81:x:325:VAL:HB	81:x:334:PRO:CG	1.92	0.99
35:s:77:A:C2	81:x:291:SER:C	2.41	0.99
81:x:346:ILE:CA	81:x:434:ALA:HA	1.92	0.99
81:x:263:PRO:HG2	81:x:312:VAL:HG13	1.42	0.98
81:x:280:PHE:HD1	81:x:324:ASN:CB	1.75	0.98
81:x:138:LEU:HD21	81:x:347:LEU:HD13	1.44	0.97
81:x:325:VAL:CB	81:x:334:PRO:HG3	1.94	0.97
81:x:280:PHE:HB3	81:x:324:ASN:CB	1.96	0.96
41:A:508:U:H3	41:A:583:G:H1	1.08	0.96
81:x:253:VAL:HG21	81:x:320:VAL:HG12	1.49	0.95
16:SO:11:GLY:HA2	16:SO:52:GLN:HA	1.49	0.93
41:A:1662:G:H1	41:A:1787:A:H61	0.95	0.93
35:s:77:A:H4'	81:x:264:VAL:CG2	1.99	0.93
81:x:289:VAL:HG13	81:x:311:ASN:H	1.34	0.93
81:x:280:PHE:CZ	81:x:320:VAL:HG13	2.04	0.92
41:A:2471:U:H3	41:A:2475:G:H1	1.10	0.92
41:A:2427:U:H3	41:A:2602:G:H1	1.05	0.92
41:A:370:U:H3	41:A:374:A:H62	1.10	0.92
81:x:312:VAL:HG21	81:x:320:VAL:HG21	1.49	0.92
81:x:346:ILE:HA	81:x:434:ALA:CB	1.99	0.92
81:x:262:VAL:HA	81:x:311:ASN:HA	0.93	0.92

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
81:x:282:PRO:HD2	81:x:324:ASN:ND2	1.85	0.92
1:2:51:A:C2	81:x:258:GLY:O	2.22	0.92
41:A:1662:G:H1	41:A:1787:A:N6	1.68	0.91
35:s:77:A:N9	81:x:293:GLU:HB2	1.85	0.91
81:x:282:PRO:HD2	81:x:324:ASN:HD22	1.36	0.90
81:x:280:PHE:CB	81:x:324:ASN:CG	2.42	0.90
81:x:247:ARG:HD3	81:x:325:VAL:HG11	1.52	0.90
81:x:358:ALA:HB2	81:x:371:LYS:HG3	1.53	0.90
11:SJ:50:LEU:HD11	11:SJ:99:ILE:HG21	1.53	0.90
81:x:250:LEU:HD21	81:x:263:PRO:HB3	1.52	0.90
81:x:280:PHE:HA	81:x:324:ASN:HB3	1.51	0.89
35:s:77:A:C1'	81:x:293:GLU:HB2	2.02	0.89
35:s:77:A:N1	81:x:291:SER:HB3	1.88	0.88
41:A:2423:U:H3	41:A:2607:G:H1	1.18	0.88
41:A:3226:A:N6	41:A:3260:G:N1	2.20	0.88
1:2:416:A:H1'	81:x:37:ARG:NH2	1.88	0.88
1:2:430:G:C5'	81:x:290:LYS:HE3	2.02	0.88
81:x:280:PHE:HB3	81:x:324:ASN:OD1	1.73	0.88
35:s:77:A:O2'	81:x:293:GLU:CB	2.22	0.88
81:x:7:HIS:NE2	81:x:86:TYR:CD1	2.43	0.87
1:2:1797:A:H5'	32:Se:95:ARG:HD2	1.56	0.86
1:2:416:A:H1'	81:x:37:ARG:CZ	2.06	0.85
81:x:280:PHE:CA	81:x:324:ASN:HB3	2.06	0.85
41:A:1257:C:H42	41:A:1261:G:N2	1.75	0.85
60:W:36:TYR:O	60:W:40:HIS:HB2	1.76	0.85
41:A:3234:A:H61	41:A:3253:G:H1	1.23	0.85
81:x:344:VAL:HA	81:x:436:GLY:HA3	1.55	0.85
35:s:77:A:H2	81:x:291:SER:O	1.61	0.84
41:A:301:G:H1	41:A:314:U:H3	1.22	0.84
41:A:341:G:N2	41:A:349:A:N6	2.25	0.84
41:A:1257:C:N4	41:A:1261:G:H22	1.75	0.83
41:A:1717:U:H3	41:A:1727:G:H1	1.26	0.83
81:x:280:PHE:CD1	81:x:324:ASN:CB	2.53	0.83
35:s:77:A:O2'	81:x:293:GLU:C	2.20	0.83
41:A:341:G:H21	41:A:349:A:N6	1.77	0.83
81:x:11:VAL:HG23	81:x:90:ILE:HB	1.59	0.83
81:x:349:HIS:HB2	81:x:433:VAL:HB	1.59	0.82
41:A:824:C:H5''	42:D:21:ARG:HD3	1.59	0.82
41:A:3379:C:H4'	43:E:315:GLY:HA2	1.60	0.82
81:x:7:HIS:NE2	81:x:86:TYR:CE1	2.48	0.81
81:x:280:PHE:CB	81:x:324:ASN:CB	2.58	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:A:3276:G:H3'	46:H:48:ARG:HH22	1.46	0.80
61:X:62:VAL:HG23	61:X:74:MET:HE1	1.64	0.80
81:x:263:PRO:HD3	81:x:312:VAL:H	1.43	0.80
41:A:1257:C:N4	41:A:1261:G:N2	2.30	0.80
41:A:40:A:H61	41:A:963:G:N2	1.79	0.80
80:r:57:CYS:SG	80:r:58:SER:N	2.54	0.80
35:s:27:G:H1	35:s:45:A:H61	1.27	0.80
35:s:77:A:C2	81:x:292:VAL:N	2.51	0.79
1:2:632:U:H4'	30:Sc:11:SER:HB3	1.65	0.79
41:A:538:G:H1	41:A:553:U:H3	1.29	0.79
35:s:77:A:H2	81:x:292:VAL:N	1.81	0.79
41:A:2216:G:H1	41:A:2229:A:H61	1.26	0.78
81:x:289:VAL:CG1	81:x:310:PHE:HB2	2.13	0.78
15:SN:130:VAL:HG21	15:SN:143:LYS:HB3	1.65	0.78
81:x:280:PHE:CB	81:x:324:ASN:HB3	2.13	0.78
5:SD:60:VAL:HG12	5:SD:87:PRO:HB2	1.66	0.78
41:A:87:U:H3	41:A:99:A:H62	1.28	0.77
7:SF:106:LYS:HD3	16:SO:279:ALA:HB2	1.67	0.77
81:x:5:LYS:HB3	81:x:85:TYR:HA	1.67	0.77
81:x:302:ALA:HB1	81:x:308:VAL:HG21	1.67	0.77
35:s:21:U:H5'	35:s:49:C:H42	1.48	0.76
49:K:36:LYS:HB2	49:K:78:MET:HE1	1.66	0.76
1:2:1426:C:H3'	1:2:1427:A:H4'	1.67	0.76
41:A:664:U:H3	41:A:798:G:H1	1.33	0.76
81:x:263:PRO:CD	81:x:312:VAL:N	2.48	0.76
67:e:30:THR:HG23	67:e:91:SER:HB2	1.67	0.76
16:SO:12:THR:HB	16:SO:52:GLN:HG3	1.68	0.76
1:2:513:U:H1'	24:SW:131:GLN:HG2	1.68	0.75
46:H:67:GLY:HA3	46:H:74:VAL:HB	1.67	0.75
52:N:76:THR:HB	52:N:79:GLU:HG3	1.69	0.75
1:2:416:A:C1'	81:x:37:ARG:CZ	2.65	0.75
30:Sc:63:GLN:CB	30:Sc:64:PRO:HD2	2.09	0.75
81:x:263:PRO:HD2	81:x:312:VAL:N	2.01	0.75
1:2:647:G:H22	1:2:687:G:H1	1.35	0.74
41:A:2573:G:H2'	41:A:2574:G:C8	2.22	0.74
1:2:1227:A:H61	1:2:1256:A:H2'	1.51	0.74
3:SB:94:THR:HG22	3:SB:114:ILE:HG13	1.68	0.74
38:C:29:U:H5''	52:N:27:ASP:HB3	1.69	0.74
9:SH:101:LEU:H	9:SH:104:ASN:HB2	1.53	0.74
41:A:1463:U:H3	41:A:1467:A:H62	1.36	0.74
1:2:1502:G:N7	10:SI:102:ARG:NH2	2.36	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:A:1404:G:N2	41:A:1407:A:OP2	2.20	0.74
3:SB:40:ILE:HD12	3:SB:67:PRO:HG3	1.69	0.74
81:x:289:VAL:HG11	81:x:310:PHE:HB2	1.68	0.74
1:2:430:G:H4'	81:x:260:GLY:N	2.02	0.73
30:Sc:63:GLN:HB3	30:Sc:64:PRO:CD	2.10	0.73
57:S:123:THR:OG1	57:S:126:GLN:NE2	2.20	0.73
81:x:344:VAL:HA	81:x:436:GLY:CA	2.18	0.73
1:2:430:G:H4'	81:x:260:GLY:H	1.53	0.73
41:A:40:A:H61	41:A:963:G:H21	1.33	0.73
41:A:1236:G:N2	41:A:1244:A:OP1	2.20	0.73
41:A:1310:G:H2'	41:A:1311:G:C8	2.24	0.73
35:s:19:G:N2	41:A:1242:G:OP1	2.21	0.73
23:SV:171:SER:HB3	23:SV:180:ASP:H	1.54	0.73
16:SO:42:LEU:HD11	16:SO:68:VAL:HG11	1.70	0.73
7:SF:95:LYS:HG2	7:SF:96:TYR:CE1	2.24	0.72
81:x:285:VAL:HG11	81:x:319:ASP:HB3	1.70	0.72
81:x:262:VAL:HG13	81:x:310:PHE:O	1.89	0.72
24:SW:99:LEU:HD23	24:SW:104:PHE:HE1	1.55	0.72
81:x:361:LEU:HD23	81:x:410:MET:HE1	1.71	0.72
41:A:1246:G:N2	41:A:1266:G:OP2	2.22	0.72
67:e:17:VAL:HG11	67:e:92:ILE:HD12	1.71	0.72
35:s:9:A:H62	35:s:24:C:H41	1.37	0.72
59:V:68:THR:HG22	59:V:69:LYS:H	1.53	0.72
81:x:261:THR:O	81:x:312:VAL:N	2.23	0.72
1:2:1022:C:O2'	1:2:1125:A:N1	2.23	0.72
16:SO:8:VAL:HG12	16:SO:314:GLN:HE21	1.55	0.72
16:SO:149:ASP:HB3	16:SO:175:ASP:HB3	1.72	0.72
41:A:3213:A:N7	53:O:124:ARG:NH2	2.37	0.72
60:W:96:VAL:HG21	60:W:104:ARG:HH21	1.55	0.72
41:A:655:C:H2'	41:A:656:A:H8	1.55	0.71
35:s:77:A:C2'	81:x:293:GLU:HB2	2.19	0.71
10:SI:42:GLY:HA2	10:SI:84:LYS:HD2	1.71	0.71
16:SO:69:GLN:N	16:SO:83:ALA:O	2.23	0.71
20:SS:7:LYS:O	20:SS:8:HIS:ND1	2.23	0.71
41:A:68:C:N4	41:A:314:U:O2'	2.21	0.71
3:SB:47:SER:HB2	3:SB:128:ASN:HD21	1.55	0.71
35:s:77:A:H5'	81:x:254:TYR:CD2	2.24	0.71
41:A:1035:G:H2'	41:A:1036:A:H8	1.56	0.71
1:2:224:C:O2'	1:2:225:A:OP1	2.08	0.71
81:x:250:LEU:HD11	81:x:310:PHE:CZ	2.17	0.71
32:Se:10:ARG:HB3	32:Se:34:LYS:HA	1.73	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:SB:58:LEU:HD12	3:SB:138:THR:HG22	1.73	0.71
7:SF:95:LYS:HA	16:SO:53:LYS:HG2	1.72	0.71
7:SF:97:VAL:O	16:SO:53:LYS:NZ	2.22	0.71
41:A:101:G:N2	41:A:101:G:OP2	2.24	0.71
41:A:1336:U:H2'	41:A:1337:A:H8	1.56	0.70
1:2:1339:C:O2'	1:2:1341:A:N7	2.24	0.70
41:A:3226:A:N6	41:A:3260:G:H1	1.88	0.70
1:2:1291:G:OP2	1:2:1291:G:N2	2.23	0.70
2:SA:76:ARG:NH1	2:SA:76:ARG:O	2.21	0.70
41:A:341:G:N2	41:A:349:A:C6	2.60	0.70
65:c:6:THR:HG22	65:c:8:THR:H	1.57	0.70
81:x:263:PRO:HD2	81:x:311:ASN:CA	2.22	0.70
41:A:87:U:O4	41:A:99:A:N7	2.25	0.70
21:ST:142:ARG:HA	21:ST:147:LEU:HB2	1.74	0.70
41:A:894:G:N2	41:A:1660:C:OP1	2.24	0.70
1:2:936:G:OP1	1:2:1074:G:N2	2.25	0.70
41:A:797:U:O2	52:N:12:ASN:ND2	2.25	0.70
81:x:287:THR:HB	81:x:315:VAL:HG11	1.74	0.70
3:SB:187:ILE:HG21	12:SK:66:VAL:HG11	1.74	0.69
10:SI:115:GLU:OE1	10:SI:115:GLU:N	2.24	0.69
35:s:51:U:H3	35:s:65:G:H1	1.40	0.69
41:A:50:U:H2'	41:A:51:A:H8	1.57	0.69
81:x:367:HIS:O	81:x:368:ILE:HG13	1.91	0.69
21:ST:63:MET:HG2	21:ST:98:ARG:HG2	1.74	0.69
41:A:990:U:H4'	59:V:100:LYS:HB2	1.74	0.69
1:2:127:G:N7	21:ST:202:ARG:NH2	2.40	0.69
1:2:539:G:O2'	1:2:540:G:OP2	2.10	0.69
41:A:1237:G:H1	41:A:1251:A:H2	1.41	0.69
13:SL:27:GLN:OE1	13:SL:43:ASN:ND2	2.25	0.69
3:SB:35:GLN:O	3:SB:35:GLN:NE2	2.25	0.69
5:SD:40:GLY:HA2	5:SD:124:LYS:HB2	1.73	0.69
81:x:263:PRO:CD	81:x:312:VAL:H	2.05	0.69
81:x:288:GLU:O	81:x:313:LYS:HG2	1.92	0.69
1:2:394:C:H42	1:2:401:A:H62	1.41	0.69
16:SO:153:GLN:HE22	16:SO:202:LEU:HG	1.56	0.69
35:s:77:A:O2'	81:x:293:GLU:HB2	1.92	0.69
41:A:2660:G:H1'	41:A:2744:U:H1'	1.73	0.69
47:I:86:VAL:HG13	47:I:136:TYR:HB3	1.74	0.68
61:X:103:ALA:HA	61:X:109:MET:HA	1.75	0.68
20:SS:19:LEU:HD11	20:SS:108:ARG:HD2	1.74	0.68
20:SS:68:ARG:HG3	20:SS:76:VAL:HG11	1.75	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:s:77:A:C4	81:x:293:GLU:CG	2.74	0.68
7:SF:46:PHE:HA	7:SF:49:TYR:HB2	1.75	0.68
81:x:263:PRO:HD2	81:x:311:ASN:C	2.17	0.68
41:A:87:U:H3	41:A:99:A:N6	1.91	0.68
81:x:290:LYS:HG3	81:x:313:LYS:HB3	1.74	0.68
40:Y:43:ARG:NH2	41:A:2112:U:O2'	2.27	0.68
41:A:491:C:H3'	41:A:492:U:H5''	1.75	0.68
43:E:227:GLU:HG2	43:E:270:ARG:HE	1.58	0.68
53:O:60:LEU:HD13	58:U:152:LEU:HD11	1.76	0.68
2:SA:217:ILE:C	2:SA:219:ALA:H	2.00	0.68
16:SO:178:VAL:HB	16:SO:192:PHE:HB2	1.75	0.68
31:Sd:55:VAL:HG12	31:Sd:75:VAL:HG12	1.74	0.68
41:A:3234:A:N6	41:A:3253:G:H1	1.91	0.68
81:x:282:PRO:CD	81:x:324:ASN:HD22	2.06	0.68
16:SO:281:TYR:HE2	16:SO:286:GLU:HA	1.59	0.68
23:SV:103:GLN:HG2	23:SV:164:ARG:HD3	1.76	0.68
41:A:1695:U:O2'	41:A:1749:A:N1	2.26	0.68
19:SR:104:VAL:O	19:SR:112:GLY:N	2.26	0.68
22:SU:141:ARG:HA	29:Sb:51:GLU:HB2	1.76	0.68
29:Sb:106:THR:HG23	29:Sb:108:ALA:H	1.57	0.68
39:T:43:LYS:NZ	41:A:1765:U:OP2	2.26	0.68
81:x:278:VAL:CG1	81:x:326:ALA:HB1	2.24	0.68
6:SE:110:GLU:HB2	9:SH:119:ILE:HD13	1.76	0.67
68:f:9:THR:HG23	68:f:76:SER:HB3	1.76	0.67
76:n:25:GLN:OE1	76:n:28:ARG:NH1	2.27	0.67
1:2:1653:C:O3'	78:p:21:ARG:NH1	2.27	0.67
81:x:262:VAL:HG22	81:x:311:ASN:CB	2.22	0.67
1:2:1104:U:OP1	30:Sc:14:LYS:NZ	2.26	0.67
41:A:1104:G:H2'	41:A:1105:A:H8	1.60	0.67
41:A:2948:C:OP1	43:E:244:ARG:NH2	2.28	0.67
81:x:246:LEU:HD12	81:x:269:THR:O	1.94	0.67
1:2:126:A:HO2'	1:2:264:G:HO2'	1.40	0.67
81:x:262:VAL:CG2	81:x:311:ASN:HB2	2.22	0.67
1:2:1297:G:N2	1:2:1300:A:OP2	2.26	0.67
41:A:547:G:H2'	41:A:548:G:H8	1.59	0.67
41:A:627:U:H2'	41:A:628:A:H8	1.60	0.67
1:2:1073:G:H4'	26:SY:10:GLY:HA2	1.76	0.67
81:x:263:PRO:HB2	81:x:310:PHE:CE2	2.30	0.67
1:2:72:A:H2'	1:2:73:U:H4'	1.77	0.67
40:Y:45:ASN:HB3	40:Y:48:ARG:HG3	1.77	0.67
74:l:22:CYS:CB	74:l:34:CYS:SG	2.82	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SG:110:VAL:HG12	8:SG:115:LEU:HA	1.77	0.67
81:x:280:PHE:CB	81:x:324:ASN:OD1	2.41	0.67
23:SV:172:ARG:HE	23:SV:175:GLN:HG3	1.58	0.67
41:A:2423:U:H2'	41:A:2424:A:H8	1.60	0.67
44:F:300:ARG:O	57:S:39:ARG:NH2	2.27	0.67
74:l:22:CYS:HB2	74:l:37:CYS:HG	1.59	0.66
1:2:629:U:OP2	1:2:969:C:N4	2.24	0.66
41:A:2393:G:N2	41:A:2394:G:O6	2.28	0.66
41:A:2631:U:H2'	41:A:2632:G:H8	1.59	0.66
52:N:153:ASP:OD1	52:N:154:VAL:N	2.28	0.66
1:2:521:A:N3	31:Sd:34:ASN:ND2	2.43	0.66
19:SR:53:ILE:HD12	19:SR:56:ILE:HD12	1.76	0.66
41:A:2555:G:N2	64:b:135:ARG:O	2.29	0.66
1:2:135:A:H4'	1:2:136:C:H5'	1.76	0.66
1:2:1410:A:H5''	7:SF:118:ILE:HG23	1.75	0.66
24:SW:45:ILE:HD11	24:SW:104:PHE:HB3	1.75	0.66
41:A:2837:A:H5''	50:L:154:ARG:HE	1.60	0.66
66:d:8:THR:HG22	66:d:10:HIS:H	1.60	0.66
40:Y:23:ARG:HH21	40:Y:29:PHE:HZ	1.44	0.66
41:A:99:A:H5'	54:P:194:GLN:HB3	1.77	0.66
41:A:2339:C:O2'	41:A:2340:U:O4'	2.11	0.66
62:Z:90:ALA:O	62:Z:120:LYS:NZ	2.26	0.66
81:x:277:VAL:HG13	81:x:329:SER:HB3	1.76	0.66
48:J:162:LEU:HG	54:P:7:LEU:HD11	1.77	0.66
53:O:19:ARG:HG2	53:O:65:LEU:HD23	1.78	0.66
4:SC:32:HIS:HD2	4:SC:42:VAL:HG11	1.60	0.66
71:i:79:SER:OG	71:i:80:ARG:NH1	2.29	0.66
35:s:77:A:C2	81:x:292:VAL:CA	2.79	0.66
35:s:77:A:N1	81:x:291:SER:CB	2.58	0.66
22:SU:47:ARG:HB3	22:SU:59:ALA:HB3	1.77	0.66
81:x:310:PHE:H	81:x:310:PHE:HD1	1.44	0.66
1:2:65:A:H2	1:2:84:A:H62	1.43	0.65
48:J:90:THR:HA	48:J:214:LEU:HD21	1.78	0.65
1:2:1555:A:N6	14:SM:14:TYR:OH	2.29	0.65
41:A:1145:G:N2	41:A:1331:U:O2'	2.27	0.65
49:K:112:ILE:HD11	49:K:134:ILE:HD13	1.78	0.65
81:x:193:ILE:HD13	81:x:228:LEU:HD12	1.79	0.65
81:x:358:ALA:HA	81:x:370:CYS:C	2.22	0.65
7:SF:71:GLY:O	7:SF:77:GLN:NE2	2.29	0.65
60:W:44:GLU:OE1	60:W:49:ASN:ND2	2.29	0.65
72:j:104:GLN:O	72:j:108:GLN:HG3	1.97	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
74:l:19:CYS:SG	74:l:27:PHE:HB2	2.35	0.65
81:x:11:VAL:HA	81:x:90:ILE:HB	1.78	0.65
21:ST:32:ILE:HD13	21:ST:54:GLY:H	1.62	0.65
41:A:1010:G:N2	50:L:193:ASP:OD2	2.29	0.65
81:x:289:VAL:HA	81:x:311:ASN:O	1.96	0.65
24:SW:66:ASP:HB3	24:SW:69:ARG:HB3	1.77	0.65
40:Y:23:ARG:NH1	40:Y:25:ASP:OD2	2.29	0.65
41:A:370:U:H3	41:A:374:A:N6	1.91	0.65
30:Sc:69:ARG:NH2	30:Sc:116:ASP:OD2	2.29	0.65
2:SA:217:ILE:O	2:SA:218:LEU:HG	1.97	0.65
21:ST:1:MET:N	21:ST:18:ILE:O	2.29	0.65
23:SV:57:ALA:HB2	23:SV:177:GLY:HA2	1.79	0.65
65:c:100:PRO:HG2	65:c:123:VAL:HG23	1.78	0.65
21:ST:44:GLU:N	21:ST:44:GLU:OE2	2.29	0.65
35:s:77:A:O2'	81:x:293:GLU:HB3	1.95	0.65
41:A:499:G:O4'	41:A:3273:A:N6	2.30	0.65
16:SO:10:ARG:N	16:SO:312:VAL:O	2.30	0.64
41:A:297:G:OP2	41:A:297:G:N2	2.20	0.64
41:A:1427:U:OP2	65:c:4:ARG:NH1	2.26	0.64
44:F:35:VAL:HG21	44:F:244:LEU:HD21	1.78	0.64
48:J:158:ASP:HB2	48:J:159:PRO:HD2	1.78	0.64
54:P:8:GLU:HB2	54:P:50:ARG:HH12	1.62	0.64
41:A:2317:A:H2'	41:A:2318:U:C6	2.32	0.64
41:A:2433:U:H1'	54:P:125:SER:HB3	1.80	0.64
56:R:122:ALA:HB3	56:R:143:PRO:HB2	1.78	0.64
1:2:359:A:H62	30:Sc:35:GLY:HA3	1.62	0.64
1:2:539:G:H5'	1:2:542:A:H8	1.61	0.64
1:2:1610:G:OP1	3:SB:72:HIS:NE2	2.25	0.64
1:2:1614:A:OP2	3:SB:84:LYS:NZ	2.29	0.64
2:SA:154:ASP:OD1	2:SA:155:GLY:N	2.30	0.64
3:SB:69:PHE:CD2	7:SF:50:GLU:HG2	2.33	0.64
41:A:681:U:O2	41:A:696:C:N4	2.27	0.64
81:x:253:VAL:CG2	81:x:320:VAL:HG12	2.25	0.64
13:SL:38:ARG:HH22	32:Se:55:GLU:HG3	1.62	0.64
41:A:1157:G:OP1	47:I:90:LYS:NZ	2.31	0.64
81:x:253:VAL:HG12	81:x:317:VAL:HG23	1.78	0.64
35:s:34:U:H2'	35:s:35:A:H2'	1.79	0.64
41:A:21:G:H3'	41:A:22:G:H8	1.62	0.64
45:G:58:LYS:HA	45:G:93:THR:HB	1.78	0.64
48:J:134:TYR:HB3	48:J:190:VAL:HG11	1.80	0.64
55:Q:46[A]:GLU:HG3	55:Q:49[A]:ARG:HB2	1.79	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:X:18:PRO:HA	61:X:51:ALA:HA	1.79	0.64
41:A:567:G:H2'	41:A:568:G:C8	2.33	0.64
47:I:60:ARG:O	47:I:64:GLN:HG2	1.97	0.64
81:x:285:VAL:HG11	81:x:319:ASP:CB	2.28	0.64
8:SG:69:ILE:HG13	8:SG:70:SER:H	1.63	0.64
20:SS:95:THR:HG22	31:Sd:16:PRO:HD2	1.79	0.64
28:Sa:49:GLU:N	28:Sa:49:GLU:OE2	2.31	0.64
41:A:1105:A:H2'	41:A:1106:G:H8	1.63	0.64
41:A:3226:A:C6	41:A:3260:G:N1	2.65	0.64
81:x:359:PRO:HD2	81:x:370:CYS:O	1.98	0.64
7:SF:39:VAL:HG12	7:SF:41:PRO:HD2	1.80	0.64
41:A:1919:G:H21	41:A:1933:A:H62	1.46	0.64
1:2:429:G:O3'	81:x:290:LYS:NZ	2.31	0.64
24:SW:168:ARG:HG2	24:SW:174:ARG:HH12	1.61	0.64
28:Sa:66:ASP:O	28:Sa:70:ASN:ND2	2.31	0.64
41:A:370:U:O4	41:A:374:A:N7	2.31	0.64
74:l:22:CYS:HB2	74:l:34:CYS:SG	2.37	0.64
16:SO:42:LEU:HB2	16:SO:61:PHE:HB2	1.79	0.64
41:A:799:G:O2'	52:N:18:TRP:NE1	2.28	0.64
41:A:2631:U:H2'	41:A:2632:G:C8	2.31	0.64
28:Sa:64:GLU:HG2	33:Sf:3:LEU:HG	1.79	0.63
41:A:508:U:O2	41:A:583:G:N2	2.29	0.63
41:A:1656:A:OP2	71:i:37:LYS:NZ	2.30	0.63
46:H:102:ASN:ND2	46:H:104:GLU:OE1	2.31	0.63
1:2:686:C:O3'	29:Sb:118:ARG:NH1	2.29	0.63
4:SC:77:ARG:NH2	4:SC:87:VAL:O	2.31	0.63
30:Sc:69:ARG:HG3	30:Sc:117:ILE:HG12	1.79	0.63
41:A:3097:C:OP1	43:E:349:LYS:NZ	2.31	0.63
1:2:1795:U:H5'	32:Se:79:ILE:HD11	1.81	0.63
35:s:77:A:C2	81:x:291:SER:O	2.44	0.63
41:A:1103:A:N6	41:A:1363:A:O2'	2.32	0.63
39:T:42:ARG:NH2	41:A:1601:U:OP1	2.32	0.63
43:E:10:ARG:HH12	43:E:263:SER:HB2	1.63	0.63
56:R:64:ASN:O	56:R:80:LYS:NZ	2.31	0.63
7:SF:99:GLU:O	7:SF:103:ASN:N	2.20	0.63
23:SV:81:VAL:HG12	23:SV:102:VAL:HG12	1.80	0.63
41:A:999:G:N3	41:A:1002:A:N6	2.47	0.63
41:A:1634:G:N7	64:b:17:ARG:NH1	2.46	0.63
41:A:2331:C:H2'	41:A:2332:A:H8	1.62	0.63
44:F:114:ASN:HB2	44:F:117:GLU:HG3	1.79	0.63
1:2:397:A:H4'	23:SV:50:GLY:HA2	1.80	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:SZ:20:TYR:HB3	27:SZ:27:PHE:HB2	1.79	0.63
41:A:2216:G:H1	41:A:2229:A:N6	1.97	0.63
41:A:2617:U:O2'	50:L:116:ARG:NH2	2.32	0.63
41:A:3226:A:N1	41:A:3260:G:C2	2.67	0.63
44:F:113:VAL:HB	44:F:118:LYS:HE3	1.81	0.63
56:R:124:LYS:HB3	56:R:140:GLU:HG3	1.81	0.63
81:x:272:LEU:HD21	81:x:310:PHE:HB3	1.81	0.63
1:2:1483:A:H4'	7:SF:71:GLY:HA2	1.81	0.63
30:Sc:70:LYS:HG3	30:Sc:93:LEU:HD22	1.81	0.63
41:A:348:A:N3	41:A:352:A:O2'	2.32	0.63
41:A:408:A:N3	41:A:655:C:O2'	2.29	0.63
41:A:3045:G:OP1	43:E:19:ARG:NH2	2.32	0.63
51:M:101:ASN:HB3	51:M:128:TYR:HE1	1.64	0.63
69:g:19:ARG:HD3	69:g:28:VAL:HG13	1.81	0.63
74:l:33:THR:HG23	74:l:38:GLY:HA2	1.81	0.63
29:Sb:15:ASN:ND2	29:Sb:72:CYS:O	2.32	0.62
41:A:182:U:H3	41:A:234:G:H1	1.47	0.62
81:x:290:LYS:HB2	81:x:311:ASN:OD1	1.97	0.62
41:A:71:A:OP1	65:c:67:HIS:NE2	2.32	0.62
41:A:1551:C:H2'	41:A:1552:G:C8	2.34	0.62
41:A:1805:C:H2'	41:A:1806:A:H8	1.64	0.62
41:A:2560:C:N4	41:A:2575:G:OP1	2.32	0.62
41:A:2767:U:H3	41:A:2791:G:H1	1.47	0.62
57:S:29:LEU:HD21	57:S:124:LEU:HB2	1.82	0.62
1:2:50:C:H41	1:2:424:C:H2'	1.63	0.62
1:2:737:A:OP1	20:SS:200:ARG:NH1	2.31	0.62
1:2:918:U:H4'	27:SZ:18:ARG:HD3	1.81	0.62
27:SZ:88:GLY:O	27:SZ:92:LYS:NZ	2.32	0.62
41:A:1135:A:OP2	66:d:5:LYS:NZ	2.32	0.62
41:A:2951:G:H2'	41:A:2952:G:C8	2.33	0.62
1:2:385:A:H5''	23:SV:22:ARG:HG2	1.82	0.62
2:SA:54:ARG:NH1	2:SA:57:ASP:OD2	2.32	0.62
17:SP:144:ILE:HG12	17:SP:158:VAL:HB	1.82	0.62
41:A:707:U:O2'	41:A:754:G:N3	2.31	0.62
41:A:1104:G:H2'	41:A:1105:A:C8	2.33	0.62
41:A:2854:U:OP2	50:L:3:ARG:NH2	2.33	0.62
41:A:2950:G:N2	41:A:2950:G:OP2	2.31	0.62
64:b:25:ILE:HA	64:b:43:VAL:HG12	1.80	0.62
16:SO:17:ASN:O	16:SO:17:ASN:ND2	2.32	0.62
32:Se:35:ALA:O	32:Se:37:LYS:NZ	2.31	0.62
41:A:40:A:N6	41:A:963:G:H21	1.97	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:A:1141:C:O2'	41:A:1153:A:N3	2.30	0.62
41:A:2515:A:N1	41:A:2594:C:N4	2.42	0.62
41:A:2675:C:N4	51:M:22:SER:OG	2.33	0.62
41:A:2769:A:H5''	79:q:80:ARG:HD2	1.81	0.62
41:A:821:U:H2'	41:A:822:G:H8	1.65	0.62
41:A:1543:G:HO2'	41:A:2168:A:HO2'	1.48	0.62
51:M:162:TRP:HA	51:M:165:GLN:HG2	1.82	0.62
1:2:1682:U:OP1	21:ST:31:ARG:NH2	2.33	0.62
7:SF:6:SER:HA	7:SF:23:LYS:HA	1.82	0.62
19:SR:49:LYS:NZ	19:SR:246:GLU:OE2	2.32	0.62
59:V:116:ARG:HB2	59:V:128:LEU:HD11	1.81	0.62
1:2:179:A:N1	21:ST:202:ARG:NH1	2.48	0.62
18:SQ:111:ARG:HH22	27:SZ:121:VAL:HG21	1.65	0.62
22:SU:150:GLN:HB3	22:SU:181:ILE:HG22	1.81	0.62
29:Sb:24:GLN:HE22	33:Sf:5:GLN:H	1.46	0.62
41:A:609:G:H8	44:F:310:THR:HG23	1.64	0.62
41:A:2445:A:H2'	41:A:2446:U:O4'	2.00	0.62
41:A:2573:G:H2'	41:A:2574:G:H8	1.64	0.62
1:2:1108:G:OP2	1:2:1108:G:N2	2.27	0.62
41:A:2349:U:O2'	41:A:3307:A:N3	2.32	0.62
1:2:154:G:H1'	21:ST:56:ASN:HD22	1.63	0.62
16:SO:110:VAL:HA	16:SO:126:SER:HA	1.80	0.62
3:SB:69:PHE:HD2	7:SF:50:GLU:HG2	1.65	0.61
35:s:77:A:C4	81:x:293:GLU:HB2	2.34	0.61
41:A:638:C:N4	41:A:639:G:O6	2.33	0.61
41:A:1370:G:H2'	41:A:1371:G:H8	1.66	0.61
41:A:2260:U:OP1	41:A:2306:C:N4	2.33	0.61
1:2:523:G:O2'	1:2:529:A:N6	2.33	0.61
29:Sb:2:THR:OG1	29:Sb:3:ARG:N	2.33	0.61
41:A:1665:C:H2'	41:A:1666:G:H8	1.65	0.61
50:L:80:SER:HB2	50:L:147:VAL:HG11	1.83	0.61
58:U:10:ILE:HG12	58:U:26:ARG:HB2	1.82	0.61
73:k:57:LEU:O	73:k:61:ILE:HG13	2.00	0.61
18:SQ:96:LEU:HD23	18:SQ:96:LEU:H	1.65	0.61
41:A:939:U:OP2	65:c:26:ARG:NH1	2.32	0.61
1:2:1797:A:H5'	32:Se:95:ARG:CD	2.30	0.61
5:SD:78:LEU:HB2	15:SN:114:VAL:HG21	1.82	0.61
41:A:528:U:H2'	41:A:529:A:C8	2.35	0.61
41:A:1338:C:O2	69:g:12:LYS:NZ	2.32	0.61
43:E:62:ARG:NH2	43:E:352:GLU:OE2	2.34	0.61
41:A:360:G:H21	41:A:815:G:H1'	1.66	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:A:2681:U:H5'	51:M:65:ILE:HD11	1.82	0.61
69:g:34:LYS:NZ	69:g:52:GLN:OE1	2.34	0.61
1:2:912:U:OP1	1:2:913:G:O2'	2.17	0.61
22:SU:99:LEU:HB2	22:SU:112:ARG:HD2	1.82	0.61
41:A:1497:C:H2'	41:A:1498:A:H8	1.66	0.61
46:H:70:LYS:HB2	46:H:146:LEU:HD21	1.82	0.61
51:M:54:VAL:HG23	51:M:57:PHE:HB2	1.82	0.61
52:N:5:LYS:H	52:N:5:LYS:HZ3	1.49	0.61
1:2:1529:C:O2	10:SI:12:GLN:NE2	2.33	0.61
41:A:312:C:H2'	41:A:313:A:H8	1.66	0.61
41:A:547:G:H2'	41:A:548:G:C8	2.35	0.61
46:H:75:PRO:HG2	46:H:77:ARG:HD2	1.83	0.61
46:H:89:THR:HG21	46:H:158:TYR:HE2	1.65	0.61
55:Q:85[A]:ARG:HG3	55:Q:99[A]:LEU:HD21	1.83	0.61
25:SX:33:ARG:NH2	25:SX:53:TYR:O	2.34	0.61
41:A:525:C:OP2	53:O:77:ARG:NH2	2.32	0.61
41:A:769:G:O2'	52:N:168:ARG:NH2	2.34	0.61
41:A:1237:G:O6	41:A:1251:A:N1	2.34	0.61
41:A:1565:G:H1'	41:A:1576:G:C4	2.36	0.61
42:D:109:GLU:N	42:D:109:GLU:OE2	2.32	0.61
64:b:89:VAL:HG23	64:b:92:PHE:HD2	1.64	0.61
1:2:354:C:H5''	23:SV:16:ALA:HB2	1.83	0.61
17:SP:12:GLU:OE1	17:SP:12:GLU:N	2.31	0.61
20:SS:162:ILE:HG22	20:SS:164:LEU:H	1.66	0.61
28:Sa:11:LEU:HD12	28:Sa:12:TYR:HD1	1.65	0.61
38:C:141:C:O2	54:P:112:ASN:ND2	2.34	0.61
41:A:627:U:H2'	41:A:628:A:C8	2.36	0.61
47:I:25:GLN:H	47:I:25:GLN:CD	2.08	0.61
51:M:45:PRO:HB3	51:M:69:VAL:HB	1.82	0.61
81:x:267:VAL:O	81:x:304:PRO:HA	2.00	0.61
81:x:358:ALA:HB1	81:x:369:ALA:HB1	1.82	0.61
1:2:810:G:N2	22:SU:108:GLN:OE1	2.34	0.60
13:SL:42:ARG:NH2	13:SL:58:GLU:OE2	2.34	0.60
16:SO:89:LEU:HB2	16:SO:103:PHE:HB2	1.81	0.60
19:SR:161:LYS:NZ	19:SR:163:GLY:O	2.33	0.60
41:A:2964:G:N2	41:A:2967:A:OP2	2.26	0.60
41:A:3139:A:H4'	43:E:20:LYS:HD3	1.83	0.60
1:2:1030:A:OP2	32:Se:8:ASN:ND2	2.34	0.60
8:SG:74:GLN:OE1	8:SG:78:ARG:NH2	2.34	0.60
41:A:87:U:H2'	41:A:88:A:C8	2.36	0.60
58:U:162:THR:HG23	58:U:163:PHE:HD1	1.65	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:58:U:O2'	1:2:451:A:N3	2.33	0.60
1:2:163:G:N2	1:2:163:G:OP2	2.34	0.60
35:s:12:G:N2	35:s:24:C:O2	2.34	0.60
41:A:47:C:H5''	52:N:16:LYS:HG2	1.83	0.60
41:A:346:C:N4	41:A:349:A:OP2	2.34	0.60
41:A:2305:G:N2	41:A:2305:G:OP2	2.31	0.60
41:A:2588:U:OP1	48:J:241:LYS:NZ	2.32	0.60
62:Z:110:VAL:HG22	62:Z:124:VAL:HG12	1.84	0.60
64:b:34:LYS:HA	64:b:34:LYS:HE3	1.82	0.60
39:T:73:GLY:O	39:T:74:ARG:NH1	2.33	0.60
41:A:504:A:H61	41:A:587:U:H3	1.47	0.60
41:A:1084:A:H2'	41:A:1085:A:C8	2.36	0.60
44:F:166:VAL:O	44:F:170:LYS:HG2	2.01	0.60
46:H:68:PRO:HG3	46:H:145:LEU:HD13	1.84	0.60
48:J:167:PRO:HB3	48:J:177:TYR:CE2	2.36	0.60
49:K:18:VAL:HG13	49:K:27:VAL:HG22	1.84	0.60
50:L:47:PRO:HD2	50:L:141:LYS:HA	1.83	0.60
56:R:109:ALA:HA	56:R:112:LEU:HD12	1.82	0.60
1:2:178:U:OP1	21:ST:191:ARG:NH1	2.34	0.60
18:SQ:97:LEU:HB3	18:SQ:232:HIS:CE1	2.37	0.60
41:A:1793:C:N4	42:D:177:LYS:O	2.33	0.60
44:F:328:ASN:OD1	47:I:48:ASN:ND2	2.34	0.60
68:f:39:PHE:CE1	68:f:43:HIS:CE1	2.89	0.60
1:2:868:G:OP1	26:SY:121:ARG:NH1	2.34	0.60
16:SO:261:LYS:HG3	16:SO:270:LEU:HD21	1.83	0.60
41:A:1302:A:N7	41:A:2857:C:O2'	2.35	0.60
41:A:1411:C:OP1	69:g:98:HIS:ND1	2.35	0.60
41:A:1786:G:H2'	41:A:1787:A:C8	2.37	0.60
41:A:2178:A:H3'	42:D:132:ASN:HD21	1.66	0.60
41:A:2503:G:N1	41:A:2504:U:H1'	2.15	0.60
43:E:10:ARG:NH2	43:E:263:SER:O	2.29	0.60
74:l:21:ARG:HH21	74:l:37:CYS:HB2	1.66	0.60
81:x:8:ILE:CD1	81:x:85:TYR:CE1	2.84	0.60
81:x:344:VAL:HG21	81:x:426:VAL:HG21	1.84	0.60
16:SO:182:ASN:ND2	16:SO:189:GLU:OE2	2.34	0.60
41:A:2234:G:HO2'	41:A:2603:G:HO2'	1.47	0.60
48:J:106:LYS:O	48:J:110:THR:HG23	2.01	0.60
9:SH:136:GLN:OE1	9:SH:136:GLN:N	2.32	0.60
27:SZ:48:VAL:HG21	27:SZ:53:ASP:HB2	1.84	0.60
29:Sb:75:ILE:HG12	29:Sb:127:GLY:HA2	1.82	0.60
35:s:6:C:O2	35:s:69:G:N2	2.34	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:A:2567:C:N4	41:A:2575:G:O6	2.34	0.60
41:A:2951:G:H2'	41:A:2952:G:H8	1.66	0.60
1:2:350:U:O2'	1:2:970:A:N1	2.34	0.60
16:SO:316:MET:SD	16:SO:316:MET:N	2.64	0.60
17:SP:93:THR:HG22	17:SP:182:LEU:HG	1.83	0.60
22:SU:75:THR:HG23	22:SU:76:LYS:HD3	1.84	0.60
41:A:2975:U:H2'	41:A:2976:A:C8	2.37	0.60
57:S:16:ARG:NH2	57:S:55:SER:OG	2.35	0.60
81:x:280:PHE:CE2	81:x:320:VAL:HG22	2.36	0.60
1:2:1182:U:H5	1:2:1185:U:H5''	1.66	0.60
6:SE:118:GLU:HG2	9:SH:122:HIS:H	1.66	0.60
8:SG:110:VAL:HG21	8:SG:119:LEU:HD11	1.83	0.60
20:SS:45:ILE:HA	20:SS:61:VAL:HG11	1.83	0.60
41:A:1062:A:H5''	41:A:1063:G:H5'	1.84	0.60
41:A:1493:G:N2	41:A:1493:G:OP2	2.35	0.60
41:A:2931:C:H5''	61:X:40:LYS:HE3	1.84	0.60
41:A:705:A:N6	41:A:715:A:OP2	2.34	0.59
67:e:51:LEU:HD11	71:i:91:ARG:HA	1.84	0.59
17:SP:41:ARG:HD3	17:SP:45:VAL:HB	1.83	0.59
41:A:1822:C:H2'	41:A:1823:A:H8	1.66	0.59
41:A:2331:C:H2'	41:A:2332:A:C8	2.36	0.59
28:Sa:21:ASN:HB2	29:Sb:67:GLY:HA3	1.85	0.59
41:A:1527:C:N4	41:A:1528:G:O6	2.36	0.59
41:A:2137:U:OP2	41:A:2142:A:N6	2.35	0.59
48:J:86:THR:O	48:J:90:THR:HG23	2.02	0.59
36:t:11:C:H2'	36:t:12:G:C8	2.38	0.59
65:c:22:ILE:H	65:c:22:ILE:HD12	1.68	0.59
81:x:290:LYS:HB2	81:x:311:ASN:CG	2.28	0.59
1:2:634:G:N2	1:2:965:U:OP2	2.33	0.59
1:2:1125:A:OP1	78:p:18:ARG:NH1	2.36	0.59
22:SU:27:LEU:HD21	22:SU:80:GLU:HG2	1.83	0.59
37:B:64:A:H5'	37:B:65:G:H5''	1.83	0.59
41:A:928:C:H2'	41:A:929:A:C8	2.38	0.59
41:A:1119:C:H2'	41:A:1120:A:H8	1.66	0.59
47:I:121:LYS:HB2	59:V:133:ALA:HB3	1.85	0.59
81:x:266:ARG:NE	81:x:305:GLY:HA2	2.17	0.59
1:2:142:G:H22	1:2:173:A:H2	1.49	0.59
7:SF:101:SER:O	7:SF:105:LEU:HB2	2.02	0.59
9:SH:30:TYR:O	9:SH:33:THR:OG1	2.21	0.59
10:SI:57:ARG:HG2	10:SI:104:VAL:HG21	1.83	0.59
41:A:2185:G:O2'	41:A:2314:U:OP2	2.20	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:A:2344:U:H2'	41:A:2345:A:H8	1.68	0.59
43:E:220:VAL:O	43:E:334:ARG:NH1	2.36	0.59
58:U:73:LYS:NZ	58:U:97:VAL:O	2.35	0.59
81:x:11:VAL:HG23	81:x:90:ILE:CB	2.31	0.59
81:x:344:VAL:HG22	81:x:434:ALA:HB1	1.85	0.59
1:2:853:G:OP1	39:T:173:ARG:NH2	2.35	0.59
41:A:1794:G:O2'	41:A:1796:G:N2	2.36	0.59
41:A:3395:G:N2	41:A:3396:U:O4	2.36	0.59
56:R:172:GLN:O	56:R:176:ILE:HG13	2.03	0.59
63:a:24:SER:OG	63:a:75:ARG:NH1	2.36	0.59
41:A:358:G:N2	41:A:361:A:OP2	2.35	0.59
42:D:148:VAL:HG23	42:D:156:LYS:HB3	1.84	0.59
20:SS:8:HIS:O	20:SS:30:ARG:NH1	2.35	0.59
20:SS:100:ARG:HD3	20:SS:236:ILE:HD11	1.85	0.59
26:SY:56:ASP:OD2	33:Sf:52:THR:OG1	2.20	0.59
41:A:337:G:OP2	44:F:196:ASN:ND2	2.31	0.59
41:A:1786:G:H2'	41:A:1787:A:H8	1.67	0.59
47:I:96:PRO:HB2	47:I:99:PRO:HD2	1.85	0.59
12:SK:50:ILE:O	12:SK:54:VAL:HG22	2.03	0.59
41:A:504:A:O2'	44:F:315:LYS:NZ	2.36	0.59
41:A:1661:G:H2'	41:A:1662:G:C8	2.38	0.59
6:SE:37:ALA:O	6:SE:42:ARG:NH1	2.36	0.58
20:SS:141:THR:HG21	20:SS:162:ILE:HD11	1.85	0.58
1:2:151:G:N3	21:ST:13:GLN:NE2	2.50	0.58
16:SO:11:GLY:HA2	16:SO:52:GLN:CA	2.29	0.58
41:A:2340:U:H2'	41:A:2341:A:H8	1.68	0.58
41:A:3014:U:H2'	41:A:3015:G:C8	2.38	0.58
55:Q:83[A]:ALA:O	55:Q:87[A]:MET:HG3	2.03	0.58
2:SA:59:LEU:HA	2:SA:66:ILE:HB	1.86	0.58
16:SO:114:ASP:OD2	16:SO:155:ARG:NH1	2.36	0.58
41:A:67:A:O2'	41:A:315:C:O2	2.21	0.58
41:A:1661:G:H2'	41:A:1662:G:H8	1.67	0.58
41:A:2340:U:H2'	41:A:2341:A:C8	2.38	0.58
71:i:87:GLU:OE1	71:i:91:ARG:NH2	2.36	0.58
74:l:34:CYS:C	74:l:36:SER:H	2.11	0.58
1:2:416:A:O4'	81:x:37:ARG:CZ	2.52	0.58
24:SW:59:LEU:HD11	24:SW:72:GLU:HG2	1.85	0.58
28:Sa:7:GLN:OE1	28:Sa:7:GLN:N	2.25	0.58
33:Sf:23:THR:OG1	33:Sf:25:VAL:O	2.21	0.58
41:A:3116:G:OP1	41:A:3116:G:N2	2.28	0.58
64:b:26:VAL:HG11	64:b:96:VAL:HB	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1303:U:O2'	1:2:1322:A:OP2	2.21	0.58
9:SH:15:LEU:HB2	9:SH:22:VAL:HB	1.84	0.58
20:SS:179:LYS:HD3	20:SS:230:GLU:HA	1.86	0.58
39:T:88:ARG:O	41:A:1779:C:N4	2.36	0.58
41:A:68:C:OP2	41:A:301:G:N2	2.33	0.58
41:A:1003:A:N1	41:A:1049:C:O2'	2.35	0.58
41:A:1596:C:O2'	41:A:1696:A:N3	2.34	0.58
41:A:2838:A:H4'	50:L:74:LYS:HD3	1.85	0.58
41:A:3044:G:H2'	41:A:3045:G:H8	1.67	0.58
1:2:1643:U:O2	1:2:1780:G:N2	2.37	0.58
41:A:57:A:H2'	41:A:58:G:C8	2.39	0.58
41:A:2363:A:H2'	41:A:2364:G:C8	2.37	0.58
41:A:2700:G:H5''	59:V:17:ARG:HG2	1.84	0.58
46:H:131:LYS:HB2	46:H:134:ARG:HG3	1.85	0.58
54:P:190:THR:HG22	54:P:193:ARG:HH12	1.69	0.58
81:x:345:ILE:N	81:x:435:VAL:O	2.31	0.58
1:2:1409:G:N1	1:2:1412:G:OP2	2.36	0.58
7:SF:64:ASP:OD2	7:SF:66:ARG:NH2	2.36	0.58
7:SF:93:HIS:O	16:SO:53:LYS:NZ	2.36	0.58
21:ST:7:TYR:HB2	21:ST:113:ILE:HD12	1.86	0.58
37:B:7:G:O2'	45:G:72:ASP:OD1	2.21	0.58
41:A:985:U:H2'	41:A:986:U:H6	1.68	0.58
41:A:1829:G:H5''	41:A:1830:G:H5'	1.86	0.58
44:F:237:GLN:O	44:F:246:ARG:NH1	2.35	0.58
49:K:130:ASP:OD1	49:K:130:ASP:N	2.36	0.58
61:X:70:ARG:O	61:X:72:LYS:NZ	2.37	0.58
73:k:53:TYR:OH	73:k:86:LYS:NZ	2.36	0.58
80:r:39:CYS:HB2	80:r:42:CYS:SG	2.43	0.58
81:x:350:PRO:HG2	81:x:429:MET:SD	2.44	0.58
16:SO:117:LYS:NZ	16:SO:158:PRO:HA	2.18	0.58
22:SU:80:GLU:OE1	22:SU:83:LYS:NZ	2.34	0.58
50:L:38:LYS:HG2	50:L:41:ALA:HB2	1.84	0.58
81:x:248:LEU:HD11	81:x:326:ALA:HB3	1.84	0.58
81:x:346:ILE:CA	81:x:434:ALA:CB	2.79	0.58
37:B:89:G:N2	37:B:92:A:OP2	2.34	0.58
41:A:1112:A:H1'	41:A:1371:G:H5'	1.85	0.58
41:A:2298:U:O4	41:A:2925:C:N4	2.30	0.58
54:P:190:THR:O	54:P:194:GLN:HG3	2.03	0.58
1:2:385:A:OP1	23:SV:25:ARG:NH2	2.37	0.58
4:SC:35:ILE:HG22	4:SC:37:THR:HG23	1.85	0.58
5:SD:84:ASN:OD1	5:SD:85:LYS:NZ	2.33	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:ST:148:SER:OG	21:ST:151:ASP:OD1	2.22	0.58
35:s:19:G:N1	41:A:1242:G:N7	2.50	0.58
41:A:1151:U:O2'	41:A:2369:G:N2	2.37	0.58
41:A:2960:C:H2'	41:A:2961:G:H8	1.68	0.58
46:H:80:ASN:HB3	46:H:83:TYR:HD2	1.69	0.58
70:h:49:ILE:HD11	70:h:71:VAL:HG22	1.84	0.58
1:2:588:U:O2	34:Sg:57:ASN:ND2	2.37	0.57
7:SF:6:SER:N	7:SF:96:TYR:OH	2.36	0.57
16:SO:30:PRO:HG3	16:SO:296:ALA:HB3	1.86	0.57
41:A:284:A:OP2	79:q:41:ARG:NH1	2.36	0.57
41:A:1361:U:H2'	41:A:1362:G:H8	1.69	0.57
41:A:2565:U:H3	41:A:2576:G:H1	1.52	0.57
64:b:66:THR:O	64:b:66:THR:HG22	2.04	0.57
81:x:325:VAL:O	81:x:334:PRO:HG3	2.03	0.57
1:2:898:A:N1	1:2:911:U:O2'	2.32	0.57
5:SD:103:LEU:HD13	5:SD:115:VAL:HG13	1.87	0.57
6:SE:50:THR:HG23	6:SE:52:LYS:HG3	1.86	0.57
36:t:63:G:O2'	36:t:64:A:OP1	2.19	0.57
39:T:62:ARG:NH1	41:A:3070:A:OP1	2.37	0.57
40:Y:56:ARG:HH12	40:Y:62:GLY:HA3	1.69	0.57
41:A:276:U:H2'	41:A:277:G:H8	1.69	0.57
41:A:655:C:H2'	41:A:656:A:C8	2.38	0.57
41:A:2341:A:OP2	43:E:247:ARG:NH2	2.38	0.57
1:2:1797:A:N6	32:Se:85:ARG:O	2.36	0.57
3:SB:160:VAL:HG11	13:SL:25:VAL:HG11	1.86	0.57
4:SC:32:HIS:CD2	4:SC:42:VAL:HG11	2.38	0.57
12:SK:102:THR:OG1	12:SK:103:ARG:N	2.37	0.57
41:A:1018:G:H22	41:A:1034:U:H2'	1.69	0.57
41:A:1263:A:H4'	41:A:1264:G:O4'	2.05	0.57
41:A:1381:A:H2'	41:A:1382:G:H8	1.69	0.57
43:E:45:SER:HB2	43:E:181:ILE:HG23	1.86	0.57
1:2:1433:G:H21	14:SM:42:CYS:HB3	1.70	0.57
16:SO:9:LEU:HD11	16:SO:311:ARG:HD3	1.87	0.57
41:A:3015:G:H2'	41:A:3016:A:H8	1.67	0.57
41:A:3225:C:N3	41:A:3226:A:N6	2.52	0.57
62:Z:86:VAL:HG23	62:Z:120:LYS:HB3	1.85	0.57
69:g:79:VAL:O	69:g:83:GLU:HG2	2.04	0.57
41:A:1447:G:N2	41:A:2356:A:OP2	2.36	0.57
41:A:3190:C:H2'	41:A:3191:G:H8	1.68	0.57
45:G:39:GLN:OE1	45:G:48:LYS:NZ	2.37	0.57
49:K:12:VAL:HG12	49:K:79:ILE:HD13	1.85	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:W:61:THR:HG22	60:W:62:VAL:HG13	1.85	0.57
64:b:17:ARG:NH2	64:b:18:TYR:OH	2.38	0.57
1:2:1490:C:OP2	2:SA:9:ARG:NH2	2.37	0.57
41:A:1112:A:N3	41:A:1370:G:O2'	2.30	0.57
41:A:2945:G:O2'	41:A:2948:C:OP2	2.22	0.57
41:A:3185:U:O2'	58:U:170:THR:OG1	2.20	0.57
45:G:60:ILE:HB	45:G:80:SER:HB2	1.86	0.57
52:N:47:ALA:HB1	52:N:48:PRO:HD2	1.87	0.57
58:U:162:THR:HG23	58:U:163:PHE:CD1	2.38	0.57
81:x:343:GLN:HG3	81:x:400:ALA:O	2.04	0.57
3:SB:121:ILE:HB	3:SB:129:PRO:HB3	1.87	0.57
5:SD:97:LEU:HA	5:SD:100:TRP:HD1	1.70	0.57
14:SM:30:LEU:HA	14:SM:39:CYS:HA	1.87	0.57
16:SO:26:SER:HA	16:SO:73:LEU:HD11	1.87	0.57
20:SS:87:MET:HA	20:SS:87:MET:HE3	1.86	0.57
23:SV:164:ARG:NH2	41:A:3353:G:H2'	2.20	0.57
43:E:284:ARG:HB3	43:E:323:MET:HE3	1.84	0.57
52:N:6:ASN:O	57:S:164:ARG:NH1	2.38	0.57
56:R:110:THR:HG22	56:R:111:LYS:HG3	1.85	0.57
74:l:34:CYS:CB	74:l:37:CYS:HG	2.17	0.57
81:x:246:LEU:HA	81:x:269:THR:O	2.04	0.57
81:x:408:LYS:HG3	81:x:409:PRO:HD2	1.87	0.57
1:2:1012:U:H4'	42:D:247:ARG:HB3	1.86	0.57
2:SA:217:ILE:C	2:SA:219:ALA:N	2.62	0.57
37:B:12:U:O3'	37:B:111:U:O2'	2.21	0.57
41:A:394:G:N1	41:A:397:A:OP2	2.32	0.57
41:A:518:G:H5'	41:A:520:U:H5'	1.86	0.57
41:A:585:A:H5''	70:h:70:LYS:HD3	1.87	0.57
41:A:1136:A:O4'	41:A:2636:A:N6	2.38	0.57
41:A:2703:A:OP2	45:G:23:ARG:NH2	2.38	0.57
41:A:2895:G:O2'	77:o:100:TYR:O	2.22	0.57
41:A:3268:A:H5'	46:H:46:ARG:HH22	1.70	0.57
1:2:1573:A:H4'	1:2:1574:G:O5'	2.04	0.57
37:B:87:G:O2'	58:U:119:ARG:NH2	2.34	0.57
41:A:714:G:N7	65:c:111:LYS:NZ	2.53	0.57
41:A:1756:C:H2'	41:A:1757:A:H8	1.70	0.57
41:A:3305:A:O2'	41:A:3306:U:O4'	2.17	0.57
56:R:131:ARG:HE	56:R:137:ASN:HD22	1.53	0.57
57:S:41:ASP:OD1	57:S:41:ASP:N	2.36	0.57
1:2:255:U:O4	1:2:256:A:N6	2.38	0.57
1:2:803:A:HO2'	1:2:804:A:H8	1.53	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:SO:48:THR:HG23	16:SO:55:GLY:HA2	1.87	0.57
21:ST:32:ILE:HG23	21:ST:53:SER:HA	1.87	0.57
24:SW:62:ARG:O	24:SW:69:ARG:NH1	2.38	0.57
30:Sc:99:ASN:ND2	35:s:70:A:OP1	2.37	0.57
41:A:707:U:OP1	41:A:780:A:O2'	2.21	0.57
41:A:707:U:H1'	41:A:754:G:H1'	1.87	0.57
41:A:2522:G:O6	42:D:70:ARG:NH2	2.30	0.57
54:P:51:LEU:HD13	54:P:117:ASN:HB3	1.86	0.57
81:x:264:VAL:HA	81:x:309:GLY:HA2	1.87	0.57
1:2:1472:C:OP1	3:SB:102:ARG:NH2	2.38	0.56
41:A:201:A:H4'	41:A:220:G:C6	2.40	0.56
41:A:1310:G:N2	41:A:2381:G:OP1	2.36	0.56
41:A:3243:A:OP1	55:Q:159[A]:LYS:NZ	2.38	0.56
1:2:687:G:H5'	29:Sb:119:LYS:HD3	1.87	0.56
3:SB:117:THR:HA	3:SB:120:ILE:HD12	1.87	0.56
24:SW:87:SER:OG	24:SW:89:ASP:OD1	2.21	0.56
35:s:67:C:H5''	81:x:408:LYS:NZ	2.19	0.56
41:A:1765:U:H2'	41:A:1766:G:C8	2.40	0.56
60:W:13:LYS:O	60:W:66:VAL:HA	2.04	0.56
81:x:7:HIS:CD2	81:x:86:TYR:HD1	2.16	0.56
1:2:1404:C:H2'	1:2:1405:G:C8	2.41	0.56
12:SK:57:TYR:HD2	12:SK:60:VAL:HG23	1.70	0.56
41:A:68:C:H41	41:A:314:U:HO2'	1.50	0.56
41:A:836:A:H4'	80:r:12:GLY:HA3	1.86	0.56
41:A:1717:U:H2'	41:A:1718:G:C8	2.41	0.56
41:A:1805:C:H2'	41:A:1806:A:C8	2.40	0.56
41:A:2217:U:H2'	41:A:2218:G:H8	1.70	0.56
41:A:2533:G:H22	41:A:2548:C:H1'	1.70	0.56
41:A:3226:A:C6	41:A:3260:G:C2	2.93	0.56
51:M:75:LYS:O	51:M:79:ILE:HG12	2.05	0.56
67:e:98:SER:OG	67:e:99:ASP:N	2.37	0.56
80:r:38:ASP:HB3	80:r:45:LYS:HA	1.87	0.56
1:2:907:A:OP2	18:SQ:5:LYS:NZ	2.39	0.56
7:SF:110:THR:HG21	16:SO:279:ALA:HB1	1.88	0.56
30:Sc:65:ASN:ND2	30:Sc:116:ASP:OD2	2.38	0.56
41:A:303:G:O2'	41:A:2778:G:OP2	2.22	0.56
41:A:1047:A:N3	41:A:2633:U:O2'	2.39	0.56
41:A:1863:G:N2	41:A:1866:C:OP2	2.38	0.56
41:A:1888:U:OP1	43:E:247:ARG:NH1	2.38	0.56
41:A:2183:A:O2'	42:D:236:GLY:N	2.39	0.56
41:A:2228:A:H2'	41:A:2229:A:H8	1.70	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:A:2618:G:O2'	41:A:2865:U:OP1	2.22	0.56
64:b:95:VAL:HG11	64:b:113:VAL:HG11	1.88	0.56
81:x:250:LEU:HD22	81:x:280:PHE:CE1	2.41	0.56
81:x:280:PHE:HB3	81:x:324:ASN:HB3	1.78	0.56
1:2:195:G:N7	23:SV:141:ARG:NH1	2.52	0.56
41:A:729:C:O2'	57:S:79:LYS:NZ	2.37	0.56
41:A:1438:U:OP1	44:F:76:ARG:NH2	2.38	0.56
61:X:13:ILE:HD13	61:X:54:LEU:HB3	1.87	0.56
1:2:776:G:O6	31:Sd:11:LYS:NZ	2.39	0.56
16:SO:266:ASP:HB2	16:SO:267:PRO:HD3	1.86	0.56
18:SQ:38:PHE:HB3	18:SQ:73:LEU:HB3	1.87	0.56
41:A:1928:G:N2	41:A:2320:A:O2'	2.39	0.56
41:A:3082:C:H2'	41:A:3083:G:H8	1.71	0.56
45:G:268:GLU:HA	45:G:271:LYS:HG2	1.88	0.56
54:P:120:TRP:HE1	54:P:123:GLN:HB3	1.69	0.56
68:f:55:LEU:HB2	68:f:95:PRO:HD3	1.86	0.56
81:x:278:VAL:HB	81:x:326:ALA:HB1	1.88	0.56
13:SL:12:VAL:HA	13:SL:30:VAL:HA	1.87	0.56
28:Sa:25:LYS:HB2	28:Sa:28:ASP:HB2	1.88	0.56
43:E:219:ALA:HB2	43:E:336:VAL:HG12	1.87	0.56
50:L:76:MET:HE1	50:L:148:VAL:HA	1.88	0.56
71:i:44:CYS:HB2	71:i:80:ARG:HA	1.88	0.56
1:2:1466:G:O2'	1:2:1602:C:OP1	2.24	0.56
10:SI:25:GLN:N	10:SI:25:GLN:OE1	2.39	0.56
19:SR:153:SER:OG	19:SR:154:LEU:N	2.38	0.56
39:T:105:LEU:HD22	39:T:135:LYS:HG3	1.87	0.56
41:A:66:A:N6	41:A:76:G:H1'	2.21	0.56
41:A:215:G:OP1	63:a:12:ARG:NH1	2.37	0.56
41:A:2184:U:H2'	41:A:2185:G:H8	1.70	0.56
46:H:43:LEU:HD21	46:H:85:ILE:HD11	1.87	0.56
52:N:55:ARG:NH1	52:N:73:ARG:O	2.37	0.56
71:i:76:TYR:HB2	71:i:80:ARG:HB2	1.87	0.56
5:SD:134:SER:HA	5:SD:137:MET:HE1	1.88	0.56
29:Sb:37:PHE:HD1	29:Sb:41:MET:HE2	1.70	0.56
35:s:61:A:OP1	35:s:62:C:N4	2.39	0.56
41:A:347:G:N7	74:l:55:ARG:NH1	2.54	0.56
41:A:1191:U:OP2	55:Q:49[A]:ARG:NH1	2.36	0.56
41:A:2351:U:H2'	41:A:2352:A:H8	1.71	0.56
41:A:2894:C:H2'	41:A:2895:G:H8	1.71	0.56
1:2:331:A:OP2	23:SV:175:GLN:NE2	2.38	0.56
1:2:1755:A:O2'	1:2:1756:A:N3	2.39	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:SO:103:PHE:HE1	16:SO:138:GLY:HA2	1.71	0.56
32:Se:43:ASN:ND2	32:Se:65:PRO:O	2.39	0.56
34:Sg:55:ARG:HH11	34:Sg:58:PRO:HA	1.70	0.56
41:A:2948:C:H4'	43:E:243:HIS:H	1.71	0.56
41:A:3346:U:H2'	41:A:3347:A:H8	1.71	0.56
56:R:85:ALA:O	56:R:89:LYS:HG3	2.06	0.56
62:Z:117:ASN:O	76:n:14:ALA:HB1	2.06	0.56
1:2:51:A:C4	81:x:258:GLY:O	2.59	0.55
41:A:491:C:O5'	46:H:112:THR:OG1	2.24	0.55
41:A:1105:A:H2'	41:A:1106:G:C8	2.40	0.55
41:A:2461:A:O2'	41:A:2485:A:N1	2.38	0.55
29:Sb:24:GLN:NE2	33:Sf:5:GLN:H	2.05	0.55
54:P:106:VAL:HG11	54:P:132:VAL:HG21	1.88	0.55
81:x:266:ARG:CZ	81:x:305:GLY:HA2	2.36	0.55
1:2:472:U:O2'	1:2:769:A:N3	2.37	0.55
9:SH:139:LYS:O	9:SH:143:ARG:NH2	2.40	0.55
38:C:28:C:O2'	41:A:691:A:N1	2.39	0.55
41:A:1255:C:H2'	41:A:1256:G:C8	2.41	0.55
41:A:2652:U:OP1	79:q:65:THR:OG1	2.23	0.55
58:U:110:MET:HE3	58:U:121:ILE:HG12	1.87	0.55
65:c:76:ASP:N	65:c:76:ASP:OD1	2.39	0.55
69:g:83:GLU:O	69:g:86:THR:OG1	2.24	0.55
81:x:340:PHE:HB3	81:x:441:VAL:HG23	1.88	0.55
3:SB:188:LYS:HD2	12:SK:63:SER:HB2	1.88	0.55
16:SO:205:SER:HB3	16:SO:210:LEU:HB2	1.88	0.55
38:C:23:U:H5''	63:a:13:ARG:HG3	1.88	0.55
41:A:308:A:H1'	41:A:2222:A:H2	1.72	0.55
41:A:615:U:H2'	41:A:616:G:H8	1.71	0.55
41:A:2815:G:N2	41:A:2818:U:O2	2.37	0.55
41:A:3110:C:H2'	41:A:3111:U:C6	2.41	0.55
38:C:12:A:OP1	56:R:3:ARG:NE	2.39	0.55
41:A:1224:C:H2'	41:A:1225:A:H8	1.69	0.55
41:A:2685:C:H2'	41:A:2686:A:H8	1.70	0.55
51:M:74:PRO:O	51:M:78:GLU:HG2	2.06	0.55
73:k:70:ARG:HG3	73:k:87:VAL:HG21	1.89	0.55
3:SB:153:GLY:O	3:SB:154:ALA:C	2.50	0.55
5:SD:97:LEU:HA	5:SD:100:TRP:CD1	2.42	0.55
19:SR:158:THR:HG21	19:SR:221:THR:HA	1.89	0.55
41:A:2515:A:H5''	54:P:28:TRP:CD1	2.42	0.55
73:k:58:ILE:HG23	73:k:94:ILE:HD11	1.88	0.55
81:x:262:VAL:CG1	81:x:310:PHE:O	2.54	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
81:x:342:ALA:CB	81:x:438:ILE:HG12	2.37	0.55
3:SB:21:THR:HG22	3:SB:23:VAL:HG22	1.88	0.55
8:SG:77:GLU:O	8:SG:81:LYS:N	2.32	0.55
17:SP:7:PHE:O	17:SP:54:TRP:NE1	2.32	0.55
17:SP:29:VAL:HG23	17:SP:150:ASP:HB3	1.88	0.55
41:A:517:G:OP1	47:I:67:ARG:NH2	2.32	0.55
41:A:2632:G:H4'	59:V:12:ARG:HD2	1.88	0.55
64:b:10:VAL:HG13	64:b:83:THR:HB	1.89	0.55
1:2:430:G:OP1	81:x:290:LYS:NZ	2.38	0.55
38:C:42:G:H21	74:l:21:ARG:HA	1.71	0.55
38:C:155:A:H5'	48:J:185:ARG:HD2	1.89	0.55
41:A:1264:G:H1'	41:A:1265:U:C6	2.42	0.55
41:A:2988:C:OP1	55:Q:65[A]:ASN:ND2	2.39	0.55
43:E:143:GLY:O	43:E:147:GLU:HG2	2.07	0.55
48:J:82:LEU:HG	48:J:86:THR:HB	1.89	0.55
51:M:13:LYS:HD3	51:M:134:PRO:HG3	1.87	0.55
81:x:248:LEU:O	81:x:248:LEU:HD12	2.07	0.55
1:2:755:A:O2'	20:SS:39:ARG:NH2	2.40	0.55
2:SA:14:ASP:OD1	2:SA:15:GLY:N	2.39	0.55
41:A:374:A:H4'	41:A:375:A:H5'	1.88	0.55
41:A:1793:C:OP2	80:r:49:ARG:NH2	2.40	0.55
50:L:43:VAL:HG11	50:L:197:VAL:HB	1.87	0.55
70:h:19:SER:OG	70:h:20:LYS:N	2.37	0.55
20:SS:151:ASP:HB3	20:SS:154:ILE:HG13	1.89	0.55
41:A:80:G:O6	41:A:106:A:N6	2.40	0.55
41:A:785:G:H5''	57:S:92:ARG:HH22	1.72	0.55
41:A:919:U:H5''	41:A:920:A:H5'	1.88	0.55
41:A:938:C:O2	41:A:2813:A:O2'	2.25	0.55
49:K:181:VAL:O	77:o:89:TYR:OH	2.20	0.55
81:x:280:PHE:CG	81:x:324:ASN:OD1	2.60	0.55
2:SA:135:GLU:HG2	2:SA:153:ALA:HB2	1.88	0.54
11:SJ:45:ALA:O	11:SJ:50:LEU:HB2	2.07	0.54
17:SP:2:SER:OG	17:SP:3:LEU:N	2.40	0.54
20:SS:107:GLY:HA2	20:SS:189:LEU:HD11	1.88	0.54
41:A:1132:C:H2'	41:A:1133:A:H8	1.72	0.54
41:A:3009:G:N2	43:E:15:GLY:O	2.40	0.54
51:M:82:ARG:O	51:M:86:VAL:HG23	2.07	0.54
72:j:44:ILE:O	72:j:48:ARG:HG3	2.06	0.54
1:2:416:A:O4'	81:x:37:ARG:NH1	2.40	0.54
19:SR:64:LYS:O	19:SR:65:GLU:HG2	2.07	0.54
30:Sc:63:GLN:O	30:Sc:64:PRO:C	2.48	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:Y:86:SER:O	40:Y:89:LEU:N	2.40	0.54
40:Y:97:LYS:N	40:Y:98:PRO:HD3	2.22	0.54
41:A:110:G:OP2	52:N:73:ARG:NH2	2.40	0.54
41:A:307:A:O2'	41:A:2223:A:N3	2.33	0.54
41:A:431:U:OP1	70:h:65:ARG:NH1	2.35	0.54
41:A:1662:G:N2	41:A:1787:A:N1	2.46	0.54
58:U:77:VAL:HG22	58:U:126:VAL:HG13	1.89	0.54
63:a:115:ARG:O	63:a:119:ILE:HG12	2.07	0.54
23:SV:36:THR:HG21	23:SV:173:PRO:HB2	1.89	0.54
24:SW:83:VAL:HG13	24:SW:85:VAL:HG13	1.90	0.54
27:SZ:112:ILE:HD11	32:Se:53:LEU:HG	1.89	0.54
30:Sc:43:PHE:O	30:Sc:46:SER:OG	2.25	0.54
39:T:80:LYS:NZ	41:A:1940:G:OP1	2.40	0.54
41:A:125:C:H2'	41:A:126:U:H6	1.73	0.54
41:A:788:C:H2'	41:A:789:A:H8	1.72	0.54
41:A:1174:G:N2	55:Q:87[A]:MET:HE2	2.22	0.54
41:A:1255:C:H2'	41:A:1256:G:H8	1.72	0.54
41:A:1435:A:N6	41:A:1437:C:O2	2.41	0.54
41:A:2518:C:H2'	41:A:2519:A:C8	2.41	0.54
53:O:115:PHE:O	53:O:119:GLN:HG3	2.07	0.54
58:U:26:ARG:HH22	58:U:28:ARG:HH11	1.54	0.54
81:x:11:VAL:HB	81:x:109:ALA:HB2	1.89	0.54
1:2:545:A:O4'	1:2:594:A:N6	2.40	0.54
1:2:549:G:O2'	1:2:556:A:N1	2.36	0.54
2:SA:72:LEU:HD22	4:SC:65:TYR:HD2	1.73	0.54
7:SF:60:PHE:HD1	7:SF:63:ILE:HD11	1.71	0.54
7:SF:95:LYS:C	16:SO:53:LYS:HE3	2.33	0.54
11:SJ:87:HIS:HB3	11:SJ:89:ARG:HH12	1.72	0.54
16:SO:18:GLY:H	16:SO:308:ASN:HB3	1.73	0.54
18:SQ:30:PHE:HB3	18:SQ:96:LEU:HD22	1.88	0.54
41:A:1322:U:H2'	41:A:1323:G:H8	1.72	0.54
41:A:1438:U:H1'	44:F:94:CYS:HA	1.88	0.54
41:A:1777:U:H2'	41:A:1778:G:C8	2.42	0.54
42:D:54:ARG:HG2	42:D:56:ALA:H	1.71	0.54
68:f:15:ASN:HB3	68:f:18:LYS:HG2	1.89	0.54
72:j:76:GLN:O	72:j:81:ARG:NH2	2.37	0.54
75:m:57:ASN:O	75:m:57:ASN:ND2	2.40	0.54
81:x:142:THR:HG21	81:x:425:ALA:HB2	1.89	0.54
81:x:247:ARG:HD3	81:x:325:VAL:CG1	2.33	0.54
81:x:325:VAL:O	81:x:334:PRO:CG	2.55	0.54
1:2:142:G:OP1	21:ST:139:ASN:ND2	2.39	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:SE:41:VAL:HG13	6:SE:84:ILE:HG21	1.89	0.54
20:SS:212:ASP:OD1	20:SS:213:SER:N	2.39	0.54
41:A:1098:A:OP2	59:V:108:ARG:NH1	2.41	0.54
41:A:2947:G:C2	43:E:250:ALA:HB1	2.42	0.54
54:P:114:ARG:NH1	54:P:151:ILE:O	2.40	0.54
81:x:289:VAL:HG13	81:x:310:PHE:HB2	1.89	0.54
1:2:155:U:OP2	31:Sd:132:ARG:NH2	2.34	0.54
1:2:392:G:O2'	1:2:1673:G:N3	2.41	0.54
1:2:468:A:N1	1:2:594:A:O2'	2.38	0.54
1:2:1235:C:H5'	15:SN:145:HIS:CE1	2.43	0.54
2:SA:70:THR:HA	2:SA:86:LEU:HD23	1.90	0.54
3:SB:42:LEU:CD1	3:SB:47:SER:HA	2.37	0.54
30:Sc:74:VAL:HG11	30:Sc:104:LEU:HD11	1.89	0.54
41:A:66:A:H61	41:A:76:G:H1'	1.72	0.54
41:A:612:U:H2'	41:A:613:G:H8	1.71	0.54
41:A:674:G:O6	57:S:56:LYS:NZ	2.40	0.54
41:A:947:G:H5''	69:g:55:ILE:HB	1.89	0.54
41:A:1257:C:N3	41:A:1261:G:N1	2.54	0.54
41:A:1339:C:H2'	41:A:1340:G:H8	1.73	0.54
41:A:2434:U:N3	41:A:2594:C:OP2	2.40	0.54
81:x:359:PRO:O	81:x:369:ALA:HA	2.08	0.54
1:2:102:U:H3'	1:2:360:A:H61	1.72	0.54
1:2:1081:A:O2'	1:2:1083:G:O6	2.24	0.54
1:2:1332:C:OP2	8:SG:45:ARG:NH1	2.41	0.54
1:2:1556:A:H4'	1:2:1557:U:H5	1.72	0.54
16:SO:209:THR:O	16:SO:224:ASN:ND2	2.40	0.54
35:s:67:C:H2'	35:s:68:G:H8	1.72	0.54
38:C:103:G:OP2	38:C:105:A:O2'	2.25	0.54
39:T:74:ARG:NE	41:A:1942:U:OP2	2.37	0.54
41:A:32:U:H3	41:A:52:A:H61	1.54	0.54
41:A:2093:A:H2'	41:A:2094:C:C6	2.43	0.54
41:A:3016:A:H2'	41:A:3017:A:H8	1.71	0.54
41:A:3107:U:H2'	41:A:3108:G:C8	2.43	0.54
67:e:47:ASN:HB2	67:e:73:GLY:HA2	1.89	0.54
1:2:215:A:O2'	1:2:216:U:OP1	2.26	0.54
5:SD:42:ALA:HB3	5:SD:122:VAL:HB	1.90	0.54
16:SO:253:ALA:HA	16:SO:262:VAL:HA	1.90	0.54
20:SS:126:VAL:HA	20:SS:141:THR:HA	1.88	0.54
24:SW:37:LYS:HB3	34:Sg:33:ARG:HB2	1.89	0.54
24:SW:86:LEU:HD13	24:SW:99:LEU:HD11	1.89	0.54
35:s:49:C:H2'	35:s:60:A:H1'	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:s:64:G:H2'	35:s:65:G:H8	1.73	0.54
41:A:351:A:N6	76:n:37:TYR:O	2.40	0.54
41:A:3107:U:H2'	41:A:3108:G:H8	1.73	0.54
71:i:42:PRO:HB2	71:i:51:LEU:HD12	1.89	0.54
81:x:8:ILE:HD11	81:x:85:TYR:HE1	1.72	0.54
81:x:344:VAL:HG23	81:x:435:VAL:C	2.33	0.54
1:2:51:A:N1	81:x:258:GLY:O	2.41	0.54
1:2:926:A:H2	27:SZ:125:SER:HA	1.73	0.54
2:SA:190:ARG:HH12	2:SA:195:SER:HB2	1.73	0.54
41:A:54:C:H2'	41:A:55:G:H8	1.73	0.54
41:A:500:C:H2'	41:A:501:A:H8	1.73	0.54
41:A:3051:U:H2'	41:A:3052:G:H8	1.72	0.54
41:A:3181:C:H2'	41:A:3182:G:H8	1.73	0.54
49:K:10:ILE:HD13	49:K:75:VAL:HG11	1.89	0.54
50:L:54:SER:HB2	50:L:135:ILE:HD11	1.90	0.54
81:x:249:PRO:HA	81:x:324:ASN:O	2.07	0.54
8:SG:73:LEU:HA	8:SG:76:GLU:HG2	1.89	0.54
38:C:150:G:H21	48:J:59:GLN:HE22	1.55	0.54
41:A:276:U:H2'	41:A:277:G:C8	2.42	0.54
41:A:412:G:N2	56:R:118:GLN:OE1	2.33	0.54
41:A:700:C:H2'	41:A:701:G:H8	1.73	0.54
41:A:994:G:N2	41:A:995:U:O4	2.34	0.54
41:A:1011:A:H2'	41:A:1012:G:H8	1.73	0.54
43:E:113:GLU:HB3	43:E:176:ALA:HB2	1.90	0.54
51:M:101:ASN:HB3	51:M:128:TYR:CE1	2.43	0.54
60:W:14:THR:O	60:W:14:THR:HG22	2.07	0.54
60:W:58:GLU:HB2	60:W:63:VAL:HG22	1.90	0.54
70:h:38:PRO:HA	70:h:41:ALA:HB3	1.89	0.54
78:p:2:ARG:HH21	78:p:4:LYS:HD3	1.73	0.54
1:2:819:G:H4'	1:2:820:U:O5'	2.08	0.53
7:SF:52:LEU:HA	7:SF:60:PHE:CE2	2.42	0.53
27:SZ:87:GLY:HA3	27:SZ:120:PRO:HG2	1.89	0.53
41:A:381:U:H3	41:A:388:G:H1	1.56	0.53
41:A:616:G:H2'	41:A:617:G:H8	1.73	0.53
41:A:2423:U:H2'	41:A:2424:A:C8	2.42	0.53
81:x:142:THR:HG23	81:x:435:VAL:HG13	1.89	0.53
81:x:347:LEU:O	81:x:348:ASN:HB3	2.08	0.53
1:2:1534:G:N2	1:2:1535:U:O4	2.40	0.53
7:SF:60:PHE:CD1	7:SF:63:ILE:HD11	2.43	0.53
10:SI:108:LEU:HD12	10:SI:113:ILE:HB	1.89	0.53
17:SP:125:ASP:HB3	17:SP:128:SER:HB2	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:SV:34:ALA:HB2	23:SV:56:ARG:HD2	1.91	0.53
41:A:196:G:N1	41:A:199:A:OP2	2.36	0.53
41:A:2812:C:H2'	41:A:2813:A:C8	2.44	0.53
42:D:180:LEU:HD22	80:r:26:VAL:HG11	1.89	0.53
54:P:46:ASP:OD1	54:P:46:ASP:N	2.40	0.53
1:2:51:A:N3	81:x:258:GLY:O	2.41	0.53
9:SH:131:LEU:HA	9:SH:145:ARG:HH22	1.73	0.53
16:SO:46:LYS:HD2	16:SO:58:VAL:HG21	1.89	0.53
27:SZ:115:ILE:HD11	32:Se:53:LEU:HD11	1.91	0.53
41:A:565:U:H2'	41:A:566:G:H8	1.72	0.53
41:A:1132:C:H2'	41:A:1133:A:C8	2.44	0.53
41:A:1717:U:H2'	41:A:1718:G:H8	1.72	0.53
41:A:2282:U:OP1	41:A:2973:G:O2'	2.20	0.53
57:S:99:THR:OG1	57:S:100:THR:N	2.39	0.53
81:x:347:LEU:N	81:x:433:VAL:O	2.41	0.53
7:SF:52:LEU:HA	7:SF:60:PHE:HE2	1.73	0.53
23:SV:48:THR:OG1	23:SV:52:ASN:O	2.27	0.53
35:s:53:G:H5'	81:x:357:TYR:HD1	1.74	0.53
41:A:957:C:H1'	65:c:43:ILE:HD11	1.90	0.53
44:F:196:ASN:ND2	63:a:11:ASP:OD1	2.39	0.53
47:I:185:ILE:O	47:I:189:ILE:HG22	2.08	0.53
70:h:16:TYR:OH	70:h:89:LEU:O	2.25	0.53
81:x:345:ILE:C	81:x:346:ILE:HG23	2.33	0.53
1:2:1490:C:H5'	1:2:1492:A:H1'	1.90	0.53
18:SQ:27:LYS:NZ	18:SQ:49:ASN:OD1	2.42	0.53
41:A:491:C:OP1	46:H:115:GLU:N	2.35	0.53
41:A:1046:A:O2'	41:A:1048:A:OP2	2.23	0.53
41:A:1244:A:H4'	41:A:1245:A:H5''	1.91	0.53
41:A:2699:G:O2'	59:V:15:PHE:O	2.27	0.53
41:A:2941:A:OP2	43:E:256:HIS:ND1	2.41	0.53
65:c:101:VAL:HG22	65:c:124:ILE:HB	1.90	0.53
69:g:97:ALA:O	69:g:105:ARG:NH2	2.41	0.53
6:SE:29:SER:OG	6:SE:30:THR:N	2.42	0.53
41:A:894:G:H4'	41:A:895:A:H5'	1.90	0.53
41:A:2129:U:H2'	41:A:2130:G:C8	2.44	0.53
41:A:2559:U:H5''	41:A:2561:A:H5'	1.90	0.53
41:A:2681:U:H2'	41:A:2682:C:C6	2.43	0.53
41:A:2724:U:OP2	41:A:2726:C:N4	2.42	0.53
41:A:3385:U:H2'	41:A:3386:G:H8	1.74	0.53
47:I:224:ILE:HA	58:U:36:ILE:HG12	1.89	0.53
48:J:184:ALA:O	48:J:188:THR:HG23	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
73:k:79:SER:HB3	73:k:82:ARG:HG3	1.89	0.53
1:2:50:C:OP1	1:2:423:G:N2	2.41	0.53
41:A:571:U:H2'	41:A:572:A:H8	1.74	0.53
41:A:1040:A:N3	50:L:198:LYS:NZ	2.56	0.53
43:E:238:LEU:HD21	43:E:250:ALA:HB2	1.89	0.53
48:J:173:MET:HA	48:J:173:MET:HE3	1.89	0.53
53:O:119:GLN:O	53:O:123:LEU:HG	2.08	0.53
81:x:262:VAL:HA	81:x:311:ASN:CB	2.39	0.53
81:x:311:ASN:C	81:x:311:ASN:OD1	2.52	0.53
81:x:361:LEU:N	81:x:368:ILE:O	2.42	0.53
1:2:1699:G:H2'	1:2:1701:A:H62	1.73	0.53
16:SO:53:LYS:H	16:SO:53:LYS:HE2	1.73	0.53
16:SO:80:ALA:HB3	16:SO:92:TRP:HB2	1.91	0.53
19:SR:157:LYS:HE2	19:SR:170:ILE:HG23	1.91	0.53
41:A:158:G:H2'	41:A:159:A:H8	1.73	0.53
41:A:1223:A:H1'	41:A:1287:A:H2	1.73	0.53
58:U:71:LYS:HE3	58:U:73:LYS:HG2	1.90	0.53
61:X:57:MET:HE1	61:X:105:PRO:HA	1.89	0.53
61:X:57:MET:HE3	61:X:75:PRO:HB3	1.89	0.53
81:x:11:VAL:HB	81:x:109:ALA:CB	2.39	0.53
4:SC:55:VAL:HG12	4:SC:68:LEU:HA	1.91	0.53
11:SJ:89:ARG:HH11	11:SJ:89:ARG:HG3	1.74	0.53
41:A:937:G:N2	41:A:961:C:OP1	2.42	0.53
56:R:175:ARG:O	56:R:179:GLN:HG2	2.09	0.53
65:c:75:LEU:HG	65:c:114:GLY:HA2	1.91	0.53
81:x:247:ARG:HA	81:x:325:VAL:CG1	2.39	0.53
1:2:541:A:O2'	1:2:542:A:OP1	2.22	0.53
7:SF:39:VAL:HG21	7:SF:45:ARG:HA	1.90	0.53
16:SO:220:ILE:HD12	16:SO:234:LEU:HD11	1.90	0.53
18:SQ:136:ARG:HB2	18:SQ:218:LEU:HD11	1.90	0.53
41:A:911:C:H5''	42:D:15:ILE:HD13	1.91	0.53
41:A:929:A:OP1	44:F:61:SER:OG	2.26	0.53
47:I:77:VAL:HB	59:V:139:ARG:HG2	1.90	0.53
74:l:39:TYR:CD1	74:l:40:PRO:HA	2.43	0.53
81:x:247:ARG:HG3	81:x:418:TYR:CZ	2.44	0.53
81:x:263:PRO:HG3	81:x:320:VAL:HG11	1.91	0.53
1:2:1699:G:H8	1:2:1702:A:H62	1.57	0.52
7:SF:63:ILE:HG22	7:SF:92:TYR:CE2	2.44	0.52
23:SV:39:GLY:HA2	23:SV:61:GLU:HB3	1.90	0.52
37:B:121:U:OP2	45:G:259:LYS:NZ	2.42	0.52
41:A:2282:U:H5''	41:A:2973:G:H1'	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:A:3225:C:H2'	41:A:3226:A:C8	2.43	0.52
41:A:3233:C:H2'	41:A:3234:A:C8	2.44	0.52
80:r:33:GLN:HG3	80:r:49:ARG:HD3	1.91	0.52
1:2:590:C:H2'	1:2:591:A:H8	1.74	0.52
8:SG:111:LYS:HA	8:SG:115:LEU:HB3	1.90	0.52
17:SP:48:ILE:HG12	17:SP:149:LEU:HD21	1.91	0.52
20:SS:163:ASP:OD2	20:SS:166:SER:OG	2.27	0.52
23:SV:194:ARG:HG2	23:SV:194:ARG:HH11	1.75	0.52
41:A:2228:A:H2'	41:A:2229:A:C8	2.44	0.52
74:l:34:CYS:SG	74:l:37:CYS:SG	3.07	0.52
81:x:149:ILE:HD12	81:x:231:ALA:HB1	1.90	0.52
81:x:328:ASP:C	81:x:330:LYS:N	2.65	0.52
3:SB:109:LYS:O	3:SB:113:ILE:HD12	2.09	0.52
12:SK:65:LEU:HD12	12:SK:71:ILE:HD12	1.90	0.52
17:SP:98:ILE:HG21	17:SP:102:PHE:HD1	1.74	0.52
25:SX:122:ILE:O	25:SX:143:SER:OG	2.25	0.52
26:SY:48:SER:OG	26:SY:86:GLU:OE2	2.21	0.52
35:s:1:G:O6	35:s:72:A:N6	2.42	0.52
41:A:36:C:H4'	41:A:808:A:H2	1.75	0.52
41:A:533:A:H2'	41:A:535:G:C8	2.44	0.52
41:A:695:C:OP2	44:F:115:HIS:NE2	2.29	0.52
41:A:1106:G:OP1	66:d:22:LYS:NZ	2.42	0.52
41:A:1942:U:H4'	41:A:3345:G:H21	1.74	0.52
41:A:2837:A:H2'	41:A:2845:A:C2	2.44	0.52
50:L:138:VAL:HG11	50:L:148:VAL:HB	1.91	0.52
64:b:48:ARG:HB3	64:b:69:LYS:HB3	1.90	0.52
79:q:92:GLU:OE2	79:q:94:GLY:N	2.41	0.52
8:SG:41:ILE:HG23	8:SG:46:LEU:HD23	1.92	0.52
16:SO:117:LYS:HZ3	16:SO:158:PRO:HA	1.73	0.52
24:SW:37:LYS:HG2	24:SW:126:ARG:HH12	1.74	0.52
41:A:85:A:H61	41:A:99:A:H3'	1.74	0.52
41:A:1188:U:OP1	41:A:1210:U:O2'	2.20	0.52
41:A:2552:C:N4	67:e:54:SER:OG	2.43	0.52
41:A:3232:G:H1	41:A:3255:U:H3	1.56	0.52
43:E:47:LEU:HD11	43:E:179:ALA:HB3	1.91	0.52
50:L:168:SER:HA	59:V:160:ILE:HD13	1.92	0.52
79:q:2:VAL:N	79:q:90:HIS:O	2.43	0.52
18:SQ:64:ARG:O	18:SQ:88:VAL:N	2.40	0.52
41:A:2294:U:O2'	41:A:2296:A:N7	2.38	0.52
41:A:3006:A:H62	41:A:3140:G:H21	1.58	0.52
50:L:23:ASN:O	50:L:25:ALA:N	2.41	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:Q:54[A]:TYR:OH	55:Q:73[A]:PHE:O	2.27	0.52
55:Q:125[A]:ARG:HG3	55:Q:129[A]:LEU:HD12	1.90	0.52
74:l:66:TYR:OH	74:l:73:ARG:NH2	2.42	0.52
1:2:453:U:H2'	1:2:454:U:H5''	1.91	0.52
1:2:593:U:H4'	1:2:595:G:H4'	1.91	0.52
1:2:826:U:N3	1:2:846:G:O6	2.30	0.52
1:2:1044:U:H5''	18:SQ:153:HIS:HE1	1.75	0.52
1:2:1102:G:OP1	29:Sb:76:SER:OG	2.28	0.52
1:2:1584:G:N2	1:2:1611:A:OP2	2.42	0.52
7:SF:94:GLN:C	16:SO:53:LYS:HD2	2.34	0.52
13:SL:18:ARG:HB2	13:SL:18:ARG:NH1	2.24	0.52
23:SV:84:HIS:NE2	23:SV:97:THR:OG1	2.34	0.52
37:B:28:C:OP1	51:M:137:ARG:NH1	2.41	0.52
39:T:158:GLU:O	39:T:162:ARG:HB3	2.10	0.52
41:A:519:A:OP2	47:I:70:LYS:NZ	2.32	0.52
41:A:2424:A:H61	42:D:230:VAL:HG11	1.75	0.52
41:A:3026:G:N2	41:A:3029:A:OP2	2.41	0.52
50:L:153:ARG:NH1	50:L:157:TYR:OH	2.42	0.52
81:x:247:ARG:HG3	81:x:418:TYR:CE1	2.45	0.52
81:x:247:ARG:O	81:x:249:PRO:HD3	2.09	0.52
1:2:430:G:P	81:x:290:LYS:NZ	2.83	0.52
1:2:430:G:P	81:x:290:LYS:HZ1	2.32	0.52
1:2:499:U:H5''	1:2:500:C:H5	1.75	0.52
1:2:600:U:OP2	30:Sc:110:LYS:NZ	2.43	0.52
2:SA:23:GLU:OE2	4:SC:61:TRP:NE1	2.34	0.52
3:SB:216:GLU:OE2	3:SB:219:ARG:NH2	2.42	0.52
17:SP:110:TYR:HA	17:SP:115:PHE:CD1	2.45	0.52
20:SS:94:ALA:HB3	31:Sd:17:LEU:HD23	1.90	0.52
35:s:77:A:C4	81:x:293:GLU:CB	2.93	0.52
41:A:501:A:H2'	41:A:502:U:C6	2.45	0.52
41:A:911:C:H42	42:D:3:ARG:HD3	1.74	0.52
41:A:1311:G:H2'	41:A:1312:C:C6	2.44	0.52
41:A:1370:G:H2'	41:A:1371:G:C8	2.43	0.52
41:A:1679:A:H2'	41:A:1680:G:H8	1.74	0.52
46:H:142:ASP:HA	46:H:145:LEU:HB2	1.91	0.52
65:c:126:LYS:HB3	65:c:148:ILE:HD13	1.92	0.52
81:x:11:VAL:HG12	81:x:111:CYS:O	2.10	0.52
1:2:5:U:H2'	1:2:6:G:H8	1.75	0.52
5:SD:103:LEU:HD22	5:SD:116:VAL:H	1.75	0.52
11:SJ:100:VAL:HG23	11:SJ:100:VAL:O	2.10	0.52
20:SS:31:PRO:HG3	20:SS:43:PRO:HG3	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:SS:103:TYR:O	20:SS:182:TYR:OH	2.28	0.52
27:SZ:16:VAL:N	27:SZ:31:THR:O	2.39	0.52
29:Sb:28:ARG:HD2	29:Sb:28:ARG:O	2.09	0.52
41:A:217:U:O2	63:a:103:LYS:NZ	2.40	0.52
41:A:1463:U:O4	41:A:1467:A:N7	2.43	0.52
41:A:1934:G:N1	41:A:1935:G:N7	2.58	0.52
41:A:2265:C:H2'	41:A:2266:U:C6	2.44	0.52
41:A:2364:G:N2	41:A:2376:G:N7	2.57	0.52
42:D:117:GLU:HG2	42:D:124:GLY:H	1.73	0.52
43:E:183:LEU:O	43:E:191:LYS:NZ	2.43	0.52
43:E:347:SER:OG	43:E:348:ARG:N	2.41	0.52
44:F:126:ILE:O	44:F:129:THR:OG1	2.26	0.52
1:2:647:G:H22	1:2:687:G:H22	1.58	0.52
11:SJ:97:VAL:HA	11:SJ:100:VAL:HG22	1.92	0.52
41:A:3123:A:O2'	49:K:40:HIS:ND1	2.43	0.52
43:E:261:MET:HB2	43:E:264:VAL:HG23	1.92	0.52
61:X:131:SER:OG	61:X:132:ASN:OD1	2.28	0.52
66:d:46:ALA:O	66:d:50:THR:HG22	2.10	0.52
81:x:88:THR:HG21	81:x:307:ASN:ND2	2.25	0.52
1:2:1688:U:H3	1:2:1713:G:H22	1.57	0.52
19:SR:141:ARG:HH11	19:SR:141:ARG:HG3	1.74	0.52
22:SU:29:ASN:OD1	22:SU:30:SER:N	2.41	0.52
24:SW:129:ILE:HD13	24:SW:134:ILE:HG21	1.91	0.52
39:T:21:LYS:HE3	39:T:55:VAL:HA	1.91	0.52
41:A:56:G:H2'	41:A:57:A:C8	2.45	0.52
41:A:1207:G:O2'	41:A:1209:G:OP1	2.26	0.52
41:A:2941:A:OP2	43:E:255:TRP:HB3	2.10	0.52
43:E:44:THR:HG21	43:E:184:ASN:ND2	2.25	0.52
1:2:1777:G:N7	78:p:8:LYS:NZ	2.56	0.51
4:SC:54:TYR:HD2	4:SC:72:GLY:HA2	1.75	0.51
17:SP:83:GLN:HE22	17:SP:100:GLY:HA2	1.75	0.51
23:SV:37:LYS:HB2	23:SV:59:ARG:HG2	1.92	0.51
41:A:207:U:H2'	41:A:208:C:C6	2.45	0.51
41:A:1941:C:H42	41:A:2107:A:H61	1.59	0.51
45:G:232:ASP:OD1	45:G:235:SER:OG	2.22	0.51
50:L:72:ALA:O	50:L:76:MET:HG2	2.10	0.51
81:x:325:VAL:HB	81:x:334:PRO:CB	2.41	0.51
15:SN:132:LEU:HB3	15:SN:139:LEU:HD11	1.92	0.51
16:SO:19:TRP:HB2	16:SO:38:ARG:HE	1.75	0.51
31:Sd:27:VAL:HG21	31:Sd:35:VAL:HG21	1.93	0.51
41:A:596:C:O2	44:F:326:ARG:NH1	2.43	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:A:1361:U:H2'	41:A:1362:G:C8	2.45	0.51
41:A:1472:U:H2'	41:A:1473:G:C8	2.45	0.51
41:A:1741:A:H4'	71:i:38:LEU:HD21	1.91	0.51
41:A:3007:U:O4	41:A:3008:A:N6	2.43	0.51
3:SB:100:ASN:HB2	3:SB:180:ARG:HD3	1.92	0.51
4:SC:54:TYR:O	4:SC:69:THR:OG1	2.27	0.51
20:SS:163:ASP:O	20:SS:165:ALA:N	2.43	0.51
41:A:946:U:H2'	41:A:947:G:H8	1.75	0.51
41:A:1364:C:O2	57:S:10:HIS:NE2	2.40	0.51
41:A:1533:U:H2'	41:A:1534:A:H8	1.75	0.51
44:F:131:VAL:HB	44:F:134:LEU:HD12	1.92	0.51
67:e:99:ASP:O	67:e:103:THR:HG22	2.10	0.51
81:x:315:VAL:HG23	81:x:316:SER:N	2.26	0.51
81:x:341:THR:HB	81:x:440:ALA:HB3	1.91	0.51
3:SB:41:LYS:HA	3:SB:69:PHE:CE1	2.44	0.51
23:SV:121:LEU:HD13	23:SV:160:PHE:CG	2.45	0.51
33:Sf:31:TYR:O	33:Sf:48:SER:OG	2.25	0.51
41:A:1339:C:H2'	41:A:1340:G:C8	2.45	0.51
41:A:2457:G:H5'	41:A:2482:U:H1'	1.92	0.51
41:A:2957:G:H1	41:A:2975:U:H3	1.57	0.51
48:J:90:THR:HG22	48:J:214:LEU:HD11	1.91	0.51
61:X:30:GLY:HA3	61:X:66:LYS:HE2	1.91	0.51
79:q:38:GLN:OE1	79:q:41:ARG:NH1	2.42	0.51
1:2:334:G:O6	23:SV:5:ARG:NH2	2.43	0.51
1:2:513:U:H2'	1:2:514:G:H8	1.76	0.51
1:2:1382:A:O2'	1:2:1383:G:OP1	2.27	0.51
1:2:1405:G:H2'	1:2:1406:A:C8	2.46	0.51
3:SB:40:ILE:O	3:SB:42:LEU:N	2.44	0.51
23:SV:76:THR:HG21	23:SV:104:ILE:HB	1.93	0.51
38:C:126:A:O2'	38:C:128:U:OP2	2.29	0.51
41:A:1146:C:H2'	41:A:1147:G:H8	1.76	0.51
41:A:2697:A:H2'	41:A:2698:G:C8	2.46	0.51
54:P:112:ASN:OD1	54:P:113:LEU:HG	2.10	0.51
68:f:6:ASP:O	68:f:77:ARG:NH1	2.43	0.51
69:g:121:ASN:N	69:g:121:ASN:OD1	2.44	0.51
81:x:6:THR:O	81:x:85:TYR:HB2	2.11	0.51
81:x:278:VAL:HG11	81:x:326:ALA:HB1	1.92	0.51
81:x:347:LEU:H	81:x:433:VAL:C	2.18	0.51
1:2:1198:G:OP1	1:2:1199:G:O2'	2.21	0.51
1:2:1484:G:H21	1:2:1606:C:H1'	1.76	0.51
1:2:1552:U:O2'	1:2:1597:A:N3	2.38	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:SE:22:LEU:H	6:SE:22:LEU:HD12	1.76	0.51
7:SF:99:GLU:HG3	16:SO:9:LEU:CD2	2.41	0.51
22:SU:64:VAL:HG22	22:SU:94:ALA:HB1	1.92	0.51
31:Sd:22:GLN:HB3	31:Sd:72:PHE:CZ	2.45	0.51
41:A:1176:C:H2'	41:A:1177:G:N2	2.25	0.51
41:A:1321:G:N2	58:U:112:ALA:HB2	2.26	0.51
41:A:2831:G:N1	41:A:2858:U:O4	2.43	0.51
41:A:3385:U:H2'	41:A:3386:G:C8	2.44	0.51
45:G:60:ILE:HD11	45:G:93:THR:HA	1.92	0.51
55:Q:89[A]:SER:O	55:Q:89[A]:SER:OG	2.25	0.51
76:n:15:LYS:O	76:n:19:GLN:HG3	2.11	0.51
81:x:349:HIS:HA	81:x:433:VAL:HG12	1.92	0.51
81:x:367:HIS:C	81:x:368:ILE:HG13	2.36	0.51
1:2:1672:G:H2'	1:2:1673:G:C8	2.46	0.51
18:SQ:4:GLY:H	27:SZ:49:LYS:NZ	2.08	0.51
22:SU:17:GLU:OE2	22:SU:17:GLU:N	2.27	0.51
22:SU:17:GLU:HG3	22:SU:46:ILE:HG12	1.93	0.51
35:s:27:G:H1	35:s:45:A:N6	2.02	0.51
38:C:75:G:OP2	63:a:74:TYR:OH	2.28	0.51
41:A:1803:C:H2'	41:A:1804:A:H8	1.75	0.51
57:S:110:ALA:O	57:S:114:ILE:HG13	2.10	0.51
8:SG:104:ASN:O	8:SG:107:SER:OG	2.23	0.51
11:SJ:24:ILE:HG21	11:SJ:41:ILE:HD13	1.92	0.51
18:SQ:135:LEU:HD22	18:SQ:215:VAL:HG12	1.93	0.51
18:SQ:144:ARG:HB3	18:SQ:208:GLN:HB3	1.93	0.51
38:C:154:C:H2'	38:C:155:A:C8	2.45	0.51
41:A:314:U:H2'	41:A:315:C:C6	2.45	0.51
41:A:647:A:OP1	41:A:649:A:N6	2.44	0.51
41:A:2173:U:H5''	42:D:18:SER:HB3	1.92	0.51
41:A:2339:C:H4'	41:A:2340:U:O5'	2.11	0.51
41:A:2574:G:H2'	41:A:2575:G:H8	1.75	0.51
41:A:3163:A:N6	41:A:3288:G:O6	2.44	0.51
41:A:3231:U:O2	41:A:3256:G:O6	2.29	0.51
81:x:287:THR:HB	81:x:315:VAL:CG1	2.40	0.51
1:2:680:U:O4	1:2:682:C:N4	2.44	0.51
1:2:1443:U:H4'	1:2:1446:A:H1'	1.92	0.51
26:SY:67:THR:OG1	26:SY:69:ASN:O	2.29	0.51
37:B:89:G:H4'	58:U:84:ARG:HD3	1.93	0.51
41:A:1643:A:O2'	41:A:1644:C:O4'	2.27	0.51
41:A:2676:A:N6	51:M:22:SER:O	2.32	0.51
41:A:3023:U:H2'	41:A:3024:A:H8	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:E:54:THR:OG1	43:E:55:THR:N	2.44	0.51
48:J:61:GLN:HA	48:J:64:ILE:HB	1.92	0.51
75:m:15:THR:HG23	75:m:73:LEU:HD22	1.93	0.51
1:2:258:C:O2	23:SV:178:ARG:NH1	2.38	0.51
1:2:477:A:H2'	1:2:478:A:C8	2.46	0.51
3:SB:42:LEU:HD11	3:SB:47:SER:HA	1.92	0.51
7:SF:107:LYS:HD2	16:SO:277:GLU:HG2	1.93	0.51
16:SO:52:GLN:O	16:SO:53:LYS:C	2.51	0.51
20:SS:23:LEU:O	24:SW:3:ARG:NH2	2.42	0.51
41:A:341:G:N2	41:A:349:A:H61	2.06	0.51
41:A:364:G:O6	74:l:56:ARG:NE	2.43	0.51
41:A:1491:A:OP1	74:l:14:LYS:NZ	2.44	0.51
41:A:1590:G:O2'	41:A:1797:A:N6	2.44	0.51
49:K:151:VAL:O	49:K:155:SER:OG	2.24	0.51
75:m:58:ASP:OD1	75:m:61:LYS:HG2	2.11	0.51
81:x:11:VAL:HG23	81:x:90:ILE:CG2	2.41	0.51
1:2:1407:U:H2'	16:SO:284:ALA:O	2.10	0.50
41:A:1061:A:H4'	59:V:102:ARG:HH22	1.76	0.50
41:A:1765:U:H2'	41:A:1766:G:H8	1.76	0.50
62:Z:100:LYS:NZ	62:Z:106:ASP:OD1	2.42	0.50
75:m:17:ARG:O	75:m:19:ASP:N	2.43	0.50
1:2:76:A:N3	1:2:80:A:N6	2.59	0.50
1:2:1232:U:H4'	4:SC:2:LEU:HD13	1.92	0.50
1:2:1662:G:H2'	1:2:1663:G:H8	1.76	0.50
9:SH:87:ASN:ND2	9:SH:100:THR:OG1	2.37	0.50
11:SJ:50:LEU:O	11:SJ:52:LYS:HG3	2.12	0.50
16:SO:68:VAL:HA	16:SO:84:SER:HA	1.92	0.50
16:SO:276:PRO:HD3	16:SO:313:TRP:HH2	1.76	0.50
18:SQ:142:PHE:O	18:SQ:208:GLN:N	2.44	0.50
26:SY:11:ILE:HG13	26:SY:11:ILE:O	2.09	0.50
41:A:1362:G:H2'	41:A:1363:A:H8	1.76	0.50
41:A:1597:C:H5'	41:A:1696:A:H1'	1.93	0.50
41:A:3324:C:OP1	68:f:19:ARG:NH2	2.44	0.50
48:J:30:THR:O	48:J:30:THR:OG1	2.26	0.50
50:L:86:HIS:HB3	50:L:139:ARG:HG2	1.94	0.50
58:U:77:VAL:HG11	58:U:106:LEU:HD22	1.92	0.50
64:b:104:PRO:O	64:b:108:GLU:HG2	2.11	0.50
81:x:246:LEU:HD23	81:x:326:ALA:O	2.11	0.50
1:2:343:C:H2'	1:2:344:A:H8	1.75	0.50
1:2:513:U:H2'	1:2:514:G:C8	2.46	0.50
1:2:815:G:H21	39:T:162:ARG:HH22	1.59	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SG:81:LYS:HZ1	17:SP:205:ARG:HH11	1.59	0.50
18:SQ:61:LEU:HD21	18:SQ:96:LEU:HD13	1.93	0.50
18:SQ:134:VAL:HG12	18:SQ:218:LEU:HD12	1.92	0.50
41:A:87:U:H2'	41:A:88:A:H8	1.76	0.50
41:A:143:G:H2'	41:A:144:A:H8	1.76	0.50
41:A:518:G:H3'	41:A:519:A:H3'	1.93	0.50
41:A:594:U:P	41:A:609:G:H1	2.35	0.50
41:A:1459:C:H2'	41:A:1460:A:H8	1.75	0.50
41:A:2166:A:H4'	54:P:72:LYS:HD3	1.92	0.50
41:A:3082:C:H2'	41:A:3083:G:C8	2.45	0.50
67:e:26:GLY:O	67:e:30:THR:OG1	2.29	0.50
81:x:280:PHE:CG	81:x:324:ASN:CB	2.93	0.50
1:2:351:C:N4	1:2:631:G:OP1	2.43	0.50
8:SG:18:GLU:OE1	8:SG:19:ARG:NE	2.45	0.50
16:SO:115:ILE:HG22	16:SO:122:ILE:HG12	1.93	0.50
41:A:1100:U:H2'	41:A:1101:G:C8	2.46	0.50
41:A:1886:A:H2'	41:A:1887:A:H8	1.76	0.50
41:A:2432:A:N6	41:A:2598:G:O6	2.44	0.50
41:A:3283:U:H2'	41:A:3284:G:C8	2.46	0.50
47:I:87:VAL:HG21	47:I:243:MET:HE1	1.93	0.50
67:e:57:GLU:OE2	67:e:69:TYR:OH	2.27	0.50
70:h:51:TYR:CE2	70:h:93:THR:HG21	2.46	0.50
74:l:22:CYS:CB	74:l:37:CYS:SG	2.86	0.50
1:2:680:U:H2'	1:2:681:U:C5	2.47	0.50
1:2:1280:C:H2'	1:2:1281:G:H8	1.77	0.50
1:2:1408:G:H2'	1:2:1409:G:O4'	2.11	0.50
4:SC:46:LEU:HA	4:SC:49:LEU:HD12	1.93	0.50
6:SE:86:VAL:H	6:SE:89:MET:HE3	1.76	0.50
41:A:612:U:H2'	41:A:613:G:C8	2.47	0.50
41:A:1362:G:H2'	41:A:1363:A:C8	2.47	0.50
41:A:1889:G:OP1	43:E:246:LEU:N	2.44	0.50
41:A:1948:G:H2'	41:A:1949:G:C8	2.46	0.50
41:A:2890:A:O2'	41:A:2933:A:N3	2.37	0.50
41:A:2975:U:H2'	41:A:2976:A:H8	1.75	0.50
50:L:31:ILE:HB	50:L:66:GLU:HB2	1.93	0.50
64:b:32:GLY:HA2	64:b:40:HIS:CE1	2.47	0.50
1:2:523:G:N1	1:2:528:U:OP2	2.35	0.50
1:2:929:A:H5''	1:2:931:C:H41	1.77	0.50
15:SN:107:LYS:HG2	15:SN:108:VAL:H	1.75	0.50
21:ST:130:PRO:HB2	40:Y:83:THR:H	1.77	0.50
25:SX:72:THR:HG23	25:SX:124:THR:HG22	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25: SX:109: VAL: HG12	25: SX:137: PHE: HB2	1.92	0.50
41: A:544: C: O2	41: A:547: G: N2	2.26	0.50
41: A:1039: U: H2'	41: A:1040: A: C8	2.47	0.50
48: J:82: LEU: HD13	48: J:222: PHE: HE2	1.75	0.50
51: M:117: ASP: HB3	51: M:120: ILE: HG12	1.94	0.50
64: b:83: THR: HG23	71: i:93: PHE: CE1	2.46	0.50
2: SA:72: LEU: HD22	4: SC:65: TYR: CD2	2.47	0.50
16: SO:307: ASP: O	16: SO:309: VAL: HG13	2.11	0.50
18: SQ:106: THR: HG23	18: SQ:109: LYS: H	1.75	0.50
41: A:1447: G: O2'	41: A:2355: G: O6	2.28	0.50
41: A:2177: G: N2	42: D:118: GLU: OE1	2.43	0.50
41: A:2768: U: H2'	41: A:2769: A: H8	1.76	0.50
54: P:35: VAL: HG12	54: P:36: ILE: HG13	1.93	0.50
80: r:59: CYS: SG	80: r:60: CYS: N	2.85	0.50
1: 2:479: C: H5'	24: SW:124: HIS: HB2	1.94	0.50
1: 2:1774: G: OP1	78: p:7: LYS: NZ	2.45	0.50
16: SO:238: ASP: OD2	16: SO:258: THR: N	2.39	0.50
27: SZ:15: GLY: H	27: SZ:79: VAL: HA	1.76	0.50
27: SZ:79: VAL: HG13	27: SZ:110: LEU: HD21	1.94	0.50
41: A:610: G: N1	41: A:1337: A: OP1	2.45	0.50
41: A:625: G: N2	41: A:1401: A: OP1	2.37	0.50
41: A:1117: G: O6	41: A:1142: G: N2	2.44	0.50
41: A:1226: G: H4'	41: A:3117: C: H1'	1.93	0.50
41: A:1718: G: H2'	41: A:1719: G: C8	2.46	0.50
42: D:80: GLU: HG2	42: D:170: ALA: HA	1.94	0.50
74: l:34: CYS: C	74: l:36: SER: N	2.70	0.50
81: x:342: ALA: HA	81: x:438: ILE: HA	1.93	0.50
1: 2:60: U: N3	1: 2:63: G: OP1	2.37	0.50
1: 2:360: A: O2'	1: 2:362: G: OP1	2.27	0.50
1: 2:499: U: H5''	1: 2:500: C: C5	2.47	0.50
1: 2:1357: A: H2'	1: 2:1358: G: C8	2.47	0.50
12: SK:90: LYS: HG2	12: SK:104: ALA: HB2	1.94	0.50
16: SO:8: VAL: HG12	16: SO:314: GLN: NE2	2.26	0.50
16: SO:31: ASN: O	16: SO:47: LEU: N	2.45	0.50
19: SR:105: GLY: HA3	19: SR:111: VAL: HA	1.94	0.50
20: SS:246: LEU: HD12	20: SS:246: LEU: H	1.77	0.50
41: A:1778: G: O2'	41: A:1780: G: OP2	2.29	0.50
41: A:2099: A: H2'	41: A:2100: A: C8	2.47	0.50
41: A:2147: A: OP2	42: D:200: ARG: NH2	2.45	0.50
41: A:2413: A: H2'	41: A:2414: G: H8	1.77	0.50
41: A:2735: U: H2'	41: A:2736: A: C8	2.47	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:A:3252:G:H2'	41:A:3253:G:C8	2.47	0.50
41:A:3252:G:H2'	41:A:3253:G:H8	1.77	0.50
42:D:168:VAL:HG23	80:r:79:VAL:HG11	1.93	0.50
47:I:151:ARG:HD2	47:I:207:LEU:HD23	1.93	0.50
54:P:149:ASN:ND2	72:j:96:GLU:O	2.43	0.50
59:V:86:GLU:OE2	59:V:88:ARG:NH1	2.40	0.50
1:2:1056:U:O2'	18:SQ:202:LYS:NZ	2.44	0.49
5:SD:87:PRO:O	5:SD:88:LEU:HD23	2.11	0.49
7:SF:95:LYS:HG2	7:SF:96:TYR:CD1	2.47	0.49
11:SJ:28:SER:OG	11:SJ:29:THR:N	2.45	0.49
21:ST:67:VAL:HB	21:ST:99:GLY:HA2	1.94	0.49
21:ST:71:THR:OG1	21:ST:72:ARG:N	2.42	0.49
37:B:118:A:H5''	45:G:253:PHE:CZ	2.47	0.49
41:A:2190:U:H2'	41:A:2191:U:C6	2.47	0.49
41:A:3108:G:N3	49:K:163:GLN:NE2	2.54	0.49
43:E:85:VAL:HB	43:E:163:HIS:CD2	2.46	0.49
48:J:97:TYR:OH	48:J:207:ASP:OD1	2.26	0.49
1:2:477:A:H2'	1:2:478:A:H8	1.77	0.49
1:2:861:U:O2'	29:Sb:56:HIS:O	2.26	0.49
1:2:1173:C:HO2'	1:2:1601:G:H1	1.59	0.49
1:2:1357:A:H2'	1:2:1358:G:H8	1.77	0.49
3:SB:113:ILE:HD12	3:SB:113:ILE:H	1.77	0.49
7:SF:69:VAL:HB	7:SF:81:ILE:HD11	1.94	0.49
9:SH:36:LYS:HB3	9:SH:102:ALA:HA	1.94	0.49
24:SW:99:LEU:HD23	24:SW:104:PHE:CE1	2.41	0.49
27:SZ:16:VAL:HG12	27:SZ:18:ARG:HG3	1.93	0.49
27:SZ:29:HIS:CD2	27:SZ:38:THR:HG23	2.47	0.49
31:Sd:18:LEU:HB3	31:Sd:20:ARG:HD3	1.94	0.49
35:s:61:A:OP1	35:s:63:C:N4	2.45	0.49
41:A:103:G:OP1	52:N:70:ARG:NE	2.45	0.49
41:A:727:G:O6	41:A:742:G:O2'	2.23	0.49
41:A:2141:U:O2'	41:A:2976:A:N3	2.38	0.49
41:A:2685:C:H2'	41:A:2686:A:C8	2.46	0.49
41:A:3332:U:H2'	41:A:3333:G:O4'	2.12	0.49
45:G:23:ARG:O	45:G:23:ARG:NH1	2.40	0.49
49:K:86:TYR:CE2	49:K:151:VAL:HB	2.46	0.49
59:V:89:LEU:HD12	59:V:91:LEU:HD21	1.95	0.49
81:x:10:ILE:HD12	81:x:87:VAL:HG21	1.94	0.49
81:x:250:LEU:CD1	81:x:280:PHE:HE1	2.25	0.49
1:2:127:G:N2	1:2:178:U:O2	2.45	0.49
1:2:1225:U:O2	1:2:1230:A:O2'	2.22	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1387:G:OP1	8:SG:32:LYS:NZ	2.44	0.49
2:SA:22:ASN:O	2:SA:26:THR:OG1	2.27	0.49
19:SR:69:ILE:HB	19:SR:133:LYS:HG2	1.95	0.49
29:Sb:53:ILE:HD12	29:Sb:60:LYS:HB2	1.93	0.49
37:B:11:A:N1	37:B:67:G:O2'	2.40	0.49
41:A:2442:G:H3'	41:A:2443:A:H8	1.77	0.49
41:A:2779:A:O2'	52:N:180:ARG:NH2	2.44	0.49
41:A:3160:U:H3	41:A:3290:G:H1	1.61	0.49
44:F:311:HIS:HE1	44:F:314:LYS:HB2	1.78	0.49
53:O:14:LEU:H	53:O:14:LEU:HD12	1.77	0.49
59:V:95:HIS:O	59:V:96:ILE:HG13	2.11	0.49
62:Z:72:ALA:O	62:Z:76:VAL:HG13	2.12	0.49
70:h:31:LYS:NZ	70:h:78:SER:O	2.45	0.49
1:2:166:C:O2'	21:ST:133:LEU:O	2.30	0.49
1:2:1175:U:H2'	1:2:1176:G:H8	1.76	0.49
1:2:1388:A:N7	1:2:1411:A:N6	2.60	0.49
14:SM:8:PHE:HE1	14:SM:12:ARG:HE	1.60	0.49
28:Sa:2:GLU:OE1	28:Sa:2:GLU:N	2.44	0.49
41:A:624:G:H2'	41:A:625:G:H8	1.78	0.49
41:A:631:U:H2'	41:A:632:G:C8	2.47	0.49
41:A:794:U:H2'	41:A:795:G:H8	1.76	0.49
41:A:980:A:H2	41:A:1104:G:H1'	1.77	0.49
41:A:2249:G:H1	41:A:2266:U:H3	1.60	0.49
41:A:2710:C:H2'	41:A:2711:C:C6	2.48	0.49
59:V:44:ALA:HA	59:V:95:HIS:HB3	1.95	0.49
74:l:22:CYS:HB2	74:l:34:CYS:HG	1.76	0.49
77:o:127:LEU:HD12	77:o:128:LYS:H	1.77	0.49
79:q:18:ARG:HH11	79:q:18:ARG:HG3	1.78	0.49
81:x:345:ILE:HG12	81:x:435:VAL:O	2.13	0.49
1:2:394:C:N4	1:2:401:A:H62	2.08	0.49
1:2:1220:C:H2'	1:2:1221:A:H8	1.77	0.49
1:2:1314:U:H4'	1:2:1315:U:H5	1.77	0.49
9:SH:24:GLY:HA2	9:SH:58:ALA:HB3	1.95	0.49
10:SI:73:VAL:HG11	10:SI:102:ARG:HG2	1.95	0.49
15:SN:120:GLU:HG3	15:SN:130:VAL:O	2.13	0.49
22:SU:6:ALA:HA	22:SU:9:LEU:HB3	1.94	0.49
41:A:412:G:H2'	41:A:413:U:C6	2.48	0.49
41:A:712:G:N2	41:A:754:G:O3'	2.46	0.49
41:A:1472:U:H2'	41:A:1473:G:H8	1.78	0.49
41:A:1729:A:O4'	67:e:52:ARG:NH1	2.46	0.49
41:A:1785:U:H2'	41:A:1786:G:C8	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:A:2245:C:O2'	42:D:220:GLY:O	2.28	0.49
41:A:2999:U:H2'	41:A:3000:A:C8	2.47	0.49
47:I:30:ARG:O	47:I:34:LYS:HG2	2.12	0.49
64:b:74:VAL:HB	64:b:101:PHE:HE2	1.77	0.49
81:x:299:LEU:CD1	81:x:308:VAL:HG12	2.42	0.49
1:2:25:C:H5'	1:2:26:A:H5'	1.95	0.49
1:2:1226:A:H4'	1:2:1227:A:OP1	2.12	0.49
1:2:1404:C:H2'	1:2:1405:G:H8	1.77	0.49
3:SB:39:GLU:HG3	3:SB:40:ILE:N	2.27	0.49
7:SF:50:GLU:HB2	7:SF:51:PRO:HD3	1.94	0.49
10:SI:5:SER:H	10:SI:8:ASP:HB2	1.78	0.49
19:SR:63:VAL:HG23	19:SR:68:ILE:HD12	1.93	0.49
21:ST:32:ILE:HA	21:ST:52:ILE:HG23	1.95	0.49
21:ST:131:LYS:N	40:Y:81:PRO:O	2.34	0.49
31:Sd:31:ASN:C	31:Sd:32:ARG:HD3	2.37	0.49
41:A:126:U:OP1	54:P:144:ARG:NH1	2.45	0.49
41:A:797:U:H5''	52:N:2:ALA:HA	1.94	0.49
41:A:1560:G:O2'	41:A:1561:G:O4'	2.21	0.49
41:A:2263:C:H2'	41:A:2264:U:H6	1.77	0.49
41:A:3119:U:H4'	77:o:104:PRO:HG2	1.94	0.49
51:M:84:LEU:HD21	51:M:163:PHE:HE1	1.76	0.49
58:U:14:LEU:HD23	58:U:57:GLU:HG2	1.95	0.49
81:x:250:LEU:HD13	81:x:280:PHE:CE1	2.48	0.49
1:2:705:U:O2'	1:2:706:A:O5'	2.25	0.49
1:2:944:A:OP2	32:Se:19:LYS:NZ	2.40	0.49
1:2:1483:A:OP2	1:2:1521:G:N2	2.35	0.49
1:2:1537:C:O5'	1:2:1572:G:N2	2.45	0.49
6:SE:76:VAL:O	6:SE:95:GLY:N	2.41	0.49
15:SN:136:LYS:O	15:SN:137:ASP:HB2	2.12	0.49
16:SO:7:LEU:N	16:SO:272:ASP:OD2	2.42	0.49
16:SO:276:PRO:HG2	16:SO:278:PHE:CZ	2.48	0.49
35:s:66:G:OP1	81:x:100:LYS:NZ	2.42	0.49
36:t:11:C:H2'	36:t:12:G:H8	1.76	0.49
41:A:411:U:H2'	41:A:412:G:C8	2.47	0.49
41:A:584:G:H2'	41:A:585:A:H8	1.78	0.49
41:A:790:U:H2'	41:A:791:A:C8	2.48	0.49
41:A:1107:C:H2'	41:A:1108:U:H6	1.77	0.49
41:A:1616:U:H2'	41:A:1617:G:C8	2.47	0.49
50:L:62:SER:HA	50:L:65:LEU:HD12	1.93	0.49
54:P:160:GLU:OE1	54:P:160:GLU:N	2.44	0.49
57:S:158:HIS:H	57:S:186:VAL:HG12	1.78	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
62:Z:60:TYR:OH	72:j:26:LYS:NZ	2.39	0.49
67:e:74:ASN:HB2	67:e:86:ARG:HB3	1.95	0.49
1:2:304:U:O2	25:SX:69:LYS:NZ	2.46	0.49
1:2:929:A:OP1	1:2:931:C:N4	2.46	0.49
7:SF:98:ASP:HA	16:SO:51:ASP:HB3	1.95	0.49
19:SR:113:LEU:O	19:SR:135:SER:OG	2.28	0.49
22:SU:82:GLU:OE2	22:SU:164:TYR:OH	2.31	0.49
23:SV:116:HIS:CE1	23:SV:146:ARG:HE	2.31	0.49
38:C:94:C:H5'	74:l:76:ASN:HD21	1.78	0.49
41:A:2098:C:H2'	41:A:2099:A:C8	2.47	0.49
41:A:3004:C:O2'	41:A:3005:A:OP1	2.31	0.49
47:I:100:ARG:O	47:I:104:GLN:HG3	2.13	0.49
60:W:99:LYS:HZ2	60:W:102:GLU:HB2	1.76	0.49
81:x:285:VAL:CG1	81:x:319:ASP:HB3	2.40	0.49
1:2:885:G:N2	27:SZ:123:SER:O	2.46	0.49
2:SA:134:CYS:SG	2:SA:135:GLU:N	2.86	0.49
12:SK:65:LEU:HD21	12:SK:76:ALA:HB1	1.95	0.49
15:SN:121:CYS:SG	15:SN:143:LYS:HE3	2.53	0.49
23:SV:54:LYS:NZ	23:SV:175:GLN:OE1	2.36	0.49
38:C:97:A:OP1	72:j:67:ARG:NH2	2.45	0.49
41:A:307:A:H2'	41:A:308:A:C8	2.48	0.49
41:A:1074:U:O2	66:d:42:ASN:ND2	2.44	0.49
41:A:2601:A:H2'	41:A:2602:G:H8	1.78	0.49
41:A:3218:A:O2'	41:A:3278:C:N4	2.45	0.49
42:D:53:GLY:O	42:D:192:LYS:NZ	2.41	0.49
42:D:70:ARG:HD2	42:D:72:ARG:HH12	1.78	0.49
43:E:343:TYR:CZ	43:E:345:ASN:HB2	2.47	0.49
45:G:235:SER:O	45:G:239:ILE:HG23	2.13	0.49
52:N:102:GLN:HA	52:N:102:GLN:OE1	2.11	0.49
58:U:19:VAL:O	58:U:19:VAL:HG13	2.12	0.49
81:x:346:ILE:HA	81:x:434:ALA:HB2	1.91	0.49
1:2:1408:G:C4	16:SO:284:ALA:HB3	2.48	0.49
1:2:1601:G:OP1	10:SI:86:ARG:NH1	2.46	0.49
41:A:165:A:H2'	41:A:166:C:C6	2.48	0.49
41:A:1390:A:N6	41:A:1418:A:O2'	2.46	0.49
41:A:2359:C:H4'	41:A:2399:A:H4'	1.95	0.49
41:A:2555:G:H21	64:b:136:PHE:HA	1.78	0.49
41:A:2631:U:OP2	59:V:4:SER:OG	2.31	0.49
41:A:2960:C:H2'	41:A:2961:G:C8	2.46	0.49
51:M:47:GLN:HB2	51:M:64:LYS:HD3	1.94	0.49
57:S:170:ARG:HD2	65:c:57:GLY:HA3	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
64:b:23:VAL:HG12	64:b:45:GLY:HA3	1.95	0.49
74:l:21:ARG:HD3	74:l:39:TYR:CD1	2.47	0.49
81:x:278:VAL:CB	81:x:326:ALA:HB1	2.42	0.49
1:2:539:G:H5'	1:2:542:A:C8	2.44	0.48
1:2:1044:U:H5''	18:SQ:153:HIS:CE1	2.48	0.48
2:SA:34:TYR:OH	2:SA:37:VAL:HB	2.13	0.48
11:SJ:48:HIS:HB2	11:SJ:50:LEU:CD2	2.43	0.48
13:SL:10:ALA:HA	13:SL:32:PHE:HA	1.94	0.48
17:SP:79:ARG:NH1	17:SP:164:ASN:O	2.46	0.48
20:SS:72:VAL:HG22	20:SS:90:ILE:HG12	1.94	0.48
41:A:1718:G:H2'	41:A:1719:G:H8	1.76	0.48
41:A:2423:U:O4	41:A:2607:G:O6	2.31	0.48
41:A:3190:C:H2'	41:A:3191:G:C8	2.47	0.48
48:J:140:VAL:HG21	54:P:3:ALA:HB2	1.95	0.48
48:J:177:TYR:CE1	48:J:222:PHE:HB3	2.48	0.48
53:O:83:LYS:HB3	53:O:83:LYS:HE2	1.68	0.48
60:W:35:LYS:HA	60:W:38:ILE:HG12	1.94	0.48
68:f:36:ILE:HD12	68:f:59:ILE:HD11	1.94	0.48
81:x:250:LEU:HD22	81:x:280:PHE:HE1	1.78	0.48
1:2:467:G:O2'	1:2:469:C:OP2	2.25	0.48
4:SC:80:LEU:O	4:SC:82:LEU:HD22	2.14	0.48
21:ST:63:MET:HA	21:ST:98:ARG:HB3	1.95	0.48
41:A:308:A:H1'	41:A:2222:A:C2	2.47	0.48
41:A:629:U:H2'	41:A:630:A:C8	2.47	0.48
41:A:1175:C:H2'	41:A:1176:C:C6	2.47	0.48
41:A:1383:G:H4'	44:F:138:ARG:HH12	1.77	0.48
41:A:1746:U:H2'	41:A:1747:G:H8	1.77	0.48
41:A:2129:U:H2'	41:A:2130:G:H8	1.78	0.48
46:H:82:ARG:HH11	70:h:104:PRO:HB2	1.77	0.48
51:M:15:GLU:HB3	51:M:130:VAL:HG23	1.94	0.48
54:P:39:ALA:HB3	54:P:61:ILE:HG22	1.95	0.48
54:P:114:ARG:HG2	54:P:137:PRO:HG3	1.95	0.48
81:x:263:PRO:CD	81:x:311:ASN:HA	2.43	0.48
81:x:291:SER:O	81:x:311:ASN:HB3	2.13	0.48
1:2:733:A:N3	1:2:736:C:N4	2.62	0.48
1:2:1267:G:OP1	1:2:1435:G:N2	2.47	0.48
1:2:1298:U:O2	19:SR:209:ASN:ND2	2.46	0.48
1:2:1408:G:O4'	16:SO:285:ALA:N	2.28	0.48
1:2:1756:A:C2	35:s:38:A:H4'	2.48	0.48
16:SO:14:GLU:HB2	16:SO:309:VAL:HG12	1.96	0.48
18:SQ:97:LEU:HB3	18:SQ:232:HIS:ND1	2.28	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:SS:42:LEU:N	20:SS:84:ALA:O	2.42	0.48
21:ST:7:TYR:HD2	21:ST:12:SER:OG	1.96	0.48
23:SV:162:ALA:HA	41:A:3352:U:C4	2.48	0.48
29:Sb:112:ASP:OD1	29:Sb:112:ASP:N	2.45	0.48
38:C:58:G:O6	74:l:63:ARG:NH1	2.46	0.48
41:A:631:U:H2'	41:A:632:G:H8	1.77	0.48
41:A:1109:U:H2'	41:A:1110:U:C6	2.48	0.48
41:A:1203:A:H2'	41:A:1204:A:C8	2.48	0.48
41:A:1249:G:H2'	41:A:1250:G:H8	1.78	0.48
41:A:1403:C:H2'	41:A:1404:G:C8	2.47	0.48
41:A:1738:C:H1'	71:i:52:GLN:HG3	1.95	0.48
41:A:1919:G:N2	41:A:1933:A:H62	2.10	0.48
41:A:2244:A:O2'	42:D:223:SER:OG	2.29	0.48
41:A:2469:G:N1	41:A:2477:G:O6	2.46	0.48
41:A:3160:U:C2	41:A:3291:G:N1	2.82	0.48
46:H:60:ASP:OD1	46:H:62:THR:OG1	2.25	0.48
81:x:342:ALA:HB2	81:x:438:ILE:HG12	1.95	0.48
1:2:628:G:H21	1:2:971:A:H62	1.61	0.48
1:2:1274:C:H4'	1:2:1275:A:O5'	2.14	0.48
20:SS:9:LEU:HB2	20:SS:30:ARG:HB2	1.95	0.48
26:SY:87:ASP:OD1	26:SY:87:ASP:N	2.46	0.48
41:A:932:U:O4'	41:A:934:G:H5'	2.12	0.48
41:A:1497:C:H2'	41:A:1498:A:C8	2.47	0.48
41:A:2676:A:N1	51:M:22:SER:OG	2.40	0.48
41:A:3138:U:H2'	41:A:3139:A:H8	1.78	0.48
56:R:56:ARG:NH2	56:R:75:GLU:OE1	2.42	0.48
65:c:88:ASP:N	65:c:88:ASP:OD1	2.40	0.48
72:j:35:LYS:O	72:j:35:LYS:HD2	2.14	0.48
1:2:143:G:OP2	21:ST:139:ASN:ND2	2.42	0.48
1:2:1216:C:O2'	1:2:1217:A:H2'	2.13	0.48
1:2:1667:A:H2'	1:2:1668:G:H8	1.79	0.48
11:SJ:106:ILE:HB	11:SJ:108:ILE:HG12	1.94	0.48
18:SQ:145:LYS:HE3	18:SQ:152:ARG:HA	1.96	0.48
35:s:77:A:N9	81:x:293:GLU:CB	2.69	0.48
41:A:32:U:H2'	41:A:33:G:O4'	2.14	0.48
41:A:797:U:H2'	41:A:798:G:C8	2.48	0.48
41:A:1439:U:H2'	41:A:1440:G:C8	2.49	0.48
41:A:2446:U:H2'	41:A:2447:A:C8	2.47	0.48
41:A:2632:G:H5''	59:V:12:ARG:HB2	1.94	0.48
43:E:283:TYR:N	43:E:323:MET:O	2.46	0.48
58:U:78:TRP:O	58:U:124:LEU:HB2	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
74:l:34:CYS:HB2	74:l:38:GLY:H	1.78	0.48
81:x:250:LEU:CD2	81:x:280:PHE:HE1	2.26	0.48
9:SH:127:HIS:CD2	9:SH:133:VAL:HG11	2.49	0.48
11:SJ:40:ASN:HA	11:SJ:43:LYS:HE2	1.95	0.48
14:SM:15:GLY:O	14:SM:18:SER:OG	2.32	0.48
16:SO:224:ASN:O	16:SO:228:LYS:N	2.41	0.48
17:SP:198:MET:HG3	17:SP:199:PRO:HD2	1.96	0.48
23:SV:92:ARG:HH12	41:A:2106:A:H2	1.60	0.48
23:SV:159:GLN:HB3	23:SV:164:ARG:O	2.14	0.48
26:SY:140:LYS:NZ	41:A:847:A:OP1	2.46	0.48
35:s:24:C:H2'	35:s:25:A:C8	2.48	0.48
41:A:591:G:O2'	46:H:17:ALA:O	2.26	0.48
41:A:1598:G:H2'	41:A:1599:G:C8	2.48	0.48
54:P:27:VAL:HB	54:P:122:ASN:ND2	2.28	0.48
60:W:29:ASP:HB3	60:W:32:SER:OG	2.12	0.48
81:x:310:PHE:CD1	81:x:310:PHE:N	2.76	0.48
81:x:362:ASP:HA	81:x:366:ALA:O	2.14	0.48
1:2:897:C:H1'	27:SZ:41:ARG:HH21	1.79	0.48
2:SA:42:THR:HB	2:SA:43:PRO:HD2	1.96	0.48
2:SA:74:GLN:OE1	2:SA:74:GLN:HA	2.13	0.48
10:SI:73:VAL:O	10:SI:77:ASN:ND2	2.47	0.48
16:SO:123:ILE:HG22	16:SO:133:VAL:HG12	1.96	0.48
20:SS:127:LYS:HD3	20:SS:142:HIS:HA	1.94	0.48
26:SY:84:ILE:HD11	26:SY:89:TYR:HD1	1.78	0.48
41:A:201:A:H2'	41:A:202:G:H8	1.78	0.48
41:A:2227:C:H2'	41:A:2228:A:H8	1.78	0.48
41:A:2389:C:H2'	41:A:2390:A:H8	1.79	0.48
41:A:2526:C:H2'	41:A:2527:G:C8	2.49	0.48
41:A:2697:A:H2'	41:A:2698:G:H8	1.79	0.48
41:A:2827:U:O2'	41:A:2829:U:O4	2.30	0.48
41:A:3211:C:H2'	41:A:3212:C:C6	2.48	0.48
72:j:57:VAL:O	72:j:60:GLU:HG3	2.12	0.48
75:m:77:ARG:HH11	75:m:77:ARG:HG3	1.79	0.48
81:x:263:PRO:HD2	81:x:311:ASN:HA	1.95	0.48
81:x:321:ARG:NE	81:x:322:ARG:O	2.47	0.48
81:x:357:TYR:OH	81:x:428:ASP:HB2	2.13	0.48
1:2:30:G:H5'	30:Sc:126:LYS:HD2	1.96	0.48
1:2:209:U:H2'	1:2:210:A:C8	2.48	0.48
7:SF:41:PRO:C	7:SF:43:ILE:H	2.21	0.48
17:SP:150:ASP:OD2	17:SP:165:ARG:NH2	2.42	0.48
19:SR:79:GLU:O	19:SR:103:VAL:HG12	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:A:158:G:H2'	41:A:159:A:C8	2.47	0.48
41:A:519:A:N6	58:U:65:ASN:O	2.45	0.48
41:A:1918:C:N4	41:A:1935:G:O6	2.47	0.48
41:A:2415:C:OP1	42:D:2:GLY:N	2.47	0.48
50:L:108:ALA:O	50:L:112:GLN:HG2	2.13	0.48
53:O:21:VAL:HG12	53:O:65:LEU:HA	1.95	0.48
55:Q:110[A]:PRO:HA	55:Q:113[A]:ASP:OD2	2.14	0.48
1:2:17:C:O2'	1:2:1137:A:N1	2.46	0.48
1:2:50:C:N4	1:2:424:C:H2'	2.29	0.48
1:2:230:C:O2	1:2:235:G:N2	2.36	0.48
41:A:286:U:H2'	41:A:287:G:C8	2.49	0.48
41:A:746:A:H2'	41:A:747:A:C8	2.49	0.48
41:A:988:U:H2'	41:A:989:A:C8	2.48	0.48
41:A:1011:A:H2'	41:A:1012:G:C8	2.49	0.48
41:A:1201:C:N4	41:A:2857:C:OP1	2.36	0.48
42:D:3:ARG:HB2	42:D:207:VAL:HG22	1.96	0.48
46:H:104:GLU:H	46:H:104:GLU:CD	2.21	0.48
54:P:162:ARG:HB3	54:P:164:LEU:HD13	1.95	0.48
64:b:22:LYS:HE2	64:b:134:LEU:HB2	1.96	0.48
64:b:92:PHE:HD1	64:b:114:VAL:HG22	1.77	0.48
81:x:8:ILE:HG12	81:x:85:TYR:CD1	2.48	0.48
1:2:463:U:O2'	1:2:527:A:N6	2.46	0.48
1:2:565:C:H1'	30:Sc:66:SER:HB2	1.95	0.48
1:2:1217:A:C5	4:SC:40:LEU:HD11	2.49	0.48
1:2:1594:G:OP2	1:2:1596:C:N4	2.47	0.48
9:SH:86:LEU:HD12	9:SH:97:ASP:HB3	1.96	0.48
11:SJ:63:LEU:HD11	11:SJ:86:ILE:HD11	1.95	0.48
16:SO:295:SER:OG	16:SO:300:THR:OG1	2.31	0.48
25:SX:17:PRO:HG3	25:SX:63:LEU:HD11	1.96	0.48
26:SY:98:VAL:HB	26:SY:115:LEU:HD13	1.96	0.48
35:s:19:G:O4'	35:s:58:G:N2	2.39	0.48
41:A:355:A:N1	44:F:82:THR:HG22	2.29	0.48
41:A:1459:C:H2'	41:A:1460:A:C8	2.49	0.48
41:A:1920:U:O2'	41:A:1932:A:N7	2.43	0.48
41:A:3008:A:N1	41:A:3139:A:N6	2.61	0.48
41:A:3138:U:H2'	41:A:3139:A:C8	2.48	0.48
42:D:147:ARG:HG2	42:D:157:VAL:HG22	1.95	0.48
43:E:59:ASP:OD1	43:E:59:ASP:N	2.38	0.48
52:N:109:PHE:CG	73:k:20:MET:HE1	2.49	0.48
56:R:131:ARG:HG3	56:R:137:ASN:ND2	2.29	0.48
62:Z:134:ASP:O	62:Z:138:ARG:HG3	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
81:x:11:VAL:CG2	81:x:90:ILE:HB	2.37	0.48
81:x:266:ARG:HA	81:x:306:ASP:O	2.14	0.48
81:x:289:VAL:HG11	81:x:310:PHE:CB	2.39	0.48
1:2:30:G:H4'	30:Sc:131:SER:HB3	1.96	0.47
16:SO:52:GLN:HG2	16:SO:53:LYS:N	2.28	0.47
35:s:54:G:OP1	81:x:351:GLY:HA3	2.14	0.47
41:A:1567:U:H3	41:A:1571:A:H1'	1.79	0.47
41:A:2116:G:OP1	41:A:2118:C:N4	2.46	0.47
41:A:2374:C:OP1	41:A:2823:G:O2'	2.28	0.47
42:D:103:PRO:HA	42:D:163:ARG:HA	1.96	0.47
1:2:51:A:C6	81:x:258:GLY:O	2.67	0.47
1:2:768:C:C2	24:SW:143:ILE:HG21	2.49	0.47
1:2:950:C:O2'	26:SY:104:ARG:NH2	2.47	0.47
1:2:1025:A:OP2	1:2:1027:A:N6	2.34	0.47
3:SB:149:VAL:HG23	3:SB:156:ARG:HG3	1.96	0.47
8:SG:69:ILE:HB	8:SG:71:PHE:CD2	2.50	0.47
32:Se:43:ASN:HD22	32:Se:66:LYS:HG2	1.79	0.47
36:t:60:A:H5''	36:t:61:C:H5	1.78	0.47
41:A:242:C:HO2'	41:A:243:G:H8	1.62	0.47
41:A:616:G:H2'	41:A:617:G:C8	2.49	0.47
41:A:1224:C:H2'	41:A:1225:A:C8	2.48	0.47
41:A:2501:U:H2'	41:A:2502:A:H5''	1.96	0.47
41:A:2900:A:O2'	41:A:3025:C:O2'	2.29	0.47
41:A:3076:C:H2'	41:A:3077:A:C8	2.49	0.47
81:x:250:LEU:HD13	81:x:280:PHE:HE1	1.79	0.47
1:2:783:G:C8	31:Sd:12:VAL:HG22	2.50	0.47
1:2:851:U:H1'	1:2:852:C:H5	1.79	0.47
1:2:1227:A:N6	1:2:1256:A:H2'	2.25	0.47
1:2:1280:C:H2'	1:2:1281:G:C8	2.49	0.47
18:SQ:106:THR:OG1	27:SZ:116:GLU:OE2	2.24	0.47
22:SU:153:LEU:HB3	22:SU:186:PRO:HG3	1.96	0.47
40:Y:82:ILE:H	40:Y:85:ALA:HB2	1.78	0.47
41:A:760:G:N2	41:A:770:G:N3	2.62	0.47
41:A:1663:C:H2'	41:A:1664:G:H8	1.79	0.47
41:A:2389:C:H2'	41:A:2390:A:C8	2.50	0.47
45:G:65:ILE:HG12	45:G:74:VAL:HG22	1.96	0.47
51:M:79:ILE:HG22	51:M:127:PHE:HE2	1.78	0.47
53:O:91:CYS:SG	53:O:92:GLU:N	2.88	0.47
57:S:170:ARG:O	57:S:171:LYS:HG2	2.14	0.47
72:j:68:GLN:O	72:j:71:LYS:HD3	2.14	0.47
41:A:127:G:H2'	41:A:128:G:H8	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:A:2338:C:OP1	43:E:236:LYS:NZ	2.43	0.47
42:D:7:ASN:OD1	42:D:8:GLN:N	2.48	0.47
46:H:59:GLU:OE2	46:H:59:GLU:N	2.28	0.47
53:O:127:LYS:HD3	55:Q:194[A]:LEU:HD12	1.96	0.47
1:2:1779:U:O4	78:p:12:ARG:NH2	2.46	0.47
8:SG:109:LEU:HD11	17:SP:49:ASN:HA	1.95	0.47
16:SO:84:SER:O	16:SO:110:VAL:HG22	2.14	0.47
20:SS:22:LYS:HG3	20:SS:23:LEU:HD22	1.97	0.47
26:SY:23:PRO:O	26:SY:25:TRP:N	2.43	0.47
41:A:359:U:H2'	41:A:360:G:O4'	2.15	0.47
41:A:981:U:O2'	41:A:1105:A:O2'	2.20	0.47
41:A:1307:G:C2	55:Q:60[A]:LYS:HG3	2.50	0.47
41:A:2308:C:H5''	41:A:2309:A:H2'	1.96	0.47
41:A:3069:G:C2	41:A:3070:A:C8	3.02	0.47
41:A:3084:C:H2'	41:A:3085:G:O4'	2.15	0.47
41:A:3213:A:H62	53:O:124:ARG:NH2	2.13	0.47
43:E:86:VAL:HG22	43:E:162:VAL:HG12	1.97	0.47
43:E:222:LYS:HB3	43:E:331:ASN:HB3	1.96	0.47
46:H:40:LEU:HD11	46:H:54:TYR:HB2	1.94	0.47
47:I:121:LYS:O	47:I:125:GLU:HG2	2.14	0.47
62:Z:117:ASN:O	76:n:18:LYS:HE3	2.13	0.47
1:2:1185:U:H4'	1:2:1186:U:H5''	1.95	0.47
16:SO:132:LYS:HG2	16:SO:143:THR:HG23	1.96	0.47
41:A:354:U:H2'	41:A:355:A:H8	1.80	0.47
41:A:1318:A:N7	55:Q:18[A]:ARG:NH1	2.62	0.47
41:A:1596:C:H2'	41:A:1597:C:C6	2.50	0.47
41:A:1733:G:H2'	41:A:1734:G:H8	1.79	0.47
43:E:68:HIS:CD2	43:E:69:LYS:HG3	2.50	0.47
47:I:39:GLU:O	47:I:43:ILE:HD12	2.15	0.47
59:V:110:LYS:HD3	59:V:110:LYS:HA	1.77	0.47
1:2:623:A:H3'	1:2:624:G:H5''	1.95	0.47
1:2:647:G:N2	1:2:687:G:H1	2.07	0.47
1:2:1026:A:N7	1:2:1772:C:O2'	2.41	0.47
1:2:1182:U:H4'	6:SE:124:THR:HB	1.97	0.47
1:2:1292:G:H21	17:SP:111:ILE:HD11	1.79	0.47
3:SB:25:LEU:HB3	7:SF:27:GLY:O	2.15	0.47
16:SO:38:ARG:HG3	16:SO:67:ILE:HG12	1.96	0.47
19:SR:170:ILE:HB	19:SR:197:TYR:HB2	1.96	0.47
20:SS:115:THR:HG23	20:SS:118:GLU:H	1.79	0.47
24:SW:62:ARG:HH21	24:SW:68:LYS:HB3	1.80	0.47
24:SW:106:GLU:O	24:SW:111:THR:OG1	2.32	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:SY:99:ARG:NH2	26:SY:119:GLU:OE2	2.45	0.47
30:Sc:86:PHE:HB2	30:Sc:120:VAL:HG11	1.96	0.47
35:s:1:G:N2	35:s:74:A:H1'	2.29	0.47
37:B:94:C:H2'	37:B:95:A:H8	1.79	0.47
38:C:95:G:O2'	74:l:81:GLY:O	2.33	0.47
41:A:1413:G:H2'	41:A:1414:G:H8	1.78	0.47
41:A:1433:A:N7	69:g:19:ARG:NH2	2.63	0.47
41:A:1592:G:OP1	71:i:58:ARG:NH2	2.47	0.47
41:A:1886:A:O4'	41:A:3307:A:H5'	2.14	0.47
41:A:2103:U:H2'	41:A:2104:A:C8	2.49	0.47
41:A:2344:U:H2'	41:A:2345:A:C8	2.47	0.47
41:A:2526:C:H2'	41:A:2527:G:H8	1.80	0.47
41:A:2586:G:O2'	41:A:2588:U:OP2	2.32	0.47
41:A:3006:A:H2'	41:A:3007:U:O4'	2.14	0.47
41:A:3333:G:H22	41:A:3369:G:H1'	1.79	0.47
45:G:282:ARG:O	45:G:286:VAL:HG23	2.15	0.47
46:H:47:PHE:CD2	46:H:74:VAL:HG13	2.49	0.47
54:P:23:GLN:HG2	54:P:122:ASN:ND2	2.29	0.47
58:U:30:PHE:CD1	58:U:103:VAL:HG21	2.50	0.47
80:r:11:THR:HB	80:r:14:TYR:CD2	2.50	0.47
1:2:209:U:H5'	23:SV:171:SER:HB2	1.96	0.47
1:2:352:A:H4'	1:2:353:A:O5'	2.14	0.47
1:2:1202:A:N6	1:2:1457:C:O5'	2.48	0.47
5:SD:85:LYS:O	5:SD:87:PRO:HD3	2.15	0.47
16:SO:243:LEU:HA	16:SO:254:ALA:HA	1.97	0.47
16:SO:257:ALA:HA	16:SO:288:HIS:HB2	1.96	0.47
21:ST:52:ILE:HD11	21:ST:109:LEU:HD23	1.97	0.47
37:B:21:G:O2'	37:B:22:A:N7	2.48	0.47
41:A:57:A:H2'	41:A:58:G:H8	1.80	0.47
41:A:1186:G:N3	58:U:112:ALA:HB1	2.30	0.47
41:A:1595:U:O2'	41:A:1606:U:O2	2.31	0.47
41:A:1709:C:H2'	41:A:1710:C:C6	2.50	0.47
41:A:2193:U:H5'	41:A:2194:G:OP1	2.14	0.47
41:A:2527:G:H2'	41:A:2528:G:C8	2.50	0.47
48:J:144:GLU:OE1	54:P:6:TYR:OH	2.28	0.47
59:V:41:ASP:OD1	59:V:61:THR:OG1	2.26	0.47
62:Z:88:MET:HE2	62:Z:88:MET:HB2	1.85	0.47
68:f:79:ARG:HA	68:f:89:LEU:HD23	1.96	0.47
1:2:323:A:OP2	23:SV:10:LYS:NZ	2.27	0.47
1:2:445:A:N6	1:2:462:G:N3	2.57	0.47
1:2:888:U:H1'	27:SZ:126:THR:HG21	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1674:C:OP1	21:ST:92:ARG:NH1	2.41	0.47
24:SW:107:ARG:NH2	24:SW:148:VAL:O	2.48	0.47
37:B:52:G:O2'	37:B:53:U:OP1	2.31	0.47
41:A:286:U:O2'	54:P:179:LYS:O	2.33	0.47
41:A:499:G:H2'	41:A:500:C:C6	2.50	0.47
41:A:809:G:H2'	41:A:810:A:H8	1.80	0.47
41:A:1744:G:H2'	41:A:1745:C:C6	2.50	0.47
41:A:1803:C:H2'	41:A:1804:A:C8	2.50	0.47
41:A:2270:A:H2'	41:A:2271:A:C8	2.50	0.47
41:A:2597:U:H2'	41:A:2598:G:H8	1.80	0.47
41:A:2825:C:H42	41:A:2864:A:H61	1.61	0.47
41:A:3346:U:H3	41:A:3359:A:H61	1.62	0.47
43:E:6:TYR:HB2	61:X:46:LEU:HD11	1.96	0.47
57:S:170:ARG:HH11	65:c:57:GLY:H	1.61	0.47
81:x:138:LEU:HD21	81:x:347:LEU:CD1	2.29	0.47
81:x:328:ASP:C	81:x:330:LYS:H	2.23	0.47
1:2:187:G:H3'	23:SV:138:ASN:HD22	1.80	0.47
1:2:609:U:H4'	1:2:610:G:O5'	2.15	0.47
1:2:895:G:N3	27:SZ:38:THR:OG1	2.41	0.47
3:SB:208:SER:HB2	3:SB:211:ILE:HB	1.97	0.47
11:SJ:24:ILE:HB	11:SJ:91:ILE:HB	1.97	0.47
16:SO:10:ARG:O	16:SO:52:GLN:HA	2.15	0.47
18:SQ:32:ILE:HB	18:SQ:43:VAL:HB	1.96	0.47
20:SS:127:LYS:N	20:SS:140:VAL:O	2.36	0.47
38:C:13:A:O2'	56:R:121:GLN:O	2.28	0.47
39:T:62:ARG:HH22	41:A:3067:C:H3'	1.80	0.47
41:A:2754:G:O6	79:q:86:LYS:NZ	2.45	0.47
63:a:116:LYS:O	63:a:120:GLN:HG2	2.14	0.47
81:x:8:ILE:HG12	81:x:85:TYR:CE1	2.50	0.47
81:x:259:ILE:O	81:x:311:ASN:ND2	2.48	0.47
1:2:1273:G:H4'	1:2:1274:C:O5'	2.15	0.46
1:2:1534:G:OP2	12:SK:74:SER:OG	2.25	0.46
1:2:1775:U:P	78:p:11:ARG:HH12	2.38	0.46
2:SA:217:ILE:HG13	2:SA:218:LEU:N	2.30	0.46
3:SB:146:THR:HA	3:SB:159:ALA:HA	1.97	0.46
17:SP:139:VAL:HG23	17:SP:141:ILE:HD12	1.95	0.46
19:SR:41:LEU:HD23	19:SR:68:ILE:HD13	1.97	0.46
19:SR:159:THR:HG22	19:SR:168:ARG:HA	1.96	0.46
22:SU:140:VAL:HA	22:SU:150:GLN:HA	1.96	0.46
29:Sb:14:ILE:HG23	29:Sb:65:LEU:HD21	1.97	0.46
41:A:1525:G:H5'	41:A:1830:G:OP2	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:A:1553:U:H4'	41:A:1554:U:H5'	1.96	0.46
41:A:2812:C:H2'	41:A:2813:A:H8	1.78	0.46
41:A:3014:U:H2'	41:A:3015:G:H8	1.80	0.46
42:D:29:LEU:HB2	42:D:123:ARG:HA	1.97	0.46
57:S:33:TYR:HE2	57:S:124:LEU:HB3	1.81	0.46
59:V:68:THR:HG22	59:V:69:LYS:N	2.25	0.46
68:f:75:ILE:HG12	68:f:93:VAL:HG13	1.96	0.46
1:2:55:A:OP1	31:Sd:112:LYS:NZ	2.43	0.46
2:SA:53:THR:HB	2:SA:94:ARG:HH11	1.80	0.46
16:SO:64:HIS:HD2	16:SO:90:ARG:HH21	1.62	0.46
19:SR:76:LEU:HD22	19:SR:104:VAL:HG13	1.97	0.46
20:SS:9:LEU:O	20:SS:28:ALA:N	2.37	0.46
20:SS:174:LYS:HB3	20:SS:174:LYS:HE3	1.73	0.46
35:s:63:C:H2'	35:s:64:G:C8	2.49	0.46
41:A:207:U:H2'	41:A:208:C:H6	1.81	0.46
41:A:899:U:H2'	41:A:900:G:H8	1.80	0.46
41:A:1948:G:H2'	41:A:1949:G:H8	1.79	0.46
41:A:2157:G:H4'	41:A:2158:A:H8	1.79	0.46
41:A:2163:C:N3	41:A:2172:A:N6	2.62	0.46
41:A:2270:A:H8	41:A:2270:A:OP1	1.98	0.46
41:A:3057:U:O2'	41:A:3058:U:H4'	2.15	0.46
41:A:3137:C:H5''	43:E:276:THR:HG21	1.97	0.46
43:E:292:ALA:HB1	43:E:295:ALA:HB3	1.98	0.46
43:E:306:THR:HG21	43:E:316:GLU:HA	1.98	0.46
50:L:91:VAL:HG21	50:L:135:ILE:HG23	1.97	0.46
77:o:110:CYS:SG	77:o:111:ARG:N	2.87	0.46
1:2:364:G:H21	1:2:756:A:H61	1.61	0.46
1:2:1318:G:H2'	1:2:1319:A:H8	1.79	0.46
1:2:1357:A:H4'	10:SI:126:GLU:OE1	2.16	0.46
1:2:1785:U:H2'	1:2:1786:G:H8	1.80	0.46
4:SC:15:LEU:HG	4:SC:68:LEU:HD13	1.97	0.46
5:SD:129:GLU:HG3	5:SD:129:GLU:O	2.14	0.46
8:SG:81:LYS:HD2	8:SG:81:LYS:C	2.41	0.46
19:SR:49:LYS:HA	19:SR:49:LYS:HD3	1.67	0.46
23:SV:37:LYS:C	23:SV:59:ARG:HA	2.39	0.46
29:Sb:77:PRO:HD3	30:Sc:7:ARG:HG2	1.97	0.46
30:Sc:121:ARG:HG3	30:Sc:122:PHE:CE2	2.50	0.46
31:Sd:23:PHE:HE1	31:Sd:75:VAL:HG22	1.80	0.46
37:B:81:U:H2'	37:B:82:G:H8	1.80	0.46
38:C:47:C:H1'	38:C:61:A:H2'	1.96	0.46
40:Y:16:GLY:O	41:A:3050:U:O2'	2.29	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:A:1224:C:C2	41:A:1225:A:C8	3.03	0.46
41:A:1363:A:OP1	47:I:160:ARG:NH1	2.47	0.46
41:A:1364:C:H2'	41:A:1365:G:C8	2.50	0.46
41:A:1619:A:H2'	41:A:1620:U:O4'	2.16	0.46
41:A:3338:C:H2'	41:A:3339:A:C8	2.51	0.46
42:D:113:VAL:HG12	42:D:166:ILE:HD13	1.98	0.46
52:N:90:ALA:HB1	52:N:95:ILE:HB	1.96	0.46
56:R:138:LYS:HB3	56:R:138:LYS:HE2	1.73	0.46
63:a:73:VAL:O	63:a:73:VAL:HG12	2.14	0.46
68:f:25:PHE:HB3	68:f:65:LYS:HG2	1.96	0.46
1:2:313:U:H4'	1:2:314:C:O5'	2.15	0.46
1:2:430:G:O3'	81:x:260:GLY:HA2	2.15	0.46
2:SA:23:GLU:OE1	2:SA:27:ARG:NH2	2.48	0.46
4:SC:10:LYS:HA	4:SC:13:GLN:HB3	1.96	0.46
5:SD:86:VAL:HG23	5:SD:86:VAL:O	2.16	0.46
16:SO:252:LEU:O	16:SO:263:PHE:N	2.45	0.46
18:SQ:137:ILE:HG12	18:SQ:215:VAL:HG13	1.97	0.46
27:SZ:46:MET:HE2	27:SZ:46:MET:HB3	1.79	0.46
38:C:8:C:H2'	38:C:9:A:H8	1.79	0.46
41:A:1380:G:OP1	44:F:191:LYS:N	2.48	0.46
41:A:1604:G:H5''	41:A:1835:A:H4'	1.96	0.46
41:A:2351:U:H2'	41:A:2352:A:C8	2.49	0.46
41:A:2985:C:H2'	41:A:2986:U:H6	1.80	0.46
41:A:2986:U:C2	41:A:2987:A:C8	3.04	0.46
43:E:148:LEU:HD13	43:E:196:ARG:HE	1.79	0.46
44:F:26:PHE:CD1	44:F:130:ALA:HB2	2.51	0.46
48:J:75:ILE:HD11	54:P:18:VAL:HG23	1.97	0.46
63:a:31:LEU:HG	63:a:101:PRO:HG3	1.96	0.46
81:x:247:ARG:HA	81:x:325:VAL:HG13	1.97	0.46
1:2:67:A:N6	1:2:83:G:O2'	2.49	0.46
1:2:451:A:N6	1:2:453:U:O2	2.49	0.46
1:2:710:U:N3	1:2:729:G:OP2	2.47	0.46
1:2:815:G:H1'	39:T:162:ARG:NH1	2.31	0.46
1:2:907:A:N3	1:2:997:G:O2'	2.48	0.46
1:2:1727:G:H2'	1:2:1728:A:C8	2.51	0.46
6:SE:30:THR:HG22	6:SE:86:VAL:HG21	1.96	0.46
9:SH:14:ILE:HD11	9:SH:21:ASN:HD21	1.80	0.46
16:SO:38:ARG:HA	16:SO:67:ILE:HG23	1.97	0.46
21:ST:182:GLN:OE1	21:ST:186:ARG:NE	2.49	0.46
35:s:35:A:O2'	35:s:36:A:H8	1.98	0.46
38:C:94:C:H5''	74:l:76:ASN:ND2	2.30	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:T:86:GLU:OE2	39:T:91:SER:OG	2.34	0.46
41:A:147:U:H5'	48:J:136:LEU:HB2	1.96	0.46
41:A:675:C:O2'	41:A:679:U:OP1	2.31	0.46
41:A:787:G:H2'	41:A:788:C:C6	2.51	0.46
41:A:2376:G:H2'	41:A:2377:G:C8	2.51	0.46
43:E:67:PHE:CE2	61:X:88:ARG:HB2	2.50	0.46
45:G:34:LYS:HD3	45:G:34:LYS:C	2.40	0.46
81:x:346:ILE:C	81:x:434:ALA:HA	2.40	0.46
1:2:44:U:OP2	1:2:437:A:N6	2.29	0.46
1:2:87:C:O2'	1:2:169:A:N1	2.44	0.46
1:2:802:G:H21	29:Sb:107:SER:HB2	1.80	0.46
1:2:1041:G:H2'	1:2:1042:G:C8	2.50	0.46
1:2:1335:U:H5'	11:SJ:85:ARG:HH22	1.80	0.46
1:2:1684:U:H2'	1:2:1685:G:H8	1.80	0.46
13:SL:15:VAL:HG13	13:SL:28:VAL:HG12	1.98	0.46
15:SN:135:HIS:N	15:SN:138:ARG:O	2.35	0.46
16:SO:153:GLN:HE21	16:SO:201:THR:HA	1.80	0.46
30:Sc:42:PRO:O	30:Sc:79:ASN:ND2	2.49	0.46
41:A:787:G:H2'	41:A:788:C:H6	1.81	0.46
41:A:843:A:H2'	41:A:844:G:H8	1.80	0.46
41:A:1141:C:H2'	41:A:1142:G:O4'	2.15	0.46
41:A:1144:U:OP1	41:A:1367:G:O2'	2.25	0.46
41:A:2094:C:H2'	41:A:2095:G:C8	2.50	0.46
41:A:2196:C:H2'	41:A:2242:A:N6	2.30	0.46
41:A:2676:A:H5'	41:A:2677:G:N7	2.30	0.46
43:E:57:VAL:HG22	43:E:73:VAL:HG22	1.96	0.46
80:r:11:THR:O	80:r:11:THR:OG1	2.33	0.46
1:2:100:A:H61	1:2:385:A:H1'	1.79	0.46
19:SR:52:THR:HB	19:SR:54:GLU:HG2	1.98	0.46
28:Sa:79:LEU:HD13	28:Sa:82:VAL:HG11	1.97	0.46
41:A:34:A:H3'	41:A:48:A:H61	1.81	0.46
41:A:261:U:H2'	41:A:262:U:C6	2.51	0.46
41:A:684:G:H2'	41:A:685:G:H8	1.80	0.46
41:A:900:G:H1'	41:A:1589:A:H62	1.81	0.46
41:A:1246:G:H2'	41:A:1247:U:C6	2.51	0.46
41:A:1556:C:O2'	48:J:54:GLU:OE2	2.29	0.46
41:A:2154:U:H2'	41:A:2155:G:C8	2.51	0.46
41:A:3121:U:H1'	41:A:3122:A:H5''	1.98	0.46
48:J:88:ALA:O	48:J:92:LYS:HG2	2.16	0.46
51:M:12:LEU:HD11	51:M:154:THR:HG23	1.97	0.46
53:O:93:LYS:HE3	53:O:93:LYS:HB2	1.74	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
72:j:100:VAL:HG22	72:j:104:GLN:HB3	1.98	0.46
81:x:103:ILE:HD13	81:x:362:ASP:OD2	2.15	0.46
1:2:864:U:O4	29:Sb:60:LYS:NZ	2.36	0.46
1:2:1641:C:H2'	1:2:1642:G:C8	2.50	0.46
4:SC:77:ARG:HG3	4:SC:82:LEU:HB2	1.97	0.46
12:SK:76:ALA:O	12:SK:80:LEU:N	2.29	0.46
19:SR:56:ILE:HG23	19:SR:61:LEU:HB2	1.97	0.46
27:SZ:81:VAL:HG11	27:SZ:102:LEU:HD12	1.98	0.46
28:Sa:9:VAL:O	28:Sa:10:GLU:HB3	2.16	0.46
30:Sc:90:ASP:O	30:Sc:136:TRP:NE1	2.49	0.46
41:A:738:A:OP1	41:A:1093:A:N6	2.46	0.46
41:A:1342:C:H2'	41:A:1343:A:H8	1.79	0.46
41:A:1597:C:H2'	41:A:1598:G:C8	2.51	0.46
41:A:1869:C:H2'	41:A:1870:C:C6	2.51	0.46
41:A:1949:G:H2'	41:A:1950:U:O4'	2.16	0.46
41:A:2184:U:H2'	41:A:2185:G:C8	2.49	0.46
43:E:10:ARG:NH1	43:E:263:SER:HB2	2.28	0.46
44:F:26:PHE:HA	44:F:127:ALA:HA	1.97	0.46
55:Q:62[A]:THR:HG22	55:Q:65[A]:ASN:H	1.80	0.46
69:g:98:HIS:H	69:g:98:HIS:HD1	1.63	0.46
70:h:16:TYR:HA	70:h:28:SER:HA	1.96	0.46
81:x:302:ALA:HB1	81:x:308:VAL:HG11	1.98	0.46
81:x:327:GLY:O	81:x:328:ASP:C	2.56	0.46
1:2:1274:C:H1'	1:2:1275:A:OP2	2.16	0.46
1:2:1523:G:OP2	1:2:1523:G:N2	2.25	0.46
3:SB:69:PHE:HB3	7:SF:46:PHE:HB3	1.98	0.46
4:SC:52:LYS:HB3	4:SC:54:TYR:CD1	2.51	0.46
7:SF:92:TYR:CE2	7:SF:96:TYR:HE2	2.34	0.46
15:SN:85:TYR:C	15:SN:87:THR:HG22	2.41	0.46
16:SO:68:VAL:HG22	16:SO:84:SER:HB2	1.98	0.46
41:A:201:A:OP1	41:A:220:G:O2'	2.30	0.46
41:A:213:A:N6	41:A:228:U:O4'	2.48	0.46
41:A:307:A:H2'	41:A:308:A:H8	1.81	0.46
41:A:1355:A:H4'	41:A:1356:U:H5''	1.97	0.46
41:A:1711:C:H2'	41:A:1712:G:O4'	2.15	0.46
41:A:2180:G:H2'	41:A:2181:C:C6	2.51	0.46
41:A:2366:C:H2'	41:A:2367:A:H8	1.81	0.46
41:A:2837:A:H2'	41:A:2845:A:H2	1.78	0.46
41:A:3251:U:H2'	41:A:3252:G:C8	2.50	0.46
44:F:47:ARG:HH21	44:F:109:TRP:HA	1.80	0.46
47:I:116:PHE:O	47:I:199:ASN:ND2	2.46	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:K:9:GLN:OE1	49:K:52:LEU:HD11	2.16	0.46
1:2:61:A:O2'	1:2:62:A:O4'	2.34	0.46
1:2:88:U:H4'	1:2:171:A:H4'	1.97	0.46
1:2:851:U:O2	1:2:852:C:N4	2.29	0.46
1:2:1122:G:N2	1:2:1125:A:OP2	2.43	0.46
19:SR:111:VAL:HG11	19:SR:218:ILE:HD12	1.98	0.46
41:A:788:C:H2'	41:A:789:A:C8	2.50	0.46
41:A:939:U:H2'	41:A:940:G:H8	1.81	0.46
41:A:1009:A:H2'	41:A:1010:G:C8	2.51	0.46
42:D:179:LEU:O	42:D:181:LYS:N	2.49	0.46
43:E:153:LYS:HD3	43:E:154:TYR:CZ	2.51	0.46
59:V:112:ASN:OD1	59:V:128:LEU:HD22	2.16	0.46
60:W:27:VAL:O	60:W:27:VAL:HG13	2.15	0.46
65:c:34:MET:HE3	65:c:34:MET:HB2	1.88	0.46
75:m:7:ASP:HB3	75:m:10:GLN:HB2	1.98	0.46
1:2:783:G:H8	31:Sd:12:VAL:HG22	1.81	0.45
1:2:956:C:OP1	1:2:1072:C:O2'	2.33	0.45
1:2:1173:C:OP1	9:SH:132:ARG:NH2	2.49	0.45
1:2:1561:U:H2'	1:2:1562:G:H8	1.80	0.45
1:2:1584:G:C6	7:SF:14:LYS:HE2	2.51	0.45
3:SB:118:LEU:CD2	3:SB:129:PRO:HB2	2.46	0.45
10:SI:37:VAL:HG11	10:SI:100:ILE:HD11	1.97	0.45
10:SI:61:VAL:O	10:SI:65:ILE:HG12	2.16	0.45
23:SV:76:THR:HG23	23:SV:105:ASP:HB3	1.98	0.45
25:SX:132:SER:OG	25:SX:133:LYS:N	2.48	0.45
26:SY:60:VAL:HG13	26:SY:66:ILE:HG13	1.97	0.45
41:A:665:A:H2'	41:A:666:A:C8	2.51	0.45
41:A:1084:A:H2'	41:A:1085:A:H8	1.79	0.45
41:A:1388:U:O2'	69:g:99:ASN:O	2.33	0.45
41:A:2369:G:H2'	41:A:2370:G:C8	2.51	0.45
41:A:2431:C:N4	41:A:2432:A:H62	2.14	0.45
41:A:3346:U:H2'	41:A:3347:A:C8	2.50	0.45
46:H:13:GLU:HA	69:g:4:LEU:HD11	1.98	0.45
54:P:9:GLU:OE2	73:k:41:ARG:NH1	2.50	0.45
1:2:1042:G:H2'	1:2:1043:A:H8	1.81	0.45
3:SB:80:LYS:HB2	3:SB:83:ARG:HH22	1.82	0.45
5:SD:133:LEU:HA	5:SD:136:ILE:HG12	1.97	0.45
10:SI:18:TYR:HD2	10:SI:59:ALA:HA	1.82	0.45
10:SI:131:ASP:O	10:SI:135:ILE:HG12	2.16	0.45
16:SO:178:VAL:HG22	16:SO:199:ILE:HD13	1.97	0.45
21:ST:142:ARG:NH1	21:ST:148:SER:O	2.39	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:SW:159:ALA:HB3	24:SW:162:SER:OG	2.16	0.45
25:SX:94:ILE:N	25:SX:94:ILE:HD12	2.31	0.45
41:A:199:A:C4	41:A:201:A:C8	3.04	0.45
41:A:721:G:N2	41:A:750:G:H1'	2.30	0.45
41:A:1748:G:OP1	75:m:44:LYS:HE3	2.16	0.45
41:A:3016:A:H2'	41:A:3017:A:C8	2.50	0.45
41:A:3303:G:O2'	41:A:3305:A:N6	2.49	0.45
43:E:161:LEU:HG	43:E:180:GLU:HG2	1.98	0.45
43:E:284:ARG:HH21	43:E:296:THR:HG22	1.80	0.45
47:I:184:LEU:O	47:I:188:ILE:HG12	2.16	0.45
48:J:133:LYS:HB3	48:J:138:HIS:CD2	2.51	0.45
53:O:72:LEU:HD21	53:O:81:VAL:HG22	1.97	0.45
62:Z:58:ASP:O	62:Z:62:VAL:HG13	2.16	0.45
68:f:86:LYS:HG2	68:f:87:ASN:ND2	2.31	0.45
1:2:142:G:N7	21:ST:177:ARG:NH2	2.64	0.45
1:2:361:C:H2'	1:2:362:G:C8	2.52	0.45
1:2:434:G:N2	1:2:437:A:OP2	2.49	0.45
4:SC:30:ALA:HB1	4:SC:38:LYS:HG2	1.98	0.45
16:SO:70:ASP:OD1	16:SO:70:ASP:C	2.59	0.45
22:SU:111:LYS:HE2	22:SU:111:LYS:HB3	1.81	0.45
41:A:500:C:H4'	46:H:80:ASN:HD21	1.80	0.45
41:A:987:U:H2'	41:A:988:U:C6	2.51	0.45
41:A:2897:A:H2'	41:A:2899:C:H5'	1.97	0.45
55:Q:23[A]:VAL:HG13	55:Q:33[A]:ILE:HG21	1.98	0.45
68:f:85:ALA:O	68:f:87:ASN:N	2.48	0.45
1:2:513:U:H3	1:2:538:A:H62	1.64	0.45
18:SQ:116:LYS:HG3	18:SQ:117:TRP:CD1	2.52	0.45
21:ST:10:ASN:HB3	21:ST:128:THR:HG23	1.97	0.45
22:SU:9:LEU:HD12	22:SU:10:SER:H	1.81	0.45
30:Sc:30:LYS:O	30:Sc:34:LEU:HB2	2.17	0.45
35:s:22:A:H2'	35:s:23:U:C6	2.52	0.45
37:B:40:C:O2	51:M:72:ARG:NH1	2.38	0.45
37:B:91:G:N2	50:L:56:GLU:OE1	2.48	0.45
38:C:100:U:HO2'	62:Z:89:LYS:HZ1	1.54	0.45
41:A:117:U:O2'	41:A:119:U:OP2	2.32	0.45
41:A:1907:C:O2	43:E:240:ARG:NH2	2.47	0.45
41:A:2744:U:H2'	41:A:2745:G:C8	2.51	0.45
43:E:43:LEU:O	43:E:340:LYS:NZ	2.45	0.45
43:E:140:ASP:OD1	43:E:140:ASP:N	2.49	0.45
49:K:57:VAL:HG23	49:K:68:LEU:HD13	1.97	0.45
72:j:5:LYS:O	72:j:9:LEU:HG	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
75:m:25:VAL:HG22	75:m:43:PHE:CD1	2.52	0.45
1:2:95:G:O2'	1:2:460:A:O2'	2.29	0.45
1:2:486:G:N2	1:2:501:U:O2'	2.50	0.45
1:2:912:U:H5'	1:2:913:G:H2'	1.98	0.45
1:2:1382:A:H1'	11:SJ:57:ARG:HB3	1.98	0.45
7:SF:63:ILE:HG22	7:SF:92:TYR:CZ	2.51	0.45
20:SS:139:VAL:HG13	20:SS:150:PRO:HG3	1.99	0.45
20:SS:206:ASP:HB3	20:SS:222:LEU:HB2	1.99	0.45
22:SU:125:ILE:O	22:SU:129:LEU:HB2	2.16	0.45
29:Sb:81:VAL:HG23	29:Sb:85:ASP:HB2	1.98	0.45
32:Se:41:ILE:HG22	32:Se:41:ILE:O	2.16	0.45
38:C:8:C:H2'	38:C:9:A:C8	2.51	0.45
41:A:72:C:H4'	52:N:63:VAL:HB	1.98	0.45
41:A:907:G:C5	41:A:926:A:C8	3.04	0.45
41:A:1138:U:H2'	41:A:1139:G:C8	2.52	0.45
41:A:1498:A:H2'	41:A:1499:C:C6	2.51	0.45
41:A:3110:C:H2'	41:A:3111:U:H6	1.80	0.45
47:I:147:LEU:HD11	47:I:240:VAL:HG11	1.98	0.45
48:J:60:ARG:O	48:J:63:LYS:HG2	2.16	0.45
50:L:103:LEU:HB2	50:L:112:GLN:NE2	2.31	0.45
1:2:209:U:O3'	23:SV:170:SER:OG	2.30	0.45
1:2:647:G:N2	1:2:687:G:H22	2.13	0.45
7:SF:132:LYS:HB2	7:SF:132:LYS:HE3	1.65	0.45
16:SO:47:LEU:HA	16:SO:54:PHE:O	2.16	0.45
18:SQ:82:ARG:HD2	18:SQ:103:MET:HE3	1.98	0.45
35:s:27:G:C2'	35:s:28:U:H5'	2.47	0.45
41:A:341:G:C2	41:A:349:A:N6	2.84	0.45
41:A:632:G:H21	70:h:23:ASN:HD21	1.64	0.45
41:A:726:G:N2	41:A:743:C:OP2	2.40	0.45
41:A:985:U:H2'	41:A:986:U:C6	2.50	0.45
41:A:1709:C:H2'	41:A:1710:C:H6	1.81	0.45
41:A:2265:C:H2'	41:A:2266:U:H6	1.81	0.45
41:A:2367:A:H2'	41:A:2368:A:C8	2.52	0.45
41:A:3044:G:H2'	41:A:3045:G:C8	2.48	0.45
41:A:3236:U:H3	41:A:3251:U:H3	1.65	0.45
46:H:34:LEU:HD23	46:H:34:LEU:HA	1.85	0.45
46:H:62:THR:OG1	46:H:78:ARG:HD3	2.16	0.45
57:S:76:ALA:HA	57:S:79:LYS:HD2	1.99	0.45
81:x:312:VAL:HG21	81:x:320:VAL:CG2	2.35	0.45
81:x:355:ALA:C	81:x:357:TYR:H	2.25	0.45
1:2:1609:U:H5''	7:SF:75:VAL:HG22	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1789:G:H2'	1:2:1790:A:H8	1.82	0.45
3:SB:96:SER:HB2	3:SB:176:THR:HG21	1.99	0.45
8:SG:45:ARG:O	8:SG:49:LYS:HG3	2.17	0.45
25:SX:94:ILE:HG22	25:SX:96:LYS:H	1.81	0.45
29:Sb:14:ILE:HG12	29:Sb:25:VAL:HG11	1.98	0.45
31:Sd:41:ARG:NH2	31:Sd:52:LYS:O	2.50	0.45
35:s:18:G:H4'	35:s:61:A:C6	2.52	0.45
35:s:30:C:H2'	35:s:31:G:C8	2.51	0.45
35:s:67:C:H2'	35:s:68:G:C8	2.52	0.45
41:A:1074:U:H1'	66:d:46:ALA:HB2	1.99	0.45
41:A:1508:C:H2'	41:A:1509:A:C8	2.52	0.45
41:A:2676:A:H5'	41:A:2677:G:C8	2.52	0.45
41:A:2727:A:OP2	41:A:2728:G:N2	2.49	0.45
41:A:3060:C:H2'	41:A:3061:G:H8	1.81	0.45
41:A:3160:U:H5''	41:A:3396:U:H3'	1.98	0.45
41:A:3181:C:HO2'	55:Q:164[A]:SER:HG	1.55	0.45
45:G:156:GLY:HA2	45:G:181:PRO:HD3	1.98	0.45
48:J:91:PHE:CE2	48:J:185:ARG:HB3	2.51	0.45
50:L:31:ILE:HG22	50:L:62:SER:HB2	1.98	0.45
53:O:17:VAL:HG11	53:O:74:ARG:HA	1.97	0.45
72:j:66:VAL:HG12	72:j:80:LEU:HD11	1.99	0.45
1:2:1158:C:H42	1:2:1163:A:H61	1.65	0.45
1:2:1680:G:O2'	1:2:1681:A:O4'	2.32	0.45
2:SA:217:ILE:O	2:SA:219:ALA:N	2.50	0.45
3:SB:140:THR:HA	3:SB:214:LYS:HD3	1.99	0.45
6:SE:53:PRO:HB3	6:SE:83:MET:HE1	1.99	0.45
10:SI:138:GLN:O	10:SI:141:GLU:HG3	2.16	0.45
37:B:4:U:H2'	37:B:5:G:H8	1.82	0.45
38:C:83:C:N4	63:a:52:ARG:HH22	2.15	0.45
41:A:651:G:H2'	41:A:652:G:C8	2.52	0.45
41:A:750:G:C2	41:A:751:A:C8	3.05	0.45
41:A:987:U:H2'	41:A:988:U:H6	1.81	0.45
41:A:1905:G:O6	43:E:241:LYS:NZ	2.50	0.45
41:A:2457:G:H2'	41:A:2458:A:H2'	1.98	0.45
41:A:3193:C:H2'	41:A:3194:C:H6	1.82	0.45
42:D:30:ARG:HH21	42:D:36:GLU:HB2	1.82	0.45
53:O:23:ILE:HG21	53:O:28:SER:HB2	1.98	0.45
1:2:1584:G:H1'	1:2:1585:U:H5	1.82	0.45
3:SB:74:ALA:HB1	7:SF:122:ARG:HH22	1.81	0.45
22:SU:163:ASP:OD1	22:SU:163:ASP:N	2.48	0.45
28:Sa:86:SER:O	28:Sa:86:SER:OG	2.33	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:Sd:11:LYS:HB2	31:Sd:24:VAL:HG12	1.98	0.45
41:A:127:G:H2'	41:A:128:G:C8	2.52	0.45
41:A:354:U:H2'	41:A:355:A:C8	2.52	0.45
41:A:428:A:H2'	41:A:429:U:C6	2.52	0.45
41:A:714:G:O2'	41:A:753:C:O2'	2.28	0.45
41:A:2367:A:H2'	41:A:2368:A:H8	1.82	0.45
41:A:2615:G:H2'	41:A:2616:C:C6	2.52	0.45
41:A:2713:U:H5''	79:q:9:LYS:O	2.17	0.45
45:G:40:HIS:HB3	45:G:43:LYS:HG3	1.99	0.45
48:J:93:LEU:HA	48:J:96:LYS:HE3	1.98	0.45
48:J:186:LEU:HD23	48:J:189:LEU:HD12	1.98	0.45
64:b:67:LYS:HD3	64:b:67:LYS:HA	1.79	0.45
81:x:357:TYR:OH	81:x:359:PRO:HB3	2.17	0.45
1:2:687:G:P	29:Sb:118:ARG:HH12	2.39	0.45
1:2:1331:A:OP1	8:SG:45:ARG:NH2	2.40	0.45
5:SD:30:VAL:O	5:SD:34:THR:OG1	2.33	0.45
6:SE:57:MET:HA	6:SE:57:MET:HE2	1.98	0.45
41:A:171:G:N1	41:A:248:U:O2	2.50	0.45
41:A:500:C:H2'	41:A:501:A:C8	2.51	0.45
41:A:1128:U:O4'	50:L:4:ARG:NH2	2.50	0.45
41:A:1177:G:N2	41:A:1177:G:OP1	2.44	0.45
41:A:1206:G:OP1	50:L:157:TYR:OH	2.26	0.45
41:A:2105:G:H2'	41:A:2106:A:C8	2.52	0.45
43:E:287:LYS:HE3	43:E:287:LYS:HB3	1.81	0.45
49:K:120:ASP:OD2	49:K:124:ARG:NH1	2.48	0.45
58:U:42:TRP:O	58:U:46:GLN:HG2	2.17	0.45
1:2:686:C:H2'	1:2:687:G:C8	2.52	0.44
1:2:959:U:H5''	26:SY:14:SER:HB2	2.00	0.44
2:SA:223:LYS:HE2	16:SO:142:ALA:HA	1.99	0.44
8:SG:18:GLU:HG2	8:SG:70:SER:O	2.17	0.44
22:SU:130:VAL:HB	22:SU:133:THR:HG22	1.99	0.44
23:SV:168:CYS:HB2	23:SV:184:LEU:HD21	1.98	0.44
41:A:837:A:OP1	80:r:5:THR:OG1	2.27	0.44
41:A:1157:G:H2'	41:A:1158:A:O4'	2.17	0.44
41:A:1361:U:O2	47:I:159:GLN:NE2	2.49	0.44
41:A:1705:U:O2	41:A:1786:G:O2'	2.34	0.44
41:A:1882:G:H2'	41:A:1883:A:C8	2.53	0.44
41:A:2177:G:H2'	42:D:128:ARG:HB2	1.98	0.44
41:A:2237:C:H2'	41:A:2238:G:H8	1.83	0.44
41:A:3234:A:N1	41:A:3253:G:N2	2.55	0.44
44:F:14:GLU:OE1	44:F:14:GLU:N	2.46	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:G:124:GLU:OE2	45:G:124:GLU:N	2.48	0.44
46:H:170:LYS:HB3	46:H:172:HIS:CE1	2.52	0.44
56:R:175:ARG:CZ	56:R:179:GLN:HE21	2.30	0.44
81:x:261:THR:O	81:x:311:ASN:C	2.59	0.44
1:2:606:A:H4'	1:2:607:G:H3'	1.98	0.44
1:2:1204:A:H61	14:SM:15:GLY:HA3	1.82	0.44
1:2:1415:U:H2'	1:2:1416:G:H8	1.83	0.44
14:SM:7:TRP:CD1	14:SM:8:PHE:HD2	2.35	0.44
18:SQ:65:VAL:HA	18:SQ:87:ARG:HA	1.99	0.44
22:SU:63:PRO:O	22:SU:64:VAL:HB	2.17	0.44
23:SV:39:GLY:O	23:SV:59:ARG:HB3	2.16	0.44
36:t:9:G:H2'	36:t:11:C:H41	1.82	0.44
41:A:41:G:N2	41:A:2803:A:H62	2.15	0.44
41:A:1219:C:H4'	41:A:1223:A:H5'	2.00	0.44
41:A:1264:G:H1'	41:A:1265:U:C5	2.52	0.44
41:A:1475:A:H4'	68:f:57:GLN:HG3	1.99	0.44
41:A:3072:C:H2'	41:A:3073:A:O4'	2.18	0.44
44:F:23:PRO:HG2	44:F:25:VAL:HG12	1.97	0.44
44:F:219:LEU:HD22	44:F:225:VAL:HG11	1.98	0.44
45:G:206:GLN:O	45:G:210:GLU:HG2	2.17	0.44
53:O:65:LEU:HD12	58:U:172:TYR:OH	2.17	0.44
54:P:113:LEU:HB2	54:P:134:LEU:HD22	2.00	0.44
57:S:23:ASN:HB3	57:S:26:LEU:HB3	1.98	0.44
72:j:14:LYS:HZ1	72:j:61:GLN:HG2	1.82	0.44
80:r:14:TYR:HB3	80:r:18:TYR:HD2	1.83	0.44
1:2:614:C:OP2	30:Sc:5:LYS:NZ	2.45	0.44
3:SB:45:LYS:HE3	3:SB:45:LYS:HB3	1.74	0.44
7:SF:55:VAL:HG11	7:SF:105:LEU:HD12	1.99	0.44
22:SU:51:VAL:HG23	22:SU:53:GLY:H	1.82	0.44
35:s:61:A:H5''	35:s:62:C:H5	1.81	0.44
39:T:64:ARG:NE	41:A:1672:U:OP1	2.50	0.44
41:A:105:C:H2'	41:A:106:A:H8	1.82	0.44
41:A:1163:A:H2'	41:A:1164:G:H8	1.83	0.44
41:A:2759:U:H5''	41:A:2760:C:H5'	1.99	0.44
45:G:263:GLU:HG3	45:G:264:GLN:OE1	2.17	0.44
50:L:19:LYS:HB3	50:L:19:LYS:HE3	1.79	0.44
71:i:56:THR:O	71:i:56:THR:OG1	2.34	0.44
1:2:311:U:OP1	30:Sc:24:TRP:NE1	2.40	0.44
1:2:603:U:H2'	1:2:604:A:C8	2.52	0.44
1:2:1406:A:H2'	1:2:1407:U:C6	2.53	0.44
3:SB:114:ILE:O	3:SB:118:LEU:HB2	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:SK:52:LYS:HB2	12:SK:52:LYS:HE3	1.74	0.44
17:SP:10:THR:OG1	17:SP:13:ASP:OD2	2.35	0.44
22:SU:84:LYS:HE2	22:SU:84:LYS:HB2	1.89	0.44
36:t:58:A:O2'	36:t:60:A:OP2	2.35	0.44
39:T:7:GLN:NE2	39:T:35:ALA:O	2.50	0.44
41:A:16:A:H2'	41:A:17:G:C8	2.53	0.44
41:A:155:G:H21	73:k:26:ILE:HD11	1.82	0.44
41:A:342:A:H5'	41:A:344:A:C8	2.53	0.44
41:A:1015:U:O4	41:A:1036:A:N6	2.50	0.44
41:A:1263:A:N3	41:A:1263:A:H2'	2.33	0.44
41:A:1433:A:H5'	69:g:27:ARG:HB2	1.99	0.44
41:A:2503:G:H2'	41:A:2503:G:N3	2.32	0.44
41:A:2578:U:H2'	41:A:2579:G:O4'	2.17	0.44
41:A:3356:G:H2'	41:A:3357:U:O4'	2.17	0.44
44:F:61:SER:OG	44:F:61:SER:O	2.35	0.44
50:L:215:GLU:N	50:L:215:GLU:OE2	2.49	0.44
54:P:46:ASP:O	54:P:50:ARG:HG3	2.17	0.44
61:X:15:LEU:HD23	61:X:53:SER:HB3	2.00	0.44
76:n:14:ALA:O	76:n:18:LYS:HG2	2.16	0.44
81:x:302:ALA:CB	81:x:308:VAL:HG11	2.48	0.44
1:2:1785:U:OP1	27:SZ:136:ARG:NH2	2.49	0.44
7:SF:39:VAL:HG23	7:SF:45:ARG:HE	1.82	0.44
7:SF:65:ILE:HG21	7:SF:85:ILE:HG22	1.99	0.44
23:SV:56:ARG:HD3	23:SV:56:ARG:HA	1.73	0.44
23:SV:61:GLU:HG3	23:SV:62:THR:HG22	2.00	0.44
29:Sb:23:ARG:HD3	33:Sf:4:VAL:HG22	2.00	0.44
29:Sb:31:SER:OG	29:Sb:32:LYS:N	2.50	0.44
35:s:21:U:OP1	35:s:49:C:N4	2.51	0.44
35:s:27:G:N2	35:s:45:A:N1	2.64	0.44
37:B:13:A:OP2	37:B:67:G:N2	2.49	0.44
37:B:76:A:N3	58:U:50:LYS:NZ	2.64	0.44
40:Y:12:LYS:HD3	40:Y:12:LYS:HA	1.78	0.44
41:A:879:U:H4'	56:R:132:ALA:HB3	1.98	0.44
41:A:928:C:H2'	41:A:929:A:H8	1.81	0.44
41:A:988:U:H2'	41:A:989:A:H8	1.83	0.44
41:A:1499:C:H2'	41:A:1500:G:C8	2.52	0.44
41:A:1666:G:H2'	41:A:1667:A:H8	1.81	0.44
41:A:2900:A:HO2'	41:A:3025:C:HO2'	1.65	0.44
57:S:126:GLN:O	57:S:130:ARG:HG3	2.18	0.44
1:2:332:U:OP1	23:SV:31:ARG:NH1	2.39	0.44
1:2:1797:A:OP1	32:Se:10:ARG:NE	2.51	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:SB:144:GLU:HG2	3:SB:221:ALA:HB1	2.00	0.44
9:SH:68:ARG:O	9:SH:72:ILE:HG13	2.18	0.44
15:SN:130:VAL:HG11	15:SN:143:LYS:HA	2.00	0.44
35:s:26:C:H2'	35:s:27:G:O4'	2.18	0.44
35:s:57:C:H3'	35:s:58:G:H8	1.82	0.44
41:A:733:G:N2	41:A:736:A:OP2	2.48	0.44
41:A:1104:G:H8	41:A:1104:G:OP2	2.01	0.44
41:A:1342:C:H2'	41:A:1343:A:C8	2.53	0.44
41:A:2226:U:H2'	41:A:2227:C:H6	1.83	0.44
41:A:2471:U:O4	41:A:2475:G:O6	2.35	0.44
41:A:3095:U:H2'	41:A:3096:C:C6	2.53	0.44
42:D:5:ILE:HG13	42:D:8:GLN:HG3	2.00	0.44
42:D:225:ILE:HG21	42:D:234:LYS:HA	1.98	0.44
43:E:35:ASP:HA	43:E:184:ASN:HB3	1.98	0.44
50:L:103:LEU:HB2	50:L:112:GLN:HE22	1.83	0.44
51:M:32:ARG:HB3	51:M:120:ILE:HA	2.00	0.44
81:x:313:LYS:HZ3	81:x:313:LYS:HB2	1.83	0.44
1:2:10:G:H21	19:SR:88:LYS:HA	1.82	0.44
1:2:94:U:O2'	20:SS:8:HIS:ND1	2.50	0.44
1:2:145:A:H61	1:2:169:A:H62	1.64	0.44
1:2:251:A:H2	20:SS:131:LEU:HD12	1.83	0.44
1:2:333:A:H5'	23:SV:48:THR:HB	1.98	0.44
1:2:1398:U:H3'	1:2:1399:C:H4'	1.99	0.44
9:SH:45:LEU:O	9:SH:49:LYS:HG2	2.18	0.44
10:SI:138:GLN:O	10:SI:142:GLU:HG3	2.17	0.44
15:SN:105:TYR:O	15:SN:118:ARG:NH1	2.49	0.44
16:SO:112:SER:HB3	16:SO:154:VAL:H	1.83	0.44
19:SR:54:GLU:OE2	28:Sa:11:LEU:HD13	2.18	0.44
22:SU:114:ARG:O	22:SU:117:THR:OG1	2.34	0.44
39:T:105:LEU:HD23	39:T:138:LEU:HD23	2.00	0.44
41:A:129:U:H3	41:A:139:G:H1	1.66	0.44
41:A:1288:U:H2'	41:A:1289:G:H8	1.83	0.44
41:A:1480:G:O4'	41:A:1483:G:N2	2.46	0.44
41:A:1576:G:H2'	41:A:1577:G:C8	2.53	0.44
41:A:1616:U:H2'	41:A:1617:G:H8	1.82	0.44
41:A:1804:A:H2'	41:A:1805:C:H6	1.82	0.44
42:D:177:LYS:HB2	80:r:29:LEU:HD12	1.98	0.44
46:H:42:LEU:HD23	46:H:84:VAL:HG12	1.99	0.44
58:U:38:LYS:HG2	58:U:58:ILE:HD13	1.99	0.44
62:Z:58:ASP:OD1	62:Z:58:ASP:N	2.43	0.44
66:d:32:LEU:HD23	66:d:32:LEU:HA	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:g:4:LEU:HD12	69:g:91:THR:HG22	2.00	0.44
71:i:74:ARG:HD2	71:i:75:ALA:H	1.83	0.44
81:x:280:PHE:CE1	81:x:320:VAL:HG13	2.51	0.44
81:x:289:VAL:HG22	81:x:310:PHE:HD2	1.82	0.44
1:2:482:U:H2'	1:2:483:A:H8	1.83	0.44
4:SC:68:LEU:HD23	4:SC:73:VAL:HG22	1.99	0.44
8:SG:27:ASP:HB3	8:SG:30:THR:HG22	2.00	0.44
19:SR:214:ALA:O	19:SR:218:ILE:HG12	2.18	0.44
24:SW:109:LEU:HB2	24:SW:146:PHE:HB3	1.99	0.44
33:Sf:46:VAL:HG22	33:Sf:54:VAL:HG21	2.00	0.44
40:Y:37:ALA:O	40:Y:41:LYS:HG2	2.18	0.44
41:A:692:A:H4'	44:F:46:LYS:HB2	1.99	0.44
41:A:790:U:H2'	41:A:791:A:H8	1.82	0.44
41:A:1324:U:H5'	58:U:2:ALA:HA	2.00	0.44
41:A:3015:G:H2'	41:A:3016:A:C8	2.50	0.44
41:A:3051:U:H2'	41:A:3052:G:C8	2.53	0.44
46:H:154:LEU:HD23	53:O:119:GLN:HG2	1.99	0.44
55:Q:27[A]:LEU:HD11	55:Q:102[A]:LEU:HD13	1.99	0.44
58:U:6:GLU:HG3	58:U:30:PHE:CE1	2.53	0.44
62:Z:77:GLU:HA	62:Z:133:LEU:HD13	2.00	0.44
77:o:126:LYS:HA	77:o:126:LYS:HD3	1.82	0.44
81:x:263:PRO:HG2	81:x:312:VAL:CG1	2.31	0.44
81:x:347:LEU:O	81:x:348:ASN:CB	2.65	0.44
1:2:647:G:H1	1:2:687:G:H1	1.65	0.44
2:SA:48:VAL:HB	2:SA:86:LEU:HD13	2.00	0.44
10:SI:49:ASP:O	10:SI:51:GLU:N	2.51	0.44
11:SJ:28:SER:HB2	11:SJ:112:VAL:HA	1.99	0.44
18:SQ:35:PRO:HG2	18:SQ:38:PHE:HE2	1.82	0.44
27:SZ:17:ALA:N	27:SZ:80:HIS:O	2.49	0.44
31:Sd:27:VAL:HG13	31:Sd:69:SER:HB2	2.00	0.44
35:s:77:A:H5'	81:x:254:TYR:HD2	1.78	0.44
41:A:938:C:OP1	41:A:962:A:O2'	2.26	0.44
41:A:992:A:H5''	59:V:43:LYS:HD2	1.99	0.44
41:A:1477:A:OP1	41:A:3075:G:O2'	2.27	0.44
41:A:1806:A:H2'	41:A:1807:G:O4'	2.18	0.44
41:A:1842:A:H5''	76:n:45:ARG:HH22	1.83	0.44
41:A:2160:G:H2'	41:A:2161:G:H8	1.82	0.44
41:A:2769:A:H2'	41:A:2770:G:C8	2.53	0.44
41:A:2936:A:H2'	41:A:2937:G:C8	2.53	0.44
56:R:116:HIS:HB3	56:R:149:VAL:HB	2.00	0.44
59:V:69:LYS:HB3	59:V:69:LYS:HE3	1.84	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:X:108:GLU:HG3	61:X:128:ARG:HG2	2.00	0.44
67:e:32:LYS:O	67:e:36:GLN:HG3	2.17	0.44
70:h:37:THR:HG23	70:h:39:GLN:H	1.83	0.44
81:x:357:TYR:CZ	81:x:359:PRO:HB3	2.53	0.44
2:SA:97:SER:O	2:SA:101:GLN:HG2	2.17	0.43
4:SC:16:PHE:CE2	4:SC:82:LEU:HG	2.53	0.43
5:SD:47:GLU:O	5:SD:51:ALA:N	2.49	0.43
9:SH:16:ARG:NH1	51:M:111:ASP:OD2	2.51	0.43
16:SO:23:LEU:HD11	16:SO:293:ALA:HB3	2.00	0.43
16:SO:83:ALA:HB1	16:SO:110:VAL:HG23	2.00	0.43
16:SO:147:HIS:CE1	16:SO:179:LYS:HG2	2.53	0.43
17:SP:88:LYS:HA	17:SP:88:LYS:HD3	1.90	0.43
17:SP:188:LEU:HD11	17:SP:195:TRP:CD1	2.53	0.43
31:Sd:44:LEU:HD23	31:Sd:44:LEU:HA	1.80	0.43
32:Se:63:ALA:C	32:Se:64:LEU:HD23	2.43	0.43
41:A:37:U:OP1	41:A:934:G:N2	2.44	0.43
41:A:247:C:H2'	41:A:248:U:O4'	2.18	0.43
41:A:370:U:H2'	41:A:371:G:O4'	2.18	0.43
41:A:1596:C:H2'	41:A:1597:C:H6	1.83	0.43
41:A:1609:C:N4	41:A:1610:G:O6	2.51	0.43
41:A:2557:A:OP1	42:D:69:TYR:OH	2.33	0.43
41:A:2785:A:H2'	41:A:2786:G:C8	2.53	0.43
41:A:3105:U:C2	41:A:3106:A:C8	3.06	0.43
41:A:3173:G:O6	70:h:92:LYS:NZ	2.42	0.43
43:E:236:LYS:HE2	43:E:236:LYS:HB2	1.76	0.43
48:J:165:PHE:HZ	54:P:3:ALA:HB1	1.83	0.43
52:N:49:ARG:O	52:N:137:GLN:NE2	2.51	0.43
59:V:102:ARG:O	59:V:106:LEU:HD22	2.18	0.43
81:x:11:VAL:HG22	81:x:12:VAL:N	2.32	0.43
81:x:326:ALA:O	81:x:327:GLY:C	2.58	0.43
81:x:346:ILE:HB	81:x:433:VAL:O	2.17	0.43
1:2:458:G:OP1	31:Sd:109:LYS:NZ	2.41	0.43
1:2:629:U:H2'	1:2:630:A:H8	1.83	0.43
1:2:646:C:H2'	1:2:647:G:C8	2.53	0.43
1:2:993:A:H62	1:2:1011:G:H21	1.66	0.43
1:2:1650:U:H2'	1:2:1651:A:C8	2.53	0.43
7:SF:82:ARG:HH12	7:SF:115:THR:HG23	1.83	0.43
7:SF:143:ARG:HD3	7:SF:143:ARG:HA	1.62	0.43
16:SO:153:GLN:C	16:SO:153:GLN:OE1	2.61	0.43
16:SO:253:ALA:HB2	16:SO:262:VAL:HG23	1.99	0.43
18:SQ:191:GLU:O	18:SQ:195:LYS:NZ	2.51	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25: SX:13: PHE: HD2	25: SX:15: LYS: HD2	1.82	0.43
30: Sc:109: ARG: HG3	30: Sc:114: LYS: HA	1.99	0.43
35: s:21: U: H1'	35: s:22: A: C8	2.52	0.43
37: B:52: G: H2'	37: B:53: U: C6	2.52	0.43
38: C:100: U: O2'	62: Z:89: LYS: NZ	2.32	0.43
41: A:250: U: H5''	41: A:251: G: H2'	2.00	0.43
41: A:286: U: H2'	41: A:287: G: H8	1.82	0.43
41: A:656: A: H2'	41: A:657: A: H8	1.83	0.43
41: A:746: A: H2'	41: A:747: A: H8	1.82	0.43
41: A:1254: C: H2'	41: A:1255: C: H6	1.83	0.43
41: A:1328: C: OP1	70: h:82: ARG: NH2	2.51	0.43
41: A:1393: A: N6	41: A:1417: G: H1'	2.33	0.43
41: A:1429: G: C4	44: F:99: MET: HE1	2.53	0.43
41: A:1551: C: H2'	41: A:1552: G: O4'	2.18	0.43
48: J:142: LEU: HD22	48: J:147: LYS: HB2	2.00	0.43
64: b:88: ASP: O	64: b:121: ARG: NH2	2.51	0.43
79: q:92: GLU: OE2	79: q:93: LEU: N	2.51	0.43
1:2:59: C: O2'	1:2:60: U: O4'	2.34	0.43
1:2:1701: A: H2'	1:2:1702: A: C8	2.54	0.43
3: SB:56: ALA: HA	3: SB:59: VAL: HG23	2.01	0.43
3: SB:80: LYS: HB2	3: SB:83: ARG: NH2	2.32	0.43
5: SD:125: ASN: C	5: SD:127: GLY: H	2.26	0.43
8: SG:23: LYS: HA	8: SG:23: LYS: HE3	2.00	0.43
8: SG:71: PHE: C	8: SG:73: LEU: H	2.26	0.43
8: SG:106: THR: O	8: SG:110: VAL: HG23	2.18	0.43
16: SO:31: ASN: HA	16: SO:47: LEU: HB2	2.00	0.43
17: SP:69: ASN: HB3	17: SP:71: GLU: OE1	2.18	0.43
17: SP:179: ARG: HH21	17: SP:183: ARG: HH12	1.65	0.43
22: SU:107: ARG: HD2	22: SU:107: ARG: HA	1.66	0.43
26: SY:103: GLU: HG2	26: SY:104: ARG: HG3	2.00	0.43
41: A:58: G: O2'	41: A:61: A: H5'	2.18	0.43
41: A:153: U: OP2	72: j:103: LYS: HE3	2.17	0.43
41: A:209: A: O2'	41: A:211: A: OP2	2.36	0.43
41: A:415: G: H2'	41: A:416: A: H8	1.83	0.43
41: A:665: A: N6	41: A:798: G: O6	2.51	0.43
41: A:721: G: H2'	41: A:722: G: H8	1.82	0.43
41: A:2181: C: H2'	41: A:2182: A: C8	2.54	0.43
41: A:2217: U: H2'	41: A:2218: G: C8	2.50	0.43
41: A:2428: U: H2'	41: A:2429: G: H8	1.83	0.43
41: A:3132: C: H2'	41: A:3133: C: C6	2.52	0.43
41: A:3139: A: H2'	41: A:3140: G: O4'	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:A:3333:G:H1'	41:A:3370:A:N6	2.33	0.43
44:F:42:VAL:HG12	44:F:236:LEU:HD21	2.00	0.43
44:F:161:LYS:HA	44:F:161:LYS:HD2	1.70	0.43
57:S:35:PHE:CE1	57:S:39:ARG:HD3	2.54	0.43
1:2:496:G:H2'	1:2:497:G:C8	2.52	0.43
1:2:1220:C:H2'	1:2:1221:A:C8	2.53	0.43
1:2:1636:C:H4'	1:2:1637:C:O5'	2.17	0.43
2:SA:80:ALA:O	2:SA:83:THR:OG1	2.26	0.43
7:SF:55:VAL:HG21	7:SF:105:LEU:HD11	1.99	0.43
11:SJ:43:LYS:HA	11:SJ:46:GLU:OE2	2.18	0.43
16:SO:182:ASN:HD22	16:SO:189:GLU:CD	2.26	0.43
16:SO:273:ASP:OD1	16:SO:275:ARG:NH1	2.51	0.43
20:SS:31:PRO:HA	20:SS:81:THR:HB	1.98	0.43
24:SW:42:ILE:HA	24:SW:45:ILE:HG22	2.00	0.43
24:SW:107:ARG:NH2	24:SW:148:VAL:HG23	2.34	0.43
24:SW:135:ALA:HB2	24:SW:159:ALA:HB2	1.99	0.43
38:C:140:G:H1	41:A:19:U:H3	1.67	0.43
41:A:1242:G:H2'	41:A:1243:G:O4'	2.19	0.43
41:A:1368:U:C2	41:A:1369:A:C8	3.06	0.43
41:A:1598:G:H2'	41:A:1599:G:H8	1.82	0.43
41:A:2389:C:O2'	41:A:3307:A:N1	2.49	0.43
41:A:2467:G:H1'	41:A:2468:A:C8	2.53	0.43
41:A:2708:C:C2	41:A:2709:C:C5	3.06	0.43
41:A:2729:U:C2	41:A:2730:G:C8	3.07	0.43
41:A:3042:U:H2'	41:A:3043:C:H6	1.81	0.43
41:A:3139:A:OP1	43:E:274:SER:OG	2.34	0.43
42:D:114:SER:N	42:D:165:VAL:O	2.50	0.43
43:E:213:GLU:HG2	43:E:215:ILE:HG23	2.00	0.43
46:H:145:LEU:HD23	46:H:145:LEU:HA	1.85	0.43
49:K:31:ARG:HG2	49:K:149:ASN:HD21	1.83	0.43
55:Q:15[A]:LEU:HD11	55:Q:128[A]:ARG:HB2	2.00	0.43
61:X:12:ARG:HH11	61:X:12:ARG:HG3	1.82	0.43
61:X:86:ARG:HB2	61:X:92:PHE:CE2	2.53	0.43
75:m:25:VAL:HB	75:m:77:ARG:HD2	2.00	0.43
81:x:12:VAL:HG22	81:x:113:VAL:HB	2.00	0.43
81:x:344:VAL:HG21	81:x:426:VAL:CG2	2.48	0.43
1:2:835:U:H2'	1:2:836:U:H5	1.83	0.43
1:2:1587:A:H2'	1:2:1588:G:H8	1.82	0.43
6:SE:75:PRO:HA	6:SE:93:VAL:HG23	2.00	0.43
18:SQ:205:PHE:HB3	18:SQ:207:LEU:HD13	2.01	0.43
21:ST:115:LYS:HD2	21:ST:115:LYS:HA	1.80	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:Y:35:LYS:O	40:Y:39:LEU:HG	2.18	0.43
41:A:77:A:H5'	52:N:100:ARG:CZ	2.48	0.43
41:A:225:C:H2'	41:A:226:C:C6	2.53	0.43
41:A:411:U:H2'	41:A:412:G:H8	1.83	0.43
41:A:647:A:OP2	41:A:647:A:H8	2.01	0.43
41:A:1372:C:H2'	41:A:1373:A:H8	1.82	0.43
41:A:1446:A:N1	41:A:2356:A:H5''	2.33	0.43
41:A:1543:G:O2'	41:A:2168:A:O2'	2.21	0.43
41:A:1651:U:H2'	41:A:1652:G:H8	1.82	0.43
41:A:2356:A:N3	56:R:131:ARG:NH2	2.64	0.43
41:A:2666:C:OP2	41:A:2687:G:N1	2.52	0.43
41:A:3018:C:C4	41:A:3019:U:C4	3.06	0.43
41:A:3295:A:H2'	41:A:3296:A:C8	2.53	0.43
56:R:167:ARG:HB2	70:h:60:ARG:HD3	2.00	0.43
70:h:51:TYR:O	70:h:66:VAL:HA	2.19	0.43
74:l:34:CYS:HB2	74:l:37:CYS:SG	2.57	0.43
75:m:19:ASP:OD2	75:m:48:SER:OG	2.31	0.43
1:2:992:A:O2'	1:2:1785:U:O2	2.35	0.43
3:SB:205:SER:OG	3:SB:207:THR:HG22	2.18	0.43
7:SF:60:PHE:CZ	7:SF:89:LEU:HD22	2.54	0.43
10:SI:115:GLU:OE1	10:SI:125:SER:OG	2.35	0.43
16:SO:59:ARG:NE	16:SO:59:ARG:HA	2.34	0.43
18:SQ:97:LEU:HB3	18:SQ:232:HIS:HD1	1.84	0.43
34:Sg:13:LYS:O	34:Sg:17:GLN:HG3	2.18	0.43
40:Y:4:GLU:HB3	40:Y:30:ARG:HD3	2.00	0.43
41:A:230:U:H2'	41:A:231:G:O4'	2.18	0.43
41:A:786:A:O3'	41:A:787:G:H8	2.01	0.43
41:A:927:C:C2	41:A:928:C:C5	3.07	0.43
41:A:1031:C:H2'	41:A:1032:C:C5	2.53	0.43
41:A:1211:U:O2'	58:U:113:ARG:HD2	2.19	0.43
41:A:1263:A:O3'	41:A:1264:G:H8	2.02	0.43
41:A:1363:A:H2'	41:A:1364:C:C6	2.54	0.43
41:A:2396:G:OP1	41:A:2397:A:O2'	2.30	0.43
42:D:33:ASP:O	42:D:37:ARG:HB3	2.18	0.43
49:K:20:ILE:HG12	49:K:25:VAL:HG13	1.99	0.43
50:L:86:HIS:HB3	50:L:139:ARG:CG	2.48	0.43
61:X:80:ARG:HB2	61:X:99:ALA:HB3	2.00	0.43
69:g:83:GLU:OE2	69:g:111:ARG:NE	2.46	0.43
69:g:98:HIS:O	69:g:125:ARG:NH1	2.52	0.43
72:j:115:LYS:HE2	72:j:115:LYS:HB3	1.73	0.43
81:x:306:ASP:CB	81:x:308:VAL:HG13	2.48	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:168:A:OP1	21:ST:136:LYS:N	2.50	0.43
1:2:1465:C:H5'	7:SF:139:GLN:HB3	2.00	0.43
3:SB:118:LEU:HD23	3:SB:129:PRO:HB2	2.01	0.43
7:SF:98:ASP:OD1	7:SF:98:ASP:N	2.50	0.43
7:SF:99:GLU:OE2	7:SF:102:LYS:HE3	2.17	0.43
10:SI:22:LEU:HD23	10:SI:22:LEU:HA	1.88	0.43
16:SO:234:LEU:HD22	16:SO:263:PHE:CE2	2.54	0.43
16:SO:260:ILE:HG12	16:SO:292:LEU:HD23	2.00	0.43
18:SQ:194:ASN:ND2	18:SQ:211:HIS:HA	2.33	0.43
19:SR:83:ILE:HD12	19:SR:83:ILE:N	2.34	0.43
21:ST:186:ARG:O	21:ST:190:GLN:HG2	2.18	0.43
22:SU:16:LEU:H	22:SU:16:LEU:HD12	1.83	0.43
23:SV:162:ALA:HA	41:A:3352:U:C5	2.53	0.43
28:Sa:76:ASP:OD1	28:Sa:76:ASP:N	2.51	0.43
29:Sb:37:PHE:CD1	29:Sb:41:MET:HE2	2.52	0.43
35:s:67:C:C5'	81:x:408:LYS:HD2	2.48	0.43
39:T:4:LEU:HD13	39:T:24:LEU:HD23	2.01	0.43
41:A:98:G:N7	52:N:13:HIS:NE2	2.67	0.43
41:A:228:U:H5''	63:a:8:VAL:HG21	2.00	0.43
41:A:357:A:H2'	41:A:358:G:C8	2.54	0.43
41:A:1146:C:H2'	41:A:1147:G:C8	2.54	0.43
41:A:1300:G:OP2	41:A:1301:A:O2'	2.32	0.43
41:A:1535:A:H62	41:A:1586:G:H21	1.66	0.43
41:A:1776:G:H2'	41:A:1777:U:C6	2.53	0.43
41:A:2183:A:H5''	42:D:7:ASN:HB3	2.01	0.43
41:A:2264:U:H2'	41:A:2265:C:C6	2.53	0.43
41:A:2446:U:H2'	41:A:2447:A:H8	1.83	0.43
41:A:2561:A:H2'	41:A:2562:A:H8	1.82	0.43
41:A:2731:U:H2'	41:A:2732:G:C8	2.54	0.43
41:A:2895:G:H5''	77:o:102:ARG:HH21	1.83	0.43
41:A:3150:A:OP1	43:E:132:LYS:HB2	2.19	0.43
41:A:3379:C:H2'	41:A:3380:U:C6	2.53	0.43
42:D:137:ILE:HD11	42:D:149:ARG:HB2	2.01	0.43
64:b:47:GLU:HB3	64:b:69:LYS:HG2	2.00	0.43
71:i:18:ASN:O	71:i:18:ASN:ND2	2.49	0.43
72:j:67:ARG:HG3	72:j:80:LEU:HD13	1.99	0.43
75:m:12:LEU:HD23	75:m:12:LEU:HA	1.84	0.43
81:x:263:PRO:CG	81:x:312:VAL:HG13	2.32	0.43
81:x:344:VAL:CA	81:x:436:GLY:HA3	2.38	0.43
1:2:167:U:H1'	21:ST:133:LEU:HD23	1.99	0.43
1:2:553:G:H3'	1:2:554:C:H2'	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:SB:51:VAL:HG22	3:SB:131:GLN:HB2	2.00	0.43
4:SC:30:ALA:O	4:SC:31:LYS:HD2	2.18	0.43
16:SO:76:ASP:OD1	16:SO:76:ASP:N	2.37	0.43
35:s:67:C:H5''	81:x:408:LYS:HZ3	1.82	0.43
36:t:3:C:H2'	36:t:4:G:C8	2.54	0.43
41:A:106:A:C2	41:A:325:A:H1'	2.53	0.43
41:A:1088:U:C2	41:A:1089:G:C8	3.06	0.43
41:A:1107:C:H2'	41:A:1108:U:C6	2.52	0.43
41:A:1192:C:N4	41:A:1301:A:O2'	2.50	0.43
41:A:1558:A:H1'	62:Z:34:LEU:HD13	2.00	0.43
41:A:1677:G:H1	41:A:1691:U:H3	1.66	0.43
41:A:1860:G:H2'	41:A:1861:G:H8	1.83	0.43
41:A:3268:A:N1	46:H:135:VAL:HG22	2.34	0.43
42:D:111:THR:HG22	42:D:113:VAL:HG13	2.01	0.43
45:G:64:ILE:HD12	45:G:144:VAL:HG11	2.00	0.43
45:G:82:GLU:O	45:G:85:ARG:HG2	2.19	0.43
49:K:38:LEU:HD13	49:K:71:VAL:HG13	2.01	0.43
49:K:138:THR:OG1	49:K:139:ASN:N	2.52	0.43
50:L:71:CYS:SG	50:L:72:ALA:N	2.91	0.43
50:L:185:ARG:HG2	50:L:185:ARG:HH11	1.83	0.43
56:R:118:GLN:HB3	56:R:147:GLU:HG3	2.00	0.43
63:a:52:ARG:HE	63:a:52:ARG:HB3	1.57	0.43
67:e:95:ALA:HB2	67:e:101:LEU:HG	2.01	0.43
74:l:2:GLY:O	74:l:7:SER:OG	2.28	0.43
79:q:61:LYS:NZ	79:q:63:LYS:O	2.52	0.43
81:x:13:ILE:C	81:x:20:LYS:HD3	2.44	0.43
81:x:280:PHE:CD1	81:x:324:ASN:OD1	2.70	0.43
1:2:1533:C:H4'	1:2:1539:G:O6	2.19	0.43
5:SD:44:GLY:O	5:SD:48:SER:OG	2.30	0.43
8:SG:103:ASP:OD2	17:SP:41:ARG:NH2	2.52	0.43
9:SH:52:VAL:HG12	9:SH:65:GLU:HB3	2.00	0.43
17:SP:133:ILE:HG12	17:SP:143:VAL:HG11	2.01	0.43
19:SR:188:LEU:HD13	19:SR:196:VAL:HG11	2.01	0.43
40:Y:57:LYS:HE3	40:Y:57:LYS:HB3	1.68	0.43
41:A:94:G:OP1	41:A:2763:U:O2'	2.37	0.43
41:A:1063:G:C6	59:V:109:VAL:HG22	2.54	0.43
41:A:1203:A:OP2	41:A:1301:A:N6	2.41	0.43
41:A:1411:C:H2'	41:A:1412:G:H8	1.82	0.43
41:A:1471:U:H2'	41:A:1472:U:C6	2.54	0.43
41:A:1665:C:H2'	41:A:1666:G:C8	2.49	0.43
41:A:1791:C:H2'	41:A:1792:C:C6	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:A:2731:U:H2'	41:A:2732:G:H8	1.83	0.43
42:D:10:LYS:HA	42:D:16:PHE:CD2	2.54	0.43
42:D:46:LYS:HB2	42:D:46:LYS:HE2	1.82	0.43
49:K:70:THR:O	49:K:74:LEU:HG	2.18	0.43
49:K:76:ASP:N	49:K:76:ASP:OD1	2.45	0.43
49:K:90:MET:HE2	49:K:179:ILE:HG22	2.00	0.43
55:Q:121[A]:PRO:HA	55:Q:124[A]:LEU:HD12	2.00	0.43
61:X:89:ASP:OD1	61:X:89:ASP:N	2.36	0.43
67:e:14:LEU:O	67:e:18:ILE:HG12	2.18	0.43
81:x:346:ILE:H	81:x:435:VAL:H	1.65	0.43
1:2:953:G:H2'	1:2:954:G:H8	1.84	0.43
1:2:1171:A:H2'	1:2:1172:G:C8	2.53	0.43
2:SA:96:LEU:HD22	2:SA:131:ALA:HB2	2.01	0.43
5:SD:36:LEU:HB2	5:SD:41:LEU:HD22	2.00	0.43
8:SG:81:LYS:NZ	17:SP:205:ARG:HH11	2.16	0.43
19:SR:70:ASP:OD1	19:SR:71:THR:N	2.52	0.43
22:SU:12:ALA:HA	22:SU:13:PRO:HD3	1.83	0.43
23:SV:140:GLU:OE1	23:SV:140:GLU:HA	2.19	0.43
32:Se:39:MET:HE2	32:Se:39:MET:HB2	1.83	0.43
41:A:716:A:N7	65:c:117:ARG:HG3	2.34	0.43
41:A:897:U:H2'	41:A:898:U:C6	2.54	0.43
41:A:1086:C:H2'	41:A:1087:G:O4'	2.19	0.43
41:A:1378:U:H2'	41:A:1379:G:H8	1.84	0.43
41:A:1682:U:C5	60:W:85:LYS:HG2	2.54	0.43
41:A:2163:C:H4'	42:D:8:GLN:HA	2.00	0.43
41:A:2599:U:H2'	41:A:2600:C:C6	2.54	0.43
41:A:2963:C:H2'	41:A:2964:G:C8	2.54	0.43
53:O:8:LYS:HE2	53:O:8:LYS:HB2	1.72	0.43
64:b:126:LYS:HB3	64:b:126:LYS:HE3	1.72	0.43
71:i:91:ARG:O	71:i:95:ILE:HG23	2.19	0.43
81:x:24:THR:HG23	81:x:89:ILE:HG21	2.01	0.43
1:2:635:A:H2'	1:2:636:A:C8	2.54	0.42
6:SE:18:ARG:HH21	9:SH:90:ASN:HB3	1.82	0.42
7:SF:22:VAL:HG22	7:SF:65:ILE:HG23	2.00	0.42
16:SO:177:MET:SD	16:SO:179:LYS:HD3	2.59	0.42
16:SO:243:LEU:HD12	16:SO:252:LEU:HD11	2.01	0.42
19:SR:58:LEU:HD21	19:SR:236:PRO:HG3	2.01	0.42
19:SR:181:SER:HB2	19:SR:184:VAL:HG22	2.00	0.42
24:SW:123:HIS:NE2	34:Sg:37:ARG:HB2	2.34	0.42
25:SX:7:VAL:HG13	25:SX:8:GLN:HG2	2.01	0.42
31:Sd:12:VAL:HG12	31:Sd:23:PHE:HB3	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:s:15:G:H2'	35:s:16:C:C6	2.54	0.42
41:A:589:A:H1'	41:A:1337:A:H5''	2.01	0.42
41:A:707:U:O2	41:A:754:G:O2'	2.36	0.42
41:A:809:G:H2'	41:A:810:A:C8	2.54	0.42
41:A:1345:G:H2'	41:A:1346:G:H8	1.84	0.42
41:A:2280:A:N6	41:A:2282:U:O2'	2.49	0.42
41:A:2441:A:H2'	41:A:2442:G:C8	2.54	0.42
61:X:120:LYS:N	61:X:137:VAL:O	2.51	0.42
63:a:86:THR:HG22	63:a:96:PRO:HA	2.01	0.42
1:2:153:G:H21	21:ST:56:ASN:HD21	1.66	0.42
1:2:388:G:H5''	1:2:425:A:N6	2.34	0.42
1:2:435:C:H1'	30:Sc:48:HIS:HB2	2.00	0.42
1:2:640:U:H2'	1:2:641:G:O4'	2.18	0.42
2:SA:4:LEU:O	2:SA:5:ILE:HD13	2.20	0.42
2:SA:105:MET:HE2	2:SA:105:MET:HB3	1.97	0.42
3:SB:225:ARG:HH11	13:SL:61:ARG:HD2	1.84	0.42
8:SG:22:PRO:C	16:SO:150:TRP:HH2	2.27	0.42
11:SJ:98:GLN:CD	11:SJ:99:ILE:HG23	2.44	0.42
18:SQ:202:LYS:HB2	18:SQ:202:LYS:HE2	1.87	0.42
21:ST:16:PHE:HE2	21:ST:124:LEU:HD22	1.84	0.42
22:SU:91:ILE:HG21	22:SU:129:LEU:HD23	2.01	0.42
35:s:53:G:H5'	81:x:357:TYR:CD1	2.54	0.42
35:s:64:G:H2'	35:s:65:G:C8	2.52	0.42
41:A:946:U:H2'	41:A:947:G:C8	2.52	0.42
41:A:1615:C:H2'	41:A:1616:U:C6	2.54	0.42
41:A:1837:U:H2'	41:A:1838:G:O4'	2.19	0.42
41:A:2373:A:N3	41:A:2824:G:O2'	2.48	0.42
41:A:2557:A:H8	41:A:2557:A:OP2	2.02	0.42
41:A:3120:C:H2'	77:o:111:ARG:HD3	2.01	0.42
45:G:30:TYR:HA	45:G:33:ARG:HB3	2.01	0.42
46:H:67:GLY:O	46:H:68:PRO:C	2.62	0.42
53:O:102:LYS:HE3	53:O:102:LYS:HB3	1.87	0.42
57:S:54:LEU:HD13	57:S:58:ASN:HB3	2.01	0.42
9:SH:29:VAL:O	9:SH:43:SER:OG	2.25	0.42
9:SH:41:ARG:HD2	10:SI:38:LYS:HD3	2.00	0.42
16:SO:37:SER:OG	16:SO:38:ARG:N	2.52	0.42
16:SO:197:SER:OG	16:SO:198:ASN:N	2.51	0.42
19:SR:140:ARG:HB2	19:SR:222:TYR:CE2	2.54	0.42
34:Sg:56:MET:HE2	34:Sg:56:MET:HB2	1.98	0.42
35:s:77:A:C6	81:x:293:GLU:HG3	2.45	0.42
41:A:229:G:H2'	41:A:230:U:C6	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:A:277:G:OP1	79:q:49:GLY:N	2.53	0.42
41:A:346:C:O2	41:A:348:A:N6	2.51	0.42
41:A:821:U:H2'	41:A:822:G:C8	2.51	0.42
41:A:1345:G:H2'	41:A:1346:G:C8	2.54	0.42
41:A:1529:A:OP2	41:A:1592:G:N2	2.49	0.42
41:A:2152:A:H2'	41:A:2153:U:C6	2.54	0.42
41:A:2328:U:H2'	41:A:2329:C:H6	1.83	0.42
41:A:2434:U:H5'	41:A:2593:A:C2	2.54	0.42
41:A:2577:C:H2'	41:A:2578:U:C6	2.54	0.42
41:A:2881:C:H2'	41:A:2882:U:C6	2.54	0.42
41:A:2891:U:O2'	41:A:3014:U:H5''	2.19	0.42
41:A:3213:A:OP2	53:O:128:ARG:NE	2.53	0.42
41:A:3338:C:H2'	41:A:3339:A:H8	1.84	0.42
42:D:37:ARG:HG2	42:D:38:HIS:ND1	2.35	0.42
47:I:58:ALA:O	47:I:62:ILE:HG12	2.20	0.42
47:I:90:LYS:HB3	47:I:133:TYR:HB3	2.00	0.42
50:L:185:ARG:HA	50:L:190:VAL:HG21	2.01	0.42
60:W:89:LEU:HB3	60:W:93:ILE:HG12	2.01	0.42
61:X:84:SER:HA	61:X:94:TYR:HB3	2.01	0.42
64:b:89:VAL:HG23	64:b:92:PHE:CD2	2.51	0.42
81:x:288:GLU:O	81:x:313:LYS:N	2.52	0.42
81:x:325:VAL:CG1	81:x:334:PRO:HG3	2.47	0.42
81:x:360:VAL:O	81:x:361:LEU:C	2.61	0.42
1:2:539:G:HO2'	1:2:540:G:P	2.39	0.42
1:2:1318:G:H2'	1:2:1319:A:C8	2.54	0.42
1:2:1499:G:OP2	10:SI:73:VAL:HG22	2.19	0.42
5:SD:61:VAL:HB	5:SD:121:VAL:HG12	2.00	0.42
7:SF:106:LYS:CD	16:SO:279:ALA:HB2	2.45	0.42
8:SG:82:ASP:OD1	8:SG:83:GLN:HG3	2.19	0.42
8:SG:110:VAL:HG11	8:SG:119:LEU:HD21	2.02	0.42
20:SS:100:ARG:HB2	20:SS:114:ILE:HD13	2.00	0.42
21:ST:141:ILE:HD13	21:ST:157:VAL:HG23	2.00	0.42
22:SU:84:LYS:HG3	22:SU:85:PHE:N	2.34	0.42
24:SW:65:LYS:HA	24:SW:70:LEU:HD11	2.01	0.42
28:Sa:79:LEU:HD12	28:Sa:82:VAL:HG21	2.01	0.42
38:C:85:G:H4'	38:C:86:U:OP1	2.20	0.42
41:A:429:U:H2'	41:A:430:U:H6	1.84	0.42
41:A:868:C:H2'	41:A:869:G:C8	2.54	0.42
41:A:1489:A:OP1	71:i:10:ARG:NH1	2.53	0.42
41:A:1610:G:P	62:Z:125:ARG:HH22	2.42	0.42
41:A:2368:A:H2'	41:A:2369:G:H8	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:A:2407:C:H2'	41:A:2408:U:C6	2.54	0.42
41:A:2745:G:N2	41:A:2748:A:OP2	2.50	0.42
41:A:2766:U:H2'	41:A:2767:U:C6	2.55	0.42
41:A:2883:U:H2'	41:A:2884:C:C6	2.54	0.42
41:A:2999:U:H2'	41:A:3000:A:H8	1.84	0.42
41:A:3185:U:HO2'	58:U:170:THR:HG1	1.55	0.42
41:A:3231:U:H2'	41:A:3232:G:H8	1.85	0.42
45:G:236:LEU:HA	45:G:239:ILE:HG12	2.00	0.42
46:H:130:ILE:HD12	46:H:131:LYS:H	1.85	0.42
51:M:93:ASP:HB2	51:M:173:ASP:HA	2.02	0.42
64:b:76:ASN:OD1	64:b:77:TYR:N	2.53	0.42
71:i:92:ALA:O	71:i:96:GLU:HG2	2.19	0.42
78:p:2:ARG:HB2	78:p:5:TRP:CD1	2.54	0.42
81:x:306:ASP:HB3	81:x:308:VAL:HG13	2.00	0.42
1:2:142:G:H5''	21:ST:139:ASN:HD21	1.83	0.42
1:2:351:C:OP1	1:2:630:A:O2'	2.28	0.42
1:2:1350:U:H2'	1:2:1351:G:C8	2.54	0.42
6:SE:38:PRO:HG2	6:SE:41:VAL:HG23	2.00	0.42
10:SI:22:LEU:HD13	10:SI:55:TYR:HD2	1.85	0.42
16:SO:17:ASN:O	16:SO:39:ASP:HB3	2.19	0.42
16:SO:214:ALA:HB2	16:SO:220:ILE:HG12	2.01	0.42
16:SO:239:GLU:HB3	16:SO:257:ALA:HB2	2.01	0.42
17:SP:27:ARG:HG2	17:SP:28:ASN:H	1.85	0.42
18:SQ:69:CYS:HA	18:SQ:83:LYS:HA	2.02	0.42
18:SQ:77:GLU:OE1	18:SQ:77:GLU:N	2.47	0.42
39:T:171:ASP:OD1	39:T:172:ARG:N	2.52	0.42
41:A:73:C:H5''	73:k:4:LYS:HE2	2.01	0.42
41:A:562:C:H2'	41:A:563:U:C6	2.54	0.42
41:A:926:A:H2'	41:A:927:C:H6	1.84	0.42
41:A:1733:G:H2'	41:A:1734:G:C8	2.54	0.42
41:A:2327:U:H2'	41:A:2328:U:H6	1.85	0.42
41:A:2407:C:H2'	41:A:2408:U:H6	1.84	0.42
41:A:2714:G:H4'	41:A:2715:A:H3'	2.01	0.42
50:L:19:LYS:HG2	50:L:26:VAL:HG11	1.99	0.42
57:S:50:LYS:HB3	57:S:50:LYS:HE2	1.78	0.42
60:W:19:VAL:C	60:W:22:PRO:HD2	2.44	0.42
61:X:104:ASN:HD21	61:X:106:LYS:HD3	1.85	0.42
64:b:18:TYR:HE2	64:b:73:LYS:HD3	1.84	0.42
1:2:32:U:O2'	1:2:594:A:N1	2.51	0.42
1:2:637:C:OP1	29:Sb:32:LYS:N	2.53	0.42
4:SC:36:ASP:OD1	4:SC:36:ASP:N	2.42	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:SL:18:ARG:HD3	13:SL:23:GLY:O	2.20	0.42
16:SO:9:LEU:HB2	16:SO:313:TRP:CZ3	2.55	0.42
16:SO:135:THR:OG1	16:SO:136:ILE:N	2.52	0.42
23:SV:81:VAL:HG23	23:SV:91:VAL:HA	2.02	0.42
41:A:278:U:H3	41:A:287:G:H1	1.67	0.42
41:A:561:C:H2'	41:A:562:C:C6	2.54	0.42
41:A:863:C:H2'	41:A:864:G:O4'	2.20	0.42
41:A:907:G:O6	41:A:919:U:H2'	2.19	0.42
41:A:1138:U:H2'	41:A:1139:G:H8	1.84	0.42
41:A:1254:C:H2'	41:A:1255:C:C6	2.54	0.42
41:A:1565:G:H1'	41:A:1576:G:C5	2.54	0.42
41:A:1566:A:N6	41:A:1571:A:N3	2.67	0.42
41:A:1666:G:H2'	41:A:1667:A:C8	2.54	0.42
41:A:1921:A:OP2	41:A:1930:A:N6	2.41	0.42
41:A:2552:C:OP1	71:i:102:LYS:NZ	2.38	0.42
41:A:3183:A:H2'	41:A:3184:A:C8	2.55	0.42
43:E:76:VAL:HB	43:E:323:MET:HG2	2.02	0.42
50:L:44:ASP:OD1	50:L:181:TYR:OH	2.34	0.42
53:O:99:TRP:O	53:O:103:ILE:HG13	2.19	0.42
62:Z:97:LYS:HB3	62:Z:97:LYS:HE3	1.76	0.42
63:a:79:ALA:HB1	63:a:98:ASN:HB3	2.02	0.42
81:x:8:ILE:O	81:x:87:VAL:HA	2.20	0.42
81:x:100:LYS:HB2	81:x:367:HIS:CD2	2.55	0.42
81:x:312:VAL:CG2	81:x:320:VAL:HG21	2.36	0.42
1:2:629:U:H2'	1:2:630:A:C8	2.54	0.42
1:2:1187:U:H2'	1:2:1188:G:H8	1.85	0.42
1:2:1227:A:C8	5:SD:43:ARG:HG3	2.55	0.42
1:2:1553:G:N1	1:2:1556:A:OP2	2.52	0.42
1:2:1760:G:H1'	1:2:1781:A:C2	2.55	0.42
12:SK:86:GLU:HA	12:SK:86:GLU:OE1	2.20	0.42
12:SK:91:PRO:HA	12:SK:101:TYR:CD1	2.55	0.42
38:C:21:C:OP1	44:F:193:LYS:NZ	2.29	0.42
41:A:220:G:O2'	41:A:221:A:H5'	2.20	0.42
41:A:738:A:H2'	41:A:739:G:H8	1.84	0.42
41:A:873:C:H4'	41:A:1908:A:H5'	2.02	0.42
41:A:900:G:H1'	41:A:1589:A:N6	2.33	0.42
41:A:1660:C:H2'	41:A:1661:G:H8	1.84	0.42
41:A:3164:C:H2'	41:A:3165:A:C8	2.54	0.42
47:I:88:ARG:NH1	47:I:108:LEU:O	2.53	0.42
51:M:89:TYR:HB3	51:M:169:ALA:HB2	2.01	0.42
51:M:165:GLN:HG3	51:M:166:LYS:N	2.34	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:U:8:GLN:HE22	58:U:10:ILE:HG13	1.85	0.42
65:c:60:TYR:HE2	65:c:68:PHE:HZ	1.66	0.42
65:c:70:LYS:HE3	65:c:111:LYS:HD2	2.02	0.42
81:x:104:THR:OG1	81:x:367:HIS:HE1	2.03	0.42
1:2:5:U:H2'	1:2:6:G:C8	2.53	0.42
1:2:139:C:H4'	1:2:140:A:O5'	2.20	0.42
1:2:680:U:H2'	1:2:681:U:H5	1.84	0.42
1:2:1245:G:O2'	1:2:1246:C:P	2.77	0.42
1:2:1382:A:N3	11:SJ:57:ARG:HG3	2.33	0.42
3:SB:143:ARG:HG2	13:SL:55:VAL:HG11	2.01	0.42
4:SC:77:ARG:CZ	4:SC:85:HIS:HA	2.50	0.42
8:SG:81:LYS:HZ1	17:SP:205:ARG:NH1	2.18	0.42
16:SO:113:VAL:HG12	16:SO:124:SER:HA	2.02	0.42
19:SR:35:TRP:CE2	19:SR:37:PRO:HB3	2.55	0.42
24:SW:38:ASN:HD22	24:SW:38:ASN:HA	1.63	0.42
25:SX:109:VAL:HG11	25:SX:125:VAL:HG11	2.00	0.42
27:SZ:102:LEU:HD21	32:Se:53:LEU:HD12	2.01	0.42
37:B:6:C:O2'	45:G:50:ARG:NH2	2.52	0.42
38:C:36:G:H22	41:A:21:G:P	2.43	0.42
38:C:59:A:H5''	38:C:61:A:C8	2.55	0.42
38:C:139:U:H2'	38:C:140:G:C8	2.55	0.42
41:A:713:U:H2'	41:A:714:G:O4'	2.20	0.42
41:A:876:A:H4'	41:A:1890:U:H4'	2.01	0.42
41:A:1226:G:H2'	41:A:1227:C:C6	2.54	0.42
41:A:1382:G:P	44:F:188:ARG:HH12	2.43	0.42
41:A:1460:A:H2'	41:A:1461:A:H8	1.85	0.42
41:A:2629:U:O2'	41:A:2758:A:O2'	2.37	0.42
41:A:3146:G:H2'	41:A:3147:G:C8	2.55	0.42
41:A:3313:U:H2'	41:A:3314:A:C8	2.55	0.42
43:E:89:VAL:HG12	43:E:199:PHE:HZ	1.85	0.42
46:H:60:ASP:OD1	46:H:60:ASP:C	2.63	0.42
55:Q:140[A]:LYS:HA	55:Q:143[A]:THR:HG22	2.02	0.42
56:R:168:LEU:HD23	56:R:168:LEU:HA	1.81	0.42
81:x:263:PRO:O	81:x:310:PHE:O	2.37	0.42
1:2:299:A:OP1	20:SS:30:ARG:NH2	2.52	0.42
1:2:310:C:H4'	30:Sc:33:LEU:HD23	2.02	0.42
1:2:609:U:H1'	1:2:610:G:OP2	2.19	0.42
1:2:804:A:C2	29:Sb:105:THR:HG23	2.55	0.42
1:2:953:G:H2'	1:2:954:G:C8	2.54	0.42
1:2:1218:G:N2	1:2:1444:A:OP2	2.29	0.42
1:2:1667:A:H2'	1:2:1668:G:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:SA:219:ALA:HA	2:SA:220:PRO:HD3	1.92	0.42
4:SC:20:VAL:HG12	4:SC:67:THR:HG22	2.02	0.42
9:SH:144:ARG:HD3	9:SH:144:ARG:HA	1.89	0.42
15:SN:138:ARG:HG2	15:SN:139:LEU:N	2.34	0.42
16:SO:134:TRP:CZ3	16:SO:140:CYS:HB2	2.54	0.42
19:SR:84:LYS:HB3	19:SR:84:LYS:HE3	1.78	0.42
20:SS:47:PHE:O	20:SS:51:ARG:HB2	2.19	0.42
27:SZ:82:LYS:HE3	27:SZ:118:VAL:HG11	2.01	0.42
30:Sc:57:LEU:HD12	30:Sc:57:LEU:HA	1.93	0.42
37:B:64:A:N7	50:L:209:ASN:ND2	2.68	0.42
39:T:86:GLU:HB3	41:A:833:G:OP1	2.20	0.42
41:A:77:A:N1	41:A:324:A:N6	2.68	0.42
41:A:106:A:N3	41:A:325:A:H1'	2.35	0.42
41:A:629:U:H2'	41:A:630:A:H8	1.83	0.42
41:A:1804:A:H2'	41:A:1805:C:C6	2.55	0.42
41:A:1813:A:H2'	41:A:1814:A:C8	2.54	0.42
41:A:1836:C:H2'	41:A:1837:U:H6	1.83	0.42
41:A:2103:U:H2'	41:A:2104:A:H8	1.85	0.42
41:A:2585:G:H1'	48:J:48:ARG:HG3	2.02	0.42
41:A:2611:U:H2'	41:A:2612:U:C6	2.55	0.42
41:A:2864:A:H2'	41:A:2865:U:C6	2.55	0.42
41:A:2933:A:H2'	41:A:2934:A:C4	2.54	0.42
42:D:149:ARG:NH1	42:D:155:LYS:HG2	2.34	0.42
48:J:183:LYS:HB3	48:J:183:LYS:HE2	1.82	0.42
61:X:67:PRO:HD2	61:X:68:GLU:H	1.85	0.42
71:i:74:ARG:HD2	71:i:75:ALA:N	2.34	0.42
72:j:31:LEU:HB3	72:j:44:ILE:CD1	2.50	0.42
72:j:79:ASP:OD1	72:j:79:ASP:N	2.51	0.42
81:x:357:TYR:OH	81:x:433:VAL:HG21	2.19	0.42
1:2:2:A:N3	19:SR:199:GLN:NE2	2.68	0.42
1:2:116:U:H2'	1:2:117:U:C6	2.55	0.42
1:2:1023:A:H4'	1:2:1024:U:O5'	2.19	0.42
1:2:1113:A:N1	1:2:1131:A:H5''	2.35	0.42
1:2:1358:G:OP1	10:SI:130:ARG:NH2	2.52	0.42
1:2:1458:G:N3	1:2:1458:G:H2'	2.35	0.42
3:SB:45:LYS:HG3	3:SB:46:TRP:CD2	2.55	0.42
3:SB:71:ALA:O	3:SB:91:GLU:HG3	2.20	0.42
7:SF:39:VAL:HG12	7:SF:40:GLU:H	1.85	0.42
16:SO:178:VAL:C	16:SO:179:LYS:HD2	2.45	0.42
20:SS:210:ILE:HB	20:SS:218:PHE:CE1	2.55	0.42
22:SU:26:GLU:O	22:SU:30:SER:OG	2.26	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:SU:124:LYS:HD3	22:SU:124:LYS:HA	1.90	0.42
27:SZ:29:HIS:HB2	27:SZ:41:ARG:HG2	2.01	0.42
35:s:77:A:C2	81:x:292:VAL:C	2.98	0.42
39:T:133:LYS:HG3	39:T:134:HIS:CD2	2.55	0.42
41:A:903:U:H2'	41:A:904:A:C8	2.54	0.42
41:A:1246:G:P	41:A:1246:G:H8	2.43	0.42
41:A:1615:C:H2'	41:A:1616:U:H6	1.85	0.42
41:A:1651:U:H2'	41:A:1652:G:C8	2.55	0.42
41:A:1887:A:C2	41:A:2391:G:H4'	2.54	0.42
41:A:2186:U:H2'	41:A:2187:G:O4'	2.19	0.42
41:A:2368:A:H2'	41:A:2369:G:C8	2.55	0.42
41:A:2877:G:H2'	41:A:2878:G:H8	1.85	0.42
43:E:106:TRP:HB2	43:E:133:TYR:CE2	2.55	0.42
48:J:158:ASP:HB2	48:J:159:PRO:CD	2.46	0.42
51:M:12:LEU:HD22	51:M:131:MET:HE3	2.01	0.42
52:N:179:PHE:O	52:N:183:ARG:HG3	2.19	0.42
53:O:133:LYS:NZ	53:O:137:LYS:HE2	2.35	0.42
64:b:4:PHE:HE2	67:e:63:SER:HB2	1.85	0.42
64:b:123:GLN:OE1	64:b:123:GLN:HA	2.20	0.42
1:2:547:U:O2'	1:2:596:C:O2	2.36	0.41
1:2:850:A:OP1	39:T:165:LYS:HG2	2.20	0.41
1:2:894:U:H2'	1:2:895:G:C8	2.55	0.41
1:2:1760:G:H1'	1:2:1781:A:H2	1.85	0.41
2:SA:224:ASP:OD1	2:SA:225:TYR:N	2.49	0.41
8:SG:84:TYR:CD2	8:SG:86:PRO:HD3	2.55	0.41
11:SJ:82:TYR:HB3	14:SM:52:PHE:HB3	2.02	0.41
16:SO:90:ARG:NH2	16:SO:102:ARG:HH21	2.18	0.41
18:SQ:88:VAL:HG22	18:SQ:98:THR:HG22	2.01	0.41
19:SR:187:LEU:HD13	19:SR:211:LEU:HD22	2.01	0.41
20:SS:21:ASP:OD1	20:SS:21:ASP:C	2.62	0.41
20:SS:175:PHE:C	20:SS:175:PHE:CD1	2.98	0.41
20:SS:183:VAL:HG13	20:SS:220:THR:HG21	2.01	0.41
30:Sc:19:ARG:O	30:Sc:23:ARG:HG3	2.20	0.41
37:B:94:C:H2'	37:B:95:A:C8	2.55	0.41
41:A:293:C:H2'	41:A:294:U:O4'	2.20	0.41
41:A:1157:G:O2'	41:A:1169:A:N3	2.51	0.41
41:A:1247:U:N3	41:A:1267:U:OP2	2.49	0.41
41:A:2225:U:H2'	41:A:2226:U:H6	1.85	0.41
41:A:2441:A:H2'	41:A:2442:G:H8	1.85	0.41
41:A:2680:A:C2	51:M:57:PHE:HE2	2.38	0.41
41:A:3292:A:H2'	41:A:3293:U:C6	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:F:205:PRO:HB3	44:F:247:PHE:CD2	2.55	0.41
44:F:299:ILE:HD12	57:S:39:ARG:HB2	2.01	0.41
46:H:172:HIS:CD2	70:h:40:ASP:HB3	2.55	0.41
47:I:40:LYS:HD3	47:I:170:GLU:OE1	2.20	0.41
47:I:216:VAL:HG21	47:I:227:GLY:HA2	2.01	0.41
57:S:140:LEU:HD23	57:S:140:LEU:HA	1.87	0.41
72:j:80:LEU:HD23	72:j:80:LEU:HA	1.89	0.41
1:2:66:U:H3	21:ST:160:ARG:HG2	1.84	0.41
1:2:153:G:H1	1:2:161:U:H3	1.66	0.41
1:2:1184:A:HO2'	1:2:1209:C:HO2'	1.62	0.41
1:2:1713:G:H2'	1:2:1714:A:H8	1.85	0.41
7:SF:39:VAL:CG1	7:SF:41:PRO:HD2	2.48	0.41
7:SF:40:GLU:H	7:SF:41:PRO:CD	2.32	0.41
8:SG:105:GLN:NE2	17:SP:42:PRO:HD3	2.34	0.41
11:SJ:70:THR:O	14:SM:40:ARG:NH1	2.52	0.41
17:SP:116:LYS:HE2	17:SP:116:LYS:HB2	1.83	0.41
18:SQ:33:LYS:HD2	18:SQ:41:ARG:CZ	2.50	0.41
18:SQ:138:PHE:CD1	18:SQ:214:LYS:HB2	2.54	0.41
24:SW:35:GLY:O	24:SW:110:GLN:NE2	2.52	0.41
28:Sa:8:LEU:HD23	28:Sa:9:VAL:O	2.20	0.41
41:A:633:C:O2'	70:h:21:ARG:O	2.38	0.41
41:A:836:A:H2'	41:A:837:A:H8	1.85	0.41
41:A:884:A:OP2	41:A:2139:A:N6	2.53	0.41
41:A:920:A:OP1	41:A:923:C:N4	2.40	0.41
41:A:1194:G:H2'	41:A:1195:A:C8	2.55	0.41
41:A:1554:U:H1'	41:A:1555:U:C5	2.55	0.41
41:A:1629:U:H1'	64:b:115:LYS:HE3	2.03	0.41
41:A:2281:A:N1	41:A:2959:C:H1'	2.35	0.41
41:A:2711:C:H2'	41:A:2712:U:C6	2.55	0.41
41:A:3304:U:P	43:E:332:ARG:HH22	2.43	0.41
42:D:211:HIS:NE2	42:D:235:ALA:O	2.53	0.41
51:M:87:LYS:HE3	51:M:87:LYS:HB3	1.80	0.41
51:M:101:ASN:HD22	51:M:101:ASN:N	2.18	0.41
51:M:117:ASP:OD2	51:M:119:SER:OG	2.34	0.41
54:P:98:LEU:HA	54:P:101:THR:HG22	2.02	0.41
54:P:122:ASN:OD1	54:P:123:GLN:N	2.52	0.41
70:h:45:LEU:HD23	70:h:45:LEU:HA	1.87	0.41
81:x:342:ALA:HB3	81:x:404:MET:HE3	2.02	0.41
1:2:270:C:H41	21:ST:182:GLN:HE22	1.68	0.41
1:2:284:G:O6	21:ST:188:ARG:NH2	2.53	0.41
1:2:343:C:H2'	1:2:344:A:C8	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:611:U:OP1	30:Sc:19:ARG:NH2	2.52	0.41
1:2:891:A:H2'	1:2:892:A:H8	1.85	0.41
1:2:1307:U:H3	1:2:1319:A:H1'	1.84	0.41
1:2:1774:G:OP2	78:p:4:LYS:HG3	2.20	0.41
5:SD:125:ASN:C	5:SD:126:TRP:CG	2.98	0.41
8:SG:73:LEU:O	8:SG:73:LEU:HD23	2.21	0.41
8:SG:81:LYS:NZ	17:SP:205:ARG:HG3	2.35	0.41
19:SR:141:ARG:HG3	19:SR:141:ARG:NH1	2.34	0.41
23:SV:21:PHE:CD2	23:SV:22:ARG:HG3	2.55	0.41
23:SV:188:GLU:H	23:SV:188:GLU:HG3	1.73	0.41
30:Sc:29:TYR:CZ	30:Sc:33:LEU:HD22	2.54	0.41
39:T:133:LYS:HG3	39:T:134:HIS:HD2	1.85	0.41
41:A:19:U:H2'	41:A:20:A:C8	2.55	0.41
41:A:249:U:O2	41:A:250:U:N3	2.53	0.41
41:A:702:C:H2'	41:A:703:G:C8	2.55	0.41
41:A:792:G:C2	41:A:793:C:C5	3.09	0.41
41:A:1757:A:H2'	41:A:1758:G:H8	1.85	0.41
41:A:1886:A:H2'	41:A:1887:A:C8	2.54	0.41
41:A:2709:C:C2	41:A:2710:C:C5	3.08	0.41
42:D:45:VAL:HG22	42:D:61:VAL:HG22	2.02	0.41
42:D:96:LEU:HD22	80:r:83:ILE:HG23	2.01	0.41
51:M:77:GLU:HA	51:M:80:LEU:HB3	2.02	0.41
52:N:62:THR:HG23	52:N:64:LYS:H	1.85	0.41
57:S:29:LEU:HD12	57:S:29:LEU:HA	1.93	0.41
60:W:10:LYS:HA	60:W:10:LYS:HD3	1.81	0.41
60:W:49:ASN:OD1	60:W:49:ASN:O	2.39	0.41
81:x:263:PRO:HD3	81:x:312:VAL:HG22	2.01	0.41
1:2:555:A:N6	24:SW:19:TYR:OH	2.54	0.41
1:2:1253:U:H5''	15:SN:130:VAL:HG12	2.02	0.41
2:SA:120:TYR:HA	2:SA:123:VAL:HG12	2.02	0.41
5:SD:52:LEU:HD12	5:SD:52:LEU:HA	1.89	0.41
17:SP:179:ARG:HG3	17:SP:195:TRP:CE3	2.56	0.41
19:SR:148:LEU:HD11	24:SW:92:LYS:HE3	2.03	0.41
35:s:77:A:H2	81:x:292:VAL:CA	2.25	0.41
41:A:29:C:H4'	41:A:62:A:H4'	2.03	0.41
41:A:35:A:H2'	41:A:36:C:C6	2.55	0.41
41:A:138:U:H2'	41:A:139:G:H8	1.86	0.41
41:A:1035:G:H2'	41:A:1036:A:C8	2.44	0.41
41:A:1373:A:H2'	41:A:1374:G:H8	1.86	0.41
41:A:1415:U:H2'	41:A:1416:C:O4'	2.21	0.41
41:A:2226:U:H2'	41:A:2227:C:C6	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:A:2457:G:H1	41:A:2485:A:H61	1.67	0.41
41:A:2948:C:H5''	43:E:243:HIS:HB3	2.01	0.41
41:A:3127:A:H2'	41:A:3128:G:O4'	2.20	0.41
41:A:3132:C:H2'	41:A:3133:C:H6	1.85	0.41
41:A:3183:A:P	55:Q:12[A]:LYS:HE3	2.61	0.41
41:A:3345:G:H2'	41:A:3346:U:C6	2.54	0.41
43:E:343:TYR:CE2	43:E:345:ASN:HB2	2.55	0.41
44:F:299:ILE:HD13	44:F:299:ILE:HA	1.86	0.41
45:G:56:THR:O	45:G:56:THR:OG1	2.35	0.41
46:H:131:LYS:O	46:H:135:VAL:HG23	2.20	0.41
55:Q:9[A]:ILE:HA	55:Q:118[A]:VAL:O	2.20	0.41
70:h:53:TYR:CZ	70:h:65:ARG:HB2	2.55	0.41
75:m:63:LYS:HB2	75:m:63:LYS:HE3	1.78	0.41
1:2:29:U:H2'	1:2:30:G:H8	1.84	0.41
1:2:1222:C:H2'	1:2:1223:A:C8	2.55	0.41
1:2:1234:A:H4'	15:SN:145:HIS:CD2	2.55	0.41
1:2:1780:G:N3	41:A:2261:G:O2'	2.50	0.41
3:SB:149:VAL:O	3:SB:150:GLY:C	2.61	0.41
6:SE:50:THR:OG1	6:SE:51:SER:N	2.53	0.41
23:SV:44:HIS:O	23:SV:56:ARG:N	2.53	0.41
24:SW:123:HIS:CE1	34:Sg:37:ARG:HE	2.39	0.41
37:B:77:G:O2'	37:B:101:G:O6	2.32	0.41
39:T:4:LEU:HD22	39:T:32:ILE:HG22	2.03	0.41
39:T:62:ARG:NH2	41:A:3067:C:H3'	2.35	0.41
41:A:125:C:H2'	41:A:126:U:C6	2.53	0.41
41:A:166:C:H2'	41:A:167:U:C6	2.55	0.41
41:A:371:G:O2'	41:A:396:A:N6	2.53	0.41
41:A:664:U:H2'	41:A:665:A:C8	2.54	0.41
41:A:702:C:H2'	41:A:703:G:H8	1.84	0.41
41:A:775:A:H3'	41:A:776:U:H5''	2.01	0.41
41:A:1226:G:H2'	41:A:1227:C:H6	1.85	0.41
41:A:1927:G:N2	41:A:1928:G:N7	2.68	0.41
41:A:2659:G:H2'	41:A:2660:G:H8	1.84	0.41
41:A:3002:C:OP1	43:E:26:ARG:NH2	2.49	0.41
41:A:3152:U:OP2	41:A:3395:G:N1	2.46	0.41
45:G:104:LEU:HB2	45:G:247:ILE:HD13	2.02	0.41
45:G:257:GLU:C	45:G:259:LYS:H	2.29	0.41
45:G:294:ALA:HB1	50:L:217:PHE:HB3	2.01	0.41
52:N:77:LEU:HA	52:N:80:VAL:HG22	2.02	0.41
56:R:60:PHE:HB3	56:R:64:ASN:HB3	2.00	0.41
57:S:57:ILE:HG13	57:S:58:ASN:N	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
81:x:346:ILE:O	81:x:346:ILE:HG12	2.21	0.41
1:2:455:C:H3'	1:2:456:A:H8	1.85	0.41
1:2:996:U:H3	1:2:1008:G:H1	1.69	0.41
1:2:1417:A:O2'	7:SF:128:LYS:NZ	2.53	0.41
8:SG:82:ASP:OD1	8:SG:82:ASP:C	2.63	0.41
10:SI:47:PRO:HG2	10:SI:53:TRP:CE2	2.56	0.41
11:SJ:45:ALA:HB1	11:SJ:52:LYS:HG2	2.02	0.41
14:SM:36:LEU:HD23	14:SM:36:LEU:HA	1.93	0.41
21:ST:21:GLU:O	21:ST:25:ARG:NH2	2.53	0.41
28:Sa:5:LYS:HE2	28:Sa:7:GLN:HE22	1.85	0.41
41:A:786:A:H1'	41:A:787:G:C8	2.55	0.41
41:A:913:A:H5''	41:A:914:A:C8	2.55	0.41
41:A:1246:G:H8	41:A:1246:G:OP1	2.02	0.41
41:A:1260:A:H5'	41:A:1280:C:H4'	2.02	0.41
41:A:1436:U:H5''	41:A:1437:C:H5''	2.02	0.41
41:A:1602:A:H8	41:A:1602:A:OP1	2.04	0.41
41:A:1785:U:H2'	41:A:1786:G:H8	1.85	0.41
41:A:2412:G:H2'	41:A:2413:A:H8	1.85	0.41
41:A:3074:G:H2'	41:A:3075:G:H8	1.86	0.41
41:A:3116:G:H5'	41:A:3117:C:H5	1.86	0.41
42:D:71:LEU:HD23	42:D:71:LEU:HA	1.92	0.41
44:F:31:ARG:O	44:F:35:VAL:HG23	2.21	0.41
45:G:287:ALA:O	45:G:290:ILE:HG22	2.21	0.41
47:I:74:SER:OG	59:V:141:VAL:O	2.20	0.41
51:M:93:ASP:N	51:M:172:LEU:O	2.54	0.41
54:P:153:ASP:OD1	54:P:154:PRO:HD2	2.20	0.41
55:Q:10[A]:ASP:OD2	55:Q:37[A]:ARG:NH2	2.47	0.41
57:S:98:LYS:HE3	57:S:98:LYS:HB2	1.71	0.41
59:V:103:GLN:O	59:V:107:GLU:HG2	2.21	0.41
71:i:8:ARG:HB2	71:i:34:HIS:CD2	2.56	0.41
72:j:45:LYS:O	72:j:49:LYS:HG2	2.20	0.41
1:2:849:C:H2'	1:2:850:A:H8	1.85	0.41
1:2:1175:U:H2'	1:2:1176:G:C8	2.55	0.41
1:2:1217:A:H61	14:SM:7:TRP:NE1	2.19	0.41
1:2:1345:A:H1'	11:SJ:56:VAL:HG22	2.03	0.41
4:SC:52:LYS:HA	4:SC:52:LYS:HD3	1.90	0.41
4:SC:77:ARG:HG3	4:SC:82:LEU:CB	2.50	0.41
7:SF:90:VAL:O	7:SF:94:GLN:N	2.54	0.41
9:SH:106:GLU:O	9:SH:110:ARG:HG3	2.20	0.41
20:SS:100:ARG:HG2	20:SS:102:VAL:HG13	2.02	0.41
24:SW:96:VAL:HA	24:SW:99:LEU:HD13	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:SY:22:ALA:HB1	26:SY:23:PRO:HA	2.02	0.41
26:SY:36:GLN:OE1	26:SY:36:GLN:HA	2.20	0.41
28:Sa:73:ALA:O	28:Sa:78:LEU:N	2.54	0.41
35:s:77:A:N7	81:x:293:GLU:HG3	2.26	0.41
38:C:154:C:H2'	38:C:155:A:H8	1.85	0.41
41:A:171:G:H2'	41:A:172:G:O4'	2.21	0.41
41:A:229:G:H5''	63:a:4:GLN:H	1.84	0.41
41:A:623:U:O3'	70:h:86:ARG:NH2	2.53	0.41
41:A:797:U:H2'	41:A:798:G:H8	1.85	0.41
41:A:1112:A:H2	41:A:1369:A:C2	2.39	0.41
41:A:1214:U:H2'	41:A:1215:U:C6	2.55	0.41
41:A:1895:A:O2'	41:A:3053:G:H4'	2.20	0.41
41:A:2524:A:H5'	48:J:49:TYR:HB3	2.03	0.41
41:A:2805:G:H2'	41:A:2806:U:C6	2.56	0.41
41:A:3019:U:H2'	41:A:3020:U:O4'	2.21	0.41
41:A:3195:U:O2'	41:A:3197:G:N2	2.50	0.41
42:D:136:ILE:HD13	42:D:148:VAL:HG12	2.02	0.41
43:E:94:GLU:CD	55:Q:152[A]:VAL:HG22	2.45	0.41
45:G:55:PHE:HE1	45:G:159:VAL:HG13	1.86	0.41
45:G:124:GLU:HG2	45:G:124:GLU:O	2.21	0.41
50:L:135:ILE:HG22	50:L:136:PHE:CD1	2.56	0.41
50:L:202:LYS:HD2	50:L:202:LYS:HA	1.92	0.41
52:N:105:ASN:HB3	52:N:108:ILE:HB	2.02	0.41
68:f:96:VAL:HG12	68:f:98:VAL:HG13	2.02	0.41
69:g:102:ALA:HA	69:g:105:ARG:HB2	2.02	0.41
1:2:520:A:H2'	1:2:521:A:C8	2.56	0.41
1:2:635:A:H2'	1:2:636:A:H8	1.86	0.41
1:2:1087:A:H2'	1:2:1088:A:C8	2.55	0.41
1:2:1522:U:H4'	1:2:1523:G:OP2	2.21	0.41
1:2:1775:U:H2'	1:2:1776:A:C8	2.55	0.41
4:SC:82:LEU:HA	4:SC:83:PRO:HD3	1.89	0.41
5:SD:66:VAL:HG13	5:SD:67:THR:HG22	2.02	0.41
12:SK:60:VAL:HG12	12:SK:101:TYR:HB2	2.02	0.41
20:SS:246:LEU:HB3	20:SS:250:GLU:HB2	2.03	0.41
21:ST:137:ARG:O	21:ST:141:ILE:HG13	2.20	0.41
24:SW:114:TYR:HE2	24:SW:121:SER:HA	1.86	0.41
31:Sd:22:GLN:HB3	31:Sd:72:PHE:HZ	1.84	0.41
35:s:77:A:O2'	81:x:293:GLU:CA	2.67	0.41
35:s:77:A:C8	81:x:293:GLU:HG3	2.55	0.41
37:B:81:U:O2'	41:A:1055:A:N3	2.53	0.41
41:A:388:G:H4'	56:R:18:ARG:HG2	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:A:783:A:H5''	41:A:784:A:H5'	2.02	0.41
41:A:836:A:O2'	80:r:10:ILE:O	2.37	0.41
41:A:1127:G:N2	41:A:1130:A:OP2	2.43	0.41
41:A:1198:C:OP2	41:A:1199:C:O2'	2.25	0.41
41:A:1223:A:H1'	41:A:1287:A:C2	2.53	0.41
41:A:1307:G:N3	55:Q:60[A]:LYS:HE2	2.36	0.41
41:A:1495:U:H2'	41:A:1842:A:C2	2.55	0.41
41:A:1508:C:H5''	41:A:2353:G:H21	1.86	0.41
41:A:2683:U:H2'	41:A:2684:C:H6	1.85	0.41
42:D:30:ARG:HG3	42:D:74:GLU:HG2	2.02	0.41
42:D:102:LEU:HD12	42:D:102:LEU:H	1.85	0.41
48:J:160:ILE:O	48:J:164:VAL:HG13	2.21	0.41
48:J:203:VAL:HG21	48:J:211:LEU:HD22	2.02	0.41
53:O:33:ALA:HB3	53:O:46:ILE:HD12	2.01	0.41
54:P:22:LEU:O	54:P:26:ARG:HG3	2.20	0.41
56:R:43:LYS:HE3	56:R:43:LYS:HB3	1.64	0.41
58:U:77:VAL:HG12	58:U:79:VAL:HG13	2.02	0.41
69:g:71:HIS:HB3	69:g:93:ALA:HB2	2.03	0.41
71:i:22:VAL:HG12	71:i:30:LEU:HD22	2.03	0.41
81:x:293:GLU:O	81:x:309:GLY:N	2.53	0.41
1:2:569:C:H2'	1:2:570:A:H8	1.86	0.41
1:2:575:C:N4	30:Sc:65:ASN:OD1	2.53	0.41
1:2:1042:G:H2'	1:2:1043:A:C8	2.55	0.41
1:2:1210:C:H2'	1:2:1211:A:H8	1.86	0.41
1:2:1220:C:OP1	4:SC:48:SER:OG	2.25	0.41
1:2:1408:G:N9	16:SO:284:ALA:HB3	2.35	0.41
1:2:1585:U:H3	1:2:1611:A:H2	1.69	0.41
1:2:1588:G:H1	1:2:1608:U:H3	1.69	0.41
2:SA:7:LYS:HD3	2:SA:7:LYS:HA	1.77	0.41
2:SA:161:GLY:O	2:SA:164:VAL:HG12	2.20	0.41
3:SB:63:GLN:HB3	3:SB:87:CYS:O	2.21	0.41
5:SD:52:LEU:HB3	5:SD:78:LEU:HD21	2.03	0.41
6:SE:54:ALA:O	6:SE:58:LYS:HG2	2.21	0.41
7:SF:26:LYS:HD2	7:SF:26:LYS:N	2.35	0.41
8:SG:69:ILE:HB	8:SG:71:PHE:CE2	2.56	0.41
8:SG:91:LEU:HG	17:SP:168:HIS:NE2	2.35	0.41
8:SG:115:LEU:H	8:SG:115:LEU:HD23	1.85	0.41
11:SJ:108:ILE:HD11	11:SJ:114:VAL:HG12	2.03	0.41
14:SM:33:LYS:HG2	14:SM:34:TYR:CD2	2.55	0.41
16:SO:9:LEU:HB2	16:SO:313:TRP:CE3	2.56	0.41
16:SO:33:LEU:HD12	16:SO:33:LEU:HA	1.79	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:SP:121:VAL:HG23	17:SP:141:ILE:HG21	2.03	0.41
18:SQ:78:ASP:OD1	18:SQ:78:ASP:N	2.35	0.41
19:SR:88:LYS:HD3	19:SR:95:ARG:CZ	2.50	0.41
19:SR:174:ARG:O	24:SW:97:LEU:HB3	2.21	0.41
21:ST:137:ARG:HB3	21:ST:140:ASN:OD1	2.21	0.41
26:SY:61:THR:OG1	26:SY:62:GLN:N	2.54	0.41
26:SY:129:TYR:HA	26:SY:132:VAL:HG12	2.03	0.41
27:SZ:21:ALA:O	27:SZ:85:ALA:HA	2.21	0.41
28:Sa:4:ASP:OD1	28:Sa:4:ASP:N	2.52	0.41
31:Sd:14:SER:HA	31:Sd:21:LYS:HG3	2.03	0.41
35:s:77:A:C5	81:x:293:GLU:CG	2.71	0.41
39:T:188:ASP:OD1	39:T:189:ALA:N	2.53	0.41
41:A:356:C:H2'	41:A:357:A:H8	1.86	0.41
41:A:413:U:OP1	56:R:30:ARG:NH1	2.54	0.41
41:A:639:G:H2'	41:A:640:U:H6	1.86	0.41
41:A:644:G:H21	41:A:2372:A:H5'	1.85	0.41
41:A:736:A:C2	41:A:737:G:H1'	2.56	0.41
41:A:904:A:H2'	41:A:905:U:C6	2.56	0.41
41:A:1341:U:H2'	41:A:1342:C:H6	1.86	0.41
41:A:1742:U:H2'	41:A:1743:G:H8	1.86	0.41
41:A:1856:C:H2'	41:A:1857:C:C6	2.55	0.41
41:A:1900:A:H2	41:A:1907:C:H41	1.69	0.41
41:A:2180:G:H2'	41:A:2181:C:H6	1.84	0.41
41:A:2207:A:H61	41:A:2236:G:H1	1.69	0.41
41:A:2241:U:O2'	42:D:243:THR:N	2.48	0.41
41:A:2276:G:OP1	78:p:19:LYS:NZ	2.54	0.41
41:A:2492:C:H2'	41:A:2493:U:H4'	2.03	0.41
41:A:2722:U:H2'	41:A:2723:U:H6	1.85	0.41
41:A:2768:U:H2'	41:A:2769:A:C8	2.55	0.41
41:A:2858:U:H1'	41:A:2887:A:H61	1.86	0.41
41:A:3049:A:C8	43:E:53:MET:HE2	2.56	0.41
41:A:3153:U:OP2	41:A:3293:U:O2'	2.22	0.41
41:A:3301:U:H2'	41:A:3302:U:C6	2.56	0.41
41:A:3343:G:O2'	41:A:3362:A:N6	2.54	0.41
42:D:104:LEU:HD22	42:D:136:ILE:HD11	2.01	0.41
52:N:116:LEU:HD23	52:N:116:LEU:HA	1.92	0.41
57:S:89:ASP:HB2	57:S:110:ALA:N	2.36	0.41
58:U:109:ASP:OD1	58:U:113:ARG:NH2	2.54	0.41
60:W:22:PRO:HA	60:W:107:PHE:CZ	2.56	0.41
60:W:34:ALA:O	60:W:38:ILE:HG23	2.21	0.41
60:W:104:ARG:HG2	60:W:105:LEU:N	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:a:27:ARG:NH1	63:a:75:ARG:O	2.42	0.41
63:a:48:LEU:HG	63:a:49:PRO:HD2	2.01	0.41
63:a:110:HIS:O	63:a:115:ARG:HD2	2.21	0.41
67:e:13:LYS:HZ2	67:e:104:LEU:HD23	1.85	0.41
67:e:51:LEU:HD12	67:e:51:LEU:HA	1.88	0.41
74:l:22:CYS:SG	74:l:36:SER:OG	2.70	0.41
80:r:29:LEU:HD23	80:r:29:LEU:HA	1.86	0.41
80:r:74:ALA:O	80:r:78:THR:HG23	2.21	0.41
81:x:60:LEU:HD22	81:x:91:ASP:HB2	2.03	0.41
81:x:292:VAL:HA	81:x:309:GLY:O	2.21	0.41
81:x:342:ALA:HB1	81:x:438:ILE:HG12	2.01	0.41
2:SA:169:ASP:OD1	2:SA:169:ASP:C	2.64	0.41
7:SF:79:TYR:HA	7:SF:82:ARG:HD3	2.03	0.41
22:SU:63:PRO:C	22:SU:65:PRO:HD2	2.46	0.41
29:Sb:86:ILE:HD13	29:Sb:86:ILE:HA	1.85	0.41
30:Sc:69:ARG:HD3	30:Sc:69:ARG:HA	1.78	0.41
35:s:27:G:H2'	35:s:28:U:H5'	2.02	0.41
35:s:52:C:H5'	81:x:371:LYS:HE2	2.03	0.41
35:s:61:A:P	35:s:62:C:H41	2.44	0.41
39:T:73:GLY:O	39:T:74:ARG:HG2	2.20	0.41
41:A:59:G:H4'	41:A:60:A:H4'	2.02	0.41
41:A:594:U:OP1	41:A:609:G:N1	2.34	0.41
41:A:939:U:H2'	41:A:940:G:C8	2.56	0.41
41:A:1096:U:OP2	59:V:116:ARG:NH2	2.49	0.41
41:A:1257:C:H5''	41:A:1258:U:OP2	2.21	0.41
41:A:1463:U:H2'	41:A:1464:G:O4'	2.21	0.41
41:A:1534:A:OP2	41:A:1586:G:N1	2.33	0.41
41:A:1802:C:H2'	41:A:1803:C:H6	1.86	0.41
41:A:2227:C:H2'	41:A:2228:A:C8	2.54	0.41
41:A:2266:U:H2'	41:A:2267:C:O4'	2.21	0.41
41:A:2546:C:H2'	41:A:2547:A:O4'	2.21	0.41
41:A:2785:A:H2'	41:A:2786:G:H8	1.84	0.41
41:A:2936:A:H2'	41:A:2937:G:H8	1.86	0.41
41:A:2956:A:H61	41:A:2977:G:H1'	1.85	0.41
43:E:107:ALA:HB1	43:E:200:GLU:HG3	2.02	0.41
45:G:179:ARG:HA	45:G:179:ARG:HD3	1.80	0.41
49:K:109:ALA:HB3	49:K:111:PHE:CE1	2.56	0.41
49:K:120:ASP:C	49:K:120:ASP:OD1	2.64	0.41
52:N:171:ARG:HD2	52:N:171:ARG:HA	1.93	0.41
54:P:8:GLU:OE2	54:P:12:ARG:NH1	2.54	0.41
55:Q:9[A]:ILE:HD11	55:Q:33[A]:ILE:HD13	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:W:37:LEU:HD23	60:W:37:LEU:HA	1.86	0.41
62:Z:131:ASP:O	62:Z:135:ILE:HG12	2.21	0.41
73:k:60:LEU:HD23	73:k:60:LEU:HA	1.87	0.41
1:2:82:U:H2'	1:2:83:G:O4'	2.21	0.40
1:2:409:C:H2'	1:2:410:A:C8	2.56	0.40
1:2:568:G:O2'	1:2:583:C:O2'	2.37	0.40
1:2:800:U:H2'	1:2:801:G:C8	2.57	0.40
1:2:810:G:O2'	22:SU:111:LYS:HG3	2.21	0.40
1:2:947:U:H2'	1:2:948:G:H8	1.86	0.40
1:2:1042:G:H22	1:2:1076:A:H2	1.69	0.40
1:2:1082:C:H1'	28:Sa:62:ARG:NH2	2.36	0.40
1:2:1256:A:H1'	1:2:1257:U:OP2	2.21	0.40
9:SH:16:ARG:NH2	9:SH:19:ASN:OD1	2.54	0.40
11:SJ:34:LEU:HD12	11:SJ:112:VAL:HG23	2.03	0.40
16:SO:206:PRO:HG2	16:SO:247:PRO:HA	2.02	0.40
19:SR:40:LYS:HZ2	19:SR:247:ALA:HB1	1.86	0.40
24:SW:154:LYS:H	24:SW:154:LYS:HG2	1.72	0.40
28:Sa:12:TYR:CG	28:Sa:12:TYR:O	2.74	0.40
28:Sa:68:SER:O	28:Sa:72:LEU:HG	2.20	0.40
29:Sb:33:VAL:HG22	29:Sb:110:ILE:HD11	2.03	0.40
36:t:15:G:H22	36:t:48:C:H42	1.69	0.40
38:C:126:A:N1	41:A:1618:G:O2'	2.54	0.40
41:A:56:G:H4'	54:P:158:HIS:CG	2.56	0.40
41:A:174:C:H2'	41:A:175:C:C6	2.55	0.40
41:A:953:G:H5'	41:A:954:U:O5'	2.21	0.40
41:A:998:A:H2'	41:A:999:G:C8	2.56	0.40
41:A:1174:G:H22	55:Q:87[A]:MET:HE2	1.85	0.40
41:A:1503:A:N3	41:A:1503:A:H2'	2.36	0.40
41:A:1909:A:H2'	41:A:1910:A:C8	2.56	0.40
41:A:1927:G:C8	80:r:16:VAL:HG12	2.56	0.40
44:F:157:GLU:HG3	44:F:251:THR:HG21	2.02	0.40
46:H:66:THR:HG21	46:H:145:LEU:HD11	2.02	0.40
46:H:78:ARG:NH2	46:H:106:PHE:HB2	2.37	0.40
47:I:208:SER:OG	47:I:209:ASN:N	2.54	0.40
51:M:55:ARG:CZ	51:M:55:ARG:HB3	2.50	0.40
56:R:67:ILE:HD11	56:R:80:LYS:HB3	2.03	0.40
57:S:155:MET:HE1	57:S:163:PRO:HG3	2.01	0.40
67:e:86:ARG:NE	80:r:44:LYS:HG2	2.36	0.40
71:i:55:SER:O	71:i:62:TYR:OH	2.26	0.40
71:i:76:TYR:HD1	71:i:85:VAL:HG22	1.85	0.40
74:l:28:HIS:HB3	74:l:31:LYS:HB3	2.02	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:430:G:H5'	81:x:290:LYS:HE3	1.97	0.40
1:2:1245:G:O2'	1:2:1246:C:O5'	2.40	0.40
1:2:1480:G:O2'	7:SF:40:GLU:OE1	2.22	0.40
2:SA:141:LYS:HB3	2:SA:141:LYS:HE2	1.92	0.40
5:SD:29:LYS:HD2	5:SD:100:TRP:CD2	2.56	0.40
12:SK:57:TYR:CD2	12:SK:60:VAL:HG23	2.54	0.40
16:SO:128:ASP:C	16:SO:129:LYS:HG2	2.46	0.40
16:SO:242:SER:O	16:SO:255:ALA:N	2.37	0.40
22:SU:44:LYS:HE2	22:SU:63:PRO:HB3	2.03	0.40
25:SX:96:LYS:HD3	25:SX:97:TYR:CZ	2.56	0.40
30:Sc:18:HIS:O	30:Sc:22:ASN:ND2	2.52	0.40
35:s:19:G:H3'	35:s:20:U:O2	2.21	0.40
37:B:24:A:H2'	37:B:25:G:O4'	2.21	0.40
37:B:60:G:H2'	37:B:61:G:H8	1.86	0.40
41:A:123:A:OP1	48:J:105:LYS:NZ	2.54	0.40
41:A:501:A:H2'	41:A:502:U:H6	1.86	0.40
41:A:840:C:H2'	41:A:841:A:C8	2.57	0.40
41:A:1225:A:C4	41:A:1226:G:C8	3.09	0.40
41:A:1682:U:O4	60:W:90:ARG:NH1	2.55	0.40
41:A:2188:A:N3	41:A:2188:A:H2'	2.35	0.40
41:A:2284:C:H41	41:A:2308:C:P	2.45	0.40
41:A:2482:U:H2'	41:A:2483:G:H8	1.87	0.40
41:A:2684:C:H2'	41:A:2685:C:H6	1.85	0.40
41:A:3049:A:C6	43:E:75:ALA:HB2	2.56	0.40
41:A:3305:A:H2'	41:A:3306:U:C2	2.57	0.40
50:L:200:LEU:HD12	50:L:213:PHE:CD2	2.56	0.40
52:N:62:THR:HG23	52:N:64:LYS:N	2.35	0.40
62:Z:81:ILE:HG21	62:Z:123:TYR:HB3	2.03	0.40
63:a:54:ASP:O	63:a:70:ILE:HG12	2.21	0.40
73:k:44:VAL:HA	73:k:47:ILE:HG12	2.02	0.40
81:x:263:PRO:HB2	81:x:310:PHE:CD2	2.56	0.40
81:x:359:PRO:CG	81:x:426:VAL:HG13	2.52	0.40
1:2:1226:A:HO2'	1:2:1227:A:C5'	2.30	0.40
1:2:1379:C:HO2'	7:SF:17:THR:HG1	1.64	0.40
2:SA:164:VAL:HG23	2:SA:168:ILE:HD12	2.04	0.40
7:SF:93:HIS:HB3	7:SF:102:LYS:HG3	2.03	0.40
7:SF:103:ASN:OD1	7:SF:104:GLU:N	2.54	0.40
8:SG:108:ASP:OD1	8:SG:108:ASP:N	2.55	0.40
9:SH:67:GLU:H	9:SH:67:GLU:HG2	1.70	0.40
13:SL:60:GLU:O	13:SL:61:ARG:HG3	2.21	0.40
23:SV:41:LYS:HA	23:SV:59:ARG:O	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:SW:107:ARG:HH22	24:SW:148:VAL:HG23	1.85	0.40
35:s:48:U:H3	35:s:52:C:P	2.44	0.40
36:t:74:C:C5	50:L:110:ARG:HB3	2.56	0.40
37:B:11:A:H4'	37:B:13:A:C8	2.56	0.40
41:A:224:C:H2'	41:A:225:C:C6	2.55	0.40
41:A:1336:U:H2'	41:A:1337:A:C8	2.45	0.40
41:A:1343:A:H2'	41:A:1344:G:H8	1.86	0.40
41:A:1394:A:H4'	41:A:1420:C:H4'	2.02	0.40
41:A:2429:G:H2'	41:A:2430:A:H8	1.86	0.40
41:A:2845:A:O2'	41:A:2846:U:O4'	2.27	0.40
41:A:3060:C:H2'	41:A:3061:G:C8	2.56	0.40
41:A:3101:G:H2'	41:A:3102:G:C8	2.56	0.40
41:A:3111:U:H2'	41:A:3112:G:O4'	2.21	0.40
48:J:65:LEU:HG	48:J:69:LEU:HD13	2.02	0.40
53:O:43:LYS:HE3	53:O:43:LYS:HB2	1.75	0.40
53:O:65:LEU:HD12	53:O:65:LEU:H	1.86	0.40
54:P:56:LYS:HB2	54:P:56:LYS:HE3	1.97	0.40
59:V:57:TYR:HA	59:V:60:LYS:HG3	2.03	0.40
64:b:6:LYS:HB2	64:b:6:LYS:HE2	1.76	0.40
81:x:278:VAL:HB	81:x:326:ALA:CB	2.49	0.40
81:x:279:THR:O	81:x:325:VAL:O	2.40	0.40
1:2:1276:U:N3	1:2:1437:U:O2	2.54	0.40
1:2:1566:U:H5''	9:SH:39:GLY:N	2.35	0.40
1:2:1610:G:H5''	3:SB:107:LYS:HD2	2.02	0.40
3:SB:161:ASP:HB2	13:SL:43:ASN:O	2.21	0.40
6:SE:15:HIS:NE2	6:SE:110:GLU:HA	2.36	0.40
9:SH:109:LEU:O	9:SH:113:LEU:HG	2.22	0.40
11:SJ:24:ILE:HG23	11:SJ:114:VAL:HG23	2.02	0.40
16:SO:192:PHE:HB3	16:SO:223:TRP:CZ3	2.56	0.40
34:Sg:23:LYS:HE2	34:Sg:23:LYS:HB2	1.94	0.40
35:s:67:C:H4'	81:x:408:LYS:HD2	2.04	0.40
41:A:75:G:H1'	52:N:61:PRO:HG3	2.02	0.40
41:A:869:G:N1	41:A:891:G:C6	2.90	0.40
41:A:922:U:N3	41:A:926:A:O2'	2.54	0.40
41:A:1290:A:H2'	41:A:1291:A:C8	2.56	0.40
41:A:1353:U:H3	46:H:9:TRP:CD1	2.38	0.40
41:A:1637:A:N3	41:A:1709:C:O2'	2.43	0.40
41:A:2874:G:N2	41:A:2875:U:O4	2.51	0.40
41:A:3393:U:H2'	41:A:3394:U:C6	2.57	0.40
42:D:40:TYR:HA	42:D:91:GLY:HA3	2.03	0.40
46:H:55:LEU:HD11	46:H:66:THR:HB	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:I:170:GLU:HA	47:I:179:LEU:HA	2.04	0.40
47:I:224:ILE:HD12	47:I:224:ILE:H	1.86	0.40
49:K:69:ARG:HA	49:K:69:ARG:HD2	1.88	0.40
49:K:113:GLU:HG3	49:K:123:ILE:HG23	2.04	0.40
64:b:22:LYS:HE3	64:b:132:SER:O	2.21	0.40
1:2:215:A:HO2'	1:2:216:U:P	2.44	0.40
1:2:479:C:P	34:Sg:37:ARG:HH22	2.45	0.40
1:2:540:G:O2'	1:2:541:A:O3'	2.32	0.40
1:2:1018:U:O4	1:2:1019:A:N6	2.54	0.40
1:2:1135:U:P	30:Sc:121:ARG:HH22	2.43	0.40
1:2:1394:G:C2	1:2:1405:G:C2	3.10	0.40
1:2:1501:C:H2'	1:2:1502:G:H8	1.86	0.40
8:SG:10:LYS:O	8:SG:14:LYS:HG3	2.22	0.40
16:SO:272:ASP:HB3	16:SO:274:LEU:HG	2.04	0.40
18:SQ:2:ALA:N	27:SZ:45:GLY:O	2.54	0.40
26:SY:78:ASN:OD1	26:SY:78:ASN:N	2.54	0.40
31:Sd:49:LYS:HE2	31:Sd:49:LYS:HB2	1.93	0.40
38:C:40:A:N1	41:A:22:G:O2'	2.49	0.40
39:T:95:TRP:NE1	41:A:855:U:H4'	2.37	0.40
41:A:626:U:H2'	41:A:627:U:H6	1.85	0.40
41:A:794:U:H2'	41:A:795:G:C8	2.55	0.40
41:A:966:U:H2'	41:A:967:A:H8	1.87	0.40
41:A:1279:C:H2'	41:A:1280:C:H6	1.85	0.40
41:A:1363:A:H2'	41:A:1364:C:H6	1.87	0.40
41:A:2407:C:H1'	41:A:2818:U:H3	1.86	0.40
41:A:2428:U:H2'	41:A:2429:G:C8	2.57	0.40
41:A:3193:C:H2'	41:A:3194:C:C6	2.55	0.40
47:I:145:ARG:HA	47:I:185:ILE:HD13	2.03	0.40
49:K:21:LYS:C	49:K:22:SER:HG	2.29	0.40
49:K:36:LYS:HE3	49:K:74:LEU:HD13	2.04	0.40
54:P:23:GLN:HG2	54:P:122:ASN:HD21	1.86	0.40
54:P:176:LYS:HE3	54:P:176:LYS:HB2	1.94	0.40
55:Q:78[A]:ARG:HA	55:Q:78[A]:ARG:HD2	1.84	0.40
60:W:93:ILE:HG22	60:W:105:LEU:HD22	2.03	0.40
81:x:248:LEU:HB3	81:x:267:VAL:HA	2.04	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	SA	220/222 (99%)	208 (94%)	11 (5%)	1 (0%)	24	59
3	SB	204/206 (99%)	186 (91%)	13 (6%)	5 (2%)	4	27
4	SC	90/92 (98%)	76 (84%)	12 (13%)	2 (2%)	5	29
5	SD	119/121 (98%)	99 (83%)	20 (17%)	0	100	100
6	SE	115/117 (98%)	104 (90%)	11 (10%)	0	100	100
7	SF	139/141 (99%)	130 (94%)	7 (5%)	2 (1%)	9	39
8	SG	119/121 (98%)	108 (91%)	11 (9%)	0	100	100
9	SH	143/145 (99%)	137 (96%)	6 (4%)	0	100	100
10	SI	141/143 (99%)	132 (94%)	8 (6%)	1 (1%)	18	52
11	SJ	98/100 (98%)	87 (89%)	11 (11%)	0	100	100
12	SK	80/108 (74%)	64 (80%)	14 (18%)	2 (2%)	4	27
13	SL	61/63 (97%)	58 (95%)	3 (5%)	0	100	100
14	SM	51/53 (96%)	47 (92%)	4 (8%)	0	100	100
15	SN	71/73 (97%)	49 (69%)	21 (30%)	1 (1%)	9	39
16	SO	310/312 (99%)	285 (92%)	24 (8%)	1 (0%)	36	68
17	SP	204/206 (99%)	191 (94%)	12 (6%)	1 (0%)	24	59
18	SQ	222/232 (96%)	203 (91%)	19 (9%)	0	100	100
19	SR	214/216 (99%)	204 (95%)	10 (5%)	0	100	100
20	SS	256/258 (99%)	240 (94%)	16 (6%)	0	100	100
21	ST	226/228 (99%)	220 (97%)	5 (2%)	1 (0%)	30	62
22	SU	182/184 (99%)	170 (93%)	11 (6%)	1 (0%)	24	59
23	SV	183/200 (92%)	172 (94%)	11 (6%)	0	100	100
24	SW	182/184 (99%)	176 (97%)	6 (3%)	0	100	100
25	SX	140/142 (99%)	132 (94%)	7 (5%)	1 (1%)	18	52
26	SY	148/150 (99%)	142 (96%)	6 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
27	SZ	125/127 (98%)	113 (90%)	12 (10%)	0	100	100
28	Sa	85/87 (98%)	77 (91%)	8 (9%)	0	100	100
29	Sb	127/129 (98%)	119 (94%)	7 (6%)	1 (1%)	16	50
30	Sc	142/144 (99%)	136 (96%)	4 (3%)	2 (1%)	9	39
31	Sd	132/134 (98%)	126 (96%)	6 (4%)	0	100	100
32	Se	92/94 (98%)	79 (86%)	13 (14%)	0	100	100
33	Sf	79/81 (98%)	76 (96%)	3 (4%)	0	100	100
34	Sg	58/60 (97%)	53 (91%)	5 (9%)	0	100	100
39	T	186/188 (99%)	184 (99%)	2 (1%)	0	100	100
40	Y	124/126 (98%)	111 (90%)	11 (9%)	2 (2%)	7	36
42	D	249/251 (99%)	239 (96%)	10 (4%)	0	100	100
43	E	384/386 (100%)	370 (96%)	14 (4%)	0	100	100
44	F	359/361 (99%)	348 (97%)	11 (3%)	0	100	100
45	G	292/294 (99%)	279 (96%)	13 (4%)	0	100	100
46	H	163/175 (93%)	151 (93%)	12 (7%)	0	100	100
47	I	220/223 (99%)	216 (98%)	4 (2%)	0	100	100
48	J	231/233 (99%)	217 (94%)	13 (6%)	1 (0%)	30	62
49	K	189/191 (99%)	181 (96%)	8 (4%)	0	100	100
50	L	216/218 (99%)	207 (96%)	9 (4%)	0	100	100
51	M	167/169 (99%)	157 (94%)	10 (6%)	0	100	100
52	N	191/193 (99%)	178 (93%)	11 (6%)	2 (1%)	12	45
53	O	134/136 (98%)	128 (96%)	6 (4%)	0	100	100
54	P	201/203 (99%)	196 (98%)	5 (2%)	0	100	100
55	Q	195/197 (99%)	189 (97%)	6 (3%)	0	100	100
56	R	181/183 (99%)	172 (95%)	9 (5%)	0	100	100
57	S	183/185 (99%)	175 (96%)	7 (4%)	1 (0%)	24	59
58	U	169/171 (99%)	161 (95%)	8 (5%)	0	100	100
59	V	157/159 (99%)	149 (95%)	8 (5%)	0	100	100
60	W	98/100 (98%)	89 (91%)	9 (9%)	0	100	100
61	X	134/136 (98%)	133 (99%)	1 (1%)	0	100	100
62	Z	119/121 (98%)	113 (95%)	6 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
63	a	123/125 (98%)	120 (98%)	3 (2%)	0	100	100
64	b	133/135 (98%)	127 (96%)	6 (4%)	0	100	100
65	c	146/148 (99%)	138 (94%)	8 (6%)	0	100	100
66	d	56/58 (97%)	54 (96%)	2 (4%)	0	100	100
67	e	94/96 (98%)	92 (98%)	2 (2%)	0	100	100
68	f	107/109 (98%)	102 (95%)	5 (5%)	0	100	100
69	g	125/127 (98%)	124 (99%)	1 (1%)	0	100	100
70	h	104/106 (98%)	97 (93%)	7 (7%)	0	100	100
71	i	110/112 (98%)	104 (94%)	6 (6%)	0	100	100
72	j	117/119 (98%)	114 (97%)	3 (3%)	0	100	100
73	k	97/99 (98%)	93 (96%)	4 (4%)	0	100	100
74	l	79/81 (98%)	74 (94%)	5 (6%)	0	100	100
75	m	75/77 (97%)	69 (92%)	6 (8%)	0	100	100
76	n	48/50 (96%)	47 (98%)	1 (2%)	0	100	100
77	o	50/52 (96%)	48 (96%)	2 (4%)	0	100	100
78	p	23/25 (92%)	23 (100%)	0	0	100	100
79	q	101/103 (98%)	96 (95%)	5 (5%)	0	100	100
80	r	89/91 (98%)	84 (94%)	5 (6%)	0	100	100
81	x	439/462 (95%)	405 (92%)	28 (6%)	6 (1%)	9	39
All	All	11416/11647 (98%)	10753 (94%)	629 (6%)	34 (0%)	37	68

All (34) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
4	SC	83	PRO
4	SC	88	PRO
7	SF	39	VAL
7	SF	40	GLU
12	SK	33	LYS
12	SK	88	ILE
22	SU	64	VAL
25	SX	30	ARG
29	Sb	30	SER
30	Sc	64	PRO
48	J	158	ASP

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Mol	Chain	Res	Type
10	SI	50	ALA
16	SO	51	ASP
30	Sc	63	GLN
81	x	346	ILE
81	x	348	ASN
17	SP	189	VAL
40	Y	76	VAL
40	Y	83	THR
2	SA	218	LEU
52	N	136	GLU
81	x	259	ILE
81	x	315	VAL
3	SB	41	LYS
3	SB	156	ARG
21	ST	171	LYS
52	N	47	ALA
81	x	310	PHE
81	x	326	ALA
15	SN	114	VAL
3	SB	151	GLY
3	SB	153	GLY
3	SB	149	VAL
57	S	18	ALA

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	
2	SA	182/182 (100%)	182 (100%)	0	100	100
3	SB	172/173 (99%)	170 (99%)	2 (1%)	63	79
4	SC	77/85 (91%)	76 (99%)	1 (1%)	61	78
5	SD	88/98 (90%)	87 (99%)	1 (1%)	65	79
6	SE	95/98 (97%)	95 (100%)	0	100	100
7	SF	117/117 (100%)	117 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
8	SG	105/110 (96%)	104 (99%)	1 (1%)	68	80
9	SH	127/128 (99%)	127 (100%)	0	100	100
10	SI	115/115 (100%)	114 (99%)	1 (1%)	70	81
11	SJ	93/93 (100%)	93 (100%)	0	100	100
12	SK	67/89 (75%)	67 (100%)	0	100	100
13	SL	55/56 (98%)	55 (100%)	0	100	100
14	SM	47/47 (100%)	46 (98%)	1 (2%)	47	71
15	SN	56/64 (88%)	56 (100%)	0	100	100
16	SO	250/257 (97%)	247 (99%)	3 (1%)	63	79
17	SP	170/173 (98%)	170 (100%)	0	100	100
18	SQ	200/205 (98%)	198 (99%)	2 (1%)	68	80
19	SR	175/175 (100%)	173 (99%)	2 (1%)	65	79
20	SS	220/220 (100%)	220 (100%)	0	100	100
21	ST	189/195 (97%)	189 (100%)	0	100	100
22	SU	163/165 (99%)	163 (100%)	0	100	100
23	SV	148/161 (92%)	148 (100%)	0	100	100
24	SW	156/157 (99%)	155 (99%)	1 (1%)	78	84
25	SX	126/127 (99%)	126 (100%)	0	100	100
26	SY	127/127 (100%)	126 (99%)	1 (1%)	73	82
27	SZ	81/96 (84%)	80 (99%)	1 (1%)	63	79
28	Sa	71/74 (96%)	71 (100%)	0	100	100
29	Sb	110/110 (100%)	110 (100%)	0	100	100
30	Sc	119/119 (100%)	119 (100%)	0	100	100
31	Sd	112/112 (100%)	111 (99%)	1 (1%)	70	81
32	Se	81/81 (100%)	81 (100%)	0	100	100
33	Sf	70/70 (100%)	70 (100%)	0	100	100
34	Sg	50/51 (98%)	50 (100%)	0	100	100
39	T	152/153 (99%)	152 (100%)	0	100	100
40	Y	56/108 (52%)	56 (100%)	0	100	100
42	D	190/193 (98%)	190 (100%)	0	100	100
43	E	319/322 (99%)	316 (99%)	3 (1%)	70	81

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
44	F	288/288 (100%)	287 (100%)	1 (0%)	86	88
45	G	241/243 (99%)	239 (99%)	2 (1%)	73	82
46	H	139/154 (90%)	139 (100%)	0	100	100
47	I	186/187 (100%)	186 (100%)	0	100	100
48	J	187/191 (98%)	187 (100%)	0	100	100
49	K	168/171 (98%)	168 (100%)	0	100	100
50	L	185/185 (100%)	184 (100%)	1 (0%)	81	85
51	M	145/147 (99%)	144 (99%)	1 (1%)	76	83
52	N	154/154 (100%)	153 (99%)	1 (1%)	78	84
53	O	107/107 (100%)	106 (99%)	1 (1%)	70	81
54	P	175/175 (100%)	175 (100%)	0	100	100
55	Q	160/160 (100%)	160 (100%)	0	100	100
56	R	138/145 (95%)	138 (100%)	0	100	100
57	S	150/150 (100%)	149 (99%)	1 (1%)	76	83
58	U	155/155 (100%)	153 (99%)	2 (1%)	61	78
59	V	135/136 (99%)	134 (99%)	1 (1%)	76	83
60	W	87/87 (100%)	87 (100%)	0	100	100
61	X	104/104 (100%)	104 (100%)	0	100	100
62	Z	104/105 (99%)	104 (100%)	0	100	100
63	a	108/108 (100%)	108 (100%)	0	100	100
64	b	112/115 (97%)	111 (99%)	1 (1%)	70	81
65	c	117/118 (99%)	117 (100%)	0	100	100
66	d	46/46 (100%)	46 (100%)	0	100	100
67	e	81/81 (100%)	81 (100%)	0	100	100
68	f	92/96 (96%)	92 (100%)	0	100	100
69	g	107/109 (98%)	107 (100%)	0	100	100
70	h	90/90 (100%)	90 (100%)	0	100	100
71	i	95/95 (100%)	94 (99%)	1 (1%)	65	79
72	j	104/104 (100%)	103 (99%)	1 (1%)	68	80
73	k	80/81 (99%)	79 (99%)	1 (1%)	61	78
74	l	67/67 (100%)	66 (98%)	1 (2%)	57	76

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
75	m	68/68 (100%)	68 (100%)	0	100	100
76	n	45/45 (100%)	45 (100%)	0	100	100
77	o	45/47 (96%)	45 (100%)	0	100	100
78	p	22/23 (96%)	22 (100%)	0	100	100
79	q	87/88 (99%)	87 (100%)	0	100	100
80	r	71/71 (100%)	71 (100%)	0	100	100
81	x	366/379 (97%)	349 (95%)	17 (5%)	24	58
All	All	9542/9781 (98%)	9488 (99%)	54 (1%)	76	84

All (54) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
3	SB	149	VAL
3	SB	156	ARG
4	SC	81	ASN
5	SD	52	LEU
8	SG	32	LYS
10	SI	13	ASP
14	SM	28	THR
16	SO	17	ASN
16	SO	52	GLN
16	SO	316	MET
18	SQ	95	ASN
18	SQ	198	GLU
19	SR	104	VAL
19	SR	208	GLU
24	SW	121	SER
26	SY	86	GLU
27	SZ	12	GLN
31	Sd	96	LEU
43	E	53	MET
43	E	104	THR
43	E	161	LEU
44	F	59	GLN
45	G	45	ASN
45	G	221	GLU
50	L	140	THR
51	M	28	ASP
52	N	175	SER
53	O	14	LEU

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Mol	Chain	Res	Type
57	S	17	THR
58	U	8	GLN
58	U	48	LEU
59	V	90	ASN
64	b	118	PHE
71	i	18	ASN
72	j	99	GLN
73	k	21	THR
74	l	19	CYS
81	x	6	THR
81	x	30	LYS
81	x	34	ILE
81	x	75	ILE
81	x	102	MET
81	x	148	LEU
81	x	232	LEU
81	x	248	LEU
81	x	250	LEU
81	x	310	PHE
81	x	311	ASN
81	x	313	LYS
81	x	344	VAL
81	x	346	ILE
81	x	360	VAL
81	x	392	LYS
81	x	394	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (98) such sidechains are listed below:

Mol	Chain	Res	Type
2	SA	22	ASN
2	SA	67	ASN
2	SA	101	GLN
5	SD	80	ASN
6	SE	103	ASN
7	SF	8	GLN
7	SF	100	GLN
8	SG	29	GLN
8	SG	48	ASN
9	SH	21	ASN
9	SH	89	GLN
10	SI	16	ASN

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Mol	Chain	Res	Type
11	SJ	33	GLN
11	SJ	87	HIS
14	SM	27	HIS
14	SM	53	ASN
15	SN	151	ASN
16	SO	153	GLN
16	SO	187	GLN
16	SO	314	GLN
18	SQ	95	ASN
18	SQ	153	HIS
18	SQ	209	ASN
20	SS	197	HIS
20	SS	216	ASN
22	SU	180	GLN
23	SV	138	ASN
24	SW	48	GLN
24	SW	112	GLN
27	SZ	29	HIS
29	Sb	12	ASN
29	Sb	42	GLN
29	Sb	120	HIS
31	Sd	22	GLN
32	Se	72	HIS
33	Sf	42	ASN
39	T	3	ASN
39	T	7	GLN
39	T	58	HIS
42	D	8	GLN
42	D	97	ASN
43	E	109	HIS
43	E	165	GLN
44	F	9	HIS
44	F	59	GLN
44	F	311	HIS
45	G	32	GLN
45	G	244	HIS
46	H	97	ASN
46	H	138	GLN
48	J	28	HIS
48	J	33	ASN
48	J	45	ASN
49	K	51	GLN

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Mol	Chain	Res	Type
50	L	123	HIS
51	M	101	ASN
52	N	12	ASN
52	N	99	HIS
53	O	56	GLN
53	O	59	ASN
54	P	11	GLN
54	P	86	ASN
54	P	87	GLN
54	P	95	GLN
54	P	117	ASN
54	P	149	ASN
54	P	182	ASN
55	Q	122[A]	GLN
56	R	97	ASN
56	R	137	ASN
57	S	23	ASN
57	S	126	GLN
58	U	108	GLN
61	X	4	ASN
62	Z	65	GLN
62	Z	80	ASN
64	b	103	GLN
64	b	128	GLN
65	c	120	ASN
66	d	6	ASN
66	d	12	GLN
66	d	48	HIS
68	f	15	ASN
68	f	80	ASN
68	f	87	ASN
68	f	105	GLN
71	i	11	ASN
71	i	83	ASN
72	j	61	GLN
76	n	19	GLN
77	o	120	GLN
81	x	9	ASN
81	x	15	HIS
81	x	324	ASN
81	x	343	GLN
81	x	348	ASN

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Mol	Chain	Res	Type
81	x	352	GLN
81	x	367	HIS

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	2	1768/1799 (98%)	408 (23%)	40 (2%)
35	s	74/77 (96%)	32 (43%)	0
36	t	74/75 (98%)	18 (24%)	0
37	B	120/121 (99%)	9 (7%)	1 (0%)
38	C	157/158 (99%)	26 (16%)	1 (0%)
41	A	3180/3394 (93%)	506 (15%)	9 (0%)
All	All	5373/5624 (95%)	999 (18%)	51 (0%)

All (999) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	2	2	A
1	2	4	C
1	2	25	C
1	2	26	A
1	2	34	G
1	2	42	G
1	2	43	A
1	2	45	U
1	2	47	A
1	2	56	U
1	2	57	G
1	2	62	A
1	2	65	A
1	2	66	U
1	2	67	A
1	2	68	A
1	2	69	G
1	2	73	U
1	2	74	U
1	2	75	U
1	2	76	A
1	2	77	U
1	2	78	A
1	2	80	A

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Mol	Chain	Res	Type
1	2	81	G
1	2	104	A
1	2	114	C
1	2	116	U
1	2	121	U
1	2	126	A
1	2	127	G
1	2	129	U
1	2	130	C
1	2	131	C
1	2	132	U
1	2	134	U
1	2	135	A
1	2	138	A
1	2	140	A
1	2	141	U
1	2	142	G
1	2	153	G
1	2	158	U
1	2	168	A
1	2	171	A
1	2	172	C
1	2	176	C
1	2	178	U
1	2	182	A
1	2	185	U
1	2	186	C
1	2	191	C
1	2	192	U
1	2	193	U
1	2	194	U
1	2	195	G
1	2	204	G
1	2	216	U
1	2	217	A
1	2	218	A
1	2	224	C
1	2	225	A
1	2	227	U
1	2	228	G
1	2	230	C
1	2	232	U

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Mol	Chain	Res	Type
1	2	233	C
1	2	234	G
1	2	238	U
1	2	240	U
1	2	241	U
1	2	250	C
1	2	260	U
1	2	261	U
1	2	265	A
1	2	272	U
1	2	276	C
1	2	277	U
1	2	278	U
1	2	279	G
1	2	280	U
1	2	281	G
1	2	287	G
1	2	299	A
1	2	313	U
1	2	314	C
1	2	316	A
1	2	321	C
1	2	322	G
1	2	323	A
1	2	337	G
1	2	338	C
1	2	352	A
1	2	353	A
1	2	359	A
1	2	361	C
1	2	369	A
1	2	370	A
1	2	388	G
1	2	400	A
1	2	401	A
1	2	402	C
1	2	404	G
1	2	417	A
1	2	423	G
1	2	424	C
1	2	425	A
1	2	426	G

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Mol	Chain	Res	Type
1	2	435	C
1	2	439	U
1	2	444	C
1	2	446	A
1	2	448	C
1	2	460	A
1	2	482	U
1	2	483	A
1	2	485	A
1	2	487	G
1	2	492	A
1	2	493	U
1	2	494	U
1	2	496	G
1	2	498	G
1	2	499	U
1	2	500	C
1	2	502	U
1	2	506	A
1	2	510	G
1	2	511	A
1	2	517	U
1	2	518	A
1	2	534	A
1	2	538	A
1	2	540	G
1	2	541	A
1	2	542	A
1	2	543	C
1	2	554	C
1	2	555	A
1	2	556	A
1	2	557	G
1	2	558	U
1	2	565	C
1	2	568	G
1	2	578	U
1	2	579	A
1	2	594	A
1	2	595	G
1	2	609	U
1	2	610	G

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Mol	Chain	Res	Type
1	2	611	U
1	2	617	U
1	2	619	A
1	2	620	A
1	2	622	A
1	2	623	A
1	2	624	G
1	2	638	U
1	2	639	U
1	2	640	U
1	2	643	G
1	2	645	C
1	2	651	G
1	2	653	C
1	2	654	C
1	2	655	G
1	2	656	G
1	2	677	G
1	2	678	A
1	2	680	U
1	2	681	U
1	2	684	A
1	2	687	G
1	2	694	U
1	2	696	C
1	2	697	C
1	2	698	U
1	2	700	C
1	2	702	G
1	2	703	G
1	2	704	C
1	2	705	U
1	2	706	A
1	2	707	A
1	2	708	C
1	2	709	C
1	2	710	U
1	2	711	U
1	2	712	G
1	2	713	A
1	2	728	U
1	2	730	G

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Mol	Chain	Res	Type
1	2	732	G
1	2	733	A
1	2	734	A
1	2	736	C
1	2	738	G
1	2	741	C
1	2	742	U
1	2	743	U
1	2	756	A
1	2	765	G
1	2	766	U
1	2	767	U
1	2	774	A
1	2	775	G
1	2	778	G
1	2	781	U
1	2	782	U
1	2	783	G
1	2	787	G
1	2	789	A
1	2	807	A
1	2	812	A
1	2	813	U
1	2	814	A
1	2	815	G
1	2	816	G
1	2	819	G
1	2	820	U
1	2	821	U
1	2	823	G
1	2	833	U
1	2	836	U
1	2	837	G
1	2	839	U
1	2	840	U
1	2	841	U
1	2	846	G
1	2	852	C
1	2	856	A
1	2	857	U
1	2	863	A
1	2	864	U

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Mol	Chain	Res	Type
1	2	873	U
1	2	881	A
1	2	886	U
1	2	898	A
1	2	899	G
1	2	901	G
1	2	902	G
1	2	912	U
1	2	913	G
1	2	929	A
1	2	933	A
1	2	934	C
1	2	935	U
1	2	942	G
1	2	966	A
1	2	970	A
1	2	988	A
1	2	989	U
1	2	992	A
1	2	1004	U
1	2	1024	U
1	2	1026	A
1	2	1028	C
1	2	1039	A
1	2	1052	U
1	2	1053	G
1	2	1058	U
1	2	1059	U
1	2	1060	U
1	2	1061	A
1	2	1062	A
1	2	1074	G
1	2	1076	A
1	2	1080	U
1	2	1081	A
1	2	1082	C
1	2	1092	A
1	2	1096	C
1	2	1100	G
1	2	1138	A
1	2	1158	C
1	2	1160	A

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Mol	Chain	Res	Type
1	2	1164	G
1	2	1167	G
1	2	1170	G
1	2	1185	U
1	2	1186	U
1	2	1194	A
1	2	1199	G
1	2	1200	G
1	2	1208	A
1	2	1212	G
1	2	1217	A
1	2	1218	G
1	2	1227	A
1	2	1229	G
1	2	1241	G
1	2	1243	G
1	2	1244	A
1	2	1245	G
1	2	1246	C
1	2	1256	A
1	2	1257	U
1	2	1274	C
1	2	1275	A
1	2	1276	U
1	2	1285	U
1	2	1301	U
1	2	1307	U
1	2	1314	U
1	2	1315	U
1	2	1321	A
1	2	1322	A
1	2	1325	A
1	2	1337	A
1	2	1341	A
1	2	1344	A
1	2	1345	A
1	2	1346	A
1	2	1348	A
1	2	1349	G
1	2	1361	U
1	2	1363	U
1	2	1364	G

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Mol	Chain	Res	Type
1	2	1367	G
1	2	1370	U
1	2	1371	A
1	2	1372	U
1	2	1373	C
1	2	1382	A
1	2	1383	G
1	2	1389	C
1	2	1390	U
1	2	1398	U
1	2	1399	C
1	2	1400	A
1	2	1402	G
1	2	1407	U
1	2	1408	G
1	2	1414	U
1	2	1415	U
1	2	1427	A
1	2	1431	C
1	2	1432	U
1	2	1433	G
1	2	1436	A
1	2	1445	G
1	2	1446	A
1	2	1459	C
1	2	1460	A
1	2	1469	A
1	2	1471	A
1	2	1472	C
1	2	1491	U
1	2	1493	A
1	2	1496	U
1	2	1514	U
1	2	1516	A
1	2	1517	U
1	2	1518	C
1	2	1521	G
1	2	1523	G
1	2	1524	A
1	2	1528	U
1	2	1531	G
1	2	1537	C

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Mol	Chain	Res	Type
1	2	1540	G
1	2	1542	G
1	2	1543	A
1	2	1545	A
1	2	1556	A
1	2	1557	U
1	2	1558	U
1	2	1559	A
1	2	1573	A
1	2	1574	G
1	2	1575	G
1	2	1583	A
1	2	1585	U
1	2	1601	G
1	2	1611	A
1	2	1614	A
1	2	1631	A
1	2	1634	C
1	2	1635	A
1	2	1637	C
1	2	1657	U
1	2	1658	G
1	2	1682	U
1	2	1689	A
1	2	1693	A
1	2	1700	C
1	2	1701	A
1	2	1708	U
1	2	1709	C
1	2	1715	G
1	2	1717	G
1	2	1736	G
1	2	1754	A
1	2	1755	A
1	2	1757	G
1	2	1762	A
1	2	1766	A
1	2	1767	G
1	2	1769	U
1	2	1770	U
1	2	1780	G
1	2	1782	A

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Mol	Chain	Res	Type
1	2	1783	C
1	2	1792	G
1	2	1793	G
1	2	1794	A
1	2	1796	C
1	2	1799	U
35	s	10	G
35	s	13	U
35	s	15	G
35	s	19	G
35	s	20	U
35	s	21	U
35	s	22	A
35	s	25	A
35	s	27	G
35	s	28	U
35	s	29	U
35	s	31	G
35	s	33	C
35	s	36	A
35	s	37	C
35	s	41	C
35	s	42	G
35	s	45	A
35	s	46	G
35	s	47	G
35	s	48	U
35	s	49	C
35	s	50	C
35	s	54	G
35	s	56	U
35	s	59	A
35	s	60	A
35	s	62	C
35	s	72	A
35	s	75	C
35	s	76	C
35	s	77	A
36	t	2	G
36	t	9	G
36	t	14	A
36	t	16	U

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Mol	Chain	Res	Type
36	t	18	G
36	t	19	G
36	t	21	A
36	t	42	U
36	t	46	G
36	t	47	U
36	t	48	C
36	t	53	G
36	t	59	A
36	t	61	C
36	t	63	G
36	t	64	A
36	t	69	C
36	t	76	A
37	B	7	G
37	B	26	C
37	B	53	U
37	B	54	U
37	B	55	A
37	B	65	G
37	B	76	A
37	B	102	A
37	B	112	G
38	C	16	G
38	C	23	U
38	C	34	U
38	C	35	C
38	C	39	G
38	C	59	A
38	C	62	C
38	C	63	G
38	C	80	A
38	C	81	U
38	C	82	U
38	C	83	C
38	C	84	C
38	C	86	U
38	C	87	G
38	C	90	U
38	C	95	G
38	C	104	A
38	C	106	C

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Mol	Chain	Res	Type
38	C	111	A
38	C	112	U
38	C	113	U
38	C	116	G
38	C	125	U
38	C	126	A
38	C	158	U
41	A	16	A
41	A	26	A
41	A	30	G
41	A	40	A
41	A	43	A
41	A	49	A
41	A	57	A
41	A	59	G
41	A	60	A
41	A	65	A
41	A	66	A
41	A	67	A
41	A	72	C
41	A	75	G
41	A	77	A
41	A	85	A
41	A	92	G
41	A	99	A
41	A	109	A
41	A	110	G
41	A	111	C
41	A	116	A
41	A	117	U
41	A	118	U
41	A	122	A
41	A	135	C
41	A	136	G
41	A	148	G
41	A	156	G
41	A	157	A
41	A	172	G
41	A	173	G
41	A	190	U
41	A	191	U
41	A	219	A

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Mol	Chain	Res	Type
41	A	231	G
41	A	240	U
41	A	243	G
41	A	245	U
41	A	252	U
41	A	263	C
41	A	269	G
41	A	286	U
41	A	295	A
41	A	305	U
41	A	315	C
41	A	323	A
41	A	329	U
41	A	346	C
41	A	376	G
41	A	398	A
41	A	401	U
41	A	402	A
41	A	403	C
41	A	420	G
41	A	421	G
41	A	422	A
41	A	490	A
41	A	491	C
41	A	492	U
41	A	518	G
41	A	521	A
41	A	530	G
41	A	531	G
41	A	533	A
41	A	547	G
41	A	555	U
41	A	557	A
41	A	558	U
41	A	559	A
41	A	589	A
41	A	601	U
41	A	602	A
41	A	611	A
41	A	636	C
41	A	649	A
41	A	667	C

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Mol	Chain	Res	Type
41	A	677	A
41	A	678	G
41	A	681	U
41	A	690	A
41	A	691	A
41	A	705	A
41	A	758	C
41	A	761	A
41	A	766	U
41	A	767	U
41	A	780	A
41	A	781	G
41	A	785	G
41	A	786	A
41	A	799	G
41	A	817	A
41	A	830	A
41	A	836	A
41	A	846	A
41	A	848	A
41	A	849	C
41	A	857	G
41	A	861	C
41	A	874	U
41	A	879	U
41	A	880	G
41	A	896	A
41	A	907	G
41	A	908	G
41	A	914	A
41	A	916	G
41	A	917	A
41	A	921	A
41	A	937	G
41	A	938	C
41	A	944	C
41	A	960	U
41	A	974	G
41	A	977	C
41	A	979	U
41	A	980	A
41	A	1016	C

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Mol	Chain	Res	Type
41	A	1018	G
41	A	1020	G
41	A	1021	G
41	A	1022	U
41	A	1032	C
41	A	1037	C
41	A	1047	A
41	A	1063	G
41	A	1064	A
41	A	1072	G
41	A	1081	U
41	A	1082	U
41	A	1087	G
41	A	1093	A
41	A	1094	U
41	A	1096	U
41	A	1097	G
41	A	1098	A
41	A	1103	A
41	A	1117	G
41	A	1131	G
41	A	1143	A
41	A	1153	A
41	A	1159	A
41	A	1178	G
41	A	1179	A
41	A	1180	A
41	A	1181	U
41	A	1182	A
41	A	1193	A
41	A	1196	C
41	A	1201	C
41	A	1209	G
41	A	1217	A
41	A	1222	G
41	A	1232	C
41	A	1235	U
41	A	1236	G
41	A	1244	A
41	A	1245	A
41	A	1246	G
41	A	1248	C

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Mol	Chain	Res	Type
41	A	1253	U
41	A	1257	C
41	A	1258	U
41	A	1262	G
41	A	1263	A
41	A	1265	U
41	A	1266	G
41	A	1285	G
41	A	1287	A
41	A	1302	A
41	A	1307	G
41	A	1308	A
41	A	1309	U
41	A	1317	A
41	A	1330	A
41	A	1331	U
41	A	1348	U
41	A	1349	G
41	A	1350	A
41	A	1352	A
41	A	1353	U
41	A	1355	A
41	A	1357	G
41	A	1386	A
41	A	1392	G
41	A	1399	A
41	A	1400	G
41	A	1417	G
41	A	1418	A
41	A	1425	U
41	A	1434	G
41	A	1437	C
41	A	1446	A
41	A	1483	G
41	A	1495	U
41	A	1496	C
41	A	1503	A
41	A	1507	G
41	A	1508	C
41	A	1556	C
41	A	1557	A
41	A	1560	G

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Mol	Chain	Res	Type
41	A	1561	G
41	A	1562	C
41	A	1563	C
41	A	1564	U
41	A	1567	U
41	A	1569	U
41	A	1570	U
41	A	1571	A
41	A	1573	G
41	A	1576	G
41	A	1578	C
41	A	1579	C
41	A	1581	C
41	A	1582	C
41	A	1583	A
41	A	1589	A
41	A	1593	A
41	A	1594	A
41	A	1605	A
41	A	1630	U
41	A	1643	A
41	A	1645	U
41	A	1657	C
41	A	1694	U
41	A	1713	G
41	A	1724	U
41	A	1740	U
41	A	1741	A
41	A	1750	A
41	A	1751	G
41	A	1759	C
41	A	1762	C
41	A	1763	U
41	A	1765	U
41	A	1767	C
41	A	1769	G
41	A	1773	C
41	A	1796	G
41	A	1797	A
41	A	1808	G
41	A	1812	G
41	A	1815	U

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Mol	Chain	Res	Type
41	A	1816	A
41	A	1820	U
41	A	1821	U
41	A	1840	U
41	A	1842	A
41	A	1866	C
41	A	1878	G
41	A	1879	A
41	A	1880	U
41	A	1906	G
41	A	1952	G
41	A	2093	A
41	A	2096	A
41	A	2101	C
41	A	2102	U
41	A	2111	G
41	A	2112	U
41	A	2114	C
41	A	2122	G
41	A	2131	A
41	A	2158	A
41	A	2167	A
41	A	2169	G
41	A	2170	U
41	A	2188	A
41	A	2194	G
41	A	2205	U
41	A	2206	G
41	A	2223	A
41	A	2244	A
41	A	2249	G
41	A	2251	G
41	A	2253	G
41	A	2256	A
41	A	2257	C
41	A	2261	G
41	A	2268	U
41	A	2270	A
41	A	2273	G
41	A	2274	U
41	A	2281	A
41	A	2306	C

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Mol	Chain	Res	Type
41	A	2307	G
41	A	2310	U
41	A	2315	G
41	A	2319	U
41	A	2320	A
41	A	2335	G
41	A	2336	U
41	A	2339	C
41	A	2340	U
41	A	2372	A
41	A	2373	A
41	A	2374	C
41	A	2375	G
41	A	2376	G
41	A	2388	U
41	A	2393	G
41	A	2394	G
41	A	2397	A
41	A	2402	A
41	A	2403	G
41	A	2404	A
41	A	2411	U
41	A	2418	G
41	A	2436	U
41	A	2437	G
41	A	2438	A
41	A	2439	A
41	A	2440	G
41	A	2441	A
41	A	2442	G
41	A	2444	C
41	A	2445	A
41	A	2453	U
41	A	2454	G
41	A	2455	U
41	A	2456	A
41	A	2457	G
41	A	2458	A
41	A	2459	A
41	A	2461	A
41	A	2462	A
41	A	2463	G

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Mol	Chain	Res	Type
41	A	2468	A
41	A	2469	G
41	A	2471	U
41	A	2474	G
41	A	2477	G
41	A	2480	A
41	A	2484	A
41	A	2487	U
41	A	2488	A
41	A	2489	C
41	A	2491	A
41	A	2492	C
41	A	2493	U
41	A	2494	A
41	A	2495	C
41	A	2499	U
41	A	2501	U
41	A	2502	A
41	A	2504	U
41	A	2505	U
41	A	2507	C
41	A	2508	U
41	A	2509	U
41	A	2511	A
41	A	2514	U
41	A	2515	A
41	A	2522	G
41	A	2523	A
41	A	2526	C
41	A	2533	G
41	A	2534	G
41	A	2535	A
41	A	2540	A
41	A	2541	U
41	A	2547	A
41	A	2549	G
41	A	2552	C
41	A	2557	A
41	A	2560	C
41	A	2561	A
41	A	2570	U
41	A	2571	U

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Mol	Chain	Res	Type
41	A	2585	G
41	A	2593	A
41	A	2600	C
41	A	2606	G
41	A	2607	G
41	A	2614	G
41	A	2617	U
41	A	2652	U
41	A	2656	A
41	A	2657	A
41	A	2672	G
41	A	2674	A
41	A	2677	G
41	A	2678	A
41	A	2689	A
41	A	2696	A
41	A	2704	A
41	A	2712	U
41	A	2713	U
41	A	2728	G
41	A	2729	U
41	A	2737	C
41	A	2753	G
41	A	2755	C
41	A	2772	C
41	A	2773	C
41	A	2777	G
41	A	2778	G
41	A	2779	A
41	A	2795	U
41	A	2796	G
41	A	2799	A
41	A	2800	G
41	A	2801	A
41	A	2804	A
41	A	2808	A
41	A	2810	C
41	A	2817	A
41	A	2821	C
41	A	2838	A
41	A	2843	U
41	A	2844	C

Continued on next page...

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Mol	Chain	Res	Type
41	A	2845	A
41	A	2847	A
41	A	2860	U
41	A	2867	C
41	A	2871	G
41	A	2872	A
41	A	2887	A
41	A	2889	C
41	A	2899	C
41	A	2911	A
41	A	2935	U
41	A	2936	A
41	A	2941	A
41	A	2951	G
41	A	2971	A
41	A	2979	U
41	A	2983	C
41	A	2990	G
41	A	2997	G
41	A	3003	G
41	A	3005	A
41	A	3012	A
41	A	3039	C
41	A	3049	A
41	A	3057	U
41	A	3059	G
41	A	3078	U
41	A	3079	U
41	A	3092	C
41	A	3094	A
41	A	3101	G
41	A	3113	A
41	A	3115	C
41	A	3122	A
41	A	3130	A
41	A	3131	U
41	A	3142	A
41	A	3143	C
41	A	3153	U
41	A	3154	C
41	A	3156	U
41	A	3157	U

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Mol	Chain	Res	Type
41	A	3168	A
41	A	3170	A
41	A	3172	A
41	A	3173	G
41	A	3176	G
41	A	3179	U
41	A	3181	C
41	A	3187	A
41	A	3198	U
41	A	3207	U
41	A	3210	A
41	A	3213	A
41	A	3214	U
41	A	3217	C
41	A	3218	A
41	A	3219	G
41	A	3224	G
41	A	3227	A
41	A	3228	C
41	A	3229	G
41	A	3235	C
41	A	3243	A
41	A	3244	A
41	A	3247	G
41	A	3260	G
41	A	3268	A
41	A	3270	U
41	A	3271	G
41	A	3273	A
41	A	3276	G
41	A	3277	U
41	A	3278	C
41	A	3279	A
41	A	3281	U
41	A	3304	U
41	A	3313	U
41	A	3316	A
41	A	3319	U
41	A	3334	U
41	A	3335	A
41	A	3341	U
41	A	3350	C

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Mol	Chain	Res	Type
41	A	3351	U
41	A	3352	U
41	A	3353	G
41	A	3368	U
41	A	3369	G
41	A	3375	A
41	A	3378	C
41	A	3382	U
41	A	3390	G

All (51) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	2	68	A
1	2	77	U
1	2	139	C
1	2	141	U
1	2	215	A
1	2	224	C
1	2	237	C
1	2	278	U
1	2	313	U
1	2	322	G
1	2	352	A
1	2	387	A
1	2	400	A
1	2	539	G
1	2	541	A
1	2	554	C
1	2	555	A
1	2	609	U
1	2	639	U
1	2	677	G
1	2	705	U
1	2	711	U
1	2	819	G
1	2	912	U
1	2	928	U
1	2	1023	A
1	2	1226	A
1	2	1245	G
1	2	1256	A

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Mol	Chain	Res	Type
1	2	1273	G
1	2	1274	C
1	2	1344	A
1	2	1382	A
1	2	1430	U
1	2	1471	A
1	2	1557	U
1	2	1573	A
1	2	1584	G
1	2	1633	A
1	2	1636	C
37	B	52	G
38	C	85	G
41	A	916	G
41	A	1264	G
41	A	1820	U
41	A	2193	U
41	A	2255	A
41	A	2339	C
41	A	2533	G
41	A	3004	C
41	A	3121	U

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

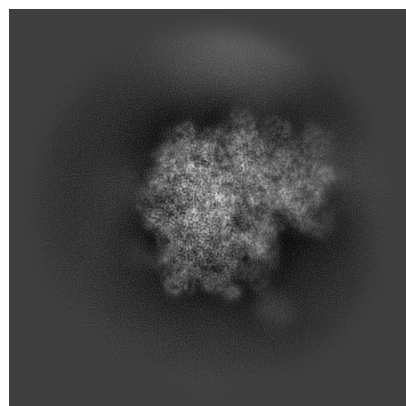
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-38656. These allow visual inspection of the internal detail of the map and identification of artifacts.

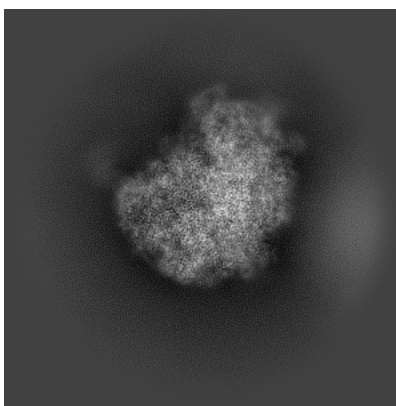
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

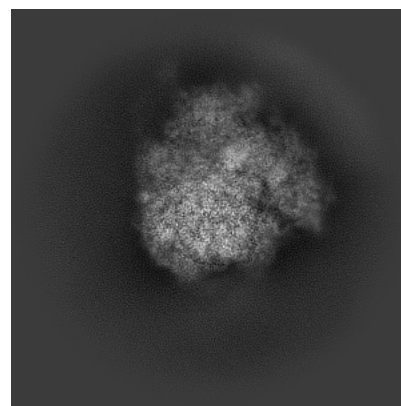
6.1.1 Primary map



X

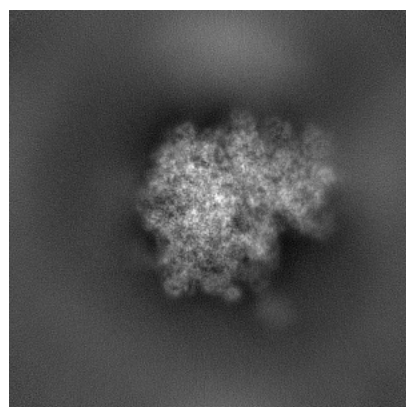


Y

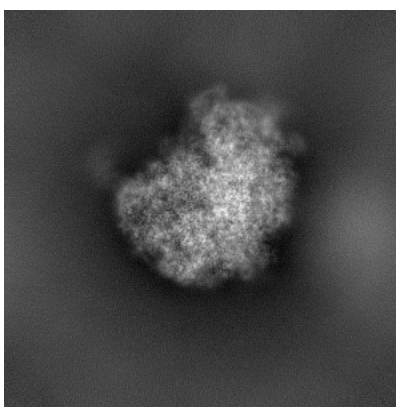


Z

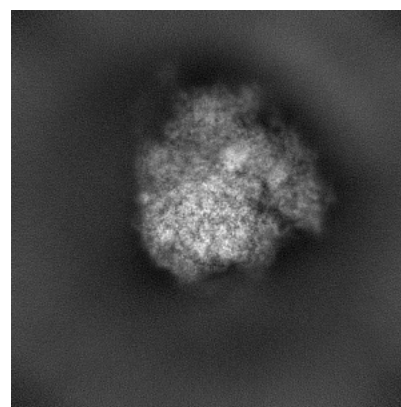
6.1.2 Raw map



X



Y

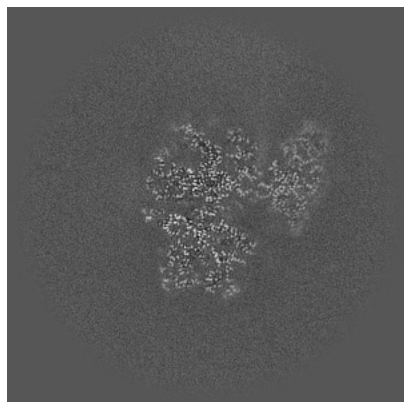


Z

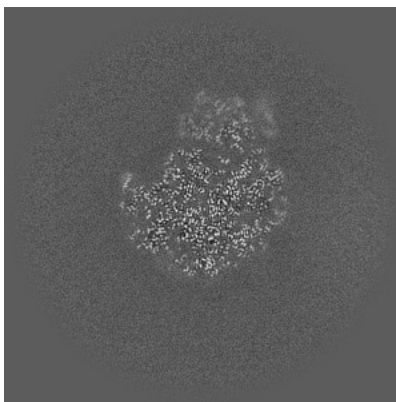
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

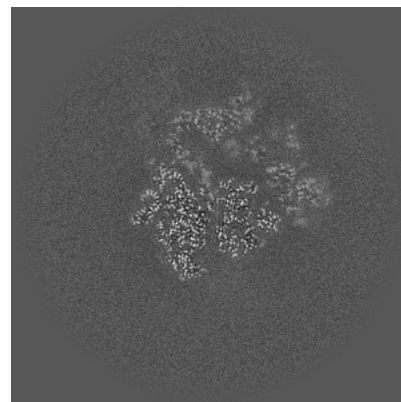
6.2.1 Primary map



X Index: 200

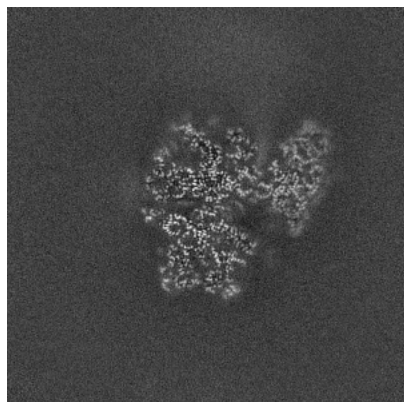


Y Index: 200

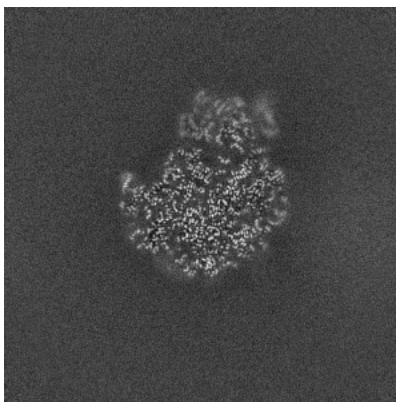


Z Index: 200

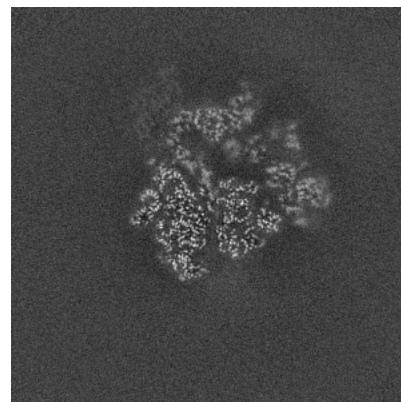
6.2.2 Raw map



X Index: 200



Y Index: 200

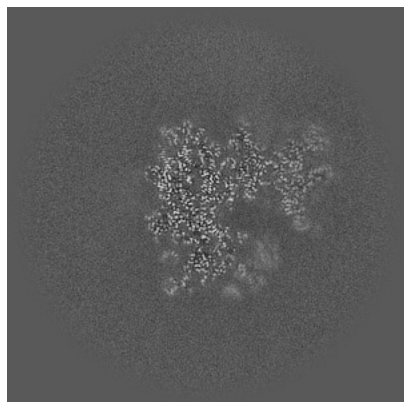


Z Index: 200

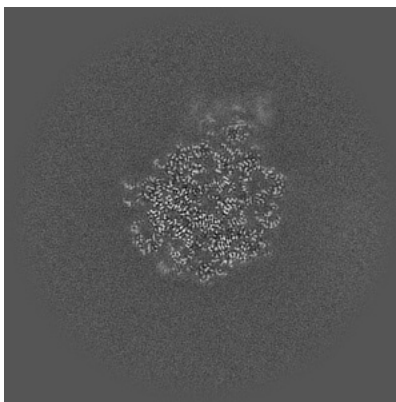
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

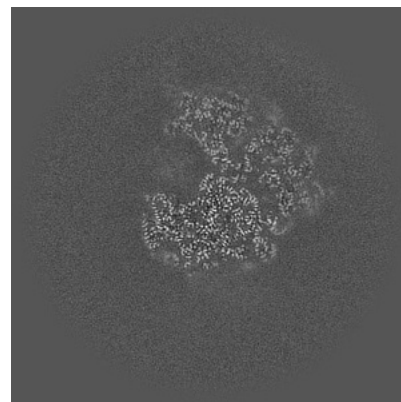
6.3.1 Primary map



X Index: 212

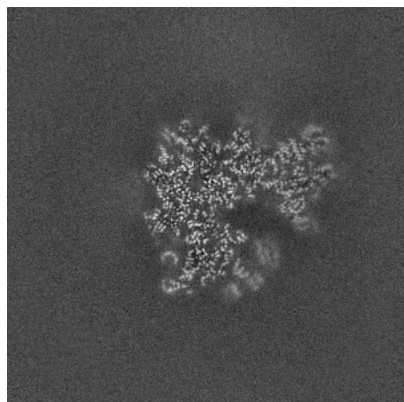


Y Index: 192

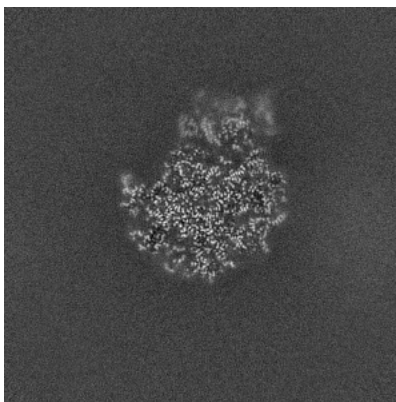


Z Index: 222

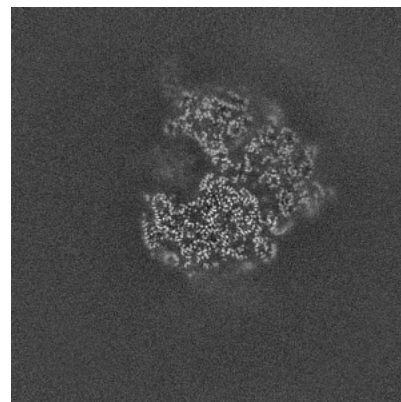
6.3.2 Raw map



X Index: 210



Y Index: 198

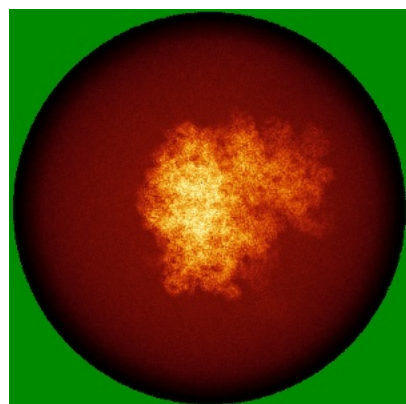


Z Index: 222

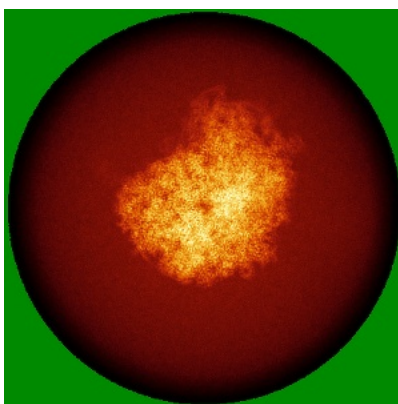
The images above show the largest variance slices of the map in three orthogonal directions.

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

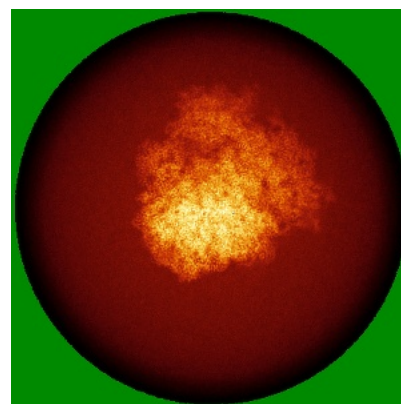
6.4.1 Primary map



X

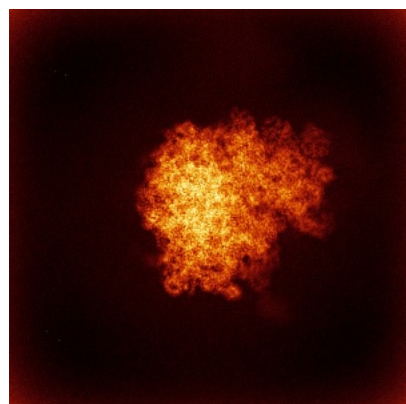


Y

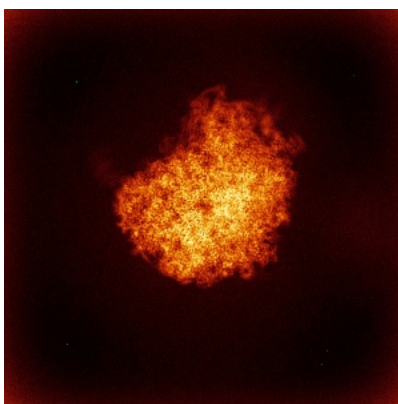


Z

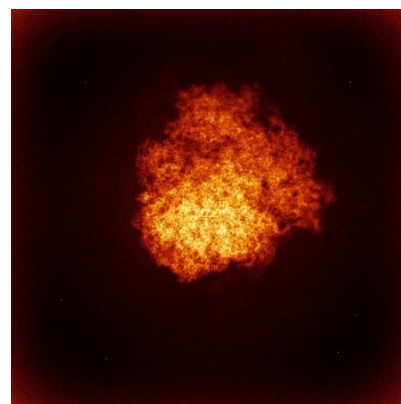
6.4.2 Raw map



X



Y

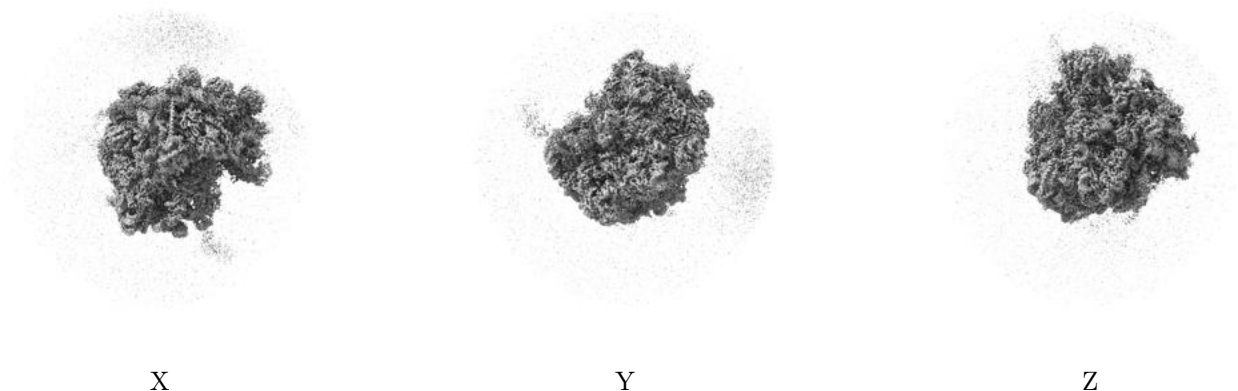


Z

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

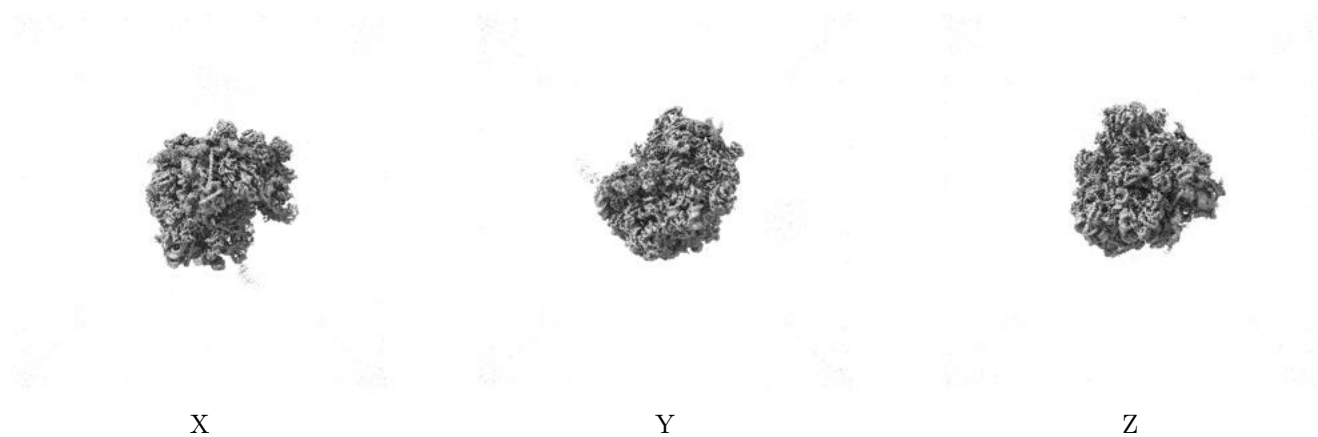
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.23. 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.

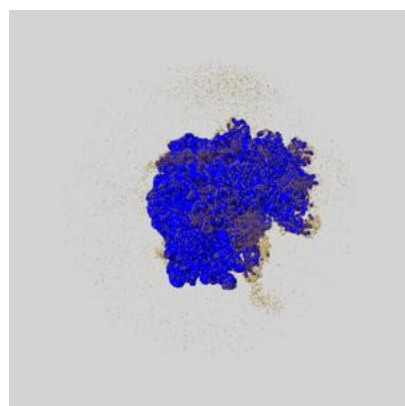
6.6 Mask visualisation [i](#)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

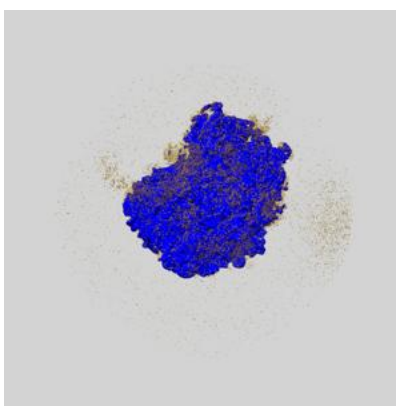
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

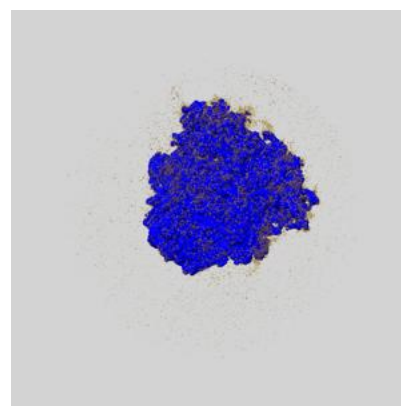
6.6.1 emd_38656_msk_1.map [i](#)



X



Y

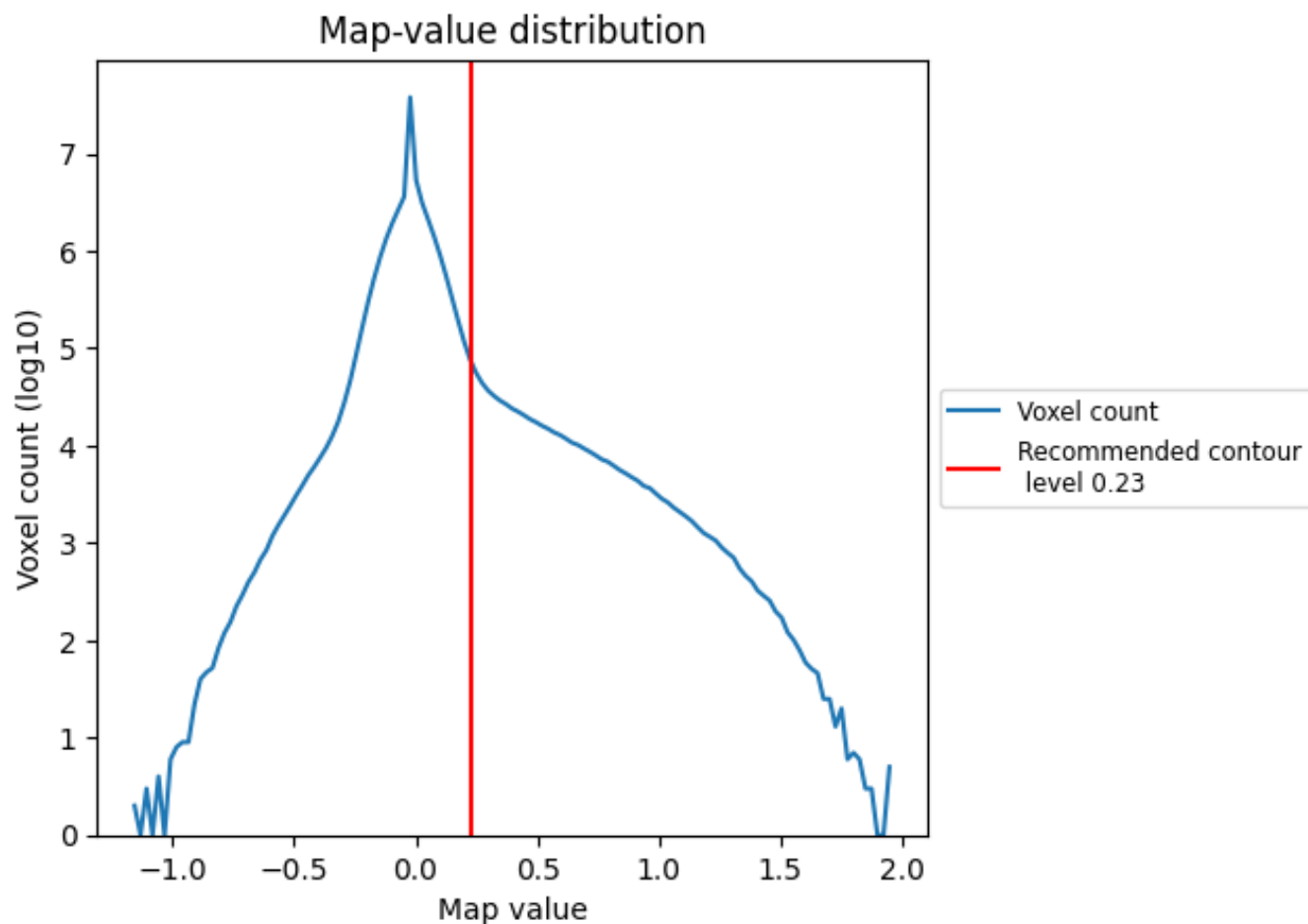


Z

7 Map analysis [i](#)

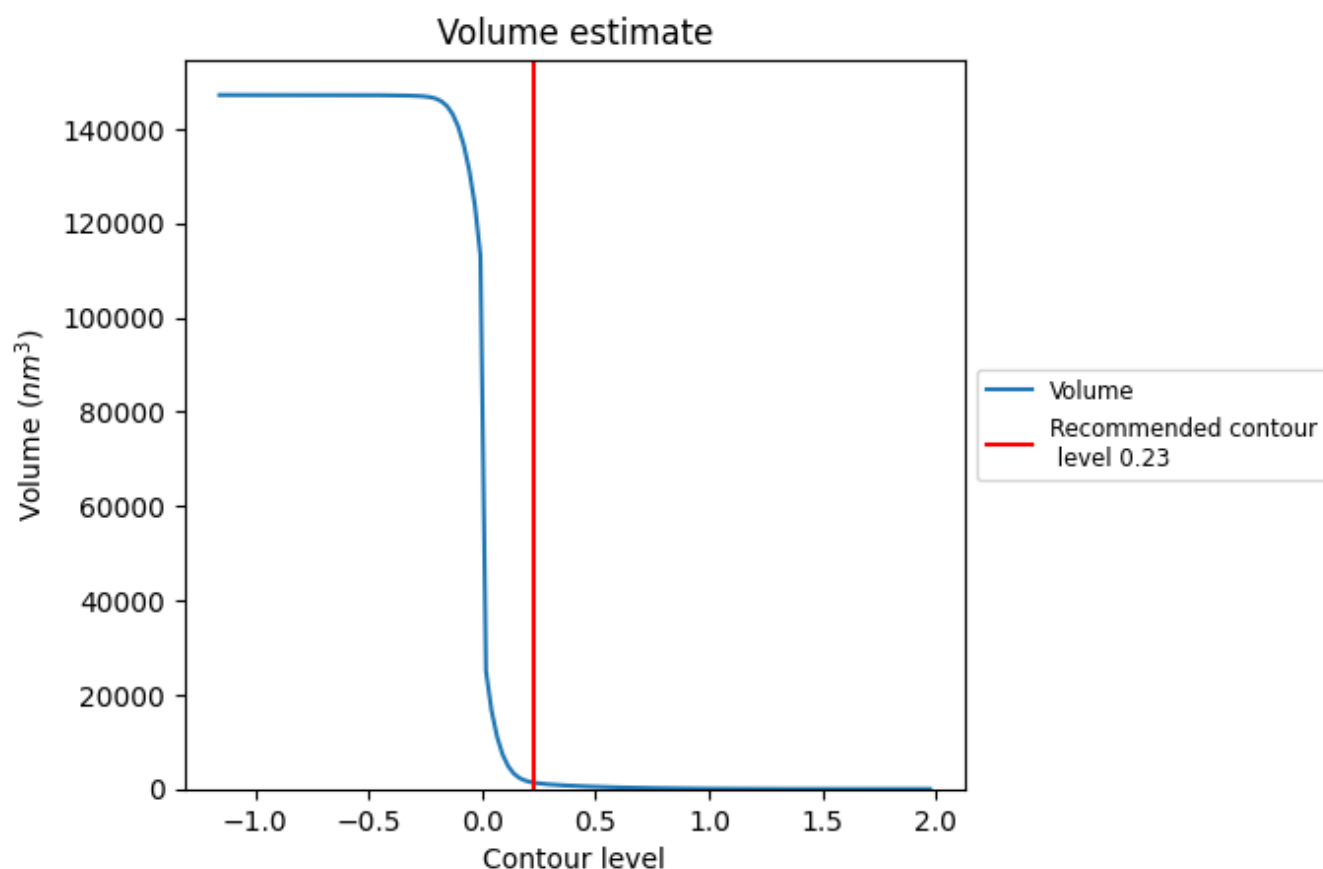
This section contains the results of statistical analysis of the map.

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.

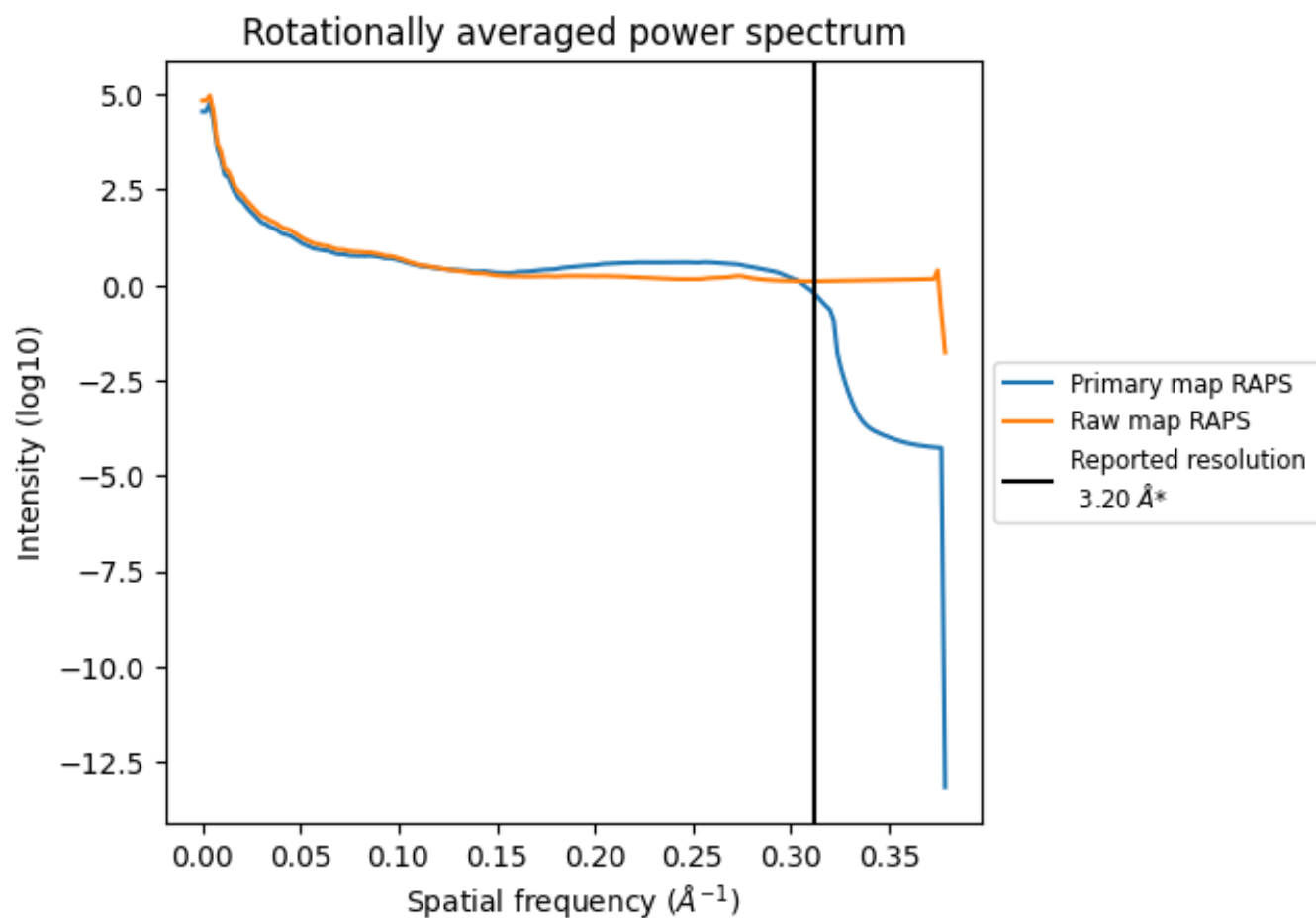
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1324 nm^3 ; this corresponds to an approximate mass of 1196 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 ⓘ

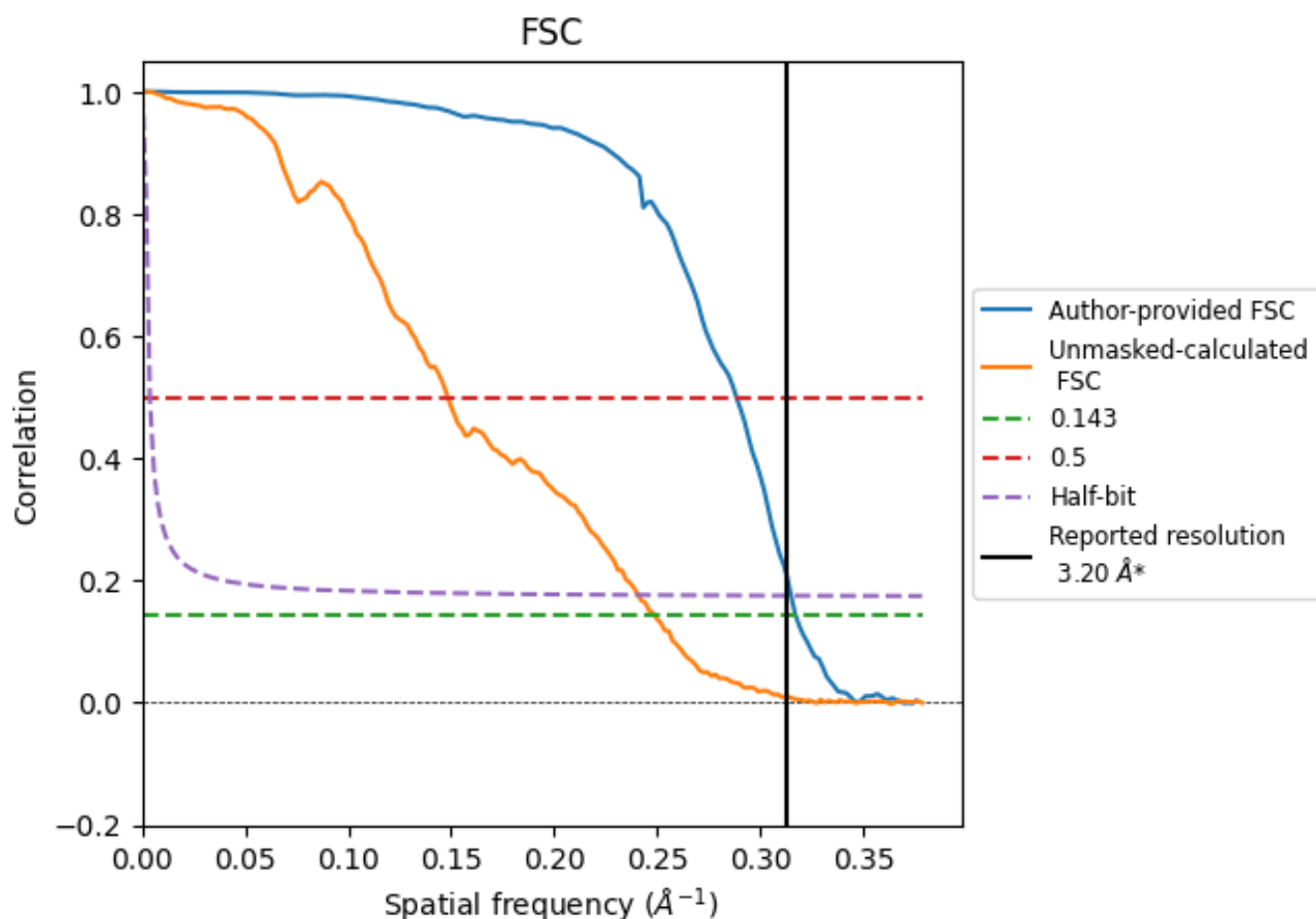


*Reported resolution corresponds to spatial frequency of 0.312 Å⁻¹

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 0.312 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

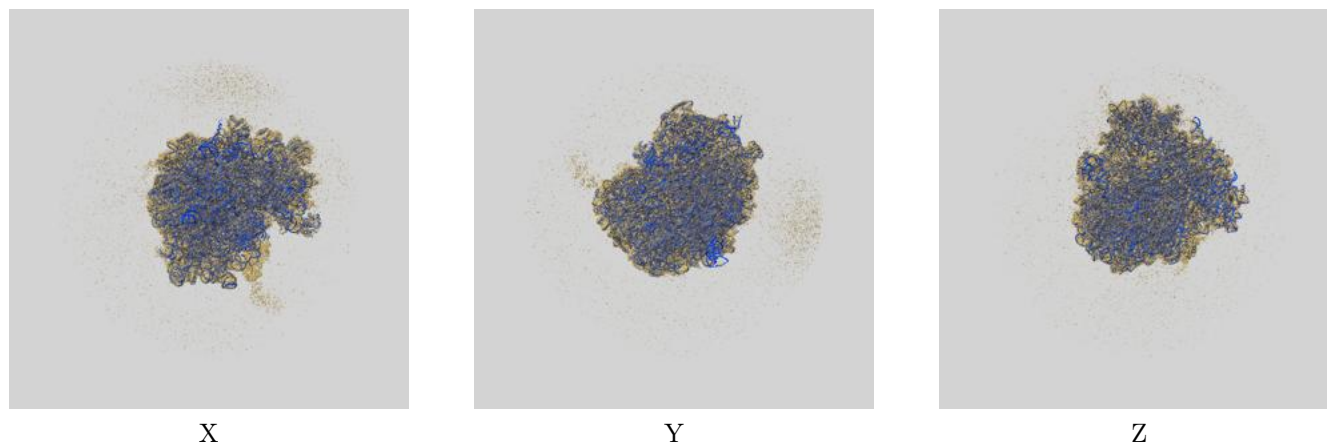
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.20	-	-
Author-provided FSC curve	3.15	3.47	3.17
Unmasked-calculated*	4.02	6.74	4.15

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.02 differs from the reported value 3.2 by more than 10 %

9 Map-model fit [i](#)

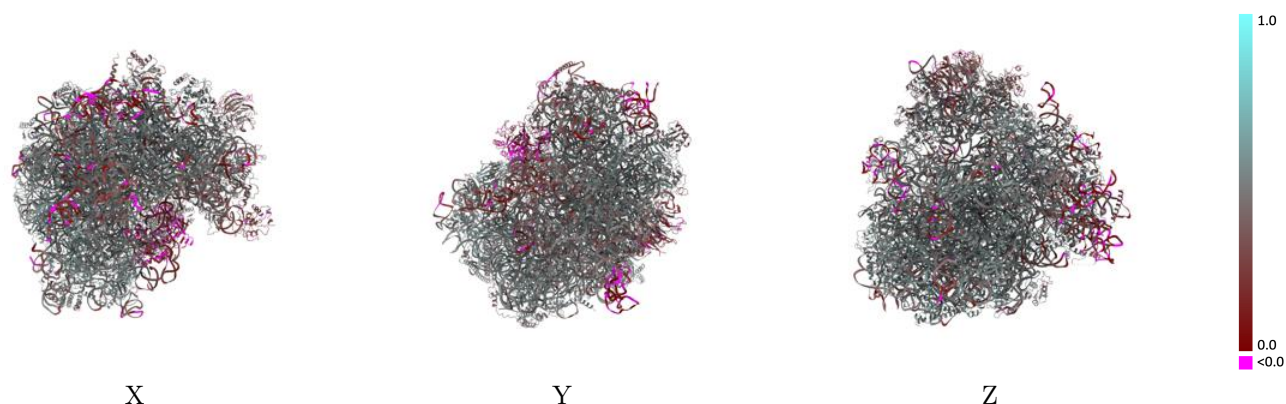
This section contains information regarding the fit between EMDB map EMD-38656 and PDB model 8Z70. Per-residue inclusion information can be found in section 3 on page 19.

9.1 Map-model overlay [i](#)



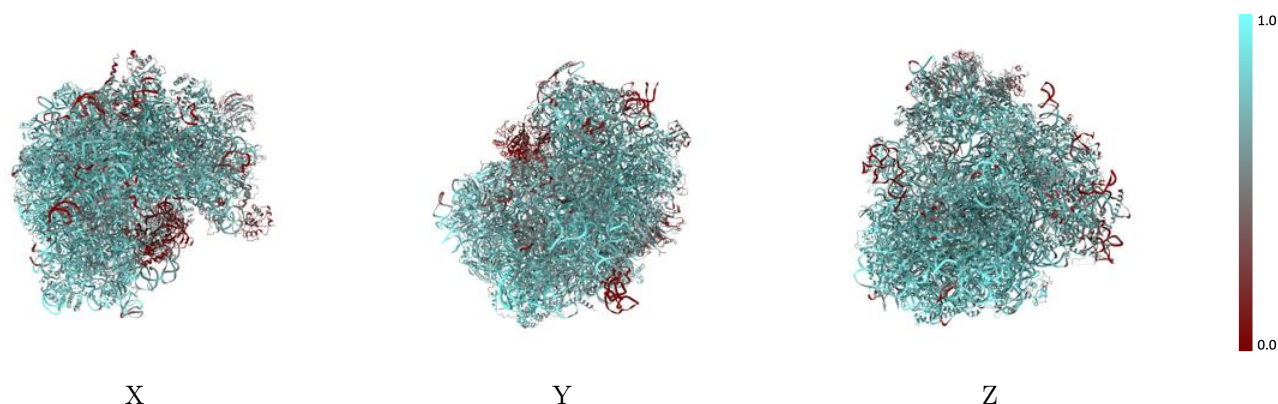
The images above show the 3D surface view of the map at the recommended contour level 0.23 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



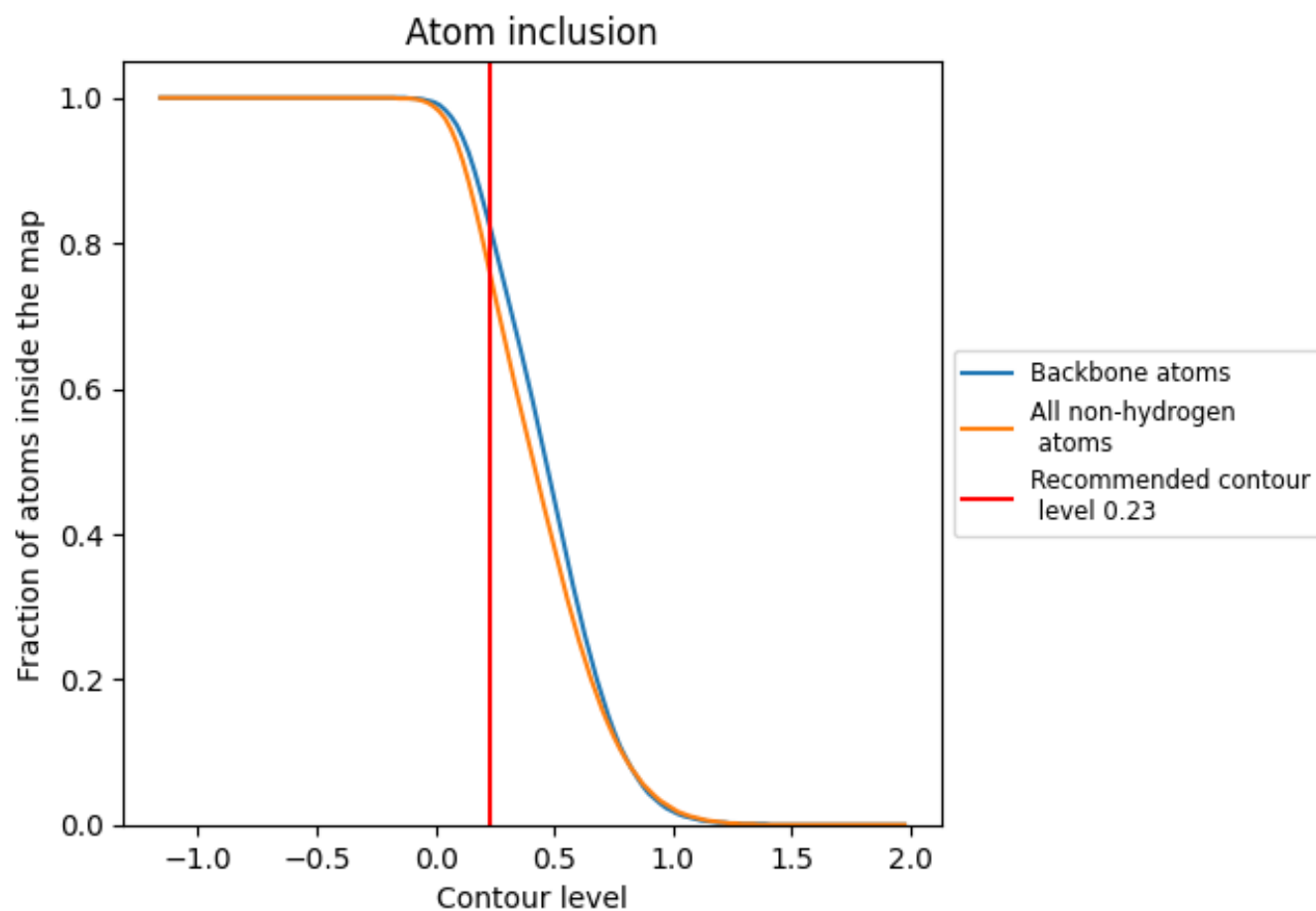
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.23).

9.4 Atom inclusion [i](#)



At the recommended contour level, 82% of all backbone atoms, 76% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.23) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7570	 0.4570
2	 0.7740	 0.4160
A	 0.8320	 0.4510
B	 0.9270	 0.5130
C	 0.9060	 0.5200
D	 0.7950	 0.5470
E	 0.8110	 0.5430
F	 0.7970	 0.5320
G	 0.7380	 0.4940
H	 0.7340	 0.4970
I	 0.8050	 0.5250
J	 0.7440	 0.4990
K	 0.7590	 0.5090
L	 0.7350	 0.5110
M	 0.6970	 0.4860
N	 0.7930	 0.5260
O	 0.7840	 0.5240
P	 0.8390	 0.5500
Q	 0.8100	 0.5270
R	 0.7900	 0.5350
S	 0.8190	 0.5440
SA	 0.5930	 0.4560
SB	 0.6340	 0.4680
SC	 0.5790	 0.4090
SD	 0.2640	 0.2440
SE	 0.5580	 0.4260
SF	 0.6510	 0.4540
SG	 0.6200	 0.4230
SH	 0.6240	 0.4660
SI	 0.6490	 0.4460
SJ	 0.6060	 0.4390
SK	 0.4920	 0.3650
SL	 0.5980	 0.4250
SM	 0.7540	 0.4940
SN	 0.3430	 0.2980



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Chain	Atom inclusion	Q-score
SO	 0.4370	 0.2820
SP	 0.7180	 0.5080
SQ	 0.6620	 0.4950
SR	 0.7270	 0.5130
SS	 0.6750	 0.5030
ST	 0.5630	 0.4330
SU	 0.5800	 0.4420
SV	 0.7360	 0.5090
SW	 0.6650	 0.4730
SX	 0.7250	 0.5240
SY	 0.7270	 0.5210
SZ	 0.7480	 0.4970
Sa	 0.7240	 0.5020
Sb	 0.7560	 0.5250
Sc	 0.6940	 0.5180
Sd	 0.6170	 0.4500
Se	 0.7530	 0.4730
Sf	 0.6720	 0.4930
Sg	 0.5680	 0.4580
T	 0.7110	 0.5150
U	 0.7970	 0.5410
V	 0.7770	 0.5300
W	 0.6970	 0.4600
X	 0.7460	 0.5340
Y	 0.6690	 0.4550
Z	 0.7610	 0.5240
a	 0.7900	 0.5320
b	 0.8060	 0.5220
c	 0.8270	 0.5400
d	 0.7570	 0.5210
e	 0.7590	 0.5290
f	 0.7420	 0.5200
g	 0.8220	 0.5560
h	 0.8360	 0.5510
i	 0.7740	 0.5240
j	 0.7890	 0.5270
k	 0.7630	 0.5060
l	 0.8630	 0.5530
m	 0.7160	 0.4990
n	 0.7950	 0.5510
o	 0.7750	 0.5240
p	 0.8170	 0.5380

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Chain	Atom inclusion	Q-score
q	 0.7590	 0.5330
r	 0.7650	 0.5350
s	 0.3400	 0.2330
t	 0.7550	 0.4120
x	 0.1090	 0.0790