



Full wwPDB EM Validation Report ⓘ

Dec 10, 2025 – 10:18 pm GMT

PDB ID : 8CG8 / pdb_00008cg8
EMDB ID : EMD-16634
Title : Translocation intermediate 3 (TI-3) of 80S *S. cerevisiae* ribosome with ligands and eEF2 in the presence of sordarin
Authors : Milicevic, N.; Jenner, L.; Myasnikov, A.; Yusupov, M.; Yusupova, G.
Deposited on : 2023-02-03
Resolution : 2.57 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:

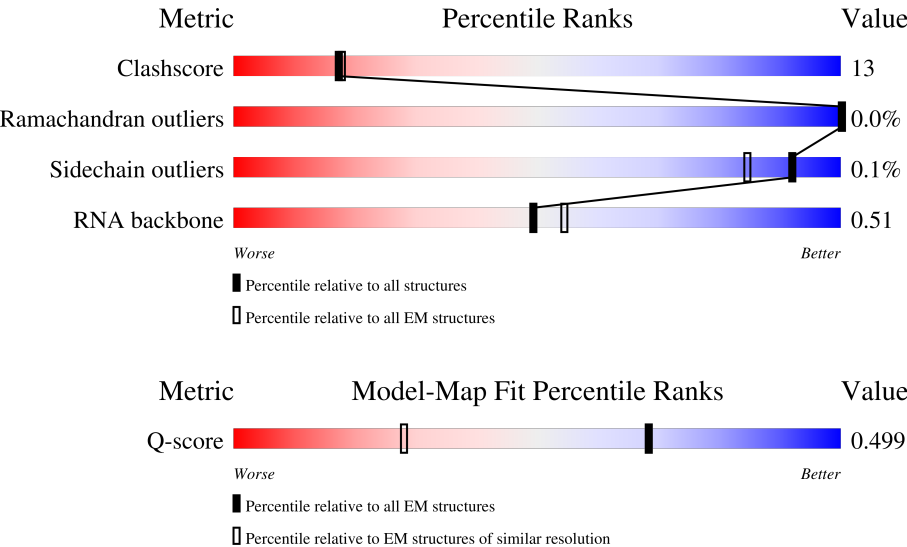
EMDB validation analysis : 0.0.1.dev129
Mogul : 1.8.4, CSD as541be (2020)
MolProbity : 4-5-2 with Phenix2.0
buster-report : 1.1.7 (2018)
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.47

1 Overall quality at a glance

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

The reported resolution of this entry is 2.57 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
RNA backbone	6643	2191	-
Q-score	-	25397	7615 (2.07 - 3.07)

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	0	135	44% 67% 32% .
2	1	108	58% 40% 25% 35%
3	2	119	9% 54% 28% 18%

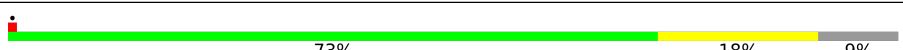
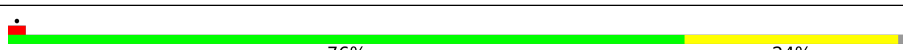
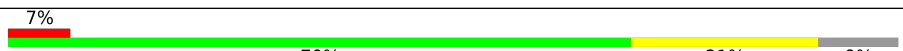
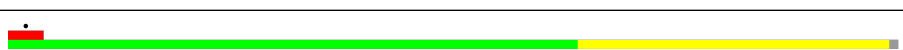
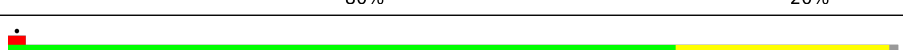
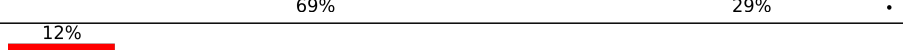
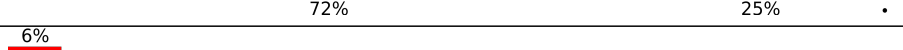
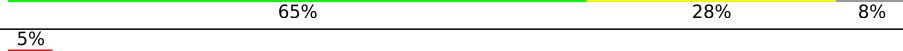
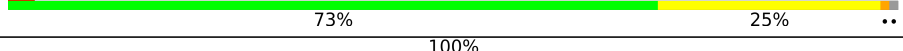
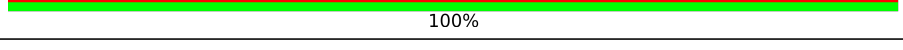
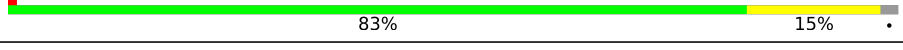
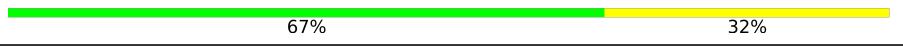
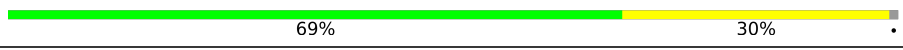
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Mol	Chain	Length	Quality of chain
4	3	82	
5	4	67	
6	5	56	
7	6	63	
8	7	319	
9	8	152	
10	A	199	
11	AA	3396	
12	Aa	842	
13	B	184	
14	BB	121	
15	Bb	76	
16	C	186	
17	CC	158	
18	Cc	77	
19	D	189	
20	DD	312	
21	Dd	39	
22	E	172	
23	EE	254	
24	Ee	165	
25	F	160	
26	FF	387	
27	G	121	
28	GG	362	

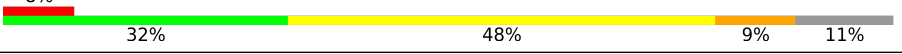
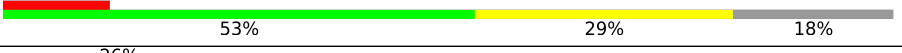
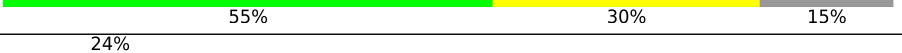
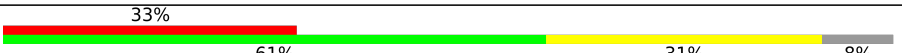
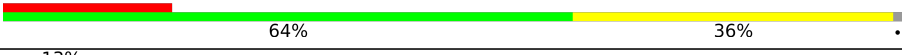
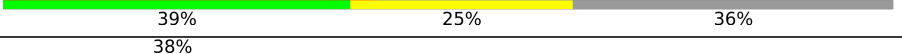
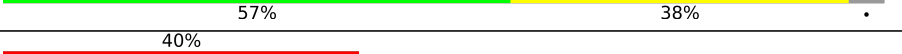
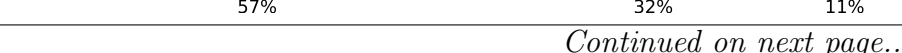
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Mol	Chain	Length	Quality of chain
29	H	137	
30	HH	297	
31	I	155	
32	II	176	
33	J	142	
34	JJ	244	
35	K	127	
36	KK	256	
37	L	136	
38	LL	191	
39	M	149	
40	MM	221	
41	N	59	
42	NN	174	
43	O	105	
44	OO	199	
45	P	113	
46	PP	138	
47	Pp	2	
48	Q	130	
49	QQ	204	
50	R	107	
51	S	121	
52	T	120	
53	U	100	

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Mol	Chain	Length	Quality of chain
54	V	88	
55	W	78	
56	X	51	
57	Y	128	
58	Z	25	
59	a	106	
60	b	92	
61	c	1800	
62	d	252	
63	e	255	
64	f	254	
65	g	240	
66	h	261	
67	i	225	
68	j	236	
69	k	190	
70	l	200	
71	m	197	
72	n	105	
73	o	156	
74	p	151	
75	q	137	
76	r	142	
77	s	143	
78	t	136	

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Mol	Chain	Length	Quality of chain
79	u	146	
80	v	144	
81	w	121	
82	x	87	
83	y	130	
84	z	145	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
85	ZN	a	201	-	-	X	-

2 Entry composition

There are 91 unique types of molecules in this entry. The entry contains 207325 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called 40S ribosomal protein S24-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
1	0	134	Total	C	N	O	0	0
			1073	676	208	189		

- Molecule 2 is a protein called 40S ribosomal protein S25-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
2	1	70	Total	C	N	O	0	0
			563	360	104	99		

- Molecule 3 is a protein called 40S ribosomal protein S26.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	2	97	Total	C	N	O	S	0	0
			769	475	160	129	5		

- Molecule 4 is a protein called 40S ribosomal protein S27-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	3	81	Total	C	N	O	S	0	0
			610	382	110	113	5		

- Molecule 5 is a protein called 40S ribosomal protein S28-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	4	63	Total	C	N	O	S	0	0
			497	306	99	91	1		

- Molecule 6 is a protein called HLJ1_G0030400.mRNA.1.CDS.1.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	5	49	Total	C	N	O	S	0	0
			404	249	86	65	4		

- Molecule 7 is a protein called 40S ribosomal protein S30-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	6	53	Total	C	N	O	S	0	0
			427	269	88	69	1		

- Molecule 8 is a protein called Guanine nucleotide-binding protein subunit beta-like protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	7	318	Total	C	N	O	S	0	0
			2436	1541	418	469	8		

- Molecule 9 is a protein called Ubiquitin-40S ribosomal protein S31.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	8	36	Total	C	N	O	S	0	0
			276	173	54	45	4		

- Molecule 10 is a protein called 60S ribosomal protein L16-A.

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

- Molecule 11 is a RNA chain called 25S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	AA	3197	Total	C	N	O	P	0	0
			68429	30589	12334	22309	3197		

- Molecule 12 is a protein called Elongation factor 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	Aa	842	Total	C	N	O	S	0	0
			6569	4173	1126	1239	31		

- Molecule 13 is a protein called 60S ribosomal protein L17-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
13	B	154	Total	C	N	O	0	0
			1222	761	237	224		

- Molecule 14 is a RNA chain called 5S ribosomal RNA.

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

- Molecule 15 is a RNA chain called Transfer RNA Phe.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	Bb	76	Total	C	N	O	P	0	0
			1638	736	294	533	75		

- Molecule 16 is a protein called 60S ribosomal protein L18-A.

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

- Molecule 17 is a RNA chain called 5.8S ribosomal RNA.

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

- Molecule 18 is a RNA chain called Transfer RNA fMet.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	Cc	77	Total	C	N	O	P	0	0
			1644	732	298	537	77		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Cc	18	C	U	conflict	GB 170517292

- Molecule 19 is a protein called 60S ribosomal protein L19-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
19	D	176	Total	C	N	O	0	0
			1423	875	308	240		

- Molecule 20 is a protein called 60S acidic ribosomal protein P0.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	DD	197	Total	C	N	O	S	0	0
			1531	980	266	281	4		

- Molecule 21 is a RNA chain called Messenger RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	Dd	6	Total	C	N	O	P	0	0
			125	56	18	45	6		

- Molecule 22 is a protein called 60S ribosomal protein L20-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	E	172	Total	C	N	O	S	0	0
			1445	930	267	244	4		

- Molecule 23 is a protein called 60S ribosomal protein L2-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	EE	252	Total	C	N	O	S	0	0
			1914	1191	388	334	1		

- Molecule 24 is a protein called 60S ribosomal protein L12-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	Ee	158	Total	C	N	O	S	0	0
			1196	750	216	228	2		

- Molecule 25 is a protein called 60S ribosomal protein L21-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	F	159	Total	C	N	O	S	0	0
			1276	805	246	221	4		

- Molecule 26 is a protein called 60S ribosomal protein L3.

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

- Molecule 27 is a protein called 60S ribosomal protein L22-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
27	G	97	Total	C	N	O		
			770	499	126	145	0	0

- Molecule 28 is a protein called 60S ribosomal protein L4-A.

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

- Molecule 29 is a protein called 60S ribosomal protein L23-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	H	129	Total	C	N	O	S		
			963	607	180	169	7	0	0

- Molecule 30 is a protein called 60S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	HH	296	Total	C	N	O	S		
			2375	1501	414	458	2	0	0

- Molecule 31 is a protein called 60S ribosomal protein L24-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	I	63	Total	C	N	O	S		
			521	336	102	82	1	0	0

- Molecule 32 is a protein called 60S ribosomal protein L6-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	II	155	Total	C	N	O	S		
			1230	795	221	213	1	0	0

- Molecule 33 is a protein called 60S ribosomal protein L25.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	J	120	Total	C	N	O	S		
			959	617	168	172	2	0	0

- Molecule 34 is a protein called 60S ribosomal protein L7-A.

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

- Molecule 35 is a protein called 60S ribosomal protein L26-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	K	126	Total	C	N	O	S	0	0
			993	625	192	176			

- Molecule 36 is a protein called 60S ribosomal protein L8-A.

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

- Molecule 37 is a protein called 60S ribosomal protein L27-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	L	135	Total	C	N	O	S	0	0
			1092	710	202	180			

- Molecule 38 is a protein called RPL9A isoform 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	LL	191	Total	C	N	O	S	0	0
			1518	963	274	277	4		

- Molecule 39 is a protein called 60S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	M	148	Total	C	N	O	S	0	0
			1173	749	231	190	3		

- Molecule 40 is a protein called 60S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	MM	215	Total	C	N	O	S	0	0
			1743	1102	331	303	7		

- Molecule 41 is a protein called 60S ribosomal protein L29.

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

- Molecule 42 is a protein called 60S ribosomal protein L11-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	NN	169	Total	C	N	O	S	0	0
			1353	847	253	249	4		

- Molecule 43 is a protein called 60S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	O	97	Total	C	N	O	S	0	0
			742	479	124	138	1		

- Molecule 44 is a protein called 60S ribosomal protein L13-A.

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

- Molecule 45 is a protein called 60S ribosomal protein L31-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	P	109	Total	C	N	O	S	0	0
			883	559	167	156	1		

- Molecule 46 is a protein called 60S ribosomal protein L14-A.

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

- Molecule 47 is a protein called Polypeptide.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	Pp	2	Total	C	N	O	S	0	0
			19	14	2	2	1		

- Molecule 48 is a protein called 60S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	Q	127	Total	C	N	O	S	0	0
			1020	647	205	167	1		

- Molecule 49 is a protein called 60S ribosomal protein L15-A.

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

- Molecule 50 is a protein called 60S ribosomal protein L33-A.

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

- Molecule 51 is a protein called 60S ribosomal protein L34-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	S	109	Total	C	N	O	S	0	0
			861	533	175	149	4		

- Molecule 52 is a protein called 60S ribosomal protein L35-A.

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

- Molecule 53 is a protein called 60S ribosomal protein L36-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	U	99	Total	C	N	O	S	0	0
			771	481	156	132	2		

- Molecule 54 is a protein called 60S ribosomal protein L37-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	V	84	Total	C	N	O	S	0	0
			665	405	145	110	5		

- Molecule 55 is a protein called 60S ribosomal protein L38.

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

- Molecule 56 is a protein called 60S ribosomal protein L39.

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

- Molecule 57 is a protein called Ubiquitin-60S ribosomal protein L40.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	Y	52	Total	C	N	O	S	0	0
			417	259	86	67	5		

- Molecule 58 is a protein called 60S ribosomal protein L41.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	Z	25	Total	C	N	O	S	0	0
			233	142	63	27	1		

- Molecule 59 is a protein called 60S ribosomal protein L42-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	a	102	Total	C	N	O	S	0	0
			819	514	166	134	5		

- Molecule 60 is a protein called 60S ribosomal protein L43-A.

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

- Molecule 61 is a RNA chain called 18S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	c	1608	Total	C	N	O	P	0	0
			34321	15360	6093	11260	1608		

- Molecule 62 is a protein called 40S ribosomal protein S0-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	d	206	Total	C	N	O	S	0	0
			1583	1017	281	283	2		

- Molecule 63 is a protein called 40S ribosomal protein S1-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	e	212	Total	C	N	O	S	0	0
			1689	1073	303	309	4		

- Molecule 64 is a protein called 40S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	f	217	Total	C	N	O	S	0	0
			1635	1047	289	297	2		

- Molecule 65 is a protein called RPS3 isoform 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	g	183	Total	C	N	O	S	0	0
			1412	893	260	253	6		

- Molecule 66 is a protein called 40S ribosomal protein S4-A.

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

- Molecule 67 is a protein called 40S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
67	i	199	Total	C	N	O	S	0	0
			1572	987	290	292	3		

- Molecule 68 is a protein called 40S ribosomal protein S6-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	j	219	Total	C	N	O	S	0	0
			1766	1108	341	314	3		

- Molecule 69 is a protein called 40S ribosomal protein S7-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
69	k	184	Total	C	N	O	0	0
			1481	951	265	265		

- Molecule 70 is a protein called 40S ribosomal protein S8-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	l	184	Total	C	N	O	S	0	0
			1457	906	291	258	2		

- Molecule 71 is a protein called 40S ribosomal protein S9-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	m	185	Total	C	N	O	S	0	0
			1494	943	289	261	1		

- Molecule 72 is a protein called 40S ribosomal protein S10-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
72	n	33	Total	C	N	O	0	0
			300	199	46	55		

- Molecule 73 is a protein called 40S ribosomal protein S11-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
73	o	142	Total	C	N	O	S	0	0
			1146	735	217	191	3		

- Molecule 74 is a protein called 40S ribosomal protein S13.

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

- Molecule 75 is a protein called 40S ribosomal protein S14-A.

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

- Molecule 76 is a protein called 40S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	r	91	Total	C	N	O	S	0	0
			732	469	138	120	5		

- Molecule 77 is a protein called 40S ribosomal protein S16-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	s	137	Total	C	N	O	S	0	0
			1080	692	199	189			

- Molecule 78 is a protein called 40S ribosomal protein S17-A.

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

- Molecule 79 is a protein called 40S ribosomal protein S18-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
79	u	145	Total	C	N	O	S	0	0
			1192	743	237	210	2		

- Molecule 80 is a protein called 40S ribosomal protein S19-A.

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

- Molecule 81 is a protein called 40S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
81	w	100	Total	C	N	O	S	0	0
			800	509	144	146	1		

- Molecule 82 is a protein called 40S ribosomal protein S21-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
82	x	87	Total	C	N	O	S	0	0
			684	420	125	137	2		

- Molecule 83 is a protein called 40S ribosomal protein S22-A.

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

- Molecule 84 is a protein called 40S ribosomal protein S23-A.

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

- Molecule 85 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
85	2	1	Total	Zn	0
			1	1	
85	5	1	Total	Zn	0
			1	1	
85	8	1	Total	Zn	0
			1	1	
85	S	1	Total	Zn	0
			1	1	
85	V	1	Total	Zn	0
			1	1	
85	Y	1	Total	Zn	0
			1	1	
85	a	1	Total	Zn	0
			1	1	
85	b	1	Total	Zn	0
			1	1	

- Molecule 86 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

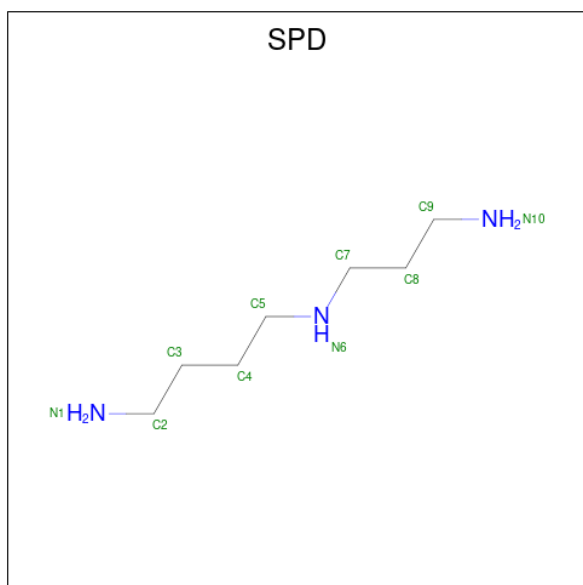
Mol	Chain	Residues	Atoms		AltConf
86	AA	188	Total	Mg	0
			188	188	
86	Aa	1	Total	Mg	0
			1	1	
86	BB	5	Total	Mg	0
			5	5	
86	CC	3	Total	Mg	0
			3	3	
86	FF	1	Total	Mg	0
			1	1	

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Mol	Chain	Residues	Atoms		AltConf
86	H	1	Total	Mg	0
			1	1	
86	c	42	Total	Mg	0
			42	42	

- Molecule 87 is SPERMIDINE (CCD ID: SPD) (formula: $C_7H_{19}N_3$).

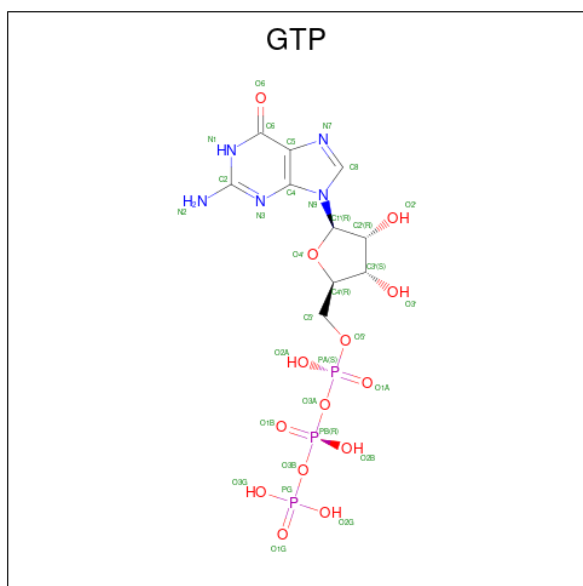


Mol	Chain	Residues	Atoms			AltConf
87	AA	1	Total	C	N	0
			10	7	3	
87	AA	1	Total	C	N	0
			10	7	3	
87	AA	1	Total	C	N	0
			10	7	3	
87	AA	1	Total	C	N	0
			10	7	3	
87	AA	1	Total	C	N	0
			10	7	3	
87	QQ	1	Total	C	N	0
			10	7	3	
87	c	1	Total	C	N	0
			10	7	3	

- Molecule 88 is POTASSIUM ION (CCD ID: K) (formula: K).

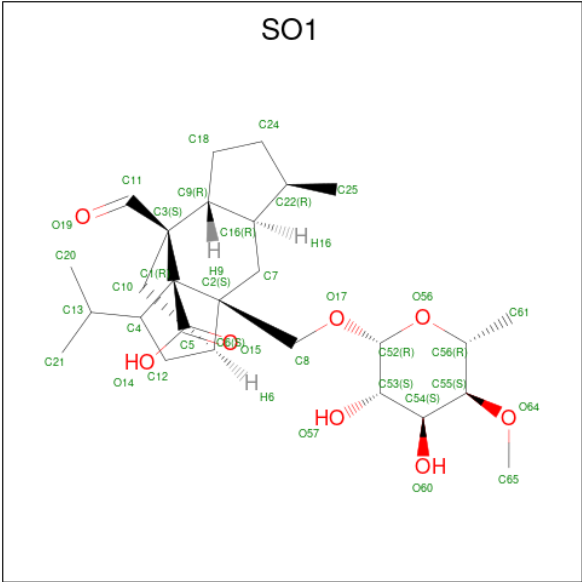
Mol	Chain	Residues	Atoms		AltConf
88	AA	12	Total	K	0
			12	12	
88	CC	1	Total	K	0
			1	1	
88	EE	1	Total	K	0
			1	1	
88	MM	1	Total	K	0
			1	1	
88	Q	1	Total	K	0
			1	1	
88	a	1	Total	K	0
			1	1	
88	c	2	Total	K	0
			2	2	

- Molecule 89 is GUANOSINE-5'-TRIPHOSPHATE (CCD ID: GTP) (formula: C₁₀H₁₆N₅O₁₄P₃) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
89	Aa	1	Total	C	N	O	P	0
			32	10	5	14	3	

- Molecule 90 is [1R-(1.ALPHA.,3A.BETA.,4.BETA.,4A.BETA.,7.BETA.,7A.ALPHA.,8A.BETA.)]8A-[(6-DEOXY-4-O-METHYL-BETA-D-ALTROPYRANOSYLOXY)METHYL]-4-FORMYL-4,4A,5,6,7,7A,8,8A-OCTAHYDRO-7-METHYL-3-(1-METHYLETHYL)-1,4-METHANO-S-INDACENE-3A(1H)-CARBOXYLIC ACID (CCD ID: SO1) (formula: C₂₇H₄₂O₈) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms			AltConf
90	Aa	1	Total	C	O	0
			35	27	8	

- Molecule 91 is water.

Mol	Chain	Residues	Atoms		AltConf
91	2	1	Total	O	0
			1	1	
91	A	2	Total	O	0
			2	2	
91	AA	764	Total	O	0
			764	764	
91	B	1	Total	O	0
			1	1	
91	BB	20	Total	O	0
			20	20	
91	CC	13	Total	O	0
			13	13	
91	Cc	1	Total	O	0
			1	1	
91	D	4	Total	O	0
			4	4	
91	EE	5	Total	O	0
			5	5	
91	F	4	Total	O	0
			4	4	
91	FF	4	Total	O	0
			4	4	

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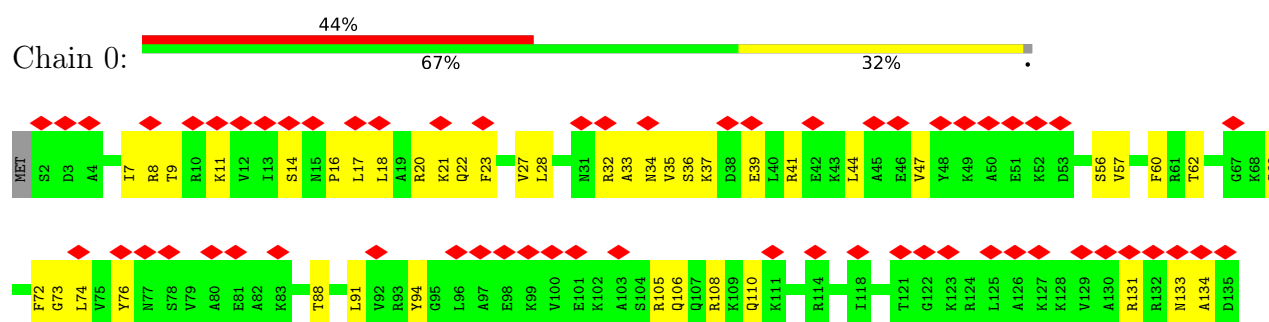
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Mol	Chain	Residues	Atoms		AltConf
91	GG	2	Total 2	O 2	0
91	H	2	Total 2	O 2	0
91	HH	1	Total 1	O 1	0
91	J	2	Total 2	O 2	0
91	JJ	1	Total 1	O 1	0
91	LL	1	Total 1	O 1	0
91	M	4	Total 4	O 4	0
91	MM	2	Total 2	O 2	0
91	N	1	Total 1	O 1	0
91	NN	2	Total 2	O 2	0
91	OO	1	Total 1	O 1	0
91	Q	5	Total 5	O 5	0
91	QQ	1	Total 1	O 1	0
91	S	1	Total 1	O 1	0
91	V	4	Total 4	O 4	0
91	a	3	Total 3	O 3	0
91	c	89	Total 89	O 89	0
91	h	1	Total 1	O 1	0
91	o	2	Total 2	O 2	0
91	p	3	Total 3	O 3	0

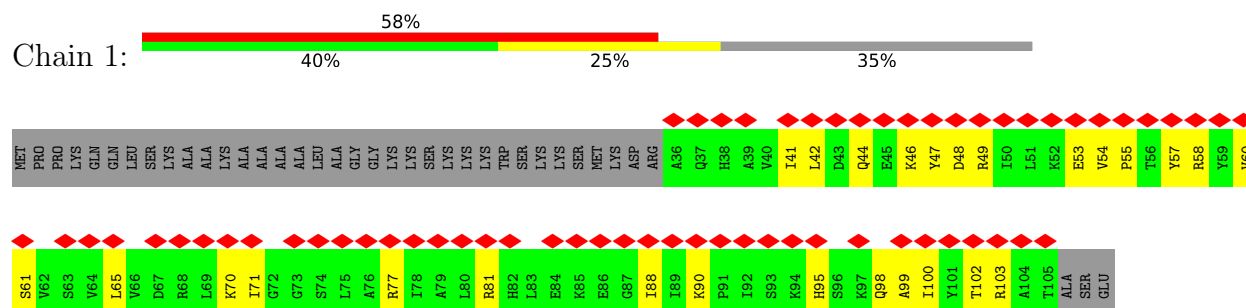
3 Residue-property plots

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

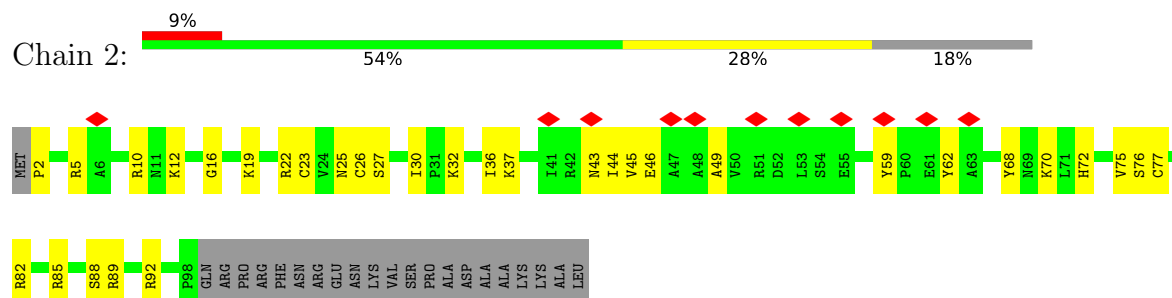
- Molecule 1: 40S ribosomal protein S24-A



- Molecule 2: 40S ribosomal protein S25-A

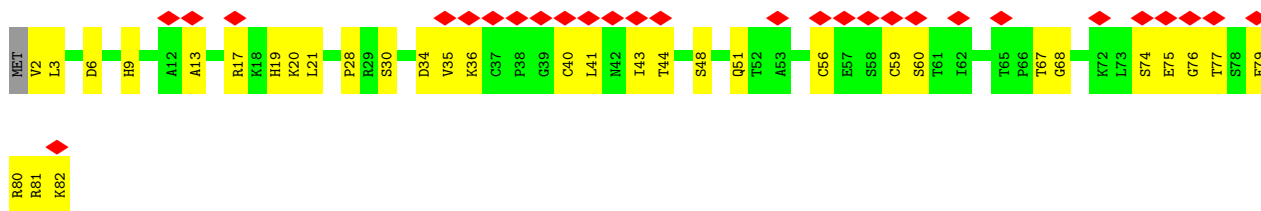


- Molecule 3: 40S ribosomal protein S26

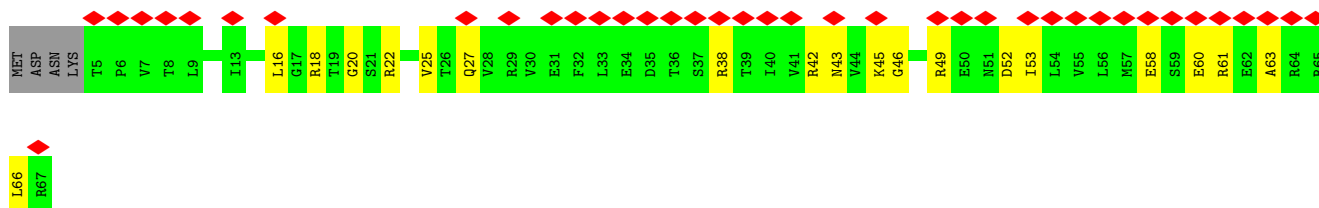


- Molecule 4: 40S ribosomal protein S27-A





- Molecule 5: 40S ribosomal protein S28-A



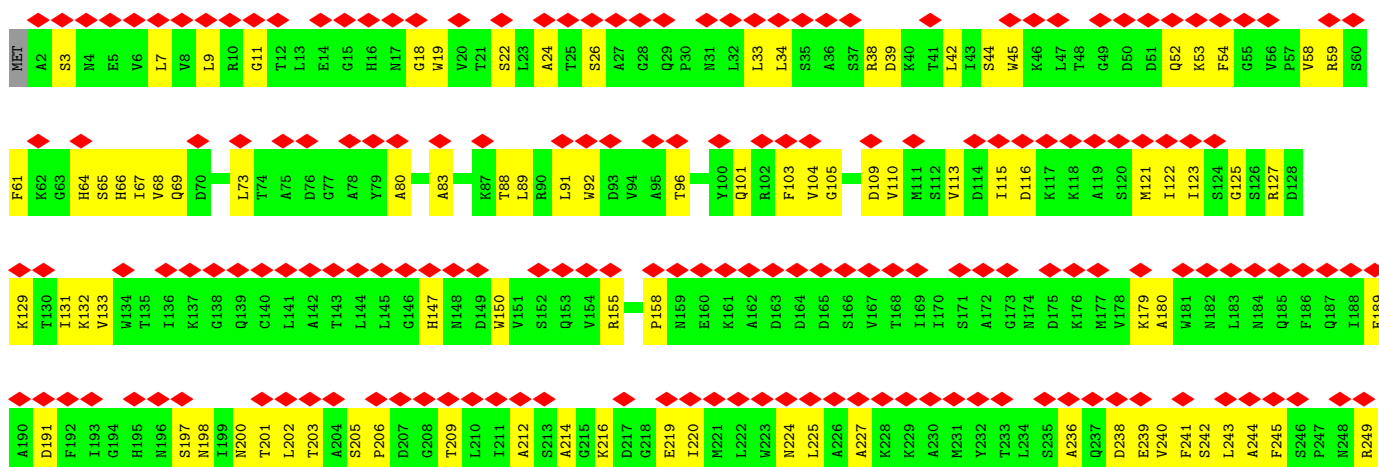
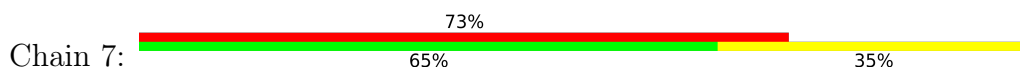
- Molecule 6: HLJ1_G0030400.mRNA.1.CDS.1



- Molecule 7: 40S ribosomal protein S30-A

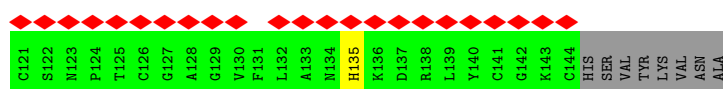
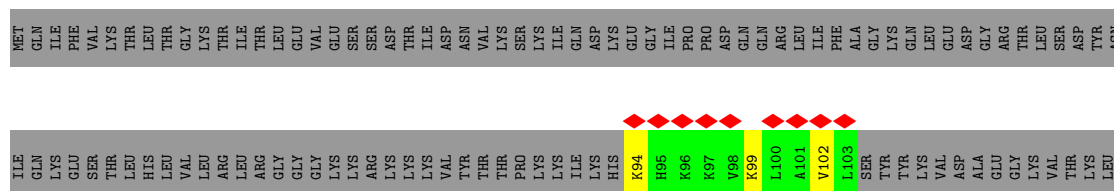


- Molecule 8: Guanine nucleotide-binding protein subunit beta-like protein

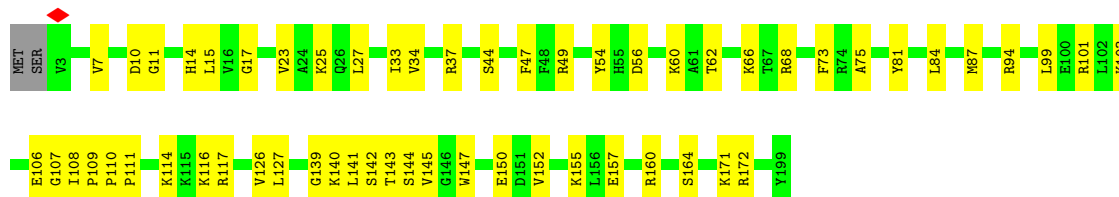




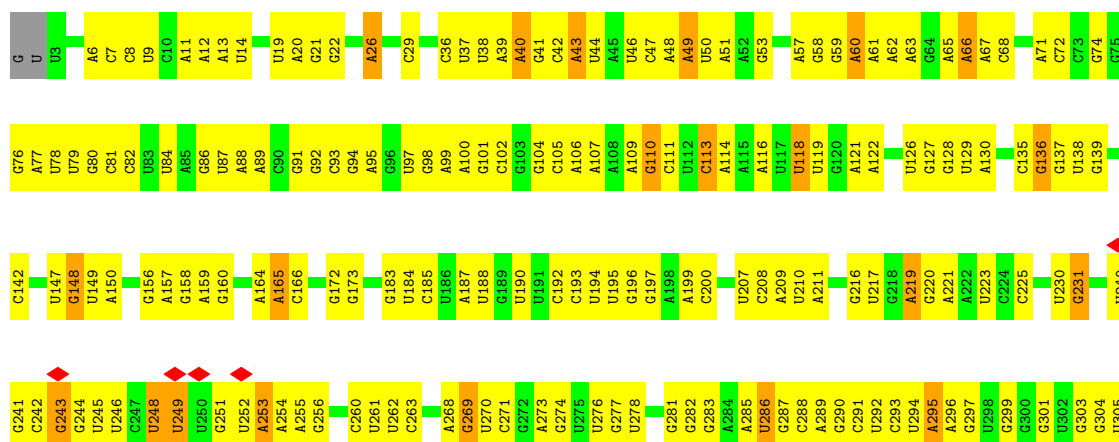
• Molecule 9: Ubiquitin-40S ribosomal protein S31



• Molecule 10: 60S ribosomal protein L16-A

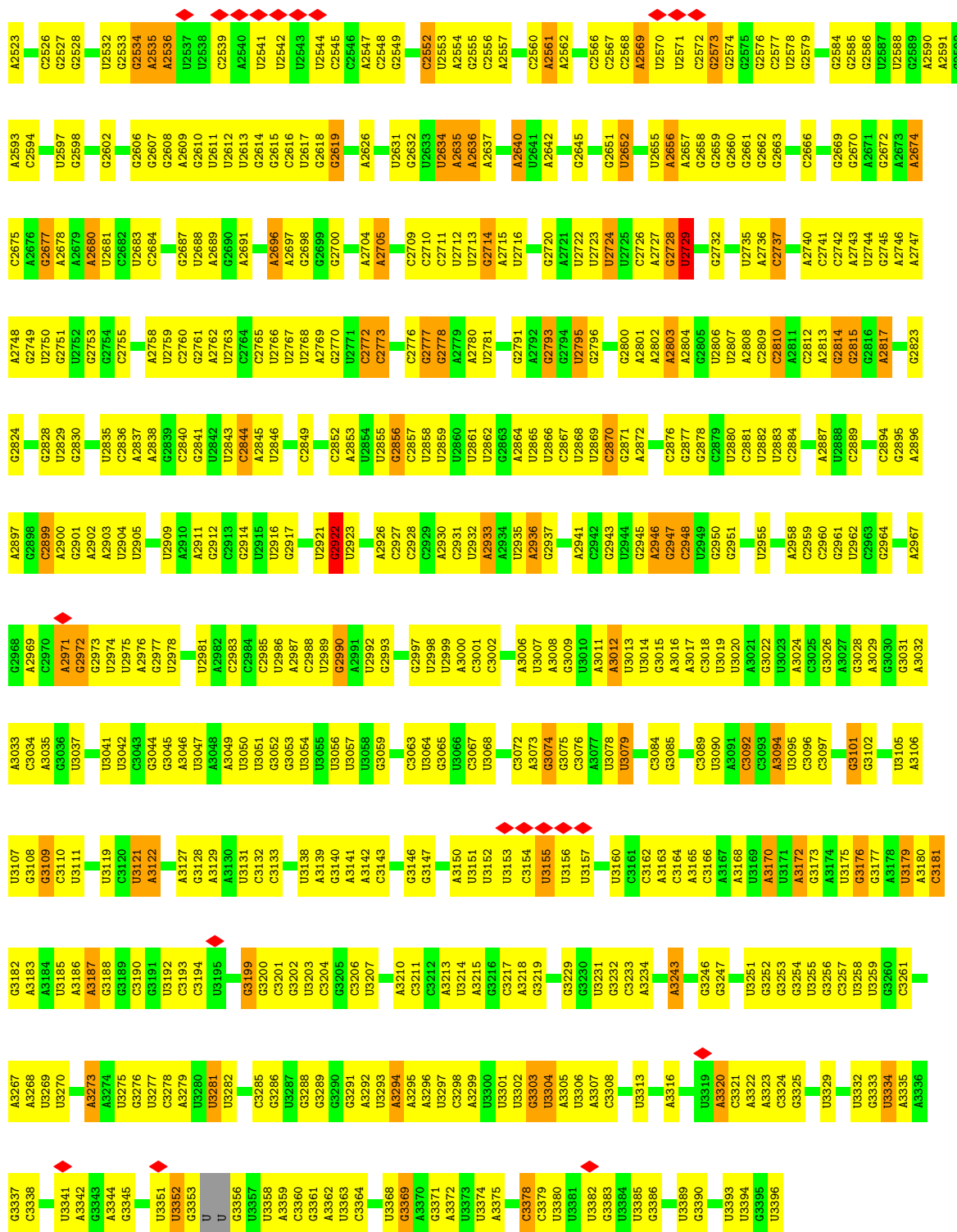


• Molecule 11: 25S ribosomal RNA

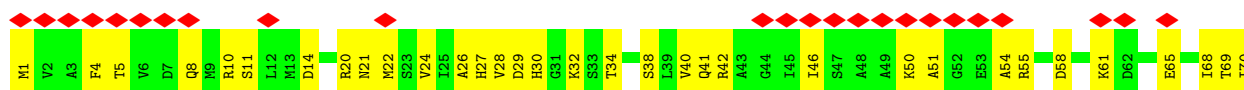


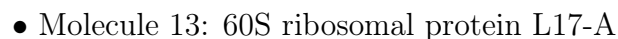


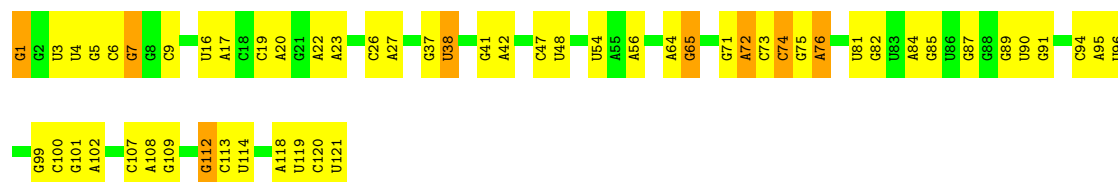
U2460	G2396	A2313	A2223	U2148	G	A1881	A1798	A1723	C1644	A1571	A1475	G1392
A2461	A2397	G2314	A2224	A2149	G	G1882	A1799	U1724	U1645	U1572	G1476	A1393
A2462	G2315	G2315	U2226	G2150	C	A1883	U1800	C1725	G1646	G1573	C1477	A1394
G2463	A2402	U2154	C2227	U2154	A	U1885	G1803	A1729	G1650	C1574	U1479	C1397
U2464	G2403	G2155	A2228	C2156	C	U1886	A1804	G1730	U1651	A1575	G1480	U1398
G2465	A2404	G2157	A2229	G2157	A	A1887	C1805	U1737	G1652	G1576	A1481	A1399
G2466	C2406	U2158	G2232	U2158	U	U1888	A1806	C1738	G1653	G1577	G1400	A1401
G2467	C2330	G2159	G2235	G2159	C	G	G1807	U1741	C1657	C1578	U1484	G1404
G2468	G2332	G2160	U2241	G2160	U	A1893	G1808	G1741	U1659	A1580	U1486	G1404
G2469	G2333	U2162	A2242	U2162	G	U1894	A1809	U1742	G1658	C1581	G1487	A1407
G2470	U2334	G2163	A2242	C2163	C	A1895	A1810	G1743	U1659	A1580	G1486	A1407
U2471	U2335	A2164	G2249	A2164	G	G1897	G1811	G1744	C1660	G1582	G1485	A1407
U2472	U2336	G2167	G2250	G2167	G	U1898	G1812	U1746	G1661	A1583	U1484	A1407
U2473	C2337	A2167	G2251	A2167	C	G1899	A1814	G1747	G1662	C1585	U1484	A1407
U2474	C2338	U2168	A2252	U2168	C	G1906	U1815	G1748	G1663	G1586	C1497	G1413
G2475	U2339	G2169	A2253	G2169	U	C1907	A1816	A1749	G1665	A1587	U1414	G1412
G2476	U2340	U2170	G2254	U2170	U	A1908	G1817	U1750	G1666	A1588	U1415	G1412
G2477	A2345	U2176	A2255	U2176	G	C1907	U1817	G1751	A1667	A1589	U1501	G1412
G2478	C2346	G2177	A2256	G2177	U	A1909	U1818	G1752	G1668	G1592	U1501	G1412
G2479	U2347	U2178	A2257	A2178	U	A1910	A1821	G1753	C1670	C1596	G1507	G1412
G2480	U2348	G2180	U2258	G2180	G	A1911	U1822	C1755	U1671	C1597	U1508	G1412
G2481	U2351	G2181	U2264	G2181	A	G1914	A1823	G1756	C1671	C1598	G1507	G1412
G2482	A2352	U2186	C2265	U2186	C	C1917	U1824	A1757	G1675	G1599	U1508	G1412
G2483	U2357	G2187	U2266	G2187	G	U1920	C1827	C1761	A1676	U1600	G1525	G1412
G2484	A2358	U2188	C2267	U2188	C	A1921	A1828	C1762	G1677	U1601	G1531	G1434
G2485	C2359	U2189	U2268	U2189	C	C1922	G1830	U1763	G1678	G1604	U1532	U1435
A2486	C2360	G2192	G2272	G2192	C	U1924	U1831	U1764	U1680	A1605	U1533	U1435
A2486	U2361	U2193	C2273	U2193	U	U1925	G1832	U1765	U1681	A1612	C1437	U1439
U2487	A2362	G2194	U2274	G2194	C	C1926	U1834	G1766	U1686	A1615	G1443	G1443
U2488	G2363	C2195	A2280	G2195	G	G1927	A1835	G1769	U1687	U1616	U1444	U1445
U2489	C2364	G2196	A2281	C2196	U	G1928	U1836	C1770	U1688	G1617	A1446	G1447
G2490	C2365	G2201	U2282	G2201	C	G1929	U1837	C1771	U1689	G1618	U1448	U1448
A2491	A2366	C2202	U2283	U2202	A	A1930	G1838	U1772	U1694	A1619	A1449	A1449
U2492	G2367	U2203	C2284	U2203	G	U1931	A1839	C1773	A1696	U1620	G1548	G1460
U2493	A2368	C2204	C2285	C2204	C	A1932	U1841	G1778	A1699	A1621	C1551	A1461
U2494	G2370	G2205	G2286	U2205	U	G1935	A1842	C1779	G1700	U1622	U1555	A1462
U2495	A2371	G2206	U2287	G2206	C	G1940	C1843	G1780	G1701	G1623	A1557	U1463
U2496	C2372	A2207	U2292	A2207	U	C1941	G1852	U1782	U1702	A1625	G1560	G1464
U2497	U2373	A2208	G2296	U2373	G	U1942	U1853	U1783	G1709	U1629	C1561	U1465
U2498	G2374	C2209	A2296	U2374	C	G1949	C1856	G1784	C1710	U1630	G1466	C1563
U2499	U2375	G2210	G2300	G2210	A	U1952	A1857	U1785	C1711	G1631	A1467	A1468
U2500	C2376	U2211	U2301	U2211	C	G	A1858	U1786	G1712	A1632	U1564	A1468
U2501	G2377	G2212	U2302	G2212	G	U1952	U1862	G1788	G1713	G1635	G1565	U1471
U2502	U2378	A2213	A2303	A2213	A	G	G1863	G1789	U1717	A1636	U1566	U1472
U2503	U2379	U2214	U2304	U2214	C	U	G1872	C1791	G1718	A1637	U1567	U1473
U2504	G2380	G2215	A2305	G2215	C	A	C1878	C1792	G1719	A1638	U1568	U1474
U2505	C2381	A2216	A2306	A2216	C	U	A1879	G1794	U1720	G1639	U1569	A1474
U2506	U2382	C2221	A2307	C2221	C	A	U1880	U1795	U1722	A1642	U1570	
U2507	G2383	A2222	U2310	A2222	U	G		A1797				
U2508	U2384	G2223										
U2509	C2385	A2224										
U2510	U2386	G2225										
U2511	C2387	A2226										
U2512	U2388	G2227										
U2513	G2389	A2228										
U2514	C2390	G2229										
U2515	U2391	A2230										
A2520	G2392	A2231										
U2521	U2393	G2232										
G2522	A2394	A2233										



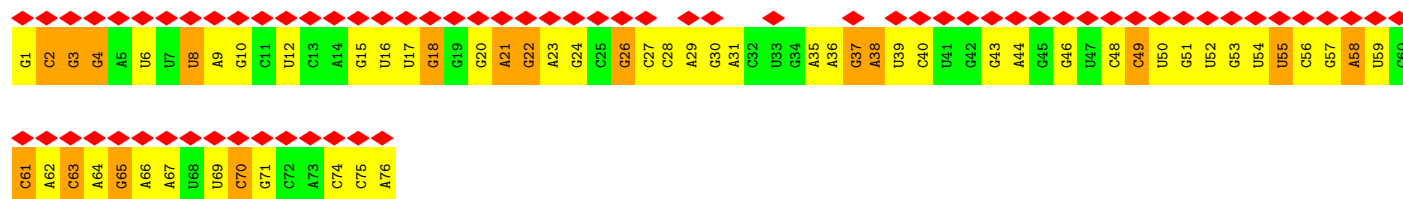
• Molecule 12: Elongation factor 2



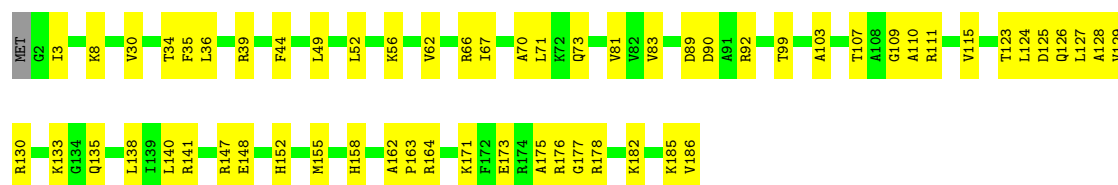




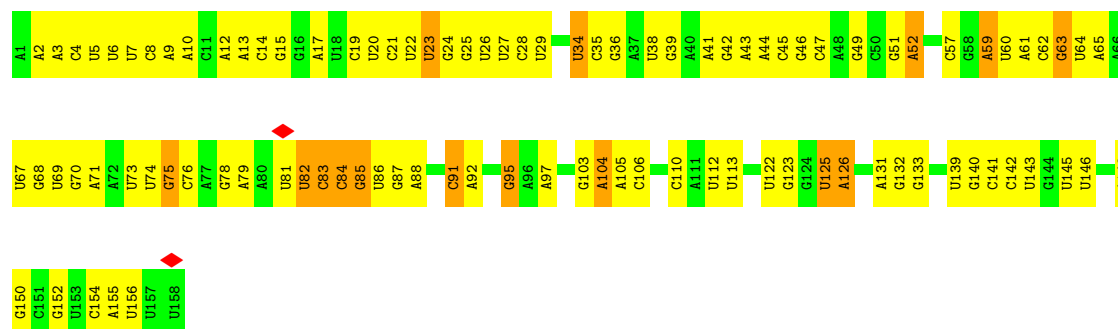
• Molecule 15: Transfer RNA Phe



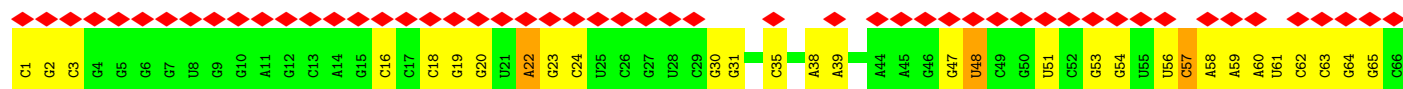
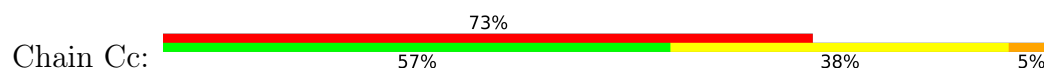
• Molecule 16: 60S ribosomal protein L18-A

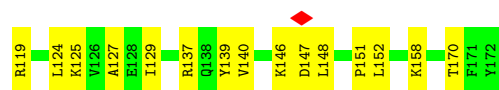


• Molecule 17: 5.8S ribosomal RNA



• Molecule 18: Transfer RNA fMet





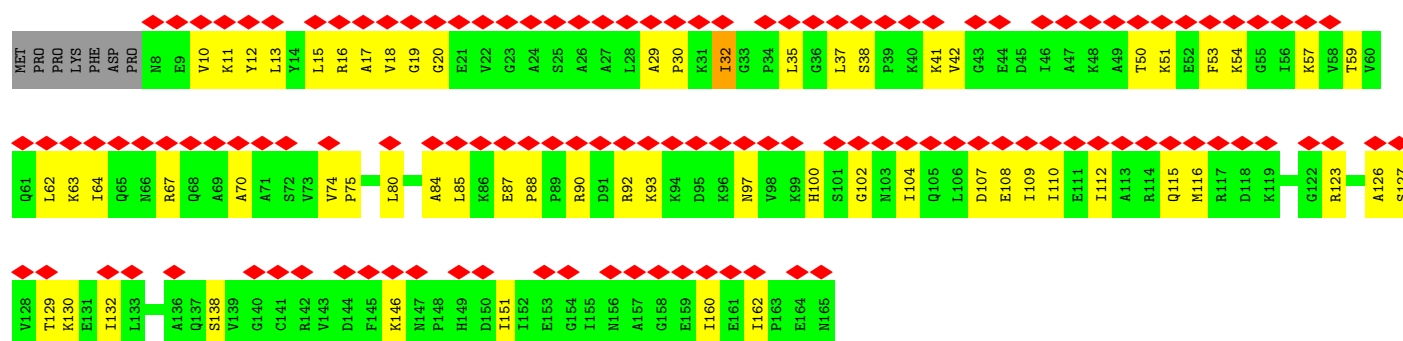
- Molecule 23: 60S ribosomal protein L2-A

Chain EE: 70% 29%



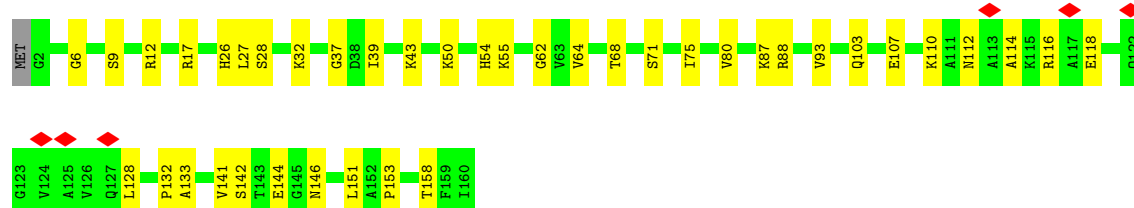
- Molecule 24: 60S ribosomal protein L12-A

Chain Ee: 76% 59% 36%



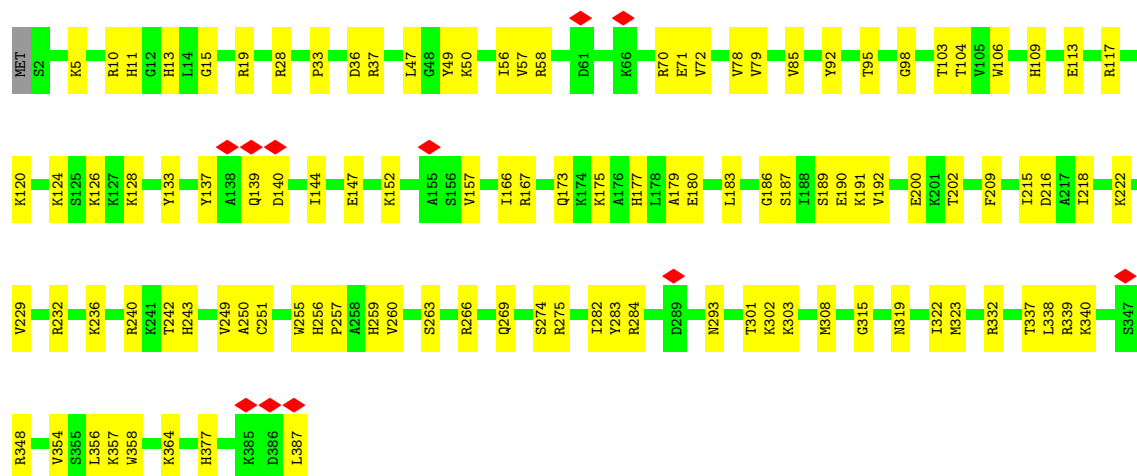
- Molecule 25: 60S ribosomal protein L21-A

Chain F: 74% 25%

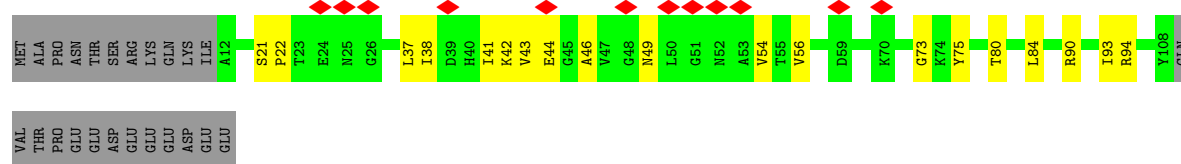


- Molecule 26: 60S ribosomal protein L3

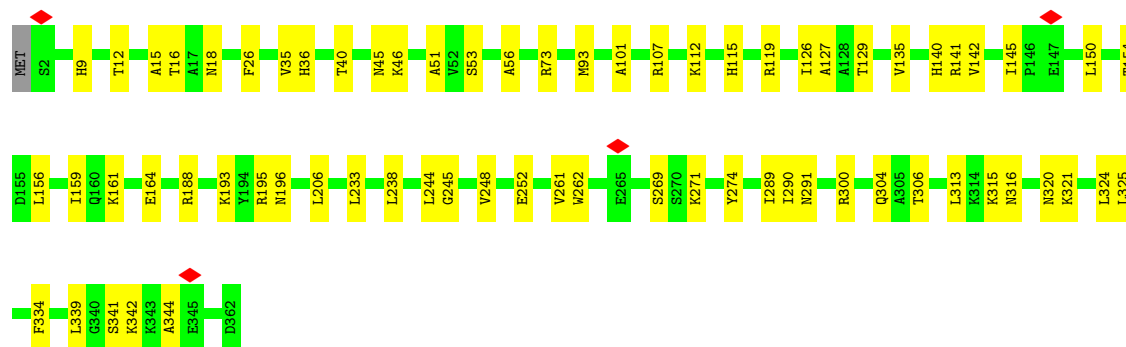
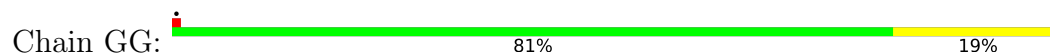
Chain FF: 72% 28%



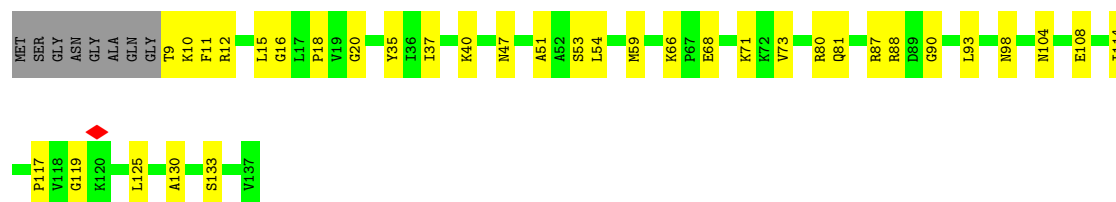
- Molecule 27: 60S ribosomal protein L22-A



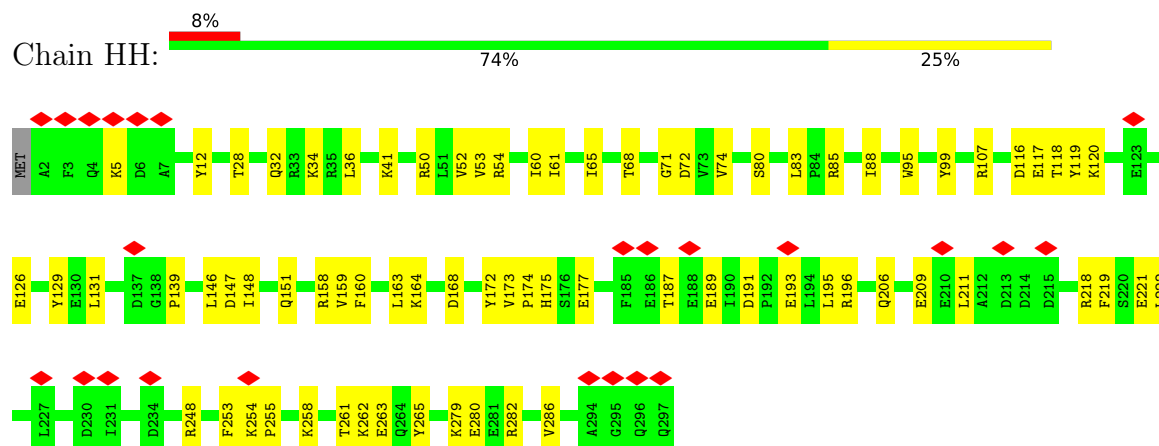
- Molecule 28: 60S ribosomal protein L4-A



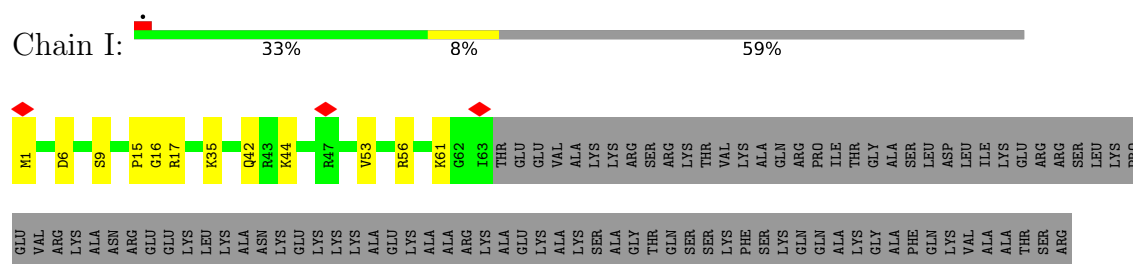
- Molecule 29: 60S ribosomal protein L23-A



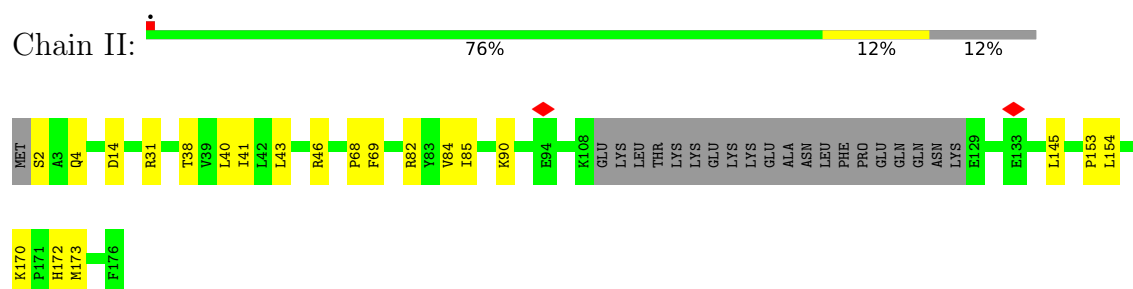
- Molecule 30: 60S ribosomal protein L5



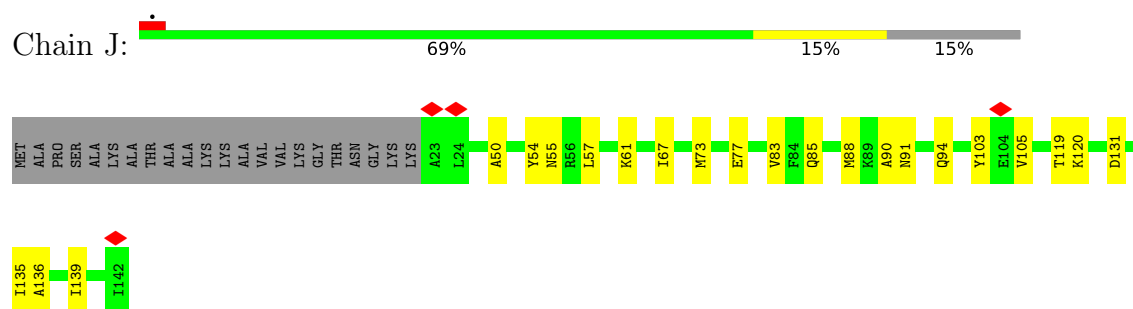
- Molecule 31: 60S ribosomal protein L24-A



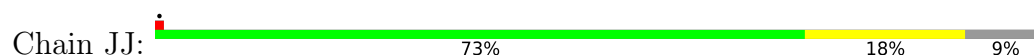
- Molecule 32: 60S ribosomal protein L6-A

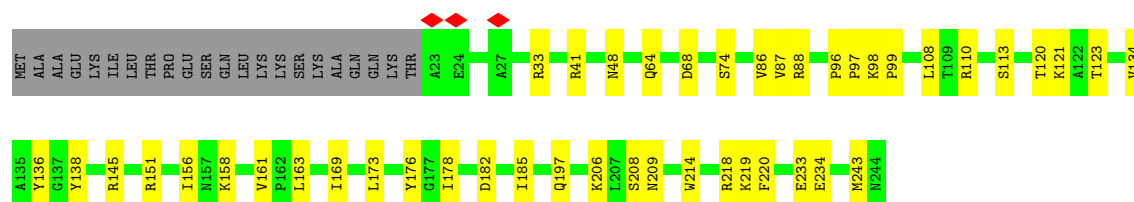


- Molecule 33: 60S ribosomal protein L25

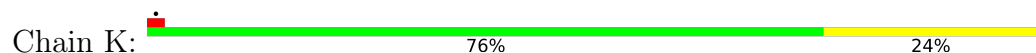


- Molecule 34: 60S ribosomal protein L7-A

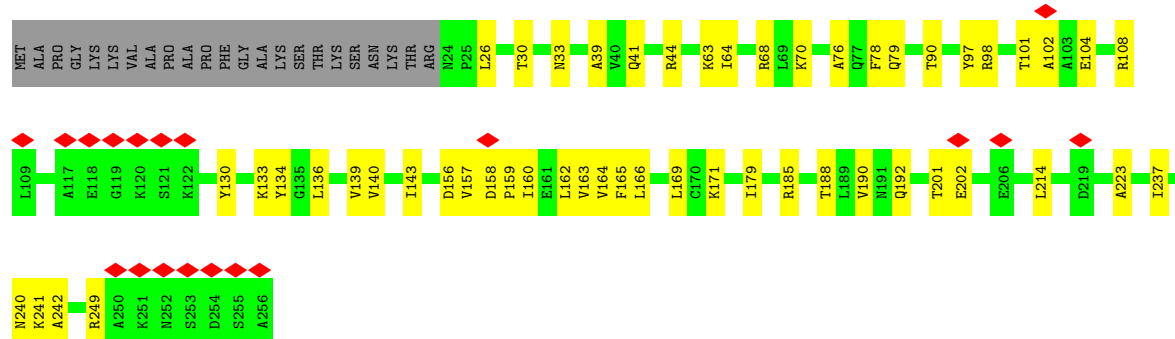
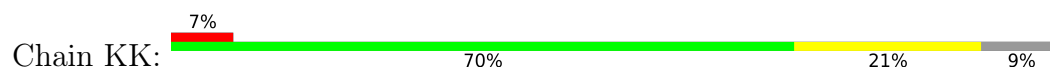




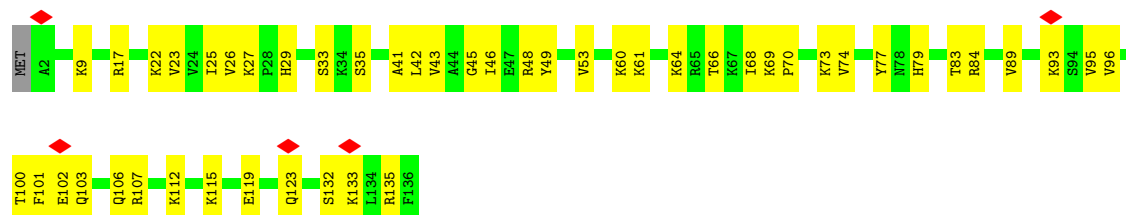
- Molecule 35: 60S ribosomal protein L26-A



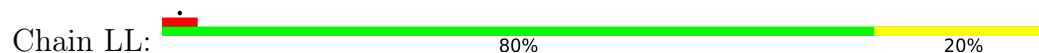
- Molecule 36: 60S ribosomal protein L8-A

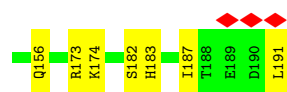


- Molecule 37: 60S ribosomal protein L27-A



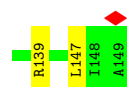
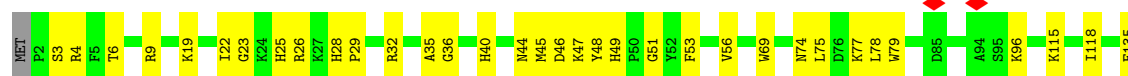
- Molecule 38: RPL9A isoform 1





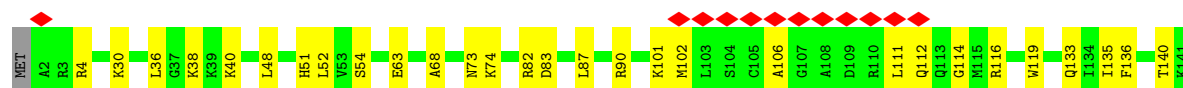
- Molecule 39: 60S ribosomal protein L28

Chain M: 75% 24%



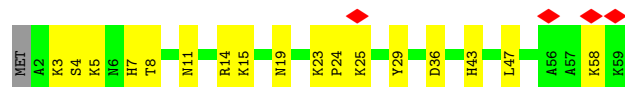
- Molecule 40: 60S ribosomal protein L10

Chain MM: 6% 76% 21%



- Molecule 41: 60S ribosomal protein L29

Chain N: 7% 69% 29%



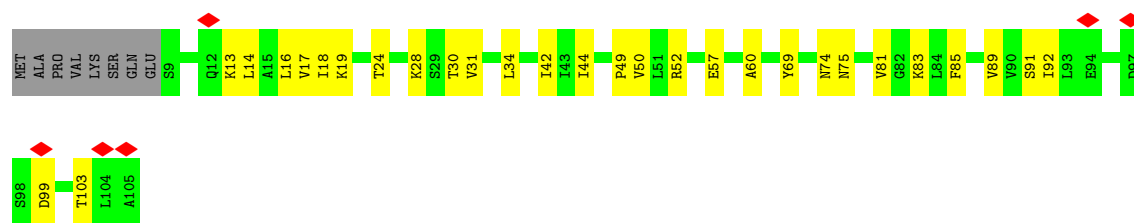
- Molecule 42: 60S ribosomal protein L11-A

Chain NN: 12% 72% 25%

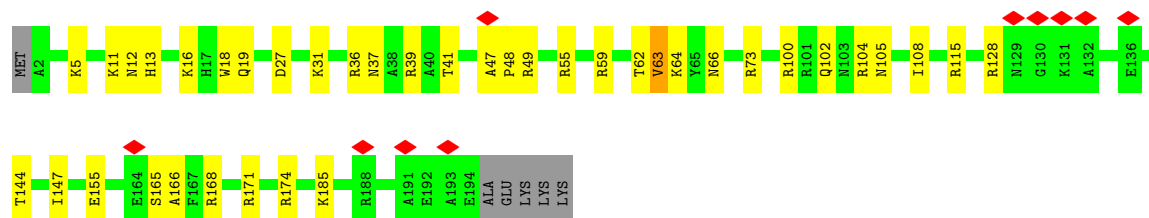
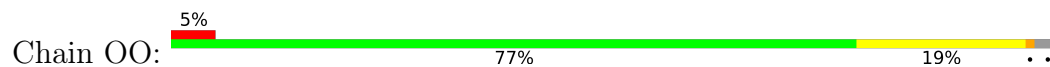


- Molecule 43: 60S ribosomal protein L30

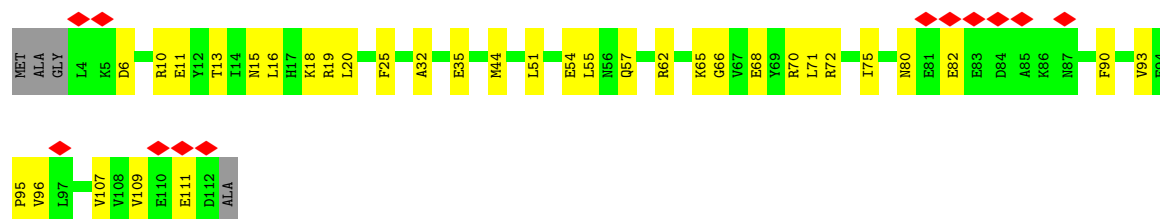
Chain O: 6% 65% 28% 8%



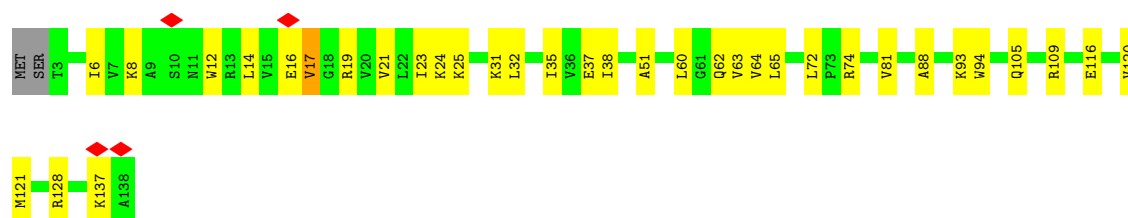
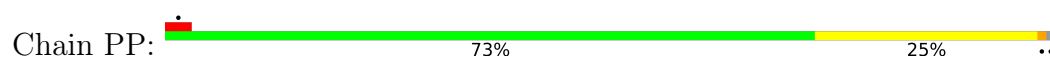
- Molecule 44: 60S ribosomal protein L13-A



- Molecule 45: 60S ribosomal protein L31-A



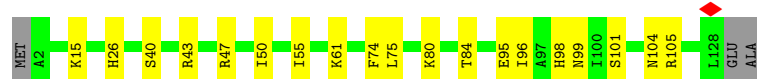
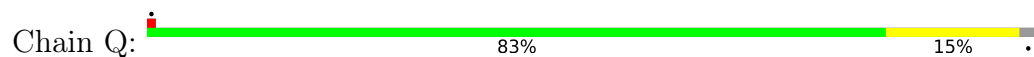
- Molecule 46: 60S ribosomal protein L14-A



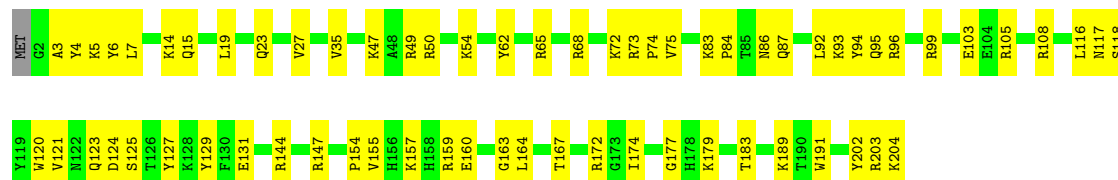
- Molecule 47: Polypeptide



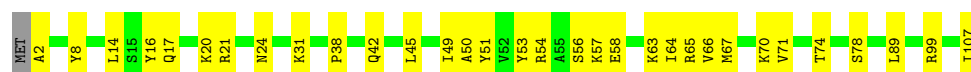
- Molecule 48: 60S ribosomal protein L32



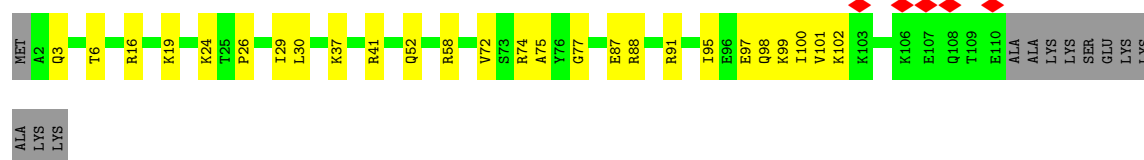
- Molecule 49: 60S ribosomal protein L15-A



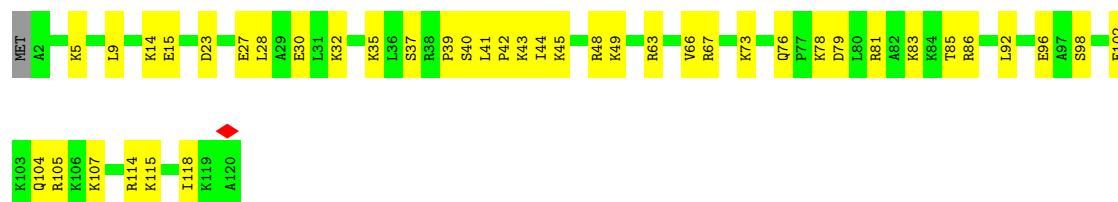
- Molecule 50: 60S ribosomal protein L33-A



- Molecule 51: 60S ribosomal protein L34-A



- Molecule 52: 60S ribosomal protein L35-A

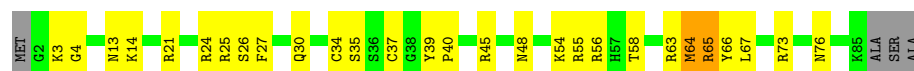


- Molecule 53: 60S ribosomal protein L36-A





- Molecule 54: 60S ribosomal protein L37-A



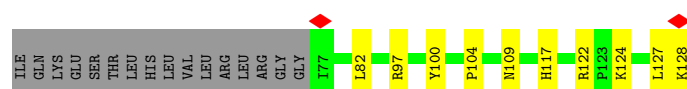
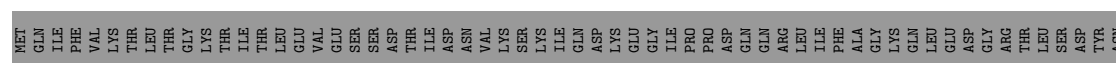
- Molecule 55: 60S ribosomal protein L38



- Molecule 56: 60S ribosomal protein L39



- Molecule 57: Ubiquitin-60S ribosomal protein L40



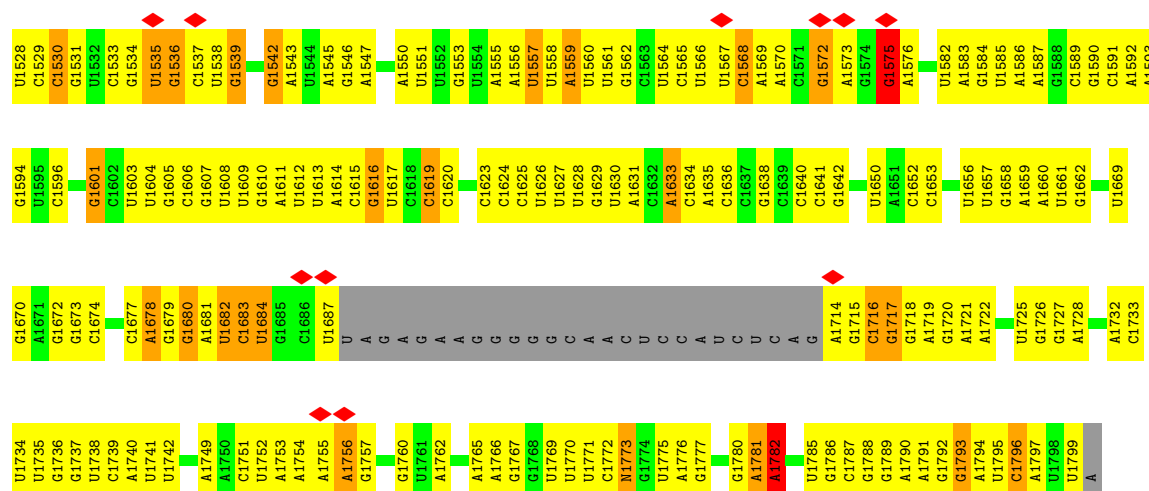
- Molecule 58: 60S ribosomal protein L41



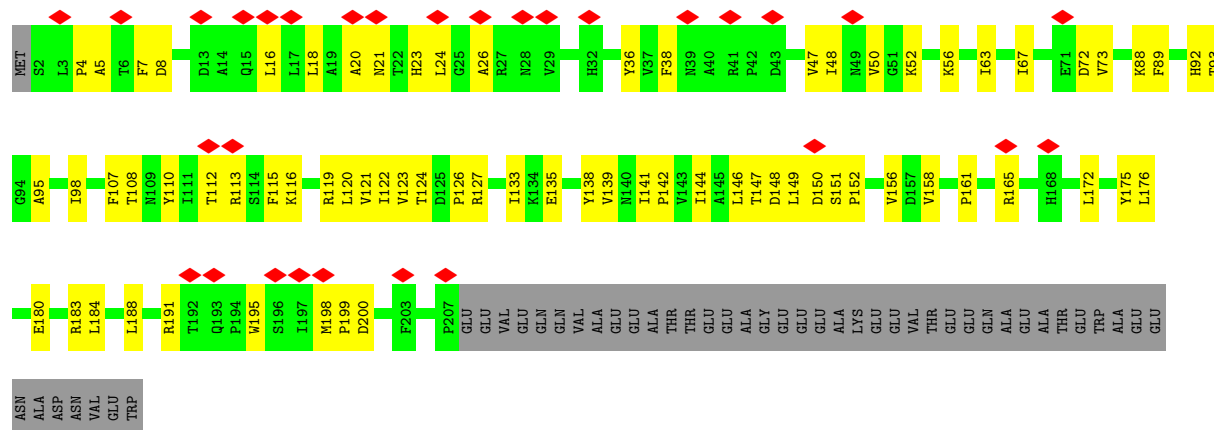
- Molecule 59: 60S ribosomal protein L42-A



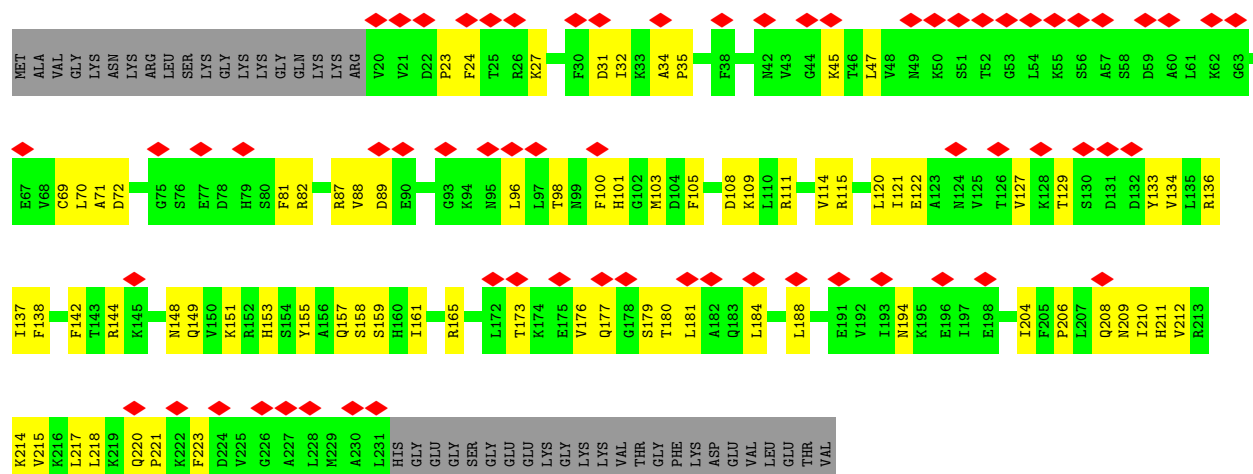




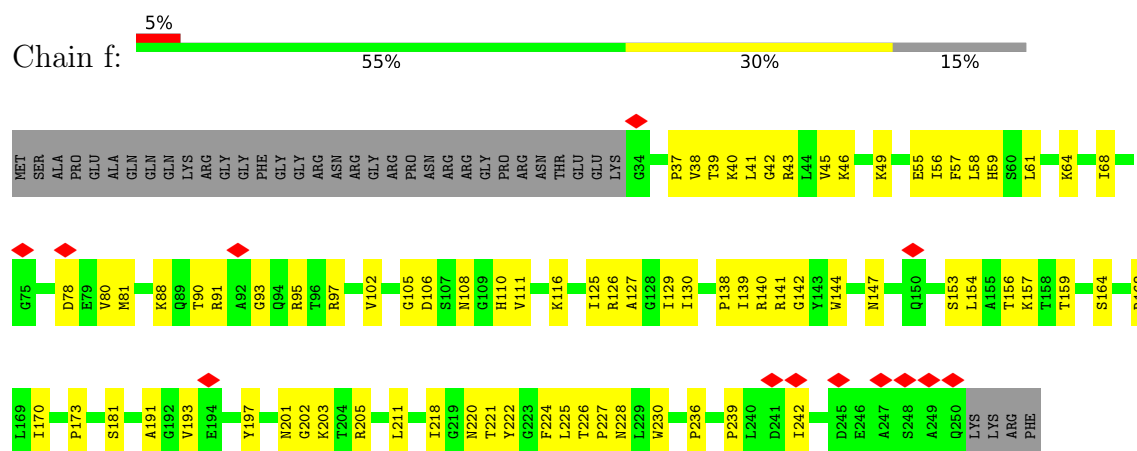
• Molecule 62: 40S ribosomal protein S0-A



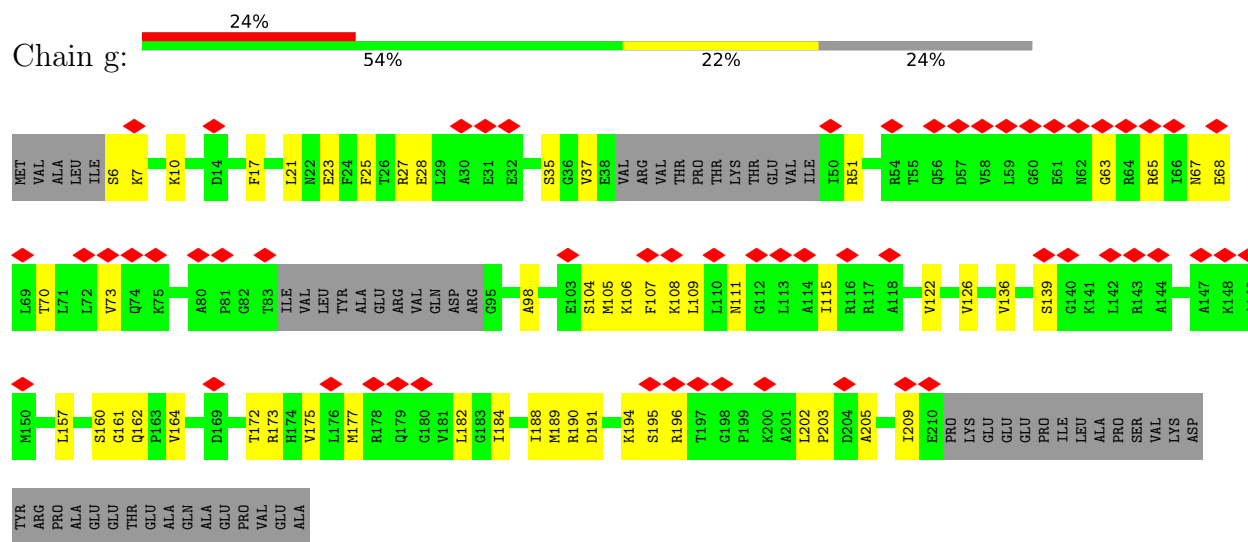
• Molecule 63: 40S ribosomal protein S1-A



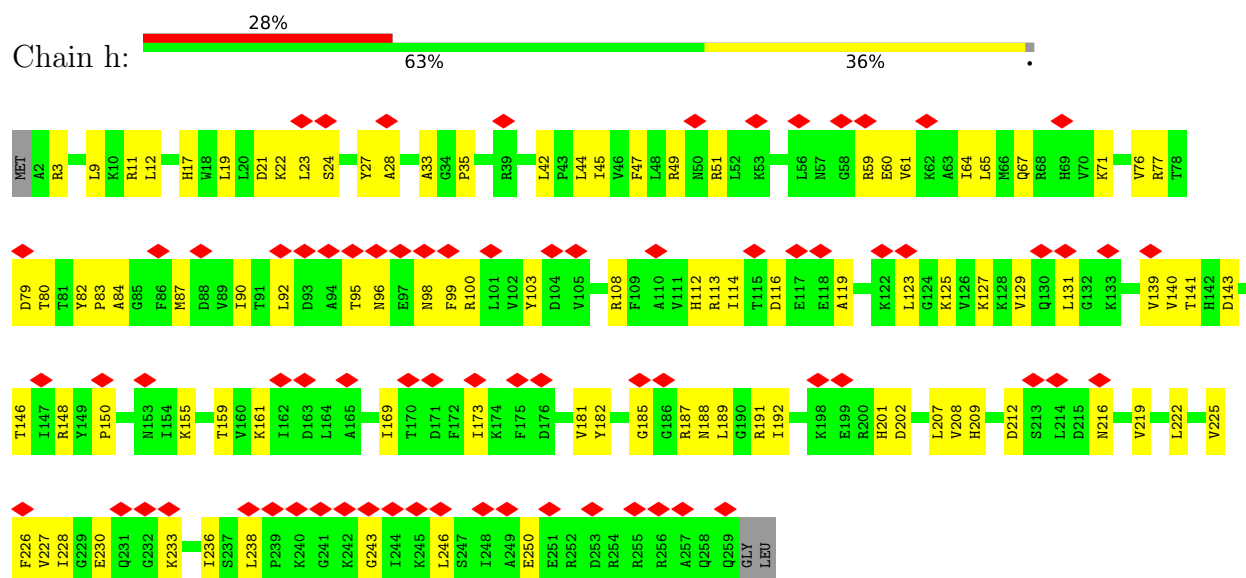
- Molecule 64: 40S ribosomal protein S2



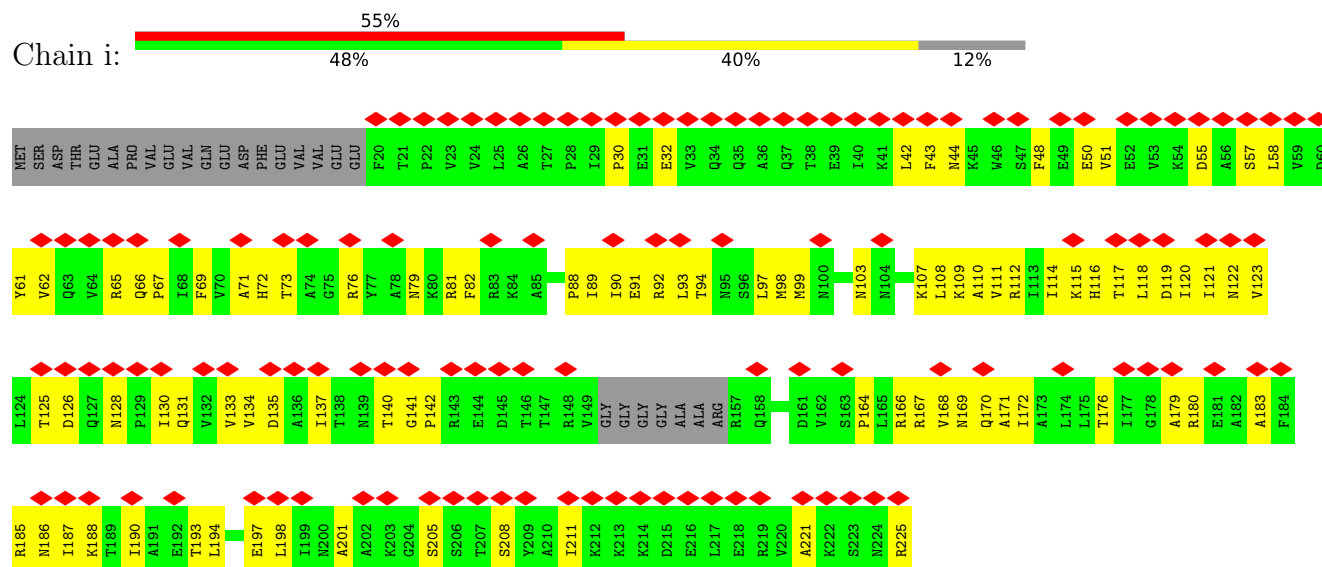
- Molecule 65: RPS3 isoform 1



- Molecule 66: 40S ribosomal protein S4-A



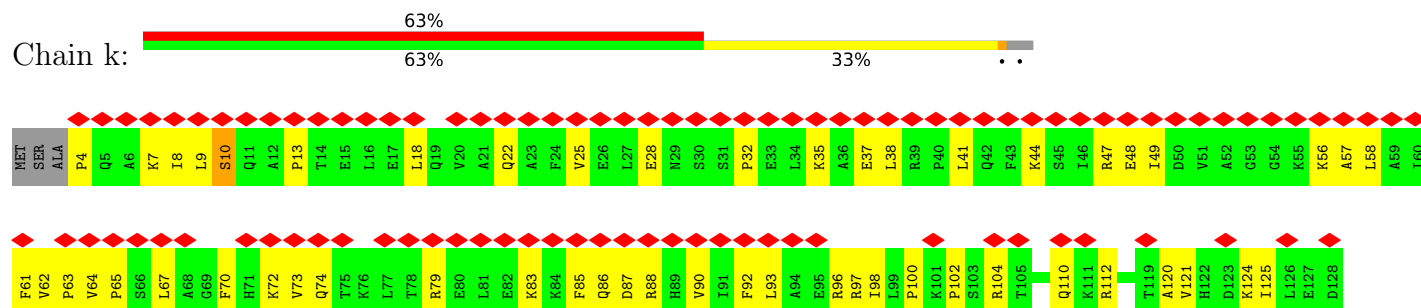
Chain i:

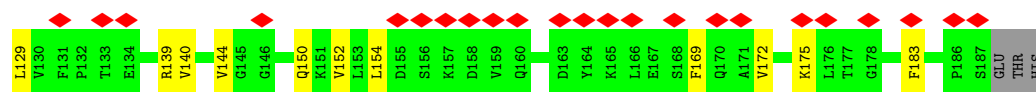


Chain j:

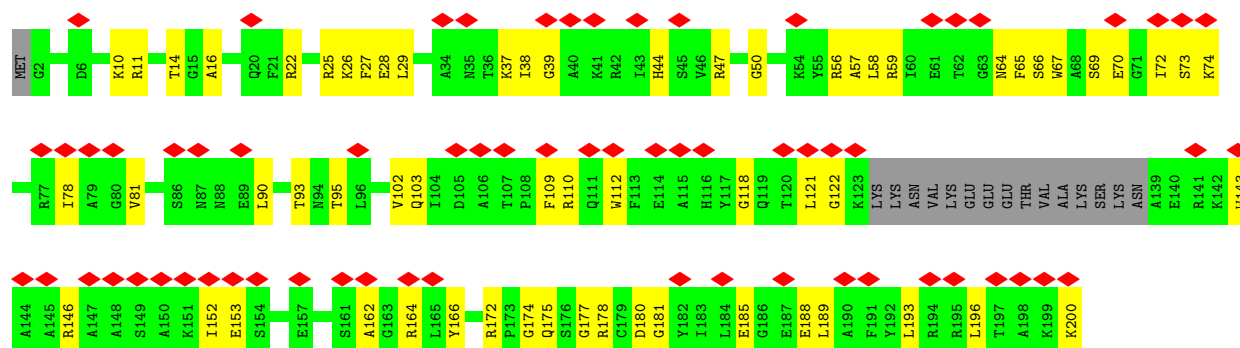


Chain k:

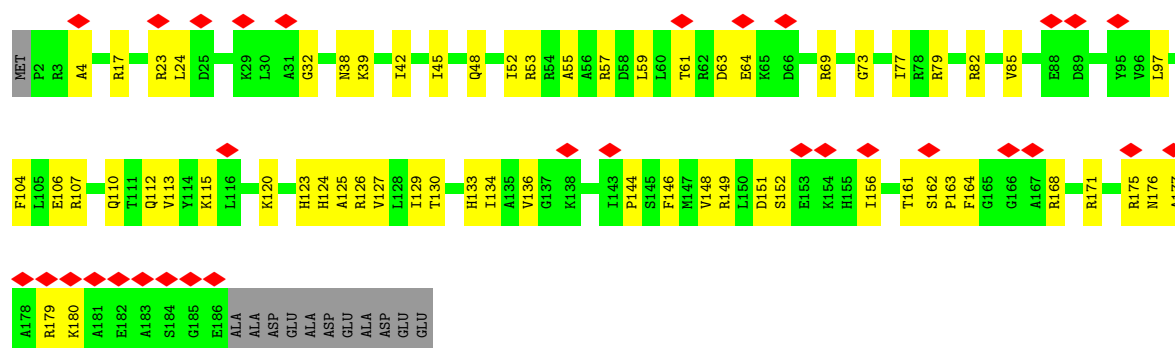




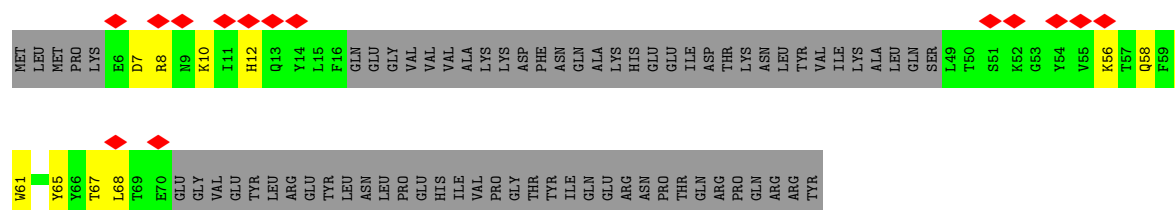
• Molecule 70: 40S ribosomal protein S8-B



• Molecule 71: 40S ribosomal protein S9-A

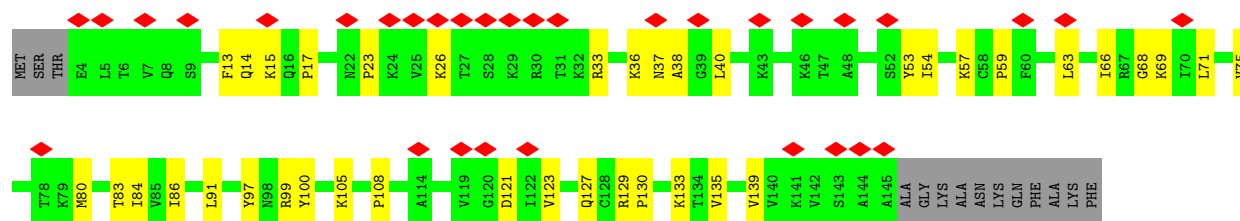


• Molecule 72: 40S ribosomal protein S10-A

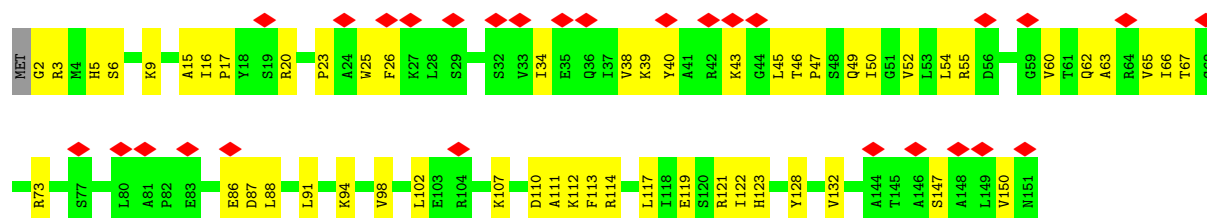


• Molecule 73: 40S ribosomal protein S11-A

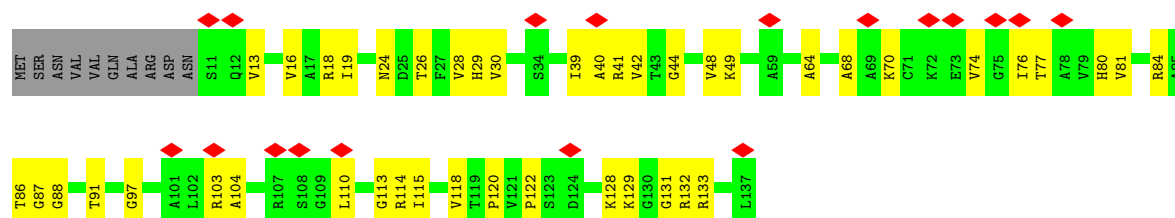




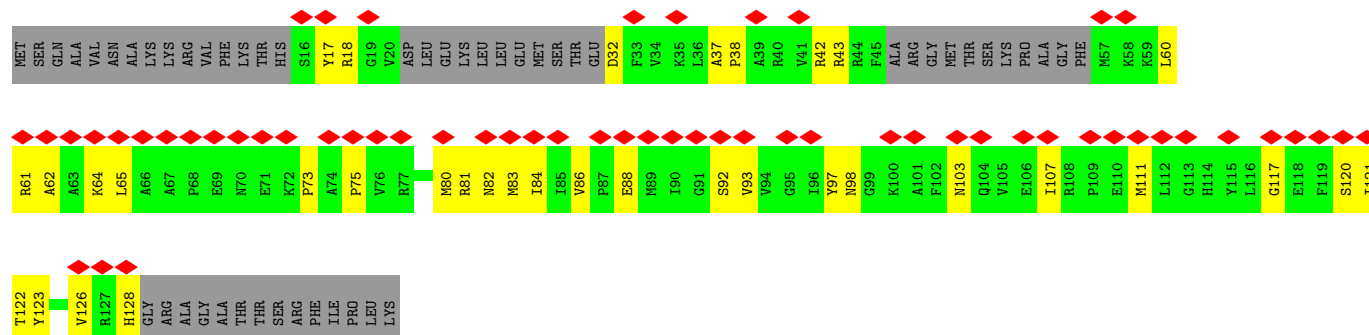
• Molecule 74: 40S ribosomal protein S13



• Molecule 75: 40S ribosomal protein S14-A

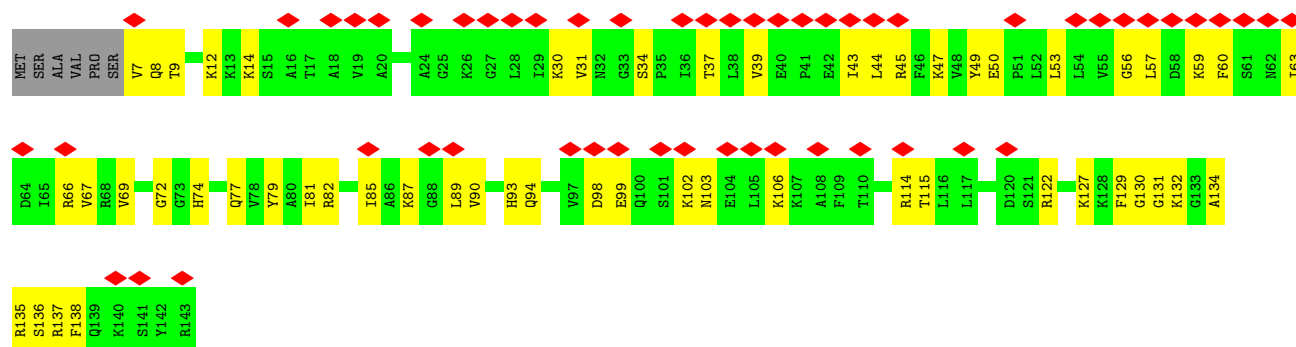


• Molecule 76: 40S ribosomal protein S15

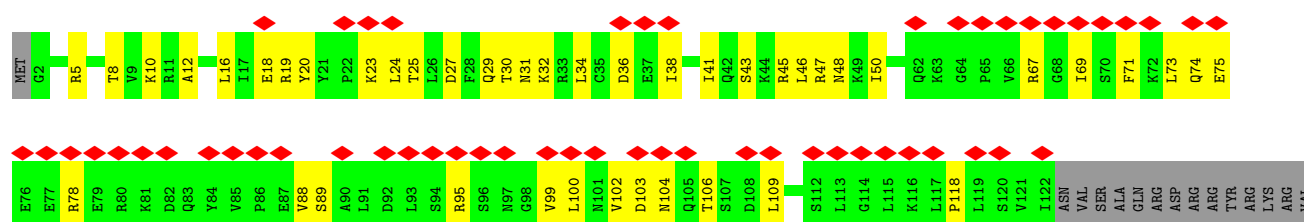
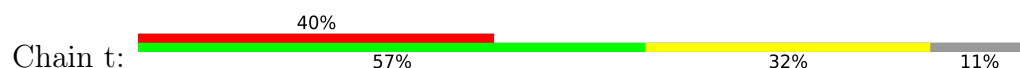


• Molecule 77: 40S ribosomal protein S16-A

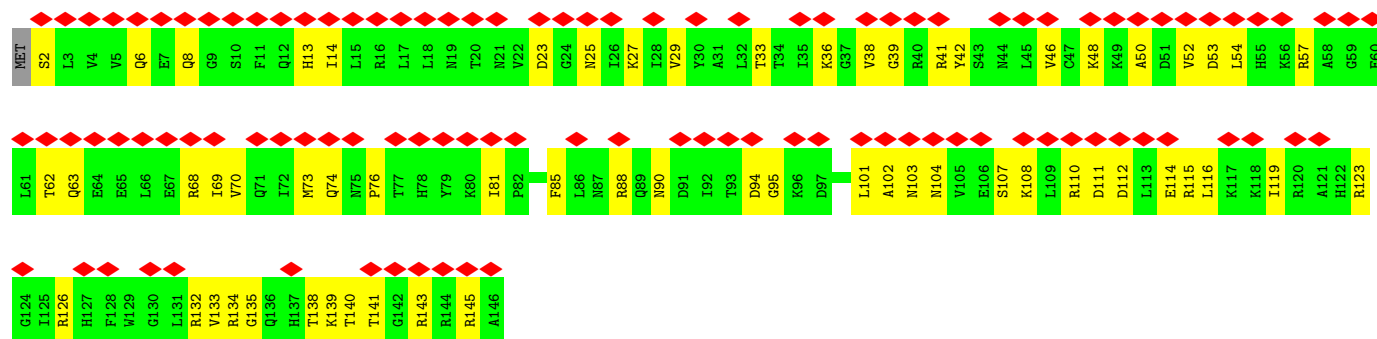




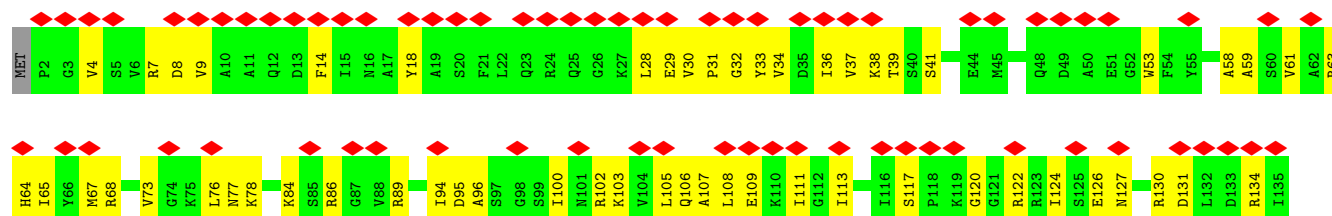
• Molecule 78: 40S ribosomal protein S17-A

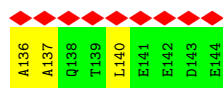


• Molecule 79: 40S ribosomal protein S18-A

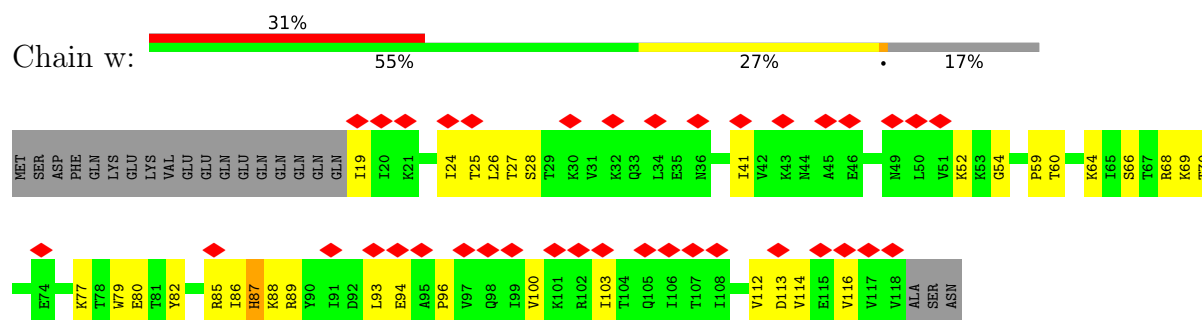


• Molecule 80: 40S ribosomal protein S19-A

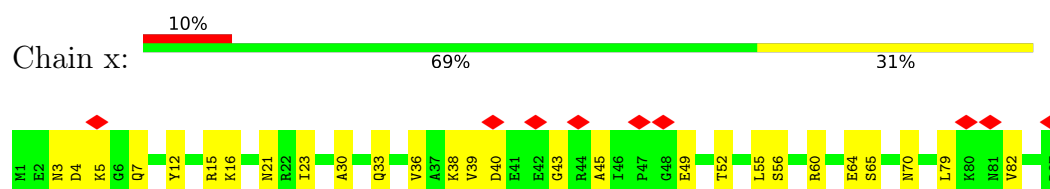




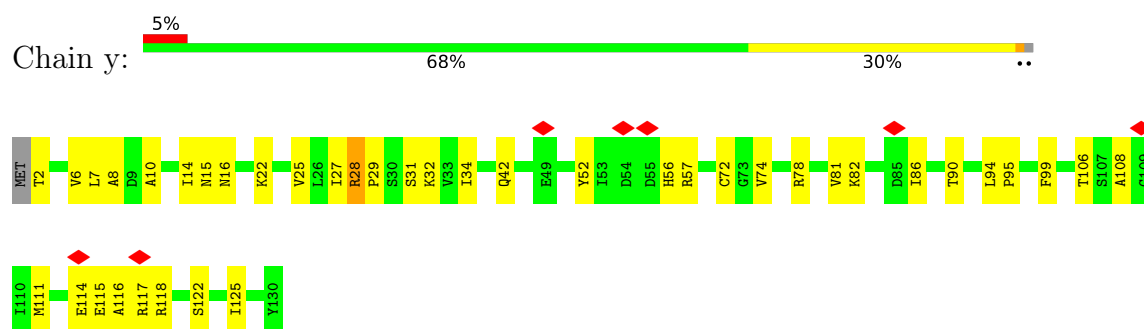
- Molecule 81: 40S ribosomal protein S20



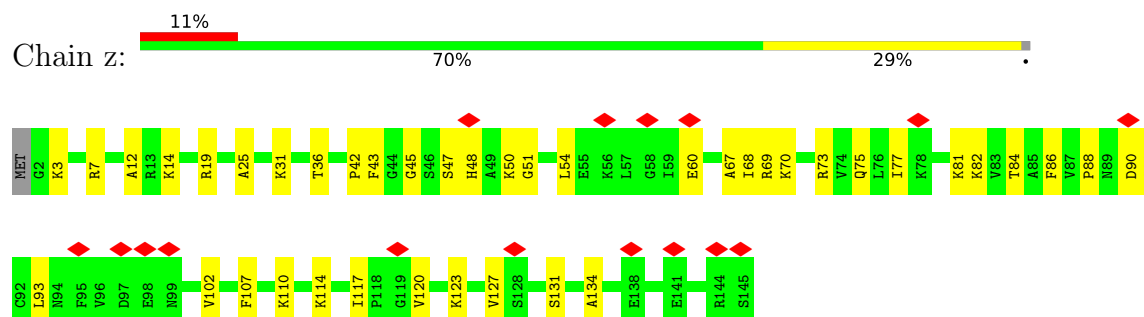
- Molecule 82: 40S ribosomal protein S21-A



- Molecule 83: 40S ribosomal protein S22-A



- Molecule 84: 40S ribosomal protein S23-A



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	73086	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	40	Depositor
Minimum defocus (nm)	400	Depositor
Maximum defocus (nm)	1000	Depositor
Magnification	270000	Depositor
Image detector	FEI FALCON IV (4k x 4k)	Depositor
Maximum map value	1.223	Depositor
Minimum map value	-0.545	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.045	Depositor
Recommended contour level	0.18	Depositor
Map size (Å)	540.0, 540.0, 540.0	wwPDB
Map dimensions	600, 600, 600	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.9, 0.9, 0.9	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: SPD, MG, B8N, 5MC, ZN, 4AC, YYG, OMC, OMG, K, MA6, 1MA, GTP, UR3, A2M, OMU, G7M, SO1, DDE

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	0	0.11	0/1087	0.32	0/1449
2	1	0.15	0/571	0.59	2/768 (0.3%)
3	2	0.12	0/782	0.35	0/1047
4	3	0.13	0/620	0.46	0/838
5	4	0.15	0/499	0.42	0/670
6	5	0.17	0/412	0.42	1/544 (0.2%)
7	6	0.14	0/433	0.43	0/575
8	7	0.13	0/2489	0.41	0/3389
9	8	0.11	0/279	0.36	0/369
10	A	0.14	0/1585	0.35	0/2128
11	AA	0.12	1/75545 (0.0%)	0.26	0/117782
12	Aa	0.13	0/6673	0.36	2/9032 (0.0%)
13	B	0.10	0/1245	0.29	0/1676
14	BB	0.08	0/2883	0.20	0/4491
15	Bb	0.10	0/1788	0.27	0/2786
16	C	0.09	0/1465	0.30	0/1965
17	CC	0.09	0/3746	0.25	0/5832
18	Cc	0.08	0/1836	0.19	0/2859
19	D	0.10	0/1440	0.29	0/1921
20	DD	0.14	0/1558	0.36	0/2107
21	Dd	0.13	0/138	0.37	0/212
22	E	0.12	0/1481	0.34	0/1990
23	EE	0.11	0/1948	0.31	0/2617
24	Ee	0.15	0/1210	0.50	1/1627 (0.1%)
25	F	0.13	0/1300	0.35	0/1743
26	FF	0.11	0/3146	0.31	0/4228
27	G	0.13	0/786	0.41	0/1065
28	GG	0.09	0/2800	0.30	0/3790
29	H	0.10	0/978	0.33	0/1316
30	HH	0.10	0/2425	0.29	0/3271
31	I	0.10	0/533	0.29	0/707

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
32	II	0.09	0/1251	0.27	0/1682
33	J	0.11	0/974	0.31	0/1314
34	JJ	0.09	0/1821	0.27	0/2451
35	K	0.12	0/1004	0.32	0/1341
36	KK	0.10	0/1836	0.29	0/2481
37	L	0.14	0/1118	0.38	0/1497
38	LL	0.12	0/1539	0.32	0/2073
39	M	0.11	0/1204	0.35	0/1612
40	MM	0.08	0/1779	0.27	0/2386
41	N	0.15	0/473	0.35	0/629
42	NN	0.11	0/1374	0.34	0/1842
43	O	0.10	0/750	0.27	0/1008
44	OO	0.11	0/1568	0.34	0/2106
45	P	0.10	0/897	0.29	0/1205
46	PP	0.11	0/1068	0.33	0/1438
47	Pp	0.06	0/19	0.12	0/23
48	Q	0.09	0/1041	0.26	0/1394
49	QQ	0.10	0/1757	0.31	0/2354
50	R	0.12	0/868	0.34	0/1168
51	S	0.10	0/871	0.29	0/1164
52	T	0.11	0/978	0.31	0/1301
53	U	0.12	0/778	0.36	0/1034
54	V	0.11	0/680	0.39	0/901
55	W	0.12	0/618	0.32	0/826
56	X	0.13	0/443	0.36	0/588
57	Y	0.12	0/423	0.26	0/562
58	Z	0.11	0/234	0.24	0/300
59	a	0.12	0/831	0.38	0/1097
60	b	0.12	0/701	0.35	0/934
61	c	0.13	1/37760 (0.0%)	0.26	0/58811
62	d	0.13	0/1623	0.37	0/2222
63	e	0.14	0/1714	0.40	0/2308
64	f	0.15	0/1665	0.41	0/2263
65	g	0.15	0/1429	0.41	0/1913
66	h	0.11	0/2097	0.34	0/2823
67	i	0.15	0/1591	0.41	0/2151
68	j	0.18	0/1790	0.46	1/2393 (0.0%)
69	k	0.16	0/1506	0.48	0/2028
70	l	0.19	0/1482	0.44	0/1980
71	m	0.12	0/1519	0.34	0/2035
72	n	0.11	0/309	0.37	0/416
73	o	0.11	0/1172	0.31	0/1580
74	p	0.14	0/1215	0.35	0/1638

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
75	q	0.11	0/901	0.36	0/1217
76	r	0.13	0/747	0.40	0/1002
77	s	0.14	0/1099	0.46	0/1473
78	t	0.15	0/971	0.42	0/1303
79	u	0.14	0/1211	0.40	0/1628
80	v	0.12	0/1130	0.37	0/1517
81	w	0.17	0/810	0.49	0/1095
82	x	0.14	0/693	0.43	0/935
83	y	0.13	0/1038	0.43	1/1395 (0.1%)
84	z	0.11	0/1139	0.39	0/1518
All	All	0.12	2/219190 (0.0%)	0.30	8/321149 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
37	L	0	1
46	PP	0	1
54	V	0	1
59	a	0	1
67	i	0	1
69	k	0	1
All	All	0	6

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
61	c	1269	OMU	O3'-P	5.16	1.61	1.56
11	AA	2946	A2M	O3'-P	5.02	1.61	1.56

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
68	j	173	PRO	CA-N-CD	-9.39	98.86	112.00
83	y	28	ARG	C-N-CD	-6.08	107.23	120.60
12	Aa	459	ILE	CA-C-N	5.88	136.54	125.66
12	Aa	459	ILE	C-N-CA	5.88	136.54	125.66
2	1	53	GLU	CA-C-N	5.60	123.77	120.24
2	1	53	GLU	C-N-CA	5.60	123.77	120.24
6	5	11	PRO	CA-N-CD	-5.56	104.22	112.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
24	Ee	32	ILE	N-CA-C	-5.03	107.85	112.83

There are no chirality outliers.

All (6) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
37	L	102	GLU	Peptide
46	PP	17	VAL	Peptide
54	V	64	MET	Peptide
59	a	7	THR	Peptide
67	i	65	ARG	Peptide
69	k	10	SER	Peptide

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	0	1073	0	1132	34	0
2	1	563	0	603	22	0
3	2	769	0	814	30	0
4	3	610	0	633	28	0
5	4	497	0	535	17	0
6	5	404	0	397	16	0
7	6	427	0	475	15	0
8	7	2436	0	2386	79	0
9	8	276	0	289	5	0
10	A	1555	0	1659	48	0
11	AA	68429	0	34442	1651	0
12	Aa	6569	0	6639	191	0
13	B	1222	0	1231	29	0
14	BB	2579	0	1304	48	0
15	Bb	1638	0	835	29	0
16	C	1441	0	1543	49	0
17	CC	3353	0	1695	90	0
18	Cc	1644	0	837	17	0
19	D	1423	0	1510	38	0
20	DD	1531	0	1571	39	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
21	Dd	125	0	63	4	0
22	E	1445	0	1487	40	0
23	EE	1914	0	1981	62	0
24	Ee	1196	0	1257	42	0
25	F	1276	0	1323	36	0
26	FF	3075	0	3142	85	0
27	G	770	0	780	15	0
28	GG	2748	0	2859	54	0
29	H	963	0	1015	30	0
30	HH	2375	0	2325	58	0
31	I	521	0	551	9	0
32	II	1230	0	1320	17	0
33	J	959	0	1023	14	0
34	JJ	1784	0	1862	35	0
35	K	993	0	1081	23	0
36	KK	1804	0	1877	40	0
37	L	1092	0	1155	40	0
38	LL	1518	0	1587	29	0
39	M	1173	0	1215	39	0
40	MM	1743	0	1785	39	0
41	N	462	0	491	15	0
42	NN	1353	0	1383	29	0
43	O	742	0	797	18	0
44	OO	1543	0	1608	42	0
45	P	883	0	918	30	0
46	PP	1053	0	1149	27	0
47	Pp	19	0	20	0	0
48	Q	1020	0	1090	19	0
49	QQ	1720	0	1779	62	0
50	R	850	0	880	28	0
51	S	861	0	918	23	0
52	T	969	0	1078	37	0
53	U	771	0	849	18	0
54	V	665	0	668	25	0
55	W	612	0	682	22	0
56	X	436	0	475	19	0
57	Y	417	0	456	7	0
58	Z	233	0	284	7	0
59	a	819	0	889	34	0
60	b	694	0	735	18	0
61	c	34321	0	17286	899	0
62	d	1583	0	1578	59	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
63	e	1689	0	1763	65	0
64	f	1635	0	1723	61	0
65	g	1412	0	1473	37	0
66	h	2056	0	2140	84	0
67	i	1572	0	1639	82	0
68	j	1766	0	1859	61	0
69	k	1481	0	1572	53	0
70	l	1457	0	1488	57	0
71	m	1494	0	1573	65	0
72	n	300	0	279	9	0
73	o	1146	0	1213	31	0
74	p	1192	0	1255	44	0
75	q	891	0	883	37	0
76	r	732	0	760	32	0
77	s	1080	0	1140	48	0
78	t	961	0	999	39	0
79	u	1192	0	1222	58	0
80	v	1112	0	1124	48	0
81	w	800	0	869	23	0
82	x	684	0	672	27	0
83	y	1021	0	1060	34	0
84	z	1121	0	1196	33	0
85	2	1	0	0	0	0
85	5	1	0	0	0	0
85	8	1	0	0	0	0
85	S	1	0	0	0	0
85	V	1	0	0	0	0
85	Y	1	0	0	0	0
85	a	1	0	0	2	0
85	b	1	0	0	0	0
86	AA	188	0	0	0	0
86	Aa	1	0	0	0	0
86	BB	5	0	0	1	0
86	CC	3	0	0	0	0
86	FF	1	0	0	0	0
86	H	1	0	0	0	0
86	c	42	0	0	0	0
87	AA	60	0	114	10	0
87	QQ	10	0	19	0	0
87	c	10	0	19	2	0
88	AA	12	0	0	0	0
88	CC	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
88	EE	1	0	0	0	0
88	MM	1	0	0	0	0
88	Q	1	0	0	0	0
88	a	1	0	0	0	0
88	c	2	0	0	0	0
89	Aa	32	0	12	3	0
90	Aa	35	0	41	2	0
91	2	1	0	0	0	0
91	A	2	0	0	0	0
91	AA	764	0	0	30	0
91	B	1	0	0	0	0
91	BB	20	0	0	0	0
91	CC	13	0	0	0	0
91	Cc	1	0	0	1	0
91	D	4	0	0	0	0
91	EE	5	0	0	0	0
91	F	4	0	0	0	0
91	FF	4	0	0	0	0
91	GG	2	0	0	0	0
91	H	2	0	0	0	0
91	HH	1	0	0	1	0
91	J	2	0	0	0	0
91	JJ	1	0	0	0	0
91	LL	1	0	0	0	0
91	M	4	0	0	0	0
91	MM	2	0	0	0	0
91	N	1	0	0	0	0
91	NN	2	0	0	0	0
91	OO	1	0	0	0	0
91	Q	5	0	0	0	0
91	QQ	1	0	0	0	0
91	S	1	0	0	0	0
91	V	4	0	0	0	0
91	a	3	0	0	0	0
91	c	89	0	0	2	0
91	h	1	0	0	0	0
91	o	2	0	0	0	0
91	p	3	0	0	0	0
All	All	207325	0	154338	4753	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 13.

All (4753) 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)
66:h:92:LEU:O	66:h:96:ASN:HA	1.49	1.10
30:HH:32:GLN:OE1	91:HH:301:HOH:O	1.65	1.10
11:AA:1018:G:OP1	11:AA:1035:G:N2	1.93	1.01
11:AA:1531:C:OP2	91:AA:3703:HOH:O	1.79	1.00
11:AA:640:U:O4	91:AA:3704:HOH:O	1.81	0.99
61:c:394:C:H42	61:c:401:A:H62	1.05	0.93
24:Ee:63:LYS:HG2	24:Ee:70:ALA:HB2	1.51	0.92
61:c:143:G:H1	61:c:171:A:H61	1.17	0.92
11:AA:1385:C:HO2'	32:II:2:SER:N	1.70	0.90
59:a:77:CYS:HG	85:a:201:ZN:ZN	0.78	0.89
69:k:56:LYS:O	69:k:88:ARG:HA	1.74	0.87
63:e:144:ARG:HD3	63:e:208:GLN:HB2	1.56	0.86
66:h:45:ILE:HA	66:h:61:VAL:HG11	1.58	0.86
61:c:1586:A:H5''	77:s:136:SER:HB2	1.57	0.85
65:g:106:LYS:HG3	65:g:175:VAL:HG22	1.59	0.84
69:k:70:PHE:O	69:k:74:GLN:HB2	1.76	0.84
10:A:10:ASP:HB2	10:A:117:ARG:HB3	1.59	0.84
11:AA:655:C:H2'	11:AA:656:A:H8	1.44	0.82
64:f:239:PRO:HA	64:f:242:ILE:HG12	1.60	0.82
16:C:155:MET:HE2	16:C:163:PRO:HB3	1.62	0.82
76:r:111:MET:HA	79:u:119:ILE:HD11	1.61	0.82
11:AA:2568:C:O2	11:AA:2573:G:N2	2.13	0.81
61:c:15:U:O2'	61:c:620:A:N6	2.14	0.81
7:6:33:ARG:HD3	71:m:126:ARG:HD3	1.63	0.80
74:p:49:GLN:HA	74:p:52:VAL:HG12	1.63	0.80
11:AA:1237:G:H1	11:AA:1251:A:H2	1.25	0.80
29:H:81:GLN:O	29:H:98:ASN:ND2	2.14	0.80
68:j:2:LYS:HB2	68:j:108:VAL:HG12	1.64	0.80
11:AA:2193:U:H5'	11:AA:2194:G:H5'	1.62	0.80
64:f:90:THR:H	64:f:93:GLY:HA2	1.47	0.80
26:FF:37:ARG:HD2	26:FF:186:GLY:HA2	1.62	0.79
61:c:788:A:OP2	66:h:108:ARG:NH2	2.15	0.79
11:AA:824:C:H5''	23:EE:21:ARG:HD3	1.63	0.79
61:c:861:U:H4'	74:p:20:ARG:HH22	1.48	0.79
11:AA:2471:U:C4	11:AA:2473:C:N3	2.51	0.79
69:k:62:VAL:HG12	69:k:64:VAL:H	1.45	0.79
69:k:102:PRO:HD3	69:k:112:ARG:HD2	1.65	0.78
11:AA:1257:C:H42	11:AA:1261:G:N2	1.82	0.78
84:z:69:ARG:HG3	84:z:117:ILE:HG12	1.63	0.78
76:r:18:ARG:HH22	76:r:38:PRO:HD3	1.48	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:y:90:THR:HG23	83:y:94:LEU:HD12	1.67	0.77
76:r:98:ASN:ND2	76:r:121:ILE:O	2.18	0.77
78:t:24:LEU:HB2	78:t:31:ASN:HD22	1.49	0.77
61:c:1034:C:HO2'	83:y:2:THR:N	1.82	0.77
71:m:59:LEU:HD12	71:m:69:ARG:HA	1.67	0.77
11:AA:370:U:H4'	11:AA:404:G:H5'	1.66	0.77
12:Aa:205:ALA:HB1	12:Aa:242:ASP:HA	1.67	0.77
61:c:1684:U:H3	61:c:1717:G:H1	1.33	0.76
11:AA:1805:C:H2'	11:AA:1806:A:H8	1.48	0.76
30:HH:120:LYS:O	30:HH:248:ARG:NH1	2.18	0.76
11:AA:68:C:OP2	11:AA:301:G:N2	2.19	0.75
52:T:114:ARG:HE	52:T:115:LYS:H	1.34	0.75
67:i:131:GLN:NE2	67:i:135:ASP:OD2	2.19	0.75
69:k:56:LYS:HB2	69:k:88:ARG:HG3	1.69	0.75
61:c:1772:C:H2'	61:c:1773:4AC:H6	1.68	0.75
61:c:1213:G:O2'	61:c:1244:A:N6	2.16	0.75
11:AA:999:G:N3	11:AA:1002:A:N6	2.35	0.75
80:v:30:VAL:HG12	80:v:32:GLY:H	1.51	0.75
61:c:394:C:N4	61:c:401:A:H62	1.82	0.75
11:AA:394:G:H22	11:AA:397:A:H5'	1.52	0.74
61:c:1357:A:N6	61:c:1368:G:C2	2.54	0.74
61:c:1760:G:H1'	61:c:1781:MA6:H2	1.70	0.74
82:x:38:LYS:HD3	82:x:49:GLU:HG2	1.69	0.74
61:c:322:G:O2'	70:l:10:LYS:NZ	2.21	0.74
11:AA:896:A:H5'	23:EE:183:GLY:HA2	1.70	0.74
49:QQ:84:PRO:HA	49:QQ:87:GLN:HG3	1.68	0.74
1:0:131:ARG:NH2	61:c:152:U:OP2	2.21	0.74
64:f:39:THR:O	64:f:42:GLY:N	2.21	0.73
79:u:70:VAL:HG12	79:u:74:GLN:HE22	1.51	0.73
12:Aa:121:VAL:HG13	12:Aa:399:ARG:HB2	1.70	0.73
61:c:258:C:O2	70:l:178:ARG:NH1	2.21	0.73
22:E:14:LEU:HD12	22:E:15:PRO:HD2	1.69	0.73
61:c:127:G:N3	61:c:178:U:O2'	2.22	0.73
61:c:1679:G:H21	61:c:1722:A:H62	1.36	0.73
8:7:123:ILE:HG22	8:7:133:VAL:HG12	1.68	0.73
11:AA:289:A:H2'	11:AA:290:G:H8	1.52	0.73
11:AA:1257:C:H42	11:AA:1261:G:H22	1.35	0.73
11:AA:518:G:OP2	11:AA:518:G:N2	2.16	0.73
17:CC:8:C:H2'	17:CC:9:A:H8	1.52	0.73
61:c:394:C:H42	61:c:401:A:N6	1.85	0.73
11:AA:2489:C:H3'	11:AA:2490:C:H2'	1.71	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:Aa:491:VAL:HA	12:Aa:559:PRO:HD3	1.69	0.72
11:AA:297:G:N2	11:AA:297:G:OP2	2.21	0.72
11:AA:901:G:OP1	54:V:13:ASN:ND2	2.22	0.72
38:LL:21:LYS:HG3	38:LL:22:SER:H	1.52	0.72
59:a:4:VAL:HG11	59:a:70:LEU:HD21	1.71	0.72
61:c:639:U:H3	69:k:100:PRO:HA	1.55	0.72
61:c:1360:A:H2'	61:c:1361:U:H4'	1.71	0.72
24:Ee:37:LEU:HG	24:Ee:67:ARG:HG2	1.70	0.72
36:KK:163:VAL:HA	36:KK:166:LEU:HD23	1.71	0.72
50:R:49:ILE:HD11	50:R:71:VAL:HG23	1.70	0.72
11:AA:240:U:H4'	11:AA:241:G:H5'	1.72	0.72
11:AA:411:U:H2'	11:AA:412:G:H8	1.55	0.72
68:j:69:LEU:HG	68:j:71:THR:H	1.52	0.72
30:HH:148:ILE:HG22	30:HH:151:GLN:HB2	1.71	0.72
73:o:99:ARG:NH1	84:z:7:ARG:O	2.22	0.72
61:c:992:A:O2'	61:c:1785:U:O2	2.06	0.72
61:c:1220:C:H42	61:c:1263:G:H1	1.37	0.72
62:d:139:VAL:HG23	62:d:141:ILE:HG12	1.72	0.72
11:AA:1336:U:H2'	11:AA:1337:A:H8	1.53	0.72
11:AA:2950:G:OP2	11:AA:2950:G:N2	2.20	0.72
61:c:1471:A:N7	61:c:1538:U:O4	2.23	0.72
59:a:77:CYS:SG	85:a:201:ZN:ZN	1.77	0.72
11:AA:426:G:OP1	48:Q:15:LYS:NZ	2.22	0.71
61:c:1357:A:C6	61:c:1368:G:C2	2.78	0.71
12:Aa:427:PHE:HD2	12:Aa:462:PHE:HB3	1.54	0.71
16:C:152:HIS:ND1	16:C:162:ALA:O	2.20	0.71
74:p:47:PRO:HD2	74:p:86:GLU:HG2	1.71	0.71
11:AA:98:G:N7	44:OO:13:HIS:NE2	2.39	0.71
26:FF:216:ASP:HB2	26:FF:339:ARG:HG2	1.72	0.71
61:c:1680:G:H21	61:c:1721:A:H62	1.36	0.71
65:g:126:VAL:HG11	65:g:188:ILE:HD12	1.70	0.71
11:AA:3379:C:H4'	26:FF:315:GLY:HA2	1.70	0.71
70:l:196:LEU:O	70:l:200:LYS:HB3	1.89	0.71
11:AA:307:A:H2'	11:AA:308:A:H8	1.56	0.71
61:c:1296:A:OP1	62:d:138:TYR:OH	2.08	0.71
11:AA:1258:U:OP1	20:DD:42:ARG:NH2	2.23	0.71
70:l:72:ILE:HG22	70:l:74:LYS:HG2	1.72	0.71
71:m:82:ARG:HE	71:m:149:ARG:HD3	1.53	0.71
12:Aa:381:TYR:HD1	12:Aa:468:THR:HG22	1.56	0.71
68:j:21:GLU:HA	68:j:24:ILE:HG22	1.73	0.71
78:t:36:ASP:OD1	78:t:47:ARG:NH1	2.22	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
81:w:24:ILE:HG22	81:w:116:VAL:HG22	1.72	0.71
11:AA:1378:U:H2'	11:AA:1379:G:H8	1.55	0.71
61:c:58:U:O2'	61:c:451:A:N3	2.23	0.71
61:c:333:A:H62	70:l:27:PHE:HB2	1.56	0.71
63:e:34:ALA:HB3	63:e:35:PRO:HD3	1.70	0.71
3:2:5:ARG:HH21	61:c:1795:U:H3'	1.56	0.71
11:AA:288:C:O2	49:QQ:95:GLN:NE2	2.13	0.71
11:AA:351:A:N6	56:X:37:TYR:O	2.23	0.71
11:AA:404:G:OP1	11:AA:405:U:OP2	2.09	0.71
11:AA:3138:U:H4'	26:FF:275:ARG:HH21	1.56	0.71
45:P:16:LEU:HD12	45:P:71:LEU:HD13	1.73	0.71
61:c:816:G:H2'	61:c:817:A:H8	1.56	0.71
61:c:628:G:H21	61:c:971:A:H62	1.38	0.70
2:1:46:LYS:HE2	2:1:49:ARG:HD2	1.73	0.70
61:c:395:U:H3	61:c:399:A:H62	1.38	0.70
61:c:1331:A:H61	65:g:161:GLY:HA3	1.55	0.70
61:c:683:C:H2'	61:c:684:A:H8	1.55	0.70
11:AA:655:C:H2'	11:AA:656:A:C8	2.26	0.70
11:AA:964:G:H5'	39:M:29:PRO:HB2	1.74	0.70
11:AA:1132:C:H2'	11:AA:1133:A2M:H8	1.73	0.70
61:c:1471:A:N6	61:c:1538:U:N3	2.39	0.70
11:AA:2396:G:N7	91:AA:3749:HOH:O	2.24	0.70
20:DD:45:LEU:HD23	20:DD:49:ALA:HB3	1.73	0.70
8:7:42:LEU:HB2	8:7:61:PHE:HB2	1.71	0.70
11:AA:799:G:O2'	44:OO:18:TRP:NE1	2.25	0.70
33:J:50:ALA:HB1	52:T:66:VAL:HG11	1.73	0.70
61:c:151:G:N3	68:j:13:GLN:NE2	2.40	0.70
11:AA:785:G:N7	39:M:77:LYS:NZ	2.36	0.70
11:AA:2476:C:H2'	11:AA:2477:G:H4'	1.74	0.70
22:E:14:LEU:H	22:E:56:GLY:HA2	1.57	0.70
63:e:149:GLN:HE21	63:e:151:LYS:HB3	1.57	0.70
64:f:170:ILE:HB	64:f:197:TYR:HB2	1.72	0.70
77:s:82:ARG:NH2	77:s:114:ARG:O	2.24	0.70
61:c:511:A:OP2	71:m:176:ASN:ND2	2.25	0.69
61:c:1420:C:H2'	65:g:160:SER:HB2	1.74	0.69
77:s:31:VAL:HG21	77:s:39:VAL:HG12	1.74	0.69
7:6:36:LYS:HE3	71:m:38:ASN:HA	1.72	0.69
10:A:126:VAL:HG13	10:A:127:LEU:HD12	1.75	0.69
11:AA:3068:U:OP2	19:D:62:ARG:NH2	2.26	0.69
43:O:17:VAL:HG11	43:O:92:ILE:HD12	1.74	0.69
61:c:1591:C:H2'	61:c:1592:A:H8	1.57	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:95:HIS:ND1	2:1:98:GLN:O	2.25	0.69
11:AA:1095:U:H4'	11:AA:1096:U:H5'	1.74	0.69
14:BB:64:A:N7	40:MM:209:ASN:ND2	2.40	0.69
26:FF:10:ARG:NH1	26:FF:11:HIS:O	2.26	0.69
9:8:94:LYS:N	61:c:1247:U:OP1	2.25	0.69
22:E:22:PRO:O	25:F:146:ASN:ND2	2.24	0.69
1:0:17:LEU:O	66:h:67:GLN:NE2	2.26	0.69
4:3:17:ARG:HH21	61:c:1070:C:H4'	1.58	0.69
4:3:51:GLN:OE1	74:p:55:ARG:NH2	2.26	0.69
12:Aa:26:ALA:HB3	12:Aa:32:LYS:HE3	1.74	0.69
61:c:861:U:O2'	83:y:56:HIS:O	2.09	0.69
61:c:1673:G:O6	61:c:1728:A:N1	2.26	0.69
65:g:190:ARG:HH12	65:g:195:SER:HA	1.57	0.69
74:p:40:TYR:HA	74:p:43:LYS:HG2	1.74	0.69
61:c:1535:U:O2	61:c:1536:G:N2	2.26	0.68
11:AA:362:U:O4	54:V:24:ARG:NH2	2.26	0.68
45:P:80:ASN:ND2	45:P:82:GLU:OE1	2.26	0.68
61:c:207:U:O2	70:l:178:ARG:NH1	2.27	0.68
61:c:958:U:O2'	74:p:55:ARG:NH1	2.25	0.68
69:k:8:ILE:HG13	69:k:9:LEU:H	1.57	0.68
11:AA:1411:C:H2'	11:AA:1412:G:H8	1.58	0.68
11:AA:2164:A:OP1	23:EE:8:GLN:NE2	2.22	0.68
18:Cc:35:C:OP1	61:c:1191:B8N:N34	2.27	0.68
42:NN:132:ASN:HA	42:NN:154:THR:HG21	1.75	0.68
76:r:64:LYS:HD2	76:r:92:SER:HB3	1.74	0.68
11:AA:2305:G:OP2	11:AA:2305:G:N2	2.23	0.68
26:FF:95:THR:OG1	26:FF:98:GLY:O	2.10	0.68
61:c:27:U:H2'	61:c:28:A2M:H8	1.73	0.68
68:j:147:LEU:HD12	68:j:151:ASP:HB3	1.74	0.68
11:AA:1196:C:OP2	11:AA:1309:U:O2'	2.10	0.68
11:AA:1661:G:H2'	11:AA:1662:G:C8	2.28	0.68
11:AA:3233:C:H2'	11:AA:3234:A:C8	2.29	0.68
22:E:34:GLU:HG3	22:E:61:ILE:HD13	1.75	0.68
61:c:1488:G:H3'	61:c:1515:A:H61	1.58	0.68
67:i:166:ARG:O	67:i:170:GLN:HG3	1.92	0.68
11:AA:733:G:N2	11:AA:736:A:OP2	2.22	0.68
46:PP:17:VAL:HG23	46:PP:35:ILE:HG22	1.75	0.68
61:c:436:A2M:H8	61:c:436:A2M:O5'	1.94	0.68
61:c:1280:4AC:H2'	61:c:1281:G:H8	1.57	0.68
79:u:6:GLN:NE2	79:u:8:GLN:OE1	2.26	0.68
12:Aa:823:ARG:HH22	12:Aa:833:PRO:HD3	1.57	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:B:126:ARG:NH1	13:B:140:GLU:OE2	2.27	0.68
3:2:32:LYS:O	3:2:37:LYS:NZ	2.26	0.68
11:AA:549:U:H2'	11:AA:550:A:H8	1.59	0.68
21:Dd:24:U:OP2	61:c:1640:C:N4	2.26	0.68
61:c:862:A:O5'	74:p:16:ILE:HD11	1.94	0.68
61:c:992:A:H2	61:c:1012:U:H3	1.40	0.68
11:AA:358:G:N2	11:AA:361:A:OP2	2.26	0.68
11:AA:969:C:OP1	41:N:19:ASN:ND2	2.24	0.68
11:AA:2452:G:H3'	11:AA:2462:A:H8	1.59	0.68
11:AA:3243:A:H4'	26:FF:95:THR:HG22	1.75	0.68
14:BB:118:A:H5''	30:HH:253:PHE:HZ	1.59	0.68
64:f:58:LEU:HA	82:x:12:TYR:CE1	2.29	0.68
69:k:41:LEU:HB3	69:k:70:PHE:HE1	1.59	0.68
77:s:49:TYR:HB3	77:s:53:LEU:HD23	1.76	0.68
64:f:140:ARG:HB2	64:f:222:TYR:CE1	2.29	0.67
11:AA:1257:C:N4	11:AA:1261:G:H22	1.90	0.67
30:HH:187:THR:HG23	30:HH:189:GLU:H	1.60	0.67
61:c:918:U:H4'	75:q:18:ARG:HD3	1.77	0.67
80:v:86:ARG:HH21	80:v:89:ARG:HB3	1.57	0.67
10:A:56:ASP:O	10:A:60:LYS:NZ	2.27	0.67
11:AA:923:C:OP2	91:AA:3714:HOH:O	2.13	0.67
11:AA:2747:A:N1	91:AA:3768:HOH:O	2.28	0.67
12:Aa:14:ASP:HA	12:Aa:449:PRO:HG3	1.74	0.67
42:NN:49:LYS:HB3	42:NN:62:ASN:HA	1.76	0.67
52:T:73:LYS:O	52:T:76:GLN:NE2	2.27	0.67
61:c:1546:G:OP2	79:u:134:ARG:NH1	2.28	0.67
62:d:184:LEU:HG	82:x:45:ALA:HB2	1.76	0.67
11:AA:894:G:H4'	11:AA:895:A:H5'	1.75	0.67
11:AA:2568:C:N3	11:AA:2573:G:N1	2.36	0.67
11:AA:2943:G:N2	26:FF:251:CYS:SG	2.66	0.67
43:O:14:LEU:O	43:O:18:ILE:HG12	1.95	0.67
66:h:129:VAL:HG12	66:h:139:VAL:HG12	1.76	0.67
68:j:78:THR:HG22	68:j:79:LYS:H	1.59	0.67
10:A:44:SER:OG	11:AA:1315:U:OP2	2.10	0.67
11:AA:823:C:H5''	23:EE:19:HIS:CD2	2.30	0.67
11:AA:1498:A:OP1	19:D:6:THR:OG1	2.12	0.67
11:AA:3358:U:H2'	11:AA:3359:A:H8	1.60	0.67
19:D:160:GLU:HG2	19:D:163:ARG:HH21	1.60	0.67
38:LL:113:GLU:OE2	38:LL:115:ARG:NH1	2.27	0.67
61:c:976:G:N1	61:c:1023:A:O2'	2.26	0.67
61:c:1553:G:O6	76:r:43:ARG:NH1	2.27	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
76:r:62:ALA:HA	76:r:65:LEU:HG	1.76	0.67
4:3:67:THR:HG22	4:3:68:GLY:H	1.60	0.67
10:A:10:ASP:O	10:A:14:HIS:NE2	2.28	0.67
27:G:84:LEU:HB3	27:G:90:ARG:HG3	1.77	0.67
38:LL:114:VAL:HB	38:LL:124:ARG:HB2	1.77	0.67
61:c:29:U:H2'	61:c:30:G:H8	1.60	0.67
66:h:127:LYS:N	66:h:140:VAL:O	2.28	0.67
11:AA:2446:U:H2'	11:AA:2447:A:C8	2.30	0.67
24:Ee:15:LEU:HD12	24:Ee:16:ARG:H	1.60	0.67
61:c:1502:G:N2	61:c:1505:A:OP2	2.26	0.67
80:v:109:GLU:OE2	80:v:122:ARG:NE	2.20	0.67
11:AA:1301:A:H4'	11:AA:1302:A:H5''	1.75	0.66
11:AA:3020:U:H2'	11:AA:3033:A:H61	1.60	0.66
62:d:18:LEU:HD22	78:t:100:LEU:HD23	1.76	0.66
4:3:35:VAL:HG12	4:3:79:PHE:HB3	1.78	0.66
26:FF:85:VAL:HG22	26:FF:202:THR:HG22	1.76	0.66
61:c:536:C:H3'	71:m:175:ARG:HH21	1.60	0.66
61:c:1679:G:N2	61:c:1722:A:H62	1.93	0.66
64:f:140:ARG:HB3	64:f:221:THR:HB	1.77	0.66
11:AA:289:A:O2'	49:QQ:93:LYS:O	2.12	0.66
11:AA:1019:G:H2'	11:AA:1020:G:H8	1.60	0.66
15:Bb:55:U:O2	15:Bb:58:A:N7	2.29	0.66
39:M:36:GLY:HA3	39:M:40:HIS:CE1	2.30	0.66
62:d:38:PHE:HB3	62:d:47:VAL:HG23	1.75	0.66
12:Aa:653:VAL:HG21	12:Aa:691:VAL:HG13	1.77	0.66
55:W:14:LEU:HA	55:W:17:ARG:HG3	1.77	0.66
11:AA:1024:G:H21	11:AA:1027:A:H8	1.42	0.66
11:AA:2526:C:OP1	23:EE:37:ARG:NH1	2.28	0.66
11:AA:3092:C:O2'	11:AA:3094:A:OP2	2.12	0.66
20:DD:128:MET:HG3	20:DD:150:ILE:HD12	1.76	0.66
38:LL:5:GLN:HE22	38:LL:7:GLU:HB2	1.59	0.66
61:c:924:A:H2'	61:c:925:G:C8	2.31	0.66
11:AA:216:G:OP1	35:K:16:ARG:NH1	2.29	0.66
12:Aa:529:ILE:HD12	12:Aa:559:PRO:HB3	1.78	0.66
54:V:54:LYS:O	54:V:58:THR:HB	1.96	0.66
63:e:122:GLU:O	63:e:165:ARG:NH1	2.28	0.66
71:m:133:HIS:HA	71:m:162:SER:HB2	1.77	0.66
11:AA:63:A:N3	11:AA:78:U:O2'	2.25	0.66
11:AA:1940:G:H21	11:AA:3362:A:H8	1.43	0.66
11:AA:2989:U:O2'	26:FF:232:ARG:NH1	2.26	0.66
55:W:12:LEU:HB3	55:W:16:ARG:HH22	1.60	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:899:G:OP2	75:q:49:LYS:NZ	2.28	0.66
61:c:1344:A:H4'	81:w:54:GLY:HA3	1.78	0.66
61:c:1610:G:N7	77:s:14:LYS:NZ	2.44	0.66
65:g:10:LYS:NZ	81:w:113:ASP:OD2	2.28	0.66
11:AA:2393:G:OP2	91:AA:3715:HOH:O	2.13	0.66
11:AA:2457:G:H1	11:AA:2460:U:H5'	1.59	0.66
20:DD:12:PHE:HE1	20:DD:58:MET:HB3	1.60	0.66
49:QQ:15:GLN:HG3	53:U:52:PRO:HD2	1.76	0.66
61:c:922:G:H2'	61:c:923:A:H8	1.61	0.66
61:c:1280:4AC:H2'	61:c:1281:G:C8	2.31	0.66
11:AA:119:U:O2'	36:KK:133:LYS:NZ	2.29	0.66
11:AA:1737:U:O2	51:S:52:GLN:NE2	2.29	0.66
61:c:58:U:H3	61:c:89:G:H1	1.44	0.66
61:c:818:C:H2'	61:c:819:G:C8	2.31	0.66
73:o:75:VAL:HG11	73:o:84:ILE:HD12	1.78	0.66
11:AA:50:U:H2'	11:AA:51:A:H8	1.61	0.66
11:AA:269:G:H5''	49:QQ:14:LYS:HE2	1.77	0.66
11:AA:1493:G:N2	11:AA:1493:G:OP2	2.29	0.66
30:HH:164:LYS:HE2	30:HH:195:LEU:HD21	1.78	0.66
61:c:1557:U:H3	76:r:81:ARG:HE	1.44	0.66
70:l:110:ARG:HH12	70:l:122:GLY:H	1.42	0.66
61:c:871:G:H2'	61:c:872:G:C8	2.31	0.65
61:c:1454:G:OP1	76:r:81:ARG:NH2	2.28	0.65
12:Aa:155:VAL:HG21	12:Aa:185:VAL:HG11	1.77	0.65
36:KK:41:GLN:OE1	36:KK:44:ARG:NH2	2.29	0.65
50:R:51:TYR:HB3	50:R:67:MET:HB2	1.79	0.65
61:c:105:A:N6	61:c:308:C:O2	2.28	0.65
66:h:103:TYR:O	66:h:182:TYR:OH	2.14	0.65
74:p:62:GLN:HB2	74:p:65:VAL:HG12	1.79	0.65
11:AA:785:G:H5''	16:C:92:ARG:HH22	1.61	0.65
11:AA:1240:A:OP1	24:Ee:92:ARG:NH1	2.29	0.65
24:Ee:59:THR:HB	24:Ee:74:VAL:HB	1.78	0.65
59:a:2:VAL:N	59:a:90:HIS:O	2.29	0.65
61:c:537:G:OP2	71:m:175:ARG:NE	2.30	0.65
61:c:445:A:OP2	66:h:59:ARG:NH2	2.29	0.65
66:h:35:PRO:HD2	66:h:83:PRO:HG2	1.79	0.65
11:AA:591:G:N2	11:AA:612:U:OP1	2.27	0.65
12:Aa:77:LEU:HB2	12:Aa:100:ILE:HB	1.77	0.65
14:BB:42:A:OP2	86:BB:203:MG:MG	1.39	0.65
28:GG:35:VAL:HG21	28:GG:244:LEU:HD21	1.78	0.65
30:HH:146:LEU:HD22	30:HH:163:LEU:HD13	1.77	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:R:42:GLN:HA	50:R:45:LEU:HD13	1.78	0.65
61:c:1041:G:H2'	61:c:1042:G:C8	2.32	0.65
61:c:1424:A:H2'	61:c:1425:A:C8	2.32	0.65
11:AA:627:U:H4'	11:AA:1399:A:H1'	1.79	0.65
11:AA:2964:G:N2	11:AA:2967:A:OP2	2.22	0.65
61:c:324:U:OP1	73:o:133:LYS:NZ	2.30	0.65
64:f:102:VAL:HG11	64:f:129:ILE:HG13	1.78	0.65
77:s:44:LEU:HG	77:s:47:LYS:HG3	1.76	0.65
78:t:24:LEU:HB3	78:t:34:LEU:HD11	1.77	0.65
6:5:15:GLY:O	6:5:19:ARG:NH1	2.30	0.65
11:AA:2515:A:N1	11:AA:2594:C:N4	2.44	0.65
3:2:2:PRO:HB3	61:c:1142:A:H5''	1.79	0.65
11:AA:126:U:OP1	49:QQ:144:ARG:NH1	2.29	0.65
11:AA:797:U:O2	44:OO:12:ASN:ND2	2.29	0.65
76:r:123:TYR:OH	79:u:126:ARG:NH1	2.28	0.65
12:Aa:632:LYS:HB3	12:Aa:648:ASP:HB2	1.79	0.65
61:c:143:G:H1	61:c:171:A:N6	1.90	0.65
77:s:103:ASN:HA	77:s:106:LYS:HG2	1.79	0.65
12:Aa:70:ILE:HG21	12:Aa:540:ILE:HG21	1.78	0.64
24:Ee:19:GLY:HA2	24:Ee:50:THR:HB	1.77	0.64
69:k:121:VAL:O	69:k:125:ILE:HD12	1.97	0.64
11:AA:1168:U:H2'	11:AA:1169:A:H8	1.62	0.64
11:AA:2899:C:O2	38:LL:173:ARG:NH2	2.29	0.64
11:AA:2344:U:H2'	11:AA:2345:A:H8	1.63	0.64
61:c:205:U:H2'	61:c:206:A:H8	1.61	0.64
64:f:56:ILE:HG23	64:f:61:LEU:HB2	1.79	0.64
68:j:147:LEU:HD11	68:j:153:VAL:HB	1.79	0.64
13:B:62:ARG:NH1	17:CC:5:U:OP2	2.30	0.64
11:AA:110:G:OP2	44:OO:73:ARG:NH2	2.29	0.64
11:AA:2557:A:OP1	23:EE:69:TYR:OH	2.11	0.64
11:AA:2969:A:N7	23:EE:215:ASN:ND2	2.45	0.64
1:0:105:ARG:NH2	61:c:458:G:OP2	2.30	0.64
3:2:49:ALA:HB2	75:q:103:ARG:HD3	1.79	0.64
8:7:300:THR:OG1	8:7:314:GLN:OE1	2.16	0.64
11:AA:2219:A:H2'	11:AA:2220:A2M:H8	1.79	0.64
61:c:1672:G:H2'	61:c:1673:G:C8	2.32	0.64
79:u:73:MET:HB3	79:u:101:LEU:HD13	1.79	0.64
11:AA:84:U:O2'	11:AA:101:G:O6	2.14	0.64
11:AA:1477:A:OP1	11:AA:3075:G:O2'	2.14	0.64
11:AA:2881:C:OP1	26:FF:11:HIS:NE2	2.30	0.64
32:II:153:PRO:HB2	32:II:154:LEU:HD12	1.80	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
67:i:142:PRO:HD2	67:i:170:GLN:HE22	1.62	0.64
11:AA:3042:U:OP2	11:AA:3092:C:N4	2.29	0.64
11:AA:3386:G:OP1	45:P:10:ARG:NH1	2.30	0.64
17:CC:84:C:N3	35:K:116:LYS:NZ	2.43	0.64
22:E:8:GLN:HB3	22:E:64:ILE:HD11	1.78	0.64
36:KK:201:THR:OG1	36:KK:202:GLU:OE1	2.15	0.64
65:g:63:GLY:O	65:g:67:ASN:ND2	2.29	0.64
11:AA:86:G:O2'	11:AA:98:G:O6	2.15	0.64
11:AA:327:A:OP2	44:OO:31:LYS:NZ	2.31	0.64
11:AA:2697:A:H2'	11:AA:2698:G:H8	1.62	0.64
26:FF:103:THR:OG1	26:FF:147:GLU:OE1	2.16	0.64
39:M:19:LYS:HG2	39:M:25:HIS:HB2	1.80	0.64
61:c:77:U:O2'	61:c:78:A:OP2	2.16	0.64
11:AA:1084:A:H2'	11:AA:1085:A:C8	2.32	0.64
53:U:35:ASN:HA	53:U:38:LYS:HE2	1.80	0.64
58:Z:12:ARG:HG2	58:Z:15:ARG:HH21	1.61	0.64
71:m:48:GLN:HE22	71:m:52:ILE:HD11	1.62	0.64
78:t:69:ILE:O	78:t:74:GLN:NE2	2.31	0.64
5:4:49:ARG:NH1	67:i:61:TYR:OH	2.31	0.63
11:AA:406:G:OP1	11:AA:1415:U:O2'	2.14	0.63
11:AA:547:G:H2'	11:AA:548:G:C8	2.33	0.63
52:T:35:LYS:HD3	52:T:44:ILE:HD12	1.80	0.63
61:c:1211:A:N3	76:r:97:TYR:OH	2.28	0.63
74:p:3:ARG:HB3	74:p:6:SER:HB3	1.79	0.63
61:c:1380:U:OP1	77:s:12:LYS:NZ	2.28	0.63
65:g:109:LEU:HD22	65:g:175:VAL:HG11	1.78	0.63
6:5:23:VAL:HG22	72:n:61:TRP:CZ2	2.34	0.63
11:AA:1574:C:H3'	11:AA:1575:A:H8	1.64	0.63
11:AA:2470:C:H42	11:AA:2490:C:H5''	1.63	0.63
12:Aa:634:TRP:NE1	12:Aa:648:ASP:OD2	2.31	0.63
61:c:100:A2M:H62	61:c:385:A:H1'	1.61	0.63
11:AA:1147:G:OP1	48:Q:47:ARG:NH1	2.31	0.63
11:AA:1660:C:H2'	11:AA:1661:G:H8	1.62	0.63
11:AA:2768:U:H2'	11:AA:2769:A:H8	1.63	0.63
61:c:335:U:O2'	73:o:130:PRO:O	2.15	0.63
3:2:62:TYR:OH	75:q:115:ILE:N	2.32	0.63
11:AA:1596:C:H2'	11:AA:1597:C:C6	2.33	0.63
12:Aa:123:ASP:OD2	12:Aa:399:ARG:NH2	2.32	0.63
49:QQ:163:GLY:O	49:QQ:172:ARG:NH1	2.28	0.63
61:c:1523:G:OP1	61:c:1523:G:N2	2.28	0.63
61:c:1679:G:H21	61:c:1722:A:N6	1.97	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
66:h:185:GLY:HA2	66:h:189:LEU:HD12	1.79	0.63
10:A:25:LYS:HE2	11:AA:1175:C:H5''	1.81	0.63
11:AA:1786:G:H2'	11:AA:1787:A:C8	2.33	0.63
11:AA:2899:C:O2'	11:AA:2901:G:OP2	2.15	0.63
12:Aa:647:ILE:HG13	12:Aa:685:ARG:HE	1.63	0.63
26:FF:71:GLU:O	29:H:88:ARG:NH1	2.31	0.63
50:R:16:TYR:OH	50:R:89:LEU:O	2.16	0.63
79:u:62:THR:HG22	79:u:63:GLN:H	1.63	0.63
8:7:109:ASP:OD2	8:7:127:ARG:NH1	2.32	0.63
11:AA:700:C:H2'	11:AA:701:G:H8	1.61	0.63
11:AA:912:G:OP2	23:EE:9:ARG:NH2	2.31	0.63
11:AA:928:C:H2'	11:AA:929:A:C8	2.33	0.63
11:AA:1631:C:OP2	37:L:48:ARG:NH2	2.30	0.63
11:AA:2160:G:H2'	11:AA:2161:G:H8	1.64	0.63
18:Cc:51:U:H3	18:Cc:65:G:H1	1.45	0.63
20:DD:28:VAL:HA	20:DD:187:VAL:HA	1.78	0.63
61:c:694:U:N3	69:k:96:ARG:O	2.32	0.63
65:g:65:ARG:NH1	65:g:68:GLU:OE2	2.31	0.63
11:AA:417:A:H2'	11:AA:418:A:C8	2.34	0.63
14:BB:6:C:O2'	30:HH:50:ARG:NH2	2.30	0.63
49:QQ:116:LEU:C	49:QQ:117:ASN:HD22	2.07	0.63
61:c:400:A:H62	70:l:29:LEU:HD21	1.62	0.63
11:AA:47:C:H5''	44:OO:16:LYS:HG2	1.80	0.63
11:AA:307:A:H2'	11:AA:308:A:C8	2.33	0.63
11:AA:1236:G:N2	11:AA:1244:A:OP1	2.32	0.63
16:C:123:THR:OG1	16:C:125:ASP:OD1	2.16	0.63
26:FF:10:ARG:NH2	26:FF:263:SER:O	2.30	0.63
61:c:251:A:H2	66:h:131:LEU:HD12	1.64	0.63
11:AA:405:U:OP2	91:AA:3717:HOH:O	2.15	0.62
11:AA:535:G:OP1	22:E:146:LYS:NZ	2.30	0.62
11:AA:549:U:H2'	11:AA:550:A:C8	2.34	0.62
11:AA:687:U:OP2	44:OO:36:ARG:NH2	2.24	0.62
61:c:1514:U:H1'	65:g:6:SER:HA	1.81	0.62
3:2:27:SER:HB3	75:q:128:LYS:HE3	1.81	0.62
11:AA:664:U:H2'	11:AA:665:A:C8	2.34	0.62
11:AA:2373:A:O2'	11:AA:2823:G:N2	2.32	0.62
40:MM:30:LYS:HG3	40:MM:63:GLU:HG3	1.80	0.62
61:c:1260:U:O4	61:c:1261:G:O6	2.17	0.62
62:d:67:ILE:HD12	62:d:73:VAL:HG22	1.81	0.62
64:f:139:ILE:HD12	64:f:218:ILE:HD12	1.80	0.62
11:AA:2162:U:OP1	23:EE:234:LYS:NZ	2.28	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2555:G:N2	37:L:135:ARG:O	2.24	0.62
35:K:32:SER:HA	35:K:49:PRO:HA	1.81	0.62
75:q:26:THR:HG21	75:q:97:GLY:HA3	1.81	0.62
11:AA:1112:A:OP1	44:OO:5:LYS:NZ	2.33	0.62
33:J:88:MET:HA	33:J:120:LYS:HE3	1.81	0.62
45:P:13:THR:OG1	45:P:72:ARG:NH1	2.31	0.62
67:i:116:HIS:O	67:i:120:ILE:HG12	2.00	0.62
76:r:75:PRO:HA	76:r:93:VAL:HG23	1.82	0.62
5:4:20:GLY:HA2	5:4:66:LEU:HD22	1.79	0.62
8:7:158:PRO:HG2	8:7:206:PRO:HA	1.81	0.62
11:AA:714:G:HO2'	11:AA:753:C:HO2'	1.39	0.62
11:AA:1103:A:OP2	34:JJ:158:LYS:NZ	2.32	0.62
11:AA:1340:G:OP2	48:Q:61:LYS:NZ	2.32	0.62
11:AA:1669:C:H5'	51:S:30:LEU:HD11	1.80	0.62
12:Aa:427:PHE:CD2	12:Aa:462:PHE:HB3	2.34	0.62
38:LL:92:TYR:HB2	38:LL:142:ASP:HB3	1.81	0.62
65:g:28:GLU:OE1	72:n:56:LYS:NZ	2.32	0.62
83:y:106:THR:HG23	83:y:108:ALA:H	1.64	0.62
84:z:47:SER:OG	84:z:48:HIS:ND1	2.31	0.62
11:AA:361:A:O3'	54:V:45:ARG:NH2	2.32	0.62
11:AA:407:A:C2	17:CC:17:A:H1'	2.34	0.62
13:B:67:ILE:HD11	13:B:80:LYS:HB3	1.81	0.62
15:Bb:37:YYG:H142	15:Bb:38:A:C2	2.34	0.62
81:w:68:ARG:HH22	81:w:77:LYS:HD3	1.64	0.62
11:AA:312:C:H2'	11:AA:313:A:H8	1.64	0.62
11:AA:708:G:N2	11:AA:711:A:OP2	2.30	0.62
61:c:103:A:O3'	61:c:308:C:N4	2.33	0.62
61:c:874:C:OP1	63:e:159:SER:OG	2.15	0.62
61:c:1502:G:N7	80:v:102:ARG:NH2	2.46	0.62
69:k:47:ARG:HE	69:k:48:GLU:H	1.47	0.62
4:3:34:ASP:OD2	4:3:80:ARG:NH2	2.28	0.62
11:AA:159:A:H2'	11:AA:160:G:H8	1.65	0.62
11:AA:1119:C:H2'	11:AA:1120:A:H8	1.65	0.62
61:c:811:A:N6	69:k:110:GLN:O	2.33	0.62
63:e:81:PHE:CD2	63:e:82:ARG:HG3	2.33	0.62
11:AA:2986:U:H2'	11:AA:2987:A:H8	1.64	0.62
12:Aa:335:LEU:HD23	12:Aa:338:ILE:HD11	1.81	0.62
40:MM:153:ARG:NH1	40:MM:157:TYR:OH	2.33	0.62
68:j:20:ASP:HB2	68:j:23:ARG:HG2	1.81	0.62
68:j:51:LYS:HB3	68:j:112:VAL:HB	1.81	0.62
83:y:15:ASN:ND2	83:y:72:CYS:O	2.20	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:HH:83:LEU:HB3	30:HH:88:ILE:HB	1.82	0.62
52:T:41:LEU:HD11	52:T:43:LYS:HE2	1.81	0.62
61:c:1035:G:OP2	74:p:9:LYS:NZ	2.33	0.62
67:i:44:ASN:ND2	67:i:69:PHE:O	2.33	0.62
67:i:97:LEU:HD11	67:i:194:LEU:HD11	1.80	0.62
79:u:70:VAL:O	79:u:74:GLN:NE2	2.33	0.62
11:AA:806:A:N3	11:AA:2812:C:O2'	2.31	0.61
22:E:25:PHE:O	22:E:41:TYR:OH	2.17	0.61
37:L:27:LYS:NZ	37:L:93:LYS:O	2.32	0.61
61:c:264:G:H5''	61:c:265:A:H5''	1.82	0.61
73:o:23:PRO:O	73:o:26:LYS:NZ	2.33	0.61
6:5:42:CYS:SG	61:c:1433:G:N2	2.70	0.61
11:AA:1427:U:OP2	39:M:4:ARG:NH1	2.32	0.61
82:x:79:LEU:HD22	82:x:82:VAL:HG21	1.81	0.61
11:AA:2214:A:N7	91:AA:3783:HOH:O	2.31	0.61
11:AA:2661:G:H2'	11:AA:2662:G:H8	1.64	0.61
11:AA:2722:U:O2'	25:F:88:ARG:O	2.17	0.61
61:c:4:C:O2'	71:m:17:ARG:NH2	2.32	0.61
66:h:139:VAL:HG13	66:h:150:PRO:HG3	1.81	0.61
67:i:93:LEU:HD21	67:i:137:ILE:HD11	1.82	0.61
17:CC:8:C:H2'	17:CC:9:A:C8	2.34	0.61
42:NN:16:LYS:HE2	42:NN:130:VAL:HG21	1.82	0.61
64:f:125:ILE:O	64:f:129:ILE:HD12	2.00	0.61
73:o:17:PRO:HG3	73:o:63:LEU:HD11	1.82	0.61
79:u:110:ARG:NH2	79:u:111:ASP:OD1	2.29	0.61
11:AA:1237:G:O6	11:AA:1251:A:N1	2.34	0.61
11:AA:2810:C:OP2	11:AA:2955:U:O2'	2.17	0.61
37:L:22:LYS:NZ	37:L:132:SER:O	2.34	0.61
60:b:46:THR:OG1	60:b:57:CYS:SG	2.58	0.61
61:c:1202:A:N6	61:c:1457:C:OP1	2.32	0.61
11:AA:2452:G:H2'	11:AA:2462:A:H1'	1.81	0.61
61:c:1471:A:OP1	67:i:185:ARG:NH2	2.28	0.61
62:d:36:TYR:OH	82:x:70:ASN:ND2	2.26	0.61
80:v:7:ARG:HH21	80:v:67:MET:HA	1.64	0.61
8:7:209:THR:HA	8:7:225:LEU:H	1.64	0.61
11:AA:542:G:H1	11:AA:549:U:H3	1.49	0.61
61:c:1612:U:OP1	67:i:92:ARG:NH1	2.33	0.61
61:c:1772:C:C4	61:c:1773:4AC:HM73	2.36	0.61
75:q:80:HIS:HA	75:q:113:GLY:O	2.01	0.61
5:4:42:ARG:NH2	5:4:58:GLU:OE2	2.34	0.61
8:7:9:LEU:HB3	8:7:311:ARG:HH22	1.65	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2552:C:H2'	43:O:50:VAL:HG11	1.81	0.61
11:AA:3308:C:O2'	13:B:69:ARG:O	2.18	0.61
12:Aa:588:LEU:HD13	12:Aa:686:VAL:HG13	1.83	0.61
25:F:27:LEU:HD11	30:HH:34:LYS:HA	1.83	0.61
61:c:455:C:H3'	61:c:456:A:H8	1.65	0.61
61:c:600:U:H2'	61:c:601:A:H8	1.64	0.61
79:u:41:ARG:NH2	80:v:36:ILE:O	2.34	0.61
8:7:224:ASN:HD21	8:7:227:ALA:HB3	1.65	0.61
11:AA:20:A:H2'	11:AA:21:G:C8	2.36	0.61
11:AA:1764:U:OP1	19:D:43:LYS:NZ	2.27	0.61
11:AA:1899:G:O2'	11:AA:2334:U:O4	2.18	0.61
12:Aa:404:THR:OG1	12:Aa:447:ASP:OD1	2.19	0.61
34:JJ:48:ASN:ND2	34:JJ:182:ASP:OD2	2.34	0.61
69:k:37:GLU:HG3	69:k:73:VAL:HG11	1.82	0.61
11:AA:1597:C:H5'	11:AA:1696:A:H1'	1.83	0.61
11:AA:2351:U:H2'	11:AA:2352:A:H8	1.66	0.61
61:c:272:U:H2'	61:c:273:G:H8	1.66	0.61
61:c:447:U:OP1	66:h:49:ARG:NH1	2.34	0.61
11:AA:38:U:OP1	91:AA:3718:HOH:O	2.16	0.60
11:AA:1472:U:H2'	11:AA:1473:G:H8	1.65	0.60
11:AA:1717:U:H2'	11:AA:1718:G:C8	2.36	0.60
11:AA:2389:C:H5''	13:B:66:SER:HA	1.81	0.60
57:Y:97:ARG:NE	57:Y:122:ARG:HB3	2.16	0.60
61:c:534:A:OP1	71:m:168:ARG:NH1	2.34	0.60
61:c:1243:G:H5''	61:c:1244:A:H3'	1.83	0.60
11:AA:282:G:OP1	87:AA:3402:SPD:N1	2.34	0.60
11:AA:800:G:H22	28:GG:101:ALA:HA	1.65	0.60
11:AA:2101:C:H2'	11:AA:2102:U:H6	1.66	0.60
11:AA:2180:G:OP1	23:EE:174:ARG:NH2	2.34	0.60
17:CC:75:G:OP2	35:K:74:TYR:OH	2.18	0.60
61:c:323:A:O2'	61:c:346:G:N2	2.34	0.60
61:c:1213:G:HO2'	61:c:1244:A:H62	1.46	0.60
61:c:1357:A:O2'	80:v:126:GLU:OE1	2.19	0.60
64:f:159:THR:O	64:f:220:ASN:ND2	2.34	0.60
69:k:49:ILE:HG23	69:k:175:LYS:HD2	1.82	0.60
11:AA:985:U:H2'	11:AA:986:U:H6	1.65	0.60
11:AA:2836:C:H5	11:AA:2852:C:H42	1.49	0.60
34:JJ:151:ARG:NH1	34:JJ:206:LYS:O	2.34	0.60
37:L:9:LYS:NZ	37:L:83:THR:O	2.34	0.60
49:QQ:116:LEU:O	49:QQ:117:ASN:ND2	2.33	0.60
61:c:625:C:H2'	61:c:626:U:C6	2.36	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:e:69:CYS:SG	75:q:114:ARG:NE	2.72	0.60
68:j:39:GLU:HB3	68:j:46:LYS:HG3	1.82	0.60
11:AA:411:U:H2'	11:AA:412:G:C8	2.37	0.60
11:AA:2103:U:H2'	11:AA:2104:A:H8	1.66	0.60
11:AA:3291:G:H2'	11:AA:3292:A:C8	2.36	0.60
14:BB:74:C:H2'	14:BB:75:G:C8	2.36	0.60
15:Bb:22:G:H2'	15:Bb:23:A:H8	1.65	0.60
61:c:1613:U:OP1	67:i:92:ARG:NH2	2.34	0.60
67:i:197:GLU:OE1	67:i:208:SER:OG	2.17	0.60
2:1:77:ARG:NH2	61:c:1534:G:N7	2.38	0.60
11:AA:67:A:O2'	11:AA:315:C:O2	2.17	0.60
11:AA:627:U:H2'	11:AA:628:A:C8	2.37	0.60
11:AA:2129:U:H2'	11:AA:2130:G:C8	2.35	0.60
11:AA:2512:C:H5''	36:KK:249:ARG:HH22	1.66	0.60
11:AA:3016:A:H2'	11:AA:3017:A:H8	1.66	0.60
29:H:59:MET:HE3	29:H:73:VAL:HG12	1.83	0.60
38:LL:93:VAL:HG22	57:Y:82:LEU:HB3	1.83	0.60
40:MM:140:THR:HG21	40:MM:148:VAL:HG21	1.83	0.60
61:c:751:G:H2'	61:c:752:A:H8	1.67	0.60
66:h:192:ILE:HD13	66:h:238:LEU:HG	1.82	0.60
11:AA:633:C:O2'	50:R:21:ARG:O	2.20	0.60
11:AA:650:OMC:H2'	11:AA:651:G:C8	2.36	0.60
11:AA:3041:U:OP1	29:H:12:ARG:NH1	2.35	0.60
14:BB:107:C:H2'	14:BB:108:A:H8	1.67	0.60
15:Bb:28:C:H2'	15:Bb:29:A:H8	1.65	0.60
19:D:44:LEU:HB3	19:D:49:THR:HB	1.82	0.60
26:FF:92:TYR:HB2	26:FF:157:VAL:HB	1.82	0.60
42:NN:20:ASN:HB3	42:NN:126:ASP:HB3	1.83	0.60
61:c:567:A:OP1	84:z:70:LYS:NZ	2.35	0.60
61:c:1356:U:H1'	61:c:1368:G:H22	1.65	0.60
61:c:1721:A:O2'	68:j:64:LYS:NZ	2.26	0.60
11:AA:874:U:N3	11:AA:2978:U:OP1	2.26	0.60
11:AA:2428:U:H2'	11:AA:2429:G:H8	1.65	0.60
11:AA:2880:U:OP1	29:H:47:ASN:ND2	2.19	0.60
14:BB:112:G:H2'	14:BB:113:C:C6	2.36	0.60
26:FF:301:THR:HG23	26:FF:303:LYS:HG2	1.83	0.60
58:Z:1:MET:HG2	61:c:1642:G:H5'	1.84	0.60
61:c:960:U:OP2	74:p:55:ARG:NH1	2.34	0.60
83:y:31:SER:H	83:y:34:ILE:HD12	1.67	0.60
11:AA:616:G:H2'	11:AA:617:G:H8	1.66	0.60
11:AA:2116:G:OP1	11:AA:2118:C:N4	2.34	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:U:44:VAL:HA	53:U:47:ILE:HG12	1.83	0.60
61:c:127:G:O6	61:c:179:A:N6	2.34	0.60
61:c:525:A:H2'	61:c:526:A:C8	2.37	0.60
61:c:1171:A:H2'	61:c:1172:G:C8	2.36	0.60
65:g:136:VAL:HG13	65:g:184:ILE:HD11	1.84	0.60
6:5:40:ARG:HH11	81:w:68:ARG:HB3	1.67	0.60
8:7:180:ALA:HB3	8:7:189:GLU:H	1.65	0.60
11:AA:1009:A:H2'	11:AA:1010:G:C8	2.37	0.60
11:AA:3119:U:H4'	57:Y:104:PRO:HG2	1.84	0.60
11:AA:3333:G:N2	11:AA:3369:G:O2'	2.34	0.60
12:Aa:29:ASP:O	12:Aa:159:LYS:NZ	2.27	0.60
61:c:859:A:O2'	74:p:73:ARG:NH1	2.33	0.60
63:e:121:ILE:HD11	63:e:165:ARG:HB3	1.83	0.60
64:f:224:PHE:HE2	83:y:99:PHE:HZ	1.50	0.60
66:h:87:MET:HE1	66:h:123:LEU:HB2	1.83	0.60
11:AA:1152:G:OP2	11:AA:1152:G:N2	2.34	0.60
11:AA:1747:G:H21	55:W:2:ALA:HB3	1.66	0.60
11:AA:2535:A:O2'	11:AA:2536:A:O5'	2.19	0.60
31:I:1:MET:HG2	31:I:15:PRO:HG3	1.84	0.60
61:c:1147:A:O2'	61:c:1636:C:OP2	2.20	0.60
66:h:208:VAL:HG21	66:h:222:LEU:HD13	1.83	0.60
7:6:55:ARG:NH2	61:c:558:U:OP2	2.35	0.59
8:7:89:LEU:HD11	8:7:110:VAL:HG11	1.84	0.59
10:A:7:VAL:HB	10:A:33:ILE:HD13	1.84	0.59
11:AA:1136:A:H4'	11:AA:2640:A2M:H2	1.83	0.59
11:AA:2218:G:H2'	11:AA:2219:A:H8	1.67	0.59
14:BB:84:A:H2'	14:BB:85:G:C8	2.36	0.59
17:CC:103:G:OP2	17:CC:105:A:O2'	2.19	0.59
61:c:146:U:H2'	61:c:147:A:H8	1.67	0.59
61:c:207:U:H2'	61:c:208:U:C6	2.36	0.59
61:c:478:A:O2'	71:m:124:HIS:ND1	2.34	0.59
61:c:1543:A:N6	61:c:1568:C:O2	2.35	0.59
62:d:56:LYS:HE3	82:x:82:VAL:HG11	1.83	0.59
71:m:161:THR:HG22	71:m:162:SER:H	1.66	0.59
75:q:18:ARG:HB2	75:q:29:HIS:O	2.01	0.59
77:s:50:GLU:OE1	77:s:114:ARG:NH1	2.35	0.59
11:AA:268:A:OP1	49:QQ:47:LYS:NZ	2.33	0.59
11:AA:2154:U:H2'	11:AA:2155:G:H8	1.67	0.59
11:AA:2744:U:H2'	11:AA:2745:G:C8	2.37	0.59
61:c:419:G:H2'	61:c:420:A2M:H8	1.84	0.59
71:m:106:GLU:O	71:m:112:GLN:NE2	2.35	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:34:ASN:ND2	61:c:532:U:O2	2.34	0.59
11:AA:1635:G:N2	11:AA:1638:A:OP2	2.20	0.59
50:R:31:LYS:NZ	50:R:78:SER:O	2.35	0.59
61:c:29:U:H2'	61:c:30:G:C8	2.37	0.59
61:c:900:A:H2'	61:c:901:G:H8	1.67	0.59
61:c:1146:G:H2'	61:c:1147:A:C8	2.37	0.59
61:c:1471:A:N6	61:c:1538:U:H3	1.99	0.59
63:e:129:THR:OG1	63:e:133:TYR:HB2	2.02	0.59
82:x:55:LEU:HD13	82:x:65:SER:HB2	1.85	0.59
1:0:7:ILE:HG13	1:0:27:VAL:HG13	1.84	0.59
11:AA:1106:G:O3'	41:N:25:LYS:NZ	2.29	0.59
11:AA:2471:U:C4	11:AA:2473:C:C4	2.91	0.59
15:Bb:37:YYG:H2'	15:Bb:38:A:C8	2.38	0.59
61:c:1474:G:H2'	61:c:1475:A:H8	1.65	0.59
61:c:1482:C:OP2	61:c:1521:G:N2	2.36	0.59
8:7:19:TRP:HB3	8:7:38:ARG:HB2	1.85	0.59
8:7:200:ASN:ND2	8:7:240:VAL:O	2.35	0.59
11:AA:407:A:H4'	11:AA:1397:C:H5'	1.85	0.59
12:Aa:439:GLY:O	12:Aa:440:ARG:HG2	2.03	0.59
15:Bb:43:G:H2'	15:Bb:44:A:C8	2.38	0.59
23:EE:250:GLN:HG3	23:EE:251:LYS:H	1.65	0.59
52:T:102:GLU:HB2	52:T:105:ARG:HH21	1.68	0.59
11:AA:1592:G:OP1	51:S:58:ARG:NH2	2.30	0.59
15:Bb:8:U:O2'	15:Bb:21:A:N1	2.33	0.59
24:Ee:115:GLN:HG2	24:Ee:116:MET:HE2	1.84	0.59
11:AA:1447:G:OP1	13:B:65:SER:OG	2.20	0.59
11:AA:1460:A:H2'	11:AA:1461:A:H8	1.66	0.59
11:AA:3015:G:H2'	11:AA:3016:A:H8	1.68	0.59
12:Aa:164:LEU:HD21	12:Aa:174:LEU:HD22	1.83	0.59
49:QQ:94:TYR:O	49:QQ:96:ARG:N	2.33	0.59
61:c:1606:C:H2'	61:c:1607:G:C8	2.38	0.59
11:AA:1211:U:H2'	11:AA:1212:A:C8	2.37	0.59
11:AA:1213:G:H4'	22:E:90:MET:HG3	1.84	0.59
11:AA:1644:C:H5''	11:AA:1645:U:H5''	1.85	0.59
11:AA:2556:C:OP1	51:S:88:ARG:NH2	2.36	0.59
28:GG:156:LEU:HD12	28:GG:159:ILE:HD12	1.83	0.59
61:c:568:G:N7	84:z:69:ARG:NH1	2.50	0.59
61:c:1176:G:OP2	79:u:139:LYS:NZ	2.35	0.59
61:c:1207:C:N3	61:c:1455:G:N1	2.49	0.59
66:h:44:LEU:HD23	66:h:82:TYR:HB3	1.85	0.59
5:4:38:ARG:NH2	5:4:60:GLU:OE2	2.34	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:589:A:H1'	11:AA:1337:A:H5''	1.84	0.59
11:AA:594:U:P	11:AA:609:G:H1	2.26	0.59
11:AA:1203:A:N3	11:AA:2855:U:O2'	2.33	0.59
11:AA:3306:U:OP1	26:FF:269:GLN:NE2	2.33	0.59
45:P:10:ARG:HE	45:P:44:MET:HE1	1.68	0.59
61:c:1269:OMU:H5''	61:c:1432:U:H5''	1.84	0.59
7:6:42:ARG:HG3	7:6:43:ARG:HG3	1.85	0.59
11:AA:107:A:OP1	44:OO:39:ARG:NH1	2.35	0.59
11:AA:501:A:H2'	11:AA:502:U:C6	2.37	0.59
11:AA:1214:U:OP1	22:E:137:ARG:NH2	2.35	0.59
11:AA:1497:C:H2'	11:AA:1498:A:H8	1.68	0.59
38:LL:101:VAL:HG22	38:LL:114:VAL:HG22	1.83	0.59
57:Y:127:LEU:HG	57:Y:128:LYS:HG2	1.84	0.59
61:c:560:U:H2'	61:c:561:G:H8	1.68	0.59
61:c:890:C:H2'	61:c:891:A:H8	1.68	0.59
61:c:923:A:H2'	61:c:924:A:C8	2.37	0.59
61:c:1474:G:H2'	61:c:1475:A:C8	2.37	0.59
61:c:1486:G:N2	61:c:1592:A:O3'	2.35	0.59
61:c:1566:U:H5''	79:u:39:GLY:H	1.67	0.59
67:i:51:VAL:HG22	67:i:131:GLN:HB2	1.84	0.59
70:l:11:ARG:O	73:o:133:LYS:NZ	2.36	0.59
84:z:107:PHE:HD1	84:z:123:LYS:HB3	1.66	0.59
11:AA:649:A2M:OP2	11:AA:2868:U:O2'	2.20	0.58
11:AA:1155:C:O2'	11:AA:1197:A:N1	2.32	0.58
11:AA:2697:A:H2'	11:AA:2698:G:C8	2.36	0.58
32:II:170:LYS:HB3	32:II:172:HIS:CE1	2.38	0.58
61:c:923:A:H2'	61:c:924:A:H8	1.68	0.58
61:c:1381:U:O4	61:c:1382:A:N6	2.34	0.58
66:h:182:TYR:HB2	66:h:228:ILE:HD13	1.85	0.58
70:l:189:LEU:HD23	70:l:193:LEU:HD23	1.85	0.58
3:2:10:ARG:NH1	61:c:1790:A:OP1	2.35	0.58
11:AA:37:U:OP1	11:AA:934:G:N2	2.31	0.58
11:AA:1551:C:HO2'	11:AA:2170:U:HO2'	1.47	0.58
11:AA:2176:U:OP1	23:EE:54:ARG:NH2	2.34	0.58
11:AA:2466:G:H21	11:AA:2490:C:H42	1.51	0.58
11:AA:3121:U:H1'	11:AA:3122:A:H5''	1.85	0.58
25:F:158:THR:OG1	40:MM:169:LYS:NZ	2.36	0.58
61:c:160:C:O2'	68:j:95:LYS:NZ	2.36	0.58
11:AA:68:C:N4	11:AA:314:U:O2'	2.34	0.58
11:AA:94:G:H2'	11:AA:95:A:C8	2.38	0.58
11:AA:394:G:N1	11:AA:397:A:OP2	2.31	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:919:U:OP2	91:AA:3714:HOH:O	2.17	0.58
11:AA:1410:U:H4'	48:Q:75:LEU:HD11	1.86	0.58
11:AA:2376:G:H2'	11:AA:2377:G:C8	2.38	0.58
61:c:91:G:OP1	61:c:397:A:N6	2.31	0.58
61:c:930:A:N3	63:e:111:ARG:NH2	2.51	0.58
69:k:86:GLN:HG3	69:k:87:ASP:H	1.68	0.58
11:AA:528:U:H2'	11:AA:529:A:H8	1.67	0.58
11:AA:1264:G:N2	11:AA:1265:U:O4	2.36	0.58
11:AA:1834:U:OP2	56:X:10:LYS:NZ	2.34	0.58
11:AA:2100:A:H2'	11:AA:2101:C:C6	2.39	0.58
11:AA:2101:C:H2'	11:AA:2102:U:C6	2.38	0.58
11:AA:2156:C:OP2	23:EE:241:ARG:NH2	2.36	0.58
11:AA:2722:U:H4'	25:F:88:ARG:HB2	1.83	0.58
11:AA:3006:A:H2'	11:AA:3007:U:O4'	2.03	0.58
13:B:60:PHE:HB3	13:B:64:ASN:HB3	1.85	0.58
28:GG:142:VAL:HB	28:GG:145:ILE:HG21	1.85	0.58
52:T:28:LEU:HG	52:T:32:LYS:HE3	1.85	0.58
55:W:17:ARG:NH2	55:W:19:ASP:OD2	2.36	0.58
61:c:44:U:C2	61:c:436:A2M:H2	2.38	0.58
61:c:447:U:O2'	66:h:27:TYR:O	2.22	0.58
63:e:158:SER:HA	63:e:161:ILE:HB	1.84	0.58
70:l:81:VAL:HG22	70:l:102:VAL:HG12	1.85	0.58
11:AA:1322:U:O2	22:E:108:GLN:NE2	2.30	0.58
11:AA:1460:A:H2'	11:AA:1461:A:C8	2.39	0.58
11:AA:2457:G:N2	11:AA:2486:A:N1	2.50	0.58
11:AA:3268:A:O2'	11:AA:3269:U:O2	2.18	0.58
22:E:146:LYS:HG2	22:E:147:ASP:OD1	2.04	0.58
52:T:78:LYS:HA	52:T:81:ARG:HD2	1.86	0.58
61:c:1229:G:N2	61:c:1255:G:O2'	2.37	0.58
61:c:1591:C:H2'	61:c:1592:A:C8	2.38	0.58
62:d:120:LEU:HD21	62:d:144:ILE:HD12	1.84	0.58
11:AA:1724:U:OP2	19:D:128:LYS:NZ	2.35	0.58
12:Aa:184:SER:OG	20:DD:137:GLN:OE1	2.20	0.58
14:BB:101:G:N7	22:E:52:LYS:NZ	2.48	0.58
15:Bb:27:C:H2'	15:Bb:28:C:C6	2.38	0.58
26:FF:113:GLU:OE2	26:FF:166:ILE:N	2.37	0.58
61:c:1224:A:N1	61:c:1261:G:C6	2.71	0.58
79:u:41:ARG:HG2	79:u:85:PHE:HZ	1.68	0.58
11:AA:874:U:OP2	11:AA:1907:C:O2'	2.16	0.58
11:AA:3352:U:O2'	70:l:162:ALA:O	2.18	0.58
12:Aa:433:ARG:HB3	12:Aa:457:VAL:HB	1.86	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:W:14:LEU:HD11	55:W:52:TYR:CG	2.39	0.58
70:l:103:GLN:HE22	70:l:166:TYR:HD1	1.52	0.58
79:u:42:TYR:HA	79:u:85:PHE:HE2	1.68	0.58
11:AA:1018:G:H2'	11:AA:1019:G:O4'	2.04	0.58
11:AA:2490:C:H1'	11:AA:2491:A:C8	2.39	0.58
11:AA:2763:U:O2	87:AA:3403:SPD:N1	2.37	0.58
11:AA:2767:U:H2'	11:AA:2768:U:C6	2.39	0.58
13:B:119:VAL:HG22	13:B:146:ILE:HG23	1.86	0.58
20:DD:41:VAL:HG21	20:DD:185:LEU:HD12	1.86	0.58
25:F:142:SER:OG	25:F:144:GLU:OE1	2.22	0.58
61:c:246:G:N2	73:o:38:ALA:O	2.36	0.58
61:c:817:A:H61	61:c:854:U:H3	1.51	0.58
61:c:1388:A:H5''	78:t:48:ASN:HD22	1.69	0.58
69:k:129:LEU:HD21	69:k:169:PHE:HB3	1.85	0.58
71:m:176:ASN:OD1	71:m:179:ARG:NH1	2.37	0.58
7:6:47:VAL:HG23	7:6:49:LEU:HD22	1.86	0.58
11:AA:1045:C:OP1	40:MM:133:GLN:NE2	2.37	0.58
11:AA:2862:U:H4'	40:MM:106:ALA:HB1	1.86	0.58
28:GG:16:THR:HG23	28:GG:18:ASN:H	1.68	0.58
80:v:28:LEU:HD12	80:v:30:VAL:H	1.68	0.58
84:z:42:PRO:HB3	84:z:81:LYS:HD2	1.85	0.58
2:1:90:LYS:NZ	2:1:103:ARG:O	2.37	0.58
11:AA:207:U:H2'	11:AA:208:C:C6	2.39	0.58
11:AA:1523:U:OP2	11:AA:1604:G:O2'	2.21	0.58
11:AA:2830:G:H1'	11:AA:2861:U:C2	2.38	0.58
13:B:118:GLN:HG2	13:B:147:GLU:HG2	1.86	0.58
15:Bb:70:C:H2'	15:Bb:71:G:C8	2.38	0.58
37:L:29:HIS:CE1	37:L:42:LEU:HD13	2.39	0.58
61:c:14:C:H5''	64:f:203:LYS:HD3	1.86	0.58
61:c:912:U:O2	61:c:914:G:N1	2.36	0.58
61:c:916:U:H3	75:q:41:ARG:NH1	2.01	0.58
63:e:133:TYR:CD2	63:e:181:LEU:HG	2.39	0.58
67:i:50:GLU:O	67:i:128:ASN:ND2	2.36	0.58
4:3:59:CYS:SG	4:3:60:SER:N	2.77	0.57
7:6:23:LYS:HG3	7:6:24:THR:H	1.69	0.57
7:6:39:LEU:HA	7:6:42:ARG:HG2	1.84	0.57
11:AA:1437:OMC:HM22	11:AA:1438:U:H5'	1.86	0.57
13:B:120:ASN:OD1	13:B:145:HIS:HB2	2.04	0.57
17:CC:67:U:H2'	17:CC:68:G:H8	1.68	0.57
49:QQ:99:ARG:NH2	49:QQ:118:SER:O	2.37	0.57
52:T:92:LEU:HB3	52:T:96:GLU:HG3	1.85	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:52:U:H2'	61:c:53:G:H8	1.69	0.57
61:c:1104:U:OP1	84:z:14:LYS:NZ	2.33	0.57
62:d:112:THR:HG23	62:d:113:ARG:HG3	1.85	0.57
69:k:58:LEU:HD12	69:k:90:VAL:HG22	1.85	0.57
78:t:16:LEU:O	78:t:20:TYR:HB2	2.04	0.57
11:AA:118:U:O2	11:AA:121:A:H5''	2.04	0.57
11:AA:277:G:N2	49:QQ:95:GLN:OE1	2.37	0.57
11:AA:2207:A:N1	91:AA:3807:HOH:O	2.32	0.57
11:AA:2344:U:H2'	11:AA:2345:A:C8	2.40	0.57
11:AA:2882:U:H2'	11:AA:2883:U:C6	2.40	0.57
11:AA:2945:G:O2'	11:AA:2948:OMC:OP2	2.22	0.57
11:AA:3295:A:H2'	11:AA:3296:A:C8	2.38	0.57
30:HH:68:THR:OG1	30:HH:71:GLY:O	2.22	0.57
36:KK:190:VAL:HG23	36:KK:192:GLN:HG3	1.87	0.57
61:c:591:A:H2'	61:c:592:A:C8	2.39	0.57
2:l:41:ILE:HD12	79:u:57:ARG:HE	1.69	0.57
11:AA:399:A:O2'	11:AA:403:C:O2'	2.13	0.57
16:C:126:GLN:HB3	16:C:130:ARG:HH12	1.69	0.57
23:EE:113:VAL:HG12	23:EE:166:ILE:HD13	1.85	0.57
30:HH:60:ILE:HB	30:HH:80:SER:HB2	1.84	0.57
30:HH:286:VAL:HG13	40:MM:206:LEU:HD11	1.85	0.57
51:S:74:ARG:HG2	51:S:75:ALA:H	1.68	0.57
61:c:354:C:H5''	70:l:16:ALA:HB2	1.86	0.57
61:c:1410:A:H2'	61:c:1411:A:C8	2.39	0.57
61:c:1535:U:O2'	61:c:1536:G:N3	2.37	0.57
78:t:69:ILE:HD12	78:t:71:PHE:HE1	1.68	0.57
4:3:3:LEU:HA	83:y:22:LYS:HG3	1.86	0.57
8:7:200:ASN:HD21	8:7:241:PHE:HD1	1.51	0.57
11:AA:428:A:H2'	11:AA:429:U:C6	2.39	0.57
11:AA:656:A:H2'	11:AA:657:A:H8	1.69	0.57
11:AA:1108:U:H2'	11:AA:1109:U:C6	2.39	0.57
11:AA:2333:C:OP2	91:AA:3719:HOH:O	2.17	0.57
61:c:1174:C:O2'	61:c:1196:A:N6	2.38	0.57
11:AA:82:C:H4'	49:QQ:204:LYS:HE3	1.86	0.57
11:AA:595:G:OP1	34:JJ:33:ARG:NH2	2.32	0.57
11:AA:656:A:H2'	11:AA:657:A:C8	2.39	0.57
11:AA:1907:C:O2	26:FF:240:ARG:NH2	2.37	0.57
11:AA:2462:A:H5'	11:AA:2463:G:H3'	1.86	0.57
11:AA:3026:G:N2	11:AA:3029:A:OP2	2.35	0.57
12:Aa:61:LYS:NZ	12:Aa:65:GLU:OE2	2.37	0.57
43:O:28:LYS:HA	43:O:31:VAL:HG12	1.87	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:340:U:H2'	61:c:341:A:C8	2.40	0.57
61:c:610:G:H21	84:z:19:ARG:HH22	1.51	0.57
64:f:108:ASN:OD1	64:f:141:ARG:NH2	2.38	0.57
9:8:94:LYS:HB2	61:c:1247:U:H5''	1.87	0.57
11:AA:431:U:H2'	11:AA:432:G:H8	1.68	0.57
11:AA:567:G:H2'	11:AA:568:G:C8	2.40	0.57
11:AA:1277:C:H2'	11:AA:1278:A:H8	1.68	0.57
11:AA:2471:U:N3	11:AA:2473:C:C4	2.72	0.57
87:AA:3405:SPD:N1	14:BB:89:G:N7	2.53	0.57
12:Aa:675:PRO:HD3	12:Aa:681:MET:HE2	1.87	0.57
38:LL:10:ILE:HB	38:LL:53:ILE:HB	1.86	0.57
61:c:1223:A:H2'	61:c:1224:A:C8	2.40	0.57
61:c:1584:G:N2	61:c:1611:A:OP2	2.28	0.57
63:e:88:VAL:HA	63:e:98:THR:HG22	1.86	0.57
68:j:63:MET:HE2	68:j:106:LEU:HD11	1.85	0.57
71:m:136:VAL:HG21	71:m:146:PHE:CE2	2.39	0.57
11:AA:129:U:H2'	11:AA:130:A:C8	2.39	0.57
11:AA:713:U:OP1	44:OO:174:ARG:NH1	2.37	0.57
11:AA:2677:G:N2	11:AA:2680:A:N7	2.53	0.57
14:BB:118:A:H5''	30:HH:253:PHE:CZ	2.37	0.57
46:PP:21:VAL:HA	46:PP:65:LEU:HA	1.85	0.57
61:c:12:U:H2'	61:c:13:C:C6	2.39	0.57
61:c:866:G:H5''	74:p:2:GLY:HA2	1.87	0.57
67:i:133:VAL:HG23	67:i:198:LEU:HD22	1.87	0.57
11:AA:528:U:H2'	11:AA:529:A:C8	2.39	0.57
11:AA:651:G:O2'	11:AA:1435:A:OP1	2.22	0.57
11:AA:1176:C:OP2	91:AA:3721:HOH:O	2.17	0.57
11:AA:2741:C:O2	59:a:20:HIS:HE1	1.87	0.57
11:AA:3164:C:H2'	11:AA:3165:A:H8	1.68	0.57
61:c:782:U:H4'	61:c:783:G:O5'	2.04	0.57
61:c:883:C:H2'	61:c:884:A:C8	2.39	0.57
61:c:1559:A:H5''	79:u:135:GLY:HA3	1.87	0.57
79:u:36:LYS:HE3	79:u:103:ASN:HA	1.87	0.57
8:7:83:ALA:HB2	8:7:113:VAL:HB	1.86	0.57
11:AA:2746:A:N6	91:AA:3829:HOH:O	2.35	0.57
11:AA:3107:U:H2'	11:AA:3108:G:C8	2.39	0.57
61:c:1171:A:H2'	61:c:1172:G:H8	1.69	0.57
61:c:1471:A:N6	61:c:1538:U:C2	2.73	0.57
68:j:195:VAL:O	68:j:199:GLN:HG2	2.04	0.57
1:0:56:SER:O	1:0:74:LEU:N	2.27	0.57
11:AA:737:G:H2'	11:AA:738:A:H8	1.70	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1110:U:OP1	16:C:164:ARG:NH2	2.38	0.57
11:AA:1211:U:H2'	11:AA:1212:A:H8	1.68	0.57
11:AA:1624:G:O2'	11:AA:1643:A:N1	2.37	0.57
11:AA:1827:C:H2'	11:AA:1828:A:C8	2.40	0.57
11:AA:2948:OMC:H5'	26:FF:243:HIS:HB3	1.87	0.57
52:T:63:ARG:NH2	52:T:79:ASP:O	2.38	0.57
61:c:973:A:H2'	61:c:974:A2M:H8	1.87	0.57
61:c:1429:G:H2'	61:c:1430:U:C6	2.40	0.57
64:f:142:GLY:N	64:f:153:SER:O	2.29	0.57
67:i:58:LEU:HD21	67:i:167:ARG:HE	1.69	0.57
70:l:118:GLY:HA3	70:l:143:TRP:HE1	1.68	0.57
78:t:27:ASP:HB3	78:t:30:THR:HG22	1.87	0.57
4:3:74:SER:O	4:3:75:GLU:HG2	2.05	0.56
11:AA:1497:C:P	91:AA:3796:HOH:O	2.62	0.56
11:AA:1680:G:H2'	11:AA:1681:U:H6	1.70	0.56
34:JJ:163:LEU:HB3	34:JJ:169:ILE:HD11	1.87	0.56
36:KK:158:ASP:HB3	36:KK:159:PRO:HD3	1.86	0.56
56:X:15:LYS:O	56:X:19:GLN:HG2	2.04	0.56
61:c:891:A:H2'	61:c:892:A:C8	2.39	0.56
11:AA:72:C:H4'	44:OO:63:VAL:HG13	1.87	0.56
11:AA:158:G:H2'	11:AA:159:A:H8	1.70	0.56
11:AA:1046:A:H2'	11:AA:1049:C:C5	2.41	0.56
11:AA:1572:U:H3	11:AA:1574:C:H41	1.53	0.56
11:AA:2228:A:H2'	11:AA:2229:A:C8	2.40	0.56
12:Aa:820:LEU:HD11	12:Aa:830:GLU:HG3	1.87	0.56
17:CC:71:A:O2'	35:K:52:ARG:NH1	2.38	0.56
26:FF:173:GLN:HG3	26:FF:175:LYS:H	1.70	0.56
30:HH:85:ARG:HH22	30:HH:254:LYS:H	1.54	0.56
37:L:84:ARG:HH22	51:S:100:ILE:HG21	1.69	0.56
53:U:51:SER:HB3	53:U:54:GLU:HG3	1.86	0.56
61:c:1785:U:H2'	61:c:1786:G:H8	1.70	0.56
3:2:44:ILE:HD13	75:q:115:ILE:HG22	1.87	0.56
11:AA:715:A:H5''	39:M:115:LYS:HA	1.87	0.56
11:AA:1666:G:H2'	11:AA:1667:A:H8	1.70	0.56
11:AA:2465:G:C6	11:AA:2493:U:O2	2.58	0.56
11:AA:2714:G:H8	11:AA:2751:G:H2'	1.69	0.56
11:AA:3074:G:H4'	45:P:62:ARG:HD2	1.88	0.56
11:AA:3183:A:H2	11:AA:3188:G:H4'	1.69	0.56
12:Aa:55:ARG:NH1	12:Aa:58:ASP:OD2	2.38	0.56
29:H:54:LEU:N	29:H:81:GLN:OE1	2.38	0.56
30:HH:83:LEU:HD22	30:HH:88:ILE:HD12	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:P:15:ASN:HB3	45:P:18:LYS:HE2	1.87	0.56
64:f:55:GLU:OE2	64:f:59:HIS:ND1	2.39	0.56
66:h:71:LYS:HD2	66:h:76:VAL:HA	1.87	0.56
71:m:136:VAL:HG21	71:m:146:PHE:HE2	1.70	0.56
77:s:127:LYS:HA	77:s:134:ALA:HA	1.87	0.56
79:u:73:MET:HE2	79:u:101:LEU:HD13	1.86	0.56
4:3:2:VAL:N	82:x:64:GLU:OE1	2.39	0.56
4:3:51:GLN:HE21	61:c:957:G:H21	1.54	0.56
11:AA:2501:U:O2'	11:AA:2502:A:OP1	2.21	0.56
12:Aa:394:PHE:HB2	12:Aa:460:ASP:OD2	2.05	0.56
25:F:28:SER:O	25:F:32:LYS:HG2	2.06	0.56
61:c:563:U:O2'	61:c:566:C:N3	2.37	0.56
61:c:1545:A:H2'	61:c:1546:G:H8	1.69	0.56
61:c:1739:C:H2'	61:c:1740:A:H8	1.71	0.56
11:AA:952:A:H5''	41:N:15:LYS:HD3	1.87	0.56
61:c:513:U:H2'	61:c:514:G:C8	2.40	0.56
69:k:144:VAL:HA	83:y:42:GLN:HE21	1.71	0.56
11:AA:1144:U:OP1	11:AA:1367:G:O2'	2.23	0.56
11:AA:3044:G:H2'	11:AA:3045:G:C8	2.41	0.56
12:Aa:8:GLN:O	12:Aa:11:SER:OG	2.22	0.56
46:PP:19:ARG:HB3	46:PP:35:ILE:HD12	1.87	0.56
59:a:38:GLN:HA	59:a:41:ARG:HD3	1.87	0.56
61:c:384:G:H2'	61:c:385:A:C8	2.41	0.56
61:c:514:G:O2'	61:c:515:A:H5'	2.05	0.56
11:AA:616:G:H2'	11:AA:617:G:C8	2.40	0.56
11:AA:817:A2M:H62	54:V:25:ARG:HH22	1.53	0.56
11:AA:1128:U:OP1	40:MM:4:ARG:NH1	2.27	0.56
11:AA:2369:G:H2'	11:AA:2370:G:C8	2.40	0.56
11:AA:2662:G:H2'	11:AA:2663:G:H8	1.70	0.56
11:AA:3214:U:OP2	46:PP:128:ARG:NH1	2.38	0.56
12:Aa:240:MET:HA	12:Aa:243:ARG:HB3	1.87	0.56
20:DD:167:GLN:NE2	20:DD:171:SER:OG	2.39	0.56
45:P:109:VAL:HG12	45:P:111:GLU:H	1.71	0.56
46:PP:37:GLU:OE2	46:PP:74:ARG:NH1	2.38	0.56
61:c:925:G:H2'	61:c:926:A:H8	1.70	0.56
61:c:947:U:H2'	61:c:948:G:C8	2.41	0.56
61:c:1357:A:H61	61:c:1367:G:H2'	1.70	0.56
61:c:1533:C:OP1	79:u:27:LYS:NZ	2.26	0.56
79:u:50:ALA:O	79:u:68:ARG:NH1	2.39	0.56
11:AA:505:G:H5''	28:GG:315:LYS:HA	1.88	0.56
11:AA:727:G:OP2	11:AA:742:G:N2	2.38	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:760:G:O2'	11:AA:770:G:N2	2.37	0.56
11:AA:992:A:H5''	25:F:43:LYS:HD3	1.88	0.56
11:AA:3050:U:O2'	31:I:16:GLY:O	2.23	0.56
12:Aa:27:HIS:ND1	12:Aa:138:GLN:HB2	2.20	0.56
15:Bb:37:YYG:H142	15:Bb:38:A:H2	1.70	0.56
19:D:21:LYS:HE2	19:D:55:VAL:HA	1.87	0.56
23:EE:101:VAL:HG22	23:EE:165:VAL:HG22	1.87	0.56
25:F:132:PRO:HB2	34:JJ:120:THR:HB	1.87	0.56
37:L:46:ILE:HA	37:L:70:PRO:HA	1.86	0.56
61:c:332:U:OP2	70:l:175:GLN:NE2	2.37	0.56
61:c:1260:U:C4	61:c:1261:G:O6	2.59	0.56
77:s:37:THR:O	77:s:45:ARG:NH1	2.32	0.56
8:7:7:LEU:HD23	8:7:274:LEU:HB2	1.88	0.56
11:AA:675:C:O2'	11:AA:679:U:OP1	2.24	0.56
11:AA:2666:C:OP2	11:AA:2687:G:N1	2.37	0.56
11:AA:3014:U:H2'	11:AA:3015:G:C8	2.40	0.56
12:Aa:212:GLY:HA3	12:Aa:219:ALA:HA	1.88	0.56
20:DD:159:VAL:HG11	20:DD:165:VAL:HG22	1.88	0.56
25:F:103:GLN:O	25:F:107:GLU:HG2	2.06	0.56
30:HH:148:ILE:HG23	30:HH:159:VAL:HG21	1.87	0.56
42:NN:32:ARG:NH1	42:NN:120:ILE:O	2.39	0.56
61:c:895:G:N1	61:c:918:U:N3	2.54	0.56
11:AA:40:A:H5''	39:M:35:ALA:HB1	1.88	0.56
11:AA:2807:U:O2'	11:AA:2809:C:OP1	2.21	0.56
11:AA:2916:U:H2'	11:AA:2917:G:H8	1.70	0.56
11:AA:2936:A:H2'	11:AA:2937:G:C8	2.41	0.56
17:CC:7:U:H2'	17:CC:8:C:C6	2.40	0.56
19:D:109:TYR:HB3	19:D:115:ILE:HG12	1.88	0.56
44:OO:11:LYS:O	44:OO:13:HIS:ND1	2.39	0.56
10:A:109:PRO:HB2	10:A:111:PRO:HD2	1.88	0.55
11:AA:612:U:H2'	11:AA:613:G:H8	1.72	0.55
11:AA:1135:A:OP2	41:N:5:LYS:NZ	2.39	0.55
14:BB:47:C:OP1	30:HH:95:TRP:N	2.39	0.55
37:L:22:LYS:H	37:L:49:TYR:HH	1.52	0.55
39:M:78:LEU:HD23	39:M:118:ILE:HG21	1.87	0.55
11:AA:2658:G:H1	11:AA:2712:U:H3	1.53	0.55
11:AA:2767:U:O2'	59:a:30:ALA:O	2.18	0.55
12:Aa:203:TYR:CE2	12:Aa:205:ALA:HB3	2.42	0.55
38:LL:89:LYS:O	38:LL:182:SER:N	2.37	0.55
61:c:250:C:H2'	61:c:251:A:H8	1.71	0.55
61:c:974:A2M:H4'	74:p:112:LYS:HE2	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:998:A:H2'	61:c:999:U:C6	2.42	0.55
80:v:14:PHE:HE2	80:v:136:ALA:HB2	1.70	0.55
11:AA:1257:C:O2'	20:DD:42:ARG:NH1	2.40	0.55
11:AA:2930:A:H2'	11:AA:2931:C:C6	2.42	0.55
18:Cc:77:A:N1	91:Cc:101:HOH:O	2.33	0.55
20:DD:60:ARG:NH1	20:DD:80:VAL:O	2.39	0.55
38:LL:84:LYS:HE3	38:LL:191:LEU:HB3	1.88	0.55
61:c:17:C:H2'	61:c:18:C:C6	2.41	0.55
61:c:66:U:O2	68:j:160:ARG:NH1	2.39	0.55
61:c:395:U:O4	61:c:399:A:N7	2.39	0.55
61:c:896:U:H5''	63:e:23:PRO:HG2	1.88	0.55
61:c:1592:A:H2'	61:c:1593:A:H8	1.72	0.55
62:d:16:LEU:HD21	62:d:199:PRO:HG2	1.89	0.55
67:i:122:ASN:O	67:i:126:ASP:HB3	2.07	0.55
3:2:23:CYS:HB2	3:2:30:ILE:HD11	1.88	0.55
11:AA:966:U:OP1	39:M:44:ASN:ND2	2.40	0.55
11:AA:1258:U:N3	11:AA:1261:G:OP2	2.34	0.55
11:AA:2347:OMU:H3'	11:AA:2348:A:H8	1.72	0.55
11:AA:2367:A:H2'	11:AA:2368:A:C8	2.40	0.55
12:Aa:27:HIS:HB3	12:Aa:30:HIS:CD2	2.41	0.55
12:Aa:216:HIS:HA	12:Aa:321:LYS:NZ	2.21	0.55
44:OO:63:VAL:HG12	44:OO:66:ASN:ND2	2.22	0.55
61:c:103:A:H4'	61:c:105:A:C8	2.42	0.55
61:c:509:G:H2'	61:c:510:G:C8	2.41	0.55
61:c:551:G:H2'	61:c:552:G:H8	1.72	0.55
61:c:789:A:OP1	66:h:108:ARG:NH1	2.39	0.55
61:c:1752:U:H2'	61:c:1753:A:H8	1.71	0.55
62:d:52:LYS:NZ	82:x:82:VAL:O	2.39	0.55
80:v:58:ALA:HB1	80:v:108:LEU:HD21	1.89	0.55
6:5:10:HIS:HB2	6:5:11:PRO:HD3	1.89	0.55
11:AA:1393:A:N6	11:AA:1417:G:H1'	2.21	0.55
11:AA:3064:U:H2'	11:AA:3065:G:H8	1.70	0.55
11:AA:3352:U:O2'	70:l:164:ARG:NH2	2.40	0.55
14:BB:19:C:H2'	14:BB:20:A:H8	1.71	0.55
16:C:175:ALA:HB2	39:M:56:VAL:HB	1.88	0.55
61:c:895:G:N1	61:c:918:U:C2	2.75	0.55
61:c:1533:C:H4'	61:c:1539:G:C6	2.41	0.55
63:e:87:ARG:HD2	63:e:101:HIS:HD2	1.72	0.55
63:e:194:ASN:HD21	63:e:212:VAL:HG23	1.71	0.55
70:l:172:ARG:HD3	70:l:175:GLN:HG3	1.88	0.55
74:p:40:TYR:HD1	74:p:43:LYS:HZ3	1.54	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
76:r:60:LEU:HD23	76:r:64:LYS:NZ	2.21	0.55
11:AA:62:A:H5''	49:QQ:164:LEU:HD21	1.89	0.55
11:AA:348:A:N3	11:AA:352:A:O2'	2.40	0.55
11:AA:360:G:N2	11:AA:815:G:H1'	2.22	0.55
11:AA:664:U:H2'	11:AA:665:A:H8	1.72	0.55
11:AA:978:G:O2'	11:AA:980:A:N3	2.34	0.55
11:AA:1269:U:H1'	11:AA:1272:C:H5	1.72	0.55
11:AA:1497:C:H2'	11:AA:1498:A:C8	2.42	0.55
12:Aa:522:MET:HE1	12:Aa:526:GLY:HA2	1.88	0.55
23:EE:242:ARG:NH1	23:EE:244:GLY:O	2.40	0.55
61:c:887:A:H5''	75:q:120:PRO:HB2	1.88	0.55
61:c:897:C:O2	61:c:915:A:N6	2.40	0.55
61:c:1280:4AC:O2'	81:w:70:THR:HG22	2.06	0.55
70:l:37:LYS:H	70:l:59:ARG:H	1.54	0.55
11:AA:196:G:N1	11:AA:199:A:OP2	2.37	0.55
11:AA:217:U:O2	35:K:103:LYS:NZ	2.39	0.55
11:AA:3076:C:OP1	45:P:65:LYS:NZ	2.36	0.55
20:DD:159:VAL:HG21	20:DD:165:VAL:HG13	1.88	0.55
36:KK:157:VAL:HG13	36:KK:160:ILE:HA	1.88	0.55
38:LL:41:ILE:HD11	38:LL:67:ALA:HB1	1.89	0.55
39:M:135:GLU:OE2	44:OO:166:ALA:N	2.40	0.55
61:c:329:G:H2'	61:c:330:G:H8	1.72	0.55
61:c:1244:A:O2'	61:c:1245:G:O5'	2.20	0.55
62:d:88:LYS:O	62:d:92:HIS:ND1	2.31	0.55
65:g:107:PHE:O	65:g:111:ASN:ND2	2.39	0.55
9:8:135:HIS:NE2	61:c:1250:U:O2'	2.39	0.55
11:AA:2102:U:H2'	11:AA:2103:U:H6	1.71	0.55
11:AA:2555:G:H4'	51:S:88:ARG:HG2	1.89	0.55
11:AA:2895:G:O2'	57:Y:100:TYR:O	2.23	0.55
11:AA:3275:U:H5'	50:R:66:VAL:HG11	1.88	0.55
11:AA:3360:C:H2'	11:AA:3361:G:O4'	2.06	0.55
26:FF:187:SER:O	26:FF:190:GLU:N	2.39	0.55
28:GG:304:GLN:NE2	28:GG:306:THR:O	2.36	0.55
36:KK:134:TYR:HB3	36:KK:190:VAL:HG11	1.87	0.55
66:h:192:ILE:N	66:h:243:GLY:O	2.37	0.55
67:i:183:ALA:HB2	67:i:193:THR:HG21	1.89	0.55
70:l:37:LYS:C	70:l:59:ARG:HA	2.32	0.55
82:x:39:VAL:HG13	82:x:43:GLY:H	1.72	0.55
3:2:68:TYR:OH	63:e:115:ARG:NH2	2.36	0.55
6:5:8:PHE:O	61:c:1450:U:O2'	2.25	0.55
11:AA:97:U:O2'	91:AA:3720:HOH:O	2.17	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:138:U:H2'	11:AA:139:G:H8	1.71	0.55
11:AA:1799:A:H2'	11:AA:1800:A:H8	1.72	0.55
11:AA:2292:U:HO2'	61:c:1656:U:HO2'	1.53	0.55
11:AA:3019:U:O2	11:AA:3035:A:N6	2.29	0.55
15:Bb:37:YYG:H1'	15:Bb:37:YYG:H31	1.89	0.55
74:p:5:HIS:CD2	74:p:121:ARG:HG3	2.42	0.55
78:t:99:VAL:HG12	78:t:118:PRO:HB2	1.89	0.55
79:u:14:ILE:HG12	79:u:23:ASP:HA	1.89	0.55
8:7:150:TRP:CH2	78:t:34:LEU:HB3	2.42	0.55
10:A:139:GLY:O	10:A:143:THR:HG23	2.05	0.55
11:AA:2688:U:OP1	30:HH:12:TYR:OH	2.25	0.55
11:AA:2723:U:H2'	11:AA:2724:OMU:H6	1.89	0.55
11:AA:2930:A:H2'	11:AA:2931:C:H6	1.70	0.55
12:Aa:110:ASP:HB3	12:Aa:537:HIS:HB2	1.88	0.55
20:DD:51:VAL:HG22	20:DD:87:VAL:HG13	1.89	0.55
61:c:512:A:H2'	61:c:513:U:C6	2.42	0.55
61:c:1001:A:H2'	61:c:1002:G:C8	2.41	0.55
61:c:1249:U:H2'	61:c:1250:U:O4'	2.07	0.55
65:g:25:PHE:HD2	65:g:37:VAL:HG22	1.72	0.55
66:h:98:ASN:ND2	66:h:116:ASP:OD1	2.26	0.55
73:o:84:ILE:HD11	73:o:139:VAL:HG21	1.88	0.55
74:p:20:ARG:HE	83:y:56:HIS:CD2	2.25	0.55
75:q:81:VAL:HB	75:q:115:ILE:HD13	1.88	0.55
76:r:103:ASN:OD1	76:r:120:SER:OG	2.25	0.55
11:AA:207:U:H2'	11:AA:208:C:H6	1.71	0.54
11:AA:691:A:N1	17:CC:28:C:O2'	2.39	0.54
11:AA:900:G:H1'	11:AA:1589:A:N6	2.22	0.54
11:AA:1127:G:N2	11:AA:1130:A:OP2	2.29	0.54
11:AA:1219:C:O2'	11:AA:1286:A:N1	2.40	0.54
12:Aa:718:LEU:HA	12:Aa:722:PRO:HG3	1.88	0.54
14:BB:38:U:N3	14:BB:41:G:OP2	2.29	0.54
40:MM:51:HIS:CD2	40:MM:168:SER:HB2	2.41	0.54
49:QQ:35:VAL:HG13	49:QQ:65:ARG:HB2	1.89	0.54
49:QQ:121:VAL:HG11	49:QQ:131:GLU:HG3	1.89	0.54
61:c:478:A:HO2'	71:m:124:HIS:HD1	1.55	0.54
64:f:58:LEU:O	82:x:15:ARG:NH1	2.40	0.54
65:g:23:GLU:O	65:g:27:ARG:HG3	2.07	0.54
67:i:118:LEU:HD23	67:i:121:ILE:HD11	1.88	0.54
69:k:58:LEU:HD11	69:k:85:PHE:CZ	2.41	0.54
11:AA:1486:G:H21	51:S:6:THR:HG22	1.72	0.54
11:AA:1843:C:OP1	56:X:48:LYS:NZ	2.39	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:3014:U:H2'	11:AA:3015:G:H8	1.71	0.54
30:HH:60:ILE:H	30:HH:80:SER:HB3	1.72	0.54
37:L:26:VAL:HG11	37:L:96:VAL:HB	1.88	0.54
53:U:57:LEU:HD23	53:U:90:MET:HG3	1.89	0.54
63:e:32:ILE:HG22	63:e:34:ALA:HB2	1.90	0.54
81:w:27:THR:HG22	81:w:86:ILE:HD11	1.90	0.54
8:7:105:GLY:O	8:7:132:LYS:NZ	2.38	0.54
11:AA:26:A:N3	11:AA:328:U:O2'	2.37	0.54
11:AA:743:C:N3	16:C:141:ARG:NH2	2.50	0.54
11:AA:928:C:H2'	11:AA:929:A:H8	1.71	0.54
11:AA:1141:C:O2'	11:AA:1153:A:N3	2.38	0.54
17:CC:26:U:O2'	28:GG:51:ALA:O	2.25	0.54
19:D:25:ASP:HB3	19:D:28:GLU:HB2	1.89	0.54
24:Ee:110:ILE:HD13	24:Ee:129:THR:HG21	1.90	0.54
49:QQ:103:GLU:HG3	49:QQ:160:GLU:HB2	1.89	0.54
52:T:114:ARG:HH21	52:T:115:LYS:HG3	1.72	0.54
61:c:5:U:H2'	61:c:6:G:H8	1.72	0.54
61:c:1380:U:O2'	61:c:1516:A:N1	2.37	0.54
61:c:1623:C:H2'	61:c:1624:C:H6	1.72	0.54
63:e:89:ASP:HB3	63:e:223:PHE:HE1	1.71	0.54
80:v:127:ASN:HA	80:v:130:ARG:HB2	1.89	0.54
8:7:214:ALA:HB2	8:7:220:ILE:HG13	1.89	0.54
11:AA:796:U:H2'	11:AA:797:U:C6	2.42	0.54
11:AA:1378:U:H2'	11:AA:1379:G:C8	2.41	0.54
11:AA:1636:U:H5''	37:L:73:LYS:HE3	1.88	0.54
11:AA:1827:C:H2'	11:AA:1828:A:H8	1.71	0.54
11:AA:2881:C:H2'	11:AA:2882:U:C6	2.41	0.54
12:Aa:730:LEU:HB2	12:Aa:799:ASP:HB2	1.88	0.54
15:Bb:70:C:H2'	15:Bb:71:G:H8	1.72	0.54
32:II:38:THR:OG1	32:II:90:LYS:NZ	2.41	0.54
61:c:97:C:H2'	61:c:98:U:C6	2.43	0.54
61:c:467:G:O2'	61:c:469:C:OP2	2.20	0.54
61:c:1610:G:H5'	67:i:107:LYS:HB2	1.89	0.54
63:e:111:ARG:HA	63:e:114:VAL:HG12	1.88	0.54
66:h:201:HIS:CD2	66:h:207:LEU:HD23	2.42	0.54
69:k:28:GLU:OE2	69:k:35:LYS:HB2	2.07	0.54
70:l:67:TRP:HB2	70:l:109:PHE:HE2	1.73	0.54
11:AA:261:U:H2'	11:AA:262:U:C6	2.42	0.54
11:AA:938:C:O2	11:AA:2813:A:O2'	2.24	0.54
11:AA:1410:U:O2'	48:Q:95:GLU:OE2	2.22	0.54
11:AA:1822:C:H2'	11:AA:1823:A:H8	1.72	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2445:A:H1'	11:AA:2503:G:N2	2.23	0.54
11:AA:2835:U:H2'	11:AA:2836:C:O2	2.07	0.54
11:AA:2878:G:H5''	26:FF:5:LYS:HE2	1.90	0.54
11:AA:2901:G:O2'	11:AA:3024:A:N1	2.36	0.54
12:Aa:126:LEU:HD21	12:Aa:334:LEU:HD22	1.88	0.54
12:Aa:579:SER:HB3	12:Aa:584:ASN:HB2	1.88	0.54
15:Bb:27:C:H2'	15:Bb:28:C:H6	1.72	0.54
26:FF:72:VAL:HG12	29:H:88:ARG:HH11	1.71	0.54
30:HH:196:ARG:HH11	30:HH:196:ARG:HG3	1.72	0.54
61:c:371:G:N2	61:c:612:U:O2	2.40	0.54
61:c:432:G:H2'	61:c:433:C:C6	2.43	0.54
61:c:468:A:N1	61:c:594:A:O2'	2.37	0.54
61:c:891:A:H2'	61:c:892:A:H8	1.72	0.54
61:c:1325:A:H2'	61:c:1326:A:H8	1.71	0.54
61:c:1628:U:H2'	61:c:1629:G:C8	2.43	0.54
11:AA:113:C:OP1	49:QQ:147:ARG:NE	2.33	0.54
11:AA:1189:C:H42	11:AA:1315:U:H1'	1.73	0.54
11:AA:1709:C:H2'	11:AA:1710:C:H6	1.73	0.54
11:AA:2396:G:OP1	11:AA:2397:A:O2'	2.22	0.54
11:AA:2465:G:N1	11:AA:2492:C:O2	2.40	0.54
11:AA:2500:A:O2'	11:AA:2501:U:OP1	2.24	0.54
12:Aa:396:ALA:HB3	12:Aa:456:LEU:HB2	1.90	0.54
17:CC:57:C:H4'	17:CC:63:G:N7	2.21	0.54
21:Dd:23:U:O2'	21:Dd:24:U:OP1	2.23	0.54
26:FF:152:LYS:NZ	26:FF:189:SER:OG	2.41	0.54
61:c:7:G:N7	64:f:205:ARG:NH1	2.39	0.54
61:c:872:G:N2	61:c:1047:G:H4'	2.23	0.54
61:c:1466:G:H2'	61:c:1467:C:C6	2.42	0.54
67:i:97:LEU:HD21	67:i:194:LEU:HD21	1.89	0.54
10:A:49:ARG:NH1	11:AA:1193:A:OP1	2.37	0.54
11:AA:283:G:OP2	11:AA:285:A:O2'	2.23	0.54
11:AA:345:G:O2'	17:CC:25:G:N3	2.39	0.54
11:AA:2365:C:H5''	11:AA:2986:U:H4'	1.89	0.54
11:AA:2661:G:H2'	11:AA:2662:G:C8	2.41	0.54
11:AA:2909:U:O2'	11:AA:3105:U:O2	2.25	0.54
11:AA:3008:A:N6	91:AA:3851:HOH:O	2.39	0.54
12:Aa:81:MET:HE3	12:Aa:339:VAL:HG11	1.89	0.54
12:Aa:649:GLN:HG3	12:Aa:687:ASN:HB3	1.90	0.54
13:B:9:THR:HG21	13:B:115:SER:HB2	1.89	0.54
17:CC:7:U:H2'	17:CC:8:C:H6	1.72	0.54
22:E:10:ILE:O	22:E:59:VAL:N	2.40	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:KK:160:ILE:O	36:KK:164:VAL:HG23	2.08	0.54
42:NN:43:GLN:NE2	42:NN:70:THR:O	2.41	0.54
61:c:163:G:N2	61:c:163:G:OP2	2.40	0.54
61:c:327:U:OP2	73:o:57:LYS:NZ	2.31	0.54
61:c:518:A:O2'	61:c:519:C:H5''	2.07	0.54
65:g:28:GLU:OE2	65:g:65:ARG:NH2	2.41	0.54
2:1:81:ARG:NH2	79:u:2:SER:OG	2.41	0.54
11:AA:292:U:OP2	49:QQ:68:ARG:NH2	2.32	0.54
11:AA:1597:C:H2'	11:AA:1598:G:C8	2.43	0.54
11:AA:1784:G:OP1	51:S:19:LYS:NZ	2.33	0.54
11:AA:1795:U:OP2	23:EE:50:HIS:NE2	2.41	0.54
11:AA:2732:G:O2'	11:AA:2759:U:OP1	2.23	0.54
11:AA:2882:U:H2'	11:AA:2883:U:H6	1.73	0.54
11:AA:2897:A:H2'	11:AA:2899:C:H5''	1.90	0.54
11:AA:3162:C:H2'	11:AA:3163:A:H8	1.71	0.54
11:AA:3295:A:H2'	11:AA:3296:A:H8	1.73	0.54
12:Aa:735:CYS:O	12:Aa:766:PHE:N	2.39	0.54
16:C:39:ARG:NH2	28:GG:300:ARG:O	2.36	0.54
38:LL:100:ASN:HB2	38:LL:115:ARG:HB2	1.88	0.54
61:c:865:A:OP2	91:c:2002:HOH:O	2.18	0.54
61:c:1078:C:H2'	61:c:1079:U:C6	2.43	0.54
61:c:1198:G:OP1	61:c:1199:G:O2'	2.17	0.54
61:c:1381:U:H4'	81:w:59:PRO:HG3	1.88	0.54
68:j:137:ARG:HD2	68:j:177:ARG:HH11	1.73	0.54
78:t:20:TYR:O	78:t:23:LYS:HB2	2.08	0.54
2:1:54:VAL:HG21	2:1:88:ILE:HB	1.90	0.54
11:AA:1448:U:H2'	11:AA:1449:A2M:H8	1.88	0.54
11:AA:2127:U:O2'	11:AA:2301:U:OP1	2.21	0.54
11:AA:3199:G:H2'	11:AA:3200:G:H8	1.72	0.54
11:AA:3275:U:O2'	50:R:99:ARG:NH1	2.40	0.54
11:AA:3297:U:O4	26:FF:124:LYS:NZ	2.36	0.54
20:DD:24:SER:OG	20:DD:192:ASP:OD1	2.26	0.54
30:HH:126:GLU:HA	30:HH:196:ARG:HD3	1.88	0.54
30:HH:173:VAL:O	30:HH:175:HIS:ND1	2.40	0.54
39:M:139:ARG:HH22	44:OO:165:SER:H	1.56	0.54
51:S:16:ARG:HG2	51:S:37:LYS:HD3	1.89	0.54
61:c:204:G:H2'	61:c:205:U:O4'	2.08	0.54
61:c:1329:A:H2'	61:c:1330:G:O4'	2.08	0.54
61:c:1378:U:H1'	77:s:8:GLN:HG3	1.89	0.54
61:c:1585:U:H3	61:c:1611:A:H2	1.56	0.54
61:c:1682:U:O4	61:c:1720:G:N2	2.41	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
66:h:100:ARG:CZ	66:h:236:ILE:HG23	2.37	0.54
69:k:61:PHE:HA	69:k:93:LEU:O	2.07	0.54
79:u:88:ARG:HH11	79:u:108:LYS:HE3	1.73	0.54
11:AA:2428:U:H2'	11:AA:2429:G:C8	2.43	0.54
12:Aa:171:LYS:O	12:Aa:274:ASN:ND2	2.40	0.54
24:Ee:11:LYS:HB2	24:Ee:64:ILE:HG13	1.89	0.54
44:OO:115:ARG:HH12	44:OO:147:ILE:HD13	1.72	0.54
61:c:953:G:H2'	61:c:954:G:C8	2.43	0.54
61:c:1169:G:N3	61:c:1575:G7M:HN72	2.23	0.54
61:c:1290:U:H2'	61:c:1291:G:N3	2.23	0.54
67:i:30:PRO:HB2	67:i:32:GLU:OE1	2.08	0.54
68:j:67:VAL:HB	68:j:99:GLY:HA2	1.89	0.54
69:k:8:ILE:C	69:k:10:SER:H	2.16	0.54
71:m:57:ARG:O	71:m:61:THR:HG23	2.08	0.54
3:2:36:ILE:HD11	3:2:75:VAL:HG12	1.90	0.53
8:7:216:LYS:NZ	78:t:23:LYS:O	2.41	0.53
11:AA:2894:C:H2'	11:AA:2895:G:H8	1.72	0.53
12:Aa:26:ALA:HB2	12:Aa:128:VAL:HB	1.90	0.53
12:Aa:50:LYS:HB2	12:Aa:54:ALA:HB3	1.89	0.53
19:D:24:LEU:HB3	19:D:32:ILE:HD13	1.90	0.53
24:Ee:18:VAL:HA	24:Ee:57:LYS:HA	1.90	0.53
25:F:93:VAL:HG11	30:HH:41:LYS:HD2	1.91	0.53
35:K:55:GLU:HB2	35:K:108:LYS:HB3	1.89	0.53
61:c:1776:A:H2'	61:c:1777:G:C8	2.42	0.53
65:g:161:GLY:O	65:g:164:VAL:HG22	2.08	0.53
67:i:179:ALA:HB1	67:i:194:LEU:HD12	1.90	0.53
8:7:66:HIS:O	8:7:67:ILE:HG13	2.08	0.53
11:AA:498:A:O2'	11:AA:3273:A:N1	2.36	0.53
11:AA:619:A:O2'	11:AA:620:U:OP2	2.22	0.53
11:AA:1322:U:H2'	11:AA:1323:G:H8	1.73	0.53
11:AA:1349:G:H5'	28:GG:291:ASN:HD21	1.73	0.53
11:AA:1829:G:H5''	11:AA:1830:G:H5'	1.90	0.53
11:AA:2433:U:H1'	49:QQ:125:SER:HB3	1.90	0.53
11:AA:3199:G:OP1	46:PP:8:LYS:NZ	2.33	0.53
12:Aa:711:ARG:NH2	12:Aa:840:ASP:OD1	2.42	0.53
14:BB:23:A:H1'	14:BB:121:U:H2'	1.89	0.53
16:C:125:ASP:HB2	28:GG:289:ILE:HD13	1.90	0.53
17:CC:110:C:O2'	17:CC:112:U:OP2	2.25	0.53
40:MM:189:GLU:HB2	40:MM:200:LEU:HB3	1.90	0.53
61:c:751:G:H2'	61:c:752:A:C8	2.42	0.53
61:c:1383:G:P	81:w:89:ARG:HH22	2.30	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
62:d:180:GLU:OE1	62:d:191:ARG:NH2	2.41	0.53
84:z:31:LYS:HG3	84:z:36:THR:HB	1.89	0.53
84:z:102:VAL:HG12	84:z:127:VAL:HG23	1.91	0.53
8:7:101:GLN:HG3	8:7:103:PHE:HD1	1.73	0.53
8:7:125:GLY:HA2	8:7:131:ILE:HA	1.91	0.53
11:AA:271:C:O2	53:U:82:ARG:NH2	2.32	0.53
12:Aa:750:LYS:HE2	12:Aa:780:PHE:HA	1.90	0.53
36:KK:26:LEU:HB3	37:L:53:VAL:HG21	1.91	0.53
61:c:272:U:H2'	61:c:273:G:C8	2.43	0.53
61:c:925:G:H2'	61:c:926:A:C8	2.43	0.53
62:d:50:VAL:HG22	78:t:109:LEU:HD21	1.91	0.53
80:v:131:ASP:HA	80:v:134:ARG:HD2	1.89	0.53
11:AA:2471:U:C4	11:AA:2473:C:C2	2.96	0.53
11:AA:2501:U:HO2'	11:AA:2502:A:P	2.31	0.53
11:AA:2742:C:H2'	11:AA:2743:A:H8	1.73	0.53
11:AA:3176:G:N2	11:AA:3213:A:H1'	2.23	0.53
11:AA:3296:A:OP1	26:FF:120:LYS:N	2.36	0.53
17:CC:49:G:OP2	52:T:48:ARG:NH2	2.41	0.53
42:NN:55:ARG:NH1	42:NN:56:THR:OG1	2.41	0.53
61:c:340:U:H2'	61:c:341:A:H8	1.73	0.53
61:c:1064:G:O2'	63:e:204:ILE:O	2.26	0.53
61:c:1164:G:H2'	61:c:1165:G:C8	2.44	0.53
61:c:1674:C:OP1	68:j:92:ARG:NH1	2.42	0.53
62:d:20:ALA:HB2	62:d:172:LEU:HD13	1.89	0.53
66:h:114:ILE:HD12	66:h:119:ALA:HB2	1.90	0.53
67:i:110:ALA:O	67:i:114:ILE:HG12	2.08	0.53
83:y:6:VAL:HB	83:y:29:PRO:HD2	1.89	0.53
11:AA:2532:U:H2'	11:AA:2533:G:C8	2.43	0.53
12:Aa:273:PHE:HA	12:Aa:277:ILE:HD13	1.89	0.53
12:Aa:571:SER:HB2	12:Aa:590:ALA:H	1.74	0.53
23:EE:28:LYS:HD3	23:EE:123:ARG:HD3	1.90	0.53
28:GG:26:PHE:HA	28:GG:127:ALA:HA	1.91	0.53
52:T:83:LYS:O	54:V:73:ARG:NH2	2.41	0.53
55:W:32:ASN:HD21	55:W:36:LYS:HE2	1.72	0.53
61:c:1400:A:H2'	61:c:1401:A:C8	2.43	0.53
61:c:1714:A:H2'	61:c:1715:G:H8	1.73	0.53
68:j:3:LEU:HD13	68:j:109:LEU:HB2	1.91	0.53
78:t:20:TYR:HD1	78:t:23:LYS:HG3	1.73	0.53
4:3:40:CYS:SG	4:3:41:LEU:N	2.81	0.53
8:7:205:SER:HB2	8:7:245:PHE:HD2	1.74	0.53
11:AA:1782:U:O2'	11:AA:1858:A:OP1	2.22	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2146:C:H2'	11:AA:2147:A:H8	1.74	0.53
11:AA:2241:U:H4'	23:EE:242:ARG:HG2	1.91	0.53
11:AA:2526:C:H2'	11:AA:2527:G:H8	1.72	0.53
11:AA:2724:OMU:OP2	11:AA:2726:C:N4	2.42	0.53
11:AA:3322:A:H2'	11:AA:3323:A:C8	2.43	0.53
16:C:90:ASP:OD2	16:C:92:ARG:NH2	2.42	0.53
61:c:398:G:OP1	70:l:47:ARG:NH1	2.38	0.53
61:c:759:U:H2'	61:c:760:A:C8	2.43	0.53
61:c:1352:G:O2'	61:c:1353:U:O4'	2.18	0.53
61:c:1358:G:N1	61:c:1366:U:N3	2.56	0.53
61:c:1511:U:H2'	61:c:1512:G:H8	1.74	0.53
68:j:78:THR:HG22	68:j:79:LYS:N	2.24	0.53
4:3:13:ALA:O	4:3:17:ARG:HG2	2.09	0.53
11:AA:20:A:OP2	52:T:86:ARG:NH2	2.41	0.53
11:AA:129:U:H2'	11:AA:130:A:H8	1.72	0.53
11:AA:761:A:H2'	11:AA:762:U:C6	2.44	0.53
14:BB:71:G:H2'	14:BB:72:A:C8	2.44	0.53
16:C:126:GLN:HB3	16:C:130:ARG:NH1	2.23	0.53
37:L:46:ILE:HB	37:L:49:TYR:CE1	2.44	0.53
68:j:1:MET:HE1	68:j:109:LEU:HD23	1.90	0.53
79:u:38:VAL:HG23	79:u:42:TYR:HD2	1.74	0.53
11:AA:531:G:H2'	11:AA:532:A:C8	2.44	0.53
11:AA:1414:G:H2'	11:AA:1415:U:C6	2.44	0.53
11:AA:2366:C:H2'	11:AA:2367:A:H8	1.73	0.53
11:AA:2576:G:H2'	11:AA:2577:C:C6	2.44	0.53
11:AA:3322:A:H2'	11:AA:3323:A:H8	1.74	0.53
12:Aa:205:ALA:HB2	12:Aa:245:TRP:HB3	1.90	0.53
12:Aa:223:ARG:HG3	12:Aa:241:MET:HE2	1.90	0.53
15:Bb:28:C:H2'	15:Bb:29:A:C8	2.43	0.53
21:Dd:21:G:OP2	61:c:1150:G:N2	2.41	0.53
23:EE:133:TYR:HB3	23:EE:168:VAL:HG23	1.89	0.53
64:f:38:VAL:O	64:f:39:THR:OG1	2.22	0.53
67:i:169:ASN:OD1	67:i:170:GLN:N	2.42	0.53
70:l:93:THR:HG23	70:l:95:THR:HG23	1.91	0.53
84:z:54:LEU:HD11	84:z:75:GLN:HB2	1.91	0.53
3:2:68:TYR:HB2	63:e:111:ARG:HB3	1.91	0.53
11:AA:952:A:H4'	11:AA:968:G:N2	2.24	0.53
11:AA:1230:G:H4'	20:DD:34:SER:HA	1.89	0.53
11:AA:2138:A:C4	54:V:3:LYS:HB3	2.43	0.53
11:AA:2154:U:H2'	11:AA:2155:G:C8	2.43	0.53
11:AA:2724:OMU:H4'	25:F:54:HIS:NE2	2.23	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:B:14:SER:OG	13:B:151:THR:OG1	2.21	0.53
17:CC:6:U:H2'	17:CC:7:U:H6	1.74	0.53
24:Ee:75:PRO:HB2	24:Ee:116:MET:HE1	1.90	0.53
34:JJ:138:TYR:CD2	34:JJ:233:GLU:HB2	2.44	0.53
42:NN:53:THR:HG23	42:NN:60:ARG:HA	1.90	0.53
61:c:547:U:O2'	61:c:596:C:O2	2.24	0.53
61:c:626:U:H2'	61:c:627:C:H6	1.73	0.53
61:c:1482:C:O2'	77:s:72:GLY:O	2.27	0.53
67:i:140:THR:O	67:i:142:PRO:HD3	2.09	0.53
11:AA:269:G:N2	11:AA:295:A:OP2	2.38	0.53
11:AA:693:A:OP1	28:GG:45:ASN:ND2	2.40	0.53
11:AA:1404:G:N2	11:AA:1407:A:OP2	2.29	0.53
11:AA:3110:C:H2'	11:AA:3111:U:C6	2.44	0.53
50:R:17:GLN:O	50:R:24:ASN:N	2.41	0.53
61:c:798:C:H2'	61:c:799:A:C8	2.45	0.53
61:c:955:A:OP1	74:p:3:ARG:NH1	2.38	0.53
61:c:1461:C:H3'	79:u:143:ARG:HH21	1.73	0.53
61:c:1472:C:OP1	67:i:185:ARG:N	2.37	0.53
61:c:1545:A:H2'	61:c:1546:G:C8	2.44	0.53
66:h:19:LEU:HD21	66:h:108:ARG:HH11	1.74	0.53
84:z:3:LYS:HG3	84:z:7:ARG:HH22	1.73	0.53
4:3:80:ARG:HD2	4:3:81:ARG:N	2.24	0.52
11:AA:595:G:P	34:JJ:33:ARG:HH22	2.32	0.52
11:AA:1293:U:O2'	22:E:88:HIS:NE2	2.42	0.52
11:AA:1667:A:H2'	11:AA:1668:G:C8	2.44	0.52
11:AA:2412:G:H2'	11:AA:2413:A:C8	2.44	0.52
11:AA:2471:U:N3	11:AA:2473:C:N4	2.57	0.52
11:AA:2508:U:H2'	11:AA:2509:U:C6	2.45	0.52
11:AA:2748:A:H1'	30:HH:36:LEU:HD23	1.89	0.52
12:Aa:390:ASP:HB3	12:Aa:393:ARG:HD3	1.90	0.52
40:MM:82:ARG:NH2	40:MM:83:ASP:OD1	2.42	0.52
61:c:265:A:H62	61:c:289:U:H3	1.57	0.52
61:c:1374:C:H2'	61:c:1375:A:C8	2.44	0.52
61:c:1585:U:H5''	77:s:134:ALA:HB3	1.91	0.52
62:d:98:ILE:HD11	62:d:116:LYS:HD2	1.91	0.52
67:i:166:ARG:HA	67:i:169:ASN:ND2	2.25	0.52
11:AA:1639:C:H41	37:L:17:ARG:HB2	1.74	0.52
11:AA:2150:G:O2'	11:AA:2189:U:OP1	2.26	0.52
17:CC:145:U:H2'	17:CC:146:U:C6	2.45	0.52
37:L:22:LYS:N	37:L:49:TYR:OH	2.29	0.52
40:MM:68:ALA:HB1	40:MM:155:ALA:HB1	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:50:C:OP1	61:c:423:G:N2	2.43	0.52
61:c:123:G:OP1	66:h:77:ARG:NH2	2.42	0.52
61:c:284:G:O6	68:j:188:ARG:NH2	2.38	0.52
61:c:399:A:H4'	66:h:3:ARG:HG2	1.91	0.52
61:c:1087:A:H2'	61:c:1088:A:C8	2.45	0.52
61:c:1542:G:N2	61:c:1568:C:O2'	2.37	0.52
66:h:201:HIS:HD2	66:h:207:LEU:HD23	1.74	0.52
73:o:69:LYS:HE3	73:o:71:LEU:HD21	1.90	0.52
79:u:69:ILE:O	79:u:73:MET:HG3	2.10	0.52
11:AA:87:U:H2'	11:AA:88:A:C8	2.45	0.52
11:AA:337:G:OP2	28:GG:196:ASN:ND2	2.28	0.52
11:AA:632:G:H2'	11:AA:633:C:C6	2.44	0.52
11:AA:960:U:H4'	11:AA:963:G:C2	2.45	0.52
11:AA:1667:A:H2'	11:AA:1668:G:H8	1.74	0.52
11:AA:2213:A:H2'	11:AA:2214:A:C8	2.43	0.52
11:AA:2568:C:O2'	11:AA:2569:A:O5'	2.27	0.52
11:AA:2947:G:C2	26:FF:250:ALA:HB1	2.43	0.52
11:AA:3324:C:OP1	45:P:19:ARG:NH1	2.37	0.52
12:Aa:447:ASP:OD1	12:Aa:448:CYS:N	2.42	0.52
19:D:130:ASN:O	19:D:132:PHE:N	2.42	0.52
36:KK:90:THR:HG23	36:KK:214:LEU:HD21	1.92	0.52
50:R:8:TYR:CG	50:R:99:ARG:HB3	2.45	0.52
52:T:23:ASP:O	52:T:27:GLU:HG3	2.09	0.52
61:c:12:U:H2'	61:c:13:C:H6	1.74	0.52
61:c:15:U:H2'	61:c:16:G:O4'	2.09	0.52
61:c:512:A:O2'	71:m:133:HIS:NE2	2.42	0.52
61:c:628:G:N2	61:c:971:A:H62	2.07	0.52
61:c:1615:C:OP1	67:i:81:ARG:NH2	2.36	0.52
71:m:127:VAL:HA	71:m:130:THR:HG22	1.91	0.52
8:7:236:ALA:O	8:7:261:LYS:NZ	2.41	0.52
11:AA:8:C:H2'	11:AA:9:U:C6	2.45	0.52
11:AA:1067:U:O3'	25:F:110:LYS:NZ	2.42	0.52
11:AA:1525:G:H5'	11:AA:1830:G:OP2	2.10	0.52
11:AA:1660:C:H2'	11:AA:1661:G:C8	2.43	0.52
11:AA:1881:A:H2'	11:AA:1882:G:H8	1.75	0.52
42:NN:92:ARG:HA	42:NN:172:LEU:HB2	1.91	0.52
61:c:762:A:H2'	61:c:763:G:C8	2.45	0.52
61:c:922:G:H2'	61:c:923:A:C8	2.42	0.52
61:c:1524:A:H5''	80:v:78:LYS:HE2	1.91	0.52
61:c:1677:C:H5''	70:l:59:ARG:HH21	1.74	0.52
78:t:103:ASP:OD1	78:t:104:ASN:N	2.36	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:A:34:VAL:HG22	10:A:103:LYS:HB2	1.91	0.52
11:AA:723:U:O2'	41:N:29:TYR:OH	2.24	0.52
11:AA:993:G:N3	11:AA:2637:A:H2'	2.25	0.52
11:AA:1564:U:H2'	11:AA:1566:A:N6	2.23	0.52
11:AA:2389:C:H2'	11:AA:2390:A:H8	1.75	0.52
11:AA:2971:A:H4'	11:AA:2972:G:O5'	2.10	0.52
11:AA:3296:A:H2'	11:AA:3297:U:H6	1.74	0.52
11:AA:3375:A:O2'	11:AA:3378:C:OP2	2.27	0.52
20:DD:92:PRO:HB2	20:DD:95:GLU:HG2	1.92	0.52
61:c:176:C:O2'	61:c:177:U:O4'	2.24	0.52
61:c:560:U:H2'	61:c:561:G:C8	2.45	0.52
61:c:900:A:H2'	61:c:901:G:C8	2.44	0.52
61:c:1641:C:H2'	61:c:1642:G:C8	2.45	0.52
61:c:1732:A:H2'	61:c:1733:C:C6	2.45	0.52
62:d:150:ASP:OD2	62:d:165:ARG:NH2	2.43	0.52
79:u:94:ASP:N	79:u:94:ASP:OD1	2.43	0.52
11:AA:245:U:H2'	11:AA:246:U:C6	2.45	0.52
11:AA:594:U:OP2	11:AA:609:G:N1	2.38	0.52
11:AA:754:G:H1	11:AA:778:U:H3	1.55	0.52
11:AA:1178:G:N3	11:AA:1328:C:O2'	2.42	0.52
12:Aa:20:ARG:NE	12:Aa:342:LEU:O	2.43	0.52
14:BB:107:C:H2'	14:BB:108:A:C8	2.44	0.52
30:HH:119:TYR:OH	30:HH:139:PRO:O	2.17	0.52
61:c:753:A:OP1	66:h:187:ARG:N	2.38	0.52
61:c:982:U:H2'	61:c:983:A:C8	2.45	0.52
61:c:1725:U:H2'	61:c:1726:G:C8	2.44	0.52
67:i:57:SER:OG	67:i:167:ARG:NH2	2.43	0.52
74:p:5:HIS:HD2	74:p:121:ARG:HE	1.56	0.52
74:p:128:TYR:O	74:p:132:VAL:HG22	2.10	0.52
7:6:55:ARG:NH1	61:c:557:G:OP1	2.36	0.52
11:AA:417:A:H2'	11:AA:418:A:H8	1.74	0.52
11:AA:1044:U:OP1	40:MM:90:ARG:NH2	2.40	0.52
11:AA:1650:G:H2'	11:AA:1651:U:C6	2.45	0.52
11:AA:2500:A:H2'	11:AA:2501:U:C6	2.45	0.52
11:AA:2976:A:H2'	11:AA:2977:G:O4'	2.09	0.52
12:Aa:574:THR:HA	12:Aa:589:LYS:HD3	1.90	0.52
23:EE:130:SER:OG	23:EE:174:ARG:NH1	2.43	0.52
61:c:1160:A:H2'	61:c:1161:C:C6	2.45	0.52
61:c:1524:A:H2'	61:c:1525:A:C8	2.44	0.52
61:c:1592:A:H2'	61:c:1593:A:C8	2.44	0.52
61:c:1669:U:H2'	61:c:1670:G:O4'	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
68:j:155:ASP:O	68:j:159:ARG:NH1	2.43	0.52
78:t:29:GLN:HA	78:t:32:LYS:HE2	1.92	0.52
80:v:111:ILE:HG23	80:v:113:ILE:HG12	1.91	0.52
2:1:41:ILE:HG23	2:1:42:LEU:HG	1.91	0.52
6:5:21:CYS:SG	6:5:39:CYS:HB3	2.49	0.52
11:AA:1772:U:H5'	11:AA:1773:C:H5'	1.91	0.52
11:AA:1797:A:H2'	11:AA:1798:A:C8	2.45	0.52
11:AA:3294:A:OP1	26:FF:128:LYS:NZ	2.38	0.52
22:E:124:LEU:HA	25:F:153:PRO:HG2	1.92	0.52
31:I:6:ASP:OD1	31:I:9:SER:N	2.28	0.52
61:c:1315:U:H2'	61:c:1316:G:O4'	2.10	0.52
61:c:1363:U:H4'	61:c:1364:G:H8	1.74	0.52
63:e:32:ILE:HA	63:e:96:LEU:HB2	1.91	0.52
65:g:6:SER:OG	65:g:7:LYS:N	2.42	0.52
69:k:4:PRO:HG3	69:k:25:VAL:HG21	1.91	0.52
79:u:110:ARG:HH12	79:u:114:GLU:HB2	1.75	0.52
84:z:107:PHE:CD2	84:z:114:LYS:HB3	2.44	0.52
4:3:34:ASP:HB3	4:3:43:ILE:HG12	1.92	0.52
11:AA:87:U:H2'	11:AA:88:A:H8	1.75	0.52
11:AA:147:U:C4	36:KK:157:VAL:HG23	2.45	0.52
11:AA:748:U:H2'	11:AA:749:C:C6	2.45	0.52
11:AA:994:G:N2	11:AA:995:U:O4	2.31	0.52
11:AA:1659:U:H2'	11:AA:1660:C:C6	2.45	0.52
11:AA:2264:U:HO2'	11:AA:2265:C:H6	1.57	0.52
12:Aa:4:PHE:O	12:Aa:5:THR:OG1	2.25	0.52
12:Aa:220:PHE:HB3	12:Aa:328:LEU:HD13	1.91	0.52
20:DD:25:LEU:HD13	20:DD:88:PHE:CE1	2.45	0.52
61:c:93:A:H1'	66:h:3:ARG:HB3	1.91	0.52
61:c:947:U:H2'	61:c:948:G:H8	1.74	0.52
62:d:123:VAL:HG21	62:d:133:ILE:HD11	1.91	0.52
67:i:94:THR:O	67:i:98:MET:HG2	2.10	0.52
67:i:112:ARG:HD2	67:i:116:HIS:CE1	2.45	0.52
77:s:89:LEU:HG	77:s:93:HIS:CE1	2.45	0.52
11:AA:787:G:H2'	11:AA:788:C:C6	2.45	0.52
11:AA:1612:A:H5''	55:W:51:LEU:HD22	1.92	0.52
11:AA:1629:U:H5'	37:L:112:LYS:HG2	1.91	0.52
11:AA:2465:G:O6	11:AA:2493:U:O2	2.28	0.52
11:AA:2618:G:C8	11:AA:2865:U:H5''	2.45	0.52
11:AA:2881:C:H2'	11:AA:2882:U:H6	1.75	0.52
11:AA:2896:A:OP1	57:Y:124:LYS:NZ	2.39	0.52
11:AA:3028:G:H4'	12:Aa:28:VAL:HG21	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:3259:U:H5'	11:AA:3261:C:H5	1.75	0.52
12:Aa:27:HIS:CG	12:Aa:28:VAL:H	2.28	0.52
15:Bb:63:C:H2'	15:Bb:64:A:C8	2.45	0.52
34:JJ:110:ARG:O	34:JJ:113:SER:OG	2.22	0.52
49:QQ:19:LEU:O	49:QQ:23:GLN:HG2	2.10	0.52
61:c:435:C:H5'	84:z:50:LYS:NZ	2.25	0.52
61:c:1358:G:C2	61:c:1366:U:O2	2.63	0.52
61:c:1441:C:O2'	61:c:1447:C:N4	2.41	0.52
61:c:1503:A:OP2	80:v:33:TYR:OH	2.14	0.52
61:c:1610:G:OP1	67:i:72:HIS:NE2	2.42	0.52
61:c:1673:G:OP1	68:j:94:ARG:NH2	2.35	0.52
63:e:71:ALA:HB3	75:q:114:ARG:HH21	1.75	0.52
64:f:78:ASP:OD2	64:f:129:ILE:HG12	2.09	0.52
72:n:60:SER:HB2	72:n:65:TYR:CE1	2.45	0.52
77:s:67:VAL:HG21	77:s:81:ILE:HG23	1.91	0.52
4:3:19:HIS:CD2	4:3:21:LEU:H	2.29	0.51
11:AA:243:G:OP1	52:T:115:LYS:NZ	2.38	0.51
11:AA:819:U:H2'	11:AA:820:A:H8	1.74	0.51
11:AA:2196:C:H2'	11:AA:2242:A:H61	1.74	0.51
11:AA:2250:G:H1	11:AA:2266:U:H3	1.58	0.51
11:AA:2714:G:H5'	11:AA:2716:U:C6	2.45	0.51
11:AA:2714:G:N7	91:AA:3826:HOH:O	2.34	0.51
11:AA:2751:G:OP1	25:F:50:LYS:NZ	2.42	0.51
11:AA:3016:A:H2'	11:AA:3017:A:C8	2.44	0.51
11:AA:3334:U:H4'	11:AA:3335:A:H5'	1.91	0.51
12:Aa:1:MET:SD	12:Aa:4:PHE:HB2	2.50	0.51
12:Aa:746:VAL:HG21	12:Aa:784:LEU:HA	1.91	0.51
40:MM:205:SER:OG	40:MM:208:ASN:OD1	2.28	0.51
61:c:149:C:N3	61:c:166:C:N4	2.58	0.51
61:c:1332:C:OP1	78:t:43:SER:OG	2.22	0.51
61:c:1770:U:H2'	61:c:1771:U:C6	2.45	0.51
75:q:64:ALA:HB3	75:q:104:ALA:HB3	1.91	0.51
75:q:84:ARG:HB3	75:q:118:VAL:HG23	1.92	0.51
11:AA:1010:G:N2	40:MM:193:ASP:OD2	2.44	0.51
11:AA:1103:A:N6	11:AA:1364:C:H5'	2.25	0.51
22:E:6:GLU:OE2	22:E:99:ARG:NH2	2.40	0.51
27:G:37:LEU:HD12	27:G:41:ILE:HD11	1.93	0.51
50:R:50:ALA:HA	50:R:67:MET:O	2.10	0.51
55:W:70:PRO:HB2	55:W:73:LEU:HD23	1.92	0.51
61:c:1047:G:H2'	61:c:1048:G:C8	2.46	0.51
64:f:140:ARG:HH12	64:f:226:THR:HG21	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
64:f:168:ARG:HD3	64:f:170:ILE:HD11	1.92	0.51
64:f:173:PRO:HG2	71:m:57:ARG:HD2	1.92	0.51
67:i:176:THR:OG1	67:i:180:ARG:NH2	2.42	0.51
1:0:36:SER:HB2	61:c:521:A:H4'	1.91	0.51
3:2:26:CYS:O	3:2:27:SER:OG	2.23	0.51
3:2:76:SER:OG	61:c:1793:G:N2	2.44	0.51
4:3:6:ASP:OD2	4:3:9:HIS:ND1	2.42	0.51
11:AA:270:U:H2'	11:AA:271:C:H6	1.76	0.51
11:AA:1019:G:H2'	11:AA:1020:G:C8	2.43	0.51
11:AA:2407:C:H2'	11:AA:2408:U:H6	1.75	0.51
11:AA:2696:A:H2'	11:AA:2697:A:C8	2.46	0.51
12:Aa:30:HIS:CE1	12:Aa:130:ASP:H	2.29	0.51
27:G:80:THR:O	27:G:84:LEU:HD23	2.10	0.51
39:M:75:LEU:HD22	39:M:78:LEU:HD22	1.93	0.51
61:c:331:A:H2'	61:c:332:U:C6	2.45	0.51
61:c:1175:U:H2'	61:c:1176:G:H8	1.75	0.51
61:c:1463:C:N4	79:u:140:THR:OG1	2.43	0.51
61:c:1566:U:H5''	79:u:39:GLY:N	2.25	0.51
10:A:147:TRP:CE3	10:A:150:GLU:HG3	2.45	0.51
11:AA:1333:C:H5''	34:JJ:110:ARG:HD3	1.93	0.51
11:AA:2095:G:H2'	11:AA:2096:A:C8	2.45	0.51
11:AA:2413:A:H2'	11:AA:2414:G:H8	1.75	0.51
11:AA:2960:C:H2'	11:AA:2961:G:H8	1.74	0.51
11:AA:3140:G:N7	26:FF:28:ARG:NH1	2.56	0.51
44:OO:102:GLN:HB2	44:OO:104:ARG:HH11	1.76	0.51
49:QQ:73:ARG:NH1	49:QQ:86:ASN:O	2.44	0.51
61:c:773:C:O2'	61:c:787:G:N2	2.43	0.51
61:c:1310:U:HO2'	61:c:1402:G:HO2'	1.57	0.51
61:c:1344:A:H2'	61:c:1345:A:C8	2.46	0.51
61:c:1491:U:O2'	61:c:1492:A:OP2	2.23	0.51
62:d:135:GLU:O	62:d:139:VAL:HG22	2.10	0.51
66:h:182:TYR:N	66:h:226:PHE:O	2.37	0.51
11:AA:648:C:C4	11:AA:2375:G:H5''	2.45	0.51
11:AA:769:G:O2'	44:OO:168:ARG:NH1	2.37	0.51
11:AA:890:C:H2'	11:AA:891:G:H8	1.75	0.51
11:AA:1109:U:H2'	11:AA:1110:U:C6	2.45	0.51
11:AA:1348:U:H4'	11:AA:1349:G:OP1	2.11	0.51
11:AA:2415:C:OP1	23:EE:2:GLY:HA3	2.11	0.51
11:AA:2436:U:H4'	36:KK:70:LYS:HD2	1.93	0.51
11:AA:2573:G:H2'	11:AA:2574:G:C8	2.46	0.51
24:Ee:87:GLU:OE1	24:Ee:100:HIS:ND1	2.44	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:JJ:214:TRP:CE2	34:JJ:219:LYS:HD2	2.46	0.51
37:L:68:ILE:HD12	37:L:119:GLU:HA	1.93	0.51
61:c:1086:A:H2'	61:c:1087:A:C8	2.45	0.51
61:c:1374:C:H2'	61:c:1375:A:H8	1.75	0.51
69:k:44:LYS:HE3	69:k:63:PRO:HB3	1.92	0.51
11:AA:696:C:OP2	28:GG:119:ARG:NH2	2.37	0.51
11:AA:2532:U:H2'	11:AA:2533:G:H8	1.76	0.51
17:CC:4:C:H2'	17:CC:5:U:C6	2.46	0.51
17:CC:132:G:OP1	33:J:91:ASN:ND2	2.41	0.51
17:CC:149:A:H2'	17:CC:150:G:C8	2.46	0.51
28:GG:233:LEU:HB3	28:GG:238:LEU:HD11	1.93	0.51
50:R:14:LEU:HD11	50:R:31:LYS:HB2	1.91	0.51
61:c:639:U:OP1	69:k:112:ARG:NH2	2.33	0.51
61:c:1480:G:H5''	80:v:63:ARG:HH12	1.75	0.51
61:c:1604:U:OP1	77:s:130:GLY:N	2.37	0.51
61:c:1752:U:H2'	61:c:1753:A:C8	2.46	0.51
62:d:72:ASP:OD1	62:d:119:ARG:N	2.44	0.51
64:f:236:PRO:O	82:x:33:GLN:NE2	2.37	0.51
66:h:125:LYS:NZ	66:h:225:VAL:O	2.38	0.51
11:AA:19:U:H2'	11:AA:20:A:C8	2.45	0.51
11:AA:66:A:N6	11:AA:76:G:H1'	2.26	0.51
11:AA:1157:G:H2'	11:AA:1158:A:O4'	2.11	0.51
11:AA:2367:A:H2'	11:AA:2368:A:H8	1.76	0.51
11:AA:2747:A:H2'	11:AA:2748:A:C8	2.45	0.51
11:AA:3056:U:OP1	11:AA:3079:U:N3	2.43	0.51
12:Aa:391:LYS:HE3	12:Aa:548:ASP:HB2	1.91	0.51
12:Aa:653:VAL:HG13	12:Aa:656:LEU:HB2	1.92	0.51
17:CC:131:A:H2'	17:CC:132:G:H8	1.76	0.51
32:II:4:GLN:HB3	48:Q:74:PHE:CE1	2.45	0.51
37:L:46:ILE:HB	37:L:49:TYR:HE1	1.74	0.51
49:QQ:159:ARG:HB2	49:QQ:164:LEU:HB2	1.91	0.51
51:S:87:GLU:OE2	51:S:91:ARG:NH2	2.44	0.51
61:c:472:U:H2'	61:c:473:A:H8	1.75	0.51
61:c:805:U:O2'	83:y:78:ARG:NH1	2.36	0.51
61:c:1253:U:H2'	61:c:1254:U:H6	1.76	0.51
61:c:1415:U:OP1	78:t:45:ARG:NH2	2.44	0.51
62:d:148:ASP:OD1	62:d:149:LEU:N	2.40	0.51
11:AA:209:A:O2'	11:AA:211:A:OP2	2.27	0.51
11:AA:294:U:H4'	53:U:77:LEU:HD23	1.92	0.51
11:AA:1616:U:H2'	11:AA:1617:G:C8	2.46	0.51
11:AA:1778:G:C4	11:AA:1780:G:N7	2.79	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2095:G:H2'	11:AA:2096:A:H8	1.75	0.51
11:AA:2118:C:H3'	11:AA:2119:A:C8	2.46	0.51
11:AA:2662:G:H2'	11:AA:2663:G:C8	2.46	0.51
11:AA:2880:U:H1'	26:FF:250:ALA:HB3	1.93	0.51
12:Aa:353:ALA:HB3	12:Aa:370:LYS:HG2	1.93	0.51
17:CC:154:C:H2'	17:CC:155:A:H8	1.75	0.51
25:F:75:ILE:HD11	25:F:88:ARG:HH11	1.76	0.51
29:H:54:LEU:HD21	29:H:119:GLY:HA3	1.93	0.51
49:QQ:120:TRP:HE1	49:QQ:123:GLN:HB3	1.76	0.51
51:S:98:GLN:HA	51:S:101:VAL:HG22	1.92	0.51
51:S:98:GLN:HG3	51:S:102:LYS:HE3	1.91	0.51
61:c:15:U:OP2	64:f:203:LYS:HG3	2.11	0.51
61:c:333:A:N6	70:l:27:PHE:HB2	2.26	0.51
61:c:990:C:H2'	61:c:991:G:O4'	2.11	0.51
61:c:1472:C:O2	61:c:1534:G:N2	2.44	0.51
61:c:1739:C:H2'	61:c:1740:A:C8	2.46	0.51
62:d:18:LEU:HD21	78:t:102:VAL:HG12	1.93	0.51
62:d:144:ILE:HG12	62:d:158:VAL:HB	1.93	0.51
71:m:45:ILE:HD11	71:m:104:PHE:HB3	1.91	0.51
77:s:67:VAL:HG11	77:s:85:ILE:HG22	1.93	0.51
11:AA:46:U:O4	49:QQ:83:LYS:NZ	2.33	0.51
11:AA:422:A:N1	11:AA:2362:C:O2'	2.38	0.51
11:AA:887:G:H2'	11:AA:888:A:C8	2.46	0.51
11:AA:938:C:OP2	39:M:26:ARG:NH1	2.44	0.51
11:AA:1576:G:H2'	11:AA:1577:G:O4'	2.11	0.51
11:AA:2352:A:H5''	13:B:83:TRP:O	2.11	0.51
11:AA:2631:U:H2'	11:AA:2632:G:H8	1.76	0.51
11:AA:3215:A:H5''	50:R:2:ALA:HB2	1.93	0.51
61:c:918:U:H2'	61:c:919:A:H8	1.75	0.51
61:c:1079:U:H2'	61:c:1080:U:C6	2.46	0.51
61:c:1607:G:H2'	61:c:1608:U:C6	2.46	0.51
61:c:1624:C:H2'	61:c:1625:C:C6	2.46	0.51
8:7:256:THR:HG21	8:7:261:LYS:HE3	1.93	0.51
11:AA:38:U:H5''	39:M:32:ARG:HD2	1.92	0.51
11:AA:66:A:H61	11:AA:76:G:H1'	1.76	0.51
11:AA:377:A:H1'	11:AA:392:G:N2	2.26	0.51
11:AA:1060:U:H2'	11:AA:1061:A:H8	1.76	0.51
11:AA:2103:U:H2'	11:AA:2104:A:C8	2.45	0.51
11:AA:2499:U:H2'	11:AA:2500:A:H8	1.76	0.51
11:AA:2561:A:H2'	11:AA:2562:A:H8	1.74	0.51
11:AA:2947:G:N3	26:FF:250:ALA:HB1	2.25	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:CC:69:U:H2'	17:CC:70:G:O4'	2.11	0.51
28:GG:206:LEU:HD23	28:GG:248:VAL:HG22	1.93	0.51
53:U:60:LEU:HD13	53:U:72:VAL:HG11	1.92	0.51
61:c:97:C:H2'	61:c:98:U:H6	1.76	0.51
61:c:400:A:H4'	61:c:401:A:H5''	1.93	0.51
61:c:1144:U:H2'	61:c:1145:U:C6	2.45	0.51
68:j:64:LYS:HB3	68:j:67:VAL:HG23	1.92	0.51
71:m:162:SER:O	71:m:162:SER:OG	2.29	0.51
73:o:121:ASP:O	73:o:123:VAL:HG13	2.11	0.51
11:AA:39:A:H5''	39:M:35:ALA:HB2	1.93	0.50
11:AA:792:G:H2'	11:AA:793:C:H6	1.76	0.50
11:AA:2115:G:H22	11:AA:2120:A:H1'	1.75	0.50
11:AA:2660:G:OP1	11:AA:2750:U:O2'	2.30	0.50
11:AA:2768:U:H2'	11:AA:2769:A:C8	2.44	0.50
12:Aa:311:GLU:HB2	12:Aa:322:VAL:HG21	1.94	0.50
12:Aa:406:LYS:HB3	12:Aa:409:GLN:HB2	1.93	0.50
17:CC:34:U:H4'	52:T:85:THR:HG21	1.92	0.50
28:GG:339:LEU:HA	28:GG:342:LYS:HE3	1.93	0.50
29:H:18:PRO:HA	29:H:51:ALA:HA	1.93	0.50
45:P:72:ARG:HG3	45:P:96:VAL:HG21	1.93	0.50
61:c:536:C:O5'	71:m:175:ARG:NH2	2.44	0.50
61:c:743:U:H2'	61:c:744:U:C6	2.46	0.50
61:c:1557:U:H3	76:r:81:ARG:NE	2.06	0.50
61:c:1738:U:H2'	61:c:1739:C:H6	1.75	0.50
68:j:173:PRO:O	68:j:173:PRO:HD2	2.10	0.50
82:x:4:ASP:O	82:x:5:LYS:HG2	2.10	0.50
11:AA:393:U:H2'	11:AA:394:G:O4'	2.12	0.50
11:AA:431:U:H2'	11:AA:432:G:C8	2.46	0.50
11:AA:640:U:H2'	11:AA:641:C:C6	2.46	0.50
11:AA:673:U:H2'	11:AA:674:G:C8	2.45	0.50
11:AA:1568:U:O2'	11:AA:1570:U:O2'	2.30	0.50
11:AA:3175:U:H4'	11:AA:3176:G:H5'	1.93	0.50
12:Aa:369:ILE:HD11	12:Aa:379:MET:HE1	1.94	0.50
17:CC:26:U:H2'	17:CC:27:U:C6	2.46	0.50
43:O:57:GLU:OE2	43:O:69:TYR:OH	2.22	0.50
61:c:646:C:H2'	61:c:647:G:O4'	2.11	0.50
61:c:888:U:H2'	61:c:889:U:C6	2.46	0.50
61:c:1066:C:H4'	63:e:149:GLN:HG3	1.94	0.50
61:c:1213:G:H1	61:c:1450:U:H3	1.58	0.50
63:e:134:VAL:HG12	63:e:218:LEU:HD12	1.92	0.50
63:e:142:PHE:HD1	63:e:209:ASN:HB3	1.75	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
65:g:191:ASP:HB3	65:g:194:LYS:HG2	1.93	0.50
71:m:133:HIS:HA	71:m:162:SER:CB	2.41	0.50
1:0:37:LYS:HD3	1:0:94:TYR:HE1	1.76	0.50
11:AA:286:U:O2'	49:QQ:179:LYS:O	2.27	0.50
11:AA:312:C:H2'	11:AA:313:A:C8	2.46	0.50
11:AA:1203:A:H2'	11:AA:1204:A:C8	2.46	0.50
11:AA:1255:C:H2'	11:AA:1256:G:C8	2.47	0.50
11:AA:1596:C:H2'	11:AA:1597:C:H6	1.75	0.50
11:AA:2102:U:H2'	11:AA:2103:U:C6	2.45	0.50
11:AA:2283:G:H1'	11:AA:2285:C:N4	2.26	0.50
11:AA:2477:G:H2'	11:AA:2477:G:N3	2.26	0.50
11:AA:2489:C:H2'	11:AA:2490:C:C2	2.46	0.50
11:AA:2712:U:HO2'	11:AA:2743:A:HO2'	1.58	0.50
11:AA:2745:G:N2	11:AA:2748:A:OP2	2.32	0.50
13:B:29:THR:HG22	13:B:119:VAL:HG21	1.92	0.50
61:c:1353:U:H2'	61:c:1354:G:H8	1.76	0.50
66:h:212:ASP:OD1	66:h:216:ASN:N	2.40	0.50
68:j:147:LEU:HD13	68:j:156:PHE:HZ	1.77	0.50
75:q:16:VAL:O	75:q:30:VAL:HA	2.11	0.50
8:7:203:THR:HG21	8:7:244:ALA:HA	1.93	0.50
10:A:172:ARG:NH1	11:AA:3190:C:OP1	2.42	0.50
11:AA:53:G:OP1	54:V:48:ASN:N	2.36	0.50
11:AA:945:C:H2'	11:AA:946:U:C6	2.45	0.50
11:AA:1565:G:H3'	11:AA:1566:A:C8	2.46	0.50
11:AA:2223:A:OP2	11:AA:2223:A:H8	1.94	0.50
11:AA:2465:G:O6	11:AA:2493:U:C2	2.64	0.50
11:AA:2904:U:H2'	11:AA:2905:U:H6	1.77	0.50
20:DD:29:GLY:N	20:DD:186:THR:O	2.44	0.50
23:EE:211:HIS:CD2	23:EE:219:ILE:HG23	2.47	0.50
26:FF:152:LYS:HE2	26:FF:192:VAL:HB	1.92	0.50
35:K:83:ASP:O	35:K:84:LYS:HG2	2.12	0.50
35:K:115:ARG:O	35:K:119:ILE:HG12	2.11	0.50
37:L:25:ILE:HG13	37:L:43:VAL:HG12	1.93	0.50
43:O:13:LYS:O	43:O:17:VAL:HG23	2.11	0.50
61:c:859:A:C5	74:p:73:ARG:HD3	2.46	0.50
61:c:1555:A:O2'	76:r:82:ASN:ND2	2.27	0.50
61:c:1624:C:H2'	61:c:1625:C:H6	1.77	0.50
62:d:122:ILE:HA	62:d:144:ILE:O	2.11	0.50
67:i:62:VAL:HG12	67:i:89:ILE:HD12	1.92	0.50
71:m:176:ASN:HA	71:m:179:ARG:HG2	1.94	0.50
80:v:14:PHE:CE2	80:v:136:ALA:HB2	2.45	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:16:PRO:HG3	66:h:95:THR:HG23	1.92	0.50
11:AA:1224:C:C2	11:AA:1225:A:C8	2.99	0.50
11:AA:1940:G:N2	11:AA:3362:A:H8	2.09	0.50
11:AA:2883:U:H2'	11:AA:2884:C:C6	2.47	0.50
11:AA:3164:C:H2'	11:AA:3165:A:C8	2.44	0.50
14:BB:1:G:O6	30:HH:262:LYS:NZ	2.45	0.50
16:C:3:ILE:HG12	34:JJ:110:ARG:HE	1.77	0.50
17:CC:83:C:H41	35:K:52:ARG:HH12	1.60	0.50
23:EE:45:VAL:HG22	23:EE:61:VAL:HG22	1.93	0.50
53:U:47:ILE:HG13	53:U:48:ALA:N	2.27	0.50
54:V:64:MET:HG2	54:V:67:LEU:HB2	1.94	0.50
61:c:600:U:H2'	61:c:601:A:C8	2.46	0.50
61:c:997:G:H2'	61:c:998:A:C8	2.46	0.50
67:i:48:PHE:HA	67:i:130:ILE:HD11	1.93	0.50
71:m:113:VAL:HG13	71:m:125:ALA:HB1	1.93	0.50
74:p:60:VAL:HG23	74:p:66:ILE:HD12	1.94	0.50
80:v:73:VAL:HG11	80:v:102:ARG:HG3	1.94	0.50
2:1:95:HIS:CE1	2:1:99:ALA:HA	2.47	0.50
3:2:44:ILE:HG23	3:2:45:VAL:HG23	1.94	0.50
11:AA:12:A:H2'	11:AA:13:A:C8	2.45	0.50
11:AA:136:G:H2'	11:AA:137:G:H8	1.77	0.50
11:AA:658:G:N2	28:GG:93:MET:HB2	2.26	0.50
11:AA:1381:A:H2'	11:AA:1382:G:H8	1.76	0.50
11:AA:1897:G:O2'	29:H:16:GLY:O	2.26	0.50
11:AA:3044:G:H2'	11:AA:3045:G:H8	1.76	0.50
11:AA:3203:U:H2'	11:AA:3204:C:C6	2.47	0.50
12:Aa:613:LYS:NZ	61:c:1264:G:OP1	2.44	0.50
13:B:35:ALA:HB2	13:B:58:ILE:HG23	1.93	0.50
17:CC:75:G:H2'	17:CC:76:C:C6	2.47	0.50
30:HH:50:ARG:NH2	30:HH:72:ASP:OD2	2.44	0.50
30:HH:279:LYS:NZ	30:HH:280:GLU:OE2	2.39	0.50
32:II:31:ARG:NE	50:R:107:ILE:O	2.41	0.50
52:T:40:SER:O	52:T:42:PRO:HD3	2.11	0.50
61:c:504:U:H2'	61:c:505:A:C8	2.47	0.50
61:c:1388:A:H5''	78:t:48:ASN:ND2	2.26	0.50
61:c:1652:C:H2'	61:c:1653:C:H6	1.77	0.50
62:d:26:ALA:HB3	62:d:149:LEU:HB2	1.94	0.50
63:e:87:ARG:HD2	63:e:101:HIS:CD2	2.46	0.50
63:e:101:HIS:HA	63:e:217:LEU:HD12	1.93	0.50
64:f:41:LEU:O	64:f:45:VAL:HG23	2.11	0.50
64:f:140:ARG:NH2	64:f:228:ASN:OD1	2.44	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
74:p:23:PRO:HG2	74:p:26:PHE:HB2	1.93	0.50
80:v:37:VAL:HG12	80:v:39:THR:H	1.76	0.50
8:7:44:SER:HB3	8:7:61:PHE:HE2	1.77	0.50
11:AA:57:A:H4'	49:QQ:157:LYS:HB2	1.92	0.50
11:AA:1364:C:H2'	11:AA:1365:G:C8	2.47	0.50
11:AA:1643:A:H2'	11:AA:1644:C:C2	2.47	0.50
11:AA:1713:G:O2'	11:AA:1730:G:N2	2.39	0.50
11:AA:1783:U:H2'	11:AA:1784:G:C8	2.46	0.50
11:AA:3251:U:H2'	11:AA:3252:G:C8	2.47	0.50
11:AA:3298:C:C2	11:AA:3299:A:C8	2.99	0.50
12:Aa:21:ASN:OD1	12:Aa:399:ARG:NH2	2.41	0.50
12:Aa:69:THR:N	89:Aa:1001:GTP:O3G	2.44	0.50
22:E:125:LYS:HZ2	22:E:127:ALA:HB2	1.77	0.50
22:E:148:LEU:HG	46:PP:38:ILE:HD11	1.94	0.50
26:FF:56:ILE:HD12	26:FF:356:LEU:HD22	1.94	0.50
61:c:1732:A:H2'	61:c:1733:C:H6	1.76	0.50
66:h:11:ARG:HD3	66:h:21:ASP:O	2.12	0.50
67:i:117:THR:O	67:i:121:ILE:HG12	2.11	0.50
72:n:8:ARG:O	72:n:12:HIS:ND1	2.30	0.50
80:v:77:ASN:OD1	80:v:95:ASP:HB3	2.11	0.50
81:w:60:THR:HG22	81:w:87:HIS:HB3	1.93	0.50
11:AA:293:C:H2'	11:AA:294:U:O4'	2.11	0.50
11:AA:418:A:H2'	11:AA:419:G:C8	2.47	0.50
11:AA:662:U:H2'	11:AA:663:OMC:C6	2.46	0.50
11:AA:1444:G:H2'	11:AA:1445:U:O4'	2.12	0.50
11:AA:1639:C:OP2	51:S:74:ARG:NH1	2.44	0.50
11:AA:2180:G:H2'	11:AA:2181:C:C6	2.47	0.50
11:AA:2506:U:H2'	11:AA:2507:C:C6	2.47	0.50
17:CC:139:U:H2'	17:CC:140:G:H8	1.76	0.50
36:KK:76:ALA:O	36:KK:79:GLN:HG3	2.11	0.50
61:c:82:U:H2'	61:c:83:G:O4'	2.12	0.50
61:c:625:C:H2'	61:c:626:U:H6	1.75	0.50
61:c:805:U:H2'	61:c:806:A:H8	1.77	0.50
61:c:1352:G:H22	61:c:1374:C:N4	2.09	0.50
61:c:1365:C:H2'	61:c:1366:U:C6	2.47	0.50
63:e:137:ILE:HD12	63:e:215:VAL:HG12	1.94	0.50
71:m:152:SER:O	71:m:156:ILE:HG13	2.11	0.50
73:o:91:LEU:HB3	73:o:100:TYR:HB3	1.93	0.50
7:6:23:LYS:HG3	7:6:24:THR:N	2.26	0.50
11:AA:138:U:H2'	11:AA:139:G:C8	2.47	0.50
11:AA:1060:U:H2'	11:AA:1061:A:C8	2.47	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1068:C:H5'	25:F:110:LYS:HZ2	1.75	0.50
11:AA:1182:A:H2'	11:AA:1183:C:C6	2.47	0.50
11:AA:1798:A:H2'	11:AA:1799:A:C8	2.47	0.50
11:AA:2106:A:H2'	11:AA:2107:A:C8	2.46	0.50
11:AA:2217:U:H2'	11:AA:2218:G:H8	1.77	0.50
11:AA:3006:A:C2	11:AA:3141:A:C4	3.00	0.50
26:FF:70:ARG:HG3	29:H:88:ARG:NH2	2.27	0.50
26:FF:109:HIS:ND1	26:FF:200:GLU:OE2	2.40	0.50
52:T:30:GLU:N	52:T:30:GLU:OE2	2.45	0.50
53:U:89:GLU:O	53:U:93:ILE:HG23	2.12	0.50
61:c:116:U:H2'	61:c:117:U:C6	2.46	0.50
61:c:1050:G:O6	61:c:1069:A:N6	2.44	0.50
61:c:1458:G:H21	76:r:126:VAL:HG11	1.77	0.50
61:c:1582:U:H5''	77:s:135:ARG:HH11	1.77	0.50
63:e:137:ILE:HG23	63:e:215:VAL:HG12	1.93	0.50
64:f:95:ARG:NH1	64:f:97:ARG:HE	2.10	0.50
67:i:130:ILE:HA	67:i:133:VAL:HG12	1.93	0.50
73:o:75:VAL:HG12	73:o:86:ILE:HG22	1.94	0.50
77:s:89:LEU:HG	77:s:93:HIS:HE1	1.77	0.50
80:v:34:VAL:HG13	80:v:53:TRP:HE1	1.77	0.50
2:1:100:ILE:HG12	67:i:120:ILE:HD11	1.93	0.49
8:7:52:GLN:HE22	8:7:53:LYS:HE2	1.75	0.49
11:AA:745:C:H2'	11:AA:746:A:H8	1.77	0.49
11:AA:866:A:C2	11:AA:867:OMG:H1'	2.47	0.49
11:AA:2397:A:H61	11:AA:2869:U:H4'	1.77	0.49
12:Aa:24:VAL:HA	12:Aa:126:LEU:HB3	1.94	0.49
12:Aa:489:VAL:HG12	12:Aa:538:LEU:HD22	1.94	0.49
14:BB:56:A:H4'	42:NN:152:HIS:HB2	1.93	0.49
19:D:160:GLU:HG2	19:D:163:ARG:NH2	2.26	0.49
38:LL:99:ILE:HG22	38:LL:101:VAL:HG23	1.94	0.49
61:c:14:C:H2'	61:c:15:U:C6	2.47	0.49
61:c:269:G:H2'	61:c:270:C:C6	2.47	0.49
61:c:865:A:H2'	61:c:866:G:O4'	2.11	0.49
61:c:1360:A:C2	61:c:1361:U:H1'	2.46	0.49
65:g:105:MET:HB3	65:g:122:VAL:HG21	1.93	0.49
67:i:111:VAL:HG13	77:s:43:ILE:HG21	1.93	0.49
70:l:152:ILE:HG13	70:l:153:GLU:H	1.77	0.49
10:A:140:LYS:O	10:A:143:THR:OG1	2.19	0.49
11:AA:673:U:H2'	11:AA:674:G:H8	1.76	0.49
11:AA:1151:U:O2'	11:AA:2369:G:N2	2.44	0.49
11:AA:1167:U:OP1	91:AA:3726:HOH:O	2.20	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1354:G:H2'	11:AA:1357:G:H4'	1.93	0.49
11:AA:1615:C:H2'	11:AA:1616:U:C6	2.47	0.49
11:AA:1721:U:OP2	19:D:103:ARG:HD3	2.12	0.49
11:AA:2218:G:H2'	11:AA:2219:A:C8	2.45	0.49
11:AA:2457:G:O2'	11:AA:2487:U:O4	2.27	0.49
11:AA:2497:U:H2'	11:AA:2498:U:O4'	2.12	0.49
11:AA:2767:U:H2'	11:AA:2768:U:H6	1.76	0.49
17:CC:63:G:H22	17:CC:97:A:H2	1.60	0.49
22:E:2:ALA:HB3	22:E:32:SER:HB2	1.95	0.49
26:FF:78:VAL:HG22	26:FF:323:MET:HG2	1.94	0.49
29:H:80:ARG:HD3	29:H:117:PRO:HD2	1.93	0.49
61:c:279:G:H2'	61:c:280:U:H3'	1.94	0.49
61:c:301:A:H2'	61:c:302:U:C6	2.47	0.49
61:c:968:U:H2'	61:c:969:C:O4'	2.12	0.49
61:c:1041:G:H2'	61:c:1042:G:H8	1.77	0.49
61:c:1623:C:H2'	61:c:1624:C:C6	2.47	0.49
61:c:1753:A:H2'	61:c:1754:A:C8	2.46	0.49
71:m:177:ALA:HA	71:m:180:LYS:HG2	1.94	0.49
7:6:45:VAL:HG23	7:6:47:VAL:HG13	1.93	0.49
10:A:152:VAL:HA	10:A:155:LYS:HE3	1.93	0.49
11:AA:63:A:H5''	49:QQ:174:ILE:HG21	1.93	0.49
11:AA:91:G:OP2	11:AA:93:C:N4	2.40	0.49
11:AA:99:A:H1'	11:AA:281:G:N7	2.27	0.49
11:AA:283:G:OP2	59:a:45:ARG:NH2	2.45	0.49
11:AA:585:A:H2'	11:AA:586:C:C6	2.47	0.49
11:AA:664:U:H5'	28:GG:107:ARG:HA	1.94	0.49
11:AA:1616:U:H2'	11:AA:1617:G:H8	1.78	0.49
11:AA:2213:A:H2'	11:AA:2214:A:H8	1.76	0.49
11:AA:2586:G:O2'	11:AA:2588:U:OP2	2.30	0.49
24:Ee:62:LEU:HB3	24:Ee:64:ILE:HG23	1.95	0.49
26:FF:302:LYS:N	26:FF:302:LYS:HD2	2.28	0.49
28:GG:325:LEU:O	34:JJ:41:ARG:NH2	2.43	0.49
44:OO:55:ARG:NH1	44:OO:73:ARG:O	2.38	0.49
48:Q:80:LYS:O	48:Q:84:THR:HG23	2.12	0.49
61:c:66:U:H5'	68:j:173:PRO:HA	1.94	0.49
61:c:886:U:H2'	61:c:887:A:H8	1.77	0.49
61:c:890:C:H2'	61:c:891:A:C8	2.47	0.49
61:c:1281:G:H2'	61:c:1282:U:C6	2.47	0.49
61:c:1482:C:N4	61:c:1524:A:OP2	2.45	0.49
61:c:1483:A:H2'	61:c:1484:G:C8	2.47	0.49
61:c:1716:C:O2'	61:c:1717:G:O5'	2.28	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
67:i:48:PHE:CG	67:i:67:PRO:HB3	2.47	0.49
68:j:98:ARG:HH22	68:j:101:ILE:C	2.21	0.49
80:v:65:ILE:HG22	80:v:124:ILE:HG23	1.93	0.49
81:w:25:THR:O	81:w:114:VAL:HA	2.12	0.49
3:2:59:TYR:OH	63:e:72:ASP:OD2	2.23	0.49
10:A:37:ARG:HD2	10:A:108:ILE:HD11	1.94	0.49
11:AA:895:A:O2'	11:AA:896:A:OP2	2.28	0.49
11:AA:911:C:H2'	11:AA:912:G:C8	2.47	0.49
11:AA:1472:U:H2'	11:AA:1473:G:C8	2.45	0.49
11:AA:1746:U:O2'	55:W:4:GLU:OE2	2.30	0.49
11:AA:2094:C:H2'	11:AA:2095:G:H8	1.77	0.49
11:AA:2178:A:H5''	23:EE:132:ASN:HD21	1.76	0.49
11:AA:2700:G:H5''	25:F:17:ARG:HG2	1.93	0.49
11:AA:2815:OMG:N3	11:AA:2870:5MC:HM52	2.27	0.49
11:AA:2880:U:H2'	11:AA:2881:C:C6	2.47	0.49
11:AA:3193:C:H2'	11:AA:3194:C:C6	2.47	0.49
16:C:175:ALA:O	16:C:182:LYS:HB2	2.12	0.49
17:CC:51:G:OP2	56:X:21:ARG:NH1	2.44	0.49
23:EE:118:GLU:HG3	23:EE:125:ALA:HB3	1.93	0.49
25:F:133:ALA:HB3	34:JJ:121:LYS:HB2	1.94	0.49
61:c:590:C:H2'	61:c:591:A:H8	1.76	0.49
6:5:16:LYS:HG2	61:c:1206:U:O2'	2.12	0.49
11:AA:49:A:OP1	49:QQ:191:TRP:NE1	2.41	0.49
11:AA:1666:G:H2'	11:AA:1667:A:C8	2.46	0.49
11:AA:2242:A:H5''	23:EE:244:GLY:HA3	1.94	0.49
12:Aa:728:VAL:HA	12:Aa:773:PRO:HA	1.94	0.49
16:C:44:PHE:HZ	16:C:127:LEU:HD21	1.76	0.49
49:QQ:124:ASP:OD1	49:QQ:127:TYR:N	2.38	0.49
61:c:145:A:H4'	61:c:146:U:OP1	2.12	0.49
61:c:460:A:H3'	61:c:461:G:H8	1.76	0.49
61:c:1175:U:H2'	61:c:1176:G:C8	2.48	0.49
71:m:133:HIS:ND1	71:m:162:SER:HB2	2.28	0.49
78:t:18:GLU:OE2	78:t:19:ARG:NE	2.45	0.49
11:AA:21:G:H3'	11:AA:22:G:H8	1.76	0.49
11:AA:585:A:H5''	50:R:70:LYS:HE2	1.94	0.49
11:AA:863:C:H2'	11:AA:864:G:O4'	2.13	0.49
11:AA:1729:A:O4'	43:O:52:ARG:NH1	2.36	0.49
14:BB:19:C:H2'	14:BB:20:A:C8	2.47	0.49
16:C:158:HIS:H	16:C:186:VAL:HG11	1.77	0.49
24:Ee:110:ILE:HD11	24:Ee:162:ILE:HD12	1.94	0.49
27:G:46:ALA:HB3	27:G:49:ASN:ND2	2.27	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:KK:68:ARG:NH1	36:KK:237:ILE:O	2.45	0.49
44:OO:62:THR:O	44:OO:64:LYS:N	2.46	0.49
49:QQ:73:ARG:HG2	49:QQ:75:VAL:HG13	1.94	0.49
61:c:1678:A:H2'	61:c:1679:G:C8	2.46	0.49
63:e:111:ARG:HH21	63:e:114:VAL:HG11	1.78	0.49
67:i:48:PHE:CD1	67:i:67:PRO:HB3	2.47	0.49
70:l:22:ARG:NH2	70:l:28:GLU:OE2	2.46	0.49
74:p:50:ILE:O	74:p:54:LEU:HD23	2.13	0.49
78:t:5:ARG:O	78:t:10:LYS:NZ	2.45	0.49
78:t:102:VAL:HB	78:t:106:THR:HB	1.95	0.49
79:u:13:HIS:CG	79:u:14:ILE:H	2.30	0.49
2:1:58:ARG:HH21	67:i:125:THR:N	2.10	0.49
3:2:89:ARG:HH22	61:c:1088:A:H4'	1.78	0.49
8:7:250:TYR:HB3	8:7:265:LEU:HD12	1.93	0.49
11:AA:314:U:H2'	11:AA:315:C:C6	2.46	0.49
11:AA:532:A:O2'	11:AA:533:A:H8	1.95	0.49
11:AA:754:G:H2'	11:AA:755:A:H8	1.77	0.49
11:AA:1597:C:H2'	11:AA:1598:G:H8	1.77	0.49
11:AA:1680:G:H2'	11:AA:1681:U:C6	2.48	0.49
11:AA:1695:U:O2'	11:AA:1749:A:N1	2.39	0.49
11:AA:2347:OMU:H2'	11:AA:2348:A:O4'	2.12	0.49
11:AA:2578:U:H2'	11:AA:2579:G:O4'	2.13	0.49
11:AA:2655:U:H2'	59:a:5:PRO:HD3	1.94	0.49
11:AA:2812:C:H2'	11:AA:2813:A:C8	2.48	0.49
11:AA:2883:U:H2'	11:AA:2884:C:H6	1.77	0.49
11:AA:2961:G:H2'	11:AA:2962:U:C6	2.47	0.49
11:AA:2990:G:OP1	26:FF:19:ARG:N	2.38	0.49
14:BB:90:U:H2'	14:BB:91:G:O4'	2.13	0.49
19:D:176:ARG:HH12	61:c:852:C:H5'	1.76	0.49
34:JJ:87:VAL:HG11	34:JJ:243:MET:HE1	1.94	0.49
35:K:70:ILE:HD13	35:K:82:VAL:HG22	1.94	0.49
61:c:5:U:H2'	61:c:6:G:C8	2.47	0.49
61:c:399:A:H5''	70:l:25:ARG:NH2	2.28	0.49
61:c:617:U:H2'	61:c:618:U:C6	2.47	0.49
61:c:1241:G:P	61:c:1241:G:H21	2.35	0.49
63:e:210:ILE:O	63:e:211:HIS:ND1	2.45	0.49
8:7:22:SER:OG	8:7:69:GLN:O	2.30	0.49
11:AA:695:C:OP2	28:GG:115:HIS:NE2	2.33	0.49
11:AA:2106:A:H2'	11:AA:2107:A:H8	1.78	0.49
11:AA:2533:G:N1	11:AA:2534:G:O6	2.46	0.49
11:AA:3329:U:H5''	26:FF:308:MET:HE2	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:CC:83:C:H41	35:K:52:ARG:NH1	2.10	0.49
21:Dd:23:U:HO2'	21:Dd:24:U:P	2.34	0.49
22:E:27:MET:HG2	25:F:151:LEU:O	2.13	0.49
27:G:38:ILE:HD11	27:G:56:VAL:HB	1.95	0.49
28:GG:145:ILE:HD11	28:GG:150:LEU:HD22	1.94	0.49
40:MM:52:LEU:HB3	40:MM:136:PHE:HB2	1.93	0.49
44:OO:37:ASN:O	44:OO:41:THR:HG23	2.13	0.49
45:P:20:LEU:HD11	45:P:32:ALA:HB2	1.94	0.49
61:c:250:C:H2'	61:c:251:A:C8	2.47	0.49
61:c:1257:U:H3'	61:c:1258:U:H6	1.78	0.49
61:c:1269:OMU:H4'	61:c:1270:G:C5'	2.43	0.49
61:c:1335:U:O2'	61:c:1336:A:OP1	2.26	0.49
69:k:18:LEU:HG	69:k:22:GLN:HE22	1.78	0.49
71:m:110:GLN:NE2	71:m:126:ARG:HB2	2.27	0.49
76:r:107:ILE:HG23	76:r:111:MET:HE2	1.95	0.49
3:2:89:ARG:NH2	61:c:1088:A:O3'	2.46	0.49
11:AA:756:U:H2'	11:AA:757:C:C6	2.48	0.49
11:AA:1389:G:OP1	48:Q:104:ASN:ND2	2.35	0.49
11:AA:2765:C:O3'	59:a:39:GLY:HA3	2.12	0.49
11:AA:2933:A:C2	11:AA:3014:U:H4'	2.48	0.49
11:AA:2998:U:H2'	11:AA:2999:U:C6	2.47	0.49
11:AA:3163:A:H2'	11:AA:3164:C:C6	2.47	0.49
12:Aa:41:GLN:HB3	12:Aa:51:ALA:HB1	1.94	0.49
12:Aa:380:LEU:O	12:Aa:469:LEU:N	2.42	0.49
17:CC:95:G:OP1	54:V:76:ASN:ND2	2.45	0.49
37:L:100:THR:O	37:L:107:ARG:HG3	2.13	0.49
42:NN:57:PHE:HB3	42:NN:59:ILE:HG23	1.94	0.49
61:c:407:A:H2'	61:c:408:C:C6	2.48	0.49
61:c:555:A:H2'	61:c:556:A:C8	2.47	0.49
61:c:1117:U:H2'	61:c:1118:G:H8	1.78	0.49
61:c:1294:G:O2'	61:c:1321:A:N1	2.37	0.49
61:c:1590:G:H2'	61:c:1591:C:C6	2.48	0.49
61:c:1733:C:H2'	61:c:1734:U:C6	2.48	0.49
62:d:126:PRO:HG2	62:d:151:SER:HB3	1.95	0.49
62:d:147:THR:HG23	62:d:151:SER:HB2	1.94	0.49
82:x:3:ASN:OD1	82:x:7:GLN:HG2	2.13	0.49
10:A:107:GLY:HA2	10:A:157:GLU:OE2	2.13	0.49
10:A:143:THR:HG22	10:A:150:GLU:HG2	1.95	0.49
11:AA:105:C:H2'	11:AA:106:A:H8	1.78	0.49
11:AA:1322:U:H2'	11:AA:1323:G:C8	2.47	0.49
11:AA:1872:C:H4'	19:D:58:HIS:HB2	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1886:A:O4'	11:AA:3307:A:H5'	2.13	0.49
11:AA:2256:A2M:N3	11:AA:2256:A2M:HM'2	2.28	0.49
11:AA:2597:U:H2'	11:AA:2598:G:H8	1.78	0.49
11:AA:2960:C:H2'	11:AA:2961:G:C8	2.48	0.49
11:AA:3101:G:H2'	11:AA:3102:G:C8	2.48	0.49
11:AA:3296:A:H2'	11:AA:3297:U:C6	2.48	0.49
26:FF:183:LEU:O	26:FF:191:LYS:NZ	2.41	0.49
43:O:44:ILE:HD13	43:O:89:VAL:HG23	1.95	0.49
44:OO:47:ALA:O	44:OO:49:ARG:N	2.41	0.49
61:c:330:G:H2'	61:c:331:A:C8	2.48	0.49
61:c:868:G:H1	61:c:960:U:H3	1.61	0.49
61:c:1142:A:H2'	61:c:1143:A:C8	2.47	0.49
62:d:127:ARG:NH2	62:d:150:ASP:O	2.45	0.49
65:g:202:LEU:HB2	65:g:205:ALA:HB2	1.93	0.49
66:h:181:VAL:HG12	66:h:227:VAL:HG22	1.94	0.49
68:j:3:LEU:HD12	68:j:111:LEU:HD11	1.94	0.49
83:y:14:ILE:HG12	83:y:25:VAL:HG11	1.95	0.49
11:AA:426:G:H5'	48:Q:50:ILE:HG22	1.95	0.48
11:AA:760:G:H1'	11:AA:771:A:N6	2.28	0.48
11:AA:1498:A:H2'	11:AA:1499:C:C6	2.48	0.48
11:AA:1646:G:O2'	11:AA:1808:G:N2	2.46	0.48
11:AA:1676:A:P	27:G:73:GLY:H	2.35	0.48
11:AA:2368:A:H2'	11:AA:2369:G:H8	1.78	0.48
11:AA:2526:C:H2'	11:AA:2527:G:C8	2.48	0.48
11:AA:2696:A:N7	11:AA:2758:A:N6	2.61	0.48
11:AA:3285:C:H2'	11:AA:3286:G:C8	2.48	0.48
12:Aa:269:LEU:HD23	12:Aa:269:LEU:H	1.78	0.48
16:C:176:ARG:N	39:M:51:GLY:HA2	2.28	0.48
23:EE:180:LEU:HD22	60:b:26:VAL:HG21	1.94	0.48
26:FF:229:VAL:HG21	26:FF:249:VAL:HG23	1.95	0.48
61:c:388:G:OP2	61:c:423:G:O2'	2.29	0.48
61:c:607:G:H5'	61:c:613:G:N2	2.28	0.48
61:c:1081:A:H2	61:c:1082:C:H41	1.61	0.48
61:c:1471:A:H2	61:c:1474:G:N3	2.12	0.48
62:d:188:LEU:HD21	62:d:195:TRP:CD1	2.48	0.48
63:e:149:GLN:NE2	63:e:151:LYS:HB3	2.25	0.48
74:p:46:THR:O	74:p:50:ILE:HG12	2.13	0.48
74:p:94:LYS:O	74:p:98:VAL:HG23	2.12	0.48
80:v:77:ASN:OD1	80:v:96:ALA:N	2.46	0.48
10:A:27:LEU:HD21	10:A:33:ILE:HB	1.95	0.48
11:AA:540:U:H2'	11:AA:541:U:C6	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:897:U:H2'	11:AA:898:OMU:H6	1.95	0.48
11:AA:1334:U:H5''	34:JJ:206:LYS:HB3	1.96	0.48
11:AA:1699:A:H2'	11:AA:1700:G:H8	1.78	0.48
11:AA:2225:U:H2'	11:AA:2226:U:C6	2.48	0.48
11:AA:2406:C:H2'	11:AA:2407:C:H6	1.79	0.48
11:AA:3187:A:OP1	38:LL:22:SER:HB2	2.13	0.48
22:E:12:ARG:O	22:E:22:PRO:HB2	2.13	0.48
32:II:4:GLN:HB2	48:Q:75:LEU:HB2	1.95	0.48
38:LL:34:LEU:HD22	38:LL:150:SER:HB3	1.94	0.48
44:OO:59:ARG:NH1	44:OO:66:ASN:O	2.46	0.48
45:P:55:LEU:HB2	45:P:95:PRO:HD3	1.95	0.48
46:PP:14:LEU:HD12	46:PP:16:GLU:HG2	1.94	0.48
61:c:248:U:H4'	73:o:36:LYS:HG3	1.96	0.48
61:c:803:A:C8	69:k:104:ARG:HD3	2.49	0.48
61:c:1205:C:H2'	61:c:1206:U:O4'	2.13	0.48
61:c:1776:A:H2'	61:c:1777:G:H8	1.78	0.48
62:d:4:PRO:HD2	62:d:7:PHE:HD2	1.78	0.48
66:h:42:LEU:N	66:h:84:ALA:O	2.34	0.48
68:j:121:LEU:H	68:j:124:LEU:HD21	1.78	0.48
76:r:37:ALA:O	76:r:42:ARG:NH1	2.46	0.48
1:0:57:VAL:HG22	1:0:60:PHE:CE1	2.49	0.48
3:2:19:LYS:NZ	61:c:928:U:OP1	2.43	0.48
10:A:23:VAL:O	10:A:27:LEU:HD23	2.14	0.48
11:AA:165:A:H2'	11:AA:166:C:C6	2.48	0.48
11:AA:230:U:H2'	11:AA:231:G:O4'	2.13	0.48
11:AA:369:A:HO2'	11:AA:404:G:H8	1.60	0.48
11:AA:436:A:OP2	11:AA:621:A:N6	2.41	0.48
11:AA:1570:U:H3	11:AA:1572:U:H1'	1.78	0.48
11:AA:2338:C:OP2	11:AA:2339:C:O2'	2.28	0.48
11:AA:2611:U:H2'	11:AA:2612:U:C6	2.49	0.48
11:AA:2926:A:H2'	11:AA:2927:C:C6	2.48	0.48
11:AA:2989:U:H2'	11:AA:2990:G:O4'	2.12	0.48
11:AA:3089:C:H2'	11:AA:3090:U:O4'	2.13	0.48
11:AA:3162:C:H2'	11:AA:3163:A:C8	2.48	0.48
11:AA:3214:U:C4	46:PP:121:MET:HG3	2.48	0.48
13:B:131:ARG:HG3	13:B:137:ASN:ND2	2.29	0.48
14:BB:47:C:OP2	30:HH:158:ARG:HD3	2.13	0.48
14:BB:72:A:H2'	14:BB:74:C:H5	1.77	0.48
42:NN:155:THR:OG1	42:NN:158:ASP:OD2	2.31	0.48
43:O:83:LYS:HB3	43:O:85:PHE:CE2	2.49	0.48
50:R:20:LYS:HG3	50:R:21:ARG:HG2	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:1151:A:H2'	61:c:1152:A:H8	1.79	0.48
61:c:1484:G:H2'	61:c:1485:C:C6	2.48	0.48
62:d:121:VAL:HG23	62:d:141:ILE:HG21	1.95	0.48
66:h:202:ASP:N	66:h:202:ASP:OD1	2.45	0.48
80:v:39:THR:HA	80:v:100:ILE:HD12	1.95	0.48
80:v:61:VAL:HG22	80:v:76:LEU:HD12	1.95	0.48
5:4:25:VAL:HG11	5:4:43:ASN:HB3	1.94	0.48
6:5:32:ARG:NH1	61:c:1596:C:O2	2.46	0.48
11:AA:98:G:H4'	11:AA:281:G:OP1	2.12	0.48
11:AA:629:U:H2'	11:AA:630:A:C8	2.48	0.48
11:AA:770:G:OP1	44:OO:171:ARG:NE	2.42	0.48
11:AA:790:U:H2'	11:AA:791:A:H8	1.78	0.48
11:AA:794:U:C2	11:AA:795:G:C8	3.02	0.48
11:AA:947:G:H5''	48:Q:55:ILE:HB	1.95	0.48
11:AA:1024:G:H1'	11:AA:1029:G:N1	2.28	0.48
11:AA:1221:A:H3'	11:AA:1222:G:H5'	1.95	0.48
11:AA:1362:G:H2'	11:AA:1363:A:C8	2.48	0.48
14:BB:96:U:OP1	22:E:43:TYR:OH	2.24	0.48
16:C:125:ASP:OD1	16:C:126:GLN:N	2.45	0.48
27:G:41:ILE:HG21	27:G:54:VAL:HG11	1.96	0.48
61:c:256:A:O2'	70:l:72:ILE:O	2.31	0.48
61:c:513:U:H5'	71:m:133:HIS:CE1	2.49	0.48
62:d:175:TYR:HD1	62:d:176:LEU:HD22	1.79	0.48
64:f:40:LYS:HA	64:f:43:ARG:HB2	1.96	0.48
64:f:116:LYS:HG2	64:f:127:ALA:HB3	1.95	0.48
67:i:72:HIS:O	77:s:79:TYR:OH	2.32	0.48
67:i:126:ASP:N	67:i:126:ASP:OD1	2.45	0.48
67:i:142:PRO:HD2	67:i:170:GLN:NE2	2.27	0.48
74:p:20:ARG:HE	83:y:56:HIS:CG	2.31	0.48
78:t:24:LEU:HB2	78:t:31:ASN:ND2	2.24	0.48
2:1:95:HIS:ND1	2:1:99:ALA:HA	2.28	0.48
3:2:82:ARG:NE	61:c:1153:G:OP1	2.46	0.48
11:AA:308:A:H1'	11:AA:2222:A:N3	2.29	0.48
11:AA:717:C:OP1	11:AA:751:A:O2'	2.32	0.48
11:AA:1207:G:O2'	11:AA:1209:G:OP2	2.31	0.48
11:AA:1255:C:H2'	11:AA:1256:G:H8	1.77	0.48
11:AA:1724:U:H1'	11:AA:1725:C:C6	2.48	0.48
11:AA:2586:G:O6	36:KK:242:ALA:N	2.44	0.48
11:AA:3089:C:OP1	26:FF:222:LYS:NZ	2.39	0.48
17:CC:9:A:H2'	17:CC:10:A:H8	1.77	0.48
24:Ee:12:TYR:O	24:Ee:13:LEU:HD22	2.12	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:H:104:ASN:OD1	29:H:108:GLU:N	2.46	0.48
61:c:932:U:OP2	63:e:155:TYR:OH	2.28	0.48
66:h:77:ARG:HD3	66:h:77:ARG:HA	1.63	0.48
68:j:34:GLN:HG3	68:j:36:VAL:HG13	1.96	0.48
68:j:35:GLU:HA	68:j:49:VAL:HG13	1.96	0.48
70:l:110:ARG:NH1	70:l:122:GLY:H	2.08	0.48
71:m:162:SER:O	71:m:164:PHE:N	2.44	0.48
10:A:62:THR:HA	11:AA:1306:G:C6	2.49	0.48
11:AA:760:G:H1'	11:AA:771:A:H61	1.78	0.48
11:AA:871:U:H2'	11:AA:872:U:C6	2.49	0.48
11:AA:1039:U:H2'	11:AA:1040:A:C8	2.48	0.48
11:AA:1306:G:O2'	11:AA:1307:G:H5''	2.12	0.48
11:AA:1364:C:OP1	34:JJ:110:ARG:NH2	2.46	0.48
11:AA:1560:G:H2'	11:AA:1561:G:C8	2.48	0.48
11:AA:2547:A:H2'	11:AA:2548:C:O4'	2.13	0.48
11:AA:2927:C:H2'	11:AA:2928:C:C6	2.47	0.48
12:Aa:244:LEU:HD13	12:Aa:277:ILE:HD11	1.95	0.48
19:D:97:ARG:O	19:D:101:VAL:HG13	2.14	0.48
20:DD:10:GLU:O	20:DD:14:LYS:N	2.27	0.48
23:EE:201:GLY:HA2	23:EE:204:MET:HG3	1.95	0.48
26:FF:106:TRP:N	26:FF:133:TYR:OH	2.39	0.48
28:GG:126:ILE:O	28:GG:129:THR:OG1	2.24	0.48
34:JJ:88:ARG:HB2	34:JJ:108:LEU:HB3	1.95	0.48
37:L:23:VAL:HG12	37:L:45:GLY:HA3	1.94	0.48
42:NN:14:ILE:HD13	42:NN:131:MET:SD	2.53	0.48
54:V:64:MET:O	54:V:66:TYR:N	2.40	0.48
61:c:883:C:H2'	61:c:884:A:H8	1.78	0.48
61:c:1168:U:H2'	61:c:1169:G:H8	1.79	0.48
61:c:1734:U:H2'	61:c:1735:U:C6	2.49	0.48
64:f:81:MET:HG3	64:f:211:LEU:HD11	1.95	0.48
66:h:98:ASN:HB2	66:h:114:ILE:HG13	1.96	0.48
68:j:38:GLY:HA2	68:j:41:VAL:HG12	1.95	0.48
69:k:120:ALA:O	69:k:124:LYS:HG2	2.13	0.48
69:k:140:VAL:HB	83:y:52:TYR:HB3	1.94	0.48
8:7:33:LEU:O	8:7:44:SER:HA	2.13	0.48
10:A:54:TYR:OH	10:A:73:PHE:O	2.28	0.48
11:AA:840:C:H4'	19:D:128:LYS:HD3	1.95	0.48
11:AA:966:U:H2'	11:AA:967:A:C8	2.48	0.48
11:AA:1182:A:OP1	22:E:158:LYS:NZ	2.42	0.48
11:AA:1447:G:N7	13:B:25:SER:OG	2.46	0.48
11:AA:1718:G:H2'	11:AA:1719:G:H8	1.77	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1895:A:N6	11:AA:2335:G:O2'	2.47	0.48
11:AA:2363:A:H2'	11:AA:2364:G:C8	2.49	0.48
17:CC:41:A:H5''	54:V:64:MET:HG3	1.95	0.48
18:Cc:22:A:N6	18:Cc:48:U:O2'	2.39	0.48
19:D:138:LEU:O	19:D:142:ILE:HG13	2.13	0.48
23:EE:65:ASP:HB3	23:EE:68:LYS:O	2.14	0.48
28:GG:53:SER:HB3	28:GG:56:ALA:HB2	1.95	0.48
30:HH:129:TYR:CG	30:HH:177:GLU:HB3	2.48	0.48
30:HH:218:ARG:HH21	30:HH:221:GLU:HB3	1.78	0.48
43:O:16:LEU:HD12	43:O:19:LYS:HD3	1.96	0.48
61:c:521:A:H2'	61:c:522:U:C6	2.49	0.48
61:c:1353:U:H2'	61:c:1354:G:C8	2.49	0.48
61:c:1439:C:H2'	61:c:1440:C:H6	1.79	0.48
61:c:1499:G:O6	61:c:1509:C:N4	2.47	0.48
69:k:58:LEU:HG	69:k:88:ARG:HB3	1.95	0.48
71:m:48:GLN:NE2	71:m:52:ILE:HD11	2.28	0.48
77:s:34:SER:HA	80:v:7:ARG:O	2.13	0.48
80:v:63:ARG:O	80:v:67:MET:HG2	2.13	0.48
84:z:60:GLU:HA	84:z:68:ILE:HG22	1.95	0.48
1:0:11:LYS:NZ	61:c:785:U:O4	2.46	0.48
4:3:20:LYS:NZ	61:c:959:U:OP2	2.47	0.48
8:7:33:LEU:HD22	8:7:45:TRP:CZ2	2.49	0.48
11:AA:36:C:H4'	11:AA:808:A:C2	2.49	0.48
11:AA:1103:A:N7	11:AA:1363:A:O2'	2.45	0.48
11:AA:1170:A:H2'	11:AA:1171:G:O4'	2.13	0.48
11:AA:1373:A:H2'	11:AA:1374:G:C8	2.49	0.48
11:AA:1742:U:H2'	11:AA:1743:G:C8	2.49	0.48
11:AA:2501:U:H3'	11:AA:2502:A:C8	2.49	0.48
11:AA:2936:A:H2'	11:AA:2937:G:H8	1.79	0.48
13:B:67:ILE:HG13	13:B:68:GLY:H	1.79	0.48
17:CC:23:U:H4'	35:K:17:LYS:HB2	1.95	0.48
17:CC:39:G:O2'	17:CC:105:A:N1	2.47	0.48
24:Ee:104:ILE:HB	24:Ee:108:GLU:OE2	2.13	0.48
37:L:60:LYS:O	37:L:64:LYS:HG2	2.13	0.48
40:MM:82:ARG:HG2	40:MM:82:ARG:HH11	1.78	0.48
45:P:80:ASN:HB3	45:P:90:PHE:CD1	2.49	0.48
46:PP:25:LYS:HD2	46:PP:62:GLN:HG2	1.94	0.48
50:R:38:PRO:HB3	50:R:74:THR:HG21	1.94	0.48
53:U:58:ILE:HD12	53:U:94:ILE:HG13	1.95	0.48
60:b:21:SER:O	60:b:25:GLN:HG3	2.14	0.48
61:c:449:C:H2'	61:c:450:U:C6	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:884:A:H2'	61:c:885:G:C8	2.49	0.48
69:k:49:ILE:HG21	69:k:172:VAL:HA	1.95	0.48
11:AA:137:G:H2'	11:AA:138:U:C6	2.49	0.48
11:AA:1218:U:O2'	11:AA:1223:A:H4'	2.14	0.48
11:AA:1828:A:H2'	11:AA:1829:G:C8	2.49	0.48
11:AA:1914:G:O2'	19:D:82:LYS:O	2.27	0.48
11:AA:2412:G:H2'	11:AA:2413:A:H8	1.78	0.48
11:AA:2577:C:H2'	11:AA:2578:U:C6	2.48	0.48
11:AA:2795:U:OP2	59:a:63:LYS:HG2	2.13	0.48
11:AA:2931:C:OP1	29:H:40:LYS:NZ	2.46	0.48
11:AA:3001:C:H4'	26:FF:117:ARG:HG3	1.94	0.48
11:AA:3101:G:H2'	11:AA:3102:G:H8	1.79	0.48
14:BB:64:A:H5'	14:BB:65:G:H5''	1.95	0.48
23:EE:127:ALA:HB2	23:EE:134:VAL:HG23	1.95	0.48
24:Ee:116:MET:HG3	24:Ee:132:ILE:HD11	1.95	0.48
38:LL:38:LEU:O	38:LL:41:ILE:HG22	2.14	0.48
39:M:3:SER:O	39:M:6:THR:OG1	2.30	0.48
45:P:62:ARG:HB3	45:P:66:GLY:O	2.14	0.48
63:e:45:LYS:HD2	75:q:13:VAL:HG12	1.95	0.48
64:f:80:VAL:HG22	64:f:102:VAL:HG22	1.94	0.48
66:h:65:LEU:HD13	66:h:80:THR:HA	1.95	0.48
66:h:207:LEU:HD12	66:h:219:VAL:HG22	1.94	0.48
4:3:19:HIS:HD2	4:3:21:LEU:H	1.62	0.48
8:7:278:PHE:CD2	8:7:287:PRO:HD2	2.48	0.48
11:AA:255:A:H2'	11:AA:256:G:C8	2.48	0.48
11:AA:547:G:O2'	11:AA:548:G:O4'	2.26	0.48
11:AA:779:G:OP1	16:C:185:LYS:NZ	2.42	0.48
11:AA:1157:G:H5''	34:JJ:220:PHE:CE2	2.48	0.48
11:AA:1239:C:O2'	24:Ee:97:ASN:HA	2.13	0.48
11:AA:2507:C:H2'	11:AA:2508:U:C6	2.49	0.48
11:AA:3009:G:N2	26:FF:15:GLY:O	2.46	0.48
11:AA:3017:A:H2'	11:AA:3018:C:H6	1.78	0.48
11:AA:3182:G:H2'	11:AA:3183:A:C8	2.49	0.48
12:Aa:40:VAL:HA	12:Aa:77:LEU:HD11	1.96	0.48
12:Aa:621:ASP:OD1	12:Aa:622:ASP:N	2.46	0.48
17:CC:64:U:C2	17:CC:65:A:C8	3.02	0.48
17:CC:97:A:OP1	52:T:67:ARG:NH2	2.45	0.48
18:Cc:30:G:H2'	18:Cc:31:G:C8	2.49	0.48
20:DD:16:ARG:HB2	20:DD:66:PHE:CZ	2.49	0.48
23:EE:116:VAL:HB	23:EE:126:LEU:HB2	1.95	0.48
25:F:141:VAL:O	34:JJ:74:SER:OG	2.21	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:P:25:PHE:HB3	45:P:65:LYS:HE3	1.96	0.48
46:PP:32:LEU:HD11	46:PP:94:TRP:CG	2.48	0.48
61:c:473:A:H2'	61:c:474:A:O4'	2.14	0.48
61:c:568:G:H4'	84:z:90:ASP:HA	1.95	0.48
61:c:1047:G:H2'	61:c:1048:G:H8	1.78	0.48
61:c:1156:C:H2'	61:c:1157:A:C8	2.49	0.48
61:c:1330:G:N2	78:t:8:THR:OG1	2.47	0.48
61:c:1601:G:OP1	80:v:86:ARG:NH2	2.47	0.48
68:j:30:LYS:HB3	68:j:34:GLN:OE1	2.13	0.48
83:y:111:MET:HE2	83:y:115:GLU:HG2	1.96	0.48
2:l:54:VAL:N	2:l:55:PRO:HD2	2.29	0.47
7:6:26:LYS:NZ	61:c:588:U:OP2	2.36	0.47
10:A:101:ARG:HH12	11:AA:3172:A:H1'	1.79	0.47
11:AA:288:C:H2'	11:AA:289:A:C8	2.49	0.47
11:AA:615:U:H2'	11:AA:616:G:H8	1.79	0.47
11:AA:821:U:H2'	11:AA:822:G:H8	1.79	0.47
11:AA:1764:U:H3'	11:AA:1765:U:H4'	1.96	0.47
11:AA:1895:A:O2'	11:AA:3053:G:H4'	2.14	0.47
11:AA:1920:U:O2'	11:AA:1932:A:N7	2.46	0.47
11:AA:2370:G:OP2	91:AA:3729:HOH:O	2.20	0.47
11:AA:2813:A:H2'	11:AA:2814:G:O4'	2.14	0.47
11:AA:2902:A:H2'	11:AA:2903:A:O4'	2.13	0.47
11:AA:2922:OMG:H5''	11:AA:2922:OMG:C8	2.49	0.47
12:Aa:121:VAL:HG12	12:Aa:453:ILE:HD12	1.95	0.47
12:Aa:216:HIS:HA	12:Aa:321:LYS:HZ1	1.79	0.47
16:C:67:ILE:HD13	16:C:140:LEU:HD12	1.95	0.47
17:CC:9:A:H2'	17:CC:10:A:C8	2.49	0.47
33:J:50:ALA:O	52:T:66:VAL:HG21	2.14	0.47
59:a:8:ARG:HG2	59:a:72:LEU:HD11	1.94	0.47
61:c:52:U:H2'	61:c:53:G:C8	2.48	0.47
61:c:305:C:H2'	61:c:306:U:C6	2.49	0.47
61:c:979:A:H4'	61:c:1786:G:N2	2.28	0.47
62:d:63:ILE:HG12	82:x:36:VAL:HG22	1.96	0.47
64:f:45:VAL:HG21	64:f:68:ILE:HG23	1.96	0.47
67:i:111:VAL:O	67:i:115:LYS:HG2	2.14	0.47
69:k:41:LEU:HB3	69:k:70:PHE:CE1	2.44	0.47
70:l:44:HIS:CE1	70:l:58:LEU:HD12	2.48	0.47
74:p:52:VAL:HG23	74:p:55:ARG:NH2	2.29	0.47
76:r:32:ASP:OD1	76:r:32:ASP:N	2.46	0.47
78:t:34:LEU:O	78:t:38:ILE:HG12	2.13	0.47
78:t:71:PHE:CD2	78:t:73:LEU:HB2	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:2:43:ASN:OD1	3:2:46:GLU:HB2	2.14	0.47
7:6:41:THR:O	7:6:45:VAL:HG22	2.13	0.47
8:7:202:LEU:HA	8:7:212:ALA:O	2.14	0.47
11:AA:289:A:H2'	11:AA:290:G:C8	2.41	0.47
11:AA:1112:A:O2'	11:AA:1370:G:O3'	2.32	0.47
11:AA:1289:G:H2'	11:AA:1290:A:H8	1.79	0.47
11:AA:2406:C:H2'	11:AA:2407:C:C6	2.50	0.47
11:AA:3105:U:C2	11:AA:3106:A:C8	3.02	0.47
12:Aa:34:THR:N	89:Aa:1001:GTP:O1A	2.48	0.47
12:Aa:338:ILE:O	12:Aa:342:LEU:HB2	2.13	0.47
20:DD:51:VAL:HG13	20:DD:87:VAL:HG22	1.96	0.47
20:DD:87:VAL:HG11	20:DD:100:ILE:HD11	1.95	0.47
41:N:43:HIS:CE1	41:N:47:LEU:HD11	2.49	0.47
44:OO:155:GLU:CD	44:OO:155:GLU:H	2.21	0.47
61:c:162:A:H2'	61:c:163:G:C4	2.49	0.47
61:c:427:C:H1'	61:c:459:G:H1'	1.96	0.47
61:c:1529:C:H2'	61:c:1530:C:C6	2.48	0.47
61:c:1590:G:H2'	61:c:1591:C:H6	1.79	0.47
61:c:1738:U:H2'	61:c:1739:C:C6	2.50	0.47
66:h:92:LEU:O	66:h:96:ASN:CA	2.42	0.47
67:i:89:ILE:HD11	67:i:137:ILE:HD12	1.95	0.47
68:j:36:VAL:HG23	68:j:50:PHE:HB2	1.96	0.47
70:l:69:SER:OG	70:l:185:GLU:OE1	2.31	0.47
70:l:188:GLU:HG3	73:o:13:PHE:CD2	2.49	0.47
83:y:10:ALA:HB1	83:y:27:ILE:HD12	1.96	0.47
1:0:17:LEU:HB3	66:h:64:ILE:HG23	1.95	0.47
1:0:106:GLN:O	1:0:110:GLN:HG2	2.14	0.47
6:5:22:ARG:NH2	6:5:36:LEU:O	2.47	0.47
11:AA:109:A:N1	11:AA:322:U:O2'	2.44	0.47
11:AA:1119:C:H2'	11:AA:1120:A:C8	2.46	0.47
11:AA:1385:C:P	28:GG:141:ARG:HH22	2.37	0.47
11:AA:1389:G:N2	11:AA:1390:A:N1	2.61	0.47
11:AA:1601:U:OP1	19:D:42:ARG:NH2	2.45	0.47
11:AA:1709:C:H2'	11:AA:1710:C:C6	2.49	0.47
12:Aa:418:TYR:CZ	12:Aa:420:PRO:HA	2.50	0.47
24:Ee:32:ILE:HG21	24:Ee:42:VAL:HG21	1.96	0.47
30:HH:65:ILE:HG12	30:HH:74:VAL:HG22	1.96	0.47
61:c:125:U:H5'	66:h:148:ARG:HD2	1.95	0.47
61:c:388:G:O6	61:c:410:A:N6	2.47	0.47
61:c:436:A2M:HM'3	61:c:436:A2M:H1'	1.68	0.47
61:c:538:A:O2'	61:c:541:A2M:H8	2.13	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:759:U:H2'	61:c:760:A:H8	1.77	0.47
61:c:1424:A:H2'	61:c:1425:A:H8	1.78	0.47
71:m:107:ARG:NH1	71:m:112:GLN:OE1	2.47	0.47
73:o:33:ARG:NH1	73:o:53:TYR:O	2.35	0.47
1:0:88:THR:HA	1:0:91:LEU:HD12	1.97	0.47
11:AA:187:A:H2'	11:AA:188:U:C6	2.50	0.47
11:AA:768:C:H2'	11:AA:769:G:C8	2.49	0.47
11:AA:1799:A:H2'	11:AA:1800:A:C8	2.49	0.47
11:AA:2427:U:H2'	11:AA:2428:U:C6	2.49	0.47
11:AA:2916:U:H2'	11:AA:2917:G:C8	2.49	0.47
11:AA:3185:U:O2'	22:E:170:THR:HG21	2.14	0.47
12:Aa:744:TYR:OH	12:Aa:757:GLU:OE2	2.24	0.47
17:CC:42:G:OP2	54:V:64:MET:HA	2.13	0.47
19:D:126:GLU:O	19:D:131:ALA:HB3	2.14	0.47
20:DD:130:PRO:O	20:DD:133:THR:OG1	2.32	0.47
28:GG:161:LYS:HB2	28:GG:164:GLU:HG2	1.97	0.47
30:HH:211:LEU:HG	30:HH:219:PHE:HB2	1.96	0.47
32:II:14:ASP:OD1	32:II:14:ASP:N	2.45	0.47
61:c:246:G:N3	73:o:40:LEU:HG	2.29	0.47
61:c:514:G:C2	61:c:515:A:C8	3.03	0.47
61:c:1117:U:H2'	61:c:1118:G:C8	2.49	0.47
61:c:1332:C:H4'	65:g:203:PRO:HB3	1.96	0.47
77:s:87:LYS:HA	77:s:90:VAL:HG12	1.95	0.47
5:4:42:ARG:HG3	5:4:43:ASN:H	1.80	0.47
11:AA:1234:G:H2'	11:AA:1235:U:C5	2.49	0.47
11:AA:2735:U:H2'	11:AA:2736:A:C8	2.49	0.47
11:AA:2961:G:H2'	11:AA:2962:U:H6	1.79	0.47
14:BB:7:G:OP2	30:HH:28:THR:OG1	2.24	0.47
17:CC:25:G:N7	35:K:13:ARG:NH1	2.62	0.47
17:CC:36:G:H2'	52:T:86:ARG:HH11	1.79	0.47
20:DD:18:TYR:HB3	20:DD:88:PHE:CD2	2.49	0.47
22:E:77:VAL:HG11	22:E:106:LEU:HD12	1.96	0.47
33:J:103:TYR:HB2	33:J:105:VAL:HG22	1.96	0.47
36:KK:98:ARG:NH1	36:KK:188:THR:O	2.47	0.47
38:LL:21:LYS:HG3	38:LL:22:SER:N	2.25	0.47
61:c:1164:G:O2'	61:c:1612:U:O2	2.21	0.47
61:c:1317:C:H2'	61:c:1318:G:O4'	2.15	0.47
62:d:110:TYR:HA	62:d:115:PHE:CG	2.49	0.47
5:4:16:LEU:HB2	5:4:27:GLN:HB2	1.97	0.47
8:7:80:ALA:O	8:7:91:LEU:HA	2.14	0.47
11:AA:219:A:HO2'	11:AA:220:G:H21	1.60	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:631:U:H2'	11:AA:632:G:C8	2.49	0.47
11:AA:649:A2M:HM'3	11:AA:649:A2M:H1'	1.61	0.47
11:AA:725:G:O6	11:AA:746:A:N6	2.48	0.47
11:AA:946:U:H2'	11:AA:947:G:H8	1.80	0.47
11:AA:1134:G:O2'	11:AA:2642:A:N3	2.38	0.47
11:AA:1289:G:H2'	11:AA:1290:A:C8	2.49	0.47
11:AA:1496:C:H5'	11:AA:1842:A:N1	2.30	0.47
11:AA:1635:G:OP1	37:L:107:ARG:NH2	2.48	0.47
11:AA:2360:C:OP1	91:AA:3730:HOH:O	2.20	0.47
11:AA:2476:C:C2'	11:AA:2477:G:H4'	2.44	0.47
12:Aa:564:ARG:O	12:Aa:725:GLN:N	2.47	0.47
14:BB:72:A:H2'	14:BB:74:C:C5	2.50	0.47
26:FF:113:GLU:OE1	26:FF:167:ARG:NH1	2.46	0.47
59:a:43:TYR:OH	59:a:53:GLN:NE2	2.36	0.47
61:c:40:A:H61	61:c:467:G:H1'	1.80	0.47
61:c:513:U:H5'	71:m:133:HIS:HE1	1.79	0.47
61:c:1215:C:H2'	61:c:1216:C:C6	2.49	0.47
61:c:1271:OMG:HM23	61:c:1271:OMG:H1'	1.69	0.47
62:d:107:PHE:HB3	62:d:139:VAL:HG21	1.96	0.47
62:d:176:LEU:O	62:d:180:GLU:HG2	2.14	0.47
69:k:64:VAL:HG23	69:k:67:LEU:HB3	1.97	0.47
1:0:44:LEU:HA	1:0:47:VAL:HG22	1.97	0.47
8:7:240:VAL:HG12	8:7:256:THR:HB	1.97	0.47
10:A:10:ASP:O	10:A:14:HIS:CD2	2.68	0.47
11:AA:41:G:N2	11:AA:2803:A:H62	2.13	0.47
11:AA:527:A:H2'	11:AA:528:U:C6	2.49	0.47
11:AA:573:C:H2'	11:AA:574:U:C6	2.50	0.47
11:AA:858:A:H2'	11:AA:859:G:C8	2.50	0.47
11:AA:995:U:H5'	87:AA:3407:SPD:H42	1.96	0.47
11:AA:1126:G:H5''	40:MM:119:TRP:HZ3	1.80	0.47
11:AA:1140:G:H2'	11:AA:1141:C:C6	2.49	0.47
11:AA:1148:G:OP1	50:R:20:LYS:HB3	2.15	0.47
11:AA:1361:U:H2'	11:AA:1362:G:C8	2.50	0.47
11:AA:1361:U:H2'	11:AA:1362:G:H8	1.80	0.47
11:AA:1641:U:O2'	11:AA:1642:A:H3'	2.14	0.47
11:AA:1795:U:C4	60:b:51:ALA:HA	2.50	0.47
11:AA:1856:C:H2'	11:AA:1857:C:H6	1.80	0.47
11:AA:1909:A:H2'	11:AA:1910:A:C8	2.49	0.47
11:AA:2094:C:H2'	11:AA:2095:G:C8	2.49	0.47
11:AA:2566:C:H2'	11:AA:2567:C:H6	1.80	0.47
11:AA:2674:A:C2	42:NN:124:GLY:HA3	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2728:G:C2	25:F:80:VAL:HG21	2.49	0.47
11:AA:2814:G:OP1	28:GG:73:ARG:NH1	2.30	0.47
11:AA:3291:G:H2'	11:AA:3292:A:H8	1.79	0.47
12:Aa:161:ASP:OD1	12:Aa:162:ARG:N	2.48	0.47
12:Aa:369:ILE:HG23	12:Aa:401:PHE:HB3	1.96	0.47
12:Aa:414:GLN:HB2	12:Aa:468:THR:H	1.79	0.47
12:Aa:591:GLU:HB2	12:Aa:685:ARG:HB3	1.95	0.47
12:Aa:616:ALA:HA	12:Aa:619:MET:HB3	1.97	0.47
12:Aa:659:ILE:HD13	12:Aa:693:LEU:HD21	1.97	0.47
90:Aa:1003:SO1:H102	90:Aa:1003:SO1:H16	1.52	0.47
14:BB:87:G:OP1	34:JJ:218:ARG:NE	2.47	0.47
15:Bb:74:C:H2'	15:Bb:75:C:C6	2.48	0.47
20:DD:121:VAL:HG12	20:DD:156:VAL:O	2.15	0.47
24:Ee:107:ASP:OD1	24:Ee:108:GLU:N	2.48	0.47
26:FF:302:LYS:HD2	26:FF:302:LYS:H	1.80	0.47
30:HH:53:VAL:HB	30:HH:159:VAL:HG23	1.95	0.47
32:II:4:GLN:OE1	48:Q:75:LEU:N	2.35	0.47
34:JJ:120:THR:H	34:JJ:123:THR:HG1	1.59	0.47
35:K:51:ARG:HD2	35:K:115:ARG:HH11	1.80	0.47
36:KK:162:LEU:HD23	49:QQ:7:LEU:HD11	1.97	0.47
36:KK:171:LYS:NZ	36:KK:223:ALA:O	2.37	0.47
49:QQ:35:VAL:HA	49:QQ:65:ARG:HE	1.79	0.47
54:V:27:PHE:HA	54:V:34:CYS:HA	1.97	0.47
55:W:50:SER:HB2	55:W:52:TYR:CZ	2.50	0.47
58:Z:2:ARG:HD3	58:Z:5:TRP:NE1	2.29	0.47
61:c:115:G:H5'	73:o:129:ARG:CZ	2.45	0.47
61:c:152:U:O3'	68:j:15:THR:OG1	2.25	0.47
61:c:213:A:H2'	61:c:214:G:O4'	2.15	0.47
61:c:351:C:OP1	61:c:630:A:O2'	2.20	0.47
61:c:605:A:OP2	61:c:606:A:O2'	2.32	0.47
61:c:1001:A:H8	61:c:1001:A:OP1	1.97	0.47
61:c:1045:C:H2'	61:c:1046:G:C8	2.49	0.47
61:c:1066:C:O2'	63:e:148:ASN:OD1	2.26	0.47
61:c:1224:A:N1	61:c:1261:G:C5	2.83	0.47
61:c:1515:A:O2'	61:c:1517:U:OP2	2.19	0.47
61:c:1781:MA6:H8	61:c:1781:MA6:O5'	2.15	0.47
71:m:42:ILE:H	71:m:42:ILE:HD12	1.80	0.47
80:v:84:LYS:HE3	80:v:86:ARG:HA	1.96	0.47
81:w:69:LYS:HG2	81:w:80:GLU:HB2	1.95	0.47
3:2:25:ASN:ND2	3:2:77:CYS:SG	2.84	0.47
11:AA:127:G:H2'	11:AA:128:G:H8	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1370:G:H2'	11:AA:1371:G:H8	1.79	0.47
11:AA:1390:A:N6	11:AA:1418:A:O2'	2.46	0.47
11:AA:1910:A:H2'	11:AA:1911:A:C8	2.49	0.47
11:AA:2258:U:O2'	12:Aa:829:LYS:NZ	2.48	0.47
11:AA:2737:C:O2'	41:N:36:ASP:OD1	2.33	0.47
11:AA:2769:A:H2'	11:AA:2770:G:C8	2.49	0.47
12:Aa:300:LEU:HD13	12:Aa:305:ILE:HD11	1.96	0.47
18:Cc:53:G:H2'	18:Cc:54:G:H8	1.79	0.47
22:E:93:GLU:HG2	22:E:129:ILE:HD11	1.97	0.47
23:EE:52:SER:HB3	23:EE:191:LEU:HD23	1.97	0.47
23:EE:247:ARG:HB3	61:c:1012:U:H4'	1.96	0.47
26:FF:139:GLN:HG2	26:FF:140:ASP:H	1.79	0.47
52:T:14:LYS:NZ	52:T:15:GLU:OE2	2.48	0.47
58:Z:13:LEU:HD11	61:c:1749:A:O2'	2.15	0.47
58:Z:19:LYS:O	58:Z:23:ARG:HG3	2.15	0.47
61:c:64:U:O2'	61:c:168:A:N3	2.46	0.47
61:c:384:G:H2'	61:c:385:A:H8	1.80	0.47
61:c:405:C:O2'	68:j:92:ARG:O	2.31	0.47
61:c:691:C:H2'	61:c:692:C:C6	2.50	0.47
61:c:980:G:H4'	61:c:1776:A:H4'	1.97	0.47
61:c:1147:A:H2'	61:c:1148:C:C6	2.50	0.47
61:c:1551:U:OP2	76:r:43:ARG:NE	2.37	0.47
62:d:124:THR:HA	62:d:146:LEU:HD12	1.96	0.47
64:f:156:THR:HG22	64:f:157:LYS:O	2.14	0.47
72:n:56:LYS:HB3	72:n:67:THR:HG22	1.95	0.47
83:y:7:LEU:HA	83:y:34:ILE:HG12	1.97	0.47
1:O:32:ARG:HE	1:O:33:ALA:H	1.63	0.47
11:AA:840:C:H2'	11:AA:841:A:C8	2.50	0.47
11:AA:1754:G:H2'	11:AA:1755:C:C6	2.50	0.47
11:AA:2634:UR3:H3U2	11:AA:2645:G:O6	2.15	0.47
11:AA:2911:A:H4'	11:AA:2912:G:H8	1.80	0.47
11:AA:3150:A:H2'	11:AA:3151:U:O4'	2.15	0.47
12:Aa:436:LEU:HB2	12:Aa:445:ILE:HG13	1.96	0.47
12:Aa:508:LEU:HD21	12:Aa:528:HIS:HB3	1.97	0.47
17:CC:14:C:C4	17:CC:15:G:C6	3.03	0.47
19:D:167:ARG:NH1	61:c:814:A:OP1	2.42	0.47
23:EE:33:ASP:OD1	23:EE:33:ASP:N	2.47	0.47
28:GG:140:HIS:O	28:GG:142:VAL:N	2.48	0.47
30:HH:52:VAL:HG21	30:HH:65:ILE:HD12	1.95	0.47
30:HH:254:LYS:HD3	30:HH:255:PRO:HD2	1.97	0.47
61:c:1499:G:OP1	80:v:122:ARG:NH1	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
64:f:154:LEU:HD12	64:f:193:VAL:HG11	1.96	0.47
67:i:61:TYR:CE2	67:i:164:PRO:HB2	2.50	0.47
70:l:57:ALA:HB2	70:l:177:GLY:HA2	1.97	0.47
10:A:87:MET:HG2	11:AA:1312:C:O2	2.15	0.47
11:AA:29:C:H4'	11:AA:62:A:H4'	1.97	0.47
11:AA:322:U:OP2	91:AA:3731:HOH:O	2.21	0.47
11:AA:638:C:C2	11:AA:639:G:C8	3.03	0.47
11:AA:710:A:H2'	11:AA:711:A:C8	2.50	0.47
11:AA:903:U:H2'	11:AA:904:A:H8	1.80	0.47
11:AA:1138:U:H2'	11:AA:1139:G:C8	2.50	0.47
11:AA:1699:A:C6	11:AA:1747:G:C6	3.02	0.47
11:AA:2366:C:H2'	11:AA:2367:A:C8	2.49	0.47
11:AA:2669:G:H2'	11:AA:2670:G:H8	1.79	0.47
11:AA:2931:C:H2'	11:AA:2932:U:O4'	2.14	0.47
11:AA:3067:C:OP2	19:D:62:ARG:NH1	2.48	0.47
11:AA:3232:G:C6	11:AA:3256:G:C6	3.03	0.47
12:Aa:515:ASP:HB3	12:Aa:518:VAL:HG12	1.96	0.47
13:B:67:ILE:HG13	13:B:68:GLY:N	2.30	0.47
16:C:8:LYS:HE2	16:C:8:LYS:HB2	1.73	0.47
45:P:19:ARG:HB3	45:P:35:GLU:HG3	1.96	0.47
61:c:329:G:H2'	61:c:330:G:C8	2.50	0.47
61:c:762:A:OP1	71:m:79:ARG:NH1	2.45	0.47
61:c:1218:G:H1	61:c:1444:A:H2'	1.79	0.47
61:c:1297:G:N2	61:c:1300:A:OP2	2.41	0.47
61:c:1715:G:H2'	61:c:1716:C:H5'	1.96	0.47
61:c:1740:A:H2'	61:c:1741:U:C6	2.50	0.47
61:c:1785:U:P	75:q:133:ARG:HH22	2.38	0.47
65:g:209:ILE:O	78:t:20:TYR:OH	2.33	0.47
77:s:57:LEU:HA	77:s:57:LEU:HD23	1.72	0.47
80:v:9:VAL:HB	80:v:140:LEU:HD21	1.97	0.47
3:2:37:LYS:HG2	3:2:72:HIS:CD2	2.50	0.46
11:AA:649:A2M:H2'	11:AA:650:OMC:C6	2.50	0.46
11:AA:1097:G:N7	25:F:116:ARG:NH2	2.62	0.46
11:AA:1135:A:H5'	41:N:7:HIS:O	2.15	0.46
11:AA:1619:A:H2'	11:AA:1620:U:O4'	2.15	0.46
11:AA:2492:C:H2'	11:AA:2493:U:O4'	2.14	0.46
11:AA:2615:G:H2'	11:AA:2616:C:H6	1.80	0.46
11:AA:3022:G:O2'	11:AA:3031:G:O6	2.27	0.46
11:AA:3072:C:H2'	11:AA:3073:A:O4'	2.15	0.46
11:AA:3192:U:H2'	11:AA:3193:C:C6	2.51	0.46
12:Aa:10:ARG:HH12	12:Aa:449:PRO:HD3	1.79	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:EE:146:THR:N	23:EE:158:ILE:O	2.42	0.46
37:L:25:ILE:HA	37:L:43:VAL:HG12	1.96	0.46
38:LL:89:LYS:HB2	38:LL:183:HIS:HB3	1.97	0.46
61:c:472:U:C2	61:c:473:A:C8	3.03	0.46
61:c:637:C:OP1	83:y:32:LYS:N	2.46	0.46
61:c:982:U:H2'	61:c:983:A:H8	1.79	0.46
65:g:70:THR:HA	65:g:73:VAL:HG12	1.96	0.46
66:h:79:ASP:HB3	66:h:82:TYR:HB2	1.97	0.46
68:j:69:LEU:HD12	68:j:70:PRO:HD2	1.97	0.46
75:q:87:GLY:HA3	75:q:120:PRO:HG2	1.97	0.46
3:2:70:LYS:NZ	61:c:933:A:OP1	2.48	0.46
11:AA:47:C:OP2	11:AA:48:A:O2'	2.23	0.46
11:AA:159:A:H2'	11:AA:160:G:C8	2.48	0.46
11:AA:210:U:C2	11:AA:230:U:H4'	2.50	0.46
11:AA:253:A:H2'	11:AA:254:A:H8	1.80	0.46
11:AA:1110:U:H2'	11:AA:1111:U:C6	2.51	0.46
11:AA:1290:A:H2'	11:AA:1291:A:C8	2.50	0.46
11:AA:1341:U:H2'	11:AA:1342:C:C6	2.50	0.46
11:AA:2186:U:H2'	11:AA:2187:G:O4'	2.14	0.46
11:AA:2210:G:H2'	11:AA:2211:U:C6	2.50	0.46
11:AA:2747:A:H5'	30:HH:175:HIS:HA	1.97	0.46
20:DD:132:LYS:HG2	20:DD:175:LEU:HD21	1.96	0.46
23:EE:28:LYS:HB3	23:EE:123:ARG:HB3	1.98	0.46
36:KK:101:THR:HG22	36:KK:102:ALA:H	1.80	0.46
36:KK:162:LEU:HA	49:QQ:7:LEU:HD21	1.97	0.46
38:LL:11:GLU:OE2	38:LL:11:GLU:N	2.48	0.46
43:O:74:ASN:OD1	43:O:75:ASN:N	2.48	0.46
52:T:96:GLU:C	52:T:98:SER:H	2.22	0.46
61:c:590:C:H2'	61:c:591:A:C8	2.51	0.46
61:c:872:G:H2'	61:c:873:U:O4'	2.15	0.46
61:c:1489:U:OP2	61:c:1515:A:N6	2.48	0.46
61:c:1586:A:H2'	61:c:1587:A:O4'	2.16	0.46
61:c:1603:U:H2'	61:c:1604:U:C6	2.50	0.46
64:f:225:LEU:HD13	82:x:23:ILE:HD11	1.97	0.46
64:f:227:PRO:HA	64:f:230:TRP:CG	2.50	0.46
79:u:116:LEU:O	79:u:119:ILE:HG22	2.14	0.46
80:v:64:HIS:CE1	80:v:68:ARG:HD2	2.50	0.46
11:AA:221:A:O2'	11:AA:223:U:OP2	2.32	0.46
11:AA:945:C:H2'	11:AA:946:U:H6	1.81	0.46
11:AA:1033:U:H2'	11:AA:1034:U:C6	2.50	0.46
11:AA:2510:U:H2'	11:AA:2511:A:C8	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2655:U:O2	59:a:5:PRO:HG3	2.16	0.46
11:AA:2958:A:H2'	11:AA:2959:OMC:H6	1.80	0.46
11:AA:3064:U:H2'	11:AA:3065:G:C8	2.50	0.46
11:AA:3268:A:OP1	32:II:46:ARG:NH2	2.46	0.46
12:Aa:299:LEU:O	12:Aa:303:LEU:N	2.49	0.46
12:Aa:414:GLN:HG3	12:Aa:468:THR:OG1	2.15	0.46
14:BB:71:G:H2'	14:BB:72:A:H8	1.80	0.46
19:D:136:ARG:HA	19:D:139:VAL:HG12	1.97	0.46
26:FF:152:LYS:HG2	26:FF:189:SER:HA	1.96	0.46
30:HH:54:ARG:HB2	30:HH:61:ILE:HB	1.98	0.46
30:HH:131:LEU:HD21	30:HH:174:PRO:HA	1.96	0.46
49:QQ:47:LYS:HD3	49:QQ:50:ARG:HH21	1.80	0.46
59:a:10:THR:HA	59:a:20:HIS:HD2	1.80	0.46
60:b:49:ARG:HB2	60:b:55:TRP:CZ3	2.51	0.46
61:c:90:C:O2'	61:c:451:A:H5''	2.15	0.46
61:c:90:C:H2'	61:c:91:G:C8	2.50	0.46
69:k:63:PRO:C	69:k:65:PRO:HD3	2.40	0.46
10:A:171:LYS:NZ	11:AA:3181:C:OP2	2.36	0.46
11:AA:654:C:H2'	11:AA:655:C:C6	2.50	0.46
11:AA:1010:G:H5''	40:MM:40:LYS:HE2	1.98	0.46
11:AA:1062:A:H5''	11:AA:1063:G:H5'	1.98	0.46
11:AA:1163:A:H2'	11:AA:1164:G:H8	1.80	0.46
11:AA:1411:C:OP1	48:Q:98:HIS:N	2.39	0.46
11:AA:2133:U:O4	11:AA:2147:A:H2	1.97	0.46
11:AA:2375:G:H1'	11:AA:2377:G:OP2	2.15	0.46
11:AA:2407:C:H2'	11:AA:2408:U:C6	2.50	0.46
11:AA:3301:U:H2'	11:AA:3302:U:C6	2.50	0.46
12:Aa:264:ALA:HB2	12:Aa:269:LEU:HD22	1.98	0.46
12:Aa:318:ALA:O	12:Aa:321:LYS:HB2	2.15	0.46
17:CC:19:C:H2'	17:CC:20:U:C6	2.50	0.46
22:E:152:LEU:HD11	46:PP:60:LEU:HD13	1.97	0.46
24:Ee:108:GLU:HG2	24:Ee:109:ILE:N	2.30	0.46
43:O:81:VAL:HG12	43:O:83:LYS:HG2	1.98	0.46
59:a:72:LEU:O	59:a:80:ARG:HA	2.15	0.46
61:c:414:OMC:HM23	61:c:414:OMC:H1'	1.78	0.46
61:c:1018:U:OP1	74:p:107:LYS:NZ	2.48	0.46
61:c:1277:G:H2'	61:c:1278:G:O4'	2.16	0.46
61:c:1318:G:H5''	78:t:67:ARG:NH2	2.31	0.46
61:c:1382:A:H5''	81:w:60:THR:HG23	1.97	0.46
61:c:1450:U:C2	61:c:1451:C:C5	3.03	0.46
61:c:1476:C:H2'	61:c:1477:G:H8	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:e:89:ASP:HB3	63:e:223:PHE:CE1	2.50	0.46
77:s:60:PHE:HB2	77:s:63:ILE:HG12	1.96	0.46
2:1:44:GLN:HG3	2:1:47:TYR:CD1	2.51	0.46
8:7:116:ASP:HB3	8:7:121:MET:HB2	1.96	0.46
8:7:201:THR:HG21	8:7:242:SER:HA	1.98	0.46
11:AA:164:A:H2'	11:AA:165:A:O4'	2.15	0.46
11:AA:195:U:H2'	11:AA:196:G:O4'	2.16	0.46
11:AA:663:OMC:H2'	11:AA:664:U:C6	2.51	0.46
11:AA:810:A:H2'	11:AA:811:U:C6	2.51	0.46
11:AA:1117:G:OP1	41:N:4:SER:HB2	2.15	0.46
11:AA:1174:G:H2'	11:AA:1175:C:C6	2.50	0.46
11:AA:1381:A:H2'	11:AA:1382:G:C8	2.51	0.46
11:AA:3050:U:H4'	31:I:17:ARG:HD3	1.98	0.46
11:AA:3275:U:N3	50:R:64:ILE:HD11	2.29	0.46
12:Aa:666:ALA:HB2	12:Aa:706:ILE:HA	1.98	0.46
25:F:112:ASN:HB3	25:F:128:LEU:HD11	1.97	0.46
34:JJ:156:ILE:HD12	34:JJ:161:VAL:HB	1.98	0.46
42:NN:92:ARG:HG2	42:NN:172:LEU:HD12	1.97	0.46
42:NN:114:ILE:H	42:NN:114:ILE:HD12	1.80	0.46
50:R:53:TYR:CZ	50:R:65:ARG:HB2	2.50	0.46
61:c:603:U:H2'	61:c:604:A:C8	2.51	0.46
61:c:604:A:H2'	61:c:605:A:O4'	2.15	0.46
61:c:821:U:H2'	61:c:822:U:C6	2.50	0.46
61:c:1388:A:N7	61:c:1411:A:N6	2.64	0.46
67:i:93:LEU:HD13	67:i:172:ILE:HG23	1.96	0.46
68:j:85:ARG:O	68:j:87:ARG:NH1	2.49	0.46
69:k:154:LEU:HD11	69:k:183:PHE:HD2	1.80	0.46
73:o:80:MET:HE2	73:o:83:THR:HB	1.97	0.46
84:z:88:PRO:HG3	84:z:123:LYS:HD2	1.97	0.46
1:0:14:SER:HB3	1:0:21:LYS:HE2	1.97	0.46
8:7:18:GLY:HA3	8:7:39:ASP:CG	2.40	0.46
8:7:197:SER:OG	8:7:219:GLU:OE1	2.31	0.46
8:7:198:ASN:HB3	8:7:216:LYS:H	1.81	0.46
10:A:108:ILE:HD12	10:A:160:ARG:CZ	2.46	0.46
11:AA:148:G:OP2	49:QQ:4:TYR:OH	2.33	0.46
11:AA:631:U:H2'	11:AA:632:G:H8	1.80	0.46
11:AA:1710:C:H2'	11:AA:1711:C:H6	1.80	0.46
11:AA:2181:C:H5''	23:EE:193:ARG:CZ	2.45	0.46
11:AA:2556:C:H2'	11:AA:2557:A:C8	2.50	0.46
11:AA:2683:U:H2'	11:AA:2684:C:C6	2.50	0.46
11:AA:3041:U:H2'	11:AA:3042:U:C6	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:Aa:27:HIS:HB3	12:Aa:30:HIS:CG	2.50	0.46
12:Aa:395:TYR:CE1	12:Aa:457:VAL:HG22	2.51	0.46
12:Aa:637:GLY:O	12:Aa:644:ASN:ND2	2.46	0.46
15:Bb:56:C:H2'	15:Bb:57:G:C8	2.50	0.46
18:Cc:30:G:H2'	18:Cc:31:G:H8	1.80	0.46
19:D:101:VAL:HG12	19:D:104:ARG:HH12	1.80	0.46
34:JJ:173:LEU:HB3	34:JJ:178:ILE:HB	1.98	0.46
35:K:55:GLU:OE2	35:K:69:LYS:NZ	2.46	0.46
37:L:115:LYS:NZ	37:L:119:GLU:OE2	2.34	0.46
42:NN:36:VAL:HG22	42:NN:120:ILE:HD12	1.96	0.46
61:c:81:G:H2'	61:c:82:U:C6	2.51	0.46
61:c:1334:U:H4'	81:w:85:ARG:HH22	1.81	0.46
61:c:1350:U:H2'	61:c:1351:G:C8	2.50	0.46
61:c:1683:C:H2'	61:c:1684:U:O4'	2.15	0.46
64:f:144:TRP:CE2	64:f:173:PRO:HG3	2.49	0.46
69:k:87:ASP:C	69:k:88:ARG:HD3	2.41	0.46
8:7:249:ARG:HG2	8:7:251:TRP:H	1.80	0.46
11:AA:519:A:N6	22:E:65:ASN:O	2.39	0.46
11:AA:550:A:H2'	11:AA:551:A:C8	2.51	0.46
11:AA:595:G:H2'	11:AA:596:C:C6	2.51	0.46
11:AA:705:A:N7	39:M:74:ASN:ND2	2.56	0.46
11:AA:792:G:H2'	11:AA:793:C:C6	2.51	0.46
11:AA:1399:A:N1	17:CC:7:U:O2'	2.49	0.46
11:AA:1598:G:H2'	11:AA:1599:G:H8	1.81	0.46
11:AA:2167:A:OP1	49:QQ:72:LYS:NZ	2.49	0.46
11:AA:2225:U:H2'	11:AA:2226:U:H6	1.81	0.46
11:AA:2608:G:H2'	11:AA:2609:A:H8	1.81	0.46
11:AA:2759:U:H5''	11:AA:2760:C:H5'	1.97	0.46
11:AA:3254:G:H2'	11:AA:3255:U:C6	2.51	0.46
30:HH:191:ASP:OD1	30:HH:193:GLU:HG3	2.16	0.46
39:M:47:LYS:HD3	39:M:48:TYR:CZ	2.51	0.46
55:W:23:ALA:O	55:W:76:ASN:HB3	2.16	0.46
61:c:961:U:H2'	61:c:962:C:H6	1.81	0.46
61:c:1267:G:H1	61:c:1442:U:H3	1.62	0.46
67:i:131:GLN:HA	67:i:134:VAL:HG12	1.96	0.46
74:p:39:LYS:HE2	74:p:39:LYS:HB2	1.68	0.46
77:s:31:VAL:HG23	77:s:81:ILE:HG21	1.97	0.46
1:0:57:VAL:HG22	1:0:60:PHE:HE1	1.81	0.46
1:0:133:ASN:N	1:0:134:ALA:HA	2.30	0.46
8:7:200:ASN:ND2	8:7:241:PHE:HD1	2.14	0.46
11:AA:811:U:H2'	11:AA:812:G:C8	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1138:U:H2'	11:AA:1139:G:H8	1.81	0.46
11:AA:1154:A:OP1	11:AA:1155:C:N4	2.48	0.46
11:AA:1694:U:H4'	51:S:24:LYS:HD3	1.98	0.46
11:AA:1949:G:OP2	19:D:135:LYS:NZ	2.41	0.46
11:AA:2192:C:H2'	11:AA:2193:U:H6	1.81	0.46
11:AA:2746:A:N1	30:HH:148:ILE:HG12	2.31	0.46
11:AA:3138:U:H4'	26:FF:275:ARG:NH2	2.29	0.46
12:Aa:204:PRO:HB2	12:Aa:222:ILE:HD12	1.97	0.46
12:Aa:822:ALA:HA	12:Aa:825:ARG:NE	2.31	0.46
17:CC:73:U:H2'	17:CC:74:U:O4'	2.15	0.46
25:F:68:THR:O	30:HH:41:LYS:HB2	2.16	0.46
36:KK:139:VAL:O	36:KK:143:ILE:HD12	2.15	0.46
37:L:74:VAL:HG23	37:L:101:PHE:CZ	2.50	0.46
42:NN:19:LEU:HB2	42:NN:69:VAL:HG12	1.98	0.46
52:T:114:ARG:HG3	52:T:115:LYS:N	2.30	0.46
53:U:47:ILE:HG13	53:U:48:ALA:H	1.80	0.46
61:c:162:A:H2'	61:c:163:G:N3	2.30	0.46
61:c:167:U:H5''	68:j:135:PRO:HA	1.98	0.46
64:f:81:MET:HG3	64:f:211:LEU:CD1	2.46	0.46
68:j:70:PRO:HD3	68:j:101:ILE:HD11	1.97	0.46
10:A:44:SER:HB2	11:AA:1315:U:H6	1.80	0.46
11:AA:7:C:H2'	11:AA:8:C:C6	2.51	0.46
11:AA:158:G:H2'	11:AA:159:A:C8	2.49	0.46
11:AA:641:C:H2'	11:AA:642:U:O4'	2.16	0.46
11:AA:970:A:H2'	11:AA:971:G:H8	1.81	0.46
11:AA:1562:C:H42	11:AA:1578:C:H42	1.63	0.46
11:AA:1742:U:H2'	11:AA:1743:G:H8	1.81	0.46
11:AA:2389:C:H2'	11:AA:2390:A:C8	2.51	0.46
11:AA:2389:C:O2'	11:AA:3307:A:N1	2.49	0.46
11:AA:2467:G:N2	11:AA:2489:C:O2'	2.46	0.46
11:AA:2631:U:H2'	11:AA:2632:G:C8	2.51	0.46
11:AA:2659:G:H2'	11:AA:2660:G:H8	1.81	0.46
11:AA:2669:G:N3	30:HH:5:LYS:HE3	2.31	0.46
11:AA:2974:U:H2'	11:AA:2975:U:C6	2.50	0.46
12:Aa:377:ASP:N	12:Aa:377:ASP:OD1	2.47	0.46
12:Aa:663:VAL:HG13	12:Aa:709:MET:HE2	1.98	0.46
13:B:19:GLY:HA3	13:B:22:LEU:HD11	1.98	0.46
20:DD:48:ARG:HG3	20:DD:91:GLU:HG3	1.98	0.46
42:NN:110:ILE:HG21	42:NN:116:TYR:HD1	1.81	0.46
45:P:51:LEU:HG	45:P:55:LEU:HD23	1.98	0.46
61:c:148:A:N6	61:c:167:U:O2	2.49	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:455:C:H3'	61:c:456:A:C8	2.49	0.46
61:c:1010:C:H2'	61:c:1011:G:O4'	2.16	0.46
61:c:1446:A:O2'	61:c:1448:G:N7	2.46	0.46
61:c:1714:A:H2'	61:c:1715:G:C8	2.50	0.46
63:e:138:PHE:HD2	63:e:214:LYS:HB3	1.80	0.46
65:g:35:SER:OG	65:g:51:ARG:O	2.34	0.46
66:h:17:HIS:O	66:h:51:ARG:NH2	2.49	0.46
68:j:161:GLU:OE1	68:j:168:THR:OG1	2.32	0.46
4:3:82:LYS:HD2	74:p:25:TRP:CG	2.51	0.46
8:7:34:LEU:HD21	8:7:80:ALA:HB2	1.97	0.46
10:A:142:SER:HB3	10:A:147:TRP:HB2	1.98	0.46
11:AA:253:A:H2'	11:AA:254:A:C8	2.51	0.46
11:AA:768:C:H2'	11:AA:769:G:H8	1.81	0.46
11:AA:904:A:OP2	54:V:30:GLN:NE2	2.49	0.46
11:AA:1176:C:H2'	11:AA:1177:G:C2	2.51	0.46
11:AA:1385:C:OP1	28:GG:141:ARG:NH1	2.49	0.46
11:AA:1926:C:OP1	60:b:23:ARG:NH2	2.48	0.46
11:AA:2421:OMU:H1'	11:AA:2421:OMU:HM23	1.57	0.46
11:AA:2609:A:H2'	11:AA:2610:G:C8	2.51	0.46
11:AA:2617:U:O2'	40:MM:116:ARG:NH2	2.49	0.46
11:AA:2999:U:H2'	11:AA:3000:A:H8	1.80	0.46
12:Aa:27:HIS:HB2	12:Aa:139:THR:HG23	1.98	0.46
13:B:22:LEU:HD12	13:B:146:ILE:HD12	1.97	0.46
14:BB:9:C:OP1	25:F:26:HIS:HB2	2.16	0.46
14:BB:119:U:H2'	14:BB:120:C:C6	2.51	0.46
17:CC:67:U:H2'	17:CC:68:G:C8	2.50	0.46
61:c:77:U:H4'	61:c:78:A:H5''	1.98	0.46
61:c:183:U:H2'	61:c:184:C:C6	2.51	0.46
61:c:296:U:H5'	66:h:140:VAL:HG11	1.98	0.46
61:c:1132:A:H2'	61:c:1133:A:H8	1.81	0.46
61:c:1717:G:H2'	61:c:1718:G:H8	1.80	0.46
63:e:184:LEU:HD12	63:e:184:LEU:HA	1.83	0.46
65:g:115:ILE:H	65:g:115:ILE:HD12	1.81	0.46
82:x:40:ASP:OD1	82:x:40:ASP:N	2.49	0.46
4:3:28:PRO:HG3	74:p:17:PRO:HG3	1.97	0.45
8:7:11:GLY:O	8:7:311:ARG:NH1	2.46	0.45
11:AA:173:G:H1	11:AA:245:U:H3	1.63	0.45
11:AA:506:U:H2'	11:AA:507:U:O4'	2.17	0.45
11:AA:702:C:H2'	11:AA:703:G:H8	1.81	0.45
11:AA:1507:G:H1'	13:B:139:TYR:CE2	2.51	0.45
11:AA:1793:C:OP2	60:b:49:ARG:NH2	2.49	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:3013:U:H2'	11:AA:3014:U:C6	2.51	0.45
11:AA:3096:C:H2'	11:AA:3097:C:C6	2.51	0.45
11:AA:3332:U:H2'	11:AA:3333:G:O4'	2.16	0.45
12:Aa:116:THR:HB	12:Aa:483:PHE:HD2	1.81	0.45
12:Aa:127:VAL:HB	12:Aa:155:VAL:HG22	1.98	0.45
12:Aa:545:LEU:HG	12:Aa:554:LEU:HD21	1.97	0.45
16:C:70:ALA:O	16:C:73:GLN:HB3	2.16	0.45
17:CC:47:C:H1'	17:CC:61:A:H2'	1.98	0.45
20:DD:25:LEU:HA	20:DD:87:VAL:O	2.16	0.45
29:H:66:LYS:HG2	29:H:68:GLU:OE1	2.16	0.45
40:MM:101:LYS:O	40:MM:102:MET:HE2	2.15	0.45
45:P:75:ILE:HG23	45:P:93:VAL:HG22	1.99	0.45
61:c:864:U:H3'	83:y:28:ARG:HH22	1.81	0.45
66:h:222:LEU:HD12	66:h:225:VAL:HB	1.97	0.45
67:i:81:ARG:HD3	67:i:82:PHE:CE2	2.51	0.45
67:i:221:ALA:O	67:i:225:ARG:HG3	2.16	0.45
77:s:7:VAL:HG23	77:s:8:GLN:H	1.81	0.45
1:0:108:ARG:NH2	61:c:444:C:OP2	2.49	0.45
8:7:88:THR:HG22	8:7:104:VAL:HG12	1.97	0.45
11:AA:421:G:O6	11:AA:2383:C:O2'	2.34	0.45
11:AA:659:G:N1	11:AA:1434:G:OP2	2.32	0.45
11:AA:1018:G:H2'	11:AA:1019:G:C4'	2.46	0.45
11:AA:1804:A:H2'	11:AA:1805:C:C6	2.51	0.45
11:AA:1922:A:H2'	11:AA:1923:C:O4'	2.17	0.45
12:Aa:243:ARG:HH21	12:Aa:248:SER:HB3	1.80	0.45
14:BB:4:U:H2'	14:BB:5:G:H8	1.82	0.45
15:Bb:18:G:N2	15:Bb:61:C:O2'	2.50	0.45
15:Bb:58:A:H8	15:Bb:58:A:OP2	1.99	0.45
16:C:158:HIS:H	16:C:186:VAL:CG1	2.29	0.45
20:DD:142:PRO:HB2	20:DD:153:VAL:HB	1.98	0.45
28:GG:261:VAL:O	28:GG:269:SER:OG	2.30	0.45
36:KK:78:PHE:HA	36:KK:179:ILE:HD13	1.98	0.45
37:L:48:ARG:HB2	37:L:69:LYS:HB3	1.98	0.45
38:LL:135:GLU:HG2	38:LL:145:VAL:HB	1.98	0.45
44:OO:102:GLN:HB2	44:OO:104:ARG:NH1	2.31	0.45
54:V:14:LYS:HE3	56:X:51:ILE:HD11	1.98	0.45
61:c:1035:G:H2'	61:c:1036:A:H8	1.81	0.45
61:c:1188:G:O2'	61:c:1430:U:OP1	2.28	0.45
61:c:1564:U:H2'	61:c:1565:C:C6	2.52	0.45
71:m:73:GLY:O	71:m:77:ILE:HD12	2.15	0.45
73:o:59:PRO:HB3	73:o:66:ILE:HD11	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
82:x:33:GLN:HE21	82:x:52:THR:HG21	1.81	0.45
11:AA:71:A:N6	11:AA:303:G:H1'	2.31	0.45
11:AA:102:C:O2'	44:OO:62:THR:OG1	2.20	0.45
11:AA:789:A:H2'	11:AA:790:U:C6	2.51	0.45
11:AA:1282:G:H4'	20:DD:83:ASN:N	2.31	0.45
11:AA:1783:U:H2'	11:AA:1784:G:H8	1.80	0.45
11:AA:2467:G:N1	11:AA:2479:C:OP1	2.49	0.45
11:AA:2729:OMU:HM23	11:AA:2729:OMU:H1'	1.64	0.45
11:AA:2902:A:H5''	11:AA:3032:A:O2'	2.16	0.45
12:Aa:274:ASN:ND2	12:Aa:278:LEU:HD12	2.32	0.45
17:CC:69:U:H3'	17:CC:70:G:C8	2.52	0.45
19:D:134:HIS:CE1	19:D:136:ARG:HB2	2.51	0.45
23:EE:138:GLY:HA3	23:EE:147:ARG:NH2	2.31	0.45
24:Ee:80:LEU:O	24:Ee:84:ALA:N	2.49	0.45
26:FF:283:TYR:CD1	26:FF:354:VAL:HG21	2.51	0.45
45:P:62:ARG:HH12	45:P:68:GLU:HG2	1.80	0.45
55:W:19:ASP:OD1	55:W:20:VAL:HG13	2.16	0.45
60:b:82:THR:O	60:b:86:LEU:HG	2.16	0.45
61:c:431:C:H2'	61:c:432:G:C8	2.51	0.45
61:c:453:U:H2'	61:c:454:U:H5''	1.98	0.45
61:c:1009:U:OP2	75:q:129:LYS:NZ	2.30	0.45
61:c:1080:U:H2'	61:c:1081:A:O4'	2.16	0.45
61:c:1499:G:H5'	80:v:122:ARG:NH2	2.31	0.45
62:d:175:TYR:CE1	62:d:199:PRO:HG3	2.52	0.45
65:g:65:ARG:O	65:g:68:GLU:HG3	2.16	0.45
65:g:172:THR:O	65:g:173:ARG:NH1	2.40	0.45
78:t:89:SER:OG	78:t:95:ARG:NH2	2.42	0.45
1:0:20:ARG:HD2	1:0:74:LEU:HD22	1.98	0.45
3:2:49:ALA:HB2	75:q:103:ARG:HH11	1.81	0.45
10:A:62:THR:HA	11:AA:1306:G:C5	2.51	0.45
10:A:81:TYR:CZ	10:A:99:LEU:HD12	2.52	0.45
10:A:94:ARG:N	11:AA:632:G:OP1	2.38	0.45
11:AA:184:U:H2'	11:AA:185:C:C6	2.51	0.45
11:AA:340:C:H2'	11:AA:341:G:C8	2.52	0.45
11:AA:800:G:C2	11:AA:933:A:N6	2.85	0.45
11:AA:982:C:H2'	11:AA:983:A:C8	2.52	0.45
11:AA:1825:G:H5'	55:W:17:ARG:HH21	1.80	0.45
11:AA:2226:U:H2'	11:AA:2227:C:C6	2.51	0.45
11:AA:2471:U:H3	11:AA:2473:C:N4	2.15	0.45
11:AA:2489:C:H2'	11:AA:2490:C:N3	2.32	0.45
11:AA:3257:C:H2'	11:AA:3258:U:O4'	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:Aa:81:MET:HE1	12:Aa:98:PHE:HB2	1.98	0.45
12:Aa:596:GLU:HG3	12:Aa:623:TYR:HE1	1.82	0.45
27:G:22:PRO:HG3	27:G:93:ILE:HD12	1.99	0.45
35:K:50:ILE:HG21	35:K:80:VAL:HG11	1.97	0.45
61:c:301:A:H5''	70:l:27:PHE:CE2	2.52	0.45
61:c:385:A:H2'	61:c:386:G:C8	2.51	0.45
61:c:903:U:OP2	75:q:24:ASN:ND2	2.49	0.45
61:c:997:G:C6	61:c:1008:G:C6	3.04	0.45
61:c:1638:G:O6	61:c:1767:G:N2	2.49	0.45
69:k:72:LYS:HB2	69:k:72:LYS:HE2	1.74	0.45
75:q:86:THR:HB	75:q:91:THR:HG22	1.98	0.45
5:4:18:ARG:HG2	61:c:1617:U:H5'	1.99	0.45
5:4:52:ASP:OD2	67:i:61:TYR:OH	2.30	0.45
8:7:80:ALA:HB3	8:7:92:TRP:HB2	1.99	0.45
8:7:115:ILE:HD13	8:7:122:ILE:HG13	1.97	0.45
10:A:141:LEU:O	10:A:145:VAL:HG22	2.16	0.45
11:AA:612:U:H2'	11:AA:613:G:C8	2.50	0.45
11:AA:759:U:H2'	11:AA:760:G:O4'	2.17	0.45
11:AA:1499:C:H2'	11:AA:1500:G:C8	2.52	0.45
11:AA:1650:G:H2'	11:AA:1651:U:H6	1.82	0.45
11:AA:1650:G:H5''	23:EE:70:ARG:HB3	1.99	0.45
11:AA:1670:C:H2'	11:AA:1671:C:H6	1.81	0.45
11:AA:2139:A:C4	54:V:3:LYS:HE2	2.51	0.45
11:AA:2196:C:OP1	61:c:995:A:H4'	2.16	0.45
11:AA:2512:C:H2'	11:AA:2513:U:C6	2.51	0.45
11:AA:2947:G:H2'	11:AA:2948:OMC:H6	1.81	0.45
12:Aa:511:LEU:HD23	12:Aa:545:LEU:HD13	1.98	0.45
24:Ee:90:ARG:HB3	24:Ee:92:ARG:HH21	1.81	0.45
26:FF:215:ILE:HD12	26:FF:338:LEU:HB3	1.99	0.45
26:FF:284:ARG:NH1	26:FF:293:ASN:O	2.49	0.45
34:JJ:208:SER:OG	34:JJ:209:ASN:N	2.49	0.45
42:NN:12:LEU:HD23	42:NN:131:MET:HE3	1.98	0.45
48:Q:96:ILE:HG21	48:Q:105:ARG:HG2	1.97	0.45
54:V:39:TYR:CD1	54:V:40:PRO:HA	2.52	0.45
61:c:30:G:H2'	61:c:31:C:C6	2.51	0.45
61:c:89:G:N2	61:c:451:A:O2'	2.49	0.45
61:c:180:A:H2'	61:c:181:A:H8	1.81	0.45
61:c:281:G:H2'	61:c:282:C:C6	2.52	0.45
61:c:1224:A:C6	61:c:1261:G:C6	3.04	0.45
63:e:24:PHE:HZ	75:q:39:ILE:HA	1.82	0.45
64:f:201:ASN:OD1	64:f:202:GLY:N	2.47	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
67:i:108:LEU:HB3	77:s:43:ILE:HD13	1.99	0.45
79:u:29:VAL:O	79:u:33:THR:HG23	2.16	0.45
8:7:127:ARG:HD3	8:7:150:TRP:CE2	2.52	0.45
10:A:114:LYS:HA	11:AA:3180:A:C4	2.51	0.45
11:AA:37:U:H2'	11:AA:38:U:C6	2.51	0.45
11:AA:208:C:H2'	11:AA:209:A:O4'	2.16	0.45
11:AA:1532:C:H2'	11:AA:1533:U:C6	2.51	0.45
11:AA:2389:C:OP1	13:B:66:SER:N	2.49	0.45
11:AA:2723:U:H2'	11:AA:2724:OMU:C6	2.47	0.45
11:AA:2724:OMU:HM23	11:AA:2724:OMU:H1'	1.49	0.45
11:AA:3165:A:H2'	11:AA:3166:C:C6	2.52	0.45
11:AA:3337:G:H2'	11:AA:3338:C:C6	2.52	0.45
16:C:176:ARG:H	39:M:51:GLY:HA2	1.81	0.45
17:CC:12:A:C6	17:CC:13:A:N7	2.84	0.45
17:CC:26:U:H2'	17:CC:27:U:H6	1.82	0.45
42:NN:160:VAL:HG23	42:NN:171:VAL:HG11	1.98	0.45
52:T:102:GLU:HA	52:T:105:ARG:HB3	1.99	0.45
55:W:22:THR:HA	55:W:74:LYS:HB2	1.99	0.45
56:X:28:ARG:HA	56:X:33:ASN:OD1	2.17	0.45
61:c:549:G:O2'	61:c:556:A:N1	2.47	0.45
61:c:1157:A:H2'	61:c:1160:A:N7	2.31	0.45
62:d:21:ASN:HB3	62:d:24:LEU:HD12	1.98	0.45
63:e:194:ASN:ND2	63:e:212:VAL:HG23	2.31	0.45
66:h:47:PHE:CE2	66:h:90:ILE:HG21	2.52	0.45
69:k:86:GLN:HG3	69:k:87:ASP:N	2.32	0.45
74:p:147:SER:HA	74:p:150:VAL:HG12	1.98	0.45
81:w:66:SER:HB3	81:w:79:TRP:CE3	2.51	0.45
11:AA:529:A:H2'	11:AA:530:G:C8	2.51	0.45
11:AA:834:U:H2'	11:AA:835:G:O4'	2.17	0.45
11:AA:1206:G:OP1	40:MM:157:TYR:OH	2.24	0.45
11:AA:1256:G:H4'	24:Ee:127:SER:HB3	1.98	0.45
11:AA:1622:U:C2	11:AA:1623:G:C8	3.05	0.45
11:AA:1831:U:H2'	11:AA:1832:C:C6	2.52	0.45
11:AA:2149:A:OP1	23:EE:196:TRP:NE1	2.42	0.45
11:AA:2576:G:H2'	11:AA:2577:C:H6	1.79	0.45
11:AA:2669:G:H2'	11:AA:2670:G:C8	2.52	0.45
11:AA:2795:U:OP1	59:a:62:ALA:N	2.44	0.45
11:AA:2864:A:H5''	40:MM:114:GLY:HA2	1.99	0.45
11:AA:3234:A:H2	11:AA:3253:G:H22	1.65	0.45
15:Bb:26:G:H2'	15:Bb:26:G:N3	2.32	0.45
23:EE:30:ARG:NH2	23:EE:33:ASP:OD2	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:Ee:35:LEU:HD22	24:Ee:64:ILE:HD12	1.99	0.45
26:FF:57:VAL:HG23	26:FF:358:TRP:HE3	1.81	0.45
30:HH:50:ARG:NH1	30:HH:147:ASP:OD2	2.46	0.45
44:OO:63:VAL:HA	44:OO:66:ASN:CG	2.42	0.45
61:c:382:C:H2'	61:c:383:G:C8	2.52	0.45
61:c:878:G:H2'	61:c:879:G:H8	1.81	0.45
61:c:1789:G:H2'	61:c:1790:A:H8	1.82	0.45
64:f:49:LYS:HD3	64:f:49:LYS:HA	1.79	0.45
64:f:105:GLY:HA3	64:f:111:VAL:HG12	1.99	0.45
65:g:98:ALA:HB2	65:g:188:ILE:HG12	1.99	0.45
66:h:181:VAL:HG12	66:h:227:VAL:HA	1.99	0.45
78:t:75:GLU:O	78:t:78:ARG:HG3	2.15	0.45
1:0:27:VAL:HG11	1:0:35:VAL:HG21	1.98	0.45
8:7:24:ALA:HB3	8:7:34:LEU:HB3	1.99	0.45
11:AA:59:G:H4'	11:AA:60:A:H4'	1.97	0.45
11:AA:655:C:H5''	48:Q:26:HIS:HB3	1.97	0.45
11:AA:661:G:H4'	11:AA:662:U:C6	2.52	0.45
11:AA:833:G:OP1	19:D:86:GLU:HB3	2.17	0.45
11:AA:1718:G:H2'	11:AA:1719:G:C8	2.52	0.45
11:AA:1781:C:H2'	11:AA:1782:U:C6	2.52	0.45
11:AA:2861:U:H2'	11:AA:2862:U:O4'	2.17	0.45
11:AA:3231:U:H2'	11:AA:3232:G:H8	1.82	0.45
11:AA:3281:U:H2'	11:AA:3282:U:C6	2.52	0.45
12:Aa:132:ILE:HG13	12:Aa:162:ARG:HD3	1.99	0.45
12:Aa:483:PHE:CD1	12:Aa:483:PHE:N	2.85	0.45
15:Bb:52:U:H2'	15:Bb:53:G:O4'	2.16	0.45
18:Cc:59:A:O2'	18:Cc:61:U:OP2	2.35	0.45
33:J:57:LEU:HD12	33:J:61:LYS:HB3	1.98	0.45
34:JJ:98:LYS:HB3	34:JJ:99:PRO:HD3	1.99	0.45
40:MM:54:SER:HB2	40:MM:135:ILE:HD11	1.97	0.45
40:MM:200:LEU:HB2	40:MM:213:PHE:CG	2.52	0.45
49:QQ:73:ARG:HB2	49:QQ:92:LEU:HD12	1.98	0.45
61:c:4:C:H4'	64:f:181:SER:HB3	1.98	0.45
61:c:17:C:H4'	61:c:1109:G:C8	2.51	0.45
61:c:647:G:H2'	61:c:648:G:H8	1.82	0.45
61:c:1180:C:O2'	76:r:128:HIS:NE2	2.39	0.45
61:c:1294:G:O2'	62:d:108:THR:OG1	2.29	0.45
61:c:1719:A:H2'	61:c:1720:G:O4'	2.17	0.45
62:d:16:LEU:HG	62:d:172:LEU:HD11	1.98	0.45
64:f:41:LEU:HD13	64:f:61:LEU:HD13	1.99	0.45
69:k:49:ILE:HB	69:k:57:ALA:HB3	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
71:m:112:GLN:HG3	71:m:148:VAL:HG21	1.99	0.45
83:y:28:ARG:HG3	83:y:29:PRO:HA	1.99	0.45
83:y:82:LYS:O	83:y:86:ILE:HG13	2.16	0.45
3:2:12:LYS:HZ3	3:2:16:GLY:H	1.65	0.45
11:AA:675:C:H2'	11:AA:676:G:O4'	2.17	0.45
11:AA:679:U:O2'	11:AA:788:C:O2	2.25	0.45
11:AA:999:G:H2'	11:AA:1000:C:C6	2.52	0.45
11:AA:1222:G:N2	11:AA:1285:G:O2'	2.48	0.45
11:AA:2156:C:P	23:EE:241:ARG:HH22	2.39	0.45
11:AA:2584:G:H1'	36:KK:240:ASN:ND2	2.31	0.45
11:AA:2632:G:H5''	25:F:12:ARG:HB2	1.98	0.45
11:AA:3332:U:OP1	31:I:35:LYS:HD3	2.17	0.45
12:Aa:145:GLN:NE2	12:Aa:484:SER:HB2	2.31	0.45
12:Aa:329:PRO:HG2	12:Aa:332:ASP:OD2	2.15	0.45
12:Aa:386:VAL:O	12:Aa:395:TYR:N	2.50	0.45
16:C:111:ARG:O	16:C:115:VAL:HG23	2.17	0.45
17:CC:154:C:H2'	17:CC:155:A:C8	2.52	0.45
30:HH:99:TYR:OH	30:HH:168:ASP:OD2	2.25	0.45
39:M:147:LEU:HB3	53:U:7:ILE:HG22	1.99	0.45
46:PP:88:ALA:O	46:PP:93:LYS:NZ	2.47	0.45
61:c:1078:C:H2'	61:c:1079:U:H6	1.81	0.45
61:c:1224:A:N6	61:c:1261:G:C6	2.84	0.45
61:c:1277:G:OP1	65:g:139:SER:OG	2.34	0.45
61:c:1332:C:O2'	65:g:162:GLN:HB3	2.16	0.45
61:c:1659:A:H2'	61:c:1660:A:C8	2.52	0.45
75:q:70:LYS:O	75:q:74:VAL:HG23	2.16	0.45
80:v:29:GLU:CD	80:v:107:ALA:HB1	2.42	0.45
81:w:26:LEU:O	81:w:88:LYS:HA	2.16	0.45
81:w:41:ILE:HD11	81:w:103:ILE:HD12	1.99	0.45
1:0:20:ARG:HA	1:0:76:TYR:HA	1.99	0.45
2:1:57:TYR:CE2	2:1:60:VAL:HG12	2.52	0.45
8:7:26:SER:HB2	8:7:73:LEU:HB3	1.99	0.45
11:AA:80:G:H2'	11:AA:81:C:H6	1.82	0.45
11:AA:516:A:H2'	11:AA:517:G:C8	2.52	0.45
11:AA:658:G:H21	28:GG:93:MET:HB2	1.83	0.45
11:AA:777:U:H5''	11:AA:2720:G:O2'	2.17	0.45
11:AA:1258:U:P	20:DD:42:ARG:HH22	2.39	0.45
11:AA:1394:A:H4'	11:AA:1420:C:H4'	1.99	0.45
11:AA:2149:A:N6	11:AA:2187:G:O2'	2.37	0.45
11:AA:2722:U:H2'	11:AA:2723:U:C6	2.52	0.45
11:AA:2793:OMG:H5''	59:a:66:LYS:HG2	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:3229:G:OP1	46:PP:137:LYS:NZ	2.39	0.45
12:Aa:27:HIS:CG	12:Aa:28:VAL:N	2.85	0.45
12:Aa:38:SER:O	12:Aa:41:GLN:NE2	2.50	0.45
17:CC:29:U:H5''	44:OO:27:ASP:HB3	1.97	0.45
23:EE:80:GLU:HB2	23:EE:170:ALA:HA	1.98	0.45
23:EE:204:MET:HB3	23:EE:208:ASP:HB2	1.99	0.45
52:T:104:GLN:HA	52:T:107:LYS:HG2	1.98	0.45
54:V:63:ARG:HE	54:V:65:ARG:HD3	1.82	0.45
61:c:151:G:H2'	61:c:152:U:C6	2.51	0.45
61:c:399:A:H5''	70:l:25:ARG:HH22	1.82	0.45
61:c:420:A2M:HM'3	61:c:420:A2M:H1'	1.74	0.45
61:c:997:G:H2'	61:c:998:A:H8	1.81	0.45
61:c:1358:G:N2	61:c:1366:U:O2	2.50	0.45
61:c:1616:G:H2'	61:c:1617:U:C6	2.52	0.45
61:c:1741:U:H2'	61:c:1742:U:C6	2.52	0.45
61:c:1770:U:H2'	61:c:1771:U:H6	1.82	0.45
62:d:198:MET:HE3	62:d:200:ASP:HB3	1.98	0.45
64:f:58:LEU:HA	82:x:12:TYR:HE1	1.79	0.45
66:h:99:PHE:CE1	66:h:113:ARG:HD3	2.52	0.45
69:k:4:PRO:N	69:k:7:LYS:HE2	2.32	0.45
70:l:172:ARG:HB2	70:l:175:GLN:HB2	1.99	0.45
82:x:12:TYR:O	82:x:12:TYR:CG	2.70	0.45
1:0:41:ARG:NH1	1:0:94:TYR:HB3	2.32	0.44
4:3:30:SER:HG	4:3:48:SER:HG	1.63	0.44
6:5:19:ARG:H	6:5:19:ARG:HD3	1.81	0.44
6:5:31:ILE:HG13	61:c:1199:G:H1	1.81	0.44
11:AA:11:A:H2'	11:AA:12:A:C8	2.51	0.44
11:AA:100:A:H3'	11:AA:101:G:H21	1.82	0.44
11:AA:2544:U:H2'	11:AA:2545:C:C6	2.51	0.44
11:AA:2656:A:H4'	59:a:98:LYS:HE3	1.98	0.44
11:AA:2769:A:H2'	11:AA:2770:G:H8	1.83	0.44
11:AA:3152:U:O2'	11:AA:3155:U:O2	2.34	0.44
11:AA:3303:G:C6	11:AA:3305:A:C2	3.04	0.44
12:Aa:292:LYS:O	12:Aa:296:ILE:HG12	2.17	0.44
12:Aa:583:HIS:HB3	12:Aa:694:HIS:HB2	1.98	0.44
16:C:30:VAL:O	16:C:34:THR:OG1	2.33	0.44
18:Cc:53:G:H2'	18:Cc:54:G:C8	2.52	0.44
24:Ee:80:LEU:HB3	24:Ee:112:ILE:HD12	1.99	0.44
36:KK:101:THR:H	36:KK:104:GLU:CD	2.23	0.44
36:KK:136:LEU:O	36:KK:140:VAL:HG23	2.17	0.44
37:L:119:GLU:O	37:L:123:GLN:HG2	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:MM:36:LEU:HD12	40:MM:73:ASN:ND2	2.32	0.44
46:PP:105:GLN:OE1	46:PP:109:ARG:NH2	2.48	0.44
52:T:28:LEU:O	52:T:32:LYS:HG2	2.16	0.44
61:c:36:C:H5''	61:c:530:C:H5''	1.99	0.44
61:c:153:G:H2'	61:c:154:G:C8	2.52	0.44
61:c:592:A:OP1	71:m:39:LYS:HG3	2.16	0.44
61:c:1002:G:N2	61:c:1760:G:H4'	2.32	0.44
61:c:1174:C:OP2	79:u:141:THR:HG21	2.17	0.44
63:e:120:LEU:HD13	63:e:142:PHE:CE2	2.52	0.44
77:s:56:GLY:HA3	77:s:59:LYS:HD3	1.99	0.44
79:u:25:ASN:O	79:u:57:ARG:NH1	2.50	0.44
80:v:8:ASP:HB3	80:v:140:LEU:HD11	1.99	0.44
83:y:114:GLU:OE1	83:y:117:ARG:NH1	2.50	0.44
8:7:3:SER:HB3	8:7:271:VAL:HG11	1.98	0.44
11:AA:121:A:O2'	36:KK:108:ARG:NH2	2.50	0.44
11:AA:828:A:H2'	11:AA:829:U:C6	2.52	0.44
11:AA:1261:G:N2	11:AA:1261:G:OP2	2.50	0.44
11:AA:1335:C:H2'	11:AA:1336:U:C6	2.52	0.44
11:AA:1336:U:H2'	11:AA:1337:A:C8	2.43	0.44
11:AA:1639:C:N4	37:L:17:ARG:HB2	2.32	0.44
11:AA:1785:U:H2'	11:AA:1786:G:C8	2.52	0.44
11:AA:2101:C:HO2'	11:AA:2102:U:P	2.41	0.44
11:AA:2714:G:C8	11:AA:2751:G:H2'	2.50	0.44
11:AA:2876:C:H2'	11:AA:2877:G:O4'	2.17	0.44
11:AA:2894:C:H2'	11:AA:2895:G:C8	2.51	0.44
14:BB:76:A:N1	14:BB:102:A:H5''	2.32	0.44
19:D:23:TRP:HB2	19:D:53:LYS:HE3	1.99	0.44
23:EE:250:GLN:HG3	23:EE:251:LYS:N	2.31	0.44
29:H:15:LEU:HD23	29:H:53:SER:HB3	1.98	0.44
60:b:13:LYS:HE3	60:b:14:TYR:CZ	2.52	0.44
61:c:154:G:H2'	61:c:155:U:C6	2.51	0.44
61:c:610:G:O2'	61:c:613:G:O3'	2.35	0.44
61:c:1310:U:H2'	61:c:1311:U:C6	2.52	0.44
61:c:1335:U:HO2'	61:c:1336:A:P	2.40	0.44
61:c:1547:A:P	79:u:123:ARG:HH22	2.40	0.44
61:c:1625:C:H2'	61:c:1626:U:C6	2.52	0.44
62:d:89:PHE:O	62:d:93:THR:HG22	2.17	0.44
63:e:129:THR:HB	63:e:179:SER:O	2.16	0.44
74:p:52:VAL:HG23	74:p:55:ARG:HH21	1.81	0.44
74:p:87:ASP:OD1	74:p:88:LEU:N	2.49	0.44
5:4:22:ARG:NH1	61:c:1619:C:O2	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:77:A:H5'	44:OO:100:ARG:CZ	2.47	0.44
11:AA:644:G:H2'	11:AA:2372:A:N7	2.33	0.44
11:AA:651:G:H2'	11:AA:652:G:C8	2.52	0.44
11:AA:835:G:H1'	11:AA:858:A:N6	2.32	0.44
11:AA:916:G:H5'	11:AA:917:A:OP1	2.17	0.44
11:AA:942:U:OP1	11:AA:1434:G:C8	2.71	0.44
11:AA:987:U:H2'	11:AA:988:U:C6	2.53	0.44
11:AA:2146:C:H2'	11:AA:2147:A:C8	2.50	0.44
11:AA:2328:U:H2'	11:AA:2329:C:H6	1.82	0.44
11:AA:2364:G:H22	11:AA:2396:G:H1'	1.82	0.44
11:AA:2457:G:N3	11:AA:2483:G:N2	2.57	0.44
11:AA:2476:C:N3	11:AA:2477:G:H1'	2.33	0.44
11:AA:2709:C:H2'	11:AA:2710:C:C6	2.51	0.44
11:AA:3358:U:H2'	11:AA:3359:A:C8	2.47	0.44
12:Aa:393:ARG:HH21	12:Aa:395:TYR:HE1	1.65	0.44
12:Aa:606:ILE:HG23	12:Aa:615:ARG:HD2	2.00	0.44
15:Bb:3:G:H2'	15:Bb:4:G:O4'	2.17	0.44
17:CC:6:U:H2'	17:CC:7:U:C6	2.51	0.44
30:HH:261:THR:HG23	30:HH:263:GLU:HG2	1.99	0.44
33:J:136:ALA:HA	33:J:139:ILE:HG12	1.98	0.44
40:MM:111:LEU:HD12	40:MM:112:GLN:HG2	1.98	0.44
42:NN:16:LYS:HD3	42:NN:72:ARG:NH2	2.33	0.44
51:S:72:VAL:O	51:S:77:GLY:HA2	2.17	0.44
61:c:386:G:H2'	61:c:387:A:C8	2.53	0.44
61:c:1345:A:H2'	61:c:1348:A:H62	1.82	0.44
61:c:1613:U:H2'	61:c:1614:A:H8	1.82	0.44
61:c:1625:C:H2'	61:c:1626:U:H6	1.82	0.44
61:c:1737:G:H2'	61:c:1738:U:C6	2.52	0.44
63:e:180:THR:O	63:e:184:LEU:HB2	2.17	0.44
67:i:76:ARG:HG2	77:s:122:ARG:HD3	1.99	0.44
11:AA:57:A:H2'	11:AA:58:G:C8	2.53	0.44
11:AA:276:U:H2'	11:AA:277:G:C8	2.52	0.44
11:AA:296:A:H2'	11:AA:297:G:N3	2.32	0.44
11:AA:323:A:H2'	11:AA:324:A:C8	2.52	0.44
11:AA:374:A:O2'	11:AA:376:G:H5'	2.16	0.44
11:AA:426:G:H2'	11:AA:427:C:C6	2.52	0.44
11:AA:668:G:H4'	16:C:164:ARG:HD3	1.98	0.44
11:AA:1203:A:H2'	11:AA:1204:A:H8	1.81	0.44
11:AA:1256:G:H5'	24:Ee:130:LYS:HD2	1.98	0.44
11:AA:1744:G:H2'	11:AA:1745:C:C6	2.52	0.44
11:AA:2357:A:H2'	11:AA:2358:A:H8	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2855:U:H2'	11:AA:2856:G:O4'	2.17	0.44
11:AA:2999:U:H2'	11:AA:3000:A:C8	2.52	0.44
12:Aa:424:ASP:O	12:Aa:426:LEU:N	2.46	0.44
14:BB:48:U:H1'	30:HH:222:LEU:HD22	2.00	0.44
36:KK:140:VAL:HG21	49:QQ:3:ALA:HB2	1.99	0.44
42:NN:141:ARG:O	42:NN:145:LYS:NZ	2.36	0.44
61:c:862:A:H4'	83:y:57:ARG:HG3	1.99	0.44
61:c:1114:G:O2'	61:c:1130:G:O6	2.32	0.44
61:c:1175:U:H3	61:c:1464:G:H1	1.65	0.44
61:c:1247:U:C2	61:c:1248:C:C5	3.05	0.44
61:c:1509:C:H2'	61:c:1510:U:O4'	2.18	0.44
61:c:1569:A:H2'	61:c:1570:A:C8	2.52	0.44
61:c:1609:U:H2'	61:c:1610:G:O4'	2.16	0.44
62:d:23:HIS:O	62:d:47:VAL:HA	2.17	0.44
62:d:119:ARG:O	62:d:142:PRO:HD2	2.17	0.44
63:e:24:PHE:HD1	63:e:27:LYS:HD2	1.83	0.44
63:e:70:LEU:HB2	63:e:82:ARG:O	2.18	0.44
63:e:87:ARG:NH1	63:e:100:PHE:O	2.51	0.44
67:i:190:ILE:HA	67:i:193:THR:HG22	1.99	0.44
78:t:12:ALA:HB3	78:t:50:ILE:HD12	1.99	0.44
84:z:84:THR:HG23	84:z:120:VAL:HG22	1.98	0.44
84:z:107:PHE:CD1	84:z:123:LYS:HB3	2.50	0.44
11:AA:29:C:OP1	49:QQ:189:LYS:HB2	2.18	0.44
11:AA:360:G:H21	11:AA:815:G:H1'	1.82	0.44
11:AA:1138:U:O3'	34:JJ:97:PRO:HD3	2.17	0.44
11:AA:1483:G:C8	11:AA:1485:G:C8	3.05	0.44
11:AA:1791:C:H2'	11:AA:1792:C:C6	2.52	0.44
11:AA:2429:G:H2'	11:AA:2430:A:C8	2.52	0.44
11:AA:2471:U:H5	11:AA:2473:C:OP2	2.00	0.44
11:AA:2520:A:H2'	11:AA:2521:U:C6	2.51	0.44
11:AA:2655:U:H1'	11:AA:2656:A:C2	2.53	0.44
11:AA:2776:C:H5'	11:AA:2777:G:C2	2.52	0.44
11:AA:3132:C:H2'	11:AA:3133:C:C6	2.52	0.44
17:CC:142:C:H2'	17:CC:143:U:C6	2.52	0.44
30:HH:131:LEU:HD23	30:HH:172:TYR:HE1	1.82	0.44
36:KK:185:ARG:O	36:KK:188:THR:OG1	2.35	0.44
42:NN:36:VAL:HG21	42:NN:123:PHE:HD2	1.83	0.44
54:V:21:ARG:NH2	54:V:37:CYS:O	2.46	0.44
61:c:123:G:H21	66:h:146:THR:HG21	1.83	0.44
61:c:331:A:OP1	70:l:174:GLY:HA3	2.17	0.44
61:c:760:A:H2'	61:c:761:G:O4'	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:854:U:O4	61:c:855:A:N6	2.50	0.44
61:c:1450:U:H2'	61:c:1451:C:H6	1.83	0.44
64:f:39:THR:HG21	64:f:64:LYS:HB2	1.99	0.44
66:h:230:GLU:OE2	66:h:233:LYS:HB2	2.17	0.44
68:j:124:LEU:HD12	68:j:125:THR:OG1	2.18	0.44
78:t:46:LEU:O	78:t:50:ILE:HG12	2.18	0.44
80:v:4:VAL:HG11	80:v:137:ALA:HA	1.98	0.44
83:y:115:GLU:OE1	83:y:118:ARG:NH2	2.47	0.44
11:AA:216:G:H2'	11:AA:217:U:C6	2.52	0.44
11:AA:364:G:O6	54:V:56:ARG:NE	2.44	0.44
11:AA:884:A:OP2	54:V:4:GLY:HA3	2.18	0.44
11:AA:925:A:H61	23:EE:2:GLY:C	2.25	0.44
11:AA:1126:G:H5''	40:MM:119:TRP:CZ3	2.52	0.44
11:AA:1146:C:H5''	48:Q:47:ARG:HB2	2.00	0.44
11:AA:1564:U:H2'	11:AA:1566:A:H62	1.81	0.44
11:AA:2836:C:H2'	11:AA:2837:A:C8	2.53	0.44
11:AA:2987:A:O2'	26:FF:259:HIS:HB3	2.18	0.44
11:AA:3151:U:OP1	26:FF:128:LYS:NZ	2.49	0.44
11:AA:3170:A:O5'	50:R:56:SER:OG	2.24	0.44
12:Aa:429:LYS:HE3	12:Aa:462:PHE:CZ	2.52	0.44
12:Aa:472:SER:OG	12:Aa:475:ALA:HB2	2.18	0.44
12:Aa:612:PHE:O	12:Aa:613:LYS:HG2	2.17	0.44
17:CC:141:C:O3'	49:QQ:62:TYR:OH	2.33	0.44
19:D:156:ASN:O	19:D:160:GLU:HG3	2.18	0.44
27:G:43:VAL:HG12	27:G:44:GLU:OE1	2.18	0.44
28:GG:261:VAL:HG13	28:GG:262:TRP:CD1	2.53	0.44
39:M:96:LYS:HE2	39:M:96:LYS:HB2	1.91	0.44
61:c:388:G:C6	61:c:410:A:C6	3.06	0.44
61:c:1196:A:OP2	61:c:1464:G:N2	2.46	0.44
61:c:1280:4AC:H5'	81:w:69:LYS:HB3	1.99	0.44
61:c:1340:U:H3	77:s:9:THR:HG22	1.83	0.44
61:c:1727:G:H2'	61:c:1728:A:C8	2.52	0.44
63:e:100:PHE:HD2	63:e:181:LEU:HD13	1.82	0.44
75:q:44:GLY:O	75:q:48:VAL:HG22	2.18	0.44
84:z:69:ARG:HB3	84:z:86:PHE:CE1	2.53	0.44
5:4:42:ARG:HG3	5:4:43:ASN:N	2.31	0.44
11:AA:149:U:P	49:QQ:49:ARG:HH12	2.40	0.44
11:AA:754:G:N2	11:AA:778:U:O2	2.42	0.44
11:AA:964:G:OP2	11:AA:1115:G:N1	2.43	0.44
11:AA:1011:A:H2'	11:AA:1012:G:H8	1.83	0.44
11:AA:1054:A:H5''	11:AA:2637:A:H61	1.81	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1072:G:H2'	11:AA:1073:U:C6	2.53	0.44
11:AA:1598:G:H2'	11:AA:1599:G:C8	2.53	0.44
11:AA:1618:G:H2'	11:AA:1619:A:C8	2.53	0.44
11:AA:1757:A:OP1	27:G:94:ARG:NH2	2.47	0.44
11:AA:3393:U:H2'	11:AA:3394:U:C6	2.52	0.44
14:BB:1:G:N1	30:HH:265:TYR:HB3	2.33	0.44
16:C:83:VAL:O	16:C:103:ALA:HA	2.18	0.44
17:CC:52:A:H62	56:X:27:ILE:HD13	1.81	0.44
17:CC:122:U:H2'	17:CC:123:G:H8	1.82	0.44
32:II:43:LEU:HD11	32:II:85:ILE:HG13	1.99	0.44
34:JJ:96:PRO:HB2	34:JJ:99:PRO:HD2	2.00	0.44
61:c:504:U:H2'	61:c:505:A:H8	1.82	0.44
61:c:1036:A:H2'	61:c:1037:C:C6	2.53	0.44
61:c:1575:G7M:O2'	61:c:1576:A:O4'	2.25	0.44
62:d:56:LYS:NZ	82:x:70:ASN:OD1	2.48	0.44
63:e:127:VAL:HG11	63:e:173:THR:HG22	1.99	0.44
66:h:60:GLU:O	66:h:64:ILE:HG13	2.17	0.44
68:j:31:ARG:HB3	68:j:101:ILE:HG22	2.00	0.44
68:j:56:ASN:HD22	68:j:62:PRO:HA	1.83	0.44
69:k:92:PHE:O	69:k:93:LEU:HD23	2.18	0.44
72:n:68:LEU:HD23	72:n:68:LEU:H	1.82	0.44
76:r:83:MET:HE3	76:r:84:ILE:O	2.17	0.44
79:u:138:THR:O	79:u:138:THR:HG22	2.18	0.44
81:w:19:ILE:HD12	81:w:94:GLU:HB3	2.00	0.44
11:AA:19:U:H2'	11:AA:20:A:H8	1.83	0.44
11:AA:149:U:OP2	49:QQ:49:ARG:NH1	2.46	0.44
11:AA:584:G:H2'	11:AA:585:A:H8	1.81	0.44
11:AA:637:C:C2	11:AA:638:C:C5	3.05	0.44
11:AA:756:U:H2'	11:AA:757:C:H6	1.82	0.44
11:AA:853:G:O6	60:b:2:ALA:N	2.51	0.44
11:AA:953:G:O6	91:AA:3736:HOH:O	2.21	0.44
11:AA:1295:G:H2'	11:AA:1296:C:C6	2.53	0.44
11:AA:1334:U:H2'	11:AA:1335:C:C6	2.52	0.44
11:AA:1630:U:H5''	11:AA:1813:A:N6	2.33	0.44
11:AA:1687:U:H1'	27:G:75:TYR:CG	2.53	0.44
11:AA:1801:U:H2'	11:AA:1802:C:C6	2.53	0.44
11:AA:1836:C:H2'	11:AA:1837:U:H6	1.83	0.44
11:AA:2226:U:H2'	11:AA:2227:C:H6	1.83	0.44
11:AA:2330:C:H2'	11:AA:2331:C:H6	1.82	0.44
11:AA:2651:G:H5''	11:AA:2652:U:O4'	2.18	0.44
11:AA:2680:A:H3'	11:AA:2681:U:C6	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2781:U:H4'	44:OO:185:LYS:HD3	1.99	0.44
12:Aa:717:PHE:CE1	12:Aa:722:PRO:HB3	2.53	0.44
20:DD:112:GLY:N	20:DD:165:VAL:O	2.50	0.44
25:F:114:ALA:O	25:F:118:GLU:OE1	2.35	0.44
28:GG:321:LYS:HA	28:GG:324:LEU:HB3	2.00	0.44
34:JJ:64:GLN:NE2	34:JJ:68:ASP:OD1	2.49	0.44
61:c:93:A:H61	61:c:396:G:H1'	1.83	0.44
61:c:162:A:H5''	68:j:82:SER:OG	2.16	0.44
61:c:281:G:P	61:c:281:G:H8	2.41	0.44
61:c:392:G:H2'	61:c:393:C:C6	2.53	0.44
61:c:413:U:H2'	61:c:414:OMC:C6	2.53	0.44
61:c:461:G:H2'	61:c:462:G:C8	2.52	0.44
61:c:1160:A:O2'	61:c:1620:C:O2	2.36	0.44
61:c:1302:U:C2	61:c:1303:U:C5	3.06	0.44
61:c:1330:G:C2	61:c:1331:A:H1'	2.53	0.44
61:c:1349:G:H2'	61:c:1350:U:C6	2.53	0.44
71:m:64:GLU:HA	71:m:69:ARG:HD3	2.00	0.44
75:q:19:ILE:CD1	75:q:28:VAL:HG12	2.47	0.44
77:s:99:GLU:HA	77:s:102:LYS:HB3	2.00	0.44
79:u:76:PRO:O	79:u:81:ILE:HB	2.18	0.44
79:u:110:ARG:NH1	79:u:114:GLU:HB2	2.31	0.44
2:1:98:GLN:HE22	67:i:120:ILE:HD11	1.83	0.44
4:3:36:LYS:HA	4:3:36:LYS:HD2	1.76	0.44
5:4:42:ARG:HA	5:4:63:ALA:HB3	1.99	0.44
11:AA:248:U:H3'	11:AA:249:U:H5'	2.00	0.44
11:AA:340:C:OP2	28:GG:195:ARG:NH1	2.42	0.44
11:AA:877:C:O2'	11:AA:880:G:H1'	2.18	0.44
11:AA:904:A:H2'	11:AA:905:U:C6	2.52	0.44
11:AA:1184:A:H2'	11:AA:1185:C:C6	2.53	0.44
11:AA:2462:A:H2	11:AA:2463:G:C8	2.36	0.44
11:AA:2618:G:O2'	11:AA:2865:U:OP1	2.26	0.44
11:AA:2714:G:H4'	11:AA:2715:A:H5''	2.00	0.44
11:AA:2772:C:O2	11:AA:2773:C:H5	2.01	0.44
11:AA:2946:A2M:H1'	11:AA:2946:A2M:HM'3	1.81	0.44
12:Aa:593:ILE:O	12:Aa:683:SER:OG	2.36	0.44
16:C:36:LEU:HD11	16:C:128:ALA:HB1	2.00	0.44
17:CC:81:U:H5''	17:CC:82:U:H5'	2.00	0.44
35:K:3:LYS:HD3	35:K:8:VAL:HG23	1.99	0.44
39:M:4:ARG:HA	39:M:9:ARG:HG3	2.00	0.44
41:N:5:LYS:HE3	41:N:8:THR:HB	2.00	0.44
42:NN:82:ARG:HH21	42:NN:112:LEU:HB3	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:O:34:LEU:HD11	43:O:42:ILE:HD13	2.00	0.44
61:c:306:U:OP1	73:o:105:LYS:HG3	2.18	0.44
61:c:419:G:H2'	61:c:420:A2M:C8	2.47	0.44
61:c:791:A:C5	61:c:792:U:C4	3.06	0.44
61:c:1273:G:N2	61:c:1278:G:O6	2.51	0.44
64:f:156:THR:HG21	64:f:224:PHE:CD2	2.52	0.44
64:f:156:THR:HG23	83:y:95:PRO:HB3	2.00	0.44
68:j:121:LEU:HB2	68:j:124:LEU:HD23	1.99	0.44
77:s:77:GLN:O	77:s:81:ILE:HG13	2.18	0.44
79:u:41:ARG:NH1	80:v:38:LYS:HE3	2.33	0.44
81:w:52:LYS:HB3	81:w:93:LEU:HB3	2.00	0.44
84:z:73:ARG:HH21	84:z:82:LYS:HD3	1.83	0.44
4:3:51:GLN:NE2	61:c:957:G:H21	2.16	0.43
6:5:19:ARG:HH21	6:5:32:ARG:HD2	1.83	0.43
11:AA:128:G:H2'	11:AA:129:U:C6	2.53	0.43
11:AA:385:A:H2'	11:AA:386:A:C8	2.53	0.43
11:AA:507:U:H2'	11:AA:508:U:C6	2.53	0.43
11:AA:514:G:N3	28:GG:341:SER:OG	2.51	0.43
11:AA:670:C:OP1	16:C:147:ARG:NH2	2.41	0.43
11:AA:929:A:H2'	11:AA:930:U:C6	2.53	0.43
11:AA:937:G:H5''	39:M:29:PRO:HA	2.00	0.43
11:AA:1169:A:H4'	34:JJ:219:LYS:HD3	1.99	0.43
11:AA:1541:G:H1'	11:AA:1557:A:C5	2.53	0.43
11:AA:1686:U:OP1	27:G:42:LYS:NZ	2.34	0.43
11:AA:1940:G:H2'	11:AA:1941:C:C6	2.53	0.43
11:AA:2255:A:HO2'	61:c:1757:G:HO2'	1.57	0.43
11:AA:2815:OMG:HM21	11:AA:2817:A:H2'	2.00	0.43
87:AA:3407:SPD:H72	87:AA:3407:SPD:H41	1.69	0.43
12:Aa:576:LEU:HD13	12:Aa:587:TYR:CE2	2.53	0.43
24:Ee:51:LYS:O	24:Ee:54:LYS:HG2	2.18	0.43
26:FF:49:TYR:OH	26:FF:177:HIS:ND1	2.40	0.43
28:GG:334:PHE:HA	28:GG:339:LEU:HD12	2.00	0.43
37:L:68:ILE:O	37:L:115:LYS:HE2	2.18	0.43
44:OO:144:THR:HG21	52:T:118:ILE:HG21	1.99	0.43
61:c:41:A:O2'	61:c:437:A:O2'	2.24	0.43
61:c:388:G:H5''	61:c:425:A:N6	2.33	0.43
61:c:448:C:P	66:h:49:ARG:HH22	2.40	0.43
61:c:791:A:H2'	61:c:792:U:C6	2.53	0.43
61:c:919:A:H2'	61:c:920:U:C6	2.53	0.43
61:c:1108:G:H2'	84:z:25:ALA:HB1	2.00	0.43
61:c:1151:A:H2'	61:c:1152:A:C8	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:1559:A:H8	79:u:134:ARG:HH21	1.65	0.43
61:c:1796:C:H5'	61:c:1797:A:C8	2.53	0.43
65:g:196:ARG:HB3	65:g:196:ARG:CZ	2.47	0.43
69:k:32:PRO:O	69:k:35:LYS:HG2	2.18	0.43
69:k:98:ILE:HD11	69:k:121:VAL:HG11	2.00	0.43
8:7:59:ARG:NH2	8:7:96:THR:O	2.51	0.43
11:AA:838:G:N7	60:b:4:ARG:NH2	2.63	0.43
11:AA:1225:A:C4	11:AA:1226:G:C8	3.06	0.43
11:AA:1475:A:H4'	45:P:57:GLN:HG2	2.00	0.43
11:AA:1547:G:H2'	11:AA:1548:C:C6	2.53	0.43
11:AA:2473:C:H2'	11:AA:2474:G:H5'	2.00	0.43
11:AA:2611:U:H2'	11:AA:2612:U:H6	1.83	0.43
11:AA:3095:U:H2'	11:AA:3096:C:C6	2.53	0.43
11:AA:3107:U:H2'	11:AA:3108:G:H8	1.79	0.43
11:AA:3121:U:H4'	11:AA:3122:A:OP1	2.18	0.43
12:Aa:608:PRO:HG3	12:Aa:636:PHE:CD2	2.53	0.43
15:Bb:1:G:H2'	15:Bb:2:C:C6	2.53	0.43
18:Cc:71:G:H2'	18:Cc:72:C:C6	2.53	0.43
37:L:133:LYS:HE2	37:L:133:LYS:HB3	1.84	0.43
56:X:28:ARG:HA	56:X:33:ASN:CG	2.43	0.43
60:b:84:ARG:O	60:b:88:GLU:OE1	2.36	0.43
61:c:108:A:H2'	61:c:109:G:C8	2.54	0.43
61:c:124:A:O2'	66:h:148:ARG:HD2	2.18	0.43
61:c:406:U:H2'	61:c:407:A:C8	2.53	0.43
61:c:1036:A:H2'	61:c:1037:C:H6	1.82	0.43
61:c:1388:A:OP2	78:t:32:LYS:NZ	2.51	0.43
61:c:1404:C:H2'	61:c:1405:G:H8	1.83	0.43
66:h:49:ARG:HE	66:h:49:ARG:HB3	1.60	0.43
67:i:66:GLN:HA	67:i:67:PRO:HD3	1.93	0.43
71:m:115:LYS:HA	71:m:115:LYS:HD3	1.81	0.43
71:m:136:VAL:HG13	71:m:152:SER:HB3	1.99	0.43
73:o:36:LYS:HG2	73:o:37:ASN:N	2.32	0.43
74:p:34:ILE:O	74:p:38:VAL:HG22	2.18	0.43
74:p:91:LEU:HB3	74:p:122:ILE:HG12	2.00	0.43
76:r:18:ARG:HE	79:u:90:ASN:ND2	2.15	0.43
9:8:99:LYS:NZ	61:c:1230:A:OP1	2.38	0.43
11:AA:7:C:H2'	11:AA:8:C:H6	1.83	0.43
11:AA:113:C:P	49:QQ:147:ARG:HE	2.41	0.43
11:AA:500:C:H2'	11:AA:501:A:H8	1.83	0.43
11:AA:663:OMC:HM23	11:AA:663:OMC:H1'	1.65	0.43
11:AA:791:A:H2'	11:AA:792:G:H8	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:939:U:OP2	39:M:26:ARG:NH2	2.42	0.43
11:AA:955:U:H2'	11:AA:956:U:C6	2.53	0.43
11:AA:1035:G:H2'	11:AA:1036:A:C8	2.53	0.43
11:AA:1182:A:H2'	11:AA:1183:C:H6	1.81	0.43
11:AA:1237:G:N3	24:Ee:138:SER:HB2	2.34	0.43
11:AA:1312:C:H2'	11:AA:1313:G:O4'	2.18	0.43
11:AA:2096:A:H2'	11:AA:2097:U:C6	2.53	0.43
11:AA:2420:C:H2'	11:AA:2421:OMU:H6	1.99	0.43
11:AA:2427:U:H3	11:AA:2602:G:H1	1.66	0.43
11:AA:2655:U:H4'	11:AA:2656:A:O4'	2.18	0.43
11:AA:2838:A:H4'	40:MM:74:LYS:HG2	2.01	0.43
11:AA:3011:A:H4'	11:AA:3012:A:H4'	2.00	0.43
11:AA:3018:C:C4	11:AA:3019:U:C4	3.06	0.43
13:B:64:ASN:O	13:B:67:ILE:HG12	2.18	0.43
22:E:109:ASP:OD1	22:E:113:ARG:NE	2.44	0.43
29:H:10:LYS:HG2	29:H:11:PHE:O	2.17	0.43
42:NN:54:VAL:HG23	42:NN:55:ARG:N	2.32	0.43
46:PP:16:GLU:HB2	46:PP:19:ARG:NE	2.33	0.43
61:c:78:A:H5'	68:j:159:ARG:HH21	1.83	0.43
61:c:884:A:H5''	63:e:136:ARG:HD3	2.00	0.43
61:c:1031:U:H4'	61:c:1032:G:OP2	2.18	0.43
61:c:1196:A:H4'	61:c:1197:C:H5''	2.00	0.43
62:d:122:ILE:HG12	62:d:144:ILE:HB	2.00	0.43
63:e:144:ARG:HG2	63:e:206:PRO:HB2	1.99	0.43
67:i:72:HIS:O	67:i:72:HIS:ND1	2.51	0.43
75:q:88:GLY:H	75:q:120:PRO:HG2	1.83	0.43
77:s:98:ASP:OD1	77:s:98:ASP:N	2.50	0.43
79:u:132:ARG:HH21	79:u:145:ARG:HD3	1.83	0.43
8:7:19:TRP:CD1	8:7:38:ARG:HD3	2.53	0.43
11:AA:260:C:H2'	11:AA:261:U:C6	2.53	0.43
11:AA:584:G:OP1	32:II:82:ARG:NH2	2.50	0.43
11:AA:661:G:OP2	11:AA:661:G:N2	2.26	0.43
11:AA:674:G:O6	16:C:56:LYS:NZ	2.51	0.43
11:AA:899:U:H2'	11:AA:900:G:H8	1.83	0.43
11:AA:1370:G:H2'	11:AA:1371:G:C8	2.53	0.43
11:AA:1500:G:H2'	11:AA:1501:U:O4'	2.19	0.43
11:AA:2619:OMG:HM23	11:AA:2619:OMG:H1'	1.75	0.43
11:AA:3051:U:C2	11:AA:3052:G:C8	3.07	0.43
11:AA:3106:A:H2'	11:AA:3107:U:O4'	2.19	0.43
17:CC:60:U:OP1	33:J:54:TYR:OH	2.32	0.43
20:DD:43:LYS:O	20:DD:46:ARG:HG3	2.17	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:PP:24:LYS:HG3	46:PP:25:LYS:HE3	2.00	0.43
59:a:12:CYS:HB2	59:a:23:HIS:CE1	2.52	0.43
61:c:545:A:O4'	61:c:594:A:N6	2.51	0.43
61:c:1067:C:H2'	61:c:1068:C:C6	2.52	0.43
61:c:1244:A:H2'	61:c:1244:A:N3	2.33	0.43
61:c:1301:U:H5'	64:f:88:LYS:HD2	2.01	0.43
61:c:1404:C:H2'	61:c:1405:G:C8	2.53	0.43
61:c:1535:U:C5	67:i:187:ILE:HA	2.53	0.43
87:c:1901:SPD:H41	87:c:1901:SPD:H72	1.82	0.43
62:d:93:THR:HG23	62:d:95:ALA:H	1.84	0.43
64:f:111:VAL:HG13	64:f:191:ALA:HA	1.99	0.43
66:h:23:LEU:HD23	71:m:4:ALA:HB3	2.00	0.43
69:k:64:VAL:N	69:k:65:PRO:HD3	2.34	0.43
70:l:38:ILE:HG23	70:l:78:ILE:HG23	2.00	0.43
71:m:82:ARG:NE	71:m:149:ARG:HH11	2.16	0.43
76:r:81:ARG:HD3	76:r:117:GLY:CA	2.48	0.43
77:s:94:GLN:HB2	77:s:102:LYS:HE2	2.00	0.43
79:u:46:VAL:HG21	79:u:73:MET:HG2	1.99	0.43
1:0:8:ARG:HD2	61:c:779:U:H5	1.82	0.43
1:0:9:THR:HG23	1:0:23:PHE:CD2	2.54	0.43
6:5:23:VAL:HG22	72:n:61:TRP:CE2	2.53	0.43
8:7:109:ASP:OD1	8:7:109:ASP:N	2.50	0.43
11:AA:347:G:N7	54:V:55:ARG:NH1	2.67	0.43
11:AA:950:G:N1	11:AA:1368:U:OP2	2.37	0.43
11:AA:1213:G:OP1	22:E:139:TYR:OH	2.25	0.43
11:AA:1663:C:H2'	11:AA:1664:G:H8	1.84	0.43
11:AA:2113:A:O2'	11:AA:2116:G:N7	2.50	0.43
11:AA:2217:U:H2'	11:AA:2218:G:C8	2.53	0.43
11:AA:2235:C:O2'	18:Cc:72:C:H5''	2.17	0.43
11:AA:2252:A:H2'	11:AA:2253:G:C8	2.54	0.43
11:AA:2421:OMU:O2'	59:a:52:GLY:HA3	2.18	0.43
11:AA:2948:OMC:O2'	26:FF:242:THR:HA	2.18	0.43
11:AA:3034:C:O2'	38:LL:122:LYS:HD2	2.17	0.43
11:AA:3034:C:O2	38:LL:122:LYS:N	2.51	0.43
11:AA:3094:A:H2'	11:AA:3095:U:C6	2.53	0.43
14:BB:26:C:H2'	14:BB:27:A:O4'	2.19	0.43
23:EE:108:PRO:HG2	60:b:86:LEU:HD13	2.01	0.43
35:K:23:PRO:HG2	35:K:26:GLN:HG3	1.99	0.43
36:KK:156:ASP:OD1	36:KK:156:ASP:N	2.49	0.43
40:MM:48:LEU:HD11	40:MM:167:LEU:HD12	1.99	0.43
45:P:13:THR:HG1	45:P:72:ARG:HH11	1.62	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:P:55:LEU:HD22	45:P:93:VAL:HG12	2.00	0.43
61:c:184:C:H2'	61:c:185:U:C6	2.54	0.43
61:c:517:U:H2'	61:c:518:A:C8	2.53	0.43
61:c:918:U:H2'	61:c:919:A:C8	2.51	0.43
61:c:939:A:H2'	61:c:940:A:C8	2.53	0.43
61:c:1050:G:C6	61:c:1069:A:C6	3.06	0.43
61:c:1492:A:H4'	61:c:1493:A:H5'	2.00	0.43
67:i:55:ASP:OD2	67:i:58:LEU:HD23	2.18	0.43
68:j:180:THR:HB	68:j:183:ARG:HG3	2.00	0.43
84:z:43:PHE:O	84:z:45:GLY:N	2.49	0.43
1:0:18:LEU:HD11	66:h:64:ILE:HD11	2.00	0.43
1:0:36:SER:HB3	1:0:39:GLU:OE1	2.18	0.43
2:1:48:ASP:N	2:1:48:ASP:OD1	2.51	0.43
8:7:115:ILE:HG13	8:7:116:ASP:O	2.19	0.43
11:AA:61:A:H5''	49:QQ:155:VAL:HG23	2.00	0.43
11:AA:359:U:H2'	11:AA:360:G:C8	2.54	0.43
11:AA:414:U:C2	11:AA:415:G:C8	3.07	0.43
11:AA:661:G:H4'	11:AA:662:U:H6	1.83	0.43
11:AA:890:C:O2'	11:AA:2324:A:N3	2.38	0.43
11:AA:1044:U:P	40:MM:90:ARG:HH21	2.42	0.43
11:AA:1136:A:O4'	11:AA:2636:A:N6	2.51	0.43
11:AA:1188:U:OP1	11:AA:1210:U:O2'	2.17	0.43
11:AA:1717:U:H2'	11:AA:1718:G:H8	1.82	0.43
11:AA:2829:U:OP2	91:AA:3738:HOH:O	2.21	0.43
11:AA:3002:C:O2'	26:FF:180:GLU:OE2	2.33	0.43
12:Aa:435:VAL:HG11	12:Aa:442:VAL:HB	2.01	0.43
23:EE:31:THR:HB	23:EE:123:ARG:HH21	1.84	0.43
23:EE:83:HIS:HA	60:b:64:VAL:HA	2.01	0.43
26:FF:47:LEU:HD11	26:FF:179:ALA:HB3	2.00	0.43
29:H:114:ILE:HG13	29:H:133:SER:HA	2.01	0.43
30:HH:117:GLU:HG2	30:HH:118:THR:N	2.33	0.43
61:c:58:U:OP1	61:c:456:A:O2'	2.36	0.43
61:c:89:G:H2'	61:c:90:C:C6	2.54	0.43
61:c:366:A:H2'	61:c:367:A:C8	2.53	0.43
61:c:551:G:H5'	61:c:581:U:C2	2.53	0.43
61:c:1253:U:H2'	61:c:1254:U:C6	2.53	0.43
61:c:1485:C:H2'	61:c:1486:G:O4'	2.18	0.43
61:c:1659:A:H2'	61:c:1660:A:H8	1.83	0.43
61:c:1672:G:H2'	61:c:1673:G:H8	1.80	0.43
64:f:157:LYS:HG2	64:f:170:ILE:HD13	2.01	0.43
68:j:72:ARG:HA	68:j:98:ARG:HA	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:l:152:ILE:HG13	70:l:153:GLU:N	2.34	0.43
82:x:30:ALA:O	82:x:60:ARG:HD3	2.19	0.43
1:0:57:VAL:HA	1:0:73:GLY:HA2	2.01	0.43
10:A:47:PHE:HZ	10:A:144:SER:HB3	1.84	0.43
11:AA:42:C:O2'	11:AA:43:A:H5'	2.19	0.43
11:AA:225:C:H5'	35:K:34:PRO:HD3	1.99	0.43
11:AA:242:C:O2'	11:AA:243:G:H8	2.01	0.43
11:AA:255:A:H2'	11:AA:256:G:H8	1.84	0.43
11:AA:273:A:H2'	11:AA:274:G:H8	1.83	0.43
11:AA:351:A:N7	56:X:35:ILE:HG12	2.34	0.43
11:AA:794:U:H2'	11:AA:795:G:H8	1.84	0.43
11:AA:964:G:H2'	11:AA:965:A:C8	2.53	0.43
11:AA:1234:G:H3'	11:AA:1235:U:H2'	2.01	0.43
11:AA:1362:G:H2'	11:AA:1363:A:H8	1.83	0.43
11:AA:2168:A:N6	11:AA:2170:U:O2	2.52	0.43
11:AA:2561:A:H2'	11:AA:2562:A:C8	2.53	0.43
11:AA:2612:U:H2'	11:AA:2613:U:O4'	2.19	0.43
11:AA:2640:A2M:HM'3	11:AA:2640:A2M:H1'	1.76	0.43
11:AA:3001:C:OP1	26:FF:120:LYS:NZ	2.37	0.43
12:Aa:633:ILE:HG21	12:Aa:636:PHE:HE1	1.84	0.43
14:BB:87:G:O2'	22:E:119:ARG:NH2	2.49	0.43
16:C:71:LEU:HD11	16:C:99:THR:HG21	2.00	0.43
32:II:172:HIS:CD2	32:II:173:MET:HG3	2.53	0.43
33:J:73:MET:O	33:J:77:GLU:HG3	2.17	0.43
33:J:90:ALA:HA	33:J:94:GLN:OE1	2.18	0.43
39:M:69:TRP:CE3	44:OO:64:LYS:HA	2.54	0.43
40:MM:36:LEU:HD21	40:MM:87:LEU:HD23	2.01	0.43
57:Y:109:ASN:ND2	57:Y:117:HIS:O	2.52	0.43
61:c:1366:U:C4	61:c:1367:G:C6	3.06	0.43
61:c:1528:U:H2'	61:c:1529:C:C6	2.53	0.43
61:c:1550:A:H2'	61:c:1551:U:C6	2.53	0.43
61:c:1633:A:OP2	61:c:1633:A:H8	2.01	0.43
61:c:1790:A:H2'	61:c:1791:A:C8	2.53	0.43
66:h:96:ASN:OD1	66:h:96:ASN:N	2.52	0.43
66:h:159:THR:HB	66:h:173:ILE:CG1	2.49	0.43
66:h:161:LYS:O	66:h:169:ILE:HA	2.19	0.43
66:h:173:ILE:HD12	66:h:227:VAL:HG12	2.00	0.43
70:l:66:SER:HA	70:l:73:SER:HA	2.00	0.43
71:m:53:ARG:HG3	71:m:97:LEU:HD22	2.00	0.43
73:o:97:TYR:O	73:o:99:ARG:HG3	2.19	0.43
75:q:13:VAL:HG23	75:q:77:THR:H	1.82	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
77:s:30:LYS:HB2	77:s:66:ARG:HD3	2.00	0.43
78:t:18:GLU:HA	78:t:71:PHE:HB3	2.00	0.43
83:y:81:VAL:O	83:y:122:SER:HB3	2.18	0.43
11:AA:114:A:OP1	49:QQ:54:LYS:NZ	2.52	0.43
11:AA:504:A:H2'	11:AA:505:G:H8	1.84	0.43
11:AA:598:A:H2'	11:AA:599:C:C6	2.54	0.43
11:AA:1114:U:OP1	39:M:23:GLY:N	2.30	0.43
11:AA:1124:U:H4'	11:AA:2635:A:OP2	2.19	0.43
11:AA:1128:U:H2'	11:AA:1129:A:O4'	2.19	0.43
11:AA:1201:C:O2'	87:AA:3405:SPD:N10	2.49	0.43
11:AA:1202:A:C2	11:AA:2857:C:H5'	2.54	0.43
11:AA:2468:A:H5''	11:AA:2470:C:H41	1.84	0.43
11:AA:2743:A:H2'	11:AA:2744:U:C6	2.53	0.43
11:AA:2828:G:OP2	91:AA:3738:HOH:O	2.21	0.43
11:AA:3049:A:H4'	26:FF:364:LYS:HD2	2.00	0.43
14:BB:100:C:H2'	14:BB:101:G:O4'	2.19	0.43
14:BB:108:A:H2'	14:BB:109:G:H8	1.84	0.43
16:C:126:GLN:HA	16:C:129:VAL:HG12	2.00	0.43
17:CC:28:C:H2'	17:CC:29:U:C6	2.53	0.43
22:E:151:PRO:HA	46:PP:14:LEU:HA	2.01	0.43
24:Ee:126:ALA:HA	24:Ee:162:ILE:HG13	1.99	0.43
26:FF:33:PRO:HG2	26:FF:340:LYS:HB2	2.00	0.43
30:HH:160:PHE:O	30:HH:163:LEU:HB3	2.19	0.43
37:L:33:SER:OG	37:L:35:SER:O	2.34	0.43
37:L:61:LYS:HE3	37:L:61:LYS:HB2	1.79	0.43
38:LL:12:VAL:O	38:LL:51:GLN:HB2	2.19	0.43
40:MM:142:ASP:CG	40:MM:178:ARG:HH22	2.27	0.43
49:QQ:5:LYS:NZ	53:U:37:THR:OG1	2.31	0.43
59:a:7:THR:O	59:a:22:GLN:HG2	2.19	0.43
61:c:202:A:H2'	61:c:203:U:C6	2.54	0.43
61:c:472:U:O2'	61:c:769:A:N3	2.47	0.43
61:c:647:G:H2'	61:c:648:G:C8	2.54	0.43
61:c:855:A:O2'	61:c:856:A:H3'	2.18	0.43
61:c:1322:A:H2'	61:c:1323:C:C6	2.53	0.43
61:c:1345:A:H2'	61:c:1348:A:N6	2.34	0.43
61:c:1357:A:C6	61:c:1368:G:N3	2.87	0.43
61:c:1481:C:H1'	61:c:1482:C:H5	1.83	0.43
63:e:31:ASP:OD1	63:e:45:LYS:NZ	2.43	0.43
65:g:104:SER:O	65:g:108:LYS:HG3	2.18	0.43
68:j:145:PHE:HB2	68:j:147:LEU:HD22	2.00	0.43
70:l:25:ARG:HH11	70:l:26:LYS:H	1.67	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
78:t:25:THR:O	78:t:31:ASN:ND2	2.34	0.43
84:z:131:SER:HB2	84:z:134:ALA:HB3	2.01	0.43
2:1:102:THR:HG23	67:i:123:VAL:HG13	2.00	0.43
7:6:37:ARG:HB2	71:m:123:HIS:CE1	2.53	0.43
8:7:44:SER:OG	8:7:59:ARG:HB2	2.19	0.43
10:A:110:PRO:N	10:A:111:PRO:HD2	2.34	0.43
11:AA:8:C:H2'	11:AA:9:U:H6	1.83	0.43
11:AA:291:C:C2	11:AA:292:U:C5	3.06	0.43
11:AA:971:G:H2'	11:AA:972:A:C8	2.54	0.43
11:AA:1143:A:H5'	11:AA:1368:U:H1'	1.99	0.43
11:AA:1543:G:O2'	11:AA:2168:A:O2'	2.26	0.43
11:AA:1941:C:H2'	11:AA:1942:U:C6	2.53	0.43
11:AA:2368:A:H2'	11:AA:2369:G:C8	2.53	0.43
11:AA:2726:C:O2'	11:AA:2727:A:H2'	2.18	0.43
11:AA:3020:U:H2'	11:AA:3033:A:N6	2.30	0.43
18:Cc:2:G:H2'	18:Cc:3:C:C6	2.54	0.43
49:QQ:6:TYR:CE1	53:U:40:VAL:HG22	2.54	0.43
52:T:45:LYS:O	52:T:49:LYS:HG2	2.19	0.43
61:c:186:C:OP1	70:l:146:ARG:NH2	2.52	0.43
61:c:591:A:H5''	71:m:24:LEU:HD13	2.00	0.43
61:c:607:G:H21	61:c:614:C:H5''	1.84	0.43
61:c:1174:C:H2'	61:c:1175:U:C6	2.54	0.43
61:c:1426:C:H3'	61:c:1427:A:H4'	1.99	0.43
61:c:1673:G:H1	61:c:1728:A:H2	1.65	0.43
67:i:141:GLY:HA2	67:i:171:ALA:HB2	2.00	0.43
68:j:153:VAL:O	68:j:153:VAL:HG13	2.18	0.43
73:o:13:PHE:CE2	73:o:15:LYS:HB3	2.54	0.43
77:s:129:PHE:O	77:s:137:ARG:NH1	2.52	0.43
79:u:48:LYS:HG2	79:u:54:LEU:HD21	2.01	0.43
4:3:30:SER:OG	4:3:48:SER:OG	2.32	0.43
6:5:13:ARG:HG3	6:5:14:TYR:HD1	1.83	0.43
8:7:129:LYS:HG3	8:7:147:HIS:HB2	2.01	0.43
11:AA:68:C:O3'	49:QQ:177:GLY:HA2	2.19	0.43
11:AA:434:U:H2'	11:AA:435:C:C6	2.53	0.43
11:AA:869:G:H2'	11:AA:870:G:C8	2.54	0.43
11:AA:1665:C:H2'	11:AA:1666:G:H8	1.83	0.43
11:AA:1894:U:O2'	11:AA:3054:U:OP1	2.36	0.43
11:AA:2527:G:H2'	11:AA:2528:G:C8	2.54	0.43
11:AA:2561:A:H61	11:AA:2579:G:H2'	1.84	0.43
11:AA:2933:A:N1	11:AA:3014:U:H4'	2.34	0.43
11:AA:3201:C:H2'	11:AA:3202:G:H8	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:C:34:THR:HA	16:C:49:LEU:HD22	2.01	0.43
17:CC:13:A:C4	17:CC:14:C:C5	3.07	0.43
17:CC:126:A:OP2	17:CC:126:A:H8	2.02	0.43
20:DD:166:GLY:N	20:DD:169:GLU:OE1	2.42	0.43
24:Ee:38:SER:O	24:Ee:41:LYS:N	2.51	0.43
33:J:131:ASP:O	33:J:135:ILE:HG12	2.19	0.43
37:L:29:HIS:HE1	37:L:42:LEU:HD13	1.83	0.43
46:PP:23:ILE:HA	46:PP:63:VAL:HG12	2.01	0.43
54:V:26:SER:HB3	54:V:35:SER:OG	2.18	0.43
59:a:63:LYS:HD3	59:a:63:LYS:HA	1.77	0.43
61:c:107:C:H5''	61:c:383:G:O2'	2.19	0.43
61:c:395:U:H2'	61:c:396:G:O4'	2.19	0.43
61:c:517:U:C2	61:c:518:A:C8	3.06	0.43
61:c:551:G:H2'	61:c:552:G:C8	2.51	0.43
61:c:628:G:H3'	61:c:969:C:H42	1.83	0.43
61:c:1086:A:H5'	64:f:164:SER:HB3	2.01	0.43
61:c:1170:G:N3	61:c:1170:G:H2'	2.34	0.43
61:c:1171:A:O2'	61:c:1570:A:N3	2.46	0.43
61:c:1636:C:O2	61:c:1765:A:N6	2.51	0.43
61:c:1725:U:H2'	61:c:1726:G:H8	1.84	0.43
61:c:1736:G:H2'	61:c:1737:G:H8	1.84	0.43
68:j:178:LEU:HD23	68:j:179:VAL:O	2.19	0.43
71:m:120:LYS:H	71:m:124:HIS:HD2	1.66	0.43
74:p:119:GLU:O	74:p:123:HIS:ND1	2.52	0.43
81:w:28:SER:HB2	81:w:112:VAL:HG13	2.00	0.43
8:7:241:PHE:HE2	8:7:288:HIS:HE2	1.66	0.42
11:AA:127:G:H2'	11:AA:128:G:C8	2.54	0.42
11:AA:404:G:C5	11:AA:405:U:C5	3.07	0.42
11:AA:1186:G:N3	22:E:112:ALA:HB1	2.34	0.42
11:AA:1214:U:H2'	11:AA:1215:U:C6	2.54	0.42
11:AA:1478:C:H2'	11:AA:1479:U:C6	2.54	0.42
11:AA:1636:U:O2'	37:L:79:HIS:ND1	2.49	0.42
11:AA:1738:C:H1'	51:S:52:GLN:HG3	2.01	0.42
11:AA:1856:C:C2	11:AA:1857:C:C5	3.07	0.42
11:AA:2160:G:H2'	11:AA:2161:G:C8	2.50	0.42
11:AA:2267:C:H2'	11:AA:2268:U:O4'	2.19	0.42
11:AA:2359:C:H2'	11:AA:2360:C:C6	2.54	0.42
11:AA:2429:G:H2'	11:AA:2430:A:H8	1.84	0.42
11:AA:2843:U:OP2	11:AA:2844:C:N4	2.46	0.42
11:AA:2941:A:P	26:FF:255:TRP:HB3	2.59	0.42
11:AA:3138:U:H5''	26:FF:274:SER:O	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:3378:C:H2'	11:AA:3379:C:H6	1.84	0.42
12:Aa:127:VAL:HG21	12:Aa:143:LEU:HD13	2.01	0.42
90:Aa:1003:SO1:H13	90:Aa:1003:SO1:C11	2.49	0.42
17:CC:27:U:H2'	17:CC:28:C:H6	1.83	0.42
17:CC:83:C:H2'	17:CC:85:G:H21	1.82	0.42
22:E:10:ILE:HG12	22:E:26:ARG:HB2	2.01	0.42
23:EE:140:ASN:O	23:EE:144:ASN:HA	2.19	0.42
26:FF:236:LYS:HE2	26:FF:236:LYS:HB2	1.82	0.42
36:KK:63:LYS:HD2	36:KK:64:ILE:HD13	2.01	0.42
42:NN:110:ILE:HD13	42:NN:116:TYR:HD1	1.84	0.42
43:O:42:ILE:HD11	43:O:60:ALA:HB2	1.99	0.42
49:QQ:27:VAL:HG23	49:QQ:129:TYR:CE2	2.53	0.42
56:X:6:SER:OG	56:X:9:ILE:HG12	2.19	0.42
56:X:27:ILE:O	56:X:28:ARG:HB2	2.19	0.42
58:Z:9:ARG:NH2	61:c:1782:MA6:OP1	2.37	0.42
61:c:3:U:O2	71:m:17:ARG:NH1	2.40	0.42
61:c:67:A:O2'	61:c:69:G:OP1	2.30	0.42
61:c:879:G:H2'	61:c:880:C:C6	2.54	0.42
61:c:888:U:H2'	61:c:889:U:H6	1.82	0.42
61:c:1001:A:HO2'	61:c:1002:G:P	2.40	0.42
62:d:183:ARG:HA	62:d:188:LEU:HB2	2.00	0.42
66:h:47:PHE:HE2	66:h:90:ILE:HG21	1.83	0.42
76:r:17:TYR:CG	76:r:18:ARG:N	2.87	0.42
77:s:131:GLY:HA3	77:s:137:ARG:HA	1.99	0.42
80:v:18:TYR:HD2	80:v:59:ALA:HA	1.84	0.42
10:A:68:ARG:NE	11:AA:2988:C:OP1	2.42	0.42
11:AA:506:U:OP1	28:GG:316:ASN:HB2	2.19	0.42
11:AA:970:A:H2'	11:AA:971:G:C8	2.54	0.42
11:AA:1256:G:H2'	11:AA:1257:C:C6	2.53	0.42
11:AA:1379:G:OP1	91:AA:3735:HOH:O	2.21	0.42
11:AA:1472:U:H5'	19:D:4:LEU:HB2	2.01	0.42
11:AA:1581:C:N4	11:AA:2522:G:OP2	2.52	0.42
11:AA:1729:A:C6	43:O:49:PRO:HD3	2.53	0.42
11:AA:2232:A:O2'	11:AA:2429:G:H5'	2.18	0.42
11:AA:2609:A:H2'	11:AA:2610:G:H8	1.84	0.42
11:AA:2655:U:OP2	59:a:3:ASN:N	2.52	0.42
11:AA:2722:U:H2'	11:AA:2723:U:H6	1.83	0.42
11:AA:2901:G:H4'	11:AA:3024:A:C2	2.55	0.42
11:AA:3186:A:O4'	46:PP:12:TRP:HZ2	2.02	0.42
11:AA:3371:G:H2'	11:AA:3372:A:H8	1.84	0.42
12:Aa:74:ALA:HA	12:Aa:103:ILE:HD13	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:Bb:49:C:H2'	15:Bb:50:U:C6	2.55	0.42
16:C:133:LYS:HB2	16:C:135:GLN:OE1	2.19	0.42
26:FF:209:PHE:CZ	26:FF:338:LEU:HB2	2.54	0.42
28:GG:271:LYS:HB2	28:GG:274:TYR:HB3	2.00	0.42
36:KK:33:ASN:O	36:KK:39:ALA:HB3	2.19	0.42
36:KK:165:PHE:HZ	49:QQ:3:ALA:HB1	1.84	0.42
37:L:95:VAL:O	37:L:100:THR:OG1	2.24	0.42
56:X:9:ILE:O	56:X:13:MET:HG3	2.19	0.42
58:Z:11:ARG:NH2	61:c:1775:U:OP1	2.39	0.42
61:c:851:U:H2'	61:c:852:C:O4'	2.20	0.42
61:c:1357:A:N6	61:c:1368:G:N1	2.67	0.42
61:c:1458:G:OP1	79:u:138:THR:N	2.52	0.42
61:c:1533:C:N4	61:c:1534:G:O6	2.52	0.42
61:c:1590:G:C2	61:c:1607:G:C2	3.07	0.42
63:e:157:GLN:C	63:e:159:SER:H	2.28	0.42
64:f:68:ILE:H	64:f:68:ILE:HD12	1.83	0.42
66:h:19:LEU:HD21	66:h:108:ARG:NH1	2.34	0.42
67:i:76:ARG:HD3	67:i:79:ASN:ND2	2.34	0.42
67:i:186:ASN:HD21	67:i:188:LYS:HB2	1.83	0.42
69:k:139:ARG:HA	83:y:52:TYR:O	2.18	0.42
71:m:163:PRO:HB3	71:m:168:ARG:O	2.19	0.42
75:q:19:ILE:HD13	75:q:28:VAL:HG12	2.01	0.42
79:u:140:THR:HA	79:u:143:ARG:HH11	1.83	0.42
82:x:16:LYS:HG2	82:x:23:ILE:HD13	2.01	0.42
1:0:34:ASN:O	61:c:521:A:O2'	2.34	0.42
2:1:70:LYS:HG3	2:1:71:ILE:HG22	2.00	0.42
10:A:164:SER:HG	11:AA:3181:C:HO2'	1.38	0.42
11:AA:20:A:P	52:T:86:ARG:HH21	2.41	0.42
11:AA:349:A:C4	17:CC:24:G:H1'	2.54	0.42
11:AA:612:U:C2	11:AA:613:G:C8	3.08	0.42
11:AA:1385:C:OP1	28:GG:141:ARG:NH2	2.52	0.42
11:AA:1572:U:H2'	11:AA:1573:G:H5''	2.01	0.42
11:AA:2337:OMC:HM23	11:AA:2337:OMC:H1'	1.77	0.42
11:AA:2423:U:H2'	11:AA:2424:A:C8	2.54	0.42
11:AA:2430:A:H2'	11:AA:2431:C:C6	2.54	0.42
11:AA:2659:G:H2'	11:AA:2660:G:C8	2.54	0.42
11:AA:2728:G:N7	25:F:87:LYS:NZ	2.65	0.42
11:AA:2742:C:H2'	11:AA:2743:A:C8	2.53	0.42
11:AA:3233:C:H2'	11:AA:3234:A:H8	1.78	0.42
13:B:3:ARG:NE	17:CC:12:A:OP1	2.43	0.42
14:BB:94:C:H2'	14:BB:95:A:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:CC:59:A:H5''	17:CC:61:A:C8	2.54	0.42
17:CC:125:U:C3'	17:CC:126:A:H5'	2.49	0.42
28:GG:112:LYS:HE2	49:QQ:202:TYR:HB3	2.02	0.42
29:H:71:LYS:HB3	29:H:71:LYS:HE3	1.82	0.42
31:I:9:SER:O	31:I:53:VAL:HG22	2.18	0.42
43:O:99:ASP:O	43:O:103:THR:OG1	2.24	0.42
45:P:6:ASP:OD1	45:P:6:ASP:N	2.49	0.42
52:T:5:LYS:O	52:T:9:LEU:HG	2.19	0.42
55:W:5:ILE:HD11	55:W:11:PHE:HD2	1.83	0.42
56:X:25:GLN:OE1	56:X:28:ARG:NH2	2.52	0.42
61:c:99:C:OP2	61:c:378:A:O2'	2.24	0.42
61:c:627:C:H2'	61:c:628:G:C8	2.53	0.42
61:c:977:A:C2	61:c:978:A:H1'	2.55	0.42
61:c:1126:OMG:H2'	61:c:1127:G:H8	1.84	0.42
61:c:1160:A:H2'	61:c:1161:C:H6	1.83	0.42
61:c:1273:G:H4'	61:c:1274:C:O5'	2.19	0.42
61:c:1437:U:H2'	61:c:1438:G:H8	1.84	0.42
62:d:48:ILE:HG21	62:d:161:PRO:HB2	2.00	0.42
66:h:9:LEU:HG	66:h:28:ALA:HB3	2.01	0.42
66:h:12:LEU:HD11	71:m:4:ALA:HB2	2.00	0.42
66:h:209:HIS:CE1	66:h:219:VAL:HB	2.54	0.42
70:l:90:LEU:HA	70:l:93:THR:HG22	2.01	0.42
3:2:85:ARG:H	61:c:1797:A:H61	1.68	0.42
8:7:54:PHE:CD2	8:7:312:VAL:HG21	2.55	0.42
8:7:239:GLU:O	8:7:256:THR:OG1	2.30	0.42
10:A:142:SER:HB3	10:A:147:TRP:CB	2.49	0.42
11:AA:1173:U:H1'	11:AA:1179:A:H2'	2.00	0.42
11:AA:1299:U:H2'	11:AA:1300:G:O4'	2.20	0.42
11:AA:1465:A:H2'	11:AA:1466:G:O4'	2.20	0.42
11:AA:1534:A:H2'	11:AA:1535:A:C8	2.54	0.42
11:AA:1710:C:C2	11:AA:1711:C:C5	3.07	0.42
11:AA:1836:C:H2'	11:AA:1837:U:C6	2.55	0.42
11:AA:2192:C:H2'	11:AA:2193:U:C6	2.54	0.42
11:AA:2228:A:H2'	11:AA:2229:A:H8	1.82	0.42
11:AA:2478:C:OP1	11:AA:2488:A:H8	2.01	0.42
11:AA:2590:A:H2'	11:AA:2591:A:C8	2.53	0.42
12:Aa:491:VAL:HG22	12:Aa:538:LEU:HD21	2.01	0.42
12:Aa:598:SER:O	12:Aa:602:GLU:HG3	2.19	0.42
12:Aa:612:PHE:C	12:Aa:614:ALA:H	2.27	0.42
15:Bb:69:U:H2'	15:Bb:70:C:C6	2.54	0.42
15:Bb:69:U:O2'	15:Bb:70:C:OP1	2.29	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:C:81:VAL:HG12	16:C:138:LEU:HD23	2.02	0.42
17:CC:133:G:H4'	33:J:55:ASN:ND2	2.34	0.42
19:D:39:ASN:O	19:D:43:LYS:HG3	2.19	0.42
23:EE:206:PRO:HG3	23:EE:213:GLY:HA3	2.01	0.42
24:Ee:85:LEU:HD22	24:Ee:102:GLY:HA3	2.01	0.42
25:F:54:HIS:CE1	25:F:55:LYS:HG2	2.54	0.42
29:H:90:GLY:O	31:I:16:GLY:HA2	2.19	0.42
36:KK:169:LEU:HA	53:U:43:LEU:HD11	2.00	0.42
52:T:76:GLN:O	52:T:81:ARG:NE	2.45	0.42
61:c:109:G:H4'	61:c:754:A:O2'	2.19	0.42
61:c:324:U:H2'	61:c:325:G:C8	2.55	0.42
61:c:610:G:H4'	61:c:612:U:H5	1.84	0.42
61:c:885:G:H2'	61:c:886:U:C6	2.54	0.42
61:c:1473:U:H2'	61:c:1473:U:O2	2.19	0.42
61:c:1629:G:H2'	61:c:1630:U:C6	2.54	0.42
63:e:47:LEU:HD23	63:e:47:LEU:H	1.84	0.42
64:f:138:PRO:HB2	64:f:222:TYR:HE2	1.84	0.42
67:i:71:ALA:HB2	67:i:90:ILE:HG22	2.01	0.42
71:m:176:ASN:C	71:m:180:LYS:HZ2	2.26	0.42
77:s:47:LYS:O	77:s:50:GLU:HG2	2.19	0.42
77:s:74:HIS:O	77:s:77:GLN:HG2	2.19	0.42
77:s:81:ILE:O	77:s:85:ILE:HG23	2.19	0.42
81:w:96:PRO:O	81:w:100:VAL:HG23	2.19	0.42
2:1:57:TYR:HE2	2:1:60:VAL:HG12	1.83	0.42
5:4:49:ARG:HD2	67:i:82:PHE:CE2	2.54	0.42
8:7:312:VAL:O	8:7:313:TRP:HD1	2.02	0.42
11:AA:89:A:N7	16:C:171:LYS:NZ	2.67	0.42
11:AA:397:A:H5''	11:AA:399:A:OP1	2.20	0.42
11:AA:598:A:H4'	28:GG:325:LEU:HD13	2.02	0.42
11:AA:610:G:H21	28:GG:313:LEU:HD13	1.84	0.42
11:AA:818:C:H2'	11:AA:819:U:O4'	2.19	0.42
11:AA:892:U:H4'	11:AA:2134:G:OP1	2.18	0.42
11:AA:1035:G:H2'	11:AA:1036:A:H8	1.83	0.42
11:AA:1675:G:H2'	11:AA:1676:A:C8	2.54	0.42
11:AA:2163:C:O2'	23:EE:8:GLN:O	2.36	0.42
11:AA:2222:A:H2'	11:AA:2223:A:C8	2.54	0.42
11:AA:2615:G:H2'	11:AA:2616:C:C6	2.54	0.42
11:AA:2858:U:H2'	11:AA:2859:U:C6	2.55	0.42
11:AA:2955:U:OP2	11:AA:2977:G:N1	2.51	0.42
12:Aa:427:PHE:HB3	12:Aa:429:LYS:NZ	2.34	0.42
13:B:153:LYS:HE2	13:B:153:LYS:HB2	1.89	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:FF:36:ASP:OD1	26:FF:36:ASP:N	2.52	0.42
29:H:87:ARG:HH21	29:H:93:LEU:HD11	1.85	0.42
37:L:66:THR:HB	37:L:123:GLN:HE22	1.85	0.42
39:M:77:LYS:C	39:M:79:TRP:H	2.27	0.42
56:X:28:ARG:NH1	56:X:36:ARG:O	2.47	0.42
61:c:5:U:O2'	61:c:553:G:H4'	2.19	0.42
61:c:63:G:N2	61:c:88:U:H1'	2.34	0.42
61:c:454:U:H2'	61:c:455:C:C4	2.53	0.42
61:c:516:G:C4	61:c:517:U:C5	3.06	0.42
61:c:568:G:OP1	84:z:91:GLY:HA2	2.19	0.42
61:c:1037:C:O2	83:y:16:ASN:ND2	2.53	0.42
61:c:1068:C:H2'	61:c:1069:A:H8	1.83	0.42
61:c:1458:G:OP1	79:u:139:LYS:N	2.52	0.42
61:c:1503:A:H2'	61:c:1504:G:C8	2.55	0.42
63:e:220:GLN:HA	63:e:221:PRO:HD3	1.85	0.42
65:g:157:LEU:HA	65:g:189:MET:SD	2.60	0.42
66:h:11:ARG:CZ	66:h:24:SER:HB3	2.50	0.42
70:l:56:ARG:NH1	70:l:174:GLY:O	2.49	0.42
75:q:13:VAL:HG23	75:q:76:ILE:HA	2.02	0.42
76:r:107:ILE:HA	76:r:111:MET:HE2	2.00	0.42
79:u:62:THR:HG22	79:u:63:GLN:N	2.31	0.42
79:u:102:ALA:HB3	79:u:104:ASN:HB2	2.01	0.42
10:A:17:GLY:HA3	11:AA:1313:G:O3'	2.20	0.42
11:AA:197:G:H8	11:AA:197:G:OP1	2.02	0.42
11:AA:860:G:O2'	11:AA:895:A:H5''	2.19	0.42
11:AA:1139:G:P	41:N:14:ARG:HH21	2.42	0.42
11:AA:1471:U:H2'	11:AA:1472:U:C6	2.55	0.42
11:AA:1658:G:H2'	11:AA:1659:U:C6	2.55	0.42
11:AA:2806:U:H2'	11:AA:2807:U:C6	2.54	0.42
11:AA:2911:A:H4'	11:AA:2912:G:C8	2.55	0.42
11:AA:3342:A:C2	11:AA:3364:C:C2	3.07	0.42
11:AA:3385:U:H2'	11:AA:3386:G:O4'	2.19	0.42
12:Aa:68:ILE:HB	12:Aa:108:HIS:HE1	1.84	0.42
14:BB:4:U:H2'	14:BB:5:G:C8	2.54	0.42
16:C:173:GLU:OE2	39:M:49:HIS:ND1	2.53	0.42
17:CC:2:A:C4	17:CC:3:A:C8	3.08	0.42
17:CC:155:A:H2'	17:CC:156:U:C6	2.54	0.42
24:Ee:160:ILE:O	24:Ee:160:ILE:HG22	2.19	0.42
33:J:85:GLN:HE21	33:J:119:THR:HB	1.83	0.42
37:L:41:ALA:HB2	37:L:77:TYR:HE1	1.84	0.42
46:PP:6:ILE:O	46:PP:6:ILE:HG23	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:R:54:ARG:HG2	50:R:64:ILE:HG22	1.99	0.42
61:c:446:A:H62	61:c:461:G:H21	1.66	0.42
70:l:70:GLU:HB2	70:l:72:ILE:HD11	2.01	0.42
72:n:7:ASP:HA	72:n:10:LYS:HE3	2.01	0.42
73:o:108:PRO:HB2	73:o:135:VAL:HG22	2.01	0.42
76:r:86:VAL:HG13	76:r:88:GLU:HG3	2.01	0.42
80:v:28:LEU:O	80:v:29:GLU:HG2	2.19	0.42
84:z:70:LYS:HB3	84:z:93:LEU:HD22	2.01	0.42
3:2:26:CYS:HB3	3:2:77:CYS:SG	2.59	0.42
7:6:29:LYS:O	7:6:31:LYS:HD2	2.20	0.42
11:AA:352:A:N1	11:AA:365:A:H5''	2.35	0.42
11:AA:357:A:H2'	11:AA:358:G:C8	2.55	0.42
11:AA:625:G:N2	11:AA:1401:A:OP1	2.39	0.42
11:AA:949:C:O2'	11:AA:971:G:H5''	2.20	0.42
11:AA:1176:C:N3	11:AA:1311:G:N1	2.67	0.42
11:AA:1215:U:H2'	11:AA:1216:C:C6	2.55	0.42
11:AA:1498:A:H2'	11:AA:1499:C:H6	1.84	0.42
11:AA:1688:U:H2'	11:AA:1689:U:C6	2.54	0.42
11:AA:1813:A:OP1	11:AA:1817:G:O2'	2.38	0.42
11:AA:1837:U:H2'	11:AA:1838:G:O4'	2.20	0.42
11:AA:1856:C:H2'	11:AA:1857:C:C6	2.54	0.42
11:AA:2201:G:OP1	11:AA:2418:G:N1	2.46	0.42
11:AA:2655:U:H5'	59:a:3:ASN:O	2.19	0.42
11:AA:2713:U:OP1	59:a:9:LYS:HD3	2.19	0.42
11:AA:2853:A:H5'	40:MM:63:GLU:HB3	2.01	0.42
12:Aa:523:SER:HB2	12:Aa:529:ILE:HG13	2.01	0.42
12:Aa:810:ASP:HB3	12:Aa:813:SER:HB2	2.01	0.42
16:C:178:ARG:C	16:C:185:LYS:HG3	2.44	0.42
17:CC:21:C:OP1	28:GG:193:LYS:NZ	2.29	0.42
23:EE:10:LYS:HA	23:EE:16:PHE:CD2	2.55	0.42
24:Ee:15:LEU:HG	24:Ee:17:ALA:H	1.84	0.42
46:PP:116:GLU:O	46:PP:120:VAL:HG23	2.20	0.42
49:QQ:105:ARG:HG2	49:QQ:108:ARG:HH22	1.84	0.42
59:a:46:LYS:HE3	59:a:54:THR:HB	2.02	0.42
61:c:139:C:O2	61:c:139:C:H2'	2.19	0.42
61:c:474:A:H5''	71:m:144:PRO:HD2	2.01	0.42
61:c:546:U:H2'	61:c:547:U:C6	2.55	0.42
61:c:593:U:H3'	71:m:38:ASN:HD22	1.85	0.42
61:c:936:G:H2'	61:c:937:C:C6	2.55	0.42
61:c:1357:A:C5	61:c:1368:G:N2	2.87	0.42
61:c:1433:G:H2'	61:c:1434:U:C6	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:e:82:ARG:NH2	63:e:188:LEU:HB3	2.34	0.42
65:g:17:PHE:O	65:g:21:LEU:HD23	2.20	0.42
71:m:129:ILE:HG12	71:m:134:ILE:HD13	2.02	0.42
77:s:47:LYS:HZ1	77:s:82:ARG:HH12	1.67	0.42
79:u:126:ARG:HB2	79:u:133:VAL:HG23	2.02	0.42
11:AA:435:C:H2'	11:AA:436:A:C8	2.54	0.42
11:AA:594:U:H2'	11:AA:609:G:O6	2.19	0.42
11:AA:997:A:C4	11:AA:998:A:C8	3.08	0.42
11:AA:1743:G:H2'	11:AA:1744:G:H8	1.85	0.42
11:AA:2476:C:C2	11:AA:2477:G:H1'	2.54	0.42
11:AA:2904:U:H2'	11:AA:2905:U:C6	2.54	0.42
11:AA:3015:G:H2'	11:AA:3016:A:C8	2.51	0.42
11:AA:3379:C:H2'	11:AA:3380:U:C6	2.55	0.42
12:Aa:21:ASN:ND2	12:Aa:101:ASN:HD22	2.17	0.42
12:Aa:69:THR:OG1	89:Aa:1001:GTP:O3G	2.38	0.42
12:Aa:555:LYS:HD3	12:Aa:555:LYS:HA	1.89	0.42
20:DD:55:LYS:O	20:DD:59:VAL:HG23	2.19	0.42
61:c:296:U:H2'	61:c:297:U:H6	1.84	0.42
61:c:338:C:H2'	61:c:339:C:C6	2.55	0.42
61:c:456:A:H2'	61:c:457:G:C8	2.54	0.42
61:c:1192:C:H5''	61:c:1193:A:H2'	2.01	0.42
67:i:187:ILE:HG13	67:i:188:LYS:N	2.34	0.42
70:l:25:ARG:HG2	70:l:27:PHE:CE2	2.55	0.42
73:o:68:GLY:HA3	73:o:127:GLN:HB3	2.02	0.42
73:o:99:ARG:HB2	84:z:12:ALA:HB2	2.02	0.42
76:r:80:MET:SD	76:r:83:MET:HB2	2.59	0.42
77:s:132:LYS:HD3	77:s:138:PHE:HE1	1.85	0.42
3:2:22:ARG:NH2	75:q:131:GLY:O	2.53	0.42
11:AA:192:C:H2'	11:AA:193:C:H6	1.85	0.42
11:AA:737:G:H2'	11:AA:738:A:C8	2.52	0.42
11:AA:801:A:N6	44:OO:19:GLN:OE1	2.53	0.42
11:AA:1343:A:H2'	11:AA:1344:G:C8	2.55	0.42
11:AA:1720:U:OP2	19:D:120:TYR:OH	2.33	0.42
11:AA:1770:G:H2'	11:AA:1771:C:C6	2.54	0.42
11:AA:2500:A:H2'	11:AA:2501:U:H6	1.82	0.42
11:AA:2866:U:H5''	91:AA:4350:HOH:O	2.20	0.42
11:AA:3046:A:H2'	11:AA:3047:U:C6	2.55	0.42
11:AA:3050:U:H2'	11:AA:3051:U:C6	2.55	0.42
11:AA:3160:U:H5''	11:AA:3396:U:H3'	2.02	0.42
12:Aa:303:LEU:HD12	12:Aa:327:PHE:CE1	2.55	0.42
12:Aa:701:GLY:HA3	61:c:1756:A:N6	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:Bb:53:G:H2'	15:Bb:54:U:C6	2.55	0.42
16:C:177:GLY:C	16:C:186:VAL:H	2.27	0.42
19:D:46:LYS:HE2	19:D:46:LYS:HB2	1.85	0.42
20:DD:125:ASN:OD1	20:DD:126:THR:N	2.53	0.42
24:Ee:87:GLU:O	24:Ee:88:PRO:C	2.63	0.42
26:FF:236:LYS:HE3	29:H:47:ASN:HD22	1.85	0.42
41:N:23:LYS:HA	41:N:24:PRO:HD3	1.88	0.42
44:OO:47:ALA:HB1	44:OO:48:PRO:HD2	2.01	0.42
44:OO:105:ASN:HD22	44:OO:108:ILE:HG12	1.85	0.42
44:OO:128:ARG:HA	52:T:114:ARG:HH11	1.85	0.42
59:a:15:LYS:O	59:a:15:LYS:HD3	2.20	0.42
61:c:1176:G:C6	61:c:1464:G:C6	3.07	0.42
61:c:1515:A:H4'	61:c:1517:U:C5	2.55	0.42
61:c:1558:U:H3	76:r:122:THR:HG22	1.85	0.42
61:c:1661:U:H2'	61:c:1662:G:C8	2.54	0.42
61:c:1789:G:N7	75:q:132:ARG:NH2	2.68	0.42
68:j:7:TYR:CE2	68:j:9:VAL:HB	2.55	0.42
69:k:150:GLN:HE22	69:k:152:VAL:HG22	1.84	0.42
70:l:25:ARG:HG2	70:l:27:PHE:CZ	2.55	0.42
8:7:64:HIS:CE1	8:7:68:VAL:HB	2.55	0.42
8:7:65:SER:OG	61:c:1341:A:H1'	2.20	0.42
10:A:11:GLY:C	10:A:14:HIS:HD2	2.28	0.42
11:AA:325:A:OP1	91:AA:3739:HOH:O	2.22	0.42
11:AA:430:U:C5'	50:R:67:MET:HE1	2.49	0.42
11:AA:657:A:H2'	11:AA:658:G:H8	1.84	0.42
11:AA:702:C:H2'	11:AA:703:G:C8	2.55	0.42
11:AA:713:U:H2'	11:AA:714:G:O4'	2.20	0.42
11:AA:840:C:H2'	11:AA:841:A:H8	1.84	0.42
11:AA:994:G:H5'	11:AA:2637:A:O2'	2.19	0.42
11:AA:1174:G:H2'	11:AA:1175:C:H6	1.85	0.42
11:AA:1373:A:H2'	11:AA:1374:G:H8	1.84	0.42
11:AA:1824:U:C2	11:AA:1825:G:C8	3.08	0.42
11:AA:2710:C:H2'	11:AA:2711:C:C6	2.54	0.42
11:AA:3050:U:H2'	11:AA:3051:U:H6	1.85	0.42
87:AA:3406:SPD:HN6	87:AA:3406:SPD:H32	1.61	0.42
12:Aa:479:LYS:HD3	12:Aa:479:LYS:HA	1.94	0.42
12:Aa:694:HIS:CE1	12:Aa:699:DDE:HD2	2.55	0.42
16:C:62:VAL:HG13	16:C:66:ARG:HD2	2.00	0.42
24:Ee:10:VAL:HG23	24:Ee:63:LYS:HB2	2.01	0.42
39:M:45:MET:HG2	39:M:53:PHE:CE2	2.55	0.42
39:M:139:ARG:HH22	44:OO:165:SER:N	2.17	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:MM:82:ARG:HG2	40:MM:82:ARG:NH1	2.35	0.42
49:QQ:73:ARG:HA	49:QQ:74:PRO:HD3	1.88	0.42
61:c:523:G:H1'	61:c:530:C:H42	1.85	0.42
61:c:639:U:N3	69:k:100:PRO:HA	2.29	0.42
61:c:882:U:H2'	61:c:883:C:H6	1.85	0.42
61:c:1323:C:H2'	61:c:1324:G:O4'	2.20	0.42
61:c:1583:A:OP1	77:s:135:ARG:NH1	2.53	0.42
61:c:1787:C:H2'	61:c:1788:G:C8	2.55	0.42
66:h:22:LYS:HG3	66:h:23:LEU:HG	2.02	0.42
71:m:85:VAL:HG11	71:m:104:PHE:CE1	2.55	0.42
71:m:171:ARG:HG2	71:m:175:ARG:NH1	2.34	0.42
8:7:33:LEU:HD23	8:7:34:LEU:N	2.34	0.41
8:7:271:VAL:HG23	8:7:272:ASP:OD1	2.20	0.41
10:A:75:ALA:HB1	10:A:106:GLU:OE2	2.19	0.41
11:AA:744:A:H2'	11:AA:745:C:O4'	2.20	0.41
11:AA:848:A:C5	11:AA:849:C:H1'	2.54	0.41
11:AA:1311:G:H2'	11:AA:1312:C:C6	2.55	0.41
11:AA:1313:G:O2'	11:AA:1318:A:N1	2.48	0.41
11:AA:1534:A:OP2	11:AA:1586:G:N1	2.40	0.41
11:AA:2104:A:H2'	11:AA:2105:G:C8	2.55	0.41
11:AA:2476:C:O2	11:AA:2477:G:O2'	2.33	0.41
11:AA:2553:U:C4	51:S:95:ILE:HG12	2.55	0.41
11:AA:3127:A:H2'	11:AA:3128:G:O4'	2.19	0.41
12:Aa:171:LYS:HD2	12:Aa:270:GLU:OE1	2.20	0.41
12:Aa:538:LEU:HG	12:Aa:542:LEU:HD23	2.01	0.41
16:C:35:PHE:CD2	28:GG:290:ILE:HD12	2.55	0.41
16:C:107:THR:HG22	16:C:109:GLY:H	1.84	0.41
17:CC:27:U:H2'	17:CC:28:C:C6	2.55	0.41
23:EE:114:SER:HB2	23:EE:169:ILE:HG12	2.02	0.41
30:HH:282:ARG:O	30:HH:286:VAL:HG23	2.20	0.41
43:O:30:THR:HG23	43:O:91:SER:HB2	2.01	0.41
49:QQ:99:ARG:HD3	49:QQ:167:THR:HB	2.02	0.41
50:R:58:GLU:HB2	50:R:63:LYS:HE2	2.02	0.41
61:c:295:A:H2'	61:c:296:U:H6	1.85	0.41
61:c:461:G:H2'	61:c:462:G:H8	1.85	0.41
61:c:817:A:N6	61:c:855:A:N1	2.68	0.41
61:c:1247:U:N3	61:c:1248:C:C5	2.88	0.41
61:c:1318:G:H2'	61:c:1319:A:C8	2.55	0.41
63:e:103:MET:HB3	63:e:215:VAL:HG22	2.01	0.41
63:e:108:ASP:OD1	63:e:109:LYS:N	2.53	0.41
64:f:91:ARG:HA	64:f:91:ARG:HD2	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:l:65:PHE:HA	70:l:181:GLY:O	2.20	0.41
80:v:130:ARG:HD2	80:v:134:ARG:HH21	1.84	0.41
1:0:8:ARG:HH12	1:0:28:LEU:HD12	1.85	0.41
5:4:45:LYS:HG3	5:4:46:GLY:N	2.34	0.41
8:7:45:TRP:CH2	8:7:310:ILE:HG21	2.55	0.41
8:7:179:LYS:HE3	8:7:179:LYS:HB3	1.89	0.41
8:7:191:ASP:N	8:7:191:ASP:OD1	2.52	0.41
9:8:102:VAL:HG22	61:c:1228:G:H2'	2.01	0.41
10:A:15:LEU:HD21	11:AA:1315:U:OP1	2.20	0.41
11:AA:304:G:H3'	11:AA:304:G:OP2	2.21	0.41
11:AA:505:G:OP1	28:GG:320:ASN:ND2	2.48	0.41
11:AA:630:A:H2'	11:AA:631:U:C6	2.55	0.41
11:AA:1343:A:H2'	11:AA:1344:G:H8	1.85	0.41
11:AA:1472:U:H5''	19:D:24:LEU:HD12	2.02	0.41
11:AA:1719:G:N7	19:D:121:HIS:HE1	2.18	0.41
11:AA:2180:G:H2'	11:AA:2181:C:H6	1.82	0.41
11:AA:2477:G:N2	11:AA:2478:C:O4'	2.53	0.41
11:AA:3049:A:OP2	91:AA:3734:HOH:O	2.21	0.41
14:BB:119:U:P	30:HH:258:LYS:HZ1	2.43	0.41
17:CC:43:A:H2'	17:CC:44:A:H8	1.85	0.41
20:DD:122:ARG:HA	20:DD:155:ASP:OD1	2.20	0.41
22:E:90:MET:HE1	22:E:110:MET:SD	2.60	0.41
28:GG:154:THR:OG1	28:GG:252:GLU:OE2	2.35	0.41
32:II:68:PRO:HG3	32:II:145:LEU:HD23	2.01	0.41
37:L:103:GLN:HG3	37:L:106:GLN:HE21	1.85	0.41
44:OO:47:ALA:HB2	52:T:115:LYS:HG2	2.02	0.41
51:S:3:GLN:HE22	51:S:29:ILE:HB	1.85	0.41
61:c:35:U:O2'	61:c:515:A:OP1	2.38	0.41
61:c:576:G:H22	84:z:67:ALA:HB2	1.85	0.41
61:c:641:G:H2'	61:c:642:G:O4'	2.20	0.41
61:c:1106:U:H2'	61:c:1107:G:H8	1.85	0.41
61:c:1257:U:H3'	61:c:1258:U:C6	2.55	0.41
61:c:1530:C:C2	61:c:1531:G:C8	3.08	0.41
61:c:1593:A:H2'	61:c:1594:G:H8	1.84	0.41
66:h:127:LYS:HG2	66:h:141:THR:C	2.45	0.41
68:j:2:LYS:O	68:j:108:VAL:HA	2.20	0.41
69:k:44:LYS:NZ	69:k:97:ARG:HH12	2.18	0.41
70:l:64:ASN:HB3	70:l:180:ASP:OD1	2.19	0.41
78:t:41:ILE:HG22	78:t:43:SER:H	1.85	0.41
10:A:44:SER:HB2	11:AA:1315:U:C6	2.56	0.41
11:AA:277:G:H2'	11:AA:278:U:C6	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1010:G:H4'	40:MM:40:LYS:HG2	2.02	0.41
11:AA:1221:A:O4'	20:DD:61:ARG:HG2	2.20	0.41
11:AA:1462:A:H2'	11:AA:1463:U:C6	2.55	0.41
11:AA:1678:G:H2'	11:AA:1679:A:C8	2.55	0.41
11:AA:1699:A:H2'	11:AA:1700:G:C8	2.55	0.41
11:AA:1721:U:O2'	11:AA:1723:A:N7	2.46	0.41
11:AA:1826:C:OP2	55:W:48:SER:OG	2.34	0.41
11:AA:1862:U:H2'	11:AA:1863:G:O4'	2.21	0.41
11:AA:1929:G:OP2	11:AA:1930:A:O2'	2.33	0.41
11:AA:2221:G:N2	11:AA:2224:A:OP2	2.37	0.41
11:AA:3000:A:H2'	11:AA:3001:C:C6	2.55	0.41
11:AA:3032:A:C4	11:AA:3033:A:C8	3.08	0.41
11:AA:3182:G:H2'	11:AA:3183:A:H8	1.84	0.41
11:AA:3279:A:N6	50:R:54:ARG:HD3	2.34	0.41
11:AA:3292:A:H2'	11:AA:3293:U:C6	2.55	0.41
11:AA:3320:A:H2'	11:AA:3321:C:C6	2.55	0.41
12:Aa:571:SER:HB3	12:Aa:589:LYS:HD2	2.03	0.41
17:CC:63:G:C2	17:CC:64:U:C6	3.09	0.41
24:Ee:20:GLY:H	24:Ee:50:THR:HB	1.85	0.41
24:Ee:146:LYS:HB2	24:Ee:151:ILE:HD11	2.02	0.41
28:GG:46:LYS:HG2	28:GG:46:LYS:O	2.20	0.41
34:JJ:88:ARG:HA	34:JJ:134:VAL:HG12	2.02	0.41
42:NN:56:THR:HG22	42:NN:56:THR:O	2.21	0.41
61:c:110:U:OP1	61:c:753:A:O2'	2.30	0.41
61:c:121:U:H1'	66:h:33:ALA:O	2.20	0.41
61:c:564:G:N2	61:c:577:G:OP1	2.47	0.41
61:c:762:A:C8	61:c:789:A:N6	2.88	0.41
61:c:1022:C:O2'	61:c:1125:A:N1	2.50	0.41
61:c:1044:U:H5''	63:e:153:HIS:HE1	1.85	0.41
61:c:1525:A:H2'	61:c:1526:A:C8	2.55	0.41
62:d:124:THR:O	62:d:146:LEU:HB2	2.20	0.41
64:f:147:ASN:OD1	82:x:3:ASN:HA	2.21	0.41
67:i:55:ASP:N	67:i:55:ASP:OD1	2.53	0.41
67:i:168:VAL:O	67:i:172:ILE:HG13	2.19	0.41
70:l:39:GLY:O	70:l:59:ARG:HB2	2.20	0.41
70:l:110:ARG:HH22	70:l:121:LEU:H	1.69	0.41
83:y:8:ALA:HB2	83:y:74:VAL:HG21	2.02	0.41
11:AA:79:U:N3	11:AA:80:G:N7	2.68	0.41
11:AA:82:C:N3	11:AA:104:G:N1	2.68	0.41
11:AA:370:U:H2'	11:AA:371:G:O4'	2.19	0.41
11:AA:374:A:H4'	11:AA:375:A:H5'	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:412:G:H2'	11:AA:413:U:H6	1.86	0.41
11:AA:767:U:C2	11:AA:768:C:C5	3.08	0.41
11:AA:898:OMU:H2'	11:AA:899:U:O4'	2.20	0.41
11:AA:1000:C:C2	11:AA:1045:C:N4	2.88	0.41
11:AA:1078:U:H1'	11:AA:1082:U:O2	2.21	0.41
11:AA:1701:C:H2'	11:AA:1702:U:O4'	2.20	0.41
11:AA:2221:G:N2	11:AA:2223:A:H3'	2.35	0.41
11:AA:2724:OMU:H4'	25:F:54:HIS:CD2	2.55	0.41
11:AA:3073:A:H2'	11:AA:3074:G:O4'	2.20	0.41
11:AA:3109:G:N2	38:LL:156:GLN:OE1	2.53	0.41
12:Aa:68:ILE:HB	12:Aa:108:HIS:CE1	2.56	0.41
17:CC:61:A:H5''	17:CC:63:G:O2'	2.21	0.41
19:D:10:LEU:O	19:D:14:VAL:HG13	2.20	0.41
29:H:9:THR:HB	29:H:125:LEU:HD21	2.03	0.41
34:JJ:145:ARG:HA	34:JJ:185:ILE:HD13	2.03	0.41
36:KK:143:ILE:HG21	36:KK:169:LEU:HG	2.03	0.41
38:LL:21:LYS:CG	38:LL:22:SER:H	2.27	0.41
43:O:24:THR:OG1	43:O:91:SER:HB3	2.20	0.41
54:V:25:ARG:HD2	56:X:50:ASN:O	2.21	0.41
61:c:2:A:O4'	61:c:370:A:C8	2.73	0.41
61:c:514:G:N3	61:c:515:A:C8	2.88	0.41
61:c:600:U:OP1	84:z:110:LYS:HD3	2.20	0.41
61:c:636:A:H5''	83:y:31:SER:HB3	2.02	0.41
61:c:760:A:N6	61:c:791:A:H61	2.18	0.41
61:c:778:G:H1	61:c:783:G:N2	2.18	0.41
61:c:1510:U:H2'	61:c:1511:U:C6	2.55	0.41
61:c:1525:A:N3	61:c:1589:C:O2'	2.41	0.41
61:c:1535:U:O2'	61:c:1536:G:H5''	2.20	0.41
61:c:1751:C:H2'	61:c:1752:U:H6	1.85	0.41
64:f:126:ARG:O	64:f:130:ILE:HG12	2.20	0.41
67:i:88:PRO:O	67:i:92:ARG:HG2	2.21	0.41
71:m:17:ARG:O	71:m:23:ARG:NH1	2.53	0.41
79:u:112:ASP:O	79:u:115:ARG:HD3	2.20	0.41
80:v:4:VAL:HG13	80:v:140:LEU:HD12	2.02	0.41
80:v:41:SER:OG	80:v:94:ILE:HD12	2.20	0.41
84:z:107:PHE:CE2	84:z:114:LYS:HB3	2.55	0.41
8:7:34:LEU:HD23	8:7:73:LEU:HG	2.02	0.41
8:7:238:ASP:OD2	8:7:258:THR:OG1	2.34	0.41
8:7:273:ASP:OD1	8:7:273:ASP:N	2.54	0.41
11:AA:107:A:H1'	11:AA:325:A:N3	2.35	0.41
11:AA:301:G:H1	11:AA:314:U:H3	1.68	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:433:A:OP2	50:R:57:LYS:NZ	2.43	0.41
11:AA:702:C:C2	11:AA:703:G:C8	3.08	0.41
11:AA:972:A:H2'	11:AA:973:A:C8	2.55	0.41
11:AA:1120:A:H2'	11:AA:1121:U:C6	2.55	0.41
11:AA:1213:G:H4'	22:E:90:MET:CG	2.49	0.41
11:AA:1493:G:O2'	56:X:13:MET:HB3	2.20	0.41
11:AA:1676:A:OP2	27:G:73:GLY:N	2.48	0.41
11:AA:2266:U:H2'	11:AA:2267:C:C6	2.55	0.41
11:AA:2503:G:H2'	11:AA:2504:U:C6	2.56	0.41
11:AA:3146:G:H2'	11:AA:3147:G:C8	2.55	0.41
11:AA:3325:G:OP1	45:P:70:ARG:NE	2.53	0.41
11:AA:3374:U:OP2	45:P:70:ARG:NH1	2.37	0.41
12:Aa:204:PRO:HB3	12:Aa:209:VAL:HB	2.02	0.41
12:Aa:322:VAL:HG13	12:Aa:323:VAL:HG13	2.02	0.41
12:Aa:813:SER:O	12:Aa:817:GLU:HG3	2.19	0.41
14:BB:3:U:H2'	14:BB:4:U:C6	2.56	0.41
25:F:39:ILE:HA	25:F:62:GLY:O	2.21	0.41
29:H:20:GLY:HA2	29:H:35:TYR:CE1	2.55	0.41
39:M:147:LEU:HD21	44:OO:166:ALA:HB1	2.02	0.41
41:N:58:LYS:HA	41:N:58:LYS:HD3	1.91	0.41
55:W:11:PHE:HE1	55:W:69:LEU:HD21	1.85	0.41
61:c:94:U:N1	61:c:94:U:C5	2.89	0.41
61:c:887:A:H1'	75:q:122:PRO:HB3	2.01	0.41
61:c:1298:U:H2'	61:c:1299:G:O4'	2.21	0.41
61:c:1593:A:H2'	61:c:1594:G:C8	2.55	0.41
61:c:1682:U:O2'	61:c:1683:C:H5'	2.20	0.41
62:d:107:PHE:HB2	62:d:135:GLU:HB3	2.01	0.41
74:p:102:LEU:HD13	74:p:111:ALA:HB3	2.02	0.41
76:r:61:ARG:NE	76:r:88:GLU:OE1	2.49	0.41
1:0:11:LYS:HD3	1:0:11:LYS:HA	1.80	0.41
8:7:203:THR:OG1	8:7:243:LEU:O	2.24	0.41
10:A:62:THR:O	10:A:66:LYS:HD3	2.20	0.41
11:AA:516:A:H5''	28:GG:344:ALA:HB2	2.03	0.41
11:AA:802:C:H2'	11:AA:803:C:H6	1.85	0.41
11:AA:872:U:H2'	11:AA:873:C:C6	2.56	0.41
11:AA:1176:C:H2'	11:AA:1177:G:N2	2.36	0.41
11:AA:1263:A:N3	11:AA:1263:A:H2'	2.36	0.41
11:AA:1295:G:H4'	22:E:115:ARG:HG2	2.02	0.41
11:AA:1659:U:H2'	11:AA:1660:C:H6	1.86	0.41
11:AA:1699:A:N6	11:AA:1747:G:O6	2.53	0.41
11:AA:1756:C:H2'	11:AA:1757:A:H8	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2308:C:H5''	11:AA:2309:A:H2'	2.02	0.41
11:AA:2427:U:H2'	11:AA:2428:U:H6	1.86	0.41
11:AA:2573:G:H2'	11:AA:2574:G:H8	1.84	0.41
25:F:37:GLY:N	25:F:64:VAL:O	2.39	0.41
32:II:40:LEU:HD13	32:II:84:VAL:HG21	2.02	0.41
49:QQ:183:THR:O	49:QQ:183:THR:OG1	2.36	0.41
55:W:12:LEU:HB3	55:W:16:ARG:NH2	2.33	0.41
61:c:156:A:H2'	61:c:157:A:C8	2.56	0.41
61:c:339:C:OP2	70:l:10:LYS:HE2	2.21	0.41
61:c:595:G:H2'	61:c:596:C:C6	2.56	0.41
61:c:798:C:H2'	61:c:799:A:H8	1.83	0.41
61:c:1171:A:N3	61:c:1570:A:H2	2.19	0.41
61:c:1515:A:OP2	65:g:7:LYS:HB2	2.20	0.41
61:c:1561:U:C2	61:c:1562:G:C8	3.08	0.41
62:d:156:VAL:O	82:x:65:SER:OG	2.38	0.41
69:k:38:LEU:HD23	69:k:41:LEU:HD12	2.02	0.41
69:k:79:ARG:O	69:k:83:LYS:HG3	2.20	0.41
83:y:81:VAL:HG21	83:y:125:ILE:HB	2.02	0.41
1:O:22:GLN:HB2	1:O:72:PHE:CZ	2.56	0.41
11:AA:335:G:OP1	35:K:9:SER:HB2	2.20	0.41
11:AA:432:G:H2'	11:AA:433:A:H8	1.85	0.41
11:AA:586:C:OP1	50:R:70:LYS:NZ	2.35	0.41
11:AA:597:G:H2'	11:AA:598:A:C8	2.55	0.41
11:AA:609:G:H3'	11:AA:609:G:N3	2.36	0.41
11:AA:920:A:OP1	11:AA:923:C:N4	2.47	0.41
11:AA:949:C:H2'	11:AA:950:G:O4'	2.20	0.41
11:AA:1925:U:O2'	11:AA:1927:G:N7	2.50	0.41
11:AA:2157:G:N2	11:AA:2177:G:O2'	2.53	0.41
11:AA:2900:A:O2'	38:LL:174:LYS:HD3	2.20	0.41
11:AA:2998:U:H2'	11:AA:2999:U:H6	1.86	0.41
11:AA:3008:A:N6	11:AA:3139:A:N6	2.69	0.41
11:AA:3192:U:H2'	11:AA:3193:C:H6	1.85	0.41
12:Aa:344:SER:O	12:Aa:348:ALA:N	2.53	0.41
12:Aa:590:ALA:HA	12:Aa:685:ARG:O	2.20	0.41
14:BB:37:G:C2	14:BB:41:G:C2	3.08	0.41
16:C:177:GLY:O	16:C:186:VAL:N	2.46	0.41
17:CC:64:U:H5'	52:T:49:LYS:HD2	2.03	0.41
28:GG:36:HIS:O	28:GG:40:THR:HG23	2.21	0.41
52:T:37:SER:O	52:T:39:PRO:HD3	2.21	0.41
61:c:448:C:H2'	61:c:449:C:C6	2.55	0.41
66:h:188:ASN:HB3	66:h:191:ARG:HD3	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
67:i:42:LEU:HG	67:i:43:PHE:O	2.20	0.41
67:i:109:LYS:HE3	67:i:109:LYS:HB2	1.79	0.41
68:j:180:THR:HG22	68:j:182:GLN:H	1.85	0.41
5:4:52:ASP:OD1	5:4:53:ILE:N	2.53	0.41
6:5:36:LEU:HB3	6:5:38:ILE:HG13	2.03	0.41
10:A:25:LYS:CE	11:AA:1175:C:H5''	2.50	0.41
11:AA:44:U:H1'	59:a:46:LYS:HE3	2.02	0.41
11:AA:787:G:H5''	16:C:148:GLU:CD	2.46	0.41
11:AA:1389:G:H5''	48:Q:101:SER:HB3	2.03	0.41
11:AA:2104:A:H2'	11:AA:2105:G:H8	1.86	0.41
11:AA:2472:U:C4	11:AA:2473:C:C2	3.09	0.41
11:AA:2736:A:H4'	25:F:71:SER:OG	2.21	0.41
11:AA:2823:G:C2	11:AA:2824:G:C8	3.09	0.41
12:Aa:117:ALA:HA	12:Aa:481:MET:SD	2.61	0.41
14:BB:16:U:H2'	14:BB:17:A:C8	2.56	0.41
15:Bb:64:A:H2'	15:Bb:65:G:O4'	2.21	0.41
17:CC:52:A:N6	56:X:27:ILE:HD13	2.35	0.41
17:CC:91:C:H2'	17:CC:92:A:C8	2.56	0.41
23:EE:104:LEU:HB3	23:EE:146:THR:HG21	2.02	0.41
25:F:6:GLY:H	25:F:9:SER:HB2	1.86	0.41
26:FF:218:ILE:HB	26:FF:337:THR:HG23	2.02	0.41
27:G:43:VAL:HB	27:G:49:ASN:OD1	2.20	0.41
34:JJ:233:GLU:HG2	34:JJ:234:GLU:H	1.86	0.41
35:K:68:GLY:HA2	35:K:84:LYS:HE2	2.01	0.41
38:LL:22:SER:C	38:LL:23:ARG:HD3	2.46	0.41
46:PP:72:LEU:HD11	46:PP:81:VAL:HG22	2.03	0.41
55:W:8:ILE:HD13	55:W:54:LEU:HD21	2.02	0.41
59:a:8:ARG:HG2	59:a:72:LEU:CD1	2.51	0.41
59:a:74:CYS:SG	59:a:76:LYS:HG2	2.60	0.41
61:c:36:C:O3'	61:c:530:C:H4'	2.21	0.41
61:c:107:C:H2'	61:c:108:A:H8	1.86	0.41
61:c:415:C:O2'	61:c:418:G:O6	2.36	0.41
61:c:420:A2M:H8	61:c:420:A2M:O5'	2.21	0.41
61:c:448:C:H2'	61:c:449:C:H6	1.85	0.41
61:c:585:A:H2'	61:c:586:G:H8	1.85	0.41
61:c:1037:C:H2'	61:c:1038:U:C6	2.56	0.41
61:c:1155:G:H2'	61:c:1156:C:C6	2.55	0.41
61:c:1350:U:H2'	61:c:1351:G:H8	1.85	0.41
61:c:1500:C:OP1	80:v:106:GLN:NE2	2.53	0.41
61:c:1587:A:H62	87:c:1901:SPD:H101	1.69	0.41
61:c:1716:C:O2'	61:c:1717:G:H8	2.04	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
66:h:116:ASP:HA	66:h:119:ALA:HB3	2.03	0.41
4:3:35:VAL:HG23	4:3:44:THR:OG1	2.21	0.41
4:3:56:CYS:HB2	4:3:59:CYS:HB3	2.02	0.41
4:3:76:GLY:O	4:3:77:THR:OG1	2.32	0.41
10:A:23:VAL:HG12	10:A:84:LEU:HD11	2.03	0.41
10:A:116:LYS:HA	11:AA:3180:A:H4'	2.02	0.41
11:AA:137:G:H2'	11:AA:138:U:H6	1.84	0.41
11:AA:244:G:H2'	11:AA:245:U:C6	2.56	0.41
11:AA:270:U:H2'	11:AA:271:C:C6	2.56	0.41
11:AA:296:A:N3	11:AA:299:G:O2'	2.53	0.41
11:AA:316:U:O2'	53:U:30:LYS:HD2	2.21	0.41
11:AA:369:A:O2'	11:AA:404:G:H8	2.04	0.41
11:AA:642:U:OP1	39:M:22:ILE:HG23	2.21	0.41
11:AA:746:A:H2'	11:AA:747:A:C8	2.55	0.41
11:AA:911:C:OP1	23:EE:14:SER:OG	2.39	0.41
11:AA:985:U:H2'	11:AA:986:U:C6	2.51	0.41
11:AA:1388:U:O2'	48:Q:99:ASN:O	2.37	0.41
11:AA:1438:U:H2'	11:AA:1439:U:C6	2.55	0.41
11:AA:1583:A:H2'	11:AA:1584:U:O4'	2.21	0.41
11:AA:1647:A:C2	11:AA:1809:A:H1'	2.56	0.41
11:AA:1678:G:H2'	11:AA:1679:A:H8	1.85	0.41
11:AA:1917:C:OP1	19:D:85:ARG:NH2	2.54	0.41
11:AA:2097:U:H2'	11:AA:2098:C:C6	2.56	0.41
11:AA:2130:G:H5''	87:AA:3406:SPD:H31	2.02	0.41
11:AA:2330:C:C2	11:AA:2331:C:C5	3.09	0.41
11:AA:2370:G:H2'	11:AA:2371:G:C8	2.55	0.41
11:AA:2426:U:H2'	11:AA:2427:U:C6	2.56	0.41
11:AA:2454:G:H2'	11:AA:2455:U:C6	2.56	0.41
11:AA:2471:U:N3	11:AA:2473:C:N3	2.69	0.41
11:AA:2527:G:H2'	11:AA:2528:G:H8	1.86	0.41
11:AA:2780:A:H2'	11:AA:2781:U:C6	2.55	0.41
11:AA:2840:C:H2'	11:AA:2841:G:O4'	2.20	0.41
11:AA:2946:A2M:H1'	11:AA:2981:U:C4	2.56	0.41
11:AA:3041:U:H2'	11:AA:3042:U:H6	1.85	0.41
11:AA:3177:G:O2'	11:AA:3179:U:OP1	2.34	0.41
11:AA:3288:G:H2'	11:AA:3289:G:C8	2.55	0.41
11:AA:3295:A:P	26:FF:126:LYS:H	2.44	0.41
12:Aa:74:ALA:HB3	12:Aa:437:MET:HB2	2.02	0.41
12:Aa:155:VAL:O	12:Aa:209:VAL:HA	2.21	0.41
12:Aa:186:ASN:HA	12:Aa:189:VAL:HG22	2.03	0.41
12:Aa:191:THR:HG23	12:Aa:192:TYR:CD2	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:Aa:474:THR:HG22	12:Aa:474:THR:O	2.20	0.41
13:B:27:LYS:HB3	13:B:63:PHE:CG	2.56	0.41
14:BB:3:U:H2'	14:BB:4:U:H6	1.85	0.41
16:C:176:ARG:NH1	39:M:46:ASP:OD1	2.54	0.41
17:CC:104:A:C8	17:CC:105:A:C8	3.08	0.41
18:Cc:1:C:H2'	18:Cc:2:G:C8	2.56	0.41
18:Cc:57:C:H2'	18:Cc:58:A:C8	2.56	0.41
18:Cc:63:C:H2'	18:Cc:64:G:C8	2.55	0.41
23:EE:144:ASN:OD1	23:EE:144:ASN:N	2.54	0.41
24:Ee:50:THR:O	24:Ee:53:PHE:N	2.50	0.41
26:FF:50:LYS:HA	26:FF:79:VAL:HG22	2.03	0.41
26:FF:260:VAL:HG11	26:FF:266:ARG:HD2	2.03	0.41
26:FF:282:ILE:HG23	26:FF:322:ILE:HG23	2.02	0.41
26:FF:377:HIS:ND1	26:FF:387:LEU:HD23	2.35	0.41
27:G:21:SER:HB3	27:G:22:PRO:HD3	2.03	0.41
28:GG:233:LEU:HD23	28:GG:233:LEU:HA	1.92	0.41
29:H:68:GLU:OE1	29:H:68:GLU:N	2.40	0.41
34:JJ:86:VAL:HG13	34:JJ:136:TYR:HB3	2.02	0.41
35:K:87:LYS:HB2	35:K:97:ILE:HD11	2.02	0.41
38:LL:85:GLY:HA3	38:LL:187:ILE:HD12	2.02	0.41
42:NN:173:ASP:OD1	42:NN:173:ASP:N	2.52	0.41
45:P:10:ARG:NE	45:P:44:MET:HE1	2.35	0.41
46:PP:16:GLU:HB2	46:PP:19:ARG:HE	1.86	0.41
48:Q:40:SER:HB3	48:Q:43:ARG:HB3	2.02	0.41
49:QQ:154:PRO:HB3	49:QQ:157:LYS:HE3	2.03	0.41
51:S:41:ARG:HE	51:S:41:ARG:HB3	1.69	0.41
55:W:24:THR:HG22	55:W:44:LYS:HB2	2.03	0.41
61:c:382:C:H2'	61:c:383:G:H8	1.86	0.41
61:c:404:G:H2'	61:c:405:C:C6	2.55	0.41
61:c:463:U:H2'	61:c:464:A:C8	2.55	0.41
61:c:882:U:H2'	61:c:883:C:C6	2.56	0.41
61:c:927:C:H2'	61:c:928:U:C6	2.56	0.41
61:c:1001:A:O2'	61:c:1002:G:OP1	2.31	0.41
61:c:1186:U:H2'	61:c:1187:U:O4'	2.21	0.41
61:c:1439:C:H2'	61:c:1440:C:C6	2.56	0.41
61:c:1557:U:O2'	61:c:1558:U:H2'	2.21	0.41
61:c:1680:G:N2	61:c:1721:A:H62	2.10	0.41
61:c:1785:U:H2'	61:c:1786:G:C8	2.53	0.41
62:d:56:LYS:HE2	62:d:56:LYS:HA	2.01	0.41
63:e:176:VAL:HG12	63:e:177:GLN:N	2.36	0.41
66:h:155:LYS:HA	66:h:155:LYS:HD3	1.70	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
66:h:246:LEU:HB3	66:h:250:GLU:HB2	2.02	0.41
67:i:73:THR:OG1	67:i:91:GLU:OE1	2.24	0.41
67:i:99:MET:O	67:i:103:ASN:HB2	2.20	0.41
67:i:119:ASP:O	67:i:123:VAL:HG23	2.21	0.41
67:i:166:ARG:HA	67:i:169:ASN:HD21	1.84	0.41
67:i:205:SER:O	67:i:211:ILE:HG21	2.20	0.41
69:k:9:LEU:HD11	69:k:13:PRO:HA	2.02	0.41
69:k:87:ASP:O	69:k:88:ARG:HD3	2.20	0.41
72:n:58:GLN:HB3	72:n:65:TYR:HB2	2.03	0.41
73:o:14:GLN:CB	73:o:54:ILE:HG13	2.51	0.41
75:q:68:ALA:HB1	75:q:110:LEU:HD23	2.02	0.41
76:r:121:ILE:HD11	76:r:123:TYR:CZ	2.55	0.41
79:u:104:ASN:OD1	79:u:107:SER:OG	2.39	0.41
80:v:108:LEU:HA	80:v:111:ILE:HG22	2.03	0.41
81:w:64:LYS:HA	81:w:82:TYR:O	2.20	0.41
82:x:16:LYS:HD3	82:x:21:ASN:OD1	2.21	0.41
82:x:56:SER:O	82:x:60:ARG:HG3	2.20	0.41
4:3:6:ASP:OD2	4:3:9:HIS:N	2.54	0.41
5:4:52:ASP:OD1	67:i:164:PRO:HG2	2.21	0.41
7:6:40:TYR:CG	71:m:32:GLY:HA3	2.56	0.41
8:7:307:ASP:OD1	8:7:309:VAL:HG12	2.21	0.41
11:AA:384:A:H2'	11:AA:385:A:O4'	2.20	0.41
11:AA:412:G:H2'	11:AA:413:U:C6	2.56	0.41
11:AA:433:A:H2'	11:AA:434:U:C6	2.56	0.41
11:AA:746:A:H2'	11:AA:747:A:H8	1.86	0.41
11:AA:836:A:O2'	60:b:9:GLY:O	2.35	0.41
11:AA:999:G:H1'	11:AA:1002:A:H62	1.86	0.41
11:AA:1317:A:O2'	11:AA:1318:A:H3'	2.21	0.41
11:AA:1382:G:OP2	28:GG:188:ARG:NH1	2.34	0.41
11:AA:1618:G:O2'	17:CC:126:A:N1	2.54	0.41
11:AA:1652:G:H2'	11:AA:1653:G:H8	1.85	0.41
11:AA:1789:G:H2'	11:AA:1790:G:H8	1.86	0.41
11:AA:2196:C:H2'	11:AA:2242:A:N6	2.35	0.41
11:AA:2674:A:H2'	11:AA:2675:C:C6	2.56	0.41
11:AA:2700:G:H5''	25:F:17:ARG:CG	2.51	0.41
11:AA:2760:C:N3	59:a:63:LYS:HE3	2.35	0.41
11:AA:3084:C:H2'	11:AA:3085:G:O4'	2.20	0.41
11:AA:3267:A:H2'	32:II:69:PHE:CE1	2.56	0.41
12:Aa:42:ARG:NH1	12:Aa:332:ASP:OD1	2.40	0.41
12:Aa:760:ARG:NH1	12:Aa:761:PRO:HG2	2.35	0.41
17:CC:39:G:H1'	17:CC:104:A:N6	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:CC:45:C:H2'	17:CC:46:G:H8	1.86	0.41
18:Cc:38:A:C4	18:Cc:39:A:C8	3.09	0.41
22:E:15:PRO:HB3	22:E:22:PRO:HD3	2.03	0.41
24:Ee:93:LYS:HD2	24:Ee:93:LYS:HA	1.90	0.41
26:FF:256:HIS:HA	26:FF:257:PRO:C	2.45	0.41
32:II:41:ILE:HB	32:II:85:ILE:HB	2.03	0.41
36:KK:97:TYR:HE2	36:KK:130:TYR:HB3	1.85	0.41
37:L:89:VAL:HG23	37:L:89:VAL:O	2.21	0.41
45:P:11:GLU:HB2	45:P:107:VAL:HG22	2.02	0.41
45:P:54:GLU:CD	45:P:54:GLU:H	2.29	0.41
59:a:61:LYS:NZ	59:a:63:LYS:O	2.32	0.41
61:c:249:U:H3	73:o:17:PRO:HG2	1.86	0.41
61:c:606:A:H4'	61:c:607:G:H3'	2.03	0.41
61:c:752:A:OP1	66:h:187:ARG:HD3	2.21	0.41
61:c:760:A:N1	61:c:791:A:C6	2.89	0.41
71:m:63:ASP:OD1	71:m:64:GLU:N	2.54	0.41
74:p:110:ASP:O	74:p:114:ARG:HG2	2.21	0.41
79:u:52:VAL:HG11	79:u:69:ILE:HD11	2.03	0.41
84:z:47:SER:HG	84:z:48:HIS:CE1	2.35	0.41
5:4:61:ARG:HD2	67:i:225:ARG:HD3	2.02	0.40
11:AA:37:U:O4	49:QQ:83:LYS:NZ	2.54	0.40
11:AA:308:A:H5''	53:U:80:PHE:CD2	2.56	0.40
11:AA:584:G:H2'	11:AA:585:A:C8	2.56	0.40
11:AA:908:OMG:C2	87:AA:3404:SPD:H32	2.57	0.40
11:AA:1085:A:H2'	11:AA:1086:C:C6	2.56	0.40
11:AA:1840:U:H4'	11:AA:1841:A:H5''	2.02	0.40
11:AA:1940:G:N2	11:AA:3362:A:C8	2.86	0.40
11:AA:2295:A:C6	29:H:37:ILE:HB	2.55	0.40
11:AA:2722:U:C2	11:AA:2723:U:C5	3.09	0.40
11:AA:2985:C:H2'	11:AA:2986:U:C6	2.56	0.40
12:Aa:46:ILE:HD12	12:Aa:51:ALA:HA	2.03	0.40
23:EE:243:THR:HG22	23:EE:244:GLY:N	2.36	0.40
26:FF:58:ARG:HA	26:FF:357:LYS:HG2	2.02	0.40
26:FF:70:ARG:CZ	29:H:88:ARG:HH21	2.33	0.40
30:HH:206:GLN:O	30:HH:209:GLU:HG2	2.21	0.40
31:I:56:ARG:HB3	31:I:61:LYS:HB2	2.03	0.40
39:M:28:HIS:CG	39:M:32:ARG:HG3	2.56	0.40
39:M:135:GLU:OE2	39:M:139:ARG:NH2	2.54	0.40
61:c:648:G:N3	61:c:648:G:H2'	2.36	0.40
61:c:886:U:OP1	63:e:214:LYS:NZ	2.54	0.40
61:c:959:U:H5'	74:p:15:ALA:C	2.46	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:1319:A:H2'	61:c:1320:U:O4'	2.20	0.40
61:c:1376:C:H2'	61:c:1377:U:C6	2.55	0.40
69:k:129:LEU:HD21	69:k:169:PHE:CB	2.51	0.40
79:u:88:ARG:NH1	79:u:108:LYS:HE3	2.36	0.40
79:u:90:ASN:OD1	79:u:95:GLY:HA2	2.21	0.40
1:0:62:THR:HA	1:0:69:SER:HA	2.03	0.40
8:7:52:GLN:OE1	8:7:53:LYS:HG3	2.21	0.40
11:AA:209:A:H4'	11:AA:211:A:N7	2.35	0.40
11:AA:286:U:H2'	11:AA:287:G:C8	2.55	0.40
11:AA:303:G:O2'	11:AA:2778:G:OP2	2.32	0.40
11:AA:317:A:H2'	11:AA:318:A:C8	2.56	0.40
11:AA:341:G:O2'	17:CC:22:U:O4	2.31	0.40
11:AA:396:A:O2'	91:AA:3722:HOH:O	2.17	0.40
11:AA:500:C:H2'	11:AA:501:A:C8	2.55	0.40
11:AA:665:A:OP1	49:QQ:203:ARG:HD2	2.21	0.40
11:AA:1118:C:H2'	11:AA:1119:C:H6	1.86	0.40
11:AA:1213:G:H5'	22:E:137:ARG:HH21	1.85	0.40
11:AA:1326:A:H2'	11:AA:1327:C:O4'	2.21	0.40
11:AA:1364:C:H2'	11:AA:1365:G:H8	1.86	0.40
11:AA:1597:C:H4'	51:S:26:PRO:HD2	2.02	0.40
11:AA:1810:A:H2'	11:AA:1811:G:C8	2.56	0.40
11:AA:2101:C:O2'	11:AA:2102:U:OP1	2.33	0.40
11:AA:2347:OMU:H3'	11:AA:2348:A:C8	2.55	0.40
11:AA:2584:G:H1'	36:KK:240:ASN:HD22	1.86	0.40
11:AA:2656:A:O2'	11:AA:2657:A:H3'	2.22	0.40
11:AA:2761:G:OP2	59:a:67:LYS:NZ	2.40	0.40
11:AA:2917:G:OP1	29:H:47:ASN:N	2.37	0.40
11:AA:3057:U:O2	11:AA:3057:U:H2'	2.21	0.40
11:AA:3063:C:H2'	11:AA:3064:U:H6	1.86	0.40
11:AA:3211:C:P	46:PP:109:ARG:HH12	2.44	0.40
11:AA:3362:A:H2'	11:AA:3363:U:O4'	2.21	0.40
12:Aa:239:LYS:HA	12:Aa:239:LYS:HD2	1.87	0.40
12:Aa:314:LEU:HD12	12:Aa:314:LEU:HA	1.98	0.40
12:Aa:363:ASP:O	12:Aa:367:ILE:HG22	2.20	0.40
26:FF:339:ARG:HG3	26:FF:340:LYS:O	2.21	0.40
31:I:42:GLN:HB3	31:I:44:LYS:HE2	2.03	0.40
45:P:16:LEU:HD23	45:P:16:LEU:HA	1.92	0.40
46:PP:31:LYS:HB3	46:PP:51:ALA:HB1	2.02	0.40
50:R:49:ILE:HD12	50:R:70:LYS:HA	2.02	0.40
60:b:46:THR:HB	60:b:58:SER:HB2	2.02	0.40
61:c:11:A:N3	61:c:1300:A:O2'	2.47	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:629:U:C2	61:c:630:A:C8	3.09	0.40
61:c:1334:U:H2'	61:c:1335:U:C6	2.56	0.40
61:c:1388:A:H5'	61:c:1389:C:C6	2.57	0.40
61:c:1582:U:C2	61:c:1614:A:C6	3.09	0.40
62:d:4:PRO:HD2	62:d:7:PHE:CD2	2.57	0.40
65:g:177:MET:HE1	65:g:182:LEU:HB2	2.03	0.40
67:i:140:THR:OG1	67:i:201:ALA:HB1	2.21	0.40
68:j:31:ARG:HG3	68:j:32:ILE:N	2.36	0.40
70:l:188:GLU:HG3	73:o:13:PHE:CG	2.56	0.40
71:m:149:ARG:C	71:m:151:ASP:H	2.29	0.40
74:p:113:PHE:CE2	74:p:117:LEU:HD11	2.57	0.40
77:s:31:VAL:HA	77:s:67:VAL:CG2	2.51	0.40
78:t:88:VAL:HG23	78:t:89:SER:H	1.86	0.40
79:u:27:LYS:HA	79:u:57:ARG:HA	2.03	0.40
2:1:58:ARG:HD3	2:1:58:ARG:H	1.86	0.40
3:2:88:SER:O	3:2:92:ARG:HG3	2.21	0.40
11:AA:74:G:H5''	44:OO:104:ARG:HH21	1.85	0.40
11:AA:193:C:H2'	11:AA:194:U:C6	2.56	0.40
11:AA:529:A:H2'	11:AA:530:G:H8	1.85	0.40
11:AA:715:A:N1	11:AA:781:G:O2'	2.37	0.40
11:AA:1050:U:O4	87:AA:3407:SPD:H32	2.22	0.40
11:AA:1258:U:OP2	24:Ee:123:ARG:NH1	2.42	0.40
11:AA:1339:C:H2'	11:AA:1340:G:C8	2.56	0.40
11:AA:1447:G:H3'	13:B:67:ILE:HG22	2.03	0.40
11:AA:1927:G:C8	60:b:16:VAL:HG12	2.57	0.40
11:AA:2203:U:H2'	11:AA:2204:C:C6	2.57	0.40
11:AA:2300:G:H2'	11:AA:2301:U:H6	1.86	0.40
11:AA:2302:G:C4	11:AA:2303:A:C8	3.10	0.40
11:AA:2440:G:H2'	11:AA:2441:A:C8	2.57	0.40
11:AA:2700:G:O2'	11:AA:2705:A:N1	2.47	0.40
11:AA:2765:C:H2'	11:AA:2766:U:C6	2.56	0.40
11:AA:2933:A:OP1	11:AA:3015:G:H4'	2.21	0.40
11:AA:3304:U:P	26:FF:332:ARG:HH22	2.43	0.40
12:Aa:569:SER:O	12:Aa:592:PRO:HD3	2.21	0.40
12:Aa:661:ASP:OD1	12:Aa:662:SER:N	2.53	0.40
14:BB:81:U:H2'	14:BB:82:G:H8	1.87	0.40
14:BB:113:C:H2'	14:BB:114:U:O4'	2.21	0.40
16:C:52:LEU:HD21	16:C:124:LEU:HD12	2.04	0.40
17:CC:70:G:H1'	17:CC:88:A:N6	2.36	0.40
26:FF:72:VAL:CG1	29:H:88:ARG:HH11	2.35	0.40
30:HH:206:GLN:O	30:HH:209:GLU:N	2.54	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:J:67:ILE:HD12	33:J:83:VAL:HG12	2.02	0.40
34:JJ:176:TYR:CZ	34:JJ:197:GLN:HG2	2.56	0.40
39:M:78:LEU:CD2	39:M:118:ILE:HG21	2.51	0.40
44:OO:47:ALA:HB3	44:OO:49:ARG:HD3	2.03	0.40
49:QQ:105:ARG:HG2	49:QQ:108:ARG:NH2	2.35	0.40
61:c:66:U:C6	68:j:173:PRO:HB3	2.56	0.40
61:c:335:U:H2'	61:c:336:G:C8	2.57	0.40
61:c:465:G:C6	61:c:466:U:C4	3.10	0.40
61:c:599:A:H2'	61:c:600:U:C6	2.56	0.40
61:c:610:G:H5'	61:c:612:U:O4	2.21	0.40
61:c:918:U:C2	61:c:919:A:C8	3.10	0.40
61:c:1133:A:N3	61:c:1650:U:O2'	2.50	0.40
61:c:1393:C:H2'	61:c:1394:G:H8	1.87	0.40
62:d:126:PRO:HB2	62:d:152:PRO:HG2	2.03	0.40
63:e:161:ILE:HD13	63:e:161:ILE:HA	1.96	0.40
64:f:57:PHE:HE2	64:f:110:HIS:HD2	1.68	0.40
66:h:82:TYR:CD1	66:h:83:PRO:HD2	2.57	0.40
66:h:100:ARG:O	66:h:112:HIS:HB3	2.21	0.40
74:p:63:ALA:O	74:p:67:THR:HB	2.20	0.40
77:s:114:ARG:O	77:s:115:THR:HG22	2.21	0.40
79:u:53:ASP:OD1	79:u:53:ASP:N	2.55	0.40
83:y:111:MET:HE1	83:y:116:ALA:CA	2.51	0.40
8:7:109:ASP:OD1	8:7:127:ARG:HD2	2.21	0.40
8:7:155:ARG:HD2	8:7:203:THR:HA	2.02	0.40
11:AA:183:G:H2'	11:AA:184:U:C6	2.56	0.40
11:AA:737:G:H8	11:AA:737:G:OP2	2.05	0.40
11:AA:1032:C:H2'	11:AA:1033:U:O4'	2.21	0.40
11:AA:1146:C:H2'	11:AA:1147:G:H8	1.87	0.40
11:AA:1150:A:H2	11:AA:2379:U:O2	2.05	0.40
11:AA:1302:A:N7	11:AA:2857:C:O2'	2.55	0.40
11:AA:1547:G:OP1	49:QQ:108:ARG:NH2	2.54	0.40
11:AA:1754:G:H2'	11:AA:1755:C:H6	1.85	0.40
11:AA:2586:G:C6	36:KK:241:LYS:HB2	2.56	0.40
11:AA:2959:OMC:HM22	11:AA:2960:C:O4'	2.21	0.40
11:AA:3017:A:H2'	11:AA:3018:C:C6	2.55	0.40
11:AA:3044:G:H4'	26:FF:13:HIS:HB2	2.04	0.40
11:AA:3105:U:H2'	11:AA:3106:A:C8	2.56	0.40
11:AA:3153:U:O2	11:AA:3153:U:H2'	2.21	0.40
11:AA:3246:G:H4'	11:AA:3247:G:O4'	2.21	0.40
12:Aa:22:MET:SD	12:Aa:102:LEU:HD13	2.62	0.40
12:Aa:331:ALA:O	12:Aa:335:LEU:HB2	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:Aa:576:LEU:HD11	12:Aa:585:ARG:HB3	2.03	0.40
12:Aa:696:ASP:OD2	15:Bb:35:A:O2'	2.27	0.40
16:C:173:GLU:HA	39:M:51:GLY:C	2.46	0.40
17:CC:21:C:N4	17:CC:22:U:O4	2.54	0.40
23:EE:112:ILE:HG23	23:EE:133:TYR:HB2	2.03	0.40
26:FF:137:TYR:CE1	26:FF:144:ILE:HG13	2.57	0.40
28:GG:9:HIS:HA	28:GG:15:ALA:HA	2.03	0.40
28:GG:135:VAL:HA	28:GG:245:GLY:O	2.20	0.40
30:HH:107:ARG:HH22	30:HH:116:ASP:HB2	1.86	0.40
40:MM:38:LYS:HD2	40:MM:83:ASP:HB3	2.03	0.40
40:MM:48:LEU:HB2	40:MM:142:ASP:OD1	2.21	0.40
55:W:65:LEU:HD23	55:W:65:LEU:HA	1.92	0.40
61:c:348:U:H4'	70:l:14:THR:HG22	2.02	0.40
61:c:397:A:H4'	70:l:50:GLY:HA2	2.04	0.40
61:c:643:G:O2'	61:c:644:C:OP1	2.37	0.40
61:c:1030:A:N6	91:c:2030:HOH:O	2.53	0.40
61:c:1135:U:H2'	61:c:1136:U:C6	2.56	0.40
61:c:1626:U:H2'	61:c:1627:U:H6	1.86	0.40
62:d:20:ALA:CB	62:d:172:LEU:HD13	2.51	0.40
64:f:37:PRO:HG3	64:f:46:LYS:HD3	2.02	0.40
64:f:106:ASP:OD1	64:f:110:HIS:HB2	2.20	0.40
66:h:139:VAL:O	66:h:146:THR:HA	2.21	0.40
66:h:141:THR:OG1	66:h:143:ASP:OD1	2.29	0.40
68:j:3:LEU:HD21	68:j:24:ILE:HD11	2.02	0.40
68:j:52:ILE:HD11	68:j:102:VAL:HG21	2.04	0.40
71:m:55:ALA:O	71:m:59:LEU:HD23	2.22	0.40
74:p:43:LYS:HG3	74:p:45:LEU:HD23	2.02	0.40
76:r:73:PRO:HG2	76:r:92:SER:HA	2.03	0.40
77:s:69:VAL:HG11	77:s:81:ILE:HD11	2.02	0.40
80:v:117:SER:OG	80:v:120:GLY:O	2.39	0.40
2:1:61:SER:O	2:1:65:LEU:HG	2.22	0.40
8:7:58:VAL:HG13	8:7:59:ARG:HG2	2.04	0.40
8:7:282:SER:HB3	61:c:1394:G:OP1	2.22	0.40
11:AA:418:A:H2'	11:AA:419:G:H8	1.86	0.40
11:AA:898:OMU:H1'	11:AA:898:OMU:HM23	1.60	0.40
11:AA:978:G:H1'	11:AA:1104:G:N2	2.36	0.40
11:AA:1624:G:C4	11:AA:1625:A:C8	3.10	0.40
11:AA:1833:G:H1'	56:X:4:GLN:OE1	2.22	0.40
11:AA:1852:G:H2'	11:AA:1853:U:C6	2.56	0.40
11:AA:1857:C:O2'	11:AA:1858:A:H5'	2.22	0.40
11:AA:1883:A:H2'	11:AA:1884:A:H8	1.86	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2177:G:C6	23:EE:125:ALA:HB1	2.56	0.40
11:AA:2186:U:OP2	23:EE:200:ARG:HD2	2.21	0.40
11:AA:2507:C:H2'	11:AA:2508:U:H6	1.87	0.40
11:AA:2617:U:H5''	41:N:3:LYS:HG2	2.04	0.40
11:AA:2972:G:H2'	11:AA:2973:G:H8	1.86	0.40
11:AA:2992:U:H2'	11:AA:2993:G:O4'	2.21	0.40
11:AA:3037:U:H5''	26:FF:348:ARG:CD	2.51	0.40
11:AA:3256:G:C6	11:AA:3257:C:C4	3.10	0.40
11:AA:3368:U:H4'	11:AA:3369:G:H5'	2.03	0.40
12:Aa:760:ARG:HG2	12:Aa:761:PRO:HD2	2.03	0.40
13:B:97:ASN:C	13:B:97:ASN:HD22	2.28	0.40
16:C:89:ASP:HB2	16:C:110:ALA:N	2.35	0.40
17:CC:78:G:H2'	17:CC:79:A:C8	2.57	0.40
18:Cc:23:G:H2'	18:Cc:24:C:C6	2.56	0.40
20:DD:33:VAL:HG21	20:DD:185:LEU:HD23	2.03	0.40
22:E:139:TYR:CD1	22:E:140:VAL:HG23	2.57	0.40
24:Ee:29:ALA:N	24:Ee:30:PRO:HD2	2.37	0.40
29:H:130:ALA:O	29:H:133:SER:OG	2.38	0.40
36:KK:30:THR:O	36:KK:30:THR:OG1	2.37	0.40
41:N:11:ASN:OD1	41:N:14:ARG:HD2	2.21	0.40
46:PP:64:VAL:HG13	46:PP:64:VAL:O	2.22	0.40
51:S:95:ILE:O	51:S:99:LYS:HG3	2.21	0.40
51:S:97:GLU:O	51:S:101:VAL:HG13	2.21	0.40
55:W:36:LYS:HA	55:W:37:PRO:HD3	1.91	0.40
60:b:28:LYS:HE2	60:b:28:LYS:HB2	1.92	0.40
61:c:107:C:H2'	61:c:108:A:C8	2.57	0.40
61:c:643:G:O2'	61:c:644:C:P	2.80	0.40
61:c:1281:G:H2'	61:c:1282:U:H6	1.87	0.40
61:c:1556:A:O2'	61:c:1560:U:OP1	2.39	0.40
61:c:1605:G:C6	61:c:1606:C:C4	3.09	0.40
62:d:5:ALA:HA	62:d:8:ASP:HB2	2.03	0.40
63:e:105:PHE:CZ	63:e:211:HIS:HB3	2.57	0.40
70:l:72:ILE:HG12	70:l:112:TRP:CE3	2.56	0.40
75:q:40:ALA:O	75:q:42:VAL:HG23	2.22	0.40
80:v:31:PRO:HB3	80:v:103:LYS:NZ	2.36	0.40
80:v:105:LEU:HG	80:v:122:ARG:HD2	2.03	0.40
80:v:130:ARG:HD2	80:v:134:ARG:NH2	2.37	0.40
83:y:111:MET:HE1	83:y:116:ALA:HA	2.03	0.40
84:z:51:GLY:HA2	84:z:77:ILE:HG13	2.03	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	
1	0	132/135 (98%)	129 (98%)	3 (2%)	0	100	100
2	1	68/108 (63%)	58 (85%)	10 (15%)	0	100	100
3	2	95/119 (80%)	89 (94%)	6 (6%)	0	100	100
4	3	79/82 (96%)	74 (94%)	5 (6%)	0	100	100
5	4	61/67 (91%)	59 (97%)	2 (3%)	0	100	100
6	5	47/56 (84%)	47 (100%)	0	0	100	100
7	6	51/63 (81%)	49 (96%)	2 (4%)	0	100	100
8	7	316/319 (99%)	301 (95%)	15 (5%)	0	100	100
9	8	32/152 (21%)	23 (72%)	9 (28%)	0	100	100
10	A	195/199 (98%)	193 (99%)	2 (1%)	0	100	100
12	Aa	839/842 (100%)	816 (97%)	23 (3%)	0	100	100
13	B	152/184 (83%)	149 (98%)	3 (2%)	0	100	100
16	C	183/186 (98%)	182 (100%)	1 (0%)	0	100	100
19	D	174/189 (92%)	169 (97%)	5 (3%)	0	100	100
20	DD	195/312 (62%)	191 (98%)	4 (2%)	0	100	100
22	E	170/172 (99%)	163 (96%)	7 (4%)	0	100	100
23	EE	250/254 (98%)	245 (98%)	5 (2%)	0	100	100
24	Ee	156/165 (94%)	148 (95%)	8 (5%)	0	100	100
25	F	157/160 (98%)	153 (98%)	4 (2%)	0	100	100
26	FF	384/387 (99%)	376 (98%)	8 (2%)	0	100	100
27	G	95/121 (78%)	93 (98%)	2 (2%)	0	100	100
28	GG	359/362 (99%)	352 (98%)	7 (2%)	0	100	100
29	H	127/137 (93%)	126 (99%)	1 (1%)	0	100	100
30	HH	294/297 (99%)	289 (98%)	5 (2%)	0	100	100
31	I	61/155 (39%)	61 (100%)	0	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
32	II	151/176 (86%)	149 (99%)	2 (1%)	0	100	100
33	J	118/142 (83%)	115 (98%)	3 (2%)	0	100	100
34	JJ	220/244 (90%)	217 (99%)	3 (1%)	0	100	100
35	K	124/127 (98%)	122 (98%)	2 (2%)	0	100	100
36	KK	231/256 (90%)	228 (99%)	3 (1%)	0	100	100
37	L	133/136 (98%)	129 (97%)	4 (3%)	0	100	100
38	LL	189/191 (99%)	186 (98%)	3 (2%)	0	100	100
39	M	146/149 (98%)	143 (98%)	3 (2%)	0	100	100
40	MM	213/221 (96%)	209 (98%)	4 (2%)	0	100	100
41	N	56/59 (95%)	55 (98%)	1 (2%)	0	100	100
42	NN	167/174 (96%)	158 (95%)	9 (5%)	0	100	100
43	O	95/105 (90%)	95 (100%)	0	0	100	100
44	OO	191/199 (96%)	177 (93%)	13 (7%)	1 (0%)	25	45
45	P	107/113 (95%)	105 (98%)	2 (2%)	0	100	100
46	PP	134/138 (97%)	132 (98%)	2 (2%)	0	100	100
48	Q	125/130 (96%)	125 (100%)	0	0	100	100
49	QQ	201/204 (98%)	197 (98%)	4 (2%)	0	100	100
50	R	104/107 (97%)	103 (99%)	1 (1%)	0	100	100
51	S	107/121 (88%)	106 (99%)	1 (1%)	0	100	100
52	T	117/120 (98%)	115 (98%)	2 (2%)	0	100	100
53	U	97/100 (97%)	91 (94%)	6 (6%)	0	100	100
54	V	82/88 (93%)	79 (96%)	2 (2%)	1 (1%)	11	23
55	W	75/78 (96%)	71 (95%)	4 (5%)	0	100	100
56	X	48/51 (94%)	47 (98%)	1 (2%)	0	100	100
57	Y	50/128 (39%)	50 (100%)	0	0	100	100
58	Z	23/25 (92%)	23 (100%)	0	0	100	100
59	a	100/106 (94%)	97 (97%)	3 (3%)	0	100	100
60	b	89/92 (97%)	88 (99%)	1 (1%)	0	100	100
62	d	204/252 (81%)	194 (95%)	10 (5%)	0	100	100
63	e	210/255 (82%)	201 (96%)	9 (4%)	0	100	100
64	f	215/254 (85%)	205 (95%)	10 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
65	g	177/240 (74%)	168 (95%)	9 (5%)	0	100	100
66	h	256/261 (98%)	247 (96%)	9 (4%)	0	100	100
67	i	195/225 (87%)	190 (97%)	5 (3%)	0	100	100
68	j	217/236 (92%)	213 (98%)	4 (2%)	0	100	100
69	k	182/190 (96%)	170 (93%)	12 (7%)	0	100	100
70	l	180/200 (90%)	166 (92%)	14 (8%)	0	100	100
71	m	183/197 (93%)	178 (97%)	5 (3%)	0	100	100
72	n	29/105 (28%)	26 (90%)	3 (10%)	0	100	100
73	o	140/156 (90%)	133 (95%)	7 (5%)	0	100	100
74	p	148/151 (98%)	146 (99%)	2 (1%)	0	100	100
75	q	125/137 (91%)	119 (95%)	6 (5%)	0	100	100
76	r	85/142 (60%)	83 (98%)	2 (2%)	0	100	100
77	s	135/143 (94%)	126 (93%)	9 (7%)	0	100	100
78	t	119/136 (88%)	115 (97%)	4 (3%)	0	100	100
79	u	143/146 (98%)	135 (94%)	8 (6%)	0	100	100
80	v	141/144 (98%)	134 (95%)	7 (5%)	0	100	100
81	w	98/121 (81%)	97 (99%)	1 (1%)	0	100	100
82	x	85/87 (98%)	81 (95%)	4 (5%)	0	100	100
83	y	127/130 (98%)	125 (98%)	2 (2%)	0	100	100
84	z	142/145 (98%)	132 (93%)	10 (7%)	0	100	100
All	All	11701/13056 (90%)	11331 (97%)	368 (3%)	2 (0%)	100	100

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
54	V	65	ARG
44	OO	63	VAL

5.3.2 Protein sidechains ⓘ

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

The Analysed column shows the number of residues for which the sidechain conformation was

analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	0	112/113 (99%)	112 (100%)	0	100	100
2	1	61/89 (68%)	61 (100%)	0	100	100
3	2	83/101 (82%)	83 (100%)	0	100	100
4	3	70/71 (99%)	70 (100%)	0	100	100
5	4	56/60 (93%)	56 (100%)	0	100	100
6	5	43/49 (88%)	43 (100%)	0	100	100
7	6	46/54 (85%)	46 (100%)	0	100	100
8	7	259/262 (99%)	259 (100%)	0	100	100
9	8	30/135 (22%)	30 (100%)	0	100	100
10	A	160/162 (99%)	160 (100%)	0	100	100
12	Aa	714/714 (100%)	713 (100%)	1 (0%)	92	98
13	B	125/146 (86%)	125 (100%)	0	100	100
16	C	150/151 (99%)	150 (100%)	0	100	100
19	D	143/154 (93%)	143 (100%)	0	100	100
20	DD	167/254 (66%)	167 (100%)	0	100	100
22	E	156/156 (100%)	156 (100%)	0	100	100
23	EE	193/196 (98%)	193 (100%)	0	100	100
24	Ee	129/136 (95%)	129 (100%)	0	100	100
25	F	136/137 (99%)	136 (100%)	0	100	100
26	FF	319/323 (99%)	317 (99%)	2 (1%)	84	93
27	G	84/107 (78%)	84 (100%)	0	100	100
28	GG	288/289 (100%)	287 (100%)	1 (0%)	91	97
29	H	101/105 (96%)	101 (100%)	0	100	100
30	HH	244/245 (100%)	244 (100%)	0	100	100
31	I	55/129 (43%)	55 (100%)	0	100	100
32	II	133/153 (87%)	133 (100%)	0	100	100
33	J	104/118 (88%)	104 (100%)	0	100	100
34	JJ	186/205 (91%)	186 (100%)	0	100	100
35	K	109/110 (99%)	109 (100%)	0	100	100
36	KK	187/208 (90%)	187 (100%)	0	100	100
37	L	115/116 (99%)	115 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
38	LL	171/171 (100%)	171 (100%)	0	100	100
39	M	118/119 (99%)	118 (100%)	0	100	100
40	MM	184/187 (98%)	184 (100%)	0	100	100
41	N	46/47 (98%)	46 (100%)	0	100	100
42	NN	147/150 (98%)	147 (100%)	0	100	100
43	O	81/88 (92%)	81 (100%)	0	100	100
44	OO	154/159 (97%)	154 (100%)	0	100	100
45	P	94/97 (97%)	94 (100%)	0	100	100
46	PP	107/109 (98%)	107 (100%)	0	100	100
47	Pp	2/2 (100%)	2 (100%)	0	100	100
48	Q	109/111 (98%)	109 (100%)	0	100	100
49	QQ	175/176 (99%)	175 (100%)	0	100	100
50	R	90/91 (99%)	90 (100%)	0	100	100
51	S	94/103 (91%)	94 (100%)	0	100	100
52	T	104/105 (99%)	104 (100%)	0	100	100
53	U	81/82 (99%)	81 (100%)	0	100	100
54	V	69/71 (97%)	69 (100%)	0	100	100
55	W	68/69 (99%)	68 (100%)	0	100	100
56	X	45/46 (98%)	45 (100%)	0	100	100
57	Y	47/116 (40%)	47 (100%)	0	100	100
58	Z	23/23 (100%)	23 (100%)	0	100	100
59	a	87/91 (96%)	87 (100%)	0	100	100
60	b	71/72 (99%)	71 (100%)	0	100	100
62	d	165/210 (79%)	165 (100%)	0	100	100
63	e	189/224 (84%)	189 (100%)	0	100	100
64	f	176/205 (86%)	176 (100%)	0	100	100
65	g	145/195 (74%)	145 (100%)	0	100	100
66	h	220/222 (99%)	220 (100%)	0	100	100
67	i	172/191 (90%)	172 (100%)	0	100	100
68	j	188/201 (94%)	188 (100%)	0	100	100
69	k	165/170 (97%)	165 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
70	l	146/161 (91%)	146 (100%)	0	100	100
71	m	158/166 (95%)	158 (100%)	0	100	100
72	n	32/98 (33%)	32 (100%)	0	100	100
73	o	127/137 (93%)	127 (100%)	0	100	100
74	p	127/128 (99%)	127 (100%)	0	100	100
75	q	81/105 (77%)	81 (100%)	0	100	100
76	r	77/118 (65%)	77 (100%)	0	100	100
77	s	114/119 (96%)	114 (100%)	0	100	100
78	t	105/124 (85%)	105 (100%)	0	100	100
79	u	128/129 (99%)	128 (100%)	0	100	100
80	v	115/116 (99%)	115 (100%)	0	100	100
81	w	94/114 (82%)	93 (99%)	1 (1%)	70	86
82	x	74/74 (100%)	74 (100%)	0	100	100
83	y	110/111 (99%)	110 (100%)	0	100	100
84	z	119/120 (99%)	119 (100%)	0	100	100
All	All	9952/10971 (91%)	9947 (100%)	5 (0%)	92	98

All (5) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
12	Aa	483	PHE
26	FF	104	THR
26	FF	319	ASN
28	GG	12	THR
81	w	87	HIS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (93) such sidechains are listed below:

Mol	Chain	Res	Type
1	0	22	GLN
1	0	34	ASN
1	0	77	ASN
4	3	42	ASN
6	5	48	ASN
8	7	101	GLN
10	A	26	GLN

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Mol	Chain	Res	Type
10	A	31	GLN
10	A	50	ASN
12	Aa	101	ASN
12	Aa	145	GLN
12	Aa	274	ASN
12	Aa	603	ASN
12	Aa	786	GLN
12	Aa	791	GLN
13	B	50	GLN
13	B	121	GLN
13	B	133	HIS
16	C	126	GLN
19	D	166	ASN
20	DD	167	GLN
23	EE	97	ASN
23	EE	132	ASN
26	FF	182	GLN
26	FF	224	HIS
27	G	40	HIS
27	G	101	ASN
28	GG	260	GLN
28	GG	361	HIS
29	H	98	ASN
30	HH	244	HIS
34	JJ	231	ASN
36	KK	28	HIS
36	KK	145	ASN
37	L	106	GLN
37	L	122	HIS
38	LL	5	GLN
39	M	11	HIS
39	M	62	HIS
40	MM	92	HIS
41	N	6	ASN
41	N	43	HIS
43	O	11	ASN
44	OO	103	ASN
44	OO	114	GLN
46	PP	119	GLN
48	Q	26	HIS
49	QQ	15	GLN
49	QQ	138	GLN

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Mol	Chain	Res	Type
50	R	24	ASN
50	R	77	ASN
50	R	87	ASN
52	T	68	GLN
52	T	104	GLN
52	T	108	GLN
52	T	113	GLN
59	a	53	GLN
62	d	15	GLN
62	d	32	HIS
63	e	40	ASN
63	e	42	ASN
63	e	95	ASN
64	f	89	GLN
65	g	111	ASN
65	g	165	ASN
66	h	201	HIS
68	j	201	GLN
69	k	19	GLN
69	k	74	GLN
70	l	64	ASN
71	m	48	GLN
71	m	74	ASN
73	o	8	GLN
73	o	16	GLN
73	o	81	HIS
74	p	5	HIS
74	p	62	GLN
76	r	79	HIS
77	s	21	HIS
79	u	6	GLN
79	u	8	GLN
79	u	19	ASN
79	u	74	GLN
80	v	48	GLN
80	v	64	HIS
80	v	101	ASN
81	w	33	GLN
81	w	87	HIS
83	y	42	GLN
83	y	56	HIS
83	y	64	GLN

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Mol	Chain	Res	Type
83	y	70	ASN
84	z	75	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
11	AA	3194/3396 (94%)	480 (15%)	16 (0%)
14	BB	121/121 (100%)	10 (8%)	2 (1%)
15	Bb	75/76 (98%)	38 (50%)	0
17	CC	157/158 (99%)	23 (14%)	0
18	Cc	76/77 (98%)	12 (15%)	0
21	Dd	5/39 (12%)	2 (40%)	0
61	c	1598/1800 (88%)	323 (20%)	0
All	All	5226/5667 (92%)	888 (16%)	18 (0%)

All (888) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
11	AA	6	A
11	AA	14	U
11	AA	26	A
11	AA	40	A
11	AA	43	A
11	AA	49	A
11	AA	60	A
11	AA	65	A
11	AA	66	A
11	AA	92	G
11	AA	110	G
11	AA	111	C
11	AA	113	C
11	AA	116	A
11	AA	118	U
11	AA	122	A
11	AA	135	C
11	AA	136	G
11	AA	142	C
11	AA	148	G
11	AA	150	A
11	AA	156	G
11	AA	157	A

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Mol	Chain	Res	Type
11	AA	165	A
11	AA	172	G
11	AA	190	U
11	AA	200	C
11	AA	219	A
11	AA	231	G
11	AA	243	G
11	AA	248	U
11	AA	249	U
11	AA	251	G
11	AA	252	U
11	AA	253	A
11	AA	263	C
11	AA	269	G
11	AA	286	U
11	AA	295	A
11	AA	305	U
11	AA	329	U
11	AA	376	G
11	AA	398	A
11	AA	399	A
11	AA	401	U
11	AA	402	A
11	AA	403	C
11	AA	420	G
11	AA	421	G
11	AA	422	A
11	AA	510	G
11	AA	521	A
11	AA	523	A
11	AA	532	A
11	AA	533	A
11	AA	534	U
11	AA	546	C
11	AA	547	G
11	AA	555	U
11	AA	557	A
11	AA	559	A
11	AA	560	G
11	AA	592	A
11	AA	601	U
11	AA	602	A

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Mol	Chain	Res	Type
11	AA	603	A
11	AA	607	A
11	AA	611	A
11	AA	620	U
11	AA	621	A
11	AA	636	C
11	AA	637	C
11	AA	649	A2M
11	AA	660	A
11	AA	677	A
11	AA	678	G
11	AA	681	U
11	AA	691	A
11	AA	705	A
11	AA	712	G
11	AA	719	U
11	AA	758	C
11	AA	761	A
11	AA	766	U
11	AA	767	U
11	AA	768	C
11	AA	780	A
11	AA	781	G
11	AA	785	G
11	AA	786	A
11	AA	806	A
11	AA	817	A2M
11	AA	826	G
11	AA	830	A
11	AA	857	G
11	AA	861	C
11	AA	874	U
11	AA	879	U
11	AA	880	G
11	AA	896	A
11	AA	907	G
11	AA	908	OMG
11	AA	914	A
11	AA	916	G
11	AA	917	A
11	AA	921	A
11	AA	923	C

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Mol	Chain	Res	Type
11	AA	924	G
11	AA	925	A
11	AA	937	G
11	AA	944	C
11	AA	953	G
11	AA	959	C
11	AA	960	U
11	AA	961	C
11	AA	974	G
11	AA	979	U
11	AA	980	A
11	AA	994	G
11	AA	1015	U
11	AA	1017	C
11	AA	1018	G
11	AA	1019	G
11	AA	1023	C
11	AA	1025	A
11	AA	1027	A
11	AA	1028	U
11	AA	1031	C
11	AA	1032	C
11	AA	1034	U
11	AA	1045	C
11	AA	1047	A
11	AA	1064	A
11	AA	1072	G
11	AA	1081	U
11	AA	1087	G
11	AA	1096	U
11	AA	1097	G
11	AA	1098	A
11	AA	1103	A
11	AA	1104	G
11	AA	1117	G
11	AA	1131	G
11	AA	1144	U
11	AA	1159	A
11	AA	1178	G
11	AA	1180	A
11	AA	1181	U
11	AA	1182	A

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Mol	Chain	Res	Type
11	AA	1191	U
11	AA	1193	A
11	AA	1196	C
11	AA	1201	C
11	AA	1208	U
11	AA	1209	G
11	AA	1214	U
11	AA	1222	G
11	AA	1235	U
11	AA	1236	G
11	AA	1242	G
11	AA	1245	A
11	AA	1246	G
11	AA	1253	U
11	AA	1258	U
11	AA	1262	G
11	AA	1263	A
11	AA	1265	U
11	AA	1287	A
11	AA	1295	G
11	AA	1302	A
11	AA	1307	G
11	AA	1308	A
11	AA	1309	U
11	AA	1345	G
11	AA	1348	U
11	AA	1349	G
11	AA	1352	A
11	AA	1355	A
11	AA	1357	G
11	AA	1386	A
11	AA	1391	C
11	AA	1392	G
11	AA	1399	A
11	AA	1400	G
11	AA	1417	G
11	AA	1418	A
11	AA	1431	G
11	AA	1434	G
11	AA	1437	OMC
11	AA	1443	G
11	AA	1446	A

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Mol	Chain	Res	Type
11	AA	1450	OMG
11	AA	1468	A
11	AA	1481	A
11	AA	1483	G
11	AA	1487	G
11	AA	1508	C
11	AA	1555	U
11	AA	1556	C
11	AA	1560	G
11	AA	1562	C
11	AA	1563	C
11	AA	1566	A
11	AA	1568	U
11	AA	1569	U
11	AA	1570	U
11	AA	1571	A
11	AA	1573	G
11	AA	1575	A
11	AA	1580	A
11	AA	1581	C
11	AA	1583	A
11	AA	1587	A
11	AA	1589	A
11	AA	1605	A
11	AA	1629	U
11	AA	1630	U
11	AA	1632	A
11	AA	1642	A
11	AA	1643	A
11	AA	1645	U
11	AA	1657	C
11	AA	1724	U
11	AA	1741	A
11	AA	1750	A
11	AA	1751	G
11	AA	1756	C
11	AA	1762	C
11	AA	1765	U
11	AA	1769	G
11	AA	1797	A
11	AA	1808	G
11	AA	1815	U

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Mol	Chain	Res	Type
11	AA	1816	A
11	AA	1817	G
11	AA	1821	U
11	AA	1842	A
11	AA	1858	A
11	AA	1878	G
11	AA	1879	A
11	AA	1880	U
11	AA	1893	A
11	AA	1906	G
11	AA	1935	G
11	AA	2102	U
11	AA	2111	G
11	AA	2114	C
11	AA	2122	G
11	AA	2126	A
11	AA	2131	A
11	AA	2140	U
11	AA	2144	A
11	AA	2145	A
11	AA	2158	A
11	AA	2168	A
11	AA	2169	G
11	AA	2170	U
11	AA	2188	A
11	AA	2206	G
11	AA	2208	A
11	AA	2223	A
11	AA	2249	G
11	AA	2257	C
11	AA	2265	C
11	AA	2272	G
11	AA	2273	G
11	AA	2274	U
11	AA	2281	A2M
11	AA	2307	G
11	AA	2309	A
11	AA	2310	U
11	AA	2313	A
11	AA	2315	G
11	AA	2335	G
11	AA	2336	U

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Mol	Chain	Res	Type
11	AA	2363	A
11	AA	2365	C
11	AA	2373	A
11	AA	2374	C
11	AA	2375	G
11	AA	2388	U
11	AA	2393	G
11	AA	2397	A
11	AA	2402	A
11	AA	2403	G
11	AA	2404	A
11	AA	2411	U
11	AA	2418	G
11	AA	2435	G
11	AA	2437	G
11	AA	2440	G
11	AA	2442	G
11	AA	2446	U
11	AA	2447	A
11	AA	2448	G
11	AA	2449	A
11	AA	2450	G
11	AA	2453	U
11	AA	2454	G
11	AA	2459	A
11	AA	2460	U
11	AA	2461	A
11	AA	2462	A
11	AA	2464	U
11	AA	2466	G
11	AA	2467	G
11	AA	2470	C
11	AA	2472	U
11	AA	2474	G
11	AA	2475	G
11	AA	2477	G
11	AA	2478	C
11	AA	2479	C
11	AA	2480	A
11	AA	2481	G
11	AA	2482	U
11	AA	2486	A

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Mol	Chain	Res	Type
11	AA	2487	U
11	AA	2488	A
11	AA	2489	C
11	AA	2490	C
11	AA	2492	C
11	AA	2494	A
11	AA	2495	C
11	AA	2496	C
11	AA	2499	U
11	AA	2500	A
11	AA	2501	U
11	AA	2502	A
11	AA	2503	G
11	AA	2508	U
11	AA	2511	A
11	AA	2514	U
11	AA	2515	A
11	AA	2522	G
11	AA	2523	A
11	AA	2534	G
11	AA	2536	A
11	AA	2539	C
11	AA	2541	U
11	AA	2542	U
11	AA	2549	G
11	AA	2552	C
11	AA	2554	A
11	AA	2560	C
11	AA	2561	A
11	AA	2569	A
11	AA	2570	U
11	AA	2571	U
11	AA	2572	C
11	AA	2573	G
11	AA	2585	G
11	AA	2593	A
11	AA	2606	G
11	AA	2607	G
11	AA	2614	G
11	AA	2626	A
11	AA	2635	A
11	AA	2636	A

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Mol	Chain	Res	Type
11	AA	2652	U
11	AA	2656	A
11	AA	2672	G
11	AA	2674	A
11	AA	2677	G
11	AA	2678	A
11	AA	2680	A
11	AA	2689	A
11	AA	2691	A
11	AA	2696	A
11	AA	2704	A
11	AA	2705	A
11	AA	2714	G
11	AA	2728	G
11	AA	2729	OMU
11	AA	2737	C
11	AA	2740	A
11	AA	2749	G
11	AA	2753	G
11	AA	2755	C
11	AA	2762	A
11	AA	2772	C
11	AA	2773	C
11	AA	2777	G
11	AA	2778	G
11	AA	2795	U
11	AA	2796	G
11	AA	2800	G
11	AA	2801	A
11	AA	2802	A
11	AA	2803	A
11	AA	2804	A
11	AA	2808	A
11	AA	2810	C
11	AA	2814	G
11	AA	2817	A
11	AA	2844	C
11	AA	2845	A
11	AA	2846	U
11	AA	2849	C
11	AA	2856	G
11	AA	2867	C

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Mol	Chain	Res	Type
11	AA	2870	5MC
11	AA	2871	G
11	AA	2872	A
11	AA	2887	A
11	AA	2889	C
11	AA	2899	C
11	AA	2914	G
11	AA	2922	OMG
11	AA	2923	U
11	AA	2933	A
11	AA	2935	U
11	AA	2936	A
11	AA	2947	G
11	AA	2951	G
11	AA	2971	A
11	AA	2972	G
11	AA	2983	C
11	AA	2990	G
11	AA	2997	G
11	AA	3012	A
11	AA	3059	G
11	AA	3074	G
11	AA	3078	U
11	AA	3079	U
11	AA	3092	C
11	AA	3094	A
11	AA	3101	G
11	AA	3109	G
11	AA	3122	A
11	AA	3129	A
11	AA	3131	U
11	AA	3142	A
11	AA	3143	C
11	AA	3154	C
11	AA	3155	U
11	AA	3156	U
11	AA	3157	U
11	AA	3168	A
11	AA	3170	A
11	AA	3172	A
11	AA	3173	G
11	AA	3176	G

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Mol	Chain	Res	Type
11	AA	3179	U
11	AA	3181	C
11	AA	3187	A
11	AA	3199	G
11	AA	3206	C
11	AA	3207	U
11	AA	3210	A
11	AA	3217	C
11	AA	3218	A
11	AA	3219	G
11	AA	3243	A
11	AA	3270	U
11	AA	3273	A
11	AA	3276	G
11	AA	3277	U
11	AA	3278	C
11	AA	3281	U
11	AA	3294	A
11	AA	3303	G
11	AA	3304	U
11	AA	3313	U
11	AA	3316	A
11	AA	3320	A
11	AA	3334	U
11	AA	3341	U
11	AA	3344	A
11	AA	3345	G
11	AA	3351	U
11	AA	3352	U
11	AA	3353	G
11	AA	3356	G
11	AA	3369	G
11	AA	3378	C
11	AA	3382	U
11	AA	3383	G
11	AA	3389	U
11	AA	3390	G
14	BB	7	G
14	BB	22	A
14	BB	38	U
14	BB	54	U
14	BB	65	G

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Mol	Chain	Res	Type
14	BB	73	C
14	BB	74	C
14	BB	76	A
14	BB	99	G
14	BB	112	G
15	Bb	2	C
15	Bb	3	G
15	Bb	4	G
15	Bb	6	U
15	Bb	8	U
15	Bb	9	A
15	Bb	10	G
15	Bb	12	U
15	Bb	15	G
15	Bb	16	U
15	Bb	17	U
15	Bb	18	G
15	Bb	20	G
15	Bb	21	A
15	Bb	22	G
15	Bb	24	G
15	Bb	26	G
15	Bb	30	G
15	Bb	31	A
15	Bb	36	A
15	Bb	38	A
15	Bb	39	U
15	Bb	40	C
15	Bb	46	G
15	Bb	48	C
15	Bb	49	C
15	Bb	51	G
15	Bb	55	U
15	Bb	58	A
15	Bb	59	U
15	Bb	61	C
15	Bb	62	A
15	Bb	63	C
15	Bb	65	G
15	Bb	66	A
15	Bb	67	A
15	Bb	70	C

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Mol	Chain	Res	Type
15	Bb	76	A
17	CC	23	U
17	CC	34	U
17	CC	35	C
17	CC	38	U
17	CC	52	A
17	CC	59	A
17	CC	62	C
17	CC	63	G
17	CC	75	G
17	CC	82	U
17	CC	83	C
17	CC	84	C
17	CC	85	G
17	CC	86	U
17	CC	87	G
17	CC	91	C
17	CC	95	G
17	CC	104	A
17	CC	106	C
17	CC	113	U
17	CC	125	U
17	CC	126	A
17	CC	152	G
18	Cc	16	C
18	Cc	18	C
18	Cc	19	G
18	Cc	20	G
18	Cc	22	A
18	Cc	47	G
18	Cc	48	U
18	Cc	56	U
18	Cc	57	C
18	Cc	60	A
18	Cc	62	C
18	Cc	77	A
21	Dd	22	U
21	Dd	24	U
61	c	2	A
61	c	4	C
61	c	26	A
61	c	34	G

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Mol	Chain	Res	Type
61	c	42	G
61	c	45	U
61	c	47	A
61	c	50	C
61	c	61	A
61	c	63	G
61	c	67	A
61	c	69	G
61	c	71	A
61	c	78	A
61	c	80	A
61	c	81	G
61	c	100	A2M
61	c	111	U
61	c	114	C
61	c	116	U
61	c	126	A
61	c	127	G
61	c	131	C
61	c	139	C
61	c	140	A
61	c	144	U
61	c	145	A
61	c	146	U
61	c	150	U
61	c	153	G
61	c	159	U
61	c	160	C
61	c	168	A
61	c	176	C
61	c	184	C
61	c	204	G
61	c	257	A
61	c	261	U
61	c	262	U
61	c	272	U
61	c	277	U
61	c	278	U
61	c	279	G
61	c	280	U
61	c	281	G
61	c	285	G

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Mol	Chain	Res	Type
61	c	287	G
61	c	299	A
61	c	309	C
61	c	314	C
61	c	316	A
61	c	320	U
61	c	321	C
61	c	322	G
61	c	333	A
61	c	337	G
61	c	338	C
61	c	361	C
61	c	390	G
61	c	400	A
61	c	401	A
61	c	402	C
61	c	404	G
61	c	417	A
61	c	423	G
61	c	424	C
61	c	426	G
61	c	428	A
61	c	434	G
61	c	439	U
61	c	444	C
61	c	445	A
61	c	448	C
61	c	452	A
61	c	455	C
61	c	460	A
61	c	468	A
61	c	475	A
61	c	477	A
61	c	504	U
61	c	515	A
61	c	519	C
61	c	520	A
61	c	524	U
61	c	525	A
61	c	526	A
61	c	527	A
61	c	531	C

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Mol	Chain	Res	Type
61	c	538	A
61	c	541	A2M
61	c	542	A
61	c	555	A
61	c	557	G
61	c	559	C
61	c	562	OMG
61	c	565	C
61	c	566	C
61	c	568	G
61	c	580	A
61	c	582	U
61	c	585	A
61	c	594	A
61	c	610	G
61	c	611	U
61	c	619	A2M
61	c	620	A
61	c	623	A
61	c	624	G
61	c	644	C
61	c	645	C
61	c	648	G
61	c	649	U
61	c	651	G
61	c	692	C
61	c	695	U
61	c	696	C
61	c	743	U
61	c	745	U
61	c	760	A
61	c	765	G
61	c	766	U
61	c	775	G
61	c	778	G
61	c	780	A
61	c	781	U
61	c	782	U
61	c	783	G
61	c	784	C
61	c	789	A
61	c	793	A

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Mol	Chain	Res	Type
61	c	794	U
61	c	795	U
61	c	809	A
61	c	812	A
61	c	814	A
61	c	820	U
61	c	821	U
61	c	851	U
61	c	854	U
61	c	859	A
61	c	860	U
61	c	862	A
61	c	863	A
61	c	864	U
61	c	895	G
61	c	898	A
61	c	906	A
61	c	913	G
61	c	914	G
61	c	915	A
61	c	933	A
61	c	935	U
61	c	945	U
61	c	951	A
61	c	960	U
61	c	966	A
61	c	992	A
61	c	993	A
61	c	999	U
61	c	1001	A
61	c	1002	G
61	c	1004	U
61	c	1005	A
61	c	1026	A
61	c	1027	A
61	c	1028	C
61	c	1029	U
61	c	1031	U
61	c	1053	G
61	c	1058	U
61	c	1059	U
61	c	1060	U

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Mol	Chain	Res	Type
61	c	1061	A
61	c	1063	U
61	c	1076	A
61	c	1081	A
61	c	1082	C
61	c	1092	A
61	c	1093	A
61	c	1097	U
61	c	1098	U
61	c	1100	G
61	c	1109	G
61	c	1113	A
61	c	1138	A
61	c	1150	G
61	c	1158	C
61	c	1159	C
61	c	1162	C
61	c	1183	A
61	c	1185	U
61	c	1191	B8N
61	c	1194	A
61	c	1196	A
61	c	1199	G
61	c	1200	G
61	c	1202	A
61	c	1208	A
61	c	1209	C
61	c	1217	A
61	c	1218	G
61	c	1221	A
61	c	1224	A
61	c	1227	A
61	c	1228	G
61	c	1244	A
61	c	1245	G
61	c	1246	C
61	c	1251	U
61	c	1252	C
61	c	1256	A
61	c	1257	U
61	c	1259	U
61	c	1261	G

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Mol	Chain	Res	Type
61	c	1274	C
61	c	1276	U
61	c	1280	4AC
61	c	1284	C
61	c	1314	U
61	c	1315	U
61	c	1316	G
61	c	1321	A
61	c	1325	A
61	c	1336	A
61	c	1338	C
61	c	1339	C
61	c	1340	U
61	c	1345	A
61	c	1346	A
61	c	1347	U
61	c	1354	G
61	c	1355	C
61	c	1356	U
61	c	1357	A
61	c	1361	U
61	c	1362	U
61	c	1363	U
61	c	1370	U
61	c	1371	A
61	c	1372	U
61	c	1373	C
61	c	1378	U
61	c	1390	U
61	c	1397	U
61	c	1398	U
61	c	1400	A
61	c	1411	A
61	c	1413	U
61	c	1414	U
61	c	1415	U
61	c	1421	A
61	c	1424	A
61	c	1425	A
61	c	1427	A
61	c	1428	OMG
61	c	1429	G

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Mol	Chain	Res	Type
61	c	1432	U
61	c	1433	G
61	c	1436	A
61	c	1445	G
61	c	1447	C
61	c	1458	G
61	c	1459	C
61	c	1460	A
61	c	1469	A
61	c	1471	A
61	c	1472	C
61	c	1474	G
61	c	1478	G
61	c	1481	C
61	c	1489	U
61	c	1490	C
61	c	1491	U
61	c	1492	A
61	c	1496	U
61	c	1510	U
61	c	1516	A
61	c	1521	G
61	c	1523	G
61	c	1524	A
61	c	1530	C
61	c	1535	U
61	c	1536	G
61	c	1537	C
61	c	1539	G
61	c	1542	G
61	c	1557	U
61	c	1559	A
61	c	1567	U
61	c	1568	C
61	c	1572	OMG
61	c	1573	A
61	c	1575	G7M
61	c	1601	G
61	c	1616	G
61	c	1619	C
61	c	1631	A
61	c	1633	A

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Mol	Chain	Res	Type
61	c	1634	C
61	c	1635	A
61	c	1657	U
61	c	1658	G
61	c	1678	A
61	c	1680	G
61	c	1681	A
61	c	1682	U
61	c	1683	C
61	c	1684	U
61	c	1687	U
61	c	1716	C
61	c	1717	G
61	c	1755	A
61	c	1756	A
61	c	1762	A
61	c	1766	A
61	c	1769	U
61	c	1780	G
61	c	1782	MA6
61	c	1792	G
61	c	1793	G
61	c	1794	A
61	c	1796	C
61	c	1799	U

All (18) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
11	AA	601	U
11	AA	619	A
11	AA	873	C
11	AA	916	G
11	AA	1016	C
11	AA	1033	U
11	AA	1235	U
11	AA	1562	C
11	AA	2101	C
11	AA	2487	U
11	AA	2500	A
11	AA	2501	U
11	AA	2535	A

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Mol	Chain	Res	Type
11	AA	2971	A
11	AA	3121	U
11	AA	3206	C
14	BB	1	G
14	BB	72	A

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

68 non-standard protein/DNA/RNA residues are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
11	A2M	AA	817	11,86	18,25,26	3.58	8 (44%)	18,36,39	3.38	3 (16%)
61	A2M	c	796	61	18,25,26	3.59	8 (44%)	18,36,39	3.36	4 (22%)
61	MA6	c	1781	61	18,26,27	1.03	2 (11%)	19,38,41	3.40	2 (10%)
61	G7M	c	1575	61	20,26,27	2.47	7 (35%)	17,39,42	1.14	1 (5%)
11	A2M	AA	2220	11	18,25,26	3.58	8 (44%)	18,36,39	3.36	3 (16%)
11	5MC	AA	2278	11,86	18,22,23	0.51	0	26,32,35	0.64	0
61	B8N	c	1191	61	24,29,30	3.07	5 (20%)	29,42,45	1.82	5 (17%)
61	OMC	c	1639	61,86	19,22,23	0.49	0	26,31,34	0.58	0
11	OMU	AA	1888	11	19,22,23	3.08	8 (42%)	26,31,34	1.71	5 (19%)
15	YYG	Bb	37	15	31,42,43	1.78	3 (9%)	33,62,65	2.02	11 (33%)
11	OMU	AA	2347	11	19,22,23	3.11	8 (42%)	26,31,34	1.66	5 (19%)
11	OMC	AA	2337	11	19,22,23	0.50	0	26,31,34	0.70	0
11	OMG	AA	908	11	18,26,27	1.13	2 (11%)	19,38,41	0.88	1 (5%)
11	A2M	AA	649	11	18,25,26	3.57	8 (44%)	18,36,39	3.34	3 (16%)
11	OMC	AA	2959	11,86	19,22,23	0.52	0	26,31,34	0.73	0
11	A2M	AA	1449	11,86	18,25,26	3.62	8 (44%)	18,36,39	3.31	4 (22%)
61	4AC	c	1773	61	21,24,25	3.59	10 (47%)	29,34,37	1.61	5 (17%)
61	A2M	c	619	61,86	18,25,26	3.61	8 (44%)	18,36,39	3.39	3 (16%)
61	A2M	c	420	61	18,25,26	3.59	8 (44%)	18,36,39	3.32	4 (22%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
11	A2M	AA	2281	11	18,25,26	3.61	8 (44%)	18,36,39	3.46	4 (22%)
11	OMG	AA	2791	11	18,26,27	1.11	2 (11%)	19,38,41	0.88	1 (5%)
11	OMG	AA	1450	11	18,26,27	1.10	2 (11%)	19,38,41	0.86	1 (5%)
11	OMU	AA	2724	11	19,22,23	3.08	8 (42%)	26,31,34	1.64	5 (19%)
11	OMG	AA	2793	11	18,26,27	1.10	2 (11%)	19,38,41	0.85	1 (5%)
11	A2M	AA	876	11	18,25,26	3.59	8 (44%)	18,36,39	3.37	4 (22%)
11	OMU	AA	2921	11	19,22,23	3.09	8 (42%)	26,31,34	1.67	4 (15%)
11	A2M	AA	807	11	18,25,26	3.59	8 (44%)	18,36,39	3.37	4 (22%)
11	OMG	AA	2922	11	18,26,27	1.13	2 (11%)	19,38,41	0.88	1 (5%)
61	A2M	c	100	61,86	18,25,26	3.59	8 (44%)	18,36,39	3.32	3 (16%)
61	OMC	c	414	61	19,22,23	0.52	0	26,31,34	0.66	0
61	OMG	c	1126	61	18,26,27	1.13	2 (11%)	19,38,41	0.88	1 (5%)
61	OMG	c	1428	61	18,26,27	1.12	2 (11%)	19,38,41	0.89	1 (5%)
11	A2M	AA	2946	11,86	18,25,26	3.56	8 (44%)	18,36,39	3.35	3 (16%)
61	OMU	c	1269	61	19,22,23	3.12	8 (42%)	26,31,34	1.68	5 (19%)
61	OMG	c	1572	61	18,26,27	1.14	2 (11%)	19,38,41	0.93	1 (5%)
11	OMU	AA	2421	11	19,22,23	3.10	8 (42%)	26,31,34	1.66	4 (15%)
11	1MA	AA	645	11,86	16,25,26	1.53	2 (12%)	18,37,40	1.15	3 (16%)
11	OMG	AA	2288	11	18,26,27	1.10	2 (11%)	19,38,41	0.85	1 (5%)
11	OMG	AA	867	11	18,26,27	1.10	2 (11%)	19,38,41	0.84	1 (5%)
61	OMG	c	562	61	18,26,27	1.11	2 (11%)	19,38,41	0.98	1 (5%)
61	4AC	c	1280	61	21,24,25	3.60	10 (47%)	29,34,37	1.60	5 (17%)
11	UR3	AA	2634	11	19,22,23	2.93	6 (31%)	26,32,35	1.27	1 (3%)
11	5MC	AA	2870	11,88	18,22,23	0.62	0	26,32,35	0.61	0
11	OMC	AA	650	11	19,22,23	0.49	0	26,31,34	0.68	0
11	OMC	AA	663	11	19,22,23	0.50	0	26,31,34	0.69	0
12	DDE	Aa	699	12	14,20,21	1.01	1 (7%)	14,28,30	1.15	2 (14%)
61	OMC	c	1007	61	19,22,23	0.50	0	26,31,34	0.66	0
61	A2M	c	974	61	18,25,26	3.59	8 (44%)	18,36,39	3.39	3 (16%)
61	A2M	c	28	61	18,25,26	3.54	8 (44%)	18,36,39	3.42	4 (22%)
61	OMG	c	1271	61	18,26,27	1.09	2 (11%)	19,38,41	0.85	1 (5%)
11	OMG	AA	805	11	18,26,27	1.10	2 (11%)	19,38,41	0.92	1 (5%)
11	OMC	AA	2197	11,88	19,22,23	0.47	0	26,31,34	0.64	0
11	1MA	AA	2142	11,86	16,25,26	0.90	2 (12%)	18,37,40	1.08	2 (11%)
11	A2M	AA	2256	11	18,25,26	3.58	8 (44%)	18,36,39	3.53	6 (33%)
61	A2M	c	541	61	18,25,26	3.58	8 (44%)	18,36,39	3.37	4 (22%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
61	MA6	c	1782	61	18,26,27	1.03	2 (11%)	19,38,41	3.46	2 (10%)
11	OMU	AA	2417	11	19,22,23	3.10	8 (42%)	26,31,34	1.68	5 (19%)
11	OMU	AA	898	11	19,22,23	3.09	8 (42%)	26,31,34	1.64	4 (15%)
11	A2M	AA	2640	11	18,25,26	3.58	8 (44%)	18,36,39	3.33	4 (22%)
11	OMC	AA	2948	11	19,22,23	0.54	0	26,31,34	0.92	2 (7%)
11	OMG	AA	2619	11,15	18,26,27	1.10	2 (11%)	19,38,41	0.85	1 (5%)
11	OMU	AA	2729	11	19,22,23	3.07	8 (42%)	26,31,34	1.66	5 (19%)
11	A2M	AA	1133	11,86	18,25,26	3.59	8 (44%)	18,36,39	3.35	3 (16%)
61	OMU	c	578	61	19,22,23	3.09	8 (42%)	26,31,34	1.67	4 (15%)
11	OMG	AA	2815	11	18,26,27	1.10	2 (11%)	19,38,41	0.87	1 (5%)
11	OMC	AA	1437	11,86	19,22,23	0.51	0	26,31,34	0.81	1 (3%)
11	A2M	AA	2280	11	18,25,26	3.58	8 (44%)	18,36,39	3.36	4 (22%)
61	A2M	c	436	61	18,25,26	3.60	8 (44%)	18,36,39	3.36	4 (22%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
11	A2M	AA	817	11,86	-	2/5/27/28	0/3/3/3
61	A2M	c	796	61	-	0/5/27/28	0/3/3/3
61	MA6	c	1781	61	-	1/7/29/30	0/3/3/3
61	G7M	c	1575	61	-	3/3/25/26	0/3/3/3
11	A2M	AA	2220	11	-	1/5/27/28	0/3/3/3
11	5MC	AA	2278	11,86	-	0/7/25/26	0/2/2/2
61	B8N	c	1191	61	-	8/16/34/35	0/2/2/2
61	OMC	c	1639	61,86	-	0/9/27/28	0/2/2/2
11	OMU	AA	1888	11	-	0/9/27/28	0/2/2/2
15	YYG	Bb	37	15	-	14/20/42/43	0/3/4/4
11	OMU	AA	2347	11	-	1/9/27/28	0/2/2/2
11	OMC	AA	2337	11	-	1/9/27/28	0/2/2/2
11	OMG	AA	908	11	-	0/5/27/28	0/3/3/3
11	A2M	AA	649	11	-	1/5/27/28	0/3/3/3
11	OMC	AA	2959	11,86	-	0/9/27/28	0/2/2/2
11	A2M	AA	1449	11,86	-	0/5/27/28	0/3/3/3
61	4AC	c	1773	61	-	2/11/29/30	0/2/2/2
61	A2M	c	619	61,86	-	2/5/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
61	A2M	c	420	61	-	1/5/27/28	0/3/3/3
11	A2M	AA	2281	11	-	3/5/27/28	0/3/3/3
11	OMG	AA	2791	11	-	0/5/27/28	0/3/3/3
11	OMG	AA	1450	11	-	2/5/27/28	0/3/3/3
11	OMU	AA	2724	11	-	1/9/27/28	0/2/2/2
11	OMG	AA	2793	11	-	0/5/27/28	0/3/3/3
11	A2M	AA	876	11	-	0/5/27/28	0/3/3/3
11	OMU	AA	2921	11	-	0/9/27/28	0/2/2/2
11	A2M	AA	807	11	-	2/5/27/28	0/3/3/3
11	OMG	AA	2922	11	-	2/5/27/28	0/3/3/3
61	A2M	c	100	61,86	-	2/5/27/28	0/3/3/3
61	OMC	c	414	61	-	1/9/27/28	0/2/2/2
61	OMG	c	1126	61	-	0/5/27/28	0/3/3/3
61	OMG	c	1428	61	-	1/5/27/28	0/3/3/3
11	A2M	AA	2946	11,86	-	1/5/27/28	0/3/3/3
61	OMU	c	1269	61	-	5/9/27/28	0/2/2/2
61	OMG	c	1572	61	-	4/5/27/28	0/3/3/3
11	OMU	AA	2421	11	-	1/9/27/28	0/2/2/2
11	1MA	AA	645	11,86	-	0/3/25/26	0/3/3/3
11	OMG	AA	2288	11	-	0/5/27/28	0/3/3/3
11	OMG	AA	867	11	-	0/5/27/28	0/3/3/3
61	OMG	c	562	61	-	2/5/27/28	0/3/3/3
61	4AC	c	1280	61	-	5/11/29/30	0/2/2/2
11	UR3	AA	2634	11	-	0/7/25/26	0/2/2/2
11	5MC	AA	2870	11,88	-	4/7/25/26	0/2/2/2
11	OMC	AA	650	11	-	0/9/27/28	0/2/2/2
11	OMC	AA	663	11	-	1/9/27/28	0/2/2/2
12	DDE	Aa	699	12	-	1/20/21/23	0/1/1/1
61	OMC	c	1007	61	-	0/9/27/28	0/2/2/2
61	A2M	c	974	61	-	1/5/27/28	0/3/3/3
61	A2M	c	28	61	-	2/5/27/28	0/3/3/3
61	OMG	c	1271	61	-	1/5/27/28	0/3/3/3
11	OMG	AA	805	11	-	0/5/27/28	0/3/3/3
11	OMC	AA	2197	11,88	-	4/9/27/28	0/2/2/2
11	1MA	AA	2142	11,86	-	0/3/25/26	0/3/3/3
11	A2M	AA	2256	11	-	3/5/27/28	0/3/3/3
61	A2M	c	541	61	-	3/5/27/28	0/3/3/3
61	MA6	c	1782	61	-	2/7/29/30	0/3/3/3
11	OMU	AA	2417	11	-	0/9/27/28	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
11	OMU	AA	898	11	-	1/9/27/28	0/2/2/2
11	A2M	AA	2640	11	-	1/5/27/28	0/3/3/3
11	OMC	AA	2948	11	-	1/9/27/28	0/2/2/2
11	OMG	AA	2619	11,15	-	1/5/27/28	0/3/3/3
11	OMU	AA	2729	11	-	1/9/27/28	0/2/2/2
11	A2M	AA	1133	11,86	-	0/5/27/28	0/3/3/3
61	OMU	c	578	61	-	2/9/27/28	0/2/2/2
11	OMG	AA	2815	11	-	0/5/27/28	0/3/3/3
11	OMC	AA	1437	11,86	-	1/9/27/28	0/2/2/2
11	A2M	AA	2280	11	-	2/5/27/28	0/3/3/3
61	A2M	c	436	61	-	1/5/27/28	0/3/3/3

All (320) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	AA	807	A2M	C3'-C4'	-8.90	1.30	1.53
61	c	796	A2M	C3'-C4'	-8.82	1.30	1.53
11	AA	817	A2M	C3'-C4'	-8.82	1.30	1.53
61	c	100	A2M	C3'-C4'	-8.81	1.30	1.53
61	c	541	A2M	C3'-C4'	-8.80	1.30	1.53
11	AA	1133	A2M	C3'-C4'	-8.78	1.30	1.53
11	AA	2280	A2M	C3'-C4'	-8.77	1.30	1.53
11	AA	2946	A2M	C3'-C4'	-8.73	1.30	1.53
11	AA	2220	A2M	C3'-C4'	-8.73	1.30	1.53
61	c	420	A2M	C3'-C4'	-8.72	1.30	1.53
61	c	619	A2M	C3'-C4'	-8.71	1.30	1.53
61	c	974	A2M	C3'-C4'	-8.70	1.30	1.53
11	AA	876	A2M	C3'-C4'	-8.69	1.30	1.53
11	AA	1449	A2M	C3'-C4'	-8.68	1.30	1.53
61	c	436	A2M	C3'-C4'	-8.66	1.30	1.53
11	AA	2640	A2M	C3'-C4'	-8.65	1.30	1.53
11	AA	649	A2M	C3'-C4'	-8.63	1.30	1.53
61	c	28	A2M	C3'-C4'	-8.58	1.31	1.53
11	AA	2256	A2M	C3'-C4'	-8.53	1.31	1.53
11	AA	2281	A2M	C3'-C4'	-8.40	1.31	1.53
61	c	1191	B8N	C6-N1	7.94	1.56	1.36
11	AA	2256	A2M	O4'-C4'	7.91	1.62	1.45
61	c	436	A2M	O4'-C4'	7.79	1.62	1.45
61	c	420	A2M	O4'-C4'	7.77	1.62	1.45
11	AA	1449	A2M	O4'-C4'	7.77	1.62	1.45
11	AA	1133	A2M	O4'-C4'	7.76	1.62	1.45
11	AA	2281	A2M	O4'-C4'	7.74	1.62	1.45

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	AA	2946	A2M	O4'-C4'	7.73	1.62	1.45
61	c	974	A2M	O4'-C4'	7.72	1.62	1.45
11	AA	817	A2M	O4'-C4'	7.72	1.62	1.45
61	c	100	A2M	O4'-C4'	7.71	1.62	1.45
11	AA	2640	A2M	O4'-C4'	7.69	1.62	1.45
11	AA	876	A2M	O4'-C4'	7.68	1.62	1.45
61	c	541	A2M	O4'-C4'	7.68	1.62	1.45
61	c	796	A2M	O4'-C4'	7.67	1.62	1.45
61	c	28	A2M	O4'-C4'	7.66	1.62	1.45
11	AA	649	A2M	O4'-C4'	7.65	1.62	1.45
11	AA	2220	A2M	O4'-C4'	7.64	1.62	1.45
11	AA	2280	A2M	O4'-C4'	7.58	1.61	1.45
11	AA	2281	A2M	O4'-C1'	-7.56	1.30	1.41
61	c	1269	OMU	C2-N1	7.55	1.50	1.38
11	AA	807	A2M	O4'-C4'	7.50	1.61	1.45
61	c	619	A2M	O4'-C4'	7.49	1.61	1.45
61	c	1280	4AC	C4-N3	7.48	1.45	1.32
61	c	1773	4AC	C4-N3	7.46	1.45	1.32
11	AA	2347	OMU	C2-N1	7.44	1.50	1.38
61	c	619	A2M	O4'-C1'	-7.37	1.30	1.41
61	c	1191	B8N	C4-N3	-7.31	1.26	1.40
61	c	578	OMU	C2-N1	7.31	1.50	1.38
11	AA	2421	OMU	C2-N1	7.29	1.50	1.38
11	AA	2417	OMU	C2-N1	7.27	1.50	1.38
11	AA	898	OMU	C2-N1	7.27	1.50	1.38
11	AA	2921	OMU	C2-N1	7.25	1.50	1.38
11	AA	2724	OMU	C2-N1	7.23	1.50	1.38
11	AA	1449	A2M	O4'-C1'	-7.22	1.31	1.41
11	AA	1888	OMU	C2-N1	7.22	1.50	1.38
11	AA	2256	A2M	O4'-C1'	-7.20	1.31	1.41
11	AA	649	A2M	O4'-C1'	-7.13	1.31	1.41
11	AA	2729	OMU	C2-N1	7.10	1.49	1.38
11	AA	876	A2M	O4'-C1'	-7.08	1.31	1.41
11	AA	2640	A2M	O4'-C1'	-7.08	1.31	1.41
61	c	974	A2M	O4'-C1'	-7.06	1.31	1.41
11	AA	2634	UR3	C2-N1	7.05	1.48	1.38
11	AA	2280	A2M	O4'-C1'	-7.05	1.31	1.41
11	AA	2220	A2M	O4'-C1'	-7.02	1.31	1.41
61	c	436	A2M	O4'-C1'	-7.02	1.31	1.41
61	c	420	A2M	O4'-C1'	-7.01	1.31	1.41
11	AA	807	A2M	O4'-C1'	-7.01	1.31	1.41
61	c	796	A2M	O4'-C1'	-6.96	1.31	1.41

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	AA	2724	OMU	C2-N3	6.96	1.50	1.38
61	c	28	A2M	O4'-C1'	-6.96	1.31	1.41
11	AA	817	A2M	O4'-C1'	-6.93	1.31	1.41
11	AA	898	OMU	C2-N3	6.92	1.50	1.38
61	c	100	A2M	O4'-C1'	-6.91	1.31	1.41
61	c	1269	OMU	C2-N3	6.91	1.50	1.38
61	c	1280	4AC	C6-C5	6.90	1.51	1.35
11	AA	1133	A2M	O4'-C1'	-6.90	1.31	1.41
11	AA	2421	OMU	C2-N3	6.90	1.50	1.38
61	c	578	OMU	C2-N3	6.90	1.50	1.38
11	AA	2417	OMU	C2-N3	6.89	1.50	1.38
61	c	541	A2M	O4'-C1'	-6.88	1.31	1.41
61	c	1773	4AC	C6-C5	6.87	1.51	1.35
11	AA	1888	OMU	C2-N3	6.85	1.50	1.38
11	AA	2921	OMU	C2-N3	6.84	1.50	1.38
11	AA	2347	OMU	C2-N3	6.83	1.50	1.38
11	AA	2729	OMU	C2-N3	6.83	1.50	1.38
11	AA	2946	A2M	O4'-C1'	-6.82	1.31	1.41
11	AA	2634	UR3	C6-C5	6.81	1.50	1.35
15	Bb	37	YYG	O23-C21	6.50	1.45	1.34
11	AA	2634	UR3	C2-N3	5.94	1.50	1.39
61	c	1191	B8N	C2-N1	5.88	1.56	1.39
11	AA	2921	OMU	C6-C5	5.78	1.48	1.35
11	AA	2417	OMU	C6-C5	5.78	1.48	1.35
11	AA	2729	OMU	C6-C5	5.78	1.48	1.35
11	AA	2421	OMU	C6-C5	5.77	1.48	1.35
61	c	1773	4AC	C7-N4	5.77	1.47	1.37
61	c	578	OMU	C6-C5	5.76	1.48	1.35
61	c	1280	4AC	C7-N4	5.75	1.47	1.37
11	AA	2347	OMU	C6-C5	5.75	1.48	1.35
11	AA	1888	OMU	C6-C5	5.75	1.48	1.35
61	c	1269	OMU	C6-C5	5.74	1.48	1.35
61	c	1191	B8N	C6-C5	5.73	1.43	1.34
11	AA	898	OMU	C6-C5	5.73	1.48	1.35
11	AA	2724	OMU	C6-C5	5.66	1.48	1.35
61	c	1575	G7M	C2-N3	5.59	1.46	1.33
61	c	1280	4AC	C4-N4	5.33	1.47	1.39
61	c	1773	4AC	C4-N4	5.33	1.47	1.39
61	c	1280	4AC	C2-N1	5.29	1.51	1.40
61	c	1773	4AC	C2-N1	5.27	1.51	1.40
61	c	1773	4AC	C2-N3	5.26	1.47	1.36
61	c	1280	4AC	C2-N3	5.22	1.46	1.36

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
15	Bb	37	YYG	O18-C16	5.19	1.45	1.33
61	c	1575	G7M	C4-N3	5.06	1.49	1.37
61	c	1575	G7M	C2-N2	4.75	1.45	1.34
11	AA	2729	OMU	C4-N3	4.35	1.46	1.38
11	AA	898	OMU	C4-N3	4.34	1.46	1.38
11	AA	2921	OMU	C4-N3	4.33	1.46	1.38
11	AA	2724	OMU	C4-N3	4.33	1.46	1.38
11	AA	2417	OMU	C4-N3	4.32	1.46	1.38
61	c	578	OMU	C4-N3	4.32	1.46	1.38
11	AA	1888	OMU	C4-N3	4.28	1.46	1.38
11	AA	2347	OMU	C4-N3	4.27	1.46	1.38
11	AA	2421	OMU	C4-N3	4.27	1.46	1.38
61	c	1280	4AC	CM7-C7	4.26	1.59	1.50
61	c	1280	4AC	C5-C4	4.26	1.49	1.40
61	c	1269	OMU	C4-N3	4.26	1.46	1.38
11	AA	645	1MA	C2-N3	4.22	1.34	1.29
61	c	1773	4AC	CM7-C7	4.17	1.59	1.50
61	c	1773	4AC	C5-C4	4.16	1.49	1.40
61	c	1191	B8N	C1'-C5	4.05	1.59	1.50
61	c	1575	G7M	C6-N1	3.66	1.43	1.37
11	AA	2634	UR3	C6-N1	3.47	1.46	1.38
15	Bb	37	YYG	C4-N3	-3.25	1.34	1.40
61	c	1575	G7M	C5-C6	3.23	1.53	1.45
61	c	436	A2M	C6-N6	3.21	1.45	1.34
61	c	28	A2M	C6-N6	3.20	1.45	1.34
61	c	420	A2M	C6-N6	3.19	1.45	1.34
61	c	796	A2M	C6-N6	3.19	1.45	1.34
11	AA	2220	A2M	C6-N6	3.18	1.45	1.34
11	AA	1133	A2M	C6-N6	3.18	1.45	1.34
11	AA	876	A2M	C6-N6	3.17	1.45	1.34
11	AA	2640	A2M	C6-N6	3.17	1.45	1.34
11	AA	1449	A2M	C6-N6	3.17	1.45	1.34
61	c	541	A2M	C6-N6	3.17	1.45	1.34
11	AA	807	A2M	C6-N6	3.16	1.45	1.34
11	AA	649	A2M	C6-N6	3.16	1.45	1.34
11	AA	2256	A2M	C6-N6	3.16	1.45	1.34
61	c	619	A2M	C6-N6	3.16	1.45	1.34
11	AA	2280	A2M	C6-N6	3.15	1.45	1.34
61	c	974	A2M	C6-N6	3.15	1.45	1.34
61	c	100	A2M	C6-N6	3.15	1.45	1.34
11	AA	2946	A2M	C6-N6	3.14	1.45	1.34
11	AA	817	A2M	C6-N6	3.11	1.45	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
61	c	436	A2M	O3'-C3'	3.10	1.50	1.43
11	AA	2281	A2M	C6-N6	3.08	1.45	1.34
61	c	619	A2M	O3'-C3'	3.06	1.50	1.43
61	c	1269	OMU	C6-N1	2.98	1.45	1.38
11	AA	2921	OMU	C6-N1	2.98	1.45	1.38
11	AA	2347	OMU	C6-N1	2.97	1.45	1.38
11	AA	2640	A2M	O3'-C3'	2.95	1.49	1.43
11	AA	1888	OMU	C6-N1	2.95	1.45	1.38
11	AA	2281	A2M	O3'-C3'	2.95	1.49	1.43
61	c	578	OMU	C6-N1	2.95	1.45	1.38
11	AA	1449	A2M	O3'-C3'	2.95	1.49	1.43
11	AA	2421	OMU	C6-N1	2.94	1.45	1.38
11	AA	876	A2M	O3'-C3'	2.94	1.49	1.43
11	AA	2729	OMU	C6-N1	2.94	1.45	1.38
11	AA	649	A2M	O3'-C3'	2.93	1.49	1.43
11	AA	2417	OMU	C6-N1	2.93	1.45	1.38
61	c	541	A2M	O3'-C3'	2.93	1.49	1.43
11	AA	645	1MA	C6-N6	2.93	1.35	1.27
61	c	974	A2M	O3'-C3'	2.93	1.49	1.43
11	AA	2921	OMU	O4-C4	-2.92	1.18	1.24
11	AA	898	OMU	C6-N1	2.92	1.45	1.38
61	c	796	A2M	O3'-C3'	2.91	1.49	1.43
11	AA	2280	A2M	O3'-C3'	2.91	1.49	1.43
11	AA	2729	OMU	O4-C4	-2.91	1.18	1.24
11	AA	1133	A2M	O3'-C3'	2.90	1.49	1.43
11	AA	2220	A2M	O3'-C3'	2.90	1.49	1.43
61	c	100	A2M	O3'-C3'	2.90	1.49	1.43
11	AA	807	A2M	O3'-C3'	2.90	1.49	1.43
11	AA	1888	OMU	O4-C4	-2.88	1.18	1.24
11	AA	2946	A2M	O3'-C3'	2.87	1.49	1.43
11	AA	2417	OMU	O4-C4	-2.87	1.18	1.24
11	AA	817	A2M	O3'-C3'	2.86	1.49	1.43
61	c	420	A2M	O3'-C3'	2.86	1.49	1.43
11	AA	2724	OMU	O4-C4	-2.86	1.18	1.24
61	c	28	A2M	O3'-C3'	2.86	1.49	1.43
11	AA	2724	OMU	C6-N1	2.86	1.44	1.38
11	AA	2256	A2M	O3'-C3'	2.85	1.49	1.43
11	AA	898	OMU	O4-C4	-2.85	1.19	1.24
11	AA	2421	OMU	O4-C4	-2.85	1.19	1.24
61	c	1269	OMU	O4-C4	-2.85	1.19	1.24
11	AA	2347	OMU	O4-C4	-2.84	1.19	1.24
61	c	578	OMU	O4-C4	-2.83	1.19	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	AA	2922	OMG	C8-N7	-2.80	1.30	1.35
61	c	562	OMG	C8-N7	-2.80	1.30	1.35
11	AA	1450	OMG	C8-N7	-2.78	1.30	1.35
11	AA	867	OMG	C8-N7	-2.75	1.30	1.35
11	AA	908	OMG	C8-N7	-2.75	1.30	1.35
11	AA	2791	OMG	C8-N7	-2.75	1.30	1.35
61	c	1428	OMG	C8-N7	-2.75	1.30	1.35
11	AA	2288	OMG	C8-N7	-2.74	1.30	1.35
11	AA	2619	OMG	C8-N7	-2.73	1.30	1.35
61	c	1575	G7M	C2-N1	2.73	1.44	1.37
11	AA	2281	A2M	C5-C4	-2.70	1.33	1.40
61	c	1126	OMG	C8-N7	-2.69	1.30	1.35
61	c	1271	OMG	C8-N7	-2.67	1.30	1.35
11	AA	2815	OMG	C8-N7	-2.66	1.30	1.35
11	AA	2256	A2M	C5-C4	-2.64	1.33	1.40
11	AA	2946	A2M	C5-C4	-2.64	1.33	1.40
11	AA	817	A2M	C5-C4	-2.64	1.33	1.40
61	c	796	A2M	O2'-C2'	-2.64	1.35	1.42
61	c	100	A2M	C5-C4	-2.63	1.34	1.40
11	AA	1449	A2M	C5-C4	-2.63	1.34	1.40
61	c	796	A2M	C5-C4	-2.63	1.34	1.40
11	AA	807	A2M	O2'-C2'	-2.62	1.35	1.42
61	c	619	A2M	C5-C4	-2.62	1.34	1.40
11	AA	2220	A2M	C5-C4	-2.61	1.34	1.40
61	c	1773	4AC	C6-N1	2.60	1.44	1.38
11	AA	1133	A2M	O2'-C2'	-2.60	1.36	1.42
61	c	1572	OMG	C8-N7	-2.60	1.30	1.35
11	AA	2793	OMG	C8-N7	-2.60	1.30	1.35
11	AA	1133	A2M	C5-C4	-2.60	1.34	1.40
61	c	1782	MA6	C2-N3	2.60	1.36	1.32
61	c	1781	MA6	C2-N3	2.60	1.36	1.32
11	AA	2281	A2M	O2'-C2'	-2.59	1.36	1.42
11	AA	2280	A2M	C5-C4	-2.59	1.34	1.40
61	c	974	A2M	C5-C4	-2.59	1.34	1.40
61	c	1781	MA6	C5-C4	-2.59	1.34	1.40
11	AA	2640	A2M	C5-C4	-2.59	1.34	1.40
61	c	28	A2M	C5-C4	-2.59	1.34	1.40
11	AA	876	A2M	C5-C4	-2.58	1.34	1.40
11	AA	649	A2M	C5-C4	-2.58	1.34	1.40
61	c	541	A2M	C5-C4	-2.58	1.34	1.40
61	c	619	A2M	O2'-C2'	-2.57	1.36	1.42
11	AA	807	A2M	C5-C4	-2.57	1.34	1.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
61	c	420	A2M	C5-C4	-2.57	1.34	1.40
11	AA	817	A2M	O2'-C2'	-2.57	1.36	1.42
11	AA	805	OMG	C8-N7	-2.56	1.30	1.35
61	c	541	A2M	O2'-C2'	-2.55	1.36	1.42
61	c	100	A2M	O2'-C2'	-2.55	1.36	1.42
11	AA	1449	A2M	O2'-C2'	-2.55	1.36	1.42
11	AA	2280	A2M	O2'-C2'	-2.55	1.36	1.42
61	c	1782	MA6	C5-C4	-2.53	1.34	1.40
61	c	436	A2M	C5-C4	-2.53	1.34	1.40
61	c	974	A2M	O2'-C2'	-2.53	1.36	1.42
11	AA	2946	A2M	O2'-C2'	-2.53	1.36	1.42
61	c	1280	4AC	C6-N1	2.53	1.44	1.38
11	AA	876	A2M	O2'-C2'	-2.53	1.36	1.42
11	AA	1888	OMU	C5-C4	2.50	1.49	1.43
11	AA	2421	OMU	C5-C4	2.50	1.49	1.43
61	c	578	OMU	C5-C4	2.49	1.49	1.43
11	AA	2640	A2M	O2'-C2'	-2.48	1.36	1.42
11	AA	2220	A2M	O2'-C2'	-2.48	1.36	1.42
61	c	420	A2M	O2'-C2'	-2.47	1.36	1.42
11	AA	2729	OMU	C5-C4	2.47	1.49	1.43
61	c	1269	OMU	C5-C4	2.47	1.49	1.43
61	c	436	A2M	O2'-C2'	-2.44	1.36	1.42
11	AA	2921	OMU	C5-C4	2.44	1.49	1.43
11	AA	2347	OMU	C5-C4	2.44	1.49	1.43
11	AA	2417	OMU	C5-C4	2.43	1.49	1.43
11	AA	2142	1MA	C8-N7	-2.43	1.30	1.35
11	AA	898	OMU	C5-C4	2.41	1.49	1.43
11	AA	2724	OMU	C5-C4	2.40	1.49	1.43
11	AA	649	A2M	O2'-C2'	-2.40	1.36	1.42
61	c	562	OMG	C5-C6	-2.38	1.42	1.47
61	c	1126	OMG	C5-C6	-2.33	1.42	1.47
11	AA	2280	A2M	C2-N3	2.32	1.35	1.32
61	c	436	A2M	C2-N3	2.31	1.35	1.32
11	AA	2922	OMG	C5-C6	-2.31	1.42	1.47
61	c	1269	OMU	O2-C2	-2.31	1.18	1.23
11	AA	2634	UR3	C4-N3	2.31	1.46	1.40
61	c	974	A2M	C2-N3	2.30	1.35	1.32
11	AA	2417	OMU	O2-C2	-2.30	1.18	1.23
11	AA	2634	UR3	C5-C4	2.29	1.49	1.43
61	c	1428	OMG	C5-C6	-2.29	1.42	1.47
11	AA	2729	OMU	O2-C2	-2.29	1.18	1.23
61	c	541	A2M	C2-N3	2.29	1.35	1.32

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	AA	2421	OMU	O2-C2	-2.29	1.18	1.23
11	AA	2793	OMG	C5-C6	-2.28	1.42	1.47
61	c	100	A2M	C2-N3	2.28	1.35	1.32
11	AA	649	A2M	C2-N3	2.28	1.35	1.32
11	AA	1449	A2M	C2-N3	2.28	1.35	1.32
11	AA	2347	OMU	O2-C2	-2.28	1.18	1.23
11	AA	898	OMU	O2-C2	-2.27	1.18	1.23
61	c	1773	4AC	O7-C7	-2.26	1.18	1.23
11	AA	2815	OMG	C5-C6	-2.26	1.42	1.47
61	c	578	OMU	O2-C2	-2.26	1.18	1.23
61	c	1572	OMG	C5-C6	-2.26	1.42	1.47
11	AA	2288	OMG	C5-C6	-2.26	1.42	1.47
61	c	420	A2M	C2-N3	2.26	1.35	1.32
11	AA	867	OMG	C5-C6	-2.26	1.42	1.47
11	AA	2791	OMG	C5-C6	-2.26	1.42	1.47
61	c	1271	OMG	C5-C6	-2.26	1.42	1.47
61	c	796	A2M	C2-N3	2.26	1.35	1.32
11	AA	908	OMG	C5-C6	-2.25	1.42	1.47
11	AA	2724	OMU	O2-C2	-2.25	1.18	1.23
61	c	1575	G7M	O6-C6	-2.25	1.18	1.23
11	AA	2640	A2M	C2-N3	2.25	1.35	1.32
11	AA	1450	OMG	C5-C6	-2.25	1.42	1.47
11	AA	1888	OMU	O2-C2	-2.24	1.18	1.23
11	AA	807	A2M	C2-N3	2.24	1.35	1.32
11	AA	2921	OMU	O2-C2	-2.24	1.19	1.23
12	Aa	699	DDE	CD2-NE2	2.23	1.39	1.36
11	AA	805	OMG	C5-C6	-2.23	1.42	1.47
11	AA	2220	A2M	C2-N3	2.22	1.35	1.32
11	AA	2946	A2M	C2-N3	2.22	1.35	1.32
11	AA	817	A2M	C2-N3	2.22	1.35	1.32
11	AA	2256	A2M	C2-N3	2.21	1.35	1.32
61	c	1280	4AC	O7-C7	-2.21	1.18	1.23
11	AA	2619	OMG	C5-C6	-2.21	1.42	1.47
11	AA	876	A2M	C2-N3	2.20	1.35	1.32
11	AA	1133	A2M	C2-N3	2.19	1.35	1.32
11	AA	2281	A2M	C2-N3	2.19	1.35	1.32
61	c	28	A2M	C2-N3	2.19	1.35	1.32
61	c	619	A2M	C2-N3	2.15	1.35	1.32
11	AA	2256	A2M	O2'-C2'	-2.14	1.37	1.42
11	AA	2142	1MA	C5-C4	-2.12	1.37	1.43
61	c	28	A2M	O2'-C2'	-2.07	1.37	1.42

All (177) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
61	c	1782	MA6	N1-C6-N6	-13.84	102.49	117.06
61	c	1781	MA6	N1-C6-N6	-13.60	102.74	117.06
61	c	974	A2M	C5-C6-N6	10.66	136.55	120.35
11	AA	2281	A2M	C5-C6-N6	10.59	136.44	120.35
11	AA	817	A2M	C5-C6-N6	10.57	136.41	120.35
61	c	619	A2M	C5-C6-N6	10.55	136.39	120.35
11	AA	807	A2M	C5-C6-N6	10.55	136.38	120.35
11	AA	2256	A2M	C5-C6-N6	10.55	136.38	120.35
11	AA	2220	A2M	C5-C6-N6	10.55	136.38	120.35
11	AA	876	A2M	C5-C6-N6	10.54	136.37	120.35
11	AA	1133	A2M	C5-C6-N6	10.54	136.36	120.35
11	AA	2946	A2M	C5-C6-N6	10.51	136.33	120.35
61	c	796	A2M	C5-C6-N6	10.49	136.29	120.35
11	AA	2280	A2M	C5-C6-N6	10.48	136.28	120.35
61	c	436	A2M	C5-C6-N6	10.48	136.28	120.35
61	c	541	A2M	C5-C6-N6	10.48	136.28	120.35
11	AA	2640	A2M	C5-C6-N6	10.48	136.28	120.35
61	c	28	A2M	C5-C6-N6	10.47	136.26	120.35
61	c	420	A2M	C5-C6-N6	10.46	136.25	120.35
11	AA	649	A2M	C5-C6-N6	10.45	136.23	120.35
61	c	100	A2M	C5-C6-N6	10.42	136.18	120.35
11	AA	1449	A2M	C5-C6-N6	10.35	136.07	120.35
11	AA	2281	A2M	N6-C6-N1	-7.35	103.32	118.57
61	c	974	A2M	N6-C6-N1	-7.30	103.41	118.57
11	AA	817	A2M	N6-C6-N1	-7.28	103.46	118.57
11	AA	2256	A2M	N6-C6-N1	-7.22	103.59	118.57
61	c	541	A2M	N6-C6-N1	-7.19	103.65	118.57
61	c	796	A2M	N6-C6-N1	-7.17	103.68	118.57
61	c	619	A2M	N6-C6-N1	-7.17	103.68	118.57
11	AA	2220	A2M	N6-C6-N1	-7.16	103.72	118.57
11	AA	807	A2M	N6-C6-N1	-7.15	103.73	118.57
11	AA	2280	A2M	N6-C6-N1	-7.15	103.73	118.57
11	AA	2946	A2M	N6-C6-N1	-7.15	103.73	118.57
11	AA	2640	A2M	N6-C6-N1	-7.15	103.74	118.57
61	c	100	A2M	N6-C6-N1	-7.13	103.76	118.57
11	AA	876	A2M	N6-C6-N1	-7.12	103.78	118.57
61	c	28	A2M	N6-C6-N1	-7.12	103.78	118.57
11	AA	649	A2M	N6-C6-N1	-7.12	103.79	118.57
11	AA	1133	A2M	N6-C6-N1	-7.12	103.80	118.57
61	c	420	A2M	N6-C6-N1	-7.11	103.83	118.57
61	c	436	A2M	N6-C6-N1	-7.10	103.84	118.57
11	AA	1449	A2M	N6-C6-N1	-7.05	103.95	118.57
61	c	1773	4AC	CM7-C7-N4	5.66	125.09	115.29

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
61	c	796	A2M	N3-C2-N1	-5.65	119.85	128.68
11	AA	1133	A2M	N3-C2-N1	-5.64	119.87	128.68
11	AA	2946	A2M	N3-C2-N1	-5.61	119.90	128.68
11	AA	817	A2M	N3-C2-N1	-5.61	119.91	128.68
61	c	974	A2M	N3-C2-N1	-5.60	119.92	128.68
11	AA	2256	A2M	N3-C2-N1	-5.60	119.93	128.68
61	c	541	A2M	N3-C2-N1	-5.60	119.93	128.68
11	AA	876	A2M	N3-C2-N1	-5.59	119.94	128.68
11	AA	2220	A2M	N3-C2-N1	-5.59	119.94	128.68
61	c	28	A2M	N3-C2-N1	-5.58	119.96	128.68
61	c	100	A2M	N3-C2-N1	-5.58	119.96	128.68
11	AA	1449	A2M	N3-C2-N1	-5.57	119.98	128.68
11	AA	649	A2M	N3-C2-N1	-5.55	120.00	128.68
61	c	1280	4AC	CM7-C7-N4	5.55	124.90	115.29
11	AA	2280	A2M	N3-C2-N1	-5.54	120.01	128.68
11	AA	2281	A2M	N3-C2-N1	-5.54	120.02	128.68
61	c	619	A2M	N3-C2-N1	-5.52	120.04	128.68
11	AA	2640	A2M	N3-C2-N1	-5.52	120.06	128.68
61	c	1782	MA6	N3-C2-N1	-5.51	120.06	128.68
61	c	420	A2M	N3-C2-N1	-5.46	120.14	128.68
61	c	1781	MA6	N3-C2-N1	-5.44	120.18	128.68
11	AA	807	A2M	N3-C2-N1	-5.39	120.25	128.68
61	c	436	A2M	N3-C2-N1	-5.34	120.33	128.68
11	AA	1888	OMU	C4-N3-C2	-5.19	119.74	126.58
61	c	1191	B8N	C5-C4-N3	5.15	125.71	116.17
11	AA	2421	OMU	C4-N3-C2	-5.14	119.80	126.58
61	c	578	OMU	C4-N3-C2	-5.13	119.81	126.58
11	AA	2417	OMU	C4-N3-C2	-5.13	119.81	126.58
11	AA	2729	OMU	C4-N3-C2	-5.13	119.81	126.58
11	AA	2921	OMU	C4-N3-C2	-5.07	119.90	126.58
11	AA	898	OMU	C4-N3-C2	-5.03	119.95	126.58
61	c	1269	OMU	C4-N3-C2	-5.01	119.97	126.58
11	AA	2347	OMU	C4-N3-C2	-5.00	119.99	126.58
11	AA	2724	OMU	C4-N3-C2	-4.89	120.13	126.58
11	AA	2634	UR3	C4-N3-C2	-4.72	120.11	124.56
61	c	1191	B8N	C4-N3-C2	-4.50	119.77	125.46
15	Bb	37	YYG	O23-C21-N20	3.96	117.76	110.80
15	Bb	37	YYG	C3-N3-C2	-3.93	116.46	120.13
15	Bb	37	YYG	C24-O23-C21	3.89	120.26	115.66
15	Bb	37	YYG	O23-C21-O22	-3.84	118.93	124.58
61	c	1269	OMU	N3-C2-N1	3.76	119.88	114.89
11	AA	2421	OMU	N3-C2-N1	3.75	119.87	114.89

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
11	AA	2347	OMU	N3-C2-N1	3.72	119.83	114.89
11	AA	2417	OMU	N3-C2-N1	3.71	119.81	114.89
11	AA	2921	OMU	N3-C2-N1	3.70	119.80	114.89
11	AA	1888	OMU	N3-C2-N1	3.66	119.75	114.89
11	AA	898	OMU	N3-C2-N1	3.64	119.72	114.89
11	AA	2729	OMU	N3-C2-N1	3.64	119.72	114.89
15	Bb	37	YYG	C3-N3-C4	3.64	123.17	116.71
61	c	578	OMU	N3-C2-N1	3.63	119.71	114.89
15	Bb	37	YYG	O18-C16-C15	3.51	120.49	111.52
11	AA	2724	OMU	N3-C2-N1	3.49	119.53	114.89
11	AA	1888	OMU	C5-C4-N3	3.34	119.84	114.84
61	c	578	OMU	C5-C4-N3	3.32	119.81	114.84
61	c	1191	B8N	C31-N3-C4	3.32	122.20	117.31
11	AA	2417	OMU	C5-C4-N3	3.31	119.78	114.84
11	AA	2729	OMU	C5-C4-N3	3.30	119.78	114.84
11	AA	2421	OMU	C5-C4-N3	3.29	119.76	114.84
11	AA	2921	OMU	C5-C4-N3	3.27	119.73	114.84
11	AA	898	OMU	C5-C4-N3	3.25	119.70	114.84
11	AA	2347	OMU	C5-C4-N3	3.22	119.67	114.84
61	c	1269	OMU	C5-C4-N3	3.19	119.62	114.84
11	AA	2724	OMU	C5-C4-N3	3.16	119.56	114.84
15	Bb	37	YYG	C3'-C2'-C1'	3.11	105.66	100.98
61	c	1191	B8N	N3-C2-N1	3.11	121.15	116.76
11	AA	2256	A2M	O2'-C2'-C1'	3.05	115.14	109.09
61	c	1575	G7M	C2-N1-C6	-3.03	119.53	125.10
61	c	1280	4AC	C6-C5-C4	3.00	120.63	116.96
61	c	578	OMU	O4-C4-C5	-2.91	120.03	125.16
11	AA	2724	OMU	O4-C4-C5	-2.90	120.06	125.16
11	AA	2417	OMU	O4-C4-C5	-2.88	120.09	125.16
11	AA	898	OMU	O4-C4-C5	-2.87	120.12	125.16
11	AA	2921	OMU	O4-C4-C5	-2.86	120.12	125.16
11	AA	1888	OMU	O4-C4-C5	-2.84	120.17	125.16
11	AA	2347	OMU	O4-C4-C5	-2.84	120.17	125.16
15	Bb	37	YYG	C5-C6-N1	2.82	118.16	113.96
11	AA	2729	OMU	O4-C4-C5	-2.81	120.21	125.16
11	AA	2421	OMU	O4-C4-C5	-2.79	120.25	125.16
61	c	1269	OMU	O4-C4-C5	-2.76	120.31	125.16
61	c	1280	4AC	O7-C7-N4	-2.73	117.40	121.82
11	AA	2948	OMC	C1'-N1-C2	2.72	124.50	118.42
61	c	1773	4AC	C5-C4-N3	-2.69	118.27	122.59
61	c	1773	4AC	O7-C7-N4	-2.66	117.51	121.82
61	c	28	A2M	C1'-N9-C4	2.64	131.28	126.64

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
61	c	1773	4AC	C6-C5-C4	2.64	120.19	116.96
61	c	541	A2M	C1'-N9-C4	2.55	131.12	126.64
61	c	1773	4AC	O7-C7-CM7	-2.51	117.40	122.06
61	c	1280	4AC	C5-C4-N3	-2.50	118.57	122.59
11	AA	2281	A2M	O4'-C1'-C2'	-2.50	102.26	106.59
15	Bb	37	YYG	O6-C6-C5	-2.45	119.82	124.17
11	AA	2142	1MA	N1-C6-N6	2.44	125.99	119.77
11	AA	645	1MA	N1-C2-N3	-2.43	123.19	126.02
11	AA	2815	OMG	O6-C6-C5	2.41	129.08	124.37
15	Bb	37	YYG	C8-N7-C5	2.40	107.56	102.99
11	AA	2791	OMG	O6-C6-C5	2.39	129.03	124.37
11	AA	2619	OMG	O6-C6-C5	2.38	129.02	124.37
11	AA	807	A2M	C1'-N9-C4	2.38	130.82	126.64
11	AA	805	OMG	O6-C6-C5	2.38	129.01	124.37
11	AA	2288	OMG	O6-C6-C5	2.37	129.01	124.37
11	AA	645	1MA	C5-C6-N1	2.37	117.43	113.90
11	AA	908	OMG	O6-C6-C5	2.36	128.98	124.37
61	c	1572	OMG	O6-C6-C5	2.35	128.97	124.37
61	c	1271	OMG	O6-C6-C5	2.35	128.96	124.37
61	c	1280	4AC	O7-C7-CM7	-2.35	117.70	122.06
61	c	1428	OMG	O6-C6-C5	2.34	128.95	124.37
61	c	1126	OMG	O6-C6-C5	2.34	128.94	124.37
11	AA	2793	OMG	O6-C6-C5	2.32	128.90	124.37
11	AA	1450	OMG	O6-C6-C5	2.30	128.87	124.37
11	AA	2922	OMG	O6-C6-C5	2.29	128.85	124.37
11	AA	2256	A2M	O4'-C1'-C2'	-2.28	102.63	106.59
11	AA	645	1MA	C8-N7-C5	2.28	107.33	102.99
11	AA	876	A2M	C1'-N9-C4	2.27	130.63	126.64
11	AA	867	OMG	O6-C6-C5	2.26	128.78	124.37
61	c	1269	OMU	C1'-N1-C2	2.25	121.65	117.57
11	AA	1437	OMC	C1'-N1-C2	2.24	123.42	118.42
61	c	562	OMG	O6-C6-C5	2.24	128.75	124.37
11	AA	2729	OMU	O2-C2-N1	-2.22	119.84	122.79
15	Bb	37	YYG	O18-C16-O17	-2.22	119.50	123.84
61	c	436	A2M	C1'-N9-C4	2.17	130.45	126.64
11	AA	2724	OMU	C1'-N1-C2	2.16	121.49	117.57
11	AA	2948	OMC	C1'-N1-C6	-2.14	116.17	120.84
11	AA	2142	1MA	C5-C6-N1	-2.13	110.72	113.90
61	c	1191	B8N	O4-C4-N3	-2.12	116.38	119.98
12	Aa	699	DDE	CAU-CBW-CBI	-2.12	107.00	111.20
11	AA	2280	A2M	C1'-N9-C4	2.11	130.34	126.64
61	c	420	A2M	C1'-N9-C4	2.10	130.33	126.64

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
11	AA	1449	A2M	C1'-N9-C4	2.08	130.30	126.64
11	AA	2347	OMU	C1'-N1-C2	2.08	121.33	117.57
11	AA	2256	A2M	C1'-N9-C4	2.04	130.23	126.64
12	Aa	699	DDE	CBW-CBI-NAD	2.02	117.85	115.28
11	AA	1888	OMU	O2-C2-N1	-2.01	120.11	122.79
11	AA	2640	A2M	C1'-N9-C4	2.01	130.16	126.64
11	AA	2417	OMU	O2-C2-N1	-2.00	120.12	122.79
61	c	796	A2M	C1'-N9-C4	2.00	130.16	126.64

There are no chirality outliers.

All (102) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
11	AA	649	A2M	C1'-C2'-O2'-CM'
11	AA	663	OMC	C1'-C2'-O2'-CM2
11	AA	898	OMU	C1'-C2'-O2'-CM2
11	AA	1450	OMG	O4'-C4'-C5'-O5'
11	AA	2220	A2M	C1'-C2'-O2'-CM'
11	AA	2256	A2M	C1'-C2'-O2'-CM'
11	AA	2337	OMC	C1'-C2'-O2'-CM2
11	AA	2421	OMU	C1'-C2'-O2'-CM2
11	AA	2619	OMG	C1'-C2'-O2'-CM2
11	AA	2640	A2M	C1'-C2'-O2'-CM'
11	AA	2724	OMU	C1'-C2'-O2'-CM2
11	AA	2729	OMU	C1'-C2'-O2'-CM2
11	AA	2946	A2M	C1'-C2'-O2'-CM'
15	Bb	37	YYG	C12-C13-C14-C15
15	Bb	37	YYG	C16-C15-N20-C21
15	Bb	37	YYG	O23-C21-N20-C15
15	Bb	37	YYG	N20-C21-O23-C24
15	Bb	37	YYG	O22-C21-O23-C24
61	c	420	A2M	C1'-C2'-O2'-CM'
61	c	436	A2M	C1'-C2'-O2'-CM'
61	c	541	A2M	C3'-C4'-C5'-O5'
61	c	562	OMG	O4'-C4'-C5'-O5'
61	c	974	A2M	C1'-C2'-O2'-CM'
61	c	1191	B8N	C2'-C1'-C5-C4
61	c	1191	B8N	N34-C33-C34-O35
61	c	1191	B8N	N3-C31-C32-C33
61	c	1271	OMG	C1'-C2'-O2'-CM2
61	c	1280	4AC	C3'-C4'-C5'-O5'
61	c	1572	OMG	O4'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
61	c	1572	OMG	C1'-C2'-O2'-CM2
15	Bb	37	YYG	O22-C21-N20-C15
15	Bb	37	YYG	C13-C14-C15-N20
11	AA	2197	OMC	C2'-C1'-N1-C6
11	AA	2870	5MC	C2'-C1'-N1-C6
11	AA	1450	OMG	C3'-C4'-C5'-O5'
61	c	28	A2M	C3'-C4'-C5'-O5'
61	c	562	OMG	C3'-C4'-C5'-O5'
61	c	619	A2M	O4'-C4'-C5'-O5'
61	c	619	A2M	C3'-C4'-C5'-O5'
61	c	1280	4AC	O4'-C4'-C5'-O5'
61	c	1572	OMG	C3'-C4'-C5'-O5'
61	c	1575	G7M	O4'-C4'-C5'-O5'
61	c	1191	B8N	N34-C33-C34-O36
15	Bb	37	YYG	C15-C16-O18-C19
15	Bb	37	YYG	C13-C14-C15-C16
61	c	28	A2M	O4'-C4'-C5'-O5'
61	c	100	A2M	O4'-C4'-C5'-O5'
61	c	541	A2M	O4'-C4'-C5'-O5'
11	AA	2197	OMC	C2'-C1'-N1-C2
11	AA	2870	5MC	C2'-C1'-N1-C2
61	c	1575	G7M	C3'-C4'-C5'-O5'
15	Bb	37	YYG	O17-C16-O18-C19
61	c	1572	OMG	C4'-C5'-O5'-P
11	AA	2922	OMG	C3'-C4'-C5'-O5'
11	AA	2280	A2M	O4'-C4'-C5'-O5'
15	Bb	37	YYG	N20-C15-C16-O18
61	c	1781	MA6	C5-C6-N6-C9
15	Bb	37	YYG	C14-C15-C16-O18
15	Bb	37	YYG	N20-C15-C16-O17
61	c	541	A2M	C4'-C5'-O5'-P
15	Bb	37	YYG	C14-C15-C16-O17
61	c	1280	4AC	O7-C7-N4-C4
61	c	1280	4AC	CM7-C7-N4-C4
61	c	1773	4AC	O7-C7-N4-C4
61	c	1773	4AC	CM7-C7-N4-C4
11	AA	2281	A2M	O4'-C4'-C5'-O5'
61	c	414	OMC	C1'-C2'-O2'-CM2
11	AA	2197	OMC	O4'-C1'-N1-C6
11	AA	2870	5MC	O4'-C1'-N1-C6
61	c	1782	MA6	C4'-C5'-O5'-P
61	c	1191	B8N	C31-C32-C33-C34

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Mol	Chain	Res	Type	Atoms
11	AA	807	A2M	C3'-C4'-C5'-O5'
61	c	578	OMU	O4'-C4'-C5'-O5'
11	AA	817	A2M	C4'-C5'-O5'-P
11	AA	2197	OMC	O4'-C1'-N1-C2
11	AA	2870	5MC	O4'-C1'-N1-C2
61	c	1269	OMU	O4'-C1'-N1-C6
11	AA	2922	OMG	O4'-C4'-C5'-O5'
61	c	1428	OMG	C4'-C5'-O5'-P
61	c	1575	G7M	C4'-C5'-O5'-P
61	c	1782	MA6	C3'-C4'-C5'-O5'
61	c	1269	OMU	C2'-C1'-N1-C6
11	AA	2256	A2M	O4'-C4'-C5'-O5'
11	AA	2281	A2M	C3'-C2'-O2'-CM'
61	c	1269	OMU	C2'-C1'-N1-C2
61	c	100	A2M	C3'-C4'-C5'-O5'
11	AA	2280	A2M	C3'-C4'-C5'-O5'
12	Aa	699	DDE	CAU-CAT-CE1-NE2
11	AA	2256	A2M	C4'-C5'-O5'-P
61	c	578	OMU	C3'-C4'-C5'-O5'
61	c	1191	B8N	O4'-C1'-C5-C6
61	c	1191	B8N	C31-C32-C33-N34
11	AA	2347	OMU	C2'-C1'-N1-C2
11	AA	2948	OMC	C2'-C1'-N1-C2
61	c	1269	OMU	O4'-C1'-N1-C2
11	AA	1437	OMC	O4'-C4'-C5'-O5'
11	AA	2281	A2M	C3'-C4'-C5'-O5'
11	AA	807	A2M	O4'-C4'-C5'-O5'
11	AA	817	A2M	O4'-C4'-C5'-O5'
61	c	1191	B8N	O4'-C4'-C5'-O5'
61	c	1269	OMU	C4'-C5'-O5'-P
61	c	1280	4AC	C4'-C5'-O5'-P

There are no ring outliers.

45 monomers are involved in 83 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
11	AA	817	A2M	1	0
61	c	1781	MA6	2	0
61	c	1575	G7M	2	0
11	AA	2220	A2M	1	0
61	c	1191	B8N	1	0
15	Bb	37	YYG	4	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
11	AA	2347	OMU	3	0
11	AA	2337	OMC	1	0
11	AA	908	OMG	1	0
11	AA	649	A2M	3	0
11	AA	2959	OMC	2	0
11	AA	1449	A2M	1	0
61	c	1773	4AC	2	0
61	c	420	A2M	4	0
11	AA	2724	OMU	6	0
11	AA	2793	OMG	1	0
11	AA	2922	OMG	1	0
61	c	100	A2M	1	0
61	c	414	OMC	2	0
61	c	1126	OMG	1	0
11	AA	2946	A2M	2	0
61	c	1269	OMU	2	0
11	AA	2421	OMU	3	0
11	AA	867	OMG	1	0
61	c	1280	4AC	4	0
11	AA	2634	UR3	1	0
11	AA	2870	5MC	1	0
11	AA	650	OMC	2	0
11	AA	663	OMC	3	0
12	Aa	699	DDE	1	0
61	c	974	A2M	2	0
61	c	28	A2M	1	0
61	c	1271	OMG	1	0
11	AA	2256	A2M	1	0
61	c	541	A2M	1	0
61	c	1782	MA6	1	0
11	AA	898	OMU	3	0
11	AA	2640	A2M	2	0
11	AA	2948	OMC	4	0
11	AA	2619	OMG	1	0
11	AA	2729	OMU	1	0
11	AA	1133	A2M	1	0
11	AA	2815	OMG	2	0
11	AA	1437	OMC	1	0
61	c	436	A2M	3	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 278 ligands modelled in this entry, 268 are monoatomic - leaving 10 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
89	GTP	Aa	1001	86	26,34,34	1.12	2 (7%)	32,54,54	1.57	7 (21%)
87	SPD	c	1901	-	9,9,9	0.32	0	8,8,8	0.85	0
87	SPD	AA	3404	-	9,9,9	0.33	0	8,8,8	0.79	0
87	SPD	QQ	301	-	9,9,9	0.33	0	8,8,8	0.82	0
90	SO1	Aa	1003	-	35,39,39	1.13	2 (5%)	39,64,64	1.09	4 (10%)
87	SPD	AA	3405	-	9,9,9	0.33	0	8,8,8	0.80	0
87	SPD	AA	3407	-	9,9,9	0.32	0	8,8,8	0.79	0
87	SPD	AA	3403	-	9,9,9	0.32	0	8,8,8	0.92	0
87	SPD	AA	3406	-	9,9,9	0.32	0	8,8,8	0.80	0
87	SPD	AA	3402	-	9,9,9	0.33	0	8,8,8	0.85	0

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
89	GTP	Aa	1001	86	-	3/18/38/38	0/3/3/3
87	SPD	c	1901	-	-	3/7/7/7	-
87	SPD	AA	3404	-	-	2/7/7/7	-
87	SPD	QQ	301	-	-	3/7/7/7	-
90	SO1	Aa	1003	-	-	11/21/104/104	0/7/5/5
87	SPD	AA	3405	-	-	4/7/7/7	-
87	SPD	AA	3407	-	-	2/7/7/7	-
87	SPD	AA	3403	-	-	0/7/7/7	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
87	SPD	AA	3406	-	-	3/7/7/7	-
87	SPD	AA	3402	-	-	5/7/7/7	-

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
89	Aa	1001	GTP	C5-C6	-3.97	1.39	1.47
90	Aa	1003	SO1	C2-C6	-3.80	1.49	1.55
90	Aa	1003	SO1	C16-C22	-2.32	1.51	1.54
89	Aa	1001	GTP	C2-N3	2.19	1.38	1.33

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
89	Aa	1001	GTP	PB-O3B-PG	-4.08	118.83	132.83
89	Aa	1001	GTP	C5-C6-N1	3.13	119.48	113.95
89	Aa	1001	GTP	C3'-C2'-C1'	3.08	105.61	100.98
89	Aa	1001	GTP	C8-N7-C5	2.97	108.64	102.99
89	Aa	1001	GTP	PA-O3A-PB	-2.92	122.79	132.83
89	Aa	1001	GTP	C2-N1-C6	-2.82	119.91	125.10
90	Aa	1003	SO1	C12-C6-C10	-2.73	105.75	107.91
90	Aa	1003	SO1	C52-O56-C56	2.58	118.10	113.67
89	Aa	1001	GTP	O6-C6-C5	-2.10	120.28	124.37
90	Aa	1003	SO1	C61-C56-C55	-2.07	110.26	113.41
90	Aa	1003	SO1	O56-C56-C61	2.05	111.12	106.70

There are no chirality outliers.

All (36) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
89	Aa	1001	GTP	PB-O3A-PA-O5'
90	Aa	1003	SO1	C2-C1-C5-O14
90	Aa	1003	SO1	C2-C1-C5-O15
90	Aa	1003	SO1	C20-C13-C4-C1
90	Aa	1003	SO1	C21-C13-C4-C1
90	Aa	1003	SO1	C20-C13-C4-C12
90	Aa	1003	SO1	C21-C13-C4-C12
87	AA	3405	SPD	C3-C4-C5-N6
90	Aa	1003	SO1	C54-C55-O64-C65
87	AA	3402	SPD	N6-C7-C8-C9
87	AA	3402	SPD	C3-C4-C5-N6

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Mol	Chain	Res	Type	Atoms
87	AA	3406	SPD	C3-C4-C5-N6
87	AA	3404	SPD	C3-C4-C5-N6
87	AA	3405	SPD	C2-C3-C4-C5
90	Aa	1003	SO1	O19-C11-C3-C10
87	c	1901	SPD	N1-C2-C3-C4
90	Aa	1003	SO1	O19-C11-C3-C9
87	AA	3402	SPD	N1-C2-C3-C4
89	Aa	1001	GTP	PA-O3A-PB-O2B
87	AA	3402	SPD	C4-C5-N6-C7
87	QQ	301	SPD	C4-C5-N6-C7
87	QQ	301	SPD	C8-C7-N6-C5
87	AA	3404	SPD	C4-C5-N6-C7
87	AA	3405	SPD	N6-C7-C8-C9
87	AA	3406	SPD	N1-C2-C3-C4
90	Aa	1003	SO1	O19-C11-C3-C1
87	AA	3407	SPD	C2-C3-C4-C5
87	c	1901	SPD	C2-C3-C4-C5
87	AA	3406	SPD	C4-C5-N6-C7
87	AA	3402	SPD	C2-C3-C4-C5
87	QQ	301	SPD	C3-C4-C5-N6
87	AA	3405	SPD	N1-C2-C3-C4
89	Aa	1001	GTP	PG-O3B-PB-O2B
90	Aa	1003	SO1	C4-C1-C5-O15
87	AA	3407	SPD	C8-C7-N6-C5
87	c	1901	SPD	C8-C7-N6-C5

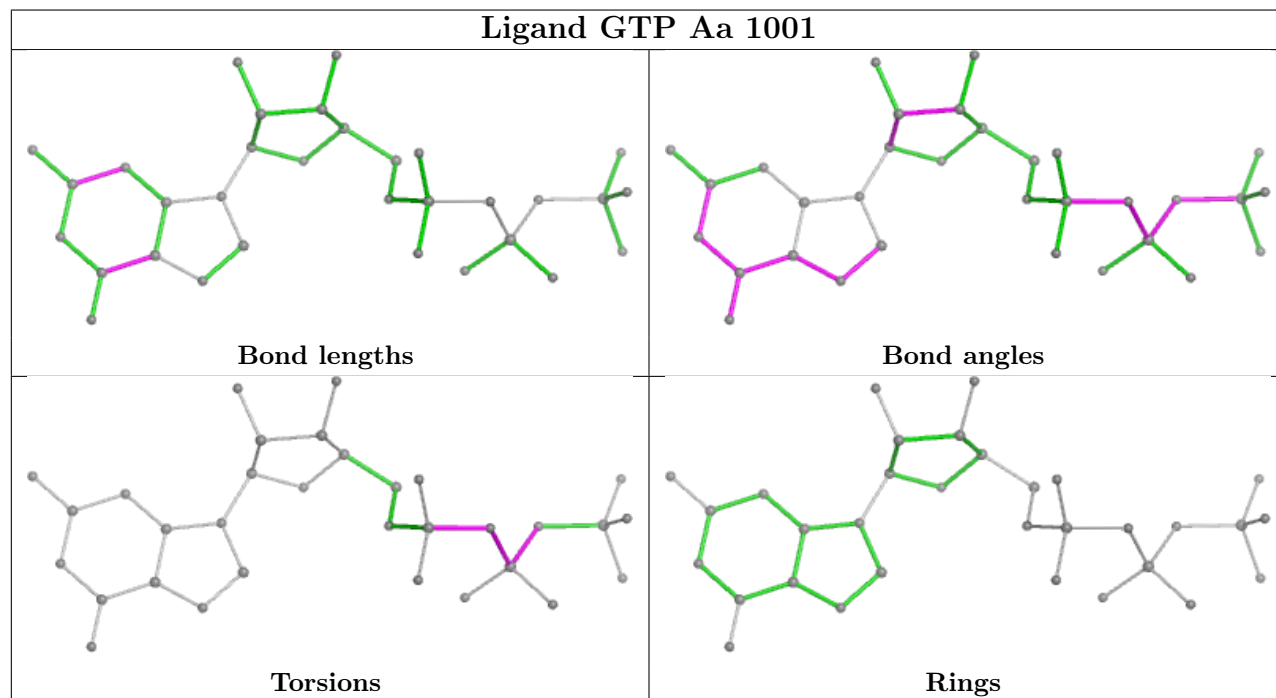
There are no ring outliers.

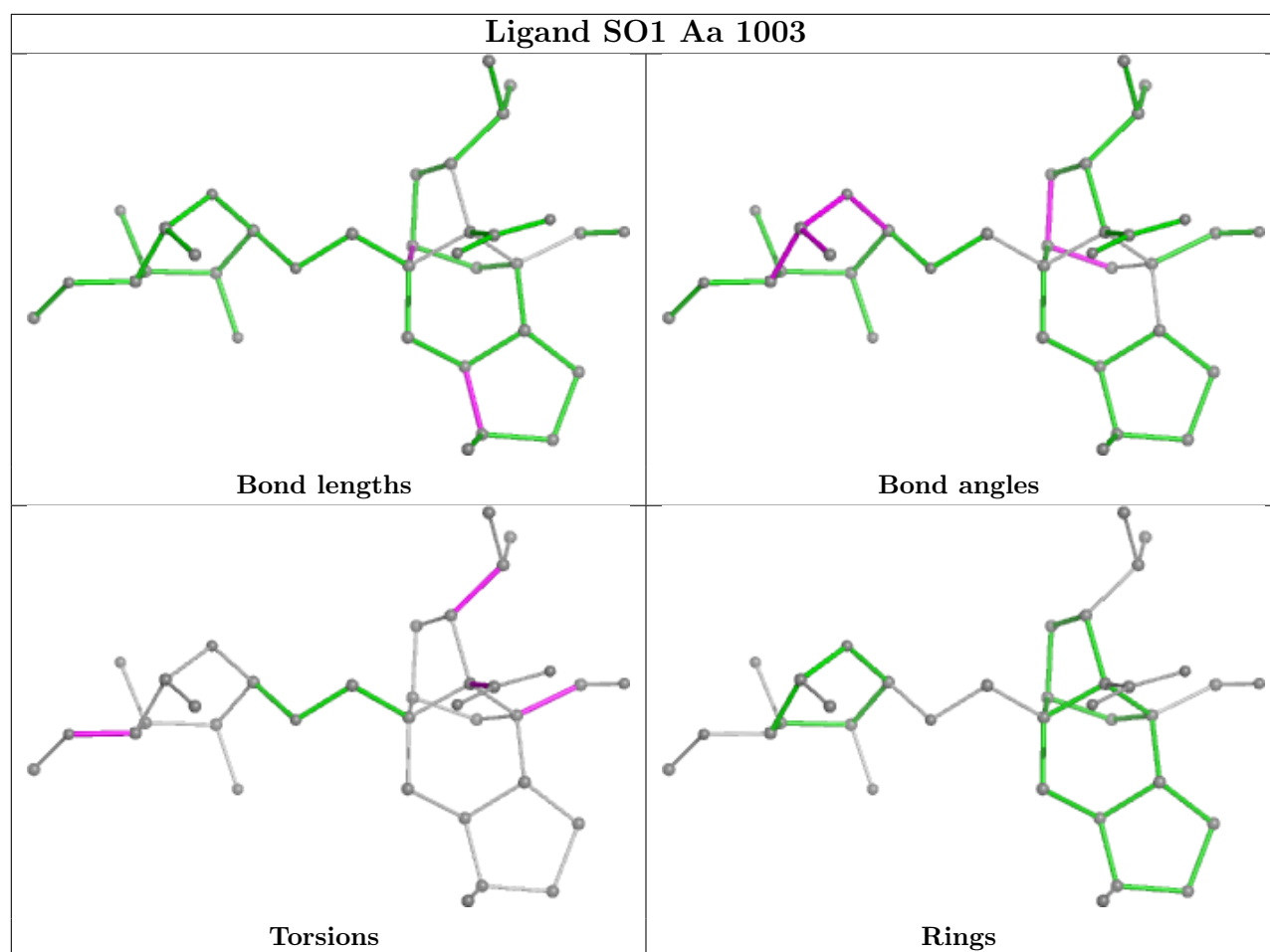
9 monomers are involved in 17 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
89	Aa	1001	GTP	3	0
87	c	1901	SPD	2	0
87	AA	3404	SPD	1	0
90	Aa	1003	SO1	2	0
87	AA	3405	SPD	2	0
87	AA	3407	SPD	3	0
87	AA	3403	SPD	1	0
87	AA	3406	SPD	2	0
87	AA	3402	SPD	1	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In

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





5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

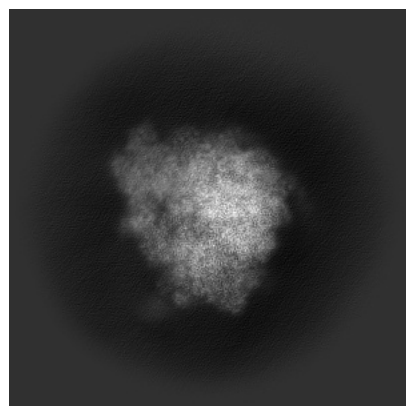
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-16634. These allow visual inspection of the internal detail of the map and identification of artifacts.

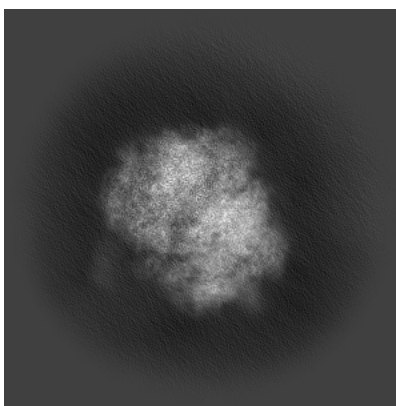
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

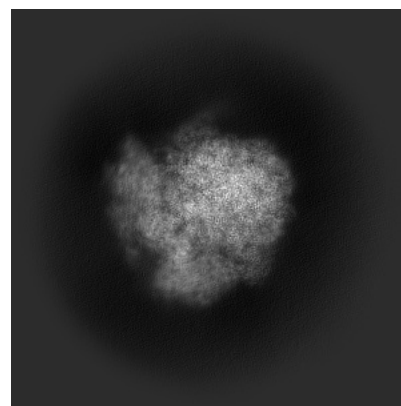
6.1.1 Primary map



X

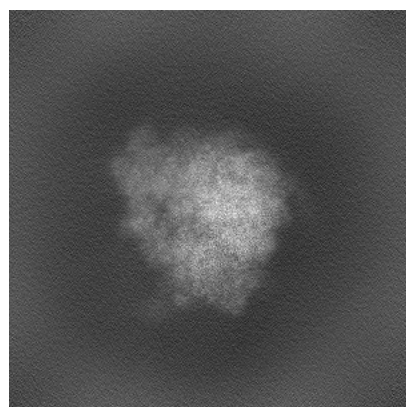


Y

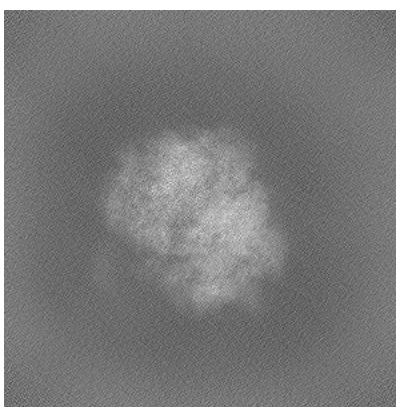


Z

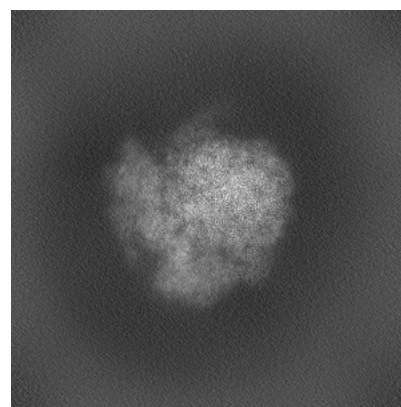
6.1.2 Raw map



X



Y

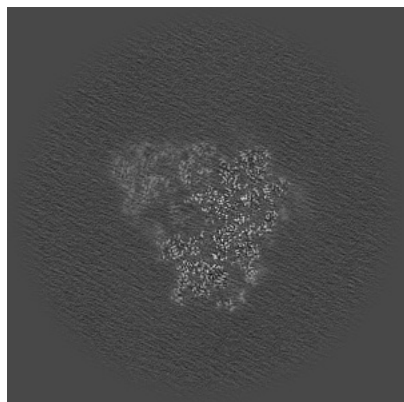


Z

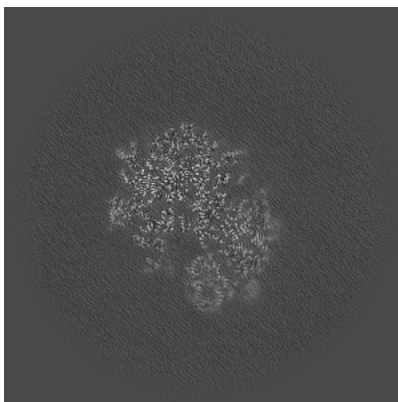
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

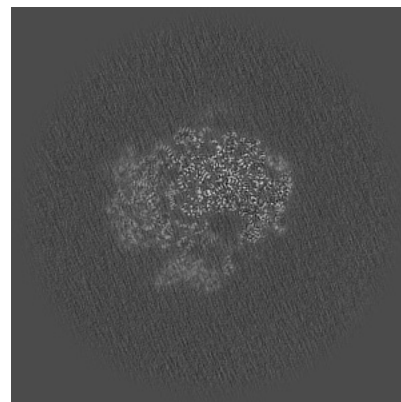
6.2.1 Primary map



X Index: 300

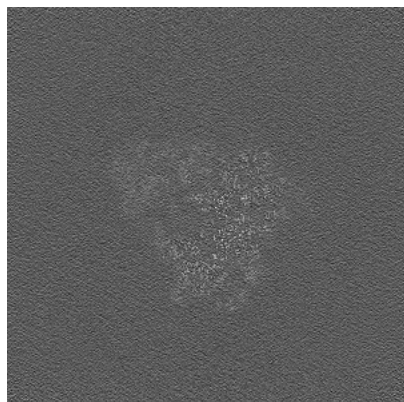


Y Index: 300

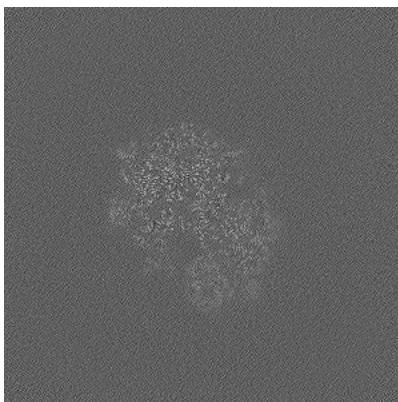


Z Index: 300

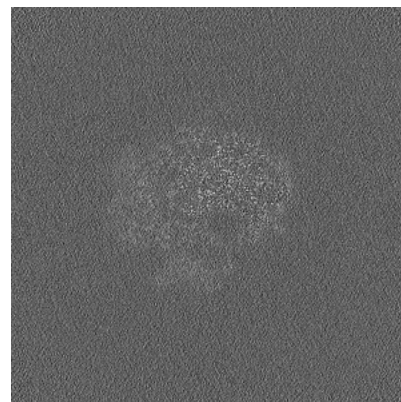
6.2.2 Raw map



X Index: 300



Y Index: 300

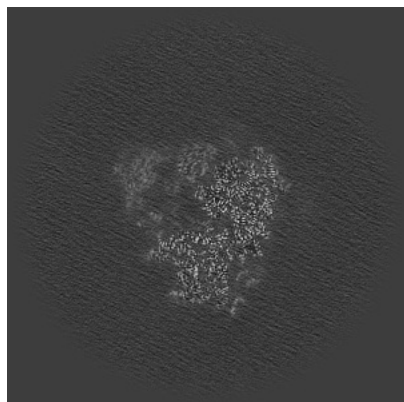


Z Index: 300

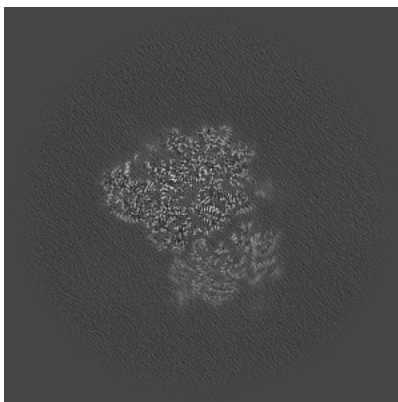
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

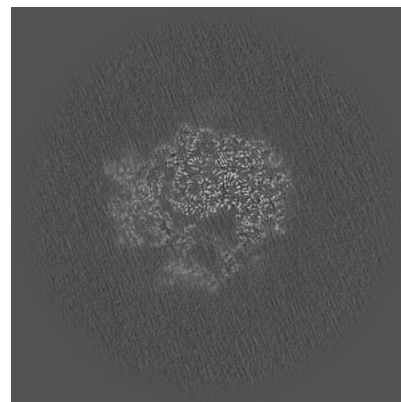
6.3.1 Primary map



X Index: 310

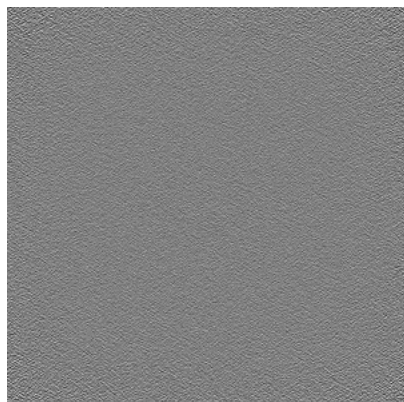


Y Index: 324

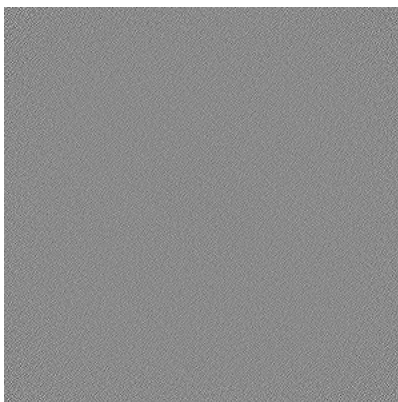


Z Index: 295

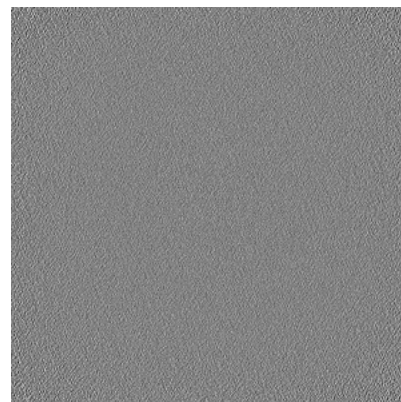
6.3.2 Raw map



X Index: 0



Y Index: 0

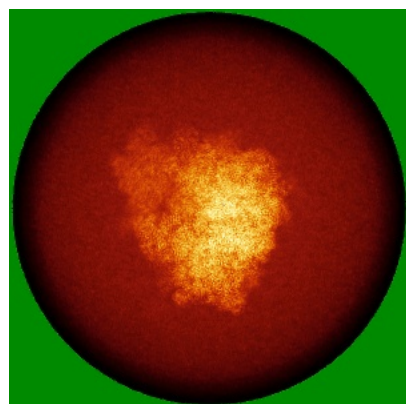


Z Index: 0

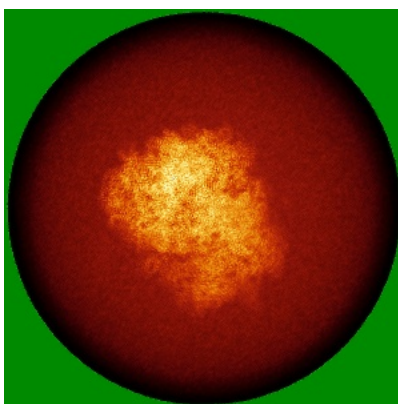
The images above show the largest variance slices of the map in three orthogonal directions.

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

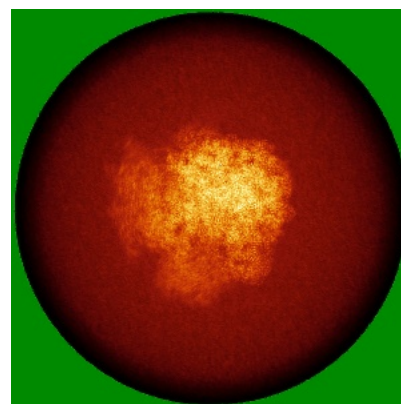
6.4.1 Primary map



X

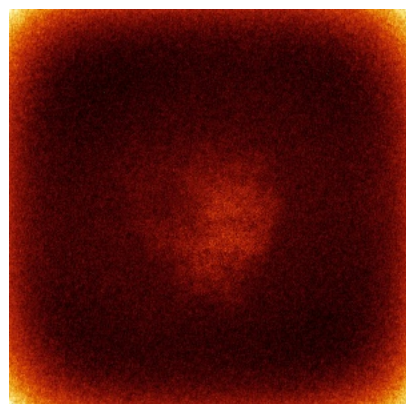


Y

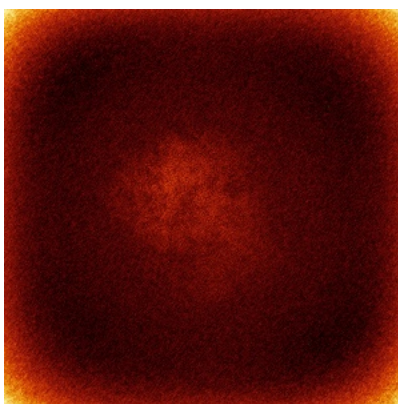


Z

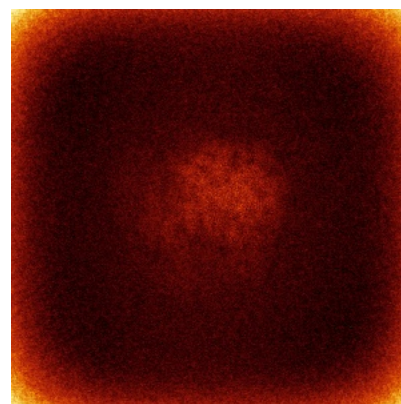
6.4.2 Raw map



X



Y

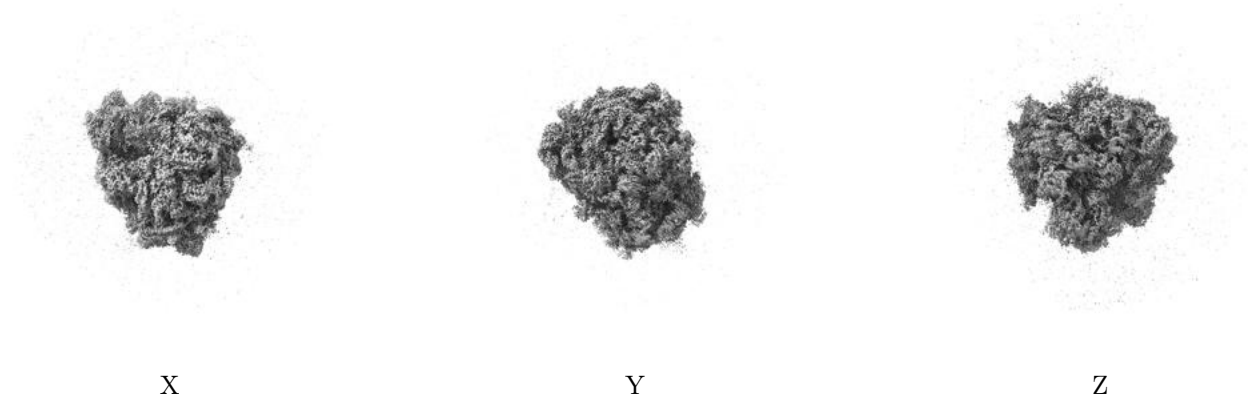


Z

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.

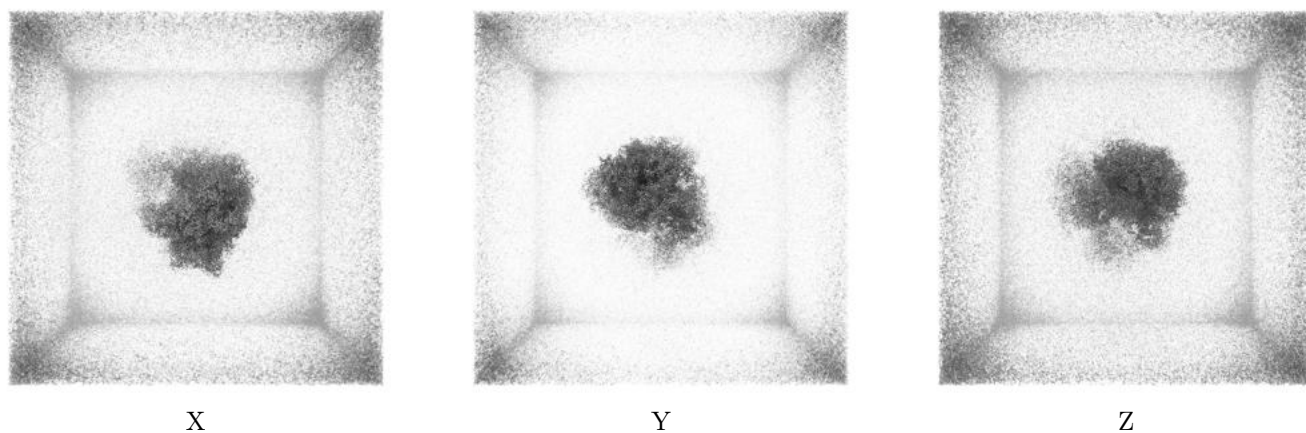
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.18. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



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

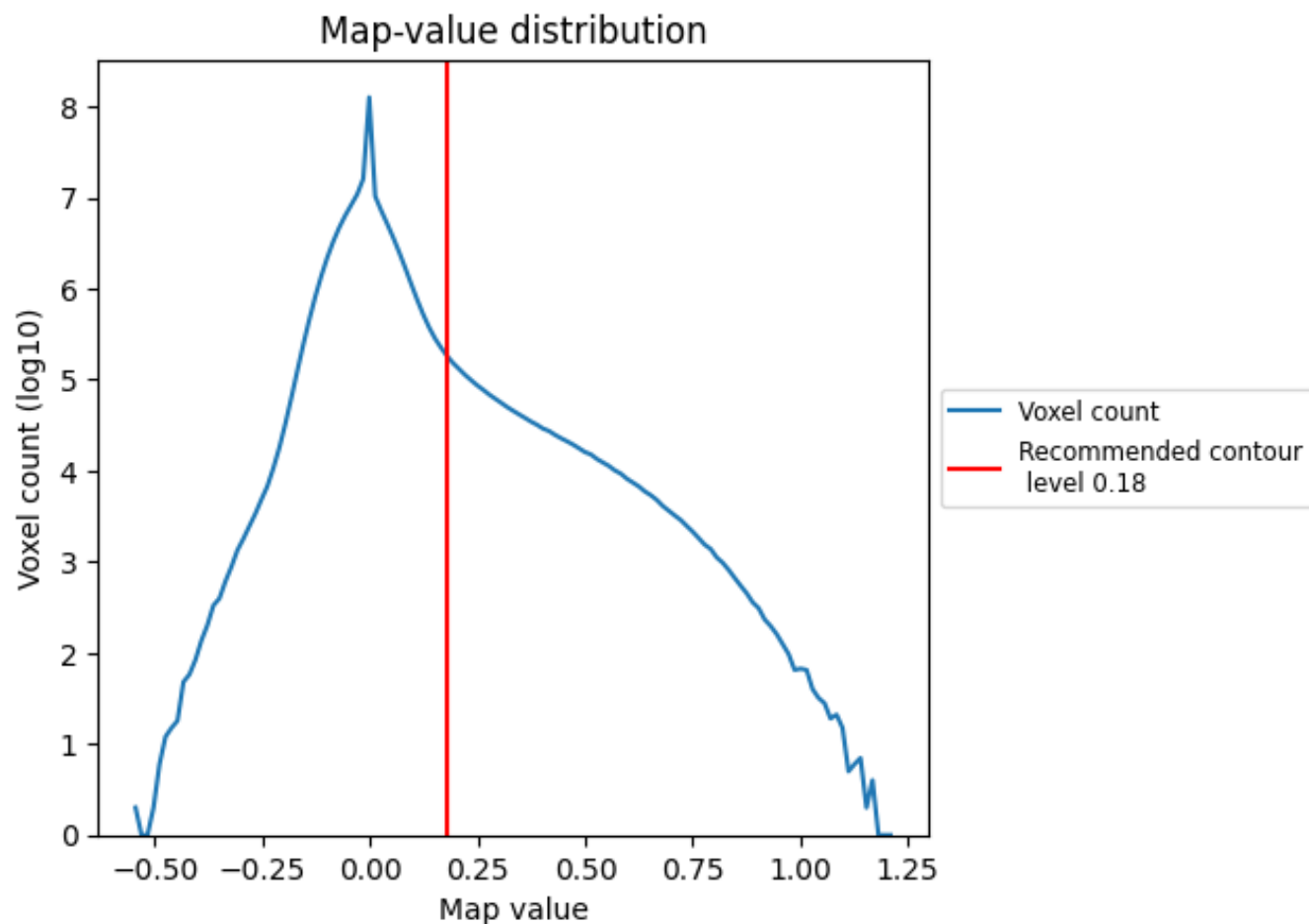
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

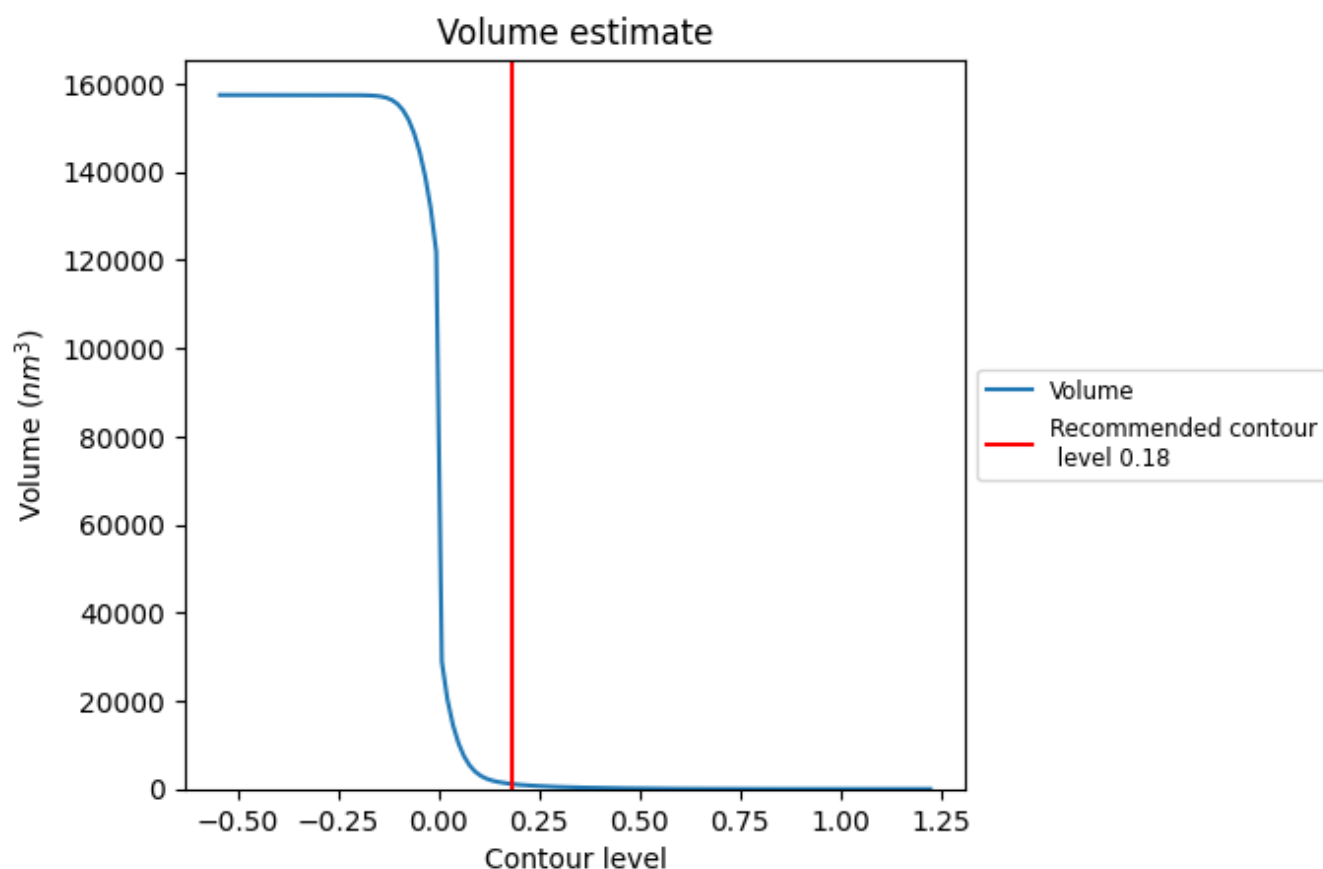
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

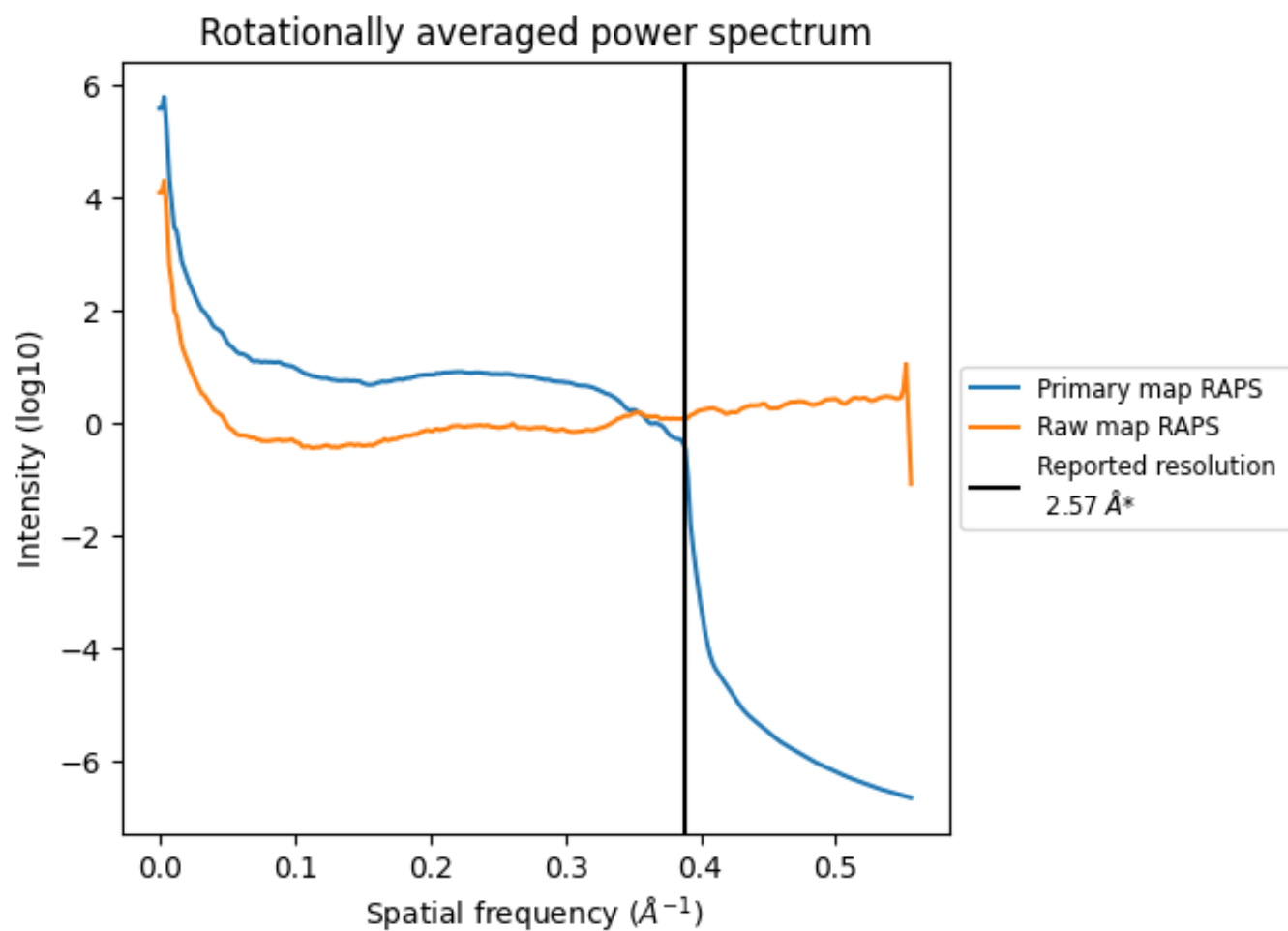
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1149 nm^3 ; this corresponds to an approximate mass of 1038 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 [i](#)

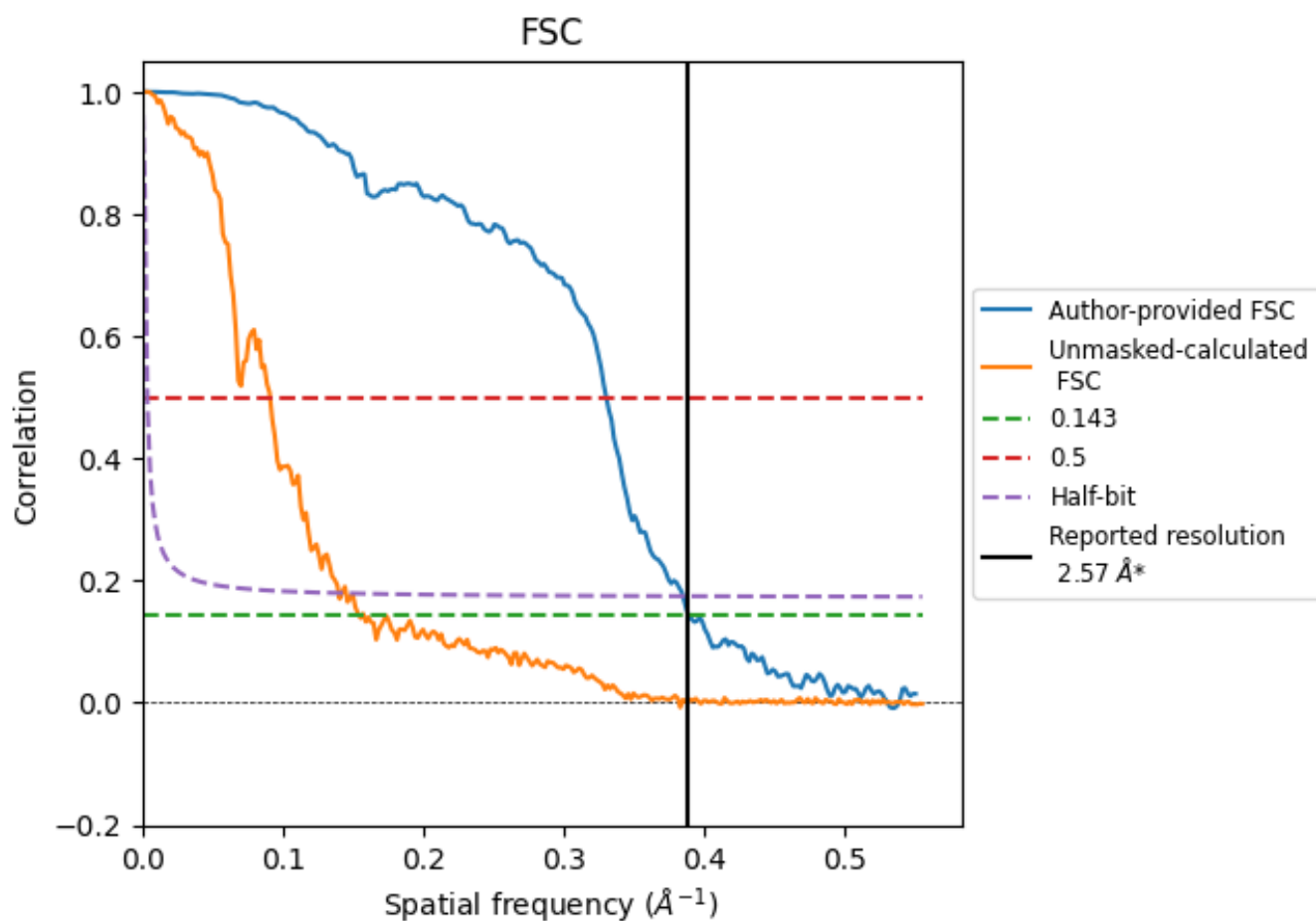


*Reported resolution corresponds to spatial frequency of 0.389 Å⁻¹

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 0.389 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

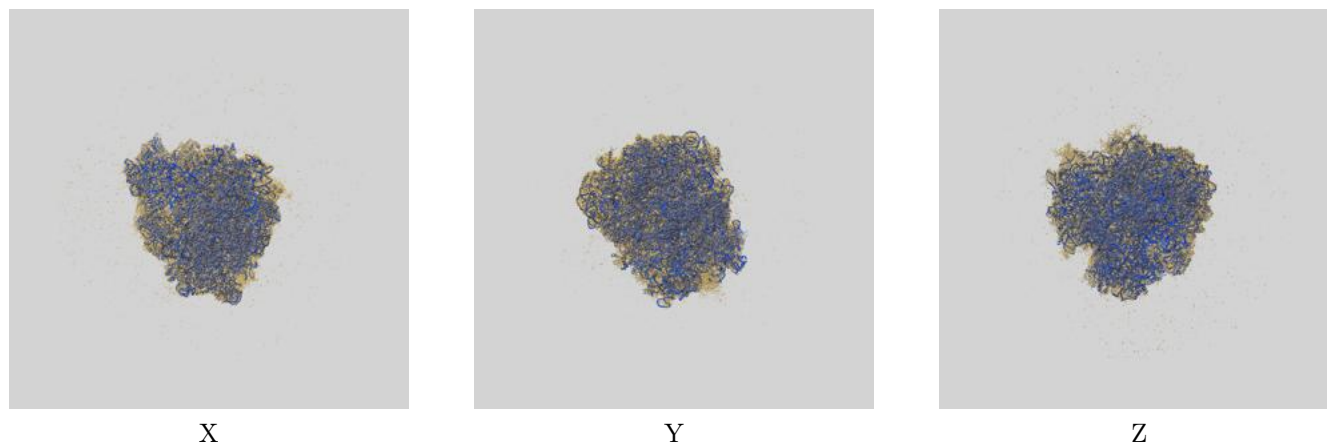
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.57	-	-
Author-provided FSC curve	2.57	3.03	2.60
Unmasked-calculated*	6.47	10.98	7.14

*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 6.47 differs from the reported value 2.57 by more than 10 %

9 Map-model fit [i](#)

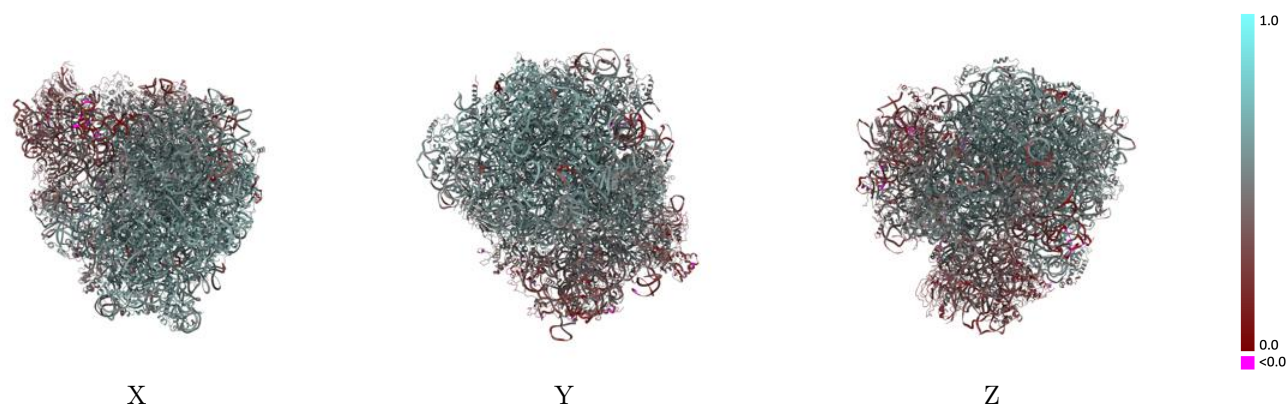
This section contains information regarding the fit between EMDB map EMD-16634 and PDB model 8CG8. Per-residue inclusion information can be found in [section 3](#) on [page 24](#).

9.1 Map-model overlay [i](#)



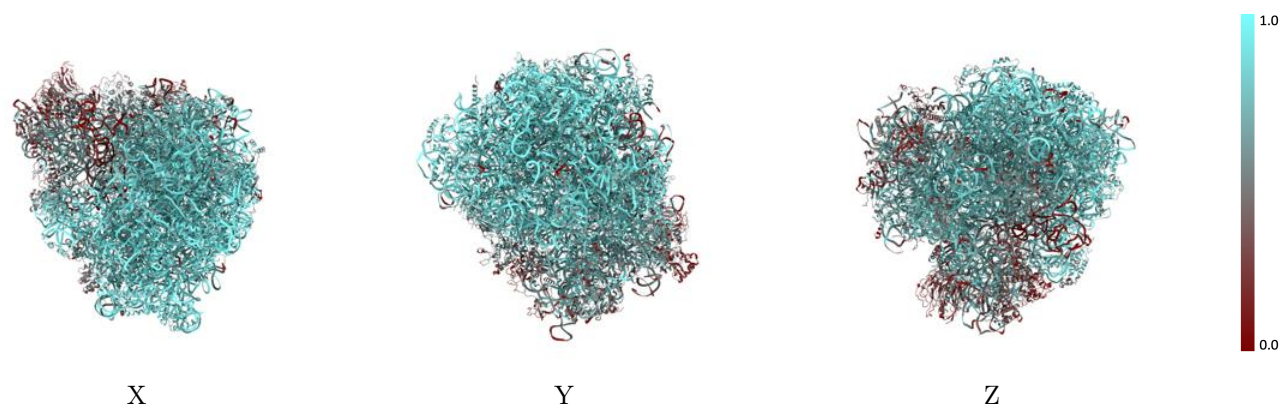
The images above show the 3D surface view of the map at the recommended contour level 0.18 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



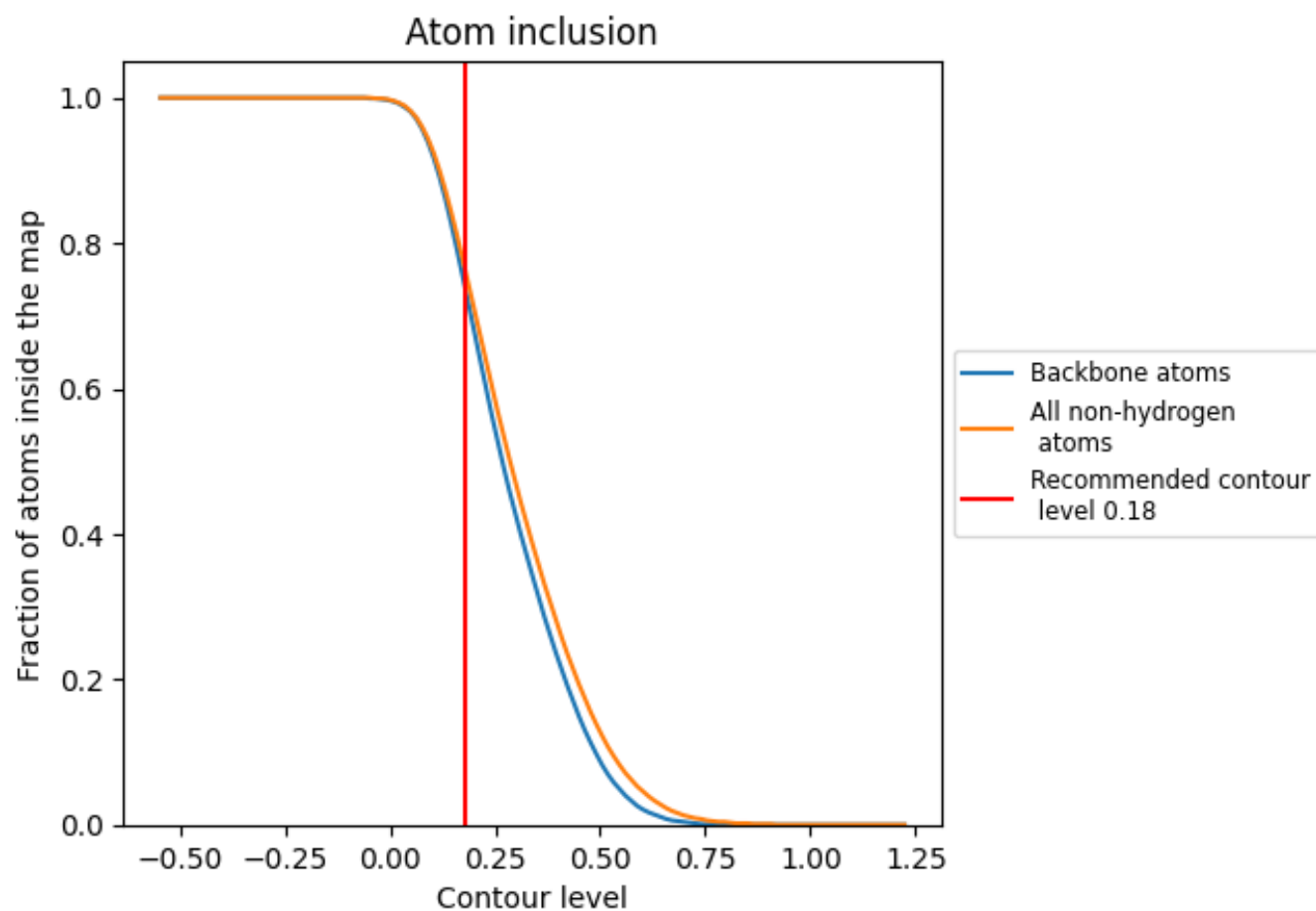
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.18).

9.4 Atom inclusion [i](#)



At the recommended contour level, 74% 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 (0.18) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7610	 0.4990
0	 0.4330	 0.3550
1	 0.1220	 0.2380
2	 0.7430	 0.5060
3	 0.5320	 0.3970
4	 0.3420	 0.3430
5	 0.7470	 0.4350
6	 0.5180	 0.4150
7	 0.2820	 0.2990
8	 0.1510	 0.2250
A	 0.8770	 0.5780
AA	 0.8940	 0.5530
Aa	 0.5450	 0.4560
B	 0.9060	 0.6040
BB	 0.9350	 0.5610
Bb	 0.1860	 0.3440
C	 0.8860	 0.5840
CC	 0.9410	 0.5800
Cc	 0.2720	 0.3330
D	 0.7860	 0.5390
DD	 0.4710	 0.4380
Dd	 0.4560	 0.5040
E	 0.8660	 0.5770
EE	 0.8860	 0.6060
Ee	 0.2300	 0.3270
F	 0.8680	 0.5720
FF	 0.8470	 0.5580
G	 0.7040	 0.4900
GG	 0.8860	 0.5950
H	 0.8460	 0.5850
HH	 0.7420	 0.4960
I	 0.8080	 0.5450
II	 0.8330	 0.5620
J	 0.8460	 0.5800
JJ	 0.8960	 0.5960



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Chain	Atom inclusion	Q-score
K	 0.8730	 0.5900
KK	 0.7400	 0.5130
L	 0.7810	 0.5310
LL	 0.7800	 0.5300
M	 0.8780	 0.5680
MM	 0.8130	 0.5680
N	 0.8230	 0.5380
NN	 0.6740	 0.4800
O	 0.7850	 0.5540
OO	 0.8180	 0.5330
P	 0.7810	 0.5480
PP	 0.8280	 0.5550
Pp	 0.1050	 0.4110
Q	 0.9190	 0.6230
QQ	 0.9110	 0.5890
R	 0.9270	 0.6110
S	 0.8560	 0.5790
T	 0.8560	 0.5670
U	 0.7500	 0.4830
V	 0.9420	 0.6070
W	 0.7080	 0.5060
X	 0.9180	 0.5870
Y	 0.8290	 0.5760
Z	 0.7880	 0.5720
a	 0.8030	 0.5640
b	 0.8210	 0.5810
c	 0.7550	 0.4360
d	 0.6370	 0.4750
e	 0.5420	 0.4150
f	 0.7540	 0.5030
g	 0.5080	 0.3770
h	 0.5530	 0.4090
i	 0.3360	 0.3260
j	 0.3590	 0.3230
k	 0.3330	 0.3210
l	 0.5240	 0.3780
m	 0.6270	 0.4330
n	 0.4570	 0.3030
o	 0.5950	 0.4290
p	 0.6550	 0.4510
q	 0.6700	 0.4740
r	 0.3390	 0.3160

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Chain	Atom inclusion	Q-score
s	 0.4920	 0.3780
t	 0.4670	 0.3680
u	 0.2910	 0.3140
v	 0.4070	 0.3160
w	 0.4900	 0.3590
x	 0.6900	 0.4860
y	 0.7340	 0.5010
z	 0.6790	 0.4950