



Full wwPDB EM Validation Report ⓘ

Mar 23, 2026 – 05:57 AM UTC

PDB ID : 8CIV / pdb_00008civ
EMDB ID : EMD-16684
Title : Translocation intermediate 5 (TI-5) 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 : 2023-02-10
Resolution : 2.47 Å(reported)

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

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

A user guide is available at

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

The types of validation reports are described at

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

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

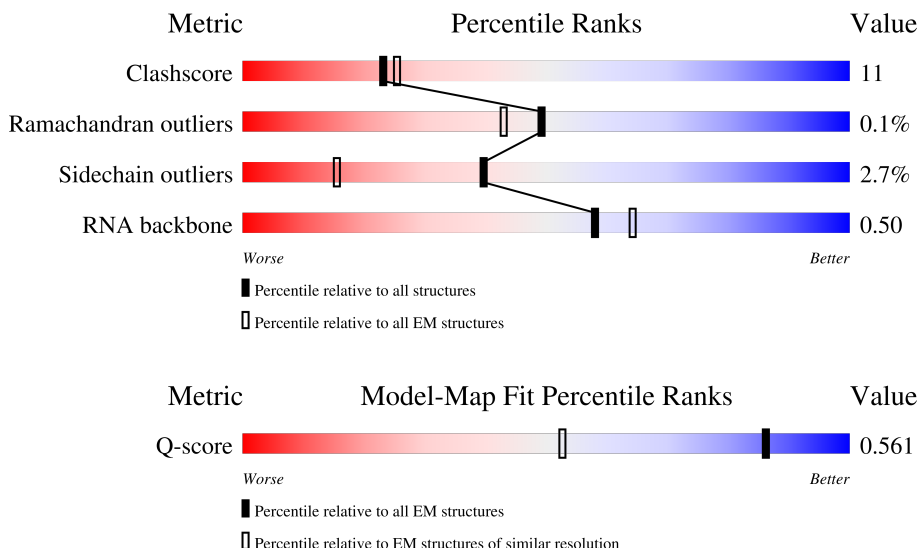
EMDB validation analysis : 0.0.1.dev132
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

1 Overall quality at a glance

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

The reported resolution of this entry is 2.47 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	6086 (1.98 - 2.97)

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	21% 73% 27% .
2	1	108	64% 46% 19% 35%
3	2	119	5% 60% 22% 18%

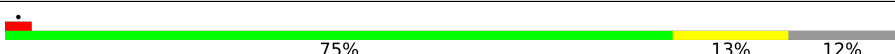
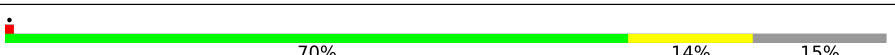
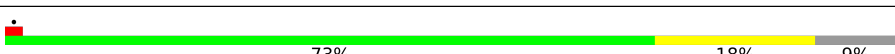
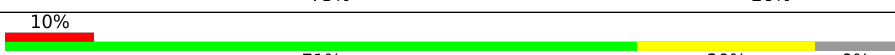
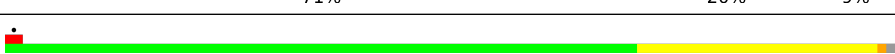
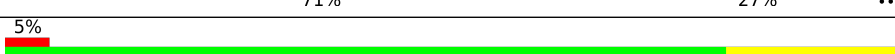
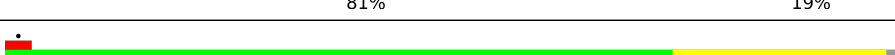
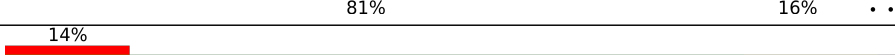
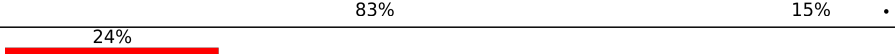
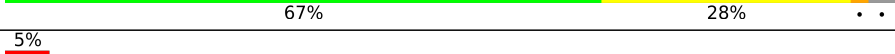
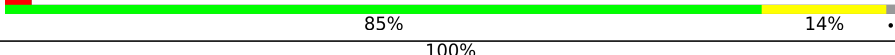
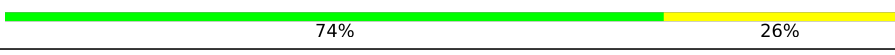
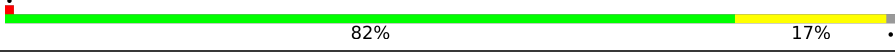
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Mol	Chain	Length	Quality of chain
4	3	82	
5	4	67	
6	5	56	
7	6	63	
8	7	319	
9	8	152	
10	A	199	
11	AA	3396	
12	Aa	842	
13	B	184	
14	BB	121	
15	Bb	76	
16	C	186	
17	CC	158	
18	Cc	77	
19	D	189	
20	DD	312	
21	Dd	39	
22	E	172	
23	EE	254	
24	Ee	165	
25	F	160	
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	93% 46% 52% ..
80	v	144	92% 65% 33% ..
81	w	121	64% 40% 40% • 17%
82	x	87	10% 75% 24% •
83	y	130	82% 16% ..
84	z	145	6% 74% 23% ..

2 Entry composition

There are 91 unique types of molecules in this entry. The entry contains 207374 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	816	Total	C	N	O	S	0	0
			6368	4051	1088	1198	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		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		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	1622	Total	C	N	O	P	0	0
			34613	15487	6148	11356	1622		

- 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	192	Total	Mg	0
			192	192	
86	Aa	1	Total	Mg	0
			1	1	
86	B	1	Total	Mg	0
			1	1	
86	BB	5	Total	Mg	0
			5	5	
86	Bb	1	Total	Mg	0
			1	1	

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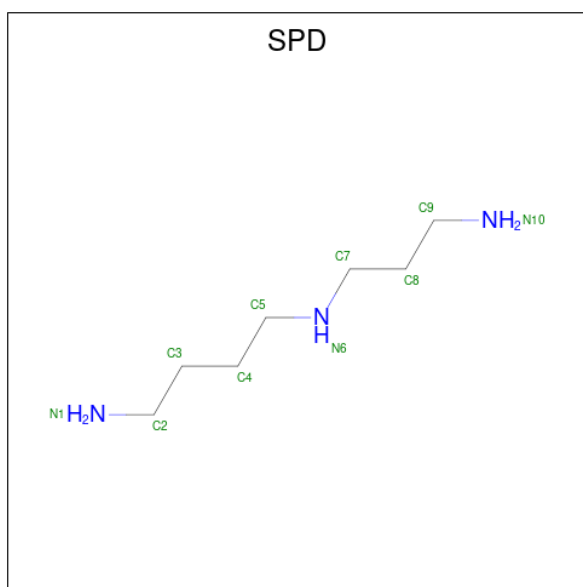
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Mol	Chain	Residues	Atoms		AltConf
86	CC	3	Total 3	Mg 3	0
86	FF	1	Total 1	Mg 1	0
86	H	1	Total 1	Mg 1	0
86	MM	1	Total 1	Mg 1	0
86	QQ	1	Total 1	Mg 1	0
86	c	44	Total 44	Mg 44	0

- Molecule 87 is POTASSIUM ION (CCD ID: K) (formula: K).

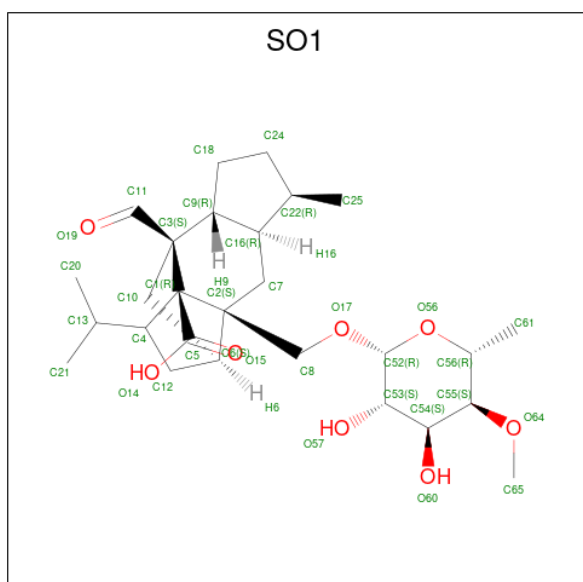
Mol	Chain	Residues	Atoms		AltConf
87	AA	13	Total 13	K 13	0
87	EE	1	Total 1	K 1	0
87	MM	1	Total 1	K 1	0
87	Q	1	Total 1	K 1	0
87	S	1	Total 1	K 1	0
87	a	1	Total 1	K 1	0
87	c	2	Total 2	K 2	0
87	q	1	Total 1	K 1	0

- Molecule 88 is SPERMIDINE (CCD ID: SPD) (formula: C₇H₁₉N₃).



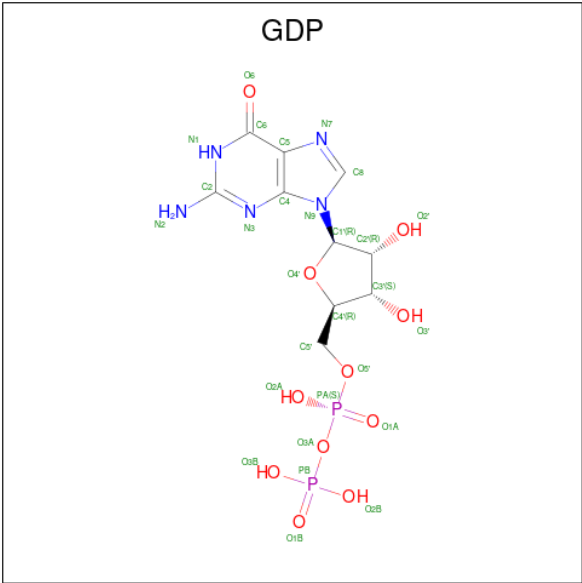
Mol	Chain	Residues	Atoms			AltConf
88	AA	1	Total	C	N	0
			10	7	3	
88	AA	1	Total	C	N	0
			10	7	3	
88	AA	1	Total	C	N	0
			10	7	3	

- Molecule 89 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
89	Aa	1	Total	C	O	0
			35	27	8	

- Molecule 90 is GUANOSINE-5'-DIPHOSPHATE (CCD ID: GDP) (formula: C₁₀H₁₅N₅O₁₁P₂) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
90	Aa	1	Total	C	N	O	P	0
			28	10	5	11	2	

- Molecule 91 is water.

Mol	Chain	Residues	Atoms		AltConf
91	2	2	Total	O	0
			2	2	
91	A	2	Total	O	0
			2	2	
91	AA	748	Total	O	0
			748	748	
91	B	3	Total	O	0
			3	3	
91	BB	12	Total	O	0
			12	12	
91	CC	13	Total	O	0
			13	13	
91	Cc	1	Total	O	0
			1	1	

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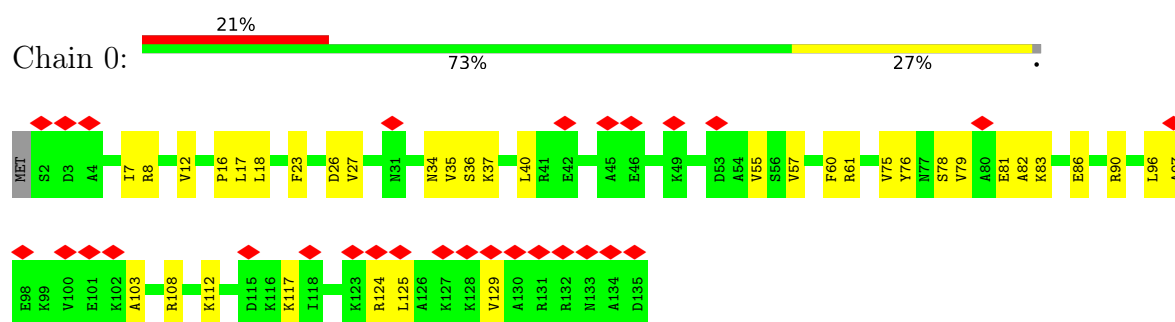
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Mol	Chain	Residues	Atoms		AltConf
91	D	2	Total 2	O 2	0
91	EE	9	Total 9	O 9	0
91	F	3	Total 3	O 3	0
91	FF	3	Total 3	O 3	0
91	GG	2	Total 2	O 2	0
91	H	3	Total 3	O 3	0
91	HH	1	Total 1	O 1	0
91	J	1	Total 1	O 1	0
91	JJ	1	Total 1	O 1	0
91	M	3	Total 3	O 3	0
91	MM	2	Total 2	O 2	0
91	N	1	Total 1	O 1	0
91	Q	4	Total 4	O 4	0
91	QQ	7	Total 7	O 7	0
91	V	2	Total 2	O 2	0
91	c	116	Total 116	O 116	0
91	e	1	Total 1	O 1	0
91	h	3	Total 3	O 3	0
91	o	1	Total 1	O 1	0
91	p	1	Total 1	O 1	0

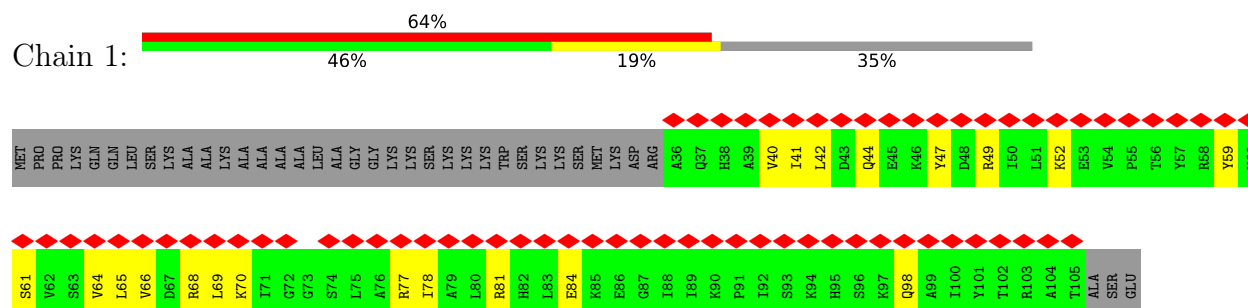
3 Residue-property plots

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.

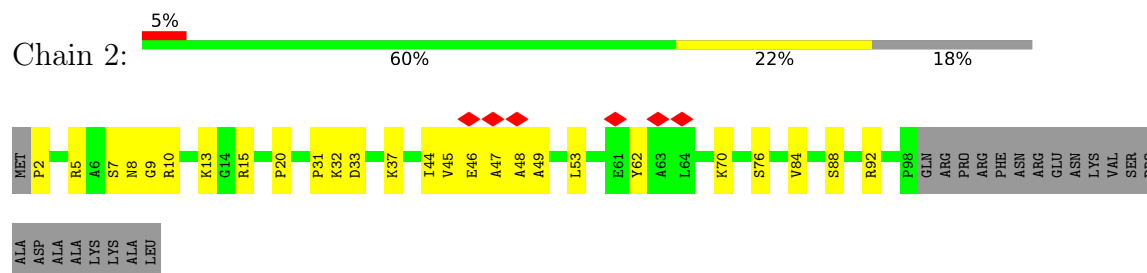
- Molecule 1: 40S ribosomal protein S24-A



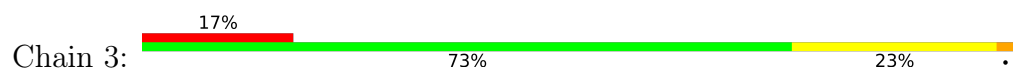
- Molecule 2: 40S ribosomal protein S25-A

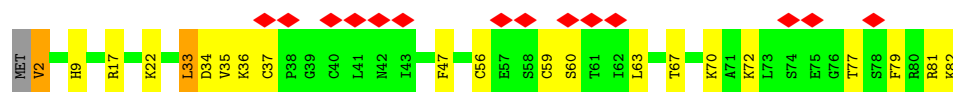


- Molecule 3: 40S ribosomal protein S26

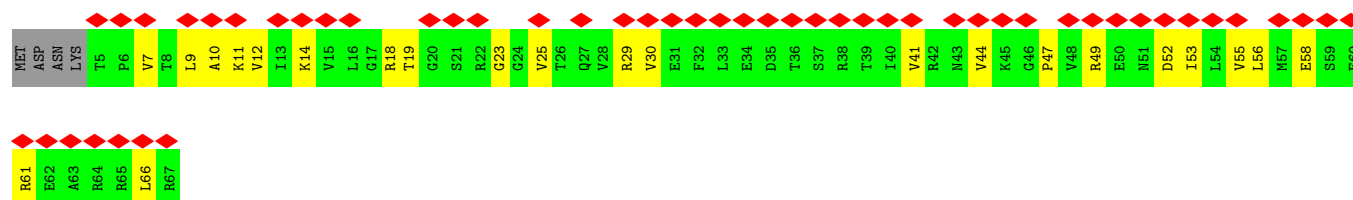
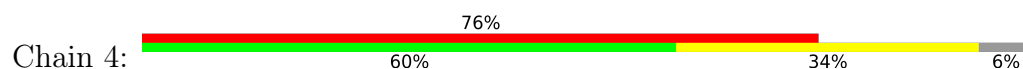


- Molecule 4: 40S ribosomal protein S27-A

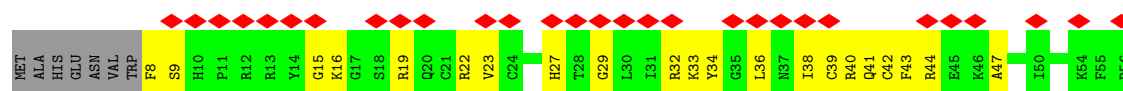




• Molecule 5: 40S ribosomal protein S28-A



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



• Molecule 7: 40S ribosomal protein S30-A



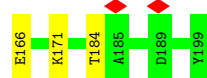
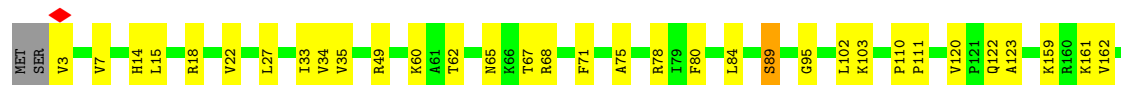
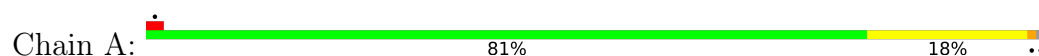
• Molecule 8: Guanine nucleotide-binding protein subunit beta-like protein



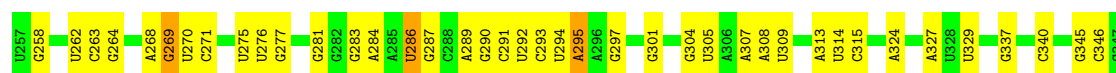
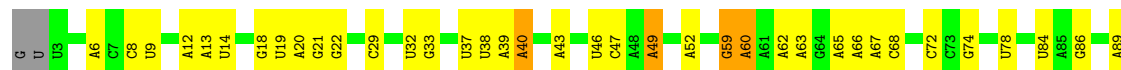
- Molecule 9: Ubiquitin-40S ribosomal protein S31

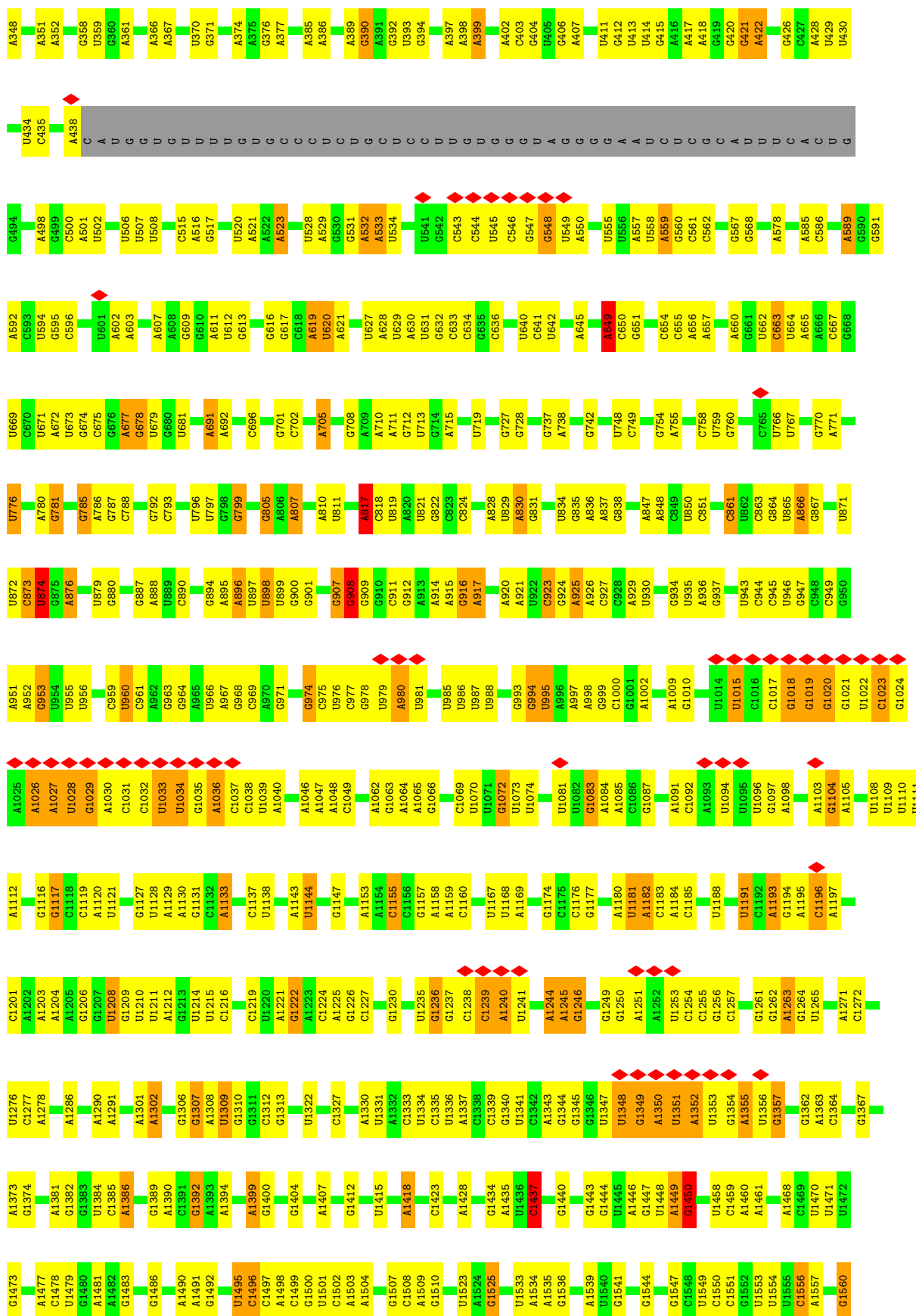


- Molecule 10: 60S ribosomal protein L16-A

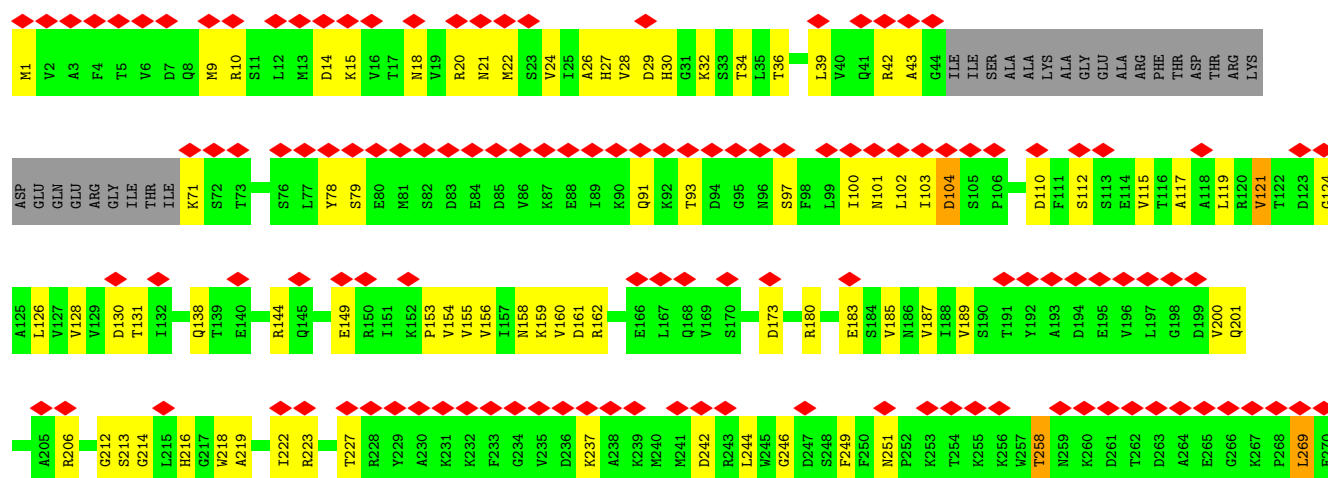


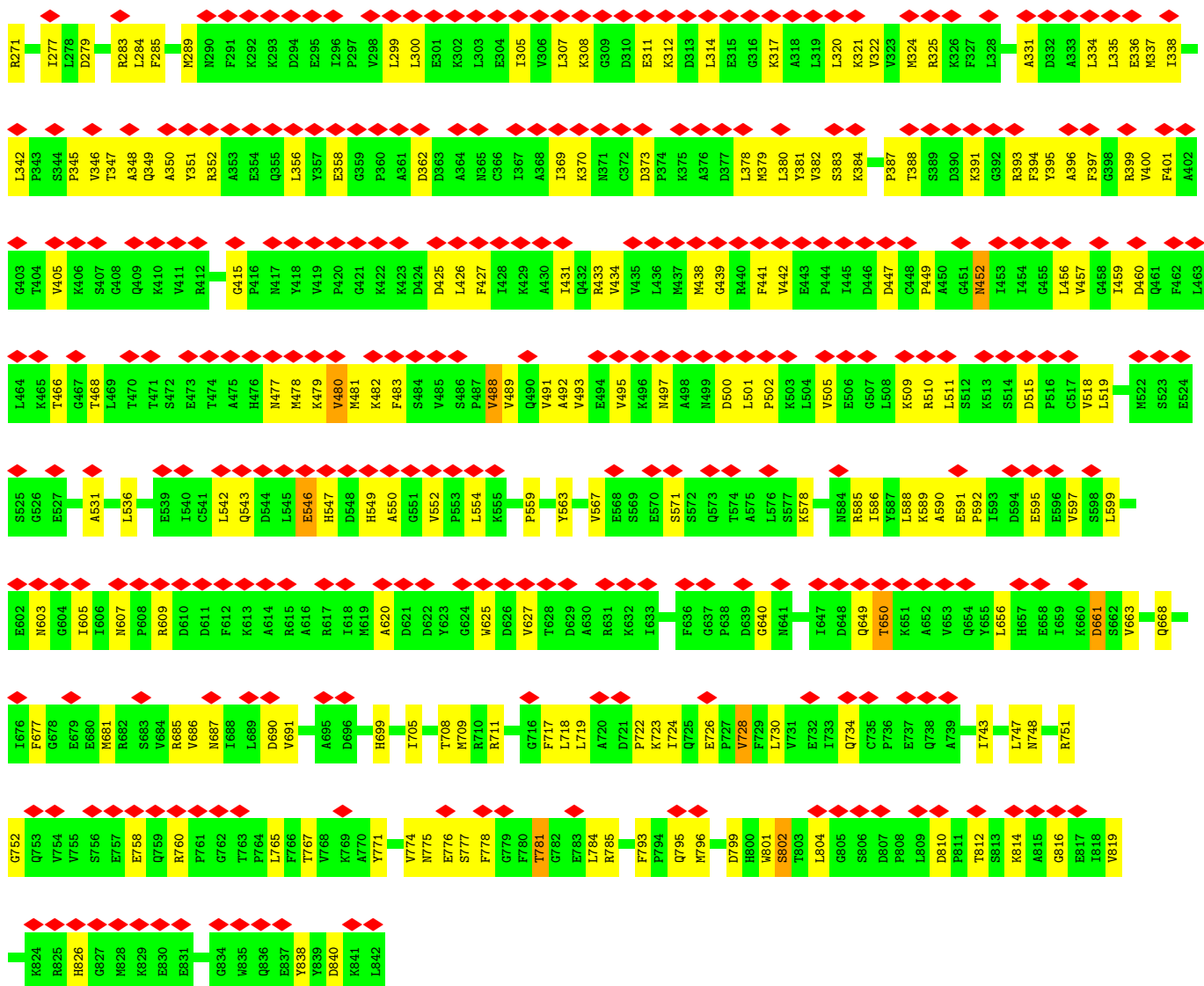
- Molecule 11: 25S ribosomal RNA



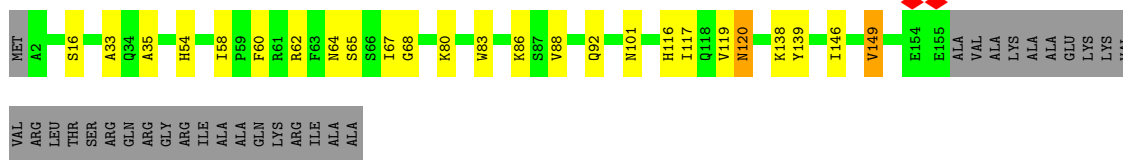








• Molecule 13: 60S ribosomal protein L17-A

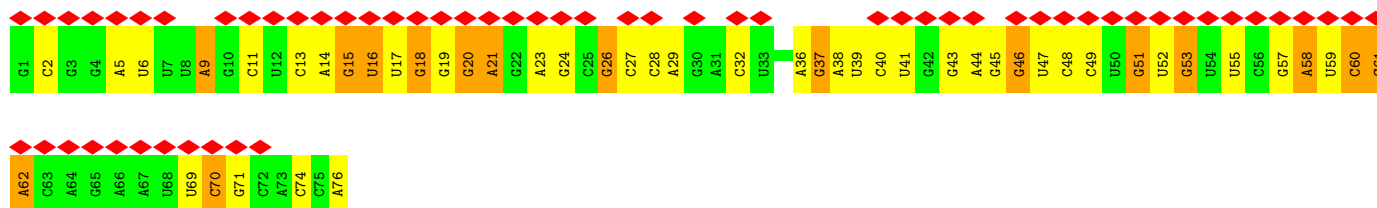
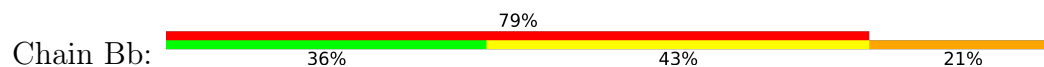


• Molecule 14: 5S ribosomal RNA

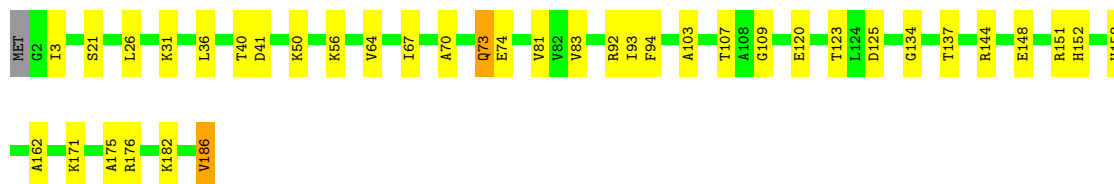
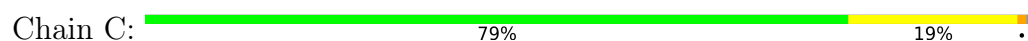




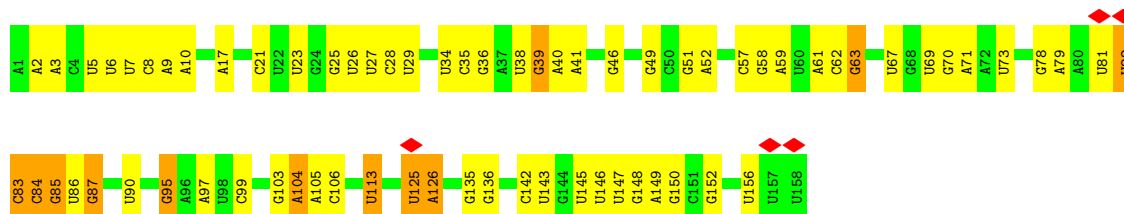
- Molecule 15: Transfer RNA Phe



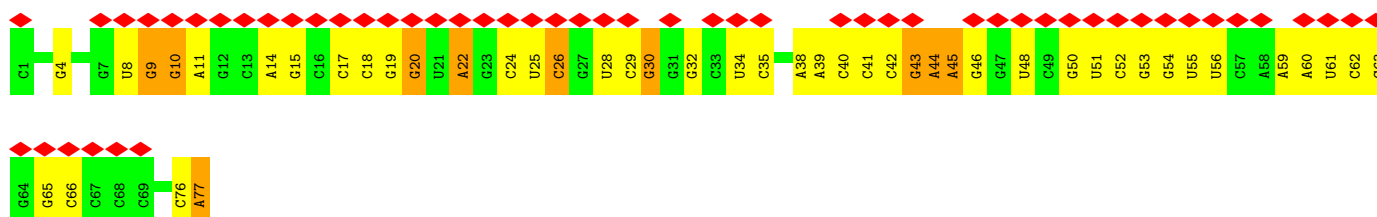
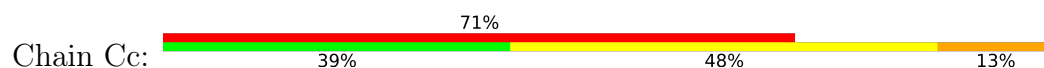
- Molecule 16: 60S ribosomal protein L18-A



- Molecule 17: 5.8S ribosomal RNA



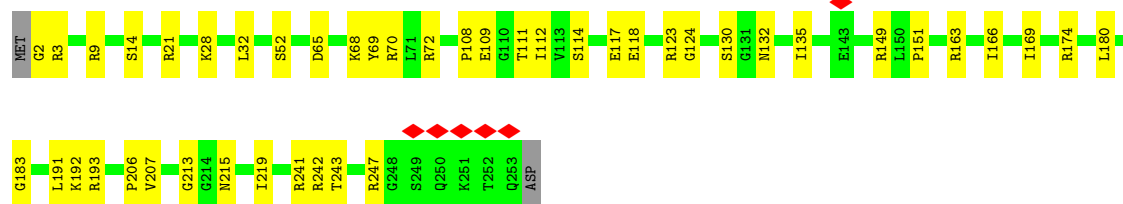
- Molecule 18: Transfer RNA fMet



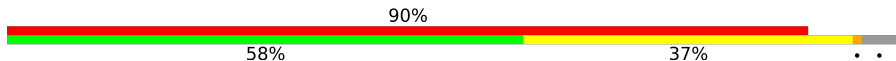
- Molecule 19: 60S ribosomal protein L19-A



Chain EE: 



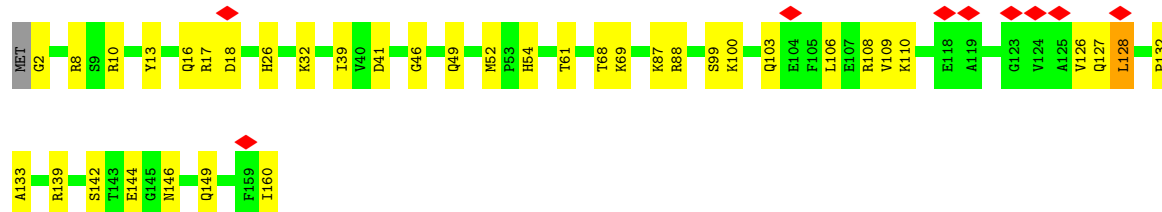
• Molecule 24: 60S ribosomal protein L12-A

Chain Ee: 



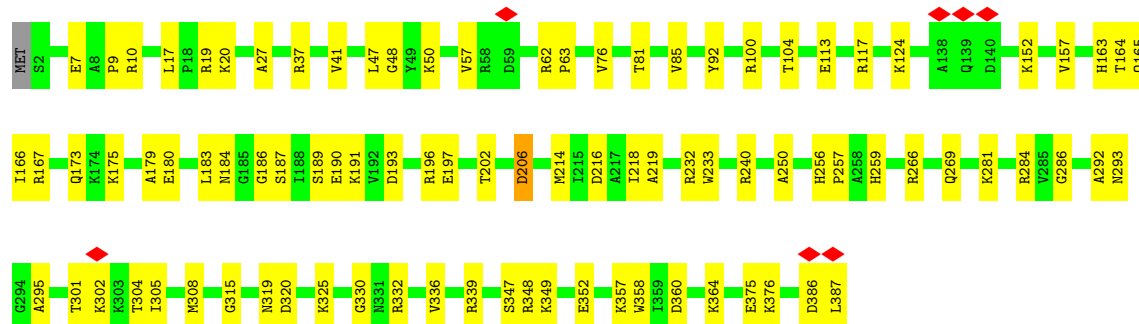
• Molecule 25: 60S ribosomal protein L21-A

Chain F: 

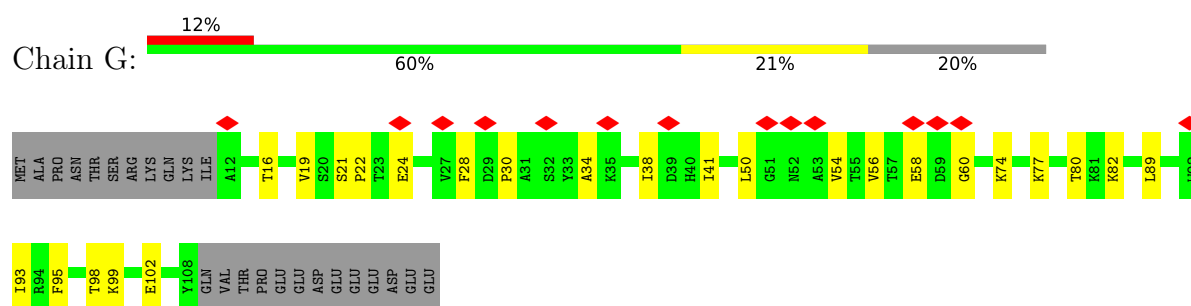


• Molecule 26: 60S ribosomal protein L3

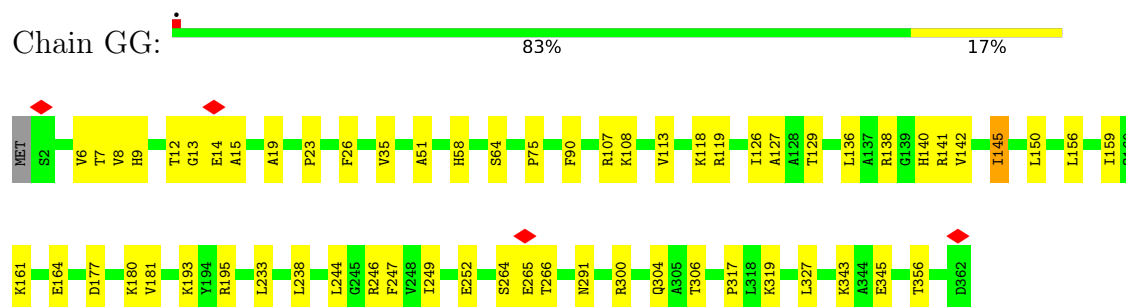
Chain FF: 



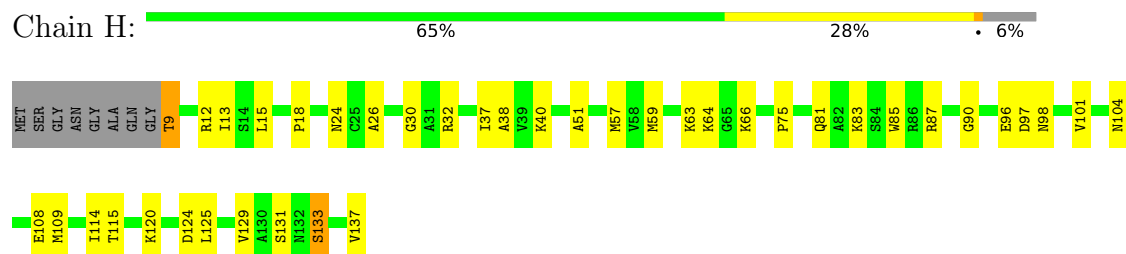
• Molecule 27: 60S ribosomal protein L22-A



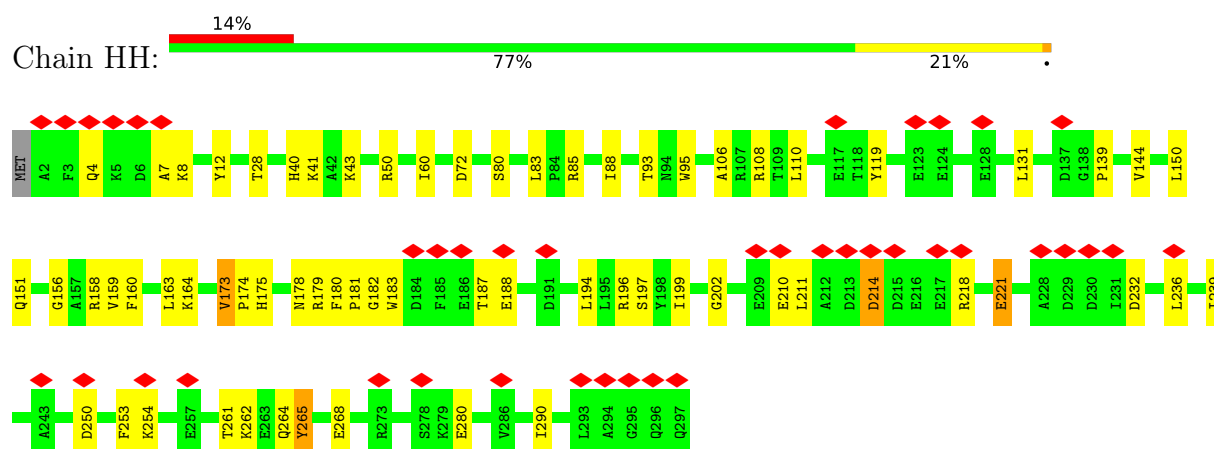
- Molecule 28: 60S ribosomal protein L4-A



- Molecule 29: 60S ribosomal protein L23-A

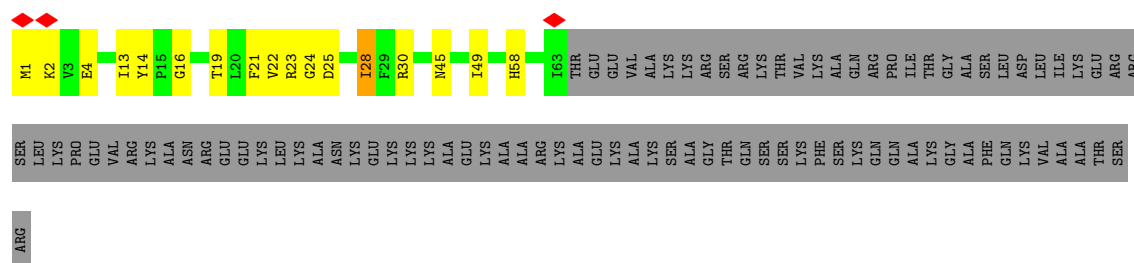


- Molecule 30: 60S ribosomal protein L5

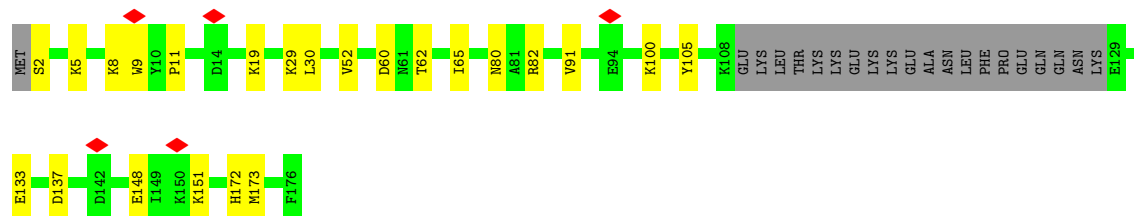
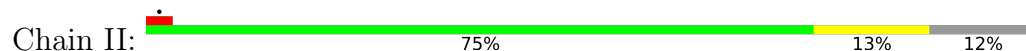


- Molecule 31: 60S ribosomal protein L24-A

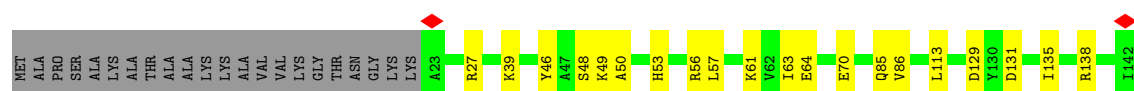




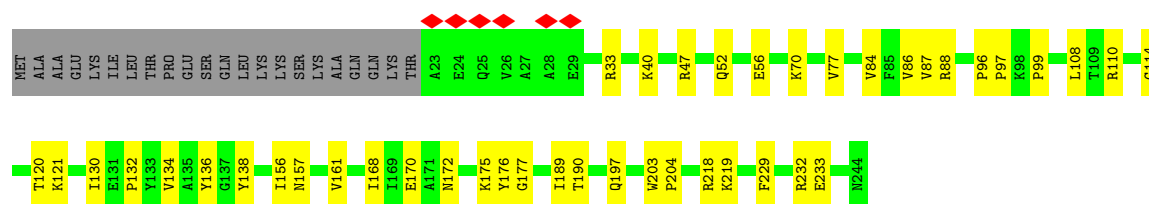
- Molecule 32: 60S ribosomal protein L6-A



- Molecule 33: 60S ribosomal protein L25



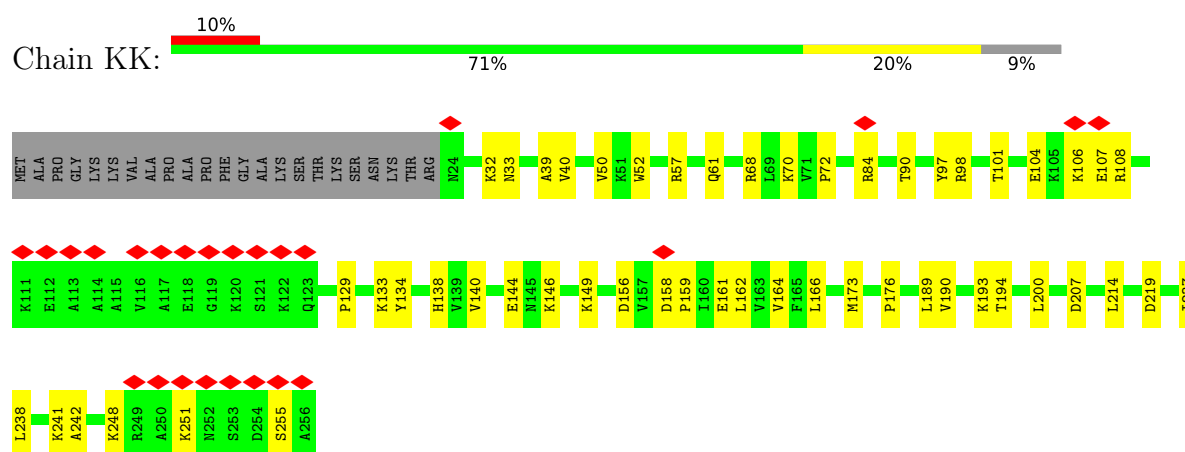
- Molecule 34: 60S ribosomal protein L7-A



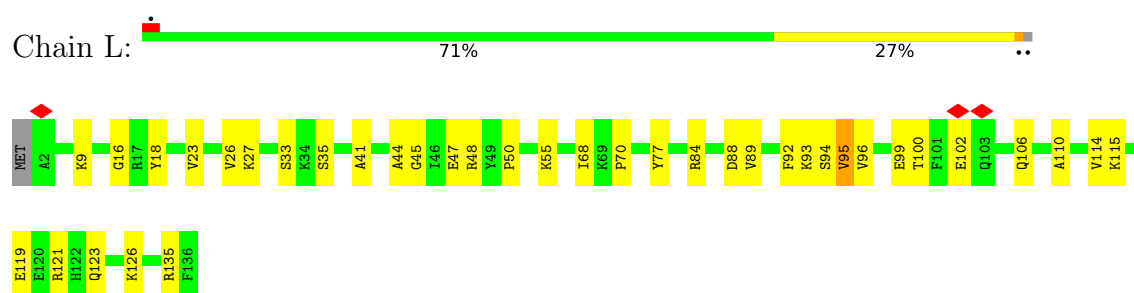
- Molecule 35: 60S ribosomal protein L26-A



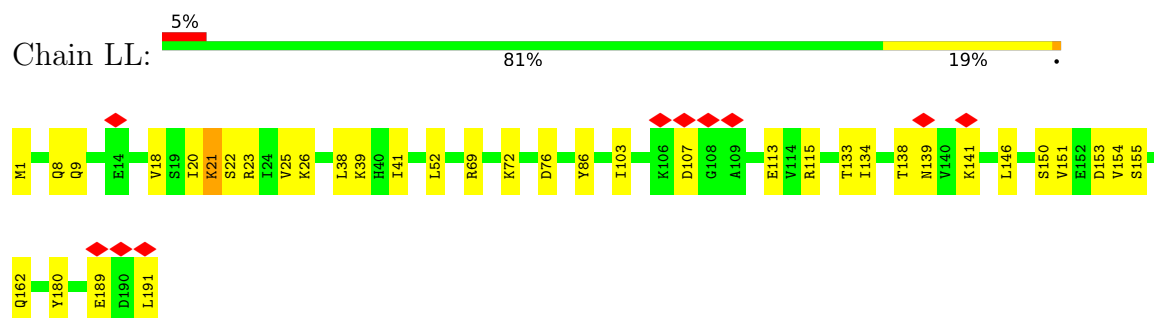
- Molecule 36: 60S ribosomal protein L8-A



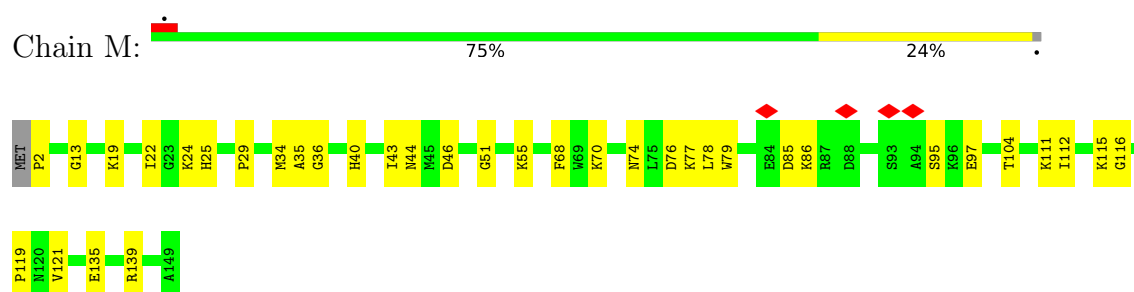
- Molecule 37: 60S ribosomal protein L27-A



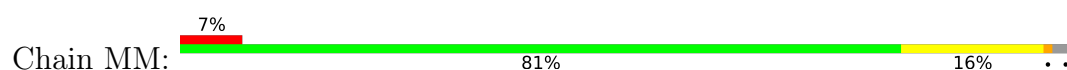
- Molecule 38: RPL9A isoform 1

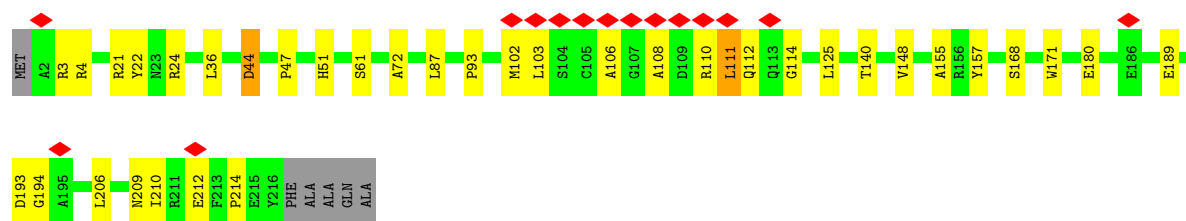


- Molecule 39: 60S ribosomal protein L28

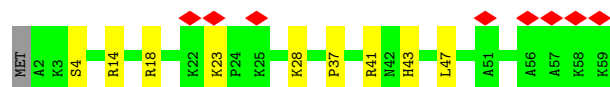
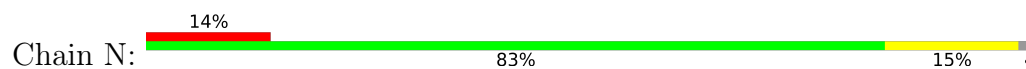


- Molecule 40: 60S ribosomal protein L10

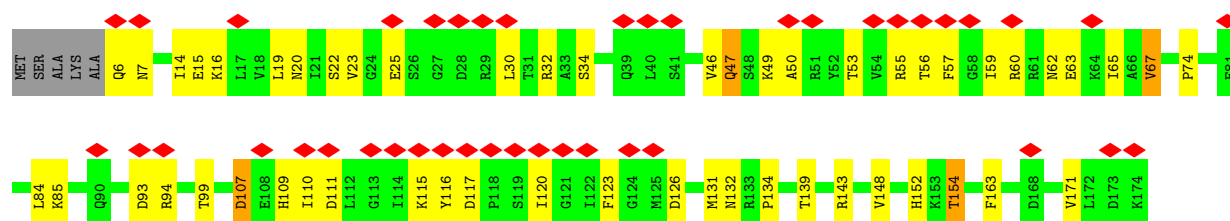




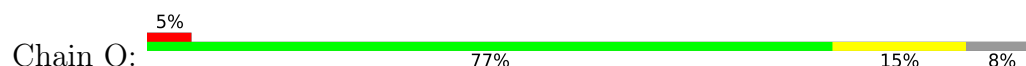
- Molecule 41: 60S ribosomal protein L29



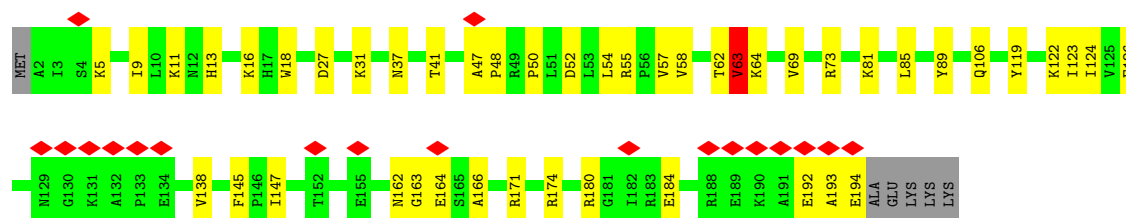
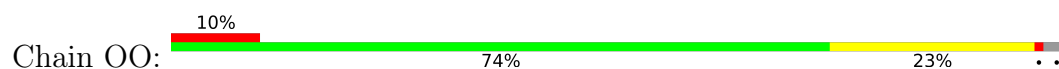
- Molecule 42: 60S ribosomal protein L11-A



- Molecule 43: 60S ribosomal protein L30



- Molecule 44: 60S ribosomal protein L13-A

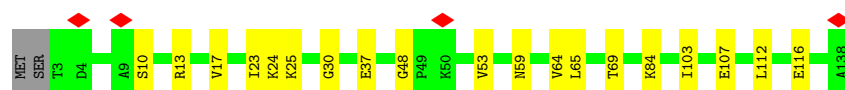
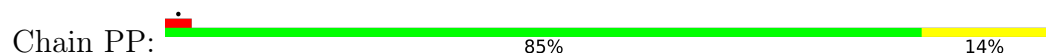


- Molecule 45: 60S ribosomal protein L31-A





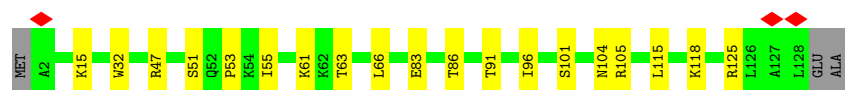
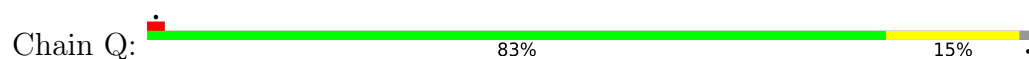
- Molecule 46: 60S ribosomal protein L14-A



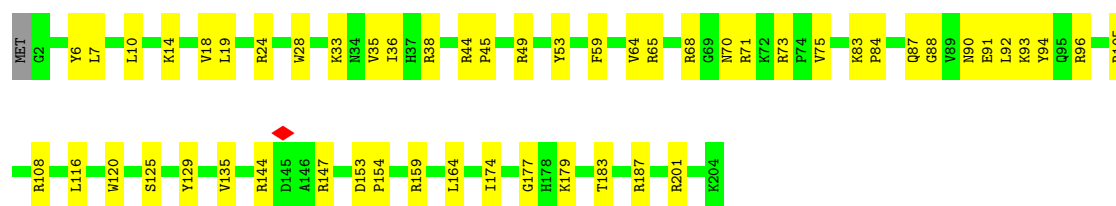
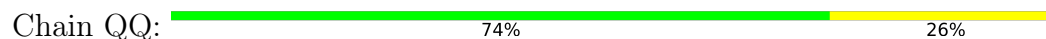
- Molecule 47: Polypeptide



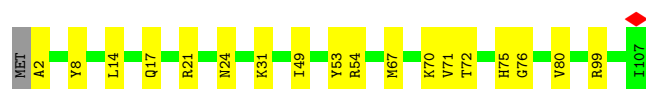
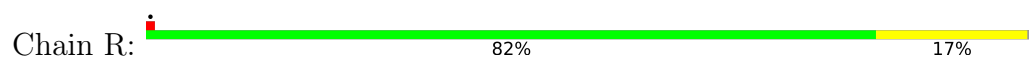
- Molecule 48: 60S ribosomal protein L32



- Molecule 49: 60S ribosomal protein L15-A

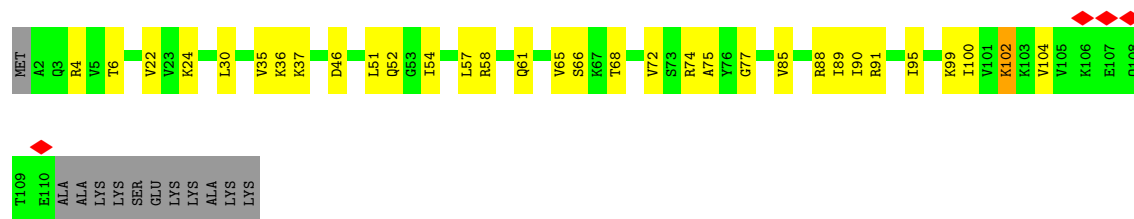


- Molecule 50: 60S ribosomal protein L33-A

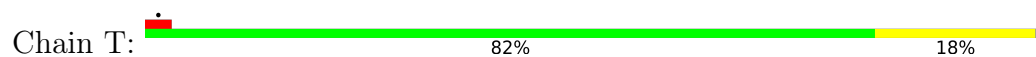


- Molecule 51: 60S ribosomal protein L34-A

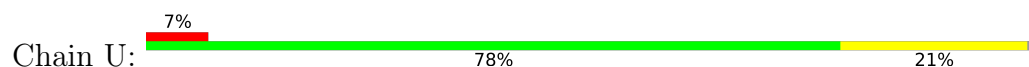




- Molecule 52: 60S ribosomal protein L35-A



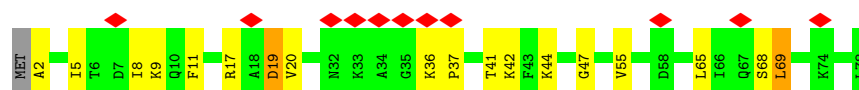
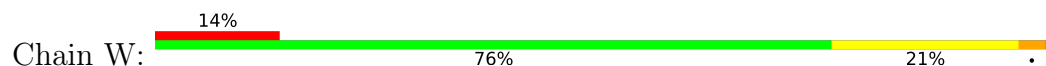
- Molecule 53: 60S ribosomal protein L36-A



- Molecule 54: 60S ribosomal protein L37-A



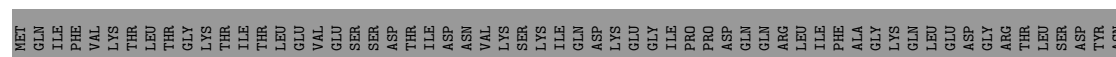
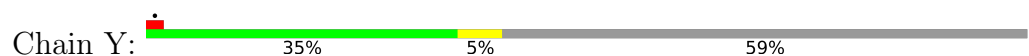
- Molecule 55: 60S ribosomal protein L38

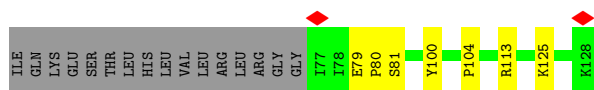


- Molecule 56: 60S ribosomal protein L39

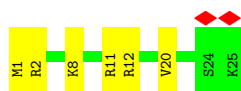
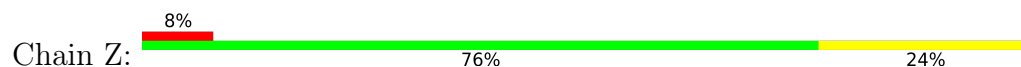


- Molecule 57: Ubiquitin-60S ribosomal protein L40

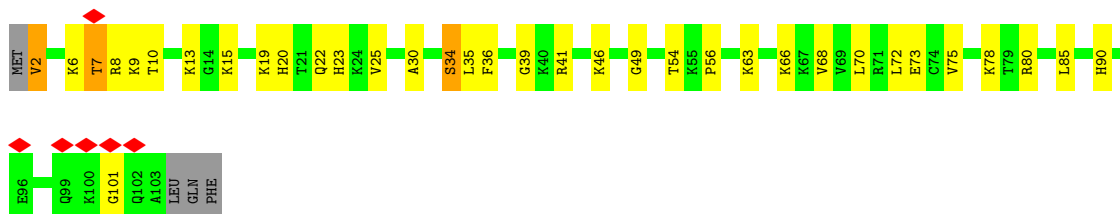




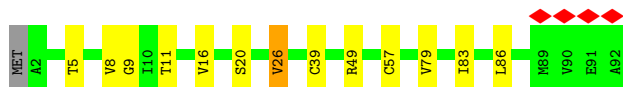
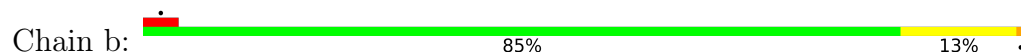
- Molecule 58: 60S ribosomal protein L41



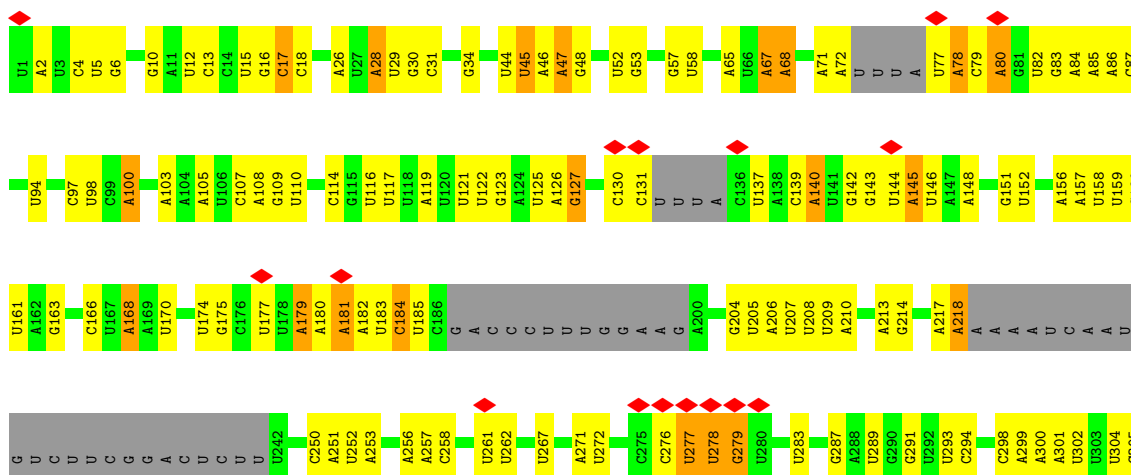
- Molecule 59: 60S ribosomal protein L42-A



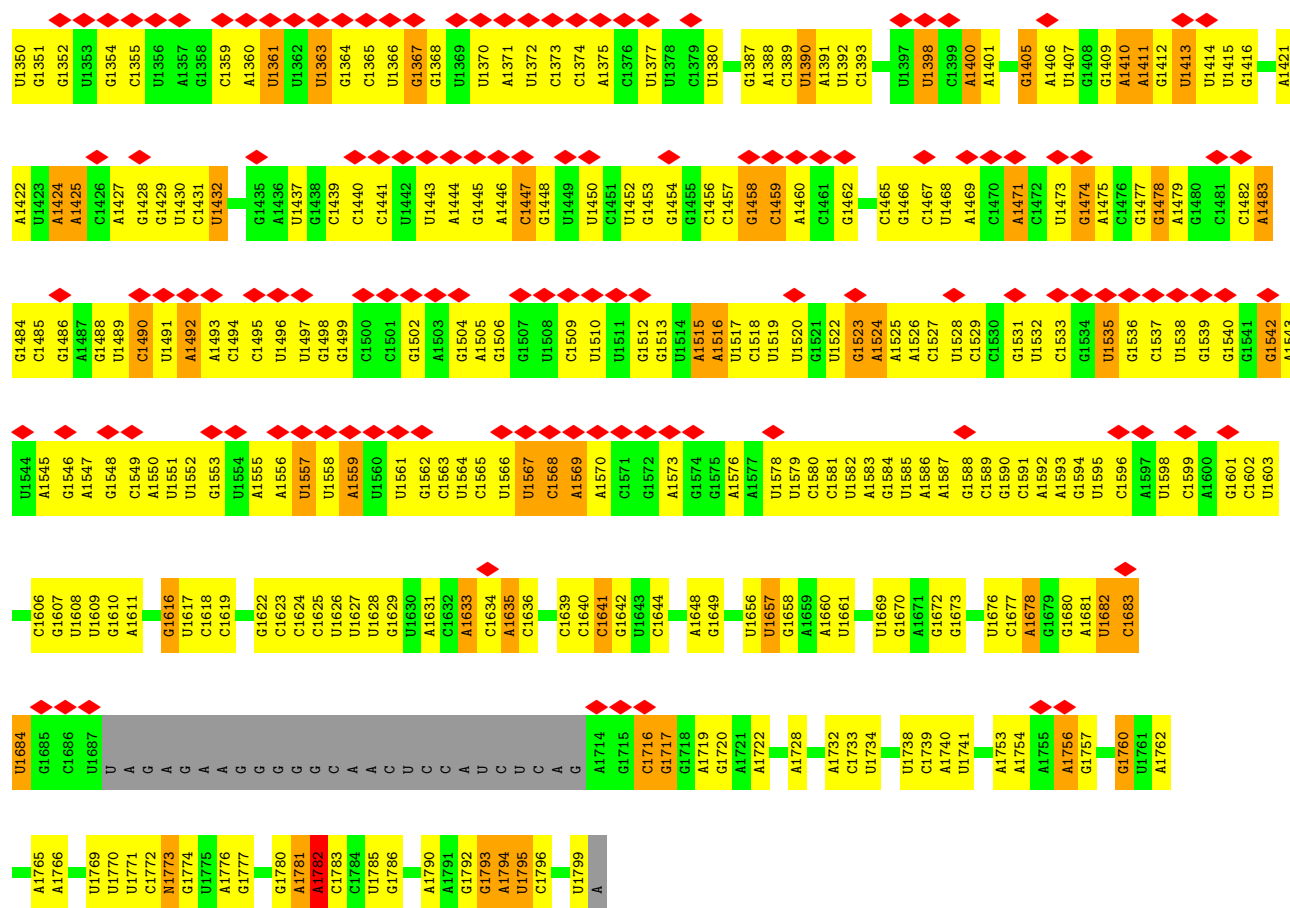
- Molecule 60: 60S ribosomal protein L43-A



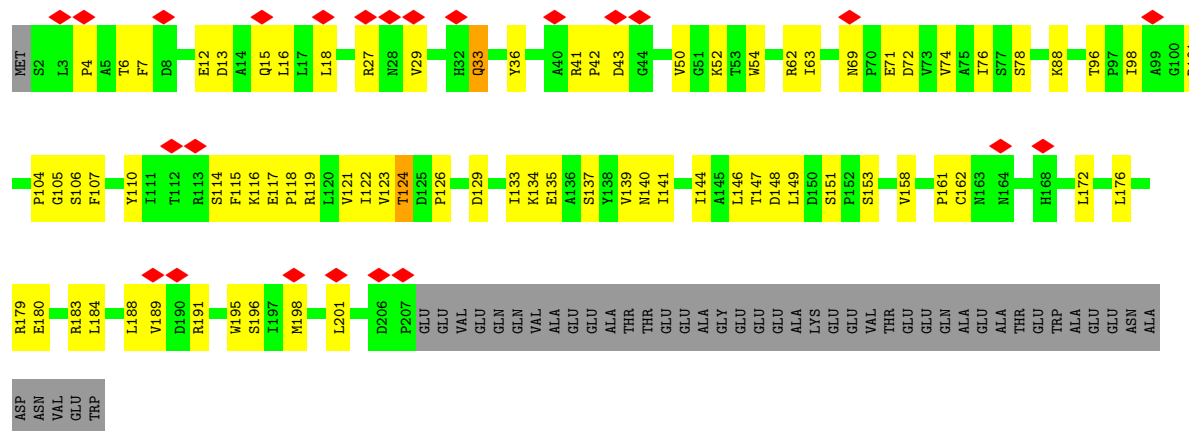
- Molecule 61: 18S ribosomal RNA





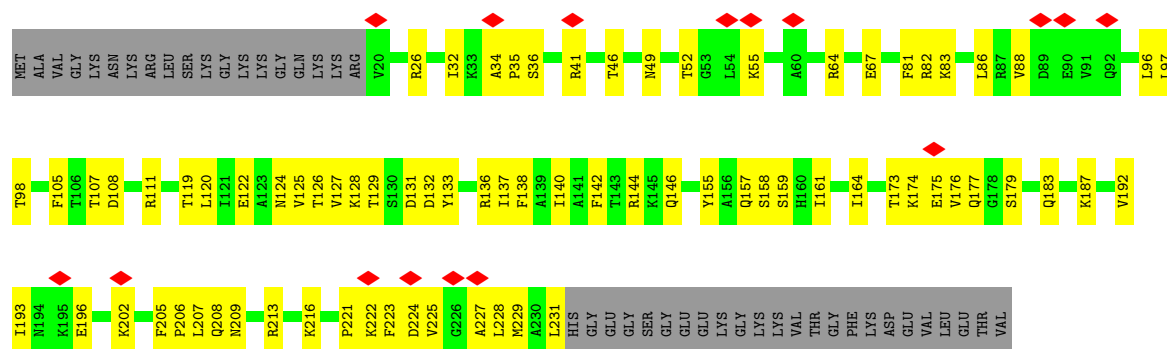


• Molecule 62: 40S ribosomal protein S0-A

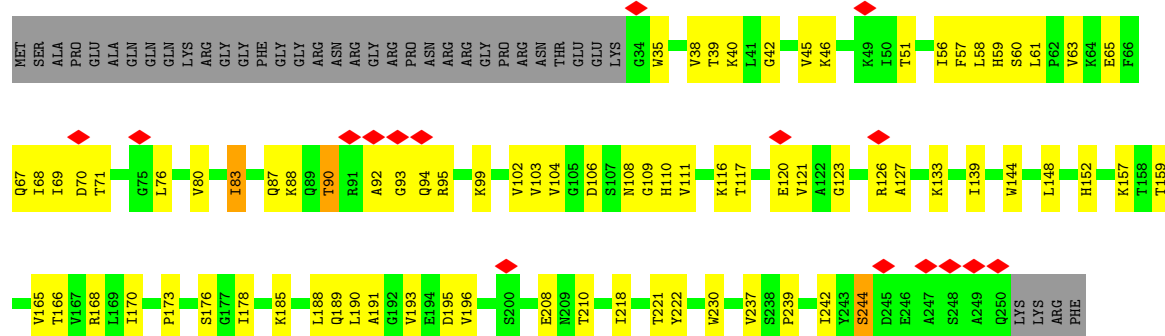


• Molecule 63: 40S ribosomal protein S1-A

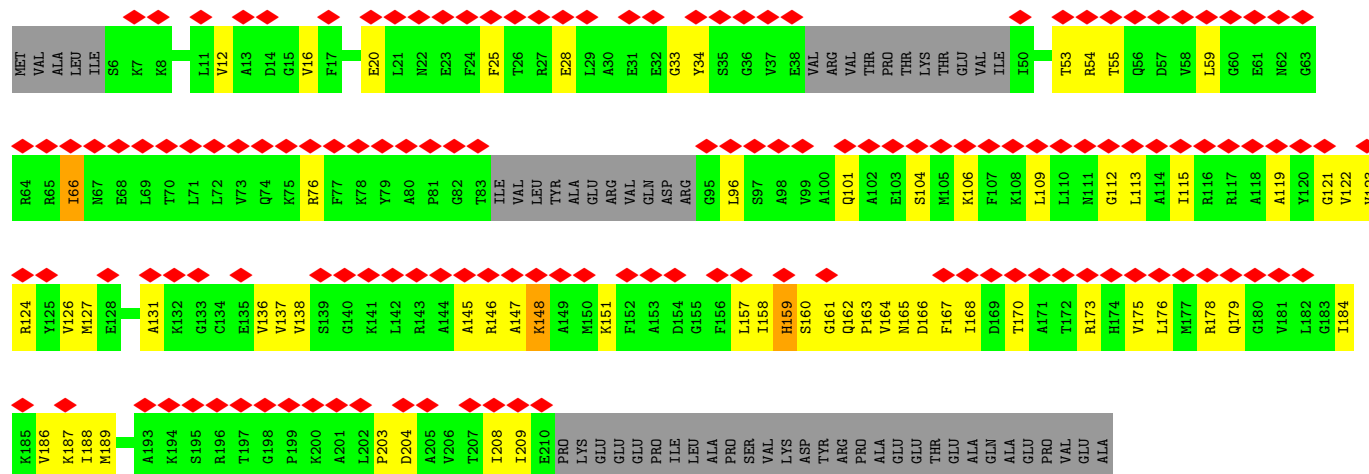




• Molecule 64: 40S ribosomal protein S2

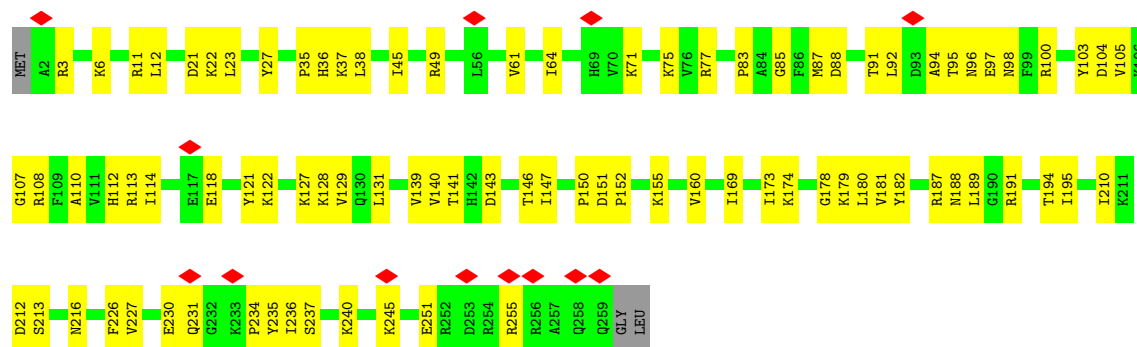


• Molecule 65: RPS3 isoform 1

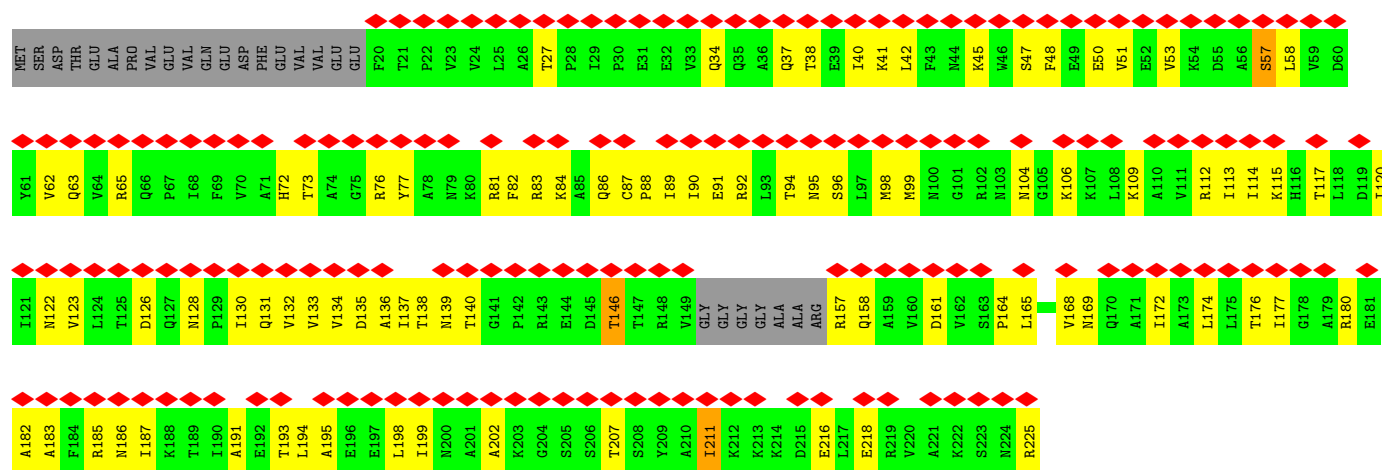
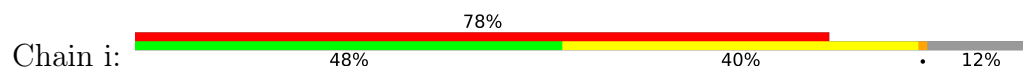


• Molecule 66: 40S ribosomal protein S4-A





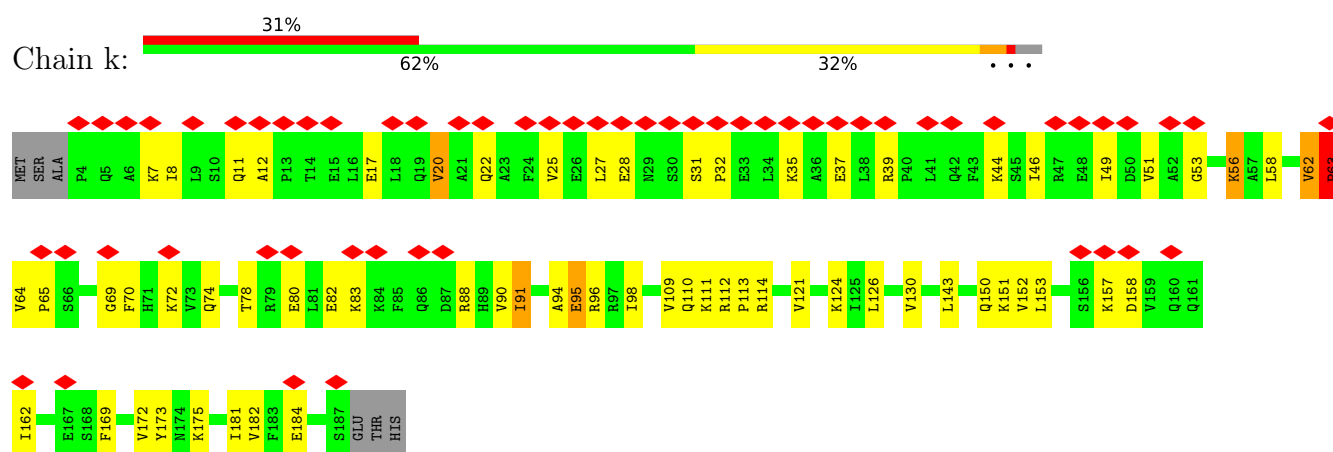
• Molecule 67: 40S ribosomal protein S5



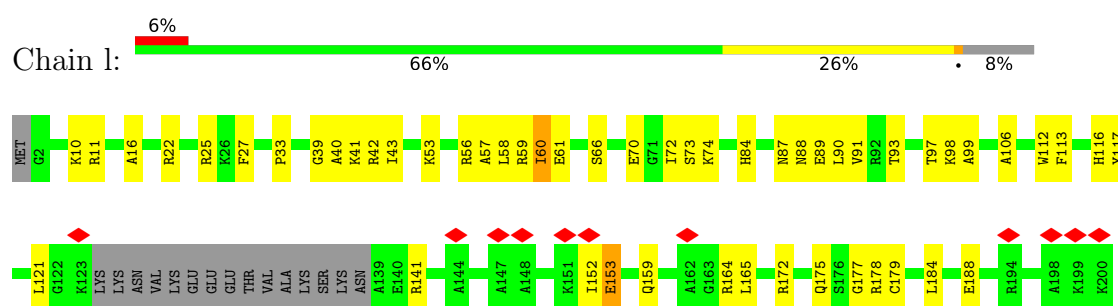
• Molecule 68: 40S ribosomal protein S6-A



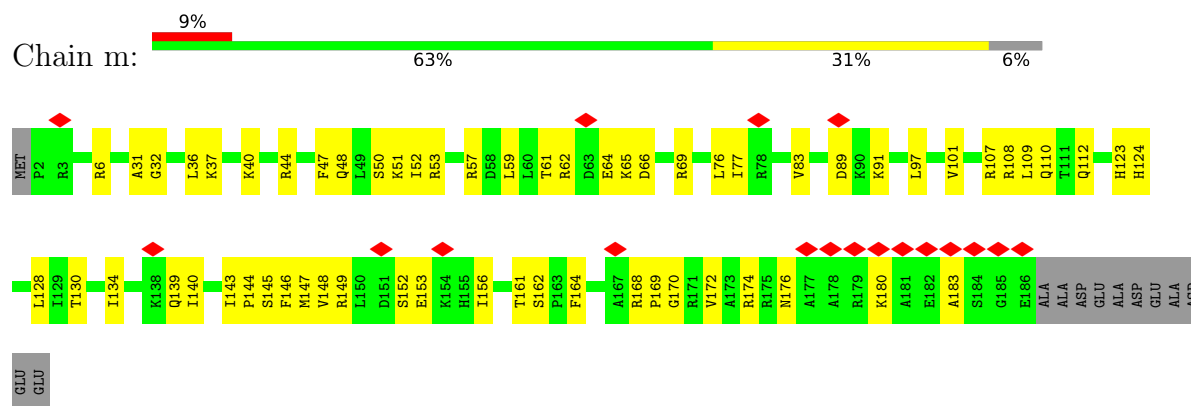
• Molecule 69: 40S ribosomal protein S7-A



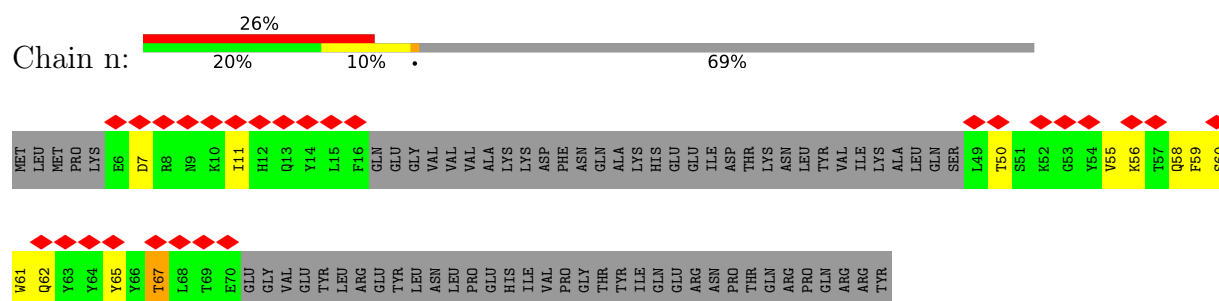
- Molecule 70: 40S ribosomal protein S8-B



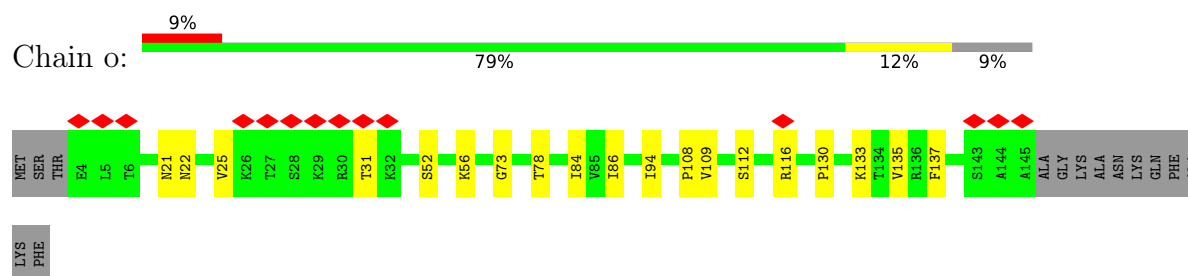
- Molecule 71: 40S ribosomal protein S9-A



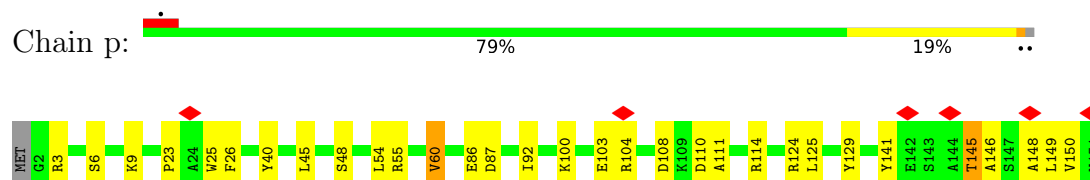
- Molecule 72: 40S ribosomal protein S10-A



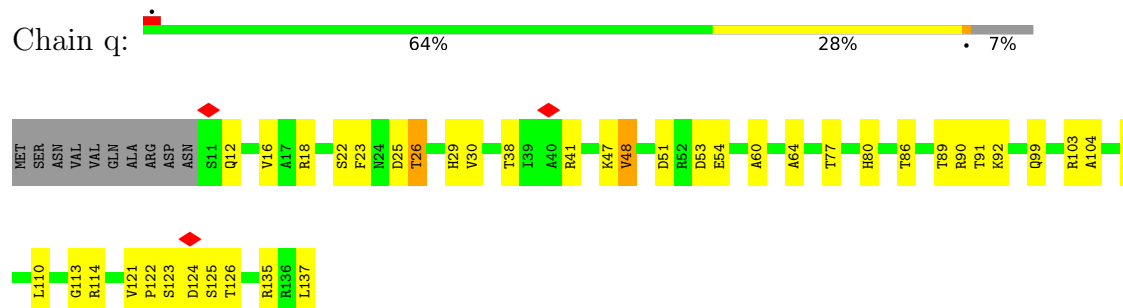
- Molecule 73: 40S ribosomal protein S11-A



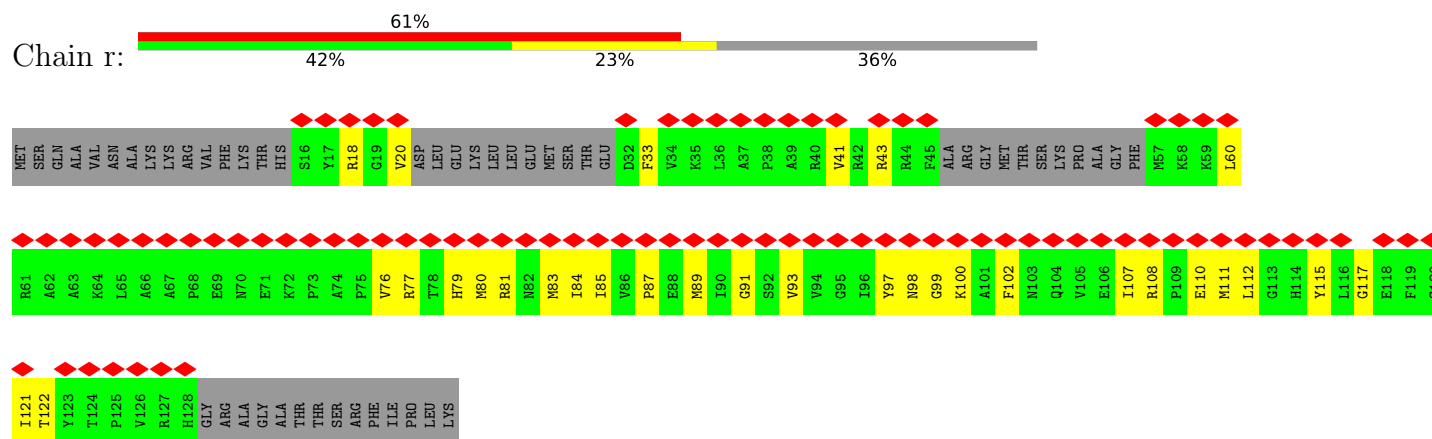
- Molecule 74: 40S ribosomal protein S13



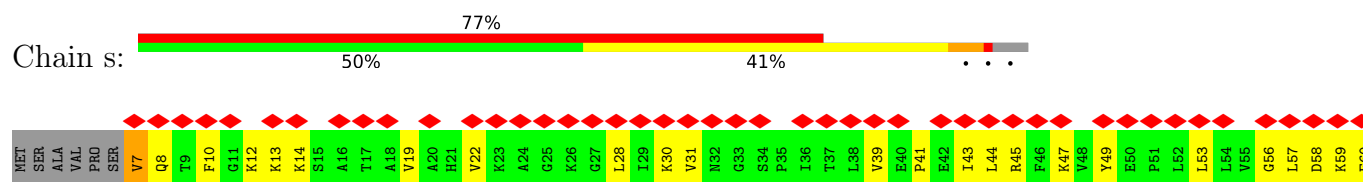
- Molecule 75: 40S ribosomal protein S14-A

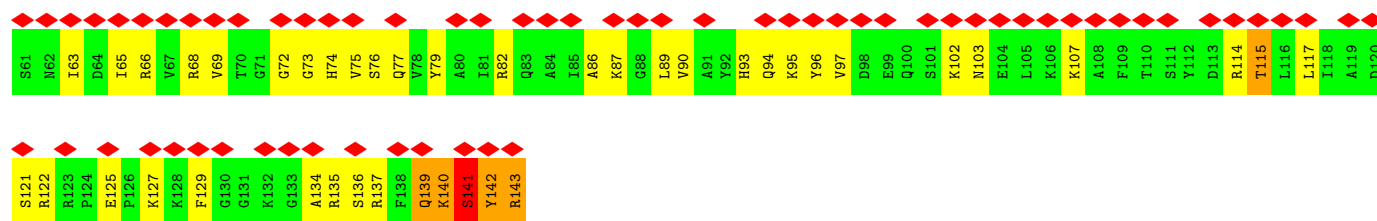


- Molecule 76: 40S ribosomal protein S15

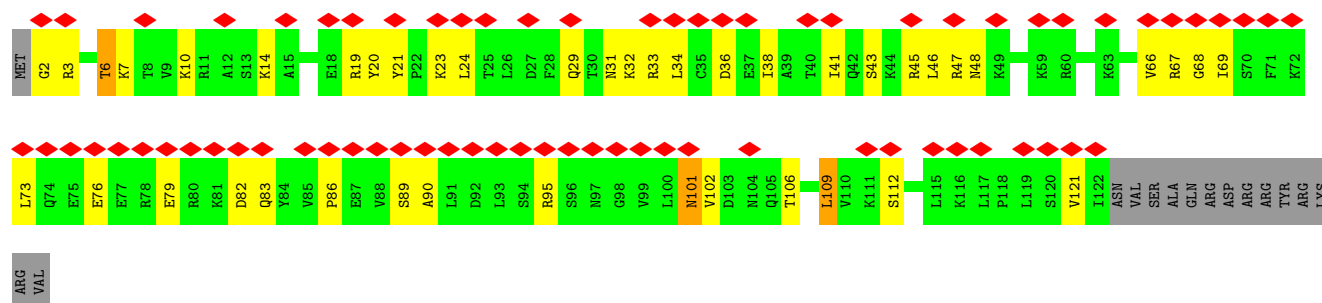


- Molecule 77: 40S ribosomal protein S16-A

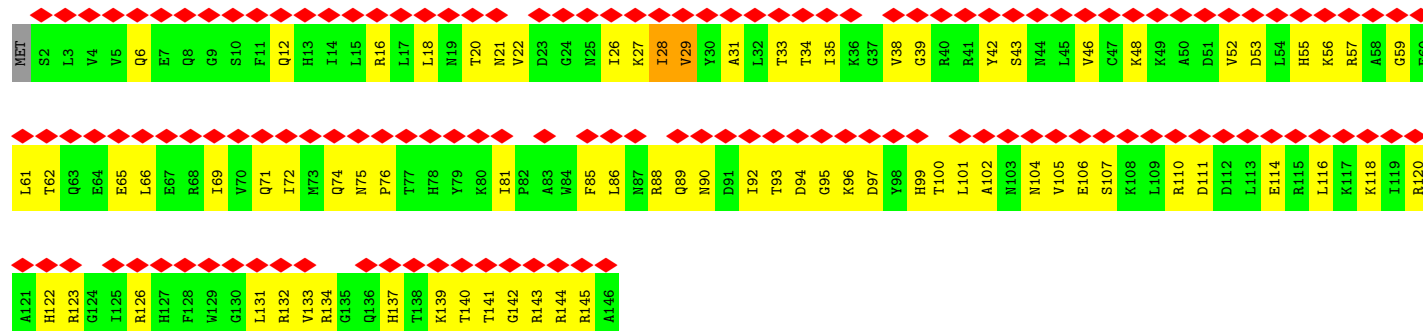
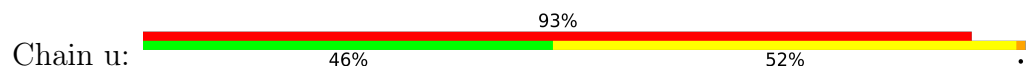




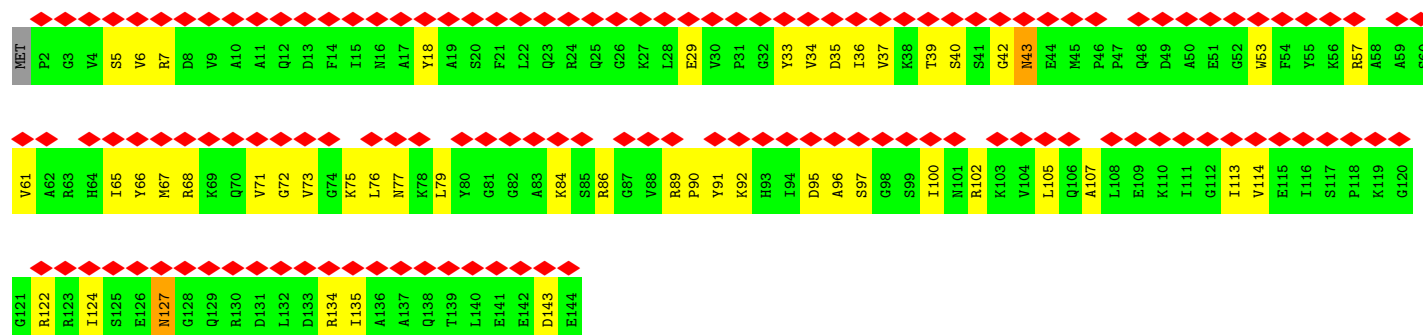
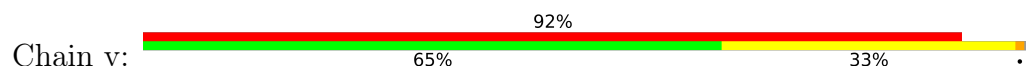
• Molecule 78: 40S ribosomal protein S17-A



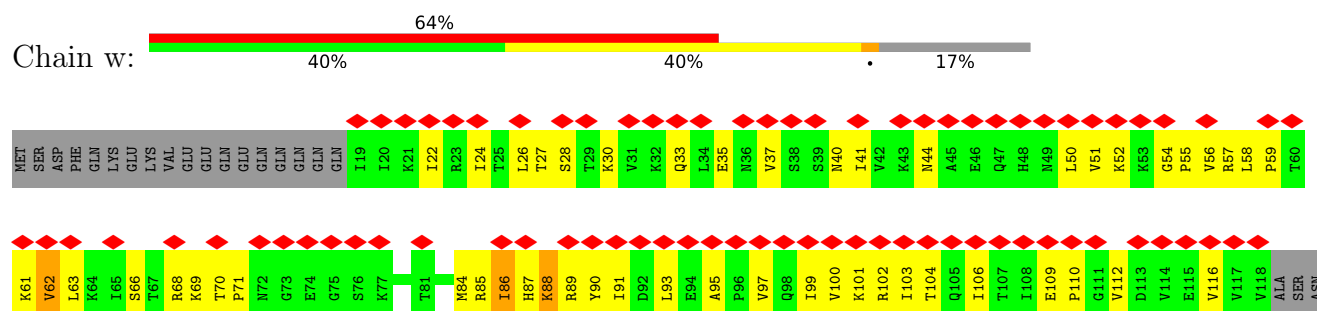
• Molecule 79: 40S ribosomal protein S18-A



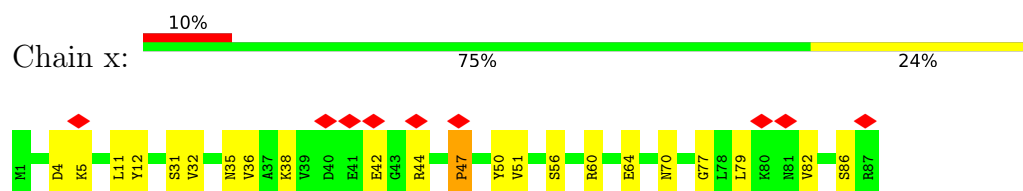
• Molecule 80: 40S ribosomal protein S19-A



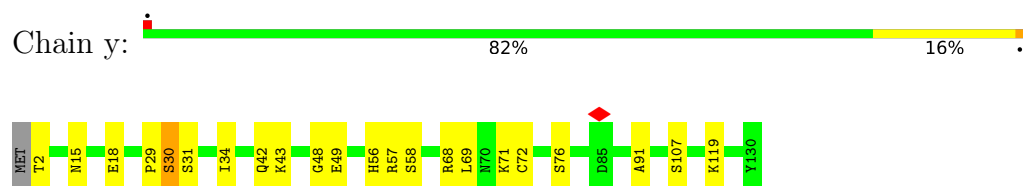
- Molecule 81: 40S ribosomal protein S20



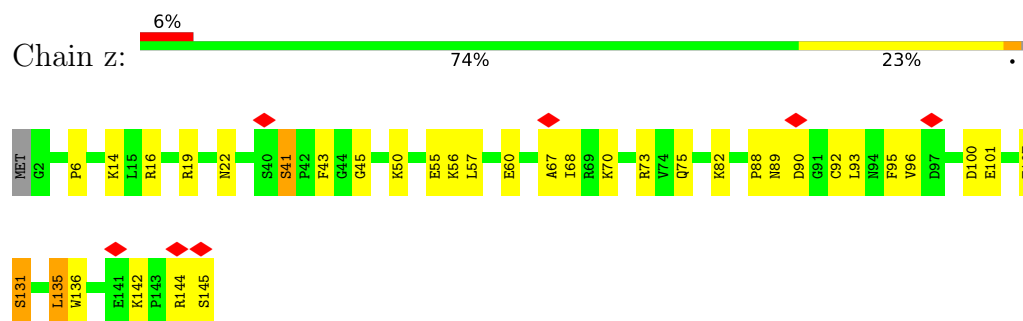
- Molecule 82: 40S ribosomal protein S21-A



- 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	23733	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	1.192	Depositor
Minimum map value	-0.529	Depositor
Average map value	-0.001	Depositor
Map value standard deviation	0.044	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: B8N, GDP, 4AC, UR3, K, 5MC, MA6, SPD, A2M, ZN, OMU, OMG, YYG, SO1, OMC, 1MA, MG, 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	0.17	0/1087	0.36	0/1449
2	1	0.12	0/571	0.42	0/768
3	2	0.20	0/782	0.45	0/1047
4	3	0.18	0/620	0.43	0/838
5	4	0.15	0/499	0.38	0/670
6	5	0.16	0/412	0.33	0/544
7	6	0.15	0/433	0.35	0/575
8	7	0.15	0/2489	0.44	0/3389
9	8	0.13	0/279	0.40	0/369
10	A	0.22	0/1585	0.34	0/2128
11	AA	0.26	1/75545 (0.0%)	0.32	3/117782 (0.0%)
12	Aa	0.14	0/6470	0.36	0/8759
13	B	0.21	0/1245	0.34	0/1676
14	BB	0.19	0/2883	0.23	0/4491
15	Bb	0.13	0/1788	0.31	0/2786
16	C	0.21	0/1465	0.35	0/1965
17	CC	0.23	0/3746	0.29	0/5832
18	Cc	0.19	0/1836	0.31	0/2859
19	D	0.20	0/1440	0.38	0/1921
20	DD	0.13	0/1558	0.35	0/2107
21	Dd	0.44	0/138	0.56	0/212
22	E	0.21	0/1481	0.37	0/1990
23	EE	0.21	0/1948	0.30	0/2617
24	Ee	0.13	0/1210	0.35	0/1627
25	F	0.19	0/1300	0.32	0/1743
26	FF	0.20	0/3146	0.33	0/4228
27	G	0.17	0/786	0.38	0/1065
28	GG	0.19	0/2800	0.32	0/3790
29	H	0.21	0/978	0.33	0/1316
30	HH	0.16	0/2425	0.31	0/3271
31	I	0.18	0/533	0.32	0/707

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
32	II	0.19	0/1251	0.32	0/1682
33	J	0.20	0/974	0.34	0/1314
34	JJ	0.20	0/1821	0.30	0/2451
35	K	0.20	0/1004	0.32	0/1341
36	KK	0.17	0/1836	0.31	0/2481
37	L	0.19	0/1118	0.35	0/1497
38	LL	0.19	0/1539	0.33	0/2073
39	M	0.23	0/1204	0.40	0/1612
40	MM	0.33	1/1779 (0.1%)	0.48	3/2386 (0.1%)
41	N	0.19	0/473	0.36	0/629
42	NN	0.38	1/1374 (0.1%)	0.56	3/1842 (0.2%)
43	O	0.19	0/750	0.31	0/1008
44	OO	0.19	0/1568	0.35	0/2106
45	P	0.21	0/897	0.38	0/1205
46	PP	0.18	0/1068	0.28	0/1438
47	Pp	0.33	0/19	0.25	0/23
48	Q	0.20	0/1041	0.28	0/1394
49	QQ	0.21	0/1757	0.33	0/2354
50	R	0.23	0/868	0.35	0/1168
51	S	0.21	0/871	0.32	0/1164
52	T	0.19	0/978	0.34	0/1301
53	U	0.18	0/778	0.37	0/1034
54	V	0.21	0/680	0.34	0/901
55	W	0.21	0/618	0.41	0/826
56	X	0.21	0/443	0.43	0/588
57	Y	0.18	0/423	0.31	0/562
58	Z	0.20	0/234	0.28	0/300
59	a	0.20	0/831	0.42	0/1097
60	b	0.19	0/701	0.31	0/934
61	c	0.20	0/38245	0.30	0/59571
62	d	0.17	0/1623	0.35	0/2222
63	e	0.18	0/1714	0.40	0/2308
64	f	0.22	0/1665	0.46	0/2263
65	g	0.27	0/1429	0.50	3/1913 (0.2%)
66	h	0.17	0/2097	0.33	0/2823
67	i	0.16	0/1591	0.42	0/2151
68	j	0.15	0/1790	0.33	0/2393
69	k	0.17	0/1506	0.38	0/2028
70	l	0.19	0/1482	0.38	0/1980
71	m	0.17	0/1519	0.32	0/2035
72	n	0.14	0/309	0.39	0/416
73	o	0.20	0/1172	0.32	0/1580
74	p	0.19	0/1215	0.31	0/1638

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
75	q	0.19	0/901	0.40	0/1217
76	r	0.14	0/747	0.41	0/1002
77	s	0.33	1/1099 (0.1%)	0.57	1/1473 (0.1%)
78	t	0.16	0/971	0.41	0/1303
79	u	0.14	0/1211	0.38	0/1628
80	v	0.13	0/1130	0.34	0/1517
81	w	0.21	0/810	0.46	0/1095
82	x	0.24	0/693	0.57	1/935 (0.1%)
83	y	0.22	0/1038	0.39	0/1395
84	z	0.18	0/1139	0.39	0/1518
All	All	0.22	4/219472 (0.0%)	0.34	14/321636 (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
34	JJ	0	1
37	L	0	1
38	LL	0	1
59	a	0	1
67	i	0	1
69	k	0	1
All	All	0	6

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
42	NN	74	PRO	CG-CD	-11.80	1.10	1.50
40	MM	214	PRO	CG-CD	-10.90	1.13	1.50
77	s	141	SER	CA-C	-6.62	1.46	1.52
11	AA	874	U	O3'-P	-5.17	1.53	1.61

All (14) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
42	NN	74	PRO	N-CD-CG	-14.88	80.87	103.20
40	MM	214	PRO	N-CD-CG	-13.08	83.58	103.20
82	x	47	PRO	CA-N-CD	-11.02	96.58	112.00
77	s	141	SER	N-CA-C	-9.33	100.52	112.93
42	NN	74	PRO	CA-CB-CG	-8.00	89.30	104.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
40	MM	214	PRO	CA-CB-CG	-7.10	91.01	104.50
65	g	148	LYS	CA-C-N	-7.06	113.16	123.05
65	g	148	LYS	C-N-CA	-7.06	113.16	123.05
42	NN	74	PRO	CA-N-CD	-6.67	102.66	112.00
40	MM	214	PRO	CA-N-CD	-6.56	102.81	112.00
65	g	146	ARG	N-CA-C	-6.32	104.88	112.59
11	AA	2141	U	C4'-C3'-O3'	-5.96	104.06	113.00
11	AA	2843	U	C4'-C3'-O3'	-5.44	104.84	113.00
11	AA	2790	A	C4'-C3'-O3'	-5.37	104.95	113.00

There are no chirality outliers.

All (6) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
34	JJ	232	ARG	Peptide
37	L	102	GLU	Peptide
38	LL	21	LYS	Peptide
59	a	7	THR	Peptide
67	i	65	ARG	Peptide
69	k	63	PRO	Peptide

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	0	1073	0	1132	29	0
2	1	563	0	603	22	0
3	2	769	0	814	22	0
4	3	610	0	633	16	0
5	4	497	0	535	20	0
6	5	404	0	399	16	0
7	6	427	0	476	9	0
8	7	2436	0	2386	110	0
9	8	276	0	289	8	0
10	A	1555	0	1659	22	0
11	AA	68429	0	34441	1098	0
12	Aa	6368	0	6436	197	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
13	B	1222	0	1231	19	0
14	BB	2579	0	1304	35	0
15	Bb	1638	0	835	31	0
16	C	1441	0	1543	27	0
17	CC	3353	0	1695	63	0
18	Cc	1644	0	837	38	0
19	D	1423	0	1510	34	0
20	DD	1531	0	1571	47	0
21	Dd	125	0	63	2	0
22	E	1445	0	1487	23	0
23	EE	1914	0	1981	39	0
24	Ee	1196	0	1257	45	0
25	F	1276	0	1323	27	0
26	FF	3075	0	3142	67	0
27	G	770	0	780	17	0
28	GG	2748	0	2859	40	0
29	H	963	0	1015	29	0
30	HH	2375	0	2325	49	0
31	I	521	0	551	14	0
32	II	1230	0	1320	18	0
33	J	959	0	1023	18	0
34	JJ	1784	0	1862	28	0
35	K	993	0	1081	26	0
36	KK	1804	0	1877	37	0
37	L	1092	0	1155	25	0
38	LL	1518	0	1587	26	0
39	M	1173	0	1215	35	0
40	MM	1743	0	1785	27	0
41	N	462	0	491	7	0
42	NN	1353	0	1383	38	0
43	O	742	0	797	12	0
44	OO	1543	0	1608	41	0
45	P	883	0	918	19	0
46	PP	1053	0	1149	8	0
47	Pp	19	0	20	7	0
48	Q	1020	0	1090	16	0
49	QQ	1720	0	1779	45	0
50	R	850	0	880	14	0
51	S	861	0	918	25	0
52	T	969	0	1078	22	0
53	U	771	0	849	16	0
54	V	665	0	667	19	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
55	W	612	0	682	12	0
56	X	436	0	475	12	0
57	Y	417	0	455	7	0
58	Z	233	0	284	5	0
59	a	819	0	886	31	0
60	b	694	0	734	10	0
61	c	34613	0	17428	807	0
62	d	1583	0	1578	56	0
63	e	1689	0	1763	54	0
64	f	1635	0	1723	55	0
65	g	1412	0	1473	54	0
66	h	2056	0	2140	67	0
67	i	1572	0	1639	83	0
68	j	1766	0	1859	71	0
69	k	1481	0	1572	45	0
70	l	1457	0	1488	46	0
71	m	1494	0	1573	47	0
72	n	300	0	279	11	0
73	o	1146	0	1213	13	0
74	p	1192	0	1255	20	0
75	q	891	0	883	31	0
76	r	732	0	760	28	0
77	s	1080	0	1140	71	0
78	t	961	0	999	43	0
79	u	1192	0	1222	70	0
80	v	1112	0	1124	47	0
81	w	800	0	869	37	0
82	x	684	0	672	19	0
83	y	1021	0	1060	16	0
84	z	1121	0	1196	27	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	0	0
85	b	1	0	0	0	0
86	AA	192	0	0	0	0
86	Aa	1	0	0	0	0
86	B	1	0	0	0	0
86	BB	5	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
86	Bb	1	0	0	0	0
86	CC	3	0	0	0	0
86	FF	1	0	0	0	0
86	H	1	0	0	0	0
86	MM	1	0	0	0	0
86	QQ	1	0	0	0	0
86	c	44	0	0	0	0
87	AA	13	0	0	0	0
87	EE	1	0	0	0	0
87	MM	1	0	0	0	0
87	Q	1	0	0	0	0
87	S	1	0	0	0	0
87	a	1	0	0	0	0
87	c	2	0	0	0	0
87	q	1	0	0	0	0
88	AA	30	0	57	4	0
89	Aa	35	0	41	6	0
90	Aa	28	0	12	1	0
91	2	2	0	0	0	0
91	A	2	0	0	0	0
91	AA	748	0	0	27	0
91	B	3	0	0	0	0
91	BB	12	0	0	0	0
91	CC	13	0	0	0	0
91	Cc	1	0	0	0	0
91	D	2	0	0	0	0
91	EE	9	0	0	0	0
91	F	3	0	0	0	0
91	FF	3	0	0	0	0
91	GG	2	0	0	0	0
91	H	3	0	0	0	0
91	HH	1	0	0	0	0
91	J	1	0	0	0	0
91	JJ	1	0	0	0	0
91	M	3	0	0	0	0
91	MM	2	0	0	0	0
91	N	1	0	0	0	0
91	Q	4	0	0	0	0
91	QQ	7	0	0	0	0
91	V	2	0	0	0	0
91	c	116	0	0	5	0
91	e	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
91	h	3	0	0	0	0
91	o	1	0	0	0	0
91	p	1	0	0	0	0
All	All	207374	0	154178	3946	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 11.

All (3946) 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)
61:c:1225:U:H5'	61:c:1226:A:H3'	1.45	0.99
69:k:70:PHE:O	69:k:74:GLN:HB2	1.63	0.97
61:c:1471:A:H62	61:c:1538:U:H3	1.14	0.95
11:AA:2442:G:H1	11:AA:2505:U:H3	0.93	0.91
61:c:1224:A:N1	61:c:1259:U:N3	2.17	0.91
61:c:1287:A:H61	61:c:1328:G:H2'	1.35	0.91
61:c:1588:G:H1	61:c:1608:U:H3	1.18	0.89
61:c:868:G:H1	61:c:960:U:H3	1.17	0.89
61:c:1195:C:H41	77:s:142:TYR:HA	1.35	0.89
61:c:1218:G:N2	61:c:1443:U:H2'	1.88	0.88
67:i:117:THR:HG21	67:i:194:LEU:HD23	1.54	0.88
66:h:92:LEU:O	66:h:96:ASN:HA	1.72	0.88
61:c:992:A:H2	61:c:1012:U:H3	1.21	0.87
1:0:18:LEU:HG	66:h:64:ILE:HD11	1.57	0.87
70:l:87:ASN:ND2	70:l:89:GLU:OE1	2.08	0.86
76:r:85:ILE:HG23	76:r:89:MET:HB3	1.57	0.86
61:c:1586:A:H5''	77:s:136:SER:HB2	1.58	0.86
65:g:106:LYS:HD2	65:g:173:ARG:HB3	1.59	0.85
61:c:1318:G:H5''	78:t:67:ARG:HH21	1.43	0.84
61:c:903:U:H5''	75:q:135:ARG:HH12	1.42	0.84
11:AA:2897:A:H5''	57:Y:125:LYS:HG3	1.61	0.82
61:c:478:A:HO2'	71:m:124:HIS:HD1	1.27	0.82
12:Aa:338:ILE:HG23	12:Aa:342:LEU:HD12	1.62	0.82
11:AA:2448:G:H1	11:AA:2499:U:H3	1.28	0.81
59:a:9:LYS:HE3	59:a:22:GLN:HE21	1.45	0.81
69:k:44:LYS:HE3	69:k:63:PRO:HD3	1.63	0.81
11:AA:1661:G:H2'	11:AA:1662:G:C8	2.15	0.81
11:AA:2489:C:H3'	11:AA:2490:C:H2'	1.63	0.80
6:5:43:PHE:O	6:5:47:ALA:HB2	1.82	0.80
11:AA:269:G:H5''	49:QQ:14:LYS:HE2	1.63	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
78:t:24:LEU:HB3	78:t:34:LEU:HD13	1.63	0.79
29:H:81:GLN:O	29:H:98:ASN:ND2	2.13	0.79
24:Ee:48:LYS:HA	24:Ee:51:LYS:HE3	1.63	0.79
11:AA:2480:A:H3'	11:AA:2481:G:H2'	1.63	0.79
3:2:45:VAL:HG11	3:2:53:LEU:HD13	1.63	0.78
67:i:42:LEU:HD22	67:i:47:SER:HA	1.63	0.78
40:MM:193:ASP:OD1	40:MM:194:GLY:N	2.15	0.78
61:c:1266:U:H2'	61:c:1267:G:C8	2.18	0.78
65:g:59:LEU:HD23	65:g:66:ILE:HD11	1.63	0.78
39:M:19:LYS:HG2	39:M:25:HIS:HB2	1.65	0.78
61:c:1291:G:H1	61:c:1324:G:H22	1.31	0.78
12:Aa:22:MET:HE3	12:Aa:102:LEU:HD13	1.66	0.78
68:j:14:LYS:HD3	68:j:123:GLY:HA3	1.66	0.77
42:NN:15:GLU:OE1	42:NN:132:ASN:ND2	2.17	0.77
61:c:256:A:O2'	70:l:72:ILE:O	2.02	0.77
61:c:992:A:O2'	61:c:1785:U:O2	2.02	0.77
66:h:194:THR:HG21	66:h:231:GLN:HG3	1.66	0.76
81:w:24:ILE:HG12	81:w:116:VAL:HG22	1.66	0.76
12:Aa:14:ASP:HA	12:Aa:449:PRO:HG3	1.66	0.76
18:Cc:51:U:H3	18:Cc:65:G:H1	1.31	0.76
37:L:18:TYR:HE1	37:L:47:GLU:HG3	1.51	0.76
11:AA:900:G:H1'	11:AA:1589:A:N6	2.01	0.75
36:KK:90:THR:HA	36:KK:214:LEU:HD21	1.68	0.75
66:h:147:ILE:HD13	66:h:169:ILE:HD11	1.68	0.75
81:w:62:VAL:HG23	81:w:85:ARG:HG3	1.68	0.75
4:3:36:LYS:NZ	4:3:37:CYS:O	2.18	0.75
29:H:30:GLY:HA3	29:H:66:LYS:HD2	1.67	0.75
71:m:62:ARG:NH1	71:m:66:ASP:OD2	2.19	0.75
8:7:24:ALA:HB3	8:7:34:LEU:HB3	1.67	0.75
11:AA:394:G:H22	11:AA:397:A:H5'	1.51	0.74
1:0:27:VAL:HG11	1:0:35:VAL:HG11	1.69	0.74
11:AA:1353:U:H2'	32:II:8:LYS:HZ1	1.50	0.74
61:c:795:U:H2'	61:c:796:A2M:H8	1.70	0.74
61:c:1312:A:N7	78:t:2:GLY:N	2.35	0.74
11:AA:3068:U:OP2	19:D:62:ARG:NH2	2.18	0.74
79:u:88:ARG:NH2	79:u:100:THR:OG1	2.21	0.74
82:x:47:PRO:O	82:x:47:PRO:HD2	1.87	0.74
61:c:871:G:H2'	61:c:872:G:C8	2.21	0.74
78:t:101:ASN:OD1	78:t:101:ASN:N	2.20	0.74
45:P:84:ASP:H	45:P:86:LYS:HZ2	1.34	0.74
61:c:1330:G:N2	65:g:204:ASP:OD2	2.21	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:591:A:H2'	61:c:592:A:C8	2.23	0.73
61:c:1098:U:OP1	64:f:159:THR:OG1	2.06	0.73
67:i:76:ARG:HH21	77:s:121:SER:H	1.36	0.73
68:j:116:LYS:NZ	68:j:118:GLU:O	2.21	0.73
83:y:29:PRO:HB2	83:y:58:SER:HB2	1.71	0.73
80:v:105:LEU:HD13	80:v:122:ARG:HD2	1.69	0.73
11:AA:2677:G:O6	11:AA:2680:A:N7	2.21	0.73
38:LL:138:THR:O	38:LL:139:ASN:ND2	2.21	0.73
18:Cc:44:A:H2'	18:Cc:45:A:C8	2.23	0.73
67:i:94:THR:HG22	67:i:114:ILE:HG13	1.71	0.73
11:AA:243:G:OP1	52:T:115:LYS:NZ	2.22	0.73
34:JJ:138:TYR:CE2	34:JJ:233:GLU:HB3	2.24	0.73
72:n:56:LYS:HE3	72:n:58:GLN:HE22	1.54	0.72
12:Aa:591:GLU:HB2	12:Aa:685:ARG:HB3	1.69	0.72
67:i:48:PHE:HA	67:i:130:ILE:HD11	1.71	0.72
74:p:48:SER:OG	74:p:86:GLU:OE2	2.08	0.72
28:GG:35:VAL:HG21	28:GG:244:LEU:HD21	1.71	0.72
65:g:96:LEU:HD11	65:g:131:ALA:HB2	1.72	0.72
68:j:74:LYS:HG2	68:j:96:SER:HB3	1.70	0.72
11:AA:2922:OMG:H5''	11:AA:2922:OMG:H8	1.54	0.72
61:c:1175:U:OP2	79:u:137:HIS:ND1	2.23	0.72
63:e:26:ARG:NH1	63:e:49:ASN:OD1	2.22	0.72
83:y:15:ASN:ND2	83:y:72:CYS:O	2.23	0.72
61:c:1672:G:H2'	61:c:1673:G:C8	2.23	0.72
11:AA:2922:OMG:H5''	11:AA:2922:OMG:C8	2.25	0.72
61:c:67:A:N6	61:c:83:G:O2'	2.23	0.72
11:AA:2180:G:OP1	23:EE:174:ARG:NH2	2.22	0.72
67:i:182:ALA:O	67:i:186:ASN:ND2	2.23	0.72
11:AA:2213:A:H2'	11:AA:2214:A:C8	2.24	0.72
65:g:163:PRO:HA	65:g:166:ASP:HB2	1.72	0.71
65:g:208:ILE:HD11	78:t:19:ARG:HD3	1.71	0.71
2:l:65:LEU:HA	2:l:70:LYS:HE3	1.71	0.71
11:AA:1863:G:N1	11:AA:1866:C:OP2	2.18	0.71
12:Aa:609:ARG:NH1	12:Aa:609:ARG:HA	2.04	0.71
9:8:94:LYS:N	61:c:1247:U:OP1	2.24	0.71
11:AA:1236:G:N2	11:AA:1244:A:OP1	2.23	0.71
78:t:24:LEU:HD13	78:t:34:LEU:HD22	1.71	0.71
6:5:15:GLY:HA3	61:c:1204:A:H61	1.55	0.71
42:NN:57:PHE:HB3	42:NN:59:ILE:HG23	1.72	0.71
69:k:62:VAL:O	69:k:94:ALA:HA	1.91	0.71
61:c:1041:G:H2'	61:c:1042:G:C8	2.24	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:FF:63:PRO:HD2	26:FF:348:ARG:HH12	1.56	0.71
61:c:1478:G:H5'	80:v:57:ARG:HH21	1.56	0.71
67:i:109:LYS:O	67:i:113:ILE:HD12	1.90	0.71
22:E:8:GLN:HB3	22:E:64:ILE:HD11	1.73	0.71
61:c:1380:U:OP1	77:s:12:LYS:NZ	2.22	0.71
75:q:80:HIS:HA	75:q:113:GLY:O	1.90	0.71
84:z:60:GLU:HA	84:z:68:ILE:HG22	1.73	0.71
11:AA:662:U:H2'	11:AA:663:OMC:C6	2.26	0.70
11:AA:2969:A:N7	23:EE:215:ASN:ND2	2.38	0.70
66:h:87:MET:HE1	66:h:236:ILE:HD13	1.72	0.70
13:B:88:VAL:O	13:B:92:GLN:HG3	1.91	0.70
61:c:1516:A:H5'	81:w:58:LEU:HD12	1.74	0.70
64:f:56:ILE:HG23	64:f:61:LEU:HB2	1.74	0.70
80:v:105:LEU:HB3	80:v:122:ARG:HH11	1.56	0.70
13:B:67:ILE:HD11	13:B:80:LYS:HB3	1.74	0.70
64:f:90:THR:H	64:f:93:GLY:HA2	1.57	0.70
67:i:146:THR:HB	67:i:157:ARG:HG2	1.72	0.70
11:AA:1112:A:OP1	44:OO:5:LYS:NZ	2.23	0.70
11:AA:1301:A:H4'	11:AA:1302:A:H5''	1.72	0.70
12:Aa:509:LYS:NZ	84:z:145:SER:OG	2.19	0.70
19:D:21:LYS:HE3	19:D:55:VAL:HA	1.73	0.70
11:AA:1024:G:H21	11:AA:1027:A:H8	1.40	0.70
11:AA:2895:G:O2'	57:Y:100:TYR:O	2.09	0.70
11:AA:3379:C:H4'	26:FF:315:GLY:HA2	1.73	0.70
19:D:162:ARG:NH1	61:c:815:G:N3	2.40	0.70
12:Aa:459:ILE:HG22	12:Aa:460:ASP:H	1.57	0.70
61:c:771:A:O2'	71:m:6:ARG:NH1	2.25	0.70
61:c:1523:G:H8	80:v:79:LEU:HD12	1.57	0.70
61:c:1171:A:H2'	61:c:1172:G:H8	1.57	0.69
73:o:21:ASN:HD21	73:o:31:THR:HA	1.57	0.69
12:Aa:289:MET:HE1	12:Aa:317:LYS:H	1.56	0.69
4:3:2:VAL:N	82:x:64:GLU:OE2	2.24	0.69
12:Aa:599:LEU:O	12:Aa:603:ASN:ND2	2.25	0.69
61:c:789:A:OP1	66:h:108:ARG:NH1	2.25	0.69
84:z:70:LYS:HB3	84:z:93:LEU:HD22	1.74	0.69
11:AA:98:G:N7	44:OO:13:HIS:NE2	2.38	0.69
77:s:129:PHE:O	77:s:137:ARG:NH2	2.25	0.69
11:AA:2193:U:H5'	11:AA:2194:G:H5'	1.75	0.69
61:c:127:G:H5''	68:j:194:LYS:HG2	1.74	0.69
61:c:158:U:O2'	61:c:160:C:OP2	2.10	0.69
62:d:4:PRO:HD2	62:d:7:PHE:HD2	1.58	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:e:41:ARG:HH12	63:e:231:LEU:HB2	1.56	0.69
59:a:8:ARG:HB3	59:a:23:HIS:HB2	1.74	0.69
61:c:800:U:H2'	61:c:801:G:H8	1.57	0.69
61:c:1222:C:H6	61:c:1222:C:H5''	1.57	0.69
61:c:1365:C:H2'	61:c:1366:U:C6	2.28	0.69
71:m:109:LEU:HB2	71:m:146:PHE:HB3	1.74	0.69
24:Ee:8:ASN:HA	24:Ee:66:ASN:H	1.58	0.69
61:c:354:C:H5''	70:l:16:ALA:HB2	1.75	0.68
61:c:861:U:O2'	83:y:56:HIS:O	2.10	0.68
61:c:1213:G:O2'	61:c:1244:A:N6	2.26	0.68
62:d:98:ILE:HD11	62:d:116:LYS:HD2	1.76	0.68
11:AA:1364:C:OP1	34:JJ:110:ARG:NH2	2.26	0.68
61:c:1222:C:H2'	61:c:1223:A:C8	2.29	0.68
61:c:1502:G:N2	61:c:1505:A:OP2	2.27	0.68
76:r:98:ASN:ND2	76:r:121:ILE:O	2.26	0.68
11:AA:1477:A:OP1	11:AA:3075:G:O2'	2.11	0.68
11:AA:2478:C:N4	11:AA:2480:A:H61	1.91	0.68
13:B:116:HIS:HB3	13:B:149:VAL:HG13	1.74	0.68
18:Cc:10:G:H2'	18:Cc:11:A:H8	1.59	0.68
2:1:49:ARG:NH1	2:1:69:LEU:O	2.26	0.68
11:AA:894:G:H4'	11:AA:895:A:H5'	1.75	0.68
32:II:100:LYS:NZ	32:II:137:ASP:OD2	2.21	0.68
33:J:64:GLU:OE2	33:J:85:GLN:NE2	2.26	0.68
25:F:126:VAL:HB	25:F:128:LEU:HD13	1.74	0.68
8:7:109:ASP:OD2	8:7:127:ARG:NH1	2.26	0.68
61:c:639:U:OP1	69:k:112:ARG:NH2	2.24	0.68
65:g:170:THR:HG23	65:g:187:LYS:HG2	1.76	0.68
71:m:161:THR:HG22	71:m:162:SER:H	1.59	0.68
11:AA:327:A:OP2	44:OO:31:LYS:NZ	2.26	0.68
18:Cc:19:G:N1	18:Cc:59:A:OP2	2.27	0.68
61:c:538:A:H5'	61:c:543:C:H41	1.58	0.68
83:y:31:SER:H	83:y:34:ILE:HD12	1.60	0.68
1:0:34:ASN:ND2	61:c:521:A:N3	2.42	0.67
11:AA:864:G:N7	91:AA:3739:HOH:O	2.27	0.67
61:c:1226:A:H5'	61:c:1229:G:H5''	1.76	0.67
62:d:140:ASN:ND2	82:x:31:SER:O	2.23	0.67
8:7:316:MET:HE3	8:7:318:ALA:HB2	1.76	0.67
11:AA:307:A:H2'	11:AA:308:A:H8	1.59	0.67
80:v:7:ARG:NH2	80:v:67:MET:O	2.27	0.67
6:5:36:LEU:HB3	6:5:38:ILE:HG13	1.76	0.67
8:7:209:THR:HA	8:7:225:LEU:HB2	1.75	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1353:U:H2'	32:II:8:LYS:NZ	2.09	0.67
20:DD:16:ARG:NH2	20:DD:69:ASP:OD2	2.26	0.67
79:u:86:LEU:HD11	79:u:97:ASP:HB3	1.77	0.67
12:Aa:438:MET:HG2	12:Aa:439:GLY:H	1.60	0.67
37:L:110:ALA:O	37:L:114:VAL:HG23	1.94	0.67
61:c:1171:A:H2'	61:c:1172:G:C8	2.29	0.67
68:j:121:LEU:H	68:j:124:LEU:HD23	1.58	0.67
68:j:180:THR:HG22	68:j:182:GLN:H	1.59	0.67
82:x:79:LEU:HD22	82:x:82:VAL:HG21	1.76	0.67
11:AA:655:C:H2'	11:AA:656:A:H8	1.59	0.67
11:AA:1635:G:N2	11:AA:1638:A:OP2	2.26	0.67
12:Aa:677:PHE:HB3	12:Aa:819:VAL:HG13	1.77	0.67
11:AA:307:A:H2'	11:AA:308:A:C8	2.30	0.67
11:AA:3306:U:OP1	26:FF:269:GLN:NE2	2.28	0.66
44:OO:5:LYS:HD3	44:OO:5:LYS:H	1.60	0.66
61:c:1202:A:N6	61:c:1457:C:OP1	2.28	0.66
62:d:69:ASN:ND2	64:f:244:SER:O	2.27	0.66
61:c:1462:G:OP1	79:u:144:ARG:NH2	2.28	0.66
67:i:41:LYS:NZ	67:i:42:LEU:O	2.28	0.66
67:i:58:LEU:HD12	67:i:138:THR:HG22	1.77	0.66
68:j:85:ARG:O	68:j:87:ARG:NH1	2.29	0.66
18:Cc:9:G:O2'	18:Cc:10:G:N7	2.28	0.66
61:c:258:C:O2	70:l:178:ARG:NH1	2.28	0.66
6:5:19:ARG:HD2	6:5:32:ARG:HD2	1.76	0.66
11:AA:1440:G:N7	91:AA:3735:HOH:O	2.27	0.66
11:AA:2854:U:OP2	40:MM:3:ARG:NH1	2.28	0.66
22:E:71:LYS:HE3	22:E:73:LYS:HG2	1.77	0.66
61:c:1365:C:OP1	77:s:66:ARG:NH2	2.28	0.66
62:d:189:VAL:O	82:x:44:ARG:NH2	2.27	0.66
79:u:122:HIS:CE1	79:u:126:ARG:HE	2.13	0.66
8:7:18:GLY:N	8:7:308:ASN:OD1	2.23	0.66
11:AA:406:G:C8	91:AA:3748:HOH:O	2.49	0.66
11:AA:824:C:H5''	23:EE:21:ARG:HD3	1.77	0.66
16:C:152:HIS:ND1	16:C:162:ALA:O	2.26	0.66
61:c:1173:C:OP2	79:u:142:GLY:N	2.29	0.66
11:AA:2960:C:H2'	11:AA:2961:G:C8	2.31	0.66
12:Aa:350:ALA:HA	12:Aa:370:LYS:HG2	1.77	0.66
61:c:110:U:OP1	61:c:753:A:O2'	2.12	0.66
61:c:1553:G:N7	76:r:43:ARG:NH2	2.44	0.66
63:e:46:THR:OG1	63:e:64:ARG:NH1	2.29	0.66
11:AA:2815:OMG:H2'	11:AA:2870:5MC:HM51	1.77	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2899:C:O2'	11:AA:2901:G:OP2	2.14	0.66
18:Cc:40:C:H2'	18:Cc:41:C:C6	2.30	0.66
61:c:1266:U:H2'	61:c:1267:G:H8	1.59	0.66
61:c:1287:A:N6	61:c:1329:A:O4'	2.27	0.66
10:A:49:ARG:NH1	11:AA:1193:A:OP1	2.26	0.66
14:BB:121:U:O2'	30:HH:268:GLU:OE1	2.11	0.66
61:c:1611:A:O2'	67:i:95:ASN:O	2.14	0.66
11:AA:216:G:OP1	35:K:16:ARG:NH1	2.29	0.65
44:OO:123:ILE:HG22	52:T:118:ILE:HG12	1.78	0.65
61:c:302:U:OP1	70:l:22:ARG:NH2	2.26	0.65
61:c:1280:C:H2'	61:c:1281:G:H8	1.61	0.65
11:AA:831:G:O2'	11:AA:1864:A:N3	2.28	0.65
12:Aa:300:LEU:HB3	12:Aa:305:ILE:HD11	1.78	0.65
61:c:924:A:H2'	61:c:925:G:C8	2.31	0.65
71:m:139:GLN:NE2	71:m:140:ILE:O	2.27	0.65
8:7:16:HIS:HE2	8:7:37:SER:HG	1.44	0.65
11:AA:3092:C:O2'	11:AA:3094:A:OP2	2.12	0.65
18:Cc:40:C:H2'	18:Cc:41:C:H6	1.62	0.65
61:c:65:A:H2	61:c:84:A:H62	1.42	0.65
70:l:184:LEU:HD22	70:l:188:GLU:HG2	1.77	0.65
11:AA:2447:A:H61	11:AA:2500:A:H2	1.42	0.65
20:DD:158:VAL:HG13	20:DD:159:VAL:HG23	1.75	0.65
24:Ee:91:ASP:HB3	24:Ee:94:LYS:HB3	1.79	0.65
69:k:151:LYS:HE3	69:k:153:LEU:HD21	1.76	0.65
11:AA:2697:A:H2'	11:AA:2698:G:C8	2.32	0.65
61:c:1471:A:OP1	67:i:185:ARG:NH2	2.29	0.65
4:3:9:HIS:O	82:x:86:SER:OG	2.14	0.65
61:c:142:G:H2'	61:c:143:G:C8	2.31	0.65
11:AA:627:U:H2'	11:AA:628:A:C8	2.30	0.65
11:AA:673:U:OP1	16:C:21:SER:OG	2.11	0.65
11:AA:3042:U:OP2	11:AA:3092:C:N4	2.29	0.65
64:f:39:THR:O	64:f:42:GLY:N	2.29	0.65
74:p:92:ILE:HD13	74:p:149:LEU:HD11	1.79	0.65
79:u:53:ASP:OD2	79:u:56:LYS:NZ	2.30	0.65
11:AA:3297:U:O4	26:FF:124:LYS:NZ	2.28	0.65
29:H:57:MET:HE3	29:H:75:PRO:HB3	1.79	0.65
61:c:1594:G:OP2	61:c:1596:C:N4	2.30	0.65
2:1:49:ARG:HA	2:1:52:LYS:HG3	1.79	0.65
11:AA:3160:U:H5''	11:AA:3396:U:H3'	1.79	0.65
12:Aa:482:LYS:H	12:Aa:482:LYS:HD2	1.61	0.65
26:FF:57:VAL:HG12	26:FF:357:LYS:HB2	1.78	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:78:A:H4'	68:j:159:ARG:HH22	1.61	0.65
11:AA:1448:U:H2'	11:AA:1449:A2M:H8	1.77	0.65
26:FF:292:ALA:HB2	26:FF:302:LYS:HD3	1.77	0.65
61:c:1225:U:OP2	61:c:1226:A:H2'	1.97	0.65
61:c:1264:G:C2	61:c:1265:G:H1'	2.31	0.65
17:CC:103:G:OP2	17:CC:105:A:O2'	2.15	0.64
61:c:902:G:OP1	75:q:90:ARG:NH1	2.23	0.64
11:AA:520:U:OP2	34:JJ:70:LYS:NZ	2.26	0.64
11:AA:1572:U:O4	11:AA:1574:C:N4	2.31	0.64
61:c:324:U:OP1	73:o:133:LYS:NZ	2.21	0.64
61:c:1213:G:N2	61:c:1450:U:O2	2.28	0.64
79:u:61:LEU:HG	79:u:62:THR:HG23	1.79	0.64
11:AA:2213:A:H2'	11:AA:2214:A:H8	1.62	0.64
22:E:73:LYS:NZ	22:E:97:VAL:O	2.30	0.64
61:c:955:A:OP1	74:p:3:ARG:NH1	2.30	0.64
61:c:1225:U:H3'	61:c:1226:A:C8	2.32	0.64
76:r:108:ARG:NH2	79:u:118:LYS:O	2.30	0.64
61:c:1677:C:OP1	70:l:42:ARG:NH1	2.28	0.64
77:s:10:PHE:O	77:s:87:LYS:NZ	2.29	0.64
11:AA:394:G:N1	11:AA:397:A:OP2	2.28	0.64
11:AA:1717:U:H2'	11:AA:1718:G:C8	2.32	0.64
17:CC:71:A:O2'	17:CC:83:C:N4	2.28	0.64
49:QQ:33:LYS:O	49:QQ:65:ARG:NH2	2.31	0.64
61:c:1410:A:H2'	61:c:1411:A:C8	2.33	0.64
75:q:16:VAL:O	75:q:30:VAL:HA	1.97	0.64
11:AA:72:C:H4'	44:OO:63:VAL:HG12	1.79	0.64
11:AA:289:A:O2'	49:QQ:93:LYS:O	2.14	0.64
12:Aa:18:ASN:ND2	12:Aa:97:SER:O	2.23	0.64
17:CC:136:G:OP1	33:J:48:SER:OG	2.15	0.64
51:S:91:ARG:HG2	51:S:95:ILE:HD12	1.80	0.64
61:c:1474:G:H2'	61:c:1475:A:H8	1.62	0.64
61:c:1542:G:N1	61:c:1568:C:O2'	2.27	0.64
61:c:1682:U:O4	61:c:1720:G:N2	2.31	0.64
77:s:127:LYS:HA	77:s:134:ALA:HA	1.79	0.64
11:AA:3049:A:OP2	91:AA:3705:HOH:O	2.14	0.64
61:c:478:A:O2'	71:m:124:HIS:ND1	2.25	0.64
61:c:752:A:OP1	66:h:187:ARG:NE	2.30	0.64
61:c:1175:U:H2'	61:c:1176:G:C8	2.33	0.64
61:c:1225:U:H3'	61:c:1226:A:H8	1.62	0.64
61:c:1259:U:H2'	61:c:1260:U:C6	2.32	0.64
11:AA:2697:A:H2'	11:AA:2698:G:H8	1.63	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:1173:C:OP1	79:u:132:ARG:NH1	2.31	0.64
11:AA:1696:A:H2'	11:AA:1697:A:C8	2.32	0.64
12:Aa:20:ARG:NE	12:Aa:342:LEU:O	2.30	0.64
22:E:14:LEU:HD12	22:E:15:PRO:HD2	1.79	0.64
66:h:129:VAL:HG22	66:h:139:VAL:HG12	1.80	0.64
61:c:455:C:H3'	61:c:456:A:H8	1.62	0.64
61:c:1479:A:H2	61:c:1528:U:H3	1.46	0.64
84:z:56:LYS:NZ	84:z:96:VAL:O	2.26	0.64
11:AA:68:C:OP2	11:AA:301:G:N2	2.30	0.63
11:AA:107:A:O2'	11:AA:324:A:N3	2.29	0.63
11:AA:2947:G:H4'	11:AA:2947:G:OP2	1.97	0.63
69:k:51:VAL:HG12	69:k:53:GLY:H	1.63	0.63
1:O:16:PRO:HD2	66:h:95:THR:HB	1.79	0.63
11:AA:1596:C:H2'	11:AA:1597:C:C6	2.33	0.63
11:AA:2429:G:H2'	11:AA:2430:A:C8	2.33	0.63
61:c:1230:A:N6	61:c:1255:G:O2'	2.30	0.63
69:k:157:LYS:NZ	69:k:158:ASP:OD2	2.31	0.63
76:r:91:GLY:H	76:r:107:ILE:HB	1.62	0.63
79:u:52:VAL:HB	79:u:61:LEU:HD11	1.78	0.63
11:AA:1492:G:OP1	54:V:14:LYS:NZ	2.32	0.63
11:AA:1940:G:H21	11:AA:3362:A:H8	1.46	0.63
26:FF:214:MET:HE3	26:FF:281:LYS:HB2	1.80	0.63
61:c:1226:A:OP1	61:c:1228:G:H5'	1.97	0.63
61:c:1332:C:OP1	78:t:43:SER:OG	2.15	0.63
11:AA:292:U:OP2	49:QQ:68:ARG:NH2	2.30	0.63
11:AA:3016:A:H2'	11:AA:3017:A:H8	1.63	0.63
12:Aa:743:ILE:HD13	12:Aa:784:LEU:HD11	1.81	0.63
20:DD:56:ASN:O	20:DD:60:ARG:HG3	1.98	0.63
76:r:98:ASN:HD22	76:r:122:THR:HA	1.63	0.63
11:AA:1805:C:H2'	11:AA:1806:A:H8	1.62	0.63
61:c:1287:A:N6	61:c:1328:G:N3	2.46	0.63
11:AA:900:G:H1'	11:AA:1589:A:H61	1.64	0.63
65:g:167:PHE:O	65:g:168:ILE:HG13	1.98	0.63
12:Aa:380:LEU:HD12	12:Aa:405:VAL:HG21	1.79	0.63
24:Ee:35:LEU:HD12	24:Ee:37:LEU:H	1.62	0.63
61:c:12:U:H2'	61:c:13:C:C6	2.33	0.63
19:D:151:ARG:NE	73:o:116:ARG:HH22	1.96	0.63
61:c:1466:G:O2'	61:c:1602:C:OP1	2.16	0.63
61:c:1478:G:OP1	80:v:39:THR:OG1	2.12	0.63
74:p:145:THR:HG22	74:p:148:ALA:HB3	1.81	0.63
58:Z:11:ARG:NH2	61:c:1127:G:OP1	2.30	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
68:j:191:ARG:NH1	68:j:191:ARG:HB3	2.14	0.63
11:AA:2490:C:H1'	11:AA:2491:A:C8	2.34	0.62
29:H:32:ARG:HB2	29:H:64:LYS:HG3	1.81	0.62
67:i:50:GLU:O	67:i:128:ASN:ND2	2.32	0.62
11:AA:1222:G:C8	20:DD:57:THR:HG21	2.33	0.62
11:AA:2955:U:H5'	47:Pp:2:PHE:HE2	1.64	0.62
11:AA:3039:C:OP1	26:FF:62:ARG:NH1	2.32	0.62
26:FF:360:ASP:OD2	26:FF:364:LYS:NZ	2.32	0.62
61:c:123:G:OP1	66:h:77:ARG:NH2	2.32	0.62
61:c:1227:A:H1'	61:c:1256:A:N6	2.14	0.62
70:l:10:LYS:HG3	73:o:133:LYS:HE3	1.81	0.62
11:AA:655:C:H2'	11:AA:656:A:C8	2.34	0.62
61:c:1226:A:OP1	61:c:1229:G:H5'	1.98	0.62
61:c:1490:C:H4'	61:c:1491:U:H5'	1.80	0.62
11:AA:2763:U:O2	88:AA:3605:SPD:N1	2.32	0.62
12:Aa:78:TYR:HE1	12:Aa:97:SER:HB2	1.64	0.62
24:Ee:20:GLY:HA3	24:Ee:54:LYS:HG3	1.81	0.62
40:MM:44:ASP:N	40:MM:44:ASP:OD1	2.32	0.62
61:c:1465:C:H5''	77:s:139:GLN:HG2	1.81	0.62
14:BB:64:A:N7	40:MM:209:ASN:ND2	2.45	0.62
20:DD:117:GLU:OE1	20:DD:117:GLU:N	2.32	0.62
50:R:14:LEU:HD11	50:R:31:LYS:HB2	1.81	0.62
61:c:163:G:OP2	61:c:163:G:N2	2.26	0.62
61:c:900:A:H3'	61:c:901:G:H21	1.65	0.62
79:u:56:LYS:HD3	79:u:61:LEU:HA	1.81	0.62
11:AA:22:G:H5''	54:V:43:LYS:HG2	1.80	0.62
11:AA:1863:G:N7	91:AA:3757:HOH:O	2.31	0.62
15:Bb:20:G:OP1	42:NN:55:ARG:NH1	2.33	0.62
61:c:1474:G:H2'	61:c:1475:A:C8	2.34	0.62
26:FF:284:ARG:NH1	26:FF:293:ASN:O	2.32	0.62
30:HH:60:ILE:N	30:HH:80:SER:OG	2.33	0.62
43:O:13:LYS:O	43:O:17:VAL:HG23	1.99	0.62
61:c:1413:U:O2'	61:c:1416:G:OP1	2.16	0.62
64:f:185:LYS:O	64:f:189:GLN:HG2	1.99	0.62
70:l:70:GLU:HB2	70:l:72:ILE:HD11	1.80	0.62
11:AA:2261:G:OP1	11:AA:2306:C:N4	2.25	0.62
11:AA:3343:G:H21	11:AA:3362:A:H2	1.47	0.62
17:CC:58:G:O6	54:V:63:ARG:NH1	2.32	0.62
38:LL:72:LYS:NZ	38:LL:76:ASP:OD2	2.31	0.62
45:P:36:ILE:HD12	45:P:59:ILE:HD11	1.81	0.62
11:AA:158:G:H2'	11:AA:159:A:H8	1.63	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:351:A:N6	56:X:37:TYR:O	2.28	0.62
11:AA:1667:A:H2'	11:AA:1668:G:C8	2.35	0.62
18:Cc:45:A:H2'	18:Cc:46:G:C8	2.35	0.62
61:c:1213:G:H1	61:c:1450:U:H3	1.47	0.62
69:k:150:GLN:HB3	69:k:181:ILE:HD12	1.81	0.62
79:u:116:LEU:HD21	79:u:123:ARG:HB2	1.80	0.62
11:AA:705:A:N7	39:M:74:ASN:ND2	2.43	0.62
11:AA:1203:A:H2'	11:AA:1204:A:C8	2.34	0.62
11:AA:2442:G:O6	11:AA:2505:U:O4	2.17	0.62
60:b:39:CYS:HB2	60:b:57:CYS:SG	2.39	0.62
68:j:57:ASP:HA	68:j:106:LEU:HA	1.80	0.62
8:7:47:LEU:HD21	8:7:302:PHE:HZ	1.65	0.61
11:AA:129:U:H2'	11:AA:130:A:C8	2.35	0.61
26:FF:232:ARG:NH1	26:FF:266:ARG:O	2.31	0.61
61:c:1290:U:H2'	61:c:1291:G:C8	2.35	0.61
8:7:209:THR:HG23	8:7:225:LEU:H	1.65	0.61
11:AA:12:A:H2'	11:AA:13:A:C8	2.35	0.61
11:AA:2680:A:N6	42:NN:56:THR:OG1	2.33	0.61
17:CC:8:C:H2'	17:CC:9:A:C8	2.35	0.61
61:c:509:G:H2'	61:c:510:G:C8	2.34	0.61
61:c:513:U:H2'	61:c:514:G:C8	2.34	0.61
61:c:1183:A:N6	76:r:122:THR:O	2.32	0.61
68:j:102:VAL:HG13	68:j:106:LEU:HD22	1.81	0.61
84:z:90:ASP:O	84:z:136:TRP:NE1	2.33	0.61
11:AA:63:A:N3	11:AA:78:U:O2'	2.33	0.61
11:AA:97:U:O2'	91:AA:3703:HOH:O	2.13	0.61
11:AA:2476:C:H2'	11:AA:2477:G:H4'	1.82	0.61
63:e:175:GLU:HG2	63:e:193:ILE:HG12	1.82	0.61
67:i:99:MET:HB2	67:i:180:ARG:NH2	2.14	0.61
77:s:41:PRO:HG2	77:s:44:LEU:HB2	1.82	0.61
10:A:27:LEU:HD21	10:A:102:LEU:HB2	1.83	0.61
11:AA:1644:C:H5''	11:AA:1645:U:H5''	1.81	0.61
11:AA:2836:C:H5	11:AA:2852:C:H42	1.49	0.61
26:FF:193:ASP:O	26:FF:197:GLU:HG2	2.01	0.61
40:MM:72:ALA:HB2	40:MM:155:ALA:HB2	1.82	0.61
61:c:1457:C:O2	79:u:137:HIS:NE2	2.25	0.61
3:2:32:LYS:O	3:2:37:LYS:NZ	2.32	0.61
36:KK:104:GLU:HA	36:KK:107:GLU:HG2	1.83	0.61
61:c:257:A:O2'	70:l:73:SER:O	2.18	0.61
11:AA:1219:C:O2'	11:AA:1286:A:N1	2.33	0.61
12:Aa:251:ASN:HA	12:Aa:269:LEU:HD22	1.82	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:DD:158:VAL:HG22	20:DD:169:GLU:HG3	1.82	0.61
24:Ee:48:LYS:O	24:Ee:51:LYS:HD2	2.00	0.61
32:II:100:LYS:HZ3	32:II:105:TYR:HE1	1.48	0.61
63:e:32:ILE:HG22	63:e:34:ALA:HB2	1.83	0.61
11:AA:627:U:H4'	11:AA:1399:A:H1'	1.81	0.61
17:CC:57:C:H4'	17:CC:63:G:N7	2.16	0.61
25:F:100:LYS:HA	25:F:103:GLN:HG2	1.81	0.61
61:c:967:A:OP2	74:p:124:ARG:NH2	2.33	0.61
66:h:181:VAL:HG21	66:h:210:ILE:HD12	1.82	0.61
11:AA:532:A:HO2'	11:AA:533:A:H8	1.47	0.61
11:AA:1033:U:H2'	11:AA:1034:U:C6	2.35	0.61
11:AA:1836:C:H41	56:X:3:ALA:HB2	1.66	0.61
11:AA:2160:G:H2'	11:AA:2161:G:H8	1.66	0.61
12:Aa:649:GLN:HG3	12:Aa:687:ASN:HB3	1.82	0.61
20:DD:42:ARG:HH11	20:DD:51:VAL:HB	1.65	0.61
35:K:71:SER:N	35:K:81:GLN:O	2.28	0.61
80:v:113:ILE:HG13	80:v:114:VAL:HG23	1.83	0.61
5:4:18:ARG:NH2	5:4:23:GLY:O	2.33	0.61
11:AA:2953:U:H2'	11:AA:2954:U:H2'	1.83	0.61
11:AA:3016:A:H2'	11:AA:3017:A:C8	2.36	0.61
12:Aa:26:ALA:HB3	12:Aa:32:LYS:HE3	1.83	0.61
23:EE:3:ARG:HB2	23:EE:207:VAL:HG22	1.82	0.61
61:c:475:A:OP1	71:m:130:THR:OG1	2.19	0.61
71:m:162:SER:O	71:m:162:SER:OG	2.14	0.61
79:u:16:ARG:NH1	79:u:21:ASN:OD1	2.34	0.61
2:1:68:ARG:HB2	2:1:70:LYS:HE2	1.83	0.60
11:AA:1553:U:H4'	11:AA:1554:U:H5'	1.83	0.60
11:AA:2949:U:C5	11:AA:2950:G:C6	2.89	0.60
17:CC:63:G:H22	17:CC:97:A:H2	1.49	0.60
49:QQ:73:ARG:HG2	49:QQ:75:VAL:HG13	1.83	0.60
61:c:45:U:O2'	61:c:46:A:H2'	2.01	0.60
61:c:68:A:OP2	68:j:171:LYS:NZ	2.34	0.60
1:0:57:VAL:HB	1:0:60:PHE:HE2	1.66	0.60
5:4:29:ARG:HG2	5:4:41:VAL:HG22	1.82	0.60
11:AA:528:U:H2'	11:AA:529:A:C8	2.36	0.60
33:J:50:ALA:O	52:T:66:VAL:HG21	2.01	0.60
54:V:54:LYS:O	54:V:58:THR:HB	2.02	0.60
61:c:476:U:OP1	61:c:477:A:O2'	2.18	0.60
11:AA:13:A:H4'	33:J:39:LYS:HD3	1.84	0.60
42:NN:53:THR:HG23	42:NN:60:ARG:HA	1.82	0.60
61:c:331:A:N7	70:l:172:ARG:NH2	2.49	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:1452:U:H2'	61:c:1453:G:H8	1.66	0.60
79:u:46:VAL:HG12	79:u:81:ILE:HD11	1.83	0.60
38:LL:162:GLN:NE2	38:LL:180:TYR:HA	2.16	0.60
52:T:34:GLN:HB3	52:T:38:ARG:HH12	1.65	0.60
54:V:14:LYS:HD3	56:X:51:ILE:HD11	1.81	0.60
80:v:134:ARG:HH21	80:v:135:ILE:HD11	1.65	0.60
11:AA:417:A:H2'	11:AA:418:A:C8	2.36	0.60
11:AA:2522:G:O6	23:EE:70:ARG:NH2	2.34	0.60
11:AA:2767:U:O2'	59:a:30:ALA:O	2.17	0.60
35:K:118:LEU:HD11	35:K:122:LYS:HE2	1.83	0.60
64:f:111:VAL:HB	64:f:191:ALA:HA	1.82	0.60
81:w:58:LEU:HG	81:w:88:LYS:HE2	1.82	0.60
55:W:9:LYS:N	55:W:9:LYS:HE2	2.16	0.60
66:h:151:ASP:OD1	68:j:215:ARG:NH1	2.26	0.60
77:s:141:SER:O	77:s:143:ARG:N	2.34	0.60
79:u:33:THR:HG23	79:u:39:GLY:HA2	1.84	0.60
11:AA:171:G:H1	11:AA:248:U:H2'	1.67	0.60
11:AA:1786:G:H2'	11:AA:1787:A:C8	2.36	0.60
61:c:1344:A:H4'	81:w:54:GLY:HA3	1.83	0.60
8:7:8:VAL:HG13	8:7:314:GLN:HG3	1.84	0.60
11:AA:985:U:H2'	11:AA:986:U:H6	1.66	0.60
11:AA:2406:C:H2'	11:AA:2407:C:C6	2.36	0.60
12:Aa:425:ASP:OD2	84:z:144:ARG:NH1	2.35	0.60
68:j:180:THR:HB	68:j:183:ARG:HG3	1.84	0.60
17:CC:49:G:OP2	52:T:48:ARG:NH2	2.34	0.60
18:Cc:45:A:H2'	18:Cc:46:G:H8	1.67	0.60
80:v:77:ASN:OD1	80:v:96:ALA:N	2.34	0.60
11:AA:1560:G:O2'	11:AA:1561:G:O4'	2.19	0.60
44:OO:37:ASN:O	44:OO:41:THR:HG23	2.02	0.60
61:c:535:A:OP1	71:m:168:ARG:NH2	2.35	0.60
77:s:143:ARG:HB3	77:s:143:ARG:NH2	2.17	0.60
11:AA:2930:A:H2'	11:AA:2931:C:C6	2.37	0.59
17:CC:67:U:H5''	54:V:85:LYS:HB2	1.84	0.59
71:m:170:GLY:O	71:m:174:ARG:NH1	2.35	0.59
1:0:16:PRO:HB2	66:h:94:ALA:HB1	1.84	0.59
11:AA:297:G:OP2	11:AA:297:G:N2	2.31	0.59
11:AA:1155:C:O2'	11:AA:1197:A:N1	2.34	0.59
59:a:34:SER:OG	59:a:35:LEU:O	2.19	0.59
69:k:27:LEU:O	69:k:31:SER:OG	2.19	0.59
71:m:162:SER:O	71:m:164:PHE:N	2.31	0.59
11:AA:649:A2M:H5''	11:AA:649:A2M:H8	1.83	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:964:G:H5'	39:M:29:PRO:HB2	1.83	0.59
11:AA:2453:U:H5'	11:AA:2460:U:H1'	1.84	0.59
61:c:1563:C:OP1	80:v:84:LYS:NZ	2.34	0.59
61:c:1682:U:H4'	68:j:65:GLN:HE22	1.67	0.59
11:AA:258:G:OP1	44:OO:81:LYS:NZ	2.28	0.59
11:AA:1029:G:H2'	11:AA:1030:A:C8	2.37	0.59
61:c:52:U:H2'	61:c:53:G:C8	2.37	0.59
61:c:472:U:O2'	61:c:769:A:N3	2.32	0.59
61:c:1169:G:H21	61:c:1576:A:H62	1.51	0.59
61:c:1264:G:N3	61:c:1265:G:H1'	2.17	0.59
61:c:1316:G:O2'	61:c:1401:A:O2'	2.16	0.59
66:h:104:ASP:HB3	66:h:110:ALA:HB2	1.85	0.59
9:8:143:LYS:NZ	61:c:1253:U:O2'	2.26	0.59
11:AA:776:U:OP2	41:N:41:ARG:NH1	2.36	0.59
4:3:33:LEU:HD12	4:3:81:ARG:HA	1.85	0.59
8:7:114:ASP:OD1	8:7:115:ILE:N	2.35	0.59
30:HH:196:ARG:HA	30:HH:199:ILE:HD12	1.84	0.59
51:S:85:VAL:O	51:S:89:ILE:HG12	2.01	0.59
61:c:1350:U:H2'	61:c:1351:G:C8	2.37	0.59
62:d:50:VAL:HG23	78:t:109:LEU:HD21	1.83	0.59
8:7:31:ASN:OD1	8:7:31:ASN:N	2.32	0.59
8:7:123:ILE:HG22	8:7:133:VAL:HG12	1.84	0.59
11:AA:1562:C:O2'	11:AA:1563:C:O5'	2.16	0.59
61:c:1034:C:HO2'	83:y:2:THR:N	1.99	0.59
61:c:1208:A:H1'	61:c:1269:U:H1'	1.84	0.59
67:i:168:VAL:O	67:i:172:ILE:HG12	2.02	0.59
69:k:20:VAL:HG21	69:k:46:ILE:HD12	1.83	0.59
11:AA:3045:G:OP1	26:FF:19:ARG:NH2	2.33	0.59
17:CC:81:U:H5''	17:CC:82:U:H5'	1.83	0.59
17:CC:156:U:OP2	36:KK:84:ARG:NH2	2.36	0.59
22:E:71:LYS:O	22:E:73:LYS:NZ	2.36	0.59
61:c:407:A:H2'	61:c:408:C:C6	2.38	0.59
61:c:1268:G:O2'	61:c:1270:G:OP1	2.19	0.59
8:7:19:TRP:HB3	8:7:38:ARG:HB2	1.85	0.59
11:AA:1624:G:O2'	11:AA:1643:A:N1	2.32	0.59
51:S:46:ASP:OD2	51:S:88:ARG:NH1	2.34	0.59
61:c:407:A:H2'	61:c:408:C:H6	1.67	0.59
61:c:1284:C:OP1	61:c:1623:C:O2'	2.20	0.59
61:c:1772:C:H2'	61:c:1773:4AC:H6	1.84	0.59
69:k:63:PRO:HG2	69:k:65:PRO:HD3	1.85	0.59
11:AA:528:U:H2'	11:AA:529:A:H8	1.67	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:664:U:H2'	11:AA:665:A:C8	2.38	0.59
37:L:23:VAL:HG12	37:L:45:GLY:HA3	1.84	0.59
45:P:9:THR:HG23	45:P:109:VAL:HB	1.85	0.59
61:c:576:G:H22	84:z:67:ALA:HB2	1.68	0.59
11:AA:309:U:OP1	53:U:84:LYS:NZ	2.27	0.58
11:AA:861:C:OP1	11:AA:2133:U:O2'	2.16	0.58
12:Aa:24:VAL:HG22	12:Aa:126:LEU:HB3	1.85	0.58
12:Aa:433:ARG:HG2	12:Aa:433:ARG:HH11	1.67	0.58
26:FF:17:LEU:HD21	26:FF:233:TRP:HH2	1.68	0.58
61:c:319:U:H4'	61:c:323:A:C8	2.38	0.58
61:c:447:U:O2'	66:h:27:TYR:O	2.19	0.58
68:j:142:ARG:NH1	68:j:149:LYS:O	2.35	0.58
69:k:49:ILE:HD12	69:k:175:LYS:HG2	1.85	0.58
77:s:31:VAL:HG21	77:s:39:VAL:HG22	1.83	0.58
11:AA:874:U:OP2	11:AA:1907:C:O2'	2.20	0.58
22:E:2:ALA:HB3	22:E:32:SER:HB3	1.85	0.58
52:T:5:LYS:HB2	52:T:8:GLU:HG3	1.85	0.58
61:c:511:A:OP2	71:m:176:ASN:ND2	2.33	0.58
61:c:1548:G:O2'	79:u:89:GLN:OE1	2.21	0.58
69:k:91:ILE:HD11	69:k:172:VAL:HG21	1.85	0.58
70:l:106:ALA:HB2	70:l:165:LEU:HG	1.85	0.58
81:w:41:ILE:HG23	81:w:103:ILE:HD11	1.84	0.58
8:7:114:ASP:OD2	8:7:156:VAL:HG22	2.04	0.58
10:A:162:VAL:O	10:A:166:GLU:HG3	2.03	0.58
14:BB:112:G:H2'	14:BB:113:C:C6	2.38	0.58
15:Bb:28:C:H2'	15:Bb:29:A:H8	1.68	0.58
44:OO:62:THR:O	44:OO:64:LYS:N	2.36	0.58
61:c:1535:U:C5	67:i:187:ILE:HA	2.38	0.58
61:c:1585:U:H5''	77:s:134:ALA:HB3	1.85	0.58
84:z:100:ASP:OD2	84:z:142:LYS:NZ	2.36	0.58
11:AA:1119:C:H2'	11:AA:1120:A:H8	1.67	0.58
11:AA:2629:U:O4	25:F:2:GLY:N	2.36	0.58
12:Aa:227:THR:HA	12:Aa:237:LYS:HD3	1.84	0.58
26:FF:187:SER:O	26:FF:190:GLU:N	2.35	0.58
39:M:36:GLY:HA3	39:M:40:HIS:CE1	2.38	0.58
61:c:647:G:H21	61:c:687:G:H1	1.51	0.58
61:c:1195:C:H41	77:s:142:TYR:CA	2.12	0.58
68:j:147:LEU:HD11	68:j:153:VAL:HB	1.84	0.58
77:s:93:HIS:HA	77:s:97:VAL:HB	1.85	0.58
8:7:86:ASP:OD1	8:7:88:THR:OG1	2.21	0.58
11:AA:2280:A2M:HM'2	11:AA:2281:A2M:H5'	1.84	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:B:62:ARG:NH1	17:CC:5:U:OP2	2.37	0.58
24:Ee:135:THR:O	24:Ee:138:SER:OG	2.20	0.58
42:NN:107:ASP:OD1	42:NN:107:ASP:N	2.36	0.58
61:c:1176:G:N3	61:c:1195:C:O2'	2.33	0.58
61:c:1564:U:H2'	61:c:1565:C:C6	2.39	0.58
69:k:7:LYS:HG3	69:k:8:ILE:HG12	1.85	0.58
71:m:107:ARG:NH1	71:m:153:GLU:OE2	2.36	0.58
15:Bb:23:A:H2'	15:Bb:24:G:H8	1.69	0.58
15:Bb:37:YYG:H1'	15:Bb:37:YYG:H31	1.84	0.58
20:DD:144:LYS:HG3	20:DD:153:VAL:HG22	1.84	0.58
24:Ee:63:LYS:HB2	24:Ee:70:ALA:HB3	1.84	0.58
29:H:38:ALA:HB3	29:H:59:MET:HB2	1.85	0.58
61:c:10:G:OP1	61:c:1633:A:O2'	2.18	0.58
67:i:96:SER:O	67:i:99:MET:HG2	2.03	0.58
11:AA:2429:G:H2'	11:AA:2430:A:H8	1.66	0.58
11:AA:2468:A:O2'	11:AA:2477:G:N1	2.36	0.58
11:AA:3000:A:H2'	11:AA:3001:C:C6	2.39	0.58
18:Cc:41:C:H2'	18:Cc:42:C:H6	1.69	0.58
37:L:119:GLU:O	37:L:123:GLN:HG2	2.04	0.58
38:LL:1:MET:O	38:LL:1:MET:HG2	2.04	0.58
61:c:183:U:H2'	61:c:184:C:C6	2.39	0.58
68:j:56:ASN:ND2	68:j:60:GLY:O	2.36	0.58
70:l:39:GLY:O	70:l:59:ARG:HB3	2.02	0.58
83:y:30:SER:O	83:y:30:SER:OG	2.15	0.58
11:AA:980:A:H2'	11:AA:981:U:C2	2.38	0.58
12:Aa:500:ASP:HB3	12:Aa:552:VAL:HG21	1.84	0.58
43:O:14:LEU:O	43:O:18:ILE:HG12	2.03	0.58
61:c:1280:C:H4'	81:w:69:LYS:HB3	1.86	0.58
61:c:1546:G:OP2	79:u:134:ARG:NH1	2.36	0.58
71:m:44:ARG:O	71:m:48:GLN:HG2	2.03	0.58
80:v:67:MET:HG3	80:v:68:ARG:HG3	1.84	0.58
11:AA:675:C:O2'	11:AA:679:U:OP1	2.21	0.58
11:AA:994:G:N2	11:AA:995:U:O4	2.32	0.58
11:AA:2185:G:O2'	11:AA:2314:U:OP2	2.21	0.58
12:Aa:249:PHE:HB2	12:Aa:258:THR:HG23	1.86	0.58
12:Aa:758:GLU:HG2	12:Aa:767:THR:HB	1.84	0.58
5:4:49:ARG:HD2	67:i:82:PHE:CG	2.39	0.58
11:AA:2214:A:N7	91:AA:3768:HOH:O	2.32	0.58
12:Aa:381:TYR:HB2	12:Aa:478:MET:HE1	1.86	0.58
19:D:172:ARG:NE	61:c:852:C:OP1	2.35	0.58
25:F:13:TYR:HA	25:F:16:GLN:HG3	1.86	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:2:44:ILE:HG23	3:2:45:VAL:HG23	1.86	0.57
6:5:44:ARG:NH2	61:c:1279:C:O3'	2.35	0.57
12:Aa:154:VAL:HB	12:Aa:337:MET:HE3	1.85	0.57
12:Aa:308:LYS:O	12:Aa:312:LYS:NZ	2.33	0.57
19:D:105:LEU:HD12	19:D:135:LYS:HG3	1.86	0.57
33:J:135:ILE:HD12	33:J:138:ARG:HH21	1.69	0.57
39:M:76:ASP:HB3	39:M:116:GLY:HA3	1.86	0.57
42:NN:30:LEU:HD21	42:NN:47:GLN:HG2	1.85	0.57
64:f:39:THR:HB	64:f:65:GLU:OE1	2.04	0.57
64:f:116:LYS:HG2	64:f:127:ALA:HB3	1.84	0.57
65:g:136:VAL:HG13	65:g:186:VAL:HG22	1.86	0.57
67:i:122:ASN:ND2	67:i:126:ASP:OD1	2.37	0.57
11:AA:3295:A:H2'	11:AA:3296:A:C8	2.39	0.57
61:c:1239:U:O2	61:c:1246:C:N4	2.37	0.57
61:c:1648:A:H2'	61:c:1649:G:H8	1.69	0.57
8:7:199:ILE:HD12	8:7:213:SER:HB3	1.86	0.57
11:AA:1336:U:H2'	11:AA:1337:A:H8	1.69	0.57
11:AA:1385:C:HO2'	32:II:2:SER:N	2.02	0.57
11:AA:2256:A2M:HM'2	11:AA:2256:A2M:C4	2.34	0.57
11:AA:2450:G:O6	11:AA:2497:U:O4	2.22	0.57
15:Bb:20:G:O2'	42:NN:55:ARG:NH2	2.36	0.57
15:Bb:43:G:H2'	15:Bb:44:A:C8	2.39	0.57
18:Cc:8:U:O2'	18:Cc:22:A:N1	2.35	0.57
18:Cc:41:C:H2'	18:Cc:42:C:C6	2.40	0.57
18:Cc:52:C:H2'	18:Cc:53:G:H8	1.68	0.57
61:c:16:G:H2'	61:c:17:C:C6	2.38	0.57
61:c:1221:A:C5	61:c:1263:G:N2	2.72	0.57
61:c:1591:C:H2'	61:c:1592:A:C8	2.40	0.57
64:f:67:GLN:O	64:f:71:THR:HG22	2.04	0.57
68:j:74:LYS:HA	68:j:96:SER:HA	1.85	0.57
79:u:96:LYS:NZ	79:u:97:ASP:O	2.37	0.57
11:AA:1551:C:HO2'	11:AA:2170:U:HO2'	1.49	0.57
11:AA:2448:G:O6	11:AA:2499:U:O4	2.21	0.57
11:AA:2947:G:C2	26:FF:250:ALA:HB1	2.40	0.57
11:AA:3050:U:O2'	31:I:16:GLY:O	2.21	0.57
11:AA:3322:A:H2'	11:AA:3323:A:C8	2.39	0.57
12:Aa:578:LYS:N	12:Aa:840:ASP:OD2	2.32	0.57
19:D:173:ARG:NH2	61:c:853:G:OP1	2.37	0.57
64:f:152:HIS:ND1	64:f:195:ASP:OD2	2.33	0.57
11:AA:1255:C:H2'	11:AA:1256:G:H8	1.69	0.57
11:AA:2696:A:H2'	11:AA:2697:A:C8	2.39	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:3268:A:O2'	11:AA:3269:U:O2	2.22	0.57
30:HH:119:TYR:OH	30:HH:139:PRO:O	2.15	0.57
61:c:1291:G:H22	61:c:1324:G:N2	2.01	0.57
78:t:66:VAL:H	78:t:69:ILE:HD11	1.70	0.57
11:AA:20:A:H2'	11:AA:21:G:C8	2.39	0.57
11:AA:407:A:C2	17:CC:17:A:H1'	2.40	0.57
11:AA:935:U:O4	91:AA:3708:HOH:O	2.17	0.57
11:AA:1029:G:H2'	11:AA:1030:A:H8	1.69	0.57
61:c:1483:A:N3	61:c:1607:G:O2'	2.35	0.57
67:i:72:HIS:O	77:s:79:TYR:OH	2.22	0.57
68:j:187:LYS:O	68:j:191:ARG:HG3	2.05	0.57
71:m:59:LEU:HD22	71:m:69:ARG:HA	1.87	0.57
74:p:3:ARG:HB3	74:p:6:SER:HB3	1.86	0.57
5:4:49:ARG:HG2	67:i:81:ARG:NH1	2.20	0.57
8:7:148:ASN:N	8:7:175:ASP:OD2	2.37	0.57
8:7:159:ASN:N	8:7:159:ASN:OD1	2.37	0.57
73:o:78:THR:HA	73:o:84:ILE:HG22	1.86	0.57
2:1:41:ILE:HG21	79:u:57:ARG:NH1	2.20	0.57
11:AA:1245:A:N7	11:AA:1271:A:O2'	2.34	0.57
28:GG:265:GLU:HG3	28:GG:266:THR:HG23	1.87	0.57
54:V:2:GLY:HA2	54:V:6:PRO:HG2	1.86	0.57
63:e:158:SER:HA	63:e:161:ILE:HB	1.87	0.57
79:u:76:PRO:O	79:u:81:ILE:HB	2.05	0.57
11:AA:715:A:N1	11:AA:781:G:O2'	2.37	0.57
11:AA:715:A:H5''	39:M:115:LYS:HA	1.87	0.57
11:AA:1340:G:OP2	48:Q:61:LYS:NZ	2.33	0.57
11:AA:3121:U:H1'	11:AA:3122:A:H5''	1.85	0.57
24:Ee:85:LEU:HD11	24:Ee:102:GLY:HA3	1.85	0.57
35:K:32:SER:HA	35:K:49:PRO:HA	1.87	0.57
61:c:17:C:H2'	61:c:18:C:C6	2.39	0.57
61:c:182:A:H2'	61:c:183:U:C6	2.40	0.57
61:c:327:U:H2'	61:c:328:A:C8	2.40	0.57
61:c:436:A2M:H8	61:c:436:A2M:O5'	2.05	0.57
61:c:474:A:H5''	71:m:144:PRO:HD2	1.87	0.57
61:c:1160:A:H2'	61:c:1161:C:C6	2.39	0.57
64:f:63:VAL:HG11	64:f:69:ILE:HD11	1.86	0.57
79:u:99:HIS:HD2	79:u:101:LEU:HG	1.70	0.57
11:AA:619:A:O2'	11:AA:620:U:OP2	2.22	0.57
11:AA:2261:G:O2'	11:AA:2262:A:N7	2.34	0.57
11:AA:2501:U:H2'	11:AA:2502:A:C4	2.40	0.57
17:CC:83:C:H2'	17:CC:85:G:H21	1.69	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:885:G:H21	75:q:123:SER:HB2	1.70	0.57
61:c:1794:A:OP2	91:c:2003:HOH:O	2.17	0.57
70:l:66:SER:HA	70:l:73:SER:HA	1.85	0.57
6:5:22:ARG:HG2	6:5:38:ILE:HG22	1.87	0.56
11:AA:2946:A2M:H5''	11:AA:2947:G:H5'	1.86	0.56
13:B:33:ALA:HB1	13:B:117:ILE:HG12	1.86	0.56
27:G:77:LYS:HG3	27:G:95:PHE:CD1	2.39	0.56
61:c:1482:C:O2'	77:s:72:GLY:O	2.18	0.56
62:d:33:GLN:NE2	82:x:64:GLU:OE1	2.37	0.56
64:f:60:SER:O	64:f:60:SER:OG	2.22	0.56
64:f:90:THR:H	64:f:93:GLY:CA	2.17	0.56
75:q:18:ARG:HB2	75:q:29:HIS:O	2.05	0.56
8:7:7:LEU:HA	8:7:315:VAL:HG12	1.86	0.56
11:AA:567:G:H2'	11:AA:568:G:C8	2.39	0.56
12:Aa:334:LEU:O	12:Aa:337:MET:HB3	2.05	0.56
56:X:28:ARG:HA	56:X:33:ASN:OD1	2.05	0.56
61:c:447:U:OP1	66:h:49:ARG:NH1	2.37	0.56
61:c:1579:U:H4'	77:s:140:LYS:O	2.05	0.56
61:c:1579:U:O2'	77:s:139:GLN:HB2	2.06	0.56
61:c:1673:G:O6	61:c:1728:A:N1	2.38	0.56
63:e:144:ARG:HD3	63:e:208:GLN:HB3	1.87	0.56
1:0:37:LYS:HG3	61:c:522:U:H5''	1.88	0.56
11:AA:1024:G:H22	11:AA:1027:A:P	2.28	0.56
11:AA:1253:U:H4'	11:AA:1254:C:H5'	1.87	0.56
11:AA:2101:C:H2'	11:AA:2102:U:C6	2.40	0.56
11:AA:2357:A:H2'	11:AA:2358:A:C8	2.40	0.56
11:AA:2561:A:H2'	11:AA:2562:A:H8	1.69	0.56
11:AA:3233:C:H2'	11:AA:3234:A:C8	2.40	0.56
17:CC:143:U:OP1	49:QQ:38:ARG:NH2	2.37	0.56
20:DD:41:VAL:HG21	20:DD:185:LEU:HD13	1.86	0.56
25:F:32:LYS:O	30:HH:41:LYS:NZ	2.35	0.56
59:a:2:VAL:N	59:a:90:HIS:O	2.37	0.56
61:c:583:C:OP2	91:c:2004:HOH:O	2.18	0.56
61:c:1085:G:N2	61:c:1088:A:OP2	2.32	0.56
64:f:123:GLY:N	64:f:126:ARG:HH21	2.03	0.56
67:i:128:ASN:HB3	67:i:131:GLN:HB3	1.87	0.56
2:1:41:ILE:HD13	79:u:57:ARG:HH22	1.70	0.56
11:AA:2129:U:H2'	11:AA:2130:G:C8	2.41	0.56
12:Aa:489:VAL:HG12	12:Aa:781:THR:HG21	1.86	0.56
52:T:58:ILE:O	52:T:62:GLN:HG2	2.05	0.56
61:c:52:U:H2'	61:c:53:G:H8	1.71	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:77:U:O2'	61:c:78:A:OP2	2.18	0.56
61:c:887:A:H1'	75:q:122:PRO:HB3	1.88	0.56
61:c:1223:A:HO2'	61:c:1224:A:H8	1.51	0.56
78:t:14:LYS:NZ	78:t:68:GLY:O	2.39	0.56
5:4:18:ARG:NH1	61:c:1616:G:O2'	2.38	0.56
11:AA:2477:G:N2	11:AA:2478:C:O4'	2.39	0.56
11:AA:2683:U:H2'	11:AA:2684:C:C6	2.41	0.56
11:AA:3119:U:H4'	57:Y:104:PRO:HG2	1.88	0.56
11:AA:3187:A:OP1	38:LL:23:ARG:NH1	2.39	0.56
29:H:40:LYS:HG3	29:H:57:MET:HG2	1.87	0.56
31:I:4:GLU:HB2	31:I:13:ILE:HB	1.88	0.56
36:KK:144:GLU:OE2	49:QQ:6:TYR:OH	2.16	0.56
61:c:939:A:H2'	61:c:940:A:C8	2.40	0.56
63:e:144:ARG:HB3	63:e:208:GLN:HB3	1.87	0.56
81:w:58:LEU:HD13	81:w:59:PRO:HD2	1.87	0.56
81:w:102:ARG:O	81:w:106:ILE:HG23	2.05	0.56
11:AA:359:U:HO2'	54:V:16:HIS:HD1	1.53	0.56
11:AA:2435:G:O2'	49:QQ:24:ARG:NH1	2.31	0.56
30:HH:182:GLY:HA2	30:HH:194:LEU:HD23	1.88	0.56
42:NN:6:GLN:O	42:NN:7:ASN:ND2	2.38	0.56
8:7:159:ASN:HD21	8:7:167:VAL:HA	1.69	0.56
11:AA:713:U:OP1	44:OO:174:ARG:NH1	2.39	0.56
11:AA:998:A:N7	91:AA:3771:HOH:O	2.33	0.56
11:AA:2196:C:O2'	11:AA:2270:A:H8	1.89	0.56
11:AA:2607:G:OP2	91:AA:3710:HOH:O	2.18	0.56
12:Aa:607:ASN:HD21	12:Aa:609:ARG:HB2	1.70	0.56
15:Bb:18:G:H5'	15:Bb:61:C:H5'	1.88	0.56
15:Bb:23:A:H2'	15:Bb:24:G:C8	2.40	0.56
17:CC:8:C:H2'	17:CC:9:A:H8	1.71	0.56
34:JJ:130:ILE:HD12	34:JJ:134:VAL:HG11	1.87	0.56
61:c:1172:G:HO2'	61:c:1543:A:HO2'	1.45	0.56
61:c:1360:A:H2'	61:c:1361:U:H4'	1.87	0.56
63:e:132:ASP:HB3	63:e:221:PRO:HB3	1.87	0.56
11:AA:370:U:H4'	11:AA:404:G:H5'	1.88	0.56
12:Aa:760:ARG:HA	12:Aa:760:ARG:HE	1.70	0.56
18:Cc:51:U:O4	18:Cc:65:G:O6	2.23	0.56
50:R:49:ILE:HD11	50:R:71:VAL:HG22	1.88	0.56
61:c:687:G:H5'	83:y:119:LYS:HE2	1.86	0.56
61:c:1317:C:H2'	61:c:1318:G:O4'	2.06	0.56
61:c:1350:U:H2'	61:c:1351:G:H8	1.69	0.56
61:c:1452:U:H2'	61:c:1453:G:C8	2.40	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:1471:A:N7	61:c:1538:U:O4	2.38	0.56
61:c:1545:A:H5''	79:u:133:VAL:HG12	1.88	0.56
77:s:59:LYS:HD3	77:s:60:PHE:CE2	2.40	0.56
11:AA:799:G:O2'	44:OO:18:TRP:NE1	2.34	0.56
34:JJ:168:ILE:O	34:JJ:172:ASN:ND2	2.38	0.56
37:L:50:PRO:HD3	37:L:68:ILE:HG12	1.86	0.56
61:c:168:A:OP1	68:j:140:ASN:ND2	2.33	0.56
61:c:788:A:OP2	66:h:108:ARG:NH2	2.36	0.56
61:c:819:G:H4'	61:c:820:U:C5	2.41	0.56
61:c:1389:C:N4	61:c:1391:A:O4'	2.39	0.56
61:c:1738:U:H2'	61:c:1739:C:C6	2.41	0.56
3:2:7:SER:HB2	3:2:13:LYS:HE3	1.88	0.56
11:AA:708:G:N2	11:AA:711:A:OP2	2.32	0.56
11:AA:2496:C:H2'	11:AA:2497:U:C6	2.41	0.56
11:AA:3084:C:O2'	11:AA:3332:U:OP1	2.18	0.56
12:Aa:244:LEU:HD13	12:Aa:277:ILE:HD11	1.87	0.56
23:EE:117:GLU:HG2	23:EE:124:GLY:H	1.71	0.56
61:c:327:U:H2'	61:c:328:A:H8	1.71	0.56
61:c:1753:A:H2'	61:c:1754:A:C8	2.41	0.56
66:h:127:LYS:N	66:h:140:VAL:O	2.35	0.56
11:AA:629:U:H2'	11:AA:630:A:C8	2.41	0.55
12:Aa:369:ILE:HD12	12:Aa:401:PHE:HB3	1.86	0.55
27:G:98:THR:HG22	27:G:99:LYS:HG3	1.88	0.55
36:KK:57:ARG:O	36:KK:61:GLN:HG3	2.06	0.55
61:c:142:G:O6	68:j:177:ARG:NH2	2.39	0.55
61:c:1218:G:C8	61:c:1444:A:C6	2.93	0.55
61:c:1227:A:H1'	61:c:1256:A:C6	2.42	0.55
84:z:6:PRO:HG3	84:z:14:LYS:HG2	1.87	0.55
11:AA:3023:U:H2'	11:AA:3024:A:H8	1.70	0.55
14:BB:71:G:H2'	14:BB:72:A:C8	2.40	0.55
18:Cc:76:C:O2'	59:a:56:PRO:O	2.19	0.55
24:Ee:94:LYS:NZ	24:Ee:98:VAL:HA	2.22	0.55
61:c:1462:G:OP2	79:u:143:ARG:NH1	2.38	0.55
67:i:89:ILE:HD13	67:i:134:VAL:HG12	1.87	0.55
11:AA:428:A:H2'	11:AA:429:U:C6	2.42	0.55
11:AA:952:A:H4'	11:AA:968:G:N2	2.21	0.55
11:AA:1117:G:OP1	41:N:4:SER:HB2	2.05	0.55
11:AA:2661:G:H2'	11:AA:2662:G:H8	1.71	0.55
12:Aa:388:THR:HG22	12:Aa:395:TYR:CE2	2.41	0.55
13:B:67:ILE:HG13	13:B:68:GLY:H	1.71	0.55
14:BB:94:C:H2'	14:BB:95:A:H8	1.72	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:Ee:94:LYS:HG3	24:Ee:95:ASP:N	2.20	0.55
61:c:410:A:H2'	61:c:411:C:C6	2.42	0.55
65:g:164:VAL:O	65:g:168:ILE:HB	2.06	0.55
75:q:48:VAL:HG11	75:q:53:ASP:HB2	1.87	0.55
12:Aa:369:ILE:HD11	12:Aa:379:MET:HG3	1.87	0.55
18:Cc:52:C:H2'	18:Cc:53:G:C8	2.41	0.55
23:EE:180:LEU:HD22	60:b:26:VAL:HG21	1.87	0.55
41:N:43:HIS:O	41:N:47:LEU:HD23	2.06	0.55
61:c:427:C:OP2	91:c:2005:HOH:O	2.18	0.55
61:c:1424:A:H2'	61:c:1425:A:H8	1.71	0.55
61:c:1732:A:H2'	61:c:1733:C:C6	2.40	0.55
78:t:24:LEU:HD12	78:t:31:ASN:HA	1.87	0.55
3:2:70:LYS:NZ	61:c:933:A:OP1	2.36	0.55
6:5:38:ILE:CD1	6:5:43:PHE:HB2	2.37	0.55
11:AA:2463:G:H4'	11:AA:2464:U:OP1	2.06	0.55
11:AA:2533:G:N2	11:AA:2534:G:O6	2.40	0.55
11:AA:3006:A:H2'	11:AA:3007:U:O4'	2.06	0.55
27:G:19:VAL:HG21	27:G:30:PRO:HB3	1.87	0.55
61:c:1648:A:H2'	61:c:1649:G:C8	2.41	0.55
81:w:55:PRO:HA	81:w:91:ILE:HG22	1.88	0.55
8:7:42:LEU:HB3	8:7:61:PHE:HD2	1.71	0.55
11:AA:911:C:H42	23:EE:3:ARG:HD3	1.71	0.55
11:AA:3215:A:H5''	50:R:2:ALA:HB2	1.89	0.55
17:CC:38:U:O2'	52:T:83:LYS:NZ	2.39	0.55
61:c:1366:U:O2'	80:v:7:ARG:NH1	2.39	0.55
8:7:209:THR:HG22	8:7:209:THR:O	2.06	0.55
11:AA:86:G:O2'	11:AA:98:G:O6	2.21	0.55
11:AA:1208:U:O2'	11:AA:3115:C:N4	2.39	0.55
11:AA:2103:U:H2'	11:AA:2104:A:C8	2.42	0.55
11:AA:2503:G:O3'	53:U:63:ASN:ND2	2.39	0.55
11:AA:2565:U:O4	37:L:55:LYS:NZ	2.37	0.55
11:AA:2930:A:H2'	11:AA:2931:C:H6	1.72	0.55
15:Bb:14:A:H61	15:Bb:21:A:H2	1.54	0.55
49:QQ:94:TYR:O	49:QQ:96:ARG:N	2.33	0.55
66:h:11:ARG:NH1	66:h:21:ASP:O	2.35	0.55
8:7:16:HIS:CE1	8:7:37:SER:HG	2.21	0.55
11:AA:616:G:H2'	11:AA:617:G:C8	2.41	0.55
11:AA:1509:A:N7	91:AA:3774:HOH:O	2.33	0.55
11:AA:1834:U:OP2	56:X:10:LYS:NZ	2.34	0.55
11:AA:2139:A:C4	54:V:3:LYS:HE2	2.41	0.55
43:O:51:LEU:HD11	51:S:90:ILE:HG22	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:1259:U:H2'	61:c:1260:U:H6	1.72	0.55
62:d:74:VAL:HG22	62:d:96:THR:HB	1.88	0.55
79:u:137:HIS:O	79:u:141:THR:OG1	2.24	0.55
1:0:60:PHE:O	61:c:522:U:O2'	2.25	0.55
8:7:267:PRO:HG2	8:7:269:TYR:HE2	1.71	0.55
20:DD:87:VAL:HG11	20:DD:100:ILE:HD11	1.89	0.55
34:JJ:156:ILE:HD12	34:JJ:161:VAL:HB	1.89	0.55
42:NN:34:SER:HA	42:NN:67:VAL:HG21	1.88	0.55
42:NN:60:ARG:NH2	42:NN:63:GLU:OE2	2.39	0.55
43:O:32:LYS:O	43:O:36:GLN:HG3	2.06	0.55
44:OO:106:GLN:HB2	53:U:18:THR:HB	1.89	0.55
59:a:75:VAL:O	59:a:78:LYS:NZ	2.36	0.55
61:c:343:C:H2'	61:c:344:A:H8	1.72	0.55
69:k:27:LEU:HD21	69:k:80:GLU:HG2	1.89	0.55
10:A:22:VAL:HG21	10:A:120:VAL:HG11	1.89	0.55
11:AA:345:G:N7	91:AA:3766:HOH:O	2.32	0.55
11:AA:897:U:H2'	11:AA:898:OMU:H6	1.89	0.55
11:AA:1023:C:H3'	11:AA:1024:G:H8	1.71	0.55
11:AA:1322:U:O2	22:E:108:GLN:NE2	2.40	0.55
14:BB:4:U:H2'	14:BB:5:G:C8	2.42	0.55
14:BB:4:U:H2'	14:BB:5:G:H8	1.72	0.55
16:C:175:ALA:O	16:C:182:LYS:HB2	2.07	0.55
16:C:176:ARG:NH1	39:M:46:ASP:OD1	2.40	0.55
20:DD:22:TYR:HB2	20:DD:88:PHE:HD2	1.72	0.55
25:F:41:ASP:OD1	25:F:61:THR:OG1	2.20	0.55
30:HH:144:VAL:HG23	30:HH:173:VAL:HG13	1.89	0.55
61:c:625:C:H2'	61:c:626:U:C6	2.42	0.55
61:c:1467:C:H2'	61:c:1468:U:C6	2.42	0.55
61:c:1583:A:N1	61:c:1611:A:H5''	2.22	0.55
67:i:76:ARG:NH2	77:s:121:SER:H	2.01	0.55
3:2:47:ALA:HB2	75:q:99:GLN:HG3	1.89	0.54
8:7:51:ASP:OD1	8:7:51:ASP:N	2.31	0.54
11:AA:895:A:O2'	11:AA:896:A:OP2	2.23	0.54
11:AA:1015:U:O2	11:AA:1028:U:O2'	2.19	0.54
11:AA:1498:A:H2'	11:AA:1499:C:C6	2.42	0.54
11:AA:1534:A:H2'	11:AA:1535:A:C8	2.42	0.54
11:AA:1782:U:O2'	11:AA:1858:A:OP1	2.25	0.54
11:AA:2101:C:H2'	11:AA:2102:U:H6	1.71	0.54
20:DD:125:ASN:OD1	20:DD:147:ARG:NH1	2.40	0.54
61:c:85:A:N3	61:c:148:A:O2'	2.39	0.54
61:c:782:U:H4'	61:c:783:G:O5'	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:1269:U:H4'	61:c:1270:G:H5''	1.90	0.54
71:m:168:ARG:HG3	71:m:169:PRO:HD2	1.88	0.54
80:v:29:GLU:HB3	80:v:107:ALA:HB1	1.89	0.54
8:7:169:ILE:HB	8:7:183:LEU:HD22	1.89	0.54
11:AA:1639:C:OP2	51:S:74:ARG:NH1	2.24	0.54
16:C:107:THR:HG22	16:C:109:GLY:H	1.73	0.54
61:c:1422:A:H4'	65:g:159:HIS:ND1	2.22	0.54
81:w:57:ARG:HA	81:w:89:ARG:HG3	1.89	0.54
11:AA:2357:A:H2'	11:AA:2358:A:H8	1.73	0.54
11:AA:3198:U:H1'	38:LL:21:LYS:HB2	1.90	0.54
12:Aa:571:SER:HB2	12:Aa:590:ALA:H	1.71	0.54
12:Aa:597:VAL:HG21	12:Aa:625:TRP:HE1	1.71	0.54
20:DD:188:VAL:O	20:DD:189:GLN:NE2	2.39	0.54
45:P:55:LEU:HB2	45:P:95:PRO:HD3	1.90	0.54
61:c:1346:A:OP2	61:c:1348:A:N6	2.33	0.54
61:c:1773:4AC:H6	61:c:1773:4AC:O5'	2.06	0.54
67:i:130:ILE:O	67:i:133:VAL:HG12	2.07	0.54
70:l:84:HIS:HB2	70:l:91:VAL:HG23	1.89	0.54
8:7:44:SER:OG	8:7:59:ARG:HB2	2.07	0.54
23:EE:52:SER:HB3	23:EE:191:LEU:HD22	1.88	0.54
26:FF:152:LYS:HG2	26:FF:189:SER:HA	1.87	0.54
31:I:22:VAL:HG22	31:I:28:ILE:HD13	1.89	0.54
42:NN:115:LYS:HD2	42:NN:117:ASP:H	1.72	0.54
59:a:68:VAL:HG23	59:a:85:LEU:HD12	1.88	0.54
61:c:1280:C:H2'	61:c:1281:G:C8	2.41	0.54
61:c:1641:C:H2'	61:c:1642:G:C8	2.42	0.54
77:s:7:VAL:HG13	77:s:8:GLN:H	1.72	0.54
11:AA:1167:U:OP1	91:AA:3709:HOH:O	2.18	0.54
11:AA:1261:G:O2'	11:AA:1278:A:N1	2.35	0.54
11:AA:1889:G:H5''	11:AA:1889:G:C8	2.43	0.54
11:AA:2880:U:H1'	26:FF:250:ALA:HB3	1.89	0.54
61:c:1003:A:H1'	61:c:1005:A:N7	2.22	0.54
61:c:1222:C:H5''	61:c:1222:C:C6	2.40	0.54
77:s:13:LYS:HD3	77:s:14:LYS:HG3	1.89	0.54
11:AA:785:G:N7	39:M:77:LYS:NZ	2.49	0.54
11:AA:1615:C:H2'	11:AA:1616:U:C6	2.42	0.54
12:Aa:212:GLY:HA3	12:Aa:219:ALA:HA	1.90	0.54
61:c:28:A2M:HM'2	61:c:29:U:O4'	2.08	0.54
61:c:525:A:H2'	61:c:526:A:H8	1.73	0.54
68:j:136:LYS:NZ	68:j:174:LYS:O	2.34	0.54
79:u:88:ARG:HH22	79:u:105:VAL:HG23	1.73	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1108:U:H2'	11:AA:1109:U:C6	2.42	0.54
11:AA:2373:A:OP1	91:AA:3712:HOH:O	2.19	0.54
14:BB:118:A:H5''	30:HH:253:PHE:CZ	2.43	0.54
19:D:165:LYS:NZ	61:c:850:A:H5''	2.23	0.54
61:c:525:A:H2'	61:c:526:A:C8	2.43	0.54
61:c:1584:G:N7	77:s:14:LYS:HE2	2.23	0.54
61:c:1586:A:H2'	61:c:1587:A:O4'	2.08	0.54
61:c:1591:C:H2'	61:c:1592:A:H8	1.72	0.54
70:l:57:ALA:HB2	70:l:177:GLY:HA2	1.89	0.54
77:s:60:PHE:HB3	77:s:63:ILE:HG12	1.90	0.54
11:AA:2403:G:H22	47:Pp:1:MET:H2	1.56	0.54
12:Aa:345:PRO:O	12:Aa:349:GLN:NE2	2.34	0.54
12:Aa:663:VAL:HG13	12:Aa:709:MET:HE2	1.89	0.54
19:D:97:ARG:O	19:D:101:VAL:HG13	2.08	0.54
24:Ee:101:SER:HA	24:Ee:141:CYS:HA	1.90	0.54
26:FF:386:ASP:HB3	26:FF:387:LEU:HD12	1.89	0.54
44:OO:106:GLN:HG2	53:U:20:MET:HG2	1.89	0.54
58:Z:2:ARG:HH21	61:c:1773:4AC:H5	1.73	0.54
61:c:1498:G:H5''	80:v:72:GLY:HA3	1.89	0.54
63:e:119:THR:HG21	63:e:161:ILE:HD11	1.89	0.54
66:h:251:GLU:OE2	66:h:255:ARG:NH2	2.41	0.54
76:r:85:ILE:HB	76:r:111:MET:SD	2.48	0.54
77:s:60:PHE:CE2	77:s:89:LEU:HD11	2.43	0.54
11:AA:760:G:H1'	11:AA:771:A:N6	2.22	0.54
11:AA:1389:G:OP1	48:Q:104:ASN:ND2	2.31	0.54
11:AA:2452:G:H2'	11:AA:2462:A:H1'	1.90	0.54
11:AA:2561:A:C4	36:KK:32:LYS:HD2	2.43	0.54
11:AA:2768:U:H2'	11:AA:2769:A:H8	1.73	0.54
11:AA:2897:A:H2'	11:AA:2899:C:H5''	1.88	0.54
12:Aa:206:ARG:NH1	12:Aa:242:ASP:OD1	2.38	0.54
37:L:26:VAL:HG11	37:L:96:VAL:HB	1.90	0.54
61:c:410:A:H2'	61:c:411:C:H6	1.73	0.54
61:c:1424:A:OP2	65:g:151:LYS:NZ	2.36	0.54
61:c:1606:C:H2'	61:c:1607:G:C8	2.43	0.54
6:5:39:CYS:SG	6:5:40:ARG:N	2.81	0.54
8:7:9:LEU:HD22	8:7:313:TRP:CD1	2.43	0.54
8:7:115:ILE:HG13	8:7:116:ASP:O	2.07	0.54
8:7:115:ILE:HD13	8:7:122:ILE:HG23	1.90	0.54
11:AA:1024:G:N2	11:AA:1027:A:O5'	2.41	0.54
11:AA:1119:C:H2'	11:AA:1120:A:C8	2.42	0.54
11:AA:2498:U:H2'	11:AA:2499:U:C5	2.43	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:Aa:155:VAL:HG21	12:Aa:185:VAL:HG11	1.90	0.54
26:FF:113:GLU:OE2	26:FF:167:ARG:HG2	2.07	0.54
26:FF:187:SER:HB3	26:FF:190:GLU:HG2	1.90	0.54
30:HH:85:ARG:HH12	30:HH:254:LYS:H	1.55	0.54
39:M:135:GLU:HG2	39:M:139:ARG:HD2	1.89	0.54
61:c:30:G:H4'	84:z:131:SER:HB2	1.89	0.54
61:c:107:C:OP1	61:c:383:G:O2'	2.26	0.54
70:l:87:ASN:HD22	70:l:88:ASN:N	2.06	0.54
11:AA:84:U:O2'	11:AA:101:G:O6	2.22	0.53
11:AA:896:A:H5'	23:EE:183:GLY:HA2	1.90	0.53
11:AA:978:G:O2'	11:AA:980:A:N3	2.41	0.53
11:AA:1019:G:H2'	11:AA:1020:G:H8	1.73	0.53
11:AA:2681:U:H1'	42:NN:22:SER:HB3	1.88	0.53
15:Bb:37:YYG:O6	15:Bb:37:YYG:H142	2.08	0.53
25:F:68:THR:O	30:HH:41:LYS:HB2	2.08	0.53
35:K:38:GLU:CD	35:K:38:GLU:H	2.16	0.53
61:c:460:A:O2'	66:h:27:TYR:OH	2.17	0.53
68:j:25:ARG:HB2	68:j:25:ARG:HH11	1.73	0.53
74:p:23:PRO:HG2	74:p:26:PHE:HB2	1.90	0.53
8:7:184:ASN:HB3	8:7:185:GLN:NE2	2.22	0.53
11:AA:674:G:O6	16:C:56:LYS:NZ	2.42	0.53
11:AA:1597:C:H5'	11:AA:1696:A:H1'	1.90	0.53
11:AA:1724:U:H1'	11:AA:1725:C:C6	2.43	0.53
11:AA:2648:G:OP1	40:MM:24:ARG:NH2	2.40	0.53
11:AA:2765:C:O3'	59:a:39:GLY:HA3	2.07	0.53
11:AA:2848:G:OP1	57:Y:100:TYR:OH	2.19	0.53
12:Aa:438:MET:SD	12:Aa:441:PHE:HB2	2.48	0.53
34:JJ:40:LYS:NZ	34:JJ:170:GLU:OE2	2.40	0.53
34:JJ:88:ARG:HB2	34:JJ:108:LEU:HB3	1.90	0.53
35:K:87:LYS:HB2	35:K:97:ILE:HD11	1.88	0.53
44:OO:192:GLU:HG2	44:OO:194:GLU:H	1.72	0.53
61:c:97:C:H2'	61:c:98:U:C6	2.44	0.53
61:c:1177:C:H41	79:u:139:LYS:NZ	2.06	0.53
61:c:1225:U:C5'	61:c:1225:U:H6	2.21	0.53
61:c:1297:G:N2	61:c:1300:A:OP2	2.40	0.53
61:c:1628:U:H2'	61:c:1629:G:C8	2.43	0.53
63:e:107:THR:O	63:e:111:ARG:HD3	2.08	0.53
66:h:188:ASN:HB3	66:h:191:ARG:HD3	1.89	0.53
11:AA:1678:G:O6	27:G:74:LYS:NZ	2.40	0.53
11:AA:2465:G:C6	11:AA:2493:U:O2	2.61	0.53
11:AA:2611:U:H2'	11:AA:2612:U:C6	2.43	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2976:A:N1	91:AA:3775:HOH:O	2.33	0.53
61:c:505:A:N1	61:c:507:U:C4	2.77	0.53
61:c:1091:A:H4'	61:c:1092:A:O4'	2.08	0.53
61:c:1175:U:H2'	61:c:1176:G:H8	1.71	0.53
62:d:122:ILE:HA	62:d:144:ILE:O	2.08	0.53
4:3:59:CYS:SG	4:3:60:SER:N	2.80	0.53
6:5:34:TYR:CE2	81:w:63:LEU:HB3	2.44	0.53
11:AA:1039:U:H2'	11:AA:1040:A:C8	2.44	0.53
11:AA:1523:U:OP2	11:AA:1604:G:O2'	2.26	0.53
11:AA:1547:G:OP1	49:QQ:108:ARG:NH2	2.40	0.53
11:AA:1659:U:H2'	11:AA:1660:C:C6	2.43	0.53
11:AA:2403:G:N2	47:Pp:1:MET:H2	2.06	0.53
11:AA:2413:A:OP1	91:AA:3711:HOH:O	2.18	0.53
11:AA:3028:G:H4'	12:Aa:28:VAL:HG21	1.90	0.53
11:AA:3371:G:H2'	11:AA:3372:A:H8	1.73	0.53
19:D:151:ARG:HE	73:o:116:ARG:HH22	1.55	0.53
40:MM:108:ALA:O	40:MM:112:GLN:HG3	2.08	0.53
61:c:420:A2M:OP1	68:j:96:SER:OG	2.21	0.53
61:c:976:G:N1	61:c:1023:A:O2'	2.34	0.53
62:d:105:GLY:N	62:d:135:GLU:OE2	2.27	0.53
75:q:26:THR:HG21	75:q:60:ALA:HB2	1.90	0.53
11:AA:501:A:H2'	11:AA:502:U:C6	2.43	0.53
11:AA:616:G:H2'	11:AA:617:G:H8	1.73	0.53
11:AA:1772:U:H5'	11:AA:1773:C:H5'	1.91	0.53
28:GG:23:PRO:HD2	28:GG:26:PHE:CE2	2.43	0.53
51:S:51:LEU:HB3	51:S:54:ILE:HD13	1.90	0.53
64:f:87:GLN:OE1	64:f:94:GLN:NE2	2.41	0.53
69:k:28:GLU:OE2	69:k:39:ARG:HD3	2.09	0.53
69:k:64:VAL:H	69:k:65:PRO:HD3	1.73	0.53
69:k:130:VAL:HG12	69:k:162:ILE:HD13	1.89	0.53
80:v:127:ASN:OD1	80:v:127:ASN:N	2.40	0.53
11:AA:1111:U:H5''	44:OO:5:LYS:HE3	1.91	0.53
11:AA:3272:C:O2	32:II:80:ASN:ND2	2.41	0.53
11:AA:3291:G:H2'	11:AA:3292:A:H8	1.74	0.53
20:DD:159:VAL:HG22	20:DD:169:GLU:HG2	1.91	0.53
24:Ee:129:THR:HG21	24:Ee:162:ILE:HD12	1.90	0.53
30:HH:85:ARG:NH2	30:HH:250:ASP:O	2.42	0.53
40:MM:102:MET:HG3	40:MM:112:GLN:HE22	1.73	0.53
61:c:300:A:H2'	61:c:301:A:C8	2.43	0.53
61:c:332:U:P	70:l:56:ARG:HH22	2.32	0.53
61:c:1494:C:H2'	61:c:1495:C:C6	2.44	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:1543:A:N6	61:c:1568:C:O2	2.42	0.53
63:e:222:LYS:HD3	63:e:223:PHE:N	2.22	0.53
70:l:141:ARG:H	70:l:141:ARG:HD3	1.74	0.53
78:t:23:LYS:HD2	78:t:34:LEU:HD11	1.91	0.53
11:AA:1018:G:N7	11:AA:1035:G:N2	2.56	0.53
11:AA:1046:A:H2'	11:AA:1049:C:C5	2.43	0.53
11:AA:1656:A:OP2	51:S:37:LYS:NZ	2.38	0.53
11:AA:2881:C:H2'	11:AA:2882:U:C6	2.44	0.53
11:AA:3275:U:O2'	50:R:99:ARG:NH1	2.42	0.53
12:Aa:1:MET:N	12:Aa:1:MET:SD	2.82	0.53
12:Aa:308:LYS:HB2	12:Aa:311:GLU:HG3	1.89	0.53
12:Aa:718:LEU:HA	12:Aa:722:PRO:HG3	1.90	0.53
24:Ee:135:THR:O	24:Ee:139:VAL:HG23	2.09	0.53
30:HH:50:ARG:NH2	30:HH:72:ASP:OD2	2.42	0.53
38:LL:20:ILE:HG12	38:LL:25:VAL:HG13	1.90	0.53
61:c:886:U:O2'	75:q:121:VAL:O	2.26	0.53
2:1:41:ILE:HD13	79:u:57:ARG:HH12	1.73	0.53
2:1:41:ILE:HD13	79:u:57:ARG:NH2	2.23	0.53
11:AA:411:U:H2'	11:AA:412:G:H8	1.73	0.53
11:AA:422:A:C2	11:AA:2363:A:H4'	2.44	0.53
11:AA:993:G:N3	11:AA:2637:A:H2'	2.23	0.53
11:AA:1084:A:H2'	11:AA:1085:A:C8	2.43	0.53
11:AA:1757:A:H2'	11:AA:1758:G:C8	2.44	0.53
11:AA:2499:U:H2'	11:AA:2500:A:O4'	2.09	0.53
26:FF:163:HIS:ND1	26:FF:164:THR:O	2.40	0.53
26:FF:375:GLU:OE1	31:I:14:TYR:OH	2.23	0.53
28:GG:142:VAL:HG12	28:GG:145:ILE:HD12	1.90	0.53
61:c:607:G:H5'	61:c:613:G:N2	2.24	0.53
61:c:1216:C:O2'	61:c:1218:G:H5''	2.09	0.53
1:0:112:LYS:NZ	61:c:57:G:OP1	2.42	0.53
11:AA:144:A:OP1	36:KK:193:LYS:NZ	2.30	0.53
11:AA:289:A:H2'	11:AA:290:G:H8	1.74	0.53
11:AA:2406:C:H2'	11:AA:2407:C:H6	1.71	0.53
11:AA:2436:U:H4'	36:KK:70:LYS:HD2	1.90	0.53
11:AA:2882:U:H2'	11:AA:2883:U:C6	2.44	0.53
11:AA:3258:U:O2'	11:AA:3260:G:OP1	2.27	0.53
26:FF:92:TYR:HB2	26:FF:157:VAL:HB	1.90	0.53
29:H:18:PRO:HA	29:H:51:ALA:HA	1.90	0.53
43:O:17:VAL:HG11	43:O:92:ILE:HD12	1.90	0.53
61:c:1057:U:O2	61:c:1062:A:N6	2.41	0.53
61:c:1225:U:H6	61:c:1225:U:H5''	1.74	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
65:g:209:ILE:O	78:t:20:TYR:OH	2.24	0.53
12:Aa:438:MET:CG	12:Aa:439:GLY:H	2.22	0.53
16:C:123:THR:OG1	16:C:125:ASP:OD1	2.27	0.53
23:EE:65:ASP:HB3	23:EE:68:LYS:O	2.09	0.53
30:HH:131:LEU:HD21	30:HH:174:PRO:HA	1.90	0.53
33:J:50:ALA:HB1	52:T:66:VAL:HG11	1.90	0.53
53:U:34:SER:OG	53:U:37:THR:HG23	2.09	0.53
61:c:1297:G:H5'	61:c:1298:U:OP2	2.09	0.53
61:c:1488:G:O2'	61:c:1494:C:O2	2.22	0.53
61:c:1523:G:OP1	61:c:1523:G:N2	2.38	0.53
66:h:212:ASP:OD1	66:h:216:ASN:N	2.42	0.53
68:j:31:ARG:HG3	68:j:34:GLN:HE22	1.74	0.53
68:j:47:GLY:HA3	68:j:117:GLY:HA3	1.89	0.53
69:k:69:GLY:HA2	69:k:72:LYS:HG2	1.90	0.53
69:k:109:VAL:HG12	69:k:110:GLN:H	1.74	0.53
71:m:112:GLN:HG3	71:m:148:VAL:HG21	1.91	0.53
76:r:81:ARG:HB3	76:r:117:GLY:HA3	1.90	0.53
77:s:69:VAL:HG21	77:s:77:GLN:HB2	1.90	0.53
11:AA:406:G:OP1	11:AA:1415:U:O2'	2.20	0.52
11:AA:656:A:H2'	11:AA:657:A:C8	2.44	0.52
11:AA:2547:A:H2'	11:AA:2548:C:O4'	2.09	0.52
32:II:29:LYS:HE3	32:II:29:LYS:O	2.08	0.52
45:P:10:ARG:NH1	45:P:12:TYR:OH	2.38	0.52
54:V:52:LYS:HG3	54:V:55:ARG:HH21	1.75	0.52
55:W:65:LEU:O	55:W:69:LEU:HD13	2.08	0.52
62:d:78:SER:OG	62:d:129:ASP:OD1	2.22	0.52
80:v:66:TYR:HB2	80:v:124:ILE:HD13	1.91	0.52
11:AA:2747:A:H5'	30:HH:175:HIS:HA	1.91	0.52
12:Aa:18:ASN:OD1	12:Aa:93:THR:OG1	2.28	0.52
20:DD:86:PHE:HB3	20:DD:88:PHE:HE1	1.73	0.52
61:c:340:U:H2'	61:c:341:A:H8	1.75	0.52
61:c:754:A:C2	61:c:793:A:H2'	2.44	0.52
61:c:1523:G:C8	80:v:79:LEU:HD12	2.42	0.52
67:i:99:MET:HB2	67:i:180:ARG:HH22	1.74	0.52
69:k:11:GLN:HG2	69:k:12:ALA:H	1.74	0.52
70:l:152:ILE:HG13	70:l:153:GLU:H	1.74	0.52
77:s:142:TYR:CG	77:s:143:ARG:N	2.75	0.52
11:AA:158:G:H2'	11:AA:159:A:C8	2.44	0.52
11:AA:874:U:N3	11:AA:2978:U:OP1	2.32	0.52
11:AA:1791:C:H2'	11:AA:1792:C:C6	2.43	0.52
11:AA:2222:A:H2'	11:AA:2223:A:C8	2.43	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2795:U:OP2	59:a:63:LYS:HG2	2.10	0.52
14:BB:56:A:H4'	42:NN:152:HIS:HB2	1.90	0.52
61:c:804:A:C8	83:y:107:SER:HA	2.45	0.52
61:c:947:U:H2'	61:c:948:G:H8	1.73	0.52
61:c:1409:G:N1	61:c:1412:G:OP2	2.42	0.52
62:d:27:ARG:NH1	62:d:43:ASP:O	2.41	0.52
66:h:160:VAL:HB	66:h:169:ILE:HD12	1.90	0.52
8:7:256:THR:HG23	8:7:258:THR:H	1.75	0.52
11:AA:170:G:C6	11:AA:250:U:H1'	2.45	0.52
11:AA:284:A:OP2	59:a:41:ARG:NH1	2.36	0.52
11:AA:412:G:H2'	11:AA:413:U:C6	2.45	0.52
11:AA:1110:U:H2'	11:AA:1111:U:C6	2.45	0.52
11:AA:1176:C:H2'	11:AA:1177:G:N2	2.25	0.52
11:AA:1364:C:H5''	16:C:3:ILE:HD13	1.91	0.52
11:AA:2413:A:H2'	11:AA:2414:G:H8	1.74	0.52
11:AA:2586:G:O6	36:KK:242:ALA:N	2.37	0.52
61:c:78:A:O2'	61:c:79:C:O4'	2.25	0.52
61:c:209:U:H2'	61:c:210:A:C8	2.44	0.52
61:c:1561:U:H2'	61:c:1562:G:H8	1.75	0.52
61:c:1716:C:O2'	61:c:1717:G:O5'	2.21	0.52
64:f:176:SER:HA	71:m:53:ARG:HH22	1.75	0.52
1:0:83:LYS:HE2	1:0:96:LEU:HD23	1.92	0.52
11:AA:393:U:H2'	11:AA:394:G:O4'	2.10	0.52
11:AA:2186:U:H2'	11:AA:2187:G:O4'	2.10	0.52
11:AA:3371:G:H2'	11:AA:3372:A:C8	2.44	0.52
14:BB:121:U:OP2	30:HH:265:TYR:OH	2.27	0.52
35:K:111:LEU:HD12	35:K:116:LYS:HG3	1.91	0.52
51:S:74:ARG:HG2	51:S:75:ALA:H	1.74	0.52
61:c:956:C:OP1	61:c:1072:C:O2'	2.28	0.52
61:c:1226:A:H5'	61:c:1229:G:C5'	2.39	0.52
61:c:1529:C:OP1	67:i:112:ARG:NH1	2.43	0.52
61:c:1624:C:H2'	61:c:1625:C:C6	2.45	0.52
70:l:60:ILE:HG21	70:l:179:CYS:HB2	1.91	0.52
77:s:90:VAL:HG21	77:s:117:LEU:HD11	1.91	0.52
79:u:132:ARG:HH21	79:u:145:ARG:HD3	1.74	0.52
11:AA:498:A:O2'	11:AA:3273:A:N1	2.35	0.52
11:AA:966:U:OP1	39:M:44:ASN:ND2	2.42	0.52
11:AA:1128:U:OP1	40:MM:4:ARG:NH1	2.31	0.52
12:Aa:10:ARG:NH2	12:Aa:447:ASP:OD1	2.43	0.52
12:Aa:216:HIS:HA	12:Aa:321:LYS:HE2	1.92	0.52
13:B:120:ASN:OD1	13:B:120:ASN:N	2.42	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:DD:51:VAL:HG13	20:DD:87:VAL:HG22	1.91	0.52
30:HH:262:LYS:HA	30:HH:265:TYR:HB2	1.92	0.52
55:W:42:LYS:HG2	55:W:55:VAL:HG22	1.90	0.52
65:g:109:LEU:HD22	65:g:115:ILE:HG13	1.92	0.52
79:u:62:THR:HG21	79:u:65:GLU:HB2	1.91	0.52
6:5:16:LYS:HB3	6:5:27:HIS:HB3	1.91	0.52
11:AA:38:U:H2'	11:AA:39:A:O4'	2.10	0.52
11:AA:585:A:H2'	11:AA:586:C:C6	2.44	0.52
11:AA:945:C:H2'	11:AA:946:U:C6	2.45	0.52
11:AA:949:C:OP2	91:AA:3713:HOH:O	2.19	0.52
11:AA:1120:A:H2'	11:AA:1121:U:H6	1.73	0.52
11:AA:1206:G:OP1	40:MM:157:TYR:OH	2.22	0.52
37:L:95:VAL:O	37:L:100:THR:OG1	2.24	0.52
61:c:902:G:N1	75:q:51:ASP:OD1	2.32	0.52
61:c:1034:C:OP1	74:p:9:LYS:NZ	2.37	0.52
61:c:1471:A:N6	61:c:1538:U:H3	1.96	0.52
62:d:126:PRO:HG2	62:d:151:SER:HB3	1.92	0.52
79:u:66:LEU:O	79:u:69:ILE:HG22	2.09	0.52
1:0:86:GLU:OE2	1:0:90:ARG:NE	2.41	0.52
11:AA:1350:A:H2'	11:AA:1351:U:H5	1.74	0.52
11:AA:1630:U:H5''	11:AA:1813:A:N6	2.24	0.52
11:AA:1925:U:O2'	11:AA:1927:G:N7	2.42	0.52
11:AA:2714:G:H4'	11:AA:2715:A:H5''	1.92	0.52
11:AA:3298:C:C2	11:AA:3299:A:C8	2.97	0.52
16:C:64:VAL:HG23	16:C:93:ILE:HD11	1.92	0.52
61:c:1316:G:OP1	78:t:7:LYS:N	2.43	0.52
61:c:1524:A:H2'	61:c:1525:A:C8	2.45	0.52
61:c:1596:C:O2'	61:c:1598:U:OP2	2.15	0.52
64:f:222:TYR:OH	82:x:11:LEU:O	2.22	0.52
66:h:98:ASN:HB2	66:h:114:ILE:HG13	1.90	0.52
67:i:195:ALA:O	67:i:199:ILE:HG13	2.10	0.52
79:u:42:TYR:HA	79:u:85:PHE:HE1	1.74	0.52
79:u:71:GLN:O	79:u:74:GLN:NE2	2.39	0.52
3:2:76:SER:OG	61:c:1793:G:N2	2.37	0.52
11:AA:999:G:N3	11:AA:1002:A:N6	2.58	0.52
12:Aa:571:SER:HB3	12:Aa:589:LYS:HG2	1.92	0.52
17:CC:73:U:OP1	35:K:24:SER:OG	2.21	0.52
23:EE:109:GLU:CD	23:EE:109:GLU:H	2.18	0.52
26:FF:281:LYS:NZ	26:FF:352:GLU:O	2.43	0.52
38:LL:189:GLU:O	38:LL:191:LEU:HD12	2.10	0.52
61:c:15:U:H2'	61:c:16:G:O4'	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:293:U:H2'	61:c:294:C:H6	1.75	0.52
61:c:331:A:OP2	70:l:175:GLN:NE2	2.41	0.52
61:c:1001:A:H2'	61:c:1002:G:C8	2.45	0.52
61:c:1504:G:H22	61:c:1549:C:H1'	1.75	0.52
61:c:1623:C:H2'	61:c:1624:C:C6	2.45	0.52
61:c:1739:C:H2'	61:c:1740:A:H8	1.74	0.52
62:d:63:ILE:HD13	62:d:158:VAL:HG21	1.91	0.52
67:i:135:ASP:O	67:i:139:ASN:ND2	2.43	0.52
73:o:22:ASN:HB3	73:o:25:VAL:HG22	1.91	0.52
2:l:77:ARG:NE	61:c:1532:U:OP2	2.37	0.52
8:7:18:GLY:O	8:7:308:ASN:ND2	2.42	0.52
11:AA:129:U:H2'	11:AA:130:A:H8	1.75	0.52
11:AA:549:U:H2'	11:AA:550:A:C8	2.45	0.52
11:AA:901:G:OP1	54:V:13:ASN:ND2	2.32	0.52
11:AA:1203:A:H2'	11:AA:1204:A:H8	1.74	0.52
11:AA:2426:U:H2'	11:AA:2427:U:C6	2.45	0.52
11:AA:2569:A:O2'	11:AA:2570:U:H5''	2.10	0.52
11:AA:2901:G:O2'	11:AA:3024:A:N1	2.42	0.52
26:FF:284:ARG:HG2	26:FF:286:GLY:H	1.75	0.52
27:G:58:GLU:CD	27:G:60:GLY:H	2.18	0.52
36:KK:52:TRP:O	36:KK:57:ARG:NH2	2.42	0.52
45:P:83:GLU:H	45:P:83:GLU:CD	2.18	0.52
48:Q:63:THR:HA	48:Q:66:LEU:HD22	1.92	0.52
61:c:1219:A:N7	61:c:1265:G:O2'	2.42	0.52
61:c:1391:A:H2'	61:c:1392:U:C6	2.45	0.52
61:c:1483:A:H2	61:c:1607:G:H1'	1.75	0.52
66:h:128:LYS:HG2	66:h:140:VAL:HB	1.92	0.52
67:i:87:CYS:HB3	67:i:92:ARG:HD3	1.91	0.52
8:7:47:LEU:HD21	8:7:302:PHE:CZ	2.45	0.51
11:AA:805:OMG:H2'	11:AA:936:A:H61	1.74	0.51
11:AA:1729:A:O4'	43:O:52:ARG:NH1	2.40	0.51
11:AA:2407:C:H2'	11:AA:2408:U:H6	1.74	0.51
45:P:84:ASP:H	45:P:86:LYS:NZ	2.08	0.51
61:c:328:A:OP2	73:o:56:LYS:NZ	2.41	0.51
61:c:1492:A:O2'	61:c:1493:A:N7	2.35	0.51
64:f:80:VAL:HG22	64:f:102:VAL:HG22	1.92	0.51
69:k:17:GLU:N	69:k:17:GLU:OE2	2.43	0.51
78:t:73:LEU:HD13	78:t:76:GLU:HG3	1.92	0.51
81:w:22:ILE:HD11	81:w:93:LEU:HD23	1.92	0.51
11:AA:271:C:O2	53:U:82:ARG:NH2	2.36	0.51
11:AA:629:U:H2'	11:AA:630:A:H8	1.74	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2244:A:H5''	23:EE:243:THR:HB	1.91	0.51
11:AA:2364:G:H22	11:AA:2396:G:H1'	1.74	0.51
11:AA:3244:A:OP2	26:FF:100:ARG:NH1	2.43	0.51
12:Aa:509:LYS:HZ3	84:z:145:SER:HG	1.52	0.51
36:KK:133:LYS:HD2	36:KK:138:HIS:HE1	1.75	0.51
37:L:18:TYR:CE1	37:L:47:GLU:HG3	2.40	0.51
46:PP:103:ILE:O	46:PP:107:GLU:HG3	2.09	0.51
61:c:97:C:H1'	61:c:426:G:H5'	1.92	0.51
61:c:518:A:H1'	61:c:534:A:H61	1.74	0.51
61:c:1087:A:H2'	61:c:1088:A:C8	2.45	0.51
8:7:13:LEU:HD12	8:7:14:GLU:H	1.75	0.51
11:AA:19:U:H2'	11:AA:20:A:C8	2.45	0.51
11:AA:1034:U:H2'	11:AA:1035:G:O4'	2.10	0.51
11:AA:1793:C:OP2	60:b:49:ARG:NH2	2.36	0.51
11:AA:1799:A:H2'	11:AA:1800:A:C8	2.46	0.51
11:AA:2430:A:H2'	11:AA:2431:C:C6	2.46	0.51
11:AA:2462:A:H5'	11:AA:2463:G:H3'	1.92	0.51
11:AA:2501:U:O2'	11:AA:2502:A:OP1	2.27	0.51
18:Cc:39:A:C6	18:Cc:40:C:C2	2.98	0.51
36:KK:149:LYS:N	36:KK:200:LEU:O	2.40	0.51
61:c:127:G:N7	68:j:202:ARG:NH1	2.54	0.51
61:c:152:U:O2'	68:j:15:THR:OG1	2.18	0.51
61:c:256:A:H2'	61:c:257:A:O4'	2.11	0.51
61:c:340:U:H2'	61:c:341:A:C8	2.46	0.51
61:c:1081:A:H2	61:c:1082:C:H41	1.58	0.51
63:e:34:ALA:HA	63:e:98:THR:HG23	1.91	0.51
64:f:38:VAL:HG22	64:f:39:THR:H	1.74	0.51
72:n:56:LYS:HB3	72:n:67:THR:HG23	1.91	0.51
8:7:33:LEU:HD11	8:7:302:PHE:CD2	2.45	0.51
11:AA:2465:G:O6	11:AA:2493:U:O2	2.28	0.51
11:AA:2807:U:O2'	11:AA:2809:C:OP1	2.22	0.51
11:AA:3322:A:H2'	11:AA:3323:A:H8	1.76	0.51
11:AA:3343:G:O2'	11:AA:3362:A:N6	2.43	0.51
15:Bb:69:U:O2'	15:Bb:70:C:OP1	2.26	0.51
24:Ee:61:GLN:NE2	24:Ee:70:ALA:O	2.43	0.51
26:FF:37:ARG:HD2	26:FF:186:GLY:HA2	1.92	0.51
30:HH:187:THR:OG1	30:HH:188:GLU:N	2.42	0.51
42:NN:50:ALA:HB2	42:NN:65:ILE:HD13	1.92	0.51
55:W:20:VAL:HG12	55:W:47:GLY:HA2	1.93	0.51
61:c:30:G:H2'	61:c:31:C:C6	2.46	0.51
61:c:58:U:O2'	61:c:451:A:N3	2.39	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
76:r:41:VAL:HG12	76:r:84:ILE:HD13	1.93	0.51
79:u:107:SER:HA	79:u:110:ARG:HD2	1.91	0.51
8:7:34:LEU:HD21	8:7:80:ALA:HB1	1.93	0.51
11:AA:255:A:H2'	11:AA:256:G:H8	1.76	0.51
11:AA:1038:C:O2'	30:HH:4:GLN:OE1	2.29	0.51
11:AA:1301:A:H4'	11:AA:1302:A:C5'	2.39	0.51
11:AA:1641:U:O2'	11:AA:1642:A:H3'	2.10	0.51
11:AA:2352:A:H5''	13:B:83:TRP:O	2.10	0.51
12:Aa:801:TRP:CZ2	89:Aa:1101:SO1:H242	2.46	0.51
42:NN:55:ARG:HB3	42:NN:56:THR:HG23	1.91	0.51
61:c:953:G:H2'	61:c:954:G:C8	2.45	0.51
61:c:1218:G:C8	61:c:1444:A:N1	2.78	0.51
61:c:1287:A:H5''	61:c:1313:A:H4'	1.93	0.51
61:c:1483:A:H2'	61:c:1484:G:C8	2.45	0.51
67:i:76:ARG:O	67:i:83:ARG:NH1	2.43	0.51
82:x:32:VAL:HG22	82:x:60:ARG:HD2	1.92	0.51
8:7:209:THR:HG23	8:7:226:ALA:H	1.76	0.51
11:AA:2618:G:C8	11:AA:2865:U:H5''	2.45	0.51
19:D:130:ASN:O	19:D:132:PHE:N	2.44	0.51
61:c:12:U:H2'	61:c:13:C:H6	1.76	0.51
61:c:406:U:H2'	61:c:407:A:H8	1.74	0.51
61:c:821:U:H2'	61:c:822:U:C6	2.46	0.51
61:c:1001:A:O2'	61:c:1002:G:OP1	2.28	0.51
67:i:92:ARG:NH2	67:i:169:ASN:OD1	2.41	0.51
68:j:31:ARG:HB3	68:j:101:ILE:HD13	1.93	0.51
79:u:22:VAL:HG13	79:u:31:ALA:HB1	1.93	0.51
80:v:65:ILE:HG22	80:v:71:VAL:HG22	1.93	0.51
8:7:74:THR:OG1	8:7:79:TYR:HB2	2.11	0.51
8:7:248:ASN:OD1	8:7:249:ARG:N	2.44	0.51
11:AA:2557:A:OP1	23:EE:69:TYR:OH	2.20	0.51
11:AA:3096:C:H2'	11:AA:3097:C:C6	2.46	0.51
11:AA:3281:U:H2'	11:AA:3282:U:C6	2.46	0.51
17:CC:26:U:H2'	17:CC:27:U:C6	2.45	0.51
24:Ee:46:ILE:HG23	24:Ee:60:VAL:HG21	1.91	0.51
25:F:46:GLY:O	25:F:49:GLN:NE2	2.43	0.51
26:FF:206:ASP:OD1	26:FF:206:ASP:N	2.42	0.51
61:c:17:C:O2'	61:c:1137:A:N1	2.34	0.51
61:c:103:A:H4'	61:c:105:A:C8	2.45	0.51
61:c:182:A:H2'	61:c:183:U:H6	1.76	0.51
63:e:224:ASP:OD2	63:e:227:ALA:HB3	2.10	0.51
67:i:34:GLN:O	77:s:57:LEU:HD22	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
67:i:90:ILE:O	67:i:94:THR:HG23	2.11	0.51
68:j:126:ASP:OD1	68:j:126:ASP:N	2.41	0.51
11:AA:49:A:OP1	44:OO:16:LYS:NZ	2.42	0.51
11:AA:1404:G:N2	11:AA:1407:A:OP2	2.33	0.51
11:AA:2180:G:H2'	11:AA:2181:C:C6	2.46	0.51
11:AA:2520:A:H2'	11:AA:2521:U:C6	2.45	0.51
36:KK:162:LEU:HA	49:QQ:7:LEU:HD11	1.93	0.51
61:c:17:C:H2'	61:c:18:C:H6	1.76	0.51
61:c:119:A:H1'	61:c:397:A:C5	2.45	0.51
61:c:1439:C:H2'	61:c:1440:C:C6	2.45	0.51
61:c:1719:A:H2'	61:c:1720:G:O4'	2.11	0.51
7:6:37:ARG:HG3	71:m:123:HIS:CE1	2.45	0.51
10:A:35:VAL:HG21	10:A:80:PHE:HE2	1.76	0.51
11:AA:1389:G:H5''	48:Q:101:SER:HB3	1.91	0.51
11:AA:2717:U:H4'	59:a:13:LYS:HD3	1.92	0.51
12:Aa:480:VAL:H	12:Aa:482:LYS:NZ	2.09	0.51
12:Aa:734:GLN:HG3	12:Aa:793:PHE:HB2	1.93	0.51
13:B:119:VAL:HG22	13:B:146:ILE:HG23	1.92	0.51
17:CC:9:A:H2'	17:CC:10:A:C8	2.46	0.51
17:CC:126:A:OP2	17:CC:126:A:H8	1.94	0.51
18:Cc:42:C:H2'	18:Cc:43:G:O4'	2.11	0.51
27:G:30:PRO:HB2	27:G:58:GLU:OE1	2.11	0.51
52:T:83:LYS:O	54:V:73:ARG:NH2	2.44	0.51
61:c:767:U:H5	71:m:143:ILE:HG12	1.76	0.51
61:c:1624:C:H2'	61:c:1625:C:H6	1.76	0.51
61:c:1683:C:H2'	61:c:1684:U:O4'	2.11	0.51
63:e:34:ALA:HB1	63:e:86:LEU:HD13	1.92	0.51
65:g:121:GLY:HA2	65:g:124:ARG:HD3	1.93	0.51
4:3:35:VAL:HG13	4:3:77:THR:HG23	1.92	0.51
11:AA:268:A:N1	11:AA:295:A:H5'	2.26	0.51
11:AA:1718:G:H2'	11:AA:1719:G:H8	1.75	0.51
14:BB:23:A:H2'	14:BB:24:A:C8	2.46	0.51
33:J:46:TYR:HB3	52:T:75:TYR:O	2.11	0.51
61:c:123:G:H21	66:h:146:THR:HG21	1.76	0.51
61:c:1259:U:O2'	61:c:1260:U:H5'	2.11	0.51
61:c:1327:C:H5''	65:g:158:ILE:HG22	1.93	0.51
61:c:1623:C:H2'	61:c:1624:C:H6	1.76	0.51
11:AA:2167:A:H2'	11:AA:2168:A:C8	2.46	0.50
12:Aa:730:LEU:HD23	12:Aa:771:TYR:CE1	2.46	0.50
24:Ee:53:PHE:HB3	24:Ee:58:VAL:HG11	1.93	0.50
24:Ee:153:GLU:HA	24:Ee:156:ASN:ND2	2.26	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:L:88:ASP:O	37:L:121:ARG:NH2	2.40	0.50
61:c:1000:C:H2'	61:c:1001:A:H3'	1.93	0.50
62:d:76:ILE:HB	62:d:123:VAL:HG12	1.93	0.50
62:d:147:THR:HG23	62:d:151:SER:HB2	1.93	0.50
78:t:20:TYR:HD2	78:t:23:LYS:HG2	1.75	0.50
84:z:135:LEU:HD21	84:z:142:LYS:HB2	1.91	0.50
2:1:41:ILE:HD13	79:u:57:ARG:NH1	2.26	0.50
7:6:12:GLY:O	7:6:16:SER:HB2	2.11	0.50
8:7:115:ILE:HB	8:7:122:ILE:HG22	1.92	0.50
10:A:34:VAL:HG22	10:A:103:LYS:HB2	1.93	0.50
11:AA:966:U:H2'	11:AA:967:A:C8	2.46	0.50
11:AA:1203:A:N3	11:AA:2855:U:O2'	2.42	0.50
11:AA:2103:U:H2'	11:AA:2104:A:H8	1.76	0.50
12:Aa:279:ASP:O	12:Aa:283:ARG:HG3	2.11	0.50
12:Aa:546:GLU:HG2	12:Aa:554:LEU:HD23	1.92	0.50
12:Aa:586:ILE:HD13	12:Aa:691:VAL:HG13	1.93	0.50
17:CC:150:G:OP1	33:J:27:ARG:NH2	2.45	0.50
24:Ee:117:ARG:HD2	24:Ee:128:VAL:HG21	1.93	0.50
61:c:29:U:H2'	61:c:30:G:H8	1.76	0.50
61:c:1387:G:H1'	61:c:1410:A:H61	1.76	0.50
63:e:124:ASN:HA	63:e:137:ILE:O	2.11	0.50
66:h:107:GLY:HA2	66:h:189:LEU:HG	1.93	0.50
78:t:10:LYS:O	78:t:14:LYS:HG3	2.12	0.50
78:t:20:TYR:O	78:t:23:LYS:HB3	2.12	0.50
3:2:62:TYR:OH	75:q:114:ARG:HA	2.10	0.50
8:7:76:ASP:OD1	8:7:76:ASP:N	2.44	0.50
11:AA:915:A:H8	11:AA:2136:C:O2'	1.94	0.50
11:AA:1667:A:H2'	11:AA:1668:G:H8	1.74	0.50
11:AA:2947:G:N3	26:FF:250:ALA:HB1	2.27	0.50
11:AA:2971:A:H4'	11:AA:2972:G:O5'	2.12	0.50
12:Aa:711:ARG:HG2	12:Aa:838:TYR:HD1	1.76	0.50
14:BB:16:U:H4'	30:HH:7:ALA:H	1.76	0.50
15:Bb:60:C:H5''	15:Bb:61:C:C5	2.46	0.50
16:C:70:ALA:O	16:C:73:GLN:HB2	2.11	0.50
19:D:126:GLU:O	19:D:131:ALA:HB3	2.11	0.50
20:DD:119:ILE:HD13	20:DD:180:PRO:HG3	1.93	0.50
44:OO:47:ALA:HB1	52:T:115:LYS:HZ2	1.75	0.50
44:OO:47:ALA:HB1	44:OO:48:PRO:HD2	1.93	0.50
49:QQ:183:THR:HG22	49:QQ:187:ARG:HB2	1.93	0.50
61:c:170:U:N3	61:c:289:U:O2'	2.42	0.50
61:c:472:U:C2	61:c:473:A:C8	2.99	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:525:A:O2'	61:c:526:A:OP1	2.27	0.50
61:c:1556:A:OP1	76:r:115:TYR:OH	2.19	0.50
62:d:69:ASN:HB3	62:d:71:GLU:OE1	2.12	0.50
66:h:35:PRO:HG2	66:h:36:HIS:HD2	1.75	0.50
71:m:147:MET:HA	71:m:147:MET:HE3	1.93	0.50
77:s:114:ARG:O	77:s:115:THR:HG22	2.11	0.50
11:AA:1255:C:H2'	11:AA:1256:G:C8	2.46	0.50
11:AA:2228:A:H2'	11:AA:2229:A:C8	2.46	0.50
11:AA:2465:G:O6	11:AA:2493:U:C2	2.64	0.50
12:Aa:30:HIS:CE1	12:Aa:130:ASP:HB2	2.46	0.50
14:BB:94:C:H2'	14:BB:95:A:C8	2.46	0.50
36:KK:161:GLU:HA	36:KK:164:VAL:HG22	1.92	0.50
51:S:100:ILE:O	51:S:104:VAL:HG13	2.11	0.50
53:U:57:LEU:HD21	53:U:73:ALA:HB2	1.94	0.50
61:c:455:C:H3'	61:c:456:A:C8	2.45	0.50
62:d:107:PHE:HB3	62:d:139:VAL:HG21	1.92	0.50
81:w:97:VAL:O	81:w:101:LYS:HG2	2.10	0.50
1:0:61:ARG:HH11	1:0:61:ARG:HG3	1.76	0.50
11:AA:173:G:H1	11:AA:245:U:H3	1.59	0.50
11:AA:985:U:H2'	11:AA:986:U:C6	2.47	0.50
11:AA:1412:G:OP1	48:Q:105:ARG:NH1	2.44	0.50
11:AA:2367:A:H2'	11:AA:2368:A:C8	2.47	0.50
17:CC:39:G:H1'	17:CC:104:A:N6	2.26	0.50
25:F:132:PRO:HB2	34:JJ:120:THR:HB	1.93	0.50
61:c:293:U:H2'	61:c:294:C:C6	2.47	0.50
63:e:122:GLU:HG2	63:e:140:ILE:HG13	1.93	0.50
68:j:187:LYS:O	68:j:190:GLN:HG2	2.12	0.50
78:t:23:LYS:HG3	78:t:24:LEU:H	1.77	0.50
7:6:40:TYR:CG	71:m:32:GLY:HA3	2.47	0.50
11:AA:29:C:H4'	11:AA:62:A:H4'	1.94	0.50
11:AA:127:G:H2'	11:AA:128:G:H8	1.76	0.50
11:AA:591:G:N2	11:AA:612:U:OP1	2.35	0.50
11:AA:1447:G:H3'	13:B:67:ILE:HG22	1.94	0.50
11:AA:2460:U:O2'	11:AA:2461:A:H5'	2.12	0.50
11:AA:2512:C:H2'	11:AA:2513:U:C6	2.47	0.50
12:Aa:661:ASP:OD1	12:Aa:661:ASP:N	2.45	0.50
37:L:70:PRO:HG3	37:L:115:LYS:HB2	1.92	0.50
61:c:209:U:H2'	61:c:210:A:H8	1.76	0.50
61:c:329:G:OP1	70:l:98:LYS:NZ	2.44	0.50
61:c:751:G:H2'	61:c:752:A:H8	1.77	0.50
61:c:929:A:O4'	75:q:124:ASP:HB2	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
65:g:101:GLN:NE2	65:g:126:VAL:HG21	2.27	0.50
69:k:78:THR:O	69:k:82:GLU:HG3	2.12	0.50
69:k:80:GLU:OE1	69:k:83:LYS:NZ	2.33	0.50
3:2:5:ARG:HH21	61:c:1795:U:H3'	1.77	0.50
8:7:54:PHE:HD2	8:7:312:VAL:HG21	1.77	0.50
11:AA:1343:A:H2'	11:AA:1344:G:C8	2.46	0.50
11:AA:1695:U:O2'	11:AA:1749:A:N1	2.34	0.50
11:AA:1813:A:H2'	11:AA:1814:A:C8	2.47	0.50
11:AA:2232:A:H2'	11:AA:2233:A:C8	2.47	0.50
11:AA:2344:U:H2'	11:AA:2345:A:C8	2.46	0.50
11:AA:2407:C:H2'	11:AA:2408:U:C6	2.47	0.50
13:B:67:ILE:HG13	13:B:68:GLY:N	2.26	0.50
16:C:36:LEU:O	16:C:40:THR:OG1	2.11	0.50
17:CC:40:A:H2'	17:CC:41:A:C8	2.46	0.50
25:F:139:ARG:HG2	34:JJ:77:VAL:HB	1.94	0.50
61:c:980:G:H4'	61:c:1776:A:H4'	1.92	0.50
61:c:1552:U:H2'	61:c:1553:G:O4'	2.11	0.50
61:c:1559:A:H8	79:u:134:ARG:HE	1.59	0.50
61:c:1760:G:H1'	61:c:1781:MA6:H2	1.93	0.50
62:d:198:MET:SD	78:t:90:ALA:HB2	2.52	0.50
71:m:53:ARG:HD2	71:m:97:LEU:HA	1.92	0.50
84:z:41:SER:O	84:z:41:SER:OG	2.29	0.50
2:1:59:TYR:CZ	2:1:61:SER:HB3	2.47	0.50
8:7:26:SER:HB2	8:7:73:LEU:HB3	1.94	0.50
11:AA:89:A:N7	16:C:171:LYS:NZ	2.60	0.50
11:AA:963:G:O2'	39:M:29:PRO:O	2.29	0.50
11:AA:2440:G:H2'	11:AA:2441:A:C8	2.47	0.50
11:AA:2588:U:OP1	36:KK:241:LYS:NZ	2.44	0.50
11:AA:3047:U:O2'	11:AA:3048:A:H5'	2.11	0.50
12:Aa:158:ASN:OD1	12:Aa:214:GLY:N	2.40	0.50
14:BB:71:G:H2'	14:BB:72:A:H8	1.77	0.50
17:CC:142:C:H2'	17:CC:143:U:C6	2.47	0.50
18:Cc:29:C:H2'	18:Cc:30:G:H8	1.77	0.50
32:II:52:VAL:HG21	32:II:65:ILE:HD13	1.94	0.50
42:NN:49:LYS:HB3	42:NN:62:ASN:HA	1.94	0.50
61:c:125:U:OP1	68:j:201:GLN:NE2	2.41	0.50
61:c:163:G:H4'	68:j:53:SER:O	2.11	0.50
61:c:802:G:H21	83:y:107:SER:HB3	1.77	0.50
61:c:1036:A:OP1	91:c:2006:HOH:O	2.20	0.50
61:c:1424:A:H2'	61:c:1425:A:C8	2.47	0.50
61:c:1678:A:OP2	70:l:42:ARG:NH1	2.33	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
81:w:22:ILE:HD13	81:w:100:VAL:HG22	1.93	0.50
11:AA:2700:G:H5''	25:F:17:ARG:HG2	1.94	0.50
11:AA:2793:OMG:H5''	59:a:66:LYS:HG2	1.94	0.50
11:AA:3393:U:H2'	11:AA:3394:U:C6	2.47	0.50
12:Aa:27:HIS:ND1	12:Aa:138:GLN:HB2	2.26	0.50
12:Aa:383:SER:HA	12:Aa:466:THR:HG22	1.93	0.50
12:Aa:488:VAL:HG12	12:Aa:796:MET:HG3	1.93	0.50
28:GG:113:VAL:HB	28:GG:118:LYS:HE2	1.93	0.50
35:K:100:HIS:ND1	35:K:102:SER:OG	2.36	0.50
42:NN:23:VAL:HG12	42:NN:25:GLU:H	1.77	0.50
61:c:395:U:H2'	61:c:396:G:O4'	2.10	0.50
61:c:1405:G:H2'	61:c:1406:A:C8	2.47	0.50
74:p:110:ASP:O	74:p:114:ARG:HG2	2.12	0.50
77:s:22:VAL:HG23	77:s:65:ILE:HG12	1.92	0.50
8:7:289:ALA:HA	8:7:305:TYR:HA	1.93	0.49
11:AA:532:A:O2'	11:AA:533:A:H8	1.94	0.49
11:AA:547:G:O2'	11:AA:548:G:O4'	2.24	0.49
11:AA:692:A:P	49:QQ:201:ARG:HH22	2.35	0.49
11:AA:872:U:H2'	11:AA:873:C:C6	2.46	0.49
11:AA:1073:U:H2'	11:AA:1074:U:C6	2.47	0.49
11:AA:1120:A:H2'	11:AA:1121:U:C6	2.47	0.49
11:AA:1715:A:N7	43:O:84:LEU:HD12	2.27	0.49
11:AA:2497:U:O2'	11:AA:2498:U:OP1	2.29	0.49
11:AA:3002:C:O2'	26:FF:180:GLU:OE2	2.25	0.49
12:Aa:352:ARG:O	12:Aa:356:LEU:HD12	2.11	0.49
30:HH:106:ALA:O	30:HH:110:LEU:HD12	2.12	0.49
37:L:27:LYS:NZ	37:L:93:LYS:O	2.45	0.49
59:a:80:ARG:HG3	59:a:80:ARG:HH11	1.77	0.49
61:c:400:A:H5''	70:l:25:ARG:HA	1.94	0.49
61:c:753:A:OP1	66:h:187:ARG:N	2.45	0.49
61:c:1584:G:O6	77:s:13:LYS:NZ	2.29	0.49
61:c:1669:U:H2'	61:c:1670:G:O4'	2.12	0.49
63:e:131:ASP:OD1	63:e:131:ASP:N	2.40	0.49
63:e:179:SER:HB3	63:e:183:GLN:HB2	1.94	0.49
65:g:76:ARG:HG3	72:n:65:TYR:CE1	2.47	0.49
79:u:74:GLN:NE2	79:u:75:ASN:HB2	2.27	0.49
81:w:37:VAL:HA	81:w:40:ASN:OD1	2.12	0.49
8:7:218:GLY:HA2	8:7:240:VAL:HG22	1.95	0.49
8:7:223:TRP:CD2	8:7:230:ALA:HB2	2.46	0.49
11:AA:68:C:O3'	49:QQ:177:GLY:HA2	2.12	0.49
11:AA:1627:U:H2'	11:AA:1814:A:N6	2.27	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1658:G:H2'	11:AA:1659:U:C6	2.47	0.49
11:AA:1721:U:O2'	11:AA:1723:A:N7	2.34	0.49
11:AA:1724:U:O4	19:D:125:LYS:NZ	2.45	0.49
11:AA:2556:C:OP1	51:S:88:ARG:NH2	2.44	0.49
12:Aa:810:ASP:O	12:Aa:816:GLY:HA3	2.12	0.49
17:CC:5:U:H2'	17:CC:6:U:H6	1.77	0.49
39:M:77:LYS:C	39:M:79:TRP:H	2.21	0.49
39:M:135:GLU:OE1	44:OO:166:ALA:N	2.44	0.49
41:N:23:LYS:HE2	41:N:23:LYS:HA	1.94	0.49
61:c:166:C:O2'	68:j:133:LEU:O	2.30	0.49
61:c:1429:G:H2'	61:c:1430:U:C6	2.47	0.49
61:c:1456:C:O5'	61:c:1457:C:H2'	2.12	0.49
61:c:1515:A:O2'	61:c:1517:U:OP2	2.26	0.49
61:c:1738:U:H2'	61:c:1739:C:H6	1.77	0.49
66:h:100:ARG:HH21	66:h:118:GLU:HG3	1.77	0.49
67:i:183:ALA:HB2	67:i:193:THR:HG21	1.94	0.49
77:s:94:GLN:HB2	77:s:102:LYS:HD2	1.94	0.49
1:0:34:ASN:HD21	61:c:522:U:C1'	2.25	0.49
1:0:124:ARG:NH1	61:c:151:G:O6	2.45	0.49
5:4:14:LYS:HB3	5:4:29:ARG:HB2	1.95	0.49
8:7:13:LEU:HD12	8:7:14:GLU:N	2.26	0.49
11:AA:130:A:H2'	11:AA:131:C:C6	2.47	0.49
11:AA:669:U:H1'	11:AA:1110:U:H4'	1.94	0.49
11:AA:1157:G:H2'	11:AA:1158:A:O4'	2.12	0.49
11:AA:2772:C:OP2	59:a:15:LYS:NZ	2.45	0.49
11:AA:3163:A:H2'	11:AA:3164:C:C6	2.47	0.49
12:Aa:102:LEU:HD12	12:Aa:103:ILE:N	2.26	0.49
17:CC:36:G:O2'	17:CC:104:A:N1	2.43	0.49
24:Ee:12:TYR:CE1	24:Ee:61:GLN:HB2	2.47	0.49
30:HH:83:LEU:HB3	30:HH:88:ILE:HB	1.92	0.49
61:c:689:G:H2'	61:c:690:G:H8	1.78	0.49
61:c:854:U:O4	61:c:855:A:N6	2.44	0.49
61:c:1211:A:H1'	76:r:99:GLY:O	2.12	0.49
61:c:1486:G:N2	61:c:1522:U:O4	2.45	0.49
61:c:1512:G:H2'	61:c:1513:G:C8	2.47	0.49
61:c:1557:U:O2'	61:c:1558:U:H2'	2.11	0.49
61:c:1592:A:H2'	61:c:1593:A:H8	1.77	0.49
62:d:54:TRP:HZ3	62:d:176:LEU:HD13	1.77	0.49
1:0:78:SER:HB3	1:0:81:GLU:HG2	1.93	0.49
2:1:77:ARG:HH22	61:c:1532:U:H3'	1.78	0.49
11:AA:185:C:H5''	35:K:122:LYS:HG2	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:412:G:H2'	11:AA:413:U:H6	1.77	0.49
11:AA:2102:U:H2'	11:AA:2103:U:C6	2.48	0.49
11:AA:2768:U:H2'	11:AA:2769:A:C8	2.47	0.49
12:Aa:206:ARG:N	12:Aa:206:ARG:HD2	2.26	0.49
18:Cc:32:G:C2	18:Cc:41:C:C2	3.00	0.49
36:KK:97:TYR:OH	36:KK:207:ASP:OD2	2.29	0.49
61:c:276:C:H2'	61:c:277:U:H5''	1.94	0.49
61:c:1192:C:H3'	61:c:1193:A:H8	1.77	0.49
61:c:1360:A:H1'	61:c:1364:G:N2	2.27	0.49
61:c:1587:A:H2'	61:c:1588:G:H8	1.77	0.49
68:j:148:SER:OG	68:j:149:LYS:N	2.45	0.49
71:m:108:ARG:NH2	71:m:110:GLN:OE1	2.38	0.49
79:u:28:ILE:HD12	79:u:29:VAL:HG22	1.94	0.49
2:1:41:ILE:HG13	2:1:42:LEU:HD22	1.93	0.49
11:AA:960:U:H4'	11:AA:963:G:C2	2.47	0.49
11:AA:1349:G:H5'	28:GG:291:ASN:OD1	2.13	0.49
11:AA:1354:G:H2'	11:AA:1357:G:H4'	1.95	0.49
11:AA:1616:U:H2'	11:AA:1617:G:C8	2.47	0.49
11:AA:1616:U:H2'	11:AA:1617:G:H8	1.77	0.49
11:AA:1666:G:H2'	11:AA:1667:A:H8	1.78	0.49
11:AA:2486:A:O2'	11:AA:2487:U:H5'	2.13	0.49
11:AA:2714:G:H5'	11:AA:2716:U:C6	2.46	0.49
11:AA:3375:A:O2'	11:AA:3378:C:OP2	2.22	0.49
12:Aa:493:VAL:HB	12:Aa:554:LEU:HD12	1.94	0.49
18:Cc:54:G:H2'	18:Cc:55:U:C6	2.48	0.49
61:c:445:A:H1'	61:c:525:A:O5'	2.13	0.49
61:c:580:A:O2'	61:c:582:U:OP1	2.30	0.49
61:c:856:A:N6	69:k:96:ARG:HB3	2.27	0.49
61:c:1218:G:H22	61:c:1443:U:H2'	1.71	0.49
64:f:165:VAL:HG11	64:f:210:THR:HA	1.95	0.49
68:j:61:PHE:HE2	68:j:96:SER:OG	1.95	0.49
68:j:157:VAL:HG21	68:j:175:ILE:HD11	1.93	0.49
69:k:63:PRO:HA	69:k:95:GLU:HB3	1.94	0.49
71:m:52:ILE:HG23	71:m:76:LEU:HD11	1.93	0.49
77:s:28:LEU:HD11	77:s:30:LYS:NZ	2.28	0.49
77:s:143:ARG:HB3	77:s:143:ARG:HH21	1.76	0.49
8:7:54:PHE:HE2	8:7:300:THR:HG21	1.77	0.49
8:7:180:ALA:HB3	8:7:189:GLU:H	1.77	0.49
11:AA:1033:U:H2'	11:AA:1034:U:C5	2.48	0.49
11:AA:1336:U:H2'	11:AA:1337:A:C8	2.47	0.49
11:AA:1497:C:H2'	11:AA:1498:A:C8	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1631:C:OP2	37:L:48:ARG:NH2	2.41	0.49
11:AA:1805:C:H2'	11:AA:1806:A:C8	2.45	0.49
11:AA:2221:G:N2	11:AA:2224:A:OP2	2.39	0.49
11:AA:2256:A2M:HM'2	11:AA:2256:A2M:N3	2.27	0.49
16:C:176:ARG:N	39:M:51:GLY:HA2	2.28	0.49
45:P:96:VAL:HG12	45:P:98:VAL:HG13	1.94	0.49
61:c:183:U:H2'	61:c:184:C:H6	1.73	0.49
61:c:484:C:H2'	61:c:485:A:H8	1.78	0.49
61:c:508:U:H2'	61:c:509:G:C8	2.48	0.49
61:c:1180:C:H2'	61:c:1181:U:C6	2.48	0.49
61:c:1609:U:H5''	77:s:75:VAL:HG22	1.95	0.49
62:d:118:PRO:HG2	62:d:141:ILE:HD13	1.94	0.49
63:e:81:PHE:HD2	63:e:82:ARG:HG3	1.78	0.49
8:7:22:SER:OG	8:7:71:CYS:SG	2.54	0.49
11:AA:371:G:N1	11:AA:374:A:OP2	2.38	0.49
11:AA:759:U:H2'	11:AA:760:G:O4'	2.13	0.49
11:AA:907:G:H2'	11:AA:926:A:H62	1.77	0.49
11:AA:1169:A:H4'	34:JJ:219:LYS:HD3	1.95	0.49
11:AA:1486:G:H21	51:S:6:THR:HG22	1.77	0.49
11:AA:1497:C:H2'	11:AA:1498:A:H8	1.77	0.49
11:AA:1661:G:H2'	11:AA:1662:G:H8	1.70	0.49
11:AA:2106:A:H2'	11:AA:2107:A:C8	2.48	0.49
11:AA:2767:U:H2'	11:AA:2768:U:C6	2.47	0.49
11:AA:2835:U:H2'	11:AA:2836:C:O2	2.13	0.49
11:AA:3068:U:OP1	19:D:59:SER:N	2.34	0.49
17:CC:29:U:H5''	44:OO:27:ASP:HB3	1.94	0.49
20:DD:72:ASP:OD2	20:DD:191:TYR:OH	2.31	0.49
23:EE:132:ASN:ND2	23:EE:151:PRO:HB3	2.28	0.49
49:QQ:105:ARG:HG2	49:QQ:108:ARG:NH2	2.28	0.49
56:X:28:ARG:HA	56:X:33:ASN:CG	2.37	0.49
61:c:58:U:OP1	61:c:456:A:O2'	2.31	0.49
61:c:156:A:H2'	61:c:157:A:O4'	2.12	0.49
61:c:1161:C:H2'	61:c:1162:C:C6	2.48	0.49
61:c:1223:A:O2'	61:c:1224:A:H8	1.95	0.49
61:c:1471:A:H2	61:c:1474:G:N3	2.10	0.49
61:c:1592:A:H2'	61:c:1593:A:C8	2.48	0.49
78:t:36:ASP:OD1	78:t:47:ARG:HD2	2.13	0.49
81:w:63:LEU:HB2	81:w:84:MET:HB3	1.95	0.49
8:7:109:ASP:OD1	8:7:109:ASP:N	2.45	0.49
11:AA:561:C:H2'	11:AA:562:C:H6	1.78	0.49
11:AA:1138:U:O3'	34:JJ:97:PRO:HD3	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1168:U:H2'	11:AA:1169:A:H8	1.77	0.49
11:AA:1423:C:H1'	32:II:5:LYS:HZ2	1.78	0.49
12:Aa:79:SER:HB3	12:Aa:335:LEU:HD22	1.94	0.49
12:Aa:546:GLU:HB3	12:Aa:547:HIS:CE1	2.48	0.49
89:Aa:1101:SO1:C11	89:Aa:1101:SO1:H13	2.43	0.49
26:FF:41:VAL:HA	26:FF:184:ASN:O	2.13	0.49
29:H:101:VAL:HG11	29:H:114:ILE:HD12	1.95	0.49
38:LL:134:ILE:HD13	38:LL:146:LEU:HD22	1.95	0.49
61:c:585:A:H2'	61:c:586:G:H8	1.77	0.49
61:c:885:G:H2'	61:c:886:U:C6	2.47	0.49
61:c:947:U:H2'	61:c:948:G:C8	2.48	0.49
65:g:119:ALA:O	65:g:123:VAL:HG12	2.12	0.49
79:u:106:GLU:O	79:u:110:ARG:HD2	2.13	0.49
81:w:26:LEU:O	81:w:88:LYS:HA	2.13	0.49
83:y:18:GLU:HG3	83:y:69:LEU:HD23	1.94	0.49
2:l:81:ARG:O	2:l:84:GLU:HG2	2.13	0.49
8:7:81:LEU:HD11	8:7:122:ILE:HG21	1.94	0.49
8:7:134:TRP:HB3	8:7:138:GLY:HA2	1.94	0.49
11:AA:515:C:H5'	28:GG:343:LYS:HE3	1.94	0.49
11:AA:911:C:OP1	23:EE:14:SER:OG	2.31	0.49
11:AA:912:G:OP2	23:EE:9:ARG:NH2	2.45	0.49
11:AA:920:A:OP1	11:AA:923:C:N4	2.41	0.49
11:AA:1666:G:H2'	11:AA:1667:A:C8	2.48	0.49
11:AA:1797:A:H2'	11:AA:1798:A:C8	2.48	0.49
11:AA:2102:U:H2'	11:AA:2103:U:H6	1.77	0.49
12:Aa:415:GLY:HA3	12:Aa:425:ASP:HB3	1.94	0.49
20:DD:43:LYS:N	20:DD:46:ARG:HH21	2.11	0.49
23:EE:247:ARG:HB3	61:c:1012:U:H4'	1.95	0.49
30:HH:173:VAL:O	30:HH:175:HIS:ND1	2.39	0.49
35:K:106:ILE:HG21	35:K:109:LEU:HD23	1.95	0.49
61:c:1108:G:H1	84:z:22:ASN:ND2	2.11	0.49
61:c:1244:A:H8	61:c:1246:C:H5'	1.78	0.49
61:c:1673:G:H1	61:c:1728:A:H2	1.59	0.49
63:e:205:PHE:CD2	63:e:206:PRO:HD2	2.48	0.49
64:f:76:LEU:HD21	64:f:104:VAL:HB	1.95	0.49
67:i:86:GLN:HA	67:i:86:GLN:OE1	2.12	0.49
75:q:64:ALA:HB3	75:q:104:ALA:HB3	1.95	0.49
11:AA:438:A:OP1	48:Q:118:LYS:NZ	2.35	0.49
11:AA:911:C:N4	23:EE:3:ARG:HD3	2.27	0.49
11:AA:1147:G:OP1	48:Q:47:ARG:NH1	2.43	0.49
11:AA:1390:A:N6	11:AA:1418:A:O2'	2.44	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1718:G:H2'	11:AA:1719:G:C8	2.48	0.49
11:AA:2662:G:H2'	11:AA:2663:G:C8	2.47	0.49
12:Aa:511:LEU:HG	12:Aa:518:VAL:HG11	1.94	0.49
16:C:83:VAL:O	16:C:103:ALA:HA	2.13	0.49
20:DD:122:ARG:HA	20:DD:155:ASP:OD1	2.13	0.49
46:PP:17:VAL:HG22	46:PP:37:GLU:HA	1.95	0.49
61:c:337:G:O2'	70:l:10:LYS:NZ	2.42	0.49
61:c:626:U:H2'	61:c:627:C:H6	1.76	0.49
61:c:1114:G:O2'	61:c:1130:G:O6	2.25	0.49
65:g:157:LEU:HD23	65:g:189:MET:HB2	1.94	0.49
69:k:62:VAL:HG11	69:k:70:PHE:CE2	2.48	0.49
6:5:8:PHE:HZ	61:c:1217:A:H61	1.61	0.48
11:AA:1062:A:H5''	11:AA:1063:G:H5'	1.95	0.48
11:AA:1423:C:H1'	32:II:5:LYS:NZ	2.28	0.48
11:AA:1895:A:O2'	11:AA:3053:G:H4'	2.13	0.48
11:AA:3107:U:H2'	11:AA:3108:G:C8	2.47	0.48
11:AA:3160:U:H2'	11:AA:3161:C:C6	2.48	0.48
12:Aa:131:THR:HG21	12:Aa:160:VAL:HA	1.95	0.48
12:Aa:180:ARG:HE	20:DD:137:GLN:HG2	1.77	0.48
17:CC:83:C:H41	35:K:52:ARG:HH12	1.60	0.48
35:K:55:GLU:HB2	35:K:108:LYS:HB3	1.94	0.48
36:KK:158:ASP:HB3	36:KK:159:PRO:HD3	1.94	0.48
38:LL:9:GLN:HB3	38:LL:52:LEU:HD11	1.95	0.48
44:OO:57:VAL:HG23	44:OO:147:ILE:HG23	1.94	0.48
61:c:508:U:H2'	61:c:509:G:H8	1.77	0.48
61:c:896:U:H2'	61:c:897:C:C6	2.48	0.48
61:c:1196:A:H4'	61:c:1197:C:H5''	1.95	0.48
61:c:1264:G:H2'	61:c:1265:G:O4'	2.13	0.48
61:c:1459:C:N4	79:u:139:LYS:HG3	2.28	0.48
64:f:218:ILE:O	64:f:221:THR:OG1	2.27	0.48
66:h:182:TYR:O	66:h:226:PHE:N	2.46	0.48
69:k:37:GLU:OE2	69:k:72:LYS:NZ	2.45	0.48
81:w:52:LYS:NZ	81:w:54:GLY:HA2	2.28	0.48
8:7:108:SER:OG	8:7:109:ASP:N	2.46	0.48
8:7:251:TRP:HH2	8:7:315:VAL:HG11	1.78	0.48
11:AA:277:G:H5'	49:QQ:91:GLU:OE1	2.13	0.48
11:AA:358:G:N2	11:AA:361:A:OP2	2.41	0.48
11:AA:2714:G:H8	11:AA:2751:G:H2'	1.77	0.48
11:AA:3324:C:OP1	45:P:19:ARG:NH1	2.40	0.48
14:BB:84:A:H2'	14:BB:85:G:C8	2.48	0.48
19:D:105:LEU:HD13	19:D:138:LEU:HD23	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:FF:358:TRP:CD1	31:I:1:MET:HE2	2.48	0.48
28:GG:156:LEU:HD12	28:GG:159:ILE:HD12	1.94	0.48
40:MM:36:LEU:HD11	40:MM:87:LEU:HD23	1.93	0.48
61:c:546:U:H2'	61:c:547:U:C6	2.47	0.48
61:c:1582:U:H5''	77:s:135:ARG:HH11	1.77	0.48
61:c:1739:C:H2'	61:c:1740:A:C8	2.47	0.48
62:d:147:THR:O	62:d:161:PRO:HA	2.14	0.48
63:e:88:VAL:HG22	63:e:98:THR:HG22	1.93	0.48
65:g:28:GLU:OE2	72:n:58:GLN:NE2	2.46	0.48
71:m:57:ARG:O	71:m:61:THR:HG23	2.13	0.48
73:o:109:VAL:HG22	73:o:137:PHE:HB2	1.96	0.48
76:r:81:ARG:NH2	76:r:117:GLY:O	2.46	0.48
8:7:36:ALA:HA	8:7:42:LEU:HD23	1.95	0.48
11:AA:112:U:OP1	52:T:104:GLN:NE2	2.46	0.48
11:AA:1460:A:H2'	11:AA:1461:A:C8	2.49	0.48
11:AA:1915:A:H2'	11:AA:1916:U:C6	2.49	0.48
11:AA:2106:A:H2'	11:AA:2107:A:H8	1.78	0.48
11:AA:2264:U:O2'	11:AA:2265:C:H6	1.95	0.48
11:AA:2661:G:H2'	11:AA:2662:G:C8	2.48	0.48
12:Aa:334:LEU:O	12:Aa:338:ILE:HG13	2.13	0.48
12:Aa:495:VAL:HG12	12:Aa:497:ASN:H	1.78	0.48
21:Dd:20:U:H2'	21:Dd:21:G:O4'	2.13	0.48
61:c:5:U:H2'	61:c:6:G:H8	1.77	0.48
61:c:333:A:H2'	61:c:334:G:C8	2.48	0.48
61:c:918:U:H2'	61:c:919:A:C8	2.49	0.48
61:c:968:U:H2'	61:c:969:C:O4'	2.12	0.48
65:g:12:VAL:O	65:g:16:VAL:HG22	2.13	0.48
68:j:191:ARG:HB3	68:j:191:ARG:HH11	1.77	0.48
78:t:89:SER:HB3	78:t:95:ARG:HH21	1.79	0.48
84:z:43:PHE:O	84:z:45:GLY:N	2.45	0.48
11:AA:39:A:H5''	39:M:35:ALA:HB2	1.96	0.48
11:AA:1188:U:OP1	11:AA:1210:U:O2'	2.29	0.48
11:AA:2369:G:H2'	11:AA:2370:G:C8	2.48	0.48
11:AA:2688:U:OP1	30:HH:12:TYR:OH	2.25	0.48
11:AA:3291:G:H2'	11:AA:3292:A:C8	2.47	0.48
12:Aa:609:ARG:HA	12:Aa:609:ARG:HH11	1.76	0.48
15:Bb:28:C:H2'	15:Bb:29:A:C8	2.47	0.48
20:DD:46:ARG:HD2	24:Ee:123:ARG:HG2	1.94	0.48
20:DD:101:VAL:O	20:DD:104:ARG:NH1	2.46	0.48
24:Ee:15:LEU:HD21	24:Ee:17:ALA:HB2	1.95	0.48
25:F:106:LEU:O	25:F:110:LYS:HG2	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:1589:C:H2'	61:c:1590:G:C8	2.49	0.48
61:c:1770:U:H2'	61:c:1771:U:C6	2.49	0.48
63:e:36:SER:OG	63:e:231:LEU:HB3	2.13	0.48
67:i:51:VAL:HG22	67:i:131:GLN:HB2	1.94	0.48
80:v:57:ARG:O	80:v:61:VAL:HG13	2.13	0.48
8:7:19:TRP:HB3	8:7:38:ARG:CB	2.43	0.48
11:AA:1240:A:OP1	24:Ee:90:ARG:NH2	2.46	0.48
11:AA:1428:A:OP2	39:M:2:PRO:HA	2.12	0.48
11:AA:2875:U:O2	47:Pp:1:MET:HB3	2.14	0.48
11:AA:2986:U:H2'	11:AA:2987:A:H8	1.78	0.48
11:AA:3153:U:H4'	11:AA:3155:U:C4	2.49	0.48
37:L:44:ALA:HB1	37:L:114:VAL:HG11	1.93	0.48
42:NN:85:LYS:C	42:NN:85:LYS:HD3	2.38	0.48
46:PP:24:LYS:HG3	46:PP:25:LYS:HG2	1.95	0.48
61:c:473:A:OP1	71:m:44:ARG:NH1	2.42	0.48
61:c:751:G:H2'	61:c:752:A:C8	2.48	0.48
61:c:888:U:H2'	61:c:889:U:C6	2.48	0.48
61:c:1387:G:H1'	61:c:1410:A:N6	2.28	0.48
61:c:1776:A:H2'	61:c:1777:G:C8	2.47	0.48
62:d:144:ILE:HG12	62:d:158:VAL:HB	1.95	0.48
82:x:12:TYR:O	82:x:12:TYR:CG	2.67	0.48
11:AA:506:U:H2'	11:AA:507:U:O4'	2.14	0.48
11:AA:612:U:H2'	11:AA:613:G:H8	1.79	0.48
11:AA:818:C:H2'	11:AA:819:U:O4'	2.14	0.48
11:AA:1009:A:H2'	11:AA:1010:G:C8	2.49	0.48
11:AA:1237:G:H22	11:AA:1251:A:H2	1.60	0.48
11:AA:1597:C:H2'	11:AA:1598:G:C8	2.49	0.48
11:AA:2389:C:H2'	11:AA:2390:A:C8	2.49	0.48
11:AA:2585:G:N3	11:AA:2585:G:H2'	2.27	0.48
11:AA:3143:C:OP2	91:AA:3715:HOH:O	2.20	0.48
11:AA:3206:C:H5''	11:AA:3207:U:O5'	2.14	0.48
61:c:127:G:O6	68:j:202:ARG:NH2	2.44	0.48
61:c:405:C:O2'	68:j:92:ARG:O	2.25	0.48
61:c:1207:C:N4	61:c:1456:C:N3	2.61	0.48
62:d:6:THR:OG1	82:x:42:GLU:OE1	2.22	0.48
64:f:59:HIS:CE1	64:f:239:PRO:HD3	2.49	0.48
64:f:173:PRO:HG2	71:m:57:ARG:HD2	1.94	0.48
73:o:108:PRO:HB2	73:o:135:VAL:HG22	1.96	0.48
75:q:92:LYS:HD2	75:q:121:VAL:HG22	1.96	0.48
78:t:34:LEU:O	78:t:38:ILE:HG22	2.13	0.48
81:w:27:THR:HG22	81:w:88:LYS:HG3	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:7:83:ALA:HB1	8:7:110:VAL:HG12	1.95	0.48
9:8:135:HIS:H	9:8:138:ARG:HG3	1.79	0.48
10:A:18:ARG:O	10:A:22:VAL:HG23	2.13	0.48
10:A:68:ARG:NH2	11:AA:2987:A:OP1	2.41	0.48
11:AA:173:G:O6	11:AA:245:U:O4	2.32	0.48
11:AA:516:A:H2'	11:AA:517:G:C8	2.49	0.48
11:AA:1021:G:H2'	11:AA:1022:U:C6	2.49	0.48
11:AA:1856:C:C2	11:AA:1857:C:C5	3.02	0.48
11:AA:2883:U:H2'	11:AA:2884:C:C6	2.49	0.48
12:Aa:161:ASP:OD1	12:Aa:162:ARG:N	2.47	0.48
12:Aa:426:LEU:C	12:Aa:427:PHE:HD1	2.21	0.48
37:L:99:GLU:CD	37:L:99:GLU:H	2.22	0.48
61:c:484:C:H2'	61:c:485:A:C8	2.48	0.48
61:c:585:A:H2'	61:c:586:G:C8	2.49	0.48
61:c:891:A:H2'	61:c:892:A:H8	1.79	0.48
61:c:923:A:H2'	61:c:924:A:C8	2.48	0.48
61:c:1229:G:H4'	61:c:1230:A:C8	2.48	0.48
61:c:1732:A:H2'	61:c:1733:C:H6	1.79	0.48
3:2:15:ARG:NH1	61:c:936:G:N7	2.61	0.48
11:AA:67:A:O2'	11:AA:315:C:O2	2.30	0.48
11:AA:118:U:O2	11:AA:121:A:H5''	2.14	0.48
11:AA:1709:C:H2'	11:AA:1710:C:H6	1.78	0.48
11:AA:3193:C:H2'	11:AA:3194:C:C6	2.49	0.48
29:H:104:ASN:OD1	29:H:108:GLU:N	2.42	0.48
30:HH:160:PHE:HA	30:HH:163:LEU:HB3	1.95	0.48
45:P:20:LEU:HD11	45:P:32:ALA:HB2	1.96	0.48
58:Z:2:ARG:NH2	61:c:1773:4AC:H5	2.28	0.48
61:c:649:U:H2'	61:c:650:U:C6	2.49	0.48
61:c:1229:G:H1'	61:c:1255:G:N2	2.29	0.48
61:c:1244:A:C8	61:c:1246:C:H5'	2.48	0.48
66:h:103:TYR:O	66:h:182:TYR:OH	2.27	0.48
68:j:3:LEU:O	68:j:15:THR:HA	2.13	0.48
68:j:63:MET:SD	68:j:106:LEU:HD21	2.54	0.48
77:s:86:ALA:O	77:s:90:VAL:HG23	2.14	0.48
80:v:73:VAL:HG21	80:v:102:ARG:HG3	1.95	0.48
4:3:56:CYS:SG	4:3:63:LEU:HD11	2.53	0.48
10:A:171:LYS:NZ	11:AA:3181:C:OP2	2.35	0.48
11:AA:850:U:H2'	11:AA:851:C:H6	1.79	0.48
11:AA:1063:G:C6	25:F:109:VAL:HG22	2.49	0.48
11:AA:2662:G:H2'	11:AA:2663:G:H8	1.78	0.48
61:c:205:U:H2'	61:c:206:A:H8	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:590:C:H2'	61:c:591:A:C8	2.49	0.48
61:c:1057:U:O2'	61:c:1058:U:H3'	2.13	0.48
61:c:1223:A:N1	61:c:1261:G:C6	2.81	0.48
61:c:1225:U:H2'	61:c:1226:A:N7	2.29	0.48
61:c:1226:A:C5'	61:c:1227:A:H4'	2.44	0.48
65:g:137:VAL:HG13	65:g:151:LYS:HG2	1.95	0.48
66:h:182:TYR:N	66:h:226:PHE:O	2.32	0.48
67:i:113:ILE:O	67:i:117:THR:HG23	2.13	0.48
72:n:59:PHE:CZ	72:n:62:GLN:HA	2.49	0.48
79:u:20:THR:HG21	79:u:35:ILE:HA	1.95	0.48
80:v:66:TYR:HD1	80:v:124:ILE:HG21	1.79	0.48
7:6:33:ARG:HE	71:m:123:HIS:HD2	1.61	0.48
11:AA:1941:C:H2'	11:AA:1942:U:C6	2.49	0.48
11:AA:2427:U:H2'	11:AA:2428:U:C6	2.49	0.48
11:AA:3332:U:H2'	11:AA:3333:G:O4'	2.13	0.48
12:Aa:21:ASN:HD22	12:Aa:399:ARG:NH2	2.11	0.48
22:E:31:ALA:HB1	22:E:36:ILE:HG22	1.96	0.48
37:L:89:VAL:HG12	37:L:92:PHE:CZ	2.49	0.48
59:a:23:HIS:HA	59:a:73:GLU:O	2.14	0.48
61:c:278:U:O2	61:c:279:G:N1	2.47	0.48
61:c:406:U:H2'	61:c:407:A:C8	2.49	0.48
61:c:517:U:H3	61:c:535:A:H61	1.62	0.48
61:c:1459:C:H3'	79:u:131:LEU:HD11	1.94	0.48
61:c:1478:G:H5'	80:v:57:ARG:NH2	2.26	0.48
63:e:136:ARG:HG2	63:e:138:PHE:CZ	2.48	0.48
70:l:89:GLU:O	70:l:93:THR:HG23	2.14	0.48
84:z:92:CYS:HG	84:z:136:TRP:CD1	2.32	0.48
4:3:67:THR:OG1	4:3:70:LYS:O	2.31	0.47
8:7:131:ILE:HD11	8:7:144:LEU:HB3	1.96	0.47
11:AA:314:U:H2'	11:AA:315:C:C6	2.49	0.47
11:AA:898:OMU:HM22	11:AA:899:U:O4'	2.14	0.47
11:AA:1460:A:H2'	11:AA:1461:A:H8	1.79	0.47
11:AA:1737:U:O2	51:S:52:GLN:NE2	2.46	0.47
11:AA:2433:U:H1'	49:QQ:125:SER:HB3	1.96	0.47
11:AA:2727:A:C2	39:M:43:ILE:HG23	2.49	0.47
28:GG:317:PRO:C	28:GG:319:LYS:H	2.21	0.47
36:KK:149:LYS:O	36:KK:176:PRO:HG2	2.14	0.47
61:c:1635:A:H61	64:f:92:ALA:H	1.62	0.47
68:j:161:GLU:HB2	68:j:168:THR:HG22	1.95	0.47
11:AA:110:G:C2	11:AA:111:C:H1'	2.50	0.47
11:AA:1224:C:C2	11:AA:1225:A:C8	3.02	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1310:G:OP2	91:AA:3716:HOH:O	2.20	0.47
11:AA:1381:A:H2'	11:AA:1382:G:C8	2.50	0.47
11:AA:1657:C:O2'	11:AA:1797:A:OP2	2.21	0.47
11:AA:2117:A:C8	11:AA:3064:U:H1'	2.48	0.47
11:AA:3000:A:H2'	11:AA:3001:C:H6	1.79	0.47
24:Ee:94:LYS:NZ	24:Ee:95:ASP:OD1	2.47	0.47
30:HH:150:LEU:HD12	42:NN:143:ARG:HG3	1.97	0.47
39:M:95:SER:OG	39:M:97:GLU:O	2.22	0.47
61:c:361:C:OP1	91:c:2007:HOH:O	2.20	0.47
61:c:872:G:N2	61:c:1047:G:H4'	2.30	0.47
61:c:1224:A:N6	61:c:1260:U:O4	2.47	0.47
61:c:1733:C:H2'	61:c:1734:U:C6	2.50	0.47
67:i:137:ILE:HG12	67:i:172:ILE:HD13	1.96	0.47
74:p:92:ILE:HG23	74:p:141:TYR:HE1	1.79	0.47
75:q:89:THR:HG21	75:q:126:THR:O	2.13	0.47
82:x:77:GLY:O	82:x:79:LEU:N	2.47	0.47
8:7:179:LYS:HD2	8:7:191:ASP:HB3	1.96	0.47
8:7:223:TRP:CE2	8:7:230:ALA:HB2	2.49	0.47
11:AA:760:G:O2'	11:AA:770:G:N2	2.41	0.47
11:AA:1230:G:H4'	20:DD:34:SER:HA	1.96	0.47
11:AA:1870:C:OP2	91:AA:3717:HOH:O	2.20	0.47
11:AA:2094:C:H2'	11:AA:2095:G:H8	1.79	0.47
11:AA:2463:G:N2	11:AA:2465:G:N7	2.62	0.47
11:AA:2744:U:H2'	11:AA:2745:G:C8	2.49	0.47
11:AA:2954:U:C5	47:Pp:2:PHE:O	2.67	0.47
12:Aa:159:LYS:HG2	90:Aa:1102:GDP:C6	2.50	0.47
24:Ee:19:GLY:C	24:Ee:54:LYS:HA	2.38	0.47
26:FF:216:ASP:HB2	26:FF:339:ARG:HG2	1.95	0.47
56:X:43:ASN:HB3	56:X:46:ARG:HG3	1.96	0.47
61:c:126:A:H62	61:c:291:G:H21	1.62	0.47
68:j:36:VAL:HG23	68:j:50:PHE:HB2	1.95	0.47
70:l:87:ASN:HB3	70:l:90:LEU:HD12	1.97	0.47
73:o:73:GLY:HA3	73:o:86:ILE:HD12	1.96	0.47
8:7:267:PRO:HG2	8:7:269:TYR:CE2	2.50	0.47
11:AA:770:G:P	44:OO:171:ARG:HH21	2.37	0.47
11:AA:1062:A:O2'	25:F:108:ARG:NH2	2.47	0.47
11:AA:2223:A:H2'	11:AA:2224:A:C8	2.49	0.47
11:AA:2458:A:H3'	11:AA:2459:A:C8	2.49	0.47
11:AA:2946:A2M:C5'	11:AA:2947:G:H5'	2.44	0.47
11:AA:2966:G:H2'	11:AA:2967:A:C8	2.48	0.47
12:Aa:433:ARG:HG2	12:Aa:433:ARG:NH1	2.29	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:Aa:774:VAL:HG11	89:Aa:1101:SO1:H121	1.96	0.47
17:CC:83:C:H5	35:K:51:ARG:HH22	1.61	0.47
26:FF:50:LYS:NZ	26:FF:330:GLY:O	2.37	0.47
30:HH:236:LEU:O	30:HH:239:ILE:HG22	2.15	0.47
39:M:77:LYS:O	39:M:79:TRP:N	2.46	0.47
39:M:86:LYS:HB2	39:M:86:LYS:HE2	1.57	0.47
44:OO:126:PHE:HD2	52:T:115:LYS:HG2	1.78	0.47
61:c:207:U:O2	70:l:178:ARG:NH1	2.47	0.47
61:c:858:G:O3'	69:k:113:PRO:HB3	2.15	0.47
61:c:894:U:H2'	61:c:895:G:C8	2.50	0.47
61:c:1453:G:H2'	61:c:1454:G:C8	2.50	0.47
61:c:1598:U:H2'	61:c:1599:C:C6	2.49	0.47
65:g:160:SER:HA	65:g:164:VAL:HG11	1.95	0.47
65:g:178:ARG:NH2	65:g:179:GLN:HB2	2.29	0.47
68:j:69:LEU:HD13	68:j:70:PRO:HD2	1.97	0.47
69:k:152:VAL:HG23	69:k:181:ILE:HD11	1.95	0.47
75:q:12:GLN:HB3	75:q:77:THR:OG1	2.13	0.47
11:AA:710:A:H2'	11:AA:711:A:C8	2.49	0.47
11:AA:792:G:H2'	11:AA:793:C:C6	2.50	0.47
11:AA:876:A2M:H5''	11:AA:1890:U:H5''	1.96	0.47
11:AA:1580:A:O2'	11:AA:1581:C:OP2	2.30	0.47
11:AA:3094:A:H2'	11:AA:3095:U:C6	2.49	0.47
11:AA:3113:A:H2'	11:AA:3114:A:O4'	2.15	0.47
12:Aa:189:VAL:HG11	12:Aa:201:GLN:HA	1.96	0.47
12:Aa:563:TYR:HB2	12:Aa:677:PHE:HZ	1.79	0.47
15:Bb:27:C:H2'	15:Bb:28:C:H6	1.79	0.47
31:I:4:GLU:HG3	31:I:30:ARG:HD3	1.96	0.47
35:K:55:GLU:HG2	35:K:69:LYS:HG2	1.95	0.47
61:c:1218:G:O6	61:c:1444:A:H2'	2.14	0.47
61:c:1261:G:C6	61:c:1262:U:N3	2.82	0.47
61:c:1458:G:OP1	79:u:139:LYS:HB2	2.13	0.47
62:d:15:GLN:HA	62:d:18:LEU:HD12	1.95	0.47
62:d:179:ARG:HB2	62:d:195:TRP:CE3	2.49	0.47
63:e:120:LEU:HD12	63:e:142:PHE:HE2	1.78	0.47
65:g:112:GLY:O	65:g:113:LEU:HG	2.15	0.47
67:i:140:THR:HG22	67:i:211:ILE:HG12	1.97	0.47
3:2:10:ARG:HB2	3:2:33:ASP:OD1	2.15	0.47
11:AA:313:A:H2'	11:AA:314:U:C6	2.50	0.47
11:AA:2160:G:H2'	11:AA:2161:G:C8	2.48	0.47
11:AA:2443:A:H2'	11:AA:2444:C:C6	2.49	0.47
11:AA:2619:OMG:HM23	11:AA:2619:OMG:H1'	1.53	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2862:U:H4'	40:MM:106:ALA:HB2	1.95	0.47
12:Aa:78:TYR:CE1	12:Aa:97:SER:HB2	2.46	0.47
12:Aa:128:VAL:HA	12:Aa:156:VAL:HG13	1.97	0.47
12:Aa:591:GLU:HG3	12:Aa:687:ASN:HD21	1.79	0.47
14:BB:47:C:OP1	30:HH:95:TRP:N	2.44	0.47
28:GG:26:PHE:HA	28:GG:127:ALA:HA	1.97	0.47
32:II:9:TRP:CH2	32:II:11:PRO:HA	2.49	0.47
32:II:30:LEU:H	32:II:30:LEU:HD23	1.80	0.47
38:LL:150:SER:HB3	38:LL:153:ASP:HB2	1.94	0.47
44:OO:122:LYS:HD2	44:OO:145:PHE:CE2	2.48	0.47
53:U:43:LEU:O	53:U:47:ILE:HG23	2.14	0.47
61:c:1335:U:O2'	61:c:1336:A:OP1	2.31	0.47
61:c:1390:U:O4'	78:t:3:ARG:NH2	2.47	0.47
61:c:1406:A:H2'	61:c:1407:U:C6	2.50	0.47
61:c:1531:G:H2'	61:c:1532:U:C6	2.49	0.47
61:c:1561:U:H2'	61:c:1562:G:C8	2.49	0.47
63:e:97:LEU:HD12	63:e:229:MET:HE1	1.97	0.47
64:f:35:TRP:CZ3	64:f:46:LYS:HB2	2.50	0.47
77:s:44:LEU:HB3	77:s:47:LYS:HB2	1.97	0.47
77:s:74:HIS:O	77:s:77:GLN:HG2	2.15	0.47
81:w:95:ALA:HB1	81:w:99:ILE:HB	1.97	0.47
1:0:12:VAL:HG22	1:0:23:PHE:HB3	1.95	0.47
5:4:58:GLU:OE1	67:i:225:ARG:NH1	2.48	0.47
8:7:69:GLN:HG2	8:7:111:MET:SD	2.55	0.47
11:AA:294:U:H4'	53:U:77:LEU:HD23	1.96	0.47
11:AA:640:U:H2'	11:AA:641:C:C6	2.49	0.47
11:AA:792:G:H5''	39:M:2:PRO:HD2	1.97	0.47
11:AA:987:U:H2'	11:AA:988:U:C6	2.49	0.47
11:AA:1184:A:H2'	11:AA:1185:C:C6	2.50	0.47
11:AA:1334:U:H2'	11:AA:1335:C:C6	2.50	0.47
11:AA:1394:A:OP2	91:AA:3714:HOH:O	2.20	0.47
11:AA:1596:C:H2'	11:AA:1597:C:H6	1.75	0.47
11:AA:1669:C:OP1	51:S:24:LYS:NZ	2.40	0.47
11:AA:1798:A:H2'	11:AA:1799:A:C8	2.49	0.47
11:AA:2816:G:O4'	11:AA:2870:5MC:HM52	2.14	0.47
11:AA:3089:C:H2'	11:AA:3090:U:O4'	2.14	0.47
11:AA:3350:C:H1'	11:AA:3351:U:C5	2.49	0.47
12:Aa:502:PRO:HA	12:Aa:505:VAL:HG22	1.97	0.47
12:Aa:511:LEU:HB2	12:Aa:549:HIS:ND1	2.30	0.47
14:BB:26:C:H2'	14:BB:27:A:O4'	2.14	0.47
14:BB:72:A:O2'	14:BB:73:C:OP1	2.32	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:Bb:36:A:H2'	15:Bb:37:YYG:H8	1.96	0.47
17:CC:5:U:H2'	17:CC:6:U:C6	2.50	0.47
20:DD:23:LYS:HG3	20:DD:24:SER:N	2.30	0.47
20:DD:77:LEU:HB2	20:DD:78:PRO:HD3	1.97	0.47
24:Ee:94:LYS:HG3	24:Ee:95:ASP:H	1.79	0.47
26:FF:295:ALA:HB2	26:FF:301:THR:O	2.15	0.47
29:H:109:MET:HE2	29:H:109:MET:HB3	1.74	0.47
39:M:85:ASP:OD1	39:M:86:LYS:N	2.48	0.47
53:U:98:ARG:HH12	53:U:99:ARG:HH21	1.62	0.47
55:W:5:ILE:HD11	55:W:11:PHE:HB2	1.97	0.47
61:c:526:A:H2'	61:c:527:A:O4'	2.14	0.47
61:c:790:U:H2'	61:c:791:A:H8	1.79	0.47
61:c:1167:G:O6	61:c:1578:U:O2	2.33	0.47
61:c:1269:U:H5'	61:c:1432:U:H5''	1.96	0.47
61:c:1325:A:H2'	61:c:1326:A:H8	1.79	0.47
61:c:1391:A:H2'	61:c:1392:U:H6	1.78	0.47
62:d:7:PHE:HA	62:d:191:ARG:HH21	1.79	0.47
62:d:110:TYR:O	62:d:110:TYR:HD1	1.96	0.47
62:d:201:LEU:HD11	78:t:82:ASP:HB2	1.96	0.47
65:g:138:VAL:HG22	65:g:184:ILE:HG12	1.97	0.47
74:p:103:GLU:OE1	74:p:103:GLU:HA	2.15	0.47
75:q:135:ARG:HH21	75:q:137:LEU:HD21	1.80	0.47
76:r:85:ILE:H	76:r:111:MET:HE1	1.79	0.47
80:v:143:ASP:OD1	80:v:143:ASP:N	2.48	0.47
8:7:180:ALA:HB2	8:7:228:LYS:NZ	2.30	0.47
8:7:276:PRO:HG2	8:7:278:PHE:CE1	2.50	0.47
11:AA:1340:G:H2'	11:AA:1341:U:C6	2.50	0.47
11:AA:1799:A:H2'	11:AA:1800:A:H8	1.79	0.47
11:AA:2152:A:H2'	11:AA:2153:U:H6	1.79	0.47
11:AA:2813:A:H2'	11:AA:2814:G:O4'	2.15	0.47
11:AA:2959:OMC:HM22	11:AA:2960:C:O4'	2.14	0.47
11:AA:3044:G:H2'	11:AA:3045:G:C8	2.50	0.47
11:AA:3294:A:H2'	11:AA:3295:A:O4'	2.14	0.47
12:Aa:378:LEU:HD21	12:Aa:405:VAL:HG22	1.97	0.47
12:Aa:804:LEU:HD23	12:Aa:814:LYS:HD3	1.96	0.47
23:EE:166:ILE:HG23	60:b:83:ILE:HD12	1.96	0.47
28:GG:8:VAL:HG21	28:GG:252:GLU:HG3	1.96	0.47
53:U:21:THR:O	53:U:21:THR:HG22	2.14	0.47
61:c:1291:G:H22	61:c:1324:G:H22	1.61	0.47
61:c:1319:A:H2'	61:c:1320:U:O4'	2.15	0.47
64:f:69:ILE:HG13	64:f:133:LYS:O	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
65:g:106:LYS:HG2	65:g:175:VAL:CG2	2.45	0.47
68:j:122:GLU:OE1	68:j:122:GLU:N	2.44	0.47
75:q:86:THR:HB	75:q:91:THR:HG22	1.95	0.47
8:7:66:HIS:HB3	8:7:85:TRP:HB2	1.97	0.47
9:8:131:PHE:O	61:c:1252:C:H4'	2.14	0.47
11:AA:46:U:OP2	88:AA:3608:SPD:H92	2.15	0.47
11:AA:642:U:OP1	39:M:22:ILE:HG23	2.15	0.47
11:AA:1019:G:H2'	11:AA:1020:G:C8	2.50	0.47
11:AA:2251:G:O2'	11:AA:2252:A:H5'	2.15	0.47
15:Bb:27:C:H2'	15:Bb:28:C:C6	2.50	0.47
26:FF:173:GLN:HG2	26:FF:175:LYS:H	1.80	0.47
26:FF:320:ASP:OD1	26:FF:320:ASP:N	2.48	0.47
38:LL:103:ILE:HD11	38:LL:134:ILE:HG21	1.97	0.47
61:c:907:A:H2'	61:c:908:U:H6	1.80	0.47
61:c:1041:G:H2'	61:c:1042:G:H8	1.78	0.47
61:c:1595:U:H5	61:c:1596:C:C4	2.33	0.47
63:e:225:VAL:HA	63:e:228:LEU:HB3	1.96	0.47
66:h:45:ILE:HG13	66:h:61:VAL:HG21	1.95	0.47
67:i:50:GLU:HB2	67:i:128:ASN:HD21	1.79	0.47
71:m:107:ARG:HB2	71:m:147:MET:HE1	1.95	0.47
11:AA:1133:A2M:H1'	11:AA:2618:G:O6	2.15	0.47
11:AA:2535:A:H2'	11:AA:2536:A:C4	2.50	0.47
11:AA:2551:U:OP1	51:S:102:LYS:NZ	2.46	0.47
11:AA:2861:U:H2'	11:AA:2862:U:O4'	2.15	0.47
11:AA:3350:C:H1'	11:AA:3351:U:H5	1.79	0.47
18:Cc:24:C:H2'	18:Cc:25:U:C6	2.50	0.47
30:HH:179:ARG:HA	30:HH:179:ARG:HD3	1.74	0.47
36:KK:255:SER:O	36:KK:255:SER:OG	2.32	0.47
39:M:104:THR:HG21	39:M:112:ILE:HD11	1.97	0.47
40:MM:102:MET:HG3	40:MM:112:GLN:NE2	2.30	0.47
48:Q:15:LYS:HE3	48:Q:15:LYS:HB3	1.74	0.47
61:c:116:U:H2'	61:c:117:U:C6	2.50	0.47
61:c:181:A:H3'	61:c:182:A:H8	1.79	0.47
61:c:217:A:H62	61:c:845:G:H1'	1.80	0.47
61:c:884:A:H2'	61:c:885:G:C8	2.50	0.47
61:c:1264:G:H2'	61:c:1265:G:C4'	2.45	0.47
61:c:1302:U:OP1	64:f:88:LYS:NZ	2.48	0.47
61:c:1617:U:H2'	61:c:1618:C:C6	2.50	0.47
70:l:116:HIS:HB3	70:l:117:TYR:HD1	1.79	0.47
84:z:130:VAL:HG13	84:z:135:LEU:HD11	1.96	0.47
11:AA:308:A:H1'	11:AA:2222:A:N3	2.29	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:787:G:H2'	11:AA:788:C:C6	2.50	0.46
11:AA:821:U:H2'	11:AA:822:G:H8	1.80	0.46
11:AA:929:A:H2'	11:AA:930:U:C6	2.50	0.46
11:AA:1194:G:H2'	11:AA:1195:A:C8	2.49	0.46
11:AA:1237:G:N3	24:Ee:138:SER:HB2	2.29	0.46
11:AA:1343:A:H2'	11:AA:1344:G:H8	1.81	0.46
11:AA:1567:U:H3	11:AA:1571:A:H1'	1.79	0.46
11:AA:2568:C:O2'	11:AA:2569:A:O5'	2.33	0.46
12:Aa:27:HIS:HD1	12:Aa:138:GLN:HB2	1.81	0.46
20:DD:132:LYS:HD3	20:DD:132:LYS:HA	1.73	0.46
32:II:172:HIS:CD2	32:II:173:MET:HG3	2.50	0.46
61:c:818:C:H2'	61:c:819:G:C8	2.50	0.46
61:c:1439:C:H2'	61:c:1440:C:H6	1.80	0.46
61:c:1524:A:N3	61:c:1590:G:O2'	2.43	0.46
63:e:231:LEU:HD23	63:e:231:LEU:H	1.79	0.46
66:h:178:GLY:N	66:h:195:ILE:O	2.47	0.46
68:j:25:ARG:HB2	68:j:25:ARG:NH1	2.30	0.46
11:AA:8:C:H2'	11:AA:9:U:C6	2.50	0.46
11:AA:126:U:OP1	49:QQ:144:ARG:NH1	2.48	0.46
11:AA:631:U:H2'	11:AA:632:G:C8	2.51	0.46
11:AA:1083:G:H2'	11:AA:1084:A:C8	2.49	0.46
11:AA:1643:A:H2'	11:AA:1644:C:C2	2.50	0.46
11:AA:2101:C:HO2'	11:AA:2102:U:P	2.36	0.46
11:AA:2215:A:N7	91:AA:3789:HOH:O	2.36	0.46
12:Aa:384:LYS:HB2	12:Aa:397:PHE:HB3	1.97	0.46
18:Cc:29:C:H2'	18:Cc:30:G:C8	2.50	0.46
22:E:12:ARG:HB2	22:E:59:VAL:HG23	1.97	0.46
42:NN:14:ILE:HD13	42:NN:131:MET:SD	2.55	0.46
58:Z:1:MET:HB2	61:c:1642:G:H5'	1.97	0.46
65:g:76:ARG:HG3	72:n:65:TYR:HE1	1.80	0.46
66:h:100:ARG:NH2	66:h:118:GLU:O	2.48	0.46
79:u:102:ALA:HB3	79:u:104:ASN:ND2	2.30	0.46
81:w:68:ARG:HH11	81:w:69:LYS:H	1.63	0.46
5:4:11:LYS:C	5:4:30:VAL:HG23	2.40	0.46
7:6:13:LYS:NZ	61:c:566:C:O2	2.38	0.46
10:A:75:ALA:HB3	10:A:78:ARG:HG2	1.97	0.46
11:AA:340:C:OP2	28:GG:195:ARG:NH1	2.41	0.46
11:AA:1696:A:H2'	11:AA:1697:A:H8	1.79	0.46
11:AA:2177:G:N2	23:EE:118:GLU:OE2	2.46	0.46
11:AA:2393:G:OP2	91:AA:3719:HOH:O	2.21	0.46
11:AA:2651:G:H5''	11:AA:2652:U:O4'	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:Cc:32:G:N2	18:Cc:41:C:C2	2.83	0.46
22:E:10:ILE:HG12	22:E:26:ARG:HB2	1.97	0.46
55:W:8:ILE:HG23	55:W:65:LEU:HD21	1.96	0.46
61:c:218:A:N7	61:c:844:A:O2'	2.47	0.46
61:c:1223:A:C6	61:c:1224:A:N6	2.83	0.46
62:d:135:GLU:O	62:d:139:VAL:HG22	2.15	0.46
64:f:83:ILE:HG21	64:f:121:VAL:HG22	1.96	0.46
66:h:100:ARG:HB2	66:h:114:ILE:HD13	1.97	0.46
71:m:180:LYS:HA	71:m:183:ALA:HB3	1.98	0.46
79:u:92:ILE:HG23	79:u:93:THR:HG22	1.97	0.46
4:3:22:LYS:HE2	61:c:1072:C:H5''	1.97	0.46
8:7:167:VAL:HG13	8:7:183:LEU:HD21	1.97	0.46
11:AA:1449:A2M:H2'	11:AA:1450:OMG:O4'	2.15	0.46
11:AA:1704:A:H2'	11:AA:1705:U:C6	2.51	0.46
11:AA:1709:C:H2'	11:AA:1710:C:C6	2.50	0.46
11:AA:1927:G:C8	60:b:16:VAL:HG12	2.50	0.46
12:Aa:223:ARG:NE	12:Aa:336:GLU:OE1	2.47	0.46
12:Aa:283:ARG:NH1	12:Aa:283:ARG:HB3	2.29	0.46
12:Aa:730:LEU:HB2	12:Aa:799:ASP:HB2	1.96	0.46
22:E:93:GLU:HG3	22:E:137:ARG:HG3	1.97	0.46
23:EE:242:ARG:NH2	23:EE:243:THR:O	2.47	0.46
27:G:50:LEU:HB3	27:G:54:VAL:HB	1.97	0.46
43:O:10:ILE:HD12	43:O:10:ILE:H	1.79	0.46
61:c:108:A:H2'	61:c:109:G:C8	2.51	0.46
61:c:956:C:H2'	61:c:957:G:H8	1.80	0.46
61:c:1170:G:N3	61:c:1170:G:H2'	2.31	0.46
61:c:1437:U:H4'	65:g:176:LEU:HD13	1.96	0.46
64:f:178:ILE:HG21	64:f:185:LYS:HA	1.98	0.46
66:h:85:GLY:O	66:h:88:ASP:HB2	2.14	0.46
66:h:152:PRO:HD2	68:j:215:ARG:NH1	2.30	0.46
68:j:121:LEU:HD12	68:j:124:LEU:HD22	1.97	0.46
78:t:102:VAL:HB	78:t:106:THR:HB	1.97	0.46
79:u:111:ASP:O	79:u:114:GLU:HG3	2.15	0.46
84:z:50:LYS:HD3	84:z:101:GLU:OE2	2.16	0.46
1:0:76:TYR:OH	1:0:86:GLU:OE1	2.31	0.46
4:3:72:LYS:HA	4:3:72:LYS:HD2	1.75	0.46
8:7:38:ARG:HG2	8:7:67:ILE:HD13	1.96	0.46
8:7:121:MET:HE3	8:7:183:LEU:HB2	1.97	0.46
11:AA:127:G:H2'	11:AA:128:G:C8	2.51	0.46
11:AA:276:U:O2'	49:QQ:91:GLU:OE1	2.25	0.46
11:AA:2273:G:O2'	11:AA:2311:G:O6	2.26	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2389:C:H2'	11:AA:2390:A:H8	1.80	0.46
11:AA:2433:U:OP2	11:AA:2434:U:O2'	2.29	0.46
11:AA:2864:A:H5''	40:MM:114:GLY:HA2	1.97	0.46
11:AA:3255:U:H2'	11:AA:3256:G:H8	1.80	0.46
12:Aa:335:LEU:HD12	12:Aa:336:GLU:H	1.80	0.46
89:Aa:1101:SO1:H16	89:Aa:1101:SO1:H102	1.50	0.46
20:DD:26:PHE:HB2	20:DD:87:VAL:HB	1.96	0.46
24:Ee:42:VAL:O	24:Ee:45:ASP:HB2	2.16	0.46
28:GG:233:LEU:HB3	28:GG:238:LEU:HD11	1.96	0.46
32:II:148:GLU:OE2	32:II:151:LYS:HD2	2.16	0.46
36:KK:156:ASP:OD1	36:KK:156:ASP:N	2.49	0.46
61:c:145:A:H1'	61:c:146:U:C6	2.50	0.46
61:c:1080:U:H2'	61:c:1081:A:H1'	1.97	0.46
61:c:1622:G:H2'	61:c:1623:C:C6	2.50	0.46
61:c:1656:U:H5''	61:c:1657:U:OP2	2.16	0.46
63:e:175:GLU:HG3	63:e:187:LYS:NZ	2.30	0.46
67:i:96:SER:O	67:i:176:THR:HG21	2.16	0.46
71:m:31:ALA:HA	71:m:36:LEU:HD12	1.98	0.46
80:v:97:SER:HB3	80:v:100:ILE:HD12	1.97	0.46
81:w:52:LYS:HB3	81:w:93:LEU:HD12	1.96	0.46
4:3:82:LYS:HD2	74:p:25:TRP:CG	2.50	0.46
11:AA:195:U:H2'	11:AA:196:G:O4'	2.16	0.46
11:AA:1128:U:H2'	11:AA:1129:A:O4'	2.16	0.46
11:AA:1221:A:H3'	11:AA:1222:G:H5'	1.98	0.46
11:AA:2338:C:H3'	11:AA:2339:C:H2'	1.96	0.46
12:Aa:491:VAL:HA	12:Aa:559:PRO:HD3	1.98	0.46
17:CC:145:U:H2'	17:CC:146:U:C6	2.51	0.46
23:EE:130:SER:OG	23:EE:174:ARG:NH1	2.49	0.46
23:EE:135:ILE:HD12	23:EE:149:ARG:HD3	1.98	0.46
27:G:34:ALA:O	27:G:38:ILE:HG12	2.15	0.46
35:K:70:ILE:HD13	35:K:82:VAL:HG22	1.96	0.46
61:c:97:C:H2'	61:c:98:U:H6	1.80	0.46
61:c:604:A:H2'	61:c:605:A:O4'	2.15	0.46
61:c:953:G:H2'	61:c:954:G:H8	1.81	0.46
61:c:1192:C:OP1	77:s:142:TYR:HB2	2.16	0.46
61:c:1287:A:N6	61:c:1328:G:H2'	2.17	0.46
61:c:1363:U:H4'	61:c:1364:G:O4'	2.15	0.46
67:i:81:ARG:HD3	67:i:82:PHE:HD1	1.80	0.46
68:j:13:GLN:O	68:j:14:LYS:HG3	2.15	0.46
70:l:113:PHE:CG	70:l:121:LEU:HD22	2.51	0.46
78:t:20:TYR:CZ	78:t:38:ILE:HG12	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
78:t:83:GLN:HG3	78:t:86:PRO:HB3	1.98	0.46
6:5:23:VAL:HG21	6:5:42:CYS:SG	2.56	0.46
11:AA:1351:U:H5''	11:AA:1352:A:OP2	2.15	0.46
11:AA:2148:U:H2'	11:AA:2149:A:C8	2.51	0.46
11:AA:3204:C:H2'	11:AA:3205:G:C8	2.51	0.46
12:Aa:124:GLY:HA3	12:Aa:342:LEU:HD13	1.98	0.46
12:Aa:331:ALA:O	12:Aa:335:LEU:HG	2.15	0.46
20:DD:125:ASN:HD21	20:DD:149:THR:HG21	1.79	0.46
40:MM:21:ARG:O	40:MM:24:ARG:NH1	2.41	0.46
61:c:1545:A:H2'	61:c:1546:G:H8	1.80	0.46
61:c:1676:U:H5''	70:l:58:LEU:HD21	1.97	0.46
62:d:117:GLU:HB3	64:f:40:LYS:HE3	1.97	0.46
11:AA:834:U:H2'	11:AA:835:G:O4'	2.16	0.46
11:AA:1525:G:H5'	11:AA:1830:G:OP2	2.15	0.46
11:AA:1541:G:H1'	11:AA:1557:A:C5	2.50	0.46
11:AA:1619:A:H2'	11:AA:1620:U:O4'	2.16	0.46
11:AA:1914:G:O2'	19:D:82:LYS:O	2.27	0.46
11:AA:2425:G:OP2	49:QQ:90:ASN:ND2	2.39	0.46
11:AA:2812:C:H2'	11:AA:2813:A:C8	2.51	0.46
11:AA:3296:A:H2'	11:AA:3297:U:C6	2.51	0.46
20:DD:173:LEU:HD22	20:DD:178:ILE:HB	1.98	0.46
25:F:39:ILE:HG22	25:F:99:SER:HB3	1.97	0.46
30:HH:290:ILE:HG13	40:MM:206:LEU:HD21	1.98	0.46
61:c:1147:A:O2'	61:c:1636:C:OP2	2.29	0.46
61:c:1525:A:N3	61:c:1589:C:O2'	2.49	0.46
63:e:126:THR:OG1	63:e:136:ARG:HD3	2.16	0.46
11:AA:559:A:O2'	46:PP:84:LYS:NZ	2.37	0.46
11:AA:627:U:H2'	11:AA:628:A:H8	1.77	0.46
11:AA:1239:C:H3'	11:AA:1240:A:H8	1.81	0.46
11:AA:1595:U:OP2	51:S:36:LYS:NZ	2.33	0.46
11:AA:2152:A:H2'	11:AA:2153:U:C6	2.51	0.46
11:AA:3043:C:H5'	26:FF:9:PRO:HG2	1.98	0.46
11:AA:3296:A:H2'	11:AA:3297:U:H6	1.80	0.46
17:CC:83:C:N4	35:K:52:ARG:HH22	2.13	0.46
24:Ee:131:GLU:O	24:Ee:135:THR:HG23	2.16	0.46
29:H:9:THR:HB	29:H:125:LEU:HD21	1.97	0.46
32:II:60:ASP:OD1	32:II:62:THR:OG1	2.19	0.46
50:R:8:TYR:CG	50:R:99:ARG:HB3	2.51	0.46
61:c:28:A2M:H8	61:c:28:A2M:O5'	2.15	0.46
61:c:1160:A:H2'	61:c:1161:C:H6	1.79	0.46
61:c:1527:C:H5'	67:i:106:LYS:HZ2	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:1546:G:H2'	61:c:1547:A:H8	1.81	0.46
65:g:101:GLN:HA	65:g:104:SER:OG	2.15	0.46
74:p:146:ALA:O	74:p:150:VAL:HG13	2.16	0.46
75:q:29:HIS:CD2	75:q:41:ARG:HB2	2.50	0.46
80:v:134:ARG:HH21	80:v:135:ILE:CD1	2.28	0.46
5:4:58:GLU:HG3	5:4:61:ARG:HD3	1.99	0.46
8:7:45:TRP:N	8:7:45:TRP:CD1	2.84	0.46
11:AA:887:G:H2'	11:AA:888:A:C8	2.51	0.46
11:AA:1221:A:H5'	20:DD:61:ARG:HG3	1.96	0.46
11:AA:1249:G:H2'	11:AA:1250:G:C8	2.51	0.46
11:AA:1470:U:H2'	11:AA:1471:U:C6	2.51	0.46
11:AA:1478:C:H2'	11:AA:1479:U:C6	2.51	0.46
11:AA:2282:U:O2	11:AA:2310:U:H4'	2.16	0.46
11:AA:3236:U:H1'	11:AA:3252:G:N2	2.31	0.46
12:Aa:559:PRO:HB2	89:Aa:1101:SO1:H211	1.98	0.46
15:Bb:26:G:H2'	15:Bb:26:G:N3	2.31	0.46
29:H:24:ASN:ND2	29:H:97:ASP:OD2	2.48	0.46
34:JJ:52:GLN:O	34:JJ:56:GLU:HG2	2.15	0.46
50:R:17:GLN:O	50:R:24:ASN:N	2.39	0.46
61:c:252:U:H2'	61:c:253:A:H8	1.80	0.46
61:c:343:C:H2'	61:c:344:A:C8	2.51	0.46
61:c:511:A:H5''	71:m:172:VAL:HG23	1.98	0.46
61:c:609:U:O2	84:z:19:ARG:NH1	2.49	0.46
61:c:1086:A:H2'	61:c:1087:A:C8	2.51	0.46
61:c:1146:G:H2'	61:c:1147:A:C8	2.51	0.46
61:c:1350:U:OP1	77:s:68:ARG:NH1	2.49	0.46
67:i:53:VAL:HG11	67:i:62:VAL:HG21	1.97	0.46
67:i:165:LEU:HG	67:i:169:ASN:HD21	1.81	0.46
70:l:41:LYS:HA	70:l:59:ARG:O	2.16	0.46
73:o:94:ILE:HD13	84:z:16:ARG:HD3	1.98	0.46
79:u:26:ILE:O	79:u:57:ARG:HB3	2.16	0.46
1:0:8:ARG:NH2	1:0:26:ASP:OD2	2.35	0.45
11:AA:287:G:OP1	49:QQ:179:LYS:HD3	2.16	0.45
11:AA:1615:C:H2'	11:AA:1616:U:H6	1.81	0.45
11:AA:2415:C:OP1	23:EE:2:GLY:HA3	2.16	0.45
11:AA:2426:U:H2'	11:AA:2427:U:H6	1.81	0.45
11:AA:3333:G:N2	11:AA:3369:G:O2'	2.50	0.45
12:Aa:559:PRO:HG2	12:Aa:778:PHE:CE1	2.51	0.45
12:Aa:595:GLU:HG3	12:Aa:599:LEU:HD23	1.98	0.45
14:BB:10:C:OP2	25:F:26:HIS:ND1	2.43	0.45
14:BB:113:C:H2'	14:BB:114:U:O4'	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:Bb:52:U:H2'	15:Bb:53:G:C8	2.50	0.45
26:FF:48:GLY:HA3	26:FF:81:THR:HG22	1.98	0.45
42:NN:148:VAL:HG13	42:NN:152:HIS:HB3	1.98	0.45
61:c:1017:U:H2'	61:c:1018:U:C6	2.51	0.45
61:c:1026:A:N7	61:c:1772:C:O2'	2.33	0.45
67:i:73:THR:HG22	67:i:91:GLU:OE1	2.16	0.45
72:n:7:ASP:OD1	72:n:7:ASP:N	2.49	0.45
74:p:108:ASP:HB3	74:p:111:ALA:HB3	1.97	0.45
80:v:37:VAL:HB	80:v:100:ILE:HD11	1.97	0.45
3:2:49:ALA:HB2	75:q:103:ARG:HD3	1.98	0.45
11:AA:976:U:OP1	16:C:144:ARG:NH2	2.46	0.45
11:AA:1381:A:H2'	11:AA:1382:G:H8	1.81	0.45
11:AA:2115:G:H22	11:AA:2120:A:H1'	1.81	0.45
11:AA:2500:A:O2'	11:AA:2501:U:OP1	2.30	0.45
11:AA:2724:OMU:H4'	25:F:54:HIS:CD2	2.51	0.45
11:AA:2961:G:H2'	11:AA:2962:U:C6	2.52	0.45
12:Aa:42:ARG:HD2	12:Aa:331:ALA:HB1	1.98	0.45
12:Aa:724:ILE:HD11	12:Aa:804:LEU:HD22	1.98	0.45
22:E:45:LEU:HD12	22:E:51:VAL:HG11	1.99	0.45
29:H:81:GLN:HG2	29:H:83:LYS:H	1.81	0.45
45:P:54:GLU:H	45:P:54:GLU:CD	2.24	0.45
61:c:818:C:H2'	61:c:819:G:H8	1.81	0.45
61:c:889:U:H2'	61:c:890:C:C6	2.52	0.45
61:c:920:U:H2'	61:c:921:U:O4'	2.15	0.45
61:c:1144:U:H2'	61:c:1145:U:C6	2.51	0.45
62:d:71:GLU:H	62:d:71:GLU:CD	2.23	0.45
63:e:120:LEU:HD12	63:e:142:PHE:CE2	2.51	0.45
64:f:123:GLY:HA2	64:f:126:ARG:HE	1.81	0.45
67:i:37:GLN:HE22	77:s:57:LEU:HG	1.81	0.45
67:i:120:ILE:HA	67:i:123:VAL:HG22	1.99	0.45
74:p:54:LEU:HD22	74:p:60:VAL:HG11	1.97	0.45
5:4:53:ILE:HG22	67:i:57:SER:HB3	1.97	0.45
8:7:183:LEU:HD23	8:7:183:LEU:H	1.82	0.45
11:AA:37:U:O4	49:QQ:83:LYS:NZ	2.50	0.45
11:AA:414:U:H2'	11:AA:415:G:C8	2.50	0.45
11:AA:817:A2M:HM'3	11:AA:920:A:C4	2.52	0.45
11:AA:1384:U:H2'	11:AA:1385:C:C6	2.51	0.45
11:AA:2216:G:H22	11:AA:2229:A:H2	1.65	0.45
11:AA:2541:U:H3'	11:AA:2542:U:O4'	2.16	0.45
12:Aa:550:ALA:HB1	12:Aa:552:VAL:HG12	1.97	0.45
14:BB:107:C:H2'	14:BB:108:A:H8	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:CC:78:G:H2'	17:CC:79:A:C8	2.51	0.45
17:CC:135:G:OP1	33:J:49:LYS:HE2	2.16	0.45
31:I:2:LYS:HE3	31:I:2:LYS:HB2	1.76	0.45
55:W:17:ARG:NE	55:W:19:ASP:OD1	2.42	0.45
59:a:8:ARG:HB3	59:a:23:HIS:O	2.17	0.45
61:c:94:U:H4'	66:h:6:LYS:HA	1.97	0.45
61:c:386:G:H2'	61:c:387:A:C8	2.51	0.45
62:d:101:ARG:HH22	62:d:104:PRO:HD2	1.81	0.45
63:e:81:PHE:CD2	63:e:82:ARG:HG3	2.52	0.45
66:h:121:TYR:OH	66:h:235:TYR:O	2.18	0.45
68:j:89:ASP:OD1	68:j:89:ASP:N	2.50	0.45
69:k:98:ILE:HG12	69:k:121:VAL:HG21	1.97	0.45
77:s:87:LYS:HG2	77:s:117:LEU:HD13	1.97	0.45
8:7:53:LYS:HD3	8:7:56:VAL:HG12	1.99	0.45
11:AA:1144:U:OP1	11:AA:1367:G:O2'	2.27	0.45
11:AA:1196:C:OP2	11:AA:1309:U:O2'	2.31	0.45
11:AA:1533:U:O4	91:AA:3718:HOH:O	2.21	0.45
11:AA:2138:A:C4	54:V:3:LYS:HB3	2.51	0.45
11:AA:2376:G:H2'	11:AA:2377:G:C8	2.51	0.45
11:AA:2450:G:O6	11:AA:2497:U:C4	2.69	0.45
11:AA:2469:G:H4'	11:AA:2470:C:C5	2.52	0.45
11:AA:2881:C:H2'	11:AA:2882:U:H6	1.80	0.45
14:BB:3:U:H2'	14:BB:4:U:C6	2.51	0.45
15:Bb:74:C:H3'	40:MM:110:ARG:NH2	2.32	0.45
61:c:562:OMG:H5''	61:c:562:OMG:C8	2.51	0.45
61:c:1192:C:H3'	61:c:1193:A:C8	2.52	0.45
61:c:1550:A:H2'	61:c:1551:U:C6	2.52	0.45
69:k:143:LEU:HD13	83:y:49:GLU:OE1	2.17	0.45
70:l:72:ILE:HG12	70:l:112:TRP:CE2	2.51	0.45
75:q:25:ASP:OD1	75:q:54:GLU:HB3	2.16	0.45
77:s:49:TYR:HB3	77:s:53:LEU:HD23	1.98	0.45
80:v:40:SER:HA	80:v:97:SER:H	1.82	0.45
81:w:50:LEU:HD21	81:w:95:ALA:HB2	1.98	0.45
8:7:175:ASP:O	8:7:176:LYS:HG2	2.16	0.45
11:AA:1022:U:H2'	11:AA:1023:C:O4'	2.16	0.45
11:AA:1757:A:H2'	11:AA:1758:G:H8	1.80	0.45
11:AA:2526:C:H2'	11:AA:2527:G:H8	1.82	0.45
11:AA:2738:A:O4'	41:N:37:PRO:HG2	2.16	0.45
12:Aa:711:ARG:O	12:Aa:838:TYR:HB3	2.17	0.45
19:D:153:LYS:O	19:D:157:GLU:HG2	2.15	0.45
19:D:165:LYS:HZ1	61:c:850:A:H5''	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:DD:75:LYS:HD3	20:DD:75:LYS:HA	1.65	0.45
26:FF:47:LEU:HD11	26:FF:179:ALA:HB3	1.98	0.45
26:FF:302:LYS:HD3	26:FF:302:LYS:HA	1.67	0.45
27:G:58:GLU:OE2	27:G:60:GLY:N	2.49	0.45
32:II:100:LYS:NZ	32:II:133:GLU:OE2	2.35	0.45
40:MM:103:LEU:HD11	40:MM:111:LEU:HD11	1.98	0.45
51:S:57:LEU:HB3	51:S:61:GLN:HB2	1.99	0.45
61:c:590:C:H2'	61:c:591:A:H8	1.80	0.45
61:c:800:U:H2'	61:c:801:G:C8	2.43	0.45
61:c:1579:U:H2'	61:c:1580:C:C6	2.52	0.45
61:c:1639:OMC:H2'	61:c:1640:C:O4'	2.16	0.45
65:g:54:ARG:HD2	65:g:54:ARG:H	1.82	0.45
68:j:20:ASP:HB3	68:j:23:ARG:HB3	1.98	0.45
68:j:48:TYR:OH	68:j:119:GLN:O	2.34	0.45
69:k:126:LEU:HG	69:k:173:TYR:CE2	2.50	0.45
72:n:50:THR:HG22	72:n:55:VAL:HG11	1.97	0.45
1:0:125:LEU:O	1:0:129:VAL:HG12	2.17	0.45
11:AA:130:A:H2'	11:AA:131:C:H6	1.80	0.45
11:AA:916:G:H5'	11:AA:917:A:OP1	2.17	0.45
11:AA:1764:U:H3'	11:AA:1765:U:H4'	1.99	0.45
11:AA:2724:OMU:OP2	11:AA:2726:C:N4	2.49	0.45
11:AA:2954:U:C4	47:Pp:2:PHE:O	2.70	0.45
11:AA:3158:G:H22	11:AA:3292:A:H2	1.65	0.45
12:Aa:314:LEU:HD12	12:Aa:314:LEU:HA	1.82	0.45
14:BB:3:U:H2'	14:BB:4:U:H6	1.82	0.45
16:C:41:ASP:O	16:C:41:ASP:OD1	2.35	0.45
17:CC:83:C:N4	35:K:52:ARG:HH12	2.14	0.45
19:D:98:ARG:O	19:D:101:VAL:HG22	2.17	0.45
24:Ee:28:LEU:HD12	24:Ee:32:ILE:HD11	1.99	0.45
39:M:70:LYS:HD3	39:M:111:LYS:HB2	1.98	0.45
61:c:482:U:H2'	61:c:483:A:H8	1.82	0.45
61:c:918:U:H2'	61:c:919:A:H8	1.81	0.45
61:c:1241:G:H21	61:c:1241:G:P	2.40	0.45
61:c:1585:U:OP1	77:s:125:GLU:N	2.47	0.45
63:e:34:ALA:HB3	63:e:35:PRO:HD3	1.99	0.45
66:h:112:HIS:NE2	66:h:237:SER:O	2.50	0.45
69:k:22:GLN:HA	69:k:25:VAL:HG22	1.99	0.45
11:AA:40:A:H5''	39:M:35:ALA:HB1	1.98	0.45
11:AA:268:A:H61	11:AA:295:A:H3'	1.82	0.45
11:AA:585:A:H5''	50:R:70:LYS:HD3	1.98	0.45
11:AA:663:OMC:HM23	11:AA:663:OMC:H1'	1.76	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1544:G:OP2	49:QQ:35:VAL:HG21	2.17	0.45
11:AA:2344:U:H2'	11:AA:2345:A:H8	1.81	0.45
11:AA:2612:U:H2'	11:AA:2613:U:O4'	2.17	0.45
11:AA:2871:G:H5''	11:AA:2872:A:H5'	1.98	0.45
11:AA:3013:U:H2'	11:AA:3014:U:C6	2.51	0.45
12:Aa:117:ALA:HA	12:Aa:481:MET:SD	2.56	0.45
12:Aa:382:VAL:HG11	12:Aa:396:ALA:HB1	1.99	0.45
26:FF:219:ALA:HB2	26:FF:336:VAL:HG12	1.99	0.45
30:HH:40:HIS:HB3	30:HH:43:LYS:HG3	1.97	0.45
30:HH:178:ASN:HA	30:HH:183:TRP:CD2	2.52	0.45
49:QQ:71:ARG:HB2	49:QQ:94:TYR:HB2	1.98	0.45
61:c:304:U:H2'	61:c:305:C:C6	2.52	0.45
61:c:1107:G:O2'	61:c:1108:G:H5'	2.17	0.45
61:c:1424:A:HO2'	61:c:1425:A:P	2.39	0.45
61:c:1564:U:H2'	61:c:1565:C:H6	1.80	0.45
61:c:1590:G:H2'	61:c:1591:C:H6	1.82	0.45
66:h:141:THR:OG1	66:h:143:ASP:OD1	2.28	0.45
80:v:86:ARG:NH1	80:v:90:PRO:O	2.49	0.45
2:l:44:GLN:NE2	79:u:6:GLN:HA	2.32	0.45
6:5:29:GLY:O	6:5:40:ARG:N	2.49	0.45
11:AA:669:U:O2'	11:AA:1109:U:O2'	2.35	0.45
11:AA:1828:A:H2'	11:AA:1829:G:C8	2.51	0.45
11:AA:2443:A:H2'	11:AA:2444:C:H6	1.82	0.45
11:AA:2989:U:O2'	26:FF:232:ARG:NH1	2.49	0.45
11:AA:3066:U:H2'	11:AA:3067:C:C6	2.51	0.45
11:AA:3072:C:H2'	11:AA:3073:A:O4'	2.17	0.45
12:Aa:21:ASN:HB2	12:Aa:399:ARG:HH21	1.82	0.45
12:Aa:394:PHE:HB2	12:Aa:460:ASP:OD2	2.16	0.45
13:B:60:PHE:HB3	13:B:64:ASN:HB3	1.98	0.45
15:Bb:57:G:H2'	15:Bb:58:A:C8	2.52	0.45
17:CC:95:G:C6	54:V:83:ALA:HA	2.52	0.45
23:EE:206:PRO:HG3	23:EE:213:GLY:HA3	1.98	0.45
37:L:9:LYS:HA	37:L:9:LYS:HD3	1.73	0.45
49:QQ:73:ARG:NH1	49:QQ:88:GLY:O	2.50	0.45
54:V:27:PHE:HA	54:V:34:CYS:HA	1.98	0.45
61:c:358:U:O2'	61:c:360:A:O5'	2.33	0.45
61:c:414:OMC:HM23	61:c:414:OMC:H1'	1.74	0.45
61:c:1195:C:H5''	61:c:1197:C:C5	2.52	0.45
61:c:1219:A:H3'	61:c:1220:C:C5	2.52	0.45
61:c:1587:A:H2'	61:c:1588:G:C8	2.51	0.45
64:f:148:LEU:HD23	64:f:148:LEU:HA	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
64:f:237:VAL:HG12	64:f:242:ILE:HG13	1.99	0.45
79:u:28:ILE:HD12	79:u:29:VAL:N	2.31	0.45
79:u:43:SER:HA	79:u:46:VAL:HG22	1.99	0.45
2:1:77:ARG:NH2	61:c:1532:U:H3'	2.31	0.45
2:1:78:ILE:HA	2:1:81:ARG:HB2	1.97	0.45
8:7:66:HIS:ND1	8:7:67:ILE:HG13	2.32	0.45
8:7:149:ASP:HB2	8:7:175:ASP:HA	1.99	0.45
8:7:222:LEU:HD13	8:7:232:TYR:HB3	1.99	0.45
10:A:15:LEU:HB2	10:A:123:ALA:O	2.17	0.45
11:AA:507:U:H2'	11:AA:508:U:C6	2.52	0.45
11:AA:1574:C:N4	11:AA:1575:A:N3	2.65	0.45
11:AA:2487:U:H4'	11:AA:2488:A:OP2	2.17	0.45
11:AA:2829:U:C2	11:AA:2830:G:C8	3.05	0.45
11:AA:3165:A:H2'	11:AA:3166:C:C6	2.52	0.45
12:Aa:244:LEU:HD23	12:Aa:244:LEU:HA	1.84	0.45
12:Aa:603:ASN:OD1	12:Aa:605:ILE:HG12	2.17	0.45
17:CC:69:U:H2'	17:CC:70:G:O4'	2.16	0.45
23:EE:108:PRO:HG2	60:b:86:LEU:HD13	1.97	0.45
24:Ee:127:SER:O	24:Ee:130:LYS:HG2	2.17	0.45
38:LL:38:LEU:O	38:LL:41:ILE:HG22	2.17	0.45
61:c:5:U:H2'	61:c:6:G:C8	2.52	0.45
61:c:1051:G:H3'	61:c:1052:U:H5''	1.98	0.45
61:c:1226:A:P	61:c:1228:G:H5'	2.56	0.45
61:c:1499:G:O6	61:c:1509:C:N4	2.50	0.45
61:c:1533:C:H4'	61:c:1539:G:C6	2.51	0.45
61:c:1569:A:H2'	61:c:1570:A:H8	1.82	0.45
65:g:20:GLU:HG2	72:n:61:TRP:CZ3	2.52	0.45
66:h:100:ARG:HH12	66:h:122:LYS:HA	1.82	0.45
11:AA:187:A:H2'	11:AA:188:U:C6	2.52	0.45
11:AA:943:U:H3'	39:M:13:GLY:HA2	1.99	0.45
11:AA:1021:G:H2'	11:AA:1022:U:H6	1.82	0.45
12:Aa:26:ALA:HB2	12:Aa:128:VAL:HB	1.99	0.45
19:D:105:LEU:HD11	19:D:139:VAL:HG23	1.99	0.45
22:E:22:PRO:O	25:F:146:ASN:ND2	2.27	0.45
28:GG:23:PRO:HD2	28:GG:26:PHE:CD2	2.52	0.45
28:GG:136:LEU:HD23	28:GG:136:LEU:HA	1.87	0.45
29:H:87:ARG:HH22	29:H:137:VAL:HG21	1.82	0.45
52:T:77:PRO:O	52:T:81:ARG:HG3	2.17	0.45
57:Y:79:GLU:HG2	57:Y:80:PRO:HD2	1.98	0.45
61:c:689:G:H2'	61:c:690:G:C8	2.52	0.45
61:c:1422:A:H4'	65:g:159:HIS:CE1	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:1740:A:H2'	61:c:1741:U:C6	2.52	0.45
62:d:198:MET:HE2	62:d:198:MET:HB2	1.91	0.45
63:e:144:ARG:CZ	63:e:206:PRO:HB3	2.46	0.45
68:j:14:LYS:HB2	68:j:14:LYS:NZ	2.32	0.45
70:l:159:GLN:HB3	70:l:164:ARG:O	2.17	0.45
76:r:33:PHE:CD2	76:r:87:PRO:HG2	2.51	0.45
76:r:80:MET:HG3	76:r:83:MET:HG3	1.99	0.45
80:v:67:MET:HG3	80:v:68:ARG:N	2.32	0.45
1:0:17:LEU:HD11	66:h:92:LEU:HD23	1.99	0.44
8:7:127:ARG:HB3	8:7:150:TRP:CD1	2.51	0.44
8:7:224:ASN:OD1	8:7:228:LYS:N	2.50	0.44
8:7:241:PHE:CE1	8:7:288:HIS:HE1	2.35	0.44
11:AA:976:U:H2'	11:AA:977:C:O4'	2.17	0.44
11:AA:2196:C:OP1	61:c:995:A:H4'	2.17	0.44
11:AA:2506:U:H2'	11:AA:2507:C:O4'	2.17	0.44
11:AA:2904:U:H2'	11:AA:2905:U:C6	2.53	0.44
12:Aa:519:LEU:HB3	12:Aa:531:ALA:HB3	1.99	0.44
12:Aa:640:GLY:N	12:Aa:668:GLN:OE1	2.48	0.44
17:CC:27:U:H2'	17:CC:28:C:H6	1.82	0.44
19:D:165:LYS:HE3	61:c:850:A:OP1	2.17	0.44
20:DD:144:LYS:HB3	20:DD:144:LYS:HE2	1.75	0.44
22:E:8:GLN:O	22:E:8:GLN:HG3	2.16	0.44
31:I:23:ARG:HB3	31:I:25:ASP:OD1	2.18	0.44
37:L:126:LYS:HB2	37:L:126:LYS:HE3	1.68	0.44
49:QQ:70:ASN:HB3	49:QQ:92:LEU:O	2.17	0.44
56:X:27:ILE:O	56:X:28:ARG:HG3	2.16	0.44
61:c:368:U:H2'	61:c:369:A:O4'	2.17	0.44
61:c:1099:U:OP1	83:y:71:LYS:NZ	2.42	0.44
61:c:1142:A:H2'	61:c:1143:A:C8	2.52	0.44
65:g:209:ILE:O	78:t:38:ILE:HD11	2.16	0.44
67:i:76:ARG:HA	77:s:122:ARG:NH1	2.32	0.44
69:k:56:LYS:O	69:k:88:ARG:HA	2.16	0.44
84:z:75:GLN:HG3	84:z:82:LYS:HG3	1.99	0.44
11:AA:366:A:H2'	11:AA:367:A:O4'	2.17	0.44
11:AA:1069:C:H2'	11:AA:1070:U:H6	1.82	0.44
11:AA:2389:C:O2'	11:AA:3307:A:N1	2.48	0.44
11:AA:2413:A:H2'	11:AA:2414:G:C8	2.52	0.44
11:AA:2655:U:H4'	11:AA:2656:A:O4'	2.17	0.44
11:AA:2760:C:N3	59:a:63:LYS:HE3	2.32	0.44
11:AA:3110:C:O2'	38:LL:155:SER:OG	2.35	0.44
11:AA:3132:C:H2'	11:AA:3133:C:C6	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:3198:U:O4	38:LL:26:LYS:HB2	2.17	0.44
14:BB:45:A:H2'	14:BB:46:A:C8	2.51	0.44
20:DD:16:ARG:HB2	20:DD:66:PHE:CZ	2.53	0.44
26:FF:193:ASP:OD1	26:FF:196:ARG:NH2	2.50	0.44
36:KK:106:LYS:HE2	36:KK:106:LYS:HB2	1.70	0.44
42:NN:134:PRO:O	42:NN:152:HIS:NE2	2.40	0.44
61:c:751:G:C6	61:c:799:A:C6	3.05	0.44
61:c:1172:G:O2'	61:c:1543:A:O2'	2.22	0.44
61:c:1240:U:H5''	76:r:77:ARG:HH22	1.82	0.44
65:g:122:VAL:O	65:g:126:VAL:HG23	2.16	0.44
69:k:124:LYS:HA	69:k:124:LYS:HD2	1.70	0.44
70:l:43:ILE:HD11	70:l:60:ILE:HD11	1.99	0.44
5:4:11:LYS:HA	5:4:52:ASP:O	2.16	0.44
8:7:146:GLY:O	8:7:147:HIS:ND1	2.51	0.44
9:8:135:HIS:HB2	9:8:138:ARG:HD3	1.99	0.44
11:AA:139:G:H2'	11:AA:140:C:C6	2.52	0.44
11:AA:585:A:H4'	50:R:72:THR:HG22	2.00	0.44
11:AA:1597:C:H2'	11:AA:1598:G:H8	1.82	0.44
11:AA:2403:G:N2	47:Pp:1:MET:O	2.50	0.44
11:AA:3231:U:H2'	11:AA:3232:G:H8	1.83	0.44
12:Aa:144:ARG:NH1	12:Aa:765:LEU:HD21	2.32	0.44
12:Aa:543:GLN:HG3	12:Aa:547:HIS:CD2	2.51	0.44
19:D:166:ASN:O	19:D:170:ARG:HG2	2.17	0.44
37:L:33:SER:OG	37:L:35:SER:O	2.28	0.44
61:c:323:A:OP2	70:l:10:LYS:HA	2.17	0.44
61:c:625:C:H2'	61:c:626:U:H6	1.81	0.44
61:c:844:A:H2'	61:c:845:G:C8	2.52	0.44
61:c:886:U:OP2	63:e:216:LYS:NZ	2.43	0.44
61:c:932:U:OP2	63:e:155:TYR:OH	2.19	0.44
61:c:1454:G:H4'	76:r:122:THR:HG21	1.98	0.44
61:c:1551:U:H2'	61:c:1552:U:H6	1.83	0.44
61:c:1610:G:P	77:s:75:VAL:HG21	2.57	0.44
78:t:36:ASP:CG	78:t:47:ARG:HD2	2.43	0.44
5:4:44:VAL:HG12	67:i:161:ASP:HB3	1.99	0.44
7:6:25:GLU:OE2	61:c:540:G:N2	2.51	0.44
8:7:81:LEU:HD23	8:7:81:LEU:HA	1.71	0.44
10:A:71:PHE:CE2	11:AA:2383:C:H5'	2.53	0.44
11:AA:1385:C:OP1	28:GG:141:ARG:NH2	2.51	0.44
11:AA:1911:A:H2	11:AA:2122:G:C8	2.35	0.44
11:AA:2150:G:O2'	11:AA:2189:U:OP1	2.28	0.44
11:AA:2323:G:O2'	11:AA:2325:G:OP2	2.32	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2417:OMU:H1'	11:AA:2417:OMU:HM23	1.65	0.44
11:AA:2566:C:H2'	11:AA:2567:C:H6	1.82	0.44
11:AA:2974:U:H2'	11:AA:2975:U:C6	2.52	0.44
11:AA:3015:G:H2'	11:AA:3016:A:H8	1.81	0.44
11:AA:3164:C:H2'	11:AA:3165:A:C8	2.52	0.44
16:C:67:ILE:HG12	16:C:81:VAL:HG11	2.00	0.44
17:CC:63:G:OP1	17:CC:90:U:H5'	2.17	0.44
30:HH:108:ARG:CZ	30:HH:253:PHE:HB2	2.47	0.44
30:HH:156:GLY:HA2	30:HH:181:PRO:HD3	2.00	0.44
61:c:560:U:H2'	61:c:561:G:H8	1.82	0.44
61:c:619:A2M:HM'3	61:c:619:A2M:H1'	1.42	0.44
61:c:809:A:H2'	61:c:810:G:C8	2.52	0.44
61:c:925:G:H2'	61:c:926:A:C8	2.52	0.44
61:c:1345:A:N6	61:c:1377:U:O2'	2.51	0.44
61:c:1491:U:H4'	61:c:1492:A:O5'	2.17	0.44
61:c:1773:4AC:H2'	61:c:1774:G:C8	2.53	0.44
62:d:16:LEU:HG	62:d:172:LEU:HD21	2.00	0.44
62:d:176:LEU:O	62:d:180:GLU:HG2	2.18	0.44
66:h:155:LYS:HA	66:h:155:LYS:HD3	1.75	0.44
69:k:64:VAL:N	69:k:65:PRO:HD3	2.32	0.44
1:O:36:SER:HB2	61:c:521:A:H4'	1.99	0.44
5:4:52:ASP:OD1	67:i:164:PRO:HG2	2.16	0.44
8:7:65:SER:OG	61:c:1341:A:H1'	2.17	0.44
10:A:62:THR:HA	11:AA:1306:G:C6	2.52	0.44
11:AA:1744:G:H2'	11:AA:1745:C:C6	2.53	0.44
11:AA:3113:A:H4'	38:LL:69:ARG:HG3	1.98	0.44
12:Aa:36:THR:HG21	12:Aa:104:ASP:OD2	2.17	0.44
12:Aa:356:LEU:O	12:Aa:478:MET:HB3	2.17	0.44
15:Bb:20:G:N2	15:Bb:21:A:HO2'	2.16	0.44
15:Bb:51:G:H2'	15:Bb:52:U:O4'	2.17	0.44
22:E:73:LYS:HD2	22:E:75:PHE:CZ	2.53	0.44
22:E:167:ARG:HA	22:E:167:ARG:HD3	1.85	0.44
28:GG:9:HIS:CD2	28:GG:15:ALA:HB2	2.53	0.44
29:H:15:LEU:HD13	29:H:51:ALA:HB3	1.99	0.44
29:H:96:GLU:HG3	31:I:21:PHE:CZ	2.52	0.44
29:H:120:LYS:HE3	29:H:124:ASP:OD1	2.16	0.44
36:KK:98:ARG:HG2	36:KK:189:LEU:O	2.17	0.44
36:KK:101:THR:HG23	36:KK:104:GLU:OE2	2.17	0.44
48:Q:55:ILE:HD12	48:Q:55:ILE:HA	1.88	0.44
49:QQ:65:ARG:HG3	49:QQ:129:TYR:CE2	2.52	0.44
61:c:29:U:H2'	61:c:30:G:C8	2.51	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:30:G:H2'	61:c:31:C:H6	1.82	0.44
61:c:86:A:H2'	61:c:87:C:H6	1.83	0.44
61:c:1440:C:H2'	61:c:1441:C:C6	2.52	0.44
61:c:1467:C:H4'	80:v:90:PRO:HG3	2.00	0.44
64:f:188:LEU:HD13	64:f:196:VAL:HG11	1.98	0.44
76:r:18:ARG:NE	79:u:90:ASN:HB3	2.32	0.44
79:u:93:THR:O	79:u:93:THR:OG1	2.35	0.44
11:AA:167:U:H2'	11:AA:168:U:H6	1.81	0.44
11:AA:207:U:H2'	11:AA:208:C:C6	2.52	0.44
11:AA:228:U:H5''	35:K:8:VAL:HG11	1.99	0.44
11:AA:1386:A:C4'	28:GG:141:ARG:HH22	2.30	0.44
11:AA:1631:C:H5''	11:AA:1632:A:H5''	1.99	0.44
11:AA:2361:A:H2'	11:AA:2362:C:H6	1.82	0.44
11:AA:2631:U:OP1	11:AA:2757:U:O2'	2.28	0.44
11:AA:2724:OMU:HM23	11:AA:2724:OMU:H1'	1.82	0.44
11:AA:2762:A:H2'	11:AA:2763:U:H6	1.82	0.44
11:AA:2898:G:O6	57:Y:125:LYS:NZ	2.51	0.44
11:AA:2902:A:H2'	11:AA:2903:A:O4'	2.18	0.44
12:Aa:362:ASP:OD1	12:Aa:362:ASP:N	2.50	0.44
34:JJ:175:LYS:HE3	34:JJ:176:TYR:CZ	2.52	0.44
34:JJ:176:TYR:CZ	34:JJ:197:GLN:HG2	2.52	0.44
44:OO:122:LYS:HD2	44:OO:145:PHE:HE2	1.83	0.44
61:c:82:U:H2'	61:c:83:G:O4'	2.18	0.44
61:c:119:A:H1'	61:c:397:A:C4	2.52	0.44
61:c:205:U:C2	61:c:206:A:C8	3.06	0.44
61:c:322:G:O2'	70:l:10:LYS:NZ	2.49	0.44
61:c:483:A:H2'	61:c:484:C:C6	2.53	0.44
61:c:851:U:H2'	61:c:852:C:C6	2.52	0.44
61:c:1155:G:H2'	61:c:1156:C:C6	2.52	0.44
61:c:1176:G:O6	79:u:140:THR:HG21	2.18	0.44
65:g:101:GLN:HE22	65:g:126:VAL:HG21	1.83	0.44
66:h:77:ARG:HD3	66:h:77:ARG:HA	1.75	0.44
76:r:60:LEU:HD22	76:r:89:MET:SD	2.57	0.44
78:t:6:THR:HG22	78:t:7:LYS:H	1.82	0.44
80:v:18:TYR:HD1	80:v:135:ILE:HG13	1.82	0.44
5:4:18:ARG:HA	5:4:18:ARG:HD2	1.70	0.44
8:7:255:ALA:H	8:7:292:LEU:HD11	1.83	0.44
11:AA:291:C:H2'	11:AA:292:U:C6	2.53	0.44
11:AA:817:A2M:HM'2	11:AA:818:C:H6	1.82	0.44
11:AA:968:G:H2'	11:AA:969:C:H6	1.82	0.44
11:AA:1263:A:C6	24:Ee:138:SER:HB3	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1306:G:O6	11:AA:2366:C:O2'	2.33	0.44
11:AA:1941:C:O2'	11:AA:3344:A:N1	2.46	0.44
11:AA:2839:G:O6	11:AA:2845:A:O2'	2.26	0.44
11:AA:2883:U:H2'	11:AA:2884:C:H6	1.81	0.44
11:AA:3116:G:H5'	11:AA:3117:C:H5	1.83	0.44
12:Aa:751:ARG:HE	12:Aa:776:GLU:HG3	1.83	0.44
16:C:148:GLU:OE1	16:C:151:ARG:NH1	2.51	0.44
17:CC:7:U:H2'	17:CC:8:C:C6	2.53	0.44
18:Cc:14:A:H2'	18:Cc:15:G:O4'	2.18	0.44
18:Cc:41:C:C2	18:Cc:42:C:C5	3.06	0.44
36:KK:251:LYS:O	36:KK:255:SER:OG	2.34	0.44
40:MM:51:HIS:CD2	40:MM:168:SER:HB2	2.53	0.44
61:c:601:A:OP2	84:z:110:LYS:HG2	2.18	0.44
61:c:968:U:OP1	61:c:1033:C:O2'	2.36	0.44
61:c:1178:G:C6	61:c:1462:G:C6	3.05	0.44
61:c:1266:U:C2	61:c:1267:G:N7	2.85	0.44
61:c:1484:G:H21	61:c:1606:C:H1'	1.82	0.44
62:d:52:LYS:HG2	82:x:82:VAL:HA	2.00	0.44
65:g:159:HIS:HA	65:g:160:SER:HA	1.50	0.44
66:h:131:LEU:HD12	66:h:131:LEU:HA	1.81	0.44
5:4:10:ALA:O	5:4:53:ILE:HA	2.18	0.44
8:7:180:ALA:CB	8:7:189:GLU:H	2.30	0.44
11:AA:277:G:H5''	59:a:49:GLY:HA2	1.98	0.44
11:AA:1191:U:OP1	57:Y:113:ARG:NH2	2.50	0.44
11:AA:1694:U:O2'	11:AA:1695:U:H5'	2.18	0.44
11:AA:2417:OMU:O5'	11:AA:2417:OMU:H6	2.18	0.44
11:AA:2909:U:O2'	11:AA:3105:U:O2	2.31	0.44
11:AA:2922:OMG:H1'	11:AA:2951:G:N3	2.32	0.44
11:AA:2946:A2M:H1'	11:AA:2981:U:C4	2.53	0.44
11:AA:2991:A:O2'	11:AA:3309:G:N7	2.49	0.44
11:AA:3280:U:O2'	11:AA:3281:U:H5'	2.18	0.44
12:Aa:342:LEU:HD23	12:Aa:342:LEU:HA	1.76	0.44
12:Aa:400:VAL:HG21	12:Aa:449:PRO:O	2.17	0.44
17:CC:21:C:OP1	28:GG:193:LYS:NZ	2.29	0.44
17:CC:99:C:OP1	33:J:53:HIS:NE2	2.43	0.44
27:G:22:PRO:HB2	27:G:28:PHE:HB2	2.00	0.44
42:NN:109:HIS:CE1	42:NN:123:PHE:H	2.36	0.44
61:c:1398:U:H6	61:c:1400:A:H61	1.66	0.44
61:c:1429:G:H2'	61:c:1430:U:H6	1.81	0.44
78:t:102:VAL:O	78:t:121:VAL:HA	2.17	0.44
80:v:42:GLY:HA2	80:v:84:LYS:HD3	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
80:v:76:LEU:HD22	80:v:105:LEU:HD11	1.99	0.44
82:x:35:ASN:HB3	82:x:50:TYR:CD1	2.52	0.44
3:2:7:SER:OG	3:2:8:ASN:N	2.51	0.44
5:4:44:VAL:HA	67:i:161:ASP:O	2.18	0.44
8:7:127:ARG:NH1	78:t:33:ARG:HG2	2.32	0.44
11:AA:226:C:H2'	11:AA:227:G:O4'	2.18	0.44
11:AA:238:A:H2'	11:AA:239:G:C8	2.53	0.44
11:AA:544:C:H2'	11:AA:547:G:H22	1.83	0.44
11:AA:999:G:H2'	11:AA:1000:C:C6	2.53	0.44
11:AA:1523:U:H5'	33:J:113:LEU:HB3	2.00	0.44
11:AA:2465:G:H1	11:AA:2493:U:H1'	1.83	0.44
12:Aa:650:THR:HG23	12:Aa:690:ASP:HA	2.00	0.44
15:Bb:37:YYG:H141	15:Bb:38:A:N1	2.33	0.44
19:D:23:TRP:HB2	19:D:53:LYS:HE3	1.98	0.44
19:D:95:TRP:CZ2	19:D:99:LEU:HD22	2.53	0.44
19:D:114:LYS:O	19:D:146:LYS:HD3	2.18	0.44
29:H:96:GLU:HG3	31:I:21:PHE:CE1	2.52	0.44
40:MM:206:LEU:O	40:MM:210:ILE:HG12	2.17	0.44
42:NN:15:GLU:HB2	42:NN:132:ASN:HB2	1.99	0.44
61:c:882:U:H2'	61:c:883:C:C6	2.53	0.44
61:c:992:A:OP2	61:c:1011:G:N1	2.34	0.44
61:c:1000:C:H6	61:c:1003:A:H8	1.63	0.44
61:c:1584:G:N2	61:c:1610:G:H2'	2.33	0.44
64:f:157:LYS:NZ	83:y:91:ALA:O	2.51	0.44
65:g:163:PRO:HG3	65:g:203:PRO:HG2	2.00	0.44
66:h:22:LYS:HB3	66:h:23:LEU:HD12	1.99	0.44
69:k:162:ILE:HB	69:k:169:PHE:CE2	2.53	0.44
71:m:108:ARG:NH1	71:m:145:SER:HB3	2.33	0.44
80:v:66:TYR:CD1	80:v:124:ILE:HG21	2.53	0.44
8:7:5:GLU:HG2	8:7:317:THR:HB	1.99	0.43
8:7:43:ILE:HD12	8:7:43:ILE:HA	1.87	0.43
11:AA:275:U:H2'	11:AA:276:U:C6	2.53	0.43
11:AA:421:G:O6	11:AA:2383:C:O2'	2.31	0.43
11:AA:1246:G:N3	11:AA:1264:G:O2'	2.43	0.43
12:Aa:149:GLU:OE1	12:Aa:149:GLU:HA	2.18	0.43
12:Aa:747:LEU:O	12:Aa:752:GLY:N	2.47	0.43
14:BB:6:C:O2'	30:HH:50:ARG:NH2	2.49	0.43
15:Bb:9:A:C8	15:Bb:45:G:H2'	2.53	0.43
17:CC:148:G:H2'	17:CC:149:A:C8	2.53	0.43
20:DD:8:LYS:HG2	20:DD:58:MET:HE1	2.00	0.43
20:DD:86:PHE:HB3	20:DD:88:PHE:CE1	2.51	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:E:12:ARG:O	22:E:22:PRO:HB2	2.18	0.43
23:EE:28:LYS:HB3	23:EE:123:ARG:HE	1.83	0.43
27:G:99:LYS:HB2	27:G:102:GLU:OE2	2.18	0.43
30:HH:8:LYS:HE3	30:HH:12:TYR:CE2	2.53	0.43
36:KK:140:VAL:HG22	36:KK:166:LEU:HD21	1.99	0.43
40:MM:140:THR:HG21	40:MM:148:VAL:HG21	2.00	0.43
49:QQ:14:LYS:HA	49:QQ:19:LEU:HD23	1.99	0.43
61:c:77:U:H4'	61:c:78:A:H5''	1.99	0.43
61:c:121:U:H2'	61:c:122:U:C6	2.53	0.43
61:c:562:OMG:H5''	61:c:562:OMG:H8	1.81	0.43
61:c:902:G:H2'	61:c:903:U:C6	2.52	0.43
61:c:1211:A:H4'	76:r:100:LYS:HE3	2.00	0.43
61:c:1219:A:H5'	61:c:1219:A:C8	2.53	0.43
61:c:1223:A:N6	61:c:1261:G:O6	2.50	0.43
61:c:1491:U:H1'	61:c:1492:A:OP2	2.18	0.43
61:c:1545:A:H2'	61:c:1546:G:C8	2.53	0.43
67:i:47:SER:OG	67:i:128:ASN:OD1	2.36	0.43
68:j:147:LEU:HD23	68:j:147:LEU:H	1.82	0.43
74:p:40:TYR:HB3	74:p:45:LEU:HD12	1.99	0.43
79:u:46:VAL:HB	79:u:72:ILE:CD1	2.48	0.43
11:AA:654:C:H2'	11:AA:655:C:C6	2.53	0.43
11:AA:945:C:H2'	11:AA:946:U:H6	1.83	0.43
11:AA:1344:G:O2'	34:JJ:157:ASN:ND2	2.51	0.43
11:AA:1491:A:H5''	54:V:14:LYS:HE2	2.00	0.43
11:AA:1627:U:O2'	11:AA:1813:A:N7	2.50	0.43
11:AA:1717:U:H2'	11:AA:1718:G:H8	1.79	0.43
11:AA:1856:C:H2'	11:AA:1857:C:H6	1.83	0.43
11:AA:2336:U:H2'	11:AA:2337:OMC:O4'	2.18	0.43
11:AA:3023:U:H2'	11:AA:3024:A:C8	2.51	0.43
16:C:158:HIS:H	16:C:186:VAL:HG13	1.83	0.43
23:EE:108:PRO:O	23:EE:111:THR:OG1	2.25	0.43
25:F:8:ARG:HH11	25:F:52:MET:HE1	1.83	0.43
26:FF:304:THR:HG22	26:FF:305:ILE:N	2.33	0.43
28:GG:13:GLY:C	28:GG:14:GLU:HG3	2.43	0.43
35:K:3:LYS:HD3	35:K:8:VAL:HG23	1.99	0.43
42:NN:93:ASP:OD1	42:NN:94:ARG:N	2.51	0.43
48:Q:32:TRP:CZ2	48:Q:53:PRO:HD2	2.53	0.43
49:QQ:105:ARG:HG2	49:QQ:108:ARG:HH22	1.82	0.43
61:c:521:A:H2'	61:c:522:U:C6	2.53	0.43
61:c:872:G:H2'	61:c:873:U:O4'	2.18	0.43
61:c:1516:A:H5'	81:w:58:LEU:CD1	2.46	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:1548:G:N1	61:c:1564:U:O4	2.52	0.43
67:i:73:THR:N	67:i:91:GLU:OE1	2.45	0.43
67:i:218:GLU:OE1	67:i:218:GLU:HA	2.17	0.43
69:k:162:ILE:HB	69:k:169:PHE:HE2	1.83	0.43
77:s:73:GLY:N	77:s:76:SER:OG	2.38	0.43
78:t:41:ILE:HD11	78:t:46:LEU:HG	1.99	0.43
80:v:39:THR:HA	80:v:100:ILE:HD13	2.00	0.43
81:w:27:THR:HG22	81:w:88:LYS:HB2	2.00	0.43
1:0:57:VAL:HB	1:0:60:PHE:CE2	2.51	0.43
10:A:7:VAL:HB	10:A:33:ILE:HD13	2.00	0.43
11:AA:595:G:OP1	34:JJ:33:ARG:NH2	2.51	0.43
11:AA:865:U:C2'	11:AA:866:A:H5'	2.48	0.43
11:AA:1507:G:H1'	13:B:139:TYR:CE2	2.52	0.43
11:AA:1747:G:H21	55:W:2:ALA:HB3	1.83	0.43
11:AA:2130:G:O4'	11:AA:2144:A:H4'	2.19	0.43
11:AA:3232:G:C6	11:AA:3256:G:C6	3.07	0.43
11:AA:3337:G:H2'	11:AA:3338:C:C6	2.53	0.43
12:Aa:71:LYS:NZ	12:Aa:387:PRO:HD2	2.33	0.43
12:Aa:91:GLN:OE1	12:Aa:347:THR:HG21	2.19	0.43
12:Aa:380:LEU:HG	12:Aa:400:VAL:HG12	2.01	0.43
17:CC:27:U:H2'	17:CC:28:C:C6	2.53	0.43
26:FF:256:HIS:HA	26:FF:257:PRO:C	2.41	0.43
40:MM:212:GLU:N	40:MM:212:GLU:OE2	2.49	0.43
49:QQ:10:LEU:HD13	53:U:47:ILE:HD11	2.00	0.43
61:c:44:U:OP2	61:c:437:A:N6	2.45	0.43
61:c:420:A2M:HM'3	61:c:420:A2M:H1'	1.83	0.43
61:c:1167:G:N2	77:s:139:GLN:OE1	2.51	0.43
61:c:1366:U:H2'	61:c:1367:G:O4'	2.19	0.43
61:c:1563:C:H2'	61:c:1564:U:C6	2.53	0.43
63:e:128:LYS:O	63:e:177:GLN:HG2	2.19	0.43
77:s:45:ARG:HD3	77:s:45:ARG:H	1.83	0.43
77:s:103:ASN:O	77:s:107:LYS:HG3	2.18	0.43
80:v:77:ASN:OD1	80:v:95:ASP:HB3	2.19	0.43
1:0:55:VAL:HG22	1:0:75:VAL:HG22	1.99	0.43
1:0:79:VAL:O	1:0:83:LYS:HD2	2.18	0.43
2:1:66:VAL:HB	67:i:187:ILE:HG21	1.99	0.43
8:7:127:ARG:HH11	78:t:33:ARG:HG2	1.82	0.43
8:7:222:LEU:HD12	8:7:232:TYR:O	2.18	0.43
11:AA:210:U:C2	11:AA:230:U:H4'	2.54	0.43
11:AA:283:G:O6	11:AA:304:G:H1'	2.19	0.43
11:AA:414:U:H2'	11:AA:415:G:H8	1.82	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:589:A:H1'	11:AA:1337:A:H5''	1.98	0.43
11:AA:691:A:N1	17:CC:28:C:O2'	2.49	0.43
11:AA:925:A:H61	23:EE:2:GLY:C	2.27	0.43
11:AA:947:G:H5''	48:Q:55:ILE:HB	1.99	0.43
11:AA:974:G:H2'	11:AA:975:C:C6	2.54	0.43
11:AA:1256:G:H2'	11:AA:1257:C:C6	2.52	0.43
11:AA:1486:G:N2	51:S:6:THR:HG22	2.34	0.43
11:AA:2218:G:H2'	11:AA:2219:A:C8	2.53	0.43
11:AA:3278:C:O2	11:AA:3278:C:H2'	2.17	0.43
12:Aa:36:THR:HG23	12:Aa:102:LEU:HD21	1.99	0.43
12:Aa:289:MET:HE1	12:Aa:317:LYS:N	2.30	0.43
12:Aa:335:LEU:HD12	12:Aa:336:GLU:N	2.32	0.43
89:Aa:1101:SO1:H4	89:Aa:1101:SO1:H81	1.72	0.43
29:H:26:ALA:O	29:H:115:THR:HG22	2.19	0.43
30:HH:221:GLU:H	30:HH:221:GLU:HG2	1.50	0.43
36:KK:33:ASN:O	36:KK:39:ALA:HB3	2.18	0.43
36:KK:238:LEU:HB3	36:KK:242:ALA:HB3	2.00	0.43
39:M:34:MET:HE3	39:M:34:MET:HB3	1.88	0.43
49:QQ:44:ARG:NH1	49:QQ:120:TRP:O	2.51	0.43
61:c:31:C:O2'	61:c:547:U:OP1	2.35	0.43
61:c:592:A:O2'	61:c:596:C:OP1	2.36	0.43
61:c:1044:U:H2'	61:c:1045:C:C6	2.53	0.43
61:c:1164:G:H2'	61:c:1165:G:C8	2.53	0.43
61:c:1166:A:H2'	61:c:1167:G:O4'	2.18	0.43
62:d:13:ASP:HA	62:d:16:LEU:HB3	2.00	0.43
62:d:88:LYS:HD3	62:d:88:LYS:HA	1.68	0.43
65:g:159:HIS:ND1	65:g:159:HIS:O	2.48	0.43
66:h:71:LYS:HB3	66:h:91:THR:OG1	2.19	0.43
66:h:112:HIS:NE2	66:h:237:SER:OG	2.47	0.43
2:1:40:VAL:HG23	2:1:41:ILE:H	1.83	0.43
11:AA:270:U:H2'	11:AA:271:C:H6	1.83	0.43
11:AA:411:U:H2'	11:AA:412:G:C8	2.52	0.43
11:AA:807:A2M:H62	11:AA:934:G:H22	1.65	0.43
11:AA:837:A:OP1	60:b:5:THR:OG1	2.28	0.43
11:AA:955:U:H2'	11:AA:956:U:C6	2.53	0.43
11:AA:1238:C:OP1	24:Ee:16:ARG:NH2	2.51	0.43
11:AA:1509:A:H2'	11:AA:1510:G:C8	2.53	0.43
11:AA:1907:C:O2	26:FF:240:ARG:NH2	2.46	0.43
11:AA:2792:A:H2'	11:AA:2793:OMG:C8	2.54	0.43
12:Aa:9:MET:N	12:Aa:9:MET:SD	2.92	0.43
12:Aa:218:TRP:CD1	12:Aa:324:MET:HB3	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:Aa:285:PHE:CZ	12:Aa:320:LEU:HD11	2.53	0.43
12:Aa:452:ASN:OD1	12:Aa:452:ASN:N	2.52	0.43
14:BB:87:G:OP1	34:JJ:218:ARG:NE	2.51	0.43
15:Bb:15:G:H2'	15:Bb:16:U:C2	2.53	0.43
18:Cc:51:U:H2'	18:Cc:52:C:H6	1.84	0.43
27:G:80:THR:HG21	27:G:95:PHE:HD2	1.83	0.43
28:GG:64:SER:HA	28:GG:75:PRO:HA	2.00	0.43
38:LL:23:ARG:HG3	38:LL:23:ARG:HH11	1.83	0.43
38:LL:151:VAL:HA	38:LL:154:VAL:HG22	2.01	0.43
44:OO:47:ALA:HB1	52:T:115:LYS:NZ	2.33	0.43
60:b:8:VAL:O	60:b:11:THR:OG1	2.36	0.43
61:c:329:G:H5'	70:l:99:ALA:HB3	1.99	0.43
61:c:434:G:N1	61:c:437:A:OP2	2.48	0.43
61:c:1333:C:H4'	65:g:162:GLN:NE2	2.33	0.43
61:c:1477:G:OP1	80:v:43:ASN:HB3	2.17	0.43
65:g:33:GLY:HA3	65:g:53:THR:HG22	2.00	0.43
65:g:96:LEU:HD12	65:g:96:LEU:HA	1.84	0.43
67:i:130:ILE:O	67:i:134:VAL:HG13	2.18	0.43
68:j:135:PRO:HB2	68:j:141:ILE:HG12	2.00	0.43
71:m:47:PHE:CE2	71:m:51:LYS:HE2	2.54	0.43
81:w:40:ASN:HD22	81:w:44:ASN:ND2	2.17	0.43
83:y:42:GLN:NE2	83:y:48:GLY:O	2.39	0.43
8:7:193:ILE:HG13	8:7:223:TRP:HH2	1.84	0.43
11:AA:531:G:H2'	11:AA:532:A:C8	2.53	0.43
11:AA:850:U:H2'	11:AA:851:C:C6	2.53	0.43
11:AA:1072:G:H2'	11:AA:1073:U:C6	2.53	0.43
11:AA:1127:G:N2	11:AA:1129:A:H3'	2.34	0.43
11:AA:1211:U:H2'	11:AA:1212:A:C8	2.53	0.43
11:AA:1620:U:H2'	11:AA:1621:A:C8	2.54	0.43
11:AA:1632:A:N3	91:AA:3795:HOH:O	2.36	0.43
11:AA:2555:G:N2	37:L:135:ARG:O	2.32	0.43
12:Aa:27:HIS:HB3	12:Aa:30:HIS:CG	2.53	0.43
12:Aa:121:VAL:HG21	12:Aa:397:PHE:CE1	2.54	0.43
12:Aa:620:ALA:HB1	12:Aa:627:VAL:HG22	2.01	0.43
13:B:35:ALA:HB2	13:B:58:ILE:HG23	2.00	0.43
25:F:126:VAL:HG23	25:F:127:GLN:H	1.84	0.43
28:GG:138:ARG:HE	28:GG:140:HIS:CD2	2.36	0.43
28:GG:150:LEU:HD23	28:GG:249:ILE:HG12	2.01	0.43
36:KK:134:TYR:HB3	36:KK:190:VAL:HG11	2.01	0.43
61:c:94:U:N1	61:c:94:U:C5	2.86	0.43
61:c:333:A:N6	70:l:27:PHE:HB2	2.33	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:599:A:H2'	61:c:600:U:C6	2.52	0.43
61:c:1146:G:H4'	64:f:90:THR:HA	1.99	0.43
61:c:1218:G:N1	61:c:1444:A:OP2	2.43	0.43
61:c:1441:C:O2'	61:c:1447:C:N4	2.51	0.43
61:c:1660:A:H2'	61:c:1661:U:C6	2.54	0.43
67:i:45:LYS:HA	67:i:45:LYS:HD3	1.79	0.43
76:r:97:TYR:HB2	76:r:102:PHE:CE1	2.53	0.43
80:v:34:VAL:HG22	80:v:53:TRP:NE1	2.33	0.43
4:3:56:CYS:HB2	4:3:59:CYS:HB3	1.99	0.43
11:AA:235:A:H2'	11:AA:236:G:C8	2.53	0.43
11:AA:263:C:H2'	11:AA:264:G:O4'	2.18	0.43
11:AA:1048:A:H2'	40:MM:22:TYR:CZ	2.53	0.43
11:AA:1182:A:H2'	11:AA:1183:C:C6	2.53	0.43
11:AA:1327:C:O2'	50:R:76:GLY:HA2	2.19	0.43
11:AA:2251:G:C2'	11:AA:2252:A:H5'	2.49	0.43
11:AA:2291:A:H2'	11:AA:2292:U:C6	2.53	0.43
11:AA:2714:G:C8	11:AA:2751:G:H2'	2.54	0.43
11:AA:2840:C:H2'	11:AA:2841:G:O4'	2.19	0.43
14:BB:24:A:H2'	14:BB:25:G:C8	2.53	0.43
30:HH:151:GLN:HE22	30:HH:159:VAL:HG21	1.83	0.43
36:KK:68:ARG:HD3	36:KK:237:ILE:O	2.19	0.43
37:L:41:ALA:HB2	37:L:77:TYR:HE1	1.83	0.43
42:NN:60:ARG:O	42:NN:63:GLU:HB2	2.19	0.43
42:NN:84:LEU:HD21	42:NN:163:PHE:HE1	1.83	0.43
61:c:250:C:H2'	61:c:251:A:H8	1.84	0.43
61:c:335:U:O2'	73:o:130:PRO:O	2.29	0.43
61:c:960:U:H2'	61:c:961:U:H6	1.84	0.43
61:c:992:A:H2	61:c:1012:U:N3	2.02	0.43
61:c:1497:U:C2	61:c:1498:G:C8	3.07	0.43
62:d:106:SER:O	62:d:115:PHE:HA	2.19	0.43
63:e:187:LYS:HB2	63:e:187:LYS:HE3	1.83	0.43
69:k:153:LEU:HA	69:k:184:GLU:O	2.18	0.43
8:7:53:LYS:HB2	8:7:53:LYS:HE3	1.85	0.43
11:AA:434:U:H2'	11:AA:435:C:C6	2.53	0.43
11:AA:594:U:H2'	11:AA:609:G:O6	2.19	0.43
11:AA:837:A:H3'	11:AA:838:G:H8	1.84	0.43
11:AA:1204:A:OP2	91:AA:3721:HOH:O	2.21	0.43
11:AA:1490:A:O2'	54:V:12:HIS:O	2.27	0.43
12:Aa:491:VAL:HG21	12:Aa:542:LEU:HD11	2.00	0.43
14:BB:1:G:C2	14:BB:2:G:C8	3.07	0.43
15:Bb:44:A:H2'	15:Bb:45:G:O4'	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:Bb:61:C:H2'	15:Bb:62:A:N9	2.34	0.43
17:CC:26:U:O2'	28:GG:51:ALA:O	2.34	0.43
19:D:168:ALA:HA	19:D:171:ASP:OD2	2.19	0.43
42:NN:62:ASN:HB3	59:a:101:GLY:O	2.19	0.43
43:O:61:MET:HE2	43:O:61:MET:HB3	1.94	0.43
45:P:77:ARG:HD2	45:P:89:LEU:HD13	2.00	0.43
51:S:22:VAL:HG12	51:S:30:LEU:HD22	2.01	0.43
61:c:177:U:O2	68:j:191:ARG:NE	2.49	0.43
61:c:1581:C:O2'	61:c:1582:U:H5'	2.19	0.43
63:e:142:PHE:HD1	63:e:209:ASN:HB3	1.84	0.43
64:f:103:VAL:HG23	64:f:190:LEU:HD12	1.99	0.43
65:g:158:ILE:O	65:g:158:ILE:HG13	2.19	0.43
65:g:161:GLY:O	65:g:164:VAL:HG22	2.19	0.43
81:w:30:LYS:HE3	81:w:33:GLN:HG2	2.00	0.43
5:4:19:THR:HG22	5:4:25:VAL:HG23	2.01	0.43
11:AA:47:C:H5''	44:OO:16:LYS:HG2	2.01	0.43
11:AA:63:A:H5''	49:QQ:174:ILE:HG21	2.00	0.43
11:AA:156:G:OP2	53:U:25:LYS:HB3	2.17	0.43
11:AA:651:G:O2'	11:AA:1435:A:OP1	2.34	0.43
11:AA:847:A:H2'	11:AA:848:A:C8	2.54	0.43
11:AA:1083:G:H2'	11:AA:1084:A:H8	1.84	0.43
11:AA:1801:U:H2'	11:AA:1802:C:C6	2.53	0.43
11:AA:2144:A:H1'	11:AA:2281:A2M:N6	2.33	0.43
11:AA:2467:G:N2	11:AA:2478:C:H5''	2.34	0.43
11:AA:3131:U:H2'	11:AA:3132:C:C6	2.54	0.43
12:Aa:775:ASN:OD1	12:Aa:776:GLU:HG2	2.19	0.43
14:BB:47:C:OP2	30:HH:158:ARG:HD3	2.18	0.43
17:CC:46:G:O2'	17:CC:61:A:N1	2.50	0.43
20:DD:26:PHE:CE1	20:DD:190:VAL:HG13	2.53	0.43
22:E:79:VAL:HG11	22:E:106:LEU:HD21	2.01	0.43
24:Ee:112:ILE:O	24:Ee:116:MET:HG2	2.19	0.43
28:GG:180:LYS:HE2	28:GG:180:LYS:HB3	1.85	0.43
34:JJ:189:ILE:HG23	34:JJ:190:THR:HG23	2.01	0.43
49:QQ:45:PRO:O	49:QQ:49:ARG:HG3	2.18	0.43
61:c:1328:G:O3'	61:c:1421:A:O2'	2.37	0.43
61:c:1431:C:H5''	61:c:1432:U:H3'	2.01	0.43
61:c:1466:G:P	77:s:139:GLN:HE21	2.42	0.43
61:c:1485:C:N3	61:c:1592:A:H1'	2.34	0.43
61:c:1581:C:H5'	77:s:136:SER:HA	2.01	0.43
61:c:1590:G:OP1	80:v:91:TYR:HB2	2.19	0.43
61:c:1776:A:H2'	61:c:1777:G:H8	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:e:129:THR:OG1	63:e:131:ASP:OD1	2.29	0.43
63:e:174:LYS:NZ	63:e:196:GLU:OE1	2.31	0.43
65:g:25:PHE:HD2	65:g:34:TYR:HH	1.67	0.43
67:i:133:VAL:HG23	67:i:198:LEU:HD22	2.01	0.43
69:k:114:ARG:HD3	69:k:114:ARG:HA	1.80	0.43
78:t:21:TYR:O	78:t:23:LYS:N	2.51	0.43
80:v:40:SER:HB3	80:v:43:ASN:OD1	2.19	0.43
8:7:42:LEU:HD21	8:7:71:CYS:HB3	2.01	0.43
11:AA:1032:C:H2'	11:AA:1033:U:O4'	2.19	0.43
11:AA:1290:A:H2'	11:AA:1291:A:C8	2.53	0.43
11:AA:1556:C:H2'	11:AA:2169:G:N2	2.34	0.43
11:AA:1766:G:H2'	11:AA:1767:C:O4'	2.19	0.43
11:AA:2615:G:H2'	11:AA:2616:C:H6	1.84	0.43
11:AA:2722:U:O2'	25:F:88:ARG:O	2.28	0.43
26:FF:85:VAL:HG22	26:FF:202:THR:HG22	2.01	0.43
27:G:82:LYS:HE3	27:G:82:LYS:HB3	1.82	0.43
34:JJ:203:TRP:CD1	34:JJ:204:PRO:HD2	2.54	0.43
55:W:36:LYS:HE2	55:W:36:LYS:HB2	1.70	0.43
61:c:213:A:H2'	61:c:214:G:O4'	2.19	0.43
61:c:684:A:H2'	61:c:685:A:C8	2.53	0.43
61:c:928:U:H4'	75:q:124:ASP:HB3	2.00	0.43
61:c:1164:G:H2'	61:c:1165:G:H8	1.84	0.43
61:c:1221:A:N7	61:c:1263:G:N2	2.67	0.43
61:c:1374:C:H2'	61:c:1375:A:C8	2.54	0.43
61:c:1782:MA6:H5''	61:c:1782:MA6:H8	2.01	0.43
64:f:109:GLY:O	64:f:139:ILE:HG22	2.19	0.43
66:h:174:LYS:O	66:h:179:LYS:NZ	2.41	0.43
68:j:38:GLY:HA2	68:j:41:VAL:HG12	2.00	0.43
71:m:148:VAL:HG11	71:m:156:ILE:HD11	2.01	0.43
77:s:142:TYR:CD2	77:s:143:ARG:N	2.87	0.43
11:AA:262:U:H2'	11:AA:263:C:O4'	2.20	0.42
11:AA:748:U:H2'	11:AA:749:C:C6	2.54	0.42
11:AA:1214:U:H2'	11:AA:1215:U:C6	2.54	0.42
11:AA:1340:G:H2'	11:AA:1341:U:H6	1.84	0.42
11:AA:2677:G:O6	11:AA:2680:A:C5	2.71	0.42
11:AA:2904:U:H2'	11:AA:2905:U:H6	1.84	0.42
12:Aa:358:GLU:HA	12:Aa:479:LYS:HZ3	1.83	0.42
12:Aa:395:TYR:CD1	12:Aa:457:VAL:HG22	2.54	0.42
17:CC:25:G:N7	35:K:13:ARG:NH1	2.64	0.42
17:CC:87:G:OP2	52:T:5:LYS:HE2	2.20	0.42
17:CC:113:U:H5''	56:X:7:PHE:HB3	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:EE:114:SER:HB2	23:EE:169:ILE:HG12	2.00	0.42
24:Ee:94:LYS:HZ1	24:Ee:98:VAL:HA	1.84	0.42
26:FF:27:ALA:HB3	26:FF:218:ILE:HG22	2.00	0.42
28:GG:7:THR:HA	28:GG:19:ALA:HA	2.00	0.42
29:H:13:ILE:HG23	29:H:85:TRP:CG	2.54	0.42
29:H:90:GLY:O	31:I:16:GLY:HA2	2.18	0.42
36:KK:162:LEU:HD23	49:QQ:7:LEU:HD21	2.01	0.42
43:O:27:TYR:OH	43:O:55:GLU:OE1	2.29	0.42
44:OO:11:LYS:O	44:OO:13:HIS:ND1	2.52	0.42
44:OO:162:ASN:OD1	44:OO:164:GLU:HB2	2.19	0.42
61:c:329:G:H2'	61:c:330:G:H8	1.84	0.42
61:c:629:U:C2	61:c:630:A:C8	3.07	0.42
61:c:1331:A:OP1	78:t:45:ARG:NH2	2.52	0.42
61:c:1583:A:H5''	77:s:135:ARG:HH22	1.84	0.42
61:c:1607:G:C2	61:c:1608:U:C5	3.07	0.42
62:d:123:VAL:HG21	62:d:133:ILE:HD11	2.00	0.42
67:i:84:LYS:HE3	67:i:84:LYS:HB3	1.71	0.42
74:p:125:LEU:HG	74:p:129:TYR:CE2	2.54	0.42
78:t:76:GLU:O	78:t:79:GLU:HG3	2.19	0.42
82:x:5:LYS:HE2	82:x:5:LYS:HB3	1.88	0.42
8:7:34:LEU:HD22	8:7:73:LEU:CD2	2.49	0.42
11:AA:348:A:N3	11:AA:352:A:O2'	2.51	0.42
11:AA:796:U:H2'	11:AA:797:U:C6	2.54	0.42
11:AA:810:A:H2'	11:AA:811:U:C6	2.54	0.42
11:AA:908:OMG:O5'	11:AA:908:OMG:H8	2.03	0.42
11:AA:1196:C:H4'	11:AA:1197:A:OP1	2.19	0.42
11:AA:1565:G:H3'	11:AA:1566:A:H8	1.83	0.42
11:AA:2397:A:H61	11:AA:2869:U:H4'	1.84	0.42
11:AA:2943:G:H2'	11:AA:2944:U:O4'	2.17	0.42
11:AA:2984:C:H2'	11:AA:2985:C:C6	2.54	0.42
11:AA:2986:U:H2'	11:AA:2987:A:C8	2.53	0.42
11:AA:3121:U:H4'	11:AA:3122:A:OP1	2.19	0.42
11:AA:3349:C:H2'	11:AA:3350:C:C6	2.54	0.42
12:Aa:201:GLN:HE22	20:DD:145:ILE:HB	1.84	0.42
16:C:134:GLY:O	16:C:137:THR:OG1	2.32	0.42
17:CC:46:G:OP1	56:X:18:LYS:NZ	2.38	0.42
44:OO:50:PRO:O	44:OO:52:ASP:N	2.52	0.42
49:QQ:159:ARG:HB2	49:QQ:164:LEU:HB2	2.01	0.42
59:a:8:ARG:HB2	59:a:25:VAL:HG23	2.01	0.42
61:c:876:G:H1'	61:c:944:A:O4'	2.19	0.42
64:f:116:LYS:HG2	64:f:127:ALA:CB	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
71:m:83:VAL:HA	71:m:149:ARG:HA	2.01	0.42
81:w:28:SER:HB2	81:w:112:VAL:HG13	2.01	0.42
81:w:109:GLU:HA	81:w:110:PRO:HD3	1.92	0.42
1:0:117:LYS:HD3	61:c:159:U:H5'	1.99	0.42
3:2:9:GLY:HA3	61:c:1795:U:O4	2.19	0.42
11:AA:94:G:H2'	11:AA:95:A:C8	2.54	0.42
11:AA:1035:G:H2'	11:AA:1036:A:C8	2.54	0.42
11:AA:1104:G:H2'	11:AA:1105:A:C8	2.54	0.42
11:AA:1601:U:OP1	19:D:42:ARG:NH2	2.52	0.42
11:AA:2573:G:H2'	11:AA:2574:G:C8	2.54	0.42
11:AA:2812:C:H2'	11:AA:2813:A:H8	1.83	0.42
12:Aa:388:THR:OG1	12:Aa:393:ARG:HB2	2.19	0.42
12:Aa:578:LYS:HG3	12:Aa:585:ARG:HG2	2.02	0.42
15:Bb:70:C:H2'	15:Bb:71:G:H8	1.85	0.42
17:CC:125:U:C3'	17:CC:126:A:H5'	2.49	0.42
20:DD:133:THR:HG22	20:DD:137:GLN:HG3	2.01	0.42
24:Ee:136:ALA:O	24:Ee:140:GLY:N	2.52	0.42
26:FF:76:VAL:HG12	26:FF:325:LYS:HA	2.02	0.42
28:GG:58:HIS:HA	28:GG:90:PHE:HE1	1.83	0.42
29:H:63:LYS:HD3	29:H:63:LYS:HA	1.86	0.42
34:JJ:233:GLU:H	34:JJ:233:GLU:HG3	1.48	0.42
38:LL:18:VAL:HG12	38:LL:20:ILE:HG13	2.02	0.42
42:NN:99:THR:O	42:NN:154:THR:HG23	2.19	0.42
45:P:82:GLU:HB2	45:P:86:LYS:HZ3	1.84	0.42
48:Q:86:THR:HG22	48:Q:115:LEU:HD13	2.01	0.42
51:S:72:VAL:O	51:S:77:GLY:HA2	2.18	0.42
61:c:47:A:H4'	61:c:48:G:H5''	2.00	0.42
61:c:207:U:H2'	61:c:208:U:C6	2.54	0.42
61:c:811:A:N7	69:k:111:LYS:HB3	2.34	0.42
61:c:1054:U:H2'	61:c:1055:U:C6	2.54	0.42
61:c:1179:G:H2'	61:c:1180:C:C6	2.54	0.42
61:c:1292:G:H2'	61:c:1293:U:C6	2.55	0.42
61:c:1499:G:N1	61:c:1509:C:N3	2.66	0.42
64:f:188:LEU:HD23	64:f:218:ILE:HD11	2.01	0.42
76:r:81:ARG:NH1	76:r:98:ASN:HB3	2.34	0.42
1:0:82:ALA:O	1:0:86:GLU:HB2	2.19	0.42
8:7:229:LYS:HD2	8:7:231:MET:SD	2.59	0.42
9:8:95:HIS:NE2	61:c:1233:G:OP2	2.52	0.42
10:A:15:LEU:HD23	10:A:15:LEU:HA	1.79	0.42
11:AA:123:A:C6	11:AA:150:A:C5	3.08	0.42
11:AA:632:G:H2'	11:AA:633:C:C6	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:836:A:O2'	60:b:9:GLY:O	2.29	0.42
11:AA:1226:G:H2'	11:AA:1227:C:C6	2.54	0.42
11:AA:3170:A:H2'	11:AA:3171:U:C6	2.54	0.42
11:AA:3387:U:H2'	11:AA:3388:C:C6	2.53	0.42
12:Aa:42:ARG:NH1	12:Aa:43:ALA:HB2	2.35	0.42
12:Aa:322:VAL:HA	12:Aa:325:ARG:NE	2.33	0.42
16:C:94:PHE:CE2	39:M:119:PRO:HD3	2.54	0.42
22:E:24:LEU:HD23	22:E:24:LEU:HA	1.84	0.42
23:EE:192:LYS:HB3	23:EE:193:ARG:CZ	2.49	0.42
24:Ee:44:GLU:O	24:Ee:48:LYS:HG2	2.20	0.42
26:FF:183:LEU:O	26:FF:191:LYS:NZ	2.39	0.42
29:H:125:LEU:HD23	29:H:125:LEU:HA	1.73	0.42
44:OO:55:ARG:NH1	44:OO:73:ARG:O	2.49	0.42
44:OO:192:GLU:HG2	44:OO:194:GLU:N	2.35	0.42
61:c:107:C:H2'	61:c:108:A:H8	1.84	0.42
61:c:139:C:H4'	61:c:140:A:H5'	2.01	0.42
61:c:179:A:H3'	61:c:180:A:C8	2.54	0.42
61:c:208:U:H2'	61:c:209:U:C6	2.54	0.42
61:c:252:U:H2'	61:c:253:A:C8	2.54	0.42
61:c:644:C:H2'	61:c:645:C:O4'	2.20	0.42
61:c:888:U:O2	61:c:988:A:O2'	2.37	0.42
61:c:891:A:H2'	61:c:892:A:C8	2.55	0.42
61:c:1519:U:H3'	61:c:1520:U:H2'	2.01	0.42
62:d:41:ARG:HG3	62:d:42:PRO:O	2.19	0.42
63:e:164:ILE:HD13	63:e:207:LEU:HD21	2.01	0.42
64:f:58:LEU:HA	82:x:12:TYR:CE1	2.54	0.42
68:j:98:ARG:HG3	68:j:98:ARG:HH11	1.84	0.42
68:j:124:LEU:HG	68:j:125:THR:OG1	2.19	0.42
68:j:137:ARG:O	68:j:141:ILE:HG13	2.19	0.42
71:m:77:ILE:HG21	71:m:91:LYS:HB3	2.01	0.42
4:3:34:ASP:O	4:3:79:PHE:HA	2.20	0.42
10:A:22:VAL:HG22	10:A:122:GLN:NE2	2.34	0.42
11:AA:92:G:H5'	11:AA:94:G:N7	2.34	0.42
11:AA:121:A:C2	36:KK:129:PRO:HB3	2.53	0.42
11:AA:1129:A:H2'	11:AA:1130:A:C8	2.54	0.42
11:AA:1254:C:H2'	11:AA:1255:C:H6	1.83	0.42
11:AA:1302:A:N7	11:AA:2857:C:O2'	2.51	0.42
11:AA:1348:U:H4'	11:AA:1349:G:OP1	2.20	0.42
11:AA:1549:U:H2'	11:AA:1550:C:C6	2.54	0.42
11:AA:1659:U:H2'	11:AA:1660:C:H6	1.83	0.42
11:AA:1688:U:H2'	11:AA:1689:U:C6	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1794:G:H4'	23:EE:191:LEU:HD13	2.01	0.42
11:AA:2440:G:H2'	11:AA:2441:A:H8	1.84	0.42
11:AA:3040:A:H5''	29:H:12:ARG:HB2	2.01	0.42
11:AA:3116:G:H5'	11:AA:3117:C:C5	2.55	0.42
12:Aa:597:VAL:HG21	12:Aa:625:TRP:NE1	2.35	0.42
28:GG:304:GLN:NE2	28:GG:306:THR:O	2.49	0.42
31:I:45:ASN:O	31:I:49:ILE:HG12	2.20	0.42
42:NN:84:LEU:HD12	42:NN:84:LEU:HA	1.89	0.42
42:NN:110:ILE:HG12	42:NN:116:TYR:HA	2.01	0.42
45:P:10:ARG:NH1	45:P:44:MET:SD	2.92	0.42
46:PP:23:ILE:O	46:PP:30:GLY:N	2.53	0.42
51:S:58:ARG:HB2	51:S:61:GLN:HG2	2.01	0.42
61:c:315:A:N1	61:c:349:U:O2'	2.44	0.42
61:c:926:A:H2	75:q:125:SER:HB3	1.84	0.42
61:c:1243:G:H5''	61:c:1244:A:H3'	2.02	0.42
62:d:62:ARG:HG2	62:d:184:LEU:HD21	2.01	0.42
62:d:134:LYS:O	62:d:137:SER:OG	2.27	0.42
63:e:97:LEU:HB3	63:e:231:LEU:HD11	2.01	0.42
64:f:106:ASP:C	64:f:108:ASN:H	2.27	0.42
66:h:35:PRO:HD2	66:h:83:PRO:HG2	2.02	0.42
67:i:34:GLN:NE2	77:s:58:ASP:OD1	2.53	0.42
71:m:97:LEU:HA	71:m:97:LEU:HD23	1.90	0.42
3:2:10:ARG:HH12	61:c:1790:A:P	2.42	0.42
10:A:60:LYS:NZ	11:AA:1307:G:OP1	2.50	0.42
11:AA:167:U:H2'	11:AA:168:U:C6	2.55	0.42
11:AA:546:C:OP2	11:AA:547:G:N2	2.52	0.42
11:AA:1473:G:OP2	19:D:8:LYS:NZ	2.36	0.42
11:AA:2660:G:OP1	11:AA:2750:U:O2'	2.35	0.42
11:AA:3330:A:OP2	26:FF:376:LYS:NZ	2.52	0.42
12:Aa:227:THR:HG23	12:Aa:237:LYS:NZ	2.34	0.42
15:Bb:21:A:N6	15:Bb:46:G:N3	2.67	0.42
17:CC:146:U:H2'	17:CC:147:U:C6	2.54	0.42
20:DD:75:LYS:O	20:DD:78:PRO:HD2	2.20	0.42
20:DD:142:PRO:C	20:DD:153:VAL:HG23	2.45	0.42
23:EE:132:ASN:HD22	23:EE:151:PRO:HB3	1.84	0.42
27:G:89:LEU:HB3	27:G:93:ILE:HD12	2.01	0.42
30:HH:60:ILE:HB	30:HH:80:SER:HB3	2.02	0.42
30:HH:60:ILE:HD11	30:HH:93:THR:HA	2.02	0.42
35:K:39:LEU:HD22	35:K:43:TYR:CE2	2.55	0.42
36:KK:57:ARG:CG	36:KK:61:GLN:HE21	2.33	0.42
36:KK:107:GLU:HG3	36:KK:108:ARG:N	2.34	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:NN:20:ASN:HB3	42:NN:126:ASP:HB3	2.01	0.42
48:Q:96:ILE:HG21	48:Q:105:ARG:HG2	2.01	0.42
49:QQ:84:PRO:HA	49:QQ:87:GLN:HG3	2.01	0.42
59:a:25:VAL:HG13	59:a:70:LEU:HB3	2.02	0.42
59:a:36:PHE:C	59:a:41:ARG:HE	2.28	0.42
61:c:366:A:OP1	61:c:758:U:O2'	2.29	0.42
61:c:1244:A:H2'	61:c:1244:A:N3	2.35	0.42
61:c:1590:G:H2'	61:c:1591:C:C6	2.54	0.42
64:f:99:LYS:HZ3	64:f:208:GLU:CD	2.22	0.42
82:x:38:LYS:HE3	82:x:51:VAL:HG23	2.01	0.42
3:2:2:PRO:HG3	61:c:1143:A:OP2	2.20	0.42
8:7:70:ASP:HB3	8:7:113:VAL:HG12	2.01	0.42
8:7:266:ASP:HA	8:7:267:PRO:HA	1.91	0.42
11:AA:286:U:O2'	49:QQ:179:LYS:O	2.37	0.42
11:AA:397:A:H5''	11:AA:399:A:OP1	2.20	0.42
11:AA:595:G:H2'	11:AA:596:C:C6	2.55	0.42
11:AA:1437:OMC:HM22	11:AA:1437:OMC:H1'	1.64	0.42
11:AA:1500:G:H2'	11:AA:1501:U:O4'	2.20	0.42
11:AA:1503:A:C4	11:AA:1504:A:C8	3.07	0.42
11:AA:1867:A:H2'	11:AA:1868:G:C8	2.55	0.42
11:AA:1916:U:H2'	11:AA:1917:C:C6	2.54	0.42
11:AA:2220:A2M:H1'	11:AA:2220:A2M:HM'3	1.55	0.42
11:AA:2269:U:H5	11:AA:2272:G:H5''	1.84	0.42
11:AA:2911:A:H4'	11:AA:2912:G:C8	2.55	0.42
14:BB:6:C:O2'	30:HH:72:ASP:OD2	2.25	0.42
16:C:50:LYS:HE3	16:C:50:LYS:HB3	1.75	0.42
17:CC:39:G:H1'	17:CC:104:A:H61	1.85	0.42
18:Cc:45:A:O2'	18:Cc:46:G:H5'	2.19	0.42
25:F:87:LYS:HB3	25:F:87:LYS:HE3	1.87	0.42
28:GG:58:HIS:HA	28:GG:90:PHE:CE1	2.55	0.42
41:N:14:ARG:HG2	41:N:18:ARG:NH2	2.34	0.42
42:NN:93:ASP:OD1	42:NN:93:ASP:C	2.62	0.42
44:OO:85:LEU:HD22	44:OO:89:TYR:HD2	1.84	0.42
46:PP:48:GLY:HA3	46:PP:53:VAL:HB	2.02	0.42
48:Q:83:GLU:O	48:Q:86:THR:HG23	2.20	0.42
59:a:46:LYS:HE3	59:a:54:THR:HB	2.01	0.42
63:e:157:GLN:C	63:e:159:SER:H	2.28	0.42
67:i:58:LEU:HD23	67:i:164:PRO:HB3	2.02	0.42
67:i:117:THR:HG22	67:i:191:ALA:O	2.19	0.42
67:i:174:LEU:HD23	67:i:174:LEU:HA	1.86	0.42
2:1:98:GLN:HE22	67:i:120:ILE:HD11	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:4:66:LEU:HD11	67:i:158:GLN:HG2	2.02	0.42
11:AA:52:A:N3	11:AA:811:U:O2'	2.53	0.42
11:AA:923:C:OP2	91:AA:3720:HOH:O	2.21	0.42
11:AA:2155:G:OP1	23:EE:241:ARG:NH1	2.50	0.42
11:AA:3084:C:H2'	11:AA:3085:G:O4'	2.19	0.42
12:Aa:213:SER:HB3	12:Aa:218:TRP:NE1	2.34	0.42
12:Aa:728:VAL:HG21	12:Aa:802:SER:HB2	2.01	0.42
13:B:16:SER:O	13:B:101:ASN:ND2	2.45	0.42
15:Bb:37:YYG:H31	15:Bb:37:YYG:C1'	2.47	0.42
18:Cc:28:U:H2'	18:Cc:29:C:H6	1.84	0.42
19:D:77:GLY:O	19:D:81:ARG:HG3	2.20	0.42
20:DD:48:ARG:HH22	20:DD:95:GLU:HB3	1.85	0.42
20:DD:133:THR:OG1	20:DD:150:ILE:HD11	2.19	0.42
25:F:69:LYS:HA	30:HH:40:HIS:CE1	2.55	0.42
25:F:142:SER:OG	25:F:144:GLU:HG2	2.20	0.42
26:FF:266:ARG:HG2	26:FF:266:ARG:NH1	2.35	0.42
49:QQ:53:TYR:CE2	49:QQ:59:PHE:HB3	2.55	0.42
61:c:1224:A:N1	61:c:1259:U:C4	2.87	0.42
61:c:1388:A:H5''	78:t:48:ASN:OD1	2.19	0.42
61:c:1785:U:H2'	61:c:1786:G:H8	1.85	0.42
62:d:13:ASP:HB3	62:d:179:ARG:HH22	1.85	0.42
67:i:38:THR:OG1	77:s:57:LEU:HD21	2.19	0.42
75:q:16:VAL:HG12	75:q:18:ARG:HG3	2.01	0.42
79:u:99:HIS:CD2	79:u:101:LEU:HG	2.52	0.42
84:z:55:GLU:OE2	84:z:73:ARG:NH1	2.53	0.42
2:1:61:SER:H	2:1:64:VAL:HB	1.85	0.42
11:AA:633:C:O2'	50:R:21:ARG:O	2.33	0.42
11:AA:2454:G:H1'	18:Cc:20:G:C5	2.55	0.42
11:AA:2526:C:H2'	11:AA:2527:G:C8	2.55	0.42
11:AA:2915:U:C5	26:FF:7:GLU:HG3	2.55	0.42
11:AA:3174:A:H62	50:R:54:ARG:HH21	1.66	0.42
12:Aa:21:ASN:HA	12:Aa:101:ASN:HB2	2.01	0.42
12:Aa:388:THR:HG22	12:Aa:395:TYR:CD2	2.55	0.42
18:Cc:54:G:H2'	18:Cc:55:U:H6	1.83	0.42
19:D:152:GLU:OE1	19:D:152:GLU:HA	2.20	0.42
20:DD:191:TYR:CZ	20:DD:194:GLY:HA2	2.54	0.42
25:F:133:ALA:HB3	34:JJ:121:LYS:HB2	2.02	0.42
37:L:16:GLY:C	37:L:18:TYR:H	2.28	0.42
39:M:68:PHE:CD1	39:M:68:PHE:N	2.88	0.42
46:PP:13:ARG:NH1	46:PP:65:LEU:O	2.53	0.42
61:c:85:A:H2'	61:c:86:A:O4'	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:1260:U:C4	61:c:1261:G:N7	2.88	0.42
61:c:1265:G:C5	61:c:1266:U:C4	3.08	0.42
61:c:1277:G:H2'	61:c:1278:G:O4'	2.19	0.42
61:c:1308:G:H2'	61:c:1309:C:H6	1.83	0.42
61:c:1516:A:C8	81:w:58:LEU:HD13	2.55	0.42
61:c:1548:G:OP1	76:r:18:ARG:NH1	2.53	0.42
65:g:106:LYS:HG2	65:g:175:VAL:HG23	2.01	0.42
65:g:158:ILE:HG12	65:g:189:MET:SD	2.60	0.42
67:i:77:TYR:HE2	67:i:87:CYS:HA	1.85	0.42
70:l:40:ALA:H	70:l:61:GLU:CD	2.28	0.42
72:n:60:SER:HB2	72:n:65:TYR:CD2	2.55	0.42
74:p:100:LYS:NZ	74:p:104:ARG:HE	2.18	0.42
77:s:43:ILE:HD12	77:s:43:ILE:HA	1.89	0.42
7:6:41:THR:O	7:6:45:VAL:HG22	2.20	0.42
8:7:176:LYS:HB2	8:7:195:HIS:HB3	2.02	0.42
8:7:245:PHE:CD2	8:7:252:LEU:HD12	2.55	0.42
11:AA:426:G:OP1	48:Q:15:LYS:NZ	2.52	0.42
11:AA:634:C:H5'	50:R:21:ARG:O	2.20	0.42
11:AA:863:C:H2'	11:AA:864:G:O4'	2.20	0.42
11:AA:949:C:O2'	11:AA:971:G:OP1	2.37	0.42
11:AA:951:A:H5''	11:AA:1143:A:N1	2.35	0.42
11:AA:2458:A:H3'	11:AA:2459:A:H8	1.83	0.42
11:AA:2876:C:H2'	11:AA:2877:G:O4'	2.20	0.42
12:Aa:115:VAL:O	12:Aa:119:LEU:HG	2.20	0.42
12:Aa:222:ILE:HG22	12:Aa:277:ILE:HD13	2.02	0.42
12:Aa:588:LEU:HD13	12:Aa:686:VAL:HG13	2.02	0.42
12:Aa:656:LEU:HD21	12:Aa:691:VAL:HG21	2.01	0.42
19:D:81:ARG:HG2	19:D:88:ARG:CZ	2.50	0.42
29:H:40:LYS:HB3	29:H:40:LYS:HE3	1.74	0.42
42:NN:14:ILE:HD13	42:NN:14:ILE:HA	1.82	0.42
42:NN:15:GLU:HG2	42:NN:16:LYS:HG2	2.02	0.42
44:OO:5:LYS:H	44:OO:5:LYS:CD	2.25	0.42
50:R:53:TYR:HE1	50:R:67:MET:HG3	1.84	0.42
55:W:8:ILE:HD12	55:W:65:LEU:HD11	2.02	0.42
61:c:184:C:H2'	61:c:185:U:C6	2.55	0.42
61:c:602:U:H2'	61:c:603:U:C6	2.55	0.42
61:c:1523:G:C6	80:v:75:LYS:HD2	2.55	0.42
64:f:57:PHE:HE2	64:f:110:HIS:HD2	1.68	0.42
67:i:183:ALA:HA	67:i:186:ASN:HD21	1.85	0.42
6:5:41:GLN:HG2	81:w:71:PRO:HB3	2.02	0.41
8:7:31:ASN:HA	8:7:47:LEU:HB2	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:385:A:H2'	11:AA:386:A:C8	2.54	0.41
11:AA:1069:C:H2'	11:AA:1070:U:C6	2.55	0.41
11:AA:1495:U:H5	11:AA:1835:A:N1	2.18	0.41
11:AA:2133:U:O4	11:AA:2147:A:H2	2.03	0.41
11:AA:2332:A:H2'	11:AA:2333:C:O4'	2.20	0.41
11:AA:3304:U:P	26:FF:332:ARG:HH22	2.43	0.41
12:Aa:480:VAL:H	12:Aa:482:LYS:HZ1	1.67	0.41
14:BB:90:U:H2'	14:BB:91:G:O4'	2.19	0.41
17:CC:6:U:H2'	17:CC:7:U:C6	2.55	0.41
24:Ee:106:LEU:HA	24:Ee:109:ILE:HG12	2.02	0.41
27:G:41:ILE:HG21	27:G:54:VAL:HG11	2.01	0.41
33:J:131:ASP:O	33:J:135:ILE:HG12	2.20	0.41
42:NN:111:ASP:OD1	42:NN:111:ASP:N	2.51	0.41
61:c:399:A:H4'	66:h:3:ARG:HG2	2.01	0.41
61:c:592:A:H2'	61:c:593:U:O4'	2.20	0.41
61:c:629:U:H2'	61:c:630:A:H8	1.85	0.41
61:c:753:A:H61	61:c:794:U:H3	1.68	0.41
61:c:1013:A:H2'	61:c:1014:G:O4'	2.19	0.41
61:c:1567:U:H2'	61:c:1568:C:C2	2.55	0.41
62:d:72:ASP:HB3	62:d:119:ARG:HG2	2.02	0.41
63:e:32:ILE:HG13	63:e:96:LEU:HD12	2.01	0.41
63:e:127:VAL:HG11	63:e:173:THR:HA	2.01	0.41
65:g:173:ARG:HD3	65:g:173:ARG:HA	1.79	0.41
67:i:136:ALA:HB2	67:i:202:ALA:HB2	2.02	0.41
68:j:218:GLU:N	68:j:218:GLU:OE1	2.53	0.41
70:l:11:ARG:HB2	70:l:16:ALA:O	2.20	0.41
71:m:89:ASP:OD1	71:m:89:ASP:N	2.52	0.41
77:s:82:ARG:HH22	77:s:114:ARG:HB2	1.85	0.41
77:s:137:ARG:HA	77:s:137:ARG:HE	1.85	0.41
79:u:27:LYS:HA	79:u:57:ARG:HA	2.02	0.41
3:2:20:PRO:HA	3:2:31:PRO:HA	2.01	0.41
3:2:46:GLU:O	3:2:48:ALA:N	2.53	0.41
6:5:33:LYS:HE3	6:5:34:TYR:CZ	2.55	0.41
11:AA:21:G:H3'	11:AA:22:G:H8	1.83	0.41
11:AA:293:C:H2'	11:AA:294:U:O4'	2.20	0.41
11:AA:561:C:H2'	11:AA:562:C:C6	2.54	0.41
11:AA:926:A:H2'	11:AA:927:C:C6	2.55	0.41
11:AA:1174:G:H1'	11:AA:1181:U:N3	2.34	0.41
11:AA:1339:C:H2'	11:AA:1340:G:C8	2.55	0.41
11:AA:1572:U:H2'	11:AA:1573:G:C8	2.55	0.41
11:AA:2810:C:OP2	11:AA:2955:U:O2'	2.38	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:3065:G:H2'	11:AA:3066:U:C6	2.54	0.41
11:AA:3295:A:H2'	11:AA:3296:A:H8	1.83	0.41
11:AA:3319:U:O4	26:FF:167:ARG:HB2	2.20	0.41
12:Aa:656:LEU:HD23	12:Aa:656:LEU:HA	1.81	0.41
14:BB:16:U:H2'	14:BB:17:A:C8	2.55	0.41
20:DD:142:PRO:O	20:DD:153:VAL:HG23	2.20	0.41
24:Ee:39:PRO:HB2	24:Ee:40:LYS:HE2	2.02	0.41
26:FF:20:LYS:HB2	26:FF:20:LYS:HE3	1.72	0.41
51:S:66:SER:OG	51:S:68:THR:HG22	2.19	0.41
61:c:1392:U:H2'	61:c:1393:C:C6	2.55	0.41
62:d:12:GLU:O	62:d:15:GLN:HG2	2.20	0.41
62:d:148:ASP:OD1	62:d:149:LEU:N	2.45	0.41
64:f:168:ARG:HD3	64:f:170:ILE:HD11	2.02	0.41
69:k:32:PRO:HA	69:k:35:LYS:HB2	2.01	0.41
70:l:72:ILE:HG22	70:l:74:LYS:HG2	2.00	0.41
8:7:201:THR:HG21	8:7:242:SER:HA	2.02	0.41
8:7:294:TRP:CH2	8:7:301:LEU:HD22	2.55	0.41
10:A:159:LYS:NZ	11:AA:3243:A:OP1	2.51	0.41
11:AA:98:G:H4'	11:AA:281:G:OP1	2.20	0.41
11:AA:235:A:H2'	11:AA:236:G:H8	1.86	0.41
11:AA:792:G:H5''	39:M:2:PRO:CD	2.50	0.41
11:AA:830:A:H2'	11:AA:831:G:O4'	2.20	0.41
11:AA:1104:G:H2'	11:AA:1105:A:H8	1.84	0.41
11:AA:1392:G:H3'	48:Q:125:ARG:HH12	1.85	0.41
11:AA:1699:A:C6	11:AA:1747:G:C6	3.09	0.41
11:AA:1719:G:N7	19:D:121:HIS:HE1	2.18	0.41
11:AA:1784:G:H2'	11:AA:1785:U:O4'	2.19	0.41
11:AA:2373:A:O2'	11:AA:2823:G:N2	2.50	0.41
11:AA:2555:G:O6	51:S:99:LYS:NZ	2.31	0.41
11:AA:2781:U:H2'	11:AA:2782:U:C6	2.55	0.41
11:AA:3007:U:H2'	11:AA:3008:A:H8	1.85	0.41
11:AA:3252:G:H2'	11:AA:3253:G:C8	2.54	0.41
12:Aa:348:ALA:HA	12:Aa:351:TYR:CE2	2.54	0.41
13:B:62:ARG:HG3	17:CC:5:U:OP1	2.21	0.41
22:E:14:LEU:H	22:E:56:GLY:HA2	1.86	0.41
28:GG:140:HIS:NE2	28:GG:246:ARG:HD2	2.35	0.41
30:HH:210:GLU:O	30:HH:214:ASP:HB2	2.20	0.41
33:J:56:ARG:O	33:J:61:LYS:HD2	2.20	0.41
39:M:34:MET:SD	44:OO:9:ILE:HD12	2.61	0.41
50:R:75:HIS:N	50:R:80:VAL:O	2.47	0.41
59:a:19:LYS:HB2	59:a:19:LYS:HE3	1.80	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:514:G:N3	61:c:515:A:C8	2.88	0.41
61:c:1636:C:O2	61:c:1765:A:N6	2.54	0.41
64:f:38:VAL:HG22	64:f:39:THR:N	2.35	0.41
66:h:179:LYS:HE3	66:h:230:GLU:OE2	2.21	0.41
67:i:76:ARG:C	67:i:77:TYR:HD1	2.27	0.41
67:i:134:VAL:O	67:i:138:THR:HG23	2.20	0.41
75:q:103:ARG:O	75:q:107:ARG:HG3	2.20	0.41
79:u:12:GLN:HB3	79:u:59:GLY:HA2	2.01	0.41
7:6:54:ARG:HD2	7:6:54:ARG:HA	1.92	0.41
8:7:238:ASP:OD2	8:7:258:THR:HG23	2.19	0.41
9:8:129:GLY:O	61:c:1253:U:H5''	2.20	0.41
11:AA:113:C:P	49:QQ:147:ARG:HE	2.43	0.41
11:AA:153:U:H4'	11:AA:158:G:H4'	2.02	0.41
11:AA:548:G:H2'	11:AA:549:U:O4'	2.20	0.41
11:AA:677:A:OP2	16:C:107:THR:HG21	2.21	0.41
11:AA:1254:C:H2'	11:AA:1255:C:C6	2.55	0.41
11:AA:1276:U:H2'	11:AA:1277:C:C6	2.56	0.41
11:AA:1312:C:H2'	11:AA:1313:G:O4'	2.20	0.41
11:AA:1922:A:H2'	11:AA:1923:C:O4'	2.20	0.41
11:AA:2255:A:N1	61:c:1644:C:O2'	2.50	0.41
11:AA:2948:OMC:H1'	11:AA:2948:OMC:HM23	1.73	0.41
11:AA:3192:U:H2'	11:AA:3193:C:C6	2.55	0.41
12:Aa:591:GLU:OE2	12:Aa:592:PRO:HD2	2.20	0.41
38:LL:86:TYR:CE2	38:LL:151:VAL:HB	2.55	0.41
44:OO:57:VAL:HG23	44:OO:147:ILE:HD12	2.03	0.41
45:P:26:LYS:HA	45:P:26:LYS:HD3	1.86	0.41
52:T:34:GLN:HB3	52:T:38:ARG:NH1	2.33	0.41
59:a:6:LYS:O	59:a:7:THR:OG1	2.34	0.41
61:c:174:U:H2'	61:c:175:G:O4'	2.20	0.41
61:c:298:C:H5''	66:h:38:LEU:HB2	2.02	0.41
61:c:433:C:H2'	61:c:434:G:O4'	2.20	0.41
61:c:919:A:H2'	61:c:920:U:C6	2.56	0.41
61:c:1172:G:H2'	61:c:1173:C:C6	2.56	0.41
61:c:1189:A:N3	61:c:1194:A:O2'	2.39	0.41
61:c:1315:U:H2'	61:c:1316:G:O4'	2.20	0.41
61:c:1424:A:O2'	61:c:1425:A:OP1	2.27	0.41
61:c:1489:U:H5	61:c:1513:G:C6	2.38	0.41
61:c:1610:G:H4'	67:i:98:MET:CE	2.50	0.41
63:e:55:LYS:HD3	63:e:55:LYS:HA	1.90	0.41
64:f:99:LYS:HA	64:f:117:THR:HA	2.01	0.41
64:f:230:TRP:CE2	83:y:68:ARG:HB3	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
66:h:240:LYS:HB3	66:h:240:LYS:HE2	1.71	0.41
67:i:63:GLN:HB3	67:i:88:PRO:HA	2.02	0.41
68:j:7:TYR:HD1	68:j:113:ILE:HB	1.84	0.41
70:l:87:ASN:HB3	70:l:90:LEU:CD1	2.50	0.41
4:3:56:CYS:CB	4:3:59:CYS:HB3	2.51	0.41
10:A:161:LYS:HG2	11:AA:3182:G:H4'	2.02	0.41
11:AA:18:G:OP1	52:T:81:ARG:NH2	2.46	0.41
11:AA:828:A:H2'	11:AA:829:U:C6	2.55	0.41
11:AA:1362:G:H2'	11:AA:1363:A:C8	2.55	0.41
11:AA:1478:C:H2'	11:AA:1479:U:H6	1.86	0.41
11:AA:2223:A:H8	11:AA:2223:A:OP2	2.03	0.41
11:AA:2428:U:H2'	11:AA:2429:G:H8	1.85	0.41
11:AA:2428:U:H2'	11:AA:2429:G:C8	2.56	0.41
11:AA:2515:A:H5''	49:QQ:28:TRP:CD1	2.56	0.41
11:AA:2566:C:H2'	11:AA:2567:C:C6	2.56	0.41
11:AA:2722:U:H2'	11:AA:2723:U:C6	2.56	0.41
11:AA:2990:G:O2'	26:FF:269:GLN:HB2	2.20	0.41
11:AA:3165:A:H2'	11:AA:3166:C:H6	1.84	0.41
11:AA:3266:G:H2'	11:AA:3267:A:C8	2.56	0.41
12:Aa:39:LEU:HD21	12:Aa:334:LEU:HB3	2.01	0.41
12:Aa:246:GLY:O	12:Aa:271:ARG:NH1	2.51	0.41
12:Aa:781:THR:OG1	12:Aa:785:ARG:NH1	2.54	0.41
16:C:182:LYS:HE2	39:M:55:LYS:O	2.21	0.41
18:Cc:65:G:H2'	18:Cc:66:C:O4'	2.21	0.41
26:FF:281:LYS:HE3	26:FF:349:LYS:O	2.21	0.41
26:FF:308:MET:HE3	26:FF:308:MET:HB3	1.91	0.41
34:JJ:132:PRO:HA	34:JJ:229:PHE:CD1	2.55	0.41
36:KK:72:PRO:HG3	49:QQ:18:VAL:HA	2.02	0.41
40:MM:47:PRO:HB3	40:MM:171:TRP:CZ2	2.55	0.41
42:NN:32:ARG:HG2	42:NN:120:ILE:HA	2.03	0.41
49:QQ:153:ASP:OD1	49:QQ:154:PRO:HD2	2.20	0.41
53:U:47:ILE:HG13	53:U:48:ALA:H	1.84	0.41
59:a:8:ARG:HG2	59:a:72:LEU:HD21	2.02	0.41
59:a:70:LEU:HD11	59:a:85:LEU:HD11	2.03	0.41
61:c:80:A:OP2	61:c:80:A:H8	2.03	0.41
61:c:855:A:O2'	61:c:856:A:H3'	2.20	0.41
61:c:902:G:O2'	61:c:1008:G:H4'	2.21	0.41
61:c:1224:A:C2	61:c:1259:U:N3	2.78	0.41
63:e:129:THR:OG1	63:e:133:TYR:HB2	2.20	0.41
67:i:41:LYS:HA	67:i:41:LYS:HD2	1.85	0.41
71:m:64:GLU:OE2	71:m:65:LYS:N	2.45	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:4:47:PRO:HB2	67:i:82:PHE:HE1	1.86	0.41
8:7:89:LEU:HB2	8:7:103:PHE:CZ	2.55	0.41
11:AA:174:C:H2'	11:AA:175:C:C6	2.56	0.41
11:AA:216:G:H4'	35:K:19:TYR:CE2	2.56	0.41
11:AA:696:C:OP2	28:GG:119:ARG:NH2	2.48	0.41
11:AA:1137:C:H2'	11:AA:1138:U:O4'	2.21	0.41
11:AA:1624:G:C4	11:AA:1625:A:C8	3.08	0.41
11:AA:2100:A:H2'	11:AA:2101:C:C6	2.56	0.41
11:AA:2640:A2M:H8	11:AA:2640:A2M:O5'	2.21	0.41
11:AA:2987:A:O2'	26:FF:259:HIS:HB3	2.21	0.41
11:AA:3164:C:H2'	11:AA:3165:A:H8	1.86	0.41
12:Aa:183:GLU:O	12:Aa:187:VAL:HG23	2.20	0.41
12:Aa:726:GLU:HG2	12:Aa:804:LEU:HD11	2.02	0.41
17:CC:2:A:H3'	17:CC:3:A:H8	1.86	0.41
29:H:129:VAL:O	29:H:133:SER:HB3	2.20	0.41
36:KK:176:PRO:HB3	36:KK:219:ASP:OD1	2.20	0.41
38:LL:8:GLN:HB3	38:LL:72:LYS:HD2	2.01	0.41
44:OO:54:LEU:HD22	44:OO:119:TYR:CG	2.56	0.41
45:P:85:ALA:O	45:P:86:LYS:HD3	2.21	0.41
49:QQ:36:ILE:HD11	49:QQ:105:ARG:HB3	2.01	0.41
52:T:96:GLU:C	52:T:98:SER:H	2.28	0.41
61:c:598:U:H2'	61:c:599:A:H8	1.86	0.41
61:c:1071:U:H2'	61:c:1072:C:C6	2.56	0.41
61:c:1716:C:HO2'	61:c:1717:G:P	2.40	0.41
62:d:36:TYR:OH	82:x:70:ASN:ND2	2.35	0.41
62:d:146:LEU:HB3	62:d:162:CYS:SG	2.60	0.41
62:d:183:ARG:HG3	62:d:188:LEU:HD12	2.02	0.41
63:e:202:LYS:HB3	63:e:202:LYS:HE3	1.92	0.41
64:f:45:VAL:HG21	64:f:68:ILE:HG23	2.03	0.41
66:h:127:LYS:HD3	66:h:127:LYS:HA	1.72	0.41
67:i:89:ILE:HD11	67:i:137:ILE:HD13	2.03	0.41
68:j:189:HIS:ND1	68:j:189:HIS:C	2.78	0.41
70:l:53:LYS:HB2	70:l:53:LYS:HE2	1.65	0.41
75:q:22:SER:OG	75:q:23:PHE:O	2.29	0.41
78:t:29:GLN:O	78:t:32:LYS:HG2	2.21	0.41
78:t:109:LEU:O	78:t:112:SER:OG	2.22	0.41
79:u:66:LEU:HD13	79:u:66:LEU:HA	1.95	0.41
80:v:5:SER:OG	80:v:6:VAL:N	2.54	0.41
84:z:92:CYS:HA	84:z:95:PHE:CD2	2.55	0.41
3:2:2:PRO:HB3	61:c:1142:A:H5''	2.02	0.41
11:AA:207:U:H2'	11:AA:208:C:H6	1.83	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:247:C:H2'	11:AA:248:U:O4'	2.21	0.41
11:AA:817:A2M:HM'3	11:AA:920:A:N3	2.35	0.41
11:AA:997:A:H2'	11:AA:998:A:O4'	2.21	0.41
11:AA:1373:A:H2'	11:AA:1374:G:C8	2.56	0.41
11:AA:1729:A:C6	43:O:49:PRO:HD3	2.55	0.41
11:AA:1811:G:H2'	11:AA:1812:G:O4'	2.21	0.41
11:AA:2522:G:H2'	11:AA:2522:G:N3	2.35	0.41
11:AA:2836:C:H5	11:AA:2852:C:N4	2.15	0.41
11:AA:3001:C:H4'	26:FF:117:ARG:HG3	2.02	0.41
12:Aa:15:LYS:HA	12:Aa:15:LYS:HD3	1.65	0.41
12:Aa:492:ALA:HB2	12:Aa:559:PRO:HA	2.02	0.41
17:CC:84:C:H5'	17:CC:85:G:C5	2.55	0.41
20:DD:164:LYS:H	20:DD:164:LYS:HG2	1.66	0.41
23:EE:70:ARG:HD2	23:EE:72:ARG:HE	1.85	0.41
26:FF:347:SER:C	26:FF:349:LYS:H	2.29	0.41
28:GG:126:ILE:O	28:GG:129:THR:OG1	2.27	0.41
28:GG:140:HIS:O	28:GG:142:VAL:HG22	2.21	0.41
29:H:96:GLU:OE1	31:I:24:GLY:N	2.49	0.41
30:HH:211:LEU:HD11	30:HH:218:ARG:NH1	2.36	0.41
30:HH:261:THR:O	30:HH:264:GLN:HG2	2.21	0.41
33:J:63:ILE:HD13	33:J:86:VAL:HG12	2.02	0.41
34:JJ:86:VAL:HG13	34:JJ:136:TYR:HB3	2.02	0.41
46:PP:112:LEU:HD22	46:PP:116:GLU:HB3	2.03	0.41
59:a:8:ARG:HA	59:a:8:ARG:HD2	1.90	0.41
61:c:1080:U:H2'	61:c:1081:A:C1'	2.51	0.41
61:c:1125:A:C5	61:c:1126:OMG:H1'	2.55	0.41
61:c:1225:U:H5''	61:c:1225:U:C6	2.55	0.41
61:c:1452:U:O2'	76:r:79:HIS:HB3	2.20	0.41
61:c:1517:U:P	61:c:1518:C:H41	2.44	0.41
61:c:1584:G:C8	77:s:122:ARG:HB3	2.55	0.41
64:f:57:PHE:HE2	64:f:110:HIS:CD2	2.39	0.41
65:g:101:GLN:HE21	65:g:186:VAL:HG11	1.85	0.41
65:g:164:VAL:HA	65:g:168:ILE:HD12	2.02	0.41
68:j:63:MET:HG2	68:j:99:GLY:O	2.20	0.41
69:k:28:GLU:O	69:k:35:LYS:HG3	2.20	0.41
71:m:40:LYS:HB2	71:m:40:LYS:HE3	1.82	0.41
76:r:110:GLU:OE1	76:r:110:GLU:N	2.53	0.41
79:u:71:GLN:HA	79:u:74:GLN:HG3	2.02	0.41
79:u:90:ASN:HA	79:u:95:GLY:HA2	2.03	0.41
3:2:88:SER:O	3:2:92:ARG:HG3	2.21	0.41
7:6:36:LYS:HD3	7:6:36:LYS:HA	1.72	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:135:C:H1'	52:T:93:THR:HB	2.03	0.41
11:AA:591:G:N3	32:II:19:LYS:HG2	2.36	0.41
11:AA:594:U:O2'	11:AA:595:G:H5'	2.20	0.41
11:AA:760:G:H1'	11:AA:771:A:H61	1.85	0.41
11:AA:1250:G:H2'	11:AA:1251:A:C8	2.55	0.41
11:AA:1347:U:P	28:GG:300:ARG:HH22	2.44	0.41
11:AA:1384:U:OP1	28:GG:138:ARG:NH2	2.53	0.41
11:AA:1458:U:H2'	11:AA:1459:C:C6	2.55	0.41
11:AA:1498:A:H2'	11:AA:1499:C:H6	1.82	0.41
11:AA:2241:U:HO2'	23:EE:243:THR:H	1.66	0.41
11:AA:2836:C:H2'	11:AA:2837:A:O4'	2.20	0.41
11:AA:3006:A:C2	11:AA:3141:A:C4	3.09	0.41
11:AA:3051:U:C2	11:AA:3052:G:C8	3.08	0.41
17:CC:84:C:N3	35:K:116:LYS:NZ	2.51	0.41
18:Cc:24:C:H2'	18:Cc:25:U:H6	1.86	0.41
18:Cc:59:A:O2'	18:Cc:61:U:OP2	2.27	0.41
28:GG:140:HIS:CD2	28:GG:247:PHE:H	2.39	0.41
33:J:27:ARG:HD2	36:KK:50:VAL:HG21	2.02	0.41
34:JJ:132:PRO:HA	34:JJ:229:PHE:CG	2.56	0.41
40:MM:93:PRO:HB2	40:MM:125:LEU:HB3	2.02	0.41
44:OO:180:ARG:HD2	44:OO:184:GLU:OE1	2.21	0.41
45:P:112:ASP:N	45:P:112:ASP:OD1	2.54	0.41
49:QQ:116:LEU:HB2	49:QQ:135:VAL:HG23	2.02	0.41
52:T:70:TYR:HB3	52:T:76:GLN:HG2	2.01	0.41
54:V:39:TYR:CD1	54:V:40:PRO:HA	2.56	0.41
61:c:756:A:H1'	66:h:12:LEU:O	2.20	0.41
61:c:823:G:C6	61:c:850:A:C6	3.09	0.41
61:c:875:G:O2'	61:c:877:G:OP2	2.37	0.41
61:c:1117:U:H2'	61:c:1118:G:C8	2.56	0.41
61:c:1446:A:C4	61:c:1448:G:N7	2.89	0.41
66:h:36:HIS:O	66:h:37:LYS:HD3	2.20	0.41
66:h:75:LYS:HD2	66:h:77:ARG:NH2	2.36	0.41
74:p:87:ASP:OD1	74:p:87:ASP:N	2.54	0.41
76:r:87:PRO:HD3	76:r:112:LEU:HD11	2.03	0.41
79:u:18:LEU:HD23	79:u:35:ILE:HG21	2.03	0.41
80:v:34:VAL:O	80:v:36:ILE:HG12	2.20	0.41
4:3:17:ARG:HG3	61:c:1070:C:H4'	2.03	0.41
8:7:89:LEU:HD12	8:7:103:PHE:HZ	1.84	0.41
8:7:222:LEU:HD12	8:7:232:TYR:C	2.46	0.41
10:A:89:SER:O	10:A:95:GLY:HA3	2.21	0.41
10:A:110:PRO:N	10:A:111:PRO:HD2	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:255:A:H2'	11:AA:256:G:C8	2.54	0.41
11:AA:671:U:H2'	11:AA:672:A:H8	1.86	0.41
11:AA:727:G:OP2	11:AA:742:G:N2	2.52	0.41
11:AA:727:G:H2'	11:AA:728:G:O4'	2.21	0.41
11:AA:737:G:H2'	11:AA:738:A:H8	1.86	0.41
11:AA:953:G:N2	11:AA:1116:G:H2'	2.36	0.41
11:AA:1024:G:N2	11:AA:1026:A:H3'	2.36	0.41
11:AA:1355:A:H2'	16:C:31:LYS:HE3	2.03	0.41
11:AA:1385:C:P	28:GG:141:ARG:HH21	2.44	0.41
11:AA:1447:G:OP1	13:B:65:SER:HB2	2.21	0.41
11:AA:1496:C:H5'	11:AA:1842:A:N1	2.36	0.41
11:AA:1750:A:OP1	55:W:44:LYS:NZ	2.38	0.41
11:AA:2116:G:OP1	11:AA:2118:C:N4	2.51	0.41
11:AA:2860:U:H1'	11:AA:2938:G:H4'	2.03	0.41
11:AA:3162:C:H2'	11:AA:3163:A:H8	1.86	0.41
11:AA:3279:A:O2'	11:AA:3280:U:H5'	2.21	0.41
12:Aa:110:ASP:OD2	12:Aa:536:LEU:HB3	2.21	0.41
12:Aa:567:VAL:O	12:Aa:592:PRO:HB3	2.21	0.41
18:Cc:10:G:H2'	18:Cc:11:A:C8	2.47	0.41
18:Cc:11:A:N6	18:Cc:26:C:N3	2.68	0.41
21:Dd:24:U:OP1	61:c:1640:C:N4	2.48	0.41
23:EE:32:LEU:HD13	23:EE:163:ARG:HD3	2.02	0.41
24:Ee:109:ILE:HG13	24:Ee:110:ILE:N	2.35	0.41
27:G:38:ILE:HD11	27:G:56:VAL:HB	2.03	0.41
28:GG:140:HIS:HA	28:GG:177:ASP:OD1	2.21	0.41
33:J:57:LEU:HD12	33:J:61:LYS:HG3	2.02	0.41
33:J:70:GLU:CD	33:J:70:GLU:N	2.79	0.41
34:JJ:47:ARG:NH1	34:JJ:177:GLY:O	2.51	0.41
38:LL:21:LYS:O	38:LL:22:SER:C	2.63	0.41
38:LL:113:GLU:OE1	38:LL:115:ARG:NH1	2.51	0.41
39:M:77:LYS:C	39:M:79:TRP:N	2.78	0.41
53:U:76:ARG:NE	53:U:76:ARG:HA	2.36	0.41
55:W:36:LYS:HA	55:W:37:PRO:HD3	1.91	0.41
61:c:330:G:O2'	70:l:33:PRO:HB3	2.21	0.41
61:c:522:U:H2'	61:c:523:G:O4'	2.21	0.41
61:c:649:U:H2'	61:c:650:U:H6	1.84	0.41
61:c:876:G:H2'	61:c:936:G:N2	2.36	0.41
61:c:1065:A:N3	63:e:146:GLN:NE2	2.62	0.41
61:c:1162:C:H3'	61:c:1163:A:H8	1.86	0.41
61:c:1219:A:C5	61:c:1265:G:O2'	2.74	0.41
61:c:1516:A:O2'	61:c:1517:U:H5'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:1553:G:O2'	61:c:1555:A:N6	2.53	0.41
61:c:1566:U:H5''	79:u:39:GLY:N	2.35	0.41
61:c:1610:G:H4'	67:i:98:MET:HE2	2.02	0.41
61:c:1716:C:C2	61:c:1717:G:C8	3.09	0.41
61:c:1722:A:H5''	68:j:75:LEU:HD22	2.03	0.41
62:d:134:LYS:HB3	62:d:134:LYS:HE2	1.75	0.41
64:f:190:LEU:HD23	64:f:190:LEU:HA	1.81	0.41
66:h:97:GLU:CG	66:h:113:ARG:HG2	2.51	0.41
68:j:2:LYS:C	68:j:3:LEU:HD12	2.45	0.41
77:s:69:VAL:CG2	77:s:77:GLN:HB2	2.51	0.41
77:s:79:TYR:HA	77:s:82:ARG:HD3	2.03	0.41
77:s:95:LYS:HG2	77:s:96:TYR:CD1	2.56	0.41
79:u:48:LYS:HE3	80:v:35:ASP:OD1	2.21	0.41
79:u:120:ARG:HA	79:u:120:ARG:HD2	1.83	0.41
81:w:35:GLU:CD	81:w:89:ARG:HH21	2.29	0.41
84:z:55:GLU:HG3	84:z:57:LEU:HD21	2.02	0.41
4:3:47:PHE:CD2	74:p:55:ARG:HD2	2.55	0.41
10:A:62:THR:HG22	10:A:65:ASN:H	1.85	0.41
11:AA:184:U:H2'	11:AA:185:C:C6	2.56	0.41
11:AA:1020:G:C2	11:AA:1021:G:C5	3.09	0.41
11:AA:1443:G:H2'	11:AA:1444:G:C8	2.56	0.41
11:AA:2290:C:H2'	11:AA:2291:A:H8	1.86	0.41
11:AA:2356:A:OP1	13:B:138:LYS:NZ	2.51	0.41
11:AA:2424:A:H2'	11:AA:2425:G:O4'	2.21	0.41
11:AA:2610:G:OP2	88:AA:3606:SPD:H52	2.21	0.41
11:AA:3386:G:H2'	11:AA:3387:U:C6	2.56	0.41
16:C:21:SER:HB3	16:C:26:LEU:HD23	2.02	0.41
17:CC:40:A:H2'	17:CC:41:A:H8	1.85	0.41
20:DD:158:VAL:HG11	20:DD:173:LEU:HD21	2.03	0.41
23:EE:112:ILE:HG13	60:b:79:VAL:HG22	2.02	0.41
24:Ee:65:GLN:O	24:Ee:68:GLN:HB2	2.20	0.41
27:G:21:SER:O	27:G:24:GLU:HG3	2.21	0.41
36:KK:146:LYS:HG3	36:KK:173:MET:HE3	2.03	0.41
51:S:58:ARG:HA	51:S:58:ARG:HD2	1.93	0.41
56:X:24:PRO:HB2	56:X:27:ILE:HD12	2.03	0.41
61:c:160:C:H2'	61:c:161:U:O4'	2.20	0.41
61:c:646:C:H2'	61:c:647:G:O4'	2.21	0.41
61:c:1316:G:O2'	78:t:10:LYS:NZ	2.54	0.41
61:c:1335:U:HO2'	61:c:1336:A:P	2.44	0.41
61:c:1553:G:N2	61:c:1556:A:OP2	2.54	0.41
63:e:125:VAL:O	63:e:136:ARG:HA	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
64:f:144:TRP:CE2	64:f:173:PRO:HG3	2.56	0.41
65:g:101:GLN:CD	65:g:188:ILE:HD11	2.45	0.41
66:h:35:PRO:HG2	66:h:36:HIS:CD2	2.55	0.41
68:j:118:GLU:OE1	68:j:119:GLN:N	2.54	0.41
3:2:8:ASN:C	3:2:10:ARG:H	2.30	0.40
8:7:199:ILE:HD13	8:7:199:ILE:HA	1.92	0.40
11:AA:59:G:H4'	11:AA:60:A:H4'	2.02	0.40
11:AA:389:A:H2'	11:AA:390:G:O4'	2.21	0.40
11:AA:429:U:H2'	11:AA:430:U:H6	1.87	0.40
11:AA:677:A:H4'	11:AA:678:G:H5'	2.02	0.40
11:AA:920:A:N3	54:V:11:ARG:NH2	2.69	0.40
11:AA:1109:U:H2'	11:AA:1110:U:O4'	2.21	0.40
11:AA:1333:C:C2	11:AA:1334:U:C5	3.09	0.40
11:AA:2095:G:H2'	11:AA:2096:A:H8	1.86	0.40
11:AA:2854:U:OP1	40:MM:61:SER:OG	2.32	0.40
11:AA:3015:G:H2'	11:AA:3016:A:C8	2.55	0.40
11:AA:3187:A:OP1	38:LL:23:ARG:HG3	2.21	0.40
12:Aa:29:ASP:O	12:Aa:159:LYS:NZ	2.47	0.40
12:Aa:153:PRO:HD2	12:Aa:200:VAL:HG22	2.02	0.40
14:BB:7:G:OP2	30:HH:28:THR:OG1	2.30	0.40
18:Cc:32:G:N1	18:Cc:41:C:N3	2.69	0.40
24:Ee:32:ILE:HD13	24:Ee:42:VAL:HG21	2.03	0.40
31:I:58:HIS:CD2	31:I:58:HIS:C	2.99	0.40
39:M:139:ARG:HH22	44:OO:163:GLY:HA2	1.85	0.40
40:MM:189:GLU:H	40:MM:189:GLU:HG2	1.69	0.40
59:a:10:THR:HA	59:a:20:HIS:CD2	2.56	0.40
61:c:1280:C:O2'	81:w:70:THR:HB	2.21	0.40
61:c:1359:C:H2'	61:c:1360:A:O4'	2.21	0.40
61:c:1473:U:O2	61:c:1473:U:H2'	2.21	0.40
61:c:1525:A:C4	61:c:1526:A:C8	3.09	0.40
61:c:1585:U:O2	61:c:1585:U:H2'	2.20	0.40
62:d:189:VAL:HA	82:x:44:ARG:HH22	1.85	0.40
63:e:67:GLU:OE2	63:e:83:LYS:HE3	2.21	0.40
64:f:120:GLU:HG2	64:f:123:GLY:H	1.86	0.40
65:g:127:MET:HA	65:g:127:MET:HE3	2.02	0.40
69:k:58:LEU:HD12	69:k:90:VAL:HG22	2.04	0.40
76:r:60:LEU:HD12	76:r:76:VAL:HG11	2.03	0.40
77:s:44:LEU:HD22	77:s:47:LYS:HG3	2.03	0.40
80:v:92:LYS:HE2	80:v:92:LYS:HB2	1.81	0.40
3:2:47:ALA:HB2	75:q:99:GLN:CG	2.50	0.40
5:4:12:VAL:HA	5:4:30:VAL:HA	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:7:93:ASP:OD2	8:7:96:THR:HG22	2.22	0.40
11:AA:377:A:H1'	11:AA:392:G:N2	2.36	0.40
11:AA:523:A:O2'	22:E:69:PRO:HD2	2.21	0.40
11:AA:785:G:H5''	16:C:92:ARG:HH22	1.85	0.40
11:AA:871:U:H2'	11:AA:872:U:C6	2.56	0.40
11:AA:1688:U:C2	11:AA:1689:U:C5	3.10	0.40
11:AA:2225:U:H2'	11:AA:2226:U:C6	2.55	0.40
11:AA:2259:A:H2'	11:AA:2260:U:C6	2.56	0.40
11:AA:2641:U:OP2	25:F:10:ARG:NH2	2.46	0.40
11:AA:2934:A:H2'	11:AA:2935:U:O4'	2.21	0.40
11:AA:2985:C:H2'	11:AA:2986:U:C6	2.56	0.40
11:AA:3329:U:H5''	26:FF:308:MET:HE3	2.02	0.40
11:AA:3366:G:H2'	11:AA:3367:C:C6	2.56	0.40
12:Aa:373:ASP:OD1	12:Aa:373:ASP:N	2.38	0.40
12:Aa:391:LYS:HD2	12:Aa:510:ARG:CZ	2.51	0.40
12:Aa:438:MET:CG	12:Aa:439:GLY:N	2.85	0.40
14:BB:27:A:H2'	14:BB:28:C:C6	2.56	0.40
18:Cc:76:C:H2'	18:Cc:77:A:H4'	2.02	0.40
22:E:13:ARG:HD3	22:E:51:VAL:HG23	2.04	0.40
24:Ee:56:ILE:HG12	24:Ee:82:ILE:HG21	2.03	0.40
28:GG:161:LYS:HB2	28:GG:164:GLU:HG2	2.03	0.40
29:H:104:ASN:HD21	29:H:108:GLU:HB2	1.85	0.40
30:HH:164:LYS:HB2	30:HH:180:PHE:CE1	2.56	0.40
30:HH:211:LEU:HD11	30:HH:218:ARG:HH12	1.86	0.40
35:K:115:ARG:O	35:K:119:ILE:HG13	2.21	0.40
37:L:99:GLU:CD	37:L:99:GLU:N	2.78	0.40
38:LL:141:LYS:HA	38:LL:141:LYS:HD3	1.95	0.40
43:O:74:ASN:OD1	43:O:74:ASN:N	2.53	0.40
58:Z:8:LYS:O	58:Z:12:ARG:HG3	2.20	0.40
61:c:863:A:O5'	83:y:57:ARG:HD2	2.21	0.40
61:c:898:A:C8	61:c:912:U:C4	3.10	0.40
61:c:934:C:C4	61:c:1077:C:H4'	2.56	0.40
61:c:962:C:H2'	61:c:963:A:O4'	2.21	0.40
61:c:1345:A:H1'	81:w:56:VAL:HG13	2.03	0.40
61:c:1475:A:H4'	61:c:1540:G:H4'	2.02	0.40
62:d:69:ASN:HB2	62:d:72:ASP:OD2	2.22	0.40
66:h:105:VAL:HG21	66:h:245:LYS:H	1.87	0.40
67:i:40:ILE:O	67:i:42:LEU:HG	2.22	0.40
75:q:47:LYS:HA	75:q:47:LYS:HD2	1.92	0.40
75:q:86:THR:HG21	75:q:90:ARG:HD3	2.03	0.40
77:s:56:GLY:HA3	77:s:59:LYS:HB2	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
84:z:88:PRO:O	84:z:89:ASN:CG	2.65	0.40
1:0:7:ILE:HG13	1:0:27:VAL:HG13	2.04	0.40
2:1:44:GLN:HA	2:1:47:TYR:HB2	2.03	0.40
11:AA:32:U:H2'	11:AA:33:G:O4'	2.20	0.40
11:AA:500:C:H5''	32:II:82:ARG:HG3	2.04	0.40
11:AA:701:G:H2'	11:AA:702:C:C6	2.57	0.40
11:AA:1091:A:H2'	11:AA:1092:C:C6	2.57	0.40
11:AA:1862:U:H2'	11:AA:1863:G:O4'	2.21	0.40
11:AA:2353:G:H5''	13:B:86:LYS:HB2	2.03	0.40
11:AA:3096:C:H5''	26:FF:325:LYS:HE2	2.03	0.40
12:Aa:431:ILE:HG12	12:Aa:456:LEU:HD23	2.02	0.40
12:Aa:468:THR:HG21	12:Aa:477:ASN:HA	2.03	0.40
12:Aa:681:MET:HE2	12:Aa:717:PHE:CD1	2.57	0.40
14:BB:100:C:H2'	14:BB:101:G:O4'	2.21	0.40
15:Bb:62:A:OP2	15:Bb:62:A:H8	2.04	0.40
17:CC:104:A:C8	17:CC:105:A:C8	3.10	0.40
19:D:7:GLN:HG2	19:D:32:ILE:O	2.21	0.40
28:GG:107:ARG:HG2	28:GG:108:LYS:N	2.37	0.40
30:HH:197:SER:OG	30:HH:202:GLY:HA3	2.21	0.40
33:J:70:GLU:CD	33:J:70:GLU:H	2.28	0.40
34:JJ:96:PRO:HB2	34:JJ:99:PRO:HD2	2.03	0.40
37:L:84:ARG:HH22	51:S:100:ILE:HG21	1.86	0.40
61:c:283:U:H5''	68:j:188:ARG:HD2	2.04	0.40
61:c:374:U:O2'	61:c:603:U:OP1	2.38	0.40
61:c:1626:U:H2'	61:c:1627:U:C6	2.57	0.40
62:d:110:TYR:O	62:d:110:TYR:CD1	2.75	0.40
62:d:124:THR:HA	62:d:146:LEU:HG	2.03	0.40
77:s:30:LYS:HE2	77:s:30:LYS:HB2	1.88	0.40
80:v:33:TYR:O	80:v:37:VAL:HG22	2.20	0.40
80:v:86:ARG:O	80:v:89:ARG:NH2	2.51	0.40
81:w:61:LYS:HG3	81:w:86:ILE:HG23	2.03	0.40
81:w:101:LYS:HA	81:w:104:THR:HG22	2.03	0.40
84:z:75:GLN:HG3	84:z:82:LYS:HE2	2.03	0.40
1:0:103:ALA:O	1:0:108:ARG:HD2	2.21	0.40
8:7:82:SER:OG	8:7:92:TRP:NE1	2.41	0.40
8:7:123:ILE:HD13	8:7:169:ILE:HD11	2.02	0.40
11:AA:249:U:H4'	11:AA:250:U:O4'	2.21	0.40
11:AA:612:U:H2'	11:AA:613:G:C8	2.56	0.40
11:AA:1215:U:H2'	11:AA:1216:C:C6	2.56	0.40
11:AA:1829:G:H5''	11:AA:1830:G:H5'	2.02	0.40
11:AA:1857:C:O2	51:S:4:ARG:HB3	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1909:A:H2'	11:AA:1910:A:C8	2.56	0.40
11:AA:2361:A:H2'	11:AA:2362:C:C6	2.56	0.40
11:AA:2610:G:P	88:AA:3606:SPD:H52	2.61	0.40
11:AA:3393:U:H2'	11:AA:3394:U:H6	1.86	0.40
12:Aa:284:LEU:HD23	12:Aa:284:LEU:HA	1.88	0.40
12:Aa:307:LEU:HD23	12:Aa:307:LEU:HA	1.83	0.40
12:Aa:515:ASP:OD1	12:Aa:515:ASP:N	2.54	0.40
12:Aa:723:LYS:HD3	12:Aa:804:LEU:O	2.20	0.40
24:Ee:125:LEU:HD23	24:Ee:125:LEU:HA	1.79	0.40
25:F:126:VAL:HG23	25:F:127:GLN:N	2.36	0.40
34:JJ:86:VAL:O	34:JJ:114:GLY:HA2	2.22	0.40
44:OO:47:ALA:O	44:OO:48:PRO:C	2.65	0.40
49:QQ:36:ILE:HG12	49:QQ:64:VAL:HG23	2.03	0.40
59:a:63:LYS:HD3	59:a:63:LYS:HA	1.82	0.40
61:c:107:C:H2'	61:c:108:A:C8	2.57	0.40
61:c:413:U:H2'	61:c:414:OMC:C6	2.56	0.40
61:c:483:A:H2'	61:c:484:C:H6	1.86	0.40
61:c:594:A:OP2	71:m:37:LYS:NZ	2.48	0.40
61:c:650:U:H5'	71:m:65:LYS:NZ	2.37	0.40
61:c:1333:C:H4'	65:g:162:GLN:HE22	1.86	0.40
61:c:1506:G:O3'	61:c:1551:U:H4'	2.22	0.40
61:c:1602:C:H2'	61:c:1603:U:O4'	2.22	0.40
61:c:1625:C:H2'	61:c:1626:U:C6	2.56	0.40
63:e:105:PHE:CD1	63:e:213:ARG:HA	2.57	0.40
66:h:180:LEU:HD23	66:h:234:PRO:HB3	2.04	0.40
67:i:115:LYS:HD3	67:i:115:LYS:HA	1.86	0.40
68:j:67:VAL:HG12	68:j:69:LEU:HB2	2.04	0.40
71:m:128:LEU:HB3	71:m:134:ILE:HD11	2.04	0.40
79:u:57:ARG:HD3	79:u:57:ARG:H	1.85	0.40
79:u:102:ALA:HB3	79:u:104:ASN:CG	2.46	0.40
1:0:96:LEU:O	1:0:97:ALA:C	2.65	0.40
6:5:23:VAL:HG22	72:n:61:TRP:CE2	2.57	0.40
9:8:97:LYS:HA	9:8:97:LYS:HD2	1.81	0.40
11:AA:649:A2M:OP2	11:AA:2868:U:O2'	2.32	0.40
11:AA:754:G:H2'	11:AA:755:A:H8	1.86	0.40
11:AA:1065:A:C8	41:N:28:LYS:HD2	2.56	0.40
11:AA:2101:C:O2'	11:AA:2102:U:OP1	2.31	0.40
11:AA:2256:A2M:H61	61:c:1756:A:H5''	1.85	0.40
11:AA:2267:C:H2'	11:AA:2268:U:O4'	2.21	0.40
11:AA:2295:A:C6	29:H:37:ILE:HB	2.57	0.40
11:AA:2709:C:H2'	11:AA:2710:C:C6	2.57	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2733:A:H2'	11:AA:2734:A:O4'	2.21	0.40
12:Aa:705:ILE:HA	12:Aa:708:THR:HG22	2.03	0.40
17:CC:71:A:H2'	35:K:51:ARG:NH2	2.36	0.40
19:D:173:ARG:NE	61:c:853:G:OP2	2.55	0.40
22:E:1:MET:HE2	22:E:1:MET:HB3	1.68	0.40
24:Ee:14:TYR:CE2	24:Ee:74:VAL:HG21	2.56	0.40
26:FF:292:ALA:HB1	26:FF:295:ALA:HB3	2.04	0.40
37:L:100:THR:HA	37:L:106:GLN:HB3	2.03	0.40
38:LL:23:ARG:NE	38:LL:39:LYS:HA	2.36	0.40
44:OO:193:ALA:O	44:OO:194:GLU:HG2	2.21	0.40
45:P:58:ALA:HA	45:P:61:LYS:HE3	2.04	0.40
45:P:82:GLU:HB2	45:P:86:LYS:NZ	2.37	0.40
53:U:47:ILE:HG13	53:U:48:ALA:N	2.37	0.40
56:X:6:SER:OG	56:X:9:ILE:HG12	2.22	0.40
61:c:393:C:H2'	61:c:394:C:C6	2.56	0.40
61:c:874:C:OP1	63:e:159:SER:OG	2.24	0.40
61:c:971:A:H2'	61:c:972:G:O4'	2.22	0.40
61:c:1173:C:C2	61:c:1174:C:C5	3.10	0.40
61:c:1350:U:H5''	77:s:68:ARG:HH12	1.87	0.40
66:h:139:VAL:HG13	66:h:150:PRO:HG3	2.03	0.40
78:t:24:LEU:HB2	78:t:31:ASN:HD22	1.86	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%)	128 (97%)	4 (3%)	0	100	100
2	1	68/108 (63%)	61 (90%)	7 (10%)	0	100	100
3	2	95/119 (80%)	88 (93%)	7 (7%)	0	100	100
4	3	79/82 (96%)	75 (95%)	4 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
5	4	61/67 (91%)	61 (100%)	0	0	100	100
6	5	47/56 (84%)	45 (96%)	2 (4%)	0	100	100
7	6	51/63 (81%)	49 (96%)	2 (4%)	0	100	100
8	7	316/319 (99%)	303 (96%)	13 (4%)	0	100	100
9	8	32/152 (21%)	22 (69%)	10 (31%)	0	100	100
10	A	195/199 (98%)	192 (98%)	3 (2%)	0	100	100
12	Aa	811/842 (96%)	789 (97%)	22 (3%)	0	100	100
13	B	152/184 (83%)	149 (98%)	3 (2%)	0	100	100
16	C	183/186 (98%)	181 (99%)	2 (1%)	0	100	100
19	D	174/189 (92%)	170 (98%)	4 (2%)	0	100	100
20	DD	195/312 (62%)	190 (97%)	5 (3%)	0	100	100
22	E	170/172 (99%)	166 (98%)	4 (2%)	0	100	100
23	EE	250/254 (98%)	247 (99%)	3 (1%)	0	100	100
24	Ee	156/165 (94%)	153 (98%)	3 (2%)	0	100	100
25	F	157/160 (98%)	153 (98%)	4 (2%)	0	100	100
26	FF	384/387 (99%)	375 (98%)	9 (2%)	0	100	100
27	G	95/121 (78%)	95 (100%)	0	0	100	100
28	GG	359/362 (99%)	345 (96%)	14 (4%)	0	100	100
29	H	127/137 (93%)	126 (99%)	1 (1%)	0	100	100
30	HH	294/297 (99%)	288 (98%)	6 (2%)	0	100	100
31	I	61/155 (39%)	61 (100%)	0	0	100	100
32	II	151/176 (86%)	148 (98%)	3 (2%)	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%)	123 (99%)	1 (1%)	0	100	100
36	KK	231/256 (90%)	227 (98%)	4 (2%)	0	100	100
37	L	133/136 (98%)	127 (96%)	6 (4%)	0	100	100
38	LL	189/191 (99%)	185 (98%)	4 (2%)	0	100	100
39	M	146/149 (98%)	141 (97%)	4 (3%)	1 (1%)	18	32
40	MM	213/221 (96%)	206 (97%)	7 (3%)	0	100	100
41	N	56/59 (95%)	56 (100%)	0	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
42	NN	167/174 (96%)	161 (96%)	6 (4%)	0	100	100
43	O	95/105 (90%)	95 (100%)	0	0	100	100
44	OO	191/199 (96%)	178 (93%)	12 (6%)	1 (0%)	24	40
45	P	107/113 (95%)	102 (95%)	5 (5%)	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%)	195 (97%)	6 (3%)	0	100	100
50	R	104/107 (97%)	103 (99%)	1 (1%)	0	100	100
51	S	107/121 (88%)	107 (100%)	0	0	100	100
52	T	117/120 (98%)	113 (97%)	4 (3%)	0	100	100
53	U	97/100 (97%)	89 (92%)	8 (8%)	0	100	100
54	V	82/88 (93%)	80 (98%)	2 (2%)	0	100	100
55	W	75/78 (96%)	72 (96%)	3 (4%)	0	100	100
56	X	48/51 (94%)	45 (94%)	3 (6%)	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%)	96 (96%)	4 (4%)	0	100	100
60	b	89/92 (97%)	88 (99%)	1 (1%)	0	100	100
62	d	204/252 (81%)	193 (95%)	11 (5%)	0	100	100
63	e	210/255 (82%)	198 (94%)	12 (6%)	0	100	100
64	f	215/254 (85%)	206 (96%)	9 (4%)	0	100	100
65	g	177/240 (74%)	173 (98%)	2 (1%)	2 (1%)	11	20
66	h	256/261 (98%)	248 (97%)	8 (3%)	0	100	100
67	i	195/225 (87%)	191 (98%)	4 (2%)	0	100	100
68	j	217/236 (92%)	212 (98%)	5 (2%)	0	100	100
69	k	182/190 (96%)	174 (96%)	7 (4%)	1 (0%)	24	40
70	l	180/200 (90%)	165 (92%)	15 (8%)	0	100	100
71	m	183/197 (93%)	177 (97%)	6 (3%)	0	100	100
72	n	29/105 (28%)	26 (90%)	3 (10%)	0	100	100
73	o	140/156 (90%)	132 (94%)	8 (6%)	0	100	100
74	p	148/151 (98%)	146 (99%)	2 (1%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
75	q	125/137 (91%)	116 (93%)	9 (7%)	0	100	100
76	r	85/142 (60%)	83 (98%)	2 (2%)	0	100	100
77	s	135/143 (94%)	126 (93%)	8 (6%)	1 (1%)	18	32
78	t	119/136 (88%)	114 (96%)	5 (4%)	0	100	100
79	u	143/146 (98%)	133 (93%)	10 (7%)	0	100	100
80	v	141/144 (98%)	139 (99%)	2 (1%)	0	100	100
81	w	98/121 (81%)	98 (100%)	0	0	100	100
82	x	85/87 (98%)	79 (93%)	6 (7%)	0	100	100
83	y	127/130 (98%)	125 (98%)	2 (2%)	0	100	100
84	z	142/145 (98%)	129 (91%)	13 (9%)	0	100	100
All	All	11673/13056 (89%)	11294 (97%)	373 (3%)	6 (0%)	49	66

All (6) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
44	OO	63	VAL
65	g	147	ALA
77	s	142	TYR
65	g	145	ALA
39	M	78	LEU
69	k	63	PRO

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	0	112/113 (99%)	111 (99%)	1 (1%)	70	86
2	1	61/89 (68%)	61 (100%)	0	100	100
3	2	83/101 (82%)	82 (99%)	1 (1%)	63	81
4	3	70/71 (99%)	68 (97%)	2 (3%)	37	62
5	4	56/60 (93%)	52 (93%)	4 (7%)	13	26

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
6	5	43/49 (88%)	42 (98%)	1 (2%)	44	69
7	6	46/54 (85%)	46 (100%)	0	100	100
8	7	259/262 (99%)	247 (95%)	12 (5%)	24	45
9	8	30/135 (22%)	29 (97%)	1 (3%)	33	58
10	A	160/162 (99%)	154 (96%)	6 (4%)	29	53
12	Aa	694/714 (97%)	665 (96%)	29 (4%)	26	49
13	B	125/146 (86%)	122 (98%)	3 (2%)	43	67
16	C	150/151 (99%)	146 (97%)	4 (3%)	39	64
19	D	143/154 (93%)	143 (100%)	0	100	100
20	DD	167/254 (66%)	159 (95%)	8 (5%)	23	43
22	E	156/156 (100%)	149 (96%)	7 (4%)	24	46
23	EE	193/196 (98%)	192 (100%)	1 (0%)	81	91
24	Ee	129/136 (95%)	127 (98%)	2 (2%)	55	77
25	F	136/137 (99%)	132 (97%)	4 (3%)	37	62
26	FF	319/323 (99%)	313 (98%)	6 (2%)	50	73
27	G	84/107 (78%)	83 (99%)	1 (1%)	63	81
28	GG	288/289 (100%)	280 (97%)	8 (3%)	38	63
29	H	101/105 (96%)	98 (97%)	3 (3%)	36	61
30	HH	244/245 (100%)	238 (98%)	6 (2%)	42	66
31	I	55/129 (43%)	53 (96%)	2 (4%)	31	55
32	II	133/153 (87%)	132 (99%)	1 (1%)	73	87
33	J	104/118 (88%)	103 (99%)	1 (1%)	68	84
34	JJ	186/205 (91%)	184 (99%)	2 (1%)	65	83
35	K	109/110 (99%)	108 (99%)	1 (1%)	70	86
36	KK	187/208 (90%)	184 (98%)	3 (2%)	55	77
37	L	115/116 (99%)	113 (98%)	2 (2%)	53	75
38	LL	171/171 (100%)	169 (99%)	2 (1%)	63	81
39	M	118/119 (99%)	116 (98%)	2 (2%)	53	75
40	MM	184/187 (98%)	181 (98%)	3 (2%)	55	77
41	N	46/47 (98%)	46 (100%)	0	100	100
42	NN	147/150 (98%)	139 (95%)	8 (5%)	20	38

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
43	O	81/88 (92%)	81 (100%)	0	100	100
44	OO	154/159 (97%)	149 (97%)	5 (3%)	34	58
45	P	94/97 (97%)	92 (98%)	2 (2%)	47	71
46	PP	107/109 (98%)	103 (96%)	4 (4%)	30	54
47	Pp	2/2 (100%)	1 (50%)	1 (50%)	0	0
48	Q	109/111 (98%)	107 (98%)	2 (2%)	51	74
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%)	91 (97%)	3 (3%)	34	58
52	T	104/105 (99%)	103 (99%)	1 (1%)	68	84
53	U	81/82 (99%)	78 (96%)	3 (4%)	30	54
54	V	69/71 (97%)	68 (99%)	1 (1%)	59	79
55	W	68/69 (99%)	64 (94%)	4 (6%)	18	34
56	X	45/46 (98%)	45 (100%)	0	100	100
57	Y	47/116 (40%)	46 (98%)	1 (2%)	47	71
58	Z	23/23 (100%)	22 (96%)	1 (4%)	26	48
59	a	87/91 (96%)	85 (98%)	2 (2%)	44	69
60	b	71/72 (99%)	69 (97%)	2 (3%)	38	63
62	d	165/210 (79%)	158 (96%)	7 (4%)	26	49
63	e	189/224 (84%)	185 (98%)	4 (2%)	47	71
64	f	176/205 (86%)	168 (96%)	8 (4%)	24	46
65	g	145/195 (74%)	140 (97%)	5 (3%)	32	57
66	h	220/222 (99%)	217 (99%)	3 (1%)	59	79
67	i	172/191 (90%)	163 (95%)	9 (5%)	21	39
68	j	188/201 (94%)	179 (95%)	9 (5%)	23	43
69	k	165/170 (97%)	159 (96%)	6 (4%)	31	55
70	l	146/161 (91%)	143 (98%)	3 (2%)	47	71
71	m	158/166 (95%)	155 (98%)	3 (2%)	50	73
72	n	32/98 (33%)	30 (94%)	2 (6%)	16	31
73	o	127/137 (93%)	125 (98%)	2 (2%)	55	77
74	p	127/128 (99%)	125 (98%)	2 (2%)	55	77

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
75	q	81/105 (77%)	77 (95%)	4 (5%)	22	42
76	r	77/118 (65%)	75 (97%)	2 (3%)	40	65
77	s	114/119 (96%)	107 (94%)	7 (6%)	17	33
78	t	105/124 (85%)	102 (97%)	3 (3%)	37	62
79	u	128/129 (99%)	122 (95%)	6 (5%)	23	44
80	v	115/116 (99%)	113 (98%)	2 (2%)	53	75
81	w	94/114 (82%)	87 (93%)	7 (7%)	13	24
82	x	74/74 (100%)	71 (96%)	3 (4%)	27	50
83	y	110/111 (99%)	107 (97%)	3 (3%)	39	64
84	z	119/120 (99%)	115 (97%)	4 (3%)	32	57
All	All	9932/10971 (90%)	9659 (97%)	273 (3%)	40	64

All (273) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	0	40	LEU
3	2	84	VAL
4	3	2	VAL
4	3	33	LEU
5	4	7	VAL
5	4	9	LEU
5	4	55	VAL
5	4	56	LEU
6	5	9	SER
8	7	29	GLN
8	7	31	ASN
8	7	45	TRP
8	7	51	ASP
8	7	133	VAL
8	7	141	LEU
8	7	159	ASN
8	7	166	SER
8	7	193	ILE
8	7	240	VAL
8	7	268	GLN
8	7	274	LEU
9	8	139	LEU
10	A	3	VAL

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Mol	Chain	Res	Type
10	A	14	HIS
10	A	67	THR
10	A	84	LEU
10	A	89	SER
10	A	184	THR
12	Aa	34	THR
12	Aa	100	ILE
12	Aa	104	ASP
12	Aa	112	SER
12	Aa	121	VAL
12	Aa	173	ASP
12	Aa	258	THR
12	Aa	269	LEU
12	Aa	299	LEU
12	Aa	346	VAL
12	Aa	434	VAL
12	Aa	442	VAL
12	Aa	452	ASN
12	Aa	480	VAL
12	Aa	483	PHE
12	Aa	488	VAL
12	Aa	501	LEU
12	Aa	546	GLU
12	Aa	650	THR
12	Aa	661	ASP
12	Aa	719	LEU
12	Aa	728	VAL
12	Aa	748	ASN
12	Aa	777	SER
12	Aa	781	THR
12	Aa	795	GLN
12	Aa	802	SER
12	Aa	812	THR
12	Aa	826	HIS
13	B	54	HIS
13	B	120	ASN
13	B	149	VAL
16	C	73	GLN
16	C	74	GLU
16	C	120	GLU
16	C	186	VAL
20	DD	34	SER

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Mol	Chain	Res	Type
20	DD	41	VAL
20	DD	58	MET
20	DD	61	ARG
20	DD	76	LEU
20	DD	121	VAL
20	DD	153	VAL
20	DD	155	ASP
22	E	45	LEU
22	E	70	THR
22	E	96	ASP
22	E	104	GLU
22	E	106	LEU
22	E	132	THR
22	E	160	THR
23	EE	219	ILE
24	Ee	61	GLN
24	Ee	101	SER
25	F	18	ASP
25	F	128	LEU
25	F	149	GLN
25	F	160	ILE
26	FF	10	ARG
26	FF	104	THR
26	FF	165	GLN
26	FF	166	ILE
26	FF	206	ASP
26	FF	319	ASN
27	G	16	THR
28	GG	6	VAL
28	GG	12	THR
28	GG	145	ILE
28	GG	181	VAL
28	GG	264	SER
28	GG	327	LEU
28	GG	345	GLU
28	GG	356	THR
29	H	9	THR
29	H	131	SER
29	H	133	SER
30	HH	173	VAL
30	HH	214	ASP
30	HH	221	GLU

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Mol	Chain	Res	Type
30	HH	232	ASP
30	HH	265	TYR
30	HH	280	GLU
31	I	19	THR
31	I	28	ILE
32	II	91	VAL
33	J	129	ASP
34	JJ	84	VAL
34	JJ	87	VAL
35	K	6	LEU
36	KK	40	VAL
36	KK	194	THR
36	KK	248	LYS
37	L	94	SER
37	L	95	VAL
38	LL	107	ASP
38	LL	133	THR
39	M	24	LYS
39	M	121	VAL
40	MM	44	ASP
40	MM	111	LEU
40	MM	180	GLU
42	NN	19	LEU
42	NN	46	VAL
42	NN	47	GLN
42	NN	67	VAL
42	NN	107	ASP
42	NN	139	THR
42	NN	154	THR
42	NN	171	VAL
44	OO	58	VAL
44	OO	63	VAL
44	OO	69	VAL
44	OO	124	ILE
44	OO	138	VAL
45	P	6	ASP
45	P	78	LYS
46	PP	10	SER
46	PP	59	ASN
46	PP	64	VAL
46	PP	69	THR
47	Pp	1	MET

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Mol	Chain	Res	Type
48	Q	51	SER
48	Q	91	THR
51	S	35	VAL
51	S	65	VAL
51	S	102	LYS
52	T	103	LYS
53	U	11	LEU
53	U	17	VAL
53	U	42	SER
54	V	46	SER
55	W	19	ASP
55	W	41	THR
55	W	68	SER
55	W	69	LEU
57	Y	81	SER
58	Z	20	VAL
59	a	2	VAL
59	a	34	SER
60	b	20	SER
60	b	26	VAL
62	d	29	VAL
62	d	33	GLN
62	d	114	SER
62	d	121	VAL
62	d	124	THR
62	d	153	SER
62	d	196	SER
63	e	52	THR
63	e	108	ASP
63	e	176	VAL
63	e	192	VAL
64	f	51	THR
64	f	70	ASP
64	f	83	ILE
64	f	90	THR
64	f	95	ARG
64	f	166	THR
64	f	193	VAL
64	f	244	SER
65	g	55	THR
65	g	66	ILE
65	g	148	LYS

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Mol	Chain	Res	Type
65	g	159	HIS
65	g	165	ASN
66	h	173	ILE
66	h	213	SER
66	h	227	VAL
67	i	27	THR
67	i	57	SER
67	i	104	ASN
67	i	132	VAL
67	i	146	THR
67	i	177	ILE
67	i	207	THR
67	i	211	ILE
67	i	216	GLU
68	j	9	VAL
68	j	71	THR
68	j	78	THR
68	j	97	VAL
68	j	108	VAL
68	j	145	PHE
68	j	153	VAL
68	j	156	PHE
68	j	193	LEU
69	k	20	VAL
69	k	56	LYS
69	k	62	VAL
69	k	91	ILE
69	k	95	GLU
69	k	182	VAL
70	l	60	ILE
70	l	97	THR
70	l	153	GLU
71	m	50	SER
71	m	101	VAL
71	m	152	SER
72	n	11	ILE
72	n	67	THR
73	o	52	SER
73	o	112	SER
74	p	60	VAL
74	p	145	THR
75	q	26	THR

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Mol	Chain	Res	Type
75	q	38	THR
75	q	48	VAL
75	q	110	LEU
76	r	20	VAL
76	r	93	VAL
77	s	7	VAL
77	s	19	VAL
77	s	115	THR
77	s	139	GLN
77	s	140	LYS
77	s	141	SER
77	s	143	ARG
78	t	6	THR
78	t	101	ASN
78	t	109	LEU
79	u	28	ILE
79	u	29	VAL
79	u	34	THR
79	u	38	VAL
79	u	55	HIS
79	u	94	ASP
80	v	43	ASN
80	v	127	ASN
81	w	51	VAL
81	w	62	VAL
81	w	66	SER
81	w	86	ILE
81	w	87	HIS
81	w	88	LYS
81	w	90	TYR
82	x	4	ASP
82	x	36	VAL
82	x	56	SER
83	y	30	SER
83	y	43	LYS
83	y	76	SER
84	z	41	SER
84	z	107	PHE
84	z	131	SER
84	z	135	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (103) such sidechains are listed below:

Mol	Chain	Res	Type
1	0	34	ASN
3	2	25	ASN
3	2	43	ASN
5	4	43	ASN
6	5	20	GLN
7	6	17	GLN
8	7	185	GLN
8	7	200	ASN
8	7	288	HIS
12	Aa	41	GLN
12	Aa	96	ASN
12	Aa	145	GLN
12	Aa	365	ASN
12	Aa	414	GLN
12	Aa	432	GLN
12	Aa	543	GLN
12	Aa	547	HIS
12	Aa	549	HIS
12	Aa	687	ASN
13	B	45	GLN
13	B	54	HIS
13	B	121	GLN
13	B	133	HIS
13	B	137	ASN
19	D	166	ASN
22	E	157	GLN
24	Ee	61	GLN
24	Ee	68	GLN
26	FF	173	GLN
26	FF	224	HIS
26	FF	293	ASN
27	G	25	ASN
27	G	40	HIS
28	GG	5	GLN
28	GG	260	GLN
30	HH	32	GLN
30	HH	81	HIS
30	HH	274	GLN
30	HH	297	GLN
35	K	81	GLN
35	K	98	ASN
36	KK	61	GLN
36	KK	77	GLN

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Mol	Chain	Res	Type
36	KK	95	ASN
36	KK	145	ASN
37	L	122	HIS
38	LL	58	HIS
38	LL	125	ASN
38	LL	162	GLN
39	M	62	HIS
40	MM	92	HIS
40	MM	113	GLN
41	N	6	ASN
41	N	45	HIS
42	NN	7	ASN
42	NN	47	GLN
43	O	36	GLN
44	OO	102	GLN
44	OO	114	GLN
45	P	87	ASN
46	PP	62	GLN
46	PP	119	GLN
48	Q	26	HIS
48	Q	49	ASN
49	QQ	32	GLN
53	U	92	ASN
54	V	12	HIS
55	W	76	ASN
56	X	43	ASN
57	Y	117	HIS
60	b	25	GLN
64	f	59	HIS
64	f	189	GLN
64	f	233	GLN
65	g	67	ASN
65	g	101	GLN
65	g	162	GLN
67	i	116	HIS
68	j	4	ASN
69	k	150	GLN
70	l	87	ASN
70	l	88	ASN
72	n	13	GLN
73	o	37	ASN
73	o	118	GLN

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Mol	Chain	Res	Type
74	p	36	GLN
74	p	78	ASN
75	q	99	GLN
76	r	104	GLN
77	s	83	GLN
78	t	31	ASN
79	u	19	ASN
79	u	44	ASN
79	u	103	ASN
80	v	25	GLN
80	v	106	GLN
80	v	129	GLN
81	w	40	ASN
82	x	21	ASN
83	y	12	ASN
83	y	64	GLN
84	z	22	ASN
84	z	89	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
11	AA	3193/3396 (94%)	490 (15%)	19 (0%)
14	BB	120/121 (99%)	8 (6%)	1 (0%)
15	Bb	75/76 (98%)	32 (42%)	0
17	CC	157/158 (99%)	22 (14%)	0
18	Cc	76/77 (98%)	22 (28%)	0
21	Dd	5/39 (12%)	2 (40%)	0
61	c	1612/1800 (89%)	312 (19%)	0
All	All	5238/5667 (92%)	888 (16%)	20 (0%)

All (888) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
11	AA	6	A
11	AA	14	U
11	AA	40	A
11	AA	43	A
11	AA	49	A
11	AA	59	G
11	AA	60	A

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Mol	Chain	Res	Type
11	AA	65	A
11	AA	66	A
11	AA	74	G
11	AA	92	G
11	AA	99	A
11	AA	110	G
11	AA	111	C
11	AA	122	A
11	AA	135	C
11	AA	136	G
11	AA	147	U
11	AA	156	G
11	AA	157	A
11	AA	165	A
11	AA	170	G
11	AA	172	G
11	AA	182	U
11	AA	190	U
11	AA	200	C
11	AA	219	A
11	AA	234	G
11	AA	243	G
11	AA	247	C
11	AA	249	U
11	AA	252	U
11	AA	253	A
11	AA	269	G
11	AA	286	U
11	AA	295	A
11	AA	305	U
11	AA	329	U
11	AA	337	G
11	AA	346	C
11	AA	376	G
11	AA	390	G
11	AA	398	A
11	AA	399	A
11	AA	402	A
11	AA	403	C
11	AA	420	G
11	AA	421	G
11	AA	422	A

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Mol	Chain	Res	Type
11	AA	521	A
11	AA	523	A
11	AA	532	A
11	AA	533	A
11	AA	534	U
11	AA	543	C
11	AA	545	U
11	AA	548	G
11	AA	555	U
11	AA	557	A
11	AA	558	U
11	AA	559	A
11	AA	560	G
11	AA	578	A
11	AA	589	A
11	AA	592	A
11	AA	602	A
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	649	A2M
11	AA	660	A
11	AA	667	C
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	766	U
11	AA	767	U
11	AA	776	U
11	AA	780	A
11	AA	781	G
11	AA	785	G
11	AA	786	A
11	AA	799	G

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Mol	Chain	Res	Type
11	AA	817	A2M
11	AA	830	A
11	AA	861	C
11	AA	866	A
11	AA	874	U
11	AA	879	U
11	AA	880	G
11	AA	890	C
11	AA	896	A
11	AA	907	G
11	AA	908	OMG
11	AA	909	G
11	AA	914	A
11	AA	916	G
11	AA	917	A
11	AA	921	A
11	AA	923	C
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	995	U
11	AA	1015	U
11	AA	1017	C
11	AA	1018	G
11	AA	1019	G
11	AA	1020	G
11	AA	1023	C
11	AA	1026	A
11	AA	1027	A
11	AA	1028	U
11	AA	1029	G
11	AA	1031	C
11	AA	1034	U

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Mol	Chain	Res	Type
11	AA	1036	A
11	AA	1037	C
11	AA	1047	A
11	AA	1064	A
11	AA	1066	G
11	AA	1072	G
11	AA	1081	U
11	AA	1083	G
11	AA	1087	G
11	AA	1094	U
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	1153	A
11	AA	1155	C
11	AA	1159	A
11	AA	1160	C
11	AA	1180	A
11	AA	1181	U
11	AA	1182	A
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	1222	G
11	AA	1235	U
11	AA	1236	G
11	AA	1239	C
11	AA	1240	A
11	AA	1241	U
11	AA	1244	A
11	AA	1245	A
11	AA	1246	G
11	AA	1262	G
11	AA	1263	A

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Mol	Chain	Res	Type
11	AA	1265	U
11	AA	1272	C
11	AA	1302	A
11	AA	1307	G
11	AA	1308	A
11	AA	1309	U
11	AA	1330	A
11	AA	1331	U
11	AA	1345	G
11	AA	1348	U
11	AA	1349	G
11	AA	1350	A
11	AA	1351	U
11	AA	1352	A
11	AA	1355	A
11	AA	1356	U
11	AA	1357	G
11	AA	1386	A
11	AA	1392	G
11	AA	1399	A
11	AA	1400	G
11	AA	1418	A
11	AA	1434	G
11	AA	1437	OMC
11	AA	1446	A
11	AA	1450	OMG
11	AA	1468	A
11	AA	1481	A
11	AA	1483	G
11	AA	1495	U
11	AA	1496	C
11	AA	1502	C
11	AA	1508	C
11	AA	1525	G
11	AA	1536	G
11	AA	1539	A
11	AA	1556	C
11	AA	1560	G
11	AA	1561	G
11	AA	1562	C
11	AA	1563	C
11	AA	1566	A

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Mol	Chain	Res	Type
11	AA	1568	U
11	AA	1569	U
11	AA	1570	U
11	AA	1571	A
11	AA	1572	U
11	AA	1573	G
11	AA	1575	A
11	AA	1576	G
11	AA	1581	C
11	AA	1589	A
11	AA	1593	A
11	AA	1605	A
11	AA	1630	U
11	AA	1643	A
11	AA	1657	C
11	AA	1724	U
11	AA	1725	C
11	AA	1741	A
11	AA	1750	A
11	AA	1751	G
11	AA	1759	C
11	AA	1762	C
11	AA	1763	U
11	AA	1765	U
11	AA	1778	G
11	AA	1797	A
11	AA	1812	G
11	AA	1813	A
11	AA	1815	U
11	AA	1816	A
11	AA	1821	U
11	AA	1842	A
11	AA	1858	A
11	AA	1866	C
11	AA	1878	G
11	AA	1879	A
11	AA	1880	U
11	AA	1889	G
11	AA	1890	U
11	AA	1893	A
11	AA	1906	G
11	AA	1935	G

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Mol	Chain	Res	Type
11	AA	2102	U
11	AA	2111	G
11	AA	2112	U
11	AA	2114	C
11	AA	2122	G
11	AA	2131	A
11	AA	2140	U
11	AA	2144	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	2222	A
11	AA	2223	A
11	AA	2249	G
11	AA	2252	A
11	AA	2255	A
11	AA	2258	U
11	AA	2262	A
11	AA	2265	C
11	AA	2266	U
11	AA	2272	G
11	AA	2273	G
11	AA	2281	A2M
11	AA	2287	C
11	AA	2307	G
11	AA	2308	C
11	AA	2309	A
11	AA	2310	U
11	AA	2313	A
11	AA	2315	G
11	AA	2334	U
11	AA	2335	G
11	AA	2336	U
11	AA	2363	A
11	AA	2373	A
11	AA	2374	C
11	AA	2375	G
11	AA	2388	U

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Mol	Chain	Res	Type
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	2419	A
11	AA	2435	G
11	AA	2437	G
11	AA	2438	A
11	AA	2442	G
11	AA	2443	A
11	AA	2447	A
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	2464	U
11	AA	2465	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
11	AA	2487	U
11	AA	2488	A
11	AA	2489	C
11	AA	2490	C
11	AA	2491	A
11	AA	2492	C
11	AA	2494	A

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Mol	Chain	Res	Type
11	AA	2495	C
11	AA	2496	C
11	AA	2498	U
11	AA	2499	U
11	AA	2501	U
11	AA	2502	A
11	AA	2503	G
11	AA	2505	U
11	AA	2511	A
11	AA	2514	U
11	AA	2515	A
11	AA	2522	G
11	AA	2534	G
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	2555	G
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	2652	U
11	AA	2656	A
11	AA	2674	A
11	AA	2677	G
11	AA	2678	A
11	AA	2689	A
11	AA	2691	A
11	AA	2696	A
11	AA	2704	A

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Mol	Chain	Res	Type
11	AA	2714	G
11	AA	2728	G
11	AA	2729	OMU
11	AA	2740	A
11	AA	2753	G
11	AA	2755	C
11	AA	2762	A
11	AA	2772	C
11	AA	2777	G
11	AA	2778	G
11	AA	2794	G
11	AA	2795	U
11	AA	2796	G
11	AA	2800	G
11	AA	2801	A
11	AA	2802	A
11	AA	2805	G
11	AA	2808	A
11	AA	2810	C
11	AA	2814	G
11	AA	2816	G
11	AA	2817	A
11	AA	2821	C
11	AA	2844	C
11	AA	2845	A
11	AA	2861	U
11	AA	2867	C
11	AA	2871	G
11	AA	2872	A
11	AA	2875	U
11	AA	2887	A
11	AA	2898	G
11	AA	2899	C
11	AA	2910	A
11	AA	2914	G
11	AA	2922	OMG
11	AA	2923	U
11	AA	2935	U
11	AA	2936	A
11	AA	2938	G
11	AA	2942	C
11	AA	2947	G

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Mol	Chain	Res	Type
11	AA	2948	OMC
11	AA	2954	U
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	3056	U
11	AA	3059	G
11	AA	3078	U
11	AA	3079	U
11	AA	3092	C
11	AA	3101	G
11	AA	3113	A
11	AA	3122	A
11	AA	3129	A
11	AA	3130	A
11	AA	3131	U
11	AA	3142	A
11	AA	3143	C
11	AA	3153	U
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
11	AA	3179	U
11	AA	3181	C
11	AA	3187	A
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	3224	G
11	AA	3243	A

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Mol	Chain	Res	Type
11	AA	3247	G
11	AA	3260	G
11	AA	3276	G
11	AA	3277	U
11	AA	3281	U
11	AA	3288	G
11	AA	3294	A
11	AA	3304	U
11	AA	3307	A
11	AA	3313	U
11	AA	3316	A
11	AA	3320	A
11	AA	3341	U
11	AA	3345	G
11	AA	3351	U
11	AA	3352	U
11	AA	3353	G
11	AA	3369	G
11	AA	3378	C
11	AA	3386	G
11	AA	3389	U
14	BB	7	G
14	BB	38	U
14	BB	42	A
14	BB	54	U
14	BB	65	G
14	BB	73	C
14	BB	76	A
14	BB	112	G
15	Bb	2	C
15	Bb	5	A
15	Bb	6	U
15	Bb	9	A
15	Bb	11	C
15	Bb	13	C
15	Bb	15	G
15	Bb	16	U
15	Bb	17	U
15	Bb	18	G
15	Bb	19	G
15	Bb	20	G
15	Bb	21	A

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Mol	Chain	Res	Type
15	Bb	26	G
15	Bb	32	C
15	Bb	39	U
15	Bb	40	C
15	Bb	41	U
15	Bb	46	G
15	Bb	47	U
15	Bb	48	C
15	Bb	49	C
15	Bb	51	G
15	Bb	53	G
15	Bb	55	U
15	Bb	58	A
15	Bb	59	U
15	Bb	60	C
15	Bb	61	C
15	Bb	62	A
15	Bb	70	C
15	Bb	76	A
17	CC	23	U
17	CC	34	U
17	CC	35	C
17	CC	39	G
17	CC	51	G
17	CC	52	A
17	CC	59	A
17	CC	62	C
17	CC	63	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	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	4	G

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Mol	Chain	Res	Type
18	Cc	9	G
18	Cc	10	G
18	Cc	17	C
18	Cc	18	C
18	Cc	20	G
18	Cc	22	A
18	Cc	26	C
18	Cc	30	G
18	Cc	34	U
18	Cc	35	C
18	Cc	38	A
18	Cc	43	G
18	Cc	44	A
18	Cc	45	A
18	Cc	48	U
18	Cc	50	G
18	Cc	56	U
18	Cc	60	A
18	Cc	62	C
18	Cc	63	C
18	Cc	77	A
21	Dd	21	G
21	Dd	24	U
61	c	2	A
61	c	4	C
61	c	17	C
61	c	26	A
61	c	34	G
61	c	45	U
61	c	47	A
61	c	67	A
61	c	68	A
61	c	71	A
61	c	72	A
61	c	78	A
61	c	80	A
61	c	100	A2M
61	c	114	C
61	c	127	G
61	c	130	C
61	c	131	C
61	c	137	U

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Mol	Chain	Res	Type
61	c	140	A
61	c	144	U
61	c	145	A
61	c	168	A
61	c	179	A
61	c	181	A
61	c	184	C
61	c	204	G
61	c	218	A
61	c	261	U
61	c	262	U
61	c	267	U
61	c	271	A
61	c	272	U
61	c	277	U
61	c	278	U
61	c	279	G
61	c	287	G
61	c	299	A
61	c	309	C
61	c	314	C
61	c	316	A
61	c	321	C
61	c	322	G
61	c	337	G
61	c	338	C
61	c	359	A
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	411	C
61	c	419	G
61	c	423	G
61	c	424	C
61	c	426	G
61	c	434	G
61	c	439	U
61	c	444	C
61	c	448	C

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Mol	Chain	Res	Type
61	c	455	C
61	c	460	A
61	c	468	A
61	c	475	A
61	c	477	A
61	c	480	G
61	c	508	U
61	c	515	A
61	c	519	C
61	c	525	A
61	c	526	A
61	c	527	A
61	c	534	A
61	c	538	A
61	c	541	A2M
61	c	542	A
61	c	557	G
61	c	558	U
61	c	559	C
61	c	562	OMG
61	c	563	U
61	c	565	C
61	c	568	G
61	c	578	OMU
61	c	579	A
61	c	582	U
61	c	583	C
61	c	594	A
61	c	606	A
61	c	611	U
61	c	619	A2M
61	c	620	A
61	c	623	A
61	c	624	G
61	c	639	U
61	c	644	C
61	c	645	C
61	c	647	G
61	c	648	G
61	c	651	G
61	c	687	G
61	c	691	C

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Mol	Chain	Res	Type
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	780	A
61	c	781	U
61	c	782	U
61	c	783	G
61	c	784	C
61	c	789	A
61	c	794	U
61	c	795	U
61	c	812	A
61	c	814	A
61	c	820	U
61	c	824	G
61	c	825	U
61	c	851	U
61	c	859	A
61	c	860	U
61	c	863	A
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	921	U
61	c	933	A
61	c	935	U
61	c	951	A
61	c	960	U
61	c	966	A
61	c	987	G
61	c	988	A
61	c	992	A
61	c	993	A

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Mol	Chain	Res	Type
61	c	1002	G
61	c	1010	C
61	c	1021	C
61	c	1026	A
61	c	1027	A
61	c	1028	C
61	c	1031	U
61	c	1053	G
61	c	1058	U
61	c	1059	U
61	c	1060	U
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	1097	U
61	c	1100	G
61	c	1138	A
61	c	1150	G
61	c	1158	C
61	c	1162	C
61	c	1163	A
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	1214	U
61	c	1217	A
61	c	1218	G
61	c	1219	A
61	c	1220	C
61	c	1221	A
61	c	1222	C
61	c	1223	A
61	c	1224	A
61	c	1225	U

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Mol	Chain	Res	Type
61	c	1226	A
61	c	1227	A
61	c	1228	G
61	c	1229	G
61	c	1231	U
61	c	1237	G
61	c	1238	A
61	c	1243	G
61	c	1244	A
61	c	1245	G
61	c	1246	C
61	c	1252	C
61	c	1256	A
61	c	1258	U
61	c	1259	U
61	c	1260	U
61	c	1262	U
61	c	1265	G
61	c	1266	U
61	c	1270	G
61	c	1274	C
61	c	1276	U
61	c	1284	C
61	c	1286	U
61	c	1287	A
61	c	1297	G
61	c	1298	U
61	c	1307	U
61	c	1308	G
61	c	1312	A
61	c	1314	U
61	c	1315	U
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	1346	A
61	c	1352	G
61	c	1354	G
61	c	1355	C

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Mol	Chain	Res	Type
61	c	1361	U
61	c	1363	U
61	c	1367	G
61	c	1368	G
61	c	1370	U
61	c	1371	A
61	c	1372	U
61	c	1373	C
61	c	1390	U
61	c	1398	U
61	c	1400	A
61	c	1405	G
61	c	1410	A
61	c	1411	A
61	c	1413	U
61	c	1414	U
61	c	1415	U
61	c	1424	A
61	c	1425	A
61	c	1427	A
61	c	1428	G
61	c	1432	U
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	1474	G
61	c	1478	G
61	c	1483	A
61	c	1490	C
61	c	1492	A
61	c	1496	U
61	c	1510	U
61	c	1515	A
61	c	1516	A
61	c	1523	G
61	c	1524	A
61	c	1535	U
61	c	1536	G

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Mol	Chain	Res	Type
61	c	1537	C
61	c	1542	G
61	c	1557	U
61	c	1559	A
61	c	1567	U
61	c	1568	C
61	c	1569	A
61	c	1573	A
61	c	1601	G
61	c	1616	G
61	c	1619	C
61	c	1631	A
61	c	1633	A
61	c	1634	C
61	c	1635	A
61	c	1641	C
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	1716	C
61	c	1717	G
61	c	1756	A
61	c	1757	G
61	c	1760	G
61	c	1762	A
61	c	1766	A
61	c	1769	U
61	c	1780	G
61	c	1782	MA6
61	c	1783	C
61	c	1792	G
61	c	1793	G
61	c	1794	A
61	c	1795	U
61	c	1796	C
61	c	1799	U

All (20) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
11	AA	619	A
11	AA	873	C
11	AA	908	OMG
11	AA	916	G
11	AA	1033	U
11	AA	1562	C
11	AA	1889	G
11	AA	2101	C
11	AA	2418	G
11	AA	2463	G
11	AA	2464	U
11	AA	2487	U
11	AA	2497	U
11	AA	2500	A
11	AA	2501	U
11	AA	2922	OMG
11	AA	2971	A
11	AA	3121	U
11	AA	3206	C
14	BB	72	A

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

62 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	2256	11	22,25,26	1.46	5 (22%)	30,36,39	2.29	13 (43%)
11	A2M	AA	876	11	22,25,26	1.67	4 (18%)	30,36,39	2.09	8 (26%)
11	OMU	AA	2921	11,86	19,22,23	1.75	4 (21%)	25,31,34	2.27	6 (24%)
61	4AC	c	1773	61	21,24,25	3.43	9 (42%)	28,34,37	2.09	6 (21%)
61	A2M	c	619	86,61	22,25,26	1.47	5 (22%)	30,36,39	2.06	9 (30%)
11	A2M	AA	2280	11	22,25,26	1.49	4 (18%)	30,36,39	2.14	8 (26%)
11	5MC	AA	2870	11,87	19,22,23	1.27	3 (15%)	26,32,35	1.66	6 (23%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
11	OMG	AA	908	11	23,26,27	1.58	6 (26%)	32,38,41	2.22	7 (21%)
11	A2M	AA	2946	11,86	22,25,26	1.59	4 (18%)	30,36,39	2.36	13 (43%)
11	OMG	AA	1450	11	23,26,27	1.52	4 (17%)	32,38,41	2.21	9 (28%)
11	A2M	AA	807	11	22,25,26	1.52	4 (18%)	30,36,39	2.27	11 (36%)
11	A2M	AA	1133	11,86	22,25,26	1.56	5 (22%)	30,36,39	2.45	11 (36%)
61	A2M	c	974	61	22,25,26	3.24	10 (45%)	30,36,39	2.95	10 (33%)
11	5MC	AA	2278	11,86	19,22,23	1.50	2 (10%)	26,32,35	1.51	5 (19%)
61	A2M	c	796	61	22,25,26	3.26	10 (45%)	30,36,39	2.91	11 (36%)
11	A2M	AA	817	11,86	22,25,26	1.67	6 (27%)	30,36,39	2.19	12 (40%)
11	OMU	AA	2724	11	19,22,23	1.71	5 (26%)	25,31,34	1.87	4 (16%)
11	OMC	AA	2959	11,86	19,22,23	1.10	2 (10%)	25,31,34	1.21	2 (8%)
11	OMU	AA	2347	11	19,22,23	1.78	4 (21%)	25,31,34	2.02	5 (20%)
11	UR3	AA	2634	11	19,22,23	1.17	2 (10%)	26,32,35	2.07	3 (11%)
15	YYG	Bb	37	15	38,42,43	2.44	12 (31%)	45,62,65	2.16	13 (28%)
11	OMC	AA	650	11	19,22,23	1.09	2 (10%)	25,31,34	0.99	1 (4%)
11	OMG	AA	2619	11,15	23,26,27	1.51	5 (21%)	32,38,41	2.13	9 (28%)
11	OMC	AA	2197	11,87	19,22,23	1.15	1 (5%)	25,31,34	1.40	4 (16%)
61	OMC	c	414	61	19,22,23	0.53	0	25,31,34	0.60	0
61	MA6	c	1782	61	23,26,27	1.40	4 (17%)	33,38,41	3.32	12 (36%)
11	OMG	AA	2922	11	23,26,27	1.60	6 (26%)	32,38,41	2.22	9 (28%)
11	OMG	AA	2793	11	23,26,27	1.51	5 (21%)	32,38,41	2.17	8 (25%)
61	A2M	c	420	61	22,25,26	3.22	9 (40%)	30,36,39	2.96	11 (36%)
11	1MA	AA	2142	11,86	21,25,26	1.46	4 (19%)	30,37,40	1.85	6 (20%)
11	OMG	AA	2791	11	23,26,27	1.41	4 (17%)	32,38,41	1.92	6 (18%)
11	OMC	AA	2948	11	19,22,23	1.18	2 (10%)	25,31,34	1.08	1 (4%)
61	OMG	c	562	61	23,26,27	0.53	0	32,38,41	0.55	0
61	MA6	c	1781	61	23,26,27	1.46	4 (17%)	33,38,41	3.16	11 (33%)
11	A2M	AA	2640	11	22,25,26	1.54	5 (22%)	30,36,39	2.29	11 (36%)
11	OMU	AA	2421	11	19,22,23	1.76	4 (21%)	25,31,34	2.14	6 (24%)
11	OMC	AA	1437	11,86	19,22,23	0.84	0	25,31,34	1.07	1 (4%)
61	A2M	c	100	86,61	22,25,26	3.22	10 (45%)	30,36,39	2.97	11 (36%)
61	B8N	c	1191	61	25,29,30	3.34	7 (28%)	28,42,45	1.94	8 (28%)
61	OMC	c	1639	86,61	19,22,23	0.56	0	25,31,34	0.55	0
61	A2M	c	28	61	22,25,26	1.57	5 (22%)	30,36,39	2.19	11 (36%)
11	1MA	AA	645	11,86	21,25,26	1.52	5 (23%)	30,37,40	1.87	5 (16%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
11	OMC	AA	663	11	19,22,23	1.20	2 (10%)	25,31,34	0.87	0
11	A2M	AA	2220	11	22,25,26	1.47	4 (18%)	30,36,39	2.28	11 (36%)
12	DDE	Aa	699	12	18,20,21	1.23	2 (11%)	17,28,30	0.90	0
11	OMG	AA	2815	11	23,26,27	1.52	5 (21%)	32,38,41	2.14	8 (25%)
61	A2M	c	541	61	22,25,26	3.24	9 (40%)	30,36,39	3.03	12 (40%)
11	OMG	AA	805	11	23,26,27	1.49	3 (13%)	32,38,41	2.30	8 (25%)
11	A2M	AA	2281	11	22,25,26	1.50	4 (18%)	30,36,39	2.64	12 (40%)
61	OMG	c	1126	61	23,26,27	0.52	0	32,38,41	0.58	0
61	OMU	c	578	61	19,22,23	3.10	8 (42%)	25,31,34	1.81	5 (20%)
11	OMU	AA	1888	11	19,22,23	1.71	4 (21%)	25,31,34	2.34	8 (32%)
61	OMC	c	1007	61	19,22,23	0.58	0	25,31,34	0.65	0
11	OMC	AA	2337	11	19,22,23	1.22	2 (10%)	25,31,34	1.01	1 (4%)
11	OMU	AA	898	11	19,22,23	1.71	4 (21%)	25,31,34	2.15	6 (24%)
11	A2M	AA	649	11	22,25,26	1.59	4 (18%)	30,36,39	2.16	10 (33%)
11	OMU	AA	2417	11	19,22,23	1.79	4 (21%)	25,31,34	2.21	6 (24%)
61	A2M	c	436	61	22,25,26	3.23	10 (45%)	30,36,39	2.91	11 (36%)
11	OMU	AA	2729	11	19,22,23	1.73	4 (21%)	25,31,34	1.94	5 (20%)
11	OMG	AA	2288	11	23,26,27	1.51	4 (17%)	32,38,41	2.14	7 (21%)
11	OMG	AA	867	11,87	23,26,27	1.54	5 (21%)	32,38,41	2.17	7 (21%)
11	A2M	AA	1449	11,86	22,25,26	1.62	4 (18%)	30,36,39	2.10	8 (26%)

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	2256	11	-	1/9/27/28	0/3/3/3
11	A2M	AA	876	11	-	0/9/27/28	0/3/3/3
11	OMU	AA	2921	11,86	-	0/9/27/28	0/2/2/2
61	4AC	c	1773	61	-	1/11/29/30	0/2/2/2
61	A2M	c	619	86,61	-	6/9/27/28	0/3/3/3
11	A2M	AA	2280	11	-	2/9/27/28	0/3/3/3
11	5MC	AA	2870	11,87	-	4/7/25/26	0/2/2/2
11	OMG	AA	908	11	-	2/9/27/28	0/3/3/3
11	A2M	AA	2946	11,86	-	1/9/27/28	0/3/3/3
11	OMG	AA	1450	11	-	2/9/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
11	A2M	AA	807	11	-	1/9/27/28	0/3/3/3
11	A2M	AA	1133	11,86	-	0/9/27/28	0/3/3/3
61	A2M	c	974	61	-	0/9/27/28	0/3/3/3
11	5MC	AA	2278	11,86	-	0/7/25/26	0/2/2/2
61	A2M	c	796	61	-	0/9/27/28	0/3/3/3
11	A2M	AA	817	11,86	-	1/9/27/28	0/3/3/3
11	OMU	AA	2724	11	-	1/9/27/28	0/2/2/2
11	OMC	AA	2959	11,86	-	0/9/27/28	0/2/2/2
11	OMU	AA	2347	11	-	0/9/27/28	0/2/2/2
11	UR3	AA	2634	11	-	0/7/25/26	0/2/2/2
15	YYG	Bb	37	15	-	12/24/42/43	0/4/4/4
11	OMC	AA	650	11	-	0/9/27/28	0/2/2/2
11	OMG	AA	2619	11,15	-	2/9/27/28	0/3/3/3
11	OMC	AA	2197	11,87	-	4/9/27/28	0/2/2/2
61	OMC	c	414	61	-	1/9/27/28	0/2/2/2
61	MA6	c	1782	61	-	2/11/29/30	0/3/3/3
11	OMG	AA	2922	11	-	3/9/27/28	0/3/3/3
11	OMG	AA	2793	11	-	0/9/27/28	0/3/3/3
61	A2M	c	420	61	-	2/9/27/28	0/3/3/3
11	1MA	AA	2142	11,86	-	0/7/25/26	0/3/3/3
11	OMG	AA	2791	11	-	1/9/27/28	0/3/3/3
11	OMC	AA	2948	11	-	1/9/27/28	0/2/2/2
61	OMG	c	562	61	-	2/9/27/28	0/3/3/3
61	MA6	c	1781	61	-	0/11/29/30	0/3/3/3
11	A2M	AA	2640	11	-	0/9/27/28	0/3/3/3
11	OMU	AA	2421	11	-	0/9/27/28	0/2/2/2
11	OMC	AA	1437	11,86	-	1/9/27/28	0/2/2/2
61	A2M	c	100	86,61	-	2/9/27/28	0/3/3/3
61	B8N	c	1191	61	-	5/16/34/35	0/2/2/2
61	OMC	c	1639	86,61	-	0/9/27/28	0/2/2/2
61	A2M	c	28	61	-	1/9/27/28	0/3/3/3
11	1MA	AA	645	11,86	-	2/7/25/26	0/3/3/3
11	OMC	AA	663	11	-	1/9/27/28	0/2/2/2
11	A2M	AA	2220	11	-	3/9/27/28	0/3/3/3
12	DDE	Aa	699	12	-	0/20/21/23	0/1/1/1
11	OMG	AA	2815	11	-	0/9/27/28	0/3/3/3
61	A2M	c	541	61	-	2/9/27/28	0/3/3/3
11	OMG	AA	805	11	-	0/9/27/28	0/3/3/3
11	A2M	AA	2281	11	-	3/9/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
61	OMG	c	1126	61	-	0/9/27/28	0/3/3/3
61	OMU	c	578	61	-	2/9/27/28	0/2/2/2
11	OMU	AA	1888	11	-	0/9/27/28	0/2/2/2
61	OMC	c	1007	61	-	0/9/27/28	0/2/2/2
11	OMC	AA	2337	11	-	0/9/27/28	0/2/2/2
11	OMU	AA	898	11	-	0/9/27/28	0/2/2/2
11	A2M	AA	649	11	-	1/9/27/28	0/3/3/3
11	OMU	AA	2417	11	-	1/9/27/28	0/2/2/2
61	A2M	c	436	61	-	0/9/27/28	0/3/3/3
11	OMU	AA	2729	11	-	0/9/27/28	0/2/2/2
11	OMG	AA	2288	11	-	0/9/27/28	0/3/3/3
11	OMG	AA	867	11,87	-	2/9/27/28	0/3/3/3
11	A2M	AA	1449	11,86	-	1/9/27/28	0/3/3/3

All (274) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
61	c	541	A2M	C3'-C4'	-9.21	1.29	1.53
61	c	420	A2M	C3'-C4'	-9.04	1.30	1.53
61	c	974	A2M	C3'-C4'	-9.02	1.30	1.53
61	c	100	A2M	C3'-C4'	-8.99	1.30	1.53
61	c	796	A2M	C3'-C4'	-8.98	1.30	1.53
61	c	436	A2M	C3'-C4'	-8.91	1.30	1.53
61	c	1191	B8N	C4-N3	-8.13	1.26	1.40
61	c	1773	4AC	C4-N3	7.98	1.46	1.32
61	c	1191	B8N	C6-N1	7.96	1.55	1.36
61	c	796	A2M	O4'-C4'	7.77	1.62	1.45
61	c	420	A2M	O4'-C4'	7.66	1.62	1.45
61	c	436	A2M	O4'-C4'	7.62	1.61	1.45
61	c	100	A2M	O4'-C4'	7.59	1.61	1.45
61	c	974	A2M	O4'-C4'	7.54	1.61	1.45
61	c	541	A2M	O4'-C4'	7.39	1.61	1.45
61	c	578	OMU	C2-N1	7.26	1.49	1.38
61	c	1191	B8N	C4-C5	7.23	1.63	1.47
15	Bb	37	YYG	C21-N20	7.15	1.52	1.34
61	c	578	OMU	C2-N3	6.94	1.50	1.38
15	Bb	37	YYG	C13-C12	6.76	1.58	1.50
61	c	1773	4AC	C6-C5	6.07	1.49	1.35
61	c	1191	B8N	C2-N1	5.95	1.56	1.39
61	c	1773	4AC	C2-N3	5.95	1.48	1.36
61	c	578	OMU	C6-C5	5.74	1.48	1.35
15	Bb	37	YYG	O23-C21	5.61	1.43	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
61	c	1773	4AC	C2-N1	5.40	1.51	1.40
61	c	1191	B8N	C6-C5	5.14	1.42	1.35
61	c	436	A2M	O4'-C1'	-4.80	1.30	1.42
61	c	541	A2M	O4'-C1'	-4.77	1.31	1.42
61	c	974	A2M	O4'-C1'	-4.77	1.31	1.42
61	c	100	A2M	O4'-C1'	-4.68	1.31	1.42
61	c	796	A2M	O4'-C1'	-4.63	1.31	1.42
61	c	420	A2M	O4'-C1'	-4.62	1.31	1.42
11	AA	2921	OMU	C4-N3	-4.47	1.31	1.38
11	AA	2729	OMU	C4-N3	-4.42	1.31	1.38
11	AA	2417	OMU	C4-N3	-4.42	1.31	1.38
61	c	1773	4AC	C4-N4	4.41	1.46	1.39
61	c	420	A2M	C6-N6	4.40	1.45	1.34
11	AA	1888	OMU	C4-N3	-4.39	1.31	1.38
61	c	578	OMU	C4-N3	4.37	1.46	1.38
61	c	541	A2M	C6-N6	4.36	1.45	1.34
61	c	796	A2M	C6-N6	4.35	1.45	1.34
61	c	974	A2M	C6-N6	4.32	1.45	1.34
61	c	436	A2M	C6-N6	4.31	1.45	1.34
11	AA	2256	A2M	C5-C4	4.31	1.46	1.39
11	AA	2347	OMU	C4-N3	-4.30	1.31	1.38
61	c	100	A2M	C6-N6	4.29	1.45	1.34
61	c	619	A2M	C5-C4	4.19	1.46	1.39
11	AA	2278	5MC	C5-C4	4.16	1.47	1.44
61	c	1773	4AC	C7-N4	4.16	1.45	1.37
15	Bb	37	YYG	C2-N1	-4.08	1.32	1.38
11	AA	2815	OMG	C6-N1	-4.06	1.31	1.38
61	c	1781	MA6	C6-N6	3.97	1.47	1.36
11	AA	2421	OMU	C2-N3	-3.97	1.31	1.38
15	Bb	37	YYG	O18-C16	3.96	1.43	1.33
11	AA	2417	OMU	C2-N3	-3.96	1.31	1.38
61	c	1773	4AC	CM7-C7	3.93	1.58	1.50
11	AA	2421	OMU	C4-N3	-3.92	1.31	1.38
11	AA	876	A2M	C5-N7	-3.92	1.31	1.39
11	AA	2347	OMU	C2-N3	-3.92	1.31	1.38
11	AA	908	OMG	C6-N1	-3.87	1.31	1.38
11	AA	867	OMG	C6-N1	-3.87	1.31	1.38
61	c	1782	MA6	C6-N6	3.86	1.47	1.36
11	AA	1450	OMG	C6-N1	-3.83	1.31	1.38
11	AA	898	OMU	C4-N3	-3.83	1.32	1.38
11	AA	2724	OMU	C4-N3	-3.79	1.32	1.38
11	AA	2729	OMU	C2-N3	-3.78	1.31	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	AA	2724	OMU	C2-N3	-3.78	1.31	1.38
11	AA	2921	OMU	C2-N3	-3.76	1.31	1.38
11	AA	2946	A2M	C5-C4	3.72	1.45	1.39
11	AA	2619	OMG	C6-N1	-3.71	1.31	1.38
11	AA	2922	OMG	C6-N1	-3.69	1.31	1.38
11	AA	2793	OMG	C6-N1	-3.65	1.32	1.38
11	AA	1449	A2M	C5-N7	-3.65	1.32	1.39
11	AA	805	OMG	C6-N1	-3.62	1.32	1.38
11	AA	817	A2M	C5-N7	-3.59	1.32	1.39
11	AA	645	1MA	C5-N7	-3.55	1.32	1.39
11	AA	2280	A2M	C5-C4	3.51	1.45	1.39
61	c	1191	B8N	C1'-C5	3.50	1.58	1.50
11	AA	898	OMU	C2-N3	-3.45	1.32	1.38
11	AA	2791	OMG	C6-N1	-3.45	1.32	1.38
11	AA	1888	OMU	C2-N3	-3.40	1.32	1.38
15	Bb	37	YYG	C6-N1	-3.39	1.34	1.42
11	AA	2288	OMG	C6-N1	-3.39	1.32	1.38
11	AA	805	OMG	C5-N7	-3.39	1.32	1.39
11	AA	649	A2M	C5-C4	3.38	1.45	1.39
11	AA	2946	A2M	C5-N7	-3.38	1.32	1.39
11	AA	2220	A2M	C5-C4	3.37	1.45	1.39
11	AA	817	A2M	C4-N9	-3.36	1.30	1.37
11	AA	908	OMG	C5-N7	-3.29	1.32	1.39
61	c	28	A2M	C5-C4	3.28	1.44	1.39
61	c	1773	4AC	C5-C4	3.27	1.48	1.41
11	AA	649	A2M	C5-N7	-3.26	1.33	1.39
11	AA	807	A2M	C5-N7	-3.26	1.33	1.39
11	AA	2281	A2M	C5-C4	3.26	1.44	1.39
11	AA	2640	A2M	C5-C4	3.22	1.44	1.39
61	c	28	A2M	C5-N7	-3.22	1.33	1.39
61	c	1773	4AC	O7-C7	-3.21	1.16	1.23
11	AA	1133	A2M	C5-N7	-3.20	1.33	1.39
11	AA	807	A2M	C4-N9	-3.18	1.31	1.37
11	AA	2922	OMG	C5-N7	-3.17	1.32	1.39
61	c	1781	MA6	C5-C4	-3.16	1.33	1.39
11	AA	817	A2M	C5-C4	3.16	1.44	1.39
61	c	100	A2M	C5-C4	-3.12	1.33	1.39
11	AA	2278	5MC	C6-N1	-3.12	1.32	1.38
11	AA	1133	A2M	C5-C4	3.11	1.44	1.39
11	AA	2640	A2M	C5-N7	-3.10	1.33	1.39
61	c	974	A2M	C5-C4	-3.10	1.33	1.39
11	AA	876	A2M	C5-C4	3.07	1.44	1.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	AA	2281	A2M	C5-N7	-3.05	1.33	1.39
61	c	28	A2M	C4-N9	-3.04	1.31	1.37
11	AA	2280	A2M	C5-N7	-3.03	1.33	1.39
11	AA	817	A2M	C8-N9	-3.02	1.32	1.37
61	c	796	A2M	C5-C4	-3.02	1.33	1.39
61	c	436	A2M	C5-C4	-3.01	1.33	1.39
61	c	541	A2M	C5-C4	-3.01	1.33	1.39
12	Aa	699	DDE	CBW-NCB	-2.98	1.48	1.54
61	c	796	A2M	O2'-C2'	-2.97	1.35	1.42
61	c	1782	MA6	C5-C4	-2.97	1.33	1.39
11	AA	876	A2M	C8-N9	-2.97	1.32	1.37
11	AA	2220	A2M	C4-N9	-2.97	1.31	1.37
11	AA	2791	OMG	C5-N7	-2.96	1.33	1.39
11	AA	2921	OMU	C5-C4	-2.95	1.37	1.43
11	AA	1449	A2M	C4-N9	-2.95	1.31	1.37
11	AA	807	A2M	C5-C4	2.94	1.44	1.39
11	AA	1449	A2M	C8-N9	-2.92	1.32	1.37
11	AA	2793	OMG	C5-N7	-2.91	1.33	1.39
11	AA	2724	OMU	C5-C4	-2.91	1.37	1.43
11	AA	2417	OMU	C5-C4	-2.90	1.37	1.43
61	c	578	OMU	O4-C4	-2.90	1.18	1.24
11	AA	2640	A2M	C4-N9	-2.89	1.31	1.37
61	c	578	OMU	C6-N1	2.89	1.45	1.38
11	AA	2793	OMG	C4-N9	-2.86	1.30	1.38
11	AA	2347	OMU	C5-C4	-2.86	1.37	1.43
11	AA	1449	A2M	C5-C4	2.85	1.44	1.39
61	c	974	A2M	O2'-C2'	-2.85	1.35	1.42
11	AA	2288	OMG	C5-N7	-2.85	1.33	1.39
11	AA	2729	OMU	C5-C4	-2.85	1.37	1.43
11	AA	649	A2M	C4-N9	-2.84	1.31	1.37
11	AA	2421	OMU	C5-C4	-2.84	1.37	1.43
11	AA	2142	1MA	C5-N7	-2.83	1.33	1.39
61	c	420	A2M	C5-C4	-2.83	1.34	1.39
11	AA	2870	5MC	C5-C4	2.82	1.46	1.44
61	c	541	A2M	O2'-C2'	-2.81	1.35	1.42
11	AA	1450	OMG	C4-N9	-2.81	1.30	1.38
61	c	436	A2M	O2'-C2'	-2.79	1.35	1.42
11	AA	876	A2M	C4-N9	-2.77	1.31	1.37
61	c	420	A2M	O2'-C2'	-2.76	1.35	1.42
61	c	100	A2M	O2'-C2'	-2.76	1.35	1.42
11	AA	2870	5MC	C6-N1	-2.76	1.33	1.38
61	c	796	A2M	C8-N9	-2.75	1.32	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	AA	2815	OMG	C5-N7	-2.74	1.33	1.39
61	c	436	A2M	O3'-C3'	2.74	1.49	1.43
61	c	100	A2M	C8-N9	-2.72	1.32	1.37
11	AA	898	OMU	C5-C4	-2.72	1.37	1.43
11	AA	1133	A2M	C4-N9	-2.71	1.32	1.37
11	AA	807	A2M	C8-N9	-2.71	1.32	1.37
11	AA	2946	A2M	C4-N9	-2.71	1.32	1.37
61	c	974	A2M	C8-N9	-2.70	1.33	1.37
61	c	541	A2M	C8-N9	-2.69	1.33	1.37
15	Bb	37	YYG	C8-N9	-2.68	1.31	1.37
11	AA	867	OMG	C4-N9	-2.68	1.31	1.38
61	c	436	A2M	C8-N9	-2.67	1.33	1.37
11	AA	1450	OMG	C5-N7	-2.67	1.33	1.39
11	AA	2256	A2M	C5-C6	2.67	1.48	1.41
61	c	796	A2M	O3'-C3'	2.67	1.49	1.43
61	c	541	A2M	O3'-C3'	2.66	1.49	1.43
61	c	420	A2M	O3'-C3'	2.66	1.49	1.43
11	AA	805	OMG	C4-N9	-2.65	1.31	1.38
11	AA	2281	A2M	C4-N9	-2.65	1.32	1.37
11	AA	2220	A2M	C5-N7	-2.64	1.34	1.39
11	AA	2640	A2M	C8-N9	-2.62	1.33	1.37
12	Aa	699	DDE	CG-ND1	-2.62	1.33	1.38
11	AA	1888	OMU	C5-C4	-2.61	1.38	1.43
61	c	974	A2M	O3'-C3'	2.61	1.49	1.43
11	AA	2815	OMG	C4-N9	-2.60	1.31	1.38
61	c	100	A2M	O3'-C3'	2.60	1.49	1.43
11	AA	2280	A2M	C4-N9	-2.59	1.32	1.37
61	c	420	A2M	C8-N9	-2.58	1.33	1.37
61	c	1781	MA6	C5-N7	-2.58	1.34	1.39
11	AA	663	OMC	C5-C4	-2.57	1.36	1.42
11	AA	867	OMG	C5-N7	-2.57	1.33	1.39
11	AA	2922	OMG	C4-N9	-2.57	1.31	1.38
11	AA	2791	OMG	C5-C4	2.57	1.45	1.38
11	AA	645	1MA	C4-N9	-2.56	1.31	1.38
11	AA	2791	OMG	C4-N9	-2.56	1.31	1.38
61	c	796	A2M	C5-N7	-2.53	1.34	1.39
15	Bb	37	YYG	O6-C6	-2.52	1.17	1.23
61	c	578	OMU	C5-C4	2.52	1.49	1.43
11	AA	2946	A2M	C8-N9	-2.52	1.33	1.37
11	AA	2281	A2M	C8-N9	-2.51	1.33	1.37
11	AA	2280	A2M	C8-N9	-2.51	1.33	1.37
11	AA	2288	OMG	C4-N9	-2.50	1.31	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	AA	663	OMC	C6-N1	-2.49	1.32	1.38
11	AA	2619	OMG	C4-N9	-2.49	1.31	1.38
11	AA	2142	1MA	C6-N6	2.49	1.34	1.28
11	AA	1133	A2M	C8-N9	-2.48	1.33	1.37
11	AA	2347	OMU	C6-N1	-2.47	1.32	1.38
11	AA	898	OMU	C6-N1	-2.47	1.32	1.38
11	AA	2619	OMG	C5-N7	-2.46	1.34	1.39
61	c	28	A2M	C8-N9	-2.46	1.33	1.37
15	Bb	37	YYG	C10-C11	2.45	1.54	1.49
61	c	619	A2M	C5-C6	2.45	1.47	1.41
15	Bb	37	YYG	C5-N7	-2.45	1.34	1.39
11	AA	2142	1MA	C5-C4	2.45	1.45	1.38
61	c	1781	MA6	C8-N9	-2.44	1.33	1.37
61	c	1782	MA6	C5-N7	-2.44	1.34	1.39
61	c	100	A2M	C5-N7	-2.44	1.34	1.39
11	AA	1888	OMU	C6-N1	-2.43	1.32	1.38
61	c	619	A2M	C5-N7	-2.42	1.34	1.39
11	AA	2634	UR3	C6-N1	-2.41	1.32	1.38
61	c	619	A2M	C4-N9	-2.41	1.32	1.37
61	c	578	OMU	O2-C2	-2.41	1.18	1.23
11	AA	649	A2M	C8-N9	-2.41	1.33	1.37
11	AA	650	OMC	C6-N1	-2.40	1.32	1.38
11	AA	2421	OMU	C6-N1	-2.40	1.32	1.38
11	AA	1450	OMG	C2-N1	-2.40	1.31	1.37
61	c	436	A2M	C5-N7	-2.40	1.34	1.39
11	AA	2724	OMU	C6-N1	-2.40	1.32	1.38
61	c	974	A2M	C5-N7	-2.40	1.34	1.39
11	AA	2337	OMC	C6-N1	-2.39	1.32	1.38
11	AA	2815	OMG	C2-N1	-2.37	1.31	1.37
61	c	541	A2M	C5-N7	-2.37	1.34	1.39
11	AA	2634	UR3	C5-C4	-2.36	1.38	1.43
11	AA	2922	OMG	O4'-C4'	-2.35	1.39	1.45
11	AA	2197	OMC	C6-N1	-2.35	1.32	1.38
61	c	420	A2M	C5-N7	-2.34	1.34	1.39
11	AA	2921	OMU	C6-N1	-2.34	1.32	1.38
11	AA	2619	OMG	C5-C4	2.34	1.45	1.38
11	AA	2959	OMC	C5-C4	-2.33	1.37	1.42
11	AA	645	1MA	C6-N6	2.33	1.33	1.28
11	AA	2256	A2M	C8-N7	2.30	1.36	1.31
11	AA	650	OMC	C5-C4	-2.29	1.37	1.42
11	AA	2220	A2M	C8-N9	-2.29	1.33	1.37
11	AA	908	OMG	C4-N9	-2.28	1.32	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	AA	2619	OMG	C2-N1	-2.28	1.32	1.37
11	AA	2417	OMU	C6-N1	-2.28	1.32	1.38
11	AA	2959	OMC	C6-N1	-2.23	1.32	1.38
11	AA	908	OMG	C5-C4	2.22	1.44	1.38
61	c	619	A2M	C8-N7	2.22	1.35	1.31
11	AA	2337	OMC	C5-C4	-2.21	1.37	1.42
11	AA	908	OMG	C2-N1	-2.21	1.32	1.37
11	AA	2922	OMG	C5-C4	2.20	1.44	1.38
61	c	796	A2M	C4-N9	-2.19	1.33	1.37
11	AA	2729	OMU	C6-N1	-2.19	1.32	1.38
11	AA	645	1MA	C8-N9	-2.18	1.32	1.37
11	AA	2793	OMG	C2-N1	-2.17	1.32	1.37
11	AA	645	1MA	C5-C4	2.17	1.44	1.38
11	AA	2256	A2M	C4-N9	-2.17	1.33	1.37
15	Bb	37	YYG	C11-N2	-2.16	1.33	1.38
11	AA	2142	1MA	C4-N9	-2.16	1.32	1.38
61	c	1191	B8N	O4-C4	-2.15	1.18	1.23
61	c	974	A2M	C4-N9	-2.15	1.33	1.37
11	AA	2948	OMC	C6-N1	-2.14	1.33	1.38
61	c	1782	MA6	C8-N9	-2.14	1.33	1.37
11	AA	2288	OMG	C5-C4	2.14	1.44	1.38
11	AA	867	OMG	C2-N1	-2.14	1.32	1.37
11	AA	817	A2M	C5-C6	2.14	1.46	1.41
11	AA	867	OMG	C5-C4	2.13	1.44	1.38
11	AA	908	OMG	C8-N9	-2.13	1.32	1.37
11	AA	2256	A2M	C5-N7	-2.13	1.35	1.39
11	AA	2870	5MC	C6-C5	2.12	1.38	1.34
61	c	436	A2M	C4-N9	-2.10	1.33	1.37
11	AA	817	A2M	O4'-C4'	-2.08	1.40	1.45
11	AA	2922	OMG	C2-N1	-2.08	1.32	1.37
11	AA	2793	OMG	C5-C4	2.07	1.44	1.38
11	AA	2815	OMG	C5-C4	2.07	1.44	1.38
11	AA	1133	A2M	C2'-C1'	-2.06	1.48	1.53
11	AA	2640	A2M	C5-C6	2.06	1.46	1.41
15	Bb	37	YYG	O18-C19	-2.04	1.40	1.45
61	c	28	A2M	C5-C6	2.03	1.46	1.41
11	AA	2724	OMU	O4'-C4'	-2.01	1.40	1.45
11	AA	2948	OMC	C5-C4	-2.00	1.38	1.42
61	c	100	A2M	C4-N9	-2.00	1.33	1.37

All (428) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
61	c	1782	MA6	N1-C6-N6	-12.35	101.81	116.86
61	c	1781	MA6	N1-C6-N6	-11.20	103.21	116.86
61	c	1782	MA6	C5-C6-N6	8.34	138.54	125.33
11	AA	2634	UR3	C4-N3-C2	-7.96	118.17	124.58
61	c	1781	MA6	C5-C6-N6	7.53	137.25	125.33
61	c	1773	4AC	N4-C4-N3	7.48	126.02	113.87
15	Bb	37	YYG	C5-C4-N3	-7.30	118.07	123.99
11	AA	908	OMG	C5-C4-N3	-6.96	117.31	128.39
61	c	420	A2M	N6-C6-N1	-6.87	103.08	118.38
61	c	974	A2M	N6-C6-N1	-6.77	103.30	118.38
61	c	436	A2M	N6-C6-N1	-6.70	103.46	118.38
11	AA	2220	A2M	C2'-C1'-N9	-6.60	102.88	113.75
61	c	541	A2M	N6-C6-N1	-6.58	103.73	118.38
61	c	100	A2M	N6-C6-N1	-6.37	104.20	118.38
61	c	796	A2M	N6-C6-N1	-6.36	104.20	118.38
11	AA	2922	OMG	C5-C4-N3	-6.17	118.57	128.39
11	AA	2288	OMG	C5-C4-N3	-6.14	118.62	128.39
11	AA	2281	A2M	C2'-C1'-N9	-6.12	103.68	113.75
61	c	100	A2M	N9-C8-N7	-6.09	105.30	113.94
11	AA	867	OMG	C5-C4-N3	-6.08	118.72	128.39
11	AA	876	A2M	C5-C4-N3	-6.07	118.36	126.72
11	AA	805	OMG	C2'-C1'-N9	-6.04	102.78	114.24
11	AA	2946	A2M	C2'-C1'-N9	-6.02	103.85	113.75
11	AA	805	OMG	C5-C4-N3	-6.00	118.84	128.39
61	c	974	A2M	N9-C8-N7	-5.97	105.46	113.94
11	AA	2815	OMG	C5-C4-N3	-5.96	118.91	128.39
11	AA	1888	OMU	C4-N3-C2	-5.94	119.23	126.61
11	AA	2280	A2M	C5-C4-N3	-5.94	118.54	126.72
11	AA	1450	OMG	C5-C4-N3	-5.93	118.96	128.39
61	c	541	A2M	N9-C8-N7	-5.92	105.54	113.94
11	AA	649	A2M	C5-C4-N3	-5.90	118.59	126.72
11	AA	2793	OMG	C5-C4-N3	-5.88	119.03	128.39
11	AA	1449	A2M	C5-C4-N3	-5.85	118.66	126.72
61	c	420	A2M	N9-C8-N7	-5.82	105.67	113.94
11	AA	645	1MA	C5-C4-N3	-5.82	118.71	127.27
61	c	796	A2M	N9-C8-N7	-5.76	105.77	113.94
61	c	436	A2M	N3-C2-N1	-5.72	119.92	128.58
11	AA	1133	A2M	C5-C4-N3	-5.71	118.85	126.72
61	c	100	A2M	C4-N9-C8	5.70	111.73	105.74
61	c	436	A2M	N9-C8-N7	-5.70	105.86	113.94
61	c	974	A2M	N3-C2-N1	-5.69	119.96	128.58
61	c	541	A2M	N3-C2-N1	-5.66	120.01	128.58
11	AA	898	OMU	C4-N3-C2	-5.66	119.59	126.61

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
61	c	420	A2M	N3-C2-N1	-5.64	120.05	128.58
61	c	1781	MA6	N1-C2-N3	-5.64	120.05	128.58
11	AA	2921	OMU	C4-N3-C2	-5.63	119.62	126.61
61	c	578	OMU	C4-N3-C2	-5.63	119.62	126.61
11	AA	2619	OMG	C5-C4-N3	-5.63	119.43	128.39
61	c	100	A2M	N3-C2-N1	-5.63	120.06	128.58
11	AA	2281	A2M	O4'-C1'-N9	5.61	118.86	108.09
61	c	1782	MA6	N1-C2-N3	-5.60	120.10	128.58
11	AA	908	OMG	N9-C4-N3	5.56	137.08	125.95
61	c	28	A2M	C5-C4-N3	-5.56	119.06	126.72
15	Bb	37	YYG	O23-C21-N20	5.56	120.12	110.77
61	c	541	A2M	C4-N9-C8	5.52	111.53	105.74
11	AA	2815	OMG	C2-N3-C4	5.51	121.78	112.30
61	c	796	A2M	N3-C2-N1	-5.50	120.26	128.58
11	AA	2421	OMU	C4-N3-C2	-5.50	119.79	126.61
61	c	974	A2M	C4-N9-C8	5.48	111.49	105.74
11	AA	1450	OMG	C2-N3-C4	5.48	121.74	112.30
61	c	974	A2M	C5-C6-N6	5.47	136.84	123.29
11	AA	908	OMG	C2-N3-C4	5.46	121.70	112.30
61	c	420	A2M	C5-C6-N6	5.46	136.80	123.29
11	AA	2640	A2M	C5-C4-N3	-5.44	119.22	126.72
11	AA	2288	OMG	C2-N3-C4	5.44	121.66	112.30
11	AA	1133	A2M	C2'-C1'-N9	-5.42	104.84	113.75
11	AA	2142	1MA	C5-C4-N3	-5.41	119.31	127.27
11	AA	2417	OMU	C4-N3-C2	-5.41	119.90	126.61
11	AA	1888	OMU	N3-C2-N1	5.37	121.88	114.89
11	AA	817	A2M	C5-C4-N3	-5.35	119.34	126.72
11	AA	867	OMG	C2-N3-C4	5.35	121.52	112.30
61	c	619	A2M	C5-C4-N3	-5.33	119.38	126.72
11	AA	2791	OMG	C5-C4-N3	-5.32	119.92	128.39
61	c	436	A2M	C5-C6-N6	5.31	136.44	123.29
61	c	796	A2M	C4-N9-C8	5.30	111.31	105.74
11	AA	2281	A2M	C5-C4-N3	-5.30	119.41	126.72
61	c	1191	B8N	C5-C4-N3	5.30	125.78	116.15
11	AA	2256	A2M	C5-C4-N3	-5.27	119.46	126.72
61	c	541	A2M	C5-C6-N6	5.26	136.30	123.29
11	AA	2946	A2M	C5-C4-N3	-5.25	119.49	126.72
11	AA	898	OMU	N3-C2-N1	5.24	121.72	114.89
11	AA	2793	OMG	C2'-C1'-N9	-5.21	104.34	114.24
11	AA	2417	OMU	N3-C2-N1	5.21	121.68	114.89
11	AA	2347	OMU	C4-N3-C2	-5.19	120.16	126.61
61	c	420	A2M	C4-N9-C8	5.19	111.18	105.74

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
61	c	436	A2M	C4-N9-C8	5.16	111.16	105.74
61	c	796	A2M	C5-C6-N6	5.16	136.06	123.29
11	AA	2724	OMU	C4-N3-C2	-5.14	120.23	126.61
11	AA	2922	OMG	C2-N3-C4	5.13	121.14	112.30
11	AA	805	OMG	C2-N3-C4	5.10	121.08	112.30
11	AA	2280	A2M	N3-C4-N9	5.06	135.77	127.17
11	AA	1449	A2M	N3-C4-N9	5.04	135.74	127.17
11	AA	2640	A2M	C2'-C1'-N9	-5.04	105.46	113.75
11	AA	876	A2M	N3-C4-N9	5.03	135.72	127.17
61	c	100	A2M	C5-C6-N6	5.02	135.72	123.29
61	c	1191	B8N	C4-N3-C2	-5.02	119.44	125.62
11	AA	807	A2M	C2'-C1'-N9	-5.00	105.52	113.75
11	AA	2220	A2M	C5-C4-N3	-4.92	119.94	126.72
11	AA	645	1MA	C2-N3-C4	4.90	122.15	112.53
11	AA	2921	OMU	N3-C2-N1	4.88	121.25	114.89
11	AA	2619	OMG	C2-N3-C4	4.85	120.66	112.30
11	AA	2421	OMU	N3-C2-N1	4.85	121.20	114.89
11	AA	807	A2M	C5-C4-N3	-4.82	120.08	126.72
11	AA	2921	OMU	C5-C4-N3	4.81	121.54	114.80
11	AA	1133	A2M	N3-C4-N9	4.81	135.35	127.17
61	c	1773	4AC	C5-C4-N4	-4.80	114.86	122.94
11	AA	2724	OMU	C5-C4-N3	4.75	121.45	114.80
11	AA	2288	OMG	N9-C4-N3	4.73	135.41	125.95
61	c	28	A2M	N3-C4-N9	4.72	135.19	127.17
61	c	1781	MA6	C5-C4-N3	-4.70	120.24	126.72
11	AA	2793	OMG	C2-N3-C4	4.66	120.33	112.30
11	AA	649	A2M	N3-C4-N9	4.66	135.09	127.17
11	AA	2417	OMU	C5-C4-N3	4.65	121.32	114.80
11	AA	2142	1MA	C2-N3-C4	4.63	121.61	112.53
11	AA	805	OMG	N9-C4-N3	4.62	135.19	125.95
61	c	1782	MA6	C5-C4-N3	-4.61	120.37	126.72
11	AA	2729	OMU	C4-N3-C2	-4.60	120.90	126.61
11	AA	2791	OMG	C2-N3-C4	4.59	120.20	112.30
11	AA	2347	OMU	N3-C2-N1	4.57	120.84	114.89
61	c	420	A2M	C5-C4-N3	-4.54	120.46	126.72
11	AA	2421	OMU	C5-C4-N3	4.53	121.14	114.80
11	AA	2922	OMG	N9-C4-N3	4.52	135.00	125.95
11	AA	2815	OMG	N9-C4-N3	4.47	134.89	125.95
61	c	541	A2M	C5-C4-N3	-4.46	120.57	126.72
11	AA	807	A2M	N3-C4-N9	4.44	134.73	127.17
61	c	100	A2M	C5-C4-N3	-4.44	120.60	126.72
61	c	796	A2M	C5-C4-N3	-4.44	120.60	126.72

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
11	AA	2793	OMG	N9-C4-N3	4.41	134.78	125.95
61	c	436	A2M	C5-C4-N3	-4.40	120.66	126.72
11	AA	2619	OMG	N9-C4-N3	4.39	134.74	125.95
61	c	1781	MA6	N9-C8-N7	-4.39	107.71	113.94
11	AA	2347	OMU	C5-C4-N3	4.39	120.94	114.80
11	AA	2729	OMU	N3-C2-N1	4.37	120.58	114.89
11	AA	1888	OMU	C5-C4-N3	4.36	120.90	114.80
11	AA	2281	A2M	N3-C4-N9	4.36	134.57	127.17
61	c	541	A2M	C1'-N9-C8	-4.34	117.47	127.09
61	c	619	A2M	N3-C4-N9	4.32	134.51	127.17
61	c	100	A2M	C1'-N9-C8	-4.31	117.53	127.09
61	c	1782	MA6	N9-C8-N7	-4.30	107.83	113.94
11	AA	2946	A2M	N3-C4-N9	4.26	134.41	127.17
11	AA	817	A2M	N3-C4-N9	4.26	134.41	127.17
11	AA	867	OMG	N9-C4-N3	4.24	134.42	125.95
61	c	974	A2M	C5-C4-N3	-4.23	120.89	126.72
11	AA	2729	OMU	C5-C4-N3	4.22	120.72	114.80
11	AA	2640	A2M	N3-C4-N9	4.21	134.33	127.17
11	AA	2921	OMU	C2'-C1'-N1	-4.20	106.27	114.24
61	c	1781	MA6	C4-C5-C6	4.12	120.17	115.91
11	AA	1888	OMU	C2'-C1'-N1	-4.11	106.44	114.24
11	AA	2220	A2M	N3-C4-N9	4.11	134.15	127.17
11	AA	1450	OMG	N9-C4-N3	4.06	134.07	125.95
61	c	796	A2M	C1'-N9-C8	-4.03	118.14	127.09
11	AA	898	OMU	C5-C4-N3	4.01	120.42	114.80
61	c	420	A2M	C1'-N9-C8	-4.00	118.21	127.09
61	c	974	A2M	C1'-N9-C8	-3.98	118.25	127.09
11	AA	2256	A2M	N3-C4-N9	3.98	133.93	127.17
61	c	100	A2M	N3-C4-N9	3.97	133.92	127.17
11	AA	2619	OMG	C6-C5-N7	3.94	137.46	130.29
11	AA	2640	A2M	C4-C5-N7	-3.94	106.08	110.58
61	c	578	OMU	N3-C2-N1	3.94	120.01	114.89
11	AA	2815	OMG	C6-C5-N7	3.93	137.45	130.29
61	c	28	A2M	N3-C2-N1	-3.93	122.64	128.58
11	AA	1450	OMG	C6-C5-N7	3.92	137.43	130.29
61	c	28	A2M	C2-N3-C4	3.92	121.40	111.83
11	AA	2791	OMG	N9-C4-N3	3.92	133.78	125.95
15	Bb	37	YYG	N9-C4-N3	3.91	135.77	129.45
11	AA	2281	A2M	N3-C2-N1	-3.89	122.69	128.58
61	c	541	A2M	N3-C4-N9	3.89	133.78	127.17
11	AA	649	A2M	C2-N3-C4	3.88	121.31	111.83
11	AA	807	A2M	N3-C2-N1	-3.85	122.76	128.58

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
11	AA	807	A2M	C4-N9-C8	3.85	109.78	105.74
11	AA	2281	A2M	C2-N3-C4	3.83	121.19	111.83
11	AA	1133	A2M	C2-N3-C4	3.83	121.18	111.83
11	AA	867	OMG	C6-C5-N7	3.82	137.23	130.29
11	AA	2724	OMU	N3-C2-N1	3.81	119.86	114.89
11	AA	2870	5MC	C5-C6-N1	-3.81	119.17	123.31
11	AA	2922	OMG	C5'-C4'-C3'	-3.80	101.52	115.21
11	AA	2634	UR3	C5-C4-N3	3.80	120.05	115.04
11	AA	2791	OMG	C2'-C1'-N9	-3.78	107.07	114.24
61	c	796	A2M	N3-C4-N9	3.77	133.57	127.17
11	AA	817	A2M	C4-C5-N7	-3.75	106.30	110.58
61	c	1782	MA6	C4-C5-C6	3.74	119.78	115.91
11	AA	2640	A2M	C2-N3-C4	3.74	120.96	111.83
11	AA	2417	OMU	C2'-C1'-N1	-3.73	107.16	114.24
61	c	420	A2M	N3-C4-N9	3.72	133.50	127.17
11	AA	876	A2M	C2-N3-C4	3.72	120.92	111.83
61	c	436	A2M	C1'-N9-C8	-3.71	118.87	127.09
11	AA	2256	A2M	C2-N3-C4	3.70	120.87	111.83
11	AA	1133	A2M	N3-C2-N1	-3.70	122.98	128.58
11	AA	2256	A2M	C4-C5-N7	-3.69	106.37	110.58
11	AA	2256	A2M	N3-C2-N1	-3.68	123.01	128.58
11	AA	2142	1MA	N9-C4-N3	3.66	135.24	126.90
61	c	436	A2M	N3-C4-N9	3.65	133.38	127.17
11	AA	645	1MA	N9-C4-N3	3.65	135.21	126.90
11	AA	2619	OMG	C2'-C1'-N9	-3.61	107.39	114.24
15	Bb	37	YYG	C10-C11-N2	3.59	126.53	119.32
11	AA	1449	A2M	C2-N3-C4	3.59	120.61	111.83
11	AA	2280	A2M	C2-N3-C4	3.59	120.60	111.83
61	c	974	A2M	N3-C4-N9	3.59	133.26	127.17
11	AA	1133	A2M	C4-N9-C8	3.58	109.50	105.74
11	AA	817	A2M	C2-N3-C4	3.57	120.56	111.83
11	AA	807	A2M	C2-N3-C4	3.57	120.56	111.83
11	AA	2256	A2M	O4'-C1'-N9	3.56	114.93	108.09
11	AA	2946	A2M	C4-C5-N7	-3.54	106.53	110.58
11	AA	649	A2M	N3-C2-N1	-3.53	123.23	128.58
61	c	578	OMU	C5-C4-N3	3.51	119.72	114.80
61	c	100	A2M	C5-N7-C8	3.51	108.96	103.45
11	AA	2640	A2M	N3-C2-N1	-3.48	123.31	128.58
61	c	619	A2M	C2-N3-C4	3.48	120.34	111.83
61	c	1782	MA6	C2-N1-C6	3.48	120.33	111.83
11	AA	2278	5MC	C5-C6-N1	-3.47	119.54	123.31
61	c	420	A2M	C5-N7-C8	3.47	108.90	103.45

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
11	AA	2220	A2M	N3-C2-N1	-3.46	123.34	128.58
15	Bb	37	YYG	O23-C21-O22	-3.45	119.59	124.62
61	c	28	A2M	C4-N9-C8	3.45	109.36	105.74
11	AA	2946	A2M	C2-N3-C4	3.44	120.23	111.83
61	c	1781	MA6	C2-N1-C6	3.43	120.22	111.83
61	c	974	A2M	C5-N7-C8	3.43	108.84	103.45
11	AA	817	A2M	N3-C2-N1	-3.43	123.39	128.58
11	AA	2220	A2M	C4-N9-C8	3.42	109.33	105.74
11	AA	2791	OMG	C6-C5-N7	3.40	136.48	130.29
11	AA	2946	A2M	N3-C2-N1	-3.40	123.44	128.58
61	c	1191	B8N	N3-C2-N1	3.40	120.87	116.72
11	AA	1450	OMG	C2'-C1'-N9	-3.40	107.79	114.24
11	AA	2421	OMU	O4-C4-C5	-3.39	119.32	125.16
61	c	619	A2M	C4-C5-N7	-3.38	106.71	110.58
15	Bb	37	YYG	O18-C16-C15	3.38	120.08	111.49
11	AA	2281	A2M	C4-N9-C8	3.38	109.28	105.74
11	AA	2281	A2M	C4-C5-N7	-3.37	106.73	110.58
11	AA	2288	OMG	C6-C5-N7	3.37	136.42	130.29
61	c	541	A2M	C5-N7-C8	3.36	108.73	103.45
61	c	619	A2M	C4-N9-C8	3.35	109.25	105.74
11	AA	867	OMG	C2'-C1'-N9	-3.34	107.90	114.24
61	c	1773	4AC	CM7-C7-N4	3.34	120.66	115.27
11	AA	2220	A2M	C2-N3-C4	3.34	119.98	111.83
11	AA	1133	A2M	C4-C5-N7	-3.31	106.80	110.58
11	AA	876	A2M	N3-C2-N1	-3.29	123.60	128.58
11	AA	1449	A2M	C4-N9-C8	3.29	109.19	105.74
11	AA	2280	A2M	C4-N9-C8	3.28	109.19	105.74
61	c	436	A2M	C5-N7-C8	3.28	108.61	103.45
61	c	796	A2M	C5-N7-C8	3.26	108.58	103.45
11	AA	2922	OMG	C6-C5-N7	3.26	136.23	130.29
61	c	1781	MA6	C2-N3-C4	3.25	119.78	111.83
61	c	420	A2M	C2-N3-C4	3.25	119.77	111.83
61	c	1782	MA6	C2-N3-C4	3.25	119.77	111.83
11	AA	1449	A2M	N3-C2-N1	-3.22	123.71	128.58
11	AA	817	A2M	C4-N9-C8	3.21	109.11	105.74
11	AA	805	OMG	C6-C5-N7	3.21	136.12	130.29
61	c	436	A2M	C2-N3-C4	3.20	119.65	111.83
11	AA	2724	OMU	O4-C4-C5	-3.19	119.65	125.16
11	AA	898	OMU	O2-C2-N1	-3.19	118.64	122.80
11	AA	2640	A2M	C4-N9-C8	3.18	109.08	105.74
11	AA	2793	OMG	C6-C5-N7	3.18	136.07	130.29
61	c	541	A2M	C2-N3-C4	3.17	119.58	111.83

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
11	AA	649	A2M	C4-C5-N7	-3.17	106.96	110.58
11	AA	2870	5MC	C5-C4-N3	-3.16	118.51	121.75
61	c	100	A2M	C2-N3-C4	3.15	119.53	111.83
61	c	619	A2M	N3-C2-N1	-3.15	123.81	128.58
11	AA	2280	A2M	C4-C5-N7	-3.14	106.99	110.58
61	c	974	A2M	C2-N3-C4	3.12	119.45	111.83
61	c	796	A2M	C2-N3-C4	3.10	119.39	111.83
15	Bb	37	YYG	N1-C2-N2	-3.04	109.68	114.03
11	AA	2870	5MC	O2-C2-N3	-3.03	117.55	122.33
11	AA	2948	OMC	O2-C2-N3	-3.03	117.56	122.33
11	AA	2921	OMU	O4-C4-C5	-3.03	119.94	125.16
11	AA	2922	OMG	C2'-C1'-N9	-3.01	108.54	114.24
61	c	1781	MA6	N3-C4-N9	3.00	132.27	127.17
11	AA	2640	A2M	C5-N7-C8	3.00	108.16	103.45
11	AA	1133	A2M	O4'-C4'-C3'	-3.00	99.21	105.15
11	AA	2959	OMC	C2'-C1'-N1	-2.98	108.58	114.24
11	AA	1449	A2M	C4-C5-N7	-2.97	107.18	110.58
11	AA	2278	5MC	C3'-C2'-C1'	2.96	107.07	101.46
11	AA	2280	A2M	N3-C2-N1	-2.96	124.10	128.58
61	c	28	A2M	C4-C5-N7	-2.95	107.21	110.58
11	AA	898	OMU	O4-C4-C5	-2.95	120.08	125.16
11	AA	2220	A2M	C4-C5-N7	-2.94	107.22	110.58
11	AA	2278	5MC	C5-C4-N3	-2.92	118.77	121.75
61	c	1782	MA6	C5-N7-C8	2.90	108.01	103.45
61	c	1773	4AC	C6-C5-C4	2.90	120.50	117.00
11	AA	2946	A2M	C4-N9-C8	2.88	108.76	105.74
11	AA	1133	A2M	C5-N7-C8	2.87	107.96	103.45
11	AA	876	A2M	C4-C5-N7	-2.87	107.30	110.58
11	AA	2870	5MC	C3'-C2'-C1'	2.84	106.83	101.46
11	AA	650	OMC	C2'-C1'-N1	-2.83	108.86	114.24
11	AA	2256	A2M	C4-N9-C8	2.83	108.71	105.74
11	AA	908	OMG	O6-C6-C5	-2.83	119.06	126.53
61	c	578	OMU	O4-C4-C5	-2.82	120.31	125.16
61	c	1781	MA6	C5-N7-C8	2.82	107.88	103.45
61	c	796	A2M	C2'-C1'-N9	-2.81	109.12	113.75
11	AA	1133	A2M	N9-C8-N7	-2.81	109.95	113.94
15	Bb	37	YYG	O22-C21-N20	-2.79	120.29	124.86
11	AA	2421	OMU	C2'-C1'-N1	-2.79	108.95	114.24
11	AA	817	A2M	C5-N7-C8	2.78	107.81	103.45
11	AA	2256	A2M	C2'-C1'-N9	-2.76	109.20	113.75
11	AA	649	A2M	O2'-C2'-C1'	-2.76	103.75	108.99
61	c	1781	MA6	C4-N9-C8	2.75	108.62	105.74

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
11	AA	2946	A2M	C5-N7-C8	2.75	107.77	103.45
11	AA	2281	A2M	C5-N7-C8	2.72	107.73	103.45
11	AA	1437	OMC	C2'-C1'-N1	-2.70	109.11	114.24
11	AA	2347	OMU	O4-C4-C5	-2.70	120.51	125.16
61	c	1782	MA6	N3-C4-N9	2.67	131.71	127.17
11	AA	805	OMG	O6-C6-C5	-2.67	119.49	126.53
11	AA	867	OMG	C4-C5-N7	-2.67	106.44	110.67
11	AA	2815	OMG	C2'-C1'-N9	-2.66	109.19	114.24
11	AA	2959	OMC	O2-C2-N3	-2.64	118.17	122.33
11	AA	2870	5MC	N1-C2-N3	2.63	123.37	118.80
61	c	541	A2M	C4'-O4'-C1'	-2.63	103.65	109.47
61	c	1191	B8N	C31-N3-C2	2.63	121.53	117.64
11	AA	2640	A2M	N9-C8-N7	-2.61	110.23	113.94
11	AA	2197	OMC	O4'-C1'-C2'	-2.61	102.09	106.59
61	c	1191	B8N	C1'-C5-C4	2.61	121.57	117.61
11	AA	2281	A2M	N9-C8-N7	-2.61	110.24	113.94
11	AA	2640	A2M	C6-C5-N7	2.60	137.09	132.09
61	c	1773	4AC	C1'-N1-C2	2.59	124.16	118.44
11	AA	807	A2M	C4-C5-N7	-2.59	107.62	110.58
11	AA	898	OMU	C2'-C1'-N1	-2.59	109.33	114.24
11	AA	2815	OMG	C5-C6-N1	2.58	119.83	113.25
11	AA	817	A2M	O4'-C1'-N9	-2.57	103.15	108.09
11	AA	2256	A2M	C5-N7-C8	2.56	107.48	103.45
11	AA	1449	A2M	C5-N7-C8	2.54	107.44	103.45
61	c	619	A2M	C5-N7-C8	2.54	107.44	103.45
61	c	100	A2M	C2'-C1'-N9	-2.54	109.58	113.75
11	AA	2946	A2M	C2-N1-C6	2.53	122.89	118.73
11	AA	908	OMG	O3'-C3'-C4'	-2.52	103.83	111.08
61	c	1191	B8N	O4-C4-C5	-2.51	118.24	122.58
11	AA	2280	A2M	C5-N7-C8	2.51	107.39	103.45
11	AA	649	A2M	C4-N9-C8	2.51	108.37	105.74
11	AA	2946	A2M	O4'-C4'-C3'	-2.50	100.18	105.15
61	c	28	A2M	C2'-C1'-N9	-2.49	109.66	113.75
11	AA	2256	A2M	C6-C5-N7	2.49	136.88	132.09
11	AA	1450	OMG	C4-C5-N7	-2.48	106.73	110.67
61	c	1191	B8N	O4-C4-N3	-2.47	115.98	119.99
11	AA	2729	OMU	O4-C4-C5	-2.47	120.91	125.16
11	AA	2417	OMU	O4-C4-C5	-2.46	120.91	125.16
11	AA	908	OMG	C6-C5-N7	2.46	134.77	130.29
11	AA	2619	OMG	C5-C6-N1	2.46	119.51	113.25
11	AA	807	A2M	N9-C8-N7	-2.44	110.47	113.94
61	c	619	A2M	N9-C8-N7	-2.44	110.48	113.94

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
11	AA	2281	A2M	C6-C5-N7	2.44	136.79	132.09
11	AA	2347	OMU	C2'-C1'-N1	-2.43	109.62	114.24
11	AA	2197	OMC	O3'-C3'-C4'	-2.43	104.11	111.08
11	AA	817	A2M	N9-C8-N7	-2.42	110.50	113.94
11	AA	2634	UR3	C3U-N3-C4	2.42	121.22	117.87
11	AA	2288	OMG	C4-C5-N7	-2.41	106.84	110.67
61	c	28	A2M	N9-C8-N7	-2.41	110.52	113.94
11	AA	2256	A2M	C2-N1-C6	2.41	122.69	118.73
11	AA	645	1MA	N1-C2-N3	-2.38	123.17	126.00
61	c	1782	MA6	C4-N9-C8	2.38	108.23	105.74
11	AA	1449	A2M	N9-C8-N7	-2.36	110.58	113.94
61	c	28	A2M	C5-N7-C8	2.36	107.16	103.45
11	AA	805	OMG	C5-C6-N1	2.35	119.23	113.25
11	AA	2417	OMU	O2-C2-N1	-2.34	119.75	122.80
11	AA	2142	1MA	C4-C5-N7	-2.33	106.97	110.67
11	AA	2256	A2M	O2'-C2'-C1'	2.32	113.40	108.99
11	AA	1450	OMG	C5-C6-N1	2.32	119.17	113.25
11	AA	2793	OMG	O6-C6-C5	-2.32	120.41	126.53
11	AA	1888	OMU	O4-C4-C5	-2.32	121.16	125.16
11	AA	876	A2M	C4-N9-C8	2.32	108.17	105.74
15	Bb	37	YYG	C8-N7-C5	2.32	108.39	104.26
11	AA	645	1MA	C4-C5-N7	-2.30	107.02	110.67
11	AA	2815	OMG	C6-C5-C4	-2.30	115.36	118.83
11	AA	2793	OMG	C4-C5-N7	-2.30	107.02	110.67
11	AA	2421	OMU	O2-C2-N1	-2.30	119.80	122.80
11	AA	649	A2M	C5-N7-C8	2.29	107.05	103.45
11	AA	649	A2M	O4'-C1'-C2'	-2.28	102.65	106.59
15	Bb	37	YYG	C11-C12-N1	2.28	106.92	105.31
11	AA	2278	5MC	O2-C2-N3	-2.27	118.75	122.33
11	AA	2922	OMG	C4-C5-N7	-2.27	107.08	110.67
11	AA	817	A2M	C2'-C1'-N9	2.27	117.48	113.75
11	AA	2220	A2M	C2-N1-C6	2.26	122.45	118.73
11	AA	817	A2M	C6-C5-N7	2.26	136.45	132.09
61	c	1782	MA6	C4-C5-N7	-2.26	108.00	110.58
61	c	28	A2M	O2'-C2'-C1'	-2.26	104.70	108.99
11	AA	2280	A2M	N9-C8-N7	-2.26	110.74	113.94
11	AA	2619	OMG	C6-C5-C4	-2.25	115.44	118.83
11	AA	2619	OMG	C4-C5-N7	-2.25	107.10	110.67
11	AA	2288	OMG	O6-C6-C5	-2.25	120.59	126.53
61	c	578	OMU	O2-C2-N1	-2.25	119.87	122.80
15	Bb	37	YYG	C14-C13-C12	2.24	117.95	113.36
11	AA	876	A2M	C5-N7-C8	2.24	106.97	103.45

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
11	AA	807	A2M	C2-N1-C6	2.24	122.41	118.73
11	AA	2946	A2M	C6-C5-N7	2.24	136.40	132.09
11	AA	2197	OMC	C1'-N1-C6	2.23	125.54	120.78
11	AA	2922	OMG	C5-C6-N1	2.23	118.92	113.25
11	AA	2870	5MC	O4'-C1'-N1	2.22	113.40	108.36
61	c	1773	4AC	C5-C4-N3	-2.22	119.12	122.60
11	AA	2220	A2M	N9-C8-N7	-2.22	110.79	113.94
11	AA	908	OMG	C5-C6-N1	2.21	118.89	113.25
11	AA	807	A2M	C5-N7-C8	2.21	106.93	103.45
11	AA	2921	OMU	O2-C2-N1	-2.20	119.93	122.80
61	c	541	A2M	C2'-C1'-N9	-2.20	110.13	113.75
11	AA	2815	OMG	C4-C5-N7	-2.20	107.18	110.67
61	c	619	A2M	C6-C5-N7	2.20	136.33	132.09
11	AA	1888	OMU	O4'-C1'-N1	2.20	113.33	108.36
11	AA	2256	A2M	N9-C8-N7	-2.19	110.82	113.94
11	AA	2946	A2M	N9-C8-N7	-2.18	110.84	113.94
61	c	28	A2M	C6-C5-N7	2.18	136.30	132.09
11	AA	2281	A2M	C2-N1-C6	2.18	122.31	118.73
11	AA	2922	OMG	O6-C6-C5	-2.18	120.78	126.53
11	AA	867	OMG	C5-C6-N1	2.18	118.80	113.25
11	AA	1888	OMU	C5-C6-N1	-2.18	118.30	121.84
11	AA	817	A2M	O3'-C3'-C4'	-2.17	104.84	111.08
15	Bb	37	YYG	C8-N9-C4	2.17	108.63	106.54
11	AA	2791	OMG	C4-C5-N7	-2.17	107.23	110.67
11	AA	649	A2M	C6-C5-N7	2.16	136.25	132.09
11	AA	1133	A2M	C6-C5-N7	2.16	136.25	132.09
11	AA	2278	5MC	CM5-C5-C6	-2.14	119.96	122.85
11	AA	2619	OMG	O6-C6-C5	-2.13	120.90	126.53
11	AA	2946	A2M	O4'-C1'-N9	2.13	112.18	108.09
11	AA	2142	1MA	C6-C5-N7	2.12	135.91	132.16
11	AA	805	OMG	C4-C5-N7	-2.12	107.31	110.67
11	AA	1888	OMU	O2-C2-N3	-2.12	117.59	121.49
11	AA	2220	A2M	C5-N7-C8	2.10	106.76	103.45
11	AA	2640	A2M	C2-N1-C6	2.10	122.19	118.73
11	AA	2337	OMC	C2'-C1'-N1	-2.10	110.25	114.24
11	AA	2793	OMG	C5-C6-N1	2.09	118.57	113.25
15	Bb	37	YYG	N9-C8-N7	-2.08	109.55	113.40
61	c	420	A2M	C4-C5-N7	-2.08	108.21	110.58
61	c	436	A2M	C2'-C1'-N9	-2.07	110.34	113.75
11	AA	807	A2M	C6-C5-N7	2.07	136.08	132.09
11	AA	1450	OMG	C2-N1-C6	-2.06	121.37	125.11
11	AA	2220	A2M	C6-C5-N7	2.06	136.06	132.09

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
61	c	1191	B8N	O36-C34-O35	-2.05	119.42	124.08
11	AA	2288	OMG	C5-C6-N1	2.03	118.43	113.25
11	AA	876	A2M	N6-C6-N1	2.03	122.91	118.38
11	AA	2197	OMC	C5-C6-N1	-2.02	118.55	121.84
11	AA	2729	OMU	O3'-C3'-C4'	-2.02	105.29	111.08
11	AA	2142	1MA	N1-C2-N3	-2.02	123.60	126.00
11	AA	1450	OMG	O4'-C1'-N9	2.01	112.92	108.36

There are no chirality outliers.

All (79) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
11	AA	663	OMC	C1'-C2'-O2'-CM2
11	AA	1437	OMC	C1'-C2'-O2'-CM2
11	AA	1450	OMG	O4'-C4'-C5'-O5'
11	AA	2197	OMC	C2'-C1'-N1-C2
11	AA	2197	OMC	C2'-C1'-N1-C6
11	AA	2220	A2M	C1'-C2'-O2'-CM'
11	AA	2256	A2M	C1'-C2'-O2'-CM'
11	AA	2281	A2M	O4'-C4'-C5'-O5'
11	AA	2281	A2M	C3'-C4'-C5'-O5'
11	AA	2417	OMU	C1'-C2'-O2'-CM2
11	AA	2619	OMG	C1'-C2'-O2'-CM2
11	AA	2791	OMG	C1'-C2'-O2'-CM2
11	AA	2946	A2M	C1'-C2'-O2'-CM'
11	AA	2948	OMC	C1'-C2'-O2'-CM2
15	Bb	37	YYG	C11-C12-C13-C14
15	Bb	37	YYG	C16-C15-N20-C21
15	Bb	37	YYG	O23-C21-N20-C15
61	c	414	OMC	C1'-C2'-O2'-CM2
61	c	578	OMU	O4'-C4'-C5'-O5'
61	c	619	A2M	C1'-C2'-O2'-CM'
61	c	1191	B8N	C2'-C1'-C5-C6
61	c	1191	B8N	C2'-C1'-C5-C4
61	c	1773	4AC	N3-C4-N4-C7
15	Bb	37	YYG	O17-C16-O18-C19
15	Bb	37	YYG	C15-C16-O18-C19
15	Bb	37	YYG	O22-C21-N20-C15
11	AA	867	OMG	C3'-C4'-C5'-O5'
11	AA	908	OMG	O4'-C4'-C5'-O5'
11	AA	908	OMG	C3'-C4'-C5'-O5'
11	AA	2922	OMG	C3'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
61	c	541	A2M	C3'-C4'-C5'-O5'
61	c	562	OMG	C3'-C4'-C5'-O5'
61	c	578	OMU	C3'-C4'-C5'-O5'
61	c	1191	B8N	C32-C31-N3-C4
11	AA	1450	OMG	C3'-C4'-C5'-O5'
11	AA	2922	OMG	O4'-C4'-C5'-O5'
61	c	100	A2M	O4'-C4'-C5'-O5'
61	c	541	A2M	O4'-C4'-C5'-O5'
61	c	562	OMG	O4'-C4'-C5'-O5'
61	c	619	A2M	O4'-C4'-C5'-O5'
61	c	1191	B8N	C32-C31-N3-C2
15	Bb	37	YYG	C12-C13-C14-C15
61	c	619	A2M	C3'-C4'-C5'-O5'
15	Bb	37	YYG	C13-C14-C15-N20
11	AA	867	OMG	O4'-C4'-C5'-O5'
11	AA	2220	A2M	O4'-C4'-C5'-O5'
11	AA	2220	A2M	C3'-C4'-C5'-O5'
15	Bb	37	YYG	N1-C12-C13-C14
11	AA	2870	5MC	C2'-C1'-N1-C6
61	c	420	A2M	C1'-C2'-O2'-CM'
15	Bb	37	YYG	C13-C14-C15-C16
61	c	619	A2M	C2'-C1'-N9-C8
11	AA	2280	A2M	O4'-C4'-C5'-O5'
61	c	420	A2M	O4'-C4'-C5'-O5'
11	AA	2870	5MC	O4'-C1'-N1-C6
11	AA	817	A2M	C4'-C5'-O5'-P
15	Bb	37	YYG	N20-C15-C16-O18
61	c	1782	MA6	C4'-C5'-O5'-P
15	Bb	37	YYG	N20-C15-C16-O17
11	AA	2197	OMC	O4'-C1'-N1-C2
11	AA	2619	OMG	C3'-C4'-C5'-O5'
11	AA	2197	OMC	O4'-C1'-N1-C6
61	c	619	A2M	C2'-C1'-N9-C4
11	AA	1449	A2M	C3'-C2'-O2'-CM'
11	AA	2280	A2M	C3'-C2'-O2'-CM'
11	AA	2922	OMG	C3'-C2'-O2'-CM2
11	AA	645	1MA	C2'-C1'-N9-C4
61	c	28	A2M	O4'-C4'-C5'-O5'
11	AA	645	1MA	C2'-C1'-N9-C8
11	AA	2724	OMU	C1'-C2'-O2'-CM2
11	AA	649	A2M	C4'-C5'-O5'-P
61	c	619	A2M	O4'-C1'-N9-C8

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Mol	Chain	Res	Type	Atoms
11	AA	807	A2M	C3'-C2'-O2'-CM'
11	AA	2870	5MC	O4'-C1'-N1-C2
61	c	1782	MA6	C3'-C4'-C5'-O5'
11	AA	2870	5MC	C2'-C1'-N1-C2
11	AA	2281	A2M	C2'-C1'-N9-C8
61	c	1191	B8N	N3-C31-C32-C33
61	c	100	A2M	C3'-C4'-C5'-O5'

There are no ring outliers.

41 monomers are involved in 68 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
11	AA	2256	A2M	3	0
11	AA	876	A2M	1	0
61	c	1773	4AC	5	0
61	c	619	A2M	1	0
11	AA	2280	A2M	1	0
11	AA	2870	5MC	2	0
11	AA	908	OMG	1	0
11	AA	2946	A2M	3	0
11	AA	1450	OMG	1	0
11	AA	807	A2M	1	0
11	AA	1133	A2M	1	0
61	c	796	A2M	1	0
11	AA	817	A2M	3	0
11	AA	2724	OMU	3	0
11	AA	2959	OMC	1	0
15	Bb	37	YYG	5	0
11	AA	2619	OMG	1	0
61	c	414	OMC	2	0
61	c	1782	MA6	1	0
11	AA	2922	OMG	3	0
11	AA	2793	OMG	2	0
61	c	420	A2M	2	0
11	AA	2948	OMC	1	0
61	c	562	OMG	2	0
61	c	1781	MA6	1	0
11	AA	2640	A2M	1	0
11	AA	1437	OMC	1	0
61	c	1639	OMC	1	0
61	c	28	A2M	2	0
11	AA	663	OMC	2	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
11	AA	2220	A2M	1	0
11	AA	2815	OMG	1	0
11	AA	805	OMG	1	0
11	AA	2281	A2M	2	0
61	c	1126	OMG	1	0
11	AA	2337	OMC	1	0
11	AA	898	OMU	2	0
11	AA	649	A2M	2	0
11	AA	2417	OMU	2	0
61	c	436	A2M	1	0
11	AA	1449	A2M	2	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 285 ligands modelled in this entry, 280 are monoatomic - leaving 5 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	SO1	Aa	1101	-	34,39,39	1.16	3 (8%)	38,64,64	1.05	2 (5%)
88	SPD	AA	3608	-	9,9,9	0.32	0	8,8,8	0.81	0
88	SPD	AA	3606	-	9,9,9	0.31	0	8,8,8	0.71	0
90	GDP	Aa	1102	-	29,30,30	1.14	3 (10%)	45,47,47	1.77	7 (15%)
88	SPD	AA	3605	-	9,9,9	0.31	0	8,8,8	0.96	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	SO1	Aa	1101	-	-	11/21/104/104	0/7/5/5
88	SPD	AA	3608	-	-	2/7/7/7	-
88	SPD	AA	3606	-	-	2/7/7/7	-
90	GDP	Aa	1102	-	-	7/16/32/32	0/3/3/3
88	SPD	AA	3605	-	-	0/7/7/7	-

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
89	Aa	1101	SO1	C2-C6	-4.05	1.49	1.55
90	Aa	1102	GDP	C5-C4	3.06	1.47	1.38
90	Aa	1102	GDP	C6-N1	-2.47	1.34	1.38
89	Aa	1101	SO1	C16-C22	-2.40	1.51	1.54
89	Aa	1101	SO1	C3-C9	-2.10	1.51	1.56
90	Aa	1102	GDP	C5-N7	-2.04	1.35	1.39

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
90	Aa	1102	GDP	C5-C4-N3	-5.97	118.89	128.39
90	Aa	1102	GDP	C2-N3-C4	4.94	120.81	112.30
90	Aa	1102	GDP	N9-C4-N3	4.48	134.91	125.95
90	Aa	1102	GDP	C6-C5-N7	3.26	136.22	130.29
89	Aa	1101	SO1	C12-C6-C10	-2.59	105.89	107.92
90	Aa	1102	GDP	C4-C5-N7	-2.52	106.67	110.67
90	Aa	1102	GDP	C3'-C2'-C1'	2.37	105.94	101.46
90	Aa	1102	GDP	O6-C6-C5	-2.12	120.93	126.53
89	Aa	1101	SO1	C7-C2-C6	2.12	116.11	112.05

There are no chirality outliers.

All (22) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
89	Aa	1101	SO1	C20-C13-C4-C1
89	Aa	1101	SO1	C21-C13-C4-C1
89	Aa	1101	SO1	C20-C13-C4-C12
89	Aa	1101	SO1	C21-C13-C4-C12
89	Aa	1101	SO1	O19-C11-C3-C1
89	Aa	1101	SO1	O19-C11-C3-C10
90	Aa	1102	GDP	C5'-O5'-PA-O3A
90	Aa	1102	GDP	C5'-O5'-PA-O1A

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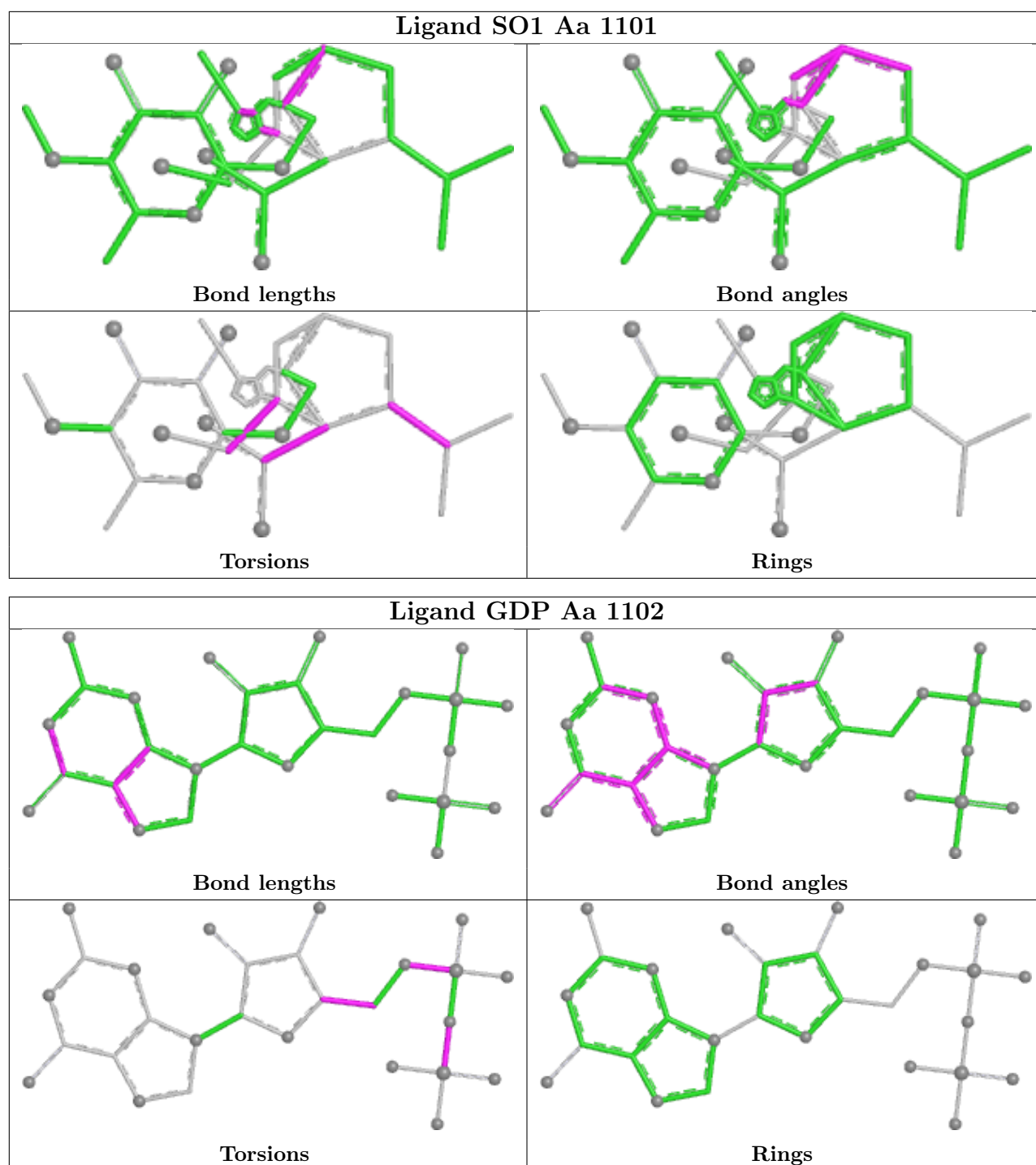
Mol	Chain	Res	Type	Atoms
90	Aa	1102	GDP	C5'-O5'-PA-O2A
90	Aa	1102	GDP	O4'-C4'-C5'-O5'
90	Aa	1102	GDP	C3'-C4'-C5'-O5'
88	AA	3608	SPD	C7-C8-C9-N10
89	Aa	1101	SO1	C3-C1-C5-O14
88	AA	3606	SPD	N1-C2-C3-C4
88	AA	3608	SPD	N1-C2-C3-C4
89	Aa	1101	SO1	C3-C1-C5-O15
90	Aa	1102	GDP	PA-O3A-PB-O1B
90	Aa	1102	GDP	PA-O3A-PB-O3B
89	Aa	1101	SO1	C2-C1-C5-O14
89	Aa	1101	SO1	C2-C1-C5-O15
88	AA	3606	SPD	C4-C5-N6-C7
89	Aa	1101	SO1	O19-C11-C3-C9

There are no ring outliers.

5 monomers are involved in 11 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
89	Aa	1101	SO1	6	0
88	AA	3608	SPD	1	0
88	AA	3606	SPD	2	0
90	Aa	1102	GDP	1	0
88	AA	3605	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.

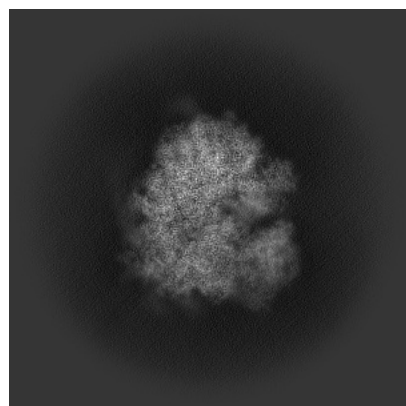
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-16684. These allow visual inspection of the internal detail of the map and identification of artifacts.

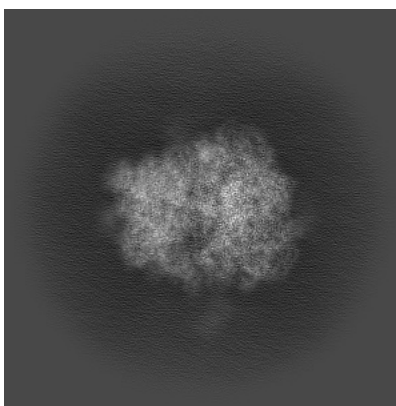
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

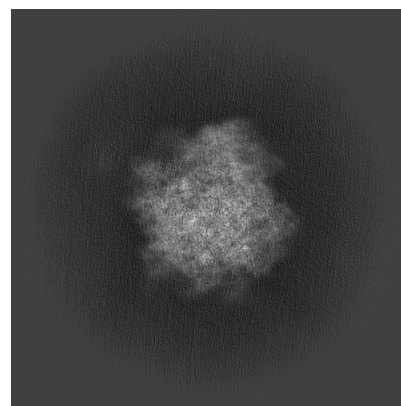
6.1.1 Primary map



X

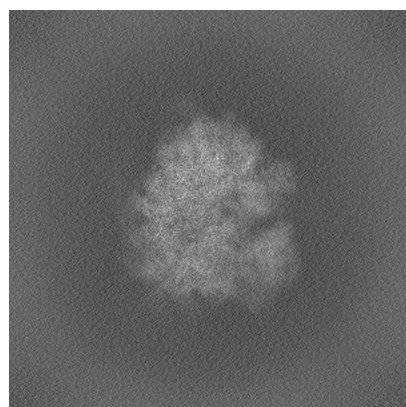


Y

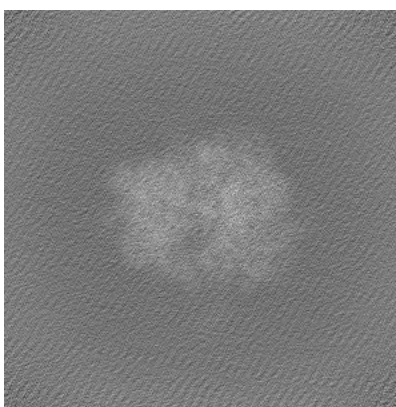


Z

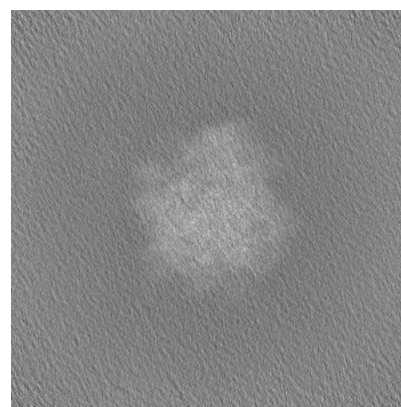
6.1.2 Raw map



X



Y

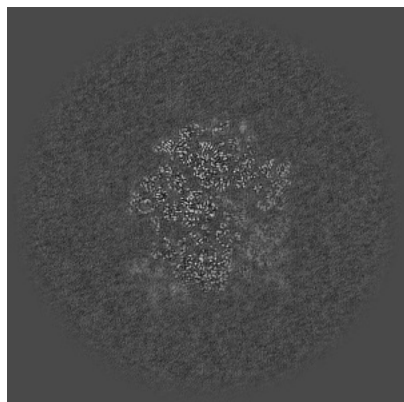


Z

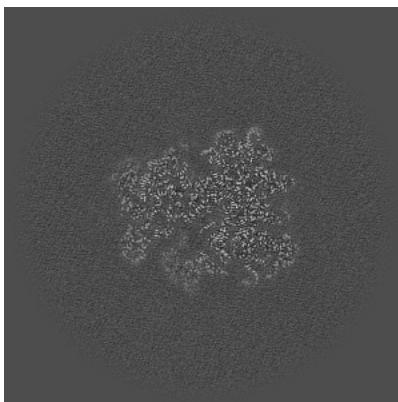
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

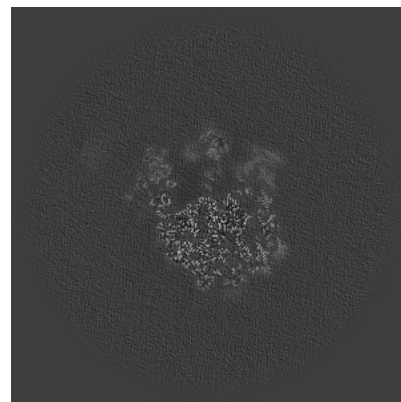
6.2.1 Primary map



X Index: 300

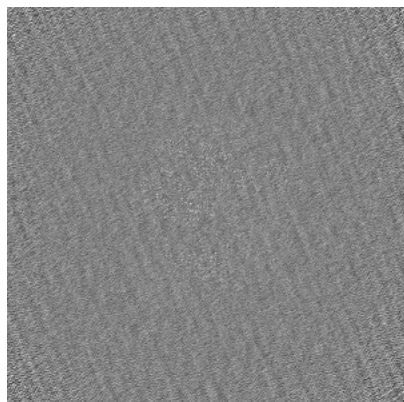


Y Index: 300

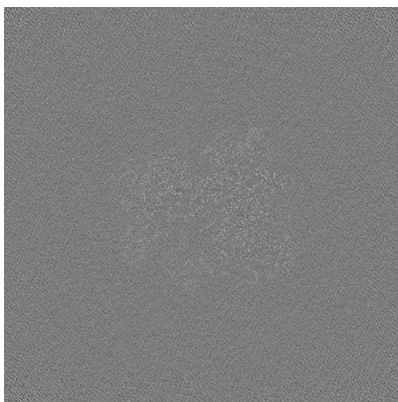


Z Index: 300

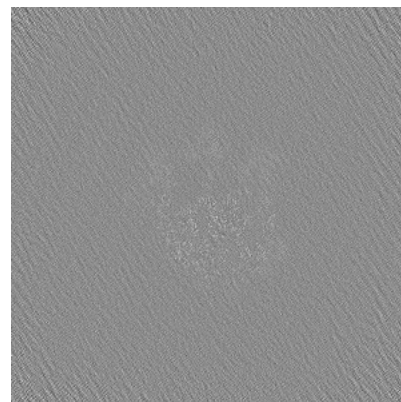
6.2.2 Raw map



X Index: 300



Y Index: 300

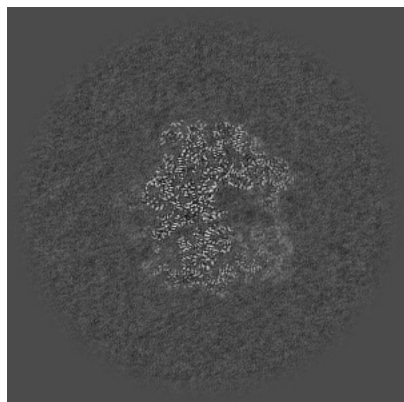


Z Index: 300

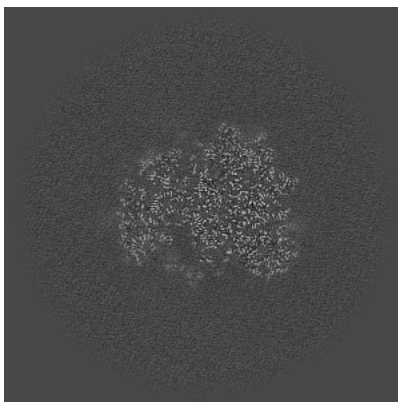
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

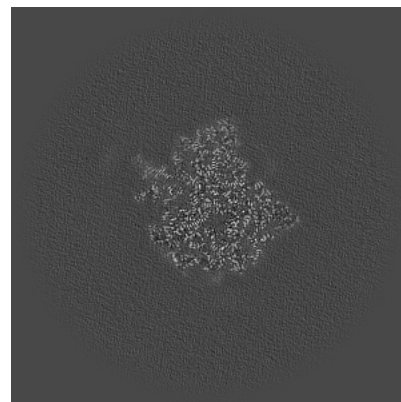
6.3.1 Primary map



X Index: 319

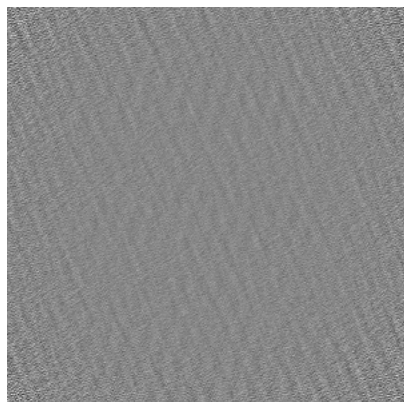


Y Index: 290

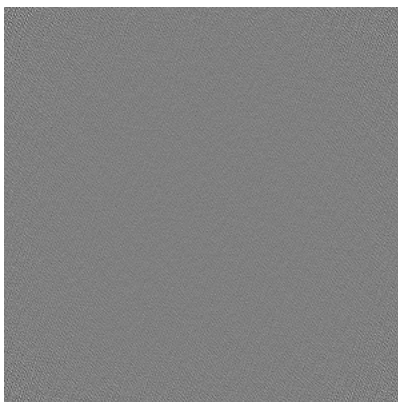


Z Index: 340

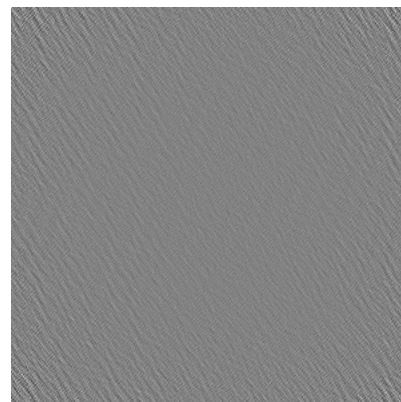
6.3.2 Raw map



X Index: 0



Y Index: 0

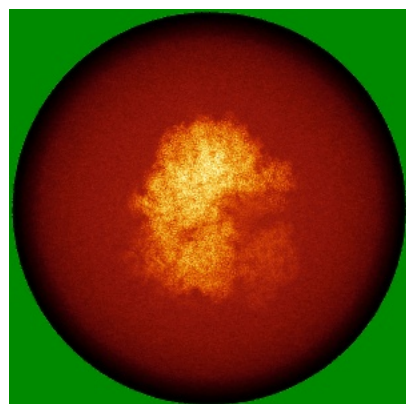


Z Index: 0

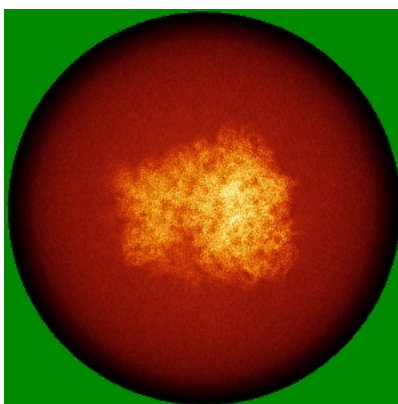
The images above show the largest variance slices of the map in three orthogonal directions.

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

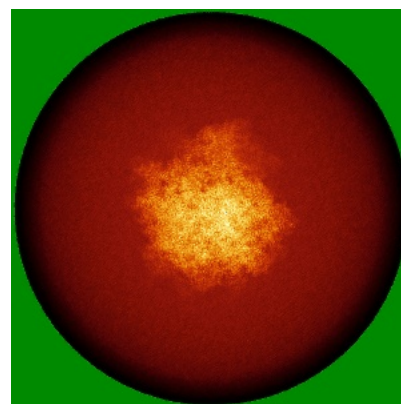
6.4.1 Primary map



X

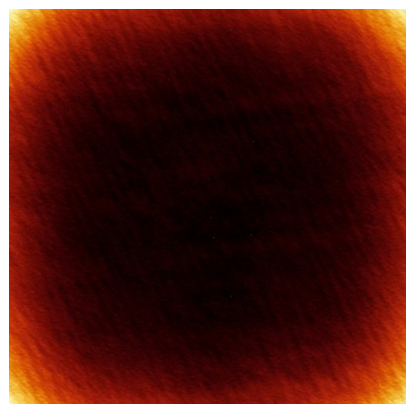


Y

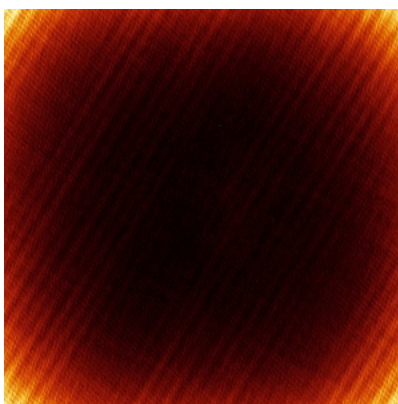


Z

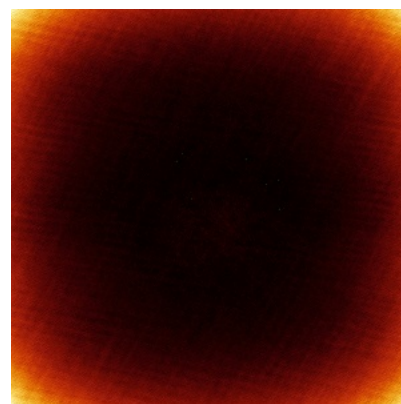
6.4.2 Raw map



X



Y

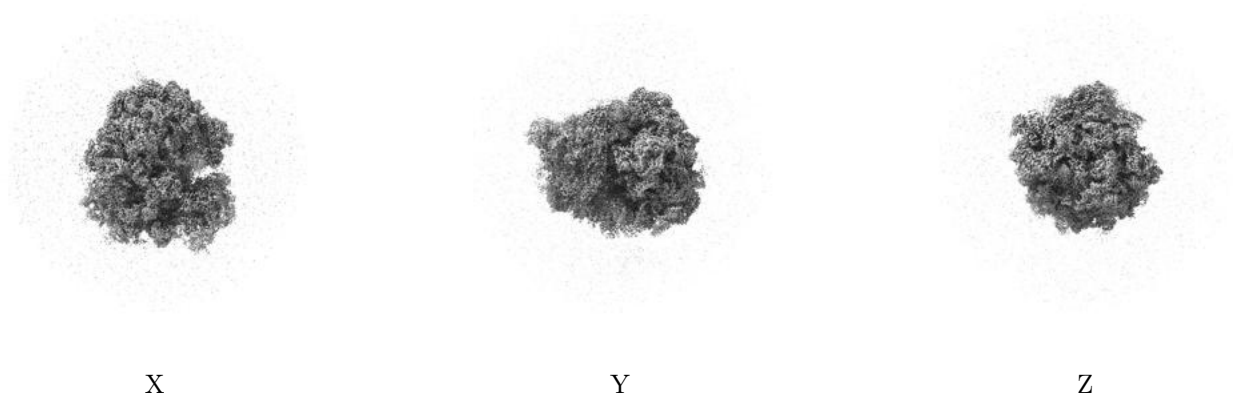


Z

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.

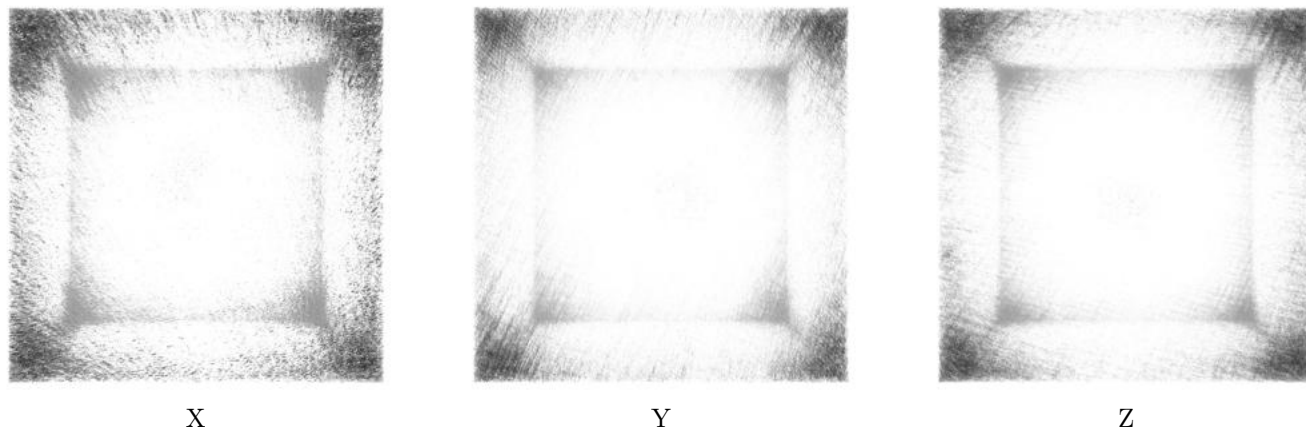
6.5 Orthogonal surface views [i](#)

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.

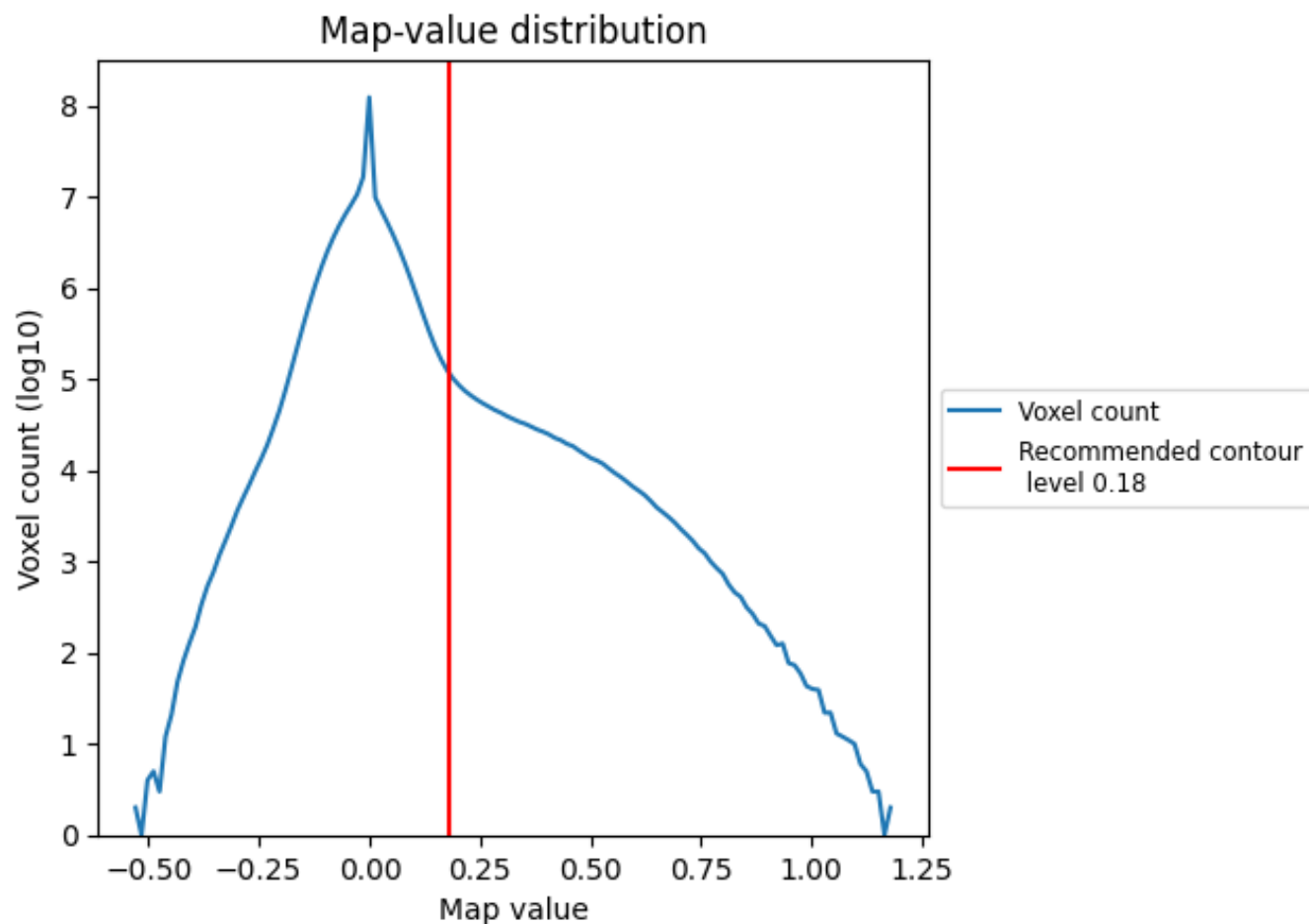
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

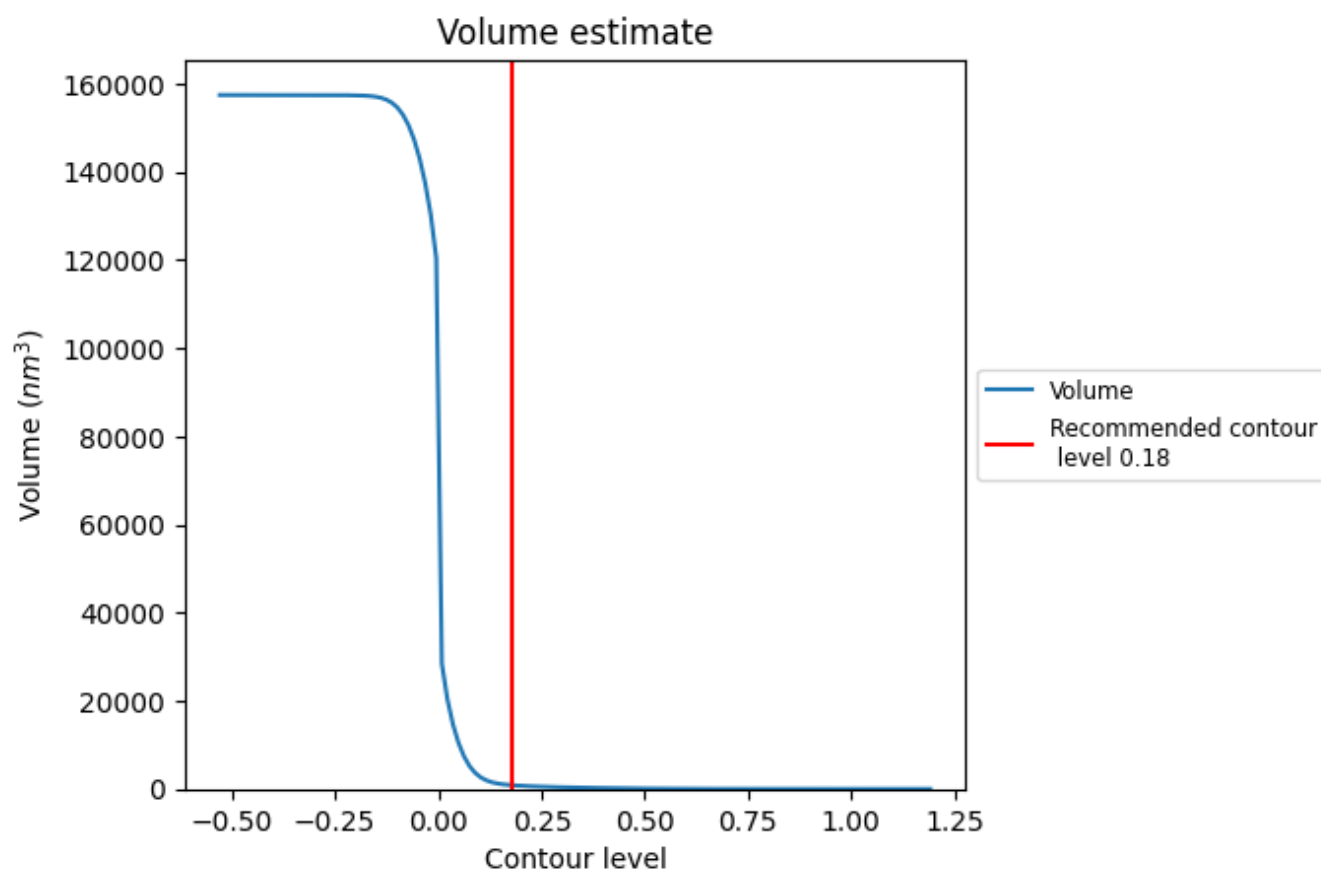
This section contains the results of statistical analysis of the map.

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.

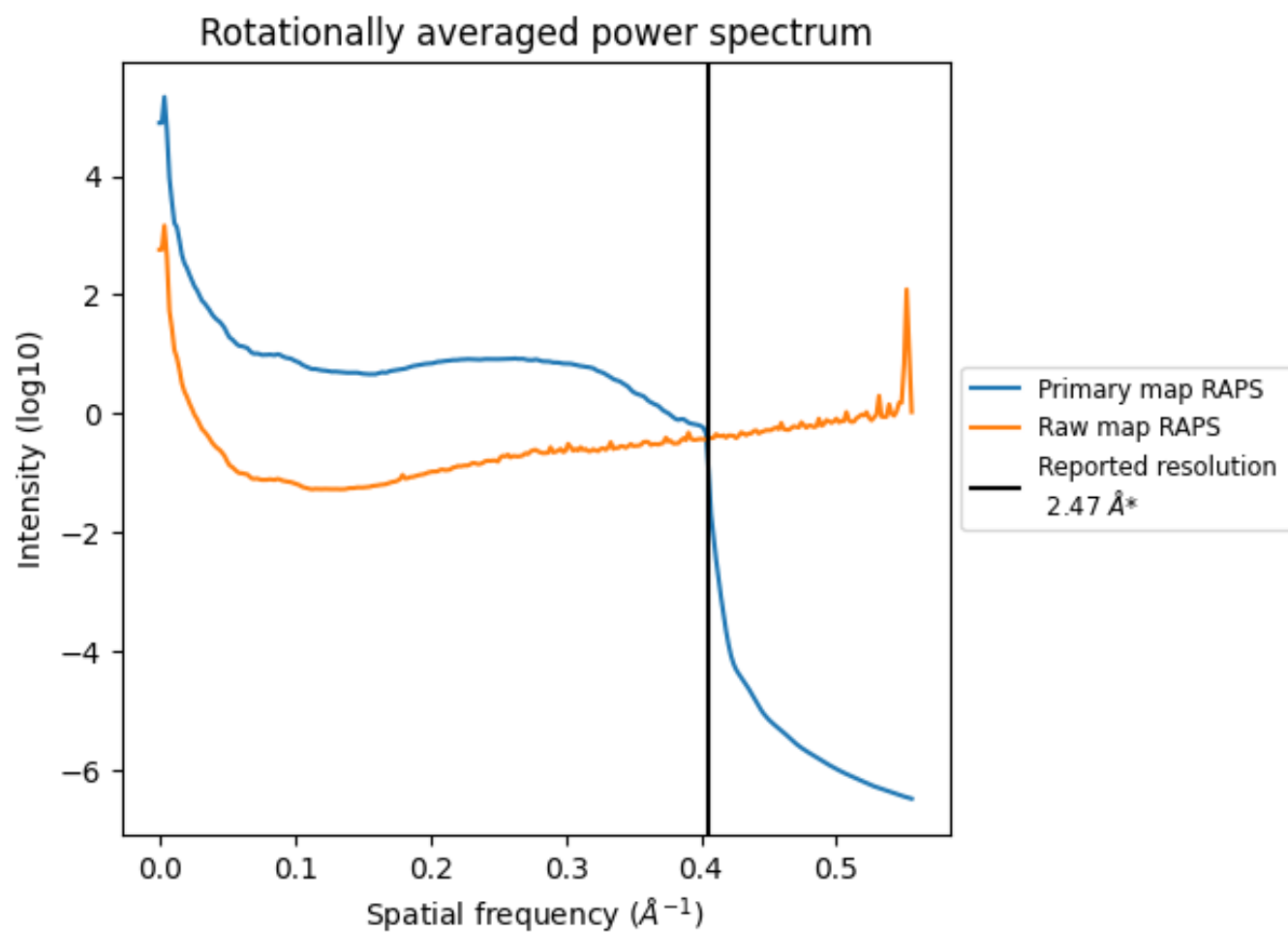
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 842 nm³; this corresponds to an approximate mass of 761 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum ⓘ

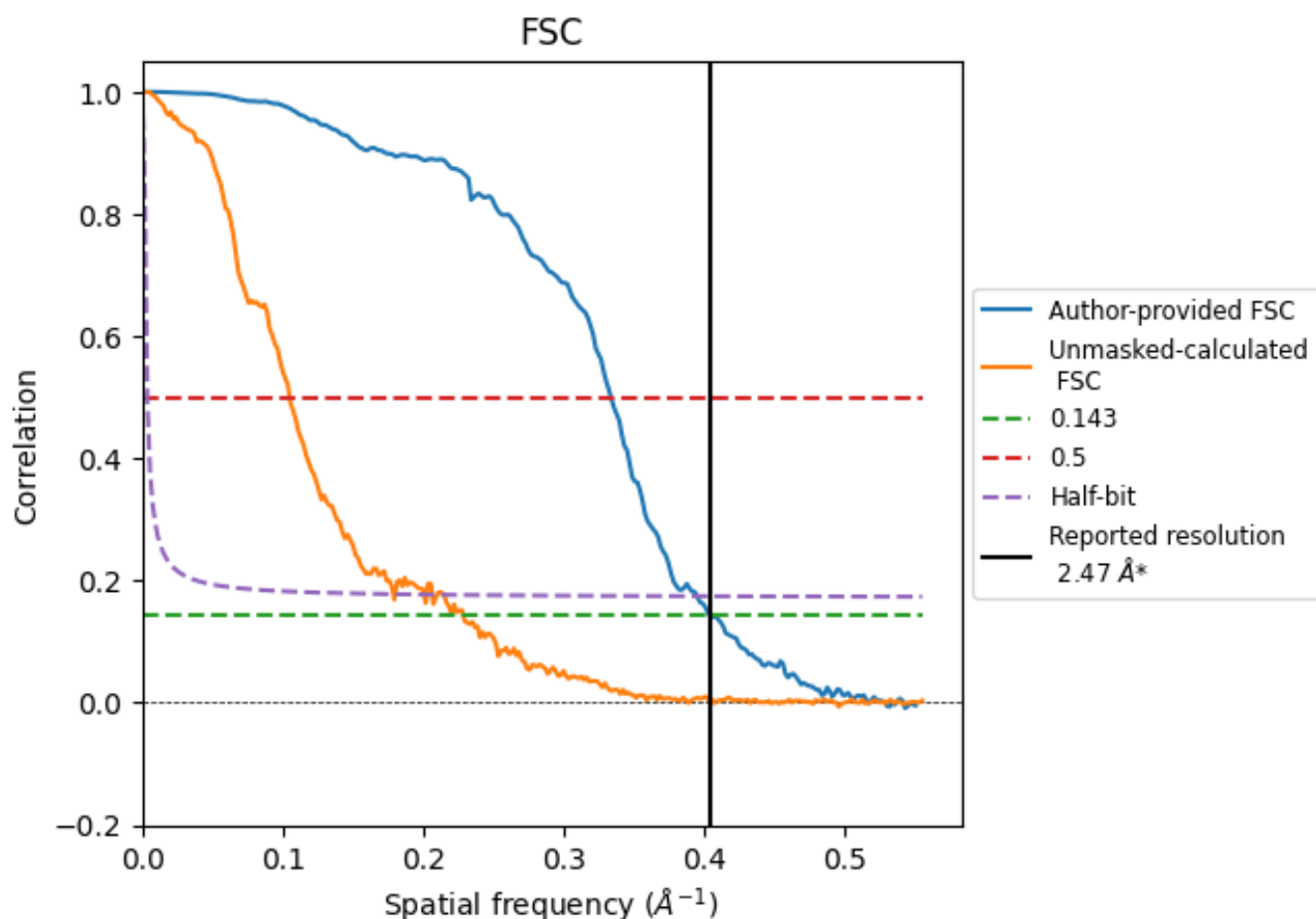


*Reported resolution corresponds to spatial frequency of 0.405 Å⁻¹

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 0.405 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

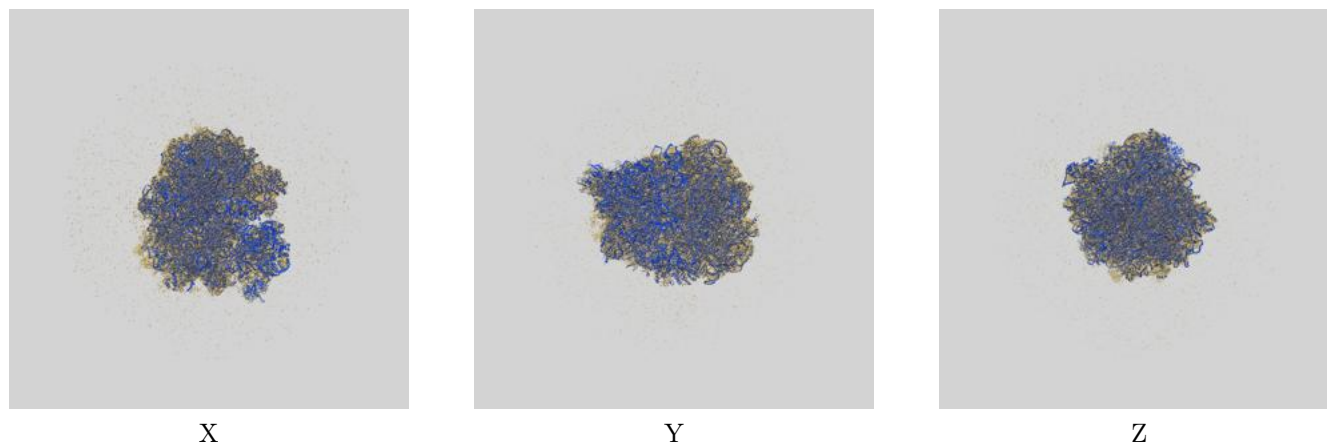
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.47	-	-
Author-provided FSC curve	2.47	2.99	2.53
Unmasked-calculated*	4.37	9.52	5.59

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.37 differs from the reported value 2.47 by more than 10 %

9 Map-model fit [i](#)

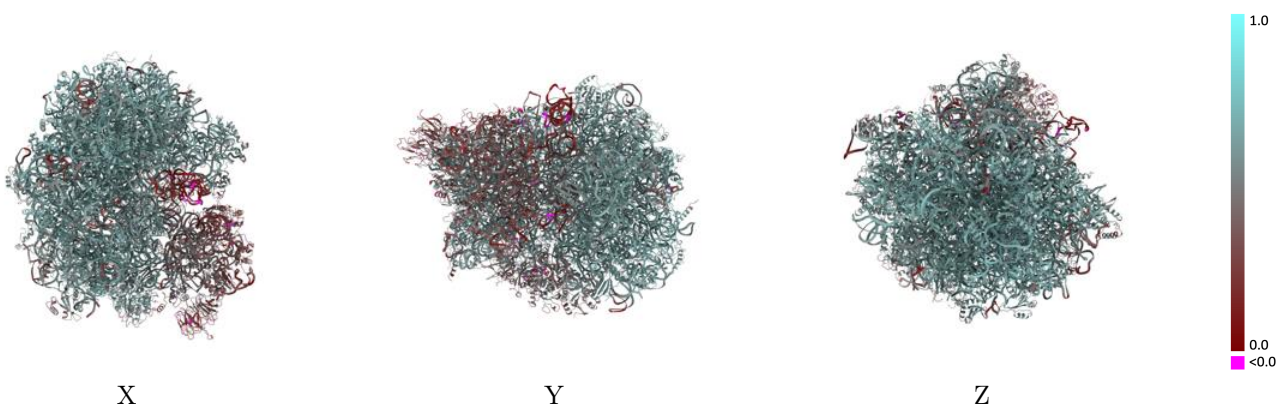
This section contains information regarding the fit between EMDB map EMD-16684 and PDB model 8CIV. Per-residue inclusion information can be found in [section 3](#) on [page 24](#).

9.1 Map-model overlay [i](#)



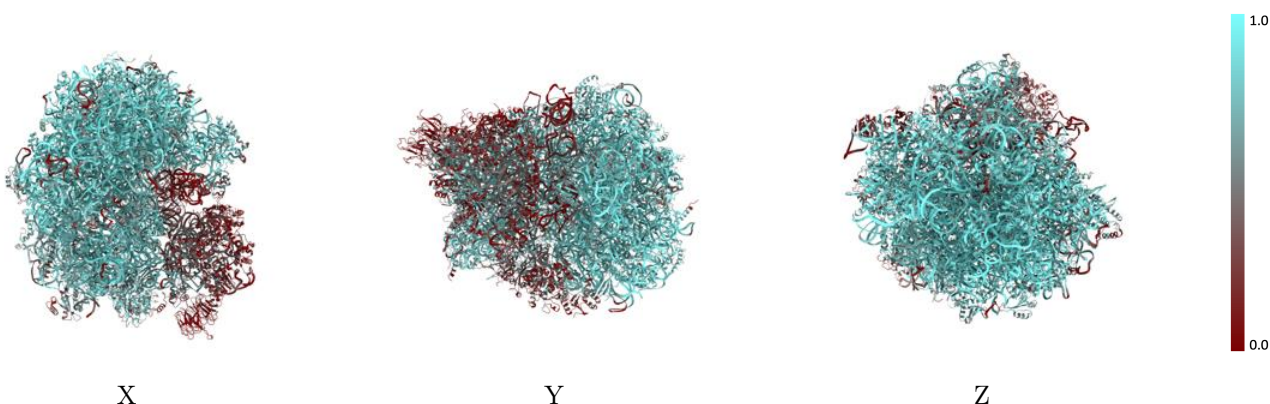
The images above show the 3D surface view of the map at the recommended contour level 0.18 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



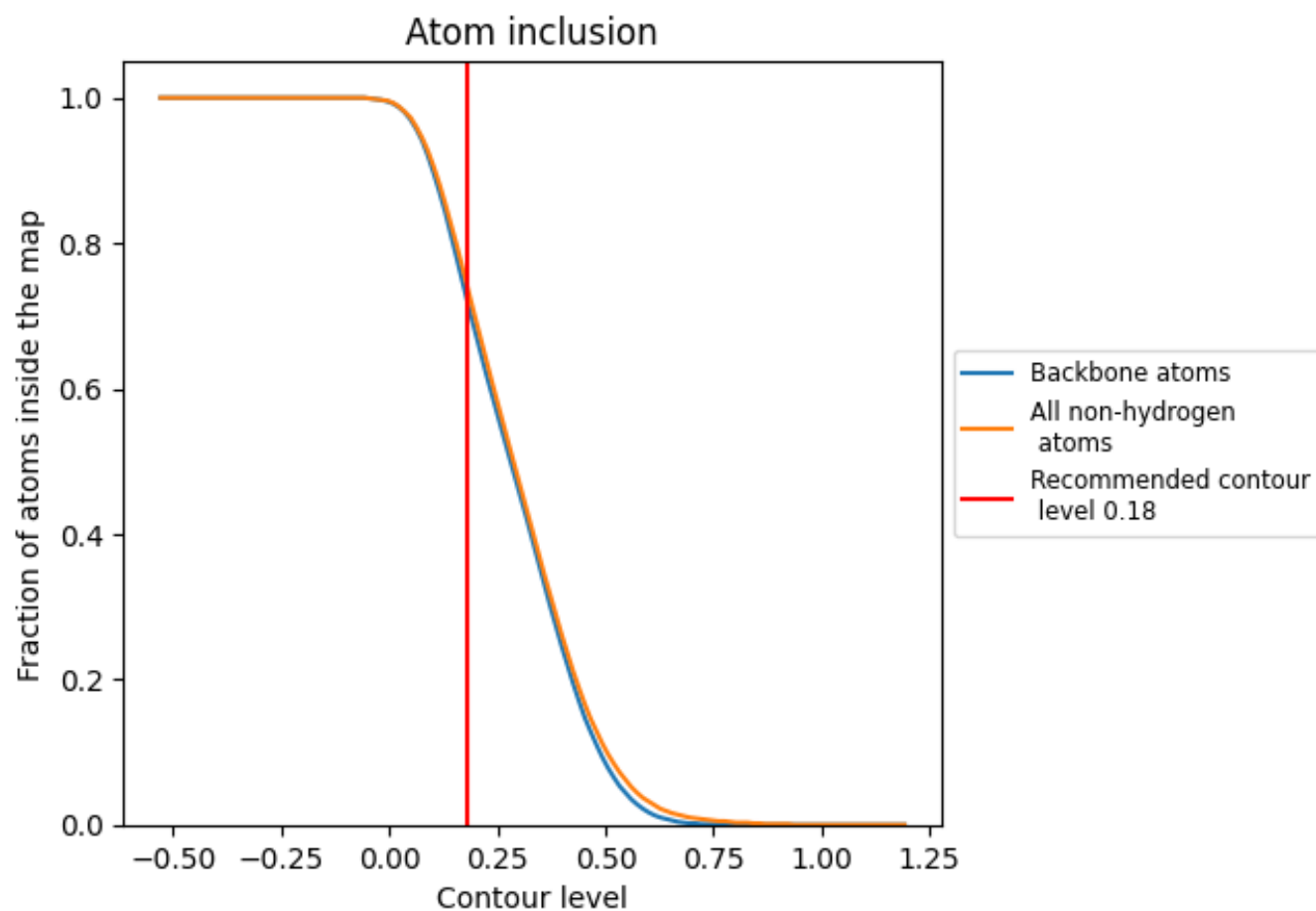
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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, 72% of all backbone atoms, 74% 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	 0.7410	 0.5610
0	 0.5850	 0.5400
1	 0.0180	 0.1990
2	 0.7850	 0.5960
3	 0.6820	 0.5520
4	 0.2240	 0.3810
5	 0.3800	 0.3990
6	 0.5790	 0.4950
7	 0.1340	 0.2910
8	 0.0510	 0.2020
A	 0.8690	 0.6380
AA	 0.8800	 0.6000
Aa	 0.3830	 0.4670
B	 0.8860	 0.6440
BB	 0.9080	 0.6040
Bb	 0.2450	 0.3760
C	 0.8770	 0.6390
CC	 0.9310	 0.6250
Cc	 0.3110	 0.3290
D	 0.8060	 0.6130
DD	 0.2930	 0.4470
Dd	 0.6000	 0.5580
E	 0.8500	 0.6320
EE	 0.8780	 0.6490
Ee	 0.1060	 0.3010
F	 0.8030	 0.6180
FF	 0.8590	 0.6320
G	 0.6890	 0.5590
GG	 0.8720	 0.6350
H	 0.8600	 0.6440
HH	 0.6960	 0.5610
I	 0.8200	 0.6240
II	 0.7980	 0.6120
J	 0.8390	 0.6270
JJ	 0.8670	 0.6390



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Chain	Atom inclusion	Q-score
K	 0.8460	 0.6310
KK	 0.7440	 0.5880
L	 0.8110	 0.6170
LL	 0.7980	 0.6110
M	 0.8740	 0.6330
MM	 0.7890	 0.6210
N	 0.7300	 0.5850
NN	 0.5750	 0.5150
O	 0.7940	 0.6200
OO	 0.7960	 0.6070
P	 0.7700	 0.5900
PP	 0.8350	 0.6240
Pp	 0.0000	 0.3720
Q	 0.8830	 0.6460
QQ	 0.9190	 0.6520
R	 0.9200	 0.6580
S	 0.8540	 0.6310
T	 0.8200	 0.6140
U	 0.7360	 0.5730
V	 0.9250	 0.6540
W	 0.6690	 0.5650
X	 0.8650	 0.6340
Y	 0.7920	 0.6320
Z	 0.7590	 0.6300
a	 0.7880	 0.6070
b	 0.8100	 0.6300
c	 0.7240	 0.5240
d	 0.6790	 0.5540
e	 0.6970	 0.5690
f	 0.7520	 0.5930
g	 0.2630	 0.3830
h	 0.7280	 0.5840
i	 0.1950	 0.3740
j	 0.4850	 0.4860
k	 0.5390	 0.5120
l	 0.7490	 0.5830
m	 0.7250	 0.5680
n	 0.2200	 0.3240
o	 0.7690	 0.5960
p	 0.7830	 0.6120
q	 0.7670	 0.5890
r	 0.1040	 0.2790

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Chain	Atom inclusion	Q-score
s	 0.2620	 0.3960
t	 0.3580	 0.4090
u	 0.1330	 0.3010
v	 0.1820	 0.3330
w	 0.2460	 0.3890
x	 0.7410	 0.5840
y	 0.8530	 0.6370
z	 0.7420	 0.6010