



Full wwPDB EM Validation Report ⓘ

Mar 6, 2026 – 10:43 PM UTC

PDB ID : 8CDR / pdb_00008cdr
EMDB ID : EMD-16594
Title : Translocation intermediate 2 (TI-2) 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 : 2023-01-31
Resolution : 2.04 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

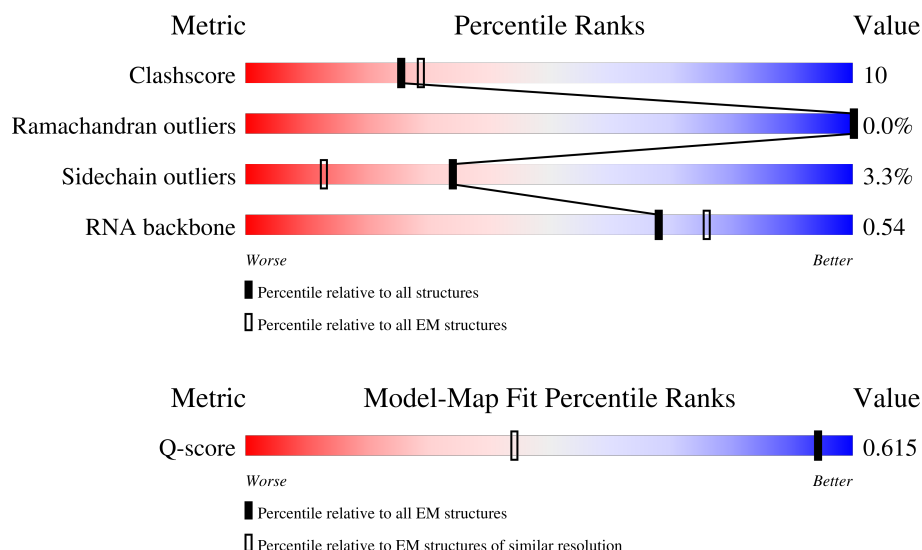
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 2.04 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	1810 (1.55 - 2.54)

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	
2	1	108	
3	2	119	

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

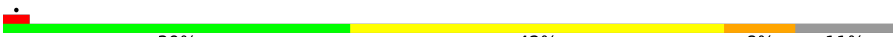
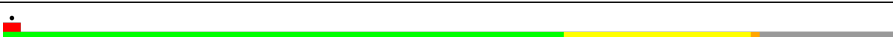
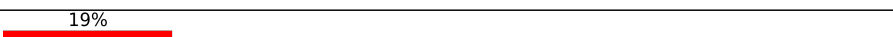
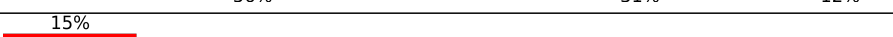
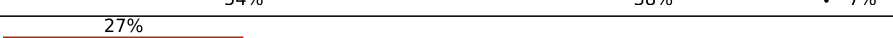
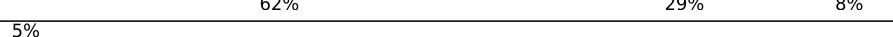
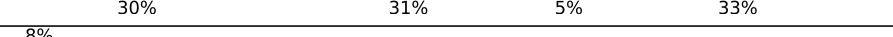
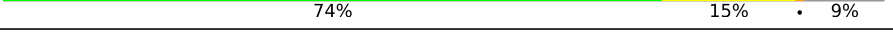
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Mol	Chain	Length	Quality of chain
29	H	137	
30	HH	297	
31	I	155	
32	II	176	
33	J	142	
34	JJ	244	
35	K	127	
36	KK	256	
37	L	136	
38	LL	191	
39	M	149	
40	MM	221	
41	N	59	
42	NN	174	
43	O	105	
44	OO	199	
45	P	113	
46	PP	138	
47	Pp	2	
48	Q	130	
49	QQ	204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

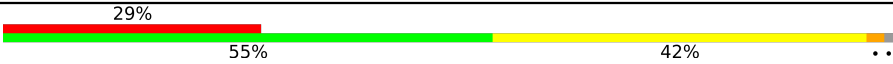
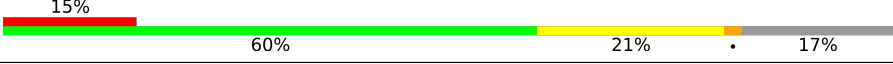
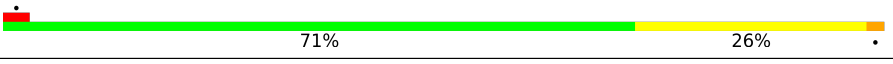
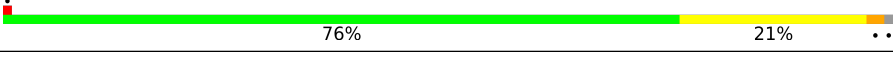
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Mol	Chain	Length	Quality of chain
54	V	88	
55	W	78	
56	X	51	
57	Y	128	
58	Z	25	
59	a	106	
60	b	92	
61	c	1800	
62	d	252	
63	e	255	
64	f	254	
65	g	240	
66	h	261	
67	i	225	
68	j	236	
69	k	190	
70	l	200	
71	m	197	
72	n	105	
73	o	156	
74	p	151	
75	q	137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

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

2 Entry composition

There are 91 unique types of molecules in this entry. The entry contains 207753 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	52	Total	C	N	O	S	0	0
			433	269	91	69	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 60S ribosomal protein L9-A.

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 dipeptide.

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-A.

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

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

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

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

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

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

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

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

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

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

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

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

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

- Molecule 65 is a protein called RPS3 isoform 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	g	205	Total	C	N	O	S	0	0
			1593	1008	293	286	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		
			1481	951	265	265	0	0

- 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		
			1457	906	291	258	2	0	0

- 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		
			1494	943	289	261	1	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
72	n	70	Total	C	N	O	S		
			596	388	96	110	2	0	0

- 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		
			1146	735	217	191	3	0	0

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

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

- 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		
			891	545	182	163	1	0	0

- 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).

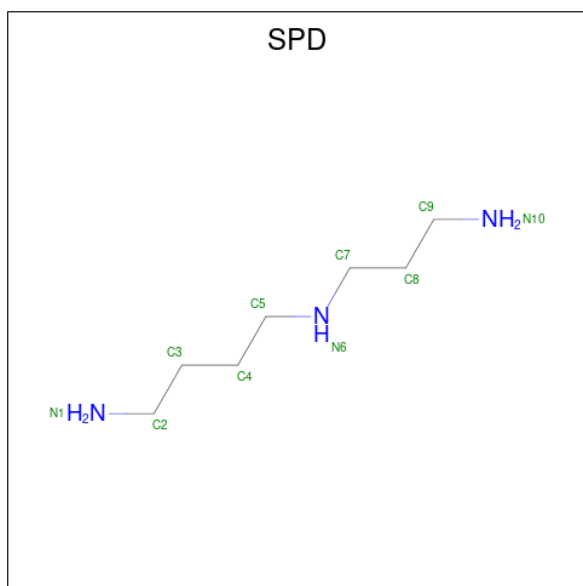
Mol	Chain	Residues	Atoms		AltConf
86	AA	200	Total	Mg	0
			200	200	
86	Aa	1	Total	Mg	0
			1	1	
86	B	1	Total	Mg	0
			1	1	
86	BB	5	Total	Mg	0
			5	5	
86	Bb	1	Total	Mg	0
			1	1	

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Mol	Chain	Residues	Atoms		AltConf
86	CC	4	Total	Mg	0
			4	4	
86	FF	1	Total	Mg	0
			1	1	
86	H	1	Total	Mg	0
			1	1	
86	MM	1	Total	Mg	0
			1	1	
86	QQ	1	Total	Mg	0
			1	1	
86	c	50	Total	Mg	0
			50	50	
86	q	1	Total	Mg	0
			1	1	

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

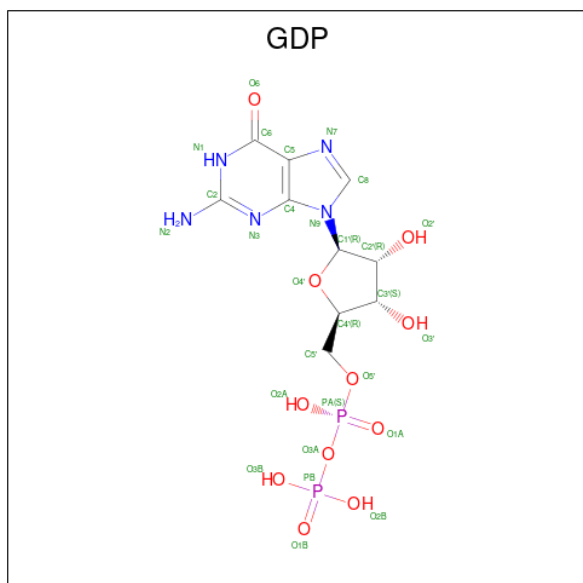


Mol	Chain	Residues	Atoms			AltConf
87	AA	1	Total	C	N	0
			10	7	3	
87	AA	1	Total	C	N	0
			10	7	3	
87	AA	1	Total	C	N	0
			10	7	3	
87	c	1	Total	C	N	0
			10	7	3	

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

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

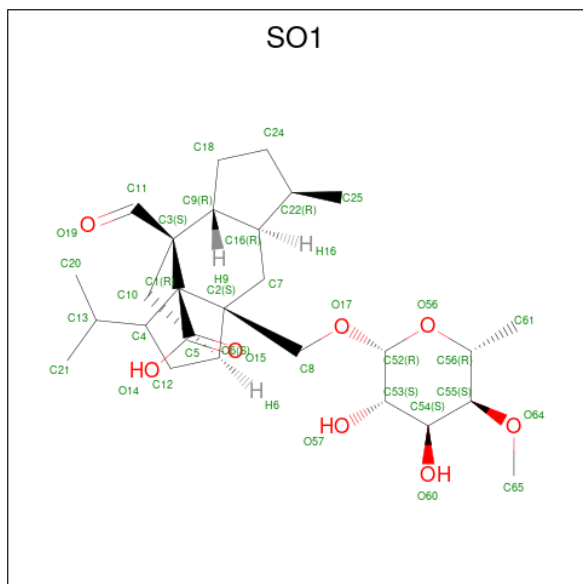
- Molecule 89 is GUANOSINE-5'-DIPHOSPHATE (CCD ID: GDP) (formula: C₁₀H₁₅N₅O₁₁P₂) (labeled as "Ligand of Interest" by depositor).



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

- Molecule 90 is [1R-(1.ALPHA.,3A.BETA.,4.BETA.,4A.BETA.,7.BETA.,7A.ALPHA.,8A.BETA.)]8A-[(6-DEOXY-4-O-METHYL-BETA-D-ALTROPYRANOSYLOXY)METHY

L]-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: $C_{27}H_{42}O_8$) (labeled as "Ligand of Interest" by depositor).



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

- Molecule 91 is water.

Mol	Chain	Residues	Atoms		AltConf
91	2	1	Total	O	0
			1	1	
91	A	2	Total	O	0
			2	2	
91	AA	851	Total	O	0
			851	851	
91	B	2	Total	O	0
			2	2	
91	BB	22	Total	O	0
			22	22	
91	CC	20	Total	O	0
			20	20	
91	Cc	1	Total	O	0
			1	1	
91	D	3	Total	O	0
			3	3	
91	EE	7	Total	O	0
			7	7	

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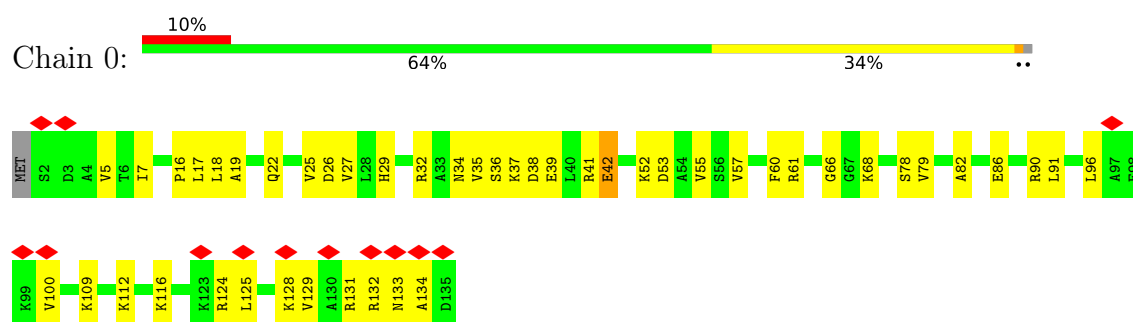
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Mol	Chain	Residues	Atoms		AltConf
91	F	3	Total 3	O 3	0
91	FF	4	Total 4	O 4	0
91	GG	4	Total 4	O 4	0
91	H	2	Total 2	O 2	0
91	HH	2	Total 2	O 2	0
91	J	2	Total 2	O 2	0
91	JJ	1	Total 1	O 1	0
91	M	3	Total 3	O 3	0
91	MM	1	Total 1	O 1	0
91	N	1	Total 1	O 1	0
91	Q	4	Total 4	O 4	0
91	QQ	7	Total 7	O 7	0
91	V	3	Total 3	O 3	0
91	a	2	Total 2	O 2	0
91	c	131	Total 131	O 131	0
91	h	1	Total 1	O 1	0
91	o	2	Total 2	O 2	0
91	p	3	Total 3	O 3	0
91	z	1	Total 1	O 1	0

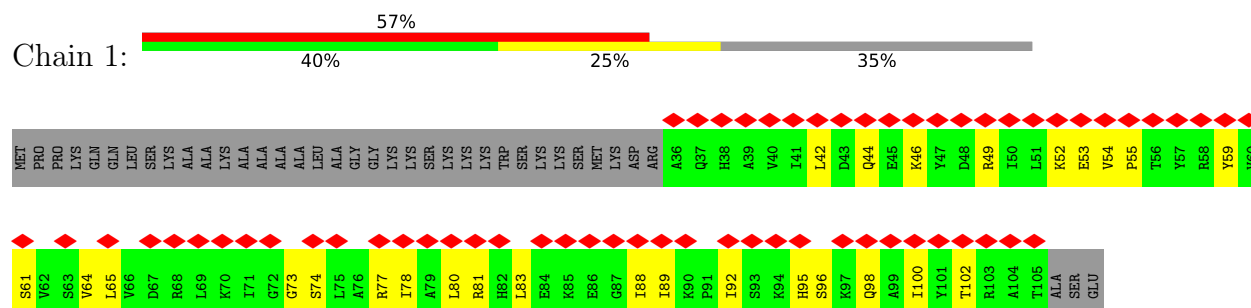
3 Residue-property plots [i](#)

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

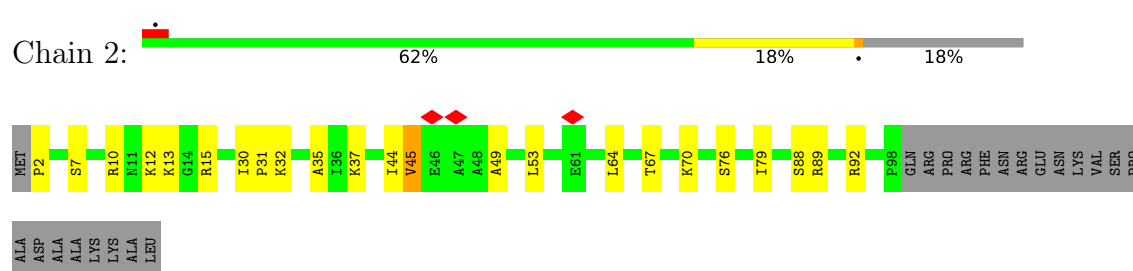
• Molecule 1: 40S ribosomal protein S24-A



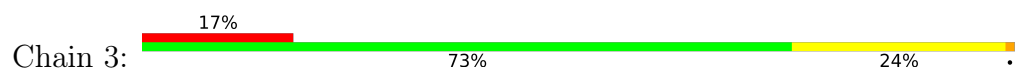
• Molecule 2: 40S ribosomal protein S25-A



• Molecule 3: 40S ribosomal protein S26

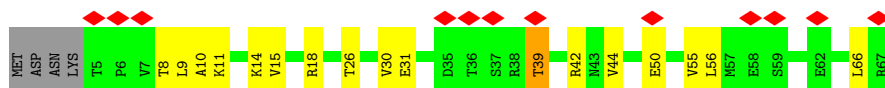


• Molecule 4: 40S ribosomal protein S27-A

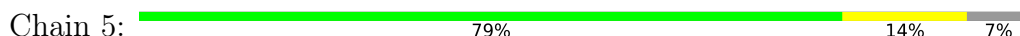




- Molecule 5: 40S ribosomal protein S28-A



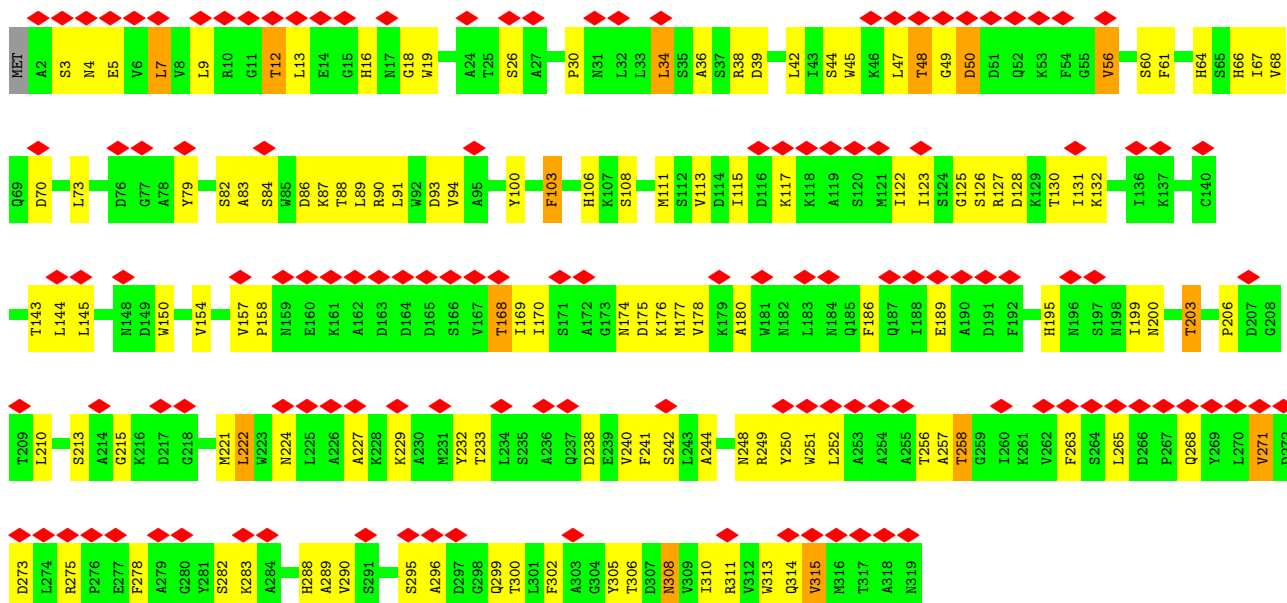
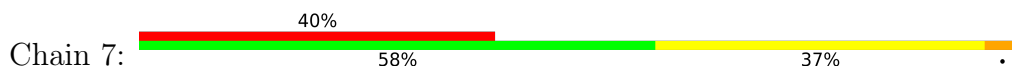
- Molecule 6: HLJ1_G0030400.mRNA.1.CDS.1



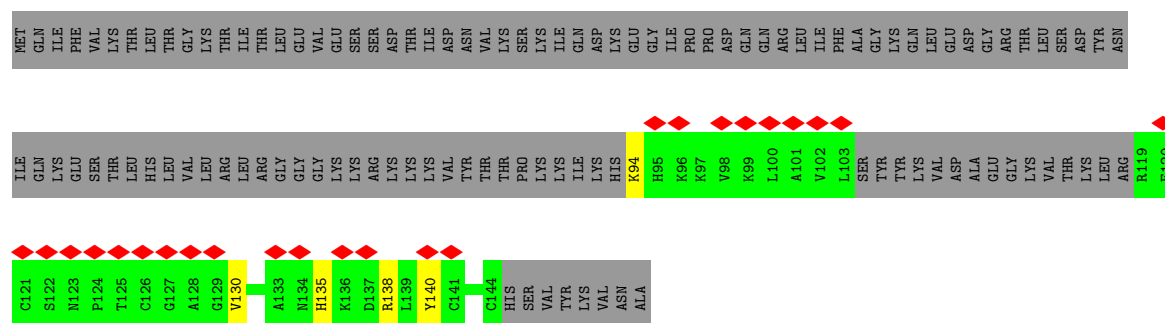
- Molecule 7: 40S ribosomal protein S30-A



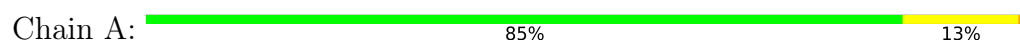
- Molecule 8: Guanine nucleotide-binding protein subunit beta-like protein



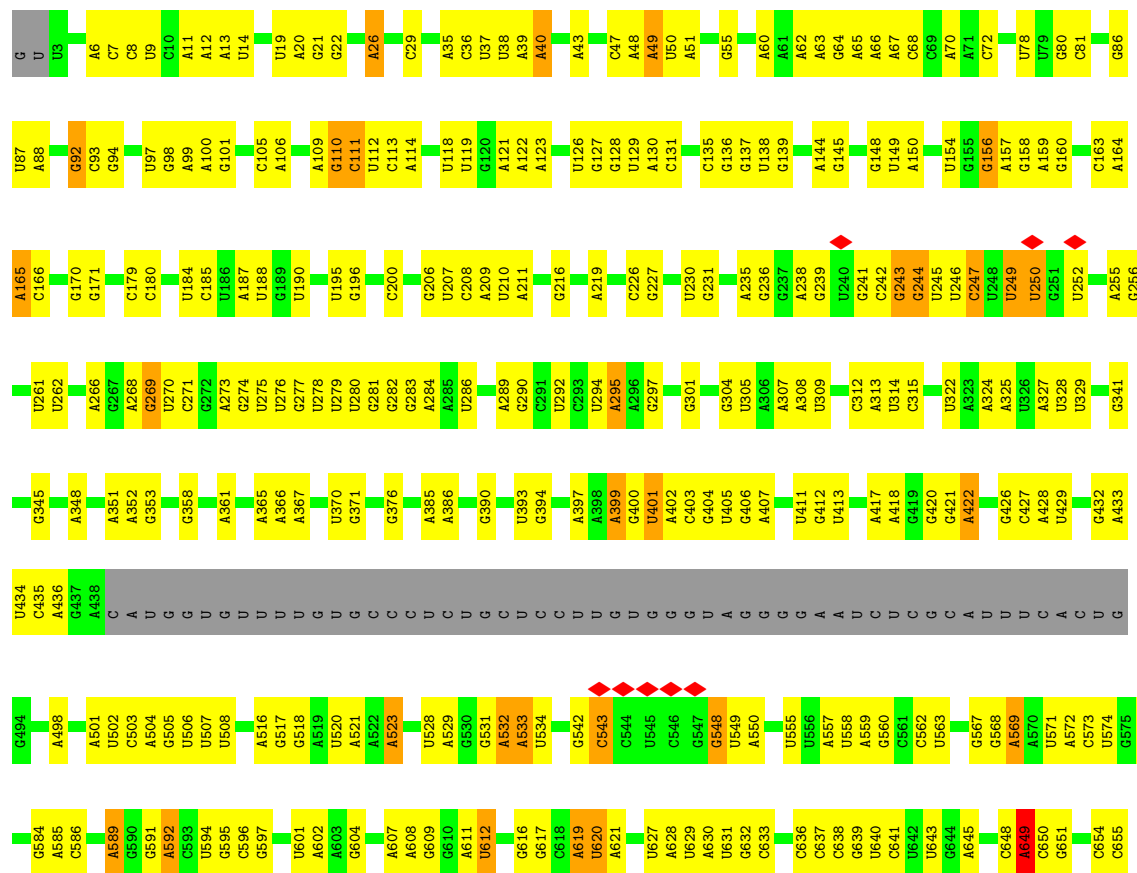
- Molecule 9: Ubiquitin-40S ribosomal protein S31



• Molecule 10: 60S ribosomal protein L16-A

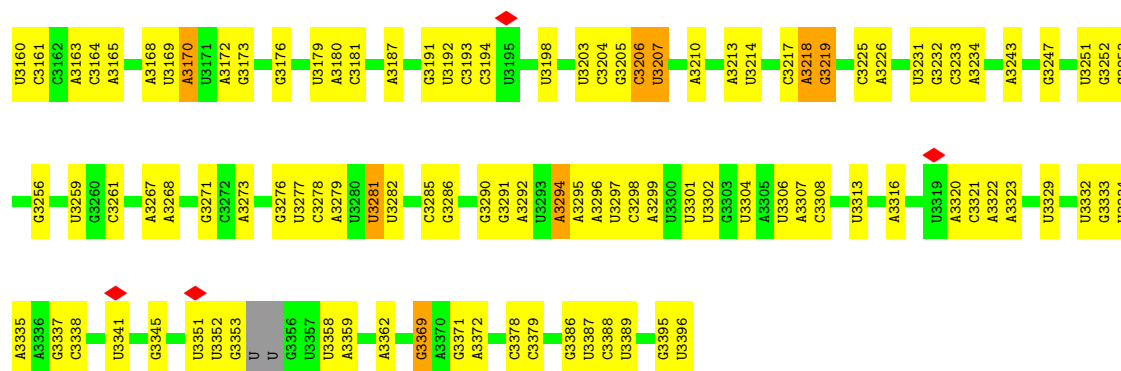


• Molecule 11: 25S ribosomal RNA

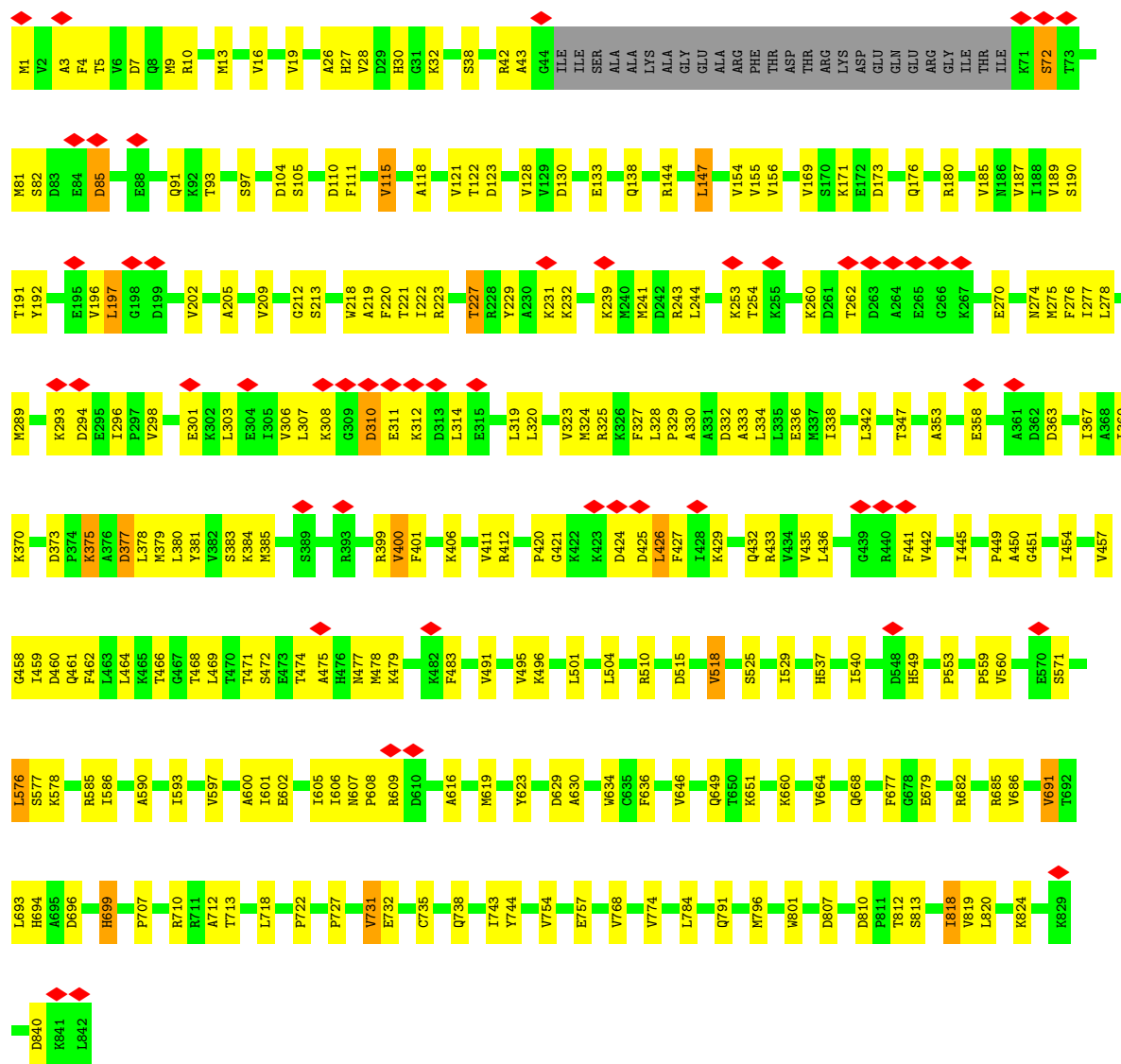




A3073	G2968	G2800	G2707	G2611	A2523	U2460	G2386	U2282	U2193	G2115	G	A1911
G3074	A2969	A2801	C2708	U2612	A2524	A2461	G2397	G2283	G2194	G2116	G	G1914
G3075	C2970	A2802	C2711	U2613	G2525	A2462	A2397	C2284	C2195	A2117	C	A1915
U3078	G2972	U2806	G2714	G2615	G2527	G2463	A2402	C2285	C2196	A2118	C	U1916
G3080	G2973	U2807	G2715	G2616	U2532	U2464	G2403	A2291	U2203	A2120	U	U1920
U3084	U2974	A2808	A2716	U2617	G2533	G2465	A2404	U2292	C2204	G2121	G	A1921
G3085	A2975	C2809	U2717	G2618	G2534	G2466	C2406	U2301	U2205	G2122	C	A1922
G3089	U2976	C2810	U2717	U2619	A2535	G2467	C2407	G2302	A2207	U2127	U	U1924
G3090	U2977	C2811	U2722	U2620	A2536	G2468	U2408	C2306	A2208	U2128	G	U1925
U3090	U2978	A2813	U2723	U2621	U2537	G2469	U2411	G2307	U2213	U2129	G	C1926
A3091	C2983	G2814	U2724	U2622	U2538	C2470	G2412	G2214	A2214	A2131	C	G1927
C3092	U2986	G2815	U2725	A2625	C2539	U2471	A2413	U2310	A2215	U2132	U	A1932
A3094	A2987	G2816	U2726	A2626	G2540	U2472	G2414	G2311	C2216	U2133	C	U1940
C3096	U2988	A2817	A2727	C2628	U2541	U2473	G2415	A2312	U2217	U2134	G	C1941
C3097	G2990	G2823	U2728	U2629	U2542	G2474	U2417	U2314	A2219	U2137	C	U1942
G3101	U2997	U2829	U2729	A2640	U2543	G2475	G2418	G2315	A2220	A2138	U	U1952
C3102	A3000	G2830	C2737	G2651	U2544	U2476	G2419	A2328	A2221	A2139	A	G
U3103	C3001	U2835	U2744	U2652	C2545	G2477	C2420	U2329	A2222	U2140	G	G
U3104	U2920	G2836	U2745	A2655	C2546	U2478	G2421	C2328	A2223	U2141	C	U
U3105	U2921	A2837	G2746	U2656	C2547	C2479	U2422	U2334	A2224	A2142	C	A
A3106	C2927	G2840	A2747	A2657	G2549	A2480	A2424	G2335	U2225	A2143	C	U
C3107	C2928	G2841	A2748	G2658	C2552	G2481	G2425	U2336	U2226	A2144	G	U
G3108	U3107	U2842	U2749	U2659	U2553	U2482	U2426	U2344	A2228	A2147	C	U
C3109	U2930	G2843	G2750	G2660	U2554	G2483	U2427	U2345	C2229	U2148	C	U
C3110	C2931	A2844	U2751	G2661	A2554	U2484	U2428	A2345	C2230	A2149	C	A
A3113	U2935	U2845	U2752	G2662	U2557	A2485	G2429	G2346	C2231	G2150	G	G
A3114	A2936	A2846	G2753	G2663	U2558	A2486	A2430	U2347	A2232	G2151	U	G
C3117	G2937	C2849	U2757	A2675	U2559	U2487	A2432	A2348	G2233	A2152	G	G
C3118	C2938	U2855	G2760	A2676	C2560	A2488	U2434	U2351	C2234	U2153	C	C
U3119	U2942	G2856	U2763	A2677	A2562	C2489	U2435	A2352	A2244	G2155	A	U
C3120	G2945	C2857	U2764	A2678	U2565	U2490	U2436	A2357	U2249	A2158	C	U
A3122	U2946	U2860	G2765	A2679	C2566	A2491	G2437	A2358	G2249	U2159	A	G
C3045	G2947	U2861	U2766	U2680	C2567	C2492	A2440	G2250	G2251	G2160	C	A
A3046	C2948	U2862	U2767	C2682	C2568	U2493	A2441	A2252	G2252	G2161	U	U
U3047	U2949	U2863	U2768	U2683	A2569	A2494	G2442	G2253	C2253	U2162	C	A
A3048	G2950	G2865	A2769	C2684	U2570	C2495	A2443	C2365	U2254	G2094	C	A
C3049	C2951	U2866	U2772	U2688	C2571	U2497	C2444	A2367	A2255	G2095	C	C
U3050	U2952	C2867	U2775	A2689	G2573	U2498	U2446	A2368	A2256	G2169	U	G
G3052	U2953	U2868	G2776	G2690	C2574	U2499	G2447	G2369	C2257	U2170	C	C
C3053	U2954	C2870	G2777	A2691	C2582	A2500	A2448	G2370	U2261	U2176	C	A
C3059	G2959	A2871	G2778	U2696	G2583	U2501	G2449	A2373	G2262	U2101	C	C
U3064	C2960	A2872	U2779	A2697	G2584	A2502	A2449	C2374	A2263	U2102	U	U
C3065	U2962	G2875	A2792	G2698	G2585	G2503	G2450	G2375	U2264	U2103	G	G
U3066	C2963	U2880	G2793	G2699	U2588	U2504	G2451	G2376	C2265	G2105	U	U
C3067	G2964	C2881	U2794	G2700	U2589	U2505	U2453	G2377	U2266	A2107	C	C
U3068	U2965	U2882	U2795	A2704	G2592	U2506	G2454	U2388	G2272	G2185	U	U
G2966	A2967	U2883	G2796	A2705	A2593	U2507	U2455	C2389	U2273	G2187	C	G
C3072	C3159	C2884	U2799	G2706	C2594	U2509	A2456	A2390	A2280	A2188	A	A
						U2510	G2457	G2393	A2281	U2189	C	U
						A2511	A2458			G2111		
						C2512				U2112		
						U2513				G2113		
						U2514				C2114		
						A2515						
						A2520						
						U2521						
						G2522						

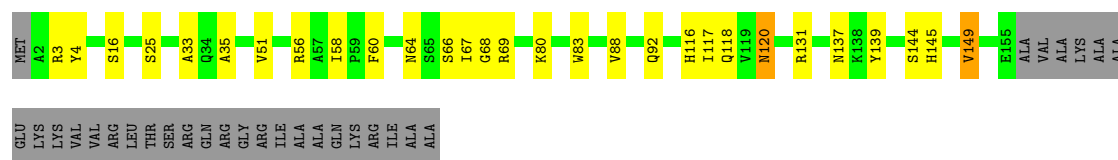


• Molecule 12: Elongation factor 2



• Molecule 13: 60S ribosomal protein L17-A

Chain B: 

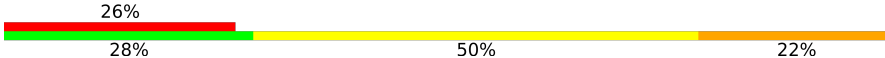


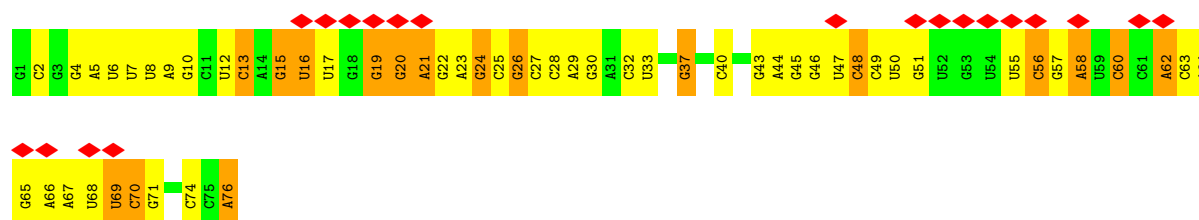
• Molecule 14: 5S ribosomal RNA

Chain BB: 



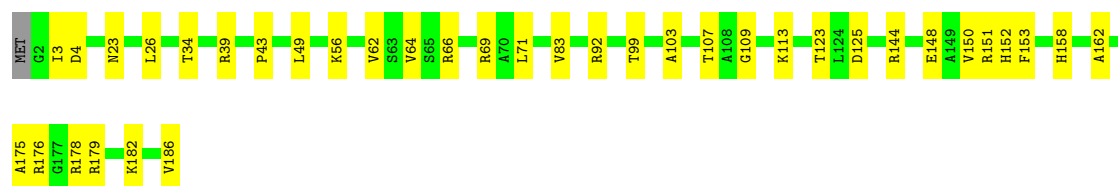
• Molecule 15: Transfer RNA Phe

Chain Bb: 



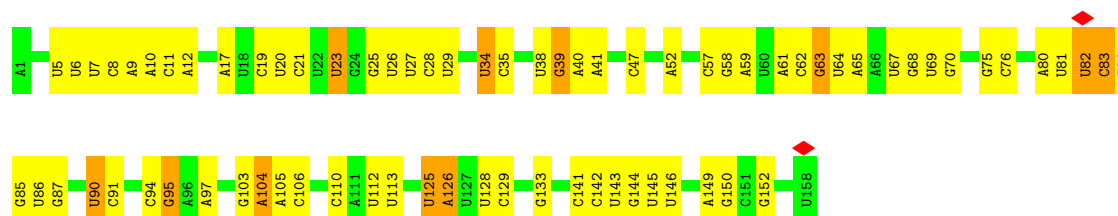
• Molecule 16: 60S ribosomal protein L18-A

Chain C: 

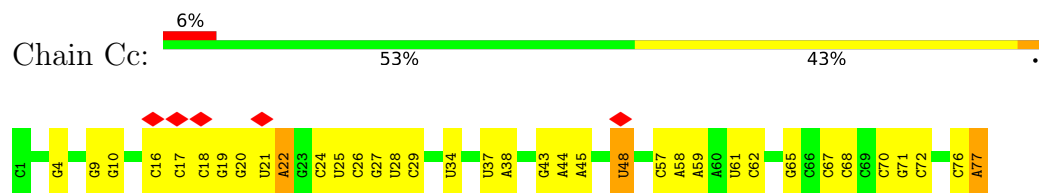


• Molecule 17: 5.8S ribosomal RNA

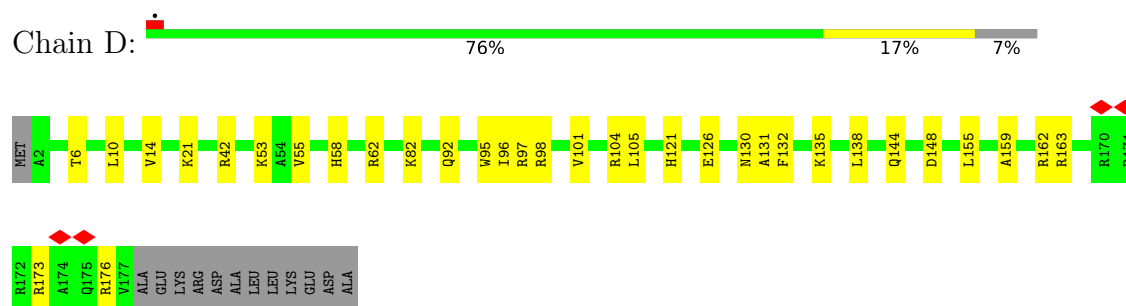
Chain CC: 



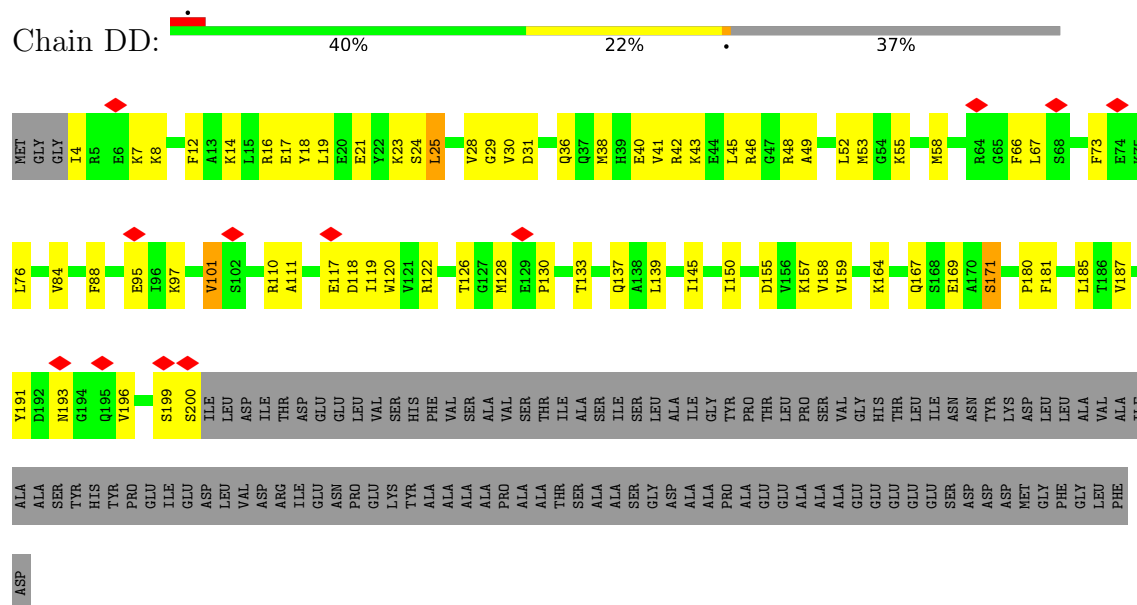
- Molecule 18: Transfer RNA fMet



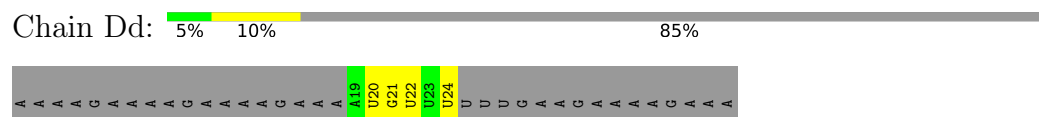
- Molecule 19: 60S ribosomal protein L19-A



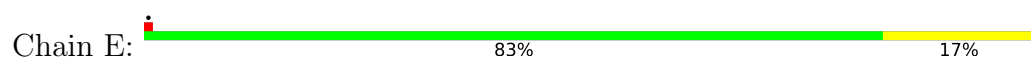
- Molecule 20: 60S acidic ribosomal protein P0

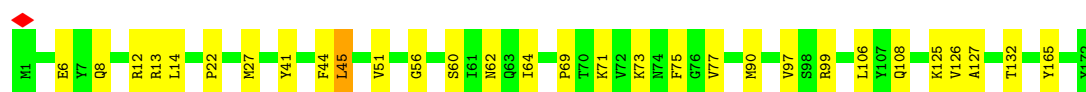


- Molecule 21: Messenger RNA

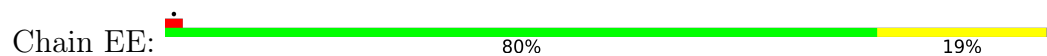


- Molecule 22: 60S ribosomal protein L20-A

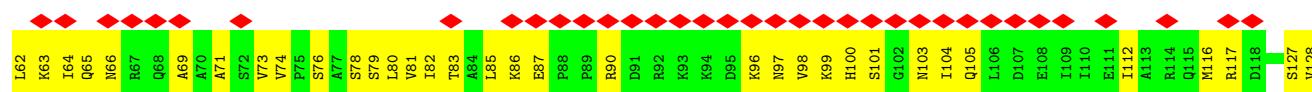
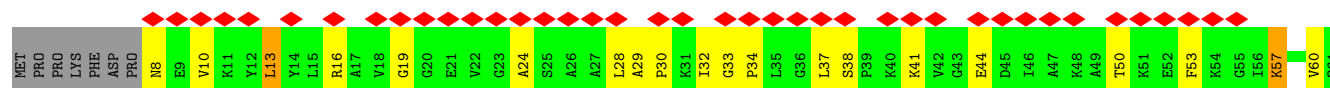




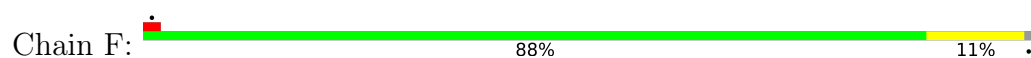
- Molecule 23: 60S ribosomal protein L2-A



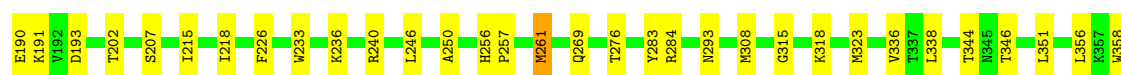
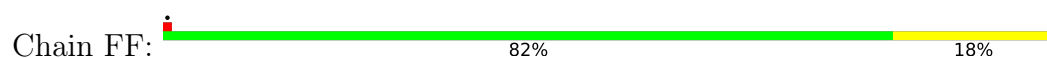
- Molecule 24: 60S ribosomal protein L12-A



- Molecule 25: 60S ribosomal protein L21-A

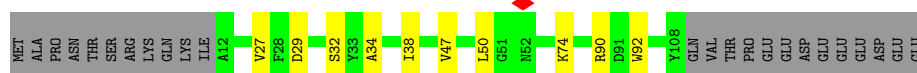


- Molecule 26: 60S ribosomal protein L3

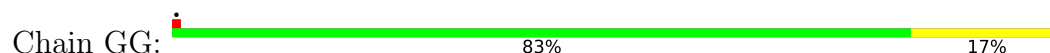




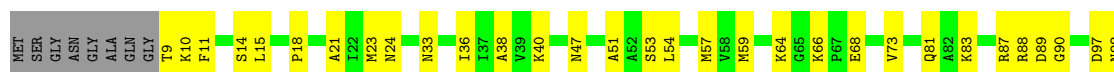
- Molecule 27: 60S ribosomal protein L22-A



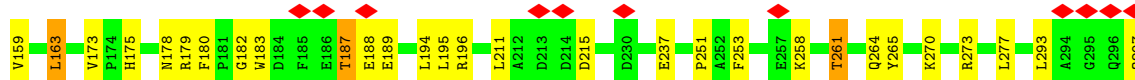
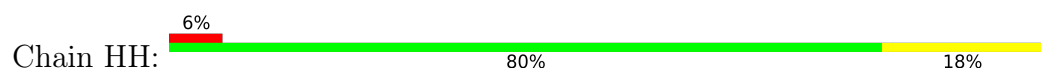
- Molecule 28: 60S ribosomal protein L4-A



- Molecule 29: 60S ribosomal protein L23-A

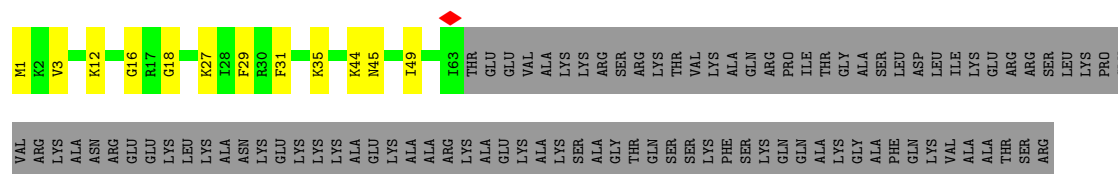


- Molecule 30: 60S ribosomal protein L5



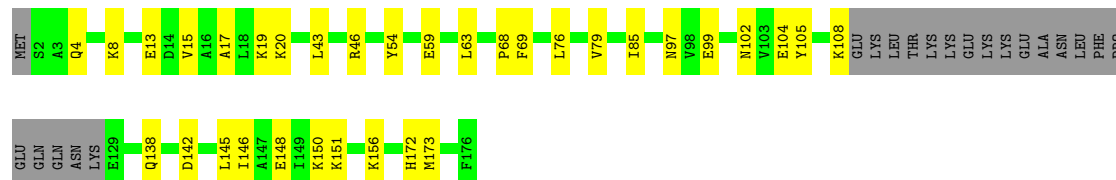
- Molecule 31: 60S ribosomal protein L24-A





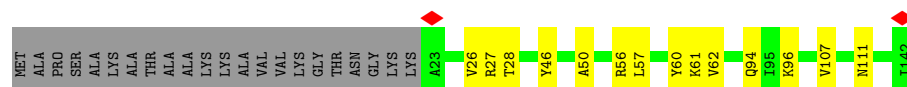
• Molecule 32: 60S ribosomal protein L6-A

Chain II: 69% 19% 12%



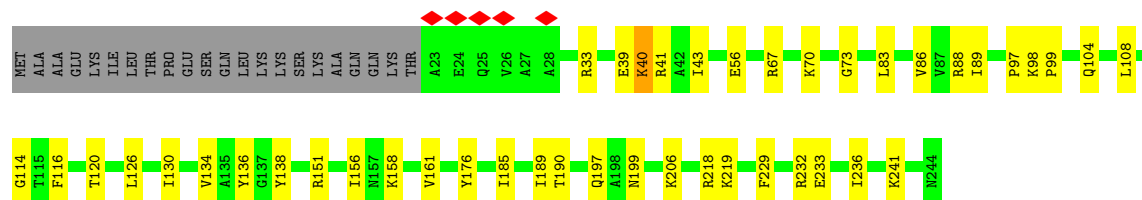
• Molecule 33: 60S ribosomal protein L25

Chain J: 75% 10% 15%



• Molecule 34: 60S ribosomal protein L7-A

Chain JJ: 73% 18% 9%



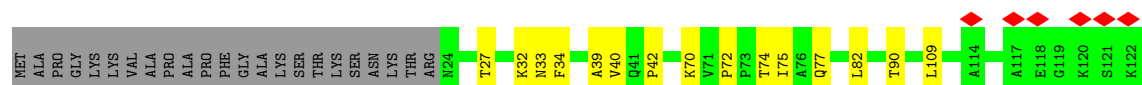
• Molecule 35: 60S ribosomal protein L26-A

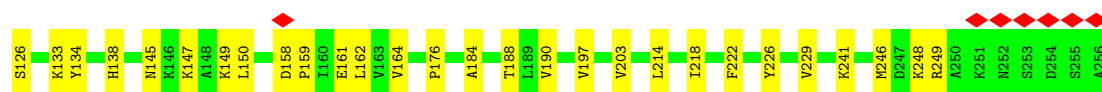
Chain K: 83% 15% 2%



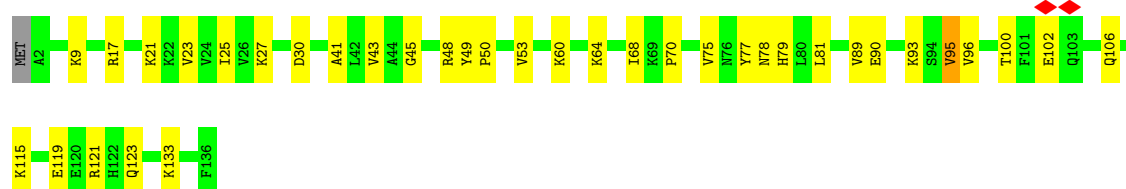
• Molecule 36: 60S ribosomal protein L8-A

Chain KK: 5% 74% 17% 9%

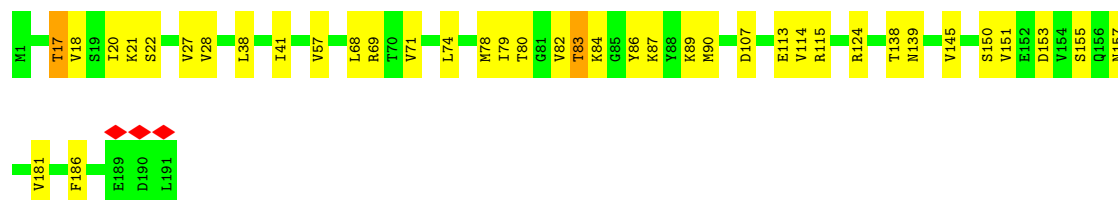
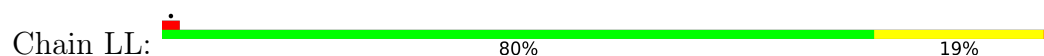




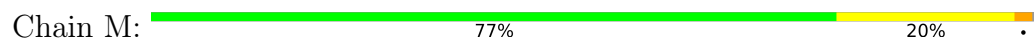
- Molecule 37: 60S ribosomal protein L27-A



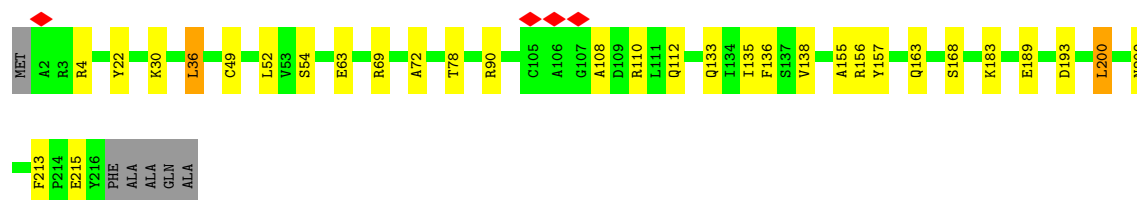
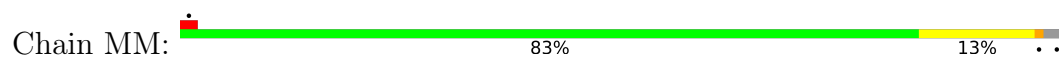
- Molecule 38: 60S ribosomal protein L9-A



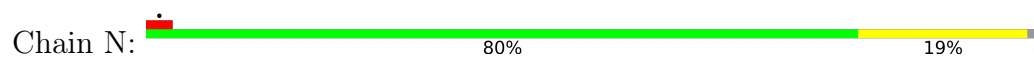
- Molecule 39: 60S ribosomal protein L28



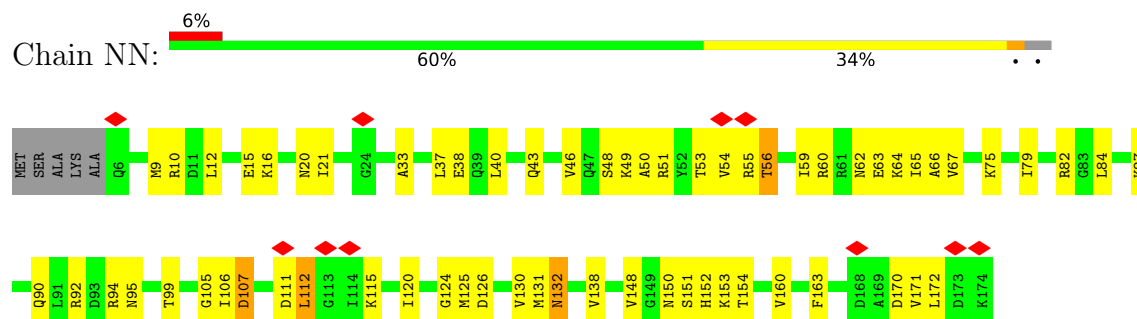
- Molecule 40: 60S ribosomal protein L10



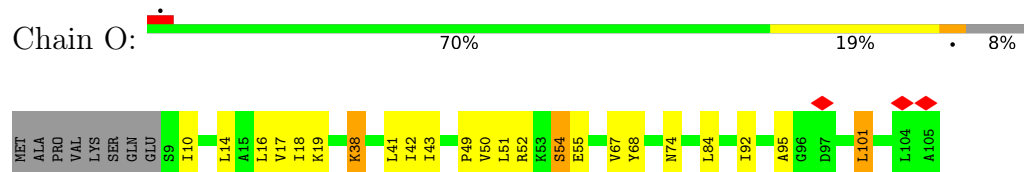
- Molecule 41: 60S ribosomal protein L29



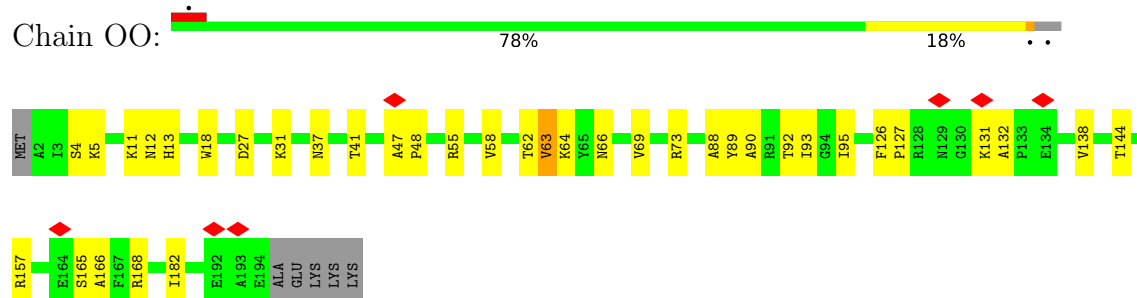
- Molecule 42: 60S ribosomal protein L11-A



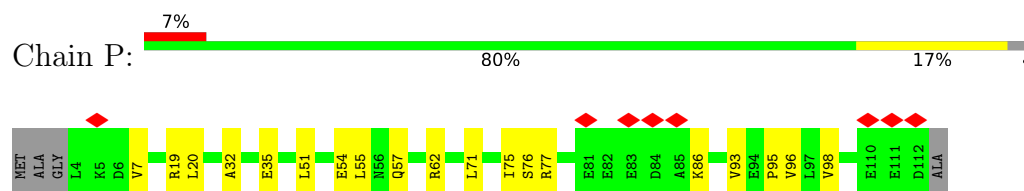
- Molecule 43: 60S ribosomal protein L30



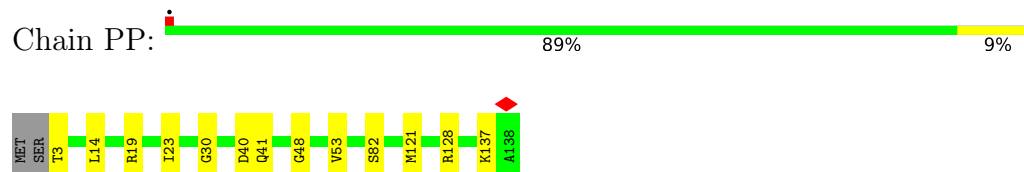
- Molecule 44: 60S ribosomal protein L13-A



- Molecule 45: 60S ribosomal protein L31-A



- Molecule 46: 60S ribosomal protein L14-A

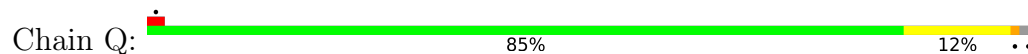


- Molecule 47: dipeptide

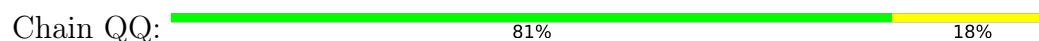




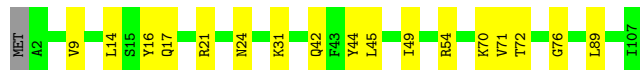
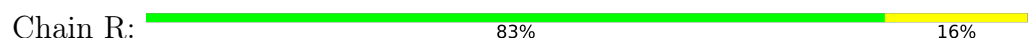
- Molecule 48: 60S ribosomal protein L32



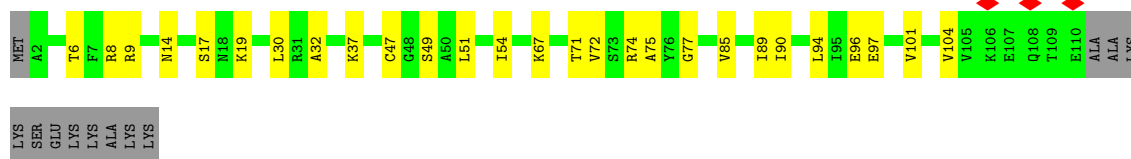
- Molecule 49: 60S ribosomal protein L15-A



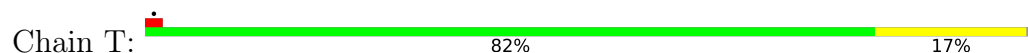
- Molecule 50: 60S ribosomal protein L33-A



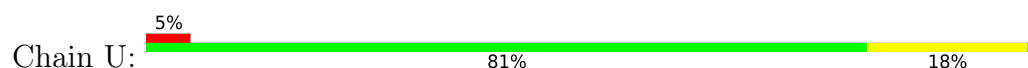
- Molecule 51: 60S ribosomal protein L34-A

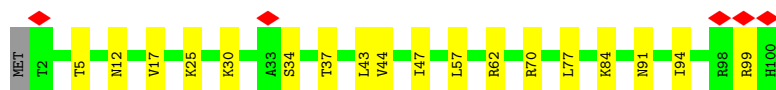


- Molecule 52: 60S ribosomal protein L35-A



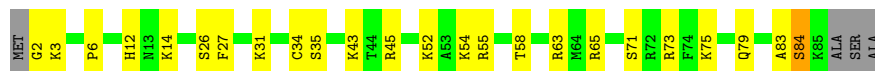
- Molecule 53: 60S ribosomal protein L36-A





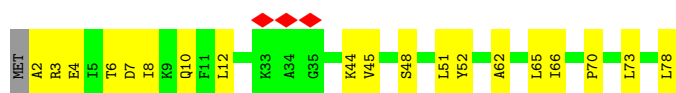
- Molecule 54: 60S ribosomal protein L37-A

Chain V: 68% 26% 5%



- Molecule 55: 60S ribosomal protein L38

Chain W: 74% 24% 2%



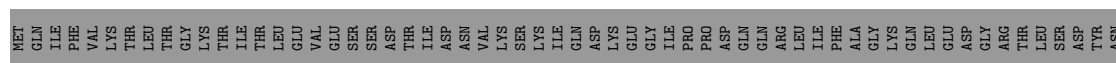
- Molecule 56: 60S ribosomal protein L39

Chain X: 76% 22% 2%



- Molecule 57: Ubiquitin-60S ribosomal protein L40

Chain Y: 34% 6% 59%



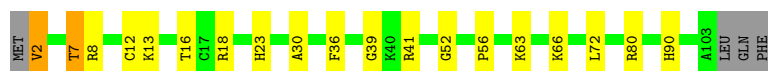
- Molecule 58: 60S ribosomal protein L41-A

Chain Z: 84% 16% 0%



- Molecule 59: 60S ribosomal protein L42-A

Chain a: 78% 16% 6%



• Molecule 60: 60S ribosomal protein L43-A

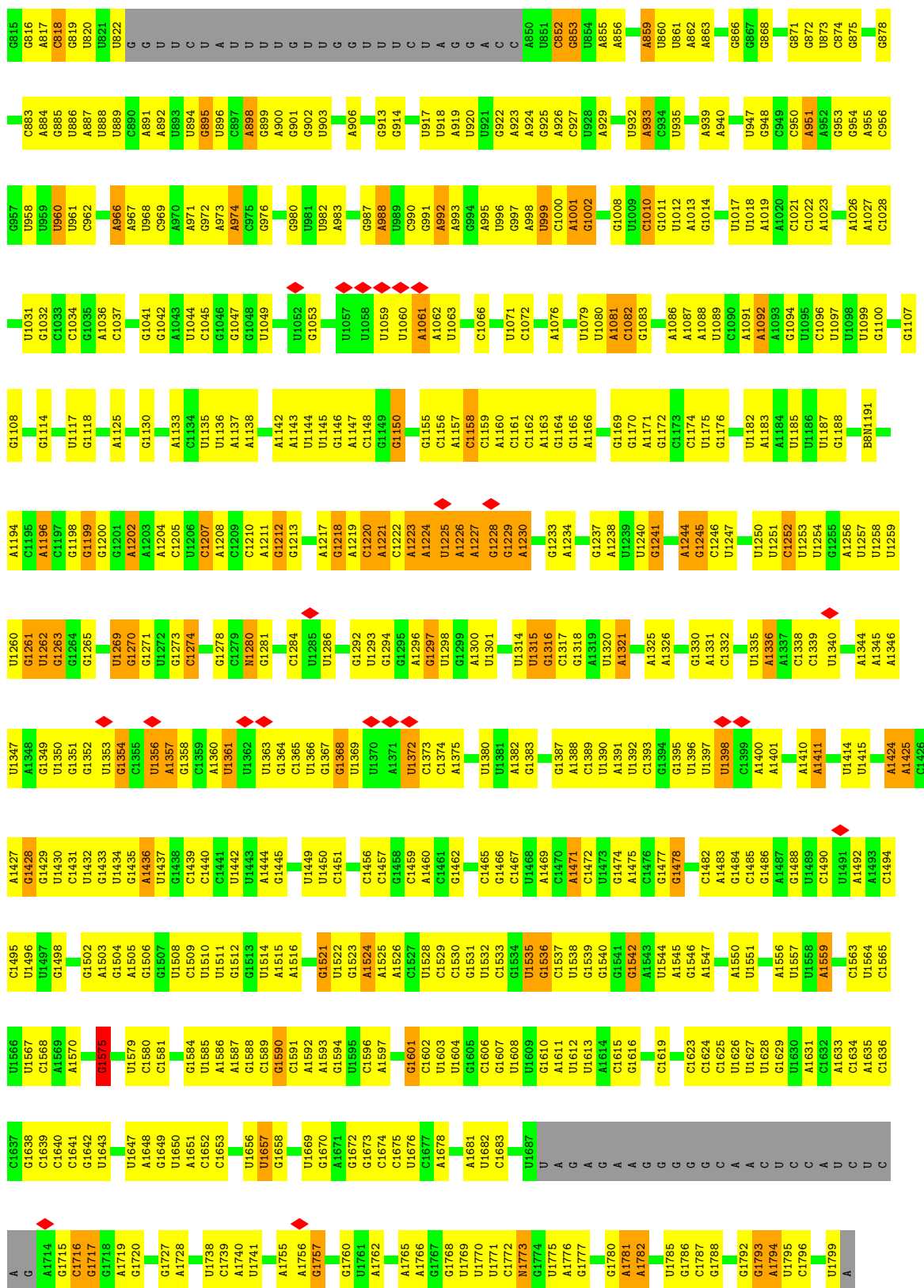
Chain b:  79% 20%

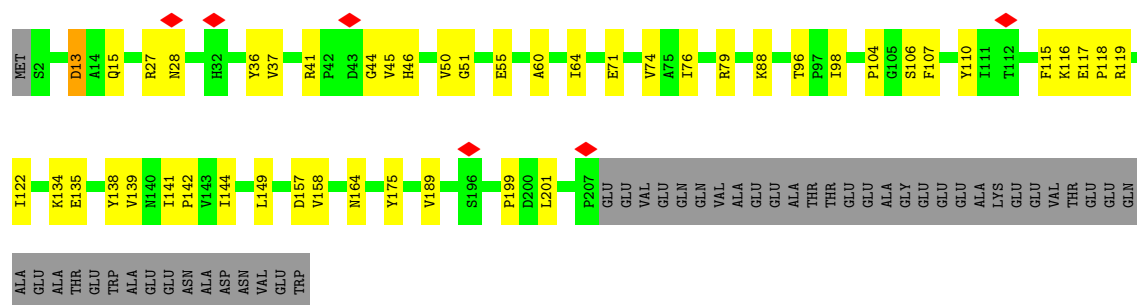


• Molecule 61: 18S ribosomal RNA

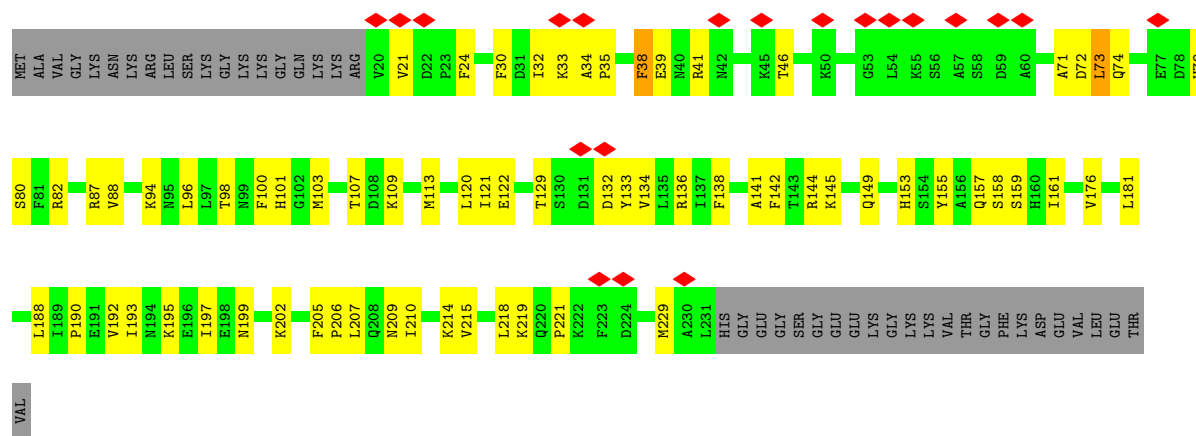
Chain c:  39% 42% 8% 11%



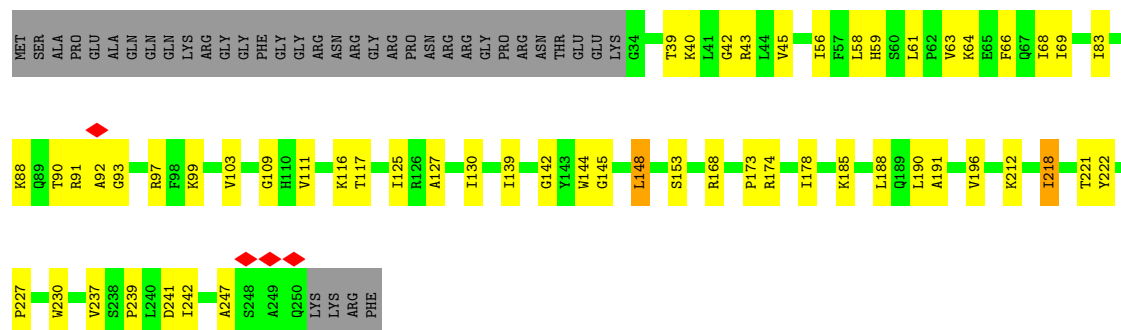




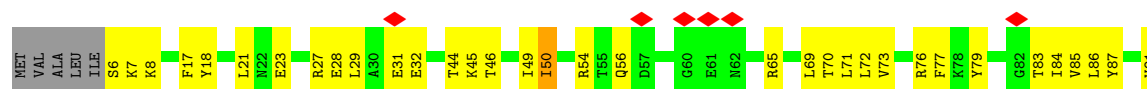
• Molecule 63: 40S ribosomal protein S1-A

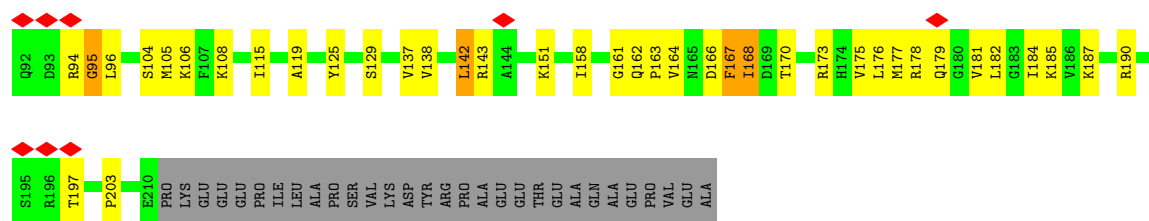


• Molecule 64: 40S ribosomal protein S2



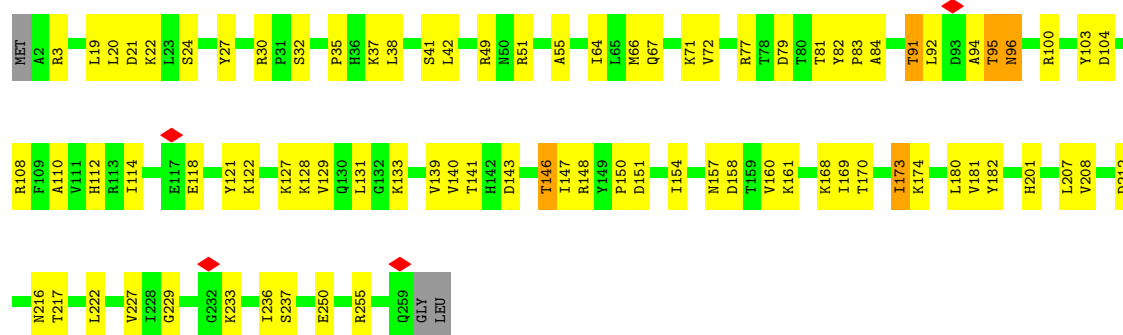
• Molecule 65: RPS3 isoform 1





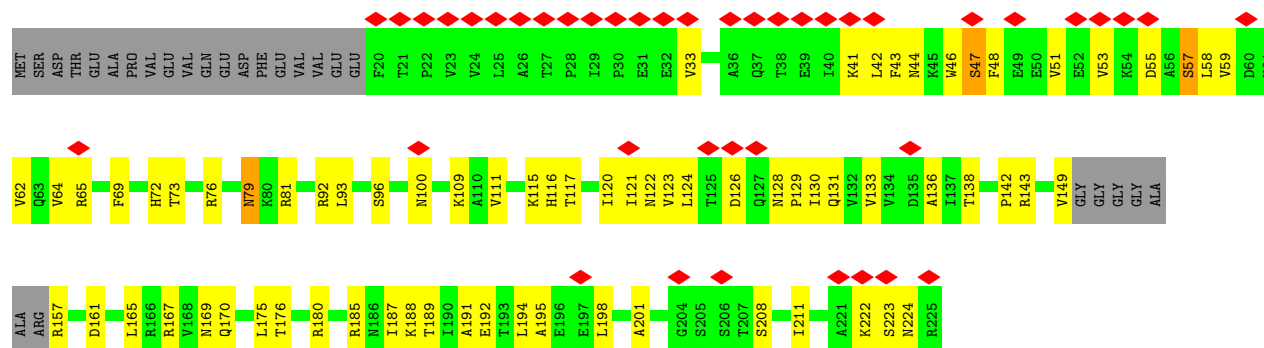
• Molecule 66: 40S ribosomal protein S4-A

Chain h: 67% 30%



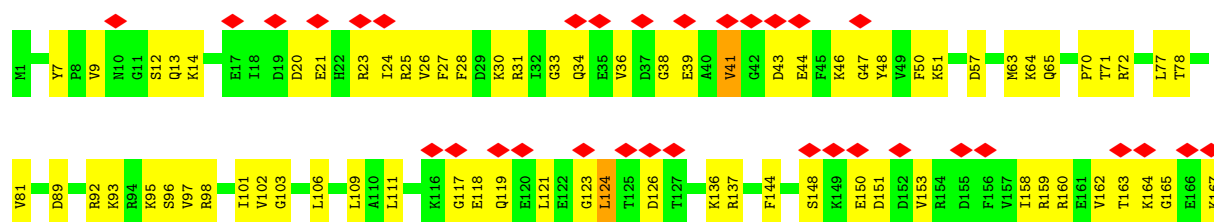
• Molecule 67: 40S ribosomal protein S5

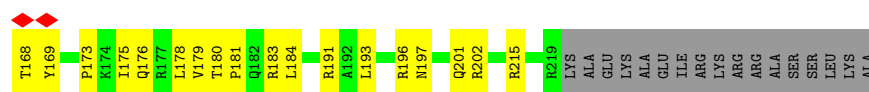
Chain i: 19% 56% 31% 12%



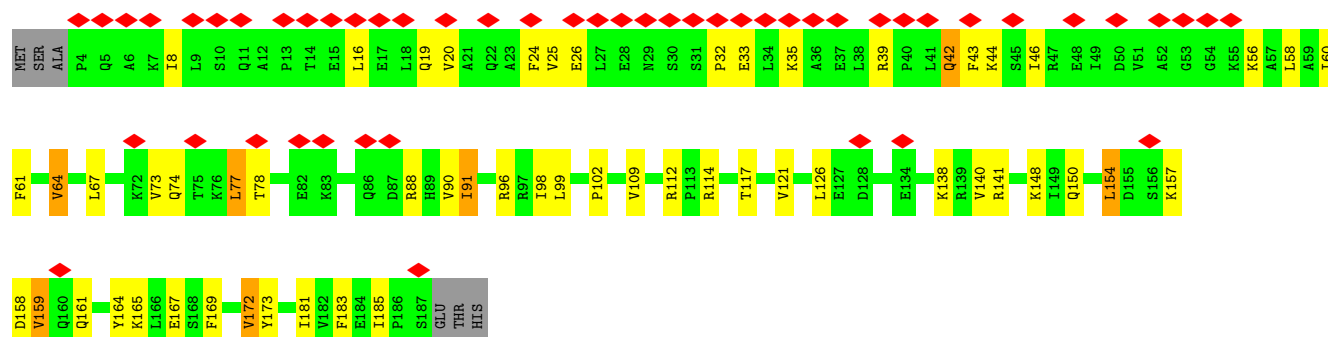
• Molecule 68: 40S ribosomal protein S6-A

Chain j: 15% 54% 38% 7%

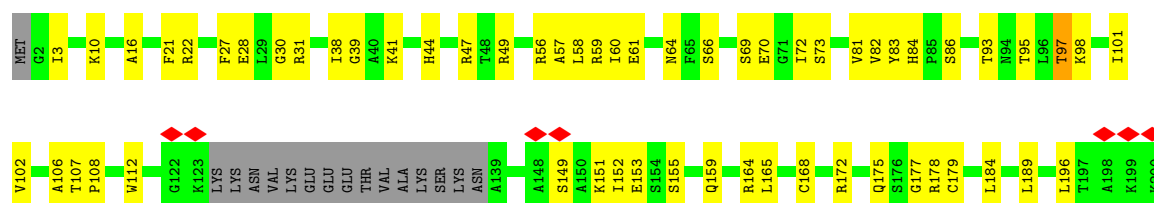




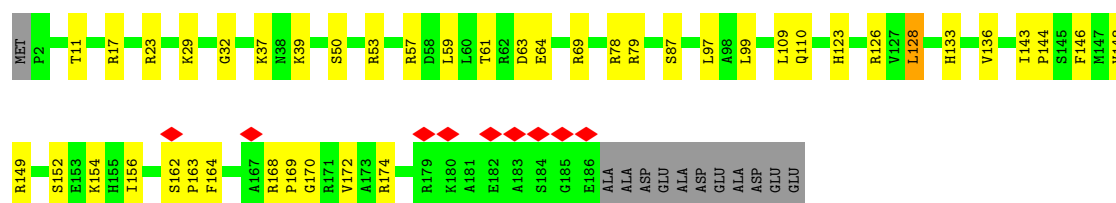
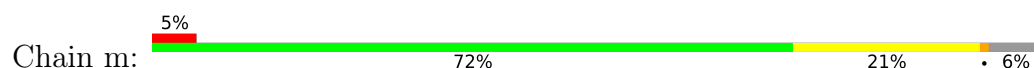
• Molecule 69: 40S ribosomal protein S7-A



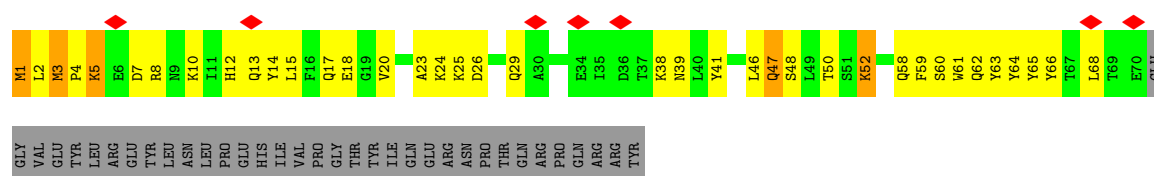
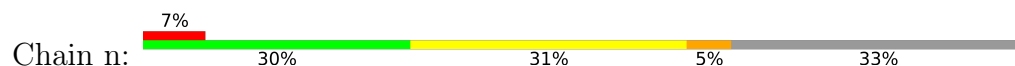
• Molecule 70: 40S ribosomal protein S8-B



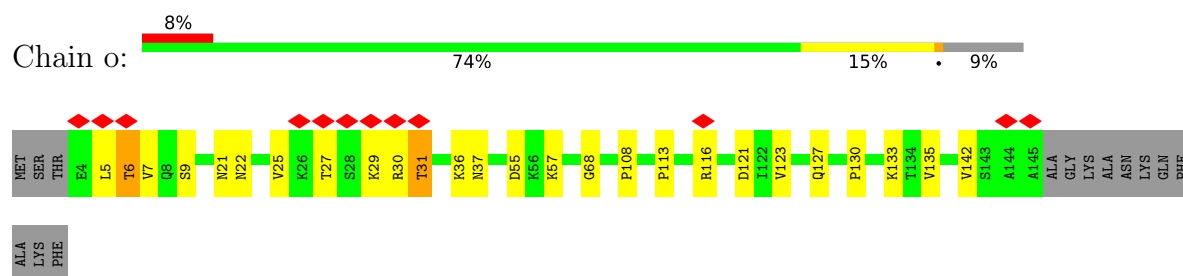
• Molecule 71: 40S ribosomal protein S9-A



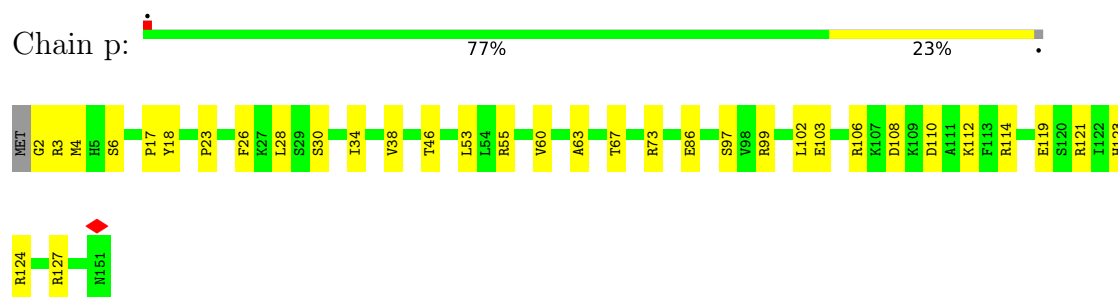
• Molecule 72: 40S ribosomal protein S10-A



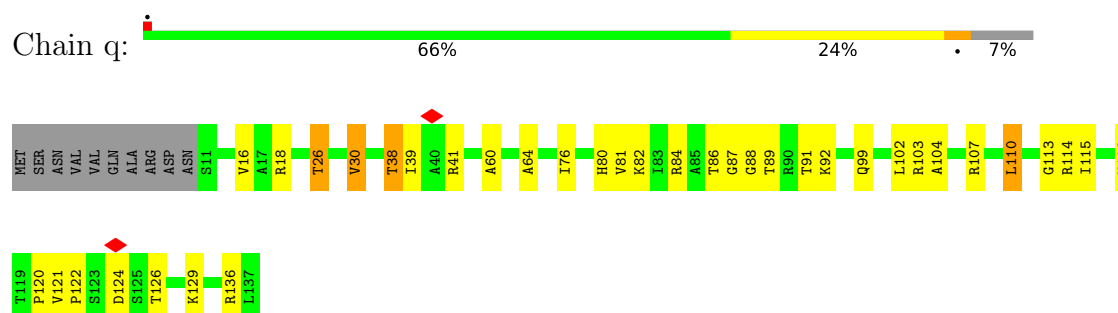
• Molecule 73: 40S ribosomal protein S11-A



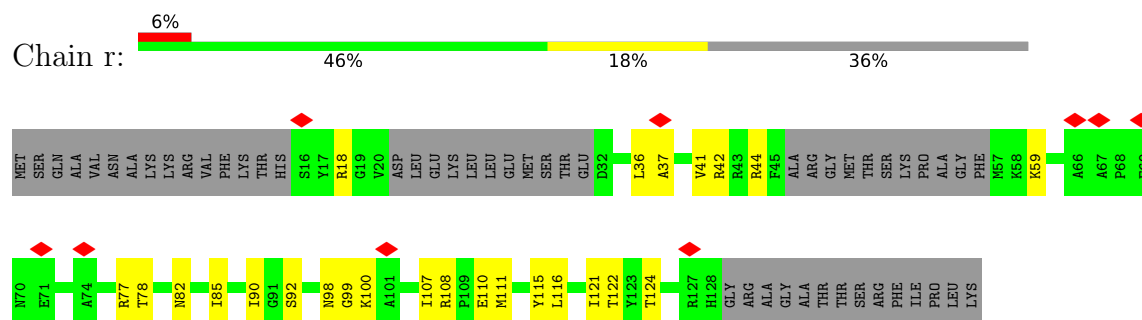
- Molecule 74: 40S ribosomal protein S13



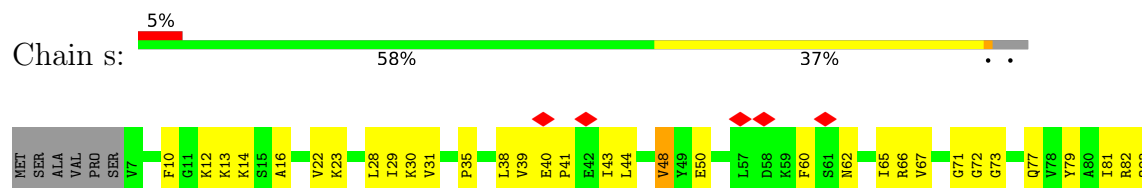
- Molecule 75: 40S ribosomal protein S14-A

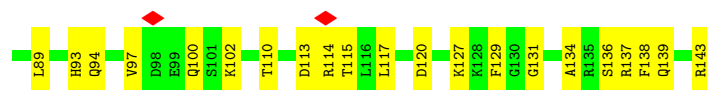


- Molecule 76: 40S ribosomal protein S15

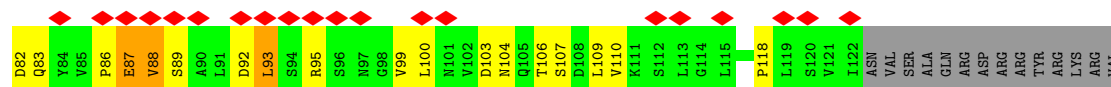
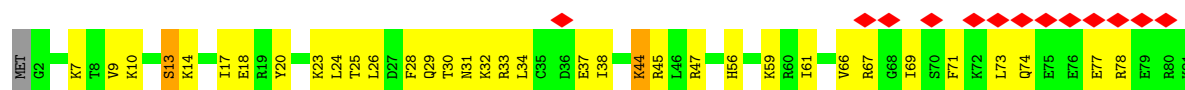


- Molecule 77: 40S ribosomal protein S16-A

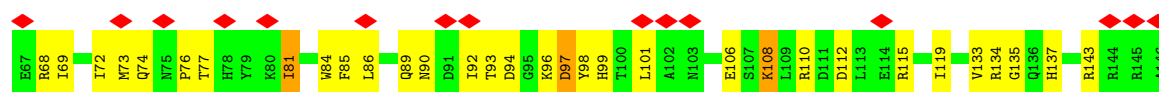




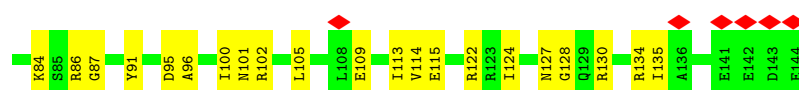
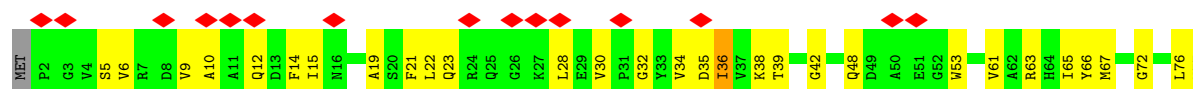
• Molecule 78: 40S ribosomal protein S17-A



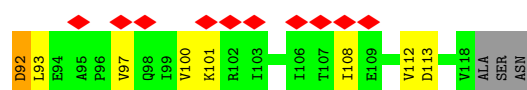
• Molecule 79: 40S ribosomal protein S18-A



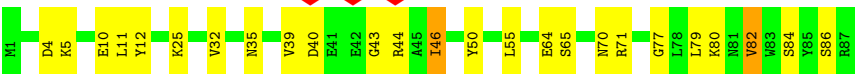
• Molecule 80: 40S ribosomal protein S19-A



• Molecule 81: 40S ribosomal protein S20



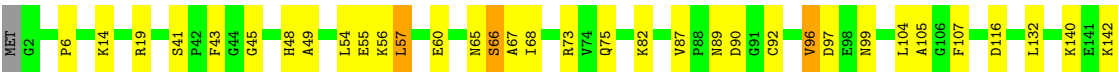
• Molecule 82: 40S ribosomal protein S21-A



• 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	55762	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	1.666	Depositor
Minimum map value	-0.477	Depositor
Average map value	-0.001	Depositor
Map value standard deviation	0.045	Depositor
Recommended contour level	0.157	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: OMU, G7M, 5MC, B8N, 1MA, DDE, A2M, SO1, 4AC, GDP, YYG, ZN, OMG, K, UR3, OMC, SPD, MG, MA6

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	0.12	0/1087	0.32	0/1449
2	1	0.15	0/571	0.54	0/768
3	2	0.10	0/782	0.31	0/1047
4	3	0.10	0/620	0.35	0/838
5	4	0.12	0/499	0.35	0/670
6	5	0.13	0/443	0.34	0/588
7	6	0.10	0/433	0.34	0/575
8	7	0.13	0/2489	0.41	0/3389
9	8	0.11	0/279	0.39	0/369
10	A	0.14	0/1585	0.32	0/2128
11	AA	0.14	0/75545	0.26	0/117782
12	Aa	0.13	0/6470	0.35	0/8759
13	B	0.11	0/1245	0.33	0/1676
14	BB	0.10	0/2883	0.20	0/4491
15	Bb	0.12	0/1788	0.29	0/2786
16	C	0.11	0/1465	0.29	0/1965
17	CC	0.12	0/3746	0.26	0/5832
18	Cc	0.08	0/1836	0.19	0/2859
19	D	0.11	0/1440	0.30	0/1921
20	DD	0.12	0/1558	0.35	0/2107
21	Dd	0.12	0/138	0.32	0/212
22	E	0.13	0/1481	0.34	0/1990
23	EE	0.12	0/1948	0.31	0/2617
24	Ee	0.15	0/1210	0.47	0/1627
25	F	0.12	0/1300	0.30	0/1743
26	FF	0.12	0/3146	0.32	0/4228
27	G	0.17	0/786	0.40	0/1065
28	GG	0.11	0/2800	0.31	0/3790
29	H	0.13	0/978	0.35	0/1316
30	HH	0.11	0/2425	0.31	0/3271
31	I	0.11	0/533	0.27	0/707

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
32	II	0.13	0/1251	0.34	0/1682
33	J	0.12	0/974	0.32	0/1314
34	JJ	0.13	0/1821	0.33	0/2451
35	K	0.10	0/1004	0.27	0/1341
36	KK	0.12	0/1836	0.30	0/2481
37	L	0.13	0/1118	0.36	0/1497
38	LL	0.12	0/1539	0.34	0/2073
39	M	0.11	0/1204	0.35	0/1612
40	MM	0.11	0/1779	0.29	0/2386
41	N	0.11	0/473	0.30	0/629
42	NN	0.13	0/1374	0.38	0/1842
43	O	0.09	0/750	0.23	0/1008
44	OO	0.12	0/1568	0.36	0/2106
45	P	0.12	0/897	0.33	0/1205
46	PP	0.12	0/1068	0.28	0/1438
47	Pp	0.20	0/19	0.49	0/23
48	Q	0.10	0/1041	0.24	0/1394
49	QQ	0.13	0/1757	0.33	0/2354
50	R	0.13	0/868	0.30	0/1168
51	S	0.13	0/871	0.30	0/1164
52	T	0.11	0/978	0.28	0/1301
53	U	0.13	0/778	0.35	0/1034
54	V	0.12	0/680	0.35	0/901
55	W	0.12	0/618	0.28	0/826
56	X	0.14	0/443	0.39	0/588
57	Y	0.09	0/423	0.26	0/562
58	Z	0.12	0/234	0.22	0/300
59	a	0.13	0/831	0.40	0/1097
60	b	0.10	0/701	0.29	0/934
61	c	0.14	2/37760 (0.0%)	0.27	0/58811
62	d	0.12	0/1623	0.33	0/2222
63	e	0.12	0/1714	0.37	0/2308
64	f	0.12	0/1665	0.36	0/2263
65	g	0.15	0/1614	0.37	0/2169
66	h	0.11	0/2097	0.32	0/2823
67	i	0.13	0/1591	0.37	0/2151
68	j	0.11	0/1790	0.33	0/2393
69	k	0.14	0/1506	0.39	0/2028
70	l	0.12	0/1482	0.37	0/1980
71	m	0.10	0/1519	0.29	0/2035
72	n	0.25	0/610	0.47	0/821
73	o	0.10	0/1172	0.28	0/1580
74	p	0.11	0/1215	0.28	0/1638

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
75	q	0.12	0/901	0.37	0/1217
76	r	0.12	0/747	0.36	0/1002
77	s	0.13	0/1099	0.40	0/1473
78	t	0.13	0/971	0.44	1/1303 (0.1%)
79	u	0.12	0/1211	0.35	0/1628
80	v	0.12	0/1130	0.33	0/1517
81	w	0.19	0/810	0.44	0/1095
82	x	0.13	0/693	0.37	0/935
83	y	0.12	0/1038	0.36	0/1395
84	z	0.11	0/1139	0.37	0/1518
All	All	0.13	2/219504 (0.0%)	0.30	1/321581 (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
24	Ee	0	1
34	JJ	0	1
37	L	0	1
59	a	0	1
63	e	0	1
67	i	0	1
69	k	0	1
77	s	0	1
All	All	0	8

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
61	c	1269	OMU	O3'-P	5.21	1.61	1.56
61	c	619	A2M	O3'-P	5.03	1.61	1.56

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
78	t	87	GLU	CA-CB-CG	5.22	124.53	114.10

There are no chirality outliers.

All (8) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
24	Ee	86	LYS	Peptide
34	JJ	232	ARG	Peptide
37	L	102	GLU	Peptide
59	a	7	THR	Peptide
63	e	38	PHE	Peptide
67	i	65	ARG	Peptide
69	k	64	VAL	Peptide
77	s	40	GLU	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	34	0
2	1	563	0	603	28	0
3	2	769	0	814	19	0
4	3	610	0	633	15	0
5	4	497	0	535	7	0
6	5	433	0	423	9	0
7	6	427	0	476	13	0
8	7	2436	0	2386	89	0
9	8	276	0	288	3	0
10	A	1555	0	1659	20	0
11	AA	68429	0	34441	1170	0
12	Aa	6368	0	6435	157	0
13	B	1222	0	1231	20	0
14	BB	2579	0	1304	36	0
15	Bb	1638	0	835	42	0
16	C	1441	0	1543	26	0
17	CC	3353	0	1695	60	0
18	Cc	1644	0	837	19	0
19	D	1423	0	1510	28	0
20	DD	1531	0	1571	45	0
21	Dd	125	0	63	3	0
22	E	1445	0	1487	23	0
23	EE	1914	0	1981	39	0
24	Ee	1196	0	1257	49	0
25	F	1276	0	1323	17	0
26	FF	3075	0	3142	47	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
27	G	770	0	780	8	0
28	GG	2748	0	2859	41	0
29	H	963	0	1015	29	0
30	HH	2375	0	2325	43	0
31	I	521	0	551	9	0
32	II	1230	0	1320	24	0
33	J	959	0	1023	11	0
34	JJ	1784	0	1862	34	0
35	K	993	0	1081	14	0
36	KK	1804	0	1877	26	0
37	L	1092	0	1155	25	0
38	LL	1518	0	1587	25	0
39	M	1173	0	1215	28	0
40	MM	1743	0	1785	19	0
41	N	462	0	491	11	0
42	NN	1353	0	1383	43	0
43	O	742	0	797	17	0
44	OO	1543	0	1608	29	0
45	P	883	0	918	13	0
46	PP	1053	0	1149	7	0
47	Pp	19	0	20	7	0
48	Q	1020	0	1090	17	0
49	QQ	1720	0	1779	32	0
50	R	850	0	880	11	0
51	S	861	0	918	22	0
52	T	969	0	1078	18	0
53	U	771	0	849	13	0
54	V	665	0	668	21	0
55	W	612	0	682	11	0
56	X	436	0	475	7	0
57	Y	417	0	455	7	0
58	Z	233	0	284	4	0
59	a	819	0	886	15	0
60	b	694	0	734	14	0
61	c	34321	0	17290	737	0
62	d	1583	0	1578	40	0
63	e	1689	0	1763	53	0
64	f	1635	0	1723	41	0
65	g	1593	0	1671	52	0
66	h	2056	0	2140	63	0
67	i	1572	0	1639	61	0
68	j	1766	0	1859	64	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
69	k	1481	0	1572	40	0
70	l	1457	0	1488	43	0
71	m	1494	0	1573	35	0
72	n	596	0	594	38	0
73	o	1146	0	1213	16	0
74	p	1192	0	1255	27	0
75	q	891	0	883	36	0
76	r	732	0	760	20	0
77	s	1080	0	1140	46	0
78	t	961	0	999	39	0
79	u	1192	0	1222	48	0
80	v	1112	0	1124	37	0
81	w	800	0	869	21	0
82	x	684	0	672	19	0
83	y	1021	0	1060	24	0
84	z	1121	0	1196	22	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	200	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
86	Bb	1	0	0	0	0
86	CC	4	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	50	0	0	0	0
86	q	1	0	0	0	0
87	AA	30	0	57	3	0
87	c	10	0	19	2	0
88	AA	13	0	0	0	0
88	CC	1	0	0	0	0
88	EE	1	0	0	0	0
88	MM	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
88	Q	1	0	0	0	0
88	a	1	0	0	0	0
88	c	2	0	0	0	0
88	q	1	0	0	0	0
89	Aa	28	0	12	0	0
90	Aa	35	0	41	3	0
91	2	1	0	0	0	0
91	A	2	0	0	0	0
91	AA	851	0	0	11	0
91	B	2	0	0	0	0
91	BB	22	0	0	0	0
91	CC	20	0	0	0	0
91	Cc	1	0	0	0	0
91	D	3	0	0	0	0
91	EE	7	0	0	0	0
91	F	3	0	0	0	0
91	FF	4	0	0	0	0
91	GG	4	0	0	0	0
91	H	2	0	0	0	0
91	HH	2	0	0	0	0
91	J	2	0	0	0	0
91	JJ	1	0	0	0	0
91	M	3	0	0	0	0
91	MM	1	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	3	0	0	0	0
91	a	2	0	0	0	0
91	c	131	0	0	3	0
91	h	1	0	0	0	0
91	o	2	0	0	0	0
91	p	3	0	0	0	0
91	z	1	0	0	0	0
All	All	207753	0	154595	3659	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 10.

All (3659) 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:1221:A:N6	61:c:1262:U:H3	1.59	1.01
61:c:1221:A:H61	61:c:1262:U:H3	1.05	1.01
11:AA:2442:G:H1	11:AA:2505:U:H3	1.02	0.94
61:c:1588:G:H1	61:c:1608:U:H3	1.01	0.93
61:c:1471:A:H62	61:c:1538:U:H3	0.94	0.92
11:AA:2405:C:O4'	47:Pp:2:PHE:HB3	1.72	0.89
11:AA:2450:G:H1	11:AA:2497:U:H3	1.20	0.88
61:c:1221:A:N6	61:c:1262:U:N3	2.22	0.88
61:c:1258:U:H4'	72:n:2:LEU:HG	1.56	0.88
62:d:88:LYS:HE3	78:t:78:ARG:HH12	1.38	0.88
11:AA:2405:C:C1'	47:Pp:2:PHE:HB3	2.02	0.87
64:f:90:THR:H	64:f:93:GLY:HA2	1.37	0.85
65:g:71:LEU:HB3	72:n:20:VAL:HG21	1.58	0.85
82:x:79:LEU:HD13	82:x:82:VAL:HG21	1.57	0.84
15:Bb:33:U:H4'	15:Bb:37:YYG:H242	1.60	0.83
61:c:1223:A:H3'	61:c:1224:A:H8	1.42	0.83
72:n:24:LYS:O	72:n:39:ASN:ND2	2.12	0.83
61:c:480:G:H1	61:c:508:U:H3	1.23	0.82
2:1:98:GLN:HE22	67:i:191:ALA:HB3	1.44	0.82
11:AA:1940:G:H21	11:AA:3362:A:H8	1.28	0.82
20:DD:30:VAL:HG11	20:DD:53:MET:HE1	1.61	0.82
24:Ee:32:ILE:HD13	24:Ee:37:LEU:HB2	1.60	0.81
61:c:1213:G:H1	61:c:1450:U:H3	1.29	0.80
61:c:1221:A:N6	61:c:1262:U:C2	2.49	0.80
38:LL:138:THR:O	38:LL:139:ASN:ND2	2.14	0.80
75:q:80:HIS:HA	75:q:113:GLY:O	1.80	0.80
11:AA:1018:G:H1	11:AA:1034:U:H3	1.29	0.80
11:AA:2403:G:H22	47:Pp:1:MET:HA	1.45	0.80
11:AA:2455:U:H3	11:AA:2483:G:H4'	1.45	0.79
11:AA:394:G:H22	11:AA:397:A:H5'	1.45	0.79
67:i:43:PHE:HD1	67:i:44:ASN:H	1.29	0.79
69:k:102:PRO:HD3	69:k:112:ARG:HD2	1.65	0.79
83:y:15:ASN:ND2	83:y:72:CYS:O	2.16	0.78
11:AA:981:U:HO2'	11:AA:1105:A:HO2'	1.29	0.78
11:AA:1301:A:H4'	11:AA:1302:A:H5''	1.66	0.78
76:r:110:GLU:HB2	79:u:119:ILE:HD13	1.65	0.78
39:M:75:LEU:HD22	39:M:78:LEU:HD22	1.65	0.78
11:AA:2568:C:O2	11:AA:2573:G:N2	2.17	0.78
61:c:1529:C:O2	80:v:12:GLN:NE2	2.18	0.77
72:n:4:PRO:HB2	72:n:7:ASP:HB2	1.66	0.77
11:AA:2700:G:H5''	25:F:17:ARG:HG2	1.66	0.77
61:c:1471:A:N6	61:c:1538:U:H3	1.78	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:FF:95:THR:HG22	26:FF:97:ARG:H	1.48	0.77
42:NN:131:MET:O	42:NN:132:ASN:ND2	2.13	0.77
29:H:81:GLN:O	29:H:98:ASN:ND2	2.17	0.76
1:O:131:ARG:HH22	61:c:153:G:H5'	1.50	0.76
19:D:21:LYS:HE3	19:D:55:VAL:HA	1.67	0.76
11:AA:2489:C:H3'	11:AA:2490:C:H2'	1.65	0.76
69:k:16:LEU:O	69:k:19:GLN:NE2	2.16	0.76
32:II:150:LYS:HE3	32:II:156:LYS:HB2	1.68	0.75
61:c:1760:G:H1'	61:c:1781:MA6:H2	1.68	0.75
61:c:868:G:H1	61:c:960:U:H3	1.33	0.75
11:AA:1562:C:H42	11:AA:1578:C:H42	1.34	0.74
11:AA:1661:G:H2'	11:AA:1662:G:C8	2.22	0.74
11:AA:655:C:H2'	11:AA:656:A:H8	1.49	0.74
11:AA:2465:G:C6	11:AA:2493:U:O2	2.41	0.74
11:AA:2897:A:H5''	57:Y:125:LYS:HG3	1.67	0.74
52:T:73:LYS:O	52:T:76:GLN:NE2	2.20	0.74
32:II:146:ILE:HG23	32:II:150:LYS:HZ3	1.52	0.74
40:MM:30:LYS:HG3	40:MM:63:GLU:HG3	1.69	0.74
61:c:1672:G:H2'	61:c:1673:G:C8	2.23	0.74
66:h:147:ILE:HD13	66:h:169:ILE:HD11	1.69	0.74
11:AA:1334:U:O2'	34:JJ:151:ARG:NH2	2.21	0.73
21:Dd:24:U:OP1	61:c:1640:C:N4	2.21	0.73
32:II:142:ASP:O	32:II:146:ILE:HG12	1.88	0.73
36:KK:90:THR:HA	36:KK:214:LEU:HD21	1.69	0.73
15:Bb:19:G:OP2	15:Bb:60:C:N4	2.21	0.73
22:E:99:ARG:NH2	22:E:126:VAL:O	2.21	0.73
20:DD:41:VAL:HG21	20:DD:185:LEU:HD13	1.71	0.73
68:j:20:ASP:HB3	68:j:23:ARG:HG2	1.70	0.73
61:c:687:G:H5'	83:y:119:LYS:HG2	1.70	0.73
61:c:871:G:H2'	61:c:872:G:C8	2.24	0.72
61:c:992:A:H2	61:c:1012:U:H3	1.33	0.72
61:c:992:A:O2'	61:c:1785:U:O2	2.06	0.72
8:7:19:TRP:HB3	8:7:38:ARG:HB2	1.70	0.72
11:AA:3306:U:OP1	26:FF:269:GLN:NE2	2.22	0.72
61:c:1535:U:O2	61:c:1536:G:N2	2.22	0.72
17:CC:58:G:O6	54:V:63:ARG:NH2	2.21	0.72
69:k:19:GLN:HE21	69:k:20:VAL:HG23	1.54	0.72
23:EE:153:GLY:HA3	23:EE:251:LYS:HE3	1.69	0.72
60:b:57:CYS:SG	60:b:59:CYS:O	2.47	0.72
20:DD:158:VAL:HG12	20:DD:159:VAL:HG23	1.69	0.72
11:AA:239:G:OP1	52:T:94:LYS:NZ	2.22	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:B:67:ILE:HD11	13:B:80:LYS:HB3	1.72	0.72
39:M:78:LEU:HD23	39:M:118:ILE:HG21	1.70	0.72
1:O:34:ASN:ND2	61:c:521:A:N3	2.37	0.72
12:Aa:593:ILE:HG13	12:Aa:685:ARG:HB2	1.71	0.72
39:M:19:LYS:HG2	39:M:25:HIS:HB2	1.70	0.72
11:AA:2969:A:N7	23:EE:215:ASN:ND2	2.38	0.71
61:c:1482:C:OP2	61:c:1521:G:N2	2.23	0.71
11:AA:1103:A:N6	11:AA:1363:A:O2'	2.22	0.71
61:c:794:U:H4'	61:c:795:U:H5'	1.72	0.71
1:O:91:LEU:HD22	1:O:96:LEU:HD22	1.73	0.71
11:AA:1572:U:O4	11:AA:1574:C:N4	2.23	0.71
4:3:2:VAL:N	82:x:64:GLU:OE1	2.24	0.71
12:Aa:718:LEU:HA	12:Aa:722:PRO:HG3	1.73	0.71
24:Ee:32:ILE:HD12	24:Ee:32:ILE:O	1.91	0.71
78:t:83:GLN:HG3	78:t:86:PRO:HB3	1.72	0.71
63:e:32:ILE:HA	63:e:96:LEU:HB2	1.73	0.70
15:Bb:60:C:OP2	15:Bb:62:A:N6	2.24	0.70
61:c:1365:C:O2'	77:s:30:LYS:NZ	2.23	0.70
11:AA:2180:G:OP1	23:EE:174:ARG:NH2	2.24	0.70
61:c:1591:C:H2'	61:c:1592:A:H8	1.56	0.70
66:h:129:VAL:HG12	66:h:139:VAL:HG12	1.72	0.70
79:u:44:ASN:OD1	79:u:48:LYS:NZ	2.24	0.70
8:7:50:ASP:OD1	8:7:50:ASP:N	2.21	0.70
80:v:30:VAL:HG12	80:v:32:GLY:H	1.57	0.70
11:AA:1567:U:H3	11:AA:1571:A:H1'	1.55	0.70
11:AA:2568:C:N3	11:AA:2573:G:N1	2.35	0.70
52:T:31:LEU:HB3	52:T:44:ILE:HG22	1.72	0.70
8:7:111:MET:HA	8:7:111:MET:HE3	1.73	0.70
15:Bb:74:C:H3'	40:MM:110:ARG:HH22	1.57	0.70
61:c:1613:U:OP1	67:i:92:ARG:NH2	2.25	0.70
8:7:131:ILE:HG22	8:7:144:LEU:H	1.56	0.69
61:c:1096:C:OP2	83:y:71:LYS:NZ	2.24	0.69
61:c:257:A:O2'	70:l:73:SER:O	2.09	0.69
81:w:58:LEU:HD12	81:w:88:LYS:HD2	1.73	0.69
2:1:73:GLY:O	2:1:77:ARG:NH1	2.25	0.69
11:AA:351:A:N6	56:X:37:TYR:O	2.24	0.69
11:AA:1236:G:N2	11:AA:1244:A:OP1	2.26	0.69
40:MM:72:ALA:HB2	40:MM:155:ALA:HB2	1.74	0.69
68:j:57:ASP:HA	68:j:106:LEU:HA	1.72	0.69
84:z:56:LYS:NZ	84:z:96:VAL:O	2.26	0.69
61:c:1344:A:H4'	81:w:54:GLY:HA3	1.73	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
62:d:27:ARG:HG3	62:d:28:ASN:H	1.57	0.69
11:AA:714:G:HO2'	11:AA:753:C:HO2'	1.40	0.69
19:D:144:GLN:NE2	19:D:148:ASP:OD2	2.26	0.69
42:NN:49:LYS:HB3	42:NN:62:ASN:HA	1.75	0.69
76:r:108:ARG:H	76:r:111:MET:HG2	1.58	0.69
11:AA:799:G:O2'	44:OO:18:TRP:NE1	2.23	0.69
11:AA:1132:C:H2'	11:AA:1133:A2M:H8	1.74	0.69
80:v:105:LEU:HB3	80:v:122:ARG:HE	1.58	0.68
11:AA:2960:C:H2'	11:AA:2961:G:H8	1.56	0.68
68:j:180:THR:HG23	68:j:183:ARG:H	1.56	0.68
61:c:143:G:N7	68:j:137:ARG:NH2	2.42	0.68
11:AA:2960:C:H2'	11:AA:2961:G:C8	2.29	0.68
12:Aa:13:MET:HE1	12:Aa:436:LEU:HD11	1.73	0.68
61:c:591:A:H2'	61:c:592:A:C8	2.29	0.68
67:i:175:LEU:HD22	67:i:198:LEU:HD22	1.76	0.68
11:AA:2213:A:H2'	11:AA:2214:A:C8	2.28	0.68
15:Bb:37:YYG:H33	15:Bb:37:YYG:C2'	2.23	0.68
49:QQ:96:ARG:NH1	49:QQ:104:GLU:OE1	2.22	0.68
37:L:121:ARG:HB2	37:L:121:ARG:HH11	1.59	0.68
61:c:1041:G:H2'	61:c:1042:G:C8	2.28	0.68
61:c:1213:G:O2'	61:c:1244:A:N6	2.27	0.68
77:s:50:GLU:HG3	77:s:82:ARG:HH21	1.57	0.68
12:Aa:571:SER:HB2	12:Aa:590:ALA:H	1.60	0.67
37:L:119:GLU:O	37:L:123:GLN:HG2	1.94	0.67
61:c:127:G:N3	61:c:178:U:O2'	2.27	0.67
11:AA:2213:A:H2'	11:AA:2214:A:H8	1.60	0.67
63:e:121:ILE:HG12	63:e:161:ILE:HG23	1.75	0.67
1:O:124:ARG:NH2	61:c:151:G:O6	2.26	0.67
11:AA:627:U:H4'	11:AA:1399:A:H1'	1.75	0.67
44:OO:37:ASN:O	44:OO:41:THR:HG23	1.95	0.67
61:c:576:G:H22	84:z:67:ALA:HB2	1.60	0.67
61:c:1171:A:H2'	61:c:1172:G:C8	2.29	0.67
70:l:39:GLY:HA2	70:l:61:GLU:HB3	1.76	0.67
13:B:116:HIS:HB3	13:B:149:VAL:HG13	1.75	0.67
61:c:639:U:OP1	69:k:112:ARG:NH2	2.24	0.67
61:c:1471:A:N7	61:c:1538:U:O4	2.28	0.67
77:s:129:PHE:O	77:s:137:ARG:NH1	2.26	0.67
11:AA:912:G:OP2	23:EE:9:ARG:NH2	2.27	0.67
11:AA:1631:C:OP2	37:L:48:ARG:NH2	2.28	0.67
11:AA:964:G:H5'	39:M:29:PRO:HB2	1.76	0.67
11:AA:2767:U:O2'	59:a:30:ALA:O	2.12	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:3050:U:O2'	31:I:16:GLY:O	2.13	0.67
61:c:163:G:N2	61:c:163:G:OP2	2.27	0.67
1:0:16:PRO:HB2	66:h:94:ALA:HB1	1.77	0.67
11:AA:297:G:N2	11:AA:297:G:OP2	2.26	0.67
26:FF:152:LYS:HG2	26:FF:189:SER:HA	1.77	0.67
42:NN:21:ILE:HG12	42:NN:37:LEU:HD23	1.77	0.67
61:c:1474:G:OP1	67:i:109:LYS:NZ	2.28	0.67
61:c:1502:G:N2	61:c:1505:A:OP2	2.28	0.67
63:e:109:LYS:O	63:e:113:MET:HG3	1.95	0.67
72:n:8:ARG:HG2	72:n:12:HIS:CE1	2.30	0.67
10:A:27:LEU:HD21	10:A:102:LEU:HB2	1.77	0.66
11:AA:2677:G:C6	11:AA:2680:A:N6	2.63	0.66
65:g:8:LYS:HG2	81:w:63:LEU:HD11	1.77	0.66
23:EE:80:GLU:HG3	60:b:66:GLY:HA2	1.76	0.66
61:c:973:A:H2'	61:c:974:A2M:H8	1.77	0.66
63:e:35:PRO:HB3	63:e:38:PHE:HD2	1.61	0.66
1:0:5:VAL:HG21	1:0:32:ARG:HH21	1.60	0.66
11:AA:353:G:O6	54:V:55:ARG:NH2	2.28	0.66
11:AA:1277:C:H2'	11:AA:1278:A:H8	1.59	0.66
77:s:77:GLN:O	77:s:81:ILE:HG12	1.95	0.66
19:D:173:ARG:HH21	19:D:176:ARG:HH21	1.43	0.66
51:S:85:VAL:O	51:S:89:ILE:HG12	1.96	0.66
11:AA:655:C:H2'	11:AA:656:A:C8	2.28	0.66
74:p:3:ARG:HB3	74:p:6:SER:HB3	1.77	0.66
69:k:64:VAL:HG23	69:k:67:LEU:HD13	1.78	0.66
80:v:42:GLY:HA2	80:v:84:LYS:HD2	1.76	0.66
11:AA:664:U:H2'	11:AA:665:A:C8	2.30	0.66
13:B:88:VAL:O	13:B:92:GLN:HG2	1.96	0.66
61:c:1225:U:H3'	61:c:1226:A:C8	2.30	0.66
61:c:1559:A:H5''	79:u:135:GLY:HA3	1.78	0.66
11:AA:542:G:H1	11:AA:549:U:H3	1.43	0.66
22:E:71:LYS:HE2	22:E:73:LYS:HG2	1.78	0.66
61:c:605:A:N1	91:c:2009:HOH:O	2.28	0.66
61:c:1502:G:N7	80:v:102:ARG:NH2	2.43	0.66
8:7:180:ALA:HB3	8:7:189:GLU:H	1.61	0.66
61:c:418:G:O2'	68:j:72:ARG:NH2	2.28	0.66
70:l:22:ARG:NH2	70:l:28:GLU:OE2	2.29	0.66
11:AA:2478:C:N4	11:AA:2480:A:H61	1.94	0.66
42:NN:107:ASP:OD1	42:NN:107:ASP:N	2.29	0.66
61:c:861:U:O2'	83:y:56:HIS:O	2.14	0.66
66:h:104:ASP:HB3	66:h:110:ALA:HB2	1.77	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:874:U:OP2	11:AA:1907:C:O2'	2.12	0.65
24:Ee:90:ARG:NH1	24:Ee:98:VAL:O	2.29	0.65
24:Ee:90:ARG:HH22	24:Ee:100:HIS:HA	1.60	0.65
61:c:1535:U:H5''	67:i:187:ILE:HD11	1.79	0.65
66:h:250:GLU:OE1	66:h:250:GLU:N	2.28	0.65
20:DD:122:ARG:NH1	20:DD:155:ASP:OD2	2.29	0.65
84:z:57:LEU:HD11	84:z:73:ARG:HB2	1.79	0.65
11:AA:289:A:O2'	49:QQ:93:LYS:O	2.14	0.65
30:HH:119:TYR:OH	30:HH:139:PRO:O	2.11	0.65
61:c:1223:A:H3'	61:c:1224:A:C8	2.30	0.65
61:c:1462:G:N7	79:u:143:ARG:NH1	2.45	0.65
11:AA:1786:G:H2'	11:AA:1787:A:C8	2.31	0.65
11:AA:3092:C:O2'	11:AA:3094:A:OP2	2.14	0.65
29:H:66:LYS:HE2	29:H:68:GLU:HG2	1.78	0.65
67:i:73:THR:HG23	77:s:114:ARG:HG2	1.79	0.65
16:C:123:THR:OG1	16:C:125:ASP:OD1	2.13	0.65
11:AA:2526:C:OP1	23:EE:37:ARG:NH1	2.28	0.65
12:Aa:85:ASP:OD1	12:Aa:85:ASP:N	2.17	0.65
20:DD:191:TYR:HB2	20:DD:196:VAL:HG12	1.77	0.65
11:AA:2465:G:O6	11:AA:2493:U:O2	2.15	0.65
33:J:60:TYR:OH	52:T:26:LYS:NZ	2.28	0.65
50:R:42:GLN:HA	50:R:45:LEU:HG	1.79	0.65
51:S:47:CYS:SG	51:S:49:SER:OG	2.54	0.65
61:c:1436:A:OP2	65:g:27:ARG:NH2	2.29	0.65
64:f:222:TYR:OH	82:x:11:LEU:O	2.11	0.65
8:7:126:SER:OG	8:7:128:ASP:OD1	2.15	0.65
11:AA:2176:U:OP1	23:EE:54:ARG:NH2	2.28	0.65
12:Aa:5:THR:HG22	12:Aa:7:ASP:H	1.62	0.65
12:Aa:380:LEU:HD11	12:Aa:454:ILE:HD11	1.79	0.65
28:GG:35:VAL:HG21	28:GG:244:LEU:HD21	1.77	0.65
61:c:947:U:H2'	61:c:948:G:H8	1.62	0.65
17:CC:8:C:H2'	17:CC:9:A:H8	1.61	0.64
11:AA:327:A:OP2	44:OO:31:LYS:NZ	2.29	0.64
12:Aa:329:PRO:HB2	12:Aa:332:ASP:HB2	1.77	0.64
61:c:1591:C:H2'	61:c:1592:A:C8	2.32	0.64
11:AA:900:G:H1'	11:AA:1589:A:N6	2.11	0.64
61:c:1331:A:OP1	78:t:45:ARG:NH2	2.25	0.64
11:AA:361:A:O3'	54:V:45:ARG:NH2	2.30	0.64
11:AA:1717:U:H2'	11:AA:1718:G:C8	2.33	0.64
11:AA:2405:C:H1'	47:Pp:2:PHE:HB3	1.80	0.64
12:Aa:196:VAL:HG23	12:Aa:197:LEU:HD22	1.78	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
71:m:109:LEU:HB2	71:m:146:PHE:HB3	1.80	0.64
38:LL:17:THR:HG23	38:LL:28:VAL:HB	1.80	0.64
58:Z:2:ARG:HH22	61:c:1773:4AC:HM72	1.62	0.64
70:l:39:GLY:O	70:l:59:ARG:HB3	1.97	0.64
73:o:6:THR:O	73:o:9:SER:OG	2.14	0.64
11:AA:2450:G:O6	11:AA:2497:U:O4	2.16	0.64
61:c:1482:C:O2'	77:s:72:GLY:O	2.15	0.64
62:d:118:PRO:HG2	62:d:141:ILE:HD13	1.79	0.64
11:AA:2964:G:N2	11:AA:2967:A:OP2	2.29	0.64
22:E:6:GLU:OE2	22:E:99:ARG:NH1	2.30	0.64
24:Ee:127:SER:HA	24:Ee:130:LYS:HD3	1.79	0.64
61:c:354:C:H5''	70:l:16:ALA:HB2	1.79	0.64
1:O:26:ASP:OD1	1:O:68:LYS:NZ	2.31	0.64
2:1:98:GLN:NE2	67:i:189:THR:OG1	2.29	0.64
11:AA:627:U:H2'	11:AA:628:A:C8	2.32	0.64
11:AA:2160:G:H2'	11:AA:2161:G:H8	1.63	0.64
11:AA:2219:A:H2'	11:AA:2220:A2M:H8	1.79	0.64
12:Aa:338:ILE:HG23	12:Aa:342:LEU:HD12	1.79	0.64
63:e:32:ILE:HG22	63:e:34:ALA:HB2	1.80	0.64
77:s:31:VAL:HA	77:s:67:VAL:HG23	1.79	0.64
1:O:38:ASP:OD1	1:O:39:GLU:N	2.31	0.63
11:AA:3042:U:OP2	11:AA:3092:C:N4	2.30	0.63
11:AA:2094:C:H2'	11:AA:2095:G:H8	1.63	0.63
11:AA:2525:G:OP2	23:EE:37:ARG:NH2	2.31	0.63
11:AA:2895:G:O2'	57:Y:100:TYR:O	2.15	0.63
11:AA:3068:U:OP2	19:D:62:ARG:NH2	2.30	0.63
15:Bb:15:G:O6	15:Bb:48:C:O2	2.16	0.63
61:c:1221:A:N6	61:c:1262:U:O2	2.18	0.63
66:h:103:TYR:O	66:h:182:TYR:OH	2.14	0.63
11:AA:406:G:OP1	11:AA:1415:U:O2'	2.13	0.63
12:Aa:743:ILE:HG12	12:Aa:784:LEU:HD11	1.81	0.63
61:c:1533:C:H4'	61:c:1539:G:C6	2.33	0.63
66:h:147:ILE:HG21	66:h:169:ILE:HG12	1.80	0.63
52:T:31:LEU:HD11	52:T:43:LYS:HE3	1.81	0.63
11:AA:126:U:OP1	49:QQ:144:ARG:NH1	2.32	0.63
11:AA:269:G:H5''	49:QQ:14:LYS:HE2	1.81	0.63
17:CC:81:U:H5''	17:CC:82:U:H5'	1.80	0.63
72:n:38:LYS:HE3	72:n:41:TYR:CE2	2.34	0.63
76:r:44:ARG:NH1	76:r:82:ASN:O	2.32	0.63
12:Aa:310:ASP:N	12:Aa:310:ASP:OD1	2.30	0.63
61:c:447:U:OP1	66:h:49:ARG:NH1	2.31	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:472:U:O2'	61:c:769:A:N3	2.32	0.63
11:AA:824:C:H5''	23:EE:21:ARG:HD3	1.81	0.63
11:AA:1574:C:H3'	11:AA:1575:A:H8	1.63	0.63
61:c:1586:A:H5''	77:s:136:SER:HB2	1.79	0.63
68:j:144:PHE:HE2	68:j:158:ILE:HD11	1.64	0.63
69:k:56:LYS:O	69:k:88:ARG:HA	1.99	0.63
11:AA:1412:G:OP1	48:Q:105:ARG:NH1	2.29	0.63
15:Bb:43:G:H2'	15:Bb:44:A:C8	2.34	0.63
23:EE:3:ARG:HB2	23:EE:207:VAL:HG22	1.81	0.63
23:EE:109:GLU:CD	23:EE:109:GLU:H	2.07	0.63
62:d:98:ILE:HD11	62:d:116:LYS:HD2	1.81	0.63
12:Aa:308:LYS:HB2	12:Aa:311:GLU:HG2	1.80	0.63
19:D:173:ARG:NH2	61:c:853:G:OP2	2.30	0.63
24:Ee:53:PHE:HD2	24:Ee:83:THR:HG21	1.64	0.63
61:c:44:U:OP2	61:c:437:A:N6	2.29	0.63
61:c:343:C:H2'	61:c:344:A:H8	1.64	0.63
66:h:21:ASP:HB3	66:h:24:SER:HB2	1.79	0.63
68:j:33:GLY:HA2	68:j:51:LYS:HG2	1.81	0.63
71:m:170:GLY:O	71:m:174:ARG:NH1	2.31	0.63
77:s:22:VAL:HG12	77:s:65:ILE:HG12	1.81	0.63
5:4:42:ARG:NH2	67:i:161:ASP:OD1	2.32	0.62
8:7:132:LYS:HG2	8:7:143:THR:HG22	1.81	0.62
61:c:1556:A:OP1	76:r:115:TYR:OH	2.16	0.62
62:d:107:PHE:HB3	62:d:139:VAL:HG21	1.81	0.62
11:AA:1644:C:H5''	11:AA:1645:U:H5''	1.80	0.62
59:a:8:ARG:HB3	59:a:23:HIS:HB2	1.80	0.62
11:AA:518:G:OP2	11:AA:518:G:N2	2.22	0.62
11:AA:1018:G:O6	11:AA:1034:U:O4	2.16	0.62
11:AA:2364:G:H22	11:AA:2396:G:H1'	1.63	0.62
12:Aa:205:ALA:HA	12:Aa:222:ILE:HD11	1.79	0.62
68:j:64:LYS:HD3	68:j:97:VAL:HG21	1.80	0.62
11:AA:1112:A:OP1	44:OO:5:LYS:NZ	2.33	0.62
11:AA:2697:A:H2'	11:AA:2698:G:C8	2.34	0.62
11:AA:2697:A:H2'	11:AA:2698:G:H8	1.63	0.62
61:c:967:A:OP2	74:p:124:ARG:NH2	2.30	0.62
17:CC:9:A:H2'	17:CC:10:A:C8	2.35	0.62
83:y:30:SER:O	83:y:30:SER:OG	2.16	0.62
11:AA:1682:U:O4	27:G:90:ARG:NH1	2.32	0.62
32:II:13:GLU:HA	48:Q:4:LEU:HD11	1.79	0.62
11:AA:1019:G:H2'	11:AA:1020:G:H8	1.65	0.62
12:Aa:155:VAL:HG21	12:Aa:185:VAL:HG11	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:28:A2M:H5''	61:c:28:A2M:H8	1.81	0.62
69:k:46:ILE:HD13	69:k:60:ILE:HG12	1.82	0.62
8:7:115:ILE:HD13	8:7:122:ILE:HG12	1.81	0.62
26:FF:57:VAL:HG22	26:FF:73:VAL:HG22	1.82	0.62
61:c:924:A:H2'	61:c:925:G:C8	2.35	0.62
61:c:1358:G:N1	61:c:1366:U:N3	2.47	0.62
63:e:193:ILE:H	63:e:193:ILE:HD12	1.65	0.62
68:j:70:PRO:O	68:j:98:ARG:NH2	2.33	0.62
6:5:15:GLY:HA3	61:c:1204:A:H61	1.65	0.61
11:AA:1203:A:H2'	11:AA:1204:A:C8	2.35	0.61
11:AA:2261:G:OP1	11:AA:2306:C:N4	2.32	0.61
12:Aa:1:MET:HG2	12:Aa:3:ALA:H	1.64	0.61
8:7:238:ASP:OD2	8:7:258:THR:OG1	2.17	0.61
11:AA:1139:G:OP2	41:N:14:ARG:NH2	2.33	0.61
14:BB:64:A:N7	40:MM:209:ASN:ND2	2.46	0.61
61:c:103:A:H4'	61:c:105:A:C8	2.35	0.61
65:g:176:LEU:HD12	65:g:181:VAL:HG13	1.81	0.61
4:3:24:LEU:HD21	83:y:53:ILE:HD13	1.82	0.61
19:D:105:LEU:HD22	19:D:135:LYS:HG3	1.80	0.61
38:LL:21:LYS:HG3	38:LL:22:SER:H	1.66	0.61
61:c:777:C:H2'	61:c:778:G:C8	2.36	0.61
68:j:31:ARG:HB3	68:j:101:ILE:HG22	1.82	0.61
68:j:103:GLY:H	68:j:106:LEU:HD23	1.65	0.61
75:q:88:GLY:O	75:q:92:LYS:NZ	2.33	0.61
77:s:50:GLU:OE2	77:s:114:ARG:NH1	2.33	0.61
11:AA:307:A:H2'	11:AA:308:A:C8	2.34	0.61
12:Aa:187:VAL:O	12:Aa:191:THR:HG23	2.00	0.61
14:BB:112:G:H2'	14:BB:113:C:C6	2.34	0.61
61:c:538:A:O2'	61:c:541:A2M:H8	2.00	0.61
61:c:637:C:O2	69:k:114:ARG:NH1	2.34	0.61
61:c:1352:G:O2'	61:c:1353:U:O4'	2.18	0.61
63:e:195:LYS:O	63:e:199:ASN:ND2	2.32	0.61
70:l:184:LEU:HB2	70:l:189:LEU:HD13	1.81	0.61
74:p:99:ARG:O	74:p:103:GLU:HG3	2.01	0.61
11:AA:307:A:H2'	11:AA:308:A:H8	1.65	0.61
11:AA:894:G:H4'	11:AA:895:A:H5'	1.82	0.61
61:c:256:A:O2'	70:l:72:ILE:O	2.16	0.61
61:c:512:A:O2'	71:m:133:HIS:NE2	2.31	0.61
61:c:976:G:N1	61:c:1023:A:O2'	2.29	0.61
67:i:121:ILE:HB	67:i:129:PRO:HB3	1.83	0.61
75:q:87:GLY:HA3	75:q:120:PRO:HG2	1.82	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:A:87:MET:HE3	11:AA:1175:C:H1'	1.82	0.61
11:AA:289:A:H2'	11:AA:290:G:H8	1.65	0.61
12:Aa:427:PHE:HB3	12:Aa:429:LYS:HD3	1.81	0.61
12:Aa:433:ARG:HB3	12:Aa:457:VAL:HB	1.82	0.61
18:Cc:59:A:O2'	18:Cc:61:U:OP2	2.17	0.61
28:GG:161:LYS:HB2	28:GG:164:GLU:HG2	1.83	0.61
30:HH:182:GLY:HA2	30:HH:194:LEU:HD23	1.82	0.61
76:r:85:ILE:HG13	76:r:111:MET:HB3	1.81	0.61
11:AA:985:U:H2'	11:AA:986:U:H6	1.66	0.61
12:Aa:274:ASN:HA	12:Aa:278:LEU:HB2	1.83	0.61
39:M:36:GLY:HA3	39:M:40:HIS:CE1	2.35	0.61
44:OO:5:LYS:HD3	44:OO:5:LYS:H	1.66	0.61
54:V:2:GLY:HA2	54:V:6:PRO:HG2	1.83	0.61
28:GG:36:HIS:O	28:GG:40:THR:HG23	2.00	0.61
61:c:1466:G:O2'	61:c:1602:C:OP1	2.18	0.61
61:c:1482:C:N4	61:c:1524:A:OP2	2.34	0.61
1:0:16:PRO:HD2	66:h:95:THR:HG22	1.82	0.61
11:AA:1596:C:H2'	11:AA:1597:C:C6	2.35	0.61
11:AA:1824:U:OP1	55:W:3:ARG:NH2	2.33	0.61
61:c:1198:G:OP1	61:c:1199:G:O2'	2.11	0.61
11:AA:1336:U:H2'	11:AA:1337:A:H8	1.66	0.60
11:AA:1560:G:O2'	11:AA:1561:G:O4'	2.16	0.60
12:Aa:27:HIS:O	12:Aa:32:LYS:NZ	2.34	0.60
30:HH:215:ASP:OD1	30:HH:215:ASP:N	2.34	0.60
40:MM:54:SER:HB2	40:MM:135:ILE:HD11	1.83	0.60
64:f:56:ILE:HG23	64:f:61:LEU:HB2	1.82	0.60
83:y:29:PRO:HB2	83:y:58:SER:HB2	1.83	0.60
61:c:1164:G:O2'	61:c:1612:U:O2	2.20	0.60
61:c:1356:U:O2	61:c:1368:G:N2	2.34	0.60
65:g:137:VAL:HG22	65:g:151:LYS:HG2	1.82	0.60
61:c:455:C:H3'	61:c:456:A:H8	1.66	0.60
63:e:41:ARG:HH11	63:e:41:ARG:HA	1.66	0.60
11:AA:1155:C:O2'	11:AA:1197:A:N1	2.30	0.60
11:AA:1812:G:N7	37:L:64:LYS:NZ	2.47	0.60
11:AA:3016:A:H2'	11:AA:3017:A:H8	1.64	0.60
11:AA:3295:A:H2'	11:AA:3296:A:C8	2.36	0.60
12:Aa:82:SER:OG	12:Aa:85:ASP:OD1	2.15	0.60
61:c:1171:A:H2'	61:c:1172:G:H8	1.64	0.60
61:c:1521:G:O2'	61:c:1523:G:OP2	2.19	0.60
11:AA:1364:C:H5''	16:C:3:ILE:HD13	1.82	0.60
28:GG:145:ILE:HG13	28:GG:146:PRO:HD2	1.81	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:12:U:H2'	61:c:13:C:C6	2.36	0.60
61:c:1316:G:O2'	78:t:10:LYS:NZ	2.34	0.60
11:AA:72:C:H4'	44:OO:63:VAL:HG13	1.83	0.60
11:AA:411:U:H2'	11:AA:412:G:H8	1.66	0.60
17:CC:8:C:H2'	17:CC:9:A:C8	2.37	0.60
28:GG:156:LEU:HD12	28:GG:159:ILE:HD12	1.83	0.60
71:m:17:ARG:O	71:m:23:ARG:NH1	2.35	0.60
84:z:6:PRO:HG3	84:z:14:LYS:HG2	1.81	0.60
17:CC:63:G:H22	17:CC:97:A:H2	1.49	0.60
37:L:23:VAL:HG12	37:L:45:GLY:HA3	1.83	0.60
65:g:32:GLU:OE2	65:g:65:ARG:NH1	2.34	0.60
2:1:46:LYS:NZ	2:1:49:ARG:HE	2.00	0.60
8:7:158:PRO:HG2	8:7:206:PRO:HA	1.84	0.60
11:AA:100:A:H3'	11:AA:101:G:H21	1.67	0.60
11:AA:2396:G:N7	91:AA:3757:HOH:O	2.32	0.60
43:O:10:ILE:HD12	43:O:10:ILE:H	1.67	0.60
67:i:117:THR:HG21	67:i:194:LEU:HD22	1.83	0.60
62:d:144:ILE:HG12	62:d:158:VAL:HB	1.83	0.60
66:h:71:LYS:HB3	66:h:91:THR:HG23	1.84	0.60
70:l:70:GLU:HB2	70:l:72:ILE:HD11	1.84	0.60
11:AA:911:C:H42	23:EE:3:ARG:HD3	1.67	0.60
11:AA:1437:OMC:HM22	28:GG:93:MET:HG3	1.84	0.60
11:AA:2945:G:O2'	11:AA:2948:OMC:OP2	2.19	0.60
15:Bb:50:U:H2'	15:Bb:51:G:C8	2.37	0.60
8:7:174:ASN:HA	8:7:199:ILE:HB	1.83	0.59
11:AA:1799:A:H2'	11:AA:1800:A:C8	2.37	0.59
11:AA:2561:A:H2'	11:AA:2562:A:H8	1.67	0.59
61:c:1474:G:H2'	61:c:1475:A:H8	1.66	0.59
75:q:26:THR:HG21	75:q:60:ALA:HB2	1.83	0.59
8:7:203:THR:HG21	8:7:244:ALA:HA	1.85	0.59
11:AA:2442:G:O6	11:AA:2505:U:O4	2.20	0.59
37:L:121:ARG:HB2	37:L:121:ARG:NH1	2.17	0.59
53:U:70:ARG:HD2	53:U:84:LYS:HG2	1.83	0.59
61:c:1034:C:HO2'	83:y:2:THR:N	2.00	0.59
68:j:77:LEU:HD12	68:j:95:LYS:HD3	1.84	0.59
77:s:28:LEU:HD11	77:s:30:LYS:HE3	1.84	0.59
81:w:52:LYS:HB3	81:w:93:LEU:HB3	1.84	0.59
2:1:49:ARG:HA	2:1:52:LYS:HG3	1.84	0.59
11:AA:952:A:H4'	11:AA:968:G:N2	2.18	0.59
11:AA:1799:A:H2'	11:AA:1800:A:H8	1.65	0.59
61:c:1776:A:H2'	61:c:1777:G:C8	2.37	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:896:A:H5'	23:EE:183:GLY:HA2	1.85	0.59
11:AA:966:U:OP1	39:M:44:ASN:ND2	2.36	0.59
19:D:176:ARG:NH2	61:c:853:G:OP2	2.35	0.59
51:S:51:LEU:HB3	51:S:54:ILE:HD13	1.83	0.59
61:c:955:A:OP1	74:p:3:ARG:NH1	2.34	0.59
61:c:1280:4AC:H2'	61:c:1281:G:H8	1.66	0.59
2:1:44:GLN:NE2	79:u:6:GLN:O	2.24	0.59
11:AA:874:U:N3	11:AA:2978:U:OP1	2.32	0.59
11:AA:1239:C:H4'	24:Ee:97:ASN:HA	1.85	0.59
12:Aa:496:LYS:HD2	12:Aa:553:PRO:HB2	1.85	0.59
30:HH:60:ILE:HB	30:HH:80:SER:HB3	1.84	0.59
11:AA:1258:U:OP1	20:DD:42:ARG:NH1	2.35	0.59
11:AA:2722:U:O2'	25:F:88:ARG:O	2.20	0.59
12:Aa:491:VAL:HA	12:Aa:559:PRO:HD3	1.85	0.59
42:NN:21:ILE:HG21	42:NN:33:ALA:HB1	1.84	0.59
61:c:810:G:N2	69:k:109:VAL:O	2.31	0.59
65:g:94:ARG:O	65:g:96:LEU:N	2.34	0.59
66:h:151:ASP:OD2	68:j:215:ARG:NH2	2.36	0.59
71:m:63:ASP:OD1	71:m:64:GLU:N	2.35	0.59
1:0:7:ILE:HG12	1:0:27:VAL:HG13	1.85	0.59
11:AA:22:G:N7	91:AA:3754:HOH:O	2.31	0.59
11:AA:68:C:OP2	11:AA:301:G:N2	2.35	0.59
11:AA:567:G:H2'	11:AA:568:G:C8	2.37	0.59
11:AA:2152:A:H2'	11:AA:2153:U:H6	1.68	0.59
11:AA:2465:G:O6	11:AA:2493:U:C2	2.56	0.59
12:Aa:111:PHE:HZ	12:Aa:540:ILE:HD12	1.68	0.59
24:Ee:60:VAL:HG12	24:Ee:73:VAL:HG22	1.85	0.59
67:i:42:LEU:HB2	67:i:47:SER:HA	1.85	0.59
80:v:77:ASN:OD1	80:v:101:ASN:ND2	2.35	0.59
8:7:300:THR:OG1	8:7:314:GLN:OE1	2.21	0.59
11:AA:520:U:OP2	34:JJ:70:LYS:NZ	2.30	0.59
11:AA:821:U:H2'	11:AA:822:G:H8	1.67	0.59
11:AA:2417:OMU:H5'	23:EE:221:LYS:HE3	1.84	0.59
11:AA:2696:A:H2'	11:AA:2697:A:C8	2.38	0.59
11:AA:2746:A:N1	30:HH:148:ILE:HG12	2.18	0.59
11:AA:3379:C:H4'	26:FF:315:GLY:HA2	1.85	0.59
12:Aa:91:GLN:HG2	12:Aa:347:THR:HG21	1.82	0.59
15:Bb:37:YYG:H33	15:Bb:37:YYG:H2'	1.84	0.59
61:c:542:A:H5''	61:c:543:C:H3'	1.85	0.59
11:AA:216:G:OP1	35:K:16:ARG:NH1	2.35	0.59
14:BB:72:A:O2'	14:BB:73:C:OP1	2.20	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:E:8:GLN:HB3	22:E:64:ILE:HD11	1.84	0.59
61:c:178:U:O4'	68:j:191:ARG:NH2	2.36	0.59
61:c:788:A:OP2	66:h:108:ARG:NH2	2.34	0.59
61:c:1296:A:OP1	62:d:138:TYR:OH	2.14	0.59
71:m:57:ARG:O	71:m:61:THR:HG23	2.02	0.59
11:AA:426:G:OP1	48:Q:15:LYS:NZ	2.36	0.59
11:AA:2458:A:H3'	11:AA:2459:A:H8	1.68	0.59
11:AA:2462:A:H5'	11:AA:2463:G:H3'	1.85	0.59
15:Bb:50:U:H2'	15:Bb:51:G:H8	1.68	0.59
61:c:110:U:OP1	61:c:753:A:O2'	2.21	0.59
61:c:1524:A:H2'	61:c:1525:A:C8	2.38	0.59
3:2:32:LYS:O	3:2:37:LYS:NZ	2.35	0.58
11:AA:1696:A:H2'	11:AA:1697:A:C8	2.38	0.58
61:c:151:G:N3	68:j:13:GLN:NE2	2.50	0.58
61:c:1785:U:OP1	75:q:136:ARG:NH1	2.35	0.58
66:h:148:ARG:NH1	68:j:201:GLN:OE1	2.36	0.58
11:AA:3358:U:H2'	11:AA:3359:A:H8	1.67	0.58
8:7:13:LEU:HD22	8:7:310:ILE:HB	1.85	0.58
11:AA:2793:OMG:H5''	59:a:66:LYS:HG2	1.85	0.58
11:AA:3322:A:H2'	11:AA:3323:A:C8	2.38	0.58
42:NN:82:ARG:HG2	42:NN:112:LEU:HD13	1.84	0.58
46:PP:48:GLY:HA3	46:PP:53:VAL:HB	1.83	0.58
61:c:1294:G:O2'	61:c:1321:A:N1	2.31	0.58
68:j:21:GLU:HA	68:j:24:ILE:HG22	1.85	0.58
10:A:7:VAL:HB	10:A:33:ILE:HD13	1.85	0.58
11:AA:407:A:C2	17:CC:17:A:H1'	2.39	0.58
11:AA:498:A:O2'	11:AA:3273:A:N1	2.35	0.58
11:AA:542:G:O6	11:AA:549:U:O4	2.20	0.58
11:AA:776:U:OP2	41:N:41:ARG:NH1	2.37	0.58
11:AA:2677:G:N1	11:AA:2680:A:N6	2.51	0.58
11:AA:2768:U:H2'	11:AA:2769:A:H8	1.67	0.58
37:L:27:LYS:NZ	37:L:96:VAL:O	2.35	0.58
61:c:142:G:H2'	61:c:143:G:C8	2.39	0.58
61:c:625:C:H2'	61:c:626:U:C6	2.38	0.58
79:u:48:LYS:HB3	79:u:54:LEU:HD11	1.85	0.58
79:u:106:GLU:OE1	79:u:110:ARG:NH1	2.36	0.58
3:2:49:ALA:HB2	75:q:103:ARG:HD3	1.85	0.58
11:AA:417:A:H2'	11:AA:418:A:C8	2.38	0.58
11:AA:656:A:H2'	11:AA:657:A:C8	2.39	0.58
11:AA:2489:C:H2'	11:AA:2490:C:C2	2.38	0.58
20:DD:139:LEU:HD11	20:DD:169:GLU:HA	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:29:U:H2'	61:c:30:G:H8	1.68	0.58
61:c:1540:G:OP2	79:u:40:ARG:NH2	2.24	0.58
84:z:97:ASP:OD1	84:z:142:LYS:NZ	2.35	0.58
11:AA:112:U:OP1	52:T:107:LYS:NZ	2.35	0.58
11:AA:2452:G:H2'	11:AA:2462:A:H1'	1.85	0.58
24:Ee:33:GLY:H	24:Ee:34:PRO:HD2	1.69	0.58
61:c:484:C:H2'	61:c:485:A:H8	1.68	0.58
61:c:513:U:H2'	61:c:514:G:C8	2.37	0.58
79:u:73:MET:HB3	79:u:101:LEU:HD13	1.84	0.58
11:AA:643:U:O2'	11:AA:1153:A:N1	2.33	0.58
11:AA:1097:G:N7	25:F:116:ARG:NH2	2.51	0.58
11:AA:2717:U:H4'	59:a:13:LYS:HD3	1.85	0.58
18:Cc:34:U:OP2	77:s:143:ARG:NH2	2.34	0.58
32:II:146:ILE:CG2	32:II:150:LYS:HZ3	2.16	0.58
61:c:560:U:H2'	61:c:561:G:H8	1.68	0.58
61:c:1544:U:H3	61:c:1567:U:H3	1.51	0.58
65:g:105:MET:HE1	65:g:119:ALA:HB2	1.86	0.58
69:k:74:GLN:HA	69:k:77:LEU:HD23	1.85	0.58
77:s:23:LYS:HD3	77:s:66:ARG:HH21	1.68	0.58
11:AA:1712:G:H2'	11:AA:1713:G:C8	2.38	0.58
11:AA:2403:G:N2	47:Pp:1:MET:HA	2.18	0.58
61:c:1316:G:O2'	61:c:1401:A:O2'	2.20	0.58
2:1:81:ARG:HH22	61:c:1531:G:H5'	1.68	0.58
11:AA:1597:C:H5'	11:AA:1696:A:H1'	1.85	0.58
11:AA:2129:U:H2'	11:AA:2130:G:C8	2.38	0.58
11:AA:2557:A:OP1	23:EE:69:TYR:OH	2.13	0.58
11:AA:3080:G:OP1	91:AA:3705:HOH:O	2.17	0.58
42:NN:132:ASN:HA	42:NN:154:THR:HG21	1.85	0.58
44:OO:90:ALA:HB1	44:OO:95:ILE:HB	1.85	0.58
49:QQ:159:ARG:HB2	49:QQ:164:LEU:HB2	1.86	0.58
61:c:77:U:O2'	61:c:78:A:OP2	2.18	0.58
63:e:113:MET:HE2	63:e:142:PHE:HE2	1.68	0.58
79:u:94:ASP:OD2	79:u:98:TYR:OH	2.14	0.58
12:Aa:293:LYS:HA	12:Aa:296:ILE:HD12	1.85	0.58
61:c:795:U:H2'	61:c:796:A2M:H8	1.85	0.58
8:7:70:ASP:HB3	8:7:113:VAL:HG12	1.85	0.57
11:AA:662:U:H2'	11:AA:663:OMC:C6	2.39	0.57
17:CC:57:C:H4'	17:CC:63:G:N7	2.18	0.57
61:c:859:A:O2'	74:p:73:ARG:NH2	2.36	0.57
61:c:1628:U:H2'	61:c:1629:G:C8	2.38	0.57
68:j:102:VAL:HG11	68:j:109:LEU:HD11	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
74:p:34:ILE:O	74:p:38:VAL:HG23	2.03	0.57
11:AA:715:A:H5''	39:M:115:LYS:HA	1.86	0.57
11:AA:358:G:N2	11:AA:361:A:OP2	2.33	0.57
11:AA:1378:U:H2'	11:AA:1379:G:H8	1.68	0.57
12:Aa:801:TRP:CZ2	90:Aa:1002:SO1:H242	2.39	0.57
30:HH:68:THR:OG1	30:HH:71:GLY:O	2.21	0.57
61:c:1682:U:H4'	68:j:65:GLN:HE22	1.69	0.57
11:AA:2313:A:OP2	91:AA:3706:HOH:O	2.17	0.57
12:Aa:353:ALA:HB3	12:Aa:370:LYS:HG2	1.85	0.57
12:Aa:459:ILE:HG13	12:Aa:460:ASP:H	1.68	0.57
12:Aa:602:GLU:OE2	12:Aa:682:ARG:NH1	2.37	0.57
17:CC:21:C:OP1	28:GG:193:LYS:NZ	2.28	0.57
61:c:751:G:H2'	61:c:752:A:H8	1.68	0.57
61:c:1365:C:H2'	61:c:1366:U:C6	2.39	0.57
63:e:88:VAL:HG11	63:e:96:LEU:HD12	1.86	0.57
71:m:110:GLN:HB2	71:m:144:PRO:HB3	1.86	0.57
76:r:98:ASN:ND2	76:r:121:ILE:O	2.37	0.57
77:s:73:GLY:O	77:s:77:GLN:HG3	2.04	0.57
12:Aa:319:LEU:O	12:Aa:323:VAL:HG13	2.05	0.57
14:BB:45:A:OP1	30:HH:151:GLN:NE2	2.38	0.57
27:G:38:ILE:HG23	27:G:50:LEU:HD12	1.85	0.57
39:M:99:ALA:N	44:OO:157:ARG:O	2.33	0.57
50:R:14:LEU:HD11	50:R:31:LYS:HB2	1.85	0.57
53:U:34:SER:OG	53:U:37:THR:HG23	2.05	0.57
61:c:65:A:H2	61:c:84:A:H62	1.50	0.57
61:c:1325:A:H2'	61:c:1326:A:H8	1.67	0.57
61:c:1477:G:H2'	61:c:1478:G:H8	1.68	0.57
67:i:76:ARG:NH1	77:s:120:ASP:OD1	2.37	0.57
68:j:38:GLY:N	68:j:48:TYR:O	2.36	0.57
79:u:12:GLN:HB3	79:u:59:GLY:HA2	1.87	0.57
11:AA:39:A:H5''	39:M:35:ALA:HB2	1.86	0.57
12:Aa:363:ASP:O	12:Aa:367:ILE:HD12	2.05	0.57
64:f:45:VAL:HG21	64:f:68:ILE:HG23	1.85	0.57
3:2:89:ARG:NH1	61:c:1089:U:OP1	2.37	0.57
11:AA:649:A2M:OP2	11:AA:2868:U:O2'	2.23	0.57
11:AA:2116:G:OP1	11:AA:2118:C:N4	2.35	0.57
12:Aa:738:GLN:NE2	12:Aa:791:GLN:OE1	2.38	0.57
61:c:918:U:H2'	61:c:919:A:H8	1.70	0.57
64:f:39:THR:O	64:f:42:GLY:N	2.32	0.57
11:AA:129:U:H2'	11:AA:130:A:C8	2.40	0.57
11:AA:1009:A:H2'	11:AA:1010:G:C8	2.40	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2478:C:H41	11:AA:2480:A:H61	1.52	0.57
28:GG:233:LEU:HB3	28:GG:238:LEU:HD11	1.87	0.57
30:HH:83:LEU:HB3	30:HH:88:ILE:HB	1.85	0.57
61:c:273:G:H1	61:c:283:U:H3	1.53	0.57
62:d:79:ARG:NH1	62:d:164:ASN:O	2.25	0.57
66:h:35:PRO:HD2	66:h:83:PRO:HG2	1.87	0.57
67:i:128:ASN:HB3	67:i:131:GLN:HB3	1.87	0.57
72:n:23:ALA:O	72:n:64:TYR:HB2	2.04	0.57
8:7:47:LEU:HD21	8:7:302:PHE:HZ	1.69	0.57
11:AA:1724:U:H1'	11:AA:1725:C:C6	2.39	0.57
11:AA:2930:A:H2'	11:AA:2931:C:C6	2.40	0.57
15:Bb:15:G:O2'	15:Bb:20:G:O6	2.23	0.57
24:Ee:137:GLN:HB2	24:Ee:148:PRO:HB2	1.87	0.57
29:H:40:LYS:HG3	29:H:57:MET:HG2	1.87	0.57
58:Z:11:ARG:NH2	61:c:1775:U:OP1	2.36	0.57
61:c:484:C:H2'	61:c:485:A:C8	2.40	0.57
61:c:525:A:O2'	61:c:526:A:OP1	2.22	0.57
61:c:1146:G:H2'	61:c:1147:A:C8	2.40	0.57
71:m:59:LEU:HD22	71:m:69:ARG:HA	1.86	0.57
11:AA:837:A:OP1	60:b:5:THR:OG1	2.21	0.57
11:AA:1203:A:N3	11:AA:2855:U:O2'	2.37	0.57
48:Q:96:ILE:HG21	48:Q:105:ARG:HG2	1.86	0.57
61:c:1241:G:OP2	76:r:77:ARG:NH1	2.33	0.57
9:8:130:VAL:HA	61:c:1253:U:H5''	1.85	0.56
11:AA:63:A:N3	11:AA:78:U:O2'	2.32	0.56
11:AA:945:C:H2'	11:AA:946:U:C6	2.40	0.56
17:CC:38:U:O2'	52:T:83:LYS:NZ	2.38	0.56
25:F:132:PRO:HB2	34:JJ:120:THR:HB	1.86	0.56
37:L:90:GLU:HA	37:L:93:LYS:HD3	1.87	0.56
61:c:251:A:H2	66:h:131:LEU:HD12	1.70	0.56
68:j:30:LYS:HD2	68:j:34:GLN:HG2	1.86	0.56
69:k:150:GLN:HB3	69:k:181:ILE:HG22	1.86	0.56
4:3:67:THR:OG1	4:3:70:LYS:O	2.23	0.56
11:AA:40:A:H5''	39:M:35:ALA:HB1	1.86	0.56
11:AA:1302:A:N7	11:AA:2857:C:O2'	2.38	0.56
23:EE:181:LYS:HB2	23:EE:184:ARG:HG3	1.87	0.56
58:Z:1:MET:HB2	61:c:1642:G:H5'	1.87	0.56
61:c:1262:U:H2'	61:c:1263:G:C8	2.40	0.56
65:g:177:MET:HE1	65:g:182:LEU:HD22	1.85	0.56
78:t:14:LYS:O	78:t:18:GLU:HG2	2.04	0.56
81:w:92:ASP:OD1	81:w:92:ASP:N	2.37	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:36:SER:HB2	61:c:521:A:H4'	1.88	0.56
2:1:65:LEU:HD11	2:1:80:LEU:HD13	1.87	0.56
2:1:77:ARG:NE	61:c:1533:C:OP2	2.38	0.56
9:8:94:LYS:HB2	61:c:1247:U:H5''	1.86	0.56
10:A:22:VAL:HG21	10:A:120:VAL:HG11	1.86	0.56
10:A:49:ARG:NH1	11:AA:1193:A:OP1	2.31	0.56
11:AA:501:A:H2'	11:AA:502:U:C6	2.41	0.56
11:AA:591:G:N2	11:AA:612:U:OP1	2.32	0.56
11:AA:1907:C:O2	26:FF:240:ARG:NH2	2.37	0.56
11:AA:2662:G:H2'	11:AA:2663:G:C8	2.40	0.56
11:AA:2897:A:H2'	11:AA:2899:C:H5''	1.86	0.56
11:AA:3251:U:H2'	11:AA:3252:G:C8	2.40	0.56
26:FF:85:VAL:HG22	26:FF:202:THR:HG22	1.87	0.56
28:GG:325:LEU:O	34:JJ:41:ARG:NH2	2.36	0.56
38:LL:41:ILE:HD13	38:LL:71:VAL:HG22	1.86	0.56
49:QQ:94:TYR:O	49:QQ:96:ARG:N	2.33	0.56
50:R:16:TYR:OH	50:R:89:LEU:O	2.20	0.56
61:c:5:U:H2'	61:c:6:G:H8	1.71	0.56
61:c:1240:U:H1'	61:c:1244:A:H2	1.70	0.56
61:c:1424:A:H2'	61:c:1425:A:H8	1.70	0.56
65:g:29:LEU:HD21	65:g:69:LEU:HD21	1.85	0.56
66:h:42:LEU:N	66:h:84:ALA:O	2.38	0.56
66:h:79:ASP:HB3	66:h:82:TYR:HB2	1.87	0.56
66:h:127:LYS:N	66:h:140:VAL:O	2.38	0.56
66:h:160:VAL:HB	66:h:169:ILE:HD12	1.87	0.56
84:z:55:GLU:HG2	84:z:57:LEU:HG	1.87	0.56
1:0:41:ARG:NH1	1:0:55:VAL:O	2.38	0.56
10:A:16:VAL:HG23	10:A:80:PHE:HD1	1.70	0.56
11:AA:370:U:H4'	11:AA:404:G:H5'	1.86	0.56
11:AA:1152:G:OP2	11:AA:1152:G:N2	2.39	0.56
11:AA:1497:C:H2'	11:AA:1498:A:H8	1.70	0.56
11:AA:2405:C:C4'	47:Pp:2:PHE:HB3	2.34	0.56
11:AA:2476:C:H2'	11:AA:2477:G:H4'	1.86	0.56
11:AA:3204:C:H2'	11:AA:3205:G:C8	2.41	0.56
30:HH:50:ARG:NH2	30:HH:72:ASP:OD2	2.38	0.56
61:c:923:A:H2'	61:c:924:A:C8	2.39	0.56
61:c:1486:G:N2	61:c:1522:U:O4	2.39	0.56
67:i:223:SER:HA	75:q:107:ARG:HH22	1.71	0.56
78:t:24:LEU:HD13	78:t:34:LEU:HD21	1.86	0.56
82:x:11:LEU:HD23	82:x:11:LEU:H	1.70	0.56
3:2:44:ILE:HG12	3:2:67:THR:HG23	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:675:C:O2'	11:AA:679:U:OP1	2.22	0.56
12:Aa:307:LEU:HD12	12:Aa:312:LYS:HG3	1.87	0.56
17:CC:9:A:H2'	17:CC:10:A:H8	1.69	0.56
61:c:1623:C:H2'	61:c:1624:C:H6	1.70	0.56
2:1:95:HIS:CE1	2:1:100:ILE:H	2.23	0.56
11:AA:785:G:H5''	16:C:92:ARG:HH22	1.71	0.56
11:AA:1667:A:H2'	11:AA:1668:G:C8	2.40	0.56
24:Ee:81:VAL:O	24:Ee:85:LEU:HD12	2.06	0.56
54:V:84:SER:O	54:V:84:SER:OG	2.22	0.56
61:c:123:G:H21	66:h:146:THR:HG21	1.69	0.56
70:l:66:SER:HA	70:l:73:SER:HA	1.86	0.56
81:w:28:SER:HB2	81:w:112:VAL:HA	1.86	0.56
5:4:44:VAL:HG22	67:i:161:ASP:HB2	1.87	0.56
6:5:32:ARG:NH2	61:c:1597:A:OP2	2.39	0.56
11:AA:2662:G:H2'	11:AA:2663:G:H8	1.71	0.56
19:D:105:LEU:HD23	19:D:138:LEU:HD23	1.88	0.56
61:c:751:G:H2'	61:c:752:A:C8	2.41	0.56
67:i:143:ARG:HA	67:i:167:ARG:HD3	1.88	0.56
11:AA:2453:U:O4	11:AA:2484:A:N6	2.38	0.56
11:AA:2810:C:OP2	11:AA:2955:U:O2'	2.24	0.56
11:AA:3006:A:H2'	11:AA:3007:U:O4'	2.06	0.56
11:AA:3016:A:H2'	11:AA:3017:A:C8	2.41	0.56
61:c:647:G:N2	61:c:688:G:O6	2.38	0.56
61:c:1160:A:H2'	61:c:1161:C:C6	2.40	0.56
8:7:168:THR:C	8:7:169:ILE:HD12	2.31	0.56
11:AA:282:G:OP1	87:AA:3448:SPD:N1	2.38	0.56
11:AA:715:A:N1	11:AA:781:G:O2'	2.38	0.56
11:AA:1103:A:OP2	34:JJ:158:LYS:NZ	2.36	0.56
11:AA:2367:A:H2'	11:AA:2368:A:C8	2.41	0.56
11:AA:2795:U:OP2	59:a:63:LYS:HG2	2.05	0.56
12:Aa:400:VAL:HG22	12:Aa:450:ALA:HA	1.87	0.56
27:G:34:ALA:O	27:G:38:ILE:HD12	2.05	0.56
30:HH:187:THR:OG1	30:HH:188:GLU:N	2.39	0.56
61:c:125:U:OP1	68:j:201:GLN:NE2	2.38	0.56
61:c:1221:A:H3'	61:c:1222:C:H6	1.71	0.56
68:j:47:GLY:HA3	68:j:117:GLY:HA3	1.87	0.56
11:AA:98:G:N7	44:OO:13:HIS:NE2	2.53	0.56
11:AA:1729:A:O4'	43:O:52:ARG:NH1	2.37	0.56
11:AA:2217:U:H2'	11:AA:2218:G:H8	1.70	0.56
11:AA:2569:A:O2'	11:AA:2570:U:H5''	2.06	0.56
14:BB:62:U:H5''	30:HH:277:LEU:HD12	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:CC:103:G:OP2	17:CC:105:A:O2'	2.23	0.56
42:NN:16:LYS:HE2	42:NN:130:VAL:HG21	1.88	0.56
61:c:772:G:OP1	66:h:22:LYS:NZ	2.35	0.56
61:c:786:C:O2'	66:h:255:ARG:NH1	2.39	0.56
61:c:1164:G:H2'	61:c:1165:G:C8	2.41	0.56
61:c:1280:4AC:H2'	61:c:1281:G:C8	2.41	0.56
3:2:7:SER:HB2	3:2:13:LYS:HE3	1.88	0.55
8:7:258:THR:O	8:7:275:ARG:NH1	2.39	0.55
11:AA:1523:U:OP2	11:AA:1604:G:O2'	2.24	0.55
11:AA:2661:G:H2'	11:AA:2662:G:H8	1.71	0.55
61:c:66:U:H5'	68:j:173:PRO:HA	1.88	0.55
61:c:319:U:H4'	61:c:323:A:C8	2.41	0.55
65:g:17:PHE:CZ	65:g:21:LEU:HD11	2.40	0.55
11:AA:400:G:H4'	11:AA:401:U:H5''	1.88	0.55
11:AA:733:G:N2	11:AA:736:A:OP2	2.38	0.55
11:AA:1196:C:OP2	11:AA:1309:U:O2'	2.19	0.55
11:AA:2723:U:H2'	11:AA:2724:OMU:H6	1.88	0.55
29:H:101:VAL:HG11	29:H:114:ILE:HD12	1.87	0.55
74:p:34:ILE:HG13	74:p:67:THR:HG21	1.88	0.55
11:AA:629:U:H2'	11:AA:630:A:C8	2.41	0.55
11:AA:1108:U:H2'	11:AA:1109:U:C6	2.42	0.55
11:AA:1448:U:H2'	11:AA:1449:A2M:H8	1.87	0.55
14:BB:4:U:H2'	14:BB:5:G:H8	1.70	0.55
17:CC:26:U:H2'	17:CC:27:U:C6	2.42	0.55
53:U:43:LEU:O	53:U:47:ILE:HG23	2.06	0.55
1:0:57:VAL:HB	1:0:60:PHE:HE1	1.70	0.55
11:AA:585:A:H5''	50:R:70:LYS:HD2	1.88	0.55
11:AA:664:U:H2'	11:AA:665:A:H8	1.72	0.55
11:AA:1117:G:OP1	41:N:4:SER:HB2	2.07	0.55
11:AA:1661:G:H2'	11:AA:1662:G:H8	1.72	0.55
11:AA:2393:G:OP2	91:AA:3707:HOH:O	2.18	0.55
25:F:106:LEU:O	25:F:110:LYS:HG2	2.06	0.55
49:QQ:99:ARG:O	49:QQ:103:GLU:HG2	2.06	0.55
59:a:8:ARG:HG2	59:a:72:LEU:CD2	2.37	0.55
61:c:146:U:H2'	61:c:147:A:H8	1.71	0.55
67:i:223:SER:HA	75:q:107:ARG:HH12	1.71	0.55
69:k:141:ARG:HG3	83:y:51:GLU:OE1	2.07	0.55
3:2:2:PRO:HB3	61:c:1142:A:H5''	1.89	0.55
8:7:60:SER:HB3	77:s:94:GLN:NE2	2.21	0.55
11:AA:1119:C:H2'	11:AA:1120:A:H8	1.72	0.55
11:AA:1203:A:H2'	11:AA:1204:A:H8	1.71	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:DD:17:GLU:O	20:DD:21:GLU:HB3	2.06	0.55
25:F:143:THR:OG1	34:JJ:73:GLY:O	2.22	0.55
28:GG:126:ILE:O	28:GG:129:THR:OG1	2.19	0.55
56:X:28:ARG:HA	56:X:33:ASN:OD1	2.07	0.55
61:c:568:G:H4'	84:z:90:ASP:HA	1.87	0.55
69:k:73:VAL:HG22	69:k:77:LEU:HB3	1.87	0.55
79:u:50:ALA:O	79:u:68:ARG:NH2	2.39	0.55
11:AA:2880:U:H1'	26:FF:250:ALA:HB3	1.88	0.55
42:NN:48:SER:HB2	42:NN:66:ALA:HB3	1.86	0.55
61:c:1087:A:H2'	61:c:1088:A:C8	2.42	0.55
61:c:1535:U:O2'	61:c:1536:G:N3	2.38	0.55
78:t:103:ASP:OD1	78:t:104:ASN:N	2.32	0.55
2:1:61:SER:H	2:1:64:VAL:HB	1.72	0.55
7:6:24:THR:O	7:6:26:LYS:HE2	2.07	0.55
7:6:37:ARG:O	7:6:41:THR:HG23	2.06	0.55
11:AA:119:U:O2'	36:KK:133:LYS:NZ	2.37	0.55
11:AA:528:U:H2'	11:AA:529:A:C8	2.42	0.55
11:AA:1498:A:H2'	11:AA:1499:C:C6	2.41	0.55
11:AA:2389:C:H2'	11:AA:2390:A:H8	1.72	0.55
11:AA:2477:G:N2	11:AA:2478:C:O4'	2.40	0.55
18:Cc:9:G:O2'	18:Cc:10:G:N7	2.39	0.55
61:c:272:U:H2'	61:c:273:G:H8	1.72	0.55
61:c:1188:G:O2'	61:c:1430:U:OP1	2.24	0.55
80:v:127:ASN:OD1	80:v:127:ASN:N	2.39	0.55
83:y:31:SER:H	83:y:34:ILE:HD12	1.72	0.55
11:AA:800:G:H22	28:GG:101:ALA:HA	1.72	0.55
11:AA:1240:A:H1'	24:Ee:96:LYS:HD3	1.89	0.55
11:AA:2376:G:H2'	11:AA:2377:G:C8	2.41	0.55
11:AA:2499:U:H2'	11:AA:2500:A:H8	1.71	0.55
12:Aa:472:SER:HB3	12:Aa:475:ALA:HB2	1.89	0.55
12:Aa:820:LEU:HD23	12:Aa:824:LYS:HD2	1.89	0.55
14:BB:94:C:H2'	14:BB:95:A:H8	1.70	0.55
26:FF:360:ASP:OD2	26:FF:364:LYS:NZ	2.40	0.55
34:JJ:156:ILE:HD12	34:JJ:161:VAL:HB	1.89	0.55
35:K:32:SER:HA	35:K:49:PRO:HA	1.88	0.55
61:c:874:C:OP1	63:e:159:SER:OG	2.20	0.55
11:AA:29:C:H4'	11:AA:62:A:H4'	1.89	0.55
11:AA:895:A:O2'	11:AA:896:A:OP2	2.24	0.55
11:AA:2961:G:H2'	11:AA:2962:U:C6	2.42	0.55
16:C:4:ASP:OD2	34:JJ:104:GLN:NE2	2.32	0.55
24:Ee:57:LYS:O	24:Ee:79:SER:OG	2.25	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:Ee:78:SER:O	24:Ee:82:ILE:HG12	2.05	0.55
61:c:17:C:H2'	61:c:18:C:C6	2.42	0.55
61:c:93:A:H1'	66:h:3:ARG:HB3	1.89	0.55
67:i:72:HIS:O	77:s:79:TYR:OH	2.24	0.55
11:AA:728:G:H5''	16:C:43:PRO:HB2	1.88	0.55
11:AA:1659:U:H2'	11:AA:1660:C:C6	2.42	0.55
11:AA:2677:G:H1	11:AA:2680:A:N6	2.04	0.55
11:AA:2848:G:OP1	57:Y:100:TYR:OH	2.24	0.55
11:AA:2899:C:O2'	11:AA:2901:G:OP2	2.19	0.55
20:DD:120:TRP:CE2	20:DD:157:LYS:HG3	2.42	0.55
29:H:18:PRO:HA	29:H:51:ALA:HA	1.89	0.55
61:c:415:C:O2'	61:c:418:G:O6	2.19	0.55
61:c:1223:A:H61	61:c:1260:U:H3	1.55	0.55
61:c:1269:OMU:H4'	61:c:1270:G:C5'	2.37	0.55
64:f:145:GLY:O	83:y:98:GLN:NE2	2.37	0.55
68:j:39:GLU:HG3	68:j:46:LYS:HA	1.89	0.55
68:j:57:ASP:OD2	68:j:72:ARG:NH1	2.39	0.55
8:7:12:THR:HB	8:7:311:ARG:HG2	1.88	0.54
11:AA:435:C:H2'	11:AA:436:A:H8	1.72	0.54
11:AA:1553:U:H4'	11:AA:1554:U:H5'	1.89	0.54
11:AA:1750:A:OP1	55:W:44:LYS:NZ	2.34	0.54
11:AA:2101:C:H2'	11:AA:2102:U:C6	2.42	0.54
11:AA:2676:A:H4'	11:AA:2677:G:H5''	1.89	0.54
11:AA:2683:U:H2'	11:AA:2684:C:C6	2.42	0.54
17:CC:143:U:OP1	49:QQ:38:ARG:NH2	2.37	0.54
23:EE:104:LEU:HD22	23:EE:136:ILE:HD11	1.89	0.54
25:F:160:ILE:O	40:MM:168:SER:OG	2.21	0.54
38:LL:79:ILE:O	38:LL:83:THR:OG1	2.25	0.54
42:NN:50:ALA:HB2	42:NN:65:ILE:HD13	1.88	0.54
61:c:891:A:H2'	61:c:892:A:H8	1.72	0.54
61:c:1001:A:H2'	61:c:1002:G:C8	2.42	0.54
61:c:1650:U:H2'	61:c:1651:A:C8	2.42	0.54
68:j:193:LEU:O	68:j:197:ASN:ND2	2.35	0.54
69:k:8:ILE:HG12	69:k:42:GLN:HA	1.89	0.54
8:7:251:TRP:HZ3	8:7:315:VAL:HG21	1.71	0.54
11:AA:3121:U:H1'	11:AA:3122:A:H5''	1.88	0.54
11:AA:3322:A:H2'	11:AA:3323:A:H8	1.73	0.54
24:Ee:117:ARG:HD2	24:Ee:128:VAL:HG21	1.88	0.54
61:c:1219:A:H3'	61:c:1220:C:H6	1.72	0.54
61:c:1628:U:H2'	61:c:1629:G:H8	1.72	0.54
79:u:41:ARG:NH2	80:v:36:ILE:O	2.38	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:5:15:GLY:O	6:5:18:SER:OG	2.23	0.54
11:AA:1597:C:H2'	11:AA:1598:G:C8	2.43	0.54
19:D:97:ARG:O	19:D:101:VAL:HG13	2.07	0.54
20:DD:150:ILE:H	20:DD:150:ILE:HD12	1.71	0.54
39:M:93:SER:O	39:M:93:SER:OG	2.24	0.54
61:c:895:G:H2'	61:c:896:U:C6	2.42	0.54
61:c:1483:A:OP2	61:c:1521:G:N2	2.39	0.54
68:j:71:THR:OG1	68:j:72:ARG:N	2.40	0.54
11:AA:656:A:H2'	11:AA:657:A:H8	1.72	0.54
11:AA:1477:A:OP1	11:AA:3075:G:O2'	2.20	0.54
11:AA:2228:A:H2'	11:AA:2229:A:C8	2.43	0.54
11:AA:2446:U:H2'	11:AA:2447:A:H8	1.72	0.54
15:Bb:8:U:O2'	15:Bb:21:A:N1	2.39	0.54
28:GG:142:VAL:HB	28:GG:145:ILE:HG21	1.89	0.54
38:LL:84:LYS:HB3	38:LL:186:PHE:HB3	1.89	0.54
61:c:585:A:H2'	61:c:586:G:H8	1.72	0.54
61:c:1623:C:H2'	61:c:1624:C:C6	2.43	0.54
65:g:46:THR:HB	65:g:84:ILE:HG13	1.89	0.54
2:1:74:SER:OG	79:u:57:ARG:NH2	2.41	0.54
11:AA:19:U:H2'	11:AA:20:A:C8	2.42	0.54
11:AA:911:C:OP1	23:EE:14:SER:OG	2.25	0.54
11:AA:2352:A:H5''	13:B:83:TRP:O	2.07	0.54
11:AA:2815:OMG:H2'	11:AA:2870:5MC:HM51	1.90	0.54
11:AA:2882:U:H2'	11:AA:2883:U:C6	2.43	0.54
24:Ee:37:LEU:HD21	24:Ee:64:ILE:HG23	1.89	0.54
29:H:81:GLN:HG2	29:H:83:LYS:H	1.73	0.54
61:c:792:U:H2'	61:c:793:A:C4	2.43	0.54
64:f:218:ILE:O	64:f:221:THR:OG1	2.21	0.54
81:w:57:ARG:HG2	81:w:89:ARG:NH1	2.23	0.54
11:AA:20:A:H2'	11:AA:21:G:C8	2.42	0.54
11:AA:2389:C:H2'	11:AA:2390:A:C8	2.42	0.54
11:AA:2767:U:H2'	11:AA:2768:U:C6	2.43	0.54
12:Aa:244:LEU:HD13	12:Aa:277:ILE:HD11	1.90	0.54
14:BB:4:U:H2'	14:BB:5:G:C8	2.43	0.54
48:Q:41:VAL:HG22	48:Q:46:PHE:HB2	1.89	0.54
61:c:252:U:OP1	66:h:133:LYS:NZ	2.35	0.54
61:c:1435:G:O6	72:n:64:TYR:OH	2.18	0.54
64:f:139:ILE:HD13	64:f:191:ALA:HB1	1.90	0.54
8:7:224:ASN:HD21	8:7:227:ALA:HB3	1.73	0.54
11:AA:12:A:H2'	11:AA:13:A:C8	2.42	0.54
11:AA:113:C:OP1	49:QQ:147:ARG:NE	2.40	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1616:U:H2'	11:AA:1617:G:H8	1.72	0.54
11:AA:1784:G:OP1	51:S:19:LYS:NZ	2.39	0.54
11:AA:2547:A:H2'	11:AA:2548:C:O4'	2.07	0.54
28:GG:26:PHE:HA	28:GG:127:ALA:HA	1.90	0.54
61:c:1380:U:OP1	77:s:12:LYS:NZ	2.29	0.54
61:c:1428:OMG:N2	81:w:74:GLU:OE1	2.39	0.54
61:c:1579:U:H2'	61:c:1580:C:C6	2.43	0.54
75:q:16:VAL:HG12	75:q:18:ARG:HG3	1.89	0.54
8:7:44:SER:HB3	8:7:61:PHE:HE1	1.72	0.54
11:AA:1019:G:H2'	11:AA:1020:G:C8	2.43	0.54
11:AA:1624:G:O2'	11:AA:1643:A:N1	2.37	0.54
11:AA:2094:C:H2'	11:AA:2095:G:C8	2.43	0.54
11:AA:2901:G:O2'	11:AA:3024:A:N1	2.39	0.54
26:FF:346:THR:HG22	26:FF:351:LEU:HD11	1.90	0.54
61:c:436:A2M:H8	61:c:436:A2M:O5'	2.08	0.54
61:c:1227:A:H3'	61:c:1228:G:C2	2.43	0.54
84:z:54:LEU:HD11	84:z:75:GLN:HB2	1.88	0.54
11:AA:1746:U:O2'	55:W:4:GLU:OE1	2.23	0.54
11:AA:1798:A:H2'	11:AA:1799:A:C8	2.42	0.54
11:AA:2407:C:H2'	11:AA:2408:U:H6	1.72	0.54
11:AA:2429:G:H2'	11:AA:2430:A:C8	2.43	0.54
29:H:87:ARG:HH12	29:H:137:VAL:HG21	1.71	0.54
44:OO:62:THR:O	44:OO:64:LYS:N	2.41	0.54
60:b:46:THR:OG1	60:b:57:CYS:SG	2.61	0.54
61:c:1227:A:OP1	61:c:1229:G:H5''	2.08	0.54
61:c:1354:G:H1	61:c:1372:U:H1'	1.73	0.54
61:c:1474:G:H2'	61:c:1475:A:C8	2.42	0.54
61:c:1585:U:H3	61:c:1611:A:H2	1.54	0.54
64:f:148:LEU:O	64:f:174:ARG:NH2	2.41	0.54
65:g:28:GLU:OE1	65:g:65:ARG:NH2	2.38	0.54
68:j:181:PRO:HA	68:j:184:LEU:HD12	1.90	0.54
84:z:87:VAL:HG13	84:z:132:LEU:HD21	1.90	0.54
11:AA:619:A:O2'	11:AA:620:U:OP2	2.21	0.54
11:AA:1219:C:O2'	11:AA:1286:A:N1	2.37	0.54
11:AA:1666:G:H2'	11:AA:1667:A:H8	1.73	0.54
11:AA:2458:A:H3'	11:AA:2459:A:C8	2.43	0.54
11:AA:3023:U:H2'	11:AA:3024:A:H8	1.72	0.54
12:Aa:774:VAL:HG11	90:Aa:1002:SO1:H121	1.90	0.54
17:CC:142:C:H2'	17:CC:143:U:C6	2.43	0.54
19:D:173:ARG:HH22	61:c:853:G:H5''	1.72	0.54
20:DD:30:VAL:HG12	20:DD:185:LEU:HG	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:16:G:H2'	61:c:17:C:C6	2.43	0.54
61:c:918:U:H4'	75:q:18:ARG:HD3	1.88	0.54
1:0:86:GLU:OE2	1:0:90:ARG:NE	2.40	0.53
11:AA:118:U:O2	11:AA:121:A:H5''	2.08	0.53
11:AA:1245:A:N7	11:AA:1271:A:O2'	2.36	0.53
49:QQ:71:ARG:HB2	49:QQ:94:TYR:HB2	1.89	0.53
61:c:1401:A:OP1	78:t:56:HIS:NE2	2.28	0.53
61:c:1424:A:H2'	61:c:1425:A:C8	2.43	0.53
61:c:1488:G:O2'	61:c:1494:C:O2	2.19	0.53
62:d:88:LYS:HE3	78:t:78:ARG:NH1	2.18	0.53
70:l:168:CYS:HB2	70:l:184:LEU:HD21	1.90	0.53
75:q:84:ARG:HB3	75:q:118:VAL:HG23	1.90	0.53
4:3:14:SER:O	4:3:18:LYS:HG2	2.08	0.53
11:AA:159:A:H2'	11:AA:160:G:H8	1.74	0.53
15:Bb:56:C:H2'	15:Bb:57:G:C8	2.43	0.53
40:MM:108:ALA:O	40:MM:112:GLN:HB2	2.08	0.53
61:c:335:U:O2'	73:o:130:PRO:O	2.19	0.53
68:j:121:LEU:H	68:j:124:LEU:HD22	1.73	0.53
72:n:25:LYS:HD2	72:n:59:PHE:HZ	1.72	0.53
8:7:273:ASP:OD1	8:7:273:ASP:N	2.42	0.53
11:AA:3160:U:H5''	11:AA:3396:U:H3'	1.90	0.53
11:AA:3164:C:H2'	11:AA:3165:A:H8	1.73	0.53
11:AA:3329:U:H5''	26:FF:308:MET:HE2	1.90	0.53
30:HH:261:THR:O	30:HH:264:GLN:HG2	2.07	0.53
40:MM:52:LEU:HB3	40:MM:136:PHE:HB2	1.90	0.53
65:g:106:LYS:HG3	65:g:175:VAL:HG22	1.89	0.53
76:r:37:ALA:O	76:r:42:ARG:NH1	2.41	0.53
79:u:14:ILE:HG22	79:u:23:ASP:HA	1.89	0.53
11:AA:1084:A:H2'	11:AA:1085:A:C8	2.44	0.53
11:AA:2573:G:H2'	11:AA:2574:G:C8	2.43	0.53
12:Aa:110:ASP:HB3	12:Aa:537:HIS:HB2	1.90	0.53
12:Aa:577:SER:HB2	12:Aa:712:ALA:HB2	1.90	0.53
32:II:102:ASN:H	32:II:105:TYR:HB3	1.73	0.53
61:c:1776:A:H2'	61:c:1777:G:H8	1.71	0.53
63:e:207:LEU:HB3	63:e:210:ILE:HD11	1.91	0.53
11:AA:1805:C:H2'	11:AA:1806:A:H8	1.72	0.53
11:AA:2615:G:H2'	11:AA:2616:C:H6	1.73	0.53
11:AA:3013:U:H2'	11:AA:3014:U:C6	2.44	0.53
24:Ee:131:GLU:O	24:Ee:135:THR:HG23	2.08	0.53
50:R:9:VAL:HG21	50:R:44:TYR:HE1	1.74	0.53
61:c:939:A:H2'	61:c:940:A:C8	2.44	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
66:h:212:ASP:OD1	66:h:216:ASN:N	2.40	0.53
11:AA:394:G:N1	11:AA:397:A:OP2	2.36	0.53
11:AA:548:G:H2'	11:AA:549:U:C6	2.44	0.53
11:AA:1616:U:H2'	11:AA:1617:G:C8	2.43	0.53
11:AA:2101:C:H2'	11:AA:2102:U:H6	1.73	0.53
11:AA:2986:U:H2'	11:AA:2987:A:H8	1.73	0.53
14:BB:121:U:OP2	30:HH:265:TYR:OH	2.26	0.53
26:FF:187:SER:O	26:FF:190:GLU:N	2.42	0.53
61:c:17:C:O2'	61:c:1137:A:N1	2.34	0.53
61:c:607:G:H5'	61:c:613:G:N2	2.23	0.53
61:c:1241:G:O2'	76:r:78:THR:OG1	2.20	0.53
61:c:1488:G:H3'	61:c:1515:A:H61	1.73	0.53
61:c:1592:A:H2'	61:c:1593:A:C8	2.44	0.53
62:d:122:ILE:HA	62:d:144:ILE:O	2.08	0.53
65:g:31:GLU:O	65:g:54:ARG:NH2	2.42	0.53
8:7:128:ASP:OD1	8:7:130:THR:OG1	2.21	0.53
11:AA:1460:A:H2'	11:AA:1461:A:H8	1.73	0.53
14:BB:118:A:H5''	30:HH:253:PHE:HZ	1.74	0.53
39:M:75:LEU:HG	39:M:114:GLY:HA2	1.90	0.53
59:a:2:VAL:N	59:a:90:HIS:O	2.41	0.53
61:c:888:U:O2	61:c:988:A:O2'	2.26	0.53
61:c:960:U:H5'	74:p:55:ARG:HD3	1.90	0.53
61:c:1358:G:N2	61:c:1366:U:O2	2.42	0.53
62:d:110:TYR:HD2	64:f:64:LYS:HD2	1.74	0.53
64:f:103:VAL:HG12	64:f:190:LEU:HD12	1.91	0.53
1:0:42:GLU:OE2	1:0:52:LYS:HE3	2.09	0.53
11:AA:2480:A:H3'	11:AA:2481:G:H2'	1.91	0.53
11:AA:3297:U:O4	26:FF:124:LYS:NZ	2.33	0.53
12:Aa:320:LEU:HA	12:Aa:323:VAL:HG22	1.90	0.53
61:c:398:G:P	70:l:47:ARG:HH12	2.31	0.53
61:c:590:C:H2'	61:c:591:A:H8	1.74	0.53
61:c:782:U:H4'	61:c:783:G:O5'	2.09	0.53
61:c:1158:C:O2'	61:c:1581:C:OP2	2.26	0.53
61:c:1477:G:H2'	61:c:1478:G:C8	2.44	0.53
67:i:58:LEU:HD11	67:i:167:ARG:HE	1.74	0.53
69:k:159:VAL:HG21	69:k:185:ILE:HG12	1.91	0.53
11:AA:1534:A:H2'	11:AA:1535:A:C8	2.43	0.53
11:AA:2103:U:H2'	11:AA:2104:A:H8	1.73	0.53
11:AA:2465:G:N1	11:AA:2492:C:O2	2.42	0.53
11:AA:2468:A:O2'	11:AA:2477:G:N1	2.42	0.53
11:AA:2763:U:O2	87:AA:3449:SPD:N1	2.41	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:II:76:LEU:N	32:II:138:GLN:OE1	2.33	0.53
61:c:108:A:H2'	61:c:109:G:C8	2.44	0.53
61:c:302:U:OP1	70:l:22:ARG:NH2	2.37	0.53
61:c:998:A:H2'	61:c:999:U:C6	2.44	0.53
61:c:1144:U:H2'	61:c:1145:U:C6	2.44	0.53
69:k:138:LYS:HB2	83:y:54:ASP:HB3	1.91	0.53
11:AA:589:A:H1'	11:AA:1337:A:H5''	1.91	0.53
11:AA:2639:G:H2'	11:AA:2640:A2M:H8	1.91	0.53
12:Aa:212:GLY:HA3	12:Aa:219:ALA:HA	1.91	0.53
22:E:77:VAL:HG13	22:E:126:VAL:HG22	1.91	0.53
61:c:1360:A:C2	61:c:1361:U:H1'	2.44	0.53
62:d:142:PRO:HG3	82:x:32:VAL:HG13	1.91	0.53
63:e:132:ASP:HB3	63:e:221:PRO:HB3	1.91	0.53
11:AA:966:U:H2'	11:AA:967:A:C8	2.44	0.52
11:AA:1635:G:N2	11:AA:1638:A:OP2	2.37	0.52
11:AA:1810:A:H2'	11:AA:1811:G:C8	2.44	0.52
15:Bb:15:G:H22	15:Bb:48:C:H42	1.57	0.52
23:EE:102:LEU:HD12	23:EE:107:VAL:HG12	1.91	0.52
26:FF:215:ILE:HD12	26:FF:338:LEU:HB3	1.91	0.52
61:c:15:U:H2'	61:c:16:G:O4'	2.09	0.52
61:c:299:A:OP1	66:h:30:ARG:NH2	2.41	0.52
72:n:8:ARG:HG2	72:n:12:HIS:HE1	1.74	0.52
73:o:27:THR:O	73:o:30:ARG:NE	2.39	0.52
1:0:66:GLY:HA2	61:c:532:U:H4'	1.91	0.52
11:AA:1176:C:H2'	11:AA:1177:G:N2	2.24	0.52
11:AA:2714:G:H5'	11:AA:2716:U:C6	2.44	0.52
61:c:884:A:H2'	61:c:885:G:C8	2.45	0.52
63:e:145:LYS:HA	63:e:149:GLN:NE2	2.24	0.52
64:f:116:LYS:HG2	64:f:127:ALA:HB3	1.90	0.52
65:g:115:ILE:HD13	65:g:142:LEU:HD12	1.91	0.52
66:h:100:ARG:HH12	66:h:122:LYS:HA	1.74	0.52
79:u:30:TYR:O	79:u:33:THR:OG1	2.28	0.52
11:AA:650:OMC:H2'	11:AA:651:G:C8	2.44	0.52
11:AA:651:G:O2'	11:AA:1435:A:OP1	2.26	0.52
12:Aa:171:LYS:HB3	12:Aa:274:ASN:HD22	1.73	0.52
20:DD:45:LEU:HD22	20:DD:49:ALA:HB3	1.91	0.52
29:H:68:GLU:CD	29:H:68:GLU:H	2.17	0.52
61:c:647:G:H2'	61:c:648:G:C8	2.44	0.52
61:c:1083:G:HO2'	61:c:1094:G:HO2'	1.56	0.52
61:c:1397:U:H4'	61:c:1398:U:OP2	2.09	0.52
75:q:64:ALA:HB3	75:q:104:ALA:HB3	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
81:w:57:ARG:HG3	81:w:89:ARG:HD3	1.91	0.52
11:AA:138:U:H2'	11:AA:139:G:H8	1.73	0.52
11:AA:1615:C:H2'	11:AA:1616:U:C6	2.43	0.52
11:AA:2115:G:H22	11:AA:2120:A:H1'	1.74	0.52
11:AA:2347:OMU:H2'	11:AA:2348:A:O4'	2.10	0.52
11:AA:2881:C:H2'	11:AA:2882:U:C6	2.45	0.52
15:Bb:15:G:H2'	15:Bb:16:U:C2	2.44	0.52
24:Ee:103:ASN:OD1	24:Ee:105:GLN:NE2	2.42	0.52
36:KK:82:LEU:HD13	36:KK:222:PHE:HE2	1.74	0.52
61:c:514:G:O2'	61:c:515:A:H5'	2.10	0.52
64:f:40:LYS:HB3	64:f:43:ARG:HH21	1.74	0.52
65:g:161:GLY:O	65:g:164:VAL:HG12	2.10	0.52
73:o:29:LYS:HG3	73:o:31:THR:H	1.74	0.52
5:4:14:LYS:NZ	5:4:50:GLU:OE2	2.43	0.52
11:AA:348:A:N3	11:AA:352:A:O2'	2.42	0.52
11:AA:831:G:O2'	11:AA:1864:A:N3	2.33	0.52
11:AA:1460:A:H2'	11:AA:1461:A:C8	2.45	0.52
11:AA:2344:U:H2'	11:AA:2345:A:H8	1.74	0.52
12:Aa:229:TYR:CE2	12:Aa:276:PHE:HB3	2.45	0.52
26:FF:386:ASP:HB3	26:FF:387:LEU:HD12	1.90	0.52
29:H:23:MET:HE2	29:H:36:ILE:HD11	1.91	0.52
30:HH:116:ASP:OD1	30:HH:116:ASP:N	2.39	0.52
35:K:70:ILE:HD13	35:K:82:VAL:HG22	1.92	0.52
61:c:107:C:H2'	61:c:108:A:H8	1.74	0.52
61:c:183:U:H2'	61:c:184:C:C6	2.44	0.52
61:c:337:G:H3'	73:o:133:LYS:HB2	1.91	0.52
61:c:1429:G:H2'	61:c:1430:U:C6	2.45	0.52
77:s:38:LEU:HB3	80:v:10:ALA:HB2	1.91	0.52
3:2:35:ALA:O	3:2:37:LYS:NZ	2.41	0.52
4:3:59:CYS:SG	4:3:60:SER:N	2.78	0.52
10:A:21:SER:HA	10:A:87:MET:HE1	1.92	0.52
11:AA:314:U:H2'	11:AA:315:C:C6	2.45	0.52
11:AA:696:C:OP2	28:GG:119:ARG:NH2	2.43	0.52
11:AA:2127:U:O2'	11:AA:2301:U:OP1	2.24	0.52
11:AA:2218:G:H2'	11:AA:2219:A:H8	1.74	0.52
11:AA:2768:U:H2'	11:AA:2769:A:C8	2.44	0.52
12:Aa:385:MET:HE1	12:Aa:460:ASP:HB2	1.90	0.52
42:NN:92:ARG:HH21	42:NN:94:ARG:HH21	1.58	0.52
49:QQ:45:PRO:O	49:QQ:49:ARG:HG3	2.10	0.52
61:c:58:U:OP1	61:c:456:A:O2'	2.26	0.52
61:c:1716:C:O2'	61:c:1717:G:O5'	2.22	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:l:172:ARG:HB2	70:l:175:GLN:HB2	1.92	0.52
72:n:14:TYR:CE1	72:n:18:GLU:HG3	2.45	0.52
74:p:102:LEU:HD11	74:p:112:LYS:HA	1.91	0.52
81:w:97:VAL:HA	81:w:100:VAL:HG12	1.91	0.52
24:Ee:28:LEU:HD12	24:Ee:29:ALA:N	2.24	0.52
36:KK:74:THR:O	36:KK:77:GLN:NE2	2.43	0.52
61:c:1114:G:O2'	61:c:1130:G:O6	2.24	0.52
63:e:134:VAL:HG12	63:e:218:LEU:HB2	1.92	0.52
70:l:152:ILE:HG13	70:l:153:GLU:H	1.74	0.52
80:v:21:PHE:CD2	80:v:135:ILE:HD11	2.44	0.52
7:6:33:ARG:HD3	71:m:126:ARG:HG2	1.91	0.52
11:AA:1597:C:H2'	11:AA:1598:G:H8	1.75	0.52
11:AA:1899:G:O2'	11:AA:2334:U:O4	2.17	0.52
11:AA:2244:A:H5''	23:EE:243:THR:HB	1.91	0.52
15:Bb:56:C:H2'	15:Bb:57:G:H8	1.73	0.52
61:c:460:A:O2'	66:h:27:TYR:OH	2.14	0.52
64:f:188:LEU:HD13	64:f:196:VAL:HG11	1.92	0.52
68:j:31:ARG:HA	68:j:101:ILE:HA	1.92	0.52
71:m:168:ARG:HG3	71:m:169:PRO:HD2	1.91	0.52
79:u:94:ASP:OD1	79:u:94:ASP:N	2.42	0.52
2:1:46:LYS:HZ1	2:1:49:ARG:HE	1.57	0.52
11:AA:999:G:N3	11:AA:1002:A:N6	2.58	0.52
11:AA:1211:U:H2'	11:AA:1212:A:C8	2.44	0.52
11:AA:2263:C:O2'	11:AA:2264:U:H5'	2.10	0.52
11:AA:2611:U:H2'	11:AA:2612:U:C6	2.44	0.52
11:AA:2660:G:OP1	11:AA:2750:U:O2'	2.28	0.52
11:AA:2765:C:O3'	59:a:39:GLY:HA3	2.10	0.52
14:BB:64:A:H5'	14:BB:65:G:H5''	1.92	0.52
24:Ee:62:LEU:HD12	24:Ee:71:ALA:HA	1.92	0.52
61:c:1794:A:OP2	91:c:2002:HOH:O	2.19	0.52
70:l:149:SER:O	70:l:149:SER:OG	2.26	0.52
82:x:55:LEU:HD13	82:x:65:SER:HB2	1.91	0.52
84:z:60:GLU:HA	84:z:68:ILE:HG22	1.92	0.52
11:AA:97:U:O2'	91:AA:3709:HOH:O	2.19	0.52
11:AA:2357:A:H2'	11:AA:2358:A:H8	1.74	0.52
11:AA:2406:C:H2'	11:AA:2407:C:C6	2.45	0.52
17:CC:94:C:OP1	54:V:75:LYS:NZ	2.33	0.52
28:GG:142:VAL:HG12	28:GG:145:ILE:HD13	1.92	0.52
29:H:24:ASN:ND2	29:H:97:ASP:OD2	2.39	0.52
59:a:7:THR:C	59:a:23:HIS:O	2.53	0.52
61:c:366:A:OP1	61:c:758:U:O2'	2.25	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:1170:G:C2	61:c:1171:A:C8	2.98	0.52
62:d:36:TYR:OH	82:x:70:ASN:ND2	2.37	0.52
62:d:106:SER:O	62:d:115:PHE:HA	2.10	0.52
68:j:98:ARG:NH1	68:j:101:ILE:O	2.40	0.52
79:u:56:LYS:HE3	79:u:61:LEU:HA	1.92	0.52
11:AA:165:A:H2'	11:AA:166:C:C6	2.45	0.51
11:AA:911:C:N4	23:EE:3:ARG:HD3	2.24	0.51
11:AA:1619:A:H2'	11:AA:1620:U:O4'	2.10	0.51
11:AA:2880:U:OP1	29:H:47:ASN:ND2	2.35	0.51
11:AA:3193:C:H2'	11:AA:3194:C:C6	2.46	0.51
11:AA:3233:C:H2'	11:AA:3234:A:C8	2.45	0.51
12:Aa:468:THR:HG21	12:Aa:477:ASN:HA	1.92	0.51
17:CC:34:U:H4'	52:T:85:THR:HG21	1.92	0.51
20:DD:36:GLN:OE1	20:DD:36:GLN:HA	2.09	0.51
34:JJ:138:TYR:CE2	34:JJ:233:GLU:HB3	2.45	0.51
61:c:252:U:H2'	61:c:253:A:H8	1.75	0.51
61:c:886:U:OP1	63:e:214:LYS:NZ	2.42	0.51
61:c:1525:A:H2'	61:c:1526:A:C8	2.45	0.51
74:p:63:ALA:O	74:p:67:THR:OG1	2.26	0.51
11:AA:1240:A:H2'	11:AA:1241:U:H5'	1.91	0.51
11:AA:1340:G:H2'	11:AA:1341:U:C6	2.46	0.51
11:AA:2473:C:OP2	11:AA:2474:G:N2	2.43	0.51
11:AA:2661:G:H2'	11:AA:2662:G:C8	2.45	0.51
12:Aa:81:MET:HE1	12:Aa:336:GLU:HA	1.92	0.51
61:c:1164:G:H2'	61:c:1165:G:H8	1.76	0.51
61:c:1344:A:H2'	61:c:1345:A:C8	2.45	0.51
63:e:72:ASP:OD1	75:q:114:ARG:NH2	2.34	0.51
71:m:133:HIS:HA	71:m:162:SER:HB2	1.90	0.51
71:m:168:ARG:HG2	71:m:174:ARG:HH12	1.75	0.51
81:w:57:ARG:CG	81:w:89:ARG:HD3	2.41	0.51
8:7:308:ASN:N	8:7:308:ASN:OD1	2.43	0.51
11:AA:805:OMG:H2'	11:AA:936:A:H61	1.73	0.51
11:AA:1253:U:H4'	11:AA:1254:C:H5'	1.92	0.51
11:AA:2264:U:O2'	11:AA:2265:C:H6	1.93	0.51
11:AA:2714:G:H8	11:AA:2751:G:H2'	1.76	0.51
15:Bb:23:A:H2'	15:Bb:24:G:H8	1.75	0.51
16:C:107:THR:HG22	16:C:109:GLY:H	1.76	0.51
37:L:70:PRO:HG3	37:L:115:LYS:HB2	1.91	0.51
37:L:100:THR:HA	37:L:106:GLN:HB3	1.92	0.51
61:c:1269:OMU:H4'	61:c:1270:G:O5'	2.08	0.51
74:p:23:PRO:HG2	74:p:26:PHE:HB2	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2429:G:H2'	11:AA:2430:A:H8	1.74	0.51
11:AA:3047:U:O2'	11:AA:3048:A:H5'	2.10	0.51
12:Aa:412:ARG:HB3	12:Aa:426:LEU:HD11	1.92	0.51
28:GG:317:PRO:C	28:GG:319:LYS:H	2.18	0.51
36:KK:145:ASN:HB3	36:KK:147:LYS:HD3	1.93	0.51
57:Y:99:CYS:HB2	57:Y:114:LYS:HD2	1.92	0.51
61:c:590:C:H2'	61:c:591:A:C8	2.45	0.51
61:c:1066:C:O3'	63:e:149:GLN:HG3	2.11	0.51
61:c:1641:C:H2'	61:c:1642:G:C8	2.45	0.51
67:i:116:HIS:O	67:i:120:ILE:HG13	2.11	0.51
75:q:82:LYS:HD3	75:q:118:VAL:HG11	1.91	0.51
84:z:65:ASN:ND2	84:z:116:ASP:OD2	2.38	0.51
11:AA:960:U:H4'	11:AA:963:G:C2	2.46	0.51
11:AA:2344:U:H2'	11:AA:2345:A:C8	2.45	0.51
22:E:14:LEU:H	22:E:56:GLY:HA2	1.73	0.51
35:K:115:ARG:O	35:K:119:ILE:HG12	2.10	0.51
43:O:55:GLU:HB2	51:S:94:LEU:HD11	1.92	0.51
44:OO:63:VAL:HG12	44:OO:66:ASN:ND2	2.24	0.51
51:S:97:GLU:O	51:S:101:VAL:HG13	2.11	0.51
61:c:1350:U:H2'	61:c:1351:G:H8	1.75	0.51
65:g:178:ARG:HG2	65:g:179:GLN:OE1	2.10	0.51
3:2:79:ILE:HD13	61:c:1794:A:H1'	1.93	0.51
8:7:256:THR:OG1	8:7:257:ALA:N	2.43	0.51
11:AA:929:A:H2'	11:AA:930:U:C6	2.46	0.51
16:C:158:HIS:H	16:C:186:VAL:CG1	2.23	0.51
33:J:50:ALA:O	52:T:66:VAL:HG21	2.10	0.51
61:c:67:A:O2'	61:c:69:G:OP1	2.28	0.51
61:c:399:A:H4'	66:h:3:ARG:HG2	1.91	0.51
61:c:1219:A:N7	61:c:1265:G:H1'	2.26	0.51
61:c:1317:C:H2'	61:c:1318:G:O4'	2.11	0.51
61:c:1483:A:H2	61:c:1607:G:H1'	1.75	0.51
61:c:1592:A:H2'	61:c:1593:A:H8	1.76	0.51
68:j:163:THR:HG22	68:j:168:THR:HG22	1.91	0.51
11:AA:411:U:H2'	11:AA:412:G:C8	2.45	0.51
11:AA:947:G:H5''	48:Q:55:ILE:HB	1.92	0.51
11:AA:994:G:N2	11:AA:995:U:O4	2.37	0.51
12:Aa:147:LEU:HD21	12:Aa:189:VAL:HA	1.93	0.51
12:Aa:220:PHE:HB3	12:Aa:328:LEU:HD13	1.93	0.51
14:BB:74:C:H2'	14:BB:75:G:C8	2.45	0.51
14:BB:84:A:H2'	14:BB:85:G:C8	2.46	0.51
16:C:62:VAL:HG13	16:C:66:ARG:HD2	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:888:U:H2'	61:c:889:U:C6	2.46	0.51
61:c:895:G:H21	75:q:38:THR:HG21	1.75	0.51
61:c:1648:A:H2'	61:c:1649:G:C8	2.46	0.51
71:m:163:PRO:HG3	71:m:170:GLY:HA2	1.92	0.51
73:o:22:ASN:HB3	73:o:25:VAL:HG22	1.93	0.51
1:0:131:ARG:HD3	1:0:131:ARG:H	1.76	0.51
8:7:127:ARG:HD3	8:7:150:TRP:CD2	2.46	0.51
11:AA:616:G:H2'	11:AA:617:G:C8	2.46	0.51
11:AA:761:A:H2'	11:AA:762:U:C6	2.46	0.51
11:AA:1011:A:H2'	11:AA:1012:G:H8	1.76	0.51
11:AA:1110:U:H2'	11:AA:1111:U:C6	2.46	0.51
11:AA:2102:U:H2'	11:AA:2103:U:H6	1.75	0.51
11:AA:2465:G:H1	11:AA:2493:U:H1'	1.75	0.51
11:AA:3192:U:H2'	11:AA:3193:C:C6	2.45	0.51
11:AA:3231:U:H2'	11:AA:3232:G:H8	1.76	0.51
12:Aa:597:VAL:O	12:Aa:601:ILE:HG13	2.11	0.51
12:Aa:818:ILE:HG13	12:Aa:819:VAL:N	2.24	0.51
61:c:332:U:OP1	70:l:31:ARG:NH1	2.35	0.51
61:c:626:U:H2'	61:c:627:C:H6	1.75	0.51
61:c:1624:C:H2'	61:c:1625:C:H6	1.75	0.51
72:n:4:PRO:HB2	72:n:7:ASP:CB	2.40	0.51
11:AA:691:A:N1	17:CC:28:C:O2'	2.40	0.51
11:AA:1804:A:H2'	11:AA:1805:C:H6	1.76	0.51
11:AA:1940:G:N2	11:AA:3362:A:H8	2.03	0.51
11:AA:3308:C:O2'	13:B:69:ARG:O	2.24	0.51
12:Aa:634:TRP:CE2	12:Aa:660:LYS:HD2	2.46	0.51
14:BB:23:A:H2'	14:BB:24:A:C8	2.46	0.51
20:DD:126:THR:OG1	20:DD:128:MET:HG2	2.11	0.51
30:HH:178:ASN:HA	30:HH:183:TRP:CD2	2.46	0.51
32:II:104:GLU:H	32:II:104:GLU:CD	2.18	0.51
38:LL:138:THR:C	38:LL:139:ASN:HD22	2.18	0.51
61:c:927:C:O2'	75:q:124:ASP:O	2.26	0.51
61:c:953:G:H2'	61:c:954:G:H8	1.75	0.51
65:g:70:THR:HG22	65:g:86:LEU:HD13	1.93	0.51
74:p:106:ARG:NE	74:p:106:ARG:HA	2.25	0.51
8:7:48:THR:OG1	8:7:49:GLY:N	2.44	0.51
11:AA:528:U:H2'	11:AA:529:A:H8	1.74	0.51
11:AA:549:U:H2'	11:AA:550:A:H8	1.76	0.51
11:AA:1044:U:OP1	40:MM:90:ARG:NH2	2.41	0.51
11:AA:2351:U:H2'	11:AA:2352:A:H8	1.76	0.51
12:Aa:260:LYS:HG3	12:Aa:262:THR:HG23	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:Aa:607:ASN:HD22	12:Aa:609:ARG:HG3	1.76	0.51
38:LL:90:MET:HE3	38:LL:181:VAL:HG23	1.92	0.51
42:NN:92:ARG:O	42:NN:95:ASN:HB2	2.11	0.51
61:c:1202:A:H1'	61:c:1207:C:H42	1.74	0.51
61:c:1332:C:O2'	65:g:162:GLN:HB3	2.11	0.51
61:c:1483:A:N3	61:c:1607:G:O2'	2.39	0.51
61:c:1547:A:O2'	79:u:89:GLN:O	2.28	0.51
65:g:28:GLU:HG2	72:n:58:GLN:HG3	1.93	0.51
65:g:50:ILE:O	65:g:50:ILE:HG13	2.11	0.51
79:u:112:ASP:O	79:u:115:ARG:HG3	2.11	0.51
11:AA:294:U:H4'	53:U:77:LEU:HD23	1.93	0.50
17:CC:40:A:OP2	17:CC:103:G:N1	2.39	0.50
34:JJ:86:VAL:HG13	34:JJ:136:TYR:HB3	1.92	0.50
45:P:51:LEU:HG	45:P:55:LEU:HD23	1.92	0.50
49:QQ:158:HIS:HB3	49:QQ:161:ALA:HB3	1.92	0.50
61:c:762:A:OP1	71:m:79:ARG:NH1	2.43	0.50
61:c:1219:A:H3'	61:c:1220:C:C6	2.45	0.50
61:c:1227:A:H4'	61:c:1228:G:OP2	2.11	0.50
73:o:55:ASP:OD2	73:o:113:PRO:HD3	2.12	0.50
73:o:108:PRO:HB2	73:o:135:VAL:HG22	1.93	0.50
79:u:62:THR:HG22	79:u:63:GLN:H	1.76	0.50
11:AA:1194:G:H2'	11:AA:1195:A:C8	2.46	0.50
11:AA:1666:G:H2'	11:AA:1667:A:C8	2.46	0.50
11:AA:2426:U:H2'	11:AA:2427:U:C6	2.46	0.50
11:AA:2490:C:H1'	11:AA:2491:A:C8	2.45	0.50
15:Bb:23:A:H2'	15:Bb:24:G:C8	2.46	0.50
20:DD:36:GLN:O	20:DD:40:GLU:HG2	2.11	0.50
37:L:41:ALA:HB2	37:L:77:TYR:HE1	1.74	0.50
42:NN:10:ARG:NH2	42:NN:151:SER:O	2.38	0.50
61:c:293:U:H2'	61:c:294:C:H6	1.76	0.50
62:d:201:LEU:HD11	78:t:82:ASP:HB2	1.94	0.50
8:7:127:ARG:NH2	78:t:33:ARG:HG3	2.26	0.50
11:AA:2102:U:H2'	11:AA:2103:U:C6	2.47	0.50
11:AA:2180:G:H2'	11:AA:2181:C:C6	2.47	0.50
11:AA:2455:U:H3'	11:AA:2456:A:H8	1.76	0.50
11:AA:3291:G:H2'	11:AA:3292:A:H8	1.75	0.50
17:CC:83:C:H41	35:K:52:ARG:HH12	1.58	0.50
43:O:51:LEU:HD11	51:S:90:ILE:HG22	1.94	0.50
61:c:918:U:H2'	61:c:919:A:C8	2.46	0.50
61:c:1000:C:H2'	61:c:1001:A:H3'	1.92	0.50
61:c:1273:G:H4'	61:c:1274:C:O5'	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:1382:A:HO2'	61:c:1383:G:H8	1.58	0.50
64:f:144:TRP:CE2	64:f:173:PRO:HG3	2.46	0.50
69:k:158:ASP:OD1	69:k:161:GLN:NE2	2.44	0.50
76:r:98:ASN:HB2	76:r:122:THR:HG22	1.93	0.50
8:7:34:LEU:O	8:7:34:LEU:HD13	2.11	0.50
11:AA:759:U:H2'	11:AA:760:G:O4'	2.10	0.50
11:AA:1791:C:H2'	11:AA:1792:C:C6	2.46	0.50
11:AA:2430:A:H2'	11:AA:2431:C:C6	2.47	0.50
11:AA:2904:U:H2'	11:AA:2905:U:C6	2.47	0.50
20:DD:130:PRO:HB3	20:DD:145:ILE:HD11	1.93	0.50
42:NN:99:THR:O	42:NN:154:THR:OG1	2.29	0.50
61:c:1086:A:H2'	61:c:1087:A:C8	2.46	0.50
61:c:1156:C:H2'	61:c:1157:A:C8	2.47	0.50
6:5:10:HIS:HB3	61:c:1451:C:OP1	2.11	0.50
11:AA:594:U:P	11:AA:609:G:H1	2.34	0.50
11:AA:640:U:H2'	11:AA:641:C:C6	2.47	0.50
11:AA:792:G:H2'	11:AA:793:C:C6	2.46	0.50
11:AA:1003:A:N1	11:AA:1049:C:O2'	2.41	0.50
11:AA:1062:A:H5''	11:AA:1063:G:H5'	1.93	0.50
11:AA:1497:C:H2'	11:AA:1498:A:C8	2.45	0.50
14:BB:90:U:H2'	14:BB:91:G:O4'	2.12	0.50
61:c:30:G:H2'	61:c:31:C:C6	2.47	0.50
61:c:329:G:H2'	61:c:330:G:H8	1.75	0.50
61:c:472:U:C2	61:c:473:A:C8	2.99	0.50
61:c:894:U:H2'	61:c:895:G:C8	2.46	0.50
65:g:76:ARG:HG3	72:n:65:TYR:OH	2.11	0.50
66:h:157:ASN:ND2	66:h:222:LEU:HD21	2.26	0.50
67:i:53:VAL:HG21	67:i:59:VAL:HG22	1.93	0.50
72:n:38:LYS:HE3	72:n:41:TYR:CZ	2.47	0.50
75:q:86:THR:HB	75:q:91:THR:HG22	1.92	0.50
3:2:45:VAL:HA	75:q:99:GLN:NE2	2.26	0.50
7:6:10:ARG:NH1	61:c:566:C:O3'	2.44	0.50
11:AA:187:A:H2'	11:AA:188:U:C6	2.47	0.50
11:AA:1114:U:OP1	39:M:23:GLY:N	2.35	0.50
11:AA:2232:A:H2'	11:AA:2233:A:C8	2.47	0.50
22:E:60:SER:OG	22:E:62:ASN:OD1	2.29	0.50
26:FF:358:TRP:CD1	31:I:1:MET:HE2	2.46	0.50
30:HH:148:ILE:HG22	30:HH:151:GLN:HB3	1.93	0.50
42:NN:53:THR:HG23	42:NN:60:ARG:HA	1.94	0.50
55:W:45:VAL:HG23	55:W:52:TYR:HB2	1.94	0.50
61:c:261:U:H2'	61:c:262:U:H5''	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:1471:A:P	67:i:185:ARG:HE	2.34	0.50
61:c:1564:U:H2'	61:c:1565:C:C6	2.47	0.50
63:e:88:VAL:HA	63:e:98:THR:HG22	1.92	0.50
65:g:6:SER:OG	65:g:7:LYS:N	2.44	0.50
70:l:57:ALA:HB2	70:l:177:GLY:HA2	1.94	0.50
70:l:81:VAL:HG22	70:l:102:VAL:HG12	1.93	0.50
11:AA:2413:A:H2'	11:AA:2414:G:H8	1.77	0.50
11:AA:2526:C:H2'	11:AA:2527:G:H8	1.77	0.50
11:AA:2872:A:C2	47:Pp:1:MET:HE3	2.46	0.50
11:AA:3206:C:H5''	11:AA:3207:U:O5'	2.12	0.50
19:D:21:LYS:HG2	19:D:53:LYS:O	2.12	0.50
29:H:38:ALA:HB3	29:H:59:MET:HB2	1.92	0.50
34:JJ:138:TYR:CD2	34:JJ:233:GLU:HB3	2.46	0.50
36:KK:150:LEU:HD11	36:KK:218:ILE:HD13	1.93	0.50
38:LL:150:SER:HB3	38:LL:153:ASP:HB2	1.94	0.50
43:O:95:ALA:HB2	43:O:101:LEU:HG	1.93	0.50
61:c:52:U:H2'	61:c:53:G:C8	2.47	0.50
61:c:107:C:H2'	61:c:108:A:C8	2.47	0.50
61:c:1535:U:H5	67:i:187:ILE:HA	1.76	0.50
63:e:188:LEU:HD11	63:e:215:VAL:HG21	1.93	0.50
66:h:66:MET:HE2	66:h:66:MET:HA	1.93	0.50
69:k:56:LYS:HB2	69:k:88:ARG:HE	1.77	0.50
69:k:98:ILE:HG12	69:k:121:VAL:HG21	1.93	0.50
79:u:89:GLN:HB3	79:u:97:ASP:OD2	2.12	0.50
11:AA:585:A:H2'	11:AA:586:C:C6	2.47	0.50
11:AA:631:U:H2'	11:AA:632:G:C8	2.47	0.50
11:AA:1046:A:H2'	11:AA:1049:C:C5	2.47	0.50
11:AA:2263:C:C2'	11:AA:2264:U:H5'	2.42	0.50
11:AA:2812:C:H2'	11:AA:2813:A:C8	2.47	0.50
11:AA:2829:U:C2	11:AA:2830:G:C8	3.00	0.50
34:JJ:39:GLU:O	34:JJ:43:ILE:HG12	2.12	0.50
61:c:52:U:H2'	61:c:53:G:H8	1.75	0.50
62:d:27:ARG:HD2	62:d:44:GLY:HA3	1.92	0.50
78:t:13:SER:O	78:t:17:ILE:HG13	2.12	0.50
8:7:299:GLN:CD	8:7:299:GLN:H	2.19	0.50
11:AA:158:G:H2'	11:AA:159:A:H8	1.77	0.50
11:AA:1660:C:H2'	11:AA:1661:G:H8	1.77	0.50
11:AA:1662:G:H22	11:AA:1787:A:H2	1.59	0.50
11:AA:2568:C:O2'	11:AA:2569:A:O5'	2.29	0.50
11:AA:2688:U:OP1	30:HH:12:TYR:OH	2.27	0.50
14:BB:3:U:H2'	14:BB:4:U:C6	2.47	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:E:27:MET:HE1	22:E:44:PHE:HB2	1.93	0.50
30:HH:136:GLU:CD	30:HH:136:GLU:H	2.20	0.50
37:L:21:LYS:HD2	37:L:49:TYR:HE1	1.77	0.50
61:c:269:G:H2'	61:c:270:C:C6	2.47	0.50
61:c:483:A:H2'	61:c:484:C:C6	2.47	0.50
61:c:1590:G:H2'	61:c:1591:C:C6	2.47	0.50
61:c:1648:A:H2'	61:c:1649:G:H8	1.77	0.50
61:c:1682:U:O4	61:c:1720:G:N2	2.45	0.50
11:AA:277:G:H2'	11:AA:278:U:C6	2.47	0.49
11:AA:1393:A:N6	11:AA:1417:G:H1'	2.27	0.49
11:AA:1834:U:OP2	56:X:10:LYS:NZ	2.38	0.49
11:AA:2883:U:H2'	11:AA:2884:C:C6	2.47	0.49
11:AA:3298:C:C2	11:AA:3299:A:C8	3.00	0.49
14:BB:118:A:H5''	30:HH:253:PHE:CZ	2.47	0.49
23:EE:206:PRO:HG3	23:EE:213:GLY:HA3	1.94	0.49
49:QQ:9:GLU:HB3	53:U:44:VAL:HG21	1.93	0.49
61:c:12:U:H2'	61:c:13:C:H6	1.75	0.49
61:c:521:A:H2'	61:c:522:U:C6	2.47	0.49
61:c:953:G:H2'	61:c:954:G:C8	2.47	0.49
62:d:41:ARG:HG2	62:d:45:VAL:O	2.12	0.49
11:AA:165:A:H2'	11:AA:166:C:H6	1.77	0.49
11:AA:993:G:N3	11:AA:2637:A:H2'	2.27	0.49
11:AA:1498:A:H2'	11:AA:1499:C:H6	1.77	0.49
11:AA:2389:C:O2'	11:AA:3307:A:N1	2.41	0.49
11:AA:2436:U:H4'	36:KK:70:LYS:HD3	1.94	0.49
11:AA:2792:A:H2'	11:AA:2793:OMG:H8	1.77	0.49
11:AA:2930:A:H2'	11:AA:2931:C:H6	1.74	0.49
12:Aa:383:SER:HA	12:Aa:466:THR:HG22	1.94	0.49
25:F:75:ILE:HD13	25:F:88:ARG:HG2	1.95	0.49
28:GG:125:ALA:O	28:GG:129:THR:HG23	2.12	0.49
39:M:76:ASP:HB3	39:M:116:GLY:HA3	1.93	0.49
54:V:54:LYS:O	54:V:58:THR:HB	2.12	0.49
55:W:70:PRO:HD2	55:W:73:LEU:HD22	1.93	0.49
61:c:149:C:N3	61:c:166:C:N4	2.59	0.49
61:c:1253:U:H2'	61:c:1254:U:H6	1.78	0.49
61:c:1672:G:H2'	61:c:1673:G:H8	1.76	0.49
67:i:222:LYS:O	75:q:107:ARG:NH1	2.45	0.49
73:o:121:ASP:O	73:o:123:VAL:HG13	2.12	0.49
75:q:16:VAL:O	75:q:30:VAL:HA	2.12	0.49
79:u:14:ILE:HD12	79:u:14:ILE:O	2.11	0.49
11:AA:308:A:H1'	11:AA:2222:A:N3	2.27	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:674:G:O6	16:C:56:LYS:NZ	2.45	0.49
11:AA:1322:U:O2	22:E:108:GLN:NE2	2.43	0.49
11:AA:1486:G:H21	51:S:6:THR:HG22	1.78	0.49
18:Cc:22:A:N6	18:Cc:48:U:O2'	2.45	0.49
25:F:68:THR:O	30:HH:41:LYS:HB2	2.12	0.49
30:HH:83:LEU:HD13	30:HH:88:ILE:HD12	1.93	0.49
61:c:97:C:H2'	61:c:98:U:C6	2.46	0.49
61:c:384:G:H2'	61:c:385:A:C8	2.47	0.49
65:g:56:GLN:N	65:g:56:GLN:OE1	2.46	0.49
65:g:69:LEU:O	65:g:73:VAL:HG12	2.12	0.49
66:h:112:HIS:NE2	66:h:237:SER:O	2.44	0.49
11:AA:549:U:H2'	11:AA:550:A:C8	2.47	0.49
11:AA:717:C:OP1	11:AA:751:A:O2'	2.26	0.49
11:AA:1011:A:H2'	11:AA:1012:G:C8	2.47	0.49
11:AA:1390:A:N6	11:AA:1418:A:O2'	2.44	0.49
11:AA:2959:OMC:HM22	11:AA:2960:C:O4'	2.12	0.49
11:AA:3066:U:H2'	11:AA:3067:C:C6	2.47	0.49
11:AA:3074:G:H4'	45:P:62:ARG:HD2	1.93	0.49
12:Aa:72:SER:O	12:Aa:384:LYS:NZ	2.30	0.49
12:Aa:629:ASP:OD1	12:Aa:649:GLN:NE2	2.45	0.49
13:B:60:PHE:HB3	13:B:64:ASN:HB3	1.94	0.49
28:GG:113:VAL:HB	28:GG:118:LYS:HE2	1.94	0.49
42:NN:59:ILE:HD12	42:NN:59:ILE:O	2.12	0.49
44:OO:55:ARG:NH1	44:OO:73:ARG:O	2.42	0.49
45:P:55:LEU:HB2	45:P:95:PRO:HD3	1.95	0.49
61:c:990:C:H5''	75:q:129:LYS:HB2	1.94	0.49
61:c:1669:U:H2'	61:c:1670:G:O4'	2.12	0.49
63:e:190:PRO:HB2	63:e:192:VAL:HG13	1.95	0.49
67:i:142:PRO:HG2	67:i:170:GLN:HG2	1.93	0.49
68:j:70:PRO:HB3	68:j:101:ILE:HD11	1.93	0.49
8:7:221:MET:SD	8:7:221:MET:N	2.86	0.49
11:AA:184:U:H2'	11:AA:185:C:C6	2.47	0.49
11:AA:591:G:N3	32:II:19:LYS:HG2	2.28	0.49
11:AA:2407:C:H2'	11:AA:2408:U:C6	2.47	0.49
11:AA:3015:G:H2'	11:AA:3016:A:H8	1.77	0.49
20:DD:4:ILE:O	20:DD:8:LYS:HG3	2.11	0.49
24:Ee:85:LEU:HG	24:Ee:104:ILE:HD11	1.95	0.49
38:LL:114:VAL:HB	38:LL:124:ARG:HB2	1.93	0.49
45:P:96:VAL:HG12	45:P:98:VAL:HG13	1.95	0.49
55:W:62:ALA:O	55:W:66:ILE:HG13	2.12	0.49
61:c:293:U:H2'	61:c:294:C:C6	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
67:i:79:ASN:OD1	67:i:79:ASN:N	2.44	0.49
67:i:165:LEU:O	67:i:169:ASN:ND2	2.44	0.49
77:s:110:THR:HA	77:s:113:ASP:HB2	1.95	0.49
8:7:3:SER:HB3	8:7:271:VAL:HG11	1.95	0.49
11:AA:1718:G:H2'	11:AA:1719:G:H8	1.78	0.49
11:AA:2265:C:H5'	11:AA:2266:U:OP2	2.13	0.49
11:AA:3294:A:H5'	26:FF:128:LYS:HG3	1.94	0.49
12:Aa:412:ARG:HA	12:Aa:427:PHE:O	2.12	0.49
13:B:67:ILE:HG13	13:B:68:GLY:N	2.27	0.49
55:W:7:ASP:HB3	55:W:10:GLN:HB2	1.93	0.49
61:c:333:A:H2'	61:c:334:G:C8	2.48	0.49
61:c:980:G:H4'	61:c:1776:A:H4'	1.94	0.49
61:c:1344:A:H2'	61:c:1345:A:H8	1.78	0.49
63:e:158:SER:HA	63:e:161:ILE:HD12	1.94	0.49
67:i:136:ALA:HB1	67:i:201:ALA:HB3	1.94	0.49
8:7:66:HIS:ND1	8:7:67:ILE:HG13	2.27	0.49
10:A:87:MET:HG2	11:AA:1312:C:O2	2.12	0.49
11:AA:393:U:H2'	11:AA:394:G:O4'	2.12	0.49
11:AA:1334:U:H2'	11:AA:1335:C:C6	2.48	0.49
11:AA:1385:C:OP1	28:GG:141:ARG:NH1	2.45	0.49
11:AA:1914:G:O2'	19:D:82:LYS:O	2.26	0.49
11:AA:3119:U:H4'	57:Y:104:PRO:HG2	1.93	0.49
14:BB:3:U:H2'	14:BB:4:U:H6	1.78	0.49
14:BB:27:A:H2'	14:BB:28:C:C6	2.47	0.49
15:Bb:58:A:H8	15:Bb:58:A:OP2	1.95	0.49
20:DD:128:MET:HG3	20:DD:150:ILE:HD13	1.95	0.49
23:EE:112:ILE:HG13	60:b:79:VAL:HG22	1.94	0.49
24:Ee:19:GLY:HA2	24:Ee:50:THR:HB	1.95	0.49
30:HH:293:LEU:HD12	30:HH:297:GLN:H	1.76	0.49
33:J:56:ARG:O	33:J:61:LYS:HD3	2.12	0.49
34:JJ:116:PHE:O	34:JJ:199:ASN:ND2	2.46	0.49
36:KK:75:ILE:HD11	49:QQ:18:VAL:HG23	1.94	0.49
61:c:65:A:OP1	68:j:176:GLN:NE2	2.36	0.49
61:c:947:U:H2'	61:c:948:G:C8	2.45	0.49
61:c:968:U:H2'	61:c:969:C:O4'	2.13	0.49
61:c:1358:G:H4'	80:v:130:ARG:HG2	1.93	0.49
61:c:1508:U:H2'	61:c:1509:C:C6	2.47	0.49
62:d:74:VAL:HG22	62:d:96:THR:HB	1.93	0.49
67:i:128:ASN:O	67:i:131:GLN:N	2.45	0.49
68:j:164:LYS:HG2	68:j:165:GLY:N	2.27	0.49
69:k:140:VAL:HB	83:y:52:TYR:HB3	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:4:9:LEU:HD23	5:4:10:ALA:N	2.27	0.49
5:4:66:LEU:HD13	67:i:149:VAL:HG21	1.94	0.49
11:AA:62:A:H5''	49:QQ:164:LEU:HD21	1.94	0.49
11:AA:784:A:OP2	16:C:69:ARG:NH1	2.46	0.49
11:AA:2103:U:H2'	11:AA:2104:A:C8	2.48	0.49
11:AA:2883:U:H2'	11:AA:2884:C:H6	1.78	0.49
12:Aa:16:VAL:O	12:Aa:19:VAL:HG12	2.12	0.49
18:Cc:71:G:H2'	18:Cc:72:C:C6	2.48	0.49
61:c:17:C:H2'	61:c:18:C:H6	1.75	0.49
61:c:451:A:N6	61:c:453:U:O2	2.45	0.49
61:c:604:A:H2'	61:c:605:A:O4'	2.13	0.49
67:i:43:PHE:HB3	67:i:46:TRP:H	1.77	0.49
71:m:162:SER:O	71:m:164:PHE:N	2.43	0.49
80:v:9:VAL:HG23	80:v:14:PHE:HB2	1.95	0.49
8:7:176:LYS:HB3	8:7:195:HIS:HB3	1.95	0.49
11:AA:1054:A:H5''	11:AA:2637:A:H61	1.77	0.49
11:AA:1106:G:O3'	41:N:25:LYS:NZ	2.37	0.49
11:AA:1389:G:OP1	48:Q:104:ASN:ND2	2.36	0.49
11:AA:1765:U:H2'	11:AA:1766:G:C8	2.47	0.49
11:AA:2953:U:H2'	11:AA:2954:U:H2'	1.95	0.49
11:AA:3371:G:H2'	11:AA:3372:A:H8	1.78	0.49
12:Aa:677:PHE:CE2	12:Aa:679:GLU:HG3	2.47	0.49
19:D:130:ASN:O	19:D:132:PHE:N	2.46	0.49
44:OO:127:PRO:HD2	44:OO:132:ALA:HB2	1.95	0.49
61:c:177:U:H2'	68:j:191:ARG:HH12	1.78	0.49
61:c:250:C:H2'	61:c:251:A:H8	1.77	0.49
61:c:472:U:H5''	71:m:11:THR:HG23	1.94	0.49
61:c:615:A:O2'	61:c:621:A:N1	2.41	0.49
1:0:61:ARG:NH1	61:c:530:C:O2	2.45	0.49
3:2:70:LYS:NZ	61:c:933:A:OP1	2.43	0.49
11:AA:629:U:H2'	11:AA:630:A:H8	1.76	0.49
11:AA:760:G:H1'	11:AA:771:A:N6	2.28	0.49
11:AA:980:A:H2'	11:AA:981:U:C2	2.48	0.49
11:AA:1525:G:H5'	11:AA:1830:G:OP2	2.12	0.49
11:AA:2216:G:H22	11:AA:2229:A:H2	1.59	0.49
11:AA:2421:OMU:H1'	11:AA:2421:OMU:HM23	1.65	0.49
11:AA:2904:U:H2'	11:AA:2905:U:H6	1.77	0.49
12:Aa:26:ALA:HB2	12:Aa:128:VAL:HB	1.94	0.49
12:Aa:378:LEU:HB3	12:Aa:471:THR:HG23	1.94	0.49
12:Aa:707:PRO:HA	12:Aa:710:ARG:HG2	1.95	0.49
26:FF:218:ILE:HG12	26:FF:276:THR:HG23	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:U:62:ARG:HH11	53:U:99:ARG:HH12	1.60	0.49
61:c:107:C:OP1	61:c:383:G:O2'	2.29	0.49
61:c:1335:U:O2'	61:c:1336:A:OP1	2.27	0.49
66:h:141:THR:OG1	66:h:143:ASP:OD1	2.25	0.49
76:r:92:SER:O	76:r:107:ILE:HG12	2.13	0.49
80:v:28:LEU:HD12	80:v:30:VAL:H	1.78	0.49
8:7:19:TRP:CD1	8:7:38:ARG:HG3	2.48	0.48
11:AA:312:C:H2'	11:AA:313:A:H8	1.78	0.48
11:AA:345:G:O2'	17:CC:25:G:N3	2.46	0.48
11:AA:531:G:H2'	11:AA:532:A:C8	2.48	0.48
11:AA:576:C:OP1	34:JJ:241:LYS:NZ	2.38	0.48
11:AA:1211:U:H2'	11:AA:1212:A:H8	1.78	0.48
11:AA:1523:U:O2'	33:J:111:ASN:ND2	2.45	0.48
11:AA:1895:A:O2'	11:AA:3053:G:H4'	2.14	0.48
11:AA:3160:U:H3	11:AA:3290:G:H1	1.61	0.48
11:AA:3296:A:H2'	11:AA:3297:U:C6	2.48	0.48
12:Aa:731:VAL:HB	12:Aa:796:MET:HG2	1.94	0.48
17:CC:69:U:H2'	17:CC:70:G:O4'	2.13	0.48
61:c:258:C:O2	70:l:178:ARG:NH1	2.46	0.48
61:c:446:A:N1	61:c:461:G:O2'	2.41	0.48
61:c:684:A:H2'	61:c:685:A:C8	2.48	0.48
62:d:117:GLU:OE2	64:f:39:THR:HA	2.13	0.48
62:d:135:GLU:O	62:d:139:VAL:HG22	2.12	0.48
67:i:133:VAL:HA	67:i:198:LEU:HD12	1.95	0.48
67:i:176:THR:OG1	67:i:180:ARG:NH2	2.46	0.48
70:l:106:ALA:HB2	70:l:165:LEU:HG	1.95	0.48
10:A:62:THR:HA	11:AA:1306:G:C6	2.47	0.48
11:AA:627:U:H2'	11:AA:628:A:H8	1.75	0.48
11:AA:1128:U:H2'	11:AA:1129:A:O4'	2.12	0.48
11:AA:2222:A:H2'	11:AA:2223:A:C8	2.48	0.48
11:AA:2909:U:O2'	11:AA:3105:U:O2	2.22	0.48
12:Aa:358:GLU:HB3	12:Aa:479:LYS:HE3	1.95	0.48
17:CC:10:A:H2'	17:CC:11:C:C6	2.47	0.48
17:CC:67:U:H2'	17:CC:68:G:H8	1.78	0.48
17:CC:133:G:OP1	33:J:94:GLN:NE2	2.46	0.48
22:E:13:ARG:HD2	22:E:51:VAL:HB	1.95	0.48
22:E:45:LEU:HD12	22:E:51:VAL:HG11	1.95	0.48
44:OO:47:ALA:HB1	44:OO:48:PRO:HD2	1.95	0.48
51:S:74:ARG:HG2	51:S:75:ALA:H	1.78	0.48
61:c:31:C:OP1	84:z:140:LYS:NZ	2.41	0.48
61:c:257:A:N3	70:l:64:ASN:ND2	2.61	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:332:U:P	70:l:56:ARG:HH22	2.35	0.48
61:c:878:G:O2'	74:p:108:ASP:OD1	2.17	0.48
61:c:929:A:O4'	75:q:124:ASP:HB2	2.14	0.48
61:c:1253:U:H2'	61:c:1254:U:C6	2.48	0.48
61:c:1483:A:H2'	61:c:1484:G:C8	2.48	0.48
61:c:1624:C:H2'	61:c:1625:C:C6	2.48	0.48
63:e:120:LEU:HD21	63:e:122:GLU:HG3	1.95	0.48
63:e:141:ALA:HB1	63:e:207:LEU:HG	1.94	0.48
3:2:76:SER:OG	61:c:1793:G:N2	2.45	0.48
11:AA:872:U:H2'	11:AA:873:C:C6	2.48	0.48
11:AA:945:C:H2'	11:AA:946:U:H6	1.78	0.48
11:AA:2223:A:H2'	11:AA:2224:A:C8	2.49	0.48
11:AA:2927:C:H2'	11:AA:2928:C:C6	2.49	0.48
14:BB:10:C:OP2	25:F:26:HIS:ND1	2.44	0.48
61:c:1081:A:H2	61:c:1082:C:H41	1.60	0.48
61:c:1183:A:C6	76:r:100:LYS:HG2	2.48	0.48
61:c:1280:4AC:O2'	81:w:70:THR:HG22	2.13	0.48
11:AA:64:G:OP2	49:QQ:169:LYS:NZ	2.34	0.48
11:AA:86:G:O2'	11:AA:98:G:O6	2.32	0.48
11:AA:2144:A:H1'	11:AA:2281:A2M:N6	2.28	0.48
11:AA:2532:U:H2'	11:AA:2533:G:H8	1.78	0.48
11:AA:2835:U:H2'	11:AA:2836:C:O2	2.13	0.48
14:BB:16:U:H2'	14:BB:17:A:H8	1.78	0.48
14:BB:52:G:H21	42:NN:9:MET:HE1	1.76	0.48
18:Cc:24:C:H2'	18:Cc:25:U:C6	2.49	0.48
18:Cc:25:U:H2'	18:Cc:26:C:C6	2.48	0.48
61:c:119:A:H1'	61:c:397:A:C5	2.48	0.48
61:c:763:G:OP1	71:m:78:ARG:NH2	2.46	0.48
61:c:1318:G:H5''	78:t:67:ARG:HH21	1.77	0.48
68:j:121:LEU:HB2	68:j:124:LEU:HB3	1.96	0.48
72:n:64:TYR:HB3	72:n:66:TYR:CE1	2.48	0.48
77:s:114:ARG:O	77:s:115:THR:OG1	2.26	0.48
8:7:64:HIS:CE1	8:7:90:ARG:HD2	2.49	0.48
11:AA:55:G:OP1	54:V:43:LYS:NZ	2.38	0.48
11:AA:671:U:H2'	11:AA:672:A:H8	1.78	0.48
11:AA:2193:U:H5''	11:AA:2194:G:H5'	1.95	0.48
11:AA:2814:G:OP1	28:GG:73:ARG:NH1	2.31	0.48
12:Aa:807:ASP:O	12:Aa:813:SER:OG	2.29	0.48
61:c:209:U:H2'	61:c:210:A:C8	2.49	0.48
61:c:340:U:H2'	61:c:341:A:C8	2.48	0.48
61:c:517:U:C2	61:c:518:A:C8	3.02	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:932:U:OP2	63:e:155:TYR:OH	2.23	0.48
66:h:151:ASP:HB3	66:h:154:ILE:HG13	1.96	0.48
69:k:32:PRO:HA	69:k:35:LYS:HE3	1.94	0.48
69:k:164:TYR:CE2	69:k:165:LYS:HD2	2.48	0.48
6:5:52:PHE:HB3	81:w:82:TYR:HB3	1.94	0.48
11:AA:796:U:H2'	11:AA:797:U:C6	2.49	0.48
11:AA:1154:A:OP1	11:AA:1155:C:N4	2.42	0.48
11:AA:1306:G:O2'	11:AA:1307:G:H5''	2.14	0.48
11:AA:1354:G:H2'	11:AA:1357:G:H4'	1.96	0.48
11:AA:1506:A:H1'	11:AA:1848:G:C6	2.49	0.48
11:AA:1656:A:OP2	51:S:37:LYS:NZ	2.41	0.48
12:Aa:585:ARG:NH2	15:Bb:29:A:OP1	2.39	0.48
17:CC:47:C:H1'	17:CC:61:A:H2'	1.95	0.48
23:EE:127:ALA:HB2	23:EE:134:VAL:HG23	1.95	0.48
61:c:447:U:O2'	66:h:27:TYR:O	2.29	0.48
61:c:922:G:H2'	61:c:923:A:C8	2.48	0.48
63:e:24:PHE:HZ	75:q:39:ILE:HA	1.79	0.48
64:f:109:GLY:HA2	64:f:139:ILE:HG12	1.96	0.48
70:l:107:THR:OG1	70:l:108:PRO:HD3	2.14	0.48
83:y:115:GLU:OE1	83:y:119:LYS:NZ	2.39	0.48
2:1:61:SER:O	2:1:65:LEU:HG	2.14	0.48
5:4:31:GLU:OE1	5:4:39:THR:HG22	2.12	0.48
11:AA:1631:C:H5''	11:AA:1632:A:H5''	1.96	0.48
11:AA:1641:U:O2'	11:AA:1642:A:H3'	2.14	0.48
11:AA:2535:A:N6	11:AA:2545:C:H42	2.10	0.48
11:AA:3295:A:H2'	11:AA:3296:A:H8	1.75	0.48
12:Aa:432:GLN:HB3	12:Aa:458:GLY:HA3	1.96	0.48
12:Aa:694:HIS:CE1	12:Aa:699:DDE:HD2	2.49	0.48
14:BB:16:U:H2'	14:BB:17:A:C8	2.48	0.48
61:c:80:A:H5''	61:c:81:G:C8	2.49	0.48
61:c:895:G:H1	61:c:917:U:H3	1.59	0.48
61:c:1099:U:O4	64:f:168:ARG:NH1	2.47	0.48
63:e:71:ALA:HB3	75:q:114:ARG:HH22	1.77	0.48
76:r:18:ARG:HD3	79:u:90:ASN:O	2.14	0.48
79:u:69:ILE:HA	79:u:72:ILE:HG22	1.95	0.48
80:v:72:GLY:O	80:v:76:LEU:HG	2.14	0.48
2:1:54:VAL:N	2:1:55:PRO:HD2	2.29	0.48
7:6:13:LYS:O	7:6:17:GLN:HG2	2.14	0.48
11:AA:1206:G:OP1	40:MM:157:TYR:OH	2.21	0.48
11:AA:1829:G:H5''	11:AA:1830:G:H5'	1.95	0.48
11:AA:2252:A:HO2'	11:AA:2253:G:H8	1.62	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:C:175:ALA:O	16:C:182:LYS:HB2	2.13	0.48
17:CC:63:G:OP1	17:CC:90:U:H5'	2.14	0.48
38:LL:89:LYS:HG2	38:LL:145:VAL:HG22	1.96	0.48
61:c:585:A:H2'	61:c:586:G:C8	2.48	0.48
61:c:1221:A:H3'	61:c:1222:C:C6	2.48	0.48
61:c:1606:C:H2'	61:c:1607:G:C8	2.48	0.48
78:t:106:THR:O	78:t:110:VAL:HG23	2.14	0.48
82:x:77:GLY:O	82:x:79:LEU:N	2.46	0.48
4:3:51:GLN:OE1	74:p:55:ARG:NH2	2.46	0.48
11:AA:788:C:H2'	11:AA:789:A:H8	1.78	0.48
11:AA:1481:A:HO2'	11:AA:1858:A:HO2'	1.61	0.48
11:AA:2160:G:H2'	11:AA:2161:G:C8	2.48	0.48
12:Aa:576:LEU:HA	12:Aa:586:ILE:O	2.14	0.48
20:DD:18:TYR:HD2	20:DD:52:LEU:HD22	1.79	0.48
29:H:10:LYS:NZ	29:H:54:LEU:O	2.46	0.48
54:V:52:LYS:HG3	54:V:55:ARG:NH2	2.29	0.48
11:AA:428:A:H2'	11:AA:429:U:C6	2.48	0.48
11:AA:710:A:H2'	11:AA:711:A:C8	2.49	0.48
11:AA:1856:C:H2'	11:AA:1857:C:H6	1.79	0.48
11:AA:1941:C:H2'	11:AA:1942:U:C6	2.49	0.48
11:AA:2117:A:C8	11:AA:3064:U:H1'	2.48	0.48
12:Aa:229:TYR:OH	12:Aa:276:PHE:O	2.29	0.48
12:Aa:369:ILE:HG23	12:Aa:401:PHE:HB3	1.96	0.48
22:E:71:LYS:O	22:E:73:LYS:NZ	2.46	0.48
31:I:18:GLY:HA3	31:I:31:PHE:O	2.13	0.48
36:KK:149:LYS:O	36:KK:176:PRO:HG2	2.14	0.48
61:c:27:U:H2'	61:c:28:A2M:H8	1.96	0.48
61:c:1233:G:H2'	61:c:1234:A:O4'	2.14	0.48
61:c:1674:C:OP1	68:j:92:ARG:NH1	2.44	0.48
61:c:1786:G:OP1	75:q:136:ARG:NH2	2.47	0.48
77:s:13:LYS:HD3	77:s:14:LYS:HG3	1.96	0.48
79:u:94:ASP:HB2	79:u:96:LYS:HE2	1.95	0.48
11:AA:789:A:H2'	11:AA:790:U:H6	1.78	0.47
11:AA:791:A:H2'	11:AA:792:G:H8	1.79	0.47
11:AA:1333:C:C2	11:AA:1334:U:C5	3.02	0.47
11:AA:2218:G:H2'	11:AA:2219:A:C8	2.49	0.47
11:AA:2427:U:H2'	11:AA:2428:U:C6	2.48	0.47
11:AA:3107:U:H2'	11:AA:3108:G:C8	2.48	0.47
17:CC:150:G:OP1	33:J:27:ARG:NH2	2.47	0.47
29:H:129:VAL:O	29:H:133:SER:HB3	2.13	0.47
61:c:209:U:H2'	61:c:210:A:H8	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:361:C:N4	61:c:379:U:OP1	2.36	0.47
61:c:1410:A:O2'	61:c:1411:A:OP1	2.28	0.47
69:k:8:ILE:HG23	69:k:43:PHE:H	1.79	0.47
72:n:24:LYS:HG3	72:n:63:TYR:CZ	2.49	0.47
72:n:25:LYS:HD2	72:n:59:PHE:CZ	2.48	0.47
11:AA:1381:A:H2'	11:AA:1382:G:H8	1.79	0.47
11:AA:1863:G:N1	11:AA:1866:C:OP2	2.29	0.47
11:AA:2493:U:H2'	11:AA:2494:A:C8	2.49	0.47
11:AA:2520:A:H2'	11:AA:2521:U:C6	2.49	0.47
11:AA:3285:C:H2'	11:AA:3286:G:C8	2.49	0.47
11:AA:3294:A:H2'	11:AA:3295:A:O4'	2.14	0.47
11:AA:3337:G:H2'	11:AA:3338:C:C6	2.50	0.47
15:Bb:28:C:H2'	15:Bb:29:A:H8	1.79	0.47
16:C:152:HIS:ND1	16:C:162:ALA:O	2.30	0.47
17:CC:149:A:H2'	17:CC:150:G:C8	2.49	0.47
39:M:135:GLU:OE2	44:OO:166:ALA:N	2.47	0.47
61:c:153:G:H2'	61:c:154:G:C8	2.49	0.47
61:c:327:U:OP2	73:o:57:LYS:NZ	2.44	0.47
61:c:1079:U:H2'	61:c:1080:U:C6	2.49	0.47
61:c:1250:U:H2'	61:c:1251:U:C6	2.49	0.47
61:c:1770:U:H2'	61:c:1771:U:C6	2.49	0.47
64:f:111:VAL:HG13	64:f:191:ALA:HA	1.95	0.47
65:g:8:LYS:HE3	81:w:61:LYS:HD2	1.96	0.47
72:n:3:MET:HG3	72:n:41:TYR:CD1	2.49	0.47
79:u:48:LYS:HE3	80:v:35:ASP:HA	1.96	0.47
84:z:43:PHE:HZ	84:z:104:LEU:HB2	1.79	0.47
11:AA:855:U:H5''	19:D:95:TRP:CG	2.49	0.47
11:AA:1354:G:O2'	32:II:8:LYS:NZ	2.47	0.47
11:AA:1472:U:H2'	11:AA:1473:G:H8	1.79	0.47
11:AA:1639:C:OP2	51:S:74:ARG:NH1	2.26	0.47
11:AA:1744:G:H2'	11:AA:1745:C:C6	2.49	0.47
11:AA:1909:A:H2'	11:AA:1910:A:C8	2.49	0.47
11:AA:2193:U:O2'	11:AA:2313:A:OP2	2.27	0.47
11:AA:2493:U:H2'	11:AA:2494:A:H8	1.79	0.47
26:FF:187:SER:HB3	26:FF:190:GLU:CD	2.39	0.47
61:c:5:U:H2'	61:c:6:G:C8	2.49	0.47
61:c:1738:U:H2'	61:c:1739:C:C6	2.49	0.47
62:d:27:ARG:HG3	62:d:28:ASN:N	2.28	0.47
66:h:161:LYS:HD2	66:h:170:THR:OG1	2.14	0.47
10:A:176:LYS:HG3	11:AA:3191:G:H5''	1.96	0.47
11:AA:1437:OMC:H1'	11:AA:1437:OMC:HM23	1.64	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1493:G:OP2	11:AA:1493:G:N2	2.48	0.47
11:AA:1643:A:H2'	11:AA:1644:C:C2	2.49	0.47
11:AA:2225:U:H2'	11:AA:2226:U:C6	2.49	0.47
11:AA:2373:A:O2'	11:AA:2823:G:N2	2.45	0.47
11:AA:2792:A:H2'	11:AA:2793:OMG:C8	2.48	0.47
11:AA:3065:G:H2'	11:AA:3066:U:C6	2.48	0.47
11:AA:3252:G:H2'	11:AA:3253:G:C8	2.49	0.47
11:AA:3296:A:H2'	11:AA:3297:U:H6	1.80	0.47
11:AA:3297:U:H2'	11:AA:3298:C:H6	1.80	0.47
26:FF:147:GLU:O	26:FF:151:ILE:HG13	2.15	0.47
29:H:59:MET:HE3	29:H:73:VAL:HG12	1.95	0.47
36:KK:162:LEU:HA	49:QQ:7:LEU:HD21	1.95	0.47
61:c:886:U:H2'	61:c:887:A:H8	1.79	0.47
61:c:1211:A:H2'	61:c:1212:G:O4'	2.15	0.47
63:e:39:GLU:HB3	63:e:74:GLN:HA	1.95	0.47
65:g:76:ARG:HD2	65:g:77:PHE:CE1	2.49	0.47
2:1:49:ARG:HB3	2:1:52:LYS:HE3	1.97	0.47
4:3:56:CYS:HB2	4:3:59:CYS:HB3	1.95	0.47
11:AA:748:U:H2'	11:AA:749:C:C6	2.49	0.47
11:AA:2369:G:H2'	11:AA:2370:G:C8	2.49	0.47
11:AA:2469:G:N2	11:AA:2477:G:O2'	2.47	0.47
11:AA:2655:U:H4'	11:AA:2656:A:O4'	2.14	0.47
12:Aa:1:MET:HB3	12:Aa:43:ALA:O	2.15	0.47
17:CC:95:G:C6	54:V:83:ALA:HA	2.49	0.47
26:FF:140:ASP:OD1	26:FF:140:ASP:N	2.46	0.47
61:c:66:U:OP2	68:j:136:LYS:NZ	2.47	0.47
61:c:248:U:H4'	73:o:36:LYS:HD3	1.97	0.47
61:c:328:A:H2'	61:c:329:G:H8	1.79	0.47
61:c:992:A:OP2	61:c:1011:G:N1	2.32	0.47
69:k:91:ILE:HD11	69:k:172:VAL:HG21	1.95	0.47
72:n:58:GLN:OE1	72:n:58:GLN:HA	2.13	0.47
80:v:109:GLU:OE1	80:v:115:GLU:HA	2.15	0.47
11:AA:241:G:H2'	11:AA:241:G:N3	2.29	0.47
11:AA:422:A:C2	11:AA:2363:A:H4'	2.49	0.47
11:AA:507:U:H2'	11:AA:508:U:C6	2.50	0.47
11:AA:787:G:H2'	11:AA:788:C:C6	2.49	0.47
11:AA:887:G:H2'	11:AA:888:A:C8	2.50	0.47
11:AA:2111:G:H1'	31:I:44:LYS:HD2	1.95	0.47
11:AA:2152:A:H2'	11:AA:2153:U:C6	2.48	0.47
11:AA:2251:G:H2'	11:AA:2252:A:H5'	1.96	0.47
11:AA:2412:G:H2'	11:AA:2413:A:C8	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2561:A:C4	36:KK:32:LYS:HD2	2.48	0.47
11:AA:3281:U:H2'	11:AA:3282:U:C6	2.50	0.47
21:Dd:20:U:H2'	21:Dd:21:G:H8	1.79	0.47
25:F:82:ASN:HA	41:N:21:ILE:HD13	1.97	0.47
25:F:158:THR:O	25:F:160:ILE:HG23	2.15	0.47
32:II:20:LYS:HA	32:II:20:LYS:HE3	1.96	0.47
36:KK:133:LYS:HD2	36:KK:138:HIS:HE1	1.79	0.47
61:c:1225:U:O2'	61:c:1230:A:H4'	2.14	0.47
61:c:1257:U:O2'	72:n:8:ARG:NH1	2.46	0.47
61:c:1450:U:H2'	61:c:1451:C:C6	2.49	0.47
61:c:1533:C:H4'	61:c:1539:G:N1	2.30	0.47
62:d:157:ASP:OD1	62:d:157:ASP:N	2.47	0.47
1:0:53:ASP:HB3	1:0:79:VAL:HG13	1.95	0.47
2:1:49:ARG:O	2:1:53:GLU:HB3	2.14	0.47
3:2:12:LYS:HG3	3:2:15:ARG:HB3	1.97	0.47
3:2:44:ILE:O	75:q:99:GLN:NE2	2.47	0.47
8:7:66:HIS:HE1	78:t:29:GLN:HE21	1.63	0.47
8:7:282:SER:OG	8:7:283:LYS:N	2.48	0.47
10:A:15:LEU:HB2	10:A:123:ALA:O	2.14	0.47
11:AA:8:C:H2'	11:AA:9:U:C6	2.50	0.47
11:AA:163:C:H2'	11:AA:164:A:C8	2.50	0.47
11:AA:435:C:H2'	11:AA:436:A:C8	2.50	0.47
11:AA:506:U:H2'	11:AA:507:U:O4'	2.15	0.47
11:AA:683:U:OP1	49:QQ:204:LYS:NZ	2.48	0.47
11:AA:1803:C:H2'	11:AA:1804:A:H8	1.79	0.47
11:AA:1886:A:O4'	11:AA:3307:A:H5'	2.14	0.47
11:AA:2095:G:H2'	11:AA:2096:A:C8	2.50	0.47
11:AA:2328:U:H2'	11:AA:2329:C:H6	1.80	0.47
11:AA:2457:G:O2'	11:AA:2459:A:N6	2.45	0.47
11:AA:3164:C:H2'	11:AA:3165:A:C8	2.50	0.47
12:Aa:373:ASP:OD1	12:Aa:373:ASP:N	2.44	0.47
12:Aa:601:ILE:HG12	12:Aa:606:ILE:HB	1.97	0.47
16:C:39:ARG:NH2	28:GG:300:ARG:O	2.38	0.47
16:C:64:VAL:HG21	16:C:113:LYS:HD2	1.96	0.47
17:CC:142:C:H2'	17:CC:143:U:H6	1.80	0.47
20:DD:38:MET:HE3	20:DD:38:MET:HB3	1.70	0.47
20:DD:43:LYS:HA	20:DD:46:ARG:HG2	1.97	0.47
22:E:27:MET:HE3	22:E:41:TYR:CD1	2.50	0.47
23:EE:247:ARG:HB3	61:c:1012:U:H4'	1.96	0.47
24:Ee:8:ASN:N	24:Ee:66:ASN:H	2.12	0.47
24:Ee:16:ARG:HD2	24:Ee:57:LYS:HE3	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:II:54:TYR:CE1	32:II:63:LEU:HB3	2.49	0.47
36:KK:246:MET:HA	36:KK:249:ARG:HG2	1.96	0.47
37:L:95:VAL:O	37:L:100:THR:OG1	2.28	0.47
42:NN:20:ASN:HB3	42:NN:126:ASP:HB3	1.96	0.47
44:OO:11:LYS:O	44:OO:13:HIS:ND1	2.48	0.47
49:QQ:48:ALA:HB1	49:QQ:53:TYR:HB3	1.97	0.47
49:QQ:73:ARG:HG2	49:QQ:75:VAL:HG13	1.96	0.47
61:c:82:U:H2'	61:c:83:G:O4'	2.14	0.47
61:c:93:A:H61	61:c:396:G:H1'	1.79	0.47
61:c:153:G:H2'	61:c:154:G:H8	1.80	0.47
61:c:617:U:H2'	61:c:618:U:C6	2.50	0.47
61:c:1449:U:H2'	61:c:1450:U:H6	1.80	0.47
61:c:1615:C:P	67:i:81:ARG:HE	2.37	0.47
61:c:1715:G:H2'	61:c:1716:C:H5'	1.95	0.47
61:c:1719:A:H2'	61:c:1720:G:O4'	2.15	0.47
63:e:136:ARG:HG2	63:e:138:PHE:CZ	2.50	0.47
69:k:165:LYS:HG3	69:k:169:PHE:CZ	2.50	0.47
72:n:3:MET:O	72:n:4:PRO:C	2.57	0.47
72:n:47:GLN:HE21	72:n:48:SER:N	2.13	0.47
77:s:41:PRO:HG2	77:s:44:LEU:HB2	1.96	0.47
79:u:42:TYR:HA	79:u:85:PHE:HE2	1.79	0.47
81:w:27:THR:HB	81:w:113:ASP:OD1	2.15	0.47
2:1:92:ILE:HD11	2:1:102:THR:HB	1.96	0.47
11:AA:49:A:OP1	49:QQ:191:TRP:NE1	2.43	0.47
11:AA:67:A:N6	11:AA:271:C:O2'	2.45	0.47
11:AA:987:U:H2'	11:AA:988:U:C6	2.49	0.47
11:AA:1224:C:C2	11:AA:1225:A:C8	3.02	0.47
11:AA:1615:C:H2'	11:AA:1616:U:H6	1.80	0.47
11:AA:1886:A:O2'	26:FF:226:PHE:O	2.33	0.47
11:AA:2446:U:H2'	11:AA:2447:A:C8	2.49	0.47
11:AA:2747:A:H5'	30:HH:175:HIS:HA	1.96	0.47
11:AA:3000:A:H2'	11:AA:3001:C:C6	2.50	0.47
12:Aa:420:PRO:HD2	12:Aa:421:GLY:H	1.79	0.47
17:CC:6:U:H2'	17:CC:7:U:H6	1.79	0.47
23:EE:10:LYS:HA	23:EE:16:PHE:CD2	2.50	0.47
24:Ee:133:LEU:HD23	24:Ee:152:ILE:HG13	1.97	0.47
36:KK:162:LEU:HD23	49:QQ:7:LEU:HD11	1.96	0.47
37:L:50:PRO:HD3	37:L:68:ILE:HG12	1.96	0.47
61:c:395:U:H2'	61:c:396:G:O4'	2.14	0.47
61:c:509:G:H2'	61:c:510:G:C8	2.49	0.47
63:e:229:MET:HA	63:e:229:MET:HE3	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
66:h:96:ASN:O	66:h:96:ASN:ND2	2.47	0.47
67:i:58:LEU:HD12	67:i:167:ARG:HH21	1.79	0.47
67:i:115:LYS:HA	67:i:115:LYS:HD3	1.63	0.47
80:v:5:SER:OG	80:v:6:VAL:N	2.48	0.47
4:3:70:LYS:HG3	61:c:1049:U:H5''	1.97	0.47
8:7:89:LEU:HB2	8:7:103:PHE:HD1	1.80	0.47
11:AA:113:C:P	49:QQ:147:ARG:HE	2.38	0.47
11:AA:149:U:P	49:QQ:49:ARG:HH12	2.38	0.47
11:AA:1039:U:H2'	11:AA:1040:A:C8	2.50	0.47
11:AA:1188:U:OP1	11:AA:1210:U:O2'	2.16	0.47
11:AA:3152:U:OP2	11:AA:3395:G:N1	2.34	0.47
12:Aa:406:LYS:HE2	12:Aa:406:LYS:HB2	1.77	0.47
14:BB:113:C:H2'	14:BB:114:U:O4'	2.14	0.47
29:H:10:LYS:HD3	29:H:125:LEU:HD11	1.97	0.47
30:HH:180:PHE:HB3	30:HH:195:LEU:HD13	1.96	0.47
32:II:43:LEU:HD11	32:II:85:ILE:HG13	1.97	0.47
60:b:26:VAL:O	60:b:30:GLU:HG3	2.15	0.47
61:c:305:C:H2'	61:c:306:U:C6	2.50	0.47
61:c:1133:A:N3	61:c:1650:U:O2'	2.47	0.47
66:h:158:ASP:OD2	66:h:174:LYS:NZ	2.40	0.47
66:h:180:LEU:N	66:h:229:GLY:O	2.48	0.47
72:n:1:MET:HE3	72:n:1:MET:HB2	1.62	0.47
2:1:96:SER:HB3	61:c:1530:C:OP2	2.15	0.47
11:AA:37:U:O4	49:QQ:83:LYS:NZ	2.48	0.47
11:AA:292:U:OP2	49:QQ:68:ARG:NH2	2.40	0.47
11:AA:806:A:N3	11:AA:2812:C:O2'	2.44	0.47
11:AA:1695:U:O2'	11:AA:1749:A:N1	2.40	0.47
11:AA:1699:A:H2'	11:AA:1700:G:H8	1.80	0.47
11:AA:1729:A:C6	43:O:49:PRO:HD3	2.50	0.47
11:AA:2154:U:H2'	11:AA:2155:G:C8	2.50	0.47
11:AA:2261:G:O2'	11:AA:2262:A:N7	2.42	0.47
11:AA:2406:C:H2'	11:AA:2407:C:H6	1.80	0.47
11:AA:2419:A:H2'	11:AA:2420:C:C6	2.49	0.47
11:AA:2457:G:H2'	11:AA:2459:A:N7	2.30	0.47
11:AA:2475:G:H3'	11:AA:2476:C:C6	2.50	0.47
11:AA:2651:G:H5''	11:AA:2652:U:O4'	2.15	0.47
11:AA:3094:A:H2'	11:AA:3095:U:C6	2.50	0.47
11:AA:3214:U:OP2	46:PP:128:ARG:NH1	2.41	0.47
14:BB:94:C:H2'	14:BB:95:A:C8	2.48	0.47
15:Bb:15:G:H5''	15:Bb:16:U:C5	2.49	0.47
23:EE:136:ILE:HD13	23:EE:148:VAL:HG12	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:FF:47:LEU:HD11	26:FF:179:ALA:HB3	1.97	0.47
26:FF:190:GLU:HA	26:FF:193:ASP:HB2	1.97	0.47
29:H:33:ASN:ND2	29:H:64:LYS:HG2	2.30	0.47
36:KK:33:ASN:O	36:KK:39:ALA:HB3	2.15	0.47
36:KK:248:LYS:HB2	36:KK:248:LYS:HE2	1.68	0.47
42:NN:148:VAL:HG13	42:NN:152:HIS:HB3	1.97	0.47
61:c:205:U:H2'	61:c:206:A:H8	1.79	0.47
61:c:389:G:H2'	61:c:390:G:O4'	2.15	0.47
61:c:643:G:H2'	61:c:644:C:C6	2.50	0.47
61:c:898:A:N3	61:c:899:G:H1'	2.30	0.47
61:c:1045:C:OP1	63:e:153:HIS:NE2	2.43	0.47
61:c:1542:G:H5''	80:v:87:GLY:C	2.40	0.47
62:d:60:ALA:O	62:d:64:ILE:HG13	2.15	0.47
70:l:10:LYS:HG3	73:o:133:LYS:HE3	1.97	0.47
78:t:44:LYS:HB2	78:t:47:ARG:HH21	1.79	0.47
78:t:99:VAL:HA	78:t:118:PRO:HB2	1.97	0.47
80:v:77:ASN:HA	80:v:96:ALA:HB3	1.97	0.47
4:3:28:PRO:HG3	74:p:17:PRO:HG3	1.97	0.46
8:7:64:HIS:CE1	8:7:84:SER:HB2	2.49	0.46
11:AA:1020:G:H2'	11:AA:1021:G:H8	1.81	0.46
11:AA:1095:U:H4'	11:AA:1096:U:H5'	1.97	0.46
11:AA:1141:C:O2'	11:AA:1153:A:N3	2.41	0.46
11:AA:1709:C:H2'	11:AA:1710:C:H6	1.80	0.46
11:AA:1804:A:H2'	11:AA:1805:C:C6	2.50	0.46
11:AA:2154:U:H2'	11:AA:2155:G:H8	1.80	0.46
11:AA:2947:G:C2	26:FF:250:ALA:HB1	2.50	0.46
13:B:67:ILE:HG13	13:B:68:GLY:H	1.80	0.46
61:c:278:U:O2	61:c:279:G:N1	2.48	0.46
61:c:407:A:H2'	61:c:408:C:C6	2.51	0.46
61:c:1182:U:H4'	76:r:124:THR:HB	1.96	0.46
61:c:1391:A:H2'	61:c:1392:U:C6	2.50	0.46
61:c:1525:A:H2'	61:c:1526:A:H8	1.80	0.46
61:c:1525:A:N3	61:c:1589:C:O2'	2.42	0.46
61:c:1584:G:O2'	61:c:1610:G:O6	2.28	0.46
67:i:157:ARG:HB3	67:i:224:ASN:ND2	2.30	0.46
71:m:152:SER:O	71:m:156:ILE:HG13	2.15	0.46
77:s:28:LEU:C	77:s:29:ILE:HD13	2.40	0.46
1:0:82:ALA:O	1:0:86:GLU:HB2	2.14	0.46
4:3:9:HIS:O	82:x:86:SER:OG	2.23	0.46
11:AA:238:A:H2'	11:AA:239:G:C8	2.50	0.46
11:AA:1015:U:O2	11:AA:1028:U:O2'	2.31	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1281:G:H5'	20:DD:55:LYS:HG3	1.96	0.46
11:AA:1411:C:H2'	11:AA:1412:G:H8	1.79	0.46
11:AA:1627:U:H2'	11:AA:1814:A:H61	1.81	0.46
11:AA:1688:U:H2'	11:AA:1689:U:C6	2.50	0.46
11:AA:2498:U:H2'	11:AA:2499:U:C6	2.51	0.46
12:Aa:619:MET:HA	12:Aa:623:TYR:HD2	1.80	0.46
14:BB:26:C:H2'	14:BB:27:A:O4'	2.15	0.46
22:E:77:VAL:HG11	22:E:106:LEU:HD22	1.97	0.46
24:Ee:87:GLU:OE1	24:Ee:90:ARG:NE	2.34	0.46
32:II:59:GLU:HA	32:II:59:GLU:OE1	2.15	0.46
34:JJ:130:ILE:HD12	34:JJ:134:VAL:HG11	1.97	0.46
45:P:75:ILE:HG12	45:P:93:VAL:HG13	1.97	0.46
60:b:8:VAL:O	60:b:11:THR:OG1	2.31	0.46
61:c:1091:A:H4'	61:c:1092:A:O4'	2.15	0.46
61:c:1437:U:H5'	65:g:176:LEU:HD21	1.96	0.46
62:d:15:GLN:NE2	78:t:92:ASP:OD1	2.48	0.46
65:g:49:ILE:HG12	65:g:87:TYR:HB2	1.96	0.46
66:h:100:ARG:HB2	66:h:114:ILE:HD13	1.97	0.46
70:l:93:THR:HG1	70:l:95:THR:HG1	1.62	0.46
76:r:111:MET:SD	79:u:119:ILE:HD11	2.55	0.46
11:AA:595:G:OP1	34:JJ:33:ARG:NH2	2.48	0.46
11:AA:745:C:H2'	11:AA:746:A:H8	1.81	0.46
11:AA:897:U:H2'	11:AA:898:OMU:H6	1.97	0.46
11:AA:1029:G:H2'	11:AA:1030:A:H8	1.80	0.46
11:AA:2282:U:O2	11:AA:2310:U:H4'	2.16	0.46
11:AA:2423:U:H2'	11:AA:2424:A:C8	2.50	0.46
11:AA:2526:C:H2'	11:AA:2527:G:C8	2.50	0.46
11:AA:2566:C:H2'	11:AA:2567:C:H6	1.81	0.46
11:AA:2747:A:H2'	11:AA:2748:A:C8	2.50	0.46
11:AA:3332:U:H2'	11:AA:3333:G:O4'	2.14	0.46
44:OO:89:TYR:O	44:OO:93:ILE:HG12	2.15	0.46
61:c:66:U:C6	68:j:173:PRO:HB3	2.50	0.46
61:c:207:U:H2'	61:c:208:U:C6	2.50	0.46
61:c:448:C:H2'	61:c:449:C:H6	1.81	0.46
61:c:1022:C:O2'	61:c:1125:A:N1	2.46	0.46
61:c:1424:A:O2'	61:c:1425:A:OP1	2.29	0.46
61:c:1465:C:OP1	77:s:139:GLN:NE2	2.47	0.46
61:c:1587:A:N7	87:c:1904:SPD:N10	2.63	0.46
63:e:87:ARG:HG2	63:e:101:HIS:HB2	1.98	0.46
67:i:100:ASN:CG	67:i:180:ARG:HD3	2.40	0.46
75:q:30:VAL:HG23	75:q:39:ILE:O	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
80:v:130:ARG:O	80:v:134:ARG:HG3	2.14	0.46
2:1:83:LEU:HB3	2:1:89:ILE:HG12	1.96	0.46
4:3:20:LYS:NZ	61:c:958:U:OP2	2.45	0.46
11:AA:737:G:H2'	11:AA:738:A:H8	1.81	0.46
11:AA:1378:U:H2'	11:AA:1379:G:C8	2.50	0.46
11:AA:1490:A:O2'	54:V:12:HIS:O	2.20	0.46
11:AA:1785:U:H2'	11:AA:1786:G:C8	2.50	0.46
11:AA:1801:U:H2'	11:AA:1802:C:C6	2.50	0.46
11:AA:3371:G:H2'	11:AA:3372:A:C8	2.50	0.46
15:Bb:22:G:H2'	15:Bb:23:A:H8	1.80	0.46
17:CC:110:C:O2'	17:CC:112:U:OP2	2.33	0.46
26:FF:17:LEU:HD21	26:FF:233:TRP:HH2	1.81	0.46
61:c:58:U:O2'	61:c:451:A:N3	2.45	0.46
61:c:292:U:H2'	61:c:293:U:C6	2.50	0.46
61:c:560:U:H2'	61:c:561:G:C8	2.49	0.46
61:c:592:A:OP1	71:m:39:LYS:HG3	2.16	0.46
61:c:950:C:H2'	61:c:951:A:C8	2.50	0.46
61:c:1511:U:H2'	61:c:1512:G:H8	1.80	0.46
61:c:1740:A:H2'	61:c:1741:U:C6	2.50	0.46
83:y:10:ALA:HB1	83:y:27:ILE:HD12	1.97	0.46
1:0:36:SER:OG	1:0:37:LYS:N	2.49	0.46
2:1:42:LEU:HB3	2:1:44:GLN:HG3	1.98	0.46
2:1:59:TYR:HD1	67:i:123:VAL:HG11	1.80	0.46
11:AA:821:U:H2'	11:AA:822:G:C8	2.50	0.46
11:AA:1010:G:N2	40:MM:193:ASP:OD2	2.48	0.46
11:AA:1119:C:H2'	11:AA:1120:A:C8	2.50	0.46
11:AA:1120:A:H2'	11:AA:1121:U:H6	1.78	0.46
11:AA:1157:G:H2'	11:AA:1158:A:O4'	2.16	0.46
11:AA:1717:U:H2'	11:AA:1718:G:H8	1.76	0.46
11:AA:1764:U:H3'	11:AA:1765:U:H4'	1.97	0.46
11:AA:2504:U:H2'	11:AA:2505:U:O4'	2.15	0.46
11:AA:3334:U:H4'	11:AA:3335:A:H5'	1.97	0.46
12:Aa:424:ASP:CG	12:Aa:425:ASP:H	2.24	0.46
15:Bb:44:A:H2'	15:Bb:45:G:O4'	2.16	0.46
34:JJ:88:ARG:HB2	34:JJ:108:LEU:HB3	1.97	0.46
38:LL:80:THR:HG23	38:LL:84:LYS:HD2	1.98	0.46
61:c:891:A:H2'	61:c:892:A:C8	2.49	0.46
61:c:1358:G:C2	61:c:1366:U:O2	2.69	0.46
67:i:96:SER:HB3	67:i:176:THR:HG21	1.96	0.46
69:k:33:GLU:CD	69:k:33:GLU:H	2.22	0.46
79:u:45:LEU:HD13	80:v:35:ASP:O	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1044:U:P	40:MM:90:ARG:HH21	2.39	0.46
11:AA:1225:A:C4	11:AA:1226:G:C8	3.03	0.46
11:AA:1255:C:H2'	11:AA:1256:G:H8	1.81	0.46
11:AA:1341:U:H2'	11:AA:1342:C:C6	2.50	0.46
11:AA:1785:U:H2'	11:AA:1786:G:H8	1.81	0.46
11:AA:2101:C:O2'	11:AA:2102:U:OP1	2.29	0.46
11:AA:2186:U:H2'	11:AA:2187:G:O4'	2.16	0.46
12:Aa:227:THR:O	12:Aa:231:LYS:HG2	2.15	0.46
12:Aa:333:ALA:O	12:Aa:336:GLU:HG3	2.15	0.46
12:Aa:744:TYR:OH	12:Aa:757:GLU:OE2	2.27	0.46
13:B:4:TYR:CZ	13:B:16:SER:HB3	2.50	0.46
16:C:34:THR:HA	16:C:49:LEU:HD22	1.98	0.46
19:D:98:ARG:NH1	19:D:132:PHE:O	2.49	0.46
52:T:96:GLU:C	52:T:98:SER:H	2.24	0.46
61:c:1044:U:H2'	61:c:1045:C:C6	2.50	0.46
61:c:1316:G:HO2'	61:c:1401:A:HO2'	1.52	0.46
61:c:1366:U:OP1	77:s:66:ARG:HD3	2.16	0.46
7:6:40:TYR:CG	71:m:32:GLY:HA3	2.51	0.46
11:AA:210:U:C2	11:AA:230:U:H4'	2.50	0.46
11:AA:648:C:C4	11:AA:2375:G:H5''	2.50	0.46
11:AA:818:C:H2'	11:AA:819:U:O4'	2.16	0.46
11:AA:1036:A:H2'	11:AA:1037:C:H6	1.80	0.46
11:AA:1182:A:H2'	11:AA:1183:C:C6	2.51	0.46
11:AA:2947:G:N3	26:FF:250:ALA:HB1	2.31	0.46
11:AA:3095:U:H2'	11:AA:3096:C:C6	2.50	0.46
11:AA:3203:U:H2'	11:AA:3204:C:C6	2.50	0.46
11:AA:3259:U:H5'	11:AA:3261:C:H5	1.81	0.46
12:Aa:171:LYS:HD2	12:Aa:274:ASN:HB3	1.97	0.46
14:BB:71:G:H2'	14:BB:72:A:C8	2.50	0.46
26:FF:188:ILE:HD13	26:FF:191:LYS:HD2	1.96	0.46
43:O:43:ILE:HG23	43:O:68:TYR:HD2	1.80	0.46
61:c:340:U:H2'	61:c:341:A:H8	1.81	0.46
61:c:922:G:H2'	61:c:923:A:H8	1.80	0.46
61:c:1545:A:H2'	61:c:1546:G:H8	1.81	0.46
62:d:15:GLN:HE22	78:t:93:LEU:HD23	1.79	0.46
63:e:33:LYS:HG3	63:e:41:ARG:HG3	1.96	0.46
67:i:129:PRO:O	67:i:133:VAL:HG13	2.15	0.46
8:7:9:LEU:HA	8:7:313:TRP:HD1	1.81	0.46
8:7:60:SER:HB3	77:s:94:GLN:HE21	1.79	0.46
11:AA:130:A:H2'	11:AA:131:C:C6	2.51	0.46
11:AA:794:U:H2'	11:AA:795:G:H8	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1306:G:O6	11:AA:2366:C:O2'	2.31	0.46
11:AA:1925:U:O2'	11:AA:1927:G:N7	2.48	0.46
11:AA:3232:G:C6	11:AA:3256:G:C6	3.04	0.46
17:CC:5:U:H2'	17:CC:6:U:H6	1.81	0.46
17:CC:6:U:H2'	17:CC:7:U:C6	2.50	0.46
27:G:74:LYS:HB2	27:G:74:LYS:HE3	1.69	0.46
37:L:25:ILE:HA	37:L:43:VAL:HG12	1.97	0.46
61:c:1171:A:O2'	61:c:1570:A:N3	2.43	0.46
61:c:1356:U:H4'	61:c:1357:A:O5'	2.15	0.46
61:c:1635:A:H61	64:f:92:ALA:H	1.62	0.46
61:c:1772:C:H2'	61:c:1773:4AC:H6	1.98	0.46
65:g:79:TYR:HD2	65:g:84:ILE:HB	1.79	0.46
66:h:19:LEU:HD11	66:h:108:ARG:HG2	1.97	0.46
71:m:133:HIS:ND1	71:m:162:SER:HB2	2.30	0.46
78:t:26:LEU:HD12	78:t:59:LYS:HG2	1.98	0.46
11:AA:245:U:H2'	11:AA:246:U:C2	2.51	0.46
11:AA:434:U:H2'	11:AA:435:C:C6	2.51	0.46
11:AA:1478:C:H2'	11:AA:1479:U:C6	2.51	0.46
11:AA:2503:G:H2'	11:AA:2504:U:C6	2.50	0.46
12:Aa:123:ASP:OD1	12:Aa:399:ARG:NH1	2.42	0.46
12:Aa:176:GLN:O	12:Aa:180:ARG:HG2	2.16	0.46
29:H:90:GLY:O	31:I:16:GLY:HA2	2.16	0.46
52:T:77:PRO:O	52:T:81:ARG:HG3	2.16	0.46
61:c:256:A:H2'	61:c:257:A:O4'	2.15	0.46
61:c:1169:G:N2	61:c:1575:G7M:OP2	2.48	0.46
61:c:1175:U:H2'	61:c:1176:G:C8	2.50	0.46
61:c:1638:G:H2'	61:c:1639:OMC:O4'	2.16	0.46
67:i:48:PHE:HE1	67:i:64:VAL:HG12	1.81	0.46
68:j:63:MET:HE2	68:j:63:MET:HB3	1.88	0.46
72:n:47:GLN:O	72:n:50:THR:OG1	2.29	0.46
82:x:39:VAL:HG13	82:x:43:GLY:H	1.80	0.46
1:0:112:LYS:NZ	61:c:57:G:OP1	2.49	0.46
8:7:248:ASN:OD1	8:7:249:ARG:N	2.49	0.46
11:AA:249:U:H4'	11:AA:250:U:O4'	2.16	0.46
11:AA:1167:U:OP1	91:AA:3711:HOH:O	2.21	0.46
11:AA:1667:A:H2'	11:AA:1668:G:H8	1.79	0.46
11:AA:1856:C:H2'	11:AA:1857:C:C6	2.51	0.46
11:AA:2496:C:C2	11:AA:2497:U:C5	3.04	0.46
11:AA:2515:A:N1	11:AA:2594:C:N4	2.58	0.46
11:AA:2585:G:N3	11:AA:2585:G:H2'	2.30	0.46
11:AA:2615:G:H2'	11:AA:2616:C:C6	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:3198:U:H1'	38:LL:21:LYS:HB2	1.98	0.46
12:Aa:27:HIS:ND1	12:Aa:138:GLN:HB2	2.31	0.46
20:DD:119:ILE:HD12	20:DD:159:VAL:HB	1.97	0.46
61:c:29:U:H2'	61:c:30:G:C8	2.48	0.46
61:c:298:C:H5''	66:h:38:LEU:HB2	1.98	0.46
61:c:925:G:H2'	61:c:926:A:H8	1.81	0.46
61:c:960:U:O4'	74:p:55:ARG:NH1	2.48	0.46
61:c:1498:G:H5''	80:v:72:GLY:HA3	1.98	0.46
61:c:1542:G:N1	61:c:1568:C:O2'	2.38	0.46
61:c:1550:A:H2'	61:c:1551:U:C6	2.51	0.46
72:n:3:MET:HE3	72:n:8:ARG:HB2	1.96	0.46
78:t:20:TYR:O	78:t:23:LYS:HB2	2.16	0.46
8:7:56:VAL:HG12	77:s:100:GLN:HG2	1.97	0.45
11:AA:270:U:H2'	11:AA:271:C:H6	1.80	0.45
11:AA:727:G:O6	11:AA:742:G:O2'	2.32	0.45
11:AA:1658:G:H2'	11:AA:1659:U:C6	2.51	0.45
11:AA:1718:G:H2'	11:AA:1719:G:C8	2.51	0.45
11:AA:2255:A:HO2'	61:c:1757:G:HO2'	1.59	0.45
11:AA:2366:C:H2'	11:AA:2367:A:H8	1.81	0.45
11:AA:2426:U:H2'	11:AA:2427:U:H6	1.81	0.45
11:AA:2500:A:O2'	11:AA:2501:U:OP1	2.32	0.45
17:CC:126:A:OP2	17:CC:126:A:H8	1.99	0.45
25:F:126:VAL:HG23	25:F:127:GLN:H	1.81	0.45
30:HH:107:ARG:HB3	30:HH:251:PRO:HG3	1.98	0.45
44:OO:144:THR:HG21	52:T:118:ILE:HG21	1.98	0.45
61:c:1395:G:H2'	61:c:1396:U:C6	2.51	0.45
63:e:100:PHE:HD2	63:e:181:LEU:HD11	1.81	0.45
63:e:113:MET:HE2	63:e:142:PHE:CE2	2.51	0.45
64:f:178:ILE:HG21	64:f:185:LYS:HA	1.98	0.45
67:i:111:VAL:HG13	77:s:43:ILE:HD13	1.99	0.45
78:t:9:VAL:O	78:t:13:SER:OG	2.34	0.45
79:u:69:ILE:O	79:u:72:ILE:HG22	2.16	0.45
80:v:66:TYR:HB2	80:v:124:ILE:HD12	1.98	0.45
1:0:16:PRO:HA	1:0:19:ALA:HA	1.98	0.45
11:AA:80:G:H2'	11:AA:81:C:H6	1.82	0.45
11:AA:662:U:OP1	39:M:8:THR:HG21	2.16	0.45
11:AA:1797:A:H2'	11:AA:1798:A:C8	2.51	0.45
11:AA:2357:A:H2'	11:AA:2358:A:C8	2.51	0.45
11:AA:2986:U:H2'	11:AA:2987:A:C8	2.50	0.45
61:c:386:G:OP2	91:c:2003:HOH:O	2.21	0.45
61:c:818:C:H2'	61:c:819:G:H5''	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:872:G:N2	61:c:1047:G:H4'	2.32	0.45
61:c:887:A:H1'	75:q:122:PRO:HB3	1.98	0.45
61:c:923:A:H2'	61:c:924:A:H8	1.80	0.45
61:c:956:C:OP1	61:c:1072:C:O2'	2.33	0.45
61:c:1187:U:H2'	61:c:1188:G:H8	1.81	0.45
61:c:1210:C:H2'	61:c:1211:A:H8	1.80	0.45
63:e:144:ARG:CZ	63:e:206:PRO:HB3	2.46	0.45
65:g:70:THR:HA	65:g:86:LEU:HD13	1.97	0.45
65:g:95:GLY:HA3	65:g:125:TYR:HE2	1.82	0.45
66:h:201:HIS:HE1	66:h:207:LEU:HD12	1.81	0.45
78:t:34:LEU:O	78:t:38:ILE:HG12	2.16	0.45
1:0:133:ASN:N	1:0:134:ALA:HA	2.30	0.45
11:AA:243:G:C2	11:AA:244:G:C5	3.04	0.45
11:AA:261:U:H2'	11:AA:262:U:C6	2.52	0.45
11:AA:585:A:H4'	50:R:72:THR:HG22	1.99	0.45
11:AA:663:OMC:HM23	11:AA:663:OMC:H1'	1.72	0.45
11:AA:1022:U:H3	11:AA:1030:A:H61	1.65	0.45
11:AA:1111:U:C5'	44:OO:5:LYS:HE3	2.47	0.45
11:AA:1660:C:H2'	11:AA:1661:G:C8	2.52	0.45
11:AA:2443:A:H2'	11:AA:2444:C:C6	2.52	0.45
11:AA:2507:C:H2'	11:AA:2508:U:C6	2.51	0.45
11:AA:2830:G:H1'	11:AA:2861:U:C2	2.51	0.45
13:B:33:ALA:HB1	13:B:117:ILE:HG12	1.99	0.45
22:E:73:LYS:NZ	22:E:97:VAL:O	2.49	0.45
61:c:514:G:N3	61:c:515:A:C8	2.84	0.45
61:c:883:C:H2'	61:c:884:A:C8	2.52	0.45
61:c:1017:U:C2	61:c:1018:U:C5	3.04	0.45
61:c:1218:G:N2	61:c:1444:A:OP2	2.34	0.45
61:c:1727:G:H2'	61:c:1728:A:C8	2.51	0.45
67:i:51:VAL:HG21	67:i:64:VAL:HB	1.99	0.45
67:i:58:LEU:HD22	67:i:138:THR:HA	1.98	0.45
77:s:35:PRO:HD2	77:s:38:LEU:HD12	1.97	0.45
1:0:116:LYS:NZ	61:c:57:G:OP1	2.46	0.45
7:6:33:ARG:HB2	71:m:37:LYS:HA	1.99	0.45
8:7:4:ASN:OD1	8:7:4:ASN:N	2.49	0.45
11:AA:1128:U:OP1	40:MM:4:ARG:NH1	2.30	0.45
11:AA:1312:C:H2'	11:AA:1313:G:O4'	2.16	0.45
11:AA:1803:C:H2'	11:AA:1804:A:C8	2.51	0.45
11:AA:2971:A:H1'	11:AA:2972:G:OP2	2.15	0.45
11:AA:3072:C:H2'	11:AA:3073:A:O4'	2.16	0.45
20:DD:97:LYS:HE3	20:DD:97:LYS:HB3	1.80	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:K:39:LEU:HG	35:K:43:TYR:HE2	1.80	0.45
36:KK:161:GLU:HA	36:KK:164:VAL:HG22	1.99	0.45
55:W:8:ILE:HD12	55:W:65:LEU:HD11	1.98	0.45
61:c:255:U:H2'	61:c:256:A:H8	1.82	0.45
61:c:872:G:H2'	61:c:873:U:O4'	2.16	0.45
61:c:900:A:H2'	61:c:901:G:H8	1.81	0.45
61:c:1211:A:H1'	76:r:99:GLY:O	2.16	0.45
61:c:1213:G:N2	61:c:1450:U:O2	2.36	0.45
61:c:1450:U:H2'	61:c:1451:C:H6	1.82	0.45
61:c:1739:C:H2'	61:c:1740:A:C8	2.52	0.45
62:d:119:ARG:HH12	64:f:241:ASP:CG	2.25	0.45
62:d:134:LYS:HE3	62:d:138:TYR:HE1	1.80	0.45
72:n:59:PHE:CZ	72:n:62:GLN:HA	2.52	0.45
78:t:14:LYS:HG3	78:t:69:ILE:HD13	1.98	0.45
81:w:53:LYS:HZ2	81:w:53:LYS:HB3	1.81	0.45
7:6:25:GLU:OE2	61:c:540:G:N2	2.39	0.45
11:AA:1757:A:H2'	11:AA:1758:G:C8	2.52	0.45
11:AA:2496:C:H2'	11:AA:2497:U:C6	2.51	0.45
11:AA:3084:C:H2'	11:AA:3085:G:O4'	2.16	0.45
11:AA:3096:C:H2'	11:AA:3097:C:C6	2.52	0.45
24:Ee:37:LEU:HD13	24:Ee:69:ALA:HB2	1.97	0.45
41:N:56:ALA:O	41:N:59:LYS:NZ	2.43	0.45
46:PP:40:ASP:OD1	46:PP:41:GLN:N	2.47	0.45
61:c:32:U:O2'	61:c:594:A:N1	2.47	0.45
61:c:328:A:H2'	61:c:329:G:C8	2.52	0.45
61:c:333:A:N6	70:l:27:PHE:HB2	2.32	0.45
61:c:528:U:C2	61:c:529:A:C8	3.04	0.45
61:c:866:G:H5''	74:p:2:GLY:HA2	1.99	0.45
61:c:1439:C:H2'	61:c:1440:C:H6	1.82	0.45
61:c:1594:G:OP2	61:c:1596:C:N4	2.50	0.45
61:c:1781:MA6:H8	61:c:1781:MA6:O5'	2.16	0.45
63:e:219:LYS:HE3	63:e:219:LYS:HB3	1.72	0.45
67:i:188:LYS:HB2	67:i:192:GLU:HG3	1.98	0.45
68:j:78:THR:O	68:j:81:VAL:HG22	2.16	0.45
8:7:91:LEU:HD23	8:7:100:TYR:HB2	1.98	0.45
8:7:175:ASP:HB3	8:7:177:MET:HG2	1.98	0.45
11:AA:170:G:H2'	11:AA:171:G:C8	2.52	0.45
11:AA:275:U:H2'	11:AA:276:U:C6	2.52	0.45
11:AA:760:G:HO2'	11:AA:770:G:H22	1.63	0.45
11:AA:955:U:H2'	11:AA:956:U:C6	2.51	0.45
11:AA:1475:A:H4'	45:P:57:GLN:HG2	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2500:A:H2'	11:AA:2501:U:H6	1.81	0.45
11:AA:2674:A:N6	42:NN:124:GLY:O	2.49	0.45
11:AA:2916:U:H5	11:AA:2935:U:HO2'	1.64	0.45
20:DD:164:LYS:HE3	20:DD:164:LYS:HB3	1.61	0.45
39:M:69:TRP:CE3	44:OO:64:LYS:HA	2.52	0.45
42:NN:15:GLU:HG3	42:NN:132:ASN:HB2	1.97	0.45
43:O:74:ASN:OD1	43:O:74:ASN:N	2.49	0.45
46:PP:23:ILE:O	46:PP:30:GLY:N	2.46	0.45
57:Y:98:LYS:HD3	57:Y:118:THR:HG21	1.99	0.45
61:c:78:A:H5''	68:j:159:ARG:HH22	1.82	0.45
61:c:97:C:H2'	61:c:98:U:H6	1.82	0.45
61:c:1155:G:H2'	61:c:1156:C:C6	2.51	0.45
61:c:1160:A:H2'	61:c:1161:C:H6	1.79	0.45
61:c:1585:U:H5''	77:s:134:ALA:HB3	1.97	0.45
61:c:1589:C:H2'	61:c:1590:G:C8	2.52	0.45
64:f:99:LYS:HB2	64:f:117:THR:HG22	1.98	0.45
77:s:16:ALA:HB2	77:s:72:GLY:HA3	1.98	0.45
80:v:38:LYS:HB2	80:v:38:LYS:HE3	1.69	0.45
2:1:88:ILE:O	2:1:88:ILE:HG13	2.15	0.45
10:A:110:PRO:N	10:A:111:PRO:HD2	2.31	0.45
11:AA:67:A:O2'	11:AA:315:C:O2	2.34	0.45
11:AA:138:U:H2'	11:AA:139:G:C8	2.52	0.45
11:AA:836:A:O2'	60:b:9:GLY:O	2.32	0.45
11:AA:2462:A:H2	11:AA:2494:A:H61	1.65	0.45
11:AA:3089:C:H2'	11:AA:3090:U:O4'	2.17	0.45
14:BB:119:U:P	30:HH:258:LYS:HZ1	2.40	0.45
15:Bb:27:C:H2'	15:Bb:28:C:C6	2.52	0.45
27:G:27:VAL:HG23	27:G:27:VAL:O	2.16	0.45
29:H:15:LEU:HD13	29:H:51:ALA:HB3	1.99	0.45
35:K:87:LYS:HB2	35:K:97:ILE:HD11	1.99	0.45
36:KK:34:PHE:CD1	36:KK:42:PRO:HD3	2.52	0.45
61:c:1107:G:O2'	61:c:1108:G:H5'	2.16	0.45
61:c:1590:G:H2'	61:c:1591:C:H6	1.79	0.45
8:7:150:TRP:NE1	78:t:37:GLU:OE1	2.39	0.45
11:AA:273:A:H2'	11:AA:274:G:H8	1.82	0.45
11:AA:873:C:H5''	11:AA:874:U:O5'	2.17	0.45
11:AA:970:A:OP2	41:N:19:ASN:ND2	2.49	0.45
11:AA:1136:A:O4'	11:AA:2636:A:N6	2.50	0.45
12:Aa:85:ASP:HB3	12:Aa:223:ARG:NH2	2.32	0.45
12:Aa:510:ARG:NH2	12:Aa:549:HIS:O	2.30	0.45
43:O:17:VAL:HG11	43:O:92:ILE:HD12	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:QQ:64:VAL:HG11	49:QQ:102:ALA:HB1	1.99	0.45
49:QQ:106:VAL:HG12	49:QQ:134:LEU:HD21	1.99	0.45
61:c:255:U:C2	61:c:256:A:C8	3.05	0.45
61:c:265:A:H62	61:c:289:U:H3	1.63	0.45
61:c:448:C:H2'	61:c:449:C:C6	2.50	0.45
61:c:1739:C:H2'	61:c:1740:A:H8	1.82	0.45
66:h:55:ALA:HB2	66:h:64:ILE:HD12	1.99	0.45
70:l:72:ILE:HG12	70:l:112:TRP:CE2	2.52	0.45
76:r:36:LEU:O	76:r:36:LEU:HD23	2.17	0.45
2:1:74:SER:O	2:1:77:ARG:NH2	2.48	0.45
2:1:80:LEU:HD12	2:1:80:LEU:HA	1.80	0.45
11:AA:63:A:H5''	49:QQ:174:ILE:HG21	1.98	0.45
11:AA:637:C:C2	11:AA:638:C:C5	3.05	0.45
11:AA:1256:G:H2'	11:AA:1257:C:C6	2.52	0.45
11:AA:2656:A:C5	11:AA:2658:G:C8	3.05	0.45
11:AA:2881:C:H2'	11:AA:2882:U:H6	1.81	0.45
12:Aa:219:ALA:HB3	12:Aa:330:ALA:HA	1.98	0.45
24:Ee:130:LYS:HE3	24:Ee:156:ASN:OD1	2.17	0.45
42:NN:170:ASP:OD1	42:NN:170:ASP:N	2.49	0.45
54:V:63:ARG:HD2	54:V:65:ARG:HG2	1.98	0.45
58:Z:2:ARG:HH22	61:c:1773:4AC:CM7	2.29	0.45
61:c:250:C:H2'	61:c:251:A:C8	2.52	0.45
61:c:1545:A:N7	79:u:134:ARG:NH1	2.65	0.45
65:g:17:PHE:CE1	65:g:21:LEU:HD11	2.52	0.45
67:i:211:ILE:H	67:i:211:ILE:HD12	1.81	0.45
68:j:148:SER:N	68:j:151:ASP:OD2	2.48	0.45
77:s:60:PHE:CZ	77:s:89:LEU:HD21	2.52	0.45
84:z:82:LYS:HE2	84:z:82:LYS:HB2	1.68	0.45
11:AA:517:G:OP1	34:JJ:67:ARG:NH2	2.48	0.45
11:AA:2428:U:H2'	11:AA:2429:G:C8	2.52	0.45
11:AA:2588:U:OP1	36:KK:241:LYS:NZ	2.50	0.45
12:Aa:221:THR:HG22	12:Aa:223:ARG:H	1.82	0.45
23:EE:65:ASP:HB3	23:EE:68:LYS:O	2.17	0.45
23:EE:108:PRO:HB2	60:b:86:LEU:HD22	1.99	0.45
23:EE:122:ASP:C	23:EE:122:ASP:OD1	2.60	0.45
24:Ee:10:VAL:HG23	24:Ee:63:LYS:HE2	1.98	0.45
24:Ee:80:LEU:HB3	24:Ee:112:ILE:HG12	1.99	0.45
26:FF:284:ARG:NH1	26:FF:293:ASN:O	2.49	0.45
28:GG:140:HIS:O	28:GG:142:VAL:N	2.49	0.45
31:I:27:LYS:HE2	31:I:29:PHE:CZ	2.52	0.45
42:NN:21:ILE:HD11	42:NN:125:MET:HB2	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:NN:60:ARG:N	42:NN:63:GLU:OE1	2.49	0.45
61:c:762:A:H2'	61:c:763:G:C8	2.51	0.45
61:c:1018:U:H2'	61:c:1019:A:H8	1.82	0.45
65:g:32:GLU:N	65:g:32:GLU:OE1	2.50	0.45
82:x:40:ASP:HB3	82:x:46:ILE:HD11	1.99	0.45
2:1:92:ILE:HG13	2:1:100:ILE:HG22	1.98	0.44
8:7:42:LEU:HB2	8:7:61:PHE:HB2	1.99	0.44
8:7:295:SER:HB3	8:7:302:PHE:HE1	1.82	0.44
11:AA:50:U:H2'	11:AA:51:A:H8	1.82	0.44
11:AA:207:U:H2'	11:AA:208:C:H6	1.82	0.44
11:AA:898:OMU:HM23	11:AA:898:OMU:H1'	1.79	0.44
11:AA:1340:G:H2'	11:AA:1341:U:H6	1.82	0.44
11:AA:1783:U:H2'	11:AA:1784:G:C8	2.52	0.44
11:AA:2655:U:H1'	11:AA:2656:A:C2	2.51	0.44
11:AA:2792:A:O2'	11:AA:2793:OMG:OP1	2.35	0.44
11:AA:3110:C:O2'	38:LL:155:SER:OG	2.31	0.44
12:Aa:274:ASN:N	12:Aa:274:ASN:OD1	2.49	0.44
12:Aa:691:VAL:HG23	12:Aa:693:LEU:HG	1.99	0.44
17:CC:7:U:H2'	17:CC:8:C:C6	2.53	0.44
23:EE:242:ARG:NH2	23:EE:243:THR:O	2.51	0.44
33:J:46:TYR:HB3	52:T:75:TYR:O	2.17	0.44
42:NN:115:LYS:HD3	42:NN:115:LYS:HA	1.62	0.44
61:c:30:G:H2'	61:c:31:C:H6	1.82	0.44
61:c:247:A:O2'	73:o:37:ASN:O	2.25	0.44
61:c:1208:A:O2'	61:c:1270:G:OP2	2.33	0.44
61:c:1298:U:O3'	64:f:212:LYS:NZ	2.50	0.44
61:c:1523:G:OP1	61:c:1523:G:N2	2.31	0.44
63:e:79:HIS:CE1	63:e:82:ARG:HH21	2.35	0.44
65:g:142:LEU:H	65:g:142:LEU:HD22	1.82	0.44
71:m:136:VAL:HG13	71:m:152:SER:HB3	1.99	0.44
11:AA:11:A:H2'	11:AA:12:A:C8	2.52	0.44
11:AA:309:U:OP1	53:U:84:LYS:NZ	2.33	0.44
11:AA:595:G:H2'	11:AA:596:C:C6	2.53	0.44
11:AA:649:A2M:H2'	11:AA:650:OMC:C6	2.52	0.44
11:AA:1675:G:H2'	11:AA:1676:A:C8	2.51	0.44
11:AA:1709:C:H2'	11:AA:1710:C:C6	2.52	0.44
11:AA:2283:G:H1'	11:AA:2285:C:N4	2.33	0.44
11:AA:2883:U:H4'	26:FF:261:MET:HE1	1.99	0.44
12:Aa:10:ARG:CZ	12:Aa:449:PRO:HD3	2.46	0.44
17:CC:23:U:H5''	35:K:13:ARG:HG3	1.99	0.44
20:DD:12:PHE:HE1	20:DD:58:MET:HG2	1.81	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:Ee:116:MET:HG3	24:Ee:132:ILE:HD11	2.00	0.44
39:M:28:HIS:CD2	39:M:32:ARG:HG2	2.52	0.44
42:NN:12:LEU:HG	42:NN:131:MET:HE3	1.99	0.44
44:OO:131:LYS:HD3	44:OO:131:LYS:HA	1.71	0.44
53:U:5:THR:HG23	53:U:12:ASN:HB2	1.99	0.44
53:U:62:ARG:HD3	53:U:99:ARG:HH12	1.83	0.44
53:U:94:ILE:HG23	53:U:99:ARG:HH11	1.82	0.44
61:c:455:C:H3'	61:c:456:A:C8	2.49	0.44
61:c:925:G:H2'	61:c:926:A:C8	2.51	0.44
61:c:1345:A:H5'	81:w:53:LYS:NZ	2.32	0.44
61:c:1484:G:H2'	61:c:1485:C:C6	2.53	0.44
66:h:32:SER:OG	66:h:81:THR:OG1	2.35	0.44
68:j:23:ARG:HB2	68:j:41:VAL:O	2.17	0.44
70:l:155:SER:O	70:l:159:GLN:NE2	2.48	0.44
78:t:74:GLN:O	78:t:77:GLU:HG3	2.17	0.44
1:0:57:VAL:HB	1:0:60:PHE:CE1	2.52	0.44
7:6:37:ARG:HG3	71:m:123:HIS:CE1	2.52	0.44
10:A:21:SER:CA	10:A:87:MET:HE1	2.47	0.44
11:AA:38:U:H2'	11:AA:39:A:O4'	2.17	0.44
11:AA:925:A:H61	23:EE:2:GLY:C	2.25	0.44
11:AA:1120:A:H2'	11:AA:1121:U:C6	2.52	0.44
11:AA:1129:A:H2'	11:AA:1130:A:C8	2.52	0.44
11:AA:1646:G:O2'	11:AA:1808:G:N2	2.45	0.44
11:AA:2181:C:H5''	23:EE:193:ARG:CZ	2.48	0.44
11:AA:2421:OMU:O2'	59:a:52:GLY:HA3	2.18	0.44
11:AA:3278:C:O2	11:AA:3278:C:H2'	2.17	0.44
12:Aa:5:THR:HG22	12:Aa:7:ASP:N	2.29	0.44
12:Aa:105:SER:HB2	12:Aa:115:VAL:HB	1.98	0.44
12:Aa:303:LEU:HD22	12:Aa:327:PHE:CE1	2.52	0.44
15:Bb:66:A:H2'	15:Bb:67:A:H8	1.81	0.44
22:E:22:PRO:O	25:F:146:ASN:ND2	2.29	0.44
27:G:29:ASP:HB3	27:G:32:SER:OG	2.18	0.44
30:HH:196:ARG:NH1	30:HH:237:GLU:OE2	2.42	0.44
54:V:14:LYS:HD3	56:X:51:ILE:HD11	1.99	0.44
61:c:119:A:H1'	61:c:397:A:C8	2.52	0.44
61:c:213:A:H2'	61:c:214:G:O4'	2.18	0.44
61:c:1278:G:OP1	65:g:185:LYS:NZ	2.41	0.44
61:c:1532:U:H1'	80:v:48:GLN:HE22	1.82	0.44
62:d:76:ILE:HG12	62:d:98:ILE:HB	1.99	0.44
69:k:141:ARG:HG3	83:y:51:GLU:CD	2.42	0.44
74:p:26:PHE:CZ	74:p:28:LEU:HB2	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:123:A:C6	11:AA:150:A:C5	3.05	0.44
11:AA:266:A:H2'	53:U:30:LYS:HE3	2.00	0.44
11:AA:268:A:N1	11:AA:295:A:H5'	2.32	0.44
11:AA:640:U:OP1	39:M:21:ARG:NH1	2.43	0.44
11:AA:834:U:H2'	11:AA:835:G:O4'	2.17	0.44
11:AA:916:G:H5'	11:AA:917:A:OP1	2.16	0.44
11:AA:1348:U:H4'	11:AA:1349:G:OP1	2.16	0.44
11:AA:1506:A:H1'	11:AA:1848:G:O6	2.17	0.44
11:AA:1606:U:O4	51:S:9:ARG:NE	2.48	0.44
11:AA:1630:U:H5''	11:AA:1813:A:N6	2.32	0.44
11:AA:2133:U:O4	11:AA:2147:A:H2	2.00	0.44
11:AA:2561:A:H2'	11:AA:2562:A:C8	2.49	0.44
11:AA:2813:A:H2'	11:AA:2814:G:O4'	2.18	0.44
11:AA:3218:A:H5''	11:AA:3219:G:C5	2.52	0.44
12:Aa:27:HIS:HB3	12:Aa:30:HIS:CD2	2.52	0.44
12:Aa:608:PRO:HG3	12:Aa:636:PHE:CG	2.52	0.44
17:CC:7:U:H2'	17:CC:8:C:H6	1.83	0.44
20:DD:23:LYS:NZ	20:DD:193:ASN:HA	2.32	0.44
27:G:90:ARG:C	27:G:92:TRP:H	2.26	0.44
30:HH:22:ARG:NE	30:HH:28:THR:OG1	2.40	0.44
37:L:30:ASP:OD1	37:L:77:TYR:OH	2.24	0.44
46:PP:137:LYS:HB2	46:PP:137:LYS:HE3	1.72	0.44
61:c:174:U:H2'	61:c:175:G:O4'	2.17	0.44
61:c:482:U:H2'	61:c:483:A:H8	1.82	0.44
61:c:1317:C:O2'	61:c:1400:A:N3	2.49	0.44
67:i:55:ASP:OD2	67:i:57:SER:OG	2.34	0.44
69:k:26:GLU:OE1	69:k:26:GLU:N	2.49	0.44
74:p:119:GLU:O	74:p:123:HIS:ND1	2.50	0.44
1:O:5:VAL:HG13	1:O:29:HIS:HB3	2.00	0.44
8:7:18:GLY:HA3	8:7:39:ASP:HB3	1.99	0.44
11:AA:127:G:H2'	11:AA:128:G:H8	1.82	0.44
11:AA:985:U:H2'	11:AA:986:U:C6	2.50	0.44
11:AA:1336:U:H2'	11:AA:1337:A:C8	2.50	0.44
11:AA:1394:A:H4'	11:AA:1420:C:H4'	2.00	0.44
11:AA:1447:G:H3'	13:B:67:ILE:HG22	1.99	0.44
11:AA:2660:G:O3'	11:AA:2749:G:N2	2.51	0.44
11:AA:3163:A:H2'	11:AA:3164:C:C6	2.53	0.44
12:Aa:375:LYS:HA	12:Aa:375:LYS:HD3	1.69	0.44
14:BB:19:C:H2'	14:BB:20:A:H8	1.83	0.44
15:Bb:10:G:N2	15:Bb:26:G:H1'	2.33	0.44
15:Bb:70:C:H2'	15:Bb:71:G:H8	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:Cc:24:C:H2'	18:Cc:25:U:H6	1.82	0.44
20:DD:101:VAL:HG22	20:DD:185:LEU:O	2.18	0.44
26:FF:56:ILE:HD13	26:FF:356:LEU:HD22	2.00	0.44
30:HH:270:LYS:O	30:HH:273:ARG:HG2	2.17	0.44
42:NN:160:VAL:HG13	42:NN:171:VAL:HG11	1.98	0.44
61:c:1471:A:H2	61:c:1474:G:N3	2.14	0.44
61:c:1483:A:C2	61:c:1607:G:H1'	2.52	0.44
61:c:1612:U:H2'	61:c:1613:U:O4'	2.17	0.44
63:e:157:GLN:C	63:e:159:SER:H	2.25	0.44
64:f:66:PHE:CG	64:f:130:ILE:HD12	2.53	0.44
64:f:230:TRP:CE2	83:y:68:ARG:HB3	2.53	0.44
68:j:89:ASP:OD1	68:j:89:ASP:N	2.50	0.44
70:l:151:LYS:HD2	70:l:151:LYS:C	2.42	0.44
71:m:128:LEU:HD12	71:m:128:LEU:HA	1.88	0.44
73:o:68:GLY:HA3	73:o:127:GLN:HB3	2.00	0.44
79:u:119:ILE:HG13	79:u:119:ILE:O	2.17	0.44
11:AA:568:G:H2'	11:AA:569:A:O4'	2.16	0.44
11:AA:571:U:H2'	11:AA:572:A:H8	1.82	0.44
11:AA:1032:C:H2'	11:AA:1033:U:O4'	2.17	0.44
11:AA:1915:A:H2'	11:AA:1916:U:C6	2.52	0.44
11:AA:2148:U:H2'	11:AA:2149:A:C8	2.53	0.44
11:AA:2366:C:H2'	11:AA:2367:A:C8	2.53	0.44
11:AA:2428:U:H2'	11:AA:2429:G:H8	1.82	0.44
11:AA:2724:OMU:HM23	11:AA:2724:OMU:H1'	1.53	0.44
12:Aa:118:ALA:O	12:Aa:122:THR:OG1	2.24	0.44
17:CC:83:C:H2'	17:CC:85:G:H21	1.82	0.44
17:CC:145:U:H2'	17:CC:146:U:C6	2.52	0.44
18:Cc:44:A:H2'	18:Cc:45:A:C8	2.53	0.44
19:D:126:GLU:O	19:D:131:ALA:HB3	2.17	0.44
19:D:159:ALA:HA	19:D:162:ARG:HH21	1.82	0.44
28:GG:182:LEU:HD21	28:GG:223:PRO:HG2	1.98	0.44
34:JJ:229:PHE:CD1	34:JJ:229:PHE:C	2.96	0.44
38:LL:74:LEU:O	38:LL:78:MET:HG3	2.17	0.44
61:c:640:U:H2'	61:c:641:G:O4'	2.17	0.44
61:c:1220:C:H5''	72:n:52:LYS:HD3	1.98	0.44
61:c:1251:U:O2'	61:c:1252:C:O5'	2.30	0.44
61:c:1315:U:H2'	61:c:1316:G:O4'	2.17	0.44
61:c:1456:C:OP1	61:c:1457:C:O2'	2.30	0.44
69:k:114:ARG:O	69:k:117:THR:OG1	2.28	0.44
75:q:76:ILE:HG22	75:q:110:LEU:HD21	1.99	0.44
79:u:115:ARG:O	79:u:119:ILE:HG22	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:18:LEU:HD21	66:h:64:ILE:HG13	1.99	0.44
8:7:3:SER:OG	8:7:5:GLU:O	2.36	0.44
11:AA:790:U:C2	11:AA:791:A:C8	3.05	0.44
11:AA:964:G:OP2	11:AA:1115:G:N1	2.43	0.44
11:AA:1295:G:H2'	11:AA:1296:C:C6	2.53	0.44
11:AA:1447:G:N7	13:B:25:SER:OG	2.44	0.44
11:AA:1590:G:OP1	51:S:17:SER:OG	2.35	0.44
11:AA:1828:A:H2'	11:AA:1829:G:C8	2.52	0.44
11:AA:2217:U:H2'	11:AA:2218:G:C8	2.50	0.44
11:AA:2454:G:H2'	11:AA:2455:U:H6	1.82	0.44
11:AA:2727:A:C2	39:M:43:ILE:HG23	2.53	0.44
15:Bb:9:A:H2	15:Bb:23:A:H62	1.66	0.44
17:CC:26:U:O2'	28:GG:51:ALA:O	2.33	0.44
18:Cc:25:U:H2'	18:Cc:26:C:H6	1.82	0.44
20:DD:110:ARG:HD2	20:DD:111:ALA:O	2.17	0.44
24:Ee:142:ARG:NH2	24:Ee:147:ASN:OD1	2.51	0.44
42:NN:111:ASP:OD1	42:NN:112:LEU:HD23	2.18	0.44
43:O:54:SER:HB2	51:S:94:LEU:HD13	2.00	0.44
44:OO:88:ALA:O	44:OO:92:THR:HG23	2.17	0.44
50:R:49:ILE:HD11	50:R:71:VAL:HG22	2.00	0.44
61:c:251:A:C2	66:h:131:LEU:HD12	2.51	0.44
61:c:610:G:H21	84:z:19:ARG:HH22	1.65	0.44
61:c:1350:U:H2'	61:c:1351:G:C8	2.52	0.44
63:e:30:PHE:CD2	63:e:94:LYS:HA	2.53	0.44
67:i:121:ILE:HD11	67:i:195:ALA:HA	2.00	0.44
78:t:33:ARG:HD3	78:t:33:ARG:HA	1.76	0.44
79:u:16:ARG:HD3	79:u:17:LEU:N	2.33	0.44
4:3:4:VAL:HG22	83:y:23:ARG:HG3	1.99	0.44
7:6:55:ARG:NH2	61:c:558:U:OP2	2.50	0.44
11:AA:2106:A:H2'	11:AA:2107:A:C8	2.52	0.44
15:Bb:27:C:H2'	15:Bb:28:C:H6	1.83	0.44
15:Bb:29:A:H2'	15:Bb:30:G:C8	2.53	0.44
20:DD:25:LEU:HD21	20:DD:76:LEU:HD21	1.99	0.44
26:FF:83:PRO:HB2	26:FF:202:THR:HB	2.00	0.44
34:JJ:86:VAL:O	34:JJ:114:GLY:HA2	2.18	0.44
50:R:17:GLN:O	50:R:24:ASN:N	2.47	0.44
61:c:145:A:H1'	61:c:146:U:C6	2.53	0.44
64:f:188:LEU:HD23	64:f:218:ILE:HD11	2.00	0.44
65:g:138:VAL:HG22	65:g:184:ILE:HD12	2.00	0.44
65:g:163:PRO:HA	65:g:166:ASP:HB2	1.99	0.44
67:i:192:GLU:H	67:i:192:GLU:HG2	1.66	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:114:A:N1	11:AA:266:A:O2'	2.42	0.44
11:AA:385:A:H2'	11:AA:386:A:C8	2.53	0.44
11:AA:815:G:OP2	54:V:31:LYS:NZ	2.34	0.44
11:AA:2301:U:H2'	11:AA:2302:G:H8	1.83	0.44
11:AA:2759:U:H5''	11:AA:2760:C:H5'	1.99	0.44
11:AA:3140:G:N7	26:FF:28:ARG:NH2	2.64	0.44
11:AA:3279:A:N6	50:R:54:ARG:HD3	2.33	0.44
12:Aa:130:ASP:OD1	12:Aa:133:GLU:N	2.27	0.44
29:H:15:LEU:HD23	29:H:53:SER:HB3	2.00	0.44
42:NN:75:LYS:HE2	42:NN:79:ILE:HD11	2.00	0.44
44:OO:182:ILE:HD13	44:OO:182:ILE:HA	1.91	0.44
51:S:96:GLU:OE1	51:S:96:GLU:HA	2.18	0.44
61:c:420:A2M:HM'3	61:c:420:A2M:H1'	1.78	0.44
61:c:1563:C:H2'	61:c:1564:U:C6	2.53	0.44
67:i:165:LEU:HG	67:i:169:ASN:HD21	1.83	0.44
78:t:71:PHE:HE2	78:t:73:LEU:HD22	1.82	0.44
80:v:15:ILE:HD11	80:v:63:ARG:HD3	1.98	0.44
82:x:25:LYS:HB3	82:x:25:LYS:HE2	1.82	0.44
1:0:125:LEU:O	1:0:129:VAL:HG23	2.17	0.43
8:7:210:LEU:HD22	8:7:222:LEU:HD12	2.00	0.43
10:A:4:GLU:OE2	22:E:165:TYR:OH	2.24	0.43
11:AA:503:C:H2'	11:AA:504:A:H8	1.84	0.43
11:AA:698:U:H2'	11:AA:699:A:O4'	2.18	0.43
11:AA:714:G:O2'	11:AA:753:C:O2'	2.26	0.43
11:AA:945:C:O2'	11:AA:1406:A:H1'	2.18	0.43
11:AA:966:U:H2'	11:AA:967:A:H8	1.82	0.43
11:AA:1463:U:H2'	11:AA:1464:G:O4'	2.18	0.43
11:AA:1709:C:C2	11:AA:1710:C:C5	3.06	0.43
11:AA:1715:A:N7	43:O:84:LEU:HD12	2.33	0.43
12:Aa:696:ASP:HB2	12:Aa:699:DDE:HD2	1.99	0.43
15:Bb:28:C:H2'	15:Bb:29:A:C8	2.52	0.43
20:DD:23:LYS:HD2	20:DD:23:LYS:O	2.18	0.43
28:GG:26:PHE:CD1	28:GG:130:ALA:HB2	2.53	0.43
29:H:21:ALA:O	29:H:36:ILE:HG12	2.17	0.43
51:S:101:VAL:HA	51:S:104:VAL:HG22	2.00	0.43
61:c:329:G:H2'	61:c:330:G:C8	2.53	0.43
61:c:331:A:P	70:l:175:GLN:HE21	2.41	0.43
61:c:902:G:H2'	61:c:903:U:C6	2.53	0.43
65:g:45:LYS:HG3	65:g:83:THR:HA	1.99	0.43
68:j:93:LYS:HE3	68:j:93:LYS:HB2	1.75	0.43
70:l:3:ILE:O	70:l:30:GLY:N	2.40	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
73:o:5:LEU:HD12	73:o:5:LEU:HA	1.82	0.43
8:7:86:ASP:OD1	8:7:88:THR:OG1	2.27	0.43
11:AA:22:G:OP2	91:AA:3710:HOH:O	2.20	0.43
11:AA:412:G:H2'	11:AA:413:U:C6	2.53	0.43
11:AA:542:G:H2'	11:AA:543:C:C6	2.53	0.43
11:AA:632:G:H2'	11:AA:633:C:C6	2.53	0.43
11:AA:664:U:H5'	28:GG:107:ARG:HA	2.00	0.43
11:AA:1497:C:O2'	11:AA:1602:A:N3	2.48	0.43
11:AA:1807:G:O2'	11:AA:2559:U:O4	2.36	0.43
11:AA:1920:U:O2'	11:AA:1932:A:N7	2.42	0.43
11:AA:2196:C:OP1	61:c:995:A:H4'	2.17	0.43
11:AA:2592:G:H4'	11:AA:2594:C:C2	2.54	0.43
11:AA:2974:U:H2'	11:AA:2975:U:C6	2.53	0.43
12:Aa:289:MET:HA	12:Aa:289:MET:HE3	2.00	0.43
12:Aa:411:VAL:HG21	12:Aa:469:LEU:HB3	2.01	0.43
16:C:83:VAL:O	16:C:103:ALA:HA	2.18	0.43
18:Cc:10:G:N2	18:Cc:27:G:H1'	2.33	0.43
18:Cc:76:C:O2'	59:a:56:PRO:O	2.24	0.43
23:EE:117:GLU:OE2	23:EE:163:ARG:NH2	2.48	0.43
23:EE:135:ILE:HD12	23:EE:149:ARG:HE	1.83	0.43
29:H:136:VAL:HG12	29:H:137:VAL:HG12	2.00	0.43
36:KK:226:TYR:HA	36:KK:229:VAL:HG22	1.99	0.43
51:S:72:VAL:O	51:S:77:GLY:HA2	2.18	0.43
61:c:546:U:H2'	61:c:547:U:C6	2.53	0.43
61:c:919:A:H2'	61:c:920:U:C6	2.53	0.43
61:c:971:A:H2'	61:c:972:G:O4'	2.18	0.43
61:c:1244:A:N3	61:c:1244:A:H2'	2.34	0.43
61:c:1652:C:H2'	61:c:1653:C:H6	1.81	0.43
67:i:194:LEU:HD23	67:i:198:LEU:HD23	2.00	0.43
72:n:26:ASP:HB3	72:n:29:GLN:HB2	1.99	0.43
8:7:66:HIS:NE2	61:c:1387:G:OP1	2.45	0.43
8:7:127:ARG:HD3	8:7:150:TRP:CE2	2.53	0.43
8:7:224:ASN:OD1	8:7:229:LYS:N	2.45	0.43
11:AA:314:U:H2'	11:AA:315:C:H6	1.82	0.43
11:AA:946:U:H2'	11:AA:947:G:H8	1.82	0.43
11:AA:976:U:H2'	11:AA:977:C:O4'	2.19	0.43
11:AA:1836:C:O2'	11:AA:1842:A:N1	2.44	0.43
11:AA:2250:G:H2'	11:AA:2251:G:C8	2.52	0.43
11:AA:2454:G:H2'	11:AA:2455:U:C6	2.53	0.43
11:AA:2914:G:H5''	26:FF:9:PRO:HG3	2.00	0.43
11:AA:2966:G:OP1	91:AA:3714:HOH:O	2.21	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:3169:U:H2'	11:AA:3170:A:C8	2.53	0.43
11:AA:3333:G:N2	11:AA:3369:G:O2'	2.51	0.43
12:Aa:301:GLU:HA	12:Aa:301:GLU:OE2	2.17	0.43
22:E:12:ARG:O	22:E:22:PRO:HB2	2.18	0.43
26:FF:377:HIS:CD2	26:FF:387:LEU:HD23	2.53	0.43
32:II:4:GLN:OE1	48:Q:75:LEU:N	2.33	0.43
35:K:86:THR:HG22	35:K:96:PRO:HA	2.00	0.43
38:LL:57:VAL:HG23	38:LL:68:LEU:HD13	2.01	0.43
61:c:123:G:OP1	66:h:77:ARG:NH2	2.48	0.43
61:c:170:U:N3	61:c:289:U:O2'	2.51	0.43
61:c:252:U:H2'	61:c:253:A:C8	2.52	0.43
61:c:816:G:H2'	61:c:817:A:H8	1.82	0.43
62:d:110:TYR:O	62:d:110:TYR:HD1	2.02	0.43
64:f:83:ILE:HD11	64:f:125:ILE:HD11	1.99	0.43
68:j:43:ASP:OD1	68:j:44:GLU:N	2.52	0.43
82:x:4:ASP:C	82:x:5:LYS:HG3	2.43	0.43
83:y:24:GLN:HA	83:y:63:VAL:O	2.18	0.43
4:3:4:VAL:HG21	82:x:71:ARG:NE	2.34	0.43
8:7:199:ILE:HD12	8:7:213:SER:HB3	2.00	0.43
11:AA:426:G:H2'	11:AA:427:C:C6	2.52	0.43
11:AA:708:G:N2	11:AA:711:A:OP2	2.42	0.43
11:AA:871:U:H2'	11:AA:872:U:C6	2.53	0.43
11:AA:2767:U:H2'	11:AA:2768:U:H6	1.80	0.43
11:AA:3000:A:H2'	11:AA:3001:C:H6	1.83	0.43
11:AA:3160:U:H2'	11:AA:3161:C:C6	2.52	0.43
18:Cc:67:C:H2'	18:Cc:68:C:H6	1.83	0.43
24:Ee:135:THR:O	24:Ee:138:SER:OG	2.30	0.43
26:FF:122:TRP:CZ2	26:FF:127:LYS:HE3	2.54	0.43
40:MM:200:LEU:HB2	40:MM:213:PHE:CG	2.54	0.43
61:c:404:G:H2'	61:c:405:C:H6	1.83	0.43
61:c:791:A:H2'	61:c:792:U:C6	2.53	0.43
61:c:966:A:OP2	74:p:124:ARG:NE	2.43	0.43
64:f:59:HIS:CE1	64:f:239:PRO:HD3	2.54	0.43
65:g:178:ARG:H	65:g:178:ARG:HD3	1.82	0.43
7:6:33:ARG:HH11	71:m:123:HIS:HD2	1.64	0.43
11:AA:705:A:N7	39:M:74:ASN:ND2	2.53	0.43
11:AA:951:A:H5''	11:AA:1143:A:N1	2.34	0.43
11:AA:1045:C:OP1	40:MM:133:GLN:NE2	2.51	0.43
11:AA:1334:U:H5''	34:JJ:206:LYS:HB3	2.00	0.43
11:AA:2163:C:H4'	23:EE:7:ASN:O	2.19	0.43
11:AA:2250:G:H2'	11:AA:2251:G:H8	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2487:U:H4'	11:AA:2488:A:OP2	2.16	0.43
16:C:148:GLU:O	16:C:151:ARG:HG2	2.19	0.43
17:CC:5:U:H2'	17:CC:6:U:C6	2.54	0.43
24:Ee:82:ILE:HD12	24:Ee:100:HIS:CD2	2.54	0.43
42:NN:150:ASN:HA	42:NN:153:LYS:HE2	2.00	0.43
56:X:6:SER:OG	56:X:9:ILE:HG12	2.18	0.43
61:c:474:A:H5'	71:m:143:ILE:HG23	2.01	0.43
61:c:1146:G:H4'	64:f:90:THR:HA	1.99	0.43
61:c:1392:U:H2'	61:c:1393:C:C6	2.54	0.43
62:d:50:VAL:HG22	78:t:109:LEU:HD11	1.99	0.43
63:e:188:LEU:HD23	63:e:193:ILE:HD13	2.00	0.43
74:p:46:THR:HB	74:p:86:GLU:HG3	2.00	0.43
77:s:60:PHE:CE2	77:s:89:LEU:HD11	2.53	0.43
83:y:37:PHE:CZ	83:y:103:ILE:HD12	2.53	0.43
8:7:240:VAL:HG22	8:7:256:THR:HB	2.00	0.43
11:AA:669:U:H1'	11:AA:1110:U:H4'	2.00	0.43
11:AA:964:G:H2'	11:AA:965:A:C8	2.54	0.43
11:AA:1383:G:H4'	28:GG:240:PRO:HB2	2.00	0.43
11:AA:1470:U:H2'	11:AA:1471:U:C6	2.54	0.43
11:AA:1872:C:H4'	19:D:58:HIS:HB2	2.00	0.43
11:AA:2433:U:OP2	11:AA:2434:U:O2'	2.31	0.43
11:AA:2495:C:C2	11:AA:2496:C:C5	3.06	0.43
11:AA:2612:U:H2'	11:AA:2613:U:O4'	2.18	0.43
11:AA:3191:G:H2'	11:AA:3192:U:C6	2.54	0.43
12:Aa:314:LEU:HD23	12:Aa:314:LEU:HA	1.81	0.43
12:Aa:424:ASP:OD1	12:Aa:425:ASP:N	2.49	0.43
18:Cc:70:C:H2'	18:Cc:71:G:H8	1.84	0.43
36:KK:134:TYR:HB3	36:KK:190:VAL:HG11	2.00	0.43
37:L:9:LYS:HA	37:L:9:LYS:HD3	1.89	0.43
38:LL:27:VAL:HG12	38:LL:82:VAL:HG21	2.00	0.43
54:V:27:PHE:HA	54:V:34:CYS:HA	2.00	0.43
61:c:11:A:N1	61:c:1143:A:H2	2.16	0.43
61:c:36:C:H2'	61:c:37:U:H6	1.84	0.43
61:c:855:A:O2'	61:c:856:A:H3'	2.19	0.43
61:c:1135:U:H2'	61:c:1136:U:C6	2.54	0.43
62:d:189:VAL:O	82:x:44:ARG:NH1	2.49	0.43
64:f:91:ARG:HD3	64:f:91:ARG:HA	1.95	0.43
66:h:139:VAL:HG13	66:h:150:PRO:HG3	2.00	0.43
70:l:159:GLN:HB3	70:l:164:ARG:O	2.18	0.43
80:v:19:ALA:O	80:v:23:GLN:HG2	2.18	0.43
81:w:108:ILE:O	81:w:108:ILE:HG13	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:22:GLN:H	1:0:22:GLN:HG2	1.73	0.43
8:7:241:PHE:CG	8:7:290:VAL:HG12	2.54	0.43
11:AA:195:U:H2'	11:AA:196:G:O4'	2.19	0.43
11:AA:516:A:H2'	11:AA:517:G:C8	2.54	0.43
11:AA:616:G:H2'	11:AA:617:G:H8	1.82	0.43
11:AA:631:U:H2'	11:AA:632:G:H8	1.84	0.43
11:AA:1066:G:H2'	11:AA:1067:U:C6	2.54	0.43
11:AA:2225:U:H2'	11:AA:2226:U:H6	1.83	0.43
11:AA:2499:U:H2'	11:AA:2500:A:C8	2.52	0.43
11:AA:2837:A:H2'	11:AA:2845:A:N1	2.34	0.43
11:AA:3291:G:H2'	11:AA:3292:A:C8	2.52	0.43
11:AA:3296:A:OP1	26:FF:120:LYS:N	2.43	0.43
12:Aa:144:ARG:HD3	12:Aa:192:TYR:CE1	2.54	0.43
12:Aa:807:ASP:OD2	12:Aa:810:ASP:N	2.51	0.43
32:II:172:HIS:CD2	32:II:173:MET:HG2	2.54	0.43
34:JJ:89:ILE:HD11	34:JJ:229:PHE:HB3	2.00	0.43
61:c:1061:A:H2'	61:c:1062:A:O4'	2.18	0.43
61:c:1150:G:N2	61:c:1768:G:H2'	2.34	0.43
61:c:1202:A:H1'	61:c:1207:C:N4	2.34	0.43
61:c:1210:C:H2'	61:c:1211:A:C8	2.53	0.43
68:j:126:ASP:OD1	68:j:126:ASP:N	2.51	0.43
81:w:101:LYS:HA	81:w:101:LYS:HD3	1.73	0.43
8:7:93:ASP:OD1	8:7:94:VAL:N	2.52	0.43
8:7:123:ILE:HD12	8:7:123:ILE:O	2.18	0.43
11:AA:633:C:O2'	50:R:21:ARG:O	2.34	0.43
11:AA:828:A:H2'	11:AA:829:U:C6	2.53	0.43
11:AA:971:G:H2'	11:AA:972:A:C8	2.54	0.43
11:AA:1108:U:H2'	11:AA:1109:U:H6	1.83	0.43
11:AA:1222:G:N2	11:AA:1285:G:O2'	2.52	0.43
11:AA:1339:C:H2'	11:AA:1340:G:C8	2.54	0.43
11:AA:1373:A:H2'	11:AA:1374:G:C8	2.54	0.43
11:AA:1613:A:OP1	55:W:51:LEU:N	2.42	0.43
11:AA:2095:G:H2'	11:AA:2096:A:H8	1.83	0.43
11:AA:2806:U:H2'	11:AA:2807:U:C6	2.53	0.43
11:AA:2961:G:H2'	11:AA:2962:U:H6	1.81	0.43
12:Aa:429:LYS:HG2	12:Aa:462:PHE:CE2	2.54	0.43
12:Aa:501:LEU:HD21	84:z:99:ASN:ND2	2.33	0.43
14:BB:19:C:H2'	14:BB:20:A:C8	2.54	0.43
17:CC:6:U:C2	17:CC:7:U:C5	3.07	0.43
17:CC:29:U:H5''	44:OO:27:ASP:HB3	2.00	0.43
39:M:77:LYS:C	39:M:79:TRP:H	2.27	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:NN:84:LEU:HD11	42:NN:163:PHE:HE1	1.82	0.43
59:a:36:PHE:C	59:a:41:ARG:HE	2.27	0.43
61:c:85:A:N3	61:c:148:A:O2'	2.47	0.43
63:e:34:ALA:HA	63:e:98:THR:HG23	2.00	0.43
63:e:71:ALA:HB3	75:q:114:ARG:NH2	2.34	0.43
66:h:95:THR:O	66:h:95:THR:OG1	2.22	0.43
70:l:84:HIS:HE2	70:l:97:THR:CG2	2.32	0.43
79:u:99:HIS:HD2	79:u:101:LEU:HG	1.84	0.43
8:7:87:LYS:HG3	8:7:108:SER:O	2.19	0.43
11:AA:243:G:H2'	11:AA:244:G:H8	1.83	0.43
11:AA:609:G:OP2	28:GG:315:LYS:NZ	2.41	0.43
11:AA:863:C:H2'	11:AA:864:G:O4'	2.19	0.43
11:AA:947:G:H2'	11:AA:948:C:C6	2.53	0.43
11:AA:1881:A:H2'	11:AA:1882:G:H8	1.84	0.43
11:AA:2445:A:H2'	11:AA:2446:U:H5'	1.99	0.43
11:AA:2724:OMU:OP2	11:AA:2726:C:N4	2.51	0.43
11:AA:3358:U:H2'	11:AA:3359:A:C8	2.51	0.43
12:Aa:651:LYS:NZ	61:c:1442:U:H5''	2.34	0.43
12:Aa:686:VAL:HG21	12:Aa:713:THR:HG23	2.01	0.43
16:C:178:ARG:HA	16:C:178:ARG:HD2	1.84	0.43
28:GG:64:SER:HA	28:GG:75:PRO:HA	1.99	0.43
28:GG:343:LYS:HB2	28:GG:343:LYS:HE3	1.62	0.43
53:U:91:ASN:OD1	53:U:91:ASN:C	2.62	0.43
60:b:59:CYS:O	60:b:60:CYS:SG	2.77	0.43
61:c:123:G:P	66:h:77:ARG:HH22	2.42	0.43
61:c:329:G:OP1	70:l:98:LYS:NZ	2.50	0.43
61:c:333:A:C5	70:l:49:ARG:HD3	2.53	0.43
61:c:868:G:OP1	74:p:121:ARG:NH1	2.52	0.43
61:c:901:G:H2'	61:c:902:G:C8	2.54	0.43
61:c:997:G:C6	61:c:1008:G:C6	3.07	0.43
61:c:1142:A:H2'	61:c:1143:A:C8	2.54	0.43
61:c:1257:U:HO2'	72:n:8:ARG:HH12	1.67	0.43
61:c:1301:U:H5'	64:f:88:LYS:HD2	2.00	0.43
61:c:1482:C:H4'	77:s:77:GLN:OE1	2.19	0.43
61:c:1530:C:C2	61:c:1531:G:C8	3.07	0.43
62:d:51:GLY:O	62:d:55:GLU:HG3	2.19	0.43
66:h:37:LYS:O	66:h:41:SER:HB3	2.19	0.43
69:k:167:GLU:H	69:k:167:GLU:CD	2.25	0.43
73:o:116:ARG:HD3	73:o:116:ARG:HA	1.72	0.43
78:t:28:PHE:HA	78:t:31:ASN:HB2	2.01	0.43
6:5:17:GLY:N	61:c:1205:C:O2	2.48	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:6:33:ARG:HH11	71:m:123:HIS:CD2	2.36	0.43
8:7:238:ASP:OD1	8:7:238:ASP:N	2.52	0.43
11:AA:47:C:OP2	11:AA:48:A:O2'	2.25	0.43
11:AA:109:A:N1	11:AA:322:U:O2'	2.46	0.43
11:AA:276:U:H2'	11:AA:277:G:C8	2.54	0.43
11:AA:594:U:H2'	11:AA:609:G:O6	2.18	0.43
11:AA:847:A:H2'	11:AA:848:A:C8	2.54	0.43
11:AA:1472:U:H2'	11:AA:1473:G:C8	2.54	0.43
11:AA:1659:U:H2'	11:AA:1660:C:H6	1.81	0.43
11:AA:1669:C:H5'	51:S:30:LEU:HD11	1.99	0.43
11:AA:2442:G:H2'	11:AA:2443:A:C8	2.54	0.43
11:AA:3386:G:H2'	11:AA:3387:U:C6	2.54	0.43
12:Aa:154:VAL:HG22	12:Aa:342:LEU:HD21	2.01	0.43
24:Ee:29:ALA:N	24:Ee:30:PRO:HD2	2.33	0.43
26:FF:113:GLU:OE2	26:FF:167:ARG:N	2.37	0.43
36:KK:27:THR:HG22	37:L:53:VAL:HG23	2.01	0.43
42:NN:38:GLU:HG2	42:NN:43:GLN:O	2.18	0.43
43:O:38:LYS:H	43:O:38:LYS:HG2	1.64	0.43
48:Q:15:LYS:HE2	48:Q:15:LYS:HB3	1.71	0.43
51:S:8:ARG:HD2	51:S:32:ALA:O	2.19	0.43
61:c:1389:C:N4	61:c:1391:A:O4'	2.51	0.43
62:d:15:GLN:HB2	78:t:100:LEU:HD11	2.01	0.43
63:e:199:ASN:HA	63:e:202:LYS:HE3	2.00	0.43
83:y:11:LEU:HD12	83:y:74:VAL:HG13	2.00	0.43
6:5:12:ARG:HH11	6:5:12:ARG:HG3	1.83	0.42
11:AA:158:G:H2'	11:AA:159:A:C8	2.54	0.42
11:AA:993:G:OP1	91:AA:3713:HOH:O	2.21	0.42
11:AA:1065:A:C4	41:N:28:LYS:HB3	2.54	0.42
11:AA:1443:G:H2'	11:AA:1444:G:C8	2.54	0.42
11:AA:1636:U:O2'	37:L:79:HIS:ND1	2.47	0.42
11:AA:1922:A:H2'	11:AA:1923:C:O4'	2.18	0.42
11:AA:2138:A:C4	54:V:3:LYS:HB3	2.54	0.42
11:AA:2508:U:H2'	11:AA:2509:U:C6	2.54	0.42
11:AA:3049:A:OP2	91:AA:3712:HOH:O	2.21	0.42
11:AA:3051:U:C2	11:AA:3052:G:C8	3.06	0.42
11:AA:3214:U:N3	46:PP:121:MET:HG3	2.34	0.42
12:Aa:600:ALA:HB1	12:Aa:605:ILE:HB	2.00	0.42
12:Aa:664:VAL:O	12:Aa:668:GLN:HG2	2.19	0.42
15:Bb:29:A:H2'	15:Bb:30:G:H8	1.83	0.42
18:Cc:70:C:H2'	18:Cc:71:G:C8	2.54	0.42
20:DD:19:LEU:HD22	20:DD:73:PHE:CE1	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:Dd:20:U:H2'	21:Dd:21:G:C8	2.53	0.42
24:Ee:41:LYS:O	24:Ee:44:GLU:HG3	2.19	0.42
24:Ee:103:ASN:HD21	24:Ee:145:PHE:N	2.17	0.42
30:HH:112:LYS:HE2	30:HH:112:LYS:HB2	1.74	0.42
30:HH:146:LEU:HD22	30:HH:163:LEU:HB2	1.99	0.42
32:II:97:ASN:HD21	32:II:99:GLU:CD	2.25	0.42
52:T:83:LYS:O	54:V:73:ARG:NH2	2.52	0.42
61:c:176:C:H2'	61:c:177:U:C6	2.54	0.42
61:c:263:C:H2'	61:c:264:G:O4'	2.19	0.42
61:c:406:U:H2'	61:c:407:A:C8	2.53	0.42
61:c:800:U:H2'	61:c:801:G:C8	2.53	0.42
61:c:1156:C:H2'	61:c:1157:A:H8	1.84	0.42
61:c:1163:A:H2'	61:c:1164:G:O4'	2.19	0.42
61:c:1352:G:N2	61:c:1374:C:N3	2.67	0.42
61:c:1357:A:N6	61:c:1367:G:H2'	2.34	0.42
61:c:1449:U:H2'	61:c:1450:U:C6	2.55	0.42
61:c:1588:G:O6	61:c:1608:U:O4	2.37	0.42
67:i:42:LEU:HD12	67:i:43:PHE:O	2.18	0.42
67:i:100:ASN:ND2	67:i:180:ARG:HD3	2.34	0.42
79:u:76:PRO:O	79:u:81:ILE:HB	2.19	0.42
84:z:43:PHE:O	84:z:45:GLY:N	2.47	0.42
8:7:289:ALA:HB2	8:7:305:TYR:CD1	2.54	0.42
11:AA:21:G:H3'	11:AA:22:G:H8	1.83	0.42
11:AA:432:G:H2'	11:AA:433:A:H8	1.85	0.42
11:AA:915:A:H8	11:AA:2136:C:O2'	2.02	0.42
11:AA:1595:U:C2	11:AA:1596:C:C5	3.06	0.42
11:AA:1624:G:C4	11:AA:1625:A:C8	3.07	0.42
11:AA:1711:C:OP1	37:L:78:ASN:ND2	2.51	0.42
11:AA:1809:A:H2'	11:AA:1810:A:O4'	2.18	0.42
11:AA:2230:C:H2'	11:AA:2231:C:O4'	2.19	0.42
11:AA:2471:U:H5	11:AA:2473:C:OP2	2.02	0.42
11:AA:3107:U:H2'	11:AA:3108:G:H8	1.84	0.42
12:Aa:169:VAL:HB	12:Aa:173:ASP:HB2	2.01	0.42
12:Aa:294:ASP:OD1	12:Aa:294:ASP:N	2.52	0.42
20:DD:119:ILE:HG12	20:DD:180:PRO:HB3	1.99	0.42
44:OO:62:THR:O	44:OO:62:THR:OG1	2.35	0.42
61:c:790:U:H2'	61:c:791:A:H8	1.85	0.42
61:c:1271:OMG:HM23	61:c:1271:OMG:H1'	1.77	0.42
61:c:1590:G:OP1	80:v:91:TYR:HB2	2.19	0.42
61:c:1676:U:OP1	70:l:44:HIS:ND1	2.45	0.42
63:e:205:PHE:CD2	63:e:206:PRO:HD2	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:k:154:LEU:HD21	69:k:183:PHE:CD1	2.55	0.42
71:m:128:LEU:HD12	71:m:133:HIS:HD2	1.83	0.42
74:p:53:LEU:HD23	74:p:53:LEU:HA	1.86	0.42
76:r:18:ARG:HA	79:u:93:THR:HA	2.00	0.42
79:u:108:LYS:HA	79:u:108:LYS:HD2	1.63	0.42
11:AA:35:A:H2'	11:AA:36:C:H6	1.84	0.42
11:AA:1111:U:H5''	44:OO:5:LYS:HE3	2.02	0.42
11:AA:1263:A:N1	24:Ee:138:SER:HB3	2.34	0.42
11:AA:1317:A:O2'	11:AA:1318:A:H3'	2.19	0.42
11:AA:1560:G:H2'	11:AA:1561:G:C8	2.54	0.42
11:AA:1747:G:H21	55:W:2:ALA:HB3	1.84	0.42
11:AA:2148:U:O2'	23:EE:182:ALA:HB2	2.20	0.42
11:AA:2565:U:H2'	11:AA:2566:C:C6	2.54	0.42
11:AA:2566:C:H2'	11:AA:2567:C:C6	2.55	0.42
11:AA:2816:G:O4'	11:AA:2870:5MC:HM52	2.19	0.42
12:Aa:275:MET:HE2	12:Aa:275:MET:HB2	1.89	0.42
20:DD:29:GLY:HA2	20:DD:84:VAL:HG12	2.00	0.42
23:EE:201:GLY:HA2	23:EE:204:MET:SD	2.60	0.42
26:FF:283:TYR:N	26:FF:323:MET:O	2.45	0.42
36:KK:158:ASP:HB3	36:KK:159:PRO:HD3	2.01	0.42
56:X:24:PRO:HB2	56:X:27:ILE:HD12	2.01	0.42
61:c:125:U:H5'	66:h:148:ARG:HD2	2.01	0.42
61:c:322:G:O2'	70:l:10:LYS:NZ	2.25	0.42
61:c:749:U:H2'	61:c:750:U:C6	2.54	0.42
61:c:961:U:C2	61:c:962:C:C5	3.08	0.42
61:c:1080:U:H2'	61:c:1081:A:O4'	2.19	0.42
61:c:1219:A:H2'	61:c:1220:C:O4'	2.20	0.42
61:c:1297:G:N2	61:c:1300:A:OP2	2.49	0.42
65:g:95:GLY:HA3	65:g:125:TYR:CE2	2.55	0.42
67:i:46:TRP:HE1	67:i:122:ASN:CG	2.26	0.42
68:j:7:TYR:CE1	68:j:9:VAL:HB	2.53	0.42
68:j:27:PHE:CE1	68:j:36:VAL:HG11	2.54	0.42
3:2:53:LEU:HD21	75:q:102:LEU:HD21	2.02	0.42
7:6:29:LYS:HD2	7:6:35:TYR:HE1	1.85	0.42
8:7:200:ASN:H	8:7:215:GLY:HA2	1.84	0.42
8:7:288:HIS:O	8:7:306:THR:HG23	2.20	0.42
10:A:62:THR:H	10:A:69:GLY:HA3	1.84	0.42
11:AA:156:G:OP2	53:U:25:LYS:HB3	2.19	0.42
11:AA:255:A:H2'	11:AA:256:G:H8	1.84	0.42
11:AA:277:G:H2'	11:AA:278:U:H6	1.83	0.42
11:AA:968:G:H2'	11:AA:969:C:H6	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1551:C:O2'	11:AA:2170:U:O2'	2.36	0.42
11:AA:2840:C:H2'	11:AA:2841:G:O4'	2.20	0.42
12:Aa:171:LYS:NZ	12:Aa:270:GLU:OE1	2.52	0.42
12:Aa:213:SER:HB3	12:Aa:218:TRP:NE1	2.33	0.42
12:Aa:260:LYS:HE3	12:Aa:260:LYS:HB2	1.87	0.42
17:CC:75:G:H2'	17:CC:76:C:C6	2.54	0.42
27:G:38:ILE:HD12	27:G:38:ILE:H	1.83	0.42
28:GG:181:VAL:O	28:GG:182:LEU:HB2	2.18	0.42
42:NN:87:LYS:HD3	42:NN:106:ILE:HG22	2.01	0.42
61:c:127:G:N7	68:j:202:ARG:NH1	2.57	0.42
61:c:593:U:H4'	61:c:595:G:H4'	2.00	0.42
61:c:690:G:H2'	61:c:691:C:C6	2.54	0.42
61:c:1360:A:H2'	61:c:1361:U:H4'	2.01	0.42
61:c:1364:G:C2	61:c:1365:C:C4	3.06	0.42
61:c:1434:U:O2'	61:c:1436:A:OP1	2.26	0.42
61:c:1528:U:H2'	61:c:1529:C:H6	1.84	0.42
70:l:83:TYR:HB3	70:l:101:ILE:HB	2.00	0.42
71:m:133:HIS:HA	71:m:162:SER:CB	2.49	0.42
72:n:13:GLN:O	72:n:17:GLN:HG2	2.19	0.42
5:4:18:ARG:HD2	5:4:26:THR:HG23	2.02	0.42
8:7:232:TYR:CZ	8:7:268:GLN:HG2	2.55	0.42
8:7:252:LEU:HD22	8:7:263:PHE:HE1	1.84	0.42
11:AA:170:G:H1	11:AA:249:U:H5''	1.85	0.42
11:AA:216:G:H4'	35:K:19:TYR:CE2	2.54	0.42
11:AA:673:U:H2'	11:AA:674:G:C8	2.54	0.42
11:AA:987:U:H2'	11:AA:988:U:H6	1.84	0.42
11:AA:1024:G:H21	11:AA:1027:A:H8	1.68	0.42
11:AA:1196:C:H4'	11:AA:1197:A:OP1	2.20	0.42
11:AA:1601:U:OP1	19:D:42:ARG:NH2	2.50	0.42
11:AA:2477:G:H2'	11:AA:2477:G:N3	2.33	0.42
11:AA:2807:U:O2'	11:AA:2809:C:OP1	2.24	0.42
11:AA:2812:C:H2'	11:AA:2813:A:H8	1.84	0.42
12:Aa:607:ASN:OD1	12:Aa:607:ASN:N	2.52	0.42
17:CC:39:G:H1'	17:CC:104:A:N6	2.34	0.42
20:DD:23:LYS:HZ2	20:DD:193:ASN:HA	1.83	0.42
28:GG:135:VAL:O	28:GG:140:HIS:HB2	2.19	0.42
37:L:89:VAL:HG23	37:L:89:VAL:O	2.19	0.42
40:MM:49:CYS:HB3	40:MM:168:SER:HB3	2.00	0.42
41:N:28:LYS:HE3	41:N:28:LYS:HB2	1.72	0.42
45:P:86:LYS:HA	45:P:86:LYS:HD3	1.69	0.42
61:c:525:A:H2'	61:c:526:A:H8	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:1349:G:H2'	61:c:1350:U:C6	2.55	0.42
61:c:1511:U:H2'	61:c:1512:G:C8	2.54	0.42
61:c:1647:U:H2'	61:c:1648:A:H8	1.82	0.42
61:c:1656:U:H5''	61:c:1657:U:OP2	2.20	0.42
87:c:1904:SPD:H31	77:s:127:LYS:HB2	2.01	0.42
67:i:41:LYS:HE2	67:i:69:PHE:CZ	2.55	0.42
74:p:110:ASP:O	74:p:114:ARG:HG2	2.19	0.42
75:q:89:THR:HG21	75:q:126:THR:O	2.20	0.42
78:t:86:PRO:O	78:t:88:VAL:HG12	2.19	0.42
81:w:44:ASN:HA	81:w:47:GLN:NE2	2.34	0.42
11:AA:7:C:H2'	11:AA:8:C:C6	2.55	0.42
11:AA:36:C:H4'	11:AA:808:A:C2	2.53	0.42
11:AA:207:U:H2'	11:AA:208:C:C6	2.55	0.42
11:AA:230:U:H2'	11:AA:231:G:O4'	2.19	0.42
11:AA:678:G:H2'	11:AA:679:U:C6	2.54	0.42
11:AA:785:G:N7	39:M:77:LYS:NZ	2.47	0.42
11:AA:791:A:H2'	11:AA:792:G:C8	2.54	0.42
11:AA:835:G:H1'	11:AA:858:A:N6	2.34	0.42
11:AA:1596:C:H2'	11:AA:1597:C:H6	1.81	0.42
11:AA:1694:U:O2'	11:AA:1695:U:H5'	2.20	0.42
11:AA:2203:U:H2'	11:AA:2204:C:C6	2.55	0.42
11:AA:2460:U:O2'	11:AA:2461:A:H5'	2.20	0.42
11:AA:2476:C:C2'	11:AA:2477:G:H4'	2.49	0.42
11:AA:2500:A:H2'	11:AA:2501:U:C6	2.54	0.42
12:Aa:27:HIS:CG	12:Aa:28:VAL:H	2.38	0.42
12:Aa:529:ILE:HD12	12:Aa:559:PRO:HB3	2.02	0.42
29:H:11:PHE:HB3	29:H:88:ARG:NH1	2.34	0.42
34:JJ:185:ILE:O	34:JJ:189:ILE:HG22	2.19	0.42
38:LL:86:TYR:CD2	38:LL:151:VAL:HB	2.55	0.42
38:LL:90:MET:HG2	38:LL:181:VAL:HA	2.02	0.42
42:NN:40:LEU:HD23	42:NN:40:LEU:H	1.83	0.42
61:c:103:A:H4'	61:c:105:A:N7	2.34	0.42
61:c:646:C:H2'	61:c:647:G:O4'	2.19	0.42
61:c:1349:G:H2'	61:c:1350:U:H6	1.84	0.42
61:c:1586:A:H2'	61:c:1587:A:O4'	2.19	0.42
61:c:1674:C:H2'	61:c:1675:C:C6	2.55	0.42
63:e:142:PHE:HD2	63:e:209:ASN:HB3	1.84	0.42
3:2:30:ILE:HG13	3:2:31:PRO:HD2	2.02	0.42
9:8:138:ARG:NH1	9:8:140:TYR:O	2.52	0.42
11:AA:313:A:H2'	11:AA:314:U:C6	2.55	0.42
11:AA:370:U:H2'	11:AA:371:G:O4'	2.18	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:661:G:H4'	11:AA:662:U:C6	2.55	0.42
11:AA:976:U:OP1	16:C:144:ARG:NH2	2.45	0.42
11:AA:1109:U:H2'	11:AA:1110:U:C6	2.54	0.42
11:AA:1708:C:H2'	11:AA:1709:C:H6	1.84	0.42
11:AA:1927:G:C8	60:b:16:VAL:HG12	2.55	0.42
11:AA:3192:U:H2'	11:AA:3193:C:H6	1.84	0.42
11:AA:3320:A:H2'	11:AA:3321:C:C6	2.55	0.42
12:Aa:239:LYS:HE2	12:Aa:243:ARG:NH1	2.35	0.42
14:BB:22:A:H2'	14:BB:23:A:C8	2.55	0.42
15:Bb:57:G:O2'	15:Bb:58:A:H5'	2.20	0.42
26:FF:256:HIS:HA	26:FF:257:PRO:C	2.43	0.42
30:HH:40:HIS:HB3	30:HH:43:LYS:HE3	2.02	0.42
34:JJ:98:LYS:HB3	34:JJ:99:PRO:HD3	2.02	0.42
40:MM:156:ARG:HG3	40:MM:163:GLN:HB2	2.02	0.42
48:Q:63:THR:HA	48:Q:66:LEU:HD22	2.02	0.42
61:c:94:U:N1	61:c:94:U:C5	2.88	0.42
61:c:258:C:H2'	61:c:259:U:C6	2.54	0.42
61:c:368:U:H2'	61:c:369:A:O4'	2.19	0.42
61:c:607:G:H21	61:c:614:C:H5''	1.85	0.42
61:c:1018:U:H2'	61:c:1019:A:C8	2.55	0.42
61:c:1018:U:C2	61:c:1019:A:C8	3.08	0.42
61:c:1775:U:H2'	61:c:1776:A:C8	2.54	0.42
62:d:71:GLU:CD	62:d:71:GLU:H	2.28	0.42
66:h:72:VAL:HB	66:h:77:ARG:HG3	2.00	0.42
68:j:167:LYS:HB3	68:j:169:TYR:CD1	2.55	0.42
69:k:141:ARG:O	69:k:148:LYS:HA	2.20	0.42
77:s:82:ARG:NH2	77:s:114:ARG:HD3	2.35	0.42
80:v:113:ILE:HG12	80:v:128:GLY:HA2	2.00	0.42
82:x:4:ASP:OD1	82:x:4:ASP:N	2.51	0.42
8:7:30:PRO:HB3	8:7:296:ALA:HB2	2.00	0.42
8:7:221:MET:O	8:7:222:LEU:HD22	2.19	0.42
11:AA:663:OMC:HM21	28:GG:104:LYS:HB2	2.02	0.42
11:AA:1033:U:H2'	11:AA:1034:U:C5	2.54	0.42
11:AA:1184:A:H2'	11:AA:1185:C:C6	2.54	0.42
11:AA:1699:A:H2'	11:AA:1700:G:C8	2.54	0.42
11:AA:2689:A:H2'	11:AA:2689:A:N3	2.35	0.42
11:AA:2714:G:C8	11:AA:2751:G:H2'	2.54	0.42
12:Aa:461:GLN:H	12:Aa:461:GLN:CD	2.27	0.42
14:BB:45:A:H2'	14:BB:46:A:C8	2.55	0.42
23:EE:180:LEU:HD22	60:b:26:VAL:HG21	2.02	0.42
24:Ee:146:LYS:HB2	24:Ee:151:ILE:HD11	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:H:66:LYS:HE2	29:H:68:GLU:CG	2.49	0.42
34:JJ:126:LEU:O	34:JJ:130:ILE:HG12	2.18	0.42
45:P:19:ARG:HB3	45:P:35:GLU:HG3	2.01	0.42
54:V:75:LYS:HB3	54:V:75:LYS:HE3	1.72	0.42
61:c:504:U:H2'	61:c:505:A:C8	2.54	0.42
61:c:856:A:N6	69:k:96:ARG:HB3	2.35	0.42
61:c:874:C:H2'	61:c:875:G:C8	2.55	0.42
61:c:1225:U:H3'	61:c:1226:A:H8	1.82	0.42
61:c:1601:G:OP1	80:v:86:ARG:NH2	2.53	0.42
63:e:197:ILE:HB	63:e:210:ILE:HG21	2.02	0.42
65:g:23:GLU:CD	72:n:61:TRP:HE1	2.28	0.42
66:h:173:ILE:HD13	66:h:229:GLY:HA2	2.01	0.42
80:v:77:ASN:HB3	80:v:95:ASP:HB3	2.01	0.42
3:2:10:ARG:CZ	3:2:12:LYS:HD3	2.50	0.42
11:AA:226:C:H2'	11:AA:227:G:O4'	2.20	0.42
11:AA:404:G:C5	11:AA:405:U:C5	3.07	0.42
11:AA:709:A:P	16:C:179:ARG:HH22	2.42	0.42
11:AA:1675:G:H2'	11:AA:1676:A:H8	1.83	0.42
11:AA:2273:G:O2'	11:AA:2311:G:O6	2.31	0.42
11:AA:2696:A:N7	11:AA:2758:A:N6	2.67	0.42
11:AA:2745:G:N2	11:AA:2748:A:OP2	2.47	0.42
13:B:51:VAL:HA	13:B:56:ARG:O	2.20	0.42
15:Bb:10:G:C2	15:Bb:26:G:H1'	2.55	0.42
19:D:101:VAL:HG12	19:D:104:ARG:HH12	1.85	0.42
52:T:115:LYS:HB3	52:T:115:LYS:HE2	1.72	0.42
61:c:36:C:H2'	61:c:37:U:C6	2.55	0.42
61:c:526:A:H2'	61:c:527:A:O4'	2.19	0.42
61:c:900:A:C4	61:c:901:G:C8	3.07	0.42
61:c:1157:A:H2'	61:c:1160:A:N7	2.35	0.42
61:c:1716:C:O2'	61:c:1717:G:H8	2.03	0.42
64:f:58:LEU:HA	82:x:12:TYR:CE1	2.55	0.42
65:g:72:LEU:HD23	72:n:20:VAL:HB	2.01	0.42
75:q:81:VAL:HB	75:q:115:ILE:HA	2.02	0.42
2:1:98:GLN:HE21	67:i:189:THR:HG1	1.60	0.42
3:2:44:ILE:HG21	75:q:115:ILE:HG21	2.01	0.42
8:7:7:LEU:HD13	8:7:7:LEU:HA	1.85	0.42
11:AA:279:U:H2'	11:AA:280:U:C6	2.55	0.42
11:AA:573:C:H2'	11:AA:574:U:C6	2.55	0.42
11:AA:802:C:C2	11:AA:803:C:C5	3.08	0.42
11:AA:1031:C:C2	11:AA:1032:C:C5	3.08	0.42
11:AA:1214:U:H2'	11:AA:1215:U:C6	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1460:A:H5'	45:P:51:LEU:O	2.20	0.42
11:AA:1503:A:C4	11:AA:1504:A:C8	3.08	0.42
11:AA:2656:A:O2'	11:AA:2657:A:H3'	2.20	0.42
11:AA:3049:A:H4'	26:FF:364:LYS:HD2	2.02	0.42
11:AA:3067:C:OP2	19:D:62:ARG:NH1	2.53	0.42
14:BB:6:C:O2'	30:HH:72:ASP:OD2	2.29	0.42
19:D:10:LEU:O	19:D:14:VAL:HG13	2.20	0.42
20:DD:48:ARG:NH1	20:DD:95:GLU:OE1	2.53	0.42
30:HH:108:ARG:NE	30:HH:253:PHE:HB2	2.35	0.42
35:K:3:LYS:HD3	35:K:8:VAL:HG22	2.02	0.42
39:M:133:LEU:HG	39:M:137:LYS:HE3	2.02	0.42
61:c:66:U:O2	68:j:160:ARG:NH2	2.48	0.42
61:c:514:G:C2	61:c:515:A:C8	3.08	0.42
61:c:542:A:H5'	61:c:544:A:O4'	2.20	0.42
61:c:1001:A:O2'	61:c:1002:G:OP1	2.31	0.42
61:c:1284:C:OP2	61:c:1623:C:O2'	2.30	0.42
61:c:1504:G:H2'	61:c:1505:A:C8	2.55	0.42
62:d:13:ASP:OD1	62:d:13:ASP:N	2.49	0.42
62:d:175:TYR:CD1	62:d:199:PRO:HB3	2.55	0.42
65:g:167:PHE:HB3	65:g:190:ARG:CZ	2.50	0.42
68:j:25:ARG:HG2	68:j:28:PHE:CE2	2.55	0.42
78:t:89:SER:HB3	78:t:95:ARG:HH12	1.84	0.42
79:u:7:GLU:HB3	79:u:10:SER:OG	2.20	0.42
11:AA:127:G:H2'	11:AA:128:G:C8	2.55	0.41
11:AA:235:A:H2'	11:AA:236:G:C8	2.55	0.41
11:AA:297:G:O6	49:QQ:12:ARG:NH1	2.49	0.41
11:AA:324:A:H2'	11:AA:325:A:C8	2.55	0.41
11:AA:597:G:H5'	34:JJ:41:ARG:HD2	2.01	0.41
11:AA:760:G:H1'	11:AA:771:A:H61	1.85	0.41
11:AA:795:G:O2'	11:AA:1111:U:H5'	2.20	0.41
11:AA:992:A:O2'	11:AA:993:G:H5'	2.20	0.41
11:AA:2507:C:H2'	11:AA:2508:U:H6	1.83	0.41
11:AA:2674:A:H5''	42:NN:105:GLY:HA3	2.02	0.41
15:Bb:12:U:H2'	15:Bb:13:C:O4'	2.19	0.41
15:Bb:68:U:H2'	15:Bb:69:U:O4'	2.20	0.41
16:C:176:ARG:N	39:M:51:GLY:HA2	2.35	0.41
20:DD:46:ARG:HA	20:DD:46:ARG:HD3	1.85	0.41
22:E:45:LEU:HD12	22:E:51:VAL:CG1	2.50	0.41
30:HH:187:THR:OG1	30:HH:189:GLU:OE1	2.36	0.41
38:LL:21:LYS:O	38:LL:22:SER:C	2.62	0.41
45:P:20:LEU:HD11	45:P:32:ALA:HB2	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:86:A:H2'	61:c:87:C:H6	1.84	0.41
61:c:482:U:H2'	61:c:483:A:C8	2.55	0.41
61:c:592:A:H2'	61:c:593:U:O4'	2.20	0.41
61:c:861:U:H3'	61:c:862:A:C8	2.55	0.41
61:c:886:U:O2'	75:q:121:VAL:O	2.37	0.41
61:c:1010:C:H2'	61:c:1011:G:O4'	2.20	0.41
61:c:1410:A:H2'	61:c:1411:A:C8	2.55	0.41
70:l:38:ILE:HA	70:l:60:ILE:O	2.20	0.41
77:s:82:ARG:HH22	77:s:114:ARG:HB2	1.85	0.41
1:0:109:LYS:O	1:0:112:LYS:HG3	2.19	0.41
1:0:131:ARG:NH2	61:c:153:G:H5''	2.28	0.41
4:3:35:VAL:HG21	4:3:63:LEU:HD13	2.01	0.41
11:AA:92:G:H5'	11:AA:94:G:N7	2.35	0.41
11:AA:110:G:C2	11:AA:111:C:H1'	2.55	0.41
11:AA:144:A:H2'	11:AA:145:G:O4'	2.20	0.41
11:AA:243:G:H2'	11:AA:244:G:C8	2.55	0.41
11:AA:352:A:N1	11:AA:365:A:H5''	2.36	0.41
11:AA:785:G:OP1	16:C:66:ARG:NH2	2.54	0.41
11:AA:1018:G:H2'	11:AA:1019:G:O4'	2.20	0.41
11:AA:1621:A:H2'	11:AA:1622:U:H6	1.84	0.41
11:AA:1808:G:OP2	37:L:133:LYS:NZ	2.52	0.41
11:AA:2106:A:H2'	11:AA:2107:A:H8	1.84	0.41
11:AA:2711:C:O2'	11:AA:2744:U:OP1	2.35	0.41
11:AA:2966:G:H2'	11:AA:2967:A:C8	2.55	0.41
11:AA:3387:U:H2'	11:AA:3388:C:C6	2.54	0.41
12:Aa:515:ASP:HB3	12:Aa:518:VAL:HB	2.01	0.41
14:BB:87:G:OP1	34:JJ:218:ARG:NE	2.53	0.41
17:CC:128:U:P	17:CC:129:C:H41	2.43	0.41
24:Ee:79:SER:O	24:Ee:83:THR:HG23	2.20	0.41
52:T:73:LYS:HE2	52:T:73:LYS:HB3	1.86	0.41
61:c:116:U:H2'	61:c:117:U:C6	2.55	0.41
61:c:119:A:H1'	61:c:397:A:C4	2.55	0.41
61:c:304:U:H2'	61:c:305:C:C6	2.55	0.41
61:c:1147:A:H2'	61:c:1148:C:C6	2.55	0.41
61:c:1234:A:OP2	61:c:1245:G:O2'	2.27	0.41
61:c:1466:G:H2'	61:c:1467:C:C6	2.55	0.41
61:c:1642:G:H2'	61:c:1643:U:H6	1.85	0.41
64:f:142:GLY:N	64:f:153:SER:O	2.31	0.41
65:g:164:VAL:O	65:g:168:ILE:HB	2.20	0.41
69:k:157:LYS:HE2	69:k:157:LYS:HB3	1.82	0.41
77:s:31:VAL:HA	77:s:67:VAL:CG2	2.49	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
84:z:89:ASN:HB2	84:z:92:CYS:SG	2.60	0.41
4:3:19:HIS:HB3	4:3:22:LYS:HG3	2.03	0.41
8:7:34:LEU:HG	8:7:73:LEU:HD13	2.02	0.41
8:7:83:ALA:HB2	8:7:113:VAL:HB	2.02	0.41
10:A:114:LYS:HA	11:AA:3180:A:C4	2.55	0.41
11:AA:87:U:H2'	11:AA:88:A:H8	1.85	0.41
11:AA:273:A:H2'	11:AA:274:G:C8	2.56	0.41
11:AA:505:G:P	28:GG:320:ASN:HD22	2.43	0.41
11:AA:523:A:O2'	22:E:69:PRO:HD2	2.19	0.41
11:AA:827:A:H5''	51:S:14:ASN:O	2.20	0.41
11:AA:1406:A:H2'	11:AA:1407:A:C8	2.55	0.41
11:AA:2414:G:OP2	87:AA:3450:SPD:H21	2.20	0.41
11:AA:2611:U:H2'	11:AA:2612:U:H6	1.83	0.41
11:AA:2677:G:C6	11:AA:2679:A:C6	3.08	0.41
11:AA:2954:U:C5	15:Bb:76:A:H3'	2.56	0.41
11:AA:3006:A:C2	11:AA:3141:A:C4	3.08	0.41
11:AA:3225:C:C2	11:AA:3226:A:C8	3.08	0.41
12:Aa:171:LYS:HB3	12:Aa:274:ASN:ND2	2.35	0.41
12:Aa:578:LYS:HD3	12:Aa:840:ASP:HB3	2.03	0.41
90:Aa:1002:SO1:H102	90:Aa:1002:SO1:H16	1.47	0.41
13:B:35:ALA:HB2	13:B:58:ILE:HG23	2.02	0.41
13:B:120:ASN:OD1	13:B:145:HIS:HB2	2.20	0.41
29:H:128:ARG:NH1	29:H:128:ARG:HG2	2.35	0.41
30:HH:179:ARG:HA	30:HH:179:ARG:HD3	1.73	0.41
42:NN:90:GLN:NE2	42:NN:170:ASP:OD2	2.51	0.41
61:c:93:A:N6	61:c:396:G:H1'	2.34	0.41
61:c:175:G:H1'	61:c:266:A:N6	2.34	0.41
61:c:206:A:H1'	61:c:262:U:C2	2.55	0.41
61:c:269:G:H2'	61:c:270:C:H6	1.85	0.41
61:c:888:U:H2'	61:c:889:U:H6	1.82	0.41
61:c:1529:C:H2'	61:c:1530:C:C6	2.55	0.41
61:c:1607:G:C2	61:c:1608:U:C5	3.08	0.41
61:c:1636:C:O2	61:c:1765:A:N6	2.53	0.41
61:c:1647:U:H2'	61:c:1648:A:C8	2.55	0.41
61:c:1787:C:H2'	61:c:1788:G:C8	2.55	0.41
64:f:116:LYS:HG2	64:f:127:ALA:CB	2.50	0.41
68:j:7:TYR:HB3	68:j:12:SER:HB3	2.01	0.41
8:7:224:ASN:OD1	8:7:224:ASN:N	2.54	0.41
11:AA:255:A:H2'	11:AA:256:G:C8	2.55	0.41
11:AA:397:A:H5''	11:AA:399:A:OP1	2.21	0.41
11:AA:608:A:O3'	28:GG:326:ARG:NH2	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:638:C:C2	11:AA:639:G:C8	3.09	0.41
11:AA:1573:G:H2'	11:AA:1574:C:O4'	2.20	0.41
11:AA:1700:G:H2'	11:AA:1701:C:C6	2.55	0.41
11:AA:2452:G:H3'	11:AA:2462:A:H8	1.85	0.41
11:AA:2466:G:H2'	11:AA:2467:G:C4	2.55	0.41
11:AA:2506:U:H2'	11:AA:2507:C:C6	2.55	0.41
11:AA:2707:C:H2'	11:AA:2708:C:C6	2.56	0.41
11:AA:2861:U:H2'	11:AA:2862:U:O4'	2.21	0.41
12:Aa:9:MET:O	12:Aa:13:MET:HE3	2.20	0.41
15:Bb:37:YYG:H33	15:Bb:37:YYG:C1'	2.50	0.41
17:CC:141:C:H2'	17:CC:142:C:H6	1.86	0.41
20:DD:14:LYS:HE2	20:DD:14:LYS:HB3	1.88	0.41
20:DD:16:ARG:HD3	20:DD:66:PHE:CE1	2.55	0.41
20:DD:167:GLN:O	20:DD:171:SER:OG	2.37	0.41
25:F:17:ARG:HD2	25:F:17:ARG:HA	1.84	0.41
28:GG:152:VAL:HG21	28:GG:156:LEU:HD22	2.01	0.41
32:II:146:ILE:HG23	32:II:150:LYS:NZ	2.27	0.41
34:JJ:40:LYS:HE3	34:JJ:40:LYS:HB2	1.91	0.41
42:NN:49:LYS:HA	42:NN:64:LYS:H	1.86	0.41
44:OO:126:PHE:HB2	52:T:115:LYS:HB2	2.02	0.41
48:Q:32:TRP:CZ2	48:Q:53:PRO:HD2	2.55	0.41
61:c:351:C:OP1	61:c:630:A:O2'	2.26	0.41
61:c:1567:U:H2'	61:c:1568:C:O4'	2.20	0.41
66:h:128:LYS:HG2	66:h:140:VAL:HB	2.02	0.41
68:j:50:PHE:HB3	68:j:111:LEU:HD13	2.02	0.41
2:l:59:TYR:HB2	67:i:124:LEU:HD11	2.02	0.41
3:2:88:SER:O	3:2:92:ARG:HG3	2.20	0.41
11:AA:26:A:N3	11:AA:328:U:O2'	2.44	0.41
11:AA:797:U:O2	44:OO:12:ASN:ND2	2.52	0.41
11:AA:943:U:OP1	39:M:15:VAL:HA	2.21	0.41
11:AA:1498:A:OP1	19:D:6:THR:OG1	2.22	0.41
11:AA:2412:G:H2'	11:AA:2413:A:H8	1.86	0.41
11:AA:2501:U:H3'	11:AA:2502:A:H8	1.85	0.41
11:AA:2532:U:H2'	11:AA:2533:G:C8	2.54	0.41
11:AA:2541:U:H5''	11:AA:2542:U:C6	2.55	0.41
11:AA:3015:G:H2'	11:AA:3016:A:C8	2.55	0.41
11:AA:3113:A:H2'	11:AA:3114:A:O4'	2.19	0.41
11:AA:3268:A:OP1	32:II:46:ARG:NH2	2.52	0.41
12:Aa:218:TRP:CG	12:Aa:324:MET:HB3	2.56	0.41
12:Aa:306:VAL:C	12:Aa:307:LEU:HD23	2.45	0.41
15:Bb:25:C:C4	15:Bb:26:G:C8	3.09	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:CC:40:A:H2'	17:CC:41:A:C8	2.55	0.41
18:Cc:37:U:H2'	18:Cc:38:A:H8	1.86	0.41
28:GG:311:HIS:CE1	28:GG:314:LYS:HA	2.55	0.41
30:HH:8:LYS:HE2	30:HH:8:LYS:HB2	1.80	0.41
38:LL:113:GLU:CD	38:LL:115:ARG:HE	2.28	0.41
43:O:42:ILE:HD11	43:O:67:VAL:HG22	2.03	0.41
45:P:54:GLU:H	45:P:54:GLU:CD	2.29	0.41
49:QQ:64:VAL:CG1	49:QQ:102:ALA:HB1	2.50	0.41
61:c:292:U:H2'	61:c:293:U:H6	1.85	0.41
61:c:294:C:C2	61:c:295:A:C8	3.09	0.41
61:c:525:A:H2'	61:c:526:A:C8	2.55	0.41
61:c:565:C:H1'	84:z:66:SER:HB2	2.03	0.41
61:c:790:U:H2'	61:c:791:A:C8	2.56	0.41
61:c:1546:G:N7	79:u:134:ARG:NH2	2.69	0.41
61:c:1625:C:H2'	61:c:1626:U:H6	1.86	0.41
61:c:1626:U:H2'	61:c:1627:U:H6	1.85	0.41
62:d:28:ASN:HA	62:d:46:HIS:NE2	2.35	0.41
63:e:103:MET:HG3	63:e:215:VAL:HB	2.01	0.41
68:j:118:GLU:CD	68:j:119:GLN:H	2.29	0.41
70:l:41:LYS:HA	70:l:59:ARG:O	2.20	0.41
70:l:60:ILE:HG21	70:l:179:CYS:HB2	2.01	0.41
70:l:82:VAL:HG23	70:l:196:LEU:HD21	2.03	0.41
71:m:154:LYS:HD3	71:m:154:LYS:HA	1.74	0.41
78:t:7:LYS:HE2	78:t:7:LYS:HB2	1.67	0.41
78:t:25:THR:O	78:t:31:ASN:ND2	2.42	0.41
84:z:41:SER:O	84:z:41:SER:OG	2.25	0.41
10:A:97:ALA:O	10:A:101:ARG:HG3	2.21	0.41
11:AA:179:C:H2'	11:AA:180:C:H6	1.85	0.41
11:AA:788:C:H2'	11:AA:789:A:C8	2.54	0.41
11:AA:1048:A:H2'	40:MM:22:TYR:CZ	2.55	0.41
11:AA:1105:A:H2'	11:AA:1106:G:C8	2.56	0.41
11:AA:1313:G:O2'	11:AA:1318:A:N1	2.49	0.41
11:AA:1910:A:H2'	11:AA:1911:A:C8	2.55	0.41
11:AA:2266:U:H6	11:AA:2266:U:H5''	1.85	0.41
11:AA:2748:A:H1'	30:HH:36:LEU:HD23	2.02	0.41
11:AA:3332:U:OP1	31:I:35:LYS:HD3	2.20	0.41
12:Aa:27:HIS:CD2	12:Aa:28:VAL:H	2.38	0.41
12:Aa:377:ASP:OD1	12:Aa:377:ASP:N	2.53	0.41
12:Aa:495:VAL:HG13	12:Aa:504:LEU:HD22	2.02	0.41
12:Aa:727:PRO:HG2	12:Aa:774:VAL:HB	2.02	0.41
22:E:73:LYS:HD2	22:E:75:PHE:CZ	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:E:125:LYS:HE2	22:E:127:ALA:HB2	2.02	0.41
24:Ee:165:ASN:OD1	24:Ee:165:ASN:N	2.54	0.41
28:GG:7:THR:N	28:GG:147:GLU:OE2	2.43	0.41
30:HH:148:ILE:HG23	30:HH:159:VAL:HG21	2.02	0.41
37:L:25:ILE:HG23	37:L:41:ALA:HB1	2.03	0.41
43:O:14:LEU:O	43:O:18:ILE:HG12	2.20	0.41
61:c:272:U:H2'	61:c:273:G:C8	2.53	0.41
61:c:341:A:H2'	61:c:342:C:C6	2.55	0.41
61:c:446:A:C6	61:c:447:U:C4	3.08	0.41
61:c:515:A:N6	61:c:537:G:O2'	2.52	0.41
61:c:1117:U:H2'	61:c:1118:G:C8	2.55	0.41
61:c:1219:A:C2'	61:c:1220:C:H5'	2.50	0.41
61:c:1603:U:H2'	61:c:1604:U:C6	2.56	0.41
65:g:18:TYR:CD1	65:g:18:TYR:C	2.99	0.41
74:p:106:ARG:HA	74:p:106:ARG:HE	1.85	0.41
77:s:131:GLY:HA2	77:s:138:PHE:CD1	2.56	0.41
78:t:86:PRO:HG2	78:t:87:GLU:OE1	2.21	0.41
1:O:17:LEU:O	66:h:67:GLN:NE2	2.53	0.41
11:AA:93:C:OP2	11:AA:2764:C:O2'	2.37	0.41
11:AA:209:A:H4'	11:AA:211:A:C8	2.56	0.41
11:AA:245:U:H2'	11:AA:246:U:N1	2.35	0.41
11:AA:952:A:H5''	41:N:15:LYS:HD3	2.03	0.41
11:AA:1478:C:H2'	11:AA:1479:U:H6	1.84	0.41
11:AA:2100:A:H2'	11:AA:2101:C:C6	2.56	0.41
11:AA:2223:A:OP2	11:AA:2223:A:H8	2.03	0.41
11:AA:2251:G:C2'	11:AA:2252:A:H5'	2.51	0.41
11:AA:2328:U:H2'	11:AA:2329:C:C6	2.55	0.41
11:AA:2631:U:OP1	11:AA:2757:U:O2'	2.32	0.41
11:AA:2684:C:H2'	11:AA:2685:C:C6	2.56	0.41
11:AA:3094:A:OP1	29:H:14:SER:OG	2.38	0.41
11:AA:3113:A:O2'	38:LL:69:ARG:HB3	2.21	0.41
14:BB:44:C:C2	14:BB:45:A:C8	3.08	0.41
15:Bb:67:A:H2'	15:Bb:68:U:H6	1.85	0.41
24:Ee:13:LEU:HD23	24:Ee:64:ILE:HD11	2.02	0.41
28:GG:342:LYS:HB3	28:GG:342:LYS:HE3	1.78	0.41
31:I:45:ASN:O	31:I:49:ILE:HG12	2.19	0.41
33:J:57:LEU:HD12	33:J:57:LEU:HA	1.97	0.41
38:LL:18:VAL:HG12	38:LL:20:ILE:HG13	2.01	0.41
38:LL:38:LEU:HB3	38:LL:41:ILE:HD12	2.03	0.41
38:LL:41:ILE:HD13	38:LL:71:VAL:CG2	2.50	0.41
42:NN:55:ARG:HG3	42:NN:56:THR:N	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:O:14:LEU:HD12	43:O:14:LEU:HA	1.88	0.41
45:P:7:VAL:HA	45:P:77:ARG:O	2.20	0.41
48:Q:75:LEU:HD23	48:Q:75:LEU:HA	1.91	0.41
55:W:8:ILE:O	55:W:12:LEU:HG	2.21	0.41
60:b:11:THR:HG21	60:b:23:ARG:O	2.20	0.41
61:c:64:U:O2'	61:c:168:A:N3	2.50	0.41
61:c:435:C:OP1	84:z:49:ALA:HA	2.20	0.41
61:c:1535:U:O2'	61:c:1536:G:H5''	2.20	0.41
66:h:181:VAL:HG12	66:h:227:VAL:HG22	2.02	0.41
71:m:148:VAL:HG11	71:m:156:ILE:HD11	2.02	0.41
72:n:5:LYS:HZ3	72:n:8:ARG:HB3	1.85	0.41
72:n:60:SER:HB3	72:n:65:TYR:CE1	2.55	0.41
77:s:10:PHE:CD1	77:s:10:PHE:C	2.98	0.41
77:s:39:VAL:HG21	77:s:48:VAL:HG21	2.02	0.41
80:v:63:ARG:O	80:v:67:MET:HG3	2.21	0.41
8:7:79:TYR:CE2	8:7:91:LEU:HD21	2.55	0.41
11:AA:99:A:H1'	11:AA:281:G:N7	2.36	0.41
11:AA:105:C:H2'	11:AA:106:A:H8	1.86	0.41
11:AA:121:A:H61	36:KK:126:SER:HB3	1.85	0.41
11:AA:129:U:H2'	11:AA:130:A:H8	1.84	0.41
11:AA:671:U:H2'	11:AA:672:A:C8	2.54	0.41
11:AA:789:A:H2'	11:AA:790:U:C6	2.54	0.41
11:AA:819:U:H2'	11:AA:820:A:H8	1.85	0.41
11:AA:943:U:H3'	39:M:13:GLY:HA2	2.03	0.41
11:AA:1221:A:H3'	11:AA:1222:G:H5'	2.01	0.41
11:AA:1500:G:H2'	11:AA:1501:U:O4'	2.21	0.41
11:AA:2150:G:O2'	11:AA:2189:U:OP1	2.36	0.41
11:AA:2470:C:O2'	11:AA:2471:U:H5'	2.21	0.41
11:AA:2738:A:O4'	41:N:37:PRO:HG2	2.21	0.41
12:Aa:147:LEU:HD23	12:Aa:192:TYR:HB2	2.02	0.41
16:C:71:LEU:HD11	16:C:99:THR:HG21	2.03	0.41
16:C:148:GLU:OE1	16:C:151:ARG:NH1	2.44	0.41
17:CC:143:U:H2'	17:CC:144:G:O4'	2.21	0.41
26:FF:187:SER:O	26:FF:190:GLU:HG2	2.21	0.41
28:GG:342:LYS:HE2	34:JJ:56:GLU:OE2	2.20	0.41
32:II:68:PRO:HG3	32:II:145:LEU:HD13	2.02	0.41
61:c:255:U:H2'	61:c:256:A:C8	2.55	0.41
61:c:562:OMG:H2'	61:c:563:U:C6	2.56	0.41
61:c:1219:A:O2'	72:n:48:SER:HA	2.21	0.41
61:c:1502:G:O6	80:v:102:ARG:NH1	2.47	0.41
61:c:1635:A:N6	64:f:92:ALA:H	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
65:g:170:THR:HG23	65:g:187:LYS:HG2	2.02	0.41
68:j:14:LYS:HD2	68:j:123:GLY:O	2.21	0.41
69:k:126:LEU:HG	69:k:173:TYR:CE1	2.55	0.41
79:u:86:LEU:HD22	79:u:99:HIS:HB2	2.03	0.41
3:2:45:VAL:HG23	3:2:64:LEU:HD13	2.03	0.41
6:5:10:HIS:HE1	61:c:1204:A:N3	2.18	0.41
8:7:157:VAL:HA	8:7:158:PRO:HD3	1.93	0.41
8:7:170:ILE:HD12	8:7:170:ILE:HA	1.92	0.41
8:7:250:TYR:O	8:7:265:LEU:HD12	2.20	0.41
8:7:299:GLN:OE1	8:7:299:GLN:N	2.51	0.41
11:AA:184:U:H2'	11:AA:185:C:H6	1.86	0.41
11:AA:270:U:H2'	11:AA:271:C:C6	2.56	0.41
11:AA:341:G:C8	28:GG:191:LYS:HD3	2.56	0.41
11:AA:1169:A:H4'	34:JJ:219:LYS:HD3	2.03	0.41
11:AA:1213:G:O2'	22:E:90:MET:HG2	2.21	0.41
11:AA:1889:G:OP1	26:FF:246:LEU:N	2.50	0.41
11:AA:2232:A:H2'	11:AA:2233:A:H8	1.84	0.41
11:AA:2512:C:H2'	11:AA:2513:U:C6	2.56	0.41
11:AA:2760:C:N3	59:a:63:LYS:HE3	2.36	0.41
11:AA:2775:U:H2'	11:AA:2776:C:C6	2.56	0.41
11:AA:3159:C:H2'	11:AA:3160:U:H6	1.86	0.41
12:Aa:155:VAL:O	12:Aa:209:VAL:HA	2.20	0.41
12:Aa:460:ASP:C	12:Aa:462:PHE:H	2.28	0.41
17:CC:25:G:N7	35:K:13:ARG:NH1	2.67	0.41
17:CC:80:A:H2'	17:CC:81:U:C6	2.56	0.41
19:D:155:LEU:HD23	19:D:155:LEU:HA	1.91	0.41
19:D:163:ARG:HD3	61:c:813:U:C2	2.56	0.41
20:DD:118:ASP:OD1	20:DD:118:ASP:N	2.52	0.41
24:Ee:13:LEU:HD13	24:Ee:13:LEU:HA	1.87	0.41
30:HH:148:ILE:CG2	30:HH:151:GLN:HB3	2.51	0.41
31:I:3:VAL:HG11	31:I:12:LYS:HD2	2.02	0.41
34:JJ:176:TYR:CZ	34:JJ:197:GLN:HG2	2.55	0.41
34:JJ:236:ILE:HD12	34:JJ:236:ILE:HA	1.96	0.41
37:L:81:LEU:HD22	51:S:90:ILE:HG12	2.02	0.41
42:NN:49:LYS:HG2	42:NN:64:LYS:HG2	2.03	0.41
46:PP:14:LEU:H	46:PP:19:ARG:NH2	2.19	0.41
54:V:26:SER:HB3	54:V:35:SER:OG	2.21	0.41
56:X:25:GLN:H	56:X:25:GLN:CD	2.29	0.41
61:c:300:A:H2'	61:c:301:A:C8	2.56	0.41
61:c:301:A:H2'	61:c:302:U:C6	2.56	0.41
61:c:385:A:H2'	61:c:386:G:C8	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:518:A:C2'	61:c:519:C:H5''	2.51	0.41
61:c:1143:A:O2'	61:c:1300:A:N1	2.48	0.41
61:c:1292:G:H2'	61:c:1293:U:C6	2.56	0.41
61:c:1321:A:H5''	62:d:104:PRO:HG3	2.03	0.41
61:c:1332:C:H4'	65:g:203:PRO:HB3	2.02	0.41
61:c:1351:G:C6	61:c:1375:A:C6	3.09	0.41
61:c:1366:U:H2'	61:c:1367:G:O4'	2.20	0.41
61:c:1610:G:N7	77:s:14:LYS:NZ	2.60	0.41
63:e:138:PHE:HD2	63:e:214:LYS:HB3	1.85	0.41
64:f:174:ARG:O	71:m:97:LEU:HB3	2.21	0.41
64:f:227:PRO:HA	64:f:230:TRP:CE2	2.56	0.41
65:g:179:GLN:O	65:g:179:GLN:HG2	2.21	0.41
69:k:32:PRO:HA	69:k:35:LYS:NZ	2.36	0.41
69:k:58:LEU:HD23	69:k:58:LEU:HA	1.86	0.41
69:k:78:THR:HG23	69:k:90:VAL:HG12	2.03	0.41
74:p:18:TYR:O	83:y:56:HIS:ND1	2.54	0.41
76:r:59:LYS:HD3	76:r:59:LYS:HA	1.76	0.41
77:s:94:GLN:HG2	77:s:102:LYS:HE3	2.03	0.41
79:u:6:GLN:NE2	79:u:8:GLN:HB2	2.36	0.41
80:v:61:VAL:O	80:v:65:ILE:HD12	2.21	0.41
82:x:80:LYS:HD2	82:x:80:LYS:HA	1.75	0.41
83:y:19:LYS:HE2	83:y:19:LYS:HB3	1.82	0.41
84:z:48:HIS:CD2	84:z:105:ALA:HB2	2.56	0.41
8:7:36:ALA:HB1	8:7:68:VAL:HG13	2.03	0.41
8:7:117:LYS:HD2	8:7:117:LYS:HA	1.92	0.41
11:AA:137:G:H2'	11:AA:138:U:C6	2.56	0.41
11:AA:584:G:H2'	11:AA:585:A:H8	1.85	0.41
11:AA:1063:G:N3	11:AA:1066:G:H1'	2.35	0.41
11:AA:1327:C:O2'	50:R:76:GLY:HA2	2.21	0.41
11:AA:1340:G:OP2	48:Q:61:LYS:NZ	2.40	0.41
11:AA:1350:A:C8	11:AA:1351:U:H5	2.39	0.41
11:AA:1507:G:H1'	13:B:139:TYR:CE2	2.55	0.41
11:AA:2618:G:O2'	11:AA:2865:U:OP1	2.35	0.41
11:AA:2915:U:C5	26:FF:7:GLU:HG3	2.56	0.41
11:AA:3132:C:H2'	11:AA:3133:C:C6	2.56	0.41
12:Aa:379:MET:HE3	12:Aa:379:MET:HB3	1.79	0.41
15:Bb:9:A:H2'	15:Bb:9:A:N3	2.36	0.41
19:D:92:GLN:O	19:D:96:ILE:HG13	2.20	0.41
20:DD:19:LEU:HD23	20:DD:88:PHE:HE1	1.85	0.41
20:DD:133:THR:O	20:DD:137:GLN:HG3	2.21	0.41
24:Ee:76:SER:HB2	24:Ee:79:SER:HB2	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:II:148:GLU:O	32:II:151:LYS:HG2	2.21	0.41
36:KK:184:ALA:O	36:KK:188:THR:HG23	2.21	0.41
40:MM:36:LEU:HD13	40:MM:69:ARG:HH11	1.85	0.41
44:OO:165:SER:O	44:OO:168:ARG:N	2.54	0.41
61:c:126:A:H62	61:c:291:G:N2	2.19	0.41
61:c:454:U:N1	66:h:66:MET:HG3	2.36	0.41
61:c:779:U:O2'	61:c:780:A:O4'	2.30	0.41
61:c:1013:A:H2'	61:c:1014:G:O4'	2.21	0.41
61:c:1174:C:O2'	61:c:1196:A:N6	2.54	0.41
61:c:1387:G:OP1	78:t:32:LYS:NZ	2.32	0.41
63:e:129:THR:OG1	63:e:133:TYR:HB2	2.21	0.41
67:i:121:ILE:O	67:i:126:ASP:HA	2.20	0.41
67:i:130:ILE:O	67:i:133:VAL:HG22	2.21	0.41
68:j:31:ARG:H	68:j:31:ARG:HG2	1.63	0.41
68:j:193:LEU:HD23	68:j:196:ARG:HH21	1.85	0.41
77:s:93:HIS:HA	77:s:97:VAL:HB	2.02	0.41
78:t:71:PHE:CE2	78:t:73:LEU:HB3	2.55	0.41
80:v:34:VAL:HG13	80:v:53:TRP:HE1	1.86	0.41
83:y:115:GLU:HA	83:y:118:ARG:HG2	2.01	0.41
8:7:26:SER:HB2	8:7:73:LEU:HG	2.03	0.40
8:7:144:LEU:HD11	8:7:186:PHE:CD1	2.56	0.40
8:7:222:LEU:HB2	8:7:232:TYR:O	2.21	0.40
11:AA:154:U:OP2	52:T:103:LYS:NZ	2.35	0.40
11:AA:209:A:H4'	11:AA:211:A:N7	2.36	0.40
11:AA:952:A:H4'	11:AA:968:G:H22	1.86	0.40
11:AA:975:C:H2'	11:AA:976:U:C6	2.56	0.40
11:AA:1138:U:O3'	34:JJ:97:PRO:HD3	2.21	0.40
11:AA:1904:C:H2'	11:AA:1905:G:O4'	2.21	0.40
11:AA:2503:G:H2'	11:AA:2504:U:H6	1.86	0.40
11:AA:2542:U:H2'	11:AA:2543:U:H6	1.86	0.40
11:AA:2726:C:O2'	11:AA:2727:A:H2'	2.21	0.40
11:AA:3301:U:H2'	11:AA:3302:U:C6	2.56	0.40
12:Aa:32:LYS:HB3	12:Aa:104:ASP:OD1	2.21	0.40
12:Aa:369:ILE:HD11	12:Aa:379:MET:HE2	2.03	0.40
12:Aa:616:ALA:HA	12:Aa:630:ALA:HB1	2.02	0.40
13:B:3:ARG:NE	17:CC:12:A:OP1	2.39	0.40
13:B:64:ASN:O	13:B:67:ILE:HG12	2.21	0.40
16:C:23:ASN:HB3	16:C:26:LEU:HB3	2.03	0.40
19:D:176:ARG:NH1	61:c:852:C:OP1	2.25	0.40
29:H:11:PHE:HB3	29:H:88:ARG:HH12	1.86	0.40
32:II:19:LYS:HB3	32:II:19:LYS:HE3	1.89	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:JJ:83:LEU:HD11	34:JJ:116:PHE:HB3	2.02	0.40
35:K:5:SER:OG	35:K:8:VAL:HG13	2.21	0.40
42:NN:37:LEU:HD11	42:NN:67:VAL:HG22	2.01	0.40
42:NN:92:ARG:HA	42:NN:172:LEU:HB2	2.02	0.40
45:P:71:LEU:HD23	45:P:71:LEU:HA	1.92	0.40
61:c:143:G:H1	61:c:171:A:H61	1.69	0.40
61:c:274:G:H2'	61:c:275:C:C6	2.56	0.40
61:c:643:G:H2'	61:c:644:C:H6	1.87	0.40
61:c:990:C:H2'	61:c:991:G:O4'	2.21	0.40
63:e:32:ILE:HD11	63:e:46:THR:HB	2.03	0.40
64:f:40:LYS:HD3	64:f:247:ALA:HB2	2.03	0.40
66:h:118:GLU:HB2	66:h:121:TYR:HE1	1.86	0.40
66:h:168:LYS:HA	66:h:168:LYS:HD3	1.70	0.40
72:n:4:PRO:O	72:n:7:ASP:N	2.54	0.40
72:n:10:LYS:H	72:n:10:LYS:HG2	1.74	0.40
79:u:86:LEU:HA	79:u:99:HIS:ND1	2.36	0.40
10:A:138:LEU:HD12	10:A:138:LEU:HA	1.85	0.40
11:AA:246:U:H2'	11:AA:247:C:C5	2.56	0.40
11:AA:283:G:O6	11:AA:304:G:H1'	2.21	0.40
11:AA:366:A:H2'	11:AA:367:A:O4'	2.21	0.40
11:AA:426:G:H5'	48:Q:50:ILE:HG22	2.02	0.40
11:AA:532:A:O2'	11:AA:533:A:H8	2.04	0.40
11:AA:562:C:H2'	11:AA:563:U:C6	2.56	0.40
11:AA:654:C:H2'	11:AA:655:C:C6	2.56	0.40
11:AA:999:G:H2'	11:AA:1000:C:C6	2.56	0.40
11:AA:1236:G:C5	24:Ee:16:ARG:HG2	2.57	0.40
11:AA:1242:G:C5	12:Aa:754:VAL:HB	2.57	0.40
11:AA:1504:A:N1	11:AA:1515:A:O2'	2.45	0.40
11:AA:1729:A:N6	60:b:42:CYS:HA	2.36	0.40
11:AA:1915:A:H2'	11:AA:1916:U:H6	1.86	0.40
11:AA:2472:U:N3	11:AA:2473:C:O2	2.54	0.40
11:AA:3044:G:H2'	11:AA:3045:G:C8	2.56	0.40
12:Aa:400:VAL:O	12:Aa:451:GLY:N	2.40	0.40
13:B:131:ARG:HG3	13:B:137:ASN:OD1	2.21	0.40
17:CC:26:U:H2'	17:CC:27:U:H6	1.83	0.40
17:CC:64:U:C2	17:CC:65:A:C8	3.09	0.40
17:CC:75:G:OP2	35:K:74:TYR:OH	2.36	0.40
17:CC:95:G:O4'	54:V:79:GLN:HG3	2.21	0.40
20:DD:18:TYR:CD2	20:DD:52:LEU:HD22	2.55	0.40
20:DD:28:VAL:HG12	20:DD:187:VAL:HG22	2.03	0.40
24:Ee:99:LYS:HG3	24:Ee:101:SER:HB2	2.04	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:FF:236:LYS:HE2	26:FF:236:LYS:HB2	1.92	0.40
39:M:76:ASP:OD1	39:M:77:LYS:HG2	2.21	0.40
42:NN:40:LEU:HD11	42:NN:125:MET:HE1	2.04	0.40
48:Q:4:LEU:HD23	48:Q:4:LEU:HA	1.91	0.40
48:Q:31:ASN:OD1	48:Q:31:ASN:N	2.51	0.40
61:c:91:G:H2'	61:c:92:A:O4'	2.22	0.40
61:c:140:A:H2	68:j:179:VAL:HG13	1.86	0.40
61:c:341:A:H1'	70:l:86:SER:O	2.20	0.40
61:c:404:G:H2'	61:c:405:C:C6	2.56	0.40
61:c:982:U:H2'	61:c:983:A:C8	2.56	0.40
61:c:1036:A:H2'	61:c:1037:C:C6	2.56	0.40
61:c:1036:A:H2'	61:c:1037:C:H6	1.86	0.40
61:c:1261:G:N3	61:c:1261:G:H2'	2.34	0.40
61:c:1514:U:H5''	61:c:1515:A:O4'	2.21	0.40
63:e:73:LEU:HD12	63:e:73:LEU:HA	1.89	0.40
64:f:63:VAL:HG11	64:f:69:ILE:HD11	2.02	0.40
64:f:97:ARG:NH1	64:f:117:THR:OG1	2.54	0.40
69:k:56:LYS:HD3	69:k:88:ARG:HE	1.85	0.40
79:u:77:THR:HG22	79:u:86:LEU:HD11	2.04	0.40
6:5:12:ARG:HG3	6:5:12:ARG:NH1	2.37	0.40
11:AA:70:A:H2	11:AA:72:C:H42	1.67	0.40
11:AA:874:U:H5''	11:AA:2950:G:OP1	2.21	0.40
11:AA:1381:A:H2'	11:AA:1382:G:C8	2.55	0.40
11:AA:1448:U:H5''	13:B:66:SER:O	2.21	0.40
11:AA:2683:U:H2'	11:AA:2684:C:H6	1.83	0.40
11:AA:2846:U:O2	57:Y:97:ARG:NH2	2.55	0.40
11:AA:2882:U:H2'	11:AA:2883:U:H6	1.85	0.40
11:AA:3041:U:H2'	11:AA:3042:U:C6	2.56	0.40
11:AA:3213:A:H2'	11:AA:3214:U:O4'	2.21	0.40
11:AA:3267:A:H2'	32:II:69:PHE:CZ	2.55	0.40
12:Aa:27:HIS:HB3	12:Aa:30:HIS:CG	2.57	0.40
12:Aa:325:ARG:HB2	12:Aa:325:ARG:HH11	1.87	0.40
16:C:150:VAL:HA	16:C:153:PHE:CD2	2.57	0.40
24:Ee:24:ALA:O	24:Ee:28:LEU:HG	2.22	0.40
24:Ee:28:LEU:HD12	24:Ee:29:ALA:H	1.85	0.40
33:J:96:LYS:HG3	33:J:107:VAL:HB	2.03	0.40
43:O:50:VAL:O	43:O:54:SER:OG	2.34	0.40
59:a:12:CYS:O	59:a:18:ARG:HA	2.20	0.40
61:c:393:C:H2'	61:c:394:C:C6	2.56	0.40
61:c:1330:G:H2'	61:c:1331:A:O4'	2.21	0.40
62:d:37:VAL:HG22	62:d:149:LEU:HD13	2.04	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
62:d:88:LYS:HA	62:d:88:LYS:HD3	1.84	0.40
63:e:145:LYS:HA	63:e:149:GLN:HE22	1.85	0.40
66:h:51:ARG:HD3	66:h:51:ARG:HA	1.91	0.40
69:k:44:LYS:N	69:k:61:PHE:O	2.50	0.40
71:m:53:ARG:NH2	71:m:99:LEU:O	2.54	0.40
76:r:85:ILE:HD11	76:r:116:LEU:HD13	2.03	0.40
80:v:105:LEU:HD12	80:v:122:ARG:CD	2.52	0.40
82:x:35:ASN:HB3	82:x:50:TYR:CG	2.56	0.40
1:0:128:LYS:NZ	1:0:132:ARG:HE	2.20	0.40
8:7:125:GLY:HA3	8:7:154:VAL:HG21	2.03	0.40
10:A:11:GLY:O	10:A:14:HIS:HB2	2.21	0.40
10:A:60:LYS:NZ	11:AA:1307:G:OP1	2.40	0.40
11:AA:592:A:H5'	32:II:17:ALA:O	2.21	0.40
11:AA:810:A:H2'	11:AA:811:U:C6	2.56	0.40
11:AA:1063:G:C6	25:F:109:VAL:HG22	2.56	0.40
11:AA:1541:G:H1'	11:AA:1557:A:C5	2.55	0.40
11:AA:1639:C:N4	37:L:17:ARG:HB2	2.36	0.40
11:AA:1648:A:H2'	11:AA:1649:U:O4'	2.22	0.40
11:AA:1680:G:H2'	11:AA:1681:U:H6	1.86	0.40
11:AA:2416:U:H2'	11:AA:2417:OMU:H6	2.03	0.40
11:AA:2443:A:H2'	11:AA:2444:C:H6	1.87	0.40
11:AA:2582:C:H2'	11:AA:2583:C:C6	2.56	0.40
11:AA:2681:U:OP1	42:NN:51:ARG:HG2	2.21	0.40
11:AA:2714:G:H4'	11:AA:2715:A:H5''	2.03	0.40
11:AA:2918:G:C2	11:AA:2919:A:N7	2.90	0.40
11:AA:3052:G:H2'	11:AA:3053:G:H8	1.85	0.40
12:Aa:232:LYS:HE3	12:Aa:232:LYS:HB3	1.91	0.40
12:Aa:381:TYR:HB2	12:Aa:478:MET:SD	2.61	0.40
12:Aa:464:LEU:HD23	12:Aa:464:LEU:HA	1.80	0.40
12:Aa:732:GLU:HA	12:Aa:768:VAL:O	2.21	0.40
14:BB:71:G:H2'	14:BB:72:A:H8	1.86	0.40
18:Cc:28:U:H2'	18:Cc:29:C:C6	2.56	0.40
18:Cc:76:C:H2'	18:Cc:77:A:H4'	2.03	0.40
25:F:97:LYS:HB3	25:F:97:LYS:HE2	1.89	0.40
26:FF:106:TRP:HB2	26:FF:133:TYR:CE1	2.56	0.40
29:H:87:ARG:HB3	29:H:89:ASP:OD1	2.21	0.40
30:HH:41:LYS:HD3	30:HH:41:LYS:HA	1.91	0.40
30:HH:211:LEU:HD12	30:HH:211:LEU:HA	1.83	0.40
33:J:26:VAL:HG22	33:J:28:THR:HG22	2.04	0.40
36:KK:72:PRO:HB3	49:QQ:17:ASP:HB3	2.03	0.40
51:S:67:LYS:O	51:S:71:THR:HG22	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:765:G:C6	71:m:149:ARG:HG3	2.56	0.40
61:c:896:U:O2	75:q:41:ARG:NH1	2.54	0.40
61:c:996:U:H2'	61:c:997:G:H8	1.86	0.40
61:c:1071:U:H2'	61:c:1072:C:C6	2.56	0.40
61:c:1166:A:O2'	61:c:1587:A:H4'	2.21	0.40
61:c:1175:U:OP2	79:u:137:HIS:ND1	2.54	0.40
61:c:1494:C:H2'	61:c:1495:C:C6	2.56	0.40
61:c:1545:A:H2'	61:c:1546:G:C8	2.57	0.40
61:c:1785:U:H2'	61:c:1786:G:H8	1.86	0.40
65:g:29:LEU:HB3	65:g:32:GLU:HB2	2.03	0.40
65:g:158:ILE:HD13	65:g:163:PRO:HB2	2.03	0.40
74:p:124:ARG:HG2	74:p:127:ARG:HH22	1.86	0.40
78:t:23:LYS:HD2	78:t:23:LYS:HA	1.77	0.40
8:7:68:VAL:HG21	8:7:82:SER:HB3	2.03	0.40
11:AA:7:C:H2'	11:AA:8:C:H6	1.87	0.40
11:AA:284:A:OP2	59:a:41:ARG:NH1	2.42	0.40
11:AA:417:A:H2'	11:AA:418:A:H8	1.83	0.40
11:AA:649:A2M:HM'3	11:AA:649:A2M:H1'	1.65	0.40
11:AA:1182:A:H2'	11:AA:1183:C:H6	1.86	0.40
11:AA:1719:G:N7	19:D:121:HIS:HE1	2.20	0.40
11:AA:2185:G:O2'	11:AA:2314:U:OP2	2.31	0.40
11:AA:2226:U:H2'	11:AA:2227:C:C6	2.57	0.40
11:AA:2235:C:O2'	18:Cc:72:C:H5''	2.21	0.40
11:AA:2291:A:H2'	11:AA:2292:U:C6	2.56	0.40
11:AA:2413:A:H2'	11:AA:2414:G:C8	2.55	0.40
11:AA:2416:U:H2'	11:AA:2417:OMU:C6	2.52	0.40
11:AA:2459:A:N6	11:AA:2483:G:H22	2.20	0.40
11:AA:2881:C:OP1	26:FF:11:HIS:NE2	2.53	0.40
11:AA:3101:G:H2'	11:AA:3102:G:C8	2.57	0.40
11:AA:3205:G:OP2	11:AA:3206:C:N4	2.47	0.40
12:Aa:42:ARG:NH1	12:Aa:332:ASP:OD1	2.55	0.40
12:Aa:576:LEU:HD21	12:Aa:585:ARG:HB3	2.03	0.40
17:CC:19:C:H2'	17:CC:20:U:C6	2.55	0.40
17:CC:125:U:C3'	17:CC:126:A:H5'	2.52	0.40
24:Ee:163:PRO:HB2	24:Ee:165:ASN:HD21	1.87	0.40
29:H:104:ASN:OD1	29:H:108:GLU:N	2.43	0.40
33:J:57:LEU:HG	33:J:62:VAL:HG22	2.04	0.40
43:O:16:LEU:HA	43:O:19:LYS:HG2	2.04	0.40
48:Q:55:ILE:HD12	48:Q:55:ILE:HA	1.90	0.40
54:V:43:LYS:HE2	54:V:43:LYS:HB2	1.88	0.40
61:c:982:U:H2'	61:c:983:A:H8	1.87	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:1213:G:HO2'	61:c:1244:A:H62	1.64	0.40
61:c:1240:U:H1'	61:c:1244:A:C2	2.54	0.40
61:c:1368:G:O2'	61:c:1369:U:O4'	2.32	0.40
61:c:1483:A:H4'	77:s:71:GLY:C	2.46	0.40
61:c:1503:A:C6	79:u:84:TRP:CG	3.09	0.40
68:j:175:ILE:HD11	68:j:178:LEU:HD22	2.04	0.40
79:u:26:ILE:HG13	79:u:31:ALA:HB2	2.04	0.40
80:v:39:THR:HA	80:v:100:ILE:HD12	2.04	0.40
81:w:88:LYS:C	81:w:89:ARG:HG2	2.46	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%)	127 (96%)	5 (4%)	0	100	100
2	1	68/108 (63%)	62 (91%)	6 (9%)	0	100	100
3	2	95/119 (80%)	90 (95%)	5 (5%)	0	100	100
4	3	79/82 (96%)	75 (95%)	4 (5%)	0	100	100
5	4	61/67 (91%)	60 (98%)	1 (2%)	0	100	100
6	5	50/56 (89%)	49 (98%)	1 (2%)	0	100	100
7	6	51/63 (81%)	50 (98%)	1 (2%)	0	100	100
8	7	316/319 (99%)	303 (96%)	13 (4%)	0	100	100
9	8	32/152 (21%)	25 (78%)	7 (22%)	0	100	100
10	A	195/199 (98%)	193 (99%)	2 (1%)	0	100	100
12	Aa	811/842 (96%)	786 (97%)	25 (3%)	0	100	100
13	B	152/184 (83%)	149 (98%)	3 (2%)	0	100	100
16	C	183/186 (98%)	182 (100%)	1 (0%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
19	D	174/189 (92%)	170 (98%)	4 (2%)	0	100	100
20	DD	195/312 (62%)	191 (98%)	4 (2%)	0	100	100
22	E	170/172 (99%)	165 (97%)	5 (3%)	0	100	100
23	EE	250/254 (98%)	244 (98%)	6 (2%)	0	100	100
24	Ee	156/165 (94%)	150 (96%)	6 (4%)	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%)	92 (97%)	3 (3%)	0	100	100
28	GG	359/362 (99%)	348 (97%)	11 (3%)	0	100	100
29	H	127/137 (93%)	126 (99%)	1 (1%)	0	100	100
30	HH	294/297 (99%)	286 (97%)	8 (3%)	0	100	100
31	I	61/155 (39%)	61 (100%)	0	0	100	100
32	II	151/176 (86%)	147 (97%)	4 (3%)	0	100	100
33	J	118/142 (83%)	115 (98%)	3 (2%)	0	100	100
34	JJ	220/244 (90%)	216 (98%)	4 (2%)	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%)	129 (97%)	4 (3%)	0	100	100
38	LL	189/191 (99%)	181 (96%)	8 (4%)	0	100	100
39	M	146/149 (98%)	142 (97%)	4 (3%)	0	100	100
40	MM	213/221 (96%)	210 (99%)	3 (1%)	0	100	100
41	N	56/59 (95%)	54 (96%)	2 (4%)	0	100	100
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%)	177 (93%)	13 (7%)	1 (0%)	24	16
45	P	107/113 (95%)	103 (96%)	4 (4%)	0	100	100
46	PP	134/138 (97%)	133 (99%)	1 (1%)	0	100	100
48	Q	125/130 (96%)	125 (100%)	0	0	100	100
49	QQ	201/204 (98%)	193 (96%)	8 (4%)	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

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
52	T	117/120 (98%)	114 (97%)	3 (3%)	0	100	100
53	U	97/100 (97%)	89 (92%)	8 (8%)	0	100	100
54	V	82/88 (93%)	82 (100%)	0	0	100	100
55	W	75/78 (96%)	73 (97%)	2 (3%)	0	100	100
56	X	48/51 (94%)	46 (96%)	2 (4%)	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%)	93 (93%)	7 (7%)	0	100	100
60	b	89/92 (97%)	89 (100%)	0	0	100	100
62	d	204/252 (81%)	196 (96%)	8 (4%)	0	100	100
63	e	210/255 (82%)	202 (96%)	8 (4%)	0	100	100
64	f	215/254 (85%)	204 (95%)	11 (5%)	0	100	100
65	g	203/240 (85%)	192 (95%)	10 (5%)	1 (0%)	24	16
66	h	256/261 (98%)	249 (97%)	7 (3%)	0	100	100
67	i	195/225 (87%)	188 (96%)	7 (4%)	0	100	100
68	j	217/236 (92%)	215 (99%)	2 (1%)	0	100	100
69	k	182/190 (96%)	174 (96%)	8 (4%)	0	100	100
70	l	180/200 (90%)	168 (93%)	12 (7%)	0	100	100
71	m	183/197 (93%)	179 (98%)	4 (2%)	0	100	100
72	n	68/105 (65%)	63 (93%)	5 (7%)	0	100	100
73	o	140/156 (90%)	133 (95%)	7 (5%)	0	100	100
74	p	148/151 (98%)	145 (98%)	3 (2%)	0	100	100
75	q	125/137 (91%)	116 (93%)	9 (7%)	0	100	100
76	r	85/142 (60%)	82 (96%)	3 (4%)	0	100	100
77	s	135/143 (94%)	125 (93%)	10 (7%)	0	100	100
78	t	119/136 (88%)	115 (97%)	4 (3%)	0	100	100
79	u	143/146 (98%)	131 (92%)	12 (8%)	0	100	100
80	v	141/144 (98%)	140 (99%)	1 (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

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
84	z	142/145 (98%)	131 (92%)	11 (8%)	0	100	100
All	All	11741/13056 (90%)	11362 (97%)	377 (3%)	2 (0%)	100	100

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
44	OO	63	VAL
65	g	95	GLY

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	0	112/113 (99%)	107 (96%)	5 (4%)	24	18
2	1	61/89 (68%)	60 (98%)	1 (2%)	55	56
3	2	83/101 (82%)	82 (99%)	1 (1%)	63	65
4	3	70/71 (99%)	66 (94%)	4 (6%)	18	11
5	4	56/60 (93%)	49 (88%)	7 (12%)	4	1
6	5	46/49 (94%)	45 (98%)	1 (2%)	45	44
7	6	46/54 (85%)	44 (96%)	2 (4%)	26	20
8	7	259/262 (99%)	237 (92%)	22 (8%)	10	4
9	8	30/135 (22%)	29 (97%)	1 (3%)	33	28
10	A	160/162 (99%)	158 (99%)	2 (1%)	61	63
12	Aa	694/714 (97%)	654 (94%)	40 (6%)	18	11
13	B	125/146 (86%)	121 (97%)	4 (3%)	34	29
16	C	150/151 (99%)	150 (100%)	0	100	100
19	D	143/154 (93%)	143 (100%)	0	100	100
20	DD	167/254 (66%)	156 (93%)	11 (7%)	15	9
22	E	156/156 (100%)	154 (99%)	2 (1%)	61	63
23	EE	193/196 (98%)	193 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
24	Ee	129/136 (95%)	122 (95%)	7 (5%)	20	12
25	F	136/137 (99%)	136 (100%)	0	100	100
26	FF	320/323 (99%)	312 (98%)	8 (2%)	42	39
27	G	84/107 (78%)	83 (99%)	1 (1%)	63	65
28	GG	288/289 (100%)	278 (96%)	10 (4%)	32	27
29	H	101/105 (96%)	100 (99%)	1 (1%)	68	72
30	HH	244/245 (100%)	238 (98%)	6 (2%)	42	39
31	I	55/129 (43%)	55 (100%)	0	100	100
32	II	133/153 (87%)	130 (98%)	3 (2%)	44	42
33	J	104/118 (88%)	104 (100%)	0	100	100
34	JJ	186/205 (91%)	184 (99%)	2 (1%)	65	68
35	K	109/110 (99%)	108 (99%)	1 (1%)	70	75
36	KK	187/208 (90%)	183 (98%)	4 (2%)	47	46
37	L	115/116 (99%)	112 (97%)	3 (3%)	40	37
38	LL	171/171 (100%)	166 (97%)	5 (3%)	37	33
39	M	118/119 (99%)	114 (97%)	4 (3%)	32	27
40	MM	184/187 (98%)	177 (96%)	7 (4%)	29	24
41	N	46/47 (98%)	46 (100%)	0	100	100
42	NN	147/150 (98%)	139 (95%)	8 (5%)	20	12
43	O	81/88 (92%)	77 (95%)	4 (5%)	22	15
44	OO	154/159 (97%)	150 (97%)	4 (3%)	40	37
45	P	94/97 (97%)	93 (99%)	1 (1%)	65	68
46	PP	107/109 (98%)	105 (98%)	2 (2%)	50	50
47	Pp	2/2 (100%)	1 (50%)	1 (50%)	0	0
48	Q	109/111 (98%)	107 (98%)	2 (2%)	51	51
49	QQ	175/176 (99%)	173 (99%)	2 (1%)	65	68
50	R	90/91 (99%)	90 (100%)	0	100	100
51	S	94/103 (91%)	94 (100%)	0	100	100
52	T	104/105 (99%)	103 (99%)	1 (1%)	68	72
53	U	81/82 (99%)	79 (98%)	2 (2%)	42	39
54	V	69/71 (97%)	67 (97%)	2 (3%)	37	33

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
55	W	68/69 (99%)	65 (96%)	3 (4%)	25	19
56	X	45/46 (98%)	44 (98%)	1 (2%)	45	44
57	Y	47/116 (40%)	47 (100%)	0	100	100
58	Z	23/23 (100%)	22 (96%)	1 (4%)	26	20
59	a	87/91 (96%)	84 (97%)	3 (3%)	32	27
60	b	71/72 (99%)	69 (97%)	2 (3%)	38	34
62	d	165/210 (79%)	164 (99%)	1 (1%)	78	83
63	e	189/224 (84%)	184 (97%)	5 (3%)	40	37
64	f	176/205 (86%)	172 (98%)	4 (2%)	44	42
65	g	166/195 (85%)	153 (92%)	13 (8%)	11	5
66	h	220/222 (99%)	209 (95%)	11 (5%)	22	15
67	i	172/191 (90%)	165 (96%)	7 (4%)	27	21
68	j	188/201 (94%)	181 (96%)	7 (4%)	30	25
69	k	165/170 (97%)	155 (94%)	10 (6%)	17	10
70	l	146/161 (91%)	142 (97%)	4 (3%)	39	36
71	m	158/166 (95%)	153 (97%)	5 (3%)	34	29
72	n	65/98 (66%)	57 (88%)	8 (12%)	4	1
73	o	127/137 (93%)	122 (96%)	5 (4%)	28	23
74	p	127/128 (99%)	123 (97%)	4 (3%)	35	30
75	q	81/105 (77%)	77 (95%)	4 (5%)	22	15
76	r	77/118 (65%)	75 (97%)	2 (3%)	40	37
77	s	114/119 (96%)	110 (96%)	4 (4%)	32	27
78	t	105/124 (85%)	97 (92%)	8 (8%)	12	6
79	u	128/129 (99%)	117 (91%)	11 (9%)	10	4
80	v	115/116 (99%)	112 (97%)	3 (3%)	40	37
81	w	94/114 (82%)	89 (95%)	5 (5%)	20	13
82	x	74/74 (100%)	70 (95%)	4 (5%)	20	12
83	y	110/111 (99%)	109 (99%)	1 (1%)	70	75
84	z	119/120 (99%)	115 (97%)	4 (3%)	32	27
All	All	9990/10971 (91%)	9656 (97%)	334 (3%)	34	28

All (334) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	0	25	VAL
1	0	35	VAL
1	0	42	GLU
1	0	78	SER
1	0	100	VAL
2	1	78	ILE
3	2	45	VAL
4	3	2	VAL
4	3	61	THR
4	3	65	THR
4	3	77	THR
5	4	8	THR
5	4	11	LYS
5	4	15	VAL
5	4	30	VAL
5	4	39	THR
5	4	55	VAL
5	4	56	LEU
6	5	19	ARG
7	6	45	VAL
7	6	50	VAL
8	7	7	LEU
8	7	12	THR
8	7	16	HIS
8	7	34	LEU
8	7	45	TRP
8	7	48	THR
8	7	50	ASP
8	7	56	VAL
8	7	103	PHE
8	7	106	HIS
8	7	145	LEU
8	7	168	THR
8	7	178	VAL
8	7	203	THR
8	7	222	LEU
8	7	233	THR
8	7	242	SER
8	7	258	THR
8	7	271	VAL
8	7	278	PHE
8	7	308	ASN
8	7	315	VAL

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Mol	Chain	Res	Type
9	8	135	HIS
10	A	3	VAL
10	A	14	HIS
12	Aa	4	PHE
12	Aa	38	SER
12	Aa	72	SER
12	Aa	85	ASP
12	Aa	93	THR
12	Aa	97	SER
12	Aa	115	VAL
12	Aa	121	VAL
12	Aa	147	LEU
12	Aa	156	VAL
12	Aa	190	SER
12	Aa	197	LEU
12	Aa	202	VAL
12	Aa	227	THR
12	Aa	241	MET
12	Aa	253	LYS
12	Aa	254	THR
12	Aa	298	VAL
12	Aa	310	ASP
12	Aa	334	LEU
12	Aa	375	LYS
12	Aa	377	ASP
12	Aa	400	VAL
12	Aa	426	LEU
12	Aa	435	VAL
12	Aa	441	PHE
12	Aa	442	VAL
12	Aa	445	ILE
12	Aa	474	THR
12	Aa	483	PHE
12	Aa	518	VAL
12	Aa	525	SER
12	Aa	560	VAL
12	Aa	576	LEU
12	Aa	646	VAL
12	Aa	691	VAL
12	Aa	731	VAL
12	Aa	735	CYS
12	Aa	812	THR

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Mol	Chain	Res	Type
12	Aa	818	ILE
13	B	118	GLN
13	B	120	ASN
13	B	144	SER
13	B	149	VAL
20	DD	7	LYS
20	DD	24	SER
20	DD	25	LEU
20	DD	31	ASP
20	DD	67	LEU
20	DD	101	VAL
20	DD	117	GLU
20	DD	171	SER
20	DD	181	PHE
20	DD	199	SER
20	DD	200	SER
22	E	45	LEU
22	E	132	THR
24	Ee	13	LEU
24	Ee	38	SER
24	Ee	57	LYS
24	Ee	65	GLN
24	Ee	74	VAL
24	Ee	162	ILE
24	Ee	165	ASN
26	FF	104	THR
26	FF	139	GLN
26	FF	207	SER
26	FF	261	MET
26	FF	318	LYS
26	FF	336	VAL
26	FF	344	THR
26	FF	382	THR
27	G	47	VAL
28	GG	6	VAL
28	GG	12	THR
28	GG	37	THR
28	GG	60	THR
28	GG	67	THR
28	GG	82	THR
28	GG	177	ASP
28	GG	181	VAL

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Mol	Chain	Res	Type
28	GG	211	GLU
28	GG	345	GLU
29	H	9	THR
30	HH	69	ILE
30	HH	125	VAL
30	HH	163	LEU
30	HH	173	VAL
30	HH	187	THR
30	HH	261	THR
32	II	15	VAL
32	II	79	VAL
32	II	108	LYS
34	JJ	40	LYS
34	JJ	190	THR
35	K	8	VAL
36	KK	40	VAL
36	KK	109	LEU
36	KK	197	VAL
36	KK	203	VAL
37	L	60	LYS
37	L	75	VAL
37	L	95	VAL
38	LL	17	THR
38	LL	83	THR
38	LL	87	LYS
38	LL	107	ASP
38	LL	157	ASN
39	M	8	THR
39	M	15	VAL
39	M	93	SER
39	M	121	VAL
40	MM	36	LEU
40	MM	78	THR
40	MM	138	VAL
40	MM	183	LYS
40	MM	189	GLU
40	MM	200	LEU
40	MM	215	GLU
42	NN	46	VAL
42	NN	54	VAL
42	NN	56	THR
42	NN	107	ASP

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Mol	Chain	Res	Type
42	NN	112	LEU
42	NN	120	ILE
42	NN	132	ASN
42	NN	138	VAL
43	O	38	LYS
43	O	41	LEU
43	O	54	SER
43	O	101	LEU
44	OO	4	SER
44	OO	58	VAL
44	OO	69	VAL
44	OO	138	VAL
45	P	76	SER
46	PP	3	THR
46	PP	82	SER
47	Pp	1	MET
48	Q	41	VAL
48	Q	51	SER
49	QQ	15	GLN
49	QQ	18	VAL
52	T	37	SER
53	U	17	VAL
53	U	57	LEU
54	V	71	SER
54	V	84	SER
55	W	6	THR
55	W	48	SER
55	W	78	LEU
56	X	31	THR
58	Z	24	SER
59	a	2	VAL
59	a	16	THR
59	a	80	ARG
60	b	63	THR
60	b	70	THR
62	d	13	ASP
63	e	21	VAL
63	e	73	LEU
63	e	80	SER
63	e	107	THR
63	e	176	VAL
64	f	148	LEU

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Mol	Chain	Res	Type
64	f	218	ILE
64	f	237	VAL
64	f	242	ILE
65	g	44	THR
65	g	50	ILE
65	g	85	VAL
65	g	91	VAL
65	g	104	SER
65	g	108	LYS
65	g	129	SER
65	g	142	LEU
65	g	143	ARG
65	g	167	PHE
65	g	168	ILE
65	g	173	ARG
65	g	197	THR
66	h	20	LEU
66	h	91	THR
66	h	92	LEU
66	h	95	THR
66	h	96	ASN
66	h	146	THR
66	h	173	ILE
66	h	208	VAL
66	h	217	THR
66	h	233	LYS
66	h	236	ILE
67	i	33	VAL
67	i	47	SER
67	i	57	SER
67	i	62	VAL
67	i	79	ASN
67	i	93	LEU
67	i	208	SER
68	j	26	VAL
68	j	41	VAL
68	j	96	SER
68	j	124	LEU
68	j	150	GLU
68	j	153	VAL
68	j	162	VAL
69	k	24	PHE

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Mol	Chain	Res	Type
69	k	25	VAL
69	k	39	ARG
69	k	42	GLN
69	k	77	LEU
69	k	91	ILE
69	k	99	LEU
69	k	154	LEU
69	k	159	VAL
69	k	172	VAL
70	l	21	PHE
70	l	58	LEU
70	l	69	SER
70	l	97	THR
71	m	29	LYS
71	m	50	SER
71	m	87	SER
71	m	128	LEU
71	m	172	VAL
72	n	1	MET
72	n	3	MET
72	n	5	LYS
72	n	15	LEU
72	n	46	LEU
72	n	47	GLN
72	n	52	LYS
72	n	68	LEU
73	o	6	THR
73	o	7	VAL
73	o	21	ASN
73	o	31	THR
73	o	142	VAL
74	p	4	MET
74	p	30	SER
74	p	60	VAL
74	p	97	SER
75	q	26	THR
75	q	30	VAL
75	q	38	THR
75	q	110	LEU
76	r	41	VAL
76	r	90	ILE
77	s	48	VAL

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Mol	Chain	Res	Type
77	s	62	ASN
77	s	83	GLN
77	s	117	LEU
78	t	13	SER
78	t	30	THR
78	t	44	LYS
78	t	61	ILE
78	t	66	VAL
78	t	88	VAL
78	t	93	LEU
78	t	107	SER
79	u	15	LEU
79	u	19	ASN
79	u	20	THR
79	u	29	VAL
79	u	46	VAL
79	u	74	GLN
79	u	81	ILE
79	u	92	ILE
79	u	97	ASP
79	u	108	LYS
79	u	133	VAL
80	v	22	LEU
80	v	36	ILE
80	v	114	VAL
81	w	37	VAL
81	w	39	SER
81	w	86	ILE
81	w	88	LYS
81	w	92	ASP
82	x	10	GLU
82	x	46	ILE
82	x	82	VAL
82	x	84	SER
83	y	30	SER
84	z	57	LEU
84	z	66	SER
84	z	96	VAL
84	z	107	PHE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (75) such sidechains are listed below:

Mol	Chain	Res	Type
1	0	107	GLN
2	1	98	GLN
3	2	94	ASN
4	3	26	GLN
5	4	43	ASN
8	7	64	HIS
8	7	101	GLN
9	8	123	ASN
12	Aa	654	GLN
12	Aa	786	GLN
12	Aa	826	HIS
13	B	133	HIS
20	DD	137	GLN
23	EE	140	ASN
23	EE	211	HIS
23	EE	250	GLN
25	F	5	HIS
25	F	131	GLN
26	FF	182	GLN
26	FF	198	HIS
26	FF	243	HIS
27	G	40	HIS
28	GG	9	HIS
28	GG	160	GLN
29	H	98	ASN
30	HH	32	GLN
30	HH	111	GLN
32	II	57	HIS
32	II	97	ASN
33	J	65	GLN
33	J	137	ASN
35	K	42	GLN
38	LL	58	HIS
38	LL	139	ASN
39	M	62	HIS
41	N	6	ASN
42	NN	150	ASN
43	O	12	GLN
46	PP	119	GLN
46	PP	126	GLN
48	Q	26	HIS
49	QQ	32	GLN
52	T	59	ASN

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Mol	Chain	Res	Type
52	T	68	GLN
55	W	28	ASN
59	a	59	HIS
59	a	99	GLN
60	b	25	GLN
63	e	183	GLN
63	e	199	ASN
64	f	82	ASN
65	g	62	ASN
66	h	17	HIS
66	h	231	GLN
67	i	139	ASN
67	i	158	GLN
68	j	182	GLN
68	j	199	GLN
70	l	9	HIS
70	l	52	ASN
71	m	112	GLN
72	n	29	GLN
72	n	47	GLN
73	o	14	GLN
73	o	16	GLN
73	o	18	HIS
73	o	118	GLN
74	p	21	ASN
74	p	105	ASN
75	q	99	GLN
78	t	29	GLN
80	v	93	HIS
81	w	47	GLN
83	y	64	GLN
83	y	120	HIS

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
11	AA	3193/3396 (94%)	452 (14%)	16 (0%)
14	BB	121/121 (100%)	7 (5%)	2 (1%)
15	Bb	75/76 (98%)	31 (41%)	0
17	CC	157/158 (99%)	22 (14%)	0
18	Cc	76/77 (98%)	15 (19%)	0

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Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
21	Dd	5/39 (12%)	1 (20%)	0
61	c	1598/1800 (88%)	292 (18%)	0
All	All	5225/5667 (92%)	820 (15%)	18 (0%)

All (820) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
11	AA	6	A
11	AA	14	U
11	AA	26	A
11	AA	40	A
11	AA	43	A
11	AA	49	A
11	AA	60	A
11	AA	65	A
11	AA	66	A
11	AA	92	G
11	AA	110	G
11	AA	111	C
11	AA	122	A
11	AA	135	C
11	AA	136	G
11	AA	148	G
11	AA	156	G
11	AA	157	A
11	AA	165	A
11	AA	190	U
11	AA	200	C
11	AA	206	G
11	AA	219	A
11	AA	242	C
11	AA	243	G
11	AA	244	G
11	AA	247	C
11	AA	249	U
11	AA	250	U
11	AA	252	U
11	AA	269	G
11	AA	286	U
11	AA	295	A
11	AA	305	U
11	AA	329	U

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Mol	Chain	Res	Type
11	AA	376	G
11	AA	390	G
11	AA	399	A
11	AA	401	U
11	AA	402	A
11	AA	403	C
11	AA	420	G
11	AA	421	G
11	AA	422	A
11	AA	521	A
11	AA	523	A
11	AA	532	A
11	AA	533	A
11	AA	534	U
11	AA	543	C
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	569	A
11	AA	589	A
11	AA	592	A
11	AA	601	U
11	AA	602	A
11	AA	604	G
11	AA	607	A
11	AA	611	A
11	AA	612	U
11	AA	620	U
11	AA	621	A
11	AA	636	C
11	AA	649	A2M
11	AA	660	A
11	AA	677	A
11	AA	678	G
11	AA	681	U
11	AA	691	A
11	AA	705	A
11	AA	712	G
11	AA	715	A

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Mol	Chain	Res	Type
11	AA	719	U
11	AA	758	C
11	AA	766	U
11	AA	767	U
11	AA	780	A
11	AA	781	G
11	AA	785	G
11	AA	786	A
11	AA	799	G
11	AA	817	A2M
11	AA	830	A
11	AA	861	C
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	914	A
11	AA	916	G
11	AA	917	A
11	AA	921	A
11	AA	923	C
11	AA	924	G
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	1006	A
11	AA	1014	U
11	AA	1015	U
11	AA	1017	C
11	AA	1018	G
11	AA	1019	G
11	AA	1023	C
11	AA	1025	A

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Mol	Chain	Res	Type
11	AA	1026	A
11	AA	1027	A
11	AA	1028	U
11	AA	1029	G
11	AA	1031	C
11	AA	1034	U
11	AA	1036	A
11	AA	1047	A
11	AA	1064	A
11	AA	1072	G
11	AA	1081	U
11	AA	1087	G
11	AA	1093	A
11	AA	1094	U
11	AA	1096	U
11	AA	1097	G
11	AA	1098	A
11	AA	1103	A
11	AA	1117	G
11	AA	1131	G
11	AA	1153	A
11	AA	1159	A
11	AA	1160	C
11	AA	1180	A
11	AA	1181	U
11	AA	1182	A
11	AA	1186	G
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	1241	U
11	AA	1242	G
11	AA	1245	A
11	AA	1257	C
11	AA	1258	U
11	AA	1263	A

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Mol	Chain	Res	Type
11	AA	1265	U
11	AA	1272	C
11	AA	1278	A
11	AA	1287	A
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	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	1417	G
11	AA	1418	A
11	AA	1425	U
11	AA	1434	G
11	AA	1437	OMC
11	AA	1446	A
11	AA	1450	OMG
11	AA	1469	C
11	AA	1481	A
11	AA	1483	G
11	AA	1508	C
11	AA	1556	C
11	AA	1560	G
11	AA	1561	G
11	AA	1562	C
11	AA	1563	C
11	AA	1566	A
11	AA	1568	U
11	AA	1569	U
11	AA	1570	U
11	AA	1571	A

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Mol	Chain	Res	Type
11	AA	1573	G
11	AA	1581	C
11	AA	1583	A
11	AA	1589	A
11	AA	1605	A
11	AA	1621	A
11	AA	1629	U
11	AA	1630	U
11	AA	1642	A
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	1762	C
11	AA	1763	U
11	AA	1765	U
11	AA	1797	A
11	AA	1815	U
11	AA	1816	A
11	AA	1817	G
11	AA	1820	U
11	AA	1821	U
11	AA	1842	A
11	AA	1878	G
11	AA	1879	A
11	AA	1880	U
11	AA	1893	A
11	AA	1906	G
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

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Mol	Chain	Res	Type
11	AA	2170	U
11	AA	2188	A
11	AA	2192	C
11	AA	2206	G
11	AA	2208	A
11	AA	2223	A
11	AA	2244	A
11	AA	2249	G
11	AA	2252	A
11	AA	2253	G
11	AA	2254	U
11	AA	2257	C
11	AA	2264	U
11	AA	2266	U
11	AA	2272	G
11	AA	2273	G
11	AA	2281	A2M
11	AA	2282	U
11	AA	2307	G
11	AA	2310	U
11	AA	2313	A
11	AA	2315	G
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
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	2440	G
11	AA	2441	A
11	AA	2442	G

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Mol	Chain	Res	Type
11	AA	2443	A
11	AA	2445	A
11	AA	2446	U
11	AA	2448	G
11	AA	2449	A
11	AA	2450	G
11	AA	2453	U
11	AA	2454	G
11	AA	2459	A
11	AA	2460	U
11	AA	2461	A
11	AA	2462	A
11	AA	2464	U
11	AA	2466	G
11	AA	2467	G
11	AA	2470	C
11	AA	2471	U
11	AA	2472	U
11	AA	2474	G
11	AA	2475	G
11	AA	2476	C
11	AA	2477	G
11	AA	2478	C
11	AA	2479	C
11	AA	2480	A
11	AA	2481	G
11	AA	2484	A
11	AA	2487	U
11	AA	2488	A
11	AA	2489	C
11	AA	2490	C
11	AA	2492	C
11	AA	2494	A
11	AA	2495	C
11	AA	2496	C
11	AA	2499	U
11	AA	2500	A
11	AA	2501	U
11	AA	2503	G
11	AA	2505	U
11	AA	2511	A
11	AA	2514	U

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Mol	Chain	Res	Type
11	AA	2515	A
11	AA	2523	A
11	AA	2534	G
11	AA	2536	A
11	AA	2539	C
11	AA	2541	U
11	AA	2542	U
11	AA	2549	G
11	AA	2552	C
11	AA	2554	A
11	AA	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	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
11	AA	2705	A
11	AA	2714	G
11	AA	2728	G
11	AA	2729	OMU
11	AA	2737	C
11	AA	2753	G
11	AA	2772	C
11	AA	2777	G
11	AA	2778	G
11	AA	2793	OMG
11	AA	2795	U
11	AA	2796	G

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Mol	Chain	Res	Type
11	AA	2799	A
11	AA	2800	G
11	AA	2801	A
11	AA	2802	A
11	AA	2808	A
11	AA	2810	C
11	AA	2814	G
11	AA	2817	A
11	AA	2844	C
11	AA	2845	A
11	AA	2849	C
11	AA	2860	U
11	AA	2867	C
11	AA	2871	G
11	AA	2872	A
11	AA	2875	U
11	AA	2887	A
11	AA	2899	C
11	AA	2910	A
11	AA	2935	U
11	AA	2936	A
11	AA	2938	G
11	AA	2942	C
11	AA	2947	G
11	AA	2951	G
11	AA	2971	A
11	AA	2972	G
11	AA	2977	G
11	AA	2983	C
11	AA	2990	G
11	AA	2997	G
11	AA	3012	A
11	AA	3059	G
11	AA	3078	U
11	AA	3080	G
11	AA	3092	C
11	AA	3101	G
11	AA	3104	U
11	AA	3117	C
11	AA	3122	A
11	AA	3130	A
11	AA	3131	U

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Mol	Chain	Res	Type
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	3243	A
11	AA	3247	G
11	AA	3271	G
11	AA	3276	G
11	AA	3277	U
11	AA	3281	U
11	AA	3294	A
11	AA	3304	U
11	AA	3313	U
11	AA	3316	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	3389	U
14	BB	7	G
14	BB	11	A
14	BB	54	U

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Mol	Chain	Res	Type
14	BB	65	G
14	BB	73	C
14	BB	76	A
14	BB	112	G
15	Bb	2	C
15	Bb	4	G
15	Bb	5	A
15	Bb	6	U
15	Bb	7	U
15	Bb	13	C
15	Bb	15	G
15	Bb	16	U
15	Bb	17	U
15	Bb	19	G
15	Bb	20	G
15	Bb	21	A
15	Bb	24	G
15	Bb	26	G
15	Bb	32	C
15	Bb	40	C
15	Bb	46	G
15	Bb	47	U
15	Bb	48	C
15	Bb	49	C
15	Bb	55	U
15	Bb	56	C
15	Bb	58	A
15	Bb	60	C
15	Bb	62	A
15	Bb	63	C
15	Bb	64	A
15	Bb	65	G
15	Bb	69	U
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	52	A
17	CC	59	A
17	CC	62	C

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Mol	Chain	Res	Type
17	CC	63	G
17	CC	82	U
17	CC	83	C
17	CC	84	C
17	CC	86	U
17	CC	87	G
17	CC	90	U
17	CC	91	C
17	CC	95	G
17	CC	104	A
17	CC	106	C
17	CC	113	U
17	CC	125	U
17	CC	126	A
17	CC	152	G
18	Cc	4	G
18	Cc	16	C
18	Cc	17	C
18	Cc	18	C
18	Cc	19	G
18	Cc	20	G
18	Cc	21	U
18	Cc	22	A
18	Cc	43	G
18	Cc	48	U
18	Cc	57	C
18	Cc	58	A
18	Cc	62	C
18	Cc	65	G
18	Cc	77	A
21	Dd	22	U
61	c	2	A
61	c	4	C
61	c	26	A
61	c	27	U
61	c	28	A2M
61	c	29	U
61	c	34	G
61	c	43	A
61	c	47	A
61	c	61	A
61	c	67	A

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Mol	Chain	Res	Type
61	c	68	A
61	c	69	G
61	c	71	A
61	c	72	A
61	c	78	A
61	c	81	G
61	c	114	C
61	c	116	U
61	c	127	G
61	c	130	C
61	c	131	C
61	c	139	C
61	c	140	A
61	c	144	U
61	c	145	A
61	c	146	U
61	c	153	G
61	c	161	U
61	c	168	A
61	c	176	C
61	c	183	U
61	c	184	C
61	c	257	A
61	c	261	U
61	c	262	U
61	c	272	U
61	c	277	U
61	c	278	U
61	c	279	G
61	c	285	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	333	A
61	c	337	G
61	c	338	C
61	c	361	C
61	c	390	G

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Mol	Chain	Res	Type
61	c	400	A
61	c	401	A
61	c	402	C
61	c	404	G
61	c	416	A
61	c	423	G
61	c	424	C
61	c	426	G
61	c	428	A
61	c	434	G
61	c	439	U
61	c	444	C
61	c	445	A
61	c	448	C
61	c	455	C
61	c	468	A
61	c	475	A
61	c	477	A
61	c	514	G
61	c	515	A
61	c	519	C
61	c	526	A
61	c	534	A
61	c	537	G
61	c	538	A
61	c	540	G
61	c	542	A
61	c	555	A
61	c	557	G
61	c	558	U
61	c	559	C
61	c	565	C
61	c	578	OMU
61	c	579	A
61	c	582	U
61	c	583	C
61	c	594	A
61	c	611	U
61	c	619	A2M
61	c	620	A
61	c	623	A
61	c	624	G

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Mol	Chain	Res	Type
61	c	639	U
61	c	642	G
61	c	643	G
61	c	644	C
61	c	648	G
61	c	650	U
61	c	651	G
61	c	691	C
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	767	U
61	c	775	G
61	c	778	G
61	c	780	A
61	c	781	U
61	c	782	U
61	c	783	G
61	c	784	C
61	c	789	A
61	c	793	A
61	c	794	U
61	c	795	U
61	c	812	A
61	c	814	A
61	c	818	C
61	c	820	U
61	c	822	U
61	c	852	C
61	c	853	G
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

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Mol	Chain	Res	Type
61	c	914	G
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
61	c	999	U
61	c	1001	A
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	1032	G
61	c	1053	G
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	1159	C
61	c	1162	C
61	c	1185	U
61	c	1194	A
61	c	1196	A
61	c	1199	G
61	c	1200	G
61	c	1202	A

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Mol	Chain	Res	Type
61	c	1207	C
61	c	1212	G
61	c	1217	A
61	c	1218	G
61	c	1220	C
61	c	1221	A
61	c	1223	A
61	c	1224	A
61	c	1225	U
61	c	1226	A
61	c	1227	A
61	c	1228	G
61	c	1229	G
61	c	1230	A
61	c	1237	G
61	c	1238	A
61	c	1241	G
61	c	1244	A
61	c	1245	G
61	c	1246	C
61	c	1252	C
61	c	1256	A
61	c	1259	U
61	c	1261	G
61	c	1262	U
61	c	1263	G
61	c	1270	G
61	c	1274	C
61	c	1286	U
61	c	1297	G
61	c	1314	U
61	c	1315	U
61	c	1316	G
61	c	1320	U
61	c	1321	A
61	c	1336	A
61	c	1338	C
61	c	1339	C
61	c	1340	U
61	c	1346	A
61	c	1347	U
61	c	1354	G

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Mol	Chain	Res	Type
61	c	1356	U
61	c	1357	A
61	c	1361	U
61	c	1363	U
61	c	1368	G
61	c	1372	U
61	c	1373	C
61	c	1388	A
61	c	1390	U
61	c	1398	U
61	c	1411	A
61	c	1414	U
61	c	1415	U
61	c	1424	A
61	c	1425	A
61	c	1427	A
61	c	1428	OMG
61	c	1431	C
61	c	1432	U
61	c	1433	G
61	c	1436	A
61	c	1445	G
61	c	1459	C
61	c	1460	A
61	c	1469	A
61	c	1471	A
61	c	1472	C
61	c	1478	G
61	c	1490	C
61	c	1492	A
61	c	1496	U
61	c	1506	G
61	c	1510	U
61	c	1516	A
61	c	1521	G
61	c	1524	A
61	c	1535	U
61	c	1536	G
61	c	1537	C
61	c	1542	G
61	c	1557	U
61	c	1559	A

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Mol	Chain	Res	Type
61	c	1575	G7M
61	c	1590	G
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	1657	U
61	c	1658	G
61	c	1678	A
61	c	1681	A
61	c	1683	C
61	c	1716	C
61	c	1717	G
61	c	1755	A
61	c	1756	A
61	c	1757	G
61	c	1762	A
61	c	1766	A
61	c	1769	U
61	c	1780	G
61	c	1782	MA6
61	c	1792	G
61	c	1793	G
61	c	1794	A
61	c	1795	U
61	c	1796	C
61	c	1799	U

All (18) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
11	AA	601	U
11	AA	619	A
11	AA	873	C
11	AA	916	G
11	AA	1033	U
11	AA	1235	U
11	AA	1562	C
11	AA	2101	C
11	AA	2253	G

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Mol	Chain	Res	Type
11	AA	2418	G
11	AA	2487	U
11	AA	2500	A
11	AA	2792	A
11	AA	2971	A
11	AA	3121	U
11	AA	3206	C
14	BB	1	G
14	BB	72	A

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

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
11	OMU	AA	2417	11	19,22,23	3.10	8 (42%)	25,31,34	1.78	5 (20%)
11	OMU	AA	2421	11	19,22,23	3.12	8 (42%)	25,31,34	1.82	4 (16%)
11	OMG	AA	2793	11	23,26,27	0.47	0	32,38,41	0.54	0
11	A2M	AA	817	86,11	22,25,26	3.20	10 (45%)	30,36,39	2.93	11 (36%)
11	OMU	AA	2724	11	19,22,23	3.10	8 (42%)	25,31,34	1.78	5 (20%)
61	OMC	c	1007	61	19,22,23	0.50	0	25,31,34	0.66	0
11	OMU	AA	2347	11	19,22,23	3.12	8 (42%)	25,31,34	1.77	4 (16%)
11	OMU	AA	2729	11	19,22,23	3.09	8 (42%)	25,31,34	1.78	5 (20%)
61	A2M	c	28	61	22,25,26	3.21	9 (40%)	30,36,39	2.91	12 (40%)
61	A2M	c	100	86,61	22,25,26	3.20	9 (40%)	30,36,39	2.92	10 (33%)
61	A2M	c	974	61	22,25,26	3.20	10 (45%)	30,36,39	2.94	11 (36%)
61	OMU	c	1269	61	19,22,23	3.15	8 (42%)	25,31,34	1.78	5 (20%)
11	A2M	AA	2640	11	22,25,26	3.21	9 (40%)	30,36,39	2.93	10 (33%)
11	A2M	AA	2946	86,11	22,25,26	3.20	10 (45%)	30,36,39	2.97	11 (36%)
15	YYG	Bb	37	15	38,42,43	2.41	12 (31%)	45,62,65	2.13	12 (26%)
11	OMU	AA	898	11	19,22,23	3.11	8 (42%)	25,31,34	1.77	5 (20%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
61	MA6	c	1781	61	23,26,27	1.38	4 (17%)	33,38,41	3.21	12 (36%)
11	A2M	AA	807	11	22,25,26	3.20	10 (45%)	30,36,39	3.01	12 (40%)
11	OMU	AA	2921	86,11	19,22,23	3.10	8 (42%)	25,31,34	1.82	5 (20%)
61	OMC	c	1639	86,61	19,22,23	0.49	0	25,31,34	0.60	0
61	A2M	c	796	61	22,25,26	3.24	9 (40%)	30,36,39	3.00	12 (40%)
61	OMG	c	1428	86,61	23,26,27	0.46	0	32,38,41	0.46	0
11	OMU	AA	1888	11	19,22,23	3.11	8 (42%)	25,31,34	1.86	5 (20%)
61	A2M	c	420	61	22,25,26	3.20	9 (40%)	30,36,39	2.92	11 (36%)
11	OMC	AA	1437	86,11	19,22,23	0.52	0	25,31,34	0.84	1 (4%)
11	OMC	AA	2948	11	19,22,23	0.52	0	25,31,34	0.84	1 (4%)
11	OMG	AA	908	11	23,26,27	0.46	0	32,38,41	0.46	0
61	A2M	c	619	86,61	22,25,26	3.21	10 (45%)	30,36,39	2.93	10 (33%)
11	OMG	AA	2288	11	23,26,27	0.46	0	32,38,41	0.48	0
11	OMG	AA	2815	11	23,26,27	0.46	0	32,38,41	0.50	0
11	OMC	AA	2959	86,11	19,22,23	0.52	0	25,31,34	0.66	0
11	A2M	AA	1133	86,11	22,25,26	3.22	10 (45%)	30,36,39	2.97	11 (36%)
11	1MA	AA	2142	86,11	21,25,26	0.46	0	30,37,40	0.80	1 (3%)
61	OMG	c	562	61	23,26,27	0.46	0	32,38,41	0.48	0
11	A2M	AA	649	11	22,25,26	3.19	9 (40%)	30,36,39	2.90	10 (33%)
11	OMG	AA	2922	11	23,26,27	0.46	0	32,38,41	0.51	0
11	OMG	AA	867	88,11	23,26,27	0.47	0	32,38,41	0.50	0
61	OMG	c	1126	61	23,26,27	0.47	0	32,38,41	0.55	0
11	OMG	AA	2619	15,11	23,26,27	0.46	0	32,38,41	0.48	0
11	A2M	AA	2281	11	22,25,26	3.20	10 (45%)	30,36,39	3.10	14 (46%)
11	OMG	AA	2791	11	23,26,27	0.46	0	32,38,41	0.48	0
61	A2M	c	436	61	22,25,26	3.21	9 (40%)	30,36,39	2.91	10 (33%)
11	OMG	AA	805	11	23,26,27	0.45	0	32,38,41	0.55	0
11	A2M	AA	2280	11	22,25,26	3.20	9 (40%)	30,36,39	2.95	10 (33%)
11	5MC	AA	2278	86,11	19,22,23	0.50	0	26,32,35	0.67	0
11	OMG	AA	1450	11	23,26,27	0.46	0	32,38,41	0.44	0
11	UR3	AA	2634	11	19,22,23	2.92	6 (31%)	26,32,35	1.61	3 (11%)
11	5MC	AA	2870	88,11	19,22,23	0.63	0	26,32,35	0.60	0
61	OMU	c	578	61	19,22,23	3.13	8 (42%)	25,31,34	1.78	5 (20%)
61	4AC	c	1773	61	21,24,25	3.50	10 (47%)	28,34,37	1.68	5 (17%)
12	DDE	Aa	699	12	18,20,21	1.12	1 (5%)	17,28,30	0.96	0
61	4AC	c	1280	61	21,24,25	3.54	10 (47%)	28,34,37	1.70	5 (17%)
61	B8N	c	1191	61	25,29,30	3.40	7 (28%)	28,42,45	1.98	8 (28%)
61	G7M	c	1575	61,18	23,26,27	2.69	8 (34%)	34,39,42	2.37	11 (32%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
11	OMC	AA	2197	88,11	19,22,23	0.49	0	25,31,34	0.59	0
11	A2M	AA	876	11	22,25,26	3.20	9 (40%)	30,36,39	2.89	10 (33%)
61	OMC	c	414	61	19,22,23	0.49	0	25,31,34	0.63	0
61	A2M	c	541	61	22,25,26	3.20	9 (40%)	30,36,39	2.93	11 (36%)
11	A2M	AA	1449	86,11	22,25,26	3.20	9 (40%)	30,36,39	2.92	10 (33%)
61	OMG	c	1572	61	23,26,27	0.49	0	32,38,41	0.55	0
11	A2M	AA	2256	11	22,25,26	3.18	9 (40%)	30,36,39	3.04	11 (36%)
11	OMC	AA	663	11	19,22,23	0.51	0	25,31,34	0.75	0
11	1MA	AA	645	86,11	21,25,26	0.46	0	30,37,40	0.77	1 (3%)
11	A2M	AA	2220	11	22,25,26	3.19	9 (40%)	30,36,39	2.89	10 (33%)
11	OMC	AA	2337	11	19,22,23	0.49	0	25,31,34	0.62	0
61	MA6	c	1782	61	23,26,27	1.38	4 (17%)	33,38,41	3.25	12 (36%)
11	OMC	AA	650	11	19,22,23	0.51	0	25,31,34	0.67	0
61	OMG	c	1271	61	23,26,27	0.44	0	32,38,41	0.45	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
11	OMU	AA	2417	11	-	1/9/27/28	0/2/2/2
11	OMU	AA	2421	11	-	1/9/27/28	0/2/2/2
11	OMG	AA	2793	11	-	1/9/27/28	0/3/3/3
11	A2M	AA	817	86,11	-	1/9/27/28	0/3/3/3
11	OMU	AA	2724	11	-	1/9/27/28	0/2/2/2
61	OMC	c	1007	61	-	0/9/27/28	0/2/2/2
11	OMU	AA	2347	11	-	0/9/27/28	0/2/2/2
11	OMU	AA	2729	11	-	0/9/27/28	0/2/2/2
61	A2M	c	28	61	-	2/9/27/28	0/3/3/3
61	A2M	c	100	86,61	-	1/9/27/28	0/3/3/3
61	A2M	c	974	61	-	0/9/27/28	0/3/3/3
61	OMU	c	1269	61	-	4/9/27/28	0/2/2/2
11	A2M	AA	2640	11	-	0/9/27/28	0/3/3/3
11	A2M	AA	2946	86,11	-	0/9/27/28	0/3/3/3
15	YYG	Bb	37	15	-	4/24/42/43	0/4/4/4
11	OMU	AA	898	11	-	0/9/27/28	0/2/2/2
61	MA6	c	1781	61	-	0/11/29/30	0/3/3/3
11	A2M	AA	807	11	-	2/9/27/28	0/3/3/3
11	OMU	AA	2921	86,11	-	0/9/27/28	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
61	OMC	c	1639	86,61	-	0/9/27/28	0/2/2/2
61	A2M	c	796	61	-	0/9/27/28	0/3/3/3
61	OMG	c	1428	86,61	-	2/9/27/28	0/3/3/3
11	OMU	AA	1888	11	-	0/9/27/28	0/2/2/2
61	A2M	c	420	61	-	1/9/27/28	0/3/3/3
11	OMC	AA	1437	86,11	-	1/9/27/28	0/2/2/2
11	OMC	AA	2948	11	-	0/9/27/28	0/2/2/2
11	OMG	AA	908	11	-	3/9/27/28	0/3/3/3
61	A2M	c	619	86,61	-	4/9/27/28	0/3/3/3
11	OMG	AA	2288	11	-	0/9/27/28	0/3/3/3
11	OMG	AA	2815	11	-	0/9/27/28	0/3/3/3
11	OMC	AA	2959	86,11	-	0/9/27/28	0/2/2/2
11	A2M	AA	1133	86,11	-	0/9/27/28	0/3/3/3
11	1MA	AA	2142	86,11	-	0/7/25/26	0/3/3/3
61	OMG	c	562	61	-	0/9/27/28	0/3/3/3
11	A2M	AA	649	11	-	1/9/27/28	0/3/3/3
11	OMG	AA	2922	11	-	0/9/27/28	0/3/3/3
11	OMG	AA	867	88,11	-	2/9/27/28	0/3/3/3
61	OMG	c	1126	61	-	0/9/27/28	0/3/3/3
11	OMG	AA	2619	15,11	-	1/9/27/28	0/3/3/3
11	A2M	AA	2281	11	-	2/9/27/28	0/3/3/3
11	OMG	AA	2791	11	-	0/9/27/28	0/3/3/3
61	A2M	c	436	61	-	0/9/27/28	0/3/3/3
11	OMG	AA	805	11	-	0/9/27/28	0/3/3/3
11	A2M	AA	2280	11	-	1/9/27/28	0/3/3/3
11	5MC	AA	2278	86,11	-	0/7/25/26	0/2/2/2
11	OMG	AA	1450	11	-	2/9/27/28	0/3/3/3
11	UR3	AA	2634	11	-	0/7/25/26	0/2/2/2
11	5MC	AA	2870	88,11	-	4/7/25/26	0/2/2/2
61	OMU	c	578	61	-	3/9/27/28	0/2/2/2
61	4AC	c	1773	61	-	2/11/29/30	0/2/2/2
12	DDE	Aa	699	12	-	7/20/21/23	0/1/1/1
61	4AC	c	1280	61	-	2/11/29/30	0/2/2/2
61	B8N	c	1191	61	-	7/16/34/35	0/2/2/2
61	G7M	c	1575	61,18	-	3/7/25/26	0/3/3/3
11	OMC	AA	2197	88,11	-	4/9/27/28	0/2/2/2
11	A2M	AA	876	11	-	0/9/27/28	0/3/3/3
61	OMC	c	414	61	-	0/9/27/28	0/2/2/2
61	A2M	c	541	61	-	1/9/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
11	A2M	AA	1449	86,11	-	0/9/27/28	0/3/3/3
61	OMG	c	1572	61	-	1/9/27/28	0/3/3/3
11	A2M	AA	2256	11	-	2/9/27/28	0/3/3/3
11	OMC	AA	663	11	-	1/9/27/28	0/2/2/2
11	1MA	AA	645	86,11	-	1/7/25/26	0/3/3/3
11	A2M	AA	2220	11	-	1/9/27/28	0/3/3/3
11	OMC	AA	2337	11	-	0/9/27/28	0/2/2/2
61	MA6	c	1782	61	-	1/11/29/30	0/3/3/3
11	OMC	AA	650	11	-	0/9/27/28	0/2/2/2
61	OMG	c	1271	61	-	1/9/27/28	0/3/3/3

All (329) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	AA	807	A2M	C3'-C4'	-8.94	1.30	1.53
11	AA	2280	A2M	C3'-C4'	-8.91	1.30	1.53
61	c	796	A2M	C3'-C4'	-8.91	1.30	1.53
11	AA	1133	A2M	C3'-C4'	-8.90	1.30	1.53
61	c	541	A2M	C3'-C4'	-8.86	1.30	1.53
11	AA	817	A2M	C3'-C4'	-8.84	1.30	1.53
61	c	100	A2M	C3'-C4'	-8.84	1.30	1.53
61	c	619	A2M	C3'-C4'	-8.83	1.30	1.53
11	AA	2946	A2M	C3'-C4'	-8.83	1.30	1.53
11	AA	2640	A2M	C3'-C4'	-8.82	1.30	1.53
11	AA	876	A2M	C3'-C4'	-8.81	1.30	1.53
61	c	420	A2M	C3'-C4'	-8.79	1.30	1.53
11	AA	2220	A2M	C3'-C4'	-8.79	1.30	1.53
61	c	974	A2M	C3'-C4'	-8.77	1.30	1.53
61	c	436	A2M	C3'-C4'	-8.75	1.30	1.53
11	AA	1449	A2M	C3'-C4'	-8.72	1.30	1.53
11	AA	649	A2M	C3'-C4'	-8.70	1.30	1.53
61	c	28	A2M	C3'-C4'	-8.69	1.30	1.53
11	AA	2256	A2M	C3'-C4'	-8.56	1.31	1.53
11	AA	2281	A2M	C3'-C4'	-8.48	1.31	1.53
61	c	1191	B8N	C6-N1	8.11	1.56	1.36
11	AA	2256	A2M	O4'-C4'	7.88	1.62	1.45
61	c	28	A2M	O4'-C4'	7.85	1.62	1.45
61	c	796	A2M	O4'-C4'	7.84	1.62	1.45
61	c	1191	B8N	C4-N3	-7.83	1.26	1.40
11	AA	1133	A2M	O4'-C4'	7.81	1.62	1.45
61	c	1280	4AC	C4-N3	7.78	1.45	1.32
61	c	436	A2M	O4'-C4'	7.78	1.62	1.45

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
61	c	974	A2M	O4'-C4'	7.77	1.62	1.45
61	c	420	A2M	O4'-C4'	7.76	1.62	1.45
11	AA	2946	A2M	O4'-C4'	7.75	1.62	1.45
11	AA	2220	A2M	O4'-C4'	7.74	1.62	1.45
11	AA	2281	A2M	O4'-C4'	7.74	1.62	1.45
61	c	100	A2M	O4'-C4'	7.74	1.62	1.45
11	AA	1449	A2M	O4'-C4'	7.74	1.62	1.45
11	AA	2640	A2M	O4'-C4'	7.72	1.62	1.45
11	AA	649	A2M	O4'-C4'	7.71	1.62	1.45
61	c	1191	B8N	C4-C5	7.66	1.64	1.47
11	AA	876	A2M	O4'-C4'	7.66	1.62	1.45
61	c	1269	OMU	C2-N1	7.63	1.50	1.38
11	AA	817	A2M	O4'-C4'	7.60	1.61	1.45
61	c	541	A2M	O4'-C4'	7.58	1.61	1.45
61	c	1773	4AC	C4-N3	7.58	1.45	1.32
11	AA	2280	A2M	O4'-C4'	7.51	1.61	1.45
11	AA	807	A2M	O4'-C4'	7.45	1.61	1.45
11	AA	2421	OMU	C2-N1	7.44	1.50	1.38
61	c	578	OMU	C2-N1	7.44	1.50	1.38
61	c	619	A2M	O4'-C4'	7.43	1.61	1.45
11	AA	2347	OMU	C2-N1	7.43	1.50	1.38
11	AA	2724	OMU	C2-N1	7.34	1.50	1.38
11	AA	2921	OMU	C2-N1	7.31	1.49	1.38
11	AA	898	OMU	C2-N1	7.30	1.49	1.38
11	AA	2417	OMU	C2-N1	7.29	1.49	1.38
11	AA	1888	OMU	C2-N1	7.28	1.49	1.38
11	AA	2729	OMU	C2-N1	7.24	1.49	1.38
11	AA	2634	UR3	C2-N1	7.14	1.48	1.38
15	Bb	37	YYG	C21-N20	7.12	1.52	1.34
61	c	578	OMU	C2-N3	7.03	1.50	1.38
61	c	1269	OMU	C2-N3	6.98	1.50	1.38
11	AA	2347	OMU	C2-N3	6.97	1.50	1.38
11	AA	898	OMU	C2-N3	6.95	1.50	1.38
11	AA	2417	OMU	C2-N3	6.95	1.50	1.38
61	c	1773	4AC	C6-C5	6.95	1.51	1.35
11	AA	2724	OMU	C2-N3	6.94	1.50	1.38
11	AA	2921	OMU	C2-N3	6.92	1.50	1.38
11	AA	1888	OMU	C2-N3	6.92	1.50	1.38
11	AA	2729	OMU	C2-N3	6.91	1.50	1.38
11	AA	2421	OMU	C2-N3	6.89	1.50	1.38
61	c	1280	4AC	C6-C5	6.81	1.50	1.35
11	AA	2634	UR3	C6-C5	6.79	1.50	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
61	c	1575	G7M	C4-N3	6.68	1.49	1.34
15	Bb	37	YYG	C13-C12	6.52	1.58	1.50
61	c	1191	B8N	C2-N1	5.99	1.56	1.39
11	AA	1888	OMU	C6-C5	5.74	1.48	1.35
61	c	578	OMU	C6-C5	5.74	1.48	1.35
11	AA	2421	OMU	C6-C5	5.73	1.48	1.35
61	c	1269	OMU	C6-C5	5.73	1.48	1.35
11	AA	2921	OMU	C6-C5	5.71	1.48	1.35
11	AA	898	OMU	C6-C5	5.71	1.48	1.35
11	AA	2417	OMU	C6-C5	5.70	1.48	1.35
11	AA	2729	OMU	C6-C5	5.70	1.48	1.35
11	AA	2347	OMU	C6-C5	5.69	1.48	1.35
15	Bb	37	YYG	O23-C21	5.67	1.43	1.34
11	AA	2634	UR3	C2-N3	5.67	1.50	1.39
11	AA	2724	OMU	C6-C5	5.65	1.48	1.35
61	c	1575	G7M	C2-N3	5.47	1.46	1.33
61	c	1191	B8N	C6-C5	5.39	1.42	1.35
61	c	1280	4AC	C2-N3	5.35	1.47	1.36
61	c	1280	4AC	C2-N1	5.31	1.51	1.40
61	c	1773	4AC	C2-N1	5.25	1.51	1.40
61	c	1280	4AC	C7-N4	5.22	1.47	1.37
61	c	1773	4AC	C2-N3	5.19	1.46	1.36
61	c	1773	4AC	C7-N4	5.11	1.47	1.37
11	AA	2281	A2M	O4'-C1'	-5.11	1.30	1.42
61	c	1575	G7M	C5-N7	-5.09	1.33	1.39
61	c	1773	4AC	C4-N4	4.95	1.47	1.39
61	c	1280	4AC	C4-N4	4.94	1.47	1.39
61	c	619	A2M	O4'-C1'	-4.87	1.30	1.42
61	c	1575	G7M	C2-N2	4.84	1.45	1.34
11	AA	2256	A2M	O4'-C1'	-4.78	1.31	1.42
11	AA	807	A2M	O4'-C1'	-4.77	1.31	1.42
11	AA	876	A2M	O4'-C1'	-4.72	1.31	1.42
11	AA	649	A2M	O4'-C1'	-4.72	1.31	1.42
11	AA	1449	A2M	O4'-C1'	-4.71	1.31	1.42
11	AA	2280	A2M	O4'-C1'	-4.70	1.31	1.42
61	c	436	A2M	O4'-C1'	-4.70	1.31	1.42
61	c	28	A2M	O4'-C1'	-4.67	1.31	1.42
61	c	541	A2M	O4'-C1'	-4.67	1.31	1.42
11	AA	817	A2M	O4'-C1'	-4.66	1.31	1.42
11	AA	2640	A2M	O4'-C1'	-4.65	1.31	1.42
61	c	796	A2M	O4'-C1'	-4.61	1.31	1.42
61	c	974	A2M	O4'-C1'	-4.61	1.31	1.42

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
61	c	420	A2M	O4'-C1'	-4.61	1.31	1.42
11	AA	2946	A2M	O4'-C1'	-4.60	1.31	1.42
61	c	100	A2M	O4'-C1'	-4.60	1.31	1.42
11	AA	2220	A2M	O4'-C1'	-4.56	1.31	1.42
11	AA	1133	A2M	O4'-C1'	-4.54	1.31	1.42
61	c	578	OMU	C4-N3	4.47	1.46	1.38
61	c	436	A2M	C6-N6	4.46	1.45	1.34
61	c	796	A2M	C6-N6	4.46	1.45	1.34
61	c	541	A2M	C6-N6	4.46	1.45	1.34
11	AA	2724	OMU	C4-N3	4.46	1.46	1.38
61	c	420	A2M	C6-N6	4.45	1.45	1.34
61	c	28	A2M	C6-N6	4.45	1.45	1.34
11	AA	649	A2M	C6-N6	4.44	1.45	1.34
11	AA	2280	A2M	C6-N6	4.43	1.45	1.34
11	AA	876	A2M	C6-N6	4.43	1.45	1.34
11	AA	2640	A2M	C6-N6	4.43	1.45	1.34
11	AA	817	A2M	C6-N6	4.43	1.45	1.34
11	AA	2256	A2M	C6-N6	4.42	1.45	1.34
11	AA	1449	A2M	C6-N6	4.42	1.45	1.34
61	c	619	A2M	C6-N6	4.41	1.45	1.34
11	AA	2421	OMU	C4-N3	4.41	1.46	1.38
11	AA	2220	A2M	C6-N6	4.40	1.45	1.34
61	c	974	A2M	C6-N6	4.40	1.45	1.34
11	AA	807	A2M	C6-N6	4.40	1.45	1.34
11	AA	2921	OMU	C4-N3	4.40	1.46	1.38
11	AA	2946	A2M	C6-N6	4.39	1.45	1.34
11	AA	1133	A2M	C6-N6	4.38	1.45	1.34
11	AA	898	OMU	C4-N3	4.38	1.46	1.38
11	AA	2417	OMU	C4-N3	4.37	1.46	1.38
61	c	100	A2M	C6-N6	4.35	1.45	1.34
11	AA	1888	OMU	C4-N3	4.35	1.46	1.38
11	AA	2347	OMU	C4-N3	4.35	1.46	1.38
61	c	1269	OMU	C4-N3	4.35	1.46	1.38
11	AA	2729	OMU	C4-N3	4.29	1.46	1.38
61	c	1280	4AC	CM7-C7	4.26	1.59	1.50
11	AA	2281	A2M	C6-N6	4.22	1.45	1.34
15	Bb	37	YYG	C2-N1	-4.17	1.32	1.38
61	c	1773	4AC	CM7-C7	4.02	1.58	1.50
15	Bb	37	YYG	O18-C16	3.98	1.43	1.33
61	c	1191	B8N	C1'-C5	3.96	1.59	1.50
61	c	1782	MA6	C6-N6	3.95	1.47	1.36
61	c	1280	4AC	C5-C4	3.94	1.49	1.41

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
61	c	1781	MA6	C6-N6	3.94	1.47	1.36
61	c	1773	4AC	C5-C4	3.88	1.49	1.41
61	c	1575	G7M	C5-C6	3.81	1.53	1.43
15	Bb	37	YYG	C6-N1	-3.41	1.34	1.42
11	AA	2634	UR3	C6-N1	3.41	1.46	1.38
11	AA	2281	A2M	C5-C4	-3.09	1.33	1.39
11	AA	817	A2M	C5-C4	-2.99	1.33	1.39
11	AA	2417	OMU	O4-C4	-2.97	1.18	1.24
11	AA	898	OMU	O4-C4	-2.96	1.18	1.24
11	AA	1888	OMU	O4-C4	-2.96	1.18	1.24
11	AA	2921	OMU	O4-C4	-2.96	1.18	1.24
61	c	619	A2M	C5-C4	-2.95	1.33	1.39
61	c	578	OMU	C6-N1	2.95	1.45	1.38
11	AA	1133	A2M	C5-C4	-2.94	1.33	1.39
11	AA	2421	OMU	O4-C4	-2.94	1.18	1.24
11	AA	2729	OMU	O4-C4	-2.93	1.18	1.24
11	AA	2347	OMU	O4-C4	-2.93	1.18	1.24
11	AA	2946	A2M	C5-C4	-2.93	1.33	1.39
61	c	1269	OMU	C6-N1	2.93	1.45	1.38
11	AA	2724	OMU	O4-C4	-2.92	1.18	1.24
11	AA	2347	OMU	C6-N1	2.91	1.45	1.38
61	c	974	A2M	C5-C4	-2.91	1.33	1.39
11	AA	2280	A2M	C5-C4	-2.91	1.33	1.39
11	AA	649	A2M	C5-C4	-2.90	1.33	1.39
11	AA	2729	OMU	C6-N1	2.90	1.45	1.38
61	c	100	A2M	C5-C4	-2.90	1.33	1.39
11	AA	898	OMU	C6-N1	2.90	1.45	1.38
11	AA	1888	OMU	C6-N1	2.90	1.45	1.38
11	AA	2640	A2M	C5-C4	-2.89	1.33	1.39
11	AA	2921	OMU	C6-N1	2.89	1.45	1.38
61	c	28	A2M	C5-C4	-2.89	1.33	1.39
61	c	420	A2M	C5-C4	-2.89	1.33	1.39
11	AA	2220	A2M	C5-C4	-2.89	1.33	1.39
61	c	1269	OMU	O4-C4	-2.89	1.18	1.24
11	AA	2421	OMU	C6-N1	2.88	1.45	1.38
11	AA	2417	OMU	C6-N1	2.88	1.45	1.38
11	AA	807	A2M	C5-C4	-2.88	1.34	1.39
61	c	796	A2M	C5-C4	-2.87	1.34	1.39
61	c	619	A2M	O3'-C3'	2.86	1.50	1.43
61	c	578	OMU	O4-C4	-2.85	1.18	1.24
11	AA	1449	A2M	C5-C4	-2.85	1.34	1.39
11	AA	2256	A2M	C5-C4	-2.85	1.34	1.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	AA	876	A2M	C5-C4	-2.85	1.34	1.39
61	c	436	A2M	O3'-C3'	2.84	1.50	1.43
61	c	436	A2M	C5-C4	-2.84	1.34	1.39
11	AA	1449	A2M	O3'-C3'	2.83	1.50	1.43
11	AA	2281	A2M	O3'-C3'	2.81	1.49	1.43
61	c	1782	MA6	C5-C4	-2.81	1.34	1.39
11	AA	2724	OMU	C6-N1	2.80	1.44	1.38
61	c	1781	MA6	C5-C4	-2.80	1.34	1.39
61	c	1575	G7M	C2-N1	2.79	1.44	1.37
61	c	796	A2M	O2'-C2'	-2.79	1.35	1.42
61	c	541	A2M	C5-C4	-2.78	1.34	1.39
61	c	100	A2M	O3'-C3'	2.78	1.49	1.43
61	c	796	A2M	O3'-C3'	2.78	1.49	1.43
61	c	28	A2M	O3'-C3'	2.78	1.49	1.43
12	Aa	699	DDE	CBW-NCB	-2.77	1.48	1.54
61	c	541	A2M	O3'-C3'	2.77	1.49	1.43
11	AA	2640	A2M	O3'-C3'	2.76	1.49	1.43
61	c	420	A2M	O3'-C3'	2.76	1.49	1.43
11	AA	817	A2M	O3'-C3'	2.75	1.49	1.43
61	c	28	A2M	O2'-C2'	-2.75	1.35	1.42
11	AA	649	A2M	O3'-C3'	2.75	1.49	1.43
11	AA	2256	A2M	O3'-C3'	2.73	1.49	1.43
11	AA	876	A2M	O2'-C2'	-2.73	1.35	1.42
11	AA	2946	A2M	O2'-C2'	-2.72	1.36	1.42
61	c	974	A2M	O3'-C3'	2.72	1.49	1.43
11	AA	2946	A2M	O3'-C3'	2.71	1.49	1.43
11	AA	1133	A2M	O3'-C3'	2.71	1.49	1.43
11	AA	1449	A2M	O2'-C2'	-2.71	1.36	1.42
11	AA	807	A2M	O3'-C3'	2.70	1.49	1.43
11	AA	2220	A2M	O3'-C3'	2.70	1.49	1.43
11	AA	1133	A2M	O2'-C2'	-2.70	1.36	1.42
11	AA	807	A2M	O2'-C2'	-2.69	1.36	1.42
61	c	100	A2M	O2'-C2'	-2.69	1.36	1.42
11	AA	2280	A2M	O3'-C3'	2.69	1.49	1.43
11	AA	2281	A2M	O2'-C2'	-2.69	1.36	1.42
11	AA	2280	A2M	O2'-C2'	-2.69	1.36	1.42
61	c	541	A2M	O2'-C2'	-2.68	1.36	1.42
11	AA	817	A2M	O2'-C2'	-2.68	1.36	1.42
11	AA	876	A2M	O3'-C3'	2.67	1.49	1.43
11	AA	2634	UR3	C4-N3	2.66	1.45	1.40
61	c	619	A2M	O2'-C2'	-2.66	1.36	1.42
61	c	420	A2M	O2'-C2'	-2.65	1.36	1.42

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
61	c	436	A2M	O2'-C2'	-2.63	1.36	1.42
11	AA	2640	A2M	O2'-C2'	-2.62	1.36	1.42
11	AA	807	A2M	C8-N9	-2.62	1.33	1.37
11	AA	2220	A2M	O2'-C2'	-2.61	1.36	1.42
61	c	974	A2M	O2'-C2'	-2.61	1.36	1.42
61	c	541	A2M	C8-N9	-2.59	1.33	1.37
61	c	1773	4AC	C6-N1	2.58	1.44	1.38
11	AA	2640	A2M	C8-N9	-2.58	1.33	1.37
15	Bb	37	YYG	C8-N9	-2.58	1.31	1.37
15	Bb	37	YYG	C10-C11	2.57	1.54	1.49
11	AA	2281	A2M	C8-N9	-2.57	1.33	1.37
61	c	974	A2M	C8-N9	-2.55	1.33	1.37
11	AA	649	A2M	O2'-C2'	-2.54	1.36	1.42
61	c	796	A2M	C8-N9	-2.53	1.33	1.37
11	AA	2280	A2M	C8-N9	-2.53	1.33	1.37
11	AA	1133	A2M	C8-N9	-2.52	1.33	1.37
61	c	100	A2M	C8-N9	-2.52	1.33	1.37
11	AA	817	A2M	C8-N9	-2.52	1.33	1.37
11	AA	2256	A2M	C8-N9	-2.51	1.33	1.37
11	AA	876	A2M	C8-N9	-2.51	1.33	1.37
11	AA	1888	OMU	C5-C4	2.51	1.49	1.43
61	c	619	A2M	C8-N9	-2.50	1.33	1.37
61	c	1269	OMU	C5-C4	2.50	1.49	1.43
11	AA	2220	A2M	C8-N9	-2.50	1.33	1.37
11	AA	2421	OMU	C5-C4	2.50	1.49	1.43
61	c	436	A2M	C8-N9	-2.50	1.33	1.37
61	c	578	OMU	C5-C4	2.50	1.49	1.43
11	AA	1449	A2M	C8-N9	-2.49	1.33	1.37
61	c	28	A2M	C8-N9	-2.48	1.33	1.37
61	c	1575	G7M	O6-C6	-2.48	1.18	1.23
61	c	1575	G7M	C6-N1	2.48	1.43	1.38
11	AA	2729	OMU	C5-C4	2.48	1.49	1.43
11	AA	2946	A2M	C8-N9	-2.47	1.33	1.37
61	c	1280	4AC	C6-N1	2.46	1.44	1.38
11	AA	649	A2M	C8-N9	-2.46	1.33	1.37
11	AA	2724	OMU	O2-C2	-2.46	1.18	1.23
61	c	1269	OMU	O2-C2	-2.45	1.18	1.23
11	AA	2347	OMU	C5-C4	2.45	1.49	1.43
11	AA	2921	OMU	O2-C2	-2.44	1.18	1.23
11	AA	898	OMU	O2-C2	-2.44	1.18	1.23
11	AA	2347	OMU	O2-C2	-2.43	1.18	1.23
11	AA	2421	OMU	O2-C2	-2.43	1.18	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	AA	2417	OMU	O2-C2	-2.43	1.18	1.23
11	AA	2417	OMU	C5-C4	2.43	1.49	1.43
11	AA	898	OMU	C5-C4	2.43	1.49	1.43
11	AA	1888	OMU	O2-C2	-2.42	1.18	1.23
61	c	420	A2M	C8-N9	-2.42	1.33	1.37
11	AA	2729	OMU	O2-C2	-2.42	1.18	1.23
11	AA	2921	OMU	C5-C4	2.39	1.48	1.43
15	Bb	37	YYG	O6-C6	-2.39	1.18	1.23
61	c	28	A2M	C5-N7	-2.38	1.34	1.39
11	AA	2634	UR3	C5-C4	2.36	1.49	1.43
11	AA	2640	A2M	C5-N7	-2.35	1.34	1.39
61	c	1782	MA6	C5-N7	-2.35	1.34	1.39
11	AA	649	A2M	C5-N7	-2.33	1.34	1.39
11	AA	2724	OMU	C5-C4	2.33	1.48	1.43
61	c	1781	MA6	C5-N7	-2.32	1.34	1.39
61	c	1773	4AC	O7-C7	-2.31	1.18	1.23
61	c	578	OMU	O2-C2	-2.31	1.19	1.23
61	c	436	A2M	C5-N7	-2.30	1.34	1.39
11	AA	876	A2M	C5-N7	-2.30	1.34	1.39
11	AA	1133	A2M	C5-N7	-2.29	1.34	1.39
61	c	1280	4AC	O7-C7	-2.28	1.18	1.23
61	c	541	A2M	C5-N7	-2.28	1.34	1.39
11	AA	2220	A2M	C5-N7	-2.28	1.34	1.39
11	AA	1449	A2M	C5-N7	-2.27	1.34	1.39
11	AA	2256	A2M	O2'-C2'	-2.26	1.37	1.42
11	AA	807	A2M	C5-N7	-2.25	1.35	1.39
15	Bb	37	YYG	C5-N7	-2.24	1.34	1.39
61	c	796	A2M	C5-N7	-2.24	1.35	1.39
11	AA	2280	A2M	C5-N7	-2.24	1.35	1.39
11	AA	2281	A2M	C5-N7	-2.23	1.35	1.39
61	c	619	A2M	C5-N7	-2.22	1.35	1.39
11	AA	2946	A2M	C5-N7	-2.22	1.35	1.39
11	AA	817	A2M	C5-N7	-2.22	1.35	1.39
61	c	420	A2M	C5-N7	-2.21	1.35	1.39
61	c	100	A2M	C5-N7	-2.18	1.35	1.39
61	c	974	A2M	C5-N7	-2.18	1.35	1.39
61	c	1781	MA6	C8-N9	-2.17	1.33	1.37
11	AA	2256	A2M	C5-N7	-2.17	1.35	1.39
11	AA	2281	A2M	C4-N9	-2.14	1.33	1.37
11	AA	817	A2M	C4-N9	-2.09	1.33	1.37
61	c	619	A2M	C4-N9	-2.09	1.33	1.37
11	AA	1133	A2M	C4-N9	-2.09	1.33	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
61	c	1782	MA6	C8-N9	-2.08	1.34	1.37
61	c	1191	B8N	O4-C4	-2.07	1.18	1.23
15	Bb	37	YYG	O18-C19	-2.03	1.40	1.45
61	c	974	A2M	C4-N9	-2.02	1.33	1.37
11	AA	2946	A2M	C4-N9	-2.01	1.33	1.37
11	AA	807	A2M	C4-N9	-2.01	1.33	1.37
15	Bb	37	YYG	C11-N2	-2.00	1.34	1.38

All (337) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
61	c	1782	MA6	N1-C6-N6	-11.81	102.47	116.86
61	c	1781	MA6	N1-C6-N6	-11.65	102.66	116.86
61	c	1782	MA6	C5-C6-N6	7.92	137.86	125.33
61	c	1781	MA6	C5-C6-N6	7.92	137.86	125.33
15	Bb	37	YYG	C5-C4-N3	-7.15	118.19	123.99
11	AA	817	A2M	N6-C6-N1	-6.80	103.24	118.38
61	c	619	A2M	N6-C6-N1	-6.73	103.39	118.38
11	AA	807	A2M	N6-C6-N1	-6.72	103.42	118.38
61	c	974	A2M	N6-C6-N1	-6.63	103.61	118.38
61	c	420	A2M	N6-C6-N1	-6.60	103.67	118.38
61	c	796	A2M	N6-C6-N1	-6.60	103.68	118.38
11	AA	2280	A2M	N6-C6-N1	-6.59	103.69	118.38
11	AA	2220	A2M	N6-C6-N1	-6.59	103.69	118.38
11	AA	2281	A2M	N6-C6-N1	-6.58	103.73	118.38
61	c	436	A2M	N6-C6-N1	-6.58	103.73	118.38
11	AA	1449	A2M	N6-C6-N1	-6.57	103.75	118.38
61	c	100	A2M	N6-C6-N1	-6.56	103.76	118.38
11	AA	2256	A2M	N6-C6-N1	-6.56	103.76	118.38
11	AA	1133	A2M	N6-C6-N1	-6.55	103.78	118.38
11	AA	649	A2M	N6-C6-N1	-6.54	103.82	118.38
11	AA	876	A2M	N6-C6-N1	-6.53	103.83	118.38
11	AA	2640	A2M	N6-C6-N1	-6.53	103.83	118.38
61	c	541	A2M	N6-C6-N1	-6.49	103.92	118.38
61	c	28	A2M	N6-C6-N1	-6.48	103.95	118.38
11	AA	2946	A2M	N6-C6-N1	-6.45	104.02	118.38
11	AA	2281	A2M	N9-C8-N7	-6.18	105.17	113.94
11	AA	817	A2M	N9-C8-N7	-6.14	105.22	113.94
61	c	619	A2M	N9-C8-N7	-6.14	105.23	113.94
61	c	1280	4AC	CM7-C7-N4	6.06	125.05	115.27
11	AA	807	A2M	N9-C8-N7	-6.04	105.37	113.94
11	AA	2256	A2M	N9-C8-N7	-6.02	105.39	113.94

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
61	c	1773	4AC	CM7-C7-N4	6.01	124.97	115.27
61	c	796	A2M	N9-C8-N7	-6.00	105.42	113.94
11	AA	2280	A2M	N9-C8-N7	-5.96	105.48	113.94
11	AA	2946	A2M	N9-C8-N7	-5.96	105.49	113.94
61	c	420	A2M	N9-C8-N7	-5.95	105.50	113.94
61	c	974	A2M	N9-C8-N7	-5.92	105.54	113.94
11	AA	2640	A2M	N9-C8-N7	-5.91	105.56	113.94
11	AA	1133	A2M	N3-C2-N1	-5.90	119.66	128.58
61	c	100	A2M	N9-C8-N7	-5.90	105.57	113.94
11	AA	1449	A2M	N9-C8-N7	-5.89	105.58	113.94
11	AA	649	A2M	N9-C8-N7	-5.88	105.60	113.94
11	AA	1133	A2M	N9-C8-N7	-5.85	105.64	113.94
11	AA	2220	A2M	N9-C8-N7	-5.84	105.65	113.94
11	AA	2281	A2M	C4-N9-C8	5.83	111.86	105.74
61	c	436	A2M	N9-C8-N7	-5.82	105.68	113.94
11	AA	2634	UR3	C4-N3-C2	-5.79	119.92	124.58
61	c	1575	G7M	CN7-N7-C5	5.79	134.02	126.80
11	AA	817	A2M	N3-C2-N1	-5.79	119.82	128.58
61	c	619	A2M	N3-C2-N1	-5.77	119.85	128.58
11	AA	2281	A2M	N3-C2-N1	-5.75	119.88	128.58
11	AA	876	A2M	N9-C8-N7	-5.74	105.80	113.94
11	AA	649	A2M	N3-C2-N1	-5.73	119.91	128.58
61	c	796	A2M	N3-C2-N1	-5.71	119.93	128.58
61	c	974	A2M	N3-C2-N1	-5.71	119.94	128.58
11	AA	1888	OMU	C4-N3-C2	-5.69	119.55	126.61
11	AA	2946	A2M	N3-C2-N1	-5.69	119.97	128.58
61	c	28	A2M	N3-C2-N1	-5.69	119.98	128.58
61	c	28	A2M	N9-C8-N7	-5.67	105.89	113.94
11	AA	876	A2M	N3-C2-N1	-5.67	120.00	128.58
11	AA	2421	OMU	C4-N3-C2	-5.67	119.58	126.61
11	AA	1449	A2M	N3-C2-N1	-5.67	120.01	128.58
11	AA	2256	A2M	N3-C2-N1	-5.66	120.01	128.58
61	c	619	A2M	C4-N9-C8	5.66	111.68	105.74
11	AA	807	A2M	C4-N9-C8	5.64	111.66	105.74
61	c	100	A2M	N3-C2-N1	-5.63	120.06	128.58
11	AA	2220	A2M	N3-C2-N1	-5.63	120.06	128.58
61	c	541	A2M	N9-C8-N7	-5.62	105.96	113.94
61	c	436	A2M	N3-C2-N1	-5.62	120.07	128.58
11	AA	2921	OMU	C4-N3-C2	-5.62	119.64	126.61
61	c	420	A2M	N3-C2-N1	-5.61	120.09	128.58
11	AA	2280	A2M	N3-C2-N1	-5.61	120.10	128.58
61	c	541	A2M	N3-C2-N1	-5.61	120.10	128.58

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
61	c	1782	MA6	N1-C2-N3	-5.60	120.10	128.58
11	AA	817	A2M	C4-N9-C8	5.59	111.61	105.74
11	AA	2256	A2M	C4-N9-C8	5.57	111.59	105.74
11	AA	2640	A2M	N3-C2-N1	-5.56	120.17	128.58
11	AA	2417	OMU	C4-N3-C2	-5.53	119.75	126.61
11	AA	807	A2M	N3-C2-N1	-5.50	120.25	128.58
11	AA	2946	A2M	C4-N9-C8	5.49	111.50	105.74
11	AA	2729	OMU	C4-N3-C2	-5.48	119.81	126.61
61	c	796	A2M	C4-N9-C8	5.48	111.49	105.74
61	c	578	OMU	C4-N3-C2	-5.46	119.83	126.61
61	c	1781	MA6	N1-C2-N3	-5.46	120.32	128.58
11	AA	2280	A2M	C4-N9-C8	5.45	111.46	105.74
11	AA	2347	OMU	C4-N3-C2	-5.45	119.85	126.61
61	c	100	A2M	C4-N9-C8	5.45	111.46	105.74
61	c	974	A2M	C4-N9-C8	5.44	111.45	105.74
11	AA	817	A2M	C5-C6-N6	5.43	136.73	123.29
15	Bb	37	YYG	O23-C21-N20	5.42	119.90	110.77
11	AA	898	OMU	C4-N3-C2	-5.42	119.88	126.61
61	c	1269	OMU	C4-N3-C2	-5.40	119.91	126.61
61	c	619	A2M	C5-C6-N6	5.39	136.64	123.29
11	AA	2724	OMU	C4-N3-C2	-5.39	119.92	126.61
11	AA	807	A2M	C5-C6-N6	5.39	136.63	123.29
11	AA	1133	A2M	C4-N9-C8	5.37	111.38	105.74
11	AA	649	A2M	C4-N9-C8	5.36	111.37	105.74
11	AA	2640	A2M	C4-N9-C8	5.36	111.36	105.74
61	c	974	A2M	C5-C6-N6	5.35	136.53	123.29
11	AA	1449	A2M	C4-N9-C8	5.34	111.34	105.74
61	c	420	A2M	C4-N9-C8	5.34	111.34	105.74
11	AA	1133	A2M	C5-C6-N6	5.34	136.50	123.29
11	AA	2220	A2M	C5-C6-N6	5.32	136.46	123.29
11	AA	2220	A2M	C4-N9-C8	5.31	111.31	105.74
61	c	420	A2M	C5-C6-N6	5.29	136.39	123.29
11	AA	876	A2M	C5-C6-N6	5.28	136.36	123.29
11	AA	1449	A2M	C5-C6-N6	5.28	136.35	123.29
11	AA	2280	A2M	C5-C6-N6	5.27	136.33	123.29
61	c	436	A2M	C5-C6-N6	5.26	136.31	123.29
61	c	796	A2M	C5-C6-N6	5.26	136.30	123.29
61	c	436	A2M	C4-N9-C8	5.25	111.25	105.74
11	AA	2256	A2M	C5-C6-N6	5.25	136.29	123.29
11	AA	2640	A2M	C5-C6-N6	5.23	136.23	123.29
61	c	28	A2M	C5-C6-N6	5.22	136.21	123.29
11	AA	649	A2M	C5-C6-N6	5.21	136.18	123.29

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
61	c	100	A2M	C5-C6-N6	5.21	136.18	123.29
61	c	541	A2M	C5-C6-N6	5.20	136.16	123.29
11	AA	876	A2M	C4-N9-C8	5.19	111.19	105.74
61	c	1191	B8N	C5-C4-N3	5.18	125.55	116.15
11	AA	2281	A2M	C5-C6-N6	5.17	136.09	123.29
11	AA	2946	A2M	C5-C6-N6	5.16	136.06	123.29
61	c	541	A2M	C4-N9-C8	5.16	111.16	105.74
61	c	28	A2M	C4-N9-C8	5.09	111.08	105.74
61	c	1782	MA6	C5-C4-N3	-4.79	120.13	126.72
61	c	1575	G7M	CN7-N7-C8	-4.74	117.62	124.79
61	c	1781	MA6	C5-C4-N3	-4.69	120.26	126.72
61	c	1575	G7M	C2-N3-C4	4.65	120.31	112.30
61	c	541	A2M	C5-C4-N3	-4.62	120.35	126.72
61	c	1191	B8N	C4-N3-C2	-4.60	119.95	125.62
11	AA	2640	A2M	C5-C4-N3	-4.55	120.45	126.72
11	AA	1449	A2M	C5-C4-N3	-4.46	120.58	126.72
11	AA	2280	A2M	C5-C4-N3	-4.44	120.61	126.72
11	AA	876	A2M	C5-C4-N3	-4.42	120.62	126.72
61	c	436	A2M	C5-C4-N3	-4.42	120.63	126.72
61	c	100	A2M	C5-C4-N3	-4.42	120.64	126.72
61	c	796	A2M	C5-C4-N3	-4.41	120.65	126.72
61	c	974	A2M	C5-C4-N3	-4.39	120.67	126.72
11	AA	807	A2M	C5-C4-N3	-4.37	120.70	126.72
11	AA	649	A2M	C5-C4-N3	-4.37	120.70	126.72
61	c	28	A2M	C5-C4-N3	-4.37	120.70	126.72
61	c	420	A2M	C5-C4-N3	-4.35	120.72	126.72
11	AA	2220	A2M	C5-C4-N3	-4.33	120.75	126.72
61	c	541	A2M	C1'-N9-C8	-4.31	117.52	127.09
11	AA	2256	A2M	C5-C4-N3	-4.31	120.78	126.72
61	c	1575	G7M	C5-C4-N3	-4.30	120.02	128.15
61	c	1782	MA6	N9-C8-N7	-4.30	107.83	113.94
11	AA	2946	A2M	C5-C4-N3	-4.26	120.84	126.72
11	AA	1133	A2M	C5-C4-N3	-4.19	120.95	126.72
11	AA	817	A2M	C5-C4-N3	-4.16	120.98	126.72
61	c	1781	MA6	N9-C8-N7	-4.16	108.03	113.94
11	AA	2640	A2M	C1'-N9-C8	-4.15	117.89	127.09
11	AA	807	A2M	C1'-N9-C8	-4.14	117.90	127.09
11	AA	2281	A2M	C5-C4-N3	-4.14	121.02	126.72
11	AA	876	A2M	C1'-N9-C8	-4.12	117.96	127.09
61	c	619	A2M	C5-C4-N3	-4.07	121.12	126.72
11	AA	1449	A2M	C1'-N9-C8	-4.05	118.11	127.09
15	Bb	37	YYG	N9-C4-N3	4.04	135.99	129.45

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
61	c	1781	MA6	C4-C5-C6	4.04	120.09	115.91
61	c	100	A2M	C1'-N9-C8	-4.02	118.18	127.09
11	AA	649	A2M	C1'-N9-C8	-4.00	118.21	127.09
11	AA	1888	OMU	N3-C2-N1	4.00	120.10	114.89
61	c	1575	G7M	C1'-N9-C8	-4.00	113.24	126.74
61	c	1575	G7M	C1'-N9-C4	4.00	138.29	126.49
61	c	1575	G7M	C5-C6-N1	3.97	120.05	111.84
61	c	1782	MA6	C4-C5-C6	3.97	120.01	115.91
61	c	541	A2M	N3-C4-N9	3.96	133.89	127.17
11	AA	2280	A2M	C1'-N9-C8	-3.92	118.39	127.09
61	c	1269	OMU	N3-C2-N1	3.91	119.98	114.89
11	AA	2220	A2M	C1'-N9-C8	-3.91	118.42	127.09
11	AA	2421	OMU	N3-C2-N1	3.90	119.97	114.89
11	AA	2921	OMU	N3-C2-N1	3.88	119.95	114.89
61	c	974	A2M	C1'-N9-C8	-3.88	118.48	127.09
11	AA	2640	A2M	N3-C4-N9	3.86	133.73	127.17
11	AA	2417	OMU	N3-C2-N1	3.84	119.89	114.89
61	c	796	A2M	C1'-N9-C8	-3.83	118.60	127.09
11	AA	2347	OMU	N3-C2-N1	3.82	119.87	114.89
11	AA	898	OMU	N3-C2-N1	3.80	119.84	114.89
61	c	100	A2M	N3-C4-N9	3.80	133.63	127.17
61	c	436	A2M	C1'-N9-C8	-3.79	118.69	127.09
11	AA	807	A2M	N3-C4-N9	3.77	133.58	127.17
61	c	420	A2M	C1'-N9-C8	-3.77	118.74	127.09
11	AA	2256	A2M	C1'-N9-C8	-3.77	118.74	127.09
11	AA	2280	A2M	N3-C4-N9	3.75	133.54	127.17
11	AA	1449	A2M	N3-C4-N9	3.75	133.54	127.17
11	AA	649	A2M	N3-C4-N9	3.74	133.53	127.17
15	Bb	37	YYG	C10-C11-N2	3.73	126.81	119.32
61	c	796	A2M	N3-C4-N9	3.71	133.48	127.17
61	c	578	OMU	N3-C2-N1	3.71	119.72	114.89
61	c	436	A2M	N3-C4-N9	3.71	133.47	127.17
11	AA	2724	OMU	N3-C2-N1	3.70	119.71	114.89
11	AA	876	A2M	N3-C4-N9	3.70	133.46	127.17
61	c	28	A2M	C1'-N9-C8	-3.69	118.90	127.09
11	AA	2729	OMU	N3-C2-N1	3.69	119.70	114.89
61	c	1191	B8N	C1'-C5-C4	3.69	123.20	117.61
61	c	28	A2M	N3-C4-N9	3.68	133.43	127.17
11	AA	2634	UR3	C5-C4-N3	3.68	119.89	115.04
61	c	796	A2M	C2'-C1'-N9	-3.67	107.70	113.75
61	c	974	A2M	N3-C4-N9	3.67	133.41	127.17
11	AA	2256	A2M	N3-C4-N9	3.67	133.41	127.17

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
11	AA	2220	A2M	N3-C4-N9	3.66	133.40	127.17
11	AA	2946	A2M	N3-C4-N9	3.64	133.37	127.17
11	AA	1133	A2M	C2'-C1'-N9	-3.64	107.77	113.75
61	c	420	A2M	N3-C4-N9	3.62	133.32	127.17
11	AA	2946	A2M	C1'-N9-C8	-3.61	119.08	127.09
11	AA	2281	A2M	N3-C4-N9	3.61	133.31	127.17
11	AA	2921	OMU	C5-C4-N3	3.60	119.85	114.80
11	AA	2421	OMU	C5-C4-N3	3.60	119.84	114.80
11	AA	2729	OMU	C5-C4-N3	3.60	119.84	114.80
11	AA	2281	A2M	C1'-N9-C8	-3.59	119.12	127.09
11	AA	2417	OMU	C5-C4-N3	3.57	119.79	114.80
11	AA	1888	OMU	C5-C4-N3	3.55	119.77	114.80
11	AA	1133	A2M	N3-C4-N9	3.54	133.19	127.17
61	c	1191	B8N	N3-C2-N1	3.54	121.04	116.72
61	c	578	OMU	C5-C4-N3	3.53	119.75	114.80
11	AA	817	A2M	C5-N7-C8	3.53	109.00	103.45
11	AA	2347	OMU	C5-C4-N3	3.53	119.74	114.80
11	AA	1133	A2M	C1'-N9-C8	-3.52	119.29	127.09
11	AA	807	A2M	C5-N7-C8	3.51	108.97	103.45
11	AA	2724	OMU	C5-C4-N3	3.50	119.70	114.80
11	AA	898	OMU	C5-C4-N3	3.50	119.70	114.80
11	AA	2640	A2M	C5-N7-C8	3.49	108.94	103.45
61	c	796	A2M	C5-N7-C8	3.49	108.93	103.45
61	c	1575	G7M	O6-C6-C5	-3.49	120.23	128.01
11	AA	817	A2M	C1'-N9-C8	-3.47	119.38	127.09
11	AA	2946	A2M	C2'-C1'-N9	-3.47	108.04	113.75
61	c	619	A2M	C5-N7-C8	3.47	108.91	103.45
61	c	420	A2M	C5-N7-C8	3.47	108.90	103.45
11	AA	2256	A2M	C5-N7-C8	3.46	108.88	103.45
61	c	1781	MA6	C2-N1-C6	3.46	120.27	111.83
11	AA	2280	A2M	C5-N7-C8	3.45	108.88	103.45
11	AA	817	A2M	N3-C4-N9	3.45	133.04	127.17
61	c	1782	MA6	C2-N1-C6	3.45	120.25	111.83
61	c	619	A2M	N3-C4-N9	3.44	133.01	127.17
61	c	1269	OMU	C5-C4-N3	3.43	119.61	114.80
11	AA	1449	A2M	C5-N7-C8	3.43	108.84	103.45
11	AA	2281	A2M	C5-N7-C8	3.42	108.82	103.45
61	c	974	A2M	C5-N7-C8	3.40	108.79	103.45
61	c	436	A2M	C5-N7-C8	3.39	108.78	103.45
61	c	619	A2M	C1'-N9-C8	-3.39	119.58	127.09
61	c	100	A2M	C5-N7-C8	3.39	108.77	103.45
11	AA	2220	A2M	C5-N7-C8	3.38	108.77	103.45

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
11	AA	2946	A2M	C5-N7-C8	3.38	108.76	103.45
11	AA	649	A2M	C5-N7-C8	3.37	108.75	103.45
15	Bb	37	YYG	O18-C16-C15	3.36	120.04	111.49
11	AA	876	A2M	C5-N7-C8	3.33	108.68	103.45
11	AA	1133	A2M	C5-N7-C8	3.31	108.65	103.45
61	c	541	A2M	C5-N7-C8	3.28	108.61	103.45
61	c	1782	MA6	C2-N3-C4	3.28	119.84	111.83
61	c	28	A2M	C5-N7-C8	3.28	108.60	103.45
61	c	541	A2M	C2-N3-C4	3.22	119.70	111.83
11	AA	1449	A2M	C2-N3-C4	3.21	119.68	111.83
61	c	796	A2M	C2-N3-C4	3.20	119.64	111.83
15	Bb	37	YYG	N1-C2-N2	-3.20	109.45	114.03
11	AA	2281	A2M	C4'-O4'-C1'	-3.20	102.41	109.47
11	AA	649	A2M	C2-N3-C4	3.19	119.63	111.83
11	AA	2640	A2M	C2-N3-C4	3.18	119.60	111.83
11	AA	2280	A2M	C2-N3-C4	3.18	119.59	111.83
61	c	100	A2M	C2-N3-C4	3.18	119.59	111.83
61	c	436	A2M	C2-N3-C4	3.18	119.59	111.83
61	c	1781	MA6	C2-N3-C4	3.18	119.59	111.83
61	c	974	A2M	C2-N3-C4	3.17	119.58	111.83
61	c	420	A2M	C2-N3-C4	3.17	119.58	111.83
11	AA	817	A2M	C2-N3-C4	3.17	119.57	111.83
11	AA	876	A2M	C2-N3-C4	3.17	119.57	111.83
11	AA	2256	A2M	C2-N3-C4	3.17	119.57	111.83
11	AA	2281	A2M	C2-N3-C4	3.15	119.52	111.83
61	c	28	A2M	C2-N3-C4	3.15	119.52	111.83
15	Bb	37	YYG	O23-C21-O22	-3.15	120.04	124.62
11	AA	1133	A2M	C2-N3-C4	3.14	119.50	111.83
11	AA	2946	A2M	C2-N3-C4	3.14	119.50	111.83
11	AA	2220	A2M	C2-N3-C4	3.13	119.48	111.83
61	c	619	A2M	C2-N3-C4	3.11	119.43	111.83
11	AA	807	A2M	C2-N3-C4	3.11	119.43	111.83
61	c	1575	G7M	N9-C4-N3	3.10	132.15	125.95
61	c	1280	4AC	C6-C5-C4	3.08	120.71	117.00
61	c	1575	G7M	C2-N1-C6	-3.07	119.54	125.11
11	AA	2256	A2M	O2'-C2'-C1'	3.06	114.79	108.99
11	AA	2724	OMU	O4-C4-C5	-2.99	120.01	125.16
61	c	1280	4AC	O7-C7-N4	-2.95	117.25	121.90
11	AA	2921	OMU	O4-C4-C5	-2.95	120.07	125.16
61	c	1782	MA6	N3-C4-N9	2.95	132.19	127.17
61	c	578	OMU	O4-C4-C5	-2.95	120.07	125.16
15	Bb	37	YYG	O22-C21-N20	-2.93	120.06	124.86

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
11	AA	898	OMU	O4-C4-C5	-2.93	120.12	125.16
11	AA	2421	OMU	O4-C4-C5	-2.91	120.15	125.16
61	c	1782	MA6	C5-N7-C8	2.90	108.00	103.45
11	AA	2729	OMU	O4-C4-C5	-2.90	120.17	125.16
11	AA	2417	OMU	O4-C4-C5	-2.86	120.22	125.16
11	AA	2281	A2M	O4'-C1'-N9	2.85	113.57	108.09
15	Bb	37	YYG	C11-C12-N1	2.84	107.31	105.31
11	AA	2347	OMU	O4-C4-C5	-2.83	120.27	125.16
61	c	1781	MA6	C5-N7-C8	2.83	107.89	103.45
11	AA	1888	OMU	O4-C4-C5	-2.80	120.33	125.16
61	c	1781	MA6	N3-C4-N9	2.77	131.88	127.17
61	c	1773	4AC	O7-C7-N4	-2.76	117.56	121.90
61	c	1269	OMU	O4-C4-C5	-2.75	120.42	125.16
61	c	1773	4AC	C5-C4-N3	-2.69	118.40	122.60
11	AA	2281	A2M	C2'-C1'-N9	-2.66	109.38	113.75
61	c	1773	4AC	C6-C5-C4	2.62	120.16	117.00
61	c	1191	B8N	O4-C4-N3	-2.62	115.74	119.99
61	c	1773	4AC	O7-C7-CM7	-2.58	117.47	122.05
61	c	1280	4AC	C5-C4-N3	-2.56	118.60	122.60
11	AA	2281	A2M	O4'-C1'-C2'	-2.55	102.20	106.59
61	c	1191	B8N	C31-N3-C4	2.50	120.72	117.18
11	AA	2948	OMC	C1'-N1-C2	2.50	123.96	118.44
61	c	1782	MA6	C4-N9-C8	2.49	108.35	105.74
11	AA	2142	1MA	N1-C6-N6	2.49	125.96	119.71
15	Bb	37	YYG	C8-N9-C4	2.48	108.93	106.54
61	c	1280	4AC	O7-C7-CM7	-2.44	117.70	122.05
11	AA	1437	OMC	C1'-N1-C2	2.43	123.80	118.44
15	Bb	37	YYG	C8-N7-C5	2.39	108.51	104.26
61	c	1781	MA6	C4-N9-C8	2.37	108.23	105.74
11	AA	645	1MA	N1-C6-N6	2.35	125.62	119.71
61	c	1781	MA6	C4-C5-N7	-2.26	107.99	110.58
11	AA	807	A2M	C4'-O4'-C1'	-2.26	104.49	109.47
61	c	420	A2M	C2'-C1'-N9	-2.25	110.06	113.75
61	c	1191	B8N	O4-C4-C5	-2.24	118.71	122.58
11	AA	1888	OMU	O2-C2-N1	-2.22	119.90	122.80
11	AA	2417	OMU	O2-C2-N1	-2.20	119.94	122.80
15	Bb	37	YYG	N9-C8-N7	-2.18	109.36	113.40
61	c	1269	OMU	C1'-N1-C2	2.16	121.47	117.59
61	c	1782	MA6	C4-C5-N7	-2.15	108.13	110.58
11	AA	2729	OMU	O2-C2-N1	-2.15	120.00	122.80
61	c	974	A2M	C2'-C1'-N9	-2.12	110.27	113.75
11	AA	2724	OMU	C1'-N1-C2	2.11	121.39	117.59

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
61	c	28	A2M	C2'-C1'-N9	-2.11	110.28	113.75
11	AA	817	A2M	C4-C5-N7	-2.10	108.18	110.58
11	AA	898	OMU	O2-C2-N1	-2.10	120.07	122.80
11	AA	2634	UR3	C6-N1-C2	-2.09	120.09	121.80
61	c	1191	B8N	O4'-C1'-C2'	2.08	108.03	105.15
11	AA	2921	OMU	O2-C2-N1	-2.07	120.10	122.80
61	c	28	A2M	C2'-C3'-C4'	2.06	106.43	101.99
61	c	1575	G7M	N9-C8-N7	-2.04	107.53	112.48
11	AA	807	A2M	C4-C5-N7	-2.01	108.28	110.58
61	c	578	OMU	O2-C2-N1	-2.01	120.18	122.80
61	c	796	A2M	C4-C5-N7	-2.01	108.29	110.58
61	c	541	A2M	C4-N9-C1'	2.00	131.32	126.63

There are no chirality outliers.

All (79) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
11	AA	649	A2M	C1'-C2'-O2'-CM'
11	AA	663	OMC	C1'-C2'-O2'-CM2
11	AA	908	OMG	O4'-C4'-C5'-O5'
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	2417	OMU	C1'-C2'-O2'-CM2
11	AA	2421	OMU	C1'-C2'-O2'-CM2
11	AA	2619	OMG	C1'-C2'-O2'-CM2
11	AA	2724	OMU	C1'-C2'-O2'-CM2
12	Aa	699	DDE	CBI-CBW-NCB-CAB
12	Aa	699	DDE	CBI-CBW-NCB-CAC
12	Aa	699	DDE	CBI-CBW-NCB-CAA
12	Aa	699	DDE	CAU-CBW-NCB-CAB
12	Aa	699	DDE	CAU-CBW-NCB-CAC
12	Aa	699	DDE	CAU-CBW-NCB-CAA
15	Bb	37	YYG	O22-C21-N20-C15
15	Bb	37	YYG	O23-C21-N20-C15
61	c	420	A2M	C1'-C2'-O2'-CM'
61	c	578	OMU	C1'-C2'-O2'-CM2
61	c	1575	G7M	O4'-C4'-C5'-O5'
15	Bb	37	YYG	O17-C16-O18-C19

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Mol	Chain	Res	Type	Atoms
15	Bb	37	YYG	C15-C16-O18-C19
61	c	28	A2M	C3'-C4'-C5'-O5'
61	c	28	A2M	O4'-C4'-C5'-O5'
61	c	578	OMU	C3'-C4'-C5'-O5'
61	c	1575	G7M	C3'-C4'-C5'-O5'
11	AA	2870	5MC	C2'-C1'-N1-C6
11	AA	908	OMG	C3'-C4'-C5'-O5'
11	AA	1450	OMG	C3'-C4'-C5'-O5'
61	c	578	OMU	O4'-C4'-C5'-O5'
61	c	619	A2M	C3'-C4'-C5'-O5'
61	c	619	A2M	O4'-C4'-C5'-O5'
11	AA	2870	5MC	C2'-C1'-N1-C2
11	AA	2280	A2M	O4'-C4'-C5'-O5'
61	c	1572	OMG	O4'-C4'-C5'-O5'
61	c	100	A2M	O4'-C4'-C5'-O5'
61	c	1280	4AC	O7-C7-N4-C4
61	c	1280	4AC	CM7-C7-N4-C4
61	c	1773	4AC	O7-C7-N4-C4
61	c	1773	4AC	CM7-C7-N4-C4
61	c	1271	OMG	C1'-C2'-O2'-CM2
11	AA	2281	A2M	O4'-C4'-C5'-O5'
11	AA	807	A2M	C3'-C2'-O2'-CM'
11	AA	908	OMG	C3'-C2'-O2'-CM2
61	c	619	A2M	C2'-C1'-N9-C8
61	c	1191	B8N	N3-C31-C32-C33
11	AA	2870	5MC	O4'-C1'-N1-C2
11	AA	2870	5MC	O4'-C1'-N1-C6
61	c	1575	G7M	C4'-C5'-O5'-P
61	c	1782	MA6	C4'-C5'-O5'-P
11	AA	867	OMG	C3'-C4'-C5'-O5'
11	AA	2793	OMG	C3'-C2'-O2'-CM2
11	AA	817	A2M	C4'-C5'-O5'-P
61	c	1191	B8N	O4'-C1'-C5-C4
11	AA	2197	OMC	O4'-C1'-N1-C6
61	c	1269	OMU	O4'-C1'-N1-C6
11	AA	2281	A2M	C3'-C4'-C5'-O5'
61	c	1191	B8N	N34-C33-C34-O35
11	AA	2197	OMC	O4'-C1'-N1-C2
61	c	1428	OMG	O4'-C4'-C5'-O5'
11	AA	2256	A2M	C4'-C5'-O5'-P
61	c	1428	OMG	C4'-C5'-O5'-P
61	c	1191	B8N	C3'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
61	c	1191	B8N	O4'-C1'-C5-C6
61	c	1269	OMU	C2'-C1'-N1-C6
61	c	1191	B8N	N34-C33-C34-O36
61	c	619	A2M	O4'-C1'-N9-C8
12	Aa	699	DDE	NAD-CBI-CBW-NCB
61	c	1269	OMU	C2'-C1'-N1-C2
11	AA	807	A2M	O4'-C1'-N9-C8
11	AA	645	1MA	C2'-C1'-N9-C8
61	c	1191	B8N	O4'-C4'-C5'-O5'
61	c	541	A2M	O4'-C1'-N9-C8
61	c	1269	OMU	O4'-C1'-N1-C2
11	AA	867	OMG	O4'-C4'-C5'-O5'

There are no ring outliers.

37 monomers are involved in 62 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
11	AA	2417	OMU	3	0
11	AA	2421	OMU	2	0
11	AA	2793	OMG	4	0
11	AA	2724	OMU	3	0
11	AA	2347	OMU	1	0
61	c	28	A2M	2	0
61	c	974	A2M	1	0
61	c	1269	OMU	2	0
11	AA	2640	A2M	1	0
15	Bb	37	YYG	4	0
11	AA	898	OMU	2	0
61	c	1781	MA6	2	0
61	c	1639	OMC	1	0
61	c	796	A2M	1	0
61	c	1428	OMG	1	0
61	c	420	A2M	1	0
11	AA	1437	OMC	2	0
11	AA	2948	OMC	1	0
11	AA	2815	OMG	1	0
11	AA	2959	OMC	1	0
11	AA	1133	A2M	1	0
61	c	562	OMG	1	0
11	AA	649	A2M	3	0
11	AA	2281	A2M	1	0
61	c	436	A2M	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
11	AA	805	OMG	1	0
11	AA	2870	5MC	2	0
61	c	1773	4AC	3	0
12	Aa	699	DDE	2	0
61	c	1280	4AC	3	0
61	c	1575	G7M	1	0
61	c	541	A2M	1	0
11	AA	1449	A2M	1	0
11	AA	663	OMC	3	0
11	AA	2220	A2M	1	0
11	AA	650	OMC	2	0
61	c	1271	OMG	1	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 302 ligands modelled in this entry, 296 are monoatomic - leaving 6 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$
87	SPD	AA	3450	-	9,9,9	0.31	0	8,8,8	0.75	0
89	GDP	Aa	1001	86	29,30,30	1.16	3 (10%)	45,47,47	1.75	7 (15%)
87	SPD	AA	3448	-	9,9,9	0.32	0	8,8,8	0.85	0
90	SO1	Aa	1002	-	34,39,39	1.13	3 (8%)	38,64,64	0.97	1 (2%)
87	SPD	c	1904	-	9,9,9	0.31	0	8,8,8	0.86	0
87	SPD	AA	3449	-	9,9,9	0.32	0	8,8,8	0.90	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
87	SPD	AA	3450	-	-	2/7/7/7	-
89	GDP	Aa	1001	86	-	6/16/32/32	0/3/3/3
87	SPD	AA	3448	-	-	1/7/7/7	-
90	SO1	Aa	1002	-	-	10/21/104/104	0/7/5/5
87	SPD	c	1904	-	-	2/7/7/7	-
87	SPD	AA	3449	-	-	0/7/7/7	-

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
90	Aa	1002	SO1	C2-C6	-3.86	1.49	1.55
89	Aa	1001	GDP	C5-C4	3.08	1.47	1.38
89	Aa	1001	GDP	C6-N1	-2.48	1.34	1.38
90	Aa	1002	SO1	C16-C22	-2.29	1.51	1.54
90	Aa	1002	SO1	C3-C9	-2.10	1.51	1.56
89	Aa	1001	GDP	C5-N7	-2.07	1.34	1.39

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
89	Aa	1001	GDP	C5-C4-N3	-5.99	118.86	128.39
89	Aa	1001	GDP	C2-N3-C4	5.01	120.94	112.30
89	Aa	1001	GDP	N9-C4-N3	4.42	134.80	125.95
89	Aa	1001	GDP	C6-C5-N7	3.35	136.38	130.29
90	Aa	1002	SO1	C12-C6-C10	-3.13	105.47	107.92
89	Aa	1001	GDP	C4-C5-N7	-2.56	106.62	110.67
89	Aa	1001	GDP	O6-C6-C5	-2.09	121.03	126.53
89	Aa	1001	GDP	C3'-C2'-C1'	2.06	105.37	101.46

There are no chirality outliers.

All (21) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
89	Aa	1001	GDP	C5'-O5'-PA-O3A
89	Aa	1001	GDP	C5'-O5'-PA-O1A
89	Aa	1001	GDP	C5'-O5'-PA-O2A
89	Aa	1001	GDP	O4'-C4'-C5'-O5'
90	Aa	1002	SO1	C2-C1-C5-O14
90	Aa	1002	SO1	C2-C1-C5-O15
90	Aa	1002	SO1	C20-C13-C4-C1
90	Aa	1002	SO1	C21-C13-C4-C1

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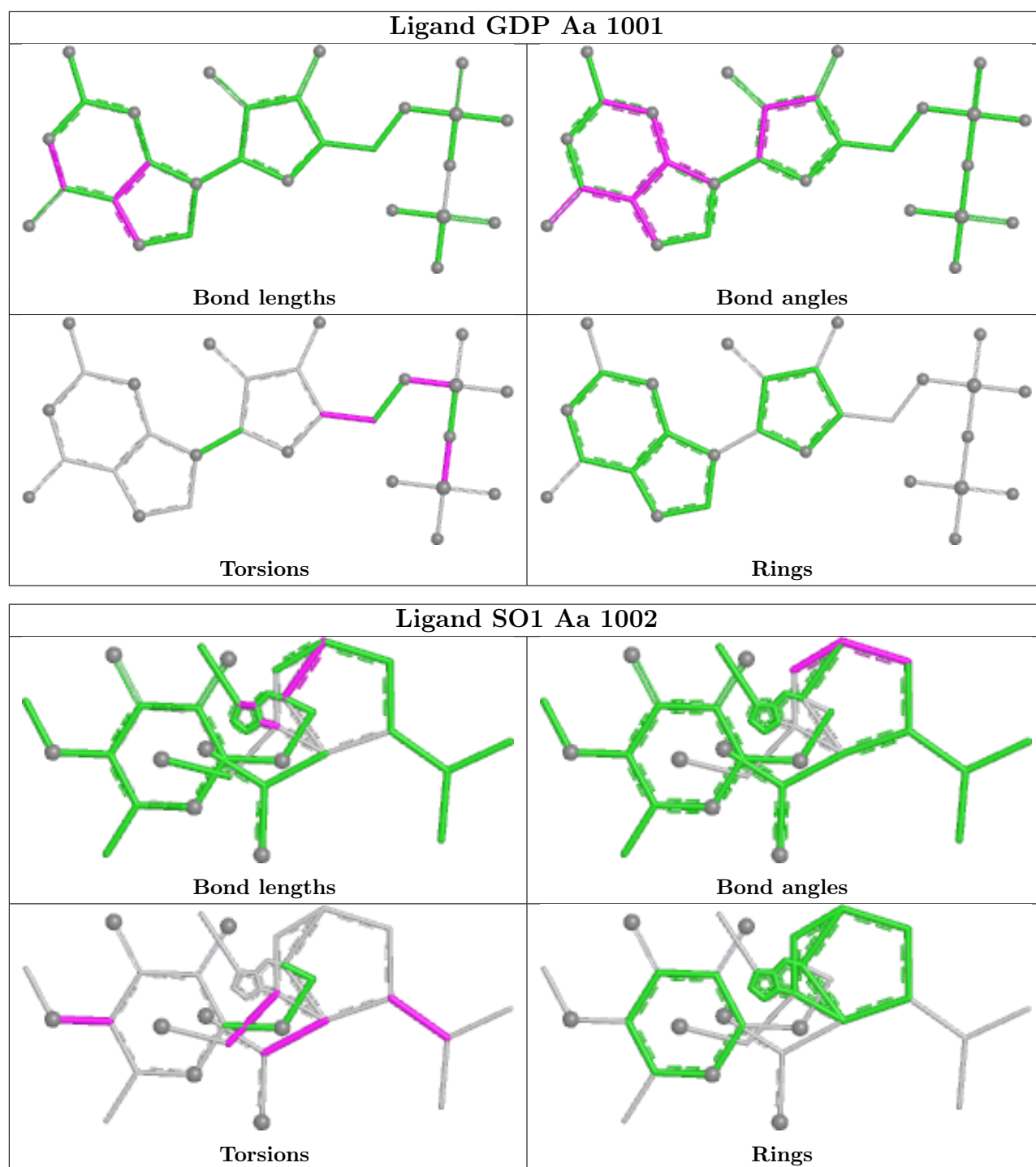
Mol	Chain	Res	Type	Atoms
90	Aa	1002	SO1	C20-C13-C4-C12
90	Aa	1002	SO1	C21-C13-C4-C12
90	Aa	1002	SO1	O19-C11-C3-C1
90	Aa	1002	SO1	O19-C11-C3-C10
87	AA	3450	SPD	C2-C3-C4-C5
89	Aa	1001	GDP	C3'-C4'-C5'-O5'
90	Aa	1002	SO1	C54-C55-O64-C65
87	c	1904	SPD	C4-C5-N6-C7
87	AA	3450	SPD	C4-C5-N6-C7
89	Aa	1001	GDP	PA-O3A-PB-O2B
87	c	1904	SPD	N1-C2-C3-C4
87	AA	3448	SPD	C7-C8-C9-N10
90	Aa	1002	SO1	O19-C11-C3-C9

There are no ring outliers.

5 monomers are involved in 8 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
87	AA	3450	SPD	1	0
87	AA	3448	SPD	1	0
90	Aa	1002	SO1	3	0
87	c	1904	SPD	2	0
87	AA	3449	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.

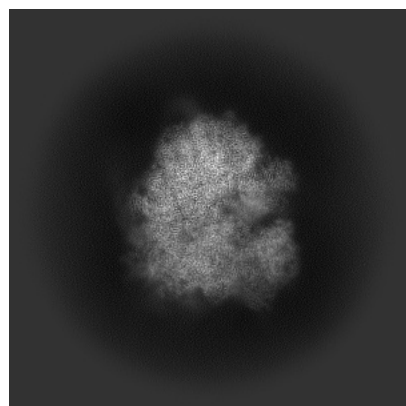
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-16594. These allow visual inspection of the internal detail of the map and identification of artifacts.

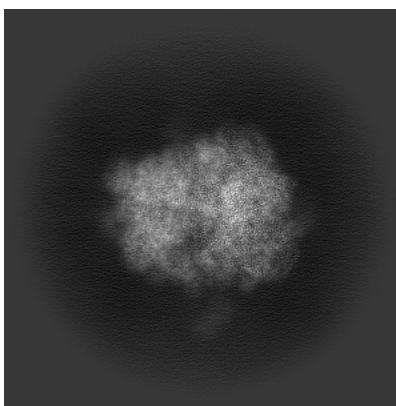
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

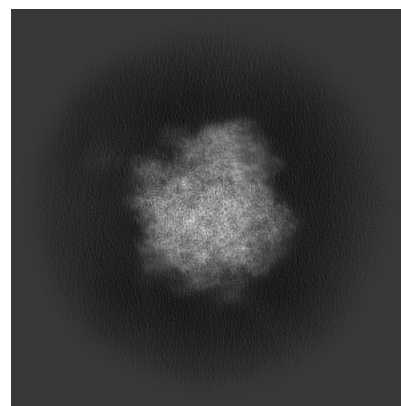
6.1.1 Primary map



X

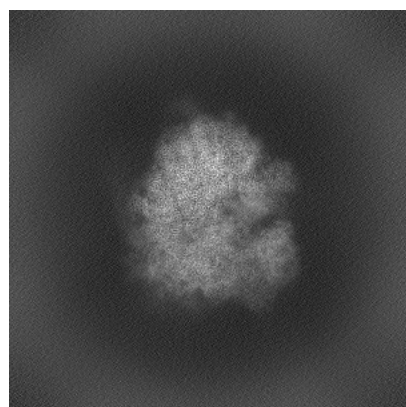


Y

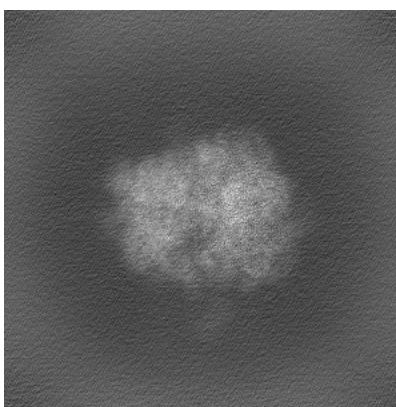


Z

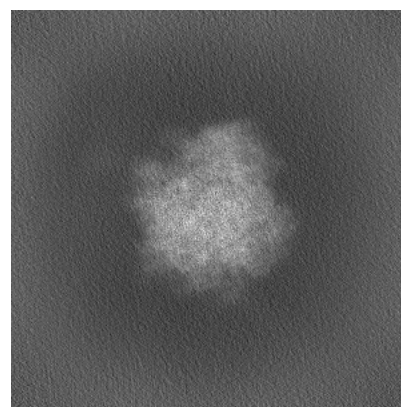
6.1.2 Raw map



X



Y

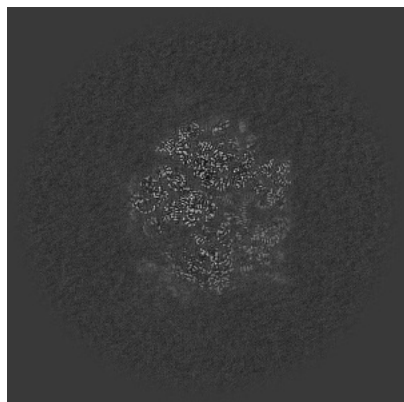


Z

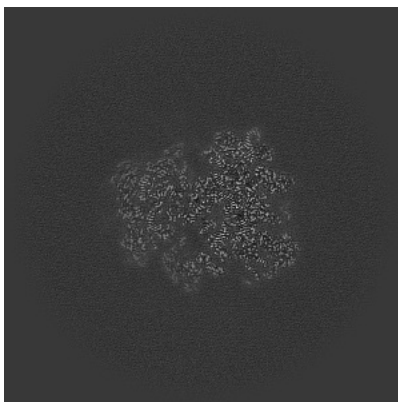
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

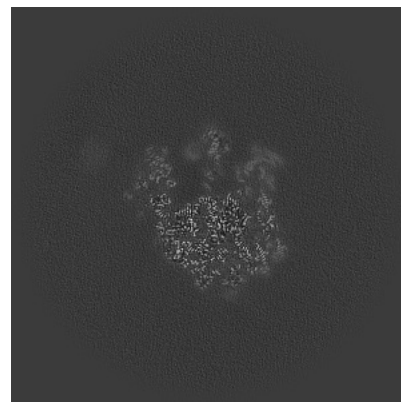
6.2.1 Primary map



X Index: 300

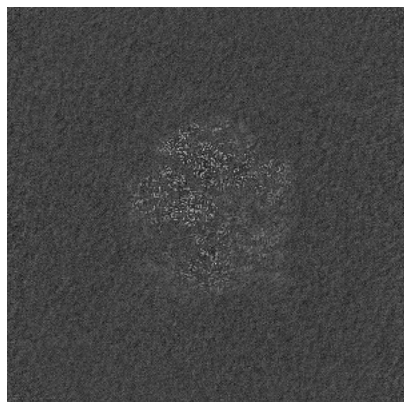


Y Index: 300

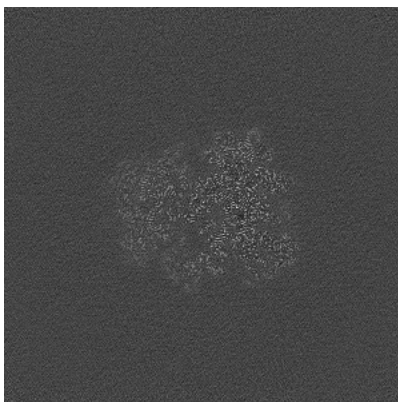


Z Index: 300

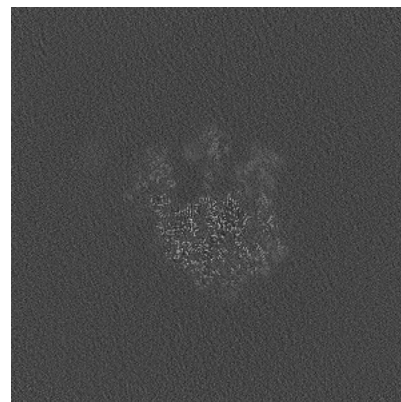
6.2.2 Raw map



X Index: 300



Y Index: 300

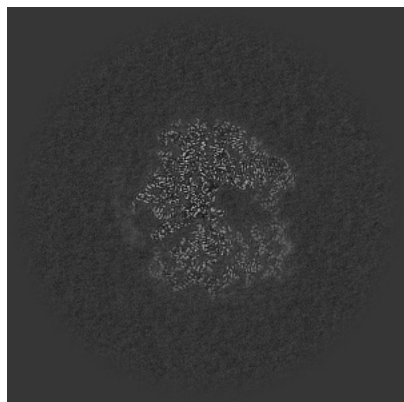


Z Index: 300

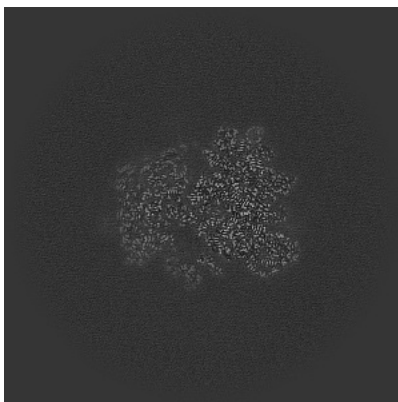
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

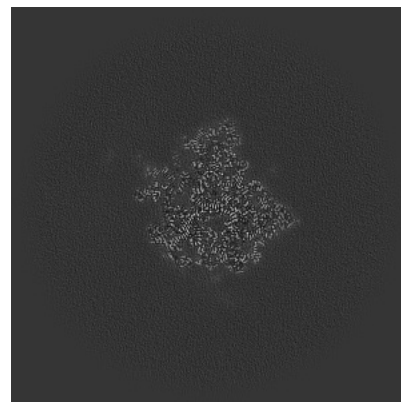
6.3.1 Primary map



X Index: 321

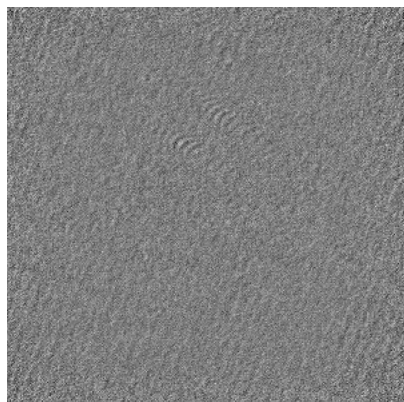


Y Index: 295

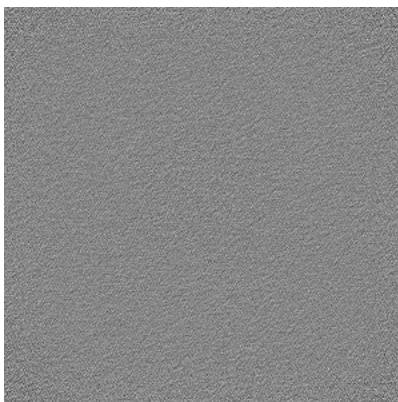


Z Index: 343

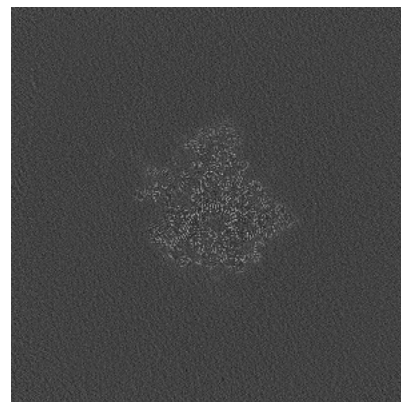
6.3.2 Raw map



X Index: 0



Y Index: 0

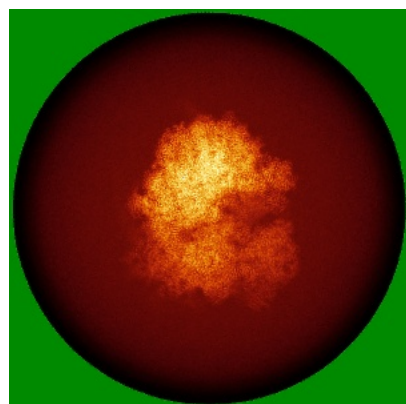


Z Index: 343

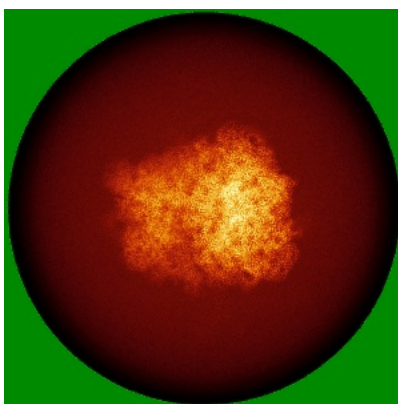
The images above show the largest variance slices of the map in three orthogonal directions.

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

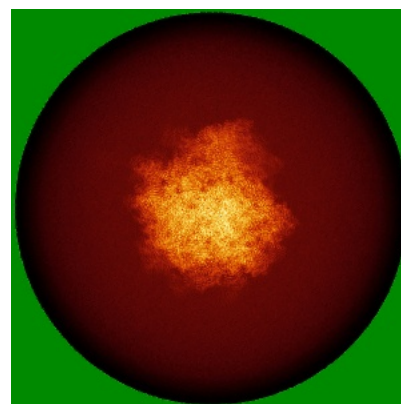
6.4.1 Primary map



X

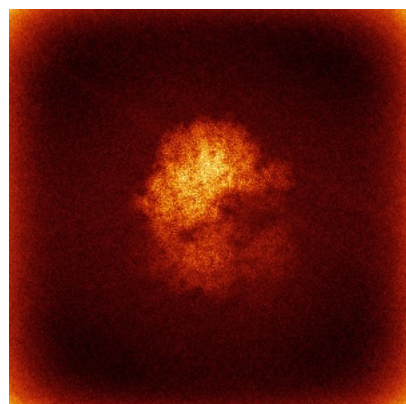


Y

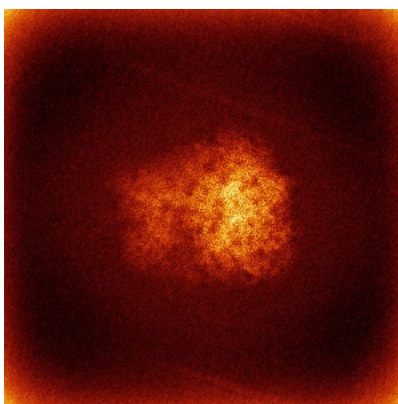


Z

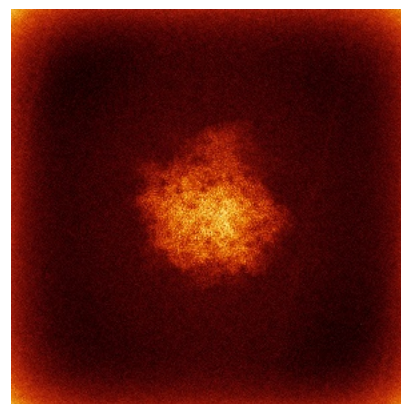
6.4.2 Raw map



X



Y

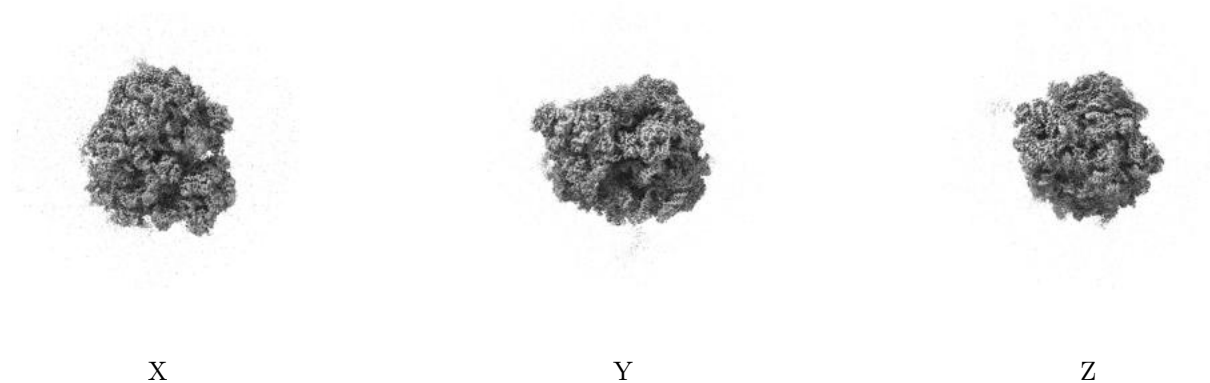


Z

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.

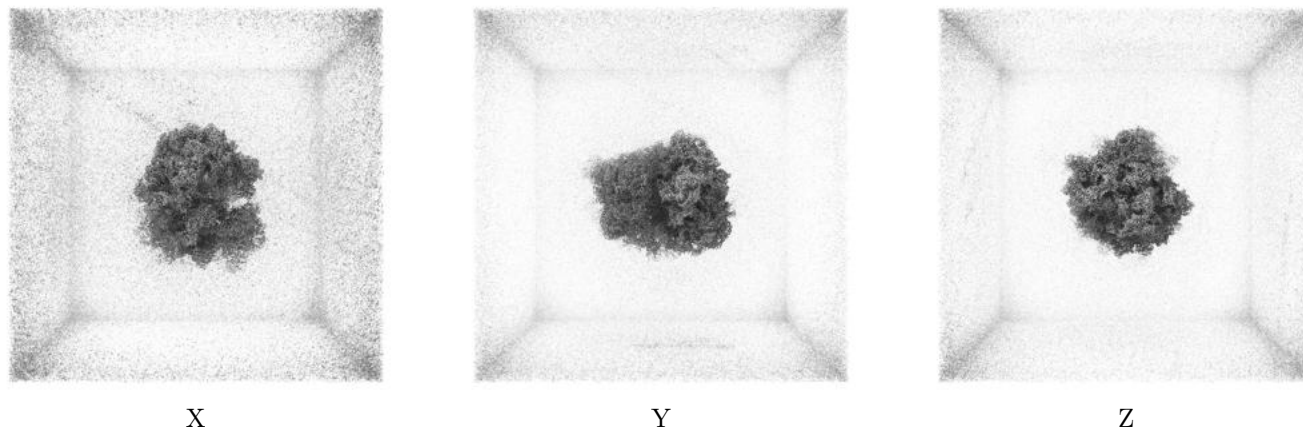
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.157. 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.

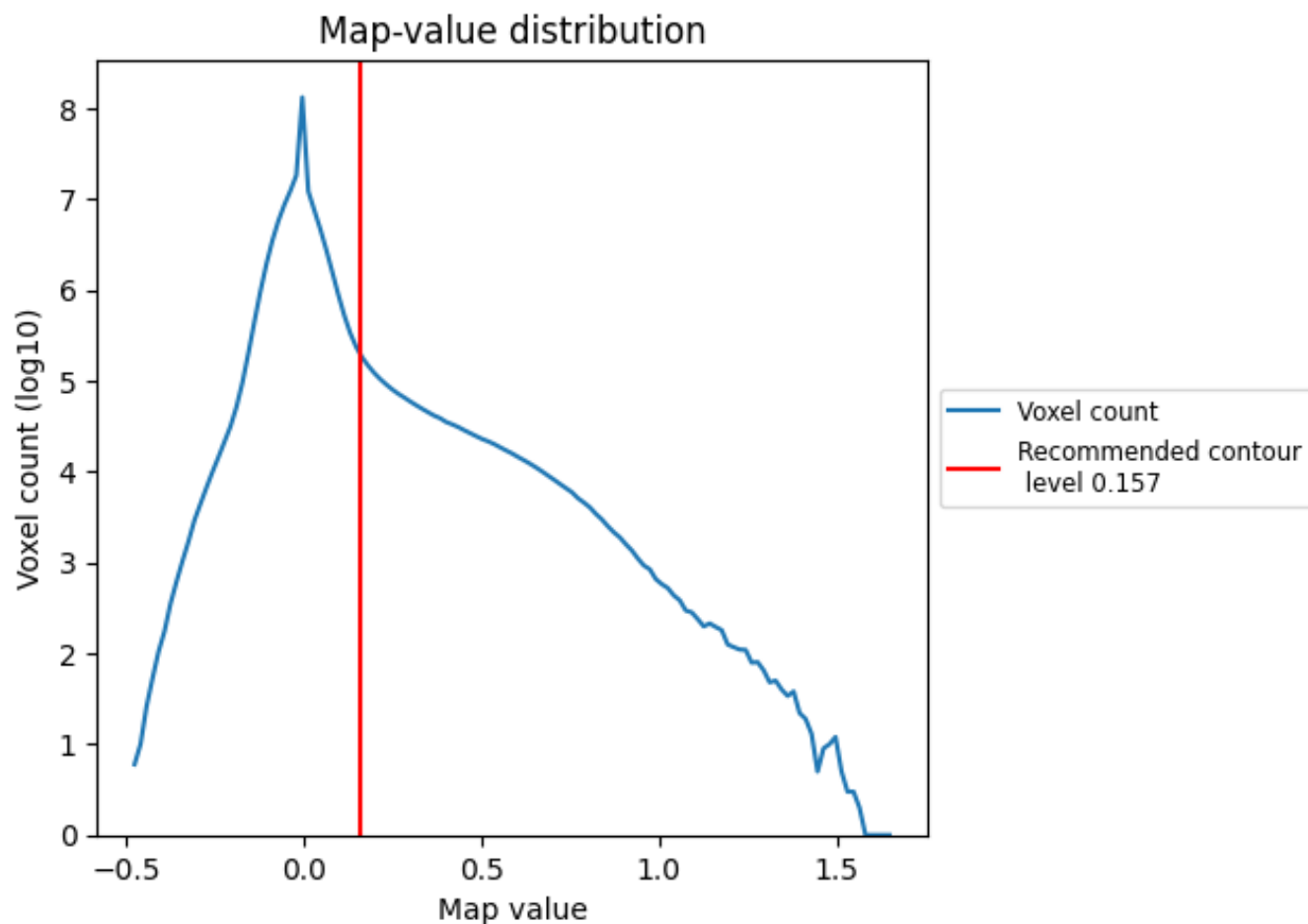
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

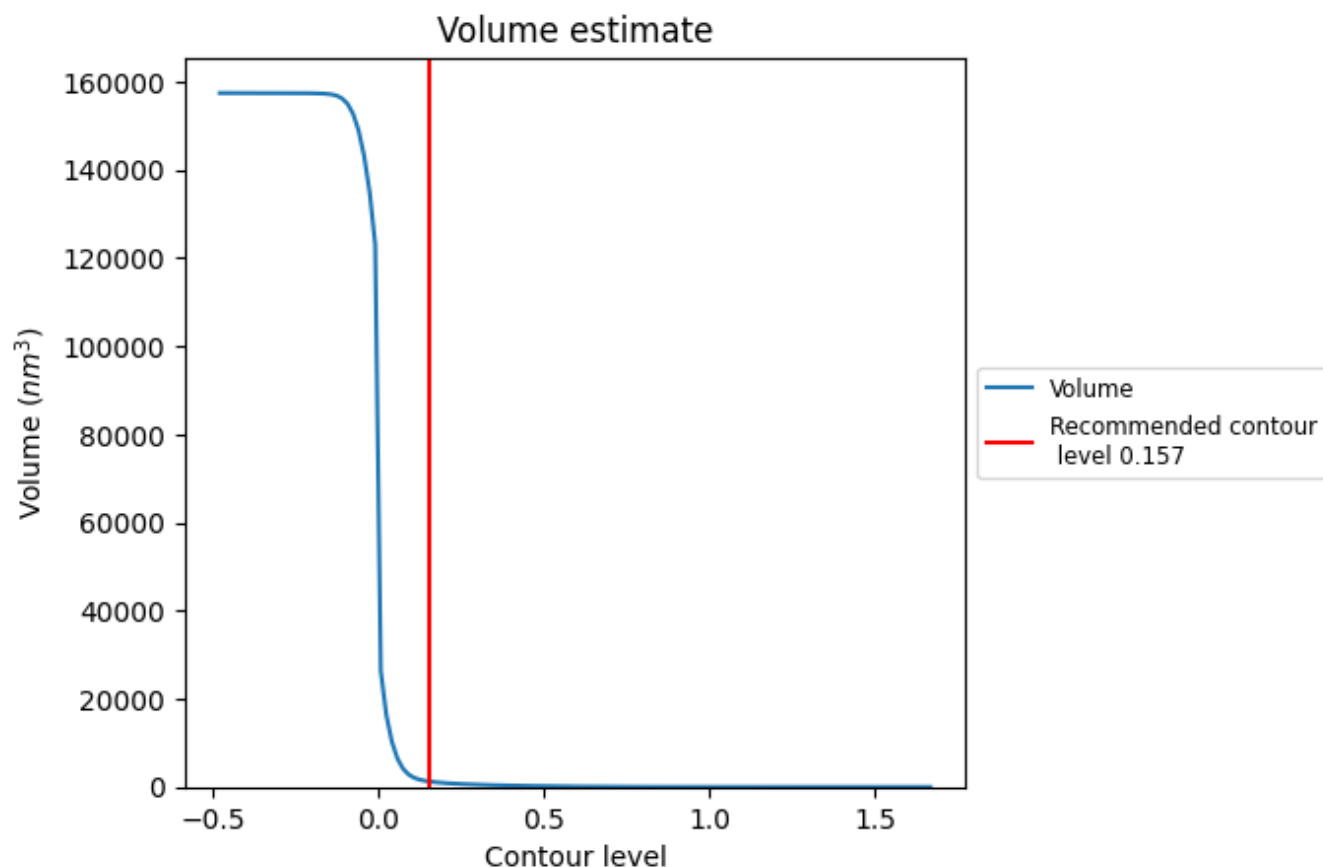
This section contains the results of statistical analysis of the map.

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.

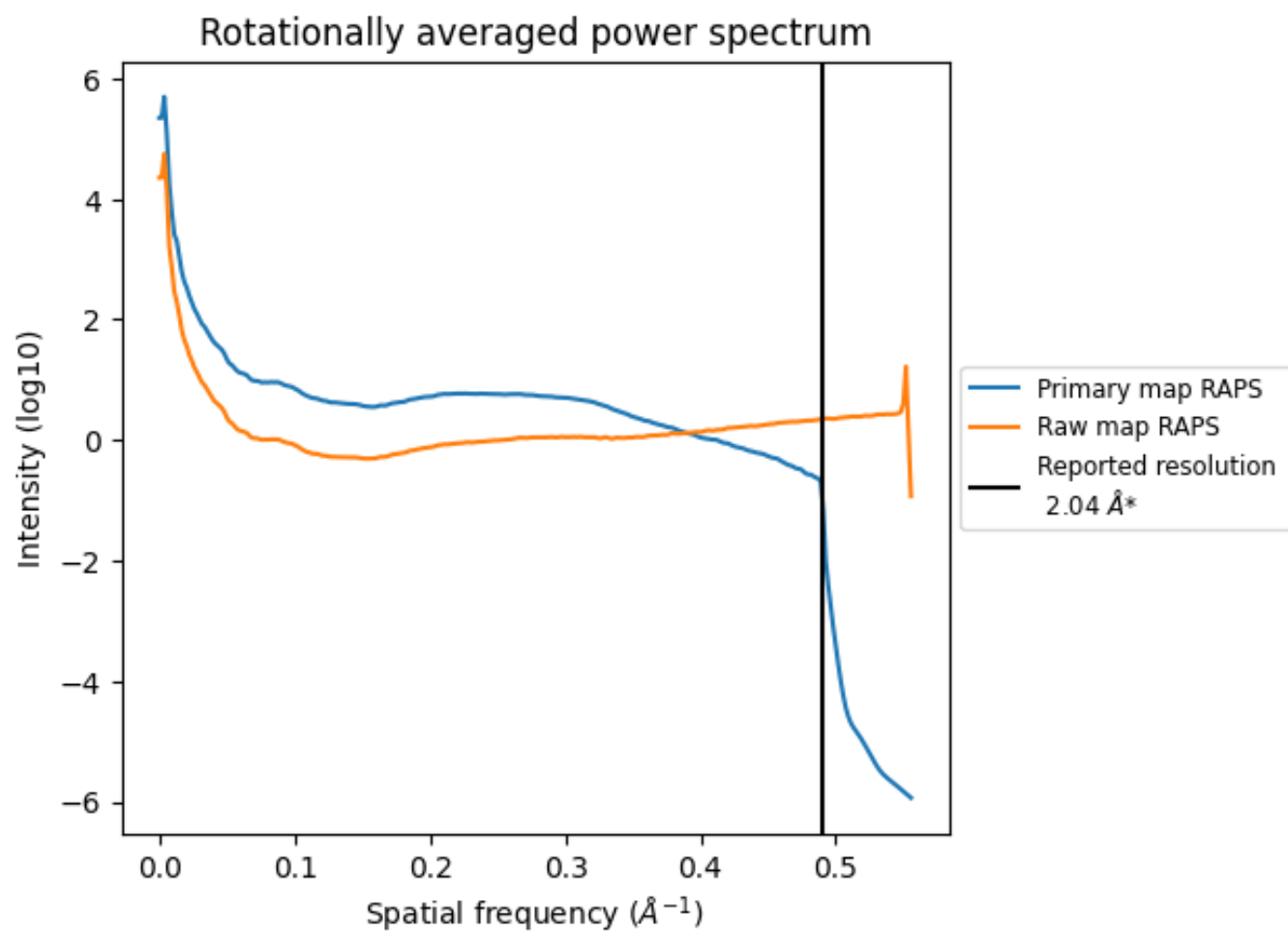
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1219 nm^3 ; this corresponds to an approximate mass of 1101 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 ⓘ

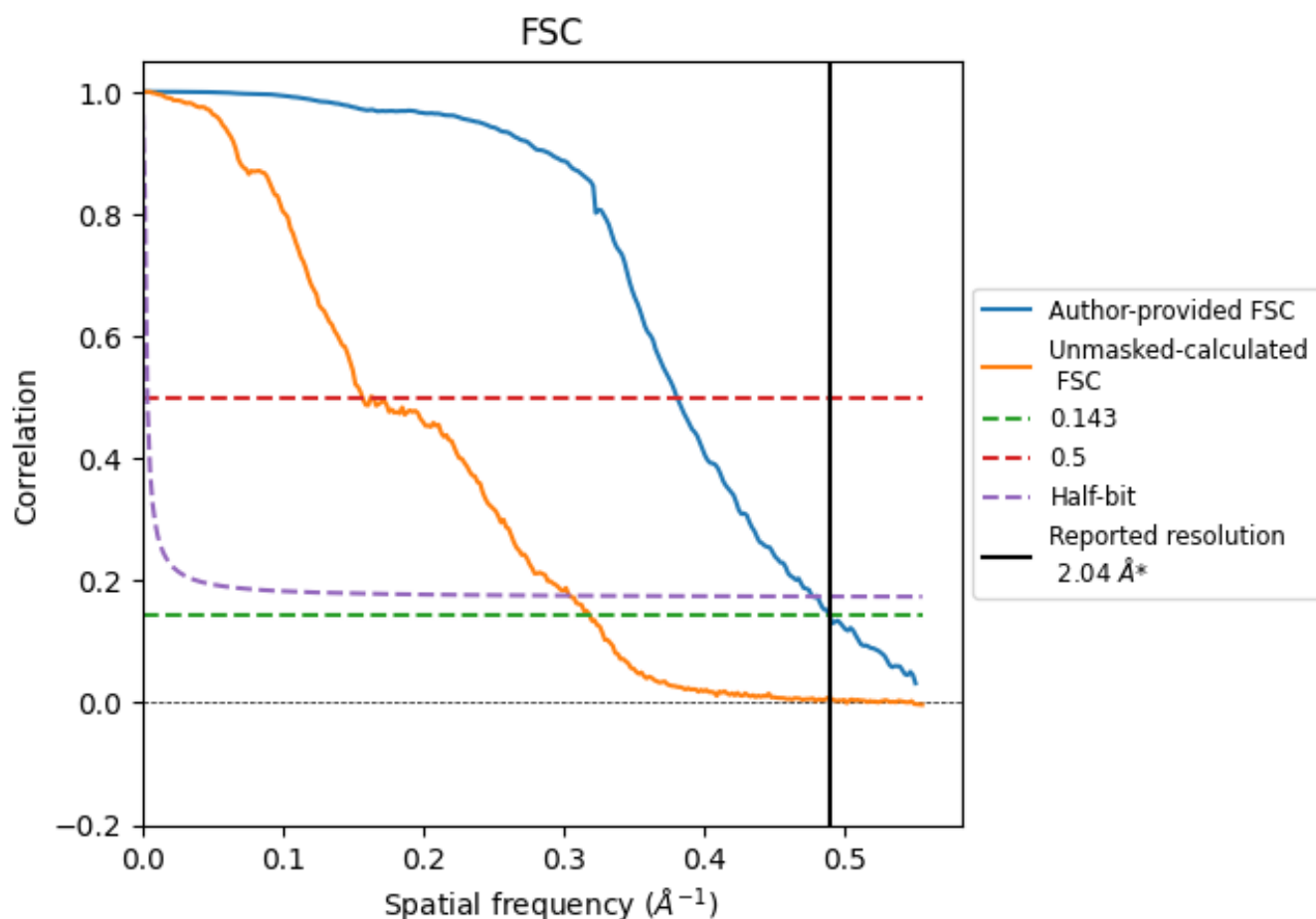


*Reported resolution corresponds to spatial frequency of 0.490 $\text{\AA}^{-1}$

8 Fourier-Shell correlation [i](#)

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.490 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

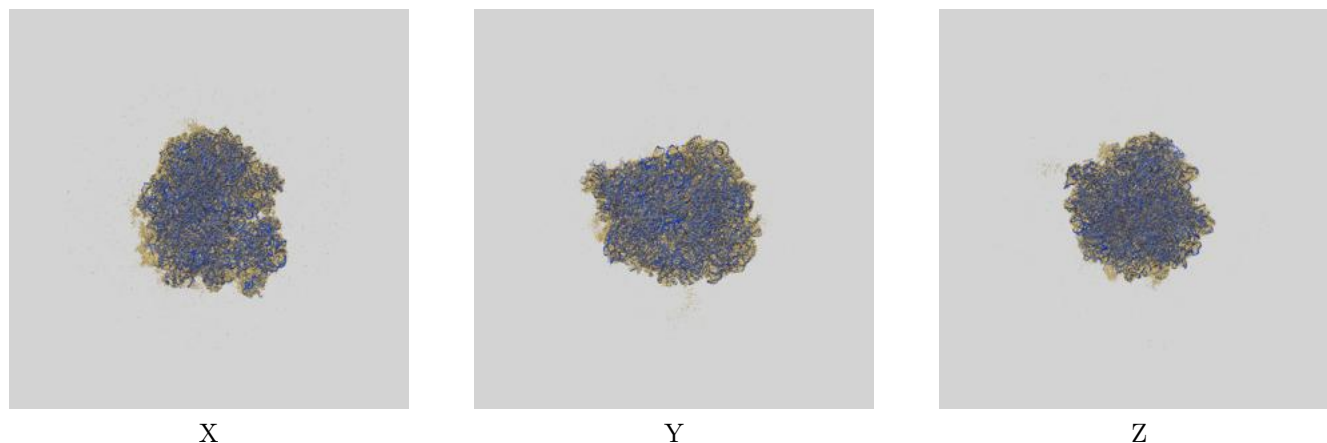
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.04	-	-
Author-provided FSC curve	2.04	2.63	2.09
Unmasked-calculated*	3.14	6.38	3.28

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.14 differs from the reported value 2.04 by more than 10 %

9 Map-model fit [i](#)

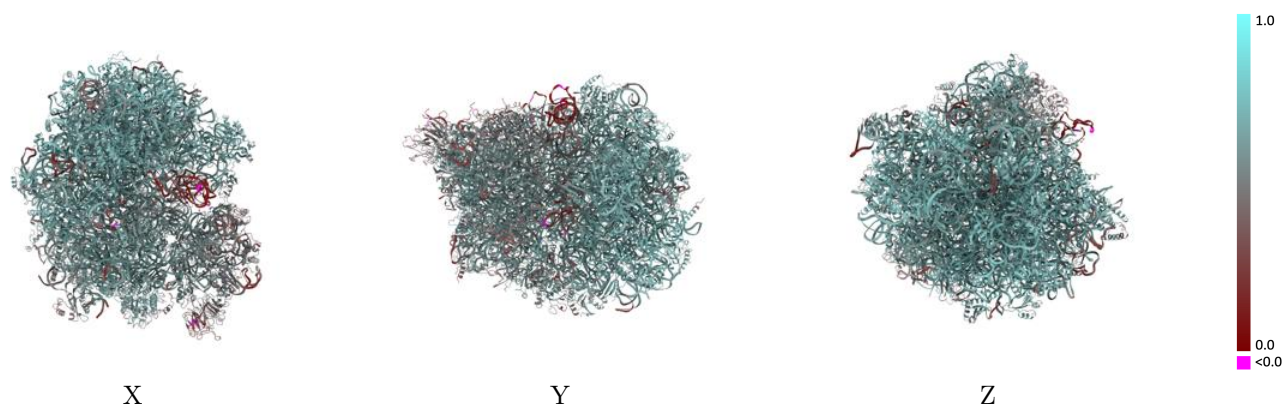
This section contains information regarding the fit between EMDB map EMD-16594 and PDB model 8CDR. Per-residue inclusion information can be found in section [3](#) on page [24](#).

9.1 Map-model overlay [i](#)



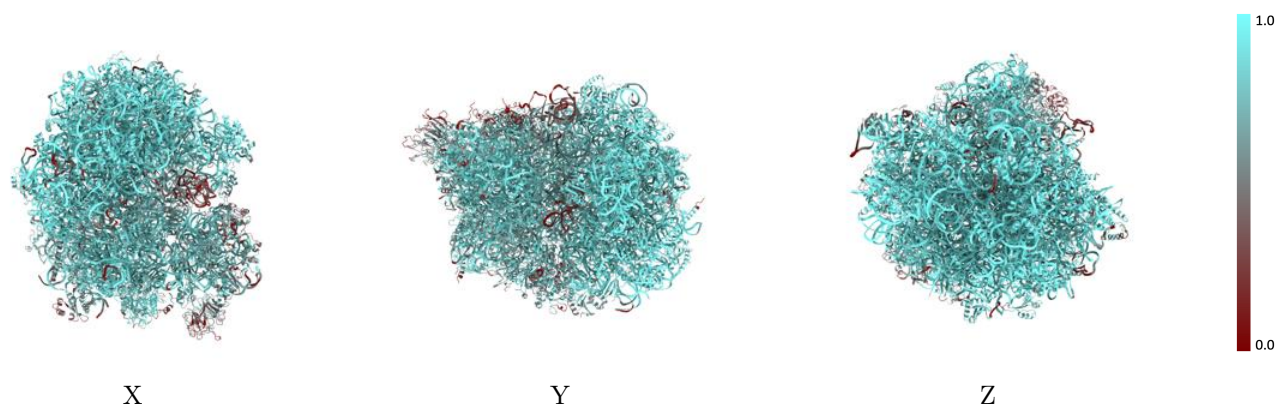
The images above show the 3D surface view of the map at the recommended contour level 0.157 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



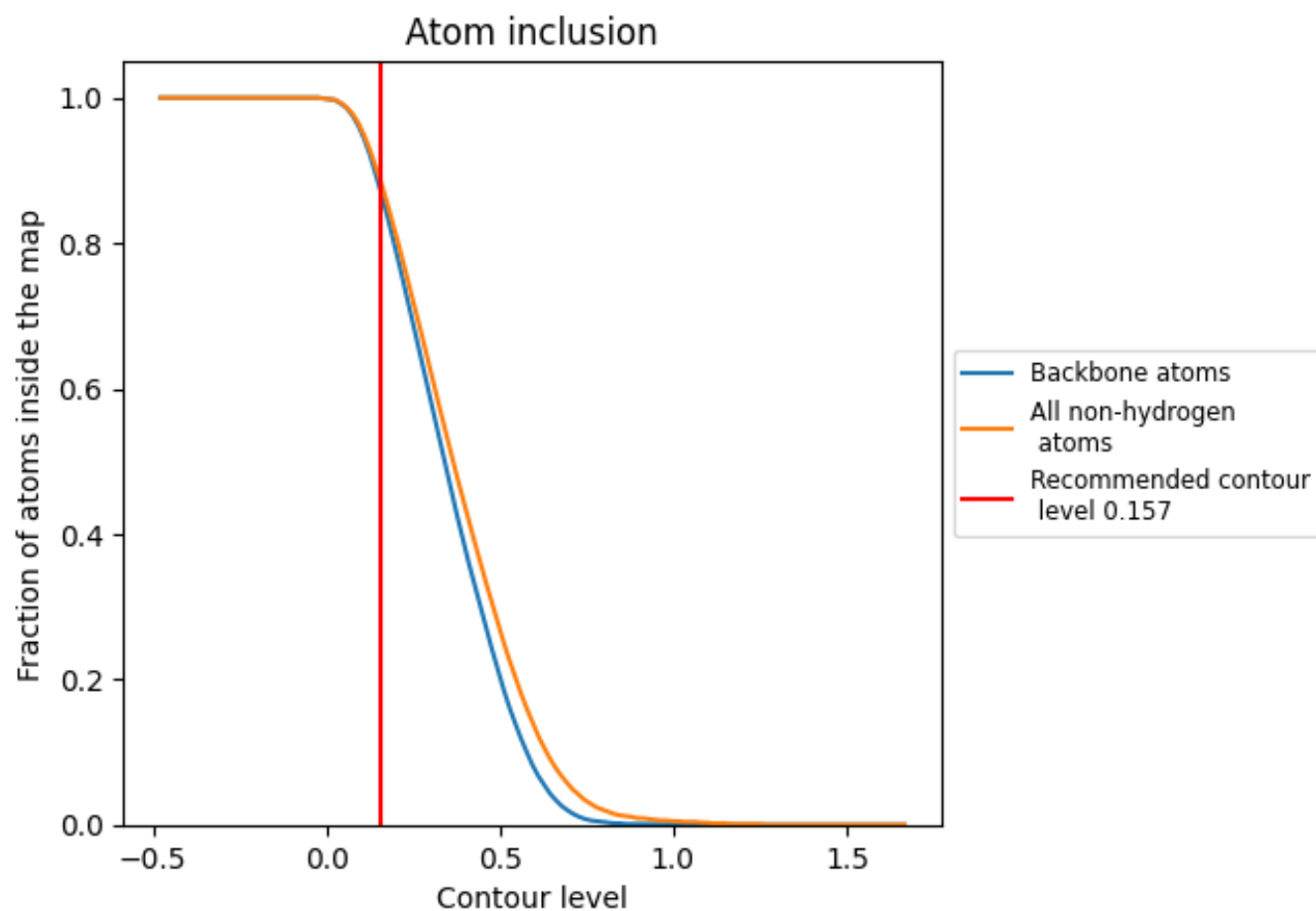
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.157).

9.4 Atom inclusion ⓘ



At the recommended contour level, 87% of all backbone atoms, 88% 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 (0.157) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8850	 0.6150
0	 0.7560	 0.5420
1	 0.1240	 0.3180
2	 0.8820	 0.6330
3	 0.7450	 0.5570
4	 0.6370	 0.5200
5	 0.9110	 0.5950
6	 0.7620	 0.5400
7	 0.4680	 0.4030
8	 0.3900	 0.3190
A	 0.9740	 0.6970
AA	 0.9430	 0.6410
Aa	 0.7810	 0.5890
B	 0.9780	 0.7080
BB	 0.9830	 0.6560
Bb	 0.5780	 0.4790
C	 0.9790	 0.7000
CC	 0.9770	 0.6650
Cc	 0.7320	 0.4630
D	 0.9080	 0.6670
DD	 0.7110	 0.5560
Dd	 0.8080	 0.5250
E	 0.9590	 0.6890
EE	 0.9680	 0.6990
Ee	 0.3580	 0.4190
F	 0.9310	 0.6720
FF	 0.9640	 0.6960
G	 0.8880	 0.6190
GG	 0.9630	 0.6920
H	 0.9730	 0.7000
HH	 0.8700	 0.6260
I	 0.9510	 0.6910
II	 0.9340	 0.6690
J	 0.9460	 0.6800
JJ	 0.9570	 0.6910



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Chain	Atom inclusion	Q-score
K	 0.9520	 0.6870
KK	 0.8880	 0.6370
L	 0.9120	 0.6420
LL	 0.9320	 0.6700
M	 0.9620	 0.6890
MM	 0.9280	 0.6820
N	 0.9030	 0.6320
NN	 0.7930	 0.5660
O	 0.9070	 0.6510
OO	 0.9210	 0.6630
P	 0.8960	 0.6550
PP	 0.9530	 0.6860
Pp	 0.3160	 0.2890
Q	 0.9700	 0.7090
QQ	 0.9880	 0.7060
R	 0.9950	 0.7190
S	 0.9380	 0.6800
T	 0.9420	 0.6680
U	 0.9060	 0.6300
V	 0.9910	 0.7090
W	 0.8530	 0.6230
X	 0.9610	 0.6740
Y	 0.9600	 0.7030
Z	 0.9290	 0.6690
a	 0.9380	 0.6710
b	 0.9280	 0.6840
c	 0.9010	 0.5740
d	 0.8470	 0.5870
e	 0.7500	 0.5550
f	 0.8990	 0.6350
g	 0.7410	 0.5340
h	 0.8560	 0.5890
i	 0.6190	 0.4820
j	 0.6500	 0.4930
k	 0.6000	 0.5090
l	 0.8390	 0.5910
m	 0.8540	 0.5900
n	 0.6960	 0.4970
o	 0.8480	 0.6120
p	 0.8840	 0.6280
q	 0.8510	 0.5880
r	 0.7220	 0.5050

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Chain	Atom inclusion	Q-score
s	 0.7670	 0.5310
t	 0.6290	 0.4870
u	 0.5780	 0.4640
v	 0.7020	 0.4920
w	 0.6790	 0.5170
x	 0.8600	 0.6140
y	 0.9520	 0.6610
z	 0.9120	 0.6480