



Full wwPDB EM Validation Report ⓘ

Sep 23, 2025 – 05:41 pm BST

PDB ID : 8CDL / pdb_00008cdl
EMDB ID : EMD-16591
Title : 80S *S. cerevisiae* ribosome with ligands in hybrid-2 pre-translocation (PRE-H2) complex
Authors : Milicevic, N.; Jenner, L.; Myasnikov, A.; Yusupov, M.; Yusupova, G.
Deposited on : 2023-01-31
Resolution : 2.72 Å(reported)

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

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

A user guide is available at

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

The types of validation reports are described at

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

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

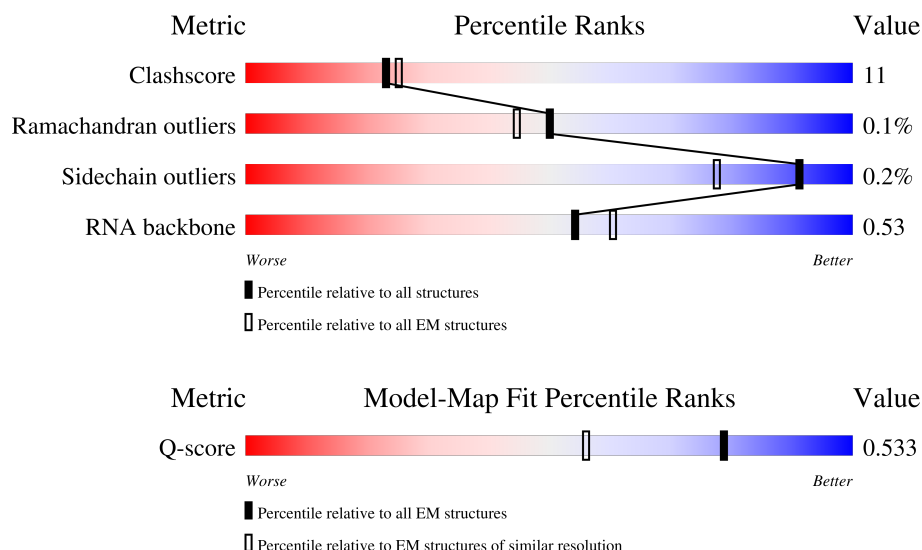
EMDB validation analysis : 0.0.1.dev129
Mogul : 1.8.4, CSD as541be (2020)
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.46

1 Overall quality at a glance

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

The reported resolution of this entry is 2.72 Å.

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



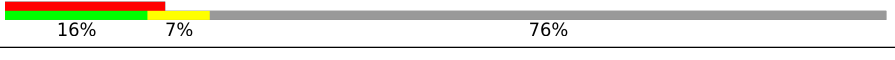
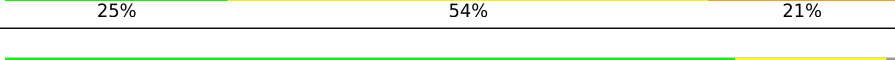
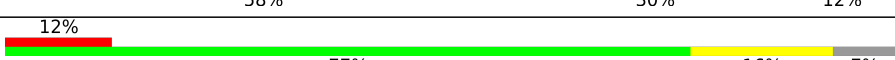
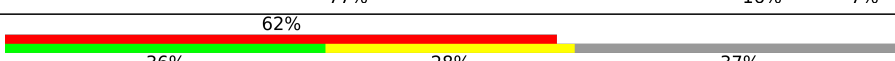
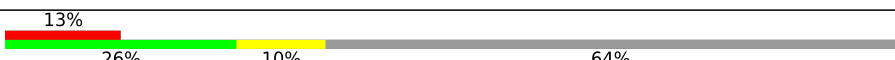
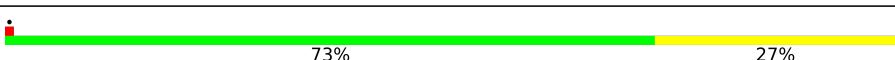
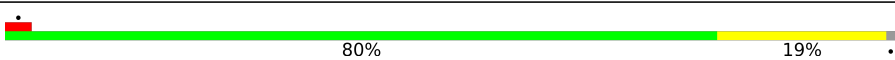
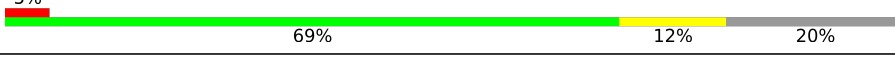
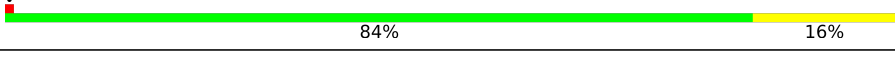
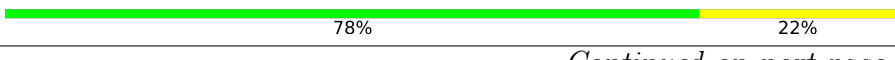
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
RNA backbone	6643	2191	-
Q-score	-	25397	10355 (2.22 - 3.22)

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	B	184	
13	BB	121	
14	Bb	76	
15	C	186	
16	CC	158	
17	Cc	77	
18	D	189	
19	DD	312	
20	Dd	39	
21	E	172	
22	EE	254	
23	Ee	165	
24	F	160	
25	FF	387	
26	G	121	
27	GG	362	
28	H	129	

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Mol	Chain	Length	Quality of chain
29	HH	297	
30	I	155	
31	II	176	
32	J	142	
33	JJ	244	
34	K	127	
35	KK	256	
36	L	136	
37	LL	191	
38	M	149	
39	MM	221	
40	N	59	
41	NN	174	
42	O	105	
43	OO	199	
44	P	113	
45	PP	138	
46	Pp	2	
47	Q	130	
48	QQ	204	
49	R	107	
50	S	121	
51	T	120	
52	U	100	
53	V	88	

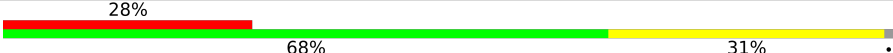
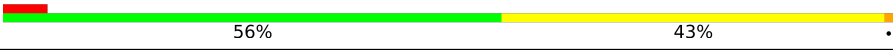
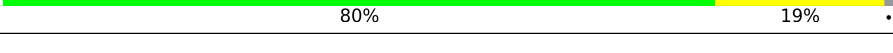
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Mol	Chain	Length	Quality of chain
54	W	78	
55	X	51	
56	Y	128	
57	Z	25	
58	a	106	
59	b	92	
60	c	1800	
61	d	252	
62	e	255	
63	f	254	
64	g	240	
65	h	261	
66	i	225	
67	j	236	
68	k	190	
69	l	200	
70	m	197	
71	n	105	
72	o	156	
73	p	151	
74	q	137	
75	r	142	
76	s	143	
77	t	136	
78	u	146	

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

2 Entry composition

There are 88 unique types of molecules in this entry. The entry contains 201553 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	53	Total	C	N	O	S	0	0
			442	274	92	72	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	3190	Total	C	N	O	P	0	0
			68285	30524	12313	22258	3190		

- Molecule 12 is a protein called 60S ribosomal protein L17-A.

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

- Molecule 13 is a RNA chain called 5S ribosomal RNA.

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

- Molecule 14 is a RNA chain called Transfer RNA Phe.

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

- Molecule 15 is a protein called 60S ribosomal protein L18-A.

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

- Molecule 16 is a RNA chain called 5.8S ribosomal RNA.

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

- Molecule 17 is a RNA chain called Transfer RNA fMet.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	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 18 is a protein called 60S ribosomal protein L19-A.

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

- Molecule 19 is a protein called 60S acidic ribosomal protein P0.

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

- Molecule 20 is a RNA chain called Messenger RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	Dd	14	Total	C	N	O	P	0	0
			298	134	52	98	14		

- Molecule 21 is a protein called 60S ribosomal protein L20-A.

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

- Molecule 22 is a protein called 60S ribosomal protein L2-A.

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

- Molecule 23 is a protein called 60S ribosomal protein L12-A.

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

- Molecule 24 is a protein called 60S ribosomal protein L21-A.

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

- Molecule 25 is a protein called 60S ribosomal protein L3.

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

- Molecule 26 is a protein called 60S ribosomal protein L22-A.

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

- Molecule 27 is a protein called 60S ribosomal protein L4-A.

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

- Molecule 28 is a protein called 60S ribosomal protein L23-A.

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

- Molecule 29 is a protein called 60S ribosomal protein L5.

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

- Molecule 30 is a protein called 60S ribosomal protein L24-A.

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

- Molecule 31 is a protein called 60S ribosomal protein L6-A.

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

- Molecule 32 is a protein called 60S ribosomal protein L25.

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

- Molecule 33 is a protein called 60S ribosomal protein L7-A.

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

- Molecule 34 is a protein called 60S ribosomal protein L26-A.

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

- Molecule 35 is a protein called 60S ribosomal protein L8-A.

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

- Molecule 36 is a protein called 60S ribosomal protein L27-A.

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

- Molecule 37 is a protein called 60S ribosomal protein L9-A.

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

- Molecule 38 is a protein called 60S ribosomal protein L28.

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

- Molecule 39 is a protein called 60S ribosomal protein L10.

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

- Molecule 40 is a protein called 60S ribosomal protein L29.

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

- Molecule 41 is a protein called 60S ribosomal protein L11-A.

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

- Molecule 42 is a protein called 60S ribosomal protein L30.

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

- Molecule 43 is a protein called 60S ribosomal protein L13-A.

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

- Molecule 44 is a protein called 60S ribosomal protein L31-A.

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

- Molecule 45 is a protein called 60S ribosomal protein L14-A.

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

- Molecule 46 is a protein called dipeptide.

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

- Molecule 47 is a protein called 60S ribosomal protein L32.

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

- Molecule 48 is a protein called 60S ribosomal protein L15-A.

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

- Molecule 49 is a protein called 60S ribosomal protein L33-A.

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

- Molecule 50 is a protein called 60S ribosomal protein L34-A.

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

- Molecule 51 is a protein called 60S ribosomal protein L35-A.

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

- Molecule 52 is a protein called 60S ribosomal protein L36-A.

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

- Molecule 53 is a protein called 60S ribosomal protein L37-A.

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

- Molecule 54 is a protein called 60S ribosomal protein L38.

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

- Molecule 55 is a protein called 60S ribosomal protein L39.

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

- Molecule 56 is a protein called Ubiquitin-60S ribosomal protein L40.

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

- Molecule 57 is a protein called 60S ribosomal protein L41-A.

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

- Molecule 58 is a protein called 60S ribosomal protein L42-A.

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

- Molecule 59 is a protein called 60S ribosomal protein L43-A.

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

- Molecule 60 is a RNA chain called 18S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	c	1604	Total	C	N	O	P	0	0
			34236	15322	6079	11231	1604		

- Molecule 61 is a protein called 40S ribosomal protein S0-A.

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

- Molecule 62 is a protein called 40S ribosomal protein S1-A.

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

- Molecule 63 is a protein called 40S ribosomal protein S2.

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

- Molecule 64 is a protein called RPS3 isoform 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	g	206	Total	C	N	O	S	0	0
			1601	1014	294	287	6		

- Molecule 65 is a protein called 40S ribosomal protein S4-A.

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

- Molecule 66 is a protein called 40S ribosomal protein S5.

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

- Molecule 67 is a protein called 40S ribosomal protein S6-A.

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

- Molecule 68 is a protein called 40S ribosomal protein S7-A.

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

- Molecule 69 is a protein called 40S ribosomal protein S8-B.

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

- Molecule 70 is a protein called 40S ribosomal protein S9-A.

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

- Molecule 71 is a protein called 40S ribosomal protein S10-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	n	91	Total	C	N	O	S	0	0
			772	503	123	144	2		

- Molecule 72 is a protein called 40S ribosomal protein S11-A.

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

- Molecule 73 is a protein called 40S ribosomal protein S13.

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

- Molecule 74 is a protein called 40S ribosomal protein S14-A.

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

- Molecule 75 is a protein called 40S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	r	104	Total	C	N	O	S	0	0
			837	533	155	143	6		

- Molecule 76 is a protein called 40S ribosomal protein S16-A.

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

- Molecule 77 is a protein called 40S ribosomal protein S17-A.

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

- Molecule 78 is a protein called 40S ribosomal protein S18-A.

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

- Molecule 79 is a protein called 40S ribosomal protein S19-A.

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

- Molecule 80 is a protein called 40S ribosomal protein S20.

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

- Molecule 81 is a protein called 40S ribosomal protein S21-A.

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

- Molecule 82 is a protein called 40S ribosomal protein S22-A.

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

- Molecule 83 is a protein called 40S ribosomal protein S23-A.

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

- Molecule 84 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
84	2	1	Total	Zn	0
			1	1	
84	5	1	Total	Zn	0
			1	1	
84	8	1	Total	Zn	0
			1	1	
84	S	1	Total	Zn	0
			1	1	
84	V	1	Total	Zn	0
			1	1	
84	Y	1	Total	Zn	0
			1	1	
84	a	1	Total	Zn	0
			1	1	
84	b	1	Total	Zn	0
			1	1	

- Molecule 85 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
85	AA	191	Total	Mg	0
			191	191	
85	B	1	Total	Mg	0
			1	1	
85	BB	4	Total	Mg	0
			4	4	
85	Bb	1	Total	Mg	0
			1	1	
85	CC	4	Total	Mg	0
			4	4	
85	Cc	1	Total	Mg	0
			1	1	
85	Dd	1	Total	Mg	0
			1	1	
85	FF	1	Total	Mg	0
			1	1	
85	H	1	Total	Mg	0
			1	1	

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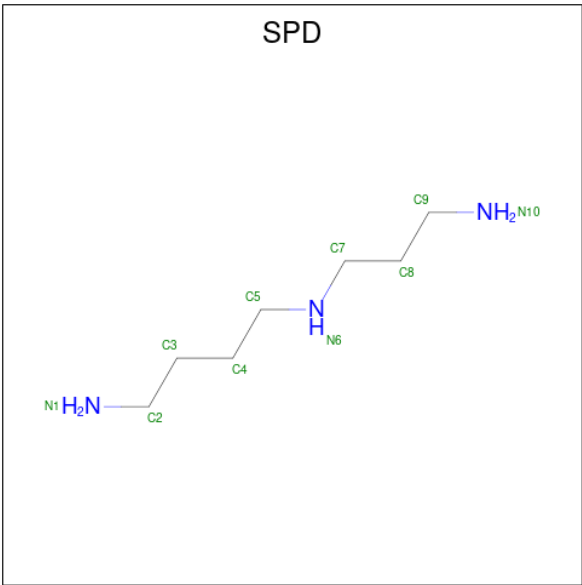
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Mol	Chain	Residues	Atoms		AltConf
85	JJ	1	Total 1	Mg 1	0
85	MM	1	Total 1	Mg 1	0
85	QQ	2	Total 2	Mg 2	0
85	V	1	Total 1	Mg 1	0
85	a	1	Total 1	Mg 1	0
85	c	46	Total 46	Mg 46	0
85	q	1	Total 1	Mg 1	0

- Molecule 86 is POTASSIUM ION (CCD ID: K) (formula: K).

Mol	Chain	Residues	Atoms		AltConf
86	AA	11	Total 11	K 11	0
86	EE	1	Total 1	K 1	0
86	MM	1	Total 1	K 1	0
86	Q	1	Total 1	K 1	0
86	S	1	Total 1	K 1	0
86	a	1	Total 1	K 1	0
86	c	4	Total 4	K 4	0
86	q	1	Total 1	K 1	0

- Molecule 87 is SPERMIDINE (CCD ID: SPD) (formula: C₇H₁₉N₃).



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 water.

Mol	Chain	Residues	Atoms		AltConf
88	2	2	Total	O	0
			2	2	
88	A	3	Total	O	0
			3	3	
88	AA	804	Total	O	0
			804	804	
88	BB	12	Total	O	0
			12	12	
88	Bb	5	Total	O	0
			5	5	
88	CC	18	Total	O	0
			18	18	
88	Cc	5	Total	O	0
			5	5	
88	D	4	Total	O	0
			4	4	

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Mol	Chain	Residues	Atoms		AltConf
88	Dd	4	Total 4	O 4	0
88	EE	6	Total 6	O 6	0
88	F	4	Total 4	O 4	0
88	FF	5	Total 5	O 5	0
88	GG	3	Total 3	O 3	0
88	H	3	Total 3	O 3	0
88	J	2	Total 2	O 2	0
88	LL	2	Total 2	O 2	0
88	M	3	Total 3	O 3	0
88	MM	2	Total 2	O 2	0
88	N	1	Total 1	O 1	0
88	OO	1	Total 1	O 1	0
88	P	1	Total 1	O 1	0
88	Q	3	Total 3	O 3	0
88	QQ	6	Total 6	O 6	0
88	S	2	Total 2	O 2	0
88	V	3	Total 3	O 3	0
88	a	4	Total 4	O 4	0
88	c	170	Total 170	O 170	0
88	f	1	Total 1	O 1	0
88	o	1	Total 1	O 1	0

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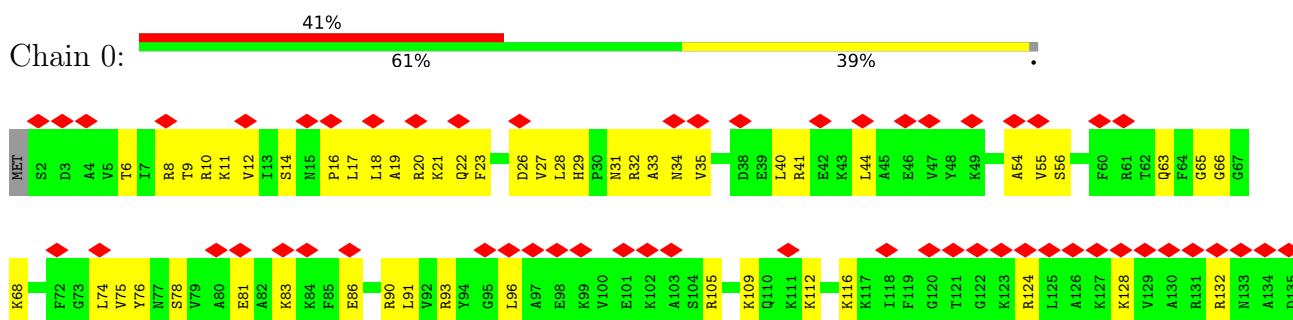
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Mol	Chain	Residues	Atoms		AltConf
88	p	1	Total 1	O 1	0
88	q	2	Total 2	O 2	0
88	z	1	Total 1	O 1	0

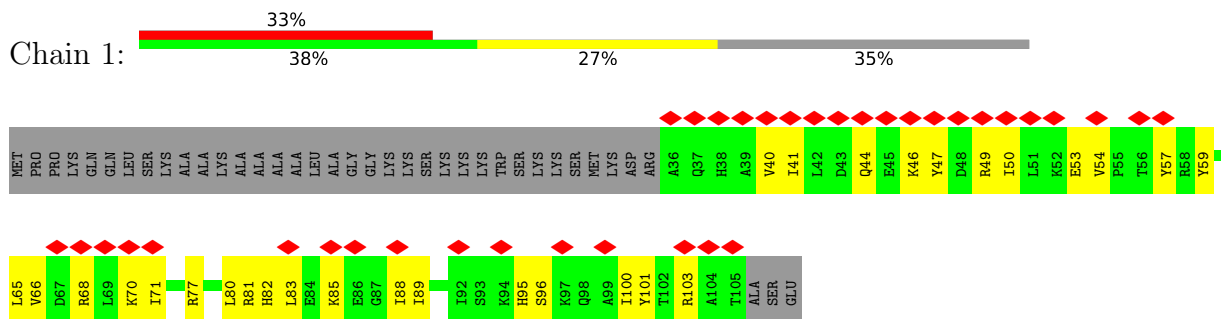
3 Residue-property plots

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

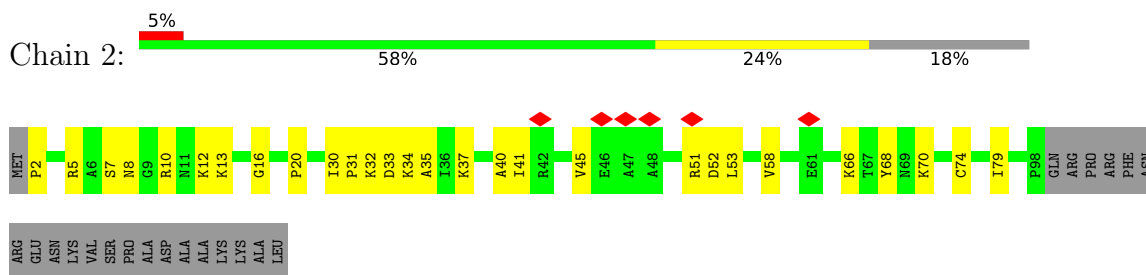
- Molecule 1: 40S ribosomal protein S24-A



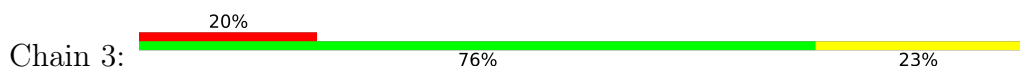
- Molecule 2: 40S ribosomal protein S25-A

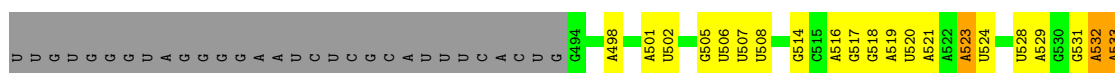


- Molecule 3: 40S ribosomal protein S26



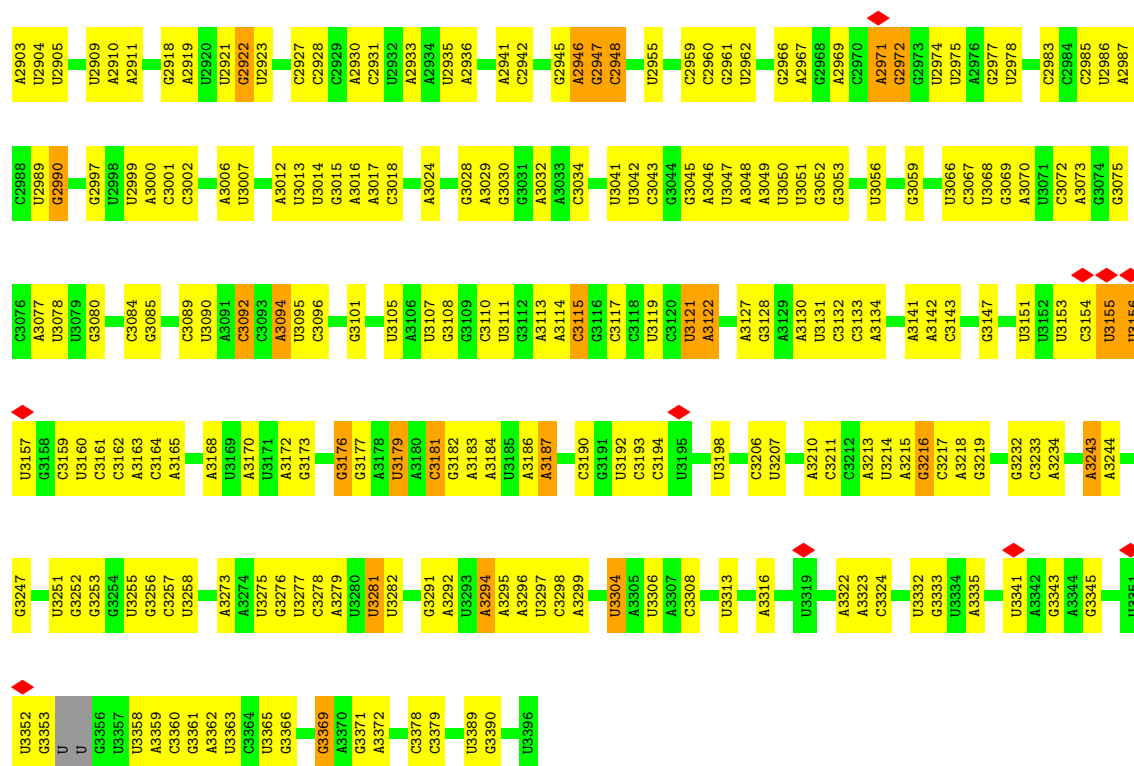
- Molecule 4: 40S ribosomal protein S27-A



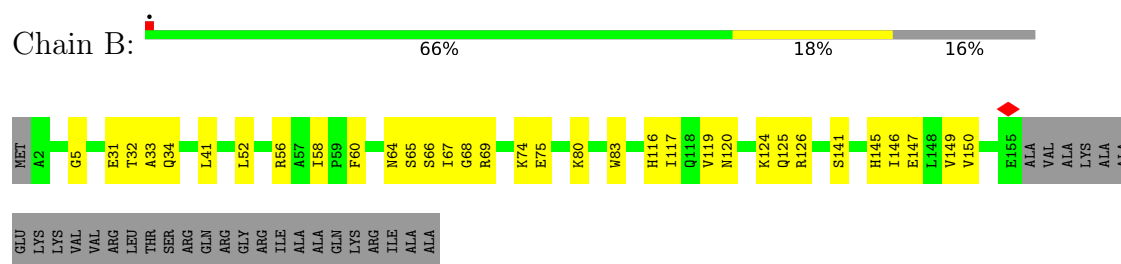




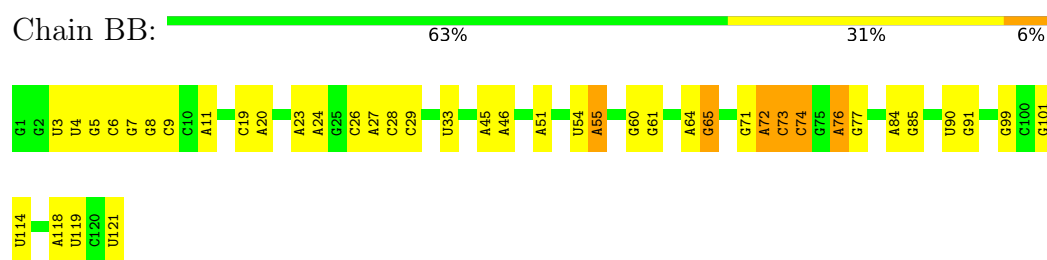




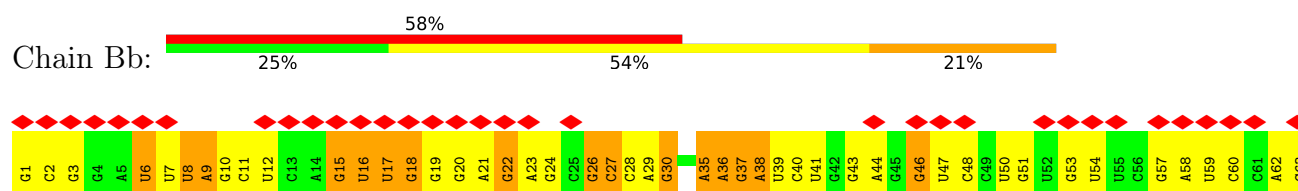
• Molecule 12: 60S ribosomal protein L17-A

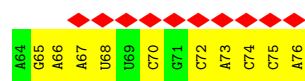


• Molecule 13: 5S ribosomal RNA



• Molecule 14: Transfer RNA Phe





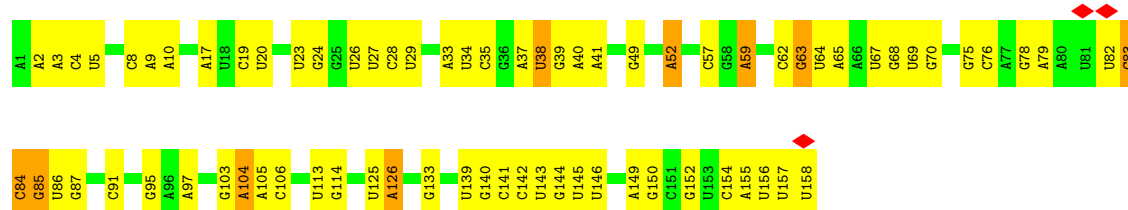
• Molecule 15: 60S ribosomal protein L18-A

Chain C: 82% 17%



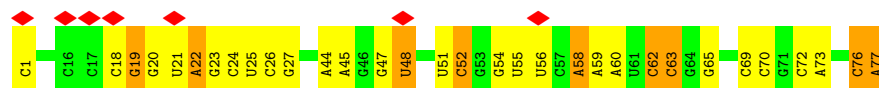
• Molecule 16: 5.8S ribosomal RNA

Chain CC: 53% 41% 6%



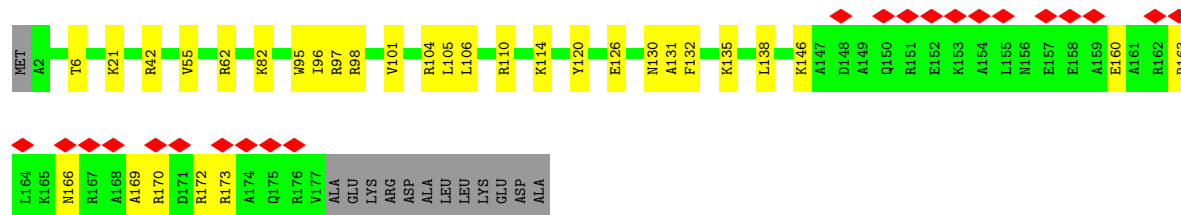
• Molecule 17: Transfer RNA fMet

Chain Cc: 9% 58% 30% 12%



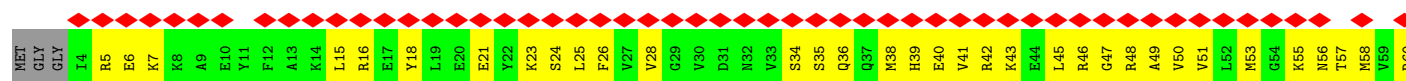
• Molecule 18: 60S ribosomal protein L19-A

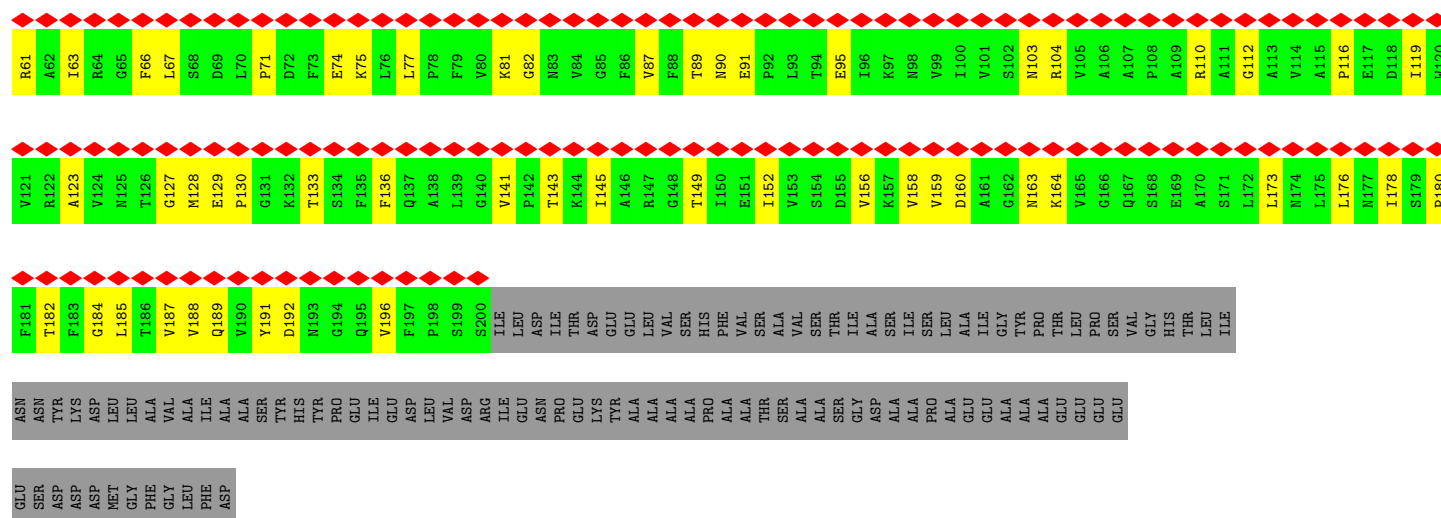
Chain D: 12% 77% 16% 7%



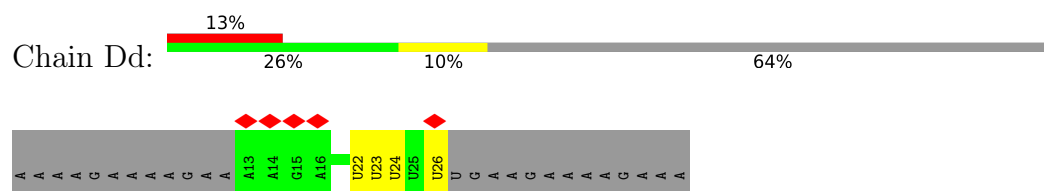
• Molecule 19: 60S acidic ribosomal protein P0

Chain DD: 62% 36% 28% 37%

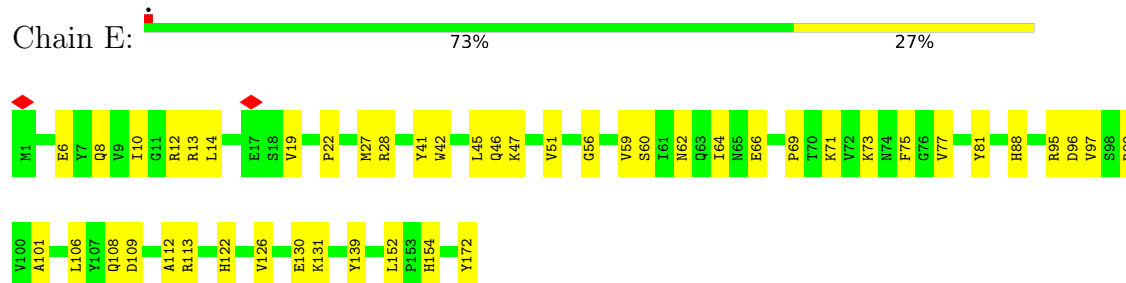




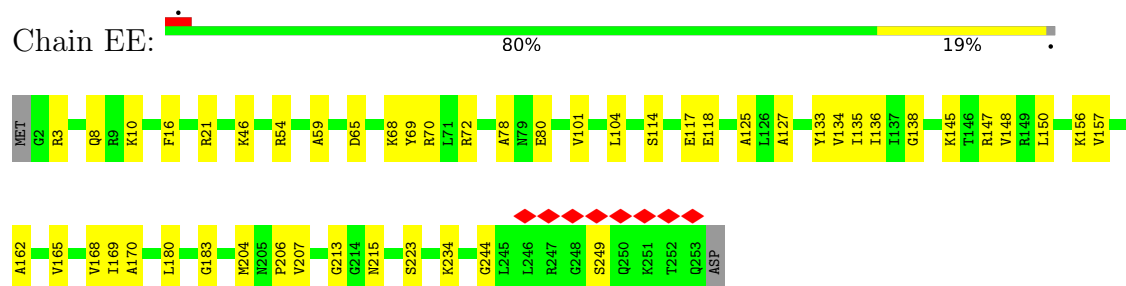
- Molecule 20: Messenger RNA



- Molecule 21: 60S ribosomal protein L20-A

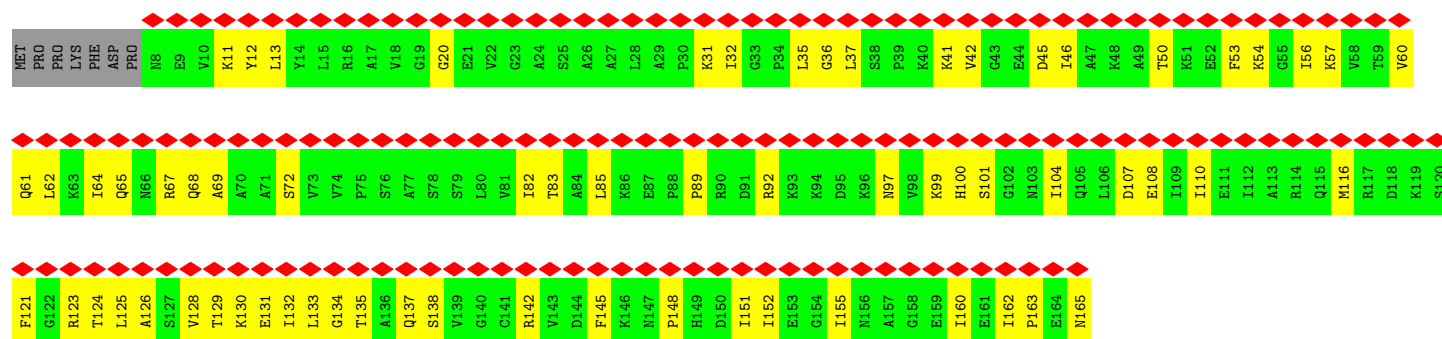


- Molecule 22: 60S ribosomal protein L2-A

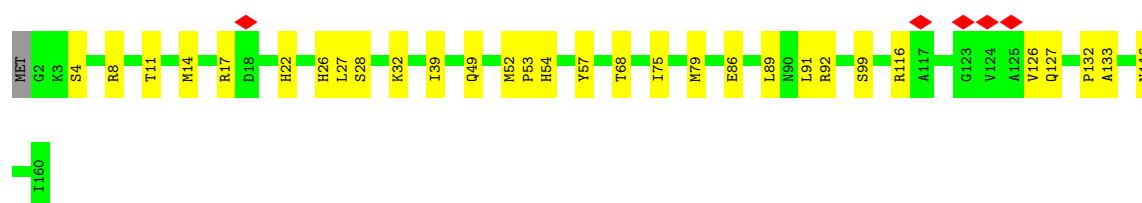
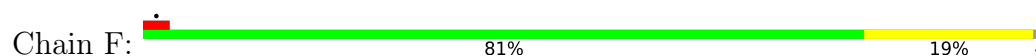


- Molecule 23: 60S ribosomal protein L12-A

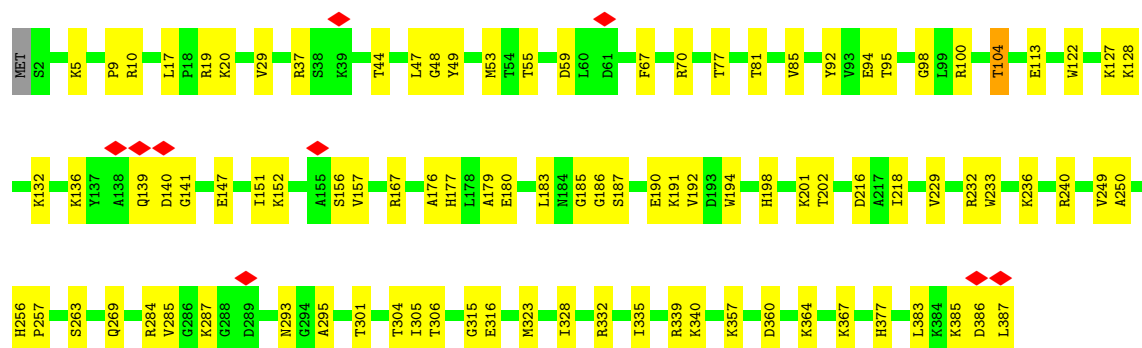
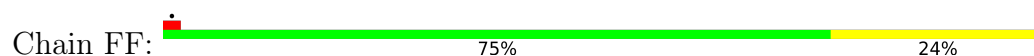




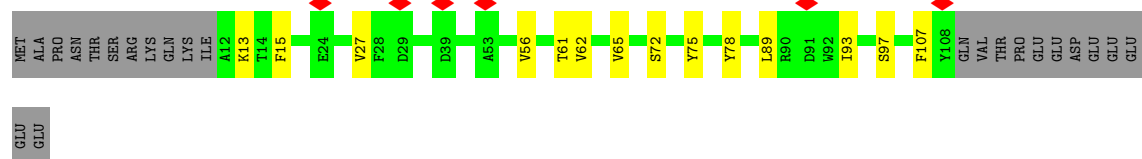
• Molecule 24: 60S ribosomal protein L21-A



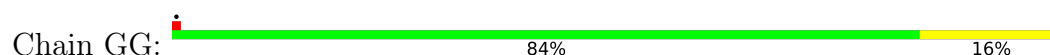
• Molecule 25: 60S ribosomal protein L3



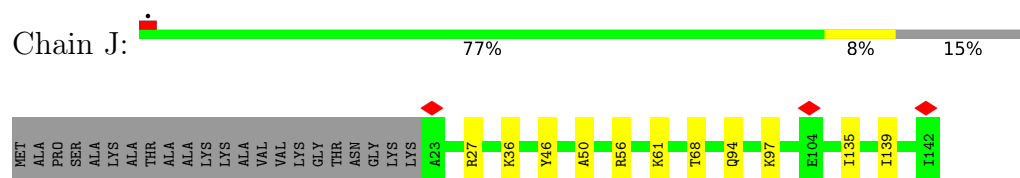
• Molecule 26: 60S ribosomal protein L22-A



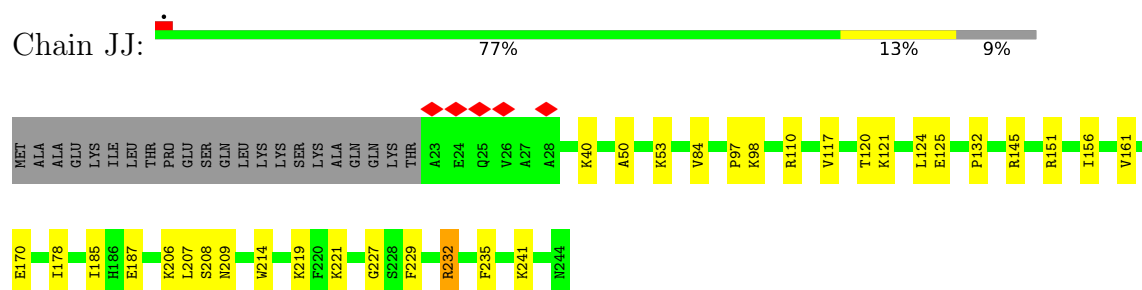
• Molecule 27: 60S ribosomal protein L4-A



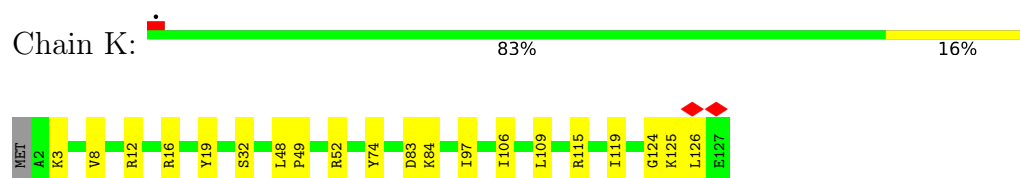
- Molecule 32: 60S ribosomal protein L25



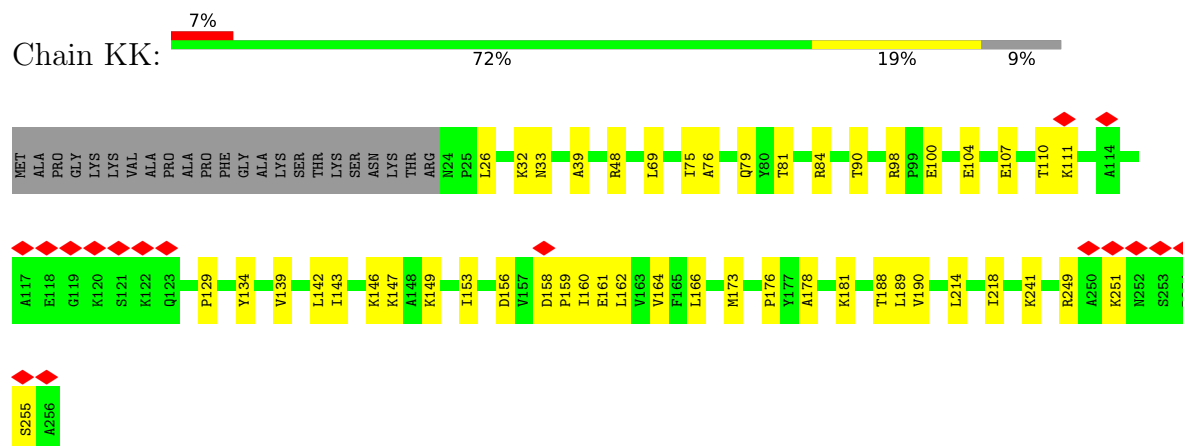
- Molecule 33: 60S ribosomal protein L7-A



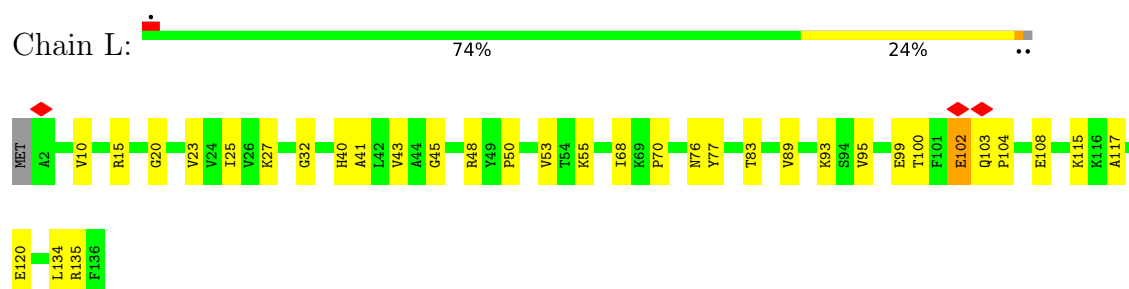
- Molecule 34: 60S ribosomal protein L26-A



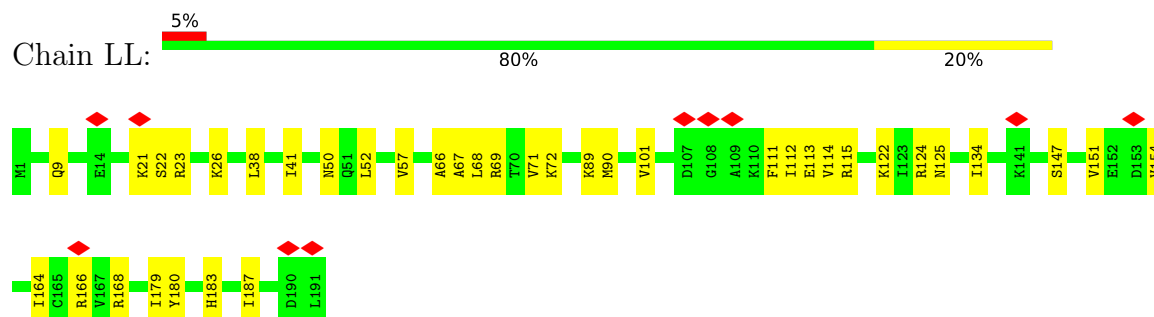
- Molecule 35: 60S ribosomal protein L8-A



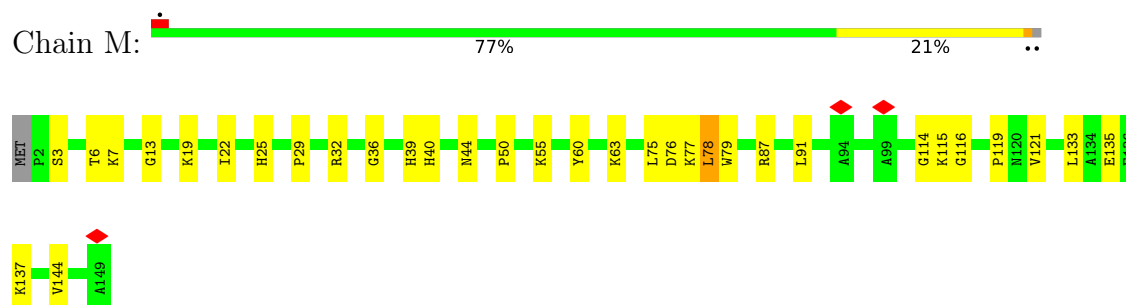
- Molecule 36: 60S ribosomal protein L27-A



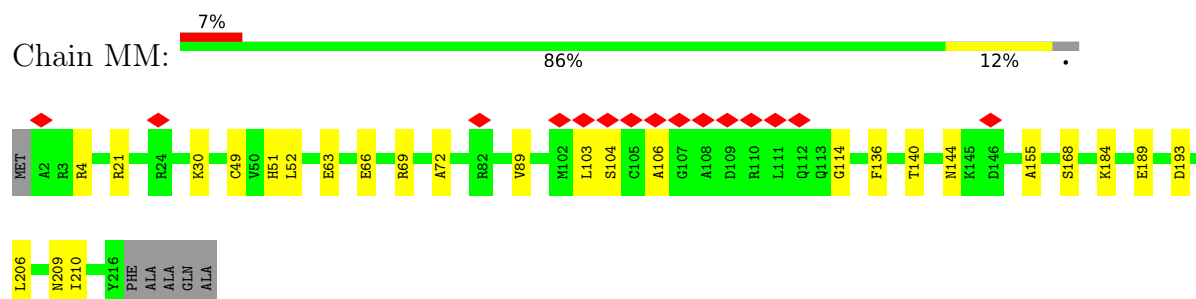
- Molecule 37: 60S ribosomal protein L9-A



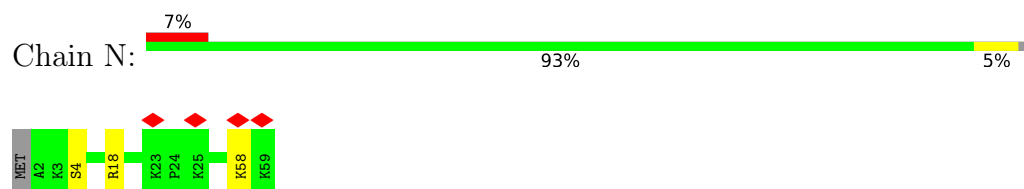
- Molecule 38: 60S ribosomal protein L28



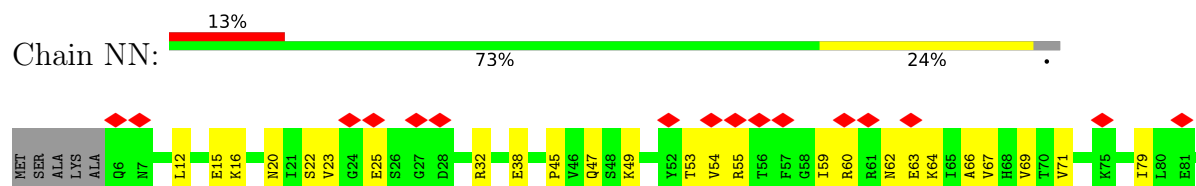
- Molecule 39: 60S ribosomal protein L10



- Molecule 40: 60S ribosomal protein L29

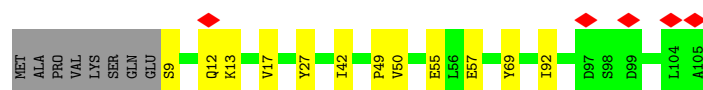
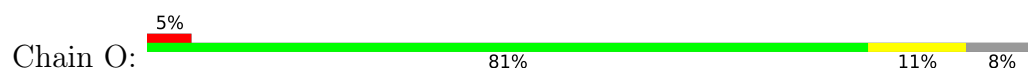


- Molecule 41: 60S ribosomal protein L11-A

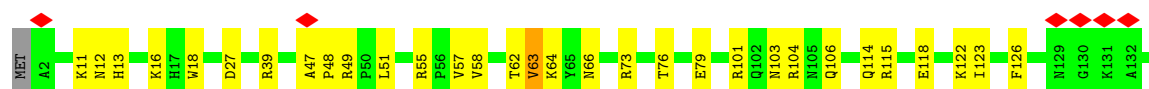
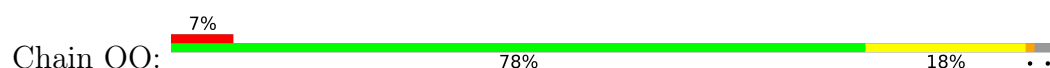




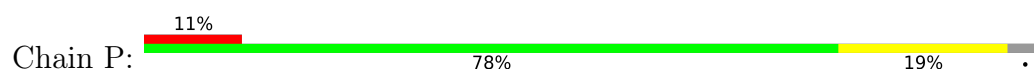
- Molecule 42: 60S ribosomal protein L30



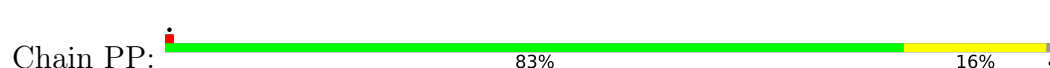
- Molecule 43: 60S ribosomal protein L13-A



- Molecule 44: 60S ribosomal protein L31-A



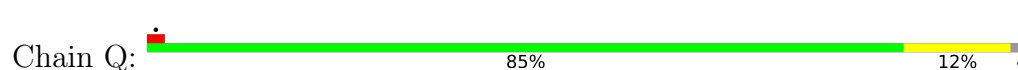
- Molecule 45: 60S ribosomal protein L14-A



- Molecule 46: dipeptide



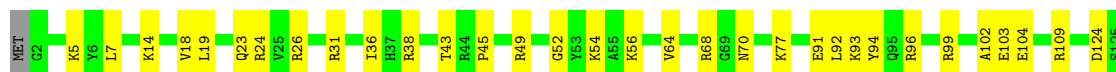
- Molecule 47: 60S ribosomal protein L32





- Molecule 48: 60S ribosomal protein L15-A

Chain QQ: 75% 25%



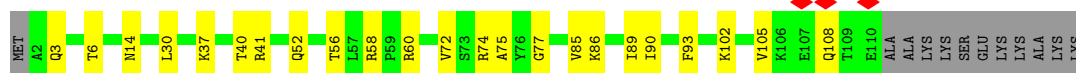
- Molecule 49: 60S ribosomal protein L33-A

Chain R: 82% 17%



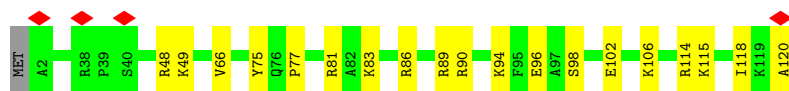
- Molecule 50: 60S ribosomal protein L34-A

Chain S: 71% 19% 10%



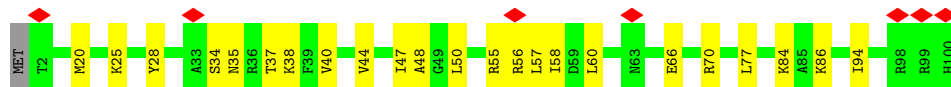
- Molecule 51: 60S ribosomal protein L35-A

Chain T: 83% 16%



- Molecule 52: 60S ribosomal protein L36-A

Chain U: 7% 76% 23%

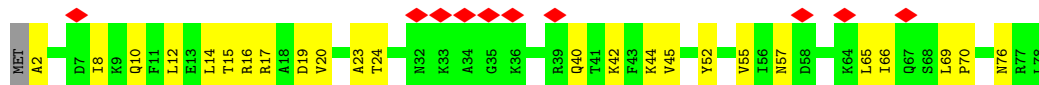


- Molecule 53: 60S ribosomal protein L37-A

Chain V: 68% 27% 5%



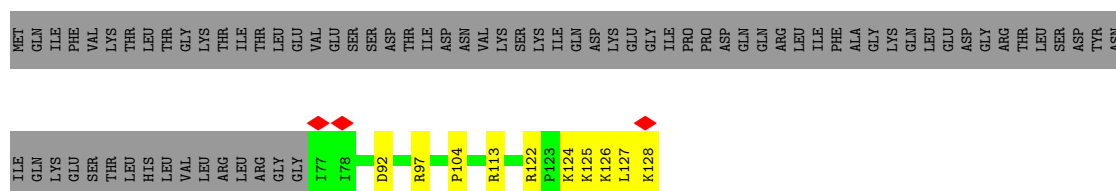
- Molecule 54: 60S ribosomal protein L38



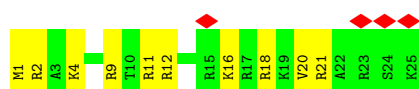
- Molecule 55: 60S ribosomal protein L39



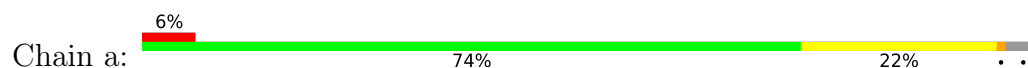
- Molecule 56: Ubiquitin-60S ribosomal protein L40



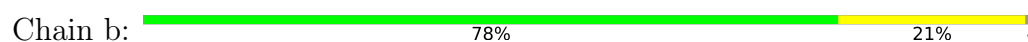
- Molecule 57: 60S ribosomal protein L41-A



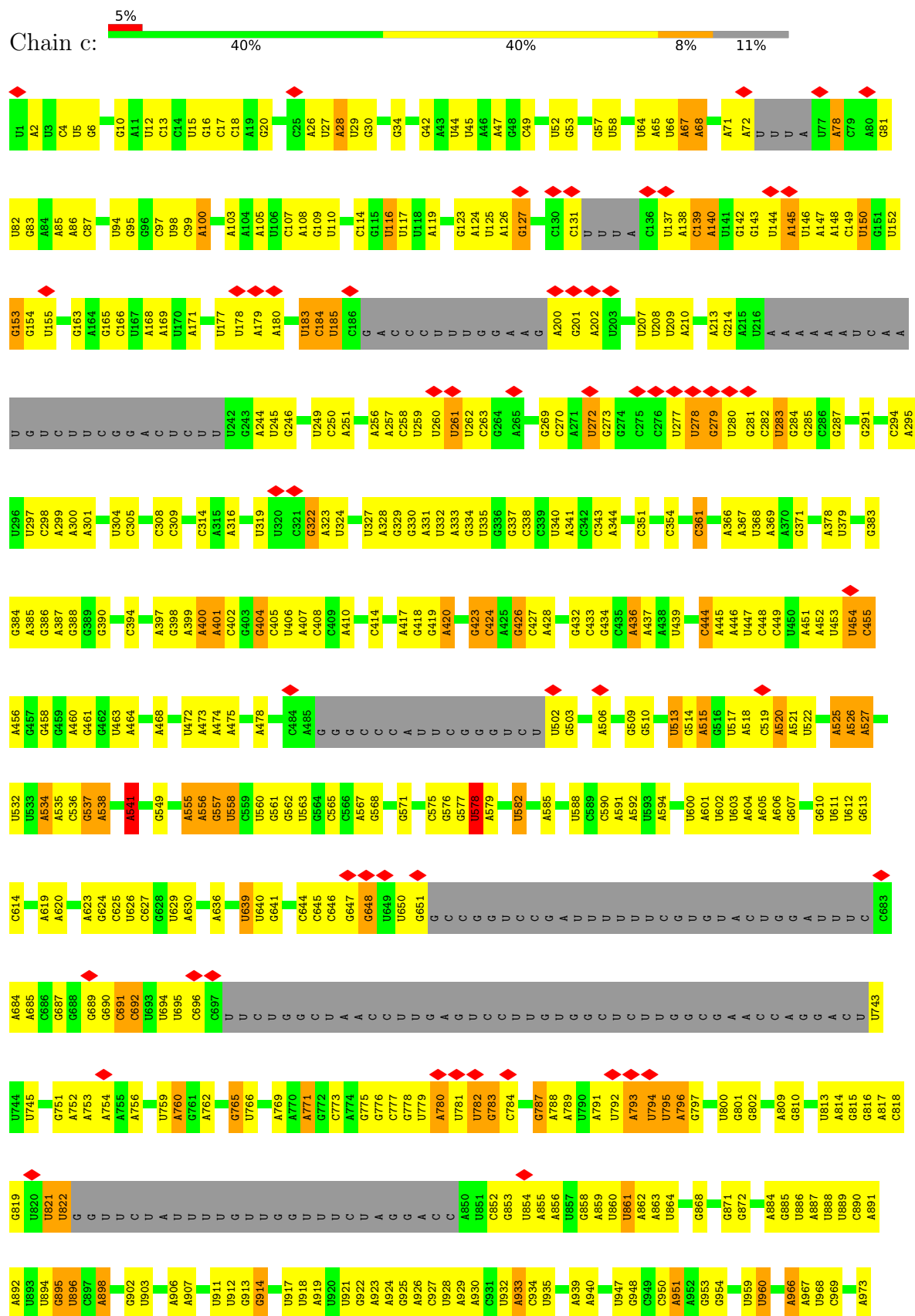
- Molecule 58: 60S ribosomal protein L42-A

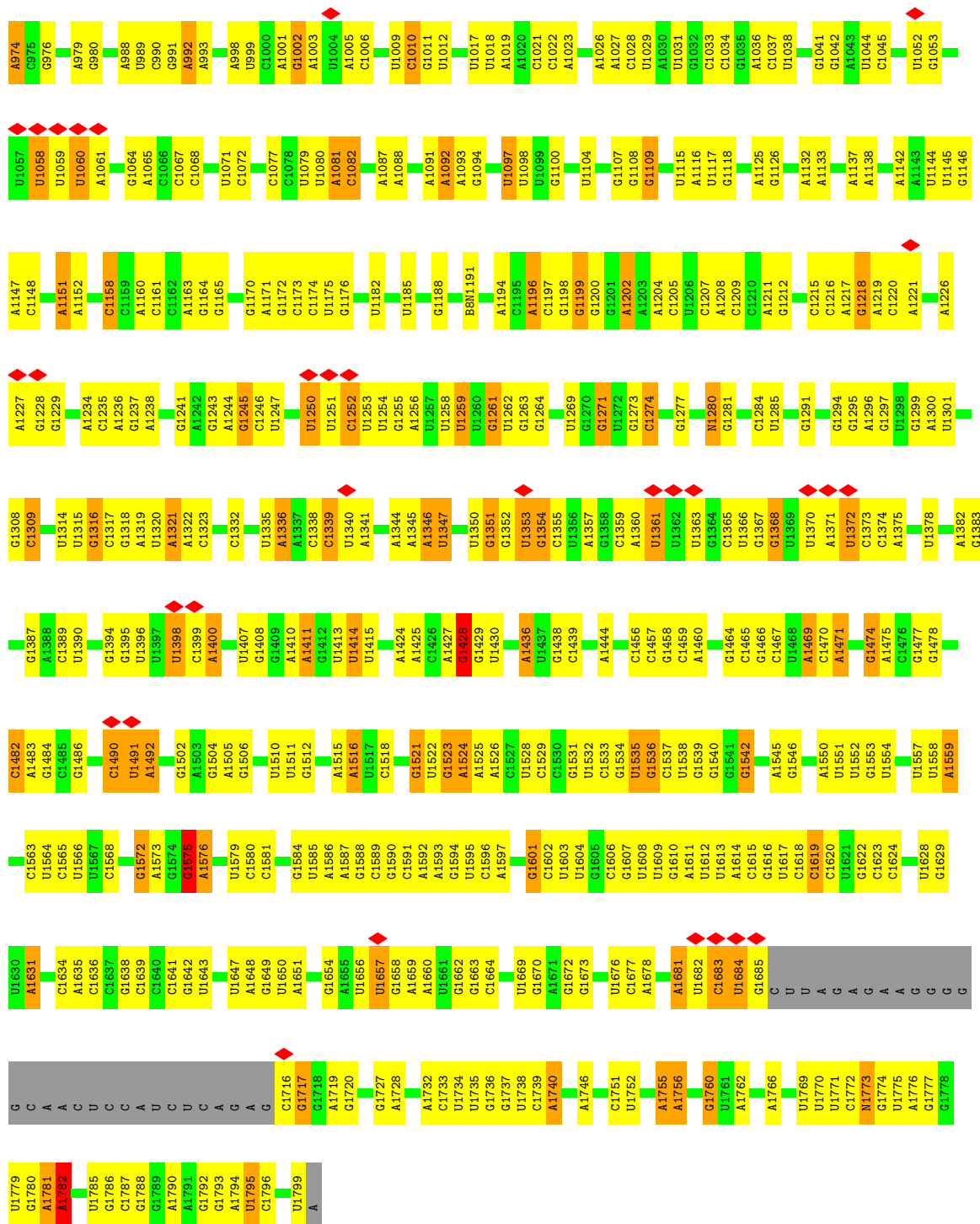


- Molecule 59: 60S ribosomal protein L43-A

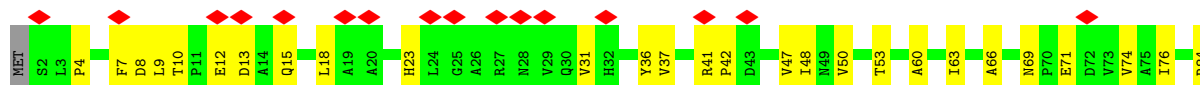


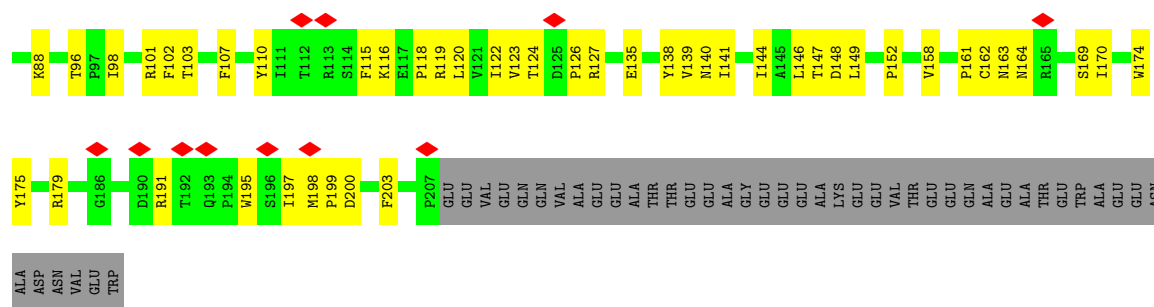
● Molecule 60: 18S ribosomal RNA



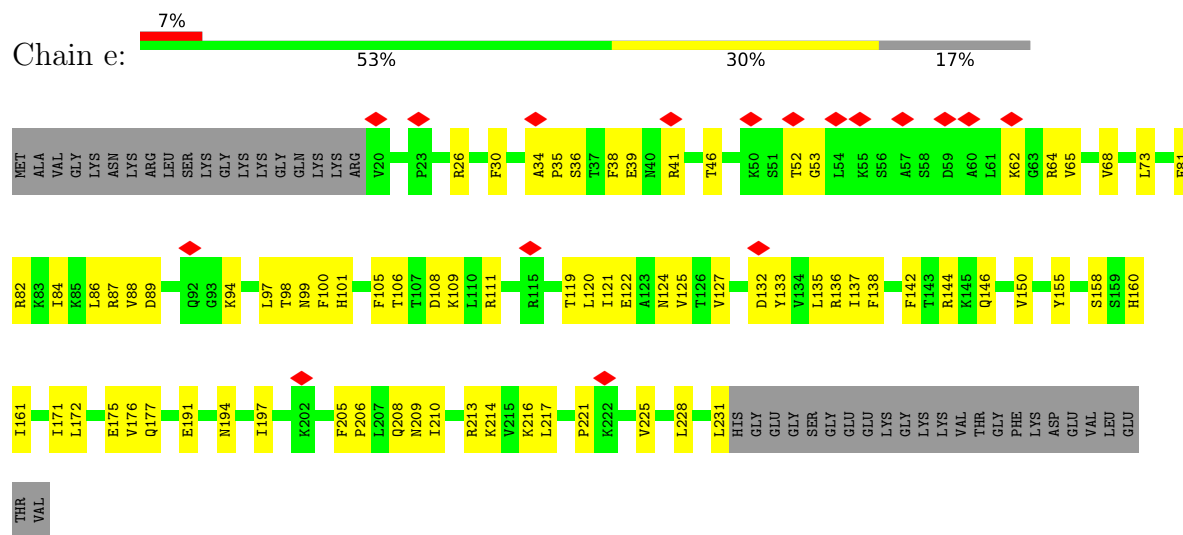


• Molecule 61: 40S ribosomal protein S0-A

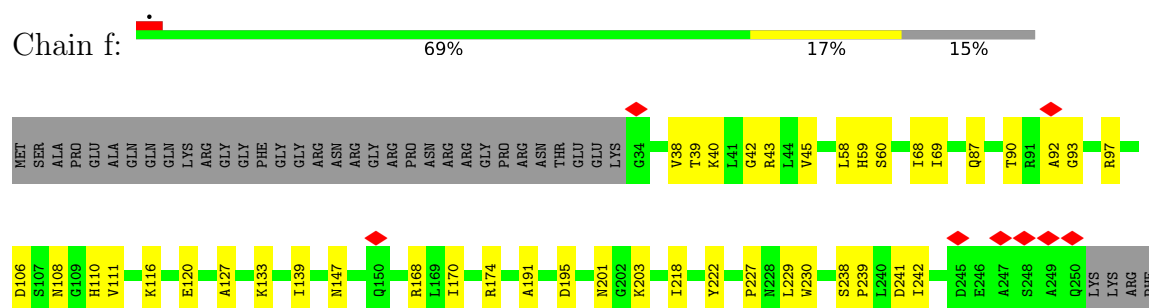




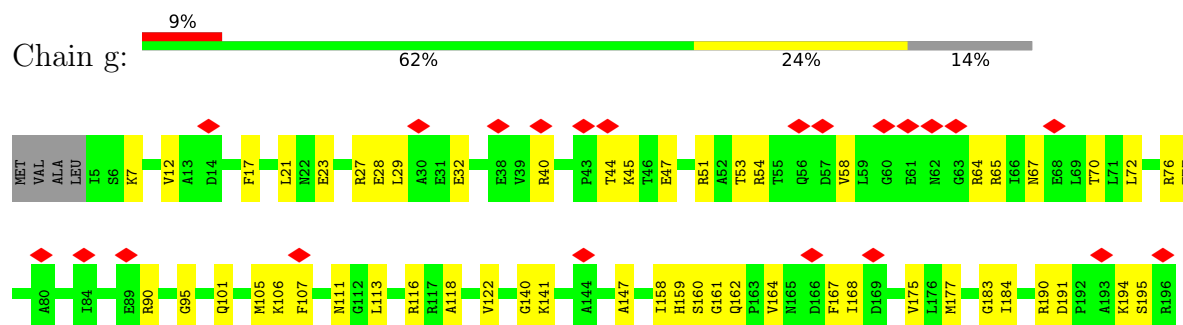
- Molecule 62: 40S ribosomal protein S1-A

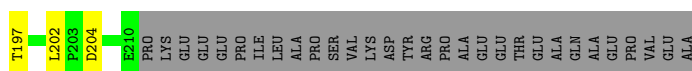


- Molecule 63: 40S ribosomal protein S2

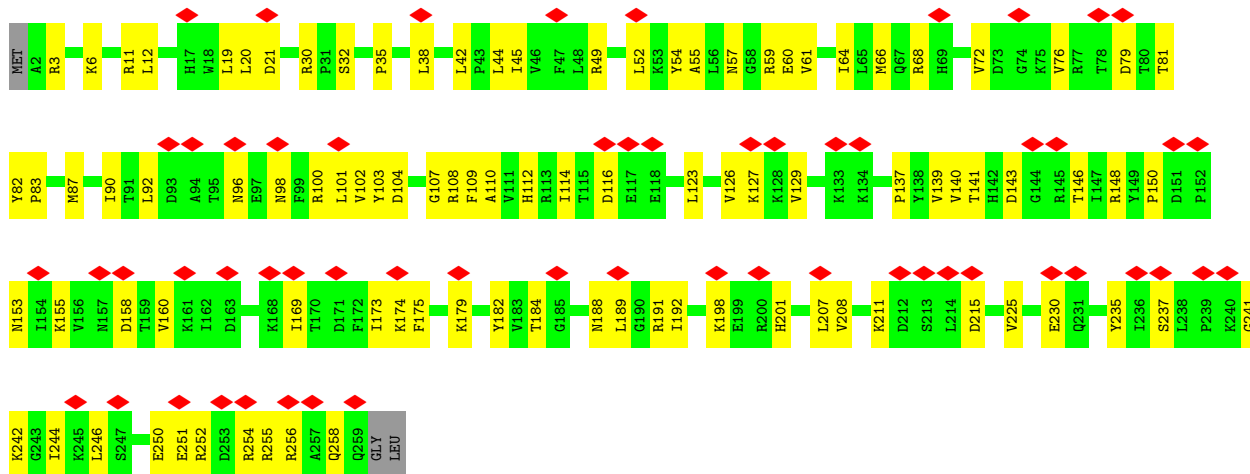


- Molecule 64: RPS3 isoform 1

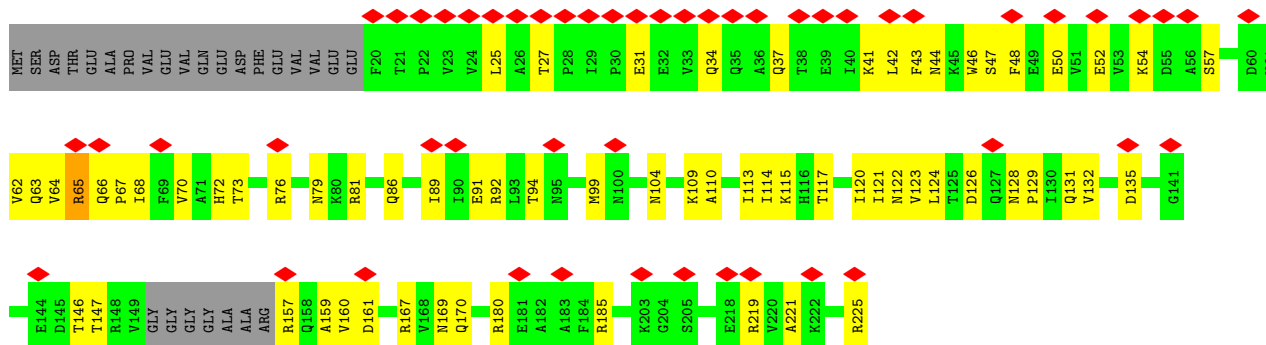




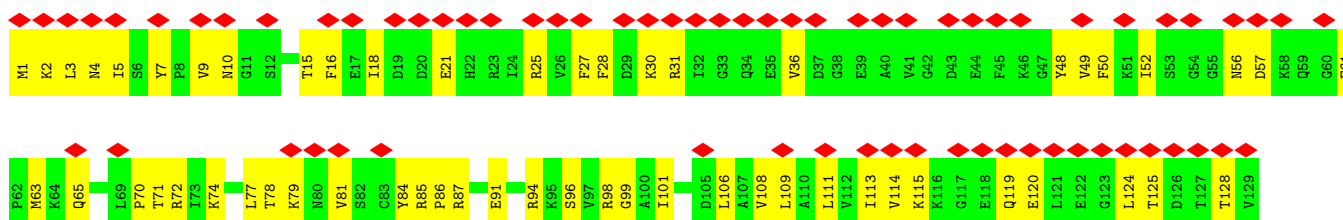
• Molecule 65: 40S ribosomal protein S4-A

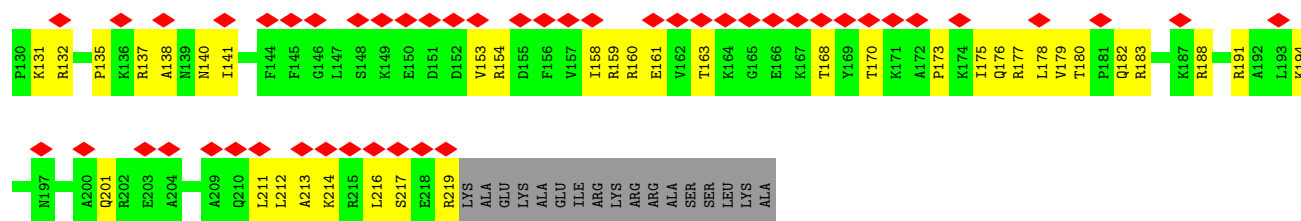


• Molecule 66: 40S ribosomal protein S5

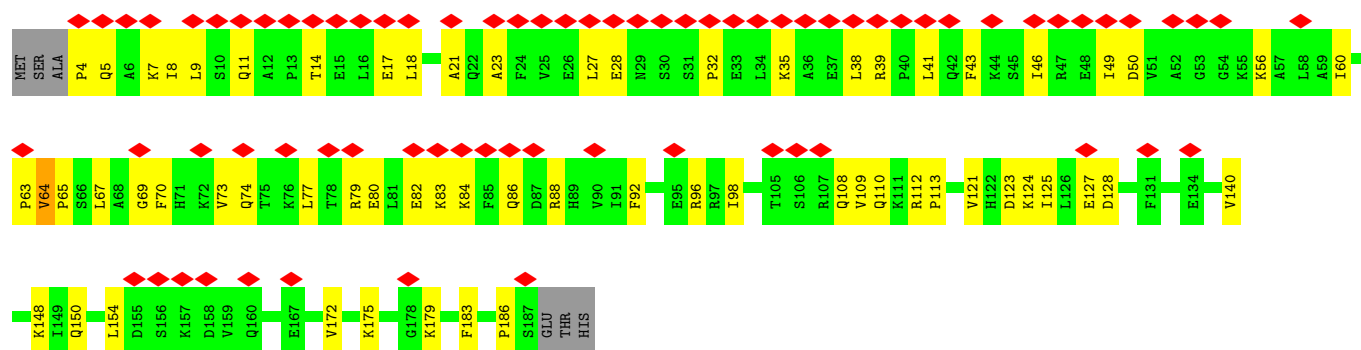
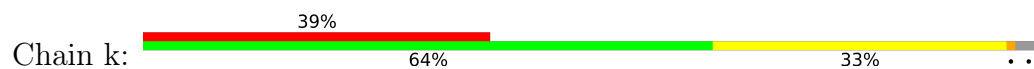


• Molecule 67: 40S ribosomal protein S6-A

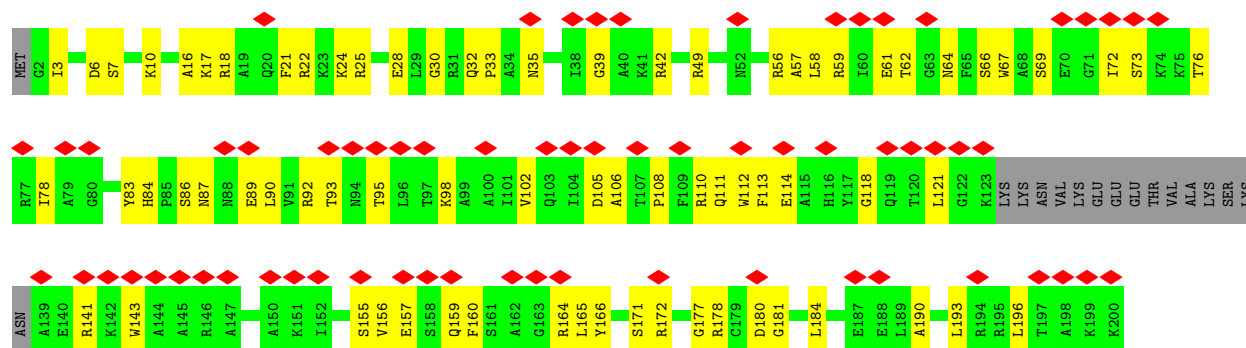




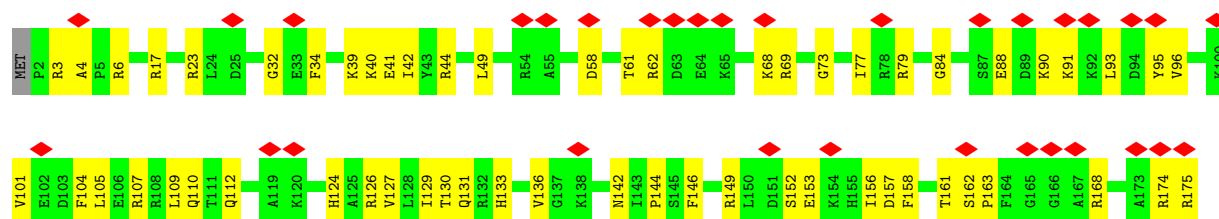
• Molecule 68: 40S ribosomal protein S7-A

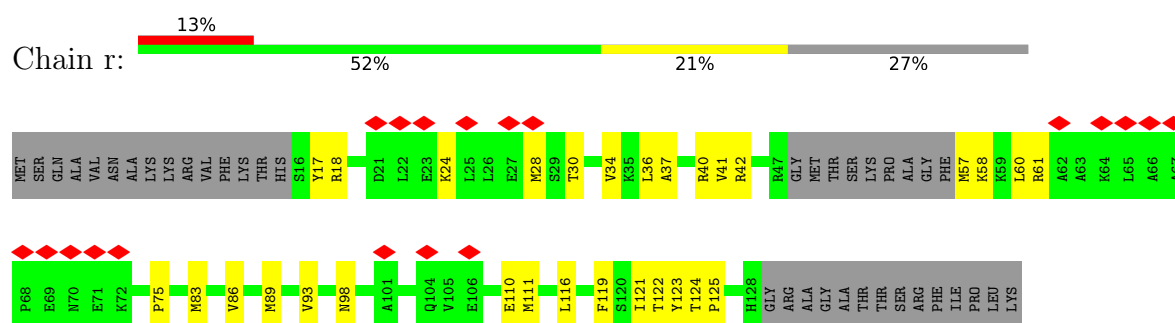


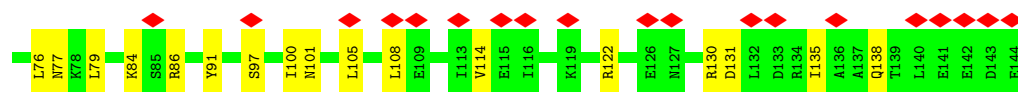
• Molecule 69: 40S ribosomal protein S8-B



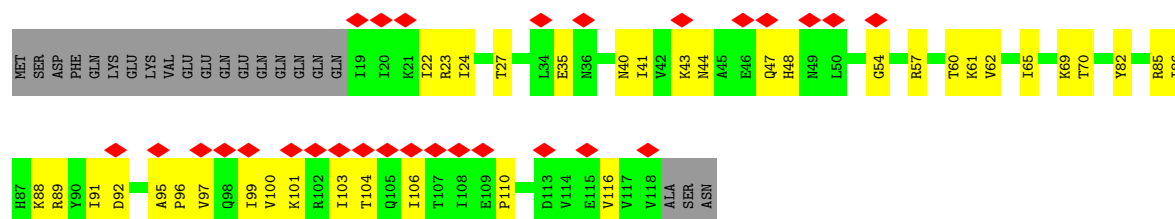
• Molecule 70: 40S ribosomal protein S9-A



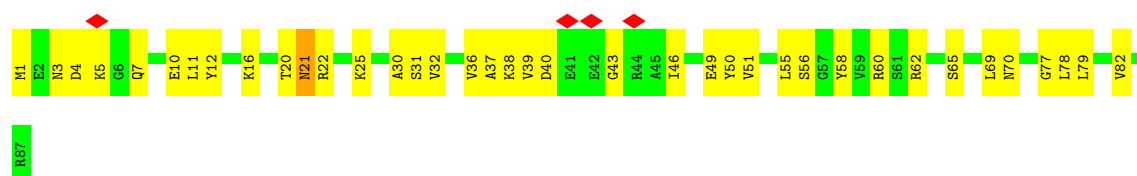




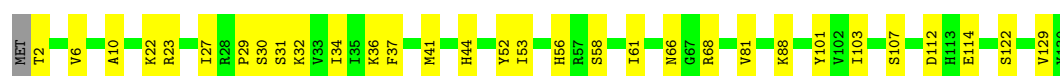
- Molecule 80: 40S ribosomal protein S20



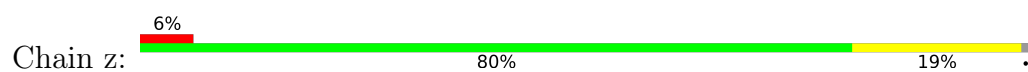
- Molecule 81: 40S ribosomal protein S21-A



- Molecule 82: 40S ribosomal protein S22-A



- Molecule 83: 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	68945	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	165000	Depositor
Image detector	FEI FALCON IV (4k x 4k)	Depositor
Maximum map value	0.864	Depositor
Minimum map value	-0.437	Depositor
Average map value	0.002	Depositor
Map value standard deviation	0.040	Depositor
Recommended contour level	0.141	Depositor
Map size (Å)	418.176, 418.176, 418.176	wwPDB
Map dimensions	576, 576, 576	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.726, 0.726, 0.726	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

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

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	0.36	0/1449
2	1	0.15	0/571	0.48	0/768
3	2	0.13	0/782	0.35	0/1047
4	3	0.13	0/620	0.37	0/838
5	4	0.14	0/499	0.36	0/670
6	5	0.14	0/452	0.35	0/600
7	6	0.13	0/433	0.47	0/575
8	7	0.14	0/2489	0.44	0/3389
9	8	0.12	0/279	0.42	0/369
10	A	0.18	0/1585	0.33	0/2128
11	AA	0.18	0/75384	0.27	0/117530
12	B	0.16	0/1245	0.31	0/1676
13	BB	0.14	0/2883	0.22	0/4491
14	Bb	0.14	0/1788	0.42	3/2786 (0.1%)
15	C	0.16	0/1465	0.31	0/1965
16	CC	0.16	0/3746	0.28	0/5832
17	Cc	0.11	0/1836	0.23	0/2859
18	D	0.15	0/1440	0.31	0/1921
19	DD	0.13	0/1558	0.38	0/2107
20	Dd	0.13	0/333	0.18	0/516
21	E	0.16	0/1481	0.37	0/1990
22	EE	0.15	0/1948	0.29	0/2617
23	Ee	0.12	0/1210	0.37	0/1627
24	F	0.14	0/1300	0.30	0/1743
25	FF	0.16	0/3146	0.33	0/4228
26	G	0.14	0/786	0.38	0/1065
27	GG	0.15	0/2800	0.30	0/3790
28	H	0.17	0/978	0.37	0/1316
29	HH	0.12	0/2425	0.29	0/3271
30	I	0.16	0/533	0.33	0/707
31	II	0.14	0/1251	0.29	0/1682
32	J	0.15	0/974	0.33	0/1314

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	JJ	0.15	0/1821	0.29	0/2451
34	K	0.15	0/1004	0.34	0/1341
35	KK	0.14	0/1836	0.30	0/2481
36	L	0.16	0/1118	0.42	0/1497
37	LL	0.17	0/1539	0.37	0/2073
38	M	0.17	0/1204	0.35	0/1612
39	MM	0.14	0/1779	0.30	0/2386
40	N	0.15	0/473	0.31	0/629
41	NN	0.15	0/1374	0.39	0/1842
42	O	0.12	0/750	0.26	0/1008
43	OO	0.15	0/1568	0.37	0/2106
44	P	0.16	0/897	0.33	0/1205
45	PP	0.13	0/1068	0.26	0/1438
46	Pp	0.05	0/19	0.18	0/23
47	Q	0.15	0/1041	0.26	0/1394
48	QQ	0.14	0/1757	0.32	0/2354
49	R	0.18	0/868	0.32	0/1168
50	S	0.16	0/871	0.31	0/1164
51	T	0.14	0/978	0.28	0/1301
52	U	0.16	0/778	0.37	0/1034
53	V	0.18	0/680	0.36	0/901
54	W	0.17	0/618	0.37	0/826
55	X	0.16	0/443	0.43	0/588
56	Y	0.14	0/423	0.31	0/562
57	Z	0.13	0/234	0.27	0/300
58	a	0.15	0/831	0.35	0/1097
59	b	0.15	0/701	0.34	0/934
60	c	0.16	1/37665 (0.0%)	0.27	0/58663
61	d	0.15	0/1623	0.37	0/2222
62	e	0.16	0/1714	0.42	0/2308
63	f	0.16	0/1665	0.41	0/2263
64	g	0.16	0/1622	0.38	0/2180
65	h	0.13	0/2097	0.34	0/2823
66	i	0.16	0/1591	0.42	2/2151 (0.1%)
67	j	0.14	0/1790	0.39	0/2393
68	k	0.16	0/1506	0.42	0/2028
69	l	0.14	0/1482	0.43	0/1980
70	m	0.16	0/1519	0.37	0/2035
71	n	0.20	0/792	0.54	2/1071 (0.2%)
72	o	0.13	0/1172	0.37	0/1580
73	p	0.14	0/1215	0.35	0/1638
74	q	0.18	0/901	0.44	0/1217
75	r	0.15	0/853	0.38	0/1145

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
76	s	0.14	0/1099	0.41	0/1473
77	t	0.31	0/971	0.60	1/1303 (0.1%)
78	u	0.15	0/1211	0.38	0/1628
79	v	0.13	0/1130	0.35	0/1517
80	w	0.16	0/810	0.41	0/1095
81	x	0.17	0/693	0.42	0/935
82	y	0.16	0/1038	0.37	0/1395
83	z	0.15	0/1139	0.36	0/1518
All	All	0.16	1/213278 (0.0%)	0.31	8/313142 (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
33	JJ	0	1
36	L	0	1
58	a	0	1
66	i	0	1
68	k	0	1
71	n	0	1
76	s	0	1
78	u	0	1
All	All	0	8

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
60	c	1575	G7M	O3'-P	5.07	1.61	1.56

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
14	Bb	37	YYG	O3'-P-O5'	-12.44	85.33	104.00
14	Bb	37	YYG	OP2-P-O3'	8.02	132.06	108.00
77	t	73	LEU	N-CA-C	-6.39	105.38	113.43
14	Bb	37	YYG	P-O3'-C3'	-5.45	112.03	120.20
71	n	47	GLN	CA-C-N	5.15	131.38	121.54
71	n	47	GLN	C-N-CA	5.15	131.38	121.54
66	i	219	ARG	CA-C-N	-5.10	116.85	121.65
66	i	219	ARG	C-N-CA	-5.10	116.85	121.65

There are no chirality outliers.

All (8) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
33	JJ	232	ARG	Peptide
36	L	102	GLU	Peptide
58	a	7	THR	Peptide
66	i	65	ARG	Peptide
68	k	64	VAL	Peptide
71	n	48	SER	Peptide
76	s	40	GLU	Peptide
78	u	90	ASN	Peptide

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	0	1073	0	1132	52	0
2	1	563	0	603	28	0
3	2	769	0	814	26	0
4	3	610	0	633	15	0
5	4	497	0	535	18	0
6	5	442	0	428	18	0
7	6	427	0	476	14	0
8	7	2436	0	2386	104	0
9	8	276	0	288	12	0
10	A	1555	0	1659	20	0
11	AA	68285	0	34370	1161	0
12	B	1222	0	1231	26	0
13	BB	2579	0	1304	38	0
14	Bb	1638	0	835	43	0
15	C	1441	0	1543	25	0
16	CC	3353	0	1695	58	0
17	Cc	1644	0	837	23	0
18	D	1423	0	1510	25	0
19	DD	1531	0	1571	67	0
20	Dd	298	0	149	2	0
21	E	1445	0	1487	38	0
22	EE	1914	0	1981	37	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
23	Ee	1196	0	1257	51	0
24	F	1276	0	1323	24	0
25	FF	3075	0	3142	66	0
26	G	770	0	780	11	0
27	GG	2748	0	2859	41	0
28	H	963	0	1015	16	0
29	HH	2375	0	2325	44	0
30	I	521	0	551	6	0
31	II	1230	0	1320	21	0
32	J	959	0	1023	11	0
33	JJ	1784	0	1862	23	0
34	K	993	0	1081	16	0
35	KK	1804	0	1877	35	0
36	L	1092	0	1155	25	0
37	LL	1518	0	1587	28	0
38	M	1173	0	1215	32	0
39	MM	1743	0	1785	20	0
40	N	462	0	491	3	0
41	NN	1353	0	1383	32	0
42	O	742	0	797	8	0
43	OO	1543	0	1608	35	0
44	P	883	0	918	13	0
45	PP	1053	0	1149	16	0
46	Pp	19	0	20	1	0
47	Q	1020	0	1090	11	0
48	QQ	1720	0	1779	43	0
49	R	850	0	880	15	0
50	S	861	0	918	20	0
51	T	969	0	1078	17	0
52	U	771	0	849	20	0
53	V	665	0	668	24	0
54	W	612	0	682	17	0
55	X	436	0	475	17	0
56	Y	417	0	455	9	0
57	Z	233	0	282	9	0
58	a	819	0	886	25	0
59	b	694	0	734	13	0
60	c	34236	0	17249	734	0
61	d	1583	0	1578	60	0
62	e	1689	0	1763	55	0
63	f	1635	0	1723	34	0
64	g	1601	0	1682	45	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
65	h	2056	0	2140	71	0
66	i	1572	0	1639	63	0
67	j	1766	0	1859	85	0
68	k	1481	0	1572	53	0
69	l	1457	0	1488	62	0
70	m	1494	0	1573	52	0
71	n	772	0	760	35	0
72	o	1146	0	1213	22	0
73	p	1192	0	1255	31	0
74	q	891	0	883	38	0
75	r	837	0	868	26	0
76	s	1080	0	1140	44	0
77	t	961	0	999	63	0
78	u	1192	0	1222	50	0
79	v	1112	0	1124	36	0
80	w	800	0	869	32	0
81	x	684	0	672	30	0
82	y	1021	0	1060	24	0
83	z	1121	0	1196	23	0
84	2	1	0	0	0	0
84	5	1	0	0	0	0
84	8	1	0	0	0	0
84	S	1	0	0	0	0
84	V	1	0	0	0	0
84	Y	1	0	0	0	0
84	a	1	0	0	0	0
84	b	1	0	0	0	0
85	AA	191	0	0	0	0
85	B	1	0	0	0	0
85	BB	4	0	0	0	0
85	Bb	1	0	0	0	0
85	CC	4	0	0	0	0
85	Cc	1	0	0	0	0
85	Dd	1	0	0	0	0
85	FF	1	0	0	0	0
85	H	1	0	0	0	0
85	JJ	1	0	0	0	0
85	MM	1	0	0	0	0
85	QQ	2	0	0	0	0
85	V	1	0	0	0	0
85	a	1	0	0	0	0
85	c	46	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
85	q	1	0	0	0	0
86	AA	11	0	0	0	0
86	EE	1	0	0	0	0
86	MM	1	0	0	0	0
86	Q	1	0	0	0	0
86	S	1	0	0	0	0
86	a	1	0	0	0	0
86	c	4	0	0	0	0
86	q	1	0	0	0	0
87	AA	30	0	57	4	0
87	c	10	0	19	2	0
88	2	2	0	0	0	0
88	A	3	0	0	1	0
88	AA	804	0	0	38	0
88	BB	12	0	0	0	0
88	Bb	5	0	0	0	0
88	CC	18	0	0	0	0
88	Cc	5	0	0	0	0
88	D	4	0	0	0	0
88	Dd	4	0	0	0	0
88	EE	6	0	0	0	0
88	F	4	0	0	0	0
88	FF	5	0	0	1	0
88	GG	3	0	0	0	0
88	H	3	0	0	0	0
88	J	2	0	0	0	0
88	LL	2	0	0	0	0
88	M	3	0	0	0	0
88	MM	2	0	0	0	0
88	N	1	0	0	0	0
88	OO	1	0	0	0	0
88	P	1	0	0	0	0
88	Q	3	0	0	0	0
88	QQ	6	0	0	0	0
88	S	2	0	0	0	0
88	V	3	0	0	0	0
88	a	4	0	0	0	0
88	c	170	0	0	9	0
88	f	1	0	0	0	0
88	o	1	0	0	0	0
88	p	1	0	0	0	0
88	q	2	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
88	z	1	0	0	0	0
All	All	201553	0	148369	3747	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 11.

All (3747) 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)
11:AA:1018:G:OP1	11:AA:1035:G:N2	1.74	1.19
11:AA:403:C:O3'	88:AA:3703:HOH:O	1.56	1.18
11:AA:1451:C:OP1	88:AA:3702:HOH:O	1.56	1.18
11:AA:2250:G:H1	11:AA:2266:U:H3	1.14	0.95
11:AA:1257:C:H42	11:AA:1261:G:H22	1.13	0.94
8:7:19:TRP:HB3	8:7:38:ARG:HB2	1.49	0.93
49:R:49:ILE:HD11	49:R:71:VAL:HG23	1.50	0.93
11:AA:1257:C:H42	11:AA:1261:G:N2	1.69	0.91
11:AA:2764:C:H42	17:Cc:77:A:H8	1.19	0.91
17:Cc:51:U:H3	17:Cc:65:G:H1	1.12	0.91
78:u:92:ILE:HG23	78:u:93:THR:HG23	1.53	0.90
11:AA:1257:C:N4	11:AA:1261:G:H22	1.71	0.89
19:DD:48:ARG:NH1	19:DD:89:THR:OG1	2.06	0.88
11:AA:2673:A:OP2	41:NN:94:ARG:NH1	2.06	0.88
65:h:92:LEU:O	65:h:96:ASN:HA	1.73	0.87
55:X:28:ARG:H	55:X:33:ASN:HD21	1.24	0.86
11:AA:1949:G:H1	11:AA:2097:U:H3	1.22	0.86
60:c:149:C:O2	67:j:132:ARG:NH2	2.08	0.86
14:Bb:37:YYG:O22	14:Bb:37:YYG:H132	1.76	0.85
63:f:90:THR:H	63:f:93:GLY:HA2	1.41	0.84
37:LL:41:ILE:HD11	37:LL:67:ALA:HB1	1.57	0.84
61:d:148:ASP:OD1	61:d:149:LEU:N	2.11	0.83
14:Bb:37:YYG:H132	14:Bb:37:YYG:C21	2.07	0.83
28:H:81:GLN:O	28:H:98:ASN:ND2	2.12	0.83
25:FF:37:ARG:HD3	25:FF:186:GLY:HA2	1.61	0.82
11:AA:1255:C:H4'	23:Ee:130:LYS:HB3	1.62	0.81
60:c:340:U:H2'	60:c:341:A:H8	1.46	0.81
77:t:62:GLN:HE22	77:t:63:LYS:HE3	1.45	0.81
11:AA:894:G:H4'	11:AA:895:A:H5'	1.63	0.81
43:OO:104:ARG:HA	52:U:20:MET:HB2	1.62	0.81
66:i:52:GLU:H	66:i:131:GLN:HE22	1.29	0.80
60:c:868:G:H1	60:c:960:U:H3	1.26	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:c:992:A:H2	60:c:1012:U:H3	1.25	0.80
11:AA:2568:C:O2	11:AA:2573:G:N2	2.15	0.80
1:0:34:ASN:ND2	60:c:521:A:N3	2.29	0.80
11:AA:2193:U:H5'	11:AA:2194:G:H5'	1.63	0.79
8:7:158:PRO:HG2	8:7:206:PRO:HA	1.64	0.79
67:j:63:MET:HG3	67:j:98:ARG:HG3	1.63	0.79
11:AA:1237:G:O6	11:AA:1251:A:N1	2.16	0.79
81:x:79:LEU:HD13	81:x:82:VAL:HG21	1.64	0.79
23:Ee:116:MET:HG2	23:Ee:132:ILE:HD11	1.65	0.79
7:6:55:ARG:NH1	60:c:557:G:OP1	2.16	0.79
60:c:322:G:O2'	69:l:10:LYS:NZ	2.16	0.78
7:6:33:ARG:HD3	70:m:126:ARG:HD3	1.65	0.78
49:R:42:GLN:HA	49:R:45:LEU:HD13	1.66	0.78
11:AA:1258:U:OP1	19:DD:42:ARG:NH1	2.17	0.78
17:Cc:1:C:H42	17:Cc:73:A:H61	1.32	0.78
60:c:1353:U:H2'	60:c:1354:G:H8	1.48	0.78
69:l:98:LYS:HD2	69:l:172:ARG:HG2	1.66	0.78
8:7:65:SER:HB2	60:c:1341:A:H1'	1.65	0.77
67:j:2:LYS:HB2	67:j:108:VAL:HG12	1.64	0.77
45:PP:48:GLY:HA3	45:PP:53:VAL:HB	1.64	0.77
60:c:478:A:HO2'	70:m:124:HIS:HD1	1.29	0.77
11:AA:2449:A:N6	11:AA:2498:U:O2	2.16	0.77
8:7:190:ALA:H	8:7:228:LYS:HZ2	1.33	0.77
16:CC:67:U:H5''	53:V:85:LYS:HB2	1.67	0.77
68:k:64:VAL:HG23	68:k:67:LEU:HB2	1.67	0.77
35:KK:81:THR:HG21	35:KK:181:LYS:HG3	1.66	0.76
67:j:180:THR:HG22	67:j:182:GLN:H	1.50	0.76
14:Bb:37:YYG:H1'	14:Bb:37:YYG:H31	1.66	0.76
60:c:795:U:H2'	60:c:796:A2M:H8	1.65	0.76
11:AA:1261:G:O2'	11:AA:1262:G:N7	2.18	0.76
41:NN:53:THR:HG22	41:NN:60:ARG:HA	1.68	0.76
11:AA:2568:C:N3	11:AA:2573:G:N1	2.32	0.76
77:t:24:LEU:HD23	77:t:34:LEU:HD22	1.66	0.76
8:7:8:VAL:HG21	8:7:316:MET:HE2	1.67	0.75
8:7:131:ILE:HB	8:7:144:LEU:HB2	1.68	0.75
11:AA:1301:A:H4'	11:AA:1302:A:H5''	1.69	0.75
8:7:14:GLU:HG3	8:7:15:GLY:H	1.51	0.75
8:7:240:VAL:HG12	8:7:256:THR:HG22	1.69	0.75
9:8:135:HIS:NE2	60:c:1250:U:O2'	2.12	0.75
67:j:52:ILE:HG22	67:j:109:LEU:HD21	1.69	0.75
60:c:751:G:H2'	60:c:752:A:H8	1.52	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
73:p:60:VAL:HG23	73:p:66:ILE:HD12	1.69	0.74
70:m:3:ARG:HH12	70:m:6:ARG:HG3	1.52	0.74
11:AA:1232:C:O2	19:DD:39:HIS:NE2	2.20	0.74
21:E:22:PRO:O	24:F:146:ASN:ND2	2.19	0.74
25:FF:216:ASP:HB2	25:FF:339:ARG:HG2	1.69	0.74
8:7:144:LEU:HD13	8:7:181:TRP:HE1	1.52	0.74
1:0:32:ARG:HE	1:0:33:ALA:H	1.35	0.74
11:AA:362:U:O4	53:V:24:ARG:NH2	2.21	0.74
11:AA:1661:G:H2'	11:AA:1662:G:C8	2.23	0.74
79:v:77:ASN:OD1	79:v:101:ASN:ND2	2.21	0.74
25:FF:85:VAL:HG22	25:FF:202:THR:HG22	1.70	0.73
23:Ee:65:GLN:O	23:Ee:68:GLN:NE2	2.20	0.73
64:g:106:LYS:HG3	64:g:175:VAL:HG22	1.69	0.73
26:G:61:THR:HG23	26:G:62:VAL:HG23	1.70	0.73
60:c:567:A:OP1	83:z:70:LYS:NZ	2.20	0.73
60:c:1097:U:O4	63:f:201:ASN:ND2	2.20	0.73
11:AA:38:U:H4'	38:M:32:ARG:HD2	1.71	0.73
11:AA:1033:U:H2'	11:AA:1034:U:C6	2.23	0.73
41:NN:20:ASN:HB3	41:NN:126:ASP:HB3	1.70	0.73
60:c:143:G:H1	60:c:171:A:H61	1.37	0.73
76:s:29:ILE:HD12	76:s:36:ILE:HD12	1.71	0.73
5:4:44:VAL:HG12	66:i:161:ASP:HB2	1.69	0.73
60:c:1610:G:N7	76:s:14:LYS:NZ	2.36	0.73
65:h:68:ARG:HD2	65:h:76:VAL:HG11	1.68	0.72
65:h:98:ASN:ND2	65:h:116:ASP:OD1	2.22	0.72
23:Ee:13:LEU:HD11	23:Ee:31:LYS:HB3	1.72	0.72
60:c:1727:G:N2	69:l:32:GLN:OE1	2.22	0.72
11:AA:2468:A:H5''	11:AA:2470:C:H41	1.55	0.72
11:AA:2534:G:N2	11:AA:2545:C:O2	2.19	0.72
60:c:1171:A:H2'	60:c:1172:G:H8	1.55	0.72
60:c:992:A:O2'	60:c:1785:U:O2	2.07	0.72
60:c:1521:G:O2'	60:c:1523:G:OP2	2.06	0.72
11:AA:77:A:P	88:AA:3726:HOH:O	2.47	0.71
60:c:58:U:O2'	60:c:451:A:N3	2.23	0.71
65:h:129:VAL:HG22	65:h:139:VAL:HG12	1.70	0.71
11:AA:2969:A:N7	22:EE:215:ASN:ND2	2.37	0.71
13:BB:73:C:H41	21:E:19:VAL:HG11	1.54	0.71
24:F:27:LEU:HD11	29:HH:34:LYS:HA	1.72	0.71
11:AA:1805:C:H2'	11:AA:1806:A:H8	1.55	0.71
67:j:180:THR:HB	67:j:183:ARG:HG3	1.71	0.71
83:z:60:GLU:HA	83:z:68:ILE:HG22	1.72	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:7:169:ILE:HG12	8:7:183:LEU:HD11	1.72	0.71
60:c:1613:U:OP1	66:i:92:ARG:NH2	2.23	0.71
60:c:1436:A:OP2	64:g:27:ARG:NH2	2.23	0.71
1:0:128:LYS:NZ	60:c:154:G:O6	2.22	0.71
11:AA:655:C:H2'	11:AA:656:A:H8	1.54	0.71
21:E:152:LEU:HD11	45:PP:60:LEU:HD13	1.73	0.71
53:V:14:LYS:HD3	55:X:51:ILE:HD11	1.72	0.71
60:c:1359:C:OP1	79:v:130:ARG:NH1	2.24	0.71
68:k:98:ILE:HG12	68:k:121:VAL:HG21	1.71	0.71
60:c:163:G:N2	60:c:163:G:OP2	2.20	0.71
80:w:62:VAL:HG12	80:w:85:ARG:HG3	1.73	0.71
4:3:80:ARG:HE	4:3:81:ARG:H	1.37	0.70
7:6:55:ARG:HH22	60:c:557:G:H4'	1.55	0.70
55:X:28:ARG:N	55:X:33:ASN:HD21	1.88	0.70
60:c:154:G:OP1	67:j:2:LYS:NZ	2.25	0.70
60:c:636:A:H5''	82:y:31:SER:HB2	1.71	0.70
67:j:5:ILE:HG22	67:j:111:LEU:HB2	1.73	0.70
11:AA:824:C:H5''	22:EE:21:ARG:HD3	1.73	0.70
11:AA:424:G:O2'	47:Q:23:ASP:OD2	2.07	0.70
19:DD:128:MET:HG2	19:DD:129:GLU:H	1.57	0.70
25:FF:187:SER:O	25:FF:190:GLU:N	2.25	0.70
60:c:1482:C:OP2	60:c:1521:G:N2	2.23	0.70
67:j:135:PRO:HD2	67:j:158:ILE:HD13	1.73	0.70
23:Ee:11:LYS:HB3	23:Ee:64:ILE:HB	1.72	0.70
29:HH:187:THR:HG22	29:HH:188:GLU:H	1.55	0.70
78:u:84:TRP:HA	78:u:89:GLN:HE22	1.56	0.70
11:AA:1219:C:O2'	11:AA:1286:A:N1	2.25	0.70
16:CC:142:C:OP1	48:QQ:38:ARG:NH1	2.25	0.70
83:z:70:LYS:HB3	83:z:93:LEU:HD22	1.73	0.70
11:AA:3016:A:H2'	11:AA:3017:A:H8	1.57	0.70
31:II:62:THR:HG21	31:II:78:ARG:HD2	1.74	0.70
60:c:65:A:OP1	67:j:176:GLN:NE2	2.23	0.70
60:c:1171:A:H2'	60:c:1172:G:C8	2.26	0.70
60:c:1585:U:H3	60:c:1611:A:H2	1.36	0.70
8:7:24:ALA:HB3	8:7:34:LEU:HB3	1.73	0.69
11:AA:1447:G:OP1	12:B:65:SER:OG	2.08	0.69
60:c:1672:G:H2'	60:c:1673:G:C8	2.27	0.69
60:c:1081:A:H2	60:c:1082:C:H41	1.38	0.69
60:c:1533:C:H4'	60:c:1539:G:C6	2.27	0.69
64:g:29:LEU:HB3	64:g:32:GLU:HB2	1.75	0.69
78:u:14:ILE:HG22	78:u:23:ASP:HA	1.75	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:63:GLN:HG2	1:0:68:LYS:HB3	1.73	0.69
11:AA:1871:U:P	88:AA:3705:HOH:O	2.39	0.69
60:c:773:C:O2'	60:c:787:G:N2	2.25	0.69
11:AA:532:A:HO2'	11:AA:533:A:H8	1.40	0.69
11:AA:1284:C:H2'	11:AA:1285:G:C4	2.27	0.69
11:AA:1354:G:H5'	31:II:8:LYS:HZ2	1.58	0.69
21:E:95:ARG:NH1	45:PP:38:ILE:O	2.26	0.69
29:HH:119:TYR:OH	29:HH:139:PRO:O	2.11	0.69
72:o:55:ASP:OD2	72:o:82:ARG:NH1	2.25	0.69
8:7:214:ALA:HB1	8:7:240:VAL:HG21	1.74	0.69
25:FF:47:LEU:HD22	25:FF:335:ILE:HD11	1.74	0.69
60:c:1540:G:OP2	78:u:40:ARG:NH2	2.24	0.69
60:c:1594:G:OP2	60:c:1596:C:N4	2.26	0.69
60:c:472:U:H2'	60:c:473:A:H8	1.59	0.68
1:0:124:ARG:NH1	60:c:150:U:OP2	2.24	0.68
11:AA:3068:U:OP2	18:D:62:ARG:NH2	2.25	0.68
19:DD:188:VAL:HG12	19:DD:189:GLN:HG2	1.76	0.68
42:O:27:TYR:OH	42:O:55:GLU:OE1	2.10	0.68
43:OO:79:GLU:OE2	43:OO:103:ASN:ND2	2.25	0.68
60:c:209:U:H2'	60:c:210:A:C8	2.29	0.68
76:s:50:GLU:OE1	76:s:82:ARG:NH1	2.25	0.68
6:5:14:TYR:HH	60:c:1553:G:HO2'	1.36	0.68
11:AA:1845:G:H4'	53:V:8:PHE:HD2	1.57	0.68
42:O:9:SER:N	42:O:12:GLN:OE1	2.26	0.68
60:c:647:G:H21	60:c:687:G:H1	1.40	0.68
62:e:35:PRO:HB3	62:e:38:PHE:HD2	1.57	0.68
8:7:18:GLY:N	8:7:308:ASN:OD1	2.27	0.68
11:AA:733:G:N2	11:AA:736:A:OP2	2.22	0.68
11:AA:3243:A:H4'	25:FF:95:THR:HG22	1.73	0.68
2:1:57:TYR:OH	2:1:70:LYS:NZ	2.27	0.68
53:V:54:LYS:O	53:V:58:THR:HB	1.93	0.68
60:c:165:G:H21	67:j:132:ARG:HH12	1.42	0.68
63:f:39:THR:O	63:f:42:GLY:N	2.25	0.68
11:AA:664:U:H2'	11:AA:665:A:C8	2.29	0.68
11:AA:2534:G:N1	11:AA:2545:C:N3	2.33	0.68
66:i:37:GLN:H	76:s:57:LEU:HD21	1.59	0.68
11:AA:2219:A:H2'	11:AA:2220:A2M:H8	1.76	0.68
67:j:50:PHE:HB3	67:j:111:LEU:HD22	1.75	0.68
28:H:15:LEU:HD23	28:H:53:SER:HB3	1.74	0.68
11:AA:351:A:N6	55:X:37:TYR:O	2.26	0.67
60:c:1229:G:N2	60:c:1255:G:O2'	2.25	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:d:200:ASP:OD2	77:t:90:ALA:HA	1.94	0.67
66:i:146:THR:HG1	66:i:157:ARG:N	1.91	0.67
6:5:10:HIS:HB2	6:5:11:PRO:HD2	1.75	0.67
21:E:14:LEU:H	21:E:56:GLY:HA2	1.59	0.67
60:c:591:A:H2'	60:c:592:A:C8	2.29	0.67
64:g:195:SER:OG	64:g:197:THR:O	2.10	0.67
11:AA:2490:C:H1'	11:AA:2491:A:C8	2.29	0.67
29:HH:128:GLU:O	29:HH:164:LYS:NZ	2.26	0.67
8:7:126:SER:OG	8:7:128:ASP:OD1	2.12	0.67
11:AA:3041:U:OP1	28:H:12:ARG:NH1	2.28	0.67
22:EE:3:ARG:HB2	22:EE:207:VAL:HG22	1.76	0.67
60:c:335:U:O2'	72:o:130:PRO:O	2.11	0.67
60:c:68:A:OP1	67:j:160:ARG:NH2	2.26	0.67
62:e:62:LYS:NZ	62:e:89:ASP:O	2.25	0.67
2:1:77:ARG:NH2	60:c:1534:G:N7	2.43	0.67
3:2:32:LYS:O	3:2:37:LYS:NZ	2.28	0.67
11:AA:68:C:OP2	11:AA:301:G:N2	2.27	0.67
11:AA:1237:G:O6	11:AA:1251:A:C6	2.48	0.67
11:AA:2960:C:H2'	11:AA:2961:G:H8	1.59	0.67
67:j:175:ILE:HG23	67:j:178:LEU:HD23	1.76	0.67
72:o:57:LYS:HE2	72:o:131:ILE:HB	1.77	0.67
60:c:1681:A:N7	67:j:65:GLN:NE2	2.40	0.67
64:g:76:ARG:HG3	64:g:77:PHE:CD1	2.30	0.67
64:g:76:ARG:HD3	71:n:63:TYR:CE2	2.29	0.67
11:AA:269:G:H5''	48:QQ:14:LYS:HE2	1.77	0.67
4:3:35:VAL:HG13	4:3:77:THR:HG23	1.77	0.67
60:c:1755:A:H5''	83:z:63:GLN:HG2	1.77	0.67
65:h:35:PRO:HD2	65:h:83:PRO:HG2	1.77	0.67
14:Bb:26:G:O6	14:Bb:44:A:N1	2.28	0.67
76:s:47:LYS:HZ3	76:s:114:ARG:HH12	1.41	0.67
11:AA:1907:C:O2	25:FF:240:ARG:NH2	2.29	0.66
68:k:49:ILE:HD12	68:k:175:LYS:HG2	1.77	0.66
11:AA:696:C:OP2	27:GG:119:ARG:NH2	2.28	0.66
67:j:78:THR:HG22	67:j:79:LYS:H	1.61	0.66
8:7:10:ARG:NH2	8:7:51:ASP:OD1	2.28	0.66
11:AA:361:A:O3'	53:V:45:ARG:NH2	2.27	0.66
18:D:98:ARG:NH2	18:D:130:ASN:OD1	2.28	0.66
60:c:751:G:H2'	60:c:752:A:C8	2.30	0.66
11:AA:297:G:OP2	11:AA:297:G:N2	2.25	0.66
11:AA:1263:A:N1	23:Ee:138:SER:OG	2.27	0.66
11:AA:2270:A:H2'	11:AA:2271:A:C8	2.30	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:f:116:LYS:HG2	63:f:127:ALA:HB3	1.75	0.66
8:7:292:LEU:HD22	8:7:301:LEU:HD21	1.75	0.66
11:AA:2902:A:P	88:AA:3714:HOH:O	2.54	0.66
13:BB:5:G:OP1	41:NN:143:ARG:NH2	2.25	0.66
58:a:2:VAL:N	58:a:90:HIS:O	2.29	0.66
81:x:21:ASN:O	81:x:21:ASN:ND2	2.28	0.66
60:c:1535:U:O2	60:c:1536:G:N2	2.28	0.66
2:1:44:GLN:NE2	78:u:8:GLN:OE1	2.29	0.66
14:Bb:37:YYG:H141	14:Bb:37:YYG:C10	2.25	0.66
60:c:1353:U:H2'	60:c:1354:G:C8	2.31	0.66
2:1:54:VAL:HG11	2:1:88:ILE:HB	1.78	0.66
11:AA:799:G:OP2	38:M:32:ARG:NH1	2.29	0.66
62:e:52:THR:HG22	62:e:53:GLY:H	1.60	0.66
1:0:20:ARG:HH12	1:0:22:GLN:HE21	1.43	0.66
60:c:319:U:H4'	60:c:323:A:C8	2.31	0.66
60:c:446:A:H5''	65:h:57:ASN:HD22	1.61	0.66
11:AA:505:G:N7	88:AA:3774:HOH:O	2.28	0.66
60:c:1482:C:O2'	76:s:72:GLY:O	2.11	0.66
70:m:90:LYS:HB3	70:m:95:TYR:HD2	1.60	0.66
18:D:105:LEU:HD23	18:D:138:LEU:HD23	1.76	0.65
45:PP:25:LYS:HE3	45:PP:62:GLN:HG3	1.77	0.65
83:z:107:PHE:HD1	83:z:123:LYS:HB3	1.61	0.65
5:4:12:VAL:HG22	5:4:52:ASP:H	1.62	0.65
11:AA:2895:G:OP1	37:LL:166:ARG:NH2	2.29	0.65
28:H:24:ASN:ND2	28:H:97:ASP:OD2	2.29	0.65
65:h:112:HIS:NE2	65:h:237:SER:O	2.28	0.65
77:t:47:ARG:NH1	77:t:48:ASN:OD1	2.30	0.65
18:D:114:LYS:O	18:D:146:LYS:NZ	2.21	0.65
78:u:50:ALA:O	78:u:68:ARG:NH1	2.30	0.65
11:AA:864:G:N7	88:AA:3787:HOH:O	2.29	0.65
25:FF:383:LEU:HD23	25:FF:387:LEU:HD22	1.78	0.65
74:q:80:HIS:HA	74:q:113:GLY:O	1.97	0.65
49:R:16:TYR:OH	49:R:89:LEU:O	2.15	0.65
60:c:448:C:OP1	65:h:49:ARG:NH2	2.25	0.65
60:c:771:A:O2'	70:m:6:ARG:NH2	2.29	0.65
60:c:871:G:H2'	60:c:872:G:C8	2.31	0.65
67:j:57:ASP:HA	67:j:106:LEU:HA	1.77	0.65
11:AA:1949:G:OP1	18:D:104:ARG:NH1	2.29	0.65
14:Bb:9:A:H2	14:Bb:23:A:H62	1.44	0.65
29:HH:148:ILE:HG23	29:HH:159:VAL:HG21	1.77	0.65
11:AA:242:C:HO2'	11:AA:243:G:H8	1.45	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:737:G:H2'	11:AA:738:A:H8	1.62	0.65
11:AA:1095:U:H4'	11:AA:1096:U:H5'	1.79	0.65
11:AA:2457:G:H2'	11:AA:2459:A:H62	1.61	0.65
4:3:3:LEU:HA	82:y:22:LYS:HD3	1.79	0.65
11:AA:1844:C:OP2	88:AA:3725:HOH:O	2.15	0.65
15:C:182:LYS:NZ	38:M:55:LYS:O	2.29	0.65
60:c:924:A:H2'	60:c:925:G:C8	2.32	0.65
41:NN:49:LYS:HB3	41:NN:62:ASN:HA	1.79	0.65
60:c:126:A:H62	60:c:291:G:H21	1.44	0.65
8:7:64:HIS:CE1	8:7:84:SER:HB2	2.32	0.64
11:AA:358:G:N2	11:AA:361:A:OP2	2.27	0.64
60:c:1788:G:N7	74:q:132:ARG:NH1	2.45	0.64
70:m:84:GLY:HA3	70:m:107:ARG:HE	1.60	0.64
75:r:58:LYS:HB2	75:r:61:ARG:HH12	1.62	0.64
57:Z:4:LYS:NZ	60:c:1774:G:N7	2.44	0.64
60:c:1551:U:O4	75:r:40:ARG:NH2	2.30	0.64
69:l:7:SER:O	69:l:18:ARG:NH1	2.30	0.64
69:l:93:THR:HG23	69:l:95:THR:HG23	1.77	0.64
74:q:86:THR:HG21	74:q:90:ARG:HE	1.61	0.64
11:AA:2633:U:OP1	88:AA:3722:HOH:O	2.13	0.64
60:c:278:U:O2	60:c:279:G:N1	2.30	0.64
66:i:48:PHE:HE2	66:i:68:ILE:H	1.46	0.64
11:AA:1717:U:H2'	11:AA:1718:G:C8	2.33	0.64
16:CC:49:G:OP2	51:T:48:ARG:NH2	2.30	0.64
27:GG:20:LEU:HD11	27:GG:252:GLU:HG2	1.78	0.64
36:L:99:GLU:O	36:L:103:GLN:NE2	2.30	0.64
60:c:340:U:H2'	60:c:341:A:C8	2.31	0.64
60:c:1615:C:H2'	66:i:81:ARG:HD2	1.80	0.64
11:AA:307:A:H2'	11:AA:308:A:H8	1.62	0.64
11:AA:1057:A:OP1	33:JJ:98:LYS:NZ	2.29	0.64
49:R:14:LEU:HD11	49:R:31:LYS:HB2	1.79	0.64
61:d:163:ASN:O	61:d:169:SER:OG	2.15	0.64
66:i:73:THR:N	66:i:91:GLU:OE1	2.30	0.64
70:m:62:ARG:O	70:m:69:ARG:NH1	2.29	0.64
2:1:80:LEU:HB2	2:1:101:TYR:HE2	1.63	0.64
11:AA:1613:A:OP1	54:W:2:ALA:N	2.30	0.64
11:AA:1635:G:N2	11:AA:1638:A:OP2	2.22	0.64
19:DD:42:ARG:NH1	19:DD:51:VAL:O	2.30	0.64
11:AA:562:C:OP2	45:PP:77:ARG:NH1	2.31	0.64
35:KK:98:ARG:NH1	35:KK:188:THR:O	2.31	0.64
61:d:124:THR:HG22	61:d:174:TRP:HE1	1.61	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:f:139:ILE:HD12	63:f:218:ILE:HD12	1.78	0.64
71:n:7:ASP:OD1	71:n:10:LYS:NZ	2.30	0.64
1:0:63:GLN:NE2	1:0:66:GLY:O	2.29	0.64
3:2:12:LYS:HD3	3:2:16:GLY:H	1.63	0.64
11:AA:1437:OMC:HM22	27:GG:93:MET:HG3	1.80	0.64
11:AA:3042:U:OP2	11:AA:3092:C:N4	2.28	0.64
11:AA:1322:U:O4	88:AA:3719:HOH:O	2.11	0.64
65:h:87:MET:HE1	65:h:123:LEU:HB2	1.80	0.64
2:1:46:LYS:HB3	2:1:49:ARG:HG3	1.80	0.63
11:AA:2697:A:H2'	11:AA:2698:G:H8	1.64	0.63
11:AA:3016:A:H2'	11:AA:3017:A:C8	2.33	0.63
60:c:103:A:H4'	60:c:105:A:C8	2.34	0.63
60:c:1387:G:OP1	77:t:32:LYS:NZ	2.31	0.63
26:G:89:LEU:HD23	26:G:93:ILE:HD12	1.79	0.63
11:AA:2713:U:O2'	58:a:8:ARG:NH1	2.32	0.63
17:Cc:19:G:N2	17:Cc:59:A:O4'	2.31	0.63
18:D:173:ARG:NH2	60:c:854:U:OP2	2.30	0.63
57:Z:2:ARG:HH22	60:c:1773:4AC:HM72	1.63	0.63
70:m:161:THR:HG22	70:m:162:SER:H	1.64	0.63
77:t:24:LEU:HB3	77:t:34:LEU:HD13	1.80	0.63
7:6:26:LYS:HD3	7:6:27:PRO:HD2	1.79	0.63
19:DD:104:ARG:HD2	19:DD:184:GLY:HA3	1.80	0.63
60:c:947:U:H2'	60:c:948:G:H8	1.64	0.63
62:e:35:PRO:HB3	62:e:38:PHE:CD2	2.33	0.63
11:AA:1203:A:H2'	11:AA:1204:A:C8	2.34	0.63
11:AA:2489:C:H3'	11:AA:2490:C:H2'	1.80	0.63
11:AA:2767:U:O2'	58:a:30:ALA:O	2.16	0.63
37:LL:21:LYS:HG3	37:LL:22:SER:H	1.61	0.63
3:2:12:LYS:NZ	60:c:1029:U:OP2	2.32	0.63
11:AA:2697:A:H2'	11:AA:2698:G:C8	2.33	0.63
60:c:1332:C:OP2	77:t:45:ARG:NH1	2.32	0.63
60:c:1474:G:H2'	60:c:1475:A:H8	1.63	0.63
60:c:1760:G:H1'	60:c:1781:MA6:H2	1.81	0.63
66:i:63:GLN:HE22	66:i:66:GLN:HB2	1.64	0.63
79:v:57:ARG:NH1	79:v:101:ASN:OD1	2.32	0.63
11:AA:952:A:H4'	11:AA:968:G:N2	2.14	0.63
60:c:1591:C:H2'	60:c:1592:A:H8	1.63	0.63
63:f:40:LYS:HA	63:f:43:ARG:HG2	1.81	0.63
75:r:18:ARG:NH1	78:u:90:ASN:O	2.32	0.63
1:0:22:GLN:NE2	65:h:54:TYR:O	2.32	0.63
11:AA:1015:U:O2	11:AA:1028:U:O2'	2.17	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1786:G:H2'	11:AA:1787:A:C8	2.32	0.63
11:AA:3155:U:H5'	11:AA:3156:U:H4'	1.80	0.63
29:HH:148:ILE:HG22	29:HH:151:GLN:HB3	1.81	0.63
68:k:96:ARG:NH1	68:k:128:ASP:OD2	2.28	0.63
13:BB:6:C:O2'	29:HH:50:ARG:NH2	2.32	0.63
33:JJ:151:ARG:HH12	33:JJ:207:LEU:HA	1.64	0.63
66:i:41:LYS:NZ	66:i:42:LEU:O	2.32	0.63
11:AA:1254:C:H2'	11:AA:1255:C:C6	2.33	0.62
16:CC:63:G:H22	16:CC:97:A:H2	1.47	0.62
48:QQ:192:LYS:O	48:QQ:196:THR:OG1	2.17	0.62
60:c:1474:G:H2'	60:c:1475:A:C8	2.33	0.62
78:u:53:ASP:HB3	78:u:56:LYS:HE3	1.81	0.62
17:Cc:51:U:O4	17:Cc:65:G:O6	2.17	0.62
27:GG:182:LEU:HD21	27:GG:223:PRO:HG2	1.81	0.62
30:I:47:ARG:HD2	30:I:58:HIS:ND1	2.13	0.62
60:c:1484:G:N2	60:c:1606:C:O2	2.33	0.62
70:m:127:VAL:O	70:m:131:GLN:HB2	2.00	0.62
11:AA:216:G:OP1	34:K:16:ARG:NH1	2.33	0.62
11:AA:2446:U:N3	11:AA:2447:A:N6	2.48	0.62
23:Ee:85:LEU:HD13	23:Ee:100:HIS:HB3	1.82	0.62
60:c:1584:G:N2	60:c:1611:A:OP2	2.26	0.62
11:AA:353:G:O6	53:V:55:ARG:NH2	2.29	0.62
23:Ee:126:ALA:HA	23:Ee:162:ILE:HG13	1.82	0.62
34:K:3:LYS:HD3	34:K:8:VAL:HG23	1.81	0.62
39:MM:30:LYS:HG3	39:MM:63:GLU:HG3	1.82	0.62
43:OO:114:GLN:NE2	43:OO:118:GLU:OE2	2.26	0.62
66:i:129:PRO:HA	66:i:132:VAL:HG12	1.82	0.62
68:k:70:PHE:O	68:k:74:GLN:HB2	1.99	0.62
11:AA:3295:A:H2'	11:AA:3296:A:C8	2.34	0.62
14:Bb:35:A:O2'	60:c:577:G:N3	2.30	0.62
29:HH:60:ILE:HB	29:HH:80:SER:HB3	1.82	0.62
62:e:34:ALA:HB1	62:e:86:LEU:HD13	1.81	0.62
64:g:160:SER:HB3	64:g:164:VAL:HG11	1.80	0.62
11:AA:1477:A:OP1	11:AA:3075:G:O2'	2.15	0.62
69:l:39:GLY:HA2	69:l:61:GLU:HB3	1.80	0.62
11:AA:655:C:H2'	11:AA:656:A:C8	2.33	0.62
11:AA:900:G:H1'	11:AA:1589:A:N6	2.15	0.62
11:AA:2160:G:H2'	11:AA:2161:G:H8	1.65	0.62
11:AA:2512:C:OP1	35:KK:249:ARG:NH2	2.33	0.62
29:HH:90:HIS:NE2	29:HH:229:ASP:OD2	2.24	0.62
35:KK:134:TYR:HB3	35:KK:190:VAL:HG11	1.82	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:M:75:LEU:HB2	38:M:114:GLY:HA2	1.81	0.62
60:c:1587:A:O2'	66:i:104:ASN:OD1	2.18	0.62
11:AA:2864:A:H5''	39:MM:114:GLY:HA2	1.82	0.62
60:c:148:A:N6	60:c:166:C:O2	2.33	0.62
60:c:1785:U:H2'	60:c:1786:G:H8	1.64	0.62
11:AA:413:U:H5''	12:B:34:GLN:NE2	2.15	0.61
11:AA:619:A:O2'	11:AA:620:U:OP2	2.18	0.61
11:AA:1009:A:H2'	11:AA:1010:G:C8	2.35	0.61
11:AA:2244:A:HO2'	22:EE:223:SER:HG	1.45	0.61
36:L:50:PRO:HD3	36:L:68:ILE:HG12	1.82	0.61
56:Y:97:ARG:HE	56:Y:122:ARG:HB3	1.64	0.61
60:c:1482:C:N4	60:c:1524:A:OP2	2.33	0.61
11:AA:1239:C:O2'	23:Ee:97:ASN:OD1	2.17	0.61
58:a:8:ARG:HG3	58:a:25:VAL:HG21	1.80	0.61
60:c:12:U:H2'	60:c:13:C:C6	2.35	0.61
60:c:1198:G:OP1	60:c:1199:G:O2'	2.16	0.61
61:d:101:ARG:HG2	61:d:103:THR:H	1.64	0.61
68:k:11:GLN:NE2	68:k:17:GLU:OE2	2.33	0.61
60:c:1772:C:H2'	60:c:1773:4AC:H6	1.81	0.61
3:2:45:VAL:HG11	3:2:53:LEU:HD22	1.80	0.61
6:5:52:PHE:HB3	80:w:82:TYR:HB3	1.82	0.61
11:AA:549:U:H2'	11:AA:550:A:C8	2.35	0.61
11:AA:1234:G:H21	23:Ee:131:GLU:HB3	1.65	0.61
11:AA:1497:C:H2'	11:AA:1498:A:H8	1.66	0.61
11:AA:1516:C:N4	88:AA:3815:HOH:O	2.33	0.61
11:AA:1807:G:H5'	36:L:135:ARG:NH1	2.15	0.61
11:AA:3233:C:H2'	11:AA:3234:A:C8	2.34	0.61
60:c:1344:A:H2'	60:c:1345:A:H8	1.65	0.61
60:c:1486:G:N2	60:c:1522:U:O4	2.32	0.61
65:h:100:ARG:HB2	65:h:114:ILE:HD13	1.83	0.61
10:A:172:ARG:NH1	11:AA:3190:C:OP1	2.26	0.61
11:AA:107:A:O2'	11:AA:324:A:N3	2.30	0.61
11:AA:1322:U:O2	21:E:108:GLN:NE2	2.32	0.61
11:AA:1364:C:OP1	33:JJ:110:ARG:NH2	2.33	0.61
11:AA:3275:U:O2'	49:R:99:ARG:NH1	2.33	0.61
16:CC:75:G:OP2	34:K:74:TYR:OH	2.17	0.61
19:DD:67:LEU:HD12	19:DD:71:PRO:HA	1.82	0.61
11:AA:394:G:H22	11:AA:397:A:H5'	1.65	0.61
75:r:75:PRO:HA	75:r:93:VAL:HG23	1.82	0.61
79:v:9:VAL:HG13	79:v:14:PHE:HB2	1.83	0.61
11:AA:1049:C:OP1	39:MM:21:ARG:NH2	2.32	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2103:U:H2'	11:AA:2104:A:H8	1.66	0.61
25:FF:185:GLY:O	25:FF:191:LYS:NZ	2.24	0.61
47:Q:81:ASP:O	47:Q:84:THR:OG1	2.17	0.61
58:a:4:VAL:HG11	58:a:70:LEU:HD11	1.81	0.61
60:c:29:U:H2'	60:c:30:G:H8	1.66	0.61
60:c:209:U:H2'	60:c:210:A:H8	1.64	0.61
60:c:1477:G:H2'	60:c:1478:G:H8	1.64	0.61
62:e:138:PHE:HB2	62:e:214:LYS:HB3	1.83	0.61
71:n:48:SER:O	71:n:50:THR:N	2.34	0.61
8:7:179:LYS:HD2	8:7:191:ASP:HB3	1.83	0.61
31:II:52:VAL:HG21	31:II:65:ILE:HD12	1.83	0.61
11:AA:383:G:N2	11:AA:386:A:OP2	2.34	0.61
12:B:124:LYS:O	12:B:126:ARG:NH1	2.33	0.61
23:Ee:107:ASP:OD1	23:Ee:108:GLU:N	2.34	0.61
50:S:74:ARG:HG2	50:S:75:ALA:H	1.66	0.61
57:Z:9:ARG:NH2	60:c:1782:MA6:OP1	2.32	0.61
66:i:57:SER:OG	66:i:167:ARG:NH1	2.33	0.61
76:s:79:TYR:HA	76:s:82:ARG:HG2	1.81	0.61
78:u:42:TYR:HA	78:u:85:PHE:HE2	1.65	0.61
15:C:123:THR:OG1	15:C:125:ASP:OD1	2.16	0.61
19:DD:28:VAL:HG22	19:DD:187:VAL:HG22	1.82	0.61
60:c:1142:A:OP2	88:c:2007:HOH:O	2.16	0.61
8:7:38:ARG:HA	8:7:67:ILE:HG23	1.83	0.60
11:AA:1084:A:H2'	11:AA:1085:A:C8	2.36	0.60
48:QQ:94:TYR:O	48:QQ:96:ARG:N	2.31	0.60
60:c:1041:G:H2'	60:c:1042:G:C8	2.36	0.60
64:g:40:ARG:HD3	80:w:110:PRO:HB3	1.83	0.60
76:s:47:LYS:HZ3	76:s:114:ARG:HH22	1.48	0.60
11:AA:2393:G:OP2	88:AA:3729:HOH:O	2.16	0.60
11:AA:2676:A:H4'	11:AA:2677:G:H5''	1.83	0.60
44:P:10:ARG:NH1	44:P:44:MET:SD	2.74	0.60
44:P:46:THR:OG1	44:P:91:SER:OG	2.14	0.60
55:X:30:ARG:H	55:X:33:ASN:HD22	1.47	0.60
60:c:418:G:O2'	67:j:72:ARG:NH2	2.33	0.60
68:k:27:LEU:HD22	68:k:84:LYS:HZ1	1.66	0.60
69:l:39:GLY:O	69:l:59:ARG:HB3	2.01	0.60
77:t:82:ASP:C	77:t:84:TYR:H	2.08	0.60
8:7:90:ARG:HE	8:7:99:THR:HG21	1.67	0.60
11:AA:1255:C:H2'	11:AA:1256:G:H8	1.67	0.60
60:c:930:A:N3	62:e:111:ARG:NH2	2.49	0.60
60:c:1739:C:H2'	60:c:1740:A:H8	1.67	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:QQ:31:ARG:NH1	48:QQ:124:ASP:OD2	2.35	0.60
52:U:50:LEU:HB2	52:U:55:ARG:HE	1.65	0.60
60:c:1219:A:O2'	71:n:47:GLN:O	2.17	0.60
11:AA:1018:G:H2'	11:AA:1019:G:O4'	2.02	0.60
11:AA:2428:U:H2'	11:AA:2429:G:H8	1.67	0.60
11:AA:3049:A:C8	25:FF:53:MET:HE2	2.36	0.60
22:EE:118:GLU:HG3	22:EE:125:ALA:HB3	1.81	0.60
11:AA:2683:U:H2'	11:AA:2684:C:C6	2.36	0.60
14:Bb:28:C:H2'	14:Bb:29:A:H8	1.67	0.60
14:Bb:37:YYG:H193	20:Dd:22:U:H5	1.66	0.60
60:c:1165:G:H5''	66:i:99:MET:HE3	1.82	0.60
61:d:8:ASP:OD1	61:d:9:LEU:N	2.35	0.60
61:d:15:GLN:HA	61:d:18:LEU:HD12	1.83	0.60
67:j:27:PHE:HA	67:j:30:LYS:HE3	1.84	0.60
79:v:105:LEU:HD22	79:v:122:ARG:HG3	1.83	0.60
60:c:939:A:H2'	60:c:940:A:C8	2.37	0.60
61:d:107:PHE:HB3	61:d:139:VAL:HG21	1.83	0.60
7:6:40:TYR:CD2	70:m:32:GLY:HA3	2.37	0.60
11:AA:1033:U:O2'	11:AA:1034:U:OP1	2.14	0.60
45:PP:16:GLU:OE2	45:PP:19:ARG:NH2	2.33	0.60
59:b:28:LYS:NZ	59:b:32:GLN:OE1	2.34	0.60
60:c:1558:U:H3	75:r:122:THR:HG1	1.49	0.60
11:AA:524:U:OP1	45:PP:77:ARG:NH2	2.35	0.60
11:AA:643:U:O2'	11:AA:1153:A:N1	2.34	0.60
11:AA:2960:C:H2'	11:AA:2961:G:C8	2.36	0.60
28:H:108:GLU:HG3	28:H:128:ARG:HG3	1.83	0.60
60:c:256:A:O2'	69:l:72:ILE:O	2.17	0.60
60:c:1316:G:OP1	77:t:7:LYS:N	2.32	0.60
78:u:83:ALA:O	78:u:89:GLN:NE2	2.34	0.60
8:7:116:ASP:HB3	8:7:121:MET:HB2	1.83	0.60
60:c:895:G:H21	74:q:38:THR:HG21	1.67	0.60
72:o:22:ASN:HB3	72:o:25:VAL:HG22	1.83	0.60
11:AA:1132:C:H2'	11:AA:1133:A2M:H8	1.84	0.59
11:AA:1221:A:H61	19:DD:5:ARG:HE	1.50	0.59
17:Cc:76:C:O2'	58:a:56:PRO:O	2.17	0.59
76:s:94:GLN:HB2	76:s:102:LYS:HG3	1.84	0.59
11:AA:1553:U:H4'	11:AA:1554:U:H5'	1.83	0.59
12:B:60:PHE:HB3	12:B:64:ASN:HB3	1.83	0.59
41:NN:47:GLN:NE2	41:NN:64:LYS:HD3	2.17	0.59
60:c:17:C:O2'	60:c:1137:A:N1	2.35	0.59
60:c:513:U:H2'	60:c:514:G:C8	2.37	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
77:t:70:SER:HA	77:t:74:GLN:HE22	1.66	0.59
3:2:7:SER:HB2	3:2:13:LYS:HE3	1.84	0.59
11:AA:994:G:N2	11:AA:995:U:O4	2.33	0.59
11:AA:2250:G:O6	11:AA:2266:U:O4	2.19	0.59
19:DD:45:LEU:HB3	19:DD:49:ALA:HB3	1.85	0.59
23:Ee:104:ILE:HG23	23:Ee:108:GLU:HB3	1.84	0.59
60:c:152:U:O2	67:j:4:ASN:ND2	2.35	0.59
78:u:26:ILE:HB	78:u:31:ALA:HB2	1.84	0.59
19:DD:38:MET:SD	19:DD:39:HIS:ND1	2.76	0.59
21:E:71:LYS:O	21:E:73:LYS:NZ	2.34	0.59
60:c:976:G:N1	60:c:1023:A:O2'	2.31	0.59
60:c:1490:C:O2	60:c:1491:U:N3	2.35	0.59
75:r:57:MET:HE3	75:r:60:LEU:HD12	1.84	0.59
82:y:30:SER:HB2	82:y:61:ILE:HG13	1.85	0.59
11:AA:407:A:C2	16:CC:17:A:H1'	2.37	0.59
11:AA:413:U:H5''	12:B:34:GLN:HE22	1.67	0.59
11:AA:966:U:OP1	38:M:44:ASN:ND2	2.35	0.59
41:NN:38:GLU:HB2	41:NN:45:PRO:HD3	1.85	0.59
60:c:284:G:OP2	67:j:188:ARG:NH2	2.32	0.59
60:c:447:U:OP1	65:h:49:ARG:NH1	2.36	0.59
60:c:1511:U:H2'	60:c:1512:G:C8	2.37	0.59
61:d:84:ARG:NH1	61:d:203:PHE:O	2.35	0.59
67:j:70:PRO:O	67:j:98:ARG:NH1	2.35	0.59
76:s:110:THR:HA	76:s:113:ASP:HB2	1.84	0.59
11:AA:435:C:H2'	11:AA:436:A:H8	1.67	0.59
36:L:102:GLU:O	36:L:103:GLN:HG3	2.02	0.59
38:M:60:TYR:HE2	38:M:63:LYS:HA	1.67	0.59
60:c:625:C:H2'	60:c:626:U:C6	2.37	0.59
60:c:928:U:O2'	88:c:2008:HOH:O	2.16	0.59
66:i:37:GLN:HG3	76:s:57:LEU:HD11	1.84	0.59
66:i:72:HIS:O	76:s:79:TYR:OH	2.20	0.59
11:AA:97:U:O2'	88:AA:3730:HOH:O	2.17	0.59
11:AA:1302:A:N7	11:AA:2857:C:O2'	2.36	0.59
21:E:6:GLU:OE2	21:E:99:ARG:NH2	2.35	0.59
23:Ee:129:THR:HG21	23:Ee:162:ILE:HD12	1.85	0.59
60:c:754:A:N6	60:c:793:A:OP2	2.35	0.59
75:r:24:LYS:O	75:r:28:MET:HB2	2.03	0.59
79:v:97:SER:O	79:v:101:ASN:ND2	2.35	0.59
82:y:44:HIS:NE2	82:y:112:ASP:OD2	2.35	0.59
11:AA:601:U:O2'	11:AA:602:A:OP1	2.21	0.59
11:AA:1627:U:O2'	11:AA:1813:A:N7	2.35	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:c:585:A:N6	88:c:2034:HOH:O	2.35	0.59
11:AA:785:G:OP1	15:C:66:ARG:NH2	2.33	0.59
15:C:152:HIS:ND1	15:C:162:ALA:O	2.21	0.59
60:c:361:C:N4	60:c:379:U:OP1	2.36	0.59
70:m:110:GLN:HE22	70:m:126:ARG:HB2	1.67	0.59
4:3:19:HIS:HB3	4:3:22:LYS:HG3	1.84	0.59
11:AA:3046:A:N7	88:AA:3799:HOH:O	2.31	0.59
60:c:818:C:H2'	60:c:819:G:C8	2.38	0.59
60:c:1034:C:HO2'	82:y:2:THR:N	2.01	0.59
11:AA:1032:C:H2'	11:AA:1033:U:C6	2.37	0.58
11:AA:2213:A:H2'	11:AA:2214:A:C8	2.38	0.58
13:BB:118:A:H5''	29:HH:253:PHE:HZ	1.67	0.58
60:c:354:C:H5''	69:l:16:ALA:HB2	1.84	0.58
63:f:222:TYR:OH	81:x:11:LEU:O	2.16	0.58
67:j:79:LYS:HA	67:j:86:PRO:HG2	1.85	0.58
11:AA:1481:A:HO2'	11:AA:1858:A:HO2'	1.50	0.58
11:AA:1572:U:H2'	11:AA:1573:G:N7	2.18	0.58
11:AA:2103:U:H2'	11:AA:2104:A:C8	2.38	0.58
22:EE:180:LEU:HD22	59:b:26:VAL:HG21	1.85	0.58
36:L:95:VAL:O	36:L:100:THR:OG1	2.15	0.58
38:M:135:GLU:OE2	43:OO:166:ALA:N	2.36	0.58
43:OO:106:GLN:OE1	52:U:20:MET:HG2	2.03	0.58
60:c:119:A:H1'	60:c:397:A:C4	2.38	0.58
60:c:571:G:H5''	83:z:114:LYS:HE3	1.85	0.58
60:c:1188:G:O2'	60:c:1430:U:OP1	2.19	0.58
68:k:23:ALA:HB1	68:k:84:LYS:HD3	1.85	0.58
77:t:83:GLN:HG3	77:t:86:PRO:HG3	1.85	0.58
8:7:245:PHE:HE1	8:7:252:LEU:HD12	1.67	0.58
11:AA:284:A:OP2	58:a:41:ARG:NH1	2.35	0.58
11:AA:1354:G:H2'	11:AA:1357:G:H4'	1.85	0.58
11:AA:2476:C:C4	11:AA:2477:G:H1'	2.39	0.58
60:c:283:U:H5''	67:j:188:ARG:NH2	2.18	0.58
66:i:121:ILE:HG21	66:i:132:VAL:HG11	1.85	0.58
69:l:67:TRP:CZ3	69:l:69:SER:HB2	2.39	0.58
11:AA:417:A:H2'	11:AA:418:A:C8	2.37	0.58
11:AA:428:A:H2'	11:AA:429:U:C6	2.38	0.58
11:AA:874:U:N3	11:AA:2978:U:OP1	2.28	0.58
11:AA:2269:U:H2'	11:AA:2270:A:H2	1.67	0.58
43:OO:57:VAL:HG23	43:OO:115:ARG:HH11	1.68	0.58
60:c:454:U:C4	65:h:66:MET:HE1	2.38	0.58
68:k:79:ARG:HA	68:k:82:GLU:OE1	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:7:34:LEU:HD22	8:7:73:LEU:HG	1.84	0.58
11:AA:2468:A:O2'	11:AA:2477:G:N2	2.36	0.58
11:AA:3358:U:H2'	11:AA:3359:A:H8	1.68	0.58
22:EE:127:ALA:HB2	22:EE:134:VAL:HG23	1.86	0.58
60:c:590:C:H2'	60:c:591:A:H8	1.68	0.58
60:c:1009:U:OP1	74:q:129:LYS:NZ	2.36	0.58
60:c:1366:U:H2'	60:c:1367:G:O4'	2.03	0.58
69:l:114:GLU:HA	69:l:118:GLY:HA2	1.85	0.58
72:o:73:GLY:HA3	72:o:86:ILE:HD12	1.84	0.58
78:u:38:VAL:HG23	78:u:42:TYR:HD2	1.66	0.58
8:7:203:THR:HG22	8:7:243:LEU:HD12	1.84	0.58
11:AA:2228:A:H2'	11:AA:2229:A:C8	2.39	0.58
52:U:66:GLU:OE1	52:U:70:ARG:NH2	2.36	0.58
60:c:95:G:OP1	65:h:6:LYS:NZ	2.35	0.58
60:c:819:G:N1	60:c:821:U:O4	2.37	0.58
60:c:1601:G:OP1	79:v:86:ARG:NH1	2.31	0.58
11:AA:67:A:O2'	11:AA:315:C:O2	2.19	0.58
11:AA:1250:G:H2'	11:AA:1251:A:H8	1.67	0.58
60:c:399:A:N3	65:h:3:ARG:NH1	2.51	0.58
60:c:788:A:OP2	65:h:108:ARG:NH2	2.35	0.58
60:c:884:A:H2'	60:c:885:G:C8	2.38	0.58
77:t:89:SER:O	77:t:90:ALA:C	2.46	0.58
11:AA:1103:A:N6	11:AA:1363:A:O2'	2.34	0.58
11:AA:1119:C:H2'	11:AA:1120:A:H8	1.69	0.58
11:AA:2488:A:N6	11:AA:2490:C:OP2	2.36	0.58
13:BB:121:U:OP2	29:HH:265:TYR:OH	2.21	0.58
60:c:1351:G:C6	60:c:1375:A:N1	2.71	0.58
62:e:121:ILE:HD12	62:e:161:ILE:HG23	1.86	0.58
63:f:38:VAL:HG12	63:f:39:THR:H	1.69	0.58
73:p:99:ARG:NH2	73:p:119:GLU:OE2	2.25	0.58
3:2:79:ILE:HD11	60:c:1795:U:H5'	1.85	0.58
60:c:99:C:OP2	60:c:378:A:O2'	2.21	0.58
60:c:147:A:OP2	60:c:166:C:N4	2.36	0.58
60:c:1563:C:OP1	79:v:84:LYS:NZ	2.28	0.58
11:AA:2930:A:H2'	11:AA:2931:C:C6	2.38	0.58
22:EE:104:LEU:HD22	22:EE:136:ILE:HD11	1.86	0.58
22:EE:249:SER:OG	60:c:1012:U:OP1	2.21	0.58
60:c:802:G:N2	82:y:107:SER:OG	2.34	0.58
64:g:76:ARG:HD3	71:n:63:TYR:CD2	2.39	0.58
65:h:30:ARG:HE	65:h:38:LEU:HD11	1.68	0.58
77:t:71:PHE:HD1	77:t:73:LEU:HB2	1.68	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:z:107:PHE:CD1	83:z:123:LYS:HB3	2.39	0.58
4:3:82:LYS:HD2	73:p:25:TRP:CG	2.39	0.57
11:AA:2901:G:O2'	11:AA:3024:A:N1	2.34	0.57
27:GG:126:ILE:O	27:GG:129:THR:OG1	2.19	0.57
31:II:170:LYS:HB3	31:II:172:HIS:CE1	2.39	0.57
60:c:576:G:H22	83:z:67:ALA:HB2	1.68	0.57
60:c:967:A:OP2	73:p:124:ARG:NH2	2.37	0.57
61:d:164:ASN:HA	61:d:170:ILE:HD11	1.86	0.57
68:k:56:LYS:O	68:k:88:ARG:HA	2.03	0.57
11:AA:1196:C:OP2	11:AA:1309:U:O2'	2.20	0.57
11:AA:1262:G:H2'	11:AA:1264:G:H1'	1.85	0.57
14:Bb:2:C:H2'	14:Bb:3:G:H8	1.69	0.57
16:CC:59:A:O2'	32:J:61:LYS:NZ	2.34	0.57
36:L:27:LYS:NZ	36:L:93:LYS:O	2.37	0.57
62:e:158:SER:HA	62:e:161:ILE:HB	1.86	0.57
72:o:10:GLU:HG2	72:o:11:ARG:H	1.70	0.57
78:u:69:ILE:O	78:u:73:MET:HG3	2.02	0.57
10:A:34:VAL:HG22	10:A:103:LYS:HB2	1.85	0.57
11:AA:126:U:OP1	48:QQ:144:ARG:NH1	2.35	0.57
11:AA:2795:U:OP2	58:a:63:LYS:HG2	2.03	0.57
16:CC:103:G:OP2	16:CC:105:A:O2'	2.22	0.57
58:a:10:THR:HA	58:a:20:HIS:HD2	1.69	0.57
59:b:46:THR:OG1	59:b:57:CYS:SG	2.58	0.57
11:AA:1765:U:H2'	11:AA:1766:G:C8	2.38	0.57
11:AA:2966:G:H2'	11:AA:2967:A:C8	2.39	0.57
11:AA:3085:G:OP1	30:I:34:SER:OG	2.19	0.57
14:Bb:66:A:H2'	14:Bb:67:A:C8	2.40	0.57
38:M:36:GLY:HA3	38:M:40:HIS:CE1	2.39	0.57
49:R:31:LYS:NZ	49:R:78:SER:O	2.37	0.57
60:c:1484:G:H21	60:c:1606:C:H1'	1.70	0.57
65:h:104:ASP:HB3	65:h:110:ALA:HB2	1.85	0.57
70:m:3:ARG:NH1	70:m:4:ALA:O	2.37	0.57
8:7:13:LEU:HB3	8:7:45:TRP:CZ3	2.39	0.57
8:7:250:TYR:HB3	8:7:265:LEU:HB2	1.87	0.57
11:AA:307:A:H2'	11:AA:308:A:C8	2.39	0.57
11:AA:1596:C:H2'	11:AA:1597:C:C6	2.38	0.57
11:AA:2395:G:N7	88:AA:3813:HOH:O	2.33	0.57
19:DD:160:ASP:HB2	19:DD:163:ASN:HD21	1.70	0.57
60:c:923:A:H2'	60:c:924:A:C8	2.40	0.57
73:p:119:GLU:O	73:p:123:HIS:ND1	2.38	0.57
1:0:132:ARG:NH1	60:c:155:U:OP2	2.38	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:831:G:O2'	11:AA:1864:A:N3	2.34	0.57
11:AA:1448:U:H2'	11:AA:1449:A2M:H8	1.86	0.57
11:AA:2467:G:C5	11:AA:2479:C:H5''	2.39	0.57
11:AA:2930:A:H2'	11:AA:2931:C:H6	1.70	0.57
37:LL:124:ARG:NH1	37:LL:164:ILE:O	2.38	0.57
60:c:1366:U:O2'	79:v:7:ARG:NH1	2.38	0.57
73:p:142:GLU:HB2	73:p:145:THR:HG22	1.84	0.57
77:t:71:PHE:CD1	77:t:73:LEU:HB2	2.40	0.57
79:v:10:ALA:O	79:v:63:ARG:NH2	2.38	0.57
11:AA:675:C:O2'	11:AA:679:U:OP1	2.20	0.57
11:AA:2795:U:OP1	58:a:62:ALA:N	2.34	0.57
12:B:119:VAL:HG22	12:B:146:ILE:HG23	1.87	0.57
61:d:98:ILE:HD11	61:d:116:LYS:HD2	1.85	0.57
61:d:144:ILE:HG12	61:d:158:VAL:HB	1.85	0.57
68:k:123:ASP:O	68:k:127:GLU:HG2	2.04	0.57
11:AA:1039:U:H2'	11:AA:1040:A:C8	2.40	0.57
11:AA:1255:C:H2'	11:AA:1256:G:C8	2.39	0.57
19:DD:48:ARG:NH1	19:DD:91:GLU:HB2	2.19	0.57
56:Y:92:ASP:OD1	56:Y:126:LYS:NZ	2.37	0.57
60:c:68:A:N7	67:j:160:ARG:NH1	2.52	0.57
60:c:1575:G7M:H2'	60:c:1576:A:C8	2.40	0.57
60:c:1755:A:O2'	60:c:1756:A:O5'	2.21	0.57
61:d:203:PHE:CE2	77:t:91:LEU:HD21	2.40	0.57
63:f:40:LYS:HA	63:f:43:ARG:HE	1.69	0.57
67:j:31:ARG:HB3	67:j:101:ILE:HG13	1.86	0.57
77:t:87:GLU:O	77:t:88:VAL:C	2.47	0.57
11:AA:72:C:H4'	43:OO:63:VAL:HG13	1.87	0.57
12:B:67:ILE:HD11	12:B:80:LYS:HB3	1.86	0.57
15:C:174:ARG:HA	15:C:178:ARG:HG3	1.87	0.57
18:D:105:LEU:HD22	18:D:135:LYS:HG3	1.86	0.57
19:DD:130:PRO:HD3	19:DD:145:ILE:HG21	1.87	0.57
24:F:17:ARG:HG3	24:F:22:HIS:HA	1.87	0.57
75:r:86:VAL:HG22	75:r:89:MET:HE3	1.86	0.57
79:v:64:HIS:O	79:v:68:ARG:NH1	2.38	0.57
11:AA:1237:G:C6	11:AA:1251:A:N1	2.73	0.57
11:AA:3275:U:H5'	49:R:66:VAL:HG11	1.87	0.57
35:KK:75:ILE:HD11	48:QQ:18:VAL:HG23	1.86	0.57
44:P:23:VAL:O	44:P:28:ARG:NH2	2.36	0.57
60:c:762:A:OP1	70:m:79:ARG:NH1	2.34	0.57
60:c:810:G:N2	68:k:109:VAL:O	2.38	0.57
60:c:1787:C:H2'	60:c:1788:G:H8	1.69	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
65:h:127:LYS:N	65:h:140:VAL:O	2.37	0.57
73:p:100:LYS:HG2	73:p:104:ARG:NH1	2.19	0.57
3:2:12:LYS:HB2	3:2:33:ASP:OD2	2.04	0.56
6:5:13:ARG:HG3	6:5:14:TYR:HD2	1.70	0.56
10:A:164:SER:OG	11:AA:3181:C:O2'	2.21	0.56
11:AA:656:A:H2'	11:AA:657:A:C8	2.40	0.56
11:AA:1378:U:H2'	11:AA:1379:G:H8	1.70	0.56
60:c:1344:A:H2'	60:c:1345:A:C8	2.40	0.56
62:e:144:ARG:HD3	62:e:208:GLN:HB3	1.87	0.56
67:j:21:GLU:O	67:j:25:ARG:HG2	2.05	0.56
76:s:46:PHE:HA	76:s:49:TYR:HB2	1.86	0.56
11:AA:2129:U:H2'	11:AA:2130:G:C8	2.40	0.56
11:AA:2820:A:H2'	46:Pp:2:PHE:HB2	1.86	0.56
19:DD:60:ARG:HH21	19:DD:81:LYS:HD2	1.69	0.56
60:c:126:A:OP2	67:j:201:GLN:NE2	2.38	0.56
60:c:139:C:H1'	67:j:179:VAL:HG11	1.87	0.56
60:c:1234:A:OP2	60:c:1245:G:O2'	2.20	0.56
60:c:1716:C:O2'	60:c:1717:G:O5'	2.22	0.56
62:e:88:VAL:HA	62:e:98:THR:HG22	1.87	0.56
79:v:62:ALA:HB2	79:v:108:LEU:HD21	1.87	0.56
2:1:59:TYR:HB2	66:i:124:LEU:HD21	1.87	0.56
3:2:53:LEU:HD11	74:q:112:ILE:HG21	1.87	0.56
11:AA:364:G:OP2	53:V:52:LYS:NZ	2.35	0.56
11:AA:1093:A:H4'	24:F:116:ARG:HH22	1.70	0.56
11:AA:2106:A:H2'	11:AA:2107:A:C8	2.40	0.56
11:AA:2810:C:OP2	11:AA:2955:U:O2'	2.22	0.56
11:AA:3294:A:OP1	25:FF:128:LYS:NZ	2.33	0.56
34:K:119:ILE:HG22	34:K:124:GLY:HA3	1.88	0.56
47:Q:42:VAL:HG12	47:Q:52:GLN:HE21	1.70	0.56
52:U:44:VAL:HA	52:U:47:ILE:HG12	1.87	0.56
60:c:472:U:O2'	60:c:769:A:N3	2.35	0.56
60:c:887:A:H1'	74:q:122:PRO:HB3	1.87	0.56
60:c:953:G:H2'	60:c:954:G:H8	1.71	0.56
60:c:1772:C:C4	60:c:1773:4AC:HM73	2.40	0.56
64:g:141:LYS:HG2	64:g:147:ALA:HB2	1.87	0.56
68:k:27:LEU:HD22	68:k:84:LYS:NZ	2.20	0.56
1:0:105:ARG:NH1	60:c:444:C:O5'	2.38	0.56
8:7:120:SER:O	8:7:121:MET:HE2	2.04	0.56
11:AA:682:U:H5''	11:AA:683:U:H5	1.69	0.56
11:AA:923:C:OP2	88:AA:3731:HOH:O	2.17	0.56
11:AA:2477:G:N2	11:AA:2478:C:O4'	2.39	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2744:U:H2'	11:AA:2745:G:C8	2.40	0.56
11:AA:2899:C:O2'	11:AA:2901:G:OP2	2.19	0.56
11:AA:3244:A:OP2	25:FF:100:ARG:NH1	2.38	0.56
29:HH:39:GLN:O	29:HH:41:LYS:NZ	2.39	0.56
43:OO:123:ILE:HG22	51:T:118:ILE:HG12	1.88	0.56
48:QQ:56:LYS:NZ	48:QQ:145:ASP:OD2	2.34	0.56
74:q:17:ALA:HB3	74:q:81:VAL:HA	1.88	0.56
81:x:32:VAL:HG22	81:x:60:ARG:HD2	1.86	0.56
81:x:51:VAL:HG21	81:x:78:LEU:HD21	1.86	0.56
11:AA:1831:U:O2'	16:CC:114:G:OP1	2.20	0.56
25:FF:44:THR:HA	25:FF:340:LYS:NZ	2.21	0.56
43:OO:62:THR:O	43:OO:64:LYS:N	2.39	0.56
1:0:91:LEU:HD22	1:0:96:LEU:HD22	1.88	0.56
3:2:10:ARG:NH1	60:c:1790:A:OP1	2.32	0.56
3:2:32:LYS:NZ	60:c:930:A:OP1	2.38	0.56
3:2:45:VAL:HG23	74:q:99:GLN:OE1	2.06	0.56
11:AA:1386:A:H5''	27:GG:141:ARG:NH2	2.21	0.56
25:FF:92:TYR:HB2	25:FF:157:VAL:HB	1.88	0.56
26:G:93:ILE:HG12	26:G:107:PHE:HD1	1.70	0.56
60:c:525:A:O2'	60:c:526:A:OP1	2.24	0.56
71:n:22:VAL:HG12	71:n:63:TYR:CE2	2.40	0.56
76:s:14:LYS:O	76:s:123:ARG:NH1	2.38	0.56
77:t:89:SER:O	77:t:91:LEU:N	2.38	0.56
79:v:108:LEU:HB3	79:v:114:VAL:HG22	1.87	0.56
80:w:41:ILE:HG13	80:w:103:ILE:HD11	1.86	0.56
80:w:97:VAL:HA	80:w:100:VAL:HG12	1.88	0.56
11:AA:952:A:OP1	40:N:18:ARG:NH2	2.38	0.56
13:BB:84:A:H2'	13:BB:85:G:C8	2.40	0.56
35:KK:146:LYS:NZ	35:KK:173:MET:O	2.38	0.56
60:c:1564:U:OP1	79:v:38:LYS:NZ	2.38	0.56
67:j:138:ALA:HB1	67:j:153:VAL:HG11	1.87	0.56
70:m:62:ARG:HH12	70:m:68:LYS:HD2	1.71	0.56
80:w:48:HIS:CE1	80:w:99:ILE:HD13	2.41	0.56
11:AA:411:U:H2'	11:AA:412:G:H8	1.71	0.56
11:AA:435:C:H2'	11:AA:436:A:C8	2.40	0.56
11:AA:964:G:H5'	38:M:29:PRO:HB2	1.86	0.56
11:AA:1024:G:H21	11:AA:1027:A:H8	1.54	0.56
11:AA:2561:A:H2'	11:AA:2562:A:H8	1.70	0.56
27:GG:136:LEU:HD21	27:GG:143:GLU:HG3	1.87	0.56
38:M:133:LEU:O	38:M:137:LYS:HG3	2.06	0.56
60:c:343:C:H2'	60:c:344:A:H8	1.70	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:c:1650:U:H2'	60:c:1651:A:C8	2.41	0.56
68:k:23:ALA:O	68:k:84:LYS:NZ	2.35	0.56
70:m:110:GLN:NE2	70:m:126:ARG:HB2	2.21	0.56
71:n:46:LEU:O	71:n:50:THR:HB	2.06	0.56
72:o:114:ALA:O	72:o:116:ARG:NH1	2.39	0.56
73:p:94:LYS:O	73:p:98:VAL:HG23	2.05	0.56
11:AA:627:U:H2'	11:AA:628:A:C8	2.41	0.56
11:AA:2176:U:OP1	22:EE:54:ARG:NH2	2.29	0.56
11:AA:3343:G:O2'	11:AA:3362:A:N6	2.38	0.56
11:AA:3379:C:H4'	25:FF:315:GLY:HA2	1.88	0.56
60:c:502:U:H2'	60:c:503:G:C8	2.40	0.56
60:c:1477:G:H2'	60:c:1478:G:C8	2.41	0.56
81:x:55:LEU:HD11	81:x:69:LEU:HG	1.88	0.56
8:7:170:ILE:HG21	8:7:211:ILE:HG21	1.88	0.56
11:AA:1667:A:H2'	11:AA:1668:G:C8	2.41	0.56
11:AA:1899:G:O2'	11:AA:2334:U:O4	2.17	0.56
11:AA:2406:C:H2'	11:AA:2407:C:C6	2.40	0.56
11:AA:2882:U:H2'	11:AA:2883:U:C6	2.41	0.56
11:AA:3214:U:OP2	45:PP:128:ARG:NH1	2.39	0.56
19:DD:51:VAL:HG22	19:DD:87:VAL:HG22	1.88	0.56
28:H:54:LEU:HD21	28:H:119:GLY:HA3	1.88	0.56
39:MM:51:HIS:CD2	39:MM:168:SER:HB2	2.40	0.56
61:d:140:ASN:ND2	81:x:31:SER:O	2.33	0.56
3:2:52:ASP:OD2	74:q:107:ARG:HD3	2.07	0.55
11:AA:616:G:H2'	11:AA:617:G:H8	1.71	0.55
11:AA:1243:G:N2	11:AA:1270:A:O3'	2.36	0.55
11:AA:2836:C:H5	11:AA:2852:C:H42	1.53	0.55
14:Bb:27:C:H2'	14:Bb:28:C:C6	2.41	0.55
38:M:19:LYS:HG2	38:M:25:HIS:HB2	1.88	0.55
61:d:37:VAL:HG22	61:d:149:LEU:HD13	1.88	0.55
80:w:22:ILE:HG13	80:w:100:VAL:HG21	1.87	0.55
81:x:1:MET:N	81:x:10:GLU:OE2	2.39	0.55
4:3:67:THR:HG22	4:3:68:GLY:H	1.70	0.55
11:AA:662:U:H2'	11:AA:663:OMC:C6	2.41	0.55
11:AA:928:C:H2'	11:AA:929:A:C8	2.40	0.55
11:AA:1147:G:OP1	47:Q:47:ARG:NH1	2.39	0.55
60:c:525:A:H2'	60:c:526:A:H8	1.71	0.55
60:c:684:A:H2'	60:c:685:A:C8	2.42	0.55
61:d:23:HIS:HA	61:d:48:ILE:HB	1.87	0.55
64:g:105:MET:HE3	64:g:184:ILE:HD12	1.87	0.55
70:m:153:GLU:HA	70:m:156:ILE:HD12	1.87	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:6:26:LYS:NZ	60:c:588:U:OP1	2.38	0.55
11:AA:1203:A:H2'	11:AA:1204:A:H8	1.70	0.55
11:AA:1254:C:H1'	23:Ee:134:GLY:HA3	1.86	0.55
11:AA:2473:C:H3'	11:AA:2474:G:O4'	2.07	0.55
14:Bb:28:C:H2'	14:Bb:29:A:C8	2.41	0.55
16:CC:8:C:H2'	16:CC:9:A:C8	2.40	0.55
43:OO:47:ALA:O	43:OO:49:ARG:N	2.38	0.55
60:c:327:U:H2'	60:c:328:A:C8	2.41	0.55
60:c:886:U:H2'	60:c:887:A:H8	1.70	0.55
60:c:898:A:N1	60:c:911:U:O2'	2.38	0.55
60:c:918:U:H2'	60:c:919:A:H8	1.71	0.55
64:g:105:MET:HB2	64:g:122:VAL:HG21	1.87	0.55
83:z:90:ASP:O	83:z:136:TRP:NE1	2.35	0.55
11:AA:129:U:H2'	11:AA:130:A:H8	1.71	0.55
11:AA:2302:G:H21	60:c:1746:A:H8	1.54	0.55
11:AA:2369:G:H2'	11:AA:2370:G:C8	2.42	0.55
13:BB:112:G:H2'	13:BB:113:C:C6	2.41	0.55
21:E:8:GLN:HB3	21:E:64:ILE:HD11	1.88	0.55
35:KK:251:LYS:O	35:KK:255:SER:OG	2.23	0.55
67:j:84:TYR:OH	67:j:91:GLU:OE2	2.22	0.55
67:j:163:THR:HG22	67:j:168:THR:HG23	1.88	0.55
80:w:96:PRO:HD2	80:w:99:ILE:HD11	1.88	0.55
11:AA:1389:G:OP1	47:Q:104:ASN:ND2	2.36	0.55
11:AA:1534:A:H2'	11:AA:1535:A:C8	2.41	0.55
11:AA:1696:A:H2'	11:AA:1697:A:C8	2.41	0.55
11:AA:2927:C:H2'	11:AA:2928:C:C6	2.42	0.55
25:FF:360:ASP:OD2	25:FF:364:LYS:NZ	2.27	0.55
42:O:17:VAL:HG11	42:O:92:ILE:HD12	1.89	0.55
60:c:250:C:H2'	60:c:251:A:H8	1.72	0.55
60:c:386:G:OP2	69:l:25:ARG:NH2	2.37	0.55
60:c:816:G:H21	68:k:110:GLN:HE22	1.52	0.55
60:c:894:U:H2'	60:c:895:G:C8	2.42	0.55
60:c:973:A:H2'	60:c:974:A2M:H8	1.88	0.55
60:c:1638:G:N7	88:c:2028:HOH:O	2.33	0.55
61:d:63:ILE:HG12	81:x:36:VAL:HG22	1.87	0.55
65:h:100:ARG:HG2	65:h:102:VAL:HG13	1.87	0.55
65:h:179:LYS:HA	65:h:230:GLU:HA	1.89	0.55
11:AA:129:U:H2'	11:AA:130:A:C8	2.42	0.55
11:AA:759:U:H2'	11:AA:760:G:O4'	2.07	0.55
11:AA:806:A:N3	11:AA:2812:C:O2'	2.38	0.55
11:AA:853:G:O6	59:b:2:ALA:N	2.39	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:CC:9:A:H2'	16:CC:10:A:C8	2.41	0.55
16:CC:57:C:H4'	16:CC:63:G:N7	2.21	0.55
16:CC:142:C:H2'	16:CC:143:U:C6	2.41	0.55
17:Cc:44:A:H2'	17:Cc:45:A:C8	2.41	0.55
19:DD:41:VAL:HG23	19:DD:103:ASN:HD22	1.71	0.55
22:EE:150:LEU:HD11	22:EE:156:LYS:HD2	1.88	0.55
23:Ee:99:LYS:HZ2	23:Ee:101:SER:HG	1.51	0.55
50:S:3:GLN:HB3	50:S:30:LEU:HD12	1.88	0.55
60:c:66:U:H3	67:j:160:ARG:HB2	1.71	0.55
60:c:330:G:H2'	60:c:331:A:C8	2.42	0.55
60:c:1221:A:N6	60:c:1263:G:H21	2.05	0.55
62:e:39:GLU:HB3	62:e:73:LEU:O	2.06	0.55
66:i:31:GLU:HA	66:i:34:GLN:HB2	1.88	0.55
8:7:70:ASP:HB3	8:7:113:VAL:HG12	1.88	0.55
11:AA:1362:G:OP2	88:AA:3732:HOH:O	2.18	0.55
11:AA:1724:U:H1'	11:AA:1725:C:C6	2.42	0.55
41:NN:71:VAL:HG21	41:NN:79:ILE:HD12	1.89	0.55
41:NN:100:GLY:HA3	41:NN:154:THR:HG22	1.87	0.55
60:c:861:U:OP1	73:p:64:ARG:NH2	2.40	0.55
60:c:1382:A:H5''	80:w:60:THR:HG23	1.88	0.55
60:c:1587:A:OP2	87:c:1951:SPD:N10	2.40	0.55
61:d:110:TYR:HA	61:d:115:PHE:CG	2.42	0.55
68:k:7:LYS:HD2	68:k:8:ILE:HG23	1.88	0.55
5:4:22:ARG:HG2	60:c:1619:C:C2	2.42	0.55
11:AA:999:G:N3	11:AA:1002:A:N6	2.54	0.55
11:AA:2696:A:H2'	11:AA:2697:A:C8	2.41	0.55
11:AA:3006:A:H2'	11:AA:3007:U:O4'	2.07	0.55
60:c:473:A:OP1	70:m:44:ARG:NH1	2.37	0.55
60:c:1365:C:H2'	60:c:1366:U:C6	2.42	0.55
60:c:1535:U:O2'	60:c:1536:G:N3	2.36	0.55
76:s:47:LYS:HZ3	76:s:114:ARG:NH1	2.05	0.55
11:AA:627:U:H4'	11:AA:1399:A:H1'	1.88	0.55
11:AA:2357:A:H2'	11:AA:2358:A:H8	1.71	0.55
11:AA:3252:G:H2'	11:AA:3253:G:C8	2.42	0.55
13:BB:23:A:H2'	13:BB:24:A:C8	2.42	0.55
19:DD:48:ARG:NE	19:DD:95:GLU:OE2	2.39	0.55
60:c:537:G:OP2	70:m:175:ARG:NH1	2.39	0.55
64:g:95:GLY:HA2	64:g:101:GLN:NE2	2.22	0.55
67:j:212:LEU:HD23	67:j:216:LEU:HD23	1.87	0.55
2:1:81:ARG:HH22	60:c:1531:G:H5'	1.72	0.55
11:AA:67:A:N6	11:AA:271:C:O2'	2.38	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:359:U:HO2'	53:V:16:HIS:HD1	1.53	0.55
11:AA:2413:A:H2'	11:AA:2414:G:H8	1.72	0.55
11:AA:3151:U:OP2	25:FF:132:LYS:NZ	2.39	0.55
14:Bb:2:C:H2'	14:Bb:3:G:C8	2.42	0.55
35:KK:162:LEU:HD23	48:QQ:7:LEU:HD11	1.88	0.55
48:QQ:96:ARG:NH1	48:QQ:104:GLU:OE2	2.38	0.55
60:c:520:A:H2'	60:c:521:A:C8	2.42	0.55
60:c:1504:G:OP1	79:v:97:SER:OG	2.22	0.55
60:c:1559:A:H5''	78:u:135:GLY:HA3	1.89	0.55
60:c:1739:C:H2'	60:c:1740:A:C8	2.41	0.55
74:q:29:HIS:CD2	74:q:41:ARG:HB2	2.42	0.55
76:s:77:GLN:O	76:s:81:ILE:HG12	2.06	0.55
78:u:18:LEU:HD11	78:u:35:ILE:HG21	1.89	0.55
1:0:112:LYS:NZ	60:c:57:G:OP1	2.41	0.54
11:AA:19:U:H2'	11:AA:20:A:C8	2.41	0.54
11:AA:1757:A:H2'	11:AA:1758:G:C8	2.42	0.54
11:AA:2896:A:OP1	56:Y:124:LYS:NZ	2.39	0.54
11:AA:2945:G:O2'	11:AA:2948:OMC:OP2	2.25	0.54
60:c:327:U:H2'	60:c:328:A:H8	1.72	0.54
60:c:536:C:OP2	70:m:174:ARG:NH2	2.34	0.54
60:c:1251:U:O2'	60:c:1252:C:O5'	2.23	0.54
69:l:113:PHE:HE2	69:l:121:LEU:HB2	1.72	0.54
72:o:124:THR:HB	72:o:141:LYS:HB2	1.89	0.54
11:AA:981:U:HO2'	11:AA:1105:A:HO2'	1.54	0.54
11:AA:1192:C:OP1	56:Y:113:ARG:NH1	2.41	0.54
11:AA:1246:G:O2'	11:AA:1264:G:O5'	2.20	0.54
11:AA:2213:A:H2'	11:AA:2214:A:H8	1.72	0.54
19:DD:55:LYS:HD2	19:DD:58:MET:HE2	1.89	0.54
39:MM:140:THR:OG1	39:MM:144:ASN:ND2	2.39	0.54
52:U:70:ARG:HH11	52:U:84:LYS:HG2	1.72	0.54
60:c:82:U:H2'	60:c:83:G:O4'	2.06	0.54
1:0:27:VAL:HG21	1:0:40:LEU:HD11	1.88	0.54
11:AA:519:A:OP1	21:E:62:ASN:ND2	2.35	0.54
11:AA:760:G:H1'	11:AA:771:A:N6	2.21	0.54
11:AA:1750:A:OP1	54:W:44:LYS:NZ	2.27	0.54
11:AA:2228:A:H2'	11:AA:2229:A:H8	1.71	0.54
11:AA:2375:G:OP2	88:AA:3734:HOH:O	2.19	0.54
11:AA:2862:U:H4'	39:MM:106:ALA:HB2	1.89	0.54
11:AA:3215:A:C8	45:PP:121:MET:HE3	2.43	0.54
36:L:23:VAL:HG12	36:L:45:GLY:HA3	1.88	0.54
42:O:57:GLU:OE2	42:O:69:TYR:OH	2.21	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:S:85:VAL:O	50:S:89:ILE:HG12	2.06	0.54
60:c:626:U:H2'	60:c:627:C:H6	1.71	0.54
60:c:1132:A:H2'	60:c:1133:A:H8	1.71	0.54
63:f:168:ARG:HD3	63:f:170:ILE:HD11	1.90	0.54
67:j:72:ARG:HB3	67:j:98:ARG:HA	1.88	0.54
11:AA:155:G:OP2	88:AA:3733:HOH:O	2.18	0.54
11:AA:1221:A:N6	19:DD:5:ARG:HE	2.06	0.54
11:AA:2407:C:H2'	11:AA:2408:U:H6	1.71	0.54
23:Ee:11:LYS:NZ	23:Ee:12:TYR:O	2.35	0.54
23:Ee:20:GLY:HA3	23:Ee:54:LYS:HD3	1.90	0.54
27:GG:142:VAL:HB	27:GG:145:ILE:HG21	1.90	0.54
38:M:60:TYR:CE2	38:M:63:LYS:HA	2.42	0.54
39:MM:72:ALA:HB2	39:MM:155:ALA:HB2	1.88	0.54
60:c:298:C:H5''	65:h:38:LEU:HB2	1.89	0.54
60:c:1253:U:H2'	60:c:1254:U:C6	2.42	0.54
64:g:23:GLU:OE2	64:g:27:ARG:NE	2.41	0.54
8:7:272:ASP:OD1	8:7:272:ASP:N	2.39	0.54
11:AA:715:A:H5''	38:M:115:LYS:HA	1.88	0.54
11:AA:1486:G:H21	50:S:6:THR:HG22	1.72	0.54
11:AA:2489:C:H2'	11:AA:2490:C:O2	2.06	0.54
11:AA:2552:C:H2'	42:O:50:VAL:HG11	1.90	0.54
11:AA:2881:C:H2'	11:AA:2882:U:C6	2.43	0.54
17:Cc:47:G:H2'	17:Cc:48:U:H4'	1.89	0.54
22:EE:206:PRO:HG3	22:EE:213:GLY:HA3	1.90	0.54
54:W:10:GLN:O	54:W:14:LEU:HD23	2.07	0.54
60:c:78:A:OP1	67:j:154:ARG:NH2	2.35	0.54
60:c:819:G:H1	60:c:852:C:H5	1.54	0.54
63:f:111:VAL:HB	63:f:191:ALA:HA	1.88	0.54
1:0:78:SER:N	1:0:81:GLU:OE2	2.40	0.54
10:A:68:ARG:NH2	11:AA:2987:A:OP1	2.40	0.54
11:AA:404:G:P	88:AA:3703:HOH:O	2.49	0.54
11:AA:528:U:H2'	11:AA:529:A:H8	1.72	0.54
11:AA:589:A:H1'	11:AA:1337:A:H5''	1.88	0.54
11:AA:1035:G:H2'	11:AA:1036:A:H8	1.72	0.54
11:AA:2736:A:OP1	24:F:92:ARG:NH1	2.38	0.54
13:BB:64:A:N7	39:MM:209:ASN:ND2	2.52	0.54
25:FF:183:LEU:O	25:FF:191:LYS:NZ	2.34	0.54
34:K:125:LYS:HD2	34:K:126:LEU:HG	1.89	0.54
48:QQ:43:THR:OG1	48:QQ:131:GLU:OE2	2.22	0.54
60:c:58:U:OP1	60:c:456:A:O2'	2.26	0.54
60:c:896:U:OP1	62:e:26:ARG:NH2	2.40	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:c:1317:C:H2'	60:c:1318:G:O4'	2.08	0.54
65:h:79:ASP:HB3	65:h:82:TYR:HB2	1.89	0.54
83:z:19:ARG:O	83:z:23:ARG:HG2	2.08	0.54
11:AA:760:G:H1'	11:AA:771:A:H61	1.73	0.54
11:AA:1108:U:H2'	11:AA:1109:U:C6	2.42	0.54
11:AA:3193:C:H2'	11:AA:3194:C:C6	2.43	0.54
14:Bb:27:C:H2'	14:Bb:28:C:H6	1.73	0.54
60:c:250:C:H2'	60:c:251:A:C8	2.43	0.54
60:c:1196:A:OP2	60:c:1464:G:N2	2.35	0.54
65:h:11:ARG:NH1	65:h:21:ASP:O	2.41	0.54
70:m:17:ARG:O	70:m:23:ARG:NH1	2.40	0.54
80:w:88:LYS:C	80:w:89:ARG:HD2	2.32	0.54
1:0:8:ARG:HE	1:0:9:THR:H	1.55	0.54
11:AA:8:C:H2'	11:AA:9:U:C6	2.43	0.54
11:AA:94:G:H2'	11:AA:95:A:C8	2.43	0.54
11:AA:2095:G:H2'	11:AA:2096:A:C8	2.43	0.54
13:BB:4:U:H2'	13:BB:5:G:H8	1.73	0.54
15:C:178:ARG:NH2	15:C:186:VAL:HG22	2.22	0.54
50:S:105:VAL:HA	50:S:108:GLN:HG3	1.90	0.54
54:W:42:LYS:HG2	54:W:55:VAL:HG22	1.89	0.54
60:c:1755:A:O2'	60:c:1756:A:O4'	2.23	0.54
66:i:99:MET:HB2	66:i:180:ARG:NH2	2.22	0.54
72:o:45:PRO:HB2	72:o:47:THR:HG22	1.90	0.54
76:s:38:LEU:HB3	79:v:10:ALA:HB2	1.90	0.54
1:0:6:THR:HB	1:0:28:LEU:HB2	1.88	0.54
5:4:58:GLU:OE2	66:i:225:ARG:NH1	2.41	0.54
8:7:261:LYS:HA	8:7:273:ASP:HB2	1.90	0.54
11:AA:1176:C:H2'	11:AA:1177:G:N2	2.23	0.54
11:AA:1226:G:H5'	11:AA:3117:C:H1'	1.90	0.54
11:AA:2367:A:H2'	11:AA:2368:A:C8	2.43	0.54
11:AA:3291:G:H2'	11:AA:3292:A:C8	2.43	0.54
38:M:76:ASP:OD1	38:M:77:LYS:HG2	2.08	0.54
60:c:407:A:H2'	60:c:408:C:C6	2.43	0.54
60:c:536:C:O2'	60:c:537:G:OP1	2.26	0.54
60:c:1182:U:H4'	75:r:124:THR:HB	1.90	0.54
73:p:62:GLN:HB2	73:p:65:VAL:HG12	1.90	0.54
11:AA:400:G:H4'	11:AA:401:U:H5''	1.89	0.54
11:AA:1615:C:H2'	11:AA:1616:U:C6	2.43	0.54
19:DD:26:PHE:HB2	19:DD:87:VAL:HB	1.88	0.54
60:c:17:C:H2'	60:c:18:C:C6	2.43	0.54
60:c:67:A:N6	60:c:83:G:O2'	2.41	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:c:1280:4AC:H5'	80:w:69:LYS:HE2	1.90	0.54
60:c:1566:U:H5''	78:u:39:GLY:H	1.72	0.54
62:e:133:TYR:HD2	62:e:217:LEU:HD11	1.72	0.54
65:h:44:LEU:HD23	65:h:82:TYR:HB3	1.89	0.54
65:h:251:GLU:OE2	65:h:255:ARG:NE	2.30	0.54
1:0:17:LEU:HD11	65:h:92:LEU:HD12	1.89	0.53
11:AA:1265:U:H2'	11:AA:1266:G:C8	2.43	0.53
11:AA:2588:U:OP1	35:KK:48:ARG:NH2	2.33	0.53
11:AA:3281:U:H2'	11:AA:3282:U:C6	2.43	0.53
14:Bb:36:A:C2'	14:Bb:37:YYG:H5'	2.37	0.53
19:DD:75:LYS:NZ	19:DD:196:VAL:O	2.40	0.53
27:GG:166:VAL:HG12	27:GG:170:LYS:HE2	1.89	0.53
60:c:400:A:H5''	69:l:25:ARG:HA	1.89	0.53
60:c:1684:U:H3	60:c:1717:G:H1	1.56	0.53
60:c:1787:C:H2'	60:c:1788:G:C8	2.42	0.53
68:k:46:ILE:HG12	68:k:60:ILE:HA	1.89	0.53
69:l:113:PHE:CE2	69:l:121:LEU:HB2	2.43	0.53
77:t:5:ARG:O	77:t:10:LYS:NZ	2.40	0.53
79:v:61:VAL:O	79:v:65:ILE:HD12	2.08	0.53
80:w:24:ILE:HG22	80:w:116:VAL:HG22	1.88	0.53
80:w:35:GLU:OE2	80:w:57:ARG:NH1	2.42	0.53
11:AA:2714:G:H5'	11:AA:2716:U:C6	2.43	0.53
11:AA:3186:A:OP1	21:E:154:HIS:ND1	2.32	0.53
60:c:165:G:N2	67:j:132:ARG:HH12	2.06	0.53
60:c:947:U:H2'	60:c:948:G:C8	2.43	0.53
62:e:137:ILE:HG21	62:e:172:LEU:HD22	1.89	0.53
64:g:140:GLY:O	64:g:147:ALA:HA	2.07	0.53
3:2:45:VAL:HA	74:q:99:GLN:HE22	1.72	0.53
11:AA:294:U:H4'	52:U:77:LEU:HD23	1.90	0.53
11:AA:1798:A:H2'	11:AA:1799:A:C8	2.43	0.53
11:AA:2437:G:H1	11:AA:2510:U:H3	1.56	0.53
14:Bb:11:C:H2'	14:Bb:12:U:C6	2.42	0.53
66:i:43:PHE:N	66:i:46:TRP:O	2.32	0.53
1:0:10:ARG:HG2	1:0:11:LYS:HG3	1.90	0.53
11:AA:2095:G:H2'	11:AA:2096:A:H8	1.74	0.53
57:Z:21:ARG:NH1	60:c:1117:U:OP1	2.41	0.53
60:c:29:U:H2'	60:c:30:G:C8	2.44	0.53
60:c:406:U:H2'	60:c:407:A:H8	1.74	0.53
60:c:932:U:OP2	62:e:155:TYR:OH	2.19	0.53
70:m:73:GLY:O	70:m:77:ILE:HG12	2.08	0.53
77:t:20:TYR:HD1	77:t:23:LYS:HG3	1.73	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
79:v:44:GLU:HG2	79:v:45:MET:HG2	1.91	0.53
11:AA:2429:G:H2'	11:AA:2430:A:H8	1.72	0.53
11:AA:2429:G:H2'	11:AA:2430:A:C8	2.44	0.53
11:AA:2476:C:H2'	11:AA:2477:G:H4'	1.90	0.53
60:c:183:U:H2'	60:c:184:C:C6	2.44	0.53
62:e:135:LEU:HD23	62:e:217:LEU:HA	1.90	0.53
64:g:44:THR:HG23	64:g:45:LYS:HG2	1.89	0.53
72:o:68:GLY:HA3	72:o:127:GLN:HB3	1.90	0.53
11:AA:1799:A:H2'	11:AA:1800:A:H8	1.73	0.53
11:AA:3162:C:H2'	11:AA:3163:A:H8	1.72	0.53
11:AA:3298:C:C2	11:AA:3299:A:C8	2.97	0.53
16:CC:39:G:O2'	16:CC:105:A:N1	2.41	0.53
35:KK:158:ASP:HB3	35:KK:159:PRO:HD3	1.91	0.53
54:W:40:GLN:NE2	54:W:57:ASN:OD1	2.33	0.53
60:c:861:U:O2'	82:y:56:HIS:O	2.27	0.53
60:c:1590:G:OP1	79:v:91:TYR:HB2	2.08	0.53
62:e:132:ASP:HB3	62:e:221:PRO:HB3	1.91	0.53
8:7:123:ILE:HD13	8:7:169:ILE:HG21	1.90	0.53
11:AA:966:U:H2'	11:AA:967:A:C8	2.44	0.53
11:AA:1940:G:H21	11:AA:3362:A:H8	1.57	0.53
11:AA:2897:A:H5''	56:Y:125:LYS:HG3	1.89	0.53
11:AA:3121:U:H1'	11:AA:3122:A:H5''	1.91	0.53
17:Cc:24:C:H2'	17:Cc:25:U:H6	1.74	0.53
28:H:68:GLU:O	28:H:72:LYS:NZ	2.42	0.53
39:MM:66:GLU:OE2	39:MM:69:ARG:NH2	2.41	0.53
60:c:886:U:OP2	62:e:216:LYS:NZ	2.42	0.53
60:c:896:U:O2	74:q:41:ARG:NH1	2.37	0.53
60:c:980:G:H4'	60:c:1776:A:H4'	1.90	0.53
60:c:1170:G:C2	60:c:1171:A:C8	2.96	0.53
62:e:81:PHE:HD2	62:e:82:ARG:HG3	1.73	0.53
11:AA:269:G:N2	11:AA:295:A:OP2	2.33	0.53
13:BB:73:C:N4	21:E:19:VAL:HG11	2.23	0.53
15:C:67:ILE:HG12	15:C:81:VAL:HG11	1.91	0.53
17:Cc:22:A:N6	17:Cc:48:U:O2'	2.42	0.53
22:EE:80:GLU:HG3	59:b:66:GLY:HA2	1.90	0.53
29:HH:50:ARG:NH2	29:HH:72:ASP:OD2	2.40	0.53
60:c:1164:G:O2'	60:c:1612:U:O2	2.27	0.53
60:c:1414:U:OP2	77:t:2:GLY:N	2.42	0.53
60:c:1628:U:H2'	60:c:1629:G:C8	2.43	0.53
64:g:113:LEU:HD23	64:g:118:ALA:HB2	1.91	0.53
65:h:201:HIS:HE1	65:h:207:LEU:HD22	1.72	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
68:k:41:LEU:HD13	68:k:70:PHE:CE1	2.43	0.53
70:m:34:PHE:CE2	70:m:105:LEU:HB3	2.44	0.53
71:n:16:PHE:HB2	71:n:76:LEU:HD13	1.91	0.53
73:p:102:LEU:HD11	73:p:112:LYS:HA	1.91	0.53
3:2:51:ARG:NH1	5:4:37:SER:O	2.41	0.53
5:4:61:ARG:NH1	66:i:225:ARG:HG2	2.23	0.53
8:7:90:ARG:HB2	8:7:92:TRP:NE1	2.23	0.53
11:AA:113:C:OP1	48:QQ:147:ARG:NE	2.39	0.53
11:AA:824:C:O2'	11:AA:1534:A:N3	2.39	0.53
11:AA:1791:C:H2'	11:AA:1792:C:C6	2.44	0.53
19:DD:48:ARG:CZ	19:DD:91:GLU:HB2	2.39	0.53
60:c:44:U:OP2	60:c:437:A:N6	2.32	0.53
60:c:330:G:H2'	60:c:331:A:H8	1.74	0.53
60:c:591:A:H2'	60:c:592:A:H8	1.73	0.53
60:c:1280:4AC:H2'	60:c:1281:G:C8	2.44	0.53
78:u:17:LEU:HD23	78:u:35:ILE:HD11	1.91	0.53
1:0:54:ALA:HB1	1:0:76:TYR:HB2	1.90	0.53
8:7:67:ILE:HB	8:7:85:TRP:HB2	1.91	0.53
11:AA:498:A:O2'	11:AA:3273:A:N1	2.38	0.53
11:AA:760:G:O2'	11:AA:770:G:N2	2.36	0.53
11:AA:2338:C:OP1	25:FF:236:LYS:NZ	2.39	0.53
13:BB:45:A:OP1	29:HH:151:GLN:NE2	2.29	0.53
17:Cc:19:G:N2	17:Cc:58:A:H2'	2.23	0.53
19:DD:123:ALA:HA	19:DD:152:ILE:HB	1.91	0.53
29:HH:164:LYS:HE2	29:HH:195:LEU:HD21	1.90	0.53
60:c:590:C:H2'	60:c:591:A:C8	2.42	0.53
60:c:1067:C:H5''	62:e:150:VAL:HG23	1.91	0.53
60:c:1648:A:H2'	60:c:1649:G:C8	2.44	0.53
64:g:29:LEU:HD22	64:g:32:GLU:HG3	1.91	0.53
1:0:86:GLU:HB3	1:0:91:LEU:HD21	1.92	0.52
8:7:115:ILE:HG22	8:7:116:ASP:O	2.09	0.52
11:AA:528:U:H2'	11:AA:529:A:C8	2.43	0.52
11:AA:576:C:OP1	33:JJ:241:LYS:HE3	2.09	0.52
11:AA:2946:A2M:H5''	11:AA:2947:G:H5'	1.90	0.52
19:DD:173:LEU:HA	19:DD:176:LEU:HB2	1.91	0.52
23:Ee:46:ILE:HG12	23:Ee:60:VAL:HG11	1.91	0.52
27:GG:317:PRO:C	27:GG:319:LYS:H	2.17	0.52
29:HH:83:LEU:HB3	29:HH:88:ILE:HB	1.92	0.52
60:c:272:U:H2'	60:c:273:G:H8	1.74	0.52
60:c:436:A2M:H8	60:c:436:A2M:O5'	2.09	0.52
60:c:448:C:H2'	60:c:449:C:C6	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:c:639:U:OP1	68:k:112:ARG:NH2	2.30	0.52
60:c:800:U:H2'	60:c:801:G:C8	2.44	0.52
60:c:1641:C:H2'	60:c:1642:G:C8	2.44	0.52
65:h:153:ASN:O	65:h:174:LYS:NZ	2.39	0.52
67:j:77:LEU:HB3	67:j:81:VAL:HG21	1.91	0.52
78:u:73:MET:HB3	78:u:101:LEU:CD1	2.38	0.52
11:AA:3034:C:O2'	37:LL:122:LYS:HD2	2.10	0.52
11:AA:3332:U:OP1	30:I:35:LYS:HD3	2.09	0.52
14:Bb:15:G:N2	14:Bb:20:G:O6	2.40	0.52
25:FF:49:TYR:OH	25:FF:177:HIS:ND1	2.35	0.52
60:c:10:G:O2'	63:f:87:GLN:OE1	2.25	0.52
60:c:759:U:H2'	60:c:760:A:H8	1.73	0.52
60:c:1465:C:OP1	76:s:139:GLN:NE2	2.30	0.52
69:l:78:ILE:HD11	69:l:102:VAL:HG11	1.90	0.52
74:q:20:TYR:HD1	74:q:84:ARG:HG3	1.74	0.52
11:AA:20:A:H2'	11:AA:21:G:C8	2.44	0.52
11:AA:800:G:H22	27:GG:101:ALA:HA	1.74	0.52
11:AA:1022:U:H2'	11:AA:1023:C:C6	2.44	0.52
11:AA:2453:U:O4	11:AA:2485:A:N6	2.42	0.52
11:AA:2557:A:OP1	22:EE:69:TYR:OH	2.25	0.52
14:Bb:18:G:C8	14:Bb:57:G:O6	2.63	0.52
21:E:60:SER:OG	21:E:62:ASN:OD1	2.27	0.52
27:GG:120:TYR:CE1	27:GG:277:PRO:HB3	2.45	0.52
60:c:852:C:H2'	60:c:853:G:C8	2.44	0.52
60:c:1296:A:OP1	61:d:138:TYR:OH	2.21	0.52
61:d:203:PHE:HE2	77:t:91:LEU:HD21	1.74	0.52
68:k:77:LEU:HD11	68:k:92:PHE:HZ	1.75	0.52
75:r:83:MET:HE2	75:r:116:LEU:HD11	1.91	0.52
11:AA:616:G:H2'	11:AA:617:G:C8	2.43	0.52
11:AA:1601:U:OP2	18:D:42:ARG:NH2	2.42	0.52
11:AA:2662:G:H2'	11:AA:2663:G:H8	1.74	0.52
11:AA:3184:A:N3	11:AA:3187:A:O2'	2.36	0.52
14:Bb:58:A:H1'	14:Bb:60:C:H41	1.74	0.52
26:G:13:LYS:HE3	26:G:15:PHE:CZ	2.44	0.52
28:H:23:MET:HE3	28:H:100:GLY:HA3	1.90	0.52
60:c:922:G:H2'	60:c:923:A:C8	2.45	0.52
60:c:1368:G:H5''	79:v:69:LYS:HG2	1.91	0.52
70:m:127:VAL:O	70:m:131:GLN:CB	2.57	0.52
70:m:129:ILE:O	70:m:142:ASN:HA	2.09	0.52
71:n:45:ALA:O	71:n:48:SER:HB3	2.09	0.52
77:t:20:TYR:O	77:t:23:LYS:HB2	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
81:x:58:TYR:OH	81:x:62:ARG:NH1	2.42	0.52
83:z:50:LYS:HD3	83:z:101:GLU:OE2	2.10	0.52
8:7:115:ILE:HG12	8:7:122:ILE:HG22	1.90	0.52
8:7:124:SER:HG	8:7:134:TRP:CD1	2.28	0.52
11:AA:247:C:H2'	11:AA:248:U:O4'	2.09	0.52
11:AA:1799:A:H2'	11:AA:1800:A:C8	2.44	0.52
11:AA:2333:C:OP2	88:AA:3735:HOH:O	2.19	0.52
11:AA:2344:U:H2'	11:AA:2345:A:H8	1.75	0.52
11:AA:3045:G:OP1	25:FF:19:ARG:NH2	2.43	0.52
11:AA:3177:G:O2'	11:AA:3179:U:OP1	2.25	0.52
22:EE:65:ASP:HB3	22:EE:68:LYS:O	2.10	0.52
27:GG:29:PRO:HD2	27:GG:277:PRO:HB2	1.91	0.52
57:Z:12:ARG:NH2	60:c:1779:U:O4	2.41	0.52
60:c:1001:A:O2'	60:c:1002:G:OP1	2.27	0.52
64:g:191:ASP:HB3	64:g:194:LYS:HG2	1.92	0.52
73:p:46:THR:H	73:p:49:GLN:HE21	1.58	0.52
74:q:81:VAL:HB	74:q:115:ILE:HD13	1.91	0.52
80:w:57:ARG:HA	80:w:89:ARG:HG3	1.92	0.52
8:7:13:LEU:HD13	8:7:45:TRP:HZ3	1.74	0.52
11:AA:289:A:O2'	48:QQ:93:LYS:O	2.28	0.52
11:AA:1491:A:H5''	53:V:14:LYS:HE3	1.91	0.52
11:AA:2453:U:C6	11:AA:2461:A:H5''	2.45	0.52
11:AA:2563:G:OP2	36:L:55:LYS:NZ	2.41	0.52
11:AA:2867:C:P	88:AA:3738:HOH:O	2.68	0.52
27:GG:74:ILE:HD12	27:GG:75:PRO:HD2	1.90	0.52
60:c:1588:G:H1	60:c:1608:U:H3	1.55	0.52
65:h:252:ARG:HG2	65:h:256:ARG:HE	1.74	0.52
69:l:64:ASN:ND2	69:l:180:ASP:OD2	2.42	0.52
74:q:78:ALA:HB2	74:q:111:ARG:HB2	1.91	0.52
82:y:6:VAL:HG23	82:y:34:ILE:HD11	1.90	0.52
8:7:81:LEU:HB3	8:7:113:VAL:HG21	1.92	0.52
11:AA:121:A:C2	35:KK:129:PRO:HB3	2.44	0.52
11:AA:896:A:H5'	22:EE:183:GLY:HA2	1.91	0.52
11:AA:1232:C:O3'	19:DD:36:GLN:NE2	2.42	0.52
11:AA:2469:G:H21	11:AA:2488:A:H8	1.57	0.52
11:AA:3119:U:H4'	56:Y:104:PRO:HG2	1.92	0.52
14:Bb:16:U:H4'	14:Bb:17:U:H5	1.75	0.52
43:OO:55:ARG:NH1	43:OO:73:ARG:O	2.38	0.52
60:c:168:A:OP1	67:j:140:ASN:ND2	2.29	0.52
60:c:1410:A:O2'	60:c:1411:A:OP1	2.25	0.52
60:c:1533:C:H4'	60:c:1539:G:N1	2.25	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
67:j:74:LYS:HD2	67:j:94:ARG:HG2	1.92	0.52
69:l:66:SER:HA	69:l:73:SER:HA	1.92	0.52
69:l:67:TRP:CH2	69:l:69:SER:HB2	2.45	0.52
2:1:80:LEU:HA	2:1:83:LEU:HD23	1.92	0.52
11:AA:1667:A:H2'	11:AA:1668:G:H8	1.75	0.52
11:AA:2500:A:H2'	11:AA:2501:U:H6	1.75	0.52
11:AA:2615:G:H2'	11:AA:2616:C:H6	1.74	0.52
11:AA:2901:G:N2	11:AA:3030:G:O2'	2.43	0.52
13:BB:71:G:H2'	13:BB:72:A:C8	2.45	0.52
23:Ee:45:ASP:OD1	23:Ee:46:ILE:N	2.43	0.52
33:JJ:178:ILE:HD11	33:JJ:187:GLU:HG3	1.92	0.52
35:KK:153:ILE:HG12	35:KK:166:LEU:HD23	1.91	0.52
58:a:61:LYS:NZ	58:a:63:LYS:O	2.31	0.52
60:c:966:A:H5''	73:p:4:MET:HE2	1.92	0.52
66:i:27:THR:HG21	76:s:29:ILE:HG12	1.91	0.52
71:n:19:GLY:HA3	71:n:90:THR:HG23	1.92	0.52
78:u:41:ARG:HD3	79:v:46:PRO:HD3	1.91	0.52
10:A:23:VAL:O	10:A:27:LEU:HD23	2.07	0.52
11:AA:289:A:H2'	11:AA:290:G:H8	1.75	0.52
11:AA:1240:A:N1	11:AA:1244:A:H3'	2.24	0.52
19:DD:24:SER:OG	19:DD:192:ASP:OD1	2.27	0.52
36:L:25:ILE:HA	36:L:43:VAL:HG12	1.92	0.52
58:a:25:VAL:HG22	58:a:72:LEU:HG	1.92	0.52
60:c:351:C:OP1	60:c:630:A:O2'	2.23	0.52
60:c:1151:A:H2'	60:c:1152:A:H8	1.75	0.52
65:h:103:TYR:O	65:h:182:TYR:OH	2.28	0.52
69:l:110:ARG:NH1	69:l:121:LEU:HB3	2.25	0.52
5:4:45:LYS:HB3	66:i:160:VAL:HG21	1.91	0.52
11:AA:1128:U:OP1	39:MM:4:ARG:NH1	2.32	0.52
11:AA:1254:C:H2'	11:AA:1255:C:H6	1.74	0.52
11:AA:1572:U:H2'	11:AA:1573:G:C8	2.45	0.52
25:FF:287:LYS:O	25:FF:293:ASN:ND2	2.40	0.52
27:GG:141:ARG:NH1	27:GG:180:LYS:HG3	2.25	0.52
60:c:126:A:H62	60:c:291:G:N2	2.06	0.52
62:e:46:THR:OG1	62:e:64:ARG:NH1	2.43	0.52
67:j:49:VAL:HB	67:j:115:LYS:HB2	1.92	0.52
68:k:83:LYS:O	68:k:86:GLN:NE2	2.43	0.52
80:w:103:ILE:HD12	80:w:106:ILE:HG21	1.92	0.52
11:AA:1949:G:O6	11:AA:2097:U:O4	2.27	0.51
11:AA:3371:G:H2'	11:AA:3372:A:C8	2.45	0.51
16:CC:41:A:HO2'	53:V:59:THR:HG1	1.57	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:c:514:G:HO2'	60:c:515:A:H8	1.56	0.51
60:c:1564:U:H2'	60:c:1565:C:C6	2.45	0.51
60:c:1776:A:H2'	60:c:1777:G:C8	2.44	0.51
66:i:146:THR:OG1	66:i:157:ARG:N	2.43	0.51
67:j:135:PRO:HB2	67:j:141:ILE:HG12	1.92	0.51
2:l:95:HIS:ND1	2:l:96:SER:O	2.39	0.51
11:AA:1157:G:H2'	11:AA:1158:A:O4'	2.09	0.51
11:AA:1597:C:H5'	11:AA:1696:A:H1'	1.91	0.51
11:AA:2139:A:C4	53:V:3:LYS:HE2	2.44	0.51
18:D:169:ALA:HA	18:D:172:ARG:HE	1.73	0.51
25:FF:385:LYS:NZ	25:FF:386:ASP:OD2	2.43	0.51
42:O:9:SER:O	42:O:13:LYS:HG3	2.11	0.51
43:OO:126:PHE:O	51:T:114:ARG:NH2	2.43	0.51
60:c:110:U:OP1	60:c:753:A:O2'	2.28	0.51
60:c:259:U:O2	69:l:178:ARG:NH2	2.43	0.51
60:c:933:A:N6	88:c:2044:HOH:O	2.42	0.51
60:c:1365:C:OP1	76:s:66:ARG:NH2	2.43	0.51
60:c:1471:A:H2	60:c:1474:G:N3	2.09	0.51
71:n:16:PHE:HE1	71:n:73:VAL:HG13	1.74	0.51
80:w:61:LYS:HB2	80:w:86:ILE:HG13	1.92	0.51
1:O:105:ARG:NH2	60:c:458:G:OP2	2.43	0.51
11:AA:68:C:O3'	48:QQ:177:GLY:HA2	2.10	0.51
11:AA:1810:A:H2'	11:AA:1811:G:C8	2.45	0.51
11:AA:2452:G:H2'	11:AA:2462:A:H1'	1.92	0.51
11:AA:2631:U:OP2	24:F:4:SER:OG	2.29	0.51
11:AA:2792:A:H2'	11:AA:2793:OMG:C8	2.46	0.51
11:AA:2947:G:N3	25:FF:250:ALA:HB1	2.25	0.51
19:DD:141:VAL:HA	19:DD:156:VAL:HG21	1.91	0.51
21:E:73:LYS:NZ	21:E:97:VAL:O	2.43	0.51
25:FF:48:GLY:HA3	25:FF:81:THR:HG22	1.93	0.51
38:M:3:SER:O	38:M:6:THR:OG1	2.26	0.51
41:NN:47:GLN:HA	41:NN:67:VAL:HA	1.93	0.51
57:Z:18:ARG:NH2	60:c:1125:A:OP1	2.43	0.51
60:c:388:G:OP2	60:c:423:G:O2'	2.28	0.51
60:c:1677:C:OP1	69:l:42:ARG:NH1	2.43	0.51
65:h:160:VAL:HB	65:h:169:ILE:HD12	1.92	0.51
70:m:163:PRO:HB3	70:m:168:ARG:H	1.75	0.51
1:O:8:ARG:HG2	60:c:779:U:C4	2.45	0.51
1:O:116:LYS:NZ	60:c:57:G:OP2	2.24	0.51
11:AA:415:G:H2'	11:AA:416:A:C8	2.46	0.51
11:AA:761:A:H2'	11:AA:762:U:C6	2.45	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1035:G:H2'	11:AA:1036:A:C8	2.45	0.51
11:AA:1293:U:O2'	21:E:88:HIS:NE2	2.43	0.51
11:AA:2196:C:H2'	11:AA:2242:A:H61	1.76	0.51
11:AA:2428:U:H2'	11:AA:2429:G:C8	2.45	0.51
15:C:147:ARG:HB2	15:C:150:VAL:HG23	1.91	0.51
16:CC:69:U:H2'	16:CC:70:G:O4'	2.10	0.51
21:E:172:TYR:OH	45:PP:65:LEU:HG	2.11	0.51
23:Ee:35:LEU:HD13	23:Ee:64:ILE:HG21	1.91	0.51
35:KK:147:LYS:O	35:KK:149:LYS:NZ	2.41	0.51
78:u:56:LYS:HD2	78:u:61:LEU:HD12	1.92	0.51
80:w:40:ASN:O	80:w:43:LYS:HG3	2.11	0.51
8:7:152:SER:H	8:7:173:GLY:HA2	1.75	0.51
8:7:305:TYR:HE2	8:7:311:ARG:HD2	1.76	0.51
11:AA:118:U:O2	11:AA:121:A:H5''	2.11	0.51
11:AA:1283:C:C2'	11:AA:1284:C:H5'	2.41	0.51
11:AA:2487:U:H4'	11:AA:2488:A:OP2	2.11	0.51
11:AA:2747:A:H5'	29:HH:175:HIS:HA	1.93	0.51
13:BB:121:U:O2'	29:HH:268:GLU:OE1	2.29	0.51
18:D:126:GLU:O	18:D:131:ALA:HB3	2.10	0.51
21:E:10:ILE:O	21:E:59:VAL:N	2.43	0.51
60:c:525:A:H2'	60:c:526:A:C8	2.45	0.51
60:c:1788:G:C8	74:q:132:ARG:NH1	2.79	0.51
67:j:31:ARG:HA	67:j:101:ILE:HA	1.92	0.51
71:n:11:ILE:HG22	71:n:35:ILE:HG21	1.93	0.51
75:r:110:GLU:OE1	78:u:119:ILE:HD12	2.11	0.51
76:s:47:LYS:NZ	76:s:114:ARG:HH22	2.08	0.51
78:u:102:ALA:HB3	78:u:104:ASN:CG	2.35	0.51
1:0:20:ARG:HD2	1:0:74:LEU:HD22	1.91	0.51
3:2:35:ALA:O	3:2:37:LYS:NZ	2.37	0.51
11:AA:625:G:N2	11:AA:1401:A:OP1	2.35	0.51
11:AA:1498:A:OP1	18:D:6:THR:OG1	2.19	0.51
11:AA:2154:U:H2'	11:AA:2155:G:H8	1.76	0.51
11:AA:3163:A:H2'	11:AA:3164:C:C6	2.46	0.51
11:AA:3297:U:H4'	12:B:74:LYS:HE2	1.92	0.51
24:F:133:ALA:HB3	33:JJ:121:LYS:HB2	1.91	0.51
60:c:86:A:H2'	60:c:87:C:H6	1.76	0.51
60:c:607:G:H21	60:c:614:C:H5''	1.75	0.51
60:c:854:U:O4	60:c:855:A:N6	2.44	0.51
60:c:912:U:O2	60:c:914:G:N1	2.44	0.51
60:c:1218:G:N2	60:c:1444:A:OP2	2.30	0.51
60:c:1619:C:H2'	60:c:1620:C:H6	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
62:e:124:ASN:HA	62:e:137:ILE:O	2.11	0.51
62:e:176:VAL:O	62:e:177:GLN:HG2	2.10	0.51
64:g:64:ARG:HG3	71:n:91:TYR:CE1	2.46	0.51
65:h:141:THR:OG1	65:h:143:ASP:OD1	2.23	0.51
75:r:125:PRO:HG3	78:u:129:TRP:CH2	2.44	0.51
8:7:149:ASP:OD1	8:7:150:TRP:N	2.40	0.51
8:7:156:VAL:HG12	8:7:169:ILE:HG22	1.93	0.51
11:AA:651:G:O2'	11:AA:1435:A:OP1	2.28	0.51
11:AA:1169:A:OP1	88:AA:3737:HOH:O	2.20	0.51
11:AA:1250:G:H2'	11:AA:1251:A:C8	2.45	0.51
11:AA:3295:A:H2'	11:AA:3296:A:H8	1.72	0.51
13:BB:33:U:H1'	29:HH:210:GLU:OE2	2.10	0.51
37:LL:22:SER:O	37:LL:23:ARG:HD3	2.11	0.51
57:Z:1:MET:HB2	60:c:1642:G:H5'	1.92	0.51
60:c:97:C:H2'	60:c:98:U:C6	2.45	0.51
60:c:1087:A:H2'	60:c:1088:A:C8	2.46	0.51
60:c:1221:A:H62	60:c:1263:G:H21	1.58	0.51
62:e:35:PRO:HD2	62:e:41:ARG:HA	1.91	0.51
67:j:30:LYS:HE2	67:j:36:VAL:HB	1.93	0.51
68:k:140:VAL:HB	82:y:52:TYR:HB3	1.93	0.51
11:AA:640:U:H2'	11:AA:641:C:C6	2.46	0.51
11:AA:1117:G:OP1	40:N:4:SER:HB2	2.10	0.51
11:AA:3371:G:H2'	11:AA:3372:A:H8	1.75	0.51
55:X:30:ARG:HB2	55:X:33:ASN:HB2	1.93	0.51
60:c:1579:U:H2'	60:c:1580:C:C6	2.46	0.51
60:c:1738:U:H2'	60:c:1739:C:C6	2.46	0.51
62:e:87:ARG:HD2	62:e:101:HIS:HB2	1.92	0.51
66:i:221:ALA:O	66:i:225:ARG:HG3	2.11	0.51
67:j:3:LEU:O	67:j:15:THR:HA	2.11	0.51
74:q:20:TYR:HB3	74:q:27:PHE:HB2	1.92	0.51
80:w:100:VAL:HA	80:w:103:ILE:HG22	1.92	0.51
2:1:65:LEU:HA	2:1:70:LYS:HE3	1.91	0.51
10:A:117:ARG:NH2	11:AA:3182:G:OP1	2.44	0.51
11:AA:75:G:H5'	43:OO:58:VAL:HB	1.93	0.51
15:C:94:PHE:CE2	38:M:119:PRO:HD3	2.46	0.51
35:KK:162:LEU:HA	48:QQ:7:LEU:HD21	1.93	0.51
66:i:25:LEU:HG	76:s:27:GLY:HA3	1.92	0.51
67:j:161:GLU:HA	67:j:170:THR:HA	1.93	0.51
68:k:69:GLY:O	68:k:73:VAL:HG12	2.11	0.51
71:n:88:PRO:HD2	71:n:91:TYR:HB2	1.93	0.51
77:t:99:VAL:HG12	77:t:118:PRO:HB2	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
78:u:17:LEU:HD13	78:u:66:LEU:HD12	1.92	0.51
2:1:47:TYR:O	2:1:50:ILE:HG12	2.11	0.51
8:7:127:ARG:HD3	8:7:150:TRP:CE2	2.45	0.51
11:AA:12:A:H2'	11:AA:13:A:C8	2.46	0.51
11:AA:656:A:H2'	11:AA:657:A:H8	1.76	0.51
11:AA:737:G:H2'	11:AA:738:A:C8	2.42	0.51
11:AA:1498:A:H2'	11:AA:1499:C:C6	2.46	0.51
11:AA:1783:U:H2'	11:AA:1784:G:C8	2.45	0.51
11:AA:2477:G:H21	11:AA:2478:C:H5'	1.76	0.51
11:AA:2497:U:H3'	11:AA:2498:U:C6	2.46	0.51
11:AA:3002:C:O2'	25:FF:180:GLU:OE2	2.24	0.51
11:AA:3255:U:H2'	11:AA:3256:G:H8	1.76	0.51
14:Bb:66:A:H2'	14:Bb:67:A:H8	1.75	0.51
17:Cc:72:C:H2'	17:Cc:73:A:H8	1.74	0.51
23:Ee:126:ALA:O	23:Ee:129:THR:OG1	2.28	0.51
35:KK:107:GLU:O	35:KK:110:THR:OG1	2.29	0.51
60:c:207:U:H2'	60:c:208:U:C6	2.46	0.51
60:c:1202:A:H1'	60:c:1207:C:H42	1.76	0.51
72:o:4:GLU:N	72:o:7:VAL:HG22	2.26	0.51
75:r:119:PHE:HE1	78:u:119:ILE:HG12	1.75	0.51
11:AA:632:G:H2'	11:AA:633:C:C6	2.46	0.50
11:AA:2566:C:H2'	11:AA:2567:C:H6	1.76	0.50
11:AA:2569:A:O2'	11:AA:2570:U:H5''	2.10	0.50
23:Ee:50:THR:HB	23:Ee:53:PHE:HB2	1.93	0.50
23:Ee:54:LYS:HB3	23:Ee:89:PRO:HG3	1.93	0.50
41:NN:15:GLU:HG2	41:NN:16:LYS:HG2	1.92	0.50
60:c:123:G:H21	65:h:146:THR:HG21	1.75	0.50
60:c:142:G:H2'	60:c:143:G:C8	2.46	0.50
60:c:322:G:HO2'	69:l:10:LYS:NZ	2.08	0.50
60:c:509:G:H2'	60:c:510:G:C8	2.46	0.50
60:c:1648:A:H2'	60:c:1649:G:H8	1.76	0.50
68:k:8:ILE:HG13	68:k:8:ILE:O	2.11	0.50
7:6:15:LYS:NZ	60:c:585:A:OP1	2.44	0.50
11:AA:57:A:H4'	48:QQ:157:LYS:HB2	1.93	0.50
11:AA:1032:C:H2'	11:AA:1033:U:H6	1.77	0.50
14:Bb:1:G:O2'	39:MM:103:LEU:HD12	2.12	0.50
14:Bb:8:U:O2'	14:Bb:46:G:N2	2.44	0.50
60:c:178:U:O2	67:j:194:LYS:NZ	2.40	0.50
60:c:294:C:H2'	60:c:295:A:H8	1.77	0.50
60:c:502:U:H2'	60:c:503:G:H8	1.75	0.50
60:c:600:U:H2'	60:c:601:A:H8	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:c:1299:G:H2'	60:c:1300:A:C8	2.46	0.50
8:7:144:LEU:HD22	8:7:181:TRP:HZ2	1.76	0.50
8:7:256:THR:HG21	8:7:261:LYS:HD3	1.92	0.50
11:AA:542:G:O6	11:AA:550:A:N6	2.44	0.50
11:AA:2138:A:C4	53:V:3:LYS:HB3	2.47	0.50
11:AA:3332:U:H2'	11:AA:3333:G:O4'	2.11	0.50
16:CC:142:C:H2'	16:CC:143:U:H6	1.76	0.50
24:F:53:PRO:HB3	24:F:91:LEU:HD11	1.92	0.50
60:c:463:U:H2'	60:c:464:A:C8	2.46	0.50
66:i:117:THR:O	66:i:121:ILE:HG12	2.11	0.50
2:1:40:VAL:HG13	2:1:41:ILE:H	1.75	0.50
11:AA:26:A:N3	11:AA:328:U:O2'	2.41	0.50
11:AA:163:C:H2'	11:AA:164:A:C8	2.46	0.50
11:AA:960:U:H4'	11:AA:963:G:C2	2.46	0.50
11:AA:1348:U:H4'	11:AA:1349:G:OP1	2.11	0.50
11:AA:1643:A:H2'	11:AA:1644:C:C2	2.47	0.50
12:B:120:ASN:OD1	12:B:145:HIS:HB2	2.11	0.50
22:EE:168:VAL:HG13	59:b:79:VAL:HG21	1.93	0.50
23:Ee:13:LEU:HD22	23:Ee:62:LEU:HD12	1.93	0.50
60:c:49:C:OP2	88:c:2009:HOH:O	2.19	0.50
60:c:1001:A:H2'	60:c:1002:G:C8	2.47	0.50
60:c:1022:C:O2'	60:c:1125:A:N1	2.43	0.50
61:d:120:LEU:HD21	61:d:144:ILE:HD12	1.93	0.50
3:2:33:ASP:OD1	3:2:34:LYS:N	2.44	0.50
4:3:59:CYS:SG	4:3:60:SER:N	2.83	0.50
11:AA:631:U:H2'	11:AA:632:G:H8	1.77	0.50
11:AA:797:U:O2	43:OO:12:ASN:ND2	2.44	0.50
11:AA:847:A:H2'	11:AA:848:A:C8	2.47	0.50
11:AA:1394:A:H4'	11:AA:1420:C:H4'	1.94	0.50
11:AA:1895:A:O2'	11:AA:3053:G:H4'	2.11	0.50
11:AA:2221:G:N2	11:AA:2223:A:H3'	2.27	0.50
11:AA:2458:A:H3'	11:AA:2459:A:H8	1.76	0.50
11:AA:3251:U:H2'	11:AA:3252:G:C8	2.46	0.50
13:BB:19:C:H2'	13:BB:20:A:H8	1.76	0.50
14:Bb:43:G:H2'	14:Bb:44:A:C8	2.47	0.50
18:D:101:VAL:HG12	18:D:104:ARG:HH12	1.76	0.50
25:FF:67:PHE:HA	25:FF:70:ARG:HD3	1.94	0.50
60:c:331:A:H2'	60:c:332:U:C6	2.47	0.50
60:c:1366:U:P	76:s:66:ARG:HE	2.35	0.50
61:d:66:ALA:HB1	81:x:50:TYR:HE1	1.75	0.50
61:d:118:PRO:HG2	61:d:141:ILE:HD13	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:f:230:TRP:CE2	82:y:68:ARG:HB3	2.45	0.50
73:p:104:ARG:HG3	73:p:104:ARG:HH11	1.76	0.50
77:t:76:GLU:O	77:t:77:GLU:C	2.54	0.50
11:AA:180:C:H2'	11:AA:181:U:C6	2.47	0.50
11:AA:895:A:O2'	11:AA:896:A:OP2	2.25	0.50
11:AA:1231:A:H1'	11:AA:1278:A:H61	1.77	0.50
11:AA:1831:U:H2'	11:AA:1832:C:C6	2.46	0.50
11:AA:2406:C:H2'	11:AA:2407:C:H6	1.74	0.50
11:AA:2611:U:H2'	11:AA:2612:U:C6	2.47	0.50
41:NN:23:VAL:HG12	41:NN:25:GLU:H	1.76	0.50
56:Y:97:ARG:NE	56:Y:122:ARG:HB3	2.26	0.50
60:c:888:U:H2'	60:c:889:U:C6	2.46	0.50
60:c:890:C:H2'	60:c:891:A:H8	1.77	0.50
71:n:83:PRO:HB2	71:n:85:HIS:CD2	2.47	0.50
8:7:13:LEU:HD13	8:7:45:TRP:CZ3	2.46	0.50
11:AA:1497:C:H2'	11:AA:1498:A:C8	2.45	0.50
11:AA:1631:C:OP2	36:L:48:ARG:NH2	2.41	0.50
11:AA:1921:A:H2'	11:AA:1922:A:C8	2.47	0.50
11:AA:3113:A:O2'	37:LL:66:ALA:O	2.28	0.50
11:AA:3232:G:C6	11:AA:3256:G:C6	3.00	0.50
60:c:127:G:H4'	67:j:194:LYS:HZ3	1.77	0.50
60:c:752:A:H2	60:c:797:G:H22	1.58	0.50
60:c:1589:C:H2'	60:c:1590:G:C8	2.47	0.50
62:e:68:VAL:HG13	62:e:73:LEU:HD21	1.93	0.50
62:e:144:ARG:CZ	62:e:206:PRO:HB3	2.42	0.50
64:g:67:ASN:O	64:g:70:THR:OG1	2.28	0.50
67:j:2:LYS:O	67:j:108:VAL:HA	2.12	0.50
69:l:62:THR:OG1	69:l:76:THR:O	2.25	0.50
11:AA:507:U:H2'	11:AA:508:U:C6	2.47	0.50
11:AA:1277:C:C2	11:AA:1278:A:C8	3.00	0.50
11:AA:2475:G:H3'	11:AA:2476:C:C6	2.47	0.50
11:AA:2500:A:H2'	11:AA:2501:U:C6	2.47	0.50
11:AA:2768:U:H2'	11:AA:2769:A:H8	1.75	0.50
11:AA:3308:C:O2'	12:B:69:ARG:O	2.26	0.50
26:G:13:LYS:HE3	26:G:15:PHE:HZ	1.76	0.50
60:c:143:G:H1	60:c:171:A:N6	2.05	0.50
65:h:6:LYS:O	65:h:30:ARG:NH1	2.35	0.50
67:j:120:GLU:HB3	67:j:125:THR:OG1	2.12	0.50
69:l:57:ALA:HB2	69:l:177:GLY:HA2	1.93	0.50
69:l:83:TYR:HB2	69:l:196:LEU:HD21	1.94	0.50
69:l:166:TYR:HB3	69:l:184:LEU:HD12	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
73:p:132:VAL:HG13	73:p:134:VAL:HG23	1.92	0.50
74:q:68:ALA:HB1	74:q:110:LEU:HD13	1.92	0.50
8:7:19:TRP:CD1	8:7:38:ARG:HD2	2.47	0.50
11:AA:708:G:N2	11:AA:711:A:OP2	2.41	0.50
11:AA:945:C:H2'	11:AA:946:U:C6	2.47	0.50
11:AA:1719:G:OP1	18:D:110:ARG:NH1	2.43	0.50
11:AA:1765:U:H2'	11:AA:1766:G:H8	1.76	0.50
11:AA:1827:C:H2'	11:AA:1828:A:C8	2.47	0.50
16:CC:83:C:H41	34:K:52:ARG:NH1	2.09	0.50
24:F:68:THR:O	29:HH:41:LYS:HB2	2.12	0.50
60:c:1220:C:H4'	71:n:52:LYS:HG2	1.94	0.50
60:c:1261:G:H2'	60:c:1262:U:C6	2.47	0.50
63:f:106:ASP:OD1	63:f:110:HIS:HB2	2.12	0.50
68:k:46:ILE:HD13	68:k:60:ILE:HG12	1.94	0.50
77:t:24:LEU:HB2	77:t:31:ASN:OD1	2.12	0.50
83:z:95:PHE:O	83:z:142:LYS:NZ	2.35	0.50
8:7:111:MET:HE3	8:7:127:ARG:CZ	2.42	0.49
11:AA:501:A:H2'	11:AA:502:U:C6	2.47	0.49
11:AA:1659:U:H2'	11:AA:1660:C:C6	2.47	0.49
11:AA:2344:U:H2'	11:AA:2345:A:C8	2.47	0.49
11:AA:2462:A:H5'	11:AA:2463:G:H2'	1.94	0.49
11:AA:2507:C:H2'	11:AA:2508:U:C6	2.47	0.49
11:AA:2724:OMU:O5'	11:AA:2724:OMU:H6	2.11	0.49
16:CC:150:G:OP1	32:J:27:ARG:NH2	2.45	0.49
60:c:52:U:H2'	60:c:53:G:H8	1.77	0.49
60:c:1160:A:H2'	60:c:1161:C:C6	2.47	0.49
60:c:1681:A:N6	60:c:1720:G:O2'	2.36	0.49
68:k:73:VAL:HG22	68:k:77:LEU:HD23	1.94	0.49
70:m:62:ARG:HH22	70:m:68:LYS:HD2	1.75	0.49
70:m:90:LYS:HB3	70:m:95:TYR:CD2	2.44	0.49
5:4:61:ARG:HH22	66:i:159:ALA:HB3	1.76	0.49
11:AA:1256:G:H2'	11:AA:1257:C:C6	2.46	0.49
11:AA:1334:U:H5''	33:JJ:206:LYS:HB3	1.94	0.49
11:AA:2101:C:H2'	11:AA:2102:U:C6	2.47	0.49
11:AA:2683:U:H1'	41:NN:128:TYR:CE2	2.47	0.49
11:AA:2880:U:H1'	25:FF:250:ALA:HB3	1.93	0.49
16:CC:8:C:H2'	16:CC:9:A:H8	1.77	0.49
21:E:96:ASP:OD2	21:E:101:ALA:HB3	2.12	0.49
23:Ee:46:ILE:HG23	23:Ee:60:VAL:HG21	1.94	0.49
24:F:89:LEU:HB3	24:F:91:LEU:HD13	1.94	0.49
60:c:333:A:N7	69:l:49:ARG:HD3	2.27	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:c:607:G:N2	60:c:614:C:H5''	2.27	0.49
60:c:791:A:H2'	60:c:792:U:C6	2.47	0.49
60:c:1351:G:N1	60:c:1375:A:C2	2.80	0.49
60:c:1483:A:H2'	60:c:1484:G:C8	2.47	0.49
60:c:1727:G:H2'	60:c:1728:A:C8	2.48	0.49
71:n:26:ASP:O	71:n:39:ASN:ND2	2.45	0.49
74:q:18:ARG:HB2	74:q:29:HIS:O	2.12	0.49
77:t:86:PRO:O	77:t:88:VAL:HG22	2.12	0.49
8:7:45:TRP:CD1	8:7:57:PRO:HA	2.48	0.49
11:AA:135:C:C4	51:T:94:LYS:HE2	2.47	0.49
11:AA:787:G:H2'	11:AA:788:C:C6	2.47	0.49
11:AA:1451:C:P	88:AA:3702:HOH:O	2.47	0.49
15:C:23:ASN:HB3	15:C:26:LEU:HB3	1.94	0.49
16:CC:133:G:OP1	32:J:94:GLN:NE2	2.45	0.49
60:c:1146:G:H2'	60:c:1147:A:C8	2.47	0.49
60:c:1591:C:H2'	60:c:1592:A:C8	2.44	0.49
77:t:21:TYR:HD2	77:t:73:LEU:HD13	1.75	0.49
79:v:63:ARG:O	79:v:67:MET:HG2	2.12	0.49
11:AA:2094:C:H2'	11:AA:2095:G:H8	1.76	0.49
11:AA:2427:U:H2'	11:AA:2428:U:C6	2.47	0.49
11:AA:3234:A:H2	11:AA:3253:G:H22	1.60	0.49
11:AA:3296:A:H2'	11:AA:3297:U:H6	1.77	0.49
37:LL:69:ARG:HH11	37:LL:72:LYS:HD2	1.77	0.49
59:b:87:ARG:O	59:b:91:GLU:HG3	2.12	0.49
60:c:108:A:H2'	60:c:109:G:C8	2.47	0.49
60:c:549:G:O2'	60:c:556:A:N1	2.42	0.49
60:c:743:U:OP2	68:k:108:GLN:NE2	2.42	0.49
60:c:1511:U:H2'	60:c:1512:G:H8	1.77	0.49
60:c:1532:U:H2'	60:c:1533:C:O4'	2.12	0.49
60:c:1585:U:H5''	76:s:134:ALA:HB3	1.94	0.49
61:d:41:ARG:HG2	61:d:42:PRO:HD2	1.93	0.49
11:AA:1362:G:H2'	11:AA:1363:A:C8	2.47	0.49
11:AA:2767:U:H2'	11:AA:2768:U:C6	2.48	0.49
11:AA:3084:C:O2'	11:AA:3332:U:OP1	2.18	0.49
13:BB:76:A:N1	13:BB:102:A:H5''	2.27	0.49
15:C:83:VAL:O	15:C:103:ALA:HA	2.13	0.49
60:c:66:U:C6	67:j:173:PRO:HB3	2.47	0.49
60:c:610:G:H21	83:z:19:ARG:HH22	1.60	0.49
60:c:1280:4AC:H2'	60:c:1281:G:H8	1.78	0.49
63:f:229:LEU:O	81:x:16:LYS:NZ	2.43	0.49
82:y:81:VAL:O	82:y:122:SER:OG	2.27	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:98:G:N7	43:OO:13:HIS:NE2	2.61	0.49
11:AA:628:A:H2'	11:AA:629:U:O4'	2.13	0.49
11:AA:1257:C:H5''	23:Ee:123:ARG:NE	2.27	0.49
11:AA:2357:A:H2'	11:AA:2358:A:C8	2.46	0.49
11:AA:2561:A:C4	35:KK:32:LYS:HD2	2.47	0.49
23:Ee:37:LEU:HD13	23:Ee:69:ALA:HB2	1.95	0.49
34:K:32:SER:HA	34:K:49:PRO:HA	1.94	0.49
41:NN:155:THR:HG22	41:NN:157:GLU:H	1.78	0.49
45:PP:89:ALA:HB1	45:PP:92:GLU:OE1	2.13	0.49
60:c:1147:A:O2'	60:c:1636:C:OP2	2.27	0.49
60:c:1226:A:H2'	60:c:1227:A:H5''	1.95	0.49
60:c:1586:A:H5''	76:s:136:SER:HB2	1.95	0.49
60:c:1654:G:O2'	60:c:1746:A:N6	2.42	0.49
61:d:10:THR:OG1	61:d:13:ASP:OD1	2.25	0.49
68:k:8:ILE:HD12	68:k:43:PHE:HE1	1.76	0.49
68:k:80:GLU:HG3	68:k:84:LYS:HE3	1.94	0.49
77:t:60:ARG:NH1	77:t:66:VAL:HG21	2.28	0.49
78:u:116:LEU:HA	78:u:119:ILE:HG22	1.95	0.49
8:7:175:ASP:OD1	8:7:175:ASP:N	2.43	0.49
11:AA:385:A:H2'	11:AA:386:A:C8	2.48	0.49
11:AA:549:U:H2'	11:AA:550:A:H8	1.74	0.49
11:AA:631:U:H2'	11:AA:632:G:C8	2.48	0.49
11:AA:2618:G:C8	11:AA:2865:U:H5''	2.48	0.49
11:AA:3147:G:O2'	25:FF:104:THR:OG1	2.29	0.49
18:D:130:ASN:O	18:D:132:PHE:N	2.45	0.49
21:E:28:ARG:NH1	27:GG:361:HIS:O	2.45	0.49
27:GG:35:VAL:HG21	27:GG:244:LEU:HD21	1.94	0.49
36:L:10:VAL:O	36:L:83:THR:OG1	2.17	0.49
48:QQ:18:VAL:HG13	48:QQ:19:LEU:HD22	1.94	0.49
60:c:15:U:H2'	60:c:16:G:O4'	2.12	0.49
60:c:1584:G:C8	76:s:122:ARG:HB3	2.48	0.49
6:5:31:ILE:HD13	80:w:65:ILE:HD11	1.93	0.49
8:7:42:LEU:HD11	8:7:68:VAL:HG11	1.94	0.49
8:7:111:MET:HE3	8:7:127:ARG:NE	2.28	0.49
11:AA:1252:A:C2	11:AA:1263:A:H5''	2.48	0.49
16:CC:26:U:H2'	16:CC:27:U:C6	2.47	0.49
24:F:126:VAL:HG23	24:F:127:GLN:H	1.77	0.49
27:GG:233:LEU:HB3	27:GG:238:LEU:HD11	1.94	0.49
33:JJ:151:ARG:NH1	33:JJ:207:LEU:HA	2.28	0.49
53:V:25:ARG:HG3	55:X:51:ILE:HD12	1.95	0.49
60:c:1158:C:O2'	60:c:1581:C:OP2	2.28	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:d:124:THR:HG22	61:d:174:TRP:NE1	2.28	0.49
66:i:110:ALA:O	66:i:114:ILE:HG12	2.12	0.49
68:k:150:GLN:HB2	68:k:179:LYS:NZ	2.28	0.49
2:1:68:ARG:HB2	2:1:70:LYS:HE2	1.94	0.49
8:7:167:VAL:HG12	8:7:183:LEU:HD22	1.94	0.49
10:A:171:LYS:NZ	11:AA:3181:C:OP2	2.29	0.49
11:AA:394:G:N1	11:AA:397:A:OP2	2.33	0.49
11:AA:649:A2M:OP2	11:AA:2868:U:O2'	2.29	0.49
11:AA:785:G:OP2	15:C:63:SER:OG	2.27	0.49
36:L:41:ALA:HB2	36:L:77:TYR:HE1	1.76	0.49
43:OO:76:THR:HG22	43:OO:101:ARG:HB3	1.94	0.49
60:c:968:U:H2'	60:c:969:C:O4'	2.13	0.49
68:k:14:THR:O	68:k:18:LEU:HG	2.12	0.49
2:1:83:LEU:HG	2:1:89:ILE:HG12	1.94	0.49
11:AA:370:U:H4'	11:AA:404:G:H5'	1.95	0.49
11:AA:1039:U:H2'	11:AA:1040:A:H8	1.77	0.49
11:AA:1347:U:H5''	27:GG:302:ALA:HB1	1.95	0.49
11:AA:1493:G:O6	55:X:2:ALA:N	2.45	0.49
11:AA:1729:A:C6	42:O:49:PRO:HD3	2.48	0.49
11:AA:2487:U:H5''	11:AA:2489:C:C2	2.48	0.49
11:AA:2897:A:H2'	11:AA:2899:C:H5''	1.95	0.49
11:AA:3322:A:H2'	11:AA:3323:A:C8	2.48	0.49
12:B:67:ILE:HG13	12:B:68:GLY:N	2.27	0.49
18:D:21:LYS:HE3	18:D:55:VAL:HA	1.94	0.49
19:DD:23:LYS:N	19:DD:90:ASN:OD1	2.31	0.49
60:c:107:C:OP1	60:c:383:G:O2'	2.27	0.49
60:c:177:U:O2	67:j:191:ARG:NH1	2.46	0.49
60:c:1346:A:H4'	60:c:1347:U:H5'	1.94	0.49
60:c:1351:G:C6	60:c:1375:A:C2	3.00	0.49
60:c:1552:U:O2'	60:c:1597:A:N3	2.42	0.49
61:d:74:VAL:HG22	61:d:96:THR:HB	1.95	0.49
61:d:119:ARG:NH1	63:f:241:ASP:OD1	2.46	0.49
67:j:71:THR:HA	67:j:98:ARG:NH1	2.28	0.49
71:n:27:PHE:HE1	71:n:43:ILE:HG21	1.77	0.49
76:s:47:LYS:HZ3	76:s:114:ARG:NH2	2.10	0.49
83:z:46:SER:OG	83:z:78:LYS:NZ	2.46	0.49
8:7:116:ASP:OD1	8:7:119:ALA:N	2.46	0.48
8:7:310:ILE:O	8:7:310:ILE:HG13	2.13	0.48
9:8:138:ARG:NH1	60:c:1235:C:N3	2.61	0.48
11:AA:1208:U:O2'	11:AA:3115:C:N4	2.45	0.48
11:AA:1500:G:H2'	11:AA:1501:U:O4'	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1525:G:H5'	11:AA:1830:G:OP2	2.12	0.48
11:AA:1856:C:H2'	11:AA:1857:C:H6	1.78	0.48
11:AA:3252:G:H2'	11:AA:3253:G:H8	1.78	0.48
18:D:106:LEU:HB3	18:D:120:TYR:CE1	2.48	0.48
19:DD:127:GLY:HA2	19:DD:149:THR:HA	1.95	0.48
25:FF:285:VAL:O	25:FF:285:VAL:HG12	2.13	0.48
35:KK:100:GLU:HB2	35:KK:104:GLU:HB2	1.95	0.48
37:LL:90:MET:HB3	37:LL:179:ILE:HG22	1.94	0.48
41:NN:49:LYS:HA	41:NN:64:LYS:HA	1.95	0.48
60:c:474:A:H5''	70:m:144:PRO:HD2	1.95	0.48
60:c:816:G:H21	68:k:110:GLN:NE2	2.11	0.48
81:x:40:ASP:OD1	81:x:46:ILE:HD11	2.13	0.48
8:7:37:SER:OG	8:7:38:ARG:N	2.46	0.48
10:A:10:ASP:HB2	10:A:117:ARG:HB3	1.95	0.48
11:AA:312:C:H2'	11:AA:313:A:H8	1.78	0.48
11:AA:591:G:N2	11:AA:612:U:OP1	2.32	0.48
11:AA:713:U:OP1	43:OO:174:ARG:NH1	2.47	0.48
11:AA:1717:U:H2'	11:AA:1718:G:H8	1.76	0.48
11:AA:2352:A:H5''	12:B:83:TRP:O	2.12	0.48
11:AA:3211:C:OP2	45:PP:109:ARG:NH2	2.46	0.48
11:AA:3324:C:OP1	44:P:19:ARG:NH1	2.40	0.48
12:B:116:HIS:HB3	12:B:149:VAL:HG12	1.96	0.48
25:FF:198:HIS:HA	25:FF:201:LYS:HD2	1.96	0.48
29:HH:85:ARG:HH12	29:HH:254:LYS:H	1.61	0.48
33:JJ:40:LYS:NZ	33:JJ:170:GLU:OE2	2.38	0.48
33:JJ:232:ARG:O	33:JJ:235:PHE:N	2.46	0.48
35:KK:107:GLU:HB2	35:KK:111:LYS:NZ	2.28	0.48
39:MM:49:CYS:HB3	39:MM:168:SER:HB3	1.95	0.48
51:T:86:ARG:O	51:T:90:ARG:HG2	2.13	0.48
60:c:517:U:O4	60:c:518:A:N6	2.45	0.48
60:c:1483:A:OP2	60:c:1521:G:N2	2.46	0.48
67:j:138:ALA:HA	67:j:175:ILE:HD11	1.95	0.48
71:n:57:THR:HA	71:n:65:TYR:O	2.13	0.48
72:o:108:PRO:HB2	72:o:135:VAL:HG22	1.94	0.48
73:p:47:PRO:HD2	73:p:86:GLU:HG2	1.95	0.48
74:q:89:THR:HG22	74:q:125:SER:HB3	1.95	0.48
11:AA:1119:C:H2'	11:AA:1120:A:C8	2.49	0.48
11:AA:2196:C:O2'	11:AA:2270:A:H8	1.96	0.48
11:AA:2724:OMU:H4'	24:F:54:HIS:CE1	2.48	0.48
11:AA:2745:G:N2	11:AA:2748:A:OP2	2.36	0.48
11:AA:2776:C:H5'	11:AA:2777:G:C2	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:GG:265:GLU:HG2	27:GG:266:THR:HG23	1.96	0.48
43:OO:11:LYS:O	43:OO:13:HIS:ND1	2.45	0.48
54:W:8:ILE:HG23	54:W:65:LEU:HD21	1.95	0.48
60:c:448:C:H2'	60:c:449:C:H6	1.78	0.48
67:j:1:MET:HB3	67:j:18:ILE:O	2.14	0.48
70:m:107:ARG:NH1	70:m:112:GLN:HE21	2.10	0.48
82:y:41:MET:HG2	82:y:129:VAL:HG21	1.94	0.48
1:0:86:GLU:OE2	1:0:90:ARG:NE	2.46	0.48
4:3:67:THR:HG22	4:3:68:GLY:N	2.27	0.48
11:AA:261:U:H2'	11:AA:262:U:C6	2.48	0.48
11:AA:1168:U:H2'	11:AA:1169:A:H8	1.78	0.48
11:AA:1757:A:H2'	11:AA:1758:G:H8	1.76	0.48
11:AA:2269:U:H2'	11:AA:2270:A:C2	2.48	0.48
19:DD:42:ARG:CZ	19:DD:51:VAL:HB	2.42	0.48
41:NN:54:VAL:HG12	41:NN:55:ARG:HG3	1.94	0.48
52:U:58:ILE:HG23	52:U:94:ILE:HD11	1.95	0.48
60:c:333:A:H2'	60:c:334:G:C8	2.48	0.48
60:c:1273:G:H4'	60:c:1274:C:O5'	2.13	0.48
60:c:1284:C:H4'	60:c:1285:U:H5'	1.95	0.48
61:d:84:ARG:HE	61:d:88:LYS:HZ1	1.61	0.48
61:d:135:GLU:O	61:d:139:VAL:HG22	2.12	0.48
62:e:119:THR:HG21	62:e:161:ILE:HD11	1.95	0.48
80:w:92:ASP:OD1	80:w:92:ASP:N	2.47	0.48
1:0:17:LEU:HD23	65:h:64:ILE:HD13	1.94	0.48
1:0:29:HIS:ND1	1:0:32:ARG:O	2.33	0.48
7:6:7:SER:OG	7:6:10:ARG:NH1	2.44	0.48
7:6:17:GLN:NE2	60:c:563:U:H4'	2.29	0.48
11:AA:532:A:O2'	11:AA:533:A:H8	1.96	0.48
11:AA:573:C:H2'	11:AA:574:U:C6	2.49	0.48
11:AA:1110:U:H2'	11:AA:1111:U:C6	2.48	0.48
11:AA:1282:G:C5	11:AA:1283:C:C5	3.02	0.48
11:AA:1621:A:H2'	11:AA:1622:U:H6	1.77	0.48
11:AA:1920:U:O2'	11:AA:1932:A:N7	2.43	0.48
11:AA:2440:G:H2'	11:AA:2441:A:C8	2.49	0.48
11:AA:2561:A:H61	11:AA:2579:G:H2'	1.78	0.48
13:BB:64:A:H5'	13:BB:65:G:H5''	1.95	0.48
13:BB:90:U:H2'	13:BB:91:G:O4'	2.14	0.48
14:Bb:36:A:H2'	14:Bb:37:YYG:H5'	1.95	0.48
54:W:24:THR:HG22	54:W:44:LYS:HB2	1.96	0.48
60:c:12:U:H2'	60:c:13:C:H6	1.76	0.48
60:c:333:A:OP1	69:l:49:ARG:N	2.39	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:c:1502:G:N2	60:c:1505:A:OP2	2.42	0.48
61:d:66:ALA:HB1	81:x:50:TYR:CE1	2.48	0.48
63:f:174:ARG:HA	63:f:195:ASP:OD2	2.13	0.48
11:AA:92:G:C8	87:AA:3604:SPD:H72	2.49	0.48
11:AA:1083:G:H4'	29:HH:45:ASN:HD22	1.79	0.48
11:AA:1269:U:O2'	11:AA:1271:A:N7	2.47	0.48
11:AA:2902:A:H2'	11:AA:2903:A:O4'	2.14	0.48
19:DD:75:LYS:HZ2	19:DD:196:VAL:HB	1.79	0.48
39:MM:103:LEU:H	39:MM:103:LEU:HD23	1.78	0.48
60:c:169:A:OP2	67:j:137:ARG:NH2	2.30	0.48
60:c:1258:U:H4'	71:n:2:LEU:HD22	1.95	0.48
60:c:1590:G:H2'	60:c:1591:C:C6	2.49	0.48
60:c:1592:A:H2'	60:c:1593:A:H8	1.77	0.48
66:i:54:LYS:HZ3	66:i:135:ASP:HB2	1.79	0.48
68:k:50:ASP:OD1	68:k:56:LYS:NZ	2.39	0.48
70:m:133:HIS:ND1	70:m:162:SER:HB2	2.28	0.48
80:w:44:ASN:HA	80:w:47:GLN:HG2	1.96	0.48
11:AA:1221:A:O4'	19:DD:61:ARG:HD3	2.14	0.48
11:AA:1390:A:N6	11:AA:1418:A:O2'	2.45	0.48
15:C:158:HIS:H	15:C:186:VAL:HG11	1.79	0.48
38:M:76:ASP:OD1	38:M:77:LYS:N	2.46	0.48
60:c:257:A:O2'	69:l:73:SER:O	2.30	0.48
60:c:1104:U:OP1	83:z:14:LYS:NZ	2.46	0.48
62:e:30:PHE:CD2	62:e:94:LYS:HA	2.48	0.48
73:p:110:ASP:O	73:p:114:ARG:HG2	2.13	0.48
74:q:16:VAL:HG12	74:q:18:ARG:HG3	1.96	0.48
75:r:111:MET:HA	78:u:119:ILE:HD11	1.96	0.48
1:0:56:SER:OG	1:0:74:LEU:HB2	2.14	0.48
11:AA:2651:G:H5''	11:AA:2652:U:O4'	2.13	0.48
11:AA:2678:A:H62	41:NN:55:ARG:HH21	1.62	0.48
11:AA:2709:C:H2'	11:AA:2710:C:C6	2.49	0.48
16:CC:83:C:H41	34:K:52:ARG:HH12	1.61	0.48
24:F:28:SER:O	24:F:32:LYS:HG2	2.14	0.48
27:GG:26:PHE:HA	27:GG:127:ALA:HA	1.95	0.48
27:GG:181:VAL:O	27:GG:182:LEU:HB2	2.14	0.48
28:H:87:ARG:HB3	28:H:89:ASP:OD1	2.13	0.48
30:I:35:LYS:HE3	30:I:51:TRP:CZ2	2.49	0.48
33:JJ:156:ILE:HD12	33:JJ:161:VAL:HB	1.96	0.48
60:c:283:U:H2'	60:c:284:G:C8	2.49	0.48
60:c:1277:G:O3'	64:g:183:GLY:HA3	2.14	0.48
69:l:118:GLY:HA3	69:l:143:TRP:CZ3	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:506:U:H2'	11:AA:507:U:O4'	2.14	0.48
11:AA:1019:G:H2'	11:AA:1020:G:H8	1.78	0.48
11:AA:2793:OMG:H2'	17:Cc:77:A:N1	2.28	0.48
11:AA:2947:G:C2	25:FF:250:ALA:HB1	2.48	0.48
11:AA:3047:U:O2'	11:AA:3048:A:H5'	2.13	0.48
11:AA:3050:U:O2'	30:I:16:GLY:O	2.32	0.48
13:BB:8:G:O6	29:HH:21:ARG:NH2	2.46	0.48
13:BB:71:G:H2'	13:BB:72:A:H8	1.79	0.48
16:CC:39:G:H1'	16:CC:104:A:N6	2.29	0.48
19:DD:63:ILE:HB	19:DD:77:LEU:HD21	1.96	0.48
29:HH:68:THR:OG1	29:HH:71:GLY:O	2.29	0.48
32:J:50:ALA:HB1	51:T:66:VAL:HG11	1.96	0.48
32:J:50:ALA:O	51:T:66:VAL:HG21	2.13	0.48
34:K:48:LEU:HD23	34:K:115:ARG:HH21	1.79	0.48
39:MM:206:LEU:O	39:MM:210:ILE:HG12	2.13	0.48
43:OO:47:ALA:HB1	43:OO:48:PRO:HD2	1.95	0.48
60:c:12:U:O2'	60:c:1299:G:H1'	2.14	0.48
60:c:800:U:H2'	60:c:801:G:H8	1.79	0.48
66:i:109:LYS:O	66:i:113:ILE:HG12	2.13	0.48
66:i:129:PRO:O	66:i:132:VAL:HG12	2.13	0.48
75:r:98:ASN:ND2	75:r:121:ILE:O	2.25	0.48
11:AA:314:U:H2'	11:AA:315:C:C6	2.48	0.48
11:AA:754:G:H2'	11:AA:755:A:H8	1.79	0.48
11:AA:1232:C:H1'	19:DD:35:SER:HB2	1.95	0.48
11:AA:2116:G:OP1	11:AA:2118:C:N4	2.46	0.48
19:DD:116:PRO:HD2	19:DD:119:ILE:HD11	1.96	0.48
37:LL:151:VAL:HA	37:LL:154:VAL:HG22	1.96	0.48
43:OO:47:ALA:HB1	51:T:115:LYS:HG3	1.96	0.48
60:c:787:G:H4'	65:h:255:ARG:HH12	1.79	0.48
60:c:895:G:H1	60:c:917:U:H3	1.61	0.48
60:c:1297:G:N2	60:c:1300:A:OP2	2.30	0.48
60:c:1770:U:H2'	60:c:1771:U:C6	2.49	0.48
61:d:7:PHE:HA	61:d:191:ARG:HH21	1.78	0.48
61:d:15:GLN:HB2	77:t:100:LEU:HD11	1.95	0.48
69:l:89:GLU:O	69:l:93:THR:HG22	2.14	0.48
72:o:47:THR:HG21	72:o:116:ARG:HH12	1.78	0.48
72:o:122:ILE:H	72:o:122:ILE:HD12	1.78	0.48
76:s:22:VAL:HG22	76:s:65:ILE:HG22	1.96	0.48
78:u:69:ILE:HA	78:u:72:ILE:HG22	1.95	0.48
9:8:143:LYS:HZ1	60:c:1254:U:H5'	1.79	0.47
11:AA:1083:G:H2'	11:AA:1084:A:C8	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1353:U:O2'	31:II:8:LYS:NZ	2.32	0.47
11:AA:1915:A:H2'	11:AA:1916:U:C6	2.49	0.47
11:AA:2261:G:O2'	11:AA:2262:A:N7	2.41	0.47
11:AA:3092:C:O2'	11:AA:3094:A:OP2	2.17	0.47
13:BB:26:C:H2'	13:BB:27:A:O4'	2.14	0.47
14:Bb:72:C:H2'	14:Bb:73:A:C8	2.49	0.47
17:Cc:51:U:H2'	17:Cc:52:C:C6	2.49	0.47
36:L:20:GLY:HA2	36:L:134:LEU:HD23	1.95	0.47
53:V:2:GLY:HA2	53:V:6:PRO:HG2	1.95	0.47
60:c:294:C:H2'	60:c:295:A:C8	2.49	0.47
60:c:852:C:H2'	60:c:853:G:H8	1.78	0.47
61:d:12:GLU:O	61:d:15:GLN:HG3	2.14	0.47
62:e:99:ASN:OD1	62:e:100:PHE:N	2.43	0.47
74:q:84:ARG:HB3	74:q:118:VAL:HG23	1.96	0.47
11:AA:2508:U:H2'	11:AA:2509:U:C6	2.49	0.47
11:AA:3015:G:H2'	11:AA:3016:A:H8	1.79	0.47
15:C:175:ALA:O	15:C:182:LYS:HB2	2.15	0.47
24:F:49:GLN:HA	24:F:52:MET:HE3	1.96	0.47
32:J:46:TYR:HB3	51:T:75:TYR:O	2.14	0.47
38:M:77:LYS:O	38:M:79:TRP:N	2.47	0.47
60:c:385:A:H5''	69:l:22:ARG:HG3	1.95	0.47
60:c:1036:A:H2'	60:c:1037:C:C6	2.49	0.47
60:c:1243:G:OP1	60:c:1243:G:N2	2.40	0.47
60:c:1524:A:H2'	60:c:1525:A:C8	2.49	0.47
66:i:37:GLN:HG2	76:s:53:LEU:O	2.14	0.47
68:k:80:GLU:O	68:k:84:LYS:HG3	2.14	0.47
70:m:175:ARG:HE	70:m:179:ARG:HD2	1.79	0.47
1:0:6:THR:HA	60:c:780:A:H61	1.78	0.47
11:AA:415:G:H2'	11:AA:416:A:H8	1.78	0.47
11:AA:819:U:H2'	11:AA:820:A:H8	1.79	0.47
11:AA:1560:G:O2'	11:AA:1561:G:O4'	2.31	0.47
11:AA:1687:U:H1'	26:G:75:TYR:CD2	2.49	0.47
11:AA:2162:U:OP1	22:EE:234:LYS:NZ	2.37	0.47
11:AA:2662:G:H2'	11:AA:2663:G:C8	2.49	0.47
11:AA:2815:OMG:N3	11:AA:2870:5MC:HM52	2.29	0.47
11:AA:2866:U:O3'	88:AA:3738:HOH:O	2.20	0.47
11:AA:2883:U:H2'	11:AA:2884:C:C6	2.49	0.47
11:AA:2989:U:H2'	11:AA:2990:G:O4'	2.14	0.47
11:AA:3141:A:P	88:AA:3704:HOH:O	2.52	0.47
14:Bb:37:YYG:H31	14:Bb:37:YYG:C1'	2.40	0.47
17:Cc:51:U:H2'	17:Cc:52:C:H6	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:Ee:110:ILE:HG12	23:Ee:163:PRO:HG2	1.96	0.47
28:H:18:PRO:HA	28:H:51:ALA:HA	1.97	0.47
31:II:93:VAL:O	31:II:96:VAL:HG12	2.14	0.47
47:Q:34:LYS:NZ	47:Q:52:GLN:OE1	2.47	0.47
58:a:25:VAL:HG11	58:a:70:LEU:HD13	1.95	0.47
60:c:137:U:H2'	60:c:138:A:C8	2.49	0.47
60:c:388:G:C6	60:c:410:A:C6	3.01	0.47
60:c:1352:G:H2'	60:c:1353:U:C5	2.48	0.47
60:c:1566:U:H5''	78:u:39:GLY:N	2.29	0.47
66:i:64:VAL:HG23	66:i:65:ARG:HE	1.79	0.47
66:i:123:VAL:HG12	66:i:124:LEU:HD22	1.96	0.47
69:l:190:ALA:HA	69:l:193:LEU:HD23	1.96	0.47
75:r:18:ARG:HD2	75:r:36:LEU:O	2.15	0.47
5:4:8:THR:HG23	5:4:56:LEU:HB2	1.96	0.47
6:5:33:LYS:O	6:5:36:LEU:HD23	2.15	0.47
11:AA:47:C:H5''	43:OO:16:LYS:HG2	1.96	0.47
11:AA:292:U:OP2	48:QQ:68:ARG:NH2	2.37	0.47
11:AA:787:G:H2'	11:AA:788:C:H6	1.79	0.47
11:AA:993:G:N3	11:AA:2637:A:H2'	2.29	0.47
11:AA:1019:G:H2'	11:AA:1020:G:C8	2.49	0.47
11:AA:1233:G:H1'	23:Ee:121:PHE:CD2	2.50	0.47
11:AA:1389:G:H5''	47:Q:101:SER:HB3	1.96	0.47
11:AA:1627:U:H2'	11:AA:1814:A:N6	2.30	0.47
11:AA:2407:C:H2'	11:AA:2408:U:C6	2.49	0.47
11:AA:2674:A:H5''	41:NN:105:GLY:HA3	1.97	0.47
11:AA:2904:U:H2'	11:AA:2905:U:H6	1.79	0.47
31:II:60:ASP:OD1	31:II:62:THR:HG22	2.14	0.47
39:MM:103:LEU:HG	39:MM:104:SER:N	2.29	0.47
60:c:20:G:H5'	60:c:571:G:C8	2.49	0.47
60:c:922:G:H2'	60:c:923:A:H8	1.79	0.47
60:c:953:G:H2'	60:c:954:G:C8	2.50	0.47
60:c:1776:A:H2'	60:c:1777:G:H8	1.79	0.47
65:h:192:ILE:HD12	65:h:242:LYS:C	2.40	0.47
69:l:155:SER:O	69:l:159:GLN:NE2	2.34	0.47
8:7:46:LYS:HG2	8:7:58:VAL:HG13	1.96	0.47
8:7:200:ASN:H	8:7:215:GLY:HA2	1.79	0.47
11:AA:585:A:H2'	11:AA:586:C:C6	2.49	0.47
11:AA:677:A:H4'	11:AA:678:G:H5'	1.97	0.47
11:AA:1441:G:O6	88:AA:3739:HOH:O	2.20	0.47
11:AA:2101:C:O2'	11:AA:2102:U:OP1	2.32	0.47
11:AA:2871:G:H5''	11:AA:2872:A:H5'	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:3360:C:H2'	11:AA:3361:G:O4'	2.14	0.47
19:DD:42:ARG:HH21	19:DD:53:MET:HE2	1.79	0.47
28:H:32:ARG:HB2	28:H:64:LYS:HG3	1.96	0.47
35:KK:161:GLU:OE2	48:QQ:26:ARG:NH1	2.37	0.47
41:NN:118:PRO:HG3	78:u:106:GLU:OE2	2.15	0.47
58:a:7:THR:O	58:a:22:GLN:NE2	2.47	0.47
60:c:689:G:H2'	60:c:690:G:H8	1.79	0.47
60:c:1339:C:O2'	60:c:1341:A:N7	2.39	0.47
60:c:1672:G:H2'	60:c:1673:G:H8	1.78	0.47
61:d:36:TYR:OH	81:x:70:ASN:ND2	2.41	0.47
11:AA:1234:G:N2	23:Ee:131:GLU:HB3	2.29	0.47
11:AA:1921:A:H2'	11:AA:1922:A:H8	1.79	0.47
11:AA:2106:A:H2'	11:AA:2107:A:H8	1.78	0.47
11:AA:2152:A:H2'	11:AA:2153:U:H6	1.79	0.47
11:AA:2491:A:H2'	11:AA:2492:C:O4'	2.15	0.47
17:Cc:19:G:H22	17:Cc:58:A:H2'	1.80	0.47
38:M:75:LEU:HD12	38:M:78:LEU:HD22	1.96	0.47
42:O:42:ILE:O	42:O:42:ILE:HG13	2.14	0.47
60:c:324:U:OP1	72:o:133:LYS:NZ	2.30	0.47
62:e:191:GLU:HB3	62:e:194:ASN:HD22	1.80	0.47
66:i:128:ASN:HB3	66:i:131:GLN:HB3	1.96	0.47
71:n:44:LYS:HD3	71:n:44:LYS:HA	1.69	0.47
77:t:102:VAL:HB	77:t:106:THR:HB	1.96	0.47
5:4:21:SER:OG	60:c:1619:C:O4'	2.32	0.47
8:7:64:HIS:ND1	8:7:68:VAL:HG22	2.30	0.47
11:AA:649:A2M:HM'3	11:AA:649:A2M:H1'	1.68	0.47
11:AA:745:C:H2'	11:AA:746:A:H8	1.78	0.47
11:AA:1190:A:H4'	56:Y:113:ARG:HH21	1.80	0.47
11:AA:2413:A:H2'	11:AA:2414:G:C8	2.50	0.47
11:AA:2430:A:H2'	11:AA:2431:C:C6	2.49	0.47
11:AA:2472:U:O2	11:AA:2473:C:H1'	2.15	0.47
11:AA:2588:U:OP1	35:KK:241:LYS:NZ	2.48	0.47
11:AA:2722:U:H2'	11:AA:2723:U:C6	2.49	0.47
11:AA:2887:A:P	88:AA:3715:HOH:O	2.67	0.47
11:AA:3214:U:O2'	31:II:166:LYS:NZ	2.48	0.47
13:BB:27:A:H2'	13:BB:28:C:C6	2.50	0.47
22:EE:133:TYR:HE1	22:EE:135:ILE:HD11	1.79	0.47
22:EE:136:ILE:HD13	22:EE:148:VAL:HG12	1.96	0.47
23:Ee:32:ILE:HD13	23:Ee:42:VAL:HG21	1.97	0.47
25:FF:29:VAL:HG22	25:FF:218:ILE:HD13	1.95	0.47
25:FF:284:ARG:NH1	25:FF:293:ASN:O	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:I:13:ILE:HG12	30:I:32:GLN:HG2	1.97	0.47
38:M:144:VAL:HG13	43:OO:159:VAL:HG13	1.97	0.47
60:c:103:A:O3'	60:c:308:C:N4	2.47	0.47
60:c:145:A:H1'	60:c:146:U:C6	2.50	0.47
60:c:207:U:O2	69:l:178:ARG:NH2	2.44	0.47
60:c:1151:A:H2'	60:c:1152:A:C8	2.50	0.47
60:c:1400:A:H4'	77:t:60:ARG:NH2	2.30	0.47
60:c:1464:G:O3'	76:s:141:SER:OG	2.29	0.47
64:g:164:VAL:HG23	64:g:168:ILE:HG13	1.97	0.47
66:i:94:THR:OG1	66:i:114:ILE:HG13	2.15	0.47
67:j:85:ARG:O	67:j:87:ARG:NH1	2.48	0.47
1:0:8:ARG:HB3	1:0:26:ASP:OD1	2.15	0.47
1:0:55:VAL:HG12	1:0:75:VAL:HG23	1.96	0.47
11:AA:156:G:OP2	52:U:25:LYS:HB3	2.14	0.47
11:AA:348:A:N3	11:AA:352:A:O2'	2.48	0.47
11:AA:1046:A:H2'	11:AA:1049:C:C5	2.50	0.47
11:AA:1744:G:H2'	11:AA:1745:C:C6	2.49	0.47
11:AA:2186:U:H2'	11:AA:2187:G:O4'	2.14	0.47
11:AA:3000:A:H2'	11:AA:3001:C:C6	2.50	0.47
25:FF:113:GLU:OE2	25:FF:167:ARG:HG2	2.15	0.47
50:S:41:ARG:HG2	50:S:56:THR:HG21	1.97	0.47
59:b:11:THR:HG21	59:b:23:ARG:O	2.14	0.47
61:d:147:THR:O	61:d:161:PRO:HA	2.15	0.47
1:0:18:LEU:HG	1:0:20:ARG:NH2	2.29	0.47
8:7:54:PHE:HD2	8:7:312:VAL:HG11	1.80	0.47
11:AA:911:C:H42	22:EE:3:ARG:HD3	1.80	0.47
11:AA:1011:A:H2'	11:AA:1012:G:H8	1.79	0.47
11:AA:1090:G:H2'	11:AA:1091:A:H8	1.80	0.47
11:AA:2253:G:O2'	11:AA:2254:U:OP1	2.32	0.47
11:AA:2655:U:H4'	11:AA:2656:A:O4'	2.15	0.47
11:AA:3094:A:H2'	11:AA:3095:U:C6	2.50	0.47
12:B:67:ILE:HG13	12:B:68:GLY:H	1.79	0.47
29:HH:129:TYR:OH	29:HH:175:HIS:O	2.23	0.47
29:HH:173:VAL:O	29:HH:175:HIS:ND1	2.43	0.47
60:c:68:A:H61	67:j:132:ARG:HB2	1.80	0.47
60:c:85:A:H2'	60:c:86:A:C8	2.50	0.47
60:c:454:U:O2'	60:c:455:C:O5'	2.33	0.47
60:c:455:C:H3'	60:c:456:A:H8	1.78	0.47
68:k:96:ARG:CZ	68:k:124:LYS:HB3	2.44	0.47
68:k:148:LYS:NZ	68:k:179:LYS:HE2	2.30	0.47
6:5:36:LEU:HD12	6:5:38:ILE:HD12	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:792:G:H2'	11:AA:793:C:C6	2.50	0.47
11:AA:1088:U:H2'	11:AA:1089:G:O4'	2.14	0.47
11:AA:1232:C:H2'	11:AA:1233:G:C8	2.49	0.47
11:AA:1266:G:H2'	11:AA:1267:U:H6	1.80	0.47
11:AA:2660:G:OP1	11:AA:2750:U:O2'	2.33	0.47
11:AA:2763:U:O2	87:AA:3604:SPD:N10	2.48	0.47
11:AA:2828:G:O2'	39:MM:4:ARG:NH2	2.48	0.47
11:AA:2902:A:OP1	11:AA:3032:A:O2'	2.22	0.47
11:AA:2986:U:C2	11:AA:2987:A:C8	3.02	0.47
23:Ee:57:LYS:HE2	23:Ee:92:ARG:HH22	1.79	0.47
24:F:14:MET:HE3	24:F:14:MET:HB2	1.82	0.47
25:FF:95:THR:OG1	25:FF:98:GLY:O	2.24	0.47
38:M:91:LEU:HD13	38:M:121:VAL:HG21	1.97	0.47
60:c:792:U:H2'	60:c:793:A:C4	2.49	0.47
60:c:1638:G:H2'	60:c:1639:OMC:O4'	2.14	0.47
66:i:147:THR:O	66:i:157:ARG:N	2.48	0.47
70:m:41:GLU:HG2	70:m:44:ARG:HH21	1.79	0.47
77:t:72:LYS:H	77:t:75:GLU:CD	2.21	0.47
83:z:69:ARG:HG3	83:z:117:ILE:HG12	1.96	0.47
11:AA:673:U:H2'	11:AA:674:G:C8	2.50	0.46
11:AA:692:A:OP1	48:QQ:201:ARG:NH2	2.30	0.46
11:AA:872:U:H2'	11:AA:873:C:C6	2.50	0.46
11:AA:1020:G:H2'	11:AA:1021:G:H8	1.79	0.46
11:AA:1211:U:H2'	11:AA:1212:A:C8	2.50	0.46
11:AA:1831:U:H2'	11:AA:1832:C:H6	1.80	0.46
11:AA:2230:C:H2'	11:AA:2231:C:O4'	2.16	0.46
11:AA:2446:U:H3	11:AA:2447:A:N6	2.11	0.46
11:AA:2455:U:H3'	11:AA:2456:A:C8	2.50	0.46
11:AA:2585:G:N3	11:AA:2585:G:H2'	2.29	0.46
13:BB:4:U:H2'	13:BB:5:G:C8	2.50	0.46
17:Cc:24:C:H2'	17:Cc:25:U:C6	2.50	0.46
23:Ee:36:GLY:O	23:Ee:67:ARG:NE	2.48	0.46
25:FF:377:HIS:NE2	25:FF:387:LEU:HA	2.30	0.46
60:c:538:A:O2'	60:c:541:A2M:H8	2.15	0.46
60:c:992:A:OP2	60:c:1011:G:N1	2.38	0.46
60:c:1350:U:H2'	60:c:1351:G:C8	2.50	0.46
60:c:1352:G:H2'	60:c:1353:U:C6	2.50	0.46
60:c:1662:G:H2'	60:c:1663:G:H8	1.80	0.46
60:c:1664:C:H4'	69:l:17:LYS:HE2	1.98	0.46
62:e:158:SER:HA	62:e:161:ILE:HD12	1.97	0.46
63:f:227:PRO:HA	63:f:230:TRP:CG	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:l:190:ALA:HA	69:l:193:LEU:CD2	2.45	0.46
70:m:34:PHE:CD2	70:m:105:LEU:HB3	2.50	0.46
78:u:27:LYS:N	78:u:57:ARG:HH11	2.13	0.46
81:x:20:THR:HG21	81:x:22:ARG:HH21	1.80	0.46
83:z:65:ASN:ND2	83:z:116:ASP:OD2	2.42	0.46
5:4:57:MET:HE2	5:4:57:MET:N	2.30	0.46
9:8:143:LYS:NZ	60:c:1254:U:H5'	2.29	0.46
11:AA:173:G:H1	11:AA:245:U:H3	1.63	0.46
11:AA:183:G:H2'	11:AA:184:U:C6	2.51	0.46
11:AA:999:G:H2'	11:AA:1000:C:C6	2.51	0.46
11:AA:1824:U:H2'	11:AA:1825:G:H8	1.78	0.46
11:AA:3089:C:H2'	11:AA:3090:U:O4'	2.14	0.46
16:CC:68:G:H2'	16:CC:69:U:H6	1.79	0.46
25:FF:44:THR:HA	25:FF:340:LYS:HZ1	1.80	0.46
37:LL:89:LYS:HD2	37:LL:183:HIS:HB3	1.98	0.46
48:QQ:64:VAL:HG11	48:QQ:102:ALA:HB1	1.97	0.46
50:S:86:LYS:O	50:S:90:ILE:HD12	2.15	0.46
60:c:386:G:H2'	60:c:387:A:C8	2.50	0.46
60:c:1071:U:H2'	60:c:1072:C:C6	2.50	0.46
64:g:32:GLU:HB3	64:g:58:VAL:HG22	1.96	0.46
66:i:122:ASN:HA	66:i:126:ASP:HA	1.97	0.46
81:x:55:LEU:HD13	81:x:65:SER:HB2	1.97	0.46
10:A:142:SER:HB3	10:A:147:TRP:HB2	1.98	0.46
11:AA:986:U:O3'	33:JJ:125:GLU:HG2	2.16	0.46
11:AA:1011:A:H2'	11:AA:1012:G:C8	2.50	0.46
11:AA:1329:U:O3'	49:R:19:SER:OG	2.34	0.46
11:AA:1644:C:H5''	11:AA:1645:U:H5''	1.96	0.46
11:AA:2163:C:O2'	22:EE:8:GLN:O	2.33	0.46
11:AA:2882:U:H2'	11:AA:2883:U:H6	1.79	0.46
19:DD:104:ARG:HB3	19:DD:182:THR:HG22	1.98	0.46
23:Ee:56:ILE:HD13	23:Ee:83:THR:HG22	1.97	0.46
29:HH:215:ASP:OD1	29:HH:215:ASP:N	2.47	0.46
35:KK:76:ALA:O	35:KK:79:GLN:HG2	2.15	0.46
35:KK:90:THR:HG23	35:KK:214:LEU:HD21	1.98	0.46
35:KK:160:ILE:O	35:KK:164:VAL:HG13	2.14	0.46
39:MM:89:VAL:HG13	39:MM:136:PHE:HE1	1.81	0.46
52:U:20:MET:HE2	52:U:20:MET:HB3	1.74	0.46
53:V:39:TYR:CD1	53:V:40:PRO:HA	2.49	0.46
60:c:903:U:OP2	74:q:24:ASN:ND2	2.48	0.46
60:c:1471:A:H62	60:c:1538:U:H3	1.63	0.46
60:c:1719:A:H2'	60:c:1720:G:O4'	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
62:e:125:VAL:O	62:e:136:ARG:HA	2.16	0.46
71:n:7:ASP:O	71:n:11:ILE:HG12	2.15	0.46
3:2:20:PRO:HA	3:2:31:PRO:HA	1.98	0.46
7:6:30:PRO:HB2	7:6:34:ALA:HB1	1.97	0.46
8:7:282:SER:OG	60:c:1394:G:OP1	2.27	0.46
11:AA:29:C:H4'	11:AA:62:A:H4'	1.96	0.46
11:AA:38:U:H2'	11:AA:39:A:O4'	2.16	0.46
11:AA:184:U:H2'	11:AA:185:C:C6	2.51	0.46
11:AA:785:G:H5''	15:C:92:ARG:HH22	1.80	0.46
11:AA:901:G:OP1	53:V:13:ASN:ND2	2.37	0.46
11:AA:1824:U:O2'	54:W:17:ARG:NH1	2.47	0.46
11:AA:3164:C:H2'	11:AA:3165:A:H8	1.80	0.46
14:Bb:19:G:H2'	14:Bb:20:G:O4'	2.15	0.46
21:E:42:TRP:O	21:E:46:GLN:HG3	2.16	0.46
24:F:39:ILE:HG22	24:F:99:SER:HB3	1.97	0.46
60:c:371:G:O2'	82:y:88:LYS:NZ	2.42	0.46
60:c:646:C:H2'	60:c:647:G:O4'	2.15	0.46
60:c:1079:U:H2'	60:c:1080:U:C6	2.51	0.46
60:c:1360:A:H2'	60:c:1361:U:H4'	1.97	0.46
65:h:126:VAL:HG12	65:h:158:ASP:O	2.16	0.46
67:j:137:ARG:NE	67:j:177:ARG:HH21	2.13	0.46
76:s:47:LYS:NZ	76:s:114:ARG:HH12	2.13	0.46
78:u:29:VAL:O	78:u:33:THR:HG23	2.15	0.46
6:5:6:VAL:HG12	6:5:7:TRP:CD1	2.51	0.46
11:AA:99:A:H1'	11:AA:281:G:N7	2.31	0.46
11:AA:1574:C:H3'	11:AA:1575:A:H8	1.79	0.46
11:AA:1721:U:O2'	11:AA:1723:A:N7	2.43	0.46
11:AA:2220:A2M:H1'	11:AA:2220:A2M:HM'3	1.67	0.46
11:AA:2611:U:H2'	11:AA:2612:U:H6	1.80	0.46
11:AA:2765:C:O3'	58:a:39:GLY:HA3	2.16	0.46
11:AA:3066:U:H2'	11:AA:3067:C:C6	2.50	0.46
17:Cc:62:C:H2'	17:Cc:63:C:H5'	1.98	0.46
22:EE:70:ARG:HD2	22:EE:72:ARG:HH21	1.81	0.46
32:J:68:THR:HG22	32:J:68:THR:O	2.15	0.46
37:LL:38:LEU:O	37:LL:41:ILE:HG22	2.16	0.46
41:NN:117:ASP:O	41:NN:120:ILE:HG22	2.15	0.46
60:c:394:C:H42	60:c:401:A:H62	1.63	0.46
60:c:1523:G:H1'	79:v:79:LEU:HD13	1.98	0.46
61:d:139:VAL:HG23	61:d:141:ILE:HG13	1.98	0.46
68:k:60:ILE:HD12	68:k:92:PHE:HE1	1.80	0.46
82:y:31:SER:H	82:y:34:ILE:HD13	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:6:55:ARG:NH1	7:6:57:ASN:H	2.13	0.46
8:7:48:THR:HG22	8:7:55:GLY:N	2.31	0.46
10:A:83:ALA:O	11:AA:1312:C:O2'	2.33	0.46
11:AA:180:C:H2'	11:AA:181:U:H6	1.81	0.46
11:AA:1184:A:H2'	11:AA:1185:C:C6	2.50	0.46
11:AA:1246:G:H2'	11:AA:1246:G:N3	2.31	0.46
11:AA:1379:G:OP1	88:AA:3743:HOH:O	2.21	0.46
11:AA:2568:C:N4	11:AA:2573:G:O6	2.36	0.46
11:AA:3365:U:H2'	11:AA:3366:G:C8	2.50	0.46
22:EE:101:VAL:HG22	22:EE:165:VAL:HG22	1.97	0.46
37:LL:9:GLN:HB3	37:LL:52:LEU:HD11	1.97	0.46
60:c:16:G:H2'	60:c:17:C:C6	2.51	0.46
60:c:536:C:HO2'	60:c:537:G:P	2.39	0.46
60:c:753:A:H61	60:c:794:U:H3	1.63	0.46
60:c:1091:A:H4'	60:c:1092:A:O4'	2.16	0.46
60:c:1592:A:H2'	60:c:1593:A:C8	2.50	0.46
77:t:81:LYS:HD2	77:t:81:LYS:HA	1.69	0.46
78:u:69:ILE:O	78:u:72:ILE:HG22	2.16	0.46
1:0:93:ARG:NE	60:c:526:A:OP2	2.46	0.46
10:A:7:VAL:HB	10:A:33:ILE:HD13	1.97	0.46
11:AA:597:G:H2'	11:AA:598:A:C8	2.51	0.46
11:AA:2480:A:H2'	11:AA:2481:G:C5	2.51	0.46
23:Ee:61:GLN:N	23:Ee:72:SER:O	2.49	0.46
23:Ee:124:THR:O	23:Ee:128:VAL:HG23	2.16	0.46
32:J:56:ARG:O	32:J:61:LYS:HD3	2.16	0.46
60:c:244:A:OP1	65:h:155:LYS:NZ	2.40	0.46
60:c:521:A:H2'	60:c:522:U:C6	2.50	0.46
62:e:160:HIS:HB2	62:e:205:PHE:HE2	1.81	0.46
65:h:173:ILE:HD11	65:h:235:TYR:CE2	2.51	0.46
70:m:49:LEU:HD13	70:m:104:PHE:HE2	1.80	0.46
77:t:10:LYS:HG2	77:t:53:TYR:CZ	2.50	0.46
2:1:53:GLU:N	2:1:53:GLU:OE1	2.48	0.46
4:3:51:GLN:N	73:p:56:ASP:OD2	2.49	0.46
6:5:13:ARG:NH1	60:c:1554:U:OP1	2.49	0.46
11:AA:47:C:OP2	11:AA:48:A:O2'	2.22	0.46
11:AA:219:A:O2'	11:AA:220:G:N2	2.29	0.46
11:AA:594:U:H2'	11:AA:609:G:O6	2.16	0.46
11:AA:714:G:O2'	11:AA:753:C:O2'	2.25	0.46
11:AA:796:U:H2'	11:AA:797:U:C6	2.51	0.46
11:AA:1021:G:H2'	11:AA:1022:U:C6	2.51	0.46
11:AA:1638:A:N1	11:AA:1736:G:O2'	2.47	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1807:G:H5'	36:L:135:ARG:HH12	1.81	0.46
11:AA:2235:C:C2	11:AA:2236:G:C8	3.04	0.46
11:AA:2347:OMU:H2'	11:AA:2348:A:O4'	2.16	0.46
11:AA:2490:C:H1'	11:AA:2491:A:N7	2.29	0.46
11:AA:2971:A:H4'	11:AA:2972:G:O5'	2.14	0.46
48:QQ:126:THR:HG23	48:QQ:127:TYR:CD2	2.50	0.46
60:c:124:A:O2'	65:h:148:ARG:HD2	2.16	0.46
60:c:647:G:H2'	60:c:648:G:C8	2.51	0.46
60:c:1036:A:H2'	60:c:1037:C:H6	1.80	0.46
60:c:1669:U:H2'	60:c:1670:G:O4'	2.16	0.46
61:d:50:VAL:HG22	77:t:109:LEU:HD21	1.98	0.46
67:j:211:LEU:HA	67:j:214:LYS:HG2	1.98	0.46
76:s:50:GLU:O	76:s:54:LEU:HD13	2.16	0.46
79:v:25:GLN:HB3	79:v:27:LYS:NZ	2.31	0.46
82:y:31:SER:OG	82:y:32:LYS:N	2.49	0.46
83:z:41:SER:O	83:z:41:SER:OG	2.32	0.46
2:1:54:VAL:HG21	2:1:88:ILE:HD13	1.98	0.46
11:AA:1235:U:H1'	11:AA:1237:G:OP2	2.16	0.46
11:AA:1365:G:P	88:AA:3724:HOH:O	2.74	0.46
11:AA:1381:A:H2'	11:AA:1382:G:H8	1.81	0.46
11:AA:1437:OMC:H1'	11:AA:1437:OMC:HM23	1.64	0.46
11:AA:1570:U:N3	11:AA:1572:U:O2'	2.38	0.46
11:AA:2447:A:H2'	11:AA:2448:G:C8	2.51	0.46
11:AA:2741:C:O2	58:a:20:HIS:HE1	1.99	0.46
11:AA:3160:U:H2'	11:AA:3161:C:C6	2.51	0.46
11:AA:3359:A:H2'	11:AA:3360:C:C6	2.51	0.46
21:E:27:MET:HE2	21:E:27:MET:HB3	1.79	0.46
22:EE:145:LYS:HD2	22:EE:157:VAL:HG12	1.98	0.46
29:HH:41:LYS:HD3	29:HH:41:LYS:HA	1.78	0.46
29:HH:117:GLU:HA	29:HH:120:LYS:HE2	1.97	0.46
60:c:27:U:H2'	60:c:28:A2M:H8	1.97	0.46
60:c:1471:A:N3	60:c:1471:A:H2'	2.31	0.46
60:c:1535:U:O2'	60:c:1536:G:H5''	2.16	0.46
60:c:1617:U:H2'	60:c:1618:C:C6	2.50	0.46
67:j:10:ASN:HB3	67:j:128:THR:HG23	1.98	0.46
71:n:24:LYS:HA	71:n:63:TYR:CD1	2.51	0.46
73:p:34:ILE:O	73:p:38:VAL:HG13	2.16	0.46
80:w:96:PRO:HG2	80:w:99:ILE:HG12	1.98	0.46
1:0:65:GLY:H	60:c:532:U:H5''	1.81	0.46
9:8:94:LYS:HB2	60:c:1247:U:H5''	1.98	0.46
11:AA:314:U:H2'	11:AA:315:C:H6	1.82	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2445:A:H2'	11:AA:2446:U:O4'	2.15	0.46
11:AA:3182:G:H2'	11:AA:3183:A:C8	2.51	0.46
13:BB:9:C:OP1	24:F:26:HIS:HB2	2.16	0.46
16:CC:19:C:H2'	16:CC:20:U:C6	2.51	0.46
24:F:8:ARG:O	24:F:11:THR:OG1	2.24	0.46
27:GG:138:ARG:HE	27:GG:140:HIS:CD2	2.34	0.46
29:HH:8:LYS:H	29:HH:8:LYS:HD2	1.81	0.46
31:II:175:LYS:HD3	31:II:175:LYS:HA	1.79	0.46
34:K:106:ILE:HG21	34:K:109:LEU:HD23	1.97	0.46
45:PP:59:ASN:HB2	45:PP:62:GLN:OE1	2.16	0.46
60:c:1258:U:O2'	60:c:1259:U:O5'	2.34	0.46
60:c:1781:MA6:H8	60:c:1781:MA6:O5'	2.16	0.46
62:e:97:LEU:HD22	62:e:231:LEU:HD21	1.98	0.46
64:g:76:ARG:HG3	64:g:77:PHE:CE1	2.51	0.46
66:i:63:GLN:HG3	66:i:86:GLN:HA	1.97	0.46
69:l:156:VAL:HA	69:l:159:GLN:NE2	2.30	0.46
76:s:29:ILE:O	76:s:29:ILE:HG13	2.16	0.46
1:O:29:HIS:ND1	1:O:29:HIS:O	2.49	0.45
11:AA:674:G:O6	15:C:56:LYS:NZ	2.49	0.45
11:AA:1241:U:H1'	11:AA:1248:C:C4	2.51	0.45
11:AA:1506:A:H1'	11:AA:1848:G:O6	2.16	0.45
11:AA:2154:U:H2'	11:AA:2155:G:C8	2.50	0.45
11:AA:2217:U:H2'	11:AA:2218:G:H8	1.81	0.45
11:AA:2503:G:H2'	11:AA:2504:U:C6	2.50	0.45
16:CC:149:A:H2'	16:CC:150:G:C8	2.51	0.45
25:FF:17:LEU:HD21	25:FF:233:TRP:HH2	1.80	0.45
31:II:53:VAL:HG11	31:II:145:LEU:HD11	1.98	0.45
44:P:7:VAL:HG22	44:P:78:LYS:HA	1.98	0.45
45:PP:96:ALA:O	45:PP:101:LYS:NZ	2.44	0.45
54:W:12:LEU:O	54:W:15:THR:OG1	2.33	0.45
60:c:571:G:H5'	83:z:114:LYS:CE	2.46	0.45
60:c:607:G:H5'	60:c:613:G:N2	2.30	0.45
60:c:782:U:H4'	60:c:783:G:O5'	2.16	0.45
60:c:1320:U:H3'	61:d:101:ARG:HH12	1.80	0.45
60:c:1335:U:O2'	60:c:1336:A:OP1	2.28	0.45
60:c:1631:A:OP1	88:c:2010:HOH:O	2.21	0.45
60:c:1735:U:H2'	60:c:1736:G:C8	2.52	0.45
60:c:1737:G:H2'	60:c:1738:U:C6	2.51	0.45
63:f:58:LEU:HA	81:x:12:TYR:HE1	1.81	0.45
66:i:34:GLN:O	76:s:57:LEU:HD22	2.16	0.45
68:k:32:PRO:HA	68:k:35:LYS:HG3	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:l:89:GLU:OE1	69:l:92:ARG:NH1	2.49	0.45
71:n:16:PHE:CE1	71:n:88:PRO:HG3	2.51	0.45
75:r:58:LYS:HB2	75:r:61:ARG:NH1	2.29	0.45
8:7:81:LEU:HD12	8:7:115:ILE:HD11	1.97	0.45
8:7:202:LEU:HA	8:7:212:ALA:O	2.16	0.45
8:7:211:ILE:O	8:7:211:ILE:HG13	2.16	0.45
11:AA:650:OMC:H2'	11:AA:651:G:C8	2.51	0.45
11:AA:1010:G:H22	11:AA:1040:A:H2	1.64	0.45
11:AA:1083:G:H2'	11:AA:1084:A:H8	1.81	0.45
11:AA:1239:C:H2'	11:AA:1240:A:O4'	2.17	0.45
11:AA:1460:A:H2'	11:AA:1461:A:C8	2.51	0.45
11:AA:3176:G:N2	11:AA:3213:A:H1'	2.31	0.45
14:Bb:53:G:H2'	14:Bb:54:U:C6	2.51	0.45
25:FF:367:LYS:NZ	88:FF:502:HOH:O	2.48	0.45
28:H:106:LYS:HB2	28:H:106:LYS:HE2	1.67	0.45
33:JJ:214:TRP:CE2	33:JJ:219:LYS:HD2	2.51	0.45
60:c:817:A:H2'	60:c:818:C:C6	2.52	0.45
60:c:1003:A:O2'	60:c:1005:A:N7	2.44	0.45
60:c:1006:C:O2'	74:q:136:ARG:O	2.30	0.45
60:c:1650:U:H2'	60:c:1651:A:H8	1.81	0.45
66:i:43:PHE:HB2	66:i:48:PHE:CE1	2.51	0.45
70:m:42:ILE:H	70:m:42:ILE:HD12	1.82	0.45
77:t:15:ALA:O	77:t:18:GLU:HG3	2.15	0.45
2:1:40:VAL:HG13	2:1:41:ILE:N	2.31	0.45
6:5:15:GLY:HA3	60:c:1204:A:H61	1.81	0.45
9:8:130:VAL:HG22	9:8:141:CYS:HB2	1.98	0.45
10:A:27:LEU:HD12	10:A:98:ALA:O	2.16	0.45
11:AA:413:U:H2'	11:AA:414:U:C6	2.52	0.45
11:AA:1234:G:H2'	11:AA:1235:U:C5	2.51	0.45
11:AA:1551:C:O2'	11:AA:2170:U:O2'	2.20	0.45
11:AA:1805:C:H2'	11:AA:1806:A:C8	2.44	0.45
11:AA:2615:G:H2'	11:AA:2616:C:C6	2.51	0.45
11:AA:2883:U:H2'	11:AA:2884:C:H6	1.80	0.45
11:AA:3072:C:H2'	11:AA:3073:A:O4'	2.16	0.45
16:CC:156:U:H2'	16:CC:157:U:C6	2.51	0.45
19:DD:178:ILE:HG22	19:DD:180:PRO:HD3	1.98	0.45
28:H:37:ILE:HD11	28:H:73:VAL:HG13	1.99	0.45
31:II:172:HIS:CD2	31:II:173:MET:HG3	2.51	0.45
58:a:92:GLU:HG2	58:a:94:GLY:H	1.81	0.45
60:c:269:G:H2'	60:c:270:C:C6	2.52	0.45
60:c:1320:U:O2'	60:c:1322:A:OP1	2.33	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:c:1735:U:H2'	60:c:1736:G:H8	1.80	0.45
61:d:4:PRO:HD2	61:d:7:PHE:CD1	2.51	0.45
1:0:32:ARG:HE	1:0:33:ALA:N	2.07	0.45
8:7:182:ASN:OD1	8:7:183:LEU:N	2.44	0.45
11:AA:514:G:N3	27:GG:341:SER:OG	2.47	0.45
11:AA:828:A:H2'	11:AA:829:U:C6	2.52	0.45
11:AA:834:U:H2'	11:AA:835:G:O4'	2.16	0.45
11:AA:1237:G:OP1	11:AA:1246:G:H5'	2.17	0.45
11:AA:1326:A:H2'	11:AA:1327:C:O4'	2.17	0.45
11:AA:1523:U:OP2	11:AA:1604:G:O2'	2.34	0.45
11:AA:1630:U:H5''	11:AA:1813:A:N6	2.31	0.45
11:AA:1941:C:H2'	11:AA:1942:U:C6	2.52	0.45
11:AA:2160:G:H2'	11:AA:2161:G:C8	2.48	0.45
11:AA:2493:U:C2	11:AA:2494:A:N7	2.84	0.45
11:AA:2959:OMC:HM22	11:AA:2960:C:O4'	2.16	0.45
12:B:33:ALA:HB1	12:B:117:ILE:HG12	1.98	0.45
13:BB:6:C:O2'	29:HH:72:ASP:OD2	2.23	0.45
14:Bb:10:G:N2	14:Bb:26:G:H1'	2.32	0.45
15:C:185:LYS:HG2	15:C:186:VAL:HG23	1.99	0.45
16:CC:68:G:H2'	16:CC:69:U:C6	2.52	0.45
24:F:17:ARG:HB3	24:F:22:HIS:CE1	2.51	0.45
60:c:979:A:H4'	60:c:1786:G:N2	2.31	0.45
60:c:1357:A:N7	60:c:1367:G:N2	2.64	0.45
60:c:1365:C:H2'	60:c:1366:U:C5	2.51	0.45
60:c:1471:A:P	66:i:185:ARG:HE	2.40	0.45
60:c:1545:A:H4'	78:u:127:HIS:HE1	1.80	0.45
60:c:1614:A:H2'	60:c:1615:C:C6	2.52	0.45
11:AA:664:U:H2'	11:AA:665:A:H8	1.75	0.45
11:AA:1014:U:H3'	11:AA:1015:U:C5'	2.46	0.45
11:AA:1233:G:H1'	23:Ee:121:PHE:HD2	1.81	0.45
11:AA:1281:G:C2	11:AA:1282:G:C8	3.05	0.45
11:AA:2218:G:H2'	11:AA:2219:A:H8	1.81	0.45
11:AA:2309:A:N3	11:AA:2961:G:O2'	2.44	0.45
11:AA:2389:C:OP1	12:B:66:SER:N	2.50	0.45
11:AA:2502:A:OP2	11:AA:2502:A:H8	1.99	0.45
14:Bb:50:U:H2'	14:Bb:51:G:H8	1.81	0.45
19:DD:40:GLU:HB3	19:DD:103:ASN:HD21	1.80	0.45
19:DD:46:ARG:HE	19:DD:47:GLY:H	1.63	0.45
29:HH:134:ALA:HA	29:HH:141:PRO:HD3	1.99	0.45
48:QQ:183:THR:HG22	48:QQ:187:ARG:HB2	1.98	0.45
51:T:102:GLU:HG3	51:T:106:LYS:HE3	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:c:1351:G:O6	60:c:1375:A:C6	2.69	0.45
60:c:1428:OMG:H1'	60:c:1428:OMG:HM23	1.73	0.45
60:c:1550:A:P	75:r:42:ARG:HH21	2.40	0.45
60:c:1603:U:H2'	60:c:1604:U:C6	2.51	0.45
61:d:175:TYR:CD2	61:d:199:PRO:HB3	2.52	0.45
62:e:120:LEU:HD21	62:e:122:GLU:HG3	1.99	0.45
64:g:53:THR:HG23	64:g:54:ARG:HG3	1.99	0.45
65:h:32:SER:OG	65:h:81:THR:OG1	2.31	0.45
70:m:88:GLU:HA	70:m:91:LYS:HE3	1.97	0.45
72:o:27:THR:O	72:o:30:ARG:NE	2.43	0.45
77:t:10:LYS:HG2	77:t:53:TYR:CE2	2.52	0.45
77:t:71:PHE:O	77:t:73:LEU:N	2.49	0.45
5:4:44:VAL:HG21	5:4:48:VAL:HG11	1.98	0.45
11:AA:63:A:H5''	48:QQ:174:ILE:HG21	1.98	0.45
11:AA:127:G:H2'	11:AA:128:G:C8	2.52	0.45
11:AA:127:G:H2'	11:AA:128:G:H8	1.80	0.45
11:AA:288:C:H2'	11:AA:289:A:H8	1.82	0.45
11:AA:916:G:H5'	11:AA:917:A:OP1	2.15	0.45
11:AA:1404:G:N2	11:AA:1407:A:OP2	2.42	0.45
11:AA:1541:G:H1'	11:AA:1557:A:C5	2.52	0.45
11:AA:1576:G:H3'	11:AA:1577:G:H8	1.80	0.45
11:AA:1621:A:H2'	11:AA:1622:U:C6	2.52	0.45
11:AA:2543:U:H2'	11:AA:2544:U:H6	1.82	0.45
21:E:12:ARG:O	21:E:22:PRO:HB2	2.17	0.45
23:Ee:142:ARG:HE	23:Ee:145:PHE:C	2.24	0.45
25:FF:77:THR:HG21	25:FF:328:ILE:HG12	1.98	0.45
33:JJ:208:SER:OG	33:JJ:209:ASN:N	2.50	0.45
37:LL:114:VAL:HB	37:LL:124:ARG:HB2	1.99	0.45
41:NN:110:ILE:HG21	41:NN:116:TYR:HA	1.98	0.45
48:QQ:23:GLN:NE2	48:QQ:24:ARG:HG3	2.32	0.45
53:V:27:PHE:HA	53:V:34:CYS:HA	1.99	0.45
60:c:368:U:H2'	60:c:369:A:O4'	2.17	0.45
60:c:1504:G:H2'	60:c:1505:A:C8	2.51	0.45
61:d:66:ALA:HB2	81:x:37:ALA:HB2	1.99	0.45
64:g:159:HIS:HA	64:g:160:SER:HA	1.62	0.45
65:h:42:LEU:HD22	65:h:109:PHE:HD2	1.81	0.45
65:h:52:LEU:HD23	65:h:54:TYR:CE2	2.52	0.45
68:k:28:GLU:OE2	68:k:35:LYS:HA	2.17	0.45
75:r:30:THR:O	75:r:34:VAL:HG13	2.17	0.45
79:v:65:ILE:HG13	79:v:71:VAL:HB	1.99	0.45
81:x:30:ALA:O	81:x:60:ARG:HD3	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:286:U:H2'	11:AA:287:G:H8	1.82	0.45
11:AA:2674:A:C2	41:NN:124:GLY:HA3	2.51	0.45
11:AA:2835:U:H2'	11:AA:2836:C:O2	2.16	0.45
23:Ee:125:LEU:HD12	23:Ee:165:ASN:H	1.80	0.45
60:c:1438:G:H2'	60:c:1439:C:H6	1.82	0.45
62:e:81:PHE:CD2	62:e:82:ARG:HG3	2.51	0.45
65:h:254:ARG:O	65:h:258:GLN:NE2	2.46	0.45
66:i:126:ASP:N	66:i:126:ASP:OD1	2.50	0.45
2:1:47:TYR:CZ	2:1:50:ILE:HD11	2.51	0.45
2:1:100:ILE:HG23	66:i:120:ILE:HD13	1.99	0.45
11:AA:393:U:H2'	11:AA:394:G:O4'	2.16	0.45
11:AA:507:U:H2'	11:AA:508:U:H6	1.81	0.45
11:AA:584:G:H2'	11:AA:585:A:H8	1.80	0.45
11:AA:964:G:H2'	11:AA:965:A:C8	2.51	0.45
11:AA:2658:G:H1	11:AA:2712:U:H3	1.63	0.45
17:Cc:22:A:O2'	17:Cc:23:G:O4'	2.27	0.45
29:HH:179:ARG:HD3	29:HH:179:ARG:HA	1.67	0.45
31:II:87:THR:HG22	31:II:88:SER:N	2.31	0.45
33:JJ:145:ARG:HA	33:JJ:185:ILE:HD13	1.98	0.45
35:KK:69:LEU:HD22	48:QQ:24:ARG:HH21	1.81	0.45
38:M:87:ARG:O	38:M:91:LEU:HD23	2.16	0.45
54:W:45:VAL:CG1	54:W:52:TYR:HB2	2.46	0.45
60:c:895:G:H2'	60:c:896:U:C6	2.51	0.45
60:c:1469:A:H2'	60:c:1470:C:C6	2.52	0.45
68:k:77:LEU:HD11	68:k:92:PHE:CZ	2.51	0.45
69:l:6:ASP:HB3	69:l:28:GLU:CD	2.42	0.45
8:7:150:TRP:NE1	77:t:37:GLU:OE1	2.49	0.45
9:8:134:ASN:HA	9:8:138:ARG:HB3	1.97	0.45
11:AA:1025:A:H3'	11:AA:1026:A:H8	1.82	0.45
11:AA:1597:C:H2'	11:AA:1598:G:C8	2.52	0.45
11:AA:2133:U:O4	11:AA:2147:A:H2	2.00	0.45
11:AA:2282:U:O2	11:AA:2310:U:H4'	2.17	0.45
11:AA:2455:U:H3'	11:AA:2456:A:H8	1.82	0.45
11:AA:2462:A:H2	11:AA:2494:A:H61	1.64	0.45
11:AA:2478:C:O2'	11:AA:2479:C:H5'	2.17	0.45
11:AA:2568:C:O2'	11:AA:2569:A:O5'	2.34	0.45
16:CC:145:U:H2'	16:CC:146:U:C6	2.52	0.45
17:Cc:69:C:H2'	17:Cc:70:C:C6	2.52	0.45
25:FF:113:GLU:HB3	25:FF:176:ALA:HB2	1.98	0.45
33:JJ:221:LYS:O	33:JJ:227:GLY:HA3	2.17	0.45
52:U:47:ILE:HG13	52:U:48:ALA:N	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:c:1132:A:H2'	60:c:1133:A:C8	2.49	0.45
61:d:47:VAL:HG21	77:t:105:GLN:HB3	1.98	0.45
63:f:45:VAL:HG21	63:f:68:ILE:HG23	1.99	0.45
63:f:147:ASN:OD1	81:x:3:ASN:HA	2.17	0.45
67:j:98:ARG:HD3	67:j:99:GLY:H	1.82	0.45
69:l:105:ASP:HA	69:l:164:ARG:NH1	2.32	0.45
71:n:46:LEU:HB3	71:n:66:TYR:CE1	2.52	0.45
77:t:77:GLU:H	77:t:77:GLU:HG3	1.56	0.45
11:AA:426:G:H2'	11:AA:427:C:C6	2.52	0.45
11:AA:947:G:H2'	11:AA:948:C:C6	2.52	0.45
11:AA:1213:G:OP1	21:E:139:TYR:OH	2.27	0.45
11:AA:1879:A:N7	88:AA:3835:HOH:O	2.36	0.45
11:AA:1896:A:H61	11:AA:2339:C:H42	1.65	0.45
11:AA:2152:A:H2'	11:AA:2153:U:C6	2.52	0.45
11:AA:2423:U:H2'	11:AA:2424:A:C8	2.52	0.45
11:AA:2534:G:O6	11:AA:2545:C:N4	2.30	0.45
11:AA:2678:A:N6	41:NN:55:ARG:HH21	2.15	0.45
11:AA:2961:G:H2'	11:AA:2962:U:C6	2.51	0.45
11:AA:3095:U:H2'	11:AA:3096:C:C6	2.52	0.45
13:BB:19:C:H2'	13:BB:20:A:C8	2.52	0.45
15:C:96:PHE:CE2	15:C:114:ILE:HD13	2.52	0.45
19:DD:43:LYS:HB2	23:Ee:121:PHE:HD1	1.82	0.45
31:II:62:THR:OG1	31:II:79:VAL:O	2.23	0.45
33:JJ:50:ALA:HA	33:JJ:53:LYS:HE3	1.98	0.45
38:M:77:LYS:C	38:M:79:TRP:H	2.24	0.45
41:NN:12:LEU:HG	41:NN:131:MET:HE3	1.99	0.45
60:c:407:A:H2'	60:c:408:C:H6	1.81	0.45
60:c:1175:U:H2'	60:c:1176:G:C8	2.52	0.45
60:c:1539:G:H4'	78:u:40:ARG:CZ	2.47	0.45
64:g:17:PHE:CE1	64:g:77:PHE:CD2	3.05	0.45
64:g:28:GLU:HG3	64:g:65:ARG:HH22	1.82	0.45
76:s:112:TYR:O	76:s:112:TYR:CD1	2.70	0.45
82:y:101:TYR:HE1	82:y:114:GLU:HG3	1.81	0.45
6:5:36:LEU:HD22	64:g:12:VAL:HG11	1.99	0.44
8:7:19:TRP:CH2	8:7:306:THR:HB	2.51	0.44
11:AA:1231:A:OP1	19:DD:34:SER:HB2	2.17	0.44
11:AA:1456:A:OP2	88:AA:3741:HOH:O	2.20	0.44
11:AA:1688:U:O4	26:G:78:TYR:HB2	2.17	0.44
11:AA:2507:C:H2'	11:AA:2508:U:H6	1.82	0.44
11:AA:2534:G:H2'	11:AA:2535:A:C8	2.52	0.44
11:AA:2640:A2M:HM'3	11:AA:2640:A2M:HI'	1.72	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2673:A:O2'	41:NN:126:ASP:OD1	2.23	0.44
12:B:32:THR:HA	12:B:58:ILE:HD12	1.99	0.44
13:BB:29:C:O2'	13:BB:51:A:N1	2.34	0.44
14:Bb:29:A:H2'	14:Bb:30:G:O4'	2.16	0.44
16:CC:37:A:OP1	51:T:89:ARG:NH2	2.49	0.44
18:D:166:ASN:HD22	60:c:815:G:H5'	1.81	0.44
19:DD:46:ARG:NE	19:DD:47:GLY:H	2.15	0.44
31:II:4:GLN:HB3	47:Q:74:PHE:CE1	2.52	0.44
47:Q:3:SER:HB3	47:Q:71:HIS:CE1	2.52	0.44
60:c:272:U:H2'	60:c:273:G:C8	2.51	0.44
60:c:304:U:H2'	60:c:305:C:C6	2.52	0.44
60:c:819:G:C2	60:c:853:G:C2	3.05	0.44
60:c:1320:U:H2'	61:d:101:ARG:HH22	1.82	0.44
60:c:1584:G:C5	76:s:14:LYS:HE2	2.51	0.44
60:c:1647:U:H2'	60:c:1648:A:C8	2.51	0.44
60:c:1733:C:H2'	60:c:1734:U:H6	1.82	0.44
61:d:4:PRO:HD2	61:d:7:PHE:HD1	1.80	0.44
61:d:175:TYR:CG	61:d:199:PRO:HB3	2.52	0.44
67:j:137:ARG:CD	67:j:177:ARG:HH21	2.29	0.44
73:p:20:ARG:HG3	82:y:56:HIS:CE1	2.53	0.44
81:x:4:ASP:O	81:x:5:LYS:HG2	2.17	0.44
82:y:29:PRO:HB2	82:y:58:SER:HB2	1.98	0.44
11:AA:943:U:H3'	38:M:13:GLY:HA2	1.98	0.44
11:AA:1214:U:H2'	11:AA:1215:U:C6	2.52	0.44
11:AA:1245:A:H2'	11:AA:1272:C:OP1	2.18	0.44
11:AA:1517:G:P	55:X:41:ARG:HH22	2.39	0.44
11:AA:2412:G:H2'	11:AA:2413:A:C8	2.52	0.44
11:AA:2451:G:H2'	11:AA:2452:G:C8	2.52	0.44
11:AA:3041:U:H2'	11:AA:3042:U:C6	2.52	0.44
19:DD:57:THR:HG22	19:DD:60:ARG:HH12	1.82	0.44
19:DD:112:GLY:HA2	19:DD:164:LYS:HD3	1.98	0.44
21:E:47:LYS:HE3	21:E:122:HIS:CE1	2.53	0.44
25:FF:47:LEU:HD11	25:FF:179:ALA:HB3	1.99	0.44
27:GG:64:SER:HA	27:GG:75:PRO:HA	1.98	0.44
27:GG:209:TYR:CE1	27:GG:212:ASP:HB2	2.52	0.44
60:c:116:U:H2'	60:c:117:U:C6	2.51	0.44
60:c:125:U:H5'	65:h:148:ARG:HD2	1.98	0.44
60:c:332:U:P	69:l:56:ARG:HH22	2.40	0.44
60:c:776:G:H2'	60:c:777:C:C6	2.52	0.44
60:c:821:U:H2'	60:c:822:U:C6	2.52	0.44
60:c:902:G:H1'	60:c:907:A:N6	2.32	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:c:1236:A:H2'	60:c:1237:G:H8	1.82	0.44
71:n:69:THR:O	71:n:73:VAL:HG23	2.16	0.44
74:q:16:VAL:O	74:q:30:VAL:HA	2.18	0.44
77:t:83:GLN:O	77:t:86:PRO:HD3	2.16	0.44
79:v:131:ASP:O	79:v:135:ILE:HG12	2.18	0.44
8:7:59:ARG:NH2	8:7:95:ALA:O	2.50	0.44
11:AA:36:C:H4'	11:AA:808:A:C2	2.53	0.44
11:AA:287:G:OP1	48:QQ:179:LYS:HD2	2.17	0.44
16:CC:83:C:H2'	16:CC:85:G:H21	1.81	0.44
21:E:73:LYS:HD2	21:E:75:PHE:CZ	2.52	0.44
22:EE:80:GLU:HB2	22:EE:170:ALA:HA	1.99	0.44
25:FF:139:GLN:HG2	25:FF:140:ASP:N	2.33	0.44
52:U:50:LEU:HD21	52:U:58:ILE:HD12	1.99	0.44
53:V:25:ARG:O	53:V:25:ARG:HD2	2.17	0.44
60:c:81:G:H2'	60:c:82:U:C6	2.53	0.44
60:c:97:C:H2'	60:c:98:U:H6	1.81	0.44
60:c:520:A:H2'	60:c:521:A:H8	1.82	0.44
60:c:555:A:O2'	60:c:556:A:H5'	2.17	0.44
60:c:603:U:H2'	60:c:604:A:H8	1.81	0.44
60:c:855:A:O2'	60:c:856:A:H3'	2.17	0.44
60:c:1466:G:O2'	60:c:1602:C:OP1	2.36	0.44
60:c:1528:U:H2'	60:c:1529:C:C6	2.52	0.44
62:e:108:ASP:OD1	62:e:109:LYS:N	2.50	0.44
67:j:7:TYR:CZ	67:j:9:VAL:HB	2.52	0.44
82:y:32:LYS:O	82:y:36:LYS:HG2	2.17	0.44
82:y:37:PHE:CZ	82:y:103:ILE:HD12	2.52	0.44
1:0:14:SER:HB3	1:0:21:LYS:HE3	1.99	0.44
1:0:35:VAL:HG13	1:0:40:LEU:HD21	2.00	0.44
6:5:30:LEU:HA	6:5:39:CYS:HA	1.99	0.44
8:7:88:THR:HG21	8:7:102:ARG:NH2	2.33	0.44
8:7:213:SER:HB2	8:7:223:TRP:HZ3	1.81	0.44
8:7:284:ALA:HB1	77:t:63:LYS:NZ	2.32	0.44
10:A:91:LYS:NZ	88:A:201:HOH:O	2.37	0.44
11:AA:411:U:H2'	11:AA:412:G:C8	2.51	0.44
11:AA:698:U:H2'	11:AA:699:A:O4'	2.18	0.44
11:AA:1393:A:N6	11:AA:1417:G:H1'	2.32	0.44
11:AA:2367:A:H2'	11:AA:2368:A:H8	1.83	0.44
11:AA:3084:C:H2'	11:AA:3085:G:O4'	2.18	0.44
11:AA:3278:C:O2	11:AA:3278:C:H2'	2.17	0.44
16:CC:38:U:O2'	51:T:83:LYS:NZ	2.50	0.44
16:CC:40:A:H2'	16:CC:41:A:C8	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:KK:26:LEU:HB3	36:L:53:VAL:HG21	2.00	0.44
41:NN:59:ILE:HA	41:NN:63:GLU:OE1	2.18	0.44
55:X:30:ARG:HB2	55:X:33:ASN:HD22	1.82	0.44
57:Z:16:LYS:O	57:Z:20:VAL:HG23	2.17	0.44
59:b:10:ILE:HG22	59:b:27:LYS:HG3	1.99	0.44
60:c:116:U:O2'	60:c:333:A:N3	2.43	0.44
60:c:149:C:H2'	60:c:150:U:C6	2.53	0.44
60:c:343:C:H2'	60:c:344:A:C8	2.51	0.44
60:c:684:A:H2'	60:c:685:A:H8	1.81	0.44
60:c:1429:G:H2'	60:c:1430:U:C6	2.52	0.44
62:e:208:GLN:HG3	62:e:209:ASN:HB2	1.99	0.44
66:i:66:GLN:HA	66:i:67:PRO:HD3	1.80	0.44
66:i:169:ASN:OD1	66:i:170:GLN:N	2.51	0.44
77:t:34:LEU:O	77:t:38:ILE:HG12	2.16	0.44
78:u:102:ALA:C	78:u:104:ASN:H	2.25	0.44
9:8:126:CYS:SG	9:8:143:LYS:HG3	2.58	0.44
11:AA:597:G:H2'	11:AA:598:A:H8	1.81	0.44
11:AA:1517:G:OP1	55:X:22:PRO:HG3	2.16	0.44
11:AA:1666:G:H2'	11:AA:1667:A:C8	2.52	0.44
11:AA:1737:U:O2	50:S:52:GLN:NE2	2.50	0.44
11:AA:1910:A:H2'	11:AA:1911:A:C8	2.52	0.44
11:AA:2351:U:H2'	11:AA:2352:A:H8	1.82	0.44
11:AA:2454:G:H2'	11:AA:2455:U:H6	1.81	0.44
11:AA:2488:A:H2'	11:AA:2488:A:N3	2.33	0.44
11:AA:3216:G:OP1	31:II:162:SER:OG	2.27	0.44
11:AA:3296:A:H2'	11:AA:3297:U:C6	2.52	0.44
11:AA:3322:A:H2'	11:AA:3323:A:H8	1.82	0.44
19:DD:15:LEU:HD23	19:DD:66:PHE:HE2	1.83	0.44
21:E:12:ARG:HB2	21:E:59:VAL:HG23	1.98	0.44
27:GG:140:HIS:NE2	27:GG:246:ARG:HD2	2.33	0.44
35:KK:139:VAL:O	35:KK:143:ILE:HG12	2.17	0.44
36:L:70:PRO:HG3	36:L:115:LYS:HB2	1.98	0.44
44:P:55:LEU:HB2	44:P:95:PRO:HD3	1.99	0.44
60:c:153:G:N2	67:j:56:ASN:OD1	2.43	0.44
60:c:184:C:H2'	60:c:185:U:C6	2.53	0.44
60:c:1647:U:H2'	60:c:1648:A:H8	1.82	0.44
60:c:1659:A:H2'	60:c:1660:A:H8	1.83	0.44
63:f:38:VAL:HG12	63:f:39:THR:N	2.32	0.44
63:f:69:ILE:HG13	63:f:133:LYS:O	2.18	0.44
65:h:90:ILE:HD11	65:h:101:LEU:HD11	2.00	0.44
67:j:25:ARG:HD2	67:j:28:PHE:CE2	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
67:j:61:PHE:HE2	67:j:96:SER:HB2	1.83	0.44
78:u:18:LEU:O	78:u:18:LEU:HD12	2.17	0.44
78:u:61:LEU:O	78:u:62:THR:OG1	2.28	0.44
83:z:107:PHE:CD2	83:z:114:LYS:HG2	2.53	0.44
2:1:77:ARG:NH1	60:c:1533:C:OP2	2.31	0.44
3:2:7:SER:OG	3:2:8:ASN:N	2.51	0.44
3:2:41:ILE:HG22	3:2:66:LYS:HD3	1.99	0.44
6:5:14:TYR:OH	60:c:1553:G:O2'	2.18	0.44
11:AA:286:U:O2'	48:QQ:179:LYS:O	2.33	0.44
11:AA:548:G:H2'	11:AA:549:U:O4'	2.17	0.44
11:AA:785:G:O6	38:M:77:LYS:NZ	2.51	0.44
11:AA:789:A:H2'	11:AA:790:U:H6	1.82	0.44
11:AA:790:U:C2	11:AA:791:A:C8	3.05	0.44
11:AA:975:C:OP2	15:C:15:HIS:HA	2.18	0.44
11:AA:1003:A:N1	11:AA:1049:C:O2'	2.48	0.44
11:AA:1034:U:H2'	11:AA:1035:G:O4'	2.18	0.44
11:AA:1202:A:C2	11:AA:2857:C:H5'	2.53	0.44
11:AA:1240:A:H2'	11:AA:1241:U:C6	2.52	0.44
11:AA:1573:G:O2'	11:AA:1574:C:O4'	2.27	0.44
11:AA:2129:U:H2'	11:AA:2130:G:H8	1.81	0.44
11:AA:2459:A:H61	11:AA:2483:G:N2	2.15	0.44
11:AA:3192:U:H2'	11:AA:3193:C:C6	2.53	0.44
15:C:71:LEU:HD11	15:C:99:THR:HG21	2.00	0.44
18:D:97:ARG:O	18:D:101:VAL:HG13	2.16	0.44
34:K:109:LEU:HD22	34:K:115:ARG:NH2	2.33	0.44
43:OO:115:ARG:HH12	43:OO:147:ILE:HG12	1.82	0.44
47:Q:96:ILE:HG21	47:Q:105:ARG:HG2	2.00	0.44
60:c:934:C:C4	60:c:1077:C:H4'	2.53	0.44
60:c:1175:U:H2'	60:c:1176:G:H8	1.83	0.44
63:f:120:GLU:OE1	64:g:116:ARG:NH1	2.51	0.44
74:q:91:THR:HG22	74:q:93:THR:HB	2.00	0.44
75:r:57:MET:HG2	75:r:83:MET:HE1	2.00	0.44
2:1:59:TYR:CG	66:i:124:LEU:HD21	2.52	0.44
11:AA:293:C:H2'	11:AA:294:U:O4'	2.17	0.44
11:AA:1128:U:H2'	11:AA:1129:A:O4'	2.18	0.44
11:AA:2180:G:H2'	11:AA:2181:C:C6	2.53	0.44
11:AA:2457:G:N2	11:AA:2486:A:N1	2.66	0.44
11:AA:2867:C:H2'	11:AA:2868:U:H6	1.83	0.44
11:AA:3358:U:H2'	11:AA:3359:A:C8	2.50	0.44
13:BB:45:A:H2'	13:BB:46:A:C8	2.53	0.44
13:BB:118:A:H5''	29:HH:253:PHE:CZ	2.51	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:BB:119:U:P	29:HH:258:LYS:HZ1	2.40	0.44
27:GG:347:THR:HG22	27:GG:349:THR:HG23	2.00	0.44
29:HH:108:ARG:HD3	29:HH:253:PHE:HB2	1.98	0.44
51:T:77:PRO:O	51:T:81:ARG:HG3	2.18	0.44
60:c:140:A:H2'	60:c:140:A:N3	2.32	0.44
60:c:208:U:H2'	60:c:209:U:H6	1.83	0.44
60:c:366:A:H2'	60:c:367:A:C8	2.52	0.44
60:c:424:C:O2	60:c:427:C:N4	2.50	0.44
60:c:1659:A:H2'	60:c:1660:A:C8	2.53	0.44
64:g:21:LEU:HD21	64:g:77:PHE:HE2	1.83	0.44
65:h:103:TYR:HE2	65:h:184:THR:HG22	1.82	0.44
70:m:131:GLN:O	70:m:131:GLN:HG3	2.18	0.44
77:t:7:LYS:O	77:t:11:ARG:HG2	2.18	0.44
77:t:24:LEU:O	77:t:24:LEU:HD12	2.18	0.44
78:u:76:PRO:HA	78:u:81:ILE:HD12	1.99	0.44
79:v:39:THR:HA	79:v:100:ILE:HD13	2.00	0.44
1:0:14:SER:HA	1:0:21:LYS:HD2	1.99	0.44
8:7:13:LEU:HB3	8:7:45:TRP:HZ3	1.83	0.44
11:AA:215:G:OP1	34:K:12:ARG:NH1	2.39	0.44
11:AA:1258:U:O2	11:AA:1261:G:N1	2.50	0.44
11:AA:1619:A:H2'	11:AA:1620:U:O4'	2.17	0.44
11:AA:1742:U:H2'	11:AA:1743:G:H8	1.83	0.44
11:AA:1831:U:C2	11:AA:1832:C:C5	3.05	0.44
11:AA:1915:A:H2'	11:AA:1916:U:H6	1.83	0.44
11:AA:2792:A:H2'	11:AA:2793:OMG:H8	1.82	0.44
11:AA:3110:C:H2'	11:AA:3111:U:C6	2.53	0.44
14:Bb:22:G:H2'	14:Bb:23:A:H8	1.82	0.44
17:Cc:26:C:C2	17:Cc:27:G:C8	3.05	0.44
17:Cc:54:G:C2	17:Cc:55:U:C4	3.06	0.44
23:Ee:151:ILE:HG23	23:Ee:160:ILE:HG13	1.99	0.44
25:FF:94:GLU:OE1	25:FF:156:SER:OG	2.34	0.44
37:LL:21:LYS:CG	37:LL:22:SER:H	2.30	0.44
60:c:463:U:H2'	60:c:464:A:H8	1.82	0.44
60:c:603:U:H2'	60:c:604:A:C8	2.53	0.44
60:c:604:A:H2'	60:c:605:A:O4'	2.18	0.44
62:e:225:VAL:HA	62:e:228:LEU:HB3	1.99	0.44
63:f:58:LEU:HA	81:x:12:TYR:CE1	2.53	0.44
67:j:16:PHE:HE2	67:j:124:LEU:HD11	1.83	0.44
83:z:109:ARG:HG3	83:z:114:LYS:HB3	1.99	0.44
4:3:4:VAL:HG22	82:y:23:ARG:HD3	2.00	0.44
8:7:200:ASN:ND2	8:7:239:GLU:OE2	2.51	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:8:126:CYS:HB3	9:8:130:VAL:HB	1.99	0.44
11:AA:313:A:H2'	11:AA:314:U:C6	2.53	0.44
11:AA:518:G:OP2	11:AA:518:G:N2	2.28	0.44
11:AA:671:U:H2'	11:AA:672:A:H8	1.83	0.44
11:AA:1194:G:H2'	11:AA:1195:A:C8	2.52	0.44
11:AA:1616:U:H2'	11:AA:1617:G:C8	2.53	0.44
11:AA:1694:U:O2'	11:AA:1695:U:H5'	2.18	0.44
11:AA:1709:C:H2'	11:AA:1710:C:H6	1.83	0.44
11:AA:2830:G:H1'	11:AA:2861:U:C2	2.53	0.44
12:B:116:HIS:HB3	12:B:149:VAL:CG1	2.48	0.44
13:BB:77:G:O2'	13:BB:101:G:O6	2.30	0.44
19:DD:16:ARG:HG2	19:DD:66:PHE:CZ	2.53	0.44
24:F:132:PRO:HB2	33:JJ:120:THR:HB	2.00	0.44
29:HH:50:ARG:NH1	29:HH:147:ASP:OD2	2.51	0.44
60:c:420:A2M:HM'3	60:c:420:A2M:H1'	1.78	0.44
60:c:968:U:OP1	60:c:1033:C:O2'	2.33	0.44
60:c:1354:G:O6	60:c:1372:U:O2'	2.25	0.44
64:g:107:PHE:O	64:g:111:ASN:ND2	2.51	0.44
67:j:114:VAL:C	67:j:115:LYS:HD2	2.43	0.44
74:q:23:PHE:O	74:q:24:ASN:HB2	2.18	0.44
77:t:79:GLU:O	77:t:80:ARG:C	2.61	0.44
77:t:83:GLN:O	77:t:84:TYR:C	2.61	0.44
79:v:105:LEU:HB3	79:v:122:ARG:NH1	2.33	0.44
81:x:12:TYR:CG	81:x:12:TYR:O	2.70	0.44
8:7:255:ALA:HB2	8:7:292:LEU:HG	1.99	0.43
11:AA:661:G:N7	38:M:25:HIS:ND1	2.62	0.43
11:AA:1306:G:O2'	11:AA:1307:G:H5''	2.17	0.43
11:AA:1460:A:H2'	11:AA:1461:A:H8	1.83	0.43
11:AA:2416:U:H2'	11:AA:2417:OMU:C6	2.48	0.43
16:CC:75:G:H2'	16:CC:76:C:C6	2.52	0.43
19:DD:18:TYR:OH	19:DD:50:VAL:HG21	2.18	0.43
25:FF:147:GLU:O	25:FF:151:ILE:HG13	2.18	0.43
36:L:117:ALA:HA	36:L:120:GLU:HG2	1.99	0.43
60:c:327:U:H1'	72:o:10:GLU:OE2	2.18	0.43
60:c:600:U:H2'	60:c:601:A:C8	2.52	0.43
60:c:1466:G:H2'	60:c:1467:C:C6	2.53	0.43
60:c:1635:A:N6	63:f:92:ALA:H	2.16	0.43
65:h:137:PRO:HG2	65:h:150:PRO:HD2	2.00	0.43
65:h:211:LYS:HG3	65:h:215:ASP:HA	1.99	0.43
69:l:121:LEU:HG	69:l:157:GLU:HG3	1.99	0.43
70:m:58:ASP:O	70:m:61:THR:HG22	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:7:64:HIS:NE2	8:7:84:SER:HB2	2.34	0.43
11:AA:1321:G:N2	21:E:112:ALA:HB2	2.33	0.43
11:AA:1574:C:OP1	32:J:36:LYS:HE2	2.17	0.43
11:AA:2152:A:HO2'	11:AA:2243:A:HO2'	1.66	0.43
11:AA:2364:G:H22	11:AA:2396:G:H1'	1.83	0.43
11:AA:2565:U:H2'	11:AA:2566:C:H6	1.84	0.43
11:AA:3365:U:H2'	11:AA:3366:G:H8	1.83	0.43
16:CC:52:A:H4'	55:X:19:GLN:HA	1.99	0.43
16:CC:154:C:H2'	16:CC:155:A:H8	1.82	0.43
21:E:13:ARG:HD3	21:E:51:VAL:HG23	2.00	0.43
44:P:80:ASN:HB3	44:P:90:PHE:CD1	2.53	0.43
49:R:8:TYR:CG	49:R:99:ARG:HB3	2.52	0.43
54:W:23:ALA:O	54:W:76:ASN:HB3	2.18	0.43
60:c:209:U:H5'	69:l:171:SER:HB2	2.00	0.43
60:c:333:A:C5	69:l:49:ARG:HD3	2.53	0.43
60:c:629:U:C2	60:c:630:A:C8	3.06	0.43
60:c:898:A:H2'	60:c:912:U:O4	2.18	0.43
60:c:990:C:H2'	60:c:991:G:O4'	2.18	0.43
60:c:1398:U:H3'	60:c:1399:C:H2'	2.00	0.43
60:c:1607:G:H2'	60:c:1608:U:C6	2.53	0.43
61:d:53:THR:OG1	61:d:161:PRO:HG2	2.17	0.43
61:d:198:MET:SD	77:t:90:ALA:HB2	2.58	0.43
62:e:65:VAL:HG22	62:e:87:ARG:HB3	2.00	0.43
80:w:95:ALA:HB1	80:w:99:ILE:HD11	2.00	0.43
10:A:161:LYS:HD3	11:AA:3182:G:H4'	1.99	0.43
11:AA:63:A:N3	11:AA:78:U:O2'	2.41	0.43
11:AA:761:A:O5'	11:AA:761:A:H8	2.02	0.43
11:AA:1134:G:O2'	11:AA:2642:A:N3	2.45	0.43
11:AA:1226:G:H2'	11:AA:1227:C:H6	1.83	0.43
11:AA:1666:G:H2'	11:AA:1667:A:H8	1.83	0.43
11:AA:1688:U:H2'	11:AA:1689:U:C6	2.52	0.43
11:AA:1833:G:H5''	55:X:10:LYS:HD3	2.00	0.43
11:AA:1949:G:H2'	11:AA:1950:U:C6	2.54	0.43
11:AA:2104:A:H2'	11:AA:2105:G:H8	1.84	0.43
11:AA:2446:U:H2'	11:AA:2447:A:C8	2.53	0.43
11:AA:2867:C:OP2	88:AA:3738:HOH:O	2.21	0.43
16:CC:141:C:OP1	48:QQ:109:ARG:NH2	2.46	0.43
54:W:66:ILE:HA	54:W:69:LEU:HD13	2.00	0.43
55:X:5:LYS:HE2	55:X:13:MET:HE1	2.00	0.43
60:c:260:U:H5'	60:c:261:U:OP2	2.19	0.43
60:c:1382:A:N3	80:w:57:ARG:HD2	2.33	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:c:1595:U:H5	60:c:1596:C:C4	2.36	0.43
60:c:1609:U:H2'	60:c:1610:G:O4'	2.19	0.43
62:e:142:PHE:HD1	62:e:209:ASN:HB3	1.83	0.43
65:h:72:VAL:HG22	65:h:90:ILE:HG12	2.00	0.43
74:q:27:PHE:HA	74:q:43:THR:HG22	2.00	0.43
80:w:101:LYS:HA	80:w:104:THR:HG22	1.99	0.43
8:7:33:LEU:HB2	8:7:47:LEU:HD21	1.99	0.43
9:8:97:LYS:HA	9:8:97:LYS:HD2	1.73	0.43
10:A:11:GLY:O	10:A:41:LEU:HD23	2.18	0.43
10:A:108:ILE:HD12	10:A:160:ARG:CZ	2.49	0.43
11:AA:110:G:C2	11:AA:111:C:H1'	2.52	0.43
11:AA:165:A:H2'	11:AA:166:C:C6	2.54	0.43
11:AA:601:U:HO2'	11:AA:602:A:P	2.41	0.43
11:AA:612:U:H4'	31:II:21:THR:HG21	2.00	0.43
11:AA:884:A:OP2	53:V:4:GLY:HA3	2.18	0.43
11:AA:1490:A:O2'	53:V:12:HIS:O	2.34	0.43
11:AA:1615:C:H2'	11:AA:1616:U:H6	1.81	0.43
11:AA:1783:U:H2'	11:AA:1784:G:H8	1.84	0.43
11:AA:2389:C:H2'	11:AA:2390:A:H8	1.84	0.43
11:AA:2768:U:H2'	11:AA:2769:A:C8	2.53	0.43
11:AA:2829:U:OP2	88:AA:3740:HOH:O	2.20	0.43
11:AA:3163:A:H2'	11:AA:3164:C:H6	1.82	0.43
12:B:56:ARG:NH2	12:B:75:GLU:OE1	2.49	0.43
18:D:95:TRP:HZ3	18:D:98:ARG:HH21	1.66	0.43
19:DD:6:GLU:HG2	19:DD:7:LYS:N	2.34	0.43
21:E:19:VAL:O	21:E:19:VAL:HG13	2.17	0.43
35:KK:98:ARG:HG2	35:KK:189:LEU:O	2.18	0.43
43:OO:122:LYS:HD3	43:OO:145:PHE:HE1	1.82	0.43
45:PP:17:VAL:HG22	45:PP:37:GLU:HA	2.00	0.43
60:c:258:C:O2	69:l:178:ARG:NH1	2.52	0.43
60:c:300:A:H2'	60:c:301:A:C8	2.53	0.43
60:c:788:A:C5	65:h:19:LEU:HD13	2.53	0.43
61:d:146:LEU:HB3	61:d:162:CYS:SG	2.58	0.43
69:l:33:PRO:HB2	69:l:35:ASN:OD1	2.18	0.43
69:l:72:ILE:HG12	69:l:112:TRP:CH2	2.54	0.43
69:l:180:ASP:OD1	69:l:181:GLY:N	2.52	0.43
76:s:59:LYS:O	76:s:59:LYS:HD3	2.18	0.43
3:2:5:ARG:HH21	60:c:1795:U:H3'	1.83	0.43
5:4:38:ARG:HH12	74:q:107:ARG:NH1	2.15	0.43
11:AA:1349:G:OP1	11:AA:1349:G:H3'	2.18	0.43
11:AA:1637:A:H4'	36:L:15:ARG:HB3	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1657:C:O2'	11:AA:1797:A:OP2	2.22	0.43
11:AA:2225:U:H2'	11:AA:2226:U:C6	2.54	0.43
11:AA:2544:U:H2'	11:AA:2545:C:H6	1.83	0.43
11:AA:2839:G:O6	11:AA:2845:A:O2'	2.33	0.43
11:AA:2840:C:H2'	11:AA:2841:G:O4'	2.18	0.43
11:AA:2986:U:H2'	11:AA:2987:A:H8	1.84	0.43
16:CC:78:G:H2'	16:CC:79:A:H8	1.84	0.43
22:EE:70:ARG:HD2	22:EE:72:ARG:NH2	2.33	0.43
23:Ee:133:LEU:O	23:Ee:137:GLN:N	2.49	0.43
25:FF:306:THR:HG21	25:FF:316:GLU:HG3	2.00	0.43
48:QQ:70:ASN:HB3	48:QQ:92:LEU:O	2.18	0.43
60:c:1344:A:H4'	80:w:54:GLY:HA3	2.01	0.43
65:h:87:MET:N	65:h:101:LEU:O	2.35	0.43
67:j:50:PHE:CE1	67:j:113:ILE:HG12	2.53	0.43
67:j:158:ILE:H	67:j:158:ILE:HD12	1.83	0.43
70:m:41:GLU:HG2	70:m:44:ARG:NH2	2.34	0.43
1:0:20:ARG:NH1	1:0:22:GLN:HE21	2.14	0.43
11:AA:929:A:OP1	27:GG:61:SER:OG	2.29	0.43
11:AA:1381:A:H2'	11:AA:1382:G:C8	2.54	0.43
11:AA:1444:G:H2'	11:AA:1445:U:O4'	2.19	0.43
11:AA:2419:A:H2'	11:AA:2420:C:C6	2.53	0.43
11:AA:3051:U:C2	11:AA:3052:G:C8	3.07	0.43
14:Bb:67:A:H2'	14:Bb:68:U:C6	2.53	0.43
22:EE:133:TYR:HB3	22:EE:168:VAL:HG12	2.01	0.43
25:FF:256:HIS:HA	25:FF:257:PRO:C	2.44	0.43
36:L:32:GLY:HA2	36:L:40:HIS:CE1	2.53	0.43
43:OO:122:LYS:HE3	51:T:120:ALA:HA	2.01	0.43
60:c:602:U:C2	60:c:603:U:C5	3.07	0.43
60:c:1018:U:C2	60:c:1019:A:C8	3.07	0.43
60:c:1525:A:H2'	60:c:1526:A:O4'	2.19	0.43
60:c:1546:G:N7	78:u:134:ARG:NH2	2.67	0.43
60:c:1654:G:H21	60:c:1746:A:H2	1.65	0.43
61:d:175:TYR:OH	61:d:197:ILE:O	2.25	0.43
62:e:171:ILE:O	62:e:175:GLU:HG2	2.19	0.43
65:h:42:LEU:HB2	65:h:109:PHE:CD2	2.54	0.43
69:l:160:PHE:CZ	69:l:165:LEU:HD11	2.54	0.43
70:m:40:LYS:HB2	70:m:40:LYS:HE3	1.76	0.43
73:p:100:LYS:O	73:p:103:GLU:HG2	2.17	0.43
82:y:66:ASN:ND2	82:y:68:ARG:HD2	2.33	0.43
1:0:41:ARG:HG2	1:0:55:VAL:HG23	2.00	0.43
2:1:81:ARG:NH2	60:c:1531:G:OP1	2.51	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:7:43:ILE:HG21	8:7:45:TRP:HE1	1.83	0.43
10:A:81:TYR:CZ	10:A:99:LEU:HD12	2.54	0.43
11:AA:542:G:C6	11:AA:550:A:C6	3.06	0.43
11:AA:612:U:H2'	11:AA:613:G:H8	1.82	0.43
11:AA:1066:G:H2'	11:AA:1067:U:C6	2.54	0.43
11:AA:2439:A:H2'	11:AA:2440:G:C8	2.54	0.43
11:AA:2520:A:H2'	11:AA:2521:U:C6	2.54	0.43
11:AA:2566:C:H2'	11:AA:2567:C:C6	2.53	0.43
11:AA:2607:G:OP2	88:AA:3747:HOH:O	2.22	0.43
14:Bb:50:U:H2'	14:Bb:51:G:C8	2.53	0.43
23:Ee:137:GLN:HB2	23:Ee:148:PRO:HB2	2.01	0.43
60:c:119:A:H1'	60:c:397:A:C5	2.53	0.43
60:c:179:A:C6	60:c:180:A:H1'	2.54	0.43
60:c:371:G:N2	60:c:612:U:O2	2.51	0.43
60:c:452:A:H3'	60:c:453:U:H6	1.83	0.43
60:c:1017:U:H2'	60:c:1018:U:H6	1.83	0.43
60:c:1584:G:H1'	60:c:1585:U:H5	1.84	0.43
60:c:1590:G:H2'	60:c:1591:C:H6	1.83	0.43
61:d:31:VAL:N	61:d:149:LEU:O	2.49	0.43
61:d:127:ARG:NH2	61:d:152:PRO:HD3	2.34	0.43
66:i:70:VAL:HG23	66:i:115:LYS:NZ	2.33	0.43
67:j:159:ARG:HH21	67:j:170:THR:HG23	1.83	0.43
67:j:214:LYS:O	67:j:217:SER:OG	2.25	0.43
69:l:87:ASN:HB3	69:l:90:LEU:HG	2.00	0.43
70:m:180:LYS:HA	70:m:183:ALA:HB3	2.00	0.43
72:o:6:THR:O	72:o:9:SER:OG	2.27	0.43
73:p:40:TYR:HB3	73:p:50:ILE:HG12	2.01	0.43
75:r:18:ARG:HG3	75:r:18:ARG:O	2.18	0.43
75:r:37:ALA:HB1	75:r:41:VAL:HG11	2.00	0.43
82:y:10:ALA:HB1	82:y:27:ILE:HD12	2.00	0.43
8:7:116:ASP:CG	8:7:121:MET:HB2	2.43	0.43
8:7:144:LEU:HD13	8:7:181:TRP:NE1	2.29	0.43
11:AA:546:C:C5	11:AA:547:G:H1'	2.54	0.43
11:AA:567:G:H2'	11:AA:568:G:C8	2.54	0.43
11:AA:584:G:H2'	11:AA:585:A:C8	2.53	0.43
11:AA:1565:G:H3'	11:AA:1566:A:C8	2.54	0.43
11:AA:1722:U:O4'	18:D:96:ILE:HG12	2.18	0.43
11:AA:1782:U:H2'	11:AA:1783:U:O4'	2.18	0.43
11:AA:2707:C:H2'	11:AA:2708:C:C6	2.53	0.43
11:AA:2748:A:H1'	29:HH:36:LEU:HD23	2.00	0.43
11:AA:3013:U:H2'	11:AA:3014:U:C6	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:3359:A:H2'	11:AA:3360:C:H6	1.83	0.43
12:B:41:LEU:HD13	12:B:150:VAL:HG11	2.01	0.43
25:FF:5:LYS:HG2	25:FF:5:LYS:O	2.19	0.43
27:GG:140:HIS:O	27:GG:142:VAL:N	2.52	0.43
60:c:107:C:H2'	60:c:108:A:C8	2.54	0.43
60:c:921:U:OP1	62:e:101:HIS:NE2	2.41	0.43
60:c:1732:A:H2'	60:c:1733:C:C6	2.53	0.43
63:f:106:ASP:OD1	63:f:106:ASP:N	2.51	0.43
64:g:51:ARG:NE	64:g:90:ARG:O	2.52	0.43
66:i:62:VAL:HG12	66:i:89:ILE:HD13	1.99	0.43
78:u:27:LYS:HG3	78:u:57:ARG:NH1	2.33	0.43
2:1:65:LEU:HD22	2:1:71:ILE:HD13	2.00	0.43
11:AA:159:A:H2'	11:AA:160:G:H8	1.84	0.43
11:AA:270:U:H2'	11:AA:271:C:H6	1.84	0.43
11:AA:523:A:O2'	21:E:69:PRO:HD2	2.18	0.43
11:AA:561:C:H2'	11:AA:562:C:H6	1.84	0.43
11:AA:598:A:H2'	11:AA:599:C:C6	2.54	0.43
11:AA:612:U:H2'	11:AA:613:G:C8	2.54	0.43
11:AA:821:U:H2'	11:AA:822:G:H8	1.83	0.43
11:AA:897:U:H2'	11:AA:898:OMU:H6	2.01	0.43
11:AA:1261:G:H3'	11:AA:1261:G:N3	2.34	0.43
11:AA:1312:C:H2'	11:AA:1313:G:O4'	2.19	0.43
11:AA:1472:U:H2'	11:AA:1473:G:H8	1.84	0.43
11:AA:1493:G:O2'	55:X:13:MET:HG2	2.18	0.43
11:AA:2402:A:H5''	27:GG:67:THR:OG1	2.19	0.43
11:AA:2447:A:H2'	11:AA:2448:G:H8	1.84	0.43
11:AA:2861:U:H2'	11:AA:2862:U:O4'	2.19	0.43
19:DD:136:PHE:HZ	19:DD:176:LEU:HD21	1.82	0.43
25:FF:136:LYS:O	25:FF:141:GLY:HA2	2.18	0.43
25:FF:295:ALA:HB2	25:FF:301:THR:O	2.18	0.43
37:LL:147:SER:HB3	37:LL:187:ILE:HD11	2.01	0.43
51:T:49:LYS:HA	51:T:49:LYS:HD3	1.79	0.43
60:c:759:U:H2'	60:c:760:A:C8	2.51	0.43
60:c:885:G:H2'	60:c:886:U:C6	2.54	0.43
60:c:1071:U:H2'	60:c:1072:C:H6	1.84	0.43
60:c:1308:G:H2'	60:c:1309:C:H6	1.83	0.43
60:c:1366:U:OP1	76:s:66:ARG:NE	2.40	0.43
64:g:158:ILE:HD13	64:g:202:LEU:HD11	2.01	0.43
64:g:204:ASP:HB2	77:t:8:THR:HG21	2.00	0.43
66:i:128:ASN:O	66:i:131:GLN:N	2.50	0.43
67:j:180:THR:HG22	67:j:182:GLN:N	2.27	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
68:k:154:LEU:O	68:k:186:PRO:HD2	2.18	0.43
74:q:14:PHE:CD1	74:q:78:ALA:HB3	2.54	0.43
83:z:43:PHE:O	83:z:45:GLY:N	2.47	0.43
1:0:21:LYS:NZ	60:c:782:U:O2	2.51	0.43
11:AA:691:A:OP1	27:GG:46:LYS:NZ	2.41	0.43
11:AA:734:C:H2'	11:AA:735:A:O4'	2.19	0.43
11:AA:1060:U:H2'	11:AA:1061:A:H8	1.84	0.43
11:AA:1079:A:H1'	29:HH:115:LEU:HD11	2.01	0.43
11:AA:1925:U:O2'	11:AA:1927:G:N7	2.52	0.43
11:AA:2376:G:H2'	11:AA:2377:G:C8	2.54	0.43
11:AA:2427:U:H2'	11:AA:2428:U:H6	1.84	0.43
11:AA:2675:C:N4	41:NN:22:SER:HB3	2.34	0.43
11:AA:2772:C:OP2	58:a:15:LYS:NZ	2.51	0.43
16:CC:4:C:H2'	16:CC:5:U:C6	2.54	0.43
16:CC:29:U:H5''	43:OO:27:ASP:HB3	2.01	0.43
19:DD:130:PRO:HA	19:DD:133:THR:OG1	2.19	0.43
22:EE:46:LYS:HD2	22:EE:46:LYS:HA	1.88	0.43
25:FF:194:TRP:O	25:FF:198:HIS:ND1	2.51	0.43
25:FF:229:VAL:HG21	25:FF:249:VAL:HG23	2.01	0.43
29:HH:125:VAL:HG11	29:HH:199:ILE:HG21	2.01	0.43
45:PP:32:LEU:HD11	45:PP:94:TRP:CD2	2.54	0.43
48:QQ:52:GLY:O	48:QQ:148:TYR:OH	2.33	0.43
52:U:34:SER:O	52:U:37:THR:N	2.52	0.43
60:c:1407:U:H2'	60:c:1408:G:C8	2.54	0.43
60:c:1550:A:H2'	60:c:1551:U:C6	2.53	0.43
71:n:59:PHE:CE2	71:n:62:GLN:HA	2.53	0.43
74:q:122:PRO:HB2	74:q:124:ASP:O	2.19	0.43
75:r:17:TYR:CE2	75:r:18:ARG:HG2	2.54	0.43
76:s:10:PHE:CE2	76:s:12:LYS:HE3	2.54	0.43
81:x:5:LYS:HE2	81:x:7:GLN:NE2	2.34	0.43
1:0:21:LYS:HB2	1:0:75:VAL:HG12	2.01	0.42
2:1:82:HIS:O	2:1:85:LYS:HG2	2.19	0.42
8:7:272:ASP:HB2	8:7:274:LEU:HD23	2.00	0.42
11:AA:789:A:H2'	11:AA:790:U:C6	2.54	0.42
11:AA:837:A:O2'	59:b:10:ILE:HD13	2.19	0.42
11:AA:873:C:H5''	11:AA:874:U:O5'	2.19	0.42
11:AA:898:OMU:H1'	11:AA:898:OMU:HM23	1.69	0.42
11:AA:1804:A:H2'	11:AA:1805:C:C6	2.54	0.42
11:AA:1870:C:O2	11:AA:3066:U:O2'	2.35	0.42
11:AA:2270:A:H2'	11:AA:2271:A:H8	1.80	0.42
16:CC:78:G:H2'	16:CC:79:A:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:CC:157:U:H2'	16:CC:158:U:O4'	2.19	0.42
21:E:152:LEU:HB2	21:E:172:TYR:CE2	2.54	0.42
25:FF:10:ARG:NH2	25:FF:263:SER:O	2.40	0.42
35:KK:33:ASN:O	35:KK:39:ALA:HB3	2.18	0.42
36:L:89:VAL:HG23	36:L:89:VAL:O	2.19	0.42
39:MM:52:LEU:HB3	39:MM:136:PHE:HB2	2.01	0.42
43:OO:76:THR:OG1	43:OO:79:GLU:HG2	2.19	0.42
47:Q:86:THR:HG23	47:Q:87:MET:HG2	2.01	0.42
60:c:28:A2M:HM'3	60:c:28:A2M:H1'	1.79	0.42
60:c:791:A:C5	60:c:792:U:C4	3.07	0.42
60:c:817:A:H2'	60:c:818:C:H6	1.83	0.42
60:c:929:A:C8	74:q:123:SER:O	2.72	0.42
60:c:1294:G:C6	60:c:1295:G:N7	2.86	0.42
60:c:1294:G:O2'	60:c:1321:A:N1	2.34	0.42
87:c:1951:SPD:H52	87:c:1951:SPD:H21	1.76	0.42
65:h:57:ASN:HD21	65:h:59:ARG:NH2	2.17	0.42
65:h:188:ASN:HB2	65:h:191:ARG:HD3	2.00	0.42
65:h:201:HIS:ND1	65:h:207:LEU:HD13	2.34	0.42
67:j:137:ARG:HD3	67:j:177:ARG:HH21	1.83	0.42
77:t:62:GLN:NE2	77:t:63:LYS:HE3	2.25	0.42
11:AA:114:A:OP1	48:QQ:54:LYS:NZ	2.53	0.42
11:AA:349:A:C4	16:CC:24:G:H1'	2.54	0.42
11:AA:849:C:H2'	11:AA:850:U:C6	2.54	0.42
11:AA:1222:G:H8	19:DD:57:THR:HG21	1.84	0.42
11:AA:1280:C:C2	11:AA:1281:G:C8	3.07	0.42
11:AA:2094:C:H2'	11:AA:2095:G:C8	2.54	0.42
87:AA:3604:SPD:H42	38:M:39:HIS:NE2	2.34	0.42
14:Bb:16:U:H4'	14:Bb:17:U:C5	2.53	0.42
16:CC:2:A:C4	16:CC:3:A:C8	3.07	0.42
44:P:23:VAL:HG21	44:P:31:ARG:HD3	2.01	0.42
54:W:19:ASP:OD1	54:W:20:VAL:N	2.53	0.42
60:c:146:U:H2'	60:c:147:A:H8	1.83	0.42
60:c:925:G:H2'	60:c:926:A:C8	2.55	0.42
60:c:1347:U:O2'	60:c:1516:A:H2'	2.19	0.42
60:c:1471:A:C8	60:c:1540:G:H1'	2.54	0.42
60:c:1483:A:N3	60:c:1607:G:O2'	2.45	0.42
64:g:164:VAL:O	64:g:168:ILE:HB	2.19	0.42
77:t:70:SER:HA	77:t:74:GLN:NE2	2.32	0.42
77:t:74:GLN:HA	77:t:77:GLU:CD	2.44	0.42
77:t:94:SER:OG	77:t:95:ARG:N	2.52	0.42
78:u:118:LYS:HE2	78:u:118:LYS:HB3	1.75	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:56:CYS:HB2	4:3:59:CYS:HB3	2.00	0.42
5:4:49:ARG:HG3	5:4:50:GLU:O	2.19	0.42
11:AA:47:C:OP1	43:OO:16:LYS:HE2	2.19	0.42
11:AA:195:U:H2'	11:AA:196:G:O4'	2.20	0.42
11:AA:1230:G:P	19:DD:110:ARG:HH12	2.42	0.42
11:AA:1591:G:OP1	50:S:37:LYS:NZ	2.50	0.42
11:AA:1747:G:H21	54:W:2:ALA:HB3	1.83	0.42
11:AA:2219:A:H2'	11:AA:2220:A2M:C8	2.46	0.42
11:AA:2526:C:H2'	11:AA:2527:G:H8	1.83	0.42
11:AA:2681:U:H4'	41:NN:66:ALA:HB3	2.00	0.42
15:C:178:ARG:HE	38:M:50:PRO:HB2	1.84	0.42
21:E:130:GLU:OE1	21:E:131:LYS:HG3	2.19	0.42
22:EE:117:GLU:HB2	22:EE:162:ALA:HB1	1.99	0.42
24:F:57:TYR:CD1	24:F:89:LEU:HD11	2.54	0.42
27:GG:7:THR:OG1	27:GG:147:GLU:OE2	2.32	0.42
39:MM:184:LYS:HG2	39:MM:189:GLU:HB2	2.01	0.42
44:P:20:LEU:HD11	44:P:32:ALA:HB2	2.02	0.42
50:S:58:ARG:HA	50:S:58:ARG:HD2	1.86	0.42
60:c:86:A:H2'	60:c:87:C:C6	2.54	0.42
60:c:388:G:O6	60:c:410:A:N6	2.52	0.42
60:c:1733:C:H2'	60:c:1734:U:C6	2.54	0.42
66:i:47:SER:HB3	66:i:50:GLU:OE2	2.18	0.42
66:i:76:ARG:HB3	66:i:79:ASN:ND2	2.34	0.42
78:u:62:THR:O	78:u:66:LEU:HD23	2.19	0.42
79:v:34:VAL:HG13	79:v:53:TRP:HE1	1.84	0.42
1:0:56:SER:HG	1:0:74:LEU:HB2	1.85	0.42
1:0:124:ARG:HH12	60:c:150:U:H5	1.66	0.42
5:4:53:ILE:HB	66:i:57:SER:HA	2.01	0.42
11:AA:315:C:OP2	52:U:28:TYR:OH	2.26	0.42
11:AA:422:A:C2	11:AA:2363:A:H4'	2.54	0.42
11:AA:849:C:H2'	11:AA:850:U:H6	1.84	0.42
11:AA:1226:G:H2'	11:AA:1227:C:C6	2.54	0.42
11:AA:1370:G:OP2	88:AA:3746:HOH:O	2.21	0.42
11:AA:2273:G:O2'	11:AA:2311:G:O6	2.25	0.42
11:AA:2397:A:H8	11:AA:2941:A:N1	2.18	0.42
11:AA:2461:A:O2'	11:AA:2462:A:H5''	2.19	0.42
11:AA:2561:A:H2'	11:AA:2562:A:C8	2.52	0.42
11:AA:2767:U:H2'	11:AA:2768:U:H6	1.84	0.42
11:AA:2918:G:C2	11:AA:2919:A:N7	2.88	0.42
11:AA:2985:C:H2'	11:AA:2986:U:H6	1.84	0.42
11:AA:3132:C:H2'	11:AA:3133:C:C6	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:DD:21:GLU:O	19:DD:90:ASN:ND2	2.50	0.42
19:DD:42:ARG:NH2	19:DD:53:MET:HE2	2.33	0.42
23:Ee:155:ILE:HG12	23:Ee:160:ILE:HB	2.01	0.42
28:H:40:LYS:HE2	28:H:59:MET:SD	2.59	0.42
29:HH:54:ARG:HB2	29:HH:61:ILE:HB	2.00	0.42
36:L:83:THR:HG22	50:S:93:PHE:CZ	2.54	0.42
43:OO:63:VAL:HG12	43:OO:66:ASN:ND2	2.35	0.42
43:OO:126:PHE:HB2	51:T:115:LYS:HB3	2.01	0.42
60:c:146:U:H2'	60:c:147:A:C8	2.54	0.42
60:c:560:U:H2'	60:c:561:G:H8	1.84	0.42
60:c:891:A:H2'	60:c:892:A:H8	1.84	0.42
60:c:1017:U:C2	60:c:1018:U:C5	3.07	0.42
60:c:1107:G:O2'	60:c:1108:G:H5'	2.20	0.42
60:c:1115:U:H2'	60:c:1116:A:H8	1.85	0.42
61:d:179:ARG:HG3	61:d:195:TRP:CE3	2.54	0.42
70:m:109:LEU:HB2	70:m:146:PHE:HB3	2.01	0.42
4:3:24:LEU:HD11	82:y:53:ILE:HD13	2.01	0.42
5:4:27:GLN:HG2	5:4:43:ASN:OD1	2.19	0.42
6:5:50:ILE:H	6:5:50:ILE:HD12	1.85	0.42
11:AA:277:G:H5'	48:QQ:91:GLU:OE1	2.20	0.42
11:AA:748:U:H2'	11:AA:749:C:C6	2.54	0.42
11:AA:1274:A:H2'	11:AA:1275:C:O4'	2.19	0.42
11:AA:1327:C:O2'	49:R:76:GLY:HA2	2.20	0.42
11:AA:2555:G:N2	36:L:135:ARG:O	2.40	0.42
11:AA:2714:G:H8	11:AA:2751:G:H2'	1.84	0.42
11:AA:2807:U:O2'	11:AA:2809:C:OP1	2.28	0.42
11:AA:2909:U:H2'	11:AA:2910:A:O4'	2.19	0.42
16:CC:155:A:P	35:KK:84:ARG:HH12	2.42	0.42
19:DD:191:TYR:HB2	19:DD:196:VAL:HG22	2.01	0.42
22:EE:114:SER:HB2	22:EE:169:ILE:HG12	2.01	0.42
32:J:135:ILE:O	32:J:139:ILE:HG12	2.19	0.42
37:LL:57:VAL:HG23	37:LL:68:LEU:HD13	2.01	0.42
37:LL:90:MET:HG2	37:LL:180:TYR:C	2.44	0.42
41:NN:45:PRO:HB3	41:NN:69:VAL:HB	2.00	0.42
43:OO:122:LYS:HD3	43:OO:145:PHE:CE1	2.55	0.42
48:QQ:45:PRO:O	48:QQ:49:ARG:HG3	2.19	0.42
60:c:244:A:H2'	60:c:245:U:C6	2.55	0.42
60:c:694:U:N3	68:k:98:ILE:HG13	2.34	0.42
60:c:1027:A:N7	88:c:2038:HOH:O	2.36	0.42
60:c:1208:A:H5'	60:c:1209:C:OP2	2.20	0.42
60:c:1539:G:H4'	78:u:40:ARG:NH2	2.34	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:c:1732:A:H2'	60:c:1733:C:H6	1.84	0.42
65:h:127:LYS:HA	65:h:127:LYS:HD2	1.65	0.42
65:h:208:VAL:HG21	65:h:225:VAL:HG11	2.02	0.42
73:p:45:LEU:HA	73:p:49:GLN:HE21	1.85	0.42
2:1:66:VAL:HA	2:1:71:ILE:O	2.19	0.42
4:3:8:LEU:HA	4:3:8:LEU:HD23	1.86	0.42
8:7:117:LYS:HA	8:7:117:LYS:HD2	1.61	0.42
11:AA:296:A:OP1	52:U:86:LYS:NZ	2.50	0.42
11:AA:429:U:H2'	11:AA:430:U:H6	1.84	0.42
11:AA:691:A:N1	16:CC:28:C:O2'	2.49	0.42
11:AA:1392:G:H1'	11:AA:1418:A:N6	2.34	0.42
11:AA:1929:G:OP2	11:AA:1930:A:O2'	2.34	0.42
11:AA:2443:A:H2'	11:AA:2444:C:C6	2.55	0.42
21:E:77:VAL:HG21	21:E:106:LEU:HD12	2.00	0.42
21:E:77:VAL:HG12	21:E:126:VAL:HG22	2.02	0.42
23:Ee:130:LYS:HD2	23:Ee:152:ILE:HG23	2.02	0.42
26:G:56:VAL:HG22	26:G:65:VAL:HG22	2.01	0.42
58:a:15:LYS:HA	58:a:18:ARG:HE	1.85	0.42
60:c:64:U:O2'	60:c:168:A:N3	2.47	0.42
60:c:213:A:H2'	60:c:214:G:O4'	2.19	0.42
60:c:329:G:H2'	60:c:330:G:H8	1.82	0.42
60:c:333:A:H8	60:c:333:A:O5'	2.01	0.42
65:h:45:ILE:HG13	65:h:61:VAL:HG21	2.01	0.42
70:m:163:PRO:HG3	70:m:168:ARG:HB3	2.01	0.42
77:t:84:TYR:HB3	77:t:85:VAL:H	1.47	0.42
81:x:77:GLY:O	81:x:79:LEU:N	2.52	0.42
3:2:58:VAL:HG13	74:q:111:ARG:HB3	2.00	0.42
4:3:21:LEU:HB3	60:c:864:U:O2	2.19	0.42
8:7:214:ALA:HB2	8:7:220:ILE:HG12	2.01	0.42
9:8:119:ARG:N	9:8:132:LEU:H	2.18	0.42
11:AA:275:U:H2'	11:AA:276:U:C6	2.54	0.42
11:AA:536:U:C2	11:AA:537:A:C8	3.07	0.42
11:AA:602:A:H2'	11:AA:603:A:C8	2.54	0.42
11:AA:811:U:H2'	11:AA:812:G:C8	2.54	0.42
11:AA:827:A:H5''	50:S:14:ASN:O	2.20	0.42
11:AA:887:G:H2'	11:AA:888:A:C8	2.55	0.42
11:AA:1024:G:H22	11:AA:1027:A:P	2.43	0.42
11:AA:1182:A:H2'	11:AA:1183:C:C6	2.54	0.42
11:AA:1196:C:H4'	11:AA:1197:A:OP1	2.19	0.42
11:AA:2355:G:OP1	12:B:141:SER:OG	2.25	0.42
11:AA:2707:C:H2'	11:AA:2708:C:H6	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:E:41:TYR:O	21:E:45:LEU:HD23	2.19	0.42
51:T:96:GLU:C	51:T:98:SER:H	2.27	0.42
58:a:10:THR:HA	58:a:20:HIS:CD2	2.51	0.42
60:c:207:U:H2'	60:c:208:U:H6	1.83	0.42
60:c:323:A:OP2	69:l:10:LYS:HA	2.20	0.42
60:c:397:A:H2'	60:c:398:G:C8	2.55	0.42
60:c:526:A:H2'	60:c:527:A:O4'	2.19	0.42
60:c:862:A:O5'	73:p:16:ILE:HD11	2.19	0.42
60:c:891:A:H2'	60:c:892:A:C8	2.55	0.42
60:c:1515:A:H1'	60:c:1518:C:N4	2.35	0.42
67:j:3:LEU:HD21	67:j:27:PHE:CE2	2.54	0.42
67:j:98:ARG:HD3	67:j:99:GLY:N	2.34	0.42
69:l:21:PHE:CD2	69:l:22:ARG:HB2	2.55	0.42
73:p:105:ASN:O	73:p:107:LYS:N	2.53	0.42
78:u:27:LYS:H	78:u:57:ARG:HH11	1.68	0.42
3:2:70:LYS:NZ	60:c:933:A:OP1	2.37	0.42
4:3:34:ASP:OD1	4:3:82:LYS:HE3	2.20	0.42
11:AA:1169:A:H4'	33:JJ:219:LYS:HD3	2.01	0.42
11:AA:1235:U:O2'	11:AA:1236:G:OP2	2.36	0.42
11:AA:1378:U:H2'	11:AA:1379:G:C8	2.51	0.42
12:B:125:GLN:HB3	12:B:141:SER:HB2	2.00	0.42
14:Bb:38:A:H2'	14:Bb:39:U:O4'	2.20	0.42
19:DD:25:LEU:HG	19:DD:191:TYR:CD2	2.55	0.42
25:FF:59:ASP:OD2	25:FF:357:LYS:NZ	2.53	0.42
34:K:126:LEU:HD12	34:K:126:LEU:O	2.20	0.42
37:LL:111:PHE:CD2	37:LL:125:ASN:HB3	2.55	0.42
37:LL:112:ILE:HD11	37:LL:134:ILE:HG21	2.02	0.42
41:NN:47:GLN:CD	41:NN:64:LYS:HD3	2.45	0.42
48:QQ:5:LYS:HG2	52:U:40:VAL:HG21	2.02	0.42
48:QQ:5:LYS:CE	52:U:37:THR:HG22	2.50	0.42
60:c:269:G:H2'	60:c:270:C:H6	1.84	0.42
60:c:426:G:N7	88:c:2036:HOH:O	2.36	0.42
60:c:534:A:C4	60:c:535:A:C8	3.08	0.42
60:c:818:C:H2'	60:c:819:G:H8	1.84	0.42
60:c:1160:A:H2'	60:c:1161:C:H6	1.84	0.42
60:c:1173:C:H2'	60:c:1174:C:H6	1.84	0.42
60:c:1211:A:H2'	60:c:1212:G:O4'	2.20	0.42
60:c:1291:G:OP1	63:f:97:ARG:NH1	2.53	0.42
60:c:1352:G:N2	60:c:1374:C:C2	2.87	0.42
60:c:1676:U:H5''	69:l:58:LEU:HD11	2.02	0.42
62:e:38:PHE:CZ	62:e:84:ILE:HG21	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
76:s:56:GLY:HA3	76:s:59:LYS:HG3	2.02	0.42
8:7:72:THR:HG22	8:7:81:LEU:HB2	2.01	0.42
11:AA:8:C:H2'	11:AA:9:U:H6	1.85	0.42
11:AA:39:A:H61	11:AA:42:C:H3'	1.85	0.42
11:AA:59:G:H4'	11:AA:60:A:H4'	2.00	0.42
11:AA:63:A:OP2	88:AA:3745:HOH:O	2.21	0.42
11:AA:84:U:O2'	11:AA:101:G:O6	2.26	0.42
11:AA:909:G:OP2	48:QQ:77:LYS:NZ	2.43	0.42
11:AA:1699:A:C6	11:AA:1747:G:C6	3.08	0.42
11:AA:2242:A:H5''	22:EE:244:GLY:HA3	2.01	0.42
11:AA:2389:C:H2'	11:AA:2390:A:C8	2.55	0.42
11:AA:2813:A:H2'	11:AA:2814:G:O4'	2.20	0.42
11:AA:3279:A:N6	49:R:54:ARG:HD3	2.35	0.42
13:BB:113:C:H2'	13:BB:114:U:O4'	2.19	0.42
15:C:125:ASP:OD2	27:GG:282:SER:OG	2.27	0.42
22:EE:59:ALA:HB2	22:EE:78:ALA:HB2	2.02	0.42
25:FF:122:TRP:CE2	25:FF:127:LYS:HE3	2.55	0.42
28:H:32:ARG:NH1	60:c:1733:C:O3'	2.53	0.42
36:L:104:PRO:O	36:L:108:GLU:OE1	2.38	0.42
38:M:76:ASP:HB3	38:M:116:GLY:HA3	2.01	0.42
41:NN:32:ARG:HB3	41:NN:120:ILE:O	2.20	0.42
50:S:102:LYS:HA	50:S:105:VAL:HG22	2.01	0.42
55:X:6:SER:OG	55:X:9:ILE:HG12	2.19	0.42
56:Y:127:LEU:HD23	56:Y:128:LYS:HG2	2.02	0.42
60:c:17:C:H4'	60:c:1109:G:C8	2.54	0.42
60:c:445:A:H2'	60:c:446:A:H8	1.85	0.42
60:c:1065:A:N3	62:e:146:GLN:NE2	2.62	0.42
60:c:1196:A:H4'	60:c:1197:C:H5''	2.01	0.42
60:c:1254:U:H2'	60:c:1255:G:C8	2.55	0.42
63:f:60:SER:OG	81:x:25:LYS:O	2.38	0.42
64:g:45:LYS:NZ	64:g:47:GLU:OE2	2.34	0.42
66:i:122:ASN:O	66:i:126:ASP:HB3	2.19	0.42
68:k:154:LEU:HD11	68:k:183:PHE:HD2	1.85	0.42
70:m:133:HIS:HD1	70:m:162:SER:HB2	1.84	0.42
1:0:40:LEU:O	1:0:44:LEU:HD23	2.20	0.42
8:7:116:ASP:CB	8:7:121:MET:HB2	2.48	0.42
10:A:105:PHE:CG	10:A:109:PRO:HG3	2.54	0.42
11:AA:130:A:H2'	11:AA:131:C:C6	2.54	0.42
11:AA:156:G:H8	11:AA:156:G:OP1	2.03	0.42
11:AA:230:U:H2'	11:AA:231:G:O4'	2.20	0.42
11:AA:308:A:H1'	11:AA:2222:A:N3	2.34	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:966:U:H2'	11:AA:967:A:H8	1.83	0.42
11:AA:1797:A:H2'	11:AA:1798:A:C8	2.55	0.42
11:AA:2619:OMG:H1'	11:AA:2619:OMG:HM23	1.76	0.42
16:CC:63:G:H2'	16:CC:63:G:N3	2.35	0.42
23:Ee:82:ILE:HG23	23:Ee:85:LEU:HD12	2.01	0.42
29:HH:148:ILE:CG2	29:HH:151:GLN:HB3	2.48	0.42
31:II:60:ASP:OD1	31:II:60:ASP:N	2.51	0.42
44:P:13:THR:OG1	44:P:72:ARG:NH1	2.40	0.42
49:R:45:LEU:HD11	49:R:74:THR:HG23	2.01	0.42
60:c:281:G:H2'	60:c:282:C:C6	2.55	0.42
60:c:384:G:H2'	60:c:385:A:C8	2.55	0.42
60:c:400:A:H8	69:l:24:LYS:O	2.03	0.42
60:c:592:A:OP1	70:m:39:LYS:HG3	2.18	0.42
60:c:959:U:H5'	73:p:15:ALA:O	2.20	0.42
60:c:989:U:H2'	60:c:990:C:C6	2.55	0.42
60:c:1044:U:H2'	60:c:1045:C:C6	2.55	0.42
60:c:1117:U:H2'	60:c:1118:G:H8	1.85	0.42
60:c:1360:A:C2	60:c:1361:U:H1'	2.55	0.42
60:c:1438:G:H2'	60:c:1439:C:C6	2.55	0.42
60:c:1586:A:H1'	60:c:1611:A:N6	2.35	0.42
62:e:106:THR:HG23	74:q:116:GLU:OE1	2.20	0.42
67:j:213:ALA:O	67:j:216:LEU:HG	2.20	0.42
68:k:21:ALA:HB2	68:k:43:PHE:HZ	1.85	0.42
68:k:121:VAL:O	68:k:125:ILE:HG13	2.20	0.42
71:n:68:LEU:HD21	71:n:76:LEU:HD12	2.01	0.42
77:t:107:SER:HA	77:t:110:VAL:HG22	2.01	0.42
3:2:45:VAL:HG13	3:2:45:VAL:O	2.19	0.41
11:AA:226:C:H2'	11:AA:227:G:O4'	2.20	0.41
11:AA:286:U:H2'	11:AA:287:G:C8	2.55	0.41
11:AA:1138:U:O3'	33:JJ:97:PRO:HD3	2.20	0.41
11:AA:1244:A:C5	11:AA:1271:A:H5''	2.55	0.41
11:AA:1339:C:H2'	11:AA:1340:G:C8	2.55	0.41
11:AA:1596:C:H2'	11:AA:1597:C:H6	1.81	0.41
11:AA:1863:G:N1	11:AA:1866:C:OP2	2.27	0.41
11:AA:2881:C:H2'	11:AA:2882:U:H6	1.82	0.41
11:AA:2985:C:H2'	11:AA:2986:U:C6	2.55	0.41
11:AA:3361:G:H2'	11:AA:3362:A:C2	2.54	0.41
16:CC:64:U:C2	16:CC:65:A:C8	3.08	0.41
16:CC:84:C:H5'	16:CC:85:G:C2	2.55	0.41
23:Ee:50:THR:HA	23:Ee:53:PHE:HD2	1.83	0.41
25:FF:236:LYS:HE2	25:FF:236:LYS:HB2	1.79	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:KK:178:ALA:HB2	35:KK:218:ILE:HD12	2.01	0.41
37:LL:113:GLU:OE2	37:LL:115:ARG:NH2	2.53	0.41
60:c:816:G:C2	60:c:817:A:C8	3.08	0.41
60:c:1215:C:H2'	60:c:1216:C:C6	2.55	0.41
60:c:1271:OMG:H1'	60:c:1271:OMG:HM23	1.68	0.41
69:l:141:ARG:H	69:l:141:ARG:HD3	1.84	0.41
70:m:136:VAL:HG13	70:m:152:SER:HB3	2.02	0.41
71:n:46:LEU:O	71:n:50:THR:CB	2.68	0.41
78:u:119:ILE:HG23	78:u:121:ALA:H	1.85	0.41
81:x:56:SER:O	81:x:60:ARG:HG3	2.20	0.41
8:7:234:LEU:H	8:7:234:LEU:HD23	1.84	0.41
11:AA:243:G:H2'	11:AA:244:G:H8	1.85	0.41
11:AA:280:U:O2'	11:AA:282:G:N7	2.51	0.41
11:AA:810:A:H2'	11:AA:811:U:C6	2.55	0.41
11:AA:1675:G:OP1	26:G:72:SER:OG	2.38	0.41
11:AA:1795:U:C4	59:b:51:ALA:HA	2.55	0.41
11:AA:2989:U:O2'	25:FF:232:ARG:NH1	2.52	0.41
11:AA:3107:U:H2'	11:AA:3108:G:C8	2.55	0.41
11:AA:3161:C:H2'	11:AA:3162:C:C6	2.55	0.41
15:C:39:ARG:NH2	27:GG:300:ARG:O	2.32	0.41
16:CC:126:A:OP2	16:CC:126:A:H8	2.02	0.41
19:DD:158:VAL:HG23	19:DD:159:VAL:HG22	2.02	0.41
27:GG:58:HIS:HA	27:GG:90:PHE:HE1	1.85	0.41
33:JJ:132:PRO:HA	33:JJ:229:PHE:CG	2.55	0.41
60:c:246:G:N2	72:o:38:ALA:O	2.51	0.41
70:m:157:ASP:OD1	70:m:158:PHE:N	2.50	0.41
71:n:10:LYS:HD2	71:n:37:THR:OG1	2.19	0.41
11:AA:11:A:H2'	11:AA:12:A:C8	2.55	0.41
11:AA:516:A:H2'	11:AA:517:G:C8	2.55	0.41
11:AA:788:C:C2	11:AA:789:A:C8	3.08	0.41
11:AA:911:C:N4	22:EE:3:ARG:HD3	2.34	0.41
11:AA:1120:A:H2'	11:AA:1121:U:H6	1.84	0.41
11:AA:1220:U:OP1	11:AA:1221:A:O2'	2.21	0.41
11:AA:1231:A:H1'	11:AA:1278:A:N6	2.34	0.41
11:AA:1232:C:H2'	11:AA:1233:G:H8	1.85	0.41
11:AA:1470:U:H2'	11:AA:1471:U:C6	2.55	0.41
11:AA:1914:G:O2'	18:D:82:LYS:O	2.35	0.41
11:AA:2225:U:H2'	11:AA:2226:U:H6	1.85	0.41
11:AA:2676:A:H4'	11:AA:2677:G:O4'	2.20	0.41
11:AA:2876:C:H2'	11:AA:2877:G:O4'	2.20	0.41
11:AA:3133:C:H2'	11:AA:3134:A:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:B:31:GLU:OE1	12:B:60:PHE:HA	2.20	0.41
14:Bb:37:YYG:H141	14:Bb:37:YYG:H101	2.01	0.41
23:Ee:99:LYS:NZ	23:Ee:101:SER:OG	2.33	0.41
48:QQ:36:ILE:HG12	48:QQ:64:VAL:HG23	2.02	0.41
55:X:30:ARG:N	55:X:33:ASN:HD22	2.17	0.41
60:c:58:U:O2	60:c:451:A:O2'	2.37	0.41
60:c:200:A:H2'	60:c:201:G:C8	2.56	0.41
60:c:1319:A:H2'	60:c:1320:U:O4'	2.21	0.41
60:c:1322:A:H2'	60:c:1323:C:C6	2.56	0.41
60:c:1389:C:H6	77:t:28:PHE:CZ	2.38	0.41
60:c:1395:G:H2'	60:c:1396:U:O4'	2.19	0.41
66:i:31:GLU:OE1	66:i:31:GLU:N	2.45	0.41
66:i:70:VAL:HG23	66:i:115:LYS:HZ1	1.85	0.41
70:m:101:VAL:HG12	70:m:105:LEU:CD2	2.50	0.41
5:4:61:ARG:HH12	66:i:225:ARG:HG2	1.83	0.41
6:5:16:LYS:HG2	60:c:1596:C:OP1	2.20	0.41
11:AA:288:C:H2'	11:AA:289:A:C8	2.55	0.41
11:AA:839:C:H4'	11:AA:1724:U:H2'	2.02	0.41
11:AA:855:U:H5''	18:D:95:TRP:CG	2.55	0.41
11:AA:1264:G:H21	11:AA:1265:U:H5	1.68	0.41
11:AA:1283:C:C4	11:AA:1284:C:C4	3.08	0.41
11:AA:1764:U:H3'	11:AA:1765:U:H4'	2.02	0.41
11:AA:2444:C:H3'	11:AA:2445:A:H8	1.86	0.41
11:AA:2999:U:H2'	11:AA:3000:A:C8	2.55	0.41
11:AA:3113:A:H2'	11:AA:3114:A:O4'	2.20	0.41
13:BB:60:G:H2'	13:BB:61:G:H8	1.85	0.41
14:Bb:57:G:C8	14:Bb:57:G:O5'	2.74	0.41
19:DD:119:ILE:HG12	19:DD:180:PRO:HB2	2.03	0.41
19:DD:141:VAL:HG12	19:DD:143:THR:HG23	2.01	0.41
31:II:54:TYR:CE1	31:II:63:LEU:HB3	2.56	0.41
33:JJ:84:VAL:HG23	33:JJ:117:VAL:HB	2.01	0.41
38:M:77:LYS:C	38:M:79:TRP:N	2.78	0.41
48:QQ:148:TYR:O	48:QQ:151:ILE:HG22	2.20	0.41
60:c:902:G:OP1	74:q:90:ARG:NH2	2.54	0.41
60:c:1173:C:H2'	60:c:1174:C:C6	2.55	0.41
60:c:1263:G:H2'	60:c:1264:G:O4'	2.20	0.41
60:c:1352:G:O2'	60:c:1353:U:O5'	2.33	0.41
64:g:90:ARG:HD2	64:g:90:ARG:HA	1.93	0.41
65:h:241:GLY:O	65:h:244:ILE:HG12	2.21	0.41
65:h:251:GLU:CD	65:h:255:ARG:HE	2.22	0.41
67:j:216:LEU:HA	67:j:219:ARG:HH12	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:m:93:LEU:HA	70:m:96:VAL:HB	2.02	0.41
71:n:8:ARG:O	71:n:12:HIS:ND1	2.44	0.41
72:o:23:PRO:O	72:o:26:LYS:NZ	2.42	0.41
79:v:135:ILE:HA	79:v:138:GLN:HG2	2.01	0.41
81:x:38:LYS:HD2	81:x:49:GLU:HB3	2.02	0.41
2:1:57:TYR:C	2:1:103:ARG:HH21	2.29	0.41
8:7:38:ARG:HH12	77:t:27:ASP:CG	2.28	0.41
8:7:46:LYS:O	8:7:46:LYS:HG3	2.20	0.41
8:7:85:TRP:CE2	8:7:111:MET:HE1	2.54	0.41
11:AA:282:G:OP1	87:AA:3603:SPD:H81	2.19	0.41
11:AA:359:U:O2'	53:V:16:HIS:ND1	2.41	0.41
11:AA:371:G:N1	11:AA:374:A:OP2	2.46	0.41
11:AA:642:U:OP1	38:M:22:ILE:HG23	2.20	0.41
11:AA:799:G:O2'	43:OO:18:TRP:NE1	2.48	0.41
11:AA:1069:C:H2'	11:AA:1070:U:H6	1.86	0.41
11:AA:1090:G:C2	11:AA:1091:A:C5	3.08	0.41
11:AA:1463:U:H2'	11:AA:1464:G:O4'	2.20	0.41
11:AA:1570:U:O2'	11:AA:1571:A:O5'	2.36	0.41
11:AA:1659:U:H2'	11:AA:1660:C:H6	1.86	0.41
11:AA:2493:U:H2'	11:AA:2494:A:C8	2.55	0.41
11:AA:2974:U:H2'	11:AA:2975:U:C6	2.55	0.41
16:CC:139:U:C2	16:CC:140:G:C8	3.08	0.41
28:H:57:MET:HE3	28:H:126:TRP:CH2	2.56	0.41
34:K:97:ILE:HD13	34:K:97:ILE:HA	1.92	0.41
37:LL:101:VAL:HG22	37:LL:114:VAL:HG22	2.03	0.41
38:M:7:LYS:HD3	38:M:7:LYS:HA	1.74	0.41
57:Z:11:ARG:NH2	60:c:1775:U:OP1	2.53	0.41
58:a:15:LYS:HA	58:a:18:ARG:NE	2.35	0.41
60:c:126:A:N1	60:c:263:C:O2'	2.53	0.41
60:c:424:C:O2'	60:c:426:G:OP1	2.28	0.41
60:c:895:G:N2	74:q:38:THR:HG21	2.34	0.41
60:c:1280:4AC:O2'	80:w:70:THR:HB	2.20	0.41
60:c:1491:U:O2'	60:c:1492:A:OP2	2.29	0.41
62:e:105:PHE:CD1	62:e:213:ARG:HA	2.55	0.41
64:g:161:GLY:O	64:g:164:VAL:HG12	2.20	0.41
68:k:4:PRO:HD2	68:k:39:ARG:HH12	1.86	0.41
69:l:3:ILE:O	69:l:30:GLY:N	2.28	0.41
70:m:126:ARG:O	70:m:130:THR:HG22	2.19	0.41
71:n:16:PHE:CE1	71:n:73:VAL:HG13	2.54	0.41
2:1:100:ILE:HG12	66:i:120:ILE:HD11	2.03	0.41
6:5:17:GLY:N	60:c:1205:C:O2	2.49	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:6:11:ALA:HA	83:z:70:LYS:HE2	2.03	0.41
7:6:36:LYS:HD3	7:6:36:LYS:HA	1.88	0.41
8:7:131:ILE:HG22	8:7:131:ILE:O	2.20	0.41
8:7:149:ASP:H	8:7:175:ASP:HB3	1.85	0.41
11:AA:531:G:H2'	11:AA:532:A:C8	2.56	0.41
11:AA:710:A:H2'	11:AA:711:A:C8	2.55	0.41
11:AA:712:G:H2'	11:AA:713:U:C6	2.55	0.41
11:AA:1211:U:H2'	11:AA:1212:A:H8	1.83	0.41
11:AA:1624:G:O2'	11:AA:1643:A:N1	2.44	0.41
11:AA:1631:C:H5''	11:AA:1632:A:H5''	2.01	0.41
11:AA:1655:G:OP1	50:S:40:THR:OG1	2.37	0.41
11:AA:2256:A2M:N3	11:AA:2256:A2M:HM'2	2.35	0.41
11:AA:2444:C:H2'	11:AA:2445:A:O4'	2.21	0.41
11:AA:2461:A:H2	11:AA:2463:G:C5	2.39	0.41
11:AA:2501:U:H3'	11:AA:2502:A:C8	2.54	0.41
16:CC:26:U:O2'	27:GG:51:ALA:O	2.38	0.41
37:LL:21:LYS:O	37:LL:22:SER:C	2.62	0.41
58:a:7:THR:HA	58:a:23:HIS:O	2.21	0.41
60:c:166:C:OP1	67:j:131:LYS:HD3	2.21	0.41
60:c:446:A:N6	60:c:461:G:H21	2.17	0.41
60:c:765:G:C6	70:m:149:ARG:HG3	2.54	0.41
60:c:950:C:H2'	60:c:951:A:C8	2.55	0.41
60:c:1308:G:H2'	60:c:1309:C:C6	2.55	0.41
60:c:1575:G7M:HO2'	60:c:1576:A:P	2.43	0.41
61:d:60:ALA:HB1	61:d:144:ILE:HD13	2.03	0.41
64:g:7:LYS:HA	64:g:7:LYS:HD3	1.87	0.41
69:l:108:PRO:O	69:l:111:GLN:HG3	2.20	0.41
74:q:81:VAL:HG11	74:q:102:LEU:HD13	2.02	0.41
76:s:62:ASN:OD1	76:s:62:ASN:N	2.52	0.41
3:2:40:ALA:O	3:2:68:TYR:HA	2.20	0.41
10:A:17:GLY:HA3	11:AA:1313:G:O3'	2.20	0.41
11:AA:585:A:H5''	49:R:70:LYS:HE2	2.02	0.41
11:AA:791:A:H2'	11:AA:792:G:H8	1.84	0.41
11:AA:971:G:H2'	11:AA:972:A:C8	2.56	0.41
11:AA:1010:G:N2	39:MM:193:ASP:OD2	2.54	0.41
11:AA:1241:U:H2'	11:AA:1243:G:N7	2.35	0.41
11:AA:2305:G:OP2	11:AA:2305:G:N2	2.36	0.41
11:AA:2618:G:O2'	11:AA:2865:U:OP1	2.32	0.41
11:AA:2723:U:H2'	11:AA:2724:OMU:C6	2.49	0.41
11:AA:3077:A:N6	11:AA:3080:G:C5	2.89	0.41
13:BB:3:U:H2'	13:BB:4:U:C6	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:KK:75:ILE:CD1	48:QQ:18:VAL:HG23	2.51	0.41
37:LL:41:ILE:HG12	37:LL:71:VAL:CG2	2.51	0.41
40:N:58:LYS:HD3	40:N:58:LYS:HA	1.91	0.41
50:S:72:VAL:O	50:S:77:GLY:HA2	2.20	0.41
52:U:56:ARG:O	52:U:60:LEU:HD23	2.20	0.41
60:c:886:U:H2'	60:c:887:A:C8	2.54	0.41
60:c:1064:G:H2'	60:c:1065:A:C8	2.55	0.41
60:c:1067:C:H2'	60:c:1068:C:H6	1.85	0.41
60:c:1207:C:H4'	60:c:1208:A:O4'	2.20	0.41
60:c:1542:G:N2	60:c:1568:C:H1'	2.36	0.41
60:c:1606:C:H2'	60:c:1607:G:C8	2.56	0.41
60:c:1683:C:H2'	60:c:1684:U:O4'	2.21	0.41
61:d:76:ILE:HB	61:d:123:VAL:HG12	2.02	0.41
62:e:127:VAL:HG13	62:e:176:VAL:HG11	2.03	0.41
65:h:158:ASP:HB3	65:h:173:ILE:O	2.21	0.41
68:k:5:GLN:NE2	68:k:9:LEU:HD23	2.35	0.41
68:k:17:GLU:OE1	68:k:17:GLU:N	2.53	0.41
69:l:84:HIS:CE1	69:l:86:SER:OG	2.73	0.41
76:s:82:ARG:HH21	76:s:116:LEU:HG	1.85	0.41
79:v:76:LEU:HD12	79:v:105:LEU:HD11	2.03	0.41
80:w:97:VAL:HG22	80:w:101:LYS:NZ	2.36	0.41
1:O:16:PRO:C	1:O:19:ALA:H	2.29	0.41
8:7:42:LEU:HB2	8:7:61:PHE:HB2	2.03	0.41
8:7:182:ASN:C	8:7:183:LEU:HD12	2.45	0.41
11:AA:210:U:C2	11:AA:230:U:H4'	2.56	0.41
11:AA:1222:G:C8	19:DD:57:THR:HG21	2.55	0.41
11:AA:1262:G:N2	11:AA:1265:U:O4'	2.54	0.41
11:AA:1357:G:H2'	11:AA:1358:C:C6	2.56	0.41
11:AA:1478:C:H2'	11:AA:1479:U:C6	2.56	0.41
11:AA:1618:G:O2'	16:CC:126:A:N1	2.53	0.41
11:AA:2708:C:H2'	11:AA:2709:C:H6	1.84	0.41
11:AA:2736:A:H2'	11:AA:2737:C:O4'	2.21	0.41
11:AA:2775:U:H2'	11:AA:2776:C:C6	2.56	0.41
11:AA:2894:C:H5'	37:LL:168:ARG:NH1	2.36	0.41
11:AA:3362:A:H2'	11:AA:3363:U:O4'	2.21	0.41
15:C:158:HIS:H	15:C:186:VAL:CG1	2.34	0.41
19:DD:28:VAL:HG12	19:DD:185:LEU:HD12	2.02	0.41
21:E:81:TYR:CE1	21:E:88:HIS:HB2	2.56	0.41
21:E:109:ASP:OD1	21:E:113:ARG:NE	2.52	0.41
37:LL:9:GLN:N	37:LL:9:GLN:OE1	2.53	0.41
49:R:31:LYS:HD2	49:R:31:LYS:HA	1.84	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:S:41:ARG:HA	50:S:56:THR:HG22	2.02	0.41
58:a:8:ARG:CG	58:a:25:VAL:HG21	2.47	0.41
60:c:5:U:H2'	60:c:6:G:H8	1.86	0.41
60:c:97:C:H1'	60:c:426:G:H5'	2.03	0.41
60:c:858:G:O3'	68:k:113:PRO:HB3	2.20	0.41
63:f:59:HIS:CE1	63:f:239:PRO:HD3	2.55	0.41
65:h:11:ARG:NH1	65:h:20:LEU:HB3	2.36	0.41
67:j:27:PHE:CE1	67:j:36:VAL:HG11	2.56	0.41
72:o:109:VAL:HG22	72:o:137:PHE:HB2	2.01	0.41
5:4:56:LEU:C	5:4:57:MET:HE2	2.45	0.41
6:5:13:ARG:HG3	6:5:14:TYR:CD2	2.54	0.41
7:6:55:ARG:NH2	60:c:558:U:OP1	2.51	0.41
8:7:42:LEU:CD1	8:7:68:VAL:HG11	2.50	0.41
8:7:84:SER:OG	8:7:86:ASP:OD2	2.33	0.41
8:7:172:ALA:HB3	8:7:202:LEU:HD13	2.02	0.41
8:7:263:PHE:HA	8:7:271:VAL:HG22	2.03	0.41
11:AA:107:A:OP1	43:OO:39:ARG:NH1	2.51	0.41
11:AA:149:U:P	48:QQ:49:ARG:HH12	2.43	0.41
11:AA:209:A:O2'	11:AA:211:A:OP2	2.32	0.41
11:AA:216:G:H4'	34:K:19:TYR:CE2	2.56	0.41
11:AA:412:G:H2'	11:AA:413:U:C6	2.56	0.41
11:AA:649:A2M:H2'	11:AA:650:OMC:C6	2.56	0.41
11:AA:768:C:OP1	43:OO:186:ARG:NH2	2.54	0.41
11:AA:1046:A:O2'	11:AA:1048:A:OP2	2.31	0.41
11:AA:1141:C:O2'	11:AA:1153:A:N3	2.49	0.41
11:AA:1263:A:H61	23:Ee:135:THR:HA	1.86	0.41
11:AA:1268:G:H21	11:AA:1273:A:H62	1.69	0.41
11:AA:1343:A:H2'	11:AA:1344:G:C8	2.55	0.41
11:AA:1562:C:O2'	11:AA:1563:C:O5'	2.37	0.41
11:AA:1593:A:OP1	50:S:60:ARG:NH1	2.51	0.41
11:AA:1616:U:H2'	11:AA:1617:G:H8	1.86	0.41
11:AA:2371:G:N2	88:AA:3734:HOH:O	2.53	0.41
11:AA:2444:C:H3'	11:AA:2445:A:C8	2.56	0.41
11:AA:2578:U:H2'	11:AA:2579:G:O4'	2.20	0.41
11:AA:2592:G:H4'	11:AA:2594:C:C2	2.56	0.41
11:AA:2726:C:O2'	11:AA:2727:A:H2'	2.21	0.41
11:AA:2770:G:H5''	58:a:79:THR:HG23	2.01	0.41
11:AA:3017:A:H2'	11:AA:3018:C:H6	1.85	0.41
11:AA:3049:A:H1'	25:FF:55:THR:HG23	2.02	0.41
11:AA:3069:G:C2	11:AA:3070:A:C8	3.09	0.41
11:AA:3306:U:OP1	25:FF:269:GLN:NE2	2.51	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:B:64:ASN:O	12:B:67:ILE:HG12	2.19	0.41
14:Bb:53:G:H2'	14:Bb:54:U:H6	1.85	0.41
16:CC:143:U:H2'	16:CC:144:G:O4'	2.21	0.41
18:D:160:GLU:OE1	18:D:163:ARG:NH1	2.54	0.41
18:D:170:ARG:HD3	18:D:170:ARG:HA	1.91	0.41
19:DD:56:ASN:ND2	19:DD:82:GLY:O	2.41	0.41
20:Dd:23:U:H2'	20:Dd:24:U:C6	2.56	0.41
22:EE:10:LYS:HA	22:EE:16:PHE:CD2	2.56	0.41
24:F:75:ILE:HG23	24:F:86:GLU:HG3	2.03	0.41
26:G:27:VAL:O	26:G:27:VAL:HG23	2.21	0.41
29:HH:59:ASP:OD1	29:HH:60:ILE:N	2.53	0.41
29:HH:129:TYR:CG	29:HH:177:GLU:HB3	2.56	0.41
31:II:40:LEU:HD13	31:II:84:VAL:HG21	2.03	0.41
35:KK:149:LYS:O	35:KK:176:PRO:HG2	2.20	0.41
44:P:97:LEU:O	44:P:97:LEU:HD23	2.21	0.41
48:QQ:163:GLY:O	48:QQ:172:ARG:NH1	2.48	0.41
50:S:74:ARG:HG2	50:S:75:ALA:N	2.34	0.41
53:V:66:TYR:O	53:V:70:VAL:HG23	2.20	0.41
59:b:59:CYS:C	59:b:61:LYS:H	2.29	0.41
60:c:94:U:H2'	60:c:95:G:O4'	2.20	0.41
60:c:432:G:H2'	60:c:433:C:C6	2.55	0.41
60:c:691:C:H2'	60:c:692:C:C6	2.56	0.41
60:c:1550:A:OP2	75:r:42:ARG:NH2	2.54	0.41
60:c:1656:U:H5''	60:c:1657:U:OP2	2.21	0.41
62:e:34:ALA:HB3	62:e:35:PRO:HD3	2.02	0.41
62:e:36:SER:OG	62:e:231:LEU:HB3	2.21	0.41
64:g:167:PHE:HB3	64:g:190:ARG:CZ	2.50	0.41
64:g:175:VAL:HG11	64:g:177:MET:HE2	2.03	0.41
65:h:107:GLY:HA2	65:h:189:LEU:HG	2.03	0.41
65:h:175:PHE:CE1	65:h:198:LYS:HD2	2.56	0.41
66:i:44:ASN:HD21	66:i:115:LYS:NZ	2.19	0.41
69:l:106:ALA:HB2	69:l:165:LEU:HG	2.02	0.41
73:p:100:LYS:HG2	73:p:104:ARG:HH12	1.85	0.41
76:s:58:ASP:O	76:s:60:PHE:N	2.54	0.41
77:t:21:TYR:O	77:t:23:LYS:N	2.48	0.41
77:t:58:MET:HA	77:t:61:ILE:HG22	2.03	0.41
77:t:71:PHE:CE1	77:t:74:GLN:HB3	2.55	0.41
79:v:6:VAL:HB	79:v:66:TYR:CE1	2.56	0.41
3:2:30:ILE:HD13	3:2:74:CYS:HA	2.02	0.41
6:5:54:LYS:HE2	6:5:54:LYS:HB3	1.83	0.41
8:7:83:ALA:HB1	8:7:110:VAL:HG12	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:7:147:HIS:HE1	8:7:173:GLY:H	1.69	0.41
11:AA:874:U:OP2	11:AA:1907:C:O2'	2.23	0.41
11:AA:1215:U:H2'	11:AA:1216:C:C6	2.56	0.41
11:AA:1720:U:OP2	18:D:120:TYR:OH	2.26	0.41
11:AA:2221:G:N2	11:AA:2224:A:OP2	2.32	0.41
11:AA:3304:U:P	25:FF:332:ARG:HH22	2.44	0.41
19:DD:67:LEU:CD1	19:DD:74:GLU:HB3	2.50	0.41
35:KK:139:VAL:HA	35:KK:142:LEU:HD12	2.03	0.41
35:KK:178:ALA:HB2	35:KK:218:ILE:HG23	2.03	0.41
44:P:86:LYS:HA	44:P:86:LYS:HE2	2.03	0.41
52:U:35:ASN:HA	52:U:38:LYS:HB2	2.02	0.41
52:U:57:LEU:HD23	52:U:57:LEU:HA	1.92	0.41
60:c:406:U:H2'	60:c:407:A:C8	2.54	0.41
60:c:927:C:H2'	60:c:928:U:C6	2.55	0.41
60:c:1010:C:H2'	60:c:1011:G:O4'	2.20	0.41
60:c:1642:G:H2'	60:c:1643:U:H6	1.86	0.41
61:d:126:PRO:HB2	61:d:152:PRO:HG2	2.03	0.41
66:i:72:HIS:O	66:i:72:HIS:ND1	2.53	0.41
68:k:148:LYS:HZ2	68:k:179:LYS:HE2	1.86	0.41
70:m:3:ARG:NH1	70:m:6:ARG:HG3	2.28	0.41
76:s:41:PRO:HG2	76:s:44:LEU:HB2	2.03	0.41
79:v:100:ILE:HD12	79:v:100:ILE:H	1.86	0.41
80:w:23:ARG:HG3	80:w:92:ASP:HB3	2.03	0.41
1:0:12:VAL:HG12	1:0:23:PHE:HB3	2.02	0.40
1:0:31:ASN:OD1	1:0:31:ASN:O	2.39	0.40
8:7:16:HIS:CD2	8:7:43:ILE:HD13	2.57	0.40
11:AA:283:G:OP2	11:AA:285:A:O2'	2.27	0.40
11:AA:561:C:H2'	11:AA:562:C:C6	2.55	0.40
11:AA:624:G:P	49:R:86:ARG:HH12	2.44	0.40
11:AA:955:U:H2'	11:AA:956:U:C6	2.56	0.40
11:AA:1090:G:H2'	11:AA:1091:A:C8	2.56	0.40
11:AA:1228:C:C2	11:AA:1229:G:C8	3.10	0.40
11:AA:1486:G:N2	50:S:6:THR:HG22	2.36	0.40
11:AA:2669:G:H2'	11:AA:2670:G:H8	1.86	0.40
11:AA:2760:C:N3	58:a:63:LYS:HE3	2.36	0.40
11:AA:2761:G:O2'	11:AA:2795:U:O4	2.36	0.40
11:AA:2947:G:H2'	11:AA:2948:OMC:H6	1.86	0.40
11:AA:3159:C:H2'	11:AA:3160:U:C6	2.56	0.40
11:AA:3198:U:O4	37:LL:26:LYS:HB2	2.21	0.40
11:AA:3333:G:N2	11:AA:3369:G:O2'	2.54	0.40
12:B:5:GLY:N	12:B:147:GLU:OE1	2.48	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:B:52:LEU:HD23	12:B:52:LEU:HA	1.89	0.40
24:F:57:TYR:CE2	24:F:89:LEU:HD21	2.55	0.40
24:F:79:MET:HE3	24:F:79:MET:HB3	1.88	0.40
27:GG:156:LEU:HD12	27:GG:159:ILE:HD12	2.04	0.40
33:JJ:124:LEU:HD23	33:JJ:124:LEU:HA	1.95	0.40
36:L:76:ASN:OD1	36:L:77:TYR:N	2.54	0.40
36:L:83:THR:HG22	50:S:93:PHE:CE1	2.56	0.40
44:P:112:ASP:OD1	44:P:112:ASP:N	2.53	0.40
54:W:16:ARG:CZ	54:W:70:PRO:HG3	2.51	0.40
60:c:1038:U:C2	60:c:1094:G:N2	2.89	0.40
60:c:1147:A:H2'	60:c:1148:C:C6	2.56	0.40
62:e:176:VAL:HG12	62:e:177:GLN:N	2.36	0.40
67:j:48:TYR:OH	67:j:119:GLN:O	2.39	0.40
78:u:127:HIS:CD2	78:u:133:VAL:HG11	2.55	0.40
79:v:7:ARG:NH2	79:v:67:MET:O	2.53	0.40
79:v:30:VAL:HA	79:v:31:PRO:HD3	1.92	0.40
80:w:24:ILE:HG12	80:w:91:ILE:O	2.21	0.40
81:x:39:VAL:HG13	81:x:43:GLY:HA2	2.02	0.40
1:O:132:ARG:NH2	60:c:154:G:OP2	2.55	0.40
3:2:2:PRO:HB3	60:c:1142:A:H5''	2.03	0.40
11:AA:359:U:H4'	11:AA:817:A2M:H61	1.86	0.40
11:AA:377:A:H1'	11:AA:392:G:N2	2.35	0.40
11:AA:1060:U:H2'	11:AA:1061:A:C8	2.55	0.40
11:AA:1658:G:H2'	11:AA:1659:U:C6	2.56	0.40
11:AA:2681:U:H2'	11:AA:2682:C:H6	1.87	0.40
11:AA:2710:C:H2'	11:AA:2711:C:C6	2.57	0.40
13:BB:23:A:H1'	13:BB:121:U:H2'	2.02	0.40
15:C:155:MET:HE2	15:C:163:PRO:HB3	2.03	0.40
19:DD:25:LEU:HG	19:DD:191:TYR:HD2	1.86	0.40
21:E:66:GLU:OE2	21:E:73:LYS:HE2	2.21	0.40
23:Ee:131:GLU:O	23:Ee:135:THR:HG23	2.21	0.40
25:FF:152:LYS:HE3	25:FF:192:VAL:HB	2.02	0.40
25:FF:304:THR:HG22	25:FF:305:ILE:N	2.37	0.40
31:II:157:GLN:OE1	31:II:157:GLN:N	2.51	0.40
32:J:97:LYS:HE2	32:J:97:LYS:HB2	1.89	0.40
54:W:65:LEU:O	54:W:69:LEU:HD12	2.21	0.40
59:b:13:LYS:HE2	59:b:14:TYR:CZ	2.57	0.40
60:c:52:U:H2'	60:c:53:G:C8	2.55	0.40
60:c:283:U:H5''	67:j:188:ARG:HH21	1.87	0.40
60:c:1332:C:O2'	64:g:162:GLN:HB3	2.20	0.40
60:c:1335:U:HO2'	60:c:1336:A:P	2.41	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:c:1623:C:C2	60:c:1624:C:C5	3.09	0.40
60:c:1751:C:H2'	60:c:1752:U:C6	2.56	0.40
61:d:122:ILE:HA	61:d:144:ILE:O	2.20	0.40
64:g:72:LEU:HD22	71:n:65:TYR:HD2	1.85	0.40
65:h:175:PHE:HZ	65:h:208:VAL:HG11	1.85	0.40
67:j:72:ARG:HG2	67:j:98:ARG:NH2	2.36	0.40
67:j:114:VAL:O	67:j:115:LYS:HD2	2.21	0.40
68:k:49:ILE:HG21	68:k:172:VAL:HA	2.02	0.40
71:n:3:MET:SD	71:n:8:ARG:NE	2.71	0.40
73:p:7:ALA:O	73:p:9:LYS:NZ	2.49	0.40
73:p:60:VAL:O	73:p:60:VAL:HG13	2.22	0.40
8:7:203:THR:HG22	8:7:243:LEU:CD1	2.49	0.40
8:7:245:PHE:CE1	8:7:252:LEU:HD12	2.51	0.40
11:AA:59:G:H2'	16:CC:33:A:H2'	2.04	0.40
11:AA:673:U:H2'	11:AA:674:G:H8	1.87	0.40
11:AA:914:A:C2	22:EE:204:MET:HG2	2.57	0.40
11:AA:1020:G:H2'	11:AA:1021:G:C8	2.55	0.40
11:AA:1144:U:OP1	11:AA:1367:G:O2'	2.32	0.40
11:AA:1228:C:H2'	11:AA:1229:G:H8	1.85	0.40
11:AA:1624:G:C4	11:AA:1625:A:C8	3.08	0.40
11:AA:2543:U:H2'	11:AA:2544:U:C6	2.56	0.40
11:AA:2909:U:O2'	11:AA:3105:U:O2	2.24	0.40
11:AA:3127:A:H2'	11:AA:3128:G:O4'	2.21	0.40
13:BB:72:A:H2'	13:BB:74:C:H5	1.87	0.40
14:Bb:6:U:H2'	14:Bb:7:U:C6	2.57	0.40
17:Cc:72:C:H2'	17:Cc:73:A:C8	2.54	0.40
22:EE:138:GLY:HA3	22:EE:147:ARG:NH2	2.36	0.40
23:Ee:41:LYS:HE2	23:Ee:69:ALA:HB3	2.03	0.40
25:FF:20:LYS:HE3	25:FF:20:LYS:HB2	1.90	0.40
27:GG:142:VAL:HG23	27:GG:142:VAL:O	2.21	0.40
60:c:137:U:H2'	60:c:138:A:H8	1.86	0.40
60:c:297:U:H2'	60:c:298:C:C6	2.57	0.40
60:c:575:C:H4'	60:c:582:U:C4	2.57	0.40
60:c:813:U:H5'	73:p:76:LYS:NZ	2.36	0.40
60:c:1351:G:C6	60:c:1352:G:N1	2.89	0.40
60:c:1456:C:OP1	60:c:1457:C:O2'	2.30	0.40
61:d:98:ILE:HG21	61:d:102:PHE:HD1	1.86	0.40
61:d:203:PHE:HZ	77:t:91:LEU:HD11	1.86	0.40
62:e:160:HIS:CB	62:e:205:PHE:HE2	2.34	0.40
63:f:106:ASP:C	63:f:108:ASN:H	2.29	0.40
63:f:218:ILE:HD13	63:f:218:ILE:HA	1.97	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
75:r:119:PHE:CE1	78:u:119:ILE:HG12	2.54	0.40
75:r:123:TYR:OH	78:u:126:ARG:HD3	2.21	0.40
79:v:21:PHE:O	79:v:25:GLN:HG2	2.20	0.40
10:A:65:ASN:HB3	10:A:68:ARG:HD2	2.02	0.40
11:AA:246:U:O2	11:AA:247:C:N4	2.54	0.40
11:AA:1024:G:C6	11:AA:1026:A:H5''	2.57	0.40
11:AA:1031:C:H2'	11:AA:1032:C:C6	2.57	0.40
11:AA:1738:C:H2'	11:AA:1739:U:C6	2.56	0.40
11:AA:2232:A:H2'	11:AA:2233:A:C8	2.57	0.40
11:AA:2466:G:H2'	11:AA:2467:G:O4'	2.21	0.40
11:AA:2483:G:H8	11:AA:2485:A:OP2	2.05	0.40
11:AA:2689:A:N3	11:AA:2689:A:H2'	2.36	0.40
11:AA:3028:G:H2'	11:AA:3029:A:C8	2.56	0.40
11:AA:3113:A:O2'	37:LL:69:ARG:HB3	2.22	0.40
13:BB:55:A:O2'	41:NN:152:HIS:ND1	2.50	0.40
14:Bb:37:YYG:H2'	14:Bb:38:A:O4'	2.21	0.40
16:CC:9:A:H2'	16:CC:10:A:H8	1.82	0.40
25:FF:284:ARG:HB3	25:FF:323:MET:HB3	2.04	0.40
27:GG:125:ALA:O	27:GG:129:THR:HG23	2.22	0.40
27:GG:180:LYS:HE2	27:GG:180:LYS:HB3	1.92	0.40
34:K:83:ASP:O	34:K:84:LYS:HG2	2.21	0.40
35:KK:156:ASP:N	35:KK:156:ASP:OD1	2.53	0.40
48:QQ:99:ARG:O	48:QQ:103:GLU:HG3	2.21	0.40
54:W:8:ILE:HD12	54:W:65:LEU:HD11	2.04	0.40
60:c:404:G:H2'	60:c:405:C:H6	1.86	0.40
60:c:578:OMU:H2'	60:c:578:OMU:H6	1.83	0.40
60:c:926:A:H2'	60:c:927:C:O4'	2.21	0.40
60:c:998:A:H2'	60:c:999:U:C6	2.57	0.40
60:c:1058:U:O2'	60:c:1060:U:OP2	2.34	0.40
62:e:197:ILE:HG22	62:e:210:ILE:HG12	2.03	0.40
65:h:55:ALA:HB1	65:h:60:GLU:HB2	2.03	0.40
68:k:63:PRO:C	68:k:65:PRO:HD3	2.46	0.40
71:n:50:THR:HA	71:n:53:GLY:O	2.21	0.40
72:o:26:LYS:HB3	72:o:30:ARG:NH2	2.35	0.40
73:p:104:ARG:NH1	73:p:104:ARG:HG3	2.36	0.40
78:u:35:ILE:HB	78:u:38:VAL:HG12	2.04	0.40
1:0:83:LYS:HD3	1:0:91:LEU:HD13	2.02	0.40
1:0:109:LYS:O	1:0:112:LYS:HG3	2.21	0.40
8:7:217:ASP:N	8:7:217:ASP:OD1	2.53	0.40
9:8:138:ARG:NH2	60:c:1235:C:N3	2.67	0.40
11:AA:123:A:C6	11:AA:150:A:C5	3.10	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:591:G:N3	31:II:19:LYS:HG2	2.36	0.40
11:AA:1237:G:C5	11:AA:1238:C:C5	3.10	0.40
11:AA:1677:G:H5'	26:G:97:SER:CB	2.51	0.40
11:AA:1681:U:H2'	11:AA:1682:U:O4'	2.22	0.40
11:AA:1768:U:H2'	11:AA:1769:G:O4'	2.22	0.40
11:AA:2437:G:C5	11:AA:2511:A:C6	3.09	0.40
11:AA:2632:G:O6	11:AA:2647:A:N6	2.55	0.40
11:AA:3043:C:H5'	25:FF:9:PRO:HG2	2.03	0.40
11:AA:3232:G:H2'	11:AA:3233:C:C6	2.56	0.40
11:AA:3257:C:H2'	11:AA:3258:U:O4'	2.21	0.40
16:CC:67:U:H2'	16:CC:68:G:H8	1.86	0.40
43:OO:51:LEU:HD23	43:OO:51:LEU:HA	1.89	0.40
53:V:24:ARG:HG2	53:V:24:ARG:O	2.22	0.40
60:c:16:G:O6	63:f:203:LYS:NZ	2.46	0.40
60:c:640:U:H2'	60:c:641:G:O4'	2.21	0.40
60:c:756:A:H1'	65:h:12:LEU:O	2.22	0.40
60:c:1144:U:H2'	60:c:1145:U:C6	2.56	0.40
61:d:69:ASN:HB3	61:d:71:GLU:CD	2.47	0.40
63:f:238:SER:O	63:f:242:ILE:HG12	2.21	0.40
65:h:246:LEU:HB3	65:h:250:GLU:HG3	2.03	0.40
68:k:28:GLU:OE1	68:k:38:LEU:HD22	2.21	0.40
69:l:156:VAL:HA	69:l:159:GLN:HE22	1.86	0.40
77:t:15:ALA:O	77:t:19:ARG:HG2	2.21	0.40
80:w:27:THR:HG22	80:w:88:LYS:HG3	2.02	0.40
80:w:35:GLU:CD	80:w:57:ARG:HH12	2.29	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	0	132/135 (98%)	129 (98%)	3 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	1	68/108 (63%)	60 (88%)	8 (12%)	0	100	100
3	2	95/119 (80%)	87 (92%)	8 (8%)	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	51/56 (91%)	51 (100%)	0	0	100	100
7	6	51/63 (81%)	49 (96%)	2 (4%)	0	100	100
8	7	316/319 (99%)	293 (93%)	23 (7%)	0	100	100
9	8	32/152 (21%)	26 (81%)	6 (19%)	0	100	100
10	A	195/199 (98%)	193 (99%)	2 (1%)	0	100	100
12	B	152/184 (83%)	150 (99%)	2 (1%)	0	100	100
15	C	183/186 (98%)	181 (99%)	2 (1%)	0	100	100
18	D	174/189 (92%)	170 (98%)	4 (2%)	0	100	100
19	DD	195/312 (62%)	190 (97%)	5 (3%)	0	100	100
21	E	170/172 (99%)	163 (96%)	7 (4%)	0	100	100
22	EE	250/254 (98%)	248 (99%)	2 (1%)	0	100	100
23	Ee	156/165 (94%)	148 (95%)	8 (5%)	0	100	100
24	F	157/160 (98%)	154 (98%)	3 (2%)	0	100	100
25	FF	384/387 (99%)	373 (97%)	11 (3%)	0	100	100
26	G	95/121 (78%)	95 (100%)	0	0	100	100
27	GG	359/362 (99%)	348 (97%)	11 (3%)	0	100	100
28	H	127/129 (98%)	126 (99%)	1 (1%)	0	100	100
29	HH	294/297 (99%)	289 (98%)	5 (2%)	0	100	100
30	I	61/155 (39%)	61 (100%)	0	0	100	100
31	II	151/176 (86%)	147 (97%)	4 (3%)	0	100	100
32	J	118/142 (83%)	115 (98%)	3 (2%)	0	100	100
33	JJ	220/244 (90%)	217 (99%)	3 (1%)	0	100	100
34	K	124/127 (98%)	124 (100%)	0	0	100	100
35	KK	231/256 (90%)	228 (99%)	3 (1%)	0	100	100
36	L	133/136 (98%)	129 (97%)	4 (3%)	0	100	100
37	LL	189/191 (99%)	183 (97%)	6 (3%)	0	100	100
38	M	146/149 (98%)	140 (96%)	5 (3%)	1 (1%)	19	40

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
39	MM	213/221 (96%)	208 (98%)	5 (2%)	0	100	100
40	N	56/59 (95%)	53 (95%)	3 (5%)	0	100	100
41	NN	167/174 (96%)	160 (96%)	7 (4%)	0	100	100
42	O	95/105 (90%)	95 (100%)	0	0	100	100
43	OO	191/199 (96%)	177 (93%)	13 (7%)	1 (0%)	25	47
44	P	107/113 (95%)	102 (95%)	5 (5%)	0	100	100
45	PP	134/138 (97%)	132 (98%)	2 (2%)	0	100	100
47	Q	125/130 (96%)	125 (100%)	0	0	100	100
48	QQ	201/204 (98%)	194 (96%)	7 (4%)	0	100	100
49	R	104/107 (97%)	104 (100%)	0	0	100	100
50	S	107/121 (88%)	107 (100%)	0	0	100	100
51	T	117/120 (98%)	113 (97%)	4 (3%)	0	100	100
52	U	97/100 (97%)	90 (93%)	7 (7%)	0	100	100
53	V	82/88 (93%)	80 (98%)	2 (2%)	0	100	100
54	W	75/78 (96%)	71 (95%)	4 (5%)	0	100	100
55	X	48/51 (94%)	44 (92%)	4 (8%)	0	100	100
56	Y	50/128 (39%)	50 (100%)	0	0	100	100
57	Z	23/25 (92%)	23 (100%)	0	0	100	100
58	a	100/106 (94%)	97 (97%)	3 (3%)	0	100	100
59	b	89/92 (97%)	88 (99%)	1 (1%)	0	100	100
61	d	204/252 (81%)	190 (93%)	14 (7%)	0	100	100
62	e	210/255 (82%)	199 (95%)	11 (5%)	0	100	100
63	f	215/254 (85%)	206 (96%)	9 (4%)	0	100	100
64	g	204/240 (85%)	196 (96%)	8 (4%)	0	100	100
65	h	256/261 (98%)	248 (97%)	8 (3%)	0	100	100
66	i	195/225 (87%)	187 (96%)	8 (4%)	0	100	100
67	j	217/236 (92%)	208 (96%)	9 (4%)	0	100	100
68	k	182/190 (96%)	173 (95%)	9 (5%)	0	100	100
69	l	180/200 (90%)	171 (95%)	9 (5%)	0	100	100
70	m	183/197 (93%)	178 (97%)	5 (3%)	0	100	100
71	n	89/105 (85%)	83 (93%)	4 (4%)	2 (2%)	5	13

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
72	o	140/156 (90%)	132 (94%)	8 (6%)	0	100	100
73	p	148/151 (98%)	144 (97%)	4 (3%)	0	100	100
74	q	125/137 (91%)	119 (95%)	6 (5%)	0	100	100
75	r	100/142 (70%)	98 (98%)	2 (2%)	0	100	100
76	s	135/143 (94%)	126 (93%)	9 (7%)	0	100	100
77	t	119/136 (88%)	102 (86%)	14 (12%)	3 (2%)	4	11
78	u	143/146 (98%)	132 (92%)	11 (8%)	0	100	100
79	v	141/144 (98%)	137 (97%)	4 (3%)	0	100	100
80	w	98/121 (81%)	97 (99%)	1 (1%)	0	100	100
81	x	85/87 (98%)	80 (94%)	5 (6%)	0	100	100
82	y	127/130 (98%)	125 (98%)	2 (2%)	0	100	100
83	z	142/145 (98%)	129 (91%)	13 (9%)	0	100	100
All	All	10968/12206 (90%)	10575 (96%)	386 (4%)	7 (0%)	50	72

All (7) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
77	t	88	VAL
43	OO	63	VAL
71	n	48	SER
71	n	49	LEU
77	t	72	LYS
77	t	86	PRO
38	M	78	LEU

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	0	112/113 (99%)	112 (100%)	0	100	100
2	1	61/89 (68%)	61 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	2	83/101 (82%)	83 (100%)	0	100	100
4	3	70/71 (99%)	70 (100%)	0	100	100
5	4	56/60 (93%)	56 (100%)	0	100	100
6	5	47/49 (96%)	47 (100%)	0	100	100
7	6	46/54 (85%)	46 (100%)	0	100	100
8	7	259/262 (99%)	259 (100%)	0	100	100
9	8	30/135 (22%)	30 (100%)	0	100	100
10	A	160/162 (99%)	160 (100%)	0	100	100
12	B	125/146 (86%)	125 (100%)	0	100	100
15	C	150/151 (99%)	150 (100%)	0	100	100
18	D	143/154 (93%)	143 (100%)	0	100	100
19	DD	167/254 (66%)	167 (100%)	0	100	100
21	E	156/156 (100%)	156 (100%)	0	100	100
22	EE	193/196 (98%)	193 (100%)	0	100	100
23	Ee	129/136 (95%)	129 (100%)	0	100	100
24	F	136/137 (99%)	136 (100%)	0	100	100
25	FF	320/323 (99%)	319 (100%)	1 (0%)	91	97
26	G	84/107 (78%)	84 (100%)	0	100	100
27	GG	288/289 (100%)	287 (100%)	1 (0%)	91	97
28	H	101/101 (100%)	101 (100%)	0	100	100
29	HH	244/245 (100%)	244 (100%)	0	100	100
30	I	55/129 (43%)	55 (100%)	0	100	100
31	II	133/153 (87%)	133 (100%)	0	100	100
32	J	104/118 (88%)	104 (100%)	0	100	100
33	JJ	186/205 (91%)	186 (100%)	0	100	100
34	K	109/110 (99%)	109 (100%)	0	100	100
35	KK	187/208 (90%)	187 (100%)	0	100	100
36	L	115/116 (99%)	115 (100%)	0	100	100
37	LL	171/171 (100%)	170 (99%)	1 (1%)	84	93
38	M	118/119 (99%)	118 (100%)	0	100	100
39	MM	184/187 (98%)	184 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
40	N	46/47 (98%)	46 (100%)	0	100	100
41	NN	147/150 (98%)	147 (100%)	0	100	100
42	O	81/88 (92%)	81 (100%)	0	100	100
43	OO	154/159 (97%)	154 (100%)	0	100	100
44	P	94/97 (97%)	94 (100%)	0	100	100
45	PP	107/109 (98%)	107 (100%)	0	100	100
46	Pp	2/2 (100%)	2 (100%)	0	100	100
47	Q	109/111 (98%)	109 (100%)	0	100	100
48	QQ	175/176 (99%)	175 (100%)	0	100	100
49	R	90/91 (99%)	90 (100%)	0	100	100
50	S	94/103 (91%)	94 (100%)	0	100	100
51	T	104/105 (99%)	104 (100%)	0	100	100
52	U	81/82 (99%)	81 (100%)	0	100	100
53	V	69/71 (97%)	69 (100%)	0	100	100
54	W	68/69 (99%)	68 (100%)	0	100	100
55	X	45/46 (98%)	45 (100%)	0	100	100
56	Y	47/116 (40%)	47 (100%)	0	100	100
57	Z	23/23 (100%)	23 (100%)	0	100	100
58	a	87/91 (96%)	87 (100%)	0	100	100
59	b	71/72 (99%)	71 (100%)	0	100	100
61	d	165/210 (79%)	165 (100%)	0	100	100
62	e	189/224 (84%)	189 (100%)	0	100	100
63	f	176/205 (86%)	176 (100%)	0	100	100
64	g	167/195 (86%)	167 (100%)	0	100	100
65	h	220/222 (99%)	220 (100%)	0	100	100
66	i	172/191 (90%)	172 (100%)	0	100	100
67	j	188/201 (94%)	188 (100%)	0	100	100
68	k	165/170 (97%)	165 (100%)	0	100	100
69	l	146/161 (91%)	146 (100%)	0	100	100
70	m	158/166 (95%)	158 (100%)	0	100	100
71	n	84/98 (86%)	84 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
72	o	127/137 (93%)	127 (100%)	0	100	100
73	p	127/128 (99%)	127 (100%)	0	100	100
74	q	81/105 (77%)	81 (100%)	0	100	100
75	r	89/118 (75%)	89 (100%)	0	100	100
76	s	114/119 (96%)	114 (100%)	0	100	100
77	t	105/124 (85%)	93 (89%)	12 (11%)	4	11
78	u	128/129 (99%)	128 (100%)	0	100	100
79	v	115/116 (99%)	115 (100%)	0	100	100
80	w	94/114 (82%)	94 (100%)	0	100	100
81	x	74/74 (100%)	73 (99%)	1 (1%)	62	83
82	y	110/111 (99%)	110 (100%)	0	100	100
83	z	119/120 (99%)	119 (100%)	0	100	100
All	All	9329/10253 (91%)	9313 (100%)	16 (0%)	91	98

All (16) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
25	FF	104	THR
27	GG	12	THR
37	LL	50	ASN
77	t	72	LYS
77	t	73	LEU
77	t	74	GLN
77	t	77	GLU
77	t	78	ARG
77	t	79	GLU
77	t	81	LYS
77	t	82	ASP
77	t	84	TYR
77	t	85	VAL
77	t	88	VAL
77	t	91	LEU
81	x	21	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (92) such sidechains are listed below:

Mol	Chain	Res	Type
1	0	22	GLN
1	0	106	GLN
2	1	38	HIS
7	6	57	ASN
8	7	153	GLN
9	8	134	ASN
12	B	34	GLN
12	B	55	GLN
12	B	125	GLN
12	B	133	HIS
12	B	137	ASN
15	C	5	HIS
15	C	23	ASN
18	D	3	ASN
18	D	34	GLN
18	D	68	GLN
18	D	166	ASN
19	DD	37	GLN
19	DD	103	ASN
21	E	68	HIS
21	E	157	GLN
22	EE	24	GLN
22	EE	47	GLN
23	Ee	105	GLN
24	F	131	GLN
25	FF	182	GLN
25	FF	224	HIS
25	FF	293	ASN
25	FF	371	GLN
26	G	25	ASN
27	GG	175	HIS
27	GG	260	GLN
27	GG	361	HIS
28	H	98	ASN
29	HH	45	ASN
29	HH	63	GLN
31	II	102	ASN
32	J	85	GLN
33	JJ	64	GLN
33	JJ	80	GLN
33	JJ	225	GLN
34	K	42	GLN
34	K	120	GLN

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Mol	Chain	Res	Type
35	KK	145	ASN
37	LL	58	HIS
37	LL	64	HIS
37	LL	163	GLN
37	LL	183	HIS
38	M	11	HIS
41	NN	150	ASN
42	O	71	GLN
43	OO	160	GLN
44	P	21	HIS
45	PP	119	GLN
47	Q	71	HIS
51	T	59	ASN
51	T	104	GLN
51	T	113	GLN
55	X	33	ASN
58	a	38	GLN
59	b	25	GLN
61	d	131	GLN
62	e	220	GLN
63	f	59	HIS
63	f	220	ASN
64	g	111	ASN
65	h	57	ASN
65	h	201	HIS
65	h	209	HIS
65	h	216	ASN
66	i	63	GLN
66	i	95	ASN
66	i	224	ASN
68	k	5	GLN
68	k	89	HIS
69	l	52	ASN
69	l	88	ASN
69	l	94	ASN
70	m	139	GLN
71	n	81	ASN
72	o	92	HIS
73	p	36	GLN
73	p	49	GLN
73	p	78	ASN
73	p	151	ASN

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Mol	Chain	Res	Type
77	t	62	GLN
78	u	75	ASN
78	u	89	GLN
80	w	44	ASN
81	x	35	ASN
82	y	42	GLN
83	z	63	GLN

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
11	AA	3185/3396 (93%)	474 (14%)	16 (0%)
13	BB	120/121 (99%)	10 (8%)	1 (0%)
14	Bb	75/76 (98%)	29 (38%)	0
16	CC	157/158 (99%)	22 (14%)	0
17	Cc	76/77 (98%)	14 (18%)	0
20	Dd	13/39 (33%)	1 (7%)	0
60	c	1594/1800 (88%)	279 (17%)	0
All	All	5220/5667 (92%)	829 (15%)	17 (0%)

All (829) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
11	AA	6	A
11	AA	26	A
11	AA	40	A
11	AA	43	A
11	AA	49	A
11	AA	59	G
11	AA	60	A
11	AA	65	A
11	AA	66	A
11	AA	86	G
11	AA	92	G
11	AA	99	A
11	AA	110	G
11	AA	111	C
11	AA	116	A
11	AA	117	U
11	AA	122	A
11	AA	135	C

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Mol	Chain	Res	Type
11	AA	136	G
11	AA	147	U
11	AA	156	G
11	AA	157	A
11	AA	190	U
11	AA	200	C
11	AA	219	A
11	AA	220	G
11	AA	241	G
11	AA	243	G
11	AA	249	U
11	AA	251	G
11	AA	252	U
11	AA	266	A
11	AA	269	G
11	AA	286	U
11	AA	295	A
11	AA	305	U
11	AA	329	U
11	AA	376	G
11	AA	397	A
11	AA	398	A
11	AA	399	A
11	AA	401	U
11	AA	402	A
11	AA	403	C
11	AA	420	G
11	AA	421	G
11	AA	422	A
11	AA	520	U
11	AA	521	A
11	AA	523	A
11	AA	532	A
11	AA	533	A
11	AA	534	U
11	AA	545	U
11	AA	548	G
11	AA	555	U
11	AA	557	A
11	AA	558	U
11	AA	559	A
11	AA	560	G

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Mol	Chain	Res	Type
11	AA	592	A
11	AA	602	A
11	AA	603	A
11	AA	604	G
11	AA	607	A
11	AA	611	A
11	AA	620	U
11	AA	621	A
11	AA	636	C
11	AA	649	A2M
11	AA	677	A
11	AA	678	G
11	AA	681	U
11	AA	691	A
11	AA	705	A
11	AA	712	G
11	AA	719	U
11	AA	758	C
11	AA	761	A
11	AA	766	U
11	AA	767	U
11	AA	768	C
11	AA	776	U
11	AA	781	G
11	AA	785	G
11	AA	786	A
11	AA	817	A2M
11	AA	830	A
11	AA	835	G
11	AA	850	U
11	AA	861	C
11	AA	874	U
11	AA	879	U
11	AA	880	G
11	AA	896	A
11	AA	907	G
11	AA	908	OMG
11	AA	914	A
11	AA	916	G
11	AA	917	A
11	AA	921	A
11	AA	923	C

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Mol	Chain	Res	Type
11	AA	925	A
11	AA	937	G
11	AA	944	C
11	AA	959	C
11	AA	960	U
11	AA	961	C
11	AA	974	G
11	AA	980	A
11	AA	1015	U
11	AA	1017	C
11	AA	1018	G
11	AA	1023	C
11	AA	1026	A
11	AA	1027	A
11	AA	1028	U
11	AA	1029	G
11	AA	1032	C
11	AA	1034	U
11	AA	1036	A
11	AA	1037	C
11	AA	1047	A
11	AA	1064	A
11	AA	1072	G
11	AA	1081	U
11	AA	1087	G
11	AA	1096	U
11	AA	1097	G
11	AA	1098	A
11	AA	1103	A
11	AA	1104	G
11	AA	1117	G
11	AA	1131	G
11	AA	1143	A
11	AA	1144	U
11	AA	1155	C
11	AA	1159	A
11	AA	1178	G
11	AA	1179	A
11	AA	1180	A
11	AA	1181	U
11	AA	1182	A
11	AA	1191	U

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Mol	Chain	Res	Type
11	AA	1193	A
11	AA	1196	C
11	AA	1201	C
11	AA	1208	U
11	AA	1209	G
11	AA	1217	A
11	AA	1222	G
11	AA	1231	A
11	AA	1232	C
11	AA	1236	G
11	AA	1237	G
11	AA	1244	A
11	AA	1245	A
11	AA	1246	G
11	AA	1247	U
11	AA	1249	G
11	AA	1253	U
11	AA	1254	C
11	AA	1257	C
11	AA	1258	U
11	AA	1262	G
11	AA	1263	A
11	AA	1264	G
11	AA	1265	U
11	AA	1272	C
11	AA	1275	C
11	AA	1281	G
11	AA	1284	C
11	AA	1285	G
11	AA	1286	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	1351	U
11	AA	1352	A

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Mol	Chain	Res	Type
11	AA	1355	A
11	AA	1356	U
11	AA	1357	G
11	AA	1386	A
11	AA	1391	C
11	AA	1399	A
11	AA	1400	G
11	AA	1417	G
11	AA	1418	A
11	AA	1421	G
11	AA	1434	G
11	AA	1437	OMC
11	AA	1443	G
11	AA	1446	A
11	AA	1450	OMG
11	AA	1468	A
11	AA	1481	A
11	AA	1483	G
11	AA	1484	U
11	AA	1487	G
11	AA	1508	C
11	AA	1556	C
11	AA	1560	G
11	AA	1562	C
11	AA	1563	C
11	AA	1566	A
11	AA	1568	U
11	AA	1569	U
11	AA	1571	A
11	AA	1572	U
11	AA	1580	A
11	AA	1581	C
11	AA	1583	A
11	AA	1589	A
11	AA	1605	A
11	AA	1630	U
11	AA	1639	C
11	AA	1642	A
11	AA	1643	A
11	AA	1657	C
11	AA	1688	U
11	AA	1724	U

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Mol	Chain	Res	Type
11	AA	1741	A
11	AA	1742	U
11	AA	1750	A
11	AA	1751	G
11	AA	1752	A
11	AA	1759	C
11	AA	1762	C
11	AA	1763	U
11	AA	1765	U
11	AA	1769	G
11	AA	1773	C
11	AA	1775	G
11	AA	1797	A
11	AA	1808	G
11	AA	1812	G
11	AA	1815	U
11	AA	1816	A
11	AA	1817	G
11	AA	1821	U
11	AA	1842	A
11	AA	1866	C
11	AA	1878	G
11	AA	1879	A
11	AA	1880	U
11	AA	1886	A
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	2126	A
11	AA	2131	A
11	AA	2140	U
11	AA	2144	A
11	AA	2158	A
11	AA	2168	A
11	AA	2169	G
11	AA	2170	U
11	AA	2171	G
11	AA	2176	U

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Mol	Chain	Res	Type
11	AA	2188	A
11	AA	2204	C
11	AA	2207	A
11	AA	2208	A
11	AA	2209	U
11	AA	2223	A
11	AA	2225	U
11	AA	2244	A
11	AA	2254	U
11	AA	2266	U
11	AA	2267	C
11	AA	2268	U
11	AA	2271	A
11	AA	2273	G
11	AA	2274	U
11	AA	2279	A
11	AA	2281	A2M
11	AA	2282	U
11	AA	2307	G
11	AA	2308	C
11	AA	2309	A
11	AA	2310	U
11	AA	2313	A
11	AA	2315	G
11	AA	2336	U
11	AA	2363	A
11	AA	2373	A
11	AA	2374	C
11	AA	2375	G
11	AA	2393	G
11	AA	2397	A
11	AA	2402	A
11	AA	2403	G
11	AA	2404	A
11	AA	2411	U
11	AA	2418	G
11	AA	2435	G
11	AA	2438	A
11	AA	2442	G
11	AA	2444	C
11	AA	2447	A
11	AA	2449	A

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Mol	Chain	Res	Type
11	AA	2450	G
11	AA	2453	U
11	AA	2454	G
11	AA	2458	A
11	AA	2459	A
11	AA	2460	U
11	AA	2461	A
11	AA	2462	A
11	AA	2464	U
11	AA	2465	G
11	AA	2466	G
11	AA	2467	G
11	AA	2468	A
11	AA	2470	C
11	AA	2471	U
11	AA	2472	U
11	AA	2473	C
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	2487	U
11	AA	2488	A
11	AA	2489	C
11	AA	2490	C
11	AA	2492	C
11	AA	2493	U
11	AA	2494	A
11	AA	2495	C
11	AA	2496	C
11	AA	2497	U
11	AA	2499	U
11	AA	2501	U
11	AA	2503	G
11	AA	2511	A
11	AA	2514	U
11	AA	2515	A
11	AA	2549	G
11	AA	2550	U

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Mol	Chain	Res	Type
11	AA	2552	C
11	AA	2554	A
11	AA	2560	C
11	AA	2561	A
11	AA	2569	A
11	AA	2570	U
11	AA	2571	U
11	AA	2572	C
11	AA	2573	G
11	AA	2585	G
11	AA	2593	A
11	AA	2606	G
11	AA	2607	G
11	AA	2614	G
11	AA	2626	A
11	AA	2652	U
11	AA	2656	A
11	AA	2657	A
11	AA	2672	G
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	2714	G
11	AA	2728	G
11	AA	2729	OMU
11	AA	2753	G
11	AA	2755	C
11	AA	2772	C
11	AA	2777	G
11	AA	2778	G
11	AA	2793	OMG
11	AA	2795	U
11	AA	2796	G
11	AA	2800	G
11	AA	2801	A
11	AA	2802	A
11	AA	2808	A
11	AA	2810	C

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Mol	Chain	Res	Type
11	AA	2814	G
11	AA	2817	A
11	AA	2844	C
11	AA	2845	A
11	AA	2846	U
11	AA	2867	C
11	AA	2871	G
11	AA	2872	A
11	AA	2873	U
11	AA	2875	U
11	AA	2876	C
11	AA	2887	A
11	AA	2889	C
11	AA	2899	C
11	AA	2911	A
11	AA	2922	OMG
11	AA	2923	U
11	AA	2933	A
11	AA	2935	U
11	AA	2936	A
11	AA	2942	C
11	AA	2947	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	3056	U
11	AA	3059	G
11	AA	3078	U
11	AA	3092	C
11	AA	3094	A
11	AA	3101	G
11	AA	3115	C
11	AA	3122	A
11	AA	3130	A
11	AA	3131	U
11	AA	3142	A
11	AA	3143	C
11	AA	3153	U

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Mol	Chain	Res	Type
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	3207	U
11	AA	3210	A
11	AA	3216	G
11	AA	3217	C
11	AA	3218	A
11	AA	3219	G
11	AA	3243	A
11	AA	3247	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	3335	A
11	AA	3341	U
11	AA	3345	G
11	AA	3352	U
11	AA	3353	G
11	AA	3369	G
11	AA	3378	C
11	AA	3389	U
11	AA	3390	G
13	BB	7	G
13	BB	11	A
13	BB	54	U
13	BB	55	A
13	BB	65	G
13	BB	73	C

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Mol	Chain	Res	Type
13	BB	74	C
13	BB	76	A
13	BB	99	G
13	BB	112	G
14	Bb	6	U
14	Bb	8	U
14	Bb	9	A
14	Bb	15	G
14	Bb	16	U
14	Bb	17	U
14	Bb	18	G
14	Bb	21	A
14	Bb	22	G
14	Bb	24	G
14	Bb	26	G
14	Bb	27	C
14	Bb	30	G
14	Bb	35	A
14	Bb	36	A
14	Bb	38	A
14	Bb	40	C
14	Bb	41	U
14	Bb	46	G
14	Bb	47	U
14	Bb	48	C
14	Bb	59	U
14	Bb	62	A
14	Bb	63	C
14	Bb	65	G
14	Bb	70	C
14	Bb	74	C
14	Bb	75	C
14	Bb	76	A
16	CC	23	U
16	CC	34	U
16	CC	35	C
16	CC	38	U
16	CC	52	A
16	CC	59	A
16	CC	62	C
16	CC	63	G
16	CC	82	U

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Mol	Chain	Res	Type
16	CC	83	C
16	CC	84	C
16	CC	85	G
16	CC	86	U
16	CC	87	G
16	CC	91	C
16	CC	95	G
16	CC	104	A
16	CC	106	C
16	CC	113	U
16	CC	125	U
16	CC	126	A
16	CC	152	G
17	Cc	18	C
17	Cc	19	G
17	Cc	20	G
17	Cc	21	U
17	Cc	22	A
17	Cc	48	U
17	Cc	52	C
17	Cc	56	U
17	Cc	58	A
17	Cc	60	A
17	Cc	62	C
17	Cc	63	C
17	Cc	76	C
17	Cc	77	A
20	Dd	26	U
60	c	2	A
60	c	4	C
60	c	26	A
60	c	34	G
60	c	42	G
60	c	45	U
60	c	47	A
60	c	67	A
60	c	68	A
60	c	71	A
60	c	72	A
60	c	78	A
60	c	100	A2M
60	c	114	C

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Mol	Chain	Res	Type
60	c	116	U
60	c	127	G
60	c	131	C
60	c	139	C
60	c	140	A
60	c	144	U
60	c	145	A
60	c	150	U
60	c	153	G
60	c	183	U
60	c	184	C
60	c	185	U
60	c	202	A
60	c	249	U
60	c	261	U
60	c	262	U
60	c	272	U
60	c	277	U
60	c	278	U
60	c	279	G
60	c	280	U
60	c	283	U
60	c	285	G
60	c	287	G
60	c	299	A
60	c	309	C
60	c	314	C
60	c	316	A
60	c	322	G
60	c	337	G
60	c	338	C
60	c	361	C
60	c	390	G
60	c	400	A
60	c	401	A
60	c	402	C
60	c	404	G
60	c	414	OMC
60	c	417	A
60	c	419	G
60	c	423	G
60	c	424	C

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Mol	Chain	Res	Type
60	c	426	G
60	c	428	A
60	c	434	G
60	c	439	U
60	c	444	C
60	c	454	U
60	c	455	C
60	c	460	A
60	c	468	A
60	c	475	A
60	c	506	A
60	c	513	U
60	c	515	A
60	c	519	C
60	c	520	A
60	c	525	A
60	c	526	A
60	c	527	A
60	c	534	A
60	c	537	G
60	c	538	A
60	c	541	A2M
60	c	555	A
60	c	556	A
60	c	557	G
60	c	558	U
60	c	565	C
60	c	568	G
60	c	578	OMU
60	c	579	A
60	c	582	U
60	c	594	A
60	c	606	A
60	c	611	U
60	c	620	A
60	c	623	A
60	c	624	G
60	c	639	U
60	c	644	C
60	c	645	C
60	c	648	G
60	c	650	U

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Mol	Chain	Res	Type
60	c	651	G
60	c	691	C
60	c	692	C
60	c	695	U
60	c	696	C
60	c	745	U
60	c	760	A
60	c	765	G
60	c	766	U
60	c	771	A
60	c	775	G
60	c	778	G
60	c	780	A
60	c	781	U
60	c	782	U
60	c	783	G
60	c	784	C
60	c	787	G
60	c	789	A
60	c	793	A
60	c	794	U
60	c	795	U
60	c	809	A
60	c	814	A
60	c	821	U
60	c	822	U
60	c	859	A
60	c	860	U
60	c	861	U
60	c	863	A
60	c	895	G
60	c	896	U
60	c	898	A
60	c	906	A
60	c	913	G
60	c	914	G
60	c	933	A
60	c	935	U
60	c	951	A
60	c	960	U
60	c	966	A
60	c	988	A

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Mol	Chain	Res	Type
60	c	992	A
60	c	993	A
60	c	1002	G
60	c	1010	C
60	c	1021	C
60	c	1026	A
60	c	1028	C
60	c	1031	U
60	c	1052	U
60	c	1053	G
60	c	1058	U
60	c	1059	U
60	c	1060	U
60	c	1061	A
60	c	1081	A
60	c	1082	C
60	c	1092	A
60	c	1093	A
60	c	1097	U
60	c	1098	U
60	c	1100	G
60	c	1109	G
60	c	1138	A
60	c	1151	A
60	c	1158	C
60	c	1163	A
60	c	1185	U
60	c	1194	A
60	c	1196	A
60	c	1199	G
60	c	1200	G
60	c	1202	A
60	c	1217	A
60	c	1218	G
60	c	1228	G
60	c	1238	A
60	c	1241	G
60	c	1244	A
60	c	1245	G
60	c	1246	C
60	c	1250	U
60	c	1252	C

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Mol	Chain	Res	Type
60	c	1256	A
60	c	1259	U
60	c	1261	G
60	c	1274	C
60	c	1301	U
60	c	1309	C
60	c	1314	U
60	c	1315	U
60	c	1316	G
60	c	1321	A
60	c	1336	A
60	c	1338	C
60	c	1339	C
60	c	1340	U
60	c	1346	A
60	c	1347	U
60	c	1351	G
60	c	1353	U
60	c	1354	G
60	c	1355	C
60	c	1361	U
60	c	1363	U
60	c	1368	G
60	c	1370	U
60	c	1371	A
60	c	1372	U
60	c	1373	C
60	c	1378	U
60	c	1383	G
60	c	1390	U
60	c	1398	U
60	c	1400	A
60	c	1411	A
60	c	1413	U
60	c	1414	U
60	c	1415	U
60	c	1424	A
60	c	1425	A
60	c	1427	A
60	c	1428	OMG
60	c	1436	A
60	c	1458	G

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Mol	Chain	Res	Type
60	c	1459	C
60	c	1460	A
60	c	1469	A
60	c	1471	A
60	c	1474	G
60	c	1482	C
60	c	1490	C
60	c	1491	U
60	c	1492	A
60	c	1506	G
60	c	1510	U
60	c	1516	A
60	c	1521	G
60	c	1523	G
60	c	1524	A
60	c	1535	U
60	c	1536	G
60	c	1537	C
60	c	1542	G
60	c	1557	U
60	c	1559	A
60	c	1572	OMG
60	c	1573	A
60	c	1575	G7M
60	c	1576	A
60	c	1601	G
60	c	1616	G
60	c	1619	C
60	c	1622	G
60	c	1631	A
60	c	1634	C
60	c	1657	U
60	c	1658	G
60	c	1678	A
60	c	1681	A
60	c	1682	U
60	c	1683	C
60	c	1684	U
60	c	1685	G
60	c	1717	G
60	c	1740	A
60	c	1755	A

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Mol	Chain	Res	Type
60	c	1756	A
60	c	1760	G
60	c	1762	A
60	c	1766	A
60	c	1769	U
60	c	1780	G
60	c	1782	MA6
60	c	1792	G
60	c	1793	G
60	c	1794	A
60	c	1795	U
60	c	1796	C
60	c	1799	U

All (17) 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	1348	U
11	AA	1562	C
11	AA	2101	C
11	AA	2253	G
11	AA	2487	U
11	AA	2500	A
11	AA	2792	A
11	AA	2843	U
11	AA	2971	A
11	AA	3121	U
11	AA	3206	C
13	BB	72	A

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

67 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	2724	11	19,22,23	3.00	8 (42%)	26,31,34	1.69	4 (15%)
11	OMG	AA	2288	11	18,26,27	1.15	2 (11%)	19,38,41	0.83	1 (5%)
11	A2M	AA	1449	11,85	18,25,26	3.60	8 (44%)	18,36,39	3.33	4 (22%)
11	OMU	AA	1888	11	19,22,23	3.00	8 (42%)	26,31,34	1.75	5 (19%)
60	OMC	c	414	60	19,22,23	0.55	0	26,31,34	0.69	0
60	B8N	c	1191	60	24,29,30	3.03	7 (29%)	29,42,45	1.79	7 (24%)
60	OMU	c	1269	60	19,22,23	3.03	8 (42%)	26,31,34	1.73	5 (19%)
11	A2M	AA	1133	11,85	18,25,26	3.60	8 (44%)	18,36,39	3.39	3 (16%)
60	A2M	c	28	60	18,25,26	3.61	8 (44%)	18,36,39	3.36	3 (16%)
11	5MC	AA	2870	11,86	18,22,23	0.67	0	26,32,35	0.60	0
60	OMG	c	1126	60	18,26,27	1.17	2 (11%)	19,38,41	0.87	1 (5%)
60	A2M	c	420	60	18,25,26	3.58	8 (44%)	18,36,39	3.36	3 (16%)
60	OMG	c	1572	60	18,26,27	1.13	2 (11%)	19,38,41	0.87	1 (5%)
11	OMG	AA	2815	11	18,26,27	1.14	2 (11%)	19,38,41	0.85	1 (5%)
11	A2M	AA	876	11	18,25,26	3.60	8 (44%)	18,36,39	3.37	4 (22%)
11	OMG	AA	867	11,86	18,26,27	1.14	2 (11%)	19,38,41	0.87	1 (5%)
11	A2M	AA	2256	11	18,25,26	3.59	8 (44%)	18,36,39	3.51	5 (27%)
11	OMU	AA	2421	11	19,22,23	3.00	8 (42%)	26,31,34	1.72	5 (19%)
11	A2M	AA	2640	11	18,25,26	3.62	8 (44%)	18,36,39	3.31	4 (22%)
60	MA6	c	1781	60	18,26,27	1.05	2 (11%)	19,38,41	3.42	2 (10%)
11	A2M	AA	2220	11	18,25,26	3.59	8 (44%)	18,36,39	3.34	3 (16%)
11	OMG	AA	2791	11	18,26,27	1.14	2 (11%)	19,38,41	0.86	1 (5%)
60	A2M	c	100	60,85	18,25,26	3.61	8 (44%)	18,36,39	3.31	3 (16%)
11	1MA	AA	645	11,85	16,25,26	0.93	2 (12%)	18,37,40	1.06	2 (11%)
60	A2M	c	974	60	18,25,26	3.62	8 (44%)	18,36,39	3.32	4 (22%)
60	G7M	c	1575	60,17	20,26,27	2.41	7 (35%)	17,39,42	1.26	1 (5%)
11	UR3	AA	2634	11	19,22,23	2.85	7 (36%)	26,32,35	1.34	3 (11%)
11	OMU	AA	2347	11	19,22,23	3.02	8 (42%)	26,31,34	1.69	5 (19%)
60	OMG	c	1428	60,85	18,26,27	1.15	2 (11%)	19,38,41	0.84	1 (5%)
11	OMG	AA	2922	11,14	18,26,27	1.16	2 (11%)	19,38,41	0.83	1 (5%)
60	OMG	c	1271	60	18,26,27	1.13	2 (11%)	19,38,41	0.87	1 (5%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
11	A2M	AA	649	11	18,25,26	3.61	8 (44%)	18,36,39	3.35	4 (22%)
11	OMU	AA	2729	11	19,22,23	2.98	8 (42%)	26,31,34	1.67	5 (19%)
60	MA6	c	1782	60	18,26,27	1.01	2 (11%)	19,38,41	3.53	2 (10%)
60	4AC	c	1280	60	21,24,25	3.54	10 (47%)	29,34,37	1.68	6 (20%)
60	A2M	c	541	60	18,25,26	3.60	8 (44%)	18,36,39	3.36	4 (22%)
60	A2M	c	619	60,85	18,25,26	3.65	9 (50%)	18,36,39	3.44	3 (16%)
60	OMC	c	1007	60	19,22,23	0.53	0	26,31,34	0.66	0
11	A2M	AA	2281	11	18,25,26	3.66	9 (50%)	18,36,39	3.36	4 (22%)
11	OMG	AA	1450	11	18,26,27	1.16	2 (11%)	19,38,41	0.84	1 (5%)
11	A2M	AA	807	11	18,25,26	3.61	7 (38%)	18,36,39	3.36	4 (22%)
11	OMU	AA	2921	11	19,22,23	2.99	8 (42%)	26,31,34	1.68	5 (19%)
11	OMC	AA	2959	11	19,22,23	0.58	0	26,31,34	0.68	0
11	OMU	AA	898	11	19,22,23	2.99	8 (42%)	26,31,34	1.66	4 (15%)
60	OMU	c	578	60	19,22,23	3.05	8 (42%)	26,31,34	1.69	5 (19%)
11	OMC	AA	663	11	19,22,23	0.56	0	26,31,34	0.73	0
11	OMC	AA	2337	11	19,22,23	0.56	0	26,31,34	0.69	0
11	A2M	AA	2280	11	18,25,26	3.60	8 (44%)	18,36,39	3.37	4 (22%)
11	OMG	AA	2619	11	18,26,27	1.14	2 (11%)	19,38,41	0.86	1 (5%)
60	OMG	c	562	60	18,26,27	1.12	2 (11%)	19,38,41	0.85	1 (5%)
11	OMC	AA	2197	11,86	19,22,23	0.54	0	26,31,34	0.63	0
11	1MA	AA	2142	11,85	16,25,26	0.96	2 (12%)	18,37,40	1.06	2 (11%)
11	OMC	AA	650	11,85	19,22,23	0.57	0	26,31,34	0.67	0
14	YYG	Bb	37	14	31,42,43	1.98	7 (22%)	33,62,65	1.84	10 (30%)
11	OMG	AA	908	11	18,26,27	1.19	2 (11%)	19,38,41	0.85	1 (5%)
11	OMC	AA	2948	11	19,22,23	0.57	0	26,31,34	0.91	2 (7%)
11	A2M	AA	817	11,85	18,25,26	3.60	8 (44%)	18,36,39	3.45	3 (16%)
60	A2M	c	436	60	18,25,26	3.63	8 (44%)	18,36,39	3.35	4 (22%)
60	A2M	c	796	60	18,25,26	3.63	8 (44%)	18,36,39	3.33	4 (22%)
11	OMU	AA	2417	11	19,22,23	3.00	8 (42%)	26,31,34	1.70	4 (15%)
11	OMC	AA	1437	11,85	19,22,23	0.59	0	26,31,34	1.07	2 (7%)
60	OMC	c	1639	60,85	19,22,23	0.55	0	26,31,34	0.61	0
11	OMG	AA	805	11	18,26,27	1.14	2 (11%)	19,38,41	0.89	1 (5%)
60	4AC	c	1773	60	21,24,25	3.46	10 (47%)	29,34,37	1.58	5 (17%)
11	OMG	AA	2793	11	18,26,27	1.15	2 (11%)	19,38,41	0.91	1 (5%)
11	5MC	AA	2278	11,85	18,22,23	0.57	0	26,32,35	0.65	0
11	A2M	AA	2946	11,85	18,25,26	3.59	7 (38%)	18,36,39	3.35	3 (16%)

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	2724	11	-	1/9/27/28	0/2/2/2
11	OMG	AA	2288	11	-	0/5/27/28	0/3/3/3
11	A2M	AA	1449	11,85	-	0/5/27/28	0/3/3/3
11	OMU	AA	1888	11	-	0/9/27/28	0/2/2/2
60	OMC	c	414	60	-	2/9/27/28	0/2/2/2
60	B8N	c	1191	60	-	5/16/34/35	0/2/2/2
60	OMU	c	1269	60	-	0/9/27/28	0/2/2/2
11	A2M	AA	1133	11,85	-	0/5/27/28	0/3/3/3
60	A2M	c	28	60	-	1/5/27/28	0/3/3/3
11	5MC	AA	2870	11,86	-	4/7/25/26	0/2/2/2
60	OMG	c	1126	60	-	0/5/27/28	0/3/3/3
60	A2M	c	420	60	-	1/5/27/28	0/3/3/3
60	OMG	c	1572	60	-	3/5/27/28	0/3/3/3
11	OMG	AA	2815	11	-	0/5/27/28	0/3/3/3
11	A2M	AA	876	11	-	0/5/27/28	0/3/3/3
11	OMG	AA	867	11,86	-	2/5/27/28	0/3/3/3
11	A2M	AA	2256	11	-	3/5/27/28	0/3/3/3
11	OMU	AA	2421	11	-	0/9/27/28	0/2/2/2
11	A2M	AA	2640	11	-	1/5/27/28	0/3/3/3
60	MA6	c	1781	60	-	0/7/29/30	0/3/3/3
11	A2M	AA	2220	11	-	1/5/27/28	0/3/3/3
11	OMG	AA	2791	11	-	0/5/27/28	0/3/3/3
60	A2M	c	100	60,85	-	2/5/27/28	0/3/3/3
11	1MA	AA	645	11,85	-	0/3/25/26	0/3/3/3
60	A2M	c	974	60	-	0/5/27/28	0/3/3/3
60	G7M	c	1575	60,17	-	2/3/25/26	0/3/3/3
11	UR3	AA	2634	11	-	0/7/25/26	0/2/2/2
11	OMU	AA	2347	11	-	0/9/27/28	0/2/2/2
60	OMG	c	1428	60,85	-	2/5/27/28	0/3/3/3
11	OMG	AA	2922	11,14	-	2/5/27/28	0/3/3/3
60	OMG	c	1271	60	-	1/5/27/28	0/3/3/3
11	A2M	AA	649	11	-	1/5/27/28	0/3/3/3
11	OMU	AA	2729	11	-	1/9/27/28	0/2/2/2
60	MA6	c	1782	60	-	2/7/29/30	0/3/3/3
60	4AC	c	1280	60	-	5/11/29/30	0/2/2/2
60	A2M	c	541	60	-	3/5/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
60	A2M	c	619	60,85	-	1/5/27/28	0/3/3/3
60	OMC	c	1007	60	-	0/9/27/28	0/2/2/2
11	A2M	AA	2281	11	-	3/5/27/28	0/3/3/3
11	OMG	AA	1450	11	-	2/5/27/28	0/3/3/3
11	A2M	AA	807	11	-	0/5/27/28	0/3/3/3
11	OMU	AA	2921	11	-	0/9/27/28	0/2/2/2
11	OMC	AA	2959	11	-	0/9/27/28	0/2/2/2
11	OMU	AA	898	11	-	1/9/27/28	0/2/2/2
60	OMU	c	578	60	-	8/9/27/28	0/2/2/2
11	OMC	AA	663	11	-	1/9/27/28	0/2/2/2
11	OMC	AA	2337	11	-	0/9/27/28	0/2/2/2
11	A2M	AA	2280	11	-	2/5/27/28	0/3/3/3
11	OMG	AA	2619	11	-	1/5/27/28	0/3/3/3
60	OMG	c	562	60	-	0/5/27/28	0/3/3/3
11	OMC	AA	2197	11,86	-	4/9/27/28	0/2/2/2
11	1MA	AA	2142	11,85	-	0/3/25/26	0/3/3/3
11	OMC	AA	650	11,85	-	0/9/27/28	0/2/2/2
14	YYG	Bb	37	14	-	13/20/42/43	0/3/4/4
11	OMG	AA	908	11	-	1/5/27/28	0/3/3/3
11	OMC	AA	2948	11	-	1/9/27/28	0/2/2/2
11	A2M	AA	817	11,85	-	2/5/27/28	0/3/3/3
60	A2M	c	436	60	-	0/5/27/28	0/3/3/3
60	A2M	c	796	60	-	0/5/27/28	0/3/3/3
11	OMU	AA	2417	11	-	1/9/27/28	0/2/2/2
11	OMC	AA	1437	11,85	-	4/9/27/28	0/2/2/2
60	OMC	c	1639	60,85	-	0/9/27/28	0/2/2/2
11	OMG	AA	805	11	-	0/5/27/28	0/3/3/3
60	4AC	c	1773	60	-	2/11/29/30	0/2/2/2
11	OMG	AA	2793	11	-	0/5/27/28	0/3/3/3
11	5MC	AA	2278	11,85	-	0/7/25/26	0/2/2/2
11	A2M	AA	2946	11,85	-	0/5/27/28	0/3/3/3

All (326) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	AA	807	A2M	C3'-C4'	-9.00	1.30	1.53
11	AA	2946	A2M	C3'-C4'	-8.90	1.30	1.53
60	c	619	A2M	C3'-C4'	-8.90	1.30	1.53
11	AA	1133	A2M	C3'-C4'	-8.89	1.30	1.53
60	c	796	A2M	C3'-C4'	-8.88	1.30	1.53

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
60	c	100	A2M	C3'-C4'	-8.86	1.30	1.53
11	AA	2640	A2M	C3'-C4'	-8.85	1.30	1.53
11	AA	817	A2M	C3'-C4'	-8.84	1.30	1.53
60	c	541	A2M	C3'-C4'	-8.82	1.30	1.53
11	AA	2280	A2M	C3'-C4'	-8.82	1.30	1.53
60	c	28	A2M	C3'-C4'	-8.81	1.30	1.53
60	c	420	A2M	C3'-C4'	-8.80	1.30	1.53
11	AA	876	A2M	C3'-C4'	-8.80	1.30	1.53
60	c	974	A2M	C3'-C4'	-8.80	1.30	1.53
60	c	436	A2M	C3'-C4'	-8.79	1.30	1.53
11	AA	2220	A2M	C3'-C4'	-8.78	1.30	1.53
11	AA	1449	A2M	C3'-C4'	-8.75	1.30	1.53
11	AA	649	A2M	C3'-C4'	-8.70	1.30	1.53
11	AA	2256	A2M	C3'-C4'	-8.47	1.31	1.53
11	AA	2281	A2M	C3'-C4'	-8.39	1.31	1.53
11	AA	2281	A2M	O4'-C1'	-7.91	1.30	1.41
60	c	1191	B8N	C6-N1	7.80	1.55	1.36
60	c	420	A2M	O4'-C4'	7.78	1.62	1.45
11	AA	2256	A2M	O4'-C4'	7.77	1.62	1.45
60	c	796	A2M	O4'-C4'	7.76	1.62	1.45
60	c	100	A2M	O4'-C4'	7.74	1.62	1.45
60	c	974	A2M	O4'-C4'	7.68	1.62	1.45
11	AA	2281	A2M	O4'-C4'	7.65	1.62	1.45
11	AA	2220	A2M	O4'-C4'	7.64	1.62	1.45
60	c	436	A2M	O4'-C4'	7.63	1.62	1.45
11	AA	2640	A2M	O4'-C4'	7.60	1.62	1.45
60	c	28	A2M	O4'-C4'	7.60	1.62	1.45
11	AA	1133	A2M	O4'-C4'	7.59	1.62	1.45
11	AA	2946	A2M	O4'-C4'	7.59	1.62	1.45
60	c	619	A2M	O4'-C1'	-7.54	1.30	1.41
11	AA	649	A2M	O4'-C4'	7.53	1.61	1.45
60	c	541	A2M	O4'-C4'	7.53	1.61	1.45
11	AA	817	A2M	O4'-C4'	7.52	1.61	1.45
60	c	1191	B8N	C4-N3	-7.52	1.26	1.40
11	AA	876	A2M	O4'-C4'	7.48	1.61	1.45
11	AA	2280	A2M	O4'-C4'	7.48	1.61	1.45
11	AA	1449	A2M	O4'-C4'	7.44	1.61	1.45
60	c	619	A2M	O4'-C4'	7.41	1.61	1.45
11	AA	649	A2M	O4'-C1'	-7.39	1.30	1.41
11	AA	807	A2M	O4'-C4'	7.34	1.61	1.45
11	AA	2256	A2M	O4'-C1'	-7.33	1.30	1.41
11	AA	1449	A2M	O4'-C1'	-7.31	1.30	1.41

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
60	c	436	A2M	O4'-C1'	-7.30	1.30	1.41
11	AA	2280	A2M	O4'-C1'	-7.29	1.30	1.41
60	c	1280	4AC	C4-N3	7.26	1.45	1.32
11	AA	807	A2M	O4'-C1'	-7.26	1.31	1.41
11	AA	876	A2M	O4'-C1'	-7.23	1.31	1.41
11	AA	2640	A2M	O4'-C1'	-7.21	1.31	1.41
11	AA	817	A2M	O4'-C1'	-7.21	1.31	1.41
60	c	28	A2M	O4'-C1'	-7.20	1.31	1.41
60	c	974	A2M	O4'-C1'	-7.20	1.31	1.41
60	c	1773	4AC	C4-N3	7.19	1.45	1.32
60	c	541	A2M	O4'-C1'	-7.18	1.31	1.41
11	AA	2347	OMU	C2-N1	7.13	1.49	1.38
60	c	578	OMU	C2-N1	7.11	1.49	1.38
11	AA	2220	A2M	O4'-C1'	-7.05	1.31	1.41
11	AA	1133	A2M	O4'-C1'	-7.00	1.31	1.41
11	AA	2417	OMU	C2-N1	6.99	1.49	1.38
60	c	100	A2M	O4'-C1'	-6.99	1.31	1.41
60	c	796	A2M	O4'-C1'	-6.99	1.31	1.41
11	AA	2724	OMU	C2-N1	6.99	1.49	1.38
11	AA	2946	A2M	O4'-C1'	-6.99	1.31	1.41
11	AA	898	OMU	C2-N1	6.98	1.49	1.38
11	AA	2421	OMU	C2-N1	6.98	1.49	1.38
60	c	1269	OMU	C2-N1	6.96	1.49	1.38
11	AA	1888	OMU	C2-N1	6.96	1.49	1.38
11	AA	2921	OMU	C2-N1	6.90	1.49	1.38
60	c	1773	4AC	C6-C5	6.86	1.51	1.35
11	AA	2729	OMU	C2-N1	6.83	1.49	1.38
60	c	1280	4AC	C6-C5	6.83	1.50	1.35
60	c	420	A2M	O4'-C1'	-6.83	1.31	1.41
11	AA	2634	UR3	C2-N1	6.82	1.48	1.38
60	c	578	OMU	C2-N3	6.76	1.50	1.38
11	AA	2724	OMU	C2-N3	6.69	1.49	1.38
11	AA	2634	UR3	C6-C5	6.68	1.50	1.35
60	c	1269	OMU	C2-N3	6.68	1.49	1.38
11	AA	1888	OMU	C2-N3	6.68	1.49	1.38
11	AA	2347	OMU	C2-N3	6.68	1.49	1.38
11	AA	2417	OMU	C2-N3	6.67	1.49	1.38
11	AA	2421	OMU	C2-N3	6.64	1.49	1.38
11	AA	2729	OMU	C2-N3	6.62	1.49	1.38
11	AA	898	OMU	C2-N3	6.62	1.49	1.38
11	AA	2921	OMU	C2-N3	6.60	1.49	1.38
14	Bb	37	YYG	O23-C21	6.47	1.45	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
60	c	1269	OMU	C6-C5	5.75	1.48	1.35
11	AA	2634	UR3	C2-N3	5.74	1.50	1.39
60	c	1191	B8N	C2-N1	5.74	1.56	1.39
60	c	1280	4AC	C7-N4	5.72	1.47	1.37
60	c	578	OMU	C6-C5	5.70	1.48	1.35
11	AA	1888	OMU	C6-C5	5.65	1.48	1.35
11	AA	2421	OMU	C6-C5	5.65	1.48	1.35
11	AA	2921	OMU	C6-C5	5.63	1.48	1.35
11	AA	2729	OMU	C6-C5	5.63	1.48	1.35
11	AA	2417	OMU	C6-C5	5.60	1.48	1.35
11	AA	2347	OMU	C6-C5	5.58	1.48	1.35
11	AA	2724	OMU	C6-C5	5.58	1.48	1.35
11	AA	898	OMU	C6-C5	5.57	1.48	1.35
60	c	1773	4AC	C7-N4	5.49	1.47	1.37
60	c	1191	B8N	C6-C5	5.42	1.42	1.34
60	c	1280	4AC	C2-N1	5.33	1.51	1.40
60	c	1575	G7M	C2-N3	5.32	1.46	1.33
60	c	1280	4AC	C4-N4	5.22	1.47	1.39
14	Bb	37	YYG	O18-C16	5.10	1.45	1.33
60	c	1280	4AC	C2-N3	5.08	1.46	1.36
60	c	1773	4AC	C2-N3	5.04	1.46	1.36
60	c	1773	4AC	C4-N4	5.03	1.47	1.39
60	c	1773	4AC	C2-N1	4.99	1.50	1.40
60	c	1575	G7M	C4-N3	4.87	1.49	1.37
60	c	1575	G7M	C2-N2	4.64	1.45	1.34
60	c	578	OMU	C4-N3	4.29	1.46	1.38
60	c	1269	OMU	C4-N3	4.23	1.46	1.38
60	c	1280	4AC	CM7-C7	4.21	1.59	1.50
11	AA	898	OMU	C4-N3	4.13	1.46	1.38
11	AA	2417	OMU	C4-N3	4.13	1.46	1.38
11	AA	2421	OMU	C4-N3	4.12	1.45	1.38
11	AA	2921	OMU	C4-N3	4.10	1.45	1.38
11	AA	2729	OMU	C4-N3	4.09	1.45	1.38
11	AA	1888	OMU	C4-N3	4.09	1.45	1.38
11	AA	2724	OMU	C4-N3	4.08	1.45	1.38
11	AA	2347	OMU	C4-N3	4.04	1.45	1.38
60	c	1280	4AC	C5-C4	4.02	1.49	1.40
60	c	1773	4AC	C5-C4	3.97	1.49	1.40
60	c	1773	4AC	CM7-C7	3.94	1.58	1.50
60	c	1191	B8N	C1'-C5	3.90	1.59	1.50
60	c	1575	G7M	C6-N1	3.65	1.43	1.37
14	Bb	37	YYG	O6-C6	-3.38	1.18	1.22

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	AA	2634	UR3	C6-N1	3.26	1.45	1.38
60	c	541	A2M	C6-N6	3.16	1.45	1.34
60	c	1575	G7M	C5-C6	3.16	1.53	1.45
60	c	436	A2M	C6-N6	3.15	1.45	1.34
11	AA	2256	A2M	C6-N6	3.14	1.45	1.34
60	c	420	A2M	C6-N6	3.14	1.45	1.34
60	c	974	A2M	C6-N6	3.14	1.45	1.34
60	c	619	A2M	C6-N6	3.13	1.45	1.34
60	c	796	A2M	C6-N6	3.13	1.45	1.34
11	AA	1133	A2M	C6-N6	3.12	1.45	1.34
60	c	28	A2M	C6-N6	3.11	1.45	1.34
11	AA	2220	A2M	C6-N6	3.11	1.45	1.34
11	AA	2946	A2M	C6-N6	3.10	1.45	1.34
11	AA	2640	A2M	C6-N6	3.10	1.45	1.34
11	AA	2280	A2M	C6-N6	3.10	1.45	1.34
11	AA	1449	A2M	C6-N6	3.10	1.45	1.34
11	AA	807	A2M	C6-N6	3.10	1.45	1.34
60	c	100	A2M	C6-N6	3.09	1.45	1.34
11	AA	649	A2M	C6-N6	3.09	1.45	1.34
11	AA	817	A2M	C6-N6	3.08	1.45	1.34
11	AA	876	A2M	C6-N6	3.07	1.45	1.34
11	AA	2417	OMU	O4-C4	-3.06	1.18	1.24
11	AA	2724	OMU	O4-C4	-3.05	1.18	1.24
11	AA	2921	OMU	O4-C4	-3.02	1.18	1.24
11	AA	2281	A2M	C6-N6	3.01	1.45	1.34
60	c	436	A2M	O3'-C3'	3.01	1.50	1.43
11	AA	2347	OMU	O4-C4	-3.00	1.18	1.24
11	AA	2729	OMU	O4-C4	-3.00	1.18	1.24
11	AA	2421	OMU	O4-C4	-2.99	1.18	1.24
60	c	1269	OMU	O4-C4	-2.99	1.18	1.24
11	AA	2281	A2M	O3'-C3'	2.98	1.50	1.43
11	AA	2256	A2M	O3'-C3'	2.95	1.49	1.43
60	c	578	OMU	O4-C4	-2.95	1.18	1.24
11	AA	1888	OMU	O4-C4	-2.94	1.18	1.24
11	AA	898	OMU	O4-C4	-2.94	1.18	1.24
60	c	796	A2M	O3'-C3'	2.94	1.49	1.43
11	AA	908	OMG	C8-N7	-2.93	1.30	1.35
60	c	619	A2M	O3'-C3'	2.93	1.49	1.43
60	c	541	A2M	O3'-C3'	2.92	1.49	1.43
11	AA	1450	OMG	C8-N7	-2.91	1.30	1.35
11	AA	1449	A2M	O3'-C3'	2.90	1.49	1.43
11	AA	2288	OMG	C8-N7	-2.90	1.30	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
60	c	578	OMU	C6-N1	2.90	1.45	1.38
14	Bb	37	YYG	C2-N1	-2.87	1.31	1.37
11	AA	649	A2M	O3'-C3'	2.87	1.49	1.43
60	c	1428	OMG	C8-N7	-2.87	1.30	1.35
60	c	1269	OMU	C6-N1	2.87	1.44	1.38
60	c	100	A2M	O3'-C3'	2.86	1.49	1.43
11	AA	2791	OMG	C8-N7	-2.85	1.30	1.35
11	AA	807	A2M	O3'-C3'	2.85	1.49	1.43
11	AA	2220	A2M	O3'-C3'	2.85	1.49	1.43
11	AA	2640	A2M	O3'-C3'	2.85	1.49	1.43
60	c	28	A2M	O3'-C3'	2.83	1.49	1.43
60	c	420	A2M	O3'-C3'	2.83	1.49	1.43
11	AA	817	A2M	O3'-C3'	2.83	1.49	1.43
11	AA	2281	A2M	C5-C4	-2.82	1.33	1.40
11	AA	2280	A2M	O3'-C3'	2.82	1.49	1.43
11	AA	876	A2M	O3'-C3'	2.82	1.49	1.43
11	AA	867	OMG	C8-N7	-2.82	1.30	1.35
11	AA	805	OMG	C8-N7	-2.81	1.30	1.35
11	AA	1133	A2M	C5-C4	-2.81	1.33	1.40
11	AA	649	A2M	C5-C4	-2.80	1.33	1.40
60	c	974	A2M	O3'-C3'	2.80	1.49	1.43
60	c	562	OMG	C8-N7	-2.80	1.30	1.35
11	AA	2729	OMU	C6-N1	2.80	1.44	1.38
11	AA	2347	OMU	C6-N1	2.80	1.44	1.38
11	AA	2946	A2M	C5-C4	-2.80	1.33	1.40
11	AA	807	A2M	C5-C4	-2.79	1.33	1.40
11	AA	2921	OMU	C6-N1	2.79	1.44	1.38
11	AA	2815	OMG	C8-N7	-2.79	1.30	1.35
11	AA	2619	OMG	C8-N7	-2.79	1.30	1.35
11	AA	2922	OMG	C8-N7	-2.79	1.30	1.35
11	AA	2421	OMU	C6-N1	2.78	1.44	1.38
11	AA	1888	OMU	C6-N1	2.78	1.44	1.38
11	AA	2417	OMU	C6-N1	2.78	1.44	1.38
11	AA	1133	A2M	O3'-C3'	2.78	1.49	1.43
11	AA	898	OMU	C6-N1	2.78	1.44	1.38
11	AA	817	A2M	C5-C4	-2.77	1.33	1.40
60	c	974	A2M	C5-C4	-2.77	1.33	1.40
60	c	1126	OMG	C8-N7	-2.77	1.30	1.35
60	c	1271	OMG	C8-N7	-2.75	1.30	1.35
14	Bb	37	YYG	C13-C12	2.75	1.58	1.50
11	AA	2946	A2M	O3'-C3'	2.75	1.49	1.43
60	c	796	A2M	C5-C4	-2.75	1.33	1.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	AA	2793	OMG	C8-N7	-2.75	1.30	1.35
11	AA	1449	A2M	C5-C4	-2.74	1.33	1.40
60	c	619	A2M	C5-C4	-2.73	1.33	1.40
11	AA	2724	OMU	C6-N1	2.73	1.44	1.38
14	Bb	37	YYG	C4-N3	-2.73	1.35	1.40
11	AA	2256	A2M	C5-C4	-2.72	1.33	1.40
11	AA	2640	A2M	C5-C4	-2.72	1.33	1.40
60	c	100	A2M	C5-C4	-2.72	1.33	1.40
11	AA	876	A2M	C5-C4	-2.71	1.33	1.40
60	c	796	A2M	O2'-C2'	-2.71	1.35	1.42
11	AA	2280	A2M	C5-C4	-2.70	1.33	1.40
11	AA	2220	A2M	C5-C4	-2.70	1.33	1.40
60	c	436	A2M	C5-C4	-2.68	1.33	1.40
60	c	1782	MA6	C5-C4	-2.68	1.33	1.40
11	AA	2946	A2M	O2'-C2'	-2.67	1.35	1.42
60	c	28	A2M	C5-C4	-2.67	1.33	1.40
60	c	28	A2M	O2'-C2'	-2.66	1.35	1.42
11	AA	2281	A2M	O2'-C2'	-2.65	1.35	1.42
60	c	1781	MA6	C5-C4	-2.65	1.33	1.40
60	c	1575	G7M	C2-N1	2.65	1.44	1.37
60	c	619	A2M	O2'-C2'	-2.65	1.35	1.42
60	c	436	A2M	O2'-C2'	-2.65	1.35	1.42
60	c	100	A2M	O2'-C2'	-2.64	1.35	1.42
11	AA	1449	A2M	O2'-C2'	-2.64	1.35	1.42
11	AA	807	A2M	O2'-C2'	-2.63	1.35	1.42
60	c	420	A2M	C5-C4	-2.63	1.34	1.40
60	c	541	A2M	C5-C4	-2.61	1.34	1.40
11	AA	2142	1MA	C8-N7	-2.61	1.30	1.35
14	Bb	37	YYG	C10-C11	2.61	1.54	1.50
11	AA	1133	A2M	O2'-C2'	-2.61	1.35	1.42
11	AA	2640	A2M	O2'-C2'	-2.61	1.35	1.42
60	c	1572	OMG	C8-N7	-2.60	1.30	1.35
60	c	420	A2M	O2'-C2'	-2.59	1.36	1.42
60	c	541	A2M	O2'-C2'	-2.59	1.36	1.42
11	AA	817	A2M	O2'-C2'	-2.59	1.36	1.42
60	c	974	A2M	O2'-C2'	-2.57	1.36	1.42
11	AA	876	A2M	O2'-C2'	-2.56	1.36	1.42
11	AA	2220	A2M	O2'-C2'	-2.56	1.36	1.42
11	AA	649	A2M	O2'-C2'	-2.55	1.36	1.42
11	AA	2280	A2M	O2'-C2'	-2.55	1.36	1.42
11	AA	2347	OMU	O2-C2	-2.53	1.18	1.23
60	c	578	OMU	C5-C4	2.50	1.49	1.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
60	c	1126	OMG	C5-C6	-2.50	1.42	1.47
11	AA	2724	OMU	O2-C2	-2.47	1.18	1.23
11	AA	1450	OMG	C5-C6	-2.47	1.42	1.47
60	c	1773	4AC	C6-N1	2.47	1.44	1.38
60	c	1428	OMG	C5-C6	-2.47	1.42	1.47
11	AA	2922	OMG	C5-C6	-2.46	1.42	1.47
11	AA	645	1MA	C8-N7	-2.45	1.30	1.35
11	AA	2421	OMU	O2-C2	-2.44	1.18	1.23
60	c	1781	MA6	C2-N3	2.44	1.36	1.32
11	AA	2815	OMG	C5-C6	-2.43	1.42	1.47
11	AA	2921	OMU	O2-C2	-2.43	1.18	1.23
11	AA	867	OMG	C5-C6	-2.43	1.42	1.47
60	c	1280	4AC	C6-N1	2.43	1.43	1.38
60	c	1269	OMU	C5-C4	2.43	1.49	1.43
11	AA	898	OMU	O2-C2	-2.42	1.18	1.23
11	AA	908	OMG	C5-C6	-2.40	1.42	1.47
11	AA	2791	OMG	C5-C6	-2.40	1.42	1.47
11	AA	2619	OMG	C5-C6	-2.39	1.42	1.47
11	AA	2417	OMU	O2-C2	-2.39	1.18	1.23
11	AA	2288	OMG	C5-C6	-2.38	1.42	1.47
11	AA	805	OMG	C5-C6	-2.38	1.42	1.47
11	AA	1888	OMU	O2-C2	-2.37	1.18	1.23
60	c	562	OMG	C5-C6	-2.37	1.42	1.47
60	c	1269	OMU	O2-C2	-2.37	1.18	1.23
11	AA	2793	OMG	C5-C6	-2.37	1.42	1.47
11	AA	2921	OMU	C5-C4	2.34	1.48	1.43
60	c	1572	OMG	C5-C6	-2.33	1.42	1.47
11	AA	2729	OMU	O2-C2	-2.32	1.18	1.23
11	AA	2729	OMU	C5-C4	2.32	1.48	1.43
60	c	1773	4AC	O7-C7	-2.31	1.18	1.23
60	c	578	OMU	O2-C2	-2.30	1.18	1.23
11	AA	2421	OMU	C5-C4	2.30	1.48	1.43
60	c	1271	OMG	C5-C6	-2.29	1.42	1.47
11	AA	645	1MA	C5-C4	-2.29	1.37	1.43
11	AA	2142	1MA	C5-C4	-2.28	1.37	1.43
11	AA	2724	OMU	C5-C4	2.28	1.48	1.43
60	c	1782	MA6	C2-N3	2.27	1.35	1.32
11	AA	898	OMU	C5-C4	2.27	1.48	1.43
11	AA	2256	A2M	O2'-C2'	-2.24	1.36	1.42
11	AA	2347	OMU	C5-C4	2.23	1.48	1.43
60	c	1280	4AC	O7-C7	-2.23	1.18	1.23
11	AA	1888	OMU	C5-C4	2.23	1.48	1.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
60	c	420	A2M	C2-N3	2.20	1.35	1.32
60	c	1575	G7M	O6-C6	-2.19	1.18	1.23
60	c	619	A2M	O5'-C5'	-2.19	1.39	1.44
11	AA	2417	OMU	C5-C4	2.17	1.48	1.43
11	AA	2280	A2M	C2-N3	2.17	1.35	1.32
11	AA	2634	UR3	C4-N3	2.16	1.45	1.40
11	AA	2634	UR3	C5-C4	2.15	1.49	1.43
60	c	100	A2M	C2-N3	2.15	1.35	1.32
60	c	541	A2M	C2-N3	2.15	1.35	1.32
60	c	796	A2M	C2-N3	2.13	1.35	1.32
11	AA	2634	UR3	O2-C2	-2.12	1.18	1.22
60	c	1191	B8N	O4-C4	-2.10	1.18	1.23
11	AA	817	A2M	C2-N3	2.10	1.35	1.32
11	AA	2220	A2M	C2-N3	2.10	1.35	1.32
60	c	436	A2M	C2-N3	2.09	1.35	1.32
11	AA	876	A2M	C2-N3	2.09	1.35	1.32
11	AA	2640	A2M	C2-N3	2.08	1.35	1.32
60	c	28	A2M	C2-N3	2.08	1.35	1.32
11	AA	2256	A2M	C2-N3	2.08	1.35	1.32
60	c	974	A2M	C2-N3	2.07	1.35	1.32
11	AA	2281	A2M	C2-N3	2.07	1.35	1.32
60	c	619	A2M	C2-N3	2.06	1.35	1.32
60	c	1191	B8N	O2-C2	-2.05	1.18	1.22
11	AA	2281	A2M	O5'-C5'	-2.04	1.39	1.44
11	AA	1449	A2M	C2-N3	2.03	1.35	1.32
11	AA	649	A2M	C2-N3	2.02	1.35	1.32
11	AA	1133	A2M	C2-N3	2.00	1.35	1.32

All (179) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
60	c	1782	MA6	N1-C6-N6	-14.07	102.25	117.06
60	c	1781	MA6	N1-C6-N6	-13.68	102.66	117.06
11	AA	817	A2M	C5-C6-N6	10.75	136.68	120.35
60	c	619	A2M	C5-C6-N6	10.63	136.50	120.35
11	AA	1133	A2M	C5-C6-N6	10.60	136.46	120.35
60	c	420	A2M	C5-C6-N6	10.54	136.37	120.35
11	AA	876	A2M	C5-C6-N6	10.54	136.37	120.35
11	AA	807	A2M	C5-C6-N6	10.54	136.36	120.35
60	c	28	A2M	C5-C6-N6	10.54	136.36	120.35
60	c	541	A2M	C5-C6-N6	10.53	136.35	120.35
11	AA	2220	A2M	C5-C6-N6	10.53	136.35	120.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
11	AA	2256	A2M	C5-C6-N6	10.51	136.32	120.35
11	AA	649	A2M	C5-C6-N6	10.49	136.29	120.35
11	AA	2280	A2M	C5-C6-N6	10.49	136.29	120.35
60	c	436	A2M	C5-C6-N6	10.46	136.25	120.35
11	AA	1449	A2M	C5-C6-N6	10.45	136.23	120.35
60	c	974	A2M	C5-C6-N6	10.41	136.18	120.35
11	AA	2946	A2M	C5-C6-N6	10.41	136.17	120.35
60	c	100	A2M	C5-C6-N6	10.40	136.15	120.35
11	AA	2640	A2M	C5-C6-N6	10.38	136.13	120.35
60	c	796	A2M	C5-C6-N6	10.36	136.10	120.35
11	AA	2281	A2M	C5-C6-N6	10.15	135.78	120.35
11	AA	817	A2M	N6-C6-N1	-7.47	103.07	118.57
60	c	619	A2M	N6-C6-N1	-7.26	103.50	118.57
60	c	420	A2M	N6-C6-N1	-7.23	103.56	118.57
11	AA	2946	A2M	N6-C6-N1	-7.18	103.66	118.57
60	c	28	A2M	N6-C6-N1	-7.18	103.67	118.57
11	AA	1133	A2M	N6-C6-N1	-7.16	103.70	118.57
11	AA	1449	A2M	N6-C6-N1	-7.16	103.70	118.57
11	AA	2220	A2M	N6-C6-N1	-7.16	103.70	118.57
60	c	541	A2M	N6-C6-N1	-7.16	103.71	118.57
60	c	100	A2M	N6-C6-N1	-7.16	103.72	118.57
11	AA	807	A2M	N6-C6-N1	-7.15	103.72	118.57
11	AA	2280	A2M	N6-C6-N1	-7.15	103.73	118.57
11	AA	649	A2M	N6-C6-N1	-7.15	103.74	118.57
11	AA	2256	A2M	N6-C6-N1	-7.14	103.75	118.57
11	AA	876	A2M	N6-C6-N1	-7.14	103.75	118.57
60	c	436	A2M	N6-C6-N1	-7.12	103.79	118.57
60	c	974	A2M	N6-C6-N1	-7.12	103.79	118.57
11	AA	2281	A2M	N6-C6-N1	-7.06	103.92	118.57
11	AA	2640	A2M	N6-C6-N1	-7.05	103.93	118.57
60	c	796	A2M	N6-C6-N1	-7.02	104.01	118.57
11	AA	1133	A2M	N3-C2-N1	-5.75	119.69	128.68
60	c	28	A2M	N3-C2-N1	-5.70	119.77	128.68
60	c	1773	4AC	CM7-C7-N4	5.64	125.06	115.29
11	AA	2281	A2M	N3-C2-N1	-5.63	119.87	128.68
11	AA	2946	A2M	N3-C2-N1	-5.63	119.87	128.68
60	c	1280	4AC	CM7-C7-N4	5.61	125.00	115.29
60	c	796	A2M	N3-C2-N1	-5.60	119.92	128.68
60	c	974	A2M	N3-C2-N1	-5.58	119.95	128.68
11	AA	817	A2M	N3-C2-N1	-5.57	119.97	128.68
11	AA	649	A2M	N3-C2-N1	-5.57	119.98	128.68
11	AA	2220	A2M	N3-C2-N1	-5.56	119.98	128.68

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
60	c	100	A2M	N3-C2-N1	-5.54	120.02	128.68
11	AA	2280	A2M	N3-C2-N1	-5.54	120.02	128.68
11	AA	2256	A2M	N3-C2-N1	-5.54	120.03	128.68
11	AA	876	A2M	N3-C2-N1	-5.53	120.03	128.68
60	c	1782	MA6	N3-C2-N1	-5.53	120.04	128.68
60	c	420	A2M	N3-C2-N1	-5.52	120.04	128.68
11	AA	1449	A2M	N3-C2-N1	-5.51	120.06	128.68
60	c	436	A2M	N3-C2-N1	-5.48	120.11	128.68
60	c	619	A2M	N3-C2-N1	-5.48	120.11	128.68
60	c	541	A2M	N3-C2-N1	-5.45	120.16	128.68
60	c	1781	MA6	N3-C2-N1	-5.43	120.19	128.68
11	AA	2640	A2M	N3-C2-N1	-5.39	120.26	128.68
11	AA	807	A2M	N3-C2-N1	-5.36	120.30	128.68
60	c	1269	OMU	C4-N3-C2	-5.33	119.55	126.58
60	c	578	OMU	C4-N3-C2	-5.31	119.58	126.58
11	AA	2421	OMU	C4-N3-C2	-5.25	119.66	126.58
11	AA	2921	OMU	C4-N3-C2	-5.21	119.70	126.58
11	AA	1888	OMU	C4-N3-C2	-5.20	119.72	126.58
11	AA	2724	OMU	C4-N3-C2	-5.19	119.73	126.58
11	AA	2729	OMU	C4-N3-C2	-5.17	119.76	126.58
11	AA	2417	OMU	C4-N3-C2	-5.15	119.78	126.58
11	AA	898	OMU	C4-N3-C2	-5.12	119.83	126.58
11	AA	2347	OMU	C4-N3-C2	-5.08	119.88	126.58
60	c	1191	B8N	C5-C4-N3	4.99	125.41	116.17
11	AA	2634	UR3	C4-N3-C2	-4.86	119.98	124.56
60	c	1191	B8N	C4-N3-C2	-4.36	119.95	125.46
14	Bb	37	YYG	O23-C21-N20	4.08	117.96	110.80
11	AA	2421	OMU	N3-C2-N1	3.97	120.16	114.89
11	AA	1888	OMU	N3-C2-N1	3.88	120.04	114.89
60	c	1269	OMU	N3-C2-N1	3.88	120.04	114.89
11	AA	2921	OMU	N3-C2-N1	3.82	119.96	114.89
11	AA	2724	OMU	N3-C2-N1	3.77	119.90	114.89
11	AA	2417	OMU	N3-C2-N1	3.73	119.83	114.89
11	AA	898	OMU	N3-C2-N1	3.69	119.79	114.89
60	c	578	OMU	N3-C2-N1	3.67	119.76	114.89
11	AA	2347	OMU	N3-C2-N1	3.66	119.75	114.89
11	AA	2729	OMU	N3-C2-N1	3.65	119.74	114.89
14	Bb	37	YYG	O23-C21-O22	-3.57	119.33	124.58
60	c	578	OMU	C5-C4-N3	3.46	120.02	114.84
11	AA	2724	OMU	C5-C4-N3	3.39	119.91	114.84
11	AA	2347	OMU	C5-C4-N3	3.39	119.91	114.84
11	AA	1437	OMC	C1'-N1-C2	3.38	125.97	118.42

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
14	Bb	37	YYG	O18-C16-C15	3.38	120.18	111.52
11	AA	2417	OMU	C5-C4-N3	3.38	119.89	114.84
14	Bb	37	YYG	C24-O23-C21	3.34	119.60	115.66
11	AA	2729	OMU	C5-C4-N3	3.34	119.83	114.84
60	c	1269	OMU	C5-C4-N3	3.33	119.83	114.84
11	AA	2921	OMU	C5-C4-N3	3.30	119.78	114.84
14	Bb	37	YYG	C3-N3-C2	-3.25	117.09	120.13
11	AA	898	OMU	C5-C4-N3	3.24	119.69	114.84
11	AA	1888	OMU	C5-C4-N3	3.24	119.68	114.84
11	AA	2421	OMU	C5-C4-N3	3.23	119.68	114.84
60	c	1191	B8N	N3-C2-N1	3.18	121.25	116.76
11	AA	2256	A2M	O2'-C2'-C1'	3.17	115.38	109.09
60	c	1575	G7M	C2-N1-C6	-3.07	119.45	125.10
14	Bb	37	YYG	C5-C6-N1	3.06	118.53	113.96
11	AA	2417	OMU	O4-C4-C5	-2.97	119.93	125.16
60	c	1280	4AC	C6-C5-C4	2.94	120.56	116.96
60	c	1191	B8N	C31-N3-C4	2.91	121.59	117.31
11	AA	1888	OMU	O4-C4-C5	-2.90	120.06	125.16
11	AA	2347	OMU	O4-C4-C5	-2.89	120.07	125.16
11	AA	2724	OMU	O4-C4-C5	-2.85	120.15	125.16
60	c	1269	OMU	O4-C4-C5	-2.85	120.15	125.16
11	AA	898	OMU	O4-C4-C5	-2.84	120.16	125.16
60	c	578	OMU	O4-C4-C5	-2.84	120.17	125.16
14	Bb	37	YYG	C8-N7-C5	2.83	108.38	102.99
11	AA	2921	OMU	O4-C4-C5	-2.82	120.20	125.16
11	AA	2421	OMU	O4-C4-C5	-2.80	120.23	125.16
11	AA	2948	OMC	C1'-N1-C2	2.76	124.59	118.42
60	c	1280	4AC	O7-C7-N4	-2.76	117.34	121.82
14	Bb	37	YYG	C3-N3-C4	2.73	121.57	116.71
60	c	1280	4AC	C5-C4-N3	-2.71	118.23	122.59
60	c	1773	4AC	C6-C5-C4	2.67	120.23	116.96
60	c	1773	4AC	O7-C7-N4	-2.66	117.51	121.82
11	AA	2729	OMU	O4-C4-C5	-2.65	120.50	125.16
11	AA	1437	OMC	C1'-N1-C6	-2.65	115.07	120.84
11	AA	2281	A2M	O4'-C1'-C2'	-2.59	102.10	106.59
60	c	1773	4AC	C5-C4-N3	-2.58	118.45	122.59
11	AA	2640	A2M	C1'-N9-C4	2.55	131.12	126.64
60	c	1280	4AC	O2-C2-N3	-2.52	118.24	122.33
60	c	541	A2M	C1'-N9-C4	2.51	131.05	126.64
60	c	1773	4AC	O7-C7-CM7	-2.49	117.44	122.06
11	AA	876	A2M	C1'-N9-C4	2.49	131.01	126.64
11	AA	805	OMG	O6-C6-C5	2.48	129.21	124.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
60	c	1271	OMG	O6-C6-C5	2.43	129.12	124.37
11	AA	2791	OMG	O6-C6-C5	2.41	129.09	124.37
11	AA	2347	OMU	C1'-N1-C2	2.41	121.94	117.57
11	AA	2815	OMG	O6-C6-C5	2.41	129.08	124.37
11	AA	2619	OMG	O6-C6-C5	2.39	129.05	124.37
14	Bb	37	YYG	O18-C16-O17	-2.38	119.18	123.84
11	AA	2142	1MA	N1-C6-N6	2.38	125.81	119.77
11	AA	2288	OMG	O6-C6-C5	2.37	129.01	124.37
11	AA	867	OMG	O6-C6-C5	2.37	129.00	124.37
11	AA	2793	OMG	O6-C6-C5	2.37	129.00	124.37
60	c	1280	4AC	O7-C7-CM7	-2.37	117.66	122.06
11	AA	2256	A2M	O4'-C1'-C2'	-2.36	102.50	106.59
60	c	562	OMG	O6-C6-C5	2.35	128.96	124.37
60	c	1428	OMG	O6-C6-C5	2.35	128.95	124.37
11	AA	2922	OMG	O6-C6-C5	2.34	128.95	124.37
60	c	1269	OMU	O2-C2-N1	-2.34	119.68	122.79
11	AA	807	A2M	C1'-N9-C4	2.34	130.75	126.64
60	c	1126	OMG	O6-C6-C5	2.34	128.94	124.37
60	c	1572	OMG	O6-C6-C5	2.32	128.91	124.37
11	AA	1450	OMG	O6-C6-C5	2.31	128.89	124.37
11	AA	2634	UR3	C6-N1-C2	-2.27	119.75	121.79
60	c	1191	B8N	O4-C4-N3	-2.27	116.12	119.98
11	AA	908	OMG	O6-C6-C5	2.26	128.78	124.37
11	AA	645	1MA	N1-C6-N6	2.23	125.43	119.77
11	AA	1888	OMU	O2-C2-N1	-2.23	119.83	122.79
11	AA	2280	A2M	C1'-N9-C4	2.17	130.46	126.64
11	AA	649	A2M	C1'-N9-C4	2.16	130.43	126.64
60	c	796	A2M	C1'-N9-C4	2.15	130.41	126.64
11	AA	2921	OMU	O2-C2-N1	-2.14	119.94	122.79
11	AA	645	1MA	C5-C6-N1	-2.13	110.72	113.90
11	AA	1449	A2M	C1'-N9-C4	2.11	130.34	126.64
11	AA	2142	1MA	C5-C6-N1	-2.10	110.76	113.90
11	AA	2634	UR3	C1'-N1-C2	2.09	120.52	116.99
60	c	974	A2M	C1'-N9-C4	2.07	130.28	126.64
60	c	1191	B8N	C32-C31-N3	2.07	115.87	112.00
14	Bb	37	YYG	O6-C6-C5	-2.05	120.53	124.17
11	AA	2421	OMU	O2-C2-N1	-2.05	120.07	122.79
60	c	1191	B8N	O4'-C1'-C2'	2.04	108.02	105.14
11	AA	2948	OMC	C1'-N1-C6	-2.04	116.39	120.84
60	c	578	OMU	O2-C2-N1	-2.02	120.10	122.79
60	c	436	A2M	C1'-N9-C4	2.02	130.19	126.64
11	AA	2729	OMU	O2-C2-N1	-2.02	120.11	122.79

There are no chirality outliers.

All (92) 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	867	OMG	C3'-C4'-C5'-O5'
11	AA	898	OMU	C1'-C2'-O2'-CM2
11	AA	1437	OMC	C1'-C2'-O2'-CM2
11	AA	1450	OMG	O4'-C4'-C5'-O5'
11	AA	1450	OMG	C3'-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	2619	OMG	C1'-C2'-O2'-CM2
11	AA	2640	A2M	C1'-C2'-O2'-CM'
11	AA	2724	OMU	C1'-C2'-O2'-CM2
11	AA	2729	OMU	C1'-C2'-O2'-CM2
11	AA	2922	OMG	O4'-C4'-C5'-O5'
14	Bb	37	YYG	N1-C12-C13-C14
14	Bb	37	YYG	C11-C12-C13-C14
14	Bb	37	YYG	C12-C13-C14-C15
14	Bb	37	YYG	C13-C14-C15-N20
14	Bb	37	YYG	O22-C21-N20-C15
14	Bb	37	YYG	O23-C21-N20-C15
14	Bb	37	YYG	N20-C21-O23-C24
14	Bb	37	YYG	O22-C21-O23-C24
60	c	28	A2M	C1'-C2'-O2'-CM'
60	c	414	OMC	C3'-C4'-C5'-O5'
60	c	414	OMC	O4'-C4'-C5'-O5'
60	c	420	A2M	C1'-C2'-O2'-CM'
60	c	541	A2M	O4'-C4'-C5'-O5'
60	c	541	A2M	C3'-C4'-C5'-O5'
60	c	578	OMU	O4'-C4'-C5'-O5'
60	c	1191	B8N	N34-C33-C34-O35
60	c	1191	B8N	C31-C32-C33-N34
60	c	1271	OMG	C1'-C2'-O2'-CM2
60	c	1428	OMG	C1'-C2'-O2'-CM2
60	c	1572	OMG	O4'-C4'-C5'-O5'
60	c	1572	OMG	C3'-C4'-C5'-O5'
60	c	1782	MA6	O4'-C4'-C5'-O5'
14	Bb	37	YYG	C15-C16-O18-C19

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Mol	Chain	Res	Type	Atoms
60	c	578	OMU	C2'-C1'-N1-C6
11	AA	867	OMG	O4'-C4'-C5'-O5'
11	AA	2922	OMG	C3'-C4'-C5'-O5'
60	c	1575	G7M	C3'-C4'-C5'-O5'
60	c	1782	MA6	C3'-C4'-C5'-O5'
14	Bb	37	YYG	O17-C16-O18-C19
60	c	1191	B8N	N34-C33-C34-O36
11	AA	2281	A2M	O4'-C4'-C5'-O5'
60	c	100	A2M	O4'-C4'-C5'-O5'
60	c	1575	G7M	O4'-C4'-C5'-O5'
11	AA	2870	5MC	C2'-C1'-N1-C6
60	c	578	OMU	C2'-C1'-N1-C2
11	AA	2280	A2M	O4'-C4'-C5'-O5'
14	Bb	37	YYG	C13-C14-C15-C16
11	AA	2281	A2M	C3'-C4'-C5'-O5'
14	Bb	37	YYG	C14-C15-C16-O18
14	Bb	37	YYG	C14-C15-C16-O17
11	AA	2256	A2M	O4'-C4'-C5'-O5'
60	c	1280	4AC	C3'-C4'-C5'-O5'
11	AA	2870	5MC	C2'-C1'-N1-C2
60	c	541	A2M	C4'-C5'-O5'-P
11	AA	2870	5MC	O4'-C1'-N1-C6
60	c	1280	4AC	O7-C7-N4-C4
60	c	1280	4AC	CM7-C7-N4-C4
60	c	1773	4AC	O7-C7-N4-C4
60	c	1773	4AC	CM7-C7-N4-C4
60	c	100	A2M	C3'-C4'-C5'-O5'
60	c	578	OMU	O4'-C1'-N1-C6
60	c	619	A2M	C3'-C4'-C5'-O5'
11	AA	2870	5MC	O4'-C1'-N1-C2
11	AA	817	A2M	C4'-C5'-O5'-P
11	AA	2197	OMC	O4'-C1'-N1-C2
60	c	578	OMU	O4'-C1'-N1-C2
11	AA	2256	A2M	C3'-C4'-C5'-O5'
11	AA	2197	OMC	O4'-C1'-N1-C6
60	c	1572	OMG	C4'-C5'-O5'-P
11	AA	2281	A2M	C3'-C2'-O2'-CM'
60	c	578	OMU	C3'-C2'-O2'-CM2
60	c	1428	OMG	C4'-C5'-O5'-P
11	AA	1437	OMC	C2'-C1'-N1-C6
60	c	578	OMU	C3'-C4'-C5'-O5'
11	AA	1437	OMC	C2'-C1'-N1-C2

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Mol	Chain	Res	Type	Atoms
60	c	1280	4AC	O4'-C4'-C5'-O5'
60	c	1191	B8N	C32-C33-C34-O35
11	AA	2280	A2M	C3'-C4'-C5'-O5'
60	c	578	OMU	C1'-C2'-O2'-CM2
11	AA	908	OMG	C3'-C4'-C5'-O5'
60	c	1191	B8N	C32-C33-C34-O36
60	c	1280	4AC	C2'-C1'-N1-C2
11	AA	1437	OMC	O4'-C4'-C5'-O5'
11	AA	2948	OMC	C2'-C1'-N1-C2
11	AA	817	A2M	O4'-C4'-C5'-O5'

There are no ring outliers.

37 monomers are involved in 64 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
11	AA	2724	OMU	3	0
11	AA	1449	A2M	1	0
11	AA	1133	A2M	1	0
60	c	28	A2M	2	0
11	AA	2870	5MC	1	0
60	c	420	A2M	1	0
11	AA	2815	OMG	1	0
11	AA	2256	A2M	1	0
11	AA	2640	A2M	1	0
60	c	1781	MA6	2	0
11	AA	2220	A2M	3	0
60	c	974	A2M	1	0
60	c	1575	G7M	2	0
11	AA	2347	OMU	1	0
60	c	1428	OMG	1	0
60	c	1271	OMG	1	0
11	AA	649	A2M	3	0
60	c	1782	MA6	1	0
60	c	1280	4AC	4	0
60	c	541	A2M	1	0
11	AA	2959	OMC	1	0
11	AA	898	OMU	2	0
60	c	578	OMU	1	0
11	AA	663	OMC	1	0
11	AA	2619	OMG	1	0
11	AA	650	OMC	2	0
14	Bb	37	YYG	10	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
11	AA	2948	OMC	2	0
11	AA	817	A2M	1	0
60	c	436	A2M	1	0
60	c	796	A2M	1	0
11	AA	2417	OMU	1	0
11	AA	1437	OMC	2	0
60	c	1639	OMC	1	0
60	c	1773	4AC	3	0
11	AA	2793	OMG	3	0
11	AA	2946	A2M	1	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 291 ligands modelled in this entry, 287 are monoatomic - leaving 4 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	3604	-	9,9,9	0.32	0	8,8,8	0.79	0
87	SPD	c	1951	-	9,9,9	0.34	0	8,8,8	0.87	0
87	SPD	AA	3605	-	9,9,9	0.32	0	8,8,8	0.89	0
87	SPD	AA	3603	-	9,9,9	0.33	0	8,8,8	0.85	0

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
87	SPD	AA	3604	-	-	4/7/7/7	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
87	SPD	c	1951	-	-	2/7/7/7	-
87	SPD	AA	3605	-	-	2/7/7/7	-
87	SPD	AA	3603	-	-	2/7/7/7	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (10) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
87	AA	3605	SPD	C8-C7-N6-C5
87	c	1951	SPD	N6-C7-C8-C9
87	AA	3604	SPD	C3-C4-C5-N6
87	AA	3604	SPD	C2-C3-C4-C5
87	AA	3604	SPD	C7-C8-C9-N10
87	c	1951	SPD	C2-C3-C4-C5
87	AA	3604	SPD	N1-C2-C3-C4
87	AA	3605	SPD	C4-C5-N6-C7
87	AA	3603	SPD	C4-C5-N6-C7
87	AA	3603	SPD	C8-C7-N6-C5

There are no ring outliers.

3 monomers are involved in 6 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
87	AA	3604	SPD	3	0
87	c	1951	SPD	2	0
87	AA	3603	SPD	1	0

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.

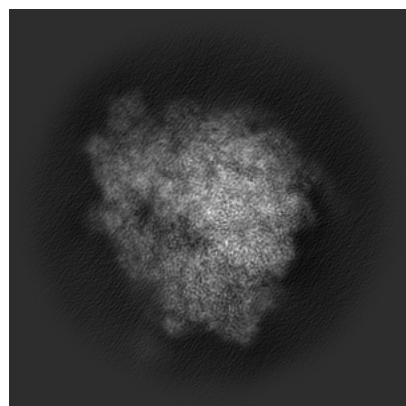
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-16591. These allow visual inspection of the internal detail of the map and identification of artifacts.

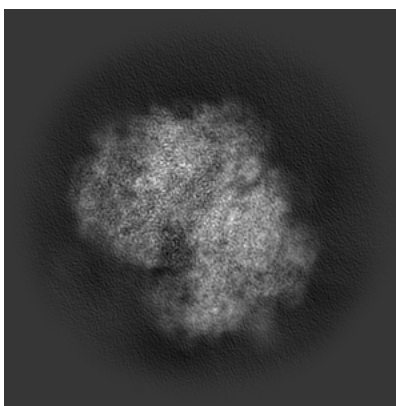
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

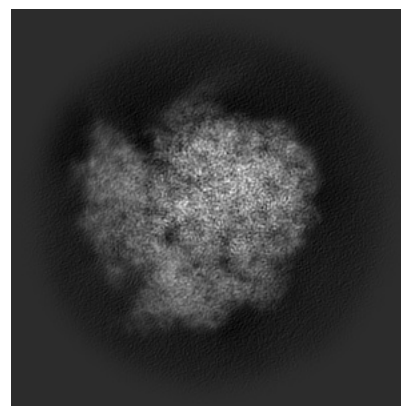
6.1.1 Primary map



X

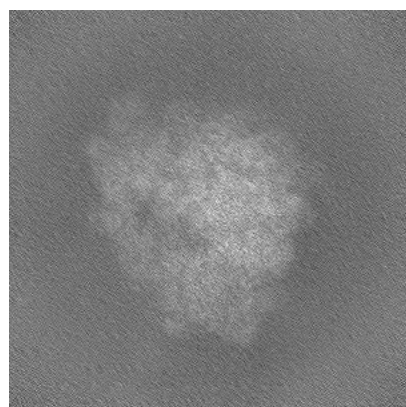


Y

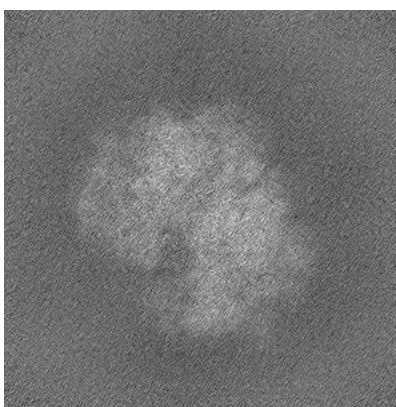


Z

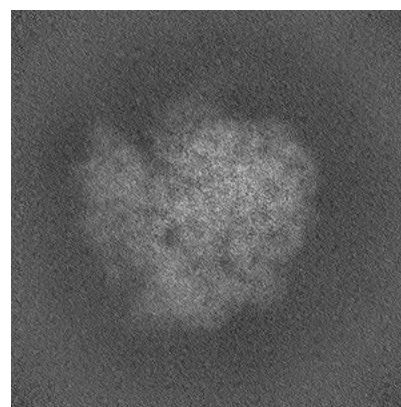
6.1.2 Raw map



X



Y

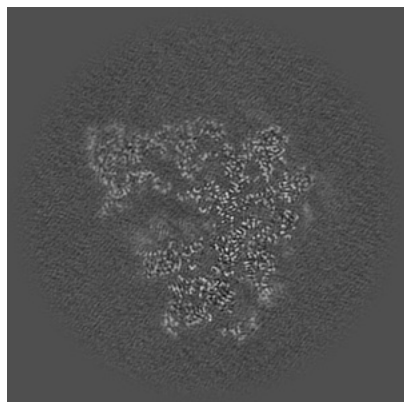


Z

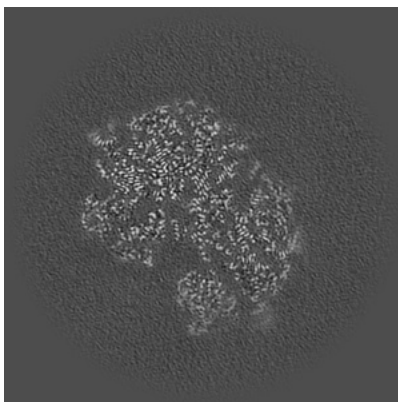
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

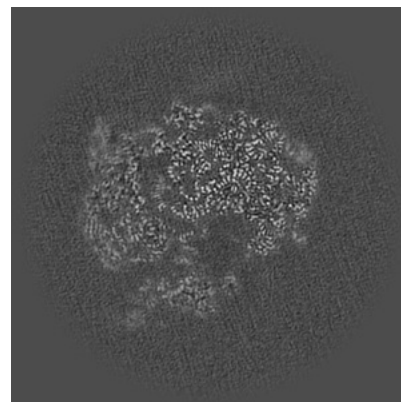
6.2.1 Primary map



X Index: 288

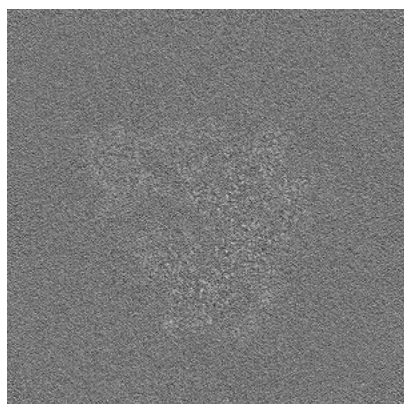


Y Index: 288

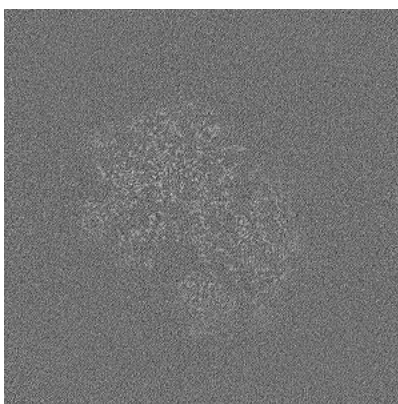


Z Index: 288

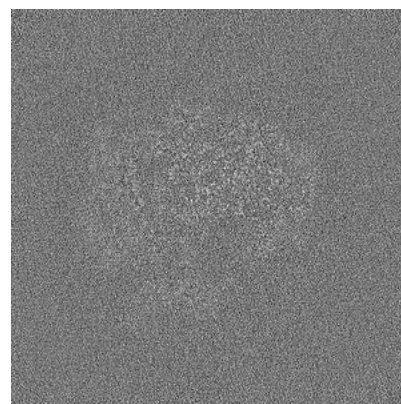
6.2.2 Raw map



X Index: 288



Y Index: 288

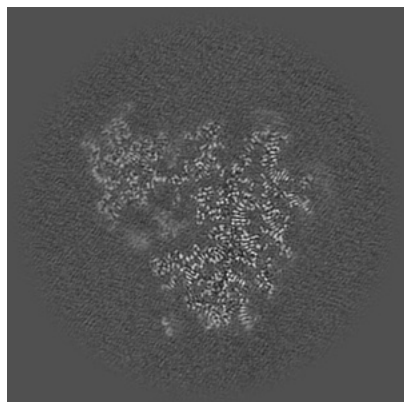


Z Index: 288

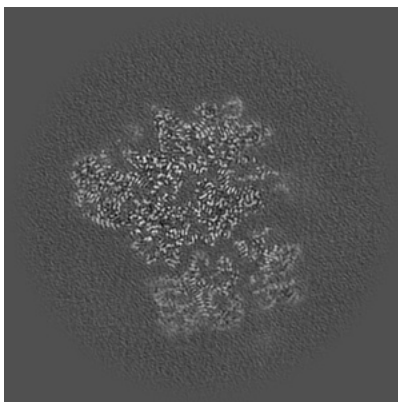
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

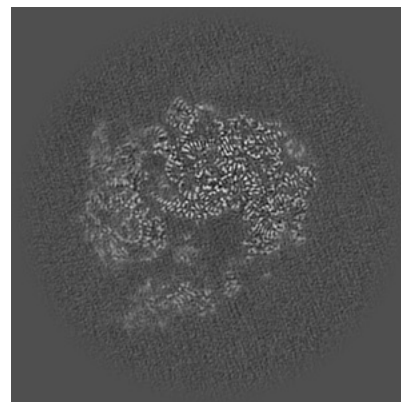
6.3.1 Primary map



X Index: 273

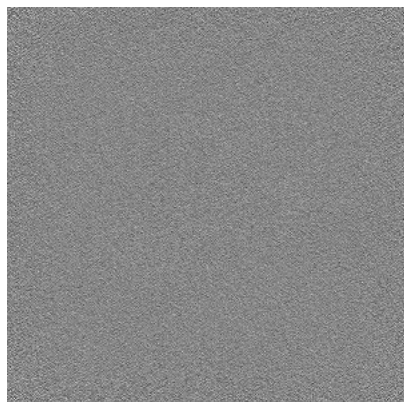


Y Index: 321

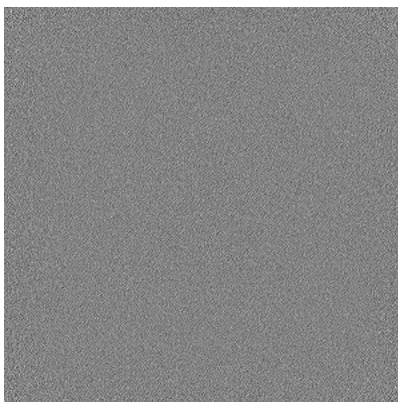


Z Index: 284

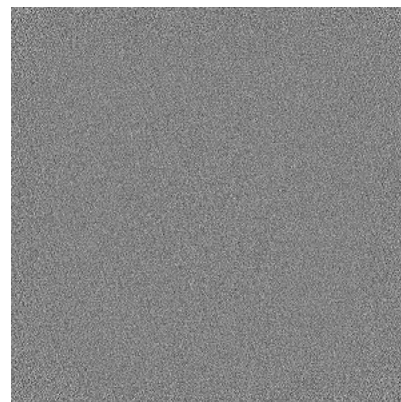
6.3.2 Raw map



X Index: 0



Y Index: 0

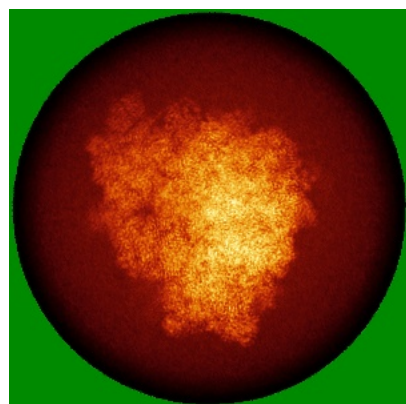


Z Index: 0

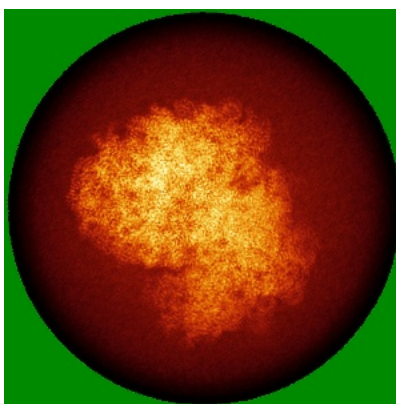
The images above show the largest variance slices of the map in three orthogonal directions.

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

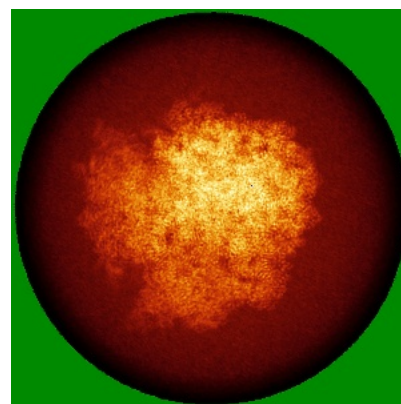
6.4.1 Primary map



X

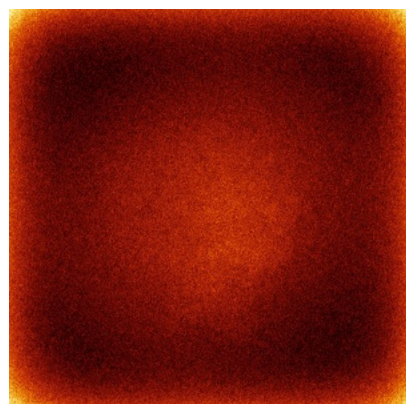


Y

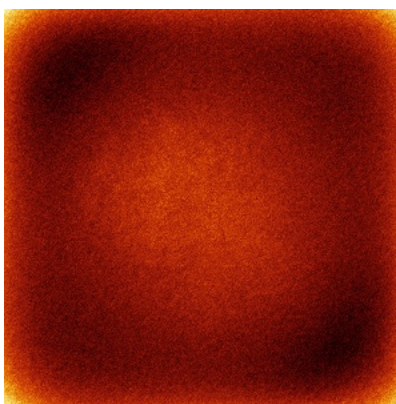


Z

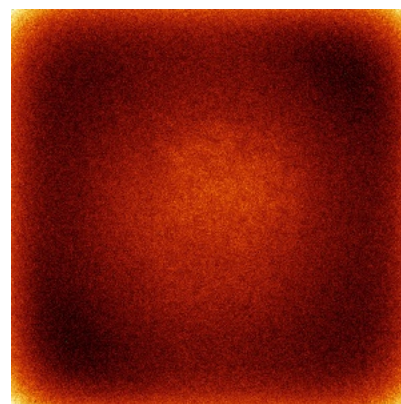
6.4.2 Raw map



X



Y



Z

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

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



X



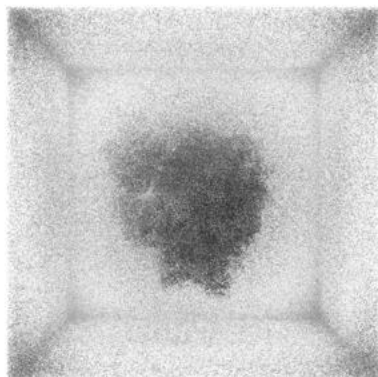
Y



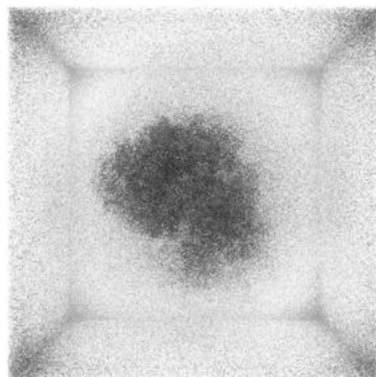
Z

The images above show the 3D surface view of the map at the recommended contour level 0.141. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

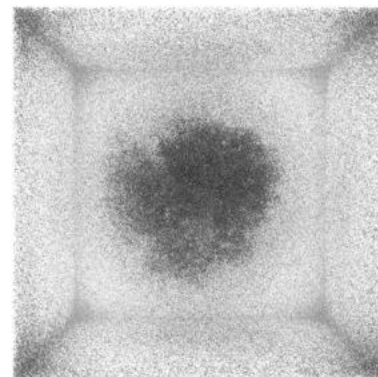
6.5.2 Raw map



X



Y



Z

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.

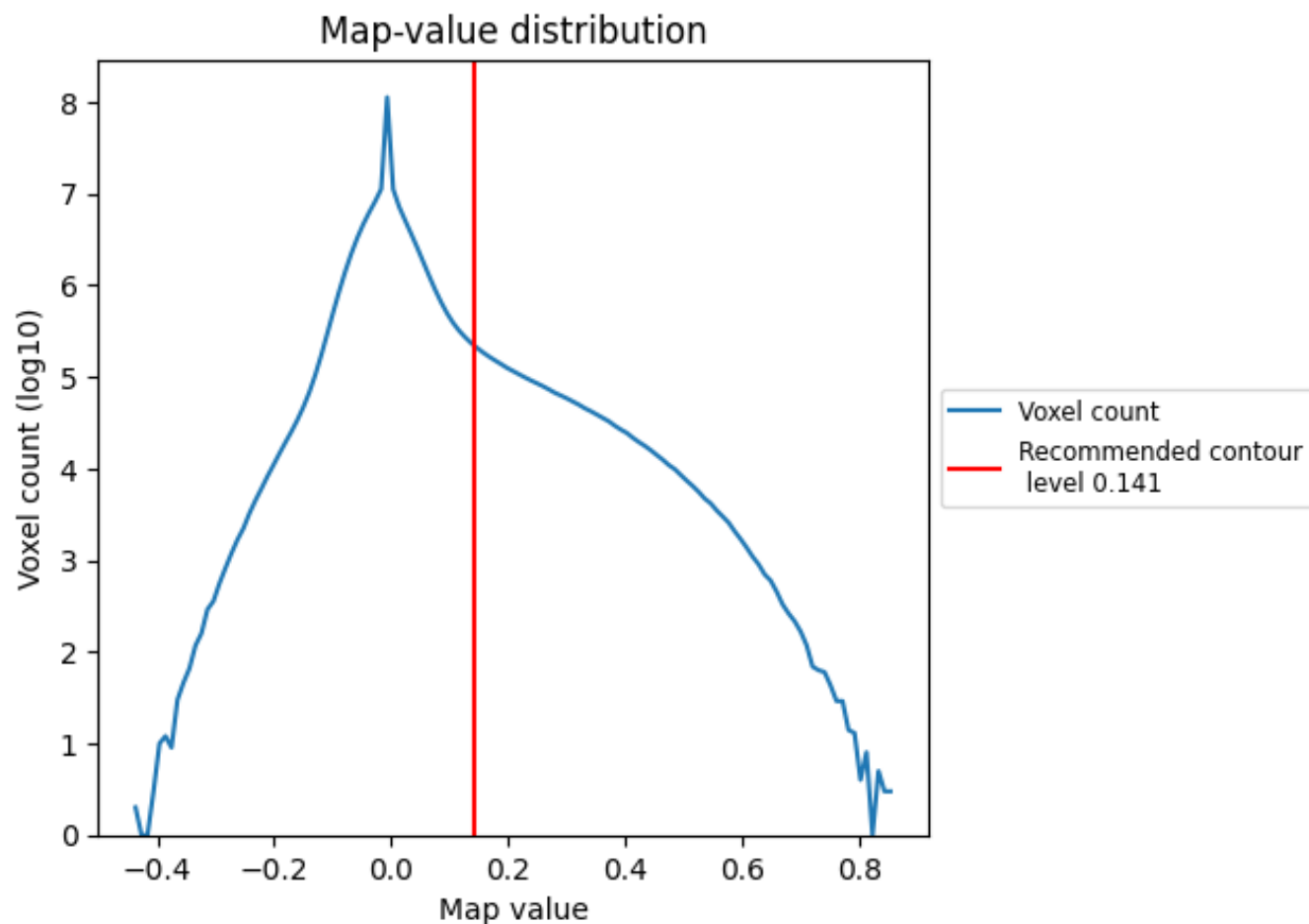
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

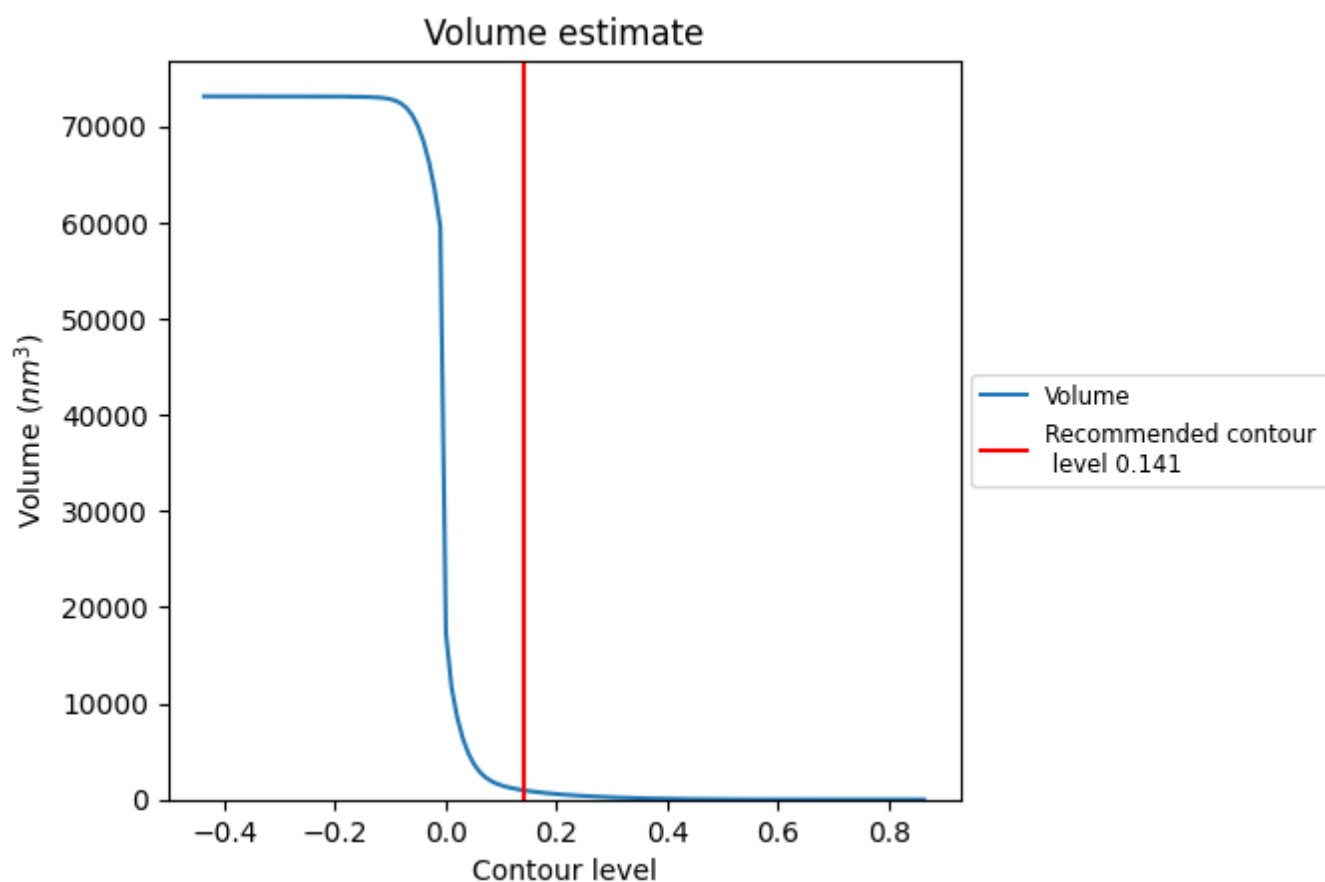
This section contains the results of statistical analysis of the map.

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.

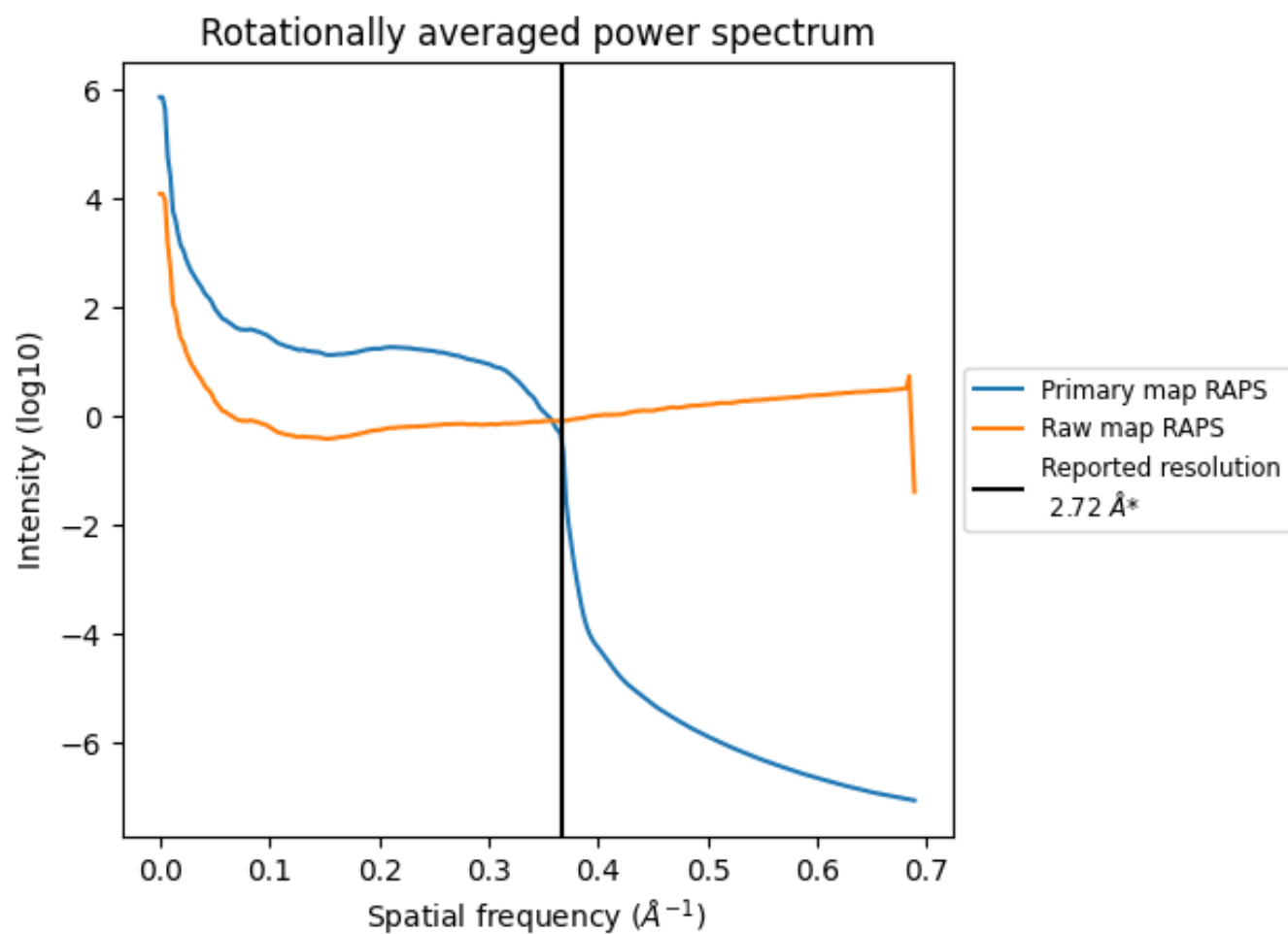
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 959 nm³; this corresponds to an approximate mass of 866 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 ⓘ

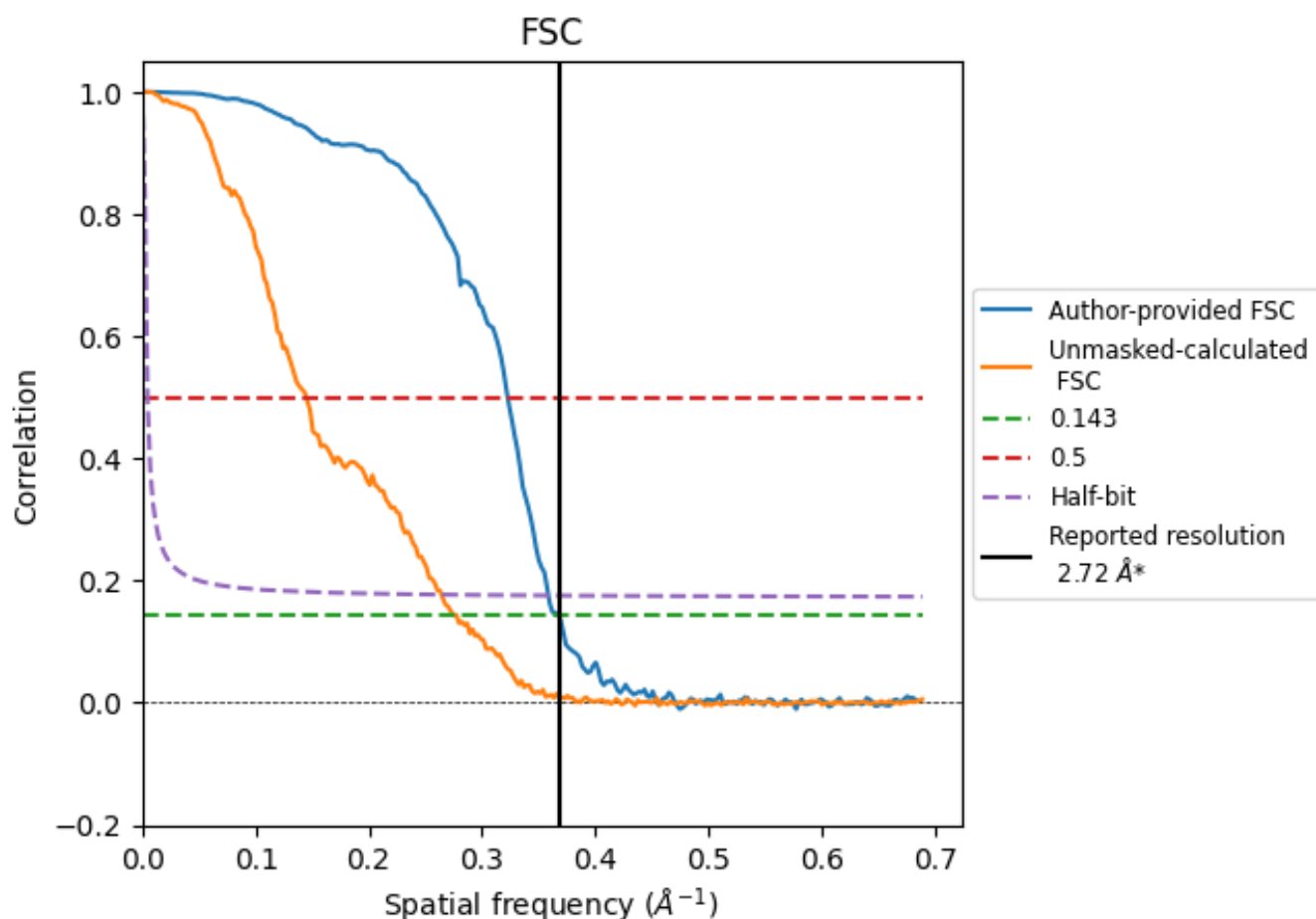


*Reported resolution corresponds to spatial frequency of 0.368 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.368 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

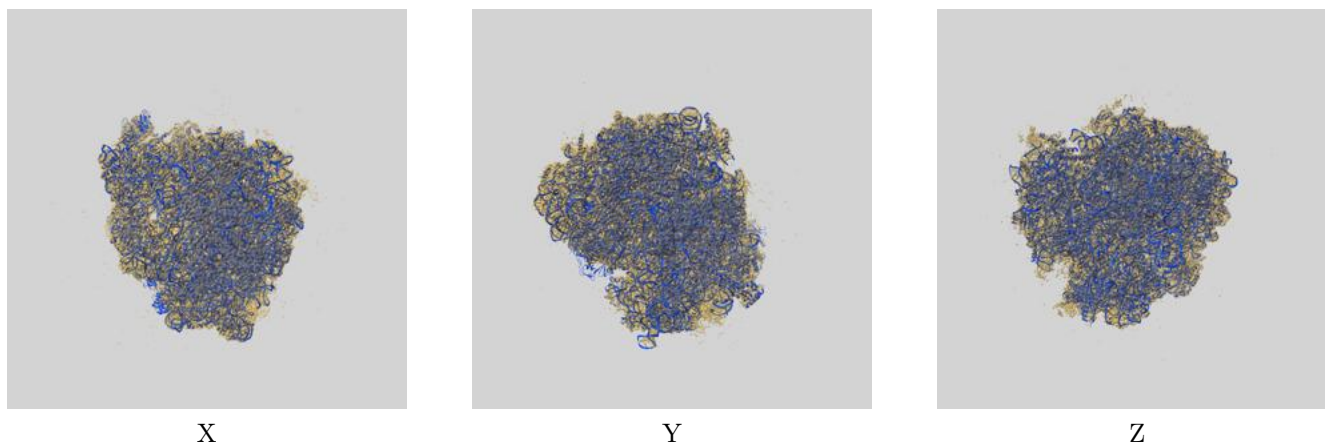
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.72	-	-
Author-provided FSC curve	2.72	3.10	2.79
Unmasked-calculated*	3.64	6.91	3.78

*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 3.64 differs from the reported value 2.72 by more than 10 %

9 Map-model fit [i](#)

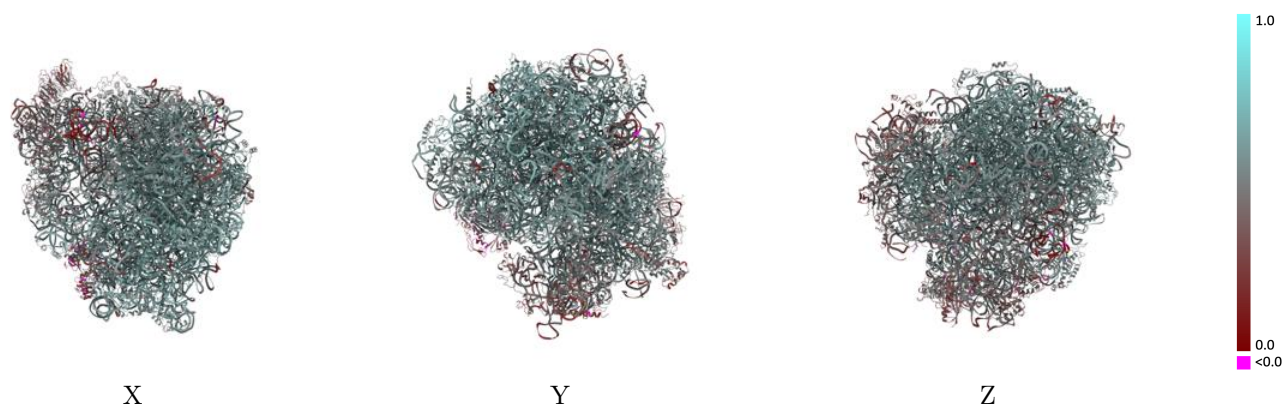
This section contains information regarding the fit between EMDB map EMD-16591 and PDB model 8CDL. Per-residue inclusion information can be found in section 3 on page 24.

9.1 Map-model overlay [i](#)



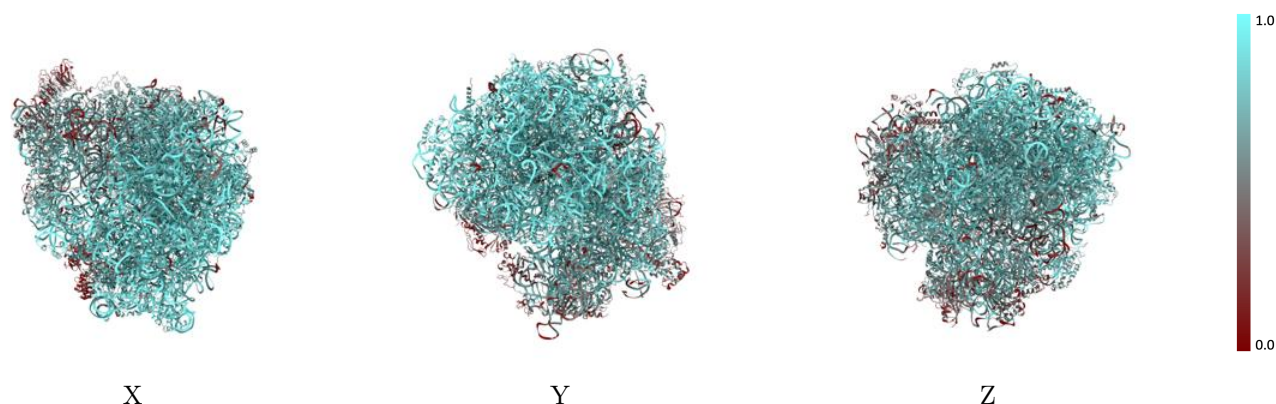
The images above show the 3D surface view of the map at the recommended contour level 0.141 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



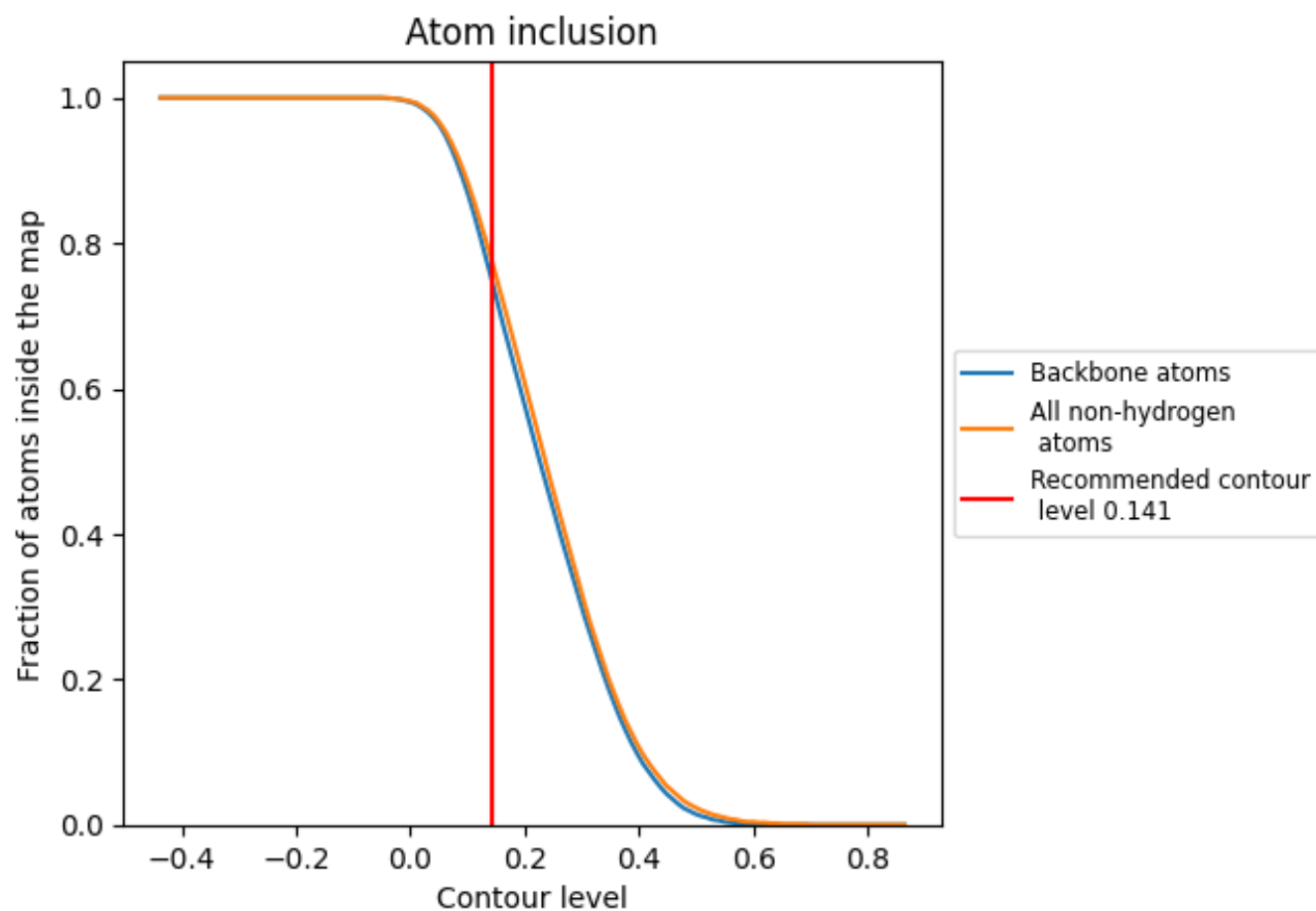
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.141).

9.4 Atom inclusion [i](#)



At the recommended contour level, 75% of all backbone atoms, 78% 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 (0.141) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7790	 0.5330
0	 0.4740	 0.4080
1	 0.3450	 0.3370
2	 0.7580	 0.5510
3	 0.6570	 0.5040
4	 0.5160	 0.4590
5	 0.7970	 0.5360
6	 0.6470	 0.4660
7	 0.3140	 0.3450
8	 0.2430	 0.2800
A	 0.8490	 0.5920
AA	 0.8770	 0.5630
B	 0.8820	 0.6050
BB	 0.9330	 0.5750
Bb	 0.3970	 0.3900
C	 0.8620	 0.5930
CC	 0.9340	 0.5960
Cc	 0.6470	 0.4380
D	 0.7570	 0.5500
DD	 0.0320	 0.1580
Dd	 0.6320	 0.5240
E	 0.8480	 0.5950
EE	 0.8430	 0.6050
Ee	 0.0110	 0.1480
F	 0.8290	 0.5830
FF	 0.8520	 0.5800
G	 0.7200	 0.5250
GG	 0.8550	 0.5980
H	 0.8180	 0.5920
HH	 0.7140	 0.5170
I	 0.8260	 0.5800
II	 0.8290	 0.5640
J	 0.8240	 0.5860
JJ	 0.8720	 0.5970
K	 0.8360	 0.5920



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Chain	Atom inclusion	Q-score
KK	 0.7310	 0.5330
L	 0.7900	 0.5560
LL	 0.7600	 0.5550
M	 0.8380	 0.5770
MM	 0.7960	 0.5760
N	 0.7590	 0.5600
NN	 0.6590	 0.4890
O	 0.7360	 0.5670
OO	 0.7930	 0.5550
P	 0.7910	 0.5500
PP	 0.8230	 0.5760
Pp	 0.1580	 0.3770
Q	 0.8870	 0.6160
QQ	 0.8880	 0.6060
R	 0.9000	 0.6170
S	 0.8330	 0.5910
T	 0.8190	 0.5760
U	 0.7170	 0.5100
V	 0.9140	 0.6170
W	 0.6610	 0.5120
X	 0.8480	 0.5850
Y	 0.7550	 0.5850
Z	 0.7220	 0.5710
a	 0.7660	 0.5720
b	 0.7970	 0.5930
c	 0.8120	 0.5170
d	 0.6610	 0.4880
e	 0.6860	 0.5250
f	 0.7510	 0.5490
g	 0.6510	 0.5000
h	 0.5670	 0.4580
i	 0.5360	 0.4450
j	 0.3910	 0.3840
k	 0.4850	 0.4420
l	 0.5170	 0.4440
m	 0.5900	 0.4490
n	 0.5710	 0.4600
o	 0.6420	 0.5050
p	 0.7590	 0.5490
q	 0.7230	 0.5270
r	 0.6330	 0.4850
s	 0.5660	 0.4550

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Chain	Atom inclusion	Q-score
t	 0.5520	 0.4400
u	 0.5730	 0.4380
v	 0.5480	 0.4320
w	 0.5410	 0.4410
x	 0.7330	 0.5260
y	 0.8230	 0.5800
z	 0.7610	 0.5690