Full wwPDB EM Validation Report

Dec 10, 2025 – 09:44 pm GMT

PDB ID	:	8CEH / pdb_00008ceh
EMDB ID	:	EMD-16609
Title	:	Translocation intermediate 4 (TI-4) of 80S S. cerevisiae ribosome with ligands and eEF2 in the presence of sordarin
Authors	:	Milicevic, N.; Jenner, L.; Myasnikov, A.; Yusupov, M.; Yusupova, G.
Deposited on	:	2023-02-01
Resolution	:	2.05 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

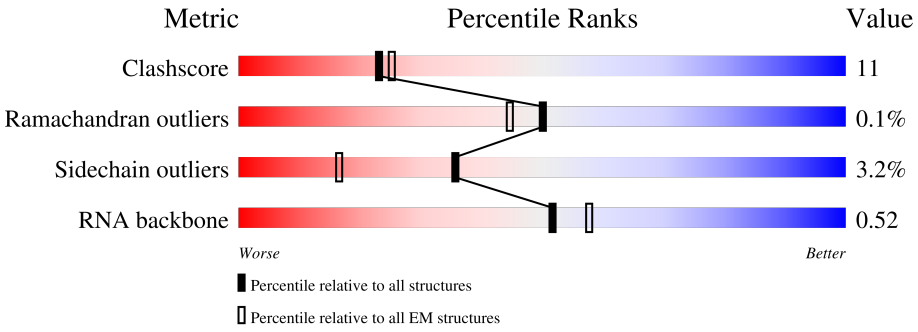
EMDB validation analysis	:	0.0.1.dev129
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4-5-2 with Phenix2.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up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

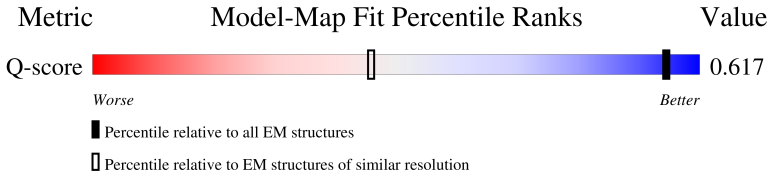
1 Overall quality at a glance

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

The reported resolution of this entry is 2.05 Å.

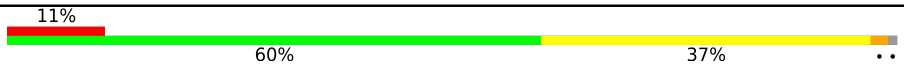
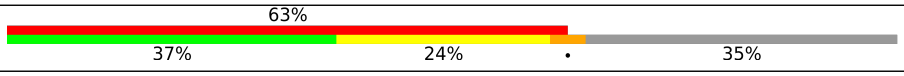
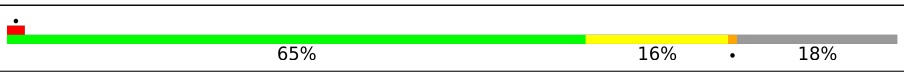
Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.





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	1849 (1.55 - 2.55)

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 <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion < 40%). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	0	135	
2	1	108	
3	2	119	

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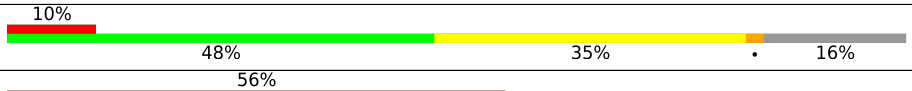
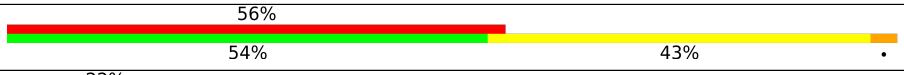
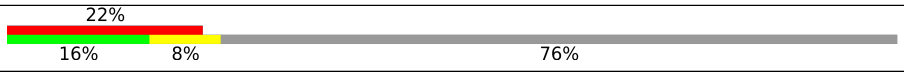
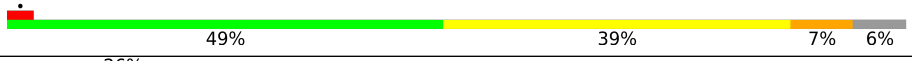
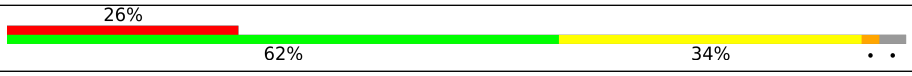
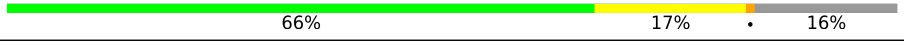
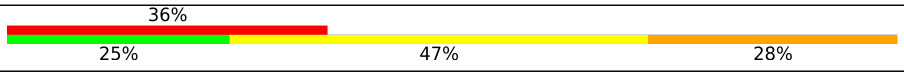
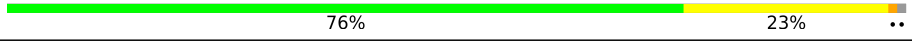
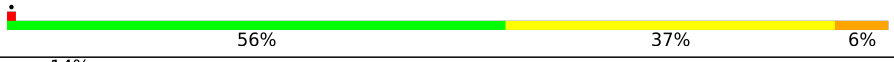
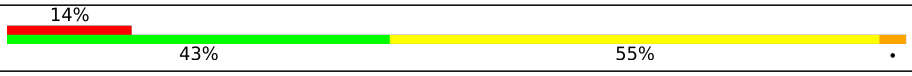
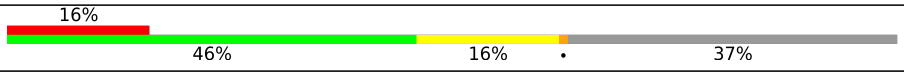
Mol	Chain	Length	Quality of chain
4	3	82	
5	4	67	
6	5	56	
7	6	63	
8	7	319	
9	8	152	
10	A	199	
11	AA	3396	
12	Aa	842	
13	B	184	
14	BB	121	
15	Bb	76	
16	C	186	
17	CC	158	
18	Cc	77	
19	D	189	
20	DD	312	
21	Dd	39	
22	E	172	
23	EE	254	
24	Ee	165	
25	F	160	
26	FF	387	
27	G	121	
28	GG	362	

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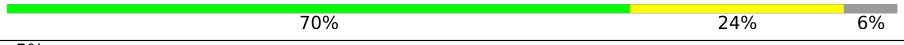
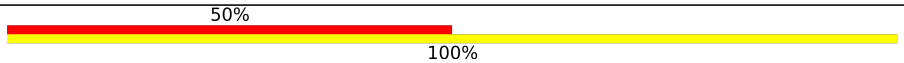
Mol	Chain	Length	Quality of chain
29	H	137	
30	HH	297	
31	I	155	
32	II	176	
33	J	142	
34	JJ	244	
35	K	127	
36	KK	256	
37	L	136	
38	LL	191	
39	M	149	
40	MM	221	
41	N	59	
42	NN	174	
43	O	105	
44	OO	199	
45	P	113	
46	PP	138	
47	Pp	2	
48	Q	130	
49	QQ	204	
50	R	107	
51	S	121	
52	T	120	
53	U	100	

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Mol	Chain	Length	Quality of chain
54	V	88	69% 23% 5%
55	W	78	72% 26%
56	X	51	75% 24%
57	Y	128	34% 7% 59%
58	Z	25	84% 16%
59	a	106	72% 25%
60	b	92	85% 14%
61	c	1800	38% 42% 9% 11%
62	d	252	56% 25% 18%
63	e	255	58% 22% 17%
64	f	254	63% 22% 15%
65	g	240	12% 48% 27% 24%
66	h	261	66% 31%
67	i	225	32% 52% 33% 12%
68	j	236	16% 58% 33% 7%
69	k	190	14% 56% 37%
70	l	200	62% 28% 8%
71	m	197	70% 22% 6%
72	n	105	7% 14% 14% 69%
73	o	156	5% 71% 19% 9%
74	p	151	80% 18%
75	q	137	72% 20% 7%
76	r	142	25% 44% 19% 36%
77	s	143	18% 52% 41%
78	t	136	18% 51% 35% 11%

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Mol	Chain	Length	Quality of chain
79	u	146	49% 56% 42%
80	v	144	26% 56% 39%
81	w	121	17% 50% 27% 6% 17%
82	x	87	72% 28%
83	y	130	79% 18%
84	z	145	72% 26%

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
90	PO4	Aa	1002	-	-	X	-

2 Entry composition

There are 92 unique types of molecules in this entry. The entry contains 207126 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
			Total	C	N	O		
1	0	134	1073	676	208	189	0	0

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

- Molecule 12 is a protein called Elongation factor 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	Aa	816	Total	C	N	O	S	0	0
			6368	4051	1088	1198	31		

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

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

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

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

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

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

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

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

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

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

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

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

There is a discrepancy between the modelled and reference sequences:

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

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

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

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

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

- Molecule 21 is a RNA chain called Messenger RNA.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

- Molecule 38 is a protein called RPL9A isoform 1.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

- Molecule 47 is a protein called Polypeptide.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

- Molecule 65 is a protein called RPS3 isoform 1.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Mol	Chain	Residues	Atoms		AltConf
86	AA	198	Total	Mg	0
			198	198	
86	Aa	1	Total	Mg	0
			1	1	
86	B	1	Total	Mg	0
			1	1	
86	BB	5	Total	Mg	0
			5	5	
86	Bb	1	Total	Mg	0
			1	1	

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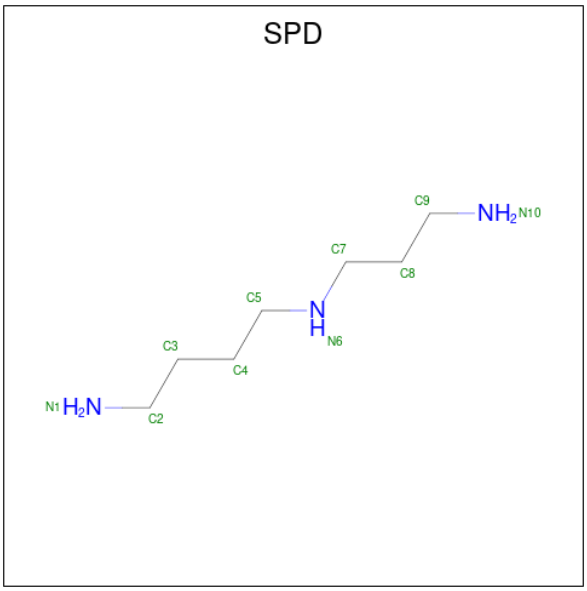
Mol	Chain	Residues	Atoms	AltConf
86	CC	3	Total Mg 3 3	0
86	Dd	1	Total Mg 1 1	0
86	FF	1	Total Mg 1 1	0
86	H	1	Total Mg 1 1	0
86	QQ	1	Total Mg 1 1	0
86	c	49	Total Mg 49 49	0

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

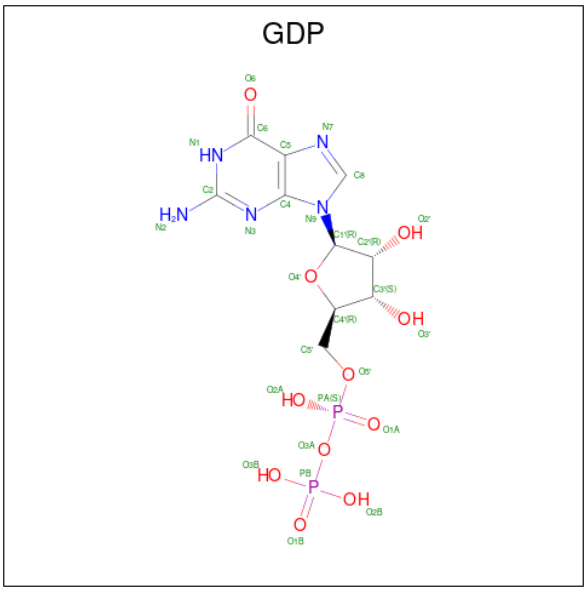
Mol	Chain	Residues	Atoms	AltConf
87	AA	14	Total K 14 14	0
87	EE	1	Total K 1 1	0
87	MM	1	Total K 1 1	0
87	Q	1	Total K 1 1	0
87	a	1	Total K 1 1	0
87	c	2	Total K 2 2	0
87	q	1	Total K 1 1	0

- Molecule 88 is SPERMIDINE (CCD ID: SPD) (formula: $C_7H_{19}N_3$).



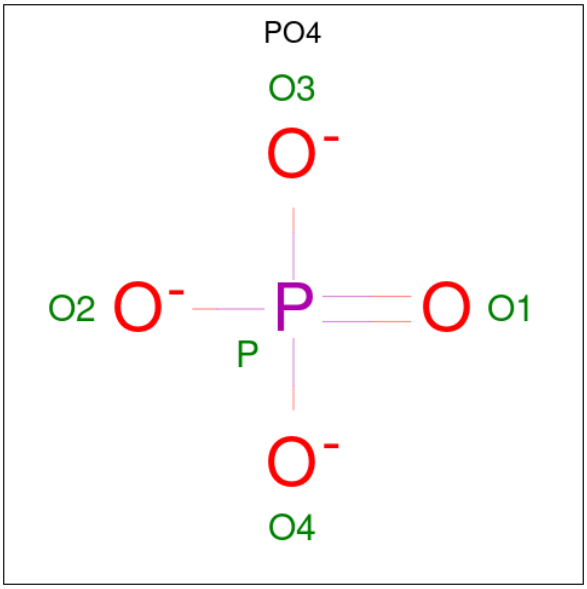
Mol	Chain	Residues	Atoms	AltConf
88	AA	1	Total C N 10 7 3	0
88	AA	1	Total C N 10 7 3	0
88	AA	1	Total C N 10 7 3	0

- Molecule 89 is GUANOSINE-5'-DIPHOSPHATE (CCD ID: GDP) (formula: $C_{10}H_{15}N_5O_{11}P_2$) (labeled as "Ligand of Interest" by depositor).



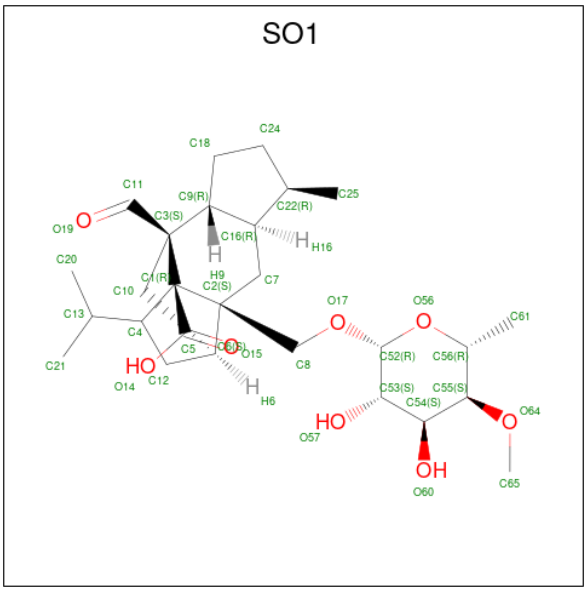
Mol	Chain	Residues	Atoms					AltConf
89	Aa	1	Total	C	N	O	P	0
			28	10	5	11	2	

- Molecule 90 is PHOSPHATE ION (CCD ID: PO4) (formula: O_4P).



Mol	Chain	Residues	Atoms			AltConf
90	Aa	1	Total	O	P	0
			5	4	1	

- Molecule 91 is [1R-(1.ALPHA.,3A.BETA.,4.BETA.,4A.BETA.,7.BETA.,7A.ALPHA.,8A.BETA.)]8A-[(6-DEOXY-4-O-METHYL-BETA-D-ALTROPYRANOSYLOXY)METHYL]-4-FORMYL-4,4A,5,6,7,7A,8,8A-OCTAHYDRO-7-METHYL-3-(1-METHYLETHYL)-1,4-METHANO-S-INDACENE-3A(1H)-CARBOXYLIC ACID (CCD ID: SO1) (formula: $C_{27}H_{42}O_8$) (labeled as "Ligand of Interest" by depositor).



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

- Molecule 92 is water.

Mol	Chain	Residues	Atoms	AltConf
92	2	1	Total O 1 1	0
92	A	2	Total O 2 2	0
92	AA	778	Total O 778 778	0
92	B	3	Total O 3 3	0
92	BB	13	Total O 13 13	0
92	CC	13	Total O 13 13	0
92	Cc	1	Total O 1 1	0
92	D	1	Total O 1 1	0
92	EE	6	Total O 6 6	0
92	F	4	Total O 4 4	0
92	FF	3	Total O 3 3	0

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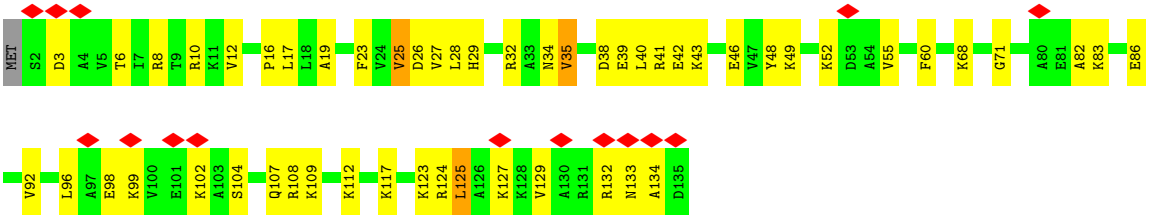
Mol	Chain	Residues	Atoms	AltConf
92	GG	3	Total O 3 3	0
92	H	3	Total O 3 3	0
92	HH	1	Total O 1 1	0
92	J	1	Total O 1 1	0
92	JJ	1	Total O 1 1	0
92	M	2	Total O 2 2	0
92	MM	2	Total O 2 2	0
92	N	1	Total O 1 1	0
92	Q	4	Total O 4 4	0
92	QQ	6	Total O 6 6	0
92	V	2	Total O 2 2	0
92	c	118	Total O 118 118	0
92	h	2	Total O 2 2	0
92	o	2	Total O 2 2	0
92	p	2	Total O 2 2	0

3 Residue-property plots (i)

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

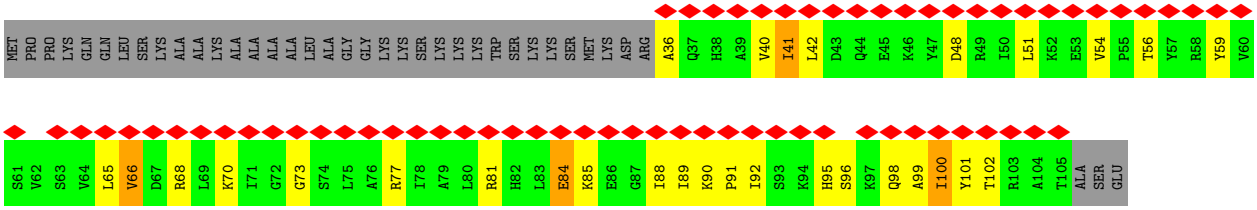
• Molecule 1: 40S ribosomal protein S24-A

Chain 0:



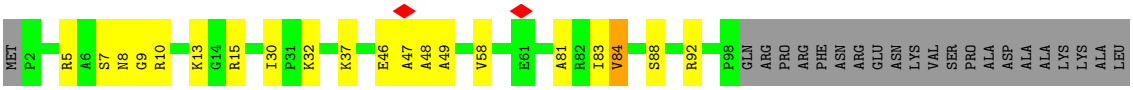
• Molecule 2: 40S ribosomal protein S25-A

Chain 1:



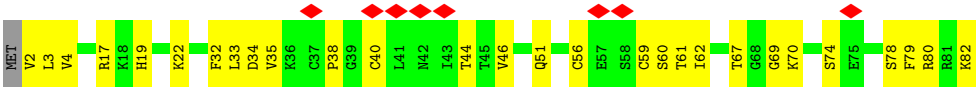
• Molecule 3: 40S ribosomal protein S26

Chain 2:



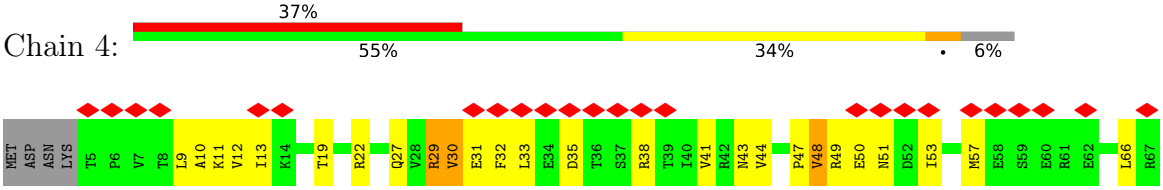
• Molecule 4: 40S ribosomal protein S27-A

Chain 3:



• Molecule 5: 40S ribosomal protein S28-A

Chain 4:



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

Chain 5:

• Molecule 7: 40S ribosomal protein S30-A

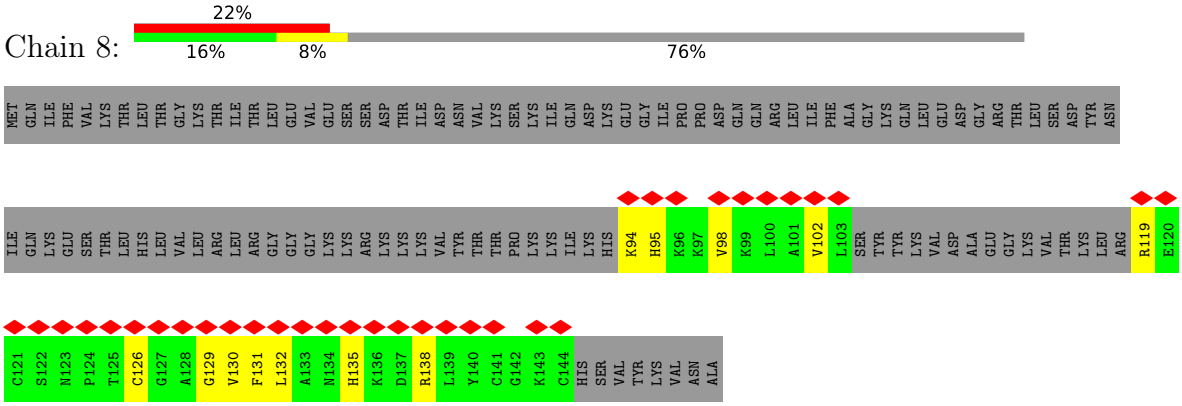
Chain 6:

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

Chain 7:

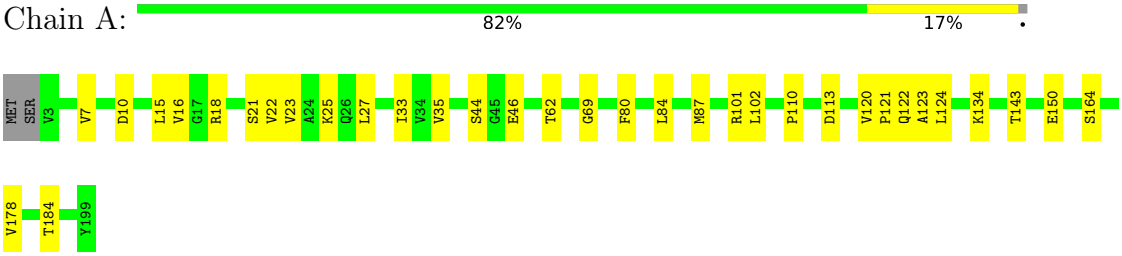
• Molecule 9: Ubiquitin-40S ribosomal protein S31

Chain 8:



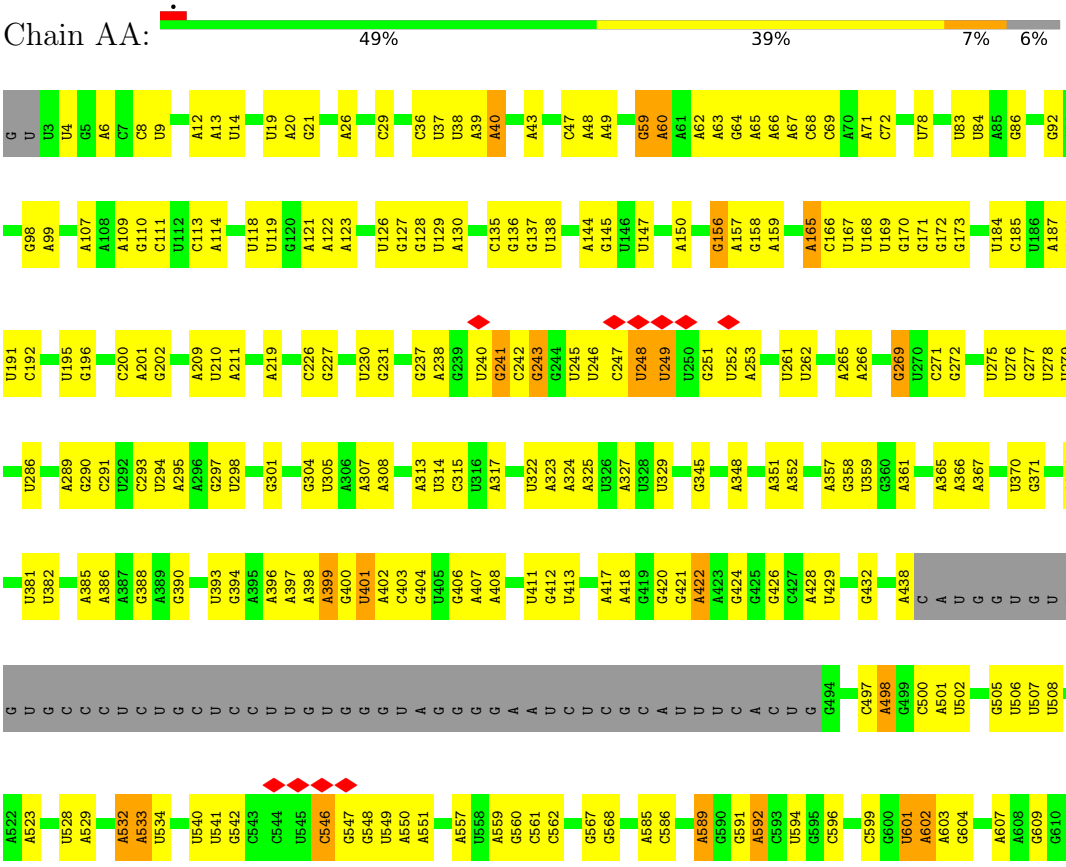
• Molecule 10: 60S ribosomal protein L16-A

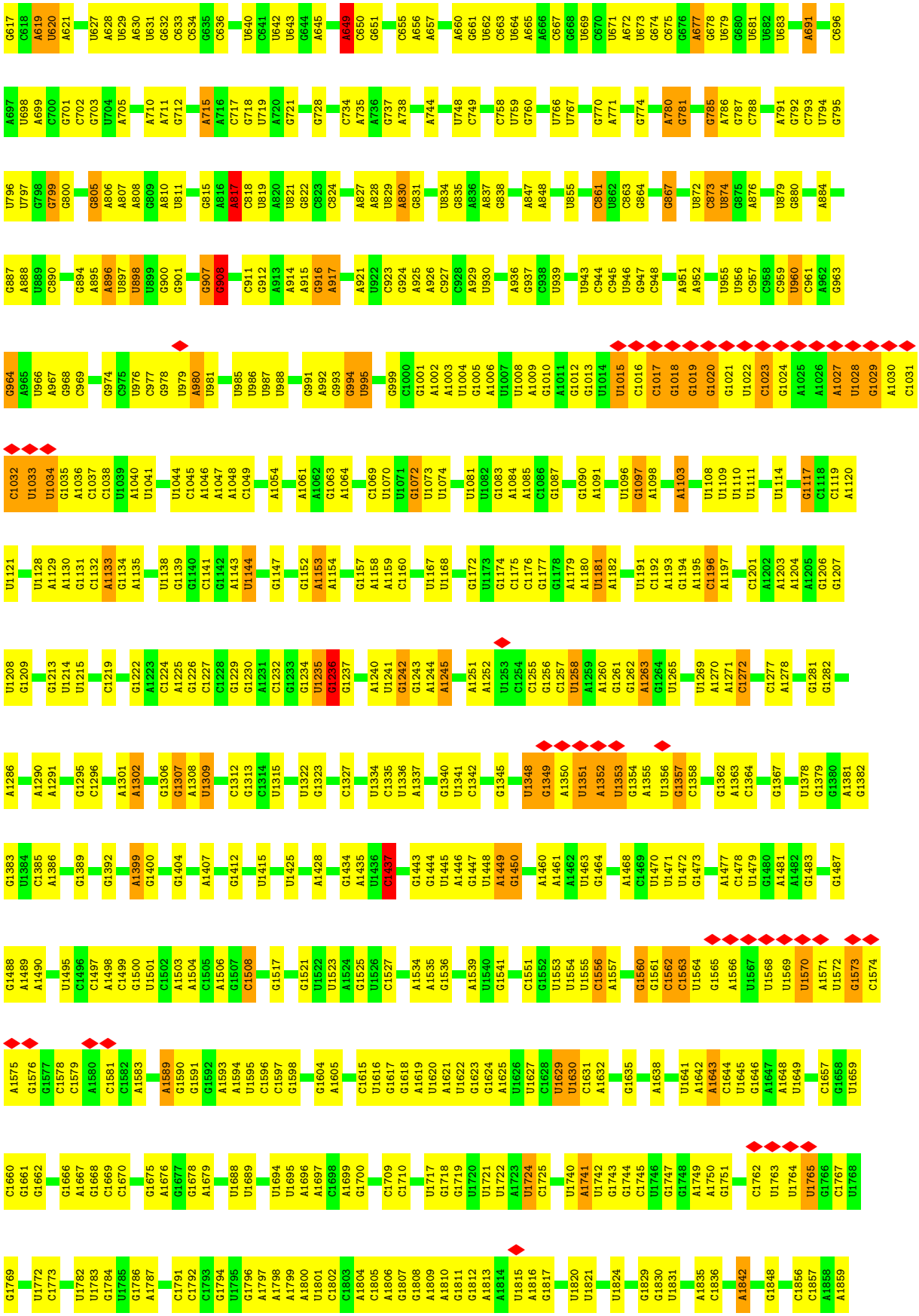
Chain A:

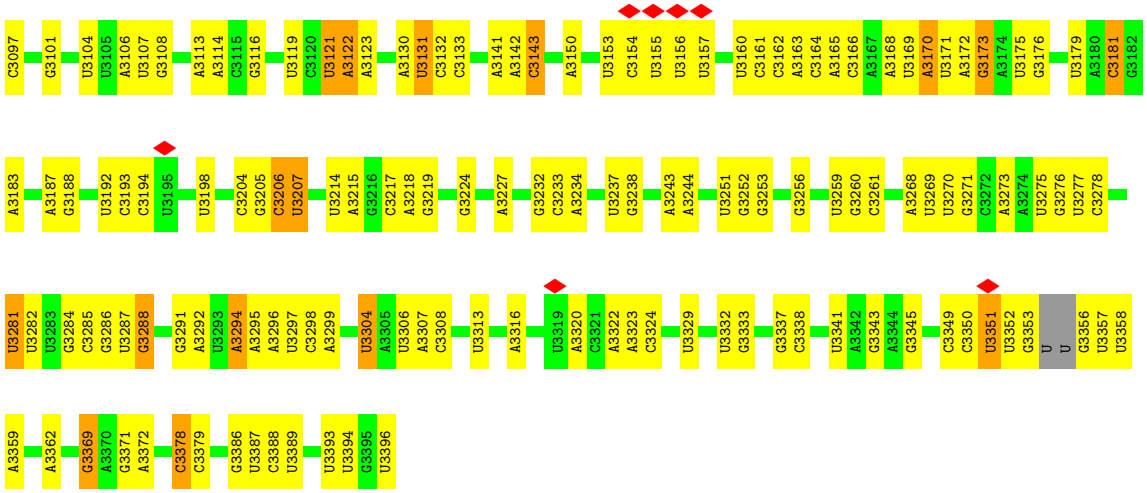


• Molecule 11: 25S ribosomal RNA

Chain AA:

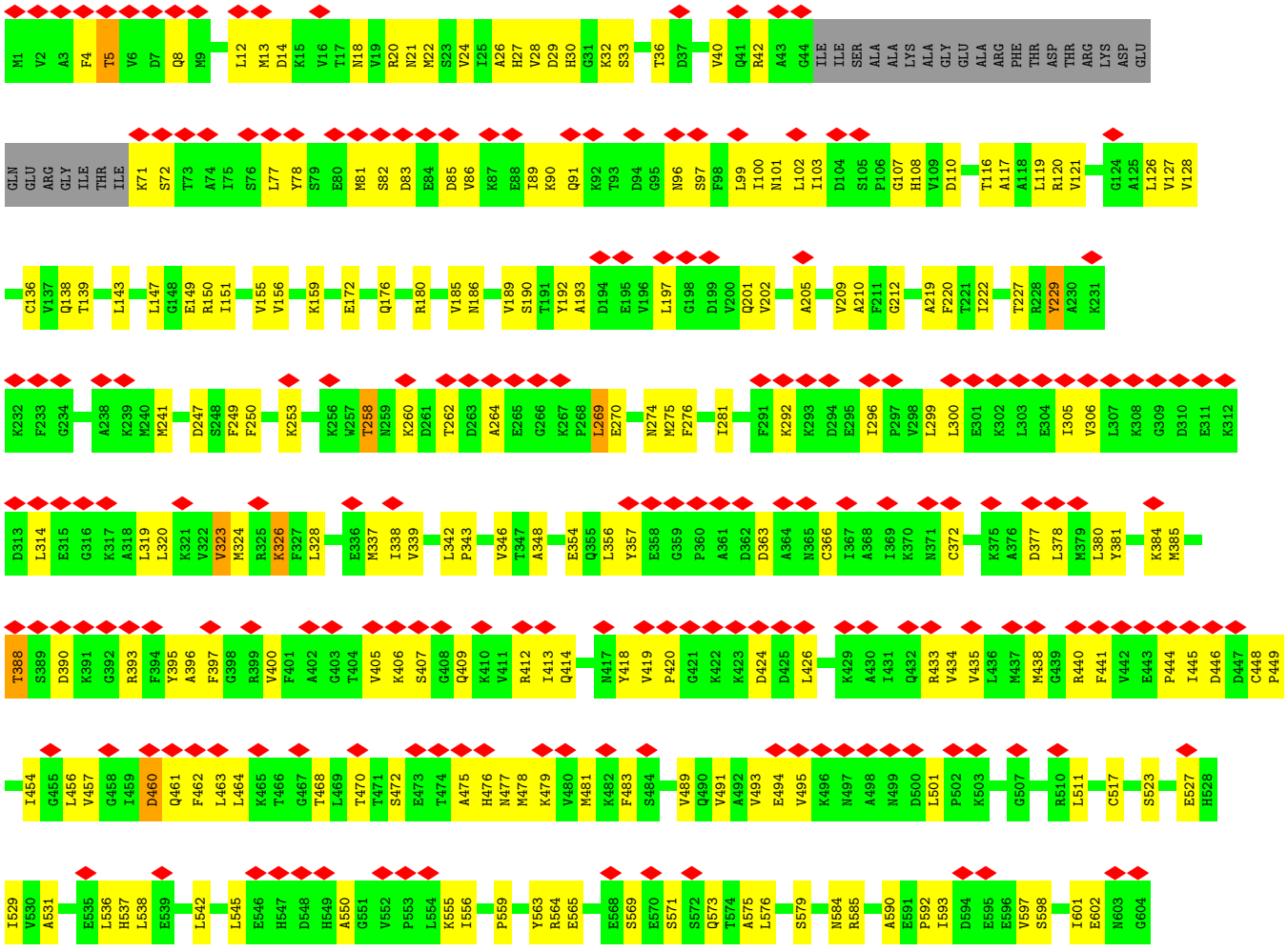


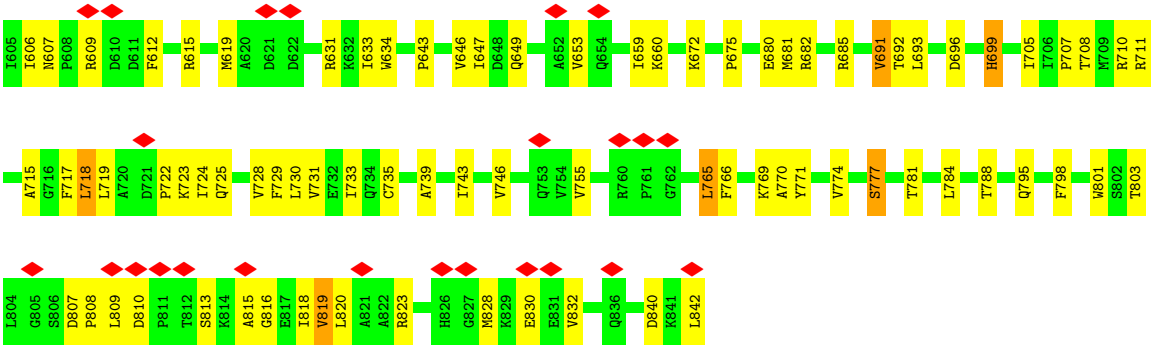




• Molecule 12: Elongation factor 2

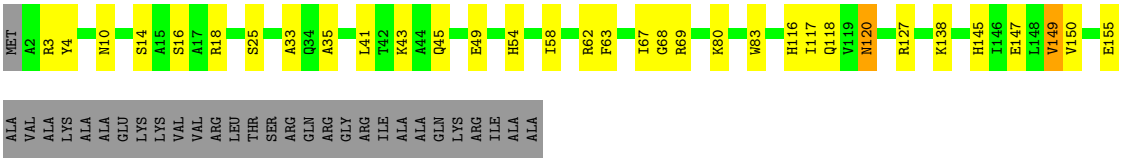
Chain Aa:





• Molecule 13: 60S ribosomal protein L17-A

Chain B:

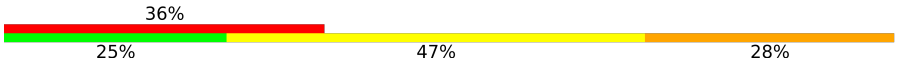


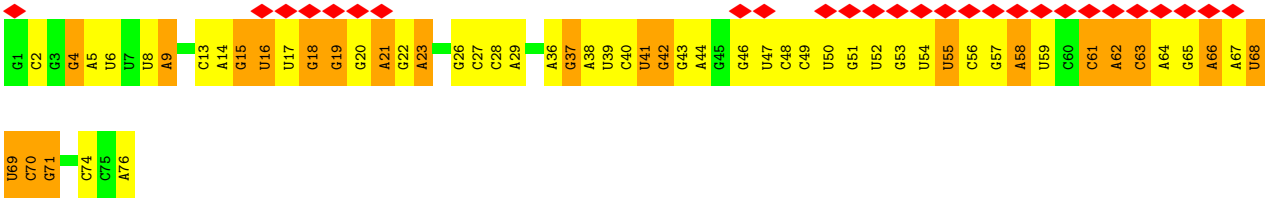
• Molecule 14: 5S ribosomal RNA

Chain BB:

• Molecule 15: Transfer RNA Phe

Chain Bb:



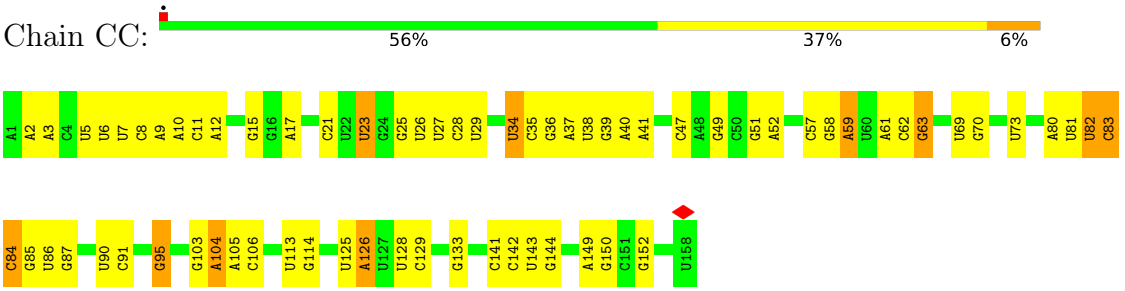


• Molecule 16: 60S ribosomal protein L18-A

Chain C:

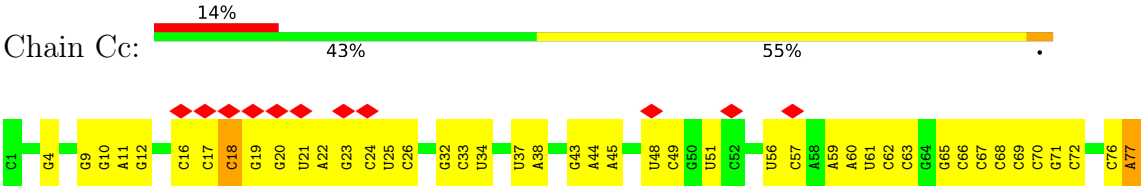
• Molecule 17: 5.8S ribosomal RNA

Chain CC:



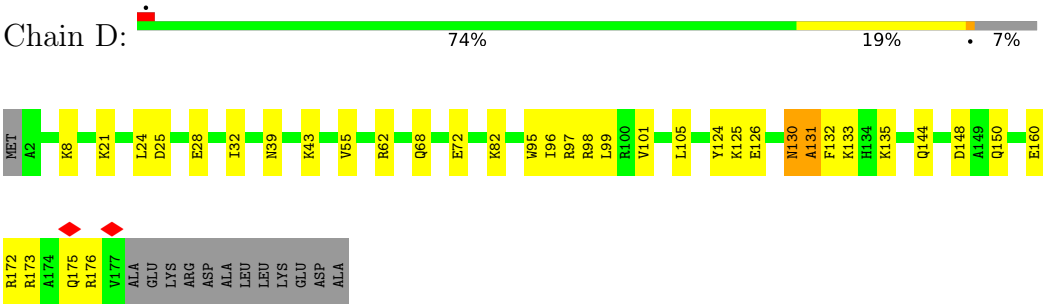
• Molecule 18: Transfer RNA fMet

Chain Cc:



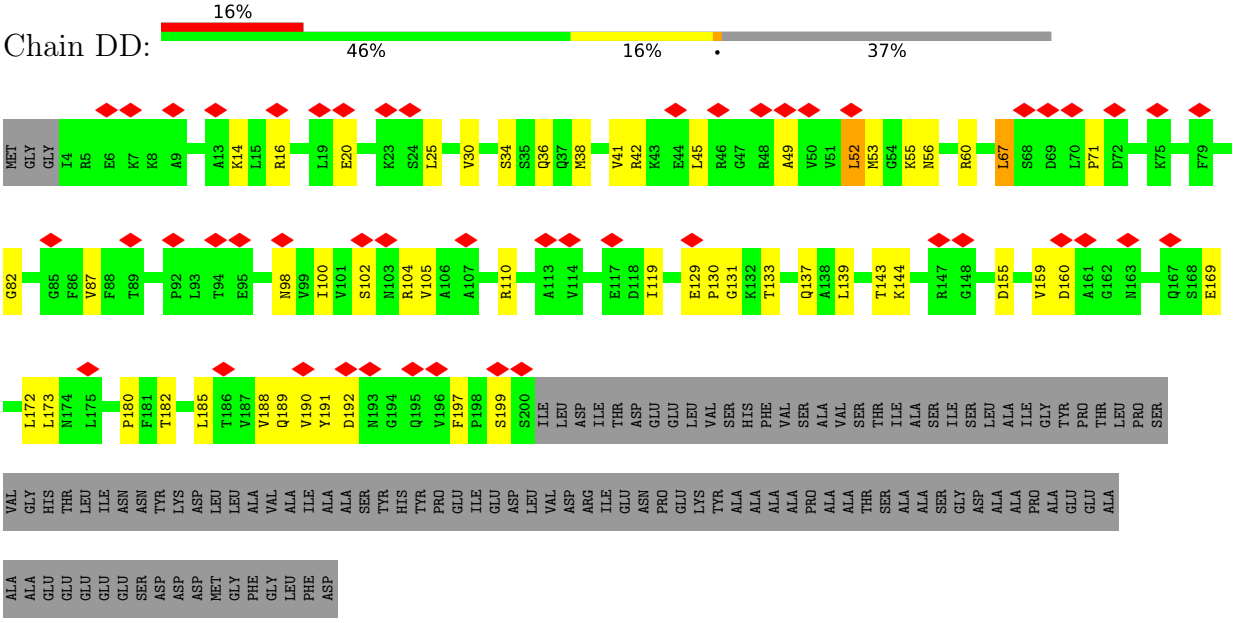
• Molecule 19: 60S ribosomal protein L19-A

Chain D:



• Molecule 20: 60S acidic ribosomal protein P0

Chain DD:

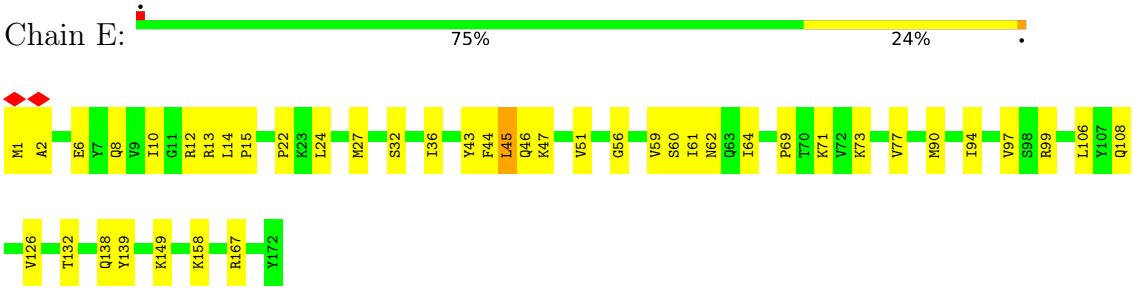


• Molecule 21: Messenger RNA

Chain Dd:

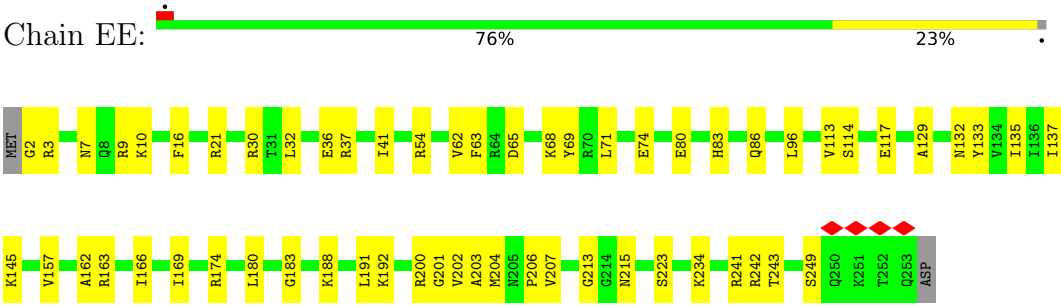
• Molecule 22: 60S ribosomal protein L20-A

Chain E:



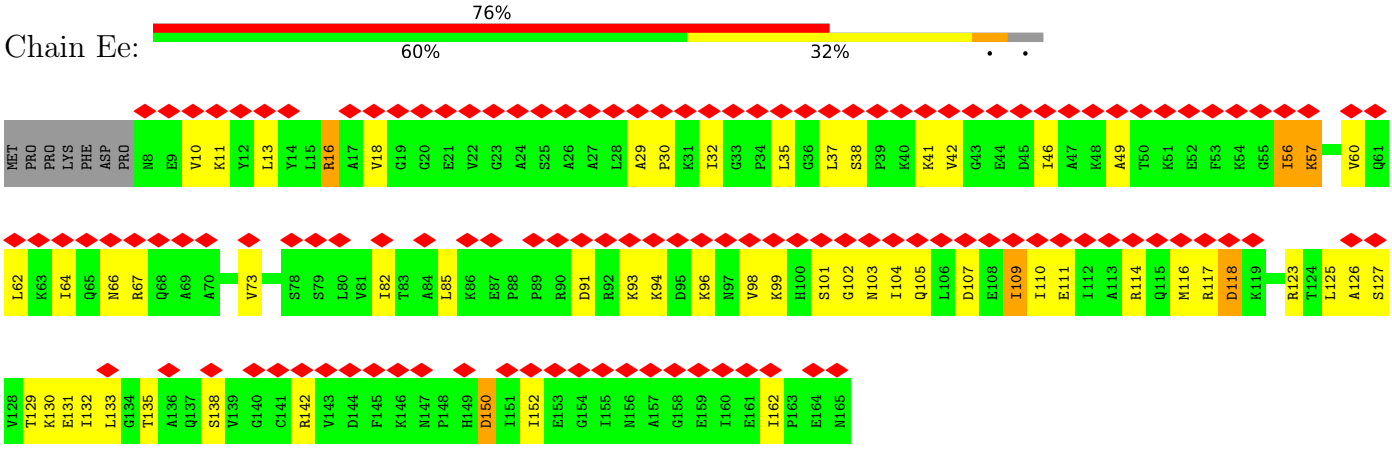
• Molecule 23: 60S ribosomal protein L2-A

Chain EE:



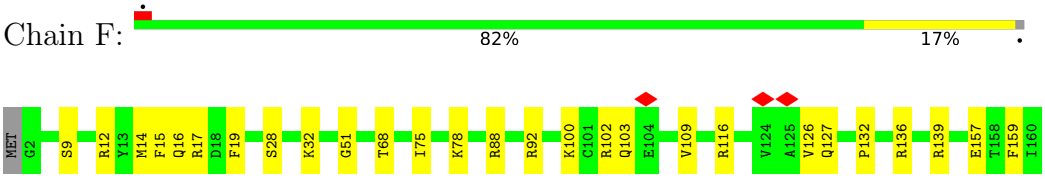
• Molecule 24: 60S ribosomal protein L12-A

Chain Ee:



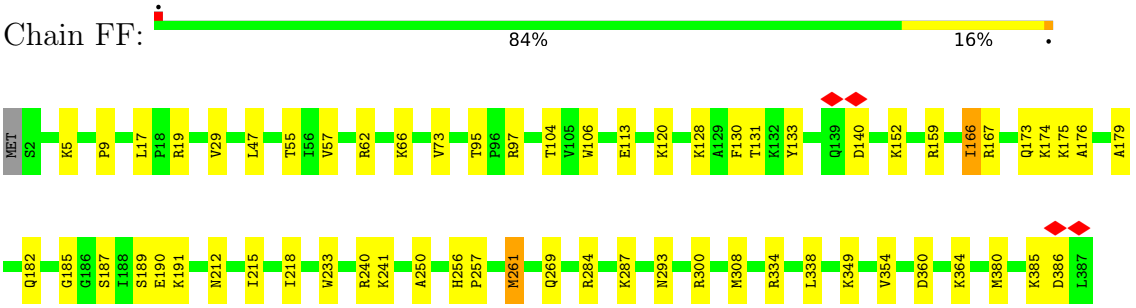
• Molecule 25: 60S ribosomal protein L21-A

Chain F:



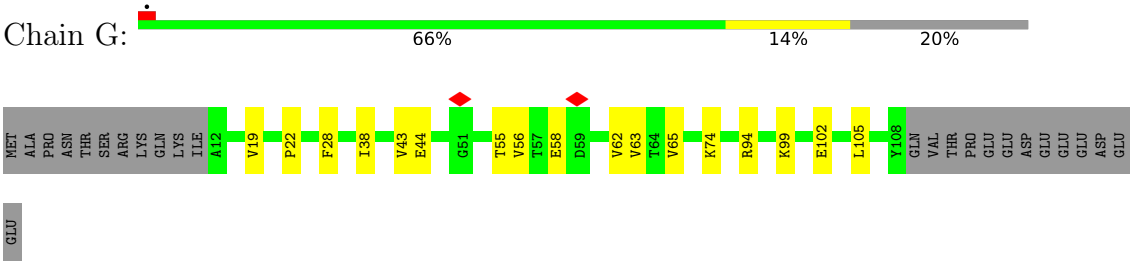
• Molecule 26: 60S ribosomal protein L3

Chain FF:



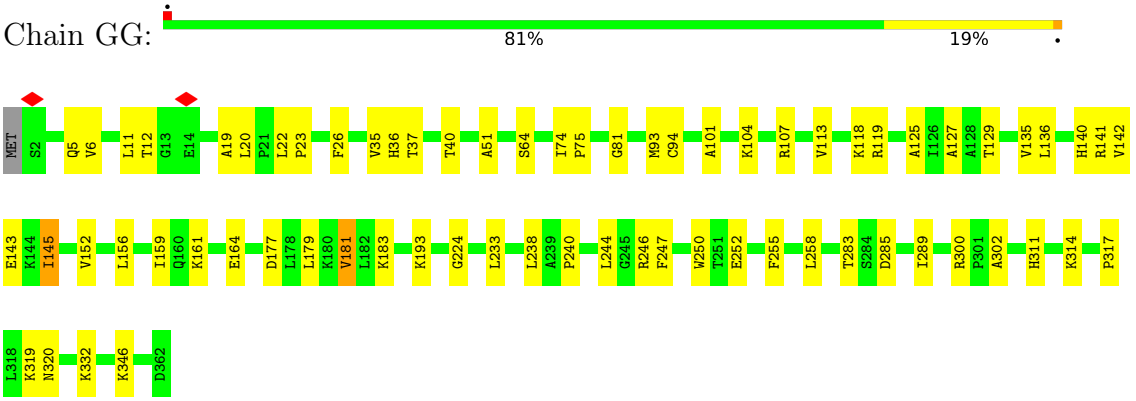
• Molecule 27: 60S ribosomal protein L22-A

Chain G:



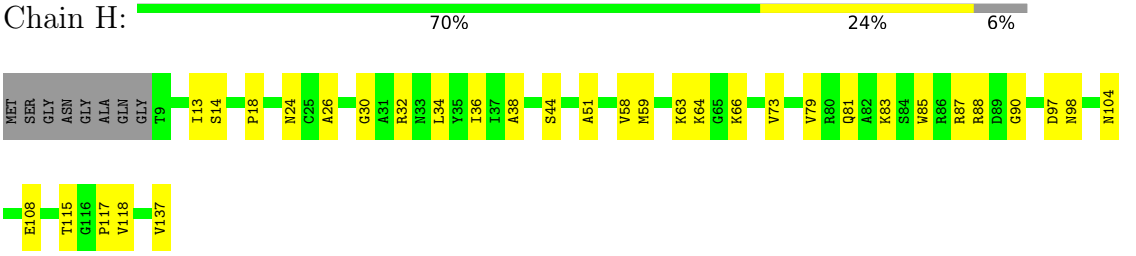
• Molecule 28: 60S ribosomal protein L4-A

Chain GG:



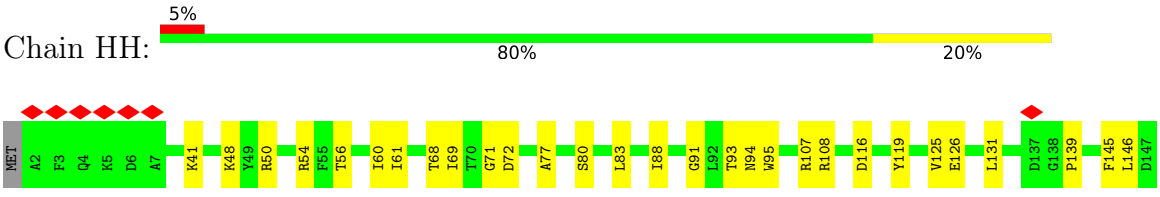
• Molecule 29: 60S ribosomal protein L23-A

Chain H:



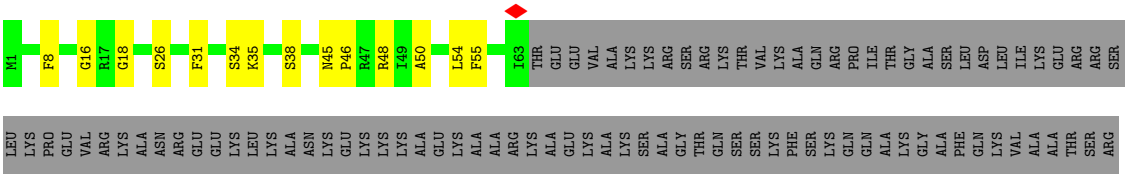
• Molecule 30: 60S ribosomal protein L5

Chain HH:



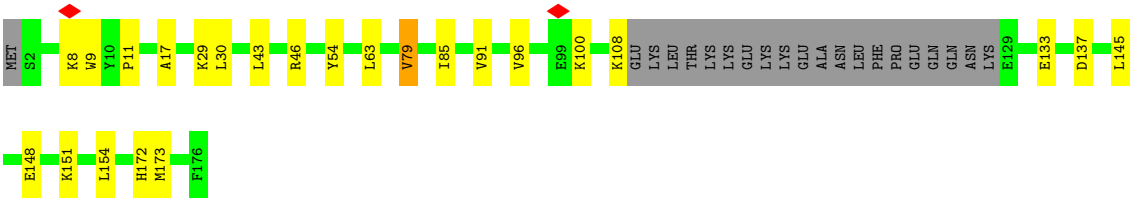
• Molecule 31: 60S ribosomal protein L24-A

Chain I:



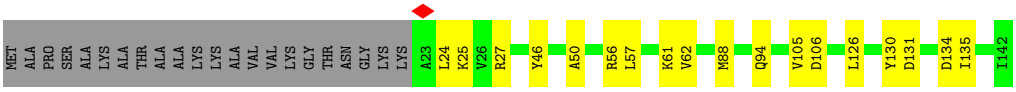
• Molecule 32: 60S ribosomal protein L6-A

Chain II:



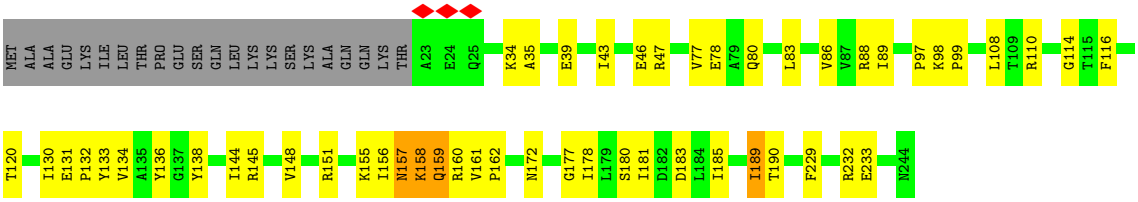
• Molecule 33: 60S ribosomal protein L25

Chain J:



• Molecule 34: 60S ribosomal protein L7-A

Chain JJ:

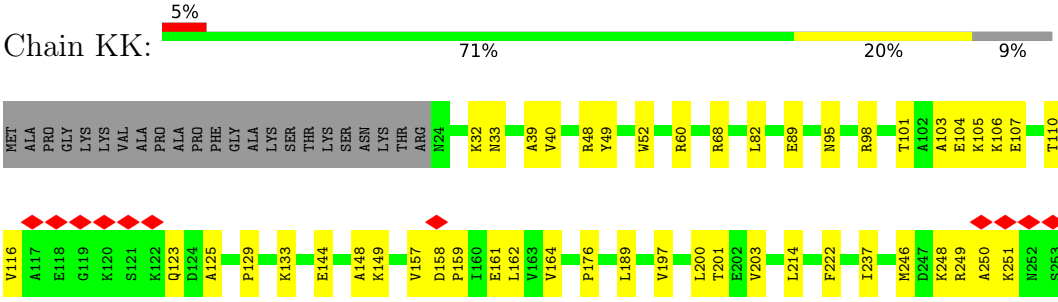


• Molecule 35: 60S ribosomal protein L26-A

Chain K:

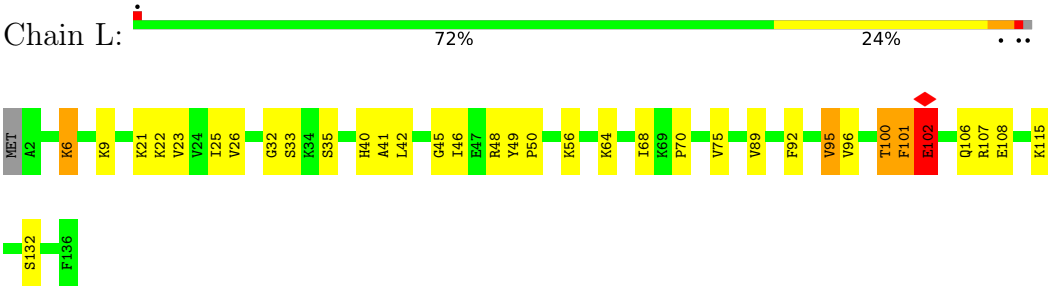
• Molecule 36: 60S ribosomal protein L8-A

Chain KK:



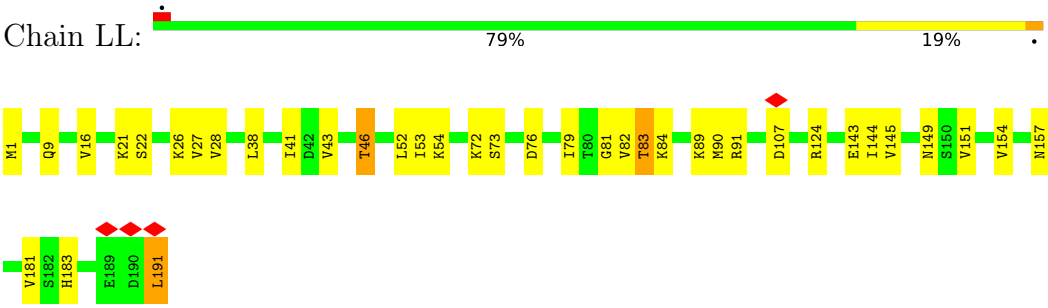
• Molecule 37: 60S ribosomal protein L27-A

Chain L:



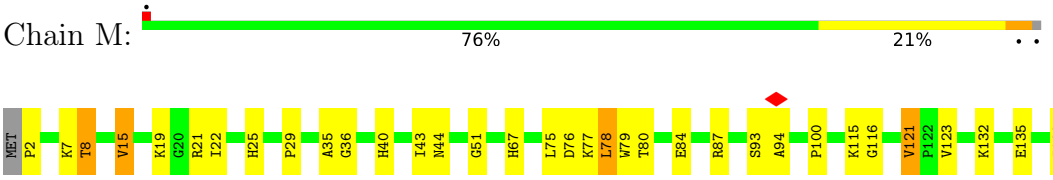
• Molecule 38: RPL9A isoform 1

Chain LL:



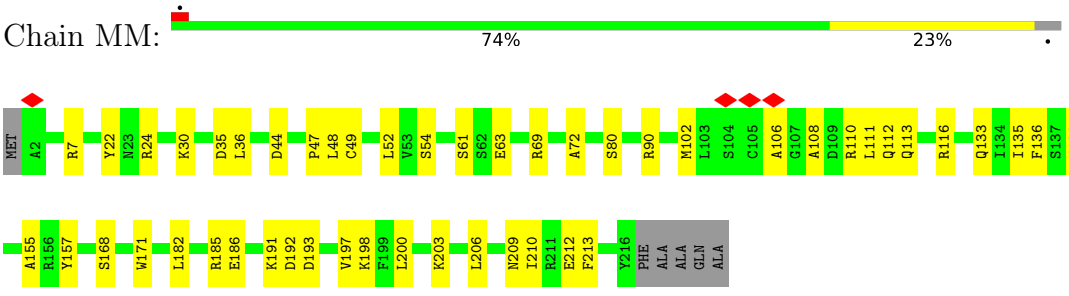
• Molecule 39: 60S ribosomal protein L28

Chain M:



• Molecule 40: 60S ribosomal protein L10

Chain MM:

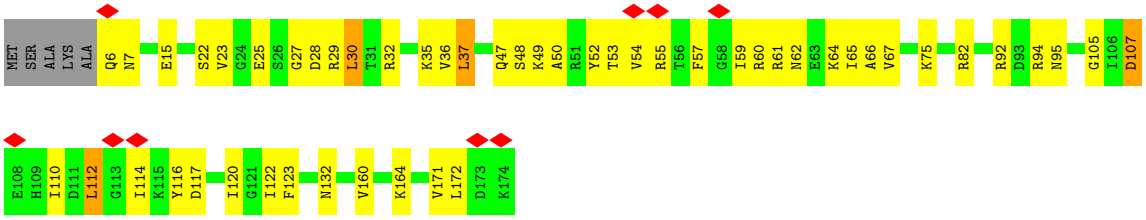


• Molecule 41: 60S ribosomal protein L29

Chain N:

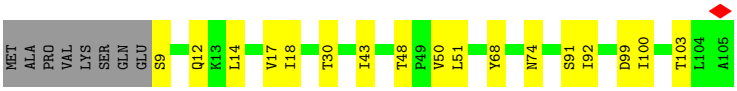
• Molecule 42: 60S ribosomal protein L11-A

Chain NN:



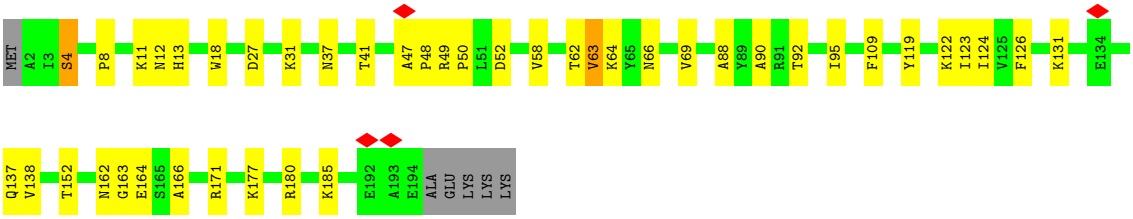
• Molecule 43: 60S ribosomal protein L30

Chain O:



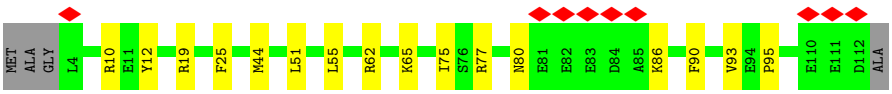
• Molecule 44: 60S ribosomal protein L13-A

Chain OO:



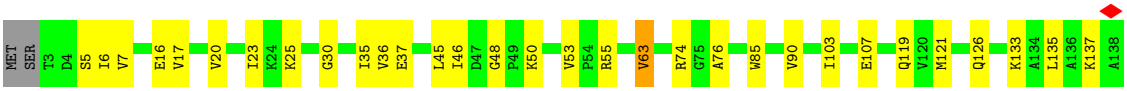
• Molecule 45: 60S ribosomal protein L31-A

Chain P:



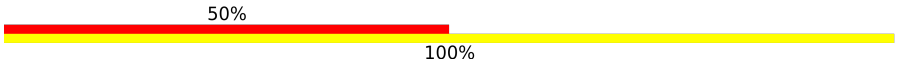
• Molecule 46: 60S ribosomal protein L14-A

Chain PP:



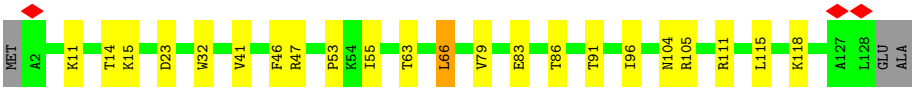
• Molecule 47: Polypeptide

Chain Pp:



• Molecule 48: 60S ribosomal protein L32

Chain Q:

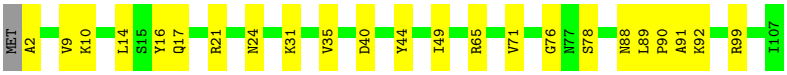


• Molecule 49: 60S ribosomal protein L15-A

Chain QQ:

• Molecule 50: 60S ribosomal protein L33-A

Chain R:

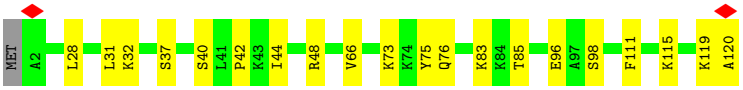


• Molecule 51: 60S ribosomal protein L34-A

Chain S:

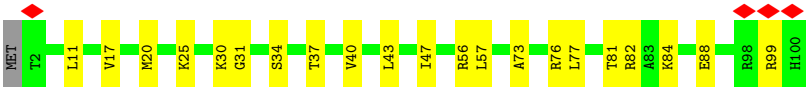
• Molecule 52: 60S ribosomal protein L35-A

Chain T:



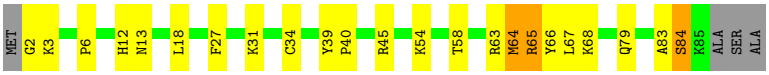
• Molecule 53: 60S ribosomal protein L36-A

Chain U:



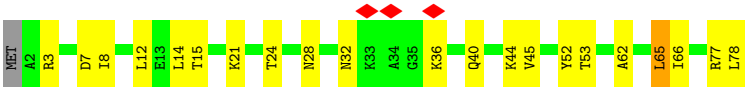
• Molecule 54: 60S ribosomal protein L37-A

Chain V:



• Molecule 55: 60S ribosomal protein L38

Chain W:

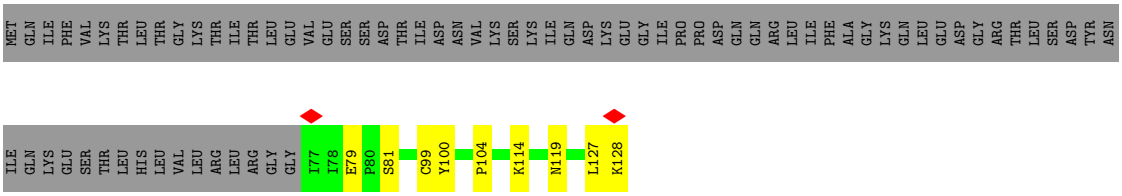


• Molecule 56: 60S ribosomal protein L39

Chain X:

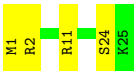
• Molecule 57: Ubiquitin-60S ribosomal protein L40

Chain Y:



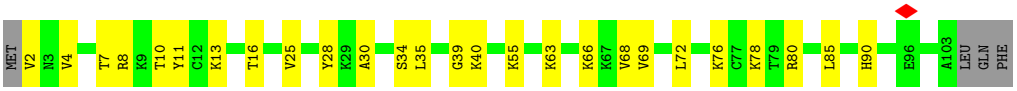
• Molecule 58: 60S ribosomal protein L41

Chain Z:



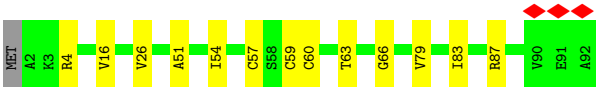
• Molecule 59: 60S ribosomal protein L42-A

Chain a:



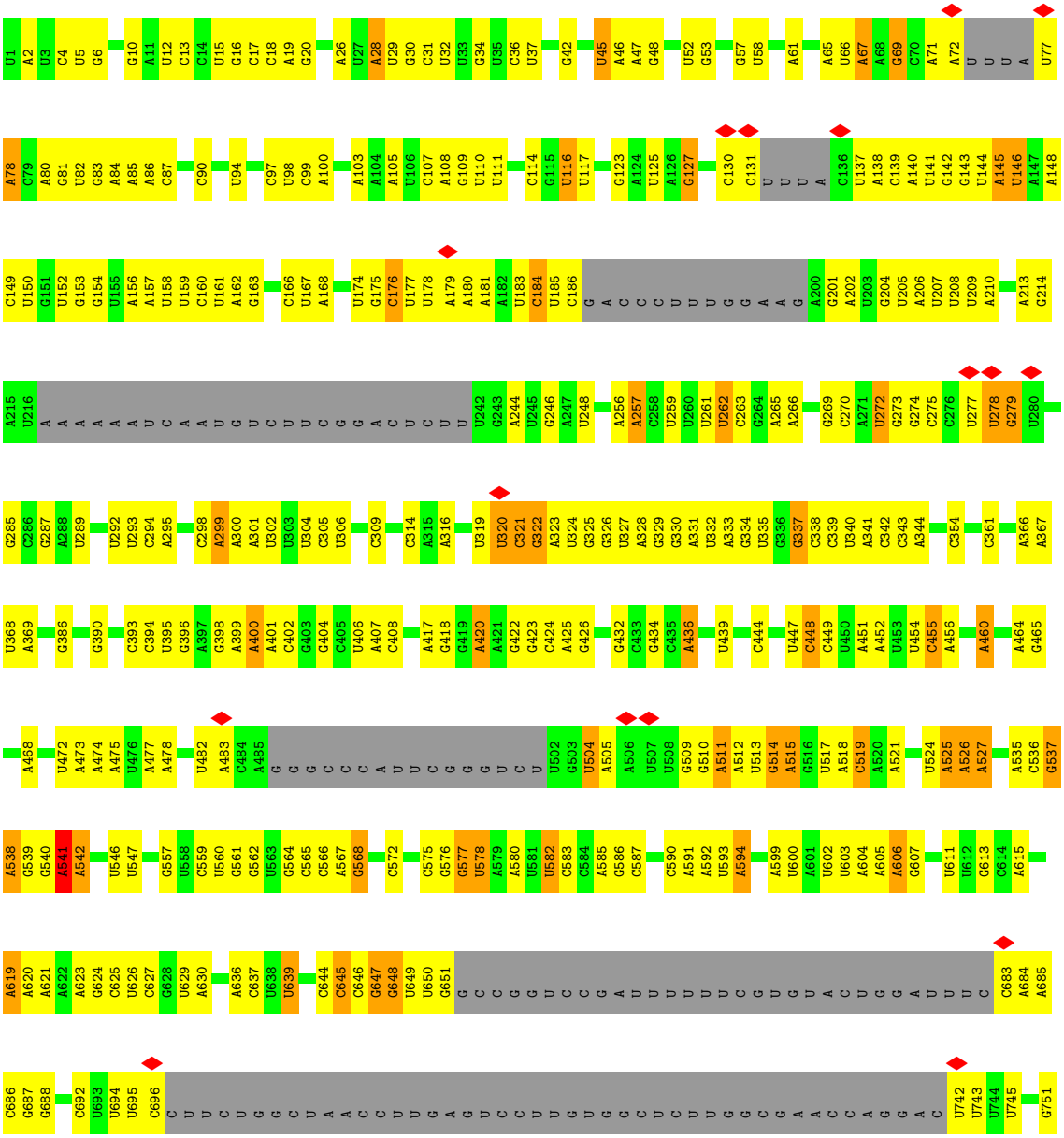
• Molecule 60: 60S ribosomal protein L43-A

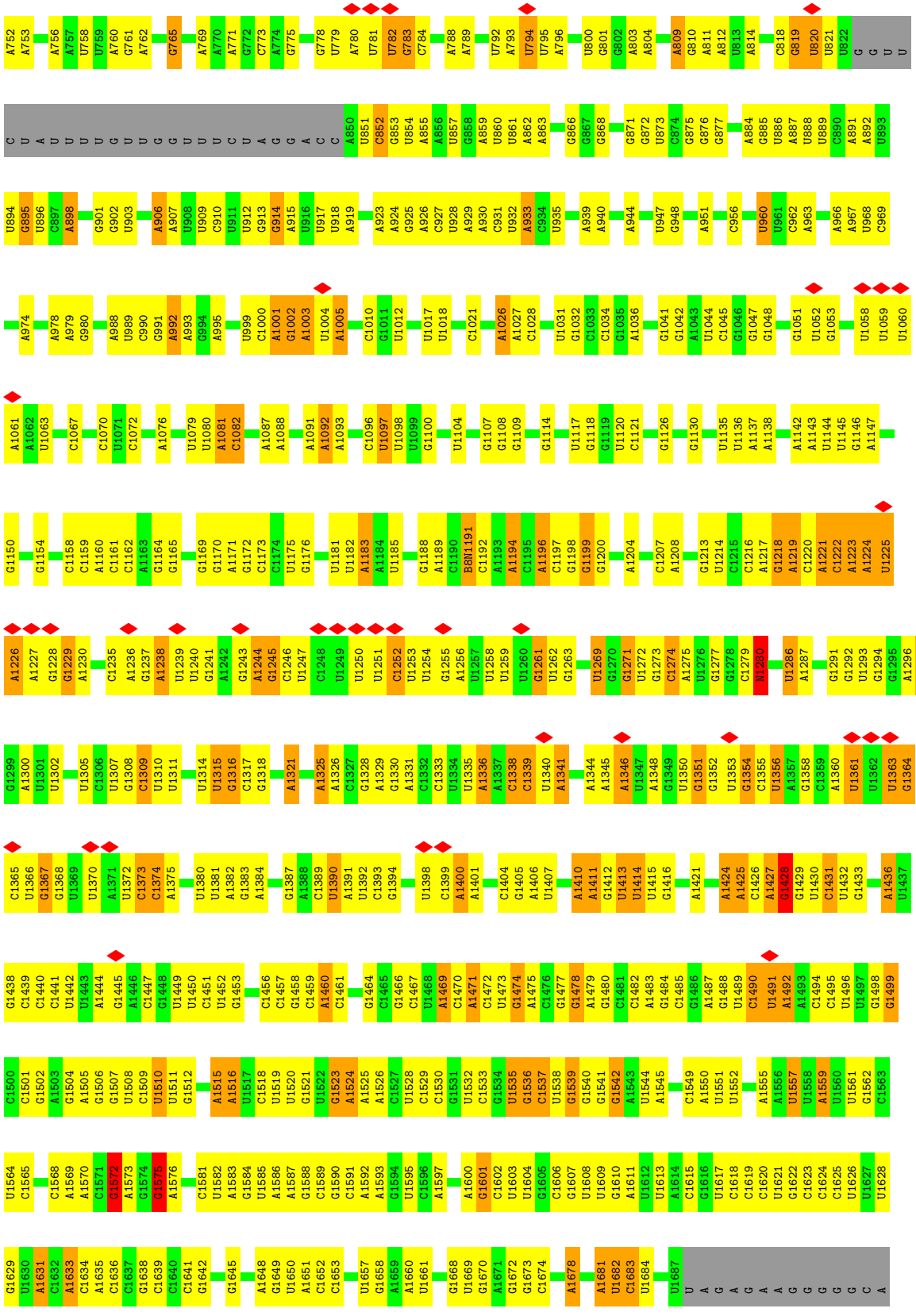
Chain b:

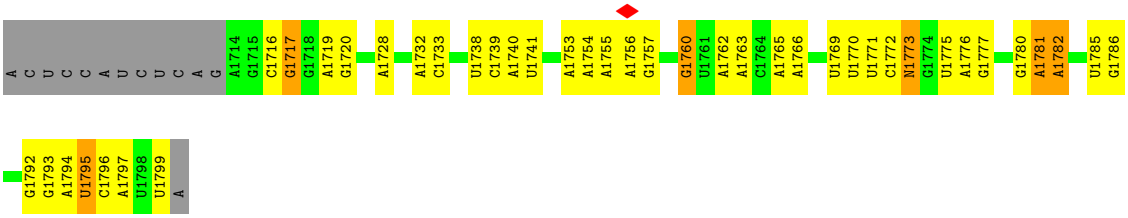


• Molecule 61: 18S ribosomal RNA

Chain c:

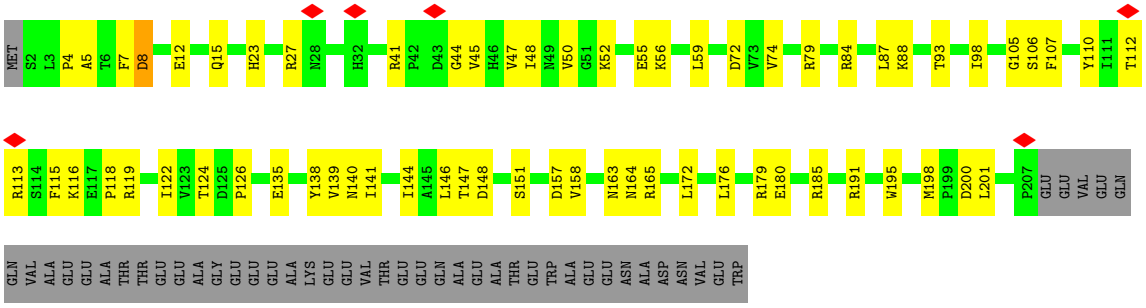






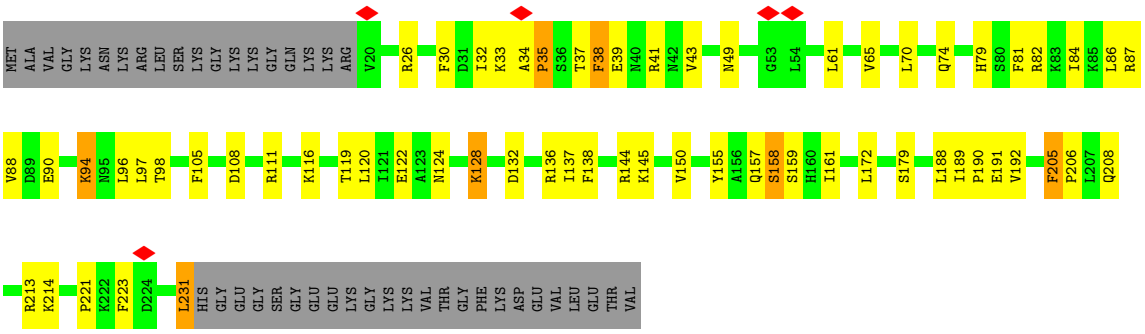
• Molecule 62: 40S ribosomal protein S0-A

Chain d:



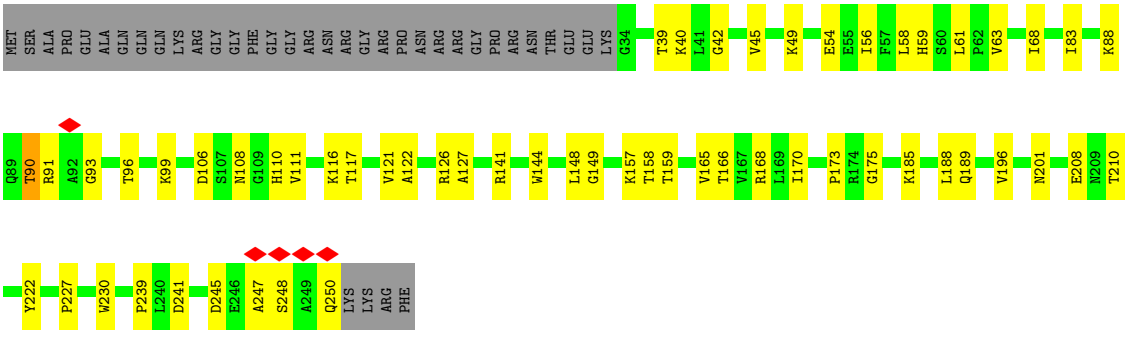
• Molecule 63: 40S ribosomal protein S1-A

Chain e:



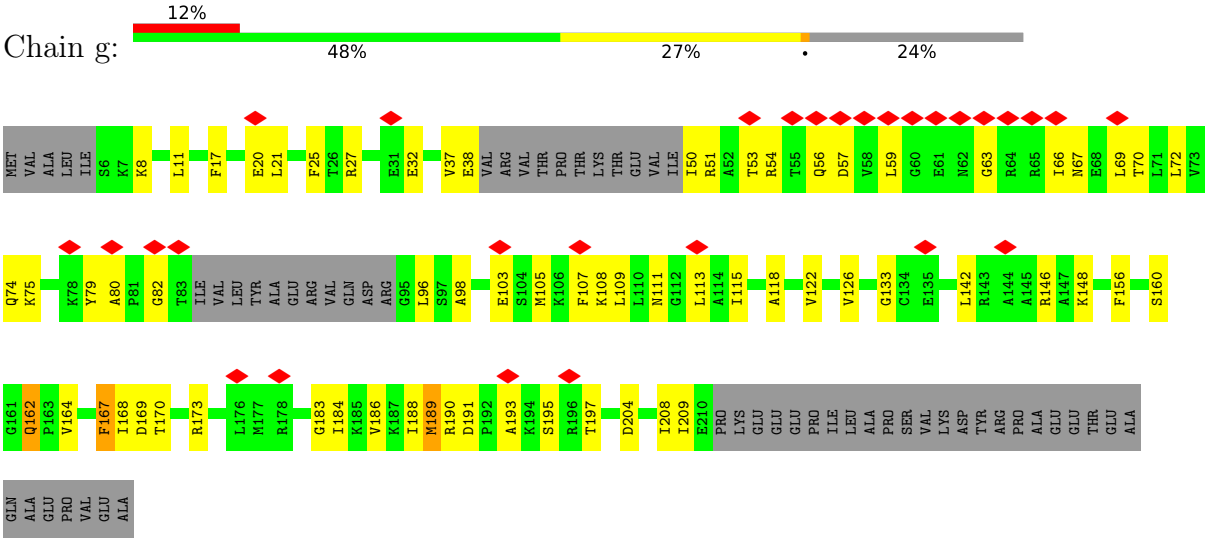
• Molecule 64: 40S ribosomal protein S2

Chain f:



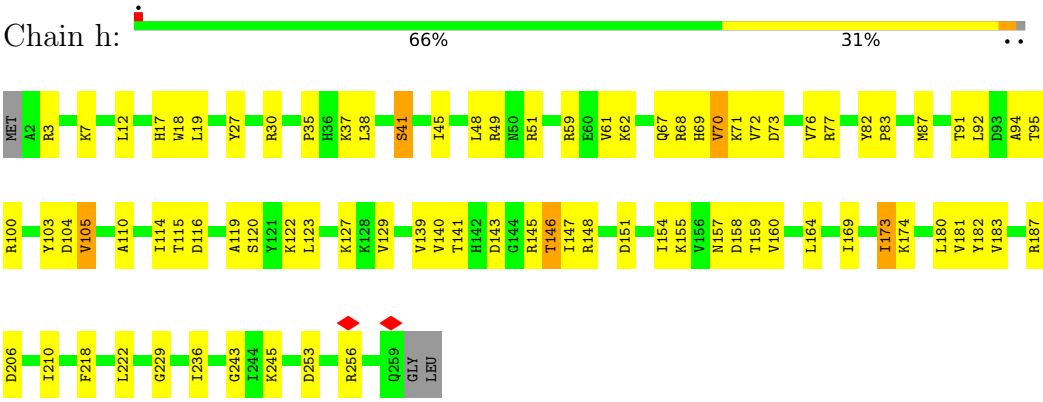
• Molecule 65: RPS3 isoform 1

Chain g:



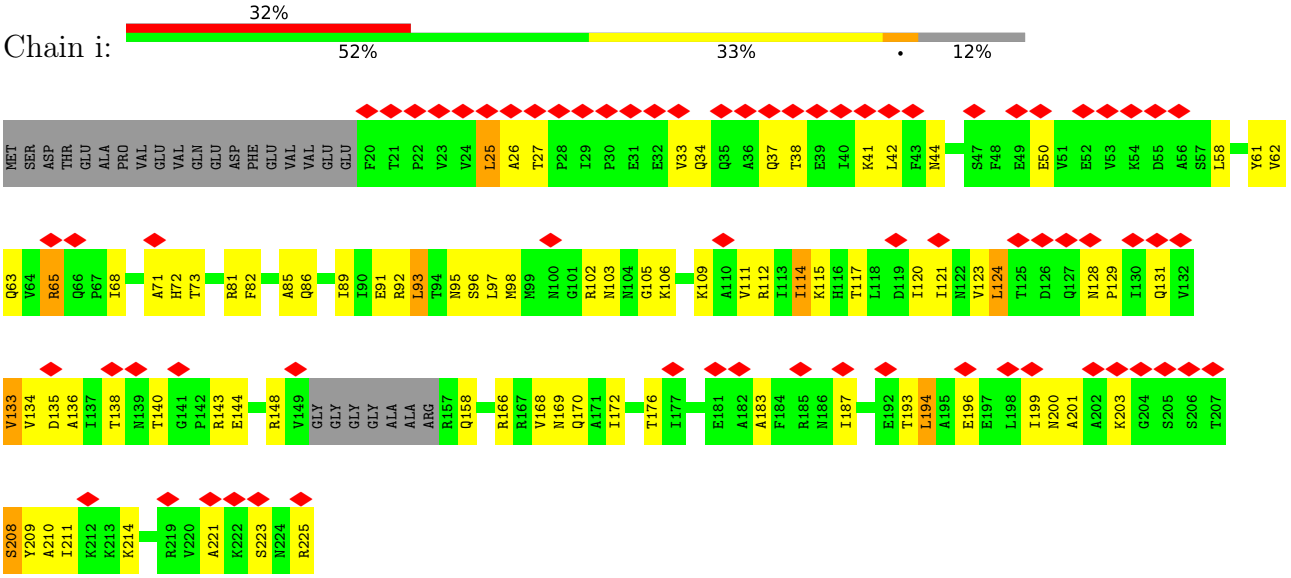
• Molecule 66: 40S ribosomal protein S4-A

Chain h:



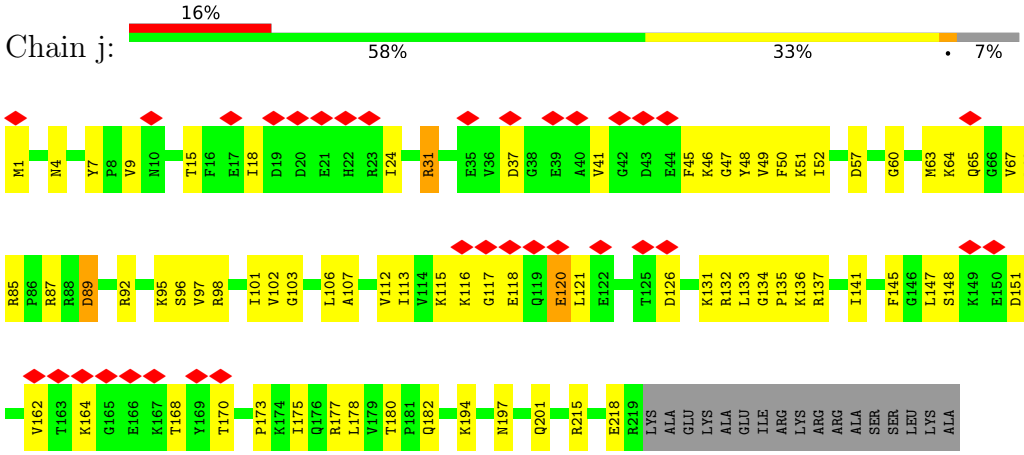
• Molecule 67: 40S ribosomal protein S5

Chain i:



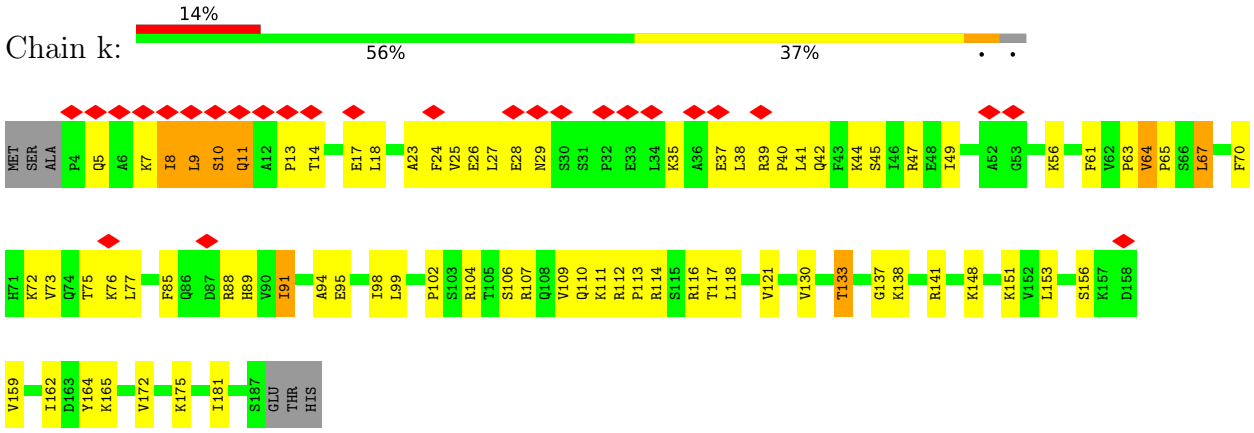
• Molecule 68: 40S ribosomal protein S6-A

Chain j:



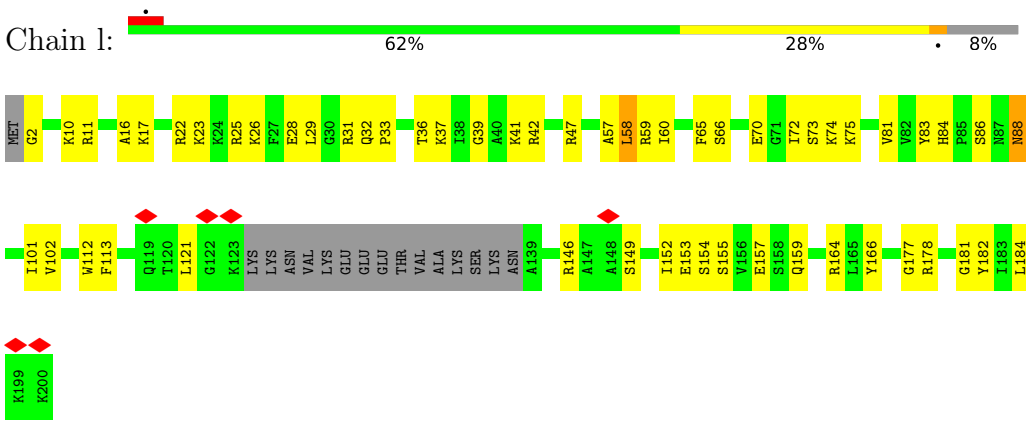
• Molecule 69: 40S ribosomal protein S7-A

Chain k:



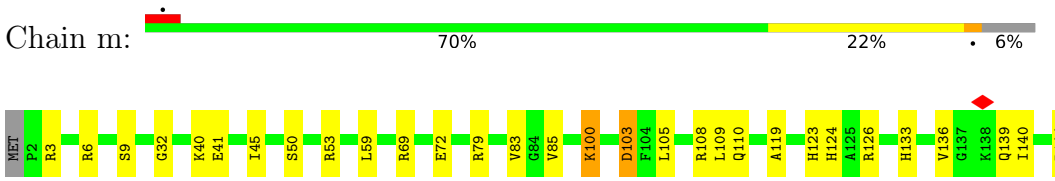
• Molecule 70: 40S ribosomal protein S8-B

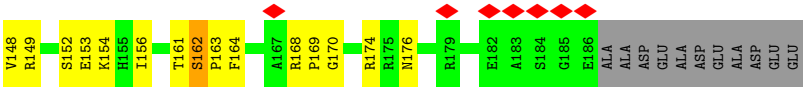
Chain l:



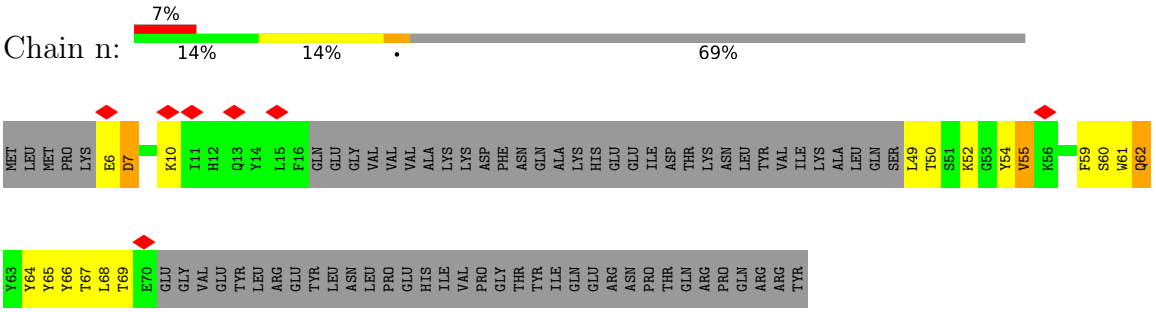
• Molecule 71: 40S ribosomal protein S9-A

Chain m:

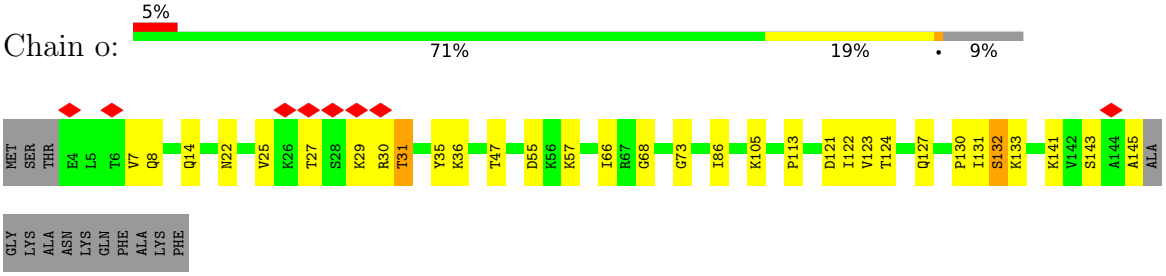




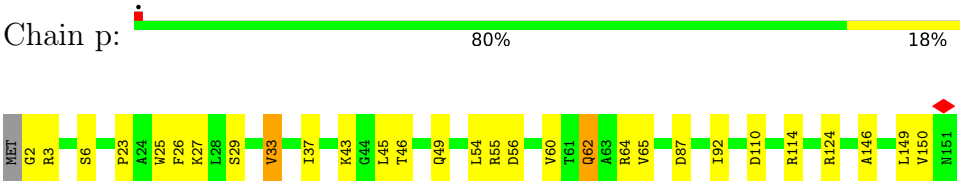
• Molecule 72: 40S ribosomal protein S10-A



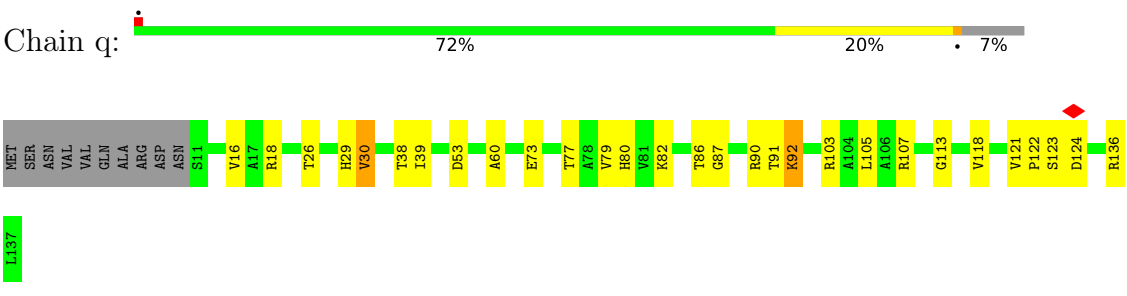
• Molecule 73: 40S ribosomal protein S11-A



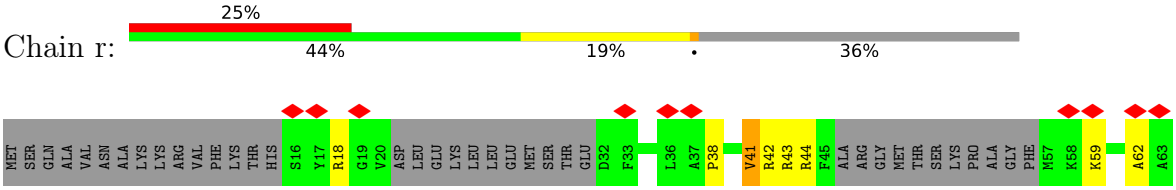
• Molecule 74: 40S ribosomal protein S13

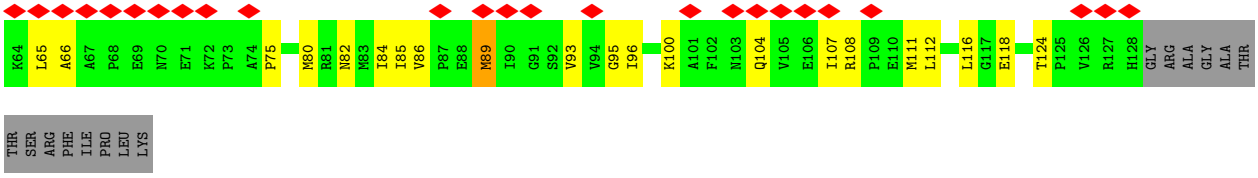


• Molecule 75: 40S ribosomal protein S14-A



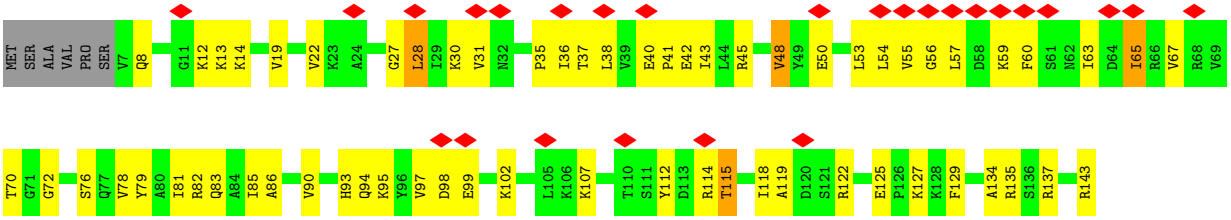
• Molecule 76: 40S ribosomal protein S15





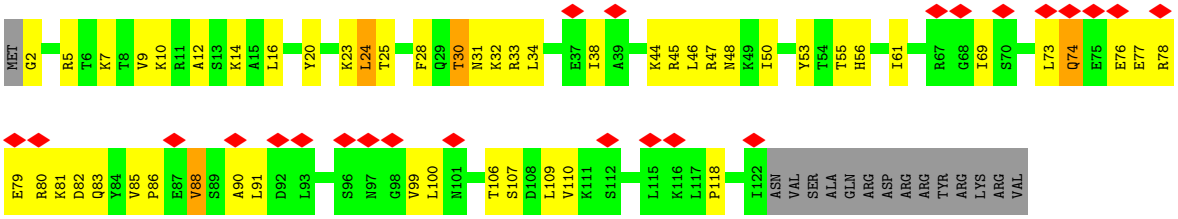
• Molecule 77: 40S ribosomal protein S16-A

Chain s:



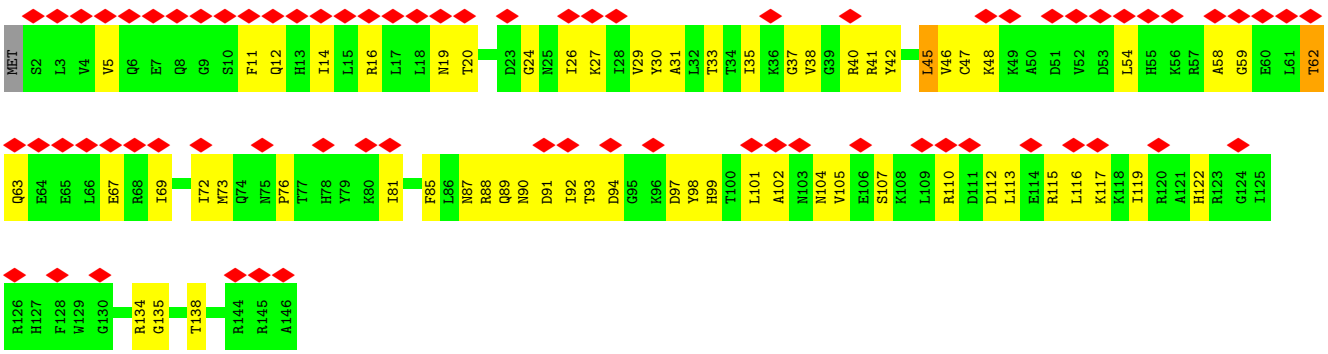
• Molecule 78: 40S ribosomal protein S17-A

Chain t:



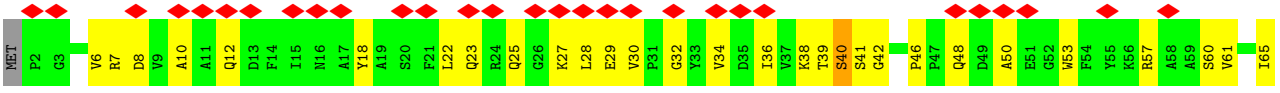
• Molecule 79: 40S ribosomal protein S18-A

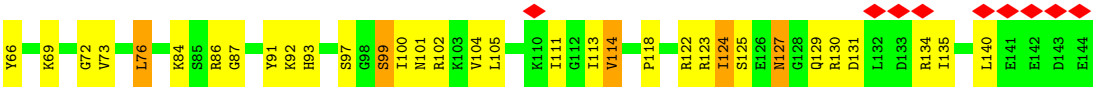
Chain u:



• Molecule 80: 40S ribosomal protein S19-A

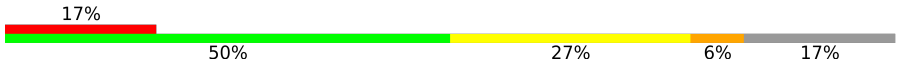
Chain v:

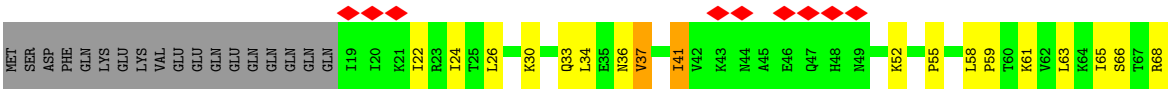


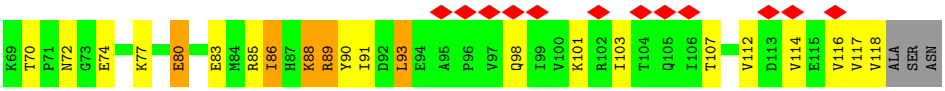


• Molecule 81: 40S ribosomal protein S20

Chain w:

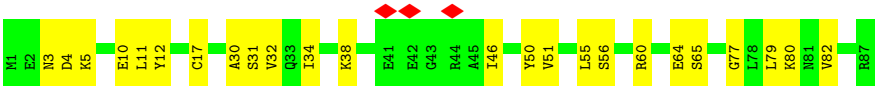






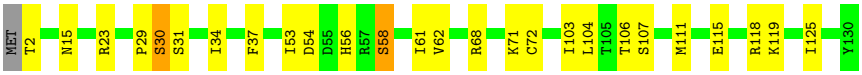
• Molecule 82: 40S ribosomal protein S21-A

Chain x:



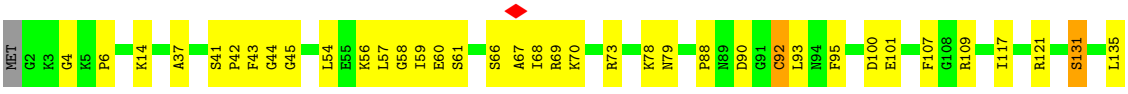
• Molecule 83: 40S ribosomal protein S22-A

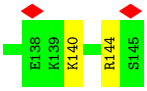
Chain y:



• Molecule 84: 40S ribosomal protein S23-A

Chain z:





4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	58351	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 ($e^-/Å^2$)	40	Depositor
Minimum defocus (nm)	400	Depositor
Maximum defocus (nm)	1000	Depositor
Magnification	270000	Depositor
Image detector	FEI FALCON IV (4k x 4k)	Depositor
Maximum map value	1.697	Depositor
Minimum map value	-0.518	Depositor
Average map value	-0.001	Depositor
Map value standard deviation	0.046	Depositor
Recommended contour level	0.161	Depositor
Map size (Å)	540.0, 540.0, 540.0	wwPDB
Map dimensions	600, 600, 600	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.9, 0.9, 0.9	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: OMG, G7M, GDP, SPD, MA6, K, OMC, PO4, 5MC, ZN, YYG, UR3, 4AC, OMU, DDE, B8N, 1MA, SO1, A2M, MG

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	0.16	0/1087	0.39	0/1449
2	1	0.12	0/571	0.43	0/768
3	2	0.17	0/782	0.41	0/1047
4	3	0.14	0/620	0.41	0/838
5	4	0.15	0/499	0.39	0/670
6	5	0.13	0/412	0.33	0/544
7	6	0.13	0/433	0.43	0/575
8	7	0.14	0/2489	0.42	0/3389
9	8	0.12	0/279	0.44	0/369
10	A	0.20	0/1585	0.35	0/2128
11	AA	0.28	6/75545 (0.0%)	0.30	0/117782
12	Aa	0.14	0/6470	0.38	0/8759
13	B	0.20	0/1245	0.34	0/1676
14	BB	0.17	0/2883	0.24	0/4491
15	Bb	0.13	0/1788	0.33	0/2786
16	C	0.17	0/1465	0.34	0/1965
17	CC	0.20	0/3746	0.29	0/5832
18	Cc	0.11	0/1836	0.23	0/2859
19	D	0.16	0/1440	0.34	0/1921
20	DD	0.14	0/1558	0.38	0/2107
21	Dd	0.17	0/138	0.31	0/212
22	E	0.18	0/1481	0.38	0/1990
23	EE	0.19	0/1948	0.36	0/2617
24	Ee	0.72	2/1210 (0.2%)	0.71	1/1627 (0.1%)
25	F	0.16	0/1300	0.32	0/1743
26	FF	0.18	0/3146	0.35	0/4228
27	G	0.14	0/786	0.36	0/1065
28	GG	0.17	0/2800	0.36	0/3790
29	H	0.17	0/978	0.34	0/1316
30	HH	0.15	0/2425	0.33	0/3271
31	I	0.16	0/533	0.30	0/707

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
32	II	0.16	0/1251	0.36	0/1682
33	J	0.17	0/974	0.34	0/1314
34	JJ	0.19	0/1821	0.48	2/2451 (0.1%)
35	K	0.16	0/1004	0.30	0/1341
36	KK	0.16	0/1836	0.33	0/2481
37	L	0.16	0/1118	0.35	0/1497
38	LL	0.17	0/1539	0.38	0/2073
39	M	0.18	0/1204	0.39	0/1612
40	MM	0.17	0/1779	0.35	0/2386
41	N	0.16	0/473	0.32	0/629
42	NN	0.16	0/1374	0.38	0/1842
43	O	0.14	0/750	0.27	0/1008
44	OO	0.17	0/1568	0.38	0/2106
45	P	0.16	0/897	0.34	0/1205
46	PP	0.17	0/1068	0.32	0/1438
47	Pp	0.21	0/19	0.55	0/23
48	Q	0.16	0/1041	0.29	0/1394
49	QQ	0.19	0/1757	0.36	0/2354
50	R	0.19	0/868	0.34	0/1168
51	S	0.18	0/871	0.33	0/1164
52	T	0.15	0/978	0.30	0/1301
53	U	0.17	0/778	0.38	0/1034
54	V	0.19	0/680	0.47	0/901
55	W	0.18	0/618	0.36	0/826
56	X	0.19	0/443	0.45	0/588
57	Y	0.13	0/423	0.27	0/562
58	Z	0.18	0/234	0.26	0/300
59	a	0.18	0/831	0.39	0/1097
60	b	0.16	0/701	0.37	0/934
61	c	0.18	0/37760	0.29	0/58811
62	d	0.15	0/1623	0.36	0/2222
63	e	0.16	0/1714	0.42	0/2308
64	f	0.18	0/1665	0.42	0/2263
65	g	0.15	0/1429	0.39	0/1913
66	h	0.15	0/2097	0.36	0/2823
67	i	0.17	0/1591	0.43	0/2151
68	j	0.12	0/1790	0.34	0/2393
69	k	0.18	0/1506	0.51	2/2028 (0.1%)
70	l	0.16	0/1482	0.37	0/1980
71	m	0.14	0/1519	0.33	0/2035
72	n	0.12	0/309	0.41	0/416
73	o	0.15	0/1172	0.32	0/1580
74	p	0.15	0/1215	0.30	0/1638

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
75	q	0.16	0/901	0.45	1/1217 (0.1%)
76	r	0.13	0/747	0.36	0/1002
77	s	0.14	0/1099	0.44	0/1473
78	t	0.14	0/971	0.39	0/1303
79	u	0.12	0/1211	0.35	0/1628
80	v	0.14	0/1130	0.39	0/1517
81	w	0.17	0/810	0.41	0/1095
82	x	0.17	0/693	0.41	0/935
83	y	0.19	0/1038	0.42	0/1395
84	z	0.15	0/1139	0.38	0/1518
All	All	0.22	8/218987 (0.0%)	0.33	6/320876 (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
19	D	0	1
26	FF	0	1
34	JJ	0	2
37	L	0	2
54	V	0	1
59	a	0	1
63	e	0	2
67	i	0	1
69	k	0	3
77	s	0	1
84	z	0	1
All	All	0	16

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	AA	1236	G	C2-N3	26.21	1.85	1.32
11	AA	1236	G	N3-C4	25.66	1.86	1.35
11	AA	1236	G	N1-C2	18.83	1.75	1.37
24	Ee	16	ARG	CD-NE	18.75	1.72	1.46
11	AA	1236	G	C6-N1	18.56	1.76	1.39
11	AA	1236	G	C5-C6	17.48	1.77	1.42
11	AA	1236	G	C5-C4	15.79	1.70	1.38
24	Ee	16	ARG	NE-CZ	15.36	1.50	1.33

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
24	Ee	16	ARG	CD-NE-CZ	20.62	153.26	124.40
34	JJ	157	ASN	CA-C-N	8.99	138.71	121.54
34	JJ	157	ASN	C-N-CA	8.99	138.71	121.54
69	k	9	LEU	CA-C-N	5.66	132.36	121.54
69	k	9	LEU	C-N-CA	5.66	132.36	121.54
75	q	73	GLU	N-CA-C	-5.04	107.79	114.04

There are no chirality outliers.

All (16) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
19	D	130	ASN	Peptide
26	FF	349	LYS	Peptide
34	JJ	158	LYS	Peptide
34	JJ	232	ARG	Peptide
37	L	101	PHE	Peptide
37	L	102	GLU	Peptide
54	V	64	MET	Peptide
59	a	7	THR	Peptide
63	e	35	PRO	Peptide
63	e	38	PHE	Peptide
67	i	65	ARG	Peptide
69	k	10	SER	Peptide
69	k	11	GLN	Peptide
69	k	64	VAL	Peptide
77	s	40	GLU	Peptide
84	z	88	PRO	Peptide

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	0	1073	0	1132	40	0
2	1	563	0	603	27	0
3	2	769	0	814	12	0
4	3	610	0	633	19	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	4	497	0	535	23	0
6	5	404	0	399	17	0
7	6	427	0	475	18	0
8	7	2436	0	2386	106	0
9	8	276	0	289	8	0
10	A	1555	0	1659	27	0
11	AA	68429	0	34441	1138	0
12	Aa	6368	0	6435	209	0
13	B	1222	0	1231	24	0
14	BB	2579	0	1304	37	0
15	Bb	1638	0	835	42	0
16	C	1441	0	1543	36	0
17	CC	3353	0	1695	64	0
18	Cc	1644	0	837	22	0
19	D	1423	0	1510	26	0
20	DD	1531	0	1571	39	0
21	Dd	125	0	63	0	0
22	E	1445	0	1487	32	0
23	EE	1914	0	1981	43	0
24	Ee	1196	0	1257	77	0
25	F	1276	0	1323	19	0
26	FF	3075	0	3142	51	0
27	G	770	0	780	9	0
28	GG	2748	0	2859	49	0
29	H	963	0	1015	21	0
30	HH	2375	0	2325	44	0
31	I	521	0	551	10	0
32	II	1230	0	1320	17	0
33	J	959	0	1023	16	0
34	JJ	1784	0	1862	42	0
35	K	993	0	1081	19	0
36	KK	1804	0	1877	35	0
37	L	1092	0	1155	24	0
38	LL	1518	0	1587	26	0
39	M	1173	0	1215	36	0
40	MM	1743	0	1785	36	0
41	N	462	0	491	9	0
42	NN	1353	0	1383	38	0
43	O	742	0	797	10	0
44	OO	1543	0	1608	33	0
45	P	883	0	918	12	0
46	PP	1053	0	1149	19	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
47	Pp	19	0	20	4	0
48	Q	1020	0	1090	16	0
49	QQ	1720	0	1779	36	0
50	R	850	0	880	15	0
51	S	861	0	918	9	0
52	T	969	0	1078	19	0
53	U	771	0	849	15	0
54	V	665	0	668	19	0
55	W	612	0	682	12	0
56	X	436	0	475	11	0
57	Y	417	0	455	7	0
58	Z	233	0	284	4	0
59	a	819	0	886	20	0
60	b	694	0	734	9	0
61	c	34321	0	17285	729	0
62	d	1583	0	1578	51	0
63	e	1689	0	1763	52	0
64	f	1635	0	1723	39	0
65	g	1412	0	1473	49	0
66	h	2056	0	2140	67	0
67	i	1572	0	1639	73	0
68	j	1766	0	1859	70	0
69	k	1481	0	1572	67	0
70	l	1457	0	1488	55	0
71	m	1494	0	1573	42	0
72	n	300	0	279	16	0
73	o	1146	0	1213	20	0
74	p	1192	0	1255	20	0
75	q	891	0	883	25	0
76	r	732	0	760	31	0
77	s	1080	0	1140	58	0
78	t	961	0	999	45	0
79	u	1192	0	1222	44	0
80	v	1112	0	1124	54	0
81	w	800	0	869	33	0
82	x	684	0	672	22	0
83	y	1021	0	1060	22	0
84	z	1121	0	1196	27	0
85	2	1	0	0	0	0
85	5	1	0	0	0	0
85	8	1	0	0	0	0
85	S	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
85	V	1	0	0	0	0
85	Y	1	0	0	0	0
85	a	1	0	0	0	0
85	b	1	0	0	0	0
86	AA	198	0	0	0	0
86	Aa	1	0	0	0	0
86	B	1	0	0	0	0
86	BB	5	0	0	0	0
86	Bb	1	0	0	0	0
86	CC	3	0	0	0	0
86	Dd	1	0	0	0	0
86	FF	1	0	0	0	0
86	H	1	0	0	0	0
86	QQ	1	0	0	0	0
86	c	49	0	0	0	0
87	AA	14	0	0	0	0
87	EE	1	0	0	0	0
87	MM	1	0	0	0	0
87	Q	1	0	0	0	0
87	a	1	0	0	0	0
87	c	2	0	0	0	0
87	q	1	0	0	0	0
88	AA	30	0	57	5	0
89	Aa	28	0	12	3	0
90	Aa	5	0	0	6	0
91	Aa	35	0	41	7	0
92	2	1	0	0	0	0
92	A	2	0	0	0	0
92	AA	778	0	0	9	0
92	B	3	0	0	0	0
92	BB	13	0	0	0	0
92	CC	13	0	0	0	0
92	Cc	1	0	0	0	0
92	D	1	0	0	0	0
92	EE	6	0	0	0	0
92	F	4	0	0	0	0
92	FF	3	0	0	0	0
92	GG	3	0	0	0	0
92	H	3	0	0	0	0
92	HH	1	0	0	0	0
92	J	1	0	0	0	0
92	JJ	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
92	M	2	0	0	0	0
92	MM	2	0	0	0	0
92	N	1	0	0	0	0
92	Q	4	0	0	0	0
92	QQ	6	0	0	0	0
92	V	2	0	0	0	0
92	c	118	0	0	4	0
92	h	2	0	0	0	0
92	o	2	0	0	0	0
92	p	2	0	0	0	0
All	All	207126	0	154034	3892	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 (3892) 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:1236:G:C6	11:AA:1236:G:C5	1.77	1.61
11:AA:1236:G:C2	24:Ee:16:ARG:NE	1.76	1.53
11:AA:1236:G:C2	11:AA:1236:G:N1	1.75	1.53
24:Ee:16:ARG:NE	24:Ee:16:ARG:CD	1.72	1.53
11:AA:1236:G:C6	11:AA:1236:G:N1	1.76	1.51
11:AA:1236:G:C4	24:Ee:16:ARG:NE	1.80	1.48
11:AA:1236:G:C2	11:AA:1236:G:N3	1.85	1.44
11:AA:1236:G:C4	11:AA:1236:G:N3	1.86	1.40
11:AA:1236:G:C6	24:Ee:16:ARG:NE	1.91	1.39
11:AA:1236:G:C5	24:Ee:16:ARG:NE	1.93	1.37
11:AA:1236:G:N1	24:Ee:16:ARG:NE	1.76	1.33
11:AA:1236:G:C2	24:Ee:16:ARG:CZ	2.19	1.25
11:AA:1236:G:C4	24:Ee:16:ARG:CZ	2.23	1.21
11:AA:1236:G:N3	24:Ee:16:ARG:CD	2.04	1.19
11:AA:1018:G:OP1	11:AA:1035:G:N2	1.75	1.17
11:AA:1236:G:C2	24:Ee:16:ARG:CD	2.36	1.07
11:AA:1236:G:C4	24:Ee:16:ARG:CD	2.39	1.05
11:AA:173:G:H1	11:AA:245:U:H3	0.97	0.96
11:AA:1237:G:H1	11:AA:1251:A:H2	1.08	0.95
40:MM:108:ALA:O	40:MM:112:GLN:HB2	1.66	0.94
11:AA:2457:G:H1	11:AA:2460:U:H5'	1.32	0.92
60:b:57:CYS:SG	60:b:59:CYS:O	2.29	0.90
8:7:8:VAL:HG22	8:7:316:MET:HE3	1.54	0.90

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1236:G:C4	24:Ee:16:ARG:HD3	2.06	0.89
64:f:90:THR:H	64:f:93:GLY:HA2	1.32	0.89
11:AA:1236:G:C5	24:Ee:16:ARG:CZ	2.56	0.87
69:k:7:LYS:HD3	69:k:8:ILE:HG13	1.54	0.87
61:c:687:G:H5'	83:y:119:LYS:HG2	1.58	0.86
61:c:992:A:H2	61:c:1012:U:H3	1.23	0.85
11:AA:394:G:H22	11:AA:397:A:H5'	1.42	0.85
11:AA:1236:G:C2	24:Ee:16:ARG:HD2	2.10	0.85
11:AA:2489:C:H3'	11:AA:2490:C:H2'	1.59	0.85
24:Ee:82:ILE:HA	24:Ee:85:LEU:HG	1.59	0.83
12:Aa:385:MET:HE3	12:Aa:460:ASP:HB2	1.60	0.83
11:AA:1940:G:H21	11:AA:3362:A:H8	1.27	0.82
29:H:81:GLN:O	29:H:98:ASN:ND2	2.10	0.82
15:Bb:55:U:O2	15:Bb:58:A:N7	2.12	0.82
61:c:1542:G:H1	61:c:1568:C:HO2'	0.85	0.82
12:Aa:434:VAL:HB	12:Aa:445:ILE:O	1.79	0.82
61:c:1358:G:H1	61:c:1366:U:H3	1.28	0.81
1:0:34:ASN:ND2	61:c:521:A:N3	2.28	0.81
11:AA:1019:G:H2'	11:AA:1020:G:H8	1.44	0.81
12:Aa:388:THR:HG21	12:Aa:393:ARG:HB2	1.62	0.81
8:7:19:TRP:HB3	8:7:38:ARG:HB3	1.63	0.80
11:AA:1236:G:N1	24:Ee:16:ARG:CZ	2.44	0.80
12:Aa:28:VAL:HA	90:Aa:1002:PO4:O4	1.80	0.80
74:p:46:THR:H	74:p:49:GLN:HE21	1.29	0.80
11:AA:542:G:H1	11:AA:549:U:H3	1.29	0.80
15:Bb:55:U:C2	15:Bb:58:A:N7	2.49	0.80
11:AA:2457:G:N2	11:AA:2486:A:N1	2.30	0.80
69:k:8:ILE:HD12	69:k:9:LEU:H	1.46	0.79
12:Aa:300:LEU:HB3	12:Aa:305:ILE:HD11	1.64	0.79
19:D:21:LYS:HE3	19:D:55:VAL:HA	1.61	0.79
78:t:83:GLN:HB3	78:t:86:PRO:HB3	1.65	0.79
11:AA:1236:G:C6	24:Ee:16:ARG:CZ	2.66	0.79
20:DD:139:LEU:HD11	20:DD:169:GLU:HA	1.63	0.79
34:JJ:155:LYS:HG3	34:JJ:158:LYS:HA	1.63	0.79
61:c:1436:A:OP2	65:g:27:ARG:NH2	2.16	0.78
38:LL:91:ARG:HD2	38:LL:143:GLU:HG3	1.66	0.78
61:c:1588:G:H1	61:c:1608:U:H3	1.32	0.77
61:c:256:A:O2'	70:l:72:ILE:O	2.02	0.77
11:AA:2213:A:H2'	11:AA:2214:A:C8	2.19	0.77
68:j:52:ILE:HD11	68:j:102:VAL:HG21	1.67	0.77
11:AA:1236:G:N3	24:Ee:16:ARG:HD2	1.99	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
76:r:18:ARG:HD2	79:u:90:ASN:HB3	1.65	0.77
61:c:1474:G:H2'	61:c:1475:A:H8	1.49	0.77
61:c:647:G:H22	61:c:687:G:H1	1.34	0.76
61:c:1034:C:HO2'	83:y:2:THR:N	1.83	0.76
17:CC:58:G:O6	54:V:63:ARG:NH2	2.19	0.76
42:NN:49:LYS:HB3	42:NN:62:ASN:HA	1.66	0.76
11:AA:1661:G:H2'	11:AA:1662:G:C8	2.21	0.76
39:M:19:LYS:HG2	39:M:25:HIS:HB2	1.68	0.76
12:Aa:24:VAL:HG23	12:Aa:102:LEU:HD11	1.68	0.76
68:j:147:LEU:HD11	68:j:153:VAL:HB	1.67	0.75
61:c:123:G:H21	66:h:146:THR:HG21	1.51	0.75
81:w:33:GLN:HA	81:w:36:ASN:HB2	1.68	0.75
11:AA:1019:G:H2'	11:AA:1020:G:C8	2.21	0.75
80:v:39:THR:HA	80:v:100:ILE:HD13	1.67	0.75
61:c:1591:C:H2'	61:c:1592:A:H8	1.49	0.74
61:c:1672:G:H2'	61:c:1673:G:C8	2.22	0.74
75:q:80:HIS:HA	75:q:113:GLY:O	1.87	0.74
61:c:868:G:H1	61:c:960:U:H3	1.33	0.74
61:c:1352:G:N2	61:c:1374:C:N3	2.35	0.74
61:c:1535:U:O2	61:c:1536:G:N2	2.21	0.74
8:7:181:TRP:HZ3	8:7:186:PHE:HB3	1.52	0.74
11:AA:3068:U:OP2	19:D:62:ARG:NH2	2.20	0.74
8:7:174:ASN:HA	8:7:199:ILE:HB	1.68	0.74
70:l:70:GLU:HB2	70:l:72:ILE:HD11	1.70	0.74
61:c:567:A:OP1	84:z:70:LYS:NZ	2.20	0.74
64:f:39:THR:O	64:f:42:GLY:N	2.19	0.74
11:AA:2193:U:H5'	11:AA:2194:G:H5'	1.70	0.74
62:d:140:ASN:ND2	82:x:31:SER:O	2.20	0.74
12:Aa:26:ALA:HB3	12:Aa:32:LYS:HE3	1.67	0.74
83:y:15:ASN:ND2	83:y:72:CYS:O	2.21	0.73
11:AA:1017:C:H3'	11:AA:1035:G:H22	1.53	0.73
61:c:871:G:H2'	61:c:872:G:C8	2.23	0.73
61:c:354:C:H5"	70:l:16:ALA:HB2	1.70	0.73
12:Aa:381:TYR:HB2	12:Aa:478:MET:HE3	1.70	0.73
61:c:576:G:H22	84:z:67:ALA:HB2	1.53	0.73
1:0:16:PRO:HD2	66:h:95:THR:HG22	1.69	0.73
11:AA:655:C:H2'	11:AA:656:A:H8	1.52	0.73
26:FF:95:THR:HG22	26:FF:97:ARG:H	1.52	0.73
61:c:647:G:N2	61:c:687:G:H1	1.86	0.73
79:u:12:GLN:HB3	79:u:59:GLY:HA2	1.71	0.73
61:c:1358:G:N2	61:c:1366:U:O2	2.22	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:1559:A:H5”	79:u:135:GLY:HA3	1.71	0.72
11:AA:2180:G:OP1	23:EE:174:ARG:NH2	2.23	0.72
82:x:11:LEU:HD12	82:x:12:TYR:HB3	1.71	0.72
11:AA:627:U:H4’	11:AA:1399:A:H1’	1.69	0.72
40:MM:30:LYS:HG3	40:MM:63:GLU:HG3	1.71	0.72
11:AA:1301:A:H4’	11:AA:1302:A:H5”	1.69	0.72
46:PP:48:GLY:HA3	46:PP:53:VAL:HB	1.72	0.72
1:0:26:ASP:OD1	1:0:68:LYS:NZ	2.23	0.72
69:k:67:LEU:HD13	69:k:94:ALA:HB2	1.70	0.72
11:AA:2568:C:N3	11:AA:2573:G:N1	2.32	0.72
13:B:116:HIS:HB3	13:B:149:VAL:HG13	1.70	0.72
15:Bb:55:U:O2	15:Bb:58:A:C5	2.42	0.72
34:JJ:158:LYS:O	34:JJ:160:ARG:N	2.22	0.72
11:AA:72:C:H4’	44:OO:63:VAL:HG13	1.72	0.71
61:c:1483:A:H2’	61:c:1484:G:C8	2.25	0.71
61:c:1540:G:OP2	79:u:40:ARG:NH2	2.23	0.71
83:y:30:SER:HB2	83:y:61:ILE:HG13	1.70	0.71
8:7:5:GLU:HG2	8:7:317:THR:OG1	1.90	0.71
12:Aa:735:CYS:O	12:Aa:766:PHE:HB2	1.91	0.71
61:c:1478:G:OP1	80:v:39:THR:OG1	2.08	0.71
66:h:68:ARG:HD2	66:h:76:VAL:HG11	1.72	0.71
11:AA:2446:U:H3	11:AA:2447:A:N6	1.88	0.71
27:G:43:VAL:HG12	27:G:44:GLU:HG2	1.72	0.71
11:AA:3324:C:OP1	45:P:19:ARG:NH1	2.24	0.71
28:GG:142:VAL:HG12	28:GG:145:ILE:HD12	1.71	0.71
61:c:152:U:O2	68:j:4:ASN:ND2	2.20	0.71
11:AA:3080:G:OP1	92:AA:3701:HOH:O	2.09	0.71
68:j:47:GLY:HA3	68:j:117:GLY:HA3	1.73	0.71
80:v:66:TYR:HB2	80:v:124:ILE:HD12	1.71	0.71
12:Aa:606:ILE:HD13	12:Aa:619:MET:HE2	1.73	0.71
77:s:94:GLN:HG3	77:s:102:LYS:HE2	1.71	0.71
77:s:129:PHE:O	77:s:137:ARG:NH1	2.23	0.71
15:Bb:4:G:H1	15:Bb:69:U:H3	1.36	0.71
29:H:30:GLY:HA3	29:H:66:LYS:HD2	1.73	0.71
71:m:136:VAL:HG13	71:m:152:SER:HB3	1.73	0.71
39:M:75:LEU:HD22	39:M:78:LEU:HD22	1.73	0.70
11:AA:2700:G:H5”	25:F:17:ARG:HG2	1.73	0.70
76:r:108:ARG:H	76:r:111:MET:HG2	1.57	0.70
11:AA:1717:U:H2’	11:AA:1718:G:C8	2.26	0.70
11:AA:2568:C:O2	11:AA:2573:G:N2	2.20	0.70
12:Aa:593:ILE:HG13	12:Aa:685:ARG:HB2	1.74	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:1213:G:O2'	61:c:1244:A:N6	2.24	0.70
11:AA:2960:C:H2'	11:AA:2961:G:C8	2.26	0.70
75:q:16:VAL:O	75:q:30:VAL:HA	1.92	0.70
78:t:23:LYS:HD2	78:t:34:LEU:HD11	1.74	0.70
42:NN:57:PHE:HB3	42:NN:59:ILE:HG23	1.72	0.70
80:v:127:ASN:OD1	80:v:127:ASN:N	2.22	0.70
67:i:63:GLN:HG3	67:i:86:GLN:HA	1.74	0.70
8:7:289:ALA:HA	8:7:305:TYR:HA	1.74	0.69
11:AA:2499:U:H2'	11:AA:2500:A:H8	1.57	0.69
8:7:109:ASP:OD1	8:7:109:ASP:N	2.16	0.69
11:AA:1237:G:O6	11:AA:1251:A:N1	2.25	0.69
11:AA:2969:A:N7	23:EE:215:ASN:ND2	2.40	0.69
79:u:37:GLY:O	79:u:99:HIS:NE2	2.24	0.69
28:GG:35:VAL:HG21	28:GG:244:LEU:HD21	1.73	0.69
67:i:50:GLU:O	67:i:128:ASN:ND2	2.26	0.69
69:k:98:ILE:HG12	69:k:121:VAL:HG21	1.74	0.69
11:AA:1097:G:N7	25:F:116:ARG:NH2	2.40	0.69
11:AA:1103:A:N6	11:AA:1363:A:O2'	2.25	0.69
11:AA:1236:G:C5	24:Ee:16:ARG:CD	2.75	0.69
67:i:106:LYS:HB3	67:i:109:LYS:HE3	1.72	0.69
10:A:27:LEU:HD21	10:A:102:LEU:HB2	1.74	0.69
11:AA:1237:G:N1	11:AA:1251:A:C2	2.57	0.69
14:BB:45:A:OP1	30:HH:151:GLN:NE2	2.24	0.69
24:Ee:37:LEU:HB3	24:Ee:41:LYS:HE2	1.74	0.69
30:HH:91:GLY:O	30:HH:94:ASN:ND2	2.26	0.69
77:s:127:LYS:HA	77:s:134:ALA:HA	1.74	0.69
12:Aa:612:PHE:HD2	12:Aa:631:ARG:HG3	1.58	0.69
61:c:1041:G:H2'	61:c:1042:G:C8	2.28	0.69
61:c:1296:A:OP1	62:d:138:TYR:OH	2.10	0.69
30:HH:148:ILE:HG22	30:HH:151:GLN:HB3	1.75	0.68
12:Aa:90:LYS:O	12:Aa:91:GLN:NE2	2.27	0.68
39:M:76:ASP:HB3	39:M:116:GLY:HA3	1.76	0.68
61:c:886:U:OP1	63:e:214:LYS:NZ	2.27	0.68
63:e:35:PRO:HB3	63:e:38:PHE:HD2	1.57	0.68
63:e:144:ARG:HG2	63:e:206:PRO:HB2	1.76	0.68
61:c:265:A:H62	61:c:289:U:H3	1.42	0.68
11:AA:1206:G:OP1	40:MM:157:TYR:OH	2.10	0.68
61:c:257:A:O2'	70:l:73:SER:O	2.11	0.68
8:7:311:ARG:NH1	8:7:312:VAL:O	2.27	0.68
12:Aa:249:PHE:HB3	12:Aa:269:LEU:HD11	1.75	0.68
61:c:1474:G:H2'	61:c:1475:A:C8	2.28	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2492:C:H2'	11:AA:2493:U:O4'	1.94	0.68
52:T:31:LEU:HB3	52:T:44:ILE:HG22	1.74	0.68
61:c:538:A:O2'	61:c:541:A2M:H8	1.94	0.68
11:AA:2465:G:N1	11:AA:2492:C:O2	2.27	0.68
61:c:163:G:OP2	61:c:163:G:N2	2.23	0.68
69:k:5:GLN:HE22	69:k:18:LEU:HB3	1.58	0.68
11:AA:2767:U:O2'	59:a:30:ALA:O	2.11	0.68
61:c:564:G:N2	61:c:577:G:OP1	2.27	0.68
61:c:924:A:H2'	61:c:925:G:C8	2.28	0.68
61:c:1424:A:H2'	61:c:1425:A:C8	2.29	0.68
11:AA:1562:C:H42	11:AA:1578:C:H42	1.42	0.68
11:AA:2895:G:O2'	57:Y:100:TYR:O	2.10	0.68
56:X:28:ARG:HA	56:X:33:ASN:OD1	1.94	0.68
61:c:1081:A:H2	61:c:1082:C:H41	1.41	0.68
8:7:267:PRO:HD2	8:7:269:TYR:HE1	1.59	0.67
11:AA:289:A:O2'	49:QQ:93:LYS:O	2.11	0.67
11:AA:3143:C:OP2	92:AA:3702:HOH:O	2.12	0.67
61:c:418:G:O2'	68:j:72:ARG:NH2	2.26	0.67
61:c:819:G:H1	61:c:852:C:H41	1.41	0.67
61:c:1471:A:H62	61:c:1538:U:H3	1.41	0.67
61:c:1601:G:OP1	80:v:86:ARG:NH2	2.26	0.67
67:i:140:THR:HG21	67:i:210:ALA:HB1	1.76	0.67
42:NN:50:ALA:HB2	42:NN:65:ILE:HD13	1.76	0.67
47:Pp:1:MET:HE3	47:Pp:2:PHE:HB2	1.75	0.67
58:Z:2:ARG:HH22	61:c:1773:4AC:HM72	1.58	0.67
2:1:81:ARG:HA	2:1:84:GLU:HG2	1.76	0.67
6:5:8:PHE:O	61:c:1450:U:O2'	2.11	0.67
23:EE:30:ARG:NH1	23:EE:36:GLU:OE2	2.23	0.67
67:i:92:ARG:HH22	67:i:169:ASN:HB3	1.58	0.67
73:o:22:ASN:HB3	73:o:25:VAL:HG22	1.75	0.67
78:t:34:LEU:HD23	78:t:38:ILE:HG12	1.77	0.67
11:AA:1334:U:O2'	34:JJ:151:ARG:NH2	2.27	0.67
20:DD:139:LEU:HD21	20:DD:169:GLU:HG3	1.75	0.67
61:c:590:C:H2'	61:c:591:A:H8	1.58	0.67
61:c:1482:C:OP2	61:c:1521:G:N2	2.27	0.67
36:KK:246:MET:HA	36:KK:249:ARG:HD3	1.75	0.67
61:c:322:G:O2'	70:l:10:LYS:NZ	2.21	0.67
79:u:16:ARG:HH22	79:u:19:ASN:HA	1.59	0.67
12:Aa:584:ASN:HA	12:Aa:692:THR:O	1.95	0.67
24:Ee:116:MET:HG3	24:Ee:132:ILE:HD11	1.75	0.67
44:OO:124:ILE:HG23	52:T:119:LYS:HG2	1.77	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:U:84:LYS:O	53:U:88:GLU:HG3	1.94	0.67
11:AA:2101:C:H2'	11:AA:2102:U:C6	2.29	0.67
12:Aa:743:ILE:HD13	12:Aa:784:LEU:HD11	1.77	0.67
61:c:992:A:O2'	61:c:1785:U:O2	2.13	0.67
61:c:1564:U:OP1	80:v:38:LYS:NZ	2.27	0.67
72:n:54:TYR:HA	72:n:69:THR:HG22	1.77	0.67
77:s:37:THR:O	77:s:45:ARG:NH1	2.27	0.67
61:c:591:A:H2'	61:c:592:A:C8	2.29	0.67
61:c:166:C:O2'	68:j:133:LEU:O	2.13	0.67
56:X:30:ARG:HH21	56:X:33:ASN:HD22	1.41	0.66
77:s:50:GLU:OE2	77:s:114:ARG:NH1	2.28	0.66
79:u:48:LYS:HG3	79:u:54:LEU:HD11	1.77	0.66
11:AA:655:C:H2'	11:AA:656:A:C8	2.28	0.66
37:L:102:GLU:HG3	37:L:107:ARG:HH21	1.59	0.66
64:f:45:VAL:HG21	64:f:68:ILE:HG23	1.76	0.66
11:AA:2901:G:O2'	11:AA:3024:A:N1	2.27	0.66
61:c:1498:G:H5"	80:v:72:GLY:HA3	1.78	0.66
65:g:53:THR:HG23	65:g:54:ARG:HG3	1.77	0.66
11:AA:307:A:H2'	11:AA:308:A:C8	2.30	0.66
11:AA:2922:OMG:H5"	11:AA:2922:OMG:H8	1.60	0.66
30:HH:50:ARG:NH2	30:HH:72:ASP:OD2	2.28	0.66
57:Y:127:LEU:HG	57:Y:128:LYS:HG2	1.78	0.66
64:f:185:LYS:O	64:f:189:GLN:HG2	1.95	0.66
8:7:45:TRP:HB3	8:7:57:PRO:HA	1.78	0.66
11:AA:2476:C:H2'	11:AA:2477:G:H4'	1.78	0.66
7:6:25:GLU:OE2	61:c:540:G:N2	2.29	0.66
11:AA:1863:G:N1	11:AA:1866:C:OP2	2.22	0.66
11:AA:3306:U:OP1	26:FF:269:GLN:NE2	2.28	0.66
79:u:24:GLY:HA2	79:u:58:ALA:HB3	1.78	0.66
11:AA:426:G:OP1	48:Q:15:LYS:NZ	2.29	0.65
12:Aa:378:LEU:HD21	12:Aa:405:VAL:HG22	1.78	0.65
24:Ee:85:LEU:HD13	24:Ee:102:GLY:H	1.60	0.65
30:HH:83:LEU:HB3	30:HH:88:ILE:HB	1.78	0.65
34:JJ:138:TYR:CE2	34:JJ:233:GLU:HB3	2.31	0.65
61:c:1135:U:OP1	84:z:121:ARG:NH2	2.29	0.65
63:e:35:PRO:HD2	63:e:41:ARG:HA	1.77	0.65
66:h:127:LYS:N	66:h:140:VAL:O	2.29	0.65
69:k:8:ILE:CD1	69:k:9:LEU:H	2.08	0.65
8:7:317:THR:O	8:7:317:THR:HG22	1.96	0.65
11:AA:1631:C:OP2	37:L:48:ARG:NH2	2.28	0.65
11:AA:2462:A:H5'	11:AA:2463:G:H3'	1.78	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2480:A:H3'	11:AA:2481:G:H2'	1.78	0.65
20:DD:130:PRO:O	20:DD:133:THR:OG1	2.14	0.65
61:c:1482:C:O2'	77:s:72:GLY:O	2.13	0.65
11:AA:964:G:H5'	39:M:29:PRO:HB2	1.79	0.65
11:AA:1354:G:H2'	11:AA:1357:G:H4'	1.79	0.65
26:FF:360:ASP:OD2	26:FF:364:LYS:NZ	2.29	0.65
65:g:167:PHE:O	65:g:168:ILE:HG12	1.96	0.65
11:AA:2955:U:H5'	47:Pp:2:PHE:HE2	1.61	0.65
15:Bb:37:YYG:H192	15:Bb:37:YYG:H141	1.79	0.65
69:k:85:PHE:HD2	69:k:88:ARG:HG3	1.60	0.65
3:2:32:LYS:O	3:2:37:LYS:NZ	2.27	0.65
8:7:70:ASP:HB3	8:7:113:VAL:HG12	1.78	0.65
24:Ee:99:LYS:NZ	24:Ee:101:SER:OG	2.26	0.65
24:Ee:109:ILE:HG21	24:Ee:133:LEU:HD22	1.78	0.65
61:c:509:G:H2'	61:c:510:G:C8	2.31	0.65
11:AA:900:G:H1'	11:AA:1589:A:N6	2.11	0.65
11:AA:1258:U:OP1	20:DD:42:ARG:NH1	2.30	0.65
61:c:67:A:O2'	61:c:69:G:OP1	2.10	0.65
11:AA:1017:C:C3'	11:AA:1035:G:H22	2.08	0.65
11:AA:1132:C:H2'	11:AA:1133:A2M:H8	1.78	0.65
11:AA:1139:G:OP2	41:N:14:ARG:NH2	2.30	0.65
40:MM:72:ALA:HB2	40:MM:155:ALA:HB2	1.79	0.65
61:c:447:U:O2'	66:h:27:TYR:O	2.13	0.65
62:d:119:ARG:NH1	64:f:241:ASP:OD1	2.28	0.65
11:AA:2945:G:O2'	11:AA:2948:OMC:OP2	2.15	0.65
20:DD:98:ASN:O	20:DD:102:SER:HB3	1.97	0.65
61:c:65:A:H2	61:c:84:A:H62	1.42	0.65
75:q:18:ARG:HB2	75:q:29:HIS:O	1.96	0.65
11:AA:993:G:OP1	92:AA:3703:HOH:O	2.14	0.64
11:AA:1364:C:OP1	34:JJ:110:ARG:NH2	2.30	0.64
11:AA:2697:A:H2'	11:AA:2698:G:C8	2.32	0.64
66:h:157:ASN:ND2	66:h:222:LEU:HD21	2.12	0.64
23:EE:3:ARG:HB2	23:EE:207:VAL:HG22	1.78	0.64
77:s:31:VAL:HA	77:s:67:VAL:HG22	1.79	0.64
6:5:19:ARG:NH1	61:c:1597:A:OP1	2.27	0.64
8:7:250:TYR:HB3	8:7:265:LEU:HB2	1.78	0.64
11:AA:664:U:H2'	11:AA:665:A:C8	2.32	0.64
11:AA:994:G:N7	92:AA:3736:HOH:O	2.30	0.64
11:AA:3016:A:H2'	11:AA:3017:A:H8	1.61	0.64
11:AA:3285:C:H2'	11:AA:3286:G:H8	1.62	0.64
61:c:1171:A:O2'	61:c:1570:A:N3	2.29	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
67:i:37:GLN:HG3	77:s:57:LEU:HD21	1.79	0.64
67:i:72:HIS:O	77:s:79:TYR:OH	2.16	0.64
2:1:65:LEU:HA	2:1:70:LYS:HE3	1.79	0.64
11:AA:351:A:N6	56:X:37:TYR:O	2.29	0.64
28:GG:36:HIS:O	28:GG:40:THR:HG23	1.98	0.64
11:AA:1236:G:C6	24:Ee:16:ARG:NH2	2.66	0.64
11:AA:2535:A:O2'	11:AA:2536:A:O5'	2.15	0.64
12:Aa:27:HIS:HB2	12:Aa:139:THR:HG23	1.79	0.64
22:E:138:GLN:HG3	38:LL:1:MET:HE1	1.79	0.64
61:c:819:G:N3	61:c:820:U:O2'	2.30	0.64
66:h:100:ARG:HB2	66:h:114:ILE:HD13	1.79	0.64
71:m:162:SER:O	71:m:164:PHE:N	2.26	0.64
8:7:65:SER:HB2	61:c:1341:A:H1'	1.78	0.64
44:OO:37:ASN:O	44:OO:41:THR:HG23	1.97	0.64
82:x:4:ASP:O	82:x:5:LYS:HG2	1.98	0.64
11:AA:2213:A:H2'	11:AA:2214:A:H8	1.60	0.64
61:c:142:G:H2'	61:c:143:G:C8	2.32	0.64
61:c:1466:G:O2'	61:c:1602:C:OP1	2.16	0.64
73:o:27:THR:O	73:o:30:ARG:NE	2.31	0.64
8:7:195:HIS:NE2	8:7:213:SER:O	2.29	0.64
11:AA:2897:A:H2'	11:AA:2899:C:H5"	1.80	0.64
35:K:119:ILE:HG22	35:K:124:GLY:HA3	1.80	0.64
66:h:59:ARG:HA	66:h:62:LYS:HE3	1.79	0.64
51:S:85:VAL:O	51:S:89:ILE:HG12	1.97	0.64
61:c:1681:A:N6	61:c:1720:G:O2'	2.29	0.64
11:AA:3016:A:H2'	11:AA:3017:A:C8	2.32	0.63
17:CC:59:A:O2'	33:J:61:LYS:NZ	2.31	0.63
26:FF:152:LYS:HG2	26:FF:189:SER:HA	1.79	0.63
2:1:41:ILE:HG23	2:1:42:LEU:HD13	1.79	0.63
11:AA:417:A:H2'	11:AA:418:A:C8	2.33	0.63
12:Aa:127:VAL:HG11	12:Aa:143:LEU:HD12	1.79	0.63
62:d:98:ILE:HD11	62:d:116:LYS:HD2	1.79	0.63
66:h:105:VAL:HG21	66:h:245:LYS:H	1.63	0.63
11:AA:2219:A:H2'	11:AA:2220:A2M:H8	1.80	0.63
13:B:67:ILE:HD11	13:B:80:LYS:HB3	1.80	0.63
20:DD:87:VAL:HG11	20:DD:100:ILE:HD11	1.79	0.63
80:v:18:TYR:O	80:v:22:LEU:HD22	1.98	0.63
4:3:67:THR:OG1	4:3:70:LYS:O	2.16	0.63
11:AA:394:G:N1	11:AA:397:A:OP2	2.30	0.63
22:E:99:ARG:NH2	22:E:126:VAL:O	2.32	0.63
61:c:319:U:H4'	61:c:323:A:C8	2.33	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:1585:U:H3	61:c:1611:A:H2	1.46	0.63
8:7:109:ASP:OD2	8:7:127:ARG:NH1	2.29	0.63
67:i:73:THR:HG22	77:s:114:ARG:HH21	1.62	0.63
11:AA:627:U:H2'	11:AA:628:A:C8	2.33	0.63
11:AA:2960:C:H2'	11:AA:2961:G:H8	1.62	0.63
11:AA:3050:U:O2'	31:I:16:GLY:O	2.15	0.63
12:Aa:718:LEU:HA	12:Aa:722:PRO:HG3	1.79	0.63
61:c:1484:G:N2	61:c:1606:C:O2	2.31	0.63
80:v:131:ASP:OD1	80:v:134:ARG:NH1	2.32	0.63
81:w:52:LYS:HB3	81:w:93:LEU:HB3	1.80	0.63
8:7:123:ILE:HG22	8:7:133:VAL:HG22	1.81	0.63
20:DD:38:MET:HE1	20:DD:185:LEU:HD21	1.81	0.63
11:AA:165:A:H2'	11:AA:166:C:C6	2.33	0.63
11:AA:1024:G:H21	11:AA:1027:A:H8	1.44	0.63
11:AA:2922:OMG:H5"	11:AA:2922:OMG:C8	2.34	0.63
17:CC:8:C:H2'	17:CC:9:A:H8	1.64	0.63
42:NN:160:VAL:HG13	42:NN:171:VAL:HG21	1.80	0.63
79:u:26:ILE:HB	79:u:31:ALA:HB2	1.81	0.63
80:v:30:VAL:HG12	80:v:32:GLY:H	1.64	0.63
11:AA:2953:U:H2'	11:AA:2954:U:H2'	1.81	0.63
11:AA:3121:U:H1'	11:AA:3122:A:H5"	1.81	0.63
22:E:13:ARG:HD3	22:E:51:VAL:HG23	1.81	0.63
22:E:27:MET:HE1	22:E:44:PHE:HB2	1.81	0.63
61:c:123:G:OP1	66:h:77:ARG:NH2	2.30	0.63
68:j:31:ARG:HB3	68:j:101:ILE:HG22	1.80	0.63
70:l:39:GLY:O	70:l:59:ARG:HB3	1.99	0.63
71:m:148:VAL:HG13	71:m:152:SER:HB2	1.81	0.63
11:AA:1034:U:H2'	11:AA:1035:G:H8	1.63	0.62
11:AA:1236:G:C4	24:Ee:16:ARG:NH1	2.66	0.62
11:AA:3233:C:H2'	11:AA:3234:A:C8	2.34	0.62
12:Aa:607:ASN:HD21	12:Aa:609:ARG:HB2	1.64	0.62
64:f:56:ILE:HG23	64:f:61:LEU:HB2	1.80	0.62
5:4:50:GLU:HG2	5:4:51:ASN:H	1.64	0.62
11:AA:2795:U:OP2	59:a:63:LYS:HG2	1.99	0.62
24:Ee:107:ASP:O	24:Ee:111:GLU:HG3	1.98	0.62
38:LL:9:GLN:HB3	38:LL:52:LEU:HD11	1.80	0.62
61:c:1226:A:H5'	61:c:1230:A:H5'	1.80	0.62
8:7:112:SER:HB3	8:7:154:VAL:HG22	1.80	0.62
12:Aa:147:LEU:HD12	12:Aa:193:ALA:HA	1.80	0.62
20:DD:38:MET:HA	20:DD:38:MET:HE3	1.81	0.62
64:f:222:TYR:OH	82:x:11:LEU:O	2.15	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:126:U:OP1	49:QQ:144:ARG:NH1	2.33	0.62
11:AA:170:G:H2'	11:AA:171:G:C8	2.35	0.62
18:Cc:34:U:OP2	77:s:143:ARG:NH2	2.26	0.62
61:c:1171:A:H2'	61:c:1172:G:C8	2.34	0.62
12:Aa:108:HIS:CE1	90:Aa:1002:PO4:O3	2.53	0.62
11:AA:2561:A:H2'	11:AA:2562:A:H8	1.64	0.62
50:R:14:LEU:HD11	50:R:31:LYS:HB2	1.81	0.62
11:AA:1596:C:H2'	11:AA:1597:C:C6	2.34	0.62
42:NN:30:LEU:HD11	42:NN:47:GLN:HG2	1.80	0.62
62:d:107:PHE:HB3	62:d:139:VAL:HG21	1.81	0.62
67:i:111:VAL:HG13	77:s:43:ILE:HG12	1.82	0.62
68:j:57:ASP:HA	68:j:106:LEU:HA	1.80	0.62
70:l:22:ARG:NH2	70:l:28:GLU:OE2	2.33	0.62
13:B:10:ASN:O	13:B:14:SER:OG	2.17	0.62
39:M:36:GLY:HA3	39:M:40:HIS:CE1	2.35	0.62
61:c:511:A:OP2	71:m:176:ASN:ND2	2.32	0.62
61:c:1250:U:O2'	61:c:1251:U:O4'	2.14	0.62
8:7:249:ARG:HG2	8:7:251:TRP:H	1.65	0.62
11:AA:327:A:OP2	44:OO:31:LYS:NZ	2.32	0.62
11:AA:1807:G:O2'	11:AA:2559:U:O4	2.18	0.62
11:AA:3295:A:H2'	11:AA:3296:A:C8	2.34	0.62
61:c:932:U:OP2	63:e:155:TYR:OH	2.16	0.62
61:c:1237:G:H2'	61:c:1238:A:H8	1.64	0.62
61:c:1557:U:OP2	61:c:1559:A:O2'	2.17	0.62
65:g:8:LYS:HD3	81:w:63:LEU:HD11	1.80	0.62
77:s:28:LEU:HD21	77:s:30:LYS:HE3	1.82	0.62
12:Aa:150:ARG:NH1	12:Aa:354:GLU:OE2	2.33	0.61
12:Aa:407:SER:HB2	12:Aa:446:ASP:HA	1.82	0.61
12:Aa:597:VAL:O	12:Aa:601:ILE:HG12	2.00	0.61
61:c:150:U:H5'	68:j:132:ARG:HH21	1.64	0.61
78:t:20:TYR:HD1	78:t:23:LYS:HG3	1.65	0.61
2:1:36:ALA:HA	2:1:40:VAL:HG22	1.82	0.61
15:Bb:50:U:H2'	15:Bb:51:G:C8	2.36	0.61
61:c:1098:U:OP1	64:f:159:THR:OG1	2.18	0.61
69:k:23:ALA:O	69:k:27:LEU:HG	2.00	0.61
80:v:61:VAL:O	80:v:65:ILE:HG13	1.99	0.61
8:7:316:MET:HG2	8:7:318:ALA:H	1.65	0.61
61:c:58:U:O2'	61:c:451:A:N3	2.32	0.61
68:j:180:THR:HG22	68:j:182:GLN:H	1.65	0.61
72:n:60:SER:HB3	72:n:65:TYR:CE1	2.35	0.61
11:AA:2244:A:H5"	23:EE:243:THR:HB	1.82	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2470:C:H42	11:AA:2490:C:H5”	1.63	0.61
15:Bb:52:U:H2’	15:Bb:53:G:C8	2.35	0.61
17:CC:8:C:H2’	17:CC:9:A:C8	2.36	0.61
22:E:8:GLN:HB3	22:E:64:ILE:HD11	1.82	0.61
54:V:2:GLY:HA2	54:V:6:PRO:HG2	1.82	0.61
61:c:939:A:H2’	61:c:940:A:C8	2.35	0.61
65:g:105:MET:HB2	65:g:122:VAL:HG21	1.82	0.61
81:w:58:LEU:HD23	81:w:88:LYS:HD2	1.82	0.61
11:AA:1236:G:C2	24:Ee:16:ARG:NH1	2.66	0.61
11:AA:2673:A:OP1	42:NN:95:ASN:ND2	2.32	0.61
12:Aa:300:LEU:HD22	12:Aa:305:ILE:HG12	1.82	0.61
12:Aa:653:VAL:HG11	12:Aa:691:VAL:HG22	1.82	0.61
19:D:173:ARG:HH22	19:D:176:ARG:HG2	1.65	0.61
44:OO:62:THR:O	44:OO:64:LYS:N	2.33	0.61
61:c:861:U:O2’	83:y:56:HIS:O	2.17	0.61
9:8:94:LYS:N	61:c:1247:U:OP1	2.33	0.61
11:AA:1836:C:H41	56:X:3:ALA:HB2	1.66	0.61
11:AA:2101:C:H2’	11:AA:2102:U:H6	1.65	0.61
14:BB:64:A:N7	40:MM:209:ASN:ND2	2.43	0.61
61:c:895:G:H1	61:c:917:U:H3	1.49	0.61
61:c:1591:C:H2’	61:c:1592:A:C8	2.33	0.61
69:k:56:LYS:HB2	69:k:88:ARG:HE	1.65	0.61
11:AA:3322:A:H2’	11:AA:3323:A:C8	2.35	0.61
30:HH:68:THR:OG1	30:HH:71:GLY:O	2.18	0.61
74:p:23:PRO:HG2	74:p:26:PHE:HB2	1.83	0.61
84:z:6:PRO:HG3	84:z:14:LYS:HG2	1.83	0.61
11:AA:240:U:H4’	11:AA:241:G:H5’	1.82	0.61
11:AA:985:U:H2’	11:AA:986:U:H6	1.66	0.61
11:AA:1236:G:N2	11:AA:1244:A:OP1	2.34	0.61
11:AA:1635:G:N2	11:AA:1638:A:OP2	2.30	0.61
20:DD:30:VAL:HG11	20:DD:53:MET:HE1	1.83	0.61
40:MM:44:ASP:OD1	40:MM:185:ARG:NH1	2.26	0.61
61:c:625:C:H2’	61:c:626:U:C6	2.36	0.61
61:c:1533:C:H4’	61:c:1539:G:N1	2.15	0.61
1:0:112:LYS:NZ	61:c:57:G:OP1	2.33	0.61
11:AA:549:U:H2’	11:AA:550:A:C8	2.34	0.61
11:AA:1009:A:H2’	11:AA:1010:G:C8	2.36	0.61
12:Aa:724:ILE:HD11	12:Aa:815:ALA:HB1	1.83	0.61
55:W:62:ALA:O	55:W:66:ILE:HG13	2.00	0.61
61:c:85:A:N3	61:c:148:A:O2’	2.33	0.61
83:y:29:PRO:HB2	83:y:58:SER:HB2	1.82	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:63:A:N3	11:AA:78:U:O2'	2.31	0.61
11:AA:438:A:OP1	48:Q:118:LYS:NZ	2.25	0.61
69:k:109:VAL:HG12	69:k:110:GLN:H	1.65	0.61
11:AA:824:C:H5"	23:EE:21:ARG:HD3	1.83	0.60
11:AA:1812:G:N7	37:L:64:LYS:NZ	2.39	0.60
40:MM:80:SER:HB3	40:MM:147:VAL:HG11	1.83	0.60
62:d:4:PRO:HD2	62:d:7:PHE:HD2	1.66	0.60
69:k:49:ILE:HD12	69:k:175:LYS:HG2	1.83	0.60
11:AA:1364:C:H5"	16:C:3:ILE:HD13	1.83	0.60
11:AA:1696:A:H2'	11:AA:1697:A:C8	2.35	0.60
15:Bb:37:YYG:H142	15:Bb:38:A:C2	2.36	0.60
61:c:110:U:OP1	61:c:753:A:O2'	2.19	0.60
65:g:20:GLU:HG2	72:n:61:TRP:CZ3	2.36	0.60
8:7:221:MET:SD	8:7:221:MET:N	2.74	0.60
17:CC:9:A:H2'	17:CC:10:A:C8	2.36	0.60
8:7:200:ASN:N	8:7:214:ALA:O	2.31	0.60
11:AA:1203:A:H2'	11:AA:1204:A:C8	2.36	0.60
11:AA:3251:U:H2'	11:AA:3252:G:C8	2.36	0.60
51:S:41:ARG:HG2	51:S:56:THR:HG21	1.83	0.60
81:w:41:ILE:HD11	81:w:103:ILE:HG23	1.84	0.60
81:w:68:ARG:HH22	81:w:77:LYS:HG2	1.65	0.60
4:3:62:ILE:O	4:3:74:SER:OG	2.17	0.60
11:AA:361:A:O3'	54:V:45:ARG:NH2	2.34	0.60
11:AA:901:G:OP1	54:V:13:ASN:ND2	2.33	0.60
12:Aa:110:ASP:HB3	12:Aa:537:HIS:HB2	1.82	0.60
64:f:116:LYS:HG2	64:f:127:ALA:HB3	1.81	0.60
81:w:22:ILE:HG22	81:w:118:VAL:HG22	1.83	0.60
11:AA:662:U:H2'	11:AA:663:OMC:C6	2.37	0.60
16:C:158:HIS:H	16:C:186:VAL:CG1	2.15	0.60
26:FF:29:VAL:HG22	26:FF:218:ILE:HD12	1.83	0.60
61:c:862:A:H8	74:p:64:ARG:HH22	1.50	0.60
17:CC:103:G:OP2	17:CC:105:A:O2'	2.18	0.60
26:FF:187:SER:O	26:FF:190:GLU:N	2.35	0.60
61:c:1354:G:O6	61:c:1373:C:N4	2.34	0.60
69:k:8:ILE:C	69:k:10:SER:H	2.09	0.60
11:AA:1667:A:H2'	11:AA:1668:G:C8	2.36	0.60
12:Aa:819:VAL:O	12:Aa:823:ARG:HG2	2.01	0.60
61:c:1479:A:OP2	80:v:57:ARG:NH1	2.35	0.60
61:c:12:U:H2'	61:c:13:C:C6	2.36	0.60
61:c:77:U:O2'	61:c:78:A:OP2	2.17	0.60
61:c:862:A:OP2	74:p:64:ARG:NH2	2.35	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:799:G:O2'	44:OO:18:TRP:NE1	2.31	0.60
11:AA:1237:G:N1	11:AA:1251:A:H2	1.90	0.60
11:AA:2768:U:H2'	11:AA:2769:A:H8	1.65	0.60
24:Ee:42:VAL:O	24:Ee:46:ILE:HG12	2.02	0.60
36:KK:161:GLU:HA	36:KK:164:VAL:HG22	1.82	0.60
61:c:967:A:OP2	74:p:124:ARG:NH2	2.32	0.60
61:c:1641:C:H2'	61:c:1642:G:C8	2.37	0.60
68:j:147:LEU:HD13	68:j:156:PHE:HZ	1.67	0.60
61:c:103:A:H4'	61:c:105:A:C8	2.37	0.59
61:c:1096:C:OP2	83:y:71:LYS:NZ	2.29	0.59
67:i:201:ALA:HA	67:i:211:ILE:HD11	1.83	0.59
11:AA:715:A:H5"	39:M:115:LYS:HA	1.84	0.59
11:AA:1786:G:H2'	11:AA:1787:A:C8	2.37	0.59
11:AA:2557:A:OP1	23:EE:69:TYR:OH	2.17	0.59
11:AA:3013:U:H2'	11:AA:3014:U:C6	2.37	0.59
12:Aa:155:VAL:HG21	12:Aa:185:VAL:HG11	1.84	0.59
20:DD:25:LEU:HG	20:DD:191:TYR:HB3	1.84	0.59
83:y:115:GLU:HA	83:y:118:ARG:HG2	1.83	0.59
8:7:59:ARG:NH1	8:7:95:ALA:O	2.34	0.59
11:AA:966:U:OP1	39:M:44:ASN:ND2	2.36	0.59
11:AA:1631:C:H5"	11:AA:1632:A:H5"	1.85	0.59
30:HH:182:GLY:HA2	30:HH:194:LEU:HD23	1.82	0.59
36:KK:106:LYS:O	36:KK:110:THR:HG23	2.02	0.59
49:QQ:45:PRO:O	49:QQ:49:ARG:HG3	2.02	0.59
61:c:751:G:H2'	61:c:752:A:H8	1.66	0.59
61:c:1484:G:H21	61:c:1606:C:H1'	1.66	0.59
80:v:8:ASP:HB3	80:v:140:LEU:HD11	1.83	0.59
11:AA:2588:U:OP1	36:KK:48:ARG:NH2	2.32	0.59
61:c:407:A:H2'	61:c:408:C:H6	1.67	0.59
61:c:1525:A:H5'	80:v:93:HIS:HB2	1.85	0.59
66:h:148:ARG:NH1	68:j:201:GLN:OE1	2.35	0.59
67:i:62:VAL:HG13	67:i:89:ILE:HD13	1.84	0.59
78:t:14:LYS:HG2	78:t:69:ILE:HD11	1.85	0.59
11:AA:1119:C:H2'	11:AA:1120:A:H8	1.66	0.59
11:AA:1176:C:H2'	11:AA:1177:G:N2	2.18	0.59
11:AA:2160:G:H2'	11:AA:2161:G:H8	1.68	0.59
11:AA:2373:A:OP1	92:AA:3704:HOH:O	2.17	0.59
15:Bb:37:YYG:H1'	15:Bb:37:YYG:H31	1.83	0.59
18:Cc:59:A:O2'	18:Cc:61:U:OP2	2.19	0.59
25:F:132:PRO:HB2	34:JJ:120:THR:HB	1.84	0.59
42:NN:15:GLU:OE1	42:NN:132:ASN:ND2	2.32	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:1356:U:O4'	61:c:1368:G:N2	2.35	0.59
8:7:256:THR:HG23	8:7:258:THR:H	1.68	0.59
11:AA:29:C:H4'	11:AA:62:A:H4'	1.85	0.59
11:AA:68:C:OP2	11:AA:301:G:N2	2.35	0.59
12:Aa:14:ASP:HA	12:Aa:449:PRO:HG3	1.82	0.59
30:HH:178:ASN:HA	30:HH:183:TRP:CD2	2.38	0.59
49:QQ:159:ARG:HB2	49:QQ:164:LEU:HB2	1.84	0.59
56:X:25:GLN:OE1	56:X:28:ARG:NH1	2.36	0.59
61:c:1219:A:H2'	61:c:1220:C:O4'	2.02	0.59
61:c:1682:U:HO2'	61:c:1683:C:H6	1.50	0.59
63:e:158:SER:HA	63:e:161:ILE:HB	1.83	0.59
78:t:31:ASN:ND2	78:t:55:THR:OG1	2.35	0.59
12:Aa:82:SER:O	12:Aa:86:VAL:HG13	2.03	0.59
39:M:77:LYS:O	39:M:79:TRP:N	2.36	0.59
61:c:1628:U:H2'	61:c:1629:G:C8	2.37	0.59
42:NN:6:GLN:O	42:NN:7:ASN:ND2	2.36	0.59
61:c:771:A:OP1	71:m:9:SER:OG	2.18	0.59
61:c:1428:OMG:N2	81:w:74:GLU:OE1	2.33	0.59
63:e:34:ALA:HA	63:e:98:THR:OG1	2.02	0.59
65:g:8:LYS:HG3	81:w:63:LEU:HD21	1.85	0.59
1:0:42:GLU:O	1:0:46:GLU:HG3	2.03	0.59
12:Aa:634:TRP:HB2	12:Aa:646:VAL:HG13	1.85	0.59
63:e:82:ARG:NH1	63:e:191:GLU:OE2	2.36	0.59
67:i:121:ILE:HD12	67:i:199:ILE:HG13	1.85	0.59
11:AA:1236:G:N1	24:Ee:16:ARG:CD	2.65	0.59
11:AA:2367:A:H2'	11:AA:2368:A:C8	2.38	0.59
22:E:6:GLU:OE2	22:E:99:ARG:NH1	2.35	0.59
61:c:1473:U:O2'	67:i:103:ASN:OD1	2.15	0.59
11:AA:1627:U:O2'	11:AA:1813:A:N7	2.36	0.58
61:c:1346:A:OP2	61:c:1348:A:N6	2.33	0.58
61:c:1426:C:H3'	61:c:1427:A:H4'	1.85	0.58
62:d:79:ARG:HH12	62:d:164:ASN:HB2	1.68	0.58
66:h:92:LEU:O	66:h:96:ASN:HA	2.03	0.58
1:0:102:LYS:HD3	1:0:108:ARG:HH22	1.68	0.58
40:MM:191:LYS:NZ	40:MM:212:GLU:OE1	2.36	0.58
61:c:818:C:H2'	61:c:819:G:C8	2.37	0.58
61:c:1555:A:O2'	76:r:82:ASN:ND2	2.31	0.58
2:1:73:GLY:O	2:1:77:ARG:NH1	2.36	0.58
11:AA:2714:G:H5'	11:AA:2716:U:C6	2.37	0.58
29:H:32:ARG:HB2	29:H:64:LYS:HG3	1.85	0.58
61:c:1171:A:H2'	61:c:1172:G:H8	1.68	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:1273:G:H4'	61:c:1274:C:O5'	2.03	0.58
69:k:47:ARG:HG3	69:k:61:PHE:HE2	1.68	0.58
75:q:26:THR:HG21	75:q:60:ALA:HB2	1.85	0.58
11:AA:307:A:H2'	11:AA:308:A:H8	1.67	0.58
11:AA:1551:C:HO2'	11:AA:2170:U:HO2'	1.49	0.58
11:AA:1659:U:H2'	11:AA:1660:C:C6	2.39	0.58
11:AA:2611:U:H2'	11:AA:2612:U:C6	2.39	0.58
11:AA:2836:C:H5	11:AA:2852:C:H42	1.51	0.58
32:II:100:LYS:NZ	32:II:133:GLU:OE2	2.35	0.58
33:J:50:ALA:HB1	52:T:66:VAL:HG11	1.84	0.58
55:W:8:ILE:HD12	55:W:65:LEU:HD11	1.85	0.58
65:g:72:LEU:HD11	72:n:67:THR:HB	1.83	0.58
66:h:96:ASN:OD1	66:h:96:ASN:N	2.37	0.58
8:7:59:ARG:NH2	77:s:95:LYS:O	2.37	0.58
11:AA:528:U:H2'	11:AA:529:A:C8	2.38	0.58
11:AA:1724:U:H1'	11:AA:1725:C:C6	2.39	0.58
59:a:10:THR:HG21	59:a:72:LEU:HD23	1.85	0.58
72:n:64:TYR:HB3	72:n:66:TYR:CZ	2.38	0.58
11:AA:1669:C:H5'	51:S:30:LEU:HD11	1.85	0.58
29:H:59:MET:HE3	29:H:73:VAL:HG12	1.85	0.58
44:OO:177:LYS:HG3	53:U:11:LEU:HD13	1.86	0.58
61:c:590:C:H2'	61:c:591:A:C8	2.38	0.58
61:c:1144:U:H2'	61:c:1145:U:C6	2.39	0.58
19:D:144:GLN:NE2	19:D:148:ASP:OD1	2.36	0.58
30:HH:119:TYR:OH	30:HH:139:PRO:O	2.15	0.58
59:a:34:SER:OG	59:a:35:LEU:O	2.21	0.58
11:AA:978:G:O2'	11:AA:980:A:N3	2.36	0.58
11:AA:1236:G:C6	24:Ee:16:ARG:CD	2.87	0.58
11:AA:1322:U:O2	22:E:108:GLN:NE2	2.37	0.58
11:AA:1560:G:O2'	11:AA:1561:G:O4'	2.19	0.58
11:AA:3275:U:O2'	50:R:99:ARG:NH1	2.36	0.58
30:HH:148:ILE:HG23	30:HH:159:VAL:HG21	1.85	0.58
61:c:902:G:OP1	75:q:90:ARG:NH1	2.32	0.58
63:e:61:LEU:HD22	63:e:96:LEU:HD11	1.84	0.58
71:m:162:SER:O	71:m:162:SER:OG	2.20	0.58
11:AA:1574:C:H3'	11:AA:1575:A:H8	1.67	0.58
15:Bb:27:C:H2'	15:Bb:28:C:C6	2.38	0.58
17:CC:21:C:OP1	28:GG:193:LYS:NZ	2.27	0.58
30:HH:131:LEU:HD23	30:HH:172:TYR:HE1	1.67	0.58
49:QQ:94:TYR:O	49:QQ:96:ARG:N	2.33	0.58
61:c:340:U:H2'	61:c:341:A:H8	1.69	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:771:A:O2'	71:m:6:ARG:NH1	2.37	0.58
61:c:1169:G:N2	61:c:1575:G7M:OP2	2.36	0.58
65:g:103:GLU:OE2	65:g:173:ARG:NE	2.34	0.58
6:5:36:LEU:HB3	6:5:38:ILE:HG13	1.86	0.58
14:BB:112:G:H2'	14:BB:113:C:C6	2.39	0.58
20:DD:188:VAL:HG12	20:DD:189:GLN:HG2	1.86	0.58
42:NN:171:VAL:HG12	42:NN:172:LEU:H	1.69	0.58
61:c:142:G:O6	68:j:177:ARG:NH2	2.36	0.58
61:c:803:A:C4	69:k:104:ARG:HG3	2.39	0.58
66:h:103:TYR:O	66:h:182:TYR:OH	2.16	0.58
84:z:100:ASP:OD1	84:z:101:GLU:N	2.36	0.58
11:AA:980:A:H2'	11:AA:981:U:C2	2.39	0.57
20:DD:42:ARG:HB3	24:Ee:123:ARG:HH21	1.69	0.57
61:c:1087:A:H2'	61:c:1088:A:C8	2.38	0.57
61:c:1380:U:OP1	77:s:12:LYS:NZ	2.36	0.57
64:f:165:VAL:HG11	64:f:210:THR:HA	1.86	0.57
76:r:96:ILE:HG12	76:r:116:LEU:HB3	1.85	0.57
79:u:46:VAL:HG21	79:u:73:MET:HE3	1.85	0.57
83:y:30:SER:O	83:y:30:SER:OG	2.18	0.57
11:AA:894:G:H4'	11:AA:895:A:H5'	1.87	0.57
11:AA:1015:U:O2	11:AA:1028:U:O2'	2.19	0.57
11:AA:1033:U:H2'	11:AA:1034:U:C6	2.39	0.57
11:AA:1245:A:N7	11:AA:1271:A:O2'	2.37	0.57
11:AA:1949:G:OP2	19:D:135:LYS:NZ	2.33	0.57
48:Q:79:VAL:HG13	48:Q:111:ARG:HG2	1.86	0.57
61:c:17:C:O2'	61:c:1137:A:N1	2.31	0.57
61:c:407:A:H2'	61:c:408:C:C6	2.40	0.57
80:v:6:VAL:HG13	80:v:7:ARG:HG3	1.86	0.57
11:AA:1017:C:H3'	11:AA:1035:G:N2	2.18	0.57
11:AA:1257:C:H42	11:AA:1261:G:H22	1.52	0.57
11:AA:2426:U:H2'	11:AA:2427:U:C6	2.40	0.57
12:Aa:186:ASN:HA	12:Aa:189:VAL:HG22	1.87	0.57
59:a:28:TYR:HB3	59:a:69:VAL:HB	1.86	0.57
63:e:119:THR:HG21	63:e:161:ILE:HD11	1.87	0.57
64:f:106:ASP:OD1	64:f:106:ASP:N	2.37	0.57
66:h:158:ASP:OD2	66:h:174:LYS:NZ	2.35	0.57
11:AA:683:U:OP1	49:QQ:204:LYS:NZ	2.38	0.57
11:AA:2697:A:H2'	11:AA:2698:G:H8	1.69	0.57
12:Aa:418:TYR:CZ	12:Aa:420:PRO:HA	2.39	0.57
61:c:420:A2M:OP1	68:j:96:SER:OG	2.18	0.57
61:c:1587:A:H2'	61:c:1588:G:H8	1.69	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:7:42:LEU:HB2	8:7:61:PHE:HB2	1.87	0.57
11:AA:282:G:OP1	88:AA:3613:SPD:N1	2.37	0.57
43:O:99:ASP:O	43:O:103:THR:OG1	2.20	0.57
67:i:221:ALA:O	67:i:225:ARG:NE	2.37	0.57
76:r:44:ARG:NH1	76:r:82:ASN:O	2.36	0.57
8:7:89:LEU:HB2	8:7:103:PHE:CZ	2.39	0.57
8:7:157:VAL:HG13	8:7:169:ILE:HA	1.86	0.57
11:AA:501:A:H2'	11:AA:502:U:C6	2.39	0.57
11:AA:2446:U:N3	11:AA:2447:A:N6	2.52	0.57
12:Aa:493:VAL:HG12	12:Aa:556:ILE:HG13	1.86	0.57
23:EE:188:LYS:HE3	23:EE:192:LYS:HE3	1.86	0.57
24:Ee:105:GLN:O	24:Ee:109:ILE:HG13	2.05	0.57
33:J:50:ALA:O	52:T:66:VAL:HG21	2.04	0.57
61:c:1524:A:H2'	61:c:1525:A:C8	2.40	0.57
11:AA:643:U:O2'	11:AA:1153:A:N1	2.35	0.57
11:AA:1018:G:H2'	11:AA:1019:G:O4'	2.03	0.57
12:Aa:26:ALA:HB2	12:Aa:128:VAL:HB	1.87	0.57
14:BB:72:A:O2'	14:BB:73:C:OP1	2.19	0.57
61:c:108:A:H2'	61:c:109:G:C8	2.40	0.57
61:c:1243:G:H5"	61:c:1244:A:H3'	1.87	0.57
69:k:151:LYS:HE3	69:k:153:LEU:HD21	1.87	0.57
79:u:92:ILE:HG23	79:u:93:THR:HG23	1.86	0.57
10:A:10:ASP:OD2	22:E:167:ARG:NH2	2.38	0.57
10:A:134:LYS:NZ	11:AA:3123:A:OP1	2.32	0.57
11:AA:3092:C:O2'	11:AA:3094:A:OP2	2.14	0.57
12:Aa:491:VAL:HG21	12:Aa:542:LEU:HD11	1.86	0.57
49:QQ:71:ARG:HB2	49:QQ:94:TYR:HB2	1.86	0.57
61:c:5:U:H2'	61:c:6:G:H8	1.70	0.57
63:e:190:PRO:HB2	63:e:192:VAL:HG13	1.87	0.57
3:2:49:ALA:HB2	75:q:103:ARG:HH11	1.68	0.57
10:A:22:VAL:HG21	10:A:120:VAL:HG11	1.86	0.57
11:AA:792:G:H2'	11:AA:793:C:C6	2.39	0.57
11:AA:952:A:H4'	11:AA:968:G:N2	2.20	0.57
11:AA:1277:C:H2'	11:AA:1278:A:H8	1.68	0.57
11:AA:1336:U:H2'	11:AA:1337:A:H8	1.69	0.57
11:AA:1412:G:OP1	48:Q:105:ARG:NH1	2.36	0.57
61:c:15:U:H2'	61:c:16:G:O4'	2.05	0.57
61:c:1389:C:N4	61:c:1391:A:O4'	2.38	0.57
63:e:82:ARG:HH22	63:e:189:ILE:HA	1.70	0.57
10:A:21:SER:HA	10:A:87:MET:HE1	1.85	0.57
11:AA:269:G:H5"	49:QQ:14:LYS:HE2	1.87	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1219:C:O2'	11:AA:1286:A:N1	2.36	0.57
11:AA:1477:A:OP1	11:AA:3075:G:O2'	2.19	0.57
11:AA:2696:A:H2'	11:AA:2697:A:C8	2.39	0.57
23:EE:65:ASP:HB3	23:EE:68:LYS:O	2.05	0.57
50:R:31:LYS:NZ	50:R:78:SER:O	2.37	0.57
11:AA:3285:C:H2'	11:AA:3286:G:C8	2.39	0.56
61:c:765:G:C5	71:m:149:ARG:HD2	2.40	0.56
61:c:1592:A:H2'	61:c:1593:A:H8	1.70	0.56
81:w:98:GLN:HA	81:w:101:LYS:HD3	1.87	0.56
5:4:13:ILE:HD13	5:4:31:GLU:HB2	1.86	0.56
11:AA:173:G:O6	11:AA:245:U:O4	2.24	0.56
11:AA:2768:U:H2'	11:AA:2769:A:C8	2.40	0.56
12:Aa:32:LYS:NZ	89:Aa:1001:GDP:O2B	2.37	0.56
12:Aa:571:SER:HB2	12:Aa:590:ALA:H	1.70	0.56
15:Bb:43:G:H2'	15:Bb:44:A:C8	2.40	0.56
61:c:45:U:O2'	61:c:46:A:H2'	2.04	0.56
66:h:129:VAL:HG12	66:h:139:VAL:HG12	1.88	0.56
66:h:188:ASN:HB3	66:h:191:ARG:HD3	1.86	0.56
6:5:23:VAL:HG22	72:n:61:TRP:CE2	2.41	0.56
11:AA:945:C:H2'	11:AA:946:U:C6	2.41	0.56
11:AA:2180:G:H2'	11:AA:2181:C:C6	2.41	0.56
11:AA:3296:A:OP1	26:FF:120:LYS:N	2.37	0.56
25:F:139:ARG:HG2	34:JJ:77:VAL:HB	1.88	0.56
27:G:22:PRO:HB2	27:G:28:PHE:HB2	1.87	0.56
27:G:38:ILE:HG13	27:G:56:VAL:HB	1.87	0.56
42:NN:25:GLU:HG3	42:NN:27:GLY:H	1.70	0.56
61:c:167:U:H5"	68:j:135:PRO:HA	1.87	0.56
61:c:209:U:H2'	61:c:210:A:C8	2.40	0.56
61:c:647:G:H21	61:c:687:G:H22	1.52	0.56
61:c:1521:G:O2'	61:c:1523:G:OP2	2.23	0.56
71:m:109:LEU:HB2	71:m:146:PHE:HB3	1.87	0.56
79:u:88:ARG:HE	79:u:91:ASP:HA	1.71	0.56
80:v:111:ILE:HG22	80:v:113:ILE:HG13	1.86	0.56
11:AA:1196:C:OP2	11:AA:1309:U:O2'	2.18	0.56
12:Aa:281:ILE:HG23	12:Aa:324:MET:HE1	1.86	0.56
61:c:1525:A:N3	61:c:1589:C:O2'	2.33	0.56
11:AA:1772:U:H5'	11:AA:1773:C:H5'	1.87	0.56
11:AA:3296:A:H2'	11:AA:3297:U:H6	1.70	0.56
14:BB:62:U:H5"	30:HH:277:LEU:HD23	1.88	0.56
61:c:183:U:H2'	61:c:184:C:C6	2.40	0.56
61:c:751:G:H2'	61:c:752:A:C8	2.40	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:1471:A:O2'	67:i:102:ARG:NH1	2.38	0.56
11:AA:2862:U:H4'	40:MM:106:ALA:HB2	1.88	0.56
35:K:32:SER:HA	35:K:49:PRO:HA	1.87	0.56
38:LL:84:LYS:HD3	38:LL:191:LEU:HB3	1.86	0.56
45:P:44:MET:SD	45:P:77:ARG:HB2	2.46	0.56
61:c:637:C:O2	69:k:114:ARG:NH2	2.34	0.56
11:AA:407:A:C2	17:CC:17:A:H1'	2.40	0.56
11:AA:1646:G:O2'	11:AA:1808:G:N2	2.29	0.56
11:AA:2477:G:N2	11:AA:2478:C:O4'	2.39	0.56
11:AA:2930:A:H2'	11:AA:2931:C:C6	2.40	0.56
28:GG:161:LYS:HB2	28:GG:164:GLU:HG2	1.88	0.56
61:c:518:A:O2'	61:c:519:C:H5"	2.05	0.56
74:p:3:ARG:HB3	74:p:6:SER:HB3	1.86	0.56
1:0:6:THR:HG23	1:0:28:LEU:HD13	1.87	0.56
12:Aa:155:VAL:HB	12:Aa:209:VAL:HG22	1.88	0.56
52:T:40:SER:O	52:T:42:PRO:HD3	2.05	0.56
61:c:455:C:H3'	61:c:456:A:H8	1.70	0.56
64:f:99:LYS:HD3	64:f:208:GLU:OE2	2.06	0.56
69:k:17:GLU:H	69:k:17:GLU:CD	2.13	0.56
11:AA:428:A:H2'	11:AA:429:U:C6	2.41	0.56
11:AA:1256:G:H2'	11:AA:1257:C:C6	2.41	0.56
11:AA:2406:C:H2'	11:AA:2407:C:C6	2.41	0.56
12:Aa:711:ARG:NH2	12:Aa:840:ASP:OD1	2.38	0.56
15:Bb:8:U:O2'	15:Bb:21:A:N1	2.36	0.56
19:D:160:GLU:OE2	19:D:163:ARG:NH1	2.38	0.56
26:FF:185:GLY:O	26:FF:191:LYS:NZ	2.28	0.56
59:a:2:VAL:N	59:a:90:HIS:O	2.39	0.56
61:c:86:A:H2'	61:c:87:C:H6	1.71	0.56
61:c:256:A:H2'	61:c:257:A:O4'	2.06	0.56
61:c:568:G:H4'	84:z:90:ASP:HA	1.88	0.56
61:c:1198:G:OP1	61:c:1199:G:O2'	2.14	0.56
64:f:106:ASP:OD1	64:f:110:HIS:HB2	2.06	0.56
79:u:41:ARG:HG3	80:v:46:PRO:HD3	1.87	0.56
80:v:130:ARG:O	80:v:134:ARG:HG3	2.04	0.56
1:0:92:VAL:HG22	1:0:98:GLU:HA	1.88	0.56
11:AA:656:A:H2'	11:AA:657:A:C8	2.41	0.56
11:AA:1798:A:H2'	11:AA:1799:A:C8	2.41	0.56
11:AA:2457:G:O2'	11:AA:2487:U:O4	2.20	0.56
24:Ee:46:ILE:HG23	24:Ee:60:VAL:HG21	1.88	0.56
61:c:66:U:H5'	68:j:173:PRO:HA	1.88	0.56
61:c:929:A:O4'	75:q:124:ASP:HB2	2.05	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:l:195:ARG:HG2	70:l:195:ARG:HH11	1.71	0.56
76:r:18:ARG:HH22	76:r:38:PRO:HD3	1.71	0.56
12:Aa:733:ILE:HG21	12:Aa:743:ILE:HD11	1.88	0.55
16:C:64:VAL:HG21	16:C:113:LYS:HD2	1.88	0.55
36:KK:82:LEU:HD13	36:KK:222:PHE:HE2	1.71	0.55
61:c:386:G:OP2	70:l:25:ARG:NH2	2.35	0.55
61:c:1471:A:H2	61:c:1474:G:N3	2.05	0.55
63:e:26:ARG:NH1	63:e:49:ASN:OD1	2.39	0.55
11:AA:715:A:N1	11:AA:781:G:O2'	2.39	0.55
11:AA:2615:G:H2'	11:AA:2616:C:H6	1.71	0.55
12:Aa:813:SER:O	12:Aa:816:GLY:N	2.39	0.55
13:B:67:ILE:HG13	13:B:68:GLY:H	1.72	0.55
17:CC:49:G:OP2	52:T:48:ARG:NH2	2.39	0.55
20:DD:188:VAL:O	20:DD:189:GLN:NE2	2.38	0.55
29:H:24:ASN:ND2	29:H:97:ASP:OD2	2.38	0.55
61:c:782:U:H4'	61:c:783:G:O5'	2.06	0.55
77:s:22:VAL:HG22	77:s:65:ILE:HG23	1.87	0.55
78:t:106:THR:O	78:t:110:VAL:HG23	2.06	0.55
8:7:294:TRP:CZ3	8:7:301:LEU:HB2	2.41	0.55
11:AA:1117:G:OP1	41:N:4:SER:HB2	2.06	0.55
11:AA:1799:A:H2'	11:AA:1800:A:C8	2.41	0.55
11:AA:2683:U:H2'	11:AA:2684:C:C6	2.42	0.55
11:AA:2882:U:H2'	11:AA:2883:U:C6	2.41	0.55
11:AA:2961:G:H2'	11:AA:2962:U:C6	2.41	0.55
11:AA:3204:C:H2'	11:AA:3205:G:C8	2.42	0.55
61:c:67:A:N6	61:c:83:G:O2'	2.40	0.55
61:c:560:U:H2'	61:c:561:G:H8	1.70	0.55
9:8:126:CYS:HB3	9:8:130:VAL:HG21	1.88	0.55
11:AA:1110:U:H2'	11:AA:1111:U:C6	2.41	0.55
11:AA:2442:G:H1	11:AA:2505:U:H3	1.54	0.55
11:AA:2532:U:H2'	11:AA:2533:G:C8	2.42	0.55
12:Aa:12:LEU:HD13	12:Aa:99:LEU:HD13	1.88	0.55
14:BB:118:A:H5"	30:HH:253:PHE:CZ	2.42	0.55
61:c:329:G:H2'	61:c:330:G:H8	1.72	0.55
61:c:1499:G:H5'	80:v:122:ARG:CZ	2.36	0.55
1:0:39:GLU:OE2	1:0:43:LYS:NZ	2.38	0.55
11:AA:815:G:OP2	54:V:31:LYS:NZ	2.38	0.55
11:AA:838:G:O6	60:b:4:ARG:NH1	2.34	0.55
11:AA:1167:U:OP1	92:AA:3705:HOH:O	2.17	0.55
11:AA:1619:A:H2'	11:AA:1620:U:O4'	2.07	0.55
12:Aa:81:MET:O	12:Aa:96:ASN:ND2	2.40	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:CC:26:U:H2'	17:CC:27:U:C6	2.41	0.55
26:FF:5:LYS:HG3	26:FF:5:LYS:O	2.07	0.55
30:HH:250:ASP:OD2	30:HH:254:LYS:NZ	2.39	0.55
61:c:1317:C:H2'	61:c:1318:G:O4'	2.07	0.55
61:c:1585:U:OP1	77:s:125:GLU:N	2.40	0.55
61:c:1678:A:OP2	70:l:42:ARG:NH1	2.27	0.55
8:7:81:LEU:HD11	8:7:115:ILE:HB	1.89	0.55
11:AA:619:A:O2'	11:AA:620:U:OP2	2.20	0.55
12:Aa:739:ALA:HB1	12:Aa:788:THR:HB	1.87	0.55
30:HH:146:LEU:HD22	30:HH:163:LEU:HB2	1.89	0.55
55:W:14:LEU:HD21	55:W:52:TYR:CG	2.41	0.55
61:c:1001:A:H2'	61:c:1002:G:C8	2.42	0.55
61:c:1338:C:HO2'	61:c:1339:C:H6	1.55	0.55
61:c:1358:G:N1	61:c:1366:U:N3	2.50	0.55
61:c:1424:A:H2'	61:c:1425:A:H8	1.70	0.55
68:j:70:PRO:O	68:j:98:ARG:NH2	2.39	0.55
78:t:73:LEU:HD12	78:t:76:GLU:HB2	1.88	0.55
8:7:179:LYS:HD2	8:7:191:ASP:HB3	1.88	0.55
12:Aa:461:GLN:HG2	12:Aa:462:PHE:CD1	2.42	0.55
13:B:35:ALA:HB2	13:B:58:ILE:HG23	1.88	0.55
40:MM:49:CYS:HB3	40:MM:168:SER:HB3	1.89	0.55
48:Q:41:VAL:HG22	48:Q:46:PHE:HB2	1.89	0.55
61:c:436:A2M:H8	61:c:436:A2M:O5'	2.07	0.55
68:j:41:VAL:HG11	68:j:50:PHE:HE2	1.71	0.55
78:t:69:ILE:O	78:t:74:GLN:NE2	2.40	0.55
2:1:66:VAL:HG21	67:i:187:ILE:HG21	1.88	0.55
2:1:92:ILE:HB	2:1:100:ILE:HB	1.89	0.55
8:7:224:ASN:ND2	8:7:227:ALA:H	2.05	0.55
11:AA:1034:U:H2'	11:AA:1035:G:C8	2.41	0.55
12:Aa:202:VAL:HG22	12:Aa:209:VAL:HG23	1.88	0.55
12:Aa:264:ALA:HB2	12:Aa:269:LEU:HD23	1.89	0.55
34:JJ:130:ILE:HD12	34:JJ:134:VAL:HG11	1.88	0.55
50:R:49:ILE:HD11	50:R:71:VAL:HG22	1.89	0.55
11:AA:371:G:N1	11:AA:374:A:OP2	2.35	0.55
11:AA:596:C:OP2	34:JJ:34:LYS:NZ	2.36	0.55
11:AA:3295:A:H2'	11:AA:3296:A:H8	1.71	0.55
12:Aa:448:CYS:SG	12:Aa:454:ILE:HG21	2.47	0.55
28:GG:20:LEU:HD11	28:GG:252:GLU:HG3	1.88	0.55
50:R:16:TYR:OH	50:R:89:LEU:O	2.24	0.55
62:d:147:THR:HG23	62:d:151:SER:HB2	1.88	0.55
8:7:47:LEU:HA	8:7:55:GLY:HA2	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:129:U:H2'	11:AA:130:A:C8	2.42	0.55
11:AA:271:C:O2	53:U:82:ARG:NH2	2.33	0.55
11:AA:585:A:H2'	11:AA:586:C:C6	2.42	0.55
11:AA:2232:A:H2'	11:AA:2233:A:C8	2.42	0.55
17:CC:83:C:H41	35:K:52:ARG:HH12	1.54	0.55
19:D:97:ARG:O	19:D:101:VAL:HG13	2.07	0.55
42:NN:48:SER:HB2	42:NN:66:ALA:HB3	1.88	0.55
44:OO:109:PHE:CG	53:U:20:MET:HE1	2.42	0.55
48:Q:86:THR:HG22	48:Q:115:LEU:HD13	1.89	0.55
58:Z:1:MET:HB2	61:c:1642:G:H5'	1.89	0.55
61:c:17:C:H2'	61:c:18:C:C6	2.41	0.55
61:c:1067:C:H5"	63:e:150:VAL:HG23	1.88	0.55
61:c:1648:A:H2'	61:c:1649:G:H8	1.72	0.55
76:r:85:ILE:HG21	76:r:111:MET:HB2	1.88	0.55
78:t:28:PHE:HZ	78:t:48:ASN:HD22	1.53	0.55
80:v:124:ILE:HD13	80:v:129:GLN:HG2	1.88	0.55
83:y:31:SER:H	83:y:34:ILE:HD12	1.71	0.55
4:3:32:PHE:O	4:3:82:LYS:HB2	2.07	0.54
8:7:159:ASN:N	8:7:159:ASN:OD1	2.37	0.54
11:AA:1907:C:O2	26:FF:240:ARG:NH2	2.37	0.54
11:AA:3023:U:H2'	11:AA:3024:A:H8	1.72	0.54
12:Aa:564:ARG:HG3	12:Aa:682:ARG:HD3	1.89	0.54
24:Ee:91:ASP:HB3	24:Ee:94:LYS:HB3	1.89	0.54
37:L:23:VAL:HG12	37:L:45:GLY:HA3	1.89	0.54
39:M:139:ARG:HH21	44:OO:163:GLY:HA2	1.72	0.54
61:c:16:G:H2'	61:c:17:C:C6	2.42	0.54
61:c:94:U:H1'	66:h:7:LYS:HD2	1.89	0.54
61:c:525:A:O2'	61:c:526:A:OP1	2.24	0.54
61:c:1776:A:H2'	61:c:1777:G:C8	2.41	0.54
11:AA:2376:G:H2'	11:AA:2377:G:C8	2.42	0.54
12:Aa:27:HIS:ND1	12:Aa:138:GLN:HB2	2.21	0.54
24:Ee:129:THR:O	24:Ee:133:LEU:HD23	2.08	0.54
28:GG:233:LEU:HB3	28:GG:238:LEU:HD11	1.90	0.54
61:c:272:U:H2'	61:c:273:G:H8	1.71	0.54
2:1:59:TYR:OH	2:1:99:ALA:O	2.22	0.54
7:6:37:ARG:O	7:6:41:THR:HG23	2.07	0.54
10:A:21:SER:CA	10:A:87:MET:HE1	2.36	0.54
11:AA:649:A2M:OP2	11:AA:2868:U:O2'	2.24	0.54
61:c:325:G:OP1	73:o:132:SER:OG	2.23	0.54
65:g:66:ILE:O	65:g:70:THR:HG23	2.06	0.54
81:w:37:VAL:HG21	81:w:112:VAL:HG11	1.88	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:2:7:SER:HB2	3:2:13:LYS:HE3	1.89	0.54
11:AA:651:G:O2'	11:AA:1435:A:OP1	2.25	0.54
11:AA:2446:U:H2'	11:AA:2447:A:C8	2.42	0.54
11:AA:2467:G:N1	11:AA:2479:C:OP1	2.39	0.54
24:Ee:46:ILE:HD12	24:Ee:60:VAL:HG11	1.89	0.54
61:c:895:G:H21	75:q:38:THR:HG21	1.73	0.54
61:c:947:U:H2'	61:c:948:G:H8	1.72	0.54
61:c:960:U:H5'	74:p:55:ARG:HD3	1.90	0.54
66:h:35:PRO:HD2	66:h:83:PRO:HG2	1.88	0.54
78:t:32:LYS:HD2	78:t:47:ARG:HH12	1.72	0.54
79:u:30:TYR:O	79:u:33:THR:OG1	2.24	0.54
81:w:24:ILE:HG22	81:w:116:VAL:HG22	1.89	0.54
11:AA:370:U:H4'	11:AA:404:G:H5'	1.88	0.54
12:Aa:22:MET:SD	12:Aa:102:LEU:HD13	2.47	0.54
62:d:50:VAL:HG22	78:t:109:LEU:HD21	1.89	0.54
9:8:94:LYS:HB2	61:c:1247:U:H5"	1.89	0.54
11:AA:1348:U:H4'	11:AA:1349:G:OP1	2.07	0.54
12:Aa:433:ARG:HH21	12:Aa:444:PRO:HB2	1.72	0.54
38:LL:21:LYS:HG3	38:LL:22:SER:H	1.72	0.54
77:s:38:LEU:HB3	80:v:10:ALA:HB2	1.89	0.54
11:AA:2347:OMU:H2'	11:AA:2348:A:O4'	2.08	0.54
12:Aa:36:THR:O	12:Aa:40:VAL:HG13	2.08	0.54
61:c:186:C:OP1	70:l:146:ARG:NH2	2.26	0.54
61:c:324:U:OP1	73:o:133:LYS:NZ	2.30	0.54
61:c:1160:A:H2'	61:c:1161:C:C6	2.42	0.54
61:c:1410:A:O2'	61:c:1411:A:OP1	2.26	0.54
61:c:1624:C:H2'	61:c:1625:C:C6	2.43	0.54
63:e:124:ASN:HA	63:e:137:ILE:O	2.08	0.54
2:1:95:HIS:CD2	2:1:99:ALA:HA	2.43	0.54
4:3:17:ARG:HD2	61:c:1070:C:H4'	1.88	0.54
11:AA:297:G:O6	49:QQ:12:ARG:NH1	2.37	0.54
12:Aa:406:LYS:HB2	12:Aa:409:GLN:HB2	1.88	0.54
61:c:1279:C:H2'	61:c:1280:4AC:O4'	2.08	0.54
76:r:111:MET:HE2	79:u:119:ILE:HG13	1.90	0.54
77:s:83:GLN:HE22	77:s:119:ALA:HB2	1.72	0.54
5:4:44:VAL:HG21	5:4:48:VAL:HG21	1.89	0.54
11:AA:107:A:O2'	11:AA:324:A:N3	2.39	0.54
11:AA:411:U:H2'	11:AA:412:G:H8	1.73	0.54
11:AA:1108:U:H2'	11:AA:1109:U:C6	2.43	0.54
11:AA:2467:G:N2	11:AA:2489:C:O2'	2.41	0.54
12:Aa:659:ILE:HD13	12:Aa:693:LEU:HD21	1.88	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:C:64:VAL:HG23	16:C:93:ILE:HD11	1.89	0.54
20:DD:104:ARG:HD2	20:DD:182:THR:HG22	1.90	0.54
61:c:1251:U:O2'	61:c:1252:C:O5'	2.21	0.54
4:3:3:LEU:HD13	82:x:64:GLU:HG3	1.88	0.54
8:7:115:ILE:HD11	8:7:119:ALA:HA	1.89	0.54
11:AA:19:U:H2'	11:AA:20:A:C8	2.42	0.54
11:AA:39:A:H5"	39:M:35:ALA:HB2	1.90	0.54
11:AA:289:A:H2'	11:AA:290:G:H8	1.73	0.54
61:c:1414:U:OP2	78:t:2:GLY:N	2.41	0.54
68:j:126:ASP:OD1	68:j:126:ASP:N	2.40	0.54
9:8:95:HIS:NE2	61:c:1247:U:OP2	2.41	0.53
11:AA:629:U:H2'	11:AA:630:A:C8	2.42	0.53
11:AA:2129:U:H2'	11:AA:2130:G:C8	2.44	0.53
11:AA:2455:U:H3	11:AA:2483:G:H4'	1.74	0.53
12:Aa:380:LEU:HD13	12:Aa:400:VAL:HG12	1.89	0.53
12:Aa:413:ILE:HG23	12:Aa:463:LEU:HD22	1.89	0.53
12:Aa:725:GLN:HG2	12:Aa:803:THR:HA	1.88	0.53
29:H:90:GLY:O	31:I:16:GLY:HA2	2.08	0.53
61:c:1164:G:H2'	61:c:1165:G:C8	2.43	0.53
61:c:1164:G:H2'	61:c:1165:G:H8	1.73	0.53
4:3:4:VAL:HG22	83:y:23:ARG:HG3	1.90	0.53
11:AA:2485:A:H2'	11:AA:2486:A:H8	1.72	0.53
12:Aa:380:LEU:HD22	12:Aa:405:VAL:HG21	1.90	0.53
15:Bb:63:C:H2'	15:Bb:64:A:C8	2.43	0.53
67:i:37:GLN:H	77:s:57:LEU:HD21	1.73	0.53
70:l:74:LYS:HE2	70:l:112:TRP:HB2	1.89	0.53
78:t:79:GLU:OE2	78:t:80:ARG:NE	2.41	0.53
79:u:89:GLN:HA	79:u:97:ASP:HA	1.89	0.53
11:AA:792:G:H2'	11:AA:793:C:H6	1.71	0.53
11:AA:3006:A:H2'	11:AA:3007:U:O4'	2.09	0.53
12:Aa:798:PHE:CD2	91:Aa:1003:SO1:H22	2.44	0.53
39:M:77:LYS:C	39:M:79:TRP:H	2.15	0.53
61:c:158:U:O2'	61:c:160:C:OP2	2.18	0.53
61:c:299:A:OP1	66:h:30:ARG:NH2	2.41	0.53
61:c:1051:G:H3'	61:c:1052:U:H5"	1.90	0.53
63:e:61:LEU:HD13	63:e:96:LEU:HD21	1.91	0.53
69:k:44:LYS:HD3	69:k:63:PRO:HB3	1.90	0.53
2:1:59:TYR:HB2	67:i:124:LEU:HD12	1.91	0.53
4:3:38:PRO:HG2	4:3:61:THR:HG21	1.90	0.53
11:AA:121:A:O2'	36:KK:105:LYS:NZ	2.26	0.53
11:AA:1119:C:H2'	11:AA:1120:A:C8	2.43	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1863:G:N7	92:AA:3751:HOH:O	2.33	0.53
11:AA:2407:C:H2'	11:AA:2408:U:H6	1.73	0.53
11:AA:2747:A:H5'	30:HH:175:HIS:HA	1.90	0.53
17:CC:141:C:OP1	49:QQ:109:ARG:NH2	2.41	0.53
24:Ee:11:LYS:HB2	24:Ee:64:ILE:HB	1.90	0.53
61:c:891:A:H2'	61:c:892:A:H8	1.74	0.53
80:v:42:GLY:HA2	80:v:84:LYS:HD2	1.90	0.53
1:0:42:GLU:HA	1:0:52:LYS:HG3	1.91	0.53
8:7:181:TRP:CZ3	8:7:186:PHE:HB3	2.38	0.53
11:AA:1128:U:H2'	11:AA:1129:A:O4'	2.09	0.53
11:AA:2427:U:H2'	11:AA:2428:U:C6	2.42	0.53
11:AA:2763:U:O2	88:AA:3614:SPD:N1	2.41	0.53
12:Aa:172:GLU:OE1	12:Aa:274:ASN:ND2	2.41	0.53
12:Aa:647:ILE:HG13	12:Aa:685:ARG:HH11	1.72	0.53
13:B:33:ALA:HB1	13:B:117:ILE:HG12	1.90	0.53
14:BB:71:G:H2'	14:BB:72:A:C8	2.44	0.53
34:JJ:156:ILE:O	34:JJ:159:GLN:HB2	2.07	0.53
36:KK:95:ASN:OD1	36:KK:98:ARG:NH1	2.41	0.53
42:NN:107:ASP:OD1	42:NN:107:ASP:N	2.41	0.53
61:c:1294:G:O2'	61:c:1321:A:N1	2.36	0.53
61:c:1648:A:H2'	61:c:1649:G:C8	2.44	0.53
70:l:152:ILE:HD11	70:l:157:GLU:HB3	1.89	0.53
77:s:13:LYS:HD3	77:s:14:LYS:HG3	1.90	0.53
81:w:30:LYS:HD3	81:w:33:GLN:OE1	2.09	0.53
11:AA:1534:A:H2'	11:AA:1535:A:C8	2.43	0.53
11:AA:2216:G:H22	11:AA:2229:A:H2	1.56	0.53
11:AA:3350:C:H1'	11:AA:3351:U:H5	1.74	0.53
61:c:166:C:H4'	68:j:131:LYS:HE3	1.91	0.53
61:c:894:U:H2'	61:c:895:G:C8	2.43	0.53
61:c:1488:G:H3'	61:c:1515:A:H61	1.74	0.53
62:d:23:HIS:HD2	62:d:47:VAL:HG13	1.73	0.53
8:7:200:ASN:H	8:7:215:GLY:HA2	1.74	0.53
11:AA:771:A:H5"	39:M:132:LYS:NZ	2.24	0.53
11:AA:1597:C:H2'	11:AA:1598:G:C8	2.44	0.53
11:AA:1805:C:H2'	11:AA:1806:A:H8	1.73	0.53
11:AA:2505:U:OP1	53:U:56:ARG:NH1	2.42	0.53
11:AA:2883:U:H2'	11:AA:2884:C:C6	2.44	0.53
24:Ee:11:LYS:CB	24:Ee:64:ILE:HB	2.39	0.53
61:c:304:U:H2'	61:c:305:C:C6	2.44	0.53
61:c:1356:U:O2	61:c:1368:G:N1	2.39	0.53
61:c:1550:A:P	76:r:42:ARG:HH12	2.31	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
67:i:117:THR:O	67:i:121:ILE:HG12	2.09	0.53
1:0:25:VAL:HG22	1:0:71:GLY:H	1.74	0.53
6:5:15:GLY:O	6:5:18:SER:OG	2.26	0.53
11:AA:601:U:O2'	11:AA:602:A:OP1	2.22	0.53
11:AA:960:U:H4'	11:AA:963:G:C2	2.44	0.53
11:AA:2357:A:H2'	11:AA:2358:A:H8	1.72	0.53
11:AA:3322:A:H2'	11:AA:3323:A:H8	1.74	0.53
13:B:67:ILE:HG13	13:B:68:GLY:N	2.23	0.53
26:FF:284:ARG:NH1	26:FF:293:ASN:O	2.41	0.53
61:c:1368:G:H5"	80:v:69:LYS:HG2	1.90	0.53
61:c:1535:U:O2'	61:c:1536:G:N3	2.35	0.53
79:u:41:ARG:NH2	80:v:36:ILE:O	2.41	0.53
5:4:47:PRO:HB2	67:i:82:PHE:CZ	2.44	0.53
11:AA:314:U:H2'	11:AA:315:C:C6	2.44	0.53
11:AA:1641:U:O2'	11:AA:1642:A:H3'	2.09	0.53
11:AA:2127:U:O2'	11:AA:2301:U:OP1	2.23	0.53
11:AA:2419:A:H2'	11:AA:2420:C:C6	2.43	0.53
11:AA:2457:G:N1	11:AA:2460:U:H5'	2.13	0.53
12:Aa:707:PRO:HA	12:Aa:710:ARG:HG2	1.90	0.53
16:C:123:THR:OG1	16:C:125:ASP:OD1	2.17	0.53
40:MM:108:ALA:O	40:MM:112:GLN:CB	2.49	0.53
61:c:340:U:H2'	61:c:341:A:C8	2.44	0.53
61:c:968:U:H2'	61:c:969:C:O4'	2.09	0.53
61:c:1785:U:OP1	75:q:136:ARG:NH1	2.41	0.53
66:h:159:THR:HB	66:h:173:ILE:HD12	1.91	0.53
1:0:27:VAL:HG11	1:0:35:VAL:HG11	1.91	0.53
11:AA:119:U:O2'	36:KK:133:LYS:NZ	2.39	0.53
11:AA:2737:C:O2'	41:N:36:ASP:OD1	2.26	0.53
11:AA:2848:G:OP1	57:Y:100:TYR:OH	2.19	0.53
13:B:118:GLN:HG2	13:B:147:GLU:HG2	1.91	0.53
17:CC:38:U:O2'	52:T:83:LYS:NZ	2.42	0.53
26:FF:215:ILE:HD12	26:FF:338:LEU:HB3	1.90	0.53
45:P:51:LEU:HG	45:P:55:LEU:HD23	1.91	0.53
49:QQ:5:LYS:HG2	53:U:40:VAL:HG21	1.90	0.53
49:QQ:33:LYS:O	49:QQ:65:ARG:NH2	2.42	0.53
61:c:29:U:H2'	61:c:30:G:H8	1.74	0.53
61:c:884:A:H2'	61:c:885:G:C8	2.45	0.53
61:c:1561:U:H2'	61:c:1562:G:H8	1.73	0.53
64:f:175:GLY:O	71:m:53:ARG:NH1	2.42	0.53
66:h:71:LYS:HB3	66:h:91:THR:HG23	1.90	0.53
66:h:151:ASP:OD1	68:j:215:ARG:NH1	2.26	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:10:ARG:NH1	1:0:26:ASP:OD2	2.37	0.52
5:4:22:ARG:HG3	61:c:1619:C:C4	2.45	0.52
8:7:16:HIS:HB3	8:7:308:ASN:HB3	1.90	0.52
10:A:22:VAL:HG22	10:A:122:GLN:HE21	1.75	0.52
11:AA:507:U:H2'	11:AA:508:U:C6	2.45	0.52
11:AA:2328:U:H2'	11:AA:2329:C:H6	1.75	0.52
11:AA:2430:A:H2'	11:AA:2431:C:C6	2.44	0.52
11:AA:2500:A:O2'	11:AA:2501:U:OP1	2.25	0.52
20:DD:119:ILE:CD1	20:DD:180:PRO:HG2	2.39	0.52
61:c:1623:C:H2'	61:c:1624:C:C6	2.44	0.52
66:h:160:VAL:HB	66:h:169:ILE:HD12	1.91	0.52
80:v:105:LEU:HD13	80:v:122:ARG:HE	1.75	0.52
11:AA:2225:U:H2'	11:AA:2226:U:C6	2.44	0.52
61:c:1360:A:H2'	61:c:1361:U:H4'	1.92	0.52
61:c:1585:U:H5"	77:s:134:ALA:HB3	1.90	0.52
65:g:37:VAL:HA	65:g:50:ILE:HA	1.90	0.52
66:h:67:GLN:HG3	66:h:69:HIS:CE1	2.44	0.52
2:1:91:PRO:HA	2:1:101:TYR:HD1	1.75	0.52
6:5:23:VAL:HG22	72:n:61:TRP:CD2	2.45	0.52
9:8:129:GLY:O	61:c:1253:U:H5"	2.10	0.52
11:AA:317:A:OP2	53:U:30:LYS:NZ	2.42	0.52
24:Ee:56:ILE:HG21	24:Ee:82:ILE:HB	1.90	0.52
32:II:154:LEU:HD11	46:PP:119:GLN:HG2	1.90	0.52
61:c:269:G:H2'	61:c:270:C:C6	2.45	0.52
61:c:607:G:H5'	61:c:613:G:N2	2.24	0.52
61:c:615:A:O2'	61:c:621:A:N1	2.34	0.52
61:c:1623:C:H2'	61:c:1624:C:H6	1.75	0.52
65:g:109:LEU:HD12	65:g:184:ILE:HD11	1.92	0.52
68:j:64:LYS:HD3	68:j:97:VAL:HG21	1.92	0.52
84:z:54:LEU:HD12	84:z:73:ARG:HG2	1.90	0.52
11:AA:12:A:H2'	11:AA:13:A:C8	2.44	0.52
11:AA:1498:A:H2'	11:AA:1499:C:C6	2.44	0.52
11:AA:3237:U:H2'	11:AA:3238:G:C8	2.44	0.52
17:CC:142:C:H2'	17:CC:143:U:C6	2.43	0.52
42:NN:54:VAL:HG22	42:NN:59:ILE:HD11	1.91	0.52
61:c:980:G:H4'	61:c:1776:A:H4'	1.91	0.52
61:c:1044:U:H2'	61:c:1045:C:C6	2.45	0.52
61:c:1188:G:O2'	61:c:1430:U:OP1	2.26	0.52
1:0:8:ARG:HD2	61:c:779:U:C4	2.45	0.52
11:AA:691:A:N1	17:CC:28:C:O2'	2.39	0.52
11:AA:912:G:OP2	23:EE:9:ARG:NH2	2.33	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1230:G:H4'	20:DD:34:SER:HA	1.92	0.52
11:AA:3074:G:H4'	45:P:62:ARG:HD2	1.90	0.52
11:AA:3296:A:H2'	11:AA:3297:U:C6	2.45	0.52
12:Aa:247:ASP:OD1	12:Aa:247:ASP:N	2.37	0.52
12:Aa:414:GLN:NE2	12:Aa:475:ALA:O	2.43	0.52
14:BB:4:U:H2'	14:BB:5:G:H8	1.75	0.52
14:BB:90:U:H2'	14:BB:91:G:O4'	2.09	0.52
15:Bb:4:G:O6	15:Bb:69:U:O4	2.27	0.52
26:FF:166:ILE:HD12	26:FF:167:ARG:N	2.25	0.52
36:KK:33:ASN:O	36:KK:39:ALA:HB3	2.09	0.52
61:c:116:U:H2'	61:c:117:U:C6	2.44	0.52
61:c:1366:U:H2'	61:c:1367:G:O4'	2.09	0.52
61:c:1413:U:O2'	61:c:1416:G:OP1	2.27	0.52
66:h:147:ILE:HD13	66:h:169:ILE:HD11	1.91	0.52
79:u:94:ASP:OD2	79:u:98:TYR:OH	2.14	0.52
5:4:57:MET:SD	5:4:57:MET:N	2.81	0.52
7:6:33:ARG:HH11	71:m:123:HIS:HD2	1.57	0.52
11:AA:2745:G:N2	11:AA:2748:A:OP2	2.37	0.52
11:AA:3268:A:O2'	11:AA:3269:U:O2	2.26	0.52
18:Cc:51:U:H3	18:Cc:65:G:H1	1.56	0.52
33:J:57:LEU:HD12	33:J:61:LYS:HG3	1.91	0.52
49:QQ:65:ARG:HG3	49:QQ:129:TYR:CE2	2.44	0.52
61:c:886:U:O2'	75:q:121:VAL:O	2.26	0.52
61:c:1175:U:H2'	61:c:1176:G:H8	1.75	0.52
61:c:1280:4AC:H6	61:c:1280:4AC:H5"	1.91	0.52
61:c:1511:U:H2'	61:c:1512:G:C8	2.45	0.52
63:e:35:PRO:HB2	63:e:37:THR:H	1.75	0.52
65:g:107:PHE:O	65:g:111:ASN:ND2	2.42	0.52
68:j:116:LYS:HZ1	68:j:120:GLU:HB3	1.75	0.52
76:r:75:PRO:HA	76:r:93:VAL:HG23	1.92	0.52
8:7:101:GLN:NE2	8:7:137:LYS:O	2.42	0.52
10:A:87:MET:HG2	11:AA:1312:C:O2	2.09	0.52
11:AA:675:C:O2'	11:AA:679:U:OP1	2.20	0.52
11:AA:785:G:O6	39:M:77:LYS:NZ	2.43	0.52
11:AA:1747:G:O3'	55:W:53:THR:HG21	2.10	0.52
16:C:120:GLU:OE1	16:C:130:ARG:NH2	2.37	0.52
67:i:193:THR:HA	67:i:196:GLU:OE2	2.09	0.52
68:j:85:ARG:O	68:j:87:ARG:NH1	2.41	0.52
71:m:103:ASP:N	71:m:103:ASP:OD1	2.43	0.52
82:x:55:LEU:HD13	82:x:65:SER:HB2	1.91	0.52
3:2:84:VAL:HG22	61:c:1797:A:C6	2.45	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:7:8:VAL:HB	8:7:314:GLN:HB2	1.91	0.52
8:7:167:VAL:HG11	8:7:184:ASN:HD21	1.75	0.52
11:AA:929:A:H2'	11:AA:930:U:C6	2.45	0.52
11:AA:2357:A:H2'	11:AA:2358:A:C8	2.45	0.52
11:AA:2369:G:H2'	11:AA:2370:G:C8	2.45	0.52
11:AA:2415:C:OP1	23:EE:2:GLY:HA3	2.10	0.52
11:AA:3119:U:H4'	57:Y:104:PRO:HG2	1.90	0.52
12:Aa:319:LEU:O	12:Aa:323:VAL:HG13	2.09	0.52
14:BB:118:A:H5"	30:HH:253:PHE:HZ	1.75	0.52
19:D:126:GLU:O	19:D:131:ALA:HB3	2.10	0.52
28:GG:156:LEU:HA	28:GG:159:ILE:HD12	1.92	0.52
30:HH:107:ARG:HB3	30:HH:251:PRO:HG3	1.90	0.52
61:c:179:A:H3'	61:c:180:A:H8	1.75	0.52
61:c:337:G:H3'	73:o:133:LYS:HB2	1.91	0.52
61:c:1091:A:H4'	61:c:1092:A:O4'	2.10	0.52
61:c:1732:A:H2'	61:c:1733:C:C6	2.45	0.52
62:d:118:PRO:HG2	62:d:141:ILE:HD13	1.90	0.52
78:t:28:PHE:HZ	78:t:48:ASN:ND2	2.07	0.52
11:AA:158:G:H2'	11:AA:159:A:H8	1.75	0.52
11:AA:2115:G:H22	11:AA:2120:A:H1'	1.75	0.52
15:Bb:27:C:H2'	15:Bb:28:C:H6	1.75	0.52
20:DD:100:ILE:HG23	20:DD:185:LEU:HB2	1.91	0.52
34:JJ:156:ILE:C	34:JJ:158:LYS:H	2.18	0.52
61:c:127:G:N3	61:c:178:U:O2'	2.38	0.52
61:c:918:U:H2'	61:c:919:A:C8	2.45	0.52
61:c:1502:G:N2	61:c:1505:A:OP2	2.30	0.52
68:j:148:SER:N	68:j:151:ASP:OD2	2.43	0.52
70:l:32:GLN:HG3	70:l:33:PRO:HD2	1.92	0.52
71:m:41:GLU:O	71:m:45:ILE:HG13	2.09	0.52
71:m:163:PRO:HG3	71:m:170:GLY:HA2	1.92	0.52
11:AA:2162:U:OP1	23:EE:234:LYS:NZ	2.32	0.52
11:AA:2880:U:H1'	26:FF:250:ALA:HB3	1.91	0.52
11:AA:3085:G:OP1	31:I:34:SER:OG	2.21	0.52
11:AA:3343:G:H21	11:AA:3362:A:H2	1.56	0.52
14:BB:22:A:H2'	14:BB:23:A:C8	2.45	0.52
35:K:39:LEU:HG	35:K:43:TYR:HE2	1.74	0.52
42:NN:160:VAL:O	42:NN:164:LYS:HG2	2.10	0.52
61:c:1315:U:OP1	61:c:1328:G:N2	2.29	0.52
61:c:1613:U:OP1	67:i:92:ARG:NH2	2.43	0.52
11:AA:872:U:H2'	11:AA:873:C:C6	2.45	0.51
11:AA:1032:C:H2'	11:AA:1033:U:C6	2.45	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1203:A:H2'	11:AA:1204:A:H8	1.75	0.51
12:Aa:22:MET:HE3	12:Aa:338:ILE:HG12	1.92	0.51
15:Bb:28:C:H2'	15:Bb:29:A:H8	1.75	0.51
19:D:176:ARG:HH12	61:c:852:C:H5'	1.76	0.51
22:E:77:VAL:HG11	22:E:106:LEU:HD22	1.90	0.51
24:Ee:13:LEU:HD12	24:Ee:62:LEU:HB3	1.92	0.51
32:II:30:LEU:H	32:II:30:LEU:HD23	1.75	0.51
36:KK:116:VAL:HG11	36:KK:123:GLN:HA	1.91	0.51
61:c:145:A:H4'	61:c:146:U:OP1	2.10	0.51
61:c:447:U:H2'	61:c:448:C:O4'	2.11	0.51
61:c:1728:A:H1'	70:l:32:GLN:HE22	1.74	0.51
62:d:87:LEU:HB3	78:t:78:ARG:HD3	1.92	0.51
64:f:168:ARG:HD3	64:f:170:ILE:HD11	1.91	0.51
78:t:32:LYS:HB2	78:t:47:ARG:HH11	1.75	0.51
11:AA:2352:A:H5"	13:B:83:TRP:O	2.10	0.51
11:AA:2445:A:H1'	11:AA:2503:G:N2	2.25	0.51
11:AA:2547:A:H2'	11:AA:2548:C:O4'	2.10	0.51
11:AA:2662:G:H2'	11:AA:2663:G:C8	2.46	0.51
12:Aa:573:GLN:HG3	12:Aa:719:LEU:HD22	1.92	0.51
14:BB:3:U:H2'	14:BB:4:U:H6	1.75	0.51
36:KK:251:LYS:O	36:KK:255:SER:OG	2.22	0.51
45:P:25:PHE:HB3	45:P:65:LYS:HD2	1.91	0.51
54:V:64:MET:O	54:V:66:TYR:N	2.36	0.51
55:W:8:ILE:O	55:W:12:LEU:HD12	2.11	0.51
63:e:82:ARG:NH2	63:e:188:LEU:O	2.43	0.51
8:7:207:ASP:OD1	8:7:207:ASP:N	2.42	0.51
11:AA:911:C:N4	23:EE:3:ARG:HD3	2.26	0.51
11:AA:1213:G:O2'	22:E:90:MET:HG2	2.09	0.51
11:AA:1597:C:H5'	11:AA:1696:A:H1'	1.92	0.51
11:AA:1856:C:H2'	11:AA:1857:C:H6	1.76	0.51
11:AA:2765:C:O3'	59:a:39:GLY:HA3	2.09	0.51
11:AA:3107:U:H2'	11:AA:3108:G:C8	2.44	0.51
24:Ee:133:LEU:HB2	24:Ee:152:ILE:HD11	1.93	0.51
27:G:19:VAL:HG12	27:G:105:LEU:HD23	1.91	0.51
51:S:74:ARG:HG2	51:S:75:ALA:H	1.76	0.51
53:U:43:LEU:O	53:U:47:ILE:HG23	2.11	0.51
61:c:1592:A:H2'	61:c:1593:A:C8	2.45	0.51
76:r:95:GLY:HA2	76:r:104:GLN:HA	1.91	0.51
77:s:114:ARG:O	77:s:115:THR:HG22	2.09	0.51
78:t:44:LYS:HB2	78:t:47:ARG:HH21	1.75	0.51
3:2:49:ALA:HB2	75:q:103:ARG:HD2	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:358:G:N2	11:AA:361:A:OP2	2.38	0.51
11:AA:787:G:H2'	11:AA:788:C:C6	2.45	0.51
11:AA:2533:G:N1	11:AA:2534:G:O6	2.44	0.51
11:AA:2673:A:P	42:NN:94:ARG:HH12	2.33	0.51
11:AA:2881:C:H2'	11:AA:2882:U:C6	2.46	0.51
11:AA:3193:C:H2'	11:AA:3194:C:C6	2.46	0.51
16:C:107:THR:HG22	16:C:109:GLY:H	1.75	0.51
38:LL:151:VAL:HA	38:LL:154:VAL:HG22	1.92	0.51
61:c:298:C:H5"	66:h:38:LEU:HB2	1.92	0.51
61:c:1352:G:O2'	61:c:1353:U:O4'	2.25	0.51
61:c:1511:U:H2'	61:c:1512:G:H8	1.76	0.51
61:c:1770:U:H2'	61:c:1771:U:C6	2.45	0.51
69:k:25:VAL:O	69:k:29:ASN:ND2	2.43	0.51
71:m:133:HIS:HA	71:m:162:SER:HB2	1.93	0.51
71:m:168:ARG:HD2	71:m:174:ARG:HH22	1.76	0.51
6:5:54:LYS:HE3	81:w:80:GLU:HG3	1.92	0.51
11:AA:165:A:H2'	11:AA:166:C:H6	1.74	0.51
11:AA:1245:A:C5	11:AA:1272:C:H4'	2.46	0.51
11:AA:1256:G:H4'	24:Ee:127:SER:HB3	1.93	0.51
11:AA:2452:G:H3'	11:AA:2462:A:H8	1.75	0.51
11:AA:3042:U:OP2	11:AA:3092:C:N4	2.30	0.51
12:Aa:494:GLU:HG2	12:Aa:555:LYS:HE3	1.92	0.51
12:Aa:746:VAL:HG21	12:Aa:784:LEU:HA	1.91	0.51
22:E:71:LYS:O	22:E:73:LYS:NZ	2.42	0.51
28:GG:125:ALA:O	28:GG:129:THR:HG23	2.10	0.51
28:GG:317:PRO:C	28:GG:319:LYS:H	2.18	0.51
42:NN:23:VAL:HG12	42:NN:25:GLU:H	1.74	0.51
42:NN:32:ARG:O	42:NN:36:VAL:HG23	2.11	0.51
61:c:1365:C:O2'	77:s:30:LYS:NZ	2.44	0.51
66:h:104:ASP:HB3	66:h:110:ALA:HB2	1.93	0.51
68:j:89:ASP:OD1	68:j:89:ASP:N	2.41	0.51
77:s:50:GLU:HG3	77:s:82:ARG:HH21	1.75	0.51
80:v:125:SER:O	80:v:129:GLN:HG3	2.10	0.51
5:4:9:LEU:HG	5:4:33:LEU:HD12	1.92	0.51
6:5:33:LYS:HE2	6:5:34:TYR:CZ	2.45	0.51
11:AA:40:A:H5"	39:M:35:ALA:HB1	1.92	0.51
11:AA:498:A:O2'	11:AA:3273:A:N1	2.43	0.51
11:AA:1362:G:H2'	11:AA:1363:A:C8	2.46	0.51
11:AA:2526:C:H2'	11:AA:2527:G:H8	1.76	0.51
11:AA:3298:C:C2	11:AA:3299:A:C8	2.98	0.51
12:Aa:28:VAL:HG13	90:Aa:1002:PO4:O3	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:Aa:438:MET:O	12:Aa:440:ARG:N	2.44	0.51
33:J:106:ASP:HB2	33:J:130:TYR:CE1	2.45	0.51
61:c:329:G:H2'	61:c:330:G:C8	2.46	0.51
61:c:1456:C:OP1	61:c:1457:C:O2'	2.24	0.51
61:c:1587:A:H2'	61:c:1588:G:C8	2.45	0.51
68:j:65:GLN:NE2	68:j:65:GLN:O	2.43	0.51
70:l:66:SER:HA	70:l:73:SER:HA	1.93	0.51
72:n:6:GLU:OE1	72:n:10:LYS:NZ	2.43	0.51
2:1:68:ARG:HB2	2:1:70:LYS:HE2	1.92	0.51
8:7:34:LEU:HD22	8:7:73:LEU:HG	1.93	0.51
11:AA:1008:U:O2'	40:MM:35:ASP:OD2	2.27	0.51
11:AA:1063:G:C6	25:F:109:VAL:HG22	2.46	0.51
14:BB:3:U:H2'	14:BB:4:U:C6	2.45	0.51
24:Ee:66:ASN:OD1	24:Ee:67:ARG:NH2	2.35	0.51
26:FF:57:VAL:HG22	26:FF:73:VAL:HG22	1.91	0.51
79:u:29:VAL:O	79:u:33:THR:HG23	2.11	0.51
80:v:114:VAL:HG22	80:v:124:ILE:HA	1.92	0.51
81:w:58:LEU:HD21	81:w:90:TYR:HD2	1.75	0.51
84:z:57:LEU:HD22	84:z:59:ILE:HG13	1.92	0.51
10:A:35:VAL:HG21	10:A:80:PHE:HE2	1.74	0.51
11:AA:976:U:OP1	16:C:144:ARG:NH2	2.36	0.51
11:AA:1447:G:H3'	13:B:67:ILE:HG22	1.93	0.51
11:AA:1525:G:H5'	11:AA:1830:G:OP2	2.11	0.51
11:AA:1675:G:H2'	11:AA:1676:A:H8	1.74	0.51
11:AA:1791:C:H2'	11:AA:1792:C:C6	2.45	0.51
11:AA:2364:G:H22	11:AA:2396:G:H1'	1.76	0.51
11:AA:2371:G:N1	11:AA:2375:G:OP1	2.24	0.51
11:AA:2600:C:OP1	49:QQ:93:LYS:NZ	2.43	0.51
20:DD:139:LEU:HD12	20:DD:172:LEU:HD23	1.91	0.51
26:FF:187:SER:HB3	26:FF:190:GLU:HG2	1.93	0.51
29:H:104:ASN:OD1	29:H:108:GLU:N	2.43	0.51
36:KK:111:LYS:NZ	36:KK:125:ALA:O	2.39	0.51
42:NN:49:LYS:HA	42:NN:64:LYS:H	1.76	0.51
61:c:86:A:H2'	61:c:87:C:C6	2.46	0.51
61:c:137:U:H2'	61:c:138:A:C8	2.46	0.51
61:c:888:U:H2'	61:c:889:U:C6	2.45	0.51
61:c:1429:G:H2'	61:c:1430:U:C6	2.46	0.51
65:g:63:GLY:O	65:g:67:ASN:ND2	2.44	0.51
77:s:41:PRO:HG3	77:s:78:VAL:HG21	1.93	0.51
11:AA:505:G:OP1	28:GG:320:ASN:ND2	2.40	0.51
11:AA:1940:G:N2	11:AA:3362:A:H8	2.02	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2455:U:H3'	11:AA:2456:A:C8	2.46	0.51
11:AA:2971:A:H1'	11:AA:2972:G:OP2	2.10	0.51
11:AA:3268:A:OP1	32:II:46:ARG:NH2	2.43	0.51
12:Aa:292:LYS:O	12:Aa:296:ILE:HG12	2.11	0.51
29:H:18:PRO:HA	29:H:51:ALA:HA	1.92	0.51
61:c:66:U:OP2	68:j:136:LYS:NZ	2.44	0.51
69:k:26:GLU:HA	69:k:29:ASN:HD21	1.76	0.51
75:q:86:THR:HB	75:q:91:THR:HG22	1.92	0.51
81:w:33:GLN:O	81:w:37:VAL:HG22	2.11	0.51
2:1:95:HIS:CE1	2:1:100:ILE:H	2.29	0.51
3:2:46:GLU:O	3:2:48:ALA:N	2.43	0.51
8:7:112:SER:HB2	8:7:153:GLN:HA	1.93	0.51
11:AA:422:A:C2	11:AA:2363:A:H4'	2.46	0.51
11:AA:847:A:H2'	11:AA:848:A:C8	2.46	0.51
11:AA:2503:G:H2'	11:AA:2504:U:C6	2.47	0.51
11:AA:2592:G:H4'	11:AA:2594:C:C2	2.46	0.51
11:AA:2660:G:OP1	11:AA:2750:U:O2'	2.28	0.51
11:AA:3072:C:H2'	11:AA:3073:A:O4'	2.11	0.51
28:GG:136:LEU:HD21	28:GG:143:GLU:HG3	1.93	0.51
38:LL:38:LEU:O	38:LL:41:ILE:HG22	2.10	0.51
61:c:1535:U:C5	67:i:187:ILE:HA	2.46	0.51
63:e:88:VAL:HA	63:e:98:THR:HG22	1.93	0.51
64:f:83:ILE:HG21	64:f:121:VAL:HG22	1.93	0.51
76:r:41:VAL:HB	76:r:84:ILE:HD13	1.93	0.51
84:z:43:PHE:O	84:z:45:GLY:N	2.42	0.51
4:3:59:CYS:SG	4:3:60:SER:N	2.81	0.50
4:3:82:LYS:HE2	74:p:25:TRP:HB2	1.92	0.50
11:AA:1207:G:OP1	57:Y:119:ASN:ND2	2.40	0.50
11:AA:2815:OMG:H2'	11:AA:2870:5MC:HM51	1.93	0.50
11:AA:3252:G:H2'	11:AA:3253:G:C8	2.46	0.50
40:MM:52:LEU:HB3	40:MM:136:PHE:HB2	1.93	0.50
61:c:1535:U:O2'	61:c:1536:G:H5"	2.11	0.50
78:t:12:ALA:HB3	78:t:50:ILE:HD12	1.93	0.50
1:0:125:LEU:O	1:0:129:VAL:HG23	2.11	0.50
11:AA:1281:G:H5'	20:DD:55:LYS:HG2	1.92	0.50
11:AA:1562:C:O2'	11:AA:1563:C:O5'	2.21	0.50
11:AA:2148:U:H2'	11:AA:2149:A:C8	2.47	0.50
29:H:81:GLN:HG2	29:H:83:LYS:H	1.76	0.50
35:K:87:LYS:HB2	35:K:97:ILE:HD11	1.93	0.50
42:NN:54:VAL:HG23	42:NN:55:ARG:H	1.75	0.50
42:NN:82:ARG:HG2	42:NN:112:LEU:HD22	1.92	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:1609:U:OP1	77:s:76:SER:N	2.43	0.50
67:i:93:LEU:HD12	67:i:114:ILE:HD11	1.93	0.50
67:i:223:SER:HA	75:q:107:ARG:HH12	1.76	0.50
79:u:102:ALA:HB3	79:u:104:ASN:HB2	1.92	0.50
5:4:66:LEU:HD22	67:i:158:GLN:HG2	1.93	0.50
11:AA:674:G:O6	16:C:56:LYS:NZ	2.45	0.50
11:AA:1243:G:N2	11:AA:1270:A:O2'	2.43	0.50
11:AA:1709:C:H2'	11:AA:1710:C:H6	1.75	0.50
11:AA:1831:U:O2'	17:CC:114:G:OP1	2.21	0.50
11:AA:3160:U:H2'	11:AA:3161:C:C6	2.47	0.50
12:Aa:20:ARG:HB2	12:Aa:100:ILE:CD1	2.41	0.50
38:LL:79:ILE:O	38:LL:83:THR:OG1	2.27	0.50
61:c:30:G:H4'	84:z:131:SER:HB3	1.93	0.50
61:c:209:U:H2'	61:c:210:A:H8	1.76	0.50
61:c:395:U:H2'	61:c:396:G:O4'	2.11	0.50
61:c:472:U:H2'	61:c:473:A:H8	1.76	0.50
61:c:535:A:P	71:m:168:ARG:HH22	2.34	0.50
61:c:761:G:H4'	71:m:72:GLU:OE1	2.11	0.50
61:c:1621:U:H2'	61:c:1622:G:C8	2.46	0.50
67:i:58:LEU:HD12	67:i:138:THR:HG22	1.92	0.50
5:4:22:ARG:HH22	67:i:148:ARG:NE	2.09	0.50
10:A:87:MET:HE3	11:AA:1175:C:H1'	1.94	0.50
11:AA:2403:G:N2	47:Pp:1:MET:O	2.45	0.50
11:AA:3047:U:O2'	11:AA:3048:A:H5'	2.11	0.50
18:Cc:11:A:H2'	18:Cc:12:G:C8	2.47	0.50
20:DD:119:ILE:HD13	20:DD:180:PRO:HG2	1.93	0.50
37:L:95:VAL:O	37:L:100:THR:OG1	2.24	0.50
46:PP:5:SER:C	46:PP:6:ILE:HD13	2.36	0.50
53:U:57:LEU:HD21	53:U:73:ALA:HB2	1.94	0.50
57:Y:99:CYS:HB2	57:Y:114:LYS:HD2	1.93	0.50
61:c:201:G:H2'	61:c:202:A:C8	2.46	0.50
61:c:1401:A:OP1	78:t:56:HIS:NE2	2.35	0.50
61:c:1669:U:H2'	61:c:1670:G:O4'	2.11	0.50
63:e:35:PRO:HB3	63:e:38:PHE:CD2	2.43	0.50
64:f:40:LYS:HE2	64:f:247:ALA:HB2	1.92	0.50
74:p:146:ALA:O	74:p:150:VAL:HG22	2.10	0.50
79:u:45:LEU:HD21	79:u:81:ILE:HG12	1.93	0.50
80:v:99:SER:HA	80:v:102:ARG:NH1	2.27	0.50
11:AA:1473:G:OP2	19:D:8:LYS:NZ	2.42	0.50
11:AA:1629:U:H5	37:L:108:GLU:HG3	1.76	0.50
11:AA:2196:C:O2'	11:AA:2270:A:H8	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:3084:C:O2'	11:AA:3332:U:OP1	2.24	0.50
11:AA:3206:C:H5"	11:AA:3207:U:O5'	2.12	0.50
11:AA:3329:U:H5"	26:FF:308:MET:HE2	1.94	0.50
12:Aa:159:LYS:HG2	89:Aa:1001:GDP:C6	2.47	0.50
29:H:38:ALA:HB3	29:H:59:MET:HB2	1.94	0.50
43:O:30:THR:HG23	43:O:91:SER:HB2	1.93	0.50
61:c:639:U:OP1	69:k:112:ARG:NH2	2.45	0.50
61:c:1358:G:H4'	80:v:130:ARG:HG2	1.93	0.50
66:h:120:SER:O	66:h:164:LEU:HB3	2.11	0.50
68:j:74:LYS:HG2	68:j:96:SER:HB3	1.93	0.50
11:AA:785:G:OP1	16:C:66:ARG:NH2	2.45	0.50
11:AA:955:U:H2'	11:AA:956:U:C6	2.47	0.50
11:AA:1061:A:H4'	25:F:102:ARG:HD3	1.94	0.50
11:AA:1141:C:O2'	11:AA:1153:A:N3	2.39	0.50
11:AA:1147:G:OP1	48:Q:47:ARG:NH1	2.38	0.50
20:DD:192:ASP:HB3	20:DD:197:PHE:HE1	1.75	0.50
61:c:1502:G:N2	61:c:1504:G:H3'	2.26	0.50
61:c:1504:G:H2'	61:c:1505:A:C8	2.47	0.50
70:l:41:LYS:HA	70:l:59:ARG:O	2.12	0.50
70:l:57:ALA:HB1	70:l:60:ILE:HG13	1.94	0.50
11:AA:168:U:H2'	11:AA:169:U:C6	2.47	0.50
11:AA:1508:C:OP1	13:B:127:ARG:NH2	2.43	0.50
11:AA:1809:A:H2'	11:AA:1810:A:O4'	2.11	0.50
11:AA:2152:A:H2'	11:AA:2153:U:H6	1.76	0.50
11:AA:2525:G:OP2	23:EE:37:ARG:NH2	2.44	0.50
12:Aa:229:TYR:HE2	12:Aa:276:PHE:HB3	1.77	0.50
26:FF:17:LEU:HD21	26:FF:233:TRP:HH2	1.77	0.50
68:j:49:VAL:HB	68:j:115:LYS:HB3	1.93	0.50
77:s:99:GLU:O	77:s:102:LYS:HG3	2.11	0.50
2:1:77:ARG:NE	61:c:1533:C:OP2	2.41	0.50
11:AA:1213:G:OP1	22:E:139:TYR:OH	2.26	0.50
11:AA:2103:U:H2'	11:AA:2104:A:C8	2.47	0.50
11:AA:2466:G:O2'	11:AA:2490:C:OP1	2.27	0.50
11:AA:2883:U:H2'	11:AA:2884:C:H6	1.76	0.50
11:AA:3165:A:H61	11:AA:3285:C:H42	1.59	0.50
12:Aa:715:ALA:O	12:Aa:719:LEU:HD12	2.12	0.50
18:Cc:70:C:H2'	18:Cc:71:G:H8	1.76	0.50
20:DD:42:ARG:HB3	24:Ee:123:ARG:NH2	2.26	0.50
23:EE:201:GLY:HA2	23:EE:204:MET:SD	2.52	0.50
25:F:51:GLY:HA3	25:F:92:ARG:HG3	1.92	0.50
30:HH:116:ASP:OD1	30:HH:116:ASP:N	2.35	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:474:A:H5”	71:m:144:PRO:HD2	1.93	0.50
61:c:918:U:H2’	61:c:919:A:H8	1.76	0.50
61:c:1551:U:OP2	76:r:43:ARG:NH1	2.45	0.50
62:d:106:SER:O	62:d:115:PHE:HA	2.12	0.50
8:7:36:ALA:HB1	8:7:68:VAL:HG13	1.92	0.50
11:AA:1460:A:H2’	11:AA:1461:A:C8	2.47	0.50
11:AA:1666:G:H2’	11:AA:1667:A:H8	1.77	0.50
11:AA:2449:A:H3’	11:AA:2450:G:H8	1.75	0.50
11:AA:2486:A:O2’	11:AA:2487:U:H5’	2.12	0.50
11:AA:2883:U:H4’	26:FF:261:MET:HE1	1.94	0.50
11:AA:3244:A:OP1	26:FF:97:ARG:NH2	2.43	0.50
14:BB:27:A:H2’	14:BB:28:C:C6	2.47	0.50
15:Bb:58:A:H2’	15:Bb:61:C:H41	1.77	0.50
26:FF:128:LYS:O	26:FF:131:THR:OG1	2.27	0.50
48:Q:96:ILE:HG21	48:Q:105:ARG:HG2	1.93	0.50
54:V:54:LYS:O	54:V:58:THR:HB	2.11	0.50
61:c:1286:U:H2’	61:c:1287:A:C8	2.47	0.50
61:c:1479:A:H5”	80:v:60:SER:OG	2.12	0.50
75:q:103:ARG:HG2	75:q:107:ARG:HD3	1.94	0.50
7:6:14:VAL:HG21	61:c:567:A:N3	2.25	0.49
11:AA:294:U:H4’	53:U:77:LEU:HD23	1.94	0.49
11:AA:1024:G:H1’	11:AA:1029:G:N1	2.27	0.49
11:AA:1046:A:H2’	11:AA:1049:C:C5	2.47	0.49
11:AA:1497:C:H2’	11:AA:1498:A:H8	1.75	0.49
11:AA:1679:A:OP1	27:G:94:ARG:HD2	2.11	0.49
11:AA:1799:A:H2’	11:AA:1800:A:H8	1.77	0.49
11:AA:2501:U:H3’	11:AA:2502:A:C8	2.47	0.49
12:Aa:461:GLN:HG2	12:Aa:462:PHE:HD1	1.77	0.49
17:CC:149:A:H2’	17:CC:150:G:C8	2.46	0.49
30:HH:263:GLU:OE1	30:HH:263:GLU:N	2.43	0.49
33:J:56:ARG:O	33:J:61:LYS:HD3	2.11	0.49
61:c:876:G:H1’	61:c:944:A:O4’	2.13	0.49
61:c:947:U:H2’	61:c:948:G:C8	2.46	0.49
61:c:1331:A:OP1	78:t:45:ARG:NH2	2.41	0.49
61:c:1532:U:O2	80:v:48:GLN:NE2	2.44	0.49
63:e:34:ALA:HB3	63:e:35:PRO:HD3	1.94	0.49
66:h:100:ARG:HH12	66:h:236:ILE:HG21	1.77	0.49
72:n:7:ASP:OD1	72:n:7:ASP:N	2.45	0.49
79:u:20:THR:HB	79:u:35:ILE:HD13	1.93	0.49
81:w:55:PRO:HA	81:w:91:ILE:HG12	1.94	0.49
84:z:92:CYS:HA	84:z:95:PHE:CD1	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:5:29:GLY:O	6:5:40:ARG:HB3	2.12	0.49
11:AA:601:U:HO2'	11:AA:602:A:P	2.33	0.49
11:AA:874:U:N3	11:AA:2978:U:OP1	2.41	0.49
11:AA:1269:U:N3	11:AA:1272:C:OP2	2.41	0.49
11:AA:1351:U:OP2	11:AA:1352:A:O2'	2.19	0.49
11:AA:1378:U:H2'	11:AA:1379:G:H8	1.76	0.49
11:AA:1565:G:H2'	11:AA:1566:A:O4'	2.11	0.49
12:Aa:400:VAL:HG21	12:Aa:449:PRO:O	2.11	0.49
17:CC:85:G:OP2	35:K:113:LYS:NZ	2.38	0.49
18:Cc:9:G:O2'	18:Cc:10:G:N7	2.42	0.49
20:DD:41:VAL:HG11	20:DD:185:LEU:HD11	1.93	0.49
29:H:87:ARG:HH12	29:H:137:VAL:HG21	1.77	0.49
61:c:1107:G:O2'	61:c:1108:G:H5'	2.11	0.49
61:c:1564:U:H2'	61:c:1565:C:C6	2.47	0.49
67:i:93:LEU:HD23	67:i:172:ILE:HG23	1.94	0.49
79:u:88:ARG:NH1	79:u:112:ASP:OD2	2.45	0.49
1:0:82:ALA:O	1:0:86:GLU:HB2	2.11	0.49
8:7:59:ARG:NH2	8:7:96:THR:O	2.45	0.49
8:7:64:HIS:CD2	8:7:68:VAL:HB	2.46	0.49
11:AA:993:G:N3	11:AA:2637:A:H2'	2.28	0.49
11:AA:1245:A:N1	11:AA:1272:C:O2'	2.45	0.49
11:AA:2264:U:O2'	11:AA:2265:C:H6	1.95	0.49
12:Aa:585:ARG:HH22	15:Bb:29:A:P	2.35	0.49
15:Bb:19:G:O5'	15:Bb:57:G:N2	2.44	0.49
17:CC:23:U:H5"	35:K:13:ARG:HG3	1.93	0.49
22:E:45:LEU:HD12	22:E:51:VAL:HG11	1.94	0.49
42:NN:49:LYS:HG2	42:NN:64:LYS:HG2	1.94	0.49
43:O:51:LEU:HD11	51:S:90:ILE:HG22	1.95	0.49
61:c:1302:U:OP1	64:f:88:LYS:NZ	2.45	0.49
62:d:93:THR:HB	62:d:185:ARG:HH12	1.78	0.49
62:d:105:GLY:N	62:d:135:GLU:OE2	2.25	0.49
62:d:144:ILE:HG12	62:d:158:VAL:HB	1.93	0.49
67:i:25:LEU:HD12	67:i:26:ALA:N	2.27	0.49
67:i:140:THR:O	67:i:140:THR:HG22	2.12	0.49
75:q:16:VAL:HG12	75:q:18:ARG:HG3	1.94	0.49
77:s:38:LEU:HD13	80:v:10:ALA:HB2	1.94	0.49
79:u:113:LEU:HB3	79:u:117:LYS:HE3	1.93	0.49
2:1:54:VAL:HG21	2:1:88:ILE:HD13	1.94	0.49
4:3:35:VAL:HA	4:3:78:SER:O	2.13	0.49
8:7:90:ARG:HE	8:7:99:THR:HG21	1.77	0.49
11:AA:118:U:O2	11:AA:121:A:H5"	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2526:C:H2'	11:AA:2527:G:C8	2.48	0.49
11:AA:2723:U:H2'	11:AA:2724:OMU:H6	1.94	0.49
11:AA:3287:U:C2	11:AA:3288:G:C8	3.00	0.49
11:AA:3386:G:H2'	11:AA:3387:U:C6	2.48	0.49
14:BB:64:A:H5'	14:BB:65:G:H5"	1.94	0.49
30:HH:60:ILE:HB	30:HH:80:SER:HB3	1.93	0.49
34:JJ:78:GLU:CD	34:JJ:78:GLU:H	2.20	0.49
40:MM:54:SER:HB2	40:MM:135:ILE:HD11	1.93	0.49
60:b:59:CYS:O	60:b:60:CYS:SG	2.71	0.49
61:c:901:G:H2'	61:c:902:G:C8	2.47	0.49
61:c:1738:U:H2'	61:c:1739:C:C6	2.48	0.49
69:k:47:ARG:HG3	69:k:47:ARG:HH11	1.76	0.49
2:1:102:THR:HG23	67:i:123:VAL:HG13	1.95	0.49
11:AA:760:G:H1'	11:AA:771:A:N6	2.27	0.49
11:AA:785:G:H5"	16:C:92:ARG:HH22	1.76	0.49
11:AA:966:U:H2'	11:AA:967:A:C8	2.47	0.49
11:AA:1688:U:H2'	11:AA:1689:U:C6	2.47	0.49
11:AA:2501:U:HO2'	11:AA:2502:A:P	2.35	0.49
11:AA:2661:G:H2'	11:AA:2662:G:H8	1.77	0.49
12:Aa:249:PHE:HB2	12:Aa:258:THR:HG22	1.94	0.49
39:M:44:ASN:ND2	44:OO:4:SER:O	2.46	0.49
48:Q:11:LYS:HB2	48:Q:14:THR:HG22	1.93	0.49
61:c:30:G:H2'	61:c:31:C:C6	2.48	0.49
61:c:1516:A:H8	81:w:58:LEU:HD12	1.77	0.49
69:k:14:THR:HB	69:k:17:GLU:CD	2.37	0.49
76:r:107:ILE:HG23	76:r:111:MET:HG3	1.95	0.49
8:7:33:LEU:O	8:7:44:SER:HA	2.12	0.49
8:7:203:THR:OG1	8:7:243:LEU:O	2.25	0.49
11:AA:1573:G:H2'	11:AA:1574:C:O4'	2.13	0.49
11:AA:2566:C:H2'	11:AA:2567:C:H6	1.77	0.49
11:AA:3234:A:H61	11:AA:3253:G:H1	1.59	0.49
15:Bb:9:A:H2	15:Bb:23:A:H62	1.60	0.49
15:Bb:67:A:H2'	15:Bb:68:U:C6	2.46	0.49
19:D:130:ASN:O	19:D:132:PHE:N	2.45	0.49
39:M:75:LEU:HD21	39:M:138:ILE:HD11	1.94	0.49
61:c:567:A:O2'	84:z:90:ASP:OD1	2.27	0.49
61:c:1262:U:H2'	61:c:1263:G:O4'	2.12	0.49
63:e:158:SER:HA	63:e:161:ILE:HD12	1.95	0.49
67:i:72:HIS:O	67:i:72:HIS:ND1	2.45	0.49
68:j:31:ARG:HA	68:j:101:ILE:HA	1.93	0.49
77:s:59:LYS:HG3	77:s:59:LYS:O	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:7:180:ALA:HB3	8:7:189:GLU:H	1.78	0.49
10:A:62:THR:HA	11:AA:1306:G:C6	2.46	0.49
11:AA:20:A:H2'	11:AA:21:G:C8	2.47	0.49
11:AA:156:G:OP2	53:U:25:LYS:HB3	2.12	0.49
11:AA:348:A:N3	11:AA:352:A:O2'	2.45	0.49
11:AA:1083:G:H2'	11:AA:1084:A:C8	2.47	0.49
11:AA:2244:A:HO2'	23:EE:223:SER:HG	1.54	0.49
12:Aa:659:ILE:HB	12:Aa:705:ILE:HG21	1.95	0.49
12:Aa:777:SER:O	12:Aa:777:SER:OG	2.27	0.49
14:BB:26:C:H2'	14:BB:27:A:O4'	2.13	0.49
14:BB:47:C:OP2	30:HH:158:ARG:HD3	2.12	0.49
20:DD:38:MET:O	20:DD:42:ARG:HD2	2.13	0.49
25:F:75:ILE:HD13	25:F:88:ARG:HG2	1.95	0.49
39:M:139:ARG:NH2	44:OO:163:GLY:HA2	2.28	0.49
61:c:455:C:H3'	61:c:456:A:C8	2.47	0.49
61:c:572:C:OP1	84:z:109:ARG:NH1	2.45	0.49
61:c:866:G:O6	92:c:2001:HOH:O	2.20	0.49
61:c:887:A:H1'	75:q:122:PRO:HB3	1.94	0.49
61:c:1335:U:O2'	61:c:1336:A:OP1	2.30	0.49
61:c:1552:U:OP2	76:r:43:ARG:NH2	2.45	0.49
68:j:57:ASP:OD2	68:j:72:ARG:NH1	2.45	0.49
1:0:41:ARG:HG3	1:0:55:VAL:HG23	1.94	0.49
1:0:117:LYS:HB3	61:c:159:U:H5'	1.93	0.49
11:AA:1350:A:H2'	11:AA:1351:U:C5	2.48	0.49
11:AA:2812:C:H2'	11:AA:2813:A:C8	2.48	0.49
11:AA:2835:U:H2'	11:AA:2836:C:O2	2.13	0.49
12:Aa:18:ASN:ND2	12:Aa:97:SER:O	2.41	0.49
17:CC:9:A:H2'	17:CC:10:A:H8	1.77	0.49
25:F:136:ARG:HB2	34:JJ:80:GLN:HG3	1.93	0.49
26:FF:166:ILE:HD13	26:FF:174:LYS:HA	1.95	0.49
44:OO:11:LYS:O	44:OO:13:HIS:ND1	2.46	0.49
55:W:15:THR:HG22	55:W:45:VAL:HG11	1.95	0.49
61:c:78:A:H5'	68:j:159:ARG:HH22	1.78	0.49
61:c:82:U:H2'	61:c:83:G:O4'	2.12	0.49
61:c:103:A:H4'	61:c:105:A:N7	2.28	0.49
61:c:460:A:O2'	66:h:27:TYR:OH	2.16	0.49
61:c:1499:G:O6	61:c:1509:C:N4	2.45	0.49
78:t:24:LEU:HG	78:t:34:LEU:HD22	1.94	0.49
8:7:20:VAL:HA	8:7:37:SER:HA	1.95	0.49
11:AA:114:A:OP1	49:QQ:54:LYS:NZ	2.45	0.49
11:AA:550:A:H2'	11:AA:551:A:H8	1.78	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:567:G:H2'	11:AA:568:G:C8	2.47	0.49
11:AA:673:U:H2'	11:AA:674:G:C8	2.47	0.49
11:AA:1597:C:H2'	11:AA:1598:G:H8	1.76	0.49
12:Aa:388:THR:O	12:Aa:388:THR:OG1	2.25	0.49
14:BB:13:A:OP2	14:BB:67:G:N2	2.43	0.49
54:V:84:SER:O	54:V:84:SER:OG	2.23	0.49
61:c:143:G:N7	68:j:137:ARG:NH2	2.54	0.49
61:c:1220:C:H4'	72:n:52:LYS:HG3	1.93	0.49
61:c:1549:C:OP1	76:r:42:ARG:NH2	2.41	0.49
61:c:1772:C:H2'	61:c:1773:4AC:H6	1.94	0.49
66:h:73:ASP:HB3	66:h:164:LEU:HD11	1.95	0.49
68:j:134:GLY:HA3	68:j:158:ILE:HG21	1.94	0.49
69:k:113:PRO:HG2	69:k:116:ARG:HD3	1.94	0.49
81:w:70:THR:OG1	81:w:72:ASN:O	2.23	0.49
11:AA:371:G:H4'	11:AA:396:A:N1	2.28	0.49
11:AA:400:G:H4'	11:AA:401:U:H5"	1.95	0.49
11:AA:827:A:H5"	51:S:14:ASN:O	2.13	0.49
11:AA:1709:C:H2'	11:AA:1710:C:C6	2.48	0.49
11:AA:1824:U:OP1	55:W:3:ARG:NH2	2.45	0.49
11:AA:2103:U:H2'	11:AA:2104:A:H8	1.78	0.49
11:AA:2597:U:H2'	11:AA:2598:G:H8	1.78	0.49
13:B:45:GLN:O	13:B:49:GLU:HG3	2.13	0.49
15:Bb:51:G:H2'	15:Bb:52:U:C6	2.47	0.49
17:CC:10:A:H2'	17:CC:11:C:C6	2.48	0.49
29:H:79:VAL:HB	29:H:118:VAL:HG22	1.94	0.49
61:c:930:A:N3	63:e:111:ARG:NH2	2.59	0.49
61:c:1017:U:H2'	61:c:1018:U:H6	1.78	0.49
64:f:149:GLY:HA2	82:x:3:ASN:HB2	1.94	0.49
65:g:25:PHE:HE1	65:g:69:LEU:HD12	1.77	0.49
11:AA:298:U:H5'	53:U:31:GLY:O	2.13	0.48
11:AA:2585:G:N3	11:AA:2585:G:H2'	2.28	0.48
11:AA:2651:G:H5"	11:AA:2652:U:O4'	2.13	0.48
11:AA:3000:A:H2'	11:AA:3001:C:C6	2.48	0.48
11:AA:3284:G:H2'	11:AA:3285:C:C6	2.47	0.48
12:Aa:176:GLN:O	12:Aa:180:ARG:HG2	2.13	0.48
12:Aa:356:LEU:HA	12:Aa:479:LYS:HG2	1.94	0.48
12:Aa:489:VAL:O	12:Aa:531:ALA:HA	2.12	0.48
14:BB:16:U:H2'	14:BB:17:A:C8	2.48	0.48
22:E:1:MET:HE1	22:E:36:ILE:HG21	1.95	0.48
35:K:55:GLU:OE2	35:K:69:LYS:NZ	2.37	0.48
36:KK:89:GLU:HG3	36:KK:214:LEU:HD21	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:L:89:VAL:HG12	37:L:92:PHE:CZ	2.48	0.48
54:V:18:LEU:HD11	56:X:12:LYS:HD2	1.94	0.48
61:c:137:U:H2'	61:c:138:A:H8	1.78	0.48
61:c:513:U:H2'	61:c:514:G:C8	2.47	0.48
61:c:928:U:H4'	75:q:124:ASP:HB3	1.93	0.48
61:c:1297:G:N2	61:c:1300:A:OP2	2.40	0.48
62:d:135:GLU:O	62:d:139:VAL:HG22	2.12	0.48
66:h:68:ARG:HH11	66:h:76:VAL:HG11	1.78	0.48
67:i:95:ASN:O	67:i:98:MET:HB2	2.12	0.48
81:w:26:LEU:O	81:w:88:LYS:HA	2.13	0.48
11:AA:952:A:OP1	41:N:18:ARG:NH1	2.38	0.48
11:AA:1232:C:O2'	20:DD:36:GLN:OE1	2.23	0.48
11:AA:1363:A:OP1	34:JJ:160:ARG:HD3	2.13	0.48
11:AA:1523:U:OP2	11:AA:1604:G:O2'	2.30	0.48
11:AA:2532:U:H2'	11:AA:2533:G:H8	1.78	0.48
11:AA:2615:G:H2'	11:AA:2616:C:C6	2.48	0.48
12:Aa:438:MET:HB2	12:Aa:441:PHE:CD1	2.48	0.48
61:c:1207:C:H4'	61:c:1208:A:O4'	2.13	0.48
61:c:1682:U:H4'	68:j:65:GLN:NE2	2.27	0.48
62:d:112:THR:HG23	62:d:113:ARG:HG3	1.95	0.48
64:f:106:ASP:C	64:f:108:ASN:H	2.21	0.48
64:f:248:SER:OG	64:f:250:GLN:OE1	2.30	0.48
75:q:87:GLY:HA2	75:q:92:LYS:HD2	1.95	0.48
79:u:16:ARG:HH12	79:u:19:ASN:C	2.21	0.48
7:6:8:LEU:HD21	84:z:56:LYS:HB3	1.94	0.48
10:A:44:SER:OG	11:AA:1315:U:OP2	2.22	0.48
11:AA:69:C:OP1	49:QQ:178:HIS:ND1	2.33	0.48
11:AA:1644:C:H5"	11:AA:1645:U:H5"	1.94	0.48
11:AA:1718:G:H2'	11:AA:1719:G:C8	2.48	0.48
11:AA:2569:A:O2'	11:AA:2570:U:H5"	2.13	0.48
11:AA:2717:U:H4'	59:a:13:LYS:HD3	1.94	0.48
11:AA:2904:U:H2'	11:AA:2905:U:C6	2.48	0.48
12:Aa:807:ASP:CG	12:Aa:809:LEU:H	2.21	0.48
17:CC:81:U:H5"	17:CC:82:U:H5'	1.95	0.48
28:GG:23:PRO:HD2	28:GG:26:PHE:CD2	2.49	0.48
35:K:39:LEU:HG	35:K:43:TYR:CE2	2.48	0.48
61:c:1552:U:O2'	61:c:1597:A:N3	2.38	0.48
63:e:34:ALA:HB1	63:e:86:LEU:HD22	1.95	0.48
63:e:81:PHE:HD2	63:e:82:ARG:HG3	1.78	0.48
64:f:58:LEU:HA	82:x:12:TYR:CE1	2.48	0.48
64:f:122:ALA:O	64:f:126:ARG:HG3	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
74:p:92:ILE:HG21	74:p:149:LEU:HD11	1.94	0.48
76:r:59:LYS:HB3	76:r:59:LYS:HE3	1.67	0.48
84:z:58:GLY:HA3	84:z:68:ILE:HD13	1.95	0.48
7:6:38:LEU:HD22	7:6:42:ARG:HH21	1.78	0.48
10:A:15:LEU:HB2	10:A:123:ALA:O	2.13	0.48
11:AA:1237:G:C6	11:AA:1251:A:N1	2.81	0.48
11:AA:1437:OMC:HM22	28:GG:93:MET:HG3	1.96	0.48
11:AA:1666:G:H2'	11:AA:1667:A:C8	2.47	0.48
11:AA:2152:A:H2'	11:AA:2153:U:C6	2.49	0.48
11:AA:2160:G:H2'	11:AA:2161:G:C8	2.47	0.48
11:AA:2185:G:O2'	11:AA:2314:U:OP2	2.26	0.48
11:AA:2407:C:H2'	11:AA:2408:U:C6	2.48	0.48
11:AA:2429:G:H2'	11:AA:2430:A:C8	2.48	0.48
11:AA:2700:G:O2'	11:AA:2705:A:N1	2.41	0.48
12:Aa:338:ILE:O	12:Aa:342:LEU:HB2	2.12	0.48
12:Aa:343:PRO:HB2	12:Aa:348:ALA:HB2	1.95	0.48
15:Bb:18:G:H1'	15:Bb:57:G:H1	1.78	0.48
23:EE:113:VAL:HG12	23:EE:166:ILE:HD13	1.96	0.48
24:Ee:85:LEU:HD13	24:Ee:102:GLY:N	2.26	0.48
26:FF:256:HIS:HA	26:FF:257:PRO:C	2.38	0.48
34:JJ:138:TYR:CD2	34:JJ:233:GLU:HB3	2.48	0.48
44:OO:131:LYS:HD3	44:OO:131:LYS:HA	1.64	0.48
61:c:17:C:H2'	61:c:18:C:H6	1.78	0.48
61:c:526:A:H2'	61:c:527:A:O4'	2.14	0.48
61:c:1114:G:O2'	61:c:1130:G:O6	2.23	0.48
61:c:1175:U:H2'	61:c:1176:G:C8	2.49	0.48
61:c:1222:C:H2'	61:c:1223:A:H8	1.77	0.48
61:c:1272:U:O4	61:c:1431:C:O2'	2.25	0.48
61:c:1583:A:OP1	77:s:135:ARG:NH1	2.26	0.48
66:h:141:THR:OG1	66:h:143:ASP:OD1	2.26	0.48
69:k:5:GLN:NE2	69:k:18:LEU:HB3	2.28	0.48
70:l:182:TYR:OH	70:l:188:GLU:OE2	2.28	0.48
78:t:46:LEU:O	78:t:50:ILE:HG12	2.13	0.48
1:0:132:ARG:NH2	61:c:154:G:OP2	2.46	0.48
8:7:31:ASN:HA	8:7:47:LEU:HB2	1.94	0.48
11:AA:1029:G:H2'	11:AA:1030:A:H8	1.79	0.48
11:AA:1312:C:H2'	11:AA:1313:G:O4'	2.13	0.48
11:AA:1621:A:H2'	11:AA:1622:U:H6	1.78	0.48
11:AA:2828:G:OP2	40:MM:7:ARG:NH2	2.47	0.48
14:BB:4:U:H2'	14:BB:5:G:C8	2.48	0.48
19:D:25:ASP:HB3	19:D:28:GLU:HB2	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:DD:67:LEU:HG	20:DD:71:PRO:HA	1.95	0.48
20:DD:143:THR:O	20:DD:144:LYS:HD2	2.13	0.48
25:F:100:LYS:HB3	25:F:103:GLN:HG2	1.94	0.48
39:M:135:GLU:OE2	44:OO:166:ALA:N	2.46	0.48
61:c:406:U:H2'	61:c:407:A:H8	1.77	0.48
61:c:1550:A:H2'	61:c:1551:U:C6	2.48	0.48
62:d:179:ARG:HB2	62:d:195:TRP:CE3	2.49	0.48
63:e:39:GLU:OE1	63:e:39:GLU:HA	2.14	0.48
68:j:18:ILE:HB	68:j:24:ILE:HD12	1.94	0.48
77:s:35:PRO:HD3	80:v:7:ARG:O	2.13	0.48
81:w:83:GLU:OE1	81:w:85:ARG:NH1	2.46	0.48
8:7:248:ASN:HD21	8:7:249:ARG:HH11	1.61	0.48
11:AA:710:A:H2'	11:AA:711:A:C8	2.49	0.48
11:AA:1553:U:H4'	11:AA:1554:U:H5'	1.96	0.48
11:AA:3284:G:H2'	11:AA:3285:C:H6	1.78	0.48
13:B:41:LEU:HD13	13:B:150:VAL:HG11	1.96	0.48
14:BB:84:A:H2'	14:BB:85:G:C8	2.48	0.48
28:GG:285:ASP:O	28:GG:289:ILE:HG13	2.13	0.48
44:OO:88:ALA:O	44:OO:92:THR:HG23	2.14	0.48
54:V:64:MET:HE3	54:V:67:LEU:HB3	1.94	0.48
61:c:156:A:H2'	61:c:157:A:O4'	2.13	0.48
61:c:1529:C:H2'	61:c:1530:C:C6	2.48	0.48
62:d:163:ASN:OD1	62:d:165:ARG:N	2.47	0.48
70:l:57:ALA:HB2	70:l:177:GLY:HA2	1.95	0.48
11:AA:806:A:N3	11:AA:2812:C:O2'	2.40	0.48
11:AA:1895:A:O2'	11:AA:3053:G:H4'	2.14	0.48
11:AA:3371:G:H2'	11:AA:3372:A:C8	2.47	0.48
11:AA:3378:C:H2'	11:AA:3379:C:H6	1.79	0.48
12:Aa:414:GLN:HG2	12:Aa:477:ASN:HB3	1.96	0.48
16:C:67:ILE:HG12	16:C:81:VAL:HG11	1.96	0.48
17:CC:63:G:OP1	17:CC:90:U:H5'	2.14	0.48
30:HH:48:LYS:HG2	30:HH:145:PHE:HE2	1.78	0.48
61:c:686:C:H2'	61:c:687:G:C8	2.49	0.48
69:k:8:ILE:HG12	69:k:42:GLN:HG3	1.94	0.48
71:m:152:SER:O	71:m:156:ILE:HG13	2.14	0.48
8:7:22:SER:OG	8:7:69:GLN:O	2.30	0.48
11:AA:64:G:OP2	49:QQ:169:LYS:NZ	2.38	0.48
11:AA:94:G:H2'	11:AA:95:A:C8	2.48	0.48
11:AA:396:A:O2'	11:AA:399:A:OP1	2.19	0.48
11:AA:968:G:H2'	11:AA:969:C:H6	1.78	0.48
11:AA:2328:U:H2'	11:AA:2329:C:C6	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2810:C:OP2	11:AA:2955:U:O2'	2.31	0.48
14:BB:16:U:H2'	14:BB:17:A:H8	1.79	0.48
23:EE:80:GLU:HG2	60:b:66:GLY:HA2	1.96	0.48
38:LL:124:ARG:HB3	38:LL:164:ILE:HG12	1.96	0.48
44:OO:50:PRO:O	44:OO:52:ASP:N	2.47	0.48
61:c:5:U:H2'	61:c:6:G:C8	2.48	0.48
61:c:161:U:OP1	68:j:85:ARG:N	2.28	0.48
61:c:292:U:H2'	61:c:293:U:C6	2.48	0.48
61:c:1308:G:H2'	61:c:1309:C:C6	2.49	0.48
61:c:1606:C:H2'	61:c:1607:G:C8	2.49	0.48
63:e:82:ARG:HG2	63:e:105:PHE:CE1	2.49	0.48
67:i:200:ASN:HA	67:i:203:LYS:HG2	1.96	0.48
70:l:155:SER:O	70:l:159:GLN:NE2	2.45	0.48
82:x:30:ALA:O	82:x:60:ARG:HD3	2.14	0.48
82:x:77:GLY:O	82:x:79:LEU:N	2.47	0.48
5:4:11:LYS:HB2	5:4:53:ILE:HG13	1.96	0.48
5:4:29:ARG:HB2	5:4:29:ARG:HH11	1.79	0.48
8:7:33:LEU:HB3	8:7:45:TRP:CD1	2.49	0.48
11:AA:759:U:H2'	11:AA:760:G:O4'	2.14	0.48
11:AA:1022:U:H2'	11:AA:1023:C:C6	2.49	0.48
11:AA:1497:C:H2'	11:AA:1498:A:C8	2.48	0.48
11:AA:2466:G:H2'	11:AA:2467:G:C4	2.48	0.48
11:AA:3369:G:N2	26:FF:380:MET:O	2.43	0.48
12:Aa:120:ARG:HA	12:Aa:149:GLU:OE2	2.14	0.48
30:HH:183:TRP:HA	30:HH:190:ILE:HA	1.95	0.48
61:c:36:C:H2'	61:c:37:U:H6	1.78	0.48
61:c:205:U:H2'	61:c:206:A:H8	1.78	0.48
61:c:448:C:H2'	61:c:449:C:H6	1.79	0.48
61:c:478:A:O2'	71:m:124:HIS:ND1	2.33	0.48
61:c:1519:U:H3'	61:c:1520:U:H2'	1.94	0.48
68:j:51:LYS:HB3	68:j:112:VAL:HB	1.96	0.48
71:m:161:THR:HG22	71:m:162:SER:H	1.78	0.48
77:s:35:PRO:HG2	77:s:37:THR:HG22	1.96	0.48
9:8:119:ARG:N	9:8:131:PHE:HA	2.29	0.48
11:AA:123:A:C6	11:AA:150:A:C5	3.02	0.48
11:AA:1334:U:H2'	11:AA:1335:C:C6	2.49	0.48
11:AA:1724:U:O4	19:D:125:LYS:NZ	2.47	0.48
11:AA:2217:U:H2'	11:AA:2218:G:H8	1.79	0.48
11:AA:2477:G:H2'	11:AA:2477:G:N3	2.29	0.48
11:AA:2947:G:N3	26:FF:250:ALA:HB1	2.29	0.48
11:AA:3291:G:H2'	11:AA:3292:A:H8	1.79	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:Aa:424:ASP:O	12:Aa:426:LEU:N	2.41	0.48
17:CC:6:U:H2'	17:CC:7:U:H6	1.79	0.48
22:E:14:LEU:H	22:E:56:GLY:HA2	1.79	0.48
42:NN:110:ILE:HG21	42:NN:116:TYR:HA	1.96	0.48
44:OO:48:PRO:HA	44:OO:137:GLN:HB2	1.95	0.48
61:c:127:G:H4'	68:j:194:LYS:HD3	1.96	0.48
63:e:132:ASP:CB	63:e:221:PRO:HB3	2.44	0.48
70:l:10:LYS:HG3	73:o:133:LYS:HE3	1.96	0.48
7:6:40:TYR:CG	71:m:32:GLY:HA3	2.49	0.47
10:A:25:LYS:NZ	11:AA:1176:C:OP1	2.41	0.47
11:AA:506:U:H2'	11:AA:507:U:O4'	2.14	0.47
11:AA:1084:A:H2'	11:AA:1085:A:C8	2.49	0.47
11:AA:1120:A:H2'	11:AA:1121:U:H6	1.79	0.47
11:AA:1389:G:OP1	48:Q:104:ASN:ND2	2.37	0.47
11:AA:1643:A:H2'	11:AA:1644:C:C2	2.48	0.47
11:AA:1659:U:H2'	11:AA:1660:C:H6	1.77	0.47
11:AA:2760:C:N3	59:a:63:LYS:HE3	2.29	0.47
18:Cc:10:G:H2'	18:Cc:11:A:H8	1.79	0.47
35:K:55:GLU:HB2	35:K:108:LYS:HB3	1.95	0.47
40:MM:111:LEU:HD23	40:MM:111:LEU:H	1.79	0.47
61:c:10:G:OP1	61:c:1633:A:O2'	2.22	0.47
61:c:52:U:H2'	61:c:53:G:C8	2.49	0.47
61:c:804:A:C8	83:y:107:SER:HA	2.49	0.47
61:c:1572:OMG:H1'	61:c:1572:OMG:HM22	1.58	0.47
61:c:1610:G:OP1	67:i:72:HIS:NE2	2.47	0.47
67:i:58:LEU:HD12	67:i:138:THR:HA	1.95	0.47
71:m:3:ARG:HH12	71:m:6:ARG:HG2	1.79	0.47
76:r:108:ARG:H	76:r:111:MET:CG	2.27	0.47
78:t:9:VAL:HA	78:t:50:ILE:HD13	1.96	0.47
83:y:37:PHE:CZ	83:y:103:ILE:HD12	2.49	0.47
11:AA:589:A:H1'	11:AA:1337:A:H5"	1.96	0.47
11:AA:1003:A:N1	11:AA:1049:C:O2'	2.42	0.47
11:AA:1473:G:O6	92:AA:3707:HOH:O	2.20	0.47
11:AA:1616:U:H2'	11:AA:1617:G:C8	2.49	0.47
11:AA:2282:U:O2	11:AA:2310:U:H4'	2.14	0.47
11:AA:2767:U:H2'	11:AA:2768:U:C6	2.49	0.47
11:AA:2914:G:H5"	26:FF:9:PRO:HG3	1.96	0.47
11:AA:3170:A:H2'	11:AA:3171:U:C6	2.49	0.47
12:Aa:576:LEU:HD21	12:Aa:842:LEU:HB3	1.96	0.47
12:Aa:598:SER:O	12:Aa:602:GLU:HG2	2.14	0.47
14:BB:6:C:O2'	30:HH:72:ASP:OD2	2.21	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:DD:119:ILE:HG21	20:DD:173:LEU:HD11	1.95	0.47
35:K:83:ASP:O	35:K:84:LYS:HG2	2.14	0.47
37:L:22:LYS:NZ	37:L:132:SER:O	2.37	0.47
61:c:125:U:H5'	66:h:148:ARG:HD2	1.96	0.47
61:c:923:A:H2'	61:c:924:A:C8	2.49	0.47
61:c:1507:G:H2'	61:c:1508:U:O4'	2.14	0.47
61:c:1536:G:H3'	61:c:1537:C:H5"	1.96	0.47
64:f:188:LEU:HD13	64:f:196:VAL:HG11	1.96	0.47
77:s:35:PRO:HD2	77:s:38:LEU:HD12	1.95	0.47
79:u:38:VAL:HG12	79:u:101:LEU:HD21	1.96	0.47
79:u:107:SER:HA	79:u:110:ARG:HG2	1.96	0.47
11:AA:187:A:H2'	11:AA:188:U:C6	2.49	0.47
11:AA:308:A:H1'	11:AA:2222:A:N3	2.29	0.47
11:AA:381:U:H2'	11:AA:382:U:C6	2.49	0.47
11:AA:550:A:H2'	11:AA:551:A:C8	2.49	0.47
11:AA:907:G:H2'	11:AA:926:A:H62	1.79	0.47
11:AA:987:U:H2'	11:AA:988:U:C6	2.48	0.47
11:AA:1495:U:H5	11:AA:1835:A:N1	2.12	0.47
11:AA:3089:C:H2'	11:AA:3090:U:O4'	2.13	0.47
23:EE:10:LYS:HA	23:EE:16:PHE:CD2	2.49	0.47
24:Ee:110:ILE:HG23	24:Ee:125:LEU:HD11	1.97	0.47
44:OO:122:LYS:HG2	52:T:120:ALA:HA	1.96	0.47
61:c:32:U:O2'	61:c:594:A:N1	2.46	0.47
61:c:326:G:H2'	61:c:327:U:C6	2.49	0.47
61:c:855:A:C2	61:c:857:U:H1'	2.49	0.47
61:c:891:A:H2'	61:c:892:A:C8	2.49	0.47
61:c:902:G:H2'	61:c:903:U:C6	2.49	0.47
61:c:906:A:H2'	61:c:907:A:C8	2.50	0.47
61:c:1308:G:H2'	61:c:1309:C:H6	1.78	0.47
61:c:1674:C:OP1	68:j:92:ARG:NH1	2.44	0.47
68:j:7:TYR:HD1	68:j:113:ILE:HB	1.78	0.47
69:k:102:PRO:HD3	69:k:112:ARG:HD2	1.96	0.47
74:p:110:ASP:O	74:p:114:ARG:HG2	2.13	0.47
11:AA:662:U:OP1	39:M:8:THR:HG21	2.14	0.47
11:AA:1018:G:H2'	11:AA:1019:G:C4'	2.44	0.47
11:AA:1718:G:H2'	11:AA:1719:G:H8	1.79	0.47
11:AA:2218:G:H2'	11:AA:2219:A:H8	1.79	0.47
11:AA:3065:G:H2'	11:AA:3066:U:C6	2.49	0.47
12:Aa:143:LEU:HD21	12:Aa:189:VAL:HG12	1.96	0.47
14:BB:23:A:H2'	14:BB:24:A:C8	2.49	0.47
15:Bb:41:U:H5'	15:Bb:42:G:OP2	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:FF:187:SER:HB3	26:FF:190:GLU:CD	2.39	0.47
28:GG:311:HIS:CE1	28:GG:314:LYS:HA	2.50	0.47
34:JJ:157:ASN:HB2	34:JJ:159:GLN:HG3	1.96	0.47
37:L:50:PRO:HD3	37:L:68:ILE:HG12	1.96	0.47
37:L:70:PRO:HG3	37:L:115:LYS:HB2	1.95	0.47
61:c:472:U:H2'	61:c:473:A:C8	2.49	0.47
61:c:1317:C:O2'	61:c:1400:A:N3	2.44	0.47
11:AA:109:A:N1	11:AA:322:U:O2'	2.46	0.47
11:AA:540:U:H2'	11:AA:541:U:C6	2.50	0.47
11:AA:805:OMG:H2'	11:AA:936:A:H61	1.78	0.47
11:AA:1914:G:O2'	19:D:82:LYS:O	2.29	0.47
11:AA:2861:U:H2'	11:AA:2862:U:O4'	2.15	0.47
11:AA:2927:C:H2'	11:AA:2928:C:C6	2.50	0.47
12:Aa:83:ASP:HA	12:Aa:86:VAL:HG22	1.95	0.47
16:C:175:ALA:O	16:C:182:LYS:HB2	2.14	0.47
17:CC:83:C:H2'	17:CC:85:G:H21	1.79	0.47
19:D:133:LYS:HE3	19:D:133:LYS:HB3	1.51	0.47
29:H:13:ILE:HG23	29:H:85:TRP:CG	2.50	0.47
48:Q:63:THR:HA	48:Q:66:LEU:HD22	1.97	0.47
61:c:602:U:H2'	61:c:603:U:C6	2.49	0.47
61:c:1307:U:H3	61:c:1318:G:N2	2.13	0.47
61:c:1569:A:H2'	61:c:1570:A:C8	2.50	0.47
68:j:74:LYS:HA	68:j:96:SER:HA	1.95	0.47
75:q:30:VAL:HG13	75:q:39:ILE:O	2.15	0.47
78:t:76:GLU:O	78:t:79:GLU:HG3	2.15	0.47
81:w:61:LYS:HB2	81:w:86:ILE:HG23	1.97	0.47
2:1:77:ARG:HE	61:c:1533:C:P	2.37	0.47
5:4:49:ARG:HD2	67:i:82:PHE:CG	2.50	0.47
8:7:11:GLY:O	8:7:311:ARG:NH1	2.47	0.47
11:AA:8:C:H2'	11:AA:9:U:C6	2.50	0.47
11:AA:86:G:O2'	11:AA:98:G:O6	2.30	0.47
11:AA:1129:A:H2'	11:AA:1130:A:C8	2.49	0.47
11:AA:1203:A:N3	11:AA:2855:U:O2'	2.42	0.47
11:AA:2426:U:H2'	11:AA:2427:U:H6	1.80	0.47
11:AA:2469:G:N2	11:AA:2477:G:O2'	2.48	0.47
11:AA:2478:C:N4	11:AA:2480:A:H61	2.12	0.47
11:AA:2578:U:H2'	11:AA:2579:G:O4'	2.13	0.47
11:AA:2930:A:H2'	11:AA:2931:C:H6	1.79	0.47
14:BB:94:C:H2'	14:BB:95:A:H8	1.80	0.47
15:Bb:15:G:H2'	15:Bb:16:U:C5	2.49	0.47
15:Bb:20:G:N2	15:Bb:21:A:O2'	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:E:10:ILE:O	22:E:59:VAL:N	2.48	0.47
24:Ee:104:ILE:CD1	24:Ee:109:ILE:HG12	2.45	0.47
46:PP:23:ILE:O	46:PP:30:GLY:N	2.47	0.47
61:c:811:A:N7	69:k:111:LYS:HB3	2.30	0.47
61:c:1036:A:OP1	92:c:2002:HOH:O	2.21	0.47
61:c:1183:A:C4	76:r:100:LYS:HD3	2.49	0.47
61:c:1501:C:OP2	80:v:102:ARG:NH2	2.43	0.47
61:c:1529:C:O2	80:v:12:GLN:NE2	2.47	0.47
61:c:1716:C:O2'	61:c:1717:G:O5'	2.31	0.47
65:g:17:PHE:O	65:g:21:LEU:HD23	2.15	0.47
65:g:208:ILE:HG23	78:t:38:ILE:O	2.13	0.47
69:k:91:ILE:HD11	69:k:172:VAL:HG21	1.95	0.47
4:3:44:THR:HG22	4:3:46:VAL:HG23	1.97	0.47
7:6:22:GLU:H	7:6:22:GLU:CD	2.22	0.47
9:8:138:ARG:NH2	61:c:1235:C:N3	2.63	0.47
11:AA:532:A:O2'	11:AA:533:A:H8	1.97	0.47
11:AA:594:U:H2'	11:AA:609:G:O6	2.15	0.47
11:AA:1385:C:OP1	28:GG:141:ARG:NH1	2.40	0.47
11:AA:1941:C:H2'	11:AA:1942:U:C6	2.50	0.47
11:AA:2406:C:H2'	11:AA:2407:C:H6	1.78	0.47
11:AA:2452:G:H2'	11:AA:2462:A:H1'	1.96	0.47
11:AA:2916:U:H5	11:AA:2935:U:HO2'	1.61	0.47
11:AA:3192:U:H2'	11:AA:3193:C:C6	2.49	0.47
12:Aa:253:LYS:HG2	12:Aa:253:LYS:O	2.15	0.47
12:Aa:523:SER:HB2	12:Aa:529:ILE:HG13	1.95	0.47
12:Aa:542:LEU:HA	12:Aa:545:LEU:HD12	1.97	0.47
12:Aa:809:LEU:HD22	12:Aa:832:VAL:HG11	1.96	0.47
17:CC:6:U:H2'	17:CC:7:U:C6	2.48	0.47
23:EE:145:LYS:HD2	23:EE:157:VAL:HG12	1.97	0.47
26:FF:66:LYS:HE3	26:FF:66:LYS:HB3	1.61	0.47
26:FF:212:ASN:ND2	26:FF:354:VAL:HG22	2.30	0.47
42:NN:53:THR:HG23	42:NN:60:ARG:HA	1.96	0.47
61:c:148:A:N6	61:c:167:U:O2	2.47	0.47
61:c:293:U:H2'	61:c:294:C:C6	2.49	0.47
61:c:647:G:H2'	61:c:648:G:H8	1.79	0.47
61:c:1482:C:N4	61:c:1524:A:OP2	2.47	0.47
61:c:1561:U:H2'	61:c:1562:G:C8	2.49	0.47
62:d:41:ARG:HG2	62:d:45:VAL:O	2.13	0.47
65:g:164:VAL:O	65:g:168:ILE:HB	2.15	0.47
70:l:26:LYS:HG2	70:l:29:LEU:HD23	1.95	0.47
70:l:84:HIS:HE2	70:l:97:THR:CG2	2.28	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
72:n:49:LEU:HA	72:n:52:LYS:HE3	1.96	0.47
83:y:115:GLU:HB3	83:y:118:ARG:NH2	2.29	0.47
1:0:8:ARG:CZ	1:0:28:LEU:HD11	2.45	0.47
11:AA:38:U:H2'	11:AA:39:A:O4'	2.15	0.47
11:AA:1915:A:H2'	11:AA:1916:U:C6	2.50	0.47
11:AA:2779:A:O2'	44:OO:180:ARG:NH2	2.40	0.47
11:AA:3183:A:H2	11:AA:3188:G:H4'	1.80	0.47
14:BB:113:C:H2'	14:BB:114:U:O4'	2.14	0.47
16:C:177:GLY:O	16:C:186:VAL:N	2.42	0.47
38:LL:16:VAL:HA	38:LL:28:VAL:O	2.13	0.47
52:T:96:GLU:C	52:T:98:SER:H	2.22	0.47
55:W:77:ARG:HH11	55:W:77:ARG:HG3	1.80	0.47
61:c:98:U:H2'	61:c:99:C:C6	2.50	0.47
61:c:684:A:H2'	61:c:685:A:C8	2.50	0.47
61:c:1160:A:H2'	61:c:1161:C:H6	1.78	0.47
61:c:1339:C:O2'	61:c:1341:A:N7	2.45	0.47
61:c:1406:A:H2'	61:c:1407:U:C6	2.50	0.47
62:d:72:ASP:HB3	62:d:119:ARG:HG2	1.97	0.47
66:h:122:LYS:NZ	66:h:123:LEU:O	2.44	0.47
73:o:121:ASP:O	73:o:123:VAL:HG13	2.15	0.47
74:p:29:SER:O	74:p:33:VAL:HG12	2.15	0.47
8:7:90:ARG:HD3	8:7:102:ARG:HG3	1.96	0.47
11:AA:113:C:OP1	49:QQ:147:ARG:NE	2.48	0.47
11:AA:616:G:H2'	11:AA:617:G:C8	2.50	0.47
11:AA:895:A:O2'	11:AA:896:A:OP2	2.24	0.47
11:AA:911:C:H42	23:EE:3:ARG:HD3	1.79	0.47
11:AA:2541:U:H5"	11:AA:2542:U:C6	2.50	0.47
11:AA:2552:C:H2'	43:O:50:VAL:HG11	1.96	0.47
11:AA:2904:U:H2'	11:AA:2905:U:H6	1.80	0.47
11:AA:3106:A:H2'	11:AA:3107:U:O4'	2.15	0.47
12:Aa:681:MET:HE2	12:Aa:717:PHE:CD1	2.49	0.47
22:E:158:LYS:HB2	22:E:158:LYS:HE3	1.59	0.47
26:FF:287:LYS:N	26:FF:287:LYS:HD3	2.30	0.47
35:K:50:ILE:HG21	35:K:80:VAL:HG11	1.97	0.47
61:c:333:A:H2'	61:c:334:G:C8	2.50	0.47
61:c:393:C:OP2	70:l:2:GLY:N	2.47	0.47
61:c:800:U:H2'	61:c:801:G:C8	2.50	0.47
61:c:1017:U:H2'	61:c:1018:U:C6	2.50	0.47
61:c:1170:G:C2	61:c:1171:A:C8	3.02	0.47
61:c:1529:C:C5'	77:s:42:GLU:HG2	2.45	0.47
62:d:79:ARG:NH2	62:d:164:ASN:O	2.29	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:e:90:GLU:HG3	63:e:223:PHE:HZ	1.79	0.47
68:j:175:ILE:HD11	68:j:178:LEU:HD22	1.96	0.47
71:m:45:ILE:HD12	71:m:105:LEU:HG	1.97	0.47
4:3:34:ASP:O	4:3:79:PHE:HA	2.15	0.47
11:AA:1675:G:H2'	11:AA:1676:A:C8	2.49	0.47
11:AA:1717:U:H2'	11:AA:1718:G:H8	1.79	0.47
11:AA:2203:U:H2'	11:AA:2204:C:C6	2.50	0.47
11:AA:2568:C:O2'	11:AA:2569:A:O5'	2.33	0.47
11:AA:3045:G:OP1	26:FF:19:ARG:NH2	2.43	0.47
11:AA:3160:U:H2'	11:AA:3161:C:H6	1.80	0.47
12:Aa:4:PHE:O	12:Aa:5:THR:OG1	2.33	0.47
12:Aa:472:SER:HB3	12:Aa:475:ALA:HB2	1.97	0.47
89:Aa:1001:GDP:O3B	90:Aa:1002:PO4:O1	2.33	0.47
91:Aa:1003:SO1:H13	91:Aa:1003:SO1:C11	2.45	0.47
28:GG:179:LEU:HD11	28:GG:183:LYS:HE2	1.96	0.47
30:HH:173:VAL:O	30:HH:175:HIS:ND1	2.34	0.47
34:JJ:86:VAL:O	34:JJ:114:GLY:HA2	2.15	0.47
36:KK:158:ASP:HB3	36:KK:159:PRO:HD3	1.97	0.47
61:c:1235:C:H2'	61:c:1236:A:H8	1.79	0.47
61:c:1501:C:N4	61:c:1502:G:O6	2.47	0.47
61:c:1645:G:H1	61:c:1755:A:H2	1.61	0.47
62:d:110:TYR:HA	62:d:115:PHE:CG	2.50	0.47
66:h:98:ASN:HD22	66:h:119:ALA:HB3	1.78	0.47
69:k:37:GLU:O	69:k:40:PRO:HD2	2.15	0.47
71:m:139:GLN:NE2	71:m:140:ILE:O	2.37	0.47
81:w:55:PRO:HB3	81:w:91:ILE:HD11	1.97	0.47
84:z:69:ARG:HD2	84:z:117:ILE:HG12	1.97	0.47
8:7:282:SER:HB3	61:c:1394:G:OP1	2.15	0.46
11:AA:366:A:H2'	11:AA:367:A:O4'	2.15	0.46
11:AA:669:U:H1'	11:AA:1110:U:H4'	1.96	0.46
11:AA:701:G:H2'	11:AA:702:C:C6	2.51	0.46
11:AA:2219:A:H2'	11:AA:2220:A2M:C8	2.45	0.46
11:AA:2661:G:H2'	11:AA:2662:G:C8	2.50	0.46
11:AA:2723:U:H2'	11:AA:2724:OMU:C6	2.46	0.46
11:AA:2854:U:OP1	40:MM:61:SER:OG	2.31	0.46
12:Aa:72:SER:H	12:Aa:384:LYS:HZ3	1.63	0.46
28:GG:135:VAL:O	28:GG:140:HIS:HB2	2.15	0.46
42:NN:32:ARG:O	42:NN:120:ILE:HD11	2.15	0.46
44:OO:126:PHE:HB2	52:T:115:LYS:HB2	1.97	0.46
61:c:29:U:H2'	61:c:30:G:C8	2.49	0.46
61:c:482:U:H2'	61:c:483:A:C8	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:1421:A:H4'	65:g:160:SER:HB3	1.96	0.46
61:c:1559:A:C5	79:u:134:ARG:HB3	2.50	0.46
61:c:1776:A:H2'	61:c:1777:G:H8	1.80	0.46
69:k:10:SER:O	69:k:11:GLN:HG2	2.15	0.46
69:k:130:VAL:HG12	69:k:162:ILE:HD13	1.96	0.46
69:k:175:LYS:HE2	69:k:175:LYS:HB2	1.67	0.46
2:1:95:HIS:ND1	2:1:100:ILE:HG13	2.30	0.46
4:3:56:CYS:HB2	4:3:59:CYS:HB3	1.96	0.46
10:A:18:ARG:O	10:A:22:VAL:HG23	2.15	0.46
11:AA:1336:U:H2'	11:AA:1337:A:C8	2.49	0.46
11:AA:1604:G:H4'	11:AA:1835:A:H4'	1.97	0.46
11:AA:1667:A:H2'	11:AA:1668:G:H8	1.79	0.46
11:AA:2273:G:O2'	11:AA:2311:G:O6	2.25	0.46
11:AA:2501:U:O2'	11:AA:2502:A:OP1	2.27	0.46
11:AA:2714:G:H8	11:AA:2751:G:H2'	1.79	0.46
11:AA:2830:G:H1'	11:AA:2861:U:C2	2.50	0.46
11:AA:3162:C:H2'	11:AA:3163:A:H8	1.80	0.46
12:Aa:495:VAL:HG11	12:Aa:501:LEU:HA	1.95	0.46
12:Aa:563:TYR:CZ	12:Aa:818:ILE:HG21	2.50	0.46
45:P:25:PHE:HB3	45:P:65:LYS:HG2	1.98	0.46
61:c:1772:C:C4	61:c:1773:4AC:HM73	2.50	0.46
62:d:157:ASP:OD2	82:x:60:ARG:NE	2.45	0.46
68:j:63:MET:SD	68:j:106:LEU:HD21	2.55	0.46
10:A:46:GLU:HG3	10:A:134:LYS:HD3	1.96	0.46
11:AA:261:U:H2'	11:AA:262:U:C6	2.51	0.46
11:AA:2389:C:H2'	11:AA:2390:A:C8	2.50	0.46
11:AA:2714:G:H4'	11:AA:2715:A:H5"	1.97	0.46
11:AA:2820:A:C2	47:Pp:1:MET:HA	2.51	0.46
16:C:62:VAL:HG13	16:C:66:ARG:HD2	1.96	0.46
16:C:67:ILE:HG23	16:C:81:VAL:HG21	1.96	0.46
19:D:24:LEU:HB3	19:D:32:ILE:HD13	1.96	0.46
26:FF:140:ASP:OD1	26:FF:140:ASP:N	2.46	0.46
61:c:52:U:H2'	61:c:53:G:H8	1.80	0.46
61:c:447:U:OP1	66:h:49:ARG:NH1	2.46	0.46
61:c:517:U:C2	61:c:518:A:C8	3.04	0.46
61:c:1533:C:H4'	61:c:1539:G:C2	2.50	0.46
61:c:1584:G:C8	77:s:122:ARG:HB3	2.51	0.46
7:6:47:VAL:HG22	7:6:49:LEU:HD22	1.96	0.46
11:AA:629:U:H2'	11:AA:630:A:H8	1.80	0.46
11:AA:821:U:H2'	11:AA:822:G:H8	1.81	0.46
11:AA:1920:U:O2'	11:AA:1932:A:N7	2.41	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2747:A:H2'	11:AA:2748:A:C8	2.50	0.46
11:AA:3332:U:H2'	11:AA:3333:G:O4'	2.15	0.46
11:AA:3358:U:C2	11:AA:3359:A:C8	3.03	0.46
12:Aa:564:ARG:HG2	12:Aa:801:TRP:CZ3	2.51	0.46
12:Aa:601:ILE:HG21	12:Aa:643:PRO:HA	1.97	0.46
15:Bb:28:C:H2'	15:Bb:29:A:C8	2.50	0.46
36:KK:98:ARG:HG2	36:KK:189:LEU:O	2.15	0.46
38:LL:91:ARG:CD	38:LL:143:GLU:HG3	2.41	0.46
46:PP:17:VAL:HG22	46:PP:37:GLU:HA	1.97	0.46
61:c:1097:U:O4	64:f:201:ASN:ND2	2.49	0.46
64:f:108:ASN:HA	64:f:141:ARG:HH12	1.79	0.46
65:g:190:ARG:HH12	65:g:195:SER:HA	1.80	0.46
65:g:204:ASP:OD1	65:g:204:ASP:N	2.34	0.46
66:h:37:LYS:O	66:h:41:SER:HB3	2.15	0.46
66:h:95:THR:O	66:h:95:THR:OG1	2.26	0.46
68:j:48:TYR:HE2	68:j:121:LEU:HD13	1.80	0.46
70:l:65:PHE:HA	70:l:181:GLY:O	2.15	0.46
84:z:44:GLY:H	84:z:78:LYS:NZ	2.14	0.46
11:AA:599:C:OP1	28:GG:332:LYS:HE3	2.16	0.46
11:AA:698:U:H2'	11:AA:699:A:O4'	2.16	0.46
11:AA:1521:G:O6	56:X:17:LYS:NZ	2.38	0.46
11:AA:3371:G:H2'	11:AA:3372:A:H8	1.80	0.46
12:Aa:314:LEU:HB3	12:Aa:319:LEU:HD13	1.98	0.46
14:BB:94:C:H2'	14:BB:95:A:C8	2.51	0.46
17:CC:5:U:H2'	17:CC:6:U:C6	2.51	0.46
20:DD:14:LYS:HZ1	20:DD:52:LEU:HD12	1.80	0.46
20:DD:45:LEU:HD12	20:DD:49:ALA:HB3	1.97	0.46
24:Ee:16:ARG:HB2	24:Ee:57:LYS:HE3	1.98	0.46
24:Ee:37:LEU:HB3	24:Ee:41:LYS:CE	2.44	0.46
61:c:792:U:H2'	61:c:793:A:C8	2.50	0.46
61:c:866:G:H5"	74:p:2:GLY:HA2	1.97	0.46
61:c:1490:C:N3	61:c:1492:A:N6	2.63	0.46
61:c:1600:A:H1'	61:c:1601:G:H5"	1.98	0.46
63:e:65:VAL:HG22	63:e:87:ARG:HB3	1.98	0.46
68:j:147:LEU:HD13	68:j:156:PHE:CZ	2.49	0.46
79:u:48:LYS:HD2	80:v:50:ALA:HB2	1.98	0.46
3:2:88:SER:O	3:2:92:ARG:HG3	2.16	0.46
5:4:10:ALA:HB1	5:4:30:VAL:HG13	1.98	0.46
11:AA:406:G:OP1	11:AA:1415:U:O2'	2.21	0.46
11:AA:1678:G:O6	27:G:74:LYS:NZ	2.48	0.46
11:AA:2417:OMU:HM23	11:AA:2417:OMU:H1'	1.72	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:3281:U:H2'	11:AA:3282:U:C6	2.50	0.46
12:Aa:735:CYS:SG	12:Aa:743:ILE:HG13	2.55	0.46
16:C:123:THR:OG1	16:C:126:GLN:HG3	2.15	0.46
23:EE:133:TYR:HE1	23:EE:135:ILE:HD11	1.81	0.46
30:HH:126:GLU:HA	30:HH:196:ARG:HE	1.81	0.46
30:HH:215:ASP:OD1	30:HH:215:ASP:N	2.48	0.46
30:HH:256:THR:OG1	30:HH:258:LYS:NZ	2.30	0.46
38:LL:89:LYS:HG2	38:LL:145:VAL:HG22	1.97	0.46
46:PP:103:ILE:O	46:PP:107:GLU:HG3	2.15	0.46
50:R:35:VAL:HG13	50:R:40:ASP:HB2	1.98	0.46
61:c:176:C:H2'	61:c:177:U:C6	2.50	0.46
61:c:406:U:H2'	61:c:407:A:C8	2.50	0.46
61:c:525:A:H2'	61:c:526:A:H8	1.81	0.46
62:d:122:ILE:HA	62:d:144:ILE:O	2.16	0.46
67:i:93:LEU:HD11	67:i:194:LEU:HD21	1.96	0.46
69:k:159:VAL:HG23	69:k:162:ILE:HD11	1.97	0.46
76:r:85:ILE:HG13	76:r:111:MET:HB3	1.97	0.46
79:u:46:VAL:HG21	79:u:73:MET:CE	2.46	0.46
79:u:69:ILE:HA	79:u:72:ILE:HD12	1.98	0.46
1:0:102:LYS:HB2	1:0:108:ARG:HH12	1.81	0.46
11:AA:947:G:H2'	11:AA:948:C:C6	2.50	0.46
11:AA:1621:A:H2'	11:AA:1622:U:C6	2.50	0.46
11:AA:1927:G:C8	60:b:16:VAL:HG12	2.51	0.46
11:AA:2102:U:H2'	11:AA:2103:U:C6	2.51	0.46
11:AA:2762:A:H2'	11:AA:2763:U:H6	1.80	0.46
11:AA:3022:G:O2'	11:AA:3031:G:O6	2.31	0.46
12:Aa:820:LEU:HD11	12:Aa:830:GLU:HG3	1.98	0.46
91:Aa:1003:SO1:H4	91:Aa:1003:SO1:H81	1.70	0.46
13:B:43:LYS:HB2	13:B:43:LYS:HE3	1.69	0.46
15:Bb:56:C:H2'	15:Bb:57:G:C8	2.50	0.46
15:Bb:56:C:O2	42:NN:54:VAL:HG12	2.15	0.46
22:E:73:LYS:NZ	22:E:97:VAL:O	2.47	0.46
26:FF:166:ILE:HD12	26:FF:167:ARG:H	1.81	0.46
27:G:99:LYS:HB2	27:G:102:GLU:OE1	2.15	0.46
51:S:51:LEU:HB3	51:S:54:ILE:HD13	1.97	0.46
56:X:44:TRP:CE2	56:X:45:ARG:HG3	2.51	0.46
59:a:4:VAL:HG21	59:a:85:LEU:HD11	1.97	0.46
61:c:343:C:H2'	61:c:344:A:H8	1.80	0.46
61:c:448:C:H2'	61:c:449:C:C6	2.50	0.46
61:c:1584:G:C5	77:s:14:LYS:HE2	2.50	0.46
62:d:110:TYR:O	62:d:110:TYR:HD1	1.99	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
77:s:115:THR:OG1	77:s:118:ILE:O	2.31	0.46
80:v:73:VAL:HA	80:v:76:LEU:HD12	1.98	0.46
11:AA:393:U:H2'	11:AA:394:G:O4'	2.15	0.46
11:AA:549:U:H2'	11:AA:550:A:H8	1.77	0.46
11:AA:897:U:H2'	11:AA:898:OMU:H6	1.98	0.46
11:AA:2186:U:H2'	11:AA:2187:G:O4'	2.16	0.46
11:AA:2228:A:H2'	11:AA:2229:A:C8	2.50	0.46
12:Aa:241:MET:HE2	12:Aa:241:MET:HB2	1.72	0.46
17:CC:5:U:H2'	17:CC:6:U:H6	1.81	0.46
35:K:3:LYS:HD3	35:K:8:VAL:HG23	1.98	0.46
37:L:9:LYS:HD3	37:L:9:LYS:HA	1.73	0.46
52:T:73:LYS:O	52:T:76:GLN:NE2	2.49	0.46
61:c:400:A:O5'	70:l:25:ARG:HD3	2.16	0.46
61:c:1176:G:C6	61:c:1464:G:C6	3.04	0.46
61:c:1382:A:O2'	61:c:1383:G:H8	1.98	0.46
68:j:162:VAL:HG23	68:j:162:VAL:O	2.16	0.46
69:k:64:VAL:HG23	69:k:67:LEU:HB3	1.98	0.46
74:p:45:LEU:HB3	74:p:49:GLN:HG3	1.98	0.46
77:s:82:ARG:NH1	77:s:114:ARG:O	2.49	0.46
84:z:56:LYS:HG2	84:z:93:LEU:HD11	1.97	0.46
5:4:13:ILE:O	5:4:50:GLU:HG3	2.16	0.46
7:6:25:GLU:OE2	61:c:542:A:N6	2.49	0.46
11:AA:411:U:H2'	11:AA:412:G:C8	2.50	0.46
11:AA:908:OMG:C5	88:AA:3615:SPD:H81	2.51	0.46
11:AA:1257:C:H42	11:AA:1261:G:N2	2.12	0.46
11:AA:1263:A:N3	11:AA:1263:A:H2'	2.31	0.46
11:AA:1503:A:C4	11:AA:1504:A:C8	3.04	0.46
11:AA:1782:U:H2'	11:AA:1783:U:O4'	2.16	0.46
12:Aa:81:MET:HE2	12:Aa:81:MET:HB2	1.77	0.46
12:Aa:155:VAL:HG23	12:Aa:202:VAL:HG21	1.97	0.46
12:Aa:385:MET:HG3	12:Aa:460:ASP:OD2	2.15	0.46
12:Aa:464:LEU:HD13	84:z:144:ARG:HB3	1.97	0.46
24:Ee:38:SER:O	24:Ee:42:VAL:HG12	2.16	0.46
32:II:148:GLU:OE1	32:II:151:LYS:HD2	2.16	0.46
36:KK:101:THR:HG22	36:KK:103:ALA:H	1.81	0.46
38:LL:81:GLY:HA3	38:LL:149:ASN:O	2.16	0.46
49:QQ:53:TYR:HB2	49:QQ:133:ILE:HG21	1.97	0.46
61:c:1559:A:C4	79:u:134:ARG:HB3	2.51	0.46
61:c:1617:U:H2'	61:c:1618:C:C6	2.51	0.46
68:j:164:LYS:HB3	68:j:164:LYS:HE3	1.55	0.46
69:k:49:ILE:HG13	69:k:172:VAL:HG22	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
77:s:82:ARG:HH22	77:s:114:ARG:HD3	1.79	0.46
81:w:61:LYS:HB2	81:w:86:ILE:CG2	2.46	0.46
6:5:30:LEU:HD12	6:5:31:ILE:N	2.30	0.46
8:7:229:LYS:HA	8:7:229:LYS:HD2	1.57	0.46
11:AA:632:G:H2'	11:AA:633:C:C6	2.51	0.46
11:AA:1856:C:H2'	11:AA:1857:C:C6	2.50	0.46
11:AA:2148:U:H2'	11:AA:2149:A:C5	2.51	0.46
11:AA:3198:U:O2	38:LL:21:LYS:N	2.49	0.46
11:AA:3357:U:H2'	11:AA:3358:U:H6	1.81	0.46
12:Aa:119:LEU:HD22	12:Aa:151:ILE:HD12	1.98	0.46
12:Aa:489:VAL:HG21	12:Aa:538:LEU:HB2	1.97	0.46
16:C:36:LEU:O	16:C:40:THR:OG1	2.26	0.46
24:Ee:111:GLU:O	24:Ee:114:ARG:HG2	2.16	0.46
28:GG:26:PHE:HA	28:GG:127:ALA:HA	1.98	0.46
29:H:117:PRO:HG3	31:I:26:SER:HA	1.97	0.46
33:J:25:LYS:HD3	33:J:27:ARG:NH2	2.31	0.46
38:LL:89:LYS:HB2	38:LL:183:HIS:HB3	1.98	0.46
39:M:93:SER:O	39:M:93:SER:OG	2.25	0.46
42:NN:52:TYR:HA	42:NN:61:ARG:HD2	1.98	0.46
49:QQ:70:ASN:HB3	49:QQ:92:LEU:O	2.16	0.46
49:QQ:115:VAL:O	49:QQ:159:ARG:NH1	2.48	0.46
61:c:398:G:P	70:l:47:ARG:HH12	2.39	0.46
61:c:1450:U:H2'	61:c:1451:C:H6	1.81	0.46
63:e:137:ILE:HG21	63:e:172:LEU:HD22	1.98	0.46
63:e:157:GLN:C	63:e:159:SER:H	2.24	0.46
1:0:27:VAL:HG12	1:0:29:HIS:HD2	1.80	0.45
8:7:59:ARG:C	77:s:99:GLU:HG2	2.41	0.45
11:AA:129:U:H2'	11:AA:130:A:H8	1.80	0.45
11:AA:1010:G:N2	40:MM:193:ASP:OD2	2.49	0.45
11:AA:1242:G:H8	11:AA:1242:G:OP1	1.99	0.45
11:AA:1404:G:N2	11:AA:1407:A:OP2	2.46	0.45
11:AA:1506:A:H1'	11:AA:1848:G:O6	2.16	0.45
11:AA:1925:U:O2'	11:AA:1927:G:N7	2.44	0.45
11:AA:2500:A:H2'	11:AA:2501:U:H6	1.81	0.45
11:AA:2541:U:H5"	11:AA:2542:U:C5	2.51	0.45
12:Aa:5:THR:OG1	12:Aa:8:GLN:OE1	2.33	0.45
12:Aa:107:GLY:HA3	90:Aa:1002:PO4:O4	2.16	0.45
24:Ee:49:ALA:HB1	24:Ee:73:VAL:HG23	1.98	0.45
26:FF:212:ASN:HD22	26:FF:354:VAL:HG22	1.81	0.45
28:GG:346:LYS:HD2	28:GG:346:LYS:HA	1.69	0.45
34:JJ:47:ARG:NH1	34:JJ:177:GLY:O	2.43	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:L:21:LYS:HD2	37:L:49:TYR:HE1	1.80	0.45
42:NN:117:ASP:HB3	42:NN:120:ILE:HG22	1.97	0.45
43:O:74:ASN:N	43:O:74:ASN:OD1	2.47	0.45
61:c:400:A:H5"	70:l:25:ARG:HA	1.97	0.45
61:c:1237:G:H2'	61:c:1238:A:C8	2.49	0.45
61:c:1529:C:OP1	67:i:112:ARG:NH1	2.49	0.45
61:c:1624:C:H2'	61:c:1625:C:H6	1.81	0.45
63:e:35:PRO:HB2	63:e:38:PHE:H	1.81	0.45
64:f:59:HIS:CE1	64:f:239:PRO:HD3	2.51	0.45
65:g:38:GLU:HG3	65:g:50:ILE:N	2.31	0.45
65:g:164:VAL:HA	65:g:168:ILE:HG13	1.97	0.45
1:0:25:VAL:HG21	1:0:60:PHE:CE2	2.51	0.45
8:7:144:LEU:HD11	8:7:181:TRP:CG	2.50	0.45
11:AA:385:A:H2'	11:AA:386:A:C8	2.51	0.45
11:AA:523:A:O2'	22:E:69:PRO:HD2	2.15	0.45
11:AA:796:U:H2'	11:AA:797:U:C6	2.51	0.45
11:AA:976:U:P	16:C:144:ARG:HH22	2.39	0.45
11:AA:1224:C:C2	11:AA:1225:A:C8	3.04	0.45
11:AA:1428:A:OP2	39:M:2:PRO:HA	2.17	0.45
12:Aa:85:ASP:O	12:Aa:89:ILE:HG13	2.17	0.45
13:B:62:ARG:HD2	13:B:63:PHE:CZ	2.51	0.45
25:F:126:VAL:HG23	25:F:127:GLN:H	1.79	0.45
26:FF:47:LEU:HD11	26:FF:179:ALA:HB3	1.98	0.45
28:GG:64:SER:HA	28:GG:75:PRO:HA	1.97	0.45
37:L:26:VAL:HG11	37:L:96:VAL:HB	1.98	0.45
39:M:84:GLU:OE1	39:M:87:ARG:NH1	2.48	0.45
61:c:512:A:O2'	71:m:133:HIS:NE2	2.42	0.45
61:c:1590:G:H2'	61:c:1591:C:C6	2.51	0.45
61:c:1682:U:H4'	68:j:65:GLN:HE22	1.81	0.45
62:d:27:ARG:HE	62:d:44:GLY:HA3	1.81	0.45
70:l:81:VAL:HG22	70:l:102:VAL:HG12	1.97	0.45
80:v:118:PRO:HD3	80:v:123:ARG:HH12	1.80	0.45
8:7:116:ASP:HB3	8:7:121:MET:HB2	1.97	0.45
11:AA:1157:G:H2'	11:AA:1158:A:O4'	2.16	0.45
11:AA:1478:C:H2'	11:AA:1479:U:C6	2.50	0.45
11:AA:1765:U:P	19:D:39:ASN:HD21	2.40	0.45
11:AA:1886:A:O4'	11:AA:3307:A:H5'	2.16	0.45
11:AA:2264:U:HO2'	11:AA:2265:C:H6	1.65	0.45
11:AA:2429:G:H2'	11:AA:2430:A:H8	1.81	0.45
11:AA:2947:G:C2	26:FF:250:ALA:HB1	2.52	0.45
11:AA:3332:U:OP1	31:I:35:LYS:HD3	2.15	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:Aa:731:VAL:HA	12:Aa:795:GLN:O	2.15	0.45
17:CC:26:U:O2'	28:GG:51:ALA:O	2.35	0.45
24:Ee:126:ALA:O	24:Ee:129:THR:OG1	2.26	0.45
25:F:12:ARG:O	25:F:16:GLN:HG3	2.16	0.45
36:KK:148:ALA:HA	36:KK:201:THR:HG22	1.97	0.45
42:NN:37:LEU:HD21	42:NN:67:VAL:HG22	1.98	0.45
58:Z:2:ARG:HH22	61:c:1773:4AC:CM7	2.26	0.45
61:c:599:A:H2'	61:c:600:U:C6	2.52	0.45
63:e:136:ARG:HG2	63:e:138:PHE:CZ	2.52	0.45
69:k:164:TYR:CE2	69:k:165:LYS:HD2	2.51	0.45
72:n:50:THR:HA	72:n:55:VAL:HG21	1.98	0.45
77:s:53:LEU:HD13	77:s:57:LEU:HD23	1.97	0.45
78:t:33:ARG:HA	78:t:33:ARG:HD3	1.82	0.45
3:2:9:GLY:HA3	61:c:1795:U:O4	2.16	0.45
7:6:43:ARG:HG2	7:6:54:ARG:HH22	1.81	0.45
11:AA:248:U:H3'	11:AA:249:U:H5'	1.98	0.45
11:AA:855:U:H5"	19:D:95:TRP:CG	2.52	0.45
11:AA:1255:C:H5"	24:Ee:152:ILE:HG21	1.98	0.45
11:AA:1615:C:H2'	11:AA:1616:U:C6	2.50	0.45
11:AA:2163:C:H4'	23:EE:7:ASN:O	2.17	0.45
11:AA:2498:U:H2'	11:AA:2499:U:C6	2.51	0.45
11:AA:3164:C:H2'	11:AA:3165:A:H8	1.80	0.45
12:Aa:675:PRO:HB2	12:Aa:718:LEU:HD21	1.99	0.45
17:CC:143:U:OP1	49:QQ:38:ARG:NH2	2.37	0.45
22:E:71:LYS:HG3	22:E:73:LYS:HZ2	1.82	0.45
23:EE:180:LEU:HD22	60:b:26:VAL:HG21	1.99	0.45
33:J:46:TYR:HD1	52:T:75:TYR:HB3	1.82	0.45
49:QQ:36:ILE:HD11	49:QQ:105:ARG:HB3	1.98	0.45
61:c:107:C:H2'	61:c:108:A:H8	1.82	0.45
61:c:262:U:H2'	61:c:263:C:C6	2.52	0.45
61:c:293:U:H2'	61:c:294:C:H6	1.80	0.45
61:c:366:A:OP1	61:c:758:U:O2'	2.25	0.45
62:d:180:GLU:CD	62:d:191:ARG:HH21	2.23	0.45
65:g:170:THR:HA	65:g:186:VAL:O	2.17	0.45
66:h:105:VAL:HG23	66:h:243:GLY:HA2	1.99	0.45
68:j:145:PHE:HD2	68:j:156:PHE:CD1	2.34	0.45
82:x:56:SER:O	82:x:60:ARG:HG3	2.17	0.45
83:y:111:MET:HB2	83:y:115:GLU:CD	2.41	0.45
1:0:40:LEU:HD21	1:0:60:PHE:CE2	2.51	0.45
8:7:199:ILE:HD12	8:7:213:SER:HB3	1.98	0.45
11:AA:37:U:O4	49:QQ:83:LYS:NZ	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:313:A:H2'	11:AA:314:U:C6	2.52	0.45
11:AA:528:U:H2'	11:AA:529:A:H8	1.79	0.45
11:AA:1556:C:H2'	11:AA:2169:G:N2	2.31	0.45
11:AA:2113:A:O2'	11:AA:2116:G:N7	2.48	0.45
11:AA:2144:A:H1'	11:AA:2281:A2M:N6	2.31	0.45
11:AA:2561:A:C4	36:KK:32:LYS:HD2	2.52	0.45
11:AA:3294:A:H2'	11:AA:3295:A:O4'	2.17	0.45
12:Aa:24:VAL:HG22	12:Aa:126:LEU:HB3	1.99	0.45
14:BB:71:G:H2'	14:BB:72:A:H8	1.82	0.45
15:Bb:61:C:H2'	15:Bb:62:A:O4'	2.16	0.45
26:FF:173:GLN:HG2	26:FF:175:LYS:H	1.81	0.45
30:HH:54:ARG:HB2	30:HH:61:ILE:HB	1.99	0.45
34:JJ:86:VAL:HG13	34:JJ:136:TYR:HB3	1.98	0.45
42:NN:117:ASP:O	42:NN:120:ILE:HG22	2.17	0.45
44:OO:185:LYS:HE3	44:OO:185:LYS:HB2	1.80	0.45
46:PP:35:ILE:HD13	46:PP:46:ILE:HG22	1.98	0.45
46:PP:55:ARG:NH1	46:PP:76:ALA:O	2.40	0.45
50:R:90:PRO:HB2	50:R:92:LYS:HG2	1.97	0.45
61:c:482:U:H2'	61:c:483:A:H8	1.81	0.45
61:c:1001:A:O2'	61:c:1002:G:OP1	2.28	0.45
61:c:1017:U:C2	61:c:1018:U:C5	3.04	0.45
61:c:1358:G:C2	61:c:1366:U:O2	2.68	0.45
63:e:205:PHE:CD2	63:e:206:PRO:HD2	2.51	0.45
70:l:113:PHE:CD2	70:l:121:LEU:HB2	2.51	0.45
71:m:83:VAL:HG12	71:m:85:VAL:HG23	1.99	0.45
71:m:108:ARG:NH1	71:m:145:SER:HB3	2.31	0.45
11:AA:1134:G:O2'	11:AA:2642:A:N3	2.45	0.45
11:AA:1383:G:H4'	28:GG:240:PRO:HB2	1.99	0.45
11:AA:1506:A:H1'	11:AA:1848:G:C6	2.52	0.45
11:AA:1694:U:O2'	11:AA:1695:U:H5'	2.16	0.45
11:AA:2389:C:H2'	11:AA:2390:A:H8	1.82	0.45
11:AA:2507:C:H2'	11:AA:2508:U:C6	2.52	0.45
11:AA:2648:G:OP1	40:MM:24:ARG:NH2	2.50	0.45
19:D:98:ARG:O	19:D:101:VAL:HG22	2.17	0.45
28:GG:113:VAL:HB	28:GG:118:LYS:HE2	1.99	0.45
34:JJ:43:ILE:O	34:JJ:46:GLU:HG3	2.16	0.45
34:JJ:88:ARG:HB2	34:JJ:108:LEU:HB3	1.98	0.45
45:P:75:ILE:HG12	45:P:93:VAL:HG13	1.99	0.45
59:a:11:TYR:HE2	59:a:13:LYS:HG2	1.82	0.45
59:a:35:LEU:HD23	59:a:40:LYS:HE3	1.99	0.45
61:c:149:C:N3	61:c:166:C:N4	2.64	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:978:A:H2'	61:c:979:A:O4'	2.17	0.45
61:c:1421:A:C4'	65:g:160:SER:HB3	2.47	0.45
62:d:148:ASP:HB2	62:d:164:ASN:ND2	2.31	0.45
66:h:116:ASP:N	66:h:116:ASP:OD1	2.50	0.45
82:x:77:GLY:C	82:x:79:LEU:H	2.25	0.45
8:7:247:PRO:HG2	8:7:297:ASP:C	2.42	0.45
11:AA:696:C:OP2	28:GG:119:ARG:NH2	2.46	0.45
11:AA:2419:A:H2'	11:AA:2420:C:H6	1.82	0.45
11:AA:2452:G:OP1	11:AA:2460:U:N3	2.50	0.45
11:AA:2505:U:H2'	11:AA:2506:U:C6	2.51	0.45
11:AA:2520:A:H2'	11:AA:2521:U:C6	2.52	0.45
11:AA:2722:U:O2'	25:F:88:ARG:O	2.27	0.45
11:AA:2950:G:OP1	26:FF:241:LYS:NZ	2.47	0.45
11:AA:3215:A:H5"	50:R:2:ALA:HB2	1.97	0.45
23:EE:114:SER:HB2	23:EE:169:ILE:HG12	1.98	0.45
25:F:14:MET:HG2	25:F:15:PHE:CD1	2.52	0.45
34:JJ:156:ILE:HG12	34:JJ:172:ASN:CG	2.42	0.45
36:KK:149:LYS:O	36:KK:176:PRO:HG2	2.16	0.45
42:NN:75:LYS:HD2	42:NN:75:LYS:HA	1.81	0.45
49:QQ:96:ARG:NH1	49:QQ:104:GLU:OE1	2.49	0.45
52:T:40:SER:O	52:T:40:SER:OG	2.32	0.45
61:c:341:A:H2'	61:c:342:C:C6	2.52	0.45
61:c:472:U:C2	61:c:473:A:C8	3.05	0.45
61:c:1147:A:OP1	64:f:91:ARG:NE	2.50	0.45
64:f:54:GLU:OE2	82:x:11:LEU:HD13	2.17	0.45
67:i:25:LEU:HD12	67:i:27:THR:H	1.81	0.45
1:0:104:SER:OG	1:0:107:GLN:HG2	2.16	0.45
11:AA:167:U:H2'	11:AA:168:U:H6	1.82	0.45
11:AA:293:C:H4'	53:U:76:ARG:HH21	1.82	0.45
11:AA:432:G:OP1	50:R:65:ARG:NH2	2.47	0.45
11:AA:650:OMC:H2'	11:AA:651:G:C8	2.52	0.45
11:AA:1695:U:O2'	11:AA:1749:A:N1	2.45	0.45
11:AA:1804:A:H2'	11:AA:1805:C:C6	2.52	0.45
11:AA:2102:U:H2'	11:AA:2103:U:H6	1.81	0.45
11:AA:2223:A:H2'	11:AA:2224:A:C8	2.52	0.45
11:AA:2959:OMC:HM22	11:AA:2960:C:O4'	2.16	0.45
11:AA:3160:U:H5"	11:AA:3396:U:H3'	1.99	0.45
14:BB:60:G:H2'	14:BB:61:G:H8	1.82	0.45
24:Ee:96:LYS:HD3	24:Ee:96:LYS:HA	1.82	0.45
24:Ee:131:GLU:O	24:Ee:135:THR:HG23	2.17	0.45
28:GG:152:VAL:HG21	28:GG:156:LEU:HD22	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:QQ:73:ARG:HA	49:QQ:74:PRO:HD3	1.83	0.45
61:c:181:A:H2'	61:c:181:A:N3	2.31	0.45
61:c:244:A:OP1	66:h:155:LYS:NZ	2.47	0.45
61:c:278:U:O2	61:c:279:G:N1	2.49	0.45
61:c:1413:U:O2'	61:c:1414:U:OP1	2.35	0.45
61:c:1529:C:O2'	80:v:12:GLN:OE1	2.23	0.45
61:c:1738:U:H2'	61:c:1739:C:H6	1.81	0.45
67:i:41:LYS:NZ	67:i:42:LEU:O	2.44	0.45
84:z:60:GLU:HA	84:z:68:ILE:HG22	1.99	0.45
6:5:16:LYS:NZ	61:c:1595:U:O3'	2.50	0.45
10:A:21:SER:HA	10:A:87:MET:CE	2.47	0.45
11:AA:663:OMC:HM23	11:AA:663:OMC:H1'	1.69	0.45
11:AA:671:U:H2'	11:AA:672:A:H8	1.82	0.45
11:AA:1488:G:C2	11:AA:1489:A:C8	3.05	0.45
11:AA:1498:A:H2'	11:AA:1499:C:H6	1.82	0.45
11:AA:2130:G:O4'	11:AA:2144:A:H4'	2.17	0.45
11:AA:2225:U:H2'	11:AA:2226:U:H6	1.81	0.45
11:AA:2423:U:H2'	11:AA:2424:A:C8	2.52	0.45
11:AA:2493:U:H2'	11:AA:2494:A:C8	2.51	0.45
11:AA:2566:C:H2'	11:AA:2567:C:C6	2.52	0.45
20:DD:139:LEU:HD23	20:DD:139:LEU:HA	1.72	0.45
28:GG:11:LEU:HD13	28:GG:159:ILE:HD11	1.99	0.45
30:HH:41:LYS:HD3	30:HH:41:LYS:HA	1.72	0.45
33:J:131:ASP:HB3	33:J:134:ASP:OD2	2.17	0.45
36:KK:104:GLU:N	36:KK:104:GLU:OE1	2.50	0.45
39:M:100:PRO:HG2	39:M:123:VAL:HG22	1.99	0.45
59:a:8:ARG:HB2	59:a:25:VAL:CG2	2.47	0.45
61:c:19:A:H2'	61:c:20:G:O4'	2.17	0.45
61:c:368:U:H2'	61:c:369:A:O4'	2.16	0.45
61:c:399:A:H4'	66:h:3:ARG:HG2	1.99	0.45
61:c:885:G:H2'	61:c:886:U:C6	2.51	0.45
61:c:1104:U:O4	84:z:4:GLY:HA2	2.17	0.45
61:c:1333:C:H4'	65:g:162:GLN:HG3	1.97	0.45
61:c:1387:G:OP1	78:t:33:ARG:NH2	2.49	0.45
61:c:1491:U:O2'	61:c:1492:A:OP2	2.27	0.45
61:c:1740:A:H2'	61:c:1741:U:C6	2.52	0.45
66:h:49:ARG:HE	66:h:49:ARG:HB3	1.49	0.45
68:j:197:ASN:O	68:j:201:GLN:HG2	2.16	0.45
69:k:28:GLU:HG2	69:k:38:LEU:HB2	1.98	0.45
83:y:30:SER:HB2	83:y:61:ILE:CG1	2.44	0.45
7:6:33:ARG:HH11	71:m:123:HIS:CD2	2.33	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:297:G:OP2	11:AA:297:G:N2	2.39	0.45
11:AA:800:G:H22	28:GG:101:ALA:HA	1.82	0.45
11:AA:1004:U:H2'	11:AA:1005:G:O4'	2.17	0.45
11:AA:1172:G:O2'	11:AA:1179:A:N1	2.48	0.45
11:AA:1460:A:H2'	11:AA:1461:A:H8	1.81	0.45
11:AA:1470:U:H2'	11:AA:1471:U:C6	2.52	0.45
11:AA:1564:U:H1'	11:AA:1576:G:O6	2.17	0.45
11:AA:2574:G:N7	37:L:56:LYS:NZ	2.65	0.45
11:AA:2662:G:H2'	11:AA:2663:G:H8	1.82	0.45
11:AA:2683:U:H2'	11:AA:2684:C:H6	1.81	0.45
11:AA:2813:A:H2'	11:AA:2814:G:O4'	2.17	0.45
11:AA:3094:A:H2'	11:AA:3095:U:C6	2.52	0.45
11:AA:3094:A:OP1	29:H:14:SER:OG	2.30	0.45
11:AA:3096:C:H2'	11:AA:3097:C:C6	2.52	0.45
11:AA:3278:C:O2	11:AA:3278:C:H2'	2.17	0.45
17:CC:37:A:H5"	17:CC:39:G:O4'	2.17	0.45
20:DD:129:GLU:CD	20:DD:131:GLY:H	2.24	0.45
37:L:25:ILE:HG23	37:L:41:ALA:HB1	1.99	0.45
40:MM:113:GLN:HB3	40:MM:116:ARG:HD2	1.99	0.45
41:N:28:LYS:HB2	41:N:28:LYS:HE3	1.77	0.45
61:c:31:C:OP1	84:z:140:LYS:NZ	2.38	0.45
61:c:300:A:H2'	61:c:301:A:C8	2.52	0.45
61:c:872:G:H2'	61:c:873:U:O4'	2.16	0.45
61:c:1253:U:H2'	61:c:1254:U:H6	1.82	0.45
61:c:1450:U:C2	61:c:1451:C:C5	3.04	0.45
61:c:1590:G:OP1	80:v:91:TYR:HB2	2.17	0.45
69:k:130:VAL:HB	69:k:133:THR:HG23	1.99	0.45
70:l:36:THR:O	70:l:96:LEU:N	2.42	0.45
77:s:81:ILE:O	77:s:85:ILE:HG12	2.18	0.45
80:v:25:GLN:OE1	80:v:27:LYS:NZ	2.34	0.45
2:1:96:SER:H	67:i:112:ARG:NH2	2.14	0.44
11:AA:210:U:C2	11:AA:230:U:H4'	2.51	0.44
11:AA:673:U:H2'	11:AA:674:G:H8	1.81	0.44
11:AA:873:C:H5"	11:AA:874:U:O5'	2.16	0.44
11:AA:1257:C:N4	11:AA:1261:G:H22	2.15	0.44
11:AA:1624:G:C4	11:AA:1625:A:C8	3.05	0.44
11:AA:3113:A:H2'	11:AA:3114:A:O4'	2.17	0.44
11:AA:3165:A:H2'	11:AA:3166:C:C6	2.53	0.44
12:Aa:565:GLU:HB3	12:Aa:717:PHE:CZ	2.52	0.44
18:Cc:25:U:H2'	18:Cc:26:C:C6	2.52	0.44
32:II:9:TRP:CZ2	32:II:11:PRO:HA	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:JJ:132:PRO:HG2	34:JJ:133:TYR:CE2	2.53	0.44
35:K:35:LEU:HD13	35:K:39:LEU:HB3	2.00	0.44
57:Y:79:GLU:OE1	57:Y:81:SER:OG	2.26	0.44
61:c:367:A:H2'	61:c:368:U:O4'	2.17	0.44
61:c:393:C:H2'	61:c:394:C:C6	2.52	0.44
61:c:536:C:HO2'	61:c:537:G:P	2.39	0.44
61:c:1542:G:H5"	80:v:87:GLY:C	2.42	0.44
63:e:39:GLU:HG2	63:e:74:GLN:NE2	2.33	0.44
66:h:48:LEU:HD11	66:h:70:VAL:HG21	2.00	0.44
67:i:136:ALA:HB1	67:i:201:ALA:HB3	1.98	0.44
69:k:44:LYS:HE2	69:k:95:GLU:OE1	2.17	0.44
74:p:62:GLN:HB2	74:p:65:VAL:HG13	1.99	0.44
79:u:76:PRO:O	79:u:81:ILE:HB	2.17	0.44
83:y:104:LEU:HD23	83:y:125:ILE:HA	1.99	0.44
10:A:110:PRO:HA	10:A:113:ASP:OD2	2.17	0.44
11:AA:500:C:H2'	11:AA:501:A:H8	1.82	0.44
11:AA:976:U:H2'	11:AA:977:C:O4'	2.18	0.44
11:AA:1054:A:H5"	11:AA:2637:A:H61	1.81	0.44
11:AA:1251:A:H2'	11:AA:1252:A:C8	2.52	0.44
11:AA:2435:G:O2'	49:QQ:24:ARG:NH1	2.48	0.44
11:AA:2457:G:N3	11:AA:2483:G:N2	2.51	0.44
11:AA:2727:A:C2	39:M:43:ILE:HG23	2.52	0.44
11:AA:3113:A:OP1	38:LL:73:SER:OG	2.34	0.44
11:AA:3132:C:H2'	11:AA:3133:C:C6	2.52	0.44
12:Aa:212:GLY:HA3	12:Aa:219:ALA:HA	2.00	0.44
12:Aa:612:PHE:CD2	12:Aa:631:ARG:HG3	2.46	0.44
12:Aa:807:ASP:OD2	12:Aa:810:ASP:N	2.40	0.44
17:CC:150:G:OP1	33:J:27:ARG:NH2	2.51	0.44
22:E:15:PRO:HB3	22:E:22:PRO:HD3	1.99	0.44
22:E:46:GLN:HG2	22:E:51:VAL:O	2.17	0.44
22:E:77:VAL:HG21	22:E:94:ILE:HD12	1.98	0.44
23:EE:96:LEU:HB3	60:b:87:ARG:HG3	1.98	0.44
23:EE:242:ARG:NH2	23:EE:243:THR:O	2.50	0.44
24:Ee:35:LEU:HD12	24:Ee:64:ILE:HG21	1.99	0.44
28:GG:23:PRO:HD2	28:GG:26:PHE:CE2	2.52	0.44
28:GG:74:ILE:HG12	28:GG:94:CYS:SG	2.56	0.44
30:HH:131:LEU:HD23	30:HH:172:TYR:CE1	2.50	0.44
34:JJ:178:ILE:HG23	34:JJ:183:ASP:HB3	2.00	0.44
36:KK:112:GLU:HA	36:KK:125:ALA:HB3	1.99	0.44
38:LL:90:MET:HB2	38:LL:144:ILE:CG2	2.47	0.44
61:c:335:U:O2'	73:o:130:PRO:O	2.24	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:639:U:OP1	69:k:118:LEU:N	2.41	0.44
61:c:962:C:H2'	61:c:963:A:O4'	2.18	0.44
61:c:1287:A:N1	61:c:1328:G:O2'	2.46	0.44
66:h:17:HIS:O	66:h:51:ARG:NH2	2.50	0.44
83:y:53:ILE:HD11	83:y:62:VAL:HG23	2.00	0.44
84:z:61:SER:OG	84:z:66:SER:O	2.33	0.44
11:AA:184:U:H2'	11:AA:185:C:C6	2.51	0.44
11:AA:810:A:H2'	11:AA:811:U:C6	2.53	0.44
11:AA:818:C:H2'	11:AA:819:U:O4'	2.16	0.44
11:AA:1236:G:C5	24:Ee:16:ARG:HB3	2.53	0.44
11:AA:1378:U:H2'	11:AA:1379:G:C8	2.52	0.44
11:AA:1517:G:OP1	56:X:22:PRO:HG3	2.17	0.44
11:AA:2421:OMU:H1'	11:AA:2421:OMU:HM23	1.63	0.44
11:AA:2941:A:H8	11:AA:2941:A:OP2	2.00	0.44
11:AA:3150:A:H5'	26:FF:130:PHE:H	1.82	0.44
11:AA:3175:U:OP1	50:R:10:LYS:NZ	2.38	0.44
12:Aa:28:VAL:HA	90:Aa:1002:PO4:P	2.57	0.44
12:Aa:121:VAL:HG21	12:Aa:397:PHE:HE1	1.82	0.44
12:Aa:607:ASN:ND2	12:Aa:609:ARG:HB2	2.28	0.44
26:FF:385:LYS:HG3	26:FF:386:ASP:H	1.82	0.44
31:I:18:GLY:HA3	31:I:31:PHE:O	2.18	0.44
34:JJ:156:ILE:HD12	34:JJ:161:VAL:HB	1.98	0.44
40:MM:47:PRO:HB3	40:MM:171:TRP:CZ2	2.52	0.44
61:c:30:G:H2'	61:c:31:C:H6	1.82	0.44
61:c:1218:G:N2	61:c:1444:A:OP2	2.48	0.44
61:c:1404:C:H2'	61:c:1405:G:H8	1.82	0.44
61:c:1469:A:H2'	61:c:1470:C:C6	2.53	0.44
61:c:1615:C:H2'	67:i:81:ARG:HG3	1.99	0.44
67:i:65:ARG:HG2	67:i:65:ARG:HH11	1.81	0.44
69:k:8:ILE:CB	69:k:42:GLN:HG3	2.47	0.44
69:k:13:PRO:O	69:k:14:THR:OG1	2.30	0.44
78:t:24:LEU:HB2	78:t:31:ASN:OD1	2.17	0.44
81:w:24:ILE:HG12	81:w:91:ILE:O	2.18	0.44
81:w:41:ILE:HG21	81:w:91:ILE:HD12	1.99	0.44
8:7:86:ASP:OD1	8:7:88:THR:OG1	2.29	0.44
9:8:135:HIS:NE2	61:c:1250:U:O2'	2.42	0.44
11:AA:226:C:H2'	11:AA:227:G:O4'	2.18	0.44
11:AA:874:U:OP2	11:AA:1907:C:O2'	2.24	0.44
11:AA:1144:U:OP1	11:AA:1367:G:O2'	2.21	0.44
11:AA:1350:A:H2'	11:AA:1351:U:H5	1.82	0.44
11:AA:2356:A:H5'	13:B:138:LYS:HE3	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2507:C:H2'	11:AA:2508:U:H6	1.83	0.44
12:Aa:774:VAL:O	12:Aa:777:SER:HB3	2.17	0.44
16:C:158:HIS:H	16:C:186:VAL:HG12	1.83	0.44
17:CC:126:A:OP2	17:CC:126:A:H8	2.00	0.44
44:OO:63:VAL:HG12	44:OO:66:ASN:ND2	2.32	0.44
45:P:86:LYS:HD3	45:P:86:LYS:HA	1.65	0.44
52:T:28:LEU:O	52:T:32:LYS:HG2	2.17	0.44
54:V:65:ARG:H	54:V:68:LYS:HD2	1.83	0.44
61:c:742:U:H1'	69:k:107:ARG:HD2	1.98	0.44
61:c:1620:C:H2'	61:c:1621:U:C6	2.52	0.44
67:i:143:ARG:HH12	67:i:214:LYS:NZ	2.14	0.44
68:j:46:LYS:O	68:j:118:GLU:HG2	2.18	0.44
69:k:35:LYS:HD3	69:k:39:ARG:HG3	1.99	0.44
5:4:32:PHE:CD2	5:4:38:ARG:HD2	2.52	0.44
8:7:59:ARG:HA	8:7:59:ARG:HD2	1.76	0.44
11:AA:47:C:OP2	11:AA:48:A:O2'	2.23	0.44
11:AA:1045:C:OP1	40:MM:133:GLN:NE2	2.51	0.44
11:AA:1073:U:H2'	11:AA:1074:U:C6	2.53	0.44
11:AA:2218:G:H2'	11:AA:2219:A:C8	2.53	0.44
11:AA:2489:C:H2'	11:AA:2490:C:C2	2.52	0.44
11:AA:3165:A:H2'	11:AA:3166:C:H6	1.83	0.44
12:Aa:299:LEU:HD23	12:Aa:299:LEU:HA	1.84	0.44
20:DD:16:ARG:O	20:DD:20:GLU:HG2	2.17	0.44
24:Ee:118:ASP:OD1	24:Ee:118:ASP:N	2.46	0.44
28:GG:140:HIS:NE2	28:GG:246:ARG:HD2	2.33	0.44
28:GG:181:VAL:HG21	28:GG:224:GLY:HA3	1.98	0.44
37:L:115:LYS:NZ	37:L:119:GLU:OE2	2.28	0.44
39:M:94:ALA:HB1	39:M:121:VAL:HA	1.99	0.44
46:PP:17:VAL:HG11	46:PP:74:ARG:HA	1.98	0.44
53:U:34:SER:O	53:U:37:THR:OG1	2.32	0.44
55:W:77:ARG:HG3	55:W:77:ARG:NH1	2.31	0.44
61:c:305:C:H2'	61:c:306:U:C6	2.53	0.44
61:c:332:U:OP1	70:l:31:ARG:NH1	2.38	0.44
61:c:636:A:H5"	83:y:31:SER:HB3	1.99	0.44
61:c:756:A:H1'	66:h:12:LEU:O	2.18	0.44
61:c:1310:U:H2'	61:c:1311:U:C6	2.53	0.44
61:c:1719:A:H2'	61:c:1720:G:O4'	2.18	0.44
63:e:132:ASP:HB3	63:e:221:PRO:HB3	1.98	0.44
68:j:103:GLY:H	68:j:106:LEU:HD13	1.81	0.44
70:l:149:SER:O	70:l:149:SER:OG	2.32	0.44
84:z:37:ALA:HA	84:z:41:SER:HB3	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:109:LYS:O	1:0:112:LYS:HG3	2.18	0.44
8:7:203:THR:HG21	8:7:244:ALA:HA	1.99	0.44
11:AA:794:U:H2'	11:AA:795:G:H8	1.83	0.44
11:AA:968:G:H2'	11:AA:969:C:C6	2.52	0.44
11:AA:1152:G:OP2	11:AA:1152:G:N2	2.45	0.44
11:AA:1340:G:H2'	11:AA:1341:U:C6	2.52	0.44
11:AA:3337:G:H2'	11:AA:3338:C:C6	2.53	0.44
12:Aa:102:LEU:HD12	12:Aa:103:ILE:N	2.33	0.44
12:Aa:357:TYR:OH	12:Aa:476:HIS:HB2	2.17	0.44
12:Aa:412:ARG:HB3	12:Aa:426:LEU:HD21	2.00	0.44
19:D:95:TRP:CZ2	19:D:99:LEU:HD22	2.53	0.44
40:MM:36:LEU:HD13	40:MM:69:ARG:HH11	1.82	0.44
61:c:153:G:C6	61:c:162:A:C6	3.05	0.44
61:c:274:G:H2'	61:c:275:C:C6	2.52	0.44
61:c:525:A:H2'	61:c:526:A:C8	2.52	0.44
61:c:604:A:H2'	61:c:605:A:O4'	2.18	0.44
61:c:1426:C:O2'	61:c:1428:OMG:H8	2.00	0.44
64:f:83:ILE:HG12	64:f:121:VAL:HG13	1.99	0.44
64:f:230:TRP:CE2	83:y:68:ARG:HB3	2.52	0.44
66:h:72:VAL:HB	66:h:77:ARG:HG3	1.99	0.44
67:i:73:THR:OG1	67:i:91:GLU:OE1	2.36	0.44
75:q:82:LYS:HG2	75:q:118:VAL:HG11	2.00	0.44
78:t:20:TYR:CD1	78:t:23:LYS:HG3	2.50	0.44
11:AA:83:U:H2'	11:AA:84:U:O4'	2.18	0.44
11:AA:357:A:O4'	28:GG:81:GLY:HA3	2.18	0.44
11:AA:728:G:H5"	16:C:43:PRO:HB2	1.99	0.44
11:AA:748:U:H2'	11:AA:749:C:C6	2.53	0.44
11:AA:896:A:H5'	23:EE:183:GLY:HA2	1.99	0.44
11:AA:947:G:H5"	48:Q:55:ILE:HB	1.99	0.44
11:AA:1174:G:H1'	11:AA:1181:U:N3	2.33	0.44
11:AA:2413:A:H2'	11:AA:2414:G:H8	1.82	0.44
11:AA:2452:G:H3'	11:AA:2462:A:C8	2.52	0.44
11:AA:3164:C:H2'	11:AA:3165:A:C8	2.53	0.44
12:Aa:27:HIS:HB3	12:Aa:30:HIS:CG	2.53	0.44
12:Aa:412:ARG:NH1	12:Aa:472:SER:O	2.50	0.44
12:Aa:615:ARG:HH21	12:Aa:633:ILE:HD12	1.83	0.44
12:Aa:634:TRP:CG	12:Aa:660:LYS:HZ3	2.36	0.44
16:C:178:ARG:HH11	16:C:186:VAL:HG21	1.83	0.44
29:H:36:ILE:HD13	29:H:58:VAL:HG21	2.00	0.44
40:MM:102:MET:HA	40:MM:102:MET:HE2	1.99	0.44
49:QQ:48:ALA:HB1	49:QQ:53:TYR:HB3	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:b:79:VAL:HG13	60:b:83:ILE:HD12	1.99	0.44
61:c:1117:U:H2'	61:c:1118:G:C8	2.52	0.44
61:c:1189:A:N3	61:c:1194:A:O2'	2.46	0.44
61:c:1450:U:H2'	61:c:1451:C:C6	2.53	0.44
61:c:1452:U:C2	61:c:1453:G:C8	3.05	0.44
69:k:44:LYS:N	69:k:61:PHE:O	2.37	0.44
69:k:85:PHE:CD2	69:k:88:ARG:HG3	2.49	0.44
80:v:28:LEU:O	80:v:29:GLU:HG2	2.18	0.44
8:7:301:LEU:O	8:7:312:VAL:HA	2.17	0.44
10:A:62:THR:H	10:A:69:GLY:HA3	1.83	0.44
11:AA:359:U:H4'	11:AA:817:A2M:N6	2.32	0.44
11:AA:591:G:N2	11:AA:612:U:OP1	2.43	0.44
11:AA:1255:C:H2'	11:AA:1256:G:C8	2.53	0.44
11:AA:1302:A:N7	11:AA:2857:C:O2'	2.48	0.44
11:AA:1562:C:H42	11:AA:1578:C:N4	2.12	0.44
11:AA:1867:A:H2'	11:AA:1868:G:C8	2.53	0.44
11:AA:2146:C:H5"	23:EE:203:ALA:HB1	2.00	0.44
11:AA:2167:A:H2'	11:AA:2168:A:C8	2.52	0.44
11:AA:2249:G:OP1	11:AA:2273:G:H8	2.00	0.44
11:AA:2490:C:H1'	11:AA:2491:A:C8	2.53	0.44
12:Aa:527:GLU:O	12:Aa:529:ILE:HG12	2.18	0.44
18:Cc:44:A:H2'	18:Cc:45:A:C8	2.53	0.44
22:E:2:ALA:HB3	22:E:32:SER:CB	2.48	0.44
22:E:43:TYR:CZ	22:E:47:LYS:HE2	2.52	0.44
22:E:71:LYS:HE2	22:E:73:LYS:HG2	2.00	0.44
24:Ee:130:LYS:HG2	24:Ee:152:ILE:HD12	2.00	0.44
25:F:68:THR:O	30:HH:41:LYS:HB2	2.18	0.44
26:FF:113:GLU:HB3	26:FF:176:ALA:HB2	1.98	0.44
26:FF:159:ARG:HG2	26:FF:182:GLN:HA	2.00	0.44
26:FF:212:ASN:ND2	26:FF:354:VAL:H	2.15	0.44
29:H:88:ARG:HD3	29:H:88:ARG:HA	1.86	0.44
32:II:96:VAL:HG21	32:II:145:LEU:HD13	2.00	0.44
33:J:105:VAL:HG11	33:J:126:LEU:HD13	2.00	0.44
37:L:32:GLY:HA2	37:L:40:HIS:CE1	2.52	0.44
39:M:77:LYS:C	39:M:79:TRP:N	2.76	0.44
49:QQ:124:ASP:OD1	49:QQ:127:TYR:N	2.44	0.44
50:R:16:TYR:CZ	50:R:91:ALA:HB2	2.53	0.44
61:c:97:C:O2	61:c:425:A:O2'	2.35	0.44
61:c:1439:C:H2'	61:c:1440:C:H6	1.83	0.44
61:c:1483:A:C6	61:c:1484:G:C6	3.06	0.44
61:c:1586:A:H2'	61:c:1587:A:O4'	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
62:d:84:ARG:HE	62:d:88:LYS:NZ	2.16	0.44
62:d:172:LEU:O	62:d:176:LEU:HG	2.18	0.44
69:k:72:LYS:HB2	69:k:72:LYS:HE2	1.84	0.44
78:t:10:LYS:HA	78:t:53:TYR:CD2	2.52	0.44
83:y:111:MET:HE1	83:y:119:LYS:HD2	2.00	0.44
11:AA:277:G:H2'	11:AA:278:U:C6	2.52	0.44
11:AA:283:G:O6	11:AA:304:G:H1'	2.18	0.44
11:AA:424:G:O2'	48:Q:23:ASP:OD2	2.29	0.44
11:AA:943:U:OP1	39:M:15:VAL:HA	2.18	0.44
11:AA:1114:U:H5"	39:M:22:ILE:HD12	2.00	0.44
11:AA:1500:G:H2'	11:AA:1501:U:O4'	2.18	0.44
11:AA:1829:G:H5"	11:AA:1830:G:H5'	2.00	0.44
11:AA:2094:C:H2'	11:AA:2095:G:C8	2.53	0.44
11:AA:2412:G:H2'	11:AA:2413:A:C8	2.53	0.44
11:AA:2500:A:H2'	11:AA:2501:U:C6	2.53	0.44
12:Aa:210:ALA:HB2	12:Aa:337:MET:SD	2.58	0.44
15:Bb:14:A:H2'	15:Bb:15:G:H4'	1.99	0.44
15:Bb:70:C:H2'	15:Bb:71:G:C8	2.53	0.44
16:C:83:VAL:O	16:C:103:ALA:HA	2.18	0.44
16:C:176:ARG:N	39:M:51:GLY:HA2	2.33	0.44
28:GG:283:THR:HG23	28:GG:285:ASP:H	1.82	0.44
34:JJ:155:LYS:HG3	34:JJ:158:LYS:CA	2.42	0.44
42:NN:29:ARG:HG3	42:NN:123:PHE:CZ	2.52	0.44
50:R:17:GLN:O	50:R:24:ASN:N	2.46	0.44
61:c:154:G:N2	68:j:60:GLY:O	2.38	0.44
61:c:956:C:OP1	61:c:1072:C:O2'	2.33	0.44
61:c:1120:U:H2'	61:c:1121:C:C6	2.52	0.44
61:c:1424:A:O2'	61:c:1425:A:OP1	2.34	0.44
61:c:1588:G:H22	61:c:1608:U:H3	1.65	0.44
61:c:1620:C:H2'	61:c:1621:U:H6	1.83	0.44
62:d:23:HIS:HA	62:d:48:ILE:HB	1.99	0.44
65:g:56:GLN:HA	65:g:59:LEU:HD23	2.00	0.44
66:h:253:ASP:HA	66:h:256:ARG:HE	1.83	0.44
76:r:62:ALA:O	76:r:66:ALA:HB3	2.17	0.44
76:r:80:MET:O	76:r:116:LEU:HD12	2.17	0.44
77:s:99:GLU:HA	77:s:102:LYS:CG	2.48	0.44
82:x:79:LEU:HD22	82:x:82:VAL:HG21	1.99	0.44
1:0:8:ARG:NH2	1:0:28:LEU:HD11	2.33	0.43
3:2:5:ARG:HH21	61:c:1795:U:H3'	1.83	0.43
4:3:17:ARG:HH11	4:3:17:ARG:HG3	1.83	0.43
6:5:20:GLN:HB2	6:5:25:SER:HA	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:5:56:ARG:HE	6:5:56:ARG:HB3	1.78	0.43
11:AA:127:G:H2'	11:AA:128:G:H8	1.82	0.43
11:AA:505:G:P	28:GG:320:ASN:HD22	2.41	0.43
11:AA:656:A:H2'	11:AA:657:A:H8	1.80	0.43
11:AA:939:U:O2'	11:AA:2402:A:N1	2.48	0.43
11:AA:2474:G:O2'	11:AA:2475:G:N7	2.45	0.43
11:AA:2829:U:C2	11:AA:2830:G:C8	3.05	0.43
11:AA:3041:U:H2'	11:AA:3042:U:C6	2.52	0.43
11:AA:3084:C:H2'	11:AA:3085:G:O4'	2.18	0.43
11:AA:3291:G:H2'	11:AA:3292:A:C8	2.52	0.43
18:Cc:66:C:H2'	18:Cc:67:C:H6	1.83	0.43
27:G:56:VAL:HG22	27:G:65:VAL:HG22	1.99	0.43
30:HH:77:ALA:O	30:HH:108:ARG:NH1	2.46	0.43
38:LL:21:LYS:O	38:LL:22:SER:C	2.61	0.43
39:M:7:LYS:HD3	39:M:7:LYS:HA	1.83	0.43
61:c:175:G:H1'	61:c:266:A:N6	2.33	0.43
61:c:989:U:H2'	61:c:990:C:C6	2.52	0.43
61:c:1610:G:H4'	67:i:98:MET:HE2	1.99	0.43
61:c:1739:C:H2'	61:c:1740:A:C8	2.53	0.43
8:7:87:LYS:HG3	8:7:108:SER:O	2.18	0.43
11:AA:507:U:H2'	11:AA:508:U:H6	1.83	0.43
11:AA:677:A:N1	11:AA:703:G:O2'	2.49	0.43
11:AA:830:A:H2'	11:AA:831:G:O4'	2.18	0.43
11:AA:1362:G:H4'	34:JJ:159:GLN:O	2.17	0.43
11:AA:1447:G:O2'	11:AA:2355:G:O6	2.36	0.43
11:AA:1630:U:H5"	11:AA:1813:A:N6	2.33	0.43
11:AA:3063:C:H2'	11:AA:3064:U:H6	1.82	0.43
17:CC:83:C:H41	35:K:52:ARG:NH1	2.14	0.43
18:Cc:67:C:H2'	18:Cc:68:C:H6	1.82	0.43
18:Cc:69:C:H2'	18:Cc:70:C:H6	1.83	0.43
18:Cc:71:G:H2'	18:Cc:72:C:C6	2.53	0.43
24:Ee:109:ILE:HG13	24:Ee:109:ILE:H	1.64	0.43
34:JJ:145:ARG:HG3	34:JJ:185:ILE:HD13	1.99	0.43
36:KK:162:LEU:HA	49:QQ:7:LEU:HD21	2.01	0.43
61:c:546:U:H2'	61:c:547:U:C6	2.53	0.43
61:c:912:U:O2	61:c:914:G:N1	2.51	0.43
61:c:1224:A:C6	61:c:1225:U:C4	3.07	0.43
61:c:1383:G:H2'	61:c:1384:A:C8	2.53	0.43
62:d:116:LYS:H	62:d:116:LYS:HG2	1.69	0.43
65:g:51:ARG:HA	65:g:51:ARG:HD2	1.73	0.43
65:g:108:LYS:HA	65:g:111:ASN:HD21	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
67:i:97:LEU:HD11	67:i:194:LEU:HD11	1.99	0.43
73:o:57:LYS:HE2	73:o:131:ILE:HB	2.00	0.43
75:q:53:ASP:N	75:q:53:ASP:OD1	2.51	0.43
82:x:12:TYR:O	82:x:12:TYR:CG	2.71	0.43
10:A:143:THR:OG1	10:A:150:GLU:OE1	2.32	0.43
11:AA:1001:G:N3	11:AA:1041:U:H5'	2.33	0.43
11:AA:1290:A:H2'	11:AA:1291:A:C8	2.53	0.43
11:AA:1783:U:H2'	11:AA:1784:G:C8	2.53	0.43
11:AA:1810:A:H2'	11:AA:1811:G:C8	2.53	0.43
11:AA:1836:C:N4	56:X:3:ALA:HB2	2.34	0.43
11:AA:2451:G:H2'	11:AA:2452:G:C8	2.53	0.43
11:AA:2489:C:H5"	11:AA:2490:C:H2'	2.00	0.43
11:AA:3169:U:H2'	11:AA:3170:A:C8	2.54	0.43
12:Aa:42:ARG:NH2	12:Aa:78:TYR:O	2.51	0.43
12:Aa:155:VAL:O	12:Aa:209:VAL:HA	2.17	0.43
12:Aa:575:ALA:HB1	12:Aa:715:ALA:HB3	1.99	0.43
17:CC:39:G:H1'	17:CC:104:A:N6	2.34	0.43
24:Ee:150:ASP:OD1	24:Ee:150:ASP:N	2.51	0.43
32:II:11:PRO:HG2	48:Q:91:THR:HG21	2.00	0.43
33:J:46:TYR:HB3	52:T:75:TYR:O	2.17	0.43
34:JJ:233:GLU:H	34:JJ:233:GLU:HG3	1.49	0.43
37:L:33:SER:OG	37:L:35:SER:O	2.24	0.43
49:QQ:159:ARG:H	49:QQ:159:ARG:HG2	1.67	0.43
59:a:76:LYS:HB2	59:a:76:LYS:HE3	1.85	0.43
61:c:1222:C:N4	61:c:1261:G:O6	2.52	0.43
61:c:1360:A:C2	61:c:1361:U:H1'	2.53	0.43
61:c:1365:C:H2'	61:c:1366:U:C6	2.53	0.43
61:c:1484:G:H2'	61:c:1485:C:C6	2.53	0.43
61:c:1621:U:H2'	61:c:1622:G:H8	1.83	0.43
67:i:166:ARG:HA	67:i:169:ASN:OD1	2.19	0.43
67:i:183:ALA:HB2	67:i:193:THR:OG1	2.18	0.43
68:j:37:ASP:O	68:j:41:VAL:HG12	2.18	0.43
80:v:18:TYR:HB2	80:v:135:ILE:HG21	2.01	0.43
3:2:81:ALA:HB3	3:2:83:ILE:HD12	2.01	0.43
7:6:24:THR:O	7:6:26:LYS:HE2	2.18	0.43
7:6:48:THR:O	7:6:48:THR:OG1	2.34	0.43
8:7:200:ASN:N	8:7:215:GLY:HA2	2.33	0.43
8:7:259:GLY:HA3	8:7:275:ARG:NH1	2.33	0.43
10:A:7:VAL:HB	10:A:33:ILE:HD13	1.99	0.43
11:AA:137:G:H2'	11:AA:138:U:C6	2.53	0.43
11:AA:861:C:OP1	11:AA:2133:U:O2'	2.23	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:985:U:H2'	11:AA:986:U:C6	2.48	0.43
11:AA:1135:A:OP2	41:N:5:LYS:NZ	2.51	0.43
11:AA:1235:U:O4	24:Ee:135:THR:HG22	2.19	0.43
11:AA:1572:U:H2'	11:AA:1573:G:H8	1.82	0.43
11:AA:2447:A:C6	11:AA:2448:G:N7	2.87	0.43
12:Aa:13:MET:HE2	12:Aa:13:MET:HB2	1.76	0.43
19:D:172:ARG:HB3	19:D:176:ARG:HH21	1.82	0.43
24:Ee:162:ILE:HD13	24:Ee:162:ILE:HA	1.91	0.43
35:K:43:TYR:O	35:K:124:GLY:HA2	2.18	0.43
36:KK:248:LYS:HD3	36:KK:248:LYS:HA	1.63	0.43
51:S:58:ARG:HA	51:S:58:ARG:HD2	1.87	0.43
54:V:39:TYR:CD1	54:V:40:PRO:HA	2.53	0.43
61:c:174:U:H2'	61:c:175:G:O4'	2.18	0.43
61:c:179:A:H3'	61:c:180:A:C8	2.53	0.43
61:c:1120:U:H2'	61:c:1121:C:H6	1.83	0.43
61:c:1146:G:H4'	64:f:90:THR:HA	1.99	0.43
61:c:1225:U:H3'	61:c:1226:A:C8	2.54	0.43
61:c:1515:A:H1'	61:c:1518:C:N4	2.33	0.43
64:f:144:TRP:CE2	64:f:173:PRO:HG3	2.53	0.43
68:j:135:PRO:O	68:j:141:ILE:HD11	2.18	0.43
70:l:195:ARG:HG2	70:l:195:ARG:NH1	2.33	0.43
72:n:6:GLU:O	72:n:10:LYS:HG2	2.18	0.43
74:p:49:GLN:H	74:p:49:GLN:HG2	1.64	0.43
78:t:77:GLU:O	78:t:81:LYS:HG2	2.19	0.43
10:A:178:VAL:HA	46:PP:135:LEU:HD21	2.01	0.43
11:AA:201:A:H2'	11:AA:202:G:H8	1.83	0.43
11:AA:279:U:H2'	11:AA:280:U:C6	2.53	0.43
11:AA:397:A:H5"	11:AA:399:A:OP1	2.18	0.43
11:AA:1040:A:N3	40:MM:198:LYS:NZ	2.54	0.43
11:AA:1069:C:H2'	11:AA:1070:U:H6	1.84	0.43
11:AA:1120:A:H2'	11:AA:1121:U:C6	2.53	0.43
12:Aa:117:ALA:HA	12:Aa:481:MET:SD	2.58	0.43
12:Aa:121:VAL:HG11	12:Aa:397:PHE:CZ	2.52	0.43
17:CC:7:U:H2'	17:CC:8:C:C6	2.53	0.43
17:CC:47:C:H1'	17:CC:61:A:H2'	1.99	0.43
20:DD:119:ILE:HG13	20:DD:159:VAL:HG12	2.00	0.43
26:FF:300:ARG:HH11	26:FF:300:ARG:HG3	1.82	0.43
28:GG:140:HIS:O	28:GG:142:VAL:N	2.49	0.43
30:HH:107:ARG:NH2	30:HH:169:GLY:O	2.47	0.43
34:JJ:89:ILE:HD11	34:JJ:229:PHE:HB3	2.00	0.43
61:c:207:U:H2'	61:c:208:U:C6	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:918:U:H4'	75:q:18:ARG:HD3	2.00	0.43
61:c:1196:A:H4'	61:c:1197:C:H5"	2.00	0.43
61:c:1329:A:OP2	65:g:160:SER:OG	2.37	0.43
61:c:1628:U:H2'	61:c:1629:G:H8	1.82	0.43
67:i:61:TYR:HA	67:i:85:ALA:HB1	2.01	0.43
8:7:109:ASP:CG	8:7:127:ARG:HD2	2.44	0.43
8:7:264:SER:OG	8:7:265:LEU:N	2.51	0.43
11:AA:98:G:N7	44:OO:13:HIS:NE2	2.64	0.43
11:AA:633:C:H2'	11:AA:634:C:O4'	2.18	0.43
11:AA:664:U:H2'	11:AA:665:A:H8	1.78	0.43
17:CC:128:U:P	17:CC:129:C:H41	2.42	0.43
24:Ee:82:ILE:O	24:Ee:85:LEU:HB2	2.19	0.43
48:Q:32:TRP:CZ2	48:Q:53:PRO:HD2	2.53	0.43
61:c:560:U:H2'	61:c:561:G:C8	2.52	0.43
61:c:1391:A:H2'	61:c:1392:U:C6	2.53	0.43
61:c:1451:C:C2	61:c:1452:U:C5	3.06	0.43
61:c:1681:A:H2	61:c:1720:G:H21	1.65	0.43
67:i:129:PRO:O	67:i:133:VAL:HG12	2.17	0.43
69:k:138:LYS:HB2	83:y:54:ASP:HB3	2.00	0.43
73:o:55:ASP:OD2	73:o:113:PRO:HD3	2.17	0.43
76:r:118:GLU:HG3	79:u:122:HIS:H	1.84	0.43
80:v:34:VAL:HG13	80:v:53:TRP:HE1	1.83	0.43
11:AA:59:G:H4'	11:AA:60:A:H4'	2.00	0.43
11:AA:293:C:H2'	11:AA:294:U:O4'	2.19	0.43
11:AA:561:C:H2'	11:AA:562:C:H6	1.84	0.43
11:AA:1836:C:O2'	11:AA:1842:A:N1	2.42	0.43
11:AA:2273:G:N2	11:AA:2311:G:H2'	2.32	0.43
11:AA:2469:G:H2'	11:AA:2474:G:C2	2.54	0.43
11:AA:2561:A:H61	11:AA:2579:G:H2'	1.84	0.43
11:AA:2639:G:H2'	11:AA:2640:A2M:H8	2.01	0.43
11:AA:3198:U:O4	38:LL:26:LYS:HB2	2.19	0.43
11:AA:3308:C:O2'	13:B:69:ARG:O	2.31	0.43
12:Aa:229:TYR:HD1	12:Aa:229:TYR:HA	1.74	0.43
17:CC:95:G:C6	54:V:83:ALA:HA	2.54	0.43
24:Ee:103:ASN:HA	24:Ee:142:ARG:O	2.18	0.43
24:Ee:117:ARG:HD3	24:Ee:125:LEU:HD23	2.00	0.43
26:FF:106:TRP:HB2	26:FF:133:TYR:CE1	2.54	0.43
32:II:54:TYR:CE1	32:II:63:LEU:HB3	2.53	0.43
37:L:42:LEU:HG	37:L:101:PHE:HE2	1.83	0.43
59:a:68:VAL:HG22	59:a:85:LEU:HB2	1.99	0.43
61:c:331:A:H5'	70:l:33:PRO:HA	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:1208:A:H8	61:c:1269:OMU:H6	1.83	0.43
61:c:1280:4AC:O2'	81:w:70:THR:HG22	2.19	0.43
61:c:1330:G:H2'	61:c:1331:A:O4'	2.19	0.43
62:d:124:THR:O	62:d:146:LEU:HB2	2.19	0.43
66:h:105:VAL:HG21	66:h:245:LYS:N	2.30	0.43
69:k:41:LEU:HB3	69:k:70:PHE:CE2	2.54	0.43
70:l:113:PHE:CG	70:l:121:LEU:HD22	2.54	0.43
70:l:159:GLN:HB3	70:l:164:ARG:O	2.18	0.43
73:o:73:GLY:HA3	73:o:86:ILE:HD12	2.00	0.43
5:4:32:PHE:HD2	5:4:38:ARG:HD2	1.84	0.43
6:5:34:TYR:CZ	81:w:63:LEU:HG	2.54	0.43
11:AA:2191:U:H2'	11:AA:2192:C:O4'	2.19	0.43
12:Aa:569:SER:O	12:Aa:592:PRO:HD3	2.19	0.43
16:C:151:ARG:O	16:C:162:ALA:HB3	2.19	0.43
18:Cc:10:G:H2'	18:Cc:11:A:C8	2.54	0.43
25:F:28:SER:O	25:F:32:LYS:HG2	2.18	0.43
30:HH:108:ARG:CZ	30:HH:253:PHE:HB2	2.49	0.43
34:JJ:180:SER:H	34:JJ:183:ASP:HB2	1.83	0.43
45:P:55:LEU:HB2	45:P:95:PRO:HD3	2.00	0.43
46:PP:23:ILE:HD13	46:PP:63:VAL:HG23	2.00	0.43
61:c:1000:C:O2'	61:c:1002:G:N7	2.42	0.43
61:c:1079:U:H2'	61:c:1080:U:C6	2.53	0.43
61:c:1096:C:O2	61:c:1096:C:H2'	2.19	0.43
61:c:1483:A:H2	61:c:1607:G:H1'	1.84	0.43
61:c:1631:A:N1	61:c:1763:A:O2'	2.47	0.43
61:c:1668:G:H2'	61:c:1669:U:C6	2.53	0.43
64:f:96:THR:HG23	64:f:96:THR:O	2.19	0.43
68:j:31:ARG:HD2	68:j:68:LEU:HD22	2.01	0.43
68:j:147:LEU:HD23	68:j:147:LEU:H	1.84	0.43
69:k:7:LYS:HD3	69:k:8:ILE:N	2.34	0.43
71:m:100:LYS:HE3	71:m:100:LYS:HB2	1.90	0.43
72:n:59:PHE:CZ	72:n:62:GLN:HA	2.54	0.43
72:n:68:LEU:HD23	72:n:68:LEU:H	1.84	0.43
1:0:16:PRO:HA	1:0:19:ALA:HA	1.99	0.43
8:7:89:LEU:HD21	8:7:110:VAL:HG11	2.01	0.43
8:7:254:ALA:O	8:7:260:ILE:HA	2.19	0.43
11:AA:230:U:H2'	11:AA:231:G:O4'	2.19	0.43
11:AA:243:G:OP1	52:T:115:LYS:NZ	2.31	0.43
11:AA:417:A:H2'	11:AA:418:A:H8	1.79	0.43
11:AA:540:U:H2'	11:AA:541:U:H6	1.84	0.43
11:AA:916:G:H5'	11:AA:917:A:OP1	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1260:A:H2'	11:AA:1261:G:C4	2.54	0.43
11:AA:2396:G:N7	92:AA:3771:HOH:O	2.37	0.43
12:Aa:12:LEU:HB3	12:Aa:99:LEU:HD22	2.00	0.43
12:Aa:649:GLN:HG3	12:Aa:649:GLN:O	2.19	0.43
16:C:70:ALA:O	16:C:73:GLN:HB2	2.18	0.43
16:C:164:ARG:HB3	44:OO:8:PRO:HD3	2.01	0.43
23:EE:206:PRO:HG3	23:EE:213:GLY:HA3	2.00	0.43
32:II:63:LEU:HB2	32:II:79:VAL:HG12	2.01	0.43
32:II:172:HIS:CD2	32:II:173:MET:HG2	2.53	0.43
52:T:115:LYS:HB3	52:T:115:LYS:HE2	1.64	0.43
61:c:1229:G:H1'	61:c:1255:G:N2	2.33	0.43
61:c:1650:U:H2'	61:c:1651:A:C8	2.54	0.43
62:d:56:LYS:HD2	62:d:56:LYS:HA	1.82	0.43
66:h:181:VAL:HG21	66:h:210:ILE:HD12	2.01	0.43
68:j:77:LEU:HD12	68:j:95:LYS:HB2	2.00	0.43
71:m:59:LEU:HD22	71:m:69:ARG:HA	2.00	0.43
80:v:92:LYS:HB2	80:v:92:LYS:HE2	1.77	0.43
2:1:54:VAL:HG21	2:1:88:ILE:HG21	2.01	0.43
8:7:122:ILE:HD11	8:7:134:TRP:HB2	2.01	0.43
8:7:127:ARG:HG2	8:7:150:TRP:HB3	2.01	0.43
11:AA:1263:A:N6	24:Ee:138:SER:HB3	2.34	0.43
11:AA:1357:G:H2'	11:AA:1358:C:C6	2.54	0.43
11:AA:2101:C:O2'	11:AA:2102:U:OP1	2.35	0.43
12:Aa:205:ALA:HA	12:Aa:222:ILE:HD11	2.01	0.43
15:Bb:37:YYG:H31	15:Bb:37:YYG:C1'	2.46	0.43
20:DD:169:GLU:O	20:DD:173:LEU:HG	2.19	0.43
30:HH:261:THR:HG22	30:HH:264:GLN:HE22	1.84	0.43
33:J:88:MET:HE3	33:J:88:MET:HB3	1.83	0.43
37:L:56:LYS:HD3	37:L:56:LYS:HA	1.83	0.43
38:LL:41:ILE:HG13	38:LL:43:VAL:HG13	2.01	0.43
54:V:63:ARG:HD2	54:V:65:ARG:HD3	2.01	0.43
61:c:17:C:H4'	61:c:1109:G:C8	2.54	0.43
61:c:895:G:H2'	61:c:896:U:C6	2.53	0.43
61:c:1253:U:H2'	61:c:1254:U:C6	2.53	0.43
61:c:1316:G:OP1	78:t:7:LYS:N	2.52	0.43
61:c:1325:A:H2'	61:c:1326:A:H8	1.84	0.43
63:e:144:ARG:CZ	63:e:206:PRO:HB3	2.48	0.43
66:h:18:TRP:HA	66:h:51:ARG:HH22	1.84	0.43
67:i:44:ASN:HD21	67:i:115:LYS:NZ	2.16	0.43
67:i:131:GLN:HA	67:i:134:VAL:HG22	2.00	0.43
70:l:57:ALA:HB1	70:l:60:ILE:CG1	2.49	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
73:o:124:THR:HB	73:o:141:LYS:HB2	2.01	0.43
77:s:56:GLY:HA3	77:s:59:LYS:HB2	1.99	0.43
8:7:60:SER:N	77:s:99:GLU:HG2	2.34	0.42
11:AA:195:U:H2'	11:AA:196:G:O4'	2.19	0.42
11:AA:345:G:O2'	17:CC:25:G:N3	2.52	0.42
11:AA:794:U:C2	11:AA:795:G:C8	3.06	0.42
11:AA:994:G:N2	11:AA:995:U:O4	2.43	0.42
11:AA:1229:G:OP1	20:DD:110:ARG:NH2	2.47	0.42
11:AA:1447:G:N7	13:B:25:SER:OG	2.44	0.42
11:AA:1764:U:H3'	11:AA:1765:U:H4'	2.01	0.42
11:AA:2289:U:H2'	11:AA:2290:C:C6	2.54	0.42
11:AA:2374:C:OP1	11:AA:2823:G:O2'	2.29	0.42
11:AA:2389:C:O2'	11:AA:3307:A:N1	2.49	0.42
12:Aa:250:PHE:HB3	12:Aa:275:MET:HE3	2.00	0.42
12:Aa:511:LEU:HD21	12:Aa:545:LEU:HG	2.01	0.42
12:Aa:672:LYS:HD2	12:Aa:680:GLU:HG2	2.01	0.42
15:Bb:37:YYG:H2'	15:Bb:38:A:O4'	2.19	0.42
17:CC:25:G:N7	35:K:13:ARG:NH1	2.59	0.42
26:FF:380:MET:HE2	26:FF:380:MET:HB3	1.93	0.42
36:KK:103:ALA:O	36:KK:107:GLU:HG2	2.19	0.42
50:R:9:VAL:HG21	50:R:44:TYR:HE1	1.84	0.42
51:S:72:VAL:O	51:S:77:GLY:HA2	2.19	0.42
61:c:66:U:P	68:j:136:LYS:HZ3	2.41	0.42
61:c:246:G:N2	73:o:66:ILE:O	2.45	0.42
61:c:474:A:OP1	71:m:145:SER:OG	2.31	0.42
61:c:1335:U:HO2'	61:c:1336:A:P	2.41	0.42
61:c:1525:A:H2'	61:c:1526:A:C8	2.54	0.42
61:c:1588:G:C6	61:c:1589:C:C4	3.07	0.42
61:c:1660:A:H2'	61:c:1661:U:C6	2.54	0.42
61:c:1786:G:OP1	75:q:136:ARG:NH2	2.51	0.42
63:e:144:ARG:HB3	63:e:208:GLN:HB3	2.01	0.42
67:i:168:VAL:O	67:i:172:ILE:HG13	2.17	0.42
74:p:27:LYS:HD3	74:p:27:LYS:HA	1.79	0.42
2:1:98:GLN:HE21	67:i:120:ILE:HD11	1.84	0.42
11:AA:429:U:H4'	50:R:88:ASN:O	2.20	0.42
11:AA:744:A:H4'	16:C:142:GLY:O	2.19	0.42
11:AA:2283:G:H1'	11:AA:2285:C:N4	2.33	0.42
11:AA:2573:G:H2'	11:AA:2574:G:H8	1.84	0.42
11:AA:2707:C:H2'	11:AA:2708:C:C6	2.54	0.42
11:AA:2711:C:O2'	11:AA:2744:U:OP1	2.34	0.42
11:AA:3162:C:H2'	11:AA:3163:A:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:Aa:220:PHE:HB3	12:Aa:328:LEU:HD13	2.00	0.42
14:BB:47:C:OP1	30:HH:95:TRP:N	2.43	0.42
17:CC:51:G:OP2	56:X:21:ARG:NH1	2.29	0.42
17:CC:84:C:H5'	17:CC:85:G:C4	2.54	0.42
22:E:12:ARG:O	22:E:22:PRO:HB2	2.19	0.42
23:EE:30:ARG:HG2	23:EE:74:GLU:HG3	2.01	0.42
23:EE:83:HIS:CE1	23:EE:86:GLN:HB2	2.54	0.42
42:NN:49:LYS:HD3	42:NN:62:ASN:HB3	2.01	0.42
43:O:17:VAL:HG11	43:O:92:ILE:HD12	2.00	0.42
61:c:107:C:H2'	61:c:108:A:C8	2.54	0.42
61:c:343:C:C2	61:c:344:A:C8	3.07	0.42
61:c:420:A2M:HM'3	61:c:420:A2M:H1'	1.77	0.42
61:c:464:A:C2	61:c:465:G:C8	3.07	0.42
61:c:788:A:C6	66:h:19:LEU:HD13	2.54	0.42
61:c:1466:G:H2'	61:c:1467:C:C6	2.54	0.42
61:c:1495:C:O2'	61:c:1519:U:O2	2.27	0.42
65:g:126:VAL:HG11	65:g:188:ILE:HG12	2.01	0.42
67:i:73:THR:OG1	67:i:73:THR:O	2.37	0.42
76:r:107:ILE:HA	76:r:111:MET:HG3	2.01	0.42
78:t:32:LYS:HD2	78:t:47:ARG:NH1	2.33	0.42
82:x:38:LYS:O	82:x:46:ILE:HD12	2.18	0.42
11:AA:592:A:H5'	32:II:17:ALA:O	2.20	0.42
11:AA:999:G:N3	11:AA:1002:A:N6	2.68	0.42
11:AA:1225:A:C4	11:AA:1226:G:C8	3.08	0.42
11:AA:2442:G:H2'	11:AA:2443:A:C8	2.54	0.42
11:AA:2523:A:H2'	36:KK:49:TYR:O	2.19	0.42
14:BB:107:C:OP2	40:MM:203:LYS:NZ	2.52	0.42
15:Bb:19:G:H3'	15:Bb:20:G:H8	1.84	0.42
15:Bb:56:C:C2	15:Bb:57:G:C8	3.07	0.42
17:CC:95:G:O4'	54:V:79:GLN:HG3	2.19	0.42
28:GG:314:LYS:HD2	34:JJ:162:PRO:HB3	2.01	0.42
36:KK:250:ALA:O	36:KK:254:ASP:HB2	2.19	0.42
43:O:43:ILE:HA	43:O:68:TYR:O	2.19	0.42
45:P:10:ARG:HB2	45:P:12:TYR:CE1	2.54	0.42
61:c:567:A:H2'	61:c:568:G:O4'	2.19	0.42
61:c:647:G:H2'	61:c:648:G:C8	2.54	0.42
61:c:928:U:O2'	92:c:2003:HOH:O	2.21	0.42
61:c:1182:U:H4'	76:r:124:THR:HB	2.02	0.42
61:c:1441:C:H2'	61:c:1442:U:C6	2.55	0.42
61:c:1739:C:H2'	61:c:1740:A:H8	1.84	0.42
66:h:45:ILE:HA	66:h:61:VAL:HG11	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
73:o:29:LYS:HG3	73:o:31:THR:H	1.85	0.42
79:u:112:ASP:O	79:u:115:ARG:HG3	2.18	0.42
79:u:116:LEU:HD12	79:u:116:LEU:HA	1.85	0.42
5:4:50:GLU:HG2	5:4:51:ASN:N	2.33	0.42
10:A:21:SER:N	10:A:87:MET:HE1	2.35	0.42
11:AA:67:A:O2'	11:AA:315:C:O2	2.37	0.42
11:AA:191:U:H2'	11:AA:192:C:C6	2.54	0.42
11:AA:237:G:H2'	11:AA:238:A:C8	2.54	0.42
11:AA:834:U:H2'	11:AA:835:G:O4'	2.19	0.42
11:AA:874:U:OP1	26:FF:241:LYS:HG2	2.19	0.42
11:AA:1044:U:OP1	40:MM:90:ARG:NH2	2.49	0.42
11:AA:1167:U:H2'	11:AA:1168:U:O4'	2.18	0.42
11:AA:1646:G:H1'	11:AA:1809:A:N6	2.34	0.42
11:AA:1794:G:H4'	23:EE:191:LEU:HD13	2.01	0.42
11:AA:2361:A:H2'	11:AA:2362:C:H6	1.84	0.42
11:AA:2427:U:H2'	11:AA:2428:U:H6	1.85	0.42
11:AA:2561:A:N3	36:KK:32:LYS:HD2	2.35	0.42
11:AA:2610:G:OP1	88:AA:3615:SPD:H52	2.19	0.42
11:AA:2724:OMU:OP2	11:AA:2726:C:N4	2.53	0.42
11:AA:3063:C:H2'	11:AA:3064:U:C6	2.54	0.42
12:Aa:728:VAL:HG11	12:Aa:771:TYR:HB3	2.00	0.42
12:Aa:755:VAL:HG23	12:Aa:770:ALA:HA	2.01	0.42
23:EE:117:GLU:HB2	23:EE:162:ALA:HB1	2.02	0.42
28:GG:6:VAL:HG21	28:GG:255:PHE:CE2	2.54	0.42
37:L:22:LYS:HE2	37:L:129:TRP:CH2	2.55	0.42
43:O:14:LEU:O	43:O:18:ILE:HG12	2.19	0.42
44:OO:162:ASN:OD1	44:OO:164:GLU:HB2	2.19	0.42
46:PP:50:LYS:HG3	46:PP:85:TRP:CD1	2.54	0.42
61:c:629:U:C2	61:c:630:A:C8	3.08	0.42
61:c:1603:U:H2'	61:c:1604:U:C6	2.54	0.42
61:c:1636:C:O2	61:c:1765:A:N6	2.53	0.42
64:f:99:LYS:HB2	64:f:117:THR:HG22	2.00	0.42
67:i:34:GLN:O	77:s:57:LEU:HD22	2.20	0.42
67:i:68:ILE:HD12	67:i:71:ALA:HA	2.00	0.42
67:i:96:SER:C	67:i:176:THR:HG21	2.44	0.42
68:j:1:MET:HB3	68:j:18:ILE:O	2.20	0.42
69:k:89:HIS:CD2	69:k:165:LYS:HB3	2.54	0.42
69:k:109:VAL:HG12	69:k:110:GLN:N	2.33	0.42
77:s:54:LEU:HD21	77:s:112:TYR:CG	2.54	0.42
80:v:72:GLY:O	80:v:76:LEU:HD12	2.19	0.42
81:w:41:ILE:HD12	81:w:41:ILE:HA	1.78	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:2:8:ASN:C	3:2:10:ARG:H	2.27	0.42
4:3:33:LEU:HA	4:3:80:ARG:O	2.20	0.42
8:7:126:SER:OG	8:7:128:ASP:OD1	2.19	0.42
10:A:101:ARG:HD3	11:AA:3173:G:OP2	2.20	0.42
11:AA:71:A:P	39:M:67:HIS:HE2	2.42	0.42
11:AA:158:G:H2'	11:AA:159:A:C8	2.54	0.42
11:AA:290:G:H2'	11:AA:291:C:C6	2.54	0.42
11:AA:314:U:H2'	11:AA:315:C:H6	1.84	0.42
11:AA:324:A:H2'	11:AA:325:A:C8	2.54	0.42
11:AA:1021:G:C5	11:AA:1022:U:C4	3.07	0.42
11:AA:1448:U:H2'	11:AA:1449:A2M:H8	2.00	0.42
11:AA:1620:U:H2'	11:AA:1621:A:C8	2.55	0.42
11:AA:2117:A:N7	11:AA:3064:U:O2'	2.50	0.42
11:AA:2337:OMC:HM23	11:AA:2337:OMC:H1'	1.85	0.42
11:AA:2544:U:H2'	11:AA:2545:C:C6	2.55	0.42
11:AA:3006:A:C2	11:AA:3141:A:C4	3.08	0.42
12:Aa:406:LYS:HB2	12:Aa:406:LYS:HE2	1.69	0.42
12:Aa:755:VAL:HB	12:Aa:769:LYS:O	2.19	0.42
13:B:62:ARG:HG3	17:CC:5:U:OP1	2.19	0.42
17:CC:133:G:OP1	33:J:94:GLN:NE2	2.52	0.42
18:Cc:68:C:H2'	18:Cc:69:C:H6	1.84	0.42
34:JJ:229:PHE:CD1	34:JJ:229:PHE:C	2.97	0.42
36:KK:52:TRP:NE1	36:KK:60:ARG:HH12	2.17	0.42
40:MM:48:LEU:O	40:MM:139:ARG:HA	2.19	0.42
49:QQ:19:LEU:HD23	49:QQ:19:LEU:HA	1.86	0.42
53:U:99:ARG:H	53:U:99:ARG:HG2	1.66	0.42
54:V:27:PHE:HA	54:V:34:CYS:HA	2.02	0.42
59:a:28:TYR:CZ	59:a:30:ALA:HA	2.54	0.42
61:c:94:U:C5	61:c:94:U:N1	2.87	0.42
61:c:141:U:H2'	61:c:142:G:H8	1.84	0.42
61:c:514:G:O2'	61:c:515:A:H5'	2.20	0.42
61:c:648:G:N3	61:c:648:G:H2'	2.35	0.42
61:c:809:A:H2'	61:c:810:G:C8	2.55	0.42
61:c:929:A:C8	75:q:123:SER:HA	2.54	0.42
61:c:1003:A:H1'	61:c:1005:A:N7	2.34	0.42
62:d:56:LYS:HE3	62:d:59:LEU:HD23	2.00	0.42
67:i:117:THR:HG21	67:i:194:LEU:HD22	2.02	0.42
71:m:110:GLN:CD	71:m:126:ARG:HB2	2.45	0.42
72:n:59:PHE:HE1	72:n:64:TYR:CZ	2.38	0.42
76:r:85:ILE:HG22	76:r:112:LEU:HD13	2.01	0.42
78:t:86:PRO:O	78:t:88:VAL:HG12	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
78:t:91:LEU:HD13	78:t:91:LEU:HA	1.94	0.42
11:AA:1570:U:H3	11:AA:1572:U:H1'	1.85	0.42
11:AA:1623:G:H2'	11:AA:1624:G:O4'	2.20	0.42
11:AA:1742:U:H2'	11:AA:1743:G:C8	2.55	0.42
11:AA:2476:C:C2'	11:AA:2477:G:H4'	2.45	0.42
11:AA:2597:U:H2'	11:AA:2598:G:C8	2.55	0.42
11:AA:2816:G:O4'	11:AA:2870:5MC:HM52	2.19	0.42
11:AA:2941:A:O5'	11:AA:2943:G:H4'	2.19	0.42
13:B:4:TYR:CE2	13:B:16:SER:HB3	2.55	0.42
14:BB:107:C:H2'	14:BB:108:A:C8	2.54	0.42
35:K:48:LEU:HD23	35:K:48:LEU:HA	1.92	0.42
40:MM:200:LEU:HB2	40:MM:213:PHE:CG	2.55	0.42
40:MM:206:LEU:O	40:MM:210:ILE:HG12	2.20	0.42
49:QQ:183:THR:HG22	49:QQ:187:ARG:HB2	2.01	0.42
61:c:248:U:H4'	73:o:36:LYS:HD3	2.02	0.42
61:c:800:U:H2'	61:c:801:G:H8	1.83	0.42
61:c:1172:G:H2'	61:c:1173:C:C6	2.55	0.42
61:c:1275:A:C2	61:c:1438:G:C4	3.07	0.42
61:c:1315:U:H2'	61:c:1316:G:O4'	2.20	0.42
61:c:1366:U:O2'	80:v:7:ARG:NE	2.53	0.42
61:c:1775:U:H2'	61:c:1776:A:C8	2.54	0.42
62:d:88:LYS:HG3	62:d:201:LEU:HG	2.01	0.42
65:g:133:GLY:HA3	65:g:156:PHE:O	2.20	0.42
67:i:166:ARG:O	67:i:170:GLN:HB2	2.20	0.42
70:l:42:ARG:HG2	70:l:58:LEU:HD12	2.01	0.42
71:m:133:HIS:HA	71:m:162:SER:CB	2.49	0.42
73:o:143:SER:O	73:o:145:ALA:N	2.52	0.42
77:s:55:VAL:HG23	77:s:56:GLY:H	1.84	0.42
82:x:17:CYS:HB2	82:x:56:SER:HB3	2.01	0.42
1:0:124:ARG:HA	1:0:127:LYS:NZ	2.35	0.42
2:1:84:GLU:HG3	2:1:85:LYS:N	2.34	0.42
8:7:83:ALA:HB2	8:7:113:VAL:HB	2.02	0.42
11:AA:640:U:OP1	39:M:21:ARG:NH1	2.49	0.42
11:AA:874:U:H5"	11:AA:2950:G:OP1	2.19	0.42
11:AA:1196:C:H4'	11:AA:1197:A:OP1	2.20	0.42
11:AA:1590:G:C2	11:AA:1591:G:C8	3.07	0.42
11:AA:1595:U:C2	11:AA:1596:C:C5	3.07	0.42
11:AA:2196:C:OP1	61:c:995:A:H4'	2.20	0.42
11:AA:2222:A:H2'	11:AA:2223:A:C8	2.55	0.42
11:AA:2305:G:OP2	11:AA:2305:G:N2	2.36	0.42
11:AA:2508:U:H2'	11:AA:2509:U:C6	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2612:U:H2'	11:AA:2613:U:O4'	2.20	0.42
11:AA:2812:C:H2'	11:AA:2813:A:H8	1.85	0.42
11:AA:2881:C:H2'	11:AA:2882:U:H6	1.83	0.42
11:AA:2984:C:H2'	11:AA:2985:C:C6	2.54	0.42
12:Aa:396:ALA:HB3	12:Aa:456:LEU:HB2	2.01	0.42
22:E:27:MET:HE1	22:E:44:PHE:CB	2.48	0.42
23:EE:41:ILE:HG12	23:EE:63:PHE:HD2	1.85	0.42
33:J:131:ASP:O	33:J:135:ILE:HG12	2.19	0.42
34:JJ:98:LYS:HB3	34:JJ:99:PRO:HD3	2.02	0.42
36:KK:68:ARG:HD3	36:KK:237:ILE:O	2.20	0.42
38:LL:90:MET:HE1	38:LL:162:GLN:HB2	2.02	0.42
61:c:66:U:C5'	68:j:173:PRO:HA	2.49	0.42
61:c:645:C:H2'	61:c:646:C:C6	2.54	0.42
61:c:1218:G:O4'	61:c:1444:A:N6	2.53	0.42
61:c:1509:C:H2'	61:c:1510:U:O4'	2.19	0.42
63:e:97:LEU:HD22	63:e:231:LEU:HD13	2.02	0.42
65:g:96:LEU:HD23	65:g:96:LEU:HA	1.92	0.42
65:g:98:ALA:HB2	65:g:169:ASP:HB3	2.01	0.42
67:i:73:THR:HG22	77:s:114:ARG:NH2	2.32	0.42
69:k:73:VAL:HG13	69:k:77:LEU:HD23	2.01	0.42
1:0:17:LEU:HD23	66:h:94:ALA:HB3	2.02	0.42
1:0:52:LYS:HE3	1:0:52:LYS:HB3	1.94	0.42
8:7:38:ARG:HG3	8:7:67:ILE:HG12	2.00	0.42
8:7:282:SER:OG	8:7:283:LYS:N	2.52	0.42
11:AA:661:G:H4'	11:AA:662:U:C6	2.54	0.42
11:AA:828:A:H2'	11:AA:829:U:C6	2.55	0.42
11:AA:863:C:H2'	11:AA:864:G:O4'	2.20	0.42
11:AA:1282:G:H4'	20:DD:82:GLY:C	2.44	0.42
11:AA:1460:A:H5'	45:P:51:LEU:O	2.19	0.42
11:AA:1471:U:H2'	11:AA:1472:U:C6	2.54	0.42
11:AA:2356:A:H61	11:AA:2983:C:H5	1.64	0.42
11:AA:2473:C:H3'	11:AA:2474:G:O4'	2.20	0.42
11:AA:2674:A:H5"	42:NN:105:GLY:HA3	2.02	0.42
11:AA:2770:G:H2'	11:AA:2771:U:C6	2.54	0.42
11:AA:2964:G:N2	11:AA:2967:A:OP2	2.35	0.42
16:C:39:ARG:NH2	28:GG:300:ARG:O	2.35	0.42
16:C:178:ARG:HA	16:C:178:ARG:HD2	1.82	0.42
17:CC:73:U:OP1	35:K:24:SER:OG	2.27	0.42
22:E:167:ARG:HA	22:E:167:ARG:HD3	1.89	0.42
27:G:58:GLU:OE1	27:G:63:VAL:HG22	2.19	0.42
38:LL:27:VAL:HG12	38:LL:82:VAL:HG21	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:85:A:H2'	61:c:86:A:O4'	2.19	0.42
61:c:306:U:OP2	73:o:105:LYS:HD2	2.20	0.42
61:c:1213:G:H1	61:c:1450:U:H3	1.68	0.42
61:c:1292:G:H2'	61:c:1293:U:C6	2.55	0.42
61:c:1516:A:C8	81:w:58:LEU:HD12	2.53	0.42
62:d:88:LYS:HD3	62:d:88:LYS:HA	1.77	0.42
62:d:198:MET:HG2	78:t:83:GLN:HE22	1.85	0.42
63:e:120:LEU:HD21	63:e:122:GLU:HG3	2.02	0.42
66:h:87:MET:O	66:h:122:LYS:HE2	2.19	0.42
70:l:83:TYR:HB3	70:l:101:ILE:HB	2.02	0.42
70:l:166:TYR:HB3	70:l:184:LEU:HD12	2.01	0.42
80:v:40:SER:HA	80:v:97:SER:N	2.35	0.42
5:4:10:ALA:HB1	5:4:30:VAL:CG1	2.49	0.42
7:6:29:LYS:HD2	7:6:35:TYR:HE1	1.84	0.42
8:7:2:ALA:HB3	8:7:271:VAL:HA	2.02	0.42
8:7:108:SER:OG	8:7:128:ASP:N	2.53	0.42
11:AA:275:U:H2'	11:AA:276:U:C6	2.55	0.42
11:AA:352:A:N1	11:AA:365:A:H5"	2.35	0.42
11:AA:1072:G:H2'	11:AA:1073:U:C6	2.54	0.42
11:AA:1541:G:H1'	11:AA:1557:A:C5	2.55	0.42
11:AA:1648:A:H2'	11:AA:1649:U:O4'	2.20	0.42
11:AA:1916:U:H2'	11:AA:1917:C:C6	2.55	0.42
11:AA:2599:U:H2'	11:AA:2600:C:C6	2.55	0.42
11:AA:3095:U:H2'	11:AA:3096:C:C6	2.55	0.42
11:AA:3192:U:H2'	11:AA:3193:C:H6	1.85	0.42
12:Aa:136:CYS:N	12:Aa:139:THR:OG1	2.53	0.42
18:Cc:70:C:H2'	18:Cc:71:G:C8	2.53	0.42
23:EE:129:ALA:HB3	23:EE:132:ASN:HD22	1.84	0.42
25:F:157:GLU:HG3	25:F:159:PHE:CD2	2.55	0.42
25:F:157:GLU:HG3	25:F:159:PHE:HD2	1.85	0.42
43:O:17:VAL:HG21	43:O:100:ILE:HG21	2.01	0.42
44:OO:92:THR:HG21	52:T:111:PHE:HB3	2.02	0.42
49:QQ:96:ARG:NH2	49:QQ:104:GLU:OE1	2.53	0.42
58:Z:11:ARG:NH2	61:c:1775:U:OP1	2.39	0.42
61:c:141:U:H2'	61:c:142:G:C8	2.55	0.42
61:c:185:U:H2'	61:c:186:C:C6	2.55	0.42
61:c:301:A:H2'	61:c:302:U:C6	2.54	0.42
61:c:326:G:H2'	61:c:327:U:H6	1.84	0.42
61:c:472:U:O2'	61:c:769:A:N3	2.41	0.42
61:c:1529:C:H5'	77:s:42:GLU:HG2	2.02	0.42
63:e:70:LEU:HD13	63:e:84:ILE:HG13	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:e:105:PHE:CE1	63:e:213:ARG:HA	2.55	0.42
66:h:37:LYS:HD3	66:h:37:LYS:HA	1.85	0.42
68:j:85:ARG:HB3	68:j:87:ARG:HH12	1.83	0.42
69:k:24:PHE:O	69:k:28:GLU:HG3	2.19	0.42
69:k:137:GLY:HA3	69:k:153:LEU:HD12	2.02	0.42
70:l:11:ARG:HB2	70:l:16:ALA:O	2.19	0.42
73:o:68:GLY:HA3	73:o:127:GLN:HB3	2.01	0.42
77:s:97:VAL:HG12	77:s:98:ASP:OD1	2.20	0.42
81:w:34:LEU:HG	81:w:89:ARG:HE	1.85	0.42
1:0:12:VAL:HG22	1:0:23:PHE:HB3	2.02	0.42
1:0:102:LYS:HD3	1:0:108:ARG:NH2	2.33	0.42
8:7:91:LEU:HD13	8:7:91:LEU:HA	1.94	0.42
8:7:132:LYS:HG2	8:7:143:THR:HG22	2.01	0.42
11:AA:121:A:C2	36:KK:129:PRO:HB3	2.55	0.42
11:AA:245:U:H2'	11:AA:246:U:C6	2.54	0.42
11:AA:650:OMC:HM21	11:AA:2871:G:C6	2.55	0.42
11:AA:915:A:H8	11:AA:2136:C:O2'	2.03	0.42
11:AA:1699:A:H2'	11:AA:1700:G:C8	2.55	0.42
11:AA:2162:U:H2'	11:AA:2163:C:O4'	2.20	0.42
11:AA:2943:G:H2'	11:AA:2944:U:O4'	2.19	0.42
12:Aa:197:LEU:HD12	12:Aa:197:LEU:HA	1.88	0.42
12:Aa:314:LEU:HD12	12:Aa:314:LEU:HA	1.92	0.42
15:Bb:70:C:H2'	15:Bb:71:G:H8	1.85	0.42
18:Cc:23:G:H2'	18:Cc:24:C:H6	1.84	0.42
19:D:68:GLN:O	19:D:72:GLU:HG3	2.19	0.42
34:JJ:35:ALA:O	34:JJ:39:GLU:HG2	2.19	0.42
34:JJ:185:ILE:O	34:JJ:189:ILE:HG22	2.19	0.42
36:KK:101:THR:HB	36:KK:104:GLU:CD	2.45	0.42
61:c:81:G:H2'	61:c:82:U:C6	2.55	0.42
61:c:327:U:H2'	61:c:328:A:C8	2.55	0.42
61:c:1271:OMG:HM23	61:c:1271:OMG:H1'	1.69	0.42
61:c:1344:A:H2'	61:c:1345:A:C8	2.55	0.42
61:c:1535:U:H5	67:i:187:ILE:HA	1.84	0.42
61:c:1589:C:H2'	61:c:1590:G:C8	2.55	0.42
62:d:52:LYS:NZ	82:x:82:VAL:O	2.53	0.42
62:d:200:ASP:OD1	78:t:90:ALA:HA	2.19	0.42
63:e:30:PHE:CD2	63:e:94:LYS:HA	2.55	0.42
66:h:98:ASN:HD22	66:h:119:ALA:CB	2.32	0.42
68:j:147:LEU:HD12	68:j:151:ASP:HB3	2.01	0.42
68:j:159:ARG:HB3	68:j:170:THR:OG1	2.19	0.42
69:k:63:PRO:HB2	69:k:65:PRO:HD3	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:k:76:LYS:O	69:k:76:LYS:HG3	2.19	0.42
75:q:105:LEU:HD23	75:q:105:LEU:HA	1.91	0.42
4:3:69:GLY:HA3	61:c:1048:G:O3'	2.20	0.41
5:4:27:GLN:OE1	5:4:43:ASN:ND2	2.51	0.41
8:7:19:TRP:O	8:7:38:ARG:N	2.40	0.41
8:7:292:LEU:HD22	8:7:301:LEU:HD21	2.01	0.41
11:AA:237:G:H2'	11:AA:238:A:H8	1.84	0.41
11:AA:1699:A:H2'	11:AA:1700:G:H8	1.85	0.41
11:AA:1722:U:O4'	19:D:96:ILE:HG12	2.19	0.41
11:AA:1744:G:H2'	11:AA:1745:C:C6	2.56	0.41
11:AA:2176:U:OP1	23:EE:54:ARG:NH2	2.41	0.41
11:AA:2211:U:H2'	11:AA:2212:C:O4'	2.20	0.41
11:AA:2495:C:C2	11:AA:2496:C:C5	3.07	0.41
11:AA:3393:U:H2'	11:AA:3394:U:C6	2.55	0.41
12:Aa:381:TYR:HD2	12:Aa:478:MET:HG3	1.85	0.41
12:Aa:579:SER:HA	12:Aa:708:THR:OG1	2.20	0.41
13:B:120:ASN:OD1	13:B:145:HIS:HB2	2.20	0.41
18:Cc:76:C:O2	59:a:55:LYS:HD3	2.20	0.41
19:D:173:ARG:NH2	19:D:176:ARG:HG2	2.31	0.41
42:NN:54:VAL:HG23	42:NN:55:ARG:N	2.35	0.41
61:c:626:U:H2'	61:c:627:C:H6	1.84	0.41
61:c:629:U:OP2	92:c:2004:HOH:O	2.22	0.41
61:c:872:G:N2	61:c:1047:G:H4'	2.35	0.41
61:c:909:U:H2'	61:c:910:C:C6	2.55	0.41
61:c:931:C:H5"	63:e:116:LYS:HG3	2.02	0.41
61:c:1087:A:H5'	61:c:1298:U:C5	2.55	0.41
61:c:1223:A:N1	61:c:1261:G:C6	2.88	0.41
61:c:1480:G:C2	61:c:1528:U:C2	3.08	0.41
62:d:15:GLN:HB2	78:t:100:LEU:HD11	2.01	0.41
62:d:55:GLU:OE2	82:x:80:LYS:N	2.27	0.41
63:e:70:LEU:HB3	63:e:79:HIS:HB3	2.01	0.41
64:f:227:PRO:HA	64:f:230:TRP:CG	2.55	0.41
65:g:167:PHE:O	65:g:189:MET:HG2	2.20	0.41
65:g:191:ASP:OD1	65:g:193:ALA:N	2.50	0.41
70:l:65:PHE:O	70:l:73:SER:HA	2.19	0.41
78:t:78:ARG:HE	78:t:78:ARG:HB3	1.48	0.41
80:v:40:SER:HA	80:v:97:SER:H	1.84	0.41
8:7:57:PRO:HB2	77:s:99:GLU:OE2	2.20	0.41
11:AA:412:G:H2'	11:AA:413:U:C6	2.55	0.41
11:AA:631:U:H2'	11:AA:632:G:C8	2.54	0.41
11:AA:951:A:H5"	11:AA:1143:A:N1	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1074:U:O2'	41:N:42:ASN:OD1	2.21	0.41
11:AA:1306:G:O6	11:AA:2366:C:O2'	2.35	0.41
11:AA:1478:C:H2'	11:AA:1479:U:H6	1.85	0.41
11:AA:1490:A:O2'	54:V:12:HIS:O	2.25	0.41
11:AA:2178:A:H5"	23:EE:132:ASN:ND2	2.35	0.41
11:AA:2724:OMU:OP1	25:F:78:LYS:NZ	2.44	0.41
11:AA:3051:U:C2	11:AA:3052:G:C8	3.07	0.41
11:AA:3066:U:H2'	11:AA:3067:C:C6	2.55	0.41
11:AA:3378:C:H2'	11:AA:3379:C:C6	2.55	0.41
12:Aa:192:TYR:OH	12:Aa:765:LEU:HD13	2.20	0.41
12:Aa:269:LEU:HD12	12:Aa:270:GLU:O	2.20	0.41
12:Aa:390:ASP:HB3	12:Aa:393:ARG:HG3	2.01	0.41
24:Ee:93:LYS:HE3	24:Ee:93:LYS:HB3	1.78	0.41
32:II:43:LEU:HD21	32:II:85:ILE:HD12	2.01	0.41
40:MM:30:LYS:HE3	40:MM:30:LYS:HB3	1.89	0.41
48:Q:83:GLU:O	48:Q:86:THR:HG23	2.21	0.41
61:c:97:C:H2'	61:c:98:U:C6	2.55	0.41
61:c:341:A:H1'	70:l:86:SER:O	2.20	0.41
61:c:514:G:N3	61:c:515:A:C8	2.88	0.41
61:c:575:C:H4'	61:c:582:U:C4	2.55	0.41
61:c:1135:U:H2'	61:c:1136:U:C6	2.56	0.41
61:c:1235:C:OP2	61:c:1245:G:H8	2.03	0.41
62:d:12:GLU:O	62:d:15:GLN:HG2	2.20	0.41
62:d:157:ASP:HB3	82:x:34:ILE:HD11	2.02	0.41
65:g:32:GLU:OE1	65:g:57:ASP:HB3	2.19	0.41
69:k:10:SER:OG	69:k:44:LYS:HA	2.20	0.41
71:m:119:ALA:HA	71:m:124:HIS:HD2	1.85	0.41
1:0:17:LEU:HD22	66:h:69:HIS:HB3	2.03	0.41
4:3:2:VAL:C	4:3:4:VAL:H	2.28	0.41
4:3:51:GLN:N	74:p:56:ASP:OD2	2.53	0.41
11:AA:201:A:H2'	11:AA:202:G:C8	2.55	0.41
11:AA:209:A:H4'	11:AA:211:A:N7	2.34	0.41
11:AA:546:C:C5	11:AA:547:G:H1'	2.55	0.41
11:AA:734:C:H2'	11:AA:735:A:O4'	2.19	0.41
11:AA:797:U:O2	44:OO:12:ASN:ND2	2.51	0.41
11:AA:884:A:C8	11:AA:2139:A:C8	3.08	0.41
11:AA:1153:A:O2'	11:AA:1154:A:H5'	2.20	0.41
11:AA:1194:G:H2'	11:AA:1195:A:C8	2.55	0.41
11:AA:2156:C:OP1	23:EE:241:ARG:NH2	2.47	0.41
11:AA:2332:A:H2'	11:AA:2333:C:O4'	2.20	0.41
11:AA:2512:C:H4'	36:KK:249:ARG:HH22	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2515:A:N1	11:AA:2594:C:N4	2.64	0.41
11:AA:2689:A:H2'	11:AA:2689:A:N3	2.34	0.41
11:AA:2984:C:H2'	11:AA:2985:C:H6	1.85	0.41
11:AA:3304:U:O2'	26:FF:334:ARG:NH2	2.52	0.41
12:Aa:529:ILE:HD12	12:Aa:559:PRO:HB3	2.03	0.41
12:Aa:653:VAL:HG11	12:Aa:691:VAL:CG2	2.50	0.41
16:C:44:PHE:HZ	16:C:127:LEU:HD21	1.86	0.41
17:CC:29:U:H5"	44:OO:27:ASP:HB3	2.01	0.41
17:CC:80:A:H2'	17:CC:81:U:C6	2.55	0.41
24:Ee:125:LEU:O	24:Ee:129:THR:HG23	2.20	0.41
30:HH:160:PHE:HA	30:HH:163:LEU:HB3	2.01	0.41
38:LL:72:LYS:HE2	38:LL:76:ASP:OD2	2.20	0.41
61:c:536:C:O2'	61:c:537:G:OP1	2.33	0.41
61:c:753:A:OP2	66:h:187:ARG:HB2	2.20	0.41
61:c:898:A:C8	61:c:912:U:C4	3.08	0.41
61:c:1223:A:C6	61:c:1224:A:C5	3.08	0.41
61:c:1392:U:H2'	61:c:1393:C:C6	2.55	0.41
61:c:1520:U:H4'	61:c:1521:G:H2'	2.02	0.41
61:c:1565:C:O2	79:u:87:ASN:HA	2.20	0.41
65:g:80:ALA:O	65:g:82:GLY:N	2.53	0.41
68:j:218:GLU:N	68:j:218:GLU:OE1	2.52	0.41
73:o:8:GLN:NE2	73:o:14:GLN:O	2.44	0.41
77:s:115:THR:O	77:s:115:THR:HG23	2.21	0.41
2:1:48:ASP:HA	2:1:51:LEU:HD12	2.02	0.41
5:4:27:GLN:HE21	5:4:27:GLN:HB3	1.72	0.41
8:7:19:TRP:CH2	8:7:306:THR:HB	2.55	0.41
8:7:246:SER:HA	8:7:294:TRP:CD1	2.55	0.41
11:AA:408:A:N6	17:CC:15:G:H1'	2.35	0.41
11:AA:664:U:H5'	28:GG:107:ARG:HA	2.02	0.41
11:AA:760:G:O2'	11:AA:770:G:N2	2.41	0.41
11:AA:987:U:H2'	11:AA:988:U:H6	1.85	0.41
11:AA:1214:U:H2'	11:AA:1215:U:C6	2.55	0.41
11:AA:1616:U:H2'	11:AA:1617:G:H8	1.84	0.41
11:AA:1906:G:H1'	11:AA:1908:A:N6	2.36	0.41
12:Aa:328:LEU:HD23	12:Aa:328:LEU:HA	1.91	0.41
12:Aa:378:LEU:HD22	12:Aa:409:GLN:HE22	1.84	0.41
12:Aa:395:TYR:CD1	12:Aa:457:VAL:HG22	2.55	0.41
14:BB:81:U:H2'	14:BB:82:G:C8	2.55	0.41
14:BB:98:C:O2'	34:JJ:131:GLU:OE1	2.26	0.41
17:CC:84:C:H5'	17:CC:85:G:C5	2.55	0.41
20:DD:56:ASN:HB3	20:DD:60:ARG:NH2	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:H:14:SER:O	29:H:81:GLN:NE2	2.53	0.41
31:I:50:ALA:HA	31:I:55:PHE:CG	2.55	0.41
37:L:46:ILE:HG23	37:L:68:ILE:HG23	2.02	0.41
61:c:992:A:H2	61:c:1012:U:N3	2.04	0.41
61:c:1026:A:N7	61:c:1772:C:O2'	2.48	0.41
61:c:1277:G:O3'	65:g:183:GLY:HA3	2.20	0.41
61:c:1374:C:H2'	61:c:1375:A:C8	2.55	0.41
61:c:1604:U:HO2'	81:w:66:SER:HG	1.64	0.41
64:f:157:LYS:HZ2	64:f:170:ILE:HG23	1.85	0.41
68:j:147:LEU:HD12	68:j:151:ASP:CB	2.50	0.41
74:p:87:ASP:OD1	74:p:87:ASP:N	2.54	0.41
78:t:30:THR:O	78:t:30:THR:OG1	2.37	0.41
2:1:41:ILE:HG21	79:u:11:PHE:CE1	2.55	0.41
2:1:90:LYS:HE3	2:1:90:LYS:HB3	1.92	0.41
7:6:40:TYR:CD1	7:6:44:PHE:HD2	2.39	0.41
8:7:54:PHE:CE2	8:7:300:THR:HG21	2.55	0.41
8:7:164:ASP:OD1	8:7:164:ASP:N	2.52	0.41
8:7:202:LEU:HA	8:7:212:ALA:O	2.21	0.41
10:A:23:VAL:CG1	10:A:84:LEU:HD11	2.50	0.41
10:A:121:PRO:HA	10:A:124:LEU:HD12	2.00	0.41
11:AA:127:G:H2'	11:AA:128:G:C8	2.55	0.41
11:AA:1048:A:H2'	40:MM:22:TYR:CZ	2.55	0.41
11:AA:1236:G:C5	24:Ee:16:ARG:HE	1.65	0.41
11:AA:1323:G:O3'	22:E:2:ALA:HA	2.20	0.41
11:AA:1381:A:H2'	11:AA:1382:G:H8	1.86	0.41
11:AA:1670:C:H4'	11:AA:1859:A:O3'	2.19	0.41
11:AA:2261:G:O2'	11:AA:2262:A:N7	2.48	0.41
11:AA:2611:U:H2'	11:AA:2612:U:H6	1.84	0.41
11:AA:2793:OMG:H5"	59:a:66:LYS:HG2	2.02	0.41
11:AA:3271:G:C2	32:II:108:LYS:HG2	2.56	0.41
11:AA:3291:G:C2	11:AA:3292:A:C5	3.08	0.41
11:AA:3357:U:H2'	11:AA:3358:U:C6	2.55	0.41
12:Aa:21:ASN:HA	12:Aa:101:ASN:O	2.20	0.41
12:Aa:377:ASP:OD1	12:Aa:377:ASP:N	2.53	0.41
12:Aa:717:PHE:CE2	12:Aa:722:PRO:HB3	2.55	0.41
12:Aa:774:VAL:HG21	91:Aa:1003:SO1:H101	2.03	0.41
15:Bb:37:YYG:H141	15:Bb:37:YYG:C19	2.49	0.41
15:Bb:74:C:H3'	40:MM:110:ARG:NH2	2.36	0.41
17:CC:40:A:H2'	17:CC:41:A:C8	2.56	0.41
22:E:149:LYS:HG2	46:PP:16:GLU:HB3	2.02	0.41
24:Ee:32:ILE:CD1	24:Ee:41:LYS:HZ1	2.33	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:M:75:LEU:HD23	39:M:75:LEU:HA	1.82	0.41
44:OO:62:THR:O	44:OO:62:THR:OG1	2.37	0.41
45:P:80:ASN:HB3	45:P:90:PHE:CD1	2.55	0.41
61:c:66:U:C6	68:j:173:PRO:HB3	2.55	0.41
61:c:586:G:H2'	61:c:587:C:C6	2.56	0.41
61:c:793:A:H5"	61:c:794:U:H5"	2.02	0.41
61:c:888:U:H2'	61:c:889:U:H6	1.84	0.41
61:c:1291:G:N2	61:c:1305:U:O4	2.52	0.41
61:c:1427:A:C6	65:g:146:ARG:HD3	2.54	0.41
61:c:1590:G:H2'	61:c:1591:C:H6	1.84	0.41
61:c:1625:C:H2'	61:c:1626:U:C6	2.55	0.41
62:d:74:VAL:HG23	62:d:118:PRO:HB3	2.01	0.41
62:d:198:MET:HE2	62:d:198:MET:HB3	1.86	0.41
63:e:105:PHE:CD1	63:e:213:ARG:HA	2.54	0.41
67:i:121:ILE:HB	67:i:129:PRO:HB3	2.03	0.41
69:k:67:LEU:O	69:k:67:LEU:HG	2.21	0.41
76:r:38:PRO:O	76:r:42:ARG:HG2	2.20	0.41
78:t:78:ARG:NH2	78:t:79:GLU:HB3	2.35	0.41
84:z:95:PHE:CD2	84:z:135:LEU:HB3	2.56	0.41
2:1:65:LEU:HD22	2:1:70:LYS:HZ1	1.86	0.41
6:5:32:ARG:HB2	61:c:1595:U:OP1	2.21	0.41
11:AA:147:U:C4	36:KK:157:VAL:HG13	2.56	0.41
11:AA:323:A:H2'	11:AA:324:A:C8	2.56	0.41
11:AA:770:G:P	44:OO:171:ARG:HH21	2.43	0.41
11:AA:1138:U:O3'	34:JJ:97:PRO:HD3	2.20	0.41
11:AA:2138:A:C4	54:V:3:LYS:HB3	2.56	0.41
11:AA:2533:G:C2	11:AA:2534:G:O6	2.73	0.41
11:AA:3038:U:H5"	26:FF:62:ARG:HG2	2.03	0.41
11:AA:3069:G:C2	11:AA:3070:A:C8	3.09	0.41
11:AA:3131:U:H2'	11:AA:3132:C:C6	2.56	0.41
11:AA:3214:U:C4	46:PP:121:MET:HG3	2.55	0.41
12:Aa:180:ARG:HD3	20:DD:137:GLN:HB3	2.02	0.41
12:Aa:260:LYS:NZ	12:Aa:262:THR:H	2.19	0.41
12:Aa:460:ASP:OD1	12:Aa:460:ASP:C	2.64	0.41
12:Aa:571:SER:CB	12:Aa:590:ALA:H	2.34	0.41
12:Aa:729:PHE:CE2	12:Aa:774:VAL:HG22	2.55	0.41
13:B:3:ARG:NE	17:CC:12:A:OP1	2.39	0.41
15:Bb:65:G:C4	15:Bb:66:A:C8	3.08	0.41
17:CC:36:G:OP1	54:V:66:TYR:OH	2.22	0.41
24:Ee:32:ILE:HD11	24:Ee:41:LYS:HZ1	1.86	0.41
30:HH:258:LYS:HZ3	30:HH:258:LYS:HG2	1.66	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:KK:144:GLU:OE2	49:QQ:6:TYR:OH	2.20	0.41
42:NN:49:LYS:HA	42:NN:64:LYS:HA	2.02	0.41
55:W:32:ASN:OD1	55:W:36:LYS:HB3	2.20	0.41
55:W:44:LYS:HA	55:W:52:TYR:O	2.21	0.41
60:b:51:ALA:HB3	60:b:54:ILE:HD12	2.03	0.41
61:c:259:U:OP1	70:l:75:LYS:NZ	2.42	0.41
61:c:339:C:P	70:l:10:LYS:HD3	2.61	0.41
61:c:684:A:H2'	61:c:685:A:H8	1.85	0.41
61:c:875:G:O2'	61:c:877:G:OP2	2.37	0.41
61:c:1221:A:H3'	61:c:1221:A:N3	2.35	0.41
62:d:84:ARG:HH21	62:d:201:LEU:HD12	1.85	0.41
63:e:136:ARG:HG2	63:e:138:PHE:CE1	2.55	0.41
67:i:114:ILE:HA	67:i:114:ILE:HD13	1.60	0.41
70:l:37:LYS:HA	70:l:37:LYS:HD3	1.91	0.41
70:l:88:ASN:HD22	70:l:88:ASN:HA	1.59	0.41
79:u:38:VAL:N	79:u:101:LEU:HD21	2.36	0.41
1:0:48:TYR:C	1:0:49:LYS:HD3	2.46	0.41
8:7:200:ASN:ND2	8:7:240:VAL:O	2.54	0.41
11:AA:791:A:H2'	11:AA:792:G:H8	1.86	0.41
11:AA:992:A:O2'	11:AA:993:G:H5'	2.21	0.41
11:AA:1594:A:H1'	11:AA:1615:C:H1'	2.03	0.41
11:AA:2454:G:H2'	11:AA:2455:U:H6	1.85	0.41
11:AA:2573:G:H2'	11:AA:2574:G:C8	2.56	0.41
11:AA:3227:A:H4'	46:PP:133:LYS:NZ	2.36	0.41
88:AA:3615:SPD:H41	88:AA:3615:SPD:H72	1.78	0.41
12:Aa:306:VAL:HG22	12:Aa:326:LYS:HD3	2.03	0.41
12:Aa:696:ASP:HB2	12:Aa:699:DDE:HD2	2.02	0.41
12:Aa:801:TRP:CZ2	91:Aa:1003:SO1:H242	2.56	0.41
14:BB:48:U:OP2	30:HH:94:ASN:HB3	2.21	0.41
15:Bb:36:A:H2'	15:Bb:37:YYG:H8	2.01	0.41
16:C:39:ARG:CZ	28:GG:302:ALA:HB2	2.51	0.41
26:FF:187:SER:O	26:FF:190:GLU:HG2	2.20	0.41
31:I:8:PHE:CD1	31:I:46:PRO:HG3	2.56	0.41
33:J:57:LEU:HG	33:J:62:VAL:HG22	2.03	0.41
38:LL:90:MET:HE3	38:LL:181:VAL:HG23	2.01	0.41
61:c:602:U:H2'	61:c:603:U:H6	1.85	0.41
61:c:1449:U:H2'	61:c:1450:U:H6	1.86	0.41
65:g:75:LYS:HD2	65:g:75:LYS:HA	1.82	0.41
66:h:100:ARG:HH22	66:h:236:ILE:HG22	1.86	0.41
68:j:57:ASP:HA	68:j:107:ALA:H	1.85	0.41
69:k:117:THR:O	69:k:121:VAL:HG22	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:l:23:LYS:O	70:l:25:ARG:NH1	2.54	0.41
76:r:86:VAL:H	76:r:89:MET:HE2	1.84	0.41
82:x:10:GLU:O	82:x:10:GLU:HG3	2.20	0.41
1:0:83:LYS:HD3	1:0:96:LEU:HD22	2.02	0.41
1:0:98:GLU:HG3	1:0:99:LYS:H	1.85	0.41
4:3:19:HIS:HB3	4:3:22:LYS:HG3	2.03	0.41
5:4:35:ASP:OD2	5:4:38:ARG:NH2	2.54	0.41
6:5:15:GLY:HA3	61:c:1204:A:H61	1.85	0.41
8:7:288:HIS:O	8:7:306:THR:HG23	2.21	0.41
11:AA:167:U:H2'	11:AA:168:U:C6	2.56	0.41
11:AA:718:G:C2	11:AA:721:G:H1'	2.56	0.41
11:AA:837:A:H3'	11:AA:838:G:H8	1.86	0.41
11:AA:926:A:H2'	11:AA:927:C:C6	2.55	0.41
11:AA:2379:U:H2'	11:AA:2380:U:C6	2.56	0.41
11:AA:2456:A:H2'	11:AA:2457:G:C8	2.56	0.41
11:AA:2496:C:C4	11:AA:2497:U:C4	3.09	0.41
11:AA:2561:A:H2'	11:AA:2562:A:C8	2.50	0.41
11:AA:2911:A:H4'	11:AA:2912:G:C8	2.55	0.41
11:AA:2961:G:H2'	11:AA:2962:U:H6	1.83	0.41
12:Aa:81:MET:HE3	12:Aa:339:VAL:HG11	2.03	0.41
12:Aa:346:VAL:HA	12:Aa:372:CYS:SG	2.61	0.41
12:Aa:363:ASP:OD1	12:Aa:366:CYS:N	2.47	0.41
17:CC:104:A:C8	17:CC:105:A:C8	3.09	0.41
23:EE:62:VAL:HG11	23:EE:71:LEU:HD13	2.03	0.41
26:FF:187:SER:HB3	26:FF:190:GLU:CG	2.51	0.41
28:GG:140:HIS:CD2	28:GG:247:PHE:H	2.38	0.41
44:OO:47:ALA:O	44:OO:49:ARG:HB2	2.21	0.41
61:c:1183:A:C6	76:r:100:LYS:HG2	2.56	0.41
61:c:1219:A:H2'	61:c:1220:C:C6	2.56	0.41
61:c:1226:A:H5'	61:c:1230:A:O4'	2.21	0.41
61:c:1439:C:H2'	61:c:1440:C:C6	2.56	0.41
61:c:1469:A:H4'	61:c:1541:G:H4'	2.02	0.41
62:d:126:PRO:HG2	62:d:151:SER:HB3	2.03	0.41
63:e:128:LYS:HD3	63:e:132:ASP:HA	2.03	0.41
65:g:109:LEU:HD21	65:g:115:ILE:HA	2.03	0.41
65:g:191:ASP:OD1	65:g:191:ASP:C	2.63	0.41
69:k:8:ILE:CG1	69:k:42:GLN:HG3	2.49	0.41
74:p:37:ILE:HG13	74:p:54:LEU:HD11	2.02	0.41
1:0:29:HIS:HB2	1:0:32:ARG:HG2	2.03	0.41
6:5:43:PHE:O	6:5:47:ALA:HB2	2.21	0.41
8:7:33:LEU:HB3	8:7:45:TRP:NE1	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:7:206:PRO:HG2	8:7:247:PRO:HA	2.01	0.41
8:7:220:ILE:O	8:7:233:THR:HA	2.20	0.41
11:AA:113:C:P	49:QQ:147:ARG:HE	2.44	0.41
11:AA:265:A:H5"	11:AA:266:A:OP2	2.21	0.41
11:AA:359:U:H4'	11:AA:817:A2M:H61	1.86	0.41
11:AA:497:C:H2'	11:AA:498:A:O4'	2.21	0.41
11:AA:780:A:O4'	16:C:162:ALA:HA	2.21	0.41
11:AA:887:G:H2'	11:AA:888:A:C8	2.56	0.41
11:AA:963:G:O2'	39:M:29:PRO:O	2.39	0.41
11:AA:1226:G:H2'	11:AA:1227:C:C6	2.56	0.41
11:AA:1340:G:H2'	11:AA:1341:U:H6	1.86	0.41
11:AA:1363:A:H2'	11:AA:1364:C:C6	2.56	0.41
11:AA:1615:C:H2'	11:AA:1616:U:H6	1.86	0.41
11:AA:1801:U:H2'	11:AA:1802:C:C6	2.54	0.41
11:AA:2101:C:HO2'	11:AA:2102:U:P	2.44	0.41
11:AA:2168:A:H8	11:AA:2168:A:OP2	2.04	0.41
11:AA:2186:U:OP2	23:EE:200:ARG:HD2	2.21	0.41
11:AA:2344:U:H2'	11:AA:2345:A:C8	2.56	0.41
11:AA:2354:C:H2'	11:AA:2355:G:O4'	2.21	0.41
11:AA:2361:A:H2'	11:AA:2362:C:C6	2.55	0.41
11:AA:2655:U:H4'	11:AA:2656:A:O4'	2.19	0.41
11:AA:2656:A:C8	11:AA:2658:G:C8	3.08	0.41
11:AA:2660:G:O3'	11:AA:2749:G:N2	2.54	0.41
11:AA:2714:G:C8	11:AA:2751:G:H2'	2.56	0.41
11:AA:2986:U:H2'	11:AA:2987:A:C8	2.56	0.41
11:AA:3349:C:H2'	11:AA:3350:C:C6	2.56	0.41
12:Aa:29:ASP:O	12:Aa:159:LYS:NZ	2.48	0.41
12:Aa:380:LEU:HD23	12:Aa:456:LEU:HD11	2.01	0.41
12:Aa:494:GLU:CG	12:Aa:555:LYS:HE3	2.50	0.41
16:C:58:ASN:C	16:C:60:PRO:HD3	2.46	0.41
16:C:161:LYS:HD3	16:C:161:LYS:HA	1.90	0.41
17:CC:57:C:H4'	17:CC:63:G:N7	2.36	0.41
17:CC:143:U:H2'	17:CC:144:G:O4'	2.21	0.41
30:HH:179:ARG:HA	30:HH:179:ARG:HD3	1.74	0.41
32:II:8:LYS:H	32:II:8:LYS:HG2	1.55	0.41
32:II:29:LYS:HB2	32:II:29:LYS:HE2	1.66	0.41
34:JJ:155:LYS:C	34:JJ:156:ILE:HG13	2.45	0.41
37:L:100:THR:HA	37:L:106:GLN:HB3	2.03	0.41
38:LL:46:THR:HG23	38:LL:54:LYS:HB2	2.03	0.41
42:NN:92:ARG:HD3	42:NN:92:ARG:N	2.36	0.41
59:a:11:TYR:CE2	59:a:13:LYS:HG2	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:48:G:C6	61:c:432:G:C2	3.09	0.41
61:c:272:U:H2'	61:c:273:G:C8	2.53	0.41
61:c:323:A:OP2	70:l:10:LYS:HA	2.20	0.41
61:c:762:A:OP1	71:m:79:ARG:NH1	2.49	0.41
61:c:811:A:N6	69:k:113:PRO:HD3	2.36	0.41
61:c:811:A:N6	69:k:110:GLN:O	2.54	0.41
61:c:1142:A:H2'	61:c:1143:A:C8	2.56	0.41
61:c:1146:G:H2'	61:c:1147:A:C8	2.55	0.41
61:c:1239:U:H2'	61:c:1240:U:C6	2.56	0.41
61:c:1391:A:H2'	61:c:1392:U:H6	1.86	0.41
61:c:1488:G:O2'	61:c:1494:C:O2	2.31	0.41
61:c:1638:G:H2'	61:c:1639:OMC:O4'	2.20	0.41
62:d:5:ALA:O	62:d:8:ASP:HB2	2.21	0.41
63:e:144:ARG:HG3	63:e:145:LYS:O	2.21	0.41
64:f:148:LEU:HD12	64:f:148:LEU:HA	1.87	0.41
65:g:74:GLN:HG3	65:g:79:TYR:HB2	2.02	0.41
65:g:105:MET:HG3	65:g:118:ALA:HB1	2.03	0.41
65:g:148:LYS:HB2	65:g:148:LYS:HE2	1.71	0.41
66:h:77:ARG:HD2	66:h:82:TYR:CE1	2.56	0.41
71:m:153:GLU:HB3	71:m:154:LYS:HE2	2.01	0.41
71:m:168:ARG:HG3	71:m:169:PRO:HD2	2.03	0.41
77:s:36:ILE:HD11	77:s:48:VAL:HG12	2.02	0.41
77:s:60:PHE:HB3	77:s:63:ILE:HD11	2.01	0.41
78:t:16:LEU:HD23	78:t:16:LEU:HA	1.88	0.41
78:t:99:VAL:HA	78:t:118:PRO:HB2	2.03	0.41
79:u:27:LYS:HD3	79:u:54:LEU:O	2.20	0.41
79:u:47:CYS:HB3	79:u:54:LEU:HD22	2.03	0.41
84:z:92:CYS:HA	84:z:95:PHE:HD1	1.85	0.41
3:2:37:LYS:HE3	61:c:933:A:OP2	2.21	0.41
11:AA:388:G:H4'	13:B:18:ARG:O	2.21	0.41
11:AA:1139:G:O6	41:N:10:HIS:NE2	2.53	0.41
11:AA:1236:G:N3	24:Ee:16:ARG:HD3	2.21	0.41
11:AA:1352:A:H5"	11:AA:1353:U:H5'	2.03	0.41
11:AA:1444:G:H2'	11:AA:1445:U:O4'	2.20	0.41
11:AA:1463:U:H2'	11:AA:1464:G:O4'	2.20	0.41
11:AA:1721:U:OP2	19:D:124:TYR:OH	2.32	0.41
11:AA:1910:A:H2'	11:AA:1911:A:C8	2.55	0.41
11:AA:2490:C:H4'	11:AA:2491:A:OP1	2.21	0.41
11:AA:2496:C:O2'	18:Cc:18:C:N4	2.54	0.41
11:AA:2681:U:H1'	42:NN:22:SER:HB3	2.01	0.41
11:AA:2738:A:O4'	41:N:37:PRO:HG2	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:Aa:545:LEU:O	12:Aa:550:ALA:HB3	2.21	0.41
17:CC:34:U:H4'	52:T:85:THR:HG21	2.02	0.41
18:Cc:76:C:H2'	18:Cc:77:A:H4'	2.03	0.41
22:E:60:SER:OG	22:E:62:ASN:OD1	2.38	0.41
28:GG:140:HIS:HA	28:GG:177:ASP:OD1	2.21	0.41
29:H:26:ALA:O	29:H:115:THR:HG22	2.21	0.41
29:H:63:LYS:HD3	29:H:63:LYS:HA	1.89	0.41
36:KK:149:LYS:N	36:KK:200:LEU:O	2.49	0.41
40:MM:182:LEU:O	40:MM:186:GLU:HG2	2.21	0.41
61:c:1216:C:O2'	61:c:1444:A:N1	2.50	0.41
61:c:1330:G:H22	65:g:204:ASP:HB3	1.86	0.41
61:c:1390:U:OP1	78:t:5:ARG:HD2	2.21	0.41
61:c:1502:G:N1	61:c:1506:G:O6	2.54	0.41
66:h:180:LEU:N	66:h:229:GLY:O	2.54	0.41
67:i:26:ALA:HB3	77:s:27:GLY:O	2.21	0.41
70:l:17:LYS:HE2	70:l:17:LYS:HB2	1.94	0.41
76:r:85:ILE:HD11	76:r:116:LEU:HD23	2.01	0.41
77:s:86:ALA:O	77:s:90:VAL:HG23	2.20	0.41
5:4:57:MET:HE1	67:i:144:GLU:HB2	2.03	0.40
8:7:311:ARG:HD2	8:7:312:VAL:H	1.86	0.40
11:AA:209:A:H4'	11:AA:211:A:C8	2.56	0.40
11:AA:737:G:H2'	11:AA:738:A:H8	1.85	0.40
11:AA:1090:G:H2'	11:AA:1091:A:H8	1.87	0.40
11:AA:1306:G:O2'	11:AA:1307:G:H5"	2.21	0.40
11:AA:1327:C:O2'	50:R:76:GLY:HA2	2.21	0.40
11:AA:1341:U:H2'	11:AA:1342:C:C6	2.56	0.40
11:AA:1363:A:H2'	11:AA:1364:C:H6	1.86	0.40
11:AA:1495:U:C5	11:AA:1835:A:N1	2.88	0.40
11:AA:1556:C:H2'	11:AA:2169:G:H22	1.86	0.40
11:AA:1909:A:H2'	11:AA:1910:A:C8	2.56	0.40
11:AA:1911:A:H2	11:AA:2122:G:C8	2.39	0.40
11:AA:2935:U:O4	29:H:44:SER:OG	2.39	0.40
11:AA:3387:U:H2'	11:AA:3388:C:C6	2.56	0.40
28:GG:22:LEU:HA	28:GG:23:PRO:HD3	1.81	0.40
30:HH:195:LEU:HD12	30:HH:195:LEU:O	2.21	0.40
31:I:45:ASN:HB3	31:I:48:ARG:HG2	2.03	0.40
34:JJ:116:PHE:CE1	34:JJ:144:ILE:HG12	2.55	0.40
44:OO:90:ALA:HB1	44:OO:95:ILE:HB	2.03	0.40
46:PP:36:VAL:N	46:PP:45:LEU:O	2.51	0.40
61:c:90:C:O2'	61:c:451:A:H5"	2.21	0.40
61:c:207:U:O2	70:l:178:ARG:NH2	2.54	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:c:599:A:H2'	61:c:600:U:H6	1.87	0.40
61:c:1344:A:H2'	61:c:1345:A:H8	1.86	0.40
61:c:1460:A:H5'	61:c:1461:C:OP2	2.21	0.40
61:c:1504:G:H4'	80:v:41:SER:HB2	2.02	0.40
61:c:1760:G:H1'	61:c:1781:MA6:H2	2.03	0.40
65:g:195:SER:OG	65:g:197:THR:O	2.40	0.40
66:h:140:VAL:HA	66:h:145:ARG:O	2.22	0.40
67:i:98:MET:SD	67:i:105:GLY:O	2.79	0.40
70:l:72:ILE:HD12	70:l:72:ILE:N	2.37	0.40
70:l:152:ILE:HG13	70:l:153:GLU:H	1.85	0.40
80:v:101:ASN:O	80:v:104:VAL:HG12	2.20	0.40
8:7:221:MET:HB2	8:7:223:TRP:CH2	2.56	0.40
8:7:316:MET:HG2	8:7:318:ALA:N	2.35	0.40
11:AA:642:U:OP1	39:M:22:ILE:HG23	2.21	0.40
11:AA:663:OMC:HM21	28:GG:104:LYS:HB2	2.03	0.40
11:AA:737:G:H2'	11:AA:738:A:C8	2.57	0.40
11:AA:2396:G:OP1	11:AA:2397:A:O2'	2.34	0.40
11:AA:2452:G:C2	11:AA:2462:A:H2'	2.56	0.40
11:AA:2746:A:N1	30:HH:148:ILE:HG12	2.36	0.40
11:AA:3232:G:C6	11:AA:3256:G:C6	3.10	0.40
11:AA:3287:U:N3	11:AA:3288:G:N7	2.69	0.40
12:Aa:774:VAL:HG11	91:Aa:1003:SO1:H203	2.03	0.40
91:Aa:1003:SO1:H203	91:Aa:1003:SO1:H121	1.83	0.40
14:BB:11:A:N1	14:BB:67:G:O2'	2.43	0.40
24:Ee:29:ALA:N	24:Ee:30:PRO:HD2	2.37	0.40
34:JJ:83:LEU:HD11	34:JJ:116:PHE:HB3	2.03	0.40
34:JJ:148:VAL:HG12	34:JJ:181:ILE:HD11	2.02	0.40
43:O:9:SER:N	43:O:12:GLN:HG3	2.36	0.40
46:PP:20:VAL:HG21	46:PP:90:VAL:HG11	2.03	0.40
59:a:78:LYS:O	59:a:80:ARG:HD2	2.21	0.40
61:c:1350:U:H2'	61:c:1351:G:C8	2.57	0.40
61:c:1363:U:H4'	61:c:1364:G:O4'	2.20	0.40
61:c:1381:U:H4'	81:w:59:PRO:HG3	2.03	0.40
61:c:1581:C:O2'	61:c:1582:U:H5'	2.21	0.40
66:h:183:VAL:HG21	66:h:218:PHE:HE2	1.87	0.40
71:m:136:VAL:HG21	71:m:146:PHE:CE2	2.56	0.40
73:o:35:TYR:C	73:o:35:TYR:CD1	2.99	0.40
79:u:42:TYR:HA	79:u:85:PHE:HE1	1.85	0.40
1:0:133:ASN:N	1:0:134:ALA:HA	2.34	0.40
8:7:180:ALA:O	8:7:188:ILE:HA	2.21	0.40
8:7:266:ASP:HA	8:7:267:PRO:HA	1.92	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:144:A:H2'	11:AA:145:G:O4'	2.21	0.40
11:AA:542:G:O6	11:AA:550:A:N6	2.54	0.40
11:AA:717:C:H2'	11:AA:718:G:O4'	2.22	0.40
11:AA:945:C:H2'	11:AA:946:U:H6	1.81	0.40
11:AA:1044:U:P	40:MM:90:ARG:HH21	2.45	0.40
11:AA:1234:G:H2'	11:AA:1235:U:C5	2.56	0.40
11:AA:1617:G:H2'	11:AA:1618:G:O4'	2.21	0.40
11:AA:2460:U:O2'	11:AA:2461:A:H5'	2.21	0.40
11:AA:2974:U:H2'	11:AA:2975:U:C6	2.56	0.40
11:AA:3084:C:OP1	31:I:38:SER:OG	2.27	0.40
11:AA:3259:U:H5'	11:AA:3261:C:H5	1.87	0.40
12:Aa:419:VAL:HA	12:Aa:420:PRO:HD3	1.93	0.40
16:C:148:GLU:O	16:C:151:ARG:HG2	2.22	0.40
17:CC:69:U:H2'	17:CC:70:G:O4'	2.21	0.40
19:D:105:LEU:HD13	19:D:135:LYS:HG3	2.03	0.40
28:GG:5:GLN:HB3	28:GG:19:ALA:HB1	2.03	0.40
37:L:6:LYS:HE3	37:L:6:LYS:HB3	1.80	0.40
42:NN:35:LYS:CE	42:NN:120:ILE:HD13	2.51	0.40
55:W:28:ASN:HB2	55:W:40:GLN:HB3	2.03	0.40
61:c:320:U:OP1	61:c:321:C:O2'	2.34	0.40
61:c:504:U:H2'	61:c:505:A:C8	2.56	0.40
61:c:683:C:H2'	61:c:684:A:H8	1.87	0.40
61:c:694:U:N3	69:k:98:ILE:HG13	2.37	0.40
61:c:884:A:H2'	61:c:885:G:H8	1.87	0.40
61:c:1280:4AC:CM7	61:c:1280:4AC:H5	2.52	0.40
61:c:1544:U:H2'	61:c:1545:A:C8	2.56	0.40
61:c:1652:C:H2'	61:c:1653:C:H6	1.86	0.40
61:c:1753:A:H2'	61:c:1754:A:C8	2.56	0.40
63:e:81:PHE:CD2	63:e:82:ARG:HG3	2.56	0.40
67:i:221:ALA:HB1	67:i:225:ARG:HH21	1.86	0.40
69:k:165:LYS:H	69:k:165:LYS:HG2	1.81	0.40
79:u:62:THR:HG22	79:u:63:GLN:H	1.87	0.40
2:1:89:ILE:HB	2:1:101:TYR:HB3	2.03	0.40
5:4:19:THR:OG1	5:4:27:GLN:HG2	2.22	0.40
7:6:33:ARG:HD3	71:m:126:ARG:HG2	2.03	0.40
7:6:56:MET:HE2	7:6:56:MET:HB3	1.83	0.40
8:7:248:ASN:HD21	8:7:249:ARG:NH1	2.19	0.40
10:A:164:SER:HG	11:AA:3181:C:HO2'	1.67	0.40
11:AA:900:G:H1'	11:AA:1589:A:H61	1.86	0.40
11:AA:956:U:H2'	11:AA:957:C:C6	2.57	0.40
11:AA:1236:G:C5	24:Ee:16:ARG:NH2	2.90	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1740:U:H1'	11:AA:1741:A:H2	1.86	0.40
11:AA:2133:U:O4	11:AA:2147:A:H2	2.05	0.40
11:AA:2631:U:OP1	11:AA:2757:U:O2'	2.31	0.40
11:AA:2955:U:H2'	11:AA:2956:A:O4'	2.21	0.40
11:AA:3260:G:H4'	46:PP:126:GLN:HA	2.03	0.40
12:Aa:463:LEU:HD12	12:Aa:463:LEU:HA	1.88	0.40
12:Aa:723:LYS:HD3	12:Aa:808:PRO:HD3	2.03	0.40
15:Bb:9:A:H2	15:Bb:23:A:N6	2.18	0.40
17:CC:6:U:C2	17:CC:7:U:C5	3.10	0.40
17:CC:7:U:H2'	17:CC:8:C:H6	1.87	0.40
18:Cc:37:U:C2	18:Cc:38:A:C8	3.10	0.40
23:EE:36:GLU:OE1	23:EE:163:ARG:NH1	2.46	0.40
28:GG:250:TRP:CZ3	28:GG:258:LEU:HD11	2.57	0.40
32:II:100:LYS:HD3	32:II:137:ASP:OD2	2.22	0.40
38:LL:53:ILE:HD12	46:PP:7:VAL:HG21	2.03	0.40
40:MM:192:ASP:HA	40:MM:197:VAL:HG12	2.02	0.40
44:OO:119:TYR:CE2	44:OO:123:ILE:HD13	2.56	0.40
61:c:593:U:OP1	71:m:40:LYS:HB2	2.21	0.40
61:c:606:A:H4'	61:c:607:G:H3'	2.03	0.40
61:c:926:A:H2'	61:c:927:C:C6	2.57	0.40
61:c:990:C:H2'	61:c:991:G:O4'	2.21	0.40
61:c:1223:A:H2'	61:c:1224:A:O4'	2.22	0.40
61:c:1381:U:O4	61:c:1382:A:N6	2.55	0.40
61:c:1469:A:OP1	80:v:91:TYR:OH	2.36	0.40
65:g:25:PHE:CE1	65:g:69:LEU:HD12	2.55	0.40
67:i:208:SER:OG	67:i:209:TYR:N	2.54	0.40
69:k:141:ARG:O	69:k:148:LYS:HA	2.21	0.40
76:r:111:MET:CE	79:u:119:ILE:HG13	2.51	0.40
84:z:42:PRO:O	84:z:79:ASN:ND2	2.47	0.40
1:0:123:LYS:HE3	1:0:123:LYS:HB2	1.82	0.40
11:AA:36:C:H4'	11:AA:808:A:C2	2.56	0.40
11:AA:271:C:H2'	11:AA:272:G:O4'	2.21	0.40
11:AA:289:A:H2'	11:AA:290:G:C8	2.54	0.40
11:AA:794:U:H2'	11:AA:795:G:C8	2.56	0.40
11:AA:1295:G:H2'	11:AA:1296:C:C6	2.56	0.40
11:AA:1662:G:H22	11:AA:1787:A:H2	1.68	0.40
12:Aa:71:LYS:HE3	12:Aa:71:LYS:HB2	1.88	0.40
12:Aa:83:ASP:O	12:Aa:86:VAL:HG22	2.21	0.40
13:B:62:ARG:NH1	17:CC:5:U:OP2	2.54	0.40
14:BB:60:G:H2'	14:BB:61:G:C8	2.56	0.40
17:CC:2:A:C4	17:CC:3:A:C8	3.09	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:CC:83:C:H5'	17:CC:84:C:P	2.62	0.40
18:Cc:32:G:H2'	18:Cc:33:C:C6	2.57	0.40
23:EE:32:LEU:HD13	23:EE:163:ARG:HD3	2.04	0.40
39:M:80:THR:HA	39:M:87:ARG:HH21	1.85	0.40
61:c:162:A:H3'	61:c:163:G:N2	2.36	0.40
61:c:213:A:H2'	61:c:214:G:O4'	2.20	0.40
61:c:294:C:H2'	61:c:295:A:C8	2.56	0.40
61:c:773:C:O2'	61:c:788:A:H1'	2.21	0.40
61:c:1181:U:H2'	61:c:1182:U:O4'	2.21	0.40
61:c:1477:G:H2'	61:c:1478:G:C8	2.57	0.40
61:c:1575:G7M:H2'	61:c:1576:A:C8	2.56	0.40
63:e:33:LYS:HZ3	63:e:41:ARG:HH12	1.69	0.40
64:f:49:LYS:HA	64:f:49:LYS:HD3	1.81	0.40
66:h:151:ASP:HB3	66:h:154:ILE:HG13	2.03	0.40
80:v:28:LEU:C	80:v:30:VAL:H	2.29	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	0	132/135 (98%)	127 (96%)	5 (4%)	0	100	100
2	1	68/108 (63%)	62 (91%)	6 (9%)	0	100	100
3	2	95/119 (80%)	88 (93%)	6 (6%)	1 (1%)	12	5
4	3	79/82 (96%)	73 (92%)	6 (8%)	0	100	100
5	4	61/67 (91%)	61 (100%)	0	0	100	100
6	5	47/56 (84%)	47 (100%)	0	0	100	100
7	6	51/63 (81%)	50 (98%)	1 (2%)	0	100	100
8	7	316/319 (99%)	297 (94%)	19 (6%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
9	8	32/152 (21%)	20 (62%)	12 (38%)	0	100	100
10	A	195/199 (98%)	192 (98%)	3 (2%)	0	100	100
12	Aa	811/842 (96%)	787 (97%)	24 (3%)	0	100	100
13	B	152/184 (83%)	149 (98%)	3 (2%)	0	100	100
16	C	183/186 (98%)	180 (98%)	3 (2%)	0	100	100
19	D	174/189 (92%)	170 (98%)	3 (2%)	1 (1%)	22	13
20	DD	195/312 (62%)	194 (100%)	1 (0%)	0	100	100
22	E	170/172 (99%)	165 (97%)	5 (3%)	0	100	100
23	EE	250/254 (98%)	245 (98%)	5 (2%)	0	100	100
24	Ee	156/165 (94%)	154 (99%)	2 (1%)	0	100	100
25	F	157/160 (98%)	154 (98%)	3 (2%)	0	100	100
26	FF	384/387 (99%)	375 (98%)	9 (2%)	0	100	100
27	G	95/121 (78%)	94 (99%)	1 (1%)	0	100	100
28	GG	359/362 (99%)	344 (96%)	15 (4%)	0	100	100
29	H	127/137 (93%)	125 (98%)	2 (2%)	0	100	100
30	HH	294/297 (99%)	287 (98%)	7 (2%)	0	100	100
31	I	61/155 (39%)	61 (100%)	0	0	100	100
32	II	151/176 (86%)	146 (97%)	5 (3%)	0	100	100
33	J	118/142 (83%)	115 (98%)	3 (2%)	0	100	100
34	JJ	220/244 (90%)	212 (96%)	7 (3%)	1 (0%)	25	17
35	K	124/127 (98%)	123 (99%)	1 (1%)	0	100	100
36	KK	231/256 (90%)	226 (98%)	5 (2%)	0	100	100
37	L	133/136 (98%)	128 (96%)	5 (4%)	0	100	100
38	LL	189/191 (99%)	181 (96%)	8 (4%)	0	100	100
39	M	146/149 (98%)	139 (95%)	6 (4%)	1 (1%)	19	11
40	MM	213/221 (96%)	206 (97%)	7 (3%)	0	100	100
41	N	56/59 (95%)	54 (96%)	2 (4%)	0	100	100
42	NN	167/174 (96%)	158 (95%)	9 (5%)	0	100	100
43	O	95/105 (90%)	95 (100%)	0	0	100	100
44	OO	191/199 (96%)	176 (92%)	14 (7%)	1 (0%)	25	17
45	P	107/113 (95%)	103 (96%)	4 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
46	PP	134/138 (97%)	132 (98%)	2 (2%)	0	100	100
48	Q	125/130 (96%)	125 (100%)	0	0	100	100
49	QQ	201/204 (98%)	194 (96%)	7 (4%)	0	100	100
50	R	104/107 (97%)	103 (99%)	1 (1%)	0	100	100
51	S	107/121 (88%)	106 (99%)	1 (1%)	0	100	100
52	T	117/120 (98%)	114 (97%)	3 (3%)	0	100	100
53	U	97/100 (97%)	89 (92%)	8 (8%)	0	100	100
54	V	82/88 (93%)	77 (94%)	4 (5%)	1 (1%)	11	4
55	W	75/78 (96%)	71 (95%)	4 (5%)	0	100	100
56	X	48/51 (94%)	45 (94%)	3 (6%)	0	100	100
57	Y	50/128 (39%)	50 (100%)	0	0	100	100
58	Z	23/25 (92%)	23 (100%)	0	0	100	100
59	a	100/106 (94%)	95 (95%)	5 (5%)	0	100	100
60	b	89/92 (97%)	89 (100%)	0	0	100	100
62	d	204/252 (81%)	193 (95%)	11 (5%)	0	100	100
63	e	210/255 (82%)	199 (95%)	11 (5%)	0	100	100
64	f	215/254 (85%)	204 (95%)	11 (5%)	0	100	100
65	g	177/240 (74%)	168 (95%)	9 (5%)	0	100	100
66	h	256/261 (98%)	247 (96%)	9 (4%)	0	100	100
67	i	195/225 (87%)	186 (95%)	9 (5%)	0	100	100
68	j	217/236 (92%)	207 (95%)	10 (5%)	0	100	100
69	k	182/190 (96%)	172 (94%)	10 (6%)	0	100	100
70	l	180/200 (90%)	169 (94%)	11 (6%)	0	100	100
71	m	183/197 (93%)	176 (96%)	7 (4%)	0	100	100
72	n	29/105 (28%)	25 (86%)	4 (14%)	0	100	100
73	o	140/156 (90%)	132 (94%)	8 (6%)	0	100	100
74	p	148/151 (98%)	145 (98%)	3 (2%)	0	100	100
75	q	125/137 (91%)	115 (92%)	10 (8%)	0	100	100
76	r	85/142 (60%)	84 (99%)	1 (1%)	0	100	100
77	s	135/143 (94%)	127 (94%)	8 (6%)	0	100	100
78	t	119/136 (88%)	112 (94%)	7 (6%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
79	u	143/146 (98%)	135 (94%)	8 (6%)	0	100	100
80	v	141/144 (98%)	137 (97%)	4 (3%)	0	100	100
81	w	98/121 (81%)	98 (100%)	0	0	100	100
82	x	85/87 (98%)	76 (89%)	9 (11%)	0	100	100
83	y	127/130 (98%)	125 (98%)	2 (2%)	0	100	100
84	z	142/145 (98%)	129 (91%)	13 (9%)	0	100	100
All	All	11673/13056 (89%)	11237 (96%)	430 (4%)	6 (0%)	50	44

All (6) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
34	JJ	159	GLN
39	M	78	LEU
44	OO	63	VAL
54	V	65	ARG
3	2	47	ALA
19	D	131	ALA

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	0	112/113 (99%)	107 (96%)	5 (4%)	23	17
2	1	61/89 (68%)	56 (92%)	5 (8%)	9	4
3	2	83/101 (82%)	79 (95%)	4 (5%)	21	15
4	3	70/71 (99%)	69 (99%)	1 (1%)	62	63
5	4	56/60 (93%)	51 (91%)	5 (9%)	8	3
6	5	43/49 (88%)	40 (93%)	3 (7%)	12	6
7	6	46/54 (85%)	43 (94%)	3 (6%)	14	7
8	7	259/262 (99%)	244 (94%)	15 (6%)	17	10
9	8	30/135 (22%)	27 (90%)	3 (10%)	6	2

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
10	A	160/162 (99%)	158 (99%)	2 (1%)	65 66
12	Aa	694/714 (97%)	664 (96%)	30 (4%)	25 19
13	B	125/146 (86%)	121 (97%)	4 (3%)	34 28
16	C	150/151 (99%)	149 (99%)	1 (1%)	81 83
19	D	143/154 (93%)	140 (98%)	3 (2%)	48 45
20	DD	167/254 (66%)	160 (96%)	7 (4%)	25 20
22	E	156/156 (100%)	152 (97%)	4 (3%)	41 36
23	EE	193/196 (98%)	190 (98%)	3 (2%)	58 57
24	Ee	129/136 (95%)	121 (94%)	8 (6%)	15 8
25	F	136/137 (99%)	134 (98%)	2 (2%)	60 60
26	FF	320/323 (99%)	316 (99%)	4 (1%)	65 66
27	G	84/107 (78%)	82 (98%)	2 (2%)	44 40
28	GG	288/289 (100%)	284 (99%)	4 (1%)	62 63
29	H	101/105 (96%)	100 (99%)	1 (1%)	73 74
30	HH	244/245 (100%)	238 (98%)	6 (2%)	42 38
31	I	55/129 (43%)	54 (98%)	1 (2%)	54 52
32	II	133/153 (87%)	131 (98%)	2 (2%)	60 60
33	J	104/118 (88%)	103 (99%)	1 (1%)	73 74
34	JJ	186/205 (91%)	184 (99%)	2 (1%)	70 71
35	K	109/110 (99%)	109 (100%)	0	100 100
36	KK	187/208 (90%)	184 (98%)	3 (2%)	58 57
37	L	115/116 (99%)	110 (96%)	5 (4%)	25 19
38	LL	171/171 (100%)	166 (97%)	5 (3%)	37 32
39	M	118/119 (99%)	115 (98%)	3 (2%)	42 38
40	MM	184/187 (98%)	183 (100%)	1 (0%)	86 88
41	N	46/47 (98%)	46 (100%)	0	100 100
42	NN	147/150 (98%)	140 (95%)	7 (5%)	21 15
43	O	81/88 (92%)	80 (99%)	1 (1%)	67 68
44	OO	154/159 (97%)	149 (97%)	5 (3%)	34 28
45	P	94/97 (97%)	94 (100%)	0	100 100
46	PP	107/109 (98%)	104 (97%)	3 (3%)	38 34

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
47	Pp	2/2 (100%)	2 (100%)	0	100 100
48	Q	109/111 (98%)	108 (99%)	1 (1%)	75 77
49	QQ	175/176 (99%)	174 (99%)	1 (1%)	84 86
50	R	90/91 (99%)	89 (99%)	1 (1%)	70 71
51	S	94/103 (91%)	92 (98%)	2 (2%)	48 45
52	T	104/105 (99%)	103 (99%)	1 (1%)	73 74
53	U	81/82 (99%)	79 (98%)	2 (2%)	42 38
54	V	69/71 (97%)	68 (99%)	1 (1%)	62 63
55	W	68/69 (99%)	63 (93%)	5 (7%)	11 5
56	X	45/46 (98%)	45 (100%)	0	100 100
57	Y	47/116 (40%)	47 (100%)	0	100 100
58	Z	23/23 (100%)	22 (96%)	1 (4%)	25 19
59	a	87/91 (96%)	86 (99%)	1 (1%)	70 71
60	b	71/72 (99%)	70 (99%)	1 (1%)	62 63
62	d	165/210 (79%)	164 (99%)	1 (1%)	84 86
63	e	189/224 (84%)	180 (95%)	9 (5%)	21 15
64	f	176/205 (86%)	170 (97%)	6 (3%)	32 26
65	g	145/195 (74%)	138 (95%)	7 (5%)	21 15
66	h	220/222 (99%)	212 (96%)	8 (4%)	30 25
67	i	172/191 (90%)	162 (94%)	10 (6%)	17 10
68	j	188/201 (94%)	179 (95%)	9 (5%)	21 15
69	k	165/170 (97%)	155 (94%)	10 (6%)	15 9
70	l	146/161 (91%)	140 (96%)	6 (4%)	26 20
71	m	158/166 (95%)	154 (98%)	4 (2%)	42 38
72	n	32/98 (33%)	29 (91%)	3 (9%)	7 3
73	o	127/137 (93%)	122 (96%)	5 (4%)	27 22
74	p	127/128 (99%)	123 (97%)	4 (3%)	35 30
75	q	81/105 (77%)	77 (95%)	4 (5%)	21 14
76	r	77/118 (65%)	74 (96%)	3 (4%)	27 22
77	s	114/119 (96%)	105 (92%)	9 (8%)	10 4
78	t	105/124 (85%)	96 (91%)	9 (9%)	8 4

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
79	u	128/129 (99%)	121 (94%)	7 (6%)	18 11
80	v	115/116 (99%)	108 (94%)	7 (6%)	15 9
81	w	94/114 (82%)	83 (88%)	11 (12%)	4 1
82	x	74/74 (100%)	71 (96%)	3 (4%)	26 20
83	y	110/111 (99%)	107 (97%)	3 (3%)	40 35
84	z	119/120 (99%)	116 (98%)	3 (2%)	42 38
All	All	9933/10971 (90%)	9611 (97%)	322 (3%)	36 28

All (322) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	0	3	ASP
1	0	25	VAL
1	0	35	VAL
1	0	38	ASP
1	0	125	LEU
2	1	41	ILE
2	1	56	THR
2	1	66	VAL
2	1	84	GLU
2	1	100	ILE
3	2	15	ARG
3	2	30	ILE
3	2	58	VAL
3	2	84	VAL
4	3	40	CYS
5	4	12	VAL
5	4	29	ARG
5	4	30	VAL
5	4	41	VAL
5	4	48	VAL
6	5	26	SER
6	5	38	ILE
6	5	42	CYS
7	6	18	THR
7	6	47	VAL
7	6	57	ASN
8	7	20	VAL
8	7	25	THR
8	7	41	THR

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Mol	Chain	Res	Type
8	7	45	TRP
8	7	56	VAL
8	7	67	ILE
8	7	76	ASP
8	7	109	ASP
8	7	130	THR
8	7	147	HIS
8	7	157	VAL
8	7	159	ASN
8	7	167	VAL
8	7	260	ILE
8	7	316	MET
9	8	98	VAL
9	8	102	VAL
9	8	132	LEU
10	A	16	VAL
10	A	184	THR
12	Aa	5	THR
12	Aa	33	SER
12	Aa	77	LEU
12	Aa	116	THR
12	Aa	156	VAL
12	Aa	190	SER
12	Aa	201	GLN
12	Aa	227	THR
12	Aa	229	TYR
12	Aa	258	THR
12	Aa	269	LEU
12	Aa	320	LEU
12	Aa	323	VAL
12	Aa	326	LYS
12	Aa	388	THR
12	Aa	435	VAL
12	Aa	460	ASP
12	Aa	468	THR
12	Aa	470	THR
12	Aa	483	PHE
12	Aa	517	CYS
12	Aa	536	LEU
12	Aa	691	VAL
12	Aa	718	LEU
12	Aa	730	LEU

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Mol	Chain	Res	Type
12	Aa	765	LEU
12	Aa	777	SER
12	Aa	781	THR
12	Aa	819	VAL
12	Aa	828	MET
13	B	54	HIS
13	B	120	ASN
13	B	149	VAL
13	B	155	GLU
16	C	120	GLU
19	D	43	LYS
19	D	150	GLN
19	D	175	GLN
20	DD	52	LEU
20	DD	67	LEU
20	DD	105	VAL
20	DD	155	ASP
20	DD	160	ASP
20	DD	190	VAL
20	DD	199	SER
22	E	24	LEU
22	E	45	LEU
22	E	61	ILE
22	E	132	THR
23	EE	137	ILE
23	EE	202	VAL
23	EE	249	SER
24	Ee	10	VAL
24	Ee	18	VAL
24	Ee	56	ILE
24	Ee	57	LYS
24	Ee	98	VAL
24	Ee	109	ILE
24	Ee	118	ASP
24	Ee	150	ASP
25	F	9	SER
25	F	19	PHE
26	FF	55	THR
26	FF	104	THR
26	FF	166	ILE
26	FF	261	MET
27	G	55	THR

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Mol	Chain	Res	Type
27	G	62	VAL
28	GG	12	THR
28	GG	37	THR
28	GG	145	ILE
28	GG	181	VAL
29	H	34	LEU
30	HH	56	THR
30	HH	69	ILE
30	HH	93	THR
30	HH	125	VAL
30	HH	173	VAL
30	HH	187	THR
31	I	54	LEU
32	II	79	VAL
32	II	91	VAL
33	J	24	LEU
34	JJ	189	ILE
34	JJ	190	THR
36	KK	40	VAL
36	KK	197	VAL
36	KK	203	VAL
37	L	6	LYS
37	L	75	VAL
37	L	95	VAL
37	L	100	THR
37	L	102	GLU
38	LL	46	THR
38	LL	83	THR
38	LL	107	ASP
38	LL	157	ASN
38	LL	191	LEU
39	M	8	THR
39	M	15	VAL
39	M	121	VAL
40	MM	138	VAL
42	NN	28	ASP
42	NN	30	LEU
42	NN	37	LEU
42	NN	107	ASP
42	NN	112	LEU
42	NN	114	ILE
42	NN	122	ILE

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Mol	Chain	Res	Type
43	O	48	THR
44	OO	4	SER
44	OO	58	VAL
44	OO	69	VAL
44	OO	138	VAL
44	OO	152	THR
46	PP	25	LYS
46	PP	63	VAL
46	PP	137	LYS
48	Q	66	LEU
49	QQ	18	VAL
50	R	21	ARG
51	S	64	THR
51	S	72	VAL
52	T	37	SER
53	U	17	VAL
53	U	81	THR
54	V	84	SER
55	W	7	ASP
55	W	21	LYS
55	W	24	THR
55	W	65	LEU
55	W	78	LEU
58	Z	24	SER
59	a	16	THR
60	b	63	THR
62	d	8	ASP
63	e	32	ILE
63	e	43	VAL
63	e	94	LYS
63	e	108	ASP
63	e	128	LYS
63	e	158	SER
63	e	179	SER
63	e	205	PHE
63	e	231	LEU
64	f	63	VAL
64	f	90	THR
64	f	111	VAL
64	f	158	THR
64	f	166	THR
64	f	245	ASP

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Mol	Chain	Res	Type
65	g	11	LEU
65	g	113	LEU
65	g	142	LEU
65	g	162	GLN
65	g	167	PHE
65	g	189	MET
65	g	209	ILE
66	h	41	SER
66	h	70	VAL
66	h	96	ASN
66	h	105	VAL
66	h	115	THR
66	h	146	THR
66	h	173	ILE
66	h	206	ASP
67	i	25	LEU
67	i	33	VAL
67	i	38	THR
67	i	93	LEU
67	i	114	ILE
67	i	124	LEU
67	i	133	VAL
67	i	135	ASP
67	i	194	LEU
67	i	208	SER
68	j	9	VAL
68	j	15	THR
68	j	31	ARG
68	j	45	PHE
68	j	67	VAL
68	j	89	ASP
68	j	120	GLU
68	j	153	VAL
68	j	168	THR
69	k	8	ILE
69	k	45	SER
69	k	67	LEU
69	k	75	THR
69	k	91	ILE
69	k	99	LEU
69	k	106	SER
69	k	133	THR

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Mol	Chain	Res	Type
69	k	156	SER
69	k	181	ILE
70	l	58	LEU
70	l	88	ASN
70	l	93	THR
70	l	96	LEU
70	l	97	THR
70	l	154	SER
71	m	50	SER
71	m	100	LYS
71	m	103	ASP
71	m	162	SER
72	n	7	ASP
72	n	55	VAL
72	n	62	GLN
73	o	7	VAL
73	o	31	THR
73	o	47	THR
73	o	122	ILE
73	o	132	SER
74	p	33	VAL
74	p	43	LYS
74	p	60	VAL
74	p	62	GLN
75	q	30	VAL
75	q	77	THR
75	q	79	VAL
75	q	92	LYS
76	r	41	VAL
76	r	65	LEU
76	r	89	MET
77	s	8	GLN
77	s	19	VAL
77	s	28	LEU
77	s	48	VAL
77	s	65	ILE
77	s	70	THR
77	s	93	HIS
77	s	107	LYS
77	s	115	THR
78	t	24	LEU
78	t	25	THR

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Mol	Chain	Res	Type
78	t	30	THR
78	t	61	ILE
78	t	74	GLN
78	t	82	ASP
78	t	85	VAL
78	t	88	VAL
78	t	107	SER
79	u	5	VAL
79	u	14	ILE
79	u	45	LEU
79	u	62	THR
79	u	67	GLU
79	u	105	VAL
79	u	138	THR
80	v	23	GLN
80	v	40	SER
80	v	76	LEU
80	v	99	SER
80	v	114	VAL
80	v	124	ILE
80	v	127	ASN
81	w	37	VAL
81	w	41	ILE
81	w	65	ILE
81	w	80	GLU
81	w	86	ILE
81	w	88	LYS
81	w	89	ARG
81	w	93	LEU
81	w	107	THR
81	w	114	VAL
81	w	117	VAL
82	x	32	VAL
82	x	50	TYR
82	x	51	VAL
83	y	30	SER
83	y	58	SER
83	y	106	THR
84	z	92	CYS
84	z	107	PHE
84	z	131	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (88)

such sidechains are listed below:

Mol	Chain	Res	Type
1	0	77	ASN
1	0	106	GLN
1	0	133	ASN
3	2	8	ASN
4	3	9	HIS
4	3	42	ASN
5	4	43	ASN
7	6	51	ASN
8	7	64	HIS
8	7	200	ASN
10	A	122	GLN
10	A	193	GLN
12	Aa	30	HIS
12	Aa	96	ASN
12	Aa	145	GLN
13	B	45	GLN
13	B	133	HIS
19	D	144	GLN
19	D	166	ASN
20	DD	37	GLN
20	DD	137	GLN
20	DD	193	ASN
22	E	65	ASN
23	EE	132	ASN
23	EE	211	HIS
24	Ee	165	ASN
25	F	131	GLN
26	FF	182	GLN
26	FF	212	ASN
26	FF	224	HIS
28	GG	5	GLN
28	GG	9	HIS
28	GG	160	GLN
34	JJ	194	HIS
36	KK	77	GLN
37	L	36	HIS
38	LL	58	HIS
38	LL	64	HIS
38	LL	125	ASN
38	LL	183	HIS
41	N	6	ASN
42	NN	7	ASN

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Mol	Chain	Res	Type
42	NN	62	ASN
43	O	11	ASN
44	OO	137	GLN
46	PP	41	GLN
46	PP	62	GLN
46	PP	119	GLN
48	Q	26	HIS
48	Q	49	ASN
49	QQ	32	GLN
49	QQ	156	HIS
50	R	24	ASN
50	R	26	ASN
50	R	88	ASN
52	T	99	GLN
53	U	35	ASN
55	W	76	ASN
56	X	33	ASN
62	d	33	GLN
62	d	131	GLN
63	e	220	GLN
64	f	59	HIS
65	g	111	ASN
66	h	157	ASN
66	h	216	ASN
67	i	44	ASN
67	i	224	ASN
68	j	65	GLN
69	k	29	ASN
69	k	160	GLN
69	k	161	GLN
70	l	52	ASN
70	l	64	ASN
71	m	112	GLN
73	o	81	HIS
74	p	49	GLN
74	p	58	HIS
76	r	103	ASN
78	t	48	ASN
78	t	74	GLN
78	t	83	GLN
79	u	21	ASN
80	v	138	GLN

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Mol	Chain	Res	Type
81	w	44	ASN
82	x	75	ASN
82	x	81	ASN
83	y	12	ASN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
11	AA	3194/3396 (94%)	474 (14%)	24 (0%)
14	BB	120/121 (99%)	8 (6%)	1 (0%)
15	Bb	75/76 (98%)	36 (48%)	0
17	CC	157/158 (99%)	20 (12%)	0
18	Cc	76/77 (98%)	17 (22%)	0
21	Dd	5/39 (12%)	0	0
61	c	1598/1800 (88%)	323 (20%)	0
All	All	5225/5667 (92%)	878 (16%)	25 (0%)

All (878) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
11	AA	4	U
11	AA	6	A
11	AA	14	U
11	AA	26	A
11	AA	40	A
11	AA	43	A
11	AA	49	A
11	AA	59	G
11	AA	60	A
11	AA	65	A
11	AA	66	A
11	AA	92	G
11	AA	99	A
11	AA	110	G
11	AA	111	C
11	AA	122	A
11	AA	135	C
11	AA	136	G
11	AA	156	G
11	AA	157	A
11	AA	165	A

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Mol	Chain	Res	Type
11	AA	172	G
11	AA	190	U
11	AA	200	C
11	AA	219	A
11	AA	241	G
11	AA	242	C
11	AA	243	G
11	AA	247	C
11	AA	248	U
11	AA	249	U
11	AA	251	G
11	AA	252	U
11	AA	253	A
11	AA	269	G
11	AA	286	U
11	AA	295	A
11	AA	305	U
11	AA	329	U
11	AA	376	G
11	AA	390	G
11	AA	398	A
11	AA	399	A
11	AA	401	U
11	AA	402	A
11	AA	403	C
11	AA	420	G
11	AA	421	G
11	AA	422	A
11	AA	498	A
11	AA	520	U
11	AA	521	A
11	AA	532	A
11	AA	533	A
11	AA	534	U
11	AA	546	C
11	AA	548	G
11	AA	557	A
11	AA	559	A
11	AA	560	G
11	AA	589	A
11	AA	592	A
11	AA	601	U

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Mol	Chain	Res	Type
11	AA	602	A
11	AA	603	A
11	AA	604	G
11	AA	607	A
11	AA	611	A
11	AA	612	U
11	AA	620	U
11	AA	621	A
11	AA	636	C
11	AA	649	A2M
11	AA	660	A
11	AA	667	C
11	AA	677	A
11	AA	678	G
11	AA	681	U
11	AA	691	A
11	AA	705	A
11	AA	712	G
11	AA	715	A
11	AA	719	U
11	AA	758	C
11	AA	766	U
11	AA	767	U
11	AA	774	G
11	AA	780	A
11	AA	781	G
11	AA	785	G
11	AA	786	A
11	AA	799	G
11	AA	817	A2M
11	AA	830	A
11	AA	861	C
11	AA	867	OMG
11	AA	874	U
11	AA	879	U
11	AA	880	G
11	AA	890	C
11	AA	896	A
11	AA	907	G
11	AA	908	OMG
11	AA	914	A
11	AA	916	G

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Mol	Chain	Res	Type
11	AA	917	A
11	AA	921	A
11	AA	923	C
11	AA	924	G
11	AA	925	A
11	AA	937	G
11	AA	944	C
11	AA	959	C
11	AA	960	U
11	AA	961	C
11	AA	964	G
11	AA	974	G
11	AA	979	U
11	AA	980	A
11	AA	991	G
11	AA	994	G
11	AA	995	U
11	AA	1006	A
11	AA	1012	G
11	AA	1013	G
11	AA	1015	U
11	AA	1017	C
11	AA	1018	G
11	AA	1019	G
11	AA	1020	G
11	AA	1023	C
11	AA	1027	A
11	AA	1028	U
11	AA	1029	G
11	AA	1031	C
11	AA	1032	C
11	AA	1034	U
11	AA	1036	A
11	AA	1037	C
11	AA	1038	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

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Mol	Chain	Res	Type
11	AA	1098	A
11	AA	1103	A
11	AA	1117	G
11	AA	1131	G
11	AA	1144	U
11	AA	1153	A
11	AA	1159	A
11	AA	1160	C
11	AA	1180	A
11	AA	1181	U
11	AA	1182	A
11	AA	1191	U
11	AA	1192	C
11	AA	1193	A
11	AA	1196	C
11	AA	1201	C
11	AA	1208	U
11	AA	1209	G
11	AA	1222	G
11	AA	1235	U
11	AA	1236	G
11	AA	1240	A
11	AA	1241	U
11	AA	1242	G
11	AA	1245	A
11	AA	1258	U
11	AA	1262	G
11	AA	1263	A
11	AA	1265	U
11	AA	1272	C
11	AA	1302	A
11	AA	1307	G
11	AA	1308	A
11	AA	1309	U
11	AA	1345	G
11	AA	1348	U
11	AA	1349	G
11	AA	1351	U
11	AA	1352	A
11	AA	1353	U
11	AA	1355	A
11	AA	1356	U

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Mol	Chain	Res	Type
11	AA	1357	G
11	AA	1386	A
11	AA	1392	G
11	AA	1399	A
11	AA	1400	G
11	AA	1425	U
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	1487	G
11	AA	1508	C
11	AA	1527	C
11	AA	1536	G
11	AA	1539	A
11	AA	1555	U
11	AA	1556	C
11	AA	1560	G
11	AA	1562	C
11	AA	1563	C
11	AA	1568	U
11	AA	1569	U
11	AA	1570	U
11	AA	1571	A
11	AA	1573	G
11	AA	1579	C
11	AA	1581	C
11	AA	1583	A
11	AA	1589	A
11	AA	1593	A
11	AA	1605	A
11	AA	1629	U
11	AA	1630	U
11	AA	1643	A
11	AA	1657	C
11	AA	1724	U
11	AA	1741	A
11	AA	1750	A

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Mol	Chain	Res	Type
11	AA	1751	G
11	AA	1762	C
11	AA	1763	U
11	AA	1765	U
11	AA	1767	C
11	AA	1769	G
11	AA	1796	G
11	AA	1797	A
11	AA	1815	U
11	AA	1816	A
11	AA	1817	G
11	AA	1820	U
11	AA	1821	U
11	AA	1842	A
11	AA	1866	C
11	AA	1867	A
11	AA	1878	G
11	AA	1879	A
11	AA	1880	U
11	AA	1893	A
11	AA	1906	G
11	AA	1935	G
11	AA	2102	U
11	AA	2112	U
11	AA	2114	C
11	AA	2122	G
11	AA	2131	A
11	AA	2140	U
11	AA	2144	A
11	AA	2158	A
11	AA	2168	A
11	AA	2169	G
11	AA	2170	U
11	AA	2171	G
11	AA	2188	A
11	AA	2206	G
11	AA	2208	A
11	AA	2223	A
11	AA	2244	A
11	AA	2249	G
11	AA	2258	U
11	AA	2265	C

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Mol	Chain	Res	Type
11	AA	2272	G
11	AA	2273	G
11	AA	2281	A2M
11	AA	2282	U
11	AA	2307	G
11	AA	2308	C
11	AA	2310	U
11	AA	2313	A
11	AA	2315	G
11	AA	2334	U
11	AA	2335	G
11	AA	2336	U
11	AA	2363	A
11	AA	2373	A
11	AA	2374	C
11	AA	2375	G
11	AA	2388	U
11	AA	2393	G
11	AA	2397	A
11	AA	2402	A
11	AA	2403	G
11	AA	2404	A
11	AA	2411	U
11	AA	2418	G
11	AA	2419	A
11	AA	2435	G
11	AA	2437	G
11	AA	2444	C
11	AA	2446	U
11	AA	2447	A
11	AA	2448	G
11	AA	2449	A
11	AA	2450	G
11	AA	2453	U
11	AA	2454	G
11	AA	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

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Mol	Chain	Res	Type
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	2477	G
11	AA	2478	C
11	AA	2479	C
11	AA	2480	A
11	AA	2481	G
11	AA	2486	A
11	AA	2487	U
11	AA	2488	A
11	AA	2489	C
11	AA	2490	C
11	AA	2491	A
11	AA	2492	C
11	AA	2494	A
11	AA	2495	C
11	AA	2496	C
11	AA	2499	U
11	AA	2500	A
11	AA	2501	U
11	AA	2502	A
11	AA	2505	U
11	AA	2511	A
11	AA	2514	U
11	AA	2515	A
11	AA	2522	G
11	AA	2523	A
11	AA	2534	G
11	AA	2536	A
11	AA	2539	C
11	AA	2541	U
11	AA	2542	U
11	AA	2549	G
11	AA	2552	C
11	AA	2554	A

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Mol	Chain	Res	Type
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	2652	U
11	AA	2656	A
11	AA	2672	G
11	AA	2674	A
11	AA	2677	G
11	AA	2681	U
11	AA	2689	A
11	AA	2691	A
11	AA	2696	A
11	AA	2704	A
11	AA	2705	A
11	AA	2728	G
11	AA	2737	C
11	AA	2753	G
11	AA	2755	C
11	AA	2772	C
11	AA	2773	C
11	AA	2777	G
11	AA	2778	G
11	AA	2795	U
11	AA	2796	G
11	AA	2799	A
11	AA	2800	G
11	AA	2801	A
11	AA	2802	A
11	AA	2808	A
11	AA	2810	C
11	AA	2814	G
11	AA	2817	A
11	AA	2844	C

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Mol	Chain	Res	Type
11	AA	2845	A
11	AA	2867	C
11	AA	2871	G
11	AA	2872	A
11	AA	2887	A
11	AA	2898	G
11	AA	2899	C
11	AA	2910	A
11	AA	2914	G
11	AA	2922	OMG
11	AA	2923	U
11	AA	2935	U
11	AA	2936	A
11	AA	2938	G
11	AA	2942	C
11	AA	2947	G
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	3080	G
11	AA	3092	C
11	AA	3101	G
11	AA	3104	U
11	AA	3116	G
11	AA	3122	A
11	AA	3130	A
11	AA	3131	U
11	AA	3142	A
11	AA	3143	C
11	AA	3153	U
11	AA	3154	C
11	AA	3155	U
11	AA	3156	U
11	AA	3157	U
11	AA	3168	A

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Mol	Chain	Res	Type
11	AA	3170	A
11	AA	3172	A
11	AA	3173	G
11	AA	3176	G
11	AA	3179	U
11	AA	3181	C
11	AA	3187	A
11	AA	3206	C
11	AA	3207	U
11	AA	3217	C
11	AA	3218	A
11	AA	3219	G
11	AA	3224	G
11	AA	3243	A
11	AA	3270	U
11	AA	3276	G
11	AA	3277	U
11	AA	3281	U
11	AA	3288	G
11	AA	3294	A
11	AA	3304	U
11	AA	3313	U
11	AA	3316	A
11	AA	3320	A
11	AA	3341	U
11	AA	3345	G
11	AA	3351	U
11	AA	3352	U
11	AA	3353	G
11	AA	3356	G
11	AA	3369	G
11	AA	3378	C
11	AA	3389	U
14	BB	7	G
14	BB	42	A
14	BB	54	U
14	BB	55	A
14	BB	65	G
14	BB	73	C
14	BB	76	A
14	BB	112	G
15	Bb	2	C

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Mol	Chain	Res	Type
15	Bb	4	G
15	Bb	5	A
15	Bb	6	U
15	Bb	9	A
15	Bb	13	C
15	Bb	15	G
15	Bb	16	U
15	Bb	17	U
15	Bb	18	G
15	Bb	19	G
15	Bb	21	A
15	Bb	22	G
15	Bb	23	A
15	Bb	26	G
15	Bb	39	U
15	Bb	40	C
15	Bb	41	U
15	Bb	42	G
15	Bb	46	G
15	Bb	47	U
15	Bb	48	C
15	Bb	49	C
15	Bb	54	U
15	Bb	55	U
15	Bb	58	A
15	Bb	59	U
15	Bb	61	C
15	Bb	62	A
15	Bb	63	C
15	Bb	66	A
15	Bb	68	U
15	Bb	69	U
15	Bb	70	C
15	Bb	71	G
15	Bb	76	A
17	CC	23	U
17	CC	34	U
17	CC	35	C
17	CC	52	A
17	CC	59	A
17	CC	62	C
17	CC	63	G

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Mol	Chain	Res	Type
17	CC	82	U
17	CC	83	C
17	CC	84	C
17	CC	86	U
17	CC	87	G
17	CC	91	C
17	CC	95	G
17	CC	104	A
17	CC	106	C
17	CC	113	U
17	CC	125	U
17	CC	126	A
17	CC	152	G
18	Cc	4	G
18	Cc	16	C
18	Cc	17	C
18	Cc	18	C
18	Cc	19	G
18	Cc	20	G
18	Cc	21	U
18	Cc	22	A
18	Cc	43	G
18	Cc	48	U
18	Cc	49	C
18	Cc	56	U
18	Cc	57	C
18	Cc	60	A
18	Cc	62	C
18	Cc	63	C
18	Cc	77	A
61	c	2	A
61	c	4	C
61	c	26	A
61	c	28	A2M
61	c	34	G
61	c	42	G
61	c	45	U
61	c	47	A
61	c	61	A
61	c	67	A
61	c	69	G
61	c	71	A

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Mol	Chain	Res	Type
61	c	72	A
61	c	78	A
61	c	80	A
61	c	111	U
61	c	114	C
61	c	116	U
61	c	127	G
61	c	130	C
61	c	131	C
61	c	139	C
61	c	140	A
61	c	144	U
61	c	145	A
61	c	146	U
61	c	168	A
61	c	176	C
61	c	184	C
61	c	204	G
61	c	257	A
61	c	261	U
61	c	262	U
61	c	272	U
61	c	277	U
61	c	278	U
61	c	279	G
61	c	285	G
61	c	287	G
61	c	299	A
61	c	309	C
61	c	314	C
61	c	316	A
61	c	320	U
61	c	321	C
61	c	322	G
61	c	337	G
61	c	338	C
61	c	361	C
61	c	390	G
61	c	400	A
61	c	401	A
61	c	402	C
61	c	404	G

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Mol	Chain	Res	Type
61	c	417	A
61	c	422	G
61	c	423	G
61	c	424	C
61	c	426	G
61	c	434	G
61	c	439	U
61	c	444	C
61	c	448	C
61	c	452	A
61	c	454	U
61	c	455	C
61	c	460	A
61	c	468	A
61	c	475	A
61	c	477	A
61	c	504	U
61	c	511	A
61	c	514	G
61	c	515	A
61	c	519	C
61	c	524	U
61	c	525	A
61	c	526	A
61	c	527	A
61	c	537	G
61	c	538	A
61	c	539	G
61	c	541	A2M
61	c	542	A
61	c	557	G
61	c	559	C
61	c	565	C
61	c	566	C
61	c	568	G
61	c	577	G
61	c	578	OMU
61	c	580	A
61	c	582	U
61	c	583	C
61	c	585	A
61	c	594	A

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Mol	Chain	Res	Type
61	c	606	A
61	c	611	U
61	c	619	A2M
61	c	620	A
61	c	623	A
61	c	624	G
61	c	639	U
61	c	644	C
61	c	645	C
61	c	647	G
61	c	648	G
61	c	649	U
61	c	650	U
61	c	651	G
61	c	688	G
61	c	692	C
61	c	695	U
61	c	696	C
61	c	743	U
61	c	745	U
61	c	760	A
61	c	765	G
61	c	775	G
61	c	778	G
61	c	780	A
61	c	781	U
61	c	782	U
61	c	783	G
61	c	784	C
61	c	789	A
61	c	794	U
61	c	795	U
61	c	809	A
61	c	812	A
61	c	814	A
61	c	819	G
61	c	820	U
61	c	821	U
61	c	851	U
61	c	852	C
61	c	853	G
61	c	854	U

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Mol	Chain	Res	Type
61	c	859	A
61	c	860	U
61	c	863	A
61	c	895	G
61	c	898	A
61	c	906	A
61	c	913	G
61	c	914	G
61	c	915	A
61	c	933	A
61	c	935	U
61	c	951	A
61	c	960	U
61	c	966	A
61	c	988	A
61	c	992	A
61	c	993	A
61	c	999	U
61	c	1001	A
61	c	1002	G
61	c	1003	A
61	c	1004	U
61	c	1005	A
61	c	1010	C
61	c	1021	C
61	c	1026	A
61	c	1027	A
61	c	1028	C
61	c	1031	U
61	c	1032	G
61	c	1053	G
61	c	1058	U
61	c	1059	U
61	c	1060	U
61	c	1061	A
61	c	1063	U
61	c	1076	A
61	c	1081	A
61	c	1082	C
61	c	1092	A
61	c	1093	A
61	c	1097	U

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Mol	Chain	Res	Type
61	c	1100	G
61	c	1138	A
61	c	1150	G
61	c	1154	G
61	c	1158	C
61	c	1159	C
61	c	1162	C
61	c	1183	A
61	c	1185	U
61	c	1191	B8N
61	c	1192	C
61	c	1194	A
61	c	1196	A
61	c	1199	G
61	c	1200	G
61	c	1214	U
61	c	1217	A
61	c	1218	G
61	c	1219	A
61	c	1221	A
61	c	1222	C
61	c	1223	A
61	c	1224	A
61	c	1225	U
61	c	1226	A
61	c	1227	A
61	c	1228	G
61	c	1229	G
61	c	1238	A
61	c	1241	G
61	c	1244	A
61	c	1245	G
61	c	1246	C
61	c	1252	C
61	c	1256	A
61	c	1258	U
61	c	1259	U
61	c	1261	G
61	c	1274	C
61	c	1280	4AC
61	c	1286	U
61	c	1297	G

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Mol	Chain	Res	Type
61	c	1309	C
61	c	1314	U
61	c	1315	U
61	c	1316	G
61	c	1321	A
61	c	1325	A
61	c	1336	A
61	c	1338	C
61	c	1339	C
61	c	1340	U
61	c	1341	A
61	c	1346	A
61	c	1351	G
61	c	1354	G
61	c	1355	C
61	c	1356	U
61	c	1361	U
61	c	1363	U
61	c	1364	G
61	c	1367	G
61	c	1370	U
61	c	1372	U
61	c	1373	C
61	c	1374	C
61	c	1390	U
61	c	1398	U
61	c	1399	C
61	c	1400	A
61	c	1410	A
61	c	1411	A
61	c	1412	G
61	c	1413	U
61	c	1414	U
61	c	1415	U
61	c	1424	A
61	c	1425	A
61	c	1427	A
61	c	1428	OMG
61	c	1431	C
61	c	1432	U
61	c	1433	G
61	c	1436	A

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Mol	Chain	Res	Type
61	c	1445	G
61	c	1447	C
61	c	1458	G
61	c	1459	C
61	c	1460	A
61	c	1469	A
61	c	1471	A
61	c	1472	C
61	c	1474	G
61	c	1478	G
61	c	1487	A
61	c	1489	U
61	c	1490	C
61	c	1491	U
61	c	1492	A
61	c	1496	U
61	c	1499	G
61	c	1510	U
61	c	1515	A
61	c	1516	A
61	c	1523	G
61	c	1524	A
61	c	1535	U
61	c	1536	G
61	c	1537	C
61	c	1539	G
61	c	1542	G
61	c	1557	U
61	c	1559	A
61	c	1572	OMG
61	c	1573	A
61	c	1575	G7M
61	c	1601	G
61	c	1631	A
61	c	1633	A
61	c	1634	C
61	c	1635	A
61	c	1657	U
61	c	1658	G
61	c	1678	A
61	c	1681	A
61	c	1682	U

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Mol	Chain	Res	Type
61	c	1683	C
61	c	1684	U
61	c	1717	G
61	c	1756	A
61	c	1757	G
61	c	1760	G
61	c	1762	A
61	c	1766	A
61	c	1769	U
61	c	1780	G
61	c	1782	MA6
61	c	1792	G
61	c	1793	G
61	c	1794	A
61	c	1795	U
61	c	1796	C
61	c	1799	U

All (25) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
11	AA	601	U
11	AA	619	A
11	AA	873	C
11	AA	908	OMG
11	AA	916	G
11	AA	1016	C
11	AA	1033	U
11	AA	1235	U
11	AA	1562	C
11	AA	2101	C
11	AA	2372	A
11	AA	2418	G
11	AA	2458	A
11	AA	2467	G
11	AA	2487	U
11	AA	2490	C
11	AA	2500	A
11	AA	2501	U
11	AA	2535	A
11	AA	2870	5MC
11	AA	2922	OMG

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

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

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
61	4AC	c	1280	61	21,24,25	3.56	10 (47%)	29,34,37	1.63	5 (17%)
11	OMU	AA	2347	11	19,22,23	3.04	8 (42%)	26,31,34	1.73	5 (19%)
11	A2M	AA	2256	11	18,25,26	3.60	8 (44%)	18,36,39	3.56	5 (27%)
11	A2M	AA	817	11,86	18,25,26	3.58	7 (38%)	18,36,39	3.53	3 (16%)
11	A2M	AA	1133	11,86	18,25,26	3.60	7 (38%)	18,36,39	3.44	3 (16%)
61	A2M	c	974	61	18,25,26	3.60	7 (38%)	18,36,39	3.35	3 (16%)
11	1MA	AA	2142	11,86	16,25,26	0.98	2 (12%)	18,37,40	1.13	2 (11%)
11	OMC	AA	2959	11,86	19,22,23	0.58	0	26,31,34	0.68	0
11	OMC	AA	1437	11,86	19,22,23	0.59	0	26,31,34	0.88	1 (3%)
11	OMC	AA	2337	11	19,22,23	0.56	0	26,31,34	0.62	0
11	OMC	AA	650	11	19,22,23	0.60	0	26,31,34	0.68	0
11	A2M	AA	2280	11	18,25,26	3.59	8 (44%)	18,36,39	3.36	3 (16%)
15	YYG	Bb	37	15	31,42,43	2.21	8 (25%)	33,62,65	1.81	10 (30%)
11	A2M	AA	2946	11,86	18,25,26	3.60	7 (38%)	18,36,39	3.30	3 (16%)
61	OMG	c	1126	61	18,26,27	1.19	2 (11%)	19,38,41	0.86	1 (5%)
11	UR3	AA	2634	11	19,22,23	2.83	7 (36%)	26,32,35	1.31	1 (3%)
12	DDE	Aa	699	12	14,20,21	1.01	1 (7%)	14,28,30	1.17	1 (7%)
61	A2M	c	541	61	18,25,26	3.58	8 (44%)	18,36,39	3.32	4 (22%)
11	A2M	AA	2220	11	18,25,26	3.59	8 (44%)	18,36,39	3.37	3 (16%)
11	5MC	AA	2870	11,87	18,22,23	0.69	0	26,32,35	0.64	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
11	OMG	AA	2922	11	18,26,27	1.20	2 (11%)	19,38,41	0.96	1 (5%)
11	OMU	AA	2724	11	19,22,23	2.99	8 (42%)	26,31,34	1.69	5 (19%)
61	A2M	c	436	61	18,25,26	3.61	8 (44%)	18,36,39	3.39	3 (16%)
61	OMC	c	1007	61	19,22,23	0.56	0	26,31,34	0.65	0
61	B8N	c	1191	61	24,29,30	3.05	6 (25%)	29,42,45	1.76	6 (20%)
11	A2M	AA	2640	11	18,25,26	3.59	8 (44%)	18,36,39	3.32	4 (22%)
61	OMC	c	1639	86,61	19,22,23	0.56	0	26,31,34	0.55	0
61	A2M	c	100	86,61	18,25,26	3.61	8 (44%)	18,36,39	3.34	4 (22%)
11	A2M	AA	649	11	18,25,26	3.59	8 (44%)	18,36,39	3.35	3 (16%)
11	OMU	AA	2417	11	19,22,23	2.99	8 (42%)	26,31,34	1.70	5 (19%)
61	OMG	c	562	61	18,26,27	1.12	2 (11%)	19,38,41	0.86	1 (5%)
11	OMU	AA	2729	11	19,22,23	2.99	8 (42%)	26,31,34	1.63	5 (19%)
11	OMG	AA	2815	11	18,26,27	1.16	2 (11%)	19,38,41	0.81	1 (5%)
61	A2M	c	619	86,61	18,25,26	3.61	8 (44%)	18,36,39	3.39	3 (16%)
11	OMU	AA	2421	11	19,22,23	3.01	8 (42%)	26,31,34	1.77	5 (19%)
61	OMG	c	1428	61	18,26,27	1.13	2 (11%)	19,38,41	0.83	1 (5%)
11	OMG	AA	2619	11,15	18,26,27	1.18	2 (11%)	19,38,41	0.86	1 (5%)
61	OMU	c	578	61	19,22,23	3.09	8 (42%)	26,31,34	1.68	5 (19%)
61	MA6	c	1781	61	18,26,27	1.05	2 (11%)	19,38,41	3.37	2 (10%)
11	OMG	AA	805	11	18,26,27	1.18	2 (11%)	19,38,41	0.86	1 (5%)
61	OMG	c	1572	61	18,26,27	1.13	2 (11%)	19,38,41	0.93	1 (5%)
61	A2M	c	796	61	18,25,26	3.61	8 (44%)	18,36,39	3.35	4 (22%)
11	OMC	AA	2948	11	19,22,23	0.57	0	26,31,34	0.73	1 (3%)
11	OMC	AA	2197	11,87	19,22,23	0.55	0	26,31,34	0.58	0
61	MA6	c	1782	61	18,26,27	1.03	2 (11%)	19,38,41	3.47	2 (10%)
61	G7M	c	1575	18,61	20,26,27	2.40	7 (35%)	17,39,42	1.15	1 (5%)
11	OMU	AA	2921	11,86	19,22,23	3.03	8 (42%)	26,31,34	1.71	5 (19%)
11	A2M	AA	876	11	18,25,26	3.59	8 (44%)	18,36,39	3.35	4 (22%)
61	OMG	c	1271	61	18,26,27	1.11	2 (11%)	19,38,41	0.86	1 (5%)
11	OMG	AA	2793	11	18,26,27	1.18	2 (11%)	19,38,41	0.84	1 (5%)
61	OMC	c	414	61	19,22,23	0.54	0	26,31,34	0.67	0
11	OMG	AA	867	11,87	18,26,27	1.19	2 (11%)	19,38,41	0.90	1 (5%)
11	A2M	AA	1449	11,86	18,25,26	3.60	8 (44%)	18,36,39	3.40	4 (22%)
61	A2M	c	28	61	18,25,26	3.59	9 (50%)	18,36,39	3.41	5 (27%)
11	5MC	AA	2278	11,86	18,22,23	0.59	0	26,32,35	0.62	0
11	OMG	AA	2288	11	18,26,27	1.18	2 (11%)	19,38,41	0.81	1 (5%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
61	4AC	c	1773	61	21,24,25	3.39	10 (47%)	29,34,37	1.51	6 (20%)
11	OMG	AA	908	11	18,26,27	1.23	2 (11%)	19,38,41	0.89	1 (5%)
61	A2M	c	420	61	18,25,26	3.60	8 (44%)	18,36,39	3.37	4 (22%)
11	OMC	AA	663	11	19,22,23	0.58	0	26,31,34	0.75	0
11	OMG	AA	2791	11	18,26,27	1.15	2 (11%)	19,38,41	0.83	1 (5%)
11	OMU	AA	1888	11	19,22,23	3.02	8 (42%)	26,31,34	1.82	6 (23%)
11	OMU	AA	898	11	19,22,23	2.99	8 (42%)	26,31,34	1.70	5 (19%)
11	A2M	AA	2281	11	18,25,26	3.67	9 (50%)	18,36,39	3.36	4 (22%)
61	OMU	c	1269	61	19,22,23	3.09	8 (42%)	26,31,34	1.71	5 (19%)
11	1MA	AA	645	11,86	16,25,26	0.95	2 (12%)	18,37,40	1.08	2 (11%)
11	A2M	AA	807	11	18,25,26	3.61	8 (44%)	18,36,39	3.36	4 (22%)
11	OMG	AA	1450	11	18,26,27	1.13	2 (11%)	19,38,41	0.80	1 (5%)

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
61	4AC	c	1280	61	-	4/11/29/30	0/2/2/2
11	OMU	AA	2347	11	-	0/9/27/28	0/2/2/2
11	A2M	AA	2256	11	-	2/5/27/28	0/3/3/3
11	A2M	AA	817	11,86	-	2/5/27/28	0/3/3/3
11	A2M	AA	1133	11,86	-	0/5/27/28	0/3/3/3
61	A2M	c	974	61	-	0/5/27/28	0/3/3/3
11	1MA	AA	2142	11,86	-	1/3/25/26	0/3/3/3
11	OMC	AA	2959	11,86	-	0/9/27/28	0/2/2/2
11	OMC	AA	1437	11,86	-	2/9/27/28	0/2/2/2
11	OMC	AA	2337	11	-	0/9/27/28	0/2/2/2
11	OMC	AA	650	11	-	0/9/27/28	0/2/2/2
11	A2M	AA	2280	11	-	0/5/27/28	0/3/3/3
15	YYG	Bb	37	15	-	14/20/42/43	0/3/4/4
11	A2M	AA	2946	11,86	-	0/5/27/28	0/3/3/3
61	OMG	c	1126	61	-	0/5/27/28	0/3/3/3
11	UR3	AA	2634	11	-	0/7/25/26	0/2/2/2
12	DDE	Aa	699	12	-	2/20/21/23	0/1/1/1
61	A2M	c	541	61	-	3/5/27/28	0/3/3/3
11	A2M	AA	2220	11	-	1/5/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
11	5MC	AA	2870	11,87	-	4/7/25/26	0/2/2/2
11	OMG	AA	2922	11	-	2/5/27/28	0/3/3/3
11	OMU	AA	2724	11	-	1/9/27/28	0/2/2/2
61	A2M	c	436	61	-	0/5/27/28	0/3/3/3
61	OMC	c	1007	61	-	0/9/27/28	0/2/2/2
61	B8N	c	1191	61	-	6/16/34/35	0/2/2/2
11	A2M	AA	2640	11	-	0/5/27/28	0/3/3/3
61	OMC	c	1639	86,61	-	0/9/27/28	0/2/2/2
61	A2M	c	100	86,61	-	1/5/27/28	0/3/3/3
11	A2M	AA	649	11	-	1/5/27/28	0/3/3/3
11	OMU	AA	2417	11	-	1/9/27/28	0/2/2/2
61	OMG	c	562	61	-	1/5/27/28	0/3/3/3
11	OMU	AA	2729	11	-	0/9/27/28	0/2/2/2
11	OMG	AA	2815	11	-	0/5/27/28	0/3/3/3
61	A2M	c	619	86,61	-	3/5/27/28	0/3/3/3
11	OMU	AA	2421	11	-	1/9/27/28	0/2/2/2
61	OMG	c	1428	61	-	1/5/27/28	0/3/3/3
11	OMG	AA	2619	11,15	-	1/5/27/28	0/3/3/3
61	OMU	c	578	61	-	2/9/27/28	0/2/2/2
61	MA6	c	1781	61	-	0/7/29/30	0/3/3/3
11	OMG	AA	805	11	-	0/5/27/28	0/3/3/3
61	OMG	c	1572	61	-	3/5/27/28	0/3/3/3
61	A2M	c	796	61	-	0/5/27/28	0/3/3/3
11	OMC	AA	2948	11	-	0/9/27/28	0/2/2/2
11	OMC	AA	2197	11,87	-	4/9/27/28	0/2/2/2
61	MA6	c	1782	61	-	1/7/29/30	0/3/3/3
61	G7M	c	1575	18,61	-	3/3/25/26	0/3/3/3
11	OMU	AA	2921	11,86	-	0/9/27/28	0/2/2/2
11	A2M	AA	876	11	-	0/5/27/28	0/3/3/3
61	OMG	c	1271	61	-	1/5/27/28	0/3/3/3
11	OMG	AA	2793	11	-	2/5/27/28	0/3/3/3
61	OMC	c	414	61	-	1/9/27/28	0/2/2/2
11	OMG	AA	867	11,87	-	2/5/27/28	0/3/3/3
11	A2M	AA	1449	11,86	-	0/5/27/28	0/3/3/3
61	A2M	c	28	61	-	2/5/27/28	0/3/3/3
11	5MC	AA	2278	11,86	-	0/7/25/26	0/2/2/2
11	OMG	AA	2288	11	-	0/5/27/28	0/3/3/3
61	4AC	c	1773	61	-	2/11/29/30	0/2/2/2
11	OMG	AA	908	11	-	1/5/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
61	A2M	c	420	61	-	2/5/27/28	0/3/3/3
11	OMC	AA	663	11	-	1/9/27/28	0/2/2/2
11	OMG	AA	2791	11	-	0/5/27/28	0/3/3/3
11	OMU	AA	1888	11	-	0/9/27/28	0/2/2/2
11	OMU	AA	898	11	-	0/9/27/28	0/2/2/2
11	A2M	AA	2281	11	-	3/5/27/28	0/3/3/3
61	OMU	c	1269	61	-	4/9/27/28	0/2/2/2
11	1MA	AA	645	11,86	-	0/3/25/26	0/3/3/3
11	A2M	AA	807	11	-	1/5/27/28	0/3/3/3
11	OMG	AA	1450	11	-	2/5/27/28	0/3/3/3

All (325) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
61	c	28	A2M	C3'-C4'	-9.07	1.29	1.53
11	AA	807	A2M	C3'-C4'	-8.89	1.30	1.53
61	c	541	A2M	C3'-C4'	-8.86	1.30	1.53
11	AA	2280	A2M	C3'-C4'	-8.86	1.30	1.53
61	c	619	A2M	C3'-C4'	-8.86	1.30	1.53
61	c	974	A2M	C3'-C4'	-8.86	1.30	1.53
61	c	796	A2M	C3'-C4'	-8.85	1.30	1.53
61	c	100	A2M	C3'-C4'	-8.85	1.30	1.53
11	AA	1133	A2M	C3'-C4'	-8.84	1.30	1.53
61	c	420	A2M	C3'-C4'	-8.83	1.30	1.53
11	AA	876	A2M	C3'-C4'	-8.80	1.30	1.53
11	AA	2220	A2M	C3'-C4'	-8.80	1.30	1.53
61	c	436	A2M	C3'-C4'	-8.78	1.30	1.53
11	AA	2640	A2M	C3'-C4'	-8.77	1.30	1.53
11	AA	649	A2M	C3'-C4'	-8.76	1.30	1.53
11	AA	2946	A2M	C3'-C4'	-8.74	1.30	1.53
11	AA	817	A2M	C3'-C4'	-8.73	1.30	1.53
11	AA	1449	A2M	C3'-C4'	-8.70	1.30	1.53
11	AA	2256	A2M	C3'-C4'	-8.46	1.31	1.53
11	AA	2281	A2M	C3'-C4'	-8.41	1.31	1.53
11	AA	2281	A2M	O4'-C1'	-8.11	1.29	1.41
11	AA	2256	A2M	O4'-C4'	7.98	1.62	1.45
61	c	1191	B8N	C6-N1	7.87	1.56	1.36
61	c	796	A2M	O4'-C4'	7.73	1.62	1.45
11	AA	2946	A2M	O4'-C4'	7.66	1.62	1.45
11	AA	1133	A2M	O4'-C4'	7.65	1.62	1.45
11	AA	2220	A2M	O4'-C4'	7.64	1.62	1.45

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	AA	1449	A2M	O4'-C4'	7.63	1.62	1.45
61	c	420	A2M	O4'-C4'	7.58	1.61	1.45
61	c	436	A2M	O4'-C4'	7.57	1.61	1.45
61	c	974	A2M	O4'-C4'	7.56	1.61	1.45
61	c	619	A2M	O4'-C1'	-7.56	1.30	1.41
11	AA	876	A2M	O4'-C4'	7.55	1.61	1.45
11	AA	2640	A2M	O4'-C4'	7.54	1.61	1.45
11	AA	2281	A2M	O4'-C4'	7.54	1.61	1.45
61	c	100	A2M	O4'-C4'	7.52	1.61	1.45
61	c	541	A2M	O4'-C4'	7.52	1.61	1.45
11	AA	649	A2M	O4'-C4'	7.48	1.61	1.45
61	c	1280	4AC	C4-N3	7.47	1.45	1.32
61	c	28	A2M	O4'-C4'	7.46	1.61	1.45
11	AA	2280	A2M	O4'-C4'	7.41	1.61	1.45
11	AA	817	A2M	O4'-C4'	7.41	1.61	1.45
11	AA	807	A2M	O4'-C1'	-7.40	1.30	1.41
61	c	1191	B8N	C4-N3	-7.37	1.26	1.40
11	AA	649	A2M	O4'-C1'	-7.33	1.30	1.41
11	AA	2256	A2M	O4'-C1'	-7.32	1.30	1.41
61	c	1269	OMU	C2-N1	7.31	1.50	1.38
11	AA	807	A2M	O4'-C4'	7.26	1.61	1.45
11	AA	2347	OMU	C2-N1	7.23	1.50	1.38
61	c	619	A2M	O4'-C4'	7.23	1.61	1.45
61	c	436	A2M	O4'-C1'	-7.22	1.31	1.41
15	Bb	37	YYG	C21-N20	7.21	1.52	1.34
61	c	578	OMU	C2-N1	7.21	1.50	1.38
11	AA	1449	A2M	O4'-C1'	-7.18	1.31	1.41
11	AA	817	A2M	O4'-C1'	-7.18	1.31	1.41
61	c	100	A2M	O4'-C1'	-7.17	1.31	1.41
11	AA	2280	A2M	O4'-C1'	-7.16	1.31	1.41
11	AA	2640	A2M	O4'-C1'	-7.16	1.31	1.41
61	c	420	A2M	O4'-C1'	-7.13	1.31	1.41
11	AA	876	A2M	O4'-C1'	-7.12	1.31	1.41
11	AA	1133	A2M	O4'-C1'	-7.11	1.31	1.41
61	c	974	A2M	O4'-C1'	-7.07	1.31	1.41
11	AA	2946	A2M	O4'-C1'	-7.06	1.31	1.41
61	c	796	A2M	O4'-C1'	-7.06	1.31	1.41
11	AA	1888	OMU	C2-N1	7.06	1.49	1.38
11	AA	2921	OMU	C2-N1	7.06	1.49	1.38
61	c	1773	4AC	C4-N3	7.04	1.45	1.32
61	c	541	A2M	O4'-C1'	-7.03	1.31	1.41
11	AA	2421	OMU	C2-N1	7.01	1.49	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	AA	2220	A2M	O4'-C1'	-7.00	1.31	1.41
11	AA	2724	OMU	C2-N1	6.94	1.49	1.38
61	c	578	OMU	C2-N3	6.91	1.50	1.38
11	AA	898	OMU	C2-N1	6.91	1.49	1.38
61	c	1773	4AC	C6-C5	6.87	1.51	1.35
61	c	28	A2M	O4'-C1'	-6.85	1.31	1.41
11	AA	2417	OMU	C2-N1	6.81	1.49	1.38
61	c	1269	OMU	C2-N3	6.79	1.50	1.38
11	AA	2634	UR3	C6-C5	6.71	1.50	1.35
11	AA	2347	OMU	C2-N3	6.71	1.49	1.38
61	c	1280	4AC	C6-C5	6.69	1.50	1.35
11	AA	2729	OMU	C2-N1	6.68	1.49	1.38
11	AA	2921	OMU	C2-N3	6.67	1.49	1.38
11	AA	2729	OMU	C2-N3	6.65	1.49	1.38
11	AA	2724	OMU	C2-N3	6.64	1.49	1.38
11	AA	2421	OMU	C2-N3	6.60	1.49	1.38
11	AA	2417	OMU	C2-N3	6.60	1.49	1.38
11	AA	2634	UR3	C2-N1	6.60	1.48	1.38
11	AA	898	OMU	C2-N3	6.56	1.49	1.38
11	AA	1888	OMU	C2-N3	6.56	1.49	1.38
61	c	1191	B8N	C2-N1	5.85	1.56	1.39
61	c	578	OMU	C6-C5	5.80	1.48	1.35
61	c	1269	OMU	C6-C5	5.76	1.48	1.35
61	c	1280	4AC	C7-N4	5.75	1.47	1.37
11	AA	2921	OMU	C6-C5	5.70	1.48	1.35
11	AA	2729	OMU	C6-C5	5.68	1.48	1.35
11	AA	1888	OMU	C6-C5	5.67	1.48	1.35
11	AA	2417	OMU	C6-C5	5.65	1.48	1.35
11	AA	898	OMU	C6-C5	5.64	1.48	1.35
11	AA	2421	OMU	C6-C5	5.63	1.48	1.35
11	AA	2634	UR3	C2-N3	5.62	1.49	1.39
11	AA	2724	OMU	C6-C5	5.59	1.48	1.35
11	AA	2347	OMU	C6-C5	5.57	1.48	1.35
61	c	1191	B8N	C6-C5	5.52	1.42	1.34
15	Bb	37	YYG	O23-C21	5.50	1.43	1.34
61	c	1575	G7M	C2-N3	5.42	1.46	1.33
61	c	1280	4AC	C2-N1	5.31	1.51	1.40
61	c	1773	4AC	C7-N4	5.28	1.47	1.37
61	c	1280	4AC	C4-N4	5.21	1.47	1.39
61	c	1280	4AC	C2-N3	5.21	1.46	1.36
61	c	1773	4AC	C2-N1	4.88	1.50	1.40
61	c	1773	4AC	C4-N4	4.87	1.46	1.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
61	c	1575	G7M	C4-N3	4.83	1.49	1.37
61	c	1575	G7M	C2-N2	4.67	1.45	1.34
61	c	1773	4AC	C2-N3	4.65	1.45	1.36
61	c	578	OMU	C4-N3	4.35	1.46	1.38
61	c	1269	OMU	C4-N3	4.29	1.46	1.38
61	c	1280	4AC	CM7-C7	4.20	1.59	1.50
11	AA	2724	OMU	C4-N3	4.12	1.45	1.38
11	AA	2347	OMU	C4-N3	4.09	1.45	1.38
11	AA	2417	OMU	C4-N3	4.08	1.45	1.38
61	c	1773	4AC	C5-C4	4.08	1.49	1.40
11	AA	1888	OMU	C4-N3	4.07	1.45	1.38
61	c	1191	B8N	C1'-C5	4.07	1.59	1.50
11	AA	2729	OMU	C4-N3	4.05	1.45	1.38
11	AA	2921	OMU	C4-N3	4.04	1.45	1.38
11	AA	2421	OMU	C4-N3	4.03	1.45	1.38
11	AA	898	OMU	C4-N3	4.02	1.45	1.38
61	c	1280	4AC	C5-C4	4.00	1.49	1.40
15	Bb	37	YYG	O18-C16	3.99	1.42	1.33
61	c	1773	4AC	CM7-C7	3.71	1.58	1.50
61	c	1575	G7M	C6-N1	3.66	1.43	1.37
15	Bb	37	YYG	O6-C6	-3.39	1.18	1.22
11	AA	2634	UR3	C6-N1	3.34	1.46	1.38
61	c	1575	G7M	C5-C6	3.16	1.53	1.45
11	AA	2256	A2M	C6-N6	3.15	1.45	1.34
61	c	541	A2M	C6-N6	3.14	1.45	1.34
11	AA	2421	OMU	O4-C4	-3.14	1.18	1.24
61	c	28	A2M	C6-N6	3.14	1.45	1.34
61	c	420	A2M	C6-N6	3.13	1.45	1.34
61	c	436	A2M	C6-N6	3.12	1.45	1.34
11	AA	2640	A2M	C6-N6	3.12	1.45	1.34
11	AA	2220	A2M	C6-N6	3.12	1.45	1.34
11	AA	2280	A2M	C6-N6	3.11	1.45	1.34
61	c	796	A2M	C6-N6	3.11	1.45	1.34
61	c	100	A2M	C6-N6	3.11	1.45	1.34
61	c	619	A2M	C6-N6	3.11	1.45	1.34
11	AA	807	A2M	C6-N6	3.10	1.45	1.34
11	AA	908	OMG	C8-N7	-3.10	1.29	1.35
11	AA	2417	OMU	O4-C4	-3.10	1.18	1.24
61	c	974	A2M	C6-N6	3.09	1.45	1.34
11	AA	876	A2M	C6-N6	3.09	1.45	1.34
11	AA	2729	OMU	O4-C4	-3.09	1.18	1.24
11	AA	898	OMU	O4-C4	-3.07	1.18	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	AA	2724	OMU	O4-C4	-3.07	1.18	1.24
11	AA	649	A2M	C6-N6	3.07	1.45	1.34
11	AA	1449	A2M	C6-N6	3.07	1.45	1.34
11	AA	2921	OMU	O4-C4	-3.07	1.18	1.24
11	AA	2946	A2M	C6-N6	3.06	1.45	1.34
11	AA	1133	A2M	C6-N6	3.06	1.45	1.34
11	AA	817	A2M	C6-N6	3.04	1.45	1.34
11	AA	1888	OMU	O4-C4	-3.03	1.18	1.24
11	AA	2347	OMU	O4-C4	-3.02	1.18	1.24
61	c	1269	OMU	C6-N1	3.01	1.45	1.38
11	AA	2288	OMG	C8-N7	-3.01	1.29	1.35
11	AA	867	OMG	C8-N7	-2.98	1.29	1.35
11	AA	2922	OMG	C8-N7	-2.98	1.29	1.35
11	AA	2619	OMG	C8-N7	-2.95	1.30	1.35
11	AA	1449	A2M	O3'-C3'	2.95	1.49	1.43
11	AA	2281	A2M	C6-N6	2.94	1.44	1.34
61	c	578	OMU	C6-N1	2.93	1.45	1.38
11	AA	817	A2M	O3'-C3'	2.92	1.49	1.43
61	c	436	A2M	O3'-C3'	2.92	1.49	1.43
61	c	1126	OMG	C8-N7	-2.91	1.30	1.35
11	AA	2281	A2M	O3'-C3'	2.91	1.49	1.43
11	AA	2281	A2M	C5-C4	-2.91	1.33	1.40
15	Bb	37	YYG	C4-N3	-2.90	1.35	1.40
11	AA	2815	OMG	C8-N7	-2.90	1.30	1.35
61	c	1269	OMU	O4-C4	-2.90	1.18	1.24
11	AA	805	OMG	C8-N7	-2.89	1.30	1.35
11	AA	2793	OMG	C8-N7	-2.88	1.30	1.35
11	AA	2256	A2M	O3'-C3'	2.88	1.49	1.43
61	c	619	A2M	O3'-C3'	2.88	1.49	1.43
11	AA	2791	OMG	C8-N7	-2.88	1.30	1.35
11	AA	2729	OMU	C6-N1	2.88	1.44	1.38
11	AA	2417	OMU	C6-N1	2.87	1.44	1.38
61	c	100	A2M	O3'-C3'	2.86	1.49	1.43
11	AA	1888	OMU	C6-N1	2.85	1.44	1.38
61	c	578	OMU	O4-C4	-2.83	1.19	1.24
15	Bb	37	YYG	C13-C12	2.83	1.58	1.50
61	c	1428	OMG	C8-N7	-2.83	1.30	1.35
61	c	541	A2M	O3'-C3'	2.83	1.49	1.43
61	c	420	A2M	O3'-C3'	2.82	1.49	1.43
61	c	619	A2M	C5-C4	-2.81	1.33	1.40
11	AA	2640	A2M	O3'-C3'	2.81	1.49	1.43
11	AA	2946	A2M	C5-C4	-2.80	1.33	1.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	AA	2421	OMU	C6-N1	2.79	1.44	1.38
11	AA	2946	A2M	O3'-C3'	2.79	1.49	1.43
11	AA	1133	A2M	O3'-C3'	2.78	1.49	1.43
61	c	796	A2M	O3'-C3'	2.77	1.49	1.43
11	AA	2921	OMU	C6-N1	2.77	1.44	1.38
11	AA	2220	A2M	O3'-C3'	2.77	1.49	1.43
11	AA	1133	A2M	C5-C4	-2.76	1.33	1.40
61	c	974	A2M	C5-C4	-2.76	1.33	1.40
11	AA	2280	A2M	C5-C4	-2.76	1.33	1.40
11	AA	876	A2M	O3'-C3'	2.75	1.49	1.43
11	AA	2724	OMU	C6-N1	2.75	1.44	1.38
11	AA	807	A2M	O3'-C3'	2.75	1.49	1.43
61	c	796	A2M	C5-C4	-2.74	1.33	1.40
11	AA	817	A2M	C5-C4	-2.74	1.33	1.40
11	AA	2347	OMU	C6-N1	2.74	1.44	1.38
61	c	974	A2M	O3'-C3'	2.74	1.49	1.43
11	AA	2142	1MA	C8-N7	-2.74	1.30	1.35
11	AA	898	OMU	C6-N1	2.73	1.44	1.38
61	c	1781	MA6	C5-C4	-2.73	1.33	1.40
61	c	100	A2M	C5-C4	-2.73	1.33	1.40
61	c	1782	MA6	C5-C4	-2.73	1.33	1.40
11	AA	807	A2M	C5-C4	-2.72	1.33	1.40
11	AA	2640	A2M	C5-C4	-2.72	1.33	1.40
11	AA	649	A2M	O3'-C3'	2.72	1.49	1.43
61	c	1575	G7M	C2-N1	2.71	1.44	1.37
11	AA	2280	A2M	O3'-C3'	2.71	1.49	1.43
61	c	562	OMG	C8-N7	-2.71	1.30	1.35
61	c	28	A2M	C5-C4	-2.71	1.33	1.40
11	AA	2220	A2M	C5-C4	-2.70	1.33	1.40
11	AA	876	A2M	C5-C4	-2.70	1.33	1.40
11	AA	649	A2M	C5-C4	-2.69	1.33	1.40
11	AA	1450	OMG	C8-N7	-2.69	1.30	1.35
61	c	420	A2M	C5-C4	-2.69	1.33	1.40
61	c	796	A2M	O2'-C2'	-2.68	1.35	1.42
11	AA	1449	A2M	C5-C4	-2.68	1.33	1.40
11	AA	807	A2M	O2'-C2'	-2.67	1.35	1.42
61	c	436	A2M	C5-C4	-2.67	1.33	1.40
11	AA	2256	A2M	C5-C4	-2.67	1.33	1.40
61	c	1271	OMG	C8-N7	-2.67	1.30	1.35
61	c	974	A2M	O2'-C2'	-2.66	1.35	1.42
11	AA	876	A2M	O2'-C2'	-2.66	1.35	1.42
11	AA	2946	A2M	O2'-C2'	-2.66	1.35	1.42

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	AA	817	A2M	O2'-C2'	-2.64	1.35	1.42
61	c	28	A2M	O3'-C3'	2.63	1.49	1.43
11	AA	1449	A2M	O2'-C2'	-2.63	1.35	1.42
11	AA	2281	A2M	O2'-C2'	-2.62	1.35	1.42
61	c	100	A2M	O2'-C2'	-2.61	1.35	1.42
61	c	436	A2M	O2'-C2'	-2.61	1.35	1.42
11	AA	2640	A2M	O2'-C2'	-2.61	1.35	1.42
61	c	1572	OMG	C8-N7	-2.61	1.30	1.35
11	AA	2280	A2M	O2'-C2'	-2.60	1.35	1.42
11	AA	1133	A2M	O2'-C2'	-2.60	1.35	1.42
61	c	1773	4AC	C6-N1	2.59	1.44	1.38
11	AA	2220	A2M	O2'-C2'	-2.59	1.36	1.42
15	Bb	37	YYG	C10-C11	2.59	1.54	1.50
61	c	541	A2M	C5-C4	-2.58	1.34	1.40
15	Bb	37	YYG	C2-N1	-2.57	1.32	1.37
11	AA	649	A2M	O2'-C2'	-2.55	1.36	1.42
61	c	541	A2M	O2'-C2'	-2.55	1.36	1.42
61	c	1126	OMG	C5-C6	-2.54	1.42	1.47
11	AA	898	OMU	O2-C2	-2.54	1.18	1.23
11	AA	2347	OMU	O2-C2	-2.54	1.18	1.23
61	c	1280	4AC	C6-N1	2.54	1.44	1.38
61	c	420	A2M	O2'-C2'	-2.53	1.36	1.42
11	AA	645	1MA	C8-N7	-2.53	1.30	1.35
11	AA	2921	OMU	O2-C2	-2.53	1.18	1.23
11	AA	908	OMG	C5-C6	-2.50	1.42	1.47
11	AA	2421	OMU	O2-C2	-2.50	1.18	1.23
61	c	578	OMU	C5-C4	2.50	1.49	1.43
11	AA	2922	OMG	C5-C6	-2.49	1.42	1.47
61	c	28	A2M	O2'-C2'	-2.49	1.36	1.42
11	AA	2288	OMG	C5-C6	-2.49	1.42	1.47
11	AA	2619	OMG	C5-C6	-2.48	1.42	1.47
11	AA	1888	OMU	C5-C4	2.47	1.49	1.43
61	c	1269	OMU	C5-C4	2.47	1.49	1.43
11	AA	2793	OMG	C5-C6	-2.47	1.42	1.47
61	c	619	A2M	O2'-C2'	-2.46	1.36	1.42
11	AA	2729	OMU	O2-C2	-2.46	1.18	1.23
11	AA	2815	OMG	C5-C6	-2.46	1.42	1.47
11	AA	867	OMG	C5-C6	-2.44	1.42	1.47
11	AA	805	OMG	C5-C6	-2.44	1.42	1.47
61	c	1269	OMU	O2-C2	-2.43	1.18	1.23
11	AA	2724	OMU	O2-C2	-2.42	1.18	1.23
11	AA	2417	OMU	O2-C2	-2.42	1.18	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	AA	2421	OMU	C5-C4	2.42	1.49	1.43
11	AA	2729	OMU	C5-C4	2.40	1.48	1.43
61	c	1428	OMG	C5-C6	-2.38	1.42	1.47
11	AA	2417	OMU	C5-C4	2.37	1.48	1.43
11	AA	1888	OMU	O2-C2	-2.37	1.18	1.23
11	AA	1450	OMG	C5-C6	-2.37	1.42	1.47
11	AA	2921	OMU	C5-C4	2.37	1.48	1.43
11	AA	2791	OMG	C5-C6	-2.35	1.42	1.47
11	AA	898	OMU	C5-C4	2.35	1.48	1.43
61	c	1782	MA6	C2-N3	2.35	1.35	1.32
61	c	1271	OMG	C5-C6	-2.34	1.42	1.47
61	c	1781	MA6	C2-N3	2.33	1.35	1.32
61	c	1773	4AC	O7-C7	-2.31	1.18	1.23
61	c	562	OMG	C5-C6	-2.31	1.42	1.47
61	c	1572	OMG	C5-C6	-2.30	1.42	1.47
61	c	578	OMU	O2-C2	-2.29	1.18	1.23
11	AA	645	1MA	C5-C4	-2.29	1.37	1.43
11	AA	2724	OMU	C5-C4	2.28	1.48	1.43
11	AA	2142	1MA	C5-C4	-2.28	1.37	1.43
11	AA	2634	UR3	C5-C4	2.26	1.49	1.43
61	c	1280	4AC	O7-C7	-2.26	1.18	1.23
11	AA	2634	UR3	C4-N3	2.24	1.45	1.40
11	AA	2347	OMU	C5-C4	2.21	1.48	1.43
11	AA	2256	A2M	C2-N3	2.20	1.35	1.32
61	c	28	A2M	O5'-C5'	-2.19	1.39	1.44
61	c	1575	G7M	O6-C6	-2.18	1.18	1.23
11	AA	2256	A2M	O2'-C2'	-2.18	1.37	1.42
61	c	541	A2M	C2-N3	2.17	1.35	1.32
61	c	28	A2M	C2-N3	2.15	1.35	1.32
61	c	420	A2M	C2-N3	2.13	1.35	1.32
61	c	436	A2M	C2-N3	2.12	1.35	1.32
11	AA	2281	A2M	O5'-C5'	-2.10	1.39	1.44
61	c	100	A2M	C2-N3	2.09	1.35	1.32
12	Aa	699	DDE	CD2-NE2	2.09	1.39	1.36
61	c	1191	B8N	O4-C4	-2.08	1.18	1.23
11	AA	2640	A2M	C2-N3	2.08	1.35	1.32
11	AA	2280	A2M	C2-N3	2.06	1.35	1.32
61	c	796	A2M	C2-N3	2.05	1.35	1.32
11	AA	2220	A2M	C2-N3	2.04	1.35	1.32
11	AA	649	A2M	C2-N3	2.04	1.35	1.32
11	AA	876	A2M	C2-N3	2.03	1.35	1.32
11	AA	2634	UR3	O2-C2	-2.03	1.18	1.22

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	AA	807	A2M	C2-N3	2.01	1.35	1.32
11	AA	2281	A2M	C2-N3	2.00	1.35	1.32
61	c	619	A2M	O5'-C5'	-2.00	1.39	1.44
11	AA	1449	A2M	C2-N3	2.00	1.35	1.32

All (179) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
61	c	1782	MA6	N1-C6-N6	-13.89	102.43	117.06
61	c	1781	MA6	N1-C6-N6	-13.43	102.92	117.06
11	AA	817	A2M	C5-C6-N6	11.19	137.36	120.35
11	AA	1133	A2M	C5-C6-N6	10.82	136.79	120.35
11	AA	1449	A2M	C5-C6-N6	10.69	136.59	120.35
11	AA	2220	A2M	C5-C6-N6	10.65	136.53	120.35
61	c	420	A2M	C5-C6-N6	10.63	136.51	120.35
61	c	619	A2M	C5-C6-N6	10.61	136.47	120.35
11	AA	807	A2M	C5-C6-N6	10.61	136.47	120.35
61	c	436	A2M	C5-C6-N6	10.58	136.43	120.35
61	c	796	A2M	C5-C6-N6	10.58	136.42	120.35
11	AA	2280	A2M	C5-C6-N6	10.53	136.36	120.35
61	c	28	A2M	C5-C6-N6	10.52	136.34	120.35
61	c	974	A2M	C5-C6-N6	10.52	136.33	120.35
11	AA	876	A2M	C5-C6-N6	10.51	136.33	120.35
61	c	100	A2M	C5-C6-N6	10.49	136.30	120.35
11	AA	2256	A2M	C5-C6-N6	10.48	136.28	120.35
11	AA	649	A2M	C5-C6-N6	10.46	136.25	120.35
11	AA	2640	A2M	C5-C6-N6	10.45	136.23	120.35
11	AA	2946	A2M	C5-C6-N6	10.32	136.04	120.35
61	c	541	A2M	C5-C6-N6	10.26	135.94	120.35
11	AA	2281	A2M	C5-C6-N6	10.17	135.81	120.35
11	AA	817	A2M	N6-C6-N1	-7.61	102.78	118.57
11	AA	1449	A2M	N6-C6-N1	-7.28	103.47	118.57
61	c	436	A2M	N6-C6-N1	-7.27	103.49	118.57
11	AA	1133	A2M	N6-C6-N1	-7.24	103.55	118.57
61	c	420	A2M	N6-C6-N1	-7.23	103.57	118.57
11	AA	2256	A2M	N6-C6-N1	-7.19	103.65	118.57
11	AA	2280	A2M	N6-C6-N1	-7.18	103.66	118.57
11	AA	2220	A2M	N6-C6-N1	-7.18	103.67	118.57
11	AA	807	A2M	N6-C6-N1	-7.18	103.68	118.57
61	c	796	A2M	N6-C6-N1	-7.17	103.68	118.57
61	c	619	A2M	N6-C6-N1	-7.16	103.72	118.57
61	c	28	A2M	N6-C6-N1	-7.15	103.73	118.57

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
61	c	100	A2M	N6-C6-N1	-7.13	103.77	118.57
61	c	974	A2M	N6-C6-N1	-7.10	103.84	118.57
11	AA	649	A2M	N6-C6-N1	-7.10	103.84	118.57
11	AA	2281	A2M	N6-C6-N1	-7.08	103.89	118.57
11	AA	876	A2M	N6-C6-N1	-7.06	103.92	118.57
11	AA	2640	A2M	N6-C6-N1	-7.05	103.94	118.57
11	AA	2946	A2M	N6-C6-N1	-7.02	104.00	118.57
61	c	541	A2M	N6-C6-N1	-6.94	104.16	118.57
11	AA	1133	A2M	N3-C2-N1	-5.84	119.55	128.68
61	c	974	A2M	N3-C2-N1	-5.84	119.55	128.68
61	c	1280	4AC	CM7-C7-N4	5.74	125.22	115.29
61	c	619	A2M	N3-C2-N1	-5.74	119.71	128.68
11	AA	649	A2M	N3-C2-N1	-5.73	119.72	128.68
61	c	28	A2M	N3-C2-N1	-5.73	119.73	128.68
11	AA	2256	A2M	N3-C2-N1	-5.71	119.76	128.68
11	AA	2946	A2M	N3-C2-N1	-5.69	119.79	128.68
11	AA	2281	A2M	N3-C2-N1	-5.67	119.82	128.68
11	AA	817	A2M	N3-C2-N1	-5.66	119.83	128.68
11	AA	2220	A2M	N3-C2-N1	-5.63	119.87	128.68
11	AA	1449	A2M	N3-C2-N1	-5.62	119.89	128.68
11	AA	876	A2M	N3-C2-N1	-5.59	119.94	128.68
61	c	436	A2M	N3-C2-N1	-5.59	119.94	128.68
61	c	100	A2M	N3-C2-N1	-5.56	119.98	128.68
11	AA	2421	OMU	C4-N3-C2	-5.55	119.26	126.58
61	c	420	A2M	N3-C2-N1	-5.52	120.04	128.68
61	c	1781	MA6	N3-C2-N1	-5.52	120.06	128.68
11	AA	1888	OMU	C4-N3-C2	-5.51	119.31	126.58
11	AA	2280	A2M	N3-C2-N1	-5.50	120.09	128.68
61	c	796	A2M	N3-C2-N1	-5.49	120.10	128.68
11	AA	807	A2M	N3-C2-N1	-5.45	120.16	128.68
11	AA	2640	A2M	N3-C2-N1	-5.45	120.17	128.68
61	c	541	A2M	N3-C2-N1	-5.43	120.18	128.68
61	c	1782	MA6	N3-C2-N1	-5.41	120.22	128.68
11	AA	898	OMU	C4-N3-C2	-5.30	119.58	126.58
11	AA	2921	OMU	C4-N3-C2	-5.29	119.60	126.58
61	c	1773	4AC	CM7-C7-N4	5.26	124.40	115.29
11	AA	2417	OMU	C4-N3-C2	-5.26	119.64	126.58
11	AA	2347	OMU	C4-N3-C2	-5.22	119.70	126.58
61	c	578	OMU	C4-N3-C2	-5.16	119.77	126.58
11	AA	2634	UR3	C4-N3-C2	-5.13	119.73	124.56
11	AA	2724	OMU	C4-N3-C2	-5.13	119.81	126.58
61	c	1269	OMU	C4-N3-C2	-5.09	119.87	126.58

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
61	c	1191	B8N	C5-C4-N3	5.04	125.51	116.17
11	AA	2729	OMU	C4-N3-C2	-5.02	119.96	126.58
15	Bb	37	YYG	O23-C21-N20	5.01	119.60	110.80
61	c	1191	B8N	C4-N3-C2	-4.27	120.06	125.46
11	AA	2421	OMU	N3-C2-N1	4.08	120.30	114.89
11	AA	1888	OMU	N3-C2-N1	4.04	120.26	114.89
11	AA	2921	OMU	N3-C2-N1	3.91	120.08	114.89
61	c	1269	OMU	N3-C2-N1	3.87	120.03	114.89
11	AA	2417	OMU	N3-C2-N1	3.82	119.96	114.89
11	AA	898	OMU	N3-C2-N1	3.80	119.94	114.89
11	AA	2724	OMU	N3-C2-N1	3.75	119.87	114.89
61	c	578	OMU	N3-C2-N1	3.74	119.86	114.89
11	AA	2347	OMU	N3-C2-N1	3.71	119.82	114.89
11	AA	2729	OMU	N3-C2-N1	3.48	119.51	114.89
11	AA	2256	A2M	O2'-C2'-C1'	3.47	115.97	109.09
11	AA	2421	OMU	C5-C4-N3	3.42	119.95	114.84
11	AA	898	OMU	C5-C4-N3	3.39	119.91	114.84
11	AA	2347	OMU	C5-C4-N3	3.38	119.90	114.84
11	AA	2417	OMU	C5-C4-N3	3.38	119.90	114.84
11	AA	1888	OMU	C5-C4-N3	3.38	119.89	114.84
11	AA	2724	OMU	C5-C4-N3	3.37	119.88	114.84
11	AA	2921	OMU	C5-C4-N3	3.32	119.81	114.84
11	AA	2729	OMU	C5-C4-N3	3.31	119.80	114.84
15	Bb	37	YYG	O18-C16-C15	3.25	119.84	111.52
61	c	578	OMU	C5-C4-N3	3.22	119.65	114.84
61	c	1269	OMU	C5-C4-N3	3.21	119.64	114.84
15	Bb	37	YYG	C5-C6-N1	3.12	118.61	113.96
15	Bb	37	YYG	O23-C21-O22	-3.08	120.05	124.58
61	c	1191	B8N	N3-C2-N1	3.05	121.07	116.76
61	c	541	A2M	C1'-N9-C4	3.04	131.99	126.64
11	AA	2347	OMU	O4-C4-C5	-3.03	119.84	125.16
61	c	1575	G7M	C2-N1-C6	-3.01	119.55	125.10
61	c	1191	B8N	C31-N3-C4	2.98	121.71	117.31
11	AA	2921	OMU	O4-C4-C5	-2.93	120.01	125.16
15	Bb	37	YYG	C8-N7-C5	2.89	108.49	102.99
11	AA	2724	OMU	O4-C4-C5	-2.85	120.14	125.16
61	c	578	OMU	O4-C4-C5	-2.85	120.15	125.16
61	c	1280	4AC	O7-C7-N4	-2.83	117.23	121.82
61	c	1280	4AC	C6-C5-C4	2.80	120.39	116.96
11	AA	2256	A2M	O4'-C1'-C2'	-2.78	101.76	106.59
11	AA	1888	OMU	O4-C4-C5	-2.77	120.29	125.16
11	AA	2417	OMU	O4-C4-C5	-2.76	120.30	125.16

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
11	AA	898	OMU	O4-C4-C5	-2.75	120.33	125.16
15	Bb	37	YYG	O22-C21-N20	-2.74	120.35	124.85
11	AA	2729	OMU	O4-C4-C5	-2.74	120.34	125.16
61	c	1269	OMU	O4-C4-C5	-2.73	120.36	125.16
11	AA	2421	OMU	O4-C4-C5	-2.69	120.43	125.16
61	c	1280	4AC	C5-C4-N3	-2.60	118.41	122.59
11	AA	2142	1MA	N1-C6-N6	2.57	126.31	119.77
61	c	1773	4AC	C5-C4-N3	-2.57	118.46	122.59
11	AA	2281	A2M	O4'-C1'-C2'	-2.57	102.13	106.59
11	AA	1437	OMC	C1'-N1-C2	2.56	124.14	118.42
15	Bb	37	YYG	C14-C13-C12	2.56	118.44	112.66
61	c	1773	4AC	C6-C5-C4	2.45	119.95	116.96
61	c	1773	4AC	O7-C7-N4	-2.44	117.86	121.82
11	AA	2417	OMU	O2-C2-N1	-2.43	119.56	122.79
61	c	1280	4AC	O7-C7-CM7	-2.43	117.55	122.06
61	c	1271	OMG	O6-C6-C5	2.43	129.11	124.37
12	Aa	699	DDE	CAU-CBW-CBI	-2.41	106.42	111.20
11	AA	2619	OMG	O6-C6-C5	2.40	129.06	124.37
11	AA	1888	OMU	O2-C2-N1	-2.40	119.60	122.79
61	c	1572	OMG	O6-C6-C5	2.39	129.05	124.37
11	AA	876	A2M	C1'-N9-C4	2.38	130.82	126.64
11	AA	2142	1MA	C5-C6-N1	-2.36	110.37	113.90
61	c	562	OMG	O6-C6-C5	2.35	128.96	124.37
15	Bb	37	YYG	O6-C6-C5	-2.34	120.02	124.17
11	AA	2347	OMU	C1'-N1-C2	2.34	121.80	117.57
61	c	1773	4AC	O7-C7-CM7	-2.32	117.74	122.06
11	AA	2922	OMG	O6-C6-C5	2.31	128.88	124.37
11	AA	645	1MA	N1-C6-N6	2.31	125.64	119.77
11	AA	2793	OMG	O6-C6-C5	2.30	128.87	124.37
11	AA	2791	OMG	O6-C6-C5	2.30	128.86	124.37
11	AA	908	OMG	O6-C6-C5	2.29	128.84	124.37
11	AA	2815	OMG	O6-C6-C5	2.28	128.83	124.37
11	AA	2640	A2M	C1'-N9-C4	2.28	130.65	126.64
11	AA	805	OMG	O6-C6-C5	2.28	128.82	124.37
15	Bb	37	YYG	C3-N3-C4	2.27	120.75	116.71
61	c	1428	OMG	O6-C6-C5	2.27	128.81	124.37
11	AA	2421	OMU	O2-C2-N1	-2.26	119.79	122.79
11	AA	867	OMG	O6-C6-C5	2.23	128.73	124.37
11	AA	1450	OMG	O6-C6-C5	2.23	128.73	124.37
61	c	1126	OMG	O6-C6-C5	2.21	128.70	124.37
61	c	1269	OMU	C1'-N1-C2	2.21	121.58	117.57
11	AA	2288	OMG	O6-C6-C5	2.20	128.67	124.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
11	AA	2729	OMU	O2-C2-N1	-2.20	119.86	122.79
61	c	100	A2M	C1'-N9-C4	2.17	130.46	126.64
61	c	28	A2M	C1'-N9-C4	2.16	130.44	126.64
11	AA	1449	A2M	C1'-N9-C4	2.16	130.43	126.64
11	AA	2948	OMC	C1'-N1-C2	2.15	123.22	118.42
15	Bb	37	YYG	C3-N3-C2	-2.14	118.13	120.13
61	c	1191	B8N	O4-C4-N3	-2.12	116.38	119.98
61	c	796	A2M	C1'-N9-C4	2.11	130.35	126.64
11	AA	898	OMU	O2-C2-N1	-2.10	119.99	122.79
11	AA	807	A2M	C1'-N9-C4	2.09	130.31	126.64
61	c	578	OMU	O2-C2-N1	-2.08	120.02	122.79
11	AA	2724	OMU	O2-C2-N1	-2.07	120.03	122.79
11	AA	645	1MA	C5-C6-N1	-2.07	110.81	113.90
61	c	1773	4AC	C5-C4-N4	2.06	126.49	122.92
61	c	420	A2M	C1'-N9-C4	2.05	130.25	126.64
11	AA	2921	OMU	O2-C2-N1	-2.03	120.08	122.79
61	c	28	A2M	C5'-C4'-C3'	-2.02	107.60	115.18
61	c	1191	B8N	O4'-C1'-C2'	2.02	107.99	105.14
11	AA	1888	OMU	C2'-C1'-N1	-2.02	110.31	114.22

There are no chirality outliers.

All (91) 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	1437	OMC	C1'-C2'-O2'-CM2
11	AA	1450	OMG	O4'-C4'-C5'-O5'
11	AA	2197	OMC	C2'-C1'-N1-C6
11	AA	2220	A2M	C1'-C2'-O2'-CM'
11	AA	2256	A2M	C1'-C2'-O2'-CM'
11	AA	2417	OMU	C1'-C2'-O2'-CM2
11	AA	2421	OMU	C1'-C2'-O2'-CM2
11	AA	2619	OMG	C1'-C2'-O2'-CM2
11	AA	2724	OMU	C1'-C2'-O2'-CM2
15	Bb	37	YYG	C11-C12-C13-C14
15	Bb	37	YYG	C12-C13-C14-C15
15	Bb	37	YYG	C16-C15-N20-C21
15	Bb	37	YYG	O22-C21-N20-C15
15	Bb	37	YYG	O23-C21-N20-C15
15	Bb	37	YYG	N20-C21-O23-C24
15	Bb	37	YYG	O22-C21-O23-C24

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Mol	Chain	Res	Type	Atoms
61	c	28	A2M	C3'-C4'-C5'-O5'
61	c	414	OMC	C1'-C2'-O2'-CM2
61	c	420	A2M	C1'-C2'-O2'-CM'
61	c	541	A2M	O4'-C4'-C5'-O5'
61	c	541	A2M	C3'-C4'-C5'-O5'
61	c	562	OMG	C1'-C2'-O2'-CM2
61	c	619	A2M	O4'-C4'-C5'-O5'
61	c	619	A2M	C1'-C2'-O2'-CM'
61	c	1191	B8N	C2'-C1'-C5-C4
61	c	1191	B8N	N34-C33-C34-O35
61	c	1191	B8N	N3-C31-C32-C33
61	c	1271	OMG	C1'-C2'-O2'-CM2
61	c	1280	4AC	C3'-C4'-C5'-O5'
61	c	1572	OMG	C1'-C2'-O2'-CM2
15	Bb	37	YYG	O17-C16-O18-C19
15	Bb	37	YYG	C15-C16-O18-C19
15	Bb	37	YYG	C13-C14-C15-N20
11	AA	2197	OMC	C2'-C1'-N1-C2
11	AA	867	OMG	C3'-C4'-C5'-O5'
11	AA	1450	OMG	C3'-C4'-C5'-O5'
11	AA	2922	OMG	C3'-C4'-C5'-O5'
61	c	28	A2M	O4'-C4'-C5'-O5'
61	c	619	A2M	C3'-C4'-C5'-O5'
61	c	1572	OMG	O4'-C4'-C5'-O5'
61	c	1572	OMG	C3'-C4'-C5'-O5'
15	Bb	37	YYG	C13-C14-C15-C16
61	c	578	OMU	C3'-C4'-C5'-O5'
61	c	578	OMU	O4'-C4'-C5'-O5'
61	c	1575	G7M	O4'-C4'-C5'-O5'
61	c	1575	G7M	C3'-C4'-C5'-O5'
11	AA	2870	5MC	C2'-C1'-N1-C6
61	c	1191	B8N	N34-C33-C34-O36
11	AA	2922	OMG	O4'-C4'-C5'-O5'
61	c	1280	4AC	O4'-C4'-C5'-O5'
61	c	100	A2M	O4'-C4'-C5'-O5'
11	AA	867	OMG	O4'-C4'-C5'-O5'
11	AA	2281	A2M	O4'-C4'-C5'-O5'
11	AA	2870	5MC	O4'-C1'-N1-C6
61	c	1280	4AC	O7-C7-N4-C4
61	c	1280	4AC	CM7-C7-N4-C4
61	c	1773	4AC	O7-C7-N4-C4
61	c	1773	4AC	CM7-C7-N4-C4

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Mol	Chain	Res	Type	Atoms
12	Aa	699	DDE	CAU-CAT-CE1-NE2
11	AA	2870	5MC	C2'-C1'-N1-C2
15	Bb	37	YYG	N20-C15-C16-O18
15	Bb	37	YYG	N20-C15-C16-O17
11	AA	2197	OMC	O4'-C1'-N1-C2
11	AA	908	OMG	C3'-C2'-O2'-CM2
61	c	1575	G7M	C4'-C5'-O5'-P
15	Bb	37	YYG	N1-C12-C13-C14
11	AA	2197	OMC	O4'-C1'-N1-C6
11	AA	817	A2M	C4'-C5'-O5'-P
11	AA	2870	5MC	O4'-C1'-N1-C2
61	c	1428	OMG	C4'-C5'-O5'-P
61	c	541	A2M	C4'-C5'-O5'-P
61	c	1782	MA6	C4'-C5'-O5'-P
61	c	1269	OMU	O4'-C1'-N1-C6
11	AA	807	A2M	C3'-C4'-C5'-O5'
61	c	420	A2M	O4'-C4'-C5'-O5'
61	c	1191	B8N	O4'-C1'-C5-C4
11	AA	2281	A2M	C3'-C2'-O2'-CM'
11	AA	2793	OMG	C3'-C2'-O2'-CM2
61	c	1269	OMU	C2'-C1'-N1-C6
11	AA	2281	A2M	C3'-C4'-C5'-O5'
11	AA	2793	OMG	C1'-C2'-O2'-CM2
61	c	1269	OMU	O4'-C1'-N1-C2
61	c	1191	B8N	O4'-C1'-C5-C6
61	c	1269	OMU	C2'-C1'-N1-C2
11	AA	1437	OMC	O4'-C4'-C5'-O5'
11	AA	2256	A2M	O4'-C4'-C5'-O5'
12	Aa	699	DDE	CAU-CBW-NCB-CAB
11	AA	817	A2M	O4'-C4'-C5'-O5'
11	AA	2142	1MA	C4'-C5'-O5'-P

There are no ring outliers.

38 monomers are involved in 62 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
61	c	1280	4AC	4	0
11	AA	2347	OMU	1	0
11	AA	817	A2M	2	0
11	AA	1133	A2M	1	0
11	AA	2959	OMC	1	0
11	AA	1437	OMC	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
11	AA	2337	OMC	1	0
11	AA	650	OMC	2	0
15	Bb	37	YYG	7	0
12	Aa	699	DDE	1	0
61	c	541	A2M	1	0
11	AA	2220	A2M	2	0
11	AA	2870	5MC	2	0
11	AA	2922	OMG	2	0
11	AA	2724	OMU	4	0
61	c	436	A2M	1	0
11	AA	2640	A2M	1	0
61	c	1639	OMC	1	0
11	AA	649	A2M	1	0
11	AA	2417	OMU	1	0
11	AA	2815	OMG	1	0
11	AA	2421	OMU	1	0
61	c	1428	OMG	2	0
61	c	1781	MA6	1	0
11	AA	805	OMG	1	0
61	c	1572	OMG	1	0
11	AA	2948	OMC	1	0
61	c	1575	G7M	2	0
61	c	1271	OMG	1	0
11	AA	2793	OMG	1	0
11	AA	1449	A2M	1	0
61	c	1773	4AC	4	0
11	AA	908	OMG	1	0
61	c	420	A2M	2	0
11	AA	663	OMC	3	0
11	AA	898	OMU	1	0
11	AA	2281	A2M	1	0
61	c	1269	OMU	1	0

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 297 ligands modelled in this entry, 291 are monoatomic - leaving 6 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
90	PO4	Aa	1002	86	4,4,4	1.02	0	6,6,6	0.51	0
91	SO1	Aa	1003	-	35,39,39	1.15	2 (5%)	39,64,64	1.14	3 (7%)
89	GDP	Aa	1001	86	24,30,30	0.93	1 (4%)	30,47,47	1.29	4 (13%)
88	SPD	AA	3614	-	9,9,9	0.33	0	8,8,8	0.94	0
88	SPD	AA	3615	-	9,9,9	0.30	0	8,8,8	0.79	0
88	SPD	AA	3613	-	9,9,9	0.32	0	8,8,8	0.90	0

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
91	SO1	Aa	1003	-	-	10/21/104/104	0/7/5/5
89	GDP	Aa	1001	86	-	5/12/32/32	0/3/3/3
88	SPD	AA	3614	-	-	0/7/7/7	-
88	SPD	AA	3615	-	-	3/7/7/7	-
88	SPD	AA	3613	-	-	1/7/7/7	-

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
91	Aa	1003	SO1	C2-C6	-3.89	1.49	1.55
91	Aa	1003	SO1	C16-C22	-2.41	1.50	1.54
89	Aa	1001	GDP	C6-N1	-2.40	1.34	1.37

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
89	Aa	1001	GDP	PA-O3A-PB	-3.47	120.92	132.83
89	Aa	1001	GDP	C3'-C2'-C1'	2.99	105.48	100.98
91	Aa	1003	SO1	C52-O56-C56	-2.98	108.54	113.67
91	Aa	1003	SO1	C12-C6-C10	-2.64	105.82	107.91
89	Aa	1001	GDP	C8-N7-C5	2.35	107.47	102.99

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
89	Aa	1001	GDP	C5-C6-N1	2.27	117.97	113.95
91	Aa	1003	SO1	C53-C54-C55	2.08	114.43	109.68

There are no chirality outliers.

All (19) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
89	Aa	1001	GDP	O4'-C4'-C5'-O5'
91	Aa	1003	SO1	C2-C1-C5-O14
91	Aa	1003	SO1	C2-C1-C5-O15
91	Aa	1003	SO1	C20-C13-C4-C1
91	Aa	1003	SO1	C21-C13-C4-C1
91	Aa	1003	SO1	C20-C13-C4-C12
91	Aa	1003	SO1	C21-C13-C4-C12
91	Aa	1003	SO1	O19-C11-C3-C10
88	AA	3615	SPD	C2-C3-C4-C5
89	Aa	1001	GDP	C3'-C4'-C5'-O5'
91	Aa	1003	SO1	O56-C52-O17-C8
88	AA	3615	SPD	C8-C7-N6-C5
89	Aa	1001	GDP	PA-O3A-PB-O2B
89	Aa	1001	GDP	C5'-O5'-PA-O3A
89	Aa	1001	GDP	C5'-O5'-PA-O1A
88	AA	3613	SPD	N1-C2-C3-C4
88	AA	3615	SPD	C7-C8-C9-N10
91	Aa	1003	SO1	O19-C11-C3-C1
91	Aa	1003	SO1	C1-C2-C8-O17

There are no ring outliers.

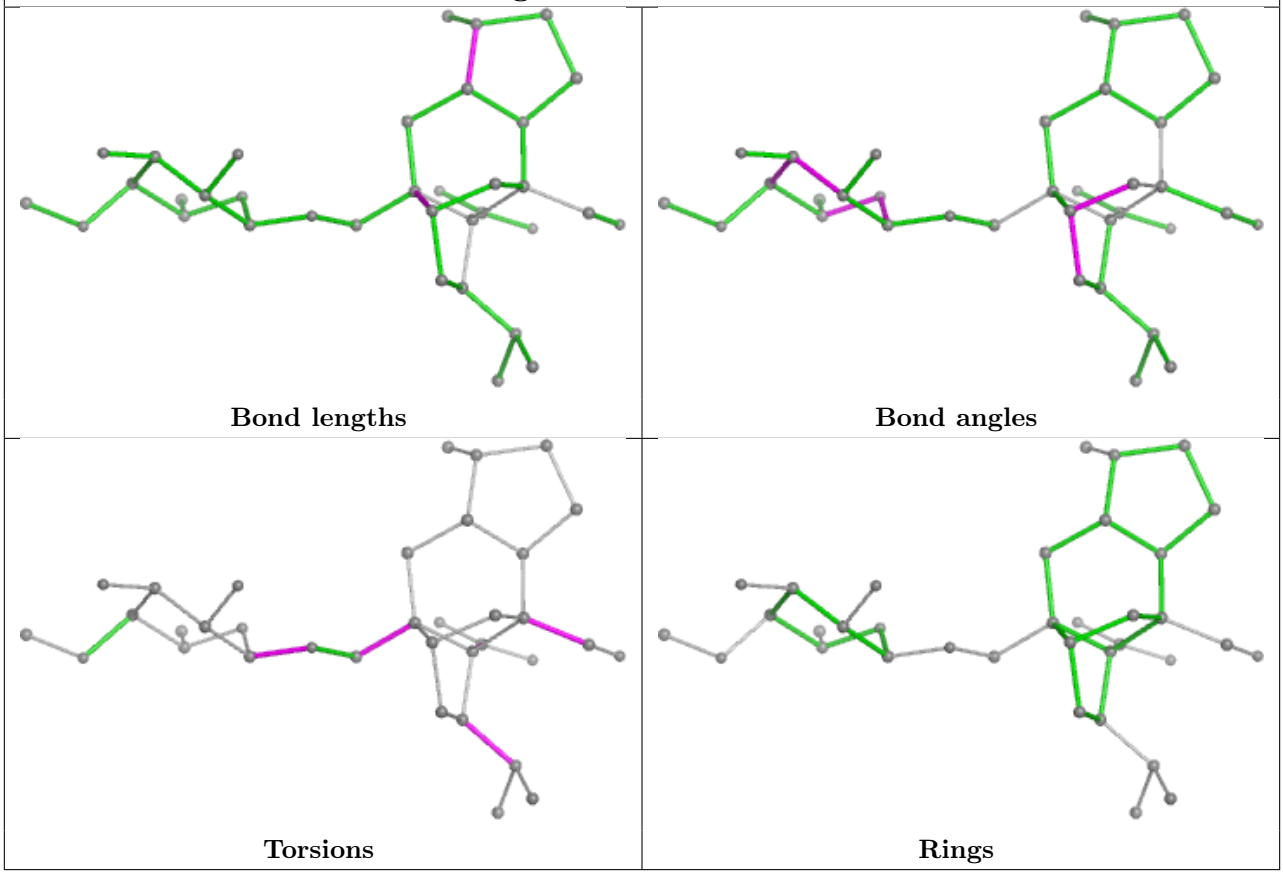
6 monomers are involved in 20 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
90	Aa	1002	PO4	6	0
91	Aa	1003	SO1	7	0
89	Aa	1001	GDP	3	0
88	AA	3614	SPD	1	0
88	AA	3615	SPD	3	0
88	AA	3613	SPD	1	0

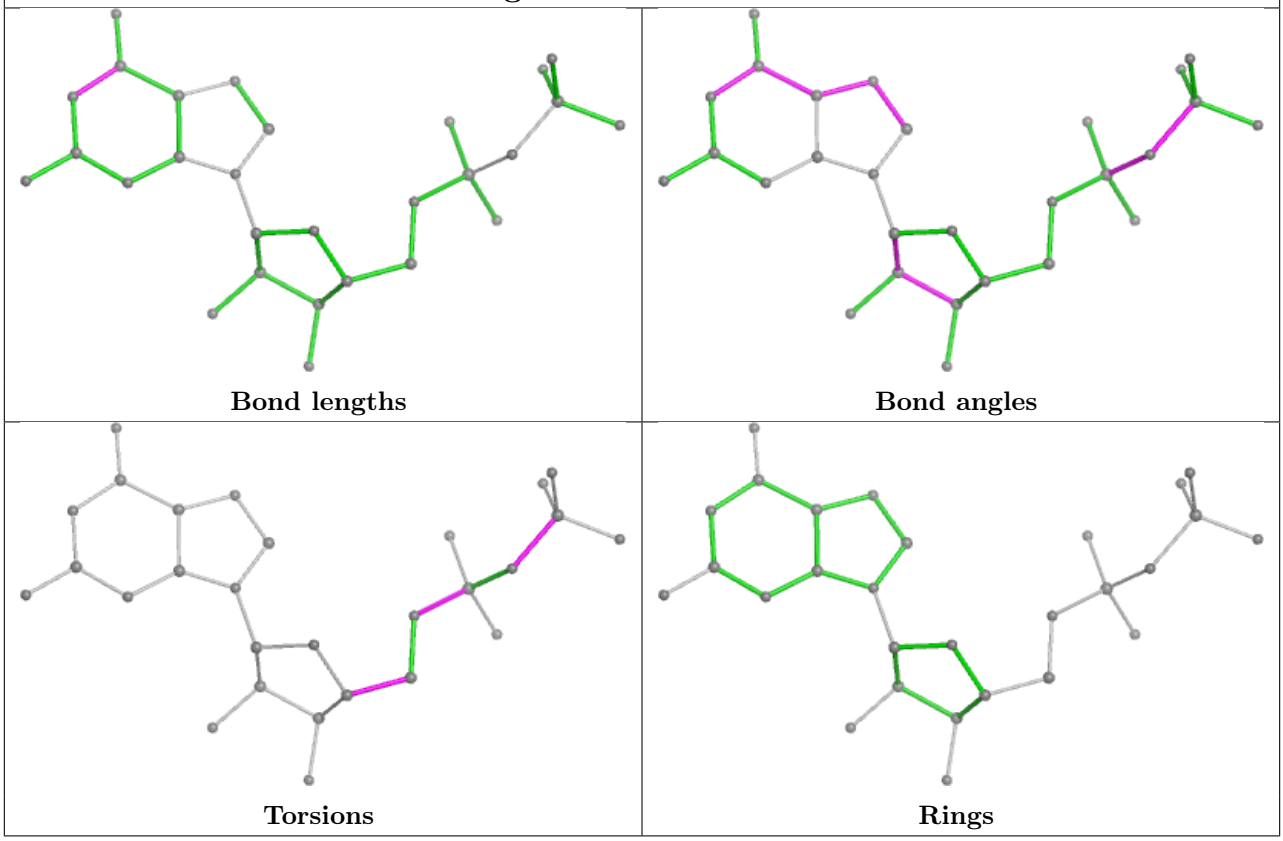
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will

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

Ligand SO1 Aa 1003



Ligand GDP Aa 1001



5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

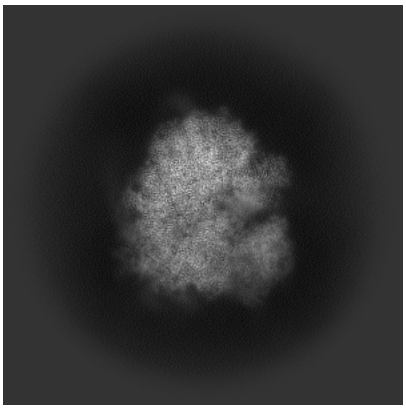
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-16609. These allow visual inspection of the internal detail of the map and identification of artifacts.

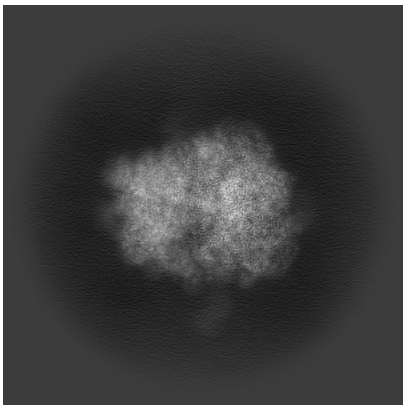
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

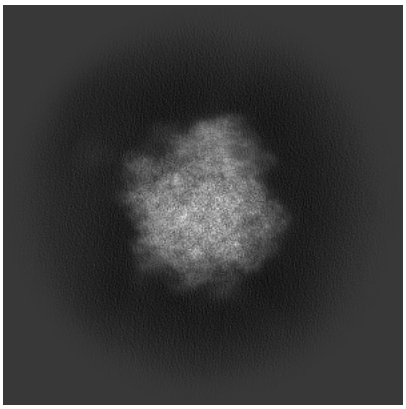
6.1.1 Primary map



X

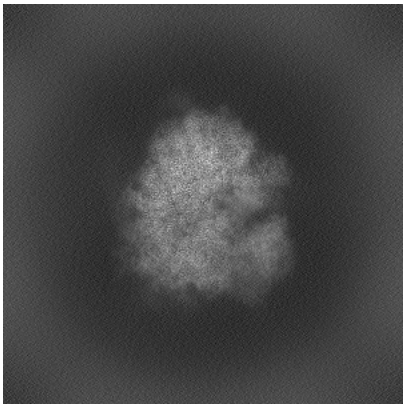


Y

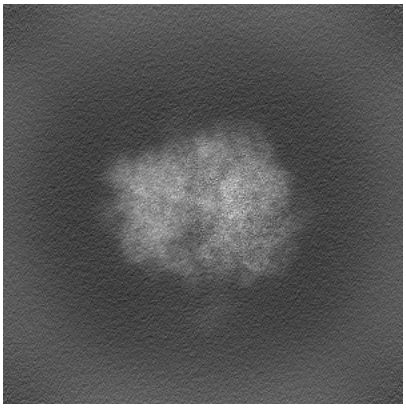


Z

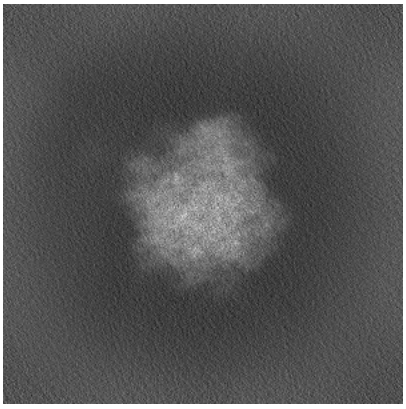
6.1.2 Raw map



X



Y

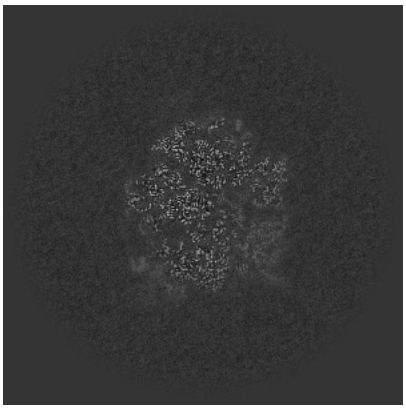


Z

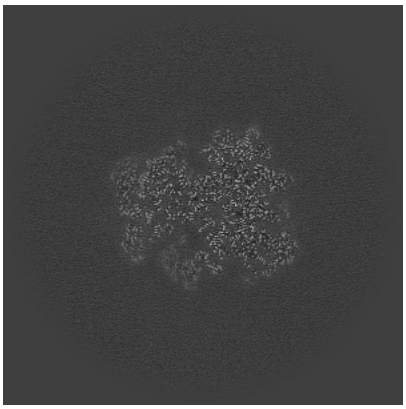
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

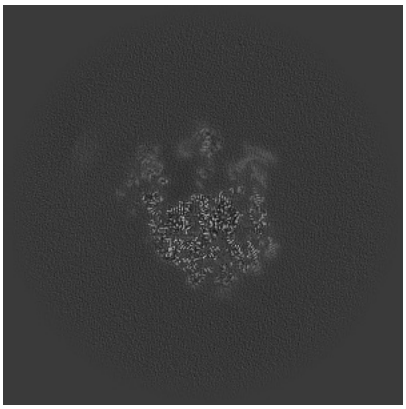
6.2.1 Primary map



X Index: 300

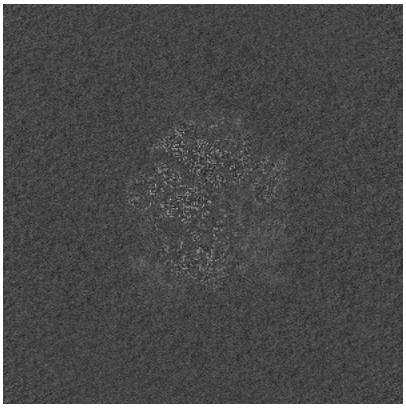


Y Index: 300

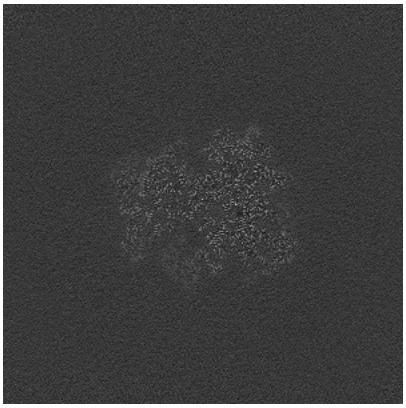


Z Index: 300

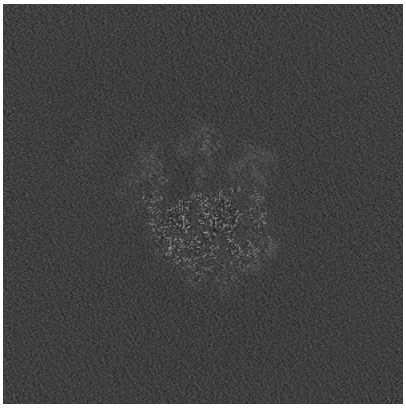
6.2.2 Raw map



X Index: 300



Y Index: 300

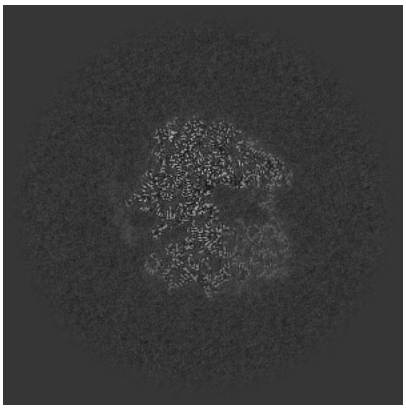


Z Index: 300

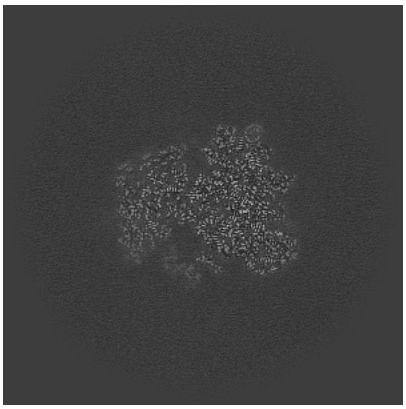
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

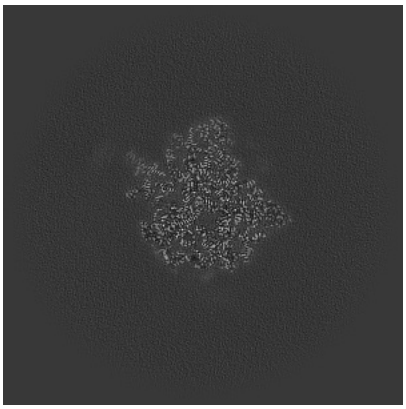
6.3.1 Primary map



X Index: 324

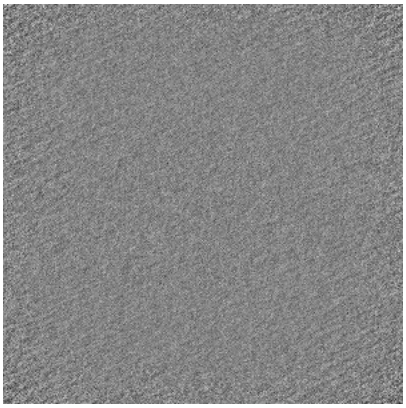


Y Index: 295

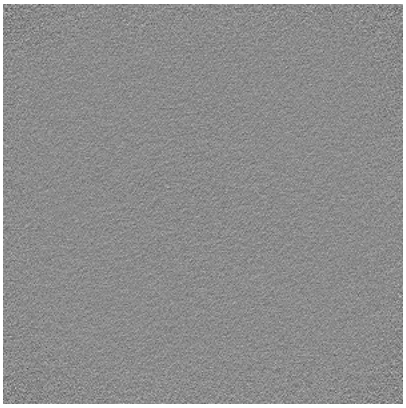


Z Index: 340

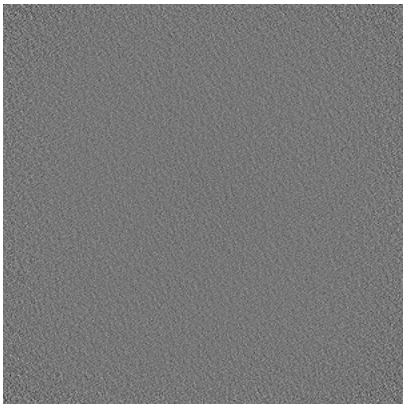
6.3.2 Raw map



X Index: 0



Y Index: 0

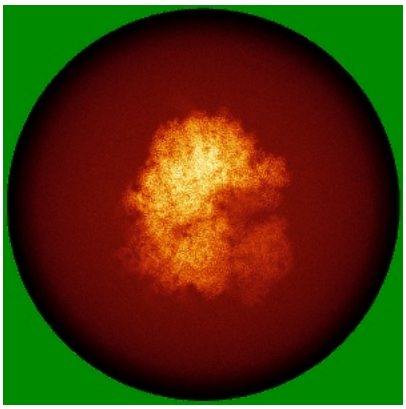


Z Index: 0

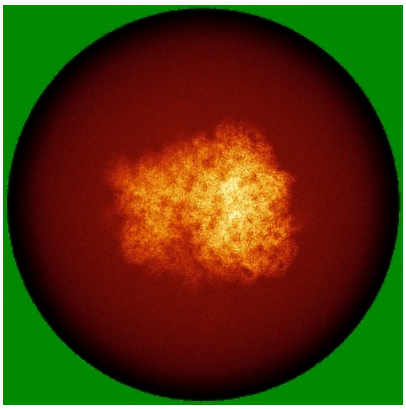
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) (i)

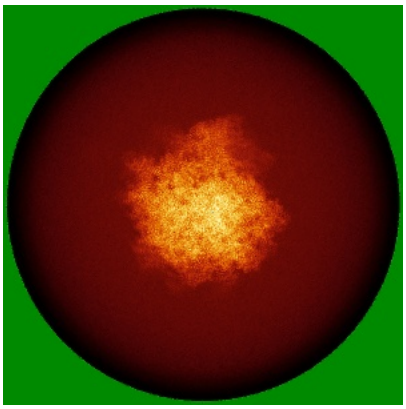
6.4.1 Primary map



X

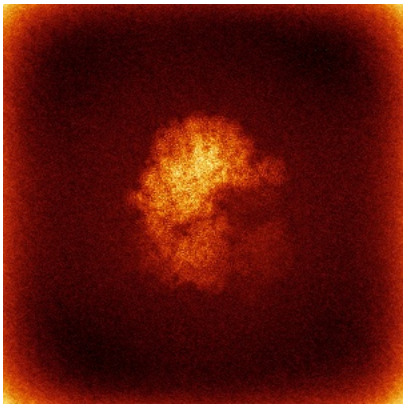


Y

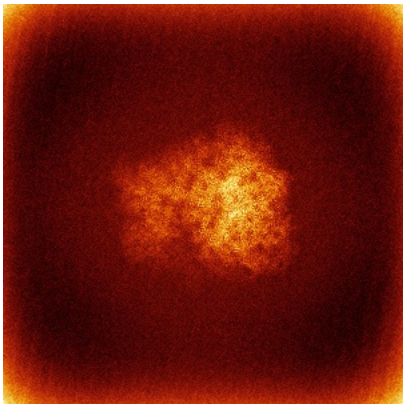


Z

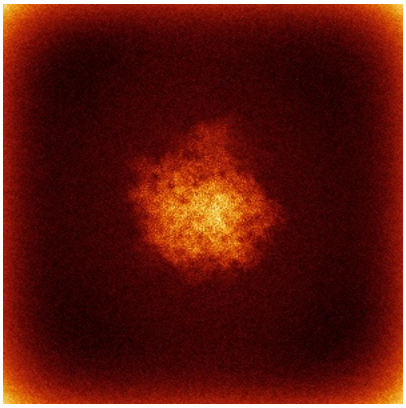
6.4.2 Raw map



X



Y



Z

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

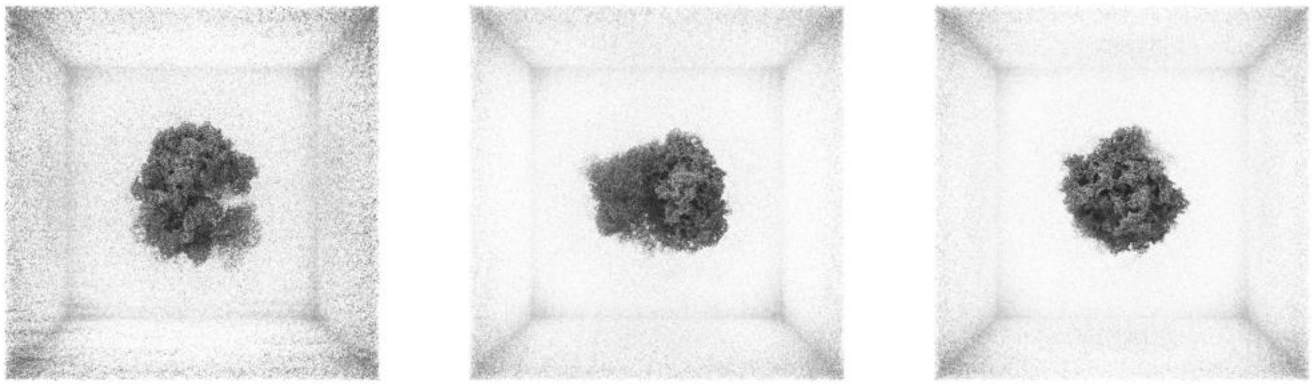
6.5 Orthogonal surface views (i)

6.5.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.161. 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.

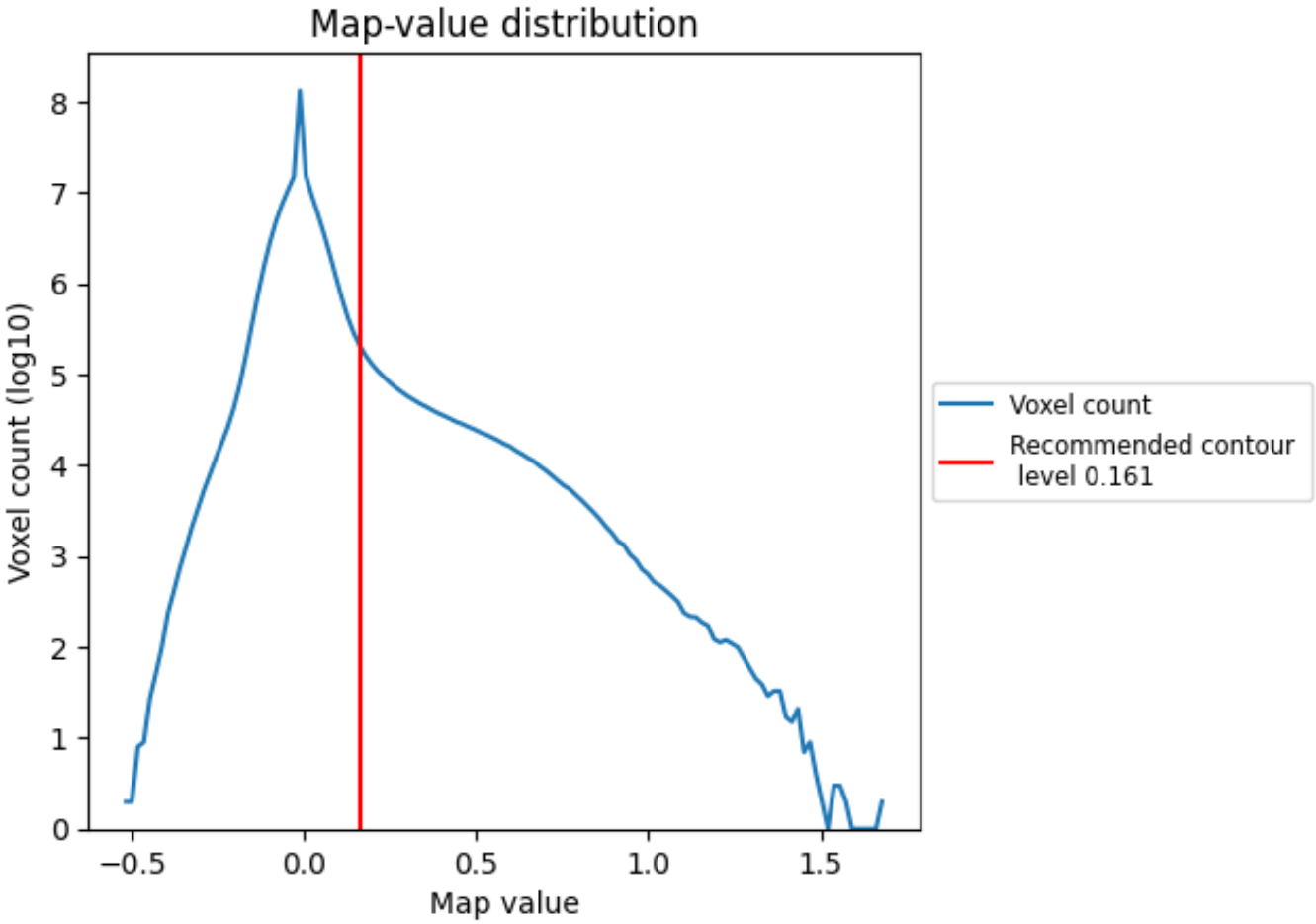
6.6 Mask visualisation (i)

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

7 Map analysis

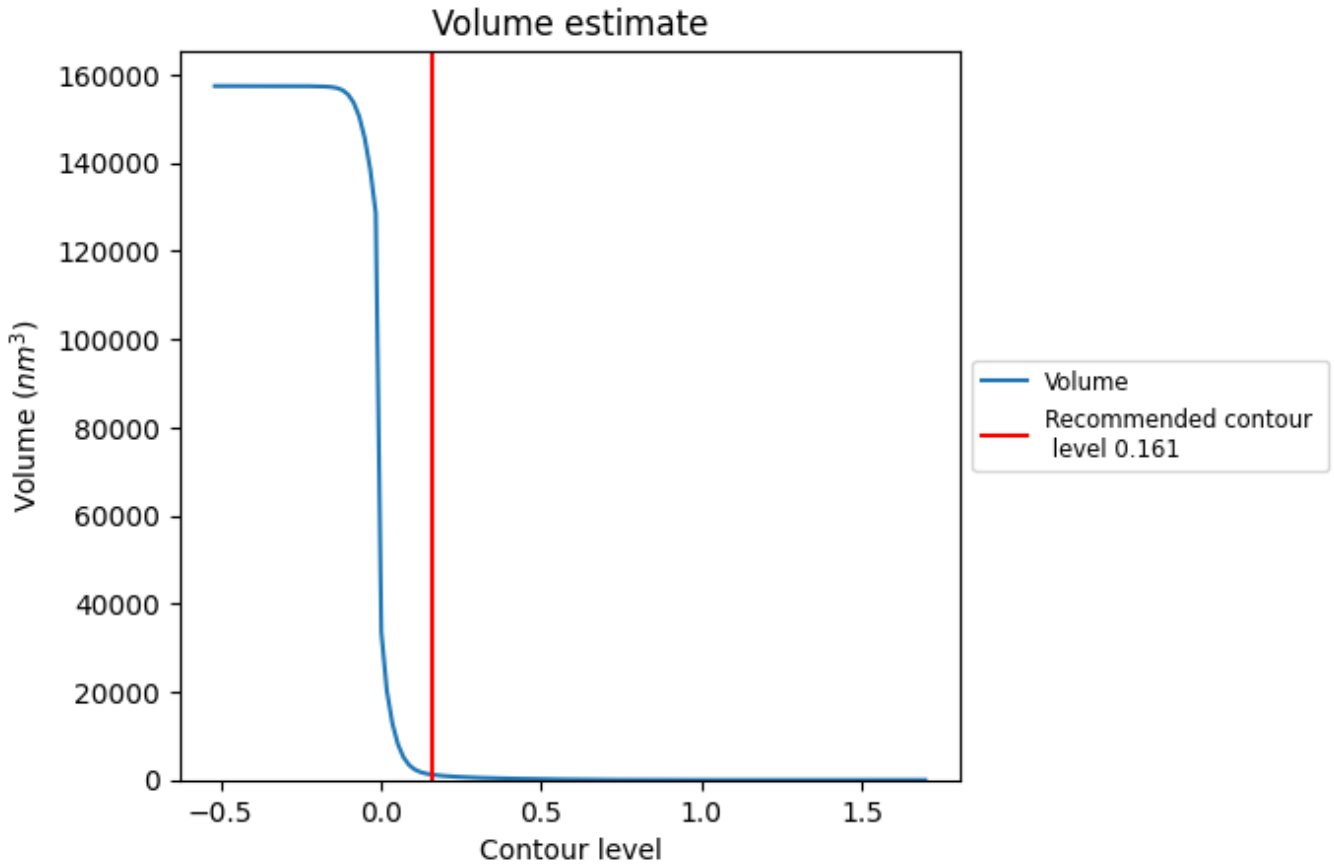
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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.

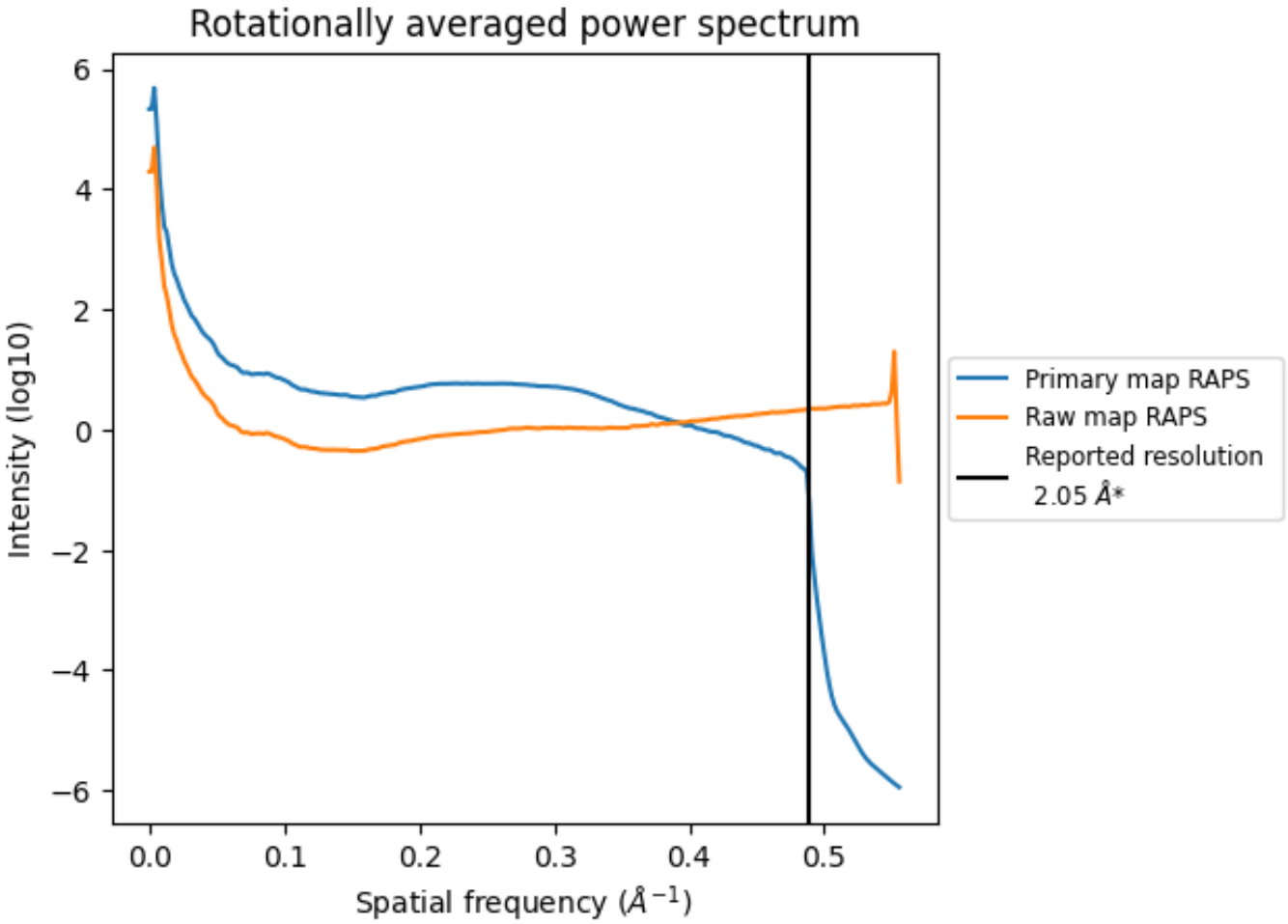
7.2 Volume estimate



The volume at the recommended contour level is 1195 nm^3; this corresponds to an approximate mass of 1079 kDa.

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

7.3 Rotationally averaged power spectrum (i)

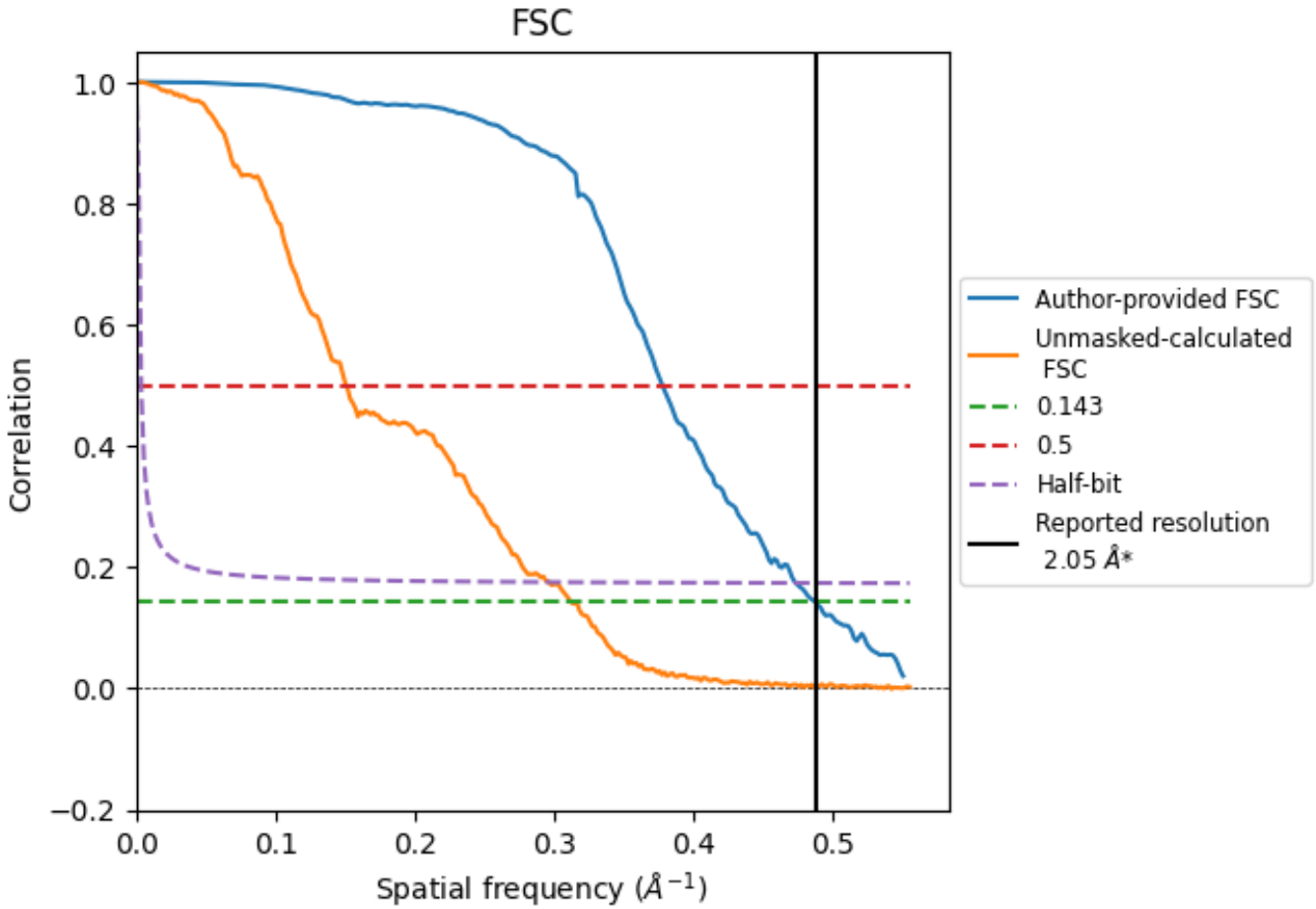


*Reported resolution corresponds to spatial frequency of 0.488 Å^{-1}

8 Fourier-Shell correlation

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



*Reported resolution corresponds to spatial frequency of 0.488 Å^{-1}

8.2 Resolution estimates (i)

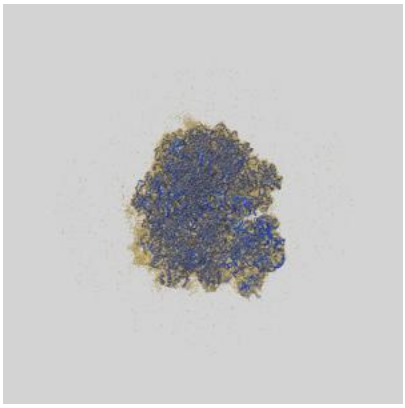
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.05	-	-
Author-provided FSC curve	2.05	2.65	2.11
Unmasked-calculated*	3.20	6.63	3.37

*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 3.20 differs from the reported value 2.05 by more than 10 %

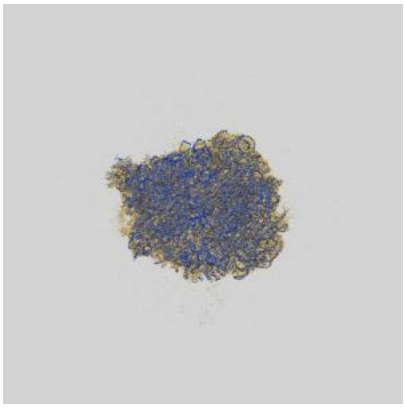
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-16609 and PDB model 8CEH. Per-residue inclusion information can be found in section 3 on page 25.

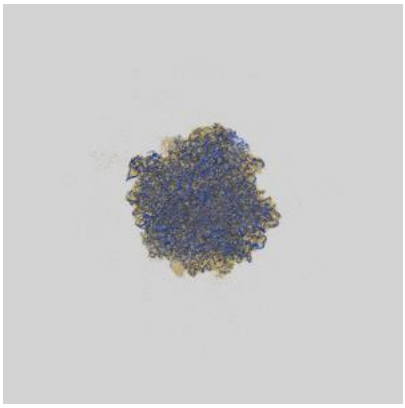
9.1 Map-model overlay



X



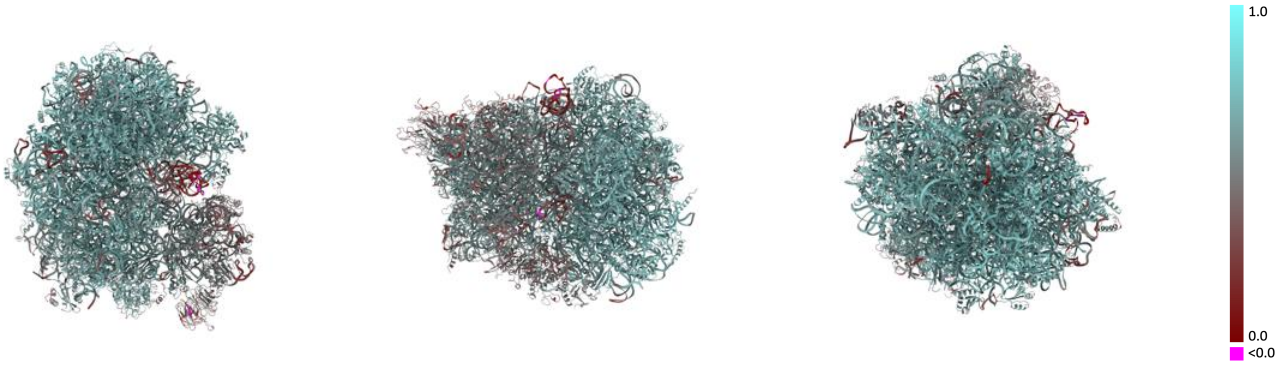
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.161 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.

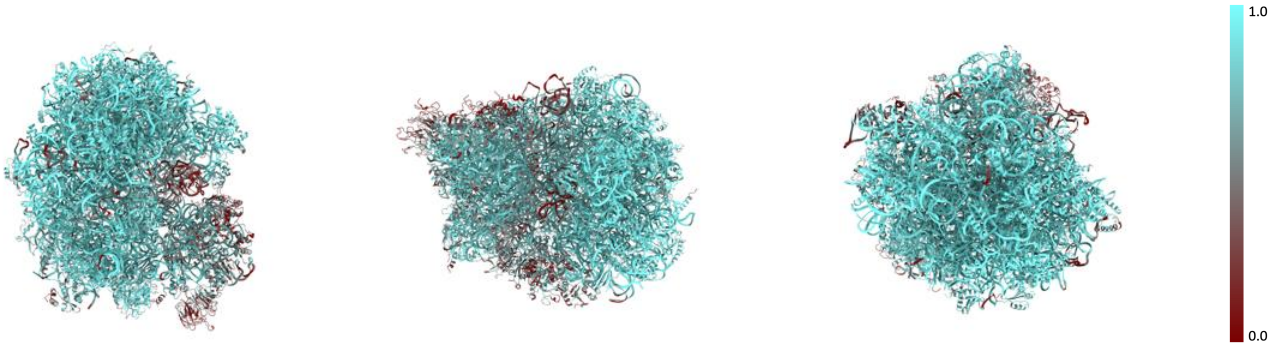
9.2 Q-score mapped to coordinate model (i)



X Y Z

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

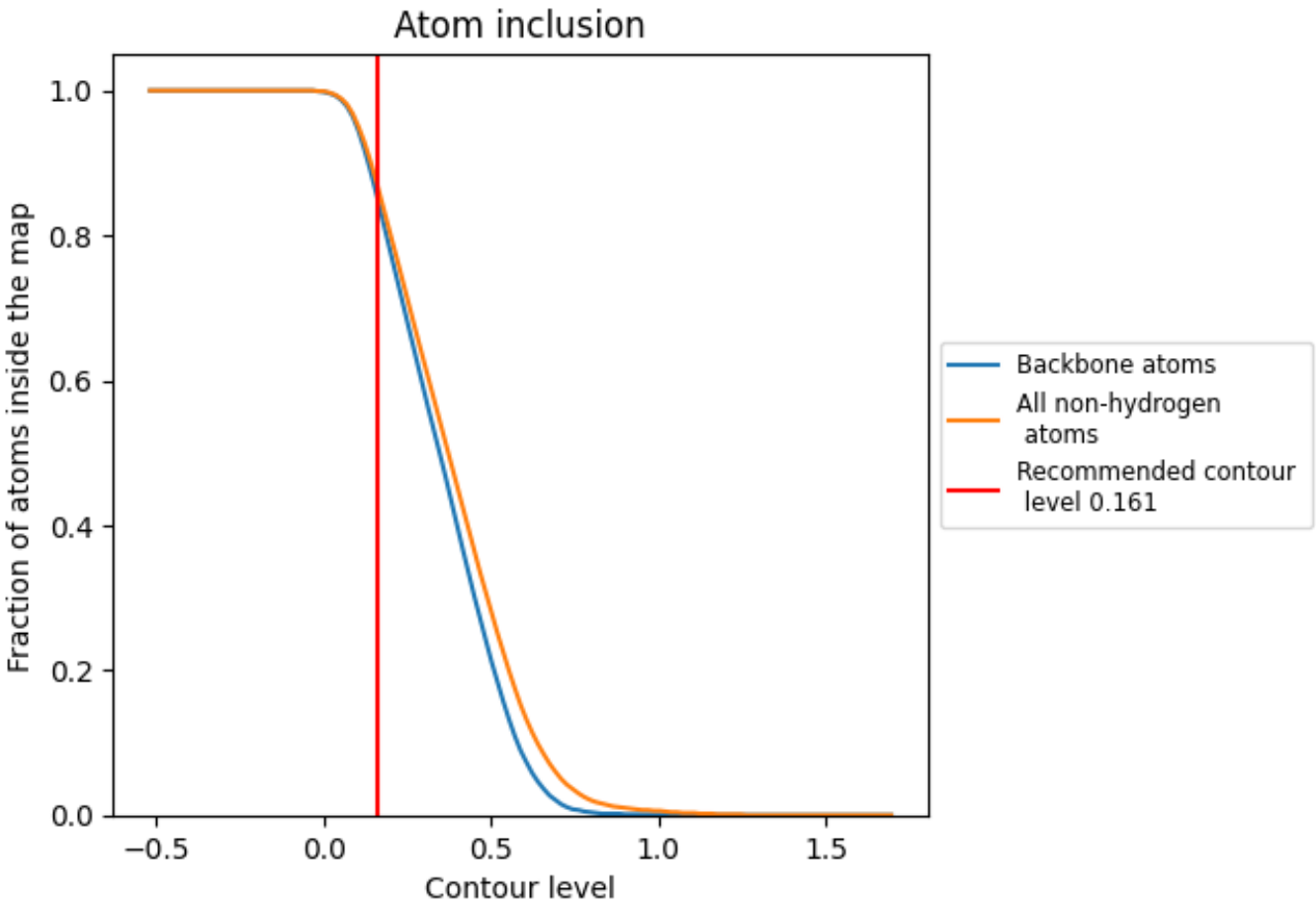
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

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 (0.161).

9.4 Atom inclusion (i)



At the recommended contour level, 85% of all backbone atoms, 87% 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 (0.161) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8700	0.6170
0	0.7540	0.5610
1	0.0770	0.3350
2	0.9190	0.6460
3	0.8290	0.6120
4	0.4760	0.4890
5	0.8400	0.5540
6	0.7660	0.5470
7	0.3680	0.3870
8	0.1620	0.3330
A	0.9720	0.6990
AA	0.9430	0.6480
Aa	0.5790	0.5000
B	0.9750	0.7100
BB	0.9880	0.6610
Bb	0.5280	0.4710
C	0.9750	0.7010
CC	0.9790	0.6760
Cc	0.6390	0.4500
D	0.9200	0.6740
DD	0.5460	0.5050
Dd	0.9440	0.6290
E	0.9630	0.6920
EE	0.9720	0.7070
Ee	0.2220	0.3650
F	0.9330	0.6750
FF	0.9630	0.6930
G	0.8690	0.6200
GG	0.9640	0.6970
H	0.9670	0.7020
HH	0.8640	0.6280
I	0.9510	0.6930
II	0.9290	0.6700
J	0.9460	0.6840
JJ	0.9570	0.6890

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Chain	Atom inclusion	Q-score
K	0.9560	0.6880
KK	0.8840	0.6480
L	0.9320	0.6650
LL	0.9270	0.6690
M	0.9570	0.6890
MM	0.9280	0.6760
N	0.8920	0.6320
NN	0.7960	0.5810
O	0.9360	0.6800
OO	0.9190	0.6680
P	0.9030	0.6550
PP	0.9550	0.6810
Pp	0.4210	0.5790
Q	0.9680	0.7080
QQ	0.9920	0.7100
R	0.9930	0.7180
S	0.9540	0.6890
T	0.9460	0.6700
U	0.8980	0.6410
V	0.9890	0.7080
W	0.8350	0.6320
X	0.9690	0.6830
Y	0.9550	0.6950
Z	0.9430	0.6750
a	0.9300	0.6730
b	0.9400	0.6970
c	0.8830	0.5730
d	0.8700	0.6060
e	0.8680	0.6250
f	0.9160	0.6460
g	0.6420	0.4980
h	0.8810	0.6060
i	0.4930	0.4690
j	0.6650	0.5120
k	0.7110	0.5520
l	0.8730	0.6200
m	0.8680	0.6050
n	0.5600	0.4460
o	0.8940	0.6490
p	0.9300	0.6640
q	0.9360	0.6420
r	0.4970	0.4680

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Chain	Atom inclusion	Q-score
s	0.6440	0.5120
t	0.6260	0.5000
u	0.4110	0.4570
v	0.5780	0.4670
w	0.6060	0.4890
x	0.8890	0.6340
y	0.9730	0.6910
z	0.8740	0.6230