



Full wwPDB EM Validation Report ⓘ

Mar 25, 2026 – 06:08 AM UTC

PDB ID : 8IP8 / pdb_00008ip8
EMDB ID : EMD-35634
Title : Wheat 80S ribosome stalled on AUG-Stop boron dependently
Authors : Yokoyama, T.; Tanaka, M.; Saito, H.; Nishimoto, M.; Tsuda, K.; Sotta, N.;
Shigematsu, H.; Shirouzu, M.; Iwasaki, S.; Ito, T.; Fujiwara, T.
Deposited on : 2023-03-14
Resolution : 2.90 Å(reported)

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

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

A user guide is available at

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

The types of validation reports are described at

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

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

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

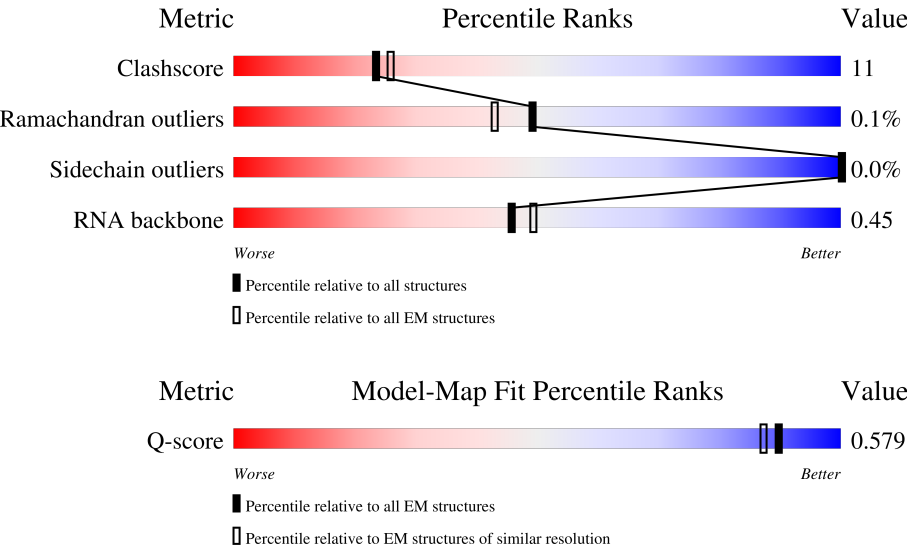
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 2.90 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	13054 (2.40 - 3.40)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	aa	1810	
2	ba	137	
3	ca	225	

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Mol	Chain	Length	Quality of chain
4	da	188	
5	ga	142	
6	ha	332	
7	ia	227	
8	ja	265	
9	ka	200	
10	la	149	
11	ma	127	
12	na	151	
13	oa	152	
14	pa	151	
15	qa	143	
16	ra	155	
17	sa	154	
18	ta	108	
19	ua	86	
20	va	129	
21	wa	56	
22	xa	86	
23	ya	62	
24	za	308	
25	bb	263	
26	cb	82	
27	db	156	
28	eb	195	

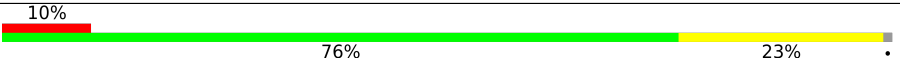
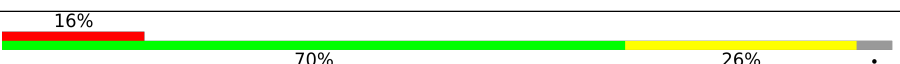
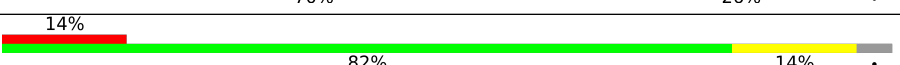
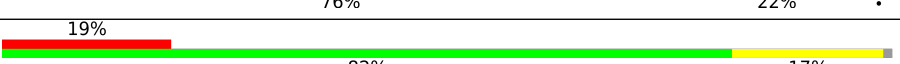
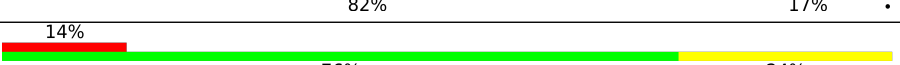
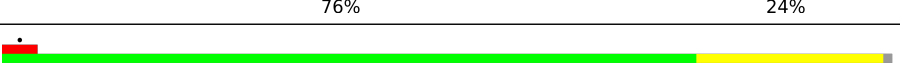
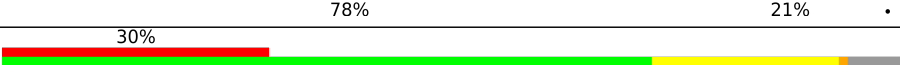
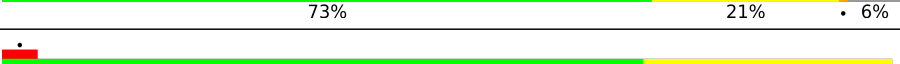
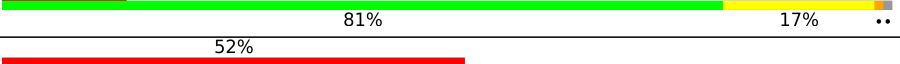
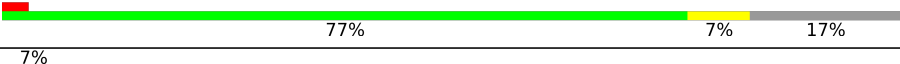
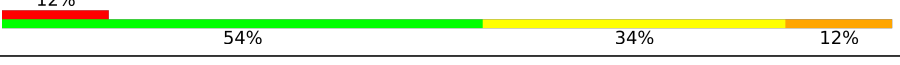
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Mol	Chain	Length	Quality of chain
29	fb	274	
30	gb	250	
31	hb	192	
32	ib	159	
33	AA	258	
34	BA	164	
35	CA	137	
36	DA	261	
37	EA	180	
38	FA	189	
39	GA	140	
40	HA	204	
41	IA	145	
42	JA	187	
43	KA	301	
44	LA	213	
45	MA	170	
46	NA	152	
47	OA	162	
48	PA	157	
49	QA	147	
50	RA	112	
51	SA	123	
52	TA	133	
53	UA	93	

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Mol	Chain	Length	Quality of chain
54	VA	76	
55	WA	105	
56	XA	135	
57	YA	178	
58	ZA	130	
59	AB	112	
60	BB	124	
61	CB	244	
62	DB	389	
63	EB	404	
64	FB	206	
65	GB	92	
66	HB	217	
67	IB	25	
68	JB	129	
69	KB	208	
70	LB	219	
71	MB	112	
72	NB	69	
73	OB	60	
74	PB	119	
75	RB	3386	
76	SB	160	
77	TB	120	
78	al	7	

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Mol	Chain	Length	Quality of chain
79	bl	437	
80	cl	75	
81	dl	3	

2 Entry composition

There are 83 unique types of molecules in this entry. The entry contains 201231 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 RNA chain called 18S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	aa	1695	Total	C	N	O	P	0	0
			36156	16155	6463	11845	1693		

There are 5 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
aa	?	-	G	deletion	GB 2123606567
aa	1399	G	C	conflict	GB 2123606567
aa	1411	C	G	conflict	GB 2123606567
aa	1441	C	G	conflict	GB 2123606567
aa	1762	C	G	conflict	GB 2123606567

- Molecule 2 is a protein called 40S ribosomal protein eS24.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	ba	113	Total	C	N	O	S	0	0
			929	593	178	156	2		

- Molecule 3 is a protein called 40S ribosomal protein eS8.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	ca	178	Total	C	N	O	S	0	0
			1443	891	291	257	4		

- Molecule 4 is a protein called 40S ribosomal protein eS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	da	81	Total	C	N	O	S	0	0
			703	461	117	122	3		

- Molecule 5 is a protein called 40S ribosomal protein uS12.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	ga	138	Total	C	N	O	S	0	0
			1070	679	207	181	3		

- Molecule 6 is a protein called RACK1.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	ha	322	Total	C	N	O	S	0	0
			2473	1555	429	478	11		

- Molecule 7 is a protein called 40S ribosomal protein uS3.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	ia	213	Total	C	N	O	S	0	0
			1673	1061	303	300	9		

- Molecule 8 is a protein called 40S ribosomal protein eS4.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	ja	261	Total	C	N	O	S	0	0
			2082	1325	388	362	7		

- Molecule 9 is a protein called 40S ribosomal protein uS7.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	ka	193	Total	C	N	O	S	0	0
			1516	947	285	277	7		

- Molecule 10 is a protein called 40S ribosomal protein uS9.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	la	140	Total	C	N	O	S	0	0
			1119	712	215	187	5		

- Molecule 11 is a protein called 40S ribosomal protein uS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	ma	103	Total	C	N	O	S	0	0
			806	504	147	151	4		

- Molecule 12 is a protein called 40S ribosomal protein uS11.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	na	125	Total	C	N	O	S	0	0
			941	579	185	173	4		

- Molecule 13 is a protein called 40S ribosomal protein uS13.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	oa	136	Total	C	N	O	S	0	0
			1114	695	220	193	6		

- Molecule 14 is a protein called 40S ribosomal protein uS15.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	pa	150	Total	C	N	O	S	0	0
			1195	765	224	204	2		

- Molecule 15 is a protein called 40S ribosomal protein eS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	qa	119	Total	C	N	O	S	0	0
			975	607	185	177	6		

- Molecule 16 is a protein called 40S ribosomal protein eS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	ra	135	Total	C	N	O	S	0	0
			1065	672	200	189	4		

- Molecule 17 is a protein called 40S ribosomal protein uS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	sa	100	Total	C	N	O	S	0	0
			807	518	151	133	5		

- Molecule 18 is a protein called 40S ribosomal protein eS25.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	ta	77	Total	C	N	O	S	0	0
			618	387	116	113	2		

- Molecule 19 is a protein called 40S ribosomal protein eS28.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	ua	64	Total	C	N	O	S	0	0
			513	314	104	93	2		

- Molecule 20 is a protein called 40S ribosomal protein uS8.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	va	128	Total	C	N	O	S	0	0
			1039	653	199	182	5		

- Molecule 21 is a protein called 40S ribosomal protein uS14.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	wa	39	Total	C	N	O	S	0	0
			314	193	65	50	6		

- Molecule 22 is a protein called 40S ribosomal protein eS27.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	xa	70	Total	C	N	O	S	0	0
			546	342	101	96	7		

- Molecule 23 is a protein called 40S ribosomal protein eS30.

Mol	Chain	Residues	Atoms				AltConf	Trace
23	ya	39	Total	C	N	O	0	0
			322	199	74	49		

- Molecule 24 is a protein called 40S ribosomal protein uS2.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	za	202	Total	C	N	O	S	0	0
			1609	1018	291	289	11		

- Molecule 25 is a protein called 40S ribosomal protein eS1.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	bb	211	Total	C	N	O	S	0	0
			1720	1096	311	304	9		

- Molecule 26 is a protein called 40S ribosomal protein eS21.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	cb	76	Total	C	N	O	S	0	0
			596	368	111	114	3		

- Molecule 27 is a protein called 40S ribosomal protein eS26.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	db	95	Total	C	N	O	S	0	0
			771	472	168	124	7		

- Molecule 28 is a protein called 40S ribosomal protein uS4.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	eb	181	Total	C	N	O	S	0	0
			1493	945	298	246	4		

- Molecule 29 is a protein called 40S ribosomal protein uS5.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	fb	214	Total	C	N	O	S	0	0
			1660	1070	294	287	9		

- Molecule 30 is a protein called 40S ribosomal protein eS6.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	gb	151	Total	C	N	O	S	0	0
			1199	749	233	209	8		

- Molecule 31 is a protein called 40S ribosomal protein eS7.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	hb	169	Total	C	N	O	S	0	0
			1389	889	255	243	2		

- Molecule 32 is a protein called 40S ribosomal protein uS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	ib	145	Total	C	N	O	S	0	0
			1166	745	223	192	6		

- Molecule 33 is a protein called 40S ribosomal protein eL8.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	AA	229	Total	C	N	O	S	0	0
			1847	1191	341	309	6		

- Molecule 34 is a protein called 60S ribosomal protein eL21.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	BA	156	Total	C	N	O	S	0	0
			1256	795	246	212	3		

- Molecule 35 is a protein called 60S ribosomal protein eL27.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	CA	136	Total	C	N	O	S	0	0
			1090	704	205	177	4		

- Molecule 36 is a protein called 60S ribosomal protein uL2.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	DA	251	Total	C	N	O	S	0	0
			1919	1193	395	324	7		

- Molecule 37 is a protein called 60S ribosomal protein uL5.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	EA	164	Total	C	N	O	S	0	0
			1332	841	248	235	8		

- Molecule 38 is a protein called 60S ribosomal protein uL6.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	FA	185	Total	C	N	O	S	0	0
			1459	925	265	263	6		

- Molecule 39 is a protein called 60S ribosomal protein uL14.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	GA	129	Total	C	N	O	S	0	0
			976	618	181	168	9		

- Molecule 40 is a protein called 60S ribosomal protein eL15.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	HA	203	Total	C	N	O	S	0	0
			1720	1078	370	269	3		

- Molecule 41 is a protein called 60S ribosomal protein uL15.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	IA	144	Total	C	N	O	S	0	0
			1123	720	218	181	4		

- Molecule 42 is a protein called 60S ribosomal protein eL18.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	JA	186	Total	C	N	O	S	0	0
			1487	938	296	248	5		

- Molecule 43 is a protein called 60S ribosomal protein uL18.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	KA	273	Total	C	N	O	S	0	0
			2209	1390	406	408	5		

- Molecule 44 is a protein called 60S ribosomal protein eL19.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	LA	170	Total	C	N	O	S	0	0
			1414	880	295	231	8		

- Molecule 45 is a protein called 60S ribosomal protein uL22.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	MA	155	Total	C	N	O	S	0	0
			1253	780	247	221	5		

- Molecule 46 is a protein called 60S ribosomal protein uL23.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	NA	116	Total	C	N	O	S	0	0
			935	600	165	168	2		

- Molecule 47 is a protein called 60S ribosomal protein eL24.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	OA	61	Total	C	N	O	S	0	0
			517	335	99	79	4		

- Molecule 48 is a protein called 60S ribosomal protein uL24.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	PA	130	Total	C	N	O	S	0	0
			1054	651	223	177	3		

- Molecule 49 is a protein called 60S ribosomal protein eL28.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	QA	142	Total	C	N	O	S	0	0
			1125	711	207	203	4		

- Molecule 50 is a protein called 60S ribosomal protein eL30.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	RA	98	Total	C	N	O	S	0	0
			757	480	131	140	6		

- Molecule 51 is a protein called 60S ribosomal protein eL31.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	SA	107	Total	C	N	O	S	0	0
			863	540	167	154	2		

- Molecule 52 is a protein called 60S ribosomal protein eL32.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	TA	126	Total	C	N	O	S	0	0
			1042	662	207	168	5		

- Molecule 53 is a protein called 60S ribosomal protein eL37.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	UA	80	Total	C	N	O	S	0	0
			656	402	144	104	6		

- Molecule 54 is a protein called 60S ribosomal protein eL39.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	VA	50	Total	C	N	O	S	0	0
			452	286	99	66	1		

- Molecule 55 is a protein called 60S ribosomal protein eL42.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	WA	98	Total	C	N	O	S	0	0
			794	498	157	134	5		

- Molecule 56 is a protein called 60S ribosomal protein eL14.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	XA	132	Total	C	N	O	S	0	0
			1066	684	196	181	5		

- Molecule 57 is a protein called 60S ribosomal protein eL20.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	YA	177	Total	C	N	O	S	0	0
			1496	963	275	250	8		

- Molecule 58 is a protein called 60S ribosomal protein eL22.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	ZA	101	Total	C	N	O	S	0	0
			814	520	144	148	2		

- Molecule 59 is a protein called 60S ribosomal protein eL36.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	AB	100	Total	C	N	O	S	0	0
			803	505	166	130	2		

- Molecule 60 is a protein called 60S ribosomal protein uL29.

Mol	Chain	Residues	Atoms				AltConf	Trace
60	BB	119	Total	C	N	O	0	0
			979	617	196	166		

- Molecule 61 is a protein called 60S ribosomal protein uL30.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	CB	234	Total	C	N	O	S	0	0
			1917	1230	357	325	5		

- Molecule 62 is a protein called 60S ribosomal protein uL3.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	DB	384	Total	C	N	O	S	0	0
			3099	1972	575	535	17		

- Molecule 63 is a protein called 60S ribosomal protein uL4.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	EB	399	Total	C	N	O	S	0	0
			3075	1934	590	540	11		

- Molecule 64 is a protein called 60S ribosomal protein uL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	FB	205	Total	C	N	O	S	0	0
			1641	1040	319	272	10		

- Molecule 65 is a protein called 60S ribosomal protein eL43.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	GB	91	Total	C	N	O	S	0	0
			707	442	136	123	6		

- Molecule 66 is a protein called 60S ribosomal protein uL16.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	HB	205	Total	C	N	O	S	0	0
			1635	1034	321	271	9		

- Molecule 67 is a protein called 60S ribosomal protein eL41.

Mol	Chain	Residues	Atoms					AltConf	Trace
67	IB	25	Total	C	N	O	S	0	0
			237	145	62	27	3		

- Molecule 68 is a protein called 60S ribosomal protein eL40.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	JB	51	Total	C	N	O	S	0	0
			420	262	88	65	5		

- Molecule 69 is a protein called 60S ribosomal protein eL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	KB	205	Total	C	N	O	S	0	0
			1670	1045	334	285	6		

- Molecule 70 is a protein called 60S ribosomal protein eL6.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	LB	215	Total	C	N	O	S	0	0
			1703	1088	310	302	3		

- Molecule 71 is a protein called 60S ribosomal protein eL33.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	MB	110	Total	C	N	O	S	0	0
			875	551	168	152	4		

- Molecule 72 is a protein called 60S ribosomal protein eL38.

Mol	Chain	Residues	Atoms					AltConf	Trace
72	NB	68	Total	C	N	O	S	0	0
			557	354	105	96	2		

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
NB	48	PHE	HIS	conflict	UNP A0A1D5W6Q2
NB	50	ALA	THR	conflict	UNP A0A1D5W6Q2
NB	65	SER	ASN	conflict	UNP A0A1D5W6Q2

- Molecule 73 is a protein called 60S ribosomal protein eL29.

Mol	Chain	Residues	Atoms					AltConf	Trace
73	OB	50	Total	C	N	O	S	0	0
			416	254	93	68	1		

- Molecule 74 is a protein called 60S ribosomal protein eL34.

Mol	Chain	Residues	Atoms					AltConf	Trace
74	PB	108	Total	C	N	O	S	0	0
			879	555	179	144	1		

- Molecule 75 is a RNA chain called 60S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	RB	3147	Total	C	N	O	P	0	0
			67383	30051	12300	21886	3146		

- Molecule 76 is a RNA chain called 5.8S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	SB	160	Total	C	N	O	P	0	0
			3408	1522	614	1113	159		

- Molecule 77 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	TB	120	Total	C	N	O	P	0	0
			2561	1144	461	837	119		

- Molecule 78 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
78	al	7	Total	C	N	O	P	0	0
			147	68	29	44	6		

- Molecule 79 is a protein called eukaryotic release factor 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
79	bl	437	Total	C	N	O	S	0	0
			3446	2168	589	675	14		

- Molecule 80 is a RNA chain called tRNAi.

Mol	Chain	Residues	Atoms					AltConf	Trace	
80	cl	75	Total	C	N	O	P	S	0	0
			1622	730	298	518	75	1		

- Molecule 81 is a RNA chain called CCA end of E-tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
81	dl	3	Total	C	N	O	P	0	0
			62	28	11	20	3		

- Molecule 82 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
82	aa	83	Total	Mg	0
			83	83	
82	ja	1	Total	Mg	0
			1	1	
82	ka	1	Total	Mg	0
			1	1	
82	BA	1	Total	Mg	0
			1	1	
82	DA	2	Total	Mg	0
			2	2	
82	FA	1	Total	Mg	0
			1	1	
82	GA	1	Total	Mg	0
			1	1	
82	JA	1	Total	Mg	0
			1	1	
82	DB	1	Total	Mg	0
			1	1	
82	OB	1	Total	Mg	0
			1	1	
82	PB	1	Total	Mg	0
			1	1	
82	RB	209	Total	Mg	0
			209	209	
82	TB	1	Total	Mg	0
			1	1	
82	cl	3	Total	Mg	0
			3	3	

- Molecule 83 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
83	wa	1	Total	Zn	0
			1	1	
83	db	1	Total	Zn	0
			1	1	
83	WA	1	Total	Zn	0
			1	1	

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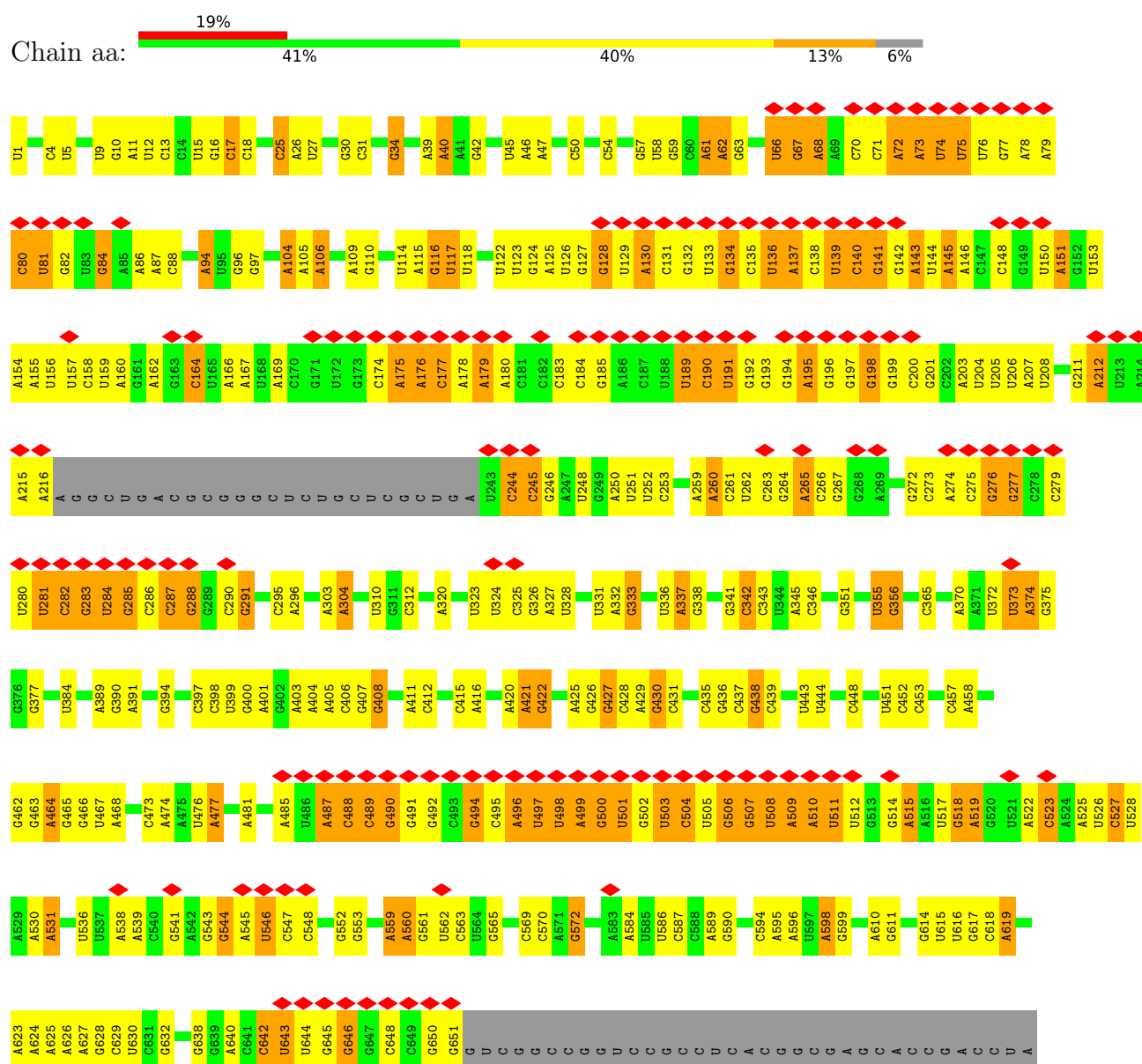
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Mol	Chain	Residues	Atoms		AltConf
			Total	Zn	
83	GB	1	1	1	0

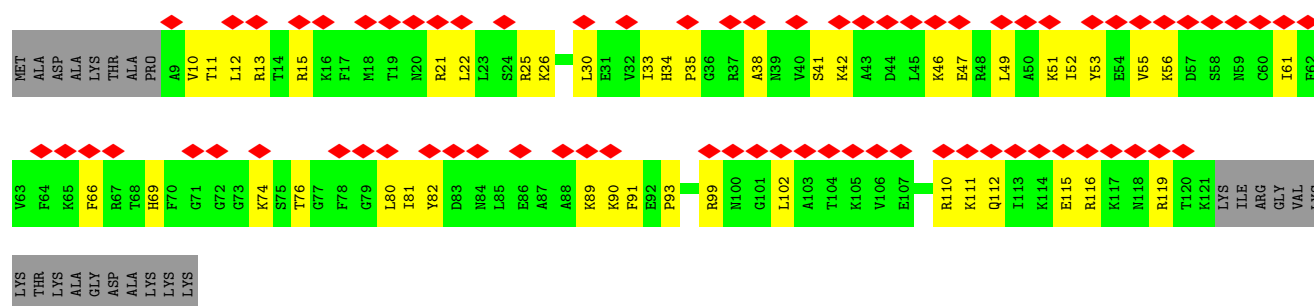
3 Residue-property plots

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

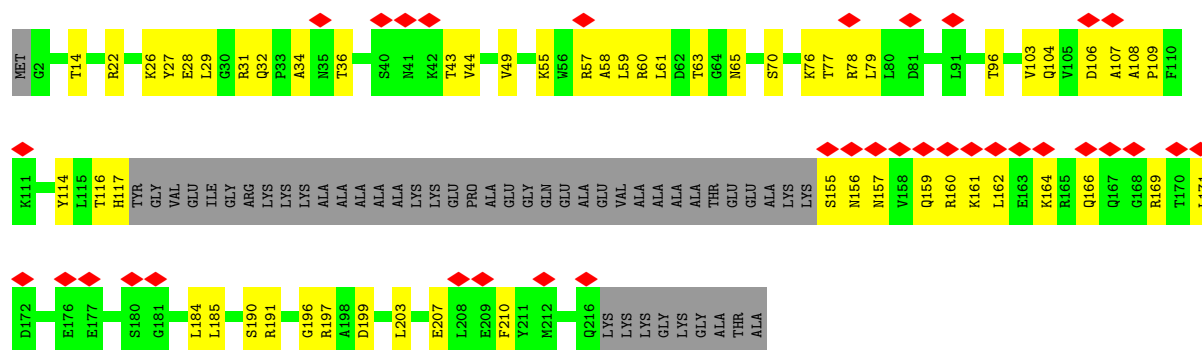
• Molecule 1: 18S ribosomal RNA



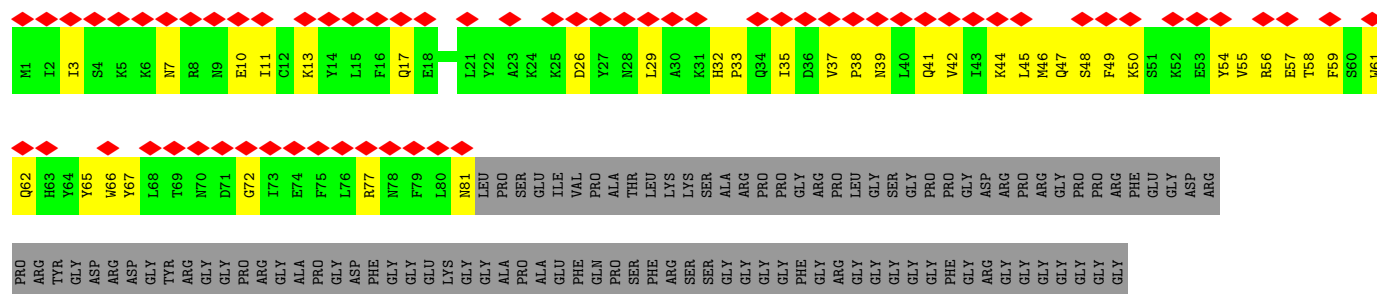




Chain ca:



Chain da:



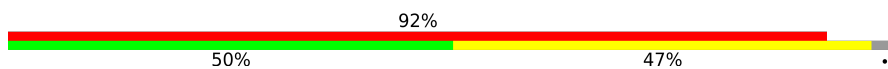
PHE
GLY
ALA
SER
PRO
MET
GLU

• Molecule 5: 40S ribosomal protein uS12

Chain ga: 

MET G2 G3 T4 L13 E35 K47 E52 K53 K54 K55 D60 P61 K67 R70 V71 V72 L73 K78 F83 V84 P85 P86 D87 D88 C89 L90 E94 E95 N96 D97 E98 V99 L100 K123 V127 S128 L129 K134 K137 E138 K139 PRO ARG SER

• Molecule 6: RACK1

Chain ha: 

MET ALA GLY ALA GLN E6 S7 L8 V9 Y10 A11 G12 V13 M14 R15 G16 H17 N18 D19 V20 V21 T22 A23 I24 A25 V26 P27 P28 L28 D29 N30 S31 P32 P33 F34 V35 S36 S37 S38 R39 D40 K41 S42 L43 L44 V45 V46 D47 L48 T49 N50 P51 I52 Q53 A54 T55 Q56 D57 S58 S59 S60 E61 Y62 G63 V64 P65 P66 R67 R68 L69 T70 G71 H72 G73 H74 F75 V76 Q77 D78 V79 V80 L81 S82 S83 D84 G85 G86 F87 F88 A88 L89 S90 G91 S92 W93 D94 G95 E96 L97 A98 L99 W100 W101 D102 S103 T104 V105 V106 T107 T108 R109 R110 F111 V112 G113 H114 E115 K116 D117 V118 L119 S120 V121 A122 F123 S124 I125 P126 M127 R128 R129 Q130 V131 S132 A133 S134 R135 D136 T137 T138 I139 K140 L141 W142 M143 T144 G145 G146 E147 C148 K149 Y150 T151 I152 G153 G154 D155 L156 G157 L158 G159 E160 H161 H162 T163 G164 W165 V166 S167 C168 V169 R170 F171 S172 P173 M174 N175 F176 A177 P178 T179 I180 V181 S182 G183 S184 W185 D186 R187 S188 V189 K190 V191 W192 M193 L194 T195 N196 C197 L198 L199 R200 C201 T202 L203 D204 G205 G206 G207 G208 Y209 V210 S211 A212 V213 A214 V215 S216 P217 D218 D219 D220 C221 L221 C222 A223 S224 G225 G226 K227 D228 G229 V230 T231 L232 L233 W234 D235 L236 T237 E238 C239 T240 R241 L242 Y243 S244 L245 D246 A247 G248 S249 T250 I251 N252 S253 L254 C255 F256 S257 P258 N259 R260 V261 L262 L263 C264 A265 A266 T267 Q268 D269 S270 T271 K272 L273 W274 D275 L276 E277 S278 S279 K279 H280 L281 V282 Q283 D284 L285 R286 P287 E288 V289 V291 S292 T293 K294 Q295 N296 L297 V298 C299 T300 C301 L302 S303 W304 S305 A306 D307 G308 S309 T310 L311 Y312 A313 Y315 T316 D317 G318 T319 R321 T322 Y323 K324 L325 G326 G327 PHE SER TYR SER SER PHE L328 T329 T330 Y331 Y332 Y333 Y334 Y335 Y336 Y337 Y338 Y339 Y340 Y341 Y342 Y343 Y344 Y345 Y346 Y347 Y348 Y349 Y350 Y351 Y352 Y353 Y354 Y355 Y356 Y357 Y358 Y359 Y360 Y361 Y362 Y363 Y364 Y365 Y366 Y367 Y368 Y369 Y370 Y371 Y372 Y373 Y374 Y375 Y376 Y377 Y378 Y379 Y380 Y381 Y382 Y383 Y384 Y385 Y386 Y387 Y388 Y389 Y390 Y391 Y392 Y393 Y394 Y395 Y396 Y397 Y398 Y399 Y400 Y401 Y402 Y403 Y404 Y405 Y406 Y407 Y408 Y409 Y410 Y411 Y412 Y413 Y414 Y415 Y416 Y417 Y418 Y419 Y420 Y421 Y422 Y423 Y424 Y425 Y426 Y427 Y428 Y429 Y430 Y431 Y432 Y433 Y434 Y435 Y436 Y437 Y438 Y439 Y440 Y441 Y442 Y443 Y444 Y445 Y446 Y447 Y448 Y449 Y450 Y451 Y452 Y453 Y454 Y455 Y456 Y457 Y458 Y459 Y460 Y461 Y462 Y463 Y464 Y465 Y466 Y467 Y468 Y469 Y470 Y471 Y472 Y473 Y474 Y475 Y476 Y477 Y478 Y479 Y480 Y481 Y482 Y483 Y484 Y485 Y486 Y487 Y488 Y489 Y490 Y491 Y492 Y493 Y494 Y495 Y496 Y497 Y498 Y499 Y500 Y501 Y502 Y503 Y504 Y505 Y506 Y507 Y508 Y509 Y510 Y511 Y512 Y513 Y514 Y515 Y516 Y517 Y518 Y519 Y520 Y521 Y522 Y523 Y524 Y525 Y526 Y527 Y528 Y529 Y530 Y531 Y532 Y533 Y534 Y535 Y536 Y537 Y538 Y539 Y540 Y541 Y542 Y543 Y544 Y545 Y546 Y547 Y548 Y549 Y550 Y551 Y552 Y553 Y554 Y555 Y556 Y557 Y558 Y559 Y560 Y561 Y562 Y563 Y564 Y565 Y566 Y567 Y568 Y569 Y570 Y571 Y572 Y573 Y574 Y575 Y576 Y577 Y578 Y579 Y580 Y581 Y582 Y583 Y584 Y585 Y586 Y587 Y588 Y589 Y590 Y591 Y592 Y593 Y594 Y595 Y596 Y597 Y598 Y599 Y600 Y601 Y602 Y603 Y604 Y605 Y606 Y607 Y608 Y609 Y610 Y611 Y612 Y613 Y614 Y615 Y616 Y617 Y618 Y619 Y620 Y621 Y622 Y623 Y624 Y625 Y626 Y627 Y628 Y629 Y630 Y631 Y632 Y633 Y634 Y635 Y636 Y637 Y638 Y639 Y640 Y641 Y642 Y643 Y644 Y645 Y646 Y647 Y648 Y649 Y650 Y651 Y652 Y653 Y654 Y655 Y656 Y657 Y658 Y659 Y660 Y661 Y662 Y663 Y664 Y665 Y666 Y667 Y668 Y669 Y670 Y671 Y672 Y673 Y674 Y675 Y676 Y677 Y678 Y679 Y680 Y681 Y682 Y683 Y684 Y685 Y686 Y687 Y688 Y689 Y690 Y691 Y692 Y693 Y694 Y695 Y696 Y697 Y698 Y699 Y700 Y701 Y702 Y703 Y704 Y705 Y706 Y707 Y708 Y709 Y710 Y711 Y712 Y713 Y714 Y715 Y716 Y717 Y718 Y719 Y720 Y721 Y722 Y723 Y724 Y725 Y726 Y727 Y728 Y729 Y730 Y731 Y732 Y733 Y734 Y735 Y736 Y737 Y738 Y739 Y740 Y741 Y742 Y743 Y744 Y745 Y746 Y747 Y748 Y749 Y750 Y751 Y752 Y753 Y754 Y755 Y756 Y757 Y758 Y759 Y760 Y761 Y762 Y763 Y764 Y765 Y766 Y767 Y768 Y769 Y770 Y771 Y772 Y773 Y774 Y775 Y776 Y777 Y778 Y779 Y780 Y781 Y782 Y783 Y784 Y785 Y786 Y787 Y788 Y789 Y790 Y791 Y792 Y793 Y794 Y795 Y796 Y797 Y798 Y799 Y800 Y801 Y802 Y803 Y804 Y805 Y806 Y807 Y808 Y809 Y810 Y811 Y812 Y813 Y814 Y815 Y816 Y817 Y818 Y819 Y820 Y821 Y822 Y823 Y824 Y825 Y826 Y827 Y828 Y829 Y830 Y831 Y832 Y833 Y834 Y835 Y836 Y837 Y838 Y839 Y840 Y841 Y842 Y843 Y844 Y845 Y846 Y847 Y848 Y849 Y850 Y851 Y852 Y853 Y854 Y855 Y856 Y857 Y858 Y859 Y860 Y861 Y862 Y863 Y864 Y865 Y866 Y867 Y868 Y869 Y870 Y871 Y872 Y873 Y874 Y875 Y876 Y877 Y878 Y879 Y880 Y881 Y882 Y883 Y884 Y885 Y886 Y887 Y888 Y889 Y890 Y891 Y892 Y893 Y894 Y895 Y896 Y897 Y898 Y899 Y900 Y901 Y902 Y903 Y904 Y905 Y906 Y907 Y908 Y909 Y910 Y911 Y912 Y913 Y914 Y915 Y916 Y917 Y918 Y919 Y920 Y921 Y922 Y923 Y924 Y925 Y926 Y927 Y928 Y929 Y930 Y931 Y932 Y933 Y934 Y935 Y936 Y937 Y938 Y939 Y940 Y941 Y942 Y943 Y944 Y945 Y946 Y947 Y948 Y949 Y950 Y951 Y952 Y953 Y954 Y955 Y956 Y957 Y958 Y959 Y960 Y961 Y962 Y963 Y964 Y965 Y966 Y967 Y968 Y969 Y970 Y971 Y972 Y973 Y974 Y975 Y976 Y977 Y978 Y979 Y980 Y981 Y982 Y983 Y984 Y985 Y986 Y987 Y988 Y989 Y990 Y991 Y992 Y993 Y994 Y995 Y996 Y997 Y998 Y999

• Molecule 7: 40S ribosomal protein uS3

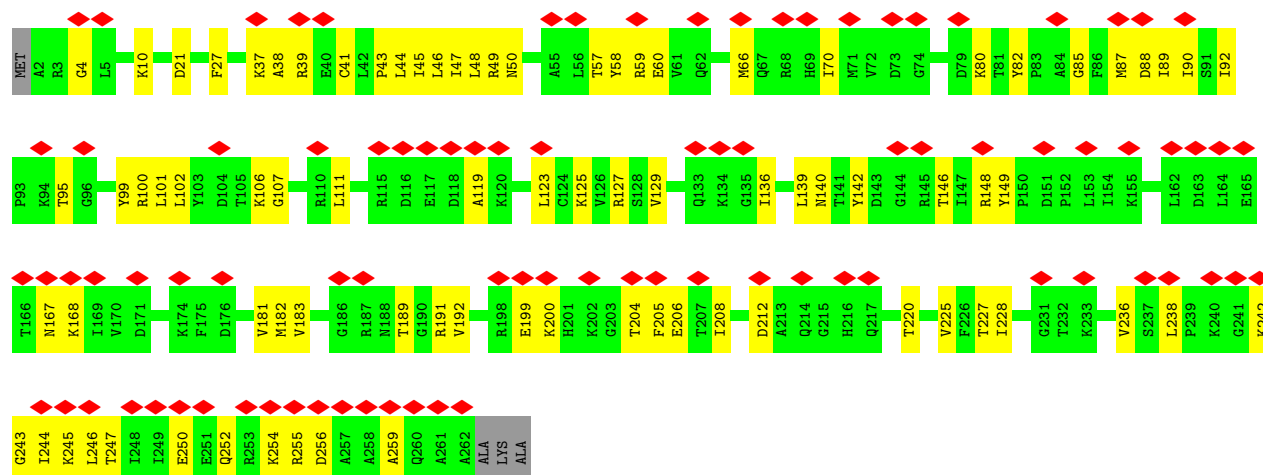
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GLU
VAL

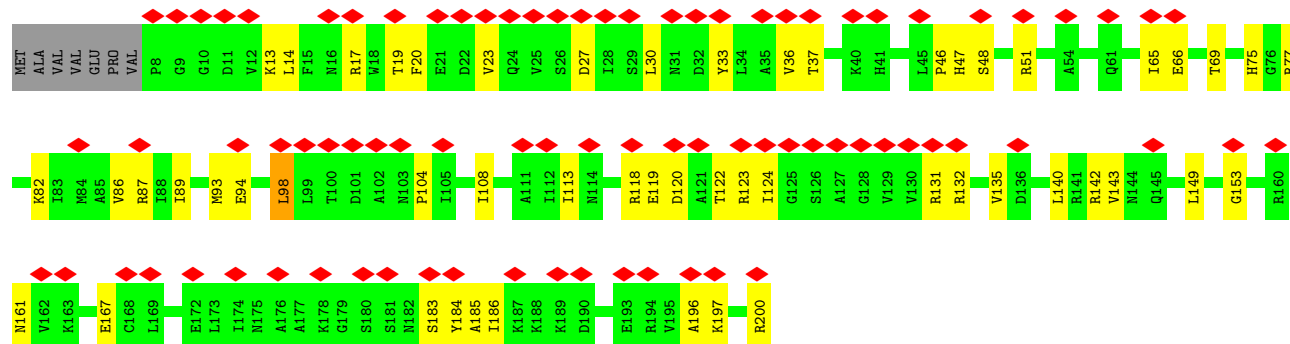
• Molecule 8: 40S ribosomal protein eS4

Chain ja: 



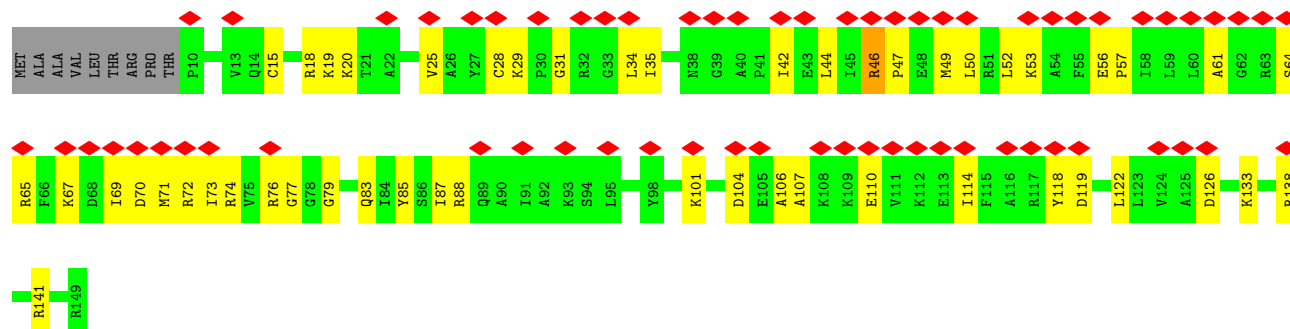
• Molecule 9: 40S ribosomal protein uS7

Chain ka: 

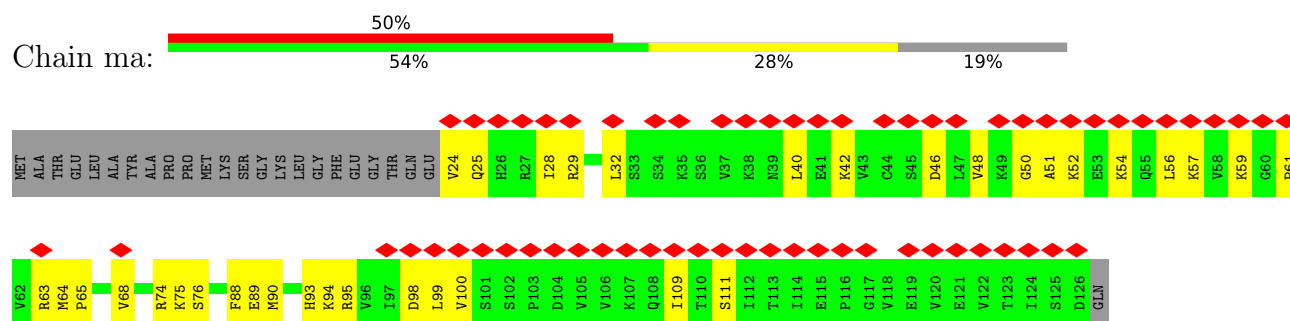


• Molecule 10: 40S ribosomal protein uS9

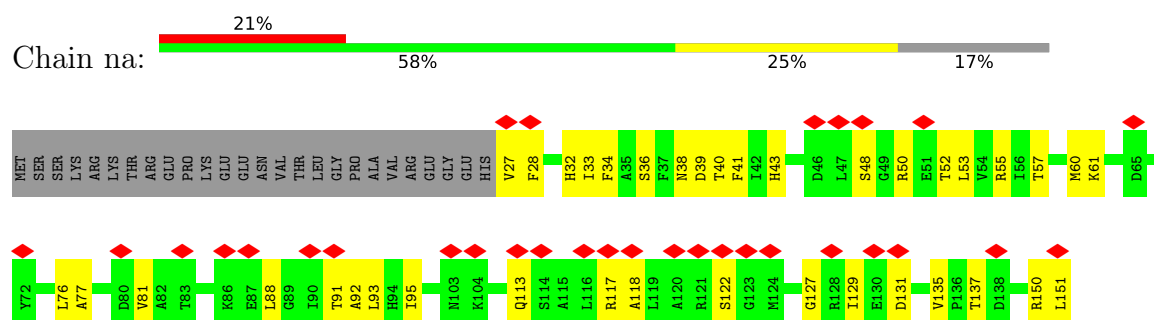
Chain la: 



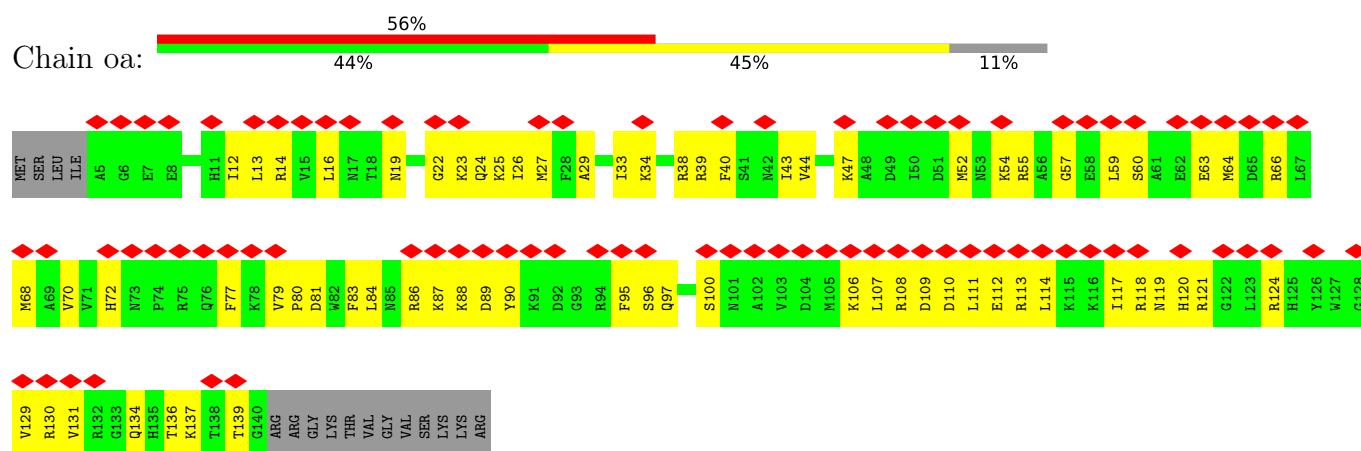
- Molecule 11: 40S ribosomal protein uS10



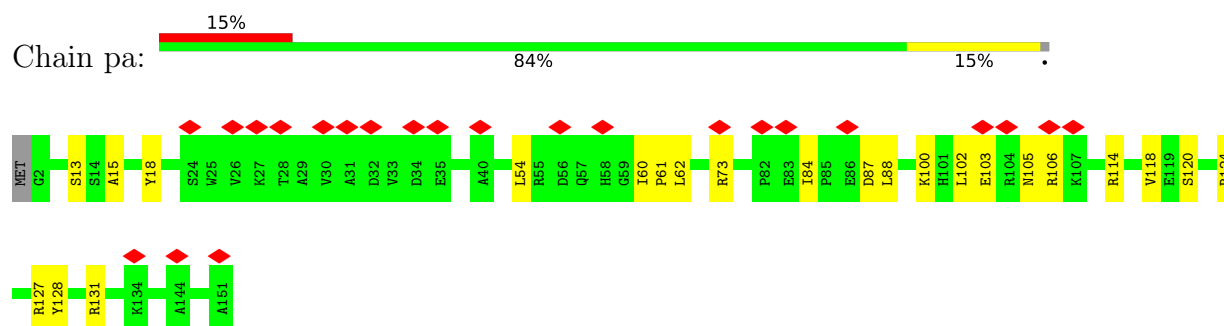
- Molecule 12: 40S ribosomal protein uS11



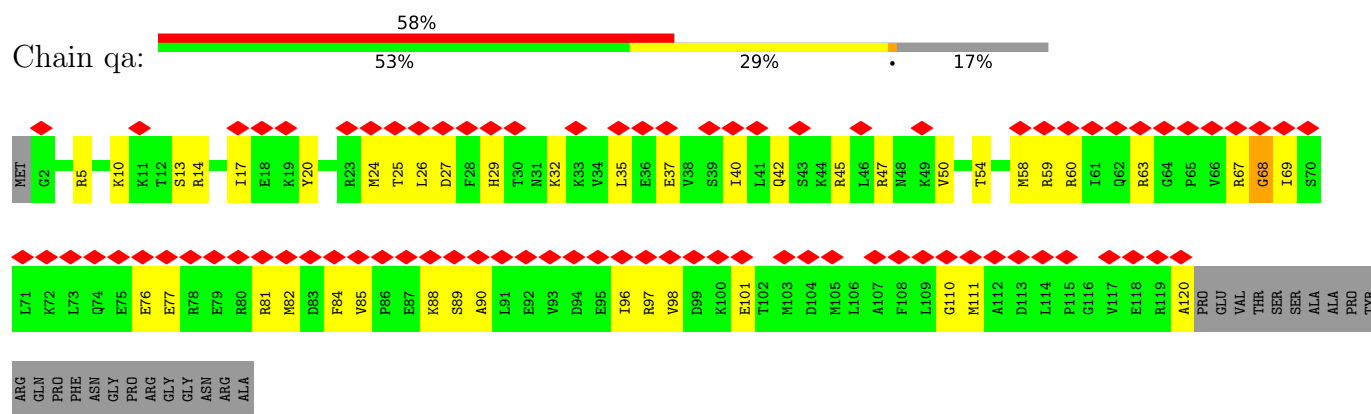
- Molecule 13: 40S ribosomal protein uS13



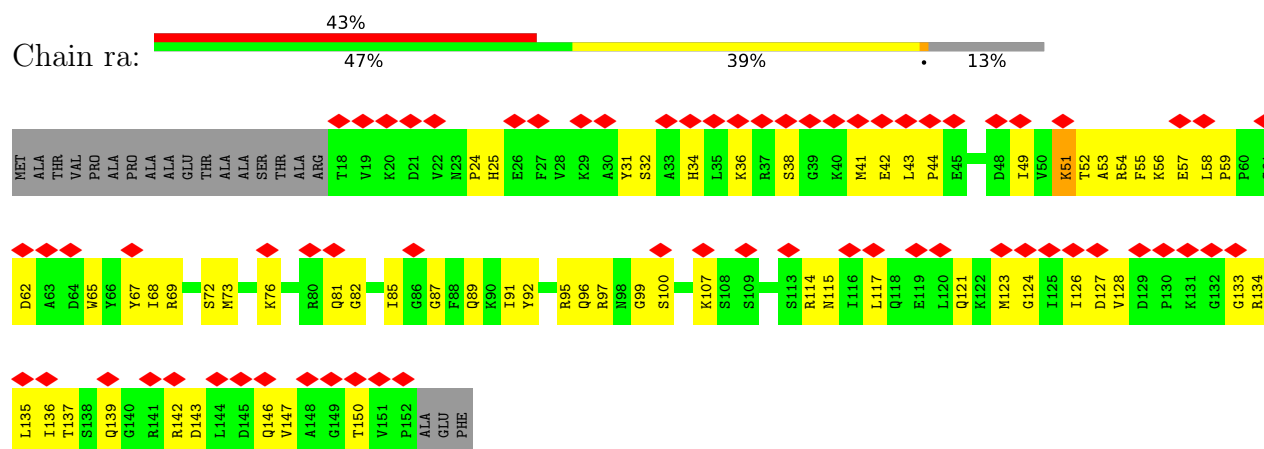
- Molecule 14: 40S ribosomal protein uS15



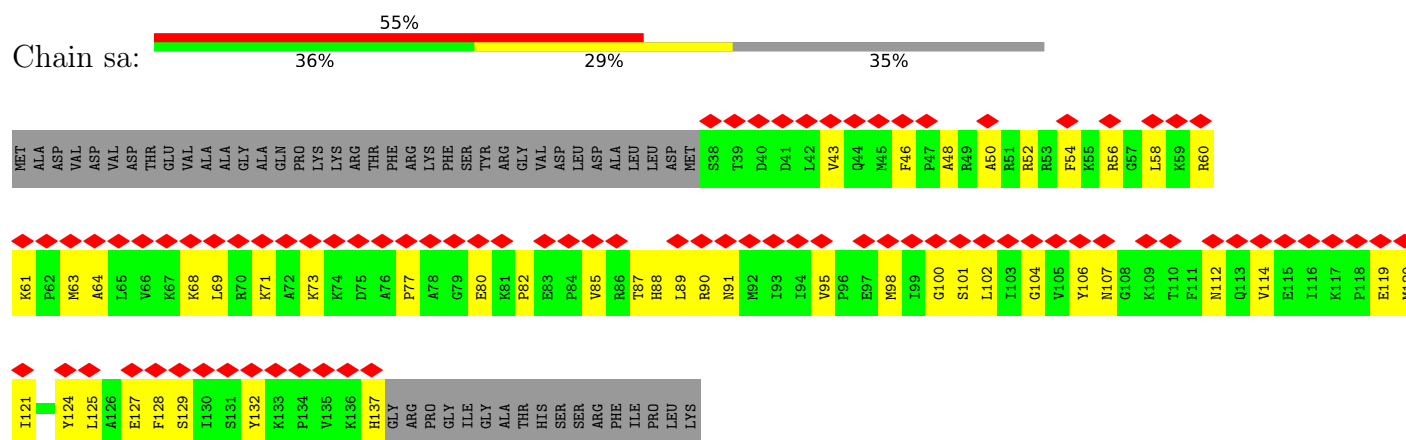
- Molecule 15: 40S ribosomal protein eS17



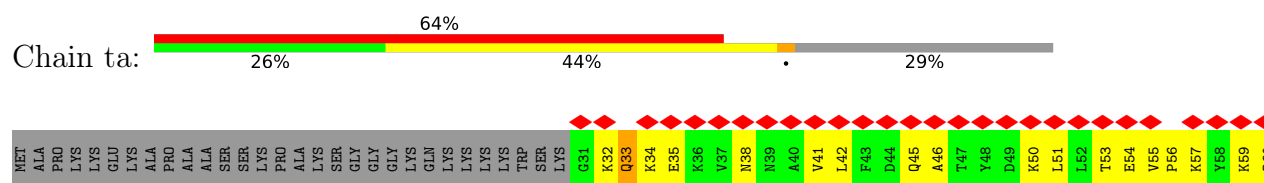
- Molecule 16: 40S ribosomal protein eS19

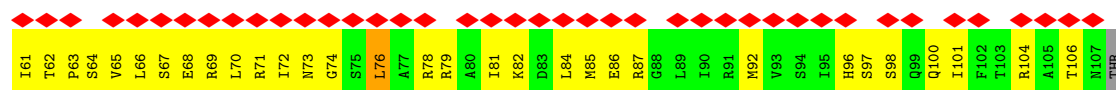


- Molecule 17: 40S ribosomal protein uS19

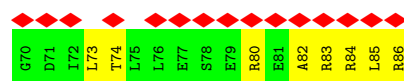
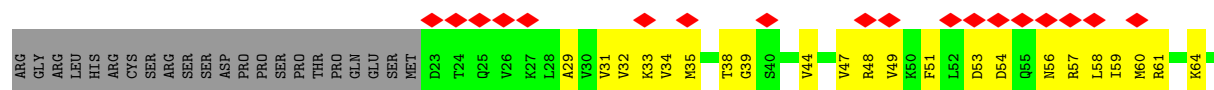
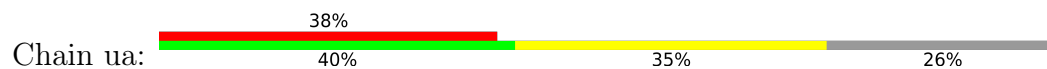


- Molecule 18: 40S ribosomal protein eS25

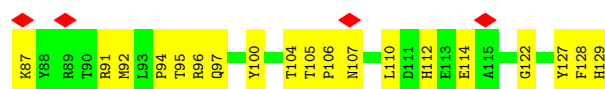
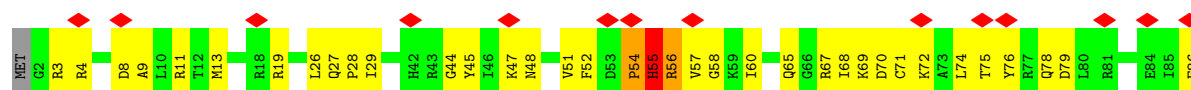




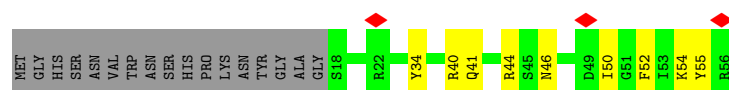
• Molecule 19: 40S ribosomal protein eS28



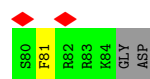
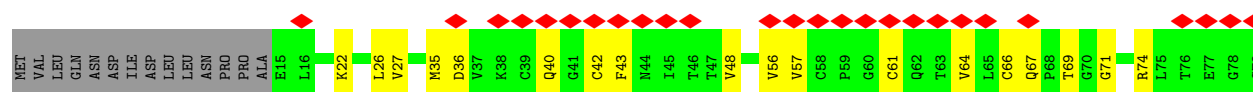
• Molecule 20: 40S ribosomal protein uS8



• Molecule 21: 40S ribosomal protein uS14

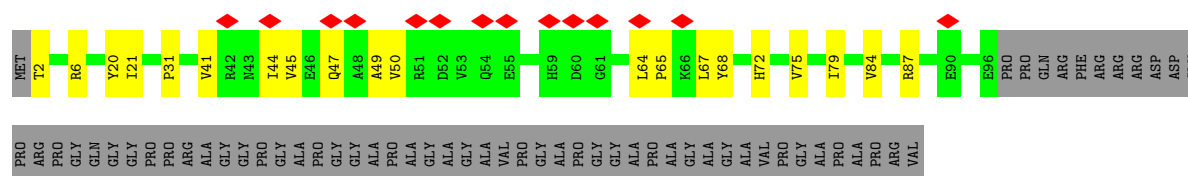


• Molecule 22: 40S ribosomal protein eS27

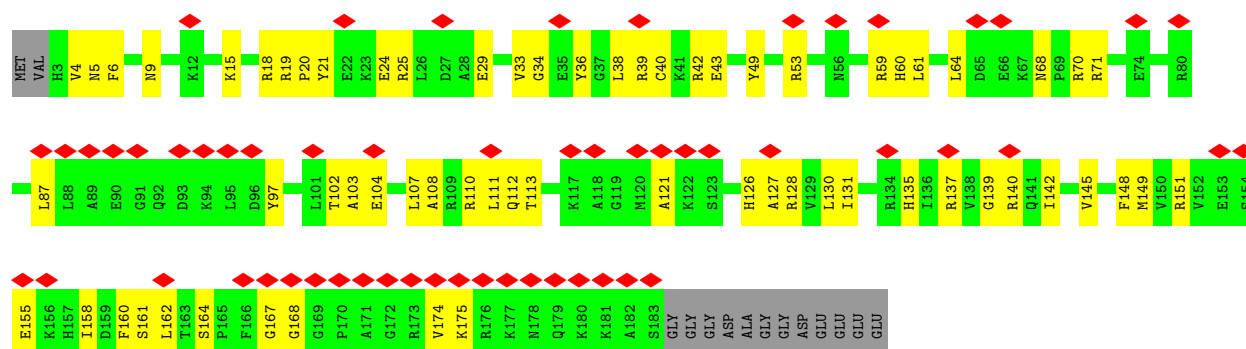


• Molecule 23: 40S ribosomal protein eS30

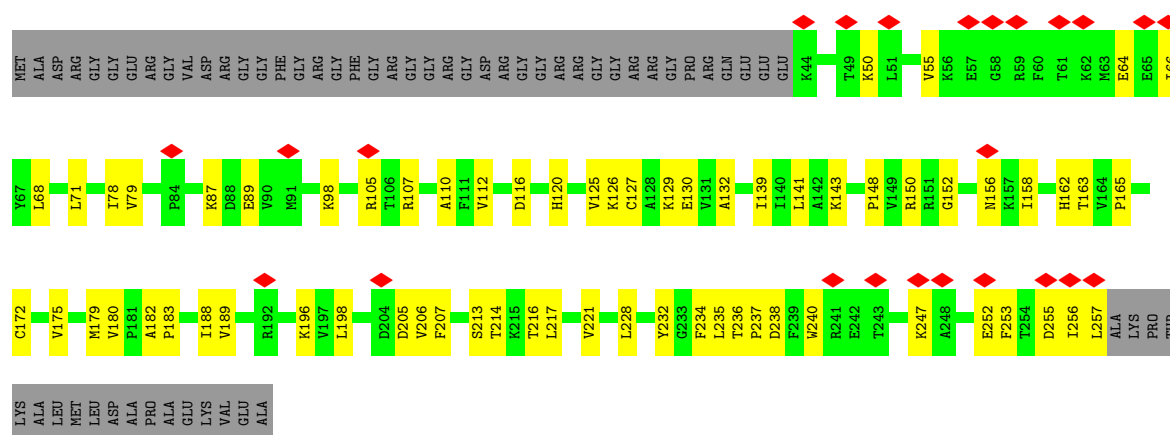




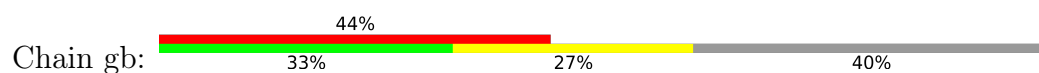
• Molecule 28: 40S ribosomal protein uS4

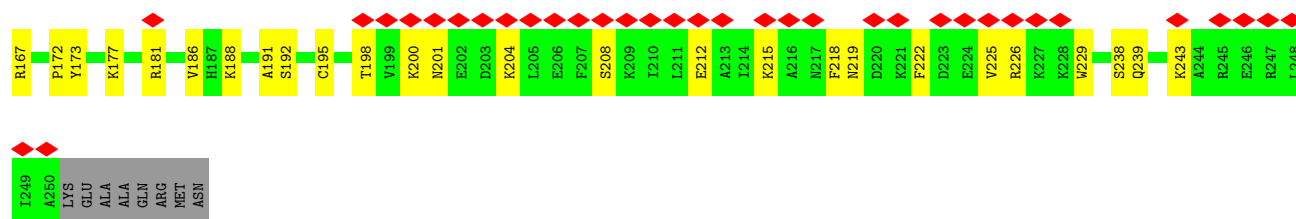


• Molecule 29: 40S ribosomal protein uS5

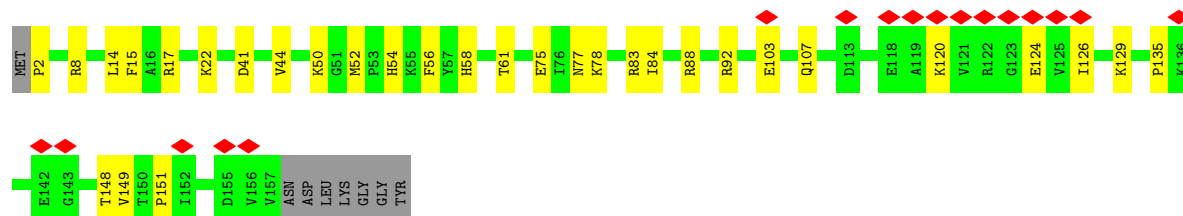
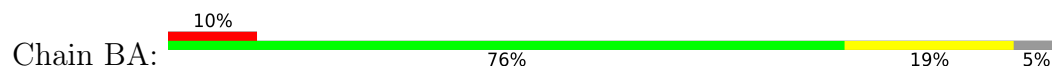


• Molecule 30: 40S ribosomal protein eS6

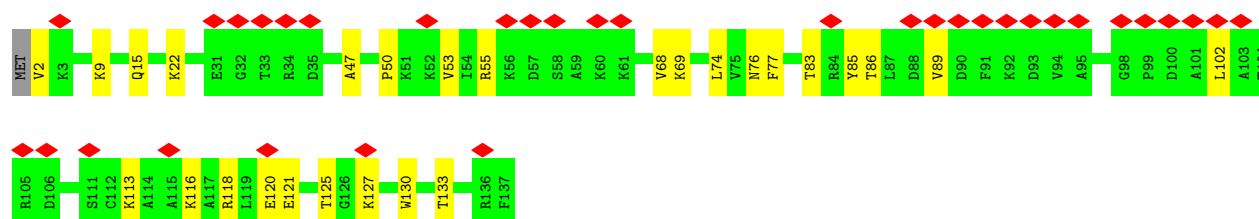
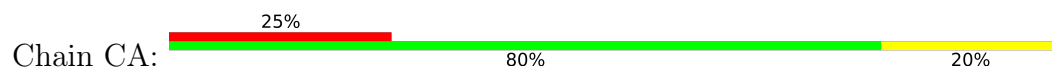




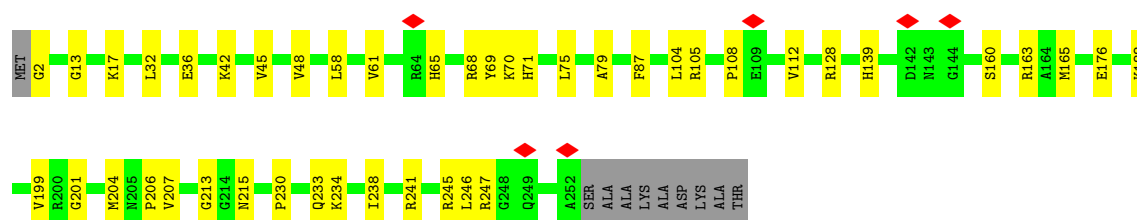
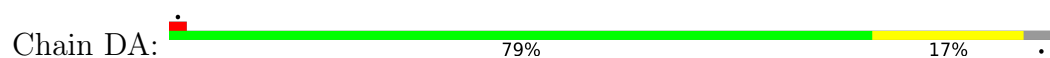
- Molecule 34: 60S ribosomal protein eL21



- Molecule 35: 60S ribosomal protein eL27

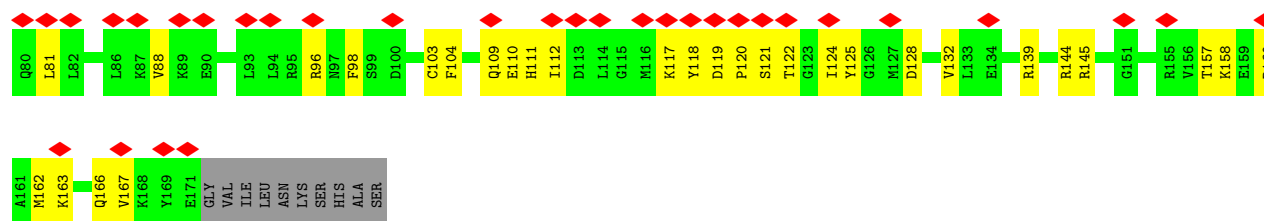


- Molecule 36: 60S ribosomal protein uL2

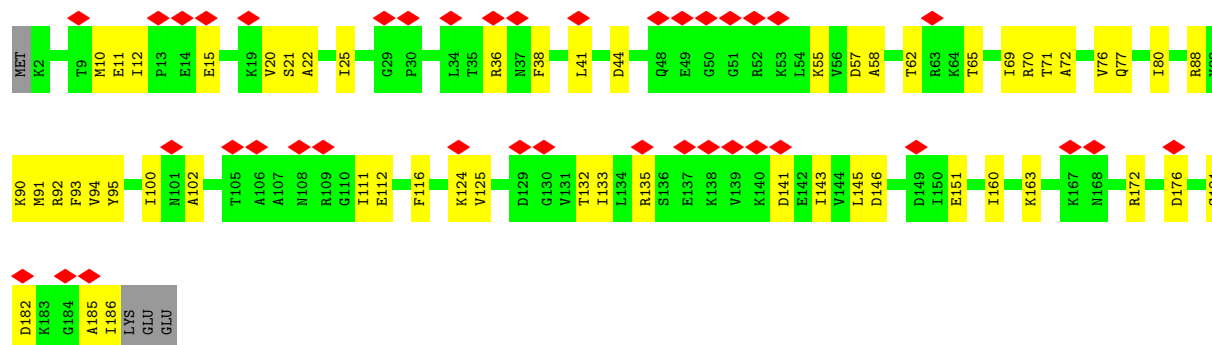


- Molecule 37: 60S ribosomal protein uL5

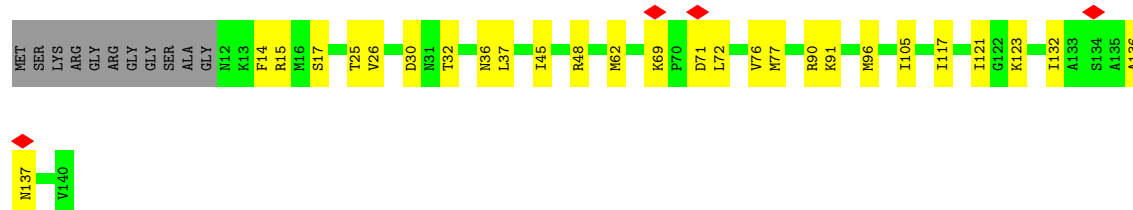
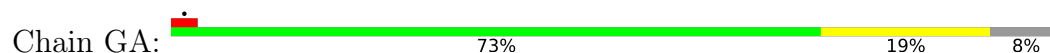




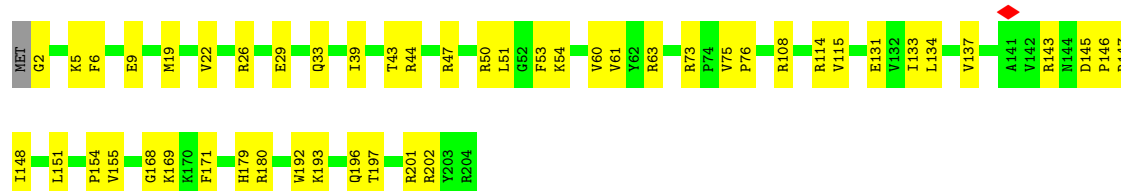
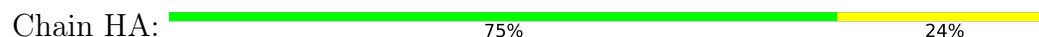
• Molecule 38: 60S ribosomal protein uL6



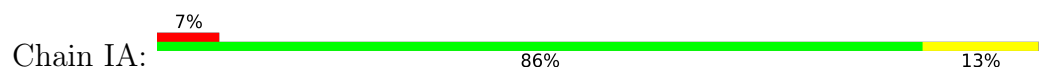
• Molecule 39: 60S ribosomal protein uL14

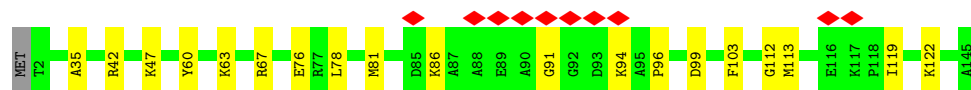


• Molecule 40: 60S ribosomal protein eL15



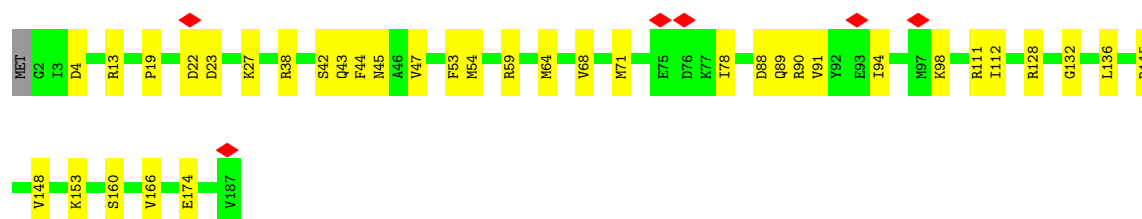
• Molecule 41: 60S ribosomal protein uL15





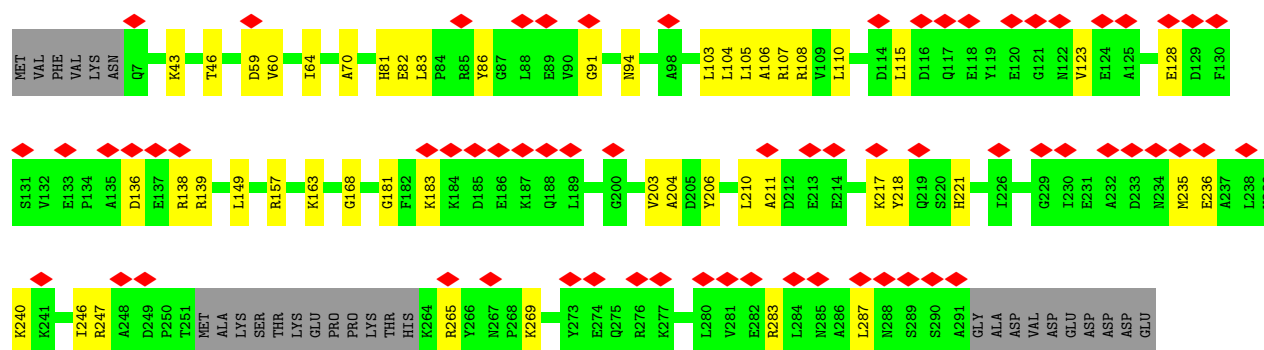
- Molecule 42: 60S ribosomal protein eL18

Chain JA: 80% 19%



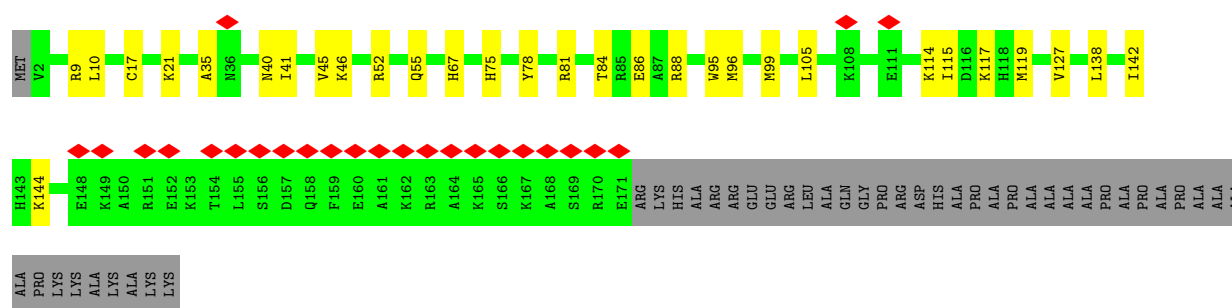
- Molecule 43: 60S ribosomal protein uL18

Chain KA: 22% 75% 16% 9%



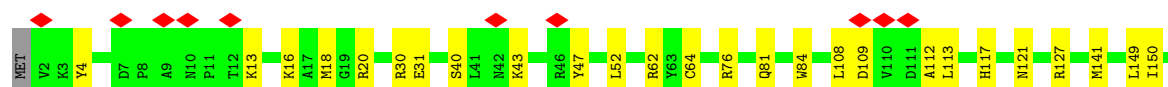
- Molecule 44: 60S ribosomal protein eL19

Chain LA: 12% 66% 14% 20%

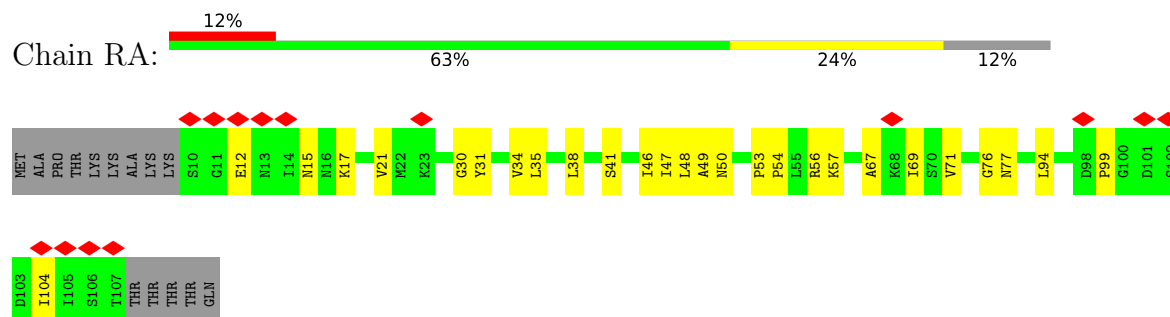


- Molecule 45: 60S ribosomal protein uL22

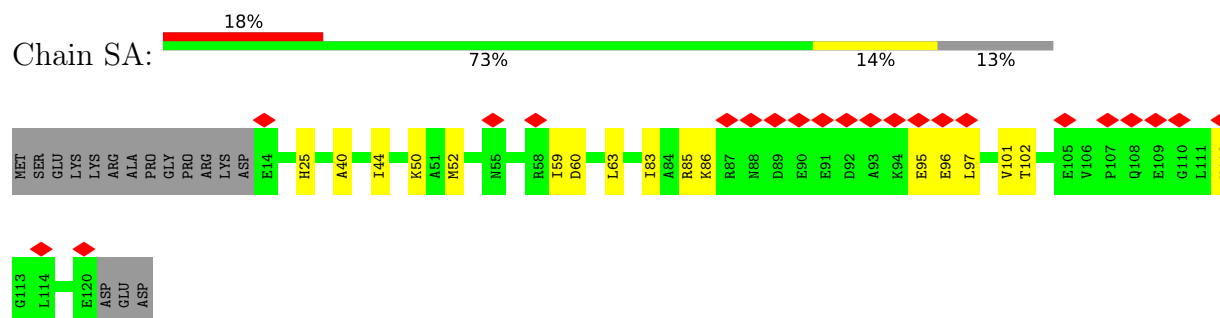
Chain MA: 7% 75% 16% 9%



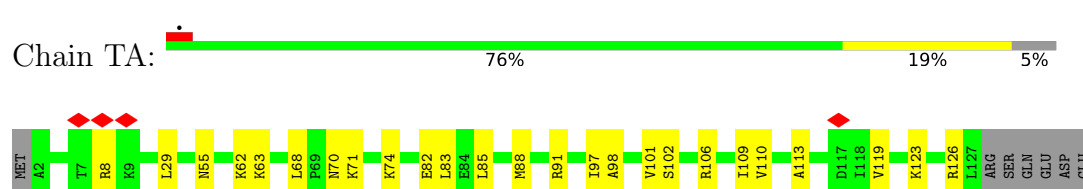
- Molecule 50: 60S ribosomal protein eL30



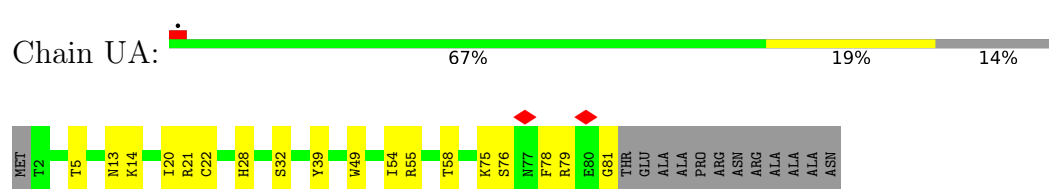
- Molecule 51: 60S ribosomal protein eL31



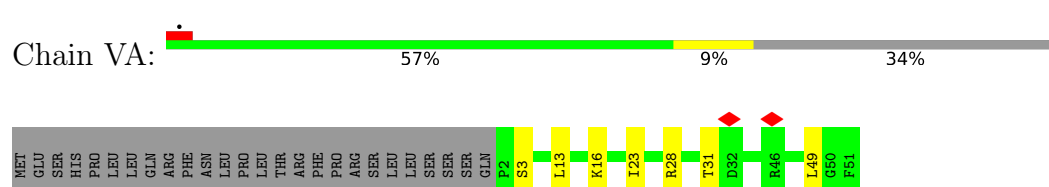
- Molecule 52: 60S ribosomal protein eL32



- Molecule 53: 60S ribosomal protein eL37



- Molecule 54: 60S ribosomal protein eL39

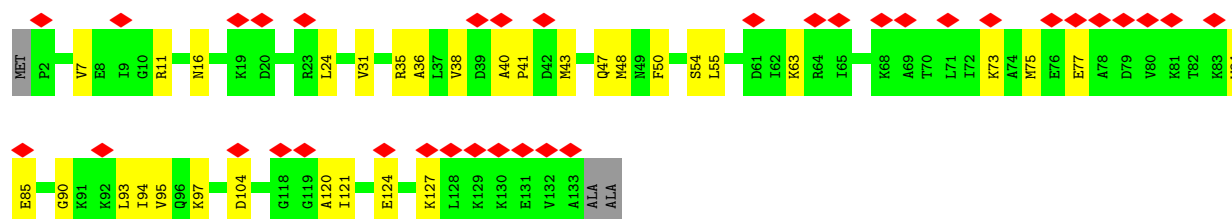
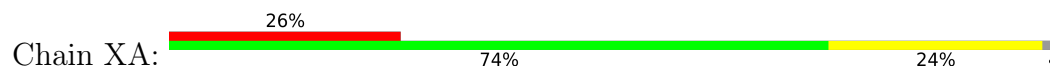


- Molecule 55: 60S ribosomal protein eL42

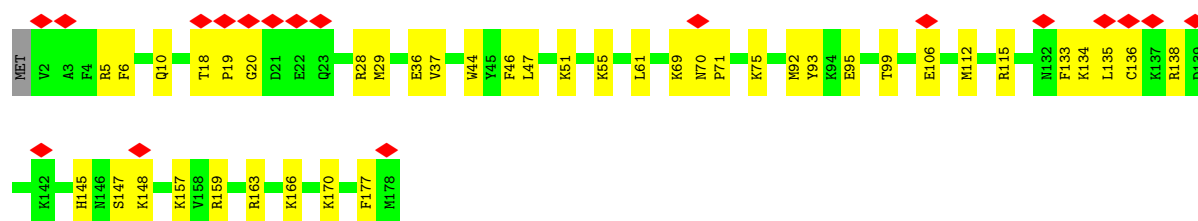
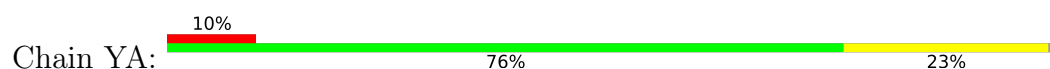




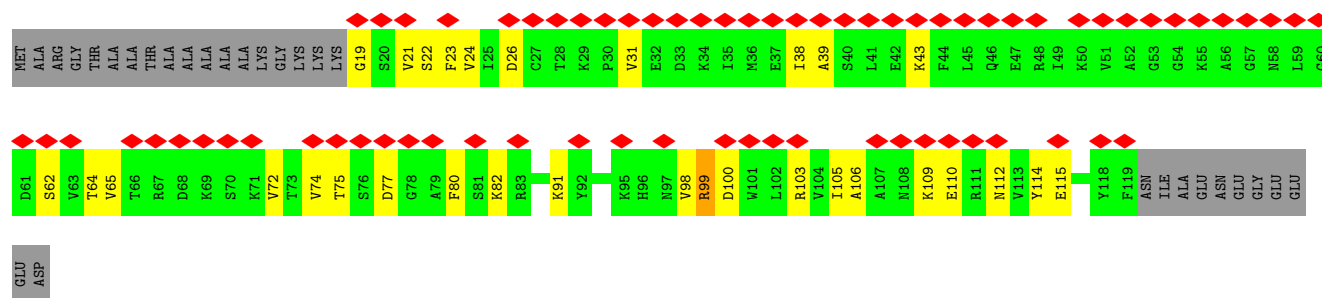
- Molecule 56: 60S ribosomal protein eL14



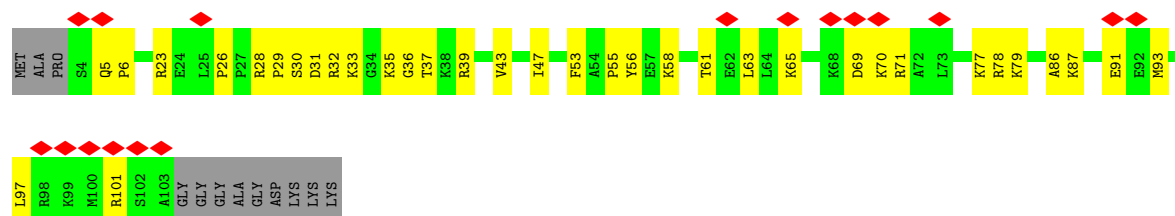
- Molecule 57: 60S ribosomal protein eL20



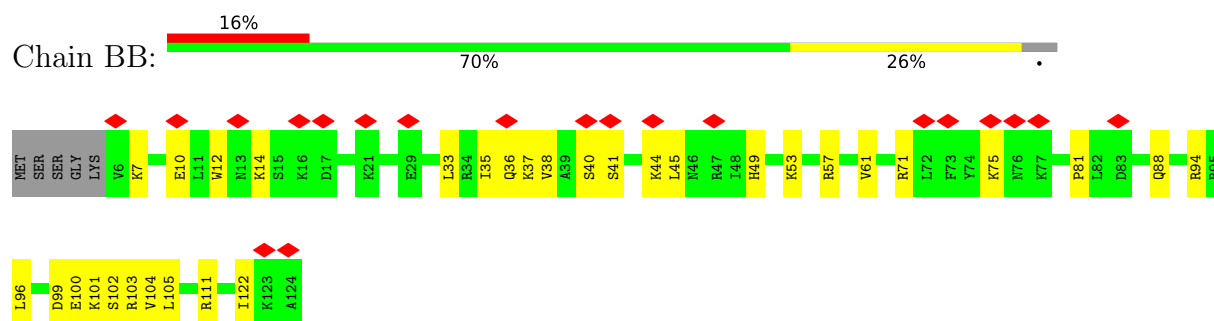
- Molecule 58: 60S ribosomal protein eL22



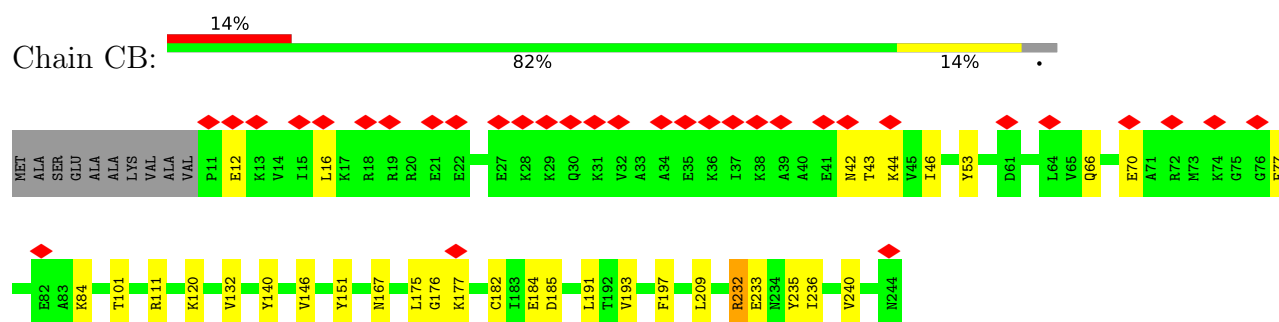
- Molecule 59: 60S ribosomal protein eL36



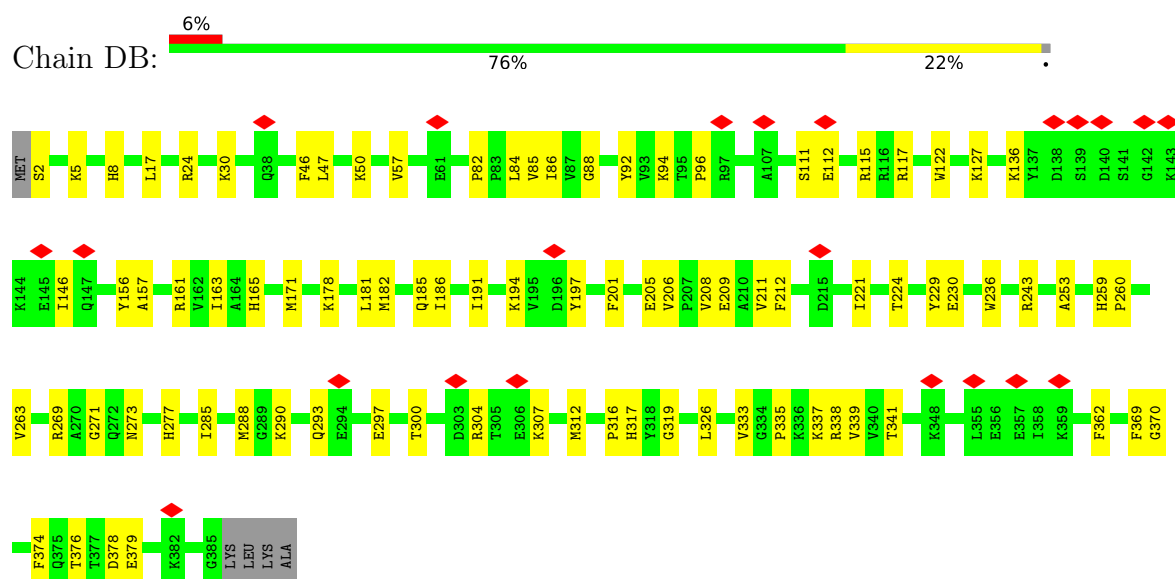
- Molecule 60: 60S ribosomal protein uL29



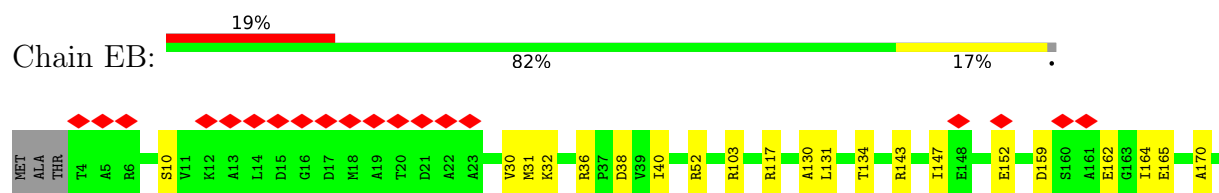
- Molecule 61: 60S ribosomal protein uL30

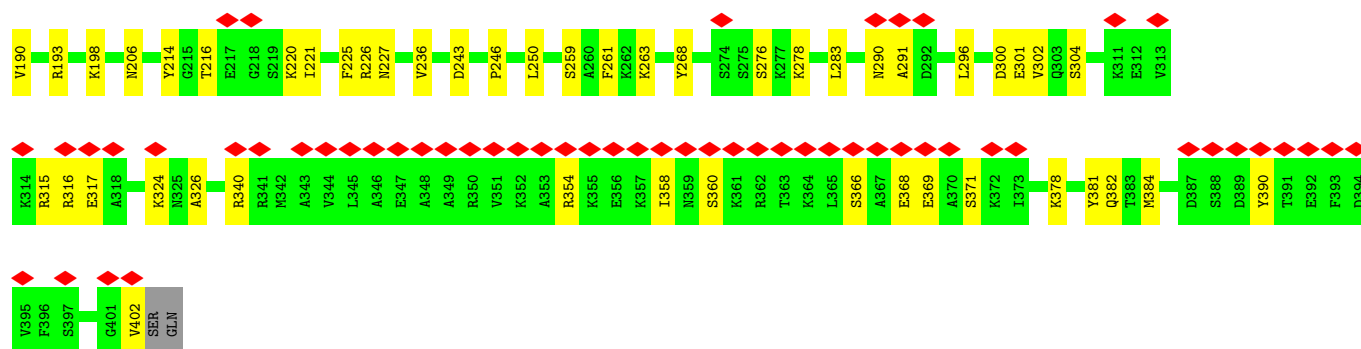


- Molecule 62: 60S ribosomal protein uL3

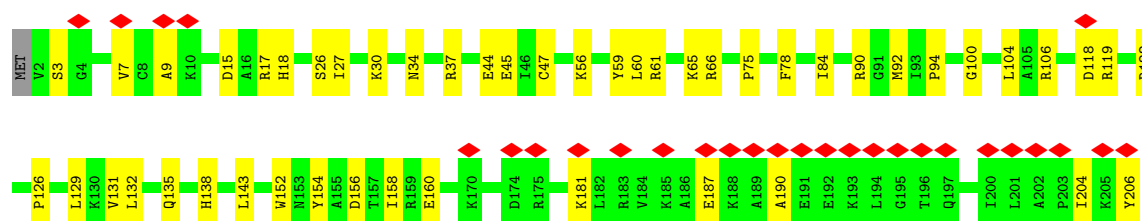
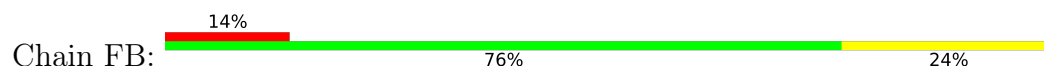


- Molecule 63: 60S ribosomal protein uL4

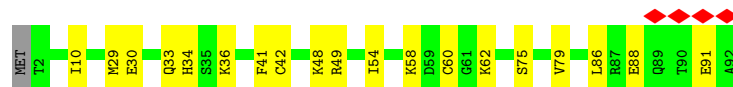
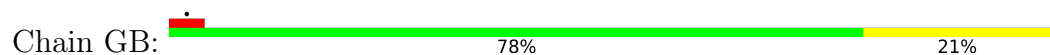




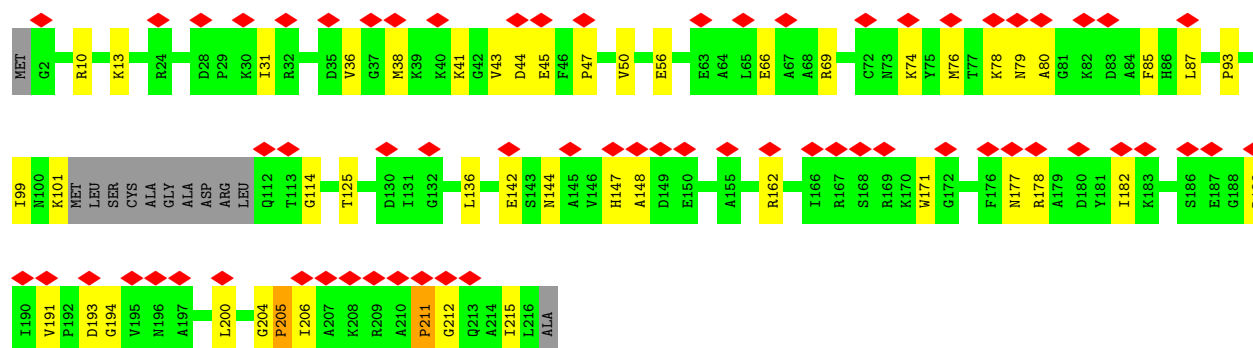
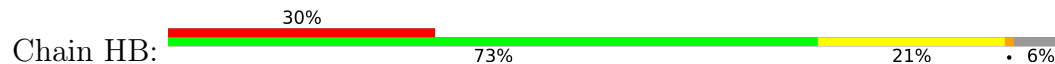
• Molecule 64: 60S ribosomal protein uL13



• Molecule 65: 60S ribosomal protein eL43



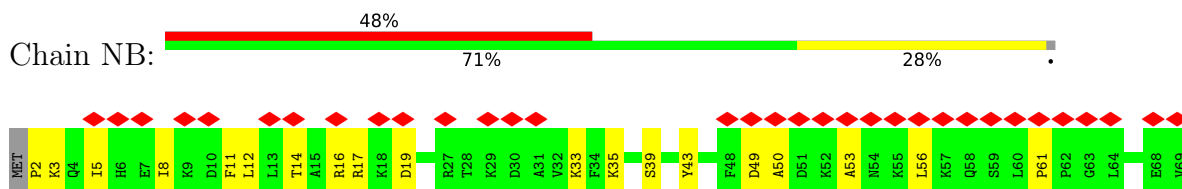
• Molecule 66: 60S ribosomal protein uL16



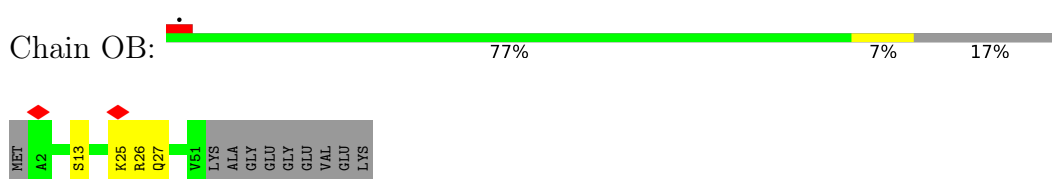
• Molecule 67: 60S ribosomal protein eL41



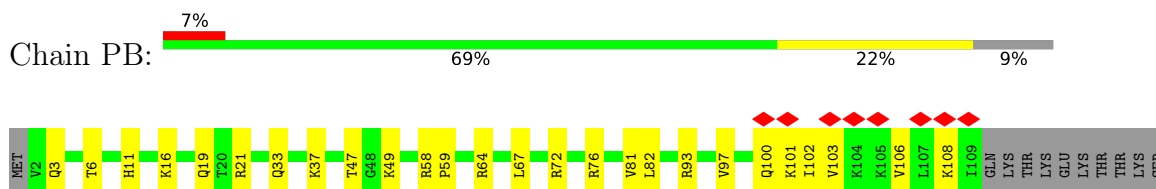
- Molecule 72: 60S ribosomal protein eL38



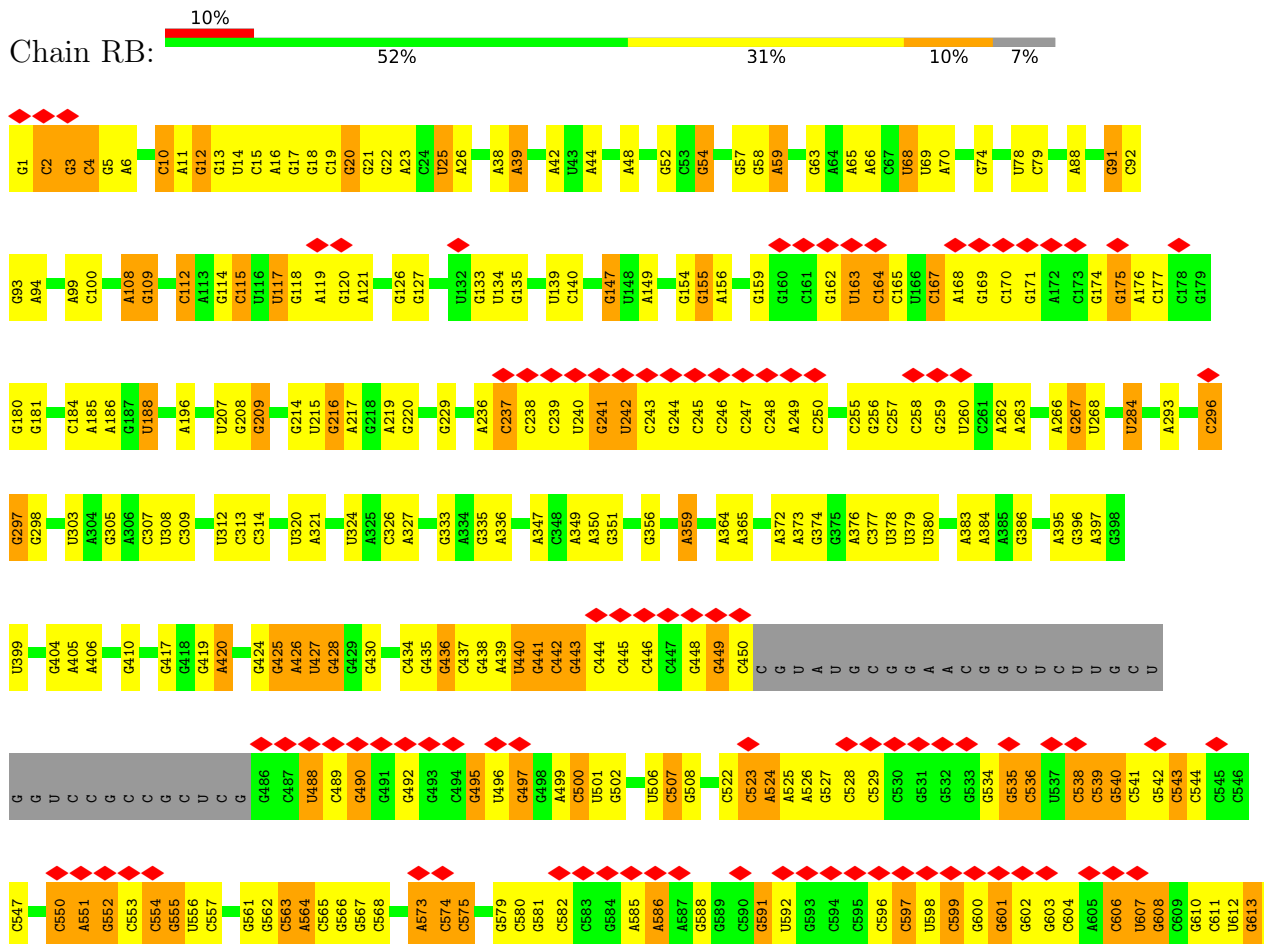
- Molecule 73: 60S ribosomal protein eL29

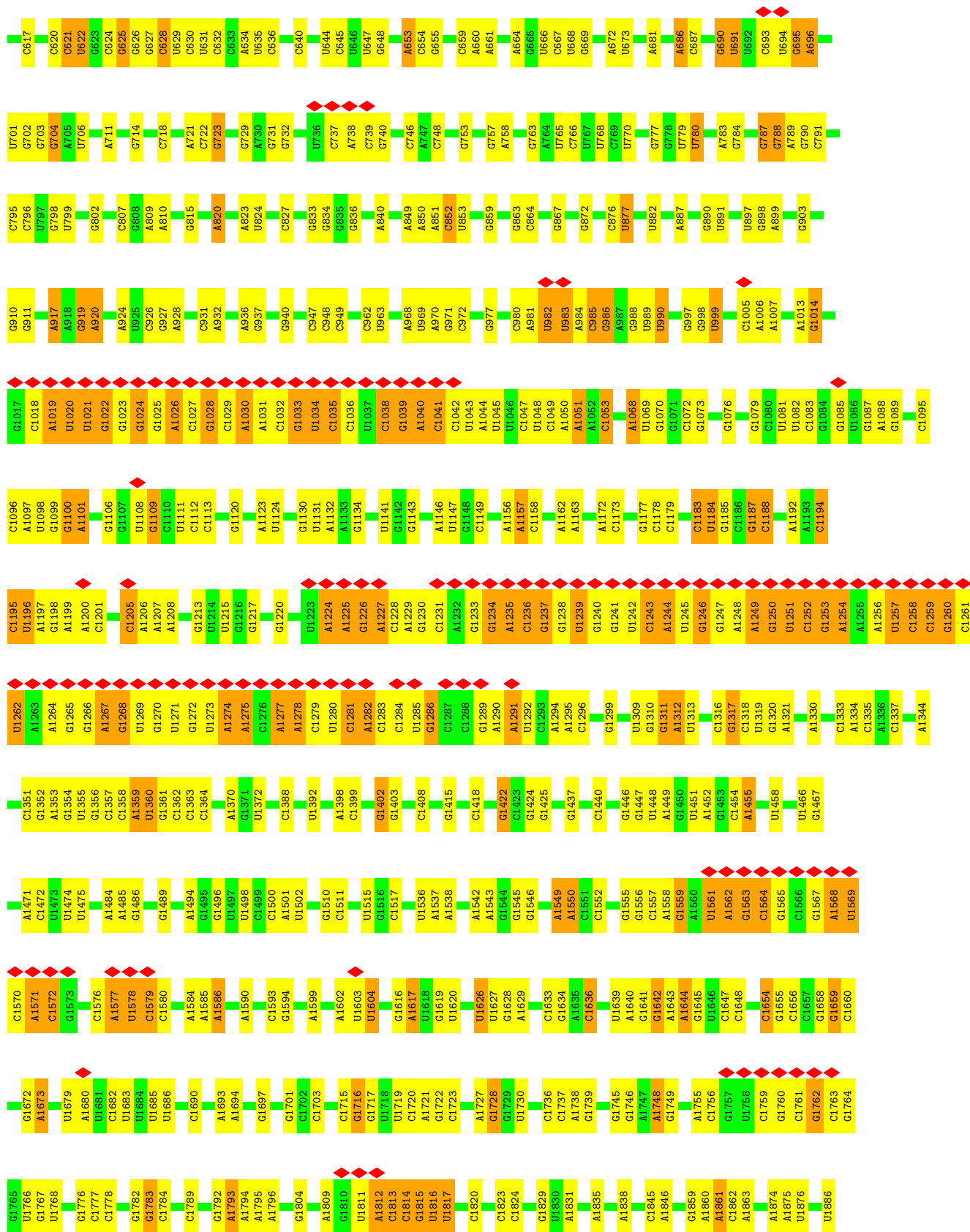


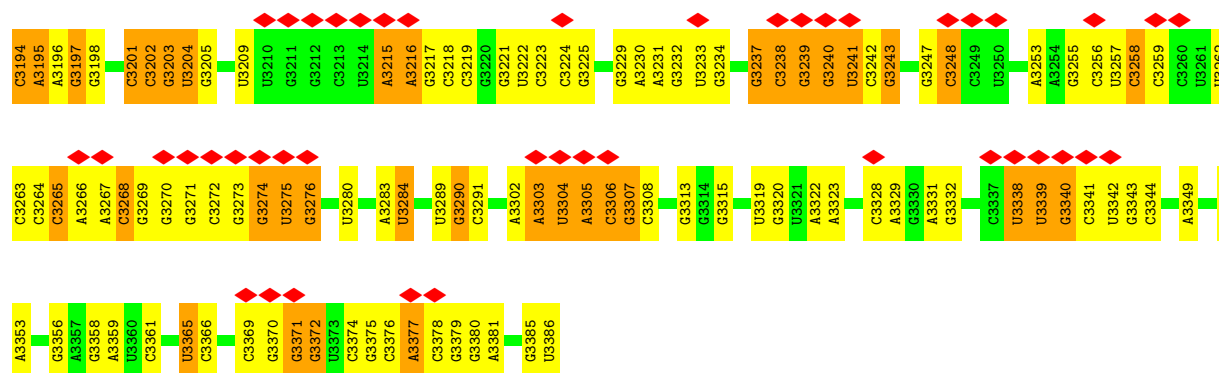
- Molecule 74: 60S ribosomal protein eL34



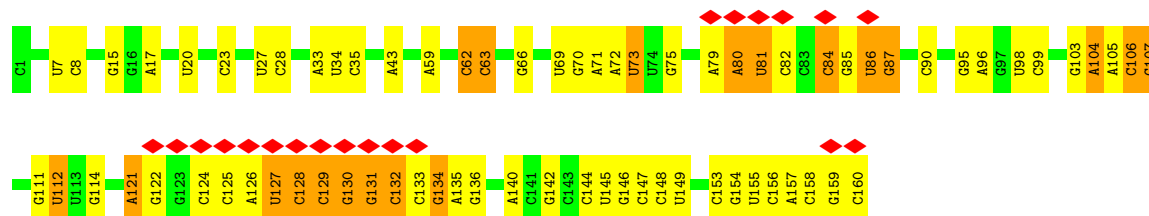
- Molecule 75: 60S ribosomal RNA



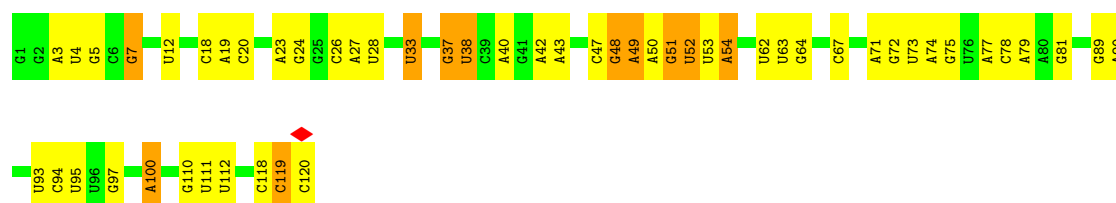




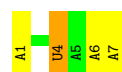
• Molecule 76: 5.8S ribosomal RNA



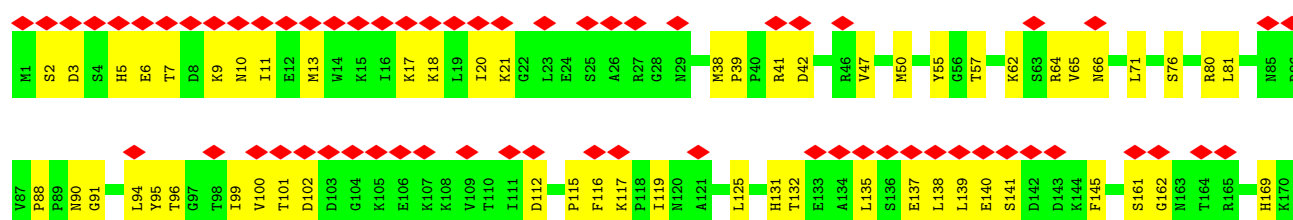
• Molecule 77: 5S ribosomal RNA

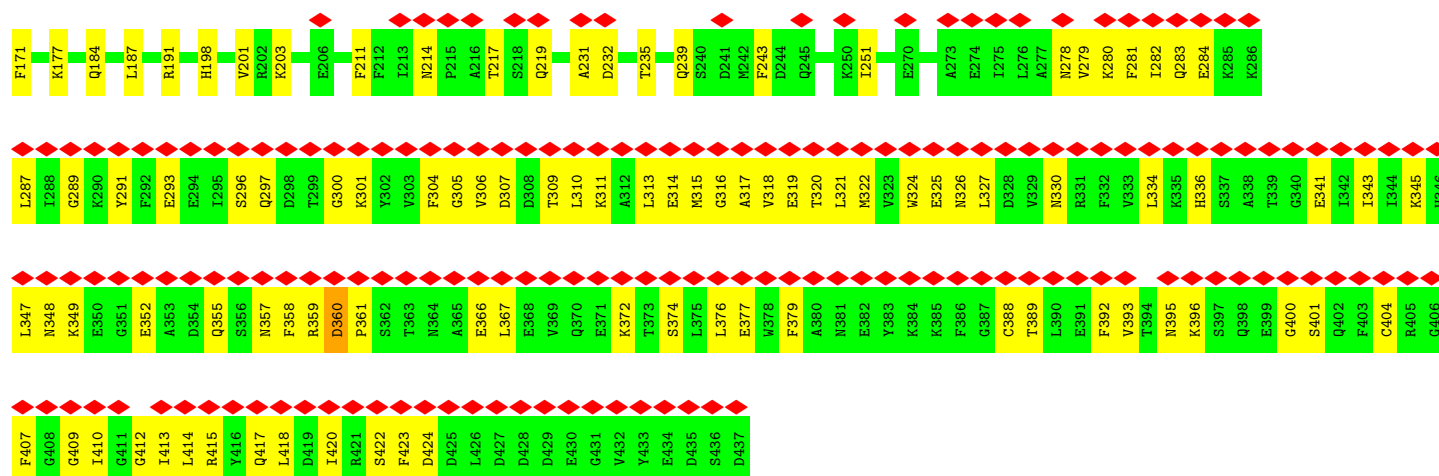


• Molecule 78: mRNA

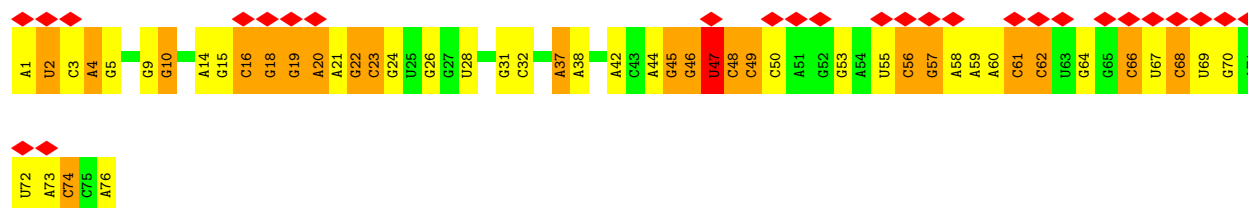


• Molecule 79: eukaryotic release factor 1

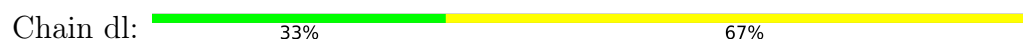




- Molecule 80: tRNA_i



- Molecule 81: CCA end of E-tRNA



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	96104	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	JEOL CRYO ARM 300	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	40.0	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	60000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.086	Depositor
Minimum map value	-0.031	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.004	Depositor
Recommended contour level	0.016	Depositor
Map size (Å)	441.28, 441.28, 441.28	wwPDB
Map dimensions	560, 560, 560	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.788, 0.788, 0.788	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: 1MG, 5MC, 2MG, H2U, MIA, 1MA, PSU, MG, ZN, G7M

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	aa	0.36	0/40441	0.42	0/63026
2	ba	0.28	0/943	0.55	0/1253
3	ca	0.36	0/1464	0.55	0/1957
4	da	0.28	0/722	0.60	0/972
5	ga	0.35	0/1088	0.53	0/1448
6	ha	0.25	0/2530	0.59	0/3443
7	ia	0.26	0/1697	0.47	0/2279
8	ja	0.32	0/2123	0.52	0/2853
9	ka	0.31	0/1538	0.54	1/2070 (0.0%)
10	la	0.33	0/1138	0.64	0/1517
11	ma	0.31	0/815	0.54	0/1098
12	na	0.35	0/953	0.53	0/1278
13	oa	0.32	0/1132	0.64	0/1511
14	pa	0.32	0/1219	0.50	0/1638
15	qa	0.25	0/985	0.54	0/1313
16	ra	0.36	0/1088	0.56	2/1463 (0.1%)
17	sa	0.29	0/824	0.55	0/1102
18	ta	0.33	0/624	0.82	0/836
19	ua	0.31	0/514	0.52	0/685
20	va	0.39	0/1057	0.76	3/1421 (0.2%)
21	wa	0.34	0/318	0.56	0/418
22	xa	0.31	0/555	0.49	0/742
23	ya	0.29	0/326	0.56	0/430
24	za	0.30	0/1644	0.45	0/2226
25	bb	0.34	0/1749	0.69	1/2349 (0.0%)
26	cb	0.34	0/605	0.57	0/814
27	db	0.36	0/784	0.46	0/1047
28	eb	0.31	0/1521	0.53	0/2035
29	fb	0.36	0/1696	0.48	0/2292
30	gb	0.27	0/1210	0.56	0/1606
31	hb	0.28	0/1415	0.60	0/1907
32	ib	0.35	0/1192	0.47	0/1597

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	AA	0.31	0/1881	0.49	0/2523
34	BA	0.37	0/1284	0.48	0/1728
35	CA	0.32	0/1111	0.52	0/1481
36	DA	0.39	0/1965	0.51	0/2644
37	EA	0.32	0/1353	0.58	0/1807
38	FA	0.32	0/1478	0.50	0/1983
39	GA	0.37	0/992	0.47	0/1333
40	HA	0.44	0/1760	0.58	0/2354
41	IA	0.41	0/1152	0.51	0/1538
42	JA	0.38	0/1511	0.49	0/2021
43	KA	0.33	0/2249	0.49	0/3020
44	LA	0.36	0/1433	0.50	0/1892
45	MA	0.38	0/1276	0.55	0/1713
46	NA	0.35	0/950	0.50	0/1275
47	OA	0.34	0/530	0.44	0/703
48	PA	0.37	0/1067	0.55	0/1425
49	QA	0.34	0/1144	0.50	0/1536
50	RA	0.35	0/769	0.48	0/1035
51	SA	0.35	0/874	0.50	0/1171
52	TA	0.39	0/1061	0.53	0/1417
53	UA	0.43	0/669	0.56	0/886
54	VA	0.40	0/464	0.46	0/616
55	WA	0.36	0/807	0.48	0/1064
56	XA	0.33	0/1079	0.51	0/1440
57	YA	0.37	0/1534	0.52	0/2061
58	ZA	0.27	0/826	0.61	0/1106
59	AB	0.35	0/814	0.53	0/1077
60	BB	0.38	0/990	0.57	0/1317
61	CB	0.35	0/1952	0.49	0/2614
62	DB	0.41	0/3167	0.51	0/4238
63	EB	0.36	0/3133	0.49	0/4220
64	FB	0.37	0/1669	0.48	0/2236
65	GB	0.36	0/716	0.50	0/948
66	HB	0.34	0/1670	0.55	2/2237 (0.1%)
67	IB	0.44	0/238	0.65	0/302
68	JB	0.34	0/426	0.46	0/564
69	KB	0.35	0/1699	0.51	0/2269
70	LB	0.29	0/1737	0.53	0/2334
71	MB	0.40	0/893	0.56	0/1198
72	NB	0.31	0/565	0.56	0/753
73	OB	0.36	0/424	0.47	0/561
74	PB	0.40	0/894	0.57	0/1197
75	RB	0.43	0/75401	0.42	0/117598

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
76	SB	0.42	0/3809	0.42	0/5936
77	TB	0.41	0/2864	0.37	0/4464
78	al	0.44	0/165	0.42	0/256
79	bl	0.29	0/3503	0.54	1/4711 (0.0%)
80	cl	0.31	0/1534	0.43	0/2386
81	dl	0.41	0/68	0.46	0/103
All	All	0.38	0/215460	0.47	10/315917 (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
10	la	0	1
12	na	0	1
18	ta	0	2
25	bb	0	1
61	CB	0	1
71	MB	0	2
79	bl	0	2
All	All	0	10

There are no bond length outliers.

All (10) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
20	va	55	HIS	N-CA-C	-8.65	92.37	110.80
20	va	54	PRO	CA-C-N	8.53	137.83	121.54
20	va	54	PRO	C-N-CA	8.53	137.83	121.54
25	bb	207	LEU	N-CA-C	7.21	119.35	110.91
66	HB	205	PRO	CA-N-CD	-7.12	102.03	112.00
66	HB	211	PRO	CA-N-CD	-6.24	103.26	112.00
79	bl	232	ASP	N-CA-C	5.57	119.90	113.38
9	ka	98	LEU	CA-CB-CG	5.24	134.64	116.30
16	ra	51	LYS	CA-C-N	5.17	131.41	121.54
16	ra	51	LYS	C-N-CA	5.17	131.41	121.54

There are no chirality outliers.

All (10) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
61	CB	232	ARG	Peptide
71	MB	23	ARG	Peptide
71	MB	9	ARG	Peptide
25	bb	178	SER	Peptide
79	bl	360	ASP	Peptide
79	bl	424	ASP	Peptide
10	la	46	ARG	Peptide
12	na	137	THR	Peptide
18	ta	33	GLN	Peptide
18	ta	76	LEU	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	aa	36156	0	18230	714	0
2	ba	929	0	992	37	0
3	ca	1443	0	1478	51	0
4	da	703	0	701	41	0
5	ga	1070	0	1133	23	0
6	ha	2473	0	2406	137	0
7	ia	1673	0	1756	33	0
8	ja	2082	0	2171	58	0
9	ka	1516	0	1564	45	0
10	la	1119	0	1190	50	0
11	ma	806	0	863	32	0
12	na	941	0	977	31	0
13	oa	1114	0	1140	74	0
14	pa	1195	0	1287	19	0
15	qa	975	0	1024	41	0
16	ra	1065	0	1083	56	0
17	sa	807	0	863	42	0
18	ta	618	0	654	69	0
19	ua	513	0	551	24	0
20	va	1039	0	1063	56	0
21	wa	314	0	318	10	0
22	xa	546	0	564	14	0
23	ya	322	0	354	16	0
24	za	1609	0	1615	51	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
25	bb	1720	0	1793	69	0
26	cb	596	0	583	22	0
27	db	771	0	789	22	0
28	eb	1493	0	1559	54	0
29	fb	1660	0	1743	51	0
30	gb	1199	0	1287	62	0
31	hb	1389	0	1444	59	0
32	ib	1166	0	1232	31	0
33	AA	1847	0	1999	50	0
34	BA	1256	0	1309	23	0
35	CA	1090	0	1172	22	0
36	DA	1919	0	1941	33	0
37	EA	1332	0	1368	38	0
38	FA	1459	0	1534	36	0
39	GA	976	0	1038	19	0
40	HA	1720	0	1791	44	0
41	IA	1123	0	1169	19	0
42	JA	1487	0	1588	29	0
43	KA	2209	0	2215	35	0
44	LA	1414	0	1529	23	0
45	MA	1253	0	1281	21	0
46	NA	935	0	1011	17	0
47	OA	517	0	542	7	0
48	PA	1054	0	1140	32	0
49	QA	1125	0	1183	17	0
50	RA	757	0	784	18	0
51	SA	863	0	910	10	0
52	TA	1042	0	1119	21	0
53	UA	656	0	679	15	0
54	VA	452	0	479	9	0
55	WA	794	0	849	22	0
56	XA	1066	0	1157	25	0
57	YA	1496	0	1545	42	0
58	ZA	814	0	850	29	0
59	AB	803	0	890	26	0
60	BB	979	0	1074	35	0
61	CB	1917	0	2021	24	0
62	DB	3099	0	3206	73	0
63	EB	3075	0	3196	58	0
64	FB	1641	0	1760	40	0
65	GB	707	0	742	17	0
66	HB	1635	0	1700	34	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
67	IB	237	0	289	9	0
68	JB	420	0	460	3	0
69	KB	1670	0	1759	35	0
70	LB	1703	0	1792	41	0
71	MB	875	0	896	18	0
72	NB	557	0	599	15	0
73	OB	416	0	432	3	0
74	PB	879	0	961	24	0
75	RB	67383	0	34024	943	0
76	SB	3408	0	1732	75	0
77	TB	2561	0	1295	39	0
78	al	147	0	74	3	0
79	bl	3446	0	3415	112	0
80	cl	1622	0	842	32	0
81	dl	62	0	34	1	0
82	BA	1	0	0	0	0
82	DA	2	0	0	0	0
82	DB	1	0	0	0	0
82	FA	1	0	0	0	0
82	GA	1	0	0	0	0
82	JA	1	0	0	0	0
82	OB	1	0	0	0	0
82	PB	1	0	0	0	0
82	RB	209	0	0	0	0
82	TB	1	0	0	0	0
82	aa	83	0	0	0	0
82	cl	3	0	0	0	0
82	ja	1	0	0	0	0
82	ka	1	0	0	0	0
83	GB	1	0	0	0	0
83	WA	1	0	0	0	0
83	db	1	0	0	0	0
83	wa	1	0	0	0	0
All	All	201231	0	149782	3791	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 (3791) 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)
1:aa:68:A:N6	1:aa:84:G:H1	1.43	1.15
63:EB:143:ARG:HH21	63:EB:246:PRO:HG2	1.15	1.10
18:ta:46:ALA:HA	18:ta:50:LYS:HD2	1.34	1.06
11:ma:63:ARG:HD2	11:ma:95:ARG:HH11	1.25	0.97
77:TB:81:G:H1	77:TB:95:U:H3	1.00	0.96
36:DA:112:VAL:HG21	65:GB:79:VAL:HG13	1.48	0.95
74:PB:58:ARG:HD3	74:PB:59:PRO:HD2	1.48	0.95
75:RB:526:A:H61	75:RB:552:G:H1	1.14	0.95
75:RB:687:C:H42	75:RB:702:G:H22	0.96	0.92
75:RB:14:U:H3	76:SB:146:G:H1	1.19	0.90
29:fb:150:ARG:HB3	29:fb:232:TYR:CE1	2.06	0.90
1:aa:1221:A:H4'	4:da:44:LYS:HZ2	1.37	0.90
9:ka:161:ASN:OD1	18:ta:69:ARG:NH2	2.06	0.89
6:ha:116:LYS:NZ	15:qa:37:GLU:OE2	2.05	0.89
12:na:27:VAL:N	12:na:91:THR:HG1	1.71	0.89
79:bl:317:ALA:HB1	79:bl:388:CYS:H	1.36	0.89
1:aa:1687:G:H21	1:aa:1732:A:H62	1.13	0.88
43:KA:128:GLU:O	43:KA:163:LYS:NZ	2.07	0.88
75:RB:5:G:H1	76:SB:155:U:H3	1.15	0.88
63:EB:378:LYS:NZ	63:EB:382:GLN:OE1	2.06	0.88
70:LB:113:ASN:ND2	70:LB:202:LEU:O	2.07	0.88
79:bl:359:ARG:HG2	79:bl:361:PRO:HD3	1.54	0.88
1:aa:176:A:N1	30:gb:202:ARG:NH2	2.22	0.87
13:oa:59:LEU:HD22	13:oa:64:MET:HE2	1.57	0.87
46:NA:78:THR:HG22	46:NA:151:ILE:HG13	1.56	0.87
75:RB:687:C:H42	75:RB:702:G:N2	1.73	0.86
38:FA:93:PHE:HB2	38:FA:141:ASP:HB3	1.56	0.86
17:sa:90:ARG:NH2	17:sa:106:TYR:O	2.09	0.85
76:SB:81:U:H4'	76:SB:82:C:H5'	1.58	0.85
8:ja:45:ILE:HD11	8:ja:80:LYS:HB3	1.58	0.84
28:eb:121:ALA:O	28:eb:126:HIS:ND1	2.11	0.84
75:RB:1567:G:N1	75:RB:1572:C:N3	2.25	0.84
1:aa:713:C:O2	1:aa:746:A:N6	2.10	0.84
4:da:32:HIS:ND1	4:da:33:PRO:O	2.10	0.84
43:KA:110:LEU:HD22	43:KA:115:LEU:HD11	1.61	0.83
75:RB:3339:U:H6	75:RB:3340:G:H5''	1.44	0.83
75:RB:16:A:H61	76:SB:144:C:H42	1.26	0.82
75:RB:3315:G:H1	75:RB:3365:U:H3	1.27	0.82
43:KA:82:GLU:OE1	43:KA:108:ARG:NH2	2.12	0.82
75:RB:3304:U:H1'	75:RB:3305:A:H5'	1.59	0.82
18:ta:82:LYS:HD3	18:ta:101:ILE:HG21	1.61	0.82
1:aa:68:A:H61	1:aa:84:G:H1	0.86	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
75:RB:3222:U:O2	75:RB:3240:G:O6	1.98	0.81
75:RB:11:A:H61	76:SB:148:C:H42	1.27	0.81
1:aa:1241:G:H2'	1:aa:1242:A:H8	1.42	0.81
6:ha:232:LEU:HD22	6:ha:241:ARG:HE	1.45	0.81
11:ma:63:ARG:HD2	11:ma:95:ARG:NH1	1.93	0.81
75:RB:3158:G:H2'	75:RB:3159:C:O4'	1.80	0.81
79:bl:17:LYS:HA	79:bl:20:ILE:HD12	1.61	0.81
1:aa:1044:A:OP1	20:va:19:ARG:NH2	2.12	0.81
79:bl:132:THR:HG23	79:bl:135:LEU:HB3	1.63	0.81
58:ZA:99:ARG:NH1	75:RB:1679:U:O4	2.14	0.81
61:CB:46:ILE:HD12	61:CB:182:CYS:HB3	1.62	0.80
75:RB:1567:G:O6	75:RB:1572:C:N4	2.13	0.80
57:YA:147:SER:O	57:YA:148:LYS:HG3	1.81	0.80
76:SB:128:C:H5''	76:SB:130:G:H1'	1.63	0.80
4:da:3:ILE:HD12	4:da:41:GLN:HB3	1.62	0.80
75:RB:162:G:N2	75:RB:163:U:O4	2.15	0.80
69:KB:129:ARG:HG2	69:KB:130:ALA:H	1.46	0.79
74:PB:37:LYS:HG3	74:PB:58:ARG:NH2	1.97	0.79
50:RA:47:ILE:HD13	50:RA:94:LEU:HD23	1.65	0.79
79:bl:355:GLN:HG3	79:bl:357:ASN:H	1.47	0.79
66:HB:193:ASP:OD2	75:RB:1014:G:N2	2.15	0.79
71:MB:3:LYS:NZ	75:RB:3203:G:OP1	2.14	0.79
79:bl:38:MET:HE3	79:bl:47:VAL:HG21	1.64	0.79
13:oa:26:ILE:HD11	13:oa:54:LYS:HB2	1.63	0.79
13:oa:124:ARG:NH2	17:sa:132:TYR:OH	2.15	0.79
75:RB:1568:A:O2'	75:RB:1571:A:N6	2.16	0.79
75:RB:25:U:O2	75:RB:326:C:O2'	2.00	0.79
19:ua:35:MET:HE3	19:ua:60:MET:HE1	1.65	0.78
1:aa:1104:U:OP1	20:va:72:LYS:NZ	2.16	0.78
26:cb:12:TYR:HE1	29:fb:68:LEU:HA	1.48	0.78
75:RB:601:G:H2'	75:RB:602:G:H8	1.48	0.78
75:RB:526:A:N6	75:RB:552:G:H1	1.81	0.78
44:LA:115:ILE:HD12	44:LA:119:MET:HE2	1.65	0.78
48:PA:73:TYR:OH	76:SB:75:G:OP2	2.00	0.78
79:bl:315:MET:SD	79:bl:316:GLY:N	2.57	0.78
44:LA:67:HIS:NE2	75:RB:2095:C:OP1	2.17	0.78
62:DB:57:VAL:HG12	62:DB:362:PHE:HB3	1.66	0.78
75:RB:2621:G:H21	75:RB:2623:C:H5	1.32	0.78
1:aa:1687:G:N2	1:aa:1732:A:H62	1.81	0.78
25:bb:144:LYS:HE3	25:bb:208:GLN:HB3	1.64	0.78
60:BB:99:ASP:OD2	60:BB:103:ARG:NH1	2.16	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
75:RB:522:C:H3'	75:RB:523:C:H5''	1.66	0.77
31:hb:66:PRO:HA	31:hb:98:THR:HG22	1.67	0.77
70:LB:81:LEU:HD13	70:LB:125:VAL:HG11	1.66	0.77
1:aa:789:C:HO2'	1:aa:790:U:H6	1.32	0.77
49:QA:139:LYS:HD2	75:RB:441:G:H5''	1.66	0.77
1:aa:1389:G:OP1	11:ma:93:HIS:ND1	2.16	0.77
29:fb:112:VAL:HG11	29:fb:139:ILE:HD13	1.66	0.77
6:ha:261:TYR:HB3	6:ha:276:LEU:HB2	1.67	0.77
57:YA:93:TYR:OH	57:YA:95:GLU:OE2	2.01	0.77
61:CB:175:LEU:O	61:CB:177:LYS:N	2.18	0.77
1:aa:1367:U:O2'	1:aa:1368:C:O2	2.02	0.77
1:aa:1507:G:OP1	16:ra:134:ARG:NH1	2.15	0.77
40:HA:146:PRO:HG3	60:BB:103:ARG:HB3	1.67	0.77
75:RB:687:C:N4	75:RB:702:G:H22	1.80	0.77
79:bl:359:ARG:HG3	79:bl:366:GLU:HG2	1.66	0.77
1:aa:814:C:H2'	1:aa:815:A:H8	1.49	0.76
16:ra:124:GLY:O	16:ra:139:GLN:NE2	2.19	0.76
31:hb:30:LEU:O	31:hb:34:ASN:ND2	2.18	0.76
30:gb:26:ASN:HB2	30:gb:40:LEU:HD22	1.65	0.76
9:ka:124:ILE:HD11	19:ua:44:VAL:HG21	1.67	0.76
42:JA:89:GLN:NE2	75:RB:788:G:O6	2.19	0.76
1:aa:643:U:H3	31:hb:104:PRO:HD3	1.51	0.76
1:aa:1221:A:H4'	4:da:44:LYS:NZ	2.00	0.76
60:BB:111:ARG:HH12	69:KB:88:LYS:HD3	1.50	0.76
1:aa:1596:G:H1	1:aa:1616:U:H3	1.33	0.75
4:da:11:ILE:HG21	4:da:45:LEU:HD11	1.67	0.75
11:ma:24:VAL:HG13	11:ma:25:GLN:HG2	1.68	0.75
25:bb:143:THR:HB	25:bb:205:PHE:CE2	2.21	0.75
66:HB:162:ARG:NH2	75:RB:1208:A:OP1	2.16	0.75
1:aa:1100:U:H2'	20:va:11:ARG:HH11	1.49	0.75
6:ha:187:ARG:NH2	6:ha:206:HIS:HB2	2.01	0.75
80:cl:47:H2U:OP2	80:cl:47:H2U:H4'	1.86	0.75
56:XA:41:PRO:HD3	56:XA:75:MET:HE1	1.68	0.75
75:RB:1543:A:H2	75:RB:1559:G:H1	1.34	0.75
18:ta:45:GLN:HB2	18:ta:50:LYS:HE3	1.69	0.75
75:RB:1755:A:C2	75:RB:1764:G:N1	2.53	0.75
25:bb:38:PHE:CG	25:bb:73:LEU:HD21	2.22	0.75
1:aa:146:A:H62	1:aa:164:C:N4	1.84	0.75
75:RB:1019:A:H8	75:RB:1021:U:H5''	1.51	0.75
23:ya:29:GLN:O	23:ya:31:ARG:NH1	2.20	0.74
1:aa:856:G:H2'	1:aa:857:A:H8	1.50	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:aa:1691:C:HO2'	1:aa:1692:G:H8	1.35	0.74
6:ha:56:GLN:HB2	6:ha:59:SER:HB2	1.69	0.74
63:EB:214:TYR:HB3	63:EB:221:ILE:HD11	1.68	0.74
69:KB:61:GLN:HE21	75:RB:74:G:H1'	1.51	0.74
15:qa:84:PHE:HB3	24:za:209:ARG:HH12	1.53	0.74
65:GB:36:LYS:HG2	65:GB:48:LYS:HE3	1.68	0.74
75:RB:2206:A:H2'	75:RB:2207:A:C8	2.22	0.74
6:ha:116:LYS:HG2	6:ha:117:ASP:H	1.51	0.74
52:TA:101:VAL:O	52:TA:126:ARG:NH1	2.20	0.74
75:RB:2178:G:O2'	75:RB:2307:U:OP2	2.05	0.74
75:RB:3303:A:N3	75:RB:3377:A:O2'	2.21	0.74
4:da:11:ILE:HG13	4:da:45:LEU:HD21	1.68	0.74
6:ha:67:ARG:NH1	6:ha:102:LEU:O	2.20	0.74
2:ba:69:HIS:HE2	2:ba:76:THR:HG23	1.52	0.74
10:la:53:LYS:HD2	10:la:85:TYR:HE1	1.52	0.74
75:RB:1233:G:O6	75:RB:1285:U:O2	2.06	0.74
1:aa:839:G:H21	1:aa:840:U:H5'	1.53	0.74
40:HA:39:ILE:HG13	40:HA:61:VAL:HG13	1.69	0.74
59:AB:87:LYS:NZ	75:RB:307:C:OP1	2.15	0.74
75:RB:3088:C:O2'	75:RB:3090:G:OP2	2.04	0.74
1:aa:1399:G:N1	1:aa:1411:C:N3	2.28	0.73
1:aa:1500:A:N6	1:aa:1520:G:N7	2.37	0.73
6:ha:43:LEU:HB3	6:ha:69:LEU:HB2	1.70	0.73
75:RB:440:U:O2'	75:RB:497:G:N2	2.22	0.73
1:aa:1425:G:O3'	21:wa:54:LYS:NZ	2.22	0.73
6:ha:117:ASP:OD1	6:ha:118:VAL:N	2.20	0.73
8:ja:87:MET:HE2	8:ja:123:LEU:HB2	1.69	0.73
75:RB:18:G:H1	76:SB:142:G:H1	1.37	0.73
75:RB:1755:A:H2	75:RB:1764:G:H1	1.29	0.73
1:aa:499:A:C5	1:aa:500:G:H1'	2.24	0.73
1:aa:1386:U:OP1	10:la:18:ARG:NH2	2.21	0.73
1:aa:1501:G:H1'	1:aa:1502:C:H5	1.53	0.73
13:oa:38:ARG:NH1	16:ra:57:GLU:OE2	2.22	0.73
62:DB:369:PHE:CE2	75:RB:3365:U:H1'	2.23	0.73
63:EB:40:ILE:HG13	63:EB:250:LEU:HD21	1.71	0.73
75:RB:18:G:N2	76:SB:142:G:H22	1.86	0.73
75:RB:3193:C:H4'	75:RB:3194:C:C5	2.24	0.72
10:la:19:LYS:HG3	10:la:20:LYS:H	1.54	0.72
13:oa:68:MET:O	13:oa:72:HIS:ND1	2.22	0.72
16:ra:31:TYR:HD2	16:ra:147:VAL:HG11	1.55	0.72
63:EB:390:TYR:HB2	63:EB:402:VAL:HG21	1.71	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:aa:901:U:O2	12:na:55:ARG:NH2	2.23	0.72
58:ZA:98:VAL:HG23	58:ZA:99:ARG:H	1.53	0.72
9:ka:46:PRO:HB3	9:ka:65:ILE:HG23	1.70	0.72
1:aa:136:U:H6	1:aa:176:A:H4'	1.54	0.72
1:aa:1187:A:H2'	1:aa:1188:A:C8	2.25	0.72
39:GA:15:ARG:HB2	75:RB:3036:A:H5''	1.71	0.72
25:bb:48:VAL:HG22	25:bb:64:ARG:HH21	1.53	0.72
75:RB:1250:G:H5'	75:RB:1254:A:H61	1.54	0.72
13:oa:55:ARG:HH21	18:ta:34:LYS:HE2	1.53	0.72
79:bl:395:ASN:HB3	79:bl:401:SER:HA	1.70	0.72
1:aa:824:U:O2	1:aa:858:G:N2	2.23	0.72
3:ca:79:LEU:HD12	3:ca:103:VAL:HG21	1.69	0.72
1:aa:1399:G:N2	1:aa:1411:C:O2	2.17	0.71
69:KB:62:THR:O	69:KB:64:LYS:N	2.22	0.71
75:RB:1659:G:H22	75:RB:1783:G:N2	1.87	0.71
75:RB:3304:U:C6	75:RB:3305:A:H2'	2.24	0.71
28:eb:111:LEU:HB2	28:eb:148:PHE:HB3	1.72	0.71
1:aa:643:U:H1'	31:hb:119:LEU:HD22	1.71	0.71
43:KA:139:ARG:HH21	75:RB:1082:U:H3'	1.55	0.71
79:bl:334:LEU:HB2	79:bl:343:ILE:HB	1.71	0.71
6:ha:174:ASN:HD21	6:ha:177:ALA:HB3	1.54	0.71
30:gb:33:SER:N	30:gb:52:ILE:O	2.21	0.71
75:RB:2144:G:O2'	75:RB:2182:U:OP1	2.08	0.71
4:da:58:THR:HG21	7:ia:28:GLU:HG2	1.71	0.71
75:RB:2300:G:O2'	75:RB:2303:U:OP2	2.08	0.71
1:aa:808:G:H21	20:va:106:PRO:HG3	1.56	0.71
18:ta:81:ILE:HG13	18:ta:84:LEU:HB3	1.70	0.71
1:aa:127:G:O2'	30:gb:202:ARG:NH1	2.24	0.71
79:bl:39:PRO:HD2	79:bl:42:ASP:OD2	1.91	0.71
79:bl:395:ASN:ND2	79:bl:400:GLY:O	2.24	0.71
1:aa:451:U:OP1	8:ja:49:ARG:NH2	2.24	0.70
1:aa:712:U:OP2	1:aa:745:C:N4	2.24	0.70
1:aa:1627:C:H2'	1:aa:1628:C:H6	1.56	0.70
75:RB:556:U:H2'	75:RB:557:C:C6	2.26	0.70
9:ka:27:ASP:HB2	9:ka:113:ILE:HD11	1.73	0.70
43:KA:107:ARG:NH1	43:KA:168:GLY:O	2.24	0.70
75:RB:3185:U:O2'	75:RB:3186:U:O5'	2.09	0.70
38:FA:70:ARG:NH1	75:RB:3110:A:OP1	2.23	0.70
75:RB:1643:A:O2'	75:RB:1804:G:N2	2.23	0.70
79:bl:305:GLY:O	79:bl:309:THR:OG1	2.05	0.70
75:RB:117:U:OP1	75:RB:118:G:N2	2.24	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:aa:541:G:O2'	1:aa:547:C:N4	2.24	0.70
7:ia:142:LEU:HD22	7:ia:150:MET:HE1	1.72	0.70
3:ca:156:ASN:OD1	3:ca:157:ASN:N	2.23	0.70
59:AB:53:PHE:HE1	59:AB:93:MET:HE1	1.57	0.70
2:ba:55:VAL:HG21	2:ba:61:ILE:HD11	1.72	0.70
13:oa:12:ILE:HD11	13:oa:19:ASN:HB3	1.73	0.70
75:RB:3223:C:H2'	75:RB:3224:C:C6	2.27	0.70
16:ra:53:ALA:HB3	16:ra:56:LYS:HG2	1.73	0.70
37:EA:21:LEU:HD11	37:EA:81:LEU:HD21	1.74	0.70
1:aa:287:C:H2'	1:aa:288:G:C8	2.25	0.70
1:aa:890:G:H2'	1:aa:891:U:C6	2.27	0.70
6:ha:72:HIS:ND1	6:ha:92:SER:OG	2.23	0.70
38:FA:44:ASP:HB3	38:FA:57:ASP:HB2	1.73	0.70
63:EB:143:ARG:HH12	75:RB:1388:C:H5'	1.57	0.70
75:RB:430:G:H1	75:RB:631:U:H3	1.38	0.70
1:aa:1222:G:OP2	4:da:44:LYS:NZ	2.23	0.69
75:RB:3265:C:H3'	75:RB:3266:A:H8	1.57	0.69
48:PA:30:MET:HB3	48:PA:100:PRO:HG2	1.75	0.69
70:LB:107:THR:HG22	70:LB:109:PRO:HA	1.74	0.69
70:LB:158:THR:HA	70:LB:162:LEU:HD23	1.74	0.69
74:PB:76:ARG:NH1	75:RB:1636:C:OP2	2.24	0.69
1:aa:1046:G:H2'	1:aa:1047:G:C8	2.27	0.69
11:ma:59:LYS:HB3	11:ma:98:ASP:HB2	1.72	0.69
56:XA:31:VAL:HG11	56:XA:35:ARG:HH12	1.57	0.69
1:aa:1176:A:H2'	1:aa:1177:G:H8	1.57	0.69
63:EB:315:ARG:NH2	75:RB:1364:C:OP1	2.26	0.69
1:aa:261:C:H2'	1:aa:262:U:C6	2.28	0.69
42:JA:54:MET:O	42:JA:59:ARG:NH2	2.26	0.69
59:AB:78:ARG:NH2	75:RB:2210:U:OP2	2.25	0.69
79:bl:318:VAL:HG12	79:bl:414:LEU:HD13	1.75	0.69
44:LA:84:THR:HG22	44:LA:86:GLU:H	1.58	0.69
54:VA:23:ILE:HD11	54:VA:28:ARG:HE	1.57	0.69
75:RB:169:G:N1	75:RB:246:C:O2	2.26	0.69
13:oa:55:ARG:HE	18:ta:34:LYS:HE3	1.56	0.69
1:aa:1024:A:OP1	14:pa:106:ARG:NH2	2.23	0.69
1:aa:1176:A:H2'	1:aa:1177:G:C8	2.28	0.69
22:xa:69:THR:HG23	22:xa:71:GLY:H	1.58	0.69
30:gb:32:ILE:HG12	30:gb:54:GLY:H	1.57	0.69
37:EA:51:LYS:HA	37:EA:66:LYS:HA	1.74	0.69
40:HA:179:HIS:O	40:HA:180:ARG:HB2	1.93	0.69
42:JA:68:VAL:HG21	42:JA:94:ILE:HG22	1.73	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:AB:23:ARG:NH1	69:KB:78:GLU:OE1	2.26	0.69
77:TB:93:U:H2'	77:TB:94:C:C6	2.28	0.69
75:RB:441:G:O6	75:RB:496:U:O2	2.11	0.69
28:eb:59:ARG:HD3	29:fb:183:PRO:HG3	1.74	0.69
30:gb:13:GLN:N	30:gb:13:GLN:HE21	1.91	0.69
38:FA:71:THR:HG21	75:RB:3118:A:N1	2.08	0.69
1:aa:518:G:HO2'	1:aa:519:A:H8	1.40	0.68
34:BA:103:GLU:OE2	34:BA:107:GLN:NE2	2.26	0.68
63:EB:162:GLU:OE2	63:EB:216:THR:OG1	2.09	0.68
75:RB:296:C:H5'	75:RB:297:G:H5'	1.75	0.68
1:aa:279:C:O2'	1:aa:281:U:OP2	2.08	0.68
6:ha:296:MET:HG3	6:ha:297:LEU:HD23	1.74	0.68
11:ma:57:LYS:HB2	11:ma:100:VAL:HB	1.75	0.68
48:PA:54:GLU:HB3	48:PA:107:LYS:HB3	1.74	0.68
75:RB:10:C:H42	76:SB:149:U:H3	1.39	0.68
1:aa:1541:C:H5''	18:ta:76:LEU:HD21	1.75	0.68
6:ha:44:LEU:HD13	6:ha:68:ARG:HH21	1.58	0.68
1:aa:1557:C:OP1	13:oa:88:LYS:NZ	2.25	0.68
6:ha:235:ASP:HB3	6:ha:240:LYS:HB2	1.75	0.68
75:RB:1261:C:N4	75:RB:1265:G:OP2	2.27	0.68
79:bl:327:LEU:HD11	79:bl:410:ILE:HD11	1.76	0.68
15:qa:82:MET:SD	24:za:89:ARG:NH1	2.67	0.68
33:AA:151:HIS:CE1	33:AA:177:LYS:HG3	2.29	0.68
72:NB:33:LYS:NZ	75:RB:1748:A:OP2	2.20	0.68
80:cl:37:MIA:H131	80:cl:37:MIA:N1	2.08	0.68
75:RB:1031:A:N6	75:RB:1033:G:N3	2.42	0.68
6:ha:294:LYS:HG2	6:ha:295:GLN:H	1.59	0.68
8:ja:256:ASP:HA	8:ja:259:ALA:HB3	1.76	0.68
32:ib:4:GLN:NE2	32:ib:10:LEU:O	2.27	0.68
55:WA:98:LYS:HD2	75:RB:2653:A:H4'	1.76	0.68
66:HB:87:LEU:HD11	66:HB:136:LEU:HD22	1.76	0.68
75:RB:2151:G:N2	75:RB:2170:G:O2'	2.26	0.68
1:aa:1465:C:OP2	13:oa:136:THR:OG1	2.10	0.68
15:qa:82:MET:O	24:za:89:ARG:NH1	2.27	0.68
75:RB:1556:G:O2'	75:RB:1558:A:N1	2.27	0.68
75:RB:2539:C:O2'	75:RB:2540:C:OP1	2.11	0.68
1:aa:284:U:H5''	1:aa:285:G:H8	1.58	0.68
1:aa:1725:C:H4'	1:aa:1726:G:OP1	1.94	0.68
35:CA:9:LYS:HG2	35:CA:86:THR:HG22	1.75	0.68
9:ka:98:LEU:HD12	18:ta:61:ILE:HD12	1.74	0.67
17:sa:87:THR:HG22	17:sa:89:LEU:H	1.57	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:CA:116:LYS:NZ	35:CA:120:GLU:OE2	2.27	0.67
67:IB:25:LYS:HD2	75:RB:1919:C:H5''	1.75	0.67
77:TB:28:U:H3	77:TB:51:G:H1	1.41	0.67
75:RB:2419:U:H3	75:RB:2600:G:H1	1.41	0.67
1:aa:1343:C:O2'	1:aa:1345:G:N7	2.26	0.67
1:aa:1572:U:H2'	1:aa:1573:C:C6	2.29	0.67
13:oa:34:LYS:HB2	13:oa:100:SER:HA	1.75	0.67
42:JA:90:ARG:HH22	75:RB:788:G:H5''	1.58	0.67
1:aa:1687:G:H21	1:aa:1732:A:N6	1.91	0.67
62:DB:201:PHE:HE2	62:DB:206:VAL:HG22	1.59	0.67
70:LB:60:THR:HG21	75:RB:613:G:H2'	1.76	0.67
1:aa:500:G:H2'	1:aa:501:U:H4'	1.75	0.67
1:aa:1379:U:H2'	1:aa:1380:A:C8	2.29	0.67
65:GB:49:ARG:NH2	75:RB:1789:C:OP2	2.23	0.67
18:ta:32:LYS:HB3	18:ta:35:GLU:HB2	1.76	0.67
18:ta:96:HIS:CG	18:ta:97:SER:H	2.12	0.67
57:YA:18:THR:OG1	57:YA:20:GLY:O	2.09	0.67
75:RB:1564:C:H2'	75:RB:1565:G:C8	2.29	0.67
8:ja:204:THR:HG22	8:ja:205:PHE:H	1.58	0.67
24:za:76:GLN:O	24:za:101:ASN:ND2	2.27	0.67
1:aa:68:A:N1	1:aa:84:G:N2	2.38	0.67
7:ia:40:ARG:HB3	7:ia:47:GLU:HB2	1.77	0.67
11:ma:76:SER:O	21:wa:40:ARG:NH2	2.28	0.67
18:ta:78:ARG:HA	18:ta:81:ILE:HG22	1.77	0.67
26:cb:16:LYS:HG2	26:cb:23:ILE:HD13	1.75	0.67
1:aa:873:G:H1	1:aa:965:U:H3	1.41	0.67
23:ya:27:LYS:HD2	23:ya:28:LYS:N	2.10	0.67
44:LA:78:TYR:OH	75:RB:2098:A:OP1	2.12	0.67
75:RB:1250:G:O2'	75:RB:1251:U:O5'	2.12	0.67
1:aa:425:A:OP1	30:gb:95:ARG:NH1	2.28	0.66
20:va:95:THR:HG23	20:va:97:GLN:H	1.58	0.66
31:hb:61:VAL:HB	31:hb:93:VAL:HG12	1.76	0.66
69:KB:58:VAL:HB	75:RB:74:G:H5''	1.78	0.66
78:al:6:A:H62	79:bl:57:THR:HG22	1.59	0.66
1:aa:1349:A:H5'	11:ma:59:LYS:HD2	1.77	0.66
75:RB:1947:U:H2'	75:RB:1948:G:C8	2.30	0.66
75:RB:3202:C:H4'	75:RB:3203:G:H5'	1.77	0.66
18:ta:42:LEU:HA	18:ta:46:ALA:HB3	1.75	0.66
31:hb:30:LEU:HD23	31:hb:41:LEU:HD22	1.78	0.66
59:AB:69:ASP:OD1	59:AB:70:LYS:N	2.28	0.66
62:DB:243:ARG:NH2	75:RB:1903:C:O2	2.28	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:LB:110:PHE:HE1	75:RB:3253:A:H2'	1.59	0.66
36:DA:204:MET:HG2	75:RB:917:A:C2	2.30	0.66
58:ZA:109:LYS:O	58:ZA:112:ASN:N	2.27	0.66
59:AB:97:LEU:HD11	59:AB:101:ARG:HD3	1.77	0.66
62:DB:369:PHE:CZ	75:RB:3365:U:H1'	2.30	0.66
79:bl:90:ASN:HD21	79:bl:116:PHE:HA	1.60	0.66
1:aa:1550:G:H22	1:aa:1576:C:H1'	1.60	0.66
2:ba:30:LEU:HD21	2:ba:49:LEU:HD21	1.76	0.66
63:EB:378:LYS:HE3	75:RB:547:C:H5''	1.78	0.66
75:RB:18:G:H22	76:SB:142:G:N2	1.93	0.66
48:PA:73:TYR:HE2	48:PA:76:ARG:HG3	1.61	0.66
1:aa:109:A:H2'	1:aa:110:G:C8	2.31	0.66
1:aa:1374:G:H5''	16:ra:81:GLN:HE22	1.61	0.66
1:aa:1592:G:N7	10:la:20:LYS:HE2	2.11	0.66
31:hb:160:ARG:O	31:hb:164:GLU:HG3	1.96	0.66
40:HA:50:ARG:NH2	75:RB:266:A:OP1	2.29	0.66
55:WA:17:CYS:SG	55:WA:76:SER:OG	2.54	0.66
62:DB:209:GLU:HA	62:DB:288:MET:HE1	1.78	0.66
62:DB:376:THR:OG1	62:DB:378:ASP:OD1	2.11	0.66
1:aa:1092:A:H2'	1:aa:1093:A:C8	2.30	0.66
1:aa:1479:U:O2'	9:ka:77:ARG:NH1	2.29	0.66
13:oa:80:PRO:HD2	13:oa:83:PHE:HD2	1.60	0.66
75:RB:1019:A:C8	75:RB:1021:U:H5''	2.30	0.66
76:SB:130:G:H2'	76:SB:131:G:C8	2.31	0.66
9:ka:47:HIS:ND1	10:la:85:TYR:OH	2.28	0.66
45:MA:108:LEU:HD23	45:MA:113:LEU:HD21	1.77	0.66
1:aa:178:A:H3'	1:aa:179:A:H4'	1.78	0.65
79:bl:348:ASN:OD1	79:bl:349:LYS:NZ	2.28	0.65
46:NA:83:MET:HE1	46:NA:151:ILE:HG12	1.79	0.65
80:cl:3:C:H2'	80:cl:4:A:C8	2.31	0.65
1:aa:517:U:H2'	1:aa:518:G:C8	2.31	0.65
10:la:35:ILE:HA	10:la:71:MET:HB2	1.78	0.65
43:KA:139:ARG:NH2	75:RB:1083:C:OP2	2.30	0.65
63:EB:143:ARG:NH2	63:EB:246:PRO:HG2	2.01	0.65
1:aa:1541:C:H4'	1:aa:1547:G:C6	2.32	0.65
6:ha:126:ASP:HB3	6:ha:128:ARG:HE	1.62	0.65
1:aa:818:A:N6	1:aa:864:A:OP2	2.29	0.65
45:MA:18:MET:HE1	45:MA:20:ARG:HG3	1.78	0.65
65:GB:88:GLU:HA	65:GB:91:GLU:HB2	1.76	0.65
75:RB:3338:U:H2'	75:RB:3339:U:H5''	1.78	0.65
3:ca:159:GLN:O	3:ca:162:LEU:N	2.29	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:da:10:GLU:HA	4:da:13:LYS:HD3	1.77	0.65
9:ka:89:ILE:HG22	9:ka:93:MET:HE2	1.79	0.65
41:IA:94:LYS:HG2	69:KB:166:VAL:HG12	1.78	0.65
48:PA:111:ASP:OD1	76:SB:85:G:N1	2.30	0.65
12:na:57:THR:HG23	12:na:60:MET:HE3	1.78	0.65
20:va:47:LYS:HG2	20:va:48:ASN:H	1.61	0.65
45:MA:62:ARG:NH1	75:RB:410:G:OP1	2.30	0.65
66:HB:93:PRO:HB2	66:HB:125:THR:HG22	1.78	0.65
75:RB:1641:G:OP1	75:RB:1816:U:O2'	2.13	0.65
75:RB:1693:A:H2'	75:RB:1694:A:C8	2.32	0.65
57:YA:70:ASN:O	57:YA:75:LYS:NZ	2.29	0.65
75:RB:1205:C:H42	75:RB:2854:C:H5''	1.61	0.65
75:RB:1701:G:O2'	75:RB:1737:C:N4	2.30	0.65
1:aa:515:A:H5''	28:eb:174:VAL:HG13	1.78	0.65
1:aa:716:A:O2'	1:aa:717:G:N2	2.29	0.65
6:ha:141:LEU:HD23	6:ha:141:LEU:H	1.61	0.65
28:eb:137:ARG:HB3	28:eb:142:ILE:HD13	1.79	0.65
44:LA:96:MET:HE1	75:RB:1660:C:H5''	1.78	0.65
75:RB:1571:A:O2'	75:RB:1572:C:O5'	2.14	0.65
15:qa:88:LYS:HG2	15:qa:89:SER:H	1.62	0.64
75:RB:1577:A:H5''	75:RB:1579:C:H5	1.60	0.64
1:aa:279:C:H2'	1:aa:282:C:C2	2.32	0.64
1:aa:494:G:C8	1:aa:495:C:H5	2.16	0.64
3:ca:63:THR:HG22	3:ca:78:ARG:HG2	1.79	0.64
6:ha:271:ILE:HD11	6:ha:299:CYS:HB3	1.77	0.64
7:ia:38:GLU:HB3	7:ia:49:ILE:HB	1.80	0.64
6:ha:276:LEU:O	6:ha:279:LYS:NZ	2.27	0.64
14:pa:13:SER:O	22:xa:22:LYS:NZ	2.31	0.64
25:bb:190:PRO:HG2	25:bb:192:VAL:HG23	1.78	0.64
34:BA:149:VAL:O	57:YA:29:MET:HG2	1.98	0.64
66:HB:114:GLY:HA2	75:RB:2861:A:H5''	1.79	0.64
71:MB:72:ILE:HD11	71:MB:94:LEU:HD23	1.79	0.64
13:oa:124:ARG:HG2	13:oa:131:VAL:HA	1.78	0.64
40:HA:155:VAL:HG22	75:RB:57:G:H4'	1.80	0.64
74:PB:72:ARG:NH2	75:RB:1817:U:O2	2.30	0.64
75:RB:1247:G:N2	75:RB:1274:A:H2'	2.12	0.64
1:aa:1489:A:N3	1:aa:1615:G:O2'	2.25	0.64
8:ja:89:ILE:HD13	8:ja:119:ALA:HA	1.79	0.64
35:CA:55:ARG:NE	75:RB:2558:G:OP1	2.30	0.64
55:WA:13:LYS:HD2	75:RB:2714:U:H4'	1.79	0.64
79:bl:217:THR:HG23	79:bl:219:GLN:H	1.60	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:aa:128:G:O6	1:aa:177:C:N4	2.31	0.64
1:aa:1485:A:N3	16:ra:25:HIS:HE1	1.96	0.64
38:FA:172:ARG:NH2	75:RB:2895:G:OP2	2.31	0.64
75:RB:207:U:O2'	75:RB:209:G:OP2	2.16	0.64
48:PA:47:ILE:HD13	48:PA:114:ARG:HH21	1.62	0.64
75:RB:3162:G:H1	75:RB:3268:C:H42	1.46	0.64
79:bl:10:ASN:HA	79:bl:13:MET:HG2	1.80	0.64
1:aa:1393:G:OP1	15:qa:32:LYS:NZ	2.30	0.64
12:na:113:GLN:HG3	27:db:45:VAL:HG12	1.78	0.64
75:RB:1755:A:H2	75:RB:1764:G:H22	1.46	0.64
79:bl:119:ILE:HG22	79:bl:138:LEU:HD13	1.80	0.64
1:aa:124:G:H21	8:ja:146:THR:HG21	1.63	0.64
62:DB:312:MET:HE1	62:DB:374:PHE:HB2	1.80	0.64
1:aa:370:A:OP1	1:aa:764:U:O2'	2.13	0.64
63:EB:236:VAL:HG11	63:EB:263:LYS:HD2	1.79	0.64
75:RB:1578:U:H4'	75:RB:1579:C:OP2	1.98	0.64
75:RB:2422:G:H2'	75:RB:2423:A:C8	2.33	0.64
16:ra:126:ILE:HG22	16:ra:136:ILE:HD12	1.79	0.63
1:aa:1231:A:O4'	1:aa:1260:A:N6	2.31	0.63
31:hb:160:ARG:NH1	31:hb:161:ASN:OD1	2.31	0.63
37:EA:158:LYS:HG2	37:EA:162:MET:HE3	1.80	0.63
38:FA:133:ILE:HD11	38:FA:143:ILE:HD12	1.79	0.63
75:RB:647:U:O2'	75:RB:1156:A:N1	2.27	0.63
76:SB:124:C:H2'	76:SB:125:C:C6	2.34	0.63
80:cl:1:A:H2'	80:cl:2:U:C6	2.34	0.63
12:na:27:VAL:N	12:na:91:THR:OG1	2.31	0.63
18:ta:34:LYS:HD3	18:ta:76:LEU:HG	1.79	0.63
42:JA:13:ARG:NH2	75:RB:1109:G:O6	2.32	0.63
75:RB:1177:G:H2'	75:RB:1178:C:C6	2.34	0.63
75:RB:2131:U:H5	75:RB:2136:A:N7	1.96	0.63
1:aa:856:G:H2'	1:aa:857:A:C8	2.33	0.63
1:aa:1241:G:H2'	1:aa:1242:A:C8	2.31	0.63
8:ja:252:GLN:OE1	8:ja:255:ARG:NH1	2.30	0.63
57:YA:47:LEU:HD12	57:YA:51:LYS:HB2	1.80	0.63
75:RB:305:G:O2'	75:RB:2216:A:N3	2.27	0.63
75:RB:1198:G:H2'	75:RB:1199:A:C8	2.33	0.63
75:RB:1249:A:H5'	75:RB:1250:G:H5''	1.81	0.63
75:RB:1578:U:H5'	75:RB:1579:C:C5	2.34	0.63
79:bl:320:THR:HA	79:bl:389:THR:HB	1.81	0.63
1:aa:1372:C:OP1	10:la:72:ARG:NH1	2.31	0.63
37:EA:98:PHE:HB2	37:EA:158:LYS:HE3	1.81	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:IA:42:ARG:NH2	75:RB:2797:G:O6	2.30	0.63
43:KA:104:LEU:HD13	43:KA:246:ILE:HG23	1.81	0.63
62:DB:92:TYR:OH	75:RB:2999:G:O2'	2.13	0.63
79:bl:117:LYS:NZ	79:bl:141:SER:O	2.29	0.63
1:aa:788:G:H4'	1:aa:789:C:H5''	1.79	0.63
1:aa:1162:A:O2'	1:aa:1163:C:OP1	2.13	0.63
75:RB:175:G:H2'	75:RB:176:A:C8	2.34	0.63
1:aa:129:U:O3'	1:aa:134:G:N2	2.25	0.63
1:aa:324:U:H3	75:RB:1914:C:H5''	1.63	0.63
1:aa:492:G:H1	1:aa:503:U:H1'	1.62	0.63
3:ca:107:ALA:HB2	3:ca:184:LEU:HG	1.80	0.63
19:ua:34:VAL:HG22	19:ua:47:VAL:HG12	1.81	0.63
42:JA:27:LYS:NZ	75:RB:1360:U:O4	2.32	0.63
75:RB:2581:G:H5'	75:RB:2582:G:OP2	1.98	0.63
79:bl:319:GLU:HG3	79:bl:415:ARG:HA	1.81	0.63
20:va:9:ALA:HA	20:va:26:LEU:HD22	1.81	0.63
30:gb:199:LYS:O	30:gb:202:ARG:HG2	1.98	0.63
43:KA:287:LEU:HD13	66:HB:206:ILE:HG22	1.80	0.63
75:RB:3221:G:N2	75:RB:3241:U:O2	2.25	0.63
77:TB:3:A:H2'	77:TB:4:U:C6	2.33	0.63
1:aa:16:G:H2'	1:aa:17:C:C6	2.34	0.63
1:aa:336:U:OP1	3:ca:57:ARG:NH2	2.31	0.63
7:ia:45:ARG:HD2	7:ia:85:GLU:HG3	1.80	0.63
75:RB:6:A:H2	76:SB:154:G:H22	1.46	0.63
1:aa:323:U:H4'	1:aa:327:A:C8	2.34	0.62
25:bb:90:ASP:HB2	25:bb:223:PHE:HZ	1.64	0.62
25:bb:175:GLN:O	25:bb:187:LYS:NZ	2.32	0.62
31:hb:44:LEU:HA	31:hb:69:LEU:HD13	1.81	0.62
75:RB:635:U:H2'	75:RB:636:C:C6	2.34	0.62
75:RB:1549:A:O2'	75:RB:1550:A:OP1	2.17	0.62
80:cl:56:C:H3'	80:cl:57:G:C8	2.34	0.62
16:ra:31:TYR:CD2	16:ra:147:VAL:HG11	2.33	0.62
18:ta:84:LEU:HD12	18:ta:87:ARG:HE	1.64	0.62
37:EA:32:LEU:HD23	37:EA:66:LYS:HE2	1.81	0.62
64:FB:26:SER:OG	75:RB:1184:U:O4	2.15	0.62
75:RB:3237:G:H2'	75:RB:3238:C:C2	2.34	0.62
16:ra:51:LYS:O	16:ra:52:THR:HG22	1.99	0.62
33:AA:208:SER:O	33:AA:212:GLU:HG2	1.98	0.62
48:PA:75:ARG:NE	54:VA:31:THR:OG1	2.30	0.62
59:AB:35:LYS:NZ	59:AB:36:GLY:O	2.29	0.62
1:aa:189:U:O4	3:ca:156:ASN:ND2	2.33	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:aa:645:G:H1	1:aa:706:U:H3	1.47	0.62
10:la:56:GLU:OE1	10:la:88:ARG:HD2	2.00	0.62
25:bb:163:GLN:HG2	25:bb:166:ARG:HH22	1.64	0.62
40:HA:145:ASP:HB3	40:HA:148:ILE:HG22	1.81	0.62
42:JA:78:ILE:HG12	42:JA:98:LYS:HE2	1.81	0.62
47:OA:40:ARG:NH1	75:RB:3049:G:OP2	2.32	0.62
79:bl:334:LEU:HD13	79:bl:343:ILE:HG22	1.81	0.62
1:aa:908:U:OP2	12:na:38:ASN:ND2	2.30	0.62
10:la:31:GLY:HA3	10:la:70:ASP:OD1	2.00	0.62
37:EA:22:ASN:HB3	37:EA:128:ASP:HB2	1.79	0.62
75:RB:126:G:H2'	75:RB:127:G:H8	1.64	0.62
75:RB:1236:C:H2'	75:RB:1237:G:C8	2.35	0.62
1:aa:1550:G:N2	1:aa:1577:A:OP2	2.32	0.62
6:ha:249:SER:HG	6:ha:267:THR:HG1	1.47	0.62
37:EA:31:ARG:HA	37:EA:34:ARG:HH21	1.64	0.62
79:bl:100:VAL:HG13	79:bl:102:ASP:H	1.65	0.62
13:oa:80:PRO:HD2	13:oa:83:PHE:CD2	2.33	0.62
75:RB:998:G:N2	75:RB:999:U:O4	2.29	0.62
75:RB:1672:G:H2'	75:RB:1673:A:C8	2.35	0.62
1:aa:462:G:OP1	2:ba:110:ARG:NH1	2.31	0.62
56:XA:11:ARG:HG2	56:XA:55:LEU:HD22	1.82	0.62
66:HB:36:VAL:HG11	66:HB:69:ARG:HH11	1.64	0.62
18:ta:67:SER:CB	18:ta:78:ARG:HH22	2.12	0.62
40:HA:53:PHE:HB2	40:HA:133:ILE:HD13	1.82	0.62
40:HA:169:LYS:NZ	75:RB:63:G:OP2	2.33	0.62
48:PA:82:GLU:HG2	48:PA:83:ARG:HD2	1.82	0.62
75:RB:6:A:H2	76:SB:154:G:H1	1.44	0.62
77:TB:79:A:H2	77:TB:97:G:H1	1.48	0.62
80:cl:19:G:H4'	80:cl:20:A:C4	2.35	0.62
66:HB:80:ALA:HB1	66:HB:144:ASN:HD22	1.64	0.62
75:RB:2711:G:H5'	75:RB:2713:U:C6	2.35	0.62
12:na:53:LEU:HD22	12:na:88:LEU:HD21	1.82	0.61
15:qa:24:MET:HB2	15:qa:58:MET:HE1	1.81	0.61
30:gb:57:ASP:OD2	30:gb:100:ARG:NE	2.32	0.61
40:HA:196:GLN:HE22	69:KB:15:LYS:HD2	1.63	0.61
75:RB:1422:G:OP1	76:SB:20:U:O2'	2.18	0.61
75:RB:2412:A:H2'	75:RB:2413:C:C6	2.35	0.61
1:aa:543:G:O2'	1:aa:544:G:OP2	2.17	0.61
4:da:29:LEU:HB3	4:da:39:ASN:OD1	1.99	0.61
23:ya:21:VAL:HG22	23:ya:22:ALA:H	1.65	0.61
48:PA:73:TYR:CE2	48:PA:76:ARG:HG3	2.35	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:PA:128:ASP:OD1	75:RB:184:C:O2'	2.14	0.61
75:RB:3180:G:H2'	75:RB:3181:G:C8	2.36	0.61
79:bl:10:ASN:OD1	79:bl:11:ILE:N	2.33	0.61
17:sa:61:LYS:HB3	17:sa:89:LEU:HD11	1.82	0.61
27:db:47:GLN:HA	27:db:50:VAL:HG23	1.81	0.61
75:RB:597:C:H3'	75:RB:598:U:H6	1.65	0.61
75:RB:666:U:H2'	75:RB:667:C:C6	2.34	0.61
1:aa:819:U:O2	1:aa:821:G:N2	2.32	0.61
1:aa:1191:U:H2'	1:aa:1192:G:H8	1.66	0.61
8:ja:246:LEU:HD12	8:ja:250:GLU:HB3	1.82	0.61
13:oa:24:GLN:HB2	13:oa:29:ALA:HB2	1.82	0.61
25:bb:32:ILE:HD11	25:bb:46:THR:HB	1.81	0.61
72:NB:19:ASP:OD2	72:NB:39:SER:HB2	2.01	0.61
75:RB:259:G:HO2'	75:RB:260:U:H6	1.49	0.61
1:aa:494:G:OP2	1:aa:496:A:N6	2.34	0.61
62:DB:370:GLY:HA2	75:RB:3082:A:H4'	1.81	0.61
70:LB:75:ILE:HD13	70:LB:127:ALA:HB2	1.81	0.61
75:RB:1658:G:H2'	75:RB:1659:G:C8	2.35	0.61
75:RB:2200:A:H2'	75:RB:2201:A:O4'	1.99	0.61
75:RB:3012:A:H2'	75:RB:3013:A:H8	1.65	0.61
15:qa:67:ARG:HG3	15:qa:68:GLY:H	1.64	0.61
1:aa:1541:C:OP1	13:oa:25:LYS:NZ	2.32	0.61
1:aa:1564:A:OP1	17:sa:124:TYR:OH	2.18	0.61
28:eb:137:ARG:NH1	28:eb:139:GLY:O	2.33	0.61
72:NB:8:ILE:HG23	72:NB:56:LEU:HD13	1.82	0.61
1:aa:1406:U:H5''	15:qa:60:ARG:HH12	1.65	0.61
29:fb:162:HIS:ND1	29:fb:163:THR:HG23	2.15	0.61
32:ib:124:VAL:HG12	32:ib:143:VAL:HG12	1.81	0.61
34:BA:75:GLU:OE1	34:BA:88:ARG:HG2	2.00	0.61
60:BB:36:GLN:HE22	60:BB:44:LYS:C	2.09	0.61
6:ha:216:SER:HB3	6:ha:220:SER:H	1.66	0.61
24:za:63:GLN:NE2	24:za:185:MET:SD	2.71	0.61
34:BA:135:PRO:HG2	61:CB:84:LYS:HG2	1.82	0.61
41:IA:99:ASP:OD1	41:IA:122:LYS:HD2	2.01	0.61
58:ZA:82:LYS:HD2	58:ZA:112:ASN:HA	1.83	0.61
63:EB:117:ARG:HD2	75:RB:686:A:H5'	1.83	0.61
75:RB:607:U:H4'	75:RB:608:G:OP1	2.00	0.61
75:RB:810:A:H61	75:RB:937:G:H22	1.49	0.61
75:RB:1576:C:OP1	75:RB:2519:G:N2	2.30	0.61
75:RB:2608:U:H2'	75:RB:2609:U:C6	2.35	0.61
75:RB:3180:G:H2'	75:RB:3181:G:H8	1.66	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:ha:285:LEU:HD23	6:ha:323:TYR:CE1	2.35	0.61
8:ja:255:ARG:O	8:ja:259:ALA:N	2.34	0.61
18:ta:81:ILE:HD11	18:ta:85:MET:HE3	1.82	0.61
20:va:86:GLU:OE2	20:va:96:ARG:NH1	2.31	0.61
1:aa:453:C:OP2	8:ja:58:TYR:OH	2.16	0.60
1:aa:1399:G:H2'	1:aa:1400:G:H8	1.66	0.60
6:ha:269:ASP:OD2	6:ha:286:ARG:NH2	2.34	0.60
58:ZA:31:VAL:HG11	58:ZA:38:ILE:HD11	1.82	0.60
20:va:68:ILE:HD11	20:va:128:PHE:HB2	1.83	0.60
25:bb:181:LEU:HA	25:bb:184:LEU:HB3	1.82	0.60
39:GA:25:THR:HG22	39:GA:36:ASN:HD21	1.66	0.60
63:EB:340:ARG:HH22	75:RB:562:G:P	2.23	0.60
75:RB:1577:A:H1'	75:RB:2519:G:C4	2.35	0.60
80:cl:69:U:H2'	80:cl:70:G:C8	2.36	0.60
6:ha:131:VAL:HG21	6:ha:180:ILE:HG21	1.83	0.60
13:oa:119:ASN:OD1	13:oa:120:HIS:N	2.34	0.60
57:YA:61:LEU:HB3	61:CB:77:PHE:CE1	2.35	0.60
62:DB:46:PHE:HE2	62:DB:211:VAL:HB	1.65	0.60
69:KB:160:GLU:O	75:RB:704:G:N2	2.33	0.60
75:RB:3159:C:H2'	75:RB:3160:C:H6	1.66	0.60
1:aa:969:U:OP1	14:pa:128:TYR:OH	2.18	0.60
1:aa:1070:A:H4'	25:bb:205:PHE:CD1	2.36	0.60
1:aa:1191:U:H2'	1:aa:1192:G:C8	2.36	0.60
16:ra:89:GLN:HB3	16:ra:107:LYS:HG2	1.82	0.60
25:bb:40:SER:C	25:bb:41:ARG:HD2	2.26	0.60
36:DA:42:LYS:HD3	36:DA:87:PHE:CD1	2.37	0.60
39:GA:32:THR:HG22	39:GA:72:LEU:HD11	1.83	0.60
75:RB:1659:G:H1	75:RB:1783:G:H22	1.50	0.60
75:RB:1755:A:H2	75:RB:1764:G:N1	1.96	0.60
1:aa:1338:U:H2'	1:aa:1339:C:C6	2.36	0.60
4:da:55:VAL:HG21	4:da:66:TRP:HB3	1.82	0.60
1:aa:154:A:H2'	1:aa:155:A:O4'	2.00	0.60
6:ha:172:SER:HB2	6:ha:178:PRO:HA	1.84	0.60
75:RB:93:G:H2'	75:RB:94:A:C8	2.36	0.60
75:RB:523:C:OP1	75:RB:523:C:H6	1.83	0.60
75:RB:2422:G:H2'	75:RB:2423:A:H8	1.67	0.60
1:aa:421:A:H5'	1:aa:422:G:C5	2.37	0.60
1:aa:1465:C:N4	13:oa:137:LYS:HE2	2.16	0.60
8:ja:208:ILE:HG13	8:ja:225:VAL:HG21	1.82	0.60
18:ta:57:LYS:HA	18:ta:60:GLN:HA	1.83	0.60
25:bb:134:MET:O	25:bb:218:LEU:N	2.35	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:aa:492:G:N2	1:aa:503:U:O2'	2.35	0.60
1:aa:783:C:N4	2:ba:15:ARG:HD2	2.17	0.60
7:ia:211:HIS:O	15:qa:20:TYR:OH	2.18	0.60
20:va:44:GLY:O	20:va:65:GLN:NE2	2.35	0.60
57:YA:69:LYS:NZ	75:RB:523:C:H42	2.00	0.60
75:RB:849:A:H2'	75:RB:850:A:O4'	2.00	0.60
6:ha:97:LEU:O	6:ha:111:PHE:N	2.35	0.60
11:ma:64:MET:HE3	11:ma:65:PRO:HD2	1.83	0.60
34:BA:8:ARG:HD2	34:BA:52:MET:HE1	1.83	0.60
60:BB:12:TRP:HD1	60:BB:61:VAL:HG13	1.67	0.60
75:RB:2896:C:O2'	75:RB:2898:G:OP2	2.20	0.60
79:bl:95:TYR:HH	79:bl:132:THR:HG1	1.50	0.60
1:aa:1783:C:H5	67:IB:1:MET:HE1	1.66	0.60
75:RB:601:G:H2'	75:RB:602:G:C8	2.36	0.60
31:hb:134:ALA:HB1	31:hb:155:LEU:HD12	1.82	0.59
35:CA:113:LYS:HE2	75:RB:1626:U:H5'	1.84	0.59
45:MA:40:SER:HB3	45:MA:43:LYS:HD3	1.84	0.59
62:DB:46:PHE:CE2	62:DB:211:VAL:HB	2.36	0.59
79:bl:324:TRP:NE1	79:bl:395:ASN:OD1	2.34	0.59
1:aa:824:U:O2	1:aa:858:G:C2	2.55	0.59
6:ha:170:ARG:HD3	6:ha:171:PHE:O	2.01	0.59
13:oa:13:LEU:HD13	13:oa:64:MET:HE3	1.83	0.59
36:DA:128:ARG:N	75:RB:2171:A:OP1	2.30	0.59
40:HA:168:GLY:HA2	40:HA:171:PHE:CE2	2.38	0.59
42:JA:94:ILE:HD13	42:JA:111:ARG:HG2	1.84	0.59
45:MA:43:LYS:H	45:MA:43:LYS:HD2	1.66	0.59
63:EB:103:ARG:NH2	75:RB:807:C:OP1	2.34	0.59
71:MB:108:TYR:HB2	71:MB:109:PRO:HD3	1.83	0.59
75:RB:1022:G:O6	75:RB:1039:G:N2	2.35	0.59
75:RB:3215:A:H3'	75:RB:3216:A:H8	1.67	0.59
36:DA:230:PRO:HD2	36:DA:233:GLN:OE1	2.01	0.59
38:FA:91:MET:HE3	38:FA:143:ILE:HD11	1.83	0.59
75:RB:1814:C:H2'	75:RB:1815:G:O4'	2.01	0.59
1:aa:128:G:N2	1:aa:176:A:O2'	2.35	0.59
6:ha:223:ALA:HB2	6:ha:233:LEU:HG	1.82	0.59
9:ka:123:ARG:HA	9:ka:132:ARG:HA	1.82	0.59
10:la:53:LYS:HD2	10:la:85:TYR:CE1	2.36	0.59
12:na:61:LYS:HZ3	12:na:76:LEU:HB3	1.66	0.59
20:va:69:LYS:HG2	29:fb:234:PHE:HE2	1.68	0.59
57:YA:36:GLU:OE1	61:CB:235:TYR:OH	2.19	0.59
61:CB:53:TYR:OH	61:CB:185:ASP:OD2	2.11	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
62:DB:201:PHE:CE2	62:DB:206:VAL:HG22	2.37	0.59
79:bl:315:MET:HE2	79:bl:418:LEU:HD21	1.84	0.59
1:aa:86:A:N3	1:aa:146:A:O2'	2.35	0.59
6:ha:44:LEU:HD13	6:ha:68:ARG:NH2	2.17	0.59
7:ia:195:LYS:HG2	7:ia:197:LYS:HG2	1.85	0.59
62:DB:30:LYS:NZ	75:RB:3135:A:OP2	2.33	0.59
68:JB:98:LYS:NZ	68:JB:120:GLN:OE1	2.35	0.59
79:bl:315:MET:HE1	79:bl:415:ARG:HD3	1.83	0.59
1:aa:755:U:H3	1:aa:806:U:H3	1.49	0.59
1:aa:1165:A:H2'	1:aa:1166:C:C6	2.36	0.59
6:ha:21:VAL:HG23	6:ha:318:GLY:HA2	1.85	0.59
15:qa:35:LEU:HD22	15:qa:47:ARG:HG3	1.84	0.59
19:ua:61:ARG:NH1	19:ua:80:ARG:O	2.36	0.59
20:va:27:GLN:HB3	20:va:28:PRO:HD3	1.83	0.59
20:va:29:ILE:HG21	20:va:60:ILE:HG13	1.84	0.59
43:KA:91:GLY:O	43:KA:94:ASN:ND2	2.36	0.59
45:MA:4:TYR:HE2	45:MA:16:LYS:HB2	1.68	0.59
75:RB:522:C:O2'	75:RB:523:C:OP1	2.15	0.59
1:aa:458:A:C8	8:ja:66:MET:HE2	2.37	0.59
1:aa:918:G:H5''	75:RB:2200:A:H1'	1.84	0.59
1:aa:1321:C:H2'	1:aa:1322:G:O4'	2.02	0.59
6:ha:44:LEU:HD11	6:ha:65:PRO:HB3	1.83	0.59
12:na:53:LEU:HD23	25:bb:24:PHE:HE2	1.67	0.59
52:TA:97:ILE:HG21	52:TA:106:ARG:HG2	1.84	0.59
1:aa:1388:A:O2'	1:aa:1389:G:H5''	2.03	0.59
9:ka:30:LEU:HD12	9:ka:143:VAL:HG22	1.84	0.59
28:eb:164:SER:O	28:eb:168:GLY:N	2.31	0.59
31:hb:30:LEU:HD21	31:hb:37:LEU:HD21	1.85	0.59
37:EA:117:LYS:HZ2	37:EA:118:TYR:HE1	1.50	0.59
59:AB:53:PHE:CE1	59:AB:93:MET:HE1	2.36	0.59
75:RB:1224:A:OP1	75:RB:1225:A:O2'	2.17	0.59
1:aa:61:A:O2'	1:aa:62:A:OP1	2.21	0.59
1:aa:66:U:H6	1:aa:67:G:H5'	1.68	0.59
1:aa:1265:A:H2'	1:aa:1266:U:C6	2.37	0.59
6:ha:20:VAL:HG13	6:ha:316:THR:HA	1.83	0.59
6:ha:267:THR:HG21	6:ha:272:LYS:HG3	1.84	0.59
17:sa:60:ARG:HH12	17:sa:64:ALA:HB2	1.67	0.59
25:bb:128:LYS:HG2	25:bb:134:MET:SD	2.42	0.59
33:AA:99:ASP:OD1	33:AA:100:LYS:N	2.35	0.59
75:RB:1537:A:H2'	75:RB:1538:A:C8	2.38	0.59
75:RB:1562:A:H61	75:RB:1580:C:H5'	1.68	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
75:RB:1659:G:N2	75:RB:1783:G:H22	2.00	0.59
75:RB:2537:G:H2'	75:RB:2538:C:C2	2.37	0.59
79:bl:18:LYS:HA	79:bl:21:LYS:HZ3	1.68	0.59
5:ga:94:GLU:HG3	5:ga:95:GLU:H	1.68	0.59
9:ka:17:ARG:NH1	9:ka:94:GLU:OE2	2.36	0.59
29:fb:236:THR:HG22	29:fb:238:ASP:H	1.68	0.59
55:WA:46:LYS:HE3	55:WA:54:THR:HB	1.83	0.59
62:DB:269:ARG:NH2	75:RB:2385:C:O2'	2.35	0.59
75:RB:1279:C:H2'	75:RB:1280:U:C2	2.37	0.59
75:RB:3223:C:H2'	75:RB:3224:C:H6	1.65	0.59
75:RB:3307:G:H2'	75:RB:3308:C:C6	2.37	0.59
1:aa:117:U:H2'	1:aa:118:U:C6	2.37	0.58
1:aa:1291:A:N1	1:aa:1332:G:O2'	2.30	0.58
1:aa:1732:A:H5''	30:gb:75:LEU:HD22	1.85	0.58
25:bb:164:ILE:HD13	25:bb:207:LEU:HD11	1.85	0.58
37:EA:34:ARG:HA	37:EA:37:LYS:HE3	1.85	0.58
64:FB:59:TYR:OH	64:FB:78:PHE:O	2.20	0.58
1:aa:351:G:N2	3:ca:14:THR:O	2.33	0.58
1:aa:1480:G:H2'	1:aa:1481:A:C8	2.37	0.58
7:ia:20:GLU:OE2	7:ia:76:ARG:NH2	2.36	0.58
11:ma:64:MET:HB2	11:ma:94:LYS:HB3	1.83	0.58
30:gb:22:MET:HA	30:gb:25:ARG:HG2	1.85	0.58
49:QA:55:LYS:O	49:QA:112:ARG:NH1	2.35	0.58
63:EB:147:ILE:HG13	63:EB:147:ILE:O	2.02	0.58
75:RB:25:U:H2'	75:RB:26:A:C8	2.37	0.58
75:RB:2879:U:H2'	75:RB:2880:U:C6	2.37	0.58
75:RB:3238:C:O2'	75:RB:3239:G:OP1	2.21	0.58
77:TB:49:A:H5''	77:TB:49:A:H8	1.67	0.58
79:bl:336:HIS:NE2	79:bl:366:GLU:O	2.36	0.58
1:aa:525:A:H2'	1:aa:526:U:O4'	2.03	0.58
2:ba:12:LEU:HD11	2:ba:30:LEU:HD22	1.84	0.58
9:ka:69:THR:HG21	9:ka:86:VAL:HG22	1.86	0.58
10:la:77:GLY:O	10:la:83:GLN:NE2	2.36	0.58
45:MA:47:TYR:OH	45:MA:76:ARG:NH2	2.26	0.58
62:DB:230:GLU:HB2	62:DB:273:ASN:HB2	1.83	0.58
64:FB:7:VAL:HG12	64:FB:9:ALA:H	1.68	0.58
75:RB:163:U:C2	75:RB:164:C:H1'	2.38	0.58
80:cl:67:U:H2'	80:cl:68:C:H6	1.69	0.58
1:aa:1521:G:H1'	1:aa:1526:C:O2	2.03	0.58
11:ma:48:VAL:O	11:ma:52:LYS:HG2	2.04	0.58
45:MA:4:TYR:CE2	45:MA:16:LYS:HD3	2.38	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
75:RB:17:G:H2'	75:RB:18:G:C8	2.38	0.58
75:RB:1895:G:O2'	75:RB:2327:U:O4	2.13	0.58
1:aa:1572:U:H2'	1:aa:1573:C:H6	1.67	0.58
5:ga:54:ILE:HG13	5:ga:55:GLY:H	1.68	0.58
9:ka:119:GLU:HG3	9:ka:135:VAL:O	2.04	0.58
12:na:77:ALA:O	12:na:81:VAL:HG23	2.03	0.58
65:GB:88:GLU:HG3	65:GB:91:GLU:OE1	2.03	0.58
1:aa:282:C:H4'	1:aa:283:G:C8	2.39	0.58
1:aa:489:C:N4	1:aa:490:G:O6	2.37	0.58
6:ha:139:ILE:HD11	6:ha:166:VAL:HG11	1.85	0.58
8:ja:129:VAL:HG12	8:ja:139:LEU:HB3	1.85	0.58
9:ka:98:LEU:HD12	18:ta:61:ILE:CD1	2.33	0.58
17:sa:90:ARG:HH22	17:sa:107:ASN:HA	1.68	0.58
28:eb:20:PRO:O	28:eb:25:ARG:NH2	2.36	0.58
36:DA:215:ASN:ND2	75:RB:2966:A:N7	2.50	0.58
75:RB:167:C:O2'	75:RB:249:A:OP1	2.21	0.58
75:RB:312:U:H2'	75:RB:313:C:C6	2.38	0.58
75:RB:3269:G:H2'	75:RB:3270:G:O4'	2.02	0.58
1:aa:74:U:H4'	1:aa:75:U:H5	1.69	0.58
1:aa:1365:C:OP2	1:aa:1366:A:N6	2.36	0.58
1:aa:1532:A:H2'	1:aa:1533:A:C8	2.38	0.58
1:aa:1683:G:H1'	3:ca:32:GLN:HE21	1.67	0.58
34:BA:126:ILE:O	75:RB:1098:U:O2'	2.20	0.58
63:EB:358:ILE:O	63:EB:360:SER:N	2.37	0.58
75:RB:1177:G:H2'	75:RB:1178:C:H6	1.67	0.58
1:aa:900:G:H1	1:aa:922:U:H3	1.49	0.58
1:aa:1406:U:H5''	15:qa:60:ARG:NH1	2.19	0.58
8:ja:127:ARG:N	8:ja:140:ASN:O	2.35	0.58
16:ra:73:MET:HA	16:ra:76:LYS:HG2	1.85	0.58
28:eb:64:LEU:HB3	28:eb:68:ASN:HD22	1.69	0.58
62:DB:224:THR:HG22	62:DB:333:VAL:HG23	1.84	0.58
75:RB:3159:C:H2'	75:RB:3160:C:C6	2.39	0.58
76:SB:103:G:OP2	76:SB:105:A:O2'	2.21	0.58
2:ba:49:LEU:HA	2:ba:52:ILE:HG22	1.86	0.58
57:YA:170:LYS:NZ	75:RB:3197:G:OP1	2.37	0.58
75:RB:525:A:C2	75:RB:526:A:H1'	2.39	0.58
75:RB:653:A:H2'	75:RB:654:C:C6	2.38	0.58
75:RB:1616:G:H2'	75:RB:1617:A:O4'	2.04	0.58
75:RB:1659:G:H22	75:RB:1783:G:H22	1.51	0.58
1:aa:1561:G:H22	1:aa:1563:A:H3'	1.69	0.58
1:aa:1627:C:H2'	1:aa:1628:C:C6	2.39	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:ga:53:LYS:HG2	5:ga:90:LEU:HD11	1.86	0.58
13:oa:26:ILE:H	13:oa:26:ILE:HD12	1.69	0.58
15:qa:5:ARG:O	15:qa:10:LYS:NZ	2.37	0.58
37:EA:110:GLU:HB2	37:EA:125:TYR:O	2.03	0.58
75:RB:427:U:H2'	75:RB:428:G:C8	2.39	0.58
1:aa:864:A:C6	14:pa:73:ARG:HD2	2.39	0.57
1:aa:1549:G:OP1	16:ra:97:ARG:NH2	2.36	0.57
3:ca:116:THR:HG22	3:ca:117:HIS:H	1.67	0.57
6:ha:285:LEU:HD23	6:ha:323:TYR:HE1	1.68	0.57
45:MA:30:ARG:NH1	45:MA:31:GLU:OE1	2.37	0.57
75:RB:1281:C:N3	75:RB:1282:A:N6	2.50	0.57
75:RB:2201:A:O2'	75:RB:2202:U:H2'	2.04	0.57
75:RB:3099:A:H2'	75:RB:3100:U:O4'	2.03	0.57
1:aa:1480:G:H2'	1:aa:1481:A:H8	1.69	0.57
1:aa:1807:A:C6	27:db:87:ARG:HD2	2.38	0.57
3:ca:166:GLN:HA	3:ca:169:ARG:HG2	1.86	0.57
29:fb:79:VAL:HG21	29:fb:143:LYS:HB3	1.86	0.57
41:IA:60:TYR:CE2	41:IA:63:LYS:HA	2.40	0.57
61:CB:43:THR:HG23	61:CB:44:LYS:HD2	1.85	0.57
75:RB:139:U:H2'	75:RB:140:C:C6	2.39	0.57
1:aa:146:A:H62	1:aa:164:C:H42	1.49	0.57
1:aa:701:C:H2'	1:aa:702:G:C8	2.39	0.57
10:la:57:PRO:HD3	10:la:88:ARG:HG3	1.85	0.57
48:PA:3:ARG:HH21	63:EB:226:ARG:NH1	2.03	0.57
75:RB:1:G:O5'	75:RB:2:C:O4'	2.23	0.57
75:RB:585:A:H2'	75:RB:586:A:O4'	2.04	0.57
75:RB:982:U:H4'	75:RB:983:U:C6	2.39	0.57
6:ha:312:TYR:HD1	6:ha:322:ILE:HG22	1.67	0.57
11:ma:32:LEU:HB3	11:ma:40:LEU:HD11	1.87	0.57
25:bb:143:THR:HB	25:bb:205:PHE:HE2	1.68	0.57
28:eb:36:TYR:OH	28:eb:104:GLU:OE1	2.13	0.57
58:ZA:26:ASP:HB3	58:ZA:115:GLU:HG3	1.86	0.57
74:PB:67:LEU:O	74:PB:72:ARG:NH1	2.37	0.57
75:RB:1244:A:H61	75:RB:1248:A:H2'	1.67	0.57
1:aa:142:G:O2'	1:aa:143:A:O5'	2.23	0.57
1:aa:952:U:H2'	1:aa:953:G:C8	2.39	0.57
1:aa:1529:G:C2'	10:la:76:ARG:HH12	2.17	0.57
10:la:29:LYS:NZ	10:la:70:ASP:OD1	2.26	0.57
20:va:105:THR:HG22	20:va:122:GLY:HA3	1.85	0.57
79:bl:280:LYS:O	79:bl:283:GLN:N	2.36	0.57
1:aa:211:G:N7	32:ib:30:LYS:NZ	2.53	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:da:44:LYS:HE3	4:da:47:GLN:NE2	2.20	0.57
4:da:54:TYR:HB3	4:da:72:GLY:HA3	1.85	0.57
6:ha:15:ARG:HD3	6:ha:319:THR:HG22	1.86	0.57
6:ha:256:PHE:CE2	6:ha:263:LEU:HD13	2.40	0.57
10:la:44:LEU:O	10:la:46:ARG:HD2	2.05	0.57
15:qa:84:PHE:HB3	24:za:209:ARG:NH1	2.19	0.57
17:sa:69:LEU:HD11	17:sa:98:MET:SD	2.45	0.57
28:eb:20:PRO:HB2	28:eb:21:TYR:CD2	2.40	0.57
48:PA:45:ARG:HH21	75:RB:186:A:P	2.27	0.57
53:UA:75:LYS:O	53:UA:76:SER:OG	2.14	0.57
75:RB:3012:A:H2'	75:RB:3013:A:C8	2.39	0.57
1:aa:1542:G:OP2	13:oa:55:ARG:NH2	2.37	0.57
18:ta:67:SER:HB3	18:ta:78:ARG:HH22	1.69	0.57
29:fb:148:PRO:HB2	29:fb:232:TYR:HE2	1.69	0.57
29:fb:213:SER:O	29:fb:216:THR:HG22	2.04	0.57
75:RB:18:G:H22	76:SB:142:G:H22	1.49	0.57
75:RB:1569:U:H5	75:RB:1571:A:H2'	1.69	0.57
75:RB:2680:U:H2'	75:RB:2681:C:C6	2.39	0.57
76:SB:126:A:O2'	76:SB:127:U:OP2	2.22	0.57
1:aa:1529:G:H2'	10:la:76:ARG:HH12	1.68	0.57
6:ha:187:ARG:CZ	6:ha:206:HIS:HB2	2.34	0.57
64:FB:94:PRO:O	64:FB:100:GLY:HA3	2.05	0.57
75:RB:527:G:C2	75:RB:552:G:C2	2.93	0.57
75:RB:631:U:H2'	75:RB:632:C:C6	2.40	0.57
75:RB:3187:G:H2'	75:RB:3188:C:C6	2.40	0.57
75:RB:3271:G:H2'	75:RB:3272:C:C6	2.39	0.57
1:aa:1175:G:C2	1:aa:1176:A:C8	2.93	0.57
6:ha:97:LEU:HB2	6:ha:111:PHE:HB2	1.87	0.57
6:ha:137:ARG:HG2	6:ha:164:GLY:C	2.29	0.57
35:CA:89:VAL:HG11	35:CA:118:ARG:HB3	1.85	0.57
51:SA:25:HIS:ND1	75:RB:3361:C:OP1	2.26	0.57
57:YA:44:TRP:CZ3	57:YA:47:LEU:HD23	2.39	0.57
70:LB:45:VAL:HG12	70:LB:47:GLU:H	1.68	0.57
75:RB:567:G:H2'	75:RB:568:C:C6	2.40	0.57
75:RB:1258:C:N4	75:RB:1267:A:OP1	2.38	0.57
75:RB:2540:C:H2'	75:RB:2541:C:C6	2.40	0.57
80:cl:66:C:H2'	80:cl:67:U:H6	1.70	0.57
1:aa:598:A:OP1	28:eb:39:ARG:NH1	2.38	0.57
1:aa:1496:A:H5'	1:aa:1497:U:C6	2.40	0.57
1:aa:1698:A:H5''	1:aa:1699:C:H5'	1.86	0.57
25:bb:81:TYR:OH	25:bb:191:GLU:OE2	2.21	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:BA:15:PHE:CD1	34:BA:44:VAL:HG21	2.39	0.57
62:DB:156:TYR:CD1	75:RB:3229:G:H2'	2.40	0.57
75:RB:757:G:H2'	75:RB:758:A:H8	1.68	0.57
75:RB:985:C:H2'	75:RB:986:G:O4'	2.05	0.57
75:RB:2573:G:H2'	75:RB:2574:C:C6	2.40	0.57
1:aa:203:A:H1'	1:aa:265:A:N6	2.20	0.56
1:aa:645:G:H2'	1:aa:646:G:H8	1.70	0.56
2:ba:112:GLN:HB2	2:ba:116:ARG:NH1	2.20	0.56
15:qa:90:ALA:N	24:za:204:ASP:OD2	2.31	0.56
18:ta:63:PRO:HD2	18:ta:66:LEU:HD12	1.86	0.56
20:va:54:PRO:HB3	22:xa:27:VAL:HG13	1.87	0.56
36:DA:71:HIS:ND1	75:RB:1648:C:H5''	2.20	0.56
63:EB:190:VAL:HG22	63:EB:206:ASN:HB3	1.87	0.56
75:RB:729:G:N1	75:RB:746:C:OP2	2.25	0.56
75:RB:1564:C:H2'	75:RB:1565:G:H8	1.70	0.56
75:RB:1593:C:H2'	75:RB:1594:G:C8	2.40	0.56
80:cl:16:C:H4'	80:cl:18:G:OP2	2.04	0.56
1:aa:203:A:H1'	1:aa:265:A:H61	1.68	0.56
1:aa:833:U:H3	1:aa:849:G:H22	1.53	0.56
10:la:104:ASP:HB3	10:la:107:ALA:HB3	1.87	0.56
20:va:110:LEU:HD22	20:va:114:GLU:HG2	1.86	0.56
33:AA:71:PRO:HD3	33:AA:229:TRP:CD1	2.40	0.56
36:DA:245:ARG:HG3	36:DA:247:ARG:NH1	2.20	0.56
57:YA:6:PHE:HD2	57:YA:106:GLU:HG2	1.70	0.56
57:YA:115:ARG:NH1	75:RB:1215:U:O2'	2.38	0.56
58:ZA:65:VAL:HG22	58:ZA:74:VAL:HG22	1.87	0.56
75:RB:834:G:O2'	75:RB:1860:A:N3	2.37	0.56
75:RB:3182:C:H2'	75:RB:3183:G:C8	2.40	0.56
1:aa:490:G:H22	1:aa:504:C:H42	1.52	0.56
1:aa:876:A:H2'	1:aa:877:G:C8	2.38	0.56
1:aa:1257:U:H2'	1:aa:1258:U:C6	2.40	0.56
9:ka:51:ARG:NH1	10:la:126:ASP:OD1	2.37	0.56
10:la:28:CYS:HB3	10:la:69:ILE:HD11	1.86	0.56
13:oa:23:LYS:NZ	18:ta:38:ASN:OD1	2.38	0.56
16:ra:43:LEU:HD12	16:ra:44:PRO:HD2	1.87	0.56
24:za:18:ASP:CG	24:za:184:ARG:HH22	2.13	0.56
39:GA:77:MET:SD	39:GA:105:ILE:HD12	2.44	0.56
41:IA:47:LYS:NZ	75:RB:970:A:OP1	2.38	0.56
55:WA:83:ARG:HH11	75:RB:2713:U:H4'	1.69	0.56
59:AB:63:LEU:HD23	59:AB:71:ARG:HB3	1.88	0.56
63:EB:326:ALA:HA	70:LB:7:MET:HE1	1.86	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:LB:159:GLU:O	70:LB:162:LEU:N	2.35	0.56
70:LB:165:SER:O	70:LB:169:ALA:N	2.37	0.56
74:PB:11:HIS:HD2	75:RB:1586:A:OP2	1.88	0.56
75:RB:108:A:H4'	75:RB:109:G:OP1	2.05	0.56
75:RB:1207:A:H2'	75:RB:1208:A:C8	2.41	0.56
43:KA:64:ILE:HG12	43:KA:105:LEU:HD21	1.87	0.56
64:FB:66:ARG:HA	64:FB:75:PRO:HD2	1.88	0.56
75:RB:3182:C:H2'	75:RB:3183:G:H8	1.71	0.56
79:bl:319:GLU:CD	79:bl:415:ARG:HA	2.31	0.56
3:ca:117:HIS:C	3:ca:169:ARG:HH12	2.13	0.56
4:da:45:LEU:HD13	4:da:49:PHE:HE2	1.70	0.56
25:bb:129:THR:OG1	25:bb:131:ASP:O	2.23	0.56
33:AA:94:LYS:NZ	33:AA:200:LYS:HE2	2.20	0.56
75:RB:496:U:H3'	75:RB:497:G:H5''	1.88	0.56
75:RB:1294:A:H2'	75:RB:1295:A:C8	2.41	0.56
75:RB:2536:U:H4'	75:RB:2537:G:O5'	2.06	0.56
77:TB:51:G:O2'	77:TB:52:U:OP1	2.23	0.56
1:aa:1235:U:O2'	1:aa:1262:U:O2'	2.17	0.56
13:oa:23:LYS:HG3	13:oa:23:LYS:O	2.05	0.56
17:sa:112:ASN:OD1	17:sa:129:SER:OG	2.22	0.56
74:PB:47:THR:HG23	74:PB:49:LYS:H	1.70	0.56
75:RB:1578:U:H5'	75:RB:1579:C:C4	2.41	0.56
80:cl:67:U:H2'	80:cl:68:C:C6	2.40	0.56
1:aa:1335:A:OP1	15:qa:45:ARG:NH2	2.34	0.56
1:aa:1600:G:H2'	1:aa:1601:A:H8	1.70	0.56
1:aa:1669:U:H2'	1:aa:1670:G:C8	2.40	0.56
5:ga:52:GLU:CD	5:ga:70:ARG:HH21	2.14	0.56
23:ya:13:LYS:O	23:ya:17:GLN:HG2	2.05	0.56
40:HA:108:ARG:HH22	75:RB:54:G:HO2'	1.50	0.56
54:VA:3:SER:O	75:RB:1829:G:O2'	2.24	0.56
75:RB:108:A:N1	75:RB:320:U:O2'	2.37	0.56
1:aa:204:U:O2	3:ca:197:ARG:NH1	2.39	0.56
1:aa:944:A:H2'	1:aa:945:A:C8	2.41	0.56
36:DA:70:LYS:NZ	36:DA:71:HIS:O	2.37	0.56
38:FA:92:ARG:HG2	38:FA:181:SER:HB3	1.86	0.56
64:FB:17:ARG:HG3	64:FB:45:GLU:HB3	1.85	0.56
75:RB:3029:A:H2'	75:RB:3030:C:H6	1.71	0.56
1:aa:829:G:H2'	1:aa:830:U:C6	2.41	0.56
1:aa:1543:U:H4'	1:aa:1544:G:O5'	2.06	0.56
18:ta:41:VAL:HG12	18:ta:46:ALA:HB2	1.88	0.56
18:ta:55:VAL:O	18:ta:62:THR:OG1	2.24	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:DA:13:GLY:O	36:DA:17:LYS:HG3	2.05	0.56
62:DB:136:LYS:HD3	62:DB:146:ILE:HD11	1.86	0.56
75:RB:631:U:H2'	75:RB:632:C:H6	1.70	0.56
75:RB:2532:G:H2'	75:RB:2533:G:O4'	2.05	0.56
75:RB:2957:C:H2'	75:RB:2958:G:C8	2.41	0.56
1:aa:212:A:N7	1:aa:245:C:O2'	2.36	0.56
1:aa:491:G:N2	1:aa:492:G:H1'	2.21	0.56
35:CA:2:VAL:O	50:RA:41:SER:OG	2.24	0.56
35:CA:22:LYS:NZ	35:CA:133:THR:O	2.22	0.56
63:EB:52:ARG:HD3	75:RB:336:A:C5	2.41	0.56
75:RB:1619:G:H2'	75:RB:1620:U:C6	2.40	0.56
75:RB:1891:A:O2'	75:RB:3049:G:H4'	2.06	0.56
1:aa:248:U:N3	1:aa:251:U:OP2	2.30	0.55
1:aa:494:G:H8	1:aa:495:C:H5	1.52	0.55
1:aa:1066:U:H3'	1:aa:1067:A:C2	2.42	0.55
1:aa:1542:G:OP2	18:ta:34:LYS:HG2	2.06	0.55
5:ga:127:VAL:HG21	5:ga:139:LYS:HA	1.89	0.55
8:ja:192:VAL:HG22	8:ja:243:GLY:HA3	1.88	0.55
19:ua:84:ARG:HG2	19:ua:85:LEU:HG	1.88	0.55
40:HA:202:ARG:NH1	69:KB:27:GLN:OE1	2.40	0.55
50:RA:46:ILE:HB	50:RA:71:VAL:HG22	1.88	0.55
63:EB:36:ARG:O	63:EB:40:ILE:HG12	2.06	0.55
75:RB:599:C:H3'	75:RB:600:G:C8	2.41	0.55
75:RB:2360:A:H2'	75:RB:2361:A:C8	2.41	0.55
77:TB:38:U:O2'	77:TB:40:A:N7	2.37	0.55
1:aa:467:U:H2'	1:aa:468:A:H8	1.71	0.55
1:aa:595:A:H2'	1:aa:596:A:C8	2.42	0.55
1:aa:1693:C:C6	1:aa:1694:G:H4'	2.41	0.55
6:ha:250:ILE:HG22	6:ha:268:GLN:HB2	1.88	0.55
17:sa:46:PHE:HB3	17:sa:50:ALA:HB3	1.89	0.55
22:xa:67:GLN:HB2	22:xa:74:ARG:HB3	1.88	0.55
34:BA:54:HIS:ND1	75:RB:2721:U:H4'	2.21	0.55
45:MA:64:CYS:O	45:MA:81:GLN:NE2	2.39	0.55
73:OB:13:SER:OG	75:RB:1141:U:OP1	2.19	0.55
75:RB:427:U:H2'	75:RB:428:G:H8	1.71	0.55
33:AA:42:LYS:HG3	33:AA:43:ASP:H	1.70	0.55
63:EB:143:ARG:NH1	75:RB:1388:C:H5'	2.20	0.55
73:OB:26:ARG:NH2	75:RB:985:C:OP1	2.39	0.55
75:RB:3157:C:O2'	75:RB:3158:G:H5'	2.07	0.55
79:bl:99:ILE:HG22	79:bl:101:THR:H	1.70	0.55
1:aa:130:A:O2'	1:aa:175:A:OP2	2.21	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:aa:212:A:N7	1:aa:244:C:O2'	2.39	0.55
1:aa:1524:A:H8	11:ma:64:MET:HE1	1.71	0.55
13:oa:39:ARG:NH2	16:ra:49:ILE:O	2.39	0.55
30:gb:7:ASN:HB3	30:gb:115:ILE:HD12	1.88	0.55
33:AA:172:PRO:HA	33:AA:219:ASN:ND2	2.21	0.55
41:IA:60:TYR:HE2	41:IA:63:LYS:HA	1.72	0.55
41:IA:60:TYR:CE1	75:RB:2774:G:C2	2.94	0.55
71:MB:15:ARG:NH2	75:RB:3167:G:OP1	2.39	0.55
71:MB:69:TYR:OH	75:RB:3264:C:OP1	2.18	0.55
75:RB:1577:A:OP2	75:RB:1577:A:H8	1.90	0.55
75:RB:2092:C:H2'	75:RB:2093:G:C8	2.42	0.55
1:aa:215:A:N1	1:aa:848:C:O2'	2.33	0.55
1:aa:216:A:N1	1:aa:848:C:H1'	2.22	0.55
1:aa:704:C:OP2	1:aa:744:G:N2	2.40	0.55
1:aa:1374:G:H2'	1:aa:1375:C:C6	2.41	0.55
14:pa:84:ILE:HG23	14:pa:88:LEU:HD23	1.89	0.55
18:ta:64:SER:HB2	18:ta:82:LYS:HE3	1.87	0.55
33:AA:173:TYR:H	33:AA:219:ASN:HD21	1.55	0.55
34:BA:17:ARG:HB2	34:BA:22:LYS:HG2	1.88	0.55
39:GA:121:ILE:HD13	39:GA:136:ALA:HB1	1.88	0.55
40:HA:60:VAL:HG23	40:HA:134:LEU:HB2	1.88	0.55
44:LA:9:ARG:O	44:LA:10:LEU:HB2	2.07	0.55
60:BB:99:ASP:O	60:BB:103:ARG:HD2	2.07	0.55
62:DB:96:PRO:HB3	64:FB:158:ILE:HD11	1.89	0.55
75:RB:2826:U:C2	75:RB:2827:G:C8	2.94	0.55
75:RB:2847:G:HO2'	75:RB:2848:A:H8	1.55	0.55
79:bl:322:MET:HE3	79:bl:412:GLY:HA2	1.87	0.55
1:aa:451:U:H2'	1:aa:452:C:O4'	2.06	0.55
3:ca:104:GLN:HG3	3:ca:185:LEU:HD23	1.88	0.55
9:ka:20:PHE:O	9:ka:23:VAL:HG12	2.06	0.55
18:ta:65:VAL:HA	18:ta:68:GLU:HB3	1.89	0.55
32:ib:23:ASP:H	32:ib:31:ALA:HB1	1.72	0.55
52:TA:106:ARG:HE	52:TA:126:ARG:HH11	1.55	0.55
75:RB:91:G:H5'	75:RB:92:C:H5''	1.87	0.55
75:RB:169:G:H2'	75:RB:170:C:C6	2.40	0.55
75:RB:1659:G:H1	75:RB:1783:G:H1	1.54	0.55
79:bl:125:LEU:HD23	79:bl:131:HIS:CD2	2.41	0.55
1:aa:68:A:N6	1:aa:84:G:N1	2.18	0.55
1:aa:167:A:O2'	1:aa:169:A:N7	2.38	0.55
1:aa:616:U:OP2	5:ga:3:LYS:NZ	2.40	0.55
1:aa:1355:U:H2'	1:aa:1356:A:C8	2.42	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:sa:87:THR:HG22	17:sa:89:LEU:N	2.22	0.55
19:ua:51:PHE:HE2	19:ua:57:ARG:HH11	1.54	0.55
25:bb:30:TYR:HE2	25:bb:48:VAL:HB	1.70	0.55
31:hb:151:ILE:HB	31:hb:182:VAL:HG12	1.88	0.55
52:TA:83:LEU:HD21	52:TA:113:ALA:HB2	1.88	0.55
61:CB:146:VAL:HG11	61:CB:191:LEU:HD13	1.88	0.55
66:HB:79:ASN:HB3	66:HB:147:HIS:CE1	2.42	0.55
75:RB:1936:G:H21	75:RB:3349:A:H8	1.55	0.55
77:TB:93:U:H2'	77:TB:94:C:H6	1.71	0.55
1:aa:778:G:N2	1:aa:780:A:O2'	2.35	0.55
1:aa:1782:C:H3'	67:IB:1:MET:HE3	1.88	0.55
53:UA:81:GLY:N	76:SB:96:A:OP1	2.38	0.55
75:RB:1563:G:H4'	75:RB:1564:C:O5'	2.07	0.55
75:RB:3304:U:H3	75:RB:3377:A:H62	1.54	0.55
1:aa:492:G:N1	1:aa:503:U:H1'	2.22	0.55
1:aa:1147:A:OP1	27:db:2:THR:N	2.40	0.55
1:aa:1374:G:H5''	16:ra:81:GLN:NE2	2.21	0.55
1:aa:1497:U:O2'	1:aa:1502:C:OP1	2.24	0.55
6:ha:140:LYS:HG2	6:ha:151:THR:HG23	1.89	0.55
15:qa:110:GLY:O	15:qa:111:MET:HE2	2.06	0.55
16:ra:36:LYS:HD2	16:ra:67:TYR:CD2	2.42	0.55
75:RB:526:A:H2'	75:RB:527:G:C8	2.42	0.55
75:RB:3043:C:O2'	75:RB:3044:A:H5'	2.06	0.55
80:cl:3:C:H2'	80:cl:4:A:H8	1.70	0.55
1:aa:130:A:P	1:aa:134:G:H22	2.30	0.55
1:aa:701:C:O2'	1:aa:702:G:O4'	2.10	0.55
1:aa:1241:G:N3	1:aa:1242:A:C8	2.75	0.55
1:aa:1365:C:H4'	1:aa:1366:A:C8	2.42	0.55
15:qa:24:MET:CB	15:qa:58:MET:HE1	2.37	0.55
27:db:79:ILE:HD13	27:db:84:VAL:HG23	1.89	0.55
30:gb:189:LEU:O	30:gb:193:ARG:HG2	2.07	0.55
38:FA:135:ARG:NH2	38:FA:141:ASP:OD2	2.33	0.55
43:KA:43:LYS:NZ	75:RB:1081:U:O3'	2.40	0.55
50:RA:47:ILE:HB	50:RA:94:LEU:HB3	1.89	0.55
58:ZA:23:PHE:HA	58:ZA:112:ASN:HB3	1.89	0.55
75:RB:3193:C:H4'	75:RB:3194:C:H5	1.72	0.55
1:aa:176:A:C6	30:gb:199:LYS:HE3	2.42	0.54
1:aa:496:A:O2'	1:aa:497:U:O5'	2.24	0.54
1:aa:1246:A:O2'	1:aa:1248:A:OP1	2.24	0.54
1:aa:1289:U:H4'	1:aa:1290:U:O5'	2.06	0.54
30:gb:14:LYS:HE2	30:gb:16:VAL:HG22	1.88	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:EA:117:LYS:HG3	37:EA:118:TYR:CD1	2.42	0.54
38:FA:10:MET:HE3	38:FA:77:GLN:NE2	2.21	0.54
79:bl:39:PRO:HA	79:bl:119:ILE:HG13	1.89	0.54
1:aa:148:C:H42	1:aa:162:A:H61	1.54	0.54
2:ba:69:HIS:CD2	2:ba:74:LYS:HE3	2.42	0.54
6:ha:164:GLY:HA3	6:ha:186:ASP:HB3	1.88	0.54
9:ka:131:ARG:HE	9:ka:132:ARG:H	1.53	0.54
16:ra:36:LYS:HD2	16:ra:67:TYR:CE2	2.42	0.54
19:ua:54:ASP:OD1	19:ua:56:ASN:ND2	2.40	0.54
28:eb:130:LEU:O	28:eb:135:HIS:HB2	2.07	0.54
53:UA:54:ILE:O	53:UA:58:THR:HG23	2.07	0.54
57:YA:5:ARG:N	57:YA:106:GLU:OE2	2.40	0.54
57:YA:92:MET:HG3	75:RB:1217:G:H4'	1.90	0.54
58:ZA:22:SER:OG	58:ZA:75:THR:HG22	2.07	0.54
1:aa:1609:G:N1	16:ra:100:SER:OG	2.41	0.54
1:aa:1806:C:OP1	27:db:87:ARG:HD3	2.07	0.54
5:ga:87:ASP:OD1	23:ya:15:ARG:HB2	2.06	0.54
13:oa:14:ARG:HG3	13:oa:14:ARG:O	2.08	0.54
20:va:55:HIS:O	20:va:56:ARG:HB2	2.08	0.54
35:CA:83:THR:HG22	35:CA:85:TYR:HD1	1.72	0.54
40:HA:75:VAL:O	75:RB:2160:C:H5'	2.06	0.54
46:NA:113:TYR:HE2	46:NA:149:ILE:HG21	1.70	0.54
59:AB:55:PRO:HA	59:AB:58:LYS:HE3	1.89	0.54
75:RB:241:G:H2'	75:RB:242:U:C6	2.42	0.54
75:RB:441:G:C6	75:RB:496:U:O2	2.61	0.54
75:RB:606:C:H2'	75:RB:607:U:C5	2.42	0.54
75:RB:1543:A:H2	75:RB:1559:G:N1	2.05	0.54
75:RB:2152:A:H5'	75:RB:2154:G:O4'	2.07	0.54
75:RB:2206:A:H2'	75:RB:2207:A:H8	1.71	0.54
6:ha:192:TRP:HA	6:ha:199:LEU:HA	1.89	0.54
21:wa:40:ARG:HG3	21:wa:41:GLN:OE1	2.07	0.54
27:db:41:VAL:HG23	27:db:68:TYR:CE1	2.42	0.54
42:JA:22:ASP:HA	42:JA:27:LYS:HE3	1.89	0.54
62:DB:94:LYS:NZ	64:FB:160:GLU:OE2	2.40	0.54
62:DB:369:PHE:HE2	75:RB:3365:U:H1'	1.71	0.54
75:RB:1024:G:H2'	75:RB:1025:G:C8	2.42	0.54
75:RB:1559:G:C2	75:RB:1561:U:H1'	2.43	0.54
1:aa:12:U:H2'	1:aa:13:C:C6	2.42	0.54
1:aa:703:G:H5''	1:aa:744:G:H1	1.73	0.54
1:aa:785:A:C8	1:aa:787:C:H5'	2.42	0.54
1:aa:1440:U:O2'	1:aa:1442:A:OP1	2.18	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:ga:54:ILE:HG13	5:ga:55:GLY:N	2.22	0.54
10:la:56:GLU:OE2	10:la:118:TYR:HE2	1.90	0.54
24:za:89:ARG:HD3	24:za:208:TYR:HA	1.88	0.54
34:BA:54:HIS:CE1	75:RB:2721:U:H4'	2.43	0.54
75:RB:240:U:HO2'	75:RB:241:G:H8	1.55	0.54
1:aa:1226:U:H2'	1:aa:1227:A:H8	1.73	0.54
40:HA:115:VAL:HA	40:HA:134:LEU:HD23	1.88	0.54
45:MA:13:LYS:HB3	45:MA:153:GLU:HB2	1.89	0.54
63:EB:368:GLU:O	63:EB:371:SER:OG	2.22	0.54
74:PB:37:LYS:C	74:PB:58:ARG:HH21	2.14	0.54
1:aa:1512:C:O2	1:aa:1571:G:O2'	2.20	0.54
16:ra:121:GLN:HE22	16:ra:128:VAL:HG23	1.73	0.54
19:ua:51:PHE:HE2	19:ua:57:ARG:NH1	2.06	0.54
61:CB:151:TYR:OH	61:CB:184:GLU:OE2	2.25	0.54
63:EB:316:ARG:NH1	63:EB:317:GLU:OE1	2.34	0.54
75:RB:625:G:H2'	75:RB:626:G:C8	2.43	0.54
75:RB:3009:U:H2'	75:RB:3010:U:C6	2.43	0.54
1:aa:1061:G:H4'	1:aa:1062:C:OP2	2.08	0.54
20:va:3:ARG:C	20:va:4:ARG:HD2	2.33	0.54
24:za:63:GLN:O	24:za:67:ARG:HG3	2.08	0.54
27:db:47:GLN:OE1	27:db:47:GLN:N	2.40	0.54
28:eb:102:THR:HG22	28:eb:103:ALA:N	2.23	0.54
48:PA:15:ARG:NH1	75:RB:214:G:OP1	2.41	0.54
75:RB:2173:G:H2'	75:RB:2174:C:C6	2.43	0.54
75:RB:2719:U:H2'	75:RB:2720:U:H6	1.73	0.54
75:RB:3222:U:O2	75:RB:3240:G:C6	2.61	0.54
76:SB:7:U:H2'	76:SB:8:C:C6	2.43	0.54
1:aa:206:U:H2'	1:aa:207:A:C8	2.42	0.54
1:aa:1185:U:O2'	17:sa:137:HIS:ND1	2.37	0.54
1:aa:1386:U:O2'	1:aa:1524:A:N1	2.34	0.54
6:ha:116:LYS:HE3	6:ha:135:ARG:HB2	1.89	0.54
6:ha:289:VAL:HG12	6:ha:291:VAL:HG23	1.89	0.54
20:va:100:TYR:HA	20:va:112:HIS:HE1	1.72	0.54
30:gb:58:LYS:N	30:gb:109:SER:OG	2.41	0.54
62:DB:191:ILE:HD13	62:DB:194:LYS:HD2	1.89	0.54
75:RB:1474:U:H2'	75:RB:1475:U:C6	2.43	0.54
75:RB:2592:A:H3'	75:RB:2593:U:H6	1.73	0.54
79:bl:214:ASN:HB3	79:bl:217:THR:HG22	1.90	0.54
1:aa:559:A:O2'	1:aa:560:A:O5'	2.22	0.54
3:ca:43:THR:HG23	3:ca:59:LEU:HB2	1.90	0.54
3:ca:77:THR:OG1	3:ca:106:ASP:HB2	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:la:110:GLU:O	10:la:114:ILE:HG12	2.08	0.54
17:sa:107:ASN:HB3	17:sa:129:SER:OG	2.08	0.54
29:fb:198:LEU:HD23	29:fb:228:LEU:HD11	1.90	0.54
32:ib:45:THR:HG22	32:ib:61:PHE:HD1	1.73	0.54
36:DA:201:GLY:HA2	36:DA:204:MET:SD	2.48	0.54
43:KA:59:ASP:OD2	43:KA:81:HIS:ND1	2.32	0.54
44:LA:17:CYS:HB3	44:LA:52:ARG:HE	1.72	0.54
71:MB:17:THR:HG22	71:MB:36:GLN:HB3	1.90	0.54
72:NB:2:PRO:HA	75:RB:1745:G:H21	1.72	0.54
75:RB:2562:G:H1'	75:RB:2571:G:N2	2.23	0.54
80:cl:44:A:H2'	80:cl:45:G:O4'	2.07	0.54
1:aa:286:C:H2'	1:aa:287:C:O4'	2.08	0.53
1:aa:310:U:OP1	32:ib:89:ARG:NH1	2.41	0.53
1:aa:1399:G:H2'	1:aa:1400:G:C8	2.43	0.53
6:ha:114:HIS:CE1	6:ha:140:LYS:HD2	2.43	0.53
6:ha:271:ILE:HB	6:ha:285:LEU:HB2	1.90	0.53
9:ka:14:LEU:HD11	9:ka:46:PRO:HD3	1.90	0.53
12:na:28:PHE:HA	12:na:92:ALA:O	2.09	0.53
17:sa:52:ARG:O	17:sa:56:ARG:HG2	2.08	0.53
35:CA:125:THR:OG1	35:CA:127:LYS:NZ	2.41	0.53
40:HA:202:ARG:NH1	69:KB:27:GLN:HB3	2.23	0.53
75:RB:948:C:H2'	75:RB:949:C:C6	2.43	0.53
75:RB:2279:U:H5'	79:bl:231:ALA:HB1	1.89	0.53
1:aa:146:A:N6	1:aa:164:C:H42	2.06	0.53
6:ha:20:VAL:HG22	6:ha:316:THR:O	2.09	0.53
8:ja:47:ILE:HG23	8:ja:111:LEU:HD11	1.90	0.53
19:ua:51:PHE:CE2	19:ua:57:ARG:HD3	2.42	0.53
22:xa:42:CYS:HB2	22:xa:61:CYS:HB2	1.91	0.53
37:EA:111:HIS:CE1	37:EA:117:LYS:HB2	2.43	0.53
70:LB:110:PHE:CE1	75:RB:3253:A:H2'	2.41	0.53
75:RB:495:G:H2'	75:RB:496:U:O4'	2.08	0.53
75:RB:1028:G:H3'	75:RB:1030:A:OP1	2.07	0.53
75:RB:3265:C:H3'	75:RB:3266:A:C8	2.41	0.53
77:TB:75:G:N2	77:TB:100:A:OP2	2.29	0.53
1:aa:546:U:O4	23:ya:28:LYS:NZ	2.26	0.53
29:fb:162:HIS:CE1	29:fb:163:THR:HG23	2.43	0.53
32:ib:4:GLN:CD	32:ib:10:LEU:H	2.16	0.53
55:WA:10:THR:HG21	55:WA:83:ARG:HH12	1.73	0.53
64:FB:206:TYR:OH	75:RB:3198:G:OP1	2.26	0.53
70:LB:209:ARG:NH1	75:RB:3201:C:O2	2.41	0.53
1:aa:495:C:H42	1:aa:499:A:N6	2.07	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:ja:148:ARG:HH21	8:ja:149:TYR:HE2	1.57	0.53
12:na:117:ARG:HE	27:db:49:ALA:HB2	1.72	0.53
16:ra:41:MET:HG2	16:ra:42:GLU:O	2.09	0.53
31:hb:47:ASN:HB2	31:hb:66:PRO:HG3	1.90	0.53
36:DA:241:ARG:HH11	36:DA:241:ARG:HG3	1.73	0.53
43:KA:283:ARG:NH2	77:TB:62:U:H5''	2.23	0.53
57:YA:18:THR:HB	57:YA:19:PRO:HD2	1.90	0.53
59:AB:93:MET:HA	59:AB:93:MET:HE2	1.90	0.53
69:KB:3:LYS:HE2	69:KB:4:HIS:CE1	2.43	0.53
75:RB:1024:G:H2'	75:RB:1025:G:H8	1.73	0.53
75:RB:3215:A:H3'	75:RB:3216:A:C8	2.44	0.53
75:RB:3240:G:H3'	75:RB:3241:U:C6	2.43	0.53
80:cl:18:G:O2'	80:cl:19:G:OP1	2.26	0.53
1:aa:1442:A:OP2	4:da:61:TRP:NE1	2.42	0.53
1:aa:1550:G:N2	1:aa:1576:C:H1'	2.22	0.53
20:va:100:TYR:HA	20:va:112:HIS:CE1	2.43	0.53
25:bb:181:LEU:HD23	25:bb:184:LEU:HD23	1.90	0.53
62:DB:221:ILE:HB	62:DB:341:THR:HB	1.89	0.53
62:DB:229:TYR:CE1	62:DB:271:GLY:HA2	2.43	0.53
75:RB:2836:G:O6	75:RB:2842:A:O2'	2.17	0.53
75:RB:3074:G:O2'	75:RB:3075:U:OP1	2.20	0.53
1:aa:786:U:H3'	2:ba:13:ARG:HH11	1.74	0.53
1:aa:906:G:H2'	1:aa:907:G:C8	2.43	0.53
3:ca:58:ALA:HB2	3:ca:196:GLY:HA2	1.91	0.53
24:za:23:LEU:HD12	24:za:28:HIS:CD2	2.44	0.53
30:gb:31:ARG:HD3	30:gb:31:ARG:N	2.23	0.53
30:gb:32:ILE:HG23	30:gb:53:MET:HA	1.90	0.53
33:AA:76:PHE:C	33:AA:78:ARG:H	2.17	0.53
33:AA:151:HIS:ND1	33:AA:177:LYS:HA	2.23	0.53
75:RB:2919:G:C2	75:RB:2949:G:H1'	2.43	0.53
78:al:4:U:O4	79:bl:62:LYS:HE3	2.08	0.53
79:bl:404:CYS:HA	79:bl:409:GLY:HA2	1.91	0.53
1:aa:515:A:H5'	28:eb:175:LYS:HD3	1.91	0.53
13:oa:84:LEU:HG	13:oa:97:GLN:HB2	1.89	0.53
41:IA:86:LYS:HD3	69:KB:164:VAL:O	2.09	0.53
42:JA:71:MET:SD	42:JA:136:LEU:HD23	2.49	0.53
42:JA:145:ARG:HB2	42:JA:148:VAL:HG23	1.90	0.53
49:QA:139:LYS:CD	75:RB:441:G:H5''	2.38	0.53
62:DB:88:GLY:HA3	62:DB:163:ILE:HD12	1.91	0.53
75:RB:543:C:H2'	75:RB:544:C:C6	2.44	0.53
75:RB:3264:C:O2'	75:RB:3265:C:OP1	2.22	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
79:bl:90:ASN:ND2	79:bl:115:PRO:O	2.41	0.53
79:bl:171:PHE:CE2	79:bl:203:LYS:HD3	2.44	0.53
79:bl:310:LEU:HA	79:bl:313:LEU:HD23	1.89	0.53
80:cl:21:A:O2'	80:cl:22:G:O4'	2.26	0.53
1:aa:774:C:H1'	28:eb:145:VAL:HG21	1.91	0.53
1:aa:1400:G:H2'	1:aa:1401:C:C6	2.44	0.53
16:ra:85:ILE:O	16:ra:89:GLN:HG3	2.09	0.53
18:ta:59:LYS:H	18:ta:62:THR:HG23	1.73	0.53
22:xa:36:ASP:O	22:xa:81:PHE:HA	2.09	0.53
59:AB:56:TYR:HB3	59:AB:79:LYS:HE3	1.89	0.53
75:RB:236:A:H2'	75:RB:237:C:O4'	2.09	0.53
75:RB:540:G:O2'	75:RB:541:C:H5'	2.09	0.53
75:RB:2622:C:HO2'	75:RB:2624:A:H2	1.57	0.53
75:RB:3025:A:H8	75:RB:3025:A:O5'	1.92	0.53
1:aa:525:A:H4'	2:ba:41:SER:OG	2.09	0.53
3:ca:203:LEU:HD22	3:ca:207:GLU:HG2	1.90	0.53
6:ha:183:GLY:HA2	6:ha:189:VAL:HG22	1.91	0.53
48:PA:50:ARG:NH1	76:SB:71:A:OP2	2.41	0.53
64:FB:94:PRO:HD3	75:RB:1179:C:H4'	1.91	0.53
66:HB:36:VAL:HG11	66:HB:69:ARG:NH1	2.23	0.53
75:RB:634:A:H2'	75:RB:635:U:C6	2.44	0.53
1:aa:632:G:OP1	14:pa:120:SER:OG	2.27	0.53
1:aa:789:C:O2'	1:aa:790:U:H6	1.92	0.53
1:aa:1240:A:H2'	1:aa:1241:G:C8	2.44	0.53
1:aa:1385:C:O2	10:la:74:ARG:NH2	2.31	0.53
1:aa:1541:C:H4'	1:aa:1547:G:N1	2.24	0.53
6:ha:77:GLN:H	6:ha:92:SER:HA	1.74	0.53
13:oa:44:VAL:HG13	13:oa:70:VAL:HG23	1.91	0.53
18:ta:56:PRO:HA	18:ta:62:THR:OG1	2.09	0.53
18:ta:63:PRO:HD2	18:ta:66:LEU:HB2	1.90	0.53
28:eb:108:ALA:HA	28:eb:113:THR:HG21	1.91	0.53
52:TA:106:ARG:NH2	75:RB:1415:G:OP1	2.42	0.53
60:BB:36:GLN:HG3	60:BB:37:LYS:N	2.24	0.53
68:JB:100:TYR:O	75:RB:2892:G:O2'	2.25	0.53
75:RB:26:A:C2	75:RB:57:G:N1	2.74	0.53
75:RB:3340:G:H21	75:RB:3341:C:H5''	1.74	0.53
79:bl:422:SER:OG	79:bl:423:PHE:O	2.25	0.53
1:aa:146:A:N6	1:aa:164:C:N4	2.56	0.52
1:aa:206:U:H2'	1:aa:207:A:H8	1.74	0.52
1:aa:1242:A:C5	1:aa:1243:C:C4	2.97	0.52
6:ha:139:ILE:HB	6:ha:152:ILE:HD11	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:gb:100:ARG:NH1	30:gb:107:ASP:OD2	2.42	0.52
40:HA:180:ARG:HG2	75:RB:284:U:O3'	2.09	0.52
75:RB:22:G:H2'	75:RB:23:A:H8	1.73	0.52
75:RB:244:G:H2'	75:RB:245:C:C6	2.44	0.52
80:cl:66:C:H2'	80:cl:67:U:C6	2.44	0.52
1:aa:1112:G:O2'	1:aa:1113:G:H5'	2.08	0.52
4:da:57:GLU:HG2	4:da:66:TRP:CD1	2.44	0.52
7:ia:33:GLY:HA3	7:ia:53:THR:HG22	1.91	0.52
8:ja:200:LYS:HA	8:ja:206:GLU:HG3	1.92	0.52
37:EA:55:THR:HG23	37:EA:62:ARG:HA	1.91	0.52
60:BB:96:LEU:O	60:BB:101:LYS:NZ	2.41	0.52
75:RB:2659:A:H2'	75:RB:2660:G:C8	2.43	0.52
1:aa:1742:A:H2'	1:aa:1743:C:C6	2.43	0.52
11:ma:28:ILE:HG23	11:ma:99:LEU:HB2	1.90	0.52
12:na:34:PHE:HB3	12:na:41:PHE:HB2	1.92	0.52
17:sa:120:MET:HE2	17:sa:128:PHE:CE1	2.44	0.52
24:za:38:MET:HE1	24:za:166:PRO:HB3	1.92	0.52
46:NA:113:TYR:CE2	46:NA:149:ILE:HG21	2.43	0.52
60:BB:100:GLU:HA	60:BB:103:ARG:HD3	1.92	0.52
60:BB:105:LEU:HD23	75:RB:112:C:OP1	2.09	0.52
62:DB:163:ILE:HG22	62:DB:181:LEU:HD11	1.92	0.52
75:RB:489:C:HO2'	75:RB:490:G:H8	1.56	0.52
75:RB:1794:A:H2'	75:RB:1795:A:C8	2.44	0.52
75:RB:1815:G:O2'	75:RB:1816:U:OP1	2.22	0.52
1:aa:250:A:O2'	32:ib:38:SER:O	2.23	0.52
9:ka:183:SER:HB2	9:ka:186:ILE:HG12	1.91	0.52
40:HA:22:VAL:O	40:HA:26:ARG:HG3	2.10	0.52
41:IA:67:ARG:O	69:KB:63:ARG:NH2	2.42	0.52
56:XA:36:ALA:HB2	56:XA:50:PHE:CE1	2.45	0.52
56:XA:85:GLU:OE1	56:XA:94:ILE:HG13	2.10	0.52
62:DB:209:GLU:OE1	62:DB:290:LYS:HG3	2.09	0.52
75:RB:1755:A:H2	75:RB:1764:G:N2	2.06	0.52
1:aa:211:G:OP2	32:ib:27:ARG:NH2	2.41	0.52
1:aa:266:C:H2'	1:aa:267:G:C8	2.44	0.52
1:aa:1696:C:H2'	1:aa:1697:G:C8	2.44	0.52
6:ha:24:ILE:HG23	6:ha:34:ILE:HD11	1.91	0.52
8:ja:10:LYS:HA	8:ja:27:PHE:HA	1.91	0.52
36:DA:104:LEU:O	36:DA:139:HIS:HE1	1.91	0.52
36:DA:234:LYS:HG2	36:DA:238:ILE:HG12	1.90	0.52
37:EA:163:LYS:O	37:EA:167:VAL:HG22	2.10	0.52
62:DB:86:ILE:HD12	62:DB:201:PHE:CD2	2.45	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
72:NB:2:PRO:HD3	75:RB:1746:G:H4'	1.91	0.52
74:PB:3:GLN:HG3	74:PB:3:GLN:O	2.09	0.52
75:RB:795:C:H2'	75:RB:796:C:C6	2.45	0.52
75:RB:2840:U:H3'	75:RB:2841:C:C5	2.44	0.52
79:bl:319:GLU:CG	79:bl:415:ARG:HA	2.39	0.52
1:aa:290:C:H2'	1:aa:291:G:O4'	2.10	0.52
1:aa:891:U:OP1	25:bb:214:LYS:NZ	2.42	0.52
1:aa:900:G:H22	1:aa:922:U:H3	1.56	0.52
3:ca:210:PHE:CD2	32:ib:9:PHE:HB2	2.44	0.52
16:ra:44:PRO:HG3	16:ra:115:ASN:ND2	2.23	0.52
30:gb:5:ILE:O	30:gb:13:GLN:HB2	2.10	0.52
41:IA:76:GLU:HB3	41:IA:112:GLY:HA3	1.91	0.52
71:MB:8:GLN:HB2	75:RB:3262:U:O2	2.09	0.52
75:RB:1561:U:H2'	75:RB:1562:A:C8	2.44	0.52
75:RB:2539:C:HO2'	75:RB:2540:C:P	2.33	0.52
1:aa:141:G:C2	1:aa:142:G:C6	2.98	0.52
1:aa:508:U:H3'	1:aa:509:A:O4'	2.09	0.52
1:aa:642:C:O2'	31:hb:113:ARG:NH2	2.42	0.52
3:ca:161:LYS:HD2	3:ca:164:LYS:HB2	1.91	0.52
13:oa:89:ASP:OD1	13:oa:90:TYR:N	2.42	0.52
20:va:76:TYR:HE1	32:ib:100:ARG:HG2	1.74	0.52
20:va:107:ASN:O	20:va:107:ASN:ND2	2.40	0.52
26:cb:57:PHE:O	26:cb:61:GLN:HG2	2.09	0.52
38:FA:58:ALA:HB2	38:FA:69:ILE:HD11	1.90	0.52
52:TA:68:LEU:HD11	52:TA:74:LYS:HB3	1.91	0.52
62:DB:201:PHE:HE2	62:DB:206:VAL:CG2	2.22	0.52
64:FB:27:ILE:HD11	75:RB:1184:U:H5	1.74	0.52
70:LB:113:ASN:HB3	70:LB:115:VAL:HG23	1.92	0.52
75:RB:591:G:H2'	75:RB:592:U:H6	1.75	0.52
75:RB:985:C:O2'	75:RB:986:G:OP1	2.28	0.52
75:RB:2199:G:H21	75:RB:2200:A:H61	1.57	0.52
1:aa:129:U:O2'	1:aa:130:A:OP1	2.27	0.52
1:aa:191:U:C5	3:ca:160:ARG:HD3	2.44	0.52
1:aa:539:A:H8	1:aa:539:A:O5'	1.92	0.52
2:ba:25:ARG:NH2	2:ba:82:TYR:OH	2.43	0.52
6:ha:223:ALA:HA	6:ha:233:LEU:HA	1.92	0.52
7:ia:71:SER:O	7:ia:74:GLN:HB3	2.10	0.52
9:ka:167:GLU:OE2	18:ta:66:LEU:N	2.43	0.52
13:oa:70:VAL:HG12	13:oa:77:PHE:CD2	2.45	0.52
18:ta:84:LEU:HD11	18:ta:87:ARG:HH21	1.75	0.52
19:ua:32:VAL:HG13	19:ua:33:LYS:HG2	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:ib:98:TYR:O	32:ib:100:ARG:HG3	2.10	0.52
57:YA:157:LYS:HE3	57:YA:159:ARG:HD3	1.91	0.52
75:RB:22:G:H2'	75:RB:23:A:C8	2.45	0.52
75:RB:383:A:H2'	75:RB:384:A:C8	2.44	0.52
75:RB:581:G:H2'	75:RB:582:C:C6	2.45	0.52
75:RB:1019:A:O2'	75:RB:1020:U:O3'	2.27	0.52
1:aa:25:C:H5''	1:aa:474:A:O2'	2.10	0.52
1:aa:476:U:O2'	1:aa:775:A:N3	2.42	0.52
6:ha:183:GLY:HA3	6:ha:210:VAL:HG11	1.92	0.52
25:bb:137:MET:HG2	25:bb:215:VAL:HG22	1.91	0.52
31:hb:126:ILE:O	31:hb:130:VAL:HG23	2.10	0.52
35:CA:121:GLU:O	35:CA:125:THR:HG23	2.10	0.52
37:EA:124:ILE:O	37:EA:124:ILE:HG13	2.08	0.52
46:NA:63:GLY:HA3	76:SB:136:G:H4'	1.92	0.52
78:al:1:A:H62	80:cl:37:MIA:H153	1.74	0.52
1:aa:39:A:OP1	28:eb:5:ASN:HB3	2.10	0.52
1:aa:191:U:H5	3:ca:160:ARG:HD3	1.74	0.52
1:aa:518:G:O2'	1:aa:519:A:H8	1.93	0.52
1:aa:1122:U:H2'	1:aa:1123:G:C8	2.44	0.52
2:ba:69:HIS:NE2	2:ba:76:THR:HG23	2.24	0.52
6:ha:143:ASN:ND2	6:ha:147:GLU:OE2	2.43	0.52
25:bb:31:ASP:O	25:bb:96:VAL:N	2.36	0.52
31:hb:40:ASP:HB3	31:hb:76:ILE:HD12	1.92	0.52
31:hb:160:ARG:HD2	31:hb:161:ASN:OD1	2.09	0.52
33:AA:145:GLN:O	33:AA:172:PRO:HG2	2.09	0.52
57:YA:10:GLN:OE1	63:EB:384:MET:HA	2.10	0.52
62:DB:2:SER:HB2	75:RB:2940:G:C8	2.45	0.52
74:PB:6:THR:HG22	75:RB:1489:G:H21	1.74	0.52
74:PB:102:ILE:HG13	74:PB:103:VAL:N	2.25	0.52
75:RB:78:U:H2'	75:RB:79:C:H6	1.75	0.52
75:RB:597:C:H3'	75:RB:598:U:C6	2.44	0.52
75:RB:1257:U:O2'	75:RB:1258:C:H5''	2.10	0.52
75:RB:2399:C:H2'	75:RB:2400:C:C6	2.45	0.52
75:RB:3242:C:H2'	75:RB:3243:G:O4'	2.10	0.52
75:RB:3304:U:H6	75:RB:3305:A:H2'	1.70	0.52
1:aa:498:U:O2'	1:aa:499:A:O4'	2.20	0.51
1:aa:779:C:OP1	8:ja:21:ASP:HB2	2.11	0.51
5:ga:100:LEU:HB3	5:ga:123:LYS:HB2	1.92	0.51
6:ha:206:HIS:CD2	6:ha:230:VAL:HG23	2.45	0.51
6:ha:302:LEU:HB2	6:ha:312:TYR:O	2.09	0.51
22:xa:57:VAL:HG12	22:xa:64:VAL:HA	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:bb:86:LEU:HB3	25:bb:98:THR:CG2	2.40	0.51
36:DA:206:PRO:HG3	36:DA:213:GLY:HA3	1.92	0.51
40:HA:5:LYS:N	75:RB:115:C:OP1	2.42	0.51
52:TA:83:LEU:HD22	52:TA:109:ILE:HG23	1.92	0.51
60:BB:12:TRP:HE1	60:BB:61:VAL:HG22	1.75	0.51
70:LB:154:ARG:HA	70:LB:154:ARG:NH2	2.25	0.51
71:MB:18:ILE:HD13	71:MB:94:LEU:HD13	1.92	0.51
74:PB:81:VAL:HG12	74:PB:82:LEU:HD12	1.92	0.51
75:RB:2138:A:H1'	75:RB:2274:A:N6	2.25	0.51
1:aa:259:A:H2'	1:aa:260:A:O4'	2.10	0.51
1:aa:1605:A:H2'	1:aa:1606:U:H6	1.75	0.51
1:aa:1749:C:H2'	1:aa:1750:A:C8	2.44	0.51
6:ha:66:PHE:CD2	6:ha:67:ARG:HG3	2.44	0.51
9:ka:48:SER:N	9:ka:66:GLU:OE2	2.40	0.51
20:va:65:GLN:HG3	20:va:67:ARG:HG2	1.93	0.51
20:va:75:THR:O	20:va:76:TYR:HB3	2.09	0.51
60:BB:12:TRP:CD1	60:BB:61:VAL:HG13	2.44	0.51
2:ba:93:PRO:HG3	8:ja:59:ARG:HH11	1.76	0.51
6:ha:114:HIS:ND1	6:ha:140:LYS:HD2	2.25	0.51
17:sa:60:ARG:NH1	17:sa:64:ALA:HB2	2.25	0.51
33:AA:222:PHE:HA	33:AA:225:VAL:HG22	1.91	0.51
48:PA:111:ASP:H	48:PA:114:ARG:HB2	1.75	0.51
60:BB:94:ARG:HH11	60:BB:94:ARG:HG3	1.75	0.51
74:PB:97:VAL:O	74:PB:101:LYS:HG2	2.11	0.51
75:RB:757:G:H2'	75:RB:758:A:C8	2.44	0.51
75:RB:1579:C:OP2	75:RB:1579:C:H2'	2.11	0.51
75:RB:2357:G:H22	75:RB:2389:G:H1'	1.74	0.51
1:aa:785:A:C6	1:aa:787:C:H2'	2.45	0.51
1:aa:1071:C:OP1	25:bb:151:LYS:NZ	2.42	0.51
1:aa:1260:A:H4'	1:aa:1261:U:O5'	2.10	0.51
6:ha:185:TRP:HA	6:ha:209:TYR:HB2	1.92	0.51
9:ka:197:LYS:HA	9:ka:200:ARG:NE	2.26	0.51
10:la:46:ARG:HH11	16:ra:24:PRO:HD3	1.75	0.51
13:oa:117:ILE:O	13:oa:118:ARG:HB2	2.10	0.51
20:va:72:LYS:HB2	20:va:127:TYR:CE1	2.45	0.51
23:ya:33:ARG:HE	28:eb:128:ARG:HD2	1.76	0.51
36:DA:188:LYS:NZ	75:RB:1789:C:O2	2.43	0.51
38:FA:20:VAL:HG23	38:FA:25:ILE:HG13	1.90	0.51
58:ZA:23:PHE:HE2	58:ZA:80:PHE:HB3	1.75	0.51
1:aa:451:U:O2'	8:ja:27:PHE:O	2.28	0.51
1:aa:1501:G:H1'	1:aa:1502:C:C5	2.41	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:ra:127:ASP:OD2	16:ra:137:THR:HG22	2.10	0.51
31:hb:84:LEU:O	31:hb:88:PHE:HB3	2.11	0.51
33:AA:61:ARG:O	33:AA:65:GLN:HG2	2.10	0.51
67:IB:18:ARG:O	67:IB:22:GLN:HG2	2.10	0.51
75:RB:621:C:O2'	75:RB:622:U:OP2	2.27	0.51
75:RB:748:C:OP2	75:RB:787:G:N2	2.37	0.51
75:RB:1041:C:H2'	75:RB:1042:C:H6	1.75	0.51
75:RB:1238:G:N2	75:RB:1259:C:O2'	2.43	0.51
75:RB:2088:C:H2'	75:RB:2089:A:C8	2.45	0.51
76:SB:130:G:H2'	76:SB:131:G:H8	1.74	0.51
77:TB:73:U:OP2	77:TB:74:A:O2'	2.20	0.51
1:aa:34:G:O2'	1:aa:519:A:O2'	2.28	0.51
6:ha:206:HIS:HD2	6:ha:230:VAL:HG23	1.76	0.51
13:oa:120:HIS:H	17:sa:127:GLU:HB3	1.76	0.51
25:bb:164:ILE:O	25:bb:168:MET:HG3	2.10	0.51
41:IA:78:LEU:O	41:IA:81:MET:HB2	2.10	0.51
46:NA:78:THR:HG22	46:NA:151:ILE:CG1	2.36	0.51
52:TA:8:ARG:CZ	52:TA:63:LYS:HD3	2.40	0.51
52:TA:82:GLU:HA	52:TA:85:LEU:HD13	1.92	0.51
57:YA:61:LEU:HB3	61:CB:77:PHE:HE1	1.76	0.51
61:CB:101:THR:HG23	61:CB:132:VAL:HG12	1.93	0.51
62:DB:253:ALA:HB3	75:RB:2877:U:H1'	1.93	0.51
66:HB:43:VAL:HG23	66:HB:194:GLY:O	2.11	0.51
75:RB:420:A:C2	75:RB:2356:A:H4'	2.45	0.51
75:RB:2898:G:O2'	75:RB:3020:A:N1	2.40	0.51
79:bl:5:HIS:CE1	79:bl:7:THR:OG1	2.63	0.51
1:aa:711:C:H2'	1:aa:712:U:C5	2.45	0.51
1:aa:814:C:H2'	1:aa:815:A:C8	2.39	0.51
1:aa:861:A:C6	31:hb:99:ARG:HG2	2.46	0.51
1:aa:1438:U:H4'	1:aa:1439:G:H5''	1.93	0.51
4:da:37:VAL:HG11	4:da:42:VAL:CG2	2.40	0.51
8:ja:247:THR:HG23	8:ja:250:GLU:H	1.75	0.51
49:QA:10:TRP:CD2	49:QA:46:TYR:HB2	2.45	0.51
59:AB:5:GLN:HG2	59:AB:6:PRO:HD2	1.93	0.51
66:HB:211:PRO:HD2	66:HB:212:GLY:H	1.75	0.51
75:RB:11:A:N6	76:SB:148:C:H42	2.04	0.51
75:RB:627:G:HO2'	75:RB:628:C:H6	1.55	0.51
75:RB:1195:C:H3'	75:RB:1196:U:H5'	1.93	0.51
75:RB:1236:C:H2'	75:RB:1237:G:H8	1.75	0.51
1:aa:1229:C:H3'	1:aa:1230:A:H8	1.76	0.51
6:ha:188:SER:HB2	6:ha:190:LYS:NZ	2.26	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:ka:86:VAL:CG1	10:la:49:MET:HE2	2.40	0.51
17:sa:73:LYS:HE3	17:sa:100:GLY:HA3	1.92	0.51
21:wa:46:ASN:O	21:wa:50:ILE:HG13	2.11	0.51
24:za:13:SER:O	24:za:17:GLN:HG3	2.11	0.51
30:gb:63:MET:HE1	30:gb:104:VAL:HG22	1.91	0.51
33:AA:157:GLU:CD	40:HA:26:ARG:HH22	2.19	0.51
75:RB:1018:C:O3'	75:RB:1019:A:H4'	2.11	0.51
1:aa:30:G:H2'	1:aa:31:C:C6	2.45	0.51
1:aa:853:U:H2'	1:aa:854:C:O4'	2.11	0.51
1:aa:1441:C:O2	4:da:62:GLN:HB3	2.11	0.51
1:aa:1498:A:OP2	1:aa:1501:G:N2	2.44	0.51
4:da:44:LYS:HE3	4:da:47:GLN:HE22	1.74	0.51
14:pa:128:TYR:HD1	14:pa:131:ARG:HH22	1.59	0.51
20:va:107:ASN:HD22	20:va:107:ASN:C	2.19	0.51
30:gb:24:LEU:HD13	30:gb:28:TYR:CE1	2.46	0.51
39:GA:117:ILE:O	39:GA:137:ASN:ND2	2.32	0.51
58:ZA:98:VAL:O	58:ZA:100:ASP:N	2.44	0.51
75:RB:19:C:H2'	75:RB:20:G:C8	2.46	0.51
75:RB:1234:G:N7	75:RB:1235:A:N6	2.58	0.51
75:RB:1424:G:H2'	75:RB:1425:G:H8	1.76	0.51
75:RB:1543:A:H2	75:RB:1559:G:H22	1.59	0.51
75:RB:2686:G:H2'	75:RB:2686:G:N3	2.25	0.51
1:aa:964:U:H5'	14:pa:15:ALA:O	2.11	0.51
6:ha:317:ASP:OD1	6:ha:317:ASP:N	2.39	0.51
26:cb:41:GLU:O	26:cb:44:LEU:HD23	2.11	0.51
29:fb:148:PRO:HB2	29:fb:232:TYR:CE2	2.46	0.51
30:gb:212:GLU:O	30:gb:215:LYS:HG2	2.11	0.51
57:YA:44:TRP:CD1	57:YA:55:LYS:HE2	2.45	0.51
65:GB:29:MET:O	65:GB:33:GLN:HG2	2.11	0.51
75:RB:672:A:H2'	75:RB:673:U:C6	2.46	0.51
75:RB:737:C:H2'	75:RB:738:A:C8	2.46	0.51
75:RB:1163:A:O2'	75:RB:1370:A:H5'	2.11	0.51
75:RB:1247:G:H22	75:RB:1274:A:H2'	1.75	0.51
75:RB:1685:U:H2'	75:RB:1686:U:C6	2.45	0.51
75:RB:2815:U:H6	75:RB:2815:U:H5'	1.76	0.51
1:aa:572:G:O5'	5:ga:87:ASP:HA	2.11	0.50
1:aa:1558:A:H2'	1:aa:1559:U:C6	2.46	0.50
1:aa:1783:C:C5	67:IB:1:MET:HE1	2.45	0.50
5:ga:55:GLY:HA2	5:ga:67:LYS:HA	1.93	0.50
10:la:56:GLU:CD	10:la:88:ARG:HH11	2.18	0.50
13:oa:63:GLU:HG2	13:oa:66:ARG:HH21	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:ta:61:ILE:CG2	18:ta:104:ARG:HG2	2.41	0.50
45:MA:43:LYS:HD2	45:MA:43:LYS:N	2.26	0.50
55:WA:28:TYR:HB3	55:WA:69:VAL:HB	1.92	0.50
60:BB:36:GLN:O	60:BB:40:SER:N	2.44	0.50
75:RB:625:G:H2'	75:RB:626:G:H8	1.76	0.50
75:RB:1245:U:H4'	75:RB:1246:G:H5'	1.93	0.50
75:RB:3102:A:H2'	75:RB:3103:U:O4'	2.11	0.50
75:RB:3241:U:H2'	75:RB:3242:C:C6	2.46	0.50
79:bl:10:ASN:OD1	79:bl:11:ILE:HG12	2.10	0.50
79:bl:284:GLU:HA	79:bl:287:LEU:HD12	1.92	0.50
79:bl:325:GLU:OE2	79:bl:392:PHE:HB3	2.11	0.50
1:aa:1092:A:H5'	1:aa:1302:C:H41	1.76	0.50
9:ka:86:VAL:HG12	10:la:49:MET:HE2	1.93	0.50
9:ka:120:ASP:OD2	19:ua:64:LYS:NZ	2.38	0.50
10:la:88:ARG:NH1	10:la:122:LEU:HD11	2.27	0.50
15:qa:96:ILE:HG21	24:za:23:LEU:HG	1.93	0.50
20:va:3:ARG:NH1	20:va:8:ASP:OD2	2.44	0.50
31:hb:62:VAL:HA	31:hb:94:VAL:HG22	1.93	0.50
33:AA:50:TRP:O	33:AA:55:ARG:NH2	2.36	0.50
37:EA:103:CYS:HB2	37:EA:132:VAL:HA	1.92	0.50
40:HA:114:ARG:HD2	40:HA:137:VAL:HG11	1.93	0.50
56:XA:104:ASP:OD2	70:LB:201:TYR:OH	2.20	0.50
57:YA:133:PHE:O	57:YA:134:LYS:HB2	2.10	0.50
75:RB:1100:G:H4'	75:RB:1101:A:O5'	2.10	0.50
75:RB:2659:A:H2'	75:RB:2660:G:H8	1.75	0.50
80:cl:23:C:H2'	80:cl:24:G:C8	2.46	0.50
1:aa:507:G:H4'	1:aa:508:U:OP1	2.11	0.50
1:aa:530:A:P	2:ba:99:ARG:HH21	2.34	0.50
1:aa:1508:C:P	16:ra:134:ARG:HH22	2.33	0.50
3:ca:26:LYS:C	3:ca:28:GLU:H	2.20	0.50
6:ha:137:ARG:HD2	6:ha:163:THR:O	2.11	0.50
6:ha:273:ILE:HD12	6:ha:283:GLN:HG2	1.93	0.50
10:la:53:LYS:HD3	10:la:56:GLU:OE1	2.11	0.50
17:sa:46:PHE:HE1	17:sa:121:ILE:HG23	1.76	0.50
33:AA:25:PHE:CD1	35:CA:55:ARG:HG2	2.46	0.50
33:AA:172:PRO:HA	33:AA:219:ASN:HD21	1.76	0.50
34:BA:15:PHE:CE1	34:BA:44:VAL:HG21	2.47	0.50
38:FA:95:TYR:HA	38:FA:176:ASP:OD1	2.11	0.50
45:MA:127:ARG:HA	45:MA:141:MET:HG2	1.93	0.50
58:ZA:106:ALA:HB2	58:ZA:114:TYR:HD2	1.75	0.50
75:RB:1312:A:C8	75:RB:1312:A:OP2	2.65	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:aa:832:C:H2'	1:aa:833:U:C6	2.47	0.50
1:aa:1241:G:C4	1:aa:1242:A:C8	3.00	0.50
1:aa:1348:A:O2'	1:aa:1349:A:OP1	2.27	0.50
1:aa:1656:C:H42	1:aa:1762:C:H42	1.60	0.50
6:ha:46:TRP:CH2	6:ha:320:ILE:HD12	2.46	0.50
9:ka:14:LEU:HD23	9:ka:93:MET:HE1	1.93	0.50
13:oa:107:LEU:O	13:oa:111:LEU:HD23	2.12	0.50
33:AA:26:GLU:HG3	33:AA:27:LYS:H	1.76	0.50
37:EA:145:ARG:HG3	43:KA:149:LEU:HD12	1.94	0.50
62:DB:86:ILE:HD12	62:DB:201:PHE:HD2	1.76	0.50
69:KB:197:LYS:O	69:KB:201:GLU:HG2	2.11	0.50
75:RB:245:C:H2'	75:RB:246:C:O4'	2.12	0.50
75:RB:438:G:N2	75:RB:620:C:O2	2.33	0.50
75:RB:2100:A:H2'	75:RB:2101:A:C8	2.46	0.50
75:RB:3339:U:H3'	75:RB:3340:G:H5''	1.92	0.50
77:TB:37:G:H21	77:TB:43:A:H61	1.60	0.50
79:bl:20:ILE:HD13	79:bl:139:LEU:HD21	1.92	0.50
1:aa:1412:A:H2'	1:aa:1413:C:H6	1.77	0.50
6:ha:265:ALA:HB3	6:ha:274:TRP:HZ3	1.75	0.50
13:oa:90:TYR:OH	17:sa:119:GLU:HA	2.12	0.50
18:ta:76:LEU:HD12	18:ta:76:LEU:O	2.11	0.50
24:za:172:ARG:HG3	24:za:208:TYR:CE1	2.47	0.50
34:BA:129:LYS:HA	75:RB:1101:A:OP2	2.11	0.50
56:XA:121:ILE:HD12	64:FB:187:GLU:HA	1.93	0.50
75:RB:1310:G:O6	75:RB:2359:C:O2'	2.29	0.50
75:RB:3307:G:H2'	75:RB:3308:C:H6	1.77	0.50
1:aa:467:U:H2'	1:aa:468:A:C8	2.47	0.50
1:aa:717:G:H5'	1:aa:743:G:N1	2.26	0.50
1:aa:1605:A:H2'	1:aa:1606:U:C6	2.46	0.50
6:ha:69:LEU:HD12	6:ha:100:TRP:CE3	2.46	0.50
8:ja:238:LEU:HB2	8:ja:242:LYS:NZ	2.27	0.50
15:qa:101:GLU:OE2	24:za:46:ARG:HG2	2.11	0.50
23:ya:33:ARG:HB3	23:ya:33:ARG:CZ	2.40	0.50
24:za:70:VAL:HG23	24:za:190:ARG:HG2	1.93	0.50
26:cb:12:TYR:CE1	29:fb:68:LEU:HA	2.38	0.50
28:eb:39:ARG:NE	28:eb:43:GLU:OE2	2.44	0.50
32:ib:23:ASP:HB3	32:ib:26:LYS:HE2	1.94	0.50
35:CA:50:PRO:HD3	35:CA:68:VAL:HG12	1.93	0.50
44:LA:144:LYS:HE2	44:LA:144:LYS:HA	1.93	0.50
74:PB:100:GLN:HA	74:PB:103:VAL:HG12	1.93	0.50
75:RB:68:U:H2'	75:RB:69:U:O4'	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
75:RB:591:G:H2'	75:RB:592:U:C6	2.46	0.50
75:RB:2538:C:H4'	75:RB:2539:C:OP1	2.11	0.50
75:RB:3185:U:HO2'	75:RB:3186:U:P	2.35	0.50
76:SB:106:C:H4'	76:SB:107:G:H5''	1.93	0.50
1:aa:139:U:HO2'	1:aa:140:C:P	2.34	0.50
1:aa:421:A:H4'	1:aa:422:G:O5'	2.11	0.50
1:aa:750:U:H5	31:hb:107:LYS:HZ1	1.58	0.50
1:aa:1650:G:H5''	67:IB:2:ARG:HH21	1.75	0.50
6:ha:53:GLN:HB3	6:ha:59:SER:HB3	1.92	0.50
11:ma:42:LYS:NZ	11:ma:46:ASP:OD2	2.45	0.50
15:qa:67:ARG:HG3	15:qa:68:GLY:N	2.27	0.50
18:ta:96:HIS:CG	18:ta:97:SER:N	2.80	0.50
26:cb:12:TYR:O	26:cb:14:PRO:HD3	2.12	0.50
29:fb:55:VAL:HG21	29:fb:78:ILE:HG23	1.92	0.50
30:gb:203:ILE:HG22	30:gb:206:LYS:HE2	1.94	0.50
57:YA:112:MET:HE2	57:YA:112:MET:HA	1.93	0.50
75:RB:3240:G:H3'	75:RB:3241:U:H6	1.77	0.50
79:bl:304:PHE:CD2	79:bl:407:PHE:HB3	2.47	0.50
1:aa:704:C:OP1	1:aa:743:G:O2'	2.29	0.50
1:aa:755:U:H2'	1:aa:756:U:C6	2.47	0.50
1:aa:851:G:H3'	1:aa:852:A:H8	1.77	0.50
6:ha:169:VAL:HG12	6:ha:182:SER:HB3	1.93	0.50
13:oa:55:ARG:HH21	18:ta:34:LYS:CE	2.24	0.50
15:qa:35:LEU:HD11	15:qa:50:VAL:HG12	1.94	0.50
20:va:29:ILE:HG12	20:va:58:GLY:O	2.12	0.50
25:bb:67:GLU:CD	25:bb:83:LYS:HZ1	2.20	0.50
28:eb:102:THR:HG22	28:eb:103:ALA:H	1.77	0.50
33:AA:201:ASN:HA	33:AA:204:LYS:HD3	1.93	0.50
70:LB:32:HIS:ND1	70:LB:37:PRO:HG3	2.27	0.50
75:RB:919:G:H5'	75:RB:920:A:OP1	2.12	0.50
75:RB:1659:G:N2	75:RB:1783:G:N2	2.57	0.50
75:RB:2711:G:H4'	75:RB:2712:A:H5''	1.94	0.50
79:bl:360:ASP:N	79:bl:367:LEU:HG	2.27	0.50
1:aa:1738:U:H2'	1:aa:1739:U:C6	2.47	0.50
6:ha:283:GLN:HG3	6:ha:285:LEU:HD11	1.94	0.50
10:la:34:LEU:HB3	10:la:70:ASP:HB3	1.94	0.50
13:oa:124:ARG:HD3	13:oa:129:VAL:HG23	1.94	0.50
15:qa:59:ARG:O	15:qa:63:ARG:N	2.42	0.50
40:HA:192:TRP:O	40:HA:196:GLN:HG2	2.12	0.50
48:PA:76:ARG:HH21	54:VA:31:THR:HG22	1.76	0.50
49:QA:93:LYS:HB3	49:QA:97:LYS:HD2	1.92	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:UA:76:SER:HB2	53:UA:79:ARG:CZ	2.42	0.50
75:RB:554:C:O2'	75:RB:555:G:OP2	2.27	0.50
75:RB:1285:U:H2'	75:RB:1286:G:H8	1.76	0.50
79:bl:306:VAL:HG23	79:bl:307:ASP:N	2.27	0.50
6:ha:264:CYS:SG	6:ha:302:LEU:HD11	2.52	0.49
7:ia:28:GLU:OE1	7:ia:69:LEU:HD11	2.11	0.49
16:ra:62:ASP:O	16:ra:65:TRP:HD1	1.95	0.49
25:bb:108:ASP:OD1	25:bb:109:LYS:N	2.46	0.49
29:fb:255:ASP:OD1	29:fb:256:ILE:N	2.45	0.49
38:FA:102:ALA:HB1	38:FA:111:ILE:HD11	1.92	0.49
65:GB:42:CYS:HB3	65:GB:60:CYS:HB3	1.94	0.49
66:HB:171:TRP:CZ3	66:HB:182:ILE:HD11	2.47	0.49
75:RB:356:G:N2	75:RB:359:A:OP2	2.32	0.49
75:RB:555:G:H2'	75:RB:556:U:C6	2.47	0.49
75:RB:903:G:H1'	75:RB:1586:A:N6	2.27	0.49
75:RB:1047:C:H2'	75:RB:1048:U:O4'	2.12	0.49
75:RB:1498:U:H5	75:RB:1831:A:N1	2.09	0.49
1:aa:74:U:H4'	1:aa:75:U:C5	2.47	0.49
1:aa:411:A:H2'	1:aa:412:C:C6	2.47	0.49
1:aa:1373:C:H2'	1:aa:1374:G:C8	2.46	0.49
1:aa:1489:A:H4'	10:la:77:GLY:HA2	1.94	0.49
20:va:87:LYS:O	20:va:91:ARG:HG3	2.12	0.49
26:cb:69:ASP:O	26:cb:73:GLN:HG2	2.12	0.49
38:FA:55:LYS:NZ	38:FA:57:ASP:OD1	2.43	0.49
38:FA:88:ARG:HA	38:FA:145:LEU:O	2.12	0.49
46:NA:113:TYR:O	46:NA:115:ILE:HG23	2.12	0.49
50:RA:54:PRO:HB2	75:RB:2548:U:H1'	1.93	0.49
55:WA:61:LYS:NZ	75:RB:2791:G:OP1	2.44	0.49
61:CB:120:LYS:HG2	61:CB:193:VAL:HG11	1.94	0.49
64:FB:17:ARG:NH1	75:RB:3175:U:OP2	2.45	0.49
69:KB:86:PRO:HG2	69:KB:89:LEU:HB3	1.93	0.49
71:MB:83:THR:HG23	75:RB:1183:C:OP1	2.12	0.49
72:NB:5:ILE:HG21	72:NB:11:PHE:HB2	1.93	0.49
75:RB:18:G:N2	76:SB:142:G:N2	2.53	0.49
75:RB:441:G:O6	75:RB:496:U:C2	2.65	0.49
75:RB:600:G:H3'	75:RB:601:G:O4'	2.12	0.49
75:RB:1717:G:H4'	75:RB:1730:U:H4'	1.94	0.49
75:RB:2720:U:H2'	75:RB:2721:U:H6	1.77	0.49
77:TB:77:A:H2'	77:TB:78:C:O4'	2.12	0.49
79:bl:349:LYS:HA	79:bl:352:GLU:HB2	1.94	0.49
1:aa:1185:U:H3	1:aa:1464:G:H1	1.58	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:ka:98:LEU:HD23	18:ta:63:PRO:HG3	1.94	0.49
9:ka:122:THR:HG22	19:ua:64:LYS:HE2	1.94	0.49
11:ma:61:PRO:HG2	11:ma:63:ARG:HH21	1.76	0.49
24:za:34:CYS:HB2	24:za:51:TYR:CE1	2.47	0.49
36:DA:241:ARG:HG3	36:DA:241:ARG:NH1	2.27	0.49
37:EA:139:ARG:NH1	77:TB:28:U:OP1	2.45	0.49
64:FB:156:ASP:O	64:FB:160:GLU:HG3	2.12	0.49
75:RB:1041:C:H2'	75:RB:1042:C:C6	2.47	0.49
75:RB:2694:A:H2'	75:RB:2695:G:C8	2.47	0.49
1:aa:709:C:N4	31:hb:111:VAL:HG21	2.26	0.49
1:aa:1187:A:H2'	1:aa:1188:A:H8	1.77	0.49
1:aa:1211:U:H3	1:aa:1462:C:H5	1.59	0.49
1:aa:1222:G:N2	1:aa:1450:A:OP2	2.39	0.49
1:aa:1494:G:O2'	1:aa:1502:C:O2	2.17	0.49
1:aa:1600:G:H2'	1:aa:1601:A:C8	2.46	0.49
6:ha:302:LEU:HD12	6:ha:311:LEU:HD21	1.94	0.49
8:ja:228:ILE:CG2	8:ja:236:VAL:HG22	2.42	0.49
20:va:51:VAL:HA	20:va:60:ILE:HG12	1.95	0.49
28:eb:135:HIS:HA	28:eb:164:SER:OG	2.12	0.49
45:MA:109:ASP:HB3	45:MA:112:ALA:HB3	1.94	0.49
55:WA:32:LYS:NZ	55:WA:33:ASP:H	2.10	0.49
58:ZA:106:ALA:HB2	58:ZA:114:TYR:CD2	2.47	0.49
75:RB:2996:G:H2'	75:RB:2997:U:C6	2.48	0.49
75:RB:3338:U:C2'	75:RB:3339:U:H5''	2.40	0.49
79:bl:301:LYS:HB2	79:bl:413:ILE:HG23	1.94	0.49
1:aa:87:A:H2'	1:aa:88:C:C6	2.47	0.49
3:ca:159:GLN:O	3:ca:161:LYS:N	2.46	0.49
4:da:13:LYS:O	4:da:17:GLN:HG3	2.13	0.49
6:ha:270:SER:HB3	6:ha:286:ARG:HD2	1.95	0.49
28:eb:40:CYS:SG	28:eb:42:ARG:HB3	2.53	0.49
49:QA:115:LEU:HA	49:QA:118:PRO:HD2	1.94	0.49
56:XA:95:VAL:HG11	64:FB:206:TYR:HD1	1.76	0.49
75:RB:404:G:OP1	75:RB:1418:C:O2'	2.29	0.49
75:RB:1474:U:H2'	75:RB:1475:U:H6	1.77	0.49
79:bl:324:TRP:CZ3	79:bl:326:ASN:HB2	2.47	0.49
1:aa:761:A:H2'	1:aa:762:A:C8	2.48	0.49
8:ja:199:GLU:O	8:ja:199:GLU:HG2	2.13	0.49
16:ra:121:GLN:NE2	16:ra:128:VAL:HG23	2.28	0.49
37:EA:96:ARG:O	37:EA:96:ARG:HD2	2.13	0.49
40:HA:201:ARG:HG2	69:KB:24:TRP:CE2	2.48	0.49
43:KA:206:TYR:CD1	77:TB:33:U:C2	3.01	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
75:RB:524:A:H2'	75:RB:525:A:O4'	2.12	0.49
75:RB:596:C:H2'	75:RB:597:C:C6	2.47	0.49
75:RB:3238:C:HO2'	75:RB:3239:G:P	2.36	0.49
80:cl:23:C:H2'	80:cl:24:G:H8	1.76	0.49
1:aa:204:U:H2'	1:aa:205:U:C6	2.48	0.49
1:aa:328:U:O2'	32:ib:81:MET:HE3	2.13	0.49
2:ba:10:VAL:HG12	2:ba:34:HIS:HA	1.93	0.49
9:ka:30:LEU:HD22	9:ka:142:ARG:NH2	2.27	0.49
15:qa:76:GLU:HG3	15:qa:77:GLU:HG2	1.95	0.49
16:ra:44:PRO:HG3	16:ra:115:ASN:HD21	1.77	0.49
28:eb:4:VAL:HG22	28:eb:5:ASN:H	1.78	0.49
62:DB:47:LEU:HG	62:DB:182:MET:SD	2.52	0.49
63:EB:103:ARG:NH2	75:RB:936:A:C2	2.81	0.49
64:FB:17:ARG:HE	64:FB:18:HIS:HD2	1.59	0.49
66:HB:205:PRO:HD2	66:HB:205:PRO:O	2.12	0.49
74:PB:21:ARG:NH2	74:PB:33:GLN:OE1	2.46	0.49
75:RB:1577:A:O2'	75:RB:2519:G:O4'	2.31	0.49
75:RB:1693:A:H2'	75:RB:1694:A:H8	1.78	0.49
75:RB:3010:U:H2'	75:RB:3011:C:C6	2.48	0.49
1:aa:96:G:O2'	1:aa:464:A:O2'	2.26	0.49
1:aa:1057:U:O2'	1:aa:1058:G:H8	1.96	0.49
6:ha:187:ARG:HD3	6:ha:206:HIS:C	2.38	0.49
10:la:104:ASP:OD2	10:la:106:ALA:N	2.43	0.49
11:ma:29:ARG:HD3	11:ma:98:ASP:OD2	2.12	0.49
12:na:32:HIS:N	12:na:43:HIS:O	2.45	0.49
18:ta:65:VAL:O	18:ta:68:GLU:HB3	2.13	0.49
24:za:204:ASP:HA	24:za:207:PHE:CD2	2.48	0.49
27:db:20:TYR:HA	27:db:31:PRO:HA	1.94	0.49
56:XA:35:ARG:NH1	56:XA:47:GLN:OE1	2.46	0.49
58:ZA:110:GLU:OE2	75:RB:1766:U:O2'	2.28	0.49
75:RB:1424:G:H2'	75:RB:1425:G:C8	2.48	0.49
75:RB:1562:A:N6	75:RB:1580:C:H5'	2.27	0.49
80:cl:69:U:H2'	80:cl:70:G:H8	1.76	0.49
1:aa:464:A:H3'	1:aa:465:G:H8	1.76	0.49
11:ma:54:LYS:N	11:ma:54:LYS:HD2	2.26	0.49
16:ra:73:MET:HE2	16:ra:117:LEU:HD21	1.94	0.49
28:eb:25:ARG:NH1	28:eb:29:GLU:OE2	2.43	0.49
30:gb:2:LYS:O	30:gb:110:VAL:HA	2.12	0.49
38:FA:15:GLU:OE2	38:FA:15:GLU:N	2.43	0.49
48:PA:115:LYS:NZ	76:SB:84:C:N3	2.45	0.49
66:HB:31:ILE:HA	66:HB:66:GLU:OE1	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
75:RB:1088:A:H2'	75:RB:1089:G:O4'	2.12	0.49
75:RB:1549:A:H2'	75:RB:1550:A:C8	2.48	0.49
75:RB:1777:C:H2'	75:RB:1778:C:C6	2.47	0.49
76:SB:126:A:H4'	76:SB:127:U:C4	2.47	0.49
79:bl:319:GLU:N	79:bl:413:ILE:O	2.45	0.49
79:bl:374:SER:HB2	79:bl:377:GLU:HB3	1.94	0.49
1:aa:261:C:O4'	3:ca:65:ASN:ND2	2.46	0.49
1:aa:266:C:H2'	1:aa:267:G:H8	1.77	0.49
1:aa:590:G:OP1	23:ya:23:LYS:HD2	2.13	0.49
1:aa:594:C:H2'	1:aa:595:A:C8	2.48	0.49
8:ja:228:ILE:HG23	8:ja:236:VAL:HG22	1.95	0.49
14:pa:87:ASP:OD1	14:pa:88:LEU:N	2.46	0.49
31:hb:155:LEU:HD21	31:hb:184:PHE:HD2	1.78	0.49
33:AA:44:LEU:HD12	46:NA:38:THR:O	2.13	0.49
56:XA:40:ALA:HB3	56:XA:43:MET:HG2	1.95	0.49
60:BB:102:SER:O	60:BB:104:VAL:HG23	2.12	0.49
62:DB:317:HIS:O	62:DB:337:LYS:HE3	2.13	0.49
74:PB:93:ARG:NH1	75:RB:2548:U:O2'	2.46	0.49
75:RB:439:A:H2'	75:RB:440:U:O4'	2.13	0.49
75:RB:690:G:H2'	75:RB:691:U:O4'	2.13	0.49
75:RB:1038:C:H3'	75:RB:1039:G:H5''	1.93	0.49
75:RB:1043:U:H2'	75:RB:1044:A:C8	2.48	0.49
75:RB:2427:U:H4'	75:RB:2428:G:O5'	2.11	0.49
75:RB:3352:C:H2'	75:RB:3353:A:C8	2.48	0.49
1:aa:491:G:H21	1:aa:492:G:H1'	1.77	0.48
1:aa:1125:U:H2'	1:aa:1126:C:C6	2.47	0.48
1:aa:1398:U:N3	1:aa:1399:G:N7	2.60	0.48
5:ga:67:LYS:HB3	5:ga:90:LEU:HD22	1.95	0.48
8:ja:38:ALA:HA	8:ja:41:CYS:SG	2.52	0.48
30:gb:203:ILE:HA	30:gb:206:LYS:HB2	1.95	0.48
31:hb:107:LYS:HD3	31:hb:108:GLY:N	2.28	0.48
38:FA:62:THR:HG23	38:FA:65:THR:H	1.78	0.48
48:PA:125:ARG:HH22	75:RB:186:A:P	2.36	0.48
66:HB:41:LYS:HD3	66:HB:45:GLU:OE1	2.13	0.48
71:MB:8:GLN:HG2	75:RB:3166:C:C2	2.47	0.48
71:MB:108:TYR:O	71:MB:110:SER:N	2.46	0.48
75:RB:850:A:H2'	75:RB:851:A:C8	2.48	0.48
75:RB:1123:A:H2'	75:RB:1124:U:H6	1.77	0.48
75:RB:1500:C:H2'	75:RB:1501:A:H8	1.77	0.48
75:RB:2218:U:H2'	75:RB:2219:U:C6	2.48	0.48
79:bl:317:ALA:O	79:bl:415:ARG:HD2	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:aa:244:C:H5'	1:aa:245:C:OP1	2.14	0.48
1:aa:640:A:H1'	20:va:57:VAL:HG12	1.95	0.48
1:aa:1683:G:H1'	3:ca:32:GLN:NE2	2.27	0.48
1:aa:1786:A:H2'	1:aa:1787:G:C8	2.47	0.48
18:ta:104:ARG:NH1	18:ta:106:THR:H	2.11	0.48
23:ya:33:ARG:NE	28:eb:128:ARG:HD2	2.28	0.48
26:cb:67:SER:HA	26:cb:70:ARG:HG2	1.96	0.48
29:fb:98:LYS:HD3	29:fb:105:ARG:HD2	1.95	0.48
30:gb:58:LYS:HG3	30:gb:109:SER:OG	2.12	0.48
30:gb:198:ASP:HA	30:gb:201:LYS:HE3	1.95	0.48
36:DA:36:GLU:OE2	36:DA:163:ARG:NH1	2.42	0.48
40:HA:33:GLN:OE1	40:HA:63:ARG:NH2	2.45	0.48
48:PA:23:SER:OG	76:SB:73:U:OP1	2.29	0.48
50:RA:12:GLU:HA	50:RA:15:ASN:OD1	2.13	0.48
56:XA:95:VAL:HG13	64:FB:204:ILE:HA	1.95	0.48
57:YA:177:PHE:HE1	75:RB:3193:C:H2'	1.78	0.48
1:aa:522:A:H2'	1:aa:523:C:H5''	1.95	0.48
10:la:34:LEU:N	10:la:70:ASP:OD2	2.36	0.48
20:va:74:LEU:HD11	20:va:92:MET:HE2	1.95	0.48
36:DA:105:ARG:HB2	36:DA:160:SER:HB3	1.95	0.48
42:JA:38:ARG:NH1	75:RB:1351:C:H5''	2.28	0.48
43:KA:139:ARG:HE	75:RB:1083:C:H5''	1.78	0.48
60:BB:36:GLN:OE1	60:BB:44:LYS:HB2	2.13	0.48
79:bl:311:LYS:NZ	79:bl:314:GLU:OE2	2.32	0.48
1:aa:80:C:H4'	1:aa:81:U:H5'	1.95	0.48
1:aa:212:A:O5'	32:ib:27:ARG:NH1	2.46	0.48
1:aa:1291:A:N6	1:aa:1333:A:H5'	2.28	0.48
1:aa:1323:U:H2'	1:aa:1324:U:O4'	2.14	0.48
1:aa:1412:A:H2'	1:aa:1413:C:C6	2.48	0.48
2:ba:42:LYS:O	2:ba:46:LYS:N	2.45	0.48
2:ba:90:LYS:HE3	2:ba:91:PHE:CE1	2.48	0.48
13:oa:25:LYS:N	13:oa:55:ARG:HH11	2.11	0.48
27:db:47:GLN:HA	27:db:50:VAL:CG2	2.43	0.48
29:fb:253:PHE:O	29:fb:257:LEU:HG	2.13	0.48
31:hb:40:ASP:O	31:hb:44:LEU:HD21	2.13	0.48
40:HA:193:LYS:O	40:HA:197:THR:HG23	2.12	0.48
55:WA:23:HIS:HA	55:WA:74:CYS:HA	1.95	0.48
55:WA:23:HIS:NE2	55:WA:74:CYS:HB3	2.28	0.48
59:AB:29:PRO:O	59:AB:30:SER:OG	2.17	0.48
75:RB:167:C:H2'	75:RB:248:C:H2'	1.94	0.48
75:RB:1072:C:H2'	75:RB:1073:G:H8	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
75:RB:2190:C:N4	75:RB:2234:U:H2'	2.29	0.48
75:RB:3117:U:H1'	75:RB:3118:A:H5''	1.96	0.48
79:bl:330:ASN:HD21	79:bl:372:LYS:HD3	1.78	0.48
1:aa:1561:G:N2	1:aa:1563:A:H3'	2.28	0.48
1:aa:1723:G:H2'	1:aa:1724:U:C6	2.49	0.48
1:aa:1807:A:N6	27:db:84:VAL:HB	2.27	0.48
6:ha:15:ARG:NH2	6:ha:17:HIS:O	2.47	0.48
7:ia:43:PRO:O	7:ia:44:MET:HG3	2.14	0.48
10:la:47:PRO:HB2	10:la:50:LEU:HB2	1.95	0.48
13:oa:44:VAL:HG13	13:oa:70:VAL:CG2	2.44	0.48
29:fb:110:ALA:O	29:fb:125:VAL:HA	2.14	0.48
31:hb:32:ASN:O	31:hb:34:ASN:ND2	2.46	0.48
42:JA:4:ASP:HB3	61:CB:111:ARG:HB2	1.94	0.48
42:JA:166:VAL:HG22	42:JA:174:GLU:HG3	1.93	0.48
46:NA:66:LYS:O	46:NA:71:GLN:HG3	2.13	0.48
55:WA:20:HIS:HE1	75:RB:2738:C:O2	1.97	0.48
61:CB:236:ILE:O	61:CB:240:VAL:HG23	2.13	0.48
64:FB:65:LYS:HE2	75:RB:1311:G:H5'	1.96	0.48
75:RB:798:G:H2'	75:RB:799:U:C6	2.49	0.48
75:RB:1727:A:H3'	75:RB:1728:G:H5'	1.96	0.48
75:RB:3174:G:O2'	75:RB:3175:U:H5'	2.13	0.48
1:aa:197:G:O2'	1:aa:198:G:H8	1.97	0.48
1:aa:893:U:H2'	1:aa:894:U:C6	2.48	0.48
8:ja:48:LEU:HD21	8:ja:70:ILE:HD13	1.96	0.48
25:bb:103:MET:HB3	25:bb:215:VAL:HB	1.95	0.48
34:BA:56:PHE:CZ	34:BA:78:LYS:HG3	2.49	0.48
39:GA:30:ASP:OD1	39:GA:30:ASP:N	2.46	0.48
56:XA:7:VAL:HG11	56:XA:50:PHE:CZ	2.48	0.48
61:CB:42:ASN:O	61:CB:46:ILE:HG12	2.14	0.48
63:EB:159:ASP:OD1	63:EB:259:SER:N	2.47	0.48
64:FB:135:GLN:HB3	64:FB:138:HIS:ND1	2.28	0.48
66:HB:44:ASP:HA	66:HB:171:TRP:HZ2	1.78	0.48
69:KB:89:LEU:O	69:KB:92:THR:OG1	2.28	0.48
75:RB:550:C:O2'	75:RB:551:A:O5'	2.19	0.48
75:RB:2958:G:H2'	75:RB:2959:U:C6	2.49	0.48
1:aa:1355:U:H2'	1:aa:1356:A:H8	1.78	0.48
1:aa:1522:U:H1'	7:ia:6:SER:HB3	1.94	0.48
3:ca:34:ALA:HB2	3:ca:57:ARG:HD2	1.96	0.48
8:ja:47:ILE:HD13	8:ja:90:ILE:CD1	2.43	0.48
24:za:75:PRO:C	24:za:77:ASP:H	2.21	0.48
33:AA:104:LYS:HE3	33:AA:105:GLU:OE2	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:AA:186:VAL:HG23	33:AA:188:LYS:HG2	1.95	0.48
40:HA:76:PRO:HA	75:RB:2160:C:OP1	2.13	0.48
75:RB:154:G:H4'	75:RB:155:G:H2'	1.96	0.48
75:RB:442:C:H2'	75:RB:443:G:C8	2.48	0.48
75:RB:2536:U:H1'	75:RB:2537:G:OP2	2.14	0.48
75:RB:2944:G:H4'	75:RB:2944:G:OP2	2.14	0.48
75:RB:3339:U:C6	75:RB:3340:G:H5''	2.35	0.48
1:aa:212:A:H5'	32:ib:27:ARG:HD2	1.96	0.48
3:ca:114:TYR:OH	3:ca:169:ARG:HD2	2.12	0.48
4:da:59:PHE:HB3	7:ia:27:ARG:HH22	1.79	0.48
24:za:180:TRP:HB2	24:za:206:PHE:CD2	2.49	0.48
27:db:44:ILE:HD11	27:db:64:LEU:HD23	1.95	0.48
28:eb:33:VAL:HG13	28:eb:38:LEU:HB2	1.96	0.48
28:eb:68:ASN:HB3	28:eb:71:ARG:HB3	1.96	0.48
29:fb:66:ILE:HG23	29:fb:71:LEU:HB2	1.95	0.48
63:EB:31:MET:HE2	63:EB:261:PHE:HE2	1.79	0.48
63:EB:316:ARG:HE	63:EB:317:GLU:H	1.61	0.48
66:HB:13:LYS:NZ	75:RB:1132:A:OP1	2.31	0.48
75:RB:573:A:H2'	75:RB:573:A:N3	2.28	0.48
75:RB:659:C:H2'	75:RB:660:A:H8	1.78	0.48
76:SB:69:U:H2'	76:SB:70:G:O4'	2.13	0.48
76:SB:147:C:H2'	76:SB:148:C:C6	2.49	0.48
1:aa:136:U:C6	1:aa:176:A:H4'	2.40	0.48
1:aa:331:U:H2'	1:aa:332:A:C8	2.48	0.48
1:aa:345:A:H2'	1:aa:346:C:C6	2.49	0.48
1:aa:810:A:O2'	20:va:104:THR:OG1	2.25	0.48
1:aa:1496:A:O4'	1:aa:1501:G:N2	2.47	0.48
1:aa:1570:G:C2	1:aa:1571:G:C8	3.02	0.48
6:ha:216:SER:CB	6:ha:220:SER:H	2.27	0.48
6:ha:284:ASP:C	6:ha:285:LEU:HD12	2.39	0.48
24:za:180:TRP:HD1	24:za:206:PHE:CE2	2.32	0.48
28:eb:60:HIS:CE1	28:eb:70:ARG:NH1	2.81	0.48
36:DA:58:LEU:HD23	36:DA:75:LEU:HD21	1.94	0.48
37:EA:50:SER:OG	75:RB:2678:U:O3'	2.26	0.48
62:DB:84:LEU:O	62:DB:205:GLU:HA	2.14	0.48
62:DB:111:SER:O	62:DB:115:ARG:HG3	2.14	0.48
65:GB:30:GLU:OE1	65:GB:34:HIS:HE1	1.97	0.48
75:RB:16:A:H61	76:SB:144:C:N4	2.02	0.48
75:RB:126:G:H2'	75:RB:127:G:C8	2.46	0.48
75:RB:1277:A:N1	75:RB:1278:A:N6	2.62	0.48
75:RB:1719:U:O2'	75:RB:1721:A:N7	2.43	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
75:RB:2196:U:H2'	75:RB:2197:C:C6	2.49	0.48
1:aa:929:A:H2'	1:aa:930:G:C8	2.48	0.48
1:aa:1254:U:O2'	1:aa:1255:U:H5'	2.14	0.48
2:ba:74:LYS:HD3	28:eb:140:ARG:HH12	1.78	0.48
10:la:61:ALA:HB1	10:la:65:ARG:HG3	1.95	0.48
11:ma:74:ARG:HG3	11:ma:76:SER:H	1.79	0.48
18:ta:71:ARG:HE	18:ta:72:ILE:H	1.61	0.48
30:gb:185:THR:O	30:gb:189:LEU:HG	2.13	0.48
33:AA:167:ARG:HG2	33:AA:222:PHE:CD1	2.48	0.48
40:HA:73:ARG:HG2	40:HA:75:VAL:HG13	1.95	0.48
48:PA:99:HIS:CD2	75:RB:215:U:H4'	2.49	0.48
63:EB:165:GLU:OE1	63:EB:220:LYS:HD2	2.14	0.48
75:RB:6:A:H2	76:SB:154:G:N2	2.12	0.48
75:RB:163:U:N3	75:RB:164:C:H1'	2.28	0.48
75:RB:695:G:H4'	75:RB:696:A:OP1	2.14	0.48
77:TB:48:G:H2'	77:TB:49:A:C8	2.49	0.48
1:aa:183:C:N3	1:aa:199:G:N1	2.62	0.47
1:aa:216:A:C2	1:aa:848:C:H1'	2.49	0.47
1:aa:1103:U:H3	20:va:69:LYS:HE3	1.78	0.47
6:ha:181:VAL:HG11	6:ha:222:CYS:SG	2.54	0.47
7:ia:40:ARG:O	7:ia:47:GLU:N	2.45	0.47
16:ra:95:ARG:HH21	16:ra:97:ARG:HD3	1.79	0.47
33:AA:161:TRP:CD1	33:AA:161:TRP:H	2.31	0.47
38:FA:125:VAL:HG11	38:FA:160:ILE:HG12	1.96	0.47
41:IA:91:GLY:H	41:IA:94:LYS:HB3	1.78	0.47
63:EB:301:GLU:OE2	63:EB:301:GLU:N	2.37	0.47
75:RB:4:C:N4	76:SB:156:C:H42	2.11	0.47
75:RB:1207:A:N3	75:RB:2852:U:O2'	2.35	0.47
75:RB:2152:A:H4'	75:RB:2153:U:O5'	2.14	0.47
1:aa:589:A:H2'	1:aa:590:G:C8	2.48	0.47
1:aa:646:G:H1	1:aa:705:A:H2	1.62	0.47
1:aa:817:C:H4'	1:aa:818:A:OP1	2.13	0.47
1:aa:1171:C:H2'	1:aa:1172:G:O4'	2.14	0.47
10:la:119:ASP:HB3	10:la:122:LEU:CD1	2.43	0.47
13:oa:114:LEU:HA	13:oa:117:ILE:HD12	1.95	0.47
18:ta:67:SER:HB2	18:ta:78:ARG:HH22	1.79	0.47
25:bb:138:PHE:CD1	25:bb:214:LYS:HB3	2.49	0.47
28:eb:155:GLU:O	28:eb:158:ILE:HG22	2.14	0.47
29:fb:180:VAL:HB	29:fb:207:PHE:HB2	1.96	0.47
37:EA:162:MET:O	37:EA:166:GLN:HG2	2.14	0.47
39:GA:17:SER:OG	75:RB:3090:G:OP1	2.30	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:JA:90:ARG:NH2	75:RB:788:G:H5''	2.28	0.47
58:ZA:82:LYS:HG2	58:ZA:114:TYR:CZ	2.48	0.47
59:AB:77:LYS:HA	59:AB:86:ALA:HB2	1.96	0.47
62:DB:46:PHE:HD2	62:DB:212:PHE:HE2	1.60	0.47
62:DB:161:ARG:HG2	62:DB:185:GLN:HA	1.94	0.47
62:DB:285:ILE:HD12	62:DB:326:LEU:HG	1.96	0.47
69:KB:57:ILE:HD11	69:KB:156:ILE:HG12	1.96	0.47
75:RB:500:C:H2'	75:RB:501:U:O4'	2.14	0.47
75:RB:1359:A:H4'	75:RB:1360:U:O5'	2.13	0.47
75:RB:2146:A:H2'	75:RB:2147:U:H6	1.79	0.47
75:RB:2366:A:N3	75:RB:2821:G:O2'	2.43	0.47
75:RB:2664:A:H2'	75:RB:2665:A:O4'	2.14	0.47
75:RB:3304:U:H3	75:RB:3377:A:N6	2.12	0.47
79:bl:345:LYS:HE2	79:bl:347:LEU:HD21	1.95	0.47
1:aa:15:U:H2'	1:aa:16:G:O4'	2.13	0.47
1:aa:1496:A:H4'	1:aa:1497:U:H3'	1.95	0.47
6:ha:304:TRP:CZ2	6:ha:311:LEU:HD12	2.49	0.47
8:ja:85:GLY:N	8:ja:88:ASP:OD2	2.38	0.47
11:ma:88:PHE:HB3	21:wa:52:PHE:HB3	1.95	0.47
19:ua:29:ALA:HB2	19:ua:51:PHE:CD1	2.49	0.47
24:za:93:LYS:HB2	24:za:206:PHE:CE1	2.50	0.47
31:hb:71:LYS:HB2	31:hb:72:PRO:HD3	1.95	0.47
31:hb:160:ARG:HD3	31:hb:164:GLU:OE2	2.15	0.47
52:TA:91:ARG:NH1	70:LB:54:ASP:OD2	2.47	0.47
55:WA:60:LYS:HE3	75:RB:2800:A:OP1	2.14	0.47
58:ZA:103:ARG:NH1	58:ZA:105:ILE:HG13	2.28	0.47
62:DB:46:PHE:HD2	62:DB:212:PHE:CE2	2.31	0.47
62:DB:290:LYS:HD2	62:DB:293:GLN:OE1	2.13	0.47
63:EB:290:ASN:HD22	63:EB:291:ALA:N	2.12	0.47
63:EB:340:ARG:NH1	75:RB:561:G:H5''	2.29	0.47
64:FB:118:ASP:OD1	64:FB:119:ARG:HG2	2.14	0.47
75:RB:2412:A:H2'	75:RB:2413:C:H6	1.78	0.47
75:RB:3217:G:H2'	75:RB:3218:C:C6	2.49	0.47
79:bl:18:LYS:HA	79:bl:21:LYS:NZ	2.27	0.47
1:aa:284:U:H5''	1:aa:285:G:C8	2.45	0.47
1:aa:643:U:H3	31:hb:104:PRO:CD	2.24	0.47
1:aa:1059:U:H2'	1:aa:1060:U:H6	1.79	0.47
1:aa:1581:A:H4'	1:aa:1582:G:O5'	2.13	0.47
1:aa:1690:U:O4	1:aa:1730:G:N2	2.47	0.47
6:ha:294:LYS:CG	6:ha:295:GLN:H	2.26	0.47
7:ia:191:ASP:OD1	7:ia:192:TRP:N	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:ka:104:PRO:O	9:ka:108:ILE:HG12	2.13	0.47
40:HA:19:MET:HA	40:HA:22:VAL:HG22	1.95	0.47
46:NA:60:SER:OG	60:BB:81:PRO:HG2	2.13	0.47
56:XA:73:LYS:O	56:XA:77:GLU:HG3	2.15	0.47
66:HB:10:ARG:NH2	66:HB:56:GLU:OE1	2.48	0.47
66:HB:142:GLU:OE1	66:HB:142:GLU:N	2.44	0.47
70:LB:52:PRO:HB2	70:LB:54:ASP:OD1	2.14	0.47
75:RB:239:C:H2'	75:RB:240:U:C6	2.50	0.47
75:RB:1023:G:O6	75:RB:1038:C:N4	2.47	0.47
75:RB:1294:A:H2'	75:RB:1295:A:H8	1.79	0.47
75:RB:2981:C:H2'	75:RB:2982:C:C6	2.49	0.47
1:aa:1546:U:O2'	1:aa:1547:G:H2'	2.14	0.47
3:ca:44:VAL:HG12	3:ca:58:ALA:HA	1.95	0.47
13:oa:106:LYS:HA	13:oa:109:ASP:HB2	1.96	0.47
20:va:92:MET:HE3	20:va:127:TYR:CE1	2.48	0.47
27:db:44:ILE:HA	27:db:67:LEU:HD11	1.97	0.47
29:fb:179:MET:HE2	29:fb:198:LEU:HD11	1.95	0.47
50:RA:48:LEU:HD13	50:RA:57:LYS:HG3	1.97	0.47
63:EB:366:SER:HB3	63:EB:369:GLU:OE1	2.14	0.47
64:FB:37:ARG:HG2	64:FB:106:ARG:HB3	1.97	0.47
70:LB:154:ARG:HA	70:LB:154:ARG:HH21	1.78	0.47
75:RB:196:A:N3	75:RB:216:G:O2'	2.48	0.47
75:RB:526:A:H2'	75:RB:527:G:H8	1.78	0.47
75:RB:2092:C:H2'	75:RB:2093:G:H8	1.80	0.47
75:RB:2173:G:H2'	75:RB:2174:C:H6	1.78	0.47
1:aa:244:C:H4'	1:aa:245:C:C5	2.50	0.47
1:aa:1570:G:C6	1:aa:1571:G:N7	2.82	0.47
6:ha:77:GLN:OE1	6:ha:93:TRP:NE1	2.42	0.47
18:ta:68:GLU:O	18:ta:74:GLY:HA2	2.14	0.47
26:cb:12:TYR:HD2	29:fb:232:TYR:CE2	2.32	0.47
31:hb:134:ALA:CB	31:hb:155:LEU:HD12	2.45	0.47
33:AA:238:SER:N	75:RB:2583:G:O6	2.47	0.47
43:KA:210:LEU:HD22	43:KA:217:LYS:HB3	1.97	0.47
64:FB:126:PRO:HA	64:FB:129:LEU:HD12	1.97	0.47
69:KB:134:LYS:HG3	75:RB:167:C:OP1	2.15	0.47
75:RB:6:A:H2	76:SB:154:G:N1	2.12	0.47
75:RB:256:G:H2'	75:RB:257:C:H6	1.80	0.47
75:RB:659:C:H2'	75:RB:660:A:C8	2.49	0.47
77:TB:19:A:H2'	77:TB:20:C:C6	2.50	0.47
79:bl:296:SER:OG	79:bl:297:GLN:HG3	2.15	0.47
1:aa:1:U:O2	29:fb:189:VAL:HG23	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:aa:72:A:N7	1:aa:73:A:H1'	2.29	0.47
1:aa:137:A:C8	1:aa:175:A:H1'	2.49	0.47
1:aa:510:A:H5''	1:aa:511:U:OP2	2.15	0.47
1:aa:771:G:H5'	28:eb:151:ARG:HH22	1.79	0.47
1:aa:952:U:H2'	1:aa:953:G:H8	1.78	0.47
1:aa:1149:U:H2'	1:aa:1150:U:C6	2.50	0.47
1:aa:1441:C:O2	1:aa:1441:C:H2'	2.15	0.47
8:ja:191:ARG:HG2	8:ja:245:LYS:HB2	1.96	0.47
13:oa:124:ARG:HD2	13:oa:130:ARG:O	2.14	0.47
16:ra:135:LEU:HD23	16:ra:136:ILE:O	2.15	0.47
16:ra:139:GLN:HB2	16:ra:142:ARG:HH22	1.80	0.47
18:ta:96:HIS:CD2	18:ta:97:SER:H	2.32	0.47
19:ua:29:ALA:HB2	19:ua:51:PHE:HD1	1.80	0.47
26:cb:12:TYR:HB2	29:fb:64:GLU:OE1	2.15	0.47
30:gb:30:LYS:NZ	30:gb:36:VAL:HG23	2.29	0.47
33:AA:42:LYS:HG3	33:AA:43:ASP:N	2.30	0.47
33:AA:94:LYS:HZ3	33:AA:200:LYS:HE2	1.79	0.47
43:KA:83:LEU:O	43:KA:86:TYR:N	2.47	0.47
47:OA:25:ARG:NH2	47:OA:27:ASP:OD2	2.48	0.47
48:PA:3:ARG:HH21	63:EB:226:ARG:CZ	2.28	0.47
60:BB:111:ARG:HH22	69:KB:88:LYS:NZ	2.12	0.47
75:RB:489:C:O2'	75:RB:490:G:H8	1.98	0.47
75:RB:496:U:H2'	75:RB:497:G:C8	2.50	0.47
75:RB:538:C:H4'	75:RB:539:C:O5'	2.14	0.47
75:RB:553:C:N3	75:RB:554:C:N4	2.63	0.47
75:RB:574:C:O2'	75:RB:575:C:P	2.72	0.47
75:RB:790:G:H2'	75:RB:791:C:C6	2.49	0.47
75:RB:1256:A:HO2'	75:RB:1257:U:H5	1.61	0.47
75:RB:1946:C:H2'	75:RB:1947:U:C6	2.49	0.47
75:RB:2275:U:OP1	75:RB:2970:G:O2'	2.27	0.47
75:RB:3339:U:O2	75:RB:3343:G:H1'	2.15	0.47
76:SB:144:C:H2'	76:SB:145:U:C6	2.50	0.47
79:bl:41:ARG:O	79:bl:41:ARG:HD2	2.14	0.47
80:cl:20:A:H5'	80:cl:60:A:H61	1.79	0.47
1:aa:922:U:H4'	12:na:41:PHE:HD2	1.80	0.47
1:aa:1356:A:H2'	1:aa:1357:U:C6	2.49	0.47
1:aa:1572:U:O2	13:oa:87:LYS:NZ	2.48	0.47
1:aa:1742:A:H2'	1:aa:1743:C:H6	1.79	0.47
7:ia:197:LYS:HD3	7:ia:197:LYS:N	2.29	0.47
13:oa:59:LEU:HD23	13:oa:60:SER:O	2.14	0.47
24:za:204:ASP:HA	24:za:207:PHE:CE2	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:eb:127:ALA:O	28:eb:131:ILE:HG13	2.15	0.47
30:gb:57:ASP:HB3	30:gb:108:LEU:HD13	1.96	0.47
31:hb:164:GLU:HG2	31:hb:186:TYR:CE2	2.50	0.47
37:EA:63:ARG:HG2	37:EA:64:ASN:OD1	2.14	0.47
39:GA:90:ARG:NH2	39:GA:123:LYS:HB3	2.30	0.47
40:HA:6:PHE:CZ	59:AB:43:VAL:HG22	2.50	0.47
48:PA:59:ARG:HH22	75:RB:188:U:H2'	1.80	0.47
50:RA:56:ARG:NH1	75:RB:1727:A:O4'	2.43	0.47
63:EB:268:TYR:CE1	63:EB:278:LYS:HE3	2.50	0.47
74:PB:37:LYS:O	74:PB:58:ARG:NH2	2.36	0.47
75:RB:26:A:H2	75:RB:57:G:N1	2.13	0.47
75:RB:99:A:H2'	75:RB:100:C:O2	2.14	0.47
75:RB:442:C:H2'	75:RB:443:G:H8	1.79	0.47
75:RB:449:G:H1	75:RB:488:U:H3	1.62	0.47
75:RB:1266:G:C6	75:RB:1268:G:H1'	2.49	0.47
75:RB:2211:G:H2'	75:RB:2212:A:H8	1.80	0.47
75:RB:2612:G:H2'	75:RB:2613:C:H6	1.80	0.47
1:aa:141:G:N1	1:aa:142:G:O6	2.48	0.47
1:aa:160:A:OP2	30:gb:85:ARG:HD3	2.14	0.47
1:aa:1529:G:N3	10:la:76:ARG:NH2	2.63	0.47
2:ba:52:ILE:HG23	2:ba:53:TYR:CD1	2.50	0.47
4:da:65:TYR:OH	7:ia:76:ARG:HG2	2.15	0.47
13:oa:86:ARG:HD2	13:oa:86:ARG:HA	1.74	0.47
14:pa:124:ARG:HA	14:pa:127:ARG:NH1	2.30	0.47
28:eb:107:LEU:HD23	28:eb:110:ARG:HD2	1.97	0.47
50:RA:38:LEU:HD13	50:RA:69:ILE:HD12	1.96	0.47
52:TA:55:ASN:O	75:RB:1408:C:H1'	2.14	0.47
53:UA:14:LYS:HE2	75:RB:1494:A:H5''	1.97	0.47
60:BB:10:GLU:O	60:BB:14:LYS:HE2	2.15	0.47
63:EB:227:ASN:HD21	75:RB:209:G:P	2.38	0.47
75:RB:58:G:H2'	76:SB:33:A:O2'	2.14	0.47
75:RB:1230:G:H4'	75:RB:3113:C:H1'	1.97	0.47
75:RB:1569:U:C5	75:RB:1571:A:H2'	2.50	0.47
75:RB:2250:C:H2'	75:RB:2251:U:O4'	2.14	0.47
75:RB:2968:A:H2'	80:cl:74:C:H5''	1.97	0.47
76:SB:98:U:H2'	76:SB:99:C:O4'	2.15	0.47
79:bl:321:LEU:HD11	79:bl:379:PHE:CD1	2.50	0.47
1:aa:10:G:H21	29:fb:98:LYS:HA	1.79	0.47
1:aa:57:G:H2'	1:aa:58:U:O4'	2.14	0.47
1:aa:87:A:H2'	1:aa:88:C:H6	1.80	0.47
1:aa:277:G:H8	1:aa:277:G:OP1	1.98	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:aa:983:A:H2'	1:aa:984:A:O4'	2.15	0.47
1:aa:1250:C:H2'	1:aa:1251:U:C6	2.49	0.47
1:aa:1298:G:O2'	1:aa:1325:A:N1	2.43	0.47
1:aa:1510:G:N7	16:ra:114:ARG:NH2	2.59	0.47
6:ha:190:LYS:HG3	6:ha:202:THR:HG22	1.97	0.47
19:ua:82:ALA:HA	19:ua:86:ARG:HD2	1.97	0.47
20:va:69:LYS:HG2	29:fb:234:PHE:CE2	2.47	0.47
31:hb:125:GLY:O	31:hb:128:GLU:HG2	2.15	0.47
32:ib:92:LEU:HD12	32:ib:101:TYR:HB3	1.95	0.47
38:FA:25:ILE:HD13	38:FA:38:PHE:CD1	2.50	0.47
51:SA:40:ALA:O	51:SA:44:ILE:HG12	2.15	0.47
53:UA:20:ILE:HD11	53:UA:39:TYR:CZ	2.50	0.47
57:YA:37:VAL:HG22	61:CB:233:GLU:OE2	2.15	0.47
60:BB:33:LEU:O	60:BB:36:GLN:HG2	2.15	0.47
62:DB:297:GLU:HB2	62:DB:307:LYS:O	2.15	0.47
70:LB:71:LEU:HD11	70:LB:75:ILE:HB	1.97	0.47
75:RB:1205:C:N4	75:RB:2854:C:H5''	2.29	0.47
75:RB:1227:A:H2'	75:RB:1228:C:H6	1.80	0.47
75:RB:1273:U:O4'	75:RB:1277:A:N6	2.48	0.47
75:RB:1736:C:H2'	75:RB:1737:C:H6	1.80	0.47
75:RB:2154:G:H2'	75:RB:2155:G:H8	1.80	0.47
75:RB:2211:G:H2'	75:RB:2212:A:C8	2.50	0.47
75:RB:2254:G:H21	75:RB:2255:A:N6	2.13	0.47
75:RB:2350:A:H2'	75:RB:2351:A:C8	2.49	0.47
77:TB:79:A:H8	77:TB:79:A:O5'	1.98	0.47
79:bl:321:LEU:HD11	79:bl:379:PHE:CE1	2.50	0.47
1:aa:189:U:C6	1:aa:190:C:H5	2.32	0.46
1:aa:400:G:O6	3:ca:26:LYS:HE3	2.14	0.46
1:aa:1022:U:H2'	1:aa:1023:C:C6	2.51	0.46
1:aa:1353:G:O2'	1:aa:1354:C:OP1	2.33	0.46
1:aa:1493:A:OP2	7:ia:8:LYS:NZ	2.35	0.46
1:aa:1566:U:H5'	1:aa:1567:G:H4'	1.96	0.46
13:oa:47:LYS:HE3	13:oa:79:VAL:HG22	1.97	0.46
13:oa:108:ARG:O	13:oa:112:GLU:N	2.35	0.46
16:ra:82:GLY:HA2	16:ra:133:GLY:HA3	1.96	0.46
16:ra:127:ASP:CG	16:ra:137:THR:HG22	2.41	0.46
29:fb:107:ARG:HG2	29:fb:129:LYS:HD3	1.96	0.46
57:YA:133:PHE:HB2	57:YA:145:HIS:ND1	2.30	0.46
58:ZA:24:VAL:HA	58:ZA:72:VAL:O	2.15	0.46
64:FB:131:VAL:HG13	64:FB:132:LEU:HG	1.97	0.46
71:MB:54:MET:HE1	71:MB:88:ALA:HB1	1.95	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
75:RB:1194:C:O5'	75:RB:1194:C:H6	1.97	0.46
75:RB:2957:C:H2'	75:RB:2958:G:H8	1.79	0.46
76:SB:7:U:C2	76:SB:8:C:C5	3.03	0.46
77:TB:79:A:H2	77:TB:97:G:N1	2.12	0.46
79:bl:243:PHE:CE2	79:bl:251:ILE:HD11	2.49	0.46
1:aa:285:G:N3	1:aa:285:G:H2'	2.29	0.46
1:aa:466:G:OP1	28:eb:4:VAL:HG12	2.15	0.46
1:aa:1734:U:H2'	1:aa:1735:C:C6	2.50	0.46
2:ba:21:ARG:HH21	8:ja:95:THR:HA	1.80	0.46
6:ha:19:ASP:CG	6:ha:20:VAL:H	2.22	0.46
9:ka:13:LYS:HD3	9:ka:19:THR:HG22	1.97	0.46
17:sa:90:ARG:HA	17:sa:125:LEU:HB2	1.97	0.46
18:ta:42:LEU:HA	18:ta:46:ALA:CB	2.44	0.46
25:bb:51:THR:HG23	25:bb:56:ILE:HA	1.97	0.46
25:bb:86:LEU:HB3	25:bb:98:THR:HG21	1.97	0.46
29:fb:163:THR:HG22	29:fb:205:ASP:O	2.14	0.46
29:fb:217:LEU:O	29:fb:221:VAL:HG12	2.16	0.46
30:gb:31:ARG:HD3	30:gb:31:ARG:H	1.79	0.46
30:gb:186:PRO:HA	30:gb:189:LEU:HD12	1.97	0.46
31:hb:131:VAL:HG12	31:hb:170:PHE:CD2	2.50	0.46
38:FA:112:GLU:HG2	38:FA:124:LYS:HD3	1.95	0.46
41:IA:81:MET:HE2	41:IA:103:PHE:CG	2.50	0.46
45:MA:30:ARG:C	45:MA:30:ARG:HD3	2.40	0.46
55:WA:24:LYS:NZ	55:WA:75:GLN:OE1	2.46	0.46
58:ZA:106:ALA:O	58:ZA:109:LYS:HB3	2.15	0.46
59:AB:28:ARG:O	59:AB:31:ASP:HB2	2.15	0.46
74:PB:108:LYS:HB3	74:PB:108:LYS:HE3	1.60	0.46
75:RB:563:C:H2'	75:RB:564:A:C8	2.50	0.46
75:RB:1316:C:H2'	75:RB:1317:G:O4'	2.16	0.46
1:aa:54:C:OP1	2:ba:115:GLU:HG3	2.16	0.46
1:aa:546:U:C5	1:aa:548:C:H5'	2.50	0.46
1:aa:750:U:H5	31:hb:107:LYS:NZ	2.13	0.46
2:ba:22:LEU:HD11	8:ja:92:ILE:HG21	1.97	0.46
2:ba:89:LYS:NZ	2:ba:102:LEU:HD23	2.30	0.46
6:ha:79:VAL:HG23	6:ha:90:SER:HB3	1.96	0.46
6:ha:118:VAL:HG13	6:ha:133:ALA:O	2.15	0.46
9:ka:30:LEU:HD23	9:ka:30:LEU:H	1.81	0.46
24:za:18:ASP:OD1	24:za:184:ARG:NH2	2.43	0.46
25:bb:138:PHE:O	25:bb:213:ARG:N	2.48	0.46
38:FA:93:PHE:CG	38:FA:100:ILE:HD11	2.50	0.46
48:PA:72:VAL:HA	48:PA:79:ILE:HG22	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:SA:86:LYS:O	51:SA:97:LEU:HD22	2.16	0.46
58:ZA:19:GLY:O	58:ZA:21:VAL:N	2.47	0.46
62:DB:112:GLU:HG3	62:DB:122:TRP:CZ2	2.50	0.46
72:NB:3:LYS:O	72:NB:43:TYR:HA	2.14	0.46
75:RB:502:G:H21	75:RB:3259:C:N4	2.13	0.46
75:RB:541:C:H4'	75:RB:542:G:H21	1.80	0.46
75:RB:795:C:H2'	75:RB:796:C:H6	1.80	0.46
75:RB:2154:G:H2'	75:RB:2155:G:C8	2.50	0.46
75:RB:2225:A:H2'	75:RB:2226:A:C8	2.50	0.46
1:aa:411:A:H2'	1:aa:412:C:H6	1.81	0.46
1:aa:1226:U:C2	1:aa:1227:A:C8	3.03	0.46
1:aa:1727:C:H2'	1:aa:1728:G:C8	2.50	0.46
8:ja:89:ILE:HG12	8:ja:100:ARG:HD3	1.97	0.46
11:ma:75:LYS:HA	21:wa:44:ARG:NH1	2.30	0.46
15:qa:88:LYS:HG2	15:qa:89:SER:N	2.29	0.46
29:fb:247:LYS:HD3	29:fb:252:GLU:HA	1.97	0.46
39:GA:62:MET:HE3	39:GA:76:VAL:HG12	1.97	0.46
42:JA:88:ASP:O	42:JA:91:VAL:HG12	2.15	0.46
55:WA:56:PRO:O	81:dl:75:C:O2'	2.31	0.46
56:XA:121:ILE:CD1	64:FB:187:GLU:HA	2.45	0.46
62:DB:2:SER:HB2	75:RB:2940:G:H8	1.80	0.46
62:DB:46:PHE:CZ	62:DB:208:VAL:HA	2.50	0.46
62:DB:253:ALA:HB1	75:RB:2944:G:N3	2.30	0.46
70:LB:135:SER:O	70:LB:136:LYS:HE2	2.15	0.46
73:OB:25:LYS:HD3	73:OB:27:GLN:HE22	1.80	0.46
75:RB:258:C:H2'	75:RB:259:G:C4	2.51	0.46
75:RB:553:C:O2'	75:RB:554:C:O5'	2.29	0.46
75:RB:2406:A:H2'	75:RB:2407:G:H8	1.80	0.46
75:RB:3053:U:H3'	75:RB:3054:C:H4'	1.96	0.46
79:bl:300:GLY:HA3	79:bl:420:ILE:HG13	1.96	0.46
79:bl:417:GLN:C	79:bl:418:LEU:HD22	2.40	0.46
79:bl:417:GLN:O	79:bl:418:LEU:HD22	2.15	0.46
1:aa:614:G:HO2'	1:aa:617:G:HO2'	1.61	0.46
1:aa:865:U:H2'	1:aa:866:U:C6	2.51	0.46
1:aa:1518:C:H2'	1:aa:1519:G:O4'	2.15	0.46
4:da:46:MET:HG3	4:da:66:TRP:CE3	2.50	0.46
12:na:150:ARG:H	12:na:150:ARG:HD3	1.79	0.46
18:ta:59:LYS:H	18:ta:62:THR:CG2	2.28	0.46
20:va:52:PHE:CE1	22:xa:26:LEU:HD21	2.50	0.46
24:za:132:ARG:NH2	24:za:157:PRO:HD3	2.30	0.46
28:eb:49:TYR:O	28:eb:53:ARG:HG2	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:GA:26:VAL:CG1	39:GA:37:LEU:HB2	2.45	0.46
60:BB:35:ILE:HA	60:BB:38:VAL:HB	1.98	0.46
69:KB:62:THR:O	69:KB:63:ARG:C	2.58	0.46
70:LB:177:LYS:NZ	75:RB:3255:G:N7	2.58	0.46
75:RB:12:G:H8	75:RB:12:G:H5''	1.80	0.46
75:RB:26:A:H2	75:RB:57:G:H1	1.62	0.46
75:RB:1112:C:H2'	75:RB:1113:C:C6	2.51	0.46
75:RB:1248:A:H2	75:RB:1275:A:H4'	1.81	0.46
75:RB:2215:A:H2'	75:RB:2216:A:C8	2.50	0.46
75:RB:2622:C:O2'	75:RB:2624:A:H2	1.98	0.46
76:SB:104:A:C8	76:SB:105:A:C8	3.03	0.46
79:bl:291:TYR:OH	79:bl:304:PHE:HB3	2.16	0.46
1:aa:17:C:H2'	1:aa:18:C:C6	2.50	0.46
1:aa:629:C:H2'	1:aa:630:U:C6	2.50	0.46
1:aa:1171:C:OP1	9:ka:75:HIS:N	2.41	0.46
7:ia:45:ARG:HD3	7:ia:83:GLY:O	2.15	0.46
8:ja:46:LEU:O	8:ja:50:ASN:HB2	2.16	0.46
11:ma:46:ASP:O	11:ma:50:GLY:N	2.41	0.46
17:sa:77:PRO:HB2	17:sa:80:GLU:HG3	1.97	0.46
20:va:76:TYR:CE2	20:va:78:GLN:NE2	2.84	0.46
25:bb:38:PHE:CD1	25:bb:73:LEU:HD21	2.50	0.46
38:FA:94:VAL:HG22	68:JB:82:LEU:HD23	1.97	0.46
53:UA:28:HIS:O	53:UA:32:SER:N	2.48	0.46
57:YA:29:MET:HE1	57:YA:46:PHE:HB2	1.96	0.46
58:ZA:98:VAL:HG23	58:ZA:99:ARG:N	2.26	0.46
62:DB:5:LYS:HD2	75:RB:2875:G:OP1	2.16	0.46
63:EB:30:VAL:C	63:EB:32:LYS:H	2.23	0.46
66:HB:189:ARG:CZ	66:HB:215:ILE:HD12	2.46	0.46
75:RB:18:G:H22	76:SB:142:G:H1	1.64	0.46
75:RB:180:G:H2'	75:RB:181:G:C8	2.51	0.46
75:RB:2406:A:H2'	75:RB:2407:G:C8	2.51	0.46
75:RB:2969:G:OP2	79:bl:177:LYS:HD2	2.16	0.46
75:RB:3217:G:H2'	75:RB:3218:C:H6	1.81	0.46
1:aa:708:G:H4'	31:hb:103:ARG:HG2	1.97	0.46
1:aa:1247:G:H4'	1:aa:1249:G:OP1	2.15	0.46
9:ka:149:LEU:HB3	9:ka:185:ALA:HA	1.97	0.46
12:na:61:LYS:NZ	12:na:76:LEU:HB3	2.30	0.46
13:oa:14:ARG:HE	37:EA:112:ILE:HD13	1.80	0.46
15:qa:10:LYS:O	15:qa:14:ARG:HG3	2.16	0.46
18:ta:76:LEU:HD22	18:ta:79:ARG:NH1	2.31	0.46
33:AA:52:LYS:HB3	33:AA:52:LYS:HE3	1.67	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:CA:74:LEU:O	75:RB:1633:C:H4'	2.15	0.46
37:EA:109:GLN:O	37:EA:112:ILE:HG22	2.16	0.46
57:YA:133:PHE:CE2	75:RB:540:G:H8	2.33	0.46
62:DB:378:ASP:OD1	62:DB:379:GLU:N	2.48	0.46
64:FB:44:GLU:HG2	64:FB:45:GLU:HG2	1.98	0.46
65:GB:41:PHE:CD2	65:GB:62:LYS:HD2	2.51	0.46
70:LB:75:ILE:CD1	70:LB:127:ALA:HB2	2.45	0.46
75:RB:1703:C:O2	75:RB:1782:G:O2'	2.32	0.46
75:RB:1762:G:H2'	75:RB:1763:C:O4'	2.15	0.46
75:RB:2433:A:H2'	75:RB:2434:U:C6	2.51	0.46
75:RB:2568:A:O2'	75:RB:2569:C:O5'	2.32	0.46
75:RB:3148:U:H2'	75:RB:3385:G:O6	2.15	0.46
75:RB:3158:G:C6	75:RB:3273:G:C6	3.03	0.46
75:RB:3275:U:O2'	75:RB:3276:G:OP2	2.33	0.46
76:SB:112:U:C2	76:SB:114:G:H1'	2.50	0.46
79:bl:64:ARG:O	79:bl:64:ARG:HD3	2.16	0.46
6:ha:211:SER:OG	6:ha:252:ASN:HA	2.16	0.46
16:ra:85:ILE:HD11	16:ra:117:LEU:HD12	1.98	0.46
38:FA:124:LYS:O	38:FA:163:LYS:HE2	2.16	0.46
43:KA:110:LEU:HD22	43:KA:115:LEU:CD1	2.40	0.46
63:EB:368:GLU:OE1	63:EB:368:GLU:N	2.45	0.46
75:RB:738:A:H2'	75:RB:739:C:H6	1.80	0.46
75:RB:1123:A:H2'	75:RB:1124:U:C6	2.50	0.46
75:RB:1146:A:H5'	75:RB:1372:U:H1'	1.97	0.46
75:RB:1172:A:H2'	75:RB:1173:C:C6	2.51	0.46
75:RB:3338:U:C3'	75:RB:3339:U:H5''	2.46	0.46
1:aa:261:C:H5''	3:ca:76:LYS:HE3	1.97	0.46
1:aa:372:U:O2	1:aa:377:G:O6	2.33	0.46
1:aa:1082:C:H2'	1:aa:1083:C:H6	1.79	0.46
1:aa:1531:G:N3	1:aa:1531:G:H2'	2.31	0.46
1:aa:1691:C:O2'	1:aa:1692:G:H8	1.94	0.46
2:ba:26:LYS:HG2	2:ba:81:ILE:HB	1.97	0.46
11:ma:61:PRO:HG2	11:ma:63:ARG:HE	1.80	0.46
18:ta:98:SER:OG	18:ta:100:GLN:HG2	2.16	0.46
30:gb:30:LYS:HZ2	30:gb:36:VAL:HG23	1.81	0.46
33:AA:66:ARG:HB3	75:RB:2511:U:C5	2.51	0.46
33:AA:68:LYS:HE3	33:AA:229:TRP:HB3	1.97	0.46
33:AA:146:LEU:O	33:AA:195:CYS:HA	2.15	0.46
34:BA:22:LYS:HE2	75:RB:2698:U:OP2	2.16	0.46
36:DA:245:ARG:NH1	36:DA:247:ARG:HH12	2.13	0.46
38:FA:72:ALA:O	38:FA:76:VAL:HG23	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:JA:153:LYS:HE2	42:JA:160:SER:HB3	1.96	0.46
43:KA:204:ALA:HB2	43:KA:235:MET:HG3	1.97	0.46
43:KA:265:ARG:HD3	43:KA:269:LYS:NZ	2.31	0.46
62:DB:50:LYS:HD3	62:DB:335:PRO:O	2.15	0.46
63:EB:164:ILE:HG12	63:EB:221:ILE:HG22	1.97	0.46
66:HB:189:ARG:NH2	66:HB:215:ILE:HD12	2.31	0.46
75:RB:117:U:O4	75:RB:147:G:N2	2.49	0.46
75:RB:1238:G:C5	75:RB:1239:U:C4	3.03	0.46
75:RB:1500:C:H2'	75:RB:1501:A:C8	2.50	0.46
75:RB:1501:A:H2'	75:RB:1502:U:C6	2.51	0.46
1:aa:717:G:H5'	1:aa:743:G:H1	1.81	0.46
1:aa:824:U:H3	1:aa:858:G:H1	1.63	0.46
1:aa:951:U:H2'	1:aa:952:U:C6	2.51	0.46
1:aa:1241:G:C4	1:aa:1242:A:N7	2.84	0.46
1:aa:1294:U:H5	1:aa:1329:A:N1	2.14	0.46
1:aa:1601:A:H2'	1:aa:1602:G:H8	1.81	0.46
1:aa:1690:U:HO2'	1:aa:1691:C:C5'	2.27	0.46
5:ga:73:LEU:HD12	5:ga:78:LYS:HB2	1.97	0.46
8:ja:204:THR:HG22	8:ja:205:PHE:N	2.29	0.46
15:qa:98:VAL:HG11	24:za:23:LEU:HD11	1.98	0.46
25:bb:135:LEU:HD12	25:bb:215:VAL:HG13	1.98	0.46
31:hb:72:PRO:HA	31:hb:75:LYS:NZ	2.31	0.46
35:CA:83:THR:CG2	35:CA:85:TYR:HD1	2.29	0.46
38:FA:100:ILE:HG22	38:FA:116:PHE:HA	1.98	0.46
40:HA:154:PRO:HB2	75:RB:57:G:H5'	1.96	0.46
47:OA:36:SER:O	47:OA:40:ARG:HG3	2.15	0.46
56:XA:93:LEU:O	56:XA:97:LYS:HG3	2.16	0.46
62:DB:253:ALA:HB1	75:RB:2944:G:C2	2.51	0.46
64:FB:17:ARG:HE	64:FB:18:HIS:CD2	2.34	0.46
69:KB:129:ARG:HH12	75:RB:168:A:N6	2.14	0.46
75:RB:2369:G:H2'	75:RB:2370:G:C8	2.50	0.46
75:RB:3010:U:H2'	75:RB:3011:C:H6	1.80	0.46
76:SB:157:A:H2'	76:SB:158:C:O4'	2.15	0.46
1:aa:614:G:H2'	1:aa:618:C:C5	2.51	0.45
1:aa:848:C:H2'	1:aa:849:G:C8	2.52	0.45
1:aa:852:A:H2'	1:aa:853:U:C6	2.51	0.45
1:aa:1042:C:H2'	1:aa:1043:C:O4'	2.17	0.45
1:aa:1151:G:H2'	1:aa:1152:A:C8	2.51	0.45
1:aa:1226:U:H2'	1:aa:1227:A:C8	2.49	0.45
1:aa:1625:U:H2'	1:aa:1626:C:C6	2.51	0.45
1:aa:1700:G:N2	1:aa:1720:G:H22	2.14	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:qa:89:SER:HA	24:za:204:ASP:OD2	2.15	0.45
16:ra:55:PHE:HB2	16:ra:96:GLN:HG3	1.98	0.45
17:sa:91:ASN:O	17:sa:124:TYR:HE2	1.99	0.45
30:gb:79:ARG:HE	30:gb:89:ARG:HB2	1.80	0.45
31:hb:67:TYR:HE1	31:hb:99:ARG:HD3	1.81	0.45
34:BA:77:ASN:HB3	34:BA:84:ILE:CG2	2.47	0.45
35:CA:102:LEU:O	35:CA:102:LEU:HD23	2.17	0.45
36:DA:2:GLY:HA2	36:DA:207:VAL:HG23	1.97	0.45
36:DA:32:LEU:HD13	36:DA:163:ARG:HD3	1.97	0.45
43:KA:203:VAL:HG22	77:TB:47:C:H4'	1.96	0.45
63:EB:300:ASP:O	63:EB:304:SER:OG	2.27	0.45
75:RB:78:U:H2'	75:RB:79:C:C6	2.51	0.45
75:RB:405:A:C2	76:SB:17:A:H1'	2.51	0.45
75:RB:425:G:H2'	75:RB:426:A:H5''	1.97	0.45
75:RB:565:C:H2'	75:RB:566:G:O4'	2.17	0.45
75:RB:611:C:H2'	75:RB:612:U:O4'	2.16	0.45
75:RB:1755:A:H2	75:RB:1764:G:C2	2.34	0.45
1:aa:1576:C:P	13:oa:34:LYS:HE3	2.56	0.45
12:na:93:LEU:O	12:na:127:GLY:N	2.48	0.45
25:bb:82:ARG:CD	25:bb:103:MET:HE3	2.46	0.45
27:db:41:VAL:O	27:db:41:VAL:HG13	2.16	0.45
28:eb:15:LYS:HB2	28:eb:15:LYS:HE3	1.63	0.45
34:BA:41:ASP:OD1	34:BA:61:THR:OG1	2.24	0.45
37:EA:157:THR:OG1	37:EA:160:ASP:OD1	2.30	0.45
38:FA:21:SER:O	38:FA:22:ALA:C	2.59	0.45
38:FA:93:PHE:CB	38:FA:141:ASP:HB3	2.37	0.45
40:HA:60:VAL:CG2	40:HA:134:LEU:HB2	2.46	0.45
45:MA:18:MET:SD	75:RB:386:G:H5''	2.56	0.45
49:QA:70:VAL:HG22	49:QA:90:LEU:HG	1.98	0.45
61:CB:232:ARG:HG3	61:CB:232:ARG:O	2.16	0.45
66:HB:47:PRO:HB3	66:HB:171:TRP:CZ2	2.52	0.45
75:RB:1:G:N2	76:SB:160:C:O3'	2.48	0.45
75:RB:1035:C:H2'	75:RB:1036:C:C6	2.51	0.45
75:RB:1295:A:H2'	75:RB:1296:C:O4'	2.16	0.45
75:RB:2897:A:C4	75:RB:2898:G:C8	3.05	0.45
80:cl:73:A:H5'	80:cl:74:C:O5'	2.16	0.45
1:aa:40:A:OP1	28:eb:6:PHE:HB2	2.17	0.45
1:aa:786:U:C2'	2:ba:13:ARG:HD3	2.46	0.45
1:aa:1681:G:H2'	1:aa:1682:U:C6	2.51	0.45
1:aa:1727:C:H2'	1:aa:1728:G:H8	1.82	0.45
6:ha:119:LEU:HD21	6:ha:135:ARG:NH1	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:ha:177:ALA:N	6:ha:178:PRO:HD3	2.31	0.45
17:sa:54:PHE:CE1	17:sa:58:LEU:HD11	2.52	0.45
19:ua:53:ASP:OD2	19:ua:54:ASP:N	2.49	0.45
30:gb:201:LYS:HA	30:gb:204:ALA:HB3	1.98	0.45
33:AA:24:LEU:HB3	35:CA:53:VAL:HG21	1.98	0.45
36:DA:42:LYS:HD3	36:DA:87:PHE:HD1	1.80	0.45
37:EA:117:LYS:NZ	37:EA:122:THR:O	2.49	0.45
48:PA:55:VAL:O	48:PA:66:GLU:HG3	2.15	0.45
55:WA:18:LYS:HG2	55:WA:18:LYS:O	2.16	0.45
58:ZA:22:SER:HA	58:ZA:74:VAL:O	2.15	0.45
75:RB:1237:G:N2	75:RB:1260:G:N7	2.64	0.45
75:RB:2100:A:H2'	75:RB:2101:A:H8	1.81	0.45
75:RB:3273:G:C5	75:RB:3274:G:N7	2.84	0.45
1:aa:408:G:OP1	30:gb:90:ARG:NH1	2.49	0.45
1:aa:1224:C:H2'	1:aa:1225:A:H8	1.81	0.45
4:da:37:VAL:HG11	4:da:42:VAL:HG21	1.98	0.45
11:ma:75:LYS:HG2	21:wa:44:ARG:HH12	1.82	0.45
22:xa:35:MET:HE3	22:xa:81:PHE:CD2	2.52	0.45
24:za:25:ALA:HB3	24:za:27:VAL:HG23	1.98	0.45
28:eb:112:GLN:OE1	28:eb:128:ARG:HB2	2.15	0.45
34:BA:2:PRO:HA	75:RB:2627:C:OP1	2.16	0.45
56:XA:63:LYS:HE3	75:RB:542:G:C8	2.51	0.45
70:LB:77:PRO:HB3	70:LB:134:ILE:HD11	1.98	0.45
71:MB:46:VAL:HG21	71:MB:79:PRO:HB3	1.98	0.45
75:RB:1111:U:H2'	75:RB:1112:C:H6	1.81	0.45
75:RB:2693:A:H2'	75:RB:2694:A:C8	2.51	0.45
79:bl:6:GLU:HA	79:bl:9:LYS:HB2	1.98	0.45
1:aa:145:A:N6	1:aa:166:A:N7	2.64	0.45
1:aa:194:G:C5	1:aa:195:A:C8	3.05	0.45
1:aa:528:U:H1'	1:aa:531:A:N7	2.31	0.45
1:aa:810:A:C8	20:va:106:PRO:HA	2.51	0.45
1:aa:1006:A:OP1	80:cl:38:A:O2'	2.28	0.45
4:da:38:PRO:HD2	4:da:41:GLN:OE1	2.16	0.45
6:ha:75:PHE:O	6:ha:92:SER:HB3	2.16	0.45
6:ha:93:TRP:HA	6:ha:117:ASP:OD1	2.17	0.45
8:ja:181:VAL:HG12	8:ja:227:THR:HA	1.99	0.45
14:pa:102:LEU:O	14:pa:105:ASN:N	2.50	0.45
16:ra:87:GLY:O	16:ra:91:ILE:HG13	2.16	0.45
17:sa:68:LYS:HA	17:sa:71:LYS:CE	2.47	0.45
41:IA:96:PRO:HG2	41:IA:119:ILE:CD1	2.46	0.45
50:RA:49:ALA:HB1	50:RA:77:ASN:C	2.41	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
66:HB:177:ASN:OD1	66:HB:178:ARG:N	2.50	0.45
75:RB:627:G:O2'	75:RB:628:C:H6	1.99	0.45
75:RB:644:U:H2'	75:RB:645:C:C6	2.52	0.45
75:RB:3007:A:N1	75:RB:3039:C:O2'	2.40	0.45
1:aa:125:A:H2'	1:aa:126:U:O4'	2.16	0.45
1:aa:342:C:H2'	1:aa:343:C:C6	2.51	0.45
1:aa:490:G:H22	1:aa:504:C:N4	2.14	0.45
1:aa:859:U:OP2	1:aa:859:U:H6	2.00	0.45
1:aa:1083:C:H2'	1:aa:1084:U:C6	2.51	0.45
3:ca:116:THR:HG22	3:ca:117:HIS:N	2.31	0.45
4:da:46:MET:HG3	4:da:66:TRP:CZ3	2.51	0.45
8:ja:183:VAL:HG11	8:ja:220:THR:HG21	1.98	0.45
15:qa:13:SER:O	15:qa:17:ILE:HG12	2.17	0.45
15:qa:17:ILE:HD11	15:qa:54:THR:HB	1.99	0.45
17:sa:46:PHE:HB3	17:sa:50:ALA:CB	2.46	0.45
24:za:18:ASP:CG	24:za:181:LEU:HD11	2.42	0.45
30:gb:13:GLN:N	30:gb:13:GLN:NE2	2.63	0.45
50:RA:30:GLY:O	50:RA:34:VAL:HG13	2.17	0.45
51:SA:52:MET:HB3	51:SA:85:ARG:HD3	1.99	0.45
65:GB:48:LYS:HD3	65:GB:58:LYS:NZ	2.32	0.45
75:RB:603:G:H2'	75:RB:604:C:C6	2.52	0.45
76:SB:159:G:H2'	76:SB:160:C:O4'	2.17	0.45
79:bl:2:SER:OG	79:bl:3:ASP:N	2.49	0.45
6:ha:206:HIS:NE2	6:ha:230:VAL:O	2.45	0.45
20:va:78:GLN:CD	20:va:78:GLN:N	2.75	0.45
25:bb:213:ARG:NH1	25:bb:214:LYS:HD2	2.31	0.45
56:XA:24:LEU:HD11	56:XA:84:TRP:CG	2.51	0.45
62:DB:263:VAL:HG11	62:DB:269:ARG:NH1	2.32	0.45
63:EB:324:LYS:HG2	63:EB:324:LYS:O	2.17	0.45
65:GB:10:ILE:HD13	75:RB:840:A:O2'	2.17	0.45
74:PB:16:LYS:O	74:PB:19:GLN:HG2	2.16	0.45
74:PB:102:ILE:O	74:PB:106:VAL:HG23	2.17	0.45
75:RB:26:A:H2	75:RB:57:G:N2	2.15	0.45
75:RB:581:G:H2'	75:RB:582:C:H6	1.81	0.45
75:RB:1721:A:N1	75:RB:1784:C:O2'	2.41	0.45
75:RB:2131:U:OP2	75:RB:2136:A:N6	2.40	0.45
1:aa:303:A:H2'	1:aa:304:A:O4'	2.17	0.45
1:aa:494:G:H8	1:aa:495:C:C5	2.35	0.45
1:aa:640:A:C1'	20:va:57:VAL:HG12	2.47	0.45
1:aa:1071:C:H4'	25:bb:149:GLN:HG2	1.98	0.45
1:aa:1162:A:HO2'	1:aa:1163:C:P	2.34	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:aa:1770:G:C2'	1:aa:1771:U:H5'	2.47	0.45
2:ba:33:ILE:HG22	2:ba:35:PRO:HD3	1.99	0.45
3:ca:49:VAL:HG11	3:ca:55:LYS:HD3	1.98	0.45
6:ha:299:CYS:HB2	6:ha:315:TYR:CZ	2.52	0.45
7:ia:115:VAL:HG11	7:ia:142:LEU:HD21	1.99	0.45
14:pa:18:TYR:CE1	20:va:54:PRO:HA	2.52	0.45
24:za:67:ARG:NH1	26:cb:72:TRP:HZ2	2.15	0.45
30:gb:75:LEU:HD12	30:gb:99:VAL:HG21	1.97	0.45
31:hb:106:LYS:HG3	31:hb:107:LYS:N	2.31	0.45
31:hb:154:TYR:CD1	31:hb:187:PRO:HG3	2.52	0.45
33:AA:110:ARG:HE	33:AA:122:ALA:HB2	1.81	0.45
33:AA:172:PRO:HB3	33:AA:215:LYS:CG	2.47	0.45
36:DA:65:HIS:CE1	36:DA:68:ARG:HG3	2.52	0.45
39:GA:48:ARG:HH12	62:DB:8:HIS:HB2	1.82	0.45
42:JA:38:ARG:HH12	75:RB:1351:C:H5''	1.81	0.45
44:LA:41:ILE:O	44:LA:45:VAL:HG23	2.16	0.45
48:PA:76:ARG:HE	54:VA:31:THR:CG2	2.29	0.45
56:XA:124:GLU:O	56:XA:127:LYS:HG2	2.16	0.45
63:EB:354:ARG:HE	63:EB:360:SER:HB3	1.82	0.45
64:FB:84:ILE:HG21	64:FB:143:LEU:HD11	1.98	0.45
71:MB:54:MET:HE1	71:MB:88:ALA:CB	2.47	0.45
75:RB:3303:A:H4'	75:RB:3377:A:H8	1.81	0.45
77:TB:111:U:H2'	77:TB:112:U:O4'	2.17	0.45
79:bl:187:LEU:O	79:bl:191:ARG:HG2	2.17	0.45
1:aa:374:A:H2'	1:aa:375:G:C8	2.52	0.45
1:aa:526:U:H2'	1:aa:527:C:O4'	2.16	0.45
1:aa:749:G:C6	1:aa:815:A:C6	3.04	0.45
1:aa:794:G:OP1	8:ja:106:LYS:NZ	2.39	0.45
1:aa:1087:U:C2	26:cb:61:GLN:NE2	2.83	0.45
1:aa:1353:G:O2'	1:aa:1354:C:O4'	2.27	0.45
4:da:61:TRP:O	4:da:62:GLN:HG2	2.17	0.45
6:ha:62:TYR:CD1	6:ha:322:ILE:HD13	2.52	0.45
6:ha:312:TYR:CD1	6:ha:322:ILE:HG22	2.49	0.45
12:na:48:SER:HB2	25:bb:66:PHE:CE2	2.51	0.45
13:oa:86:ARG:HH22	13:oa:110:ASP:CG	2.24	0.45
16:ra:34:HIS:CE1	16:ra:38:SER:HB2	2.52	0.45
18:ta:32:LYS:HE2	18:ta:35:GLU:HG3	1.97	0.45
23:ya:40:TYR:CG	28:eb:34:GLY:HA3	2.52	0.45
25:bb:127:VAL:HG21	25:bb:137:MET:HE2	1.99	0.45
26:cb:27:LYS:HD3	26:cb:27:LYS:HA	1.74	0.45
49:QA:76:THR:O	49:QA:79:GLN:HG3	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:XA:120:ALA:HB1	64:FB:190:ALA:HB1	1.99	0.45
69:KB:200:ALA:O	69:KB:204:LYS:HG3	2.16	0.45
72:NB:35:LYS:HA	72:NB:43:TYR:O	2.17	0.45
75:RB:496:U:O2'	75:RB:497:G:OP1	2.35	0.45
75:RB:627:G:O2'	75:RB:628:C:O5'	2.35	0.45
1:aa:824:U:C2	1:aa:858:G:N1	2.81	0.45
1:aa:1241:G:C2	1:aa:1242:A:C5	3.04	0.45
6:ha:86:GLN:OE1	6:ha:103:SER:HB3	2.16	0.45
7:ia:162:GLN:N	7:ia:163:PRO:HD2	2.32	0.45
8:ja:107:GLY:HA2	8:ja:189:THR:HG23	1.99	0.45
9:ka:119:GLU:HG2	9:ka:196:ALA:HB1	1.99	0.45
18:ta:61:ILE:HG22	18:ta:104:ARG:HG2	1.98	0.45
37:EA:18:LYS:HB3	37:EA:74:ARG:NH2	2.31	0.45
53:UA:22:CYS:O	76:SB:43:A:H4'	2.17	0.45
57:YA:133:PHE:HE2	75:RB:540:G:H5''	1.82	0.45
58:ZA:64:THR:HB	58:ZA:75:THR:OG1	2.16	0.45
75:RB:506:U:H2'	75:RB:507:C:C6	2.52	0.45
75:RB:982:U:H4'	75:RB:983:U:C5	2.52	0.45
75:RB:2565:C:H3'	75:RB:2566:U:H4'	1.98	0.45
75:RB:2720:U:H2'	75:RB:2721:U:C6	2.50	0.45
76:SB:126:A:H8	76:SB:130:G:N1	2.15	0.45
1:aa:66:U:C6	1:aa:67:G:H5'	2.50	0.44
1:aa:150:U:O2'	30:gb:4:ASN:OD1	2.36	0.44
1:aa:742:C:O2	1:aa:742:C:H2'	2.17	0.44
1:aa:1022:U:H2'	1:aa:1023:C:H6	1.82	0.44
1:aa:1109:U:OP2	5:ga:4:THR:OG1	2.31	0.44
1:aa:1557:C:OP2	17:sa:48:ALA:N	2.50	0.44
5:ga:78:LYS:HD3	5:ga:78:LYS:HA	1.76	0.44
13:oa:114:LEU:HA	13:oa:117:ILE:HB	1.98	0.44
14:pa:61:PRO:O	14:pa:62:LEU:HD23	2.16	0.44
15:qa:97:ARG:CZ	15:qa:120:ALA:HA	2.47	0.44
17:sa:98:MET:O	17:sa:101:SER:OG	2.20	0.44
18:ta:65:VAL:HA	18:ta:68:GLU:CB	2.47	0.44
24:za:75:PRO:C	24:za:77:ASP:N	2.75	0.44
30:gb:3:LEU:HD21	30:gb:16:VAL:HB	1.98	0.44
30:gb:59:GLN:HB3	30:gb:61:PHE:CE2	2.52	0.44
31:hb:126:ILE:HD11	31:hb:178:CYS:SG	2.57	0.44
33:AA:24:LEU:HD23	33:AA:24:LEU:HA	1.81	0.44
33:AA:74:HIS:CG	33:AA:74:HIS:O	2.70	0.44
33:AA:156:ILE:O	33:AA:160:VAL:HG23	2.17	0.44
38:FA:41:LEU:HD23	38:FA:41:LEU:HA	1.75	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:PA:50:ARG:HD2	76:SB:71:A:H3'	1.98	0.44
49:QA:58:ALA:HB3	49:QA:72:SER:HB2	1.99	0.44
60:BB:100:GLU:HA	60:BB:103:ARG:CD	2.46	0.44
63:EB:193:ARG:O	63:EB:198:LYS:HE3	2.18	0.44
64:FB:18:HIS:HA	64:FB:47:CYS:SG	2.56	0.44
64:FB:90:ARG:HG3	64:FB:104:LEU:HD11	1.99	0.44
75:RB:1562:A:C2	75:RB:1563:G:H2'	2.52	0.44
75:RB:1628:G:H5''	75:RB:1629:A:H5''	1.99	0.44
75:RB:2399:C:H2'	75:RB:2400:C:H6	1.81	0.44
1:aa:372:U:H2'	1:aa:373:U:O4'	2.17	0.44
1:aa:594:C:H2'	1:aa:595:A:H8	1.81	0.44
1:aa:856:G:H4'	1:aa:857:A:OP1	2.17	0.44
1:aa:972:A:OP2	14:pa:124:ARG:NH2	2.49	0.44
1:aa:1265:A:H2'	1:aa:1266:U:H6	1.79	0.44
1:aa:1483:G:OP1	16:ra:57:GLU:N	2.26	0.44
6:ha:77:GLN:HG2	6:ha:119:LEU:HA	1.99	0.44
18:ta:66:LEU:HD23	18:ta:66:LEU:HA	1.80	0.44
18:ta:66:LEU:HB3	18:ta:70:LEU:HD12	1.99	0.44
20:va:94:PRO:HD3	20:va:129:HIS:CD2	2.52	0.44
30:gb:31:ARG:HA	30:gb:102:CYS:O	2.16	0.44
31:hb:107:LYS:O	31:hb:108:GLY:C	2.60	0.44
32:ib:64:THR:O	32:ib:64:THR:HG22	2.18	0.44
33:AA:26:GLU:HG3	33:AA:27:LYS:N	2.32	0.44
36:DA:199:VAL:HG21	75:RB:917:A:N7	2.33	0.44
37:EA:144:ARG:NH1	75:RB:2661:C:OP2	2.51	0.44
40:HA:43:THR:HG22	40:HA:131:GLU:OE2	2.16	0.44
48:PA:76:ARG:HE	54:VA:31:THR:HG22	1.82	0.44
60:BB:49:HIS:O	60:BB:53:LYS:HG2	2.16	0.44
65:GB:75:SER:O	65:GB:79:VAL:HG23	2.17	0.44
75:RB:1156:A:H2'	75:RB:1157:A:C8	2.51	0.44
1:aa:331:U:H2'	1:aa:332:A:H8	1.83	0.44
1:aa:439:C:H5'	5:ga:47:LYS:HG3	1.98	0.44
1:aa:1380:A:H2'	1:aa:1382:C:O4'	2.18	0.44
1:aa:1495:U:H4'	7:ia:9:LYS:NZ	2.33	0.44
6:ha:228:ASP:HB2	6:ha:230:VAL:HG22	1.98	0.44
6:ha:245:LEU:HG	6:ha:274:TRP:CD1	2.52	0.44
8:ja:250:GLU:O	8:ja:254:LYS:HG3	2.17	0.44
12:na:118:ALA:O	12:na:122:SER:N	2.48	0.44
13:oa:113:ARG:NH1	13:oa:117:ILE:HD11	2.32	0.44
25:bb:201:THR:HG23	25:bb:201:THR:O	2.18	0.44
28:eb:61:LEU:HA	28:eb:64:LEU:HD12	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:eb:110:ARG:HH12	28:eb:112:GLN:HE21	1.64	0.44
46:NA:92:LEU:HD23	46:NA:92:LEU:HA	1.84	0.44
46:NA:115:ILE:HD12	46:NA:136:LEU:CD2	2.47	0.44
46:NA:146:ALA:HB1	46:NA:151:ILE:HG22	1.99	0.44
51:SA:50:LYS:HB3	51:SA:50:LYS:HE3	1.70	0.44
57:YA:18:THR:HB	57:YA:19:PRO:CD	2.47	0.44
57:YA:71:PRO:O	57:YA:99:THR:HB	2.17	0.44
75:RB:52:G:H4'	75:RB:815:G:H4'	2.00	0.44
75:RB:1068:A:N6	75:RB:1097:A:H2'	2.32	0.44
75:RB:1111:U:H2'	75:RB:1112:C:C6	2.53	0.44
75:RB:2207:A:H2'	75:RB:2208:A:O4'	2.17	0.44
75:RB:2350:A:H2'	75:RB:2351:A:H8	1.83	0.44
75:RB:3152:C:H2'	75:RB:3153:C:H6	1.83	0.44
75:RB:3221:G:H1	75:RB:3241:U:H3	1.65	0.44
75:RB:3365:U:H2'	75:RB:3366:C:H6	1.82	0.44
79:bl:80:ARG:NH1	79:bl:112:ASP:OD1	2.48	0.44
1:aa:399:U:H2'	1:aa:400:G:O4'	2.17	0.44
1:aa:457:C:O2	1:aa:457:C:H2'	2.17	0.44
1:aa:645:G:H2'	1:aa:646:G:C8	2.50	0.44
1:aa:1180:U:H2'	1:aa:1181:G:C8	2.51	0.44
1:aa:1327:C:H2'	1:aa:1328:G:O4'	2.18	0.44
1:aa:1464:G:H2'	1:aa:1464:G:N3	2.32	0.44
8:ja:43:PRO:HA	8:ja:82:TYR:O	2.18	0.44
9:ka:30:LEU:HD21	9:ka:113:ILE:HG13	1.98	0.44
18:ta:86:GLU:OE2	18:ta:92:MET:HA	2.17	0.44
25:bb:61:LEU:HG	25:bb:64:ARG:NH2	2.32	0.44
25:bb:225:LEU:HD23	25:bb:229:MET:HE1	1.99	0.44
30:gb:21:ASP:HB3	30:gb:25:ARG:CZ	2.48	0.44
32:ib:1:MET:HB2	32:ib:3:GLU:OE2	2.17	0.44
44:LA:114:LYS:O	44:LA:115:ILE:HD13	2.17	0.44
51:SA:60:ASP:HB2	51:SA:102:THR:HG22	1.98	0.44
53:UA:13:ASN:O	75:RB:820:A:C4	2.71	0.44
56:XA:73:LYS:HE2	56:XA:73:LYS:HB2	1.80	0.44
63:EB:296:LEU:O	63:EB:302:VAL:HG21	2.17	0.44
72:NB:16:ARG:HG2	72:NB:61:PRO:HG3	1.98	0.44
75:RB:1244:A:N6	75:RB:1248:A:H2'	2.32	0.44
75:RB:2759:A:H2'	75:RB:2760:U:H6	1.82	0.44
1:aa:184:C:H3'	1:aa:185:G:C8	2.53	0.44
1:aa:389:A:H5''	3:ca:22:ARG:HG3	2.00	0.44
1:aa:797:A:H2'	1:aa:798:C:H6	1.81	0.44
1:aa:1231:A:H4'	1:aa:1233:G:O4'	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:aa:1257:U:H2'	1:aa:1258:U:C5	2.52	0.44
1:aa:1465:C:OP2	1:aa:1465:C:H6	2.01	0.44
1:aa:1621:U:H2'	1:aa:1622:A:C8	2.52	0.44
1:aa:1677:U:H2'	1:aa:1678:G:O4'	2.18	0.44
6:ha:116:LYS:CG	6:ha:117:ASP:H	2.24	0.44
14:pa:100:LYS:O	14:pa:103:GLU:HG2	2.18	0.44
15:qa:81:ARG:HG2	24:za:209:ARG:HH22	1.83	0.44
16:ra:57:GLU:HG2	16:ra:58:LEU:HG	1.99	0.44
16:ra:143:ASP:O	16:ra:147:VAL:HG12	2.18	0.44
24:za:35:ASP:OD1	24:za:36:PHE:N	2.51	0.44
31:hb:42:LYS:HG3	31:hb:42:LYS:O	2.16	0.44
39:GA:37:LEU:HD21	39:GA:105:ILE:HD11	2.00	0.44
44:LA:35:ALA:HB1	44:LA:40:ASN:HB3	2.00	0.44
59:AB:33:LYS:HG2	75:RB:314:C:N3	2.32	0.44
64:FB:56:LYS:HG2	64:FB:60:LEU:HD13	1.99	0.44
71:MB:77:SER:OG	71:MB:89:LYS:HE2	2.18	0.44
75:RB:626:G:O2'	75:RB:627:G:H5'	2.17	0.44
75:RB:779:U:H5'	75:RB:780:U:OP2	2.18	0.44
75:RB:1233:G:C5	75:RB:1234:G:H1'	2.52	0.44
75:RB:1238:G:N1	75:RB:1259:C:O2	2.50	0.44
75:RB:1251:U:H5''	75:RB:1252:C:OP1	2.17	0.44
75:RB:3069:A:H2'	75:RB:3070:G:O4'	2.16	0.44
1:aa:94:A:O2'	8:ja:4:GLY:HA3	2.17	0.44
1:aa:183:C:N4	1:aa:199:G:O6	2.51	0.44
1:aa:337:A:N6	3:ca:27:TYR:HB2	2.33	0.44
1:aa:390:G:H2'	1:aa:391:A:C8	2.53	0.44
1:aa:1062:C:H5'	25:bb:199:LYS:HE3	2.00	0.44
1:aa:1402:C:H2'	1:aa:1403:G:C8	2.53	0.44
1:aa:1597:C:H2'	1:aa:1598:G:C8	2.52	0.44
1:aa:1622:A:O2'	1:aa:1623:C:H5'	2.18	0.44
6:ha:238:GLU:O	6:ha:240:LYS:HG2	2.17	0.44
6:ha:259:ASN:OD1	6:ha:260:ARG:HD3	2.18	0.44
6:ha:260:ARG:HH22	6:ha:308:GLY:HA3	1.81	0.44
8:ja:45:ILE:HG12	8:ja:80:LYS:O	2.17	0.44
11:ma:75:LYS:HA	21:wa:44:ARG:HH12	1.83	0.44
17:sa:82:PRO:HG2	17:sa:102:LEU:HG	1.99	0.44
18:ta:42:LEU:HD12	18:ta:46:ALA:HB3	1.99	0.44
24:za:34:CYS:HA	24:za:154:THR:O	2.18	0.44
24:za:180:TRP:HD1	24:za:206:PHE:HE2	1.66	0.44
25:bb:100:PHE:CD1	25:bb:181:LEU:HD13	2.53	0.44
30:gb:51:LYS:O	30:gb:53:MET:HG2	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:DA:48:VAL:HG12	65:GB:54:ILE:HG12	1.99	0.44
39:GA:117:ILE:HD11	39:GA:132:ILE:HG23	1.98	0.44
43:KA:136:ASP:C	43:KA:138:ARG:H	2.24	0.44
48:PA:108:LEU:HD22	48:PA:114:ARG:NH2	2.32	0.44
65:GB:36:LYS:HG2	65:GB:48:LYS:CE	2.45	0.44
75:RB:240:U:O2'	75:RB:241:G:H8	1.99	0.44
75:RB:1454:C:H5''	75:RB:1455:A:OP2	2.18	0.44
75:RB:1946:C:H2'	75:RB:1947:U:H6	1.81	0.44
75:RB:2611:G:H1	75:RB:2624:A:H62	1.65	0.44
1:aa:9:U:H2'	1:aa:11:A:OP2	2.18	0.44
1:aa:66:U:H3'	1:aa:67:G:H5'	2.00	0.44
1:aa:194:G:C2	1:aa:195:A:H1'	2.53	0.44
1:aa:536:U:O2'	2:ba:38:ALA:O	2.29	0.44
1:aa:1184:C:H42	1:aa:1465:C:H42	1.64	0.44
1:aa:1521:G:H1'	1:aa:1526:C:C2	2.52	0.44
4:da:50:LYS:HD3	4:da:57:GLU:HB2	2.00	0.44
6:ha:126:ASP:HB3	6:ha:128:ARG:NE	2.32	0.44
8:ja:89:ILE:HA	8:ja:99:TYR:O	2.18	0.44
28:eb:161:SER:OG	28:eb:162:LEU:N	2.51	0.44
29:fb:126:LYS:HB2	29:fb:141:LEU:HD12	1.99	0.44
35:CA:76:ASN:OD1	35:CA:77:PHE:N	2.51	0.44
41:IA:35:ALA:HB1	75:RB:39:A:H5''	1.99	0.44
56:XA:84:TRP:O	56:XA:90:GLY:HA3	2.18	0.44
74:PB:37:LYS:HG3	74:PB:58:ARG:HH21	1.75	0.44
75:RB:2433:A:H2'	75:RB:2434:U:H6	1.83	0.44
75:RB:2719:U:H2'	75:RB:2720:U:C6	2.53	0.44
75:RB:2919:G:N3	75:RB:2949:G:H1'	2.32	0.44
75:RB:3015:C:H2'	75:RB:3016:U:O4'	2.17	0.44
75:RB:3066:A:H2'	75:RB:3067:A:H8	1.82	0.44
76:SB:62:C:H4'	76:SB:63:C:O5'	2.17	0.44
1:aa:61:A:N3	1:aa:272:G:O2'	2.44	0.44
1:aa:157:U:O4'	2:ba:119:ARG:HG2	2.18	0.44
1:aa:797:A:H2'	1:aa:798:C:C6	2.53	0.44
1:aa:879:C:OP1	25:bb:159:SER:OG	2.27	0.44
1:aa:1344:U:O4	10:la:15:CYS:HA	2.18	0.44
1:aa:1409:G:H2'	1:aa:1410:C:C6	2.53	0.44
1:aa:1419:U:O2'	1:aa:1422:G:OP1	2.25	0.44
1:aa:1553:A:H2'	1:aa:1554:G:H8	1.82	0.44
3:ca:190:SER:HB3	3:ca:199:ASP:HB2	2.00	0.44
18:ta:68:GLU:HG2	18:ta:74:GLY:C	2.41	0.44
29:fb:116:ASP:OD1	29:fb:120:HIS:HB2	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:fb:189:VAL:O	29:fb:189:VAL:HG13	2.18	0.44
33:AA:105:GLU:O	33:AA:109:LYS:N	2.47	0.44
33:AA:191:ALA:O	33:AA:192:SER:OG	2.27	0.44
63:EB:10:SER:HB2	63:EB:152:GLU:OE1	2.18	0.44
70:LB:81:LEU:HB3	70:LB:125:VAL:HG13	1.99	0.44
72:NB:12:LEU:HD23	72:NB:12:LEU:HA	1.80	0.44
75:RB:377:C:H2'	75:RB:378:U:C6	2.53	0.44
75:RB:496:U:O2'	75:RB:497:G:O4'	2.30	0.44
75:RB:969:U:H2'	75:RB:970:A:C8	2.53	0.44
75:RB:989:U:H2'	75:RB:990:U:H6	1.83	0.44
75:RB:1500:C:O2'	75:RB:1599:A:N3	2.46	0.44
75:RB:1859:G:C2	75:RB:1861:A:H3'	2.53	0.44
79:bl:161:SER:OG	79:bl:162:GLY:N	2.49	0.44
79:bl:317:ALA:CB	79:bl:388:CYS:H	2.17	0.44
79:bl:325:GLU:HG2	79:bl:393:VAL:O	2.18	0.44
1:aa:66:U:H3'	1:aa:67:G:C5'	2.48	0.44
1:aa:337:A:H62	3:ca:27:TYR:HB2	1.82	0.44
1:aa:435:C:H2'	1:aa:436:G:O4'	2.18	0.44
1:aa:559:A:H2'	1:aa:560:A:C8	2.53	0.44
1:aa:711:C:H2'	1:aa:712:U:H5	1.82	0.44
1:aa:714:C:O2'	1:aa:715:U:P	2.76	0.44
1:aa:891:U:O2'	12:na:135:VAL:O	2.33	0.44
1:aa:1022:U:C2	1:aa:1023:C:C5	3.06	0.44
1:aa:1590:U:OP1	10:la:141:ARG:NH1	2.49	0.44
2:ba:42:LYS:HG2	2:ba:66:PHE:CE2	2.53	0.44
2:ba:47:GLU:O	2:ba:51:LYS:HE2	2.18	0.44
4:da:57:GLU:OE2	4:da:59:PHE:HA	2.18	0.44
6:ha:191:VAL:HG13	6:ha:200:ARG:HB2	2.00	0.44
17:sa:77:PRO:HB2	17:sa:80:GLU:CG	2.48	0.44
20:va:76:TYR:CZ	20:va:78:GLN:NE2	2.86	0.44
24:za:202:MET:HG2	24:za:204:ASP:H	1.83	0.44
29:fb:130:GLU:CD	29:fb:132:ALA:H	2.26	0.44
50:RA:50:ASN:HB2	50:RA:76:GLY:O	2.18	0.44
52:TA:102:SER:HB3	75:RB:1392:U:H5''	2.00	0.44
58:ZA:62:SER:HA	58:ZA:77:ASP:OD1	2.17	0.44
61:CB:120:LYS:HG3	61:CB:197:PHE:CE1	2.53	0.44
62:DB:157:ALA:O	62:DB:191:ILE:HG13	2.18	0.44
75:RB:16:A:N6	76:SB:144:C:H42	2.04	0.44
75:RB:997:G:N3	75:RB:2634:A:H2'	2.33	0.44
75:RB:1229:A:H2'	75:RB:1230:G:C8	2.53	0.44
75:RB:1240:G:O2'	75:RB:1243:C:N4	2.45	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
75:RB:1266:G:O6	75:RB:1268:G:H1'	2.17	0.44
79:bl:235:THR:O	79:bl:239:GLN:HG3	2.17	0.44
1:aa:216:A:H5''	1:aa:836:U:O2	2.18	0.43
1:aa:337:A:H2'	1:aa:338:G:C8	2.53	0.43
1:aa:717:G:H2'	1:aa:718:C:H5''	1.99	0.43
6:ha:167:SER:HB3	6:ha:185:TRP:HD1	1.83	0.43
7:ia:105:LEU:HB2	7:ia:122:VAL:HG21	2.00	0.43
7:ia:137:ILE:HG13	7:ia:151:LYS:HG3	1.99	0.43
9:ka:118:ARG:HG2	19:ua:74:THR:HG21	1.99	0.43
17:sa:114:VAL:HG11	17:sa:128:PHE:HB3	2.00	0.43
19:ua:38:THR:OG1	19:ua:39:GLY:N	2.51	0.43
24:za:182:LEU:O	24:za:186:VAL:HG23	2.19	0.43
44:LA:81:ARG:HG3	44:LA:88:ARG:CZ	2.48	0.43
44:LA:86:GLU:HB3	75:RB:836:G:OP1	2.18	0.43
55:WA:58:PHE:HE2	55:WA:61:LYS:HD2	1.83	0.43
60:BB:53:LYS:HA	60:BB:53:LYS:HD3	1.87	0.43
60:BB:71:ARG:O	60:BB:75:LYS:HB2	2.18	0.43
64:FB:181:LYS:HE3	75:RB:3182:C:H5''	2.00	0.43
75:RB:948:C:H2'	75:RB:949:C:H6	1.80	0.43
75:RB:1466:U:H2'	75:RB:1467:G:O4'	2.18	0.43
75:RB:1655:G:H2'	75:RB:1656:C:C6	2.53	0.43
76:SB:126:A:C8	76:SB:130:G:N1	2.86	0.43
1:aa:276:G:H1'	1:aa:277:G:P	2.58	0.43
1:aa:751:U:C2	1:aa:752:A:C8	3.06	0.43
1:aa:894:U:H2'	1:aa:895:U:C6	2.53	0.43
1:aa:1162:A:H2'	1:aa:1165:A:N7	2.33	0.43
1:aa:1349:A:H2'	1:aa:1352:A:N6	2.33	0.43
13:oa:43:ILE:HD11	16:ra:49:ILE:HG22	2.00	0.43
15:qa:50:VAL:O	15:qa:54:THR:HG23	2.18	0.43
28:eb:24:GLU:HG2	28:eb:25:ARG:N	2.33	0.43
30:gb:52:ILE:HA	30:gb:113:LEU:HD23	1.99	0.43
31:hb:65:VAL:O	31:hb:97:ALA:HA	2.19	0.43
31:hb:73:PHE:HA	31:hb:76:ILE:HG22	1.99	0.43
34:BA:14:LEU:HD11	34:BA:58:HIS:CD2	2.53	0.43
55:WA:35:LEU:HD13	55:WA:40:LYS:HE2	1.99	0.43
57:YA:134:LYS:C	57:YA:135:LEU:HD12	2.43	0.43
62:DB:316:PRO:HB3	62:DB:369:PHE:CE1	2.53	0.43
62:DB:319:GLY:HA2	75:RB:3366:C:O3'	2.18	0.43
70:LB:93:VAL:HG21	70:LB:106:ILE:HD12	2.00	0.43
75:RB:372:A:H4'	75:RB:373:A:OP1	2.17	0.43
75:RB:890:G:H2'	75:RB:891:U:C6	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
75:RB:981:A:O2'	75:RB:983:U:O4	2.28	0.43
75:RB:1603:U:H4'	75:RB:1604:U:OP2	2.17	0.43
75:RB:1795:A:H2'	75:RB:1796:A:C8	2.53	0.43
75:RB:2618:G:H2'	75:RB:2619:C:C6	2.53	0.43
75:RB:3239:G:H2'	75:RB:3240:G:H5''	2.00	0.43
79:bl:76:SER:HB2	79:bl:96:THR:HG21	2.01	0.43
79:bl:145:PHE:HZ	79:bl:279:VAL:HG11	1.83	0.43
79:bl:336:HIS:HB2	79:bl:341:GLU:OE1	2.18	0.43
1:aa:70:C:H2'	1:aa:71:C:H6	1.83	0.43
1:aa:122:U:H2'	1:aa:123:U:C6	2.54	0.43
1:aa:1049:U:H2'	1:aa:1050:C:C6	2.53	0.43
1:aa:1122:U:H2'	1:aa:1123:G:H8	1.81	0.43
6:ha:245:LEU:HD12	6:ha:274:TRP:HE1	1.82	0.43
13:oa:12:ILE:HD11	13:oa:19:ASN:CB	2.43	0.43
13:oa:119:ASN:OD1	13:oa:121:ARG:N	2.44	0.43
24:za:155:ASP:N	24:za:155:ASP:OD1	2.52	0.43
41:IA:60:TYR:HE1	75:RB:2774:G:C2	2.35	0.43
64:FB:30:LYS:NZ	75:RB:1179:C:OP1	2.44	0.43
76:SB:80:A:C8	76:SB:82:C:N4	2.87	0.43
76:SB:107:G:H4'	76:SB:140:A:H5'	2.00	0.43
79:bl:169:HIS:HB2	79:bl:211:PHE:CZ	2.53	0.43
80:cl:61:C:H2'	80:cl:62:C:C6	2.53	0.43
1:aa:70:C:H2'	1:aa:71:C:C6	2.53	0.43
1:aa:506:G:H4'	23:ya:41:ASN:CG	2.43	0.43
1:aa:1095:C:OP1	27:db:6:ARG:NH1	2.51	0.43
1:aa:1178:C:H2'	1:aa:1179:C:C6	2.54	0.43
1:aa:1653:G:H1	1:aa:1765:A:H2	1.67	0.43
1:aa:1743:C:H2'	1:aa:1744:C:H6	1.83	0.43
53:UA:20:ILE:HD11	53:UA:39:TYR:OH	2.17	0.43
63:EB:130:ALA:O	63:EB:134:THR:HG23	2.18	0.43
75:RB:364:A:H2'	75:RB:365:A:O4'	2.18	0.43
75:RB:406:A:N6	76:SB:15:G:H1'	2.34	0.43
75:RB:600:G:O5'	75:RB:600:G:H8	2.01	0.43
75:RB:1130:G:N2	75:RB:1132:A:H3'	2.33	0.43
75:RB:1281:C:OP1	75:RB:1281:C:H2'	2.18	0.43
75:RB:3149:G:H5'	75:RB:3280:U:O2	2.18	0.43
79:bl:198:HIS:O	79:bl:201:VAL:HG12	2.19	0.43
79:bl:289:GLY:O	79:bl:293:GLU:HG2	2.19	0.43
1:aa:437:C:H2'	1:aa:438:G:O4'	2.19	0.43
1:aa:1059:U:H2'	1:aa:1060:U:C6	2.54	0.43
1:aa:1363:G:H3'	1:aa:1364:C:C6	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:ha:44:LEU:CD1	6:ha:68:ARG:HH21	2.29	0.43
8:ja:125:LYS:HG3	8:ja:142:TYR:HD2	1.83	0.43
12:na:39:ASP:CG	12:na:40:THR:H	2.26	0.43
12:na:43:HIS:NE2	12:na:52:THR:HG23	2.34	0.43
13:oa:25:LYS:HE3	13:oa:52:MET:O	2.19	0.43
15:qa:40:ILE:O	15:qa:40:ILE:HG13	2.17	0.43
24:za:60:GLU:O	24:za:64:LEU:N	2.35	0.43
25:bb:33:LYS:O	25:bb:232:HIS:HE1	2.02	0.43
28:eb:107:LEU:HA	28:eb:110:ARG:HD2	2.00	0.43
30:gb:70:PRO:HB3	30:gb:105:SER:OG	2.18	0.43
33:AA:239:GLN:O	33:AA:243:LYS:HG3	2.18	0.43
42:JA:64:MET:HE3	42:JA:112:ILE:HG12	2.01	0.43
47:OA:6:GLU:O	47:OA:15:ILE:N	2.40	0.43
47:OA:39:LYS:HE2	47:OA:39:LYS:HB3	1.89	0.43
61:CB:66:GLN:O	61:CB:70:GLU:HG3	2.18	0.43
63:EB:381:TYR:HD1	63:EB:384:MET:HE3	1.82	0.43
75:RB:1398:A:H2'	75:RB:1399:C:C6	2.53	0.43
75:RB:1510:G:H2'	75:RB:1510:G:N3	2.33	0.43
75:RB:1593:C:H2'	75:RB:1594:G:H8	1.82	0.43
75:RB:2705:U:H2'	75:RB:2706:C:C6	2.53	0.43
76:SB:135:A:H2'	76:SB:136:G:O4'	2.18	0.43
77:TB:51:G:HO2'	77:TB:52:U:P	2.41	0.43
79:bl:358:PHE:O	79:bl:367:LEU:HB2	2.18	0.43
80:cl:19:G:C6	80:cl:57:G:N2	2.86	0.43
1:aa:1441:C:O2	4:da:59:PHE:HE2	2.00	0.43
1:aa:1486:U:P	16:ra:72:SER:HB2	2.57	0.43
1:aa:1738:U:H2'	1:aa:1739:U:H6	1.83	0.43
6:ha:143:ASN:OD1	6:ha:147:GLU:N	2.39	0.43
8:ja:44:LEU:HG	8:ja:82:TYR:HB3	1.99	0.43
8:ja:136:ILE:HD12	8:ja:149:TYR:OH	2.19	0.43
11:ma:51:ALA:HB2	11:ma:109:ILE:HD13	2.00	0.43
17:sa:95:VAL:HG22	17:sa:98:MET:HE2	2.01	0.43
19:ua:48:ARG:HD3	19:ua:58:LEU:HD13	2.01	0.43
29:fb:163:THR:HG21	29:fb:182:ALA:H	1.82	0.43
31:hb:25:GLN:HA	31:hb:28:PHE:HB3	1.99	0.43
40:HA:114:ARG:NH1	40:HA:151:LEU:O	2.52	0.43
44:LA:117:LYS:HD2	75:RB:1716:G:H4'	2.00	0.43
48:PA:50:ARG:HG3	48:PA:51:LYS:N	2.32	0.43
56:XA:16:ASN:ND2	56:XA:54:SER:OG	2.52	0.43
74:PB:58:ARG:CD	74:PB:59:PRO:HD2	2.35	0.43
75:RB:765:U:H2'	75:RB:766:C:C6	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
75:RB:1050:A:H2'	75:RB:1053:C:C5	2.53	0.43
75:RB:3343:G:H2'	75:RB:3344:C:C6	2.54	0.43
1:aa:148:C:H42	1:aa:162:A:N6	2.16	0.43
1:aa:159:U:O2'	30:gb:62:PRO:HG3	2.19	0.43
1:aa:427:G:H8	1:aa:427:G:OP2	2.02	0.43
1:aa:619:A:O2'	1:aa:625:A:N1	2.39	0.43
1:aa:785:A:C5	1:aa:787:C:H2'	2.54	0.43
1:aa:1179:C:OP2	13:oa:139:THR:HG21	2.19	0.43
1:aa:1325:A:H4'	1:aa:1326:A:O5'	2.19	0.43
1:aa:1598:G:H2'	1:aa:1599:C:H6	1.82	0.43
3:ca:159:GLN:C	3:ca:161:LYS:N	2.76	0.43
4:da:35:ILE:HD11	4:da:42:VAL:HG21	2.00	0.43
6:ha:190:LYS:HG2	6:ha:199:LEU:HD22	2.01	0.43
10:la:52:LEU:O	10:la:56:GLU:N	2.51	0.43
16:ra:95:ARG:NH2	16:ra:97:ARG:HD3	2.32	0.43
20:va:70:ASP:OD2	20:va:71:CYS:N	2.51	0.43
23:ya:27:LYS:HZ2	23:ya:28:LYS:HB3	1.83	0.43
28:eb:68:ASN:HB3	28:eb:71:ARG:CB	2.48	0.43
28:eb:160:PHE:HB3	28:eb:167:GLY:HA3	2.00	0.43
34:BA:83:ARG:HH12	75:RB:2725:G:H5''	1.83	0.43
43:KA:123:VAL:HA	43:KA:247:ARG:NH1	2.34	0.43
49:QA:33:PHE:HB3	52:TA:85:LEU:HD23	2.01	0.43
55:WA:32:LYS:HZ3	55:WA:33:ASP:H	1.65	0.43
55:WA:47:GLN:OE1	55:WA:54:THR:OG1	2.20	0.43
59:AB:87:LYS:O	59:AB:91:GLU:HG2	2.19	0.43
62:DB:57:VAL:CG1	62:DB:362:PHE:HB3	2.41	0.43
66:HB:38:MET:HG2	66:HB:41:LYS:HE3	2.01	0.43
69:KB:3:LYS:HG2	69:KB:4:HIS:H	1.83	0.43
70:LB:92:ARG:HH21	70:LB:204:ALA:HB3	1.84	0.43
75:RB:239:C:O2'	75:RB:240:U:H5'	2.19	0.43
75:RB:528:C:N4	75:RB:529:C:H41	2.16	0.43
75:RB:852:C:H2'	75:RB:853:U:H6	1.83	0.43
75:RB:1131:U:H2'	75:RB:1132:A:O4'	2.19	0.43
75:RB:1264:A:O2'	75:RB:1265:G:O4'	2.21	0.43
75:RB:2711:G:H5'	75:RB:2713:U:H6	1.82	0.43
75:RB:3029:A:H2'	75:RB:3030:C:C6	2.51	0.43
1:aa:104:A:H4'	1:aa:106:A:C8	2.54	0.43
1:aa:714:C:O2'	1:aa:715:U:OP1	2.32	0.43
1:aa:889:C:O2'	1:aa:890:G:H5'	2.19	0.43
1:aa:973:U:H2'	1:aa:974:C:O4'	2.18	0.43
1:aa:1416:A:H2'	1:aa:1417:A:O4'	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:aa:1435:G:H2'	1:aa:1436:U:C6	2.54	0.43
8:ja:181:VAL:O	8:ja:192:VAL:HA	2.18	0.43
10:la:79:GLY:O	10:la:83:GLN:HG3	2.19	0.43
13:oa:70:VAL:HG12	13:oa:77:PHE:CE2	2.54	0.43
18:ta:53:THR:O	18:ta:57:LYS:HG3	2.18	0.43
18:ta:104:ARG:HD3	18:ta:106:THR:H	1.84	0.43
26:cb:64:ALA:O	26:cb:68:LEU:HD23	2.17	0.43
33:AA:126:ILE:HD11	33:AA:198:THR:HG22	2.00	0.43
34:BA:148:THR:OG1	57:YA:28:ARG:NH1	2.52	0.43
42:JA:42:SER:HB3	42:JA:45:ASN:ND2	2.34	0.43
45:MA:18:MET:HE1	45:MA:20:ARG:CG	2.49	0.43
56:XA:41:PRO:HD3	56:XA:75:MET:CE	2.43	0.43
58:ZA:98:VAL:C	58:ZA:100:ASP:H	2.27	0.43
70:LB:132:VAL:HG22	70:LB:198:LEU:HD21	1.99	0.43
74:PB:64:ARG:HG2	74:PB:72:ARG:NH2	2.33	0.43
75:RB:1040:A:H3'	75:RB:1041:C:H6	1.84	0.43
75:RB:1447:G:H2'	75:RB:1448:U:O4'	2.18	0.43
75:RB:2216:A:H8	75:RB:2216:A:OP2	2.02	0.43
75:RB:2683:U:H2'	75:RB:2684:G:O4'	2.19	0.43
77:TB:3:A:H2'	77:TB:4:U:H6	1.79	0.43
80:cl:60:A:H5''	80:cl:61:C:H5	1.84	0.43
1:aa:151:A:H4'	30:gb:15:LYS:HD3	2.00	0.43
1:aa:816:U:O2'	1:aa:817:C:O5'	2.36	0.43
1:aa:964:U:H5'	14:pa:15:ALA:C	2.44	0.43
1:aa:1342:C:H1'	1:aa:1416:A:C4	2.53	0.43
1:aa:1496:A:H5''	1:aa:1497:U:H5'	2.01	0.43
6:ha:76:VAL:HA	6:ha:92:SER:OG	2.19	0.43
24:za:141:SER:HB2	24:za:146:ILE:HB	2.00	0.43
25:bb:100:PHE:HD1	25:bb:181:LEU:HD13	1.83	0.43
25:bb:113:LEU:HD22	25:bb:209:ASN:ND2	2.33	0.43
25:bb:144:LYS:HB2	25:bb:208:GLN:CG	2.49	0.43
29:fb:89:GLU:OE1	29:fb:196:LYS:NZ	2.33	0.43
30:gb:26:ASN:CB	30:gb:40:LEU:HD22	2.42	0.43
32:ib:46:PRO:O	32:ib:50:ILE:HG13	2.18	0.43
36:DA:45:VAL:HG22	36:DA:61:VAL:HG22	2.00	0.43
43:KA:59:ASP:OD1	43:KA:60:VAL:N	2.48	0.43
43:KA:211:ALA:HB2	43:KA:218:TYR:CG	2.54	0.43
50:RA:17:LYS:O	50:RA:21:VAL:HG23	2.19	0.43
63:EB:131:LEU:HA	63:EB:131:LEU:HD23	1.74	0.43
66:HB:45:GLU:O	66:HB:47:PRO:HD3	2.19	0.43
70:LB:18:HIS:CE1	70:LB:22:ARG:HG3	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:LB:212:ASP:HB3	70:LB:217:MET:SD	2.59	0.43
75:RB:527:G:C6	75:RB:528:C:C2	3.06	0.43
75:RB:1187:G:C2'	75:RB:1188:C:H5'	2.49	0.43
75:RB:1644:A:H2'	75:RB:1645:G:H8	1.82	0.43
75:RB:2891:C:H42	75:RB:2904:A:H61	1.65	0.43
77:TB:28:U:O2'	77:TB:54:A:N1	2.50	0.43
1:aa:517:U:H5'	28:eb:135:HIS:HE1	1.84	0.43
1:aa:838:U:H6	1:aa:838:U:O5'	2.01	0.43
1:aa:985:G:H4'	1:aa:1786:A:H4'	2.01	0.43
3:ca:185:LEU:HB3	3:ca:203:LEU:HD12	2.01	0.43
5:ga:13:LEU:HD12	32:ib:100:ARG:HD2	2.00	0.43
8:ja:212:ASP:HB3	8:ja:244:ILE:HD12	2.00	0.43
19:ua:51:PHE:CD2	19:ua:57:ARG:HD3	2.53	0.43
37:EA:25:VAL:HG11	37:EA:31:ARG:HG3	2.01	0.43
43:KA:157:ARG:HD3	77:TB:47:C:OP2	2.19	0.43
44:LA:21:LYS:HE2	44:LA:55:GLN:HA	2.01	0.43
44:LA:96:MET:HE3	44:LA:96:MET:HB2	1.71	0.43
49:QA:38:ASN:OD1	49:QA:38:ASN:N	2.52	0.43
51:SA:59:ILE:HG23	51:SA:63:LEU:HD23	2.01	0.43
51:SA:112:LYS:HD3	75:RB:3313:G:OP1	2.18	0.43
60:BB:41:SER:HA	60:BB:45:LEU:HD21	2.01	0.43
62:DB:47:LEU:HD23	62:DB:47:LEU:HA	1.93	0.43
62:DB:47:LEU:HD22	62:DB:339:VAL:HG22	2.01	0.43
63:EB:170:ALA:HB1	63:EB:225:PHE:CE2	2.53	0.43
63:EB:268:TYR:C	63:EB:276:SER:HG	2.27	0.43
64:FB:92:MET:HE2	75:RB:1177:G:N2	2.32	0.43
66:HB:50:VAL:HG11	66:HB:148:ALA:HB1	2.00	0.43
75:RB:379:U:H2'	75:RB:380:U:C6	2.53	0.43
75:RB:535:G:C4	75:RB:536:C:C5	3.07	0.43
75:RB:596:C:H2'	75:RB:597:C:N1	2.34	0.43
75:RB:654:C:H2'	75:RB:655:G:C8	2.53	0.43
75:RB:2259:U:H2'	75:RB:2260:C:C6	2.54	0.43
77:TB:4:U:H2'	77:TB:5:G:C8	2.54	0.43
79:bl:81:LEU:HD21	79:bl:94:LEU:HD22	1.99	0.43
79:bl:88:PRO:HG2	79:bl:91:GLY:O	2.18	0.43
1:aa:39:A:H5''	28:eb:5:ASN:O	2.18	0.42
1:aa:702:G:H2'	1:aa:703:G:O4'	2.19	0.42
1:aa:924:A:H1'	12:na:50:ARG:HD2	2.01	0.42
1:aa:1075:G:H2'	1:aa:1076:C:C6	2.53	0.42
1:aa:1681:G:H2'	1:aa:1682:U:H6	1.84	0.42
12:na:34:PHE:CE2	12:na:36:SER:HB3	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:oa:22:GLY:O	13:oa:57:GLY:N	2.50	0.42
17:sa:43:VAL:HG12	17:sa:54:PHE:HD2	1.84	0.42
31:hb:74:ARG:HD2	31:hb:132:TYR:CD1	2.53	0.42
32:ib:16:PHE:CE2	32:ib:19:THR:HA	2.53	0.42
33:AA:27:LYS:HE3	75:RB:2557:G:H1'	2.01	0.42
35:CA:22:LYS:NZ	35:CA:130:TRP:O	2.27	0.42
38:FA:76:VAL:O	38:FA:80:ILE:HG12	2.19	0.42
41:IA:96:PRO:HG2	41:IA:119:ILE:HD12	1.99	0.42
44:LA:105:LEU:HD23	44:LA:138:LEU:HD23	2.00	0.42
47:OA:16:TYR:OH	62:DB:379:GLU:OE2	2.36	0.42
61:CB:167:ASN:C	61:CB:167:ASN:OD1	2.62	0.42
64:FB:15:ASP:HB2	64:FB:122:ARG:HB3	2.00	0.42
75:RB:506:U:H2'	75:RB:507:C:H6	1.84	0.42
75:RB:1157:A:H5''	75:RB:1158:C:H5	1.83	0.42
75:RB:1192:A:N1	75:RB:1319:U:O2'	2.50	0.42
75:RB:1244:A:N6	75:RB:1248:A:O5'	2.52	0.42
75:RB:2899:A:H2'	75:RB:2900:A:O4'	2.18	0.42
75:RB:3184:C:O2	75:RB:3184:C:H2'	2.18	0.42
1:aa:4:C:H1'	28:eb:19:ARG:NH1	2.34	0.42
1:aa:283:G:P	1:aa:283:G:H8	2.42	0.42
1:aa:1057:U:C2	1:aa:1058:G:C8	3.07	0.42
1:aa:1511:A:H2'	1:aa:1512:C:C6	2.53	0.42
1:aa:1750:A:H2'	1:aa:1751:U:C6	2.54	0.42
3:ca:171:LEU:HA	3:ca:171:LEU:HD13	1.78	0.42
4:da:50:LYS:HD3	4:da:57:GLU:CB	2.49	0.42
6:ha:164:GLY:CA	6:ha:186:ASP:HB3	2.48	0.42
6:ha:242:LEU:HB3	6:ha:243:TYR:CD1	2.54	0.42
9:ka:33:TYR:CD2	9:ka:140:LEU:HD13	2.54	0.42
13:oa:16:LEU:HD12	13:oa:33:ILE:HD13	2.00	0.42
18:ta:96:HIS:CD2	18:ta:97:SER:N	2.87	0.42
19:ua:49:VAL:HG22	19:ua:59:ILE:O	2.20	0.42
24:za:132:ARG:HH21	24:za:157:PRO:HD3	1.84	0.42
24:za:162:ASP:CG	26:cb:59:ARG:HH21	2.27	0.42
25:bb:111:ARG:HE	27:db:68:TYR:HB2	1.84	0.42
26:cb:16:LYS:HD2	26:cb:21:ASN:OD1	2.20	0.42
31:hb:84:LEU:O	31:hb:89:SER:N	2.42	0.42
33:AA:26:GLU:O	75:RB:2556:A:O2'	2.26	0.42
40:HA:9:GLU:HB2	59:AB:47:ILE:HG13	2.00	0.42
42:JA:64:MET:SD	42:JA:111:ARG:HD2	2.59	0.42
51:SA:95:GLU:HG3	51:SA:96:GLU:N	2.34	0.42
52:TA:98:ALA:HB3	52:TA:101:VAL:HG23	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:UA:49:TRP:O	75:RB:932:A:O2'	2.33	0.42
53:UA:78:PHE:HB3	60:BB:88:GLN:HG2	2.01	0.42
59:AB:37:THR:HG21	75:RB:263:A:H5'	2.00	0.42
69:KB:41:LYS:HA	69:KB:44:LYS:HG2	2.02	0.42
75:RB:527:G:N1	75:RB:552:G:C2	2.87	0.42
75:RB:1361:G:H2'	75:RB:1362:C:C6	2.54	0.42
75:RB:3204:U:O2	75:RB:3204:U:H2'	2.19	0.42
1:aa:61:A:HO2'	1:aa:62:A:P	2.42	0.42
1:aa:922:U:H4'	12:na:41:PHE:CD2	2.54	0.42
1:aa:1179:C:OP1	13:oa:134:GLN:HB3	2.19	0.42
1:aa:1485:A:OP1	16:ra:69:ARG:NE	2.40	0.42
1:aa:1725:C:H1'	1:aa:1726:G:H8	1.84	0.42
4:da:77:ARG:HG2	4:da:81:ASN:HD22	1.85	0.42
6:ha:36:SER:HG	6:ha:46:TRP:HZ3	1.60	0.42
10:la:25:VAL:HG11	10:la:74:ARG:NH2	2.35	0.42
13:oa:23:LYS:HG2	18:ta:35:GLU:HA	2.01	0.42
13:oa:27:MET:HB2	13:oa:52:MET:HE2	2.01	0.42
17:sa:46:PHE:CE1	17:sa:121:ILE:HG23	2.54	0.42
18:ta:54:GLU:O	18:ta:57:LYS:N	2.52	0.42
20:va:54:PRO:HB3	22:xa:27:VAL:HG22	2.01	0.42
25:bb:29:TRP:HA	25:bb:47:LEU:HA	2.00	0.42
25:bb:136:ARG:HD2	25:bb:138:PHE:CZ	2.54	0.42
27:db:21:ILE:HD12	27:db:72:HIS:CG	2.54	0.42
27:db:75:VAL:O	27:db:79:ILE:HG12	2.19	0.42
62:DB:335:PRO:HD2	62:DB:338:ARG:HD2	2.01	0.42
70:LB:23:ARG:HH21	70:LB:23:ARG:HG2	1.84	0.42
75:RB:164:C:O2	75:RB:164:C:H2'	2.18	0.42
75:RB:1022:G:OP1	75:RB:1022:G:H3'	2.19	0.42
75:RB:1051:A:N3	75:RB:2630:U:O2'	2.49	0.42
75:RB:1228:C:C2	75:RB:1229:A:C8	3.07	0.42
75:RB:3247:G:O2'	75:RB:3248:C:H5'	2.19	0.42
79:bl:320:THR:HG22	79:bl:389:THR:HG21	2.01	0.42
80:cl:67:U:C2	80:cl:68:C:C5	3.07	0.42
1:aa:331:U:O2'	32:ib:6:GLU:OE1	2.24	0.42
1:aa:1460:G:OP1	17:sa:90:ARG:HD2	2.19	0.42
1:aa:1500:A:N3	1:aa:1501:G:N7	2.67	0.42
10:la:133:LYS:HE3	10:la:138:ARG:HA	2.02	0.42
15:qa:101:GLU:OE1	15:qa:101:GLU:N	2.39	0.42
25:bb:48:VAL:HG22	25:bb:64:ARG:NH2	2.27	0.42
25:bb:104:ASP:OD2	25:bb:105:PHE:N	2.51	0.42
30:gb:24:LEU:HD13	30:gb:28:TYR:CZ	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:hb:104:PRO:HA	31:hb:113:ARG:CZ	2.50	0.42
32:ib:142:LYS:HE2	32:ib:142:LYS:HB3	1.88	0.42
42:JA:94:ILE:CD1	42:JA:111:ARG:HG2	2.49	0.42
53:UA:55:ARG:NH1	75:RB:351:G:O6	2.52	0.42
62:DB:24:ARG:HH21	62:DB:277:HIS:CD2	2.37	0.42
66:HB:211:PRO:HD2	66:HB:212:GLY:N	2.34	0.42
69:KB:129:ARG:CG	69:KB:130:ALA:H	2.24	0.42
75:RB:1318:C:O5'	75:RB:1318:C:H6	2.02	0.42
75:RB:3222:U:C2	75:RB:3240:G:O6	2.71	0.42
76:SB:79:A:H2'	76:SB:80:A:H4'	2.01	0.42
79:bl:88:PRO:C	79:bl:90:ASN:H	2.27	0.42
79:bl:324:TRP:CG	79:bl:325:GLU:H	2.38	0.42
1:aa:195:A:H2'	1:aa:196:G:C8	2.54	0.42
9:ka:13:LYS:HG2	9:ka:19:THR:HA	2.01	0.42
13:oa:70:VAL:HG12	13:oa:77:PHE:CG	2.54	0.42
23:ya:21:VAL:HG22	23:ya:22:ALA:N	2.32	0.42
26:cb:39:VAL:HG12	26:cb:44:LEU:O	2.19	0.42
29:fb:156:ASN:O	29:fb:158:ILE:N	2.51	0.42
29:fb:188:ILE:HG12	29:fb:206:VAL:HG12	2.00	0.42
33:AA:106:ARG:O	33:AA:110:ARG:HD3	2.19	0.42
37:EA:21:LEU:HB2	37:EA:39:LEU:HD11	2.01	0.42
42:JA:128:ARG:HE	42:JA:128:ARG:HB3	1.64	0.42
45:MA:52:LEU:HD23	45:MA:52:LEU:HA	1.91	0.42
50:RA:99:PRO:HB3	50:RA:104:ILE:HG22	2.02	0.42
53:UA:5:THR:OG1	75:RB:887:A:OP1	2.30	0.42
60:BB:94:ARG:HG3	60:BB:94:ARG:NH1	2.34	0.42
64:FB:61:ARG:O	64:FB:65:LYS:HE3	2.19	0.42
75:RB:527:G:N2	75:RB:552:G:N3	2.67	0.42
75:RB:1249:A:H5''	75:RB:1250:G:H8	1.83	0.42
75:RB:1644:A:H2'	75:RB:1645:G:C8	2.54	0.42
75:RB:2810:A:H2'	75:RB:2811:G:O4'	2.18	0.42
75:RB:3275:U:H1'	75:RB:3276:G:C8	2.54	0.42
76:SB:7:U:H2'	76:SB:8:C:H6	1.81	0.42
79:bl:376:LEU:HD12	79:bl:377:GLU:N	2.35	0.42
1:aa:778:G:P	28:eb:9:ASN:HD22	2.43	0.42
1:aa:1224:C:OP1	4:da:48:SER:OG	2.26	0.42
1:aa:1374:G:H2'	1:aa:1375:C:H6	1.84	0.42
1:aa:1474:U:H4'	16:ra:99:GLY:O	2.19	0.42
1:aa:1786:A:H2'	1:aa:1787:G:H8	1.83	0.42
3:ca:108:ALA:HB3	3:ca:109:PRO:HD3	2.01	0.42
4:da:7:ASN:O	4:da:10:GLU:HG3	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:da:49:PHE:HD1	4:da:54:TYR:HD1	1.67	0.42
5:ga:94:GLU:HG3	5:ga:95:GLU:N	2.33	0.42
6:ha:114:HIS:HA	6:ha:140:LYS:NZ	2.34	0.42
9:ka:153:GLY:HA3	9:ka:184:TYR:HB3	2.01	0.42
14:pa:54:LEU:HB3	14:pa:60:ILE:HB	2.00	0.42
20:va:79:ASP:OD2	20:va:79:ASP:N	2.52	0.42
32:ib:4:GLN:OE1	32:ib:4:GLN:HA	2.20	0.42
36:DA:176:GLU:HB3	65:GB:29:MET:HE1	2.02	0.42
41:IA:35:ALA:HB2	75:RB:38:A:H5'	2.01	0.42
61:CB:209:LEU:O	75:RB:1337:C:O2'	2.38	0.42
69:KB:129:ARG:HG2	69:KB:130:ALA:N	2.24	0.42
70:LB:185:ASP:O	70:LB:189:ILE:HG13	2.20	0.42
75:RB:488:U:C2	75:RB:489:C:C5	3.07	0.42
75:RB:668:U:H2'	75:RB:669:G:C8	2.54	0.42
75:RB:2109:G:H22	75:RB:2114:A:H1'	1.85	0.42
75:RB:3273:G:C6	75:RB:3274:G:N7	2.88	0.42
75:RB:3358:G:H2'	75:RB:3359:A:C8	2.54	0.42
76:SB:132:C:H2'	76:SB:133:C:C6	2.54	0.42
79:bl:65:VAL:HG13	79:bl:66:ASN:N	2.34	0.42
79:bl:396:LYS:HB2	79:bl:396:LYS:HE2	1.74	0.42
1:aa:749:G:N7	31:hb:108:GLY:HA3	2.34	0.42
1:aa:1045:G:H4'	24:za:36:PHE:CD1	2.54	0.42
1:aa:1059:U:O2'	1:aa:1060:U:O5'	2.26	0.42
1:aa:1432:C:O2'	1:aa:1434:G:H5'	2.19	0.42
4:da:55:VAL:CG2	4:da:66:TRP:HB3	2.50	0.42
4:da:56:ARG:HG2	4:da:67:TYR:HB2	2.01	0.42
9:ka:36:VAL:HG13	9:ka:37:THR:HG23	2.00	0.42
11:ma:68:VAL:HA	11:ma:90:MET:O	2.20	0.42
13:oa:120:HIS:CE1	13:oa:124:ARG:HH21	2.38	0.42
17:sa:127:GLU:OE1	17:sa:127:GLU:N	2.43	0.42
18:ta:45:GLN:CB	18:ta:50:LYS:HE3	2.43	0.42
31:hb:92:ASP:HB3	31:hb:166:LYS:NZ	2.34	0.42
33:AA:156:ILE:HG13	33:AA:160:VAL:HG22	2.01	0.42
34:BA:50:LYS:O	34:BA:92:ARG:HD2	2.19	0.42
41:IA:113:MET:HG2	75:RB:723:G:C6	2.54	0.42
60:BB:12:TRP:NE1	60:BB:61:VAL:HG22	2.34	0.42
62:DB:82:PRO:HG3	62:DB:171:MET:SD	2.59	0.42
70:LB:47:GLU:N	70:LB:48:PRO:HD3	2.34	0.42
72:NB:50:ALA:HA	72:NB:53:ALA:HB3	2.01	0.42
75:RB:58:G:H4'	75:RB:59:A:H4'	2.00	0.42
75:RB:563:C:O2'	75:RB:564:A:OP1	2.31	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
75:RB:701:U:H2'	75:RB:702:G:C8	2.54	0.42
75:RB:823:A:H2'	75:RB:824:U:C6	2.54	0.42
75:RB:3002:A:H2'	75:RB:3003:U:O4'	2.20	0.42
76:SB:27:U:H2'	76:SB:28:C:C6	2.54	0.42
77:TB:23:A:H2'	77:TB:24:G:C8	2.54	0.42
1:aa:153:U:H4'	30:gb:59:GLN:H	1.85	0.42
1:aa:207:A:H2'	1:aa:208:U:H6	1.85	0.42
1:aa:611:G:H5'	1:aa:617:G:N2	2.35	0.42
1:aa:897:A:H2'	1:aa:898:U:C6	2.55	0.42
1:aa:1240:A:C2	1:aa:1241:G:C4	3.08	0.42
1:aa:1554:G:OP1	13:oa:121:ARG:HD2	2.20	0.42
6:ha:44:LEU:HD21	6:ha:65:PRO:HB3	2.02	0.42
6:ha:226:GLY:O	6:ha:251:ILE:HB	2.19	0.42
16:ra:32:SER:HB2	16:ra:68:ILE:HG12	2.02	0.42
17:sa:58:LEU:O	17:sa:63:MET:HE3	2.20	0.42
22:xa:40:GLN:HA	22:xa:43:PHE:HE1	1.84	0.42
26:cb:11:LEU:O	26:cb:12:TYR:HB3	2.19	0.42
31:hb:156:ASP:OD1	31:hb:156:ASP:N	2.53	0.42
42:JA:43:GLN:O	42:JA:47:VAL:HG23	2.20	0.42
43:KA:236:GLU:O	43:KA:240:LYS:HG3	2.20	0.42
44:LA:95:TRP:CH2	44:LA:99:MET:HE3	2.55	0.42
52:TA:29:LEU:HD23	52:TA:29:LEU:HA	1.87	0.42
62:DB:186:ILE:HD13	62:DB:197:TYR:HD1	1.85	0.42
70:LB:96:LEU:HD11	70:LB:107:THR:OG1	2.18	0.42
75:RB:567:G:H2'	75:RB:568:C:H6	1.83	0.42
76:SB:86:U:H5'	76:SB:87:G:OP1	2.19	0.42
79:bl:278:ASN:O	79:bl:282:ILE:HG12	2.20	0.42
1:aa:1367:U:O2'	1:aa:1368:C:P	2.78	0.42
6:ha:72:HIS:CD2	6:ha:100:TRP:HZ2	2.38	0.42
6:ha:273:ILE:HB	6:ha:283:GLN:HB3	2.01	0.42
8:ja:167:ASN:C	8:ja:168:LYS:HD2	2.45	0.42
9:ka:87:ARG:HD2	18:ta:97:SER:HB2	2.01	0.42
13:oa:16:LEU:HD21	13:oa:72:HIS:NE2	2.35	0.42
13:oa:81:ASP:OD2	13:oa:95:PHE:CD2	2.73	0.42
19:ua:31:VAL:HG23	19:ua:73:LEU:HD23	2.01	0.42
23:ya:27:LYS:HD2	23:ya:28:LYS:H	1.83	0.42
23:ya:35:HIS:CE1	23:ya:39:GLN:HE21	2.38	0.42
26:cb:4:GLU:HG3	26:cb:4:GLU:O	2.19	0.42
31:hb:73:PHE:O	31:hb:77:HIS:N	2.53	0.42
33:AA:222:PHE:O	33:AA:226:ARG:HG3	2.20	0.42
38:FA:11:GLU:O	38:FA:12:ILE:HD13	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:FA:93:PHE:HB2	38:FA:141:ASP:CB	2.39	0.42
40:HA:43:THR:HG23	40:HA:44:ARG:HG3	2.02	0.42
52:TA:8:ARG:NH1	52:TA:63:LYS:HD3	2.35	0.42
61:CB:140:TYR:CE2	61:CB:233:GLU:HG2	2.55	0.42
61:CB:193:VAL:HG13	61:CB:197:PHE:CG	2.55	0.42
62:DB:117:ARG:NH2	62:DB:178:LYS:HE2	2.34	0.42
71:MB:17:THR:CG2	71:MB:36:GLN:HB3	2.49	0.42
75:RB:2146:A:H2'	75:RB:2147:U:C6	2.55	0.42
75:RB:3273:G:C4	75:RB:3274:G:C8	3.08	0.42
77:TB:19:A:H2'	77:TB:20:C:H6	1.84	0.42
77:TB:118:C:H2'	77:TB:119:C:O4'	2.20	0.42
79:bl:90:ASN:ND2	79:bl:116:PHE:HA	2.32	0.42
79:bl:355:GLN:HG3	79:bl:357:ASN:N	2.27	0.42
1:aa:114:U:H4'	1:aa:116:G:OP1	2.20	0.42
1:aa:184:C:H3'	1:aa:185:G:H8	1.84	0.42
1:aa:1130:A:C5	1:aa:1131:G:H1'	2.55	0.42
1:aa:1131:G:P	67:IB:15:ARG:HH21	2.43	0.42
1:aa:1152:A:H2'	1:aa:1153:C:C6	2.54	0.42
1:aa:1250:C:H2'	1:aa:1251:U:H6	1.84	0.42
1:aa:1428:A:H2'	1:aa:1429:U:C6	2.54	0.42
1:aa:1477:A:C8	1:aa:1548:G:H1'	2.55	0.42
5:ga:47:LYS:HE2	5:ga:98:GLU:OE2	2.20	0.42
7:ia:40:ARG:HD2	7:ia:47:GLU:OE2	2.20	0.42
10:la:35:ILE:HG22	10:la:42:ILE:HB	2.02	0.42
17:sa:85:VAL:O	17:sa:104:GLY:N	2.53	0.42
22:xa:35:MET:HG3	22:xa:48:VAL:HG23	2.01	0.42
28:eb:97:TYR:N	28:eb:97:TYR:CD1	2.87	0.42
33:AA:137:TYR:CZ	33:AA:141:GLN:OE1	2.73	0.42
36:DA:79:ALA:HB2	36:DA:165:MET:SD	2.60	0.42
39:GA:69:LYS:HE3	39:GA:71:ASP:OD1	2.20	0.42
40:HA:108:ARG:NH2	75:RB:54:G:O2'	2.36	0.42
43:KA:139:ARG:NE	75:RB:1083:C:H5''	2.34	0.42
50:RA:53:PRO:HG3	75:RB:1727:A:N1	2.35	0.42
60:BB:122:ILE:HG13	69:KB:149:VAL:HG21	2.02	0.42
62:DB:319:GLY:HA2	75:RB:3366:C:H4'	2.01	0.42
63:EB:268:TYR:HB3	63:EB:283:LEU:HD21	2.02	0.42
72:NB:49:ASP:O	72:NB:53:ALA:N	2.49	0.42
75:RB:2:C:H2'	75:RB:3:G:C8	2.55	0.42
75:RB:579:G:H2'	75:RB:580:C:O4'	2.20	0.42
75:RB:1149:C:H4'	75:RB:1335:C:C4	2.54	0.42
75:RB:1243:C:N4	75:RB:1249:A:OP1	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
75:RB:1252:C:C4	75:RB:1253:G:H1'	2.55	0.42
75:RB:1628:G:C4	75:RB:1642:G:C8	3.07	0.42
75:RB:2423:A:H2'	75:RB:2424:C:C6	2.54	0.42
75:RB:3127:U:H2'	75:RB:3128:C:C6	2.55	0.42
75:RB:3322:A:H2'	75:RB:3323:A:C8	2.55	0.42
1:aa:197:G:O2'	1:aa:198:G:O5'	2.34	0.41
1:aa:207:A:H2'	1:aa:208:U:C6	2.54	0.41
1:aa:397:C:H2'	1:aa:398:C:C6	2.55	0.41
1:aa:840:U:H2'	1:aa:841:U:C6	2.55	0.41
1:aa:1291:A:H4'	1:aa:1292:G:OP1	2.19	0.41
1:aa:1621:U:H2'	1:aa:1622:A:H8	1.85	0.41
9:ka:131:ARG:HG3	9:ka:132:ARG:N	2.35	0.41
10:la:73:ILE:HG21	10:la:87:ILE:HG23	2.02	0.41
12:na:33:ILE:HD12	12:na:95:ILE:HG23	2.02	0.41
12:na:131:ASP:O	25:bb:107:THR:HG21	2.20	0.41
14:pa:114:ARG:O	14:pa:118:VAL:HG23	2.20	0.41
18:ta:33:GLN:CD	18:ta:73:ASN:HB3	2.45	0.41
25:bb:109:LYS:NZ	25:bb:113:LEU:HD21	2.35	0.41
28:eb:18:ARG:O	28:eb:20:PRO:HD3	2.20	0.41
29:fb:107:ARG:HB3	29:fb:127:CYS:SG	2.59	0.41
29:fb:152:GLY:HA3	29:fb:165:PRO:HA	2.02	0.41
35:CA:2:VAL:HG22	50:RA:67:ALA:HA	2.01	0.41
42:JA:94:ILE:O	42:JA:94:ILE:HG13	2.19	0.41
43:KA:46:THR:HG21	75:RB:1082:U:H4'	2.02	0.41
46:NA:146:ALA:HB1	46:NA:151:ILE:CG2	2.50	0.41
54:VA:16:LYS:HE3	54:VA:49:LEU:HD22	2.02	0.41
70:LB:121:ASN:HB2	75:RB:3258:C:O2	2.20	0.41
75:RB:15:C:H2'	75:RB:16:A:O4'	2.20	0.41
75:RB:114:G:O2'	75:RB:115:C:H5''	2.20	0.41
75:RB:255:C:H2'	75:RB:256:G:H8	1.85	0.41
75:RB:574:C:HO2'	75:RB:575:C:P	2.43	0.41
75:RB:931:C:H2'	75:RB:932:A:C8	2.55	0.41
75:RB:1019:A:H2	75:RB:1039:G:H1	1.68	0.41
75:RB:1072:C:H2'	75:RB:1073:G:C8	2.55	0.41
75:RB:3146:C:H2'	75:RB:3147:C:O4'	2.20	0.41
80:cl:31:G:H2'	80:cl:32:C:H6	1.85	0.41
1:aa:39:A:O2'	1:aa:40:A:OP2	2.31	0.41
1:aa:1780:U:H2'	1:aa:1781:U:C6	2.54	0.41
7:ia:204:LEU:HD12	7:ia:205:PRO:HD2	2.03	0.41
10:la:104:ASP:HB3	10:la:107:ALA:CB	2.49	0.41
15:qa:27:ASP:OD1	15:qa:29:HIS:N	2.51	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:ra:146:GLN:O	16:ra:150:THR:HG23	2.20	0.41
20:va:47:LYS:HG2	31:hb:145:LEU:HD11	2.02	0.41
20:va:54:PRO:O	20:va:55:HIS:CD2	2.73	0.41
20:va:74:LEU:HD11	20:va:92:MET:CE	2.49	0.41
26:cb:23:ILE:HD11	29:fb:235:LEU:HD13	2.02	0.41
29:fb:163:THR:HG21	29:fb:182:ALA:O	2.21	0.41
37:EA:17:GLN:HG2	37:EA:132:VAL:HG13	2.02	0.41
38:FA:90:LYS:HD2	38:FA:182:ASP:HB2	2.02	0.41
38:FA:132:THR:OG1	38:FA:146:ASP:OD1	2.37	0.41
39:GA:90:ARG:NH2	39:GA:96:MET:HE1	2.34	0.41
45:MA:4:TYR:HD2	45:MA:150:ILE:HD11	1.84	0.41
50:RA:31:TYR:CE1	50:RA:56:ARG:HG3	2.55	0.41
57:YA:10:GLN:OE1	63:EB:384:MET:HG2	2.20	0.41
58:ZA:98:VAL:C	58:ZA:100:ASP:N	2.76	0.41
60:BB:36:GLN:NE2	60:BB:45:LEU:HA	2.35	0.41
75:RB:552:G:C2	75:RB:553:C:C2	3.07	0.41
75:RB:827:C:O2'	75:RB:1537:A:N3	2.44	0.41
75:RB:876:C:H5''	75:RB:877:U:O5'	2.20	0.41
75:RB:1013:A:H2'	75:RB:1014:G:O4'	2.20	0.41
75:RB:1813:C:O2'	75:RB:1814:C:OP2	2.34	0.41
75:RB:1815:G:HO2'	75:RB:1816:U:P	2.40	0.41
75:RB:2558:G:H2'	75:RB:2559:C:O4'	2.20	0.41
75:RB:2765:U:H2'	75:RB:2766:A:C8	2.55	0.41
79:bl:55:TYR:CE2	79:bl:71:LEU:HD22	2.55	0.41
1:aa:5:U:OP2	29:fb:214:THR:OG1	2.24	0.41
1:aa:141:G:H2'	1:aa:142:G:C8	2.55	0.41
1:aa:174:C:H3'	1:aa:175:A:C8	2.55	0.41
1:aa:355:U:H3'	1:aa:356:G:H5'	2.02	0.41
1:aa:824:U:N3	1:aa:858:G:N1	2.67	0.41
1:aa:1247:G:C2	17:sa:60:ARG:NH2	2.88	0.41
1:aa:1524:A:H2'	11:ma:64:MET:HE1	2.02	0.41
1:aa:1587:G:H2'	1:aa:1588:C:C6	2.56	0.41
1:aa:1726:G:H2'	1:aa:1727:C:N1	2.35	0.41
3:ca:36:THR:O	3:ca:96:THR:HA	2.20	0.41
3:ca:70:SER:O	32:ib:20:LYS:HE3	2.21	0.41
6:ha:14:MET:O	6:ha:319:THR:HA	2.21	0.41
6:ha:184:SER:N	6:ha:210:VAL:HB	2.35	0.41
18:ta:33:GLN:O	18:ta:33:GLN:HG3	2.20	0.41
24:za:162:ASP:O	26:cb:65:ASP:HA	2.21	0.41
30:gb:67:VAL:HG13	30:gb:101:GLY:HA2	2.02	0.41
30:gb:69:THR:O	30:gb:101:GLY:HA3	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:HA:2:GLY:O	59:AB:39:ARG:NH2	2.52	0.41
40:HA:147:ARG:HG2	60:BB:105:LEU:HD21	2.03	0.41
43:KA:103:LEU:O	43:KA:107:ARG:HG2	2.20	0.41
57:YA:134:LYS:HB2	57:YA:134:LYS:HE3	1.84	0.41
57:YA:136:CYS:SG	57:YA:145:HIS:HE1	2.43	0.41
66:HB:47:PRO:HB3	66:HB:171:TRP:CH2	2.55	0.41
74:PB:6:THR:HG22	75:RB:1489:G:N2	2.36	0.41
75:RB:259:G:O2'	75:RB:260:U:H6	2.03	0.41
75:RB:542:G:H3'	75:RB:542:G:N3	2.34	0.41
75:RB:897:U:H4'	75:RB:898:G:O4'	2.21	0.41
75:RB:971:G:H2'	75:RB:972:C:C6	2.55	0.41
75:RB:1026:A:H2'	75:RB:1027:C:C6	2.55	0.41
75:RB:2833:C:H2'	75:RB:2834:A:O4'	2.20	0.41
75:RB:2872:U:O2	79:bl:184:GLN:HG2	2.21	0.41
75:RB:2882:C:O2'	75:RB:2883:U:H5'	2.19	0.41
75:RB:3340:G:N1	75:RB:3343:G:O4'	2.45	0.41
79:bl:137:GLU:O	79:bl:140:GLU:HG3	2.20	0.41
1:aa:261:C:O2	3:ca:197:ARG:NH2	2.43	0.41
1:aa:921:U:H3	12:na:55:ARG:NH1	2.16	0.41
1:aa:1062:C:O2	25:bb:203:SER:HB3	2.21	0.41
1:aa:1181:G:C6	1:aa:1470:G:C6	3.09	0.41
1:aa:1258:U:H2'	1:aa:1259:G:O4'	2.20	0.41
1:aa:1655:U:H2'	1:aa:1656:C:C6	2.55	0.41
5:ga:60:GLN:HB3	5:ga:61:PRO:HD3	2.02	0.41
7:ia:178:ARG:O	7:ia:179:GLN:HB2	2.20	0.41
9:ka:47:HIS:CD2	9:ka:82:LYS:HD3	2.56	0.41
11:ma:89:GLU:OE2	21:wa:55:TYR:CD1	2.73	0.41
13:oa:59:LEU:HG	13:oa:63:GLU:OE2	2.20	0.41
15:qa:110:GLY:C	15:qa:111:MET:HE2	2.46	0.41
25:bb:87:ARG:NE	25:bb:89:GLU:OE2	2.48	0.41
31:hb:136:ILE:HG23	31:hb:153:ILE:HG23	2.01	0.41
36:DA:108:PRO:HB2	65:GB:86:LEU:HD13	2.02	0.41
37:EA:118:TYR:CG	37:EA:121:SER:HA	2.55	0.41
45:MA:117:HIS:O	45:MA:149:LEU:HA	2.20	0.41
46:NA:97:ASP:OD2	46:NA:98:LEU:N	2.53	0.41
58:ZA:82:LYS:CD	58:ZA:112:ASN:HA	2.47	0.41
62:DB:259:HIS:HA	62:DB:260:PRO:C	2.45	0.41
62:DB:300:THR:O	62:DB:304:ARG:NH1	2.44	0.41
63:EB:38:ASP:OD1	63:EB:38:ASP:N	2.51	0.41
64:FB:152:TRP:NE1	64:FB:154:TYR:HB2	2.36	0.41
69:KB:133:VAL:HG13	69:KB:137:ASP:HB2	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:LB:85:ALA:HB2	71:MB:108:TYR:CE1	2.56	0.41
75:RB:2784:G:H2'	75:RB:2785:C:H6	1.85	0.41
75:RB:3038:U:OP2	75:RB:3088:C:N4	2.41	0.41
75:RB:3218:C:H2'	75:RB:3219:C:C6	2.56	0.41
79:bl:5:HIS:HE1	79:bl:7:THR:OG1	2.03	0.41
1:aa:279:C:C4	1:aa:285:G:C2	3.09	0.41
1:aa:336:U:OP1	3:ca:31:ARG:HD2	2.21	0.41
1:aa:499:A:N6	1:aa:500:G:N3	2.68	0.41
1:aa:499:A:C6	1:aa:500:G:H1'	2.55	0.41
1:aa:850:G:C6	1:aa:851:G:N2	2.87	0.41
1:aa:1123:G:OP2	67:IB:21:ARG:NH1	2.53	0.41
1:aa:1220:C:O2'	1:aa:1450:A:N1	2.50	0.41
1:aa:1240:A:C6	1:aa:1241:G:C6	3.09	0.41
1:aa:1394:A:H4'	1:aa:1395:C:O4'	2.20	0.41
2:ba:11:THR:OG1	2:ba:33:ILE:HB	2.20	0.41
5:ga:89:CYS:SG	5:ga:129:LEU:HD11	2.60	0.41
8:ja:37:LYS:C	8:ja:39:ARG:H	2.29	0.41
10:la:19:LYS:O	10:la:20:LYS:C	2.63	0.41
17:sa:68:LYS:HA	17:sa:71:LYS:HE2	2.02	0.41
18:ta:81:ILE:HG12	18:ta:85:MET:HG2	2.02	0.41
29:fb:216:THR:HG23	29:fb:216:THR:O	2.20	0.41
31:hb:102:VAL:HG12	31:hb:103:ARG:O	2.21	0.41
37:EA:119:ASP:HB2	37:EA:120:PRO:HD3	2.03	0.41
44:LA:99:MET:HE1	44:LA:127:VAL:O	2.21	0.41
49:QA:10:TRP:O	49:QA:14:LYS:HB2	2.20	0.41
52:TA:70:ASN:O	52:TA:71:LYS:HB2	2.20	0.41
56:XA:38:VAL:HG21	56:XA:48:MET:SD	2.61	0.41
57:YA:69:LYS:HZ3	75:RB:523:C:H42	1.66	0.41
57:YA:170:LYS:HE3	75:RB:3195:A:C4	2.55	0.41
63:EB:243:ASP:O	63:EB:246:PRO:HD3	2.20	0.41
63:EB:340:ARG:NH2	75:RB:561:G:O3'	2.44	0.41
66:HB:74:LYS:O	66:HB:78:LYS:HG2	2.20	0.41
66:HB:76:MET:HE2	66:HB:85:PHE:HB3	2.02	0.41
66:HB:99:ILE:HG12	66:HB:101:LYS:HG2	2.01	0.41
66:HB:191:VAL:HG13	66:HB:200:LEU:HD11	2.02	0.41
69:KB:119:TYR:CA	69:KB:154:MET:HE1	2.51	0.41
75:RB:259:G:N2	75:RB:260:U:O4	2.53	0.41
75:RB:765:U:H2'	75:RB:766:C:O4'	2.20	0.41
75:RB:1007:A:N1	75:RB:1053:C:O2'	2.52	0.41
75:RB:1362:C:H2'	75:RB:1363:C:H6	1.86	0.41
75:RB:3283:A:H2'	75:RB:3284:U:H6	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
79:bl:324:TRP:CG	79:bl:325:GLU:N	2.89	0.41
1:aa:336:U:O4	3:ca:191:ARG:NH2	2.53	0.41
1:aa:519:A:N6	1:aa:541:G:O2'	2.44	0.41
1:aa:710:G:H2'	1:aa:711:C:O4'	2.20	0.41
1:aa:749:G:H5''	31:hb:109:SER:C	2.45	0.41
1:aa:1243:C:H2'	1:aa:1244:U:O4'	2.20	0.41
1:aa:1324:U:O2	1:aa:1326:A:H5'	2.20	0.41
4:da:26:ASP:OD1	4:da:29:LEU:HD13	2.20	0.41
6:ha:226:GLY:H	6:ha:251:ILE:HB	1.85	0.41
6:ha:275:ASP:OD2	6:ha:278:SER:N	2.45	0.41
7:ia:66:ILE:O	7:ia:70:THR:HG22	2.20	0.41
13:oa:25:LYS:N	13:oa:55:ARG:NH1	2.68	0.41
22:xa:56:VAL:HG22	22:xa:66:CYS:HB2	2.02	0.41
25:bb:197:ILE:HB	25:bb:210:VAL:HG11	2.03	0.41
26:cb:75:ARG:NE	26:cb:75:ARG:HA	2.35	0.41
30:gb:3:LEU:HD23	30:gb:3:LEU:H	1.85	0.41
31:hb:98:THR:HG23	31:hb:98:THR:O	2.20	0.41
32:ib:15:VAL:HG22	32:ib:29:GLY:HA2	2.01	0.41
37:EA:88:VAL:HG21	37:EA:112:ILE:HG23	2.03	0.41
37:EA:158:LYS:O	37:EA:162:MET:HG3	2.21	0.41
43:KA:221:HIS:O	77:TB:48:G:H4'	2.20	0.41
45:MA:84:TRP:O	75:RB:2345:A:H5''	2.19	0.41
49:QA:2:THR:O	49:QA:79:GLN:NE2	2.54	0.41
59:AB:61:THR:O	59:AB:65:LYS:N	2.50	0.41
60:BB:7:LYS:HG3	60:BB:10:GLU:OE2	2.20	0.41
75:RB:18:G:N2	76:SB:142:G:H1	2.18	0.41
75:RB:525:A:H2'	75:RB:526:A:O4'	2.21	0.41
75:RB:527:G:N2	75:RB:552:G:C2	2.88	0.41
75:RB:1823:C:H2'	75:RB:1824:C:C6	2.55	0.41
75:RB:3224:C:H2'	75:RB:3225:G:H8	1.86	0.41
75:RB:3289:U:H2'	75:RB:3290:G:C8	2.55	0.41
77:TB:26:C:H2'	77:TB:27:A:O4'	2.20	0.41
77:TB:27:A:H2'	77:TB:28:U:O4'	2.21	0.41
1:aa:312:C:OP2	32:ib:104:ARG:NH1	2.48	0.41
1:aa:785:A:H5''	1:aa:786:U:OP2	2.21	0.41
1:aa:1253:U:C5	1:aa:1254:U:C4	3.09	0.41
1:aa:1596:G:N2	1:aa:1616:U:O2	2.41	0.41
1:aa:1636:U:H2'	1:aa:1637:G:C8	2.56	0.41
6:ha:179:THR:HB	6:ha:192:TRP:O	2.20	0.41
7:ia:48:ILE:HD12	7:ia:86:LEU:HD11	2.03	0.41
7:ia:203:PRO:HG2	15:qa:42:GLN:CD	2.45	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:ka:149:LEU:HD23	9:ka:149:LEU:HA	1.88	0.41
11:ma:56:LEU:HD23	11:ma:56:LEU:HA	1.96	0.41
13:oa:40:PHE:O	13:oa:44:VAL:HG23	2.20	0.41
13:oa:84:LEU:HD23	13:oa:96:SER:C	2.45	0.41
15:qa:85:VAL:HB	24:za:202:MET:SD	2.61	0.41
16:ra:54:ARG:HE	16:ra:54:ARG:HB3	1.67	0.41
20:va:51:VAL:HG22	20:va:60:ILE:HG12	2.03	0.41
25:bb:109:LYS:HD2	25:bb:109:LYS:HA	1.85	0.41
29:fb:237:PRO:HA	29:fb:240:TRP:CD1	2.56	0.41
31:hb:100:ARG:HG2	31:hb:101:ILE:N	2.34	0.41
33:AA:80:LEU:HD13	33:AA:218:PHE:HE2	1.86	0.41
39:GA:14:PHE:CG	39:GA:91:LYS:HE3	2.55	0.41
39:GA:48:ARG:NH1	62:DB:8:HIS:HB2	2.36	0.41
42:JA:44:PHE:CD2	42:JA:132:GLY:HA3	2.55	0.41
42:JA:166:VAL:CG2	42:JA:174:GLU:HG3	2.51	0.41
44:LA:46:LYS:HE3	75:RB:1762:G:H1	1.86	0.41
46:NA:79:THR:O	46:NA:83:MET:HG2	2.20	0.41
51:SA:83:ILE:HG12	51:SA:101:VAL:HG22	2.02	0.41
52:TA:110:VAL:HG11	52:TA:123:LYS:HE2	2.02	0.41
52:TA:119:VAL:HG22	75:RB:436:G:C6	2.56	0.41
57:YA:138:ARG:NH2	75:RB:1217:G:H5'	2.35	0.41
60:BB:57:ARG:O	60:BB:61:VAL:HG23	2.21	0.41
69:KB:62:THR:O	69:KB:62:THR:OG1	2.37	0.41
75:RB:26:A:H2	75:RB:57:G:H22	1.67	0.41
75:RB:308:U:H2'	75:RB:309:C:O4'	2.20	0.41
75:RB:660:A:H2'	75:RB:661:A:C8	2.56	0.41
75:RB:1194:C:H4'	75:RB:1195:C:OP2	2.20	0.41
75:RB:1237:G:N2	75:RB:1238:G:C6	2.88	0.41
75:RB:1277:A:C6	75:RB:1278:A:N6	2.89	0.41
75:RB:2354:A:H2'	75:RB:2355:C:C6	2.56	0.41
75:RB:2981:C:H2'	75:RB:2982:C:H6	1.85	0.41
75:RB:3341:C:O2'	75:RB:3342:U:H3'	2.20	0.41
79:bl:281:PHE:HB3	79:bl:396:LYS:HE3	2.02	0.41
1:aa:1245:G:C2	17:sa:88:HIS:CE1	3.09	0.41
1:aa:1493:A:OP1	21:wa:34:TYR:OH	2.34	0.41
1:aa:1746:U:H2'	1:aa:1747:A:O4'	2.21	0.41
6:ha:75:PHE:HB2	6:ha:93:TRP:CD1	2.56	0.41
6:ha:92:SER:HB2	6:ha:94:ASP:OD1	2.21	0.41
6:ha:130:ILE:HG12	6:ha:142:TRP:O	2.20	0.41
6:ha:294:LYS:O	6:ha:295:GLN:C	2.64	0.41
8:ja:129:VAL:HG12	8:ja:139:LEU:CB	2.51	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:qa:67:ARG:O	15:qa:69:ILE:N	2.54	0.41
16:ra:73:MET:HB2	16:ra:92:TYR:OH	2.21	0.41
17:sa:68:LYS:HG3	17:sa:71:LYS:NZ	2.35	0.41
24:za:19:ILE:HD13	24:za:22:MET:HE3	2.02	0.41
25:bb:31:ASP:HB2	25:bb:95:ASN:OD1	2.21	0.41
25:bb:112:SER:HA	27:db:68:TYR:HE2	1.86	0.41
30:gb:45:PHE:O	30:gb:48:TYR:HB2	2.20	0.41
30:gb:198:ASP:HA	30:gb:201:LYS:HG2	2.02	0.41
34:BA:151:PRO:HG3	57:YA:46:PHE:CE1	2.55	0.41
40:HA:47:ARG:NE	75:RB:267:G:OP1	2.54	0.41
40:HA:54:LYS:HE2	75:RB:149:A:OP2	2.21	0.41
44:LA:75:HIS:ND1	75:RB:1936:G:OP1	2.40	0.41
48:PA:111:ASP:OD1	76:SB:85:G:C6	2.73	0.41
49:QA:4:VAL:HB	49:QA:8:LEU:HD23	2.03	0.41
62:DB:85:VAL:HB	62:DB:165:HIS:NE2	2.35	0.41
72:NB:8:ILE:H	72:NB:8:ILE:HD12	1.85	0.41
75:RB:1033:G:H2'	75:RB:1034:U:O4'	2.21	0.41
75:RB:1262:U:H2'	75:RB:1264:A:H5''	2.02	0.41
75:RB:1813:C:H6	75:RB:1813:C:H2'	1.70	0.41
75:RB:2089:A:H2'	75:RB:2090:G:C8	2.55	0.41
75:RB:2089:A:H2'	75:RB:2090:G:H8	1.85	0.41
75:RB:2715:C:H2'	75:RB:2716:U:C6	2.55	0.41
75:RB:3319:U:H2'	75:RB:3320:G:O4'	2.21	0.41
79:bl:50:MET:HE3	79:bl:50:MET:HB3	1.90	0.41
80:cl:37:MIA:H112	80:cl:38:A:H1'	2.03	0.41
1:aa:97:G:H21	1:aa:430:G:C4'	2.34	0.41
1:aa:143:A:N1	1:aa:169:A:N1	2.69	0.41
1:aa:786:U:H1'	2:ba:15:ARG:NH1	2.36	0.41
1:aa:823:A:H2'	1:aa:824:U:O4'	2.21	0.41
1:aa:1082:C:H2'	1:aa:1083:C:C6	2.55	0.41
1:aa:1130:A:O3'	67:IB:15:ARG:NH2	2.46	0.41
1:aa:1601:A:H2'	1:aa:1602:G:C8	2.55	0.41
2:ba:25:ARG:HD3	2:ba:80:LEU:HD22	2.03	0.41
3:ca:43:THR:HG22	3:ca:60:ARG:HB2	2.03	0.41
3:ca:61:LEU:HD23	3:ca:61:LEU:HA	1.87	0.41
3:ca:155:SER:O	3:ca:159:GLN:N	2.34	0.41
4:da:37:VAL:HG11	4:da:42:VAL:HG23	2.03	0.41
5:ga:83:PHE:O	5:ga:85:PRO:HD3	2.21	0.41
6:ha:235:ASP:N	6:ha:240:LYS:O	2.39	0.41
6:ha:299:CYS:SG	6:ha:313:ALA:HB1	2.61	0.41
8:ja:57:THR:OG1	8:ja:60:GLU:HG3	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:la:46:ARG:HH11	16:ra:24:PRO:CD	2.34	0.41
11:ma:63:ARG:HH11	11:ma:95:ARG:NH1	2.18	0.41
12:na:129:ILE:O	27:db:65:PRO:HG3	2.21	0.41
13:oa:124:ARG:CD	13:oa:129:VAL:HG23	2.51	0.41
18:ta:55:VAL:N	18:ta:56:PRO:HD2	2.36	0.41
18:ta:64:SER:CB	18:ta:82:LYS:HE3	2.51	0.41
20:va:45:TYR:HB3	20:va:68:ILE:HD13	2.01	0.41
25:bb:30:TYR:HB3	25:bb:96:VAL:HG23	2.03	0.41
25:bb:97:LEU:HD22	25:bb:232:HIS:NE2	2.35	0.41
29:fb:179:MET:CE	29:fb:198:LEU:HD21	2.51	0.41
30:gb:26:ASN:H	30:gb:40:LEU:HD22	1.86	0.41
33:AA:181:ARG:HH11	76:SB:157:A:H4'	1.85	0.41
34:BA:120:LYS:HA	34:BA:124:GLU:HB3	2.03	0.41
36:DA:69:TYR:O	75:RB:1647:C:H4'	2.21	0.41
36:DA:245:ARG:HD2	36:DA:246:LEU:H	1.85	0.41
39:GA:45:ILE:HD13	39:GA:45:ILE:HA	1.88	0.41
40:HA:51:LEU:HA	40:HA:51:LEU:HD23	1.87	0.41
40:HA:60:VAL:HG11	76:SB:144:C:H5''	2.03	0.41
42:JA:19:PRO:HD3	42:JA:53:PHE:CD1	2.56	0.41
43:KA:70:ALA:O	77:TB:7:G:N2	2.41	0.41
44:LA:115:ILE:HD11	44:LA:142:ILE:HG23	2.02	0.41
49:QA:67:LYS:NZ	49:QA:131:GLN:HG2	2.35	0.41
52:TA:88:MET:HE3	52:TA:88:MET:HB3	1.85	0.41
54:VA:13:LEU:HD22	75:RB:1496:G:H2'	2.02	0.41
57:YA:163:ARG:CZ	57:YA:166:LYS:HD3	2.51	0.41
58:ZA:39:ALA:HB1	58:ZA:43:LYS:NZ	2.36	0.41
59:AB:32:ARG:HH22	75:RB:262:A:H3'	1.86	0.41
60:BB:12:TRP:HH2	76:SB:66:G:C5'	2.34	0.41
61:CB:12:GLU:O	61:CB:16:LEU:HB2	2.21	0.41
69:KB:77:LEU:HD11	69:KB:87:LYS:HE3	2.03	0.41
75:RB:256:G:H2'	75:RB:257:C:C6	2.56	0.41
75:RB:859:G:OP1	75:RB:1720:C:O2'	2.35	0.41
75:RB:985:C:O5'	75:RB:985:C:H6	2.04	0.41
75:RB:1262:U:O2	75:RB:1264:A:H3'	2.21	0.41
75:RB:1654:C:O2'	75:RB:1793:A:OP2	2.32	0.41
75:RB:1683:U:O2	75:RB:1685:U:H1'	2.20	0.41
75:RB:1738:A:H2'	75:RB:1739:G:O4'	2.21	0.41
75:RB:1809:A:O2'	75:RB:1812:A:N3	2.47	0.41
75:RB:2199:G:H21	75:RB:2200:A:N6	2.19	0.41
75:RB:2507:U:O2	75:RB:2507:U:H2'	2.21	0.41
75:RB:2527:A:C2	75:RB:2528:G:H1'	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
75:RB:2573:G:H2'	75:RB:2574:C:H6	1.86	0.41
75:RB:2603:G:N3	75:RB:2603:G:H2'	2.35	0.41
75:RB:2608:U:H2'	75:RB:2609:U:H6	1.81	0.41
75:RB:2779:U:O5'	75:RB:2779:U:H6	2.04	0.41
75:RB:2982:C:H2'	75:RB:2983:U:O4'	2.20	0.41
75:RB:3066:A:H2'	75:RB:3067:A:C8	2.56	0.41
75:RB:3101:U:H2'	75:RB:3102:A:C8	2.56	0.41
75:RB:3371:G:O3'	75:RB:3372:G:H8	2.03	0.41
76:SB:79:A:C3'	76:SB:80:A:H4'	2.51	0.41
76:SB:129:C:H5''	76:SB:130:G:C8	2.56	0.41
77:TB:12:U:OP2	77:TB:67:C:O2'	2.37	0.41
77:TB:78:C:H2'	77:TB:79:A:C8	2.55	0.41
79:bl:18:LYS:HG3	79:bl:21:LYS:NZ	2.36	0.41
1:aa:265:A:H2'	1:aa:266:C:H5'	2.03	0.41
1:aa:786:U:H2'	2:ba:13:ARG:HD3	2.02	0.41
1:aa:924:A:H2'	1:aa:925:U:C6	2.56	0.41
1:aa:1164:C:H42	1:aa:1289:U:P	2.44	0.41
1:aa:1353:G:O2'	1:aa:1354:C:P	2.79	0.41
1:aa:1698:A:H2'	1:aa:1698:A:N3	2.36	0.41
1:aa:1732:A:O2'	30:gb:67:VAL:HG23	2.21	0.41
1:aa:1807:A:N1	27:db:87:ARG:HD2	2.36	0.41
4:da:49:PHE:CD1	4:da:54:TYR:HD1	2.39	0.41
6:ha:261:TYR:O	6:ha:262:TRP:HD1	2.04	0.41
8:ja:182:MET:HB2	8:ja:228:ILE:HD11	2.03	0.41
15:qa:25:THR:OG1	15:qa:26:LEU:N	2.54	0.41
19:ua:29:ALA:HB1	19:ua:49:VAL:HB	2.03	0.41
20:va:9:ALA:O	20:va:13:MET:HG3	2.21	0.41
24:za:44:LYS:HG2	24:za:45:ARG:H	1.85	0.41
24:za:77:ASP:OD2	29:fb:50:LYS:NZ	2.50	0.41
24:za:86:TYR:CD1	24:za:208:TYR:CE1	3.09	0.41
28:eb:87:LEU:HD11	28:eb:149:MET:HE1	2.02	0.41
29:fb:87:LYS:HB3	29:fb:87:LYS:HE3	1.82	0.41
31:hb:164:GLU:HG2	31:hb:186:TYR:CZ	2.56	0.41
43:KA:181:GLY:O	43:KA:183:LYS:NZ	2.51	0.41
48:PA:90:ASN:HA	75:RB:376:A:H1'	2.02	0.41
48:PA:112:LYS:HE3	76:SB:85:G:N7	2.36	0.41
49:QA:117:LYS:HB2	49:QA:118:PRO:HD3	2.03	0.41
50:RA:35:LEU:HD23	50:RA:35:LEU:HA	1.83	0.41
58:ZA:91:LYS:HE3	58:ZA:91:LYS:HB3	1.85	0.41
64:FB:3:SER:O	64:FB:34:ASN:ND2	2.45	0.41
70:LB:40:GLU:OE2	70:LB:42:PRO:HD3	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
75:RB:527:G:N1	75:RB:528:C:C2	2.89	0.41
75:RB:563:C:H2'	75:RB:564:A:H8	1.85	0.41
75:RB:731:G:H2'	75:RB:732:G:C8	2.55	0.41
75:RB:1690:C:O2'	75:RB:1768:U:O2'	2.33	0.41
75:RB:2983:U:H2'	75:RB:2984:A:C8	2.56	0.41
79:bl:117:LYS:HB3	79:bl:138:LEU:HD21	2.02	0.41
1:aa:415:C:H2'	1:aa:416:A:O4'	2.20	0.40
1:aa:1482:U:H2'	1:aa:1483:G:C8	2.56	0.40
1:aa:1593:U:H2'	1:aa:1594:A:H8	1.85	0.40
2:ba:56:LYS:O	2:ba:56:LYS:HG2	2.20	0.40
2:ba:111:LYS:O	2:ba:112:GLN:HB3	2.21	0.40
8:ja:101:LEU:C	8:ja:102:LEU:HD12	2.46	0.40
20:va:75:THR:HG22	20:va:76:TYR:N	2.36	0.40
25:bb:74:GLN:HG2	25:bb:74:GLN:O	2.21	0.40
30:gb:75:LEU:O	30:gb:96:ARG:HA	2.22	0.40
35:CA:15:GLN:HG2	75:RB:1634:G:O3'	2.20	0.40
37:EA:45:GLN:HE21	37:EA:71:VAL:HG22	1.86	0.40
55:WA:32:LYS:HA	55:WA:32:LYS:HD2	1.93	0.40
56:XA:36:ALA:O	56:XA:47:GLN:HA	2.20	0.40
75:RB:66:A:N1	75:RB:298:G:O2'	2.46	0.40
75:RB:1498:U:H4'	75:RB:1517:C:H4'	2.02	0.40
75:RB:1767:G:H2'	75:RB:1768:U:C6	2.56	0.40
75:RB:2275:U:O2	75:RB:2303:U:H4'	2.20	0.40
75:RB:2423:A:H2'	75:RB:2424:C:H6	1.86	0.40
75:RB:3339:U:H2'	75:RB:3340:G:O4'	2.21	0.40
77:TB:89:G:H2'	77:TB:90:A:C8	2.56	0.40
1:aa:332:A:H2'	1:aa:333:G:O4'	2.20	0.40
1:aa:1005:C:O2'	1:aa:1007:G:N7	2.40	0.40
1:aa:1255:U:O2'	1:aa:1256:C:H6	2.04	0.40
1:aa:1398:U:C2	1:aa:1399:G:C8	3.10	0.40
1:aa:1474:U:H2'	1:aa:1475:A:O4'	2.22	0.40
1:aa:1599:C:H2'	1:aa:1600:G:H8	1.85	0.40
1:aa:1665:U:O2'	1:aa:1666:G:OP1	2.39	0.40
7:ia:65:ARG:O	7:ia:68:GLU:HB2	2.20	0.40
10:la:83:GLN:O	10:la:87:ILE:HG13	2.21	0.40
12:na:151:LEU:HD23	12:na:151:LEU:H	1.87	0.40
25:bb:82:ARG:HD2	25:bb:103:MET:HE3	2.03	0.40
32:ib:87:VAL:HG22	32:ib:108:ILE:O	2.21	0.40
37:EA:22:ASN:ND2	75:RB:2678:U:O2	2.54	0.40
38:FA:36:ARG:HH22	38:FA:151:GLU:CD	2.29	0.40
38:FA:185:ALA:O	38:FA:186:ILE:HD13	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:JA:23:ASP:O	42:JA:27:LYS:HG3	2.21	0.40
43:KA:106:ALA:O	43:KA:110:LEU:HG	2.22	0.40
44:LA:9:ARG:HG2	44:LA:10:LEU:HD12	2.04	0.40
52:TA:62:LYS:HD2	75:RB:1344:A:OP2	2.20	0.40
59:AB:33:LYS:NZ	75:RB:314:C:O2'	2.48	0.40
65:GB:48:LYS:HD3	65:GB:58:LYS:HZ3	1.86	0.40
69:KB:61:GLN:NE2	75:RB:74:G:H1'	2.26	0.40
75:RB:574:C:O2'	75:RB:575:C:H6	2.03	0.40
75:RB:2612:G:H2'	75:RB:2613:C:C6	2.55	0.40
75:RB:2884:A:N3	75:RB:2884:A:H2'	2.36	0.40
75:RB:3114:C:H2'	75:RB:3115:U:O4'	2.21	0.40
75:RB:3306:C:O2	75:RB:3306:C:H2'	2.21	0.40
76:SB:104:A:OP2	76:SB:105:A:H2'	2.21	0.40
1:aa:336:U:H5''	3:ca:31:ARG:NH1	2.36	0.40
1:aa:785:A:N7	1:aa:787:C:H5'	2.35	0.40
1:aa:891:U:C2	1:aa:892:A:C8	3.09	0.40
6:ha:62:TYR:CE1	6:ha:322:ILE:HD13	2.56	0.40
6:ha:104:THR:OG1	6:ha:106:VAL:HG22	2.21	0.40
6:ha:118:VAL:HA	6:ha:134:SER:HA	2.03	0.40
6:ha:133:ALA:HA	6:ha:139:ILE:HD13	2.03	0.40
13:oa:84:LEU:O	13:oa:87:LYS:HE2	2.21	0.40
14:pa:114:ARG:HA	14:pa:114:ARG:HD3	1.91	0.40
16:ra:123:MET:O	16:ra:123:MET:HG2	2.20	0.40
20:va:54:PRO:CB	22:xa:27:VAL:HG13	2.50	0.40
29:fb:255:ASP:OD1	29:fb:256:ILE:HG13	2.20	0.40
32:ib:12:GLN:OE1	32:ib:35:PHE:HB3	2.21	0.40
40:HA:137:VAL:O	40:HA:143:ARG:HD3	2.21	0.40
46:NA:115:ILE:HD12	46:NA:136:LEU:HD21	2.04	0.40
49:QA:20:LEU:HD11	49:QA:32:GLN:HB2	2.03	0.40
54:VA:31:THR:HG23	76:SB:75:G:P	2.61	0.40
57:YA:170:LYS:HE3	75:RB:3195:A:C5	2.55	0.40
58:ZA:106:ALA:HB1	58:ZA:109:LYS:HB3	2.04	0.40
62:DB:122:TRP:O	62:DB:127:LYS:HE3	2.22	0.40
63:EB:340:ARG:NH2	75:RB:562:G:OP1	2.55	0.40
63:EB:354:ARG:HE	63:EB:360:SER:CB	2.35	0.40
64:FB:17:ARG:NE	64:FB:18:HIS:CD2	2.89	0.40
70:LB:178:LYS:HB3	70:LB:178:LYS:HE2	1.89	0.40
75:RB:5:G:H2'	75:RB:6:A:C8	2.55	0.40
75:RB:863:G:O2'	75:RB:898:G:H4'	2.21	0.40
75:RB:1224:A:H5''	75:RB:1226:G:H5'	2.04	0.40
77:TB:49:A:H5''	77:TB:49:A:C8	2.52	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
80:cl:19:G:H5''	80:cl:20:A:C5	2.57	0.40
80:cl:56:C:H5'	80:cl:57:G:OP2	2.21	0.40
1:aa:476:U:H2'	1:aa:477:A:C8	2.57	0.40
1:aa:1362:A:OP1	16:ra:142:ARG:NH1	2.55	0.40
5:ga:71:VAL:HG11	5:ga:99:VAL:HG11	2.04	0.40
7:ia:41:VAL:HG22	7:ia:46:THR:HG23	2.03	0.40
10:la:64:SER:O	10:la:67:LYS:HG2	2.22	0.40
10:la:101:LYS:HE2	10:la:101:LYS:HB2	1.83	0.40
11:ma:109:ILE:O	11:ma:111:SER:N	2.48	0.40
13:oa:113:ARG:O	13:oa:117:ILE:HG13	2.22	0.40
18:ta:50:LYS:O	18:ta:51:LEU:HD23	2.22	0.40
19:ua:83:ARG:O	19:ua:86:ARG:HB2	2.21	0.40
25:bb:189:ILE:HB	25:bb:190:PRO:HD3	2.04	0.40
30:gb:58:LYS:O	30:gb:59:GLN:HB2	2.21	0.40
32:ib:88:ARG:NH1	32:ib:90:ASN:OD1	2.54	0.40
35:CA:50:PRO:HD3	35:CA:68:VAL:CG1	2.51	0.40
40:HA:29:GLU:OE2	40:HA:33:GLN:NE2	2.54	0.40
47:OA:14:LYS:NZ	62:DB:379:GLU:OE2	2.52	0.40
53:UA:21:ARG:HG3	76:SB:103:G:H4'	2.04	0.40
59:AB:26:PRO:HG2	69:KB:78:GLU:OE2	2.20	0.40
66:HB:204:GLY:O	77:TB:63:U:H3'	2.21	0.40
70:LB:154:ARG:NH1	75:RB:621:C:OP2	2.52	0.40
70:LB:180:ASP:O	70:LB:184:ILE:HD12	2.21	0.40
72:NB:14:THR:HA	72:NB:17:ARG:HG3	2.03	0.40
75:RB:384:A:H8	75:RB:384:A:O5'	2.05	0.40
75:RB:535:G:C6	75:RB:536:C:C4	3.09	0.40
75:RB:552:G:N2	75:RB:553:C:C2	2.90	0.40
75:RB:648:G:H2'	75:RB:2365:A:N7	2.37	0.40
75:RB:1291:A:H2'	75:RB:1292:U:O4'	2.21	0.40
75:RB:1402:G:O2'	75:RB:1403:G:H5'	2.22	0.40
75:RB:1451:U:H2'	75:RB:1452:A:C8	2.55	0.40
75:RB:1937:C:O2'	75:RB:3331:A:N1	2.50	0.40
75:RB:2632:A:H4'	75:RB:2633:A:O5'	2.22	0.40
75:RB:2639:A:H2'	75:RB:2640:A:C8	2.56	0.40
75:RB:3274:G:C6	75:RB:3275:U:C4	3.09	0.40
75:RB:3338:U:H3'	75:RB:3339:U:H5''	2.03	0.40
1:aa:295:C:H2'	1:aa:296:A:C8	2.56	0.40
1:aa:487:A:H5'	1:aa:488:C:OP2	2.20	0.40
1:aa:1169:G:H2'	1:aa:1170:G:H8	1.86	0.40
1:aa:1454:G:C2	1:aa:1455:U:C2	3.10	0.40
1:aa:1682:U:H2'	1:aa:1683:G:C8	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:ca:26:LYS:O	3:ca:29:LEU:HD22	2.22	0.40
16:ra:51:LYS:HA	16:ra:59:PRO:HA	2.03	0.40
18:ta:62:THR:HA	18:ta:63:PRO:HD3	1.96	0.40
20:va:55:HIS:O	20:va:56:ARG:CB	2.69	0.40
24:za:82:SER:OG	24:za:91:VAL:HG11	2.21	0.40
29:fb:172:CYS:O	29:fb:175:VAL:HG12	2.21	0.40
35:CA:47:ALA:N	35:CA:69:LYS:O	2.54	0.40
37:EA:98:PHE:CD1	37:EA:104:PHE:HB3	2.57	0.40
55:WA:67:LYS:HG2	55:WA:87:ARG:HG2	2.04	0.40
57:YA:157:LYS:HE3	57:YA:157:LYS:HB3	1.85	0.40
62:DB:17:LEU:HD21	62:DB:236:TRP:HH2	1.85	0.40
64:FB:118:ASP:OD1	64:FB:119:ARG:N	2.54	0.40
71:MB:46:VAL:CG2	71:MB:79:PRO:HB3	2.51	0.40
72:NB:17:ARG:NH1	75:RB:1820:C:O2'	2.55	0.40
75:RB:1177:G:C4	75:RB:1178:C:C5	3.10	0.40
75:RB:2909:G:C6	75:RB:3126:A:C5	3.08	0.40
75:RB:2996:G:H2'	75:RB:2997:U:H6	1.83	0.40
76:SB:121:A:H62	76:SB:134:G:H8	1.70	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	
2	ba	111/137 (81%)	101 (91%)	10 (9%)	0	100	100
3	ca	174/225 (77%)	162 (93%)	12 (7%)	0	100	100
4	da	79/188 (42%)	68 (86%)	11 (14%)	0	100	100
5	ga	136/142 (96%)	130 (96%)	6 (4%)	0	100	100
6	ha	320/332 (96%)	257 (80%)	63 (20%)	0	100	100
7	ia	211/227 (93%)	195 (92%)	16 (8%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
8	ja	259/265 (98%)	240 (93%)	19 (7%)	0	100	100
9	ka	191/200 (96%)	177 (93%)	14 (7%)	0	100	100
10	la	138/149 (93%)	123 (89%)	15 (11%)	0	100	100
11	ma	101/127 (80%)	94 (93%)	7 (7%)	0	100	100
12	na	123/151 (82%)	114 (93%)	9 (7%)	0	100	100
13	oa	134/152 (88%)	124 (92%)	10 (8%)	0	100	100
14	pa	148/151 (98%)	145 (98%)	3 (2%)	0	100	100
15	qa	117/143 (82%)	105 (90%)	11 (9%)	1 (1%)	14	41
16	ra	133/155 (86%)	124 (93%)	9 (7%)	0	100	100
17	sa	98/154 (64%)	84 (86%)	14 (14%)	0	100	100
18	ta	75/108 (69%)	60 (80%)	15 (20%)	0	100	100
19	ua	62/86 (72%)	58 (94%)	4 (6%)	0	100	100
20	va	126/129 (98%)	116 (92%)	8 (6%)	2 (2%)	7	27
21	wa	37/56 (66%)	37 (100%)	0	0	100	100
22	xa	68/86 (79%)	60 (88%)	8 (12%)	0	100	100
23	ya	37/62 (60%)	32 (86%)	5 (14%)	0	100	100
24	za	200/308 (65%)	193 (96%)	7 (4%)	0	100	100
25	bb	209/263 (80%)	186 (89%)	23 (11%)	0	100	100
26	cb	74/82 (90%)	67 (90%)	7 (10%)	0	100	100
27	db	93/156 (60%)	91 (98%)	2 (2%)	0	100	100
28	eb	179/195 (92%)	166 (93%)	13 (7%)	0	100	100
29	fb	212/274 (77%)	201 (95%)	11 (5%)	0	100	100
30	gb	147/250 (59%)	135 (92%)	12 (8%)	0	100	100
31	hb	167/192 (87%)	144 (86%)	22 (13%)	1 (1%)	21	51
32	ib	143/159 (90%)	139 (97%)	4 (3%)	0	100	100
33	AA	227/258 (88%)	210 (92%)	17 (8%)	0	100	100
34	BA	154/164 (94%)	146 (95%)	8 (5%)	0	100	100
35	CA	134/137 (98%)	123 (92%)	11 (8%)	0	100	100
36	DA	249/261 (95%)	241 (97%)	8 (3%)	0	100	100
37	EA	162/180 (90%)	144 (89%)	18 (11%)	0	100	100
38	FA	183/189 (97%)	173 (94%)	10 (6%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
39	GA	127/140 (91%)	123 (97%)	4 (3%)	0	100	100
40	HA	201/204 (98%)	192 (96%)	9 (4%)	0	100	100
41	IA	142/145 (98%)	136 (96%)	6 (4%)	0	100	100
42	JA	184/187 (98%)	179 (97%)	5 (3%)	0	100	100
43	KA	269/301 (89%)	257 (96%)	12 (4%)	0	100	100
44	LA	168/213 (79%)	163 (97%)	5 (3%)	0	100	100
45	MA	153/170 (90%)	147 (96%)	6 (4%)	0	100	100
46	NA	114/152 (75%)	109 (96%)	5 (4%)	0	100	100
47	OA	59/162 (36%)	57 (97%)	2 (3%)	0	100	100
48	PA	128/157 (82%)	126 (98%)	2 (2%)	0	100	100
49	QA	140/147 (95%)	130 (93%)	10 (7%)	0	100	100
50	RA	96/112 (86%)	96 (100%)	0	0	100	100
51	SA	105/123 (85%)	102 (97%)	3 (3%)	0	100	100
52	TA	124/133 (93%)	122 (98%)	2 (2%)	0	100	100
53	UA	78/93 (84%)	72 (92%)	6 (8%)	0	100	100
54	VA	48/76 (63%)	48 (100%)	0	0	100	100
55	WA	96/105 (91%)	93 (97%)	3 (3%)	0	100	100
56	XA	130/135 (96%)	124 (95%)	6 (5%)	0	100	100
57	YA	175/178 (98%)	169 (97%)	6 (3%)	0	100	100
58	ZA	99/130 (76%)	82 (83%)	16 (16%)	1 (1%)	12	39
59	AB	98/112 (88%)	92 (94%)	6 (6%)	0	100	100
60	BB	117/124 (94%)	105 (90%)	12 (10%)	0	100	100
61	CB	232/244 (95%)	224 (97%)	7 (3%)	1 (0%)	30	59
62	DB	382/389 (98%)	372 (97%)	10 (3%)	0	100	100
63	EB	397/404 (98%)	379 (96%)	18 (4%)	0	100	100
64	FB	203/206 (98%)	196 (97%)	7 (3%)	0	100	100
65	GB	89/92 (97%)	85 (96%)	4 (4%)	0	100	100
66	HB	201/217 (93%)	191 (95%)	10 (5%)	0	100	100
67	IB	23/25 (92%)	23 (100%)	0	0	100	100
68	JB	49/129 (38%)	48 (98%)	1 (2%)	0	100	100
69	KB	203/208 (98%)	192 (95%)	8 (4%)	3 (2%)	8	28

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
70	LB	213/219 (97%)	189 (89%)	24 (11%)	0	100	100
71	MB	108/112 (96%)	106 (98%)	2 (2%)	0	100	100
72	NB	66/69 (96%)	61 (92%)	5 (8%)	0	100	100
73	OB	48/60 (80%)	47 (98%)	1 (2%)	0	100	100
74	PB	106/119 (89%)	102 (96%)	4 (4%)	0	100	100
79	bl	435/437 (100%)	384 (88%)	51 (12%)	0	100	100
All	All	11017/12722 (87%)	10288 (93%)	720 (6%)	9 (0%)	49	77

All (9) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
20	va	56	ARG
58	ZA	99	ARG
69	KB	4	HIS
69	KB	63	ARG
20	va	55	HIS
31	hb	66	PRO
61	CB	176	GLY
69	KB	5	ASN
15	qa	68	GLY

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	ba	99/116 (85%)	99 (100%)	0	100	100
3	ca	153/181 (84%)	153 (100%)	0	100	100
4	da	77/143 (54%)	77 (100%)	0	100	100
5	ga	109/113 (96%)	109 (100%)	0	100	100
6	ha	274/281 (98%)	274 (100%)	0	100	100
7	ia	180/192 (94%)	180 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
8	ja	222/224 (99%)	222 (100%)	0	100	100
9	ka	163/169 (96%)	163 (100%)	0	100	100
10	la	113/120 (94%)	113 (100%)	0	100	100
11	ma	97/115 (84%)	97 (100%)	0	100	100
12	na	98/121 (81%)	98 (100%)	0	100	100
13	oa	119/133 (90%)	119 (100%)	0	100	100
14	pa	129/130 (99%)	129 (100%)	0	100	100
15	qa	108/126 (86%)	108 (100%)	0	100	100
16	ra	112/124 (90%)	112 (100%)	0	100	100
17	sa	87/130 (67%)	87 (100%)	0	100	100
18	ta	69/92 (75%)	69 (100%)	0	100	100
19	ua	57/78 (73%)	57 (100%)	0	100	100
20	va	110/111 (99%)	110 (100%)	0	100	100
21	wa	34/47 (72%)	34 (100%)	0	100	100
22	xa	64/78 (82%)	64 (100%)	0	100	100
23	ya	32/49 (65%)	32 (100%)	0	100	100
24	za	172/233 (74%)	172 (100%)	0	100	100
25	bb	189/228 (83%)	189 (100%)	0	100	100
26	cb	63/68 (93%)	63 (100%)	0	100	100
27	db	82/113 (73%)	82 (100%)	0	100	100
28	eb	154/162 (95%)	154 (100%)	0	100	100
29	fb	181/219 (83%)	181 (100%)	0	100	100
30	gb	130/215 (60%)	129 (99%)	1 (1%)	73	90
31	hb	151/171 (88%)	151 (100%)	0	100	100
32	ib	126/132 (96%)	126 (100%)	0	100	100
33	AA	200/222 (90%)	200 (100%)	0	100	100
34	BA	135/141 (96%)	135 (100%)	0	100	100
35	CA	113/114 (99%)	113 (100%)	0	100	100
36	DA	193/199 (97%)	193 (100%)	0	100	100
37	EA	142/156 (91%)	142 (100%)	0	100	100
38	FA	159/163 (98%)	159 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
39	GA	103/109 (94%)	103 (100%)	0	100	100
40	HA	177/178 (99%)	177 (100%)	0	100	100
41	IA	113/114 (99%)	113 (100%)	0	100	100
42	JA	156/157 (99%)	156 (100%)	0	100	100
43	KA	227/252 (90%)	227 (100%)	0	100	100
44	LA	150/176 (85%)	150 (100%)	0	100	100
45	MA	132/144 (92%)	131 (99%)	1 (1%)	73	90
46	NA	104/128 (81%)	104 (100%)	0	100	100
47	OA	55/133 (41%)	55 (100%)	0	100	100
48	PA	115/130 (88%)	115 (100%)	0	100	100
49	QA	127/132 (96%)	127 (100%)	0	100	100
50	RA	86/98 (88%)	86 (100%)	0	100	100
51	SA	94/108 (87%)	94 (100%)	0	100	100
52	TA	114/121 (94%)	114 (100%)	0	100	100
53	UA	69/77 (90%)	69 (100%)	0	100	100
54	VA	47/73 (64%)	47 (100%)	0	100	100
55	WA	87/93 (94%)	87 (100%)	0	100	100
56	XA	114/115 (99%)	114 (100%)	0	100	100
57	YA	162/163 (99%)	162 (100%)	0	100	100
58	ZA	89/106 (84%)	89 (100%)	0	100	100
59	AB	86/92 (94%)	86 (100%)	0	100	100
60	BB	105/109 (96%)	105 (100%)	0	100	100
61	CB	199/205 (97%)	199 (100%)	0	100	100
62	DB	332/336 (99%)	332 (100%)	0	100	100
63	EB	317/321 (99%)	317 (100%)	0	100	100
64	FB	172/173 (99%)	172 (100%)	0	100	100
65	GB	72/73 (99%)	72 (100%)	0	100	100
66	HB	170/178 (96%)	170 (100%)	0	100	100
67	IB	24/24 (100%)	24 (100%)	0	100	100
68	JB	46/115 (40%)	46 (100%)	0	100	100
69	KB	175/178 (98%)	175 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
70	LB	182/185 (98%)	182 (100%)	0	100	100
71	MB	91/93 (98%)	91 (100%)	0	100	100
72	NB	62/63 (98%)	62 (100%)	0	100	100
73	OB	44/51 (86%)	44 (100%)	0	100	100
74	PB	96/107 (90%)	96 (100%)	0	100	100
79	bl	378/378 (100%)	378 (100%)	0	100	100
All	All	9568/10697 (89%)	9566 (100%)	2 (0%)	100	100

All (2) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
30	gb	13	GLN
45	MA	121	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (72) such sidechains are listed below:

Mol	Chain	Res	Type
2	ba	118	ASN
3	ca	32	GLN
3	ca	53	ASN
4	da	39	ASN
4	da	47	GLN
5	ga	19	ASN
6	ha	162	HIS
6	ha	174	ASN
7	ia	101	GLN
7	ia	211	HIS
9	ka	24	GLN
14	pa	45	GLN
14	pa	49	GLN
16	ra	25	HIS
16	ra	115	ASN
17	sa	88	HIS
20	va	55	HIS
20	va	78	GLN
20	va	129	HIS
23	ya	29	GLN
23	ya	39	GLN
24	za	14	GLN

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Mol	Chain	Res	Type
24	za	28	HIS
24	za	145	ASN
24	za	188	GLN
25	bb	52	GLN
25	bb	92	GLN
25	bb	149	GLN
28	eb	3	HIS
28	eb	112	GLN
28	eb	135	HIS
29	fb	76	HIS
29	fb	156	ASN
30	gb	13	GLN
30	gb	112	ASN
31	hb	112	GLN
31	hb	123	HIS
32	ib	99	GLN
33	AA	219	ASN
34	BA	39	HIS
34	BA	66	ASN
36	DA	218	HIS
37	EA	80	GLN
38	FA	165	HIS
40	HA	149	ASN
41	IA	39	HIS
41	IA	74	ASN
42	JA	89	GLN
42	JA	134	ASN
45	MA	42	ASN
45	MA	81	GLN
45	MA	138	ASN
47	OA	61	HIS
49	QA	105	GLN
51	SA	29	HIS
52	TA	99	HIS
53	UA	13	ASN
57	YA	64	ASN
58	ZA	96	HIS
62	DB	37	GLN
62	DB	147	GLN
62	DB	185	GLN
66	HB	92	HIS
66	HB	144	ASN

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Mol	Chain	Res	Type
68	JB	83	GLN
69	KB	32	GLN
69	KB	61	GLN
74	PB	3	GLN
74	PB	75	ASN
79	bl	79	GLN
79	bl	90	ASN
79	bl	326	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	aa	1690/1810 (93%)	466 (27%)	0
75	RB	3143/3386 (92%)	684 (21%)	49 (1%)
76	SB	159/160 (99%)	29 (18%)	2 (1%)
77	TB	119/120 (99%)	18 (15%)	2 (1%)
78	al	6/7 (85%)	2 (33%)	0
80	cl	74/75 (98%)	31 (41%)	0
81	dl	2/3 (66%)	1 (50%)	0
All	All	5193/5561 (93%)	1231 (23%)	53 (1%)

All (1231) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	aa	17	C
1	aa	25	C
1	aa	26	A
1	aa	27	U
1	aa	34	G
1	aa	40	A
1	aa	42	G
1	aa	45	U
1	aa	46	A
1	aa	47	A
1	aa	50	C
1	aa	59	G
1	aa	61	A
1	aa	62	A
1	aa	63	G
1	aa	66	U
1	aa	67	G

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Mol	Chain	Res	Type
1	aa	68	A
1	aa	72	A
1	aa	73	A
1	aa	74	U
1	aa	75	U
1	aa	76	U
1	aa	77	G
1	aa	78	A
1	aa	79	A
1	aa	80	C
1	aa	81	U
1	aa	82	G
1	aa	84	G
1	aa	94	A
1	aa	104	A
1	aa	105	A
1	aa	106	A
1	aa	115	A
1	aa	116	G
1	aa	117	U
1	aa	128	G
1	aa	130	A
1	aa	131	C
1	aa	132	G
1	aa	133	U
1	aa	134	G
1	aa	135	C
1	aa	136	U
1	aa	137	A
1	aa	138	C
1	aa	139	U
1	aa	140	C
1	aa	141	G
1	aa	143	A
1	aa	144	U
1	aa	145	A
1	aa	151	A
1	aa	156	U
1	aa	158	C
1	aa	164	C
1	aa	175	A
1	aa	176	A

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Mol	Chain	Res	Type
1	aa	177	C
1	aa	179	A
1	aa	180	A
1	aa	189	U
1	aa	190	C
1	aa	191	U
1	aa	192	G
1	aa	193	G
1	aa	195	A
1	aa	198	G
1	aa	200	C
1	aa	201	G
1	aa	212	A
1	aa	244	C
1	aa	245	C
1	aa	246	G
1	aa	252	U
1	aa	253	C
1	aa	260	A
1	aa	263	C
1	aa	264	G
1	aa	265	A
1	aa	273	C
1	aa	274	A
1	aa	275	C
1	aa	276	G
1	aa	277	G
1	aa	280	U
1	aa	281	U
1	aa	282	C
1	aa	283	G
1	aa	284	U
1	aa	285	G
1	aa	287	C
1	aa	288	G
1	aa	291	G
1	aa	304	A
1	aa	320	A
1	aa	325	C
1	aa	326	G
1	aa	333	G
1	aa	337	A

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Mol	Chain	Res	Type
1	aa	341	G
1	aa	342	C
1	aa	355	U
1	aa	356	G
1	aa	365	C
1	aa	373	U
1	aa	374	A
1	aa	384	U
1	aa	394	G
1	aa	401	A
1	aa	403	A
1	aa	404	A
1	aa	405	A
1	aa	406	C
1	aa	407	G
1	aa	408	G
1	aa	420	A
1	aa	421	A
1	aa	422	G
1	aa	426	G
1	aa	427	G
1	aa	428	C
1	aa	429	A
1	aa	430	G
1	aa	431	C
1	aa	438	G
1	aa	443	U
1	aa	444	U
1	aa	448	C
1	aa	463	G
1	aa	464	A
1	aa	473	C
1	aa	477	A
1	aa	481	A
1	aa	485	A
1	aa	487	A
1	aa	488	C
1	aa	489	C
1	aa	490	G
1	aa	494	G
1	aa	496	A
1	aa	497	U

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Mol	Chain	Res	Type
1	aa	498	U
1	aa	499	A
1	aa	500	G
1	aa	501	U
1	aa	502	G
1	aa	503	U
1	aa	504	C
1	aa	505	U
1	aa	506	G
1	aa	507	G
1	aa	508	U
1	aa	509	A
1	aa	510	A
1	aa	511	U
1	aa	512	U
1	aa	514	G
1	aa	515	A
1	aa	518	G
1	aa	519	A
1	aa	523	C
1	aa	527	C
1	aa	531	A
1	aa	538	A
1	aa	544	G
1	aa	545	A
1	aa	546	U
1	aa	552	G
1	aa	553	G
1	aa	559	A
1	aa	560	A
1	aa	561	G
1	aa	562	U
1	aa	563	C
1	aa	565	G
1	aa	569	C
1	aa	570	C
1	aa	572	G
1	aa	584	A
1	aa	586	U
1	aa	587	C
1	aa	598	A
1	aa	599	G

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Mol	Chain	Res	Type
1	aa	610	A
1	aa	615	U
1	aa	619	A
1	aa	623	A
1	aa	624	A
1	aa	626	A
1	aa	627	A
1	aa	628	G
1	aa	638	G
1	aa	642	C
1	aa	643	U
1	aa	644	U
1	aa	646	G
1	aa	648	C
1	aa	650	G
1	aa	651	G
1	aa	706	U
1	aa	707	C
1	aa	708	G
1	aa	709	C
1	aa	712	U
1	aa	714	C
1	aa	715	U
1	aa	716	A
1	aa	717	G
1	aa	718	C
1	aa	744	G
1	aa	745	C
1	aa	746	A
1	aa	747	U
1	aa	749	G
1	aa	759	A
1	aa	760	G
1	aa	761	A
1	aa	762	A
1	aa	772	C
1	aa	777	A
1	aa	780	A
1	aa	781	A
1	aa	784	C
1	aa	785	A
1	aa	786	U

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Mol	Chain	Res	Type
1	aa	787	C
1	aa	788	G
1	aa	789	C
1	aa	790	U
1	aa	792	U
1	aa	795	A
1	aa	800	U
1	aa	817	C
1	aa	818	A
1	aa	820	A
1	aa	821	G
1	aa	825	U
1	aa	828	G
1	aa	829	G
1	aa	831	C
1	aa	835	U
1	aa	836	U
1	aa	837	G
1	aa	840	U
1	aa	842	G
1	aa	844	C
1	aa	846	U
1	aa	848	C
1	aa	849	G
1	aa	851	G
1	aa	855	G
1	aa	857	A
1	aa	859	U
1	aa	860	A
1	aa	861	A
1	aa	864	A
1	aa	865	U
1	aa	868	A
1	aa	881	G
1	aa	882	G
1	aa	889	C
1	aa	890	G
1	aa	891	U
1	aa	903	A
1	aa	908	U
1	aa	911	A
1	aa	918	G

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Mol	Chain	Res	Type
1	aa	919	G
1	aa	920	A
1	aa	926	G
1	aa	931	A
1	aa	938	A
1	aa	940	U
1	aa	947	G
1	aa	965	U
1	aa	971	A
1	aa	988	G
1	aa	989	G
1	aa	997	A
1	aa	1009	U
1	aa	1010	A
1	aa	1016	C
1	aa	1031	A
1	aa	1033	C
1	aa	1037	G
1	aa	1044	A
1	aa	1045	G
1	aa	1057	U
1	aa	1058	G
1	aa	1059	U
1	aa	1061	G
1	aa	1062	C
1	aa	1063	U
1	aa	1065	A
1	aa	1066	U
1	aa	1081	A
1	aa	1086	A
1	aa	1087	U
1	aa	1096	A
1	aa	1098	A
1	aa	1101	C
1	aa	1102	U
1	aa	1103	U
1	aa	1105	G
1	aa	1143	A
1	aa	1151	G
1	aa	1155	G
1	aa	1156	A
1	aa	1159	G

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Mol	Chain	Res	Type
1	aa	1162	A
1	aa	1163	C
1	aa	1165	A
1	aa	1172	G
1	aa	1188	A
1	aa	1189	U
1	aa	1190	U
1	aa	1191	U
1	aa	1198	A
1	aa	1200	A
1	aa	1203	G
1	aa	1204	G
1	aa	1206	A
1	aa	1208	A
1	aa	1209	C
1	aa	1221	A
1	aa	1222	G
1	aa	1224	C
1	aa	1232	G
1	aa	1233	G
1	aa	1234	A
1	aa	1245	G
1	aa	1248	A
1	aa	1249	G
1	aa	1250	C
1	aa	1261	U
1	aa	1262	U
1	aa	1277	G
1	aa	1290	U
1	aa	1305	U
1	aa	1311	U
1	aa	1315	U
1	aa	1318	U
1	aa	1319	U
1	aa	1322	G
1	aa	1325	A
1	aa	1331	C
1	aa	1344	U
1	aa	1345	G
1	aa	1348	A
1	aa	1349	A
1	aa	1350	C

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Mol	Chain	Res	Type
1	aa	1351	U
1	aa	1354	C
1	aa	1358	G
1	aa	1359	C
1	aa	1360	G
1	aa	1361	G
1	aa	1362	A
1	aa	1363	G
1	aa	1364	C
1	aa	1365	C
1	aa	1366	A
1	aa	1367	U
1	aa	1368	C
1	aa	1369	C
1	aa	1373	C
1	aa	1376	A
1	aa	1377	G
1	aa	1378	C
1	aa	1379	U
1	aa	1381	G
1	aa	1382	C
1	aa	1386	U
1	aa	1391	G
1	aa	1396	U
1	aa	1404	U
1	aa	1405	U
1	aa	1419	U
1	aa	1420	U
1	aa	1421	U
1	aa	1431	A
1	aa	1433	A
1	aa	1434	G
1	aa	1437	C
1	aa	1439	G
1	aa	1442	A
1	aa	1452	A
1	aa	1464	G
1	aa	1465	C
1	aa	1466	A
1	aa	1467	C
1	aa	1477	A
1	aa	1488	C

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Mol	Chain	Res	Type
1	aa	1495	U
1	aa	1496	A
1	aa	1497	U
1	aa	1498	A
1	aa	1499	U
1	aa	1500	A
1	aa	1501	G
1	aa	1504	U
1	aa	1514	G
1	aa	1515	G
1	aa	1519	G
1	aa	1522	U
1	aa	1523	A
1	aa	1524	A
1	aa	1529	G
1	aa	1530	G
1	aa	1531	G
1	aa	1532	A
1	aa	1538	C
1	aa	1541	C
1	aa	1544	G
1	aa	1545	A
1	aa	1547	G
1	aa	1556	U
1	aa	1562	C
1	aa	1565	U
1	aa	1566	U
1	aa	1567	G
1	aa	1577	A
1	aa	1582	G
1	aa	1583	G
1	aa	1591	A
1	aa	1592	G
1	aa	1609	G
1	aa	1615	G
1	aa	1627	C
1	aa	1630	G
1	aa	1639	A
1	aa	1643	A
1	aa	1665	U
1	aa	1666	G
1	aa	1691	C

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Mol	Chain	Res	Type
1	aa	1692	G
1	aa	1693	C
1	aa	1694	G
1	aa	1695	G
1	aa	1696	C
1	aa	1697	G
1	aa	1698	A
1	aa	1699	C
1	aa	1722	C
1	aa	1725	C
1	aa	1726	G
1	aa	1727	C
1	aa	1760	A
1	aa	1767	G
1	aa	1770	G
1	aa	1771	U
1	aa	1772	A
1	aa	1776	A
1	aa	1779	U
1	aa	1783	C
1	aa	1790	G
1	aa	1802	G
1	aa	1803	G
1	aa	1804	A
1	aa	1805	U
1	aa	1806	C
1	aa	1808	U
1	aa	1809	U
1	aa	1810	G
75	RB	2	C
75	RB	3	G
75	RB	4	C
75	RB	10	C
75	RB	13	G
75	RB	20	G
75	RB	21	G
75	RB	25	U
75	RB	39	A
75	RB	42	A
75	RB	44	A
75	RB	48	A
75	RB	54	G

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Mol	Chain	Res	Type
75	RB	59	A
75	RB	65	A
75	RB	68	U
75	RB	70	A
75	RB	88	A
75	RB	91	G
75	RB	108	A
75	RB	109	G
75	RB	112	C
75	RB	115	C
75	RB	117	U
75	RB	119	A
75	RB	120	G
75	RB	121	A
75	RB	133	G
75	RB	134	U
75	RB	135	G
75	RB	147	G
75	RB	155	G
75	RB	156	A
75	RB	159	G
75	RB	163	U
75	RB	164	C
75	RB	165	C
75	RB	167	C
75	RB	171	G
75	RB	174	G
75	RB	175	G
75	RB	177	C
75	RB	185	A
75	RB	188	U
75	RB	208	G
75	RB	209	G
75	RB	216	G
75	RB	217	A
75	RB	219	A
75	RB	220	G
75	RB	229	G
75	RB	237	C
75	RB	238	C
75	RB	241	G
75	RB	242	U

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Mol	Chain	Res	Type
75	RB	243	C
75	RB	247	C
75	RB	250	C
75	RB	267	G
75	RB	268	U
75	RB	284	U
75	RB	293	A
75	RB	296	C
75	RB	297	G
75	RB	303	U
75	RB	321	A
75	RB	324	U
75	RB	327	A
75	RB	333	G
75	RB	335	G
75	RB	347	A
75	RB	349	A
75	RB	350	A
75	RB	359	A
75	RB	374	G
75	RB	395	A
75	RB	396	G
75	RB	397	A
75	RB	399	U
75	RB	417	G
75	RB	419	G
75	RB	420	A
75	RB	424	G
75	RB	425	G
75	RB	426	A
75	RB	428	G
75	RB	434	C
75	RB	435	G
75	RB	436	G
75	RB	437	C
75	RB	440	U
75	RB	441	G
75	RB	442	C
75	RB	443	G
75	RB	444	C
75	RB	445	C
75	RB	446	C

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Mol	Chain	Res	Type
75	RB	448	G
75	RB	449	G
75	RB	450	C
75	RB	488	U
75	RB	490	G
75	RB	492	G
75	RB	495	G
75	RB	497	G
75	RB	499	A
75	RB	500	C
75	RB	507	C
75	RB	508	G
75	RB	523	C
75	RB	524	A
75	RB	534	G
75	RB	535	G
75	RB	536	C
75	RB	539	C
75	RB	540	G
75	RB	543	C
75	RB	551	A
75	RB	552	G
75	RB	554	C
75	RB	555	G
75	RB	564	A
75	RB	573	A
75	RB	574	C
75	RB	575	C
75	RB	586	A
75	RB	588	G
75	RB	591	G
75	RB	597	C
75	RB	599	C
75	RB	601	G
75	RB	606	C
75	RB	607	U
75	RB	608	G
75	RB	610	G
75	RB	613	G
75	RB	614	C
75	RB	617	C
75	RB	622	U

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Mol	Chain	Res	Type
75	RB	624	C
75	RB	625	G
75	RB	628	C
75	RB	629	U
75	RB	630	C
75	RB	640	C
75	RB	653	A
75	RB	664	A
75	RB	681	A
75	RB	686	A
75	RB	691	U
75	RB	694	U
75	RB	695	G
75	RB	696	A
75	RB	704	G
75	RB	706	U
75	RB	711	A
75	RB	714	G
75	RB	718	C
75	RB	721	A
75	RB	722	C
75	RB	723	G
75	RB	740	G
75	RB	753	G
75	RB	763	G
75	RB	768	U
75	RB	770	U
75	RB	777	G
75	RB	780	U
75	RB	783	A
75	RB	784	G
75	RB	787	G
75	RB	788	G
75	RB	789	A
75	RB	802	G
75	RB	809	A
75	RB	820	A
75	RB	833	G
75	RB	852	C
75	RB	864	C
75	RB	867	G
75	RB	872	G

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Mol	Chain	Res	Type
75	RB	877	U
75	RB	882	U
75	RB	899	A
75	RB	910	G
75	RB	911	G
75	RB	917	A
75	RB	919	G
75	RB	920	A
75	RB	924	A
75	RB	926	C
75	RB	927	G
75	RB	928	A
75	RB	940	G
75	RB	947	C
75	RB	962	C
75	RB	963	U
75	RB	968	A
75	RB	977	G
75	RB	980	C
75	RB	982	U
75	RB	983	U
75	RB	984	A
75	RB	986	G
75	RB	988	G
75	RB	990	U
75	RB	999	U
75	RB	1005	C
75	RB	1006	A
75	RB	1014	G
75	RB	1019	A
75	RB	1020	U
75	RB	1021	U
75	RB	1022	G
75	RB	1024	G
75	RB	1026	A
75	RB	1028	G
75	RB	1029	C
75	RB	1030	A
75	RB	1032	C
75	RB	1033	G
75	RB	1034	U
75	RB	1035	C

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Mol	Chain	Res	Type
75	RB	1038	C
75	RB	1039	G
75	RB	1040	A
75	RB	1041	C
75	RB	1045	U
75	RB	1049	C
75	RB	1051	A
75	RB	1053	C
75	RB	1068	A
75	RB	1069	U
75	RB	1070	G
75	RB	1076	G
75	RB	1079	G
75	RB	1085	G
75	RB	1087	G
75	RB	1095	C
75	RB	1096	C
75	RB	1099	G
75	RB	1100	G
75	RB	1101	A
75	RB	1106	G
75	RB	1108	U
75	RB	1109	G
75	RB	1120	G
75	RB	1134	G
75	RB	1143	G
75	RB	1147	U
75	RB	1157	A
75	RB	1162	A
75	RB	1183	C
75	RB	1184	U
75	RB	1185	G
75	RB	1187	G
75	RB	1188	C
75	RB	1194	C
75	RB	1195	C
75	RB	1196	U
75	RB	1197	A
75	RB	1201	C
75	RB	1205	C
75	RB	1206	A
75	RB	1213	G

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Mol	Chain	Res	Type
75	RB	1220	G
75	RB	1224	A
75	RB	1225	A
75	RB	1226	G
75	RB	1227	A
75	RB	1231	C
75	RB	1234	G
75	RB	1235	A
75	RB	1236	C
75	RB	1237	G
75	RB	1239	U
75	RB	1241	G
75	RB	1242	U
75	RB	1243	C
75	RB	1244	A
75	RB	1246	G
75	RB	1249	A
75	RB	1250	G
75	RB	1251	U
75	RB	1252	C
75	RB	1253	G
75	RB	1254	A
75	RB	1257	U
75	RB	1258	C
75	RB	1259	C
75	RB	1260	G
75	RB	1262	U
75	RB	1267	A
75	RB	1268	G
75	RB	1269	U
75	RB	1270	G
75	RB	1271	U
75	RB	1272	G
75	RB	1274	A
75	RB	1275	A
75	RB	1277	A
75	RB	1278	A
75	RB	1281	C
75	RB	1282	A
75	RB	1283	C
75	RB	1284	C
75	RB	1286	G

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Mol	Chain	Res	Type
75	RB	1289	G
75	RB	1290	A
75	RB	1291	A
75	RB	1299	G
75	RB	1309	U
75	RB	1311	G
75	RB	1312	A
75	RB	1313	U
75	RB	1317	G
75	RB	1320	G
75	RB	1321	A
75	RB	1330	A
75	RB	1333	C
75	RB	1334	A
75	RB	1352	G
75	RB	1353	A
75	RB	1354	G
75	RB	1355	U
75	RB	1356	G
75	RB	1357	C
75	RB	1358	C
75	RB	1359	A
75	RB	1360	U
75	RB	1402	G
75	RB	1422	G
75	RB	1437	G
75	RB	1440	C
75	RB	1446	G
75	RB	1449	A
75	RB	1455	A
75	RB	1458	U
75	RB	1471	A
75	RB	1472	C
75	RB	1484	A
75	RB	1485	A
75	RB	1486	G
75	RB	1511	C
75	RB	1515	U
75	RB	1536	U
75	RB	1542	A
75	RB	1546	G
75	RB	1549	A

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Mol	Chain	Res	Type
75	RB	1550	A
75	RB	1552	C
75	RB	1555	G
75	RB	1557	C
75	RB	1559	G
75	RB	1561	U
75	RB	1562	A
75	RB	1563	G
75	RB	1564	C
75	RB	1568	A
75	RB	1569	U
75	RB	1570	C
75	RB	1571	A
75	RB	1572	C
75	RB	1577	A
75	RB	1578	U
75	RB	1579	C
75	RB	1584	A
75	RB	1585	A
75	RB	1586	A
75	RB	1590	A
75	RB	1602	A
75	RB	1604	U
75	RB	1617	A
75	RB	1626	U
75	RB	1627	U
75	RB	1636	C
75	RB	1639	U
75	RB	1640	A
75	RB	1642	G
75	RB	1644	A
75	RB	1654	C
75	RB	1659	G
75	RB	1673	A
75	RB	1680	A
75	RB	1682	C
75	RB	1697	G
75	RB	1715	C
75	RB	1716	G
75	RB	1722	G
75	RB	1723	C
75	RB	1728	G

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Mol	Chain	Res	Type
75	RB	1748	A
75	RB	1749	G
75	RB	1756	C
75	RB	1759	C
75	RB	1760	G
75	RB	1761	C
75	RB	1762	G
75	RB	1776	G
75	RB	1783	G
75	RB	1792	G
75	RB	1793	A
75	RB	1811	U
75	RB	1812	A
75	RB	1813	C
75	RB	1814	C
75	RB	1815	G
75	RB	1816	U
75	RB	1817	U
75	RB	1835	A
75	RB	1838	A
75	RB	1845	C
75	RB	1846	A
75	RB	1862	C
75	RB	1863	A
75	RB	1874	A
75	RB	1875	A
75	RB	1876	U
75	RB	1886	U
75	RB	1902	G
75	RB	2089	A
75	RB	2098	A
75	RB	2101	A
75	RB	2106	U
75	RB	2108	C
75	RB	2115	G
75	RB	2116	G
75	RB	2125	A
75	RB	2134	U
75	RB	2136	A
75	RB	2138	A
75	RB	2152	A
75	RB	2153	U

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Mol	Chain	Res	Type
75	RB	2161	G
75	RB	2163	G
75	RB	2199	G
75	RB	2200	A
75	RB	2203	G
75	RB	2206	A
75	RB	2216	A
75	RB	2218	U
75	RB	2237	A
75	RB	2242	G
75	RB	2243	G
75	RB	2246	G
75	RB	2249	A
75	RB	2265	G
75	RB	2266	G
75	RB	2275	U
75	RB	2277	C
75	RB	2279	U
75	RB	2299	C
75	RB	2300	G
75	RB	2303	U
75	RB	2306	A
75	RB	2307	U
75	RB	2308	G
75	RB	2327	U
75	RB	2328	G
75	RB	2329	U
75	RB	2365	A
75	RB	2366	A
75	RB	2367	C
75	RB	2368	G
75	RB	2386	G
75	RB	2390	A
75	RB	2395	A
75	RB	2396	G
75	RB	2397	A
75	RB	2404	U
75	RB	2405	G
75	RB	2412	A
75	RB	2427	U
75	RB	2428	G
75	RB	2430	G

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Mol	Chain	Res	Type
75	RB	2431	A
75	RB	2434	U
75	RB	2435	G
75	RB	2436	A
75	RB	2505	U
75	RB	2507	U
75	RB	2511	U
75	RB	2512	A
75	RB	2520	G
75	RB	2527	A
75	RB	2528	G
75	RB	2529	C
75	RB	2530	G
75	RB	2531	G
75	RB	2532	G
75	RB	2533	G
75	RB	2534	C
75	RB	2535	A
75	RB	2536	U
75	RB	2537	G
75	RB	2538	C
75	RB	2539	C
75	RB	2540	C
75	RB	2541	C
75	RB	2543	C
75	RB	2545	U
75	RB	2547	U
75	RB	2548	U
75	RB	2549	G
75	RB	2550	G
75	RB	2551	C
75	RB	2563	G
75	RB	2565	C
75	RB	2566	U
75	RB	2567	U
75	RB	2568	A
75	RB	2569	C
75	RB	2571	G
75	RB	2572	G
75	RB	2578	U
75	RB	2579	C
75	RB	2582	G

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Mol	Chain	Res	Type
75	RB	2590	A
75	RB	2591	C
75	RB	2592	A
75	RB	2603	G
75	RB	2604	G
75	RB	2611	G
75	RB	2618	G
75	RB	2623	C
75	RB	2634	A
75	RB	2635	A
75	RB	2648	G
75	RB	2649	U
75	RB	2653	A
75	RB	2654	A
75	RB	2671	A
75	RB	2674	G
75	RB	2676	A
75	RB	2677	A
75	RB	2686	G
75	RB	2688	A
75	RB	2691	A
75	RB	2693	A
75	RB	2700	A
75	RB	2711	G
75	RB	2725	G
75	RB	2749	U
75	RB	2750	G
75	RB	2752	C
75	RB	2759	A
75	RB	2769	U
75	RB	2774	G
75	RB	2775	G
75	RB	2793	G
75	RB	2797	G
75	RB	2798	A
75	RB	2799	A
75	RB	2807	C
75	RB	2811	G
75	RB	2814	A
75	RB	2815	U
75	RB	2839	U
75	RB	2840	U

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Mol	Chain	Res	Type
75	RB	2841	C
75	RB	2842	A
75	RB	2844	A
75	RB	2846	C
75	RB	2853	G
75	RB	2868	G
75	RB	2869	A
75	RB	2872	U
75	RB	2884	A
75	RB	2896	C
75	RB	2897	A
75	RB	2908	A
75	RB	2920	U
75	RB	2932	U
75	RB	2933	A
75	RB	2939	C
75	RB	2944	G
75	RB	2963	G
75	RB	2968	A
75	RB	2969	G
75	RB	2980	C
75	RB	2987	G
75	RB	2993	A
75	RB	2994	G
75	RB	3007	A
75	RB	3008	A
75	RB	3017	A
75	RB	3051	C
75	RB	3054	C
75	RB	3055	G
75	RB	3070	G
75	RB	3074	G
75	RB	3075	U
75	RB	3082	A
75	RB	3088	C
75	RB	3095	C
75	RB	3097	G
75	RB	3100	U
75	RB	3111	C
75	RB	3118	A
75	RB	3126	A
75	RB	3127	U

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Mol	Chain	Res	Type
75	RB	3137	C
75	RB	3138	A
75	RB	3139	U
75	RB	3144	C
75	RB	3147	C
75	RB	3149	G
75	RB	3150	C
75	RB	3158	G
75	RB	3159	C
75	RB	3160	C
75	RB	3164	C
75	RB	3167	G
75	RB	3168	A
75	RB	3172	A
75	RB	3176	U
75	RB	3178	G
75	RB	3184	C
75	RB	3185	U
75	RB	3186	U
75	RB	3187	G
75	RB	3189	G
75	RB	3190	C
75	RB	3193	C
75	RB	3194	C
75	RB	3195	A
75	RB	3196	A
75	RB	3197	G
75	RB	3201	C
75	RB	3202	C
75	RB	3203	G
75	RB	3204	U
75	RB	3205	G
75	RB	3209	U
75	RB	3215	A
75	RB	3216	A
75	RB	3230	A
75	RB	3231	A
75	RB	3232	G
75	RB	3233	U
75	RB	3234	G
75	RB	3237	G
75	RB	3239	G

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Mol	Chain	Res	Type
75	RB	3240	G
75	RB	3241	U
75	RB	3243	G
75	RB	3248	C
75	RB	3256	C
75	RB	3257	U
75	RB	3258	C
75	RB	3263	C
75	RB	3265	C
75	RB	3267	A
75	RB	3268	C
75	RB	3274	G
75	RB	3275	U
75	RB	3276	G
75	RB	3284	U
75	RB	3290	G
75	RB	3291	C
75	RB	3302	A
75	RB	3303	A
75	RB	3304	U
75	RB	3305	A
75	RB	3306	C
75	RB	3307	G
75	RB	3329	A
75	RB	3332	G
75	RB	3338	U
75	RB	3339	U
75	RB	3340	G
75	RB	3356	G
75	RB	3365	U
75	RB	3370	G
75	RB	3371	G
75	RB	3372	G
75	RB	3374	C
75	RB	3375	G
75	RB	3377	A
75	RB	3378	C
75	RB	3379	G
75	RB	3380	G
75	RB	3381	A
75	RB	3386	U
76	SB	23	C

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Mol	Chain	Res	Type
76	SB	34	U
76	SB	35	C
76	SB	59	A
76	SB	62	C
76	SB	63	C
76	SB	73	U
76	SB	80	A
76	SB	81	U
76	SB	84	C
76	SB	86	U
76	SB	87	G
76	SB	90	C
76	SB	95	G
76	SB	104	A
76	SB	106	C
76	SB	107	G
76	SB	111	G
76	SB	112	U
76	SB	121	A
76	SB	122	G
76	SB	127	U
76	SB	128	C
76	SB	129	C
76	SB	130	G
76	SB	131	G
76	SB	132	C
76	SB	134	G
76	SB	153	C
77	TB	7	G
77	TB	18	C
77	TB	33	U
77	TB	37	G
77	TB	38	U
77	TB	42	A
77	TB	48	G
77	TB	49	A
77	TB	50	A
77	TB	52	U
77	TB	53	U
77	TB	54	A
77	TB	64	G
77	TB	72	G

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Mol	Chain	Res	Type
77	TB	100	A
77	TB	110	G
77	TB	119	C
77	TB	120	C
78	al	4	U
78	al	7	A
80	cl	2	U
80	cl	4	A
80	cl	5	G
80	cl	10	2MG
80	cl	14	A
80	cl	15	G
80	cl	16	C
80	cl	18	G
80	cl	19	G
80	cl	20	A
80	cl	22	G
80	cl	23	C
80	cl	42	A
80	cl	45	G
80	cl	46	G7M
80	cl	47	H2U
80	cl	48	5MC
80	cl	49	5MC
80	cl	50	C
80	cl	53	G
80	cl	56	C
80	cl	57	G
80	cl	59	A
80	cl	61	C
80	cl	62	C
80	cl	64	G
80	cl	66	C
80	cl	68	C
80	cl	72	U
80	cl	74	C
80	cl	76	A
81	dl	76	A

All (53) RNA pucker outliers are listed below:

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Mol	Chain	Res	Type
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Mol	Chain	Res	Type
75	RB	12	G
75	RB	427	U
75	RB	449	G
75	RB	538	C
75	RB	550	C
75	RB	563	C
75	RB	574	C
75	RB	607	U
75	RB	621	C
75	RB	690	G
75	RB	693	C
75	RB	695	G
75	RB	703	G
75	RB	919	G
75	RB	985	C
75	RB	1068	A
75	RB	1100	G
75	RB	1194	C
75	RB	1200	A
75	RB	1250	G
75	RB	1268	G
75	RB	1311	G
75	RB	1359	A
75	RB	1485	A
75	RB	1545	G
75	RB	1549	A
75	RB	1759	C
75	RB	1815	G
75	RB	1861	A
75	RB	2100	A
75	RB	2152	A
75	RB	2299	C
75	RB	2535	A
75	RB	2536	U
75	RB	2538	C
75	RB	2539	C
75	RB	2617	G
75	RB	2815	U
75	RB	2962	U
75	RB	2993	A
75	RB	3117	U

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Mol	Chain	Res	Type
75	RB	3194	C
75	RB	3204	U
75	RB	3238	C
75	RB	3328	C
75	RB	3369	C
75	RB	3370	G
75	RB	3371	G
75	RB	3376	C
76	SB	72	A
76	SB	129	C
77	TB	51	G
77	TB	71	A

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

11 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$
80	2MG	cl	26	80	23,26,27	2.81	9 (39%)	33,38,41	2.31	11 (33%)
80	G7M	cl	46	80	23,26,27	2.85	8 (34%)	34,39,42	1.88	9 (26%)
80	5MC	cl	48	80	19,22,23	3.93	9 (47%)	26,32,35	1.18	2 (7%)
80	1MG	cl	9	80	23,26,27	2.87	8 (34%)	33,39,42	1.68	6 (18%)
80	PSU	cl	28	80	18,21,22	1.09	2 (11%)	21,30,33	2.01	5 (23%)
80	H2U	cl	47	80	18,21,22	3.18	5 (27%)	19,30,33	1.43	4 (21%)
80	PSU	cl	55	80	18,21,22	1.14	1 (5%)	21,30,33	1.92	5 (23%)
80	1MA	cl	58	80	21,25,26	2.94	5 (23%)	30,37,40	2.38	8 (26%)
80	MIA	cl	37	80,82	28,31,32	2.58	5 (17%)	38,44,47	5.24	17 (44%)
80	5MC	cl	49	80	19,22,23	3.97	9 (47%)	26,32,35	1.03	1 (3%)
80	2MG	cl	10	80	23,26,27	2.92	8 (34%)	33,38,41	2.31	10 (30%)

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
80	2MG	cl	26	80	-	0/9/27/28	0/3/3/3
80	G7M	cl	46	80	-	1/7/25/26	0/3/3/3
80	5MC	cl	48	80	-	2/7/25/26	0/2/2/2
80	1MG	cl	9	80	-	2/7/25/26	0/3/3/3
80	PSU	cl	28	80	-	0/7/25/26	0/2/2/2
80	H2U	cl	47	80	-	4/7/38/39	0/2/2/2
80	PSU	cl	55	80	-	1/7/25/26	0/2/2/2
80	1MA	cl	58	80	-	0/7/25/26	0/3/3/3
80	MIA	cl	37	80,82	-	5/15/33/34	0/3/3/3
80	5MC	cl	49	80	-	3/7/25/26	0/2/2/2
80	2MG	cl	10	80	-	2/9/27/28	0/3/3/3

All (69) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
80	cl	47	H2U	C2-N1	9.88	1.49	1.35
80	cl	49	5MC	C6-C5	9.56	1.50	1.34
80	cl	58	1MA	C2-N3	9.50	1.47	1.30
80	cl	48	5MC	C6-C5	9.32	1.49	1.34
80	cl	37	MIA	C6-N6	8.48	1.47	1.34
80	cl	37	MIA	C2-S10	8.09	1.82	1.75
80	cl	9	1MG	C2-N3	7.74	1.45	1.33
80	cl	10	2MG	C2-N3	7.67	1.46	1.32
80	cl	49	5MC	C4-N3	7.54	1.46	1.34
80	cl	48	5MC	C4-N3	7.38	1.46	1.34
80	cl	26	2MG	C2-N3	7.13	1.45	1.32
80	cl	10	2MG	C4-N3	6.76	1.49	1.34
80	cl	46	G7M	C4-N3	6.72	1.49	1.34
80	cl	48	5MC	C2-N3	6.67	1.49	1.36
80	cl	47	H2U	C2-N3	6.66	1.49	1.38
80	cl	49	5MC	C2-N3	6.62	1.49	1.36
80	cl	58	1MA	C4-N3	6.61	1.49	1.35
80	cl	46	G7M	C2-N2	6.55	1.49	1.34
80	cl	9	1MG	C2-N2	6.41	1.45	1.34
80	cl	9	1MG	C4-N3	6.37	1.48	1.34
80	cl	26	2MG	C4-N3	6.35	1.48	1.34
80	cl	48	5MC	C5-C4	6.21	1.48	1.44
80	cl	10	2MG	C2-N2	6.03	1.46	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
80	cl	49	5MC	C5-C4	5.91	1.48	1.44
80	cl	26	2MG	C2-N2	5.75	1.45	1.33
80	cl	46	G7M	C2-N3	5.72	1.47	1.33
80	cl	49	5MC	C6-N1	5.12	1.46	1.38
80	cl	47	H2U	C4-N3	4.97	1.45	1.37
80	cl	48	5MC	C6-N1	4.89	1.46	1.38
80	cl	26	2MG	C2-N1	4.79	1.44	1.36
80	cl	10	2MG	C2-N1	4.76	1.44	1.36
80	cl	46	G7M	C5-N7	-4.56	1.33	1.39
80	cl	49	5MC	C2-N1	4.25	1.49	1.40
80	cl	58	1MA	C2-N1	4.17	1.44	1.35
80	cl	48	5MC	C2-N1	4.12	1.48	1.40
80	cl	37	MIA	C5-C4	-4.12	1.31	1.39
80	cl	49	5MC	C4-N4	4.11	1.44	1.34
80	cl	48	5MC	C4-N4	4.09	1.44	1.34
80	cl	58	1MA	C5-C6	3.86	1.54	1.43
80	cl	55	PSU	C6-C5	3.85	1.39	1.35
80	cl	46	G7M	C5-C6	3.60	1.53	1.43
80	cl	9	1MG	C2-N1	3.58	1.43	1.37
80	cl	28	PSU	C6-C5	3.05	1.38	1.35
80	cl	9	1MG	C5-N7	-3.01	1.33	1.39
80	cl	46	G7M	C2-N1	2.92	1.44	1.37
80	cl	10	2MG	C5-N7	-2.90	1.33	1.39
80	cl	37	MIA	C8-N9	-2.90	1.32	1.37
80	cl	58	1MA	C5-N7	-2.89	1.33	1.39
80	cl	26	2MG	C5-N7	-2.87	1.33	1.39
80	cl	9	1MG	C5-C6	2.87	1.52	1.45
80	cl	46	G7M	O6-C6	-2.87	1.18	1.23
80	cl	46	G7M	C6-N1	2.81	1.44	1.38
80	cl	9	1MG	O6-C6	-2.54	1.17	1.23
80	cl	10	2MG	C5-C6	2.53	1.53	1.44
80	cl	48	5MC	O2-C2	-2.49	1.19	1.23
80	cl	26	2MG	C5-C6	2.48	1.53	1.44
80	cl	10	2MG	O6-C6	-2.39	1.19	1.23
80	cl	47	H2U	O2-C2	-2.35	1.18	1.23
80	cl	26	2MG	C4-N9	-2.33	1.32	1.38
80	cl	9	1MG	C4-N9	-2.32	1.32	1.38
80	cl	49	5MC	CM5-C5	2.28	1.56	1.50
80	cl	26	2MG	O6-C6	-2.26	1.19	1.23
80	cl	47	H2U	O4-C4	-2.26	1.18	1.23
80	cl	10	2MG	C6-N1	2.22	1.43	1.38
80	cl	48	5MC	CM5-C5	2.21	1.56	1.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
80	cl	37	MIA	C4-N9	-2.20	1.33	1.37
80	cl	26	2MG	C6-N1	2.16	1.42	1.38
80	cl	49	5MC	O2-C2	-2.12	1.19	1.23
80	cl	28	PSU	C4-C5	-2.03	1.38	1.44

All (78) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
80	cl	37	MIA	N6-C6-N1	18.72	143.42	118.33
80	cl	37	MIA	C5-C6-N6	-13.94	95.13	122.03
80	cl	37	MIA	C11-S10-C2	13.63	112.48	102.25
80	cl	37	MIA	C1'-N9-C8	-9.04	107.03	127.09
80	cl	37	MIA	C4-N9-C1'	6.77	142.46	126.63
80	cl	10	2MG	C2-N3-C4	6.72	120.40	112.00
80	cl	58	1MA	C1'-N9-C4	-6.45	107.44	126.49
80	cl	26	2MG	C2-N3-C4	6.12	119.65	112.00
80	cl	37	MIA	N9-C8-N7	-6.08	105.30	113.94
80	cl	58	1MA	C1'-N9-C8	6.01	143.80	126.73
80	cl	10	2MG	C5-C4-N3	-5.56	119.54	128.39
80	cl	37	MIA	C5-C4-N3	-5.34	121.56	127.18
80	cl	28	PSU	N1-C2-N3	5.24	120.70	115.17
80	cl	58	1MA	C5-C4-N3	-5.15	119.69	127.27
80	cl	26	2MG	C5-C4-N3	-5.02	120.40	128.39
80	cl	28	PSU	C4-N3-C2	-4.89	119.63	126.37
80	cl	55	PSU	C4-N3-C2	-4.84	119.70	126.37
80	cl	55	PSU	N1-C2-N3	4.73	120.15	115.17
80	cl	46	G7M	C2-N3-C4	4.71	120.41	112.30
80	cl	9	1MG	C5-C4-N3	-4.67	120.96	128.39
80	cl	58	1MA	N1-C2-N3	-4.67	120.45	126.00
80	cl	10	2MG	C2-N1-C6	-4.66	118.92	124.55
80	cl	26	2MG	N1-C2-N2	4.61	121.27	116.56
80	cl	26	2MG	C2-N1-C6	-4.52	119.09	124.55
80	cl	37	MIA	C4-N9-C8	4.50	110.46	105.74
80	cl	46	G7M	C5-C6-N1	4.23	120.58	111.84
80	cl	37	MIA	N3-C2-N1	-4.14	119.45	127.00
80	cl	46	G7M	C5-C4-N3	-4.04	120.51	128.15
80	cl	46	G7M	O6-C6-C5	-3.93	119.25	128.01
80	cl	58	1MA	C2-N3-C4	3.75	119.89	112.53
80	cl	37	MIA	C5-N7-C8	3.75	109.34	103.45
80	cl	10	2MG	N9-C4-N3	3.70	133.35	125.95
80	cl	10	2MG	N9-C8-N7	-3.52	106.88	113.40
80	cl	9	1MG	C2-N3-C4	3.39	119.59	111.98

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
80	cl	26	2MG	N9-C8-N7	-3.35	107.18	113.40
80	cl	46	G7M	N9-C4-N3	3.32	132.59	125.95
80	cl	47	H2U	N3-C2-N1	3.30	119.97	116.65
80	cl	37	MIA	C4-C5-N7	-3.24	106.88	110.58
80	cl	37	MIA	C2-N3-C4	3.12	120.47	112.29
80	cl	26	2MG	N9-C4-N3	3.11	132.18	125.95
80	cl	46	G7M	C2-N1-C6	-3.10	119.50	125.11
80	cl	9	1MG	N9-C8-N7	-3.04	107.77	113.40
80	cl	48	5MC	C5-C6-N1	-3.03	120.02	123.31
80	cl	10	2MG	N1-C2-N2	2.98	119.61	116.56
80	cl	55	PSU	O2-C2-N1	-2.97	119.73	122.79
80	cl	47	H2U	C5-C4-N3	2.95	119.83	116.69
80	cl	58	1MA	N9-C8-N7	-2.91	108.01	113.40
80	cl	10	2MG	C5-C6-N1	2.90	120.65	113.25
80	cl	26	2MG	CM2-N2-C2	-2.90	117.42	123.65
80	cl	37	MIA	C6-C5-N7	2.88	135.57	132.43
80	cl	47	H2U	C5-C6-N1	2.87	120.21	111.52
80	cl	58	1MA	N9-C4-N3	2.83	133.36	126.90
80	cl	9	1MG	C5-C6-N1	2.83	120.25	115.02
80	cl	9	1MG	N9-C4-N3	2.80	131.55	125.95
80	cl	37	MIA	N3-C4-N9	2.72	130.44	126.99
80	cl	9	1MG	C1'-N9-C8	-2.67	119.15	126.73
80	cl	26	2MG	C5-C6-N1	2.63	119.96	113.25
80	cl	26	2MG	O6-C6-C5	-2.63	119.60	126.53
80	cl	28	PSU	C6-N1-C2	-2.62	120.26	122.69
80	cl	48	5MC	CM5-C5-C6	-2.60	119.33	122.85
80	cl	10	2MG	C8-N7-C5	2.52	108.75	104.26
80	cl	46	G7M	CN7-N7-C5	2.46	129.86	126.80
80	cl	55	PSU	C6-N1-C2	-2.44	120.43	122.69
80	cl	10	2MG	CM2-N2-C2	-2.44	118.41	123.65
80	cl	28	PSU	O2-C2-N1	-2.42	120.29	122.79
80	cl	10	2MG	O6-C6-C5	-2.38	120.24	126.53
80	cl	46	G7M	N9-C8-N7	-2.35	106.77	112.48
80	cl	47	H2U	O2-C2-N1	-2.35	120.28	123.10
80	cl	49	5MC	C5-C6-N1	-2.35	120.77	123.31
80	cl	37	MIA	S10-C2-N3	2.16	123.49	116.04
80	cl	28	PSU	C6-C5-C4	2.15	119.63	118.17
80	cl	37	MIA	C16-C14-C15	2.15	119.53	114.59
80	cl	46	G7M	N1-C2-N3	-2.12	119.45	123.32
80	cl	26	2MG	C8-N7-C5	2.11	108.02	104.26
80	cl	26	2MG	N2-C2-N3	-2.07	117.87	120.51
80	cl	55	PSU	O4'-C1'-C2'	2.05	107.99	105.15

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
80	cl	37	MIA	C5-C4-N9	2.01	108.00	105.81
80	cl	58	1MA	C8-N7-C5	2.00	107.83	104.26

There are no chirality outliers.

All (20) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
80	cl	37	MIA	O4'-C4'-C5'-O5'
80	cl	37	MIA	C13-C12-N6-C6
80	cl	37	MIA	N1-C2-S10-C11
80	cl	37	MIA	N3-C2-S10-C11
80	cl	47	H2U	C4'-C5'-O5'-P
80	cl	47	H2U	O4'-C4'-C5'-O5'
80	cl	49	5MC	O4'-C4'-C5'-O5'
80	cl	10	2MG	O4'-C4'-C5'-O5'
80	cl	47	H2U	C3'-C4'-C5'-O5'
80	cl	37	MIA	C3'-C4'-C5'-O5'
80	cl	49	5MC	C3'-C4'-C5'-O5'
80	cl	10	2MG	C3'-C4'-C5'-O5'
80	cl	46	G7M	C4'-C5'-O5'-P
80	cl	48	5MC	C3'-C4'-C5'-O5'
80	cl	9	1MG	C2'-C1'-N9-C8
80	cl	55	PSU	O4'-C1'-C5-C4
80	cl	9	1MG	C2'-C1'-N9-C4
80	cl	48	5MC	C4'-C5'-O5'-P
80	cl	49	5MC	C2'-C1'-N1-C2
80	cl	47	H2U	O4'-C1'-N1-C6

There are no ring outliers.

2 monomers are involved in 4 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
80	cl	47	H2U	1	0
80	cl	37	MIA	3	0

5.5 Carbohydrates

There are no oligosaccharides in this entry.

5.6 Ligand geometry

Of 311 ligands modelled in this entry, 311 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

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.

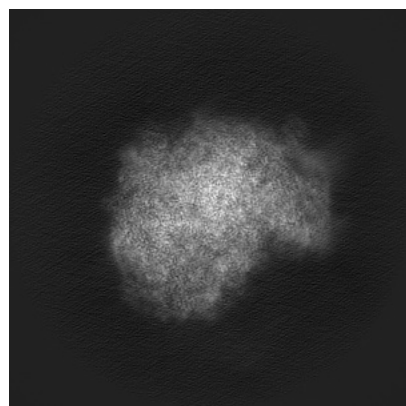
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-35634. These allow visual inspection of the internal detail of the map and identification of artifacts.

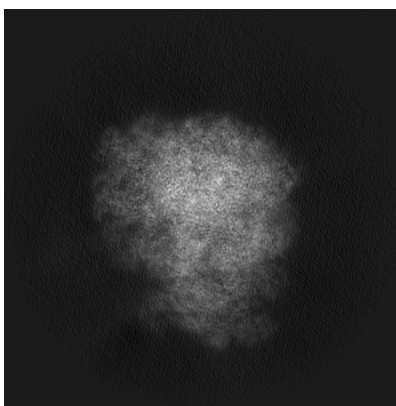
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

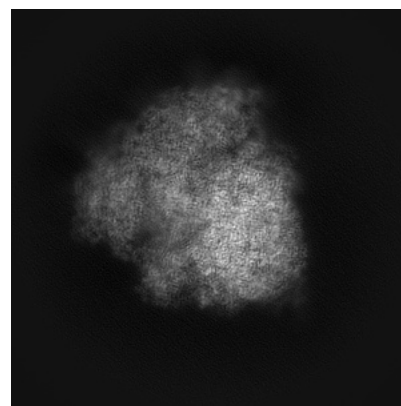
6.1.1 Primary map



X

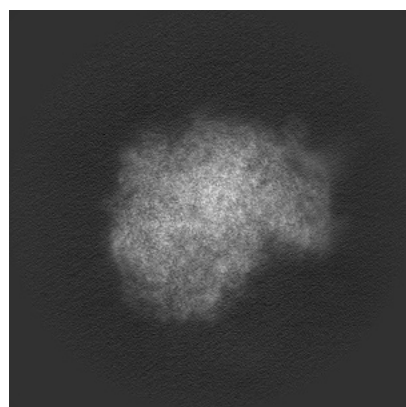


Y

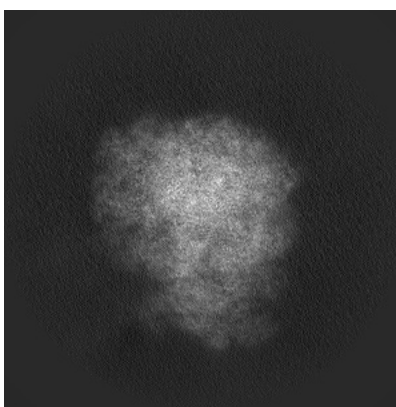


Z

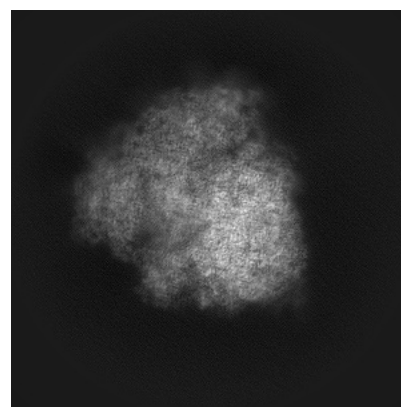
6.1.2 Raw map



X



Y

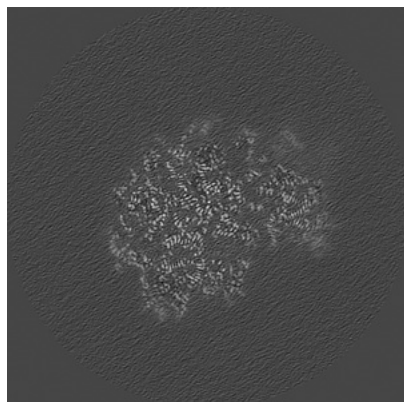


Z

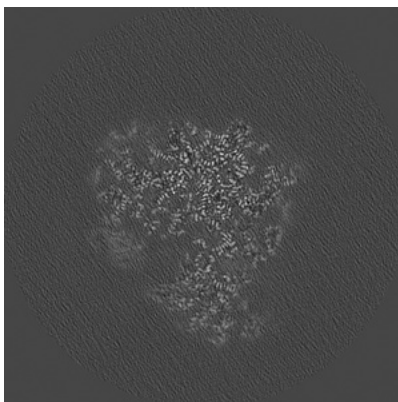
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

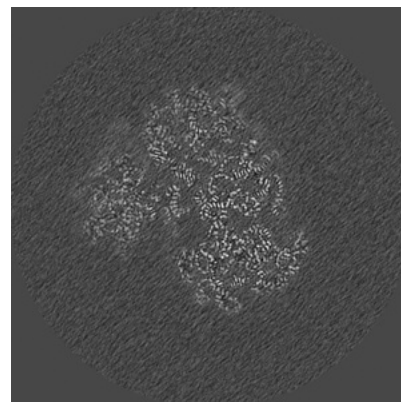
6.2.1 Primary map



X Index: 280

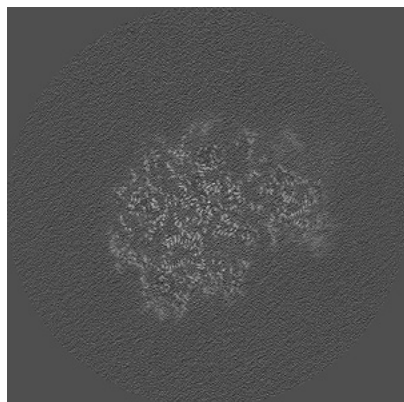


Y Index: 280

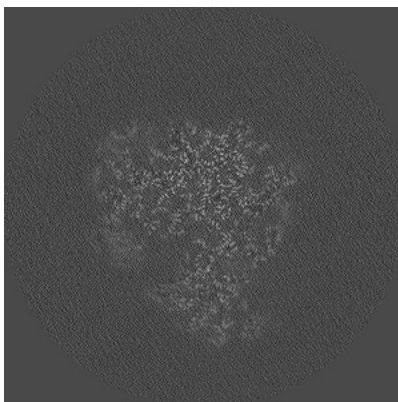


Z Index: 280

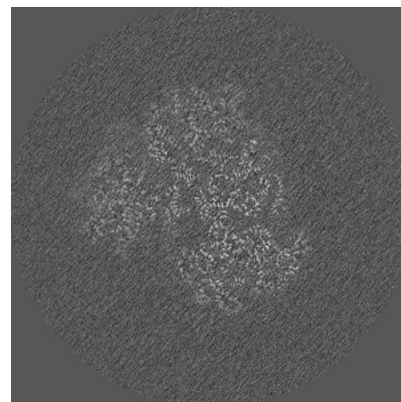
6.2.2 Raw map



X Index: 280



Y Index: 280

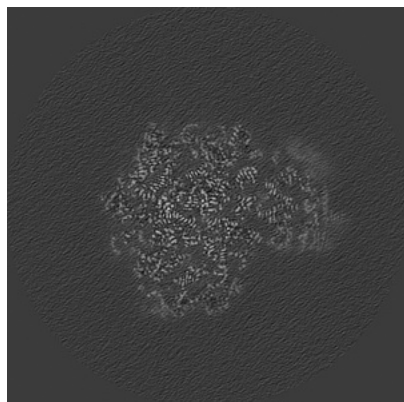


Z Index: 280

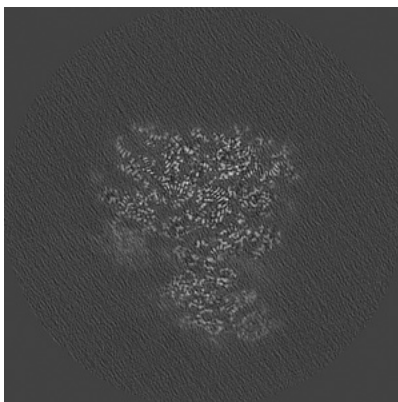
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

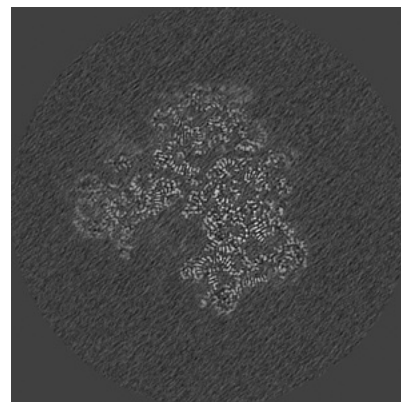
6.3.1 Primary map



X Index: 297

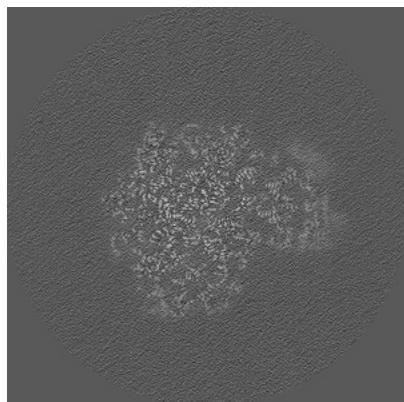


Y Index: 291

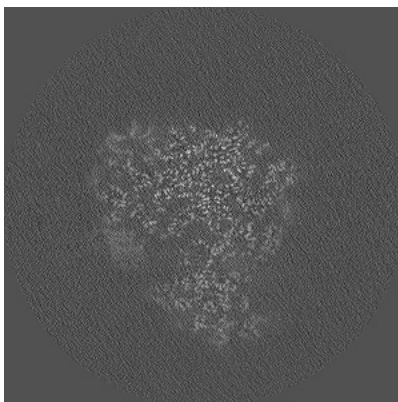


Z Index: 291

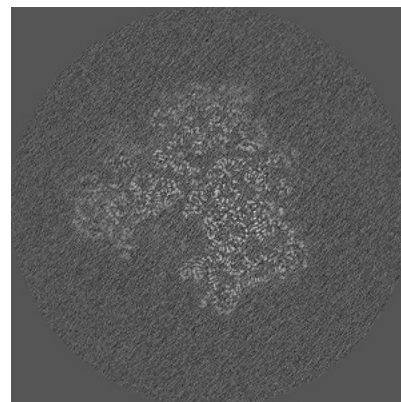
6.3.2 Raw map



X Index: 298



Y Index: 282

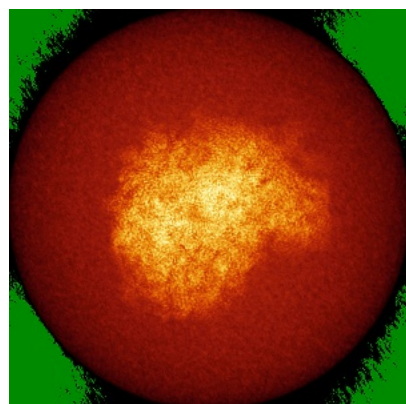


Z Index: 291

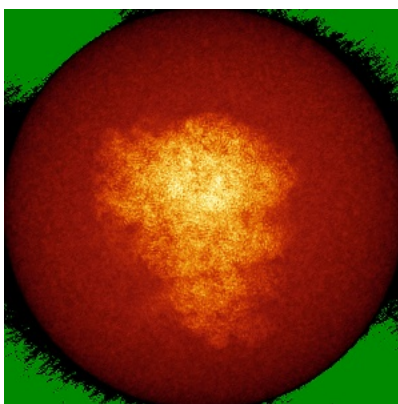
The images above show the largest variance slices of the map in three orthogonal directions.

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

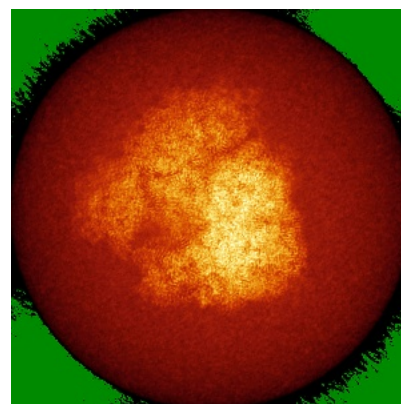
6.4.1 Primary map



X

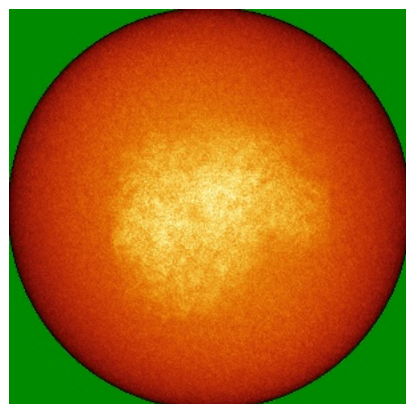


Y

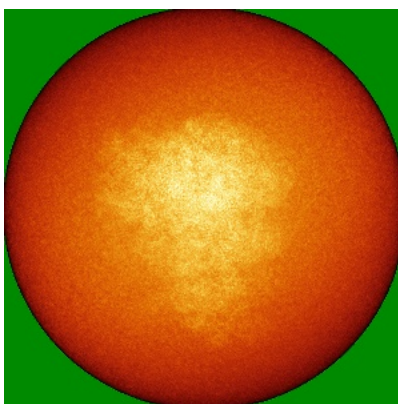


Z

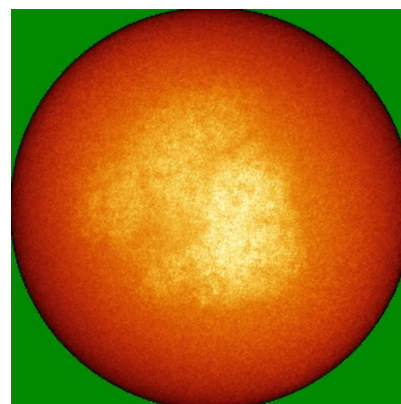
6.4.2 Raw map



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



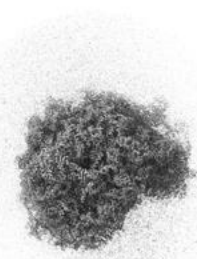
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.016. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

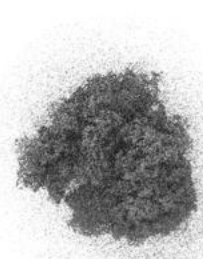
6.5.2 Raw map



X



Y



Z

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

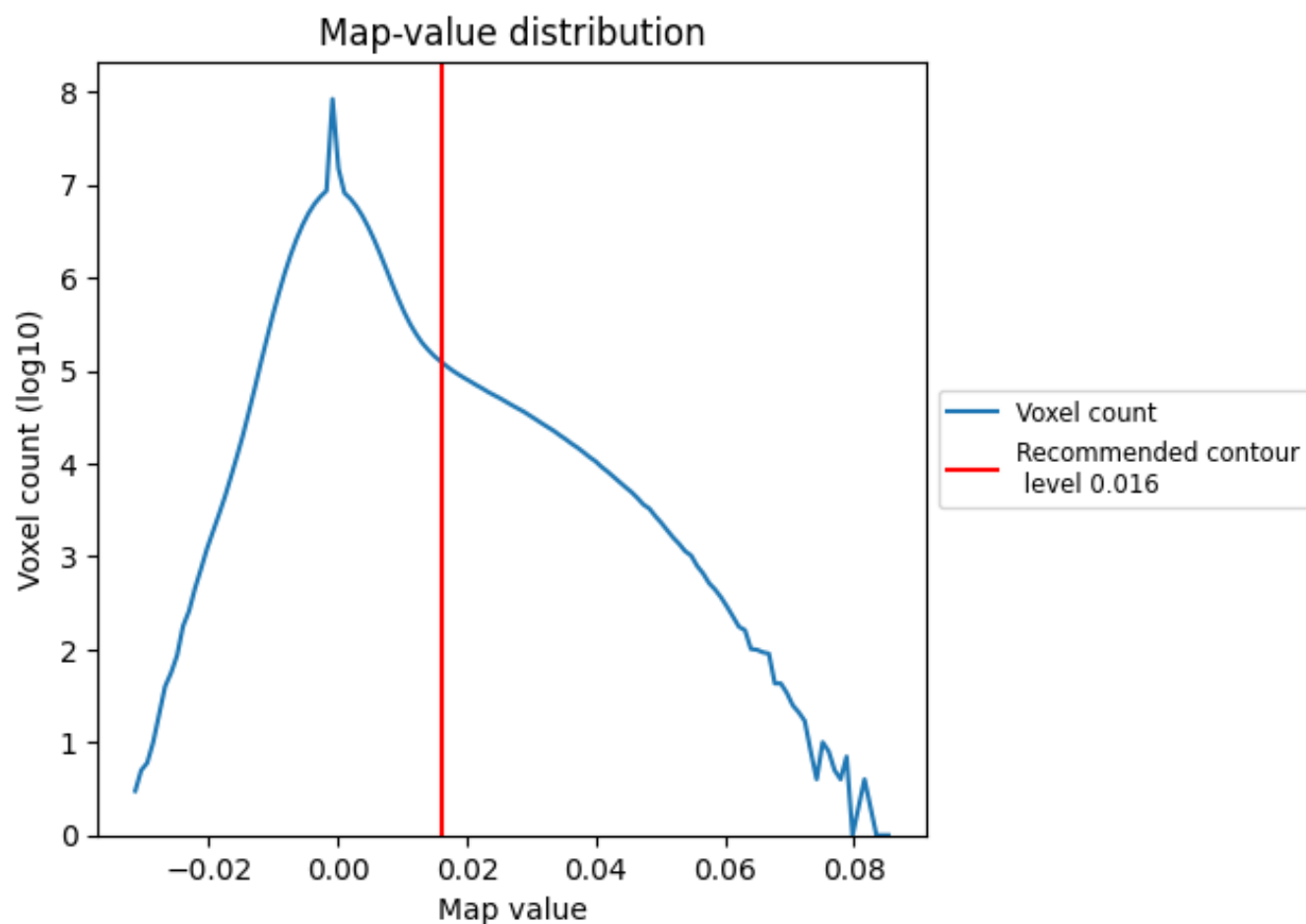
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

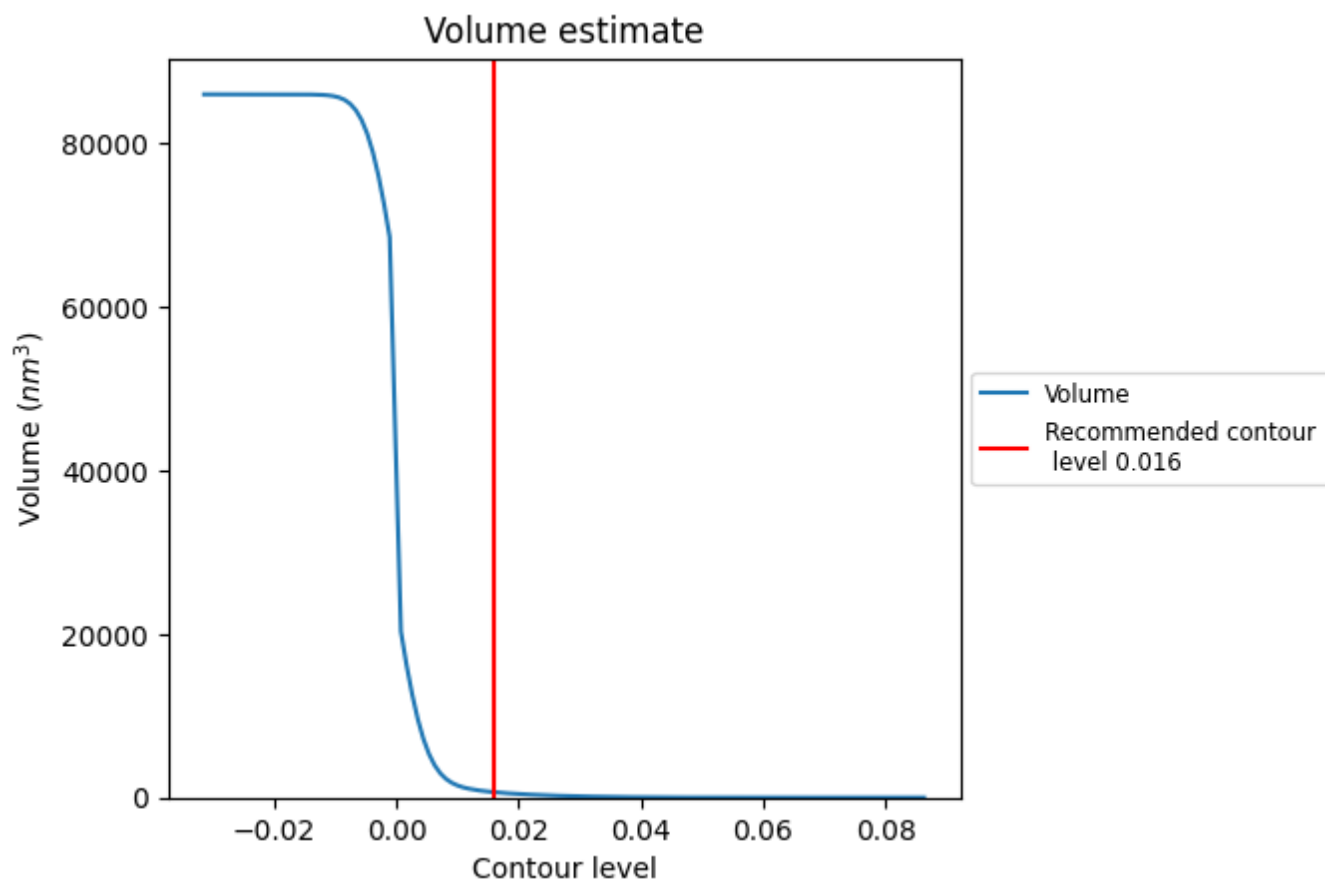
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

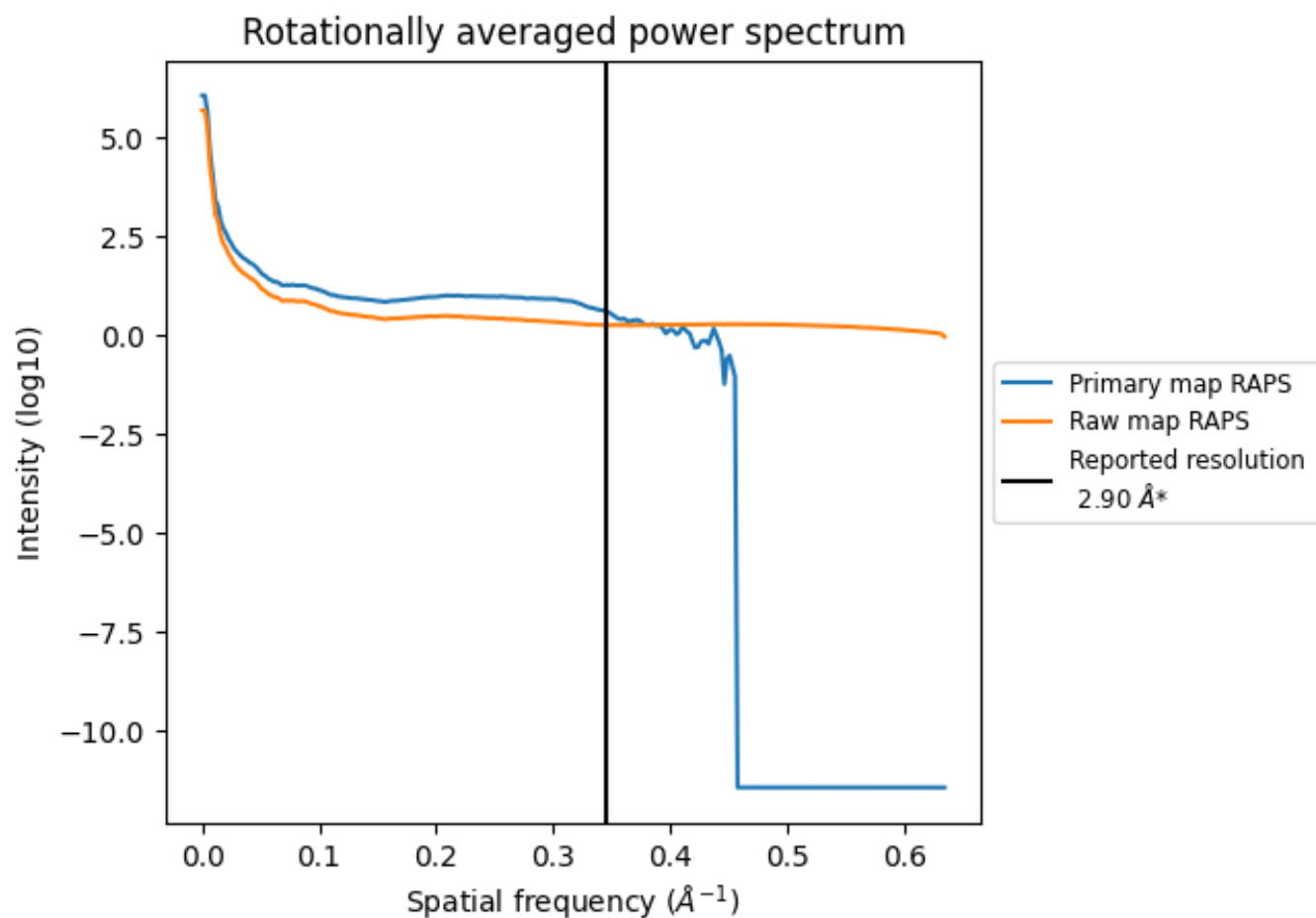
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 659 nm³; this corresponds to an approximate mass of 596 kDa.

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

7.3 Rotationally averaged power spectrum ⓘ

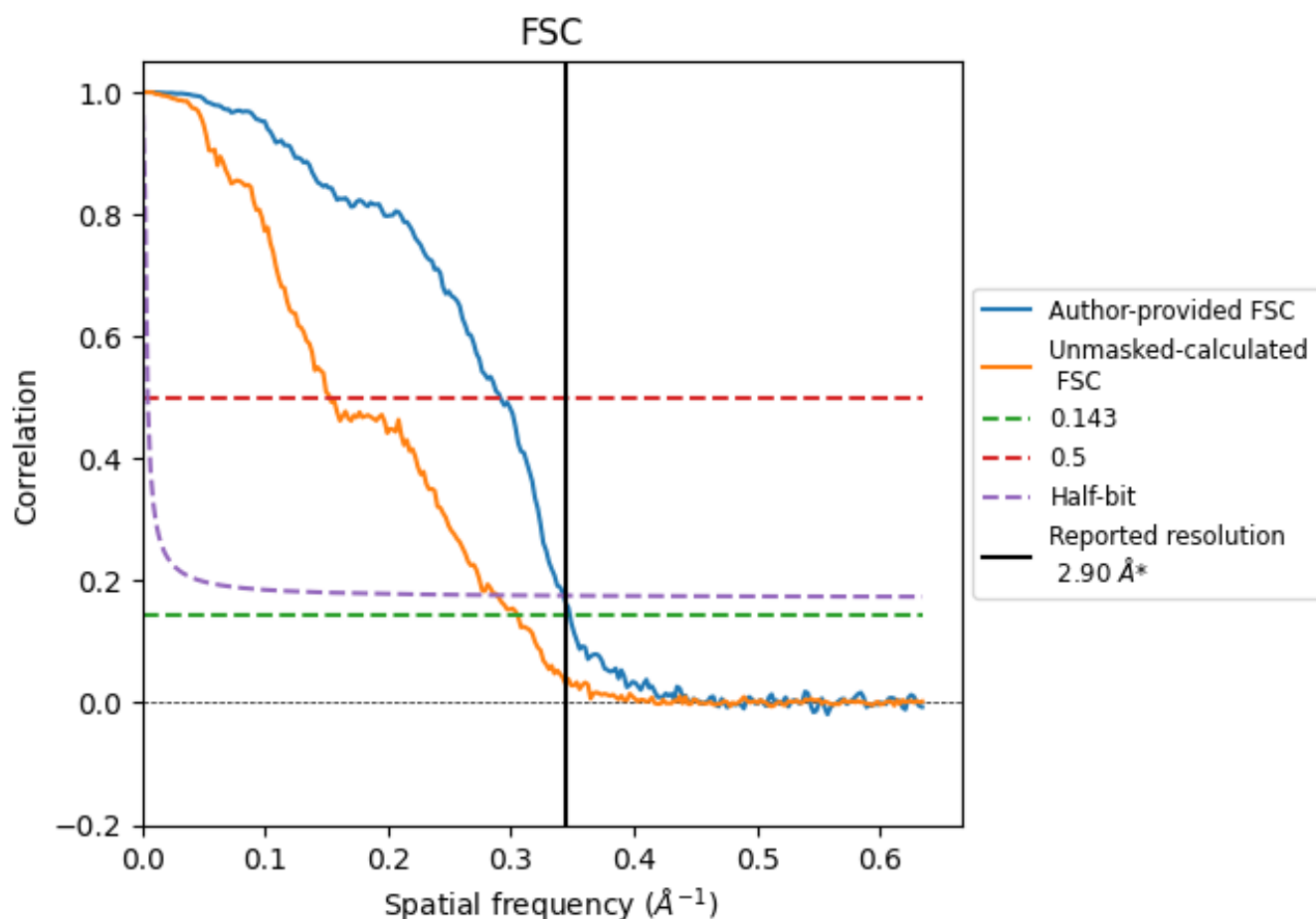


*Reported resolution corresponds to spatial frequency of 0.345 $\text{\AA}^{-1}$

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.345 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

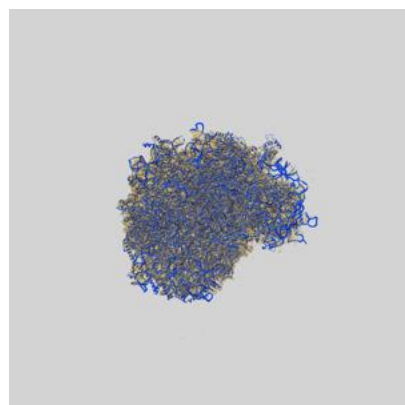
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.90	-	-
Author-provided FSC curve	2.87	3.43	2.92
Unmasked-calculated*	3.28	6.55	3.47

*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 3.28 differs from the reported value 2.9 by more than 10 %

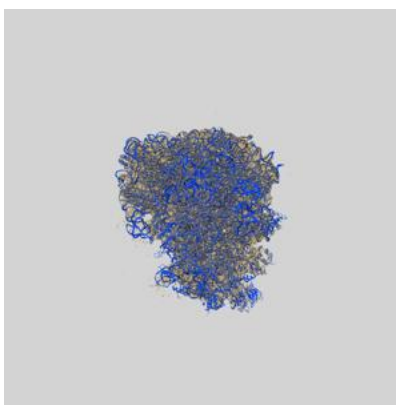
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-35634 and PDB model 8IP8. Per-residue inclusion information can be found in section 3 on page 21.

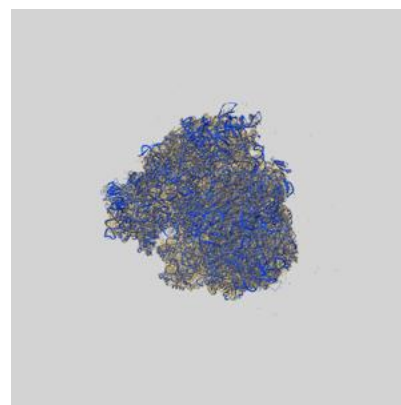
9.1 Map-model overlay [i](#)



X



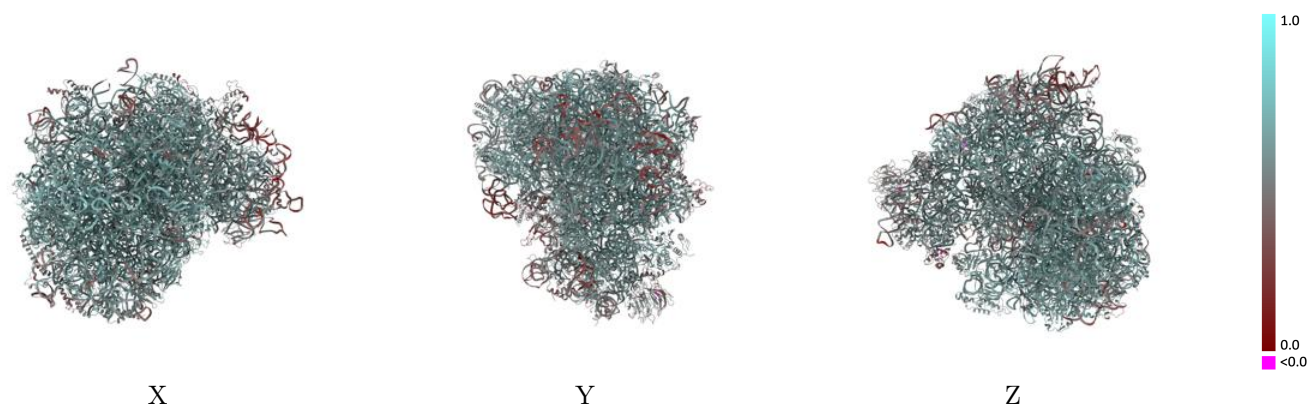
Y



Z

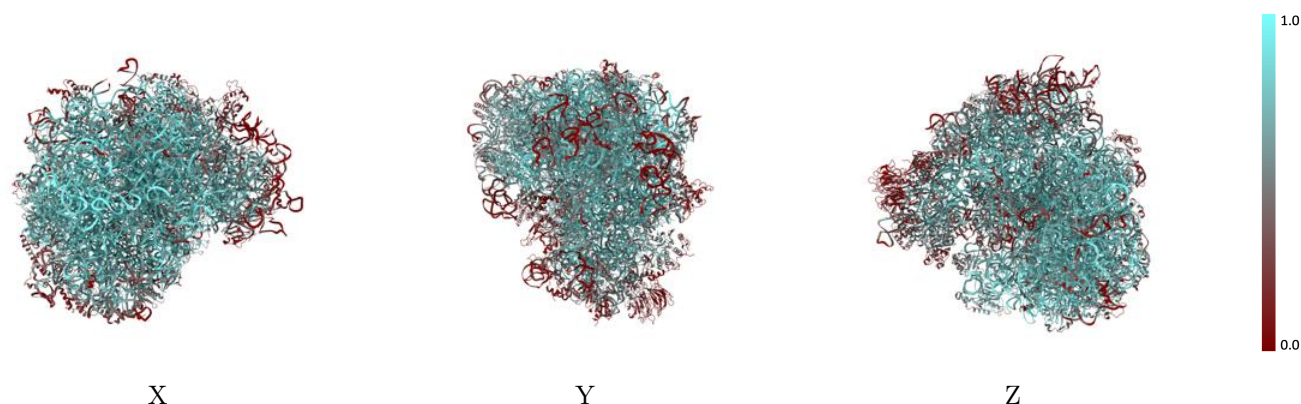
The images above show the 3D surface view of the map at the recommended contour level 0.016 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



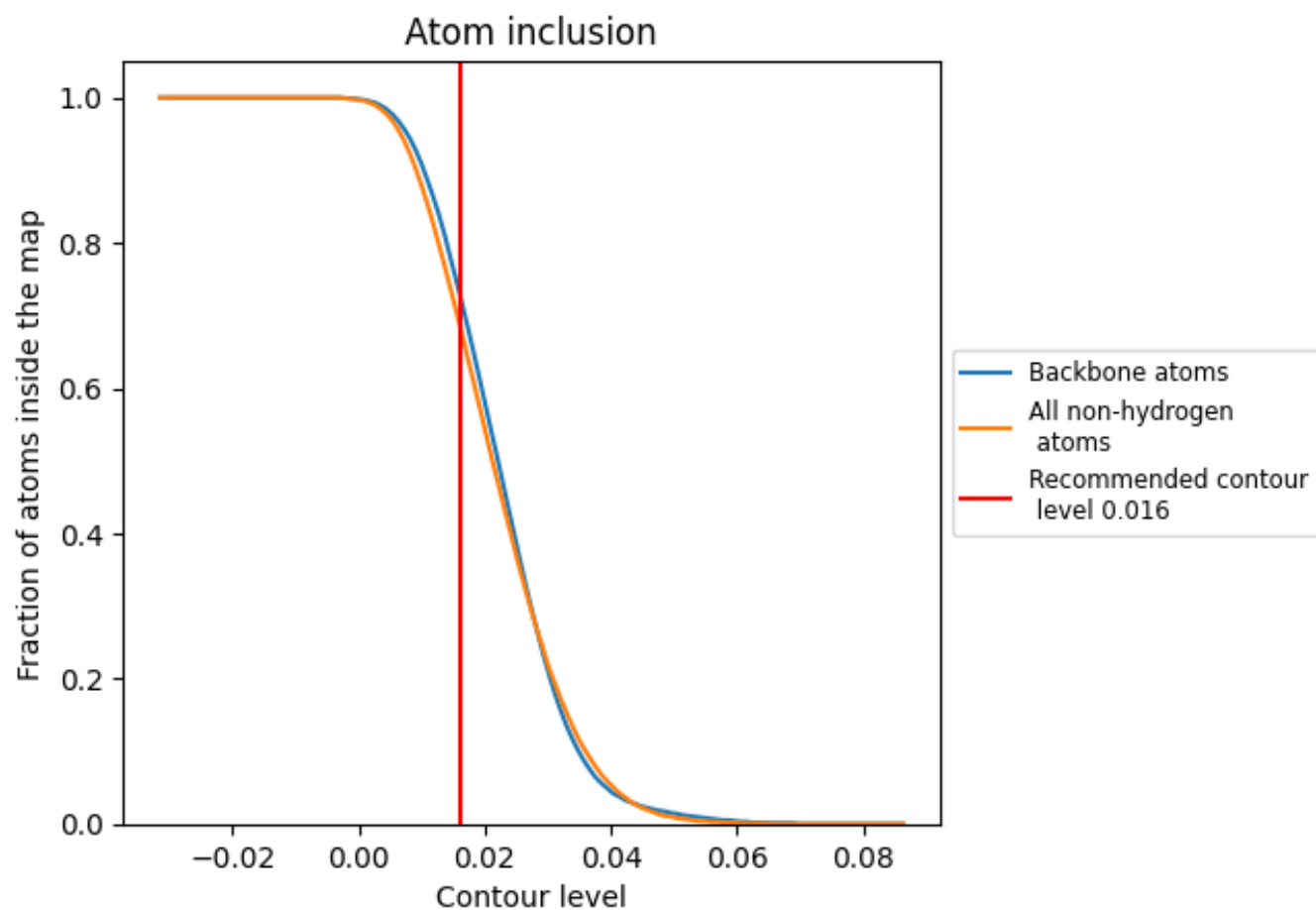
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.016).

9.4 Atom inclusion [i](#)



At the recommended contour level, 73% of all backbone atoms, 69% 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 (0.016) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.6880	 0.5790
AA	 0.4970	 0.5480
AB	 0.6150	 0.5750
BA	 0.7200	 0.6160
BB	 0.6070	 0.5620
CA	 0.5690	 0.5620
CB	 0.6990	 0.6060
DA	 0.8340	 0.6480
DB	 0.7490	 0.6250
EA	 0.5150	 0.5480
EB	 0.6570	 0.5960
FA	 0.5690	 0.5820
FB	 0.7050	 0.6140
GA	 0.7790	 0.6380
GB	 0.7510	 0.6160
HA	 0.8720	 0.6480
HB	 0.5580	 0.5680
IA	 0.8210	 0.6430
IB	 0.7390	 0.5990
JA	 0.7820	 0.6360
JB	 0.6920	 0.6070
KA	 0.6090	 0.5850
KB	 0.6930	 0.6040
LA	 0.6980	 0.6000
LB	 0.3890	 0.5180
MA	 0.7670	 0.6320
MB	 0.7820	 0.6330
NA	 0.6470	 0.5930
NB	 0.4690	 0.5460
OA	 0.7330	 0.6170
OB	 0.8060	 0.6350
PA	 0.7100	 0.6060
PB	 0.7800	 0.6170
QA	 0.6190	 0.5970
RA	 0.6220	 0.5910



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Chain	Atom inclusion	Q-score
RB	 0.8260	 0.6060
SA	 0.6430	 0.5970
SB	 0.8110	 0.5950
TA	 0.8030	 0.6370
TB	 0.8580	 0.6160
UA	 0.8970	 0.6530
VA	 0.8270	 0.6420
WA	 0.7550	 0.6360
XA	 0.5650	 0.5710
YA	 0.7220	 0.6110
ZA	 0.2980	 0.5010
aa	 0.6890	 0.5500
al	 0.8780	 0.6260
ba	 0.3160	 0.5060
bb	 0.4530	 0.5250
bl	 0.3470	 0.4640
ca	 0.6100	 0.5750
cb	 0.5440	 0.5630
cl	 0.5490	 0.5220
da	 0.2210	 0.4170
db	 0.6790	 0.6050
dl	 0.7420	 0.6120
eb	 0.5270	 0.5570
fb	 0.6480	 0.6020
ga	 0.7020	 0.6130
gb	 0.2790	 0.4800
ha	 0.1240	 0.4430
hb	 0.2680	 0.4780
ia	 0.3600	 0.5320
ib	 0.7000	 0.6170
ja	 0.5240	 0.5610
ka	 0.4540	 0.5440
la	 0.4430	 0.5360
ma	 0.3200	 0.4960
na	 0.5600	 0.5670
oa	 0.3440	 0.5040
pa	 0.6350	 0.5930
qa	 0.2790	 0.4920
ra	 0.4460	 0.5220
sa	 0.2240	 0.4990
ta	 0.1740	 0.3080
ua	 0.3690	 0.5320

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Chain	Atom inclusion	Q-score
va	 0.6620	 0.5650
wa	 0.7040	 0.5760
xa	 0.4680	 0.5390
ya	 0.5110	 0.5580
za	 0.4860	 0.5740