



Full wwPDB EM Validation Report ⓘ

Dec 10, 2025 – 10:46 am GMT

PDB ID : 9HLZ / pdb_00009hlz
EMDB ID : EMD-52281
Title : Translational activators Aep1, Aep2 and Atp25 in complex with mRNA and the yeast mitochondrial ribosome
Authors : Carlstrom, A.; Rovsnik, U.; Ott, M.
Deposited on : 2024-12-06
Resolution : 3.20 Å (reported)
Based on initial models : 5MRC, 8OM4, .

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

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

A user guide is available at

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

The types of validation reports are described at

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

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

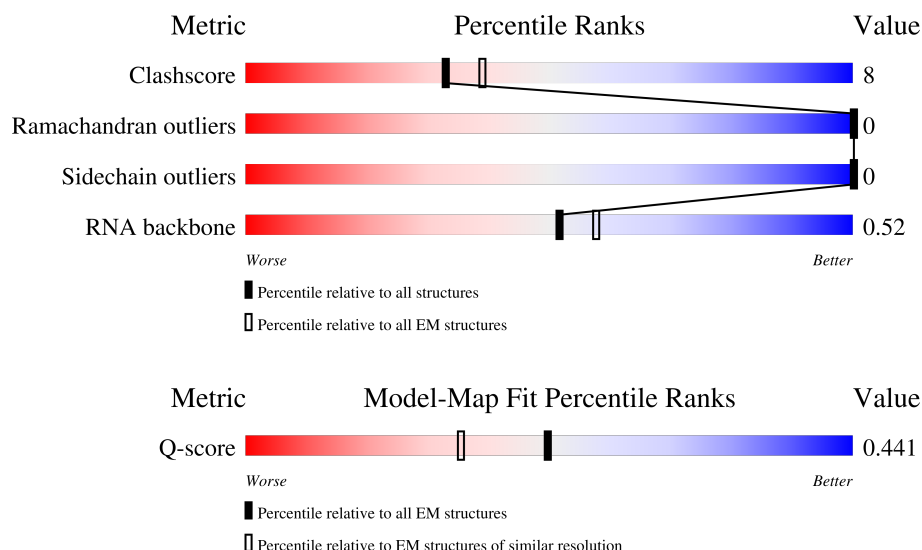
EMDB validation analysis : 0.0.1.dev129
Mogul : 1.8.4, CSD as541be (2020)
MolProbity : 4-5-2 with Phenix2.0
buster-report : 1.1.7 (2018)
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up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

1 Overall quality at a glance

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

The reported resolution of this entry is 3.20 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
RNA backbone	6643	2191	-
Q-score	-	25397	15020 (2.70 - 3.70)

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	1	111	
2	2	130	
3	3	266	

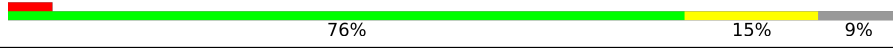
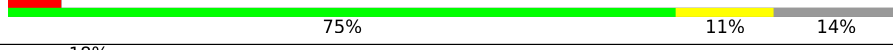
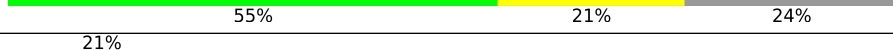
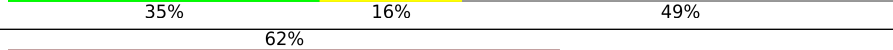
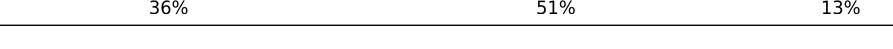
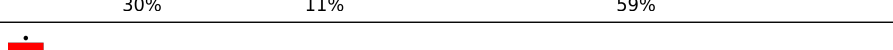
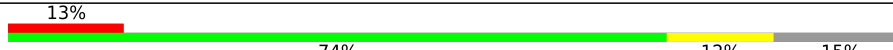
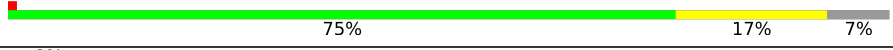
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Mol	Chain	Length	Quality of chain
4	4	321	
5	5	339	
6	6	345	
7	7	361	
8	8	500	
9	A	344	
10	B	394	
11	C	398	
12	D	486	
13	E	307	
14	F	131	
15	G	247	
16	H	155	
17	I	278	
18	J	203	
19	K	217	
20	L	153	
21	M	143	
22	N	115	
23	O	286	
24	P	121	
25	Q	237	
26	R	138	
27	S	91	
28	T	177	

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Mol	Chain	Length	Quality of chain
29	U	264	
30	W	450	
31	X	110	
32	Y	319	
33	Z	95	
34	a	518	
35	b	580	
36	c	612	
37	t	76	
38	00	93	
39	11	367	
40	22	147	
41	33	146	
42	44	140	
43	55	390	
44	66	281	
45	77	146	
46	88	264	
47	99	253	
48	AA	3296	
49	BB	393	
50	CC	269	
51	DD	286	
52	EE	292	
53	FF	214	

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Mol	Chain	Length	Quality of chain
54	GG	139	
55	HH	163	
56	II	138	
57	JJ	322	
58	KK	232	
59	LL	238	
60	MM	169	
61	NN	161	
62	OO	309	
63	PP	263	
64	QQ	297	
65	RR	371	
66	SS	258	
67	TT	319	
68	UU	86	
69	V	318	
70	VV	177	
71	WW	183	
72	XX	70	
73	YY	105	
74	ZZ	115	
75	aa	195	
76	bb	157	
77	cc	131	
78	dd	226	

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Mol	Chain	Length	Quality of chain
79	r	1649	52% 33% 6% 9%

2 Entry composition

There are 81 unique types of molecules in this entry. The entry contains 218112 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Small ribosomal subunit protein mS38.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	1	32	Total	C	N	O	S	0	0
			288	175	70	41	2		

- Molecule 2 is a protein called Small ribosomal subunit protein mS41.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	2	102	Total	C	N	O	S	0	0
			858	544	161	152	1		

- Molecule 3 is a protein called Small ribosomal subunit protein mS42.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	3	257	Total	C	N	O	S	0	0
			2063	1326	349	383	5		

- Molecule 4 is a protein called Small ribosomal subunit protein mS43.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	4	303	Total	C	N	O	S	0	0
			2436	1538	422	466	10		

- Molecule 5 is a protein called Small ribosomal subunit protein mS44.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	5	290	Total	C	N	O	S	0	0
			2354	1519	403	428	4		

- Molecule 6 is a protein called Small ribosomal subunit protein mS45.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	6	319	Total	C	N	O	S	0	0
			2593	1646	467	474	6		

- Molecule 7 is a protein called Small ribosomal subunit protein mS46.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	7	165	Total	C	N	O	S	0	0
			1330	854	214	259	3		

- Molecule 8 is a protein called Small ribosomal subunit protein mS47.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	8	467	Total	C	N	O	S	0	0
			3690	2341	621	708	20		

- Molecule 9 is a protein called Small ribosomal subunit protein bS1m.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	A	300	Total	C	N	O	S	0	0
			2419	1547	424	441	7		

- Molecule 10 is a protein called Small ribosomal subunit protein uS2m.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	B	344	Total	C	N	O	S	0	0
			2727	1720	468	536	3		

- Molecule 11 is a protein called Small ribosomal subunit protein uS3m.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	C	396	Total	C	N	O	S	0	0
			3264	2034	589	608	33		

- Molecule 12 is a protein called Small ribosomal subunit protein uS4m.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	D	349	Total	C	N	O	S	0	0
			2899	1880	512	502	5		

- Molecule 13 is a protein called Small ribosomal subunit protein uS5m.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	E	294	Total	C	N	O	S	0	0
			2348	1494	418	428	8		

- Molecule 14 is a protein called Small ribosomal subunit protein bS6m.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	F	131	Total	C	N	O	S	0	0
			1055	671	189	191	4		

- Molecule 15 is a protein called Small ribosomal subunit protein uS7m.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	G	208	Total	C	N	O	S	0	0
			1645	1037	296	307	5		

- Molecule 16 is a protein called Small ribosomal subunit protein uS8m.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	H	154	Total	C	N	O	S	0	0
			1213	767	217	220	9		

- Molecule 17 is a protein called Small ribosomal subunit protein uS9m.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	I	246	Total	C	N	O	S	0	0
			1974	1258	361	349	6		

- Molecule 18 is a protein called Small ribosomal subunit protein uS10m.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	J	188	Total	C	N	O	S	0	0
			1526	976	263	283	4		

- Molecule 19 is a protein called Small ribosomal subunit protein uS11m.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	K	151	Total	C	N	O	S	0	0
			1201	770	210	215	6		

- Molecule 20 is a protein called Small ribosomal subunit protein uS12m.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	L	125	Total	C	N	O	S	0	0
			954	588	195	167	4		

- Molecule 21 is a protein called Small ribosomal subunit protein uS13m.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	M	119	Total	C	N	O	S	0	0
			935	591	178	160	6		

- Molecule 22 is a protein called Small ribosomal subunit protein uS14m.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	N	114	Total	C	N	O	S	0	0
			945	607	181	153	4		

- Molecule 23 is a protein called Small ribosomal subunit protein uS15m.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	O	249	Total	C	N	O	S	0	0
			2035	1270	380	377	8		

- Molecule 24 is a protein called Small ribosomal subunit protein bS16m.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	P	120	Total	C	N	O	S	0	0
			951	604	178	167	2		

- Molecule 25 is a protein called Small ribosomal subunit protein uS17m.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	Q	235	Total	C	N	O	S	0	0
			1923	1203	354	361	5		

- Molecule 26 is a protein called Small ribosomal subunit protein bS18m.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	R	103	Total	C	N	O	S	0	0
			836	517	166	149	4		

- Molecule 27 is a protein called Small ribosomal subunit protein uS19m.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	S	83	Total	C	N	O	S	0	0
			662	424	121	115	2		

- Molecule 28 is a protein called Small ribosomal subunit protein bS21m.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	T	95	Total	C	N	O	S	0	0
			784	489	153	137	5		

- Molecule 29 is a protein called Small ribosomal subunit protein mS23.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	U	237	Total	C	N	O	S	0	0
			1939	1228	339	365	7		

- Molecule 30 is a protein called Small ribosomal subunit protein mS29.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	W	403	Total	C	N	O	S	0	0
			3231	2081	543	599	8		

- Molecule 31 is a protein called Small ribosomal subunit protein mS33.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	X	100	Total	C	N	O	S	0	0
			797	509	144	141	3		

- Molecule 32 is a protein called Small ribosomal subunit protein mS35.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	Y	273	Total	C	N	O	S	0	0
			2281	1442	409	426	4		

- Molecule 33 is a protein called Small ribosomal subunit protein mS37.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	Z	94	Total	C	N	O	S	0	0
			739	464	139	130	6		

- Molecule 34 is a protein called ATPase expression protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	a	478	Total	C	N	O	S	0	0
			3871	2491	662	702	16		

- Molecule 35 is a protein called ATPase expression protein 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	b	441	Total	C	N	O	S	0	0
			3618	2331	633	640	14		

- Molecule 36 is a protein called ATPase synthesis protein 25, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	c	315	Total	C	N	O	S	0	0
			2551	1629	440	477	5		

- Molecule 37 is a RNA chain called E/E-site formyl-methionine tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	t	76	Total	C	N	O	P	0	0
			1604	720	271	537	76		

- Molecule 38 is a protein called Large ribosomal subunit protein bL36m.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	00	38	Total	C	N	O	S	0	0
			324	205	66	50	3		

- Molecule 39 is a protein called Large ribosomal subunit protein mL38.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	11	348	Total	C	N	O	S	0	0
			2875	1847	499	523	6		

- Molecule 40 is a protein called Large ribosomal subunit protein mL40.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	22	113	Total	C	N	O	S	0	0
			944	597	174	168	5		

- Molecule 41 is a protein called Large ribosomal subunit protein mL41.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	33	130	Total	C	N	O	S	0	0
			1046	671	189	183	3		

- Molecule 42 is a protein called Large ribosomal subunit protein mL43.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	44	138	Total	C	N	O	S	0	0
			1117	700	219	193	5		

- Molecule 43 is a protein called Large ribosomal subunit protein mL44.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	55	324	Total	C	N	O	S	0	0
			2552	1630	431	480	11		

- Molecule 44 is a protein called Large ribosomal subunit protein mL46.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	66	240	Total	C	N	O	S	0	0
			1975	1275	335	363	2		

- Molecule 45 is a protein called Large ribosomal subunit protein mL49.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	77	106	Total	C	N	O	S	0	0
			858	553	151	152	2		

- Molecule 46 is a protein called Large ribosomal subunit protein mL50.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	88	199	Total	C	N	O	S	0	0
			1629	1032	278	315	4		

- Molecule 47 is a protein called Large ribosomal subunit protein mL57.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	99	202	Total	C	N	O	S	0	0
			1587	1014	279	289	5		

- Molecule 48 is a RNA chain called 21S mitochondrial rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	AA	2709	Total	C	N	O	P	0	0
			57599	25914	10252	18730	2703		

- Molecule 49 is a protein called Large ribosomal subunit protein uL2m.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	BB	330	Total	C	N	O	S	0	0
			2591	1614	518	449	10		

- Molecule 50 is a protein called Large ribosomal subunit protein uL3m.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	CC	249	Total	C	N	O	S	0	0
			1932	1218	360	344	10		

- Molecule 51 is a protein called Large ribosomal subunit protein uL4m.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	DD	258	Total	C	N	O	S	0	0
			2036	1291	364	378	3		

- Molecule 52 is a protein called Large ribosomal subunit protein uL5m.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	EE	274	Total	C	N	O	S	0	0
			2187	1396	391	394	6		

- Molecule 53 is a protein called Large ribosomal subunit protein uL6m.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	FF	198	Total	C	N	O	S	0	0
			1541	979	276	282	4		

- Molecule 54 is a protein called Large ribosomal subunit protein bL9m.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	GG	79	Total	C	N	O	S	0	0
			659	418	119	121	1		

- Molecule 55 is a protein called Large ribosomal subunit protein uL13m.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	HH	162	Total	C	N	O	S	0	0
			1292	819	243	226	4		

- Molecule 56 is a protein called Large ribosomal subunit protein uL14m.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	II	138	Total	C	N	O	S	0	0
			1034	639	195	189	11		

- Molecule 57 is a protein called Large ribosomal subunit protein uL15m.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	JJ	220	Total	C	N	O	S	0	0
			1746	1119	326	298	3		

- Molecule 58 is a protein called Large ribosomal subunit protein uL16m.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	KK	195	Total	C	N	O	S	0	0
			1573	1001	297	270	5		

- Molecule 59 is a protein called Large ribosomal subunit protein bL17m.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	LL	237	Total	C	N	O	S	0	0
			1882	1184	345	345	8		

- Molecule 60 is a protein called Large ribosomal subunit protein bL19m.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	MM	151	Total	C	N	O	S	0	0
			1206	766	220	217	3		

- Molecule 61 is a protein called Large ribosomal subunit protein bL21m.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	NN	119	Total	C	N	O	S	0	0
			957	604	179	172	2		

- Molecule 62 is a protein called Large ribosomal subunit protein uL22m.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	OO	225	Total	C	N	O	S	0	0
			1826	1169	332	320	5		

- Molecule 63 is a protein called Large ribosomal subunit protein uL23m.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	PP	207	Total	C	N	O	S	0	0
			1729	1104	310	309	6		

- Molecule 64 is a protein called Large ribosomal subunit protein uL24m.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	QQ	296	Total	C	N	O	S	0	0
			2367	1507	413	439	8		

- Molecule 65 is a protein called Large ribosomal subunit protein bL27m.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	RR	337	Total	C	N	O	S	0	0
			2781	1754	506	517	4		

- Molecule 66 is a protein called Large ribosomal subunit protein bL28m.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	SS	206	Total	C	N	O	S	0	0
			1712	1103	309	297	3		

- Molecule 67 is a protein called Large ribosomal subunit protein uL29m.

Mol	Chain	Residues	Atoms					AltConf	Trace
67	TT	275	Total	C	N	O	S	0	0
			2255	1428	396	426	5		

- Molecule 68 is a protein called Large ribosomal subunit protein uL30m.

Mol	Chain	Residues	Atoms				AltConf	Trace
68	UU	82	Total	C	N	O	0	0
			639	410	116	113		

- Molecule 69 is a protein called Small ribosomal subunit protein mS26.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	V	290	Total	C	N	O	S	0	0
			2322	1466	411	441	4		

- Molecule 70 is a protein called Large ribosomal subunit protein bL31m.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	VV	104	Total	C	N	O	S	0	0
			805	501	157	146	1		

- Molecule 71 is a protein called Large ribosomal subunit protein bL32m.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	WW	112	Total	C	N	O	S	0	0
			937	587	181	163	6		

- Molecule 72 is a protein called Large ribosomal subunit protein bL33m.

Mol	Chain	Residues	Atoms				AltConf	Trace
72	XX	64	Total	C	N	O	0	0
			512	330	96	86		

- Molecule 73 is a protein called Large ribosomal subunit protein bL34m.

Mol	Chain	Residues	Atoms				AltConf	Trace
73	YY	46	Total	C	N	O	0	0
			385	245	82	58		

- Molecule 74 is a protein called Large ribosomal subunit protein bL35m.

Mol	Chain	Residues	Atoms					AltConf	Trace
74	ZZ	62	Total	C	N	O	S	0	0
			508	322	111	74	1		

- Molecule 75 is a protein called Large ribosomal subunit protein mL58.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	aa	177	Total	C	N	O	S	0	0
			1440	907	267	260	6		

- Molecule 76 is a protein called Large ribosomal subunit protein mL59.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	bb	155	Total	C	N	O	S	0	0
			1299	850	225	221	3		

- Molecule 77 is a protein called Large ribosomal subunit protein mL60.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	cc	119	Total	C	N	O	S	0	0
			1004	645	191	164	4		

- Molecule 78 is a protein called Large ribosomal subunit protein mL67.

Mol	Chain	Residues	Atoms					AltConf	Trace
78	dd	217	Total	C	N	O	S	0	0
			1830	1170	333	320	7		

- Molecule 79 is a RNA chain called 15S mitochondrial rRNA.

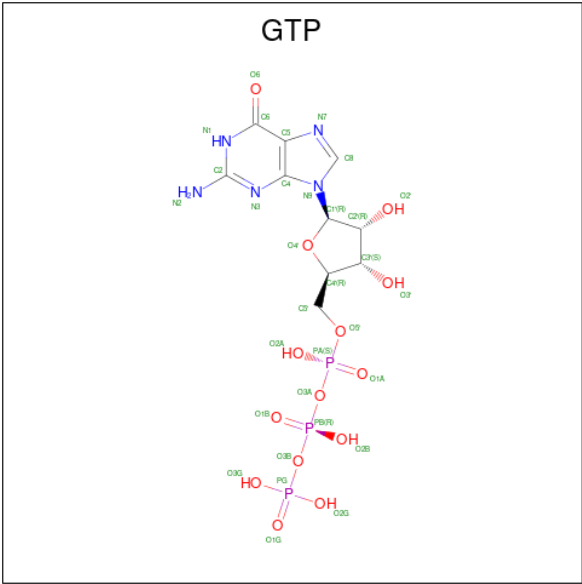
Mol	Chain	Residues	Atoms					AltConf	Trace
79	r	1495	Total	C	N	O	P	0	0
			31749	14277	5600	10377	1495		

- Molecule 80 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
80	1	1	Total	Mg	0
			1	1	
80	B	1	Total	Mg	0
			1	1	
80	E	1	Total	Mg	0
			1	1	
80	K	1	Total	Mg	0
			1	1	
80	W	1	Total	Mg	0
			1	1	
80	AA	173	Total	Mg	0
			173	173	
80	BB	1	Total	Mg	0
			1	1	
80	CC	1	Total	Mg	0
			1	1	
80	NN	1	Total	Mg	0
			1	1	
80	dd	1	Total	Mg	0
			1	1	
80	r	117	Total	Mg	0
			117	117	

- Molecule 81 is GUANOSINE-5'-TRIPHOSPHATE (CCD ID: GTP) (formula: C₁₀H₁₆N₅O₁₄P₃)

(labeled as "Ligand of Interest" by depositor).

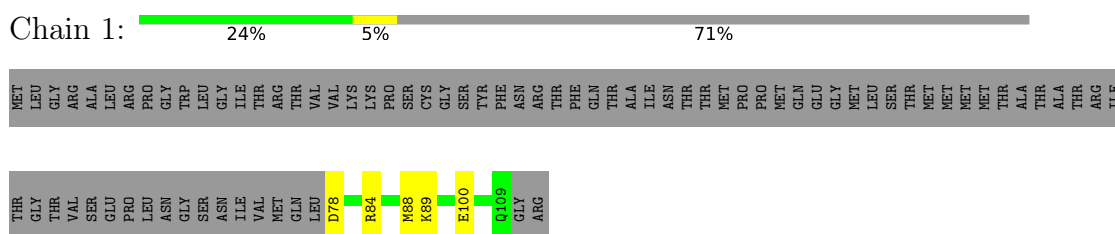


Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
81	W	1	32	10	5	14	3	0

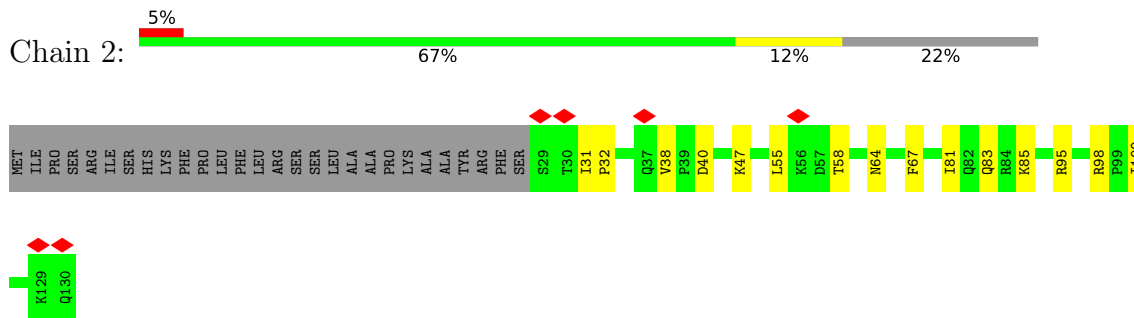
3 Residue-property plots [i](#)

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

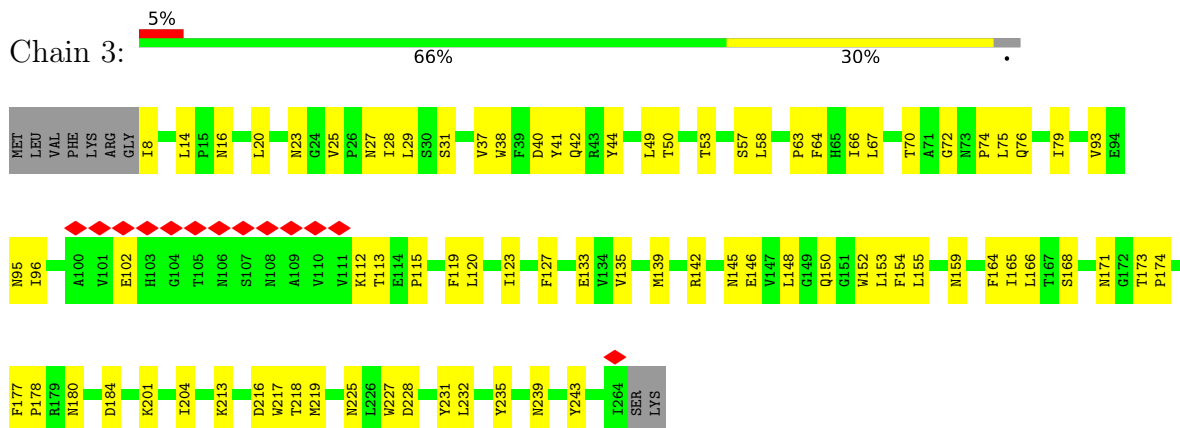
- Molecule 1: Small ribosomal subunit protein mS38



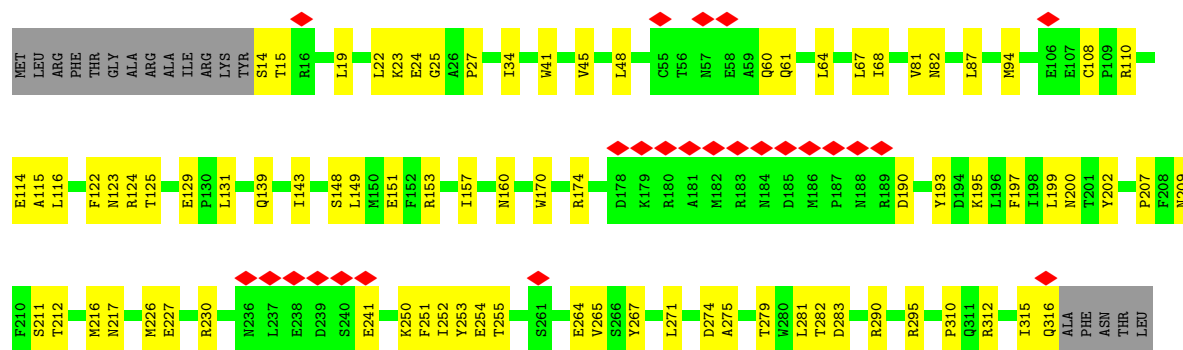
- Molecule 2: Small ribosomal subunit protein mS41



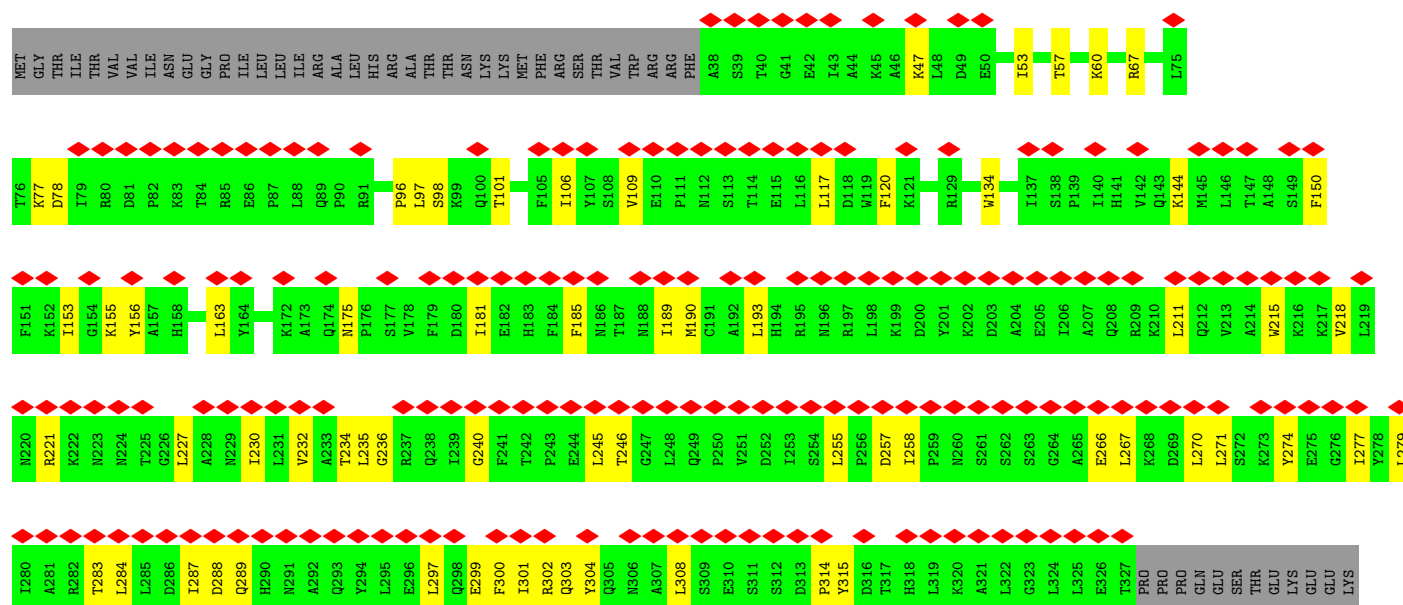
- Molecule 3: Small ribosomal subunit protein mS42



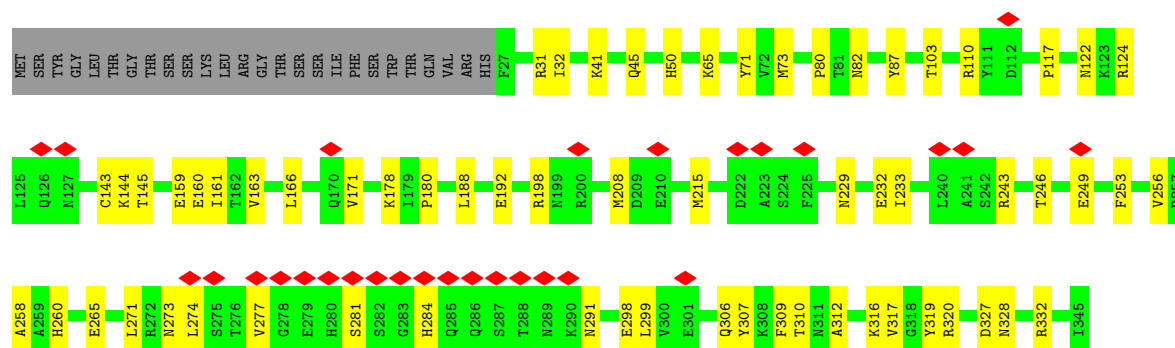
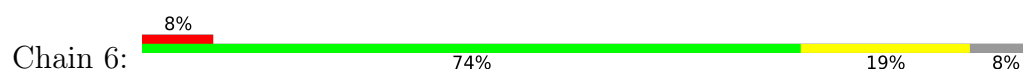
- Molecule 4: Small ribosomal subunit protein mS43



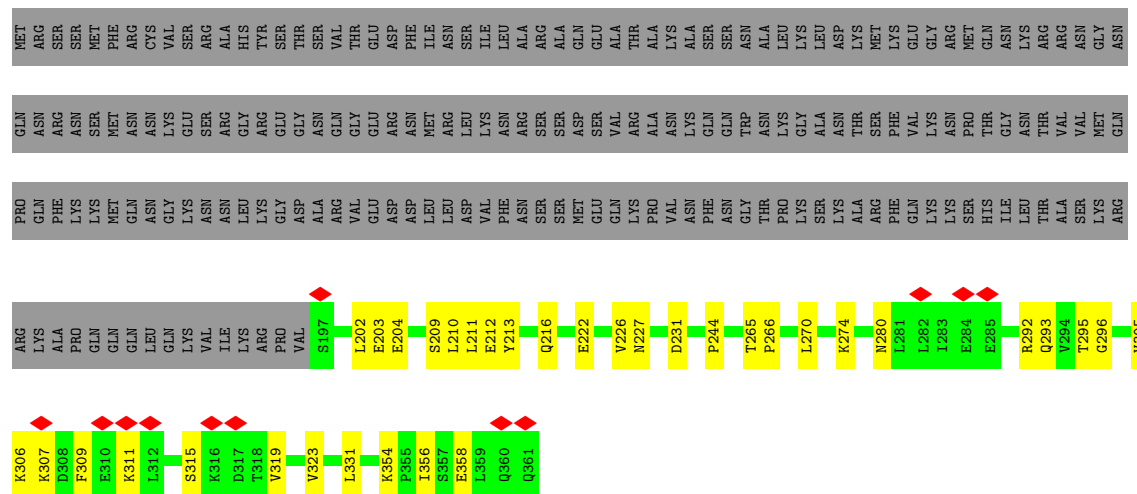
• Molecule 5: Small ribosomal subunit protein mS44



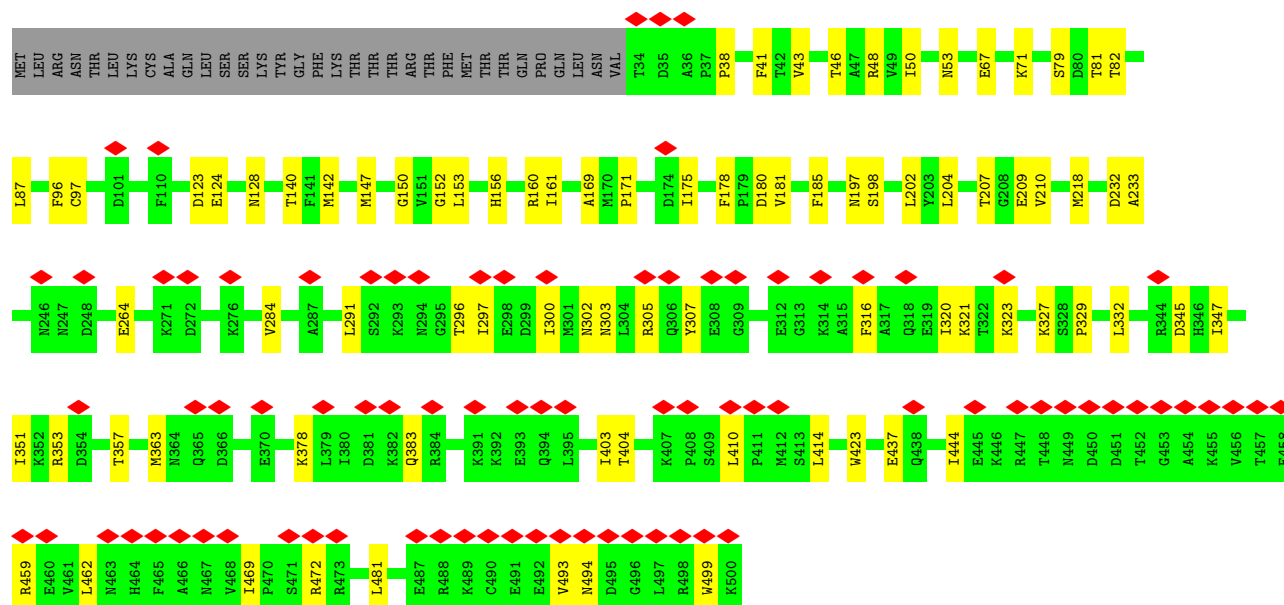
• Molecule 6: Small ribosomal subunit protein mS45



Chain 7: 36% 10% 54%

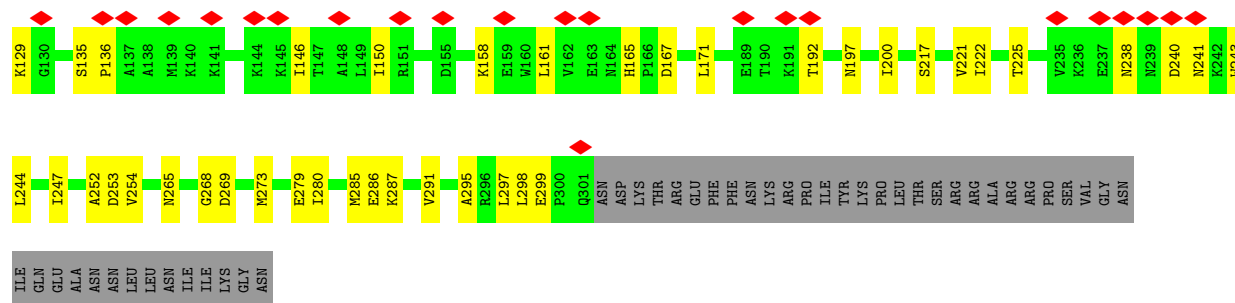


Chain 8: 17% 77% 17% 7%

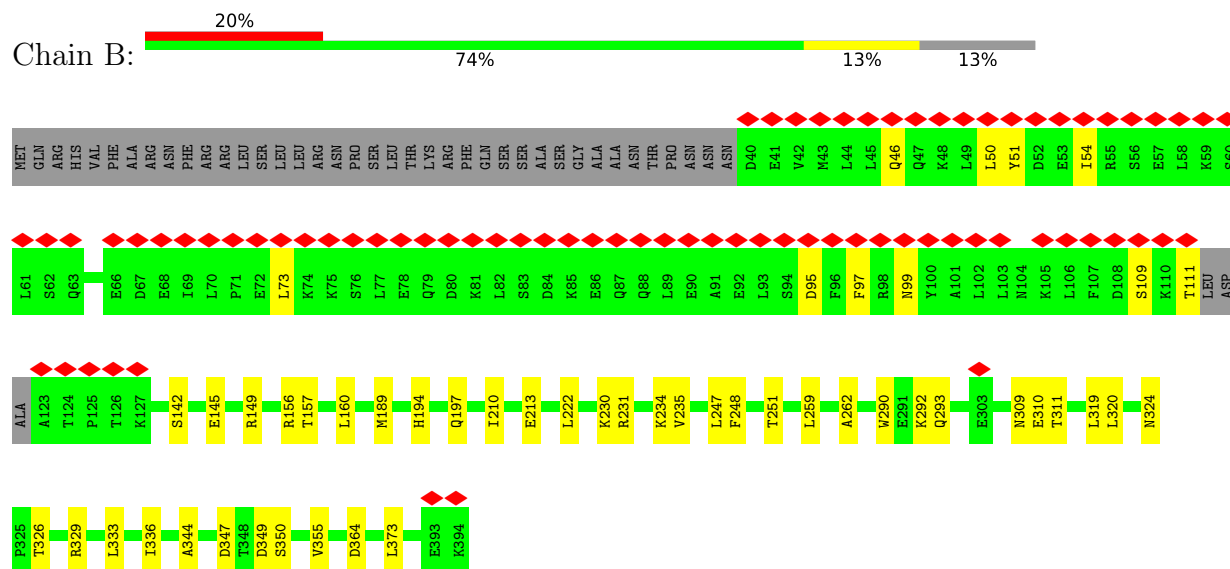


Chain A:

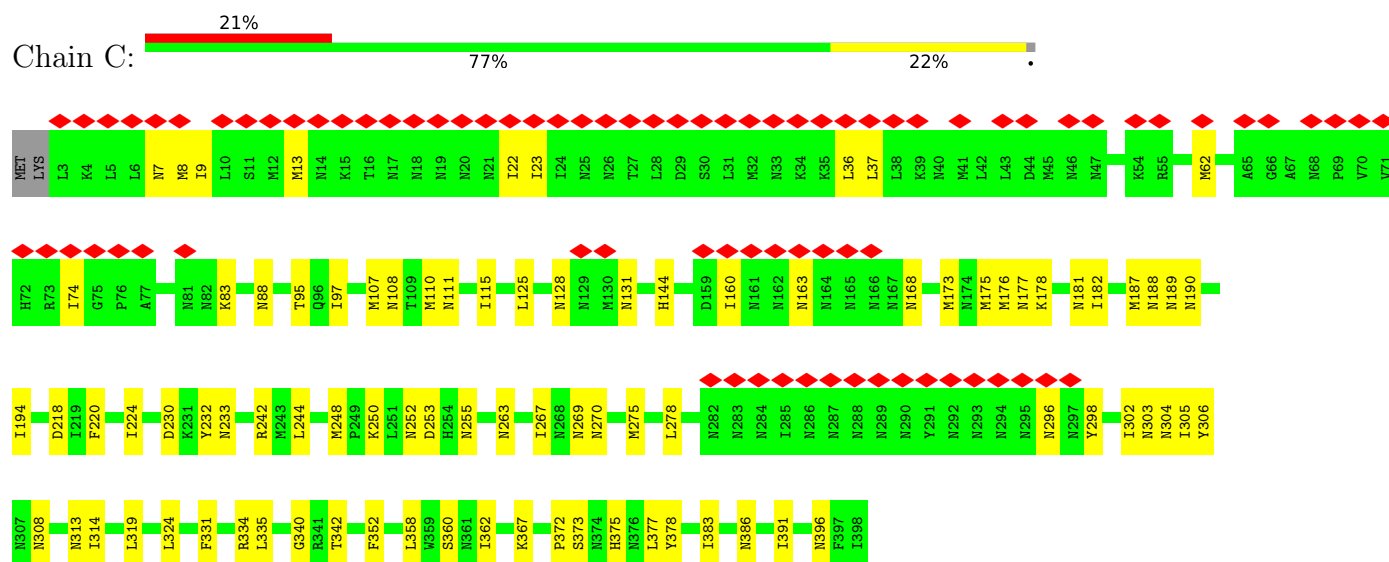




- Molecule 10: Small ribosomal subunit protein uS2m

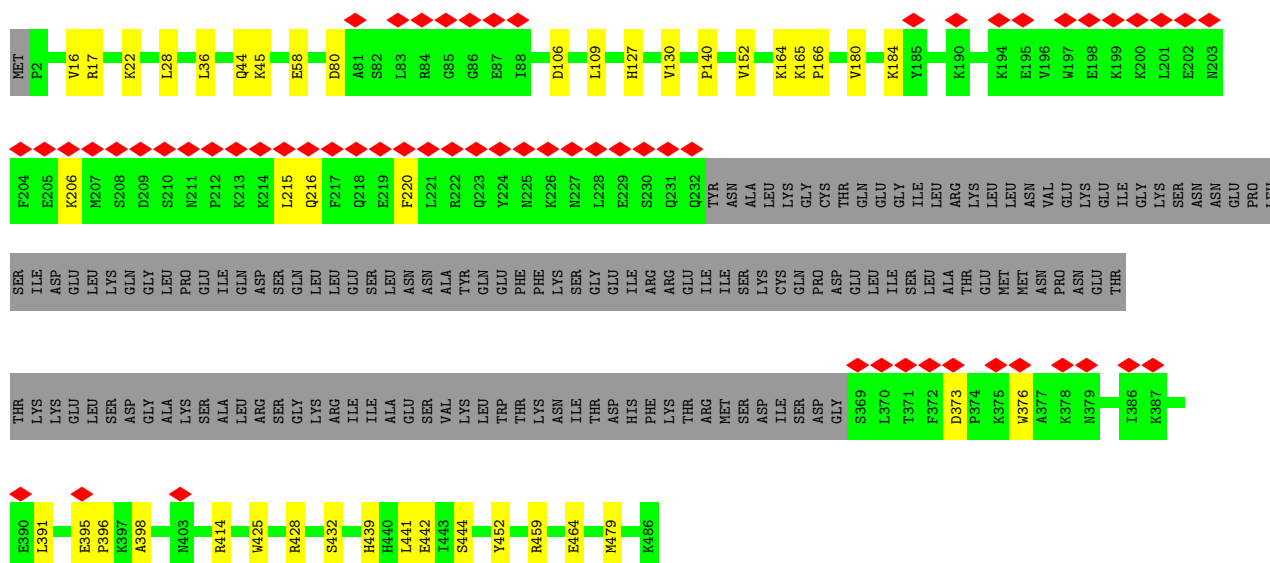


- Molecule 11: Small ribosomal subunit protein uS3m



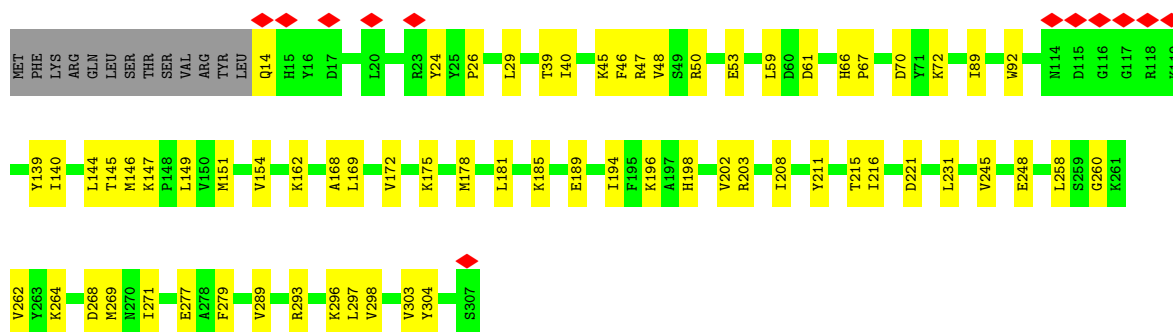
- Molecule 12: Small ribosomal subunit protein uS4m





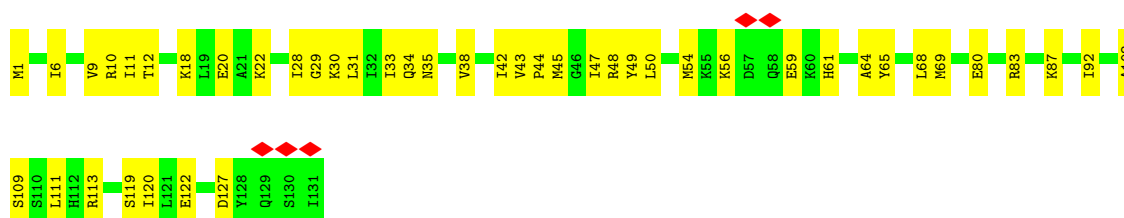
- Molecule 13: Small ribosomal subunit protein uS5m

Chain E: 74% 22%



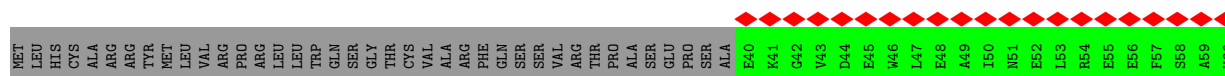
- Molecule 14: Small ribosomal subunit protein bS6m

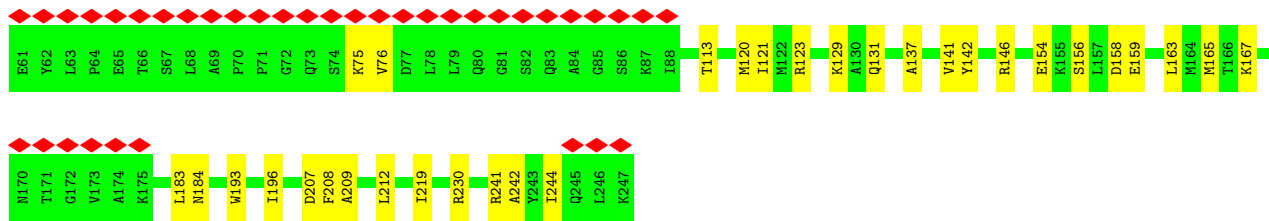
Chain F: 66% 34%



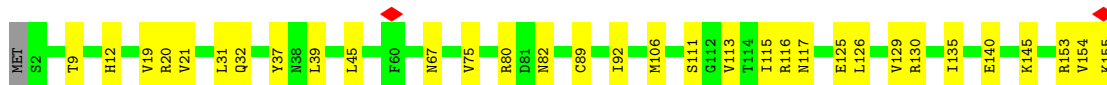
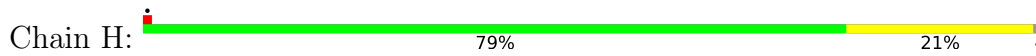
- Molecule 15: Small ribosomal subunit protein uS7m

Chain G: 23% 71% 13% 16%

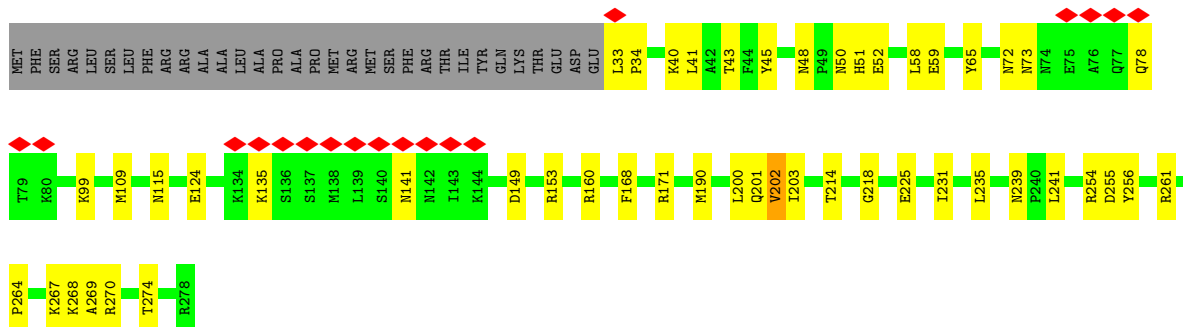




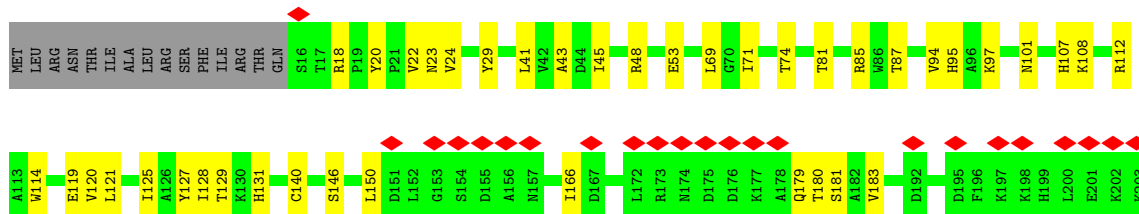
- Molecule 16: Small ribosomal subunit protein uS8m



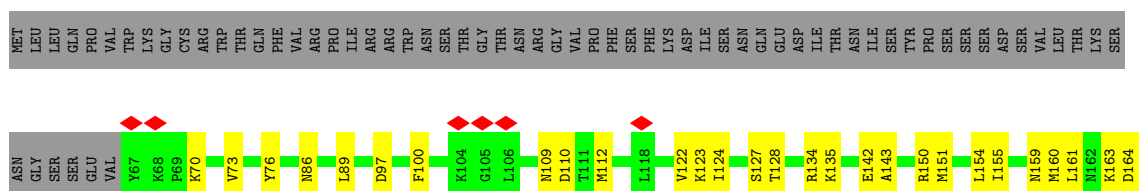
- Molecule 17: Small ribosomal subunit protein uS9m

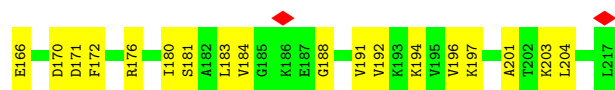


- Molecule 18: Small ribosomal subunit protein uS10m

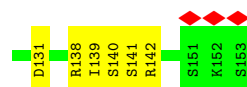
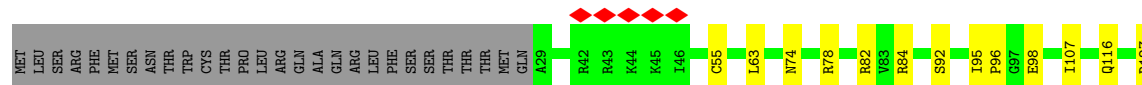


- Molecule 19: Small ribosomal subunit protein uS11m

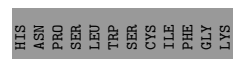
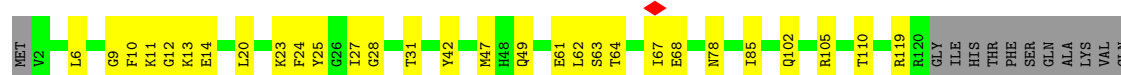




- Molecule 20: Small ribosomal subunit protein uS12m



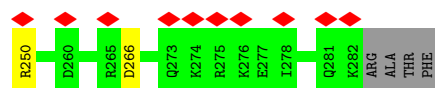
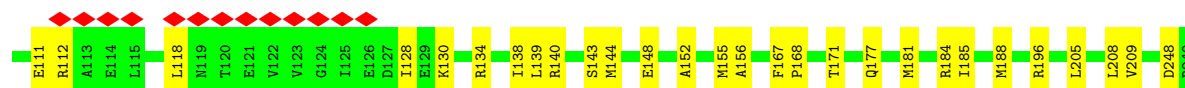
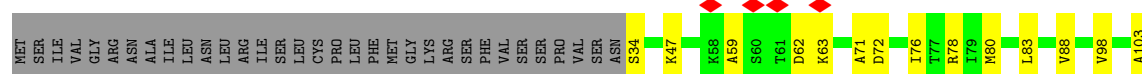
- Molecule 21: Small ribosomal subunit protein uS13m



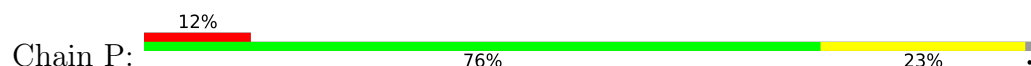
- Molecule 22: Small ribosomal subunit protein uS14m



- Molecule 23: Small ribosomal subunit protein uS15m

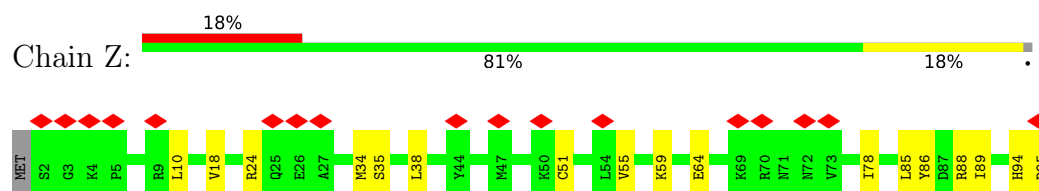


- Molecule 24: Small ribosomal subunit protein bS16m

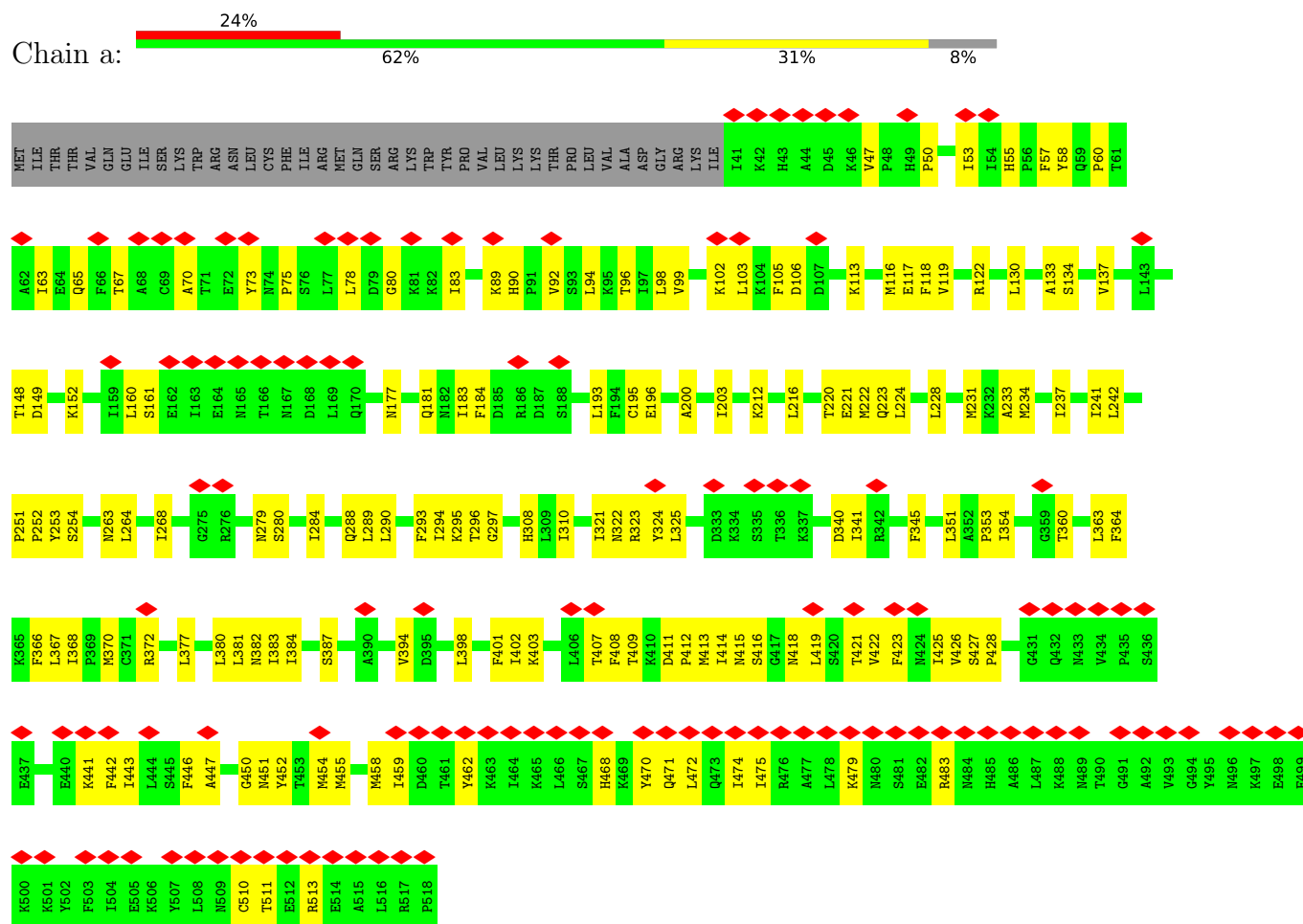




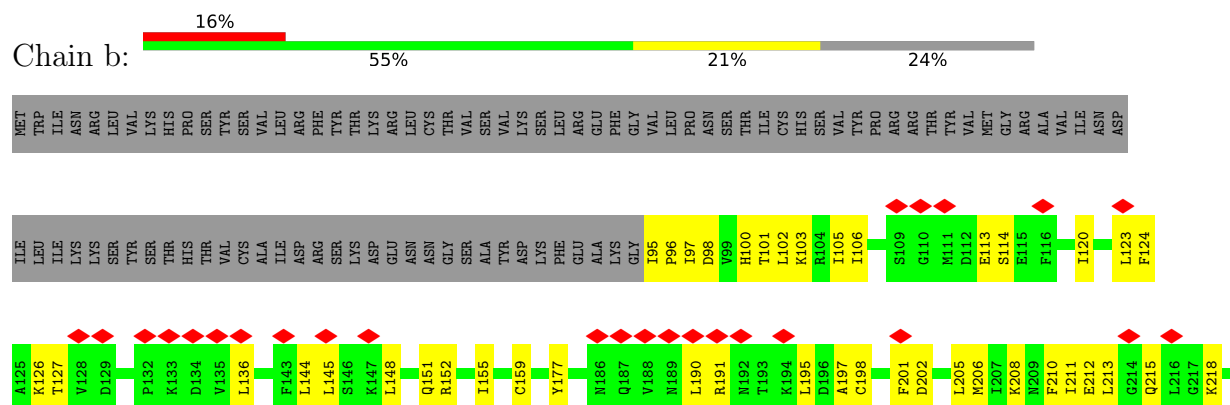
- Molecule 33: Small ribosomal subunit protein mS37



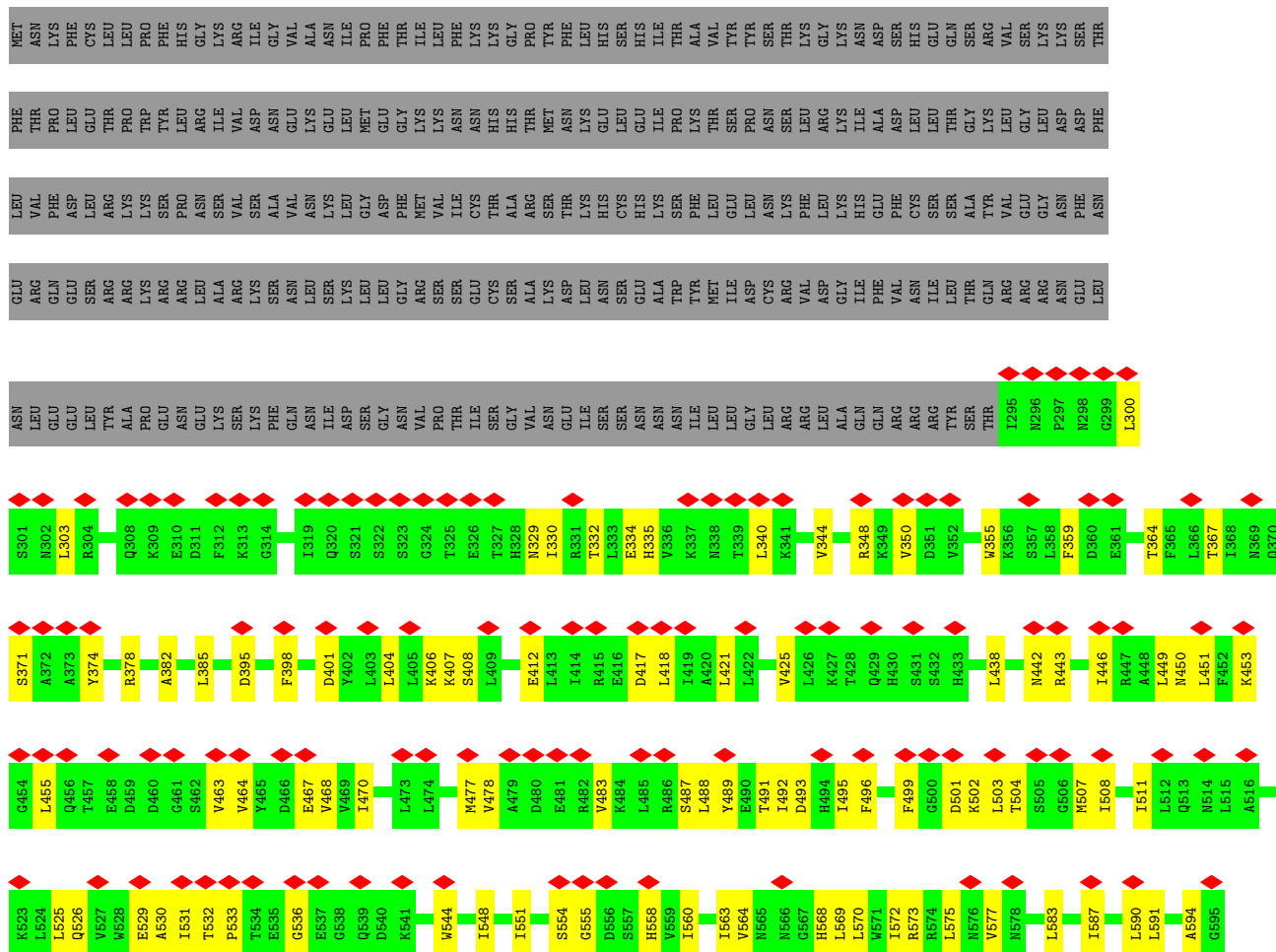
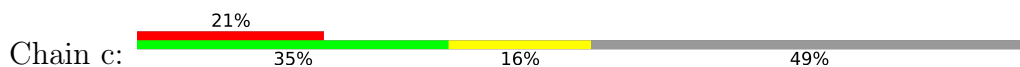
- Molecule 34: ATPase expression protein 1

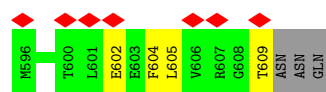


- Molecule 35: ATPase expression protein 2

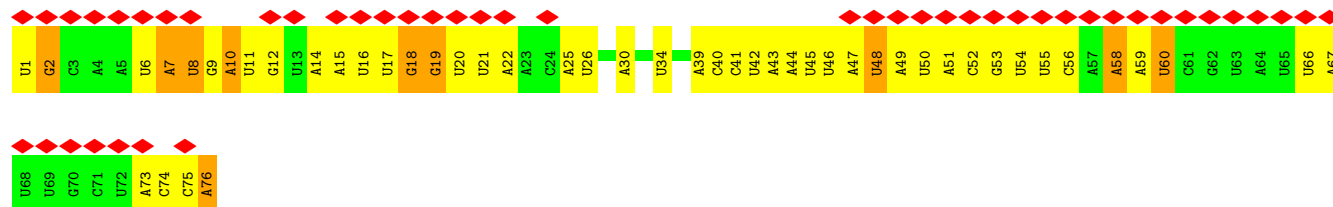


- Molecule 36: ATPase synthesis protein 25, mitochondrial

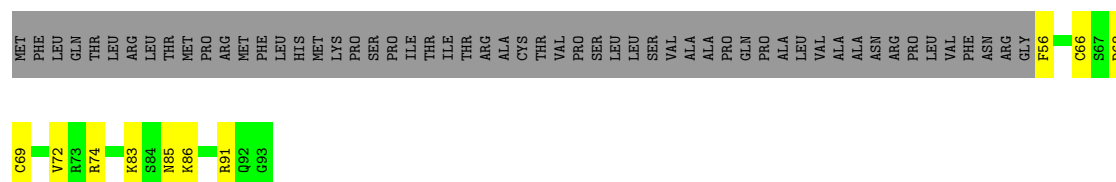




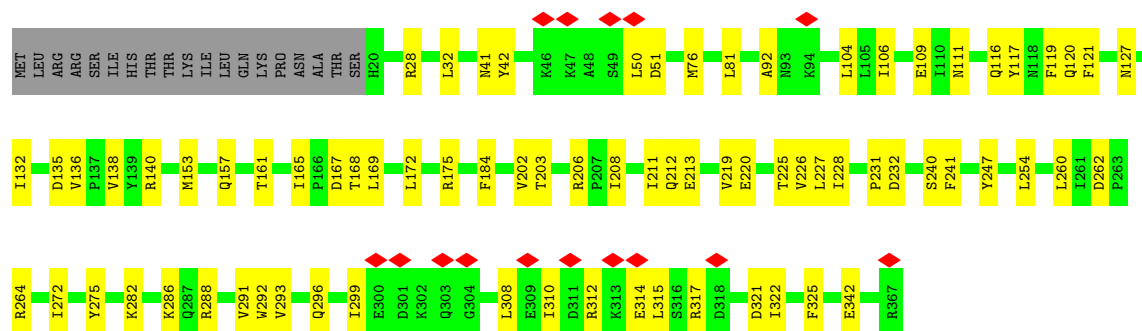
• Molecule 37: E/E-site formyl-methionine tRNA



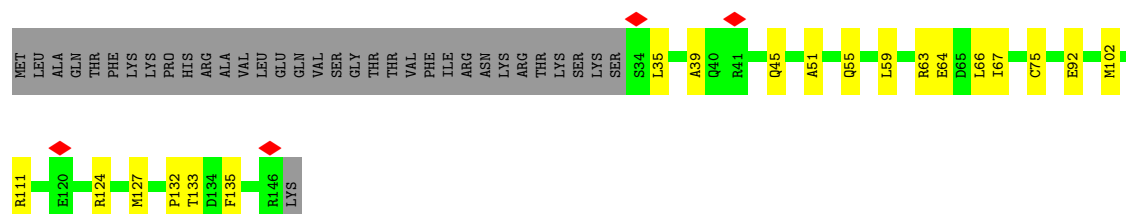
• Molecule 38: Large ribosomal subunit protein bL36m



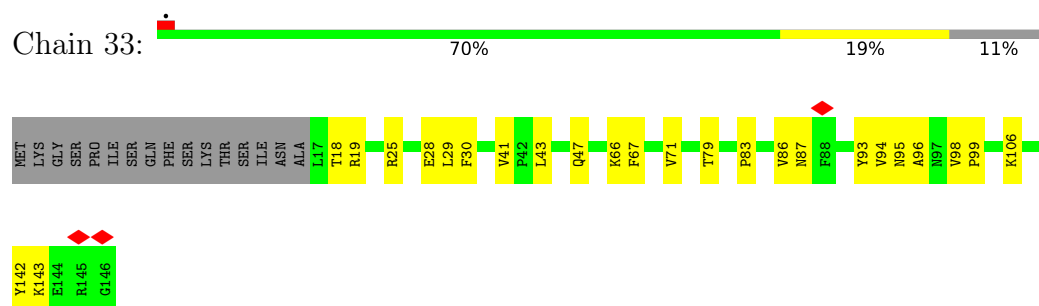
• Molecule 39: Large ribosomal subunit protein mL38



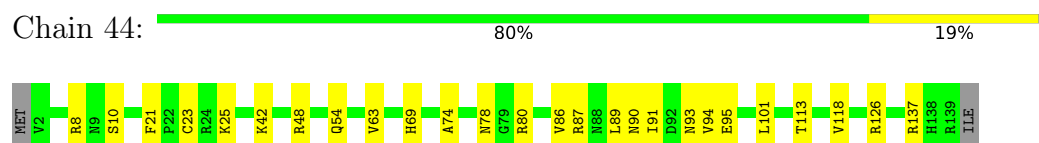
• Molecule 40: Large ribosomal subunit protein mL40



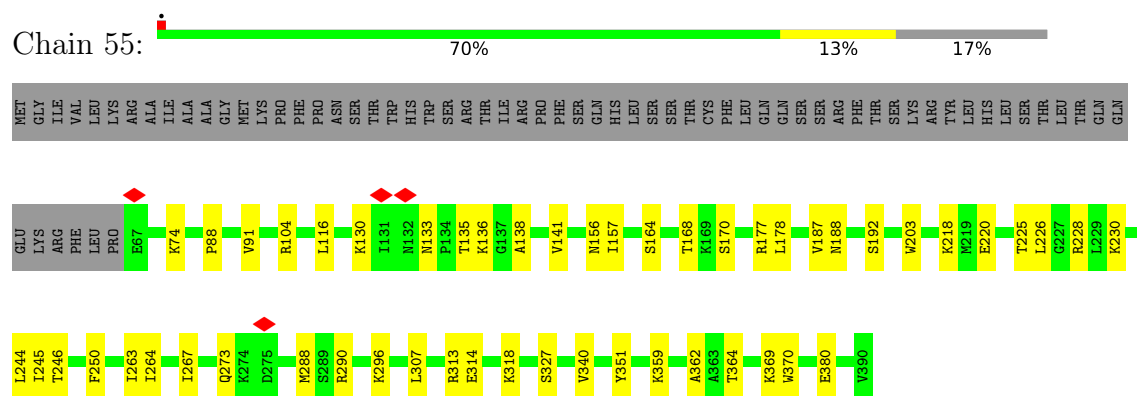
• Molecule 41: Large ribosomal subunit protein mL41



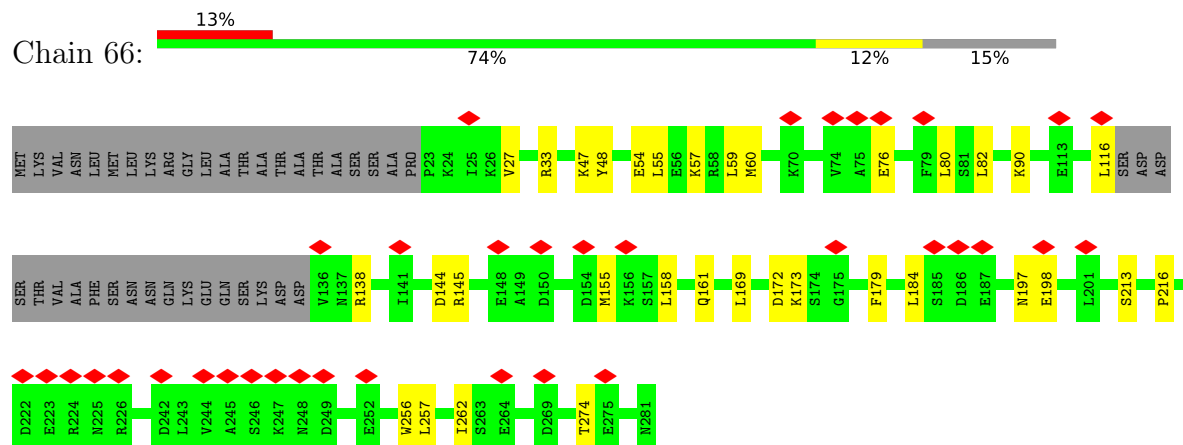
• Molecule 42: Large ribosomal subunit protein mL43



• Molecule 43: Large ribosomal subunit protein mL44

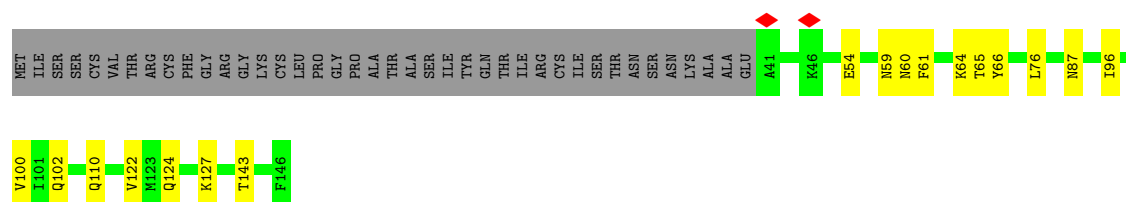


• Molecule 44: Large ribosomal subunit protein mL46

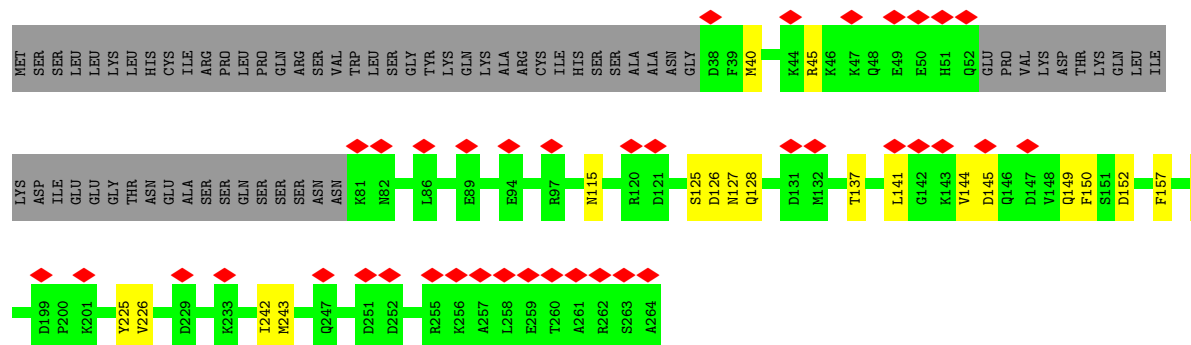


• Molecule 45: Large ribosomal subunit protein mL49

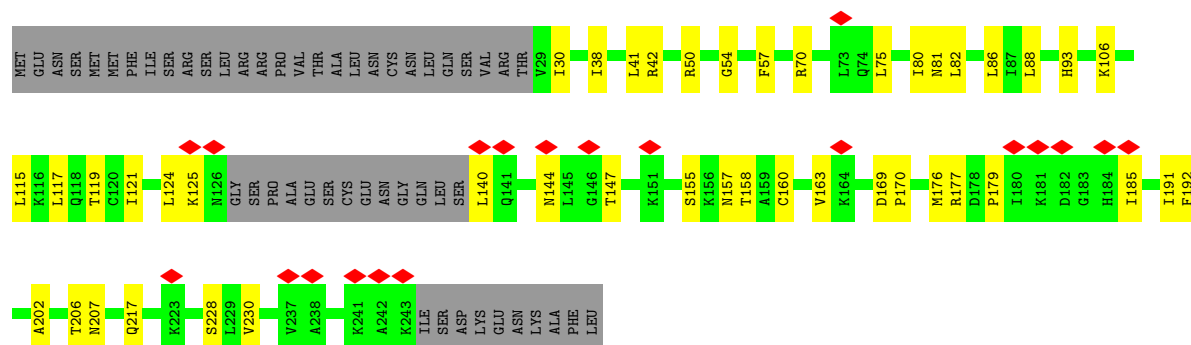




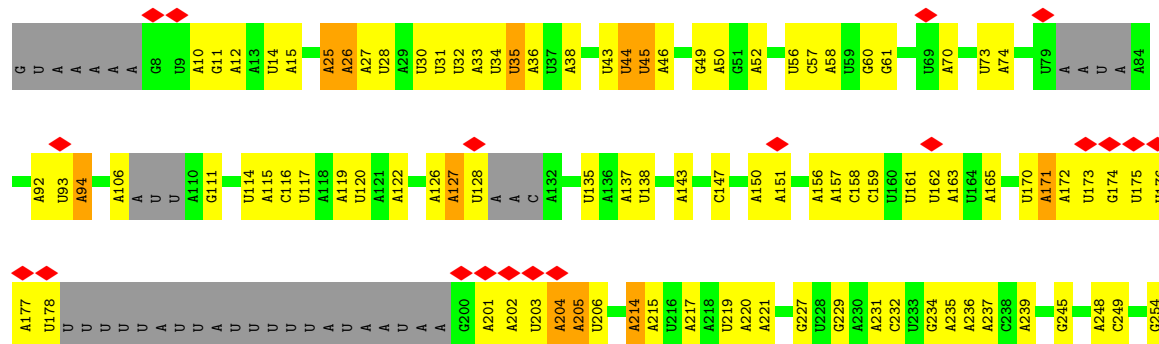
- Molecule 46: Large ribosomal subunit protein mL50

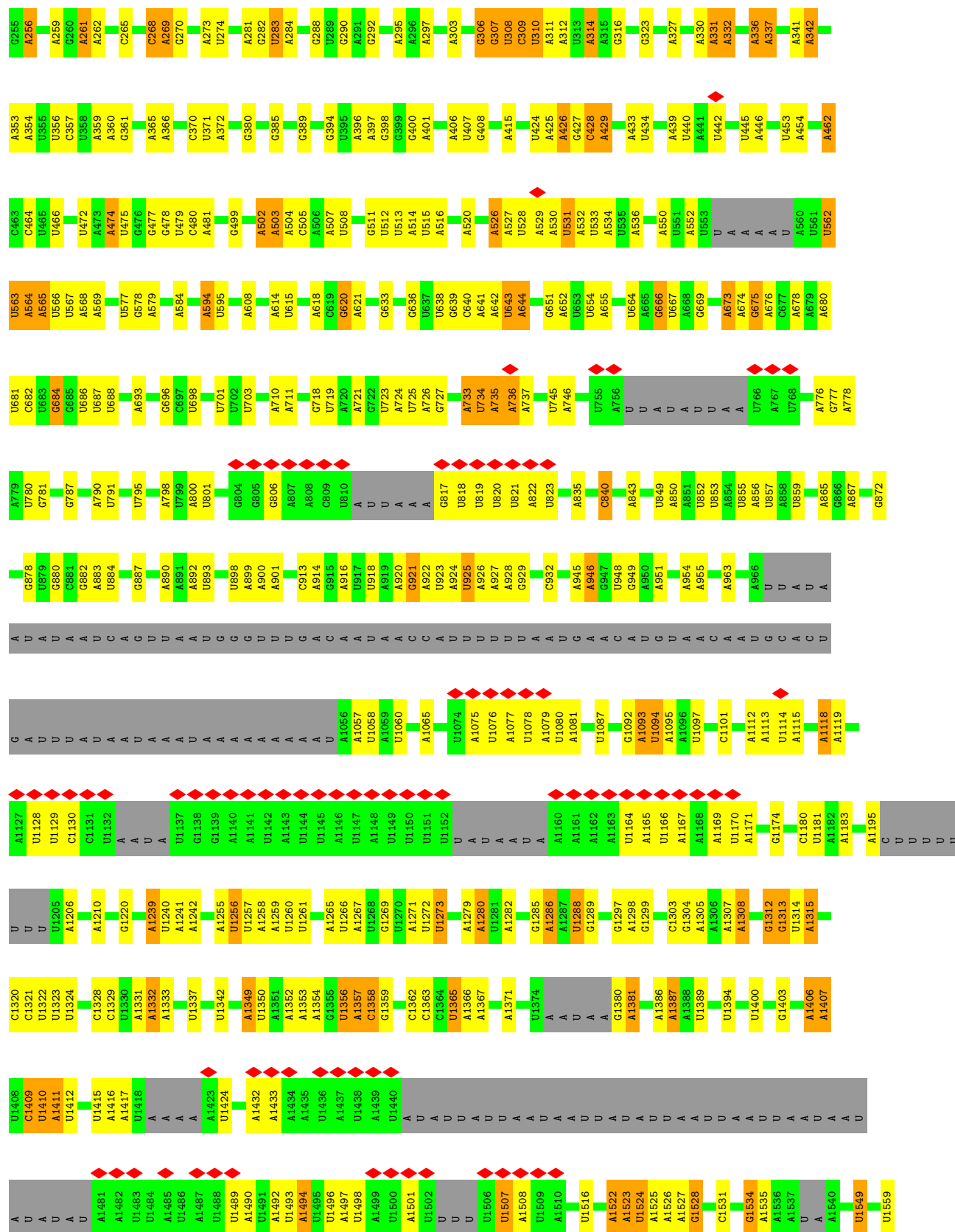


- Molecule 47: Large ribosomal subunit protein mL57

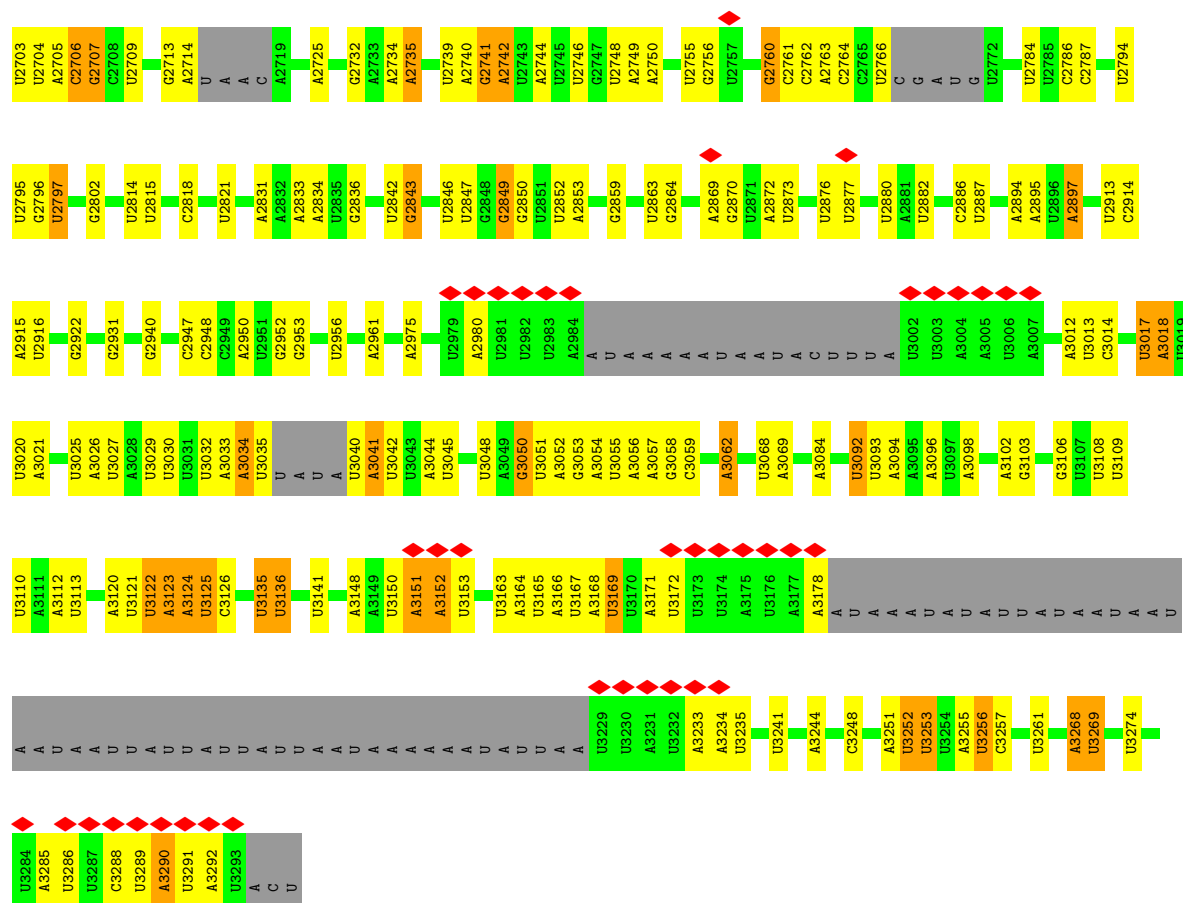


- Molecule 48: 21S mitochondrial rRNA





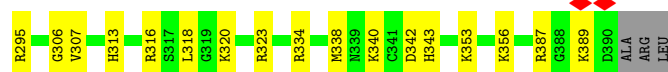
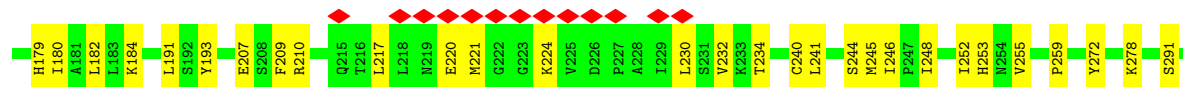
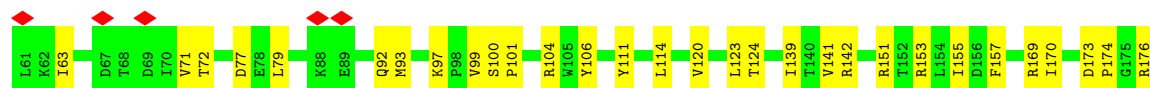




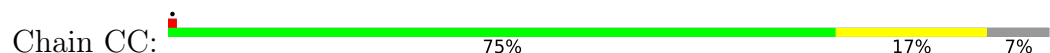
• Molecule 49: Large ribosomal subunit protein uL2m

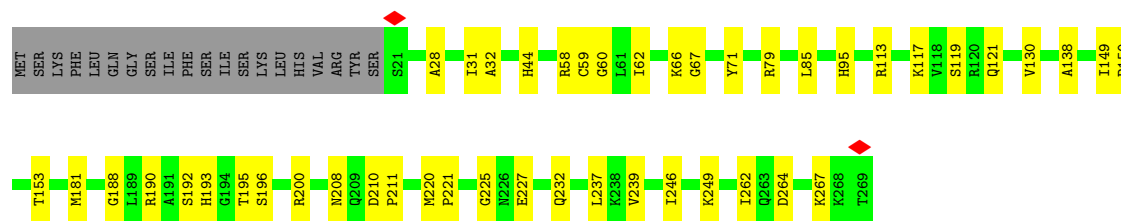


MET LEU VAL LEU GLY SER LEU ARG SER LEU VAL LEU LEU LEU CYS SER SER THR ALA SER LEU ILE SER LYS ARG ASN PRO CYS TYR PRO TYR GLY ILE LEU CYS ARG LEU SER GLN SER VAL LYS TRP GLU ASN THR SER LYS ASP ASP LYS SER SER ASN ILE THR PRO ARG LEU

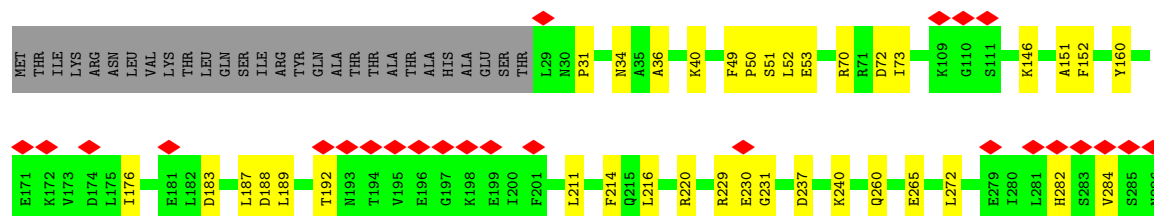
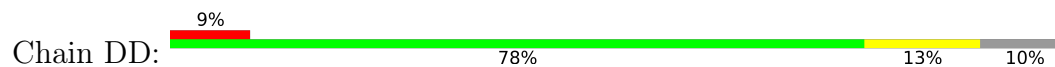


• Molecule 50: Large ribosomal subunit protein uL3m

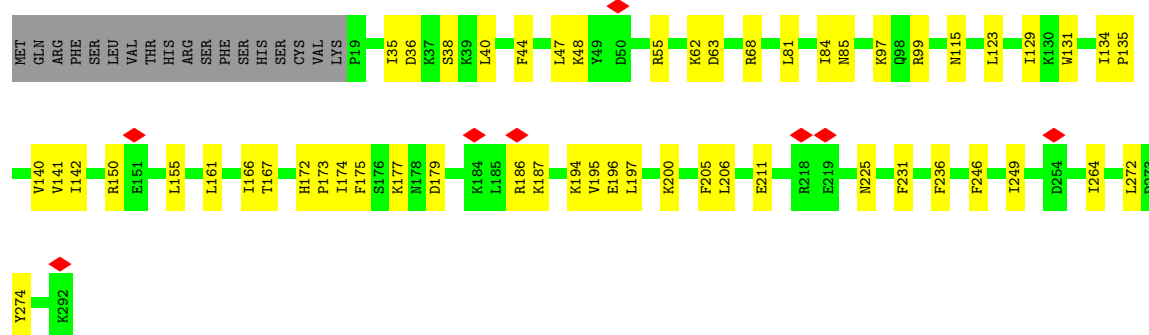
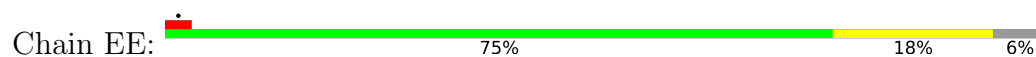




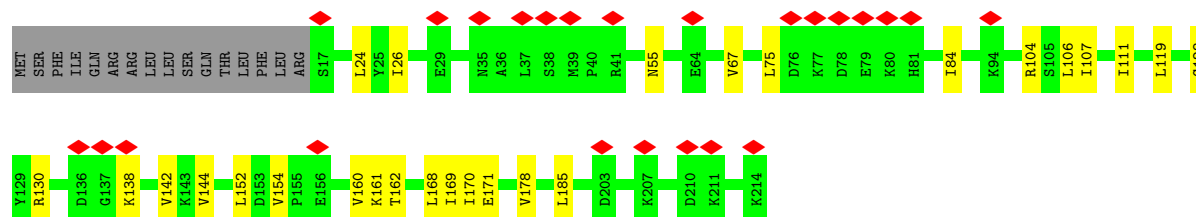
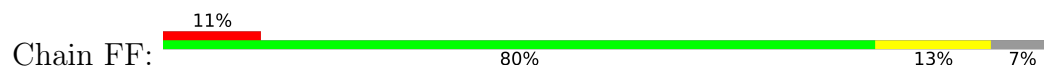
- Molecule 51: Large ribosomal subunit protein uL4m



- Molecule 52: Large ribosomal subunit protein uL5m



- Molecule 53: Large ribosomal subunit protein uL6m



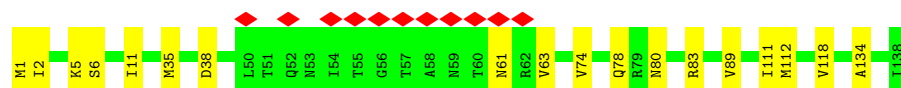
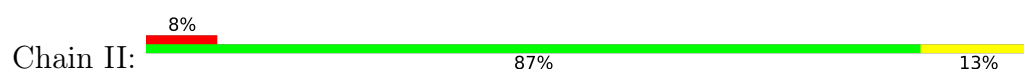
- Molecule 54: Large ribosomal subunit protein bL9m



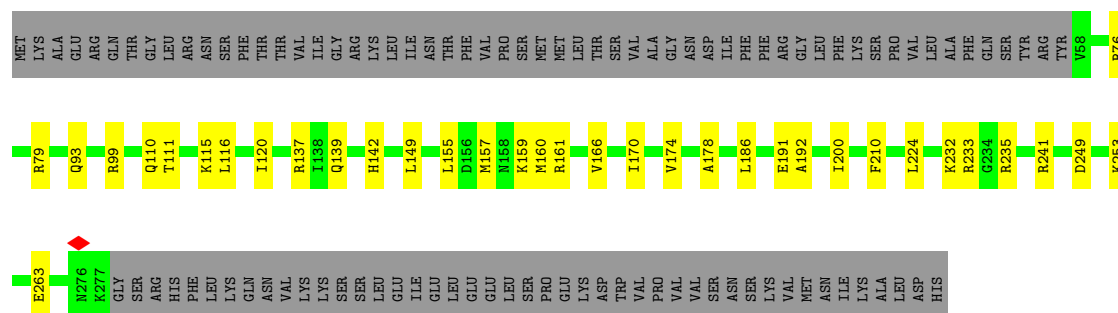
- Molecule 55: Large ribosomal subunit protein uL13m



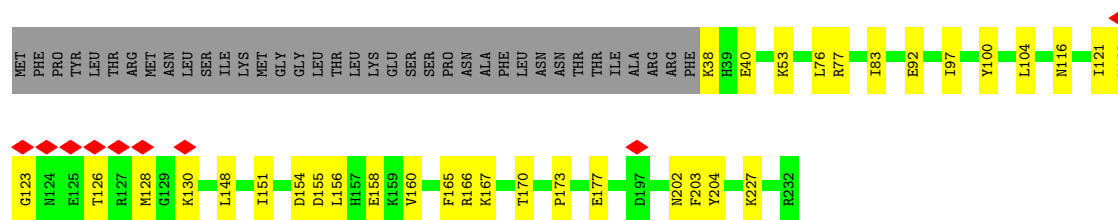
- Molecule 56: Large ribosomal subunit protein uL14m



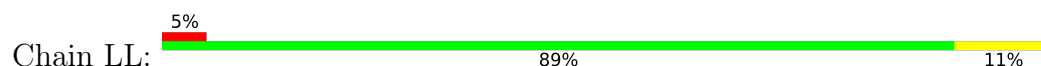
- Molecule 57: Large ribosomal subunit protein uL15m



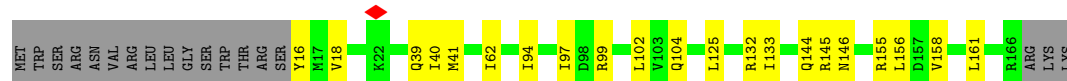
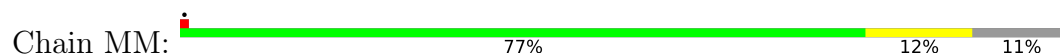
- Molecule 58: Large ribosomal subunit protein uL16m



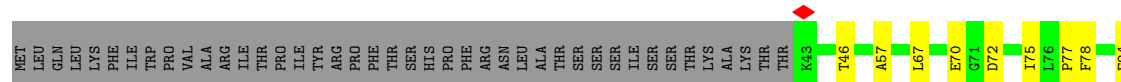
- Molecule 59: Large ribosomal subunit protein bL17m



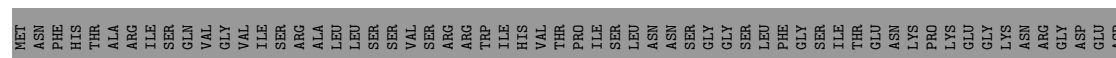
- Molecule 60: Large ribosomal subunit protein bL19m



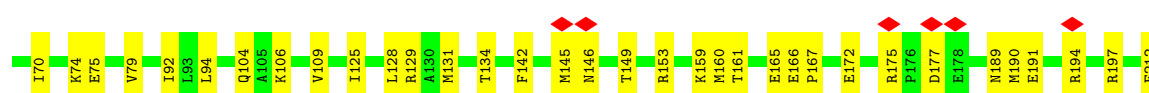
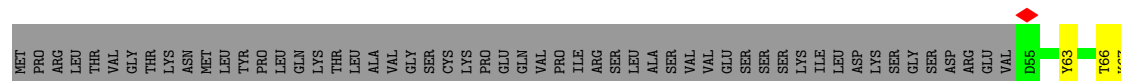
- Molecule 61: Large ribosomal subunit protein bL21m



- Molecule 62: Large ribosomal subunit protein uL22m



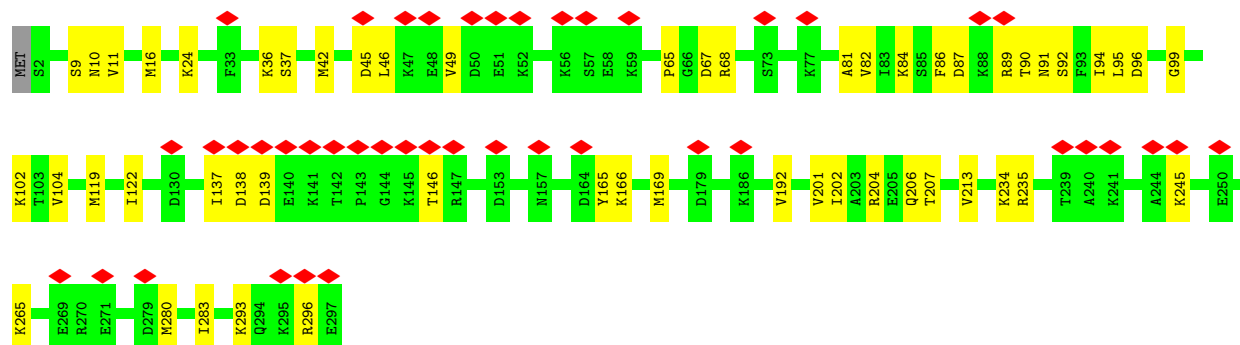
- Molecule 63: Large ribosomal subunit protein uL23m





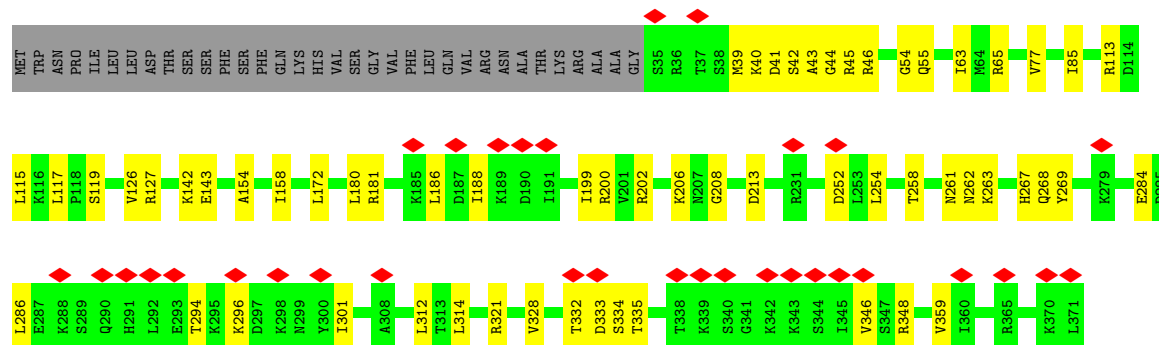
- Molecule 64: Large ribosomal subunit protein uL24m

Chain QQ: 14% 82% 18%



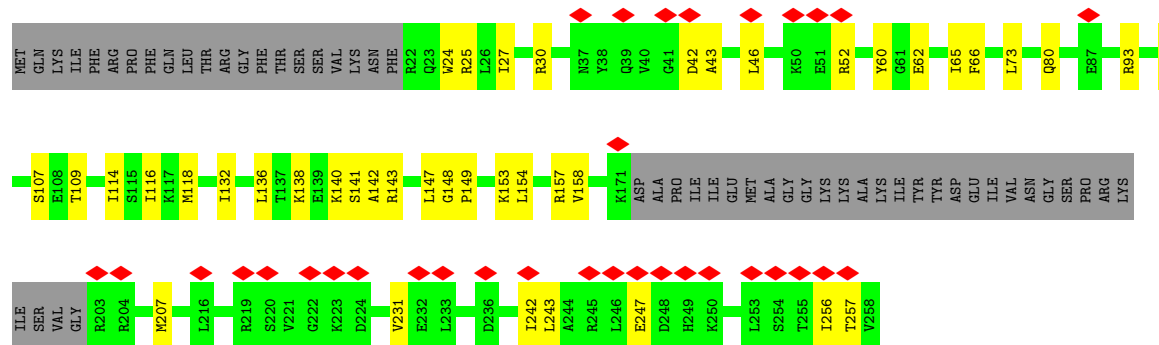
- Molecule 65: Large ribosomal subunit protein bL27m

Chain RR: 9% 75% 16% 9%



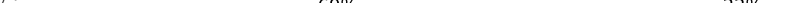
- Molecule 66: Large ribosomal subunit protein bL28m

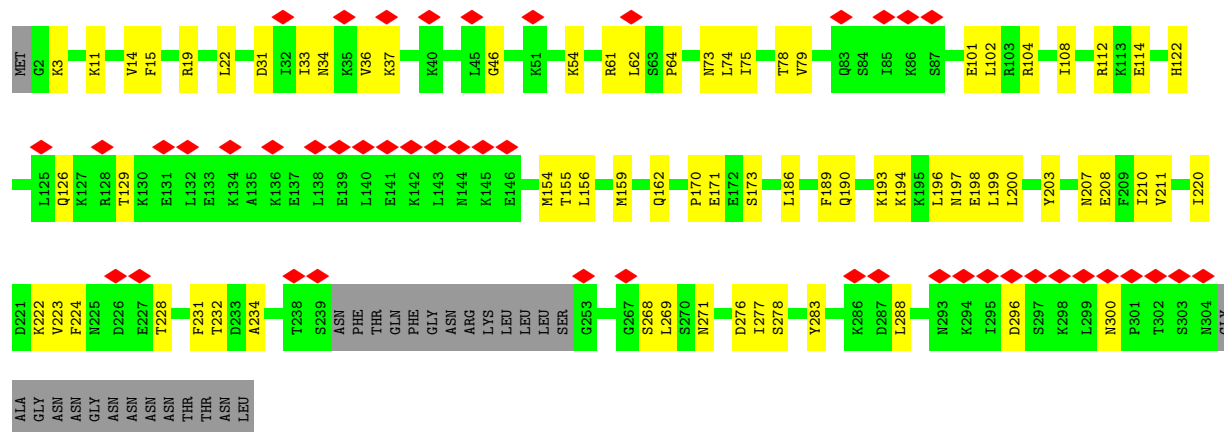
Chain SS: 13% 64% 16% 20%

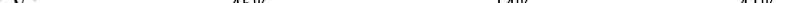


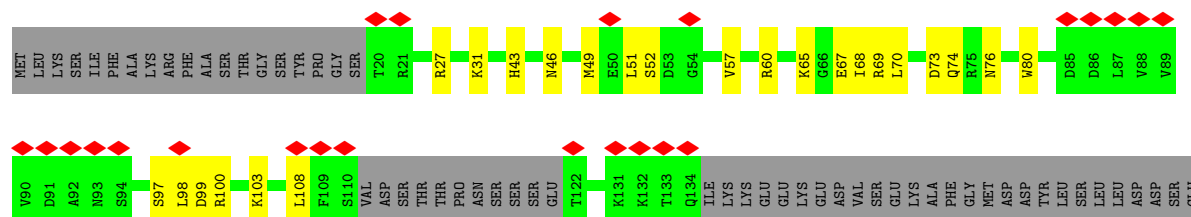
- Molecule 67: Large ribosomal subunit protein uL29m



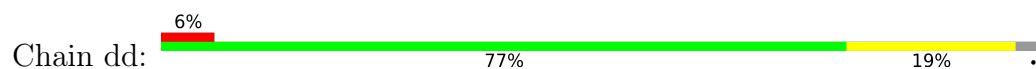
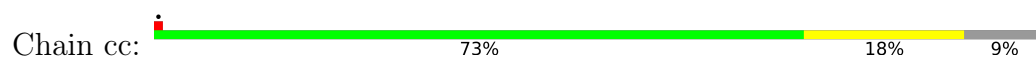
- Chain V: 



- Chain VV: 



- Chain bb:  80% 18%





U1635	U1636	A1637	A1638	A1639	U1640	A1641	U1642	U1643	C1644	U1645	U1646	A1647	C1648	A1649
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4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	22558	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	38	Depositor
Minimum defocus (nm)	400	Depositor
Maximum defocus (nm)	2600	Depositor
Magnification	165000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	1.110	Depositor
Minimum map value	-0.058	Depositor
Average map value	0.100	Depositor
Map value standard deviation	0.025	Depositor
Recommended contour level	0.17	Depositor
Map size (Å)	529.92, 529.92, 529.92	wwPDB
Map dimensions	640, 640, 640	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.82799995, 0.82799995, 0.82799995	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: MG, GTP

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	1	0.19	0/288	0.29	0/367
2	2	0.20	0/877	0.32	0/1173
3	3	0.18	0/2114	0.35	0/2872
4	4	0.14	0/2485	0.30	0/3354
5	5	0.13	0/2409	0.27	0/3263
6	6	0.15	0/2655	0.28	0/3583
7	7	0.17	0/1358	0.30	0/1839
8	8	0.13	0/3766	0.26	0/5099
9	A	0.17	0/2472	0.32	0/3331
10	B	0.18	0/2777	0.28	0/3763
11	C	0.20	0/3313	0.33	0/4470
12	D	0.17	0/2979	0.26	0/4011
13	E	0.20	0/2403	0.34	0/3237
14	F	0.16	0/1068	0.30	0/1430
15	G	0.16	0/1675	0.27	0/2263
16	H	0.20	0/1232	0.30	0/1660
17	I	0.23	0/2012	0.38	1/2707 (0.0%)
18	J	0.28	0/1562	0.35	0/2113
19	K	0.17	0/1221	0.38	0/1628
20	L	0.17	0/969	0.27	0/1300
21	M	0.20	0/949	0.34	0/1267
22	N	0.28	0/964	0.36	0/1290
23	O	0.17	0/2058	0.28	0/2749
24	P	0.22	0/967	0.30	0/1307
25	Q	0.12	0/1942	0.26	0/2594
26	R	0.15	0/848	0.30	0/1130
27	S	0.22	0/678	0.29	0/915
28	T	0.16	0/795	0.33	0/1050
29	U	0.19	0/1982	0.28	0/2679
30	W	0.24	0/3297	0.32	0/4456
31	X	0.21	0/811	0.28	0/1084
32	Y	0.19	0/2337	0.28	0/3153

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	Z	0.15	0/755	0.29	0/1017
34	a	0.11	0/3950	0.31	0/5339
35	b	0.12	0/3697	0.31	0/4982
36	c	0.10	0/2596	0.29	0/3512
37	t	0.14	0/1791	0.28	0/2784
38	00	0.20	0/329	0.32	0/432
39	11	0.20	0/2949	0.28	0/3998
40	22	0.15	0/963	0.29	0/1295
41	33	0.17	0/1072	0.32	0/1442
42	44	0.19	0/1138	0.29	0/1526
43	55	0.17	0/2604	0.27	0/3526
44	66	0.15	0/2022	0.28	0/2725
45	77	0.16	0/873	0.31	0/1170
46	88	0.12	0/1659	0.22	0/2230
47	99	0.14	0/1616	0.30	0/2177
48	AA	0.22	0/64519	0.30	0/100365
49	BB	0.20	0/2639	0.38	0/3545
50	CC	0.19	0/1975	0.30	0/2657
51	DD	0.16	0/2077	0.29	0/2814
52	EE	0.18	0/2244	0.31	0/3033
53	FF	0.11	0/1568	0.24	0/2115
54	GG	0.14	0/671	0.25	0/902
55	HH	0.19	0/1319	0.24	0/1771
56	II	0.16	0/1041	0.28	0/1396
57	JJ	0.17	0/1783	0.26	0/2384
58	KK	0.17	0/1606	0.26	0/2148
59	LL	0.17	0/1913	0.26	0/2581
60	MM	0.17	0/1224	0.28	0/1651
61	NN	0.19	0/970	0.27	0/1306
62	OO	0.19	0/1859	0.28	0/2495
63	PP	0.17	0/1773	0.27	0/2390
64	QQ	0.13	0/2420	0.27	0/3267
65	RR	0.15	0/2827	0.27	0/3780
66	SS	0.19	0/1748	0.33	0/2338
67	TT	0.14	0/2311	0.27	0/3135
68	UU	0.20	0/648	0.32	0/870
69	V	0.13	0/2354	0.27	0/3153
70	VV	0.14	0/818	0.30	0/1103
71	WW	0.18	0/955	0.28	0/1273
72	XX	0.16	0/520	0.26	0/696
73	YY	0.18	0/392	0.25	0/515
74	ZZ	0.18	0/522	0.23	0/695
75	aa	0.18	0/1471	0.29	0/1976

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
76	bb	0.16	0/1333	0.33	0/1783
77	cc	0.20	0/1028	0.28	0/1372
78	dd	0.18	0/1880	0.27	0/2541
79	r	0.23	0/35552	0.29	0/55314
All	All	0.20	0/231237	0.30	1/332656 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
17	I	202	VAL	N-CA-C	-6.11	103.95	110.36

There are no chirality outliers.

There are no planarity outliers.

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	1	288	0	341	6	0
2	2	858	0	865	12	0
3	3	2063	0	2039	80	0
4	4	2436	0	2422	76	0
5	5	2354	0	2401	50	0
6	6	2593	0	2613	65	0
7	7	1330	0	1350	32	0
8	8	3690	0	3680	65	0
9	A	2419	0	2467	66	0
10	B	2727	0	2747	42	0
11	C	3264	0	3253	69	0
12	D	2899	0	2958	30	0
13	E	2348	0	2359	62	0
14	F	1055	0	1129	45	0
15	G	1645	0	1688	27	0
16	H	1213	0	1277	29	0
17	I	1974	0	2062	41	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
18	J	1526	0	1531	35	0
19	K	1201	0	1253	39	0
20	L	954	0	1010	16	0
21	M	935	0	1000	27	0
22	N	945	0	993	30	0
23	O	2035	0	2105	42	0
24	P	951	0	1010	26	0
25	Q	1923	0	2007	42	0
26	R	836	0	868	34	0
27	S	662	0	686	15	0
28	T	784	0	813	22	0
29	U	1939	0	1929	37	0
30	W	3231	0	3332	60	0
31	X	797	0	842	13	0
32	Y	2281	0	2251	30	0
33	Z	739	0	765	22	0
34	a	3871	0	3970	139	0
35	b	3618	0	3708	83	0
36	c	2551	0	2594	73	0
37	t	1604	0	808	27	0
38	00	324	0	345	7	0
39	11	2875	0	2881	60	0
40	22	944	0	969	19	0
41	33	1046	0	1071	26	0
42	44	1117	0	1142	26	0
43	55	2552	0	2600	41	0
44	66	1975	0	1993	25	0
45	77	858	0	908	15	0
46	88	1629	0	1633	16	0
47	99	1587	0	1628	28	0
48	AA	57599	0	28895	609	0
49	BB	2591	0	2716	61	0
50	CC	1932	0	1969	41	0
51	DD	2036	0	2075	32	0
52	EE	2187	0	2203	46	0
53	FF	1541	0	1611	20	0
54	GG	659	0	665	5	0
55	HH	1292	0	1334	19	0
56	II	1034	0	1111	17	0
57	JJ	1746	0	1840	29	0
58	KK	1573	0	1629	30	0
59	LL	1882	0	1963	19	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
60	MM	1206	0	1283	17	0
61	NN	957	0	1019	25	0
62	OO	1826	0	1933	38	0
63	PP	1729	0	1724	40	0
64	QQ	2367	0	2427	48	0
65	RR	2781	0	2864	46	0
66	SS	1712	0	1798	37	0
67	TT	2255	0	2220	49	0
68	UU	639	0	699	19	0
69	V	2322	0	2421	77	0
70	VV	805	0	781	21	0
71	WW	937	0	974	23	0
72	XX	512	0	563	12	0
73	YY	385	0	423	5	0
74	ZZ	508	0	539	12	0
75	aa	1440	0	1473	29	0
76	bb	1299	0	1367	30	0
77	cc	1004	0	1065	20	0
78	dd	1830	0	1827	34	0
79	r	31749	0	15925	453	0
80	1	1	0	0	0	0
80	AA	173	0	0	0	0
80	B	1	0	0	0	0
80	BB	1	0	0	0	0
80	CC	1	0	0	0	0
80	E	1	0	0	0	0
80	K	1	0	0	0	0
80	NN	1	0	0	0	0
80	W	1	0	0	0	0
80	dd	1	0	0	0	0
80	r	117	0	0	0	0
81	W	32	0	12	0	0
All	All	218112	0	175644	3204	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 8.

All (3204) 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)
9:A:3:LEU:HD11	10:B:222:LEU:HD12	1.53	0.90

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
79:r:1194:U:H2'	79:r:1195:A:C8	2.11	0.85
79:r:779:A:H2'	79:r:780:G:C8	2.13	0.83
6:6:249:GLU:HA	13:E:296:LYS:HB2	1.63	0.81
78:dd:77:VAL:HG12	78:dd:163:ILE:HG13	1.64	0.80
79:r:1503:U:H2'	79:r:1504:A:C8	2.17	0.79
48:AA:1409:C:O2'	48:AA:1410:U:OP1	2.01	0.78
21:M:110:THR:HG21	79:r:1374:A:O2'	1.83	0.78
79:r:1195:A:H2'	79:r:1196:U:C6	2.19	0.77
63:PP:131:MET:HE3	63:PP:165:GLU:HG2	1.65	0.77
48:AA:283:U:H2'	48:AA:284:A:C8	2.20	0.77
37:t:6:U:O2'	37:t:7:A:O5'	2.01	0.77
27:S:21:LEU:HD22	27:S:35:THR:HG21	1.67	0.76
69:V:78:THR:HG23	69:V:79:VAL:N	1.99	0.76
48:AA:513:U:H2'	48:AA:514:A:C8	2.20	0.76
79:r:1192:U:H2'	79:r:1193:A:H8	1.51	0.76
48:AA:2794:U:H2'	48:AA:2797:U:H5''	1.67	0.76
79:r:154:U:C2	79:r:156:A:N7	2.53	0.76
48:AA:504:A:H1'	48:AA:566:U:H1'	1.67	0.76
79:r:1090:U:O2'	79:r:1091:A:OP1	2.02	0.76
4:4:41:TRP:O	4:4:45:VAL:HG12	1.85	0.76
49:BB:111:TYR:HB2	49:BB:114:LEU:HD23	1.68	0.76
78:dd:195:ARG:HG3	78:dd:199:ILE:HD11	1.67	0.76
49:BB:318:LEU:HD22	49:BB:323:ARG:HG2	1.65	0.76
51:DD:152:PHE:HZ	51:DD:272:LEU:HD13	1.51	0.76
8:8:302:ASN:OD1	8:8:303:ASN:N	2.20	0.75
67:TT:53:ILE:HD11	78:dd:134:VAL:HG12	1.68	0.75
79:r:1192:U:H2'	79:r:1193:A:C8	2.21	0.75
5:5:193:LEU:HD22	5:5:287:ILE:HG21	1.68	0.75
48:AA:2689:A:O2'	48:AA:2690:U:O5'	2.04	0.75
48:AA:1356:U:H5'	48:AA:1357:A:H5''	1.68	0.75
41:33:126:ILE:O	67:TT:204:ARG:NH2	2.20	0.75
24:P:107:ASN:OD1	24:P:110:ARG:NH1	2.20	0.75
35:b:313:LEU:HD22	35:b:319:LEU:CD1	2.16	0.75
43:55:104:ARG:NH1	43:55:203:TRP:O	2.20	0.75
48:AA:227:G:OP1	66:SS:25:ARG:NH2	2.20	0.75
79:r:340:C:H2'	79:r:341:A:H8	1.51	0.75
30:W:412:LEU:HB2	30:W:417:ILE:HD11	1.67	0.74
48:AA:269:A:OP1	57:JJ:241:ARG:NH1	2.21	0.74
78:dd:146:GLU:OE2	78:dd:147:ASN:ND2	2.20	0.74
34:a:368:ILE:HD13	34:a:380:LEU:HD21	1.67	0.74
52:EE:85:ASN:HB2	52:EE:129:ILE:HG21	1.68	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:C:278:LEU:HD12	11:C:304:ASN:HB2	1.68	0.74
35:b:249:LEU:HD11	35:b:300:LEU:HD13	1.68	0.74
48:AA:3124:A:O2'	48:AA:3125:U:OP1	2.06	0.74
18:J:74:THR:HG23	18:J:114:TRP:HE1	1.51	0.74
48:AA:513:U:H2'	48:AA:514:A:H8	1.52	0.74
69:V:78:THR:HG23	69:V:79:VAL:HG12	1.68	0.74
5:5:67:ARG:NH1	79:r:1514:U:OP1	2.21	0.74
22:N:34:ASN:ND2	22:N:69:MET:HE3	2.03	0.74
36:c:504:THR:HG22	36:c:507:MET:HE2	1.70	0.74
3:3:28:ILE:HG22	3:3:29:LEU:HG	1.69	0.74
9:A:253:ASP:OD1	9:A:254:VAL:N	2.21	0.74
19:K:150:ARG:O	19:K:154:LEU:HG	1.86	0.74
34:a:413:MET:O	34:a:413:MET:HE3	1.87	0.73
48:AA:1898:C:OP2	50:CC:200:ARG:NH2	2.20	0.73
52:EE:62:LYS:NZ	52:EE:63:ASP:OD1	2.21	0.73
35:b:198:CYS:SG	36:c:573:ARG:NH2	2.61	0.73
79:r:1196:U:H2'	79:r:1197:U:C6	2.23	0.73
6:6:188:LEU:HD13	12:D:444:SER:HB2	1.68	0.73
14:F:11:ILE:HD11	14:F:65:TYR:HB2	1.68	0.73
16:H:106:MET:HE2	16:H:129:VAL:HG11	1.70	0.73
48:AA:1769:U:O2'	48:AA:1770:U:OP1	2.05	0.73
79:r:1503:U:H2'	79:r:1504:A:H8	1.53	0.73
39:11:109:GLU:HB3	39:11:138:VAL:HG21	1.71	0.73
48:AA:2661:C:OP2	74:ZZ:80:LYS:NZ	2.21	0.73
79:r:343:U:H2'	79:r:344:A:C8	2.24	0.73
12:D:428:ARG:NH2	79:r:412:U:OP1	2.22	0.72
15:G:163:LEU:HD21	33:Z:55:VAL:HG13	1.71	0.72
63:PP:172:GLU:OE2	71:WW:151:ARG:NH2	2.21	0.72
11:C:111:ASN:O	11:C:115:ILE:HD12	1.88	0.72
62:OO:129:GLY:O	62:OO:275:ARG:NH2	2.22	0.72
79:r:760:A:N1	79:r:852:A:O2'	2.22	0.72
48:AA:1842:C:OP2	48:AA:1843:U:O2'	2.06	0.72
44:66:90:LYS:NZ	48:AA:2384:A:N3	2.36	0.72
45:77:66:TYR:CE2	51:DD:34:ASN:HB2	2.24	0.72
3:3:72:GLY:N	3:3:213:LYS:HE2	2.04	0.72
5:5:274:TYR:HB3	5:5:300:PHE:HZ	1.54	0.72
28:T:168:ILE:HB	33:Z:89:ILE:HD11	1.70	0.72
39:11:212:GLN:NE2	39:11:213:GLU:O	2.23	0.72
4:4:199:LEU:CD1	9:A:221:VAL:HG11	2.20	0.72
40:22:92:GLU:OE2	52:EE:131:TRP:NE1	2.22	0.72
79:r:303:G:N2	79:r:306:A:OP2	2.22	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:38:VAL:O	2:2:38:VAL:HG13	1.90	0.71
79:r:366:G:N2	79:r:369:U:OP2	2.21	0.71
48:AA:1380:G:H3'	48:AA:1381:A:H8	1.55	0.71
6:6:65:LYS:NZ	79:r:414:A:OP1	2.23	0.71
15:G:158:ASP:OD1	33:Z:59:LYS:NZ	2.22	0.71
21:M:119:ARG:NH2	79:r:1375:U:O2	2.24	0.71
14:F:64:ALA:HB2	14:F:92:ILE:HD11	1.72	0.71
67:TT:54:PRO:HG2	71:WW:145:LEU:HD11	1.73	0.71
39:11:282:LYS:NZ	65:RR:143:GLU:O	2.23	0.71
69:V:78:THR:HG23	69:V:79:VAL:H	1.56	0.70
79:r:340:C:H2'	79:r:341:A:C8	2.26	0.70
59:LL:107:ARG:NH1	59:LL:125:GLU:OE2	2.23	0.70
6:6:215:MET:HE1	12:D:432:SER:HA	1.72	0.70
26:R:56:ASP:OD1	79:r:1634:C:N4	2.23	0.70
59:LL:54:THR:HG22	59:LL:73:ILE:HD13	1.72	0.70
69:V:171:GLU:OE1	69:V:171:GLU:N	2.21	0.70
75:aa:144:ILE:HD12	75:aa:148:PHE:CD2	2.26	0.70
34:a:458:MET:O	34:a:458:MET:HE3	1.90	0.70
26:R:62:MET:HE2	26:R:62:MET:HA	1.73	0.70
48:AA:1949:G:N2	50:CC:220:MET:SD	2.63	0.70
59:LL:54:THR:HG21	59:LL:90:LEU:HD22	1.70	0.70
63:PP:222:VAL:HG23	63:PP:224:GLN:OE1	1.91	0.70
73:YY:82:ARG:HD3	73:YY:91:ILE:HD11	1.73	0.70
39:11:231:PRO:O	65:RR:127:ARG:NH2	2.24	0.70
50:CC:59:CYS:SG	50:CC:60:GLY:N	2.63	0.70
47:99:86:LEU:HD11	47:99:202:ALA:HB1	1.74	0.70
62:OO:151:LEU:HD22	62:OO:155:GLU:HG2	1.74	0.70
25:Q:126:ARG:O	25:Q:130:THR:HG23	1.92	0.70
4:4:174:ARG:HB2	4:4:197:PHE:HE2	1.57	0.70
8:8:469:ILE:HD12	8:8:469:ILE:O	1.92	0.70
25:Q:125:LEU:HD12	25:Q:128:ILE:HD11	1.73	0.70
34:a:203:ILE:HD13	34:a:241:ILE:HD12	1.73	0.70
14:F:28:ILE:HD11	14:F:69:MET:SD	2.31	0.69
4:4:114:GLU:OE1	4:4:114:GLU:N	2.24	0.69
7:7:212:GLU:OE1	18:J:183:VAL:HG11	1.90	0.69
34:a:216:LEU:O	34:a:220:THR:HG23	1.92	0.69
48:AA:229:G:OP2	66:SS:93:ARG:NH2	2.25	0.69
6:6:332:ARG:NH1	79:r:404:U:O2	2.25	0.69
9:A:158:LYS:NZ	69:V:268:SER:OG	2.22	0.69
14:F:22:LYS:HE2	69:V:224:PHE:HB3	1.74	0.69
34:a:234:MET:HE2	34:a:234:MET:N	2.07	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:55:74:LYS:NZ	63:PP:259:ILE:O	2.20	0.69
8:8:264:GLU:OE1	10:B:234:LYS:NZ	2.25	0.69
14:F:48:ARG:NH1	69:V:232:THR:O	2.25	0.69
16:H:89:CYS:HB2	16:H:154:VAL:HG12	1.74	0.69
66:SS:138:LYS:HB3	66:SS:143:ARG:HG2	1.74	0.69
67:TT:77:PHE:O	67:TT:122:ARG:NH2	2.26	0.69
10:B:95:ASP:O	10:B:99:ASN:ND2	2.26	0.69
18:J:119:GLU:OE2	32:Y:170:GLN:NE2	2.26	0.69
30:W:127:ARG:O	30:W:131:THR:HG22	1.92	0.69
34:a:242:LEU:HD12	34:a:288:GLN:HB3	1.74	0.69
48:AA:1827:A:H2'	48:AA:1828:A:C8	2.27	0.69
8:8:296:THR:HG22	8:8:297:ILE:N	2.08	0.69
14:F:33:ILE:HG23	14:F:34:GLN:OE1	1.93	0.69
79:r:1194:U:H2'	79:r:1195:A:H8	1.56	0.69
7:7:216:GLN:O	7:7:227:ASN:ND2	2.26	0.69
48:AA:34:U:O2'	48:AA:35:U:OP2	2.08	0.69
57:JJ:263:GLU:N	57:JJ:263:GLU:OE1	2.25	0.69
3:3:72:GLY:H	3:3:213:LYS:HE2	1.58	0.69
30:W:429:LYS:HE3	30:W:445:LEU:HD23	1.75	0.69
35:b:460:ILE:O	35:b:469:LEU:HD23	1.93	0.69
36:c:554:SER:OG	36:c:555:GLY:N	2.26	0.69
42:44:69:HIS:NE2	48:AA:1260:U:O3'	2.24	0.69
48:AA:1256:U:OP2	61:NN:145:LYS:NZ	2.25	0.69
48:AA:2461:A:H2	52:EE:150:ARG:NH1	1.91	0.69
48:AA:3034:A:H2'	48:AA:3035:U:C6	2.27	0.69
47:99:30:ILE:O	47:99:30:ILE:HG22	1.91	0.69
48:AA:1307:A:H4'	48:AA:1308:A:H5'	1.75	0.69
34:a:224:LEU:HD22	34:a:268:ILE:HD12	1.75	0.69
39:11:208:ILE:HD12	39:11:260:LEU:HD21	1.75	0.68
67:TT:198:VAL:HG11	67:TT:239:ARG:HH22	1.59	0.68
79:r:1504:A:H2'	79:r:1505:U:C6	2.28	0.68
8:8:207:THR:HG23	8:8:323:LYS:HG2	1.74	0.68
20:L:63:LEU:HD11	20:L:84:ARG:HB2	1.76	0.68
23:O:103:ALA:HB1	25:Q:128:ILE:HD13	1.76	0.68
34:a:83:ILE:HD13	34:a:372:ARG:HB2	1.76	0.68
36:c:487:SER:O	36:c:491:THR:HG23	1.92	0.68
48:AA:2616:G:OP2	74:ZZ:92:LYS:NZ	2.22	0.68
9:A:238:ASN:ND2	9:A:240:ASP:OD2	2.26	0.68
10:B:210:ILE:HD11	29:U:94:PRO:HG3	1.75	0.68
36:c:418:LEU:HD13	36:c:463:VAL:HG11	1.76	0.68
79:r:625:A:O2'	79:r:654:G:N2	2.26	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:E:144:LEU:HD12	13:E:172:VAL:HG12	1.75	0.68
63:PP:66:THR:HG21	78:dd:197:GLY:HA2	1.76	0.68
9:A:171:LEU:HD12	9:A:171:LEU:O	1.94	0.68
35:b:446:ARG:NH1	35:b:482:GLU:OE1	2.27	0.68
23:O:78:ARG:HA	49:BB:63:ILE:HD11	1.76	0.68
30:W:131:THR:HG23	30:W:132:ASN:N	2.09	0.68
7:7:231:ASP:OD2	7:7:293:GLN:NE2	2.27	0.68
49:BB:124:THR:HG22	49:BB:153:ARG:HG3	1.75	0.68
50:CC:130:VAL:O	50:CC:130:VAL:HG13	1.93	0.68
51:DD:188:ASP:OD1	51:DD:189:LEU:N	2.27	0.68
16:H:130:ARG:NH1	79:r:707:U:O2	2.26	0.67
34:a:242:LEU:HD11	34:a:289:LEU:HD22	1.74	0.67
43:55:178:LEU:O	47:99:106:LYS:NZ	2.25	0.67
48:AA:2360:U:H4'	76:bb:154:ILE:HD12	1.74	0.67
48:AA:259:A:N3	48:AA:274:U:O2'	2.26	0.67
47:99:115:LEU:O	47:99:119:THR:HG23	1.93	0.67
50:CC:181:MET:HE2	50:CC:188:GLY:HA3	1.76	0.67
4:4:199:LEU:HD11	9:A:221:VAL:CG1	2.25	0.67
11:C:88:ASN:ND2	18:J:53:GLU:OE1	2.28	0.67
30:W:205:LEU:O	30:W:209:ILE:HD12	1.95	0.67
39:11:264:ARG:NH2	65:RR:213:ASP:OD1	2.28	0.67
23:O:128:ILE:HD12	25:Q:129:ARG:HD2	1.76	0.67
30:W:296:LYS:O	30:W:300:THR:HG22	1.95	0.67
5:5:134:TRP:O	5:5:175:ASN:ND2	2.27	0.67
45:77:61:PHE:O	45:77:65:THR:HB	1.94	0.67
61:NN:70:GLU:OE2	61:NN:158:LEU:N	2.28	0.67
79:r:761:A:N3	79:r:851:G:O2'	2.22	0.67
13:E:139:TYR:CE2	13:E:144:LEU:HD21	2.30	0.67
45:77:124:GLN:O	51:DD:70:ARG:NH1	2.28	0.67
70:VV:52:SER:OG	70:VV:76:ASN:ND2	2.28	0.67
79:r:996:A:O2'	79:r:997:G:O5'	2.13	0.66
37:t:30:A:H61	37:t:40:C:H42	1.43	0.66
48:AA:3252:U:O2'	48:AA:3253:U:OP2	2.09	0.66
79:r:780:G:H2'	79:r:781:A:C8	2.30	0.66
6:6:306:GLN:O	24:P:62:ILE:HD12	1.95	0.66
9:A:42:THR:HG23	9:A:47:GLU:HB3	1.76	0.66
23:O:112:ARG:NH2	69:V:271:ASN:OD1	2.28	0.66
35:b:250:GLN:HA	35:b:255:ALA:HB3	1.78	0.66
48:AA:698:U:OP2	57:JJ:99:ARG:NH2	2.28	0.66
79:r:360:A:N3	79:r:372:U:O2'	2.24	0.66
14:F:29:GLY:O	14:F:33:ILE:HG22	1.94	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:H:126:LEU:HD21	16:H:154:VAL:HG23	1.78	0.66
34:a:58:TYR:CE1	34:a:78:LEU:HD21	2.31	0.66
35:b:363:TYR:O	36:c:558:HIS:NE2	2.29	0.66
3:3:150:GLN:OE1	3:3:150:GLN:N	2.29	0.66
42:44:86:VAL:O	42:44:86:VAL:HG12	1.96	0.66
79:r:1048:A:H2'	79:r:1048:A:N3	2.08	0.66
19:K:70:LYS:N	19:K:97:ASP:OD2	2.27	0.66
35:b:190:LEU:HD23	35:b:191:ARG:HG2	1.78	0.66
48:AA:503:A:H61	48:AA:513:U:H3	1.43	0.66
51:DD:230:GLU:OE1	51:DD:230:GLU:N	2.28	0.66
59:LL:35:SER:OG	59:LL:40:CYS:SG	2.52	0.66
48:AA:1380:G:H3'	48:AA:1381:A:C8	2.31	0.66
14:F:18:LYS:O	14:F:22:LYS:HG3	1.96	0.65
14:F:20:GLU:OE1	14:F:20:GLU:N	2.29	0.65
48:AA:1240:U:O4	48:AA:1241:A:N6	2.29	0.65
48:AA:2961:A:N1	48:AA:3051:U:H5	1.94	0.65
51:DD:229:ARG:NH1	51:DD:265:GLU:OE2	2.28	0.65
34:a:94:LEU:HD12	34:a:94:LEU:O	1.96	0.65
36:c:572:ILE:H	36:c:572:ILE:HD12	1.61	0.65
48:AA:1746:C:N4	48:AA:1799:U:H2'	2.11	0.65
50:CC:225:GLY:O	50:CC:227:GLU:HG2	1.96	0.65
19:K:160:MET:HA	19:K:160:MET:HE2	1.78	0.65
52:EE:97:LYS:NZ	52:EE:123:LEU:O	2.28	0.65
38:00:66:CYS:SG	38:00:69:CYS:N	2.69	0.65
5:5:232:VAL:HG21	5:5:245:LEU:HD11	1.78	0.65
24:P:10:LEU:HD13	24:P:86:VAL:HG22	1.79	0.65
26:R:90:LEU:O	26:R:90:LEU:HD23	1.97	0.65
48:AA:3055:U:H4'	48:AA:3166:A:H4'	1.79	0.65
70:VV:46:ASN:OD1	70:VV:60:ARG:NH1	2.30	0.65
3:3:49:LEU:O	3:3:53:THR:HG22	1.97	0.65
22:N:20:ARG:NH1	79:r:1047:U:H5''	2.12	0.65
32:Y:151:GLN:O	32:Y:155:ASN:ND2	2.29	0.65
34:a:421:THR:HB	36:c:455:LEU:HD12	1.78	0.65
43:55:168:THR:HG22	43:55:187:VAL:HG21	1.78	0.65
79:r:328:C:H42	79:r:335:A:H62	1.45	0.65
53:FF:160:VAL:HG13	53:FF:168:LEU:HD21	1.79	0.64
69:V:75:ILE:HD11	69:V:108:ILE:HB	1.79	0.64
79:r:1319:A:O2'	79:r:1320:A:OP1	2.15	0.64
1:1:84:ARG:NH1	79:r:1601:C:OP1	2.29	0.64
5:5:289:GLN:OE1	5:5:289:GLN:N	2.30	0.64
48:AA:2739:U:O4	48:AA:2740:A:N6	2.30	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:U:142:ARG:NH1	29:U:148:SER:OG	2.29	0.64
27:S:81:LYS:NZ	79:r:1022:U:O3'	2.30	0.64
79:r:154:U:O2	79:r:156:A:N7	2.31	0.64
5:5:271:LEU:HD13	5:5:308:LEU:HD13	1.79	0.64
79:r:905:A:N6	79:r:907:A:O3'	2.30	0.64
5:5:211:LEU:HD21	5:5:235:LEU:HD13	1.77	0.64
36:c:477:MET:SD	36:c:478:VAL:HG23	2.37	0.64
49:BB:155:ILE:HD13	49:BB:176:ARG:HE	1.62	0.64
53:FF:24:LEU:HD21	53:FF:111:ILE:HD13	1.78	0.64
14:F:50:LEU:HD13	14:F:54:MET:HG2	1.78	0.64
79:r:1196:U:H2'	79:r:1197:U:H6	1.63	0.64
2:2:81:ILE:HG22	2:2:85:LYS:HE2	1.80	0.64
15:G:193:TRP:CE3	15:G:196:ILE:HD11	2.32	0.64
79:r:739:G:H2'	79:r:740:A:C8	2.33	0.64
8:8:147:MET:HE2	8:8:171:PRO:HG3	1.78	0.64
33:Z:18:VAL:HG21	33:Z:78:ILE:HD11	1.80	0.64
35:b:338:ARG:NH2	35:b:339:CYS:SG	2.71	0.64
48:AA:2581:U:O3'	58:KK:227:LYS:NZ	2.31	0.64
51:DD:70:ARG:NH2	51:DD:72:ASP:OD2	2.30	0.64
20:L:55:CYS:SG	79:r:367:A:N6	2.71	0.63
30:W:228:LYS:NZ	30:W:230:TYR:OH	2.29	0.63
35:b:242:ILE:HD11	35:b:316:SER:OG	1.98	0.63
48:AA:1596:U:H2'	48:AA:1597:G:H8	1.63	0.63
48:AA:2464:A:OP1	52:EE:194:LYS:NZ	2.31	0.63
50:CC:232:GLN:OE1	50:CC:267:LYS:NZ	2.30	0.63
55:HH:37:ILE:HD13	75:aa:36:LYS:HG2	1.79	0.63
66:SS:138:LYS:HD3	66:SS:143:ARG:CZ	2.28	0.63
67:TT:91:ARG:NH2	67:TT:97:GLU:OE2	2.29	0.63
4:4:274:ASP:OD1	4:4:275:ALA:N	2.32	0.63
9:A:243:TRP:C	9:A:244:LEU:HD22	2.23	0.63
36:c:478:VAL:HG21	36:c:488:LEU:HD21	1.79	0.63
4:4:282:THR:HG23	4:4:283:ASP:OD1	1.97	0.63
38:00:68:ASP:OD1	38:00:83:LYS:N	2.30	0.63
48:AA:795:U:OP1	58:KK:38:LYS:N	2.31	0.63
48:AA:1328:C:H2'	48:AA:1329:C:H6	1.62	0.63
48:AA:1734:G:H2'	48:AA:1735:U:H6	1.62	0.63
49:BB:207:GLU:OE1	49:BB:207:GLU:N	2.31	0.63
64:QQ:95:LEU:HD23	64:QQ:99:GLY:HA3	1.81	0.63
15:G:159:GLU:O	15:G:230:ARG:NH1	2.32	0.63
25:Q:144:LEU:HD11	25:Q:156:PHE:CE2	2.33	0.63
34:a:351:LEU:O	34:a:351:LEU:HD23	1.98	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:b:297:HIS:CD2	35:b:330:LEU:HD11	2.33	0.63
48:AA:1366:A:O4'	48:AA:1534:G:N2	2.32	0.63
71:WW:163:THR:HG22	71:WW:167:LYS:HZ3	1.63	0.63
79:r:999:C:H5	79:r:1003:A:H61	1.46	0.63
11:C:267:ILE:HD12	11:C:314:ILE:HD12	1.81	0.63
20:L:82:ARG:NH1	20:L:92:SER:OG	2.30	0.63
34:a:408:PHE:CD2	34:a:409:THR:HG23	2.34	0.63
36:c:570:LEU:HA	36:c:605:LEU:HD21	1.80	0.63
48:AA:1352:A:H1'	63:PP:134:THR:HG21	1.79	0.63
17:I:78:GLN:NE2	17:I:115:ASN:OD1	2.32	0.63
39:11:226:VAL:HG22	39:11:293:VAL:HG22	1.81	0.63
48:AA:1698:C:H5	48:AA:1736:G:H21	1.45	0.63
4:4:267:TYR:HE2	9:A:221:VAL:HG21	1.64	0.62
48:AA:3152:A:O2'	48:AA:3153:U:O4'	2.15	0.62
51:DD:192:THR:HG21	51:DD:231:GLY:HA2	1.80	0.62
3:3:219:MET:HE3	10:B:149:ARG:CZ	2.29	0.62
22:N:60:LEU:CD2	27:S:18:ILE:HD12	2.29	0.62
48:AA:1706:G:N7	49:BB:291:SER:OG	2.30	0.62
63:PP:146:ASN:OD1	63:PP:149:THR:HG23	1.99	0.62
4:4:60:GLN:OE1	4:4:60:GLN:N	2.31	0.62
19:K:109:ASN:OD1	19:K:110:ASP:N	2.32	0.62
37:t:54:U:O4	37:t:58:A:N7	2.33	0.62
36:c:464:VAL:HA	36:c:470:ILE:HD11	1.82	0.62
45:77:64:LYS:HD3	45:77:102:GLN:HE22	1.62	0.62
76:bb:18:PHE:HZ	76:bb:75:VAL:HG11	1.64	0.62
34:a:418:ASN:O	34:a:422:VAL:HG23	2.00	0.62
42:44:63:VAL:CG2	46:88:226:VAL:HG12	2.30	0.62
42:44:86:VAL:CG1	42:44:94:VAL:HG22	2.30	0.62
48:AA:303:A:O2'	48:AA:366:A:N3	2.28	0.62
50:CC:28:ALA:HB3	55:HH:140:ILE:HD12	1.81	0.62
79:r:1573:G:O2'	79:r:1574:A:OP1	2.16	0.62
5:5:266:GLU:O	5:5:270:LEU:HG	1.99	0.62
3:3:75:LEU:HD13	9:A:92:GLU:OE2	2.00	0.62
3:3:75:LEU:HG	29:U:191:LEU:HD12	1.82	0.62
3:3:95:ASN:OD1	3:3:96:ILE:HG23	1.99	0.62
4:4:227:GLU:OE1	4:4:230:ARG:NH2	2.32	0.62
44:66:76:GLU:OE2	44:66:80:LEU:HD11	1.98	0.62
53:FF:168:LEU:HD23	53:FF:169:ILE:N	2.13	0.62
55:HH:14:ARG:NH2	55:HH:52:ASP:O	2.33	0.62
3:3:119:PHE:CE1	3:3:123:ILE:HD11	2.35	0.62
9:A:146:ILE:O	9:A:150:ILE:HD12	2.00	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:E:24:TYR:O	18:J:18:ARG:NH2	2.33	0.62
19:K:97:ASP:OD1	19:K:100:PHE:N	2.32	0.62
23:O:181:MET:HB3	23:O:208:LEU:HD11	1.81	0.62
34:a:60:PRO:O	34:a:65:GLN:NE2	2.33	0.62
52:EE:68:ARG:NH2	52:EE:211:GLU:OE2	2.31	0.62
79:r:105:G:H2'	79:r:106:U:C6	2.35	0.62
6:6:249:GLU:HG2	8:8:79:SER:OG	2.00	0.62
13:E:40:ILE:HG21	18:J:22:VAL:HG11	1.81	0.62
29:U:228:THR:O	29:U:231:MET:HE3	1.99	0.62
23:O:250:ARG:NH2	79:r:827:G:OP1	2.33	0.61
30:W:231:LYS:HD3	30:W:247:THR:HG22	1.81	0.61
43:55:313:ARG:NH1	43:55:314:GLU:OE2	2.33	0.61
66:SS:107:SER:HB2	66:SS:132:ILE:HD11	1.82	0.61
76:bb:63:MET:HE2	76:bb:85:THR:HG21	1.81	0.61
48:AA:1522:A:C6	48:AA:1523:A:N6	2.68	0.61
48:AA:2263:U:O2'	48:AA:2265:G:N7	2.31	0.61
69:V:197:ASN:HA	69:V:277:ILE:HD11	1.81	0.61
34:a:183:ILE:HD12	34:a:184:PHE:N	2.14	0.61
50:CC:190:ARG:O	50:CC:195:THR:HG21	2.00	0.61
79:r:847:A:H62	79:r:865:G:H21	1.46	0.61
6:6:281:SER:O	6:6:284:HIS:ND1	2.34	0.61
43:55:133:ASN:HB2	43:55:135:THR:HG22	1.81	0.61
52:EE:81:LEU:O	52:EE:85:ASN:ND2	2.33	0.61
63:PP:189:ASN:OD1	63:PP:212:PHE:N	2.33	0.61
76:bb:75:VAL:HG13	76:bb:78:PHE:HD2	1.64	0.61
30:W:106:HIS:NE2	79:r:1349:A:O2'	2.33	0.61
48:AA:735:A:H3'	48:AA:736:A:H5''	1.82	0.61
53:FF:142:VAL:HG22	53:FF:144:VAL:HG13	1.80	0.61
40:22:102:MET:HE1	44:66:216:PRO:HD2	1.83	0.61
45:77:64:LYS:HD3	45:77:102:GLN:NE2	2.14	0.61
48:AA:2421:U:O4	48:AA:2422:A:N6	2.34	0.61
74:ZZ:61:THR:OG1	74:ZZ:111:LEU:HD23	2.01	0.61
79:r:1209:U:C2	79:r:1210:A:C8	2.89	0.61
15:G:244:ILE:HD12	33:Z:34:MET:SD	2.40	0.61
31:X:7:ARG:O	31:X:11:VAL:HG23	2.01	0.61
48:AA:1688:C:H41	73:YY:62:ARG:HG3	1.65	0.61
48:AA:1976:U:OP2	48:AA:2264:G:N2	2.29	0.61
22:N:52:THR:HB	70:VV:108:LEU:HD23	1.82	0.61
30:W:78:LEU:HD21	30:W:405:TYR:CE2	2.36	0.61
48:AA:254:G:N2	48:AA:256:A:N3	2.48	0.61
70:VV:73:ASP:OD1	70:VV:74:GLN:N	2.33	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
79:r:789:A:N1	79:r:798:U:H2'	2.16	0.61
36:c:340:LEU:O	36:c:344:VAL:HG23	2.00	0.61
41:33:95:ASN:OD1	64:QQ:192:VAL:HG21	2.01	0.61
48:AA:1819:A:N1	79:r:1587:U:O2'	2.30	0.61
69:V:78:THR:CG2	69:V:79:VAL:N	2.64	0.61
16:H:117:ASN:OD1	25:Q:34:ASN:ND2	2.32	0.61
30:W:422:TRP:CZ2	30:W:426:ILE:HD11	2.36	0.61
48:AA:1668:C:H2'	48:AA:1669:A:H8	1.65	0.61
48:AA:2687:U:OP2	74:ZZ:82:GLY:N	2.33	0.61
52:EE:155:LEU:HD12	52:EE:155:LEU:O	2.01	0.61
59:LL:54:THR:HG21	59:LL:90:LEU:CD2	2.31	0.61
72:XX:25:ILE:HD11	72:XX:34:VAL:HG21	1.82	0.61
79:r:870:U:H2'	79:r:871:C:C6	2.36	0.61
3:3:139:MET:HG2	3:3:153:LEU:HD11	1.82	0.60
14:F:56:LYS:HB2	14:F:92:ILE:HG22	1.81	0.60
14:F:87:LYS:HE2	49:BB:232:VAL:HG22	1.83	0.60
30:W:66:THR:HG22	79:r:1351:U:O2	2.00	0.60
48:AA:237:A:H2	48:AA:2700:A:H61	1.49	0.60
48:AA:928:A:OP2	77:cc:30:ARG:NH1	2.33	0.60
53:FF:152:LEU:HD21	53:FF:185:LEU:HG	1.83	0.60
41:33:132:GLN:NE2	64:QQ:206:GLN:O	2.34	0.60
43:55:130:LYS:NZ	43:55:246:THR:HG22	2.16	0.60
48:AA:3165:U:H2'	48:AA:3166:A:C8	2.36	0.60
3:3:67:LEU:HD13	3:3:173:THR:HG21	1.82	0.60
28:T:132:ASP:OD1	28:T:133:LYS:N	2.34	0.60
48:AA:849:U:H2'	48:AA:850:A:C8	2.37	0.60
61:NN:97:LEU:HD13	61:NN:160:MET:HE1	1.83	0.60
3:3:178:PRO:HA	29:U:200:LEU:HD23	1.84	0.60
26:R:76:ASN:O	26:R:80:ASN:ND2	2.35	0.60
30:W:59:ASN:OD1	30:W:62:ASN:ND2	2.31	0.60
37:t:41:C:O2'	79:r:1406:G:N3	2.35	0.60
46:88:115:ASN:ND2	51:DD:53:GLU:OE1	2.33	0.60
48:AA:2357:U:O3'	65:RR:206:LYS:NZ	2.35	0.60
79:r:1637:A:OP2	79:r:1640:U:N3	2.34	0.60
5:5:230:ILE:HD11	5:5:284:LEU:HD13	1.82	0.60
19:K:183:LEU:HD13	19:K:192:VAL:HG12	1.83	0.60
48:AA:1696:A:OP2	49:BB:334:ARG:NH1	2.35	0.60
53:FF:119:LEU:HD12	53:FF:171:GLU:HB3	1.82	0.60
79:r:1501:A:H61	79:r:1560:U:H2'	1.66	0.60
6:6:299:LEU:HD12	6:6:306:GLN:HB2	1.84	0.60
12:D:164:LYS:NZ	12:D:165:LYS:O	2.34	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:44:90:ASN:ND2	48:AA:1210:A:O2'	2.34	0.60
48:AA:499:G:N3	51:DD:146:LYS:NZ	2.48	0.60
69:V:78:THR:CG2	69:V:79:VAL:H	2.13	0.60
34:a:160:LEU:O	34:a:212:LYS:NZ	2.20	0.60
48:AA:1180:C:OP1	68:UU:69:ARG:NH1	2.33	0.60
79:r:343:U:H2'	79:r:344:A:H8	1.66	0.60
5:5:185:PHE:CE2	5:5:189:ILE:HD11	2.37	0.60
13:E:66:HIS:ND1	13:E:67:PRO:O	2.35	0.60
40:22:124:ARG:NH2	52:EE:225:ASN:OD1	2.35	0.60
45:77:96:ILE:HG21	45:77:100:VAL:HG12	1.83	0.60
47:99:176:MET:HE2	47:99:179:PRO:HA	1.82	0.60
48:AA:2608:C:OP1	70:VV:31:LYS:NZ	2.34	0.60
7:7:270:LEU:HD13	31:X:52:ASP:HB3	1.84	0.60
12:D:166:PRO:O	12:D:414:ARG:NH1	2.31	0.60
13:E:53:GLU:OE2	32:Y:151:GLN:NE2	2.33	0.60
14:F:83:ARG:NH1	79:r:736:A:O3'	2.33	0.60
26:R:54:ILE:H	26:R:54:ILE:HD12	1.65	0.60
48:AA:1409:C:HO2'	48:AA:1410:U:P	2.21	0.60
3:3:58:LEU:HD11	3:3:76:GLN:NE2	2.17	0.60
5:5:60:LYS:NZ	79:r:153:C:O2'	2.35	0.60
14:F:49:TYR:HB3	28:T:99:ARG:HE	1.67	0.60
28:T:124:MET:HE2	28:T:124:MET:HA	1.84	0.60
48:AA:341:A:H61	48:AA:360:A:H61	1.49	0.60
49:BB:170:ILE:HD12	49:BB:180:ILE:O	2.02	0.60
8:8:147:MET:HE3	8:8:169:ALA:HB3	1.82	0.59
48:AA:126:A:C6	48:AA:127:A:N6	2.70	0.59
48:AA:925:U:H5''	48:AA:1174:G:O6	2.02	0.59
50:CC:85:LEU:HD13	50:CC:262:ILE:HD11	1.84	0.59
78:dd:173:ASP:OD1	78:dd:176:LYS:N	2.33	0.59
79:r:622:A:H2'	79:r:623:A:C8	2.37	0.59
5:5:97:LEU:HD11	5:5:101:THR:HG21	1.84	0.59
8:8:87:LEU:HD12	8:8:140:THR:HG22	1.84	0.59
12:D:130:VAL:HG12	12:D:152:VAL:HG22	1.82	0.59
34:a:363:LEU:O	34:a:367:LEU:HD22	2.02	0.59
42:44:69:HIS:HB3	42:44:87:ARG:HE	1.67	0.59
79:r:1575:A:O2'	79:r:1576:U:O4'	2.19	0.59
8:8:96:PHE:HZ	8:8:153:LEU:HD11	1.67	0.59
10:B:309:ASN:OD1	10:B:310:GLU:N	2.36	0.59
13:E:162:LYS:NZ	79:r:1465:A:OP2	2.34	0.59
26:R:67:LEU:HD21	79:r:1632:A:C6	2.38	0.59
48:AA:25:A:O2'	48:AA:26:A:OP1	2.20	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:AA:1332:A:N1	48:AA:1578:A:O2'	2.32	0.59
57:JJ:161:ARG:HD2	57:JJ:224:LEU:HD12	1.84	0.59
57:JJ:200:ILE:HD11	57:JJ:210:PHE:CD2	2.38	0.59
11:C:275:MET:HE1	11:C:305:ILE:HA	1.85	0.59
21:M:63:SER:HA	21:M:67:ILE:HD11	1.85	0.59
64:QQ:201:VAL:HG23	64:QQ:202:ILE:HG13	1.84	0.59
79:r:339:U:H2'	79:r:340:C:C6	2.37	0.59
79:r:790:U:H3'	79:r:791:G:H8	1.66	0.59
8:8:316:PHE:O	8:8:320:ILE:HG22	2.02	0.59
11:C:176:MET:HE1	13:E:92:TRP:O	2.03	0.59
19:K:123:LYS:O	19:K:124:ILE:HD13	2.02	0.59
19:K:134:ARG:NH2	79:r:754:A:OP2	2.33	0.59
36:c:583:LEU:O	36:c:587:ILE:HG23	2.03	0.59
48:AA:1734:G:H2'	48:AA:1735:U:C6	2.38	0.59
48:AA:1808:G:N1	48:AA:1824:U:O4	2.36	0.59
6:6:41:LYS:NZ	79:r:496:A:O4'	2.32	0.59
25:Q:148:LYS:O	25:Q:152:GLY:N	2.35	0.59
37:t:10:A:C2	37:t:26:U:H1'	2.37	0.59
48:AA:674:A:H2'	48:AA:674:A:N3	2.16	0.59
48:AA:1716:U:O2'	48:AA:1717:A:OP2	2.15	0.59
6:6:246:THR:HG22	13:E:297:LEU:HG	1.85	0.59
11:C:173:MET:HE1	32:Y:74:ALA:HB2	1.85	0.59
48:AA:1665:G:H8	48:AA:3052:A:C4	2.20	0.59
49:BB:139:ILE:HD11	49:BB:142:ARG:HA	1.83	0.59
71:WW:163:THR:HG22	71:WW:167:LYS:NZ	2.18	0.59
15:G:156:SER:OG	15:G:219:ILE:HG21	2.03	0.59
28:T:129:ILE:HG12	28:T:130:PRO:HD3	1.85	0.59
30:W:60:TRP:O	30:W:64:THR:HG23	2.03	0.59
53:FF:161:LYS:NZ	53:FF:171:GLU:OE2	2.27	0.59
6:6:161:ILE:HD11	6:6:171:VAL:HG21	1.85	0.59
9:A:161:LEU:HD12	9:A:165:HIS:HB2	1.85	0.59
16:H:19:VAL:HG21	79:r:893:A:H5'	1.84	0.59
23:O:128:ILE:HD13	25:Q:126:ARG:HD2	1.82	0.59
47:99:124:LEU:HG	47:99:140:LEU:HD22	1.85	0.59
48:AA:2635:C:C2	48:AA:2636:A:C8	2.91	0.59
61:NN:102:TYR:CE2	75:aa:87:MET:HE1	2.38	0.59
63:PP:70:ILE:HD12	78:dd:196:VAL:HG13	1.84	0.59
65:RR:346:VAL:HG13	65:RR:359:VAL:HG13	1.85	0.59
79:r:1193:A:H2'	79:r:1194:U:C6	2.38	0.59
8:8:207:THR:HG23	8:8:323:LYS:CG	2.33	0.59
16:H:9:THR:HG21	16:H:32:GLN:OE1	2.03	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:I:40:LYS:HB2	17:I:41:LEU:HD22	1.85	0.59
20:L:107:ILE:N	20:L:131:ASP:OD2	2.33	0.59
34:a:409:THR:HG22	34:a:414:ILE:HD12	1.84	0.59
42:44:86:VAL:HG11	42:44:94:VAL:HG22	1.84	0.59
45:77:66:TYR:HE2	51:DD:34:ASN:HB2	1.66	0.59
62:OO:190:MET:HE1	71:WW:180:LEU:HD11	1.84	0.59
63:PP:145:MET:SD	63:PP:145:MET:N	2.76	0.59
78:dd:48:THR:OG1	78:dd:49:GLN:OE1	2.21	0.59
79:r:1148:A:N3	79:r:1149:A:H1'	2.18	0.59
79:r:1172:A:O2'	79:r:1173:U:OP1	2.18	0.59
5:5:304:TYR:HE1	5:5:308:LEU:HD22	1.66	0.58
22:N:100:GLU:HG2	22:N:104:LYS:HE3	1.83	0.58
79:r:753:A:O2'	79:r:770:A:N1	2.33	0.58
10:B:262:ALA:HB2	10:B:373:LEU:HD21	1.83	0.58
48:AA:1409:C:C2	48:AA:1410:U:C5	2.92	0.58
48:AA:2634:A:C2	48:AA:2635:C:C5	2.91	0.58
64:QQ:16:MET:HE2	64:QQ:16:MET:N	2.18	0.58
66:SS:109:THR:HG21	66:SS:158:VAL:HG13	1.85	0.58
11:C:367:LYS:HE2	11:C:373:SER:HA	1.86	0.58
42:44:42:LYS:HE2	42:44:91:ILE:HD11	1.85	0.58
44:66:155:MET:HE2	44:66:257:LEU:HD23	1.85	0.58
48:AA:425:A:N6	48:AA:1943:C:O5'	2.34	0.58
48:AA:2441:U:H2'	48:AA:2442:A:C8	2.38	0.58
49:BB:244:SER:O	49:BB:278:LYS:NZ	2.34	0.58
51:DD:73:ILE:HG22	51:DD:151:ALA:HB2	1.84	0.58
79:r:344:A:H2'	79:r:345:U:C6	2.39	0.58
79:r:1090:U:HO2'	79:r:1091:A:P	2.27	0.58
11:C:125:LEU:HD13	11:C:175:MET:HB3	1.84	0.58
15:G:241:ARG:HG3	15:G:242:ALA:N	2.18	0.58
26:R:82:ILE:C	26:R:82:ILE:HD12	2.28	0.58
39:11:219:VAL:HG23	39:11:220:GLU:OE1	2.03	0.58
42:44:10:SER:OG	43:55:290:ARG:NE	2.30	0.58
48:AA:566:U:H2'	48:AA:567:U:C6	2.39	0.58
48:AA:1522:A:O2'	48:AA:1523:A:O5'	2.18	0.58
78:dd:77:VAL:HG11	78:dd:137:LEU:HD11	1.85	0.58
26:R:135:ILE:H	26:R:135:ILE:HD12	1.67	0.58
27:S:62:ILE:C	27:S:62:ILE:HD12	2.28	0.58
31:X:76:ARG:O	31:X:80:VAL:HG13	2.03	0.58
34:a:381:LEU:HD12	34:a:382:ASN:N	2.19	0.58
34:a:510:CYS:O	34:a:513:ARG:NH1	2.37	0.58
36:c:438:LEU:HD21	36:c:478:VAL:HA	1.86	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:t:11:U:H2'	37:t:12:G:C8	2.38	0.58
48:AA:735:A:O2'	48:AA:736:A:H3'	2.01	0.58
50:CC:58:ARG:NH1	50:CC:264:ASP:OD2	2.37	0.58
68:UU:26:LEU:HD11	68:UU:47:LEU:HD23	1.85	0.58
6:6:249:GLU:HA	13:E:296:LYS:CB	2.31	0.58
27:S:62:ILE:HD12	27:S:62:ILE:O	2.03	0.58
39:11:28:ARG:NH1	39:11:109:GLU:OE2	2.36	0.58
48:AA:512:U:H2'	48:AA:513:U:C6	2.38	0.58
61:NN:97:LEU:HD13	61:NN:160:MET:CE	2.32	0.58
3:3:154:PHE:CE2	3:3:174:PRO:HD3	2.39	0.58
12:D:17:ARG:NH1	12:D:58:GLU:OE1	2.37	0.58
13:E:140:ILE:HA	13:E:144:LEU:HD23	1.86	0.58
37:t:9:G:N3	37:t:45:U:O2'	2.26	0.58
54:GG:21:VAL:HG21	54:GG:45:MET:HE2	1.86	0.58
3:3:58:LEU:HB3	3:3:66:ILE:HD13	1.84	0.58
14:F:33:ILE:HD11	69:V:211:VAL:C	2.29	0.58
29:U:173:ARG:NH1	29:U:177:TYR:OH	2.36	0.58
43:55:351:TYR:CD1	75:aa:63:THR:HG21	2.39	0.58
43:55:245:ILE:HD13	62:OO:137:ILE:HD12	1.86	0.58
48:AA:2441:U:H2'	48:AA:2442:A:H8	1.67	0.58
48:AA:3289:U:H2'	48:AA:3290:A:H5'	1.86	0.58
50:CC:220:MET:HG3	50:CC:221:PRO:HD2	1.85	0.58
59:LL:106:THR:HG22	59:LL:126:LEU:HD23	1.84	0.58
66:SS:65:ILE:HG23	66:SS:66:PHE:N	2.19	0.58
79:r:518:U:O2'	79:r:533:A:N6	2.37	0.58
4:4:226:MET:SD	4:4:230:ARG:NH1	2.76	0.58
5:5:218:VAL:O	5:5:221:ARG:NH1	2.37	0.58
24:P:40:LEU:HD23	24:P:72:THR:HG22	1.85	0.58
35:b:495:ILE:O	35:b:499:TYR:N	2.37	0.58
45:77:65:THR:HG21	51:DD:36:ALA:HB3	1.86	0.58
48:AA:174:G:H2'	48:AA:175:U:O4'	2.03	0.58
48:AA:584:A:N3	48:AA:2709:U:O2'	2.34	0.58
29:U:138:LEU:HD13	29:U:179:LEU:HD13	1.86	0.57
34:a:413:MET:HG2	36:c:404:LEU:HD23	1.86	0.57
48:AA:3165:U:H2'	48:AA:3166:A:H8	1.68	0.57
75:aa:144:ILE:HD12	75:aa:148:PHE:HD2	1.68	0.57
79:r:780:G:H2'	79:r:781:A:H8	1.67	0.57
4:4:27:PRO:HG3	4:4:34:ILE:HG23	1.87	0.57
10:B:290:TRP:NE1	17:I:50:ASN:OD1	2.37	0.57
14:F:1:MET:SD	14:F:1:MET:N	2.65	0.57
36:c:330:ILE:O	36:c:334:GLU:N	2.37	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:33:71:VAL:HG23	41:33:71:VAL:O	2.03	0.57
48:AA:676:A:H4'	48:AA:1686:U:H4'	1.86	0.57
58:KK:123:GLY:O	58:KK:126:THR:HG22	2.04	0.57
63:PP:67:LYS:HG2	78:dd:196:VAL:HG11	1.86	0.57
69:V:31:ASP:N	69:V:31:ASP:OD1	2.37	0.57
79:r:1430:G:O2'	79:r:1431:U:OP1	2.17	0.57
4:4:271:LEU:HD23	4:4:271:LEU:C	2.30	0.57
22:N:7:PRO:HB2	22:N:8:ILE:HD12	1.85	0.57
36:c:421:LEU:O	36:c:425:VAL:HG23	2.04	0.57
48:AA:58:A:O2'	62:OO:237:SER:O	2.23	0.57
39:11:228:ILE:HD12	39:11:247:TYR:HB3	1.86	0.57
39:11:220:GLU:OE1	39:11:220:GLU:N	2.37	0.57
43:55:116:LEU:HD23	43:55:263:ILE:HD11	1.85	0.57
79:r:1369:U:O2'	79:r:1370:A:H3'	2.05	0.57
7:7:202:LEU:HD23	7:7:203:GLU:N	2.19	0.57
11:C:189:ASN:ND2	31:X:62:LEU:O	2.37	0.57
35:b:344:TRP:O	35:b:360:ARG:NH1	2.37	0.57
41:33:43:LEU:HD23	41:33:47:GLN:HE21	1.69	0.57
48:AA:2847:U:OP1	50:CC:196:SER:OG	2.23	0.57
48:AA:3169:U:OP1	60:MM:144:GLN:NE2	2.37	0.57
61:NN:84:GLU:OE2	61:NN:85:VAL:HG12	2.05	0.57
4:4:22:LEU:O	4:4:23:LYS:NZ	2.35	0.57
6:6:45:GLN:NE2	79:r:495:U:O4	2.37	0.57
25:Q:13:GLN:OE1	25:Q:20:VAL:HG12	2.05	0.57
34:a:58:TYR:HE1	34:a:78:LEU:HD21	1.67	0.57
47:99:50:ARG:NH2	47:99:54:GLY:O	2.37	0.57
79:r:538:C:N3	79:r:558:A:N6	2.53	0.57
6:6:31:ARG:NH2	79:r:496:A:N7	2.52	0.57
34:a:231:MET:HE1	34:a:280:SER:OG	2.05	0.57
48:AA:514:A:H2'	48:AA:515:U:C6	2.40	0.57
56:II:61:ASN:O	56:II:63:VAL:HG13	2.04	0.57
11:C:178:LYS:HB2	31:X:66:ILE:HD11	1.86	0.57
35:b:255:ALA:HB1	35:b:325:GLN:HG3	1.85	0.57
49:BB:240:CYS:C	49:BB:241:LEU:HD22	2.30	0.57
62:OO:190:MET:CE	71:WW:180:LEU:HD21	2.34	0.57
26:R:62:MET:HE3	29:U:220:TRP:CD1	2.40	0.57
34:a:394:VAL:HG13	34:a:398:LEU:HD13	1.85	0.57
48:AA:563:U:O2'	48:AA:564:A:O5'	2.23	0.57
53:FF:55:ASN:ND2	53:FF:67:VAL:O	2.35	0.57
56:II:35:MET:HA	56:II:35:MET:HE3	1.87	0.57
65:RR:117:LEU:O	65:RR:119:SER:N	2.38	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:V:3:LYS:NZ	79:r:307:G:N7	2.52	0.57
79:r:647:A:O2'	79:r:649:A:OP2	2.20	0.57
4:4:110:ARG:NE	4:4:283:ASP:O	2.39	0.56
4:4:174:ARG:HB2	4:4:197:PHE:CE2	2.38	0.56
4:4:190:ASP:N	4:4:190:ASP:OD1	2.37	0.56
64:QQ:283:ILE:HD11	76:bb:23:PRO:HG3	1.86	0.56
76:bb:85:THR:HG22	76:bb:85:THR:O	2.05	0.56
79:r:377:A:O2'	79:r:522:A:N7	2.38	0.56
5:5:215:TRP:NE1	5:5:246:THR:O	2.36	0.56
26:R:127:LYS:NZ	79:r:802:A:OP2	2.38	0.56
30:W:209:ILE:HD11	30:W:272:MET:HE2	1.87	0.56
42:44:137:ARG:NH2	55:HH:141:THR:O	2.37	0.56
45:77:87:ASN:ND2	48:AA:733:A:N3	2.53	0.56
63:PP:109:VAL:HG21	63:PP:160:MET:HE2	1.86	0.56
63:PP:167:PRO:HG3	67:TT:60:LEU:HD22	1.86	0.56
66:SS:153:LYS:O	66:SS:157:ARG:HG2	2.05	0.56
79:r:338:G:H2'	79:r:339:U:C6	2.40	0.56
3:3:216:ASP:OD1	3:3:217:TRP:N	2.38	0.56
5:5:299:GLU:HA	5:5:302:ARG:HE	1.71	0.56
8:8:469:ILE:HD11	8:8:472:ARG:HB2	1.88	0.56
9:A:45:ARG:HH22	79:r:1642:U:H5''	1.70	0.56
9:A:254:VAL:HG12	9:A:295:ALA:HB3	1.87	0.56
11:C:187:MET:HE3	32:Y:75:ARG:HB3	1.86	0.56
11:C:296:ASN:HB2	13:E:45:LYS:HE2	1.86	0.56
18:J:41:LEU:HD11	18:J:112:ARG:HB3	1.86	0.56
25:Q:144:LEU:HD11	25:Q:156:PHE:HE2	1.70	0.56
28:T:169:VAL:HG23	33:Z:85:LEU:HD11	1.87	0.56
43:55:318:LYS:NZ	75:aa:106:THR:O	2.38	0.56
47:99:42:ARG:NH1	48:AA:25:A:OP1	2.38	0.56
48:AA:512:U:H2'	48:AA:513:U:H6	1.70	0.56
48:AA:1507:U:O4	48:AA:1508:A:N6	2.38	0.56
48:AA:1975:U:OP1	49:BB:356:LYS:NZ	2.35	0.56
53:FF:170:ILE:HG22	53:FF:178:VAL:HG23	1.87	0.56
73:YY:79:PHE:CE1	73:YY:92:LEU:HD21	2.40	0.56
48:AA:564:A:H4'	48:AA:565:A:OP1	2.05	0.56
48:AA:926:A:H2'	48:AA:927:A:C8	2.41	0.56
48:AA:2331:U:H3'	48:AA:2332:U:C5'	2.34	0.56
39:11:42:TYR:HB2	39:11:50:LEU:HD23	1.88	0.56
39:11:286:LYS:HZ2	39:11:342:GLU:HB2	1.71	0.56
48:AA:913:C:H3'	48:AA:914:A:H8	1.71	0.56
48:AA:1643:G:N2	48:AA:1877:A:O2'	2.37	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:BB:252:ILE:HD12	49:BB:255:VAL:HG22	1.87	0.56
58:KK:202:ASN:OD1	58:KK:204:TYR:N	2.39	0.56
62:OO:93:LEU:HD22	64:QQ:119:MET:HG3	1.88	0.56
8:8:41:PHE:HD1	69:V:154:MET:HE2	1.70	0.56
40:22:51:ALA:O	40:22:55:GLN:NE2	2.37	0.56
48:AA:221:A:H4'	73:YY:97:LEU:HD11	1.88	0.56
48:AA:1617:A:O2'	56:II:1:MET:O	2.22	0.56
58:KK:155:ASP:N	58:KK:155:ASP:OD1	2.39	0.56
62:OO:97:HIS:O	62:OO:101:LEU:HD12	2.05	0.56
4:4:281:LEU:C	4:4:281:LEU:HD13	2.31	0.56
42:44:74:ALA:HB2	42:44:101:LEU:HD13	1.88	0.56
43:55:228:ARG:O	43:55:230:LYS:NZ	2.38	0.56
48:AA:150:A:H2'	48:AA:217:A:H62	1.71	0.56
48:AA:474:A:C2	48:AA:475:U:C5	2.94	0.56
48:AA:1167:A:H4'	75:aa:50:ALA:HB2	1.86	0.56
48:AA:1566:A:H8	48:AA:1567:C:H5	1.54	0.56
48:AA:1621:A:H2'	48:AA:1621:A:N3	2.21	0.56
48:AA:2259:U:H2'	48:AA:2260:A:H8	1.70	0.56
48:AA:2843:G:O2'	48:AA:2846:U:OP2	2.24	0.56
48:AA:3291:U:N3	48:AA:3292:A:N7	2.54	0.56
6:6:110:ARG:NH2	6:6:117:PRO:O	2.34	0.56
22:N:72:THR:HG23	79:r:1429:A:N7	2.20	0.56
26:R:92:PHE:O	26:R:99:LEU:HD11	2.05	0.56
39:11:296:GLN:OE1	39:11:308:LEU:HD21	2.06	0.56
48:AA:1312:G:O2'	48:AA:1313:G:OP1	2.24	0.56
56:II:1:MET:HE2	56:II:78:GLN:HE21	1.69	0.56
59:LL:50:ILE:O	59:LL:54:THR:HG23	2.04	0.56
79:r:817:G:O2'	79:r:818:A:OP2	2.21	0.56
19:K:128:THR:OG1	19:K:143:ALA:HB1	2.06	0.56
22:N:72:THR:HG22	79:r:1044:C:N4	2.21	0.56
30:W:303:SER:O	30:W:312:GLN:NE2	2.39	0.56
34:a:472:LEU:HD12	34:a:475:ILE:HD11	1.87	0.56
35:b:113:GLU:HG2	35:b:114:SER:H	1.71	0.56
35:b:492:VAL:HG13	35:b:493:ASN:H	1.71	0.56
48:AA:1566:A:C8	48:AA:1567:C:H5	2.24	0.56
51:DD:152:PHE:CZ	51:DD:272:LEU:HD13	2.37	0.56
64:QQ:280:MET:HE2	76:bb:7:PHE:HD1	1.68	0.56
79:r:1193:A:H2'	79:r:1194:U:H6	1.71	0.56
6:6:50:HIS:ND1	79:r:491:U:O4	2.39	0.56
15:G:193:TRP:CZ3	15:G:196:ILE:HD11	2.40	0.56
17:I:58:LEU:HB3	17:I:109:MET:HE2	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:S:42:ILE:HD11	27:S:76:PHE:HE2	1.70	0.56
34:a:89:LYS:NZ	34:a:94:LEU:O	2.39	0.56
48:AA:36:A:OP2	75:aa:182:ARG:NH2	2.39	0.56
48:AA:1604:A:H2'	48:AA:1605:U:O4'	2.06	0.56
48:AA:2367:A:H2'	48:AA:2368:U:C6	2.41	0.56
4:4:61:GLN:OE1	4:4:61:GLN:N	2.39	0.55
4:4:200:ASN:HB3	4:4:202:TYR:CE1	2.40	0.55
10:B:292:LYS:NZ	10:B:311:THR:O	2.35	0.55
43:55:369:LYS:HB3	75:aa:71:ILE:HD13	1.86	0.55
44:66:274:THR:O	44:66:274:THR:HG22	2.05	0.55
48:AA:1866:A:N3	48:AA:2859:G:O2'	2.32	0.55
48:AA:3151:A:O2'	48:AA:3152:A:OP1	2.23	0.55
65:RR:346:VAL:HG12	65:RR:348:ARG:HG3	1.88	0.55
9:A:73:ARG:NH2	10:B:349:ASP:OD2	2.40	0.55
22:N:34:ASN:CG	22:N:69:MET:HE3	2.32	0.55
32:Y:133:MET:HE2	32:Y:133:MET:HA	1.88	0.55
40:22:45:GLN:HB3	52:EE:161:LEU:HD22	1.88	0.55
48:AA:282:G:N7	74:ZZ:56:LYS:HG2	2.21	0.55
62:OO:97:HIS:O	62:OO:100:SER:OG	2.21	0.55
64:QQ:139:ASP:OD1	64:QQ:139:ASP:N	2.38	0.55
79:r:1269:U:OP2	79:r:1420:A:N6	2.39	0.55
4:4:64:LEU:H	4:4:64:LEU:HD22	1.71	0.55
8:8:469:ILE:HD12	8:8:469:ILE:C	2.32	0.55
48:AA:1706:G:H4'	48:AA:1707:C:O5'	2.06	0.55
67:TT:98:LEU:HB2	67:TT:155:VAL:HG21	1.89	0.55
69:V:193:LYS:HZ2	69:V:196:LEU:HD21	1.70	0.55
79:r:832:A:O2'	79:r:1616:C:O2	2.25	0.55
1:1:78:ASP:N	79:r:884:A:N1	2.54	0.55
2:2:31:ILE:HG23	2:2:32:PRO:HD2	1.88	0.55
3:3:235:TYR:O	3:3:239:ASN:HB2	2.06	0.55
5:5:236:GLY:O	5:5:240:GLY:N	2.39	0.55
34:a:80:GLY:O	34:a:102:LYS:NZ	2.27	0.55
34:a:130:LEU:HD11	34:a:310:ILE:HD12	1.88	0.55
36:c:438:LEU:HD22	36:c:483:VAL:HG12	1.87	0.55
48:AA:176:U:H2'	48:AA:177:A:O4'	2.07	0.55
13:E:145:THR:HG21	13:E:175:LYS:HE2	1.88	0.55
36:c:525:LEU:HD12	36:c:526:GLN:N	2.21	0.55
37:t:75:C:H5''	37:t:76:A:H4'	1.87	0.55
48:AA:70:A:N6	48:AA:92:A:N7	2.54	0.55
50:CC:220:MET:CG	50:CC:221:PRO:HD2	2.37	0.55
64:QQ:82:VAL:N	64:QQ:96:ASP:OD2	2.36	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
65:RR:44:GLY:O	65:RR:46:ARG:NH1	2.40	0.55
79:r:1647:A:O2'	79:r:1648:C:O4'	2.10	0.55
7:7:211:LEU:HD12	7:7:212:GLU:H	1.72	0.55
30:W:203:MET:HE2	79:r:1345:A:OP1	2.07	0.55
41:33:99:PRO:O	64:QQ:204:ARG:NH2	2.39	0.55
49:BB:209:PHE:HB2	49:BB:241:LEU:HD13	1.89	0.55
59:LL:100:GLU:N	59:LL:100:GLU:OE1	2.40	0.55
79:r:780:G:H1'	79:r:842:A:C8	2.40	0.55
34:a:455:MET:O	34:a:459:ILE:HD12	2.07	0.55
48:AA:733:A:O2'	48:AA:734:U:P	2.65	0.55
49:BB:170:ILE:HD11	49:BB:179:HIS:HB3	1.89	0.55
79:r:1294:A:O2'	79:r:1315:A:N6	2.36	0.55
4:4:199:LEU:CD1	9:A:221:VAL:CG1	2.84	0.55
7:7:222:GLU:HB3	18:J:166:ILE:HD11	1.88	0.55
30:W:90:LEU:HD11	30:W:128:GLU:HG2	1.89	0.55
66:SS:256:ILE:HG22	66:SS:257:THR:HG23	1.88	0.55
69:V:75:ILE:HD11	69:V:108:ILE:CB	2.37	0.55
3:3:216:ASP:OD1	3:3:218:THR:HG23	2.07	0.55
32:Y:87:LEU:HD13	32:Y:108:TYR:CD2	2.42	0.55
34:a:134:SER:O	34:a:137:VAL:HG12	2.07	0.55
69:V:31:ASP:OD2	69:V:122:HIS:ND1	2.40	0.55
79:r:338:G:H2'	79:r:339:U:H6	1.72	0.55
18:J:74:THR:HG21	79:r:1172:A:OP2	2.07	0.55
18:J:94:VAL:HG13	79:r:1037:C:O2'	2.07	0.55
19:K:188:GLY:O	19:K:192:VAL:HG13	2.07	0.55
25:Q:20:VAL:HG23	25:Q:45:VAL:HB	1.88	0.55
41:33:142:TYR:CD2	41:33:143:LYS:HG2	2.41	0.55
48:AA:564:A:H1'	48:AA:565:A:C8	2.43	0.55
79:r:1269:U:O2'	79:r:1368:A:N1	2.38	0.55
6:6:103:THR:HG22	12:D:206:LYS:NZ	2.21	0.54
6:6:328:ASN:O	79:r:403:U:O2'	2.24	0.54
8:8:123:ASP:OD1	8:8:124:GLU:N	2.39	0.54
9:A:299:GLU:OE1	9:A:299:GLU:N	2.40	0.54
13:E:215:THR:HG22	13:E:216:ILE:N	2.22	0.54
19:K:201:ALA:O	19:K:203:LYS:HG3	2.07	0.54
25:Q:185:ARG:NE	25:Q:232:MET:SD	2.76	0.54
29:U:137:MET:HE3	29:U:179:LEU:HD12	1.89	0.54
33:Z:78:ILE:HD13	79:r:1628:A:C6	2.42	0.54
67:TT:85:PRO:CB	67:TT:90:ILE:HD11	2.37	0.54
67:TT:221:VAL:HG21	67:TT:281:ILE:HG12	1.88	0.54
69:V:64:PRO:HD3	79:r:133:U:C5	2.42	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
71:WW:126:HIS:O	71:WW:130:THR:HG23	2.07	0.54
6:6:80:PRO:HD2	6:6:215:MET:HE3	1.88	0.54
8:8:197:ASN:ND2	8:8:291:LEU:O	2.41	0.54
16:H:140:GLU:OE1	16:H:140:GLU:N	2.40	0.54
21:M:67:ILE:HG22	21:M:68:GLU:N	2.22	0.54
26:R:38:THR:HG22	26:R:40:LYS:H	1.72	0.54
26:R:50:PRO:HG2	26:R:53:THR:HG21	1.88	0.54
35:b:478:LYS:HA	35:b:481:ILE:HD11	1.88	0.54
36:c:492:ILE:HD12	36:c:493:ASP:N	2.22	0.54
48:AA:25:A:HO2'	48:AA:26:A:P	2.30	0.54
48:AA:1665:G:H2'	48:AA:1665:G:N3	2.21	0.54
48:AA:1836:A:OP2	48:AA:1862:C:N4	2.36	0.54
52:EE:174:ILE:HD11	52:EE:194:LYS:HB3	1.89	0.54
63:PP:197:ARG:O	64:QQ:36:LYS:NZ	2.36	0.54
4:4:68:ILE:HD12	4:4:81:VAL:HG13	1.90	0.54
6:6:306:GLN:C	24:P:62:ILE:HD12	2.31	0.54
19:K:122:VAL:O	79:r:749:A:O2'	2.23	0.54
33:Z:86:TYR:HA	33:Z:89:ILE:HG22	1.89	0.54
48:AA:923:U:H2'	48:AA:924:A:C8	2.41	0.54
48:AA:954:A:O2'	48:AA:955:A:OP2	2.23	0.54
48:AA:1321:C:C2	48:AA:1322:U:C5	2.96	0.54
48:AA:1380:G:N2	48:AA:1381:A:H1'	2.22	0.54
65:RR:254:LEU:O	65:RR:258:THR:OG1	2.25	0.54
67:TT:110:TRP:CE2	67:TT:149:MET:HE2	2.41	0.54
79:r:816:U:O2'	79:r:817:G:H5'	2.07	0.54
79:r:1206:A:HO2'	79:r:1207:U:H6	1.56	0.54
8:8:493:VAL:HG22	8:8:494:ASN:ND2	2.22	0.54
20:L:74:ASN:OD1	79:r:642:C:N4	2.40	0.54
20:L:142:ARG:NH2	79:r:614:U:OP1	2.35	0.54
21:M:20:LEU:HD13	21:M:24:PHE:CE2	2.43	0.54
39:11:153:MET:HE2	52:EE:36:ASP:H	1.73	0.54
40:22:133:THR:HG23	70:VV:57:VAL:HG12	1.89	0.54
44:66:54:GLU:OE2	44:66:57:LYS:NZ	2.41	0.54
49:BB:79:LEU:HD23	49:BB:79:LEU:C	2.32	0.54
55:HH:143:PHE:O	55:HH:147:GLN:NE2	2.41	0.54
79:r:109:A:C2	79:r:333:A:C4	2.95	0.54
2:2:38:VAL:O	2:2:38:VAL:CG1	2.56	0.54
4:4:125:THR:O	4:4:153:ARG:NH1	2.40	0.54
9:A:192:THR:HG22	9:A:192:THR:O	2.06	0.54
30:W:209:ILE:HD12	30:W:209:ILE:H	1.73	0.54
34:a:325:LEU:HD11	34:a:363:LEU:HD23	1.88	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:11:240:SER:OG	39:11:241:PHE:N	2.40	0.54
48:AA:126:A:N6	48:AA:127:A:N6	2.55	0.54
67:TT:85:PRO:HB3	67:TT:90:ILE:HD11	1.88	0.54
48:AA:389:G:O2'	48:AA:400:G:O6	2.24	0.54
48:AA:954:A:O2'	48:AA:1093:A:N6	2.41	0.54
48:AA:1494:A:N3	67:TT:35:ARG:NH1	2.56	0.54
4:4:209:ASN:OD1	9:A:221:VAL:HG13	2.08	0.54
8:8:296:THR:CG2	8:8:297:ILE:N	2.71	0.54
13:E:196:LYS:NZ	79:r:1120:U:OP2	2.36	0.54
28:T:168:ILE:CB	33:Z:89:ILE:HD11	2.38	0.54
35:b:213:LEU:HD23	35:b:215:GLN:H	1.72	0.54
35:b:386:GLY:O	35:b:390:LEU:HD13	2.06	0.54
41:33:47:GLN:OE1	63:PP:153:ARG:NH2	2.40	0.54
48:AA:143:A:OP2	64:QQ:234:LYS:NZ	2.34	0.54
52:EE:205:PHE:HE2	52:EE:264:ILE:HD11	1.72	0.54
16:H:31:LEU:HD12	16:H:135:ILE:HD11	1.88	0.54
20:L:95:ILE:H	20:L:95:ILE:HD12	1.73	0.54
35:b:526:ASP:N	35:b:526:ASP:OD1	2.40	0.54
47:99:155:SER:OG	47:99:158:THR:OG1	2.25	0.54
48:AA:175:U:H2'	48:AA:176:U:C6	2.42	0.54
48:AA:1297:G:OP2	48:AA:1298:A:O2'	2.19	0.54
48:AA:1410:U:O2'	48:AA:1411:A:P	2.65	0.54
48:AA:2630:U:O2	65:RR:65:ARG:NH2	2.41	0.54
48:AA:3244:A:O3'	60:MM:39:GLN:NE2	2.41	0.54
56:II:2:ILE:HB	56:II:6:SER:OG	2.08	0.54
23:O:184:ARG:O	23:O:188:MET:HG2	2.07	0.54
24:P:38:GLU:OE2	24:P:71:ARG:NH1	2.41	0.54
35:b:177:TYR:OH	35:b:202:ASP:OD2	2.22	0.54
40:22:111:ARG:O	40:22:111:ARG:NE	2.32	0.54
48:AA:214:A:O2'	48:AA:215:A:O4'	2.14	0.54
48:AA:898:U:OP2	48:AA:899:A:O2'	2.22	0.54
50:CC:237:LEU:HD23	50:CC:249:LYS:HB2	1.89	0.54
64:QQ:207:THR:HG1	67:TT:102:SER:H	1.54	0.54
70:VV:97:SER:OG	70:VV:98:LEU:N	2.41	0.54
71:WW:141:GLN:NE2	78:dd:110:LEU:O	2.40	0.54
79:r:499:A:O2'	79:r:655:A:OP1	2.25	0.54
6:6:198:ARG:NH2	79:r:545:U:O2'	2.36	0.54
9:A:85:TRP:NE1	79:r:1635:U:OP2	2.37	0.54
13:E:296:LYS:HZ3	13:E:298:VAL:HB	1.73	0.54
18:J:107:HIS:ND1	79:r:1183:A:OP1	2.38	0.54
24:P:43:TYR:CD1	24:P:65:VAL:HG22	2.43	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:c:503:LEU:HD11	36:c:508:ILE:HB	1.90	0.54
39:11:127:ASN:ND2	39:11:132:ILE:O	2.38	0.54
42:44:126:ARG:NH2	75:aa:57:PRO:O	2.40	0.54
50:CC:239:VAL:HG22	50:CC:246:ILE:HD13	1.88	0.54
1:1:88:MET:HE3	79:r:1473:A:H5'	1.89	0.53
3:3:8:ILE:HD13	3:3:50:THR:HG21	1.88	0.53
6:6:32:ILE:HD11	79:r:625:A:OP2	2.08	0.53
6:6:233:ILE:HD13	6:6:274:LEU:HD21	1.88	0.53
11:C:302:ILE:HD11	11:C:306:TYR:HE2	1.73	0.53
12:D:441:LEU:HD23	12:D:452:TYR:HA	1.90	0.53
18:J:45:ILE:HG22	18:J:140:CYS:SG	2.48	0.53
19:K:161:LEU:HD11	19:K:191:VAL:HG23	1.89	0.53
48:AA:336:A:O2'	48:AA:337:A:O5'	2.24	0.53
48:AA:520:A:OP1	74:ZZ:97:ARG:NH2	2.41	0.53
48:AA:566:U:H2'	48:AA:567:U:H6	1.73	0.53
48:AA:1195:A:H2'	48:AA:1206:A:H61	1.73	0.53
48:AA:1632:A:C2	48:AA:1670:A:H2'	2.43	0.53
48:AA:2590:U:H3'	48:AA:2591:A:H5'	1.90	0.53
19:K:123:LYS:C	19:K:124:ILE:HD13	2.33	0.53
19:K:180:ILE:HD12	19:K:181:SER:N	2.23	0.53
42:44:126:ARG:HB2	62:OO:307:TYR:HE2	1.74	0.53
48:AA:314:A:N3	66:SS:140:LYS:HE3	2.24	0.53
48:AA:639:G:H2'	48:AA:641:A:N7	2.23	0.53
60:MM:94:ILE:HD13	60:MM:97:ILE:HD11	1.91	0.53
8:8:351:ILE:CG2	8:8:414:LEU:HD11	2.39	0.53
22:N:72:THR:HG22	79:r:1044:C:H42	1.74	0.53
25:Q:2:ALA:N	79:r:130:G:OP1	2.41	0.53
30:W:220:LEU:H	30:W:220:LEU:HD12	1.73	0.53
37:t:18:G:O2'	37:t:19:G:O4'	2.26	0.53
39:11:202:VAL:HG13	39:11:203:THR:HG23	1.89	0.53
39:11:228:ILE:HG12	39:11:291:VAL:HG22	1.89	0.53
44:66:172:ASP:OD1	44:66:173:LYS:N	2.34	0.53
48:AA:479:U:H2'	48:AA:480:C:C6	2.43	0.53
50:CC:119:SER:OG	50:CC:121:GLN:OE1	2.27	0.53
79:r:1430:G:HO2'	79:r:1431:U:P	2.31	0.53
16:H:92:ILE:HD11	16:H:153:ARG:HG2	1.91	0.53
16:H:115:ILE:HD12	16:H:115:ILE:N	2.22	0.53
16:H:126:LEU:HD21	16:H:154:VAL:CG2	2.37	0.53
30:W:131:THR:CG2	30:W:132:ASN:N	2.72	0.53
79:r:1371:U:H2'	79:r:1372:G:O4'	2.07	0.53
79:r:1501:A:N6	79:r:1560:U:H2'	2.24	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:7:213:TYR:HB3	18:J:129:THR:HG23	1.90	0.53
9:A:128:MET:SD	9:A:128:MET:N	2.81	0.53
15:G:129:LYS:NZ	79:r:1272:U:O3'	2.38	0.53
16:H:20:ARG:NH1	16:H:82:ASN:OD1	2.40	0.53
33:Z:94:HIS:ND1	33:Z:95:ASP:O	2.41	0.53
34:a:137:VAL:HG23	34:a:284:ILE:HG21	1.91	0.53
34:a:402:ILE:HG21	34:a:441:LYS:NZ	2.23	0.53
43:55:170:SER:CB	43:55:288:MET:HE2	2.39	0.53
48:AA:2276:G:OP1	58:KK:130:LYS:NZ	2.38	0.53
55:HH:5:ILE:HD12	55:HH:5:ILE:N	2.24	0.53
79:r:38:A:O2'	79:r:55:A:N6	2.41	0.53
27:S:80:ARG:NH2	79:r:1255:U:OP2	2.42	0.53
49:BB:120:VAL:HG21	49:BB:123:LEU:HD12	1.91	0.53
79:r:1042:A:H1'	79:r:1047:U:O4	2.09	0.53
79:r:1526:A:N6	79:r:1527:A:N6	2.56	0.53
7:7:295:THR:HG22	7:7:296:GLY:N	2.23	0.53
26:R:97:ARG:NH1	69:V:234:ALA:O	2.41	0.53
34:a:383:ILE:O	34:a:387:SER:OG	2.25	0.53
39:11:168:THR:HG21	39:11:292:TRP:NE1	2.23	0.53
48:AA:643:U:H4'	48:AA:644:A:O5'	2.08	0.53
48:AA:1803:U:OP1	49:BB:353:LYS:NZ	2.30	0.53
48:AA:1911:U:OP2	62:OO:176:LYS:NZ	2.38	0.53
48:AA:3017:U:O2'	48:AA:3018:A:O5'	2.20	0.53
49:BB:272:TYR:HB3	49:BB:307:VAL:HG13	1.91	0.53
52:EE:142:ILE:HG13	52:EE:264:ILE:HD12	1.91	0.53
57:JJ:120:ILE:HD11	74:ZZ:97:ARG:HH12	1.72	0.53
60:MM:18:VAL:HG23	75:aa:166:ARG:HG3	1.91	0.53
3:3:57:SER:HA	9:A:39:LYS:HE2	1.90	0.53
21:M:110:THR:HG21	79:r:1374:A:HO2'	1.73	0.53
34:a:148:THR:HG22	34:a:148:THR:O	2.09	0.53
48:AA:52:A:O2'	48:AA:453:U:OP1	2.24	0.53
49:BB:173:ASP:HB2	49:BB:180:ILE:HD13	1.90	0.53
65:RR:332:THR:N	65:RR:335:THR:OG1	2.36	0.53
9:A:87:ARG:NE	29:U:117:SER:OG	2.40	0.53
10:B:156:ARG:HG2	10:B:157:THR:N	2.23	0.53
26:R:131:ARG:O	26:R:135:ILE:HD12	2.08	0.53
27:S:38:ARG:NH1	27:S:54:HIS:O	2.41	0.53
34:a:470:TYR:H	34:a:474:ILE:HG22	1.74	0.53
48:AA:733:A:O2'	48:AA:734:U:OP1	2.25	0.53
48:AA:3056:A:H2'	48:AA:3057:A:H8	1.74	0.53
50:CC:95:HIS:NE2	50:CC:149:ILE:O	2.35	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
79:r:1045:C:H2'	79:r:1046:U:O4'	2.08	0.53
3:3:166:LEU:HD21	3:3:180:ASN:CG	2.34	0.53
4:4:216:MET:HA	4:4:216:MET:HE3	1.89	0.53
48:AA:2331:U:H3'	48:AA:2332:U:H5'	1.91	0.53
79:r:616:C:O2	79:r:623:A:H2	1.92	0.53
11:C:233:ASN:N	11:C:233:ASN:OD1	2.42	0.52
18:J:87:THR:HG21	79:r:1436:U:H4'	1.91	0.52
48:AA:25:A:O2'	48:AA:26:A:P	2.67	0.52
48:AA:620:G:C5	49:BB:320:LYS:HB2	2.44	0.52
48:AA:1312:G:HO2'	48:AA:1313:G:P	2.32	0.52
48:AA:2590:U:H3'	48:AA:2591:A:C5'	2.39	0.52
51:DD:51:SER:N	51:DD:183:ASP:OD2	2.40	0.52
66:SS:136:LEU:HA	66:SS:147:LEU:HD21	1.91	0.52
79:r:988:A:O2'	79:r:1467:U:OP2	2.27	0.52
10:B:344:ALA:HB3	10:B:355:VAL:HG11	1.92	0.52
13:E:185:LYS:NZ	79:r:1128:A:OP2	2.42	0.52
33:Z:51:CYS:O	33:Z:55:VAL:HG23	2.09	0.52
34:a:380:LEU:O	34:a:384:ILE:HG12	2.09	0.52
35:b:463:LYS:HB2	35:b:469:LEU:HD22	1.90	0.52
37:t:1:U:O2'	37:t:2:G:P	2.67	0.52
41:33:66:LYS:O	48:AA:1403:G:N2	2.43	0.52
42:44:48:ARG:NH1	42:44:95:GLU:OE1	2.43	0.52
48:AA:2259:U:H2'	48:AA:2260:A:C8	2.43	0.52
48:AA:3056:A:H2'	48:AA:3057:A:C8	2.44	0.52
58:KK:151:ILE:HD12	58:KK:165:PHE:CZ	2.44	0.52
61:NN:77:PRO:HA	61:NN:150:LEU:HD23	1.91	0.52
79:r:154:U:N3	79:r:156:A:C8	2.76	0.52
79:r:512:A:H61	79:r:607:U:H3	1.57	0.52
79:r:1083:A:H2'	79:r:1084:U:H6	1.73	0.52
79:r:1502:U:H2'	79:r:1503:U:C6	2.44	0.52
3:3:70:THR:HG23	3:3:76:GLN:HG2	1.91	0.52
8:8:50:ILE:HB	8:8:87:LEU:HD23	1.92	0.52
25:Q:36:GLU:OE1	25:Q:36:GLU:N	2.42	0.52
48:AA:1665:G:C8	48:AA:3052:A:H1'	2.44	0.52
48:AA:2366:U:H2'	48:AA:2367:A:H8	1.74	0.52
49:BB:92:GLN:OE1	49:BB:92:GLN:HA	2.09	0.52
76:bb:70:ALA:HB1	76:bb:75:VAL:O	2.08	0.52
79:r:135:A:H5'	79:r:266:A:H1'	1.92	0.52
79:r:1450:U:O4	79:r:1451:A:N6	2.42	0.52
4:4:129:GLU:OE1	4:4:129:GLU:N	2.38	0.52
9:A:78:GLU:OE2	28:T:175:LYS:NZ	2.40	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:H:145:LYS:HA	16:H:145:LYS:HE3	1.90	0.52
39:11:81:LEU:HD13	39:11:111:ASN:HB3	1.92	0.52
41:33:25:ARG:NH2	48:AA:1303:C:O2'	2.42	0.52
43:55:170:SER:HB3	43:55:288:MET:HE2	1.90	0.52
48:AA:1790:A:N3	48:AA:1986:A:O2'	2.37	0.52
70:VV:68:ILE:HD12	70:VV:68:ILE:N	2.24	0.52
71:WW:183:ASP:OD1	71:WW:183:ASP:N	2.42	0.52
77:cc:94:SER:OG	77:cc:97:ASP:OD1	2.28	0.52
5:5:98:SER:O	5:5:101:THR:OG1	2.28	0.52
9:A:70:THR:OG1	9:A:74:ILE:O	2.27	0.52
11:C:244:LEU:HD23	32:Y:129:LEU:HD11	1.90	0.52
18:J:23:ASN:OD1	18:J:24:VAL:N	2.42	0.52
21:M:9:GLY:O	21:M:23:LYS:NZ	2.42	0.52
32:Y:272:ASP:OD1	32:Y:272:ASP:N	2.42	0.52
4:4:124:ARG:CZ	4:4:124:ARG:HA	2.40	0.52
4:4:199:LEU:HD11	9:A:221:VAL:HG11	1.87	0.52
9:A:7:LEU:N	10:B:189:MET:HE1	2.25	0.52
15:G:137:ALA:O	15:G:141:VAL:HG13	2.09	0.52
48:AA:2694:G:N2	57:JJ:110:GLN:OE1	2.43	0.52
48:AA:2887:U:C1'	50:CC:220:MET:SD	2.98	0.52
60:MM:132:ARG:C	60:MM:133:ILE:HD13	2.35	0.52
67:TT:64:ASP:OD1	67:TT:75:LYS:NZ	2.40	0.52
67:TT:66:HIS:CD2	67:TT:67:PRO:HD2	2.44	0.52
68:UU:2:VAL:HG23	68:UU:39:VAL:HG21	1.90	0.52
8:8:296:THR:HG22	8:8:297:ILE:H	1.75	0.52
17:I:43:THR:HG21	17:I:52:GLU:HB3	1.91	0.52
29:U:40:THR:O	29:U:40:THR:OG1	2.28	0.52
35:b:223:LEU:HD12	35:b:251:LEU:HD23	1.92	0.52
36:c:573:ARG:NH1	36:c:609:THR:O	2.43	0.52
42:44:113:THR:HG22	48:AA:433:A:OP1	2.09	0.52
43:55:74:LYS:HG2	63:PP:259:ILE:HD11	1.91	0.52
43:55:359:LYS:NZ	75:aa:101:LEU:O	2.37	0.52
48:AA:158:C:H2'	48:AA:159:C:C6	2.45	0.52
48:AA:290:G:OP1	57:JJ:115:LYS:NZ	2.37	0.52
48:AA:2314:U:C5	72:XX:34:VAL:HG23	2.45	0.52
61:NN:89:LEU:HB3	61:NN:91:MET:HE1	1.90	0.52
6:6:258:ALA:HB2	13:E:303:VAL:HG13	1.92	0.52
25:Q:64:ARG:HB2	79:r:132:A:H8	1.74	0.52
34:a:381:LEU:HD11	36:c:455:LEU:HD21	1.92	0.52
48:AA:1322:U:C2	48:AA:1323:U:C5	2.97	0.52
48:AA:1745:U:H2'	48:AA:1746:C:H5''	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:EE:166:ILE:HD11	52:EE:249:ILE:HD12	1.92	0.52
55:HH:5:ILE:HD12	55:HH:5:ILE:H	1.75	0.52
79:r:344:A:H2'	79:r:345:U:H6	1.73	0.52
3:3:152:TRP:HE1	3:3:171:ASN:ND2	2.08	0.52
5:5:304:TYR:CE1	5:5:308:LEU:HD22	2.45	0.52
8:8:378:LYS:NZ	8:8:383:GLN:O	2.39	0.52
34:a:377:LEU:HD13	34:a:401:PHE:HE1	1.75	0.52
39:11:206:ARG:NH1	39:11:247:TYR:OH	2.42	0.52
48:AA:639:G:C8	62:OO:249:ALA:HB1	2.45	0.52
49:BB:111:TYR:CB	49:BB:114:LEU:HD23	2.38	0.52
67:TT:47:LEU:HG	78:dd:95:LEU:HD21	1.92	0.52
3:3:76:GLN:HG3	3:3:79:ILE:HD13	1.92	0.52
6:6:71:TYR:OH	12:D:22:LYS:NZ	2.43	0.52
10:B:251:THR:OG1	10:B:324:ASN:ND2	2.35	0.52
12:D:215:LEU:HD12	12:D:216:GLN:N	2.25	0.52
14:F:119:SER:OG	14:F:122:GLU:OE2	2.26	0.52
30:W:64:THR:HA	30:W:69:LEU:HD11	1.92	0.52
34:a:360:THR:H	34:a:363:LEU:HD12	1.75	0.52
34:a:403:LYS:O	34:a:407:THR:OG1	2.28	0.52
48:AA:1333:A:OP2	48:AA:1559:U:O2'	2.25	0.52
68:UU:15:VAL:O	68:UU:20:LYS:NZ	2.42	0.52
5:5:297:LEU:O	5:5:301:ILE:HG13	2.10	0.51
7:7:274:LYS:O	79:r:1071:A:O2'	2.27	0.51
12:D:391:LEU:HD22	12:D:398:ALA:HA	1.91	0.51
23:O:130:LYS:HE3	23:O:130:LYS:HA	1.91	0.51
34:a:113:LYS:HA	34:a:113:LYS:HE3	1.92	0.51
36:c:591:LEU:HD22	36:c:602:GLU:HB2	1.91	0.51
39:11:184:PHE:O	65:RR:200:ARG:NH2	2.43	0.51
39:11:202:VAL:HG23	48:AA:2361:A:C6	2.45	0.51
48:AA:1092:G:OP2	48:AA:1093:A:O2'	2.21	0.51
51:DD:220:ARG:O	51:DD:260:GLN:NE2	2.42	0.51
57:JJ:159:LYS:HA	57:JJ:159:LYS:HE3	1.92	0.51
74:ZZ:71:THR:OG1	74:ZZ:72:PHE:N	2.42	0.51
79:r:339:U:H2'	79:r:340:C:H6	1.73	0.51
79:r:740:A:H2'	79:r:741:A:O4'	2.10	0.51
6:6:299:LEU:HD11	24:P:60:VAL:HG11	1.91	0.51
10:B:54:ILE:HG21	11:C:37:LEU:HD13	1.93	0.51
11:C:182:ILE:C	11:C:182:ILE:HD12	2.35	0.51
13:E:151:MET:HE2	13:E:194:ILE:HD11	1.92	0.51
24:P:51:THR:HG22	24:P:54:GLU:HG2	1.92	0.51
32:Y:58:LYS:NZ	32:Y:85:ASP:O	2.43	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:AA:725:U:C2	48:AA:726:A:C8	2.98	0.51
48:AA:1407:A:O2'	78:dd:44:ASN:ND2	2.43	0.51
48:AA:1959:A:N7	48:AA:1960:A:C4	2.78	0.51
48:AA:3040:U:H2'	48:AA:3041:A:C8	2.45	0.51
61:NN:92:THR:HG21	68:UU:79:ILE:CD1	2.40	0.51
68:UU:19:THR:HG23	68:UU:50:VAL:HG12	1.92	0.51
77:cc:15:LEU:HD22	77:cc:17:TRP:CE2	2.46	0.51
7:7:213:TYR:HB3	18:J:129:THR:CG2	2.41	0.51
15:G:184:ASN:OD1	15:G:184:ASN:N	2.44	0.51
35:b:460:ILE:HD12	35:b:463:LYS:NZ	2.25	0.51
37:t:1:U:HO2'	37:t:2:G:P	2.33	0.51
48:AA:309:C:H1'	48:AA:310:U:C5	2.45	0.51
48:AA:821:U:O4	48:AA:822:A:N6	2.43	0.51
63:PP:129:ARG:O	63:PP:131:MET:HE2	2.10	0.51
79:r:397:A:C2	79:r:398:G:C8	2.99	0.51
6:6:265:GLU:OE2	6:6:273:ASN:ND2	2.43	0.51
13:E:146:MET:HE3	13:E:198:HIS:CG	2.46	0.51
13:E:296:LYS:NZ	13:E:298:VAL:HB	2.24	0.51
24:P:23:ILE:N	24:P:23:ILE:HD12	2.25	0.51
33:Z:24:ARG:NH2	79:r:1630:A:O2'	2.43	0.51
76:bb:126:LEU:O	76:bb:129:VAL:HG12	2.11	0.51
79:r:868:G:H2'	79:r:869:U:O4'	2.10	0.51
79:r:1046:U:O2	79:r:1047:U:H2'	2.09	0.51
11:C:278:LEU:HD23	11:C:278:LEU:C	2.35	0.51
11:C:342:THR:HG21	79:r:1103:U:O3'	2.10	0.51
13:E:178:MET:HE3	29:U:20:SER:CB	2.41	0.51
14:F:42:ILE:HG22	14:F:69:MET:HG2	1.92	0.51
34:a:116:MET:SD	34:a:116:MET:N	2.83	0.51
34:a:251:PRO:N	34:a:252:PRO:HD2	2.26	0.51
34:a:446:PHE:CZ	34:a:454:MET:HE2	2.45	0.51
45:77:65:THR:CG2	51:DD:36:ALA:HB3	2.40	0.51
48:AA:1688:C:N4	73:YY:62:ARG:HG3	2.23	0.51
63:PP:131:MET:HE3	63:PP:165:GLU:CG	2.36	0.51
65:RR:158:ILE:HG21	76:bb:157:PHE:CD1	2.45	0.51
79:r:492:G:O2'	79:r:497:A:N1	2.38	0.51
17:I:200:LEU:H	17:I:200:LEU:HD22	1.75	0.51
23:O:144:MET:HE1	23:O:152:ALA:N	2.25	0.51
43:55:164:SER:O	43:55:168:THR:HG23	2.10	0.51
48:AA:1328:C:H2'	48:AA:1329:C:C6	2.43	0.51
48:AA:2961:A:N1	48:AA:3051:U:C5	2.77	0.51
53:FF:24:LEU:HD22	53:FF:84:ILE:HD11	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:JJ:200:ILE:HD11	57:JJ:210:PHE:HD2	1.73	0.51
64:QQ:137:ILE:HD12	64:QQ:146:THR:HG21	1.92	0.51
65:RR:172:LEU:HD21	65:RR:202:ARG:HE	1.75	0.51
65:RR:172:LEU:HD21	65:RR:202:ARG:NE	2.26	0.51
66:SS:243:LEU:HD23	66:SS:243:LEU:C	2.36	0.51
79:r:329:U:O4	79:r:333:A:N7	2.44	0.51
79:r:1177:A:N6	79:r:1320:A:N3	2.58	0.51
79:r:1526:A:C6	79:r:1527:A:N6	2.78	0.51
4:4:264:GLU:OE1	4:4:265:VAL:N	2.44	0.51
4:4:267:TYR:CE2	9:A:221:VAL:HG21	2.45	0.51
30:W:370:ARG:NH1	79:r:1304:U:O2	2.44	0.51
33:Z:34:MET:O	33:Z:38:LEU:HD13	2.11	0.51
34:a:58:TYR:O	34:a:122:ARG:NH1	2.43	0.51
36:c:536:GLY:H	36:c:575:LEU:HD22	1.76	0.51
48:AA:666:G:H21	48:AA:684:G:H1'	1.75	0.51
48:AA:2361:A:H4'	76:bb:156:TRP:CE3	2.46	0.51
48:AA:2659:A:O2'	57:JJ:116:LEU:O	2.27	0.51
50:CC:150:PRO:O	50:CC:153:THR:HG23	2.11	0.51
61:NN:91:MET:HE2	61:NN:91:MET:N	2.25	0.51
61:NN:97:LEU:O	61:NN:104:LEU:N	2.41	0.51
79:r:227:U:C2	79:r:228:A:C8	2.99	0.51
79:r:1505:U:H2'	79:r:1506:U:C6	2.46	0.51
3:3:145:ASN:OD1	3:3:146:GLU:N	2.44	0.51
3:3:219:MET:HE3	10:B:149:ARG:NH2	2.25	0.51
3:3:235:TYR:CD1	3:3:243:TYR:HB2	2.46	0.51
10:B:109:SER:O	10:B:111:THR:N	2.42	0.51
14:F:43:VAL:HG22	69:V:231:PHE:HE1	1.76	0.51
23:O:62:ASP:OD1	23:O:62:ASP:N	2.36	0.51
30:W:369:THR:HA	31:X:1:MET:HE3	1.93	0.51
34:a:411:ASP:O	34:a:415:ASN:ND2	2.44	0.51
41:33:19:ARG:NH2	41:33:29:LEU:O	2.44	0.51
48:AA:3017:U:O2'	48:AA:3018:A:P	2.68	0.51
58:KK:154:ASP:N	58:KK:154:ASP:OD1	2.43	0.51
63:PP:191:GLU:OE1	63:PP:191:GLU:HA	2.11	0.51
66:SS:242:ILE:HD12	66:SS:247:GLU:HG3	1.93	0.51
75:aa:87:MET:HB3	75:aa:88:PRO:HD3	1.92	0.51
76:bb:154:ILE:O	76:bb:154:ILE:HG13	2.10	0.51
79:r:677:G:O2'	79:r:683:A:N1	2.42	0.51
19:K:180:ILE:O	19:K:184:VAL:HG22	2.11	0.51
19:K:203:LYS:C	19:K:204:LEU:HD22	2.36	0.51
20:L:116:GLN:OE1	20:L:116:GLN:N	2.42	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:M:14:GLU:OE1	21:M:14:GLU:N	2.36	0.51
34:a:70:ALA:O	36:c:442:ASN:ND2	2.44	0.51
34:a:419:LEU:HD12	34:a:442:PHE:CE1	2.46	0.51
35:b:410:LEU:HD11	35:b:432:CYS:SG	2.51	0.51
39:11:41:ASN:OD1	39:11:50:LEU:HD22	2.11	0.51
39:11:117:TYR:HD2	40:22:67:ILE:HD12	1.76	0.51
42:44:8:ARG:NH1	43:55:296:LYS:O	2.43	0.51
79:r:1172:A:HO2'	79:r:1173:U:P	2.34	0.51
3:3:152:TRP:HE1	3:3:171:ASN:HD22	1.59	0.51
3:3:232:LEU:HD23	4:4:281:LEU:HD12	1.92	0.51
4:4:19:LEU:O	4:4:23:LYS:NZ	2.44	0.51
9:A:241:ASN:O	9:A:241:ASN:ND2	2.43	0.51
9:A:269:ASP:C	9:A:269:ASP:OD1	2.54	0.51
14:F:108:ALA:O	14:F:113:ARG:NH1	2.38	0.51
30:W:136:LYS:O	30:W:140:SER:OG	2.27	0.51
39:11:203:THR:O	39:11:275:TYR:OH	2.30	0.51
48:AA:1524:U:H2'	48:AA:1525:A:O4'	2.11	0.51
65:RR:333:ASP:OD1	65:RR:334:SER:N	2.43	0.51
9:A:265:ASN:O	26:R:39:LYS:NZ	2.39	0.50
11:C:224:ILE:O	11:C:232:TYR:OH	2.23	0.50
22:N:60:LEU:HD22	27:S:18:ILE:HD12	1.93	0.50
25:Q:17:GLN:OE1	79:r:258:G:N2	2.38	0.50
29:U:6:ASN:O	29:U:13:ARG:NH1	2.40	0.50
30:W:173:ILE:HD12	30:W:285:VAL:HG21	1.92	0.50
48:AA:503:A:N6	48:AA:513:U:H3	2.07	0.50
48:AA:1496:U:O4	48:AA:1497:A:N6	2.44	0.50
48:AA:2333:A:O2'	65:RR:328:VAL:O	2.28	0.50
57:JJ:157:MET:HE3	57:JJ:192:ALA:HA	1.93	0.50
64:QQ:81:ALA:HB3	64:QQ:95:LEU:HD21	1.93	0.50
79:r:1204:U:O2'	79:r:1205:A:OP2	2.23	0.50
7:7:306:LYS:HG2	7:7:323:VAL:HG21	1.93	0.50
9:A:44:TYR:CZ	79:r:1642:U:H4'	2.46	0.50
22:N:48:MET:HE1	31:X:29:ARG:HB2	1.93	0.50
34:a:221:GLU:OE1	34:a:263:ASN:ND2	2.44	0.50
34:a:452:TYR:HA	34:a:455:MET:HE3	1.93	0.50
34:a:471:GLN:N	34:a:471:GLN:OE1	2.44	0.50
35:b:98:ASP:HB2	35:b:101:THR:HB	1.94	0.50
35:b:418:TRP:NE1	35:b:423:ASP:O	2.43	0.50
48:AA:1407:A:C6	48:AA:1409:C:C5	2.99	0.50
52:EE:272:LEU:HD12	52:EE:274:TYR:HE1	1.75	0.50
75:aa:122:ILE:HG23	75:aa:138:LEU:HD23	1.92	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:291:VAL:HG23	9:A:291:VAL:O	2.12	0.50
14:F:80:GLU:OE2	49:BB:77:ASP:N	2.44	0.50
15:G:165:MET:HG3	15:G:183:LEU:HD21	1.92	0.50
17:I:141:ASN:OD1	17:I:141:ASN:N	2.42	0.50
23:O:118:LEU:HD23	23:O:118:LEU:H	1.76	0.50
34:a:425:ILE:HG12	36:c:455:LEU:HD13	1.92	0.50
48:AA:270:G:OP1	57:JJ:235:ARG:NH2	2.42	0.50
48:AA:1321:C:N3	48:AA:1322:U:C5	2.80	0.50
48:AA:3122:U:O2	48:AA:3122:U:O4'	2.29	0.50
65:RR:268:GLN:OE1	65:RR:269:TYR:N	2.41	0.50
67:TT:48:ARG:NH1	78:dd:139:GLU:OE2	2.43	0.50
79:r:226:C:H2'	79:r:227:U:H6	1.77	0.50
4:4:148:SER:N	4:4:151:GLU:OE2	2.44	0.50
9:A:253:ASP:OD1	9:A:253:ASP:C	2.55	0.50
19:K:151:MET:O	19:K:155:ILE:HG12	2.12	0.50
26:R:99:LEU:HD12	26:R:99:LEU:H	1.77	0.50
26:R:110:GLN:N	26:R:110:GLN:OE1	2.44	0.50
27:S:17:ASN:ND2	27:S:39:ALA:O	2.43	0.50
41:33:93:TYR:HB3	67:TT:90:ILE:HG23	1.92	0.50
48:AA:336:A:O2'	48:AA:337:A:P	2.69	0.50
48:AA:2258:C:H2'	48:AA:2259:U:C6	2.47	0.50
48:AA:2610:A:H4'	48:AA:2611:U:O5'	2.12	0.50
48:AA:3289:U:C2'	48:AA:3290:A:H5'	2.42	0.50
50:CC:44:HIS:ND1	55:HH:99:LYS:HG2	2.26	0.50
51:DD:70:ARG:HH21	51:DD:73:ILE:HD11	1.76	0.50
78:dd:5:HIS:O	78:dd:11:ARG:NH2	2.45	0.50
79:r:1130:U:H3'	79:r:1131:U:C6	2.47	0.50
5:5:308:LEU:O	5:5:308:LEU:HG	2.12	0.50
9:A:119:HIS:O	9:A:119:HIS:ND1	2.44	0.50
10:B:247:LEU:HD13	17:I:45:TYR:CD2	2.47	0.50
14:F:120:ILE:N	14:F:120:ILE:HD12	2.26	0.50
30:W:91:ASN:OD1	30:W:128:GLU:HG3	2.12	0.50
32:Y:231:THR:OG1	32:Y:233:ILE:HG22	2.11	0.50
34:a:228:LEU:HD23	34:a:234:MET:SD	2.52	0.50
36:c:492:ILE:HG21	36:c:511:ILE:HG13	1.92	0.50
48:AA:2384:A:H2'	48:AA:2385:U:C6	2.46	0.50
70:VV:67:GLU:C	70:VV:68:ILE:HD12	2.36	0.50
79:r:134:U:O2'	79:r:266:A:N3	2.41	0.50
79:r:383:C:H2'	79:r:384:G:C8	2.47	0.50
5:5:190:MET:HE1	5:5:279:LEU:HB3	1.93	0.50
11:C:298:TYR:OH	13:E:14:GLN:OE1	2.28	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:F:6:ILE:HG23	14:F:45:MET:HE1	1.93	0.50
16:H:19:VAL:HG13	16:H:21:VAL:HG13	1.93	0.50
16:H:126:LEU:N	16:H:126:LEU:HD23	2.27	0.50
18:J:146:SER:HB3	18:J:150:LEU:HD21	1.94	0.50
23:O:112:ARG:NH2	69:V:269:LEU:O	2.44	0.50
34:a:443:ILE:O	34:a:447:ALA:N	2.43	0.50
39:11:119:PHE:HA	39:11:132:ILE:HD11	1.93	0.50
77:cc:15:LEU:HD23	77:cc:16:LEU:N	2.26	0.50
79:r:1622:G:O2'	79:r:1625:U:O4	2.28	0.50
1:1:89:LYS:NZ	79:r:955:G:OP2	2.37	0.50
8:8:38:PRO:O	8:8:53:ASN:N	2.40	0.50
11:C:110:MET:HE2	22:N:79:VAL:HG21	1.93	0.50
11:C:253:ASP:OD1	11:C:253:ASP:N	2.39	0.50
23:O:148:GLU:OE1	23:O:148:GLU:N	2.45	0.50
34:a:90:HIS:CE1	34:a:92:VAL:HG22	2.47	0.50
36:c:395:ASP:N	36:c:395:ASP:OD1	2.42	0.50
48:AA:425:A:N3	48:AA:425:A:H2'	2.26	0.50
56:II:111:ILE:HG21	56:II:134:ALA:HA	1.92	0.50
79:r:788:U:H2'	79:r:790:U:H5'	1.93	0.50
6:6:291:ASN:N	6:6:291:ASN:OD1	2.44	0.50
10:B:324:ASN:OD1	10:B:324:ASN:N	2.44	0.50
18:J:81:THR:HG23	79:r:1182:U:H5''	1.93	0.50
31:X:86:ARG:NH1	79:r:1240:U:OP2	2.45	0.50
48:AA:323:G:H22	66:SS:80:GLN:CD	2.18	0.50
48:AA:920:A:H2'	48:AA:921:G:O4'	2.12	0.50
48:AA:2359:U:O2'	48:AA:2360:U:OP1	2.30	0.50
48:AA:2760:G:C5	48:AA:2761:C:C5	3.00	0.50
60:MM:158:VAL:HG22	60:MM:161:LEU:HD21	1.93	0.50
79:r:1041:U:OP2	79:r:1427:U:O2'	2.30	0.50
6:6:265:GLU:O	13:E:304:TYR:OH	2.25	0.50
13:E:29:LEU:HD12	32:Y:160:TYR:CD1	2.47	0.50
37:t:54:U:H3	37:t:58:A:H62	1.60	0.50
44:66:33:ARG:NH1	44:66:158:LEU:O	2.42	0.50
48:AA:261:A:C8	48:AA:307:G:N7	2.80	0.50
48:AA:563:U:H1'	48:AA:564:A:OP1	2.12	0.50
48:AA:820:U:H2'	48:AA:821:U:O4'	2.12	0.50
48:AA:1663:A:H2'	48:AA:1664:A:C8	2.46	0.50
50:CC:210:ASP:HB3	50:CC:211:PRO:HD3	1.93	0.50
57:JJ:160:MET:HB3	57:JJ:166:VAL:HG22	1.93	0.50
59:LL:150:LYS:NZ	71:WW:120:CYS:SG	2.84	0.50
64:QQ:192:VAL:HG22	67:TT:89:HIS:HB3	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:V:14:VAL:HG12	69:V:15:PHE:O	2.12	0.50
4:4:139:GLN:HE22	4:4:149:LEU:HD21	1.77	0.49
8:8:437:GLU:OE1	8:8:437:GLU:N	2.44	0.49
9:A:74:ILE:HD11	28:T:177:TYR:CD1	2.46	0.49
37:t:43:A:N6	37:t:44:A:H62	2.10	0.49
48:AA:1735:U:H2'	48:AA:1736:G:O4'	2.12	0.49
48:AA:1854:U:O2'	48:AA:2818:C:O2'	2.24	0.49
3:3:44:TYR:HD1	4:4:116:LEU:HD11	1.76	0.49
4:4:199:LEU:HD12	9:A:221:VAL:HG11	1.94	0.49
21:M:11:LYS:N	21:M:14:GLU:OE2	2.45	0.49
34:a:412:PRO:O	34:a:416:SER:OG	2.29	0.49
41:33:127:VAL:HG21	67:TT:187:TYR:CD1	2.47	0.49
48:AA:878:G:OP2	77:cc:105:LYS:NZ	2.44	0.49
48:AA:1410:U:H2'	48:AA:1411:A:C8	2.47	0.49
48:AA:1816:A:N6	79:r:1476:A:O2'	2.45	0.49
48:AA:2441:U:H1'	48:AA:2641:C:H1'	1.94	0.49
48:AA:2761:C:O2'	58:KK:128:MET:HE3	2.12	0.49
61:NN:75:ILE:HD12	61:NN:152:ILE:HD12	1.93	0.49
61:NN:114:TYR:O	61:NN:161:ASN:ND2	2.45	0.49
62:OO:142:ASN:ND2	62:OO:142:ASN:O	2.45	0.49
66:SS:138:LYS:HE2	66:SS:140:LYS:HB2	1.93	0.49
79:r:781:A:H2'	79:r:782:C:C6	2.47	0.49
6:6:161:ILE:CD1	6:6:171:VAL:HG21	2.41	0.49
6:6:188:LEU:HD12	12:D:442:GLU:OE2	2.13	0.49
8:8:302:ASN:OD1	8:8:302:ASN:C	2.55	0.49
10:B:142:SER:N	10:B:145:GLU:OE1	2.39	0.49
11:C:74:ILE:HD11	11:C:269:ASN:OD1	2.12	0.49
34:a:408:PHE:O	34:a:409:THR:OG1	2.25	0.49
48:AA:3268:A:O2'	48:AA:3269:U:P	2.70	0.49
53:FF:162:THR:HG23	53:FF:162:THR:O	2.12	0.49
79:r:329:U:H3	79:r:333:A:H62	1.60	0.49
79:r:1599:U:H2'	79:r:1600:A:C8	2.47	0.49
3:3:133:GLU:N	3:3:133:GLU:OE1	2.42	0.49
26:R:83:MET:HE1	26:R:89:PRO:HA	1.94	0.49
29:U:135:SER:O	29:U:152:ARG:NH1	2.46	0.49
34:a:200:ALA:HB2	34:a:237:ILE:HD13	1.95	0.49
48:AA:2315:A:N6	48:AA:2610:A:H2'	2.27	0.49
58:KK:202:ASN:OD1	58:KK:202:ASN:C	2.55	0.49
75:aa:87:MET:O	75:aa:89:VAL:N	2.46	0.49
79:r:1082:U:O2'	79:r:1083:A:P	2.70	0.49
79:r:1090:U:O2'	79:r:1091:A:P	2.70	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
79:r:1573:G:HO2'	79:r:1574:A:P	2.34	0.49
6:6:256:VAL:HG12	6:6:260:HIS:HE1	1.76	0.49
10:B:197:GLN:NE2	10:B:364:ASP:OD2	2.46	0.49
21:M:20:LEU:O	21:M:27:ILE:HD11	2.12	0.49
23:O:250:ARG:NH1	79:r:827:G:O3'	2.46	0.49
30:W:145:LYS:HG2	30:W:386:VAL:HG22	1.94	0.49
34:a:75:PRO:O	34:a:105:PHE:N	2.45	0.49
60:MM:62:ILE:HD13	60:MM:125:LEU:HD23	1.95	0.49
63:PP:153:ARG:O	64:QQ:11:VAL:HG11	2.11	0.49
8:8:169:ALA:HB2	8:8:210:VAL:HA	1.95	0.49
8:8:175:ILE:O	8:8:175:ILE:HG22	2.11	0.49
8:8:204:LEU:HD23	8:8:209:GLU:OE2	2.11	0.49
12:D:109:LEU:HD11	12:D:130:VAL:HG11	1.94	0.49
17:I:65:TYR:OH	17:I:124:GLU:OE1	2.25	0.49
37:t:59:A:O2'	37:t:60:U:OP1	2.22	0.49
48:AA:817:G:C2	48:AA:818:U:C4	3.00	0.49
48:AA:1165:A:H2'	48:AA:1166:U:H6	1.78	0.49
48:AA:1312:G:O2'	48:AA:1313:G:P	2.71	0.49
48:AA:1666:A:H2'	48:AA:1667:A:C8	2.47	0.49
79:r:1210:A:O2'	79:r:1211:A:H5'	2.13	0.49
8:8:403:ILE:HG23	8:8:404:THR:HG23	1.95	0.49
14:F:38:VAL:HG23	23:O:140:ARG:HD2	1.95	0.49
25:Q:47:ASP:OD1	25:Q:47:ASP:N	2.44	0.49
34:a:53:ILE:HD11	34:a:118:PHE:CZ	2.48	0.49
49:BB:291:SER:O	49:BB:389:LYS:NZ	2.45	0.49
63:PP:190:MET:HE1	64:QQ:42:MET:SD	2.52	0.49
10:B:230:LYS:C	10:B:234:LYS:HZ2	2.20	0.49
17:I:149:ASP:OD1	17:I:153:ARG:HG2	2.12	0.49
34:a:181:GLN:OE1	34:a:223:GLN:NE2	2.44	0.49
48:AA:2897:A:H61	75:aa:177:LYS:NZ	2.10	0.49
51:DD:282:HIS:HD2	51:DD:284:VAL:HG22	1.77	0.49
67:TT:181:ASP:OD1	67:TT:182:THR:N	2.46	0.49
79:r:73:A:C2	79:r:104:G:H1'	2.47	0.49
79:r:1504:A:H2'	79:r:1505:U:H6	1.76	0.49
4:4:170:TRP:CE2	4:4:207:PRO:HG3	2.48	0.49
4:4:193:TYR:CZ	4:4:312:ARG:HG2	2.47	0.49
6:6:110:ARG:HG3	6:6:110:ARG:HH11	1.77	0.49
29:U:225:VAL:O	29:U:228:THR:OG1	2.28	0.49
34:a:380:LEU:O	34:a:383:ILE:HG13	2.13	0.49
39:11:157:GLN:HB2	52:EE:35:ILE:HD11	1.94	0.49
48:AA:1259:A:C5	48:AA:1260:U:C5	3.01	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:HH:103:GLU:N	55:HH:103:GLU:OE1	2.45	0.49
58:KK:76:LEU:HD13	58:KK:165:PHE:HB3	1.95	0.49
67:TT:249:GLU:C	67:TT:250:ILE:HD13	2.38	0.49
6:6:160:GLU:HG3	6:6:166:LEU:HD12	1.94	0.49
8:8:46:THR:HG21	16:H:80:ARG:HH21	1.77	0.49
9:A:273:MET:HE3	9:A:273:MET:HA	1.94	0.49
21:M:28:GLY:N	21:M:31:THR:OG1	2.45	0.49
30:W:414:ASP:O	30:W:418:THR:N	2.46	0.49
34:a:177:ASN:CG	34:a:222:MET:HE2	2.37	0.49
35:b:197:ALA:HB2	36:c:604:PHE:HD2	1.78	0.49
48:AA:50:A:OP1	71:WW:84:ARG:NE	2.37	0.49
48:AA:174:G:C2	48:AA:205:A:C2	3.01	0.49
48:AA:2589:A:O2'	48:AA:2590:U:H5'	2.12	0.49
49:BB:318:LEU:HA	49:BB:323:ARG:NH1	2.27	0.49
64:QQ:84:LYS:HE3	64:QQ:94:ILE:HG22	1.95	0.49
72:XX:40:ASP:C	72:XX:40:ASP:OD1	2.56	0.49
5:5:181:ILE:HA	5:5:185:PHE:HB3	1.95	0.48
8:8:351:ILE:HG22	8:8:414:LEU:HD11	1.94	0.48
10:B:194:HIS:HB3	10:B:222:LEU:HD21	1.95	0.48
25:Q:16:MET:SD	79:r:280:G:O2'	2.63	0.48
30:W:403:ILE:HD12	30:W:426:ILE:HD13	1.95	0.48
35:b:436:MET:O	35:b:442:SER:OG	2.31	0.48
41:33:41:VAL:HG21	63:PP:142:PHE:HZ	1.77	0.48
48:AA:565:A:H2'	48:AA:566:U:C6	2.48	0.48
48:AA:787:G:N3	48:AA:840:C:N4	2.60	0.48
48:AA:880:G:C5	48:AA:890:A:C2	3.01	0.48
48:AA:1707:C:OP1	49:BB:295:ARG:NH2	2.46	0.48
48:AA:2887:U:O4'	50:CC:220:MET:SD	2.71	0.48
52:EE:85:ASN:HB2	52:EE:129:ILE:HD13	1.94	0.48
77:cc:118:LYS:O	77:cc:122:ILE:HG22	2.13	0.48
79:r:1090:U:H3'	79:r:1091:A:C8	2.48	0.48
79:r:1501:A:H2'	79:r:1502:U:O4'	2.13	0.48
79:r:1540:U:C2	79:r:1541:U:C6	3.02	0.48
79:r:1571:A:H2'	79:r:1572:U:C6	2.48	0.48
24:P:23:ILE:HD11	24:P:43:TYR:HB2	1.94	0.48
36:c:572:ILE:HG23	36:c:577:VAL:HG12	1.95	0.48
48:AA:923:U:H2'	48:AA:924:A:H8	1.77	0.48
48:AA:1409:C:O2'	48:AA:1410:U:P	2.69	0.48
48:AA:2304:A:N6	65:RR:40:LYS:O	2.47	0.48
59:LL:74:GLN:HB2	59:LL:87:MET:HE1	1.94	0.48
67:TT:144:SER:O	67:TT:147:THR:OG1	2.30	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
67:TT:194:PRO:HG2	67:TT:198:VAL:HG13	1.95	0.48
79:r:335:A:HO2'	79:r:337:A:H8	1.60	0.48
19:K:161:LEU:HB3	19:K:194:LYS:HG3	1.95	0.48
20:L:138:ARG:NH2	20:L:141:SER:OG	2.46	0.48
30:W:141:HIS:O	30:W:144:LYS:NZ	2.41	0.48
35:b:492:VAL:O	35:b:496:ILE:HG12	2.13	0.48
43:55:170:SER:OG	43:55:288:MET:HE2	2.14	0.48
48:AA:800:A:H2'	48:AA:801:U:H6	1.78	0.48
62:OO:189:VAL:HG11	62:OO:267:LEU:HD13	1.93	0.48
63:PP:63:TYR:CZ	78:dd:206:ILE:HD11	2.48	0.48
78:dd:182:VAL:O	78:dd:186:LEU:HD12	2.13	0.48
79:r:1208:A:H2'	79:r:1209:U:H6	1.78	0.48
79:r:1501:A:H2'	79:r:1502:U:C6	2.48	0.48
4:4:108:CYS:SG	4:4:295:ARG:NH2	2.87	0.48
7:7:210:LEU:HD21	18:J:127:TYR:HB2	1.96	0.48
8:8:96:PHE:CZ	8:8:153:LEU:HD11	2.46	0.48
10:B:248:PHE:HB3	10:B:259:LEU:HD12	1.96	0.48
10:B:309:ASN:OD1	10:B:309:ASN:C	2.57	0.48
18:J:101:ASN:O	22:N:113:GLY:N	2.38	0.48
23:O:88:VAL:HG13	23:O:144:MET:CB	2.43	0.48
34:a:222:MET:C	34:a:222:MET:SD	2.95	0.48
48:AA:1566:A:C2	62:OO:253:ILE:HD11	2.49	0.48
51:DD:188:ASP:OD1	51:DD:188:ASP:C	2.56	0.48
69:V:194:LYS:O	69:V:198:GLU:HG2	2.13	0.48
79:r:666:U:C2	79:r:667:A:C8	3.01	0.48
79:r:1143:U:N3	79:r:1144:C:C5	2.82	0.48
79:r:1377:A:N6	79:r:1397:A:C6	2.81	0.48
5:5:308:LEU:HD21	5:5:314:PRO:HD3	1.93	0.48
17:I:200:LEU:HD13	17:I:235:LEU:HD11	1.95	0.48
24:P:97:ASN:HD22	69:V:102:LEU:HD22	1.78	0.48
37:t:9:G:H2'	37:t:11:U:C5	2.49	0.48
48:AA:306:G:H4'	48:AA:307:G:OP1	2.13	0.48
48:AA:1766:A:O2'	48:AA:1767:A:O5'	2.28	0.48
48:AA:1769:U:C2'	48:AA:1770:U:OP1	2.62	0.48
49:BB:220:GLU:O	49:BB:224:LYS:N	2.46	0.48
65:RR:180:LEU:CD2	65:RR:186:LEU:HD12	2.43	0.48
79:r:1319:A:O2'	79:r:1321:U:OP2	2.28	0.48
79:r:1575:A:H2'	79:r:1576:U:C6	2.48	0.48
6:6:298:GLU:OE1	24:P:116:ARG:NH1	2.46	0.48
14:F:31:LEU:O	14:F:35:ASN:HB2	2.13	0.48
35:b:426:ALA:HB1	35:b:429:VAL:HG22	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:c:531:ILE:HG22	36:c:533:PRO:HD2	1.95	0.48
60:MM:155:ARG:HG3	60:MM:156:LEU:HD12	1.95	0.48
69:V:78:THR:HA	79:r:230:A:H1'	1.93	0.48
79:r:105:G:H2'	79:r:106:U:H6	1.78	0.48
79:r:224:A:C2	79:r:225:U:C6	3.02	0.48
79:r:1430:G:O2'	79:r:1431:U:P	2.72	0.48
12:D:220:PHE:HB3	79:r:477:A:H1'	1.94	0.48
15:G:75:LYS:HG3	15:G:76:VAL:HG23	1.96	0.48
22:N:114:ILE:HG21	79:r:1161:C:H1'	1.96	0.48
34:a:381:LEU:HD13	34:a:425:ILE:HD13	1.94	0.48
35:b:261:LYS:HD2	35:b:261:LYS:N	2.29	0.48
44:66:27:VAL:HG21	44:66:184:LEU:HD23	1.94	0.48
48:AA:608:A:N3	48:AA:1585:G:O2'	2.39	0.48
48:AA:1813:A:H62	48:AA:1817:U:H3	1.62	0.48
79:r:996:A:O2'	79:r:997:G:P	2.71	0.48
2:2:47:LYS:HG2	2:2:100:ILE:HG13	1.96	0.48
6:6:122:ASN:OD1	6:6:124:ARG:NH2	2.47	0.48
11:C:263:ASN:O	11:C:267:ILE:HG12	2.14	0.48
13:E:47:ARG:HG2	13:E:48:VAL:N	2.29	0.48
13:E:208:ILE:HG23	13:E:279:PHE:HB3	1.95	0.48
36:c:548:ILE:HG12	36:c:587:ILE:HG22	1.94	0.48
48:AA:638:U:OP2	62:OO:252:ARG:NH1	2.41	0.48
48:AA:1093:A:H4'	48:AA:1094:U:O5'	2.14	0.48
49:BB:313:HIS:CE1	49:BB:316:ARG:HE	2.31	0.48
53:FF:24:LEU:HD12	53:FF:104:ARG:NH1	2.28	0.48
65:RR:43:ALA:O	65:RR:45:ARG:NH2	2.46	0.48
65:RR:181:ARG:NH2	65:RR:188:ILE:O	2.47	0.48
77:cc:88:PRO:O	77:cc:125:ARG:NH1	2.47	0.48
4:4:94:MET:HA	4:4:94:MET:HE3	1.95	0.48
6:6:256:VAL:HG12	6:6:260:HIS:CE1	2.49	0.48
11:C:168:ASN:HB2	32:Y:107:LEU:HD11	1.96	0.48
20:L:96:PRO:O	20:L:127:ARG:NH1	2.47	0.48
23:O:59:ALA:O	23:O:63:LYS:NZ	2.39	0.48
25:Q:59:ARG:NH1	69:V:46:GLY:O	2.47	0.48
29:U:60:LEU:HD11	29:U:83:ASP:OD1	2.13	0.48
36:c:544:TRP:CD1	36:c:583:LEU:HD21	2.49	0.48
48:AA:370:C:C2	48:AA:371:U:C5	3.02	0.48
48:AA:1869:A:O2'	48:AA:1872:G:N3	2.41	0.48
79:r:1643:U:O2'	79:r:1644:C:O4'	2.31	0.48
4:4:160:ASN:ND2	4:4:275:ALA:HB2	2.29	0.48
4:4:226:MET:SD	4:4:230:ARG:NH2	2.87	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:M:25:TYR:CE1	79:r:1398:U:H4'	2.48	0.48
30:W:127:ARG:C	30:W:131:THR:HG22	2.39	0.48
32:Y:228:ASP:OD1	32:Y:228:ASP:N	2.47	0.48
36:c:590:LEU:O	36:c:594:ALA:N	2.40	0.48
39:11:172:LEU:HD13	39:11:292:TRP:HZ3	1.78	0.48
48:AA:73:U:O4	48:AA:74:A:N6	2.47	0.48
48:AA:337:A:OP1	48:AA:1991:G:O2'	2.26	0.48
48:AA:480:C:H2'	48:AA:481:A:H8	1.77	0.48
48:AA:502:A:H4'	48:AA:503:A:OP1	2.14	0.48
48:AA:620:G:O2'	48:AA:654:U:H4'	2.13	0.48
48:AA:1308:A:N7	48:AA:1597:G:C2	2.82	0.48
48:AA:2289:C:N4	65:RR:41:ASP:OD2	2.47	0.48
48:AA:3032:U:O2'	48:AA:3033:A:O5'	2.20	0.48
51:DD:216:LEU:HD12	51:DD:216:LEU:O	2.14	0.48
61:NN:102:TYR:CD2	75:aa:87:MET:HE1	2.49	0.48
79:r:1571:A:H2'	79:r:1572:U:H6	1.79	0.48
3:3:75:LEU:HD22	9:A:91:GLN:HG2	1.96	0.47
4:4:316:GLN:HB2	35:b:101:THR:CG2	2.44	0.47
8:8:357:THR:HB	8:8:404:THR:HG22	1.95	0.47
11:C:97:ILE:HD13	11:C:144:HIS:HB3	1.96	0.47
11:C:232:TYR:HD1	11:C:335:LEU:HD22	1.78	0.47
13:E:168:ALA:HB1	13:E:194:ILE:HD13	1.95	0.47
23:O:138:ILE:HD11	69:V:203:TYR:HA	1.96	0.47
24:P:29:ARG:HE	79:r:110:A:H1'	1.78	0.47
34:a:264:LEU:O	34:a:268:ILE:HD13	2.14	0.47
48:AA:331:A:O2'	48:AA:332:A:P	2.72	0.47
48:AA:2330:A:C6	65:RR:321:ARG:NH1	2.82	0.47
48:AA:2413:A:H2'	48:AA:2414:U:O4'	2.14	0.47
48:AA:2461:A:C2	52:EE:150:ARG:NH1	2.76	0.47
48:AA:2872:A:C2	48:AA:2873:U:C4	3.02	0.47
62:OO:179:LEU:O	71:WW:95:LEU:HD22	2.14	0.47
71:WW:157:ARG:NH1	78:dd:121:TYR:O	2.47	0.47
79:r:33:A:H61	79:r:672:U:H1'	1.79	0.47
13:E:149:LEU:HD22	13:E:245:VAL:HG13	1.95	0.47
19:K:170:ASP:CG	19:K:171:ASP:H	2.21	0.47
32:Y:91:LEU:HD22	32:Y:101:VAL:HG13	1.96	0.47
34:a:237:ILE:O	34:a:241:ILE:HD13	2.13	0.47
48:AA:1549:U:H5''	78:dd:201:ARG:NH1	2.29	0.47
48:AA:2359:U:C2	76:bb:154:ILE:HD11	2.49	0.47
48:AA:2689:A:O2'	48:AA:2690:U:P	2.71	0.47
48:AA:3168:A:OP2	60:MM:146:ASN:HB2	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
77:cc:19:ILE:HG23	77:cc:19:ILE:O	2.14	0.47
79:r:341:A:H5'	79:r:1501:A:H1'	1.96	0.47
79:r:1043:A:C4	79:r:1387:A:C2	3.01	0.47
79:r:1129:G:H2'	79:r:1130:U:C6	2.50	0.47
79:r:1206:A:C4	79:r:1207:U:C5	3.02	0.47
79:r:1416:U:H5	79:r:1443:A:N7	2.13	0.47
10:B:231:ARG:O	10:B:235:VAL:HG23	2.15	0.47
26:R:124:ARG:NH1	79:r:728:A:OP1	2.48	0.47
28:T:129:ILE:N	28:T:130:PRO:CD	2.77	0.47
30:W:118:LEU:HD11	30:W:446:VAL:HG11	1.96	0.47
48:AA:3013:U:C2	48:AA:3034:A:C2	3.03	0.47
48:AA:3092:U:C4	48:AA:3096:A:N6	2.82	0.47
56:II:112:MET:SD	56:II:112:MET:N	2.81	0.47
66:SS:24:TRP:HB3	66:SS:27:ILE:HD12	1.95	0.47
68:UU:74:SER:OG	68:UU:75:ASN:N	2.47	0.47
69:V:276:ASP:C	69:V:276:ASP:OD1	2.57	0.47
3:3:235:TYR:CG	3:3:243:TYR:HB2	2.50	0.47
5:5:302:ARG:HD2	5:5:303:GLN:N	2.29	0.47
6:6:299:LEU:HD22	24:P:113:VAL:HG21	1.96	0.47
7:7:203:GLU:OE1	18:J:179:GLN:N	2.46	0.47
20:L:63:LEU:HD12	20:L:63:LEU:H	1.79	0.47
20:L:98:GLU:HA	79:r:635:G:OP1	2.14	0.47
34:a:451:ASN:ND2	36:c:408:SER:O	2.48	0.47
48:AA:44:U:HO2'	48:AA:45:U:P	2.37	0.47
48:AA:265:C:O2'	48:AA:297:A:H4'	2.14	0.47
48:AA:342:A:N6	76:bb:55:ASP:OD1	2.47	0.47
61:NN:67:LEU:HD11	62:OO:307:TYR:HD1	1.79	0.47
64:QQ:9:SER:OG	64:QQ:10:ASN:N	2.46	0.47
64:QQ:207:THR:OG1	67:TT:102:SER:N	2.48	0.47
67:TT:61:ARG:HG3	67:TT:61:ARG:O	2.14	0.47
79:r:920:A:H2'	79:r:921:U:H6	1.79	0.47
14:F:49:TYR:CB	28:T:99:ARG:HE	2.27	0.47
18:J:131:HIS:CD2	32:Y:157:LEU:HD21	2.49	0.47
19:K:142:GLU:OE1	19:K:142:GLU:N	2.38	0.47
21:M:110:THR:HG22	79:r:1013:C:OP1	2.14	0.47
23:O:167:PHE:HB2	23:O:168:PRO:HD2	1.96	0.47
36:c:300:LEU:HD22	36:c:335:HIS:HB3	1.95	0.47
36:c:551:ILE:HG23	36:c:590:LEU:HD11	1.96	0.47
38:00:56:PHE:HE1	38:00:91:ARG:HB2	1.78	0.47
43:55:88:PRO:HG2	43:55:91:VAL:HG12	1.97	0.47
48:AA:687:U:H2'	48:AA:688:U:C6	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:AA:2325:A:N6	48:AA:2333:A:H61	2.13	0.47
49:BB:210:ARG:NH2	49:BB:259:PRO:O	2.48	0.47
59:LL:150:LYS:HE3	59:LL:197:MET:HE2	1.96	0.47
62:OO:98:ILE:HD12	63:PP:219:TYR:CG	2.49	0.47
62:OO:140:LEU:HD12	62:OO:141:PRO:HD2	1.96	0.47
63:PP:92:ILE:HG23	67:TT:122:ARG:HA	1.95	0.47
74:ZZ:55:MET:O	74:ZZ:114:TYR:OH	2.26	0.47
79:r:943:U:H2'	79:r:944:C:H6	1.78	0.47
22:N:94:CYS:SG	22:N:97:GLN:HG3	2.54	0.47
23:O:98:VAL:HG23	69:V:199:LEU:HD11	1.95	0.47
33:Z:10:LEU:HD12	33:Z:10:LEU:N	2.30	0.47
34:a:98:LEU:HD12	34:a:98:LEU:O	2.14	0.47
34:a:294:ILE:HD11	34:a:324:TYR:HD1	1.79	0.47
35:b:268:GLN:O	35:b:268:GLN:HG2	2.14	0.47
35:b:319:LEU:HA	35:b:322:THR:HG22	1.97	0.47
35:b:467:PHE:CG	35:b:468:PRO:HD3	2.49	0.47
43:55:351:TYR:HD1	75:aa:63:THR:HG21	1.79	0.47
48:AA:1358:C:O2	48:AA:1358:C:O2'	2.33	0.47
48:AA:1618:G:O2'	56:II:6:SER:HB3	2.15	0.47
52:EE:236:PHE:CZ	52:EE:264:ILE:HG21	2.49	0.47
67:TT:201:MET:HE1	67:TT:204:ARG:NH2	2.29	0.47
76:bb:31:SER:OG	76:bb:44:PRO:O	2.31	0.47
79:r:1082:U:H2'	79:r:1083:A:C8	2.50	0.47
79:r:1371:U:H6	79:r:1371:U:H5'	1.80	0.47
3:3:27:ASN:C	3:3:28:ILE:HD12	2.39	0.47
3:3:142:ARG:HD3	3:3:165:ILE:HG21	1.96	0.47
4:4:226:MET:SD	4:4:226:MET:C	2.98	0.47
13:E:147:LYS:HG3	13:E:248:GLU:OE2	2.14	0.47
13:E:178:MET:HE3	29:U:20:SER:HB3	1.95	0.47
14:F:111:LEU:HD13	69:V:231:PHE:CZ	2.50	0.47
15:G:208:PHE:CE2	79:r:1272:U:OP1	2.68	0.47
20:L:139:ILE:HD11	79:r:652:A:H4'	1.97	0.47
34:a:224:LEU:CD2	34:a:268:ILE:HD12	2.43	0.47
34:a:370:MET:N	34:a:370:MET:SD	2.87	0.47
34:a:425:ILE:HG21	36:c:455:LEU:HD13	1.95	0.47
34:a:468:HIS:NE2	34:a:511:THR:OG1	2.47	0.47
35:b:96:PRO:HG2	35:b:151:GLN:HG3	1.95	0.47
35:b:145:LEU:HD13	35:b:145:LEU:C	2.40	0.47
35:b:208:LYS:O	35:b:212:GLU:HG2	2.14	0.47
37:t:9:G:H21	37:t:45:U:H2'	1.80	0.47
39:11:135:ASP:O	39:11:140:ARG:NH2	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:11:272:ILE:CG2	39:11:310:ILE:HG21	2.44	0.47
46:88:40:MET:N	46:88:40:MET:SD	2.88	0.47
46:88:127:ASN:OD1	46:88:128:GLN:N	2.48	0.47
48:AA:565:A:H2'	48:AA:566:U:H6	1.80	0.47
48:AA:568:A:H2'	48:AA:569:A:H8	1.79	0.47
48:AA:726:A:C4	48:AA:727:G:C8	3.02	0.47
48:AA:883:A:H5'	58:KK:121:ILE:HG23	1.96	0.47
48:AA:1666:A:H2'	48:AA:1667:A:H8	1.80	0.47
48:AA:1960:A:H2'	48:AA:1961:G:C4'	2.45	0.47
52:EE:141:VAL:HG22	52:EE:196:GLU:OE2	2.14	0.47
52:EE:173:PRO:HB2	52:EE:175:PHE:CE1	2.49	0.47
53:FF:24:LEU:HD21	53:FF:111:ILE:CD1	2.42	0.47
78:dd:87:HIS:CD2	78:dd:144:VAL:HG22	2.50	0.47
79:r:35:A:O2'	79:r:302:U:OP1	2.33	0.47
79:r:1416:U:O2	79:r:1416:U:O4'	2.31	0.47
7:7:331:LEU:HD22	31:X:20:ASP:OD1	2.15	0.47
11:C:194:ILE:H	11:C:194:ILE:HD12	1.79	0.47
11:C:306:TYR:HB2	13:E:59:LEU:HB2	1.97	0.47
14:F:33:ILE:HD12	69:V:210:ILE:HG22	1.96	0.47
20:L:78:ARG:NH1	79:r:635:G:N7	2.56	0.47
21:M:105:ARG:NH2	79:r:1017:U:OP2	2.41	0.47
37:t:74:C:C4	37:t:75:C:C4	3.02	0.47
39:11:314:GLU:O	39:11:315:LEU:C	2.57	0.47
47:99:163:VAL:HG21	47:99:192:PHE:HB3	1.97	0.47
48:AA:1307:A:H4'	48:AA:1308:A:OP1	2.14	0.47
48:AA:1624:C:H2'	48:AA:1625:G:C8	2.49	0.47
48:AA:2922:G:O2'	48:AA:2931:G:O6	2.26	0.47
51:DD:72:ASP:OD1	51:DD:72:ASP:N	2.47	0.47
51:DD:211:LEU:HD22	51:DD:216:LEU:HD12	1.96	0.47
59:LL:77:LEU:HD13	59:LL:86:LEU:HD12	1.97	0.47
60:MM:144:GLN:O	60:MM:145:ARG:HG2	2.15	0.47
69:V:101:GLU:OE2	69:V:104:ARG:NH1	2.48	0.47
79:r:250:A:C2	79:r:287:A:C5	3.03	0.47
79:r:961:U:O4	79:r:962:A:N6	2.48	0.47
2:2:31:ILE:CD1	2:2:64:ASN:HA	2.45	0.47
11:C:334:ARG:HG2	11:C:342:THR:HG22	1.97	0.47
13:E:70:ASP:OD2	32:Y:156:ARG:NH2	2.45	0.47
34:a:294:ILE:HD11	34:a:324:TYR:CD1	2.50	0.47
34:a:325:LEU:HD22	34:a:366:PHE:CG	2.50	0.47
39:11:168:THR:HG21	39:11:292:TRP:HE1	1.79	0.47
40:22:59:LEU:HB2	44:66:59:LEU:HD21	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:55:273:GLN:HA	43:55:273:GLN:OE1	2.14	0.47
48:AA:114:U:OP1	64:QQ:11:VAL:HG13	2.15	0.47
48:AA:1097:U:N3	48:AA:1925:U:OP1	2.41	0.47
48:AA:1721:U:O2	49:BB:141:VAL:HG23	2.15	0.47
48:AA:3052:A:O2'	48:AA:3053:G:H5'	2.15	0.47
49:BB:100:SER:OG	49:BB:101:PRO:HD2	2.15	0.47
50:CC:130:VAL:O	50:CC:130:VAL:CG1	2.63	0.47
58:KK:202:ASN:OD1	58:KK:203:PHE:N	2.48	0.47
64:QQ:67:ASP:OD1	64:QQ:67:ASP:N	2.46	0.47
79:r:1244:U:H4'	79:r:1245:A:O5'	2.15	0.47
5:5:106:ILE:HG21	5:5:144:LYS:HB3	1.96	0.47
7:7:315:SER:O	7:7:319:VAL:HG23	2.15	0.47
11:C:252:ASN:ND2	11:C:255:ASN:OD1	2.43	0.47
36:c:532:THR:HB	36:c:533:PRO:HD3	1.97	0.47
39:11:272:ILE:HG22	39:11:310:ILE:HG21	1.97	0.47
47:99:30:ILE:O	47:99:30:ILE:CG2	2.61	0.47
48:AA:564:A:H1'	48:AA:565:A:H8	1.79	0.47
48:AA:567:U:H2'	48:AA:568:A:C8	2.49	0.47
48:AA:1079:A:H2'	48:AA:1080:U:H6	1.79	0.47
48:AA:1118:A:O2'	48:AA:1119:A:H3'	2.15	0.47
48:AA:1816:A:H61	79:r:1476:A:H4'	1.79	0.47
48:AA:3268:A:HO2'	48:AA:3269:U:P	2.38	0.47
55:HH:46:VAL:HG23	62:OO:299:ILE:HG23	1.96	0.47
2:2:40:ASP:C	2:2:40:ASP:OD1	2.58	0.46
8:8:444:ILE:HD11	8:8:499:TRP:NE1	2.30	0.46
11:C:8:MET:SD	32:Y:311:ILE:HG22	2.55	0.46
13:E:61:ASP:HA	18:J:24:VAL:HG21	1.97	0.46
19:K:76:TYR:CE2	19:K:163:LYS:HD2	2.50	0.46
22:N:23:ARG:NH1	79:r:1249:U:OP1	2.43	0.46
23:O:34:SER:N	48:AA:1658:G:OP1	2.48	0.46
23:O:250:ARG:HD2	23:O:250:ARG:H	1.80	0.46
25:Q:64:ARG:HB2	79:r:132:A:C8	2.49	0.46
40:22:127:MET:HG2	70:VV:80:TRP:HA	1.97	0.46
44:66:57:LYS:HA	44:66:60:MET:HB2	1.98	0.46
48:AA:94:A:C6	64:QQ:24:LYS:HG2	2.50	0.46
48:AA:1299:G:O2'	48:AA:1912:G:O6	2.33	0.46
67:TT:53:ILE:HD11	78:dd:134:VAL:CG1	2.40	0.46
79:r:691:U:OP2	79:r:823:G:N1	2.41	0.46
5:5:153:ILE:HG22	5:5:155:LYS:H	1.80	0.46
8:8:142:MET:HE2	8:8:160:ARG:HB3	1.97	0.46
9:A:167:ASP:C	9:A:167:ASP:OD1	2.57	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Q:57:LEU:HD23	25:Q:58:VAL:N	2.30	0.46
34:a:377:LEU:HD13	34:a:401:PHE:CE1	2.49	0.46
35:b:152:ARG:HA	35:b:155:ILE:HG22	1.96	0.46
39:11:168:THR:HG23	39:11:322:ILE:HG21	1.97	0.46
48:AA:1415:U:O4	48:AA:1416:A:N6	2.48	0.46
48:AA:1645:U:O2'	49:BB:104:ARG:NH1	2.48	0.46
48:AA:1666:A:H5'	48:AA:3050:G:H21	1.80	0.46
48:AA:3124:A:H2'	59:LL:228:LYS:HG3	1.97	0.46
64:QQ:46:LEU:HD12	64:QQ:46:LEU:N	2.30	0.46
65:RR:154:ALA:O	65:RR:158:ILE:HG22	2.15	0.46
68:UU:5:LYS:HB3	68:UU:57:GLU:HG2	1.96	0.46
75:aa:73:ARG:NH1	75:aa:88:PRO:O	2.48	0.46
79:r:1337:A:O2'	79:r:1338:A:O5'	2.32	0.46
6:6:73:MET:HE1	79:r:481:A:O4'	2.16	0.46
6:6:159:GLU:O	6:6:163:VAL:N	2.49	0.46
23:O:196:ARG:HD2	23:O:196:ARG:O	2.16	0.46
29:U:133:ASP:C	29:U:133:ASP:OD1	2.58	0.46
30:W:128:GLU:HA	30:W:132:ASN:HB3	1.96	0.46
34:a:279:ASN:HB2	34:a:308:HIS:HB3	1.97	0.46
39:11:121:PHE:CE2	40:22:63:ARG:HB2	2.51	0.46
41:33:94:VAL:HG11	67:TT:91:ARG:NH2	2.30	0.46
48:AA:1892:G:N2	48:AA:1896:C:O2'	2.48	0.46
48:AA:2887:U:H1'	50:CC:220:MET:SD	2.55	0.46
49:BB:93:MET:HE2	49:BB:93:MET:HA	1.97	0.46
58:KK:158:GLU:OE1	58:KK:158:GLU:HA	2.15	0.46
60:MM:62:ILE:O	60:MM:99:ARG:NH1	2.43	0.46
76:bb:75:VAL:HG13	76:bb:78:PHE:CD2	2.48	0.46
79:r:919:A:H2'	79:r:920:A:C8	2.50	0.46
79:r:1124:G:N1	79:r:1127:A:OP2	2.44	0.46
6:6:243:ARG:NH1	16:H:111:SER:O	2.49	0.46
16:H:113:VAL:HG23	16:H:115:ILE:HD11	1.98	0.46
30:W:131:THR:HG23	30:W:132:ASN:H	1.78	0.46
34:a:322:ASN:HA	34:a:325:LEU:HD12	1.97	0.46
35:b:144:LEU:HG	35:b:148:LEU:HD23	1.97	0.46
35:b:394:ILE:HD12	35:b:395:LYS:N	2.30	0.46
36:c:348:ARG:HD3	36:c:350:VAL:HG22	1.98	0.46
41:33:79:THR:HG21	63:PP:79:VAL:HG13	1.97	0.46
48:AA:1899:C:O3'	48:AA:3058:G:N2	2.47	0.46
61:NN:46:THR:O	61:NN:46:THR:CG2	2.63	0.46
62:OO:195:GLN:NE2	71:WW:97:MET:HE1	2.31	0.46
78:dd:79:LEU:HD12	78:dd:85:SER:HA	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
79:r:989:C:O2'	79:r:1594:A:N1	2.46	0.46
79:r:1216:A:O2'	79:r:1217:G:O5'	2.33	0.46
79:r:1373:A:O2'	79:r:1399:G:N2	2.49	0.46
7:7:265:THR:OG1	7:7:266:PRO:HD3	2.15	0.46
8:8:218:MET:CE	8:8:481:LEU:HD13	2.44	0.46
15:G:241:ARG:CG	15:G:242:ALA:N	2.78	0.46
21:M:10:PHE:CD1	21:M:47:MET:HE3	2.51	0.46
26:R:62:MET:O	26:R:65:ILE:HG22	2.16	0.46
34:a:364:PHE:O	34:a:368:ILE:HG12	2.16	0.46
35:b:262:ILE:HD12	35:b:277:VAL:HG22	1.96	0.46
38:00:85:ASN:C	38:00:85:ASN:OD1	2.58	0.46
48:AA:10:A:N6	48:AA:3290:A:N6	2.64	0.46
48:AA:1380:G:H2'	48:AA:1380:G:N3	2.31	0.46
48:AA:1549:U:H5''	78:dd:201:ARG:HH12	1.80	0.46
48:AA:1735:U:OP2	49:BB:334:ARG:NE	2.49	0.46
48:AA:1908:A:C2	48:AA:1909:A:N7	2.84	0.46
48:AA:2228:A:H2'	48:AA:2229:U:H6	1.81	0.46
48:AA:3135:U:C4'	48:AA:3136:U:OP1	2.64	0.46
62:OO:120:ILE:HG23	62:OO:138:VAL:HG11	1.98	0.46
62:OO:279:TYR:CZ	62:OO:283:LEU:HD11	2.51	0.46
68:UU:8:LEU:HB2	68:UU:28:LEU:HD13	1.98	0.46
69:V:189:PHE:CE1	69:V:193:LYS:HD3	2.51	0.46
71:WW:166:LEU:HD23	71:WW:166:LEU:C	2.40	0.46
79:r:942:U:O2'	79:r:943:U:H5'	2.15	0.46
79:r:1018:U:H3	79:r:1260:G:H1	1.64	0.46
3:3:72:GLY:CA	3:3:213:LYS:HE2	2.46	0.46
5:5:117:LEU:N	5:5:117:LEU:HD12	2.31	0.46
7:7:295:THR:HG22	7:7:296:GLY:H	1.79	0.46
11:C:242:ARG:NH1	13:E:189:GLU:OE2	2.49	0.46
11:C:334:ARG:NH2	11:C:386:ASN:OD1	2.49	0.46
13:E:50:ARG:NH2	79:r:1168:U:O2'	2.38	0.46
14:F:35:ASN:HA	49:BB:71:VAL:HG11	1.97	0.46
17:I:264:PRO:O	79:r:1436:U:OP1	2.34	0.46
30:W:190:PHE:HA	30:W:200:ILE:O	2.16	0.46
48:AA:3044:A:H2'	48:AA:3045:U:C6	2.51	0.46
79:r:1090:U:H2'	79:r:1091:A:O4'	2.15	0.46
79:r:1308:U:H2'	79:r:1309:A:C8	2.51	0.46
3:3:20:LEU:H	3:3:20:LEU:HD12	1.80	0.46
3:3:41:TYR:HA	3:3:44:TYR:HB3	1.96	0.46
6:6:82:ASN:OD1	6:6:82:ASN:N	2.49	0.46
7:7:309:PHE:HB2	7:7:319:VAL:HG13	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:8:291:LEU:HD21	8:8:300:ILE:HG12	1.97	0.46
29:U:231:MET:SD	29:U:231:MET:C	2.99	0.46
35:b:342:HIS:O	35:b:345:GLN:NE2	2.49	0.46
48:AA:1603:G:C6	48:AA:1604:A:N6	2.84	0.46
48:AA:2749:A:O2'	58:KK:92:GLU:OE2	2.26	0.46
48:AA:2755:U:H2'	48:AA:2756:G:O4'	2.16	0.46
49:BB:182:LEU:HD13	49:BB:193:TYR:CZ	2.51	0.46
69:V:189:PHE:O	69:V:193:LYS:HG2	2.15	0.46
79:r:84:U:H2'	79:r:85:G:O4'	2.16	0.46
79:r:690:G:N1	79:r:824:A:OP2	2.43	0.46
79:r:1440:G:H2'	79:r:1441:U:O4'	2.15	0.46
79:r:1540:U:N3	79:r:1541:U:C5	2.83	0.46
4:4:115:ALA:O	4:4:290:ARG:NH2	2.39	0.46
5:5:267:LEU:HA	5:5:270:LEU:HD12	1.97	0.46
5:5:302:ARG:NH2	5:5:303:GLN:HE21	2.13	0.46
6:6:233:ILE:HD11	6:6:271:LEU:HB2	1.98	0.46
8:8:185:PHE:CZ	8:8:347:ILE:HD13	2.51	0.46
8:8:296:THR:CG2	8:8:297:ILE:H	2.28	0.46
15:G:142:TYR:O	15:G:146:ARG:N	2.36	0.46
30:W:301:ALA:O	30:W:315:SER:OG	2.34	0.46
34:a:233:ALA:C	34:a:234:MET:HE2	2.41	0.46
35:b:261:LYS:NZ	35:b:276:MET:SD	2.88	0.46
39:11:51:ASP:OD1	39:11:51:ASP:N	2.49	0.46
41:33:106:LYS:HE2	41:33:106:LYS:HA	1.98	0.46
48:AA:44:U:C2'	48:AA:45:U:O5'	2.64	0.46
48:AA:1321:C:H2'	48:AA:1322:U:H6	1.81	0.46
50:CC:192:SER:O	50:CC:195:THR:HG23	2.16	0.46
52:EE:179:ASP:OD1	52:EE:186:ARG:NH1	2.45	0.46
76:bb:32:THR:OG1	76:bb:33:SER:N	2.49	0.46
79:r:822:U:H2'	79:r:823:G:O4'	2.16	0.46
79:r:1083:A:H2'	79:r:1084:U:C6	2.51	0.46
79:r:1170:U:O2'	79:r:1171:A:H5'	2.15	0.46
79:r:1539:A:H2'	79:r:1540:U:H6	1.80	0.46
4:4:217:ASN:ND2	4:4:254:GLU:OE2	2.48	0.46
5:5:299:GLU:HB2	5:5:302:ARG:HH21	1.81	0.46
8:8:284:VAL:HG22	8:8:307:TYR:CZ	2.51	0.46
11:C:190:ASN:OD1	11:C:190:ASN:N	2.48	0.46
13:E:268:ASP:N	13:E:268:ASP:OD1	2.48	0.46
23:O:47:LYS:HE2	79:r:254:A:H1'	1.98	0.46
28:T:104:LYS:NZ	28:T:124:MET:HE1	2.31	0.46
31:X:10:LYS:O	31:X:13:GLU:OE1	2.33	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:11:211:ILE:HB	39:11:254:LEU:HD11	1.97	0.46
48:AA:1362:C:C2	48:AA:1363:C:C5	3.04	0.46
48:AA:2364:U:H2'	48:AA:2365:A:H8	1.80	0.46
48:AA:2580:A:H2'	48:AA:2581:U:H6	1.81	0.46
78:dd:79:LEU:HD13	78:dd:84:GLN:HB3	1.98	0.46
4:4:252:ILE:HG13	4:4:253:TYR:N	2.30	0.46
5:5:258:ILE:HD11	5:5:274:TYR:HB2	1.98	0.46
11:C:83:LYS:HB3	32:Y:147:GLN:HB3	1.98	0.46
11:C:270:ASN:ND2	11:C:308:ASN:OD1	2.49	0.46
13:E:46:PHE:HB3	18:J:29:TYR:CG	2.51	0.46
13:E:146:MET:HA	13:E:146:MET:HE2	1.98	0.46
13:E:221:ASP:OD1	13:E:221:ASP:N	2.49	0.46
13:E:262:VAL:HG11	13:E:271:ILE:HD11	1.98	0.46
16:H:154:VAL:HG23	16:H:154:VAL:O	2.16	0.46
26:R:45:LEU:HD11	29:U:227:GLU:CD	2.41	0.46
34:a:203:ILE:HD13	34:a:241:ILE:CD1	2.42	0.46
37:t:1:U:O2'	37:t:2:G:OP1	2.29	0.46
39:11:167:ASP:OD2	39:11:288:ARG:NH2	2.49	0.46
42:44:89:LEU:HD13	42:44:93:ASN:HB3	1.98	0.46
43:55:220:GLU:OE2	43:55:225:THR:OG1	2.26	0.46
48:AA:504:A:H2'	48:AA:505:C:C6	2.51	0.46
48:AA:666:G:N2	48:AA:684:G:H1'	2.31	0.46
48:AA:1279:A:H2'	48:AA:1280:A:O4'	2.16	0.46
48:AA:1410:U:O2'	48:AA:1411:A:O5'	2.34	0.46
48:AA:1665:G:C8	48:AA:2961:A:C2	3.04	0.46
48:AA:1813:A:H1'	79:r:1586:G:H21	1.81	0.46
52:EE:172:HIS:N	52:EE:194:LYS:O	2.49	0.46
58:KK:100:TYR:OH	58:KK:167:LYS:NZ	2.46	0.46
59:LL:159:GLN:O	59:LL:160:LEU:HD23	2.15	0.46
62:OO:119:GLU:HG3	62:OO:140:LEU:HD11	1.98	0.46
64:QQ:89:ARG:HG3	64:QQ:90:THR:HG23	1.98	0.46
69:V:193:LYS:N	69:V:193:LYS:HD2	2.31	0.46
79:r:1476:A:C2	79:r:1477:C:C6	3.04	0.46
3:3:14:LEU:HD21	3:3:93:VAL:HG11	1.99	0.45
9:A:89:ARG:O	9:A:92:GLU:HB2	2.15	0.45
9:A:95:VAL:HG21	9:A:280:ILE:HG21	1.98	0.45
19:K:164:ASP:OD1	19:K:165:ILE:N	2.48	0.45
22:N:20:ARG:NH1	79:r:1048:A:OP1	2.49	0.45
35:b:195:LEU:HD22	35:b:230:ASN:HB2	1.98	0.45
35:b:198:CYS:HA	36:c:570:LEU:HD21	1.98	0.45
38:00:72:VAL:CG1	38:00:74:ARG:HE	2.29	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:77:54:GLU:OE1	51:DD:40:LYS:NZ	2.47	0.45
48:AA:669:G:C6	48:AA:678:A:C2	3.04	0.45
48:AA:701:U:OP2	61:NN:139:ARG:NH2	2.29	0.45
48:AA:1358:C:O2'	48:AA:1359:G:OP2	2.28	0.45
48:AA:1813:A:N1	79:r:1475:C:O2'	2.35	0.45
49:BB:248:ILE:HD11	49:BB:278:LYS:HG3	1.98	0.45
56:II:74:VAL:HB	56:II:118:VAL:HG13	1.97	0.45
66:SS:114:ILE:HD11	66:SS:154:LEU:HD13	1.97	0.45
78:dd:137:LEU:HD21	78:dd:163:ILE:HD11	1.98	0.45
14:F:47:ILE:HG13	14:F:65:TYR:HD1	1.81	0.45
14:F:68:LEU:HD22	14:F:111:LEU:HD12	1.99	0.45
22:N:72:THR:HG23	79:r:1429:A:C5	2.51	0.45
25:Q:20:VAL:HG13	25:Q:47:ASP:OD2	2.15	0.45
32:Y:179:SER:HG	32:Y:180:HIS:CE1	2.33	0.45
35:b:471:ILE:N	35:b:471:ILE:HD12	2.32	0.45
48:AA:314:A:O2'	48:AA:361:G:OP1	2.30	0.45
48:AA:396:A:H2'	48:AA:397:A:C8	2.51	0.45
52:EE:166:ILE:HD12	52:EE:246:PHE:HB3	1.98	0.45
64:QQ:213:VAL:O	67:TT:167:ARG:NH2	2.46	0.45
75:aa:123:ARG:O	75:aa:127:LEU:HD23	2.15	0.45
79:r:227:U:O2	79:r:228:A:C8	2.68	0.45
79:r:323:U:H3	79:r:341:A:H2	1.62	0.45
7:7:292:ARG:NH2	32:Y:242:GLU:O	2.48	0.45
13:E:47:ARG:CZ	79:r:1169:A:H4'	2.46	0.45
15:G:121:ILE:HD11	15:G:193:TRP:HZ2	1.81	0.45
16:H:116:ARG:NE	25:Q:34:ASN:OD1	2.48	0.45
24:P:54:GLU:O	24:P:58:GLY:N	2.45	0.45
24:P:71:ARG:NH2	69:V:19:ARG:O	2.47	0.45
34:a:228:LEU:HG	34:a:234:MET:HE1	1.98	0.45
34:a:458:MET:HE1	34:a:462:TYR:CD2	2.51	0.45
36:c:378:ARG:NH2	36:c:401:ASP:O	2.50	0.45
43:55:177:ARG:NH1	43:55:370:TRP:O	2.48	0.45
47:99:117:LEU:O	47:99:121:ILE:HG23	2.17	0.45
48:AA:231:A:H2'	48:AA:232:C:H6	1.81	0.45
48:AA:2366:U:H2'	48:AA:2367:A:C8	2.50	0.45
50:CC:32:ALA:O	55:HH:154:LEU:HD21	2.15	0.45
51:DD:187:LEU:HD23	51:DD:265:GLU:HG2	1.98	0.45
54:GG:15:ARG:O	54:GG:18:ARG:NH1	2.49	0.45
57:JJ:170:ILE:HD11	57:JJ:224:LEU:HD11	1.97	0.45
63:PP:104:GLN:OE1	63:PP:161:THR:HG23	2.16	0.45
63:PP:125:ILE:O	67:TT:115:ARG:NH1	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
65:RR:269:TYR:CD1	65:RR:269:TYR:C	2.94	0.45
71:WW:134:LYS:NZ	71:WW:135:GLU:OE2	2.49	0.45
79:r:1129:G:H2'	79:r:1130:U:H6	1.82	0.45
79:r:1177:A:N6	79:r:1320:A:C4	2.84	0.45
79:r:1195:A:H2'	79:r:1196:U:H6	1.75	0.45
1:1:89:LYS:NZ	79:r:953:G:OP2	2.46	0.45
1:1:100:GLU:OE1	1:1:100:GLU:N	2.49	0.45
11:C:230:ASP:N	11:C:230:ASP:OD1	2.48	0.45
16:H:19:VAL:HG22	16:H:19:VAL:O	2.16	0.45
18:J:94:VAL:HG21	79:r:1028:G:H21	1.81	0.45
25:Q:229:MET:O	25:Q:233:GLN:N	2.40	0.45
26:R:125:LEU:HD23	26:R:125:LEU:C	2.41	0.45
26:R:135:ILE:HD12	26:R:135:ILE:N	2.31	0.45
34:a:98:LEU:O	34:a:99:VAL:HG13	2.17	0.45
36:c:450:ASN:HA	36:c:453:LYS:HG2	1.98	0.45
46:88:126:ASP:OD1	46:88:126:ASP:N	2.44	0.45
48:AA:733:A:H2'	48:AA:734:U:C6	2.52	0.45
64:QQ:87:ASP:O	64:QQ:89:ARG:NH1	2.49	0.45
78:dd:163:ILE:HG22	78:dd:190:HIS:HA	1.98	0.45
79:r:885:U:H4'	79:r:886:G:OP2	2.17	0.45
7:7:212:GLU:HG3	7:7:212:GLU:O	2.14	0.45
9:A:122:LEU:HD23	9:A:122:LEU:H	1.80	0.45
11:C:383:ILE:HG21	31:X:75:TYR:OH	2.17	0.45
17:I:254:ARG:NH1	17:I:255:ASP:O	2.49	0.45
29:U:137:MET:HE1	29:U:176:PHE:N	2.31	0.45
34:a:183:ILE:HD12	34:a:183:ILE:C	2.41	0.45
34:a:402:ILE:HG21	34:a:441:LYS:HZ1	1.80	0.45
34:a:413:MET:HE3	34:a:413:MET:C	2.42	0.45
39:11:310:ILE:HG23	39:11:312:ARG:HD2	1.99	0.45
48:AA:177:A:H2	48:AA:201:A:H61	1.63	0.45
48:AA:3285:A:H2'	48:AA:3286:U:C6	2.52	0.45
79:r:659:C:O2'	79:r:663:C:OP1	2.34	0.45
79:r:1209:U:N3	79:r:1210:A:N7	2.64	0.45
3:3:40:ASP:O	3:3:41:TYR:HB3	2.16	0.45
3:3:177:PHE:N	3:3:178:PRO:CD	2.79	0.45
8:8:43:VAL:HG22	8:8:48:ARG:HD2	1.98	0.45
9:A:197:ASN:O	29:U:111:GLN:NE2	2.50	0.45
11:C:160:ILE:HG23	11:C:163:ASN:H	1.82	0.45
13:E:29:LEU:HD12	32:Y:160:TYR:CG	2.52	0.45
17:I:261:ARG:O	17:I:269:ALA:HB2	2.17	0.45
19:K:73:VAL:HB	19:K:163:LYS:HE3	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:O:171:THR:OG1	79:r:721:U:O4'	2.35	0.45
26:R:95:ARG:O	26:R:99:LEU:HD12	2.16	0.45
35:b:297:HIS:CG	35:b:330:LEU:HD11	2.51	0.45
35:b:313:LEU:HD22	35:b:319:LEU:HD12	1.97	0.45
48:AA:1622:C:H3'	48:AA:1623:U:C6	2.51	0.45
48:AA:2734:A:P	48:AA:2742:A:H61	2.40	0.45
62:OO:124:ASN:ND2	62:OO:132:TYR:CD2	2.85	0.45
79:r:154:U:O2	79:r:156:A:C5	2.70	0.45
79:r:1502:U:H2'	79:r:1503:U:H6	1.82	0.45
6:6:309:PHE:CE2	24:P:65:VAL:HG11	2.52	0.45
11:C:9:ILE:O	11:C:13:MET:HG3	2.17	0.45
11:C:377:LEU:C	11:C:377:LEU:HD12	2.42	0.45
12:D:373:ASP:O	12:D:376:TRP:NE1	2.50	0.45
13:E:39:THR:HG22	13:E:40:ILE:HD12	1.98	0.45
17:I:190:MET:SD	30:W:432:LEU:HD22	2.57	0.45
23:O:177:GLN:O	23:O:181:MET:HG3	2.16	0.45
34:a:293:PHE:O	34:a:297:GLY:N	2.49	0.45
48:AA:511:G:H2'	48:AA:512:U:H6	1.82	0.45
48:AA:1527:A:O2'	48:AA:1528:G:OP2	2.29	0.45
48:AA:2703:U:H2'	48:AA:2704:U:C6	2.51	0.45
48:AA:2740:A:OP2	48:AA:2741:G:N1	2.47	0.45
57:JJ:249:ASP:OD2	57:JJ:253:LYS:NZ	2.47	0.45
64:QQ:102:LYS:HE2	64:QQ:122:ILE:HD11	1.99	0.45
69:V:155:THR:C	69:V:156:LEU:HD12	2.42	0.45
79:r:337:A:C6	79:r:338:G:C5	3.04	0.45
79:r:1010:G:C2	79:r:1011:A:C8	3.05	0.45
3:3:14:LEU:HD22	3:3:38:TRP:CD1	2.52	0.45
4:4:131:LEU:N	4:4:139:GLN:OE1	2.50	0.45
11:C:319:LEU:HD21	32:Y:141:ALA:HB1	1.99	0.45
16:H:39:LEU:HD21	16:H:154:VAL:HG21	1.99	0.45
35:b:206:MET:O	35:b:210:PHE:HD1	2.00	0.45
44:66:274:THR:O	44:66:274:THR:CG2	2.64	0.45
47:99:93:HIS:CD2	47:99:191:ILE:HG23	2.52	0.45
48:AA:371:U:C2	48:AA:372:A:C8	3.04	0.45
56:II:11:ILE:HD11	56:II:74:VAL:HG21	1.99	0.45
59:LL:179:GLU:CD	59:LL:214:LEU:HD13	2.42	0.45
65:RR:262:ASN:OD1	65:RR:314:LEU:N	2.50	0.45
65:RR:294:THR:HG22	65:RR:296:LYS:H	1.82	0.45
4:4:283:ASP:OD1	4:4:283:ASP:N	2.50	0.45
14:F:120:ILE:HD12	14:F:120:ILE:H	1.82	0.45
21:M:85:ILE:HG23	27:S:68:MET:HG2	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:O:185:ILE:HD13	23:O:209:VAL:HG22	1.98	0.45
44:66:60:MET:SD	70:VV:43:HIS:HA	2.57	0.45
48:AA:562:U:O4	57:JJ:137:ARG:NH1	2.47	0.45
48:AA:2689:A:N1	74:ZZ:81:HIS:NE2	2.55	0.45
58:KK:40:GLU:CD	58:KK:40:GLU:H	2.25	0.45
63:PP:128:LEU:HD13	67:TT:67:PRO:HG2	1.98	0.45
70:VV:51:LEU:HD23	70:VV:70:LEU:HD12	1.98	0.45
79:r:1001:U:O2	79:r:1001:U:H2'	2.16	0.45
79:r:1082:U:HO2'	79:r:1083:A:P	2.40	0.45
3:3:115:PRO:HB2	3:3:120:LEU:HD21	1.98	0.45
3:3:119:PHE:O	3:3:123:ILE:HG12	2.17	0.45
3:3:225:ASN:OD1	3:3:227:TRP:N	2.40	0.45
4:4:174:ARG:HD2	4:4:265:VAL:HG11	1.98	0.45
6:6:178:LYS:NZ	6:6:232:GLU:OE1	2.48	0.45
6:6:192:GLU:OE2	12:D:444:SER:OG	2.31	0.45
11:C:22:ILE:HG23	11:C:23:ILE:HG12	1.99	0.45
11:C:177:ASN:O	11:C:181:ASN:ND2	2.49	0.45
14:F:127:ASP:C	14:F:127:ASP:OD1	2.59	0.45
15:G:193:TRP:HH2	15:G:212:LEU:HD21	1.82	0.45
17:I:256:TYR:OH	79:r:1163:A:N3	2.45	0.45
23:O:188:MET:HE2	23:O:205:LEU:HB2	1.99	0.45
34:a:89:LYS:HZ2	34:a:96:THR:HG23	1.81	0.45
35:b:95:ILE:HG22	35:b:97:ILE:HG13	1.99	0.45
35:b:451:TYR:HB3	35:b:454:LEU:HD23	1.98	0.45
36:c:340:LEU:HD21	36:c:355:TRP:CD2	2.52	0.45
39:11:42:TYR:CD2	40:22:64:GLU:HG3	2.52	0.45
39:11:116:GLN:O	39:11:120:GLN:HG3	2.16	0.45
48:AA:370:C:H2'	48:AA:371:U:H6	1.82	0.45
48:AA:477:G:OP1	48:AA:1288:U:O2'	2.34	0.45
48:AA:1416:A:H2'	48:AA:1417:A:C8	2.52	0.45
48:AA:1719:G:H2'	48:AA:1720:U:H6	1.82	0.45
48:AA:3109:U:H2'	48:AA:3110:U:H6	1.82	0.45
48:AA:3120:A:H2'	48:AA:3121:U:O4'	2.17	0.45
49:BB:157:PHE:HE1	49:BB:176:ARG:NH2	2.15	0.45
62:OO:169:ARG:NH1	62:OO:238:ASP:OD2	2.46	0.45
66:SS:65:ILE:HG23	66:SS:66:PHE:H	1.80	0.45
66:SS:143:ARG:HD3	66:SS:147:LEU:HD13	1.99	0.45
69:V:54:LYS:HA	69:V:61:ARG:HH12	1.82	0.45
3:3:41:TYR:O	3:3:41:TYR:CG	2.70	0.44
5:5:47:LYS:HG2	5:5:97:LEU:HD13	1.99	0.44
5:5:109:VAL:O	5:5:109:VAL:HG23	2.16	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:D:36:LEU:HD22	12:D:44:GLN:HB3	1.98	0.44
13:E:264:LYS:NZ	79:r:27:U:OP1	2.50	0.44
25:Q:134:ALA:O	25:Q:138:GLY:N	2.43	0.44
25:Q:162:ARG:NH1	69:V:283:TYR:O	2.41	0.44
26:R:45:LEU:HD13	29:U:224:VAL:HG23	1.99	0.44
37:t:51:A:N7	37:t:52:C:N4	2.65	0.44
43:55:364:THR:HG21	75:aa:193:TYR:HA	1.98	0.44
48:AA:284:A:O2'	48:AA:2673:A:N1	2.46	0.44
48:AA:502:A:N1	48:AA:514:A:O2'	2.47	0.44
48:AA:1097:U:O4	50:CC:210:ASP:O	2.34	0.44
62:OO:106:GLN:OE1	62:OO:110:GLN:NE2	2.50	0.44
62:OO:248:LYS:HB2	62:OO:252:ARG:HB2	2.00	0.44
67:TT:181:ASP:O	67:TT:185:ASN:ND2	2.43	0.44
69:V:64:PRO:HD3	79:r:133:U:H5	1.80	0.44
69:V:207:ASN:OD1	69:V:208:GLU:N	2.50	0.44
69:V:276:ASP:OD1	69:V:278:SER:N	2.45	0.44
70:VV:99:ASP:O	70:VV:103:LYS:HE3	2.17	0.44
79:r:106:U:H2'	79:r:107:G:C8	2.52	0.44
79:r:919:A:H2'	79:r:920:A:H8	1.82	0.44
79:r:1319:A:O2'	79:r:1320:A:P	2.74	0.44
4:4:193:TYR:HE1	4:4:310:PRO:O	2.00	0.44
9:A:42:THR:HG21	29:U:123:VAL:HG21	1.99	0.44
12:D:439:HIS:HB2	12:D:464:GLU:HG3	1.99	0.44
16:H:45:LEU:HD13	16:H:75:VAL:HB	1.98	0.44
23:O:83:LEU:HD11	23:O:156:ALA:HB2	2.00	0.44
30:W:412:LEU:HB2	30:W:417:ILE:CD1	2.43	0.44
33:Z:85:LEU:O	33:Z:89:ILE:HG22	2.16	0.44
34:a:321:ILE:HG22	34:a:363:LEU:HD21	2.00	0.44
35:b:392:SER:O	35:b:396:HIS:ND1	2.49	0.44
43:55:138:ALA:HB2	43:55:244:LEU:HD23	1.98	0.44
44:66:197:ASN:OD1	44:66:198:GLU:N	2.50	0.44
47:99:38:ILE:HG22	47:99:41:LEU:HD23	2.00	0.44
48:AA:268:C:N3	48:AA:354:A:O2'	2.49	0.44
48:AA:620:G:C8	49:BB:320:LYS:HD2	2.52	0.44
48:AA:669:G:C5	48:AA:678:A:C2	3.06	0.44
48:AA:800:A:H2'	48:AA:801:U:C6	2.52	0.44
48:AA:1492:A:N1	48:AA:1522:A:N6	2.64	0.44
48:AA:2434:A:C6	52:EE:175:PHE:HD2	2.35	0.44
48:AA:3029:U:C4	48:AA:3030:U:O4	2.71	0.44
51:DD:237:ASP:O	51:DD:240:LYS:HG3	2.17	0.44
53:FF:138:LYS:O	53:FF:154:VAL:HG22	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:JJ:149:LEU:HD11	57:JJ:155:LEU:HD13	1.99	0.44
67:TT:201:MET:HE1	67:TT:204:ARG:HH21	1.82	0.44
72:XX:35:THR:HG22	72:XX:50:LYS:HD2	1.99	0.44
79:r:794:A:H2'	79:r:795:A:C8	2.52	0.44
79:r:985:U:HO2'	79:r:1128:A:HO2'	1.64	0.44
79:r:1544:U:C2	79:r:1545:U:C5	3.05	0.44
5:5:98:SER:HB2	79:r:1525:A:H5''	1.99	0.44
7:7:307:LYS:O	7:7:311:LYS:HG3	2.18	0.44
9:A:18:ASN:ND2	9:A:32:THR:O	2.50	0.44
10:B:329:ARG:NH2	33:Z:95:ASP:OD2	2.51	0.44
12:D:16:VAL:HG11	12:D:28:LEU:HD13	1.99	0.44
18:J:48:ARG:HG2	18:J:108:LYS:HG2	1.99	0.44
21:M:25:TYR:HE1	79:r:1398:U:H4'	1.83	0.44
36:c:495:ILE:O	36:c:499:PHE:HB2	2.16	0.44
42:44:54:GLN:OE1	42:44:54:GLN:HA	2.17	0.44
47:99:144:ASN:O	47:99:147:THR:HG22	2.16	0.44
48:AA:126:A:N6	48:AA:127:A:H61	2.15	0.44
48:AA:137:A:H2'	48:AA:138:U:C6	2.53	0.44
48:AA:916:A:C6	48:AA:1220:G:H1'	2.52	0.44
48:AA:3255:A:H2'	48:AA:3256:U:H6	1.82	0.44
49:BB:316:ARG:HH12	49:BB:318:LEU:HD21	1.82	0.44
60:MM:102:LEU:HD22	60:MM:104:GLN:HE22	1.81	0.44
69:V:108:ILE:O	69:V:112:ARG:HG3	2.17	0.44
69:V:170:PRO:O	69:V:173:SER:OG	2.24	0.44
79:r:689:C:H2'	79:r:690:G:O4'	2.18	0.44
4:4:124:ARG:CZ	9:A:109:LYS:HB3	2.48	0.44
5:5:120:PHE:CZ	5:5:163:LEU:HD23	2.53	0.44
8:8:459:ARG:HA	8:8:462:LEU:HD12	2.00	0.44
15:G:241:ARG:O	15:G:244:ILE:HG22	2.17	0.44
25:Q:190:LEU:HD11	25:Q:225:ARG:HB2	1.99	0.44
31:X:29:ARG:NH2	79:r:1382:C:OP1	2.49	0.44
34:a:152:LYS:HA	34:a:152:LYS:HE3	1.99	0.44
42:44:25:LYS:NZ	46:88:225:TYR:OH	2.51	0.44
48:AA:918:U:C2	48:AA:1183:A:C2	3.05	0.44
48:AA:1260:U:C2	48:AA:1261:U:C5	3.06	0.44
48:AA:1265:A:H2'	48:AA:1266:U:C6	2.53	0.44
48:AA:1380:G:N2	66:SS:116:ILE:HG22	2.32	0.44
50:CC:113:ARG:HD3	50:CC:117:LYS:HB2	2.00	0.44
61:NN:72:ASP:O	61:NN:155:ILE:HD12	2.17	0.44
62:OO:195:GLN:O	62:OO:199:SER:OG	2.35	0.44
76:bb:122:ARG:O	76:bb:126:LEU:HG	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
79:r:43:C:O2'	79:r:614:U:OP1	2.33	0.44
79:r:113:G:N3	79:r:357:A:O2'	2.43	0.44
9:A:200:ILE:HD11	9:A:287:LYS:O	2.17	0.44
11:C:218:ASP:HA	11:C:378:TYR:CD2	2.52	0.44
11:C:352:PHE:HA	11:C:396:ASN:HD22	1.82	0.44
12:D:127:HIS:HD1	79:r:509:A:HO2'	1.63	0.44
23:O:111:GLU:OE1	69:V:288:LEU:HD23	2.18	0.44
27:S:20:PRO:O	27:S:21:LEU:HD23	2.18	0.44
30:W:131:THR:CG2	30:W:132:ASN:H	2.30	0.44
34:a:133:ALA:O	34:a:137:VAL:N	2.51	0.44
34:a:195:CYS:SG	34:a:196:GLU:N	2.90	0.44
34:a:351:LEU:HD11	34:a:363:LEU:HD22	2.00	0.44
34:a:450:GLY:O	34:a:455:MET:HE2	2.17	0.44
36:c:591:LEU:HA	36:c:594:ALA:HB3	2.00	0.44
42:44:63:VAL:HG22	46:88:226:VAL:HG12	1.99	0.44
43:55:188:ASN:O	43:55:192:SER:N	2.51	0.44
48:AA:1921:A:OP1	71:WW:79:SER:OG	2.27	0.44
48:AA:1962:A:H2'	48:AA:1963:C:C6	2.53	0.44
65:RR:262:ASN:ND2	65:RR:312:LEU:O	2.51	0.44
67:TT:71:PHE:O	67:TT:122:ARG:NH1	2.51	0.44
67:TT:206:GLN:HB2	67:TT:212:ILE:HB	1.99	0.44
69:V:19:ARG:NH1	79:r:233:C:OP1	2.50	0.44
69:V:75:ILE:HG12	69:V:108:ILE:HG22	2.00	0.44
6:6:320:ARG:NE	69:V:15:PHE:CE2	2.85	0.44
8:8:41:PHE:HB2	69:V:154:MET:HG3	1.99	0.44
9:A:97:ILE:HD11	9:A:285:MET:SD	2.57	0.44
24:P:29:ARG:HG3	79:r:110:A:O2'	2.17	0.44
28:T:120:LEU:O	28:T:124:MET:HG2	2.18	0.44
39:11:321:ASP:C	39:11:321:ASP:OD1	2.60	0.44
42:44:90:ASN:O	42:44:94:VAL:HG23	2.18	0.44
47:99:125:LYS:HD3	47:99:140:LEU:HD21	1.99	0.44
48:AA:203:U:O3'	48:AA:204:A:O4'	2.36	0.44
48:AA:234:G:H2'	48:AA:235:A:O4'	2.16	0.44
48:AA:636:G:O2'	48:AA:639:G:H1'	2.18	0.44
48:AA:1259:A:C4	48:AA:1260:U:C6	3.06	0.44
48:AA:1522:A:O2'	48:AA:1523:A:C8	2.71	0.44
48:AA:2424:U:OP1	70:VV:27:ARG:NH2	2.51	0.44
48:AA:3252:U:H1'	48:AA:3253:U:OP2	2.17	0.44
49:BB:97:LYS:O	49:BB:99:VAL:N	2.47	0.44
52:EE:99:ARG:NH1	52:EE:115:ASN:O	2.50	0.44
70:VV:73:ASP:CG	70:VV:74:GLN:H	2.25	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
79:r:28:G:H2'	79:r:29:G:C8	2.52	0.44
79:r:1425:A:H2'	79:r:1426:A:C8	2.52	0.44
5:5:274:TYR:CD1	5:5:277:ILE:HD12	2.53	0.44
29:U:62:ASP:OD1	29:U:63:VAL:N	2.51	0.44
34:a:368:ILE:CD1	34:a:380:LEU:HD21	2.42	0.44
41:33:95:ASN:OD1	41:33:96:ALA:N	2.51	0.44
48:AA:1057:A:H2'	48:AA:1058:U:H6	1.83	0.44
48:AA:1622:C:H3'	48:AA:1623:U:H6	1.82	0.44
48:AA:2364:U:O2'	65:RR:208:GLY:N	2.51	0.44
48:AA:3163:U:C2	48:AA:3164:A:C8	3.04	0.44
49:BB:253:HIS:HD2	49:BB:306:GLY:O	2.00	0.44
53:FF:75:LEU:HD11	53:FF:84:ILE:HB	2.00	0.44
64:QQ:95:LEU:HD23	64:QQ:99:GLY:CA	2.46	0.44
78:dd:92:LEU:HD21	78:dd:137:LEU:HA	2.00	0.44
79:r:870:U:H2'	79:r:871:C:H6	1.81	0.44
79:r:1107:U:H2'	79:r:1108:G:H8	1.83	0.44
2:2:83:GLN:CD	2:2:83:GLN:H	2.25	0.44
8:8:178:PHE:CZ	8:8:357:THR:HG23	2.53	0.44
9:A:45:ARG:O	9:A:46:GLN:C	2.60	0.44
17:I:200:LEU:HD21	17:I:231:ILE:HG21	1.98	0.44
21:M:12:GLY:N	79:r:1362:A:OP2	2.51	0.44
23:O:71:ALA:O	23:O:72:ASP:OD1	2.35	0.44
23:O:134:ARG:HD3	69:V:207:ASN:HB3	2.00	0.44
23:O:248:ASP:OD1	23:O:248:ASP:N	2.51	0.44
34:a:55:HIS:O	34:a:122:ARG:NH2	2.51	0.44
34:a:73:TYR:CE1	36:c:443:ARG:HG2	2.53	0.44
35:b:492:VAL:HG13	35:b:493:ASN:N	2.32	0.44
48:AA:307:G:H1'	48:AA:308:U:O4'	2.18	0.44
48:AA:819:U:H2'	48:AA:820:U:C6	2.53	0.44
48:AA:1522:A:C6	48:AA:1523:A:C6	3.06	0.44
48:AA:2914:C:H2'	48:AA:2915:A:H8	1.82	0.44
51:DD:51:SER:OG	51:DD:183:ASP:OD2	2.26	0.44
79:r:167:U:N3	79:r:228:A:O3'	2.51	0.44
79:r:227:U:N3	79:r:228:A:N7	2.66	0.44
79:r:394:U:H2'	79:r:395:C:C6	2.53	0.44
79:r:540:A:N1	79:r:556:G:C6	2.86	0.44
79:r:1110:C:OP2	79:r:1111:U:O2'	2.25	0.44
6:6:160:GLU:CD	6:6:171:VAL:HG22	2.43	0.44
10:B:50:LEU:HG	10:B:51:TYR:H	1.83	0.44
16:H:37:TYR:OH	69:V:155:THR:HG22	2.18	0.44
17:I:274:THR:HB	79:r:1264:U:H5'	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:K:76:TYR:CE2	19:K:163:LYS:HB2	2.53	0.44
25:Q:92:ALA:O	25:Q:96:VAL:HG22	2.18	0.44
35:b:260:TRP:C	35:b:261:LYS:HD2	2.43	0.44
39:11:317:ARG:HG3	39:11:317:ARG:O	2.17	0.44
48:AA:60:G:H2'	48:AA:61:G:O4'	2.18	0.44
48:AA:892:A:C4	48:AA:893:U:C5	3.06	0.44
48:AA:920:A:H4'	61:NN:126:ARG:NH2	2.33	0.44
48:AA:1623:U:H1'	50:CC:193:HIS:CE1	2.53	0.44
48:AA:1959:A:C5	48:AA:1960:A:H1'	2.52	0.44
49:BB:342:ASP:O	49:BB:343:HIS:C	2.61	0.44
50:CC:62:ILE:HD11	50:CC:138:ALA:HB3	2.00	0.44
67:TT:53:ILE:O	67:TT:53:ILE:HG13	2.18	0.44
69:V:222:LYS:O	69:V:228:THR:OG1	2.30	0.44
69:V:232:THR:HG23	69:V:234:ALA:H	1.82	0.44
3:3:63:PRO:HA	3:3:66:ILE:CG2	2.48	0.43
5:5:234:THR:HG23	5:5:288:ASP:HB2	1.99	0.43
6:6:319:TYR:HE2	24:P:42:THR:HG23	1.83	0.43
7:7:209:SER:HB3	18:J:179:GLN:O	2.18	0.43
8:8:48:ARG:NH2	8:8:81:THR:HG23	2.32	0.43
13:E:169:LEU:HD11	13:E:181:LEU:HD22	2.00	0.43
15:G:120:MET:O	15:G:123:ARG:NH2	2.51	0.43
22:N:5:ARG:CZ	79:r:1059:A:OP1	2.66	0.43
29:U:5:THR:O	29:U:6:ASN:HB2	2.17	0.43
33:Z:24:ARG:NH2	79:r:1630:A:H1'	2.33	0.43
34:a:47:VAL:HG12	34:a:103:LEU:HA	1.99	0.43
36:c:467:GLU:O	36:c:468:VAL:HB	2.18	0.43
38:00:68:ASP:OD1	38:00:83:LYS:HG2	2.17	0.43
48:AA:466:U:OP1	57:JJ:93:GLN:NE2	2.42	0.43
48:AA:651:G:H2'	48:AA:652:A:O4'	2.18	0.43
48:AA:737:A:H8	48:AA:737:A:O5'	2.01	0.43
49:BB:230:LEU:O	49:BB:234:THR:N	2.43	0.43
49:BB:241:LEU:HD12	49:BB:245:MET:HE2	1.99	0.43
63:PP:258:TYR:CD1	63:PP:258:TYR:C	2.95	0.43
66:SS:141:SER:O	66:SS:142:ALA:C	2.61	0.43
70:VV:49:MET:SD	70:VV:68:ILE:HD13	2.57	0.43
79:r:340:C:O3'	79:r:1501:A:O2'	2.35	0.43
79:r:726:A:C2'	79:r:727:A:O5'	2.66	0.43
79:r:1358:U:H2'	79:r:1359:U:C6	2.53	0.43
3:3:148:LEU:HD22	4:4:82:ASN:OD1	2.17	0.43
3:3:217:TRP:O	3:3:218:THR:C	2.61	0.43
5:5:96:PRO:O	79:r:1524:U:O2'	2.36	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:117:LEU:HD12	5:5:117:LEU:H	1.82	0.43
8:8:48:ARG:HG2	8:8:82:THR:HG23	1.99	0.43
12:D:45:LYS:HD3	12:D:479:MET:HE2	2.00	0.43
17:I:270:ARG:O	79:r:1412:C:H4'	2.18	0.43
19:K:86:ASN:ND2	79:r:755:G:OP2	2.41	0.43
25:Q:13:GLN:OE1	25:Q:13:GLN:HA	2.18	0.43
30:W:403:ILE:HD11	30:W:441:LEU:HD11	2.00	0.43
32:Y:132:PHE:O	32:Y:133:MET:HE2	2.19	0.43
32:Y:221:ILE:HD11	32:Y:273:VAL:HG22	1.99	0.43
35:b:298:GLN:CD	35:b:298:GLN:H	2.25	0.43
36:c:364:THR:O	36:c:367:THR:OG1	2.34	0.43
39:11:226:VAL:O	39:11:227:LEU:HD23	2.17	0.43
48:AA:531:U:O2	48:AA:531:U:O4'	2.37	0.43
48:AA:640:C:C2	48:AA:641:A:C8	3.06	0.43
48:AA:818:U:H2'	48:AA:819:U:C6	2.53	0.43
48:AA:2361:A:H4'	76:bb:156:TRP:CZ3	2.53	0.43
48:AA:2831:A:OP1	48:AA:2915:A:O2'	2.25	0.43
60:MM:144:GLN:O	60:MM:144:GLN:HG3	2.18	0.43
76:bb:85:THR:C	76:bb:86:LYS:HD2	2.42	0.43
77:cc:119:TRP:HA	77:cc:122:ILE:HG22	2.00	0.43
79:r:665:U:H2'	79:r:666:U:H6	1.82	0.43
79:r:790:U:H2'	79:r:791:G:O4'	2.18	0.43
79:r:1001:U:C2	79:r:1002:A:C8	3.06	0.43
79:r:1084:U:H2'	79:r:1085:U:H6	1.83	0.43
79:r:1280:U:H4'	79:r:1281:A:H5''	2.00	0.43
79:r:1576:U:O2'	79:r:1577:U:P	2.76	0.43
3:3:152:TRP:HB2	3:3:168:SER:OG	2.19	0.43
6:6:316:LYS:N	6:6:316:LYS:HD2	2.33	0.43
8:8:363:MET:HE1	8:8:410:LEU:HD13	2.00	0.43
10:B:319:LEU:HD23	10:B:320:LEU:N	2.34	0.43
17:I:218:GLY:O	79:r:1283:U:O2'	2.20	0.43
20:L:140:SER:O	20:L:141:SER:OG	2.35	0.43
25:Q:168:ASP:OD1	25:Q:168:ASP:O	2.36	0.43
29:U:227:GLU:C	29:U:227:GLU:OE1	2.61	0.43
33:Z:85:LEU:O	33:Z:85:LEU:HD12	2.17	0.43
35:b:259:TYR:HA	35:b:276:MET:SD	2.58	0.43
36:c:417:ASP:OD1	36:c:418:LEU:HD12	2.18	0.43
39:11:262:ASP:OD1	39:11:262:ASP:N	2.51	0.43
48:AA:356:U:H2'	48:AA:357:C:C6	2.53	0.43
48:AA:534:A:OP1	65:RR:142:LYS:NZ	2.40	0.43
48:AA:674:A:N3	48:AA:674:A:C2'	2.81	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:EE:177:LYS:O	52:EE:187:LYS:HE3	2.18	0.43
57:JJ:120:ILE:HD11	74:ZZ:97:ARG:NH1	2.32	0.43
64:QQ:235:ARG:HH11	66:SS:46:LEU:HD13	1.82	0.43
65:RR:348:ARG:HG2	65:RR:359:VAL:HG22	1.99	0.43
69:V:186:LEU:HG	69:V:190:GLN:OE1	2.17	0.43
79:r:104:G:C2	79:r:105:G:C8	3.06	0.43
3:3:25:VAL:HG23	3:3:29:LEU:H	1.84	0.43
4:4:143:ILE:HD12	4:4:148:SER:HA	2.00	0.43
4:4:315:ILE:O	4:4:315:ILE:HD12	2.17	0.43
8:8:218:MET:HE3	8:8:481:LEU:HD13	2.00	0.43
9:A:41:SER:O	9:A:44:TYR:HB3	2.18	0.43
14:F:61:HIS:ND1	14:F:92:ILE:HG21	2.33	0.43
15:G:230:ARG:HD2	15:G:230:ARG:C	2.43	0.43
19:K:176:ARG:O	19:K:180:ILE:HG13	2.18	0.43
22:N:66:PRO:HD2	22:N:69:MET:SD	2.58	0.43
25:Q:46:HIS:HB2	25:Q:70:LYS:HE3	1.99	0.43
25:Q:65:PRO:HD2	79:r:132:A:N7	2.33	0.43
30:W:442:LEU:O	30:W:446:VAL:HG12	2.17	0.43
34:a:310:ILE:HD11	34:a:353:PRO:HG2	2.00	0.43
34:a:422:VAL:O	34:a:426:VAL:HG13	2.19	0.43
35:b:492:VAL:O	35:b:495:ILE:HG22	2.18	0.43
41:33:43:LEU:HD23	41:33:47:GLN:NE2	2.34	0.43
43:55:156:ASN:OD1	43:55:157:ILE:N	2.52	0.43
48:AA:170:U:H2'	48:AA:171:A:C8	2.53	0.43
48:AA:202:A:H2'	48:AA:203:U:C6	2.53	0.43
48:AA:642:A:C6	48:AA:680:A:C5	3.07	0.43
48:AA:1432:A:H2'	48:AA:1433:A:C8	2.53	0.43
48:AA:1680:A:C8	48:AA:1737:A:C8	3.07	0.43
48:AA:2434:A:N1	52:EE:175:PHE:HD2	2.17	0.43
48:AA:3055:U:H4'	48:AA:3166:A:O3'	2.19	0.43
48:AA:3108:U:N3	48:AA:3109:U:C5	2.87	0.43
64:QQ:68:ARG:HG2	64:QQ:82:VAL:HG22	2.00	0.43
65:RR:172:LEU:HD23	65:RR:199:ILE:HG13	2.00	0.43
67:TT:90:ILE:HG22	67:TT:91:ARG:N	2.33	0.43
69:V:193:LYS:NZ	69:V:196:LEU:HD21	2.32	0.43
79:r:813:A:H2'	79:r:814:A:C8	2.54	0.43
79:r:921:U:C2	79:r:922:A:C8	3.06	0.43
79:r:1505:U:H2'	79:r:1506:U:H6	1.83	0.43
79:r:1647:A:O2'	79:r:1648:C:O5'	2.37	0.43
3:3:16:ASN:N	3:3:102:GLU:OE1	2.51	0.43
5:5:181:ILE:HG12	5:5:221:ARG:HA	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:227:LEU:HD21	5:5:255:LEU:HD21	2.00	0.43
10:B:46:GLN:HB2	10:B:50:LEU:HD22	2.00	0.43
11:C:95:THR:HG23	11:C:95:THR:O	2.18	0.43
13:E:178:MET:HE3	29:U:20:SER:OG	2.19	0.43
20:L:63:LEU:HD11	20:L:84:ARG:CB	2.45	0.43
32:Y:204:VAL:O	32:Y:233:ILE:HD12	2.19	0.43
34:a:253:TYR:O	34:a:254:SER:C	2.61	0.43
39:11:81:LEU:HG	40:22:75:CYS:SG	2.59	0.43
41:33:30:PHE:HD1	48:AA:1568:U:C2	2.36	0.43
44:66:82:LEU:HD21	44:66:116:LEU:C	2.43	0.43
47:99:206:THR:HG22	47:99:207:ASN:OD1	2.19	0.43
48:AA:901:A:H1'	48:AA:916:A:C5	2.53	0.43
48:AA:2732:G:H21	58:KK:170:THR:HB	1.83	0.43
48:AA:3041:A:H2'	48:AA:3042:U:C6	2.53	0.43
49:BB:209:PHE:HD2	49:BB:241:LEU:HD11	1.82	0.43
57:JJ:139:GLN:OE1	57:JJ:186:LEU:HD23	2.17	0.43
57:JJ:232:LYS:HB3	57:JJ:233:ARG:HD2	2.01	0.43
58:KK:77:ARG:NH1	58:KK:177:GLU:OE2	2.50	0.43
62:OO:172:SER:OG	62:OO:173:SER:N	2.51	0.43
79:r:228:A:H2'	79:r:229:U:H6	1.83	0.43
4:4:315:ILE:HD12	4:4:316:GLN:HG2	2.00	0.43
6:6:232:GLU:OE2	12:D:459:ARG:NH1	2.52	0.43
10:B:51:TYR:CD2	11:C:36:LEU:HD12	2.53	0.43
10:B:333:LEU:HA	10:B:336:ILE:HG22	2.00	0.43
11:C:224:ILE:O	11:C:224:ILE:HG22	2.19	0.43
16:H:67:ASN:C	16:H:67:ASN:OD1	2.61	0.43
18:J:69:LEU:HD13	32:Y:165:LEU:HB3	2.00	0.43
21:M:6:LEU:HD12	21:M:62:LEU:HD22	1.99	0.43
33:Z:64:GLU:CD	33:Z:64:GLU:N	2.77	0.43
35:b:242:ILE:HG23	35:b:243:SER:N	2.33	0.43
36:c:334:GLU:O	36:c:335:HIS:HB3	2.18	0.43
39:11:157:GLN:O	39:11:161:THR:HG23	2.18	0.43
40:22:132:PRO:O	52:EE:68:ARG:NH1	2.52	0.43
43:55:307:LEU:HD21	43:55:340:VAL:HG11	2.00	0.43
46:88:149:GLN:HG3	46:88:181:THR:HG22	1.99	0.43
48:AA:2581:U:C2	48:AA:2582:U:C6	3.06	0.43
54:GG:21:VAL:HG12	54:GG:57:TYR:HA	2.00	0.43
55:HH:2:SER:HA	55:HH:5:ILE:HD13	2.00	0.43
56:II:83:ARG:HH21	56:II:89:VAL:HB	1.84	0.43
57:JJ:191:GLU:OE2	57:JJ:192:ALA:N	2.52	0.43
58:KK:77:ARG:HA	58:KK:148:LEU:HD12	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
66:SS:73:LEU:HD12	66:SS:116:ILE:HD11	2.00	0.43
69:V:73:ASN:OD1	69:V:73:ASN:C	2.59	0.43
69:V:231:PHE:O	69:V:231:PHE:CG	2.72	0.43
74:ZZ:54:LEU:N	74:ZZ:54:LEU:HD23	2.34	0.43
6:6:274:LEU:O	6:6:277:VAL:HG22	2.18	0.43
11:C:360:SER:OG	11:C:362:ILE:HG12	2.18	0.43
13:E:269:MET:HE1	79:r:1126:A:H5'	2.01	0.43
14:F:111:LEU:HD13	69:V:231:PHE:CE2	2.54	0.43
18:J:125:ILE:HD13	18:J:128:ILE:HD11	2.00	0.43
19:K:197:LYS:HE3	28:T:105:SER:HA	2.00	0.43
23:O:76:ILE:CG2	23:O:80:MET:HE3	2.49	0.43
25:Q:144:LEU:O	25:Q:147:ILE:HG22	2.18	0.43
35:b:113:GLU:HG2	35:b:114:SER:N	2.33	0.43
35:b:250:GLN:HB3	35:b:256:LEU:HD23	2.00	0.43
44:66:213:SER:HB2	52:EE:84:ILE:HD13	2.01	0.43
48:AA:1260:U:O2	48:AA:1260:U:H2'	2.17	0.43
48:AA:1356:U:OP2	78:dd:68:ARG:NH2	2.52	0.43
48:AA:1975:U:O2'	48:AA:2864:G:N2	2.51	0.43
48:AA:2886:C:O2	50:CC:220:MET:SD	2.77	0.43
48:AA:3288:C:H2'	48:AA:3289:U:O4'	2.18	0.43
51:DD:52:LEU:HD23	51:DD:214:PHE:CE2	2.54	0.43
52:EE:44:PHE:HB3	52:EE:47:LEU:HD13	2.01	0.43
52:EE:62:LYS:O	52:EE:200:LYS:NZ	2.47	0.43
52:EE:85:ASN:CB	52:EE:129:ILE:HG21	2.45	0.43
56:II:38:ASP:OD1	56:II:38:ASP:N	2.50	0.43
60:MM:145:ARG:HA	60:MM:145:ARG:HD3	1.84	0.43
61:NN:78:PHE:O	61:NN:151:THR:OG1	2.30	0.43
62:OO:279:TYR:CE1	62:OO:283:LEU:HD11	2.54	0.43
79:r:1372:G:C6	79:r:1373:A:N1	2.87	0.43
5:5:185:PHE:CD2	5:5:189:ILE:HD11	2.53	0.43
6:6:178:LYS:HB3	6:6:180:PRO:HD2	2.01	0.43
7:7:356:ILE:HG21	22:N:57:GLU:OE2	2.19	0.43
15:G:131:GLN:OE1	30:W:450:ARG:NH1	2.51	0.43
19:K:89:LEU:N	19:K:89:LEU:HD12	2.34	0.43
21:M:61:GLU:O	21:M:64:THR:HG22	2.19	0.43
23:O:266:ASP:OD2	79:r:962:A:OP1	2.36	0.43
24:P:102:THR:HG22	24:P:103:SER:N	2.34	0.43
25:Q:203:PHE:CD1	25:Q:203:PHE:C	2.96	0.43
26:R:67:LEU:HD21	79:r:1632:A:N1	2.33	0.43
28:T:163:LYS:NZ	79:r:1628:A:O3'	2.34	0.43
29:U:70:ASN:OD1	29:U:70:ASN:C	2.61	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:b:106:ILE:HD11	35:b:159:CYS:SG	2.59	0.43
35:b:461:MET:HE1	35:b:470:GLY:H	1.84	0.43
36:c:560:ILE:HA	36:c:563:ILE:HG22	2.00	0.43
46:88:125:SER:OG	46:88:127:ASN:OD1	2.35	0.43
48:AA:536:A:C6	48:AA:550:A:N1	2.87	0.43
48:AA:1738:A:C2	48:AA:1739:C:C5	3.06	0.43
58:KK:83:ILE:HD12	58:KK:173:PRO:HG2	2.01	0.43
69:V:34:ASN:HA	69:V:37:LYS:HG2	2.01	0.43
79:r:302:U:O2'	79:r:670:C:O2	2.36	0.43
79:r:1084:U:C2	79:r:1085:U:C5	3.06	0.43
79:r:1195:A:O2'	79:r:1196:U:P	2.77	0.43
5:5:53:ILE:O	5:5:57:THR:HG23	2.19	0.43
6:6:143:CYS:O	6:6:144:LYS:NZ	2.40	0.43
9:A:217:SER:C	29:U:196:MET:HE1	2.44	0.43
9:A:286:GLU:OE1	9:A:287:LYS:NZ	2.47	0.43
10:B:213:GLU:OE2	29:U:96:LYS:HG3	2.18	0.43
17:I:135:LYS:HD2	17:I:135:LYS:HA	1.92	0.43
19:K:109:ASN:OD1	19:K:109:ASN:C	2.62	0.43
23:O:103:ALA:HB1	25:Q:128:ILE:CD1	2.46	0.43
25:Q:33:ILE:HD11	25:Q:37:LEU:HD21	2.01	0.43
28:T:166:ILE:HD13	28:T:166:ILE:HA	1.96	0.43
34:a:149:ASP:HB3	34:a:193:LEU:HD21	2.01	0.43
34:a:377:LEU:HD12	34:a:377:LEU:C	2.44	0.43
35:b:102:LEU:HD13	35:b:123:LEU:HD22	2.00	0.43
35:b:201:PHE:O	35:b:205:LEU:HD23	2.19	0.43
36:c:501:ASP:OD1	36:c:502:LYS:N	2.51	0.43
39:11:225:THR:HG22	39:11:296:GLN:NE2	2.33	0.43
43:55:340:VAL:HG23	43:55:362:ALA:HB1	2.00	0.43
45:77:122:VAL:HG22	45:77:127:LYS:HB2	2.01	0.43
48:AA:478:G:H5''	48:AA:1918:G:H5''	2.01	0.43
48:AA:577:U:H2'	48:AA:579:A:H62	1.84	0.43
48:AA:2229:U:C2	48:AA:2230:A:C8	3.07	0.43
48:AA:2585:A:N1	48:AA:2599:A:O2'	2.35	0.43
48:AA:2787:C:O2'	48:AA:2831:A:H1'	2.19	0.43
48:AA:2952:G:O2'	48:AA:2953:G:H5'	2.19	0.43
48:AA:3025:U:H2'	48:AA:3026:A:C8	2.54	0.43
48:AA:3233:A:H3'	48:AA:3234:A:H5''	2.00	0.43
48:AA:3241:U:O2	48:AA:3241:U:O5'	2.37	0.43
48:AA:3261:U:O2	48:AA:3261:U:O4'	2.35	0.43
48:AA:3268:A:O2'	48:AA:3269:U:OP1	2.33	0.43
52:EE:62:LYS:NZ	52:EE:62:LYS:HB3	2.34	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:EE:140:VAL:HG21	52:EE:206:LEU:HD21	1.99	0.43
53:FF:24:LEU:CD2	53:FF:26:ILE:HG13	2.49	0.43
62:OO:245:VAL:HG13	62:OO:253:ILE:HG23	2.01	0.43
79:r:725:A:C6	79:r:726:A:N6	2.87	0.43
79:r:1271:A:H5'	79:r:1273:A:O4'	2.19	0.43
79:r:1335:U:H2'	79:r:1336:U:O4'	2.19	0.43
7:7:211:LEU:O	7:7:212:GLU:HB3	2.18	0.43
9:A:51:LYS:NZ	10:B:347:ASP:OD2	2.52	0.43
9:A:222:ILE:HD11	9:A:225:THR:HA	2.00	0.43
10:B:157:THR:HA	10:B:160:LEU:HD23	2.00	0.43
24:P:27:ASN:OD1	79:r:233:C:O2'	2.34	0.43
30:W:78:LEU:HD21	30:W:405:TYR:HE2	1.81	0.43
30:W:400:ASN:HA	30:W:426:ILE:HD12	2.01	0.43
34:a:90:HIS:ND1	34:a:92:VAL:HG22	2.33	0.43
35:b:120:ILE:HD11	35:b:136:LEU:HD21	2.01	0.43
35:b:124:PHE:HA	35:b:127:THR:OG1	2.19	0.43
36:c:359:PHE:HZ	36:c:385:LEU:HD11	1.83	0.43
39:11:76:MET:HE1	44:66:47:LYS:HG3	2.01	0.43
39:11:92:ALA:HB2	39:11:104:LEU:HB3	2.01	0.43
48:AA:127:A:H2'	48:AA:128:U:C6	2.54	0.43
48:AA:913:C:OP1	77:cc:118:LYS:HA	2.19	0.43
48:AA:1714:G:N2	48:AA:1718:A:OP2	2.45	0.43
52:EE:134:ILE:O	52:EE:135:PRO:C	2.62	0.43
53:FF:168:LEU:HD22	53:FF:170:ILE:HG13	2.01	0.43
58:KK:77:ARG:HG3	58:KK:177:GLU:OE2	2.18	0.43
64:QQ:102:LYS:HE3	64:QQ:104:VAL:HG11	2.01	0.43
65:RR:63:ILE:HD11	65:RR:85:ILE:HG22	2.01	0.43
72:XX:47:VAL:HG12	76:bb:129:VAL:HG21	2.00	0.43
77:cc:19:ILE:O	77:cc:19:ILE:CG2	2.67	0.43
79:r:257:A:N6	79:r:279:A:N1	2.67	0.43
79:r:1084:U:C2	79:r:1085:U:C6	3.07	0.43
79:r:1480:G:O2'	79:r:1481:U:H5'	2.19	0.43
22:N:114:ILE:CG2	79:r:1161:C:H1'	2.49	0.42
28:T:89:ALA:O	28:T:93:VAL:HG13	2.19	0.42
34:a:233:ALA:HB3	34:a:234:MET:CE	2.49	0.42
34:a:472:LEU:HG	34:a:472:LEU:O	2.19	0.42
35:b:517:ARG:HD2	35:b:517:ARG:C	2.44	0.42
41:33:87:ASN:N	67:TT:108:SER:OG	2.52	0.42
42:44:113:THR:HG21	48:AA:434:U:OP2	2.19	0.42
47:99:57:PHE:CE1	47:99:88:LEU:HD11	2.53	0.42
48:AA:1704:U:OP1	49:BB:387:ARG:NH2	2.45	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:AA:1914:A:H2'	48:AA:1915:A:C8	2.54	0.42
49:BB:71:VAL:HG12	49:BB:72:THR:N	2.34	0.42
49:BB:153:ARG:NE	49:BB:174:PRO:HD2	2.33	0.42
56:II:11:ILE:HD12	56:II:111:ILE:HD11	2.00	0.42
79:r:229:U:C2	79:r:230:A:C8	3.07	0.42
79:r:1102:A:C2	79:r:1238:G:C4	3.07	0.42
3:3:58:LEU:HD11	3:3:76:GLN:HE21	1.82	0.42
3:3:64:PHE:O	3:3:67:LEU:HG	2.19	0.42
4:4:123:ASN:O	4:4:124:ARG:NH2	2.53	0.42
14:F:59:GLU:OE1	14:F:61:HIS:NE2	2.52	0.42
17:I:214:THR:O	79:r:1179:U:C5	2.72	0.42
17:I:239:ASN:OD1	17:I:241:LEU:HD23	2.19	0.42
19:K:164:ASP:OD2	19:K:196:VAL:HG13	2.19	0.42
25:Q:227:HIS:HA	25:Q:230:MET:HE1	2.01	0.42
30:W:205:LEU:HD23	30:W:320:MET:HE3	2.01	0.42
30:W:316:LEU:HD21	30:W:325:MET:HG3	2.00	0.42
30:W:394:LEU:HA	30:W:398:GLU:OE1	2.19	0.42
30:W:446:VAL:HG22	30:W:446:VAL:O	2.19	0.42
35:b:195:LEU:HD11	35:b:229:ARG:HB3	2.02	0.42
36:c:560:ILE:O	36:c:564:VAL:HG23	2.18	0.42
37:t:74:C:C5	37:t:75:C:C4	3.07	0.42
39:11:153:MET:HE1	52:EE:36:ASP:HB2	1.99	0.42
44:66:169:LEU:HD13	44:66:262:ILE:HD12	2.01	0.42
47:99:169:ASP:N	47:99:170:PRO:HD2	2.34	0.42
48:AA:1315:A:O2'	71:WW:176:ARG:NH2	2.50	0.42
48:AA:1353:A:OP1	63:PP:134:THR:HG23	2.18	0.42
48:AA:1410:U:O2'	48:AA:1411:A:OP1	2.36	0.42
48:AA:2610:A:H5''	48:AA:2611:U:OP1	2.19	0.42
48:AA:3026:A:H2'	48:AA:3027:U:C6	2.54	0.42
48:AA:3112:A:H2'	48:AA:3113:U:C6	2.54	0.42
49:BB:221:MET:SD	49:BB:221:MET:C	3.02	0.42
59:LL:202:ASP:C	59:LL:202:ASP:OD1	2.62	0.42
65:RR:115:LEU:HD21	65:RR:126:VAL:HG21	2.00	0.42
3:3:72:GLY:HA3	3:3:213:LYS:HE3	2.01	0.42
8:8:152:GLY:O	8:8:156:HIS:HD2	2.02	0.42
8:8:347:ILE:HD11	8:8:423:TRP:CD1	2.54	0.42
8:8:353:ARG:O	8:8:357:THR:HG22	2.20	0.42
17:I:241:LEU:HD23	17:I:241:LEU:H	1.84	0.42
34:a:409:THR:HG21	34:a:418:ASN:OD1	2.20	0.42
34:a:479:LYS:O	34:a:483:ARG:HG3	2.18	0.42
35:b:101:THR:O	35:b:105:ILE:HG12	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:c:406:LYS:NZ	36:c:412:GLU:O	2.51	0.42
40:22:35:LEU:HG	40:22:39:ALA:HB3	2.01	0.42
47:99:177:ARG:NH2	47:99:185:ILE:O	2.43	0.42
48:AA:394:G:N1	48:AA:398:G:C6	2.87	0.42
48:AA:594:A:C8	48:AA:664:U:C4	3.08	0.42
48:AA:780:U:O2'	48:AA:781:G:H5'	2.19	0.42
48:AA:849:U:H4'	65:RR:55:GLN:HG2	2.01	0.42
48:AA:945:A:H4'	48:AA:946:A:O5'	2.19	0.42
48:AA:1380:G:C2	48:AA:1381:A:H1'	2.54	0.42
48:AA:1827:A:H2'	48:AA:1828:A:H8	1.80	0.42
52:EE:38:SER:O	52:EE:48:LYS:NZ	2.53	0.42
58:KK:97:ILE:HG23	58:KK:151:ILE:HD11	2.01	0.42
65:RR:252:ASP:OD1	65:RR:252:ASP:C	2.62	0.42
71:WW:141:GLN:O	71:WW:145:LEU:HD13	2.19	0.42
79:r:725:A:N6	79:r:726:A:N6	2.67	0.42
79:r:967:U:H2'	79:r:968:A:H8	1.84	0.42
79:r:1000:U:O2	79:r:1000:U:O4'	2.35	0.42
3:3:40:ASP:C	3:3:42:GLN:H	2.26	0.42
3:3:148:LEU:HD13	4:4:82:ASN:HD21	1.84	0.42
3:3:155:LEU:HD12	3:3:164:PHE:O	2.19	0.42
4:4:14:SER:OG	4:4:15:THR:N	2.53	0.42
4:4:316:GLN:OE1	35:b:126:LYS:HG2	2.20	0.42
7:7:280:ASN:ND2	79:r:1073:U:OP1	2.53	0.42
14:F:30:LYS:O	14:F:34:GLN:HG2	2.19	0.42
17:I:231:ILE:O	17:I:235:LEU:HG	2.19	0.42
21:M:102:GLN:NE2	79:r:1376:U:OP2	2.52	0.42
29:U:221:GLU:O	29:U:225:VAL:HG12	2.19	0.42
34:a:341:ILE:O	34:a:345:PHE:N	2.51	0.42
34:a:423:PHE:CD1	34:a:423:PHE:C	2.97	0.42
39:11:299:ILE:O	39:11:299:ILE:HG13	2.19	0.42
44:66:144:ASP:OD1	44:66:145:ARG:N	2.52	0.42
47:99:217:GLN:O	47:99:217:GLN:HG2	2.19	0.42
48:AA:156:A:H2'	48:AA:157:A:C8	2.54	0.42
48:AA:307:G:O2'	48:AA:308:U:P	2.77	0.42
48:AA:1239:A:H2'	48:AA:1240:U:O4'	2.19	0.42
48:AA:1282:A:C6	57:JJ:76:ARG:NH1	2.88	0.42
48:AA:1410:U:HO2'	48:AA:1411:A:P	2.43	0.42
48:AA:1907:U:H2'	48:AA:1908:A:H8	1.83	0.42
51:DD:49:PHE:HB3	51:DD:50:PRO:HD3	2.00	0.42
59:LL:90:LEU:HD23	59:LL:90:LEU:O	2.19	0.42
61:NN:57:ALA:HB2	61:NN:97:LEU:HD21	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
62:OO:190:MET:O	62:OO:190:MET:HE3	2.19	0.42
77:cc:43:LYS:HZ3	77:cc:43:LYS:HB2	1.84	0.42
78:dd:7:ILE:HD11	78:dd:46:SER:HB3	2.01	0.42
79:r:227:U:C2	79:r:228:A:N7	2.87	0.42
79:r:337:A:C2	79:r:338:G:C4	3.08	0.42
79:r:828:A:H2'	79:r:829:U:C6	2.53	0.42
79:r:1624:U:H5''	79:r:1625:U:H2'	2.01	0.42
4:4:315:ILE:O	4:4:316:GLN:HG2	2.19	0.42
9:A:247:ILE:HD13	9:A:252:ALA:HB3	2.01	0.42
13:E:198:HIS:O	13:E:202:VAL:HG23	2.20	0.42
15:G:123:ARG:HH12	79:r:1005:C:H5''	1.84	0.42
17:I:203:ILE:HD11	17:I:235:LEU:HD13	2.00	0.42
23:O:83:LEU:HD21	23:O:155:MET:HB3	2.00	0.42
26:R:90:LEU:HD21	26:R:131:ARG:NH1	2.35	0.42
34:a:290:LEU:O	34:a:290:LEU:HD13	2.19	0.42
35:b:100:HIS:HA	35:b:103:LYS:HB3	2.02	0.42
36:c:489:TYR:HA	36:c:492:ILE:HD11	2.00	0.42
39:11:232:ASP:OD1	65:RR:127:ARG:NH1	2.53	0.42
48:AA:268:C:H4'	48:AA:269:A:O5'	2.18	0.42
48:AA:723:U:H2'	48:AA:724:A:H8	1.85	0.42
48:AA:1365:U:O2'	48:AA:1535:A:N3	2.40	0.42
48:AA:1761:A:C2	48:AA:2259:U:H1'	2.55	0.42
52:EE:196:GLU:OE1	52:EE:197:LEU:N	2.53	0.42
53:FF:106:LEU:HD12	53:FF:107:ILE:HG23	2.01	0.42
56:II:11:ILE:O	56:II:111:ILE:HG13	2.19	0.42
66:SS:65:ILE:CG2	66:SS:66:PHE:N	2.81	0.42
69:V:22:LEU:HD12	69:V:114:GLU:OE1	2.20	0.42
70:VV:65:LYS:NZ	70:VV:68:ILE:HG13	2.35	0.42
72:XX:40:ASP:CG	72:XX:43:VAL:HG12	2.44	0.42
78:dd:21:ILE:HD12	78:dd:21:ILE:HA	1.91	0.42
79:r:69:U:OP1	79:r:389:A:O2'	2.37	0.42
79:r:814:A:H2'	79:r:815:C:C6	2.54	0.42
79:r:1084:U:N3	79:r:1085:U:C5	2.87	0.42
79:r:1540:U:C2	79:r:1541:U:C5	3.08	0.42
3:3:177:PHE:CG	3:3:178:PRO:HD3	2.54	0.42
10:B:73:LEU:HD22	11:C:7:ASN:HB3	2.02	0.42
11:C:340:GLY:O	79:r:1102:A:O2'	2.32	0.42
13:E:26:PRO:HG2	13:E:29:LEU:HD23	2.02	0.42
34:a:57:PHE:CE2	34:a:380:LEU:HB2	2.54	0.42
39:11:165:ILE:O	39:11:169:LEU:O	2.38	0.42
46:88:141:LEU:HD11	46:88:150:PHE:CE1	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:AA:205:A:H2'	48:AA:206:U:O4'	2.19	0.42
48:AA:932:C:H5'	55:HH:37:ILE:HD11	2.01	0.42
48:AA:1353:A:C5	48:AA:1358:C:H5	2.37	0.42
48:AA:1722:U:OP2	48:AA:1723:A:O2'	2.25	0.42
48:AA:1961:G:H2'	48:AA:1961:G:N3	2.33	0.42
48:AA:2849:G:C2	48:AA:2850:G:C8	3.08	0.42
48:AA:3291:U:C2	48:AA:3292:A:N7	2.88	0.42
50:CC:31:ILE:HD12	50:CC:32:ALA:N	2.35	0.42
52:EE:40:LEU:HD12	52:EE:40:LEU:O	2.20	0.42
62:OO:223:LEU:HD22	62:OO:269:THR:HG21	2.02	0.42
64:QQ:45:ASP:OD1	64:QQ:45:ASP:N	2.48	0.42
72:XX:25:ILE:CD1	72:XX:34:VAL:HG21	2.49	0.42
79:r:771:U:C2	79:r:772:A:C8	3.07	0.42
3:3:38:TRP:CE3	3:3:93:VAL:HG21	2.55	0.42
3:3:235:TYR:CE2	3:3:243:TYR:HA	2.55	0.42
9:A:135:SER:N	9:A:136:PRO:HD2	2.35	0.42
12:D:106:ASP:OD1	12:D:140:PRO:HB3	2.19	0.42
14:F:33:ILE:HD11	69:V:211:VAL:O	2.20	0.42
21:M:62:LEU:HD23	21:M:62:LEU:O	2.19	0.42
23:O:88:VAL:HG13	23:O:144:MET:HB2	2.00	0.42
26:R:97:ARG:O	26:R:100:SER:OG	2.30	0.42
27:S:28:THR:OG1	27:S:29:LYS:N	2.53	0.42
29:U:41:LYS:HB3	29:U:43:THR:HG23	2.01	0.42
35:b:227:LEU:HD11	35:b:234:LEU:HB3	2.02	0.42
35:b:241:ASP:C	35:b:241:ASP:OD1	2.62	0.42
45:77:110:GLN:NE2	51:DD:31:PRO:HA	2.35	0.42
48:AA:674:A:H2'	48:AA:675:G:H4'	2.02	0.42
48:AA:745:U:O2'	48:AA:746:A:H5'	2.19	0.42
48:AA:920:A:H3'	48:AA:921:G:H8	1.85	0.42
48:AA:1766:A:HO2'	48:AA:1767:A:C5'	2.32	0.42
50:CC:44:HIS:CG	55:HH:98:ASP:O	2.72	0.42
52:EE:167:THR:HG21	52:EE:195:VAL:HG11	2.02	0.42
61:NN:67:LEU:HD23	61:NN:67:LEU:C	2.44	0.42
62:OO:97:HIS:CG	64:QQ:119:MET:HE1	2.55	0.42
75:aa:174:TRP:CG	75:aa:178:ARG:HG2	2.55	0.42
79:r:382:U:H2'	79:r:383:C:H6	1.84	0.42
79:r:857:A:C4	79:r:859:A:N6	2.88	0.42
79:r:1332:A:HO2'	79:r:1333:U:P	2.43	0.42
2:2:47:LYS:HD3	2:2:100:ILE:HD11	2.01	0.42
3:3:75:LEU:CD2	9:A:91:GLN:HG2	2.49	0.42
4:4:251:PHE:O	4:4:255:THR:OG1	2.22	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:7:244:PRO:O	11:C:188:ASN:ND2	2.53	0.42
11:C:107:MET:SD	11:C:108:ASN:N	2.92	0.42
11:C:358:LEU:C	11:C:358:LEU:HD12	2.45	0.42
13:E:72:LYS:HD3	13:E:89:ILE:HD11	2.02	0.42
16:H:12:HIS:ND1	79:r:891:C:O2'	2.41	0.42
16:H:125:GLU:OE1	16:H:155:LYS:HB2	2.19	0.42
18:J:71:ILE:HD11	18:J:120:VAL:HG12	2.01	0.42
34:a:340:ASP:O	34:a:341:ILE:HB	2.20	0.42
35:b:320:LEU:HD13	35:b:344:TRP:HZ2	1.85	0.42
35:b:478:LYS:HB3	35:b:479:PRO:HD3	2.01	0.42
39:11:106:ILE:HA	39:11:138:VAL:HG22	2.02	0.42
47:99:75:LEU:HD13	47:99:80:ILE:CG2	2.50	0.42
48:AA:415:A:OP1	71:WW:84:ARG:NH1	2.53	0.42
48:AA:1271:A:O2'	48:AA:1273:U:O4'	2.35	0.42
48:AA:1349:A:H5''	63:PP:94:LEU:HD13	2.00	0.42
48:AA:1366:A:N7	48:AA:1367:A:N7	2.68	0.42
48:AA:1746:C:H5''	48:AA:1800:A:N6	2.35	0.42
48:AA:1774:U:OP2	76:bb:107:LYS:HE2	2.19	0.42
48:AA:2950:A:O4'	50:CC:79:ARG:NH2	2.53	0.42
48:AA:2952:G:H21	48:AA:3062:A:N6	2.18	0.42
48:AA:3151:A:HO2'	48:AA:3152:A:P	2.43	0.42
49:BB:151:ARG:O	49:BB:153:ARG:HD2	2.20	0.42
58:KK:104:LEU:HD11	58:KK:155:ASP:O	2.19	0.42
63:PP:106:LYS:HD2	63:PP:159:LYS:HB3	2.00	0.42
68:UU:7:THR:HG23	68:UU:34:ILE:CD1	2.49	0.42
69:V:193:LYS:HE3	69:V:193:LYS:HA	2.01	0.42
72:XX:16:THR:HG21	72:XX:48:LEU:HB3	2.02	0.42
76:bb:114:LYS:O	76:bb:117:GLU:OE2	2.37	0.42
79:r:69:U:H3	79:r:105:G:H1	1.67	0.42
79:r:822:U:O2'	79:r:944:C:O2	2.38	0.42
4:4:274:ASP:OD2	4:4:279:THR:OG1	2.32	0.42
7:7:354:LYS:HB3	7:7:358:GLU:HG3	2.02	0.42
9:A:279:GLU:O	9:A:295:ALA:HA	2.20	0.42
11:C:331:PHE:CD2	11:C:391:ILE:HD12	2.55	0.42
15:G:165:MET:HE1	15:G:167:LYS:HE3	2.02	0.42
17:I:48:ASN:ND2	17:I:51:HIS:HB3	2.35	0.42
19:K:183:LEU:CD1	19:K:192:VAL:HG12	2.50	0.42
34:a:106:ASP:N	34:a:106:ASP:OD1	2.51	0.42
43:55:141:VAL:HG11	63:PP:252:LEU:HD12	2.01	0.42
47:99:160:CYS:O	47:99:163:VAL:HG22	2.20	0.42
48:AA:32:U:C2	48:AA:33:A:C8	3.08	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:AA:2749:A:N3	58:KK:92:GLU:OE1	2.53	0.42
48:AA:3051:U:H2'	48:AA:3052:A:H8	1.84	0.42
65:RR:286:LEU:HD11	65:RR:301:ILE:HG23	2.02	0.42
71:WW:104:CYS:SG	71:WW:107:CYS:HB2	2.59	0.42
79:r:338:G:C4	79:r:339:U:C5	3.07	0.42
79:r:419:U:H2'	79:r:420:A:C1'	2.50	0.42
79:r:793:G:C4	79:r:795:A:OP2	2.72	0.42
79:r:1057:U:H4'	79:r:1058:G:O5'	2.19	0.42
79:r:1082:U:O2'	79:r:1083:A:OP1	2.37	0.42
79:r:1173:U:H5	79:r:1178:A:O2'	2.03	0.42
2:2:98:ARG:NH2	79:r:387:A:O2'	2.52	0.42
3:3:40:ASP:OD1	3:3:41:TYR:N	2.53	0.42
8:8:345:ASP:OD2	8:8:353:ARG:NH1	2.53	0.42
10:B:293:GLN:HB3	17:I:40:LYS:HD2	2.01	0.42
10:B:326:THR:HG23	10:B:350:SER:OG	2.20	0.42
27:S:69:VAL:HG11	70:VV:97:SER:CB	2.49	0.42
30:W:126:VAL:HG13	30:W:131:THR:HG21	2.02	0.42
34:a:321:ILE:CG2	34:a:363:LEU:HD21	2.50	0.42
36:c:407:LYS:HB2	36:c:451:LEU:HD21	2.01	0.42
40:22:133:THR:HG22	40:22:135:PHE:H	1.85	0.42
44:66:48:TYR:CD1	44:66:48:TYR:C	2.98	0.42
48:AA:568:A:H2'	48:AA:569:A:C8	2.55	0.42
48:AA:1079:A:H2'	48:AA:1080:U:C6	2.55	0.42
48:AA:1356:U:H5'	48:AA:1357:A:C5'	2.44	0.42
48:AA:1406:A:H5'	48:AA:1407:A:OP1	2.20	0.42
48:AA:1753:U:H2'	48:AA:1754:A:H8	1.85	0.42
48:AA:3108:U:C2	48:AA:3109:U:C6	3.07	0.42
53:FF:128:GLY:O	53:FF:130:ARG:NH1	2.53	0.42
65:RR:54:GLY:O	65:RR:113:ARG:NH1	2.45	0.42
69:V:220:ILE:HG12	69:V:224:PHE:HD2	1.85	0.42
72:XX:37:VAL:O	72:XX:38:ARG:NH1	2.41	0.42
76:bb:117:GLU:HA	76:bb:120:LYS:HE3	2.01	0.42
77:cc:53:ARG:O	77:cc:57:LYS:HG2	2.19	0.42
79:r:340:C:C2	79:r:341:A:C8	3.08	0.42
79:r:983:A:H2'	79:r:984:A:O4'	2.20	0.42
79:r:1449:C:H2'	79:r:1450:U:C6	2.55	0.42
2:2:67:PHE:O	2:2:95:ARG:NH2	2.53	0.41
3:3:23:ASN:HA	3:3:31:SER:HB2	2.01	0.41
8:8:232:ASP:OD1	8:8:233:ALA:N	2.53	0.41
10:B:97:PHE:HE2	32:Y:315:LEU:HG	1.85	0.41
19:K:127:SER:OG	79:r:754:A:OP1	2.24	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:N:78:CYS:SG	22:N:94:CYS:N	2.79	0.41
29:U:90:ARG:HH22	79:r:916:A:H4'	1.85	0.41
30:W:415:LYS:HD2	30:W:415:LYS:N	2.34	0.41
30:W:429:LYS:HD3	30:W:429:LYS:HA	1.86	0.41
34:a:60:PRO:HG2	34:a:119:VAL:HG12	2.02	0.41
34:a:253:TYR:HE2	34:a:295:LYS:HB3	1.85	0.41
36:c:525:LEU:HD12	36:c:525:LEU:C	2.45	0.41
46:88:137:THR:HG23	46:88:141:LEU:HD12	2.02	0.41
48:AA:173:U:H2'	48:AA:174:G:C8	2.54	0.41
48:AA:407:U:H2'	48:AA:408:G:O4'	2.20	0.41
48:AA:429:A:H2'	48:AA:429:A:N3	2.35	0.41
48:AA:526:A:H5'	57:JJ:178:ALA:O	2.20	0.41
48:AA:882:G:H5''	58:KK:122:LYS:HE2	2.02	0.41
48:AA:1596:U:H2'	48:AA:1597:G:C8	2.50	0.41
48:AA:1801:A:O2'	48:AA:1802:A:OP1	2.27	0.41
57:JJ:157:MET:HE1	57:JJ:174:VAL:CG1	2.50	0.41
63:PP:109:VAL:HG21	63:PP:160:MET:CE	2.49	0.41
64:QQ:245:LYS:HG3	66:SS:52:ARG:HG2	2.02	0.41
64:QQ:293:LYS:HA	64:QQ:296:ARG:HE	1.85	0.41
66:SS:207:MET:HE1	66:SS:231:VAL:HG22	2.02	0.41
68:UU:57:GLU:HA	77:cc:44:GLN:HG2	2.00	0.41
69:V:74:LEU:O	69:V:78:THR:HG22	2.20	0.41
76:bb:127:LYS:HB2	76:bb:127:LYS:NZ	2.36	0.41
79:r:790:U:H3'	79:r:791:G:C8	2.52	0.41
79:r:1501:A:H2'	79:r:1502:U:H6	1.85	0.41
6:6:208:MET:HE3	12:D:425:TRP:CZ2	2.55	0.41
14:F:10:ARG:HD2	14:F:12:THR:HG23	2.03	0.41
29:U:191:LEU:O	29:U:191:LEU:HD23	2.20	0.41
34:a:63:ILE:HD12	36:c:453:LYS:HE3	2.01	0.41
34:a:67:THR:CG2	36:c:446:ILE:HD11	2.50	0.41
34:a:293:PHE:HA	34:a:296:THR:HG1	1.85	0.41
36:c:300:LEU:H	36:c:303:LEU:HD12	1.85	0.41
43:55:136:LYS:HD3	62:OO:145:GLU:CD	2.45	0.41
43:55:327:SER:HB2	55:HH:141:THR:HG22	2.03	0.41
44:66:179:PHE:CE2	44:66:274:THR:HG21	2.55	0.41
46:88:157:PHE:CG	51:DD:176:ILE:HD11	2.55	0.41
48:AA:1621:A:N3	48:AA:1621:A:C2'	2.83	0.41
48:AA:3062:A:H4'	56:II:1:MET:HE1	2.02	0.41
68:UU:10:ARG:HD2	68:UU:52:GLU:OE2	2.20	0.41
68:UU:79:ILE:N	68:UU:79:ILE:HD12	2.35	0.41
69:V:159:MET:HA	69:V:162:GLN:OE1	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
79:r:396:C:C2	79:r:397:A:C8	3.08	0.41
79:r:847:A:H62	79:r:865:G:N2	2.14	0.41
79:r:1484:A:O2'	79:r:1485:A:H5'	2.20	0.41
3:3:37:VAL:HG23	3:3:38:TRP:H	1.85	0.41
3:3:72:GLY:HA3	3:3:213:LYS:CE	2.50	0.41
3:3:231:TYR:HB2	3:3:235:TYR:HB2	2.01	0.41
9:A:73:ARG:O	33:Z:88:ARG:NH1	2.54	0.41
11:C:220:PHE:CE1	11:C:224:ILE:HD11	2.55	0.41
15:G:113:THR:HG21	15:G:154:GLU:OE2	2.21	0.41
17:I:33:LEU:N	17:I:34:PRO:CD	2.84	0.41
18:J:180:THR:OG1	18:J:181:SER:N	2.53	0.41
19:K:155:ILE:O	19:K:159:ASN:N	2.52	0.41
22:N:96:TYR:CD2	22:N:96:TYR:O	2.74	0.41
22:N:99:ARG:O	22:N:103:LEU:HG	2.20	0.41
38:00:85:ASN:OD1	38:00:86:LYS:N	2.53	0.41
42:44:118:VAL:HG13	61:NN:72:ASP:OD2	2.21	0.41
44:66:158:LEU:HD21	44:66:256:TRP:CE2	2.55	0.41
48:AA:147:C:H1'	48:AA:157:A:N3	2.35	0.41
48:AA:425:A:O2'	48:AA:426:A:OP2	2.32	0.41
48:AA:1320:C:H2'	48:AA:1321:C:H6	1.85	0.41
48:AA:1621:A:OP1	56:II:5:LYS:NZ	2.53	0.41
48:AA:1899:C:OP1	48:AA:3059:C:O2'	2.36	0.41
48:AA:2095:U:P	66:SS:103:LYS:HZ2	2.43	0.41
50:CC:71:TYR:CG	50:CC:237:LEU:HD13	2.56	0.41
64:QQ:137:ILE:O	64:QQ:138:ASP:OD1	2.38	0.41
64:QQ:165:TYR:CD2	64:QQ:169:MET:HE3	2.55	0.41
67:TT:85:PRO:HB2	67:TT:90:ILE:CD1	2.50	0.41
68:UU:2:VAL:HG11	77:cc:51:VAL:HG11	2.02	0.41
68:UU:24:LYS:HE3	68:UU:24:LYS:HA	2.02	0.41
70:VV:100:ARG:HA	70:VV:103:LYS:HE3	2.02	0.41
76:bb:6:TYR:N	76:bb:6:TYR:CD1	2.87	0.41
77:cc:60:THR:HG22	77:cc:63:GLU:HG2	2.01	0.41
79:r:61:C:N4	79:r:356:C:H2'	2.36	0.41
79:r:498:A:O2'	79:r:625:A:N7	2.50	0.41
79:r:758:G:C6	79:r:759:A:C6	3.09	0.41
2:2:55:LEU:O	2:2:58:THR:HG22	2.20	0.41
3:3:112:LYS:NZ	3:3:113:THR:O	2.53	0.41
5:5:274:TYR:HB3	5:5:300:PHE:CZ	2.44	0.41
6:6:320:ARG:NH2	69:V:11:LYS:HD2	2.35	0.41
14:F:1:MET:HG3	23:O:148:GLU:OE2	2.21	0.41
17:I:99:LYS:HE3	79:r:1144:C:O3'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:J:85:ARG:NH2	79:r:1437:A:O2'	2.54	0.41
21:M:78:ASN:OD1	79:r:1377:A:O2'	2.38	0.41
23:O:139:LEU:O	23:O:143:SER:N	2.54	0.41
34:a:354:ILE:H	34:a:354:ILE:HD12	1.85	0.41
35:b:208:LYS:O	35:b:211:ILE:HG22	2.20	0.41
36:c:496:PHE:CZ	36:c:530:ALA:HB1	2.55	0.41
43:55:380:GLU:OE2	75:aa:79:SER:OG	2.29	0.41
46:88:144:VAL:HG22	46:88:145:ASP:N	2.36	0.41
46:88:152:ASP:N	46:88:152:ASP:OD1	2.53	0.41
47:99:157:ASN:OD1	47:99:158:THR:N	2.53	0.41
48:AA:11:G:H2'	48:AA:12:A:H8	1.85	0.41
48:AA:724:A:H2'	48:AA:725:U:H6	1.85	0.41
48:AA:1409:C:H2'	48:AA:1410:U:H6	1.86	0.41
48:AA:1744:C:H2'	48:AA:1745:U:C6	2.55	0.41
48:AA:2842:U:H5'	50:CC:208:ASN:HB2	2.03	0.41
59:LL:99:LEU:HD23	59:LL:99:LEU:HA	1.95	0.41
63:PP:175:ARG:HG2	63:PP:177:ASP:H	1.84	0.41
66:SS:118:MET:HE2	66:SS:118:MET:HB3	1.98	0.41
75:aa:149:VAL:HG12	75:aa:153:SER:OG	2.20	0.41
79:r:307:G:N2	79:r:670:C:O3'	2.53	0.41
79:r:801:U:H2'	79:r:802:A:H8	1.84	0.41
79:r:827:G:H2'	79:r:828:A:C8	2.55	0.41
79:r:1384:G:N1	79:r:1387:A:OP2	2.53	0.41
8:8:48:ARG:HH21	8:8:81:THR:HG23	1.85	0.41
8:8:329:PRO:HA	8:8:332:LEU:HD12	2.02	0.41
10:B:213:GLU:CD	10:B:213:GLU:C	2.88	0.41
11:C:128:ASN:OD1	11:C:131:ASN:N	2.54	0.41
17:I:267:LYS:O	17:I:268:LYS:C	2.62	0.41
17:I:270:ARG:NH2	79:r:1414:A:OP1	2.54	0.41
25:Q:9:LEU:HD12	25:Q:9:LEU:C	2.46	0.41
30:W:90:LEU:HD12	30:W:126:VAL:HG12	2.02	0.41
30:W:208:LEU:HD23	30:W:320:MET:HE1	2.03	0.41
37:t:73:A:C5	37:t:74:C:C5	3.09	0.41
44:66:161:GLN:OE1	44:66:161:GLN:HA	2.20	0.41
48:AA:44:U:H2'	48:AA:45:U:O5'	2.21	0.41
48:AA:445:U:O4	48:AA:446:A:N6	2.53	0.41
48:AA:1323:U:C2	48:AA:1324:U:C5	3.08	0.41
48:AA:1752:U:H2'	48:AA:1753:U:C6	2.55	0.41
48:AA:2947:C:O2'	48:AA:2948:C:H5'	2.21	0.41
49:BB:184:LYS:HD2	49:BB:191:LEU:HD21	2.02	0.41
65:RR:261:ASN:O	65:RR:263:LYS:N	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
79:r:822:U:OP1	79:r:887:A:O2'	2.38	0.41
79:r:943:U:H2'	79:r:944:C:C6	2.55	0.41
79:r:1207:U:H2'	79:r:1208:A:H8	1.85	0.41
3:3:44:TYR:HE1	4:4:116:LEU:HD21	1.85	0.41
6:6:310:THR:HB	24:P:66:LYS:HD2	2.01	0.41
8:8:180:ASP:C	8:8:181:VAL:HG22	2.45	0.41
9:A:6:LEU:C	10:B:189:MET:HE1	2.45	0.41
14:F:68:LEU:HD21	14:F:109:SER:HB2	2.01	0.41
28:T:168:ILE:CG2	33:Z:89:ILE:HD11	2.51	0.41
37:t:6:U:HO2'	37:t:7:A:P	2.39	0.41
37:t:8:U:O4'	37:t:48:U:O2'	2.39	0.41
37:t:10:A:N1	37:t:26:U:H1'	2.35	0.41
39:11:310:ILE:HD11	39:11:325:PHE:CZ	2.55	0.41
43:55:264:ILE:O	43:55:267:ILE:HG22	2.21	0.41
47:99:70:ARG:HG3	47:99:75:LEU:HD12	2.02	0.41
48:AA:281:A:N1	48:AA:295:A:H5''	2.35	0.41
48:AA:464:C:OP2	61:NN:136:ARG:O	2.37	0.41
48:AA:520:A:N3	48:AA:2682:G:O2'	2.47	0.41
48:AA:711:A:H4'	48:AA:727:G:N2	2.35	0.41
48:AA:790:A:C5	48:AA:791:U:C5	3.08	0.41
48:AA:820:U:H2'	48:AA:821:U:C6	2.56	0.41
48:AA:882:G:O6	58:KK:53:LYS:NZ	2.45	0.41
48:AA:1380:G:C2	66:SS:116:ILE:HG22	2.56	0.41
48:AA:2288:U:H5	65:RR:42:SER:OG	2.04	0.41
49:BB:106:TYR:HB2	49:BB:323:ARG:HH22	1.85	0.41
49:BB:246:ILE:O	49:BB:278:LYS:NZ	2.50	0.41
49:BB:340:LYS:HD3	49:BB:340:LYS:HA	1.97	0.41
52:EE:123:LEU:HD13	52:EE:231:PHE:HZ	1.86	0.41
53:FF:119:LEU:CD2	53:FF:169:ILE:HD11	2.50	0.41
59:LL:169:ASN:N	59:LL:169:ASN:HD22	2.17	0.41
65:RR:284:GLU:OE1	65:RR:284:GLU:HA	2.21	0.41
66:SS:42:ASP:OD1	66:SS:43:ALA:N	2.54	0.41
69:V:61:ARG:HB3	69:V:62:LEU:HD22	2.02	0.41
76:bb:18:PHE:CZ	76:bb:75:VAL:HG11	2.51	0.41
79:r:1545:U:C2	79:r:1546:U:C5	3.09	0.41
5:5:150:PHE:HA	5:5:156:TYR:HB2	2.03	0.41
6:6:307:TYR:CE1	24:P:63:LYS:HD2	2.55	0.41
8:8:67:GLU:HG2	8:8:71:LYS:HE3	2.03	0.41
8:8:128:ASN:OD1	8:8:181:VAL:HB	2.21	0.41
10:B:293:GLN:HB3	17:I:40:LYS:CD	2.50	0.41
12:D:180:VAL:HG13	12:D:184:LYS:NZ	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:D:184:LYS:CE	79:r:420:A:H2'	2.50	0.41
13:E:203:ARG:NH2	79:r:1122:C:OP1	2.45	0.41
15:G:207:ASP:OD1	15:G:209:ALA:N	2.49	0.41
19:K:112:MET:SD	28:T:93:VAL:HG12	2.61	0.41
22:N:30:GLN:O	22:N:34:ASN:OD1	2.39	0.41
25:Q:219:ILE:HA	25:Q:222:ASN:OD1	2.21	0.41
26:R:83:MET:HG3	26:R:102:TYR:CZ	2.56	0.41
28:T:95:ASN:HA	28:T:98:MET:HE3	2.02	0.41
34:a:418:ASN:O	34:a:421:THR:OG1	2.32	0.41
35:b:264:ASP:OD1	35:b:266:SER:N	2.47	0.41
43:55:130:LYS:HZ3	43:55:246:THR:HG22	1.83	0.41
48:AA:309:C:H1'	48:AA:310:U:C6	2.56	0.41
48:AA:480:C:H2'	48:AA:481:A:C8	2.56	0.41
48:AA:514:A:O2'	48:AA:565:A:H4'	2.20	0.41
48:AA:673:A:C2	49:BB:338:MET:SD	3.13	0.41
48:AA:1164:U:H2'	48:AA:1165:A:H8	1.86	0.41
48:AA:1181:U:OP2	68:UU:69:ARG:NH2	2.46	0.41
55:HH:39:LEU:HD11	55:HH:126:LEU:HB2	2.03	0.41
61:NN:46:THR:O	61:NN:46:THR:HG22	2.21	0.41
64:QQ:90:THR:OG1	64:QQ:92:SER:OG	2.31	0.41
66:SS:157:ARG:HG2	66:SS:157:ARG:H	1.69	0.41
66:SS:243:LEU:HD23	66:SS:243:LEU:O	2.21	0.41
67:TT:189:LEU:HA	67:TT:239:ARG:HE	1.85	0.41
69:V:126:GLN:O	69:V:129:THR:OG1	2.32	0.41
75:aa:66:VAL:O	75:aa:66:VAL:CG1	2.68	0.41
79:r:1061:U:H2'	79:r:1062:A:O4'	2.21	0.41
4:4:24:GLU:OE2	4:4:25:GLY:N	2.53	0.41
4:4:67:LEU:HD23	4:4:67:LEU:C	2.45	0.41
4:4:250:LYS:O	4:4:254:GLU:HG2	2.20	0.41
5:5:77:LYS:HG3	5:5:78:ASP:N	2.36	0.41
6:6:312:ALA:HB1	6:6:317:VAL:HB	2.03	0.41
7:7:211:LEU:HD11	7:7:226:VAL:CG1	2.51	0.41
7:7:305:VAL:HG12	7:7:306:LYS:N	2.35	0.41
8:8:327:LYS:HD3	8:8:327:LYS:N	2.36	0.41
9:A:297:LEU:HD12	9:A:298:LEU:N	2.35	0.41
11:C:303:ASN:OD1	18:J:20:TYR:HD2	2.04	0.41
11:C:313:ASN:OD1	11:C:313:ASN:N	2.53	0.41
13:E:231:LEU:HD23	13:E:260:GLY:HA3	2.02	0.41
13:E:277:GLU:C	13:E:277:GLU:CD	2.89	0.41
16:H:106:MET:CE	16:H:129:VAL:HG11	2.47	0.41
17:I:59:GLU:N	17:I:109:MET:HE1	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:J:43:ALA:HB2	18:J:121:LEU:HD11	2.03	0.41
19:K:135:LYS:HB3	79:r:760:A:OP1	2.20	0.41
34:a:242:LEU:CD1	34:a:289:LEU:HD22	2.46	0.41
34:a:427:SER:OG	34:a:428:PRO:HD3	2.20	0.41
41:33:18:THR:HG21	48:AA:1568:U:H3	1.86	0.41
43:55:218:LYS:C	43:55:218:LYS:HD3	2.46	0.41
43:55:226:LEU:HD23	43:55:226:LEU:O	2.21	0.41
44:66:138:ARG:O	70:VV:69:ARG:NH2	2.53	0.41
46:88:242:ILE:HG22	46:88:243:MET:HE2	2.03	0.41
48:AA:172:A:H2'	48:AA:173:U:C6	2.55	0.41
48:AA:633:G:H4'	48:AA:1627:C:O2'	2.21	0.41
48:AA:852:U:H2'	48:AA:853:U:C6	2.55	0.41
48:AA:1128:U:H2'	48:AA:1129:U:H6	1.86	0.41
48:AA:1753:U:H2'	48:AA:1754:A:C8	2.56	0.41
48:AA:2204:A:C6	48:AA:2205:G:C5	3.09	0.41
50:CC:66:LYS:HG3	60:MM:40:ILE:HG21	2.03	0.41
50:CC:67:GLY:HA3	60:MM:41:MET:HE3	2.03	0.41
56:II:80:ASN:OD1	56:II:80:ASN:C	2.64	0.41
64:QQ:265:LYS:HB2	64:QQ:265:LYS:HE2	1.91	0.41
66:SS:62:GLU:HA	66:SS:149:PRO:HG3	2.02	0.41
67:TT:147:THR:O	67:TT:151:GLN:HG3	2.21	0.41
68:UU:47:LEU:HD12	77:cc:45:LEU:HD21	2.03	0.41
75:aa:185:ARG:O	75:aa:189:LYS:HG2	2.21	0.41
79:r:1195:A:H2'	79:r:1196:U:C5	2.54	0.41
79:r:1585:A:H2'	79:r:1586:G:C8	2.56	0.41
79:r:1630:A:O2'	79:r:1631:U:O4'	2.35	0.41
3:3:148:LEU:HD13	4:4:82:ASN:ND2	2.36	0.41
3:3:184:ASP:OD1	3:3:184:ASP:C	2.63	0.41
3:3:228:ASP:OD1	3:3:228:ASP:N	2.51	0.41
4:4:174:ARG:HB3	4:4:195:LYS:H	1.86	0.41
6:6:87:TYR:OH	6:6:145:THR:HG21	2.21	0.41
6:6:103:THR:HG22	12:D:206:LYS:HZ1	1.85	0.41
6:6:253:PHE:CD2	13:E:298:VAL:HG21	2.56	0.41
11:C:250:LYS:HA	11:C:250:LYS:HD2	1.87	0.41
13:E:215:THR:CG2	13:E:216:ILE:N	2.83	0.41
13:E:258:LEU:HD12	13:E:258:LEU:HA	1.94	0.41
14:F:6:ILE:HD13	14:F:6:ILE:N	2.35	0.41
14:F:9:VAL:HG12	14:F:65:TYR:O	2.21	0.41
14:F:44:PRO:HD3	69:V:223:VAL:HG13	2.03	0.41
17:I:171:ARG:O	32:Y:300:ARG:HD2	2.21	0.41
19:K:166:GLU:OE1	19:K:166:GLU:C	2.64	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:M:42:TYR:OH	21:M:49:GLN:NE2	2.42	0.41
21:M:67:ILE:CG2	21:M:68:GLU:N	2.82	0.41
25:Q:21:LYS:NZ	79:r:282:C:OP2	2.40	0.41
26:R:92:PHE:CD2	26:R:98:ILE:HG21	2.56	0.41
26:R:124:ARG:HG3	79:r:728:A:OP1	2.21	0.41
30:W:205:LEU:O	30:W:206:LYS:C	2.62	0.41
34:a:196:GLU:O	34:a:237:ILE:HD11	2.20	0.41
36:c:329:ASN:O	36:c:332:THR:OG1	2.33	0.41
36:c:382:ALA:HB1	36:c:398:PHE:CE2	2.56	0.41
36:c:492:ILE:HD12	36:c:493:ASP:H	1.86	0.41
37:t:39:A:C8	37:t:40:C:C5	3.09	0.41
40:22:59:LEU:HD21	44:66:55:LEU:HD22	2.03	0.41
42:44:48:ARG:NH1	42:44:91:ILE:HG22	2.34	0.41
45:77:76:LEU:HD11	45:77:143:THR:HB	2.03	0.41
47:99:228:SER:OG	47:99:230:VAL:HG12	2.21	0.41
48:AA:177:A:H2'	48:AA:178:U:O4'	2.20	0.41
48:AA:227:G:O2'	66:SS:65:ILE:HD11	2.20	0.41
48:AA:1285:G:H2'	48:AA:1286:A:C4	2.56	0.41
48:AA:1354:A:O4'	48:AA:1549:U:H2'	2.21	0.41
48:AA:1358:C:C2	48:AA:1359:G:N7	2.89	0.41
48:AA:1409:C:H2'	48:AA:1410:U:C6	2.56	0.41
48:AA:2301:C:H5'	65:RR:39:MET:SD	2.61	0.41
48:AA:2446:U:HO2'	48:AA:2599:A:H2	1.69	0.41
48:AA:2915:A:H2'	48:AA:2916:U:C6	2.56	0.41
52:EE:142:ILE:HG13	52:EE:264:ILE:CD1	2.50	0.41
57:JJ:76:ARG:HH21	57:JJ:79:ARG:HG2	1.85	0.41
58:KK:116:ASN:OD1	58:KK:116:ASN:N	2.54	0.41
63:PP:194:ARG:NE	64:QQ:37:SER:O	2.54	0.41
64:QQ:49:VAL:HG21	64:QQ:91:ASN:HB2	2.02	0.41
66:SS:148:GLY:O	66:SS:149:PRO:C	2.64	0.41
68:UU:60:GLU:OE1	77:cc:61:TYR:CG	2.72	0.41
69:V:33:ILE:O	69:V:36:VAL:HG22	2.21	0.41
69:V:199:LEU:HD23	69:V:199:LEU:O	2.21	0.41
77:cc:89:LYS:HD2	77:cc:89:LYS:N	2.36	0.41
78:dd:161:PRO:O	78:dd:188:LEU:HD12	2.21	0.41
78:dd:164:TYR:CZ	78:dd:210:LEU:HD11	2.55	0.41
79:r:40:G:O2'	79:r:367:A:H1'	2.20	0.41
79:r:131:A:H2'	79:r:133:U:H6	1.86	0.41
79:r:133:U:H4'	79:r:134:U:OP2	2.21	0.41
79:r:383:C:H2'	79:r:384:G:H8	1.85	0.41
79:r:814:A:O2'	79:r:815:C:H5'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
79:r:966:A:N7	79:r:967:U:H1'	2.35	0.41
79:r:1001:U:C2	79:r:1002:A:N7	2.89	0.41
79:r:1207:U:H2'	79:r:1208:A:C8	2.56	0.41
79:r:1310:U:C2	79:r:1311:A:C8	3.09	0.41
79:r:1344:A:C6	79:r:1360:A:N1	2.89	0.41
3:3:63:PRO:HA	3:3:66:ILE:HG22	2.03	0.41
3:3:127:PHE:HE2	3:3:135:VAL:HG13	1.86	0.41
3:3:177:PHE:CD2	3:3:178:PRO:HD3	2.55	0.41
6:6:229:ASN:ND2	12:D:80:ASP:OD1	2.54	0.41
9:A:268:GLY:O	9:A:269:ASP:OD1	2.39	0.41
11:C:62:MET:SD	11:C:62:MET:C	3.03	0.41
17:I:168:PHE:CD1	17:I:168:PHE:N	2.89	0.41
18:J:95:HIS:O	18:J:97:LYS:N	2.53	0.41
24:P:23:ILE:HD12	24:P:23:ILE:H	1.85	0.41
28:T:141:LYS:NZ	79:r:1617:G:N7	2.69	0.41
30:W:58:LYS:NZ	30:W:66:THR:OG1	2.38	0.41
30:W:205:LEU:O	30:W:208:LEU:N	2.53	0.41
34:a:67:THR:HG23	36:c:449:LEU:HD11	2.03	0.41
37:t:8:U:H1'	37:t:48:U:H1'	2.03	0.41
48:AA:14:U:H2'	48:AA:15:A:C8	2.56	0.41
48:AA:331:A:O2'	48:AA:332:A:OP2	2.37	0.41
48:AA:2305:A:H3'	48:AA:2306:U:H4'	2.03	0.41
48:AA:2314:U:O4	72:XX:36:GLN:NE2	2.54	0.41
48:AA:2326:U:O4	48:AA:2327:A:N6	2.53	0.41
50:CC:44:HIS:CE1	55:HH:99:LYS:HG3	2.55	0.41
54:GG:21:VAL:HG11	54:GG:45:MET:HE3	2.03	0.41
55:HH:10:LEU:HD23	55:HH:10:LEU:HA	1.98	0.41
67:TT:90:ILE:CG2	67:TT:91:ARG:N	2.84	0.41
71:WW:169:LYS:HB3	71:WW:173:LEU:HD12	2.03	0.41
79:r:487:A:H2'	79:r:488:A:C8	2.56	0.41
79:r:789:A:C1'	79:r:790:U:H5	2.34	0.41
79:r:866:U:C2	79:r:867:A:C8	3.09	0.41
79:r:1085:U:C2	79:r:1086:A:C8	3.09	0.41
79:r:1285:A:H2'	79:r:1286:A:C8	2.56	0.41
4:4:48:LEU:HD12	4:4:87:LEU:HD13	2.02	0.40
8:8:142:MET:HE3	8:8:161:ILE:C	2.45	0.40
9:A:116:ASP:OD1	9:A:116:ASP:N	2.53	0.40
9:A:125:PHE:O	9:A:129:LYS:HG2	2.21	0.40
13:E:185:LYS:HD2	79:r:1127:A:OP1	2.21	0.40
19:K:109:ASN:OD1	19:K:110:ASP:OD1	2.39	0.40
19:K:172:PHE:HD1	19:K:176:ARG:HH11	1.69	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:N:73:GLN:NE2	79:r:1044:C:O2	2.53	0.40
27:S:62:ILE:C	27:S:62:ILE:CD1	2.93	0.40
30:W:139:VAL:O	30:W:144:LYS:NZ	2.54	0.40
34:a:50:PRO:HG2	34:a:117:GLU:HG3	2.03	0.40
34:a:422:VAL:O	34:a:426:VAL:HG22	2.21	0.40
37:t:10:A:N6	37:t:25:A:C2	2.89	0.40
42:44:21:PHE:HE2	42:44:23:CYS:HB3	1.85	0.40
48:AA:248:A:H2'	48:AA:249:C:C6	2.56	0.40
48:AA:268:C:C4	76:bb:100:MET:CE	3.04	0.40
48:AA:439:A:H2'	48:AA:440:U:C6	2.57	0.40
48:AA:644:A:OP2	48:AA:644:A:C8	2.73	0.40
48:AA:1387:A:H5'	66:SS:65:ILE:O	2.21	0.40
48:AA:1524:U:O2'	48:AA:1525:A:H5'	2.22	0.40
48:AA:1631:G:H2'	48:AA:1671:A:C2	2.56	0.40
48:AA:1976:U:C5	48:AA:2863:U:O2	2.75	0.40
48:AA:2735:A:C2	48:AA:2748:U:C6	3.09	0.40
51:DD:160:TYR:CD1	51:DD:160:TYR:C	2.99	0.40
55:HH:147:GLN:OE1	55:HH:155:LYS:NZ	2.39	0.40
57:JJ:111:THR:O	57:JJ:111:THR:HG23	2.20	0.40
58:KK:156:LEU:O	58:KK:160:VAL:HG22	2.21	0.40
58:KK:166:ARG:NH1	58:KK:166:ARG:HG2	2.37	0.40
63:PP:237:ASN:O	63:PP:241:ARG:HG3	2.21	0.40
65:RR:267:HIS:CD2	65:RR:268:GLN:O	2.74	0.40
69:V:200:LEU:HD22	69:V:277:ILE:HD13	2.03	0.40
72:XX:37:VAL:CG2	76:bb:133:ILE:HD12	2.51	0.40
75:aa:69:GLU:HB3	75:aa:87:MET:HG2	2.03	0.40
79:r:69:U:H1'	79:r:383:C:H1'	2.02	0.40
79:r:1140:A:N3	79:r:1156:A:O2'	2.50	0.40
79:r:1476:A:C2	79:r:1477:C:C5	3.09	0.40
79:r:1641:A:O2'	79:r:1642:U:H5'	2.21	0.40
3:3:201:LYS:O	3:3:204:ILE:HG13	2.21	0.40
4:4:124:ARG:HA	4:4:124:ARG:NE	2.35	0.40
4:4:241:GLU:OE1	4:4:241:GLU:N	2.50	0.40
5:5:283:THR:HG23	5:5:315:TYR:HE1	1.85	0.40
7:7:204:GLU:HG2	32:Y:164:LEU:HD13	2.03	0.40
7:7:210:LEU:HD12	7:7:210:LEU:HA	1.95	0.40
12:D:395:GLU:HB3	12:D:396:PRO:HD3	2.02	0.40
13:E:154:VAL:HG11	79:r:1127:A:H4'	2.03	0.40
13:E:289:VAL:O	13:E:293:ARG:HB2	2.22	0.40
14:F:68:LEU:HD21	14:F:109:SER:CB	2.51	0.40
21:M:10:PHE:CE1	21:M:23:LYS:HG3	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Q:19:THR:HG21	79:r:258:G:H4'	2.03	0.40
29:U:50:ASN:OD1	29:U:52:SER:OG	2.40	0.40
30:W:350:ARG:NH2	30:W:371:TYR:O	2.40	0.40
36:c:529:GLU:OE2	36:c:568:HIS:NE2	2.54	0.40
36:c:551:ILE:CG2	36:c:590:LEU:HD11	2.51	0.40
36:c:569:LEU:HG	36:c:570:LEU:N	2.36	0.40
40:22:133:THR:HG23	70:VV:57:VAL:CG1	2.50	0.40
46:88:45:ARG:NH2	64:QQ:84:LYS:HD2	2.36	0.40
48:AA:56:U:O2'	48:AA:57:C:H5'	2.22	0.40
48:AA:281:A:C4	48:AA:283:U:N3	2.89	0.40
48:AA:397:A:H2	48:AA:686:U:O2	2.04	0.40
48:AA:504:A:H1'	48:AA:566:U:C1'	2.44	0.40
48:AA:723:U:H2'	48:AA:724:A:C8	2.56	0.40
48:AA:901:A:N3	48:AA:901:A:H2'	2.35	0.40
48:AA:1620:A:H1'	48:AA:1622:C:C5	2.56	0.40
48:AA:1751:C:H2'	48:AA:1752:U:C6	2.56	0.40
48:AA:2635:C:N3	48:AA:2636:A:N7	2.69	0.40
48:AA:3048:U:OP1	48:AA:3050:G:H4'	2.21	0.40
49:BB:217:LEU:HB3	49:BB:224:LYS:HG2	2.03	0.40
50:CC:181:MET:HE3	50:CC:200:ARG:HG2	2.04	0.40
63:PP:166:GLU:HB2	67:TT:66:HIS:CD2	2.56	0.40
64:QQ:166:LYS:HG3	64:QQ:166:LYS:O	2.21	0.40
66:SS:30:ARG:HD2	66:SS:60:TYR:O	2.22	0.40
67:TT:221:VAL:HG11	67:TT:281:ILE:HG12	2.03	0.40
69:V:296:ASP:O	69:V:300:ASN:N	2.41	0.40
79:r:1539:A:H2'	79:r:1540:U:C6	2.56	0.40
3:3:74:PRO:HB2	3:3:75:LEU:HD12	2.02	0.40
4:4:174:ARG:CD	4:4:265:VAL:HG11	2.51	0.40
4:4:211:SER:O	4:4:212:THR:OG1	2.28	0.40
5:5:257:ASP:OD1	5:5:303:GLN:NE2	2.51	0.40
8:8:97:CYS:HB3	8:8:150:GLY:HA3	2.04	0.40
8:8:209:GLU:H	8:8:209:GLU:CD	2.28	0.40
11:C:248:MET:HG3	11:C:324:LEU:HD23	2.04	0.40
11:C:372:PRO:HB2	11:C:375:HIS:ND1	2.36	0.40
22:N:86:PHE:HA	79:r:1040:C:O2'	2.22	0.40
29:U:157:ILE:HG13	29:U:165:MET:HE2	2.03	0.40
34:a:161:SER:O	34:a:212:LYS:NZ	2.52	0.40
34:a:294:ILE:HG21	34:a:323:ARG:HB3	2.03	0.40
34:a:401:PHE:HE2	34:a:422:VAL:HG11	1.85	0.40
34:a:442:PHE:O	34:a:446:PHE:HB2	2.22	0.40
35:b:100:HIS:O	35:b:100:HIS:CG	2.74	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:b:256:LEU:HB2	35:b:259:TYR:HB2	2.04	0.40
36:c:371:SER:HA	36:c:374:TYR:HB3	2.02	0.40
39:11:175:ARG:HH11	39:11:175:ARG:HG3	1.86	0.40
41:33:28:GLU:OE1	41:33:28:GLU:N	2.46	0.40
41:33:98:VAL:O	41:33:98:VAL:HG13	2.21	0.40
43:55:250:PHE:CD1	43:55:250:PHE:N	2.90	0.40
48:AA:232:C:O2'	48:AA:693:A:N3	2.42	0.40
48:AA:914:A:N6	68:UU:13:ILE:HG21	2.36	0.40
48:AA:2093:A:N1	54:GG:29:ARG:NH1	2.69	0.40
48:AA:2643:U:H2'	48:AA:2644:A:O4'	2.22	0.40
48:AA:3092:U:O4	48:AA:3096:A:N6	2.54	0.40
57:JJ:142:HIS:CG	57:JJ:186:LEU:HD21	2.56	0.40
60:MM:16:TYR:OH	75:aa:167:LEU:HD22	2.22	0.40
62:OO:183:LEU:HB2	71:WW:95:LEU:HD21	2.01	0.40
63:PP:74:LYS:HG2	63:PP:75:GLU:N	2.37	0.40
69:V:155:THR:O	69:V:156:LEU:HD12	2.21	0.40
76:bb:117:GLU:O	76:bb:121:LYS:HG3	2.22	0.40
78:dd:140:SER:O	78:dd:144:VAL:HG23	2.21	0.40
79:r:1216:A:N3	79:r:1216:A:H2'	2.36	0.40
3:3:159:ASN:OD1	3:3:159:ASN:N	2.55	0.40
4:4:122:PHE:CZ	4:4:157:ILE:HG21	2.57	0.40
8:8:198:SER:O	8:8:202:LEU:HD23	2.21	0.40
8:8:305:ARG:HB3	8:8:321:LYS:HE3	2.04	0.40
11:C:275:MET:N	11:C:275:MET:HE2	2.37	0.40
15:G:244:ILE:HD13	33:Z:35:SER:HB2	2.03	0.40
17:I:72:ASN:O	17:I:73:ASN:C	2.64	0.40
17:I:160:ARG:NH1	17:I:225:GLU:HG3	2.37	0.40
17:I:268:LYS:O	17:I:269:ALA:C	2.64	0.40
22:N:114:ILE:CD1	79:r:1220:A:O4'	2.70	0.40
26:R:42:ASP:OD2	26:R:45:LEU:HD12	2.21	0.40
31:X:24:ASN:ND2	31:X:28:ILE:O	2.53	0.40
39:11:32:LEU:HD21	39:11:136:VAL:HG11	2.03	0.40
40:22:66:LEU:HD11	52:EE:55:ARG:HD2	2.02	0.40
47:99:81:ASN:H	47:99:207:ASN:HD21	1.68	0.40
48:AA:25:A:C2	75:aa:151:MET:HE2	2.56	0.40
48:AA:46:A:N6	48:AA:424:U:OP2	2.50	0.40
48:AA:428:C:O2'	48:AA:462:A:OP1	2.33	0.40
48:AA:1410:U:H2'	48:AA:1411:A:H8	1.85	0.40
48:AA:1527:A:C2	48:AA:1528:G:C6	3.09	0.40
48:AA:1745:U:O2'	48:AA:1827:A:H1'	2.21	0.40
48:AA:2706:C:H2'	48:AA:2707:G:H4'	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:AA:3166:A:H2'	48:AA:3167:U:C6	2.56	0.40
64:QQ:65:PRO:HD3	64:QQ:86:PHE:CZ	2.57	0.40
65:RR:63:ILE:HD11	65:RR:77:VAL:HG21	2.02	0.40
72:XX:14:LEU:HD13	72:XX:15:SER:N	2.37	0.40
79:r:308:U:N3	79:r:309:U:C5	2.90	0.40
79:r:714:U:O2'	79:r:715:U:H5'	2.22	0.40
79:r:813:A:H2'	79:r:814:A:H8	1.84	0.40
79:r:1018:U:C2	79:r:1261:A:C2	3.09	0.40
79:r:1300:U:H2'	79:r:1301:A:C8	2.55	0.40
3:3:20:LEU:HD12	3:3:20:LEU:N	2.35	0.40
6:6:327:ASP:OD2	79:r:50:A:O2'	2.37	0.40
11:C:107:MET:SD	11:C:108:ASN:ND2	2.95	0.40
13:E:211:TYR:N	13:E:215:THR:O	2.38	0.40
17:I:201:GLN:O	17:I:202:VAL:C	2.65	0.40
17:I:268:LYS:NZ	79:r:1418:A:OP2	2.25	0.40
21:M:13:LYS:O	21:M:13:LYS:HG2	2.22	0.40
23:O:266:ASP:HB3	79:r:963:G:P	2.60	0.40
24:P:76:ILE:HD13	24:P:96:LEU:HD21	2.03	0.40
25:Q:169:ILE:HG12	69:V:193:LYS:NZ	2.36	0.40
26:R:67:LEU:HD11	79:r:1632:A:C5	2.57	0.40
28:T:120:LEU:O	28:T:123:ILE:HG13	2.21	0.40
30:W:320:MET:HE2	30:W:323:LEU:HD21	2.04	0.40
34:a:73:TYR:O	34:a:73:TYR:CD2	2.74	0.40
35:b:218:LYS:O	35:b:222:ILE:HG12	2.21	0.40
35:b:464:THR:HG21	35:b:472:ASP:HB2	2.02	0.40
41:33:67:PHE:HE1	48:AA:1403:G:H2'	1.86	0.40
41:33:83:PRO:HG2	41:33:86:VAL:HG12	2.03	0.40
42:44:78:ASN:OD1	42:44:80:ARG:HG3	2.22	0.40
45:77:59:ASN:O	45:77:60:ASN:C	2.64	0.40
47:99:70:ARG:NH1	47:99:82:LEU:O	2.55	0.40
48:AA:25:A:H2'	48:AA:26:A:H5''	2.04	0.40
48:AA:806:G:C6	48:AA:822:A:C6	3.09	0.40
48:AA:1080:U:C2	48:AA:1081:A:C8	3.10	0.40
48:AA:2975:A:N6	48:AA:3012:A:N6	2.69	0.40
48:AA:3053:G:H2'	48:AA:3054:A:O4'	2.21	0.40
48:AA:3122:U:H1'	48:AA:3123:A:OP2	2.22	0.40
49:BB:169:ARG:HE	49:BB:182:LEU:HD22	1.86	0.40
64:QQ:201:VAL:HG23	64:QQ:202:ILE:CG1	2.52	0.40
67:TT:106:LEU:HD22	67:TT:152:ILE:HG23	2.02	0.40
67:TT:202:LEU:O	67:TT:206:GLN:HG2	2.20	0.40
77:cc:15:LEU:HD22	77:cc:17:TRP:NE1	2.36	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
78:dd:40:SER:OG	78:dd:42:PHE:O	2.28	0.40
79:r:881:A:OP1	79:r:1618:G:O2'	2.35	0.40
79:r:1073:U:O4	79:r:1074:A:N6	2.54	0.40
79:r:1357:A:H2'	79:r:1358:U:C6	2.56	0.40
79:r:1415:G:O2'	79:r:1416:U:OP2	2.39	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	1	30/111 (27%)	28 (93%)	2 (7%)	0	100	100
2	2	100/130 (77%)	94 (94%)	6 (6%)	0	100	100
3	3	255/266 (96%)	233 (91%)	22 (9%)	0	100	100
4	4	301/321 (94%)	288 (96%)	13 (4%)	0	100	100
5	5	288/339 (85%)	276 (96%)	12 (4%)	0	100	100
6	6	317/345 (92%)	311 (98%)	6 (2%)	0	100	100
7	7	163/361 (45%)	154 (94%)	9 (6%)	0	100	100
8	8	465/500 (93%)	447 (96%)	18 (4%)	0	100	100
9	A	298/344 (87%)	285 (96%)	13 (4%)	0	100	100
10	B	340/394 (86%)	323 (95%)	17 (5%)	0	100	100
11	C	394/398 (99%)	368 (93%)	26 (7%)	0	100	100
12	D	345/486 (71%)	339 (98%)	6 (2%)	0	100	100
13	E	292/307 (95%)	280 (96%)	12 (4%)	0	100	100
14	F	129/131 (98%)	124 (96%)	5 (4%)	0	100	100
15	G	206/247 (83%)	199 (97%)	7 (3%)	0	100	100
16	H	152/155 (98%)	146 (96%)	6 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
17	I	244/278 (88%)	226 (93%)	18 (7%)	0	100	100
18	J	186/203 (92%)	178 (96%)	8 (4%)	0	100	100
19	K	149/217 (69%)	139 (93%)	10 (7%)	0	100	100
20	L	123/153 (80%)	118 (96%)	5 (4%)	0	100	100
21	M	117/143 (82%)	114 (97%)	3 (3%)	0	100	100
22	N	112/115 (97%)	110 (98%)	2 (2%)	0	100	100
23	O	247/286 (86%)	238 (96%)	9 (4%)	0	100	100
24	P	118/121 (98%)	117 (99%)	1 (1%)	0	100	100
25	Q	233/237 (98%)	229 (98%)	4 (2%)	0	100	100
26	R	101/138 (73%)	99 (98%)	2 (2%)	0	100	100
27	S	81/91 (89%)	77 (95%)	4 (5%)	0	100	100
28	T	93/177 (52%)	89 (96%)	4 (4%)	0	100	100
29	U	235/264 (89%)	227 (97%)	8 (3%)	0	100	100
30	W	401/450 (89%)	377 (94%)	24 (6%)	0	100	100
31	X	98/110 (89%)	95 (97%)	3 (3%)	0	100	100
32	Y	271/319 (85%)	263 (97%)	8 (3%)	0	100	100
33	Z	92/95 (97%)	89 (97%)	3 (3%)	0	100	100
34	a	476/518 (92%)	442 (93%)	34 (7%)	0	100	100
35	b	439/580 (76%)	398 (91%)	41 (9%)	0	100	100
36	c	313/612 (51%)	285 (91%)	28 (9%)	0	100	100
38	00	36/93 (39%)	35 (97%)	1 (3%)	0	100	100
39	11	346/367 (94%)	328 (95%)	18 (5%)	0	100	100
40	22	111/147 (76%)	109 (98%)	2 (2%)	0	100	100
41	33	128/146 (88%)	121 (94%)	7 (6%)	0	100	100
42	44	136/140 (97%)	132 (97%)	4 (3%)	0	100	100
43	55	322/390 (83%)	314 (98%)	8 (2%)	0	100	100
44	66	236/281 (84%)	231 (98%)	5 (2%)	0	100	100
45	77	104/146 (71%)	101 (97%)	3 (3%)	0	100	100
46	88	195/264 (74%)	192 (98%)	3 (2%)	0	100	100
47	99	198/253 (78%)	193 (98%)	5 (2%)	0	100	100
49	BB	328/393 (84%)	314 (96%)	14 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
50	CC	247/269 (92%)	231 (94%)	16 (6%)	0	100	100
51	DD	256/286 (90%)	239 (93%)	17 (7%)	0	100	100
52	EE	272/292 (93%)	260 (96%)	12 (4%)	0	100	100
53	FF	196/214 (92%)	185 (94%)	11 (6%)	0	100	100
54	GG	77/139 (55%)	76 (99%)	1 (1%)	0	100	100
55	HH	160/163 (98%)	159 (99%)	1 (1%)	0	100	100
56	II	136/138 (99%)	125 (92%)	11 (8%)	0	100	100
57	JJ	218/322 (68%)	210 (96%)	8 (4%)	0	100	100
58	KK	193/232 (83%)	185 (96%)	8 (4%)	0	100	100
59	LL	235/238 (99%)	231 (98%)	4 (2%)	0	100	100
60	MM	149/169 (88%)	144 (97%)	5 (3%)	0	100	100
61	NN	117/161 (73%)	115 (98%)	2 (2%)	0	100	100
62	OO	223/309 (72%)	214 (96%)	9 (4%)	0	100	100
63	PP	205/263 (78%)	201 (98%)	4 (2%)	0	100	100
64	QQ	294/297 (99%)	280 (95%)	14 (5%)	0	100	100
65	RR	335/371 (90%)	320 (96%)	15 (4%)	0	100	100
66	SS	202/258 (78%)	193 (96%)	9 (4%)	0	100	100
67	TT	273/319 (86%)	262 (96%)	11 (4%)	0	100	100
68	UU	80/86 (93%)	78 (98%)	2 (2%)	0	100	100
69	V	286/318 (90%)	279 (98%)	7 (2%)	0	100	100
70	VV	100/177 (56%)	94 (94%)	6 (6%)	0	100	100
71	WW	110/183 (60%)	109 (99%)	1 (1%)	0	100	100
72	XX	62/70 (89%)	59 (95%)	3 (5%)	0	100	100
73	YY	44/105 (42%)	42 (96%)	2 (4%)	0	100	100
74	ZZ	60/115 (52%)	59 (98%)	1 (2%)	0	100	100
75	aa	175/195 (90%)	169 (97%)	6 (3%)	0	100	100
76	bb	153/157 (98%)	145 (95%)	8 (5%)	0	100	100
77	cc	117/131 (89%)	117 (100%)	0	0	100	100
78	dd	215/226 (95%)	206 (96%)	9 (4%)	0	100	100
All	All	15534/18765 (83%)	14862 (96%)	672 (4%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	1	31/98 (32%)	31 (100%)	0	100	100
2	2	93/117 (80%)	93 (100%)	0	100	100
3	3	232/240 (97%)	232 (100%)	0	100	100
4	4	267/281 (95%)	267 (100%)	0	100	100
5	5	258/303 (85%)	258 (100%)	0	100	100
6	6	289/312 (93%)	289 (100%)	0	100	100
7	7	158/331 (48%)	158 (100%)	0	100	100
8	8	413/444 (93%)	413 (100%)	0	100	100
9	A	269/309 (87%)	269 (100%)	0	100	100
10	B	308/350 (88%)	308 (100%)	0	100	100
11	C	380/385 (99%)	380 (100%)	0	100	100
12	D	314/437 (72%)	314 (100%)	0	100	100
13	E	253/266 (95%)	253 (100%)	0	100	100
14	F	120/120 (100%)	120 (100%)	0	100	100
15	G	177/211 (84%)	177 (100%)	0	100	100
16	H	141/142 (99%)	141 (100%)	0	100	100
17	I	215/245 (88%)	215 (100%)	0	100	100
18	J	169/183 (92%)	169 (100%)	0	100	100
19	K	130/192 (68%)	130 (100%)	0	100	100
20	L	104/131 (79%)	104 (100%)	0	100	100
21	M	100/121 (83%)	100 (100%)	0	100	100
22	N	102/103 (99%)	102 (100%)	0	100	100
23	O	217/250 (87%)	217 (100%)	0	100	100
24	P	105/106 (99%)	105 (100%)	0	100	100
25	Q	216/218 (99%)	216 (100%)	0	100	100
26	R	91/121 (75%)	91 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
27	S	72/78 (92%)	72 (100%)	0	100	100
28	T	84/159 (53%)	84 (100%)	0	100	100
29	U	212/236 (90%)	212 (100%)	0	100	100
30	W	369/409 (90%)	369 (100%)	0	100	100
31	X	85/92 (92%)	85 (100%)	0	100	100
32	Y	250/289 (86%)	250 (100%)	0	100	100
33	Z	84/85 (99%)	84 (100%)	0	100	100
34	a	437/475 (92%)	437 (100%)	0	100	100
35	b	403/531 (76%)	403 (100%)	0	100	100
36	c	288/560 (51%)	288 (100%)	0	100	100
38	00	36/84 (43%)	36 (100%)	0	100	100
39	11	323/341 (95%)	323 (100%)	0	100	100
40	22	106/137 (77%)	106 (100%)	0	100	100
41	33	112/126 (89%)	112 (100%)	0	100	100
42	44	121/123 (98%)	121 (100%)	0	100	100
43	55	284/345 (82%)	284 (100%)	0	100	100
44	66	218/252 (86%)	218 (100%)	0	100	100
45	77	95/128 (74%)	95 (100%)	0	100	100
46	88	182/240 (76%)	182 (100%)	0	100	100
47	99	176/222 (79%)	176 (100%)	0	100	100
49	BB	279/337 (83%)	279 (100%)	0	100	100
50	CC	210/229 (92%)	210 (100%)	0	100	100
51	DD	224/248 (90%)	224 (100%)	0	100	100
52	EE	242/260 (93%)	242 (100%)	0	100	100
53	FF	174/190 (92%)	174 (100%)	0	100	100
54	GG	73/129 (57%)	73 (100%)	0	100	100
55	HH	140/141 (99%)	140 (100%)	0	100	100
56	II	117/117 (100%)	117 (100%)	0	100	100
57	JJ	181/274 (66%)	181 (100%)	0	100	100
58	KK	167/200 (84%)	167 (100%)	0	100	100
59	LL	211/212 (100%)	211 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
60	MM	136/153 (89%)	136 (100%)	0	100	100
61	NN	108/147 (74%)	108 (100%)	0	100	100
62	OO	200/270 (74%)	200 (100%)	0	100	100
63	PP	185/236 (78%)	185 (100%)	0	100	100
64	QQ	267/268 (100%)	267 (100%)	0	100	100
65	RR	308/337 (91%)	308 (100%)	0	100	100
66	SS	187/231 (81%)	187 (100%)	0	100	100
67	TT	259/298 (87%)	259 (100%)	0	100	100
68	UU	73/77 (95%)	73 (100%)	0	100	100
69	V	264/287 (92%)	264 (100%)	0	100	100
70	VV	83/161 (52%)	83 (100%)	0	100	100
71	WW	104/167 (62%)	104 (100%)	0	100	100
72	XX	56/62 (90%)	56 (100%)	0	100	100
73	YY	40/93 (43%)	40 (100%)	0	100	100
74	ZZ	50/100 (50%)	50 (100%)	0	100	100
75	aa	158/171 (92%)	158 (100%)	0	100	100
76	bb	144/146 (99%)	144 (100%)	0	100	100
77	cc	110/120 (92%)	110 (100%)	0	100	100
78	dd	201/210 (96%)	201 (100%)	0	100	100
All	All	14040/16799 (84%)	14040 (100%)	0	100	100

There are no protein residues with a non-rotameric sidechain to report.

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (106) such sidechains are listed below:

Mol	Chain	Res	Type
3	3	128	ASN
3	3	171	ASN
3	3	229	HIS
4	4	89	ASN
5	5	260	ASN
5	5	306	ASN
6	6	53	ASN
8	8	165	ASN
8	8	383	GLN

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Mol	Chain	Res	Type
8	8	420	ASN
10	B	63	GLN
10	B	87	GLN
10	B	182	ASN
10	B	255	GLN
10	B	381	GLN
11	C	14	ASN
11	C	21	ASN
11	C	94	ASN
11	C	96	GLN
11	C	142	ASN
11	C	263	ASN
11	C	295	ASN
11	C	297	ASN
11	C	304	ASN
11	C	349	ASN
11	C	365	ASN
12	D	6	ASN
12	D	129	ASN
12	D	139	HIS
17	I	142	ASN
17	I	201	GLN
18	J	131	HIS
18	J	185	GLN
21	M	4	HIS
21	M	54	GLN
22	N	29	GLN
22	N	97	GLN
22	N	106	ASN
25	Q	179	GLN
26	R	36	GLN
28	T	121	ASN
29	U	68	HIS
29	U	111	GLN
30	W	82	ASN
30	W	116	ASN
30	W	172	GLN
32	Y	246	GLN
32	Y	247	ASN
34	a	240	ASN
34	a	248	ASN
34	a	473	GLN

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Mol	Chain	Res	Type
35	b	100	HIS
35	b	297	HIS
35	b	349	GLN
36	c	429	GLN
36	c	437	ASN
39	11	69	HIS
39	11	218	ASN
39	11	330	ASN
40	22	142	HIS
42	44	133	HIS
43	55	198	HIS
43	55	379	GLN
44	66	137	ASN
45	77	84	ASN
45	77	105	ASN
46	88	48	GLN
46	88	135	GLN
47	99	118	GLN
47	99	186	ASN
47	99	231	ASN
49	BB	130	HIS
49	BB	313	HIS
50	CC	50	ASN
50	CC	88	ASN
50	CC	107	GLN
52	EE	72	HIS
52	EE	75	ASN
52	EE	165	GLN
53	FF	55	ASN
53	FF	74	HIS
53	FF	85	ASN
53	FF	135	ASN
54	GG	17	HIS
55	HH	17	HIS
57	JJ	63	GLN
57	JJ	183	HIS
58	KK	39	HIS
62	OO	128	ASN
62	OO	212	GLN
63	PP	72	GLN
64	QQ	21	ASN
65	RR	355	ASN

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Mol	Chain	Res	Type
66	SS	23	GLN
66	SS	47	HIS
67	TT	66	HIS
67	TT	70	GLN
67	TT	238	GLN
70	VV	62	GLN
71	WW	94	GLN
72	XX	36	GLN
74	ZZ	83	ASN
76	bb	111	HIS
78	dd	25	GLN
78	dd	78	ASN
78	dd	87	HIS

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
37	t	75/76 (98%)	28 (37%)	0
48	AA	2678/3296 (81%)	446 (16%)	39 (1%)
79	r	1486/1649 (90%)	265 (17%)	0
All	All	4239/5021 (84%)	739 (17%)	39 (0%)

All (739) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
37	t	2	G
37	t	7	A
37	t	8	U
37	t	10	A
37	t	14	A
37	t	15	A
37	t	16	U
37	t	17	U
37	t	18	G
37	t	19	G
37	t	20	U
37	t	21	U
37	t	22	A
37	t	34	U
37	t	42	U
37	t	46	U

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Mol	Chain	Res	Type
37	t	47	A
37	t	48	U
37	t	49	A
37	t	50	U
37	t	53	G
37	t	55	U
37	t	56	C
37	t	58	A
37	t	60	U
37	t	66	U
37	t	67	A
37	t	76	A
48	AA	26	A
48	AA	27	A
48	AA	28	U
48	AA	30	U
48	AA	31	U
48	AA	35	U
48	AA	38	A
48	AA	43	U
48	AA	45	U
48	AA	49	G
48	AA	93	U
48	AA	94	A
48	AA	106	A
48	AA	111	G
48	AA	115	A
48	AA	116	C
48	AA	117	U
48	AA	119	A
48	AA	120	U
48	AA	122	A
48	AA	127	A
48	AA	135	U
48	AA	151	A
48	AA	161	U
48	AA	162	U
48	AA	163	A
48	AA	165	A
48	AA	171	A
48	AA	204	A
48	AA	205	A

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Mol	Chain	Res	Type
48	AA	214	A
48	AA	219	U
48	AA	220	A
48	AA	236	A
48	AA	239	A
48	AA	245	G
48	AA	256	A
48	AA	261	A
48	AA	262	A
48	AA	268	C
48	AA	269	A
48	AA	273	A
48	AA	283	U
48	AA	288	G
48	AA	292	G
48	AA	307	G
48	AA	308	U
48	AA	309	C
48	AA	310	U
48	AA	311	A
48	AA	312	A
48	AA	314	A
48	AA	316	G
48	AA	327	A
48	AA	330	A
48	AA	331	A
48	AA	332	A
48	AA	337	A
48	AA	342	A
48	AA	353	A
48	AA	359	A
48	AA	365	A
48	AA	380	G
48	AA	385	G
48	AA	401	A
48	AA	406	A
48	AA	426	A
48	AA	427	G
48	AA	428	C
48	AA	429	A
48	AA	442	U
48	AA	454	A

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Mol	Chain	Res	Type
48	AA	462	A
48	AA	472	U
48	AA	474	A
48	AA	502	A
48	AA	503	A
48	AA	507	A
48	AA	508	U
48	AA	516	A
48	AA	526	A
48	AA	527	A
48	AA	528	U
48	AA	529	A
48	AA	530	A
48	AA	531	U
48	AA	532	A
48	AA	533	U
48	AA	552	A
48	AA	562	U
48	AA	564	A
48	AA	565	A
48	AA	578	G
48	AA	594	A
48	AA	595	U
48	AA	614	A
48	AA	615	U
48	AA	618	A
48	AA	620	G
48	AA	621	A
48	AA	644	A
48	AA	655	A
48	AA	666	G
48	AA	667	U
48	AA	673	A
48	AA	675	G
48	AA	681	U
48	AA	682	C
48	AA	684	G
48	AA	696	G
48	AA	703	U
48	AA	710	A
48	AA	718	G
48	AA	719	U

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Mol	Chain	Res	Type
48	AA	721	A
48	AA	734	U
48	AA	735	A
48	AA	736	A
48	AA	776	A
48	AA	777	G
48	AA	778	A
48	AA	798	A
48	AA	823	U
48	AA	835	A
48	AA	840	C
48	AA	843	A
48	AA	855	U
48	AA	856	A
48	AA	857	U
48	AA	859	U
48	AA	865	A
48	AA	867	A
48	AA	872	G
48	AA	884	U
48	AA	887	G
48	AA	900	A
48	AA	921	G
48	AA	922	A
48	AA	925	U
48	AA	929	G
48	AA	946	A
48	AA	948	U
48	AA	949	G
48	AA	951	A
48	AA	963	A
48	AA	1060	U
48	AA	1065	A
48	AA	1075	A
48	AA	1076	U
48	AA	1077	A
48	AA	1078	U
48	AA	1087	U
48	AA	1094	U
48	AA	1095	A
48	AA	1101	C
48	AA	1112	A

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Mol	Chain	Res	Type
48	AA	1113	A
48	AA	1114	U
48	AA	1115	A
48	AA	1118	A
48	AA	1130	C
48	AA	1169	A
48	AA	1170	U
48	AA	1171	A
48	AA	1239	A
48	AA	1242	A
48	AA	1255	A
48	AA	1256	U
48	AA	1257	U
48	AA	1258	A
48	AA	1267	A
48	AA	1269	G
48	AA	1272	U
48	AA	1273	U
48	AA	1280	A
48	AA	1286	A
48	AA	1288	U
48	AA	1289	G
48	AA	1304	G
48	AA	1305	A
48	AA	1308	A
48	AA	1313	G
48	AA	1314	U
48	AA	1315	A
48	AA	1331	A
48	AA	1332	A
48	AA	1337	U
48	AA	1342	U
48	AA	1349	A
48	AA	1350	U
48	AA	1356	U
48	AA	1358	C
48	AA	1365	U
48	AA	1371	A
48	AA	1381	A
48	AA	1386	A
48	AA	1387	A
48	AA	1389	U

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Mol	Chain	Res	Type
48	AA	1394	U
48	AA	1400	U
48	AA	1406	A
48	AA	1407	A
48	AA	1410	U
48	AA	1411	A
48	AA	1412	U
48	AA	1424	U
48	AA	1489	U
48	AA	1490	A
48	AA	1494	A
48	AA	1498	U
48	AA	1501	A
48	AA	1507	U
48	AA	1516	U
48	AA	1523	A
48	AA	1524	U
48	AA	1526	A
48	AA	1528	G
48	AA	1531	C
48	AA	1534	G
48	AA	1549	U
48	AA	1560	A
48	AA	1561	G
48	AA	1563	C
48	AA	1569	C
48	AA	1598	A
48	AA	1600	U
48	AA	1604	A
48	AA	1605	U
48	AA	1606	A
48	AA	1618	G
48	AA	1621	A
48	AA	1626	G
48	AA	1627	C
48	AA	1633	U
48	AA	1634	A
48	AA	1635	G
48	AA	1648	U
48	AA	1649	C
48	AA	1653	A
48	AA	1654	A

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Mol	Chain	Res	Type
48	AA	1660	A
48	AA	1661	A
48	AA	1662	U
48	AA	1666	A
48	AA	1680	A
48	AA	1698	C
48	AA	1707	C
48	AA	1715	A
48	AA	1717	A
48	AA	1724	A
48	AA	1728	U
48	AA	1737	A
48	AA	1743	G
48	AA	1757	A
48	AA	1767	A
48	AA	1768	A
48	AA	1770	U
48	AA	1776	A
48	AA	1777	C
48	AA	1782	A
48	AA	1785	U
48	AA	1787	A
48	AA	1789	U
48	AA	1797	G
48	AA	1812	U
48	AA	1814	U
48	AA	1823	U
48	AA	1824	U
48	AA	1830	G
48	AA	1836	A
48	AA	1837	A
48	AA	1838	A
48	AA	1855	U
48	AA	1863	C
48	AA	1867	U
48	AA	1869	A
48	AA	1870	A
48	AA	1871	U
48	AA	1872	G
48	AA	1876	U
48	AA	1882	U
48	AA	1891	U

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Mol	Chain	Res	Type
48	AA	1893	U
48	AA	1897	C
48	AA	1921	A
48	AA	1923	C
48	AA	1931	A
48	AA	1933	A
48	AA	1943	C
48	AA	1952	A
48	AA	1955	C
48	AA	1956	G
48	AA	1961	G
48	AA	1969	G
48	AA	1989	U
48	AA	1991	G
48	AA	2084	G
48	AA	2093	A
48	AA	2186	U
48	AA	2220	U
48	AA	2251	A
48	AA	2264	G
48	AA	2265	G
48	AA	2276	G
48	AA	2291	G
48	AA	2292	C
48	AA	2305	A
48	AA	2310	U
48	AA	2313	A
48	AA	2316	A
48	AA	2317	A
48	AA	2324	U
48	AA	2328	A
48	AA	2330	A
48	AA	2331	U
48	AA	2332	U
48	AA	2336	G
48	AA	2337	A
48	AA	2338	A
48	AA	2349	A
48	AA	2360	U
48	AA	2361	A
48	AA	2362	U
48	AA	2374	A

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Mol	Chain	Res	Type
48	AA	2424	U
48	AA	2425	A
48	AA	2430	A
48	AA	2434	A
48	AA	2436	A
48	AA	2437	U
48	AA	2438	A
48	AA	2455	A
48	AA	2458	G
48	AA	2462	A
48	AA	2580	A
48	AA	2586	U
48	AA	2591	A
48	AA	2600	U
48	AA	2601	A
48	AA	2611	U
48	AA	2612	A
48	AA	2614	U
48	AA	2616	G
48	AA	2618	A
48	AA	2625	A
48	AA	2628	A
48	AA	2650	G
48	AA	2652	C
48	AA	2659	A
48	AA	2671	U
48	AA	2673	A
48	AA	2674	U
48	AA	2689	A
48	AA	2690	U
48	AA	2691	A
48	AA	2694	G
48	AA	2695	A
48	AA	2696	A
48	AA	2701	A
48	AA	2705	A
48	AA	2706	C
48	AA	2707	G
48	AA	2713	G
48	AA	2714	A
48	AA	2725	A
48	AA	2735	A

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Mol	Chain	Res	Type
48	AA	2741	G
48	AA	2742	A
48	AA	2744	A
48	AA	2746	U
48	AA	2750	A
48	AA	2760	G
48	AA	2762	C
48	AA	2763	A
48	AA	2764	C
48	AA	2766	U
48	AA	2784	U
48	AA	2786	C
48	AA	2795	U
48	AA	2796	G
48	AA	2797	U
48	AA	2802	G
48	AA	2814	U
48	AA	2815	U
48	AA	2821	U
48	AA	2833	A
48	AA	2834	A
48	AA	2836	G
48	AA	2843	G
48	AA	2849	G
48	AA	2852	U
48	AA	2853	A
48	AA	2869	A
48	AA	2870	G
48	AA	2876	U
48	AA	2877	U
48	AA	2880	U
48	AA	2882	U
48	AA	2894	A
48	AA	2895	A
48	AA	2897	A
48	AA	2913	U
48	AA	2940	G
48	AA	2956	U
48	AA	2980	A
48	AA	3014	C
48	AA	3018	A
48	AA	3020	U

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Mol	Chain	Res	Type
48	AA	3021	A
48	AA	3034	A
48	AA	3041	A
48	AA	3050	G
48	AA	3062	A
48	AA	3069	A
48	AA	3084	A
48	AA	3092	U
48	AA	3093	U
48	AA	3094	A
48	AA	3098	A
48	AA	3102	A
48	AA	3103	G
48	AA	3106	G
48	AA	3122	U
48	AA	3123	A
48	AA	3125	U
48	AA	3126	C
48	AA	3136	U
48	AA	3141	U
48	AA	3148	A
48	AA	3150	U
48	AA	3151	A
48	AA	3152	A
48	AA	3169	U
48	AA	3171	A
48	AA	3172	U
48	AA	3178	A
48	AA	3235	U
48	AA	3248	C
48	AA	3251	A
48	AA	3252	U
48	AA	3253	U
48	AA	3256	U
48	AA	3257	C
48	AA	3269	U
48	AA	3274	U
48	AA	3290	A
79	r	10	U
79	r	11	U
79	r	12	A
79	r	13	U

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Mol	Chain	Res	Type
79	r	16	G
79	r	38	A
79	r	39	A
79	r	46	A
79	r	55	A
79	r	57	G
79	r	58	A
79	r	73	A
79	r	88	A
79	r	101	U
79	r	102	G
79	r	109	A
79	r	110	A
79	r	121	U
79	r	122	U
79	r	129	G
79	r	132	A
79	r	133	U
79	r	134	U
79	r	135	A
79	r	136	A
79	r	137	U
79	r	139	A
79	r	140	A
79	r	149	U
79	r	158	U
79	r	164	A
79	r	167	U
79	r	195	U
79	r	205	A
79	r	208	U
79	r	235	A
79	r	251	G
79	r	255	G
79	r	257	A
79	r	270	G
79	r	271	U
79	r	286	G
79	r	294	A
79	r	334	U
79	r	336	U
79	r	351	A

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Mol	Chain	Res	Type
79	r	352	G
79	r	356	C
79	r	371	U
79	r	376	C
79	r	377	A
79	r	401	A
79	r	409	G
79	r	414	A
79	r	421	A
79	r	477	A
79	r	478	U
79	r	485	A
79	r	495	U
79	r	496	A
79	r	501	U
79	r	519	A
79	r	538	C
79	r	550	U
79	r	559	U
79	r	560	A
79	r	604	A
79	r	606	U
79	r	611	U
79	r	624	U
79	r	625	A
79	r	635	G
79	r	645	U
79	r	646	A
79	r	647	A
79	r	648	C
79	r	661	A
79	r	674	A
79	r	676	G
79	r	682	A
79	r	685	G
79	r	686	A
79	r	694	A
79	r	698	A
79	r	703	U
79	r	707	U
79	r	716	A
79	r	722	A

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Mol	Chain	Res	Type
79	r	727	A
79	r	728	A
79	r	735	U
79	r	741	A
79	r	749	A
79	r	751	U
79	r	760	A
79	r	763	A
79	r	765	U
79	r	766	A
79	r	767	A
79	r	768	U
79	r	769	A
79	r	770	A
79	r	787	A
79	r	789	A
79	r	818	A
79	r	820	A
79	r	842	A
79	r	857	A
79	r	858	U
79	r	859	A
79	r	880	A
79	r	882	C
79	r	898	U
79	r	903	A
79	r	904	U
79	r	905	A
79	r	916	A
79	r	918	A
79	r	931	A
79	r	936	A
79	r	991	G
79	r	994	A
79	r	996	A
79	r	997	G
79	r	999	C
79	r	1000	U
79	r	1025	U
79	r	1026	U
79	r	1031	A
79	r	1034	C

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Mol	Chain	Res	Type
79	r	1036	A
79	r	1040	C
79	r	1041	U
79	r	1058	G
79	r	1059	A
79	r	1083	A
79	r	1088	A
79	r	1091	A
79	r	1092	C
79	r	1100	A
79	r	1112	U
79	r	1134	A
79	r	1141	G
79	r	1142	U
79	r	1145	A
79	r	1148	A
79	r	1172	A
79	r	1173	U
79	r	1174	U
79	r	1175	U
79	r	1177	A
79	r	1178	A
79	r	1179	U
79	r	1188	A
79	r	1196	U
79	r	1198	A
79	r	1202	A
79	r	1203	U
79	r	1204	U
79	r	1205	A
79	r	1207	U
79	r	1211	A
79	r	1212	A
79	r	1214	A
79	r	1217	G
79	r	1223	A
79	r	1225	G
79	r	1228	A
79	r	1229	A
79	r	1233	A
79	r	1245	A
79	r	1246	U

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Mol	Chain	Res	Type
79	r	1258	U
79	r	1259	A
79	r	1265	G
79	r	1270	A
79	r	1271	A
79	r	1272	U
79	r	1273	A
79	r	1280	U
79	r	1281	A
79	r	1282	A
79	r	1284	A
79	r	1287	A
79	r	1290	A
79	r	1291	U
79	r	1294	A
79	r	1295	A
79	r	1303	U
79	r	1304	U
79	r	1305	A
79	r	1315	A
79	r	1320	A
79	r	1326	U
79	r	1333	U
79	r	1338	A
79	r	1341	U
79	r	1342	U
79	r	1343	U
79	r	1345	A
79	r	1349	A
79	r	1351	U
79	r	1353	U
79	r	1362	A
79	r	1363	U
79	r	1365	U
79	r	1366	U
79	r	1368	A
79	r	1369	U
79	r	1371	U
79	r	1373	A
79	r	1388	U
79	r	1393	U
79	r	1404	A

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Mol	Chain	Res	Type
79	r	1406	G
79	r	1413	U
79	r	1421	C
79	r	1431	U
79	r	1433	U
79	r	1439	G
79	r	1443	A
79	r	1445	U
79	r	1447	U
79	r	1449	C
79	r	1451	A
79	r	1453	C
79	r	1455	G
79	r	1462	A
79	r	1464	U
79	r	1466	A
79	r	1485	A
79	r	1487	C
79	r	1489	U
79	r	1490	A
79	r	1494	U
79	r	1511	U
79	r	1512	A
79	r	1544	U
79	r	1545	U
79	r	1547	A
79	r	1574	A
79	r	1577	U
79	r	1578	A
79	r	1584	A
79	r	1586	G
79	r	1589	G
79	r	1591	A
79	r	1595	C
79	r	1598	U
79	r	1609	G
79	r	1611	A
79	r	1621	G
79	r	1622	G
79	r	1624	U
79	r	1625	U
79	r	1628	A

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Mol	Chain	Res	Type
79	r	1629	A
79	r	1630	A
79	r	1633	U
79	r	1634	C
79	r	1637	A
79	r	1638	A
79	r	1644	C
79	r	1645	U
79	r	1649	A

All (39) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
48	AA	25	A
48	AA	44	U
48	AA	268	C
48	AA	306	G
48	AA	309	C
48	AA	336	A
48	AA	529	A
48	AA	563	U
48	AA	564	A
48	AA	643	U
48	AA	733	A
48	AA	1093	A
48	AA	1272	U
48	AA	1312	G
48	AA	1357	A
48	AA	1409	C
48	AA	1410	U
48	AA	1489	U
48	AA	1493	U
48	AA	1522	A
48	AA	1706	G
48	AA	1727	A
48	AA	1769	U
48	AA	1892	G
48	AA	2331	U
48	AA	2359	U
48	AA	2373	U
48	AA	2610	A
48	AA	2613	A

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Mol	Chain	Res	Type
48	AA	3017	U
48	AA	3068	U
48	AA	3122	U
48	AA	3124	A
48	AA	3135	U
48	AA	3150	U
48	AA	3151	A
48	AA	3171	A
48	AA	3252	U
48	AA	3268	A

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

There are no non-standard protein/DNA/RNA residues in this entry.

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 300 ligands modelled in this entry, 299 are monoatomic - leaving 1 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
81	GTP	W	501	80	26,34,34	0.99	2 (7%)	32,54,54	0.73	1 (3%)

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
81	GTP	W	501	80	-	0/18/38/38	0/3/3/3

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
81	W	501	GTP	C5-C6	-2.55	1.42	1.47
81	W	501	GTP	C8-N7	-2.05	1.31	1.35

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
81	W	501	GTP	O6-C6-C5	2.01	128.29	124.37

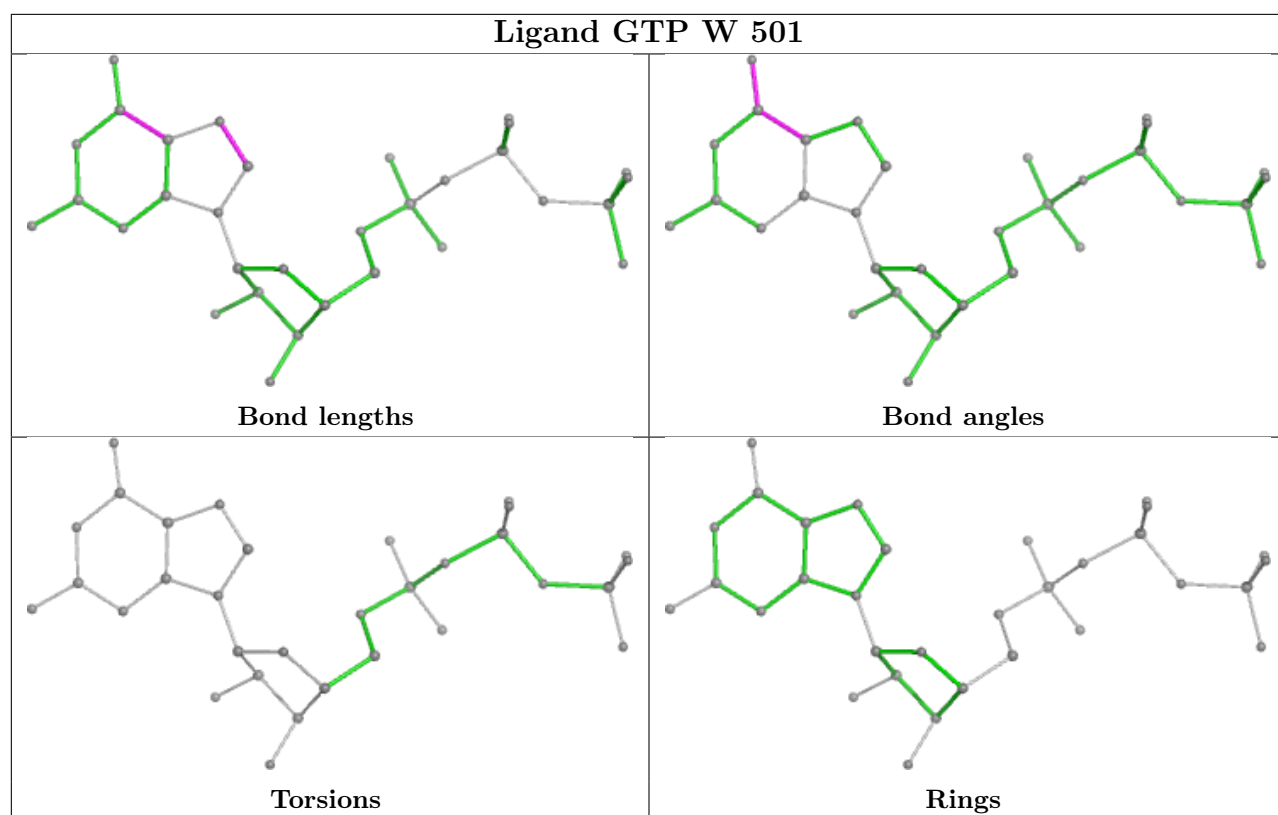
There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

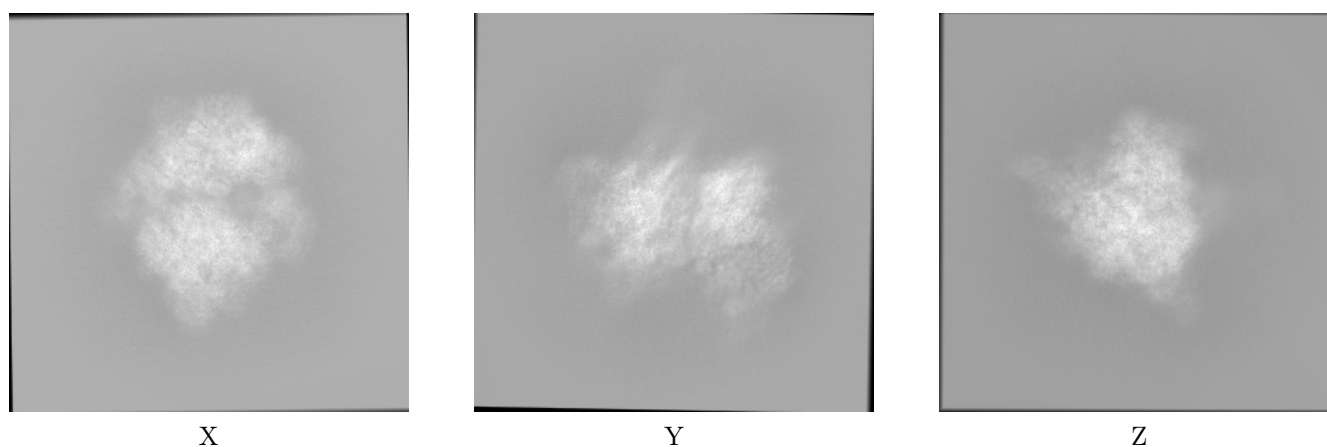
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-52281. These allow visual inspection of the internal detail of the map and identification of artifacts.

No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

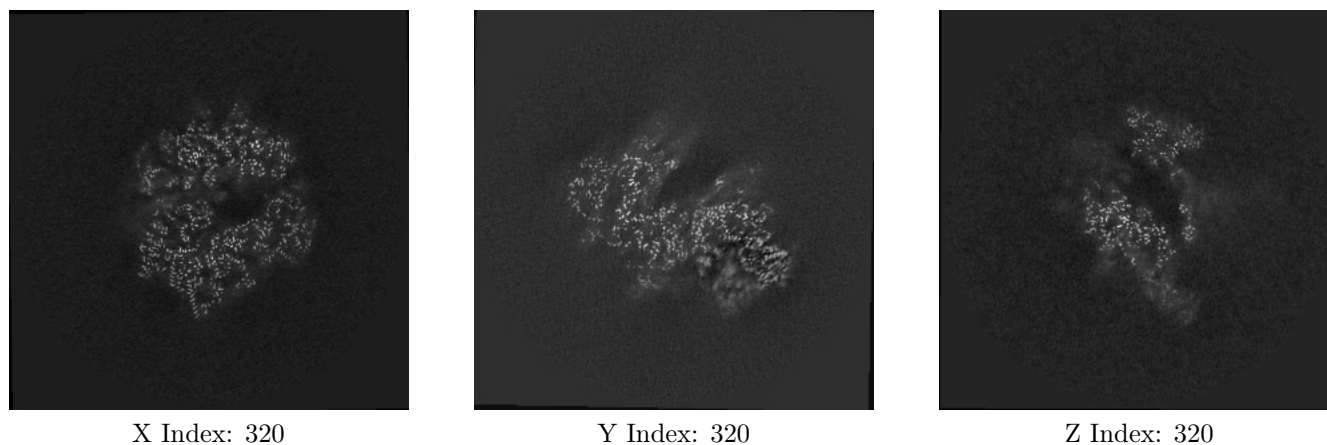
6.1.1 Primary map



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

6.2 Central slices [i](#)

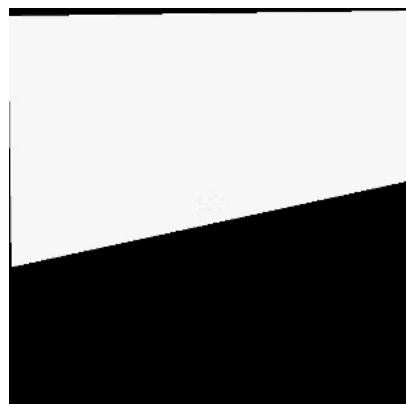
6.2.1 Primary map



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

6.3 Largest variance slices [i](#)

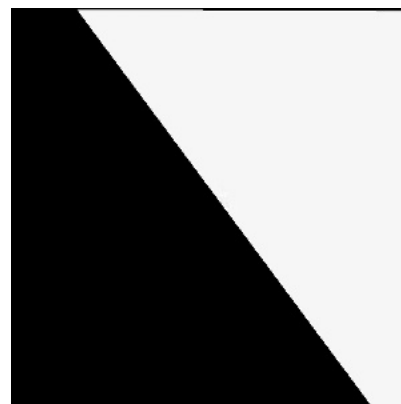
6.3.1 Primary map



X Index: 3



Y Index: 1

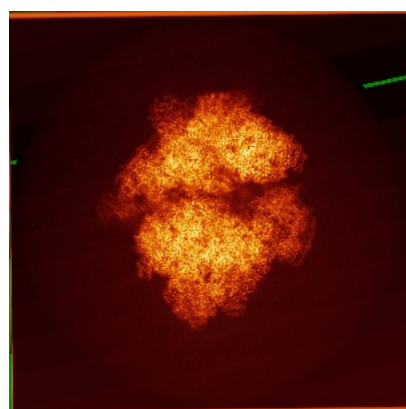


Z Index: 637

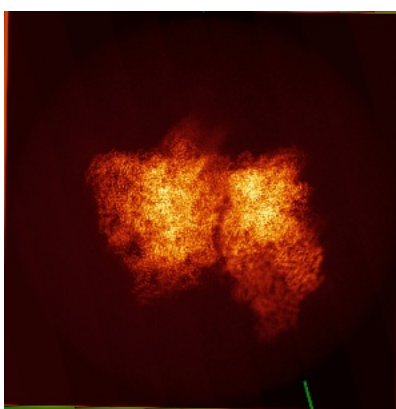
The images above show the largest variance slices of the map in three orthogonal directions.

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

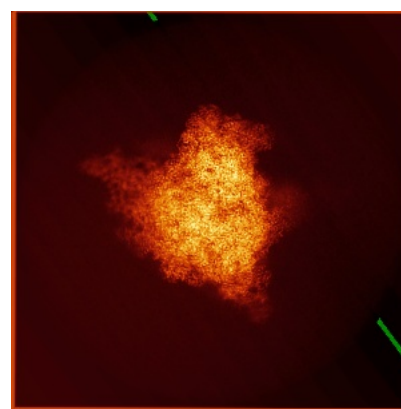
6.4.1 Primary map



X



Y

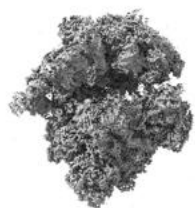


Z

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](#)

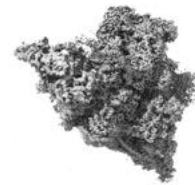
6.5.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.17. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

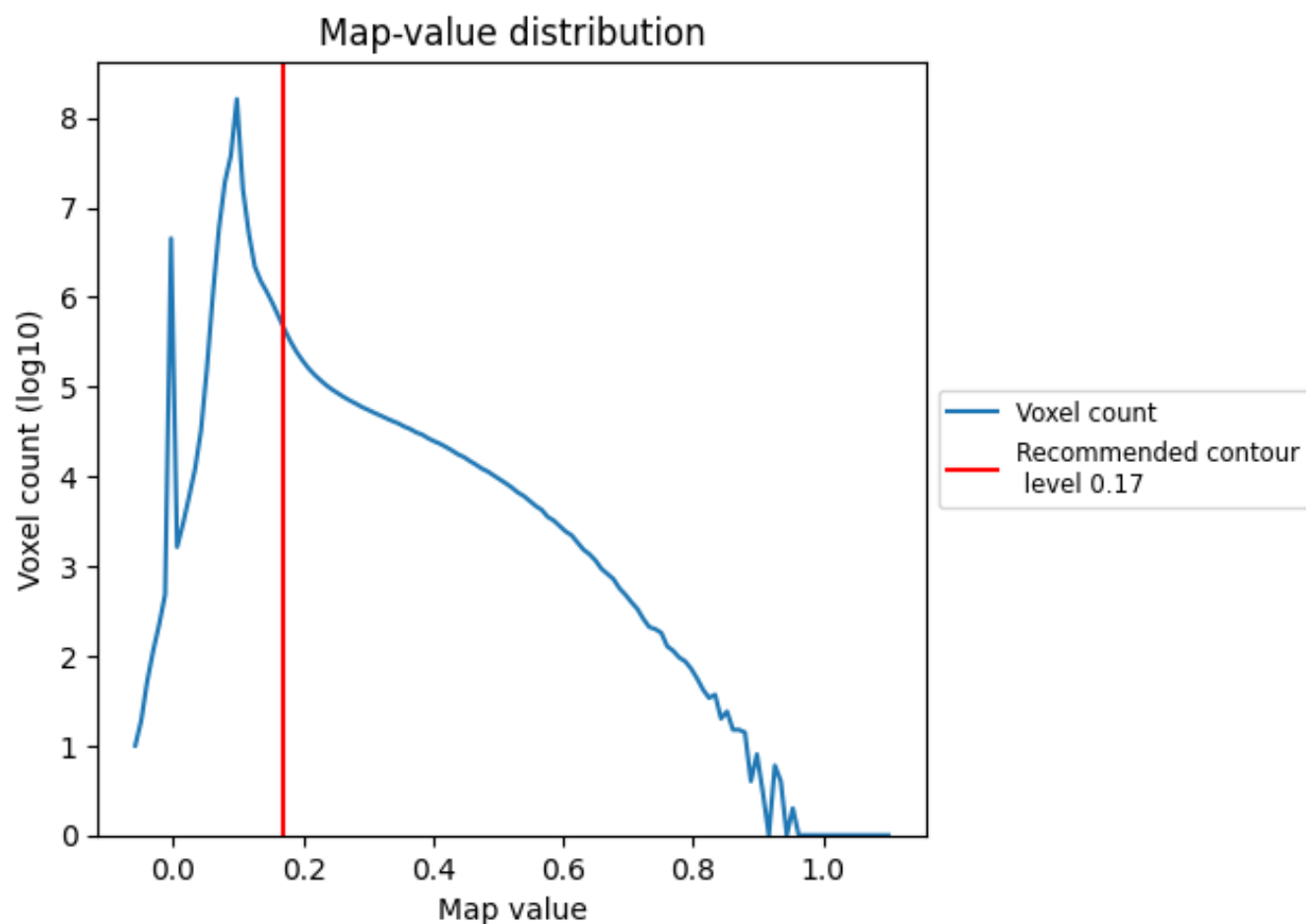
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

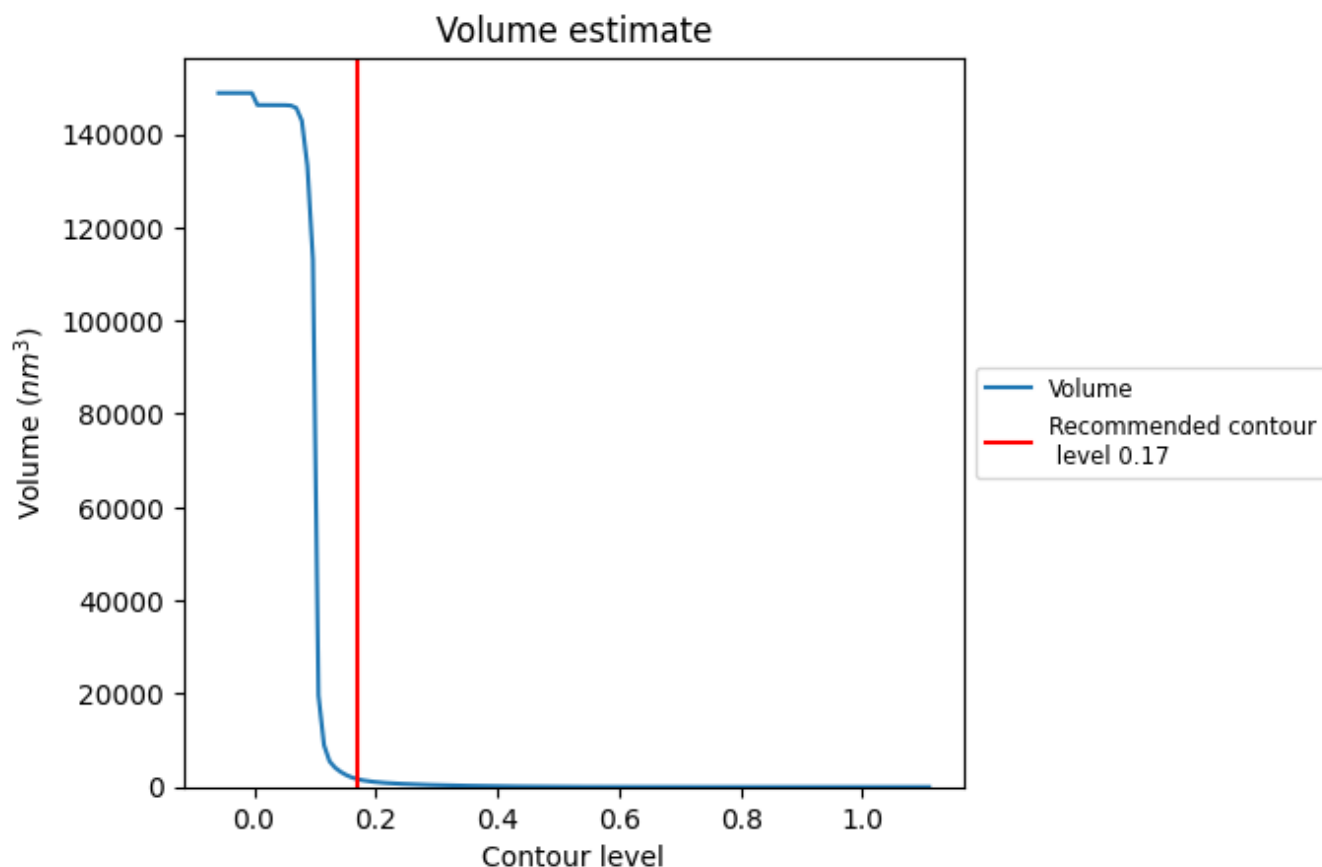
This section contains the results of statistical analysis of the map.

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.

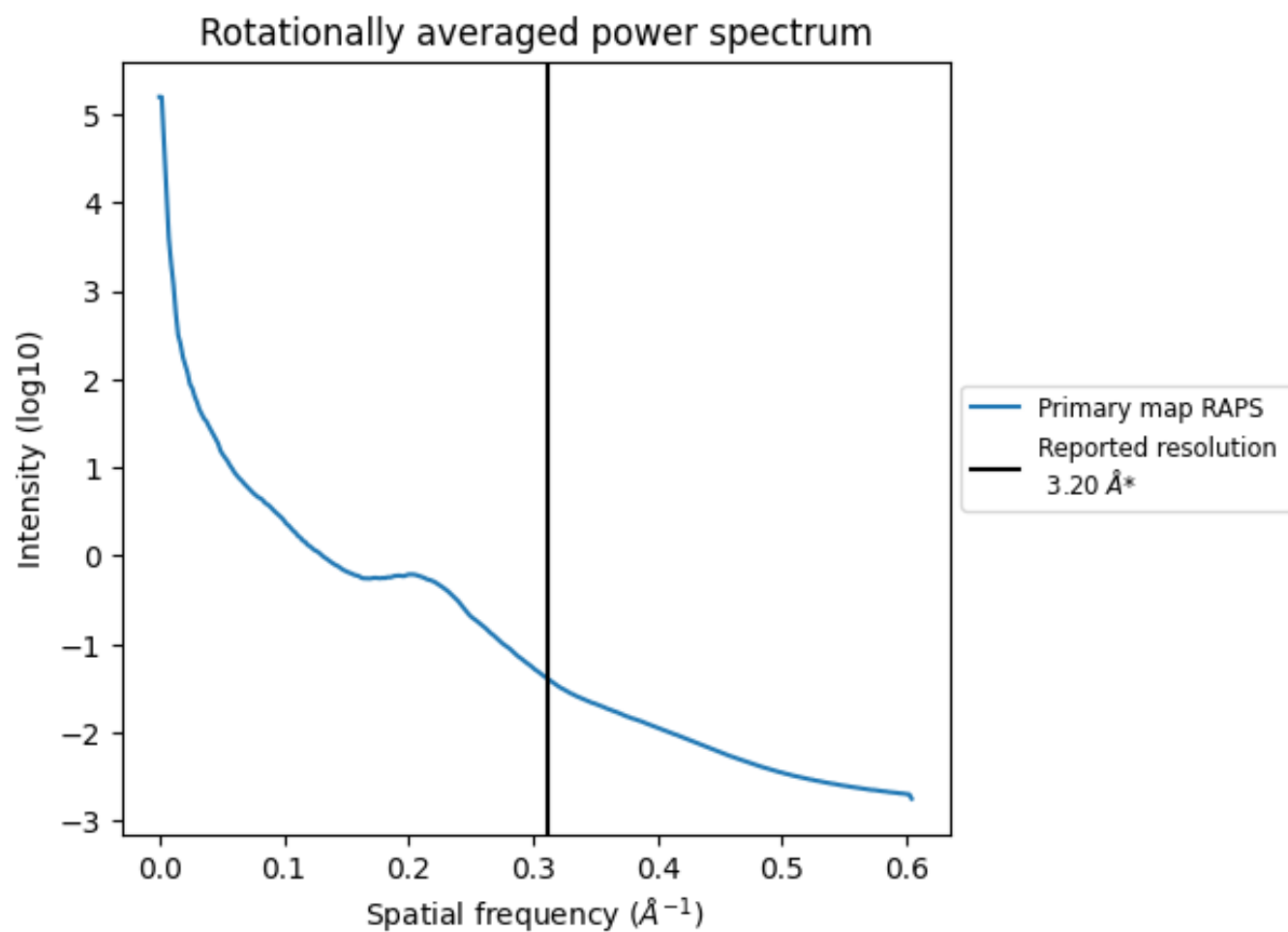
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1680 nm^3 ; this corresponds to an approximate mass of 1517 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 0.312 Å⁻¹

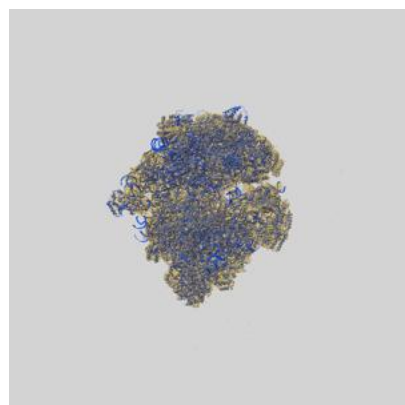
8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

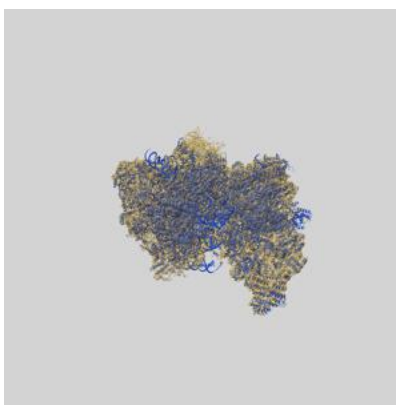
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-52281 and PDB model 9HLZ. Per-residue inclusion information can be found in [section 3](#) on [page 20](#).

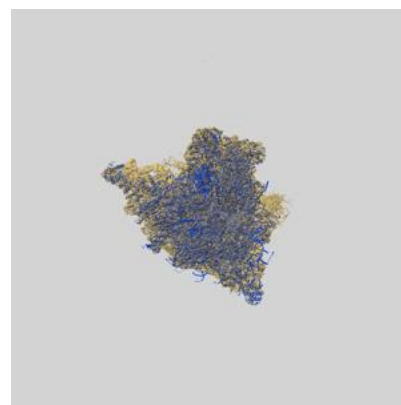
9.1 Map-model overlay [i](#)



X



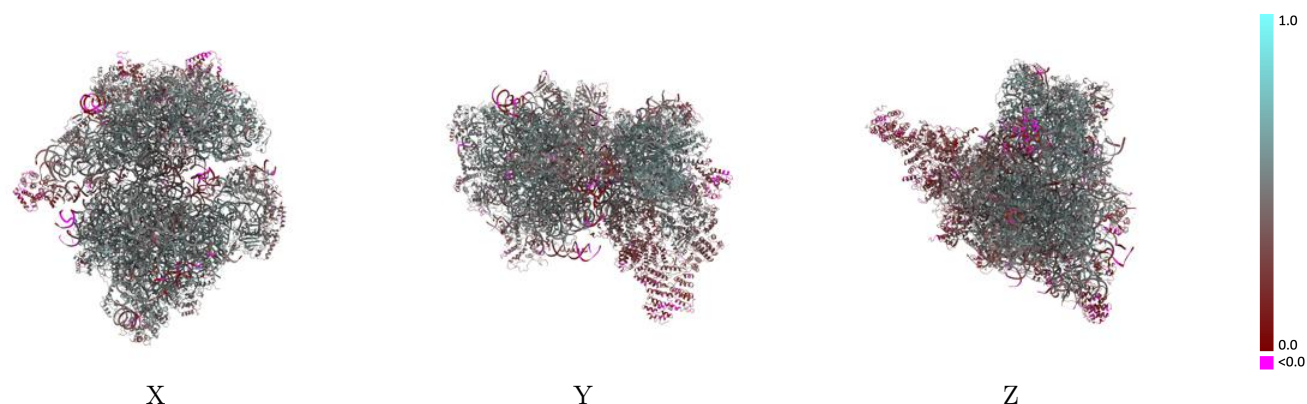
Y



Z

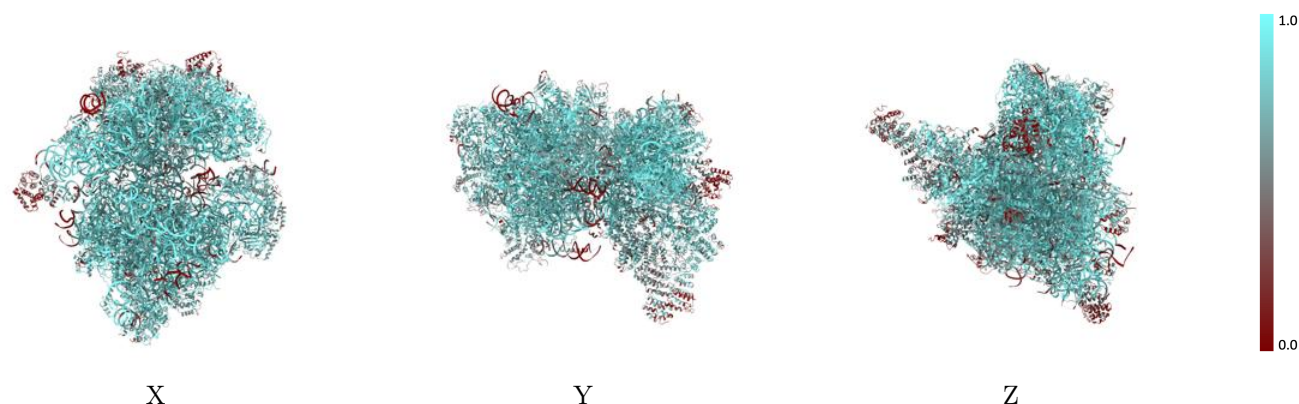
The images above show the 3D surface view of the map at the recommended contour level 0.17 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



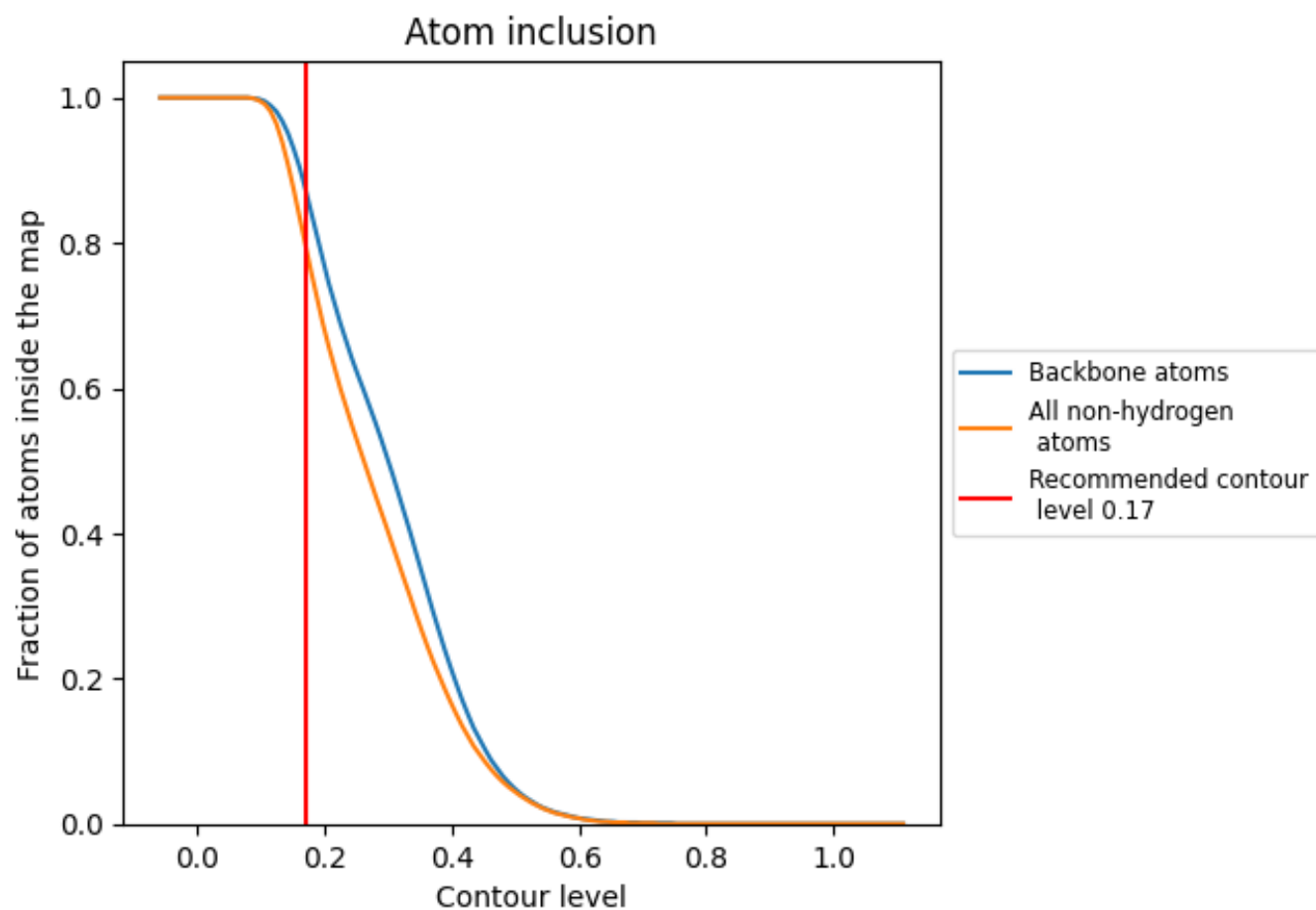
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.17).

9.4 Atom inclusion [i](#)



At the recommended contour level, 87% of all backbone atoms, 80% 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 (0.17) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7970	 0.4410
00	 0.8810	 0.4970
1	 0.8320	 0.4730
11	 0.7860	 0.4750
2	 0.7300	 0.4110
22	 0.7960	 0.4590
3	 0.8260	 0.4220
33	 0.7690	 0.4580
4	 0.7610	 0.3810
44	 0.8470	 0.5100
5	 0.3180	 0.1820
55	 0.8010	 0.4890
6	 0.7360	 0.4390
66	 0.6590	 0.4200
7	 0.8040	 0.4670
77	 0.7800	 0.4780
8	 0.6150	 0.4250
88	 0.5940	 0.3940
99	 0.6740	 0.4240
A	 0.7610	 0.3850
AA	 0.8640	 0.4560
B	 0.6930	 0.4160
BB	 0.7890	 0.4800
C	 0.7370	 0.4340
CC	 0.8670	 0.5260
D	 0.7290	 0.4230
DD	 0.7210	 0.4500
E	 0.8410	 0.4900
EE	 0.7900	 0.4870
F	 0.7720	 0.4000
FF	 0.6660	 0.4260
G	 0.6540	 0.3710
GG	 0.6380	 0.4130
H	 0.8950	 0.5180
HH	 0.8150	 0.5030



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Chain	Atom inclusion	Q-score
I	 0.8310	 0.4910
II	 0.7560	 0.4510
J	 0.8140	 0.4870
JJ	 0.8360	 0.5020
K	 0.7940	 0.3520
KK	 0.8180	 0.4980
L	 0.8460	 0.4840
LL	 0.8140	 0.4910
M	 0.8950	 0.5220
MM	 0.8490	 0.4880
N	 0.9590	 0.5410
NN	 0.8320	 0.5180
O	 0.7430	 0.4190
OO	 0.8050	 0.5020
P	 0.7820	 0.4390
PP	 0.7950	 0.4800
Q	 0.6030	 0.3490
QQ	 0.6330	 0.4110
R	 0.8270	 0.4370
RR	 0.7100	 0.4370
S	 0.8500	 0.5050
SS	 0.6810	 0.4300
T	 0.7880	 0.3840
TT	 0.6760	 0.3970
U	 0.8620	 0.4850
UU	 0.8660	 0.5170
V	 0.6520	 0.3860
VV	 0.6520	 0.4140
W	 0.8660	 0.5190
WW	 0.8140	 0.4840
X	 0.8830	 0.5050
XX	 0.7380	 0.4630
Y	 0.8430	 0.5020
YY	 0.8560	 0.5160
Z	 0.7020	 0.3790
ZZ	 0.8790	 0.5410
a	 0.5750	 0.2420
aa	 0.7930	 0.4820
b	 0.6000	 0.2410
bb	 0.7600	 0.4510
c	 0.4600	 0.1920
cc	 0.8670	 0.5180

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Chain	Atom inclusion	Q-score
dd	 0.7880	 0.4630
r	 0.9210	 0.4690
t	 0.3340	 0.1910