



Full wwPDB EM Validation Report ⓘ

Aug 2, 2025 – 02:01 PM EDT

PDB ID : 9E71 / pdb_00009e71
EMDB ID : EMD-47628
Title : Cryo-EM structure of the Pyrobaculum calidifontis 70S ribosome
Authors : Nissley, A.J.; Cate, J.H.D.
Deposited on : 2024-10-31
Resolution : 2.36 Å(reported)

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

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

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

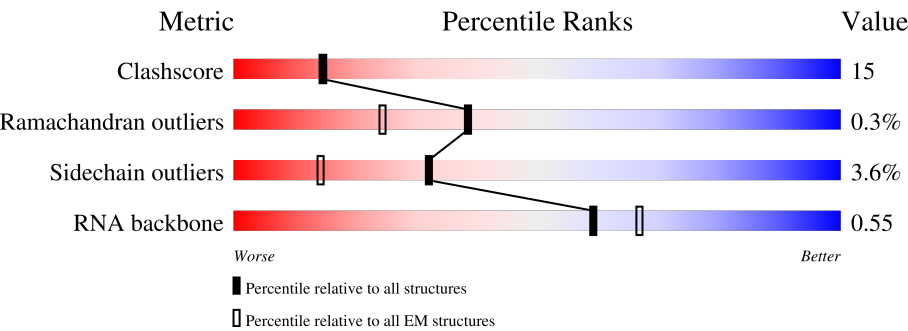
EMDB validation analysis : 0.0.1.dev126
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0rc1
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.45.1

1 Overall quality at a glance i

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

The reported resolution of this entry is 2.36 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)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415
RNA backbone	6643	2191

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	2	129	63%33%
2	1	3024	48%39%7%6%
3	4	1498	5% 35%47%13%5%
4	AA	244	74%22%
5	AB	338	6% 71%28%
6	AC	285	9% 64%33%
7	AD	178	10% 54%43%

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Mol	Chain	Length	Quality of chain
8	AE	196	
9	AF	149	
10	AG	186	
11	AH	157	
12	AI	144	
13	AJ	103	
13	AK	103	
14	AL	156	
15	AM	189	
16	AN	178	
17	AO	205	
18	AP	122	
19	AQ	147	
20	AR	78	
21	AS	99	
22	AT	184	
23	AU	81	
24	AV	128	
25	AW	62	
26	AX	79	
27	AY	179	
28	AZ	101	
29	Aa	91	
30	Ab	153	
31	Ac	84	

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Mol	Chain	Length	Quality of chain
32	Ad	52	
33	Ae	67	
34	Af	51	
35	Ag	53	
36	Ah	91	
37	Ai	102	
38	Aj	184	
39	Ak	93	
40	BA	222	
41	BB	208	
42	BC	216	
43	BD	159	
44	BE	237	
45	BF	202	
46	BG	151	
47	BH	223	
48	BI	130	
49	BJ	131	
50	BK	142	
51	BL	106	
52	BM	141	
53	BN	147	
54	BO	153	
55	BP	54	
56	BQ	151	

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Mol	Chain	Length	Quality of chain
57	BR	147	
58	BS	71	
59	BT	158	
60	BU	158	
61	BV	128	
62	BW	110	
63	BX	100	
64	BY	67	
65	BZ	77	
66	Ba	54	
67	Bb	68	
68	Bc	65	

2 Entry composition

There are 72 unique types of molecules in this entry. The entry contains 171357 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	2	129	Total	C	N	O	P	0	0
			2769	1231	512	897	129		

- Molecule 2 is a RNA chain called 23S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	1	2849	Total	C	N	O	P	0	0
			61386	27335	11453	19749	2849		

- Molecule 3 is a RNA chain called 16S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	4	1430	Total	C	N	O	P	0	0
			30817	13730	5745	9912	1430		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
4	5	4AC	C	conflict	GB 343200235
4	1318	4AC	C	conflict	GB 343200235

- Molecule 4 is a protein called Large ribosomal subunit protein uL2.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	AA	239	Total	C	N	O	S	0	0
			1803	1136	354	308	5		

- Molecule 5 is a protein called Large ribosomal subunit protein uL3.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	AB	336	Total	C	N	O	S	0	0
			2611	1681	476	450	4		

- Molecule 6 is a protein called Large ribosomal subunit protein uL4.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	AC	278	Total	C	N	O	S	0	0
			2178	1406	395	371	6		

- Molecule 7 is a protein called Large ribosomal subunit protein uL5.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	AD	178	Total	C	N	O	S	0	0
			1412	894	273	238	7		

- Molecule 8 is a protein called Large ribosomal subunit protein uL6.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	AE	195	Total	C	N	O	S	0	0
			1520	990	254	272	4		

- Molecule 9 is a protein called Large ribosomal subunit protein eL8.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	AF	145	Total	C	N	O	S	0	0
			1095	705	187	202	1		

- Molecule 10 is a protein called Large ribosomal subunit protein uL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	AG	183	Total	C	N	O	S	0	0
			1510	979	278	246	7		

- Molecule 11 is a protein called Large ribosomal subunit protein eL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	AH	155	Total	C	N	O	S	0	0
			1244	785	249	209	1		

- Molecule 12 is a protein called Large ribosomal subunit protein uL14.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	AI	138	Total	C	N	O	S	0	0
			1068	682	202	181	3		

- Molecule 13 is a protein called Large ribosomal subunit protein eL14.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	AJ	101	Total	C	N	O	S	0	0
			788	500	143	144	1		
13	AK	90	Total	C	N	O	S	0	0
			700	441	130	128	1		

- Molecule 14 is a protein called Large ribosomal subunit protein uL15.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	AL	152	Total	C	N	O	S	0	0
			1198	761	232	202	3		

- Molecule 15 is a protein called 50S ribosomal protein L15e.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	AM	184	Total	C	N	O	S	0	0
			1558	992	315	245	6		

- Molecule 16 is a protein called Large ribosomal subunit protein uL16.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	AN	169	Total	C	N	O	S	0	0
			1336	847	254	227	8		

- Molecule 17 is a protein called Large ribosomal subunit protein uL18.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	AO	200	Total	C	N	O	S	0	0
			1615	1027	309	278	1		

- Molecule 18 is a protein called Large ribosomal subunit protein eL18.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	AP	121	Total	C	N	O	S	0	0
			920	583	181	155	1		

- Molecule 19 is a protein called Large ribosomal subunit protein eL19.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	AQ	146	Total	C	N	O	S	0	0
			1214	759	244	208	3		

- Molecule 20 is a protein called Large ribosomal subunit protein eL20.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	AR	76	Total	C	N	O	S	0	0
			603	382	109	109	3		

- Molecule 21 is a protein called Large ribosomal subunit protein eL21.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	AS	98	Total	C	N	O	S	0	0
			788	503	150	134	1		

- Molecule 22 is a protein called Large ribosomal subunit protein uL22.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	AT	183	Total	C	N	O	S	0	0
			1496	978	268	247	3		

- Molecule 23 is a protein called Large ribosomal subunit protein uL23.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	AU	81	Total	C	N	O	S	0	0
			651	417	115	117	2		

- Molecule 24 is a protein called Large ribosomal subunit protein uL24.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	AV	121	Total	C	N	O	S	0	0
			976	619	194	161	2		

- Molecule 25 is a protein called Large ribosomal subunit protein eL24.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	AW	56	Total	C	N	O	S	0	0
			449	287	86	70	6		

- Molecule 26 is a protein called Large ribosomal subunit protein uL29.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	AX	67	Total	C	N	O	S	0	0
			554	343	117	92	2		

- Molecule 27 is a protein called Large ribosomal subunit protein uL30.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	AY	172	Total	C	N	O	S	0	0
			1374	888	245	235	6		

- Molecule 28 is a protein called Large ribosomal subunit protein eL30.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	AZ	98	Total	C	N	O	S	0	0
			742	481	128	132	1		

- Molecule 29 is a protein called Large ribosomal subunit protein eL31.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	Aa	88	Total	C	N	O	S	0	0
			726	460	146	120			

- Molecule 30 is a protein called Large ribosomal subunit protein eL32.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	Ab	140	Total	C	N	O	S	0	0
			1183	757	239	186	1		

- Molecule 31 is a protein called Large ribosomal subunit protein eL34.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	Ac	83	Total	C	N	O	S	0	0
			649	407	138	102	2		

- Molecule 32 is a protein called Large ribosomal subunit protein eL37.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	Ad	52	Total	C	N	O	S	0	0
			429	265	93	65	6		

- Molecule 33 is a protein called LSU ribosomal protein L38E.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	Ae	66	Total	C	N	O	S	0	0
			552	363	93	96			

- Molecule 34 is a protein called Large ribosomal subunit protein eL39.

Mol	Chain	Residues	Atoms				AltConf	Trace
34	Af	50	Total	C	N	O	0	0
			415	260	96	59		

- Molecule 35 is a protein called Large ribosomal subunit protein eL40.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	Ag	50	Total	C	N	O	S	0	0
			417	259	88	66	4		

- Molecule 36 is a protein called eL42.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	Ah	91	Total	C	N	O	S	0	0
			739	467	142	123	7		

- Molecule 37 is a protein called Large ribosomal subunit protein eL43.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	Ai	99	Total	C	N	O	S	0	0
			769	489	148	127	5		

- Molecule 38 is a protein called DJ-1/PfpI domain-containing protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	Aj	183	Total	C	N	O	S	0	0
			1469	954	248	265	2		

- Molecule 39 is a protein called PaREP1 domain containing protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	Ak	90	Total	C	N	O	S	0	0
			743	478	127	136	2		

- Molecule 40 is a protein called Small ribosomal subunit protein eS1.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	BA	187	Total	C	N	O	S	0	0
			1487	965	263	256	3		

- Molecule 41 is a protein called Small ribosomal subunit protein uS2.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	BB	198	Total	C	N	O	S	0	0
			1600	1037	277	279	7		

- Molecule 42 is a protein called Small ribosomal subunit protein uS3.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	BC	77	Total	C	N	O	S	0	0
			611	393	110	107	1		

- Molecule 43 is a protein called Small ribosomal subunit protein uS4.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	BD	157	Total	C	N	O	S	0	0
			1284	831	240	209	4		

- Molecule 44 is a protein called Small ribosomal subunit protein eS4.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	BE	236	Total	C	N	O	S	0	0
			1883	1223	336	322	2		

- Molecule 45 is a protein called Small ribosomal subunit protein uS5.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	BF	194	Total	C	N	O	S	0	0
			1498	951	272	271	4		

- Molecule 46 is a protein called Small ribosomal subunit protein eS6.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	BG	140	Total	C	N	O	S	0	0
			1065	685	190	188	2		

- Molecule 47 is a protein called Small ribosomal subunit protein uS7.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	BH	220	Total	C	N	O	S	0	0
			1773	1128	325	313	7		

- Molecule 48 is a protein called Small ribosomal subunit protein uS8.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	BI	129	Total	C	N	O	S	0	0
			1036	676	177	180	3		

- Molecule 49 is a protein called Small ribosomal subunit protein eS8.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	BJ	130	Total	C	N	O	S	0	0
			1007	636	198	172	1		

- Molecule 50 is a protein called Small ribosomal subunit protein uS9.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	BK	134	Total	C	N	O	S	0	0
			1058	680	191	182	5		

- Molecule 51 is a protein called Small ribosomal subunit protein uS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	BL	38	Total	C	N	O	S	0	0
			315	201	64	49	1		

- Molecule 52 is a protein called Small ribosomal subunit protein uS11.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	BM	127	Total	C	N	O	S	0	0
			941	592	182	164	3		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
BM	128	IAS	ASP	conflict	UNP A3MX63

- Molecule 53 is a protein called Small ribosomal subunit protein uS12.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	BN	144	Total	C	N	O	S	0	0
			1133	730	211	189	3		

- Molecule 54 is a protein called Small ribosomal subunit protein uS13.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	BO	143	Total	C	N	O	S	0	0
			1108	700	211	195	2		

- Molecule 55 is a protein called Small ribosomal subunit protein uS14.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	BP	29	Total	C	N	O	S	0	0
			241	150	51	36	4		

- Molecule 56 is a protein called Small ribosomal subunit protein uS15.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	BQ	149	Total	C	N	O	S	0	0
			1224	782	233	208	1		

- Molecule 57 is a protein called Small ribosomal subunit protein uS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	BR	144	Total	C	N	O	S	0	0
			1171	756	216	194	5		

- Molecule 58 is a protein called Small ribosomal subunit protein eS17.

Mol	Chain	Residues	Atoms				AltConf	Trace
58	BS	64	Total	C	N	O	0	0
			517	332	94	91		

- Molecule 59 is a protein called Small ribosomal subunit protein uS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	BT	135	Total	C	N	O	S	0	0
			1111	720	203	182	6		

- Molecule 60 is a protein called Small ribosomal subunit protein eS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	BU	155	Total	C	N	O	S	0	0
			1225	789	225	209	2		

- Molecule 61 is a protein called Small ribosomal subunit protein eS24.

Mol	Chain	Residues	Atoms				AltConf	Trace
61	BV	115	Total	C	N	O	0	0
			950	597	185	168		

- Molecule 62 is a protein called SSU ribosomal protein S25E.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	BW	68	Total	C	N	O	S	0	0
			544	351	96	96	1		

- Molecule 63 is a protein called SSU ribosomal protein S26E.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	BX	95	Total	C	N	O	S	0	0
			772	490	150	128	4		

- Molecule 64 is a protein called Small ribosomal subunit protein eS27.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	BY	65	Total	C	N	O	S	0	0
			501	317	100	79	5		

- Molecule 65 is a protein called eS28.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	BZ	71	Total	C	N	O	S	0	0
			552	344	108	99	1		

- Molecule 66 is a protein called SSU ribosomal protein S30E.

Mol	Chain	Residues	Atoms				AltConf	Trace
66	Ba	43	Total	C	N	O	0	0
			357	222	80	55		

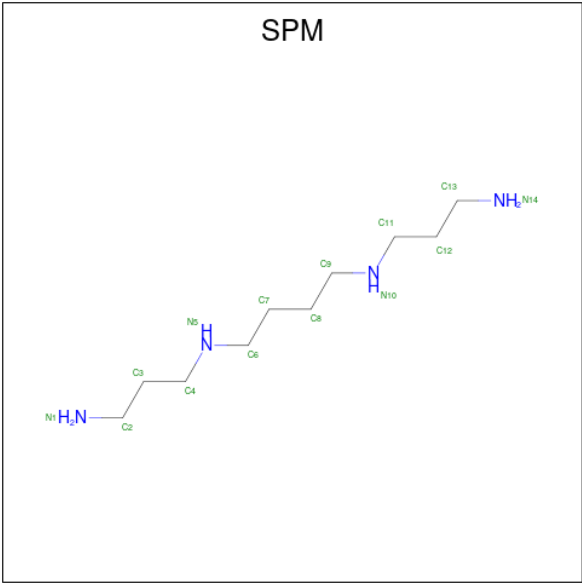
- Molecule 67 is a protein called aS35.

Mol	Chain	Residues	Atoms				AltConf	Trace
67	Bb	60	Total	C	N	O	0	0
			479	301	95	83		

- Molecule 68 is a protein called Small zinc finger protein HVO-2753-like zinc-binding pocket domain-containing protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	Bc	64	Total	C	N	O	S	0	0
			477	301	90	82	4		

- Molecule 69 is SPERMINE (CCD ID: SPM) (formula: C₁₀H₂₆N₄).



Mol	Chain	Residues	Atoms			AltConf
69	1	1	Total	C	N	0
			14	10	4	
69	1	1	Total	C	N	0
			14	10	4	
69	1	1	Total	C	N	0
			14	10	4	
69	1	1	Total	C	N	0
			14	10	4	
69	1	1	Total	C	N	0
			14	10	4	
69	1	1	Total	C	N	0
			14	10	4	
69	1	1	Total	C	N	0
			14	10	4	
69	1	1	Total	C	N	0
			14	10	4	
69	1	1	Total	C	N	0
			14	10	4	

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Mol	Chain	Residues	Atoms			AltConf
69	1	1	Total	C	N	0
			14	10	4	
69	1	1	Total	C	N	0
			14	10	4	
69	1	1	Total	C	N	0
			14	10	4	
69	1	1	Total	C	N	0
			14	10	4	
69	1	1	Total	C	N	0
			14	10	4	
69	1	1	Total	C	N	0
			14	10	4	
69	1	1	Total	C	N	0
			14	10	4	
69	1	1	Total	C	N	0
			14	10	4	
69	1	1	Total	C	N	0
			14	10	4	
69	1	1	Total	C	N	0
			14	10	4	
69	1	1	Total	C	N	0
			14	10	4	
69	1	1	Total	C	N	0
			14	10	4	
69	1	1	Total	C	N	0
			14	10	4	
69	1	1	Total	C	N	0
			14	10	4	
69	1	1	Total	C	N	0
			14	10	4	
69	1	1	Total	C	N	0
			14	10	4	
69	1	1	Total	C	N	0
			14	10	4	
69	1	1	Total	C	N	0
			14	10	4	
69	1	1	Total	C	N	0
			14	10	4	

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Mol	Chain	Residues	Atoms			AltConf
			Total	C	N	
69	1	1	14	10	4	0
69	1	1	14	10	4	0
69	1	1	14	10	4	0
69	1	1	14	10	4	0
69	1	1	14	10	4	0
69	1	1	14	10	4	0
69	1	1	14	10	4	0
69	1	1	14	10	4	0
69	1	1	14	10	4	0
69	1	1	14	10	4	0
69	1	1	14	10	4	0
69	1	1	14	10	4	0
69	1	1	14	10	4	0
69	4	1	14	10	4	0
69	4	1	14	10	4	0
69	4	1	14	10	4	0
69	4	1	14	10	4	0
69	4	1	14	10	4	0
69	4	1	14	10	4	0
69	4	1	14	10	4	0
69	4	1	14	10	4	0
69	4	1	14	10	4	0
69	4	1	14	10	4	0

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Mol	Chain	Residues	Atoms			AltConf
69	4	1	Total	C	N	0
			14	10	4	
69	4	1	Total	C	N	0
			14	10	4	
69	4	1	Total	C	N	0
			14	10	4	
69	4	1	Total	C	N	0
			14	10	4	
69	4	1	Total	C	N	0
			14	10	4	
69	4	1	Total	C	N	0
			14	10	4	
69	4	1	Total	C	N	0
			14	10	4	
69	AL	1	Total	C	N	0
			14	10	4	
69	Ah	1	Total	C	N	0
			14	10	4	

- Molecule 70 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
70	1	170	Total	Mg	0
			170	170	
70	4	78	Total	Mg	0
			78	78	
70	AA	1	Total	Mg	0
			1	1	
70	AL	2	Total	Mg	0
			2	2	
70	BK	1	Total	Mg	0
			1	1	

- Molecule 71 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
71	AW	1	Total	Zn	0
			1	1	

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Mol	Chain	Residues	Atoms		AltConf
71	Ad	1	Total 1	Zn 1	0
71	Ag	1	Total 1	Zn 1	0
71	Ah	1	Total 1	Zn 1	0
71	Ai	1	Total 1	Zn 1	0
71	BF	1	Total 1	Zn 1	0
71	BP	1	Total 1	Zn 1	0
71	BR	1	Total 1	Zn 1	0
71	BX	1	Total 1	Zn 1	0
71	BY	1	Total 1	Zn 1	0
71	Bc	1	Total 1	Zn 1	0

- Molecule 72 is water.

Mol	Chain	Residues	Atoms		AltConf
72	2	181	Total 181	O 181	0
72	1	5640	Total 5640	O 5640	0
72	4	1487	Total 1487	O 1487	0
72	AA	12	Total 12	O 12	0
72	AB	1	Total 1	O 1	0
72	AC	6	Total 6	O 6	0
72	AG	2	Total 2	O 2	0
72	AH	3	Total 3	O 3	0
72	AL	10	Total 10	O 10	0

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Mol	Chain	Residues	Atoms		AltConf
72	AM	2	Total 2	O 2	0
72	AN	2	Total 2	O 2	0
72	AO	2	Total 2	O 2	0
72	AP	1	Total 1	O 1	0
72	AQ	1	Total 1	O 1	0
72	AT	2	Total 2	O 2	0
72	AU	1	Total 1	O 1	0
72	AX	22	Total 22	O 22	0
72	AY	2	Total 2	O 2	0
72	Aa	1	Total 1	O 1	0
72	Ab	6	Total 6	O 6	0
72	Ad	3	Total 3	O 3	0
72	Ah	1	Total 1	O 1	0
72	BA	18	Total 18	O 18	0
72	BB	18	Total 18	O 18	0
72	BC	9	Total 9	O 9	0
72	BD	28	Total 28	O 28	0
72	BE	23	Total 23	O 23	0
72	BF	32	Total 32	O 32	0
72	BG	19	Total 19	O 19	0
72	BH	26	Total 26	O 26	0

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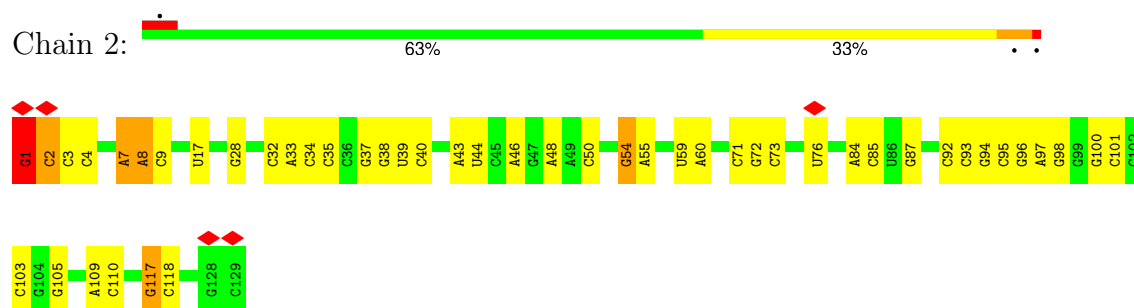
Continued from previous page...

Mol	Chain	Residues	Atoms		AltConf
72	BI	20	Total 20	O 20	0
72	BJ	13	Total 13	O 13	0
72	BK	12	Total 12	O 12	0
72	BL	7	Total 7	O 7	0
72	BM	9	Total 9	O 9	0
72	BN	12	Total 12	O 12	0
72	BO	26	Total 26	O 26	0
72	BP	8	Total 8	O 8	0
72	BQ	15	Total 15	O 15	0
72	BR	12	Total 12	O 12	0
72	BS	5	Total 5	O 5	0
72	BT	17	Total 17	O 17	0
72	BU	13	Total 13	O 13	0
72	BV	9	Total 9	O 9	0
72	BW	8	Total 8	O 8	0
72	BX	12	Total 12	O 12	0
72	BY	10	Total 10	O 10	0
72	BZ	12	Total 12	O 12	0
72	Ba	8	Total 8	O 8	0
72	Bb	7	Total 7	O 7	0
72	Bc	16	Total 16	O 16	0

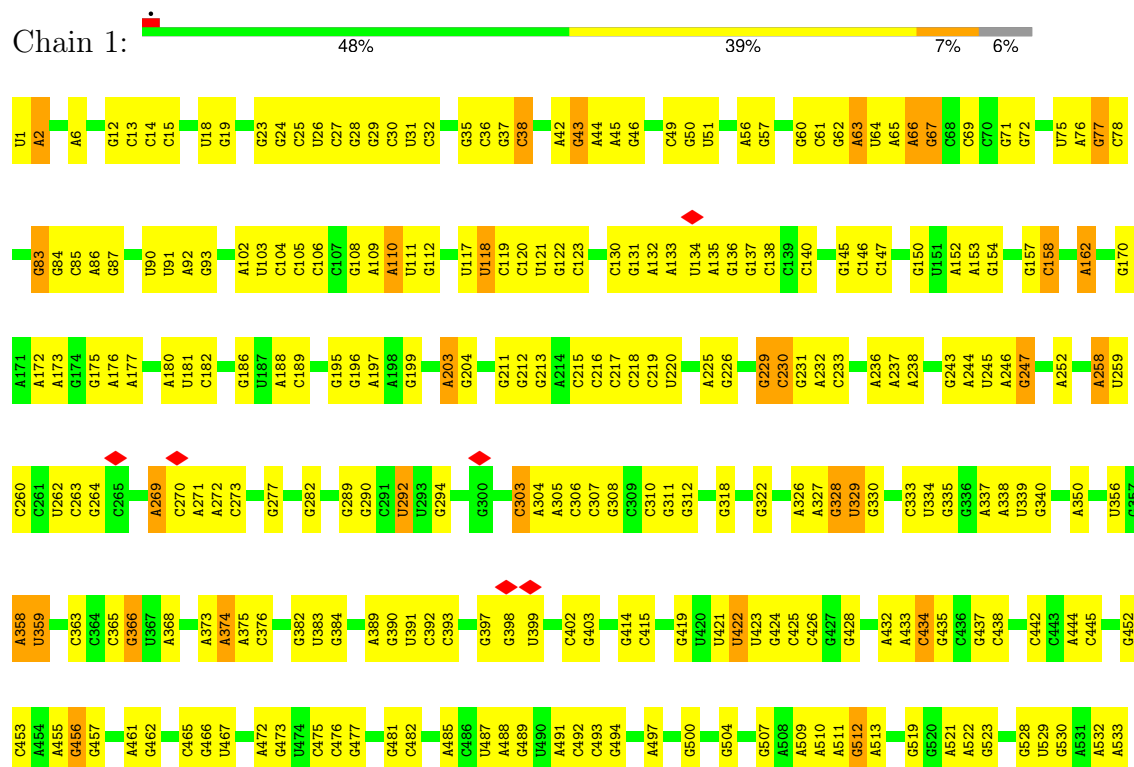
3 Residue-property plots

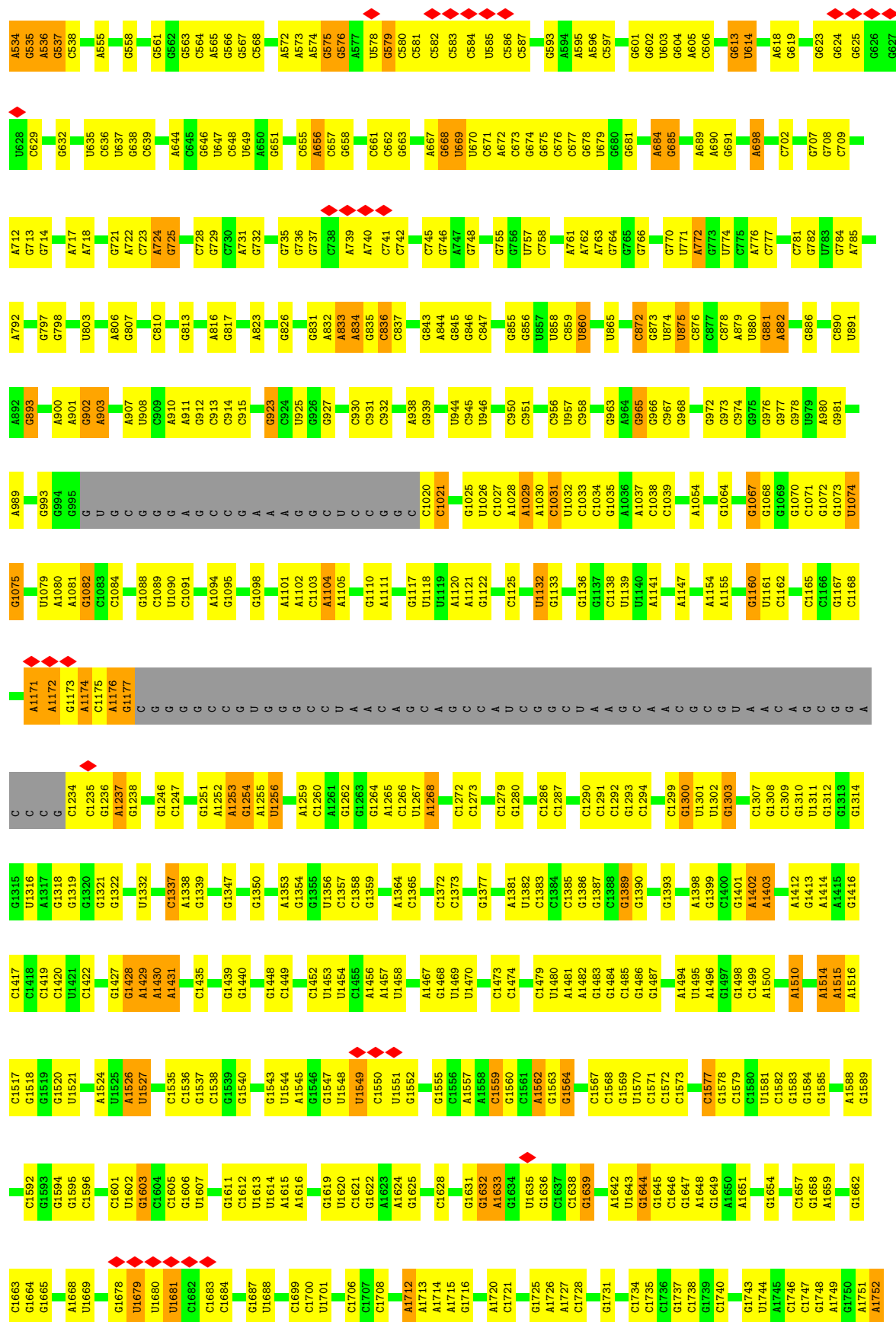
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion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

• Molecule 1: 5S rRNA



• Molecule 2: 23S rRNA

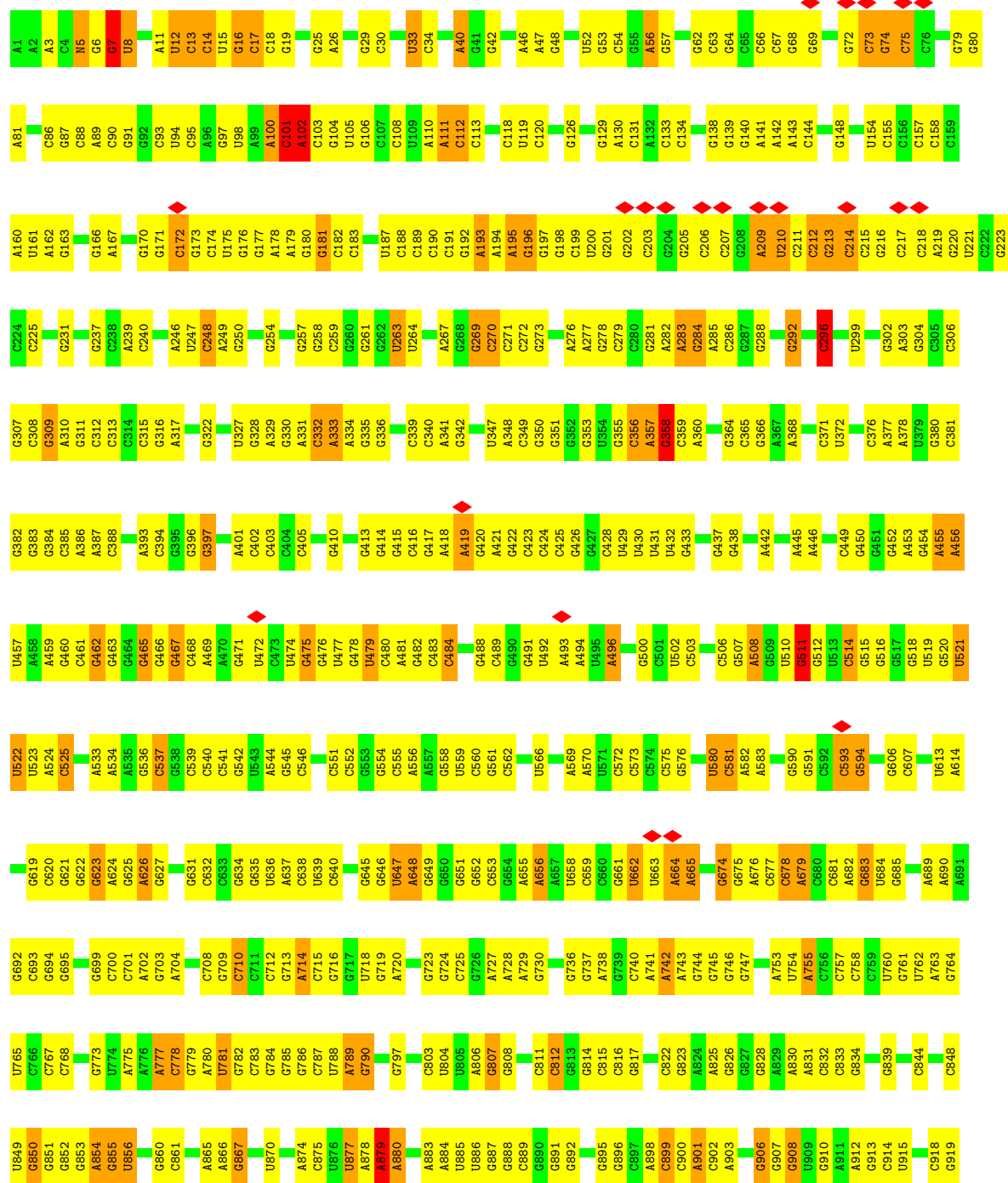


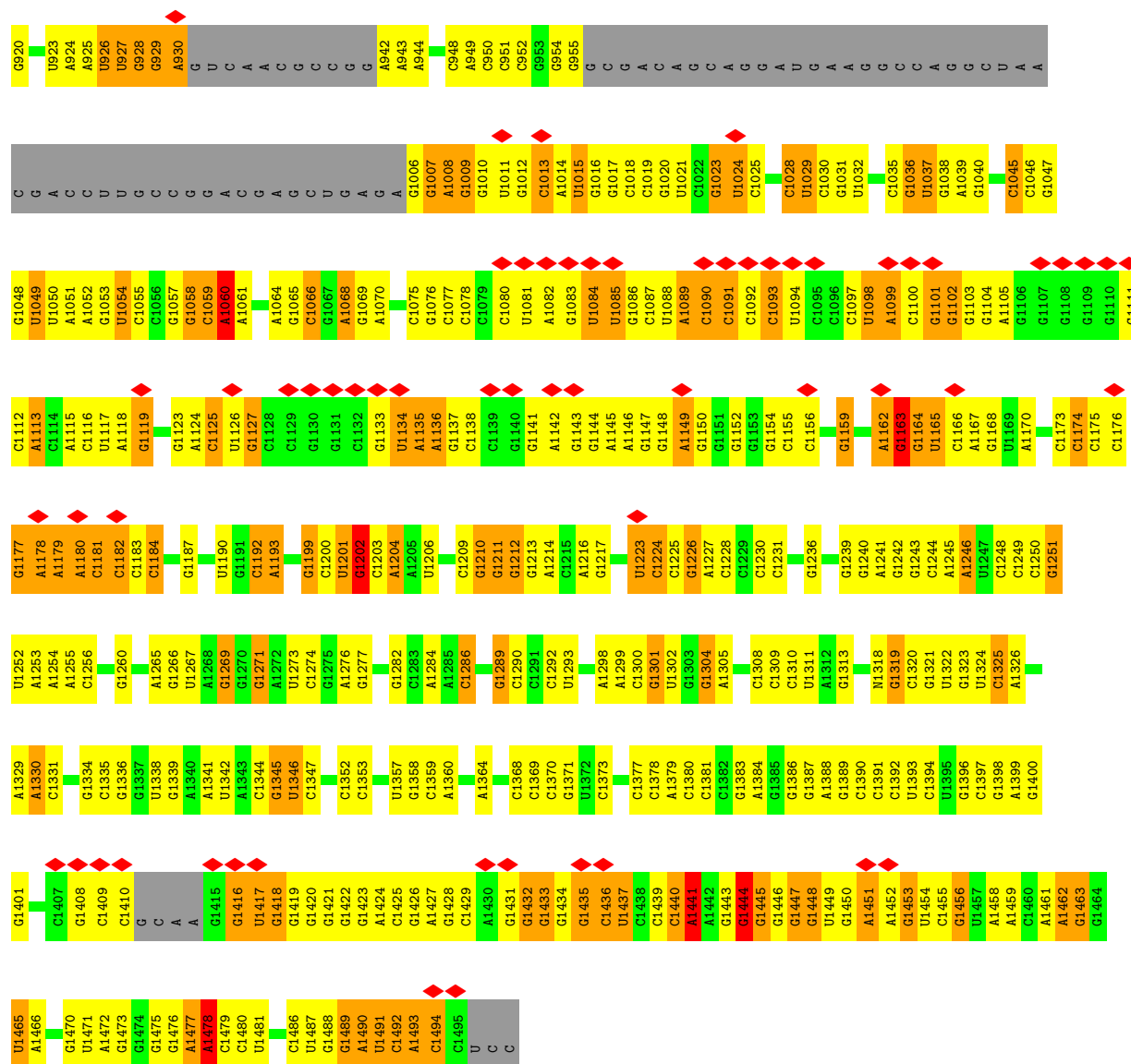




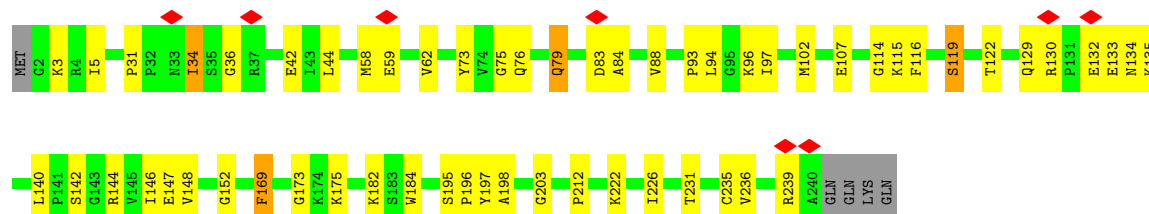
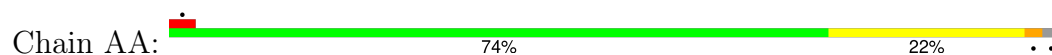


• Molecule 3: 16S rRNA



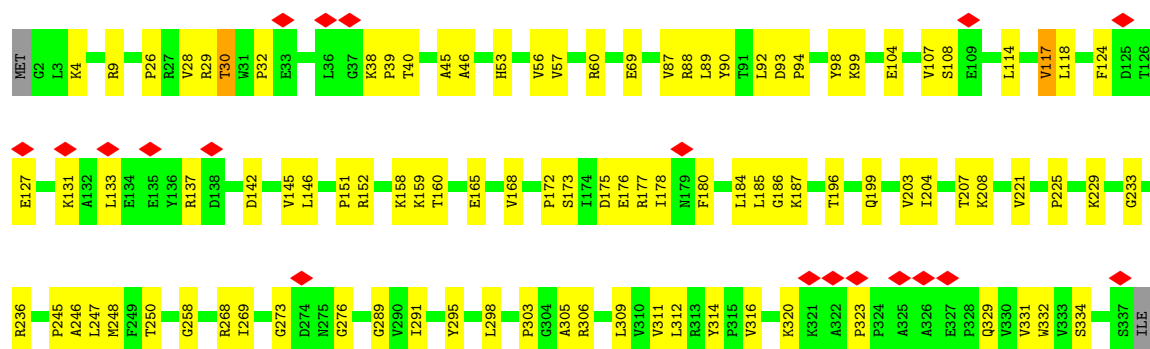


• Molecule 4: Large ribosomal subunit protein uL2

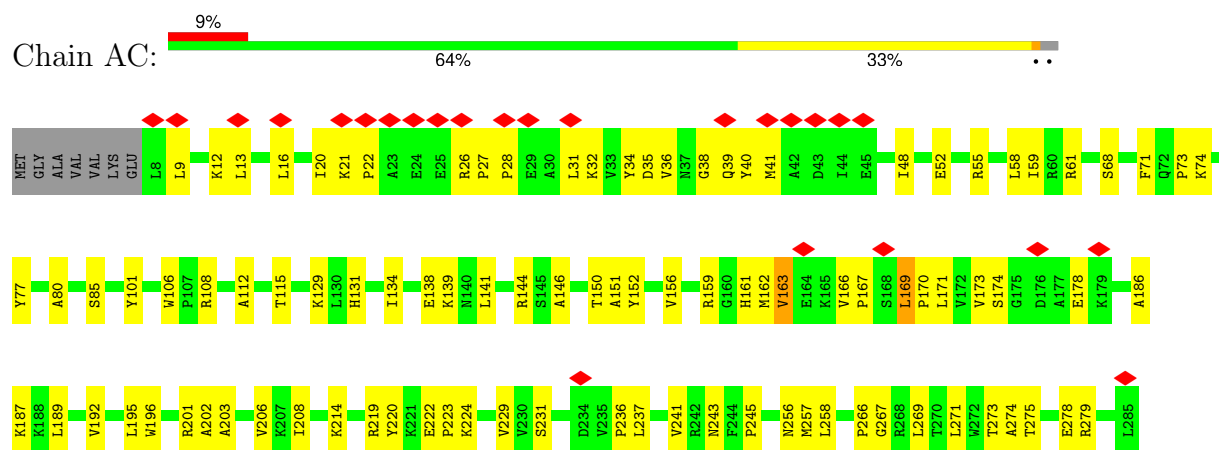


• Molecule 5: Large ribosomal subunit protein uL3

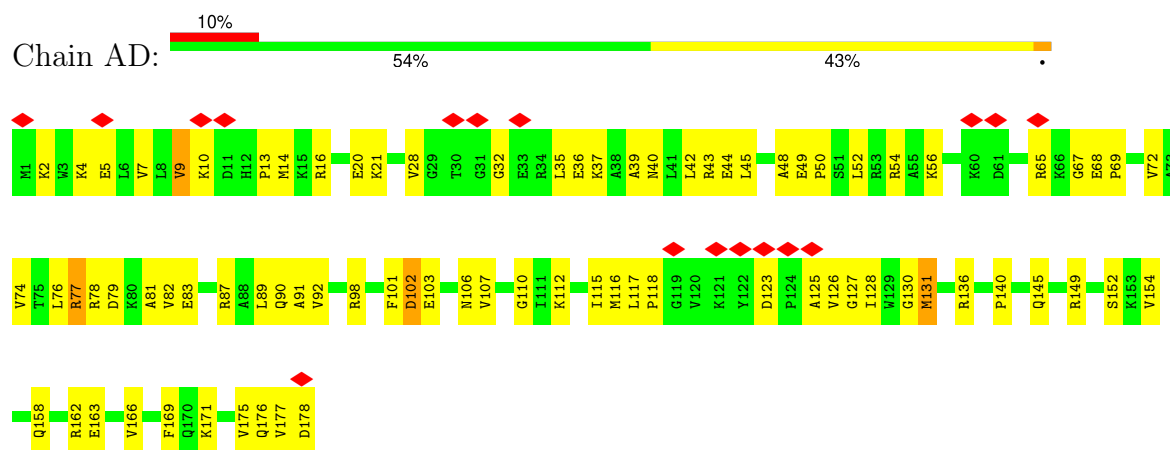




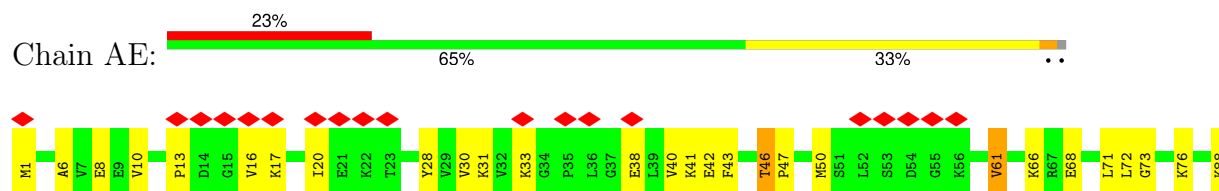
• Molecule 6: Large ribosomal subunit protein uL4

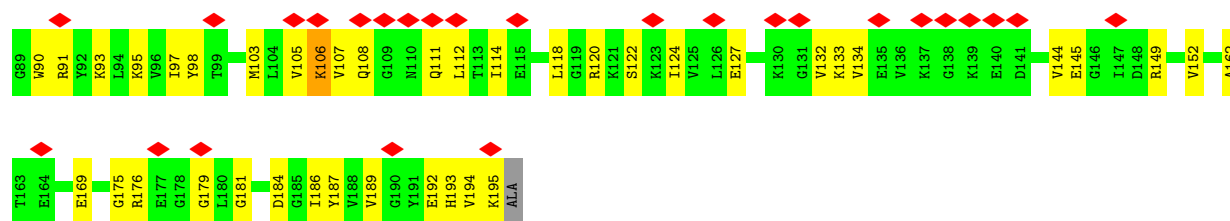


• Molecule 7: Large ribosomal subunit protein uL5

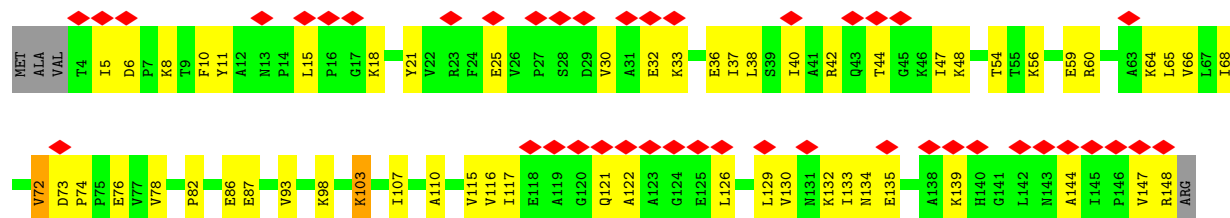


• Molecule 8: Large ribosomal subunit protein uL6

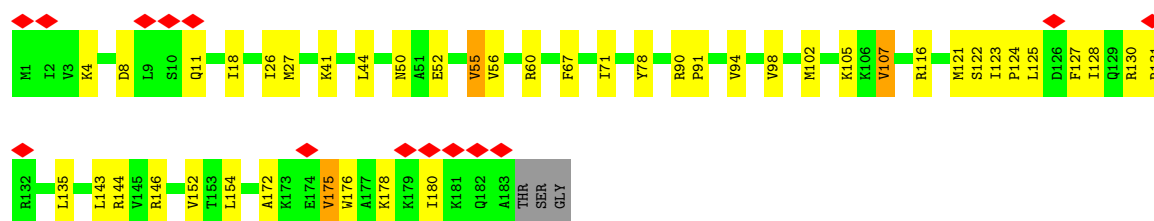
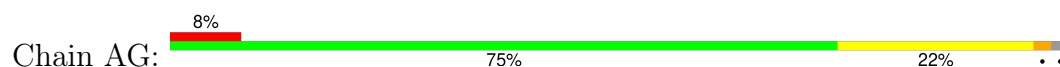




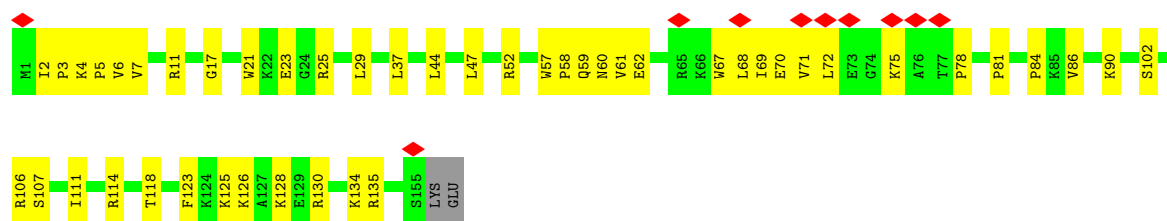
• Molecule 9: Large ribosomal subunit protein eL8



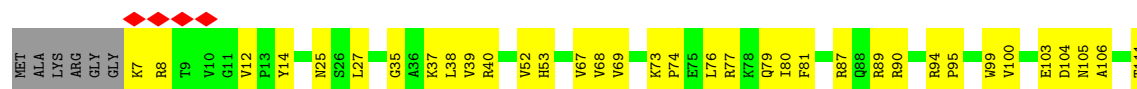
• Molecule 10: Large ribosomal subunit protein uL13



• Molecule 11: Large ribosomal subunit protein eL13

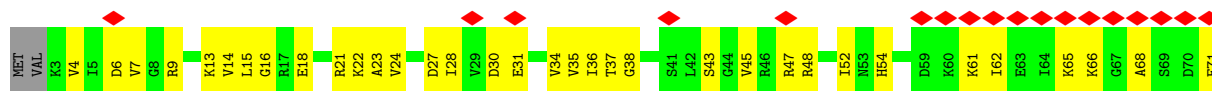


• Molecule 12: Large ribosomal subunit protein uL14

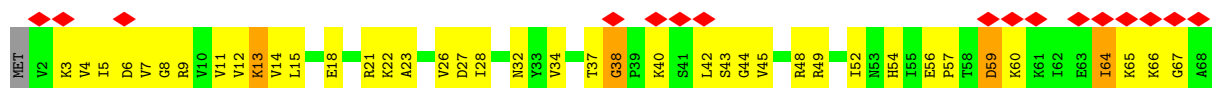




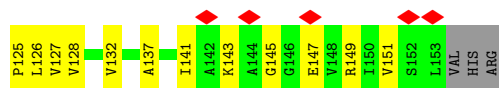
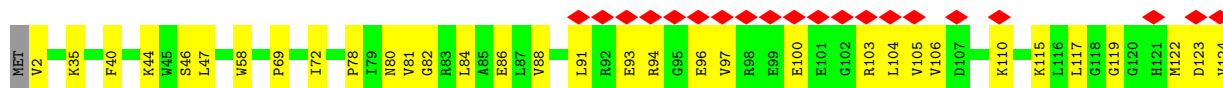
- Molecule 13: Large ribosomal subunit protein eL14



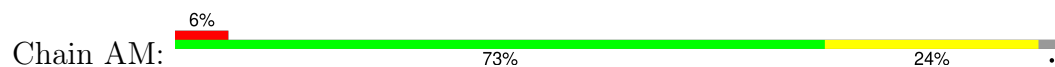
- Molecule 13: Large ribosomal subunit protein eL14



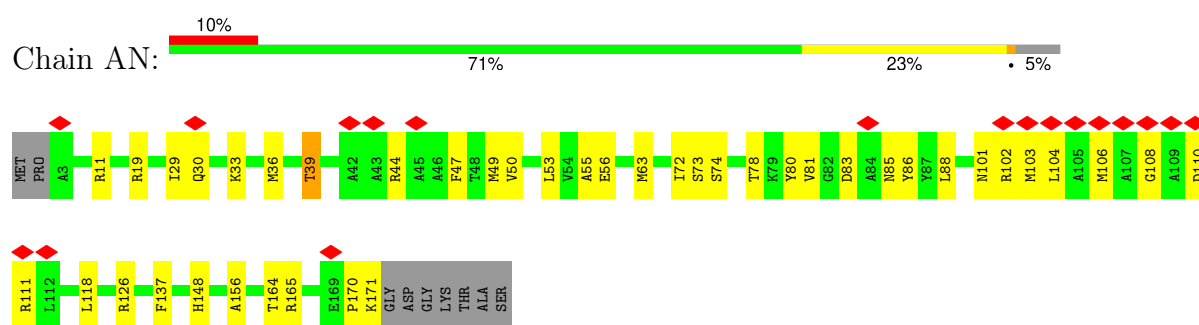
- Molecule 14: Large ribosomal subunit protein uL15



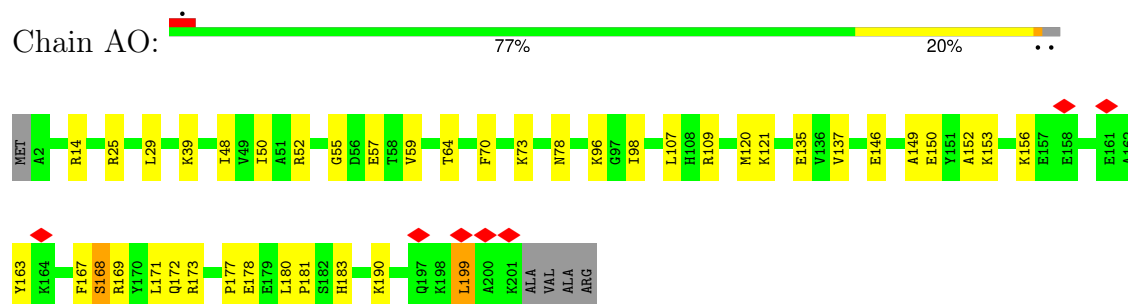
- Molecule 15: 50S ribosomal protein L15e



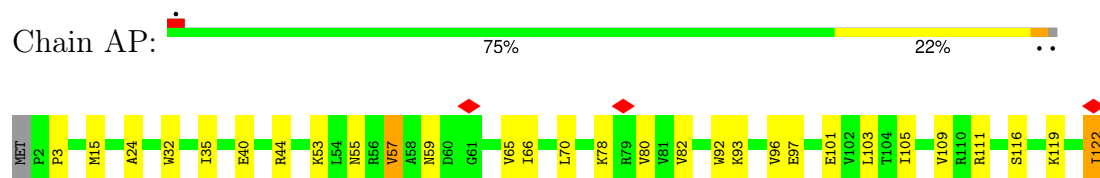
- Molecule 16: Large ribosomal subunit protein uL16



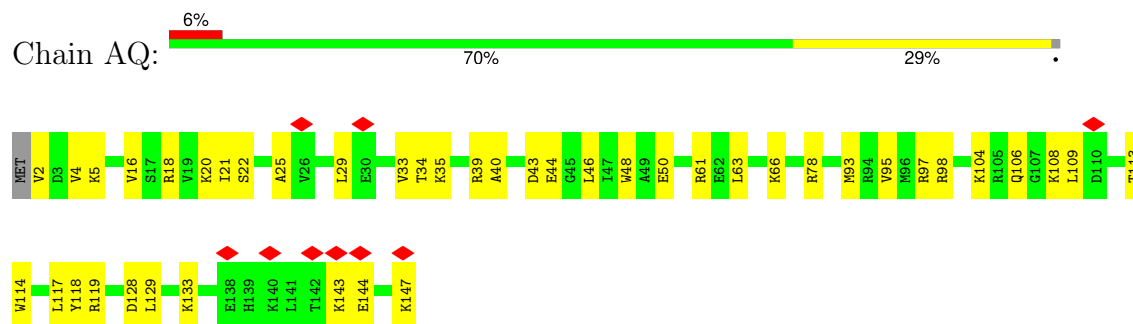
- Molecule 17: Large ribosomal subunit protein uL18



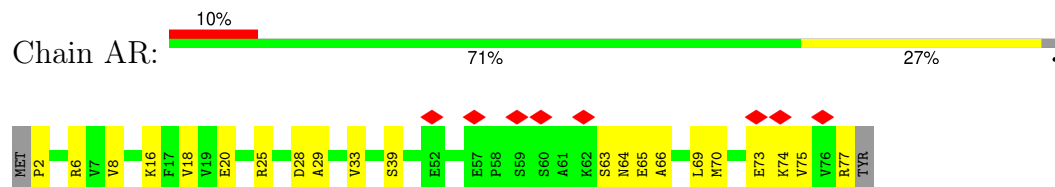
- Molecule 18: Large ribosomal subunit protein eL18



- Molecule 19: Large ribosomal subunit protein eL19



- Molecule 20: Large ribosomal subunit protein eL20

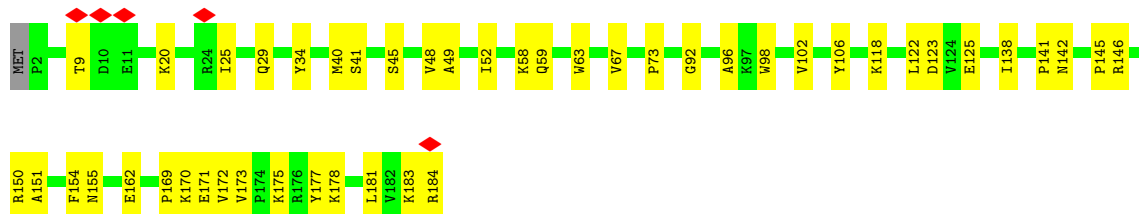
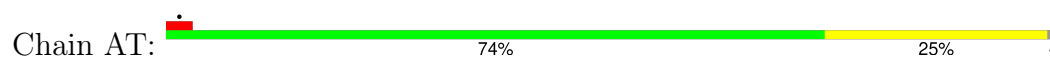


- Molecule 21: Large ribosomal subunit protein eL21





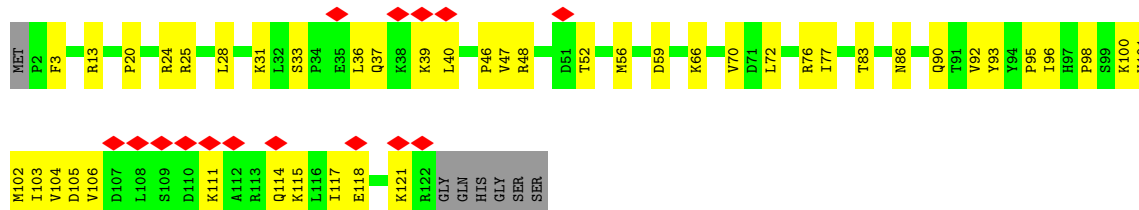
- Molecule 22: Large ribosomal subunit protein uL22



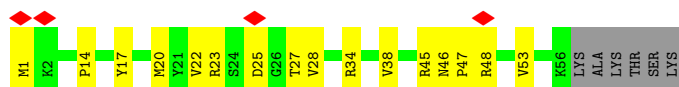
- Molecule 23: Large ribosomal subunit protein uL23



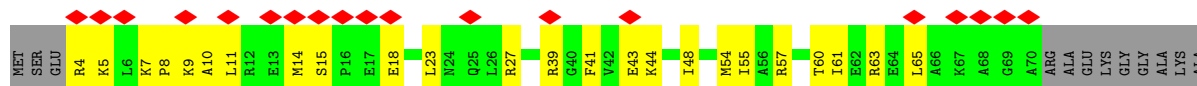
- Molecule 24: Large ribosomal subunit protein uL24



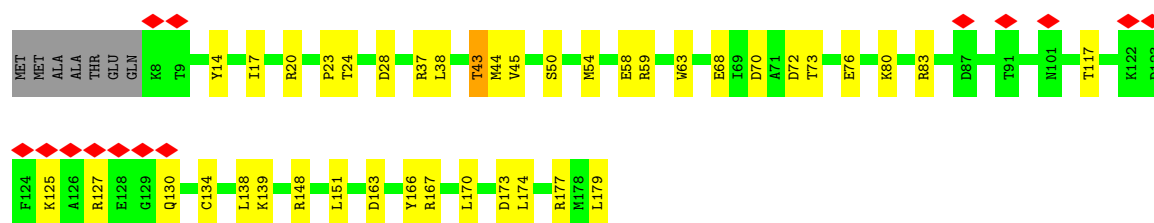
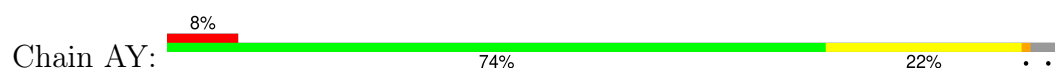
- Molecule 25: Large ribosomal subunit protein eL24



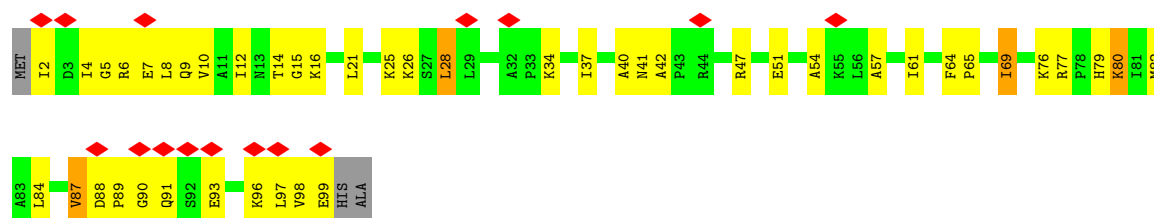
- Molecule 26: Large ribosomal subunit protein uL29



- Molecule 27: Large ribosomal subunit protein uL30



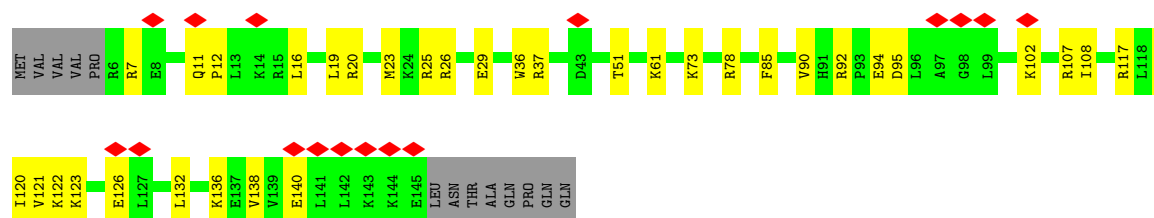
- Molecule 28: Large ribosomal subunit protein eL30



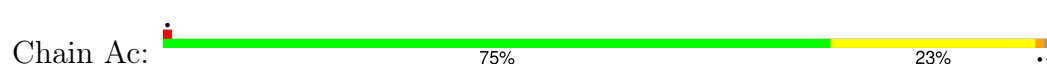
- Molecule 29: Large ribosomal subunit protein eL31



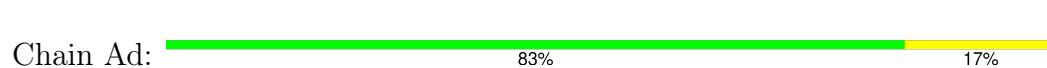
- Molecule 30: Large ribosomal subunit protein eL32



- Molecule 31: Large ribosomal subunit protein eL34



- Molecule 32: Large ribosomal subunit protein eL37





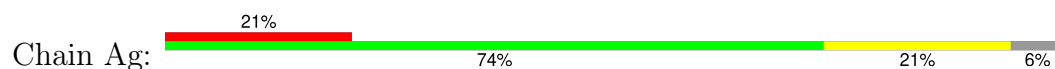
- Molecule 33: LSU ribosomal protein L38E



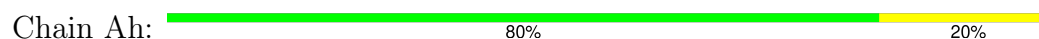
- Molecule 34: Large ribosomal subunit protein eL39



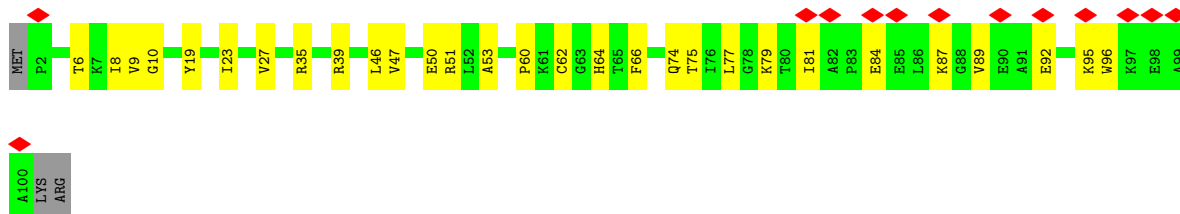
- Molecule 35: Large ribosomal subunit protein eL40



- Molecule 36: eL42

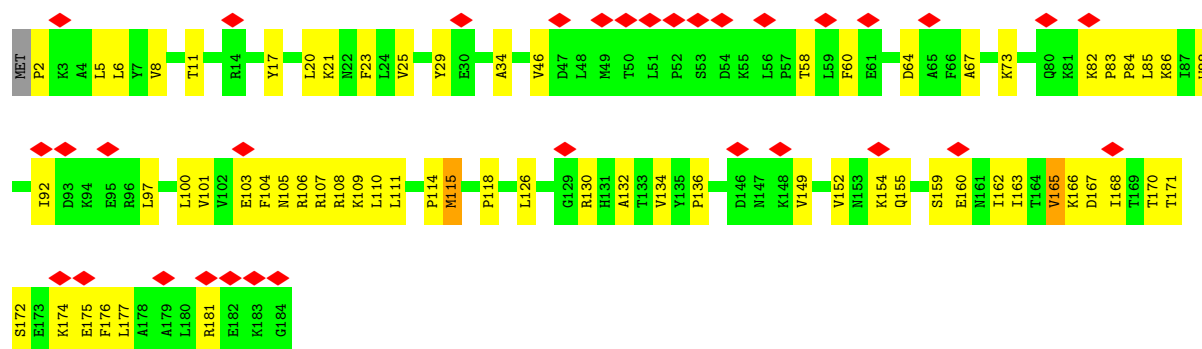


- Molecule 37: Large ribosomal subunit protein eL43

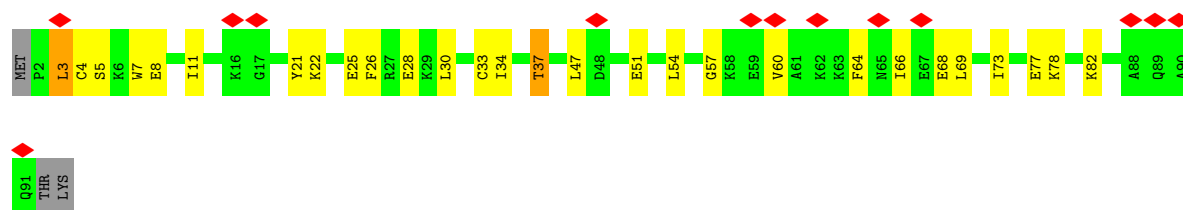


- Molecule 38: DJ-1/PfpI domain-containing protein

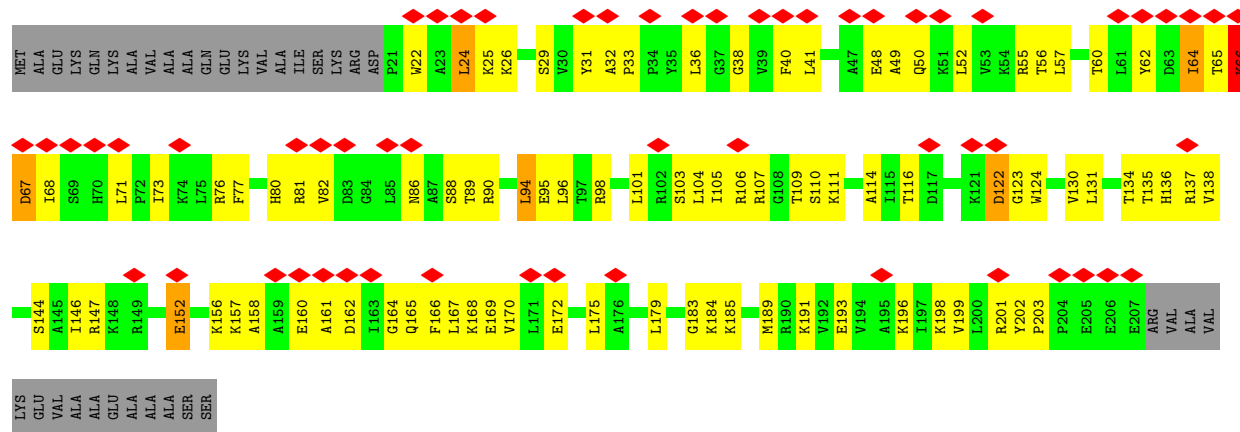
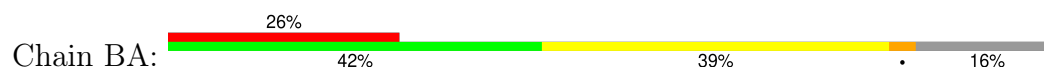




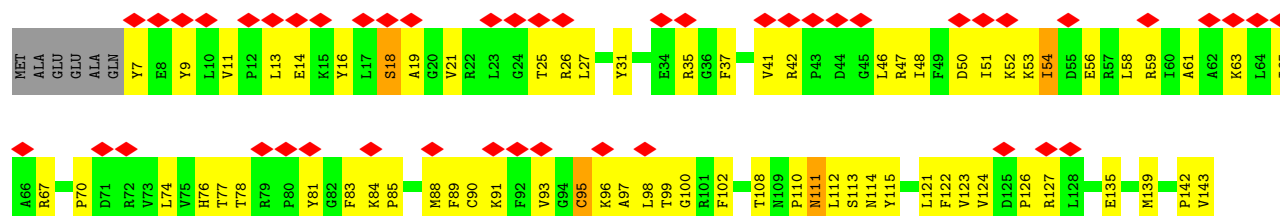
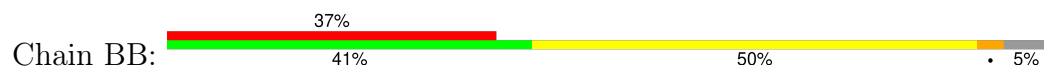
- Molecule 39: PaREP1 domain containing protein

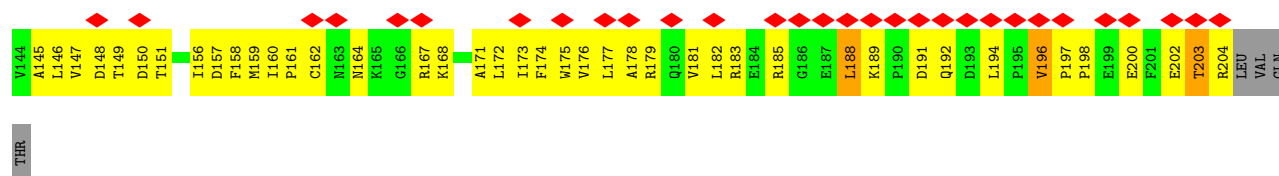


- Molecule 40: Small ribosomal subunit protein eS1

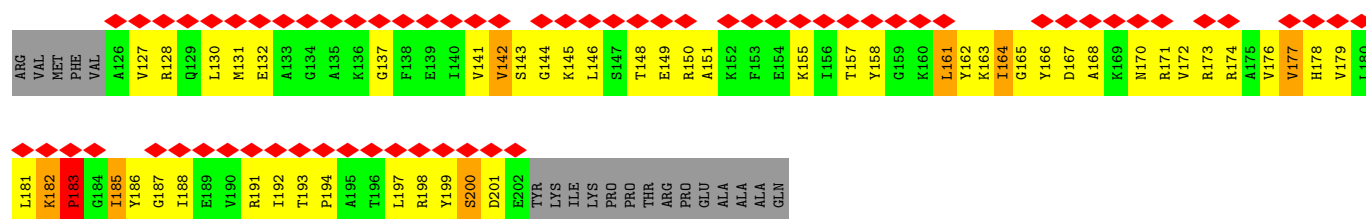
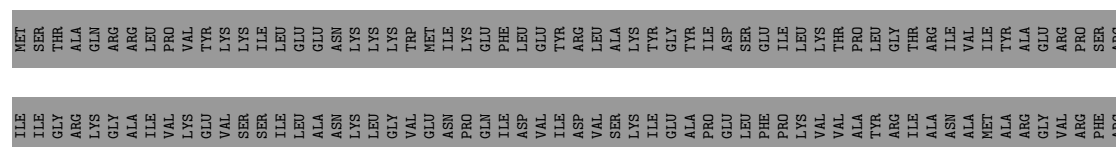


- Molecule 41: Small ribosomal subunit protein uS2

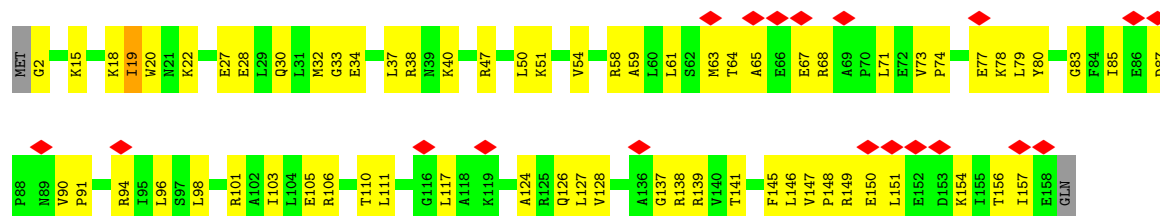




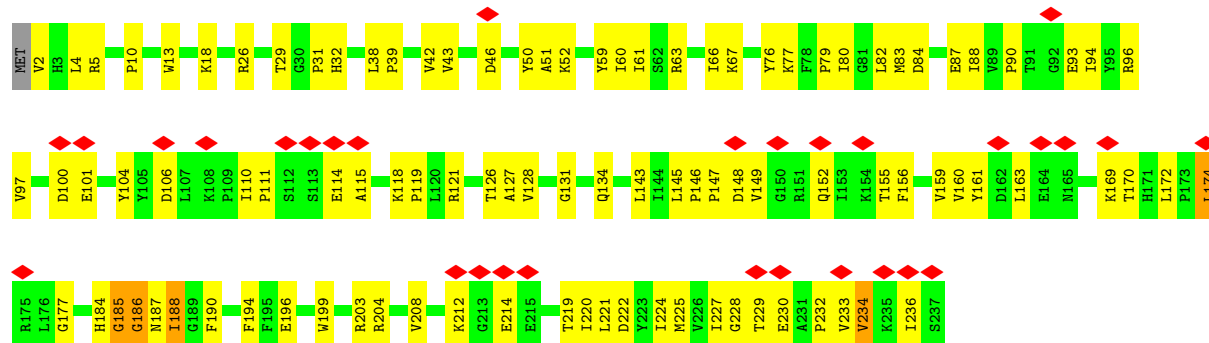
- Molecule 42: Small ribosomal subunit protein uS3



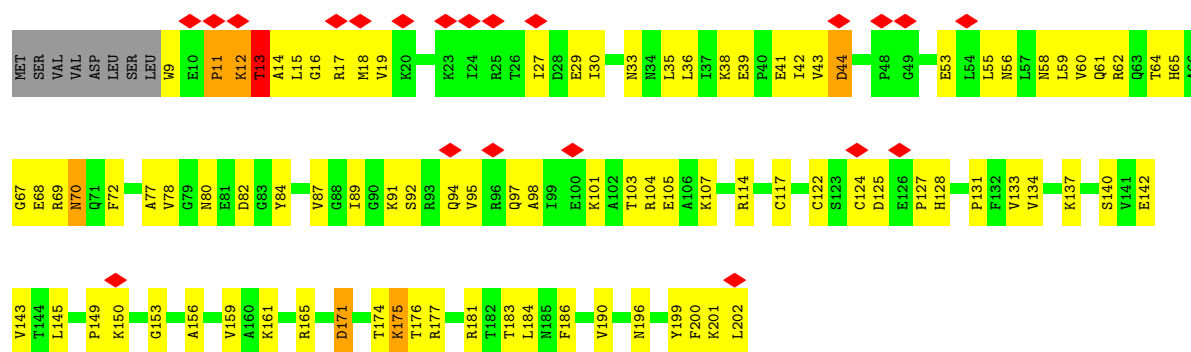
- Molecule 43: Small ribosomal subunit protein uS4



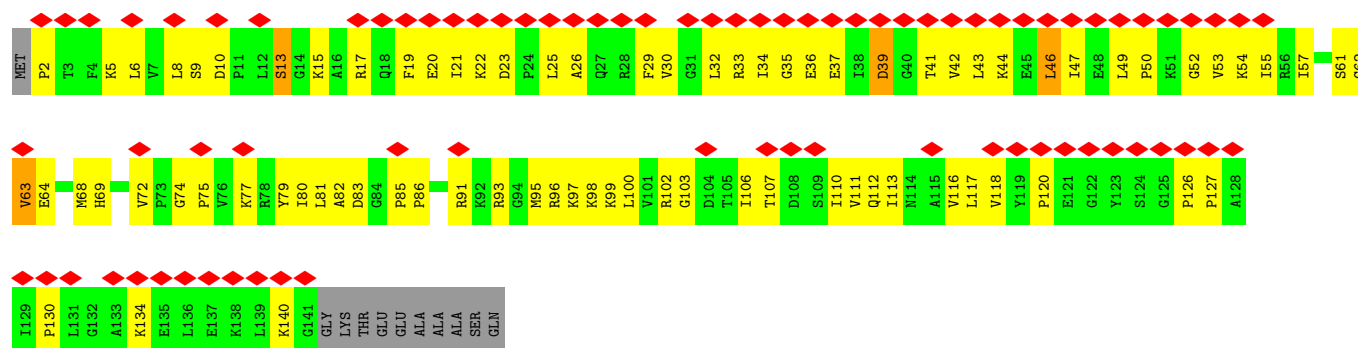
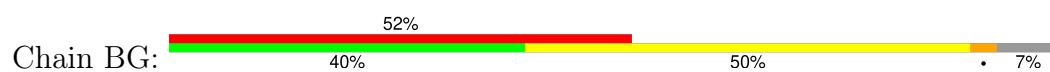
- Molecule 44: Small ribosomal subunit protein eS4



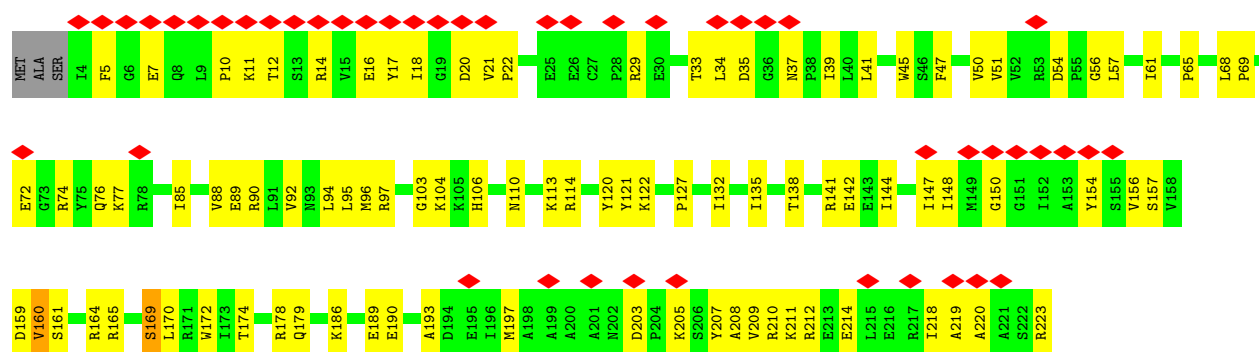
- Molecule 45: Small ribosomal subunit protein uS5



• Molecule 46: Small ribosomal subunit protein eS6



• Molecule 47: Small ribosomal subunit protein uS7

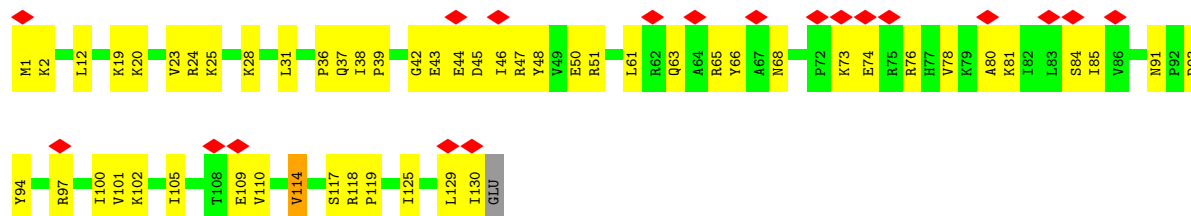


• Molecule 48: Small ribosomal subunit protein uS8

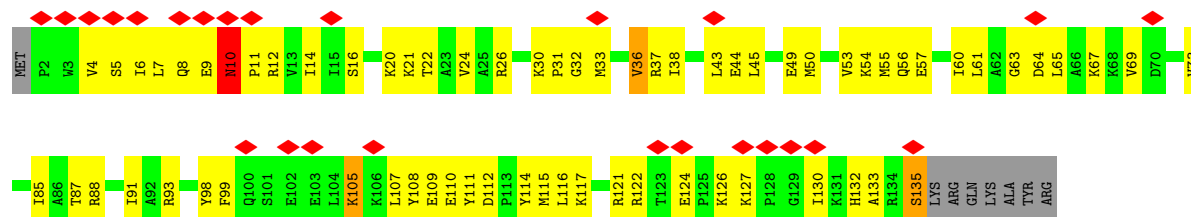




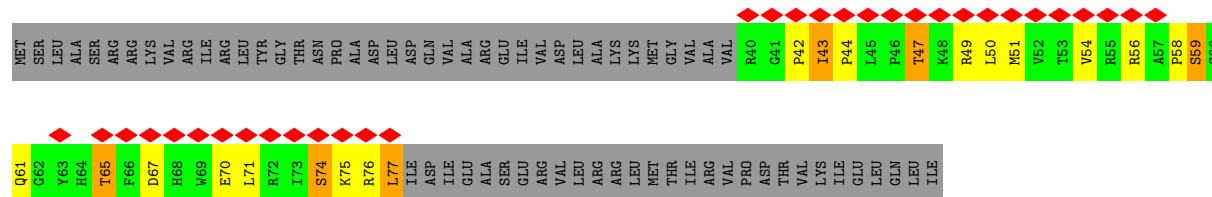
• Molecule 49: Small ribosomal subunit protein eS8



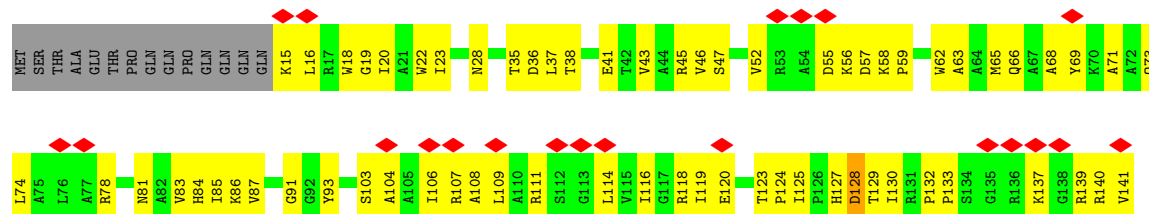
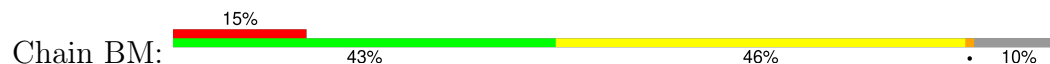
• Molecule 50: Small ribosomal subunit protein uS9



• Molecule 51: Small ribosomal subunit protein uS10



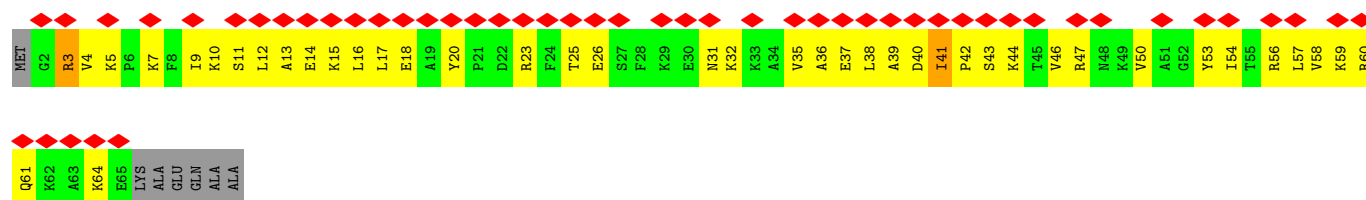
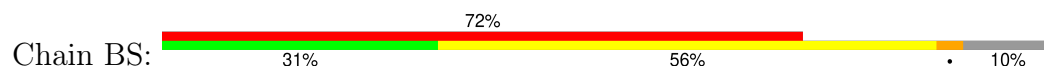
• Molecule 52: Small ribosomal subunit protein uS11



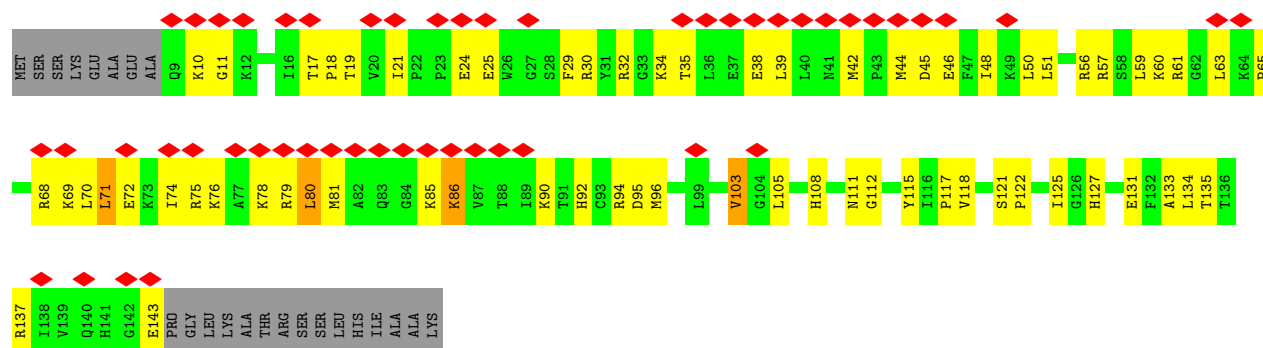
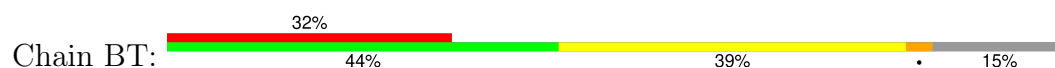
• Molecule 53: Small ribosomal subunit protein uS12



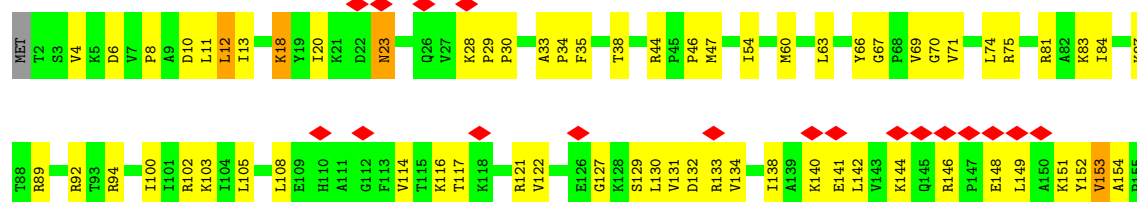
- Molecule 58: Small ribosomal subunit protein eS17



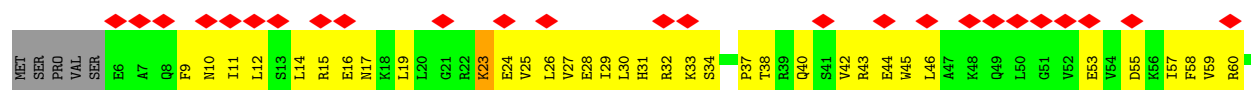
- Molecule 59: Small ribosomal subunit protein uS19



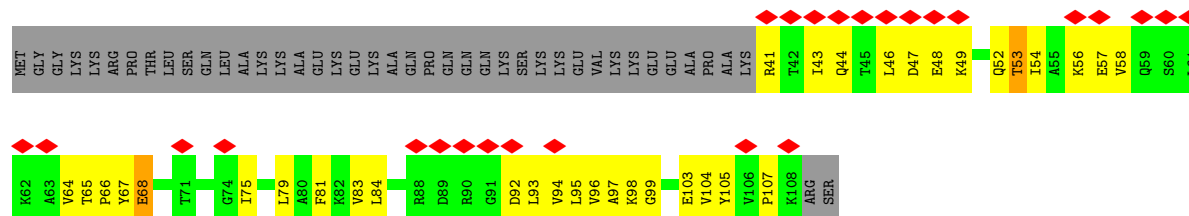
- Molecule 60: Small ribosomal subunit protein eS19



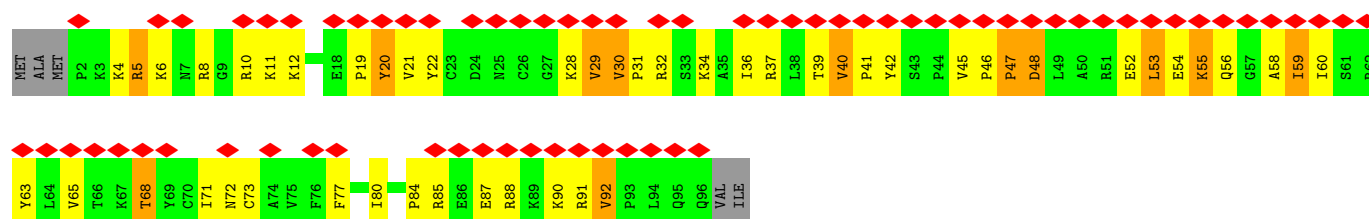
- Molecule 61: Small ribosomal subunit protein eS24



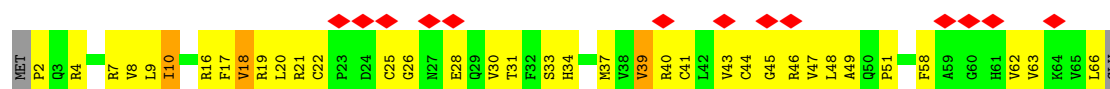
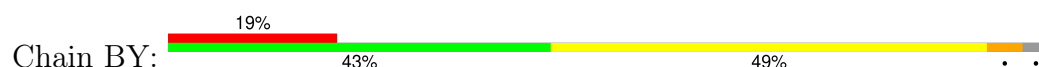
- Molecule 62: SSU ribosomal protein S25E



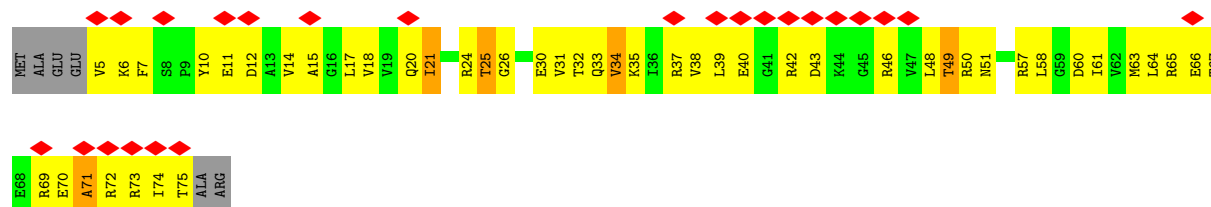
- Molecule 63: SSU ribosomal protein S26E



- Molecule 64: Small ribosomal subunit protein eS27



- Molecule 65: eS28

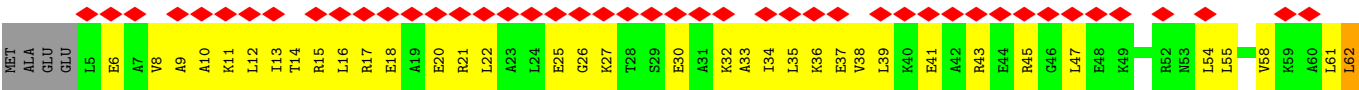


- Molecule 66: SSU ribosomal protein S30E

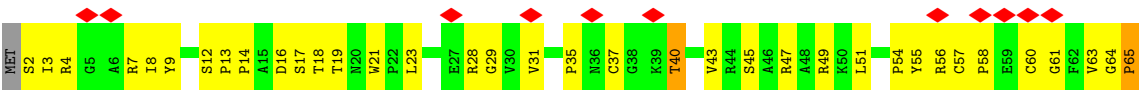




• Molecule 67: aS35



• Molecule 68: Small zinc finger protein HVO-2753-like zinc-binding pocket domain-containing protein



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	129829	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 ($e^-/\text{\AA}^2$)	40	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	1500	Depositor
Magnification	105000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	1.526	Depositor
Minimum map value	-0.618	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.049	Depositor
Recommended contour level	0.215	Depositor
Map size ($\text{\AA}$)	504.2144, 504.2144, 504.2144	wwPDB
Map dimensions	608, 608, 608	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	0.8293, 0.8293, 0.8293	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: OMC, 5MC, MG, 4AC, ZN, UR3, G7M, M7A, SPM, B8T, IAS, OMG, PSU, A2M, MA6, 6MZ, OMU

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	2	0.35	0/3096	0.36	1/4830 (0.0%)
2	1	0.30	3/67134 (0.0%)	0.34	8/104802 (0.0%)
3	4	0.27	3/33464 (0.0%)	0.39	21/52215 (0.0%)
4	AA	0.26	0/1847	0.44	0/2489
5	AB	0.24	0/2678	0.38	0/3643
6	AC	0.24	0/2234	0.43	0/3024
7	AD	0.29	0/1431	0.43	0/1913
8	AE	0.22	0/1548	0.40	0/2087
9	AF	0.23	0/1114	0.46	0/1513
10	AG	0.22	0/1542	0.34	0/2076
11	AH	0.21	0/1265	0.37	0/1692
12	AI	0.25	0/1093	0.44	0/1487
13	AJ	0.24	0/795	0.52	0/1068
13	AK	0.20	0/704	0.39	0/944
14	AL	0.25	0/1225	0.39	0/1639
15	AM	0.22	0/1594	0.33	0/2138
16	AN	0.25	0/1365	0.42	0/1841
17	AO	0.29	0/1647	0.39	0/2212
18	AP	0.22	0/933	0.40	0/1263
19	AQ	0.23	0/1233	0.43	0/1645
20	AR	0.24	0/610	0.49	0/817
21	AS	0.33	0/805	0.41	0/1081
22	AT	0.22	0/1536	0.39	0/2075
23	AU	0.21	0/655	0.39	0/877
24	AV	0.23	0/990	0.42	0/1325
25	AW	0.24	0/460	0.34	0/613
26	AX	0.26	0/557	0.47	0/738
27	AY	0.30	0/1407	0.47	0/1905
28	AZ	0.26	0/754	0.49	0/1021
29	Aa	0.23	0/735	0.38	0/986
30	Ab	0.23	0/1209	0.42	0/1621

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
31	Ac	0.21	0/663	0.31	0/889
32	Ad	0.24	0/442	0.35	0/587
33	Ae	0.22	0/562	0.37	0/753
34	Af	0.25	0/423	0.40	0/566
35	Ag	0.20	0/424	0.38	0/564
36	Ah	0.29	0/753	0.42	0/1001
37	Ai	0.24	0/788	0.47	0/1057
38	Aj	0.23	0/1497	0.46	1/2029 (0.0%)
39	Ak	0.24	0/754	0.40	0/1005
40	BA	0.25	0/1515	0.57	4/2043 (0.2%)
41	BB	0.28	0/1638	0.53	2/2221 (0.1%)
42	BC	0.33	0/620	0.71	1/831 (0.1%)
43	BD	0.21	0/1308	0.41	0/1755
44	BE	0.26	0/1929	0.53	0/2621
45	BF	0.28	0/1522	0.60	4/2059 (0.2%)
46	BG	0.22	0/1087	0.51	0/1465
47	BH	0.22	0/1809	0.43	0/2444
48	BI	0.30	0/1055	0.48	0/1425
49	BJ	0.24	0/1023	0.38	0/1370
50	BK	0.25	0/1079	0.50	0/1452
51	BL	0.21	0/324	0.55	0/437
52	BM	0.23	0/951	0.46	0/1288
53	BN	0.29	0/1157	0.48	0/1551
54	BO	0.22	0/1125	0.54	2/1518 (0.1%)
55	BP	0.32	0/244	0.56	0/324
56	BQ	0.22	0/1254	0.36	0/1692
57	BR	0.23	0/1200	0.37	0/1629
58	BS	0.23	0/524	0.49	0/698
59	BT	0.22	0/1139	0.47	0/1533
60	BU	0.22	0/1253	0.41	0/1695
61	BV	0.21	0/960	0.42	0/1280
62	BW	0.25	0/551	0.53	0/741
63	BX	0.25	0/787	0.65	0/1054
64	BY	0.23	0/511	0.50	1/689 (0.1%)
65	BZ	0.27	0/555	0.65	1/745 (0.1%)
66	Ba	0.18	0/364	0.31	0/486
67	Bb	0.23	0/478	0.56	0/634
68	Bc	0.27	0/491	0.53	0/670
All	All	0.27	6/172419 (0.0%)	0.39	46/254381 (0.0%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a

sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
7	AD	0	2
13	AK	0	1
48	BI	0	3
50	BK	0	1
All	All	0	7

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	4	880	A2M	O3'-P	5.16	1.61	1.56
2	1	2059	A2M	O3'-P	5.10	1.61	1.56
2	1	1990	A2M	O3'-P	5.09	1.61	1.56
3	4	496	A2M	O3'-P	5.05	1.61	1.56
2	1	2691	A2M	O3'-P	5.02	1.61	1.56
3	4	569	A2M	O3'-P	5.00	1.61	1.56

All (46) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	4	812	C	OP1-P-O3'	-11.30	74.10	108.00
3	4	101	C	OP1-P-O3'	-11.29	74.14	108.00
45	BF	13	THR	CA-C-N	9.78	134.66	120.38
45	BF	13	THR	C-N-CA	9.78	134.66	120.38
3	4	812	C	OP2-P-O3'	-9.44	79.69	108.00
2	1	1603	G	OP1-P-O3'	-9.12	80.64	108.00
2	1	1679	U	OP1-P-O3'	-9.12	80.65	108.00
3	4	1078	C	OP1-P-O3'	-9.11	80.68	108.00
3	4	1177	G	OP2-P-O3'	-8.95	81.16	108.00
3	4	808	G	OP1-P-O3'	-8.73	81.82	108.00
3	4	808	G	OP2-P-O3'	-8.53	82.41	108.00
3	4	101	C	OP2-P-O3'	-8.29	83.13	108.00
3	4	1177	G	OP1-P-O3'	-8.23	83.31	108.00
2	1	2903	U	P-O3'-C3'	-8.18	107.92	120.20
3	4	1078	C	OP2-P-O3'	-8.17	83.49	108.00
2	1	1679	U	OP2-P-O3'	-8.14	83.57	108.00
42	BC	183	PRO	N-CA-CB	-8.00	94.85	103.25
2	1	1603	G	OP2-P-O3'	-7.63	85.11	108.00
2	1	1564	G	P-O3'-C3'	-7.56	108.86	120.20
3	4	296	C	P-O3'-C3'	-7.41	109.09	120.20
3	4	102	A	OP1-P-OP2	7.17	141.12	119.60
2	1	2571	PSU	P-O3'-C3'	-7.05	109.62	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
45	BF	13	THR	CB-CA-C	6.99	124.32	110.42
2	1	2143	OMC	P-O3'-C3'	-6.94	109.79	120.20
1	2	1	G	P-O3'-C3'	-6.87	109.90	120.20
3	4	1383	G	P-O3'-C3'	-6.33	110.70	120.20
3	4	1440	C	P-O3'-C3'	-6.28	110.78	120.20
3	4	357	A	P-O3'-C3'	-6.24	110.85	120.20
40	BA	67	ASP	N-CA-C	6.21	120.01	110.20
54	BO	112	LEU	N-CA-C	-6.12	107.03	114.75
41	BB	188	LEU	CA-C-N	-5.92	113.52	122.29
41	BB	188	LEU	C-N-CA	-5.92	113.52	122.29
3	4	1444	G	C2'-C3'-O3'	5.80	118.21	109.50
45	BF	11	PRO	CA-N-CD	-5.67	104.07	112.00
64	BY	10	ILE	CB-CA-C	5.46	116.27	111.08
38	Aj	115	MET	CB-CA-C	-5.45	109.81	117.23
3	4	1344	C	O3'-P-O5'	5.43	112.14	104.00
3	4	358	G	C2'-C3'-O3'	5.42	121.83	113.70
3	4	1384	A	P-O3'-C3'	-5.36	112.16	120.20
3	4	358	G	C4'-C3'-C2'	-5.23	97.37	102.60
40	BA	66	LYS	N-CA-C	5.18	121.82	110.80
40	BA	64	ILE	CA-C-N	-5.17	116.28	122.44
40	BA	64	ILE	C-N-CA	-5.17	116.28	122.44
3	4	1441	A	P-O3'-C3'	-5.12	112.52	120.20
54	BO	132	VAL	N-CA-C	-5.06	107.41	111.91
65	BZ	71	ALA	N-CA-C	5.04	117.33	111.02

There are no chirality outliers.

All (7) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
7	AD	77	ARG	Sidechain
7	AD	78	ARG	Sidechain
13	AK	38	GLY	Peptide
48	BI	28	TRP	Peptide
48	BI	76	ARG	Sidechain,Peptide
50	BK	10	ASN	Peptide

5.2 Too-close contacts [i](#)

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

the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	2	2769	0	1405	34	0
2	1	61386	0	31065	1009	0
3	4	30817	0	15598	832	0
4	AA	1803	0	1849	49	0
5	AB	2611	0	2737	75	0
6	AC	2178	0	2263	66	0
7	AD	1412	0	1511	54	0
8	AE	1520	0	1607	48	0
9	AF	1095	0	1156	44	0
10	AG	1510	0	1627	32	0
11	AH	1244	0	1346	39	0
12	AI	1068	0	1110	36	0
13	AJ	788	0	853	51	0
13	AK	700	0	760	49	0
14	AL	1198	0	1233	41	0
15	AM	1558	0	1641	37	0
16	AN	1336	0	1378	30	0
17	AO	1615	0	1688	32	0
18	AP	920	0	1010	21	0
19	AQ	1214	0	1272	30	0
20	AR	603	0	647	14	0
21	AS	788	0	832	9	0
22	AT	1496	0	1575	31	0
23	AU	651	0	720	22	0
24	AV	976	0	1073	37	0
25	AW	449	0	465	14	0
26	AX	554	0	613	21	0
27	AY	1374	0	1422	30	0
28	AZ	742	0	796	39	0
29	Aa	726	0	794	18	0
30	Ab	1183	0	1270	29	0
31	Ac	649	0	698	23	0
32	Ad	429	0	430	7	0
33	Ae	552	0	592	22	0
34	Af	415	0	464	12	0
35	Ag	417	0	440	9	0
36	Ah	739	0	782	14	0
37	Ai	769	0	792	27	0
38	Aj	1469	0	1535	50	0
39	Ak	743	0	775	20	0
40	BA	1487	0	1589	78	0
41	BB	1600	0	1645	104	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
42	BC	611	0	648	55	0
43	BD	1284	0	1391	64	0
44	BE	1883	0	1968	81	0
45	BF	1498	0	1557	96	0
46	BG	1065	0	1139	92	0
47	BH	1773	0	1828	85	0
48	BI	1036	0	1090	46	0
49	BJ	1007	0	1086	44	0
50	BK	1058	0	1123	66	0
51	BL	315	0	329	30	0
52	BM	941	0	984	68	0
53	BN	1133	0	1203	44	0
54	BO	1108	0	1163	75	0
55	BP	241	0	251	26	0
56	BQ	1224	0	1287	57	0
57	BR	1171	0	1244	50	0
58	BS	517	0	560	50	0
59	BT	1111	0	1170	68	0
60	BU	1225	0	1301	60	0
61	BV	950	0	1013	63	0
62	BW	544	0	587	27	0
63	BX	772	0	827	70	0
64	BY	501	0	524	30	0
65	BZ	552	0	594	54	0
66	Ba	357	0	394	16	0
67	Bb	479	0	545	52	0
68	Bc	477	0	479	47	0
69	1	616	0	1144	23	0
69	4	252	0	468	13	0
69	AL	14	0	26	0	0
69	Ah	14	0	26	0	0
70	1	170	0	0	0	0
70	4	78	0	0	0	0
70	AA	1	0	0	0	0
70	AL	2	0	0	0	0
70	BK	1	0	0	0	0
71	AW	1	0	0	0	0
71	Ad	1	0	0	0	0
71	Ag	1	0	0	0	0
71	Ah	1	0	0	0	0
71	Ai	1	0	0	0	0
71	BF	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
71	BP	1	0	0	0	0
71	BR	1	0	0	0	0
71	BX	1	0	0	0	0
71	BY	1	0	0	0	0
71	Bc	1	0	0	0	0
72	1	5640	0	0	140	0
72	2	181	0	0	1	0
72	4	1487	0	0	83	0
72	AA	12	0	0	0	0
72	AB	1	0	0	0	0
72	AC	6	0	0	0	0
72	AG	2	0	0	0	0
72	AH	3	0	0	0	0
72	AL	10	0	0	0	0
72	AM	2	0	0	0	0
72	AN	2	0	0	0	0
72	AO	2	0	0	0	0
72	AP	1	0	0	1	0
72	AQ	1	0	0	0	0
72	AT	2	0	0	0	0
72	AU	1	0	0	0	0
72	AX	22	0	0	4	0
72	AY	2	0	0	0	0
72	Aa	1	0	0	0	0
72	Ab	6	0	0	0	0
72	Ad	3	0	0	0	0
72	Ah	1	0	0	0	0
72	BA	18	0	0	6	0
72	BB	18	0	0	3	0
72	BC	9	0	0	6	0
72	BD	28	0	0	6	0
72	BE	23	0	0	2	0
72	BF	32	0	0	10	0
72	BG	19	0	0	2	0
72	BH	26	0	0	3	0
72	BI	20	0	0	3	0
72	BJ	13	0	0	0	0
72	BK	12	0	0	0	0
72	BL	7	0	0	0	0
72	BM	9	0	0	3	0
72	BN	12	0	0	3	0
72	BO	26	0	0	5	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
72	BP	8	0	0	6	0
72	BQ	15	0	0	0	0
72	BR	12	0	0	0	0
72	BS	5	0	0	1	0
72	BT	17	0	0	10	0
72	BU	13	0	0	2	0
72	BV	9	0	0	4	0
72	BW	8	0	0	2	0
72	BX	12	0	0	9	0
72	BY	10	0	0	2	0
72	BZ	12	0	0	8	0
72	Ba	8	0	0	0	0
72	Bb	7	0	0	4	0
72	Bc	16	0	0	4	0
All	All	171357	0	121007	4232	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 15.

All (4232) 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)
43:BD:150:GLU:HG2	72:BD:204:HOH:O	1.37	1.23
72:4:3318:HOH:O	57:BR:98:ARG:HD2	1.43	1.14
59:BT:10:LYS:HD3	72:BT:204:HOH:O	1.46	1.14
42:BC:191:ARG:HG3	72:BC:303:HOH:O	1.50	1.11
40:BA:24:LEU:HD23	72:BA:308:HOH:O	1.50	1.10
55:BP:26:GLU:HG2	72:BP:208:HOH:O	1.51	1.10
72:4:3923:HOH:O	57:BR:57:LYS:HD3	1.52	1.09
54:BO:109:MET:HG2	72:BO:223:HOH:O	1.54	1.08
67:Bb:26:GLY:HA2	72:Bb:102:HOH:O	1.54	1.07
3:4:1178:A:H1'	72:4:3466:HOH:O	1.53	1.06
2:1:2:A:H2	2:1:3021:G:N1	1.57	1.01
67:Bb:32:LYS:HE2	67:Bb:62:LEU:HD22	1.41	1.00
68:Bc:14:PRO:HB2	68:Bc:23:LEU:HD13	1.43	1.00
2:1:2:A:C2	2:1:3021:G:N1	2.27	1.00
2:1:679:U:HO2'	14:AL:2:VAL:N	1.59	1.00
42:BC:200:SER:HB2	72:BC:304:HOH:O	1.61	0.98
42:BC:127:VAL:HA	42:BC:130:LEU:HD12	1.42	0.98
72:4:3520:HOH:O	54:BO:140:THR:HG22	1.63	0.97
11:AH:2:ILE:HD12	11:AH:3:PRO:HD2	1.46	0.97

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:1082:A:H4'	51:BL:42:PRO:HD2	1.45	0.97
58:BS:16:LEU:HD21	58:BS:39:ALA:HB2	1.43	0.97
3:4:475:OMG:HM22	3:4:476:G:H5'	1.46	0.97
55:BP:35:TYR:HE1	72:BP:207:HOH:O	1.48	0.96
72:4:3277:HOH:O	51:BL:59:SER:HB2	1.65	0.96
2:1:1496:A:H5'	72:1:3874:HOH:O	1.66	0.95
50:BK:73:VAL:HG11	50:BK:87:THR:HG23	1.49	0.95
45:BF:125:ASP:HB3	68:Bc:7:ARG:HD3	1.48	0.95
63:BX:30:VAL:HG11	63:BX:34:LYS:HD3	1.49	0.94
40:BA:36:LEU:HD21	40:BA:167:LEU:HD23	1.49	0.94
47:BH:54:ASP:HB3	47:BH:57:LEU:HB2	1.50	0.93
53:BN:6:SER:HB3	53:BN:7:PRO:HD3	1.47	0.93
43:BD:18:LYS:HD3	72:BD:202:HOH:O	1.67	0.93
40:BA:96:LEU:HD11	40:BA:193:GLU:HG2	1.49	0.93
23:AU:1:MET:HE1	23:AU:33:GLN:HB3	1.49	0.93
48:BI:51:GLU:HG3	48:BI:62:VAL:HB	1.51	0.92
55:BP:35:TYR:CE1	72:BP:207:HOH:O	2.23	0.91
41:BB:108:THR:HA	41:BB:139:MET:HE3	1.53	0.91
2:1:456:G:H3'	72:1:5803:HOH:O	1.71	0.90
3:4:1408:G:H1	3:4:1417:U:H3	0.92	0.90
40:BA:52:LEU:HD23	40:BA:55:ARG:HD2	1.53	0.90
40:BA:105:ILE:HD12	40:BA:111:LYS:HD2	1.54	0.90
53:BN:71:LYS:HB3	53:BN:94:LEU:HD22	1.54	0.90
6:AC:41:MET:HE1	6:AC:174:SER:HB2	1.54	0.90
45:BF:14:ALA:HA	45:BF:17:ARG:HD2	1.51	0.89
41:BB:21:VAL:HG13	41:BB:173:ILE:HD11	1.54	0.89
42:BC:178:HIS:HB2	42:BC:185:ILE:HG22	1.54	0.89
3:4:1112:C:H4'	3:4:1113:A:H5'	1.52	0.88
2:1:1838:C:H5''	37:Ai:9:VAL:HG11	1.56	0.88
2:1:1870:A:H4'	19:AQ:98:ARG:HD2	1.55	0.88
3:4:1178:A:H4'	3:4:1179:A:H5'	1.56	0.88
42:BC:166:TYR:HD2	72:BC:302:HOH:O	1.57	0.88
45:BF:69:ARG:HD2	72:BF:431:HOH:O	1.71	0.88
3:4:1098:U:H4'	72:4:3172:HOH:O	1.73	0.88
13:AK:12:VAL:HG22	13:AK:22:LYS:HG2	1.56	0.88
52:BM:137:LYS:HB3	52:BM:141:VAL:HG23	1.55	0.87
61:BV:29:ILE:HG21	61:BV:37:PRO:HG3	1.56	0.87
2:1:2851:OMU:HM22	2:1:2852:A:H5'	1.57	0.87
2:1:1790:C:H5'	2:1:1791:U:H5''	1.55	0.86
24:AV:52:THR:HB	24:AV:105:ASP:HB3	1.56	0.86
13:AJ:7:VAL:HG21	13:AJ:66:LYS:HG3	1.56	0.86

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:BB:182:LEU:HB3	41:BB:188:LEU:HD23	1.57	0.86
52:BM:87:VAL:HG11	52:BM:106:ILE:HD11	1.56	0.86
52:BM:93:TYR:CE1	72:BM:204:HOH:O	2.29	0.85
41:BB:204:ARG:CZ	72:BB:301:HOH:O	2.24	0.85
6:AC:9:LEU:HD21	6:AC:48:ILE:HD11	1.57	0.85
56:BQ:2:PRO:HB3	56:BQ:113:ARG:HH12	1.41	0.85
72:4:3520:HOH:O	54:BO:140:THR:CG2	2.23	0.85
54:BO:34:ILE:HG21	60:BU:44:ARG:HG2	1.59	0.85
41:BB:16:TYR:HB3	41:BB:51:ILE:HD11	1.58	0.84
41:BB:35:ARG:HH22	68:Bc:54:PRO:HB3	1.41	0.84
2:1:229:G:H5'	2:1:230:C:H5''	1.59	0.84
2:1:536:A:H5'	72:1:6063:HOH:O	1.76	0.84
67:Bb:12:LEU:HD21	67:Bb:41:GLU:HG2	1.59	0.84
3:4:1133:G:H5'	72:4:3291:HOH:O	1.77	0.84
72:4:3265:HOH:O	57:BR:68:MET:HG3	1.78	0.84
54:BO:56:PRO:HG2	54:BO:59:GLN:HG3	1.57	0.84
11:AH:2:ILE:HD11	11:AH:47:LEU:HD23	1.59	0.83
46:BG:72:VAL:HG23	46:BG:103:GLY:HA2	1.60	0.83
59:BT:103:VAL:HG23	59:BT:125:ILE:HD11	1.60	0.83
3:4:1212:OMG:HM22	3:4:1213:G:H5'	1.58	0.83
58:BS:26:GLU:HG3	58:BS:58:VAL:HG12	1.61	0.83
8:AE:91:ARG:HD3	8:AE:145:GLU:HG2	1.58	0.83
50:BK:20:LYS:HD3	50:BK:85:ILE:HG21	1.61	0.83
3:4:1178:A:C8	72:4:3423:HOH:O	2.31	0.83
59:BT:79:ARG:HB3	72:BT:207:HOH:O	1.76	0.82
2:1:1176:A:H1'	72:1:4085:HOH:O	1.78	0.82
13:AJ:23:ALA:HA	13:AJ:38:GLY:HA3	1.62	0.82
68:Bc:18:THR:HG22	72:Bc:204:HOH:O	1.80	0.82
48:BI:51:GLU:HG2	72:BI:211:HOH:O	1.78	0.82
3:4:924:A:H5''	59:BT:10:LYS:HE2	1.62	0.81
2:1:831:G:H22	2:1:833:A:H3'	1.45	0.81
72:4:3593:HOH:O	46:BG:95:MET:CE	2.28	0.81
54:BO:38:TYR:HH	54:BO:49:HIS:HE2	1.28	0.81
42:BC:141:VAL:HG22	42:BC:155:LYS:HG3	1.62	0.81
45:BF:30:ILE:HG23	45:BF:35:LEU:HB2	1.61	0.81
44:BE:227:ILE:HD12	44:BE:232:PRO:HB3	1.63	0.81
63:BX:12:LYS:HD2	72:BX:203:HOH:O	1.81	0.81
16:AN:36:MET:HB2	16:AN:88:LEU:HB3	1.63	0.81
3:4:1193:A:H2	72:BT:206:HOH:O	1.64	0.80
72:4:3453:HOH:O	51:BL:58:PRO:HB2	1.81	0.80
3:4:455:A:H5'	72:4:3741:HOH:O	1.82	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:BE:174:LEU:HD11	44:BE:221:LEU:HD11	1.64	0.80
7:AD:42:LEU:HD12	7:AD:72:VAL:HG12	1.62	0.80
55:BP:21:ARG:HD3	55:BP:40:CYS:HB3	1.62	0.80
3:4:1145:A:H5''	50:BK:117:LYS:HE3	1.63	0.80
2:1:2182:U:C6	72:1:5298:HOH:O	2.34	0.79
42:BC:137:GLY:HA3	42:BC:161:LEU:HB2	1.63	0.79
65:BZ:46:ARG:HH21	65:BZ:67:THR:HG22	1.48	0.79
41:BB:139:MET:HE1	45:BF:38:LYS:HE2	1.64	0.79
9:AF:37:ILE:HD12	9:AF:129:LEU:HD22	1.62	0.79
2:1:1377:G:H5'	72:1:4928:HOH:O	1.81	0.79
2:1:2181:G:H1'	72:1:3823:HOH:O	1.81	0.79
41:BB:158:PHE:HA	68:Bc:65:PRO:HG2	1.65	0.79
53:BN:104:ILE:HB	53:BN:128:LYS:HB2	1.63	0.79
3:4:93:C:H1'	3:4:358:G:H5'	1.63	0.78
44:BE:204:ARG:HG3	44:BE:222:ASP:HB2	1.65	0.78
44:BE:126:THR:HG22	44:BE:134:GLN:HB3	1.65	0.78
45:BF:177:ARG:CZ	72:BF:401:HOH:O	2.30	0.78
2:1:2617:A:C8	72:1:4992:HOH:O	2.36	0.78
67:Bb:26:GLY:CA	72:Bb:102:HOH:O	2.21	0.78
2:1:2469:G:H3'	72:1:5704:HOH:O	1.84	0.77
46:BG:2:PRO:HG2	46:BG:26:ALA:HB1	1.66	0.77
3:4:1057:G:H2'	3:4:1058:G:H5''	1.64	0.77
64:BY:10:ILE:HD12	72:BY:204:HOH:O	1.83	0.77
6:AC:202:ALA:HA	6:AC:223:PRO:HG2	1.66	0.77
53:BN:4:LYS:HG3	72:BN:205:HOH:O	1.85	0.77
63:BX:30:VAL:HG13	72:BX:205:HOH:O	1.84	0.77
59:BT:108:HIS:HB3	59:BT:115:TYR:HB3	1.68	0.76
3:4:1006:G:H21	3:4:1180:A:H3'	1.49	0.76
2:1:2617:A:H8	72:1:4992:HOH:O	1.69	0.76
3:4:942:A:H4'	72:4:3145:HOH:O	1.85	0.76
67:Bb:26:GLY:C	72:Bb:102:HOH:O	2.29	0.76
40:BA:57:LEU:HD11	52:BM:37:LEU:HD23	1.68	0.76
47:BH:72:GLU:HG2	47:BH:74:ARG:HH21	1.50	0.76
2:1:2692:G:H1'	5:AB:236:ARG:HH22	1.52	0.75
46:BG:106:ILE:HG23	46:BG:110:ILE:HD12	1.68	0.75
72:1:4309:HOH:O	13:AJ:13:LYS:HE2	1.86	0.75
68:Bc:56:ARG:HH12	68:Bc:61:GLY:HA2	1.52	0.75
2:1:57:G:HO2'	2:1:487:U:HO2'	1.34	0.75
45:BF:114:ARG:HH21	68:Bc:13:PRO:HD3	1.50	0.75
49:BJ:38:ILE:HG21	49:BJ:101:VAL:HG12	1.68	0.75
27:AY:117:THR:HG23	27:AY:134:CYS:HB3	1.67	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:1084:U:H3'	3:4:1085:U:H6	1.52	0.75
4:AA:75:GLY:HA2	13:AJ:98:THR:HG21	1.69	0.75
5:AB:268:ARG:HH21	5:AB:323:PRO:HB2	1.52	0.75
8:AE:111:GLN:HE22	8:AE:127:GLU:HG3	1.51	0.75
2:1:1074:U:H3'	2:1:1075:G:H5'	1.69	0.74
2:1:2417:U:H5''	7:AD:110:GLY:HA3	1.69	0.74
63:BX:20:TYR:HA	63:BX:31:PRO:HA	1.68	0.74
3:4:580:U:H5'	61:BV:66:TYR:HB3	1.68	0.74
62:BW:46:LEU:HD13	62:BW:79:LEU:HD21	1.67	0.74
16:AN:49:MET:HE2	16:AN:49:MET:HA	1.69	0.74
41:BB:167:ARG:HD2	41:BB:203:THR:HG22	1.69	0.74
65:BZ:42:ARG:NH1	65:BZ:43:ASP:OD2	2.19	0.74
48:BI:11:LEU:HD12	48:BI:74:ALA:HB2	1.69	0.74
68:Bc:40:THR:HG21	68:Bc:58:PRO:HG2	1.69	0.74
16:AN:33:LYS:NZ	16:AN:36:MET:SD	2.61	0.74
1:2:87:G:N7	72:2:201:HOH:O	2.20	0.74
14:AL:122:MET:HE3	14:AL:123:ASP:H	1.52	0.74
8:AE:33:LYS:HD2	8:AE:38:GLU:HB2	1.69	0.73
17:AO:48:ILE:HG21	17:AO:98:ILE:HD13	1.70	0.73
3:4:382:G:N3	72:4:3107:HOH:O	2.21	0.73
72:4:3659:HOH:O	52:BM:141:VAL:HG11	1.89	0.73
8:AE:144:VAL:HG12	8:AE:152:VAL:HG13	1.69	0.73
2:1:1435:C:H4'	31:Ac:3:ARG:HB2	1.70	0.73
9:AF:37:ILE:HG23	9:AF:122:ALA:HB1	1.70	0.73
28:AZ:37:ILE:HD12	28:AZ:84:LEU:HD11	1.70	0.73
23:AU:72:MET:HE1	23:AU:81:LEU:HD11	1.69	0.73
48:BI:20:MET:HE2	48:BI:20:MET:HA	1.71	0.72
3:4:148:G:H4'	46:BG:116:VAL:HG21	1.71	0.72
52:BM:106:ILE:HB	63:BX:45:VAL:HG21	1.70	0.72
61:BV:109:ARG:HA	72:BV:204:HOH:O	1.89	0.72
52:BM:65:MET:HG2	52:BM:104:ALA:HB1	1.69	0.72
54:BO:27:ALA:HA	54:BO:32:ILE:HG22	1.72	0.72
2:1:2623:OMU:HM22	2:1:2624:OMC:H5''	1.72	0.72
47:BH:76:GLN:HB2	72:BH:319:HOH:O	1.88	0.72
2:1:2608:OMG:HM22	2:1:2609:G:H5'	1.71	0.72
26:AX:9:LYS:H	26:AX:9:LYS:HD2	1.52	0.72
41:BB:84:LYS:HZ1	41:BB:88:MET:HG2	1.55	0.72
2:1:2088:OMU:HM22	2:1:2089:G:H5'	1.71	0.72
3:4:462:OMG:HM22	3:4:463:G:H5'	1.71	0.71
3:4:520:G:H4'	3:4:521:U:H3'	1.73	0.71
3:4:918:C:H4'	3:4:930:A:H61	1.56	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:1368:OMC:HM22	3:4:1369:C:H5'	1.71	0.71
44:BE:160:VAL:HB	44:BE:170:THR:HG22	1.72	0.71
45:BF:94:GLN:OE1	45:BF:97:GLN:NE2	2.19	0.71
3:4:879:A2M:H2'	3:4:880:A2M:H8	1.71	0.71
40:BA:60:THR:HG22	40:BA:62:TYR:H	1.56	0.71
40:BA:183:GLY:HA3	40:BA:189:MET:HE3	1.72	0.71
2:1:1801:C:H5''	5:AB:233:GLY:HA3	1.72	0.71
2:1:2028:G:H1	2:1:2044:PSU:HN3	1.37	0.71
2:1:2104:OMG:HM22	2:1:2105:U:H5'	1.73	0.71
40:BA:157:LYS:HD3	40:BA:175:LEU:HD13	1.70	0.71
41:BB:88:MET:HE1	41:BB:91:LYS:HD2	1.73	0.71
45:BF:29:GLU:HG3	45:BF:33:ASN:HD21	1.56	0.71
45:BF:177:ARG:NH1	72:BF:401:HOH:O	2.24	0.71
3:4:942:A:C4'	72:4:3145:HOH:O	2.38	0.71
9:AF:56:LYS:HB3	9:AF:60:ARG:HH21	1.55	0.71
14:AL:106:VAL:HG12	14:AL:126:LEU:HD11	1.71	0.71
46:BG:53:VAL:HA	46:BG:118:VAL:O	1.90	0.71
56:BQ:26:ILE:HD11	56:BQ:60:ILE:HD12	1.73	0.71
2:1:2739:G:H5'	22:AT:92:GLY:HA2	1.73	0.70
3:4:1251:G:H3'	72:4:3627:HOH:O	1.90	0.70
50:BK:44:GLU:O	60:BU:146:ARG:NH2	2.24	0.70
61:BV:23:LYS:HG2	61:BV:77:VAL:HB	1.73	0.70
3:4:1127:G:H1	3:4:1142:A:H61	1.39	0.70
19:AQ:109:LEU:HD21	19:AQ:117:LEU:HD12	1.72	0.70
2:1:2:A:N1	2:1:3021:G:O6	2.24	0.70
48:BI:60:LYS:NZ	64:BY:8:VAL:O	2.24	0.70
10:AG:8:ASP:HB3	10:AG:11:GLN:HB2	1.73	0.70
28:AZ:14:THR:HG21	28:AZ:91:GLN:HG3	1.73	0.70
68:Bc:37:CYS:SG	68:Bc:60:CYS:HB3	2.31	0.70
19:AQ:93:MET:HE2	19:AQ:93:MET:HA	1.74	0.70
41:BB:159:MET:HG2	68:Bc:65:PRO:HG3	1.72	0.70
44:BE:83:MET:HE3	44:BE:225:MET:HE3	1.74	0.70
2:1:199:G:H22	2:1:216:C:H4'	1.56	0.70
6:AC:206:VAL:HG22	6:AC:222:GLU:HG3	1.74	0.70
44:BE:61:ILE:HD13	44:BE:76:TYR:HA	1.74	0.70
3:4:778:C:O2	63:BX:8:ARG:NH2	2.25	0.70
41:BB:204:ARG:NH2	72:BB:301:HOH:O	2.24	0.70
62:BW:41:ARG:HA	62:BW:48:GLU:HG2	1.72	0.70
13:AJ:94:LEU:HD13	31:Ac:69:VAL:HG11	1.73	0.69
49:BJ:114:VAL:HG22	49:BJ:130:ILE:HD11	1.73	0.69
49:BJ:81:LYS:H	49:BJ:109:GLU:HG2	1.57	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:2:C:H2'	1:2:3:C:C6	2.27	0.69
11:AH:70:GLU:HG3	11:AH:75:LYS:HZ1	1.56	0.69
2:1:580:C:H5''	72:1:8130:HOH:O	1.91	0.69
3:4:1432:G:H2'	3:4:1433:G:H5'	1.72	0.69
15:AM:5:TYR:HB3	15:AM:47:GLU:HB3	1.74	0.69
3:4:1048:G:H2'	3:4:1049:U:H5'	1.72	0.69
17:AO:153:LYS:HG2	17:AO:178:GLU:HG2	1.74	0.69
29:Aa:40:VAL:HG21	29:Aa:87:VAL:HG21	1.73	0.69
63:BX:52:GLU:HG3	63:BX:58:ALA:HB1	1.73	0.69
42:BC:128:ARG:HB2	42:BC:131:MET:HE2	1.73	0.69
3:4:1014:A:N3	42:BC:145:LYS:NZ	2.41	0.69
37:AI:39:ARG:HH11	37:AI:46:LEU:HB2	1.56	0.69
67:Bb:32:LYS:HD2	67:Bb:36:LYS:HE3	1.73	0.69
2:1:1514:A:H3'	72:1:3462:HOH:O	1.92	0.69
3:4:465:OMG:HM22	3:4:466:G:H5'	1.74	0.69
37:AI:8:ILE:HG13	37:AI:9:VAL:HG13	1.75	0.69
58:BS:56:ARG:HD2	72:BS:103:HOH:O	1.91	0.69
2:1:1080:A:OP1	16:AN:11:ARG:NH2	2.26	0.69
28:AZ:54:ALA:HB3	28:AZ:61:ILE:HD11	1.75	0.69
49:BJ:43:GLU:HA	49:BJ:65:ARG:HH21	1.56	0.69
54:BO:44:LEU:HD11	54:BO:66:ALA:HB2	1.75	0.69
72:4:3923:HOH:O	57:BR:57:LYS:CD	2.25	0.69
42:BC:166:TYR:O	42:BC:170:ASN:HB2	1.93	0.69
44:BE:121:ARG:HH22	44:BE:222:ASP:HA	1.58	0.69
48:BI:14:ILE:HD11	48:BI:27:ILE:HD11	1.75	0.69
2:1:220:U:H5'	72:1:5356:HOH:O	1.91	0.68
10:AG:52:GLU:HB3	10:AG:121:MET:HG2	1.75	0.68
28:AZ:14:THR:HG22	28:AZ:90:GLY:HA3	1.74	0.68
3:4:1133:G:N2	3:4:1135:A:O2'	2.26	0.68
10:AG:4:LYS:HD2	10:AG:135:LEU:HB2	1.74	0.68
12:AI:100:VAL:HG13	25:AW:20:MET:HE3	1.74	0.68
2:1:561:G:H5''	72:1:3758:HOH:O	1.92	0.68
8:AE:10:VAL:HG22	8:AE:76:LYS:HG3	1.74	0.68
41:BB:9:TYR:HE2	41:BB:13:LEU:HD23	1.58	0.68
47:BH:29:ARG:NH2	47:BH:50:VAL:O	2.27	0.68
3:4:1273:U:OP1	54:BO:129:GLN:NE2	2.27	0.68
18:AP:24:ALA:HB2	18:AP:32:TRP:HB2	1.75	0.68
30:Ab:119:GLU:HA	30:Ab:122:LYS:HE3	1.75	0.68
2:1:2029:G:H2'	2:1:2030:G:H1'	1.76	0.68
3:4:1055:C:O2'	58:BS:10:LYS:NZ	2.26	0.68
46:BG:49:LEU:HB3	46:BG:53:VAL:HG11	1.75	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:1435:G:H2'	3:4:1436:C:C6	2.29	0.68
13:AJ:37:THR:HG21	13:AJ:47:ARG:HE	1.58	0.68
2:1:162:A:H1'	2:1:467:U:H5'	1.75	0.68
3:4:1098:U:O2'	3:4:1099:A:OP1	2.11	0.68
6:AC:21:LYS:HA	6:AC:21:LYS:HE3	1.76	0.68
36:Ah:9:MET:HE1	36:Ah:80:LYS:HD2	1.74	0.68
42:BC:142:VAL:HG22	42:BC:146:LEU:HD11	1.76	0.68
3:4:502:U:OP2	66:Ba:25:ARG:NH2	2.25	0.68
3:4:727:A:OP2	3:4:773:G:N2	2.27	0.67
2:1:3021:G:H4'	72:1:3971:HOH:O	1.94	0.67
5:AB:57:VAL:HG22	5:AB:329:GLN:HB3	1.77	0.67
29:Aa:5:LYS:NZ	29:Aa:81:ASP:OD2	2.27	0.67
60:BU:8:PRO:HG2	60:BU:11:LEU:HD12	1.77	0.67
3:4:1489:G:N2	63:BX:72:ASN:OD1	2.28	0.67
6:AC:156:VAL:HG12	6:AC:161:HIS:HB2	1.75	0.67
18:AP:15:MET:HA	18:AP:15:MET:HE2	1.76	0.67
27:AY:28:ASP:OD2	27:AY:59:ARG:NH2	2.27	0.67
41:BB:83:PHE:HA	41:BB:99:THR:HG21	1.75	0.67
50:BK:33:MET:HA	50:BK:33:MET:HE3	1.76	0.67
65:BZ:32:THR:CG2	72:BZ:102:HOH:O	2.41	0.67
27:AY:38:LEU:HD23	27:AY:43:THR:HG22	1.76	0.67
63:BX:45:VAL:HG12	63:BX:48:ASP:HB2	1.76	0.67
67:Bb:17:ARG:HA	67:Bb:20:GLU:HG2	1.75	0.67
7:AD:123:ASP:HB3	7:AD:126:VAL:HG22	1.76	0.67
72:4:3581:HOH:O	58:BS:7:LYS:HE2	1.92	0.67
41:BB:157:ASP:OD1	68:Bc:49:ARG:NH1	2.26	0.67
2:1:2179:A:N3	72:1:3528:HOH:O	2.28	0.67
3:4:1118:A:O2'	51:BL:76:ARG:NH2	2.28	0.67
8:AE:194:VAL:HG12	8:AE:195:LYS:HD2	1.76	0.67
3:4:264:U:O4	49:BJ:118:ARG:NH2	2.28	0.67
47:BH:33:THR:HG23	47:BH:35:ASP:H	1.60	0.67
51:BL:44:PRO:HA	51:BL:76:ARG:HD2	1.77	0.67
3:4:449:C:OP1	43:BD:139:ARG:NH2	2.28	0.67
10:AG:131:ARG:HD3	10:AG:131:ARG:H	1.61	0.67
67:Bb:12:LEU:HD22	67:Bb:38:VAL:HG13	1.77	0.67
3:4:1329:A:O2'	3:4:1331:C:N4	2.28	0.66
45:BF:61:GLN:HE21	45:BF:68:GLU:HG3	1.59	0.66
29:Aa:36:ILE:HD12	29:Aa:61:LEU:HD11	1.77	0.66
45:BF:18:MET:N	45:BF:18:MET:SD	2.68	0.66
2:1:2:A:H2	2:1:3021:G:H1	0.79	0.66
2:1:2544:A:N7	72:1:3537:HOH:O	2.28	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:1136:A:OP1	58:BS:60:ARG:NH1	2.28	0.66
6:AC:9:LEU:HD23	6:AC:12:LYS:HD2	1.76	0.66
19:AQ:20:LYS:HG3	19:AQ:50:GLU:HG2	1.75	0.66
2:1:1439:G:O2'	34:Af:48:LYS:NZ	2.29	0.66
42:BC:198:ARG:NH2	58:BS:40:ASP:OD2	2.29	0.66
43:BD:148:PRO:HD2	43:BD:151:LEU:HB2	1.76	0.66
2:1:3021:G:C4'	72:1:3971:HOH:O	2.42	0.66
24:AV:86:ASN:HD21	24:AV:90:GLN:HB2	1.60	0.66
41:BB:26:ARG:HH12	41:BB:42:ARG:HH21	1.44	0.66
2:1:1468:G:N7	72:1:3544:HOH:O	2.29	0.66
3:4:482:G:OP2	53:BN:71:LYS:NZ	2.29	0.66
3:4:1271:G:H3'	60:BU:87:LYS:HB2	1.77	0.66
47:BH:94:LEU:HD12	47:BH:170:LEU:HB3	1.77	0.66
64:BY:40:ARG:NH1	64:BY:45:GLY:O	2.28	0.66
2:1:2644:C:O2'	2:1:2646:G:OP2	2.14	0.66
3:4:11:A:H2'	3:4:12:U:H5'	1.76	0.66
45:BF:29:GLU:O	45:BF:33:ASN:ND2	2.29	0.66
46:BG:54:LYS:O	46:BG:118:VAL:HB	1.95	0.66
45:BF:36:LEU:HD13	68:Bc:28:ARG:HG3	1.76	0.66
65:BZ:32:THR:HG22	72:BZ:102:HOH:O	1.95	0.66
2:1:358:A:H2'	72:1:6342:HOH:O	1.96	0.66
3:4:1148:G:O2'	58:BS:3:ARG:NH2	2.28	0.66
6:AC:151:ALA:CB	6:AC:170:PRO:HG3	2.25	0.66
9:AF:15:LEU:HB2	9:AF:18:LYS:HD2	1.78	0.66
12:AI:111:THR:HG22	12:AI:117:LYS:HE3	1.78	0.66
40:BA:73:ILE:HG23	40:BA:94:LEU:HD21	1.78	0.66
2:1:236:A:OP1	11:AH:125:LYS:NZ	2.28	0.66
2:1:813:G:H5'	31:Ac:8:SER:HA	1.78	0.66
40:BA:25:LYS:NZ	52:BM:41:GLU:OE1	2.28	0.66
48:BI:106:THR:HG21	48:BI:121:ILE:HD12	1.78	0.65
52:BM:93:TYR:HD2	52:BM:132:PRO:HA	1.61	0.65
53:BN:73:VAL:HG11	53:BN:97:ILE:HG21	1.77	0.65
3:4:877:OMU:HM22	3:4:878:A:H5'	1.77	0.65
3:4:900:C:C6	72:4:3645:HOH:O	2.48	0.65
18:AP:53:LYS:NZ	18:AP:122:ILE:O	2.28	0.65
38:Aj:167:ASP:HB3	38:Aj:170:THR:HG22	1.78	0.65
3:4:1014:A:O2'	42:BC:149:GLU:O	2.10	0.65
13:AK:34:VAL:HG13	13:AK:52:ILE:HD11	1.78	0.65
56:BQ:130:LYS:NZ	56:BQ:139:PHE:O	2.27	0.65
2:1:27:C:OP2	24:AV:13:ARG:NH1	2.30	0.65
44:BE:50:TYR:O	61:BV:17:ASN:ND2	2.29	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:BT:32:ARG:HG3	59:BT:50:LEU:HD22	1.78	0.65
3:4:16:G:H2'	3:4:17:C:C6	2.32	0.65
4:AA:94:LEU:O	4:AA:129:GLN:NE2	2.26	0.65
5:AB:203:VAL:HG12	5:AB:312:LEU:HD22	1.77	0.65
42:BC:170:ASN:HB3	42:BC:171:ARG:HH11	1.61	0.65
44:BE:29:THR:HG22	72:BE:322:HOH:O	1.95	0.65
2:1:761:A:N1	2:1:2484:A:O2'	2.28	0.65
2:1:2394:G:N7	72:1:3545:HOH:O	2.29	0.65
3:4:788:U:OP2	64:BY:7:ARG:NH1	2.29	0.65
13:AJ:4:VAL:HG23	28:AZ:57:ALA:HB2	1.78	0.65
46:BG:130:PRO:HB3	67:Bb:10:ALA:HB2	1.79	0.65
47:BH:39:ILE:HD13	47:BH:65:PRO:HB2	1.79	0.65
59:BT:94:ARG:NH1	59:BT:133:ALA:O	2.27	0.65
2:1:1947:OMG:HM22	2:1:1948:G:H5'	1.78	0.65
3:4:215:C:H2'	3:4:216:G:H8	1.61	0.65
3:4:1099:A:O2'	3:4:1101:G:N2	2.27	0.65
16:AN:102:ARG:HH12	16:AN:104:LEU:HD21	1.61	0.65
18:AP:35:ILE:HD11	18:AP:65:VAL:HG11	1.78	0.65
41:BB:126:PRO:HG3	41:BB:145:ALA:HB1	1.78	0.65
65:BZ:46:ARG:NH2	65:BZ:67:THR:O	2.30	0.65
2:1:1749:A:H1'	72:1:5319:HOH:O	1.96	0.65
9:AF:5:ILE:HG12	9:AF:87:GLU:HG3	1.77	0.65
40:BA:137:ARG:HD3	72:BA:302:HOH:O	1.95	0.65
45:BF:200:PHE:HD1	45:BF:202:LEU:HD22	1.62	0.65
2:1:1559:C:OP2	31:Ac:63:ARG:NH1	2.24	0.65
2:1:2425:C:OP2	7:AD:56:LYS:NZ	2.29	0.65
19:AQ:144:GLU:N	19:AQ:144:GLU:OE2	2.30	0.65
45:BF:11:PRO:O	45:BF:17:ARG:NH1	2.30	0.65
52:BM:139:ARG:HD3	52:BM:140:ARG:HD2	1.78	0.65
3:4:784:G:HO2'	48:BI:2:VAL:N	1.95	0.65
9:AF:64:LYS:HE3	9:AF:148:ARG:HB2	1.78	0.65
13:AJ:47:ARG:NH2	13:AJ:68:ALA:O	2.30	0.65
40:BA:24:LEU:CD2	72:BA:308:HOH:O	2.24	0.65
40:BA:32:ALA:HB2	40:BA:41:LEU:HD21	1.79	0.65
53:BN:80:ASN:HB2	53:BN:82:LYS:HG3	1.78	0.65
3:4:111:A:OP1	57:BR:55:ARG:NH2	2.30	0.64
3:4:462:OMG:CM2	72:4:4171:HOH:O	2.44	0.64
11:AH:44:LEU:O	15:AM:168:GLN:NE2	2.30	0.64
13:AJ:52:ILE:HD11	28:AZ:26:LYS:HD2	1.78	0.64
3:4:888:G:N3	72:4:3138:HOH:O	2.29	0.64
3:4:1159:G:O2'	45:BF:69:ARG:NH1	2.29	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:1260:G:H21	60:BU:47:MET:HE1	1.62	0.64
3:4:1330:A:OP1	60:BU:89:ARG:NH1	2.30	0.64
5:AB:108:SER:HA	5:AB:124:PHE:HB2	1.78	0.64
6:AC:151:ALA:HB1	6:AC:170:PRO:HG3	1.77	0.64
65:BZ:25:THR:HG23	65:BZ:31:VAL:HG12	1.79	0.64
48:BI:42:GLN:NE2	48:BI:48:GLY:O	2.30	0.64
42:BC:194:PRO:HD2	42:BC:197:LEU:HD12	1.80	0.64
50:BK:36:VAL:HG11	50:BK:43:LEU:HD12	1.78	0.64
58:BS:23:ARG:NH2	58:BS:37:GLU:OE1	2.31	0.64
2:1:1072:G:H1'	72:1:6319:HOH:O	1.96	0.64
2:1:1252:A:H4'	2:1:1253:A:H5''	1.78	0.64
26:AX:8:PRO:HG3	26:AX:57:ARG:HD2	1.80	0.64
38:Aj:103:GLU:OE1	38:Aj:106:ARG:NH2	2.29	0.64
56:BQ:97:ARG:O	56:BQ:100:LYS:HG3	1.98	0.64
2:1:1909:A:H5'	72:1:6706:HOH:O	1.98	0.64
3:4:1271:G:OP1	60:BU:83:LYS:NZ	2.30	0.64
4:AA:58:MET:HB2	4:AA:62:VAL:HG23	1.79	0.64
6:AC:59:ILE:HD13	6:AC:266:PRO:HB3	1.79	0.64
44:BE:229:THR:HG22	44:BE:230:GLU:H	1.61	0.64
2:1:46:G:N7	72:1:3551:HOH:O	2.29	0.64
69:4:3012:SPM:N5	72:4:3135:HOH:O	2.28	0.64
38:Aj:60:PHE:HE2	38:Aj:100:LEU:HD23	1.62	0.64
46:BG:34:ILE:HA	46:BG:57:ILE:HG22	1.78	0.64
3:4:785:G:O4'	48:BI:2:VAL:N	2.30	0.64
20:AR:8:VAL:HG22	20:AR:18:VAL:HG13	1.80	0.64
38:Aj:152:VAL:HG12	38:Aj:154:LYS:HG3	1.78	0.64
41:BB:158:PHE:CA	68:Bc:65:PRO:HG2	2.27	0.64
45:BF:103:THR:HG22	45:BF:107:LYS:HE3	1.79	0.64
58:BS:32:LYS:HD3	58:BS:47:ARG:HH21	1.63	0.64
59:BT:10:LYS:CD	72:BT:204:HOH:O	2.21	0.64
2:1:229:G:H5'	2:1:230:C:C5'	2.27	0.64
2:1:492:OMC:HM22	2:1:493:OMC:H5''	1.78	0.64
2:1:1706:C:OP1	37:Ai:35:ARG:NH1	2.31	0.64
3:4:636:U:O2'	52:BM:125:ILE:O	2.14	0.64
3:4:1201:U:O2'	3:4:1202:OMG:O5'	2.14	0.64
27:AY:127:ARG:HB2	27:AY:130:GLN:HE21	1.63	0.64
65:BZ:66:GLU:N	65:BZ:66:GLU:OE1	2.31	0.64
67:Bb:16:LEU:HD13	67:Bb:54:LEU:HB3	1.80	0.64
2:1:831:G:N2	2:1:833:A:H3'	2.12	0.63
2:1:1102:A:HO2'	2:1:2156:C:HO2'	1.45	0.63
3:4:655:A:H5''	52:BM:56:LYS:HG3	1.78	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:BF:56:ASN:ND2	45:BF:58:ASN:OD1	2.26	0.63
54:BO:29:ILE:HD13	54:BO:67:VAL:HG11	1.79	0.63
72:4:3593:HOH:O	46:BG:95:MET:HE2	1.94	0.63
5:AB:207:THR:OG1	5:AB:258:GLY:O	2.16	0.63
2:1:2169:A:N7	72:1:3554:HOH:O	2.30	0.63
3:4:12:U:H2'	3:4:13:C:C6	2.33	0.63
3:4:81:A:N3	3:4:133:C:O2'	2.27	0.63
3:4:1019:C:H2'	3:4:1020:G:H8	1.62	0.63
3:4:1230:C:OP1	60:BU:121:ARG:NH2	2.30	0.63
3:4:1214:A:OP1	60:BU:66:TYR:OH	2.17	0.63
22:AT:58:LYS:HE3	22:AT:125:GLU:HA	1.80	0.63
65:BZ:15:ALA:HB3	65:BZ:39:LEU:HB2	1.80	0.63
3:4:97:G:N2	49:BJ:23:VAL:O	2.28	0.63
3:4:929:G:H3'	3:4:930:A:H8	1.62	0.63
72:4:3923:HOH:O	57:BR:57:LYS:HG2	1.99	0.63
4:AA:79:GLN:HB3	4:AA:84:ALA:HB1	1.80	0.63
62:BW:98:LYS:NZ	72:BW:201:HOH:O	2.30	0.63
2:1:1603:G:H1'	72:1:6286:HOH:O	1.98	0.63
3:4:103:C:OP1	3:4:315:C:O2'	2.14	0.63
61:BV:46:LEU:HD23	61:BV:57:ILE:HD13	1.79	0.63
5:AB:87:VAL:HG23	5:AB:185:LEU:HD13	1.81	0.63
42:BC:170:ASN:HB3	42:BC:171:ARG:HD2	1.80	0.63
47:BH:22:PRO:HD2	65:BZ:17:LEU:HD21	1.80	0.63
68:Bc:47:ARG:HD2	72:Bc:213:HOH:O	1.99	0.63
2:1:1557:A:N3	2:1:1628:C:O2'	2.31	0.63
22:AT:181:LEU:HA	22:AT:184:ARG:HB2	1.81	0.63
33:Ae:21:VAL:HG21	33:Ae:57:LEU:HD13	1.81	0.63
52:BM:52:VAL:HG11	52:BM:57:ASP:HB2	1.80	0.63
59:BT:92:HIS:CE1	72:BT:217:HOH:O	2.52	0.63
65:BZ:60:ASP:HA	72:BZ:104:HOH:O	1.98	0.63
3:4:63:C:H2'	3:4:64:G:C8	2.34	0.62
8:AE:120:ARG:NH2	8:AE:169:GLU:OE1	2.31	0.62
40:BA:161:ALA:HB1	40:BA:165:GLN:HB3	1.81	0.62
46:BG:41:THR:HA	46:BG:44:LYS:HZ3	1.63	0.62
3:4:489:OMC:N4	53:BN:66:ASN:OD1	2.27	0.62
3:4:506:C:O2'	3:4:510:U:OP1	2.16	0.62
3:4:1099:A:OP2	60:BU:140:LYS:NZ	2.31	0.62
40:BA:122:ASP:OD1	40:BA:122:ASP:N	2.26	0.62
45:BF:59:LEU:HD11	45:BF:70:ASN:HB3	1.80	0.62
47:BH:205:LYS:O	47:BH:210:ARG:NH1	2.28	0.62
3:4:648:A:O2'	3:4:662:U:O4	2.14	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:BB:189:LYS:N	41:BB:192:GLN:OE1	2.32	0.62
50:BK:57:GLU:OE2	50:BK:111:TYR:OH	2.16	0.62
3:4:178:A:O2'	57:BR:28:ASN:O	2.14	0.62
3:4:542:G:OP1	56:BQ:120:SER:OG	2.17	0.62
3:4:1491:U:OP2	63:BX:5:ARG:NH2	2.29	0.62
2:1:2471:A:OP1	21:AS:82:LYS:NZ	2.33	0.62
12:AI:141:SER:HB3	12:AI:142:ILE:HD12	1.81	0.62
59:BT:18:PRO:HG3	59:BT:118:VAL:HG22	1.81	0.62
2:1:1429:A:O2'	2:1:1765:C:N4	2.32	0.62
26:AX:5:LYS:HG2	26:AX:54:MET:HE1	1.81	0.62
59:BT:10:LYS:CE	72:BT:204:HOH:O	2.47	0.62
61:BV:94:ALA:HA	61:BV:101:GLY:HA3	1.81	0.62
67:Bb:10:ALA:O	67:Bb:14:THR:HG23	1.99	0.62
67:Bb:13:ILE:O	67:Bb:17:ARG:HG2	2.00	0.62
3:4:1199:G:O2'	3:4:1331:C:OP1	2.18	0.62
7:AD:106:ASN:HD21	7:AD:136:ARG:HG2	1.65	0.62
10:AG:122:SER:OG	10:AG:123:ILE:N	2.33	0.62
29:Aa:54:GLY:HA3	29:Aa:88:GLU:OE1	1.99	0.62
41:BB:84:LYS:NZ	41:BB:88:MET:HG2	2.14	0.62
2:1:91:U:O4	24:AV:48:ARG:NH2	2.33	0.62
2:1:2077:OMU:HM22	2:1:2078:C:H5'	1.81	0.62
33:Ae:4:GLU:OE2	33:Ae:44:ARG:NH1	2.33	0.62
40:BA:137:ARG:CD	72:BA:302:HOH:O	2.48	0.62
47:BH:12:THR:O	47:BH:14:ARG:NH2	2.33	0.62
54:BO:63:LEU:O	54:BO:67:VAL:HG23	2.00	0.62
2:1:1934:C:O2'	2:1:1938:A:N3	2.32	0.62
2:1:2337:C:H5'	72:1:6625:HOH:O	1.99	0.62
3:4:572:OMC:HM22	3:4:573:C:H5'	1.81	0.62
9:AF:33:LYS:O	9:AF:37:ILE:HG13	1.99	0.62
27:AY:38:LEU:HD21	27:AY:45:VAL:HG22	1.81	0.62
46:BG:85:PRO:HG2	46:BG:86:PRO:HD3	1.81	0.62
48:BI:57:ARG:NH2	56:BQ:16:ARG:O	2.30	0.62
65:BZ:42:ARG:HH12	65:BZ:67:THR:HB	1.65	0.62
2:1:2323:C:H5''	72:1:5695:HOH:O	2.00	0.62
44:BE:83:MET:HE1	44:BE:236:ILE:HD13	1.82	0.62
59:BT:34:LYS:HE2	59:BT:42:MET:HE1	1.82	0.62
2:1:2476:A:O2'	2:1:2507:A:OP1	2.17	0.61
3:4:500:G:H5''	66:Ba:22:ALA:HB2	1.82	0.61
3:4:1416:G:H3'	3:4:1417:U:H5''	1.81	0.61
50:BK:64:ASP:HA	50:BK:67:LYS:HG2	1.82	0.61
55:BP:33:GLY:HA2	72:BP:207:HOH:O	1.99	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:AI:25:ASN:OD1	12:AI:40:ARG:NH1	2.34	0.61
40:BA:123:GLY:O	40:BA:201:ARG:NH2	2.32	0.61
53:BN:101:ASP:OD1	53:BN:144:LYS:NZ	2.28	0.61
56:BQ:29:THR:OG1	56:BQ:32:GLU:OE1	2.17	0.61
63:BX:12:LYS:CD	72:BX:203:HOH:O	2.41	0.61
2:1:684:A:H4'	2:1:685:G:H5'	1.83	0.61
2:1:2709:G:N2	2:1:2712:A:OP2	2.31	0.61
3:4:621:G:H2'	3:4:622:G:C8	2.35	0.61
3:4:1170:A:H2	42:BC:185:ILE:HD11	1.65	0.61
4:AA:42:GLU:HB3	4:AA:44:LEU:HD21	1.81	0.61
5:AB:28:VAL:HG22	5:AB:204:ILE:HD13	1.82	0.61
6:AC:162:MET:HE3	6:AC:201:ARG:HD3	1.82	0.61
9:AF:54:THR:HG23	9:AF:115:VAL:HB	1.81	0.61
30:Ab:90:VAL:HG13	30:Ab:95:ASP:HB2	1.83	0.61
46:BG:47:ILE:HG23	46:BG:49:LEU:HG	1.80	0.61
47:BH:106:HIS:HA	50:BK:50:MET:HE2	1.81	0.61
49:BJ:74:GLU:OE1	49:BJ:76:ARG:NH1	2.33	0.61
61:BV:109:ARG:CA	72:BV:204:HOH:O	2.44	0.61
2:1:292:U:H5'	72:1:8411:HOH:O	2.01	0.61
3:4:405:C:O2'	3:4:582:A:N3	2.31	0.61
72:4:3923:HOH:O	57:BR:57:LYS:CG	2.46	0.61
13:AK:74:LEU:O	13:AK:78:GLU:HG3	2.01	0.61
22:AT:170:LYS:O	22:AT:175:LYS:NZ	2.29	0.61
28:AZ:28:LEU:HD21	28:AZ:54:ALA:HA	1.83	0.61
43:BD:18:LYS:CD	72:BD:202:HOH:O	2.37	0.61
1:2:34:C:H2'	1:2:35:C:H5'	1.82	0.61
3:4:282:A:H5''	3:4:283:A:H3'	1.81	0.61
6:AC:201:ARG:NH2	6:AC:224:LYS:O	2.34	0.61
7:AD:169:PHE:HD2	7:AD:175:VAL:HG11	1.65	0.61
41:BB:90:CYS:SG	41:BB:97:ALA:HB2	2.41	0.61
46:BG:6:LEU:HD12	46:BG:113:ILE:HB	1.83	0.61
48:BI:77:PRO:HD2	48:BI:79:PHE:CE2	2.35	0.61
52:BM:83:VAL:HG21	52:BM:114:LEU:HD13	1.82	0.61
53:BN:4:LYS:O	53:BN:5:LYS:C	2.43	0.61
2:1:2081:G:O2'	3:4:1443:G:O2'	2.17	0.61
7:AD:98:ARG:O	7:AD:162:ARG:NH2	2.34	0.61
56:BQ:53:ILE:HG12	64:BY:37:MET:HE1	1.83	0.61
1:2:2:C:H2'	1:2:3:C:H6	1.63	0.61
2:1:646:G:H5''	30:Ab:51:THR:HG21	1.83	0.61
3:4:278:G:H5''	57:BR:67:ARG:HG3	1.83	0.61
3:4:1127:G:H1	3:4:1142:A:N6	1.98	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:1492:C:H3'	63:BX:91:ARG:HH22	1.64	0.61
3:4:296:C:H5'	3:4:570:A:H61	1.66	0.61
3:4:483:C:H2'	3:4:484:C:H5'	1.83	0.61
6:AC:274:ALA:O	6:AC:278:GLU:HG2	2.01	0.61
9:AF:73:ASP:HB3	9:AF:74:PRO:HD3	1.83	0.61
16:AN:103:MET:HE3	16:AN:103:MET:H	1.65	0.61
56:BQ:91:LEU:HD12	56:BQ:125:LEU:HD12	1.81	0.61
61:BV:97:LEU:HB3	61:BV:100:GLU:HG3	1.82	0.61
2:1:893:G:H5''	72:1:7234:HOH:O	2.01	0.60
2:1:1160:G:OP1	35:Ag:36:LYS:NZ	2.31	0.60
2:1:2546:A:N7	72:1:3580:HOH:O	2.31	0.60
6:AC:186:ALA:HB1	6:AC:241:VAL:HG12	1.83	0.60
18:AP:59:ASN:HA	18:AP:78:LYS:HD2	1.83	0.60
28:AZ:5:GLY:O	28:AZ:9:GLN:HG2	2.01	0.60
2:1:882:A:H5'	4:AA:173:GLY:HA2	1.83	0.60
72:1:6151:HOH:O	4:AA:236:VAL:HG22	2.02	0.60
3:4:1423:G:H2'	3:4:1424:A:C8	2.36	0.60
13:AK:38:GLY:O	13:AK:43:SER:OG	2.18	0.60
49:BJ:47:ARG:HG2	49:BJ:61:LEU:HD13	1.82	0.60
50:BK:93:ARG:HG2	50:BK:116:LEU:HD23	1.83	0.60
72:1:4775:HOH:O	18:AP:44:ARG:HG3	2.01	0.60
3:4:106:G:OP1	3:4:566:U:O2'	2.09	0.60
3:4:462:OMG:HM21	72:4:4171:HOH:O	2.00	0.60
15:AM:71:PRO:HB3	15:AM:92:THR:HG22	1.83	0.60
43:BD:32:MET:HE3	43:BD:40:LYS:HD3	1.81	0.60
52:BM:52:VAL:HG21	52:BM:63:ALA:HB2	1.82	0.60
2:1:1390:G:N7	72:1:3595:HOH:O	2.31	0.60
72:4:3565:HOH:O	63:BX:30:VAL:HG12	2.01	0.60
72:4:3659:HOH:O	52:BM:141:VAL:CG1	2.46	0.60
31:Ac:63:ARG:HD2	31:Ac:74:LEU:HD23	1.82	0.60
40:BA:48:GLU:HG3	40:BA:50:GLN:H	1.66	0.60
3:4:1036:G:N2	3:4:1039:A:OP2	2.26	0.60
69:4:3002:SPM:H112	72:4:3530:HOH:O	2.02	0.60
41:BB:121:LEU:CD1	41:BB:123:VAL:HG13	2.32	0.60
42:BC:162:TYR:OH	42:BC:201:ASP:OD2	2.20	0.60
2:1:455:A:N7	72:1:3591:HOH:O	2.31	0.60
2:1:1518:G:H5'	2:1:1615:A:H1'	1.83	0.60
72:1:3614:HOH:O	22:AT:150:ARG:HD3	2.00	0.60
12:AI:128:GLU:OE1	12:AI:128:GLU:N	2.29	0.60
3:4:678:C:O2'	3:4:695:G:O4'	2.19	0.60
3:4:1393:U:H2'	3:4:1394:C:C6	2.36	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:AF:38:LEU:HD12	9:AF:47:ILE:HG21	1.84	0.60
13:AJ:77:LEU:HD13	13:AJ:86:MET:HG3	1.83	0.60
44:BE:199:TRP:HB2	57:BR:140:LYS:HB2	1.82	0.60
60:BU:105:LEU:HB3	60:BU:121:ARG:HD2	1.83	0.60
62:BW:53:THR:O	62:BW:56:LYS:HE3	2.02	0.60
2:1:2741:G:N2	2:1:2889:G:OP2	2.34	0.60
3:4:1192:C:H2'	54:BO:131:THR:HB	1.84	0.60
3:4:1313:G:H5'	72:4:3945:HOH:O	2.00	0.60
13:AJ:71:GLU:OE2	13:AJ:71:GLU:N	2.26	0.60
40:BA:196:LYS:HE3	40:BA:198:LYS:HE2	1.83	0.60
45:BF:133:VAL:HB	48:BI:95:PRO:HB3	1.83	0.60
59:BT:30:ARG:HH11	59:BT:35:THR:HG22	1.67	0.60
59:BT:127:HIS:HB3	59:BT:131:GLU:OE1	2.01	0.60
14:AL:100:GLU:HB2	14:AL:105:VAL:HG21	1.84	0.60
27:AY:148:ARG:O	27:AY:177:ARG:NH1	2.35	0.60
48:BI:51:GLU:CG	72:BI:211:HOH:O	2.44	0.60
3:4:1491:U:H4'	63:BX:80:ILE:HG21	1.84	0.60
9:AF:36:GLU:O	9:AF:40:ILE:HG13	2.02	0.60
24:AV:111:LYS:O	24:AV:114:GLN:HG3	2.01	0.60
44:BE:161:TYR:HE1	44:BE:163:LEU:HD23	1.67	0.60
54:BO:13:ASP:OD1	54:BO:68:ARG:NH2	2.29	0.60
58:BS:13:ALA:HA	58:BS:54:ILE:HD11	1.84	0.60
2:1:581:C:N4	72:1:3489:HOH:O	2.25	0.59
2:1:1398:A:N3	2:1:2124:G:O2'	2.30	0.59
2:1:1516:A:O2'	2:1:1527:U:O2	2.19	0.59
2:1:2712:A:H5''	4:AA:203:GLY:HA3	1.84	0.59
5:AB:269:ILE:HA	5:AB:298:LEU:HD23	1.84	0.59
9:AF:103:LYS:NZ	9:AF:107:ILE:O	2.34	0.59
40:BA:170:VAL:HG22	40:BA:175:LEU:HD23	1.82	0.59
42:BC:179:VAL:HG22	42:BC:188:ILE:HD11	1.84	0.59
43:BD:91:PRO:HD2	43:BD:94:ARG:HG3	1.83	0.59
45:BF:114:ARG:HH11	68:Bc:8:ILE:HG22	1.67	0.59
46:BG:127:PRO:HG3	67:Bb:13:ILE:HD12	1.82	0.59
2:1:1420:C:H5'	19:AQ:21:ILE:O	2.02	0.59
2:1:1853:C:OP1	19:AQ:66:LYS:NZ	2.31	0.59
3:4:914:C:OP1	54:BO:125:LYS:NZ	2.29	0.59
3:4:1444:G:O2'	3:4:1445:G:O5'	2.20	0.59
18:AP:93:LYS:O	18:AP:97:GLU:HG3	2.02	0.59
61:BV:27:VAL:HG22	61:BV:73:ALA:HB3	1.83	0.59
2:1:2868:U:H1'	2:1:2869:A:H5''	1.84	0.59
3:4:1040:G:OP2	45:BF:91:LYS:NZ	2.27	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:AL:69:PRO:HB2	14:AL:72:ILE:HG12	1.83	0.59
41:BB:27:LEU:HB2	41:BB:149:THR:HG22	1.84	0.59
56:BQ:98:ILE:HG21	56:BQ:115:LEU:HB2	1.84	0.59
61:BV:59:VAL:N	61:BV:96:ASN:OD1	2.34	0.59
2:1:1:U:H5''	72:1:5863:HOH:O	2.02	0.59
2:1:42:A:H3'	2:1:43:G:H5'	1.85	0.59
2:1:580:C:C5'	72:1:8130:HOH:O	2.49	0.59
2:1:624:G:H2'	2:1:625:G:C8	2.38	0.59
7:AD:166:VAL:HG13	7:AD:177:VAL:HG11	1.84	0.59
27:AY:68:GLU:OE2	27:AY:166:TYR:OH	2.15	0.59
41:BB:14:GLU:O	41:BB:18:SER:OG	2.17	0.59
50:BK:8:GLN:HE22	50:BK:11:PRO:HD2	1.66	0.59
3:4:80:G:H2'	3:4:81:A:C8	2.38	0.59
3:4:1036:G:N2	3:4:1038:G:H3'	2.17	0.59
16:AN:110:ASP:HB3	16:AN:118:LEU:HD13	1.83	0.59
17:AO:135:GLU:N	17:AO:135:GLU:OE1	2.36	0.59
22:AT:73:PRO:HB2	22:AT:96:ALA:HB1	1.83	0.59
40:BA:156:LYS:O	40:BA:160:GLU:HG3	2.02	0.59
2:1:90:U:OP2	26:AX:4:ARG:NH2	2.36	0.59
2:1:2356:C:H5'	2:1:2357:G:H5''	1.83	0.59
69:1:3116:SPM:H72	72:1:8897:HOH:O	2.01	0.59
3:4:195:A:N1	3:4:223:G:O2'	2.33	0.59
23:AU:70:SER:HB3	23:AU:73:ASP:HB2	1.85	0.59
56:BQ:93:ARG:NH1	56:BQ:149:LEU:O	2.33	0.59
61:BV:109:ARG:HB2	72:BV:204:HOH:O	2.00	0.59
2:1:145:G:H2'	2:1:146:C:C6	2.37	0.59
2:1:247:G:OP2	11:AH:25:ARG:NH2	2.31	0.59
7:AD:35:LEU:HD11	7:AD:72:VAL:HG23	1.84	0.59
41:BB:189:LYS:HE2	41:BB:191:ASP:HB3	1.85	0.59
44:BE:88:ILE:HB	44:BE:93:GLU:HG3	1.84	0.59
48:BI:51:GLU:CD	72:BI:211:HOH:O	2.45	0.59
52:BM:20:ILE:HG21	52:BM:86:LYS:HD2	1.85	0.59
63:BX:91:ARG:NH1	72:BX:201:HOH:O	2.35	0.59
2:1:308:G:H5'	72:1:4662:HOH:O	2.02	0.59
2:1:1172:A:H1'	2:1:1237:A:N6	2.17	0.59
2:1:2915:A:O2'	2:1:2916:A:O4'	2.09	0.59
3:4:1060:A2M:H4'	3:4:1061:A:O5'	2.03	0.59
40:BA:146:ILE:HD13	40:BA:189:MET:HE1	1.84	0.59
2:1:2646:G:N2	2:1:2778:G:O2'	2.36	0.59
3:4:912:A:H2'	3:4:913:G:H8	1.67	0.59
46:BG:41:THR:HA	46:BG:44:LYS:HD3	1.83	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:BM:83:VAL:CG2	52:BM:114:LEU:HD13	2.32	0.59
59:BT:65:PRO:HB3	59:BT:68:ARG:HH21	1.66	0.59
3:4:17:C:OP1	3:4:850:G:H5'	2.01	0.59
3:4:1490:A:OP2	63:BX:4:LYS:NZ	2.36	0.59
61:BV:53:GLU:HG3	61:BV:55:ASP:H	1.68	0.59
2:1:2102:A:O2'	2:1:2103:OMG:OP1	2.18	0.58
2:1:2361:G:O2'	2:1:2610:PSU:OP1	2.21	0.58
72:1:4975:HOH:O	21:AS:14:LYS:HD2	2.01	0.58
17:AO:73:LYS:O	17:AO:173:ARG:NH1	2.29	0.58
25:AW:22:VAL:HG22	25:AW:28:VAL:HG22	1.85	0.58
39:AK:21:TYR:O	39:AK:25:GLU:HG2	2.03	0.58
45:BF:131:PRO:HB3	68:Bc:8:ILE:HD12	1.85	0.58
2:1:2825:C:H5''	2:1:2827:G:H5''	1.85	0.58
3:4:8:U:H5	3:4:880:A2M:N7	2.01	0.58
3:4:1273:U:H5'	72:4:3402:HOH:O	2.03	0.58
47:BH:147:ILE:HG23	47:BH:154:TYR:HB2	1.85	0.58
50:BK:54:LYS:HG3	50:BK:88:ARG:NH1	2.17	0.58
2:1:1976:OMC:HM22	2:1:1977:U:H5'	1.85	0.58
3:4:269:G:H3'	57:BR:121:LYS:HB2	1.84	0.58
3:4:1089:A:H3'	3:4:1090:C:H5'	1.86	0.58
3:4:1286:C:H1'	59:BT:131:GLU:HG2	1.84	0.58
40:BA:130:VAL:HG11	40:BA:179:LEU:HD13	1.84	0.58
50:BK:44:GLU:O	50:BK:45:LEU:HD23	2.02	0.58
61:BV:110:LYS:O	61:BV:114:GLU:HG2	2.02	0.58
3:4:1378:C:H2'	3:4:1379:A:C8	2.37	0.58
8:AE:88:LYS:HB3	8:AE:193:HIS:HB3	1.83	0.58
8:AE:189:VAL:HG12	35:Ag:12:ILE:HD13	1.84	0.58
9:AF:134:ASN:ND2	9:AF:144:ALA:HB1	2.19	0.58
47:BH:41:LEU:N	47:BH:45:TRP:O	2.34	0.58
63:BX:29:VAL:HG22	63:BX:30:VAL:H	1.68	0.58
3:4:138:G:OP2	46:BG:134:LYS:NZ	2.30	0.58
3:4:1055:C:OP1	58:BS:7:LYS:HB2	2.04	0.58
3:4:1255:A:H2'	3:4:1256:C:H5'	1.85	0.58
12:AI:120:GLU:N	12:AI:120:GLU:OE2	2.37	0.58
47:BH:138:THR:HG23	47:BH:208:ALA:HB1	1.85	0.58
47:BH:165:ARG:NH2	65:BZ:10:TYR:OH	2.37	0.58
2:1:2:A:N1	2:1:3021:G:C6	2.71	0.58
2:1:1734:C:OP1	33:Ae:41:TYR:OH	2.17	0.58
3:4:187:U:H2'	3:4:188:C:C6	2.38	0.58
42:BC:145:LYS:HB3	42:BC:148:THR:O	2.03	0.58
63:BX:10:ARG:HH21	63:BX:31:PRO:HG3	1.67	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:44:U:O2'	1:2:46:A:N7	2.26	0.58
2:1:1154:A:H2'	2:1:1155:A:C8	2.39	0.58
2:1:1654:G:H5''	72:1:7101:HOH:O	2.03	0.58
69:1:3130:SPM:H21	72:1:4553:HOH:O	2.04	0.58
72:1:4948:HOH:O	29:Aa:67:GLU:HB2	2.03	0.58
3:4:912:A:H2'	3:4:913:G:C8	2.38	0.58
5:AB:173:SER:HB3	5:AB:176:GLU:HG3	1.84	0.58
41:BB:61:ALA:O	41:BB:65:ILE:HD12	2.03	0.58
43:BD:33:GLY:HA3	66:Ba:38:TYR:CG	2.39	0.58
52:BM:116:ILE:N	63:BX:56:GLN:OE1	2.30	0.58
61:BV:109:ARG:CB	72:BV:204:HOH:O	2.51	0.58
67:Bb:11:LYS:O	67:Bb:15:ARG:HG3	2.03	0.58
67:Bb:27:LYS:HE2	67:Bb:27:LYS:N	2.19	0.58
2:1:2555:OMC:HM22	2:1:2556:C:H5'	1.86	0.58
3:4:249:A:N1	3:4:281:G:O2'	2.37	0.58
3:4:1200:C:H2'	3:4:1201:U:H5'	1.86	0.58
20:AR:2:PRO:O	20:AR:70:MET:HE1	2.03	0.58
24:AV:20:PRO:O	24:AV:24:ARG:HG3	2.02	0.58
48:BI:108:GLN:NE2	48:BI:121:ILE:HD13	2.19	0.58
2:1:846:G:O2'	2:1:881:G:H4'	2.04	0.58
3:4:215:C:H2'	3:4:216:G:C8	2.39	0.58
3:4:900:C:C5	72:4:3645:HOH:O	2.57	0.58
13:AK:42:LEU:HD21	13:AK:83:VAL:HG13	1.86	0.58
50:BK:14:ILE:HD12	50:BK:98:TYR:HA	1.84	0.58
53:BN:94:LEU:HD21	66:Ba:7:LEU:HD23	1.86	0.58
57:BR:2:THR:HA	57:BR:42:ASP:OD2	2.03	0.58
2:1:2860:A:H4'	8:AE:73:GLY:HA3	1.85	0.58
3:4:218:C:H2'	3:4:219:A:C8	2.39	0.58
3:4:701:C:H5'	56:BQ:97:ARG:HE	1.69	0.58
72:4:3520:HOH:O	54:BO:140:THR:CB	2.50	0.58
24:AV:36:LEU:HD13	24:AV:106:VAL:HG13	1.86	0.58
46:BG:9:SER:HB2	46:BG:116:VAL:HG23	1.85	0.58
46:BG:82:ALA:N	46:BG:97:LYS:O	2.37	0.58
48:BI:22:LYS:HG2	48:BI:23:ARG:HH12	1.69	0.58
59:BT:11:GLY:HA2	59:BT:137:ARG:HH21	1.67	0.58
2:1:303:C:C5	72:1:8524:HOH:O	2.57	0.57
2:1:510:A:H1'	2:1:512:G:H5''	1.85	0.57
2:1:1110:G:C8	27:AY:23:PRO:HG3	2.39	0.57
2:1:1570:U:H2'	2:1:1571:C:C6	2.39	0.57
2:1:2048:A:H2'	2:1:2049:A:C8	2.39	0.57
3:4:483:C:C2'	3:4:484:C:H5'	2.34	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:AL:115:LYS:HG3	14:AL:132:VAL:HG12	1.86	0.57
45:BF:156:ALA:HB2	45:BF:174:THR:HG21	1.85	0.57
47:BH:138:THR:CG2	47:BH:208:ALA:HB1	2.34	0.57
57:BR:22:LYS:CE	57:BR:24:VAL:HG22	2.34	0.57
2:1:338:A:O2'	2:1:339:U:H2'	2.04	0.57
3:4:1080:C:H2'	3:4:1081:U:C6	2.39	0.57
5:AB:9:ARG:NH2	5:AB:250:THR:O	2.37	0.57
5:AB:173:SER:CB	5:AB:176:GLU:HG3	2.34	0.57
14:AL:103:ARG:HG2	14:AL:125:PRO:HB2	1.86	0.57
33:Ae:50:ALA:O	33:Ae:54:ILE:HG13	2.04	0.57
46:BG:98:LYS:NZ	72:BG:202:HOH:O	2.31	0.57
52:BM:129:THR:OG1	52:BM:130:ILE:N	2.37	0.57
2:1:1517:C:H2'	2:1:1518:G:C8	2.39	0.57
2:1:2094:G:N7	72:1:3624:HOH:O	2.33	0.57
3:4:162:A:H2'	3:4:163:G:O4'	2.04	0.57
3:4:1035:B8T:C2'	3:4:1036:G:H5'	2.34	0.57
7:AD:106:ASN:ND2	7:AD:136:ARG:HG2	2.18	0.57
46:BG:77:LYS:HG2	46:BG:102:ARG:HG3	1.86	0.57
58:BS:9:ILE:HD11	58:BS:46:VAL:HG23	1.87	0.57
59:BT:143:GLU:C	72:BT:206:HOH:O	2.47	0.57
62:BW:48:GLU:O	62:BW:52:GLN:HG3	2.05	0.57
2:1:259:U:H2'	2:1:260:C:C6	2.39	0.57
2:1:1031:C:H5''	16:AN:19:ARG:HH12	1.69	0.57
3:4:327:U:O2'	46:BG:93:ARG:HD3	2.04	0.57
11:AH:70:GLU:HG3	11:AH:75:LYS:NZ	2.19	0.57
15:AM:144:ASP:OD1	15:AM:147:TYR:N	2.28	0.57
41:BB:196:VAL:HG12	41:BB:197:PRO:HD2	1.85	0.57
59:BT:85:LYS:O	59:BT:86:LYS:HG3	2.04	0.57
2:1:150:G:N2	2:1:153:A:OP2	2.31	0.57
2:1:604:G:OP1	13:AK:13:LYS:NZ	2.31	0.57
2:1:2063:C:OP2	2:1:2064:U:O2'	2.14	0.57
72:1:5778:HOH:O	26:AX:9:LYS:HE3	2.03	0.57
3:4:638:C:H2'	3:4:639:U:C6	2.39	0.57
30:Ab:19:LEU:O	30:Ab:23:MET:HG3	2.04	0.57
45:BF:122:CYS:HB2	45:BF:149:PRO:HA	1.87	0.57
46:BG:39:ASP:OD2	46:BG:39:ASP:N	2.32	0.57
50:BK:107:LEU:HA	50:BK:110:GLU:OE1	2.05	0.57
52:BM:52:VAL:CG1	52:BM:57:ASP:HB2	2.34	0.57
58:BS:11:SER:O	58:BS:14:GLU:HG2	2.04	0.57
65:BZ:31:VAL:CG1	65:BZ:51:ASN:HB3	2.34	0.57
2:1:1176:A:C1'	72:1:4085:HOH:O	2.43	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:1103:G:H2'	3:4:1104:G:H8	1.70	0.57
23:AU:6:VAL:O	23:AU:7:ILE:HD13	2.04	0.57
26:AX:7:LYS:O	26:AX:11:LEU:HG	2.04	0.57
39:AK:33:CYS:O	39:AK:37:THR:OG1	2.17	0.57
57:BR:136:GLU:OE1	57:BR:137:TRP:N	2.37	0.57
59:BT:44:MET:O	59:BT:48:ILE:HG23	2.04	0.57
67:Bb:33:ALA:O	67:Bb:37:GLU:HG2	2.04	0.57
2:1:130:C:H2'	2:1:131:G:O4'	2.05	0.57
72:1:6088:HOH:O	14:AL:78:PRO:HG2	2.04	0.57
3:4:1036:G:H2'	3:4:1037:U:H5''	1.87	0.57
13:AK:59:ASP:OD1	13:AK:59:ASP:N	2.38	0.57
43:BD:87:ASP:HB3	43:BD:90:VAL:HG13	1.85	0.57
67:Bb:15:ARG:O	67:Bb:18:GLU:HG2	2.05	0.57
13:AK:26:VAL:O	13:AK:67:GLY:N	2.32	0.57
31:Ac:63:ARG:HG2	31:Ac:64:PRO:HD2	1.86	0.57
2:1:2034:A:O2'	3:4:1453:G:H1'	2.04	0.57
3:4:1338:U:O2'	47:BH:103:GLY:O	2.21	0.57
5:AB:92:LEU:HB3	10:AG:172:ALA:HB2	1.86	0.57
22:AT:25:ILE:HD12	22:AT:29:GLN:HB2	1.87	0.57
45:BF:41:GLU:HA	45:BF:44:ASP:OD1	2.05	0.57
47:BH:35:ASP:OD2	50:BK:63:GLY:HA3	2.04	0.57
52:BM:16:LEU:HA	52:BM:81:ASN:ND2	2.20	0.57
55:BP:46:PRO:C	72:BP:202:HOH:O	2.47	0.57
61:BV:60:ARG:HB2	61:BV:74:GLU:HG2	1.87	0.57
2:1:212:G:H5'	11:AH:7:VAL:HB	1.86	0.57
2:1:2185:C:H2'	2:1:2186:U:C6	2.40	0.57
3:4:46:A:C8	72:4:4335:HOH:O	2.53	0.57
3:4:1462:A:H1'	3:4:1490:A:C6	2.40	0.57
7:AD:103:GLU:HA	7:AD:162:ARG:HB2	1.87	0.57
16:AN:101:ASN:OD1	16:AN:111:ARG:NH2	2.36	0.57
30:Ab:102:LYS:O	30:Ab:102:LYS:HD2	2.05	0.57
40:BA:103:SER:O	40:BA:106:ARG:NH1	2.37	0.57
47:BH:186:LYS:HE3	47:BH:190:GLU:HG3	1.86	0.57
1:2:54:G:OP2	17:AO:78:ASN:HB3	2.05	0.56
2:1:662:C:H2'	2:1:663:G:H8	1.70	0.56
2:1:878:C:H2'	2:1:879:A:O4'	2.05	0.56
2:1:1292:C:H2'	2:1:1293:G:C8	2.40	0.56
2:1:1907:U:H2'	2:1:1908:G:C8	2.39	0.56
3:4:86:C:O2'	3:4:383:G:OP1	2.23	0.56
3:4:112:C:H5''	72:4:3156:HOH:O	2.04	0.56
3:4:172:C:H2'	3:4:173:G:H5'	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:807:G:O2'	40:BA:185:LYS:O	2.15	0.56
3:4:1065:G:H2'	3:4:1066:C:C6	2.40	0.56
69:4:3002:SPM:C11	72:4:3530:HOH:O	2.52	0.56
46:BG:81:LEU:HD23	46:BG:96:ARG:HH21	1.70	0.56
46:BG:126:PRO:HA	67:Bb:14:THR:HG22	1.87	0.56
48:BI:55:ASP:OD2	48:BI:60:LYS:HE3	2.05	0.56
55:BP:25:ARG:NE	72:BP:201:HOH:O	2.34	0.56
2:1:963:G:H1'	2:1:1054:A:N6	2.20	0.56
3:4:171:G:H21	3:4:172:C:H41	1.53	0.56
3:4:1273:U:H1'	54:BO:141:ALA:O	2.04	0.56
7:AD:169:PHE:O	7:AD:175:VAL:HG12	2.06	0.56
8:AE:61:VAL:HG22	8:AE:72:LEU:HD11	1.86	0.56
46:BG:52:GLY:HA3	46:BG:120:PRO:HG3	1.85	0.56
2:1:1028:A:H2'	2:1:1031:C:C5	2.40	0.56
2:1:1473:C:O2'	2:1:1515:A:H2'	2.05	0.56
2:1:1638:C:H4'	2:1:1651:A:H4'	1.87	0.56
2:1:1927:A:H4'	4:AA:169:PHE:O	2.05	0.56
2:1:2040:A:H2'	2:1:2041:C:H5'	1.87	0.56
2:1:2366:OMG:HM22	2:1:2367:G:H5'	1.87	0.56
3:4:1142:A:H5'	47:BH:11:LYS:HD2	1.87	0.56
3:4:1387:G:O3'	12:AI:77:ARG:NH2	2.38	0.56
3:4:1475:G:H2'	3:4:1477:MA6:OP2	2.06	0.56
72:4:3887:HOH:O	43:BD:18:LYS:HE2	2.05	0.56
5:AB:46:ALA:O	5:AB:309:LEU:HD12	2.05	0.56
9:AF:30:VAL:HG22	9:AF:132:LYS:HD2	1.87	0.56
13:AK:40:LYS:HD2	13:AK:44:GLY:HA2	1.87	0.56
14:AL:82:GLY:O	14:AL:86:GLU:HG3	2.06	0.56
25:AW:25:ASP:OD2	25:AW:25:ASP:N	2.30	0.56
39:AK:4:CYS:HB3	39:AK:7:TRP:HD1	1.68	0.56
40:BA:60:THR:O	40:BA:64:ILE:HG12	2.06	0.56
41:BB:146:LEU:O	41:BB:164:ASN:ND2	2.38	0.56
45:BF:150:LYS:HA	45:BF:171:ASP:OD2	2.05	0.56
46:BG:26:ALA:O	46:BG:30:VAL:HG23	2.06	0.56
46:BG:43:LEU:HB3	46:BG:47:ILE:HG22	1.87	0.56
50:BK:135:SER:O	50:BK:135:SER:OG	2.13	0.56
53:BN:27:ASP:OD1	53:BN:29:THR:OG1	2.22	0.56
61:BV:11:ILE:HG12	61:BV:45:TRP:HH2	1.70	0.56
3:4:1134:U:O2'	3:4:1135:A:OP1	2.21	0.56
3:4:1250:C:OP2	3:4:1251:G:O2'	2.24	0.56
13:AK:75:LYS:NZ	13:AK:79:ALA:HB2	2.20	0.56
40:BA:157:LYS:HD3	40:BA:175:LEU:CD1	2.35	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:BF:53:GLU:OE1	45:BF:165:ARG:NH2	2.35	0.56
60:BU:20:ILE:HD11	60:BU:60:MET:HE2	1.87	0.56
2:1:92:A:N6	72:1:3561:HOH:O	2.30	0.56
2:1:1454:U:OP2	2:1:1758:G:O2'	2.20	0.56
3:4:830:A:H2'	3:4:831:A:C8	2.40	0.56
3:4:898:A:H2'	3:4:901:A:N7	2.21	0.56
3:4:901:A:H2'	3:4:902:C:C6	2.41	0.56
3:4:1164:G:H2'	3:4:1165:U:C6	2.41	0.56
72:4:3709:HOH:O	57:BR:138:LYS:HE3	2.04	0.56
44:BE:38:LEU:HD23	44:BE:43:VAL:CG2	2.36	0.56
52:BM:68:ALA:HB3	52:BM:108:ALA:HB3	1.86	0.56
55:BP:18:ARG:HH11	55:BP:23:GLY:HA3	1.71	0.56
2:1:36:C:H2'	2:1:37:G:C8	2.40	0.56
2:1:1171:A:H5''	2:1:1172:A:C4'	2.36	0.56
2:1:1422:C:H4'	29:Aa:59:GLU:HG2	1.88	0.56
2:1:1751:A:H1'	34:Af:45:ARG:HH22	1.70	0.56
3:4:30:C:O2'	53:BN:141:LYS:NZ	2.39	0.56
3:4:1396:G:H2'	3:4:1397:C:C6	2.40	0.56
4:AA:196:PRO:HG3	4:AA:203:GLY:HA2	1.87	0.56
5:AB:26:PRO:HG2	5:AB:311:VAL:HG23	1.86	0.56
10:AG:125:LEU:HD23	10:AG:180:ILE:CD1	2.35	0.56
43:BD:127:LEU:HD13	43:BD:157:ILE:HD11	1.88	0.56
58:BS:15:LYS:HE2	58:BS:15:LYS:HA	1.88	0.56
3:4:1023:G:N7	72:4:3148:HOH:O	2.33	0.56
3:4:1313:G:N1	47:BH:72:GLU:O	2.38	0.56
28:AZ:42:ALA:O	28:AZ:47:ARG:NH2	2.38	0.56
38:Aj:107:ARG:HG2	38:Aj:109:LYS:HZ3	1.71	0.56
42:BC:201:ASP:HB3	72:BC:301:HOH:O	2.05	0.56
43:BD:106:ARG:HB2	43:BD:146:LEU:HD13	1.86	0.56
52:BM:93:TYR:CD2	52:BM:133:PRO:HD3	2.40	0.56
58:BS:56:ARG:HA	58:BS:59:LYS:HD3	1.87	0.56
2:1:1557:A:OP2	13:AJ:48:ARG:NH2	2.34	0.56
2:1:2022:A:O2'	2:1:2023:G:OP1	2.23	0.56
69:1:3124:SPM:C3	72:1:5068:HOH:O	2.53	0.56
72:4:3565:HOH:O	63:BX:30:VAL:CG1	2.52	0.56
14:AL:91:LEU:HD22	14:AL:96:GLU:HB2	1.87	0.56
40:BA:32:ALA:O	40:BA:38:GLY:HA2	2.06	0.56
50:BK:38:ILE:HG13	50:BK:73:VAL:HB	1.87	0.56
50:BK:112:ASP:HB3	50:BK:115:MET:HE2	1.87	0.56
58:BS:26:GLU:HG3	58:BS:58:VAL:CG1	2.35	0.56
59:BT:30:ARG:NH1	59:BT:35:THR:HG22	2.19	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:83:G:C5	34:Af:32:LYS:HD2	2.40	0.56
2:1:931:C:H2'	2:1:932:C:H6	1.71	0.56
3:4:1239:G:H2'	3:4:1240:G:O4'	2.06	0.56
3:4:1445:G:H2'	3:4:1446:G:C8	2.41	0.56
6:AC:77:TYR:HB3	6:AC:80:ALA:HB2	1.87	0.56
46:BG:95:MET:HE2	46:BG:95:MET:HA	1.87	0.56
47:BH:157:SER:OG	47:BH:219:ALA:O	2.24	0.56
60:BU:66:TYR:O	60:BU:69:VAL:HG13	2.05	0.56
61:BV:107:GLU:O	61:BV:111:ARG:HG3	2.05	0.56
65:BZ:64:LEU:HD12	72:BZ:101:HOH:O	2.05	0.56
1:2:117:G:H2'	1:2:118:C:C6	2.41	0.56
2:1:632:G:O2'	2:1:1347:G:OP1	2.23	0.56
3:4:119:U:H2'	3:4:120:C:C6	2.41	0.56
3:4:129:G:H2'	3:4:130:A:C8	2.41	0.56
3:4:231:G:H4'	44:BE:32:HIS:O	2.05	0.56
3:4:536:G:O2'	3:4:782:G:OP2	2.15	0.56
3:4:1115:A:H1'	50:BK:26:ARG:HH11	1.70	0.56
3:4:1370:C:H2'	3:4:1371:G:C8	2.40	0.56
38:Aj:115:MET:O	38:Aj:118:PRO:HD2	2.06	0.56
42:BC:194:PRO:HD2	42:BC:197:LEU:CD1	2.35	0.56
61:BV:38:THR:O	61:BV:42:VAL:HG23	2.05	0.56
61:BV:89:PRO:HG2	61:BV:92:ILE:HG12	1.88	0.56
2:1:25:C:OP1	6:AC:214:LYS:NZ	2.38	0.55
2:1:84:G:N7	34:Af:30:LYS:HD2	2.20	0.55
2:1:1175:C:H2'	2:1:1176:A:H5'	1.87	0.55
2:1:1890:C:OP1	25:AW:45:ARG:NE	2.31	0.55
2:1:2179:A:C2	72:1:3528:HOH:O	2.59	0.55
3:4:11:A:C2'	3:4:12:U:H5'	2.35	0.55
3:4:56:A:OP1	3:4:335:G:N1	2.27	0.55
3:4:282:A:H5'	3:4:284:G:H5'	1.87	0.55
3:4:1039:A:H5''	45:BF:60:VAL:HG11	1.88	0.55
14:AL:88:VAL:HG11	14:AL:126:LEU:HD22	1.87	0.55
17:AO:73:LYS:HE2	17:AO:183:HIS:CE1	2.41	0.55
30:Ab:119:GLU:CA	30:Ab:122:LYS:HE3	2.37	0.55
43:BD:101:ARG:O	43:BD:105:GLU:HG2	2.06	0.55
58:BS:9:ILE:CD1	58:BS:46:VAL:HG23	2.36	0.55
58:BS:31:ASN:O	58:BS:35:VAL:HG13	2.06	0.55
59:BT:76:LYS:HZ1	59:BT:80:LEU:HD21	1.70	0.55
65:BZ:31:VAL:HG11	65:BZ:74:ILE:HD12	1.88	0.55
2:1:651:G:H2'	2:1:2150:C:C5	2.40	0.55
2:1:939:G:H2'	2:1:1067:G:H5''	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:511:OMG:HM22	3:4:512:G:H5'	1.88	0.55
3:4:1009:G:H4'	72:4:3475:HOH:O	2.05	0.55
3:4:1137:G:H5''	58:BS:3:ARG:O	2.06	0.55
3:4:1434:G:H2'	3:4:1435:G:C8	2.42	0.55
3:4:1451:A:OP1	53:BN:64:LYS:HE2	2.06	0.55
47:BH:74:ARG:NH1	50:BK:114:TYR:HB2	2.21	0.55
54:BO:106:VAL:O	54:BO:110:LYS:HG3	2.06	0.55
65:BZ:7:PHE:N	65:BZ:40:GLU:OE2	2.28	0.55
67:Bb:9:ALA:O	67:Bb:13:ILE:HG13	2.06	0.55
67:Bb:21:ARG:O	67:Bb:25:GLU:HG2	2.07	0.55
2:1:382:G:OP2	15:AM:165:ARG:NH2	2.40	0.55
2:1:1663:C:H2'	2:1:1664:G:C8	2.42	0.55
2:1:2886:C:H2'	2:1:2887:G:O4'	2.07	0.55
3:4:1008:A:N6	55:BP:26:GLU:OE2	2.38	0.55
6:AC:21:LYS:HE3	6:AC:22:PRO:HD3	1.87	0.55
7:AD:115:ILE:HD11	7:AD:128:ILE:HG12	1.87	0.55
11:AH:78:PRO:HG3	15:AM:172:ILE:HD11	1.88	0.55
13:AK:6:ASP:HB3	20:AR:74:LYS:HB3	1.88	0.55
38:Aj:60:PHE:CE2	38:Aj:100:LEU:HD23	2.42	0.55
47:BH:210:ARG:HD2	72:BH:315:HOH:O	2.05	0.55
52:BM:106:ILE:HB	63:BX:45:VAL:CG2	2.35	0.55
56:BQ:23:PRO:HG3	56:BQ:61:PRO:HG2	1.87	0.55
59:BT:10:LYS:NZ	72:BT:204:HOH:O	2.38	0.55
63:BX:46:PRO:HB2	63:BX:47:PRO:HD2	1.87	0.55
65:BZ:38:VAL:HG12	65:BZ:39:LEU:O	2.07	0.55
2:1:737:G:N2	2:1:739:A:H3'	2.22	0.55
2:1:1136:G:N2	20:AR:39:SER:HB2	2.20	0.55
2:1:2027:G:H2'	2:1:2028:G:O4'	2.06	0.55
2:1:2029:G:H2'	2:1:2030:G:C1'	2.36	0.55
2:1:2184:C:H2'	2:1:2185:C:C6	2.41	0.55
2:1:2929:A:H2'	2:1:2930:G:O4'	2.06	0.55
3:4:192:G:O2'	3:4:193:A:H5''	2.06	0.55
3:4:452:G:H2'	3:4:453:A:C8	2.42	0.55
3:4:1182:C:H5'	72:4:3108:HOH:O	2.05	0.55
3:4:1200:C:C2'	3:4:1201:U:H5'	2.36	0.55
3:4:1253:A:H2'	3:4:1254:A:C8	2.42	0.55
3:4:1286:C:H41	59:BT:95:ASP:HB3	1.71	0.55
3:4:1436:C:H2'	3:4:1437:U:H5''	1.88	0.55
47:BH:114:ARG:NE	47:BH:189:GLU:OE2	2.37	0.55
2:1:465:C:H2'	2:1:466:G:C8	2.42	0.55
2:1:1537:G:H2'	2:1:1538:C:C6	2.42	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2623:OMU:OP1	5:AB:4:LYS:NZ	2.37	0.55
3:4:1462:A:H1'	3:4:1490:A:C5	2.42	0.55
14:AL:91:LEU:HB3	14:AL:97:VAL:HG23	1.87	0.55
44:BE:156:PHE:HB2	44:BE:174:LEU:HD12	1.87	0.55
53:BN:28:VAL:HG23	72:BN:202:HOH:O	2.07	0.55
56:BQ:57:GLN:NE2	64:BY:40:ARG:O	2.40	0.55
64:BY:4:ARG:O	64:BY:8:VAL:HG12	2.06	0.55
66:Ba:17:THR:O	66:Ba:19:LYS:NZ	2.28	0.55
2:1:25:C:O2'	2:1:26:U:H5'	2.06	0.55
2:1:601:G:OP1	38:Aj:21:LYS:NZ	2.28	0.55
2:1:707:G:H2'	2:1:708:G:H8	1.72	0.55
2:1:1740:C:N4	72:1:3606:HOH:O	2.32	0.55
3:4:521:U:H4'	3:4:522:U:C5'	2.36	0.55
3:4:684:U:OP2	63:BX:11:LYS:HD3	2.05	0.55
3:4:803:C:H2'	3:4:804:U:O4'	2.07	0.55
3:4:1156:C:H5'	42:BC:164:ILE:HB	1.87	0.55
3:4:1380:C:H2'	3:4:1381:C:C6	2.41	0.55
4:AA:119:SER:O	4:AA:122:THR:OG1	2.20	0.55
8:AE:6:ALA:HB3	8:AE:61:VAL:HG23	1.87	0.55
8:AE:118:LEU:HD21	8:AE:184:ASP:HB2	1.87	0.55
42:BC:128:ARG:O	42:BC:132:GLU:HG3	2.07	0.55
61:BV:14:LEU:HD11	61:BV:23:LYS:HD3	1.87	0.55
2:1:536:A:C5'	72:1:6063:HOH:O	2.40	0.55
2:1:980:A:H2'	2:1:981:G:O4'	2.07	0.55
2:1:1300:G:N1	6:AC:21:LYS:O	2.29	0.55
3:4:887:G:H2'	3:4:888:G:C8	2.42	0.55
3:4:1182:C:C5'	72:4:3108:HOH:O	2.55	0.55
13:AJ:62:ILE:HD12	13:AJ:76:ALA:CB	2.37	0.55
13:AJ:62:ILE:HD12	13:AJ:76:ALA:HB3	1.89	0.55
15:AM:34:GLU:OE1	15:AM:64:ARG:NH1	2.39	0.55
62:BW:75:ILE:HB	62:BW:79:LEU:HD23	1.88	0.55
65:BZ:14:VAL:CG2	65:BZ:64:LEU:HB2	2.35	0.55
65:BZ:31:VAL:HG21	65:BZ:74:ILE:HD13	1.89	0.55
2:1:2954:A:H1'	69:1:3113:SPM:HN12	1.71	0.55
3:4:381:C:H2'	3:4:382:G:C8	2.42	0.55
3:4:1163:OMG:N2	51:BL:61:GLN:OE1	2.39	0.55
9:AF:18:LYS:NZ	9:AF:25:GLU:HB3	2.21	0.55
11:AH:4:LYS:HB3	11:AH:23:GLU:OE1	2.06	0.55
41:BB:14:GLU:N	41:BB:14:GLU:OE1	2.40	0.55
41:BB:37:PHE:CG	41:BB:161:PRO:HG3	2.41	0.55
41:BB:47:ARG:O	41:BB:48:ILE:HD13	2.07	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:BH:161:SER:O	47:BH:165:ARG:HG3	2.07	0.55
59:BT:35:THR:HG23	59:BT:38:GLU:OE2	2.06	0.55
61:BV:27:VAL:CG2	61:BV:73:ALA:HB3	2.36	0.55
62:BW:58:VAL:CG1	62:BW:93:LEU:HD21	2.36	0.55
2:1:1020:C:H2'	2:1:1021:C:H6	1.72	0.55
2:1:1032:U:O4	69:1:3106:SPM:H122	2.05	0.55
2:1:1631:G:O2'	2:1:1632:G:H5'	2.07	0.55
2:1:1811:G:O2'	2:1:2112:U:O4	2.20	0.55
3:4:100:A:H5'	49:BJ:20:LYS:HB2	1.89	0.55
3:4:130:A:H2'	3:4:131:C:C6	2.42	0.55
3:4:380:G:H2'	3:4:381:C:C6	2.41	0.55
3:4:1103:G:H2'	3:4:1104:G:C8	2.42	0.55
3:4:1397:C:H2'	3:4:1398:G:O4'	2.06	0.55
72:4:3520:HOH:O	54:BO:140:THR:HB	2.06	0.55
13:AK:22:LYS:HE2	13:AK:85:TYR:CE1	2.42	0.55
38:Aj:167:ASP:HB3	38:Aj:170:THR:CG2	2.37	0.55
40:BA:55:ARG:HH12	52:BM:41:GLU:HG2	1.72	0.55
53:BN:76:GLN:HG3	53:BN:83:VAL:CG2	2.37	0.55
54:BO:22:VAL:HG22	54:BO:52:LEU:CD1	2.36	0.55
2:1:487:U:OP1	34:Af:34:ARG:NH2	2.40	0.55
2:1:776:A:H2'	2:1:777:C:C6	2.42	0.55
2:1:1074:U:H3'	2:1:1075:G:C5'	2.36	0.55
2:1:2116:OMC:OP2	2:1:2117:C:O2'	2.24	0.55
3:4:1006:G:O2'	3:4:1181:C:OP2	2.16	0.55
5:AB:331:VAL:HG12	25:AW:1:MET:HE3	1.89	0.55
8:AE:175:GLY:N	8:AE:179:GLY:O	2.29	0.55
17:AO:168:SER:O	17:AO:172:GLN:HG3	2.07	0.55
42:BC:173:ARG:HD2	42:BC:192:ILE:HD12	1.89	0.55
44:BE:83:MET:SD	44:BE:119:PRO:HG2	2.46	0.55
2:1:931:C:H2'	2:1:932:C:C6	2.42	0.54
2:1:1299:C:H2'	2:1:1300:G:H5''	1.87	0.54
2:1:1808:A:H61	2:1:2117:C:H42	1.55	0.54
2:1:1861:U:O2'	2:1:1862:U:H5'	2.08	0.54
2:1:1862:U:H4'	72:1:6070:HOH:O	2.07	0.54
2:1:2185:C:H2'	2:1:2186:U:H6	1.72	0.54
2:1:2583:A:H2'	2:1:2584:G:O4'	2.06	0.54
3:4:209:A:OP1	3:4:210:U:O2'	2.24	0.54
3:4:713:G:OP2	56:BQ:70:LYS:HE3	2.07	0.54
3:4:1213:G:H2'	3:4:1214:A:O4'	2.08	0.54
69:4:3008:SPM:H22	72:4:4206:HOH:O	2.06	0.54
7:AD:2:LYS:N	7:AD:5:GLU:OE1	2.27	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:AE:33:LYS:CD	8:AE:38:GLU:HB2	2.37	0.54
13:AK:11:VAL:HG12	13:AK:57:PRO:HA	1.89	0.54
20:AR:20:GLU:OE1	20:AR:63:SER:HB3	2.08	0.54
41:BB:41:VAL:HG22	41:BB:47:ARG:HD3	1.89	0.54
42:BC:178:HIS:HB2	42:BC:185:ILE:CG2	2.33	0.54
45:BF:156:ALA:HA	72:BF:410:HOH:O	2.07	0.54
47:BH:17:TYR:CZ	47:BH:22:PRO:HB3	2.42	0.54
64:BY:39:VAL:HB	64:BY:49:ALA:HB3	1.89	0.54
67:Bb:35:LEU:HD12	67:Bb:39:LEU:HG	1.89	0.54
2:1:334:U:H2'	2:1:335:G:O4'	2.07	0.54
2:1:593:G:N1	2:1:614:U:OP2	2.37	0.54
2:1:648:C:H2'	2:1:649:U:O4'	2.07	0.54
2:1:2056:5MC:H2'	2:1:2057:A:H5''	1.89	0.54
3:4:1298:A:O2'	54:BO:139:ALA:HB1	2.07	0.54
6:AC:52:GLU:HG3	6:AC:144:ARG:HB3	1.89	0.54
9:AF:135:GLU:O	9:AF:139:LYS:HG2	2.07	0.54
13:AK:14:VAL:HG11	13:AK:56:GLU:HG2	1.89	0.54
45:BF:117:CYS:SG	48:BI:97:ARG:NH2	2.80	0.54
46:BG:43:LEU:HG	46:BG:46:LEU:HD13	1.88	0.54
54:BO:5:ILE:HG22	54:BO:54:LEU:HG	1.88	0.54
1:2:100:G:H2'	1:2:101:C:C6	2.42	0.54
2:1:1292:C:H2'	2:1:1293:G:H8	1.72	0.54
2:1:2628:OMU:HM22	2:1:2629:C:O4'	2.08	0.54
2:1:2705:C:H2'	2:1:2706:G:C8	2.42	0.54
3:4:14:C:H5'	45:BF:140:SER:OG	2.07	0.54
3:4:79:G:O2'	3:4:80:G:H5'	2.07	0.54
3:4:1137:G:H5'	58:BS:4:VAL:HG22	1.88	0.54
3:4:1173:C:C2'	3:4:1174:C:H5'	2.37	0.54
3:4:1173:C:O2'	3:4:1174:C:H5'	2.07	0.54
10:AG:144:ARG:NH2	10:AG:146:ARG:HD3	2.22	0.54
14:AL:123:ASP:OD2	14:AL:124:VAL:HG13	2.06	0.54
40:BA:98:ARG:NH1	52:BM:123:THR:O	2.39	0.54
44:BE:83:MET:HE3	44:BE:225:MET:CE	2.37	0.54
47:BH:193:ALA:O	47:BH:197:MET:HG3	2.06	0.54
2:1:1922:A:H1'	2:1:2059:A2M:N6	2.22	0.54
2:1:2825:C:OP1	2:1:2827:G:H4'	2.07	0.54
3:4:536:G:H4'	3:4:537:C:H5''	1.88	0.54
3:4:623:G:O2'	3:4:797:G:OP1	2.22	0.54
3:4:848:C:O2'	3:4:849:U:H5'	2.08	0.54
3:4:1104:G:H2'	3:4:1105:A:H8	1.73	0.54
3:4:1226:G:H5'	3:4:1250:C:H4'	1.90	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:AK:13:LYS:HE2	13:AK:15:LEU:O	2.07	0.54
13:AK:32:ASN:O	13:AK:52:ILE:HG12	2.08	0.54
17:AO:149:ALA:O	17:AO:153:LYS:HG3	2.07	0.54
40:BA:146:ILE:HG21	40:BA:189:MET:HE1	1.89	0.54
41:BB:31:TYR:O	41:BB:35:ARG:HG2	2.07	0.54
53:BN:6:SER:CB	53:BN:7:PRO:HD3	2.30	0.54
60:BU:63:LEU:O	60:BU:67:GLY:HA2	2.08	0.54
2:1:624:G:H2'	2:1:625:G:H8	1.73	0.54
2:1:2312:C:H2'	2:1:2313:C:C6	2.42	0.54
69:1:3115:SPM:H62	72:1:4265:HOH:O	2.08	0.54
69:1:3134:SPM:H132	72:1:7694:HOH:O	2.05	0.54
3:4:658:U:H2'	3:4:659:C:H5'	1.90	0.54
3:4:1326:A:OP2	55:BP:30:ARG:NH2	2.41	0.54
3:4:1425:C:H2'	3:4:1426:G:O4'	2.08	0.54
5:AB:146:LEU:HD12	5:AB:165:GLU:HG3	1.89	0.54
13:AK:5:ILE:HD13	13:AK:57:PRO:HG3	1.89	0.54
26:AX:41:PHE:HB3	72:AX:102:HOH:O	2.07	0.54
35:Ag:20:TYR:CE2	35:Ag:48:LYS:HD3	2.43	0.54
40:BA:68:ILE:O	40:BA:71:LEU:HB2	2.08	0.54
40:BA:104:LEU:HD21	40:BA:191:LYS:HG2	1.89	0.54
43:BD:15:LYS:NZ	72:BD:203:HOH:O	2.40	0.54
45:BF:101:LYS:O	45:BF:105:GLU:HG2	2.07	0.54
49:BJ:48:TYR:CE2	49:BJ:50:GLU:HB2	2.42	0.54
50:BK:20:LYS:HE2	50:BK:85:ILE:HD13	1.90	0.54
59:BT:111:ASN:ND2	59:BT:134:LEU:O	2.35	0.54
60:BU:28:LYS:HD3	60:BU:29:PRO:HD2	1.89	0.54
63:BX:19:PRO:HD2	63:BX:32:ARG:HE	1.72	0.54
2:1:662:C:H2'	2:1:663:G:C8	2.43	0.54
2:1:1648:A:C8	28:AZ:82:MET:HE2	2.43	0.54
3:4:1048:G:C2'	3:4:1049:U:H5'	2.37	0.54
11:AH:58:PRO:O	11:AH:62:GLU:HG2	2.07	0.54
14:AL:40:PHE:HA	14:AL:44:LYS:HB2	1.90	0.54
44:BE:52:LYS:NZ	61:BV:74:GLU:OE2	2.40	0.54
54:BO:6:ARG:O	54:BO:18:GLY:HA3	2.08	0.54
54:BO:106:VAL:HG12	54:BO:110:LYS:HE2	1.88	0.54
59:BT:63:LEU:HD11	59:BT:68:ARG:HB3	1.90	0.54
2:1:635:U:H2'	2:1:636:C:C6	2.42	0.54
2:1:974:C:H1'	21:AS:98:GLY:HA3	1.89	0.54
2:1:1790:C:C5'	2:1:1791:U:H5''	2.32	0.54
3:4:461:C:OP1	53:BN:141:LYS:NZ	2.41	0.54
4:AA:5:ILE:HG22	4:AA:198:ALA:O	2.08	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:AI:68:VAL:HG22	12:AI:80:ILE:HG12	1.89	0.54
13:AJ:75:LYS:HA	13:AJ:78:GLU:HG2	1.90	0.54
37:AI:39:ARG:NH1	37:AI:46:LEU:HB2	2.22	0.54
41:BB:175:TRP:CE2	41:BB:198:PRO:HD3	2.42	0.54
45:BF:27:ILE:HD12	45:BF:30:ILE:HD12	1.89	0.54
47:BH:41:LEU:HB2	47:BH:47:PHE:CZ	2.43	0.54
50:BK:49:GLU:O	50:BK:53:VAL:HG23	2.08	0.54
50:BK:127:LYS:HB2	50:BK:130:ILE:HD11	1.88	0.54
67:Bb:15:ARG:HA	67:Bb:18:GLU:OE2	2.07	0.54
2:1:500:G:OP2	32:Ad:52:LYS:NZ	2.34	0.54
2:1:1642:A:H2'	2:1:1643:U:C6	2.43	0.54
2:1:2399:A:H62	2:1:2456:U:H3	1.55	0.54
2:1:2739:G:H2'	2:1:2740:C:C6	2.43	0.54
3:4:104:G:H2'	3:4:105:U:C6	2.43	0.54
3:4:188:C:O2'	49:BJ:68:ASN:OD1	2.24	0.54
3:4:913:G:H4'	54:BO:137:PHE:HE1	1.71	0.54
7:AD:7:VAL:HG12	7:AD:9:VAL:HG13	1.90	0.54
8:AE:28:TYR:CE2	8:AE:50:MET:HG3	2.42	0.54
16:AN:55:ALA:HA	16:AN:164:THR:HG22	1.88	0.54
41:BB:110:PRO:HA	41:BB:115:TYR:CG	2.43	0.54
44:BE:131:GLY:O	44:BE:147:PRO:HG3	2.08	0.54
56:BQ:25:TRP:CZ3	64:BY:30:VAL:HG11	2.42	0.54
58:BS:5:LYS:O	58:BS:10:LYS:HE3	2.08	0.54
2:1:157:G:O2'	2:1:158:C:H5'	2.08	0.54
2:1:1337:C:H5''	2:1:1339:G:O4'	2.07	0.54
69:1:3124:SPM:H32	72:1:5068:HOH:O	2.07	0.54
3:4:541:C:H2'	3:4:542:G:O4'	2.08	0.54
3:4:576:G:OP2	43:BD:78:LYS:NZ	2.32	0.54
15:AM:123:ASP:OD1	15:AM:126:TYR:N	2.33	0.54
31:Ac:3:ARG:HB3	31:Ac:4:PRO:HD3	1.89	0.54
56:BQ:108:ASP:O	56:BQ:112:ARG:HG3	2.08	0.54
68:Bc:47:ARG:HH11	68:Bc:51:LEU:HD11	1.73	0.54
2:1:6:A:C6	22:AT:183:LYS:HG2	2.42	0.54
2:1:414:G:H2'	2:1:415:C:C6	2.43	0.54
2:1:1494:A:H2'	2:1:1495:U:C6	2.43	0.54
3:4:90:C:H2'	3:4:91:G:O4'	2.08	0.54
3:4:674:OMG:H2'	3:4:675:G:C8	2.43	0.54
3:4:1023:G:H4'	3:4:1024:U:H5'	1.88	0.54
72:4:3709:HOH:O	57:BR:138:LYS:CD	2.55	0.54
4:AA:235:CYS:SG	4:AA:239:ARG:NH2	2.81	0.54
42:BC:173:ARG:CD	42:BC:192:ILE:HD12	2.38	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:BD:80:TYR:HB2	43:BD:85:ILE:HD11	1.90	0.54
61:BV:28:GLU:OE1	61:BV:29:ILE:N	2.41	0.54
62:BW:49:LYS:O	62:BW:53:THR:OG1	2.25	0.54
64:BY:4:ARG:HH22	64:BY:7:ARG:HH11	1.56	0.54
1:2:43:A:H2'	1:2:44:U:C6	2.43	0.53
2:1:1571:C:H2'	2:1:1572:C:C6	2.43	0.53
2:1:1978:G:O2'	4:AA:212:PRO:O	2.26	0.53
2:1:2050:G:OP2	2:1:2050:G:N2	2.27	0.53
3:4:1118:A:H1'	51:BL:44:PRO:HB2	1.89	0.53
3:4:1243:G:H1'	3:4:1248:C:O2	2.08	0.53
3:4:1378:C:H2'	3:4:1379:A:H8	1.72	0.53
72:4:3709:HOH:O	57:BR:138:LYS:HD2	2.06	0.53
4:AA:59:GLU:OE1	4:AA:59:GLU:N	2.41	0.53
6:AC:129:LYS:HE3	6:AC:131:HIS:O	2.07	0.53
6:AC:163:VAL:O	6:AC:166:VAL:HG22	2.08	0.53
7:AD:54:ARG:HA	7:AD:69:PRO:HA	1.89	0.53
8:AE:13:PRO:HD2	8:AE:16:VAL:HB	1.89	0.53
12:AI:89:ARG:HD3	12:AI:103:GLU:O	2.07	0.53
28:AZ:98:VAL:HG23	28:AZ:99:GLU:HG2	1.90	0.53
30:Ab:107:ARG:HB2	30:Ab:132:LEU:HD12	1.89	0.53
43:BD:83:GLY:HA2	43:BD:149:ARG:NH2	2.23	0.53
47:BH:5:PHE:HB2	47:BH:7:GLU:OE1	2.07	0.53
47:BH:160:VAL:HG12	47:BH:164:ARG:HB3	1.90	0.53
2:1:679:U:O2'	14:AL:2:VAL:N	2.36	0.53
2:1:717:A:H2'	2:1:718:A:C8	2.43	0.53
2:1:1978:G:H21	4:AA:212:PRO:HG2	1.73	0.53
2:1:2440:A:H2'	2:1:2441:G:C8	2.43	0.53
3:4:29:G:H2'	3:4:30:C:C6	2.43	0.53
3:4:417:G:N1	3:4:420:G:OP2	2.26	0.53
3:4:635:G:H2'	3:4:636:U:C6	2.43	0.53
3:4:1487:U:OP1	63:BX:8:ARG:HD3	2.08	0.53
69:4:3012:SPM:C9	56:BQ:11:ARG:HG2	2.37	0.53
15:AM:166:GLU:O	15:AM:170:LYS:HG3	2.08	0.53
38:Aj:177:LEU:O	38:Aj:181:ARG:HG3	2.08	0.53
46:BG:8:LEU:HD21	46:BG:117:LEU:HD21	1.89	0.53
47:BH:33:THR:OG1	50:BK:60:ILE:O	2.23	0.53
52:BM:81:ASN:OD1	52:BM:81:ASN:N	2.42	0.53
67:Bb:39:LEU:O	67:Bb:43:ARG:HG3	2.08	0.53
2:1:186:G:H5''	11:AH:123:PHE:CD1	2.43	0.53
2:1:511:A:H5''	24:AV:92:VAL:HG21	1.89	0.53
2:1:579:G:H2'	2:1:580:C:C6	2.43	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:684:A:H5''	2:1:772:A:H61	1.74	0.53
2:1:741:C:H2'	2:1:742:C:C6	2.43	0.53
69:1:3108:SPM:C6	72:1:3729:HOH:O	2.55	0.53
3:4:103:C:OP1	3:4:316:G:H5'	2.08	0.53
3:4:378:A:N1	3:4:394:C:O2'	2.40	0.53
3:4:718:U:H2'	3:4:719:G:O4'	2.07	0.53
5:AB:107:VAL:CG1	5:AB:185:LEU:HG	2.38	0.53
31:Ac:50:LYS:HE2	31:Ac:50:LYS:HA	1.90	0.53
38:Aj:130:ARG:NE	38:Aj:159:SER:OG	2.30	0.53
52:BM:107:ARG:NE	52:BM:111:ARG:HD2	2.23	0.53
60:BU:47:MET:HG3	72:BU:204:HOH:O	2.07	0.53
61:BV:25:VAL:HG22	61:BV:75:VAL:HB	1.91	0.53
61:BV:40:GLN:O	61:BV:44:GLU:HG2	2.07	0.53
61:BV:100:GLU:O	61:BV:104:LEU:HG	2.07	0.53
65:BZ:21:ILE:HD13	65:BZ:58:LEU:HD12	1.90	0.53
2:1:762:A:H2'	2:1:763:A:C8	2.43	0.53
2:1:2194:U:H2'	2:1:2195:U:C6	2.41	0.53
3:4:677:C:O2'	52:BM:128:IAS:HB3	2.09	0.53
6:AC:35:ASP:OD2	6:AC:39:GLN:N	2.31	0.53
12:AI:79:GLN:HB2	12:AI:81:PHE:CE2	2.43	0.53
13:AJ:52:ILE:HD11	28:AZ:26:LYS:CD	2.38	0.53
30:Ab:23:MET:HE1	30:Ab:73:LYS:HA	1.91	0.53
38:Aj:111:LEU:HD12	38:Aj:162:ILE:HG12	1.91	0.53
41:BB:25:THR:HG22	41:BB:27:LEU:H	1.73	0.53
48:BI:40:VAL:HG22	48:BI:43:ARG:HH22	1.74	0.53
2:1:170:G:OP2	69:1:3102:SPM:N1	2.41	0.53
2:1:602:G:N2	2:1:605:A:OP2	2.39	0.53
3:4:822:C:H2'	3:4:823:G:O4'	2.09	0.53
6:AC:26:ARG:CG	6:AC:27:PRO:HD2	2.38	0.53
14:AL:80:ASN:HB3	14:AL:119:GLY:O	2.08	0.53
16:AN:78:THR:HG22	16:AN:83:ASP:OD1	2.09	0.53
17:AO:70:PHE:O	17:AO:190:LYS:HE3	2.08	0.53
42:BC:182:LYS:HZ2	42:BC:183:PRO:HB3	1.74	0.53
53:BN:98:ASN:O	53:BN:101:ASP:HB2	2.09	0.53
67:Bb:58:VAL:O	67:Bb:62:LEU:HD12	2.09	0.53
2:1:350:A:H5'	2:1:368:A:H1'	1.91	0.53
2:1:915:C:OP1	6:AC:85:SER:OG	2.24	0.53
2:1:1633:A:N1	2:1:1646:C:O2'	2.40	0.53
2:1:1949:OMG:HM22	2:1:1950:U:H5'	1.89	0.53
2:1:1957:OMG:HM22	2:1:1958:G:O4'	2.09	0.53
2:1:2366:OMG:N2	72:1:3854:HOH:O	2.42	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:97:G:H2'	3:4:98:U:O4'	2.09	0.53
3:4:655:A:H2'	3:4:656:A:O4'	2.08	0.53
3:4:1118:A:H2'	3:4:1119:G:C8	2.43	0.53
3:4:1223:U:H1'	3:4:1224:C:C5	2.43	0.53
38:Aj:110:LEU:HD11	38:Aj:163:ILE:HD11	1.89	0.53
40:BA:56:THR:HG21	40:BA:76:ARG:HD3	1.90	0.53
45:BF:143:VAL:HG22	45:BF:176:THR:HG22	1.91	0.53
57:BR:18:LEU:HD12	57:BR:22:LYS:O	2.08	0.53
59:BT:35:THR:OG1	59:BT:38:GLU:HG3	2.09	0.53
59:BT:78:LYS:O	59:BT:81:MET:HE3	2.09	0.53
2:1:363:C:H5''	24:AV:31:LYS:HE3	1.90	0.53
2:1:1103:C:H2'	72:1:6755:HOH:O	2.08	0.53
2:1:1838:C:H5''	37:Ai:9:VAL:CG1	2.35	0.53
2:1:2753:A:H2'	2:1:2754:G:O4'	2.08	0.53
3:4:267:A:O2'	57:BR:118:PRO:O	2.27	0.53
3:4:948:C:H4'	3:4:949:A:O4'	2.09	0.53
3:4:1182:C:H4'	3:4:1183:C:C5'	2.39	0.53
3:4:1390:C:H2'	3:4:1391:C:C6	2.44	0.53
3:4:1446:G:H2'	3:4:1447:G:H5''	1.90	0.53
9:AF:32:GLU:O	9:AF:36:GLU:HG2	2.08	0.53
19:AQ:25:ALA:O	19:AQ:29:LEU:HG	2.08	0.53
26:AX:57:ARG:O	26:AX:61:ILE:HG12	2.09	0.53
39:Ak:66:ILE:HG22	39:Ak:69:LEU:H	1.74	0.53
40:BA:73:ILE:HG23	40:BA:94:LEU:CD2	2.38	0.53
41:BB:11:VAL:HG21	41:BB:176:VAL:HG22	1.90	0.53
41:BB:121:LEU:HD11	41:BB:123:VAL:HG13	1.90	0.53
43:BD:18:LYS:NZ	72:BD:202:HOH:O	2.28	0.53
54:BO:133:THR:HG21	72:BO:208:HOH:O	2.08	0.53
60:BU:84:ILE:HG12	60:BU:94:ARG:HH11	1.72	0.53
2:1:231:G:H2'	2:1:232:A:C8	2.44	0.53
2:1:475:C:OP2	6:AC:74:LYS:NZ	2.40	0.53
2:1:1090:U:H2'	2:1:1091:C:C6	2.43	0.53
2:1:1486:G:H2'	2:1:1487:G:H8	1.73	0.53
72:1:5448:HOH:O	19:AQ:63:LEU:HD23	2.08	0.53
3:4:854:A:H5'	3:4:856:U:H1'	1.91	0.53
3:4:1274:C:OP2	54:BO:127:ARG:HD2	2.09	0.53
3:4:1391:C:H2'	3:4:1392:C:C6	2.43	0.53
3:4:1465:U:H1'	52:BM:141:VAL:HG12	1.90	0.53
13:AK:23:ALA:HA	13:AK:38:GLY:HA3	1.91	0.53
42:BC:172:VAL:HG22	42:BC:193:THR:OG1	2.09	0.53
52:BM:16:LEU:HA	52:BM:81:ASN:HD21	1.74	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:BO:93:LEU:O	54:BO:94:ILE:HD13	2.08	0.53
61:BV:106:GLU:O	61:BV:110:LYS:HG2	2.09	0.53
65:BZ:18:VAL:HG13	65:BZ:34:VAL:CG2	2.38	0.53
1:2:96:G:H2'	1:2:97:A:C8	2.44	0.53
2:1:175:G:H2'	2:1:176:A:O4'	2.08	0.53
2:1:199:G:N2	2:1:216:C:H4'	2.24	0.53
2:1:243:G:H21	2:1:462:G:H2'	1.74	0.53
2:1:596:A:H2'	2:1:597:C:O4'	2.09	0.53
2:1:2356:C:H5'	2:1:2357:G:C5'	2.38	0.53
72:1:6668:HOH:O	31:Ac:15:LYS:HE2	2.08	0.53
3:4:789:A:H2'	3:4:790:G:O4'	2.08	0.53
3:4:1028:C:H2'	3:4:1029:U:O4'	2.09	0.53
3:4:1097:C:H4'	60:BU:132:ASP:HB3	1.90	0.53
3:4:1187:G:H4'	59:BT:135:THR:HG21	1.91	0.53
3:4:1377:C:O2'	3:4:1378:C:H5'	2.09	0.53
3:4:1408:G:O6	3:4:1417:U:O4	2.26	0.53
3:4:1432:G:C2'	3:4:1433:G:H5'	2.39	0.53
4:AA:36:GLY:HA3	4:AA:59:GLU:OE2	2.08	0.53
14:AL:106:VAL:HG13	14:AL:128:VAL:HA	1.91	0.53
15:AM:168:GLN:O	15:AM:172:ILE:HG13	2.08	0.53
40:BA:168:LYS:O	40:BA:172:GLU:HG2	2.07	0.53
41:BB:147:VAL:O	41:BB:161:PRO:HA	2.09	0.53
49:BJ:45:ASP:OD1	49:BJ:65:ARG:N	2.27	0.53
50:BK:54:LYS:HG3	50:BK:88:ARG:HH11	1.74	0.53
52:BM:119:ILE:HD12	63:BX:60:ILE:HG12	1.91	0.53
56:BQ:22:VAL:HG22	56:BQ:66:ILE:HG23	1.91	0.53
59:BT:90:LYS:HB3	59:BT:115:TYR:CD2	2.44	0.53
2:1:1613:U:O2'	2:1:1614:U:H5'	2.09	0.53
3:4:502:U:H2'	3:4:503:C:C6	2.45	0.53
3:4:518:G:H2'	3:4:519:U:O4'	2.09	0.53
3:4:924:A:C5'	59:BT:10:LYS:HE2	2.36	0.53
3:4:1192:C:C5	54:BO:132:VAL:HG22	2.44	0.53
41:BB:77:THR:HG22	41:BB:99:THR:HG22	1.91	0.53
46:BG:34:ILE:HA	46:BG:57:ILE:CG2	2.39	0.53
59:BT:70:LEU:HD23	59:BT:96:MET:SD	2.49	0.53
2:1:668:G:H4'	2:1:669:U:O5'	2.08	0.52
2:1:1020:C:H2'	2:1:1021:C:C6	2.44	0.52
2:1:1683:C:H2'	2:1:1684:C:H6	1.74	0.52
2:1:2532:G:H2'	2:1:2533:C:C6	2.45	0.52
3:4:647:U:O2'	3:4:648:A:H5'	2.09	0.52
3:4:1445:G:O2'	3:4:1446:G:O4'	2.12	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:AC:231:SER:HB3	6:AC:275:THR:HG23	1.90	0.52
13:AJ:18:GLU:OE1	13:AJ:45:VAL:HG13	2.08	0.52
26:AX:63:ARG:NH1	72:AX:103:HOH:O	2.42	0.52
43:BD:19:ILE:HG22	43:BD:20:TRP:CD1	2.44	0.52
43:BD:38:ARG:HA	66:Ba:31:ARG:HG3	1.90	0.52
47:BH:68:LEU:HD22	50:BK:53:VAL:HG12	1.91	0.52
48:BI:46:TYR:OH	68:Bc:2:SER:HA	2.09	0.52
60:BU:71:VAL:O	60:BU:75:ARG:HG3	2.08	0.52
2:1:444:A:H1'	2:1:2001:A:C2	2.44	0.52
2:1:613:G:H4'	2:1:614:U:O5'	2.09	0.52
2:1:1419:C:H2'	2:1:1420:C:C6	2.44	0.52
2:1:1514:A:H2'	2:1:1515:A:C8	2.44	0.52
2:1:1713:A:H2'	2:1:1714:A:C8	2.45	0.52
2:1:2051:G:O2'	2:1:2089:G:O6	2.24	0.52
3:4:17:C:H2'	3:4:18:C:C6	2.44	0.52
3:4:93:C:C1'	3:4:358:G:H5'	2.35	0.52
3:4:393:A:H3'	3:4:394:C:C6	2.44	0.52
3:4:1084:U:H3'	3:4:1085:U:C6	2.38	0.52
3:4:1338:U:H2'	3:4:1339:G:O4'	2.09	0.52
3:4:1379:A:H2'	3:4:1380:C:H6	1.73	0.52
72:4:3945:HOH:O	50:BK:124:GLU:HB2	2.09	0.52
4:AA:88:VAL:HG21	37:Ai:81:ILE:O	2.09	0.52
6:AC:34:TYR:OH	6:AC:167:PRO:HB2	2.09	0.52
6:AC:237:LEU:O	6:AC:241:VAL:HG22	2.10	0.52
18:AP:57:VAL:O	18:AP:119:LYS:NZ	2.35	0.52
19:AQ:129:LEU:HG	19:AQ:133:LYS:HE3	1.91	0.52
28:AZ:7:GLU:OE1	28:AZ:93:GLU:HB2	2.10	0.52
40:BA:109:THR:HB	40:BA:134:THR:O	2.09	0.52
44:BE:38:LEU:HD23	44:BE:43:VAL:HG23	1.91	0.52
45:BF:114:ARG:NH2	68:Bc:12:SER:HA	2.23	0.52
47:BH:69:PRO:HB2	47:BH:89:GLU:HB2	1.92	0.52
47:BH:147:ILE:O	47:BH:154:TYR:N	2.39	0.52
1:2:109:A:H2'	1:2:110:C:O4'	2.09	0.52
2:1:419:G:O2'	2:1:422:U:O2'	2.24	0.52
2:1:860:U:OP1	5:AB:229:LYS:HD3	2.09	0.52
2:1:1486:G:H2'	2:1:1487:G:C8	2.44	0.52
2:1:2992:G:H2'	2:1:2993:A:C8	2.45	0.52
3:4:310:A:O2'	3:4:311:G:H5'	2.09	0.52
3:4:1030:C:H2'	3:4:1031:G:H8	1.74	0.52
5:AB:137:ARG:HD3	5:AB:175:ASP:OD2	2.08	0.52
23:AU:72:MET:CE	23:AU:81:LEU:HD11	2.39	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:AZ:40:ALA:HB3	37:Ai:89:VAL:HG22	1.91	0.52
50:BK:10:ASN:HB3	50:BK:11:PRO:CD	2.38	0.52
59:BT:121:SER:HB2	59:BT:122:PRO:HD2	1.90	0.52
63:BX:84:PRO:HD2	63:BX:87:GLU:HB3	1.90	0.52
2:1:572:A:H2'	2:1:573:A:C8	2.45	0.52
2:1:585:U:O2'	2:1:586:C:H5'	2.10	0.52
2:1:977:G:N3	2:1:2380:A:H2'	2.24	0.52
2:1:2516:G:H5''	72:1:3501:HOH:O	2.09	0.52
2:1:2919:C:H2'	2:1:2920:C:C6	2.44	0.52
72:1:6356:HOH:O	32:Ad:1:MET:HB2	2.08	0.52
3:4:625:G:H2'	3:4:627:G:OP1	2.09	0.52
3:4:681:C:OP2	3:4:682:A:O2'	2.19	0.52
5:AB:172:PRO:HA	5:AB:177:ARG:HH21	1.73	0.52
7:AD:89:LEU:HA	7:AD:92:VAL:HG12	1.91	0.52
12:AI:87:ARG:HB2	12:AI:106:ALA:HB3	1.92	0.52
13:AK:75:LYS:HZ1	13:AK:79:ALA:HB2	1.72	0.52
46:BG:39:ASP:O	46:BG:42:VAL:HG12	2.10	0.52
54:BO:119:ARG:HB2	54:BO:126:VAL:HG12	1.92	0.52
1:2:37:G:OP1	7:AD:4:LYS:NZ	2.33	0.52
2:1:1120:A:H2'	2:1:1121:A:C8	2.44	0.52
37:Ai:84:GLU:HA	37:Ai:87:LYS:CG	2.40	0.52
49:BJ:93:ASP:OD1	49:BJ:97:ARG:NH1	2.43	0.52
50:BK:45:LEU:HD21	60:BU:149:LEU:HD13	1.91	0.52
57:BR:6:LEU:HD12	57:BR:10:PRO:HD3	1.92	0.52
2:1:1536:C:H2'	2:1:1537:G:C8	2.44	0.52
2:1:1560:G:O6	31:Ac:62:SER:OG	2.24	0.52
2:1:2476:A:O2'	2:1:2506:G:H4'	2.09	0.52
3:4:708:C:O2'	56:BQ:55:ARG:NH1	2.43	0.52
3:4:1098:U:O2'	3:4:1101:G:O6	2.27	0.52
3:4:1472:A:H2'	3:4:1473:G:C8	2.44	0.52
28:AZ:9:GLN:OE1	28:AZ:76:LYS:HG3	2.10	0.52
39:Ak:4:CYS:SG	39:Ak:34:ILE:HG13	2.50	0.52
41:BB:127:ARG:HD3	41:BB:150:ASP:O	2.10	0.52
45:BF:11:PRO:O	45:BF:17:ARG:HG3	2.10	0.52
63:BX:85:ARG:NH1	72:BX:202:HOH:O	2.41	0.52
2:1:259:U:H2'	2:1:260:C:H6	1.74	0.52
2:1:1569:G:H2'	2:1:1570:U:C6	2.45	0.52
3:4:1015:U:H6	72:4:4315:HOH:O	1.92	0.52
14:AL:122:MET:HG2	14:AL:141:ILE:HD13	1.91	0.52
41:BB:143:VAL:N	41:BB:157:ASP:OD2	2.41	0.52
43:BD:32:MET:SD	43:BD:37:LEU:HB2	2.49	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:BE:101:GLU:N	44:BE:101:GLU:OE2	2.42	0.52
47:BH:120:TYR:HB2	47:BH:127:PRO:HG3	1.91	0.52
54:BO:51:THR:HB	54:BO:54:LEU:HD12	1.91	0.52
59:BT:72:GLU:OE2	59:BT:76:LYS:HG3	2.09	0.52
61:BV:103:LYS:O	61:BV:106:GLU:HG3	2.10	0.52
2:1:69:C:OP1	26:AX:57:ARG:HD3	2.10	0.52
2:1:106:C:O2'	2:1:118:U:O2'	2.24	0.52
2:1:2739:G:C5'	22:AT:92:GLY:HA2	2.38	0.52
3:4:479:U:H4'	3:4:480:C:O2	2.10	0.52
3:4:561:G:H2'	3:4:562:C:C6	2.45	0.52
3:4:1020:G:H5''	51:BL:65:THR:OG1	2.10	0.52
3:4:1352:C:H2'	3:4:1353:C:C6	2.45	0.52
4:AA:182:LYS:HD2	4:AA:184:TRP:CZ2	2.44	0.52
11:AH:86:VAL:HG22	15:AM:157:ARG:HG3	1.92	0.52
33:Ae:49:LYS:O	33:Ae:53:LEU:HD13	2.09	0.52
41:BB:54:ILE:O	41:BB:58:LEU:HG	2.10	0.52
41:BB:204:ARG:NH1	72:BB:301:HOH:O	2.36	0.52
43:BD:124:ALA:O	43:BD:128:VAL:HG23	2.09	0.52
48:BI:66:LEU:HB2	48:BI:68:LYS:HG2	1.90	0.52
2:1:1028:A:H2'	2:1:1031:C:H5	1.73	0.52
2:1:1251:G:OP2	2:1:1252:A:O2'	2.12	0.52
2:1:2045:C:H2'	2:1:2046:U:H5'	1.92	0.52
2:1:2344:A:H2'	2:1:2345:G:C8	2.44	0.52
2:1:2704:OMC:HM22	2:1:2705:C:O4'	2.10	0.52
2:1:2770:G:H5''	12:AI:7:LYS:NZ	2.24	0.52
3:4:278:G:H5''	57:BR:67:ARG:CG	2.40	0.52
3:4:1101:G:H2'	3:4:1102:G:O4'	2.09	0.52
7:AD:91:ALA:HB2	7:AD:117:LEU:HA	1.92	0.52
9:AF:59:GLU:OE2	15:AM:7:TYR:OH	2.14	0.52
30:Ab:92:ARG:HA	30:Ab:120:ILE:HD11	1.91	0.52
36:Ah:2:LYS:HD2	36:Ah:91:VAL:HG21	1.90	0.52
41:BB:19:ALA:CB	41:BB:168:LYS:HD2	2.40	0.52
41:BB:89:PHE:O	41:BB:93:VAL:HG23	2.10	0.52
54:BO:59:GLN:HA	54:BO:62:LYS:HE2	1.91	0.52
2:1:580:C:H2'	2:1:581:C:C6	2.45	0.52
2:1:689:A:H2'	2:1:690:A:C8	2.45	0.52
2:1:832:A:H2'	2:1:833:A:C8	2.45	0.52
2:1:1039:C:O2'	2:1:2381:A:N7	2.42	0.52
2:1:2315:C:H2'	2:1:2316:U:C6	2.44	0.52
2:1:2537:OMG:HM22	2:1:2538:OMC:O4'	2.10	0.52
72:1:5219:HOH:O	36:Ah:39:ARG:HG2	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:651:G:H2'	3:4:652:G:C8	2.45	0.52
3:4:782:G:N7	53:BN:2:PRO:HG2	2.25	0.52
3:4:952:C:H1'	59:BT:112:GLY:O	2.09	0.52
3:4:1486:C:O2'	3:4:1487:U:H5'	2.10	0.52
4:AA:79:GLN:HB3	4:AA:84:ALA:CB	2.40	0.52
9:AF:59:GLU:OE2	15:AM:2:PRO:HG2	2.10	0.52
28:AZ:6:ARG:O	28:AZ:10:VAL:HG23	2.09	0.52
38:Aj:107:ARG:O	38:Aj:109:LYS:NZ	2.42	0.52
41:BB:35:ARG:HH12	68:Bc:54:PRO:HG3	1.74	0.52
42:BC:128:ARG:CB	42:BC:131:MET:HE2	2.40	0.52
46:BG:50:PRO:O	46:BG:53:VAL:HG12	2.10	0.52
47:BH:203:ASP:OD2	47:BH:205:LYS:HB3	2.10	0.52
2:1:1080:A:H2'	2:1:1081:A:C8	2.45	0.51
2:1:1544:U:H2'	2:1:1545:A:C8	2.45	0.51
2:1:1657:C:H2'	2:1:1658:G:O4'	2.10	0.51
2:1:1930:U:H2'	2:1:1931:C:C6	2.45	0.51
2:1:2532:G:H2'	2:1:2533:C:H6	1.75	0.51
3:4:218:C:H2'	3:4:219:A:H8	1.72	0.51
7:AD:45:LEU:O	7:AD:87:ARG:NH2	2.43	0.51
8:AE:97:ILE:HD12	8:AE:187:TYR:CD1	2.45	0.51
9:AF:132:LYS:O	9:AF:135:GLU:HG2	2.10	0.51
21:AS:15:LEU:HD13	21:AS:16:LEU:HD23	1.92	0.51
41:BB:84:LYS:NZ	41:BB:200:GLU:O	2.43	0.51
59:BT:108:HIS:CE1	59:BT:117:PRO:HB3	2.44	0.51
2:1:914:C:H2'	2:1:915:C:C6	2.45	0.51
2:1:1498:G:O2'	2:1:1499:C:H5'	2.10	0.51
2:1:2594:C:H2'	2:1:2595:G:H5'	1.92	0.51
3:4:613:U:O4	3:4:713:G:O2'	2.21	0.51
3:4:631:G:H2'	3:4:632:C:C6	2.45	0.51
3:4:635:G:HO2'	52:BM:127:HIS:HD1	1.58	0.51
3:4:637:A:H5''	52:BM:124:PRO:CB	2.40	0.51
3:4:1007:G:H1'	3:4:1180:A:O2'	2.10	0.51
3:4:1231:C:OP2	60:BU:102:ARG:NE	2.29	0.51
3:4:1491:U:H4'	63:BX:80:ILE:CG2	2.39	0.51
69:4:3012:SPM:H62	72:4:3135:HOH:O	2.10	0.51
5:AB:104:GLU:N	5:AB:133:LEU:HD11	2.25	0.51
10:AG:125:LEU:HD23	10:AG:180:ILE:HD13	1.92	0.51
13:AJ:14:VAL:HG22	13:AJ:54:HIS:O	2.10	0.51
40:BA:94:LEU:HD22	40:BA:95:GLU:N	2.26	0.51
44:BE:26:ARG:O	44:BE:77:LYS:HD2	2.10	0.51
44:BE:161:TYR:CE1	44:BE:163:LEU:HD23	2.45	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:BH:207:TYR:OH	47:BH:211:LYS:NZ	2.41	0.51
2:1:215:C:H2'	2:1:216:C:C6	2.45	0.51
2:1:398:G:H4'	72:1:6131:HOH:O	2.10	0.51
2:1:1332:U:OP1	6:AC:159:ARG:NH2	2.41	0.51
3:4:332:C:N4	49:BJ:2:LYS:O	2.40	0.51
3:4:546:C:O2'	3:4:844:C:OP1	2.24	0.51
3:4:780:A:H3'	3:4:781:U:H5'	1.92	0.51
5:AB:87:VAL:HG22	5:AB:145:VAL:HG12	1.92	0.51
5:AB:127:GLU:N	5:AB:127:GLU:OE1	2.43	0.51
15:AM:39:ARG:CZ	15:AM:61:VAL:HG22	2.39	0.51
22:AT:41:SER:O	22:AT:45:SER:OG	2.22	0.51
26:AX:10:ALA:O	26:AX:14:MET:HG3	2.11	0.51
27:AY:54:MET:HA	27:AY:54:MET:HE3	1.91	0.51
41:BB:78:THR:HG22	41:BB:100:GLY:O	2.10	0.51
43:BD:28:GLU:OE2	43:BD:47:ARG:NH2	2.43	0.51
50:BK:54:LYS:HD3	50:BK:85:ILE:HG13	1.93	0.51
54:BO:115:TRP:HD1	59:BT:134:LEU:HD22	1.74	0.51
2:1:30:C:H2'	2:1:31:U:C6	2.46	0.51
2:1:976:G:O2'	2:1:977:G:H5'	2.10	0.51
3:4:662:U:H4'	3:4:664:A:P	2.50	0.51
3:4:849:U:OP2	53:BN:26:ASN:ND2	2.36	0.51
69:4:3012:SPM:C6	72:4:3135:HOH:O	2.58	0.51
18:AP:105:ILE:O	18:AP:109:VAL:HG23	2.11	0.51
27:AY:148:ARG:HD3	27:AY:177:ARG:O	2.10	0.51
39:AK:7:TRP:HB3	39:AK:30:LEU:HB2	1.91	0.51
44:BE:94:ILE:HG21	44:BE:115:ALA:HB2	1.91	0.51
61:BV:76:HIS:ND1	61:BV:88:GLU:OE2	2.43	0.51
67:Bb:8:VAL:HG11	67:Bb:45:ARG:HD3	1.92	0.51
2:1:722:A:HO2'	2:1:755:G:HO2'	1.53	0.51
2:1:1094:A:H5'	2:1:1316:U:H1'	1.92	0.51
2:1:3002:C:O3'	5:AB:289:GLY:HA2	2.10	0.51
3:4:283:A:OP1	3:4:283:A:H2'	2.10	0.51
3:4:703:G:O2'	56:BQ:2:PRO:HD3	2.11	0.51
3:4:1204:A:OP1	3:4:1301:G:O2'	2.17	0.51
5:AB:246:ALA:HB3	10:AG:78:TYR:CE2	2.46	0.51
5:AB:246:ALA:HB3	10:AG:78:TYR:HE2	1.76	0.51
16:AN:102:ARG:NH1	16:AN:104:LEU:HD21	2.24	0.51
18:AP:103:LEU:HD21	18:AP:111:ARG:CZ	2.40	0.51
40:BA:134:THR:HA	40:BA:189:MET:HA	1.93	0.51
41:BB:25:THR:CG2	41:BB:27:LEU:HG	2.40	0.51
43:BD:63:MET:HE3	43:BD:67:GLU:HB2	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:BE:88:ILE:HD12	44:BE:93:GLU:CD	2.36	0.51
60:BU:148:GLU:O	60:BU:151:LYS:NZ	2.42	0.51
61:BV:15:ARG:HD2	61:BV:16:GLU:H	1.76	0.51
61:BV:23:LYS:CG	61:BV:77:VAL:HB	2.39	0.51
65:BZ:31:VAL:HG11	65:BZ:51:ASN:HB3	1.93	0.51
2:1:122:G:H2'	2:1:123:C:C6	2.45	0.51
2:1:1621:C:O2'	2:1:1622:G:H5'	2.10	0.51
2:1:2032:U:H2'	2:1:2033:A:O4'	2.10	0.51
2:1:2354:U:H2'	2:1:2355:U:C6	2.46	0.51
2:1:2744:G:O2'	2:1:3018:A:O2'	2.25	0.51
2:1:2836:C:H2'	2:1:2837:C:O4'	2.10	0.51
2:1:2968:U:H4'	2:1:2969:A:H5'	1.93	0.51
3:4:139:G:H5''	46:BG:5:LYS:HE2	1.91	0.51
3:4:148:G:H4'	46:BG:116:VAL:CG2	2.39	0.51
3:4:1104:G:H2'	3:4:1105:A:C8	2.46	0.51
3:4:1379:A:H2'	3:4:1380:C:C6	2.46	0.51
18:AP:66:ILE:CD1	18:AP:70:LEU:HD13	2.41	0.51
23:AU:13:ARG:HG3	23:AU:17:ARG:HH11	1.76	0.51
37:AI:23:ILE:O	37:AI:27:VAL:HG23	2.10	0.51
41:BB:127:ARG:NE	41:BB:150:ASP:OD2	2.37	0.51
45:BF:15:LEU:O	45:BF:19:VAL:HG23	2.11	0.51
52:BM:62:TRP:CZ3	52:BM:66:GLN:HG3	2.45	0.51
2:1:669:U:H2'	2:1:670:U:C6	2.45	0.51
2:1:1577:C:O2'	2:1:1712:A:OP1	2.25	0.51
2:1:2039:G:N2	3:4:1455:C:O4'	2.44	0.51
2:1:2588:C:OP2	2:1:2589:C:N4	2.33	0.51
2:1:2649:G:H2'	2:1:2650:C:C6	2.45	0.51
3:4:866:A:C5	3:4:867:G:H1'	2.45	0.51
3:4:879:A2M:H2'	3:4:880:A2M:C8	2.39	0.51
3:4:1399:A:H2'	3:4:1400:G:O4'	2.11	0.51
5:AB:88:ARG:NH1	5:AB:165:GLU:OE2	2.43	0.51
8:AE:6:ALA:HB3	8:AE:61:VAL:CG2	2.40	0.51
12:AI:12:VAL:HB	12:AI:14:TYR:CE1	2.45	0.51
24:AV:47:VAL:HG22	24:AV:103:ILE:HD11	1.93	0.51
41:BB:167:ARG:HD2	41:BB:203:THR:CG2	2.41	0.51
44:BE:104:TYR:CE2	44:BE:188:ILE:HD13	2.46	0.51
44:BE:156:PHE:CB	44:BE:174:LEU:HD12	2.40	0.51
45:BF:134:VAL:HG23	45:BF:145:LEU:HB2	1.93	0.51
53:BN:27:ASP:HA	72:BN:202:HOH:O	2.09	0.51
53:BN:104:ILE:CB	53:BN:128:LYS:HB2	2.39	0.51
54:BO:44:LEU:HD11	54:BO:66:ALA:CB	2.40	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:766:G:H5'	72:1:4878:HOH:O	2.09	0.51
2:1:1356:U:H2'	2:1:1357:C:C6	2.45	0.51
2:1:1517:C:H2'	2:1:1518:G:H8	1.75	0.51
2:1:1619:G:H2'	2:1:1620:U:C6	2.46	0.51
2:1:2540:U:OP2	36:Ah:60:LYS:HG2	2.11	0.51
2:1:2551:U:H2'	2:1:2552:U:C6	2.45	0.51
2:1:2744:G:HO2'	2:1:3018:A:HO2'	1.55	0.51
2:1:2915:A:H2'	2:1:2916:A:C8	2.46	0.51
2:1:2969:A:C6	2:1:2996:G:H5'	2.46	0.51
3:4:360:A:N3	3:4:372:U:O2'	2.40	0.51
3:4:606:G:H2'	3:4:607:C:C6	2.46	0.51
3:4:775:A:H2'	3:4:777:A:H5''	1.92	0.51
3:4:906:OMG:HM22	3:4:907:G:O4'	2.10	0.51
3:4:1480:C:H2'	3:4:1481:U:C6	2.46	0.51
4:AA:31:PRO:HG2	4:AA:34:ILE:CG2	2.40	0.51
13:AK:52:ILE:HG21	20:AR:77:ARG:HG3	1.93	0.51
13:AK:60:LYS:HD2	13:AK:82:LEU:HD22	1.93	0.51
22:AT:169:PRO:O	22:AT:173:VAL:HG23	2.11	0.51
24:AV:25:ARG:NH2	24:AV:46:PRO:HG2	2.25	0.51
32:Ad:4:THR:HB	32:Ad:5:PRO:HD3	1.93	0.51
33:Ae:19:GLN:HG3	33:Ae:35:ARG:O	2.10	0.51
46:BG:20:GLU:OE1	46:BG:22:LYS:HG3	2.10	0.51
51:BL:50:LEU:HB2	51:BL:71:LEU:HB3	1.93	0.51
52:BM:16:LEU:HD23	52:BM:81:ASN:ND2	2.26	0.51
53:BN:94:LEU:CD2	66:Ba:7:LEU:HD23	2.41	0.51
54:BO:16:LEU:HD22	54:BO:25:ALA:O	2.11	0.51
56:BQ:75:LEU:HD22	56:BQ:80:ILE:HG13	1.92	0.51
56:BQ:108:ASP:HB3	56:BQ:111:SER:HB2	1.93	0.51
2:1:12:G:H2'	2:1:13:C:C6	2.46	0.51
2:1:419:G:HO2'	2:1:422:U:HO2'	1.58	0.51
2:1:579:G:H2'	2:1:580:C:H6	1.76	0.51
2:1:2011:A2M:H8	2:1:2011:A2M:O5'	2.10	0.51
2:1:2786:G:OP1	5:AB:60:ARG:NH2	2.41	0.51
3:4:174:C:H2'	3:4:175:U:C6	2.45	0.51
3:4:887:G:H4'	45:BF:64:THR:HA	1.93	0.51
3:4:1178:A:C4'	3:4:1179:A:H5'	2.36	0.51
3:4:1182:C:H4'	3:4:1183:C:H5'	1.93	0.51
5:AB:173:SER:OG	5:AB:176:GLU:HG3	2.11	0.51
11:AH:2:ILE:HD12	11:AH:3:PRO:CD	2.31	0.51
13:AK:8:GLY:HA2	13:AK:64:ILE:HD11	1.93	0.51
13:AK:70:ASP:O	13:AK:74:LEU:HD23	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:AN:110:ASP:CB	16:AN:118:LEU:HD13	2.40	0.51
17:AO:121:LYS:HD3	17:AO:137:VAL:HG21	1.93	0.51
45:BF:92:SER:HB3	45:BF:98:ALA:HB2	1.93	0.51
46:BG:62:GLY:HA3	46:BG:102:ARG:NH1	2.26	0.51
49:BJ:84:SER:OG	49:BJ:85:ILE:N	2.44	0.51
53:BN:79:LYS:HG3	53:BN:80:ASN:OD1	2.11	0.51
62:BW:65:THR:HG22	62:BW:67:TYR:H	1.76	0.51
63:BX:40:VAL:HG12	63:BX:41:PRO:HD2	1.93	0.51
2:1:1807:C:O2'	2:1:2801:G:H4'	2.11	0.51
3:4:622:G:N2	3:4:797:G:H4'	2.26	0.51
3:4:1134:U:C2'	3:4:1135:A:H5'	2.41	0.51
3:4:1211:OMG:OP1	60:BU:38:THR:OG1	2.22	0.51
40:BA:111:LYS:HG3	40:BA:131:LEU:HD11	1.93	0.51
42:BC:174:ARG:HH21	42:BC:176:VAL:HG21	1.76	0.51
44:BE:177:GLY:N	44:BE:194:PHE:O	2.37	0.51
51:BL:74:SER:HB2	51:BL:76:ARG:NH1	2.26	0.51
63:BX:73:CYS:HB3	63:BX:77:PHE:CE2	2.45	0.51
2:1:318:G:H5''	72:1:7730:HOH:O	2.11	0.50
2:1:882:A:H5'	4:AA:173:GLY:CA	2.41	0.50
2:1:1321:G:OP2	69:1:3112:SPM:N14	2.44	0.50
2:1:1833:A:H2'	2:1:1834:A:C8	2.45	0.50
3:4:12:U:H2'	3:4:13:C:H6	1.74	0.50
3:4:385:C:H2'	3:4:386:A:O4'	2.11	0.50
3:4:1461:A:O2'	3:4:1462:A:H5'	2.11	0.50
4:AA:147:GLU:N	4:AA:147:GLU:OE2	2.43	0.50
7:AD:76:LEU:C	7:AD:81:ALA:HB2	2.36	0.50
8:AE:108:GLN:OE1	8:AE:108:GLN:N	2.42	0.50
16:AN:50:VAL:HG23	16:AN:171:LYS:HG3	1.93	0.50
21:AS:73:TYR:HE2	21:AS:90:PRO:HG3	1.76	0.50
43:BD:33:GLY:HA3	66:Ba:38:TYR:CD1	2.46	0.50
45:BF:131:PRO:CB	68:Bc:8:ILE:HD12	2.40	0.50
46:BG:91:ARG:HA	46:BG:91:ARG:NH1	2.25	0.50
48:BI:40:VAL:HG22	48:BI:43:ARG:NH2	2.25	0.50
50:BK:65:LEU:HB3	50:BK:99:PHE:CE2	2.45	0.50
54:BO:137:PHE:CE1	54:BO:139:ALA:HB3	2.46	0.50
58:BS:54:ILE:O	58:BS:58:VAL:HG23	2.10	0.50
67:Bb:32:LYS:O	67:Bb:36:LYS:HG2	2.10	0.50
1:2:8:A:H5''	1:2:9:C:OP2	2.11	0.50
2:1:1643:U:H2'	2:1:1644:G:H5'	1.93	0.50
2:1:2797:U:O2'	5:AB:53:HIS:ND1	2.31	0.50
2:1:2966:U:H2'	2:1:2967:G:O4'	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:AL:103:ARG:NH1	14:AL:145:GLY:O	2.44	0.50
23:AU:39:GLN:HG2	23:AU:44:VAL:O	2.10	0.50
28:AZ:69:ILE:HD13	28:AZ:80:LYS:HD2	1.93	0.50
41:BB:108:THR:HG23	41:BB:135:GLU:OE1	2.11	0.50
42:BC:193:THR:HG23	42:BC:197:LEU:HB2	1.93	0.50
45:BF:15:LEU:HG	45:BF:42:ILE:HD13	1.93	0.50
51:BL:49:ARG:HD2	51:BL:70:GLU:OE2	2.11	0.50
51:BL:74:SER:HB2	51:BL:76:ARG:HH12	1.76	0.50
52:BM:69:TYR:O	52:BM:73:GLN:HG2	2.11	0.50
54:BO:32:ILE:HG13	54:BO:36:THR:CG2	2.41	0.50
56:BQ:144:GLU:OE1	56:BQ:144:GLU:N	2.43	0.50
60:BU:116:LYS:HD3	60:BU:121:ARG:NH2	2.26	0.50
2:1:2:A:H2	2:1:3021:G:C2	2.27	0.50
2:1:203:A:OP2	11:AH:52:ARG:NH1	2.41	0.50
2:1:1448:G:H2'	2:1:1449:C:C6	2.46	0.50
2:1:2630:C:O2'	2:1:2631:C:H5'	2.10	0.50
3:4:75:C:OP2	3:4:213:G:H5''	2.11	0.50
3:4:943:A:N6	3:4:1190:U:OP1	2.45	0.50
3:4:1292:C:H2'	3:4:1293:U:H6	1.75	0.50
5:AB:89:LEU:HD21	5:AB:178:ILE:HG12	1.92	0.50
14:AL:115:LYS:HG3	14:AL:132:VAL:CG1	2.41	0.50
17:AO:167:PHE:O	17:AO:171:LEU:HG	2.11	0.50
41:BB:84:LYS:HB3	41:BB:85:PRO:HD3	1.93	0.50
53:BN:76:GLN:HG3	53:BN:83:VAL:HG22	1.93	0.50
58:BS:26:GLU:OE2	58:BS:59:LYS:HA	2.10	0.50
60:BU:23:ASN:N	60:BU:23:ASN:OD1	2.44	0.50
2:1:14:C:H2'	2:1:15:C:C6	2.47	0.50
3:4:52:U:H2'	3:4:53:G:C8	2.46	0.50
3:4:1054:U:H2'	3:4:1055:C:O4'	2.12	0.50
8:AE:132:VAL:HG13	8:AE:144:VAL:HG13	1.94	0.50
28:AZ:4:ILE:HD11	37:AI:96:TRP:CZ2	2.46	0.50
28:AZ:4:ILE:HG23	28:AZ:97:LEU:HD11	1.92	0.50
30:Ab:94:GLU:OE1	30:Ab:94:GLU:N	2.39	0.50
44:BE:145:LEU:HB3	44:BE:149:VAL:CG2	2.41	0.50
47:BH:97:ARG:O	47:BH:178:ARG:NH1	2.44	0.50
53:BN:52:GLY:HA3	53:BN:75:VAL:HG12	1.93	0.50
63:BX:52:GLU:OE1	63:BX:56:GLN:NE2	2.45	0.50
2:1:673:OMC:HM22	2:1:674:G:O4'	2.12	0.50
2:1:1389:G:H5'	72:1:6963:HOH:O	2.11	0.50
3:4:170:G:O2'	3:4:171:G:H5'	2.10	0.50
3:4:259:C:H1'	72:4:3905:HOH:O	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:421:A:H2'	3:4:422:G:O4'	2.12	0.50
7:AD:112:LYS:H	7:AD:112:LYS:HD2	1.76	0.50
16:AN:80:TYR:HB3	16:AN:148:HIS:ND1	2.27	0.50
28:AZ:8:LEU:HD11	28:AZ:84:LEU:HD21	1.93	0.50
33:Ae:31:LYS:HG2	33:Ae:44:ARG:HG3	1.94	0.50
39:Ak:3:LEU:HD23	39:Ak:33:CYS:SG	2.52	0.50
41:BB:146:LEU:HB3	41:BB:162:CYS:SG	2.52	0.50
44:BE:5:ARG:NH1	72:BE:303:HOH:O	2.44	0.50
49:BJ:12:LEU:O	49:BJ:20:LYS:HG2	2.11	0.50
2:1:358:A:N7	2:1:1337:C:O2'	2.33	0.50
2:1:661:C:H2'	2:1:662:C:C6	2.46	0.50
2:1:707:G:H2'	2:1:708:G:C8	2.47	0.50
2:1:1595:G:H2'	2:1:1596:C:C6	2.46	0.50
2:1:1714:A:H2'	2:1:1715:A:C8	2.46	0.50
2:1:2594:C:C2'	2:1:2595:G:H5'	2.42	0.50
2:1:2845:G:H2'	2:1:2846:G:C8	2.46	0.50
69:1:3105:SPM:H122	72:1:3704:HOH:O	2.12	0.50
3:4:684:U:C6	63:BX:11:LYS:HE2	2.47	0.50
3:4:1082:A:H2'	3:4:1083:G:C8	2.47	0.50
3:4:1396:G:H2'	3:4:1397:C:H6	1.76	0.50
5:AB:332:TRP:CH2	5:AB:334:SER:HA	2.46	0.50
9:AF:72:VAL:HG21	9:AF:78:VAL:HG21	1.93	0.50
24:AV:117:ILE:HG22	24:AV:121:LYS:CE	2.42	0.50
28:AZ:93:GLU:HG3	28:AZ:96:LYS:HE2	1.93	0.50
33:Ae:63:LYS:HD3	33:Ae:64:VAL:N	2.27	0.50
38:Aj:2:PRO:HB2	38:Aj:29:TYR:CE2	2.47	0.50
44:BE:208:VAL:HG21	44:BE:224:ILE:HG21	1.92	0.50
44:BE:227:ILE:HD13	44:BE:236:ILE:HD12	1.94	0.50
45:BF:114:ARG:NH2	68:Bc:13:PRO:HD3	2.23	0.50
55:BP:18:ARG:HG3	55:BP:19:CYS:H	1.76	0.50
62:BW:81:PHE:HE1	62:BW:103:GLU:HG3	1.77	0.50
64:BY:20:LEU:O	64:BY:28:GLU:HA	2.12	0.50
2:1:575:G:O2'	2:1:576:G:OP1	2.26	0.50
2:1:584:C:P	72:1:3451:HOH:O	2.70	0.50
2:1:603:U:OP1	13:AK:49:ARG:NE	2.41	0.50
2:1:1311:U:O4	27:AY:37:ARG:NH1	2.38	0.50
2:1:1350:G:N2	2:1:1353:A:OP2	2.32	0.50
2:1:1746:C:O2'	2:1:1752:A:N1	2.38	0.50
2:1:1882:G:OP2	19:AQ:78:ARG:NH2	2.39	0.50
2:1:1983:U:H2'	2:1:1984:A:O4'	2.12	0.50
2:1:2163:C:H2'	2:1:2164:C:C6	2.47	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2623:OMU:H5	69:1:3128:SPM:H82	1.93	0.50
2:1:2703:A:H2'	2:1:2704:OMC:H6	1.76	0.50
3:4:1039:A:P	45:BF:91:LYS:HE2	2.52	0.50
3:4:1143:G:H2'	3:4:1144:G:O4'	2.11	0.50
3:4:1183:C:H2'	3:4:1184:OMC:C6	2.46	0.50
3:4:1357:U:OP1	63:BX:85:ARG:HG3	2.11	0.50
11:AH:5:PRO:HD2	11:AH:23:GLU:OE2	2.11	0.50
13:AK:26:VAL:HG21	13:AK:37:THR:HG22	1.94	0.50
52:BM:28:ASN:O	52:BM:59:PRO:HD3	2.12	0.50
54:BO:22:VAL:O	54:BO:26:LEU:HD12	2.12	0.50
65:BZ:5:VAL:HG12	65:BZ:6:LYS:NZ	2.27	0.50
68:Bc:56:ARG:HG3	68:Bc:63:VAL:CG1	2.42	0.50
2:1:1834:A:H2'	2:1:1835:C:O4'	2.12	0.50
2:1:2410:A:H2'	2:1:2411:G:O4'	2.12	0.50
3:4:118:C:O2'	44:BE:31:PRO:HB3	2.12	0.50
3:4:214:C:H2'	3:4:215:C:C6	2.47	0.50
3:4:312:C:H2'	3:4:313:C:C6	2.47	0.50
3:4:648:A:N1	3:4:661:G:O2'	2.32	0.50
3:4:888:G:OP1	45:BF:65:HIS:HB3	2.12	0.50
3:4:1075:C:H2'	3:4:1076:G:C8	2.47	0.50
4:AA:31:PRO:HG2	4:AA:34:ILE:HG23	1.94	0.50
12:AI:27:LEU:HD22	12:AI:38:LEU:CD1	2.42	0.50
13:AJ:16:GLY:O	31:Ac:63:ARG:HG3	2.12	0.50
29:Aa:89:LEU:O	29:Aa:91:GLN:HG2	2.11	0.50
30:Ab:7:ARG:HB2	30:Ab:85:PHE:CE1	2.46	0.50
37:Ai:74:GLN:HB3	37:Ai:79:LYS:HD2	1.93	0.50
40:BA:184:LYS:NZ	72:BA:301:HOH:O	2.43	0.50
45:BF:137:LYS:HD2	45:BF:142:GLU:HG3	1.94	0.50
49:BJ:117:SER:O	49:BJ:119:PRO:HD3	2.12	0.50
50:BK:44:GLU:OE1	50:BK:44:GLU:N	2.44	0.50
60:BU:4:VAL:HG22	60:BU:131:VAL:HG12	1.94	0.50
2:1:229:G:H5''	2:1:231:G:N7	2.27	0.50
2:1:745:C:H2'	2:1:746:G:O4'	2.11	0.50
2:1:1035:G:N2	69:1:3106:SPM:HN42	2.10	0.50
2:1:1237:A:H2'	2:1:1237:A:OP2	2.12	0.50
2:1:1572:C:H2'	2:1:1573:C:C6	2.47	0.50
2:1:2185:C:H4'	2:1:2362:OMG:HM22	1.93	0.50
2:1:2203:G:H2'	2:1:2204:C:C6	2.47	0.50
2:1:2358:G:H2'	2:1:2359:C:H6	1.77	0.50
72:1:5961:HOH:O	31:Ac:2:PRO:HG2	2.12	0.50
3:4:14:C:OP1	45:BF:140:SER:OG	2.17	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:310:A:H3'	3:4:311:G:N2	2.27	0.50
3:4:833:C:H2'	3:4:834:G:O4'	2.11	0.50
3:4:1210:OMG:HM22	3:4:1211:OMG:O4'	2.11	0.50
3:4:1423:G:H2'	3:4:1424:A:H8	1.76	0.50
5:AB:203:VAL:HG12	5:AB:312:LEU:CD2	2.41	0.50
11:AH:114:ARG:O	11:AH:118:THR:HG23	2.12	0.50
14:AL:91:LEU:HD22	14:AL:96:GLU:CB	2.41	0.50
46:BG:17:ARG:NE	72:BG:201:HOH:O	2.25	0.50
46:BG:33:ARG:HG2	46:BG:36:GLU:OE1	2.12	0.50
57:BR:33:TYR:HB3	57:BR:137:TRP:HB2	1.93	0.50
65:BZ:57:ARG:HH11	65:BZ:57:ARG:HB2	1.76	0.50
2:1:1081:A:H5''	2:1:1082:G:OP1	2.12	0.49
2:1:1548:U:H4'	2:1:1727:A:C6	2.47	0.49
2:1:2476:A:OP2	69:1:3140:SPM:N5	2.45	0.49
3:4:924:A:H1'	3:4:951:C:O2'	2.11	0.49
10:AG:124:PRO:O	10:AG:128:ILE:HG12	2.11	0.49
10:AG:176:TRP:O	10:AG:180:ILE:HG12	2.12	0.49
12:AI:39:VAL:HB	12:AI:67:VAL:HB	1.94	0.49
13:AJ:27:ASP:HB2	13:AJ:35:VAL:HB	1.94	0.49
28:AZ:47:ARG:HG3	28:AZ:51:GLU:OE1	2.12	0.49
40:BA:81:ARG:HB2	40:BA:88:SER:OG	2.12	0.49
42:BC:170:ASN:CB	42:BC:171:ARG:HH11	2.25	0.49
43:BD:32:MET:CE	43:BD:40:LYS:HD3	2.42	0.49
46:BG:6:LEU:HD12	46:BG:113:ILE:O	2.12	0.49
46:BG:61:SER:OG	46:BG:112:GLN:HB3	2.12	0.49
50:BK:12:ARG:NH1	50:BK:98:TYR:O	2.44	0.49
52:BM:118:ARG:HG3	72:BM:209:HOH:O	2.11	0.49
55:BP:27:ALA:HB1	55:BP:38:ARG:NE	2.26	0.49
57:BR:5:LYS:O	57:BR:6:LEU:HD23	2.12	0.49
62:BW:44:GLN:OE1	62:BW:44:GLN:N	2.41	0.49
63:BX:63:TYR:O	63:BX:65:VAL:HG23	2.11	0.49
2:1:763:A:H2'	2:1:764:G:O4'	2.11	0.49
2:1:1495:U:O2'	2:1:1496:A:H2'	2.12	0.49
2:1:1796:U:O2'	2:1:1797:G:H5'	2.12	0.49
2:1:2439:A:H2'	2:1:2440:A:C8	2.46	0.49
3:4:102:A:N3	72:4:3159:HOH:O	2.35	0.49
3:4:536:G:O6	53:BN:2:PRO:HD2	2.11	0.49
6:AC:16:LEU:CD1	18:AP:15:MET:HB3	2.42	0.49
7:AD:48:ALA:HB3	7:AD:74:VAL:HG21	1.93	0.49
23:AU:1:MET:HB3	23:AU:37:GLU:CD	2.37	0.49
40:BA:62:TYR:CE2	40:BA:68:ILE:HD13	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:BD:138:ARG:NH1	61:BV:65:GLU:OE1	2.35	0.49
52:BM:62:TRP:O	52:BM:66:GLN:HG2	2.12	0.49
56:BQ:26:ILE:HD13	56:BQ:66:ILE:HD13	1.93	0.49
57:BR:14:ASP:N	57:BR:14:ASP:OD2	2.37	0.49
57:BR:22:LYS:HE3	57:BR:24:VAL:HG22	1.92	0.49
2:1:494:G:H4'	72:1:6645:HOH:O	2.12	0.49
2:1:536:A:H2'	72:1:4355:HOH:O	2.10	0.49
2:1:886:G:H1'	2:1:1510:A:N6	2.27	0.49
2:1:2952:U:C2'	72:1:3498:HOH:O	2.60	0.49
3:4:684:U:O4'	63:BX:11:LYS:HB2	2.12	0.49
3:4:1202:OMG:H2'	3:4:1203:C:C6	2.48	0.49
13:AJ:28:ILE:HD13	13:AJ:34:VAL:HG12	1.94	0.49
13:AK:42:LEU:CD1	13:AK:86:MET:HB3	2.42	0.49
16:AN:49:MET:HE2	16:AN:170:PRO:HA	1.94	0.49
38:AJ:6:LEU:HD22	38:AJ:8:VAL:HG22	1.93	0.49
41:BB:110:PRO:HA	41:BB:115:TYR:CD1	2.46	0.49
42:BC:145:LYS:O	42:BC:186:TYR:OH	2.24	0.49
47:BH:159:ASP:OD1	47:BH:160:VAL:N	2.45	0.49
53:BN:44:LEU:O	53:BN:79:LYS:NZ	2.31	0.49
56:BQ:11:ARG:O	64:BY:2:PRO:HD2	2.12	0.49
2:1:670:U:H2'	2:1:671:C:C6	2.46	0.49
3:4:1029:U:H2'	3:4:1030:C:C6	2.47	0.49
3:4:1148:G:H5''	72:4:4221:HOH:O	2.13	0.49
4:AA:73:TYR:CZ	4:AA:76:GLN:HG3	2.48	0.49
7:AD:14:MET:O	7:AD:158:GLN:NE2	2.41	0.49
28:AZ:93:GLU:O	28:AZ:96:LYS:HD3	2.13	0.49
39:AK:8:GLU:HG2	39:AK:64:PHE:HE2	1.77	0.49
40:BA:56:THR:HG23	40:BA:76:ARG:HG3	1.94	0.49
41:BB:189:LYS:HG2	41:BB:192:GLN:OE1	2.12	0.49
45:BF:9:TRP:NE1	45:BF:41:GLU:HG3	2.26	0.49
50:BK:6:ILE:CD1	50:BK:9:GLU:HG3	2.43	0.49
56:BQ:2:PRO:HG2	56:BQ:6:ARG:CG	2.42	0.49
56:BQ:35:GLN:O	56:BQ:38:VAL:HG12	2.12	0.49
56:BQ:50:ILE:O	56:BQ:54:LEU:HG	2.12	0.49
59:BT:122:PRO:O	59:BT:125:ILE:HG12	2.13	0.49
60:BU:142:LEU:HD23	60:BU:149:LEU:HD12	1.94	0.49
1:2:100:G:H2'	1:2:101:C:H6	1.77	0.49
2:1:698:A:N7	72:1:3617:HOH:O	2.32	0.49
2:1:702:C:OP2	6:AC:139:LYS:NZ	2.45	0.49
2:1:1467:A:O2'	2:1:1524:A:N1	2.44	0.49
3:4:561:G:H2'	3:4:562:C:H6	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:1087:C:O2'	3:4:1088:U:H5'	2.12	0.49
3:4:1409:C:H2'	3:4:1410:C:C6	2.47	0.49
4:AA:94:LEU:HA	4:AA:97:ILE:HD12	1.94	0.49
24:AV:118:GLU:O	24:AV:121:LYS:HG2	2.11	0.49
44:BE:160:VAL:HG11	44:BE:169:LYS:HE2	1.95	0.49
57:BR:24:VAL:HG11	57:BR:49:HIS:HB3	1.93	0.49
67:Bb:17:ARG:NH1	67:Bb:54:LEU:HD11	2.28	0.49
2:1:1470:U:O2'	23:AU:50:ASN:ND2	2.46	0.49
2:1:2193:C:OP1	4:AA:3:LYS:HD2	2.13	0.49
3:4:437:G:H2'	3:4:438:G:H8	1.77	0.49
3:4:689:A:H2'	3:4:690:A:C8	2.48	0.49
3:4:782:G:H2'	3:4:783:C:C6	2.46	0.49
3:4:855:G:H4'	3:4:856:U:O5'	2.11	0.49
3:4:1334:G:OP2	50:BK:126:LYS:HD3	2.12	0.49
5:AB:57:VAL:CG2	5:AB:329:GLN:HB3	2.40	0.49
6:AC:38:GLY:HA3	6:AC:192:VAL:HG22	1.94	0.49
12:AI:8:ARG:NH1	12:AI:113:GLU:HB3	2.27	0.49
14:AL:115:LYS:HE3	14:AL:132:VAL:HG11	1.93	0.49
19:AQ:104:LYS:HD3	19:AQ:114:TRP:CG	2.47	0.49
30:Ab:136:LYS:O	30:Ab:140:GLU:HG3	2.11	0.49
39:Ak:8:GLU:HG2	39:Ak:64:PHE:CE2	2.47	0.49
40:BA:157:LYS:HE3	40:BA:169:GLU:CD	2.38	0.49
44:BE:148:ASP:OD2	44:BE:149:VAL:HG13	2.12	0.49
52:BM:91:GLY:HA3	52:BM:124:PRO:HD2	1.94	0.49
61:BV:38:THR:HG22	61:BV:40:GLN:H	1.78	0.49
64:BY:4:ARG:HB2	64:BY:7:ARG:HG2	1.95	0.49
68:Bc:47:ARG:HB2	72:Bc:208:HOH:O	2.13	0.49
2:1:1252:A:H4'	2:1:1253:A:C5'	2.41	0.49
2:1:1607:U:H1'	2:1:2816:G:C2	2.48	0.49
2:1:2954:A:H1'	69:1:3113:SPM:N1	2.28	0.49
3:4:175:U:H2'	3:4:176:G:O4'	2.13	0.49
3:4:860:G:H2'	3:4:861:C:C6	2.47	0.49
3:4:1039:A:OP1	45:BF:91:LYS:HE2	2.13	0.49
3:4:1081:U:O4	3:4:1082:A:N6	2.46	0.49
3:4:1134:U:O2'	3:4:1135:A:H5'	2.12	0.49
3:4:1289:OMG:HM22	3:4:1290:C:O4'	2.12	0.49
13:AJ:6:ASP:HB3	13:AJ:61:LYS:HZ3	1.76	0.49
24:AV:28:LEU:HD23	24:AV:98:PRO:HG2	1.94	0.49
41:BB:76:HIS:CE1	41:BB:102:PHE:HB2	2.47	0.49
44:BE:219:THR:HG22	44:BE:220:ILE:H	1.77	0.49
46:BG:69:HIS:O	46:BG:72:VAL:HG22	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:BJ:28:LYS:HD2	49:BJ:31:LEU:HD23	1.94	0.49
51:BL:49:ARG:HB2	51:BL:51:MET:HE1	1.95	0.49
54:BO:58:ASP:O	54:BO:62:LYS:HD3	2.13	0.49
59:BT:71:LEU:HD13	59:BT:96:MET:CE	2.43	0.49
68:Bc:23:LEU:HD23	68:Bc:29:GLY:HA3	1.95	0.49
2:1:310:C:O2'	2:1:311:G:H5'	2.13	0.49
2:1:748:G:O2'	18:AP:122:ILE:HD11	2.13	0.49
2:1:1571:C:H2'	2:1:1572:C:H6	1.77	0.49
3:4:364:G:H2'	3:4:365:C:C6	2.48	0.49
3:4:689:A:OP1	56:BQ:2:PRO:HG3	2.13	0.49
3:4:1155:C:O2'	42:BC:165:GLY:N	2.40	0.49
4:AA:73:TYR:HA	37:Ai:66:PHE:HA	1.94	0.49
4:AA:102:MET:HE1	37:Ai:77:LEU:HD11	1.94	0.49
6:AC:9:LEU:O	6:AC:13:LEU:HG	2.13	0.49
9:AF:18:LYS:HZ3	9:AF:25:GLU:HB3	1.76	0.49
16:AN:53:LEU:HB3	16:AN:137:PHE:HB2	1.94	0.49
46:BG:13:SER:OG	46:BG:15:LYS:HD3	2.13	0.49
58:BS:36:ALA:HA	58:BS:41:ILE:HD11	1.95	0.49
58:BS:39:ALA:O	58:BS:41:ILE:HG13	2.11	0.49
2:1:724:A:H62	2:1:770:G:H2'	1.77	0.49
2:1:1358:C:H2'	2:1:1359:G:C8	2.48	0.49
2:1:2457:G:N3	2:1:2496:G:H2'	2.27	0.49
2:1:2795:C:O2'	2:1:2796:C:H5'	2.13	0.49
69:1:3116:SPM:H132	22:AT:146:ARG:HA	1.94	0.49
72:1:5353:HOH:O	17:AO:14:ARG:HD3	2.11	0.49
3:4:1045:OMC:HM22	3:4:1046:C:O4'	2.13	0.49
72:4:3781:HOH:O	43:BD:2:GLY:HA2	2.12	0.49
4:AA:146:ILE:HD12	4:AA:148:VAL:HG13	1.93	0.49
19:AQ:106:GLN:HB3	19:AQ:108:LYS:HE3	1.94	0.49
40:BA:135:THR:HG22	40:BA:136:HIS:CD2	2.48	0.49
41:BB:83:PHE:HA	41:BB:99:THR:CG2	2.41	0.49
41:BB:172:LEU:O	41:BB:176:VAL:HG23	2.13	0.49
44:BE:50:TYR:CG	61:BV:19:LEU:HD12	2.48	0.49
49:BJ:78:VAL:HG11	49:BJ:110:VAL:HG21	1.95	0.49
68:Bc:56:ARG:HG3	68:Bc:63:VAL:HG12	1.94	0.49
2:1:180:A:H5'	72:1:6606:HOH:O	2.12	0.49
2:1:844:A:O2'	2:1:845:G:H5'	2.13	0.49
2:1:1068:G:H5''	69:1:3125:SPM:H31	1.95	0.49
2:1:1578:G:H2'	2:1:1579:C:C6	2.48	0.49
2:1:2720:OMC:HM22	2:1:2721:G:H5'	1.95	0.49
3:4:429:U:O2'	3:4:430:U:H5'	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:437:G:H2'	3:4:438:G:C8	2.48	0.49
3:4:1036:G:O2'	3:4:1037:U:OP1	2.24	0.49
3:4:1050:U:H4'	58:BS:3:ARG:HD3	1.93	0.49
3:4:1115:A:H1'	50:BK:26:ARG:NH1	2.27	0.49
9:AF:44:THR:HG21	9:AF:121:GLN:CD	2.38	0.49
13:AJ:6:ASP:HB3	13:AJ:61:LYS:NZ	2.26	0.49
16:AN:103:MET:H	16:AN:103:MET:CE	2.25	0.49
27:AY:151:LEU:HB3	27:AY:163:ASP:OD1	2.12	0.49
41:BB:70:PRO:O	41:BB:95:CYS:HA	2.13	0.49
43:BD:58:ARG:HD3	45:BF:149:PRO:HG2	1.94	0.49
44:BE:199:TRP:HB2	57:BR:140:LYS:HE2	1.93	0.49
50:BK:61:LEU:HB3	50:BK:107:LEU:HD21	1.94	0.49
56:BQ:35:GLN:O	56:BQ:39:GLU:HG3	2.13	0.49
67:Bb:27:LYS:HB3	67:Bb:30:GLU:OE1	2.12	0.49
1:2:3:C:H2'	1:2:4:C:H6	1.77	0.48
1:2:50:C:O2'	17:AO:109:ARG:HG3	2.13	0.48
2:1:1715:A:H2'	2:1:1716:G:O4'	2.13	0.48
3:4:97:G:OP2	69:4:3007:SPM:N5	2.46	0.48
3:4:279:C:OP2	57:BR:67:ARG:HD2	2.13	0.48
3:4:1016:G:H4'	42:BC:187:GLY:H	1.78	0.48
3:4:1068:A:H2'	3:4:1069:G:O4'	2.12	0.48
3:4:1286:C:C1'	59:BT:131:GLU:HG2	2.43	0.48
3:4:1346:U:H2'	3:4:1347:C:C6	2.47	0.48
3:4:1472:A:H2'	3:4:1473:G:H8	1.78	0.48
5:AB:276:GLY:HA3	5:AB:291:ILE:HG22	1.95	0.48
10:AG:18:ILE:HG12	10:AG:44:LEU:HD21	1.95	0.48
35:Ag:21:LYS:HD2	35:Ag:32:PRO:O	2.13	0.48
47:BH:214:GLU:O	47:BH:218:ILE:HG13	2.12	0.48
52:BM:120:GLU:HA	63:BX:63:TYR:OH	2.13	0.48
62:BW:56:LYS:NZ	62:BW:57:GLU:HB2	2.28	0.48
63:BX:52:GLU:HG3	63:BX:53:LEU:H	1.78	0.48
2:1:120:C:H2'	2:1:121:U:C6	2.48	0.48
2:1:584:C:O2'	2:1:585:U:H5'	2.13	0.48
3:4:112:C:H2'	3:4:113:C:C6	2.49	0.48
3:4:825:A:H2'	3:4:826:G:O4'	2.14	0.48
12:AI:68:VAL:HG22	12:AI:80:ILE:CG1	2.43	0.48
13:AK:27:ASP:HB2	13:AK:67:GLY:HA2	1.95	0.48
38:Aj:107:ARG:HG2	38:Aj:109:LYS:HE2	1.95	0.48
43:BD:58:ARG:HG3	43:BD:96:LEU:CD2	2.43	0.48
44:BE:203:ARG:O	44:BE:221:LEU:HD23	2.13	0.48
47:BH:41:LEU:HB2	47:BH:47:PHE:CE2	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:BQ:46:PRO:HD2	56:BQ:49:GLN:HB2	1.94	0.48
57:BR:126:VAL:HG13	57:BR:128:ILE:CD1	2.43	0.48
58:BS:41:ILE:HD13	58:BS:47:ARG:HD3	1.95	0.48
69:1:3129:SPM:H71	72:1:5055:HOH:O	2.11	0.48
3:4:94:U:H2'	3:4:95:C:C6	2.48	0.48
3:4:144:C:H4'	46:BG:99:LYS:HZ1	1.77	0.48
3:4:302:G:H2'	3:4:303:A:C8	2.49	0.48
3:4:664:A:C8	72:4:3814:HOH:O	2.55	0.48
3:4:1064:A:O2'	3:4:1065:G:H5'	2.13	0.48
3:4:1083:G:H1'	3:4:1085:U:O4	2.13	0.48
3:4:1390:C:H2'	3:4:1391:C:H6	1.77	0.48
5:AB:168:VAL:O	5:AB:177:ARG:HD3	2.12	0.48
14:AL:147:GLU:OE2	14:AL:149:ARG:NE	2.43	0.48
15:AM:108:LYS:O	15:AM:110:PRO:HD3	2.12	0.48
19:AQ:4:VAL:HG21	19:AQ:29:LEU:HD22	1.94	0.48
33:Ae:47:PRO:O	33:Ae:51:GLU:HG2	2.12	0.48
38:Aj:97:LEU:O	38:Aj:101:VAL:HG23	2.13	0.48
46:BG:49:LEU:HB3	46:BG:53:VAL:CG1	2.41	0.48
2:1:340:G:H5'	2:1:359:U:O2'	2.13	0.48
2:1:432:A:OP1	15:AM:14:LYS:NZ	2.29	0.48
2:1:901:A:H2'	2:1:903:A:OP1	2.14	0.48
2:1:1073:G:H5''	2:1:1074:U:OP2	2.13	0.48
2:1:1681:U:O4	19:AQ:40:ALA:HB2	2.14	0.48
2:1:2176:OMG:OP1	72:1:3403:HOH:O	2.20	0.48
2:1:2344:A:H2'	2:1:2345:G:H8	1.78	0.48
2:1:2884:OMC:HM22	2:1:2885:OMC:O4'	2.13	0.48
2:1:2902:U:H5	72:1:6007:HOH:O	1.96	0.48
3:4:64:G:OP2	72:4:3101:HOH:O	2.20	0.48
3:4:1015:U:OP1	42:BC:150:ARG:HA	2.13	0.48
3:4:1101:G:H22	60:BU:154:ALA:HB1	1.78	0.48
3:4:1145:A:H5''	50:BK:117:LYS:CE	2.38	0.48
3:4:1345:G:C2'	3:4:1346:U:H5'	2.44	0.48
5:AB:117:VAL:CG2	5:AB:118:LEU:HG	2.43	0.48
9:AF:76:GLU:HG2	15:AM:11:TRP:CD1	2.48	0.48
14:AL:93:GLU:OE1	14:AL:94:ARG:HG2	2.13	0.48
27:AY:50:SER:O	27:AY:54:MET:HG2	2.12	0.48
30:Ab:123:LYS:O	30:Ab:126:GLU:HG2	2.13	0.48
43:BD:91:PRO:HG2	43:BD:94:ARG:HD3	1.96	0.48
47:BH:54:ASP:OD1	65:BZ:63:MET:HE3	2.13	0.48
53:BN:60:VAL:HG11	53:BN:119:ILE:HG23	1.96	0.48
54:BO:39:ALA:HB1	60:BU:35:PHE:CD1	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:BO:105:ASP:O	54:BO:109:MET:HG3	2.13	0.48
55:BP:41:PHE:O	55:BP:45:ALA:N	2.46	0.48
61:BV:43:ARG:NH1	61:BV:57:ILE:O	2.46	0.48
63:BX:59:ILE:HD12	63:BX:59:ILE:O	2.12	0.48
65:BZ:46:ARG:CZ	65:BZ:48:LEU:HD21	2.43	0.48
67:Bb:9:ALA:HB2	67:Bb:47:LEU:HD21	1.94	0.48
2:1:181:U:H2'	2:1:182:C:H5'	1.96	0.48
2:1:728:C:H2'	2:1:729:G:O4'	2.13	0.48
2:1:2314:G:O2'	2:1:2315:C:H5'	2.14	0.48
3:4:211:C:H2'	3:4:212:C:O4'	2.12	0.48
3:4:449:C:H2'	3:4:450:G:O4'	2.13	0.48
3:4:1389:G:H2'	3:4:1390:C:C6	2.48	0.48
13:AJ:90:VAL:HG11	31:Ac:82:VAL:HG23	1.95	0.48
23:AU:13:ARG:HG3	23:AU:17:ARG:NH1	2.29	0.48
38:Aj:114:PRO:HB3	38:Aj:165:VAL:HG22	1.96	0.48
41:BB:37:PHE:CD1	41:BB:161:PRO:HG3	2.48	0.48
43:BD:58:ARG:HG3	43:BD:96:LEU:HD22	1.96	0.48
49:BJ:61:LEU:HD23	49:BJ:125:ILE:HD12	1.96	0.48
54:BO:24:TYR:CD1	54:BO:34:ILE:HD11	2.49	0.48
58:BS:17:LEU:CD1	58:BS:54:ILE:HG23	2.43	0.48
58:BS:44:LYS:HG2	58:BS:47:ARG:HH12	1.78	0.48
63:BX:36:ILE:O	63:BX:68:THR:HA	2.13	0.48
2:1:535:G:H5''	2:1:538:C:H1'	1.94	0.48
2:1:618:A:H2'	2:1:619:G:O4'	2.13	0.48
2:1:635:U:H2'	2:1:636:C:H6	1.77	0.48
2:1:1849:G:O2'	2:1:1850:U:H5'	2.14	0.48
2:1:2667:OMG:O4'	2:1:2696:G:O2'	2.16	0.48
3:4:17:C:H2'	3:4:18:C:H6	1.78	0.48
3:4:927:U:OP1	3:4:927:U:H2'	2.13	0.48
3:4:1269:G:OP1	60:BU:44:ARG:NH2	2.47	0.48
3:4:1420:G:H4'	25:AW:46:ASN:HD21	1.77	0.48
7:AD:65:ARG:O	7:AD:68:GLU:HG2	2.13	0.48
8:AE:43:PHE:HB3	8:AE:46:THR:HG21	1.95	0.48
12:AI:103:GLU:OE1	25:AW:23:ARG:HA	2.13	0.48
13:AJ:30:ASP:HB2	13:AJ:31:GLU:OE1	2.13	0.48
14:AL:122:MET:HG2	14:AL:141:ILE:CD1	2.43	0.48
22:AT:169:PRO:O	22:AT:172:VAL:HG22	2.14	0.48
44:BE:185:GLY:O	44:BE:187:ASN:N	2.47	0.48
45:BF:13:THR:HG23	45:BF:39:GLU:OE2	2.14	0.48
64:BY:41:CYS:HB2	64:BY:48:LEU:CD2	2.43	0.48
67:Bb:17:ARG:HH11	67:Bb:54:LEU:HD11	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:476:C:H2'	2:1:477:G:O4'	2.14	0.48
2:1:487:U:O2	34:Af:39:PRO:HD3	2.13	0.48
2:1:1358:C:H2'	2:1:1359:G:H8	1.78	0.48
2:1:1430:A:H5'	2:1:1431:A:OP2	2.14	0.48
2:1:2988:A:H2'	2:1:2989:G:O4'	2.14	0.48
3:4:381:C:H2'	3:4:382:G:H8	1.79	0.48
3:4:393:A:H3'	3:4:394:C:H6	1.79	0.48
3:4:420:G:H2'	3:4:421:A:C8	2.49	0.48
3:4:1400:G:H2'	3:4:1401:G:C8	2.48	0.48
14:AL:94:ARG:HB2	14:AL:96:GLU:HG2	1.95	0.48
22:AT:48:VAL:O	22:AT:52:ILE:HG23	2.13	0.48
24:AV:117:ILE:O	24:AV:121:LYS:HE3	2.14	0.48
27:AY:76:GLU:HG3	27:AY:179:LEU:CD1	2.43	0.48
41:BB:7:TYR:CD2	41:BB:52:LYS:HG3	2.49	0.48
45:BF:201:LYS:NZ	48:BI:18:GLU:OE2	2.46	0.48
46:BG:32:LEU:HB2	46:BG:106:ILE:HD12	1.96	0.48
46:BG:35:GLY:N	46:BG:57:ILE:O	2.44	0.48
49:BJ:80:ALA:HB1	49:BJ:109:GLU:HG3	1.96	0.48
54:BO:32:ILE:HG13	54:BO:36:THR:HG22	1.94	0.48
56:BQ:130:LYS:HG3	56:BQ:135:ILE:HD11	1.95	0.48
63:BX:28:LYS:HE2	63:BX:72:ASN:CG	2.39	0.48
65:BZ:14:VAL:HG23	65:BZ:64:LEU:HB2	1.96	0.48
2:1:272:A:H2'	2:1:273:C:O4'	2.14	0.48
2:1:444:A:H2'	2:1:445:C:C6	2.49	0.48
2:1:582:C:H2'	2:1:583:C:C6	2.48	0.48
2:1:1402:A:O2'	2:1:1403:A:H2'	2.14	0.48
2:1:1798:A:H1'	2:1:2942:A:H5'	1.96	0.48
2:1:2010:A:N7	72:1:3677:HOH:O	2.35	0.48
2:1:2706:G:H2'	2:1:2707:OMU:H6	1.95	0.48
2:1:2752:G:H4'	5:AB:98:TYR:CE1	2.49	0.48
3:4:888:G:H2'	3:4:889:C:C6	2.49	0.48
3:4:1069:G:H5'	3:4:1149:A:C2	2.49	0.48
3:4:1282:G:N2	3:4:1284:A:H3'	2.29	0.48
3:4:1319:G:H2'	3:4:1320:C:C6	2.49	0.48
72:4:3709:HOH:O	57:BR:138:LYS:CE	2.59	0.48
15:AM:180:LEU:HB3	15:AM:181:PRO:HD3	1.96	0.48
19:AQ:25:ALA:HB2	19:AQ:46:LEU:HD13	1.95	0.48
33:Ae:27:GLU:HG2	33:Ae:28:ASP:OD1	2.13	0.48
41:BB:85:PRO:HB2	41:BB:174:PHE:HD2	1.78	0.48
43:BD:30:GLN:O	43:BD:34:GLU:HG3	2.13	0.48
43:BD:87:ASP:O	43:BD:90:VAL:HG22	2.12	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:BF:156:ALA:O	45:BF:161:LYS:HE2	2.13	0.48
59:BT:51:LEU:O	59:BT:56:ARG:NH1	2.46	0.48
60:BU:84:ILE:HD12	60:BU:92:ARG:HB2	1.96	0.48
60:BU:127:GLY:O	60:BU:131:VAL:HG23	2.13	0.48
61:BV:88:GLU:OE1	61:BV:89:PRO:HD2	2.13	0.48
64:BY:41:CYS:HB2	64:BY:48:LEU:HD21	1.95	0.48
2:1:326:A:O2'	2:1:327:A:H5'	2.13	0.48
2:1:1171:A:H5''	2:1:1172:A:H4'	1.94	0.48
2:1:1172:A:H4'	2:1:1172:A:OP1	2.13	0.48
2:1:1401:G:H1'	2:1:2825:C:N4	2.29	0.48
2:1:2398:A:H4'	2:1:2399:A:O4'	2.14	0.48
2:1:2403:U:H2'	2:1:2404:C:C6	2.49	0.48
3:4:101:C:H2'	72:4:4367:HOH:O	2.13	0.48
7:AD:20:GLU:OE1	7:AD:136:ARG:HD2	2.13	0.48
27:AY:72:ASP:N	27:AY:72:ASP:OD1	2.45	0.48
28:AZ:77:ARG:HB3	28:AZ:79:HIS:NE2	2.28	0.48
38:Aj:155:GLN:NE2	38:Aj:171:THR:OG1	2.45	0.48
40:BA:199:VAL:HG11	40:BA:202:TYR:CE1	2.49	0.48
43:BD:65:ALA:HA	43:BD:68:ARG:NH1	2.28	0.48
43:BD:73:VAL:HB	43:BD:74:PRO:HD3	1.95	0.48
43:BD:105:GLU:HA	43:BD:110:THR:HG21	1.95	0.48
51:BL:49:ARG:O	51:BL:50:LEU:HD13	2.13	0.48
54:BO:22:VAL:HG22	54:BO:52:LEU:HD12	1.96	0.48
58:BS:50:VAL:O	58:BS:54:ILE:HG12	2.14	0.48
2:1:397:G:H2'	2:1:398:G:O4'	2.14	0.48
2:1:601:G:H4'	38:Aj:17:TYR:CE2	2.49	0.48
2:1:792:A:N3	2:1:2557:U:O2'	2.39	0.48
2:1:1678:G:H2'	2:1:1679:U:O4'	2.14	0.48
2:1:2125:G:H2'	2:1:2126:G:H5'	1.95	0.48
2:1:2516:G:O2'	2:1:2517:C:H5''	2.13	0.48
2:1:2777:A:H2'	2:1:2778:G:O4'	2.13	0.48
72:1:5882:HOH:O	36:Ah:45:LYS:HG2	2.14	0.48
3:4:292:G:O2'	72:4:3103:HOH:O	2.20	0.48
3:4:1013:C:O2'	3:4:1014:A:H5''	2.13	0.48
3:4:1492:C:H3'	63:BX:91:ARG:NH2	2.28	0.48
3:4:1493:A:O2'	63:BX:92:VAL:O	2.15	0.48
7:AD:162:ARG:O	7:AD:166:VAL:HG23	2.14	0.48
12:AI:27:LEU:HB3	12:AI:38:LEU:HD11	1.95	0.48
31:Ac:84:ARG:NH1	31:Ac:84:ARG:HB2	2.28	0.48
38:Aj:20:LEU:HD21	38:Aj:67:ALA:HB1	1.96	0.48
41:BB:27:LEU:HB2	41:BB:149:THR:CG2	2.43	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:BE:83:MET:HE1	44:BE:236:ILE:CD1	2.44	0.48
50:BK:53:VAL:HA	50:BK:56:GLN:HG2	1.96	0.48
50:BK:61:LEU:HB2	50:BK:108:TYR:HE1	1.78	0.48
56:BQ:23:PRO:HG2	56:BQ:26:ILE:HB	1.96	0.48
62:BW:93:LEU:HD23	62:BW:107:PRO:HA	1.96	0.48
2:1:35:G:H2'	2:1:36:C:C6	2.48	0.47
2:1:188:A:H2'	2:1:189:C:O4'	2.14	0.47
2:1:1033:C:H2'	2:1:1034:C:H5'	1.96	0.47
2:1:2504:G:H4'	2:1:2505:A:C5	2.49	0.47
3:4:219:A:O2'	3:4:220:G:H5'	2.14	0.47
3:4:555:C:O2'	3:4:556:A:H5'	2.14	0.47
3:4:714:A:H5''	3:4:715:C:C5	2.49	0.47
3:4:879:A2M:HM'3	3:4:879:A2M:H1'	1.56	0.47
13:AJ:15:LEU:CD2	31:Ac:75:ALA:HB2	2.44	0.47
26:AX:23:LEU:O	26:AX:27:ARG:HG3	2.13	0.47
39:Ak:78:LYS:O	39:Ak:82:LYS:HD3	2.14	0.47
46:BG:37:GLU:HB3	46:BG:54:LYS:NZ	2.29	0.47
49:BJ:46:ILE:O	49:BJ:61:LEU:HD12	2.13	0.47
55:BP:40:CYS:HA	55:BP:43:GLU:OE1	2.14	0.47
56:BQ:16:ARG:HD3	56:BQ:62:LEU:HD11	1.95	0.47
59:BT:79:ARG:HG3	59:BT:80:LEU:HD13	1.96	0.47
60:BU:18:LYS:HE2	72:BU:208:HOH:O	2.14	0.47
64:BY:28:GLU:OE2	64:BY:63:VAL:HG21	2.14	0.47
68:Bc:45:SER:O	68:Bc:49:ARG:HG3	2.14	0.47
2:1:67:G:H22	2:1:102:A:H2	1.62	0.47
2:1:243:G:N3	2:1:462:G:O2'	2.45	0.47
72:1:4027:HOH:O	12:AI:99:TRP:HD1	1.97	0.47
3:4:62:G:N3	72:4:3161:HOH:O	2.35	0.47
3:4:322:G:OP2	49:BJ:25:LYS:NZ	2.40	0.47
3:4:559:U:H4'	48:BI:80:PRO:HB3	1.97	0.47
5:AB:57:VAL:HG12	5:AB:69:GLU:HG3	1.96	0.47
5:AB:273:GLY:HA3	5:AB:295:TYR:CE1	2.49	0.47
16:AN:74:SER:O	16:AN:78:THR:HG23	2.13	0.47
16:AN:83:ASP:HA	16:AN:86:TYR:CE1	2.49	0.47
24:AV:28:LEU:HD11	24:AV:72:LEU:HD23	1.96	0.47
33:Ae:18:ALA:HB2	33:Ae:34:ALA:HB1	1.96	0.47
40:BA:134:THR:HG22	40:BA:189:MET:SD	2.54	0.47
41:BB:35:ARG:NH2	68:Bc:54:PRO:HB3	2.18	0.47
43:BD:59:ALA:O	43:BD:63:MET:HG3	2.13	0.47
44:BE:155:THR:HG22	44:BE:156:PHE:CD2	2.49	0.47
45:BF:186:PHE:O	45:BF:190:VAL:HG23	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:BQ:92:ILE:O	56:BQ:96:LEU:HG	2.15	0.47
61:BV:31:HIS:HB2	61:BV:34:SER:OG	2.15	0.47
67:Bb:27:LYS:NZ	72:Bb:101:HOH:O	2.21	0.47
2:1:63:A:H5'	2:1:65:A:C8	2.49	0.47
2:1:219:C:OP1	11:AH:134:LYS:NZ	2.29	0.47
2:1:350:A:OP2	6:AC:243:ASN:HB2	2.14	0.47
2:1:648:C:O2'	72:1:3404:HOH:O	2.20	0.47
2:1:912:G:H2'	2:1:913:C:C6	2.49	0.47
2:1:1028:A:O2'	2:1:1030:A:OP2	2.29	0.47
2:1:1121:A:H2'	2:1:1122:G:O4'	2.13	0.47
2:1:1307:C:H3'	72:1:3584:HOH:O	2.14	0.47
2:1:1547:G:H2'	2:1:1548:U:O4'	2.13	0.47
2:1:1643:U:C2'	2:1:1644:G:H5'	2.43	0.47
2:1:1737:G:H2'	2:1:1738:C:C6	2.49	0.47
2:1:2008:C:H2'	2:1:2009:G:O4'	2.14	0.47
2:1:2732:G:H2'	2:1:2733:U:C6	2.49	0.47
3:4:899:C:O2'	3:4:1310:C:OP2	2.32	0.47
3:4:1057:G:C2'	3:4:1058:G:H5''	2.39	0.47
3:4:1118:A:H5''	51:BL:47:THR:HG22	1.95	0.47
69:4:3015:SPM:C3	72:4:3930:HOH:O	2.61	0.47
6:AC:173:VAL:HB	6:AC:271:LEU:HD11	1.96	0.47
7:AD:39:ALA:HA	7:AD:72:VAL:HG11	1.96	0.47
7:AD:176:GLN:NE2	7:AD:178:ASP:OD2	2.47	0.47
14:AL:84:LEU:O	14:AL:88:VAL:HG13	2.13	0.47
23:AU:7:ILE:HG22	26:AX:39:ARG:HH11	1.78	0.47
24:AV:83:THR:HG22	24:AV:93:TYR:CD1	2.49	0.47
24:AV:118:GLU:HA	24:AV:121:LYS:HG2	1.96	0.47
38:Aj:5:LEU:HD11	38:Aj:34:ALA:HB2	1.96	0.47
41:BB:13:LEU:CD2	41:BB:51:ILE:HD13	2.44	0.47
45:BF:27:ILE:CD1	45:BF:30:ILE:HD12	2.44	0.47
46:BG:74:GLY:O	46:BG:103:GLY:HA3	2.14	0.47
62:BW:97:ALA:HB3	62:BW:104:VAL:HB	1.96	0.47
67:Bb:39:LEU:HD21	67:Bb:55:LEU:HD22	1.96	0.47
2:1:77:G:O2'	2:1:78:C:H5'	2.14	0.47
2:1:132:A:N1	2:1:1540:G:O2'	2.36	0.47
2:1:282:G:H5''	15:AM:56:PRO:HB2	1.95	0.47
2:1:690:A:H2'	2:1:691:G:O4'	2.15	0.47
2:1:876:C:OP2	72:1:3408:HOH:O	2.21	0.47
2:1:925:U:H1'	2:1:2559:G:OP1	2.15	0.47
2:1:2585:A:H2'	2:1:2586:G:O4'	2.14	0.47
3:4:200:U:H2'	3:4:201:G:C8	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:420:G:O4'	66:Ba:40:ARG:HD3	2.14	0.47
3:4:1142:A:H5'	47:BH:11:LYS:HZ2	1.80	0.47
13:AJ:9:ARG:HB2	13:AJ:61:LYS:HZ2	1.79	0.47
15:AM:144:ASP:HB3	15:AM:147:TYR:HB2	1.94	0.47
20:AR:65:GLU:O	20:AR:69:LEU:HG	2.15	0.47
25:AW:34:ARG:O	25:AW:38:VAL:HG22	2.15	0.47
41:BB:67:ARG:NH2	68:Bc:35:PRO:HA	2.30	0.47
47:BH:147:ILE:HD12	47:BH:148:ILE:H	1.79	0.47
48:BI:45:GLY:O	48:BI:66:LEU:HD12	2.15	0.47
50:BK:105:LYS:O	50:BK:109:GLU:HG2	2.14	0.47
2:1:140:C:H5'	23:AU:33:GLN:HE21	1.79	0.47
2:1:237:A:H2'	2:1:238:A:C8	2.49	0.47
2:1:1253:A:O2'	2:1:1254:G:OP1	2.23	0.47
2:1:1310:G:OP1	27:AY:139:LYS:NZ	2.46	0.47
2:1:1481:A:H2'	2:1:1482:A:C8	2.49	0.47
2:1:2469:G:N1	2:1:2475:A:OP2	2.35	0.47
2:1:2721:G:H2'	2:1:2722:G:O4'	2.14	0.47
3:4:53:G:H2'	3:4:54:C:C6	2.49	0.47
3:4:339:C:H2'	3:4:340:C:C6	2.49	0.47
3:4:926:U:OP2	72:4:3104:HOH:O	2.20	0.47
17:AO:50:ILE:HG21	17:AO:52:ARG:HH21	1.79	0.47
17:AO:52:ARG:HB2	17:AO:55:GLY:O	2.14	0.47
43:BD:47:ARG:O	43:BD:51:LYS:HG2	2.15	0.47
44:BE:90:PRO:HG2	61:BV:19:LEU:HD23	1.96	0.47
44:BE:196:GLU:CG	57:BR:143:THR:HG23	2.44	0.47
45:BF:12:LYS:HE2	45:BF:12:LYS:HB2	1.50	0.47
46:BG:79:TYR:CE1	46:BG:100:LEU:HB2	2.50	0.47
47:BH:122:LYS:HD2	47:BH:197:MET:HE1	1.97	0.47
50:BK:38:ILE:HG12	50:BK:87:THR:HG21	1.95	0.47
54:BO:81:ARG:NH1	72:BO:205:HOH:O	2.48	0.47
62:BW:95:LEU:HD12	62:BW:104:VAL:O	2.15	0.47
67:Bb:17:ARG:O	67:Bb:20:GLU:HG3	2.14	0.47
2:1:836:C:H2'	2:1:837:C:C6	2.49	0.47
2:1:1254:G:H5'	72:1:7081:HOH:O	2.13	0.47
2:1:1536:C:H2'	2:1:1537:G:H8	1.79	0.47
2:1:1771:G:H1'	72:1:4783:HOH:O	2.14	0.47
2:1:2867:C:OP1	72:1:3407:HOH:O	2.21	0.47
3:4:327:U:H2'	3:4:328:G:O4'	2.14	0.47
3:4:545:G:H2'	3:4:546:C:C6	2.49	0.47
3:4:853:G:OP2	3:4:854:A:O2'	2.25	0.47
3:4:870:U:OP2	72:4:3105:HOH:O	2.20	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:1162:A:OP1	3:4:1162:A:H3'	2.14	0.47
26:AX:43:GLU:O	26:AX:44:LYS:HD2	2.15	0.47
28:AZ:93:GLU:HB3	28:AZ:96:LYS:HD3	1.97	0.47
40:BA:31:TYR:HD1	40:BA:40:PHE:HA	1.79	0.47
42:BC:142:VAL:CG2	42:BC:146:LEU:HD21	2.45	0.47
49:BJ:61:LEU:HD23	49:BJ:125:ILE:CD1	2.44	0.47
53:BN:84:VAL:HG21	53:BN:124:PHE:CE2	2.50	0.47
57:BR:24:VAL:CG1	57:BR:49:HIS:HB3	2.45	0.47
63:BX:52:GLU:HG3	63:BX:58:ALA:CB	2.42	0.47
68:Bc:16:ASP:HB2	68:Bc:21:TRP:O	2.14	0.47
1:2:37:G:O2'	1:2:38:G:H5'	2.13	0.47
2:1:63:A:H5''	2:1:64:U:H3'	1.97	0.47
2:1:858:U:H2'	2:1:859:C:C6	2.50	0.47
2:1:1027:C:O2'	2:1:1028:A:H5'	2.15	0.47
2:1:1253:A:O2'	2:1:1254:G:H5''	2.15	0.47
2:1:1265:A:H2'	2:1:1266:C:C6	2.49	0.47
2:1:1279:C:H2'	2:1:1280:G:O4'	2.14	0.47
2:1:1385:C:OP1	6:AC:108:ARG:HA	2.14	0.47
2:1:1588:A:H2'	2:1:1589:G:O4'	2.14	0.47
2:1:1893:U:OP1	72:1:3409:HOH:O	2.21	0.47
2:1:2001:A:H2'	2:1:2002:A:O4'	2.14	0.47
2:1:2846:G:OP1	5:AB:320:LYS:NZ	2.48	0.47
2:1:2965:G:H2'	2:1:2966:U:C6	2.50	0.47
3:4:539:C:H2'	3:4:540:C:C6	2.49	0.47
3:4:664:A:H4'	3:4:665:A:O5'	2.14	0.47
3:4:760:U:O2'	3:4:761:G:H5'	2.14	0.47
3:4:883:A:H2'	3:4:884:A:C8	2.49	0.47
3:4:1358:G:H2'	3:4:1359:C:C6	2.50	0.47
8:AE:181:GLY:O	35:Ag:3:ILE:HG21	2.15	0.47
9:AF:82:PRO:O	9:AF:86:GLU:HG2	2.15	0.47
9:AF:98:LYS:HG3	9:AF:110:ALA:HB1	1.97	0.47
12:AI:52:VAL:HG22	12:AI:53:HIS:H	1.80	0.47
13:AJ:21:ARG:HD3	13:AJ:43:SER:O	2.14	0.47
28:AZ:65:PRO:HA	37:Ai:92:GLU:HB3	1.97	0.47
29:Aa:53:LEU:HG	29:Aa:57:LEU:HD23	1.97	0.47
41:BB:74:LEU:HA	41:BB:96:LYS:O	2.15	0.47
45:BF:29:GLU:HG3	45:BF:33:ASN:ND2	2.29	0.47
45:BF:43:VAL:HG21	45:BF:107:LYS:O	2.14	0.47
45:BF:55:LEU:HD13	45:BF:159:VAL:HG23	1.97	0.47
46:BG:6:LEU:CD1	46:BG:113:ILE:HB	2.45	0.47
46:BG:72:VAL:CG2	46:BG:103:GLY:HA2	2.40	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:BG:85:PRO:CG	46:BG:86:PRO:HD3	2.44	0.47
46:BG:127:PRO:HD2	67:Bb:10:ALA:HB1	1.94	0.47
51:BL:43:ILE:HD11	51:BL:77:LEU:HB3	1.96	0.47
52:BM:23:ILE:HB	52:BM:87:VAL:HG12	1.97	0.47
52:BM:65:MET:SD	52:BM:108:ALA:HB2	2.55	0.47
52:BM:85:ILE:CG2	52:BM:119:ILE:HG23	2.45	0.47
54:BO:134:THR:OG1	54:BO:135:GLY:N	2.45	0.47
55:BP:40:CYS:O	55:BP:44:VAL:HG22	2.14	0.47
60:BU:129:SER:OG	60:BU:133:ARG:NH1	2.48	0.47
2:1:1358:C:OP1	30:Ab:117:ARG:NH2	2.47	0.47
2:1:2042:C:H2'	2:1:2043:C:H1'	1.97	0.47
2:1:2667:OMG:C2	2:1:2697:G:H1'	2.50	0.47
4:AA:107:GLU:HG2	4:AA:114:GLY:N	2.30	0.47
17:AO:156:LYS:HE2	17:AO:178:GLU:OE2	2.15	0.47
32:Ad:3:GLY:O	32:Ad:7:MET:HG2	2.15	0.47
50:BK:36:VAL:CG1	50:BK:43:LEU:HD12	2.42	0.47
51:BL:43:ILE:CD1	51:BL:77:LEU:HB3	2.45	0.47
58:BS:25:THR:OG1	58:BS:26:GLU:N	2.46	0.47
59:BT:29:PHE:CD2	59:BT:122:PRO:HB2	2.50	0.47
65:BZ:31:VAL:HG21	65:BZ:74:ILE:CD1	2.45	0.47
2:1:186:G:OP1	11:AH:130:ARG:NH2	2.35	0.47
2:1:271:A:H2'	2:1:272:A:C8	2.50	0.47
2:1:1562:A:H3'	2:1:1563:G:C8	2.50	0.47
2:1:2044:PSU:O2'	2:1:2045:C:H5'	2.15	0.47
3:4:93:C:H2'	3:4:94:U:C6	2.50	0.47
3:4:206:C:H2'	3:4:207:C:O4'	2.13	0.47
3:4:432:U:H2'	3:4:433:G:C8	2.50	0.47
3:4:508:M7A:OP2	43:BD:38:ARG:NH2	2.45	0.47
3:4:885:U:H2'	3:4:886:U:C6	2.50	0.47
5:AB:38:LYS:HE3	5:AB:40:THR:HB	1.96	0.47
6:AC:61:ARG:NH1	6:AC:138:GLU:OE2	2.47	0.47
6:AC:159:ARG:HD3	6:AC:267:GLY:O	2.15	0.47
6:AC:163:VAL:CG1	6:AC:269:LEU:HD13	2.45	0.47
7:AD:101:PHE:O	7:AD:162:ARG:NH1	2.48	0.47
11:AH:57:TRP:HB2	11:AH:60:ASN:HD22	1.79	0.47
12:AI:94:ARG:HB3	12:AI:95:PRO:HD2	1.96	0.47
34:Af:7:LEU:O	34:Af:11:LEU:HG	2.15	0.47
38:Aj:174:LYS:HE3	38:Aj:174:LYS:HB3	1.68	0.47
40:BA:122:ASP:OD1	40:BA:162:ASP:HA	2.15	0.47
41:BB:112:LEU:HD23	41:BB:113:SER:N	2.29	0.47
47:BH:141:ARG:NH1	65:BZ:12:ASP:OD1	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:BJ:39:PRO:CD	49:BJ:119:PRO:HB2	2.45	0.47
63:BX:21:VAL:HG22	63:BX:22:TYR:H	1.79	0.47
67:Bb:17:ARG:NH1	67:Bb:54:LEU:HD21	2.30	0.47
1:2:17:U:OP2	1:2:73:C:O2'	2.30	0.47
2:1:329:U:C5	24:AV:56:MET:HE3	2.50	0.47
2:1:582:C:O2'	2:1:583:C:H5'	2.15	0.47
2:1:843:G:O2'	2:1:844:A:OP2	2.32	0.47
2:1:1452:C:O2'	2:1:1453:U:H5'	2.15	0.47
2:1:1615:A:H2'	2:1:1616:A:C8	2.50	0.47
2:1:1909:A:N6	37:AI:19:TYR:HA	2.30	0.47
3:4:193:A:H2'	3:4:194:A:C8	2.50	0.47
3:4:366:G:N2	3:4:368:A:H3'	2.30	0.47
3:4:1335:C:H2'	3:4:1336:G:C8	2.50	0.47
6:AC:112:ALA:HB3	6:AC:115:THR:HG23	1.96	0.47
7:AD:49:GLU:OE2	7:AD:50:PRO:HD2	2.15	0.47
10:AG:55:VAL:HG11	10:AG:143:LEU:HD22	1.97	0.47
13:AK:84:GLU:OE1	13:AK:87:LYS:NZ	2.48	0.47
41:BB:77:THR:OG1	41:BB:124:VAL:HB	2.15	0.47
45:BF:36:LEU:HB2	68:Bc:28:ARG:HD2	1.96	0.47
45:BF:196:ASN:HA	45:BF:199:TYR:HD1	1.80	0.47
47:BH:61:ILE:HD13	47:BH:132:ILE:HD12	1.97	0.47
48:BI:118:GLU:OE2	48:BI:119:LYS:HG3	2.15	0.47
56:BQ:2:PRO:HG2	56:BQ:6:ARG:HG2	1.97	0.47
58:BS:40:ASP:O	58:BS:42:PRO:HD3	2.15	0.47
60:BU:12:LEU:HA	60:BU:138:ILE:CD1	2.44	0.47
60:BU:74:LEU:HD12	60:BU:105:LEU:HD11	1.97	0.47
65:BZ:11:GLU:OE1	65:BZ:11:GLU:N	2.37	0.47
65:BZ:51:ASN:ND2	72:BZ:103:HOH:O	2.46	0.47
65:BZ:64:LEU:CD1	72:BZ:101:HOH:O	2.62	0.47
2:1:709:C:O2'	2:1:774:U:OP1	2.29	0.46
2:1:860:U:OP2	2:1:1819:C:O2'	2.25	0.46
2:1:923:G:H2'	72:1:4808:HOH:O	2.15	0.46
2:1:2627:U:H2'	2:1:2628:OMU:H6	1.96	0.46
3:4:1134:U:H3'	3:4:1135:A:C8	2.50	0.46
3:4:1417:U:H2'	3:4:1418:G:C8	2.50	0.46
3:4:1440:C:H2'	3:4:1441:A:C8	2.50	0.46
3:4:1451:A:H2'	3:4:1451:A:OP2	2.15	0.46
7:AD:101:PHE:CD1	7:AD:107:VAL:HB	2.50	0.46
12:AI:103:GLU:OE1	25:AW:23:ARG:NE	2.34	0.46
16:AN:56:GLU:OE2	16:AN:165:ARG:HD2	2.15	0.46
22:AT:142:ASN:HB3	22:AT:154:PHE:O	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:BF:61:GLN:NE2	45:BF:68:GLU:HG3	2.28	0.46
46:BG:19:PHE:HB2	46:BG:21:ILE:HD11	1.96	0.46
51:BL:54:VAL:HG23	51:BL:67:ASP:HB3	1.96	0.46
58:BS:25:THR:HA	58:BS:58:VAL:HG11	1.97	0.46
59:BT:76:LYS:O	59:BT:80:LEU:HD22	2.15	0.46
63:BX:87:GLU:HA	63:BX:90:LYS:HG2	1.97	0.46
67:Bb:30:GLU:O	67:Bb:34:ILE:HG13	2.15	0.46
2:1:218:C:OP1	11:AH:128:LYS:NZ	2.30	0.46
2:1:237:A:H2'	2:1:238:A:H8	1.80	0.46
2:1:491:A:H2'	2:1:492:OMC:O4'	2.15	0.46
2:1:1663:C:H2'	2:1:1664:G:H8	1.79	0.46
2:1:1769:U:H3'	72:1:5533:HOH:O	2.15	0.46
2:1:1919:A:H5'	2:1:2722:G:H4'	1.97	0.46
2:1:2217:G:H1	2:1:2311:U:H3	1.62	0.46
3:4:285:A:H3'	3:4:286:C:H6	1.80	0.46
3:4:317:A:H5''	49:BJ:24:ARG:HG3	1.98	0.46
6:AC:101:TYR:O	6:AC:106:TRP:HA	2.14	0.46
9:AF:129:LEU:O	9:AF:133:ILE:HG13	2.15	0.46
20:AR:25:ARG:NH1	20:AR:28:ASP:OD2	2.48	0.46
22:AT:63:TRP:O	22:AT:67:VAL:HG23	2.15	0.46
29:Aa:44:LEU:HD12	29:Aa:79:LYS:HE3	1.97	0.46
43:BD:50:LEU:O	43:BD:54:VAL:HG23	2.16	0.46
45:BF:177:ARG:HD2	72:BF:401:HOH:O	2.15	0.46
52:BM:69:TYR:OH	52:BM:111:ARG:NH2	2.42	0.46
52:BM:106:ILE:HA	52:BM:109:LEU:HD12	1.96	0.46
54:BO:80:ASN:OD1	54:BO:92:HIS:HA	2.16	0.46
56:BQ:29:THR:HB	56:BQ:31:GLU:OE1	2.15	0.46
65:BZ:43:ASP:HB3	65:BZ:46:ARG:HG3	1.96	0.46
2:1:472:A:O2'	2:1:473:G:H5'	2.15	0.46
2:1:529:U:H2'	2:1:530:G:O4'	2.16	0.46
2:1:724:A:H1'	2:1:725:G:OP2	2.16	0.46
2:1:1267:U:H4'	2:1:1268:A:O4'	2.14	0.46
2:1:1890:C:N3	2:1:2829:C:O2'	2.41	0.46
2:1:2803:G:N1	2:1:2833:C:OP2	2.29	0.46
3:4:347:U:O2'	3:4:348:A:H2'	2.16	0.46
3:4:874:A:H2'	3:4:875:C:O4'	2.15	0.46
3:4:1124:A:H4'	3:4:1125:C:O5'	2.15	0.46
6:AC:68:SER:HA	6:AC:71:PHE:CE2	2.50	0.46
11:AH:106:ARG:HB2	11:AH:111:ILE:HD12	1.96	0.46
19:AQ:33:VAL:HG12	19:AQ:34:THR:HG23	1.96	0.46
23:AU:1:MET:HB3	23:AU:37:GLU:OE1	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:AX:43:GLU:C	26:AX:44:LYS:HD2	2.41	0.46
27:AY:76:GLU:O	27:AY:80:LYS:HG2	2.16	0.46
27:AY:83:ARG:O	27:AY:138:LEU:HD12	2.15	0.46
38:Aj:84:PRO:HD2	38:Aj:88:TRP:CE3	2.50	0.46
47:BH:106:HIS:CA	50:BK:50:MET:HE2	2.44	0.46
50:BK:64:ASP:HA	50:BK:67:LYS:CG	2.44	0.46
54:BO:84:ASP:HB2	54:BO:89:ARG:O	2.14	0.46
56:BQ:28:TYR:CZ	56:BQ:36:LEU:HD11	2.50	0.46
61:BV:89:PRO:HG2	61:BV:92:ILE:CG1	2.44	0.46
2:1:44:A:H2'	2:1:45:A:C8	2.50	0.46
2:1:965:G:O2'	2:1:1054:A:N3	2.47	0.46
2:1:2703:A:H2'	2:1:2704:OMC:C6	2.50	0.46
2:1:2733:U:H2'	2:1:2734:C:C6	2.51	0.46
3:4:201:G:O2'	3:4:202:G:H5'	2.16	0.46
3:4:220:G:H2'	3:4:221:U:O4'	2.15	0.46
3:4:339:C:H4'	3:4:1400:G:H4'	1.96	0.46
3:4:1260:G:H21	60:BU:47:MET:CE	2.28	0.46
3:4:1308:C:H2'	3:4:1309:C:C6	2.50	0.46
3:4:1390:C:O2'	3:4:1391:C:H5'	2.15	0.46
8:AE:90:TRP:CE2	8:AE:149:ARG:HB2	2.51	0.46
9:AF:15:LEU:CB	9:AF:18:LYS:HD2	2.45	0.46
9:AF:64:LYS:CE	9:AF:148:ARG:HB2	2.46	0.46
10:AG:123:ILE:HB	10:AG:128:ILE:HD11	1.98	0.46
13:AJ:28:ILE:HD13	13:AJ:34:VAL:CG1	2.46	0.46
25:AW:47:PRO:HB2	25:AW:48:ARG:HH11	1.80	0.46
40:BA:101:LEU:HD21	40:BA:131:LEU:HD22	1.98	0.46
41:BB:35:ARG:HA	41:BB:35:ARG:HD2	1.75	0.46
44:BE:96:ARG:HB2	44:BE:110:ILE:HG21	1.98	0.46
50:BK:12:ARG:O	50:BK:31:PRO:HD3	2.14	0.46
58:BS:13:ALA:CA	58:BS:54:ILE:HD11	2.45	0.46
63:BX:12:LYS:NZ	72:BX:203:HOH:O	2.47	0.46
64:BY:33:SER:OG	64:BY:34:HIS:ND1	2.48	0.46
3:4:52:U:H2'	3:4:53:G:H8	1.79	0.46
3:4:469:A:O3'	43:BD:22:LYS:NZ	2.47	0.46
5:AB:26:PRO:HG2	5:AB:311:VAL:CG2	2.45	0.46
7:AD:35:LEU:HD21	7:AD:52:LEU:HD23	1.96	0.46
11:AH:44:LEU:HA	11:AH:81:PRO:HB3	1.98	0.46
22:AT:59:GLN:HB3	22:AT:177:TYR:CE1	2.51	0.46
29:Aa:36:ILE:CD1	29:Aa:61:LEU:HD11	2.44	0.46
46:BG:77:LYS:HG2	46:BG:102:ARG:CG	2.46	0.46
49:BJ:66:TYR:CE1	49:BJ:81:LYS:HG3	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:BM:36:ASP:OD1	52:BM:38:THR:OG1	2.21	0.46
2:1:28:G:H1'	2:1:485:A:C4	2.50	0.46
2:1:86:A:H2'	2:1:87:G:O4'	2.15	0.46
2:1:603:U:OP2	13:AK:48:ARG:HD2	2.15	0.46
2:1:1350:G:H5''	30:Ab:78:ARG:HG2	1.97	0.46
2:1:1537:G:H2'	2:1:1538:C:H6	1.80	0.46
2:1:2042:C:H2'	2:1:2043:C:C1'	2.45	0.46
2:1:2521:C:H2'	72:1:3670:HOH:O	2.15	0.46
2:1:2770:G:H5''	12:AI:7:LYS:HZ2	1.80	0.46
3:4:288:G:OP2	49:BJ:19:LYS:NZ	2.49	0.46
3:4:445:A:H2'	3:4:446:A:O4'	2.16	0.46
3:4:778:C:H1'	63:BX:8:ARG:HH22	1.80	0.46
3:4:811:C:H2'	3:4:812:C:C6	2.51	0.46
3:4:1059:C:C4	3:4:1061:A:H5'	2.51	0.46
3:4:1111:G:O2'	3:4:1112:C:H5'	2.15	0.46
3:4:1137:G:H2'	3:4:1138:C:C6	2.50	0.46
3:4:1211:OMG:HM21	60:BU:54:ILE:HG21	1.97	0.46
4:AA:134:ASN:O	4:AA:135:LYS:HD3	2.16	0.46
5:AB:152:ARG:CZ	5:AB:159:LYS:HG2	2.45	0.46
6:AC:219:ARG:HD2	6:AC:220:TYR:CZ	2.51	0.46
8:AE:31:LYS:HD2	8:AE:40:VAL:HG22	1.97	0.46
17:AO:59:VAL:HG11	17:AO:98:ILE:HD12	1.98	0.46
19:AQ:97:ARG:HG2	19:AQ:118:TYR:CE1	2.50	0.46
23:AU:45:LYS:HB2	23:AU:69:TYR:CE2	2.50	0.46
32:Ad:7:MET:HA	32:Ad:10:HIS:HD2	1.81	0.46
41:BB:126:PRO:HG3	41:BB:145:ALA:CB	2.46	0.46
43:BD:139:ARG:NH2	61:BV:67:GLY:HA2	2.31	0.46
58:BS:43:SER:HB3	58:BS:46:VAL:HG12	1.96	0.46
60:BU:149:LEU:O	60:BU:153:VAL:HG22	2.15	0.46
63:BX:12:LYS:NZ	72:BX:204:HOH:O	2.47	0.46
64:BY:17:PHE:O	64:BY:66:LEU:N	2.48	0.46
2:1:521:A:H2'	2:1:522:A:C8	2.51	0.46
2:1:1246:G:H2'	2:1:1247:C:C6	2.51	0.46
2:1:1595:G:H2'	2:1:1596:C:H6	1.80	0.46
2:1:1913:U:O2'	2:1:1914:U:H5'	2.16	0.46
2:1:2463:G:H2'	2:1:2464:C:C6	2.51	0.46
2:1:2952:U:H2'	72:1:3498:HOH:O	2.15	0.46
2:1:3022:U:H2'	2:1:3023:G7M:C8	2.45	0.46
3:4:1273:U:H5''	54:BO:125:LYS:HD3	1.98	0.46
3:4:1391:C:H2'	3:4:1392:C:H6	1.79	0.46
7:AD:13:PRO:O	7:AD:16:ARG:HG2	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:AJ:31:GLU:OE1	13:AJ:31:GLU:N	2.43	0.46
34:Af:46:ARG:NH1	34:Af:46:ARG:HB2	2.30	0.46
48:BI:20:MET:HA	48:BI:20:MET:CE	2.43	0.46
51:BL:51:MET:N	51:BL:51:MET:SD	2.89	0.46
59:BT:17:THR:HG23	59:BT:18:PRO:O	2.16	0.46
2:1:292:U:C5'	72:1:8411:HOH:O	2.60	0.46
2:1:365:C:H2'	2:1:366:G:O4'	2.15	0.46
2:1:425:C:H2'	2:1:426:C:C6	2.51	0.46
2:1:519:G:N2	2:1:522:A:OP2	2.30	0.46
2:1:1339:G:H1'	2:1:1364:A:N6	2.31	0.46
2:1:1439:G:C2'	2:1:1440:G:H5'	2.46	0.46
2:1:2056:5MC:C2'	2:1:2057:A:H5''	2.45	0.46
2:1:2365:C:H2'	2:1:2366:OMG:O4'	2.16	0.46
3:4:73:C:H2'	3:4:74:G:C8	2.51	0.46
3:4:126:G:H1'	72:4:4038:HOH:O	2.15	0.46
3:4:188:C:H2'	3:4:189:C:C6	2.51	0.46
3:4:619:G:H2'	3:4:620:C:C6	2.51	0.46
3:4:919:G:H2'	3:4:920:G:O4'	2.16	0.46
3:4:1117:U:O2	51:BL:44:PRO:HG2	2.15	0.46
3:4:1193:A:C2	72:BT:206:HOH:O	2.50	0.46
3:4:1313:G:O2'	3:4:1339:G:O6	2.31	0.46
5:AB:107:VAL:HG12	5:AB:185:LEU:HG	1.98	0.46
6:AC:203:ALA:HB2	6:AC:245:PRO:HG2	1.97	0.46
13:AJ:37:THR:HB	13:AJ:47:ARG:HB2	1.98	0.46
20:AR:8:VAL:HG13	20:AR:18:VAL:HG22	1.98	0.46
23:AU:39:GLN:HG3	23:AU:46:VAL:HG23	1.97	0.46
24:AV:76:ARG:HA	24:AV:76:ARG:HD3	1.61	0.46
33:Ae:6:PHE:O	39:Ak:68:GLU:HG2	2.16	0.46
37:Ai:47:VAL:HG21	37:Ai:60:PRO:HD2	1.97	0.46
38:Aj:64:ASP:O	38:Aj:109:LYS:HB3	2.14	0.46
40:BA:94:LEU:HD22	40:BA:95:GLU:H	1.81	0.46
41:BB:156:ILE:O	68:Bc:65:PRO:HB3	2.16	0.46
44:BE:4:LEU:HB2	44:BE:26:ARG:HB2	1.97	0.46
47:BH:88:VAL:O	47:BH:92:VAL:HG23	2.16	0.46
48:BI:49:GLU:OE1	48:BI:49:GLU:N	2.36	0.46
59:BT:65:PRO:HA	59:BT:68:ARG:HG3	1.98	0.46
66:Ba:23:LYS:HD3	66:Ba:25:ARG:NH2	2.31	0.46
2:1:263:C:H2'	2:1:264:G:H8	1.80	0.46
2:1:392:C:H2'	2:1:393:C:H6	1.81	0.46
2:1:874:U:H2'	2:1:875:OMU:H6	1.97	0.46
2:1:1070:G:H2'	2:1:1071:C:C6	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1171:A:H5''	2:1:1172:A:O4'	2.16	0.46
2:1:1638:C:C4'	2:1:1651:A:H4'	2.46	0.46
2:1:1754:C:O2	32:Ad:8:GLY:HA2	2.16	0.46
2:1:2152:C:OP1	72:1:3405:HOH:O	2.20	0.46
2:1:2184:C:H2'	2:1:2185:C:H6	1.81	0.46
2:1:2854:C:OP2	72:1:3406:HOH:O	2.20	0.46
3:4:282:A:H5'	3:4:284:G:O4'	2.16	0.46
3:4:467:OMG:OP2	3:4:468:C:O2'	2.27	0.46
3:4:581:C:H1'	43:BD:145:PHE:CD1	2.51	0.46
3:4:709:G:H5''	56:BQ:14:SER:HB2	1.98	0.46
3:4:852:G:H2'	3:4:853:G:O4'	2.16	0.46
3:4:1357:U:H5'	63:BX:84:PRO:HA	1.98	0.46
4:AA:84:ALA:O	4:AA:96:LYS:NZ	2.48	0.46
10:AG:60:ARG:HA	10:AG:152:VAL:HG11	1.98	0.46
11:AH:72:LEU:HD12	15:AM:183:LEU:HD12	1.97	0.46
13:AJ:75:LYS:HA	13:AJ:78:GLU:OE2	2.15	0.46
16:AN:29:ILE:HG13	16:AN:126:ARG:HD3	1.98	0.46
17:AO:146:GLU:O	17:AO:150:GLU:HG2	2.16	0.46
24:AV:56:MET:SD	24:AV:102:MET:HE3	2.55	0.46
29:Aa:74:HIS:CE1	29:Aa:90:LYS:HD2	2.51	0.46
42:BC:166:TYR:CD2	72:BC:302:HOH:O	2.45	0.46
46:BG:63:VAL:HA	46:BG:111:VAL:CG2	2.46	0.46
50:BK:64:ASP:N	50:BK:64:ASP:OD1	2.49	0.46
59:BT:24:GLU:OE1	59:BT:24:GLU:N	2.48	0.46
60:BU:30:PRO:HD2	60:BU:33:ALA:HB2	1.98	0.46
62:BW:58:VAL:HG11	62:BW:93:LEU:HD11	1.98	0.46
63:BX:20:TYR:CA	63:BX:31:PRO:HA	2.41	0.46
2:1:23:G:H2'	2:1:24:G:C8	2.51	0.46
2:1:56:A:OP1	34:Af:21:ARG:NH1	2.47	0.46
2:1:638:G:H2'	2:1:639:C:C6	2.51	0.46
2:1:1160:G:H2'	2:1:1161:U:C6	2.51	0.46
2:1:1264:G:N3	10:AG:102:MET:HE2	2.31	0.46
2:1:1266:C:H2'	2:1:1267:U:H5'	1.98	0.46
2:1:2040:A:C2'	2:1:2041:C:H5'	2.46	0.46
3:4:144:C:H4'	46:BG:99:LYS:NZ	2.31	0.46
3:4:866:A:H5''	3:4:867:G:OP2	2.16	0.46
3:4:1040:G:O5'	45:BF:62:ARG:HG2	2.16	0.46
3:4:1163:OMG:H5'	3:4:1164:G:OP2	2.15	0.46
3:4:1204:A:N7	3:4:1269:G:H1'	2.30	0.46
3:4:1227:A:OP1	72:4:3106:HOH:O	2.21	0.46
3:4:1401:G:H22	3:4:1424:A:H2	1.63	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:AA:134:ASN:C	4:AA:135:LYS:HD3	2.41	0.46
9:AF:8:LYS:HE2	15:AM:18:GLU:CD	2.41	0.46
9:AF:130:VAL:HG21	9:AF:147:VAL:HG23	1.98	0.46
13:AJ:73:VAL:O	13:AJ:77:LEU:HG	2.15	0.46
13:AJ:83:VAL:O	13:AJ:87:LYS:HG3	2.16	0.46
14:AL:88:VAL:HG11	14:AL:126:LEU:CD2	2.46	0.46
33:Ae:25:ARG:NH1	33:Ae:66:GLU:OE2	2.48	0.46
38:Aj:159:SER:O	38:Aj:160:GLU:HG2	2.15	0.46
61:BV:53:GLU:HG3	61:BV:55:ASP:N	2.31	0.46
2:1:328:G:H3'	2:1:363:C:OP2	2.16	0.45
2:1:623:G:O2'	2:1:624:G:H5'	2.16	0.45
2:1:1645:G:H2'	2:1:1646:C:C6	2.51	0.45
2:1:1665:G:N2	33:Ae:2:PRO:HG2	2.31	0.45
2:1:1879:A:H2'	2:1:1880:C:C6	2.51	0.45
2:1:2749:C:H4'	5:AB:146:LEU:HD11	1.98	0.45
2:1:2751:U:O2'	2:1:2752:G:H5'	2.15	0.45
3:4:304:G:H5''	57:BR:84:LYS:HG3	1.98	0.45
3:4:339:C:O2'	3:4:1399:A:N3	2.44	0.45
3:4:424:C:O2'	3:4:425:C:H5'	2.16	0.45
3:4:523:U:H4'	3:4:524:A:O5'	2.16	0.45
3:4:851:G:H4'	3:4:880:A2M:HM'3	1.98	0.45
3:4:1017:G:H2'	3:4:1018:C:C6	2.51	0.45
3:4:1049:U:H2'	3:4:1050:U:C6	2.51	0.45
3:4:1152:G:H4'	50:BK:124:GLU:OE2	2.17	0.45
5:AB:127:GLU:O	5:AB:131:LYS:HG2	2.16	0.45
8:AE:107:VAL:HG21	8:AE:134:VAL:HG12	1.97	0.45
10:AG:127:PHE:HA	10:AG:130:ARG:HD3	1.97	0.45
13:AK:7:VAL:HB	20:AR:73:GLU:OE2	2.15	0.45
19:AQ:108:LYS:HA	19:AQ:143:LYS:HE3	1.98	0.45
43:BD:32:MET:HE2	43:BD:32:MET:HB2	1.56	0.45
44:BE:84:ASP:OD1	44:BE:118:LYS:NZ	2.27	0.45
46:BG:10:ASP:OD2	46:BG:13:SER:HB3	2.17	0.45
48:BI:10:ALA:O	48:BI:14:ILE:HD12	2.15	0.45
52:BM:15:LYS:HE3	52:BM:15:LYS:HB3	1.61	0.45
52:BM:20:ILE:CG2	52:BM:86:LYS:HD2	2.46	0.45
58:BS:10:LYS:HD3	58:BS:53:TYR:OH	2.16	0.45
62:BW:92:ASP:N	62:BW:92:ASP:OD1	2.49	0.45
2:1:567:G:H2'	2:1:568:C:C6	2.51	0.45
2:1:1769:U:H2'	72:1:5533:HOH:O	2.16	0.45
2:1:1784:A:H2'	2:1:1785:G:O4'	2.16	0.45
2:1:2061:G:H1'	2:1:2063:C:N4	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:AG:178:LYS:HE2	10:AG:178:LYS:HB2	1.78	0.45
14:AL:117:LEU:C	14:AL:137:ALA:HB2	2.42	0.45
14:AL:127:VAL:HG11	14:AL:149:ARG:NH1	2.32	0.45
20:AR:6:ARG:HH21	20:AR:8:VAL:HG21	1.81	0.45
27:AY:72:ASP:OD2	38:Aj:166:LYS:HE3	2.16	0.45
33:Ae:54:ILE:O	33:Ae:58:LYS:HG3	2.17	0.45
40:BA:111:LYS:HE3	40:BA:131:LEU:CD1	2.45	0.45
51:BL:44:PRO:HA	51:BL:76:ARG:CD	2.46	0.45
56:BQ:109:MET:HE2	56:BQ:112:ARG:HD2	1.97	0.45
59:BT:65:PRO:HB3	59:BT:68:ARG:NH2	2.31	0.45
60:BU:141:GLU:OE1	60:BU:144:LYS:HD3	2.15	0.45
65:BZ:35:LYS:HZ1	65:BZ:49:THR:HB	1.80	0.45
2:1:308:G:C5'	72:1:4662:HOH:O	2.63	0.45
2:1:1176:A:H2'	2:1:1177:G:O4'	2.16	0.45
2:1:1921:A:OP1	69:1:3136:SPM:N14	2.50	0.45
2:1:2028:G:H2'	2:1:2029:G:C8	2.51	0.45
2:1:2361:G:C8	2:1:2610:PSU:H5'	2.52	0.45
2:1:2907:C:H4'	22:AT:171:GLU:OE1	2.16	0.45
3:4:312:C:H2'	3:4:313:C:H6	1.80	0.45
3:4:1141:G:OP1	47:BH:10:PRO:HG3	2.16	0.45
3:4:1358:G:OP2	63:BX:85:ARG:NH2	2.33	0.45
3:4:1371:G:H1'	3:4:1478:MA6:O4'	2.16	0.45
5:AB:151:PRO:HB2	5:AB:158:LYS:HG3	1.99	0.45
5:AB:207:THR:HG22	5:AB:303:PRO:HB3	1.99	0.45
7:AD:166:VAL:CG1	7:AD:177:VAL:HG11	2.46	0.45
13:AK:22:LYS:HE2	13:AK:85:TYR:CZ	2.51	0.45
38:Aj:105:ASN:ND2	38:Aj:126:LEU:HD13	2.31	0.45
45:BF:14:ALA:HA	45:BF:17:ARG:CD	2.36	0.45
46:BG:19:PHE:HB2	46:BG:21:ILE:CD1	2.47	0.45
48:BI:111:MET:HB2	48:BI:115:GLU:OE2	2.16	0.45
49:BJ:85:ILE:HD11	49:BJ:100:ILE:HG12	1.97	0.45
50:BK:14:ILE:HD12	50:BK:98:TYR:CA	2.45	0.45
52:BM:19:GLY:O	52:BM:83:VAL:HA	2.16	0.45
56:BQ:62:LEU:O	56:BQ:66:ILE:HG13	2.15	0.45
60:BU:130:LEU:O	60:BU:134:VAL:HG23	2.16	0.45
2:1:136:G:H2'	2:1:137:G:O4'	2.17	0.45
2:1:236:A:H5'	11:AH:125:LYS:NZ	2.32	0.45
2:1:603:U:O2'	13:AK:54:HIS:ND1	2.37	0.45
2:1:1456:A:O2'	2:1:1457:A:H5'	2.16	0.45
2:1:1735:C:OP1	33:Ae:36:LEU:HB3	2.15	0.45
2:1:2090:A:H5'	2:1:2092:U:O4	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:17:C:OP2	3:4:522:U:H1'	2.16	0.45
3:4:425:C:H2'	3:4:426:G:H8	1.81	0.45
3:4:432:U:H2'	3:4:433:G:H8	1.80	0.45
3:4:678:C:H4'	3:4:679:A:O5'	2.16	0.45
3:4:926:U:H4'	3:4:927:U:H5''	1.98	0.45
3:4:1289:OMG:OP1	54:BO:128:GLY:HA3	2.16	0.45
16:AN:73:SER:HB3	16:AN:156:ALA:HB2	1.97	0.45
40:BA:49:ALA:HB1	40:BA:82:VAL:HG11	1.98	0.45
45:BF:59:LEU:HD23	45:BF:72:PHE:CE1	2.51	0.45
46:BG:91:ARG:HA	46:BG:91:ARG:HH11	1.80	0.45
46:BG:106:ILE:HA	46:BG:110:ILE:HD11	1.99	0.45
47:BH:41:LEU:HD13	47:BH:47:PHE:HZ	1.82	0.45
48:BI:98:GLN:HB3	68:Bc:4:ARG:O	2.16	0.45
49:BJ:1:MET:HE3	49:BJ:37:GLN:HE22	1.81	0.45
49:BJ:42:GLY:HA3	49:BJ:63:GLN:CD	2.40	0.45
56:BQ:91:LEU:CD1	56:BQ:125:LEU:HD12	2.46	0.45
68:Bc:18:THR:CG2	72:Bc:204:HOH:O	2.49	0.45
2:1:152:A:H2'	2:1:153:A:C8	2.51	0.45
2:1:1234:C:H2'	2:1:1235:C:C6	2.52	0.45
2:1:1414:A:H1'	2:1:1416:G:OP2	2.16	0.45
2:1:1469:U:C4	23:AU:55:PRO:HG3	2.51	0.45
2:1:2697:G:H2'	2:1:2698:UR3:H6	1.97	0.45
3:4:87:G:H2'	3:4:88:C:O4'	2.17	0.45
3:4:1216:A:C2	3:4:1336:G:H1'	2.51	0.45
3:4:1380:C:H2'	3:4:1381:C:H6	1.80	0.45
13:AJ:15:LEU:HD21	31:Ac:75:ALA:HB2	1.98	0.45
15:AM:166:GLU:HG3	15:AM:169:ARG:HH22	1.81	0.45
19:AQ:40:ALA:O	19:AQ:44:GLU:HG3	2.16	0.45
27:AY:80:LYS:HG3	27:AY:179:LEU:HD13	1.98	0.45
41:BB:142:PRO:HA	41:BB:157:ASP:OD2	2.16	0.45
45:BF:94:GLN:HB2	45:BF:97:GLN:OE1	2.16	0.45
48:BI:28:TRP:CE3	48:BI:29:PRO:HD3	2.51	0.45
51:BL:49:ARG:HB3	51:BL:51:MET:SD	2.57	0.45
61:BV:24:GLU:HG2	61:BV:76:HIS:CD2	2.50	0.45
61:BV:104:LEU:HA	61:BV:107:GLU:OE1	2.17	0.45
1:2:94:G:N2	1:2:97:A:OP2	2.39	0.45
2:1:433:A:H2'	2:1:434:C:C6	2.51	0.45
2:1:731:A:H2'	2:1:732:G:O4'	2.17	0.45
2:1:1592:C:OP1	19:AQ:61:ARG:NH1	2.47	0.45
2:1:1687:G:H2'	2:1:1688:U:O4'	2.16	0.45
2:1:2024:G:H2'	2:1:2025:C:C6	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2367:G:O2'	2:1:2368:C:H5'	2.16	0.45
2:1:2694:U:O2'	2:1:2695:G:H5'	2.16	0.45
3:4:928:G:H2'	3:4:929:G:O4'	2.17	0.45
4:AA:195:SER:HB2	4:AA:197:TYR:CE1	2.52	0.45
7:AD:90:GLN:OE1	7:AD:90:GLN:HA	2.17	0.45
23:AU:6:VAL:C	23:AU:7:ILE:HD13	2.42	0.45
41:BB:61:ALA:CB	41:BB:160:ILE:HD11	2.46	0.45
41:BB:147:VAL:HB	41:BB:151:THR:OG1	2.16	0.45
44:BE:148:ASP:OD2	44:BE:149:VAL:N	2.49	0.45
45:BF:175:LYS:HB2	45:BF:175:LYS:HE2	1.67	0.45
46:BG:22:LYS:HB3	46:BG:23:ASP:H	1.63	0.45
52:BM:118:ARG:CG	72:BM:209:HOH:O	2.65	0.45
56:BQ:141:TYR:CZ	56:BQ:143:PRO:HG3	2.52	0.45
57:BR:65:LYS:HD2	57:BR:67:ARG:CZ	2.46	0.45
58:BS:41:ILE:HD13	58:BS:47:ARG:CD	2.47	0.45
67:Bb:18:GLU:HA	67:Bb:21:ARG:NH1	2.31	0.45
2:1:216:C:H2'	2:1:217:C:C6	2.52	0.45
2:1:244:A:H2'	2:1:245:U:O4'	2.17	0.45
2:1:1548:U:H5''	2:1:1549:U:OP1	2.16	0.45
2:1:2012:G:H2'	2:1:2013:C:C6	2.52	0.45
2:1:2067:C:O2'	2:1:2068:C:H5'	2.16	0.45
2:1:2135:A:H2'	2:1:2136:C:H6	1.81	0.45
2:1:2148:U:H2'	2:1:2149:G:C8	2.52	0.45
3:4:47:A:H4'	3:4:48:G:H5''	1.97	0.45
3:4:786:G:H2'	3:4:787:C:H6	1.82	0.45
3:4:1031:G:H2'	3:4:1032:U:C6	2.52	0.45
3:4:1118:A:H2'	3:4:1119:G:H8	1.81	0.45
3:4:1170:A:H2	42:BC:185:ILE:CD1	2.28	0.45
5:AB:4:LYS:HA	5:AB:4:LYS:HD3	1.79	0.45
7:AD:21:LYS:HD3	7:AD:77:ARG:NH2	2.32	0.45
11:AH:81:PRO:HG2	15:AM:164:LEU:HB3	1.97	0.45
17:AO:152:ALA:HB1	17:AO:163:TYR:HE1	1.81	0.45
25:AW:14:PRO:HG2	25:AW:17:TYR:CD2	2.51	0.45
38:Aj:23:PHE:HB3	38:Aj:176:PHE:CD2	2.52	0.45
48:BI:101:ILE:HA	48:BI:113:HIS:CE1	2.51	0.45
53:BN:105:ILE:HD13	53:BN:105:ILE:HA	1.78	0.45
55:BP:45:ALA:HB3	55:BP:46:PRO:HD3	1.99	0.45
58:BS:11:SER:O	58:BS:15:LYS:HG2	2.16	0.45
60:BU:108:LEU:HB3	60:BU:114:VAL:HG23	1.98	0.45
65:BZ:71:ALA:HA	65:BZ:73:ARG:HH22	1.82	0.45
2:1:595:A:H2'	2:1:596:A:C8	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:993:G:H5''	16:AN:39:THR:HG23	1.98	0.45
2:1:1165:C:H5'	20:AR:16:LYS:O	2.17	0.45
2:1:1648:A:H4'	2:1:1649:G:OP2	2.16	0.45
2:1:1824:U:H2'	2:1:1825:G:O4'	2.16	0.45
3:4:17:C:O2'	3:4:878:A:N1	2.47	0.45
3:4:66:C:O2'	3:4:67:C:H5'	2.17	0.45
3:4:551:C:H2'	3:4:552:C:H6	1.82	0.45
3:4:1029:U:H2'	3:4:1030:C:H6	1.81	0.45
3:4:1137:G:H2'	3:4:1138:C:H6	1.82	0.45
3:4:1319:G:OP1	60:BU:81:ARG:HD2	2.15	0.45
3:4:1388:A:O2'	3:4:1389:G:H5'	2.17	0.45
4:AA:96:LYS:O	4:AA:96:LYS:HG3	2.16	0.45
7:AD:171:LYS:HE2	7:AD:171:LYS:HB2	1.65	0.45
9:AF:93:VAL:HB	9:AF:133:ILE:HD13	1.99	0.45
11:AH:68:LEU:HD21	15:AM:179:LEU:HD21	1.98	0.45
12:AI:69:VAL:HB	12:AI:76:LEU:O	2.17	0.45
13:AJ:4:VAL:CG2	28:AZ:57:ALA:HB2	2.47	0.45
13:AJ:75:LYS:HA	13:AJ:78:GLU:CG	2.46	0.45
13:AK:23:ALA:HA	13:AK:86:MET:HE1	1.99	0.45
27:AY:20:ARG:HB2	27:AY:63:TRP:CD1	2.51	0.45
37:AI:75:THR:O	37:AI:79:LYS:HG2	2.16	0.45
47:BH:172:TRP:CE2	47:BH:211:LYS:HG2	2.51	0.45
53:BN:6:SER:HB3	53:BN:7:PRO:CD	2.32	0.45
55:BP:27:ALA:HB3	55:BP:37:CYS:O	2.17	0.45
68:Bc:56:ARG:NH1	68:Bc:61:GLY:HA2	2.27	0.45
2:1:583:C:O2'	2:1:584:C:H5'	2.16	0.45
2:1:603:U:H2'	2:1:604:G:O4'	2.16	0.45
2:1:1825:G:N3	2:1:1898:A:H2'	2.31	0.45
2:1:2586:G:O6	2:1:2589:C:H2'	2.16	0.45
3:4:177:G:N2	57:BR:29:ILE:O	2.47	0.45
3:4:575:C:H2'	3:4:576:G:H8	1.82	0.45
3:4:645:G:H4'	52:BM:41:GLU:OE2	2.17	0.45
3:4:718:U:OP1	3:4:783:C:O2'	2.33	0.45
3:4:762:U:H2'	3:4:763:A:H8	1.82	0.45
3:4:786:G:H2'	3:4:787:C:C6	2.51	0.45
3:4:833:C:OP1	63:BX:6:LYS:HE2	2.16	0.45
3:4:927:U:H2'	72:4:3455:HOH:O	2.17	0.45
3:4:1013:C:C2'	3:4:1014:A:H5''	2.46	0.45
8:AE:107:VAL:HG22	8:AE:112:LEU:HD13	1.98	0.45
10:AG:67:PHE:O	10:AG:71:ILE:HG23	2.17	0.45
11:AH:57:TRP:O	11:AH:61:VAL:HG23	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:AM:30:LYS:HE3	15:AM:30:LYS:HB3	1.59	0.45
15:AM:102:GLU:OE2	15:AM:117:SER:OG	2.33	0.45
24:AV:36:LEU:O	24:AV:40:LEU:HG	2.16	0.45
28:AZ:28:LEU:HD11	28:AZ:54:ALA:HB2	1.98	0.45
38:Aj:82:LYS:HA	38:Aj:82:LYS:HD2	1.65	0.45
38:Aj:82:LYS:NZ	38:Aj:83:PRO:HD2	2.32	0.45
39:Ak:22:LYS:HD3	39:Ak:22:LYS:HA	1.82	0.45
39:Ak:47:LEU:O	39:Ak:51:GLU:HG3	2.16	0.45
41:BB:148:ASP:OD1	41:BB:151:THR:HG23	2.17	0.45
45:BF:70:ASN:OD1	45:BF:70:ASN:N	2.50	0.45
46:BG:8:LEU:CD1	46:BG:55:ILE:HD13	2.47	0.45
57:BR:54:ILE:HG22	57:BR:116:THR:HG22	1.99	0.45
57:BR:66:VAL:HG11	57:BR:105:VAL:HG23	1.99	0.45
2:1:1104:A:H2'	2:1:1105:A:C8	2.52	0.45
2:1:1543:G:H2'	2:1:1544:U:O4'	2.17	0.45
2:1:2119:G:H4'	2:1:2837:C:O2'	2.17	0.45
2:1:2623:OMU:HM22	2:1:2624:OMC:C5'	2.45	0.45
2:1:2679:A:H2'	2:1:2680:A:O4'	2.16	0.45
2:1:2690:G:O2'	2:1:2693:A:OP2	2.34	0.45
3:4:217:C:O2'	3:4:218:C:H5'	2.17	0.45
3:4:384:G:N2	3:4:387:A:OP2	2.45	0.45
3:4:476:G:O2'	3:4:477:U:H5'	2.17	0.45
3:4:542:G:N1	3:4:720:A:OP2	2.34	0.45
3:4:656:A:H61	3:4:758:C:H1'	1.81	0.45
3:4:699:G:O2'	3:4:700:C:H5'	2.17	0.45
3:4:814:G:O2'	3:4:815:C:H5'	2.17	0.45
3:4:860:G:H2'	3:4:861:C:H6	1.81	0.45
3:4:1019:C:H4'	51:BL:56:ARG:O	2.17	0.45
3:4:1183:C:H2'	3:4:1184:OMC:H6	1.82	0.45
3:4:1226:G:H4'	3:4:1249:C:O2'	2.17	0.45
3:4:1241:A:H2'	3:4:1242:G:O4'	2.17	0.45
5:AB:90:TYR:HB2	5:AB:142:ASP:HB3	1.99	0.45
12:AI:74:PRO:HA	12:AI:77:ARG:CZ	2.46	0.45
17:AO:120:MET:HE2	17:AO:120:MET:HB3	1.85	0.45
19:AQ:147:LYS:HE2	19:AQ:147:LYS:HB2	1.71	0.45
28:AZ:16:LYS:HB3	28:AZ:87:VAL:HG13	1.98	0.45
40:BA:114:ALA:HB2	40:BA:147:ARG:HG3	1.99	0.45
43:BD:54:VAL:CG1	72:BF:408:HOH:O	2.64	0.45
45:BF:69:ARG:CD	72:BF:431:HOH:O	2.48	0.45
46:BG:8:LEU:HD11	46:BG:117:LEU:HD23	1.98	0.45
51:BL:75:LYS:O	51:BL:76:ARG:HD3	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:BO:85:PRO:HA	59:BT:32:ARG:NH1	2.32	0.45
54:BO:118:ILE:HD12	59:BT:134:LEU:HD11	1.99	0.45
55:BP:27:ALA:HB1	55:BP:38:ARG:CD	2.47	0.45
58:BS:61:GLN:O	58:BS:64:LYS:HG2	2.17	0.45
64:BY:25:CYS:SG	64:BY:26:GLY:N	2.89	0.45
2:1:667:A:N1	2:1:927:G:O2'	2.45	0.44
2:1:1084:C:H1'	2:1:2361:G:O6	2.16	0.44
2:1:1930:U:H2'	2:1:1931:C:H6	1.80	0.44
2:1:2006:G:O2'	2:1:2007:G:H5'	2.17	0.44
2:1:2104:OMG:HM22	2:1:2105:U:C4'	2.47	0.44
2:1:2104:OMG:HM22	2:1:2105:U:C5'	2.42	0.44
2:1:2132:C:H2'	2:1:2133:G:O4'	2.17	0.44
2:1:2317:U:O4'	72:1:3412:HOH:O	2.21	0.44
2:1:2358:G:H2'	2:1:2359:C:C6	2.52	0.44
2:1:2911:G:O2'	2:1:2912:G:H5'	2.17	0.44
2:1:2914:C:O2'	2:1:2915:A:O5'	2.29	0.44
2:1:3011:U:H2'	2:1:3012:C:O4'	2.17	0.44
3:4:480:C:O2'	66:Ba:9:LYS:NZ	2.38	0.44
3:4:954:G:O2'	3:4:955:G:H5'	2.17	0.44
4:AA:83:ASP:OD1	4:AA:83:ASP:N	2.32	0.44
4:AA:144:ARG:HG3	4:AA:146:ILE:HG23	1.98	0.44
6:AC:61:ARG:HD3	6:AC:134:ILE:HD12	1.99	0.44
6:AC:152:TYR:O	6:AC:156:VAL:HG23	2.17	0.44
13:AJ:66:LYS:HE2	13:AJ:66:LYS:HB2	1.73	0.44
19:AQ:18:ARG:HD2	19:AQ:50:GLU:O	2.17	0.44
36:Ah:22:VAL:HG22	36:Ah:69:PHE:CD2	2.52	0.44
43:BD:139:ARG:HH21	61:BV:67:GLY:HA2	1.81	0.44
46:BG:83:ASP:HB3	46:BG:96:ARG:HD2	2.00	0.44
46:BG:83:ASP:N	46:BG:83:ASP:OD1	2.50	0.44
47:BH:77:LYS:HB3	47:BH:77:LYS:HE3	1.56	0.44
48:BI:108:GLN:HE22	48:BI:121:ILE:HD13	1.82	0.44
51:BL:50:LEU:HD12	55:BP:32:TYR:CZ	2.52	0.44
56:BQ:125:LEU:HD23	56:BQ:125:LEU:HA	1.83	0.44
63:BX:87:GLU:HG3	63:BX:90:LYS:HG3	1.98	0.44
64:BY:18:VAL:HG11	64:BY:58:PHE:CZ	2.52	0.44
2:1:289:G:OP1	2:1:391:U:H1'	2.17	0.44
2:1:872:OMC:HM22	2:1:873:G:O4'	2.17	0.44
2:1:911:A:OP2	2:1:2191:A:O2'	2.36	0.44
2:1:1138:C:O2'	2:1:1139:U:H5'	2.16	0.44
2:1:1174:A:OP1	2:1:1236:G:N2	2.30	0.44
2:1:1858:G:O2'	2:1:1859:U:H5'	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2031:G:C2'	2:1:2032:U:H5'	2.47	0.44
3:4:210:U:O4'	67:Bb:43:ARG:NH1	2.47	0.44
3:4:282:A:OP1	3:4:283:A:O2'	2.26	0.44
3:4:365:C:H2'	3:4:366:G:O4'	2.17	0.44
3:4:742:A:H2'	3:4:743:A:H5'	1.98	0.44
3:4:865:A:H2'	3:4:866:A:C8	2.52	0.44
22:AT:25:ILE:HD12	22:AT:29:GLN:CB	2.48	0.44
30:Ab:23:MET:HG2	30:Ab:26:ARG:NH2	2.32	0.44
35:Ag:10:LEU:HD12	35:Ag:14:LEU:HD23	1.98	0.44
38:Aj:86:LYS:HD2	38:Aj:86:LYS:O	2.18	0.44
41:BB:196:VAL:CG1	41:BB:200:GLU:HG3	2.47	0.44
44:BE:126:THR:HG23	44:BE:128:VAL:HG13	1.99	0.44
46:BG:39:ASP:HA	46:BG:54:LYS:HG2	2.00	0.44
50:BK:124:GLU:OE1	50:BK:133:ALA:HB1	2.16	0.44
54:BO:31:GLY:HA3	54:BO:94:ILE:CD1	2.47	0.44
60:BU:100:ILE:H	60:BU:100:ILE:HD12	1.82	0.44
61:BV:31:HIS:CD2	61:BV:37:PRO:HD3	2.52	0.44
62:BW:98:LYS:HG2	62:BW:99:GLY:H	1.82	0.44
64:BY:41:CYS:N	64:BY:48:LEU:HD23	2.32	0.44
2:1:28:G:OP2	72:1:3415:HOH:O	2.21	0.44
2:1:741:C:H2'	2:1:742:C:H6	1.81	0.44
2:1:797:G:H2'	2:1:798:G:C8	2.53	0.44
2:1:855:G:O2'	2:1:856:G:H5'	2.17	0.44
2:1:2603:G:O2'	2:1:2604:G:H5'	2.16	0.44
72:1:5778:HOH:O	26:AX:9:LYS:HG3	2.16	0.44
3:4:118:C:H2'	3:4:119:U:C6	2.53	0.44
3:4:148:G:H1'	46:BG:9:SER:HB3	1.99	0.44
3:4:428:C:O2'	3:4:429:U:H5'	2.16	0.44
3:4:521:U:H4'	3:4:522:U:H5''	2.00	0.44
3:4:892:G:O2'	3:4:1462:A:N7	2.31	0.44
3:4:1047:G:H2'	3:4:1048:G:C8	2.52	0.44
4:AA:116:PHE:HB3	4:AA:140:LEU:HD22	1.99	0.44
8:AE:17:LYS:HD3	8:AE:17:LYS:HA	1.64	0.44
12:AI:37:LYS:HE3	12:AI:37:LYS:HB3	1.72	0.44
13:AJ:72:GLU:CD	13:AJ:75:LYS:HE2	2.42	0.44
13:AK:21:ARG:HG3	13:AK:89:ARG:HD2	1.99	0.44
16:AN:106:MET:HE3	16:AN:108:GLY:H	1.82	0.44
19:AQ:22:SER:HB2	19:AQ:48:TRP:HZ3	1.82	0.44
27:AY:167:ARG:HG2	27:AY:170:LEU:HB2	2.00	0.44
29:Aa:8:VAL:HG22	29:Aa:79:LYS:O	2.18	0.44
30:Ab:121:VAL:HG21	30:Ab:138:VAL:HG11	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:BA:146:ILE:CG2	40:BA:189:MET:HE1	2.47	0.44
46:BG:106:ILE:HA	46:BG:110:ILE:CD1	2.48	0.44
52:BM:137:LYS:O	63:BX:28:LYS:HB2	2.18	0.44
54:BO:97:GLU:OE2	54:BO:97:GLU:N	2.41	0.44
67:Bb:12:LEU:HD11	67:Bb:41:GLU:HG3	1.98	0.44
2:1:137:G:H2'	2:1:138:C:C6	2.53	0.44
2:1:172:A:H2'	2:1:173:A:H8	1.82	0.44
2:1:513:A:H1'	2:1:528:G:N2	2.32	0.44
2:1:2022:A:H5''	4:AA:231:THR:HB	1.99	0.44
2:1:2063:C:H3'	2:1:2064:U:H2'	1.98	0.44
2:1:2802:U:H2'	2:1:2803:G:O4'	2.18	0.44
2:1:2870:A:H1'	8:AE:71:LEU:HD21	1.98	0.44
3:4:474:U:H2'	3:4:475:OMG:H8	1.83	0.44
3:4:1089:A:C3'	3:4:1090:C:H5'	2.46	0.44
3:4:1224:C:H2'	3:4:1225:C:C6	2.52	0.44
5:AB:185:LEU:O	5:AB:187:LYS:NZ	2.42	0.44
9:AF:10:PHE:CE1	9:AF:86:GLU:HG3	2.53	0.44
11:AH:68:LEU:HD21	15:AM:179:LEU:CD2	2.48	0.44
13:AK:75:LYS:NZ	13:AK:75:LYS:O	2.42	0.44
14:AL:106:VAL:HG13	14:AL:128:VAL:HG13	2.00	0.44
17:AO:180:LEU:HB3	17:AO:181:PRO:HD3	1.98	0.44
38:Aj:105:ASN:O	38:Aj:108:ARG:HD3	2.18	0.44
44:BE:39:PRO:HG2	44:BE:42:VAL:CG2	2.47	0.44
46:BG:53:VAL:CG2	46:BG:117:LEU:HB3	2.46	0.44
53:BN:45:GLU:HA	53:BN:45:GLU:OE2	2.18	0.44
53:BN:115:SER:HA	53:BN:122:VAL:O	2.18	0.44
67:Bb:12:LEU:HD21	67:Bb:41:GLU:CG	2.40	0.44
2:1:146:C:O2'	2:1:147:C:H5'	2.17	0.44
2:1:956:C:H2'	2:1:957:U:C6	2.52	0.44
2:1:1947:OMG:HM22	2:1:1948:G:C5'	2.46	0.44
2:1:2034:A:HO2'	3:4:1453:G:H1'	1.82	0.44
2:1:2781:A:H2'	2:1:2782:C:H6	1.82	0.44
3:4:68:G:H2'	3:4:69:G:H8	1.83	0.44
3:4:141:A:H2'	3:4:142:A:C8	2.52	0.44
3:4:182:C:O2'	44:BE:127:ALA:O	2.30	0.44
3:4:237:G:H4'	57:BR:118:PRO:HG3	1.99	0.44
3:4:303:A:H2'	3:4:525:C:H42	1.82	0.44
3:4:311:G:N2	43:BD:2:GLY:O	2.50	0.44
3:4:417:G:O6	3:4:419:A:H5''	2.17	0.44
3:4:423:C:O2'	3:4:424:C:H5'	2.18	0.44
3:4:454:G:O2'	3:4:456:A:H1'	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:539:C:O2'	3:4:689:A:N3	2.45	0.44
3:4:710:C:H1'	56:BQ:52:ILE:HG13	2.00	0.44
3:4:1212:OMG:CM2	3:4:1213:G:H5'	2.39	0.44
3:4:1230:C:P	60:BU:121:ARG:HH22	2.41	0.44
5:AB:107:VAL:HG13	5:AB:185:LEU:HG	2.00	0.44
7:AD:145:GLN:HG3	7:AD:154:VAL:HG23	1.99	0.44
8:AE:1:MET:SD	8:AE:66:LYS:HB2	2.57	0.44
9:AF:11:TYR:CE1	9:AF:21:TYR:HA	2.52	0.44
12:AI:89:ARG:HH11	12:AI:104:ASP:HA	1.82	0.44
14:AL:106:VAL:CG1	14:AL:126:LEU:HD11	2.42	0.44
14:AL:110:LYS:O	14:AL:110:LYS:HD3	2.17	0.44
17:AO:59:VAL:HG11	17:AO:98:ILE:CD1	2.48	0.44
24:AV:28:LEU:HD11	24:AV:72:LEU:CD2	2.48	0.44
38:Aj:152:VAL:CG1	38:Aj:154:LYS:HG3	2.47	0.44
38:Aj:172:SER:OG	38:Aj:175:GLU:HG3	2.17	0.44
42:BC:157:THR:OG1	42:BC:158:TYR:N	2.51	0.44
42:BC:167:ASP:O	42:BC:171:ARG:N	2.47	0.44
42:BC:197:LEU:HA	42:BC:197:LEU:HD23	1.63	0.44
45:BF:124:CYS:SG	45:BF:128:HIS:CD2	3.11	0.44
48:BI:60:LYS:NZ	64:BY:9:LEU:O	2.45	0.44
62:BW:92:ASP:O	62:BW:93:LEU:HD23	2.16	0.44
2:1:428:G:OP1	15:AM:69:ARG:NH1	2.50	0.44
2:1:582:C:H2'	2:1:583:C:H6	1.82	0.44
2:1:656:A:H2'	2:1:657:C:C6	2.53	0.44
2:1:957:U:H2'	2:1:958:C:C6	2.53	0.44
2:1:1293:G:H2'	2:1:1294:C:C6	2.52	0.44
2:1:1611:G:O2'	2:1:1612:C:H5'	2.16	0.44
2:1:2154:G:O2'	2:1:2155:OMU:H5''	2.18	0.44
2:1:2208:U:H2'	2:1:2209:C:C6	2.53	0.44
2:1:2654:C:H2'	2:1:2655:A:O4'	2.17	0.44
2:1:2738:G:H2'	2:1:2739:G:O4'	2.18	0.44
2:1:2823:C:H2'	2:1:2824:A:C8	2.53	0.44
2:1:2840:G:H4'	12:AI:99:TRP:HH2	1.83	0.44
3:4:190:C:H2'	3:4:191:C:H6	1.83	0.44
3:4:247:U:H4'	3:4:248:C:C5'	2.47	0.44
3:4:895:G:O2'	3:4:896:G:H5'	2.17	0.44
3:4:1015:U:O2	42:BC:185:ILE:HD11	2.17	0.44
3:4:1154:G:H2'	3:4:1155:C:C6	2.52	0.44
6:AC:26:ARG:HG3	6:AC:27:PRO:HD2	1.98	0.44
13:AK:3:LYS:HB2	13:AK:3:LYS:HE3	1.77	0.44
16:AN:29:ILE:HG13	16:AN:126:ARG:CD	2.47	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:AP:35:ILE:HD13	18:AP:65:VAL:HG21	2.00	0.44
18:AP:80:VAL:HG13	18:AP:82:VAL:HG13	2.00	0.44
37:AI:92:GLU:HA	37:AI:95:LYS:HG2	2.00	0.44
40:BA:157:LYS:HA	40:BA:160:GLU:OE1	2.18	0.44
41:BB:81:TYR:CD2	41:BB:167:ARG:HG3	2.52	0.44
42:BC:170:ASN:CB	42:BC:171:ARG:HD2	2.45	0.44
46:BG:63:VAL:HA	46:BG:111:VAL:HG23	2.00	0.44
47:BH:142:GLU:OE1	65:BZ:65:ARG:NH2	2.50	0.44
48:BI:97:ARG:HG3	48:BI:98:GLN:HG3	1.99	0.44
53:BN:87:PHE:O	53:BN:125:LYS:HA	2.18	0.44
54:BO:84:ASP:OD1	54:BO:87:THR:OG1	2.35	0.44
59:BT:34:LYS:HE2	59:BT:42:MET:CE	2.46	0.44
60:BU:47:MET:HE2	60:BU:47:MET:HB2	1.69	0.44
67:Bb:61:LEU:HD22	67:Bb:64:ARG:HH21	1.82	0.44
2:1:303:C:C6	72:1:8524:HOH:O	2.57	0.44
2:1:534:A:O2'	2:1:538:C:O2'	2.28	0.44
2:1:874:U:H2'	2:1:875:OMU:O4'	2.17	0.44
2:1:1303:G:C8	72:1:3864:HOH:O	2.66	0.44
2:1:1944:U:H2'	2:1:1945:A:O4'	2.18	0.44
2:1:2018:OMC:HM22	2:1:2019:U:O4'	2.18	0.44
3:4:753:A:H1'	3:4:755:A:N7	2.32	0.44
3:4:902:C:H2'	3:4:903:A:H8	1.83	0.44
3:4:1137:G:C5'	58:BS:4:VAL:HG22	2.48	0.44
3:4:1164:G:C4'	51:BL:61:GLN:HG3	2.48	0.44
3:4:1318:4AC:H2'	3:4:1319:G:C8	2.52	0.44
15:AM:127:ARG:HG2	15:AM:129:PHE:CE2	2.52	0.44
18:AP:119:LYS:HB3	18:AP:119:LYS:HE3	1.74	0.44
19:AQ:35:LYS:O	19:AQ:39:ARG:HG3	2.18	0.44
23:AU:45:LYS:HD2	23:AU:45:LYS:HA	1.75	0.44
29:Aa:15:ILE:HG12	29:Aa:39:PHE:CE1	2.53	0.44
33:Ae:16:GLU:HG2	33:Ae:60:LYS:HD3	1.99	0.44
43:BD:79:LEU:HB2	43:BD:85:ILE:HG12	1.99	0.44
43:BD:96:LEU:HB3	45:BF:150:LYS:O	2.18	0.44
45:BF:55:LEU:HD11	45:BF:77:ALA:HB2	2.00	0.44
46:BG:80:ILE:O	46:BG:98:LYS:HA	2.17	0.44
47:BH:144:ILE:HD13	47:BH:218:ILE:CG2	2.47	0.44
49:BJ:129:LEU:HD13	49:BJ:130:ILE:N	2.32	0.44
52:BM:84:HIS:C	52:BM:85:ILE:HD12	2.43	0.44
54:BO:42:ARG:NH2	60:BU:46:PRO:O	2.34	0.44
54:BO:131:THR:CG2	72:BO:219:HOH:O	2.66	0.44
56:BQ:62:LEU:HD23	56:BQ:62:LEU:HA	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:BX:54:GLU:O	63:BX:55:LYS:HG2	2.18	0.44
67:Bb:18:GLU:O	67:Bb:22:LEU:HG	2.18	0.44
1:2:84:A:H2'	1:2:85:C:O4'	2.18	0.44
2:1:66:A:H4'	2:1:67:G:O5'	2.18	0.44
2:1:494:G:N2	2:1:497:A:OP2	2.34	0.44
2:1:1088:G:H2'	2:1:1089:C:C6	2.53	0.44
2:1:1154:A:H2'	2:1:1155:A:H8	1.81	0.44
2:1:1808:A:N3	12:AI:90:ARG:NH1	2.65	0.44
2:1:1926:U:H2'	2:1:1927:A:C5	2.53	0.44
2:1:2049:A:O2'	2:1:2050:G:H5'	2.18	0.44
2:1:2186:U:O2'	2:1:2187:A:H5'	2.18	0.44
2:1:2559:G:O2'	2:1:2560:G:H5'	2.18	0.44
2:1:2645:A:C8	8:AE:176:ARG:HG3	2.52	0.44
2:1:2914:C:O2'	2:1:2915:A:H3'	2.18	0.44
3:4:33:U:O2'	3:4:34:C:H5'	2.18	0.44
3:4:160:A:H2'	3:4:161:U:C6	2.53	0.44
3:4:1181:C:O3'	3:4:1182:C:H3'	2.18	0.44
3:4:1216:A:N3	3:4:1336:G:O2'	2.42	0.44
8:AE:41:LYS:HG2	8:AE:43:PHE:CZ	2.53	0.44
13:AJ:22:LYS:NZ	13:AJ:85:TYR:O	2.30	0.44
26:AX:48:ILE:HG13	72:AX:108:HOH:O	2.18	0.44
30:Ab:11:GLN:HB3	30:Ab:12:PRO:HD3	1.98	0.44
41:BB:42:ARG:CD	41:BB:46:LEU:HB3	2.48	0.44
44:BE:111:PRO:HD2	44:BE:114:GLU:HB3	2.00	0.44
54:BO:34:ILE:HD13	54:BO:34:ILE:HA	1.73	0.44
54:BO:59:GLN:HA	54:BO:62:LYS:HD3	1.99	0.44
58:BS:40:ASP:C	58:BS:42:PRO:HD3	2.42	0.44
65:BZ:49:THR:HG23	65:BZ:70:GLU:HG3	2.00	0.44
2:1:103:U:H2'	2:1:104:C:O4'	2.18	0.44
2:1:580:C:H2'	2:1:581:C:H6	1.80	0.44
2:1:1555:G:H3'	13:AJ:48:ARG:HH21	1.82	0.44
2:1:1725:G:H2'	2:1:1726:A:C8	2.52	0.44
2:1:1747:C:H2'	2:1:1748:G:O4'	2.17	0.44
2:1:2213:G:O2'	2:1:2214:C:H5'	2.18	0.44
2:1:2852:A:H2'	2:1:2853:A:C8	2.52	0.44
3:4:817:G:H4'	56:BQ:10:GLY:HA2	2.00	0.44
3:4:1007:G:O2'	3:4:1008:A:OP1	2.32	0.44
3:4:1379:A:O2'	3:4:1380:C:H5'	2.18	0.44
7:AD:102:ASP:OD1	7:AD:106:ASN:HB2	2.18	0.44
8:AE:98:TYR:HA	8:AE:184:ASP:OD2	2.17	0.44
9:AF:42:ARG:HE	9:AF:42:ARG:HB3	1.60	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:AO:96:LYS:HE3	17:AO:96:LYS:HB3	1.70	0.44
22:AT:141:PRO:HA	22:AT:155:ASN:OD1	2.18	0.44
30:Ab:20:ARG:HG3	30:Ab:73:LYS:HD3	2.00	0.44
30:Ab:29:GLU:OE1	30:Ab:29:GLU:N	2.48	0.44
40:BA:110:SER:CB	40:BA:138:VAL:HG22	2.47	0.44
45:BF:9:TRP:CZ2	45:BF:11:PRO:HA	2.53	0.44
50:BK:38:ILE:HD13	50:BK:55:MET:HE3	2.00	0.44
50:BK:73:VAL:CG2	50:BK:91:ILE:HD11	2.48	0.44
52:BM:18:TRP:HB3	52:BM:37:LEU:HD13	2.00	0.44
54:BO:11:ILE:HG23	54:BO:64:ASP:HB2	1.99	0.44
56:BQ:55:ARG:HA	56:BQ:60:ILE:O	2.18	0.44
65:BZ:35:LYS:NZ	65:BZ:49:THR:HB	2.31	0.44
66:Ba:26:LYS:NZ	66:Ba:27:ASN:O	2.30	0.44
2:1:32:C:O2'	2:1:698:A:N1	2.46	0.43
2:1:1117:G:O2'	2:1:1118:U:H5'	2.18	0.43
2:1:1797:G:OP2	29:Aa:19:ARG:NH2	2.48	0.43
3:4:40:A2M:HM'3	3:4:40:A2M:H1'	1.59	0.43
3:4:140:G:N2	3:4:143:A:OP2	2.49	0.43
3:4:355:G:H4'	3:4:356:C:OP2	2.18	0.43
3:4:702:A:H5''	56:BQ:98:ILE:CD1	2.48	0.43
3:4:815:C:O2'	3:4:816:C:H5'	2.18	0.43
3:4:1292:C:H2'	3:4:1293:U:C6	2.53	0.43
21:AS:76:GLU:CG	21:AS:83:LYS:HD3	2.47	0.43
41:BB:25:THR:HG22	41:BB:27:LEU:HG	2.00	0.43
44:BE:121:ARG:NH1	44:BE:224:ILE:O	2.51	0.43
54:BO:9:VAL:HG11	54:BO:60:ILE:HD12	2.00	0.43
54:BO:31:GLY:HA3	54:BO:94:ILE:HD12	2.00	0.43
59:BT:68:ARG:HD2	59:BT:69:LYS:N	2.33	0.43
67:Bb:32:LYS:HA	67:Bb:32:LYS:HD3	1.59	0.43
2:1:132:A:H2'	2:1:133:A:C8	2.53	0.43
2:1:681:G:OP1	6:AC:55:ARG:NH1	2.44	0.43
2:1:1386:G:H2'	2:1:1387:G:C8	2.53	0.43
2:1:2471:A:H4'	21:AS:79:ILE:O	2.18	0.43
2:1:2512:U:H2'	2:1:2513:C:C6	2.54	0.43
3:4:30:C:O2'	3:4:461:C:OP1	2.36	0.43
3:4:56:A:H4'	3:4:57:G:O5'	2.18	0.43
3:4:353:G:N7	72:4:3163:HOH:O	2.36	0.43
3:4:767:C:O2'	3:4:768:C:H5'	2.17	0.43
3:4:1217:G:C5'	50:BK:22:THR:HG21	2.48	0.43
3:4:1321:G:H2'	3:4:1322:U:O4'	2.17	0.43
3:4:1371:G:O4'	3:4:1478:MA6:H4'	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:1408:G:N2	3:4:1417:U:O2	2.40	0.43
4:AA:132:GLU:HG2	4:AA:133:GLU:OE2	2.17	0.43
5:AB:45:ALA:HB1	5:AB:309:LEU:HD11	1.98	0.43
9:AF:6:ASP:OD1	9:AF:8:LYS:HE3	2.18	0.43
13:AJ:90:VAL:HG21	31:Ac:82:VAL:CG2	2.48	0.43
14:AL:78:PRO:HA	14:AL:115:LYS:O	2.17	0.43
14:AL:122:MET:HE3	14:AL:122:MET:HA	1.99	0.43
30:Ab:119:GLU:O	30:Ab:122:LYS:HG3	2.18	0.43
58:BS:12:LEU:HD12	58:BS:12:LEU:HA	1.75	0.43
61:BV:15:ARG:HH21	61:BV:17:ASN:HB2	1.82	0.43
64:BY:48:LEU:HD13	64:BY:48:LEU:HA	1.85	0.43
67:Bb:15:ARG:HA	67:Bb:18:GLU:CD	2.43	0.43
68:Bc:47:ARG:NH1	68:Bc:51:LEU:HD11	2.33	0.43
2:1:108:G:OP2	2:1:110:A:O2'	2.33	0.43
2:1:118:U:H5''	2:1:119:C:O4'	2.18	0.43
2:1:382:G:H2'	2:1:383:U:O4'	2.18	0.43
2:1:684:A:H4'	2:1:685:G:C5'	2.47	0.43
2:1:1647:G:N3	2:1:1647:G:H5'	2.33	0.43
2:1:1725:G:H2'	2:1:1726:A:H8	1.83	0.43
2:1:1864:G:O2'	2:1:1865:G:H5'	2.17	0.43
2:1:1935:G:N7	4:AA:142:SER:OG	2.35	0.43
2:1:2764:C:H2'	2:1:2765:C:C6	2.53	0.43
2:1:2835:G:OP1	5:AB:306:ARG:NH1	2.43	0.43
2:1:2995:A:H2'	2:1:2996:G:C8	2.54	0.43
3:4:7:OMG:HM23	3:4:7:OMG:H1'	1.73	0.43
3:4:333:A:H2'	3:4:336:G:O6	2.18	0.43
3:4:544:A:H2'	3:4:545:G:O4'	2.19	0.43
3:4:626:A:H1'	3:4:694:G:H5'	1.99	0.43
3:4:1225:C:H2'	3:4:1226:G:O4'	2.19	0.43
3:4:1417:U:OP1	3:4:1417:U:H4'	2.18	0.43
3:4:1447:G:O2'	3:4:1448:G:H5'	2.18	0.43
6:AC:31:LEU:CD2	6:AC:170:PRO:HG2	2.48	0.43
10:AG:27:MET:HE2	10:AG:56:VAL:HG22	2.01	0.43
14:AL:69:PRO:HD2	14:AL:72:ILE:HD11	1.99	0.43
15:AM:37:ILE:CG2	15:AM:108:LYS:HD3	2.48	0.43
33:Ae:29:PHE:CD2	33:Ae:44:ARG:HG2	2.53	0.43
44:BE:190:PHE:CE1	44:BE:212:LYS:HE2	2.53	0.43
45:BF:59:LEU:HD11	45:BF:70:ASN:HD22	1.83	0.43
49:BJ:39:PRO:HD3	49:BJ:119:PRO:HB2	2.00	0.43
57:BR:106:LYS:HG2	57:BR:109:ASP:OD2	2.16	0.43
64:BY:37:MET:C	64:BY:51:PRO:HG3	2.43	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1:G:H8	1:2:1:G:OP1	2.02	0.43
1:2:9:C:H4'	1:2:32:C:H4'	2.00	0.43
2:1:195:G:O2'	11:AH:90:LYS:NZ	2.50	0.43
2:1:203:A:N6	2:1:213:G:H1'	2.34	0.43
2:1:509:A:H4'	24:AV:95:PRO:HG2	2.00	0.43
2:1:2473:G:H2'	2:1:2474:C:H5'	2.00	0.43
2:1:2848:G:O2'	2:1:2849:G:H5'	2.18	0.43
2:1:2984:C:H4'	2:1:2985:C:O5'	2.17	0.43
3:4:214:C:H2'	3:4:215:C:H6	1.84	0.43
3:4:328:G:N1	3:4:331:A:OP2	2.49	0.43
3:4:442:A:H4'	61:BV:91:TYR:CG	2.54	0.43
3:4:637:A:H5''	52:BM:124:PRO:HB2	2.00	0.43
3:4:651:G:O2'	3:4:652:G:H5'	2.19	0.43
3:4:1050:U:O2'	3:4:1052:A:OP2	2.33	0.43
3:4:1249:C:H2'	3:4:1250:C:H6	1.83	0.43
7:AD:32:GLY:O	7:AD:36:GLU:HG2	2.19	0.43
9:AF:47:ILE:HG22	9:AF:116:VAL:HG22	2.01	0.43
11:AH:68:LEU:HG	15:AM:183:LEU:CD1	2.48	0.43
14:AL:122:MET:HE2	14:AL:124:VAL:HG22	2.01	0.43
24:AV:115:LYS:HA	24:AV:118:GLU:HG3	2.00	0.43
38:Aj:92:ILE:HD11	38:Aj:97:LEU:HD22	2.01	0.43
39:Ak:54:LEU:CD1	39:Ak:77:GLU:HG2	2.48	0.43
44:BE:196:GLU:HG2	57:BR:143:THR:HG23	1.99	0.43
45:BF:104:ARG:NE	72:BF:406:HOH:O	2.46	0.43
51:BL:58:PRO:O	51:BL:59:SER:HB3	2.18	0.43
54:BO:43:LYS:HD3	60:BU:35:PHE:CZ	2.53	0.43
54:BO:44:LEU:HB2	54:BO:46:ILE:HD12	1.99	0.43
56:BQ:64:LYS:HA	56:BQ:69:LYS:O	2.19	0.43
61:BV:33:LYS:HD2	61:BV:33:LYS:HA	1.76	0.43
1:2:3:C:H2'	1:2:4:C:C6	2.53	0.43
2:1:18:U:O2'	2:1:19:G:H5'	2.19	0.43
2:1:131:G:H4'	2:1:1737:G:O3'	2.19	0.43
2:1:333:C:O2'	2:1:334:U:H5'	2.19	0.43
2:1:712:A:N1	2:1:721:G:O2'	2.47	0.43
2:1:771:U:H5	72:AP:201:HOH:O	2.00	0.43
2:1:1572:C:H2'	2:1:1573:C:H6	1.82	0.43
2:1:1584:G:O2'	2:1:1585:G:H5'	2.18	0.43
2:1:2023:G:H2'	2:1:2024:G:O4'	2.18	0.43
2:1:2980:G:N1	2:1:2982:U:H5'	2.34	0.43
3:4:239:A:H2'	3:4:240:C:O4'	2.18	0.43
3:4:307:G:O2'	3:4:309:G:H2'	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:415:G:H2'	3:4:416:C:C6	2.53	0.43
3:4:709:G:H4'	56:BQ:16:ARG:HG2	2.00	0.43
3:4:781:U:H4'	3:4:782:G:OP2	2.17	0.43
3:4:1032:U:O2'	41:BB:111:ASN:HB2	2.18	0.43
5:AB:38:LYS:HG2	5:AB:39:PRO:N	2.33	0.43
12:AI:27:LEU:HD22	12:AI:38:LEU:HD11	2.00	0.43
13:AK:23:ALA:HA	13:AK:38:GLY:CA	2.49	0.43
23:AU:74:LEU:O	23:AU:78:LEU:HD23	2.18	0.43
26:AX:15:SER:HB3	26:AX:18:GLU:OE2	2.18	0.43
38:Aj:168:ILE:HD12	38:Aj:168:ILE:HA	1.90	0.43
40:BA:31:TYR:HE1	40:BA:40:PHE:HB2	1.84	0.43
41:BB:50:ASP:OD2	41:BB:53:LYS:HD3	2.19	0.43
46:BG:69:HIS:HB3	46:BG:72:VAL:HG22	2.00	0.43
47:BH:113:LYS:HG2	72:BH:321:HOH:O	2.18	0.43
47:BH:138:THR:HG22	47:BH:169:SER:HA	2.00	0.43
58:BS:26:GLU:HG2	58:BS:59:LYS:HG3	1.99	0.43
59:BT:92:HIS:HE1	72:BT:217:HOH:O	1.93	0.43
64:BY:19:ARG:NH2	72:BY:201:HOH:O	2.44	0.43
67:Bb:63:ARG:HD3	67:Bb:63:ARG:HA	1.90	0.43
2:1:225:A:H2'	2:1:226:G:O4'	2.18	0.43
2:1:424:G:H2'	2:1:425:C:O4'	2.19	0.43
2:1:1624:A:H2'	2:1:1625:G:O4'	2.17	0.43
2:1:2140:C:H2'	2:1:2141:C:O4'	2.17	0.43
2:1:2767:U:H2'	2:1:2768:C:O4'	2.19	0.43
2:1:2823:C:OP2	29:Aa:68:LYS:NZ	2.44	0.43
2:1:2980:G:O6	2:1:2983:U:H5''	2.19	0.43
3:4:199:C:O2'	3:4:200:U:H5'	2.17	0.43
3:4:1077:C:H1'	3:4:1145:A:C4	2.53	0.43
3:4:1341:A:H2'	3:4:1342:U:O4'	2.19	0.43
3:4:1493:A:O4'	63:BX:91:ARG:NH2	2.49	0.43
5:AB:30:THR:HG22	5:AB:316:VAL:HG11	1.99	0.43
7:AD:37:LYS:HD3	7:AD:125:ALA:O	2.19	0.43
7:AD:131:MET:HE2	7:AD:131:MET:HB2	1.81	0.43
8:AE:124:ILE:HG21	8:AE:162:ALA:HB1	2.01	0.43
10:AG:4:LYS:HE2	10:AG:4:LYS:HB3	1.75	0.43
13:AJ:36:ILE:O	13:AJ:36:ILE:HG13	2.19	0.43
18:AP:40:GLU:HG3	18:AP:40:GLU:O	2.19	0.43
18:AP:53:LYS:O	18:AP:57:VAL:HG13	2.18	0.43
37:Ai:51:ARG:HG2	37:Ai:53:ALA:O	2.18	0.43
42:BC:170:ASN:ND2	72:BC:305:HOH:O	2.52	0.43
42:BC:177:VAL:O	42:BC:188:ILE:HD12	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:BE:114:GLU:CD	44:BE:234:VAL:HB	2.44	0.43
44:BE:230:GLU:OE1	44:BE:230:GLU:N	2.51	0.43
45:BF:80:ASN:CG	45:BF:84:TYR:HB2	2.43	0.43
46:BG:130:PRO:HG2	67:Bb:6:GLU:OE1	2.18	0.43
47:BH:21:VAL:HG13	65:BZ:17:LEU:HD22	2.01	0.43
47:BH:94:LEU:CB	47:BH:174:THR:HG21	2.49	0.43
47:BH:121:TYR:CZ	62:BW:96:VAL:HG21	2.53	0.43
47:BH:157:SER:OG	47:BH:223:ARG:HA	2.17	0.43
47:BH:157:SER:HB2	47:BH:223:ARG:HA	2.01	0.43
53:BN:4:LYS:HD2	53:BN:4:LYS:HA	1.59	0.43
54:BO:42:ARG:HB3	60:BU:34:PRO:HB3	2.00	0.43
65:BZ:46:ARG:NH2	65:BZ:67:THR:HG22	2.26	0.43
2:1:84:G:O2'	2:1:85:C:H5'	2.19	0.43
2:1:555:A:N1	2:1:2739:G:O2'	2.49	0.43
2:1:1401:G:H4'	2:1:1402:A:OP1	2.18	0.43
2:1:1735:C:P	33:Ae:37:SER:HB3	2.59	0.43
3:4:190:C:H2'	3:4:191:C:C6	2.54	0.43
3:4:757:C:H5''	52:BM:139:ARG:O	2.19	0.43
3:4:923:U:H2'	3:4:925:A:OP2	2.19	0.43
3:4:1209:C:O2'	3:4:1210:OMG:H5'	2.18	0.43
3:4:1435:G:H2'	3:4:1436:C:H6	1.82	0.43
5:AB:117:VAL:HG12	5:AB:160:THR:HG23	2.01	0.43
8:AE:61:VAL:CG2	8:AE:72:LEU:HD11	2.49	0.43
11:AH:67:TRP:CH2	11:AH:71:VAL:HG21	2.54	0.43
22:AT:20:LYS:HB2	22:AT:20:LYS:HE3	1.67	0.43
24:AV:86:ASN:ND2	24:AV:90:GLN:HB2	2.32	0.43
30:Ab:108:ILE:HG21	30:Ab:117:ARG:HG2	2.01	0.43
39:Ak:11:ILE:HG13	39:Ak:26:PHE:HB3	2.01	0.43
43:BD:61:LEU:CD1	43:BD:96:LEU:HD11	2.48	0.43
44:BE:143:LEU:HD21	44:BE:145:LEU:HD21	2.01	0.43
47:BH:56:GLY:HA3	72:BZ:108:HOH:O	2.19	0.43
47:BH:148:ILE:HG22	47:BH:150:GLY:H	1.83	0.43
52:BM:103:SER:HA	63:BX:45:VAL:HG22	2.01	0.43
54:BO:32:ILE:CD1	54:BO:67:VAL:HG13	2.48	0.43
61:BV:10:ASN:OD1	61:BV:28:GLU:HB3	2.19	0.43
68:Bc:55:TYR:O	68:Bc:63:VAL:HA	2.19	0.43
68:Bc:57:CYS:HB3	68:Bc:60:CYS:O	2.19	0.43
2:1:1234:C:H2'	2:1:1235:C:H6	1.84	0.43
2:1:1683:C:O2'	2:1:1684:C:H5'	2.18	0.43
2:1:2910:G:O2'	2:1:2911:G:H5'	2.19	0.43
2:1:2949:G:H2'	2:1:2950:G:O4'	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:5:4AC:O2	3:4:467:OMG:HM21	2.17	0.43
3:4:285:A:H3'	3:4:286:C:C6	2.53	0.43
3:4:413:G:O2'	3:4:414:G:H5'	2.18	0.43
3:4:683:G:OP1	40:BA:107:ARG:NH2	2.47	0.43
3:4:1162:A:N1	42:BC:150:ARG:HD2	2.33	0.43
6:AC:146:ALA:O	6:AC:150:THR:HG23	2.19	0.43
7:AD:16:ARG:O	7:AD:140:PRO:HD3	2.19	0.43
7:AD:40:ASN:OD1	7:AD:43:ARG:NH2	2.52	0.43
10:AG:94:VAL:O	10:AG:98:VAL:HG23	2.18	0.43
11:AH:6:VAL:HG12	11:AH:21:TRP:CE3	2.53	0.43
11:AH:11:ARG:HD2	11:AH:17:GLY:HA2	2.01	0.43
18:AP:55:ASN:O	18:AP:78:LYS:HE3	2.18	0.43
24:AV:33:SER:O	24:AV:37:GLN:HG3	2.17	0.43
25:AW:48:ARG:HH12	25:AW:53:VAL:CG1	2.32	0.43
29:Aa:6:LYS:HE3	29:Aa:6:LYS:HB3	1.82	0.43
37:Ai:92:GLU:HA	37:Ai:92:GLU:OE1	2.19	0.43
40:BA:96:LEU:HD23	40:BA:96:LEU:HA	1.80	0.43
42:BC:163:LYS:HB3	42:BC:163:LYS:HE3	1.91	0.43
44:BE:31:PRO:HD2	44:BE:79:PRO:HG2	2.01	0.43
44:BE:146:PRO:HD2	44:BE:149:VAL:HG21	2.00	0.43
49:BJ:91:ASN:HB3	49:BJ:94:TYR:CD2	2.54	0.43
55:BP:34:LEU:HD21	55:BP:41:PHE:CD1	2.54	0.43
58:BS:44:LYS:CG	58:BS:47:ARG:HH12	2.32	0.43
59:BT:71:LEU:HD13	59:BT:96:MET:HE1	1.99	0.43
59:BT:71:LEU:HA	59:BT:71:LEU:HD12	1.73	0.43
61:BV:92:ILE:HD13	61:BV:92:ILE:HA	1.77	0.43
68:Bc:19:THR:HG1	68:Bc:21:TRP:CG	2.37	0.43
2:1:384:G:O6	15:AM:162:ARG:NH2	2.52	0.43
2:1:647:U:OP2	30:Ab:51:THR:HB	2.19	0.43
2:1:972:G:H2'	2:1:973:G:H8	1.83	0.43
2:1:1563:G:H5''	2:1:1731:G:C2	2.53	0.43
2:1:1801:C:H5''	5:AB:233:GLY:CA	2.45	0.43
2:1:2043:C:H2'	2:1:2044:PSU:C6	2.54	0.43
2:1:2420:G:H2'	2:1:2422:A:N7	2.33	0.43
3:4:431:U:H2'	3:4:432:U:H5'	1.99	0.43
3:4:551:C:H2'	3:4:552:C:C6	2.53	0.43
3:4:624:A:O2'	3:4:625:G:H5'	2.19	0.43
3:4:723:G:H2'	3:4:724:G:C8	2.54	0.43
3:4:728:A:H2'	3:4:729:A:O4'	2.19	0.43
3:4:1144:G:N2	3:4:1147:G:OP2	2.51	0.43
3:4:1480:C:H2'	3:4:1481:U:H6	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:AB:32:PRO:HG3	5:AB:314:TYR:O	2.19	0.43
7:AD:2:LYS:HG2	7:AD:5:GLU:OE1	2.18	0.43
7:AD:116:MET:N	7:AD:116:MET:SD	2.92	0.43
8:AE:47:PRO:HG3	8:AE:68:GLU:HG2	2.00	0.43
10:AG:91:PRO:HB3	10:AG:154:LEU:HB3	2.01	0.43
12:AI:127:MET:HE3	12:AI:127:MET:HB3	1.83	0.43
20:AR:29:ALA:O	20:AR:33:VAL:HG23	2.19	0.43
38:Aj:21:LYS:O	38:Aj:25:VAL:HG23	2.19	0.43
59:BT:74:ILE:HG23	59:BT:105:LEU:CD1	2.49	0.43
63:BX:37:ARG:NH2	72:BX:206:HOH:O	2.52	0.43
64:BY:16:ARG:O	64:BY:33:SER:HB3	2.19	0.43
2:1:434:C:H1'	72:1:4068:HOH:O	2.19	0.43
2:1:1449:C:O2'	72:1:3418:HOH:O	2.21	0.43
3:4:205:G:H2'	3:4:206:C:C6	2.53	0.43
3:4:420:G:H2'	3:4:421:A:H8	1.84	0.43
3:4:514:OMC:HM22	3:4:515:G:H5'	2.00	0.43
3:4:1242:G:O2'	3:4:1243:G:H5'	2.19	0.43
3:4:1389:G:H2'	3:4:1390:C:H6	1.84	0.43
5:AB:114:LEU:HD23	5:AB:114:LEU:HA	1.81	0.43
8:AE:41:LYS:HG3	8:AE:42:GLU:N	2.34	0.43
9:AF:126:LEU:O	9:AF:130:VAL:HG23	2.18	0.43
13:AK:6:ASP:OD2	13:AK:9:ARG:HB2	2.18	0.43
13:AK:71:GLU:OE1	13:AK:71:GLU:N	2.38	0.43
41:BB:139:MET:O	68:Bc:28:ARG:HD3	2.18	0.43
41:BB:189:LYS:HG2	41:BB:192:GLN:CD	2.44	0.43
41:BB:189:LYS:CE	41:BB:191:ASP:HB3	2.48	0.43
41:BB:200:GLU:OE1	41:BB:204:ARG:NH2	2.52	0.43
43:BD:27:GLU:N	43:BD:27:GLU:OE2	2.52	0.43
46:BG:29:PHE:HA	46:BG:32:LEU:HD12	2.01	0.43
48:BI:78:ARG:HB3	48:BI:124:VAL:HG13	2.01	0.43
2:1:258:A:H5''	2:1:259:U:OP2	2.19	0.42
2:1:375:A:H2'	2:1:376:C:C6	2.54	0.42
2:1:1412:A:H2'	2:1:1413:G:O4'	2.19	0.42
2:1:1551:U:H2'	2:1:1552:G:H5''	2.01	0.42
2:1:2776:G:H2'	2:1:2777:A:C8	2.54	0.42
3:4:257:G:O2'	3:4:258:G:H5'	2.18	0.42
3:4:270:C:H2'	3:4:271:C:C6	2.54	0.42
3:4:396:G:H2'	3:4:397:G:C8	2.54	0.42
3:4:740:C:H2'	3:4:741:A:O4'	2.18	0.42
3:4:1046:C:H2'	3:4:1047:G:C8	2.54	0.42
3:4:1118:A:HO2'	51:BL:76:ARG:NH2	2.17	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:1386:G:H2'	3:4:1387:G:O4'	2.19	0.42
4:AA:222:LYS:HD2	4:AA:226:ILE:HG23	2.01	0.42
10:AG:105:LYS:O	10:AG:107:VAL:HG22	2.19	0.42
27:AY:125:LYS:HD3	27:AY:125:LYS:HA	1.73	0.42
36:Ah:87:LYS:HA	36:Ah:87:LYS:HD2	1.72	0.42
43:BD:111:LEU:CD1	43:BD:147:VAL:HB	2.49	0.42
50:BK:20:LYS:HD3	50:BK:85:ILE:CG2	2.40	0.42
50:BK:37:ARG:NH1	60:BU:6:ASP:OD1	2.50	0.42
59:BT:21:ILE:HG23	59:BT:121:SER:HB3	2.01	0.42
60:BU:8:PRO:HG2	60:BU:11:LEU:CD1	2.48	0.42
60:BU:103:LYS:HE2	60:BU:103:LYS:HB2	1.92	0.42
61:BV:31:HIS:O	61:BV:69:GLY:HA3	2.18	0.42
64:BY:21:ARG:HB2	64:BY:28:GLU:OE2	2.19	0.42
65:BZ:17:LEU:HD13	65:BZ:61:ILE:HG12	2.01	0.42
1:2:39:U:H2'	1:2:40:C:C6	2.54	0.42
2:1:277:G:H1'	72:1:4919:HOH:O	2.19	0.42
2:1:565:A:H2'	2:1:566:G:O4'	2.20	0.42
2:1:604:G:H2'	2:1:605:A:C8	2.55	0.42
2:1:636:C:H2'	2:1:637:U:H6	1.83	0.42
2:1:1079:U:H2'	2:1:1080:A:O4'	2.18	0.42
2:1:1267:U:OP1	10:AG:26:ILE:HD13	2.19	0.42
2:1:1419:C:H2'	2:1:1420:C:H6	1.84	0.42
2:1:1927:A:OP1	4:AA:175:LYS:HD3	2.19	0.42
2:1:1945:A:H2'	2:1:1946:A:C8	2.54	0.42
2:1:2095:A:H2'	2:1:2096:U:O4'	2.19	0.42
2:1:2439:A:H5'	72:1:3954:HOH:O	2.19	0.42
2:1:2624:OMC:HM21	5:AB:225:PRO:HD2	2.00	0.42
3:4:104:G:H2'	3:4:105:U:H6	1.84	0.42
3:4:142:A:H2'	3:4:143:A:C8	2.55	0.42
3:4:179:A:O2'	3:4:181:G:N7	2.45	0.42
3:4:683:G:H22	63:BX:32:ARG:HH22	1.66	0.42
3:4:760:U:H2'	3:4:761:G:C8	2.54	0.42
3:4:886:U:H2'	3:4:887:G:O4'	2.20	0.42
3:4:915:U:H5	54:BO:134:THR:HG21	1.84	0.42
3:4:1276:A:H2'	3:4:1277:G:O4'	2.20	0.42
5:AB:107:VAL:HG11	5:AB:186:GLY:CA	2.49	0.42
5:AB:180:PHE:CE2	5:AB:184:LEU:HD11	2.53	0.42
6:AC:169:LEU:HA	6:AC:170:PRO:C	2.44	0.42
7:AD:42:LEU:CD1	7:AD:72:VAL:HG12	2.43	0.42
12:AI:127:MET:HG2	12:AI:143:VAL:HG12	2.01	0.42
23:AU:81:LEU:HD23	23:AU:81:LEU:HA	1.82	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:AY:17:ILE:HG12	27:AY:44:MET:HG3	2.00	0.42
27:AY:173:ASP:OD1	27:AY:173:ASP:N	2.52	0.42
28:AZ:15:GLY:HA3	28:AZ:88:ASP:O	2.19	0.42
31:Ac:3:ARG:O	31:Ac:7:ARG:HG3	2.18	0.42
42:BC:146:LEU:HA	42:BC:186:TYR:HE2	1.84	0.42
48:BI:105:SER:HB2	48:BI:126:LEU:HD11	2.00	0.42
49:BJ:43:GLU:OE1	49:BJ:44:GLU:HG2	2.19	0.42
49:BJ:105:ILE:HD13	49:BJ:114:VAL:HG13	2.01	0.42
54:BO:106:VAL:CG1	54:BO:110:LYS:HE2	2.49	0.42
60:BU:69:VAL:HG23	60:BU:70:GLY:H	1.84	0.42
65:BZ:20:GLN:HB3	65:BZ:35:LYS:HB2	2.02	0.42
65:BZ:72:ARG:HD3	65:BZ:72:ARG:H	1.84	0.42
68:Bc:23:LEU:HD11	68:Bc:43:VAL:CG1	2.49	0.42
1:2:105:G:O2'	2:1:1037:A:H5''	2.19	0.42
2:1:567:G:H2'	2:1:568:C:H6	1.85	0.42
2:1:675:G:O6	72:1:3401:HOH:O	2.20	0.42
2:1:966:G:H2'	2:1:967:C:C6	2.54	0.42
2:1:1662:G:H2'	2:1:1663:C:C6	2.54	0.42
2:1:2382:G:H4'	21:AS:57:ARG:HG2	2.00	0.42
2:1:2705:C:H2'	2:1:2706:G:H8	1.84	0.42
69:1:3123:SPM:H111	72:1:4524:HOH:O	2.19	0.42
3:4:276:A:O2'	3:4:277:A:H5'	2.19	0.42
3:4:364:G:O2'	3:4:365:C:H5'	2.19	0.42
3:4:652:G:O2'	3:4:653:C:H5'	2.18	0.42
3:4:702:A:H5''	56:BQ:98:ILE:HD11	2.01	0.42
6:AC:187:LYS:HG3	6:AC:196:TRP:CH2	2.54	0.42
8:AE:93:LYS:NZ	8:AE:192:GLU:HG2	2.34	0.42
9:AF:65:LEU:HB2	9:AF:126:LEU:HD11	2.00	0.42
13:AJ:24:VAL:HG23	13:AJ:86:MET:HE2	2.00	0.42
13:AJ:91:LYS:HE2	13:AJ:91:LYS:HB3	1.84	0.42
14:AL:147:GLU:OE2	14:AL:149:ARG:HG2	2.20	0.42
30:Ab:122:LYS:HD2	30:Ab:123:LYS:N	2.34	0.42
38:Aj:82:LYS:HD2	38:Aj:83:PRO:CD	2.49	0.42
40:BA:22:TRP:HB2	52:BM:78:ARG:NE	2.34	0.42
40:BA:26:LYS:HE2	40:BA:26:LYS:HB2	1.75	0.42
40:BA:158:ALA:HA	40:BA:166:PHE:CD1	2.54	0.42
41:BB:19:ALA:HB3	41:BB:172:LEU:HD22	2.00	0.42
43:BD:137:GLY:O	61:BV:68:ILE:HD12	2.19	0.42
44:BE:10:PRO:HG2	44:BE:13:TRP:CE2	2.54	0.42
52:BM:116:ILE:HG13	63:BX:52:GLU:OE2	2.19	0.42
54:BO:22:VAL:HG22	54:BO:52:LEU:HD13	1.99	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:BO:84:ASP:HB3	54:BO:88:GLY:H	1.83	0.42
57:BR:34:VAL:HG11	57:BR:128:ILE:CG2	2.49	0.42
2:1:49:C:H2'	2:1:50:G:O4'	2.19	0.42
2:1:950:C:H2'	2:1:951:C:C6	2.55	0.42
2:1:1743:G:O2'	2:1:1744:U:H5'	2.18	0.42
2:1:1954:U:O2'	4:AA:115:LYS:O	2.29	0.42
2:1:1988:G:N1	2:1:2010:A:OP2	2.26	0.42
2:1:2003:C:H5''	36:Ah:32:SER:OG	2.20	0.42
2:1:2118:G:O2'	2:1:2119:G:H5'	2.18	0.42
2:1:2831:G:O2'	2:1:2966:U:H5''	2.19	0.42
2:1:2917:C:H2'	2:1:2918:C:C6	2.55	0.42
2:1:2953:G:H1'	2:1:3010:A:N6	2.35	0.42
3:4:166:G:H2'	3:4:167:A:C8	2.54	0.42
3:4:462:OMG:H1'	3:4:511:OMG:OP1	2.18	0.42
3:4:645:G:O2'	3:4:646:G:H5'	2.18	0.42
3:4:1091:C:H5	72:4:3764:HOH:O	2.02	0.42
69:4:3015:SPM:H32	72:4:3930:HOH:O	2.20	0.42
5:AB:93:ASP:OD1	5:AB:94:PRO:HD2	2.19	0.42
7:AD:87:ARG:NH1	7:AD:118:PRO:O	2.45	0.42
7:AD:149:ARG:HG3	17:AO:107:LEU:HD12	2.01	0.42
13:AK:27:ASP:OD1	13:AK:28:ILE:N	2.50	0.42
27:AY:179:LEU:HD23	27:AY:179:LEU:HA	1.73	0.42
30:Ab:12:PRO:O	30:Ab:16:LEU:HG	2.19	0.42
33:Ae:52:GLN:HG2	33:Ae:53:LEU:HD12	2.02	0.42
38:Aj:105:ASN:HB2	38:Aj:111:LEU:HD11	2.01	0.42
41:BB:89:PHE:CD2	41:BB:178:ALA:HB2	2.54	0.42
48:BI:111:MET:HE2	48:BI:111:MET:HB3	1.90	0.42
54:BO:89:ARG:NH2	54:BO:91:LEU:HD21	2.35	0.42
59:BT:35:THR:O	59:BT:39:LEU:HG	2.20	0.42
65:BZ:18:VAL:HG13	65:BZ:34:VAL:HG21	2.00	0.42
67:Bb:34:ILE:O	67:Bb:38:VAL:HG23	2.19	0.42
2:1:12:G:H2'	2:1:13:C:H6	1.84	0.42
2:1:30:C:H2'	2:1:31:U:H6	1.83	0.42
2:1:563:G:H2'	2:1:564:C:C6	2.54	0.42
2:1:1037:A:H2'	2:1:1038:C:H5'	2.00	0.42
2:1:1700:C:O2'	2:1:1701:U:H5'	2.20	0.42
2:1:2100:C:C2'	2:1:2101:G:H5'	2.49	0.42
2:1:2212:U:H4'	2:1:2213:G:O5'	2.20	0.42
2:1:3016:C:OP1	22:AT:178:LYS:HA	2.19	0.42
3:4:157:C:H2'	3:4:158:C:H6	1.85	0.42
3:4:272:C:OP2	72:4:3109:HOH:O	2.22	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:425:C:H2'	3:4:426:G:C8	2.54	0.42
3:4:554:G:O2'	3:4:555:C:H5'	2.19	0.42
3:4:637:A:H2'	3:4:638:C:O4'	2.19	0.42
3:4:675:G:H2'	3:4:676:A:H8	1.84	0.42
3:4:828:G:H2'	3:4:830:A:OP2	2.20	0.42
3:4:1123:G:OP2	58:BS:44:LYS:HE2	2.19	0.42
3:4:1465:U:O2	52:BM:141:VAL:HA	2.20	0.42
11:AH:59:GLN:OE1	11:AH:59:GLN:N	2.40	0.42
13:AJ:27:ASP:CB	13:AJ:35:VAL:HB	2.50	0.42
13:AK:18:GLU:HA	13:AK:21:ARG:HE	1.84	0.42
19:AQ:95:VAL:HG22	19:AQ:98:ARG:NH2	2.35	0.42
24:AV:70:VAL:HG22	24:AV:77:ILE:HG22	2.01	0.42
27:AY:127:ARG:HB2	27:AY:130:GLN:NE2	2.31	0.42
31:Ac:36:LYS:HD2	31:Ac:41:GLY:O	2.19	0.42
40:BA:101:LEU:O	40:BA:105:ILE:HG12	2.19	0.42
40:BA:152:GLU:N	40:BA:152:GLU:OE2	2.53	0.42
43:BD:151:LEU:HD23	43:BD:154:LYS:HD2	2.01	0.42
44:BE:194:PHE:CE1	44:BE:208:VAL:HB	2.54	0.42
45:BF:127:PRO:HB3	68:Bc:9:TYR:CD2	2.53	0.42
46:BG:98:LYS:HB2	46:BG:98:LYS:HE3	1.83	0.42
58:BS:17:LEU:HD13	58:BS:54:ILE:HG23	2.01	0.42
61:BV:55:ASP:OD1	61:BV:85:ARG:NH2	2.43	0.42
65:BZ:26:GLY:HA2	65:BZ:74:ILE:CG2	2.49	0.42
68:Bc:64:GLY:O	68:Bc:65:PRO:C	2.63	0.42
2:1:306:C:O2'	2:1:307:C:H5'	2.20	0.42
2:1:834:A:H8	2:1:834:A:O5'	2.02	0.42
2:1:963:G:H1'	2:1:1054:A:H61	1.85	0.42
2:1:1318:G:H2'	2:1:1319:G:H8	1.83	0.42
2:1:1427:G:H22	2:1:1783:A:H5''	1.84	0.42
2:1:1520:G:O2'	2:1:1521:U:H5'	2.20	0.42
2:1:2007:G:O2'	2:1:2008:C:H5'	2.19	0.42
2:1:2475:A:H2'	2:1:2476:A:O4'	2.18	0.42
2:1:2804:U:H5	72:1:5022:HOH:O	2.01	0.42
3:4:402:C:H2'	3:4:403:C:C6	2.55	0.42
3:4:506:C:H2'	3:4:507:G:O4'	2.20	0.42
3:4:551:C:OP1	48:BI:32:LYS:HG3	2.19	0.42
3:4:646:G:H1'	52:BM:45:ARG:NH2	2.34	0.42
3:4:702:A:O2'	3:4:703:G:H5'	2.18	0.42
3:4:775:A:H5'	3:4:1470:G:H4'	2.01	0.42
3:4:1145:A:H2'	3:4:1146:A:O4'	2.20	0.42
3:4:1462:A:H4'	3:4:1463:G:OP2	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:1489:G:C6	63:BX:71:ILE:HD12	2.54	0.42
3:4:1493:A:C6	63:BX:80:ILE:HD13	2.54	0.42
72:4:3136:HOH:O	63:BX:6:LYS:HE3	2.18	0.42
6:AC:169:LEU:HD12	6:AC:171:LEU:HB2	2.01	0.42
8:AE:90:TRP:NE1	8:AE:149:ARG:HB2	2.34	0.42
8:AE:103:MET:HE1	8:AE:186:ILE:HG13	2.01	0.42
13:AK:60:LYS:HE3	13:AK:85:TYR:CE2	2.55	0.42
44:BE:38:LEU:HD21	44:BE:42:VAL:HG12	2.02	0.42
45:BF:92:SER:HB3	45:BF:98:ALA:CA	2.49	0.42
45:BF:153:GLY:O	45:BF:171:ASP:HA	2.20	0.42
47:BH:72:GLU:HB2	50:BK:121:ARG:HH22	1.84	0.42
47:BH:94:LEU:CD1	47:BH:170:LEU:HB3	2.48	0.42
47:BH:132:ILE:HD13	47:BH:132:ILE:HA	1.84	0.42
48:BI:47:VAL:HG13	48:BI:63:VAL:HG13	2.01	0.42
49:BJ:46:ILE:HD12	49:BJ:63:GLN:HB2	2.01	0.42
52:BM:137:LYS:HE2	52:BM:141:VAL:CG2	2.50	0.42
53:BN:71:LYS:HD3	66:Ba:10:ALA:HB2	2.01	0.42
54:BO:56:PRO:CG	54:BO:59:GLN:HG3	2.38	0.42
60:BU:18:LYS:HE3	60:BU:18:LYS:HB3	1.60	0.42
62:BW:65:THR:O	62:BW:68:GLU:HG3	2.19	0.42
2:1:50:G:H2'	2:1:51:U:C6	2.55	0.42
2:1:722:A:O2'	2:1:755:G:O2'	2.27	0.42
2:1:2028:G:H2'	2:1:2029:G:H8	1.84	0.42
2:1:2417:U:C2	7:AD:130:GLY:HA3	2.55	0.42
2:1:2575:C:H2'	2:1:2576:G:C8	2.55	0.42
2:1:2813:U:H2'	2:1:2814:C:C6	2.55	0.42
2:1:2916:A:H2'	2:1:2917:C:O4'	2.19	0.42
3:4:138:G:H21	46:BG:112:GLN:HE22	1.68	0.42
3:4:209:A:H4'	3:4:210:U:O5'	2.19	0.42
3:4:1299:A:H2'	3:4:1300:C:O4'	2.20	0.42
6:AC:32:LYS:HG2	6:AC:40:TYR:HE2	1.85	0.42
8:AE:8:GLU:OE1	8:AE:76:LYS:HD2	2.20	0.42
10:AG:90:ARG:HG2	10:AG:121:MET:HE2	2.02	0.42
16:AN:29:ILE:HA	16:AN:63:MET:SD	2.60	0.42
16:AN:72:ILE:HD12	16:AN:72:ILE:HA	1.82	0.42
17:AO:59:VAL:HG21	17:AO:98:ILE:HD11	2.02	0.42
17:AO:167:PHE:CG	17:AO:177:PRO:HG3	2.55	0.42
22:AT:49:ALA:HB2	22:AT:106:TYR:OH	2.20	0.42
23:AU:8:THR:O	23:AU:12:LEU:HG	2.19	0.42
23:AU:47:GLU:N	23:AU:64:LYS:O	2.51	0.42
26:AX:60:THR:HG23	72:AX:101:HOH:O	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:Af:23:PRO:HA	34:Af:24:PRO:HD3	1.94	0.42
36:Ah:30:ARG:H	36:Ah:30:ARG:HG3	1.62	0.42
44:BE:51:ALA:HB2	44:BE:60:ILE:HD12	2.02	0.42
45:BF:62:ARG:O	45:BF:68:GLU:HA	2.19	0.42
47:BH:34:LEU:HD23	47:BH:34:LEU:HA	1.91	0.42
49:BJ:73:LYS:HB2	49:BJ:73:LYS:HE2	1.79	0.42
50:BK:4:VAL:HG12	50:BK:16:SER:HB2	2.01	0.42
50:BK:32:GLY:H	50:BK:69:VAL:HA	1.85	0.42
57:BR:60:GLU:OE1	57:BR:60:GLU:N	2.52	0.42
59:BT:76:LYS:HE3	59:BT:76:LYS:HB3	1.57	0.42
62:BW:84:LEU:HD13	62:BW:105:TYR:CD1	2.55	0.42
2:1:374:A:H2'	2:1:375:A:H5'	2.01	0.42
2:1:402:C:O2'	2:1:403:G:H5'	2.20	0.42
2:1:1125:C:H1'	2:1:1132:U:N3	2.34	0.42
2:1:1956:C:H4'	2:1:1957:OMG:OP2	2.20	0.42
2:1:2191:A:H2'	2:1:2192:G:C8	2.55	0.42
3:4:481:A:N3	66:Ba:13:VAL:HG21	2.34	0.42
3:4:1019:C:H2'	3:4:1020:G:C8	2.49	0.42
3:4:1309:C:H2'	3:4:1310:C:C6	2.55	0.42
3:4:1324:U:OP2	3:4:1325:C:N4	2.52	0.42
69:4:3014:SPM:H42	72:4:4308:HOH:O	2.20	0.42
69:4:3017:SPM:H61	72:4:3979:HOH:O	2.20	0.42
10:AG:52:GLU:OE1	10:AG:52:GLU:N	2.44	0.42
13:AJ:14:VAL:HG22	13:AJ:54:HIS:C	2.44	0.42
17:AO:25:ARG:O	17:AO:29:LEU:HG	2.20	0.42
40:BA:124:TRP:NE1	40:BA:203:PRO:HG3	2.35	0.42
41:BB:47:ARG:C	41:BB:48:ILE:HD13	2.45	0.42
45:BF:69:ARG:HG3	72:BF:431:HOH:O	2.19	0.42
45:BF:137:LYS:NZ	45:BF:142:GLU:OE2	2.32	0.42
53:BN:91:ASP:OD1	66:Ba:11:GLY:HA2	2.20	0.42
57:BR:144:LEU:HD23	57:BR:144:LEU:HA	1.82	0.42
61:BV:25:VAL:CG2	61:BV:75:VAL:HB	2.49	0.42
2:1:23:G:H2'	2:1:24:G:H8	1.85	0.42
2:1:29:G:N3	2:1:481:G:O2'	2.52	0.42
2:1:71:G:H2'	2:1:72:G:H8	1.85	0.42
2:1:157:G:C2'	2:1:158:C:H5'	2.49	0.42
2:1:397:G:N2	72:1:4217:HOH:O	2.51	0.42
2:1:507:G:H4'	2:1:532:A:N1	2.35	0.42
2:1:561:G:H5'	30:Ab:36:TRP:CD1	2.55	0.42
2:1:806:A:H2'	2:1:807:G:C8	2.55	0.42
2:1:1029:A:N1	2:1:2389:G:H1'	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1111:A:N6	2:1:1314:G:H1'	2.35	0.42
2:1:1914:U:H2'	2:1:1920:A:N6	2.34	0.42
2:1:2764:C:H2'	2:1:2765:C:H6	1.85	0.42
3:4:205:G:H2'	3:4:206:C:H6	1.85	0.42
3:4:677:C:O2'	3:4:678:C:H5'	2.19	0.42
3:4:902:C:O2'	3:4:903:A:H5'	2.20	0.42
4:AA:93:PRO:HA	4:AA:152:GLY:O	2.20	0.42
4:AA:182:LYS:HD2	4:AA:184:TRP:CE2	2.55	0.42
8:AE:93:LYS:O	8:AE:189:VAL:HG22	2.20	0.42
9:AF:48:LYS:HG3	9:AF:117:ILE:HD11	2.01	0.42
15:AM:71:PRO:CB	15:AM:92:THR:HG22	2.50	0.42
16:AN:81:VAL:HG12	16:AN:85:ASN:HB2	2.01	0.42
33:Ae:56:GLU:O	33:Ae:60:LYS:HG3	2.19	0.42
41:BB:76:HIS:HA	41:BB:98:LEU:O	2.19	0.42
45:BF:89:ILE:HD11	45:BF:184:LEU:HD11	2.01	0.42
57:BR:76:HIS:O	57:BR:92:ARG:HA	2.20	0.42
57:BR:113:ILE:HD12	57:BR:125:TRP:CE3	2.55	0.42
59:BT:57:ARG:O	59:BT:61:ARG:HG3	2.19	0.42
67:Bb:8:VAL:HG11	67:Bb:45:ARG:CD	2.50	0.42
2:1:1025:G:O2'	2:1:1026:U:H5'	2.20	0.42
2:1:2034:A:N1	3:4:1373:C:O2'	2.47	0.42
2:1:2330:G:O2'	2:1:2331:C:H5'	2.19	0.42
72:1:4029:HOH:O	19:AQ:63:LEU:HD22	2.19	0.42
3:4:157:C:H2'	3:4:158:C:C6	2.55	0.42
3:4:261:G:H5'	49:BJ:102:LYS:HB3	2.02	0.42
3:4:306:C:HO2'	3:4:516:G:H4'	1.85	0.42
3:4:459:A:H4'	3:4:460:G:H5'	2.02	0.42
3:4:1093:C:H2'	3:4:1094:U:C6	2.55	0.42
3:4:1098:U:C5'	72:4:3172:HOH:O	2.67	0.42
3:4:1357:U:O3'	63:BX:88:ARG:NH2	2.52	0.42
4:AA:129:GLN:C	4:AA:130:ARG:HE	2.28	0.42
5:AB:196:THR:O	5:AB:199:GLN:HG2	2.20	0.42
9:AF:37:ILE:CD1	9:AF:129:LEU:HD22	2.41	0.42
13:AK:5:ILE:CD1	13:AK:57:PRO:HG3	2.49	0.42
37:Ai:62:CYS:SG	37:Ai:64:HIS:HB2	2.60	0.42
38:Aj:34:ALA:HA	38:Aj:46:VAL:O	2.20	0.42
41:BB:179:ARG:O	41:BB:183:ARG:HD3	2.20	0.42
41:BB:181:VAL:O	41:BB:185:ARG:HD3	2.19	0.42
44:BE:169:LYS:HE3	44:BE:170:THR:HG22	2.01	0.42
46:BG:17:ARG:NE	46:BG:17:ARG:HA	2.34	0.42
47:BH:20:ASP:OD1	65:BZ:37:ARG:NH2	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:BH:157:SER:HB3	65:BZ:69:ARG:HH22	1.85	0.42
47:BH:220:ALA:HA	47:BH:223:ARG:NH1	2.35	0.42
50:BK:45:LEU:HD21	60:BU:149:LEU:CD1	2.50	0.42
60:BU:63:LEU:HD23	60:BU:63:LEU:HA	1.56	0.42
61:BV:58:PHE:CE2	61:BV:84:ALA:HB1	2.55	0.42
1:2:95:C:H2'	1:2:96:G:O4'	2.20	0.41
2:1:62:G:H4'	2:1:63:A:OP1	2.20	0.41
2:1:269:A:C8	2:1:312:G:H1'	2.55	0.41
2:1:452:G:O2'	2:1:453:C:H5'	2.20	0.41
2:1:757:U:H2'	2:1:758:C:C6	2.54	0.41
2:1:810:C:O2'	2:1:1481:A:N3	2.50	0.41
2:1:1177:G:H1'	72:1:6960:HOH:O	2.19	0.41
2:1:1485:C:H2'	2:1:1486:G:H8	1.85	0.41
2:1:1526:A:H4'	2:1:1527:U:OP2	2.17	0.41
2:1:1594:G:O2'	2:1:1595:G:H5'	2.20	0.41
2:1:1601:C:H2'	2:1:1602:U:C6	2.55	0.41
2:1:1756:A:C2	22:AT:151:ALA:HB2	2.54	0.41
2:1:2405:G:H2'	2:1:2406:G:C8	2.55	0.41
2:1:2863:G:O2'	72:1:3430:HOH:O	2.22	0.41
2:1:2903:U:H2'	2:1:2904:G:C8	2.55	0.41
3:4:119:U:H2'	3:4:120:C:H6	1.84	0.41
3:4:299:U:OP1	72:4:3102:HOH:O	2.20	0.41
3:4:754:U:O4	3:4:1477:MA6:H93	2.20	0.41
3:4:1069:G:H3'	3:4:1070:A:H8	1.85	0.41
3:4:1178:A:C1'	72:4:3466:HOH:O	2.35	0.41
3:4:1243:G:H2'	3:4:1244:C:H5''	2.02	0.41
6:AC:178:GLU:O	6:AC:236:PRO:HD2	2.20	0.41
13:AJ:37:THR:HB	13:AJ:47:ARG:CB	2.49	0.41
13:AJ:52:ILE:HG12	28:AZ:26:LYS:HE3	2.02	0.41
25:AW:23:ARG:HB2	25:AW:27:THR:CG2	2.50	0.41
28:AZ:93:GLU:HA	28:AZ:96:LYS:NZ	2.35	0.41
38:Aj:73:LYS:HA	38:Aj:88:TRP:O	2.20	0.41
40:BA:36:LEU:HD12	40:BA:77:PHE:HE2	1.85	0.41
40:BA:162:ASP:OD1	40:BA:164:GLY:N	2.53	0.41
46:BG:68:MET:HE3	46:BG:68:MET:HB3	1.90	0.41
47:BH:33:THR:HG22	47:BH:37:ASN:H	1.84	0.41
47:BH:157:SER:CB	65:BZ:69:ARG:HH22	2.33	0.41
49:BJ:2:LYS:HA	49:BJ:2:LYS:HD2	1.89	0.41
50:BK:130:ILE:HD12	50:BK:132:HIS:O	2.20	0.41
52:BM:55:ASP:O	52:BM:58:LYS:HG3	2.19	0.41
54:BO:93:LEU:C	54:BO:94:ILE:HD13	2.45	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:BP:27:ALA:HB3	55:BP:38:ARG:HB2	2.02	0.41
55:BP:41:PHE:O	55:BP:45:ALA:HB2	2.19	0.41
2:1:32:C:H4'	6:AC:73:PRO:HG2	2.00	0.41
2:1:172:A:H2'	2:1:173:A:C8	2.55	0.41
2:1:215:C:H2'	2:1:216:C:H6	1.85	0.41
2:1:356:U:O4	69:1:3108:SPM:N1	2.53	0.41
2:1:421:U:H5''	2:1:422:U:OP2	2.20	0.41
2:1:823:A:H5'	37:Ai:10:GLY:C	2.45	0.41
2:1:2119:G:H2'	2:1:2120:C:C6	2.56	0.41
2:1:2187:A:OP2	72:1:3429:HOH:O	2.22	0.41
2:1:2505:A:OP2	72:1:3417:HOH:O	2.21	0.41
3:4:590:G:H2'	3:4:591:G:O4'	2.20	0.41
3:4:830:A:H5''	69:4:3017:SPM:H62	2.02	0.41
3:4:1023:G:H4'	3:4:1024:U:C5'	2.50	0.41
6:AC:229:VAL:O	6:AC:273:THR:HG23	2.20	0.41
6:AC:256:ASN:OD1	6:AC:258:LEU:HB2	2.19	0.41
13:AK:65:LYS:HD2	13:AK:66:LYS:O	2.19	0.41
15:AM:30:LYS:O	15:AM:33:LYS:HG3	2.20	0.41
17:AO:48:ILE:CG2	17:AO:98:ILE:HD13	2.45	0.41
21:AS:76:GLU:HG2	21:AS:83:LYS:HD3	2.02	0.41
35:Ag:6:ASP:OD1	35:Ag:6:ASP:N	2.49	0.41
38:Aj:104:PHE:HD1	38:Aj:109:LYS:HB2	1.85	0.41
46:BG:13:SER:HB2	67:Bb:13:ILE:HD12	2.02	0.41
46:BG:75:PRO:HB2	46:BG:107:THR:CG2	2.50	0.41
46:BG:140:LYS:HA	46:BG:140:LYS:HE3	2.01	0.41
47:BH:47:PHE:CD2	47:BH:65:PRO:HA	2.55	0.41
47:BH:209:VAL:HG13	47:BH:212:ARG:HH21	1.86	0.41
53:BN:72:CYS:HB3	53:BN:86:ALA:O	2.20	0.41
59:BT:90:LYS:HB3	59:BT:115:TYR:CE2	2.55	0.41
60:BU:12:LEU:HD23	60:BU:13:ILE:HG13	2.03	0.41
64:BY:43:VAL:HG23	64:BY:44:CYS:H	1.85	0.41
1:2:7:A:H2'	1:2:8:A:O4'	2.20	0.41
1:2:92:C:H2'	1:2:93:C:C6	2.55	0.41
1:2:103:C:O2'	27:AY:58:GLU:OE1	2.24	0.41
2:1:31:U:H2'	2:1:32:C:C6	2.54	0.41
2:1:1027:C:C2'	2:1:1028:A:H5'	2.50	0.41
2:1:1290:C:H2'	2:1:1291:C:C6	2.55	0.41
2:1:1844:A:H5'	2:1:1845:A:OP2	2.20	0.41
2:1:1963:U:H2'	2:1:1964:G:O4'	2.19	0.41
2:1:2197:A:H2'	2:1:2198:C:C6	2.56	0.41
2:1:2326:C:H2'	2:1:2327:A:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2935:C:O2	2:1:3010:A:O2'	2.32	0.41
3:4:68:G:H2'	3:4:69:G:C8	2.55	0.41
3:4:183:C:O2'	44:BE:131:GLY:HA2	2.20	0.41
3:4:730:G:H4'	3:4:1472:A:H4'	2.02	0.41
3:4:949:A:H5'	3:4:950:C:OP2	2.20	0.41
6:AC:257:MET:HE3	6:AC:257:MET:HB3	1.92	0.41
8:AE:105:VAL:HG22	8:AE:114:ILE:HG12	2.01	0.41
14:AL:35:LYS:HE3	14:AL:35:LYS:HB3	1.69	0.41
19:AQ:5:LYS:HB3	19:AQ:16:VAL:HG13	2.02	0.41
35:Ag:36:LYS:HA	35:Ag:42:SER:O	2.21	0.41
38:Aj:103:GLU:CD	38:Aj:106:ARG:HH21	2.26	0.41
40:BA:66:LYS:HG3	40:BA:67:ASP:N	2.35	0.41
41:BB:50:ASP:HB3	41:BB:53:LYS:HB2	2.01	0.41
41:BB:85:PRO:HB2	41:BB:174:PHE:CD2	2.56	0.41
41:BB:171:ALA:HB2	41:BB:202:GLU:HA	2.01	0.41
43:BD:63:MET:O	43:BD:68:ARG:NH2	2.54	0.41
43:BD:77:GLU:HA	43:BD:77:GLU:OE2	2.21	0.41
45:BF:16:GLY:N	45:BF:42:ILE:HD11	2.36	0.41
46:BG:37:GLU:OE1	46:BG:37:GLU:N	2.53	0.41
46:BG:64:GLU:OE2	46:BG:64:GLU:N	2.35	0.41
47:BH:110:ASN:HB3	47:BH:114:ARG:NH2	2.35	0.41
48:BI:41:LEU:CD2	48:BI:129:VAL:HG21	2.50	0.41
50:BK:112:ASP:CB	50:BK:115:MET:HE2	2.49	0.41
52:BM:46:VAL:HG23	52:BM:71:ALA:HB2	2.03	0.41
55:BP:29:ILE:HG22	55:BP:34:LEU:O	2.20	0.41
56:BQ:98:ILE:CG2	56:BQ:115:LEU:HB2	2.50	0.41
58:BS:43:SER:CB	58:BS:46:VAL:HG12	2.50	0.41
61:BV:46:LEU:CD2	61:BV:57:ILE:HD13	2.49	0.41
62:BW:65:THR:HG23	62:BW:66:PRO:HD2	2.01	0.41
65:BZ:48:LEU:HD22	65:BZ:70:GLU:OE1	2.21	0.41
2:1:1372:C:O2'	2:1:1373:C:H5'	2.21	0.41
2:1:1535:C:O2'	2:1:1536:C:H5'	2.20	0.41
2:1:1567:C:H2'	2:1:1568:C:C6	2.56	0.41
72:1:5036:HOH:O	24:AV:13:ARG:HD3	2.20	0.41
3:4:272:C:H2'	3:4:273:G:C8	2.55	0.41
3:4:460:G:H2'	3:4:461:C:C6	2.55	0.41
3:4:1179:A:N6	72:4:3208:HOH:O	2.43	0.41
3:4:1256:C:OP1	47:BH:104:LYS:NZ	2.39	0.41
3:4:1494:C:O2	63:BX:39:THR:HG23	2.19	0.41
13:AK:26:VAL:CG2	13:AK:37:THR:HG22	2.50	0.41
17:AO:39:LYS:HE2	17:AO:39:LYS:HB2	1.65	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:AV:66:LYS:HE3	24:AV:66:LYS:HB2	1.85	0.41
28:AZ:6:ARG:HA	28:AZ:9:GLN:HG3	2.01	0.41
38:Aj:85:LEU:HD12	38:Aj:88:TRP:CE2	2.55	0.41
40:BA:80:HIS:CD2	40:BA:90:ARG:HB3	2.56	0.41
41:BB:159:MET:CG	68:Bc:65:PRO:HG3	2.44	0.41
44:BE:152:GLN:H	44:BE:152:GLN:HG3	1.66	0.41
46:BG:37:GLU:HB3	46:BG:54:LYS:CE	2.50	0.41
47:BH:157:SER:CB	47:BH:223:ARG:HA	2.49	0.41
49:BJ:43:GLU:HA	49:BJ:65:ARG:NH2	2.31	0.41
55:BP:27:ALA:CB	55:BP:38:ARG:HB2	2.51	0.41
55:BP:34:LEU:HD21	55:BP:41:PHE:CE1	2.55	0.41
61:BV:12:LEU:HB3	61:BV:26:LEU:HG	2.01	0.41
62:BW:56:LYS:C	62:BW:56:LYS:HD2	2.46	0.41
1:2:37:G:C2'	1:2:38:G:H5'	2.49	0.41
2:1:112:G:H4'	2:1:145:G:H5'	2.01	0.41
2:1:392:C:H2'	2:1:393:C:C6	2.55	0.41
2:1:676:C:H2'	2:1:677:C:C6	2.55	0.41
2:1:938:A:C2	2:1:1064:G:H4'	2.55	0.41
2:1:1308:G:H2'	2:1:1309:C:C6	2.55	0.41
2:1:1318:G:H2'	2:1:1319:G:C8	2.55	0.41
2:1:1568:C:H2'	2:1:1569:G:H8	1.86	0.41
2:1:1820:A:H2'	2:1:1821:A:O4'	2.20	0.41
2:1:2007:G:H2'	2:1:2008:C:C6	2.56	0.41
2:1:2629:C:O2'	2:1:2630:C:H5'	2.19	0.41
2:1:2783:G:O4'	8:AE:122:SER:HB3	2.21	0.41
72:1:5036:HOH:O	24:AV:13:ARG:CD	2.68	0.41
3:4:213:G:H2'	3:4:214:C:C6	2.55	0.41
3:4:724:G:H2'	3:4:725:C:C6	2.56	0.41
3:4:744:G:O2'	3:4:745:G:H5'	2.20	0.41
3:4:1016:G:H5''	42:BC:143:SER:O	2.21	0.41
3:4:1116:C:H2'	3:4:1117:U:C6	2.55	0.41
7:AD:79:ASP:O	7:AD:83:GLU:HG3	2.20	0.41
8:AE:95:LYS:O	8:AE:186:ILE:HA	2.19	0.41
22:AT:34:TYR:CE2	22:AT:162:GLU:HB3	2.55	0.41
40:BA:31:TYR:HE2	40:BA:86:ASN:HD22	1.67	0.41
41:BB:178:ALA:O	41:BB:181:VAL:HG12	2.20	0.41
42:BC:142:VAL:HG21	42:BC:146:LEU:HD21	2.02	0.41
44:BE:82:LEU:HG	44:BE:83:MET:HG2	2.02	0.41
45:BF:13:THR:CG2	45:BF:39:GLU:OE2	2.68	0.41
45:BF:69:ARG:CG	72:BF:431:HOH:O	2.68	0.41
48:BI:42:GLN:HA	48:BI:47:VAL:O	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:BR:5:LYS:H	57:BR:5:LYS:HE2	1.85	0.41
57:BR:97:VAL:HG12	57:BR:125:TRP:HB2	2.03	0.41
65:BZ:50:ARG:NH2	65:BZ:66:GLU:O	2.54	0.41
2:1:252:A:N6	2:1:290:G:H1'	2.36	0.41
2:1:337:A:H5'	24:AV:59:ASP:OD1	2.21	0.41
2:1:784:G:H2'	2:1:785:A:O4'	2.20	0.41
2:1:1038:C:H2'	2:1:1039:C:C6	2.56	0.41
2:1:1582:C:O2'	2:1:1583:G:O5'	2.39	0.41
2:1:1708:C:OP2	37:AI:51:ARG:NH2	2.30	0.41
2:1:1810:G:OP1	12:AI:105:ASN:ND2	2.53	0.41
2:1:1946:A:C5	2:1:1947:OMG:H1'	2.56	0.41
2:1:2047:U:H2'	2:1:2048:A:N7	2.35	0.41
3:4:108:C:O2'	57:BR:55:ARG:HD2	2.21	0.41
3:4:570:A:O3'	44:BE:18:LYS:HE3	2.21	0.41
3:4:593:C:H4'	3:4:594:G:OP2	2.21	0.41
3:4:712:C:O2'	3:4:713:G:H5'	2.21	0.41
3:4:806:A:H4'	3:4:807:G:O5'	2.20	0.41
3:4:949:A:OP1	72:4:3108:HOH:O	2.22	0.41
3:4:1030:C:H2'	3:4:1031:G:C8	2.54	0.41
3:4:1085:U:O2'	3:4:1246:A:H2'	2.21	0.41
3:4:1433:G:H3'	3:4:1433:G:OP2	2.20	0.41
3:4:1471:U:H2'	3:4:1472:A:C8	2.56	0.41
5:AB:185:LEU:HD12	5:AB:185:LEU:HA	1.90	0.41
6:AC:208:ILE:HA	6:AC:219:ARG:O	2.20	0.41
7:AD:54:ARG:HB3	7:AD:67:GLY:C	2.46	0.41
7:AD:126:VAL:HG23	7:AD:127:GLY:O	2.20	0.41
10:AG:50:ASN:OD1	10:AG:122:SER:HA	2.20	0.41
10:AG:175:VAL:HG12	10:AG:176:TRP:CD1	2.56	0.41
12:AI:119:SER:O	12:AI:139:LEU:HD22	2.21	0.41
32:Ad:12:LYS:HE2	32:Ad:12:LYS:HB2	1.84	0.41
38:Aj:118:PRO:HB2	38:Aj:134:VAL:HG23	2.02	0.41
42:BC:193:THR:HG23	42:BC:197:LEU:CB	2.50	0.41
43:BD:50:LEU:HB2	43:BD:103:ILE:HD12	2.03	0.41
44:BE:172:LEU:HD23	44:BE:228:GLY:N	2.36	0.41
54:BO:49:HIS:O	72:BO:201:HOH:O	2.22	0.41
56:BQ:34:GLU:OE2	56:BQ:74:ILE:HG12	2.19	0.41
64:BY:18:VAL:HG23	64:BY:62:VAL:HG13	2.02	0.41
65:BZ:72:ARG:HD3	65:BZ:72:ARG:N	2.36	0.41
1:2:55:A:P	17:AO:169:ARG:HB2	2.61	0.41
2:1:246:A:C5	11:AH:84:PRO:HB3	2.55	0.41
2:1:658:G:O2'	2:1:1381:A:OP1	2.37	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:713:G:O2'	2:1:714:G:H5'	2.21	0.41
2:1:1286:C:H2'	2:1:1287:C:H6	1.86	0.41
2:1:1559:C:N4	31:Ac:62:SER:HB2	2.35	0.41
2:1:1659:A:H4'	31:Ac:50:LYS:HG3	2.03	0.41
2:1:2031:G:H2'	2:1:2032:U:H5'	2.01	0.41
2:1:2038:U:O2'	2:1:2039:G:N7	2.43	0.41
2:1:2327:A:H2'	2:1:2328:A:C8	2.56	0.41
2:1:2617:A:H5''	72:1:6638:HOH:O	2.19	0.41
2:1:2691:A2M:HM'3	2:1:2691:A2M:H1'	1.83	0.41
2:1:2751:U:H4'	5:AB:99:LYS:O	2.21	0.41
2:1:2832:G:H5'	2:1:2966:U:OP1	2.21	0.41
2:1:2955:U:H2'	2:1:2956:G:C8	2.55	0.41
2:1:2976:G:H5''	2:1:2977:A:OP1	2.20	0.41
3:4:381:C:OP1	44:BE:77:LYS:HD3	2.21	0.41
3:4:639:U:O2'	3:4:640:C:H5'	2.20	0.41
3:4:762:U:H2'	3:4:763:A:C8	2.56	0.41
4:AA:196:PRO:HD3	4:AA:203:GLY:HA2	2.01	0.41
5:AB:208:LYS:HG2	5:AB:305:ALA:HA	2.03	0.41
14:AL:143:LYS:HD2	14:AL:143:LYS:O	2.20	0.41
22:AT:123:ASP:OD2	22:AT:125:GLU:HB2	2.21	0.41
28:AZ:16:LYS:N	28:AZ:88:ASP:HB3	2.36	0.41
28:AZ:34:LYS:HD3	28:AZ:89:PRO:HD3	2.02	0.41
39:AK:30:LEU:HD21	39:AK:60:VAL:CG1	2.51	0.41
41:BB:182:LEU:CD1	41:BB:194:LEU:HD11	2.50	0.41
45:BF:64:THR:OG1	45:BF:67:GLY:O	2.37	0.41
47:BH:68:LEU:HD22	50:BK:53:VAL:CG1	2.50	0.41
50:BK:122:ARG:HE	50:BK:122:ARG:HB2	1.46	0.41
60:BU:142:LEU:HD23	60:BU:149:LEU:CD1	2.51	0.41
68:Bc:31:VAL:HG22	68:Bc:43:VAL:HG13	2.01	0.41
2:1:476:C:O2'	2:1:477:G:H5'	2.20	0.41
2:1:536:A:H5'	2:1:537:G:OP1	2.21	0.41
2:1:575:G:N7	72:1:3692:HOH:O	2.36	0.41
2:1:957:U:H1'	2:1:1319:G:H1'	2.02	0.41
2:1:1569:G:H2'	2:1:1570:U:H6	1.84	0.41
2:1:2971:C:H2'	2:1:2972:C:O4'	2.20	0.41
69:1:3132:SPM:H81	72:1:4060:HOH:O	2.20	0.41
3:4:47:A:H4'	3:4:48:G:C5'	2.50	0.41
3:4:910:G:H1'	3:4:1305:A:N6	2.36	0.41
3:4:1227:A:H3'	3:4:1228:C:C6	2.56	0.41
3:4:1428:G:H2'	3:4:1429:C:C6	2.55	0.41
6:AC:27:PRO:HA	6:AC:28:PRO:HD3	1.88	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:AC:189:LEU:HA	6:AC:192:VAL:HG12	2.01	0.41
11:AH:134:LYS:HB3	11:AH:135:ARG:H	1.73	0.41
27:AY:14:TYR:CE1	27:AY:68:GLU:HG3	2.56	0.41
29:Aa:9:LEU:HB3	29:Aa:79:LYS:HB3	2.03	0.41
30:Ab:7:ARG:HB2	30:Ab:85:PHE:CZ	2.56	0.41
34:Af:25:LEU:HD23	34:Af:28:ILE:HD12	2.02	0.41
35:Ag:48:LYS:HB3	35:Ag:48:LYS:HE3	1.66	0.41
38:Aj:111:LEU:HB2	38:Aj:162:ILE:HG23	2.03	0.41
42:BC:168:ALA:HB1	42:BC:191:ARG:HH12	1.85	0.41
45:BF:38:LYS:HD2	45:BF:38:LYS:HA	1.83	0.41
45:BF:145:LEU:HD23	45:BF:174:THR:HG22	2.02	0.41
46:BG:13:SER:HB2	67:Bb:13:ILE:CD1	2.51	0.41
47:BH:94:LEU:HD23	47:BH:94:LEU:HA	1.87	0.41
47:BH:135:ILE:HD11	47:BH:170:LEU:HD21	2.03	0.41
59:BT:68:ARG:NH1	59:BT:69:LYS:HG2	2.36	0.41
67:Bb:39:LEU:HA	67:Bb:39:LEU:HD23	1.77	0.41
1:2:33:A:H2'	1:2:34:C:C6	2.56	0.41
2:1:105:C:OP1	72:1:3420:HOH:O	2.21	0.41
2:1:414:G:H2'	2:1:415:C:H6	1.86	0.41
2:1:574:A:OP2	72:1:3428:HOH:O	2.22	0.41
2:1:678:G:H5'	18:AP:3:PRO:O	2.21	0.41
2:1:739:A:O2'	2:1:740:A:H5'	2.21	0.41
2:1:781:C:H2'	2:1:782:G:H8	1.85	0.41
2:1:816:A:H2'	2:1:817:G:O4'	2.21	0.41
2:1:1256:U:O4	72:1:3411:HOH:O	2.21	0.41
2:1:1398:A:O2'	2:1:1399:G:H5'	2.20	0.41
2:1:1420:C:OP2	72:1:3419:HOH:O	2.21	0.41
2:1:1428:G:C6	2:1:1777:A:H5'	2.55	0.41
2:1:1439:G:H2'	2:1:1440:G:H5'	2.02	0.41
2:1:1484:G:H2'	2:1:1485:C:C6	2.56	0.41
2:1:1639:G:O6	19:AQ:119:ARG:NH1	2.54	0.41
2:1:1699:C:O3'	31:Ac:12:ARG:HD2	2.21	0.41
2:1:2130:G:H5''	22:AT:98:TRP:O	2.20	0.41
2:1:2181:G:N7	2:1:2615:A:H1'	2.35	0.41
2:1:2376:U:H2'	2:1:2377:G:O4'	2.21	0.41
2:1:2385:A:H2'	2:1:2386:U:C6	2.56	0.41
2:1:2864:C:H2'	2:1:2865:A:O4'	2.21	0.41
3:4:133:C:H2'	3:4:134:C:O4'	2.21	0.41
3:4:465:OMG:HM22	3:4:466:G:C5'	2.48	0.41
3:4:558:G:H2'	3:4:559:U:H5'	2.02	0.41
3:4:559:U:H2'	3:4:560:C:C6	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:736:G:O2'	3:4:737:G:H5'	2.20	0.41
3:4:779:G:O2'	3:4:780:A:H5'	2.21	0.41
3:4:910:G:N1	3:4:1304:G:OP2	2.53	0.41
3:4:951:C:H2'	3:4:952:C:C6	2.56	0.41
3:4:1179:A:H1'	3:4:1180:A:O5'	2.20	0.41
3:4:1455:C:H2'	3:4:1456:G:C8	2.56	0.41
6:AC:58:LEU:HD21	6:AC:141:LEU:HG	2.03	0.41
6:AC:171:LEU:CD2	6:AC:195:LEU:HD21	2.51	0.41
9:AF:66:VAL:HG12	9:AF:68:ILE:HD11	2.02	0.41
9:AF:76:GLU:HG2	15:AM:11:TRP:CG	2.56	0.41
12:AI:35:GLY:HA2	12:AI:73:LYS:HD2	2.03	0.41
13:AK:14:VAL:HG11	13:AK:56:GLU:CG	2.51	0.41
13:AK:38:GLY:O	13:AK:45:VAL:HB	2.21	0.41
14:AL:104:LEU:O	14:AL:126:LEU:HD12	2.21	0.41
22:AT:29:GLN:HA	22:AT:122:LEU:HD21	2.02	0.41
24:AV:77:ILE:HG12	24:AV:96:ILE:O	2.21	0.41
24:AV:118:GLU:HA	24:AV:121:LYS:CD	2.51	0.41
28:AZ:25:LYS:HD2	28:AZ:26:LYS:N	2.35	0.41
28:AZ:64:PHE:CD1	28:AZ:65:PRO:HD2	2.55	0.41
30:Ab:36:TRP:CD1	30:Ab:37:ARG:HG3	2.56	0.41
36:Ah:33:LEU:HD23	36:Ah:33:LEU:HA	1.87	0.41
37:Ai:6:THR:OG1	37:Ai:10:GLY:HA2	2.20	0.41
38:Aj:132:ALA:HB3	38:Aj:149:VAL:HG11	2.03	0.41
40:BA:137:ARG:CZ	72:BA:302:HOH:O	2.69	0.41
40:BA:201:ARG:HH21	40:BA:203:PRO:HA	1.85	0.41
41:BB:59:ARG:O	41:BB:63:LYS:HG3	2.20	0.41
42:BC:144:GLY:O	42:BC:151:ALA:HA	2.21	0.41
43:BD:128:VAL:O	43:BD:141:THR:HA	2.21	0.41
44:BE:50:TYR:OH	44:BE:93:GLU:OE2	2.14	0.41
44:BE:59:TYR:O	44:BE:63:ARG:HG2	2.20	0.41
45:BF:56:ASN:HB2	45:BF:183:THR:HG21	2.02	0.41
46:BG:21:ILE:CG2	46:BG:25:LEU:HB2	2.51	0.41
50:BK:87:THR:O	50:BK:91:ILE:HD13	2.20	0.41
51:BL:49:ARG:C	51:BL:50:LEU:HD22	2.46	0.41
53:BN:72:CYS:SG	53:BN:87:PHE:HA	2.61	0.41
53:BN:76:GLN:HG3	53:BN:83:VAL:HG23	2.03	0.41
53:BN:105:ILE:HG23	53:BN:124:PHE:HB3	2.03	0.41
54:BO:22:VAL:HG21	54:BO:55:LEU:HD11	2.03	0.41
59:BT:21:ILE:HD11	59:BT:25:GLU:HG3	2.03	0.41
59:BT:42:MET:HG3	59:BT:46:GLU:OE1	2.21	0.41
59:BT:45:ASP:O	59:BT:48:ILE:HG12	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
62:BW:52:GLN:HG2	72:BW:208:HOH:O	2.21	0.41
65:BZ:32:THR:HG21	72:BZ:102:HOH:O	2.16	0.41
68:Bc:23:LEU:HD11	68:Bc:43:VAL:HG12	2.03	0.41
2:1:322:G:OP2	72:1:3431:HOH:O	2.22	0.41
2:1:1272:C:O2'	2:1:1273:C:H5'	2.20	0.41
2:1:1578:G:H2'	2:1:1579:C:H6	1.86	0.41
72:1:5219:HOH:O	36:Ah:43:LYS:HD2	2.20	0.41
3:4:263:PSU:H5''	49:BJ:36:PRO:HA	2.02	0.41
3:4:329:A:H2'	3:4:330:G:C8	2.56	0.41
3:4:817:G:OP1	56:BQ:11:ARG:NH1	2.51	0.41
3:4:880:A2M:HM'3	3:4:880:A2M:H1'	1.88	0.41
3:4:901:A:H2'	3:4:902:C:H6	1.82	0.41
3:4:1017:G:O2'	3:4:1018:C:H5'	2.20	0.41
3:4:1202:OMG:HM22	3:4:1203:C:O4'	2.21	0.41
72:4:3836:HOH:O	56:BQ:97:ARG:HG3	2.21	0.41
10:AG:41:LYS:O	10:AG:116:ARG:NH1	2.54	0.41
26:AX:43:GLU:OE2	26:AX:44:LYS:HG2	2.21	0.41
27:AY:70:ASP:OD1	27:AY:73:THR:OG1	2.32	0.41
39:Ak:54:LEU:HD22	39:Ak:73:ILE:HG12	2.02	0.41
40:BA:52:LEU:HA	40:BA:55:ARG:HD2	2.01	0.41
43:BD:63:MET:HE1	43:BD:71:LEU:HD12	2.02	0.41
44:BE:184:HIS:O	44:BE:188:ILE:HB	2.21	0.41
47:BH:85:ILE:HB	47:BH:90:ARG:HD3	2.03	0.41
49:BJ:81:LYS:H	49:BJ:109:GLU:CG	2.30	0.41
2:1:356:U:O2'	24:AV:100:LYS:HE2	2.21	0.40
2:1:437:G:H2'	2:1:438:C:C6	2.56	0.40
2:1:859:C:H3'	2:1:860:U:H4'	2.04	0.40
2:1:966:G:O2'	2:1:967:C:H5'	2.19	0.40
2:1:1033:C:C2'	2:1:1034:C:H5'	2.51	0.40
2:1:1098:G:OP1	30:Ab:61:LYS:NZ	2.36	0.40
2:1:1161:U:H2'	2:1:1162:C:C6	2.56	0.40
2:1:1167:G:H2'	2:1:1168:C:O4'	2.21	0.40
2:1:1266:C:C2'	2:1:1267:U:H5'	2.51	0.40
2:1:2379:A:H5''	2:1:2380:A:H5'	2.03	0.40
2:1:2510:G:O3'	36:Ah:36:GLY:HA3	2.22	0.40
2:1:3023:G7M:H2'	2:1:3024:C:C6	2.56	0.40
3:4:193:A:N3	3:4:225:C:O2'	2.42	0.40
3:4:200:U:H2'	3:4:201:G:H8	1.86	0.40
3:4:423:C:H2'	3:4:424:C:C6	2.56	0.40
3:4:477:U:H2'	3:4:478:G:O4'	2.20	0.40
3:4:582:A:H2'	3:4:583:A:C8	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:1392:C:H2'	3:4:1393:U:C6	2.56	0.40
6:AC:21:LYS:HA	6:AC:21:LYS:CE	2.44	0.40
13:AK:34:VAL:HG13	13:AK:52:ILE:CD1	2.50	0.40
20:AR:63:SER:OG	20:AR:66:ALA:HB3	2.20	0.40
33:Ae:7:LEU:HG	39:Ak:28:GLU:OE1	2.20	0.40
40:BA:33:PRO:HG3	40:BA:90:ARG:HA	2.03	0.40
44:BE:100:ASP:HB2	44:BE:106:ASP:CG	2.45	0.40
46:BG:126:PRO:HA	67:Bb:14:THR:CG2	2.50	0.40
54:BO:54:LEU:HD13	62:BW:44:GLN:HG3	2.02	0.40
61:BV:9:PHE:HB2	61:BV:45:TRP:CE2	2.56	0.40
61:BV:43:ARG:HG3	61:BV:59:VAL:HG23	2.02	0.40
63:BX:28:LYS:HG3	72:BX:207:HOH:O	2.20	0.40
63:BX:87:GLU:O	63:BX:90:LYS:HG2	2.21	0.40
1:2:71:C:H2'	1:2:72:G:O4'	2.21	0.40
2:1:14:C:H2'	2:1:15:C:H6	1.85	0.40
2:1:84:G:OP2	72:1:3434:HOH:O	2.22	0.40
2:1:262:U:H2'	2:1:263:C:C6	2.56	0.40
2:1:735:G:O2'	2:1:736:G:H5'	2.21	0.40
2:1:1581:U:H2'	2:1:1582:C:C6	2.56	0.40
2:1:1605:C:O2'	2:1:1606:G:H5'	2.21	0.40
2:1:2135:A:H2'	2:1:2136:C:C6	2.56	0.40
2:1:2415:G:OP1	72:1:3413:HOH:O	2.21	0.40
2:1:2458:A:OP2	72:1:3432:HOH:O	2.22	0.40
3:4:341:A:H2'	3:4:342:G:C8	2.56	0.40
3:4:453:A:H2'	3:4:454:G:O4'	2.21	0.40
3:4:551:C:O2'	3:4:552:C:H5'	2.20	0.40
3:4:646:G:N1	3:4:665:A:OP2	2.53	0.40
3:4:764:G:H2'	3:4:765:U:O4'	2.21	0.40
3:4:1339:G:H4'	47:BH:96:MET:HE1	2.02	0.40
3:4:1418:G:H5''	72:4:3642:HOH:O	2.20	0.40
6:AC:16:LEU:HB3	6:AC:20:ILE:HB	2.03	0.40
8:AE:106:LYS:HB3	8:AE:106:LYS:HE2	1.69	0.40
11:AH:29:LEU:HD23	11:AH:29:LEU:HA	1.91	0.40
16:AN:44:ARG:HA	16:AN:47:PHE:CD2	2.56	0.40
17:AO:199:LEU:O	17:AO:199:LEU:HD22	2.20	0.40
18:AP:92:TRP:CH2	18:AP:96:VAL:HG21	2.57	0.40
24:AV:118:GLU:HA	24:AV:121:LYS:CE	2.52	0.40
28:AZ:41:ASN:HB3	37:Ai:89:VAL:CG2	2.51	0.40
39:Ak:34:ILE:HD13	39:Ak:57:GLY:HA2	2.03	0.40
43:BD:73:VAL:O	43:BD:77:GLU:HG2	2.22	0.40
43:BD:156:THR:HG22	43:BD:157:ILE:H	1.86	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:BF:56:ASN:HB2	45:BF:183:THR:CG2	2.52	0.40
47:BH:16:GLU:O	47:BH:18:ILE:HG23	2.20	0.40
58:BS:20:TYR:CG	58:BS:38:LEU:HD21	2.57	0.40
58:BS:32:LYS:CD	58:BS:47:ARG:HH21	2.31	0.40
59:BT:71:LEU:O	59:BT:75:ARG:HD3	2.22	0.40
61:BV:30:LEU:HD22	61:BV:32:ARG:CD	2.52	0.40
61:BV:105:LEU:HD23	61:BV:105:LEU:HA	1.96	0.40
65:BZ:40:GLU:O	65:BZ:40:GLU:HG3	2.21	0.40
1:2:1:G:H2'	1:2:2:C:C6	2.57	0.40
2:1:60:G:H2'	2:1:61:C:O4'	2.21	0.40
2:1:461:A:H2'	2:1:462:G:C8	2.55	0.40
2:1:890:C:O2'	2:1:891:U:H5'	2.21	0.40
2:1:1720:A:H2'	2:1:1721:C:C6	2.57	0.40
2:1:1833:A:H2'	2:1:1834:A:H8	1.86	0.40
2:1:1980:C:H2'	2:1:1981:G:H8	1.86	0.40
2:1:1986:G:H2'	2:1:1987:PSU:O4'	2.21	0.40
2:1:2030:G:H3'	2:1:2031:G:H8	1.86	0.40
2:1:2042:C:H2'	2:1:2043:C:O4'	2.21	0.40
2:1:2398:A:H2'	36:Ah:2:LYS:O	2.21	0.40
2:1:2719:U:H2'	2:1:2720:OMC:C6	2.56	0.40
2:1:2781:A:H2'	2:1:2782:C:C6	2.56	0.40
2:1:2857:C:H2'	2:1:2858:U:C6	2.56	0.40
3:4:25:G:O2'	3:4:26:A:H5'	2.21	0.40
3:4:94:U:O2'	3:4:95:C:H5'	2.21	0.40
3:4:198:G:O2'	3:4:199:C:H5'	2.22	0.40
3:4:330:G:P	49:BJ:51:ARG:HH22	2.44	0.40
3:4:508:M7A:P	43:BD:38:ARG:HH21	2.44	0.40
3:4:575:C:H2'	3:4:576:G:C8	2.57	0.40
3:4:626:A:N3	3:4:693:C:H2'	2.36	0.40
3:4:714:A:H5''	3:4:715:C:C6	2.56	0.40
3:4:1491:U:O2'	63:BX:80:ILE:HD12	2.21	0.40
8:AE:93:LYS:HZ2	8:AE:192:GLU:HG2	1.86	0.40
9:AF:65:LEU:HD22	9:AF:126:LEU:CD1	2.51	0.40
11:AH:126:LYS:HG3	11:AH:130:ARG:NH1	2.36	0.40
13:AJ:65:LYS:O	13:AJ:68:ALA:HB2	2.21	0.40
13:AJ:72:GLU:HA	13:AJ:75:LYS:NZ	2.36	0.40
15:AM:112:LEU:HD22	15:AM:135:ASP:HA	2.04	0.40
22:AT:40:MET:SD	22:AT:102:VAL:HA	2.62	0.40
25:AW:23:ARG:HA	25:AW:23:ARG:HD2	1.75	0.40
26:AX:23:LEU:HD11	26:AX:55:ILE:HG23	2.03	0.40
41:BB:196:VAL:HG12	41:BB:200:GLU:HG3	2.04	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:BD:18:LYS:CE	72:BD:202:HOH:O	2.64	0.40
44:BE:185:GLY:O	44:BE:186:GLY:C	2.63	0.40
48:BI:41:LEU:HD22	48:BI:129:VAL:HG11	2.03	0.40
57:BR:68:MET:HE1	57:BR:96:ARG:CG	2.51	0.40
60:BU:149:LEU:HA	60:BU:152:TYR:HD2	1.86	0.40
62:BW:54:ILE:HG21	62:BW:83:VAL:HG11	2.03	0.40
64:BY:46:ARG:NH1	64:BY:47:VAL:O	2.55	0.40
2:1:71:G:H2'	2:1:72:G:C8	2.56	0.40
2:1:91:U:OP1	2:1:92:A:O2'	2.36	0.40
2:1:586:C:O2'	2:1:587:C:H5'	2.21	0.40
2:1:636:C:H2'	2:1:637:U:C6	2.55	0.40
2:1:1479:C:H2'	2:1:1480:U:C6	2.57	0.40
2:1:1639:G:OP2	19:AQ:104:LYS:NZ	2.53	0.40
2:1:1744:U:OP2	34:Af:10:LYS:NZ	2.53	0.40
2:1:2349:G:H2'	2:1:2349:G:N3	2.36	0.40
2:1:2982:U:H3'	2:1:2983:U:H3'	2.03	0.40
3:4:141:A:N6	3:4:351:G:H1'	2.36	0.40
3:4:196:G:H1'	3:4:197:G:N7	2.35	0.40
3:4:202:G:O2'	3:4:203:C:H5'	2.22	0.40
3:4:481:A:H4'	66:Ba:9:LYS:O	2.21	0.40
3:4:634:G:O2'	3:4:635:G:H5'	2.21	0.40
3:4:746:G:O2'	3:4:747:G:H5'	2.21	0.40
3:4:1322:U:H2'	3:4:1323:G:C8	2.55	0.40
5:AB:117:VAL:HG22	5:AB:118:LEU:HG	2.04	0.40
22:AT:58:LYS:HB2	22:AT:58:LYS:HE2	1.92	0.40
24:AV:117:ILE:HG22	24:AV:121:LYS:NZ	2.36	0.40
31:Ac:34:VAL:HG21	31:Ac:43:PRO:HB3	2.03	0.40
36:Ah:20:HIS:HA	36:Ah:70:THR:O	2.21	0.40
37:Ai:79:LYS:HE2	37:Ai:79:LYS:HB3	1.93	0.40
38:Aj:136:PRO:HG3	38:Aj:166:LYS:HD2	2.03	0.40
39:Ak:7:TRP:CB	39:Ak:30:LEU:HB2	2.52	0.40
41:BB:121:LEU:HD13	41:BB:122:PHE:N	2.36	0.40
44:BE:67:LYS:HB3	44:BE:87:GLU:HB3	2.03	0.40
45:BF:12:LYS:HA	45:BF:17:ARG:HH12	1.87	0.40
50:BK:7:LEU:HD12	50:BK:7:LEU:HA	1.87	0.40
52:BM:22:TRP:HE1	52:BM:35:THR:HG21	1.85	0.40
53:BN:57:LYS:HD3	53:BN:94:LEU:HD11	2.04	0.40
55:BP:27:ALA:O	55:BP:37:CYS:HA	2.20	0.40
57:BR:140:LYS:HB2	57:BR:140:LYS:HE2	1.87	0.40
59:BT:51:LEU:HD12	59:BT:59:LEU:HD12	2.04	0.40
61:BV:120:ARG:HE	61:BV:120:ARG:HB3	1.52	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
65:BZ:24:ARG:HA	65:BZ:24:ARG:HD2	1.84	0.40
2:1:374:A:H1'	72:1:5120:HOH:O	2.22	0.40
2:1:482:C:OP2	72:1:3421:HOH:O	2.21	0.40
2:1:671:C:H2'	2:1:672:A:C8	2.55	0.40
2:1:944:U:H5'	2:1:2544:A:O2'	2.22	0.40
2:1:1089:C:H2'	2:1:1090:U:O4'	2.21	0.40
2:1:1457:A:O2'	2:1:1458:U:H2'	2.22	0.40
2:1:1756:A:N1	22:AT:145:PRO:HB3	2.36	0.40
2:1:1909:A:H2'	2:1:1910:C:H5'	2.03	0.40
2:1:2015:C:O2'	2:1:2016:4AC:H5'	2.21	0.40
2:1:2212:U:H4'	2:1:2213:G:C5'	2.52	0.40
2:1:2361:G:O2'	72:1:3427:HOH:O	2.22	0.40
2:1:2746:C:H2'	2:1:2747:C:C6	2.56	0.40
72:1:3635:HOH:O	5:AB:29:ARG:HD2	2.21	0.40
3:4:6:G:O2'	3:4:7:OMG:H5'	2.21	0.40
3:4:7:OMG:O6	45:BF:181:ARG:NH1	2.40	0.40
3:4:452:G:H2'	3:4:453:A:H8	1.85	0.40
3:4:907:G:H2'	3:4:908:OMG:O4'	2.22	0.40
3:4:1019:C:O2'	3:4:1020:G:H5'	2.21	0.40
3:4:1164:G:H4'	51:BL:61:GLN:HG3	2.03	0.40
3:4:1453:G:H2'	3:4:1454:U:H6	1.86	0.40
5:AB:245:PRO:HD2	5:AB:248:MET:HE2	2.02	0.40
8:AE:20:ILE:HG12	8:AE:30:VAL:HG22	2.03	0.40
13:AK:32:ASN:C	13:AK:52:ILE:HG12	2.47	0.40
17:AO:52:ARG:HG3	17:AO:57:GLU:OE2	2.21	0.40
28:AZ:8:LEU:HD22	28:AZ:12:ILE:HD11	2.04	0.40
29:Aa:25:ARG:NH2	29:Aa:67:GLU:OE2	2.53	0.40
40:BA:110:SER:HB3	40:BA:134:THR:OG1	2.21	0.40
44:BE:80:ILE:HG22	44:BE:97:VAL:HG21	2.03	0.40
48:BI:99:ILE:HG12	68:Bc:3:ILE:HG13	2.04	0.40
63:BX:28:LYS:HE2	63:BX:72:ASN:ND2	2.36	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
4	AA	237/244 (97%)	228 (96%)	9 (4%)	0	100	100
5	AB	334/338 (99%)	326 (98%)	8 (2%)	0	100	100
6	AC	276/285 (97%)	271 (98%)	5 (2%)	0	100	100
7	AD	176/178 (99%)	169 (96%)	7 (4%)	0	100	100
8	AE	193/196 (98%)	189 (98%)	4 (2%)	0	100	100
9	AF	143/149 (96%)	141 (99%)	2 (1%)	0	100	100
10	AG	181/186 (97%)	177 (98%)	4 (2%)	0	100	100
11	AH	153/157 (98%)	151 (99%)	2 (1%)	0	100	100
12	AI	136/144 (94%)	134 (98%)	2 (2%)	0	100	100
13	AJ	99/103 (96%)	95 (96%)	4 (4%)	0	100	100
13	AK	88/103 (85%)	83 (94%)	5 (6%)	0	100	100
14	AL	150/156 (96%)	144 (96%)	6 (4%)	0	100	100
15	AM	182/189 (96%)	178 (98%)	4 (2%)	0	100	100
16	AN	167/178 (94%)	162 (97%)	5 (3%)	0	100	100
17	AO	198/205 (97%)	198 (100%)	0	0	100	100
18	AP	119/122 (98%)	118 (99%)	1 (1%)	0	100	100
19	AQ	144/147 (98%)	143 (99%)	1 (1%)	0	100	100
20	AR	74/78 (95%)	74 (100%)	0	0	100	100
21	AS	96/99 (97%)	89 (93%)	7 (7%)	0	100	100
22	AT	181/184 (98%)	180 (99%)	1 (1%)	0	100	100
23	AU	79/81 (98%)	76 (96%)	3 (4%)	0	100	100
24	AV	119/128 (93%)	117 (98%)	1 (1%)	1 (1%)	16	17
25	AW	54/62 (87%)	53 (98%)	1 (2%)	0	100	100
26	AX	65/79 (82%)	65 (100%)	0	0	100	100
27	AY	170/179 (95%)	161 (95%)	8 (5%)	1 (1%)	22	24
28	AZ	96/101 (95%)	93 (97%)	3 (3%)	0	100	100
29	Aa	86/91 (94%)	85 (99%)	1 (1%)	0	100	100
30	Ab	138/153 (90%)	137 (99%)	1 (1%)	0	100	100
31	Ac	81/84 (96%)	80 (99%)	1 (1%)	0	100	100
32	Ad	50/52 (96%)	48 (96%)	2 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
33	Ae	64/67 (96%)	63 (98%)	1 (2%)	0	100	100
34	Af	48/51 (94%)	45 (94%)	3 (6%)	0	100	100
35	Ag	48/53 (91%)	48 (100%)	0	0	100	100
36	Ah	89/91 (98%)	89 (100%)	0	0	100	100
37	Ai	97/102 (95%)	89 (92%)	8 (8%)	0	100	100
38	Aj	181/184 (98%)	172 (95%)	9 (5%)	0	100	100
39	Ak	88/93 (95%)	87 (99%)	1 (1%)	0	100	100
40	BA	185/222 (83%)	180 (97%)	4 (2%)	1 (0%)	25	28
41	BB	196/208 (94%)	187 (95%)	9 (5%)	0	100	100
42	BC	75/216 (35%)	58 (77%)	16 (21%)	1 (1%)	10	8
43	BD	155/159 (98%)	153 (99%)	2 (1%)	0	100	100
44	BE	234/237 (99%)	219 (94%)	13 (6%)	2 (1%)	14	14
45	BF	192/202 (95%)	180 (94%)	11 (6%)	1 (0%)	25	28
46	BG	138/151 (91%)	130 (94%)	8 (6%)	0	100	100
47	BH	218/223 (98%)	206 (94%)	12 (6%)	0	100	100
48	BI	127/130 (98%)	121 (95%)	5 (4%)	1 (1%)	16	17
49	BJ	128/131 (98%)	124 (97%)	4 (3%)	0	100	100
50	BK	132/142 (93%)	119 (90%)	11 (8%)	2 (2%)	8	7
51	BL	36/106 (34%)	30 (83%)	5 (14%)	1 (3%)	4	2
52	BM	123/141 (87%)	116 (94%)	7 (6%)	0	100	100
53	BN	142/147 (97%)	130 (92%)	10 (7%)	2 (1%)	9	7
54	BO	141/153 (92%)	129 (92%)	12 (8%)	0	100	100
55	BP	27/54 (50%)	21 (78%)	5 (18%)	1 (4%)	2	1
56	BQ	147/151 (97%)	146 (99%)	1 (1%)	0	100	100
57	BR	142/147 (97%)	139 (98%)	3 (2%)	0	100	100
58	BS	62/71 (87%)	57 (92%)	5 (8%)	0	100	100
59	BT	133/158 (84%)	128 (96%)	4 (3%)	1 (1%)	16	17
60	BU	153/158 (97%)	146 (95%)	7 (5%)	0	100	100
61	BV	113/128 (88%)	111 (98%)	2 (2%)	0	100	100
62	BW	66/110 (60%)	64 (97%)	1 (2%)	1 (2%)	8	7
63	BX	93/100 (93%)	69 (74%)	18 (19%)	6 (6%)	1	0

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
64	BY	63/67 (94%)	57 (90%)	6 (10%)	0	100	100
65	BZ	69/77 (90%)	63 (91%)	6 (9%)	0	100	100
66	Ba	41/54 (76%)	41 (100%)	0	0	100	100
67	Bb	58/68 (85%)	57 (98%)	1 (2%)	0	100	100
68	Bc	62/65 (95%)	59 (95%)	3 (5%)	0	100	100
All	All	8331/9068 (92%)	7998 (96%)	311 (4%)	22 (0%)	38	43

All (22) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
44	BE	185	GLY
44	BE	186	GLY
50	BK	10	ASN
53	BN	5	LYS
53	BN	6	SER
63	BX	29	VAL
63	BX	47	PRO
42	BC	183	PRO
45	BF	13	THR
27	AY	24	THR
40	BA	66	LYS
48	BI	29	PRO
51	BL	59	SER
63	BX	42	TYR
24	AV	3	PHE
63	BX	20	TYR
63	BX	53	LEU
50	BK	21	LYS
55	BP	29	ILE
62	BW	43	ILE
59	BT	86	LYS
63	BX	5	ARG

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	
4	AA	181/186 (97%)	177 (98%)	4 (2%)	47	59
5	AB	280/282 (99%)	275 (98%)	5 (2%)	54	67
6	AC	226/231 (98%)	222 (98%)	4 (2%)	54	67
7	AD	149/149 (100%)	140 (94%)	9 (6%)	16	18
8	AE	165/165 (100%)	161 (98%)	4 (2%)	44	55
9	AF	115/118 (98%)	113 (98%)	2 (2%)	56	69
10	AG	163/165 (99%)	160 (98%)	3 (2%)	54	67
11	AH	133/135 (98%)	129 (97%)	4 (3%)	36	46
12	AI	115/118 (98%)	114 (99%)	1 (1%)	75	85
13	AJ	87/89 (98%)	87 (100%)	0	100	100
13	AK	77/89 (86%)	73 (95%)	4 (5%)	19	23
14	AL	121/125 (97%)	116 (96%)	5 (4%)	26	33
15	AM	161/165 (98%)	158 (98%)	3 (2%)	52	65
16	AN	134/140 (96%)	132 (98%)	2 (2%)	60	73
17	AO	166/169 (98%)	163 (98%)	3 (2%)	54	67
18	AP	99/100 (99%)	95 (96%)	4 (4%)	27	34
19	AQ	127/128 (99%)	123 (97%)	4 (3%)	35	44
20	AR	69/71 (97%)	67 (97%)	2 (3%)	37	48
21	AS	84/85 (99%)	83 (99%)	1 (1%)	67	80
22	AT	157/158 (99%)	154 (98%)	3 (2%)	52	65
23	AU	71/71 (100%)	71 (100%)	0	100	100
24	AV	107/112 (96%)	104 (97%)	3 (3%)	38	49
25	AW	48/53 (91%)	48 (100%)	0	100	100
26	AX	58/65 (89%)	57 (98%)	1 (2%)	56	69
27	AY	147/152 (97%)	145 (99%)	2 (1%)	62	75
28	AZ	77/79 (98%)	71 (92%)	6 (8%)	10	10
29	Aa	78/81 (96%)	76 (97%)	2 (3%)	41	52
30	Ab	125/137 (91%)	124 (99%)	1 (1%)	79	88
31	Ac	67/68 (98%)	66 (98%)	1 (2%)	60	73
32	Ad	44/44 (100%)	44 (100%)	0	100	100
33	Ae	60/61 (98%)	59 (98%)	1 (2%)	56	69

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
34	Af	42/43 (98%)	41 (98%)	1 (2%)	44	55
35	Ag	46/49 (94%)	46 (100%)	0	100	100
36	Ah	82/82 (100%)	81 (99%)	1 (1%)	67	80
37	Ai	77/80 (96%)	76 (99%)	1 (1%)	65	77
38	Aj	161/162 (99%)	158 (98%)	3 (2%)	52	65
39	Ak	79/82 (96%)	76 (96%)	3 (4%)	28	37
40	BA	157/181 (87%)	147 (94%)	10 (6%)	14	16
41	BB	174/182 (96%)	165 (95%)	9 (5%)	19	23
42	BC	63/183 (34%)	53 (84%)	10 (16%)	2	1
43	BD	136/138 (99%)	131 (96%)	5 (4%)	29	38
44	BE	203/204 (100%)	194 (96%)	9 (4%)	24	30
45	BF	161/169 (95%)	151 (94%)	10 (6%)	15	17
46	BG	114/121 (94%)	110 (96%)	4 (4%)	31	40
47	BH	191/193 (99%)	185 (97%)	6 (3%)	35	44
48	BI	109/110 (99%)	102 (94%)	7 (6%)	14	16
49	BJ	105/106 (99%)	104 (99%)	1 (1%)	73	84
50	BK	110/117 (94%)	104 (94%)	6 (6%)	18	20
51	BL	34/94 (36%)	29 (85%)	5 (15%)	2	2
52	BM	93/106 (88%)	90 (97%)	3 (3%)	34	43
53	BN	117/120 (98%)	113 (97%)	4 (3%)	32	41
54	BO	113/119 (95%)	104 (92%)	9 (8%)	10	10
55	BP	25/48 (52%)	25 (100%)	0	100	100
56	BQ	135/137 (98%)	129 (96%)	6 (4%)	24	30
57	BR	131/134 (98%)	122 (93%)	9 (7%)	13	13
58	BS	55/59 (93%)	51 (93%)	4 (7%)	11	12
59	BT	120/137 (88%)	115 (96%)	5 (4%)	25	32
60	BU	127/130 (98%)	120 (94%)	7 (6%)	18	20
61	BV	101/111 (91%)	97 (96%)	4 (4%)	27	34
62	BW	59/94 (63%)	54 (92%)	5 (8%)	8	8
63	BX	85/89 (96%)	78 (92%)	7 (8%)	9	9
64	BY	55/57 (96%)	51 (93%)	4 (7%)	11	12

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
65	BZ	59/63 (94%)	52 (88%)	7 (12%)	4	4
66	Ba	39/44 (89%)	35 (90%)	4 (10%)	6	5
67	Bb	49/56 (88%)	48 (98%)	1 (2%)	50	63
68	Bc	51/52 (98%)	48 (94%)	3 (6%)	16	18
All	All	7149/7643 (94%)	6892 (96%)	257 (4%)	32	39

All (257) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	AA	34	ILE
4	AA	79	GLN
4	AA	119	SER
4	AA	169	PHE
5	AB	30	THR
5	AB	56	VAL
5	AB	117	VAL
5	AB	221	VAL
5	AB	247	LEU
6	AC	36	VAL
6	AC	163	VAL
6	AC	169	LEU
6	AC	279	ARG
7	AD	9	VAL
7	AD	10	LYS
7	AD	28	VAL
7	AD	44	GLU
7	AD	82	VAL
7	AD	102	ASP
7	AD	131	MET
7	AD	152	SER
7	AD	163	GLU
8	AE	46	THR
8	AE	61	VAL
8	AE	106	LYS
8	AE	133	LYS
9	AF	72	VAL
9	AF	103	LYS
10	AG	55	VAL
10	AG	107	VAL
10	AG	175	VAL
11	AH	37	LEU

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Mol	Chain	Res	Type
11	AH	69	ILE
11	AH	102	SER
11	AH	107	SER
12	AI	117	LYS
13	AK	4	VAL
13	AK	13	LYS
13	AK	59	ASP
13	AK	64	ILE
14	AL	46	SER
14	AL	47	LEU
14	AL	58	TRP
14	AL	81	VAL
14	AL	151	VAL
15	AM	21	GLU
15	AM	26	SER
15	AM	150	ILE
16	AN	30	GLN
16	AN	39	THR
17	AO	64	THR
17	AO	168	SER
17	AO	199	LEU
18	AP	57	VAL
18	AP	101	GLU
18	AP	116	SER
18	AP	122	ILE
19	AQ	2	VAL
19	AQ	43	ASP
19	AQ	113	THR
19	AQ	128	ASP
20	AR	64	ASN
20	AR	75	VAL
21	AS	79	ILE
22	AT	9	THR
22	AT	118	LYS
22	AT	138	ILE
24	AV	39	LYS
24	AV	101	VAL
24	AV	104	VAL
26	AX	65	LEU
27	AY	43	THR
27	AY	174	LEU
28	AZ	2	ILE

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Mol	Chain	Res	Type
28	AZ	21	LEU
28	AZ	28	LEU
28	AZ	69	ILE
28	AZ	80	LYS
28	AZ	87	VAL
29	Aa	8	VAL
29	Aa	22	GLU
30	Ab	25	ARG
31	Ac	82	VAL
33	Ae	28	ASP
34	Af	36	THR
36	Ah	63	LYS
37	Ai	50	GLU
38	Aj	11	THR
38	Aj	58	THR
38	Aj	165	VAL
39	Ak	3	LEU
39	Ak	5	SER
39	Ak	37	THR
40	BA	24	LEU
40	BA	29	SER
40	BA	65	THR
40	BA	66	LYS
40	BA	89	THR
40	BA	94	LEU
40	BA	116	THR
40	BA	122	ASP
40	BA	144	SER
40	BA	152	GLU
41	BB	18	SER
41	BB	54	ILE
41	BB	56	GLU
41	BB	95	CYS
41	BB	111	ASN
41	BB	114	ASN
41	BB	177	LEU
41	BB	196	VAL
41	BB	203	THR
42	BC	142	VAL
42	BC	161	LEU
42	BC	164	ILE
42	BC	177	VAL

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Mol	Chain	Res	Type
42	BC	181	LEU
42	BC	182	LYS
42	BC	183	PRO
42	BC	185	ILE
42	BC	199	TYR
42	BC	200	SER
43	BD	19	ILE
43	BD	64	THR
43	BD	98	LEU
43	BD	117	LEU
43	BD	126	GLN
44	BE	2	VAL
44	BE	46	ASP
44	BE	66	ILE
44	BE	159	VAL
44	BE	174	LEU
44	BE	188	ILE
44	BE	214	GLU
44	BE	233	VAL
44	BE	234	VAL
45	BF	12	LYS
45	BF	13	THR
45	BF	44	ASP
45	BF	70	ASN
45	BF	78	VAL
45	BF	82	ASP
45	BF	87	VAL
45	BF	95	VAL
45	BF	171	ASP
45	BF	175	LYS
46	BG	13	SER
46	BG	39	ASP
46	BG	46	LEU
46	BG	63	VAL
47	BH	51	VAL
47	BH	95	LEU
47	BH	156	VAL
47	BH	160	VAL
47	BH	169	SER
47	BH	179	GLN
48	BI	18	GLU
48	BI	25	VAL

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Mol	Chain	Res	Type
48	BI	32	LYS
48	BI	47	VAL
48	BI	92	LYS
48	BI	124	VAL
48	BI	129	VAL
49	BJ	114	VAL
50	BK	5	SER
50	BK	24	VAL
50	BK	30	LYS
50	BK	36	VAL
50	BK	105	LYS
50	BK	135	SER
51	BL	43	ILE
51	BL	47	THR
51	BL	65	THR
51	BL	74	SER
51	BL	77	LEU
52	BM	43	VAL
52	BM	47	SER
52	BM	74	LEU
53	BN	4	LYS
53	BN	5	LYS
53	BN	82	LYS
53	BN	115	SER
54	BO	8	ILE
54	BO	19	ASN
54	BO	34	ILE
54	BO	105	ASP
54	BO	122	LEU
54	BO	126	VAL
54	BO	131	THR
54	BO	132	VAL
54	BO	137	PHE
56	BQ	22	VAL
56	BQ	66	ILE
56	BQ	71	LEU
56	BQ	81	LYS
56	BQ	87	ASP
56	BQ	147	SER
57	BR	16	VAL
57	BR	24	VAL
57	BR	62	THR

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Mol	Chain	Res	Type
57	BR	75	THR
57	BR	99	VAL
57	BR	102	CYS
57	BR	116	THR
57	BR	130	LYS
57	BR	134	VAL
58	BS	3	ARG
58	BS	18	GLU
58	BS	41	ILE
58	BS	57	LEU
59	BT	19	THR
59	BT	60	LYS
59	BT	71	LEU
59	BT	80	LEU
59	BT	103	VAL
60	BU	10	ASP
60	BU	12	LEU
60	BU	18	LYS
60	BU	23	ASN
60	BU	117	THR
60	BU	122	VAL
60	BU	153	VAL
61	BV	23	LYS
61	BV	86	VAL
61	BV	92	ILE
61	BV	120	ARG
62	BW	47	ASP
62	BW	53	THR
62	BW	64	VAL
62	BW	68	GLU
62	BW	94	VAL
63	BX	30	VAL
63	BX	40	VAL
63	BX	48	ASP
63	BX	55	LYS
63	BX	59	ILE
63	BX	68	THR
63	BX	92	VAL
64	BY	18	VAL
64	BY	22	CYS
64	BY	31	THR
64	BY	39	VAL

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Mol	Chain	Res	Type
65	BZ	21	ILE
65	BZ	25	THR
65	BZ	30	GLU
65	BZ	33	GLN
65	BZ	34	VAL
65	BZ	49	THR
65	BZ	75	THR
66	Ba	3	SER
66	Ba	8	THR
66	Ba	17	THR
66	Ba	43	LEU
67	Bb	62	LEU
68	Bc	17	SER
68	Bc	40	THR
68	Bc	65	PRO

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (29) such sidechains are listed below:

Mol	Chain	Res	Type
5	AB	6	ASN
5	AB	299	GLN
6	AC	84	HIS
8	AE	111	GLN
10	AG	11	GLN
10	AG	150	GLN
15	AM	174	HIS
19	AQ	116	GLN
24	AV	29	ASN
27	AY	61	ASN
27	AY	130	GLN
30	Ab	91	HIS
38	Aj	99	GLN
38	Aj	150	ASN
41	BB	29	ASN
42	BC	178	HIS
43	BD	39	ASN
45	BF	33	ASN
45	BF	73	GLN
47	BH	129	GLN
48	BI	108	GLN
49	BJ	57	HIS
52	BM	66	GLN

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Mol	Chain	Res	Type
52	BM	73	GLN
54	BO	19	ASN
56	BQ	7	HIS
57	BR	51	HIS
62	BW	52	GLN
66	Ba	34	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	2	129/129 (100%)	10 (7%)	2 (1%)
2	1	2844/3024 (94%)	341 (11%)	28 (0%)
3	4	1426/1498 (95%)	260 (18%)	38 (2%)
All	All	4399/4651 (94%)	611 (13%)	68 (1%)

All (611) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	2	2	C
1	2	8	A
1	2	28	G
1	2	48	A
1	2	54	G
1	2	59	U
1	2	60	A
1	2	76	U
1	2	98	G
1	2	117	G
2	1	2	A
2	1	38	5MC
2	1	43	G
2	1	63	A
2	1	66	A
2	1	67	G
2	1	75	U
2	1	76	A
2	1	77	G
2	1	83	G
2	1	93	G
2	1	109	A
2	1	110	A

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Mol	Chain	Res	Type
2	1	111	U
2	1	118	U
2	1	134	U
2	1	135	A
2	1	154	G
2	1	158	C
2	1	162	A
2	1	177	A
2	1	196	G
2	1	197	A
2	1	203	A
2	1	204	G
2	1	211	G
2	1	229	G
2	1	230	C
2	1	233	C
2	1	247	G
2	1	258	A
2	1	269	A
2	1	270	C
2	1	292	U
2	1	294	G
2	1	303	C
2	1	304	A
2	1	305	A
2	1	328	G
2	1	329	U
2	1	330	G
2	1	358	A
2	1	359	U
2	1	366	G
2	1	373	A
2	1	374	A
2	1	389	A
2	1	390	G
2	1	399	U
2	1	422	U
2	1	423	U
2	1	435	G
2	1	442	C
2	1	457	G
2	1	488	A

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Mol	Chain	Res	Type
2	1	489	G
2	1	504	G
2	1	512	G
2	1	523	G
2	1	534	A
2	1	535	G
2	1	536	A
2	1	537	G
2	1	558	G
2	1	575	G
2	1	576	G
2	1	578	U
2	1	579	G
2	1	606	C
2	1	613	G
2	1	614	U
2	1	629	C
2	1	644	A
2	1	655	C
2	1	656	A
2	1	668	G
2	1	669	U
2	1	684	A
2	1	685	G
2	1	698	A
2	1	723	C
2	1	724	A
2	1	725	G
2	1	772	A
2	1	803	U
2	1	826	G
2	1	833	A
2	1	834	A
2	1	835	G
2	1	836	C
2	1	847	C
2	1	860	U
2	1	865	U
2	1	881	G
2	1	882	A
2	1	893	G
2	1	900	A

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Mol	Chain	Res	Type
2	1	902	OMG
2	1	903	A
2	1	907	A
2	1	910	A
2	1	923	G
2	1	930	C
2	1	945	C
2	1	946	U
2	1	965	G
2	1	968	G
2	1	978	G
2	1	989	A
2	1	1021	C
2	1	1029	A
2	1	1031	C
2	1	1067	G
2	1	1074	U
2	1	1075	G
2	1	1082	G
2	1	1095	G
2	1	1101	A
2	1	1104	A
2	1	1132	U
2	1	1133	G
2	1	1141	A
2	1	1147	A
2	1	1160	G
2	1	1171	A
2	1	1172	A
2	1	1173	G
2	1	1174	A
2	1	1176	A
2	1	1177	G
2	1	1237	A
2	1	1238	G
2	1	1254	G
2	1	1255	A
2	1	1256	U
2	1	1259	A
2	1	1260	C
2	1	1262	G
2	1	1268	A

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Mol	Chain	Res	Type
2	1	1300	G
2	1	1301	U
2	1	1302	U
2	1	1303	G
2	1	1312	G
2	1	1322	G
2	1	1338	A
2	1	1354	G
2	1	1365	C
2	1	1382	U
2	1	1383	C
2	1	1389	G
2	1	1393	G
2	1	1402	A
2	1	1403	A
2	1	1417	C
2	1	1428	G
2	1	1429	A
2	1	1430	A
2	1	1431	A
2	1	1474	C
2	1	1483	G
2	1	1500	A
2	1	1510	A
2	1	1514	A
2	1	1515	A
2	1	1526	A
2	1	1527	U
2	1	1549	U
2	1	1550	C
2	1	1559	C
2	1	1562	A
2	1	1564	G
2	1	1577	C
2	1	1632	G
2	1	1633	A
2	1	1635	U
2	1	1636	G
2	1	1639	G
2	1	1644	G
2	1	1668	A
2	1	1669	U

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Mol	Chain	Res	Type
2	1	1680	U
2	1	1681	U
2	1	1712	A
2	1	1728	C
2	1	1752	A
2	1	1757	C
2	1	1764	G
2	1	1765	C
2	1	1766	U
2	1	1777	A
2	1	1789	G
2	1	1790	C
2	1	1791	U
2	1	1792	C
2	1	1818	G
2	1	1840	G
2	1	1867	U
2	1	1868	A
2	1	1869	U
2	1	1870	A
2	1	1900	G
2	1	1909	A
2	1	1916	A
2	1	1918	C
2	1	1920	A
2	1	1927	A
2	1	1936	C
2	1	1938	A
2	1	1947	OMG
2	1	1999	A
2	1	2022	A
2	1	2023	G
2	1	2027	G
2	1	2028	G
2	1	2029	G
2	1	2030	G
2	1	2031	G
2	1	2034	A
2	1	2039	G
2	1	2041	C
2	1	2043	C
2	1	2044	PSU

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Mol	Chain	Res	Type
2	1	2047	U
2	1	2048	A
2	1	2051	G
2	1	2054	G
2	1	2058	A
2	1	2061	G
2	1	2065	U
2	1	2076	U
2	1	2085	G
2	1	2088	OMU
2	1	2092	U
2	1	2093	G
2	1	2103	OMG
2	1	2112	U
2	1	2114	U
2	1	2116	OMC
2	1	2118	G
2	1	2141	C
2	1	2142	U
2	1	2151	A
2	1	2153	A
2	1	2175	C
2	1	2180	A
2	1	2181	G
2	1	2182	U
2	1	2189	G
2	1	2199	A
2	1	2213	G
2	1	2215	G
2	1	2317	U
2	1	2318	A
2	1	2336	A
2	1	2337	C
2	1	2350	G
2	1	2357	G
2	1	2361	G
2	1	2362	OMG
2	1	2395	C
2	1	2399	A
2	1	2400	A
2	1	2417	U
2	1	2421	A

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Mol	Chain	Res	Type
2	1	2432	A
2	1	2434	A
2	1	2446	A
2	1	2447	A
2	1	2457	G
2	1	2498	G
2	1	2500	C
2	1	2537	OMG
2	1	2540	U
2	1	2541	G
2	1	2546	A
2	1	2547	A
2	1	2548	A
2	1	2555	OMC
2	1	2559	G
2	1	2561	A
2	1	2562	A
2	1	2589	C
2	1	2590	C
2	1	2594	C
2	1	2606	U
2	1	2612	C
2	1	2616	G
2	1	2617	A
2	1	2632	A
2	1	2643	G
2	1	2644	C
2	1	2648	A
2	1	2680	A
2	1	2681	G
2	1	2687	C
2	1	2696	G
2	1	2699	U
2	1	2717	G
2	1	2723	U
2	1	2727	U
2	1	2735	G
2	1	2743	U
2	1	2744	G
2	1	2754	G
2	1	2759	A
2	1	2760	G

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Mol	Chain	Res	Type
2	1	2770	G
2	1	2788	G
2	1	2804	U
2	1	2825	C
2	1	2826	U
2	1	2827	G
2	1	2846	G
2	1	2854	C
2	1	2860	A
2	1	2863	G
2	1	2869	A
2	1	2876	A
2	1	2877	A
2	1	2878	G
2	1	2890	A
2	1	2913	G
2	1	2915	A
2	1	2929	A
2	1	2939	U
2	1	2952	U
2	1	2953	G
2	1	2954	A
2	1	2969	A
2	1	2978	G
2	1	2981	U
2	1	2982	U
2	1	2983	U
2	1	2985	C
2	1	2995	A
2	1	2996	G
2	1	3000	G
2	1	3007	C
2	1	3013	G
2	1	3021	G
3	4	3	A
3	4	5	4AC
3	4	8	U
3	4	12	U
3	4	13	C
3	4	14	C
3	4	16	G
3	4	17	C

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Mol	Chain	Res	Type
3	4	33	U
3	4	42	G
3	4	56	A
3	4	72	G
3	4	73	C
3	4	74	G
3	4	75	C
3	4	89	A
3	4	100	A
3	4	101	C
3	4	102	A
3	4	110	A
3	4	111	A
3	4	112	C
3	4	154	U
3	4	155	C
3	4	172	C
3	4	180	G
3	4	181	G
3	4	193	A
3	4	195	A
3	4	196	G
3	4	209	A
3	4	210	U
3	4	212	C
3	4	213	G
3	4	214	C
3	4	246	A
3	4	248	C
3	4	250	G
3	4	254	G
3	4	269	G
3	4	270	C
3	4	283	A
3	4	284	G
3	4	292	G
3	4	296	C
3	4	308	C
3	4	309	G
3	4	332	C
3	4	333	A
3	4	334	A

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Mol	Chain	Res	Type
3	4	349	C
3	4	350	G
3	4	356	C
3	4	357	A
3	4	358	G
3	4	359	C
3	4	371	C
3	4	376	C
3	4	377	A
3	4	388	C
3	4	397	G
3	4	401	A
3	4	410	G
3	4	418	A
3	4	419	A
3	4	455	A
3	4	456	A
3	4	457	U
3	4	471	G
3	4	472	U
3	4	479	U
3	4	484	C
3	4	488	G
3	4	491	G
3	4	492	U
3	4	493	A
3	4	494	A
3	4	496	A2M
3	4	508	M7A
3	4	511	OMG
3	4	521	U
3	4	522	U
3	4	525	C
3	4	533	A
3	4	534	A
3	4	537	C
3	4	580	U
3	4	581	C
3	4	594	G
3	4	614	A
3	4	623	G
3	4	626	A

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Mol	Chain	Res	Type
3	4	647	U
3	4	648	A
3	4	649	G
3	4	656	A
3	4	662	U
3	4	664	A
3	4	665	A
3	4	679	A
3	4	683	G
3	4	685	G
3	4	692	G
3	4	704	A
3	4	710	C
3	4	714	A
3	4	716	G
3	4	738	A
3	4	742	A
3	4	755	A
3	4	777	A
3	4	778	C
3	4	781	U
3	4	789	A
3	4	790	G
3	4	807	G
3	4	832	C
3	4	839	G
3	4	850	G
3	4	855	G
3	4	856	U
3	4	867	G
3	4	879	A2M
3	4	891	G
3	4	899	C
3	4	901	A
3	4	926	U
3	4	927	U
3	4	928	G
3	4	929	G
3	4	930	A
3	4	944	A
3	4	1007	G
3	4	1008	A

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Mol	Chain	Res	Type
3	4	1009	G
3	4	1010	G
3	4	1011	U
3	4	1012	G
3	4	1013	C
3	4	1015	U
3	4	1021	U
3	4	1024	U
3	4	1025	C
3	4	1029	U
3	4	1036	G
3	4	1037	U
3	4	1045	OMC
3	4	1049	U
3	4	1051	A
3	4	1053	G
3	4	1054	U
3	4	1058	G
3	4	1059	C
3	4	1060	A2M
3	4	1066	C
3	4	1068	A
3	4	1084	U
3	4	1085	U
3	4	1086	G
3	4	1089	A
3	4	1090	C
3	4	1091	C
3	4	1092	C
3	4	1093	C
3	4	1099	A
3	4	1100	C
3	4	1101	G
3	4	1102	G
3	4	1113	A
3	4	1119	G
3	4	1125	C
3	4	1126	U
3	4	1127	G
3	4	1135	A
3	4	1136	A
3	4	1149	A

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Mol	Chain	Res	Type
3	4	1150	G
3	4	1159	G
3	4	1162	A
3	4	1163	OMG
3	4	1164	G
3	4	1165	U
3	4	1166	C
3	4	1167	A
3	4	1168	G
3	4	1174	C
3	4	1175	C
3	4	1177	G
3	4	1178	A
3	4	1179	A
3	4	1180	A
3	4	1181	C
3	4	1182	C
3	4	1192	C
3	4	1193	A
3	4	1199	G
3	4	1201	U
3	4	1202	OMG
3	4	1204	A
3	4	1206	U
3	4	1223	U
3	4	1224	C
3	4	1226	G
3	4	1236	G
3	4	1245	A
3	4	1246	A
3	4	1252	U
3	4	1265	A
3	4	1266	G
3	4	1267	U
3	4	1269	G
3	4	1271	G
3	4	1286	C
3	4	1301	G
3	4	1302	U
3	4	1304	G
3	4	1311	U
3	4	1319	G

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Mol	Chain	Res	Type
3	4	1325	C
3	4	1330	A
3	4	1345	G
3	4	1346	U
3	4	1360	A
3	4	1364	A
3	4	1416	G
3	4	1417	U
3	4	1418	G
3	4	1419	G
3	4	1422	G
3	4	1427	A
3	4	1431	G
3	4	1432	G
3	4	1433	G
3	4	1436	C
3	4	1437	U
3	4	1439	C
3	4	1441	A
3	4	1444	G
3	4	1445	G
3	4	1447	G
3	4	1449	U
3	4	1450	G
3	4	1451	A
3	4	1452	A
3	4	1453	G
3	4	1456	G
3	4	1458	A
3	4	1463	G
3	4	1465	U
3	4	1466	A
3	4	1476	G
3	4	1478	MA6
3	4	1479	C
3	4	1488	G
3	4	1489	G
3	4	1490	A
3	4	1491	U
3	4	1492	C
3	4	1493	A
3	4	1494	C

All (68) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	2	1	G
1	2	7	A
2	1	117	U
2	1	134	U
2	1	230	C
2	1	434	C
2	1	456	G
2	1	488	A
2	1	533	A
2	1	575	G
2	1	613	G
2	1	668	G
2	1	724	A
2	1	880	U
2	1	902	OMG
2	1	1253	A
2	1	1337	C
2	1	1514	A
2	1	1526	A
2	1	1868	A
2	1	2022	A
2	1	2064	U
2	1	2102	A
2	1	2361	G
2	1	2420	G
2	1	2431	U
2	1	2605	U
2	1	2868	U
2	1	2984	C
2	1	2995	A
3	4	7	OMG
3	4	16	G
3	4	73	C
3	4	101	C
3	4	180	G
3	4	212	C
3	4	213	G
3	4	358	G
3	4	471	G
3	4	521	U
3	4	593	C
3	4	663	U

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Mol	Chain	Res	Type
3	4	664	A
3	4	678	C
3	4	854	A
3	4	855	G
3	4	928	G
3	4	1007	G
3	4	1023	G
3	4	1028	C
3	4	1036	G
3	4	1053	G
3	4	1090	C
3	4	1091	C
3	4	1098	U
3	4	1100	C
3	4	1134	U
3	4	1162	A
3	4	1176	C
3	4	1178	A
3	4	1179	A
3	4	1251	G
3	4	1417	U
3	4	1421	G
3	4	1435	G
3	4	1444	G
3	4	1448	G
3	4	1462	A

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

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
3	OMC	4	1368	3	19,22,23	0.79	0	25,31,34	0.79	0
2	OMC	1	1816	2	19,22,23	0.80	0	25,31,34	0.71	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
3	OMG	4	465	3	19,26,27	0.94	1 (5%)	21,38,41	1.05	2 (9%)
3	OMU	4	877	3	19,22,23	1.26	3 (15%)	25,31,34	1.84	5 (20%)
2	B8T	1	2937	2	19,22,23	0.41	0	25,31,34	0.32	0
2	OMG	1	2667	2	19,26,27	0.91	1 (5%)	21,38,41	1.08	2 (9%)
2	OMG	1	2017	2	19,26,27	0.90	1 (5%)	21,38,41	1.04	2 (9%)
2	OMG	1	2388	2	19,26,27	0.91	1 (5%)	21,38,41	1.18	2 (9%)
2	OMG	1	2537	2	19,26,27	0.91	1 (5%)	21,38,41	1.08	2 (9%)
2	OMG	1	1947	2	19,26,27	0.90	1 (5%)	21,38,41	1.22	2 (9%)
2	PSU	1	2625	2	18,21,22	0.92	1 (5%)	21,30,33	0.71	0
2	OMC	1	2704	2	19,22,23	0.80	0	25,31,34	0.88	0
2	OMU	1	2851	2	19,22,23	1.28	4 (21%)	25,31,34	1.84	4 (16%)
2	OMC	1	493	2	19,22,23	0.79	0	25,31,34	0.81	0
2	A2M	1	2011	2	18,25,26	0.67	0	20,36,39	0.71	1 (5%)
2	5MC	1	38	2	19,22,23	1.46	3 (15%)	26,32,35	1.21	3 (11%)
3	4AC	4	1318	3	21,24,25	0.39	0	28,34,37	0.70	0
2	OMU	1	2707	2	19,22,23	1.28	4 (21%)	25,31,34	1.88	5 (20%)
3	OMG	4	1210	3	19,26,27	0.91	1 (5%)	21,38,41	1.04	1 (4%)
2	OMU	1	908	70,2	19,22,23	1.32	4 (21%)	25,31,34	1.96	7 (28%)
2	OMC	1	2624	2	19,22,23	0.80	0	25,31,34	0.85	1 (4%)
2	A2M	1	2059	70,2	18,25,26	0.71	0	20,36,39	0.91	0
2	OMG	1	2608	2	19,26,27	0.92	1 (5%)	21,38,41	1.12	2 (9%)
2	OMU	1	2666	2	19,22,23	1.26	3 (15%)	25,31,34	1.85	5 (20%)
2	OMU	1	2077	2	19,22,23	1.32	3 (15%)	25,31,34	1.78	5 (20%)
3	MA6	4	1478	3	19,26,27	0.92	1 (5%)	18,38,41	0.83	1 (5%)
2	OMU	1	2155	2	19,22,23	1.26	3 (15%)	25,31,34	1.86	5 (20%)
2	OMC	1	2884	2	19,22,23	0.79	0	25,31,34	0.81	0
3	MA6	4	1477	3	19,26,27	0.93	1 (5%)	18,38,41	0.82	1 (5%)
3	OMC	4	1184	3	19,22,23	0.80	0	25,31,34	0.85	1 (4%)
3	PSU	4	263	3	18,21,22	0.93	1 (5%)	21,30,33	0.63	0
3	M7A	4	508	3	19,25,26	0.29	0	25,37,40	0.57	0
3	OMU	4	15	3	19,22,23	1.33	4 (21%)	25,31,34	1.82	4 (16%)
2	PSU	1	2610	2	18,21,22	0.90	1 (5%)	21,30,33	0.79	0
2	OMG	1	2103	2	19,26,27	0.94	1 (5%)	21,38,41	1.06	2 (9%)
2	PSU	1	1987	2	18,21,22	0.91	1 (5%)	21,30,33	0.68	0
3	OMG	4	1163	3	19,26,27	0.90	1 (5%)	21,38,41	1.12	2 (9%)
3	OMG	4	19	3	19,26,27	0.95	1 (5%)	21,38,41	1.13	2 (9%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
3	A2M	4	880	3	18,25,26	0.69	0	20,36,39	0.80	1 (5%)
3	OMC	4	489	3	19,22,23	0.81	0	25,31,34	0.88	0
2	PSU	1	1911	2	18,21,22	0.93	1 (5%)	21,30,33	0.78	0
3	OMC	4	514	3	19,22,23	0.82	0	25,31,34	0.91	1 (4%)
2	OMG	1	1957	2	19,26,27	0.93	1 (5%)	21,38,41	1.09	2 (9%)
2	OMU	1	2408	2	19,22,23	1.33	4 (21%)	25,31,34	1.92	4 (16%)
2	OMC	1	2885	2	19,22,23	0.81	0	25,31,34	0.78	0
2	B8T	1	79	2	19,22,23	0.41	0	25,31,34	0.37	0
3	OMG	4	908	3	19,26,27	0.90	1 (5%)	21,38,41	1.09	2 (9%)
2	PSU	1	2044	2	18,21,22	0.90	1 (5%)	21,30,33	0.67	0
2	4AC	1	2016	2	21,24,25	0.39	0	28,34,37	0.60	0
2	OMC	1	2555	2	19,22,23	0.80	0	25,31,34	0.86	1 (4%)
3	OMG	4	1212	3	19,26,27	0.93	1 (5%)	21,38,41	1.11	2 (9%)
2	OMU	1	2088	2	19,22,23	1.28	3 (15%)	25,31,34	1.80	4 (16%)
3	OMG	4	1211	3	19,26,27	0.93	1 (5%)	21,38,41	1.09	1 (4%)
3	B8T	4	1469	3	19,22,23	0.43	0	25,31,34	0.42	0
3	OMG	4	1202	70,3	19,26,27	0.91	1 (5%)	21,38,41	1.12	2 (9%)
3	OMG	4	906	3	19,26,27	0.89	1 (5%)	21,38,41	1.11	2 (9%)
2	OMC	1	2538	2	19,22,23	0.78	0	25,31,34	0.79	0
3	OMG	4	7	3	19,26,27	0.93	1 (5%)	21,38,41	1.36	3 (14%)
2	OMG	1	2366	2	19,26,27	0.93	1 (5%)	21,38,41	1.07	2 (9%)
2	G7M	1	3023	2	20,26,27	2.36	3 (15%)	16,39,42	0.59	0
2	OMC	1	1976	2	19,22,23	0.83	0	25,31,34	0.91	1 (4%)
3	B8T	4	1035	3	19,22,23	0.41	0	25,31,34	0.56	0
2	OMC	1	872	2	19,22,23	0.78	0	25,31,34	0.83	1 (4%)
2	OMC	1	2116	2	19,22,23	0.81	0	25,31,34	0.72	0
3	OMG	4	1289	70,3	19,26,27	0.90	1 (5%)	21,38,41	1.03	2 (9%)
3	OMG	4	511	3	19,26,27	0.89	1 (5%)	21,38,41	1.06	2 (9%)
3	OMC	4	1034	3	19,22,23	0.80	0	25,31,34	0.81	0
2	OMG	1	1949	2	19,26,27	0.90	1 (5%)	21,38,41	1.05	2 (9%)
2	OMC	1	673	2	19,22,23	0.79	0	25,31,34	0.83	0
3	OMG	4	475	3	19,26,27	0.94	1 (5%)	21,38,41	1.06	2 (9%)
3	OMG	4	674	3	19,26,27	0.89	1 (5%)	21,38,41	1.05	2 (9%)
2	OMG	1	2176	70,2	19,26,27	0.92	1 (5%)	21,38,41	1.09	2 (9%)
52	IAS	BM	128	52	6,7,8	1.32	1 (16%)	3,8,10	1.47	1 (33%)
2	UR3	1	2698	2	19,22,23	0.93	0	26,32,35	1.72	2 (7%)
2	OMG	1	2071	2	19,26,27	0.90	1 (5%)	21,38,41	1.05	2 (9%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	OMG	1	2362	2	19,26,27	0.91	1 (5%)	21,38,41	1.07	2 (9%)
2	OMU	1	2574	2	19,22,23	1.25	3 (15%)	25,31,34	1.76	4 (16%)
2	A2M	1	1990	2	18,25,26	0.69	0	20,36,39	0.86	1 (5%)
3	OMC	4	572	3	19,22,23	0.80	0	25,31,34	0.79	0
2	OMC	1	2720	2	19,22,23	0.79	0	25,31,34	0.93	1 (4%)
3	6MZ	4	1459	70,3	17,25,26	0.82	0	15,36,39	1.96	2 (13%)
2	OMG	1	2066	2	19,26,27	0.91	1 (5%)	21,38,41	1.08	2 (9%)
3	A2M	4	1060	3	18,25,26	0.67	0	20,36,39	0.85	1 (5%)
2	OMG	1	1971	2	19,26,27	0.92	1 (5%)	21,38,41	1.08	2 (9%)
3	4AC	4	5	3	21,24,25	0.43	0	28,34,37	0.66	0
2	OMC	1	2143	2	19,22,23	0.27	0	25,31,34	0.30	0
3	A2M	4	569	70,3	18,25,26	0.67	0	20,36,39	0.72	1 (5%)
2	OMU	1	2628	2	19,22,23	1.27	3 (15%)	25,31,34	1.81	5 (20%)
3	A2M	4	879	3	18,25,26	0.66	0	20,36,39	0.73	1 (5%)
2	OMU	1	2623	2	19,22,23	1.26	3 (15%)	25,31,34	1.85	5 (20%)
2	OMC	1	2115	2	19,22,23	0.80	0	25,31,34	0.80	0
3	A2M	4	496	3	18,25,26	0.67	0	20,36,39	0.82	1 (5%)
3	OMC	4	1045	3	19,22,23	0.76	0	25,31,34	0.80	0
2	PSU	1	2607	2	18,21,22	0.96	1 (5%)	21,30,33	0.81	0
2	OMG	1	2104	2	19,26,27	0.93	1 (5%)	21,38,41	1.14	2 (9%)
2	A2M	1	2691	70,2	18,25,26	0.66	0	20,36,39	0.73	1 (5%)
3	OMG	4	467	3	19,26,27	0.84	1 (5%)	21,38,41	1.06	1 (4%)
3	A2M	4	40	3	18,25,26	0.67	0	20,36,39	0.73	1 (5%)
2	OMG	1	2601	70,2	19,26,27	0.92	1 (5%)	21,38,41	1.08	2 (9%)
2	OMU	1	875	2	19,22,23	1.27	3 (15%)	25,31,34	1.87	5 (20%)
2	5MC	1	2056	70,2	19,22,23	1.52	3 (15%)	26,32,35	1.16	3 (11%)
2	OMC	1	492	2	19,22,23	0.77	0	25,31,34	0.82	0
2	OMC	1	2018	2	19,22,23	0.79	0	25,31,34	0.75	0
3	OMG	4	462	3	19,26,27	0.93	1 (5%)	21,38,41	1.12	2 (9%)
2	PSU	1	2571	2	18,21,22	0.94	1 (5%)	21,30,33	0.73	0
2	OMG	1	902	70,2	19,26,27	0.87	1 (5%)	21,38,41	1.14	2 (9%)

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
3	OMC	4	1368	3	-	1/9/27/28	0/2/2/2
2	OMC	1	1816	2	-	0/9/27/28	0/2/2/2
3	OMG	4	465	3	-	2/5/27/28	0/3/3/3
3	OMU	4	877	3	-	0/9/27/28	0/2/2/2
2	B8T	1	2937	2	-	1/7/27/28	0/2/2/2
2	OMG	1	2667	2	-	0/5/27/28	0/3/3/3
2	OMG	1	2017	2	-	1/5/27/28	0/3/3/3
2	OMG	1	2388	2	-	2/5/27/28	0/3/3/3
2	OMG	1	2537	2	-	2/5/27/28	0/3/3/3
2	OMG	1	1947	2	-	2/5/27/28	0/3/3/3
2	PSU	1	2625	2	-	2/7/25/26	0/2/2/2
2	OMC	1	2704	2	-	0/9/27/28	0/2/2/2
2	OMU	1	2851	2	-	2/9/27/28	0/2/2/2
2	OMC	1	493	2	-	1/9/27/28	0/2/2/2
2	A2M	1	2011	2	-	0/5/27/28	0/3/3/3
2	5MC	1	38	2	-	1/7/25/26	0/2/2/2
3	4AC	4	1318	3	-	0/11/29/30	0/2/2/2
2	OMU	1	2707	2	-	0/9/27/28	0/2/2/2
3	OMG	4	1210	3	-	1/5/27/28	0/3/3/3
2	OMU	1	908	70,2	-	4/9/27/28	0/2/2/2
2	OMC	1	2624	2	-	0/9/27/28	0/2/2/2
2	A2M	1	2059	70,2	-	1/5/27/28	0/3/3/3
2	OMG	1	2608	2	-	2/5/27/28	0/3/3/3
2	OMU	1	2666	2	-	0/9/27/28	0/2/2/2
2	OMU	1	2077	2	-	1/9/27/28	0/2/2/2
3	MA6	4	1478	3	-	2/7/29/30	0/3/3/3
2	OMU	1	2155	2	-	2/9/27/28	0/2/2/2
2	OMC	1	2884	2	-	0/9/27/28	0/2/2/2
3	MA6	4	1477	3	-	0/7/29/30	0/3/3/3
3	OMC	4	1184	3	-	1/9/27/28	0/2/2/2
3	PSU	4	263	3	-	0/7/25/26	0/2/2/2
3	M7A	4	508	3	-	3/7/37/38	0/3/3/3
3	OMU	4	15	3	-	0/9/27/28	0/2/2/2
2	PSU	1	2610	2	-	0/7/25/26	0/2/2/2
2	OMG	1	2103	2	-	0/5/27/28	0/3/3/3
2	PSU	1	1987	2	-	0/7/25/26	0/2/2/2
3	OMG	4	1163	3	-	3/5/27/28	0/3/3/3
3	OMG	4	19	3	-	1/5/27/28	0/3/3/3
3	A2M	4	880	3	-	0/5/27/28	0/3/3/3
3	OMC	4	489	3	-	1/9/27/28	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	PSU	1	1911	2	-	0/7/25/26	0/2/2/2
3	OMC	4	514	3	-	1/9/27/28	0/2/2/2
2	OMG	1	1957	2	-	0/5/27/28	0/3/3/3
2	OMU	1	2408	2	-	0/9/27/28	0/2/2/2
2	OMC	1	2885	2	-	0/9/27/28	0/2/2/2
2	B8T	1	79	2	-	0/7/27/28	0/2/2/2
3	OMG	4	908	3	-	4/5/27/28	0/3/3/3
2	PSU	1	2044	2	-	2/7/25/26	0/2/2/2
2	4AC	1	2016	2	-	0/11/29/30	0/2/2/2
2	OMC	1	2555	2	-	2/9/27/28	0/2/2/2
3	OMG	4	1212	3	-	0/5/27/28	0/3/3/3
2	OMU	1	2088	2	-	0/9/27/28	0/2/2/2
3	OMG	4	1211	3	-	2/5/27/28	0/3/3/3
3	B8T	4	1469	3	-	0/7/27/28	0/2/2/2
3	OMG	4	1202	70,3	-	3/5/27/28	0/3/3/3
3	OMG	4	906	3	-	0/5/27/28	0/3/3/3
2	OMC	1	2538	2	-	0/9/27/28	0/2/2/2
3	OMG	4	7	3	-	0/5/27/28	0/3/3/3
2	OMG	1	2366	2	-	0/5/27/28	0/3/3/3
2	G7M	1	3023	2	-	1/3/25/26	0/3/3/3
2	OMC	1	1976	2	-	1/9/27/28	0/2/2/2
3	B8T	4	1035	3	-	0/7/27/28	0/2/2/2
2	OMC	1	872	2	-	0/9/27/28	0/2/2/2
2	OMC	1	2116	2	-	2/9/27/28	0/2/2/2
3	OMG	4	1289	70,3	-	0/5/27/28	0/3/3/3
3	OMG	4	511	3	-	3/5/27/28	0/3/3/3
3	OMC	4	1034	3	-	0/9/27/28	0/2/2/2
2	OMG	1	1949	2	-	0/5/27/28	0/3/3/3
2	OMC	1	673	2	-	0/9/27/28	0/2/2/2
3	OMG	4	475	3	-	0/5/27/28	0/3/3/3
3	OMG	4	674	3	-	0/5/27/28	0/3/3/3
2	OMG	1	2176	70,2	-	0/5/27/28	0/3/3/3
52	IAS	BM	128	52	-	1/7/7/8	-
2	UR3	1	2698	2	-	0/7/25/26	0/2/2/2
2	OMG	1	2071	2	-	0/5/27/28	0/3/3/3
2	OMG	1	2362	2	-	1/5/27/28	0/3/3/3
2	OMU	1	2574	2	-	0/9/27/28	0/2/2/2
2	A2M	1	1990	2	-	0/5/27/28	0/3/3/3
3	OMC	4	572	3	-	1/9/27/28	0/2/2/2
2	OMC	1	2720	2	-	0/9/27/28	0/2/2/2
3	6MZ	4	1459	70,3	-	0/5/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	OMG	1	2066	2	-	0/5/27/28	0/3/3/3
3	A2M	4	1060	3	-	3/5/27/28	0/3/3/3
2	OMG	1	1971	2	-	0/5/27/28	0/3/3/3
3	4AC	4	5	3	-	2/11/29/30	0/2/2/2
2	OMC	1	2143	2	-	0/9/27/28	0/2/2/2
3	A2M	4	569	70,3	-	0/5/27/28	0/3/3/3
2	OMU	1	2628	2	-	0/9/27/28	0/2/2/2
3	A2M	4	879	3	-	4/5/27/28	0/3/3/3
2	OMU	1	2623	2	-	2/9/27/28	0/2/2/2
2	OMC	1	2115	2	-	0/9/27/28	0/2/2/2
3	A2M	4	496	3	-	3/5/27/28	0/3/3/3
3	OMC	4	1045	3	-	2/9/27/28	0/2/2/2
2	PSU	1	2607	2	-	0/7/25/26	0/2/2/2
2	OMG	1	2104	2	-	0/5/27/28	0/3/3/3
2	A2M	1	2691	70,2	-	1/5/27/28	0/3/3/3
3	OMG	4	467	3	-	0/5/27/28	0/3/3/3
3	A2M	4	40	3	-	1/5/27/28	0/3/3/3
2	OMG	1	2601	70,2	-	0/5/27/28	0/3/3/3
2	OMU	1	875	2	-	1/9/27/28	0/2/2/2
2	5MC	1	2056	70,2	-	1/7/25/26	0/2/2/2
2	OMC	1	492	2	-	2/9/27/28	0/2/2/2
2	OMC	1	2018	2	-	0/9/27/28	0/2/2/2
3	OMG	4	462	3	-	1/5/27/28	0/3/3/3
2	PSU	1	2571	2	-	0/7/25/26	0/2/2/2
2	OMG	1	902	70,2	-	0/5/27/28	0/3/3/3

All (101) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	1	3023	G7M	C8-N9	7.19	1.46	1.33
2	1	3023	G7M	C8-N7	6.72	1.45	1.33
2	1	2056	5MC	C5-C4	5.34	1.48	1.44
2	1	38	5MC	C5-C4	5.00	1.47	1.44
2	1	2607	PSU	C6-C5	3.62	1.39	1.35
2	1	2571	PSU	C6-C5	3.61	1.39	1.35
3	4	263	PSU	C6-C5	3.60	1.39	1.35
2	1	2625	PSU	C6-C5	3.57	1.39	1.35
2	1	1911	PSU	C6-C5	3.54	1.39	1.35
2	1	2610	PSU	C6-C5	3.49	1.39	1.35
2	1	2044	PSU	C6-C5	3.46	1.39	1.35
2	1	1987	PSU	C6-C5	3.43	1.39	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	1	2408	OMU	C4-N3	-3.12	1.33	1.38
3	4	15	OMU	C4-N3	-3.07	1.33	1.38
2	1	2077	OMU	C4-N3	-3.04	1.33	1.38
2	1	875	OMU	C4-N3	-3.01	1.33	1.38
2	1	2707	OMU	C4-N3	-2.99	1.33	1.38
2	1	2088	OMU	C4-N3	-2.98	1.33	1.38
2	1	2666	OMU	C4-N3	-2.98	1.33	1.38
2	1	2628	OMU	C4-N3	-2.94	1.33	1.38
2	1	2574	OMU	C4-N3	-2.94	1.33	1.38
2	1	2623	OMU	C4-N3	-2.91	1.33	1.38
2	1	2155	OMU	C4-N3	-2.91	1.33	1.38
2	1	2103	OMG	C6-N1	-2.90	1.33	1.37
3	4	877	OMU	C4-N3	-2.89	1.33	1.38
2	1	2851	OMU	C4-N3	-2.86	1.33	1.38
2	1	2066	OMG	C6-N1	-2.83	1.33	1.37
2	1	2408	OMU	C2-N3	-2.81	1.33	1.38
2	1	1957	OMG	C6-N1	-2.80	1.33	1.37
2	1	2104	OMG	C6-N1	-2.80	1.33	1.37
2	1	2366	OMG	C6-N1	-2.80	1.33	1.37
3	4	7	OMG	C6-N1	-2.79	1.33	1.37
3	4	465	OMG	C6-N1	-2.79	1.33	1.37
2	1	908	OMU	C4-N3	-2.78	1.33	1.38
2	1	1971	OMG	C6-N1	-2.77	1.33	1.37
2	1	1949	OMG	C6-N1	-2.77	1.33	1.37
2	1	2388	OMG	C6-N1	-2.77	1.33	1.37
2	1	2601	OMG	C6-N1	-2.76	1.33	1.37
2	1	2176	OMG	C6-N1	-2.75	1.33	1.37
2	1	2537	OMG	C6-N1	-2.74	1.33	1.37
3	4	1212	OMG	C6-N1	-2.73	1.33	1.37
3	4	19	OMG	C6-N1	-2.73	1.33	1.37
2	1	2017	OMG	C6-N1	-2.71	1.33	1.37
3	4	15	OMU	C2-N3	-2.70	1.33	1.38
2	1	2155	OMU	C2-N3	-2.70	1.33	1.38
3	4	462	OMG	C6-N1	-2.69	1.33	1.37
2	1	2362	OMG	C6-N1	-2.69	1.33	1.37
2	1	2608	OMG	C6-N1	-2.68	1.33	1.37
2	1	902	OMG	C6-N1	-2.68	1.33	1.37
3	4	1211	OMG	C6-N1	-2.67	1.33	1.37
2	1	2071	OMG	C6-N1	-2.67	1.33	1.37
2	1	2667	OMG	C6-N1	-2.67	1.33	1.37
2	1	1947	OMG	C6-N1	-2.67	1.33	1.37
3	4	877	OMU	C2-N3	-2.67	1.33	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	4	1289	OMG	C6-N1	-2.65	1.33	1.37
3	4	1202	OMG	C6-N1	-2.65	1.33	1.37
3	4	908	OMG	C6-N1	-2.62	1.33	1.37
2	1	2707	OMU	C2-N3	-2.61	1.33	1.38
3	4	475	OMG	C6-N1	-2.61	1.33	1.37
2	1	2077	OMU	C2-N3	-2.61	1.33	1.38
3	4	1210	OMG	C6-N1	-2.61	1.33	1.37
2	1	2056	5MC	C6-N1	-2.58	1.33	1.38
3	4	511	OMG	C6-N1	-2.56	1.33	1.37
2	1	2666	OMU	C2-N3	-2.52	1.33	1.38
2	1	38	5MC	C6-N1	-2.52	1.33	1.38
2	1	875	OMU	C2-N3	-2.51	1.33	1.38
2	1	38	5MC	C6-C5	2.50	1.38	1.34
2	1	2088	OMU	C2-N3	-2.50	1.33	1.38
3	4	906	OMG	C6-N1	-2.50	1.34	1.37
2	1	908	OMU	C2-N3	-2.48	1.33	1.38
2	1	2623	OMU	C2-N3	-2.48	1.33	1.38
2	1	2056	5MC	C6-C5	2.47	1.38	1.34
3	4	674	OMG	C6-N1	-2.47	1.34	1.37
3	4	1163	OMG	C6-N1	-2.46	1.34	1.37
3	4	467	OMG	C6-N1	-2.46	1.34	1.37
2	1	2851	OMU	C2-N3	-2.45	1.33	1.38
2	1	2574	OMU	C2-N3	-2.42	1.33	1.38
2	1	2628	OMU	C2-N3	-2.36	1.33	1.38
2	1	2408	OMU	C5-C4	-2.35	1.38	1.43
2	1	2088	OMU	C5-C4	-2.35	1.38	1.43
2	1	2623	OMU	C5-C4	-2.32	1.38	1.43
2	1	908	OMU	C5-C4	-2.31	1.38	1.43
2	1	2628	OMU	C5-C4	-2.27	1.38	1.43
2	1	2574	OMU	C5-C4	-2.27	1.38	1.43
3	4	15	OMU	C5-C4	-2.25	1.38	1.43
2	1	908	OMU	C2-N1	2.24	1.42	1.38
3	4	1477	MA6	C6-N1	2.24	1.35	1.32
2	1	2077	OMU	C5-C4	-2.23	1.38	1.43
2	1	875	OMU	C5-C4	-2.23	1.38	1.43
2	1	2851	OMU	C5-C4	-2.23	1.38	1.43
2	1	2707	OMU	C5-C4	-2.22	1.38	1.43
2	1	3023	G7M	C6-N1	2.21	1.41	1.37
2	1	2666	OMU	C5-C4	-2.17	1.39	1.43
3	4	1478	MA6	C6-N1	2.16	1.35	1.32
52	BM	128	IAS	CB-CG	2.15	1.55	1.50
2	1	2155	OMU	C5-C4	-2.13	1.39	1.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	4	877	OMU	C5-C4	-2.11	1.39	1.43
2	1	2408	OMU	C6-N1	-2.08	1.33	1.38
2	1	2851	OMU	C6-N1	-2.04	1.33	1.38
2	1	2707	OMU	C6-N1	-2.01	1.33	1.38
3	4	15	OMU	C6-N1	-2.01	1.33	1.38

All (162) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	1	2698	UR3	C4-N3-C2	-6.86	119.06	124.58
3	4	1459	6MZ	C2-N1-C6	6.07	121.31	116.60
2	1	2408	OMU	C4-N3-C2	-5.28	120.06	126.61
2	1	2155	OMU	C4-N3-C2	-5.07	120.31	126.61
3	4	877	OMU	C4-N3-C2	-5.02	120.38	126.61
2	1	2707	OMU	C4-N3-C2	-5.01	120.39	126.61
2	1	875	OMU	C4-N3-C2	-5.00	120.40	126.61
2	1	2851	OMU	C4-N3-C2	-4.93	120.49	126.61
2	1	2666	OMU	C4-N3-C2	-4.93	120.50	126.61
2	1	2623	OMU	C4-N3-C2	-4.91	120.52	126.61
3	4	15	OMU	C4-N3-C2	-4.86	120.58	126.61
2	1	2408	OMU	C5-C4-N3	4.73	121.43	114.80
2	1	2628	OMU	C4-N3-C2	-4.70	120.78	126.61
2	1	2088	OMU	C4-N3-C2	-4.66	120.83	126.61
2	1	2574	OMU	C4-N3-C2	-4.62	120.88	126.61
2	1	908	OMU	C1'-N1-C2	4.54	125.74	117.59
2	1	2077	OMU	C4-N3-C2	-4.35	121.22	126.61
2	1	2155	OMU	C5-C4-N3	4.28	120.80	114.80
2	1	2707	OMU	N3-C2-N1	4.28	120.47	114.89
2	1	2666	OMU	N3-C2-N1	4.26	120.44	114.89
3	4	15	OMU	N3-C2-N1	4.24	120.41	114.89
3	4	877	OMU	C5-C4-N3	4.22	120.72	114.80
2	1	875	OMU	N3-C2-N1	4.21	120.37	114.89
2	1	2851	OMU	C5-C4-N3	4.19	120.67	114.80
2	1	2628	OMU	N3-C2-N1	4.19	120.34	114.89
2	1	2155	OMU	N3-C2-N1	4.18	120.33	114.89
2	1	2666	OMU	C5-C4-N3	4.14	120.60	114.80
2	1	2088	OMU	N3-C2-N1	4.13	120.27	114.89
2	1	908	OMU	C4-N3-C2	-4.12	121.50	126.61
2	1	875	OMU	C5-C4-N3	4.12	120.57	114.80
3	4	15	OMU	C5-C4-N3	4.11	120.56	114.80
2	1	2574	OMU	N3-C2-N1	4.06	120.18	114.89
3	4	877	OMU	N3-C2-N1	4.06	120.18	114.89

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	1	2707	OMU	C5-C4-N3	4.05	120.48	114.80
2	1	2623	OMU	C5-C4-N3	4.03	120.44	114.80
2	1	2088	OMU	C5-C4-N3	3.99	120.39	114.80
2	1	2077	OMU	N3-C2-N1	3.95	120.04	114.89
2	1	2623	OMU	N3-C2-N1	3.95	120.04	114.89
2	1	2574	OMU	C5-C4-N3	3.90	120.26	114.80
2	1	2408	OMU	N3-C2-N1	3.88	119.94	114.89
2	1	2077	OMU	C5-C4-N3	3.85	120.20	114.80
2	1	2628	OMU	C5-C4-N3	3.85	120.19	114.80
2	1	908	OMU	C5-C4-N3	3.83	120.17	114.80
2	1	2851	OMU	N3-C2-N1	3.82	119.86	114.89
2	1	908	OMU	N3-C2-N1	3.82	119.86	114.89
2	1	38	5MC	C5-C6-N1	-3.80	119.19	123.31
3	4	1459	6MZ	N3-C2-N1	-3.52	123.89	128.67
2	1	2056	5MC	C5-C6-N1	-3.36	119.66	123.31
2	1	2698	UR3	C5-C4-N3	3.34	119.44	115.04
2	1	2623	OMU	O4-C4-C5	-3.23	119.59	125.16
2	1	2851	OMU	O4-C4-C5	-3.22	119.62	125.16
2	1	2408	OMU	O4-C4-C5	-3.20	119.64	125.16
3	4	7	OMG	O3'-C3'-C2'	3.20	120.13	111.19
2	1	908	OMU	O4-C4-C5	-3.11	119.80	125.16
2	1	875	OMU	O4-C4-C5	-3.09	119.83	125.16
2	1	2088	OMU	O4-C4-C5	-3.06	119.89	125.16
2	1	2155	OMU	O4-C4-C5	-3.02	119.95	125.16
2	1	2628	OMU	O4-C4-C5	-3.01	119.97	125.16
2	1	2574	OMU	O4-C4-C5	-3.01	119.98	125.16
2	1	2608	OMG	C8-N7-C5	2.99	107.64	102.55
2	1	2666	OMU	O4-C4-C5	-2.99	120.01	125.16
2	1	902	OMG	C8-N7-C5	2.96	107.59	102.55
2	1	2707	OMU	O4-C4-C5	-2.95	120.07	125.16
3	4	467	OMG	C8-N7-C5	2.94	107.55	102.55
3	4	906	OMG	C8-N7-C5	2.93	107.54	102.55
3	4	1211	OMG	C8-N7-C5	2.92	107.53	102.55
2	1	2104	OMG	C8-N7-C5	2.91	107.50	102.55
3	4	877	OMU	O4-C4-C5	-2.91	120.15	125.16
2	1	2103	OMG	C8-N7-C5	2.91	107.50	102.55
2	1	1947	OMG	C8-N7-C5	2.90	107.49	102.55
2	1	1949	OMG	C8-N7-C5	2.89	107.48	102.55
2	1	2362	OMG	C8-N7-C5	2.89	107.47	102.55
3	4	1212	OMG	C8-N7-C5	2.89	107.46	102.55
3	4	15	OMU	O4-C4-C5	-2.88	120.19	125.16
2	1	2601	OMG	C8-N7-C5	2.88	107.46	102.55

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	4	462	OMG	C8-N7-C5	2.88	107.45	102.55
3	4	908	OMG	C8-N7-C5	2.88	107.45	102.55
2	1	2077	OMU	O4-C4-C5	-2.87	120.20	125.16
3	4	465	OMG	C8-N7-C5	2.85	107.41	102.55
2	1	2388	OMG	C8-N7-C5	2.85	107.40	102.55
3	4	1210	OMG	C8-N7-C5	2.84	107.38	102.55
3	4	674	OMG	C8-N7-C5	2.82	107.35	102.55
2	1	1957	OMG	C8-N7-C5	2.82	107.35	102.55
2	1	2366	OMG	C8-N7-C5	2.82	107.35	102.55
2	1	2017	OMG	C8-N7-C5	2.82	107.35	102.55
2	1	1971	OMG	C8-N7-C5	2.81	107.34	102.55
3	4	1289	OMG	C8-N7-C5	2.81	107.33	102.55
2	1	2537	OMG	C8-N7-C5	2.81	107.33	102.55
2	1	2071	OMG	C8-N7-C5	2.80	107.31	102.55
2	1	2667	OMG	C8-N7-C5	2.78	107.29	102.55
3	4	7	OMG	C8-N7-C5	2.77	107.26	102.55
3	4	511	OMG	C8-N7-C5	2.73	107.20	102.55
2	1	2066	OMG	C8-N7-C5	2.72	107.18	102.55
3	4	1202	OMG	C8-N7-C5	2.71	107.16	102.55
2	1	2056	5MC	C5-C4-N3	-2.71	118.98	121.75
3	4	19	OMG	C8-N7-C5	2.70	107.15	102.55
3	4	475	OMG	C8-N7-C5	2.70	107.15	102.55
2	1	2176	OMG	C8-N7-C5	2.65	107.06	102.55
2	1	2077	OMU	C1'-N1-C2	2.62	122.30	117.59
3	4	1163	OMG	C8-N7-C5	2.60	106.97	102.55
2	1	38	5MC	C5-C4-N3	-2.54	119.16	121.75
3	4	1477	MA6	C2-N1-C6	2.52	119.31	116.84
2	1	2155	OMU	O2-C2-N1	-2.50	119.54	122.80
3	4	879	A2M	C5-C6-N6	2.48	124.08	120.31
2	1	908	OMU	C1'-N1-C6	-2.47	115.49	120.78
3	4	880	A2M	C5-C6-N6	2.43	124.02	120.31
3	4	1478	MA6	C2-N1-C6	2.42	119.21	116.84
2	1	2691	A2M	C5-C6-N6	2.41	123.98	120.31
2	1	2388	OMG	C5-C6-N1	2.41	118.66	114.07
2	1	1976	OMC	O2-C2-N3	-2.39	118.57	122.33
2	1	2623	OMU	O2-C2-N1	-2.38	119.70	122.80
3	4	569	A2M	C5-C6-N6	2.32	123.84	120.31
2	1	2666	OMU	O2-C2-N1	-2.31	119.79	122.80
2	1	875	OMU	O2-C2-N1	-2.29	119.81	122.80
3	4	1060	A2M	C5-C6-N6	2.29	123.79	120.31
3	4	877	OMU	O2-C2-N1	-2.28	119.83	122.80
2	1	902	OMG	C5-C6-N1	2.28	118.41	114.07

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	4	19	OMG	C5-C6-N1	2.25	118.36	114.07
2	1	2104	OMG	C5-C6-N1	2.24	118.35	114.07
2	1	1990	A2M	C5-C6-N6	2.22	123.69	120.31
2	1	2011	A2M	C5-C6-N6	2.21	123.68	120.31
2	1	908	OMU	O2-C2-N3	-2.21	117.42	121.49
3	4	496	A2M	C5-C6-N6	2.20	123.67	120.31
3	4	40	A2M	C5-C6-N6	2.18	123.63	120.31
2	1	1947	OMG	C5-C6-N1	2.18	118.23	114.07
3	4	465	OMG	C5-C6-N1	2.17	118.22	114.07
2	1	1971	OMG	C5-C6-N1	2.17	118.22	114.07
2	1	2056	5MC	O2-C2-N3	-2.17	118.91	122.33
3	4	1202	OMG	C5-C6-N1	2.17	118.21	114.07
2	1	1957	OMG	C5-C6-N1	2.17	118.21	114.07
2	1	2601	OMG	C5-C6-N1	2.16	118.20	114.07
2	1	2103	OMG	C5-C6-N1	2.15	118.18	114.07
2	1	2066	OMG	C5-C6-N1	2.15	118.16	114.07
2	1	2707	OMU	O2-C2-N1	-2.15	120.00	122.80
3	4	674	OMG	C5-C6-N1	2.14	118.16	114.07
3	4	475	OMG	C5-C6-N1	2.14	118.15	114.07
3	4	906	OMG	C5-C6-N1	2.13	118.14	114.07
2	1	2017	OMG	C5-C6-N1	2.13	118.13	114.07
3	4	7	OMG	C5-C6-N1	2.11	118.10	114.07
3	4	908	OMG	C5-C6-N1	2.10	118.08	114.07
2	1	2624	OMC	O2-C2-N3	-2.10	119.02	122.33
2	1	2176	OMG	C5-C6-N1	2.10	118.07	114.07
3	4	1163	OMG	C5-C6-N1	2.10	118.07	114.07
2	1	2555	OMC	O2-C2-N3	-2.09	119.03	122.33
2	1	2537	OMG	C5-C6-N1	2.09	118.06	114.07
2	1	38	5MC	O2-C2-N3	-2.08	119.05	122.33
3	4	1289	OMG	C5-C6-N1	2.07	118.03	114.07
3	4	1184	OMC	O2-C2-N3	-2.07	119.07	122.33
52	BM	128	IAS	OD1-CG-CB	-2.07	119.36	125.38
2	1	2362	OMG	C5-C6-N1	2.06	118.00	114.07
3	4	511	OMG	C5-C6-N1	2.05	117.99	114.07
2	1	2608	OMG	C5-C6-N1	2.05	117.98	114.07
3	4	1212	OMG	C5-C6-N1	2.05	117.98	114.07
3	4	514	OMC	O2-C2-N3	-2.05	119.10	122.33
2	1	2628	OMU	O2-C2-N1	-2.04	120.14	122.80
3	4	462	OMG	C5-C6-N1	2.04	117.96	114.07
2	1	2071	OMG	C5-C6-N1	2.04	117.96	114.07
2	1	2366	OMG	C5-C6-N1	2.04	117.95	114.07
2	1	1949	OMG	C5-C6-N1	2.03	117.94	114.07

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	1	2720	OMC	C2'-C1'-N1	-2.01	110.43	114.24
2	1	2667	OMG	C5-C6-N1	2.00	117.89	114.07
2	1	872	OMC	O2-C2-N3	-2.00	119.18	122.33

There are no chirality outliers.

All (86) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	4	40	A2M	C1'-C2'-O2'-CM'
3	4	496	A2M	C1'-C2'-O2'-CM'
3	4	879	A2M	C3'-C4'-C5'-O5'
3	4	879	A2M	C1'-C2'-O2'-CM'
3	4	1045	OMC	O4'-C4'-C5'-O5'
3	4	1060	A2M	C1'-C2'-O2'-CM'
3	4	1202	OMG	O4'-C4'-C5'-O5'
2	1	1947	OMG	O4'-C4'-C5'-O5'
2	1	1947	OMG	C3'-C4'-C5'-O5'
3	4	5	4AC	O4'-C4'-C5'-O5'
3	4	511	OMG	O4'-C4'-C5'-O5'
3	4	879	A2M	O4'-C4'-C5'-O5'
3	4	1163	OMG	C3'-C4'-C5'-O5'
3	4	1202	OMG	C3'-C4'-C5'-O5'
3	4	1478	MA6	O4'-C4'-C5'-O5'
2	1	2537	OMG	O4'-C4'-C5'-O5'
3	4	5	4AC	C3'-C4'-C5'-O5'
2	1	38	5MC	C4'-C5'-O5'-P
3	4	496	A2M	O4'-C4'-C5'-O5'
3	4	511	OMG	C3'-C4'-C5'-O5'
3	4	1060	A2M	C3'-C4'-C5'-O5'
2	1	2116	OMC	O4'-C4'-C5'-O5'
2	1	2608	OMG	O4'-C4'-C5'-O5'
3	4	465	OMG	O4'-C4'-C5'-O5'
3	4	508	M7A	C3'-C4'-C5'-O5'
3	4	1045	OMC	C3'-C4'-C5'-O5'
3	4	508	M7A	O4'-C4'-C5'-O5'
3	4	908	OMG	C3'-C4'-C5'-O5'
3	4	1478	MA6	C3'-C4'-C5'-O5'
3	4	1163	OMG	O4'-C4'-C5'-O5'
2	1	2044	PSU	O4'-C4'-C5'-O5'
2	1	2537	OMG	C3'-C4'-C5'-O5'
3	4	1060	A2M	O4'-C4'-C5'-O5'
2	1	2044	PSU	C3'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
3	4	496	A2M	C3'-C4'-C5'-O5'
2	1	2555	OMC	C4'-C5'-O5'-P
3	4	908	OMG	O4'-C4'-C5'-O5'
2	1	492	OMC	O4'-C4'-C5'-O5'
2	1	2056	5MC	O4'-C4'-C5'-O5'
2	1	2388	OMG	C4'-C5'-O5'-P
2	1	2691	A2M	C1'-C2'-O2'-CM'
3	4	1368	OMC	O4'-C4'-C5'-O5'
3	4	1163	OMG	C4'-C5'-O5'-P
2	1	2851	OMU	C3'-C2'-O2'-CM2
2	1	2851	OMU	C3'-C4'-C5'-O5'
3	4	508	M7A	C4'-C5'-O5'-P
3	4	1211	OMG	C3'-C4'-C5'-O5'
2	1	2077	OMU	C3'-C2'-O2'-CM2
2	1	2555	OMC	C3'-C2'-O2'-CM2
3	4	511	OMG	C4'-C5'-O5'-P
3	4	879	A2M	C4'-C5'-O5'-P
2	1	2625	PSU	O4'-C1'-C5'-C4
2	1	2116	OMC	C3'-C4'-C5'-O5'
2	1	2608	OMG	C3'-C4'-C5'-O5'
2	1	908	OMU	O4'-C1'-N1-C2
2	1	908	OMU	O4'-C1'-N1-C6
3	4	19	OMG	C3'-C4'-C5'-O5'
2	1	908	OMU	C2'-C1'-N1-C2
3	4	1202	OMG	C4'-C5'-O5'-P
2	1	2362	OMG	C4'-C5'-O5'-P
3	4	489	OMC	C3'-C2'-O2'-CM2
3	4	572	OMC	C3'-C2'-O2'-CM2
3	4	1184	OMC	C3'-C2'-O2'-CM2
2	1	2059	A2M	C3'-C2'-O2'-CM'
2	1	908	OMU	C2'-C1'-N1-C6
3	4	462	OMG	O4'-C4'-C5'-O5'
2	1	2017	OMG	C3'-C4'-C5'-O5'
2	1	3023	G7M	O4'-C4'-C5'-O5'
2	1	2625	PSU	O4'-C1'-C5'-C6
2	1	492	OMC	C3'-C2'-O2'-CM2
2	1	493	OMC	C3'-C2'-O2'-CM2
2	1	2623	OMU	C3'-C2'-O2'-CM2
2	1	2155	OMU	O4'-C1'-N1-C6
2	1	2937	B8T	C3'-C4'-C5'-O5'
2	1	2155	OMU	C2'-C1'-N1-C6
3	4	465	OMG	C3'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
3	4	908	OMG	C3'-C2'-O2'-CM2
3	4	1211	OMG	C3'-C2'-O2'-CM2
2	1	875	OMU	C3'-C2'-O2'-CM2
3	4	1210	OMG	C3'-C4'-C5'-O5'
3	4	908	OMG	C4'-C5'-O5'-P
3	4	514	OMC	C2'-C1'-N1-C2
2	1	1976	OMC	C2'-C1'-N1-C2
52	BM	128	IAS	CA-CB-CG-OD1
2	1	2388	OMG	C3'-C4'-C5'-O5'
2	1	2623	OMU	O4'-C4'-C5'-O5'

There are no ring outliers.

77 monomers are involved in 118 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	4	1368	OMC	1	0
3	4	465	OMG	2	0
3	4	877	OMU	1	0
2	1	2667	OMG	2	0
2	1	2537	OMG	1	0
2	1	1947	OMG	3	0
2	1	2704	OMC	3	0
2	1	2851	OMU	1	0
2	1	493	OMC	1	0
2	1	2011	A2M	1	0
3	4	1318	4AC	1	0
2	1	2707	OMU	1	0
3	4	1210	OMG	2	0
2	1	2624	OMC	3	0
2	1	2059	A2M	1	0
2	1	2608	OMG	1	0
2	1	2077	OMU	1	0
3	4	1478	MA6	2	0
2	1	2155	OMU	1	0
2	1	2884	OMC	1	0
3	4	1477	MA6	2	0
3	4	1184	OMC	2	0
3	4	263	PSU	1	0
3	4	508	M7A	2	0
2	1	2610	PSU	2	0
2	1	2103	OMG	1	0
2	1	1987	PSU	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	4	1163	OMG	2	0
3	4	880	A2M	5	0
3	4	489	OMC	1	0
3	4	514	OMC	1	0
2	1	1957	OMG	2	0
2	1	2885	OMC	1	0
3	4	908	OMG	1	0
2	1	2044	PSU	3	0
2	1	2016	4AC	1	0
2	1	2555	OMC	1	0
3	4	1212	OMG	2	0
2	1	2088	OMU	1	0
3	4	1211	OMG	3	0
3	4	1202	OMG	3	0
3	4	906	OMG	1	0
2	1	2538	OMC	1	0
3	4	7	OMG	3	0
2	1	2366	OMG	3	0
2	1	3023	G7M	2	0
2	1	1976	OMC	1	0
3	4	1035	B8T	1	0
2	1	872	OMC	1	0
2	1	2116	OMC	1	0
3	4	1289	OMG	2	0
3	4	511	OMG	2	0
2	1	1949	OMG	1	0
2	1	673	OMC	1	0
3	4	475	OMG	2	0
3	4	674	OMG	1	0
2	1	2176	OMG	1	0
52	BM	128	IAS	1	0
2	1	2698	UR3	1	0
2	1	2362	OMG	1	0
3	4	572	OMC	1	0
2	1	2720	OMC	2	0
3	4	1060	A2M	1	0
3	4	5	4AC	1	0
2	1	2628	OMU	2	0
3	4	879	A2M	3	0
2	1	2623	OMU	4	0
3	4	1045	OMC	1	0
2	1	2104	OMG	3	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	1	2691	A2M	1	0
3	4	467	OMG	2	0
3	4	40	A2M	1	0
2	1	875	OMU	2	0
2	1	2056	5MC	2	0
2	1	492	OMC	2	0
2	1	2018	OMC	1	0
3	4	462	OMG	4	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 327 ligands modelled in this entry, 263 are monoatomic - leaving 64 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	$\# Z > 2$
69	SPM	1	3104	-	13,13,13	0.16	0	12,12,12	0.31	0
69	SPM	1	3118	-	13,13,13	0.15	0	12,12,12	0.17	0
69	SPM	1	3128	-	13,13,13	0.18	0	12,12,12	0.21	0
69	SPM	1	3132	-	13,13,13	0.16	0	12,12,12	0.40	0
69	SPM	4	3001	-	13,13,13	0.16	0	12,12,12	0.33	0
69	SPM	4	3013	-	13,13,13	0.16	0	12,12,12	0.28	0
69	SPM	Ah	101	-	13,13,13	0.17	0	12,12,12	0.19	0
69	SPM	4	3015	-	13,13,13	0.15	0	12,12,12	0.35	0
69	SPM	1	3117	-	13,13,13	0.17	0	12,12,12	0.36	0
69	SPM	1	3126	-	13,13,13	0.17	0	12,12,12	0.59	0
69	SPM	4	3002	-	13,13,13	0.21	0	12,12,12	0.47	0
69	SPM	4	3004	-	13,13,13	0.16	0	12,12,12	0.26	0
69	SPM	1	3127	-	13,13,13	0.17	0	12,12,12	0.30	0
69	SPM	4	3014	-	13,13,13	0.19	0	12,12,12	0.57	0
69	SPM	1	3108	-	13,13,13	0.19	0	12,12,12	0.66	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
69	SPM	1	3122	-	13,13,13	0.18	0	12,12,12	0.25	0
69	SPM	1	3105	-	13,13,13	0.15	0	12,12,12	0.16	0
69	SPM	1	3111	-	13,13,13	0.15	0	12,12,12	0.25	0
69	SPM	1	3116	-	13,13,13	0.15	0	12,12,12	0.26	0
69	SPM	1	3113	-	13,13,13	0.18	0	12,12,12	0.19	0
69	SPM	1	3137	-	13,13,13	0.17	0	12,12,12	0.43	0
69	SPM	1	3138	-	13,13,13	0.17	0	12,12,12	0.82	0
69	SPM	1	3139	-	13,13,13	0.16	0	12,12,12	0.25	0
69	SPM	1	3144	-	13,13,13	0.16	0	12,12,12	0.40	0
69	SPM	1	3119	-	13,13,13	0.21	0	12,12,12	0.26	0
69	SPM	4	3003	-	13,13,13	0.18	0	12,12,12	0.38	0
69	SPM	4	3012	-	13,13,13	0.19	0	12,12,12	0.20	0
69	SPM	1	3112	-	13,13,13	0.17	0	12,12,12	0.32	0
69	SPM	4	3016	-	13,13,13	0.16	0	12,12,12	0.22	0
69	SPM	1	3133	-	13,13,13	0.17	0	12,12,12	0.37	0
69	SPM	1	3123	-	13,13,13	0.16	0	12,12,12	0.36	0
69	SPM	1	3110	-	13,13,13	0.16	0	12,12,12	0.29	0
69	SPM	1	3109	-	13,13,13	0.17	0	12,12,12	0.36	0
69	SPM	1	3136	-	13,13,13	0.14	0	12,12,12	0.29	0
69	SPM	1	3143	-	13,13,13	0.21	0	12,12,12	0.46	0
69	SPM	1	3141	-	13,13,13	0.20	0	12,12,12	0.62	0
69	SPM	1	3106	-	13,13,13	0.17	0	12,12,12	0.19	0
69	SPM	4	3005	-	13,13,13	0.14	0	12,12,12	0.16	0
69	SPM	4	3010	-	13,13,13	0.15	0	12,12,12	0.69	0
69	SPM	4	3009	-	13,13,13	0.17	0	12,12,12	0.35	0
69	SPM	1	3125	-	13,13,13	0.17	0	12,12,12	0.29	0
69	SPM	4	3011	-	13,13,13	0.16	0	12,12,12	0.43	0
69	SPM	4	3017	-	13,13,13	0.21	0	12,12,12	1.70	1 (8%)
69	SPM	1	3124	-	13,13,13	0.15	0	12,12,12	0.23	0
69	SPM	1	3140	-	13,13,13	0.15	0	12,12,12	0.39	0
69	SPM	1	3135	-	13,13,13	0.16	0	12,12,12	0.64	0
69	SPM	4	3008	-	13,13,13	0.15	0	12,12,12	0.27	0
69	SPM	1	3115	-	13,13,13	0.18	0	12,12,12	0.45	0
69	SPM	1	3114	-	13,13,13	0.16	0	12,12,12	0.19	0
69	SPM	1	3131	-	13,13,13	0.16	0	12,12,12	0.34	0
69	SPM	1	3102	-	13,13,13	0.16	0	12,12,12	0.43	0
69	SPM	4	3006	-	13,13,13	0.15	0	12,12,12	0.24	0
69	SPM	4	3007	-	13,13,13	0.24	0	12,12,12	0.53	0
69	SPM	1	3107	-	13,13,13	0.18	0	12,12,12	0.19	0
69	SPM	1	3142	-	13,13,13	0.18	0	12,12,12	0.34	0
69	SPM	1	3134	-	13,13,13	0.15	0	12,12,12	0.43	0
69	SPM	1	3129	-	13,13,13	0.17	0	12,12,12	0.37	0
69	SPM	AL	201	-	13,13,13	0.16	0	12,12,12	0.40	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
69	SPM	1	3130	-	13,13,13	0.14	0	12,12,12	0.18	0
69	SPM	4	3018	-	13,13,13	0.15	0	12,12,12	0.32	0
69	SPM	1	3101	-	13,13,13	0.18	0	12,12,12	0.66	0
69	SPM	1	3120	-	13,13,13	0.18	0	12,12,12	0.22	0
69	SPM	1	3121	-	13,13,13	0.24	0	12,12,12	0.30	0
69	SPM	1	3103	-	13,13,13	0.16	0	12,12,12	0.44	0

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
69	SPM	1	3104	-	-	3/11/11/11	-
69	SPM	1	3118	-	-	0/11/11/11	-
69	SPM	1	3128	-	-	2/11/11/11	-
69	SPM	1	3132	-	-	3/11/11/11	-
69	SPM	4	3001	-	-	0/11/11/11	-
69	SPM	4	3013	-	-	1/11/11/11	-
69	SPM	Ah	101	-	-	2/11/11/11	-
69	SPM	4	3015	-	-	2/11/11/11	-
69	SPM	1	3117	-	-	2/11/11/11	-
69	SPM	1	3126	-	-	3/11/11/11	-
69	SPM	4	3002	-	-	4/11/11/11	-
69	SPM	4	3004	-	-	3/11/11/11	-
69	SPM	1	3127	-	-	0/11/11/11	-
69	SPM	4	3014	-	-	2/11/11/11	-
69	SPM	1	3108	-	-	3/11/11/11	-
69	SPM	1	3122	-	-	1/11/11/11	-
69	SPM	1	3105	-	-	1/11/11/11	-
69	SPM	1	3111	-	-	0/11/11/11	-
69	SPM	1	3116	-	-	2/11/11/11	-
69	SPM	1	3113	-	-	4/11/11/11	-
69	SPM	1	3137	-	-	2/11/11/11	-
69	SPM	1	3138	-	-	6/11/11/11	-
69	SPM	1	3139	-	-	1/11/11/11	-
69	SPM	1	3144	-	-	3/11/11/11	-
69	SPM	1	3119	-	-	4/11/11/11	-
69	SPM	4	3003	-	-	5/11/11/11	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
69	SPM	4	3012	-	-	4/11/11/11	-
69	SPM	1	3112	-	-	1/11/11/11	-
69	SPM	4	3016	-	-	1/11/11/11	-
69	SPM	1	3133	-	-	3/11/11/11	-
69	SPM	1	3123	-	-	1/11/11/11	-
69	SPM	1	3110	-	-	1/11/11/11	-
69	SPM	1	3109	-	-	1/11/11/11	-
69	SPM	1	3136	-	-	2/11/11/11	-
69	SPM	1	3143	-	-	1/11/11/11	-
69	SPM	1	3141	-	-	4/11/11/11	-
69	SPM	1	3106	-	-	5/11/11/11	-
69	SPM	4	3005	-	-	1/11/11/11	-
69	SPM	4	3010	-	-	2/11/11/11	-
69	SPM	4	3009	-	-	2/11/11/11	-
69	SPM	1	3125	-	-	1/11/11/11	-
69	SPM	4	3011	-	-	2/11/11/11	-
69	SPM	4	3017	-	-	4/11/11/11	-
69	SPM	1	3124	-	-	0/11/11/11	-
69	SPM	1	3140	-	-	1/11/11/11	-
69	SPM	1	3135	-	-	2/11/11/11	-
69	SPM	4	3008	-	-	0/11/11/11	-
69	SPM	1	3115	-	-	1/11/11/11	-
69	SPM	1	3114	-	-	4/11/11/11	-
69	SPM	1	3131	-	-	4/11/11/11	-
69	SPM	1	3102	-	-	0/11/11/11	-
69	SPM	4	3006	-	-	2/11/11/11	-
69	SPM	4	3007	-	-	5/11/11/11	-
69	SPM	1	3107	-	-	1/11/11/11	-
69	SPM	1	3142	-	-	3/11/11/11	-
69	SPM	1	3134	-	-	3/11/11/11	-
69	SPM	1	3129	-	-	2/11/11/11	-
69	SPM	AL	201	-	-	1/11/11/11	-
69	SPM	1	3130	-	-	0/11/11/11	-
69	SPM	4	3018	-	-	0/11/11/11	-
69	SPM	1	3101	-	-	4/11/11/11	-
69	SPM	1	3120	-	-	1/11/11/11	-
69	SPM	1	3121	-	-	1/11/11/11	-
69	SPM	1	3103	-	-	0/11/11/11	-

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
69	4	3017	SPM	C7-C8-C9	5.69	139.82	113.56

There are no chirality outliers.

All (130) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
69	1	3106	SPM	C12-C11-N10-C9
69	4	3017	SPM	C6-C7-C8-C9
69	1	3101	SPM	C7-C8-C9-N10
69	4	3007	SPM	C7-C8-C9-N10
69	1	3134	SPM	N5-C6-C7-C8
69	4	3017	SPM	C7-C8-C9-N10
69	1	3137	SPM	C7-C8-C9-N10
69	4	3003	SPM	C7-C8-C9-N10
69	1	3141	SPM	N5-C6-C7-C8
69	AL	201	SPM	N10-C11-C12-C13
69	4	3005	SPM	N5-C6-C7-C8
69	1	3128	SPM	C2-C3-C4-N5
69	1	3138	SPM	N10-C11-C12-C13
69	1	3133	SPM	N5-C6-C7-C8
69	1	3142	SPM	N5-C6-C7-C8
69	1	3108	SPM	N5-C6-C7-C8
69	1	3141	SPM	C7-C8-C9-N10
69	1	3132	SPM	N5-C6-C7-C8
69	1	3106	SPM	C7-C8-C9-N10
69	1	3121	SPM	C7-C8-C9-N10
69	1	3132	SPM	C7-C8-C9-N10
69	1	3101	SPM	C12-C11-N10-C9
69	1	3120	SPM	C7-C6-N5-C4
69	1	3143	SPM	C6-C7-C8-C9
69	1	3106	SPM	N1-C2-C3-C4
69	1	3131	SPM	N10-C11-C12-C13
69	1	3133	SPM	N10-C11-C12-C13
69	1	3134	SPM	C12-C11-N10-C9
69	1	3113	SPM	N10-C11-C12-C13
69	1	3138	SPM	C7-C8-C9-N10
69	1	3101	SPM	C8-C9-N10-C11
69	4	3014	SPM	C12-C11-N10-C9
69	1	3116	SPM	N5-C6-C7-C8
69	4	3014	SPM	C2-C3-C4-N5

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Mol	Chain	Res	Type	Atoms
69	4	3015	SPM	N10-C11-C12-C13
69	1	3144	SPM	N5-C6-C7-C8
69	1	3114	SPM	C6-C7-C8-C9
69	1	3141	SPM	C2-C3-C4-N5
69	1	3104	SPM	C6-C7-C8-C9
69	1	3119	SPM	C7-C8-C9-N10
69	1	3128	SPM	N5-C6-C7-C8
69	1	3135	SPM	C11-C12-C13-N14
69	4	3012	SPM	C8-C9-N10-C11
69	4	3016	SPM	C11-C12-C13-N14
69	1	3113	SPM	C6-C7-C8-C9
69	1	3136	SPM	N10-C11-C12-C13
69	1	3101	SPM	C7-C6-N5-C4
69	1	3117	SPM	C12-C11-N10-C9
69	1	3129	SPM	C12-C11-N10-C9
69	1	3131	SPM	C8-C9-N10-C11
69	Ah	101	SPM	C7-C6-N5-C4
69	4	3002	SPM	C7-C8-C9-N10
69	1	3131	SPM	C7-C8-C9-N10
69	1	3109	SPM	N10-C11-C12-C13
69	4	3009	SPM	C7-C8-C9-N10
69	1	3133	SPM	C6-C7-C8-C9
69	1	3126	SPM	C7-C8-C9-N10
69	4	3002	SPM	C6-C7-C8-C9
69	1	3107	SPM	C6-C7-C8-C9
69	4	3007	SPM	C2-C3-C4-N5
69	4	3010	SPM	N10-C11-C12-C13
69	1	3108	SPM	C6-C7-C8-C9
69	1	3117	SPM	C7-C8-C9-N10
69	1	3114	SPM	N5-C6-C7-C8
69	Ah	101	SPM	C6-C7-C8-C9
69	4	3012	SPM	N10-C11-C12-C13
69	1	3110	SPM	C7-C6-N5-C4
69	1	3122	SPM	N1-C2-C3-C4
69	1	3129	SPM	N1-C2-C3-C4
69	1	3132	SPM	C3-C4-N5-C6
69	1	3134	SPM	N1-C2-C3-C4
69	1	3138	SPM	C7-C6-N5-C4
69	1	3138	SPM	C11-C12-C13-N14
69	4	3002	SPM	N10-C11-C12-C13
69	1	3119	SPM	C12-C11-N10-C9
69	1	3144	SPM	C7-C6-N5-C4

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Mol	Chain	Res	Type	Atoms
69	1	3114	SPM	N10-C11-C12-C13
69	4	3007	SPM	C6-C7-C8-C9
69	1	3138	SPM	C8-C9-N10-C11
69	4	3012	SPM	C3-C4-N5-C6
69	4	3004	SPM	C6-C7-C8-C9
69	1	3125	SPM	C6-C7-C8-C9
69	1	3123	SPM	C2-C3-C4-N5
69	1	3106	SPM	C8-C9-N10-C11
69	1	3108	SPM	C3-C4-N5-C6
69	1	3126	SPM	C7-C6-N5-C4
69	4	3010	SPM	C7-C6-N5-C4
69	4	3017	SPM	C8-C9-N10-C11
69	1	3106	SPM	N5-C6-C7-C8
69	1	3135	SPM	N5-C6-C7-C8
69	1	3105	SPM	C8-C9-N10-C11
69	4	3006	SPM	C6-C7-C8-C9
69	4	3017	SPM	C3-C4-N5-C6
69	4	3003	SPM	N5-C6-C7-C8
69	4	3004	SPM	N10-C11-C12-C13
69	1	3119	SPM	C7-C6-N5-C4
69	1	3138	SPM	C3-C4-N5-C6
69	4	3002	SPM	C3-C4-N5-C6
69	1	3136	SPM	C6-C7-C8-C9
69	1	3115	SPM	C12-C11-N10-C9
69	4	3004	SPM	C8-C9-N10-C11
69	1	3112	SPM	C8-C9-N10-C11
69	1	3137	SPM	C12-C11-N10-C9
69	1	3140	SPM	C3-C4-N5-C6
69	1	3141	SPM	C12-C11-N10-C9
69	1	3142	SPM	C7-C6-N5-C4
69	1	3142	SPM	C8-C9-N10-C11
69	4	3003	SPM	C12-C11-N10-C9
69	4	3007	SPM	C8-C9-N10-C11
69	4	3009	SPM	C12-C11-N10-C9
69	4	3013	SPM	C3-C4-N5-C6
69	1	3144	SPM	C6-C7-C8-C9
69	1	3104	SPM	N10-C11-C12-C13
69	4	3012	SPM	C6-C7-C8-C9
69	4	3011	SPM	C7-C8-C9-N10
69	4	3003	SPM	C7-C6-N5-C4
69	4	3003	SPM	C6-C7-C8-C9
69	1	3113	SPM	C7-C8-C9-N10

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Mol	Chain	Res	Type	Atoms
69	1	3113	SPM	C3-C4-N5-C6
69	4	3006	SPM	C8-C9-N10-C11
69	4	3007	SPM	C11-C12-C13-N14
69	4	3011	SPM	C12-C11-N10-C9
69	1	3126	SPM	C2-C3-C4-N5
69	1	3131	SPM	C6-C7-C8-C9
69	1	3104	SPM	C8-C9-N10-C11
69	1	3114	SPM	C8-C9-N10-C11
69	1	3119	SPM	C8-C9-N10-C11
69	4	3015	SPM	C7-C8-C9-N10
69	1	3116	SPM	C6-C7-C8-C9
69	1	3139	SPM	C6-C7-C8-C9

There are no ring outliers.

25 monomers are involved in 36 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
69	1	3128	SPM	1	0
69	1	3132	SPM	1	0
69	4	3015	SPM	2	0
69	4	3002	SPM	2	0
69	4	3014	SPM	1	0
69	1	3108	SPM	2	0
69	1	3105	SPM	1	0
69	1	3116	SPM	2	0
69	1	3113	SPM	2	0
69	4	3012	SPM	4	0
69	1	3112	SPM	1	0
69	1	3123	SPM	1	0
69	1	3136	SPM	1	0
69	1	3106	SPM	2	0
69	1	3125	SPM	1	0
69	4	3017	SPM	2	0
69	1	3124	SPM	2	0
69	1	3140	SPM	1	0
69	4	3008	SPM	1	0
69	1	3115	SPM	1	0
69	1	3102	SPM	1	0
69	4	3007	SPM	1	0
69	1	3134	SPM	1	0
69	1	3129	SPM	1	0
69	1	3130	SPM	1	0

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

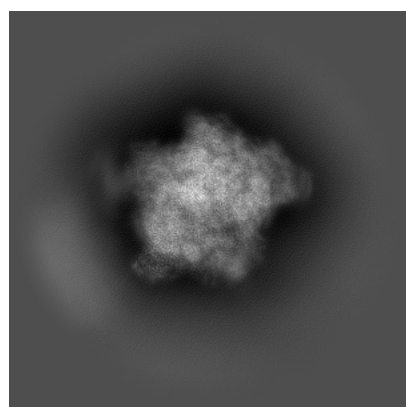
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-47628. These allow visual inspection of the internal detail of the map and identification of artifacts.

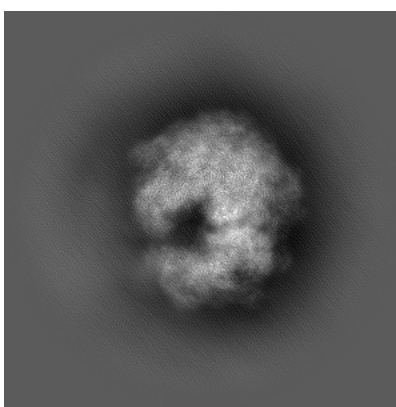
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

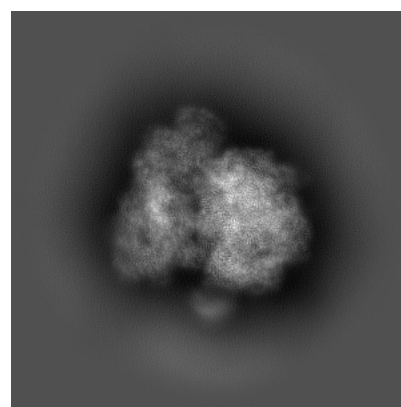
6.1.1 Primary map



X



Y

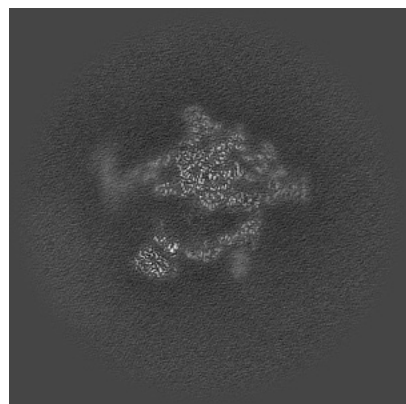


Z

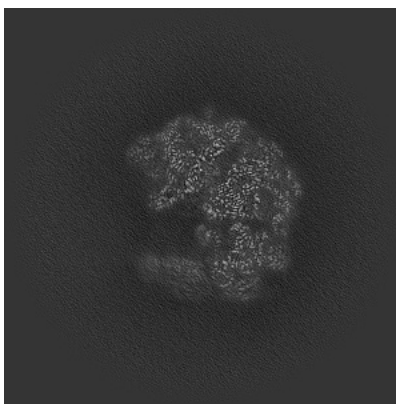
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

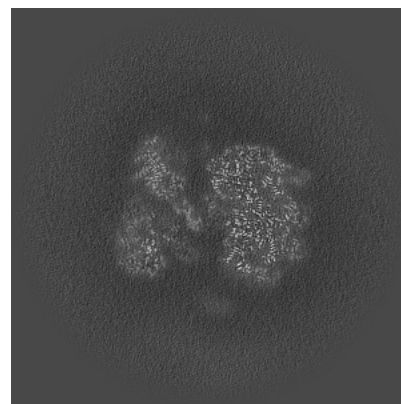
6.2.1 Primary map



X Index: 304



Y Index: 304

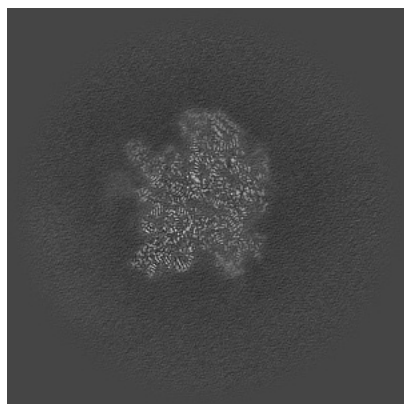


Z Index: 304

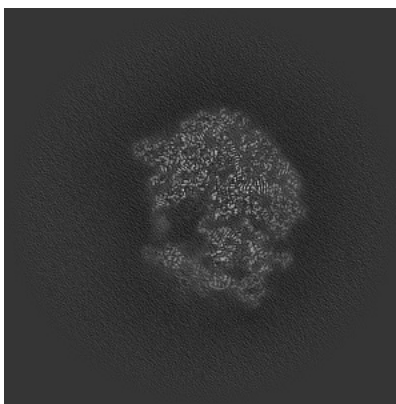
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

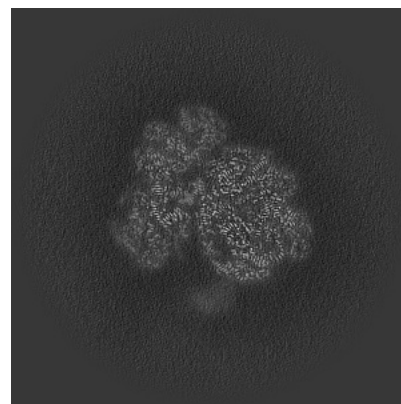
6.3.1 Primary map



X Index: 334



Y Index: 288

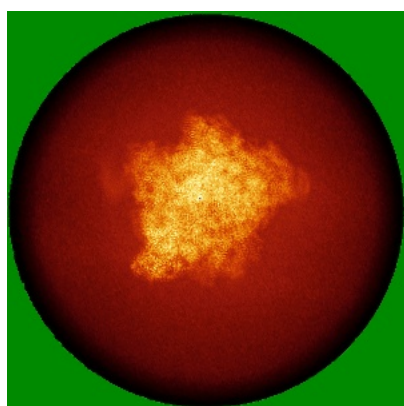


Z Index: 326

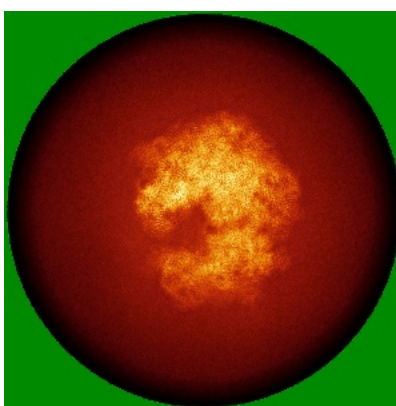
The images above show the largest variance slices of the map in three orthogonal directions.

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

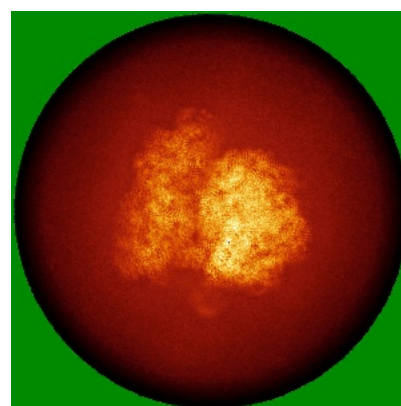
6.4.1 Primary map



X



Y

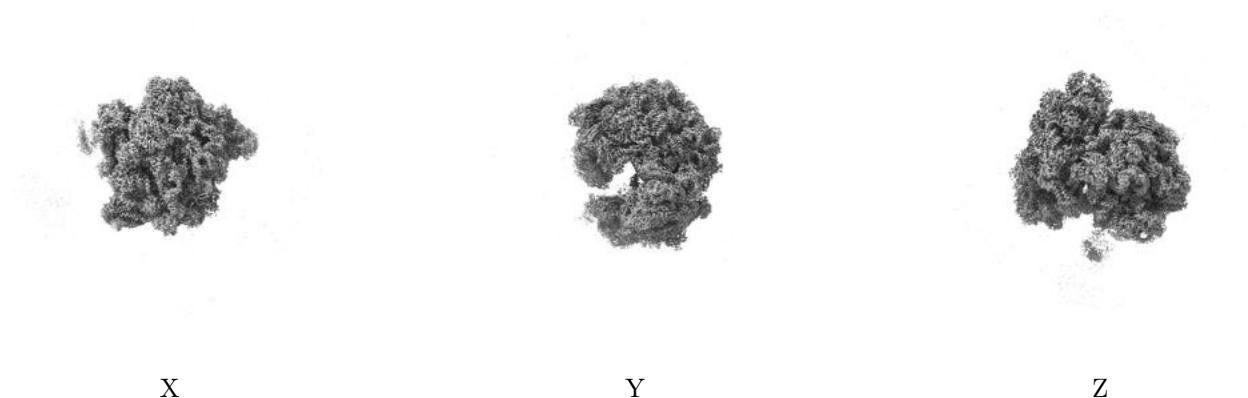


Z

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



The images above show the 3D surface view of the map at the recommended contour level 0.215. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

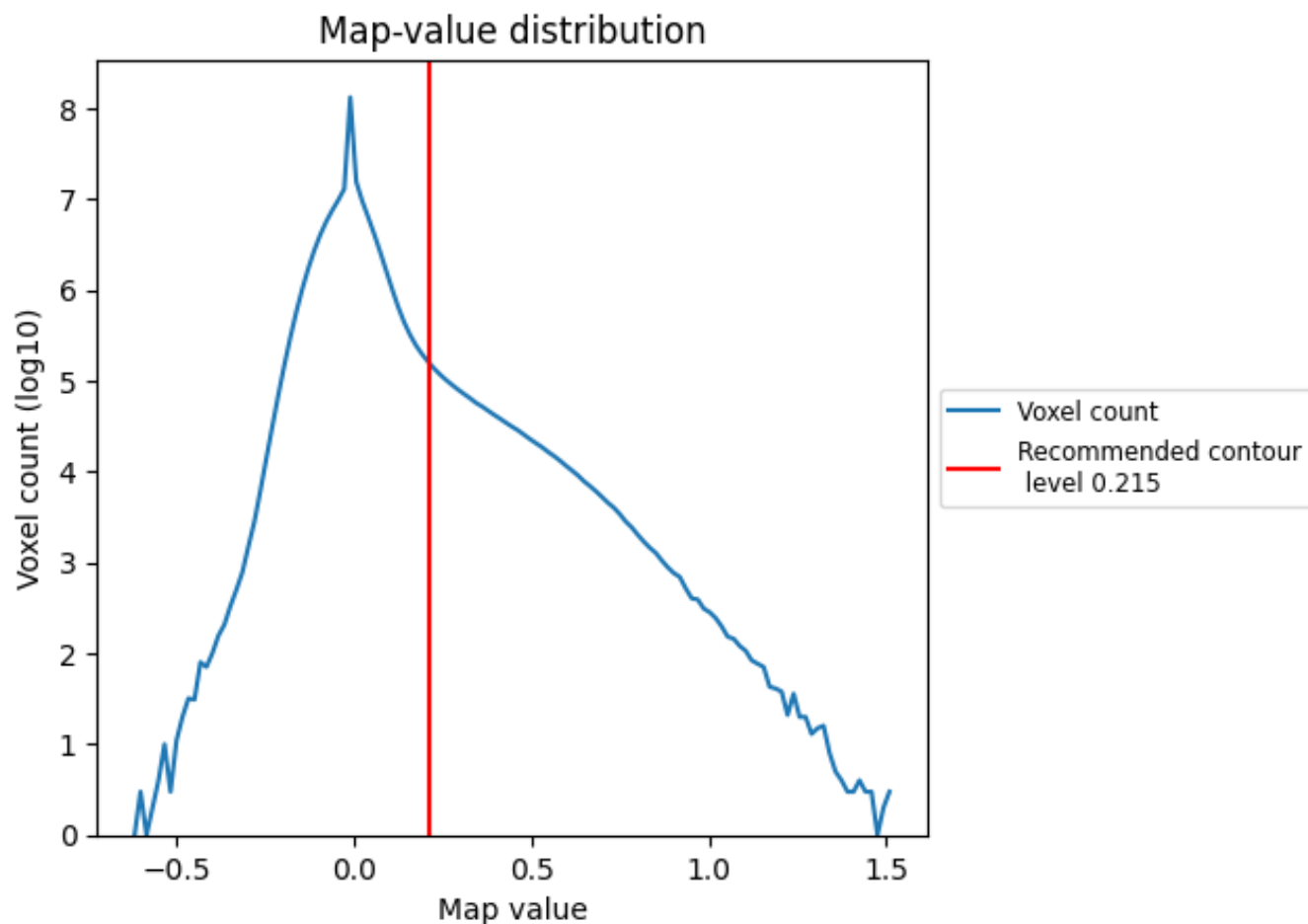
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

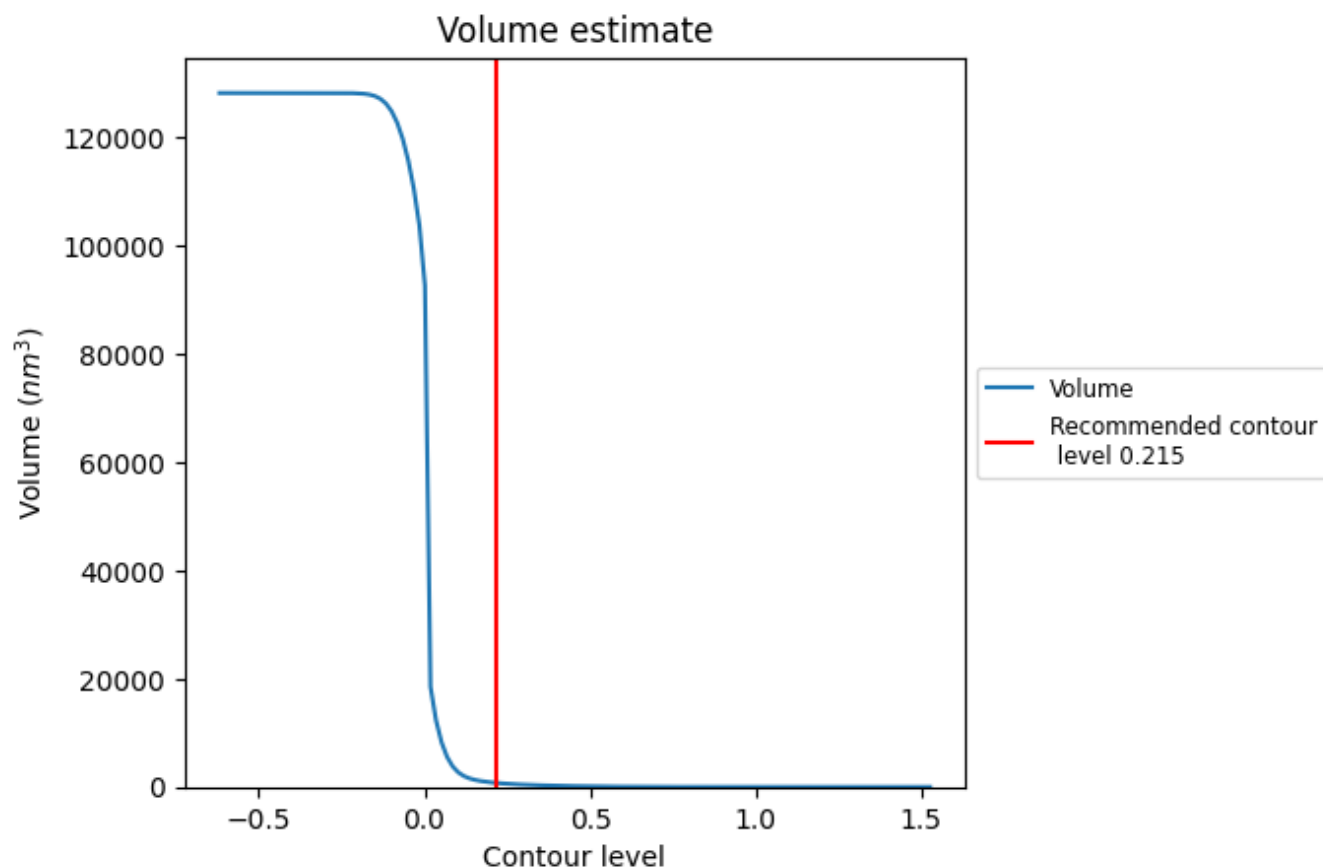
This section contains the results of statistical analysis of the map.

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.

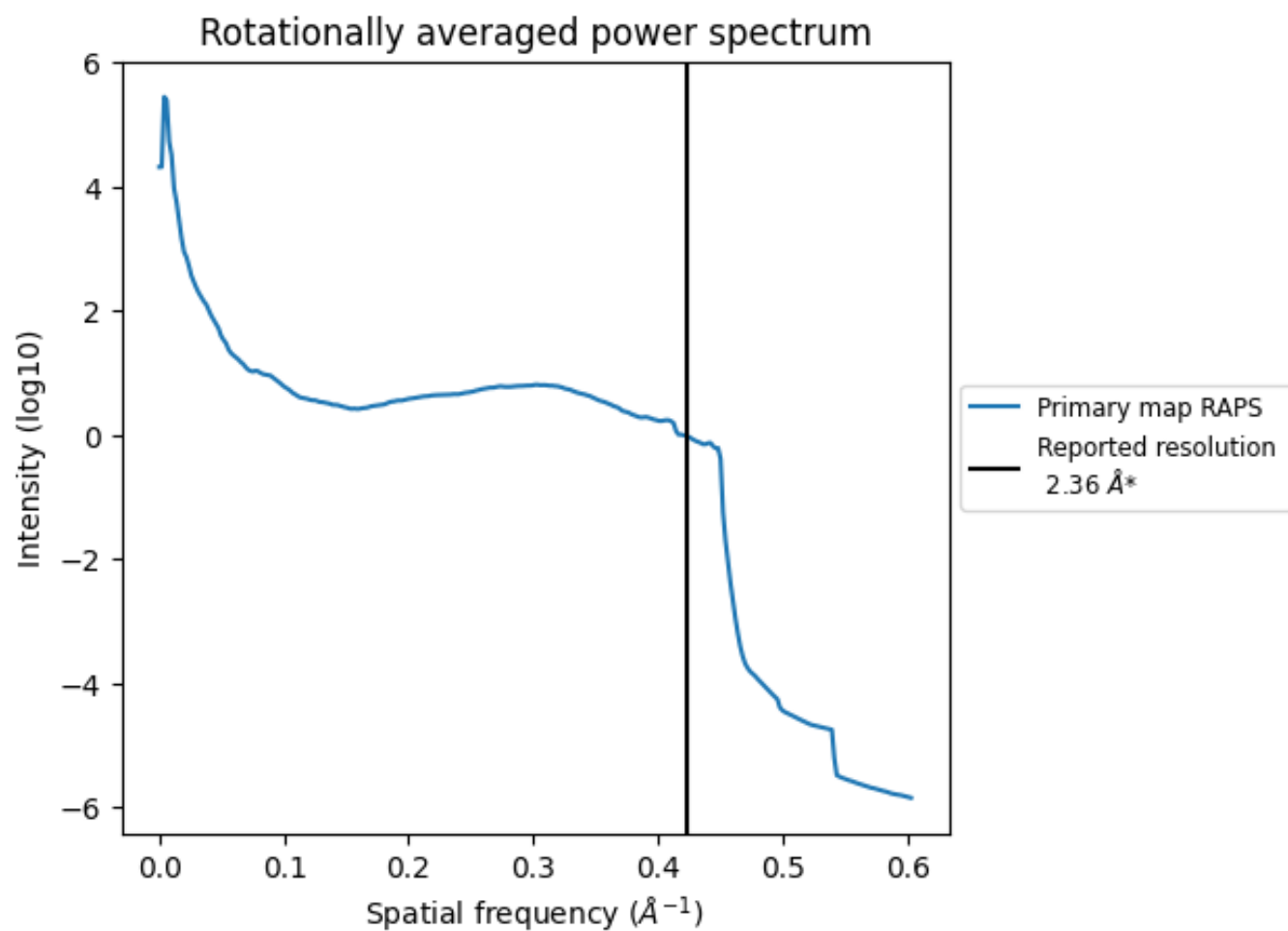
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 756 nm³; this corresponds to an approximate mass of 683 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 0.424 Å⁻¹

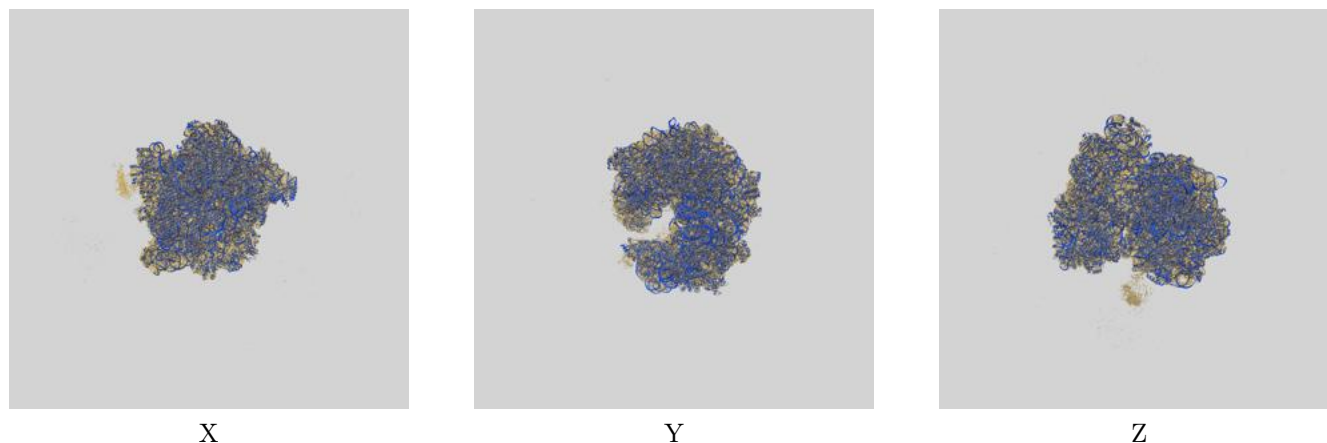
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

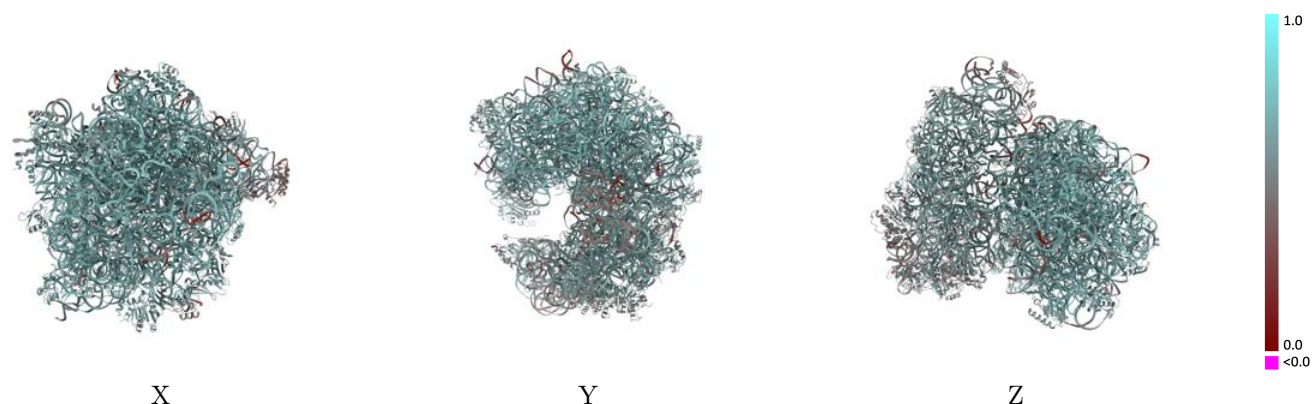
This section contains information regarding the fit between EMDB map EMD-47628 and PDB model 9E71. Per-residue inclusion information can be found in section [3](#) on page [23](#).

9.1 Map-model overlay [i](#)



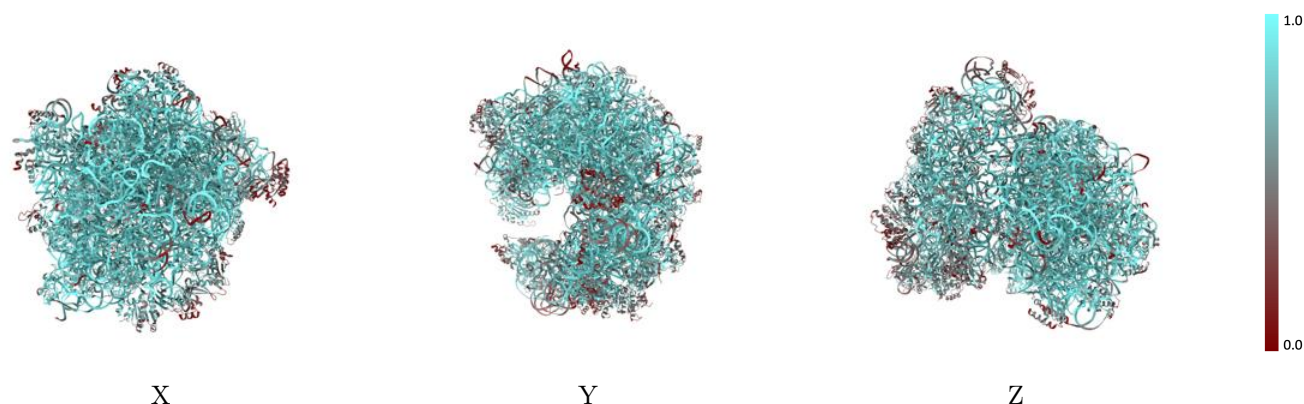
The images above show the 3D surface view of the map at the recommended contour level 0.215 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



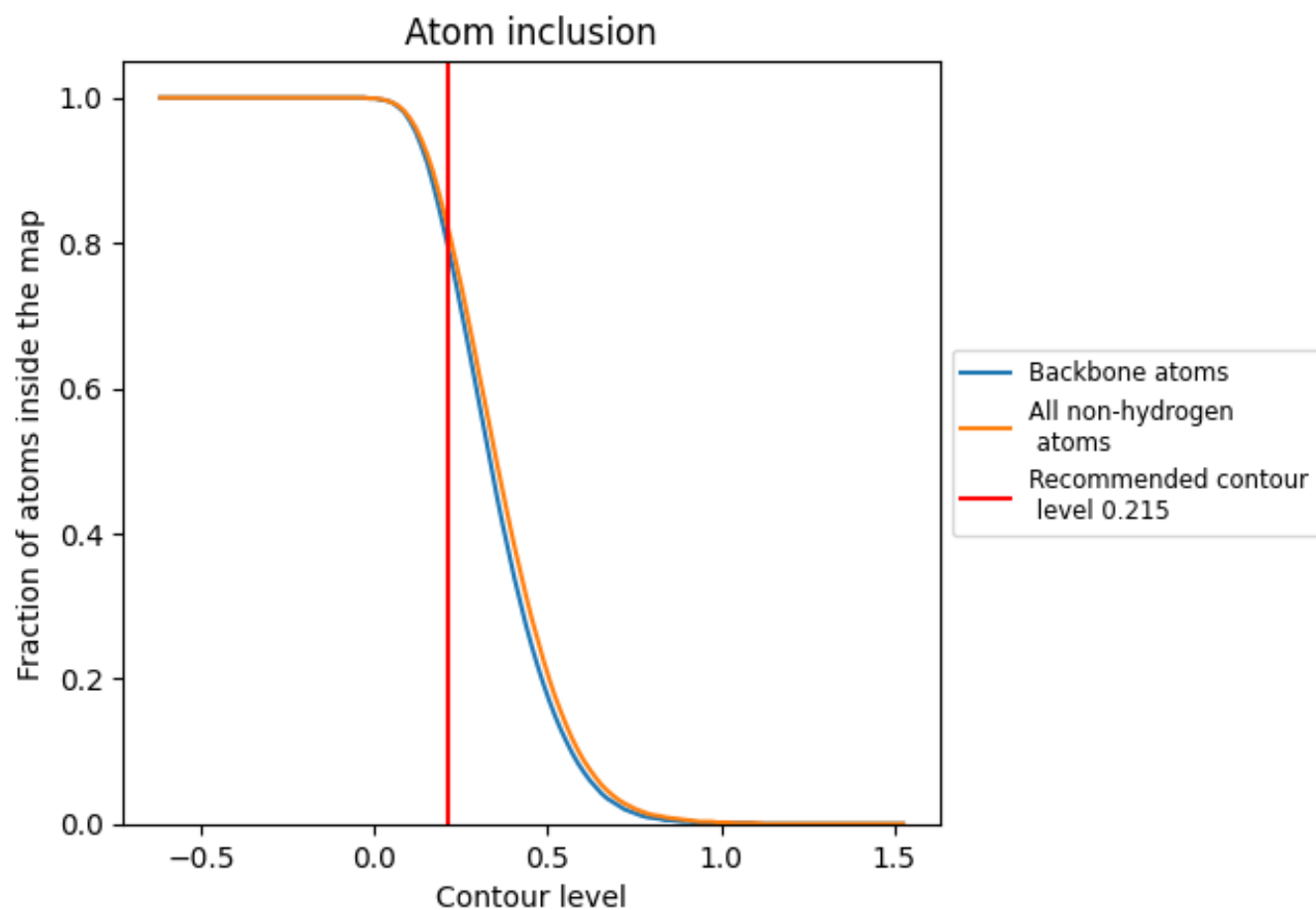
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.215).

9.4 Atom inclusion [i](#)



At the recommended contour level, 79% of all backbone atoms, 82% 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 (0.215) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8160	 0.6140
1	 0.9300	 0.6510
2	 0.9230	 0.6430
4	 0.8380	 0.5700
AA	 0.8830	 0.6710
AB	 0.8490	 0.6750
AC	 0.8070	 0.6490
AD	 0.7750	 0.6090
AE	 0.5900	 0.5970
AF	 0.5750	 0.5870
AG	 0.8080	 0.6520
AH	 0.8180	 0.6540
AI	 0.8270	 0.6530
AJ	 0.5520	 0.5570
AK	 0.5190	 0.5690
AL	 0.7420	 0.6260
AM	 0.8600	 0.6640
AN	 0.7920	 0.6340
AO	 0.8770	 0.6530
AP	 0.8330	 0.6490
AQ	 0.8250	 0.6440
AR	 0.6960	 0.6010
AS	 0.9430	 0.6800
AT	 0.8680	 0.6700
AU	 0.8050	 0.6680
AV	 0.7400	 0.6280
AW	 0.8320	 0.6530
AX	 0.6420	 0.6150
AY	 0.8380	 0.6470
AZ	 0.6670	 0.5790
Aa	 0.8080	 0.6560
Ab	 0.8120	 0.6530
Ac	 0.9160	 0.6590
Ad	 0.9830	 0.7140
Ae	 0.7110	 0.6450



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Chain	Atom inclusion	Q-score
Af	 0.9470	 0.6810
Ag	 0.6910	 0.6150
Ah	 0.9020	 0.6710
Ai	 0.7920	 0.6270
Aj	 0.6470	 0.6020
Ak	 0.6880	 0.6160
BA	 0.5200	 0.5220
BB	 0.4950	 0.5050
BC	 0.1640	 0.3990
BD	 0.7110	 0.5830
BE	 0.6780	 0.5840
BF	 0.6980	 0.5740
BG	 0.3720	 0.4690
BH	 0.6510	 0.5460
BI	 0.7930	 0.5960
BJ	 0.7190	 0.5880
BK	 0.6360	 0.5360
BL	 0.1690	 0.4480
BM	 0.6630	 0.5330
BN	 0.7040	 0.5810
BO	 0.5280	 0.5410
BP	 0.1730	 0.4250
BQ	 0.6570	 0.5710
BR	 0.6460	 0.5780
BS	 0.2220	 0.4030
BT	 0.5290	 0.5350
BU	 0.6990	 0.5720
BV	 0.4610	 0.5190
BW	 0.5220	 0.5330
BX	 0.2220	 0.4380
BY	 0.6210	 0.5710
BZ	 0.5230	 0.5050
Ba	 0.5900	 0.5470
Bb	 0.2760	 0.4360
Bc	 0.6180	 0.5340