

Additional materials to the article

Baulin E. et al. *Mathematical Biology and Bioinformatics*. 2019. V. 14. № S. P. t37–t43

doi: [10.17537/2019.14.t37](https://doi.org/10.17537/2019.14.t37)

STEM AND SIGNATURE DISTRIBUTIONS IN RNA STRUCTURES

Table S1. Overall distribution of stem lengths in nonredundant subset of RNA structures

Length	Number of all stems	Number of classical stems	Number of pseudoknotted stems
2	3224	2569	655
3	2913	2397	516
4	2142	1745	397
5	1777	1486	291
6	1190	962	228
7	769	654	115
8	348	300	48
9	229	197	32
10	99	85	14
11	39	36	3
12	26	25	1
13	21	18	3
14	11	11	0
15	1	1	0
16	1	1	0
18	1	1	0
19	1	1	0
21	1	1	0
Total	12793	10490	2303

Table S2. Distribution of lengths of stems adjacent to hairpins in nonredundant subset of RNA structures

Length	Number of all stems	Number of classical stems	Number of pseudoknotted stems	Percentage of the total number of stems of given length
2	1199	960	239	37
3	1043	867	176	36
4	1001	900	101	47
5	932	793	139	52
6	476	406	70	40
7	258	233	25	34
8	144	134	10	41
9	118	106	12	52
10	36	34	2	36
11	17	16	1	44
12	15	15	0	58
13	2	2	0	10
14	9	9	0	82
15	0	0	0	0
16	0	0	0	0
18	0	0	0	0
19	1	1	0	100
21	1	1	0	100
Total	5252	4477	775	41

Table S3. Distribution of lengths of stems adjacent to bulges in nonredundant subset of RNA structures

Length	Number of all stems	Number of classical stems	Number of pseudoknotted stems	Percentage of the total number of stems of given length
2	440	375	65	14
3	467	432	35	16
4	240	189	51	11
5	170	144	26	10
6	131	115	16	11
7	84	69	15	11
8	55	40	15	16
9	10	9	1	4
10	10	9	1	10
11	7	5	2	18
12	1	1	0	4
13	0	0	0	0
14	0	0	0	0
15	0	0	0	0
16	0	0	0	0
18	1	1	0	100
19	0	0	0	0
21	0	0	0	0
Total	1616	1389	227	13

Table S4. Distribution of lengths of stems adjacent to internal loops in nonredundant subset of RNA structures

Length	Number of all stems	Number of classical stems	Number of pseudoknotted stems	Percentage of the total number of stems of given length
2	1042	939	103	32
3	1024	888	136	35
4	641	540	101	30
5	464	364	100	26
6	373	297	76	31
7	231	204	27	30
8	101	88	13	29
9	42	34	8	18
10	41	37	4	41
11	9	9	0	23
12	9	8	1	35
13	8	8	0	38
14	2	2	0	18
15	1	1	0	100
16	1	1	0	100
18	0	0	0	0
19	0	0	0	0
21	0	0	0	0
Total	3989	3420	569	31

Table S5. Distribution of lengths of stems adjacent to multiple junctions in nonredundant subset of RNA structures

Length	Number of all stems	Number of classical stems	Number of pseudoknotted stems	Percentage of the total number of stems of given length
2	543	295	248	17
3	379	210	169	13
4	260	116	144	12
5	211	185	26	12
6	210	144	66	18
7	196	148	48	25
8	48	38	10	14
9	59	48	11	26
10	12	5	7	12
11	6	6	0	15
12	1	1	0	4
13	11	8	3	52
14	0	0	0	0
15	0	0	0	0
16	0	0	0	0
18	0	0	0	0
19	0	0	0	0
21	0	0	0	0
Total	1936	1204	732	15

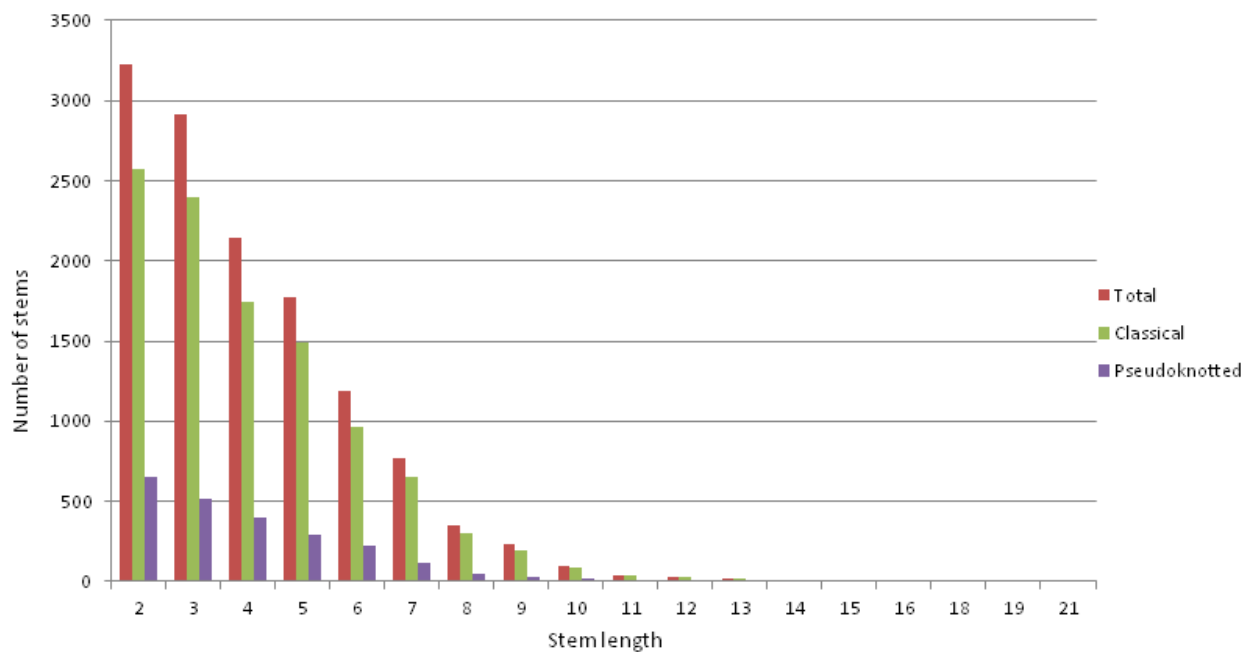


Fig. S1. Distribution of stem lengths in nonredundant subset of RNA structures.

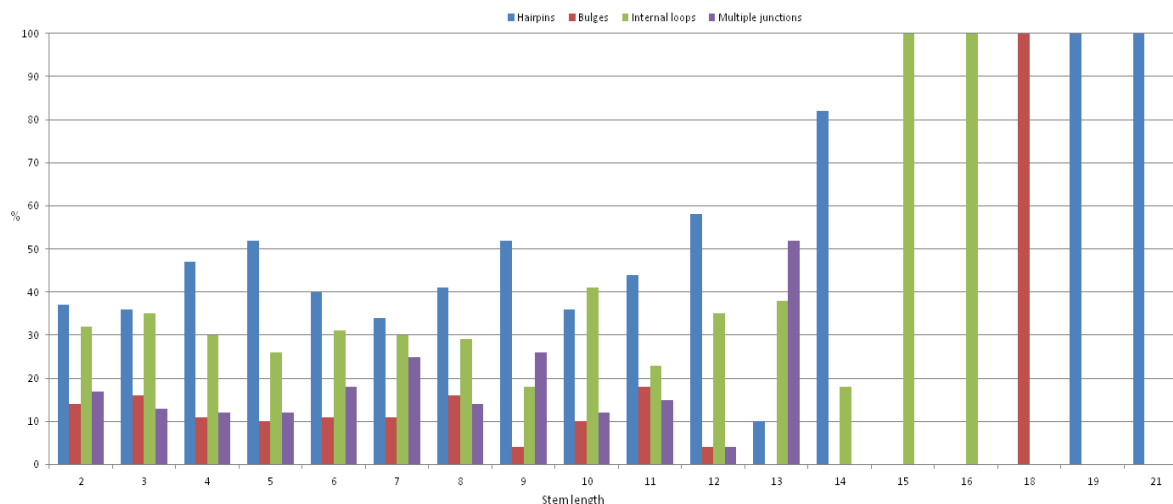


Fig. S2. Distribution of stems by adjacent loop types in nonredundant subset of RNA structures.

Table S6. List of initial signatures in nonredundant subset of RNA structures

Signature	Number
abAB	289
abAcBC	67
abcdBCAD	2
abcdCADB	2
abAcdBDeCE	3
abcdCABeDE	1
abAcdCeBEfDF	1
abAcdeBEfDFC	9
abcdCeAEfDFB	1
abcdCeBEAfDF	1
abAcdCefDFgBGE	1
abAcdeDfgFEChBHiGI	17
abAcdeDghiHFECjkGKIBLJmIM	2
Total	396

Table S7. List of signatures excluding 2-stems in nonredundant subset of RNA structures

Signature	Number
abAB	191
abAcBC	51
abAcdBDeCE	1
abAcdCeBEfDF	3
abAcdeBEfDFC	1
Total	247

Table S8. List of signatures excluding 3-stems in nonredundant subset of RNA structures

Signature	Number
abAB	162
abAcBC	41
abAcdBDeCE	1
abAcdBDeCE	9
abcdCABeDE	1
abAcdCeBEfDF	10
abcdCeAEfDFB	1
abAcdeDfgFEChBHiGI	5
abAcdefECghDHiBIGjFJ	2
Total	232

Table S9. List of signatures excluding short stems in nonredundant subset of RNA structures

Signature	Number
abAB	74
abAcBC	43
Total	117

Table S10. List of initial signatures in the whole set of RNA structures

Signature	Number
abAB	5186
abAcBC	948
abAcdBDB	2
abcdBCAD	8
abcdCADB	14
abAcdBDeCE	16
abcdCABeDE	1
abAcdCeBEfDF	17
abAcdeBEfDFC	94
abcBdeDCAfEF	2
abcdCeAEfDFB	1
abcdCeBEAfdF	1
abcdCefAFDEB	6
abAcdCefDFgBGE	1
abAcdCefDFgEGB	1
abAcdeDfgFEChBHiGI	676
abAcdeDfghiHFECjkGKIBLJmIM	12
Total	6986

Table S11. List of signatures excluding 2-stems in the whole set of RNA structures

Signature	Number
abAB	3413
abAcBC	910
abAcdBDeCE	2
abAcdCeBEfDF	191
abAcdeBEfDFC	1
abcdCefAFDEB	6
Total	4523

Table S12. List of signatures excluding 3-stems in the whole set of RNA structures

Signature	Number
abAB	1853
abAcBC	398
abAcdBDB	1
abAcdBDeCE	97
abcdCABeDE	1
abAcdCeBEfDF	174
abcBdeDCAfEF	3
abcdCeAEfDFB	1
abcdCefAFDEB	6
abAcdCefDFgBGE	2
abAcdCefDFgEGB	1
abAcdeDfgFEChBHiGI	327
abAcdefECghDHIBiGjFJ	10
Total	2874

Table S13. List of signatures excluding short stems in the whole set of RNA structures

Signature	Number
abAB	454
abAcBC	816
abcdCefAFDEB	6
Total	1276