

Additional file 1: The frequency and distribution pattern of SSRs in the pre-miRNAs across different taxa

Kingdom	Phylum	Sl. No.	Complete list of organisms	Number of Dinucleotide type of repeats	Number of Trinucleotide type of repeats	Number of Tetranucleotide type of repeats	Number of Pentanucleotide type of repeats	Number of Hexanucleotide type of repeats	Total number of miRNA precursors	Total number of SSR containing miRNA precursors
Protista	Chlorophyta	1	<i>Chlamydomonas reinhardtii</i>	30	16	2	1	1	50	22
	Mycetozoa	2	<i>Dictyostelium discoideum</i>	2	3	0	1	0	17	5
	Heterokontophyta	3	<i>Ectocarpus siliculosus</i>	12	6	0	0	0	47	13
		4	<i>Phytophthora sojae</i>	2	0	0	0	0	2	2
		5	<i>Phaeodactylum tricornutum</i>	5	0	1	0	0	13	5
Viruses	Viruses	6	Bovine herpesvirus 1	4	2	0	0	0	10	5
		7	BK polyomavirus	0	0	0	0	0	1	0
		8	Bovine leukemia virus	1	1	0	0	0	5	2
		9	Bandicoot papillomatosis carcinomatosis virus 1	0	0	0	0	0	1	0
		10	Duck enteritis virus	7	0	0	0	0	24	5
		11	Epstein Barr vir	5	0	0	0	0	25	4
		12	Herpes B virus	10	1	0	0	0	12	7
		13	Human cytomegalovirus	5	0	0	0	0	15	4
		14	Human herpesvirus 6B	1	1	0	0	0	4	2
		15	Human immunodeficiency virus 1	3	0	0	0	0	3	2
		16	Herpes Simplex Virus 1	12	0	0	0	0	18	8
		17	Herpesvirus saimiri strain A11	0	0	0	0	0	3	0

Plantae		18	Herpesvirus of turkeys	10	1	0	0	0	17	8
		19	Infectious laryngotracheitis virus	0	1	0	0	0	7	1
		20	JC polyomavirus	0	0	0	0	0	1	0
		21	Kaposi sarcoma-associated herpesvirus	2	0	0	0	0	13	2
		22	Mouse cytomegalovirus	3	0	0	0	1	18	4
		23	Merkel cell polyomavirus	0	0	0	0	0	1	0
		24	Mareks disease virus type 2	11	0	0	0	0	18	9
		25	Mouse gammaherpesvirus 68	5	0	0	0	0	15	4
		26	Pseudorabies virus	5	1	1	0	0	13	7
		27	Rhesus lymphocryptovirus	2	2	0	0	0	36	4
		28	Rhesus monkey rhadinovirus	2	0	1	0	0	7	3
		29	Simian virus 40	0	0	0	0	0	1	0
	Embryophyta	30	<i>Physcomitrella patens</i>	136	17	0	1	0	229	104
		31	<i>Selaginella moellendorffii</i>	41	11	0	1	0	58	29
	Coniferophyta	32	<i>Cunninghamia lanceolata</i>	0	0	0	0	0	4	0
		33	<i>Picea abies</i>	13	4	1	0	0	40	13
		34	<i>Pinus taeda</i>	9	2	2	0	0	35	11
		35	<i>Amborella trichopoda</i>	156	21	1	2	0	124	83
		36	<i>Panax ginseng</i>	19	0	0	0	0	29	15
		37	<i>Cynara cardunculus</i>	20	2	0	0	0	48	11
		38	<i>Helianthus tuberosus</i>	3	1	1	0	0	16	3
		39	<i>Arabidopsis thaliana</i>	222	47	9	3	0	325	149
		40	<i>Brassica rapa</i>	87	8	3	0	0	96	45
		41	<i>Carica papaya</i>	33	4	3	0	0	79	27
		42	<i>Cucumis melo</i>	88	19	1	0	0	120	62
		43	<i>Hevea brasiliensis</i>	16	2	1	0	0	31	11
		44	<i>Manihot esculenta</i>	84	12	2	0	1	153	68
		45	<i>Ricinus communis</i>	39	5	1	0	0	63	29
		46	<i>Acacia auriculiformis</i>	6	0	0	0	0	7	4

Magnoliophyta

47	<i>Arachis hypogaea</i>	13	0	0	2	0	23	11
48	<i>Glycine max</i>	309	67	1	0	1	573	248
49	<i>Lotus japonicus</i>	32	4	0	0	1	62	22
50	<i>Medicago truncatula</i>	244	51	3	3	3	672	205
51	<i>Phaseolus vulgaris</i>	9	1	0	1	0	8	4
52	<i>Vigna unguiculata</i>	15	0	0	0	0	18	8
53	<i>Avicennia marina</i>	6	0	0	0	0	2	2
54	<i>Digitalis purpurea</i>	4	1	0	0	0	13	4
55	<i>Rehmannia glutinosa</i>	8	0	0	0	0	32	7
56	<i>Salvia sclarea</i>	7	2	0	0	0	18	7
57	<i>Linum usitatissimum</i>	80	29	9	3	0	124	71
58	<i>Gossypium raimondii</i>	160	16	10	1	0	296	121
59	<i>Theobroma cacao</i>	24	10	1	1	0	82	35
60	<i>Aquilegia caerulea</i>	25	8	2	0	0	45	17
61	<i>Bruguiera cylindrica</i>	4	2	0	0	0	4	3
62	<i>Malus domestica</i>	162	29	3	1	0	206	106
63	<i>Prunus persica</i>	122	11	6	1	0	180	87
64	<i>Citrus sinensis</i>	41	8	3	0	0	60	30
65	<i>Populus trichocarpa</i>	154	24	6	0	1	352	132
66	<i>Nicotiana tabacum</i>	132	11	2	1	0	162	69
67	<i>Solanum tuberosum</i>	118	10	2	0	0	224	82
68	<i>Vitis vinifera</i>	82	10	0	0	0	163	61
69	<i>Aegilops tauschii</i>	66	5	6	1	0	88	44
70	<i>Brachypodium distachyon</i>	189	39	10	1	0	317	139
71	<i>Elaeis guineensis</i>	0	2	0	0	0	6	2
72	<i>Festuca arundinacea</i>	9	6	0	0	0	15	8
73	<i>Hordeum vulgare</i>	26	9	0	0	0	69	20
74	<i>Oryza sativa</i>	317	86	8	1	2	592	243
75	<i>Sorghum bicolor</i>	153	32	7	1	1	205	110
76	<i>Saccharum sp.</i>	21	1	1	0	0	19	8
77	<i>Triticum aestivum</i>	47	11	2	0	0	116	39
78	<i>Zea mays</i>	133	25	11	1	0	172	90

	Porifera	79	<i>Amphimedon queenslandica</i>	6	1	0	0	0	8	6
		80	<i>Leucosolenia complicata</i>	0	0	0	0	0	1	0
		81	<i>Sycon ciliatum</i>	0	0	0	0	0	1	0
	Cnidaria	82	<i>Hydra magnipapillata</i>	2	0	0	0	0	17	1
		83	<i>Nematostella vectensis</i>	13	0	0	1	0	141	12
	Platyhelminthes	84	<i>Echinococcus granulosus</i>	4	0	0	0	0	23	4
		85	<i>Gyrodactylus salaris</i>	15	2	0	0	0	60	14
		86	<i>Schistosoma mansoni</i>	29	8	0	0	0	115	24
		87	<i>Schmidtea mediterranea</i>	25	5	0	0	0	148	27
	Nematoda	88	<i>Ascaris suum</i>	17	2	0	0	0	97	17
		89	<i>Brugia malayi</i>	29	4	1	0	1	115	27
		90	<i>Caenorhabditis elegans</i>	52	7	1	0	0	250	50
		91	<i>Haemonchus contortus</i>	28	2	2	0	1	188	30
		92	<i>Pristionchus pacificus</i>	97	10	0	0	0	354	72
		93	<i>Panagrellus redivivus</i>	20	3	0	0	0	200	20
		94	<i>Strongyloides ratti</i>	14	5	0	0	0	106	17
	Annelida	95	<i>Capitella teleta</i>	22	2	1	0	0	129	21
	Mollusca	96	<i>Haliotis rufescens</i>	1	0	0	0	0	5	1
		97	<i>Lottia gigantea</i>	13	1	0	0	0	59	12
	Nemertea	98	<i>Cerebratulus lacteus</i>	1	0	0	0	0	2	1
	Brachiopoda	99	<i>Glottidia pyramidata</i>	0	0	0	0	0	1	0
		100	<i>Terebratulina retusa</i>	1	0	0	0	0	1	1
		101	<i>Ixodes scapularis</i>	21	1	1	0	0	49	16
		102	<i>Rhipicephalus microplus</i>	6	1	0	0	0	24	5
		103	<i>Tetranychus urticae</i>	11	4	1	0	0	52	11
		104	<i>Daphnia pulex</i>	16	1	0	0	0	44	14
		105	<i>Marsupenaeus japonicus</i>	0	0	0	0	0	5	0
		106	<i>Aedes aegypti</i>	19	0	0	0	2	101	17

Animalia	Arthropoda	107	<i>Anopheles gambiae</i>	25	0	0	0	0	66	21
		108	<i>Apis mellifera</i>	97	19	2	2	0	254	94
		109	<i>Acyrtosiphon pisum</i>	16	2	0	0	0	123	15
		110	<i>Bombyx mori</i>	116	18	1	4	0	487	116
		111	<i>Culex quinquefasciatus</i>	23	1	0	0	0	74	18
		112	<i>Drosophila melanogaster</i>	90	15	4	1	1	256	74
		113	<i>Heliconius melpomene</i>	26	2	1	0	0	92	25
		114	<i>Locusta migratoria</i>	4	0	0	0	0	7	3
		115	<i>Manduca sexta</i>	31	4	0	0	0	98	29
		116	<i>Nasonia vitripennis</i>	13	1	0	0	0	53	12
		117	<i>Plutella xylostella</i>	29	9	1	0	0	133	25
		118	<i>Tribolium castaneum</i>	60	6	0	0	0	220	54
		119	<i>Strigamia maritima</i>	0	0	0	0	0	3	0
	Deuterostoma	120	<i>Xenoturbella bocki</i>	3	0	0	0	0	8	3
	Hemichordata	121	<i>Saccoglossus kowalevskii</i>	30	2	0	0	0	89	26
	Echinodermata	122	<i>Lytechinus variegatus</i>	10	2	0	0	0	50	12
		123	<i>Patiria miniata</i>	12	2	0	0	0	49	12
		124	<i>Strongylocentrotus purpuratus</i>	15	3	0	0	0	63	17
		125	<i>Branchiostoma floridae</i>	43	9	1	0	0	156	43
		126	<i>Ciona intestinalis</i>	70	9	2	0	0	348	68
		127	<i>Oikopleura dioica</i>	8	3	0	0	0	66	11
		128	<i>Petromyzon marinus</i>	56	22	0	0	0	244	68
		129	<i>Xenopus tropicalis</i>	41	4	0	0	0	192	38
		130	<i>Gallus gallus</i>	210	37	3	3	0	740	203
		131	<i>Taeniopygia guttata</i>	46	15	1	0	0	247	52
		132	<i>Canis familiaris</i>	133	14	2	0	0	502	122

Chordata

133	<i>Oryctolagus cuniculus</i>	5	0	0	0	0	12	5
134	<i>Artibeus jamaicensis</i>	2	0	0	0	0	19	2
135	<i>Equus caballus</i>	236	30	4	0	0	715	234
136	<i>Eptesicus fuscus</i>	211	36	7	2	0	502	180
137	<i>Monodelphis domestica</i>	84	3	0	1	0	460	73
138	<i>Macropus eugenii</i>	0	0	0	0	0	3	0
139	<i>Sarcophilus harrisii</i>	28	7	1	0	0	64	25
140	<i>Ateles geoffroyi</i>	13	0	0	0	0	60	10
141	<i>Lagothrix lagotricha</i>	7	0	0	0	0	48	7
142	<i>Saguinus labiatus</i>	10	0	0	0	0	42	9
143	<i>Macaca mulatta</i>	181	20	5	2	0	619	168
144	<i>Pygathrix bieti</i>	5	0	0	0	0	11	5
145	<i>Gorilla gorilla</i>	108	10	6	1	0	352	95
146	<i>Homo sapiens</i>	495	74	8	6	0	1881	455
147	<i>Pan paniscus</i>	27	2	0	0	0	88	20
148	<i>Pongo pygmaeus</i>	330	40	4	2	0	642	316
149	<i>Pan troglodytes</i>	169	21	3	1	0	655	158
150	<i>Symphalangus syndactylus</i>	4	0	0	0	0	11	4
151	<i>Lemur catta</i>	0	0	0	0	0	16	0
152	<i>Ornithorhynchus anatinus</i>	145	14	4	0	0	396	121
153	<i>Cricetulus griseus</i>	50	5	1	0	0	200	43
154	<i>Mus musculus</i>	652	52	14	3	2	1193	418
155	<i>Rattus norvegicus</i>	184	22	6	0	0	495	150
156	<i>Bos taurus</i>	205	18	4	3	1	808	193
157	<i>Capra hircus</i>	96	7	0	0	0	267	83
158	<i>Ovis aries</i>	40	1	1	0	0	106	35
159	<i>Tupaia chinensis</i>	28	2	0	0	0	177	27
160	<i>Sus scrofa</i>	104	13	2	0	0	382	101

		161	<i>Cyprinus carpio</i>	38	5	0	0	0	134	37
		162	<i>Danio rerio</i>	87	10	1	0	0	346	80
		163	<i>Fugu rubripes</i>	28	5	0	0	0	131	28
		164	<i>Hippoglossus hippoglossus</i>	12	1	0	0	0	40	11
		165	<i>Ictalurus punctatus</i>	36	6	2	0	0	281	40
		166	<i>Oryzias latipes</i>	39	5	0	0	0	168	39
		167	<i>Paralichthys olivaceus</i>	5	0	0	0	0	20	5
		168	<i>Salmo salar</i>	48	7	0	0	0	371	50
		169	<i>Tetraodon nigroviridis</i>	26	3	0	0	0	132	25
		170	<i>Anolis carolinensis</i>	67	2	0	1	0	282	63
		171	<i>Ophiophagus hannah</i>	46	5	0	0	0	198	39