

**Modeling of the asymmetric evolution of one mouse and rat-specific
microRNA gene cluster in the Sfbmt2 locus**

Supplement Tables

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Keywords: microRNA, miRNA, simple repeat, SINE B1F3, evolution, gene conversion.

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mouse  chr2 10383102 10445570
rat     chr17 79301645 79245165
kangaroo_rat  GeneScaffold_6552 152744 143027
rabbit  AAGW02026857 41410 53848
gpig    scaffold_16 16013390 16026898

Genome assemblies
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Guinea pig (Cavia porcellus):
ftp://ftp.ensembl.org/pub/release-
58/fasta/cavia_porcellus/dna/Cavia_porcellus.cavPor3.58.dna.nonchromosomal.fa.gz

Kangaroo rat (Dipodomys ordii):
ftp://ftp.ensembl.org/pub/release-
55/fasta/dipodomys_ordii/dna/Dipodomys_ordii.dipOrd1.55.dna.nonchromosomal.fa.gz

Ground squirrel (Spermophilus tridecemlineatus)
ftp://ftp.ensembl.org/pub/release-
58/fasta/spermophilus_tridecemlineatus/dna/Spermophilus_tridecemlineatus.SQUIRREL.58.d
na.nonchromosomal.fa.gz

Ground squirrel:
scaffold_5659 10089 10196 Sfmbt2 289 324 d 0.7778
scaffold_5659 12816 12968 Sfmbt2 323 373 d 0.8039

GeneScaffold_5788 61782 61913 Sfmbt2 853 896 c 0.7500
GeneScaffold_5788 62856 63197 Sfmbt2 746 858 c 0.4435
GeneScaffold_5788 64981 65175 Sfmbt2 600 664 c 0.7846
GeneScaffold_5788 74912 75028 Sfmbt2 565 603 c 0.7692
GeneScaffold_5788 97330 97524 Sfmbt2 498 567 c 0.6970
GeneScaffold_5788 103073 103180 Sfmbt2 442 477 c 0.8056
GeneScaffold_5788 113670 113789 Sfmbt2 396 435 c 0.7750
GeneScaffold_5788 119783 119866 Sfmbt2 373 400 c 0.7857
GeneScaffold_5788 166031 166120 Sfmbt2 145 174 c 0.8333
GeneScaffold_5788 234259 234486 Sfmbt2 62 138 c 0.7143

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Supplement Table 1. Assembly of mouse Sfmbt2 intron 10 in rat, kangaroo rat, rabbit, guinea pig and ground squirrel.

Intron 10 in ground squirrel was assembled from 2 contigs.

Nr		L1	L2		N1	N2	D	Identity	Score
	intron10_MM	3153	3269	B1F3	4	120	d	0.7350	509
1	intron10_MM	3195	3574	MSHORT1	1	296	d	0.8669	1442
2	intron10_MM	3580	3817	MSHORT1	12	259	d	0.8683	1460
3	intron10_MM	3818	3910	MSHORT1	82	196	d	0.8646	446
4	intron10_MM	3952	4215	MSHORT1	3	296	d	0.8390	1305
5	intron10_MM	4216	4523	MSHORT1	1	296	d	0.8356	1520
6	intron10_MM	4525	4809	MSHORT1	2	296	d	0.8357	1592
7	intron10_MM	4810	5094	MSHORT1	1	296	d	0.8211	1459
8	intron10_MM	5095	5395	MSHORT1	1	296	d	0.8754	1863
9	intron10_MM	5396	5670	MSHORT1	1	296	d	0.8993	1773
10	intron10_MM	5671	5963	MSHORT1	1	296	d	0.8946	1998
11	intron10_MM	5971	6232	MSHORT1	9	296	d	0.8453	1370
12	intron10_MM	6236	6507	MSHORT1	4	292	d	0.8667	1597
13	intron10_MM	6513	6811	MSHORT1	2	294	d	0.8237	1478
14	intron10_MM	6813	7114	MSHORT1	1	296	d	0.8836	1795
15	intron10_MM	7115	7411	MSHORT1	1	296	d	0.8938	1880
16	intron10_MM	7412	7714	MSHORT1	1	293	d	0.8644	1784
17	intron10_MM	7719	8013	MSHORT1	2	296	d	0.8407	1668
18	intron10_MM	8400	8646	MSHORT1	15	296	d	0.8367	1229
19	intron10_MM	8647	8943	MSHORT1	1	296	d	0.8490	1674
20	intron10_MM	8944	9257	MSHORT1	1	296	d	0.7850	1168
21	intron10_MM	9258	9523	MSHORT1	1	296	d	0.8074	1131
22	intron10_MM	9524	9792	MSHORT1	1	296	d	0.8309	1252
23	intron10_MM	9793	10078	MSHORT1	1	293	d	0.8448	1619
24	intron10_MM	10082	10382	MSHORT1	1	286	d	0.8997	1859
25	intron10_MM	10393	10686	MSHORT1	1	296	d	0.8767	1807
26	intron10_MM	10687	10978	MSHORT1	1	296	d	0.8464	1668
27	intron10_MM	10979	11258	MSHORT1	1	293	d	0.7817	1194
28	intron10_MM	11262	11540	MSHORT1	1	296	d	0.8432	1496
29	intron10_MM	11541	11808	MSHORT1	1	296	d	0.8339	1287
30	intron10_MM	11809	11971	MSHORT1	1	167	d	0.8193	818
31	intron10_MM	12025	12365	MSHORT1	6	296	d	0.7811	1150
32	intron10_MM	12366	12650	MSHORT1	1	293	d	0.8179	1412
33	intron10_MM	12654	12885	MSHORT1	1	233	d	0.8340	1249
34	intron10_MM	12900	13178	MSHORT1	1	296	d	0.8582	1546
35	intron10_MM	13180	13450	MSHORT1	2	283	d	0.8388	1409
36	intron10_MM	13462	13755	MSHORT1	10	296	d	0.7958	1243
37	intron10_MM	13756	13919	MSHORT1	1	166	d	0.8061	786
38	intron10_MM	13969	14128	MSHORT1	1	162	d	0.8012	765
39	intron10_MM	14185	14471	MSHORT1	4	296	d	0.7762	1139
40	intron10_MM	14472	14779	MSHORT1	1	296	d	0.8249	1528
41	intron10_MM	14782	15062	MSHORT1	3	293	d	0.8097	1350
42	intron10_MM	15066	15297	MSHORT1	1	233	d	0.8298	1244
43	intron10_MM	15312	15590	MSHORT1	1	296	d	0.8582	1555
44	intron10_MM	15592	15860	MSHORT1	2	283	d	0.8212	1265
45	intron10_MM	15872	16165	MSHORT1	10	296	d	0.7924	1230
46	intron10_MM	16166	16329	MSHORT1	1	166	d	0.8242	840
47	intron10_MM	16381	16538	MSHORT1	3	162	d	0.8553	906
48	intron10_MM	16595	16927	MSHORT1	4	296	d	0.7677	1057
49	intron10_MM	16928	17236	MSHORT1	1	296	d	0.8148	1444
50	intron10_MM	17239	17520	MSHORT1	3	293	d	0.8166	1401
51	intron10_MM	17524	17755	MSHORT1	1	233	d	0.8298	1235
52	intron10_MM	17770	18048	MSHORT1	1	296	d	0.8546	1530
53	intron10_MM	18050	18316	MSHORT1	2	283	d	0.8139	1261
54	intron10_MM	18328	18620	MSHORT1	10	296	d	0.7889	1201
55	intron10_MM	18621	18784	MSHORT1	1	166	d	0.8121	812
56	intron10_MM	18836	19005	MSHORT1	3	172	d	0.8412	912
57	intron10_MM	19050	19372	MSHORT1	4	296	d	0.7559	1101
58	intron10_MM	19373	19681	MSHORT1	1	296	d	0.8289	1541
59	intron10_MM	19684	19966	MSHORT1	3	293	d	0.8131	1370
60	intron10_MM	19970	20201	MSHORT1	1	233	d	0.8468	1296
61	intron10_MM	20216	20494	MSHORT1	1	296	d	0.8440	1484
62	intron10_MM	20496	20762	MSHORT1	2	283	d	0.8029	1206
63	intron10_MM	20774	21056	MSHORT1	10	285	d	0.7950	1212
64	intron10_MM	21068	21231	MSHORT1	1	166	d	0.8121	802
65	intron10_MM	21283	21439	MSHORT1	3	162	d	0.8491	892
66	intron10_MM	21496	21808	MSHORT1	4	296	d	0.7612	1074
67	intron10_MM	21809	22116	MSHORT1	1	296	d	0.8289	1551
68	intron10_MM	22119	22401	MSHORT1	3	293	d	0.8131	1391
69	intron10_MM	22405	22636	MSHORT1	1	233	d	0.8340	1250
70	intron10_MM	22651	22929	MSHORT1	1	296	d	0.8546	1530
71	intron10_MM	22931	23201	MSHORT1	2	283	d	0.8007	1251
72	intron10_MM	23213	23506	MSHORT1	10	296	d	0.7889	1215
73	intron10_MM	23507	23669	MSHORT1	1	166	d	0.8242	849

74	intron10_MM	23721	23878	MSHORT1	3	162	d	0.8679	945
75	intron10_MM	23935	24265	MSHORT1	4	296	d	0.7492	1030
76	intron10_MM	24266	24573	MSHORT1	1	296	d	0.8148	1475
77	intron10_MM	24576	24858	MSHORT1	3	293	d	0.8166	1396
78	intron10_MM	24862	25093	MSHORT1	1	233	d	0.8298	1236
79	intron10_MM	25108	25386	MSHORT1	1	296	d	0.8617	1569
80	intron10_MM	25388	25657	MSHORT1	2	283	d	0.8116	1294
81	intron10_MM	25669	25962	MSHORT1	10	296	d	0.8028	1266
82	intron10_MM	25963	26126	MSHORT1	1	166	d	0.8242	850
83	intron10_MM	26181	26332	MSHORT1	9	162	d	0.8366	820
84	intron10_MM	26389	26732	MSHORT1	4	296	d	0.7700	1072
85	intron10_MM	26733	27037	MSHORT1	1	296	d	0.8243	1463
86	intron10_MM	27040	27320	MSHORT1	3	293	d	0.8166	1368
87	intron10_MM	27324	27555	MSHORT1	1	233	d	0.8419	1253
88	intron10_MM	27570	27850	MSHORT1	1	296	d	0.8622	1553
89	intron10_MM	27852	28121	MSHORT1	2	283	d	0.8116	1281
90	intron10_MM	28133	28426	MSHORT1	10	296	d	0.7924	1234
91	intron10_MM	28427	28590	MSHORT1	1	166	d	0.8242	842
92	intron10_MM	28638	28795	MSHORT1	3	162	d	0.8679	934
93	intron10_MM	28852	29178	MSHORT1	4	296	d	0.7500	1039
94	intron10_MM	29179	29486	MSHORT1	1	296	d	0.8289	1551
95	intron10_MM	29489	29771	MSHORT1	3	293	d	0.8131	1391
96	intron10_MM	29775	30006	MSHORT1	1	233	d	0.8340	1250
97	intron10_MM	30021	30299	MSHORT1	1	296	d	0.8546	1530
98	intron10_MM	30301	30571	MSHORT1	2	283	d	0.8007	1251
99	intron10_MM	30583	30876	MSHORT1	10	296	d	0.7889	1215
100	intron10_MM	30877	31039	MSHORT1	1	166	d	0.8242	849
101	intron10_MM	31091	31248	MSHORT1	3	162	d	0.8616	922
102	intron10_MM	31305	31639	MSHORT1	4	296	d	0.7492	1014
103	intron10_MM	31640	31948	MSHORT1	1	296	d	0.8182	1511
104	intron10_MM	31951	32233	MSHORT1	3	293	d	0.8166	1396
105	intron10_MM	32237	32468	MSHORT1	1	233	d	0.8298	1236
106	intron10_MM	32483	32761	MSHORT1	1	296	d	0.8617	1569
107	intron10_MM	32763	33032	MSHORT1	2	283	d	0.8116	1294
108	intron10_MM	33044	33337	MSHORT1	10	296	d	0.8028	1266
109	intron10_MM	33338	33501	MSHORT1	1	166	d	0.8242	850
110	intron10_MM	33556	33707	MSHORT1	9	162	d	0.8366	820
111	intron10_MM	33764	34113	MSHORT1	4	296	d	0.7700	1050
112	intron10_MM	34114	34418	MSHORT1	1	296	d	0.8243	1463
113	intron10_MM	34421	34701	MSHORT1	3	293	d	0.8166	1368
114	intron10_MM	34705	34936	MSHORT1	1	233	d	0.8376	1230
115	intron10_MM	34951	35231	MSHORT1	1	296	d	0.8622	1553
116	intron10_MM	35233	35502	MSHORT1	2	283	d	0.8116	1281
117	intron10_MM	35514	35807	MSHORT1	10	296	d	0.7889	1210
118	intron10_MM	35808	35971	MSHORT1	1	166	d	0.8242	842
119	intron10_MM	36019	36176	MSHORT1	3	162	d	0.8679	934
120	intron10_MM	36233	36523	MSHORT1	4	296	d	0.7682	1189
121	intron10_MM	36524	36831	MSHORT1	1	296	d	0.8255	1519
122	intron10_MM	36834	37116	MSHORT1	3	293	d	0.8201	1406
123	intron10_MM	37120	37351	MSHORT1	1	233	d	0.8340	1250
124	intron10_MM	37366	37644	MSHORT1	1	296	d	0.8617	1569
125	intron10_MM	37646	37919	MSHORT1	2	286	d	0.8321	1391
126	intron10_MM	37926	38207	MSHORT1	10	285	d	0.7950	1192
127	intron10_MM	38219	38382	MSHORT1	1	166	d	0.8121	820
128	intron10_MM	38432	38591	MSHORT1	1	162	d	0.8261	813
129	intron10_MM	38648	38949	MSHORT1	4	296	d	0.7551	1063
130	intron10_MM	38970	39260	MSHORT1	21	296	d	0.8172	1348
131	intron10_MM	39263	39545	MSHORT1	3	293	d	0.8166	1392
132	intron10_MM	39549	39779	MSHORT1	1	233	d	0.8383	1254
133	intron10_MM	39794	40072	MSHORT1	1	296	d	0.8511	1489
134	intron10_MM	40074	40342	MSHORT1	2	283	d	0.8043	1237
135	intron10_MM	40354	40646	MSHORT1	10	296	d	0.7785	1151
136	intron10_MM	40647	40810	MSHORT1	1	166	d	0.8182	816
137	intron10_MM	40860	41026	MSHORT1	1	169	d	0.8095	803
138	intron10_MM	41076	41403	MSHORT1	4	296	d	0.7309	933
139	intron10_MM	41404	41711	MSHORT1	1	296	d	0.8289	1551
140	intron10_MM	41714	41996	MSHORT1	3	293	d	0.8131	1391
141	intron10_MM	42000	42231	MSHORT1	1	233	d	0.8298	1235
142	intron10_MM	42246	42524	MSHORT1	1	296	d	0.8511	1508
143	intron10_MM	42526	42797	MSHORT1	2	283	d	0.8195	1323
144	intron10_MM	42809	43102	MSHORT1	10	296	d	0.7993	1271
145	intron10_MM	43105	43266	MSHORT1	3	166	d	0.8160	807
146	intron10_MM	43316	43582	MSHORT1	1	296	d	0.8118	1194
147	intron10_MM	43583	43869	MSHORT1	1	296	d	0.7698	1134
148	intron10_MM	43870	44159	MSHORT1	1	287	d	0.8166	1422
149	intron10_MM	44171	44441	MSHORT1	3	293	d	0.8172	1242
150	intron10_MM	44445	44729	MSHORT1	1	293	d	0.8035	1275

151	intron10_MM	44734	45010	MSHORT1	2	296	d	0.8421	1455
152	intron10_MM	45011	45174	MSHORT1	1	166	d	0.8485	944
153	intron10_MM	45224	45489	MSHORT1	1	296	d	0.8037	1133
154	intron10_MM	45492	45765	MSHORT1	3	296	d	0.7599	967
155	intron10_MM	45766	46064	MSHORT1	1	296	d	0.8188	1468
156	intron10_MM	46067	46349	MSHORT1	3	293	d	0.8270	1459
157	intron10_MM	46353	46638	MSHORT1	1	293	d	0.8007	1282
158	intron10_MM	46642	46906	MSHORT1	1	279	d	0.8413	1436
159	intron10_MM	46909	47086	MSHORT1	1	196	d	0.8603	940
160	intron10_MM	47133	47442	MSHORT1	10	294	d	0.8507	1522
161	intron10_MM	47455	47745	MSHORT1	7	296	d	0.8207	1467
162	intron10_MM	47746	48031	MSHORT1	1	293	d	0.8379	1533
163	intron10_MM	48035	48331	MSHORT1	1	296	d	0.8368	1430
164	intron10_MM	48332	48624	MSHORT1	1	296	d	0.8362	1525
165	intron10_MM	48625	48902	MSHORT1	1	296	d	0.8541	1599
166	intron10_MM	48904	49231	MSHORT1	2	296	d	0.8148	1436
167	intron10_MM	49232	49523	MSHORT1	1	288	d	0.8797	1765
168	intron10_MM	49528	49808	MSHORT1	1	293	d	0.8328	1518
169	intron10_MM	49815	50108	MSHORT1	4	296	d	0.8172	1381
170	intron10_MM	50109	50401	MSHORT1	1	296	d	0.8277	1515
171	intron10_MM	50402	50631	MSHORT1	1	233	d	0.9043	1503
172	intron10_MM	50646	50940	MSHORT1	1	296	d	0.8485	1670
173	intron10_MM	50942	51227	MSHORT1	2	292	d	0.8258	1440
174	intron10_MM	51235	51525	MSHORT1	4	296	d	0.8737	1739
175	intron10_MM	51527	51874	MSHORT1	2	296	d	0.8316	1270
176	intron10_MM	51878	52182	MSHORT1	4	296	d	0.8249	1453
177	intron10_MM	52183	52475	MSHORT1	1	288	d	0.8272	1190
178	intron10_MM	52484	52758	MSHORT1	1	296	d	0.8525	1517
179	intron10_MM	52759	53038	MSHORT1	1	296	d	0.8657	1592
180	intron10_MM	53039	53315	MSHORT1	1	294	d	0.8429	1464
181	intron10_MM	53318	53617	MSHORT1	1	288	d	0.8493	1561
182	intron10_MM	53631	53907	MSHORT1	6	296	d	0.8185	1398
183	intron10_MM	53911	54255	MSHORT1	4	296	d	0.8345	1367
184	intron10_MM	54256	54542	MSHORT1	1	296	d	0.8408	1569
185	intron10_MM	54543	54830	MSHORT1	1	296	d	0.8454	1591
186	intron10_MM	54831	55121	MSHORT1	1	296	d	0.8596	1636
187	intron10_MM	55123	55394	MSHORT1	2	296	d	0.8225	1313
188	intron10_MM	55490	55782	MSHORT1	1	285	d	0.8462	1582
189	intron10_MM	55794	56060	MSHORT1	1	296	d	0.8376	1311
190	intron10_MM	56061	56338	MSHORT1	1	296	d	0.8369	1380
191	intron10_MM	56339	56610	MSHORT1	1	296	d	0.8182	1347
192	intron10_MM	56611	56894	MSHORT1	1	296	d	0.8287	1465
193	intron10_MM	56897	57184	MSHORT1	3	289	d	0.8258	1452

Supplement Table 2. Map of MSHORT1 and RSHORT in the mouse intron 10.

The best scoring query consensus is shown for MSHORT1 and RSHORT1 per intron 10 loci. One B1F3 copy that kept its 5-prime portion was identified in this intron at the 5-prime start of the head to tail repeated array of MSHORT1. The Coordinates of that B1F3 element were added manually to this list in row one. Nr. Number of MSHORT1 copies from left to right; L1 and L2 intron 10 coordinates of the corresponding query sequence copy; N1 and N2 – coordinates of a region of the query consensus similar to its copy; D – orientation.

Nr.		L1	L2		N1	N2	D	Identity	Score
	intron10_RN	2054	2181	B1F3	2	126	d	0.7520	541
1	intron10_RN	2083	2284	RSHORT1	1	204	d	0.8227	1121
2	intron10_RN	2285	2331	MSHORT1	151	197	d	0.9362	381
3	intron10_RN	2332	2415	RSHORT1	1	85	d	0.9294	629
4	intron10_RN	2455	2648	RSHORT1	4	206	d	0.8376	1028
5	intron10_RN	2650	2845	RSHORT1	1	198	d	0.8333	1073
6	intron10_RN	2880	3093	RSHORT1	8	207	d	0.8482	918
7	intron10_RN	3094	3302	RSHORT1	1	207	d	0.8565	1182
8	intron10_RN	3303	3507	RSHORT1	1	205	d	0.9220	1471
9	intron10_RN	3510	3717	RSHORT1	1	207	d	0.8654	1245
10	intron10_RN	3718	3913	RSHORT1	1	207	d	0.8492	1098
11	intron10_RN	3914	4094	RSHORT1	1	207	d	0.8297	894
12	intron10_RN	4095	4304	RSHORT1	1	198	d	0.8905	1292
13	intron10_RN	4318	4530	RSHORT1	1	207	d	0.8612	1258
14	intron10_RN	4531	4685	RSHORT1	1	183	d	0.8462	715
15	intron10_RN	4694	4879	RSHORT1	1	203	d	0.8579	1031
16	intron10_RN	4884	5096	RSHORT1	1	202	d	0.8079	927
17	intron10_RN	5130	5324	RSHORT1	1	201	d	0.8250	1040
18	intron10_RN	5347	5559	RSHORT1	1	205	d	0.8447	1114
19	intron10_RN	5562	5761	RSHORT1	1	207	d	0.8325	1119
20	intron10_RN	5762	5968	RSHORT1	1	207	d	0.8398	1159
21	intron10_RN	5969	6146	RSHORT1	1	177	d	0.8596	1091
22	intron10_RN	6267	6471	RSHORT1	1	207	d	0.8878	1362
23	intron10_RN	6472	6636	RSHORT1	1	207	d	0.8521	790
24	intron10_RN	6637	6836	RSHORT1	1	198	d	0.8550	1136
25	intron10_RN	6869	7050	RSHORT1	2	184	d	0.8634	1092
26	intron10_RN	7058	7239	RSHORT1	1	184	d	0.8478	1037
27	intron10_RN	7247	7448	RSHORT1	1	207	d	0.8488	1124
28	intron10_RN	7449	7647	RSHORT1	1	201	d	0.8450	1143
29	intron10_RN	7670	7872	RSHORT1	1	207	d	0.8544	1197
30	intron10_RN	7873	8046	RSHORT1	1	174	d	0.8736	1120
31	intron10_RN	8058	8256	RSHORT1	3	207	d	0.8806	1215
32	intron10_RN	8257	8433	RSHORT1	1	203	d	0.8034	715
33	intron10_RN	8438	8636	RSHORT1	1	203	d	0.8900	1261
34	intron10_RN	8643	8839	RSHORT1	1	198	d	0.8737	1238
35	intron10_RN	8851	9046	RSHORT1	1	207	d	0.8744	1187
36	intron10_RN	9047	9240	RSHORT1	1	196	d	0.8769	1197
37	intron10_RN	9256	9467	RSHORT1	1	207	d	0.8269	1019
38	intron10_RN	9468	9661	RSHORT1	1	197	d	0.8316	1073
39	intron10_RN	9708	9916	RSHORT1	1	207	d	0.9038	1394
40	intron10_RN	9919	10093	RSHORT1	3	207	d	0.8539	915
41	intron10_RN	10094	10296	RSHORT1	1	207	d	0.8204	1012
42	intron10_RN	10297	10460	RSHORT1	1	197	d	0.7640	395
43	intron10_RN	10461	10652	RSHORT1	2	198	d	0.8667	1175
44	intron10_RN	10680	10874	RSHORT1	6	207	d	0.8693	1178
45	intron10_RN	10876	11040	RSHORT1	2	184	d	0.8263	750
46	intron10_RN	11106	11311	RSHORT1	1	207	d	0.8301	1106
47	intron10_RN	11312	11496	RSHORT1	1	207	d	0.8478	903
48	intron10_RN	11497	11710	RSHORT1	1	207	d	0.8565	1192
49	intron10_RN	11711	11900	RSHORT1	1	207	d	0.8359	915
50	intron10_RN	11901	12105	RSHORT1	1	207	d	0.8454	1108
51	intron10_RN	12106	12310	RSHORT1	1	207	d	0.8447	1248
52	intron10_RN	12311	12519	RSHORT1	1	207	d	0.8693	1076
53	intron10_RN	12520	12710	RSHORT1	1	195	d	0.8438	1106
54	intron10_RN	12720	12893	RSHORT1	2	198	d	0.8161	745
55	intron10_RN	12927	13129	RSHORT1	1	207	d	0.8829	1270
56	intron10_RN	13132	13307	RSHORT1	3	179	d	0.8953	1047
57	intron10_RN	13308	13496	RSHORT1	6	207	d	0.8511	960
58	intron10_RN	13500	13706	RSHORT1	4	207	d	0.8634	1210
59	intron10_RN	13707	13890	RSHORT1	1	198	d	0.8817	1163
60	intron10_RN	13926	14039	RSHORT1	1	139	d	0.8435	552
61	intron10_RN	14125	14254	RSHORT1	1	130	d	0.8385	741
62	intron10_RN	14293	14460	RSHORT1	1	198	d	0.8235	780
63	intron10_RN	14501	14704	RSHORT1	1	207	d	0.8164	990
64	intron10_RN	14707	14906	RSHORT1	3	207	d	0.8621	1162
65	intron10_RN	14907	15092	RSHORT1	1	207	d	0.8919	1043
66	intron10_RN	15094	15283	RSHORT1	2	204	d	0.8769	1133
67	intron10_RN	15287	15492	RSHORT1	1	207	d	0.8744	1254
68	intron10_RN	15493	15687	RSHORT1	1	207	d	0.8731	1184
69	intron10_RN	15688	15900	RSHORT1	1	206	d	0.8517	1137
70	intron10_RN	15904	16103	RSHORT1	4	207	d	0.8719	1224
71	intron10_RN	16104	16306	RSHORT1	1	207	d	0.8932	1328
72	intron10_RN	16307	16509	RSHORT1	1	205	d	0.8780	1214
73	intron10_RN	16519	16686	RSHORT1	7	206	d	0.8198	708
74	intron10_RN	16688	16892	RSHORT1	1	206	d	0.8447	1204

75	intron10_RN	16894	17099	RSHORT1	1	207	d	0.7143	535
76	intron10_RN	17174	17250	RSHORT1	131	207	d	0.8831	455
77	intron10_RN	17251	17374	RSHORT1	1	124	d	0.8306	700
78	intron10_RN	17375	17487	MSHORT1	53	165	d	0.8158	576
79	intron10_RN	17514	17712	RSHORT1	1	198	d	0.8477	1056
80	intron10_RN	17738	17921	RSHORT1	1	185	d	0.8703	1136
81	intron10_RN	17995	18199	RSHORT1	2	207	d	0.8495	1177
82	intron10_RN	18200	18397	RSHORT1	1	200	d	0.8737	1147
83	intron10_RN	18411	18575	RSHORT1	7	197	d	0.8364	702
84	intron10_RN	18584	18788	RSHORT1	1	206	d	0.8495	1223
85	intron10_RN	18792	19000	RSHORT1	3	207	d	0.7323	467
86	intron10_RN	19001	19172	RSHORT1	1	175	d	0.7931	768
87	intron10_RN	19197	19392	RSHORT1	1	198	d	0.7879	955
88	intron10_RN	19394	19433	MSHORT1	158	197	d	0.8500	264
89	intron10_RN	19434	19629	RSHORT1	1	198	d	0.8485	1110
90	intron10_RN	19631	19664	MSHORT1	162	197	d	0.9143	263
91	intron10_RN	19666	19865	RSHORT1	2	207	d	0.8473	1114
92	intron10_RN	19866	20065	RSHORT1	1	207	d	0.8522	1107
93	intron10_RN	20066	20236	RSHORT1	1	197	d	0.7965	655
94	intron10_RN	20245	20449	RSHORT1	1	206	d	0.8447	1182
95	intron10_RN	20451	20646	RSHORT1	1	207	d	0.7363	583
96	intron10_RN	20647	20824	RSHORT1	1	181	d	0.8111	855
97	intron10_RN	20851	21045	RSHORT1	1	198	d	0.8477	1126
98	intron10_RN	21081	21286	RSHORT1	1	207	d	0.8269	1058
99	intron10_RN	21287	21342	RSHORT1	1	56	d	0.8929	387
100	intron10_RN	21424	21638	RSHORT1	1	207	d	0.8365	1128
101	intron10_RN	21641	21816	RSHORT1	3	181	d	0.7921	780
102	intron10_RN	21843	22037	RSHORT1	1	198	d	0.8477	1126
103	intron10_RN	22073	22278	RSHORT1	1	207	d	0.8269	1058
104	intron10_RN	22279	22482	RSHORT1	1	207	d	0.8447	1126
105	intron10_RN	22490	22652	RSHORT1	8	197	d	0.7939	594
106	intron10_RN	22661	22866	RSHORT1	1	207	d	0.8454	1193
107	intron10_RN	22868	23073	RSHORT1	3	207	d	0.7157	443
108	intron10_RN	23074	23251	RSHORT1	1	181	d	0.8167	898
109	intron10_RN	23278	23492	RSHORT1	1	207	d	0.8365	1128
110	intron10_RN	23495	23710	RSHORT1	3	206	d	0.7729	851
111	intron10_RN	23713	23915	RSHORT1	2	207	d	0.8390	1132
112	intron10_RN	23916	24113	RSHORT1	1	205	d	0.8550	1131
113	intron10_RN	24122	24284	RSHORT1	7	197	d	0.8049	602
114	intron10_RN	24293	24496	RSHORT1	1	206	d	0.8447	1159
115	intron10_RN	24498	24654	RSHORT1	1	148	d	0.7832	516
116	intron10_RN	24688	24860	RSHORT1	1	176	d	0.8114	817
117	intron10_RN	24892	25015	RSHORT1	1	125	d	0.8560	755
118	intron10_RN	25041	25245	RSHORT1	2	207	c	0.8301	1083
119	intron10_RN	25736	25938	RSHORT1	2	207	d	0.8293	1113
120	intron10_RN	25939	26129	RSHORT1	1	205	d	0.8462	868
121	intron10_RN	26181	26307	RSHORT1	76	204	d	0.8516	664
122	intron10_RN	26311	26514	RSHORT1	1	206	d	0.8641	1266
123	intron10_RN	26516	26681	RSHORT1	1	156	d	0.7763	522
124	intron10_RN	26715	26916	RSHORT1	5	207	d	0.8039	934
125	intron10_RN	26917	27103	RSHORT1	1	198	d	0.8519	1008
126	intron10_RN	27104	27132	MSHORT1	169	197	d	0.9310	245
127	intron10_RN	27137	27337	RSHORT1	5	207	d	0.8621	1206
128	intron10_RN	27339	27550	RSHORT1	2	207	d	0.8606	1204
129	intron10_RN	27552	27756	RSHORT1	2	207	d	0.8350	1108
130	intron10_RN	27757	27956	RSHORT1	1	205	d	0.8458	1044
131	intron10_RN	28007	28130	RSHORT1	74	197	d	0.8629	691
132	intron10_RN	28139	28347	RSHORT1	1	206	d	0.8502	1210
133	intron10_RN	28351	28491	RSHORT1	3	159	d	0.7671	483
134	intron10_RN	28582	28757	RSHORT1	1	181	d	0.7821	718
135	intron10_RN	28789	28978	RSHORT1	6	198	d	0.8698	1198
136	intron10_RN	28998	29175	RSHORT1	1	178	d	0.8268	947
137	intron10_RN	29205	29243	MSHORT1	162	197	d	0.8649	244
138	intron10_RN	29245	29448	RSHORT1	2	207	d	0.8204	1040
139	intron10_RN	29449	29652	RSHORT1	1	207	d	0.8350	1078
140	intron10_RN	29702	29823	RSHORT1	76	197	d	0.8443	623
141	intron10_RN	29832	30036	RSHORT1	1	206	d	0.8495	1196
142	intron10_RN	30040	30230	RSHORT1	3	166	d	0.7296	346
143	intron10_RN	30258	30461	RSHORT1	1	207	d	0.8019	946
144	intron10_RN	30462	30658	RSHORT1	1	198	d	0.8535	1190
145	intron10_RN	30686	30884	RSHORT1	1	199	d	0.8600	1185
146	intron10_RN	30913	31114	RSHORT1	2	204	d	0.8374	1112
147	intron10_RN	31117	31316	RSHORT1	1	205	d	0.8713	1189
148	intron10_RN	31369	31490	RSHORT1	76	197	d	0.8197	549
149	intron10_RN	31499	31704	RSHORT1	1	206	d	0.8696	1290
150	intron10_RN	31706	31911	RSHORT1	1	207	d	0.7398	515
151	intron10_RN	31912	32086	RSHORT1	1	178	d	0.8305	931

152	intron10_RN	32116	32328	RSHORT1	1	207	d	0.8317	1128
153	intron10_RN	32331	32506	RSHORT1	3	181	d	0.8202	900
154	intron10_RN	32533	32725	RSHORT1	1	207	d	0.8542	1042
155	intron10_RN	32727	32926	RSHORT1	2	198	d	0.8844	1238
156	intron10_RN	32951	33152	RSHORT1	2	207	d	0.8293	1078
157	intron10_RN	33153	33347	RSHORT1	1	207	d	0.8223	938
158	intron10_RN	33348	33517	RSHORT1	1	197	d	0.7965	605
159	intron10_RN	33526	33730	RSHORT1	1	206	d	0.8447	1189
160	intron10_RN	33732	33927	RSHORT1	1	207	d	0.7617	608
161	intron10_RN	33928	34105	RSHORT1	1	181	d	0.8167	894
162	intron10_RN	34132	34345	RSHORT1	1	207	d	0.8469	1169
163	intron10_RN	34350	34540	RSHORT1	5	198	d	0.8808	1204
164	intron10_RN	34563	34765	RSHORT1	3	207	d	0.8488	1111
165	intron10_RN	34766	34965	RSHORT1	1	205	d	0.8564	1136
166	intron10_RN	35017	35137	RSHORT1	76	197	d	0.8361	573
167	intron10_RN	35146	35350	RSHORT1	1	206	d	0.8641	1210
168	intron10_RN	35352	35478	RSHORT1	1	142	d	0.8077	501
169	intron10_RN	35578	35750	RSHORT1	1	178	d	0.7727	696
170	intron10_RN	35785	35995	RSHORT1	6	207	d	0.8480	1132
171	intron10_RN	35996	36144	RSHORT1	1	150	d	0.7667	764
172	intron10_RN	36619	36829	RSHORT1	6	207	d	0.8480	1132
173	intron10_RN	36830	37041	RSHORT1	1	207	d	0.8804	1272
174	intron10_RN	37043	37244	RSHORT1	2	207	d	0.8480	1151
175	intron10_RN	37245	37446	RSHORT1	1	207	d	0.8683	1182
176	intron10_RN	37497	37615	RSHORT1	77	198	d	0.8250	521
177	intron10_RN	37623	37827	RSHORT1	1	206	d	0.8398	1139
178	intron10_RN	37831	37960	RSHORT1	3	141	d	0.7594	461
179	intron10_RN	38061	38265	RSHORT1	1	207	d	0.8125	944
180	intron10_RN	38266	38465	RSHORT1	1	206	d	0.8557	1026
181	intron10_RN	38466	38657	RSHORT1	1	198	d	0.8667	1132
182	intron10_RN	38685	38889	RSHORT1	2	207	d	0.8447	1134
183	intron10_RN	38890	39088	RSHORT1	1	204	d	0.8408	1065
184	intron10_RN	39165	39261	MSHORT1	87	185	d	0.8061	494
185	intron10_RN	39270	39474	RSHORT1	1	206	d	0.8689	1292
186	intron10_RN	39478	39631	RSHORT1	3	148	d	0.7958	514
187	intron10_RN	39703	39902	RSHORT1	1	207	d	0.8088	887
188	intron10_RN	39903	40105	RSHORT1	1	198	d	0.8650	1170
189	intron10_RN	40147	40344	RSHORT1	6	201	d	0.8376	1059
190	intron10_RN	40349	40543	RSHORT1	3	200	d	0.7817	885
191	intron10_RN	40550	40723	RSHORT1	3	198	d	0.8430	840
192	intron10_RN	40761	40942	RSHORT1	1	182	d	0.8571	1081
193	intron10_RN	40954	41135	RSHORT1	3	190	d	0.8315	955
194	intron10_RN	41143	41302	RSHORT1	1	196	d	0.8395	774
195	intron10_RN	41312	41515	RSHORT1	1	206	d	0.8350	1164
196	intron10_RN	41534	41680	RSHORT1	18	160	d	0.8322	662
197	intron10_RN	41751	41955	RSHORT1	1	206	d	0.8398	1087
198	intron10_RN	41957	42150	RSHORT1	1	198	d	0.9086	1288
199	intron10_RN	42192	42394	RSHORT1	1	207	d	0.8488	1114
200	intron10_RN	42395	42598	RSHORT1	1	207	d	0.8689	1265
201	intron10_RN	42637	42830	RSHORT1	3	196	d	0.8667	1185
202	intron10_RN	42839	42994	RSHORT1	1	196	d	0.8375	704
203	intron10_RN	43005	43208	RSHORT1	1	206	d	0.8447	1214
204	intron10_RN	43210	43407	RSHORT1	1	198	d	0.8030	873
205	intron10_RN	43445	43645	RSHORT1	5	207	d	0.8473	1103
206	intron10_RN	43650	43850	RSHORT1	5	206	d	0.9010	1316
207	intron10_RN	43852	44048	RSHORT1	1	207	d	0.8905	1228
208	intron10_RN	44055	44196	RSHORT1	7	176	d	0.8125	608
209	intron10_RN	44197	44388	RSHORT1	13	206	d	0.8351	1052
210	intron10_RN	44391	44526	RSHORT1	2	148	d	0.8357	683
211	intron10_RN	44530	44699	RSHORT1	1	177	d	0.8218	874
212	intron10_RN	44708	44911	RSHORT1	1	207	d	0.8981	1330
213	intron10_RN	44912	45102	RSHORT1	1	199	d	0.8646	1127
214	intron10_RN	45107	45272	RSHORT1	1	194	d	0.8323	772
215	intron10_RN	45284	45499	RSHORT1	1	207	d	0.8357	1065
216	intron10_RN	45500	45690	RSHORT1	1	207	d	0.8653	1093
217	intron10_RN	45691	45895	RSHORT1	1	207	d	0.8454	1165
218	intron10_RN	45896	46099	RSHORT1	1	207	d	0.8981	1342
219	intron10_RN	46102	46299	RSHORT1	3	207	d	0.9055	1357
220	intron10_RN	46300	46400	RSHORT1	1	127	d	0.8627	527
221	intron10_RN	46907	47106	RSHORT1	4	196	d	0.8454	1054
222	intron10_RN	47198	47372	RSHORT1	25	197	d	0.8914	1101
223	intron10_RN	47383	47579	RSHORT1	3	198	d	0.8629	1196
224	intron10_RN	47597	47793	RSHORT1	1	196	d	0.8832	1237
225	intron10_RN	47804	48006	RSHORT1	2	207	d	0.8390	1108
226	intron10_RN	48007	48187	RSHORT1	1	198	d	0.8396	924
227	intron10_RN	48227	48407	RSHORT1	1	207	d	0.8324	953
228	intron10_RN	48408	48611	RSHORT1	1	207	d	0.8634	1211

229	intron10_RN	48612 48806	RSHORT1	2 207	d	0.8315 806
230	intron10_RN	48809 49020	RSHORT1	3 207	d	0.8744 1226
231	intron10_RN	49021 49204	RSHORT1	1 204	d	0.8407 896
232	intron10_RN	49208 49411	RSHORT1	1 206	d	0.8592 1209
233	intron10_RN	49415 49607	RSHORT1	3 207	d	0.8333 1029
234	intron10_RN	49608 49777	RSHORT1	1 198	d	0.8728 941
235	intron10_RN	49795 50000	RSHORT1	1 207	d	0.8398 1097
236	intron10_RN	50001 50203	RSHORT1	1 207	d	0.8780 1253
237	intron10_RN	50204 50400	RSHORT1	1 207	d	0.8657 1140
238	intron10_RN	50401 50604	RSHORT1	1 206	d	0.8786 1295
239	intron10_RN	50608 50751	RSHORT1	3 148	d	0.8493 829
240	intron10_RN	50875 51046	RSHORT1	1 207	d	0.8629 882
241	intron10_RN	51047 51211	RSHORT1	1 203	d	0.8294 764
242	intron10_RN	51268 51580	MSHORT1	6 295	d	0.8225 1519

Supplement Table 3. Map of MSHORT1 and RSHORT in the rat intron 10.

The best scoring query consensus is shown for MSHORT1 and RSHORT1 per intron 10 loci. One B1F3 copy that kept its 5-prime portion was identified in this intron at the 5-prime start of the head to tail repeated array of MSHORT1 and RSHORT1. The Coordinates of that B1F3 element was added manually to this list in row one. Number of MSHORT1 or RSHORT1 copies from left to right; L1 and L2 intron 10 coordinates the corresponding query sequence copy; N1 and N2 – coordinates of a region of the query consensus similar to its copy; D – orientation.

A

SW score	perc div.	perc del.	perc ins.	query sequence	position begin	in query end	query (left)	matching repeat	repeat class/family	position in begin	end	repeat (left)	ID
279	17.3	0.0	0.0	gga-mir-466	114	165	(104) +	(TA)n	Simple_repeat	1	52	(0)	1
249	19.6	0.0	0.0	hsa-mir-1277	110	165	(113) +	(TA)n	Simple_repeat	2	57	(0)	2
244	17.9	4.5	0.0	hsa-mir-466	82	148	(136) +	(TATG)n	Simple_repeat	3	72	(0)	3
182	19.1	2.1	0.0	hsa-mir-466	148	194	(90) +	(CA)n	Simple_repeat	2	49	(0)	4 *
226	28.0	0.0	0.0	mir-MSHORT1	85	134	(162) +	(TG)n	Simple_repeat	1	50	(0)	5
273	16.3	0.0	0.0	mir-MSHORT1	140	188	(108) +	(CA)n	Simple_repeat	2	50	(0)	6
207	22.0	0.0	0.0	mir-RSHORT1	99	148	(59) +	(TG)n	Simple_repeat	1	50	(0)	7
267	13.3	0.0	0.0	mir-RSHORT1	154	198	(9) +	(CA)n	Simple_repeat	2	46	(0)	8
237	6.5	0.0	0.0	mmu-mir-466i	143	173	(148) +	(TG)n	Simple_repeat	2	32	(0)	9
201	16.9	5.1	0.0	mmu-mir-466i	176	234	(87) +	(CATA)n	Simple_repeat	2	63	(0)	10
747	20.6	0.0	0.0	mmu-mir-466j	72	246	(76) +	(TG)n	Simple_repeat	2	176	(0)	11
264	21.3	0.0	0.0	mmu-mir-466j	262	322	(0) +	(TG)n	Simple_repeat	2	62	(0)	11
213	13.2	0.0	0.0	mmu-mir-467f	143	180	(140) +	(TG)n	Simple_repeat	2	39	(0)	12
660	18.2	0.0	0.0	mmu-mir-467g	114	245	(75) +	(TA)n	Simple_repeat	2	133	(0)	13
246	24.3	0.6	5.0	mmu-mir-467h	155	314	(7) +	(TATG)n	Simple_repeat	4	156	(0)	14
249	19.6	0.0	0.0	ppy-mir-1277	110	165	(113) +	(TA)n	Simple_repeat	2	57	(0)	15
235	14.6	3.6	0.0	ssc-mir-1277	113	167	(113) +	(TATATG)n	Simple_repeat	4	60	(0)	16

B

	L1	L2		N1	N2	D	Identity	Score	
hsa-mir-1277	8	278	ppy-mir-1277	8	278	d	0.7823	59	571 <
ssc-mir-1277	1	274	hsa-mir-1277	7	277	d	0.6754	4.1	367 <
ssc-mir-1277	2	274	ppy-mir-1277	8	277	d	0.6716	4.4	353 <
mir-RSHORT1	16	96	mir-MSHORT1	1	81	d	0.9506	1	223 <

Supplement Table 4. Microsatellite content and pair wise alignment of pre-miRNAs from family 466 and 467 outside the mouse and rat specific miRNA cluster in 300nt

A) Pre-miRNA sequences with 100nt up and downstream sequence were analyzed from miRNA family 466 and 467 miRNAs that are not located in the mouse and rat cluster in intron 10 of the Sfmbt2 gene. The two miRNA cluster are represented by MSHORT1 and RSHOR1 respectively. Microsatellite content of these sequences was annotated with RepeatMasker. Annotation that overlaps with another annotation is marked with an (*). **B)** Pair wise alignment of the RepeatMasker masked sequence set as defined under **A**. L1 and L2 – coordinates of a sequence L; N1 and N2 – coordinates of a region of the sequence N to the sequence L; D – orientation.