
Supplementary materials for TargetMiner: MicroRNA target prediction with systematic identification of tissue specific negative examples

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List of selected 14 tissue types:

(1)Bone Marrow (2) Brain (3) Heart (4) Kidney (5) Liver (6) Lung (7) Pancreas (8)Prostate (9) Thymus (10) Lymph (11) Testis (12) Adrenal (13) Uterus (14) Placenta

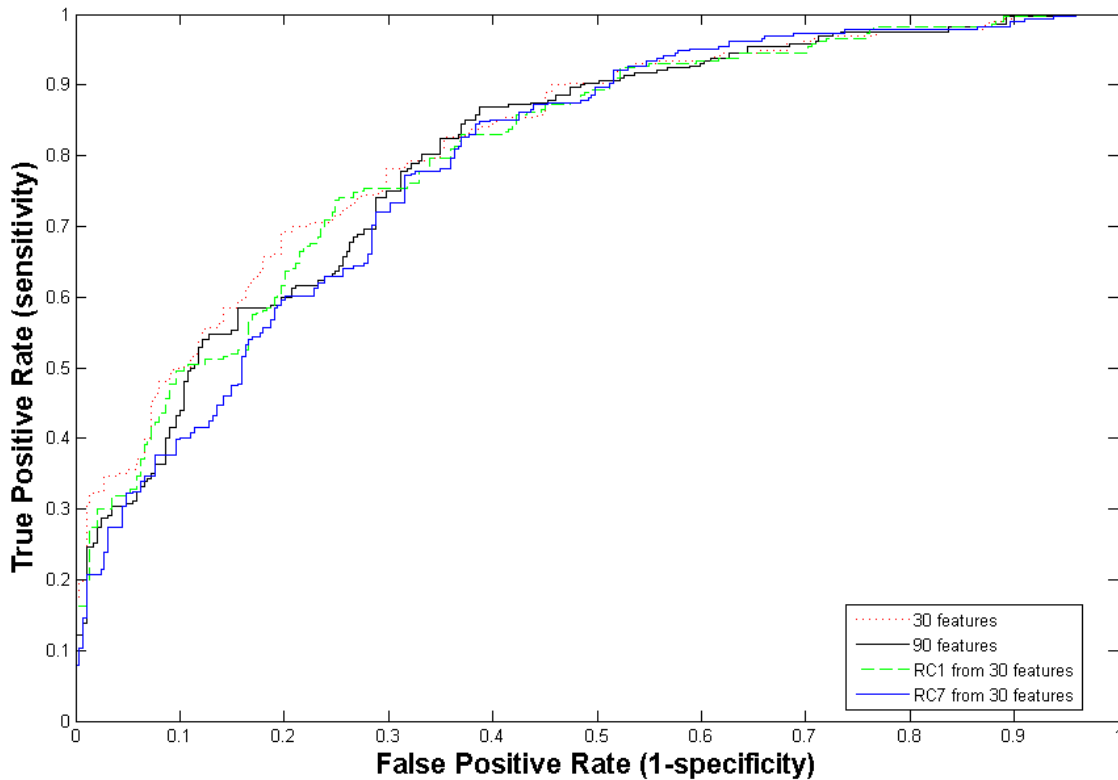


Fig S1. Receiver operating characteristic (ROC) curves are plotted on the training data set based on 90 features, 30 features, removing the features of category 1 (RC1) from 30 features and removing the features of category 7 (RC7) from 30 features. A 10-fold cross-validation prediction results are observed for 30 and 90 features with an AUC of 0.818 and 0.803, respectively. To identify the features that contributed most to the prediction model we have removed different categories of features from the selected set of 30 features and measured the AUC. The AUC is decreased to 0.792 by removing the features of category 7 from the 30 selected feature set. The features of category 1 may also be considered as important because after removing them the obtained AUC is 0.806. Removing the other categories of features (mentioned in Table T7) resulted in a very small variation in the observed AUC compared to the 30 selected feature set.

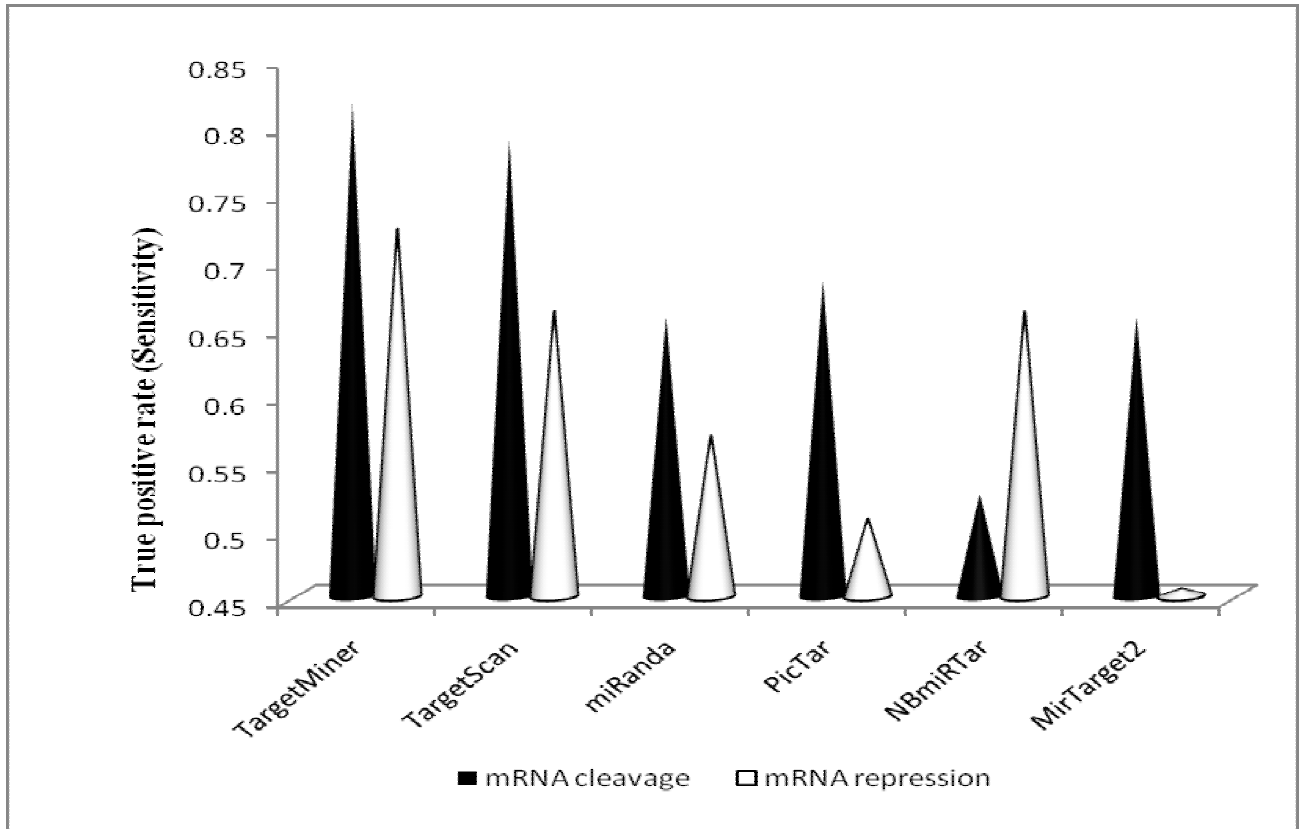


Fig S2. Comparative results on mRNA cleavage and translationally repressed target data set. Both the data sets are extracted from Tarbase database.

Table T1. A list of 289 positive training examples with references are extracted from miRecords database (Xiao *et al.*, 2009). References denote from which experiments the examples are chosen.

	miRNA	Refseq Id	References
1	hsa-let-7a	NM_001039111	Lin YC et al., 2007
2	hsa-let-7a	NM_181833	Meng et al., 2007
3	hsa-let-7a	NM_004985	Johnson SM et al., 2005
4	hsa-let-7a	NM_024674	Wu L et al., 2006
5	hsa-let-7a	NM_003483	Shell S et al., 2007
6	hsa-let-7a	NM_002524	Johnson SM et al., 2005
7	hsa-let-7b	NM_024674	Kiriakidou et al., 2004
8	hsa-let-7b	NM_001259	Johnson CD et al., 2007
9	hsa-let-7b	NM_003483	Lee YS,Dutta A , 2007
10	hsa-let-7b	NM_201567	Johnson CD et al., 2007
11	hsa-let-7c	NM_001039111	Lin YC et al., 2007
12	hsa-let-7c	NM_003483	Peng Y et al., 2008
13	hsa-let-7c	NM_002467	Koscianska E et al., 2007
14	hsa-let-7e	NM_006306	Kiriakidou et al., 2004
15	hsa-let-7e	NM_003483	Lee YS,Dutta A, 2007
16	hsa-let-7g	NM_003483	Boyerinas et al., 2008
17	hsa-let-7g	NM_006546	Boyerinas B et al., 2008
18	hsa-miR-101	NM_005378	Lewis BP et al., 2003
19	hsa-miR-101	NM_152998	Lewis BP et al., 2003
20	hsa-miR-103	NM_015640	Beitzinger M et al., 2007
21	hsa-miR-106a	NM_000321	Volinia et al., 2006
22	hsa-miR-107	NM_012104	Wang et al., 2008
23	hsa-miR-107	NM_015640	Beitzinger M et al., 2007
24	hsa-miR-10a	NM_153620	Garzon et al., 2006
25	hsa-miR-10b	NM_002148	Ma L et al., 2007
26	hsa-miR-122	NM_003045	Fabani MM et al., 2007
27	hsa-miR-125a-5p	NM_024674	Wu L,Belasco JG, 2005
28	hsa-miR-125a-5p	NM_001982	Scott GK et al., 2007
29	hsa-miR-125a-5p	NM_004448	Scott GK et al., 2007
30	hsa-miR-125b	NM_024674	Wu et al., 2005
31	hsa-miR-125b	NM_003901	Shi XB et al., 2007
32	hsa-miR-125b	NM_001806	Shi XB et al., 2007
33	hsa-miR-125b	NM_175709	Shi XB et al., 2007
34	hsa-miR-125b	NM_005324	Shi XB et al., 2007
35	hsa-miR-125b	NM_173473	Shi XB et al., 2007
36	hsa-miR-125b	NM_203339	Shi XB et al., 2007
37	hsa-miR-125b	NM_001982	Scott GK et al., 2007
38	hsa-miR-125b	NM_002644	Shi XB et al., 2007

39	hsa-miR-125b	NM_182511	Shi XB et al., 2007
40	hsa-miR-125b	NM_199332	Shi XB et al., 2007
41	hsa-miR-125b	NM_173843	Shi XB et al., 2007
42	hsa-miR-125b	NM_005105	Shi XB et al., 2007
43	hsa-miR-125b	NM_022121	Shi XB et al., 2007
44	hsa-miR-125b	NM_001188	Shi XB et al., 2007
45	hsa-miR-125b	NM_002167	Shi XB et al., 2007
46	hsa-miR-125b	NM_000499	Shi XB et al., 2007
47	hsa-miR-125b	NM_003538	Shi XB et al., 2007
48	hsa-miR-125b	NM_001007156	Laneve P et al., 2007
49	hsa-miR-125b	NM_014373	Shi XB et al., 2007
50	hsa-miR-125b	NM_004973	Shi XB et al., 2007
51	hsa-miR-125b	NM_001013398	Shi XB et al., 2007
52	hsa-miR-125b	NM_213609	Shi XB et al., 2007
53	hsa-miR-125b	NM_181353	Shi XB et al., 2007
54	hsa-miR-125b	NM_004448	Scott GK et al., 2007
55	hsa-miR-129-5p	NM_177422	Liao R et al., 2008
56	hsa-miR-129-5p	NM_015215	Liao R et al., 2008
57	hsa-miR-130a	NM_019102	Chen Y et al., 2008
58	hsa-miR-130a	NM_005461	Garzon R et al., 2006
59	hsa-miR-130a	NM_005924	Chen Y et al., 2008
60	hsa-miR-130a	NM_000757	Lewis BP et al., 2003
61	hsa-miR-133a	NM_172057	Xiao J et al., 2007
62	hsa-miR-133a	NM_000218	Luo X et al., 2007
63	hsa-miR-133a	NM_001194	Luo X et al., 2008
64	hsa-miR-133b	NM_005029	Kim J et al., 2007
65	hsa-miR-137	NM_001259	Kozaki K et al., 2008
66	hsa-miR-137	NM_198256	Kozaki K et al., 2008
67	hsa-miR-137	NM_006540	Kozaki K et al., 2008
68	hsa-miR-140-5p	NM_003376	Ye W et al., 2008
69	hsa-miR-141	NM_004898	Kiriakidou M et al., 2004
70	hsa-miR-145	NM_024615	Kiriakidou et al., 2004
71	hsa-miR-145	NM_005544	Shi B et al., 2007
72	hsa-miR-147	NM_003376	Ye W et al., 2008
73	hsa-miR-148a	NM_175850	Duursma AM et al., 2008
74	hsa-miR-148a	NM_175849	Duursma AM et al., 2008
75	hsa-miR-148a	NM_033013	Takagi et., 2008
76	hsa-miR-148b	NM_175850	Duursma AM et al., 208
77	hsa-miR-155	NM_032049	Sethupathy P et al., 2007

78	hsa-miR-155	NM_206866	Skalsky RL et al., 2007
79	hsa-miR-15a	NM_000633	Cimmino A et al., 2005
80	hsa-miR-15a	NM_014333	Calin GA et al., 2008
81	hsa-miR-15a	NM_003387	Calin GA et al., 2008
82	hsa-miR-15a	NM_005736	Calin GA et al., 2008
83	hsa-miR-15a	NM_005324	Calin GA et al., 2008
84	hsa-miR-15a	NM_021925	Calin GA et al., 2008
85	hsa-miR-15a	NM_001006605	Calin GA et al., 2008
86	hsa-miR-15a	NM_022173	Calin GA et al., 2008
87	hsa-miR-15a	NM_152729	Calin GA et al., 2008
88	hsa-miR-15a	NM_032303	Calin GA et al., 2008
89	hsa-miR-15a	NM_005316	Calin GA et al., 2008
90	hsa-miR-15a	NM_024759	Calin GA et al., 2008
91	hsa-miR-15a	NM_019083	Calin GA et al., 2008
92	hsa-miR-15a	NM_000365	Calin GA et al., 2008
93	hsa-miR-15a	NM_022353	Calin GA et al., 2008
94	hsa-miR-15a	NM_018307	Calin GA et al., 2008
95	hsa-miR-15a	NM_032124	Calin GA et al., 2008
96	hsa-miR-15a	NM_002228	Calin GA et al., 2008
97	hsa-miR-15a	NM_003930	Calin GA et al., 2008
98	hsa-miR-15a	NM_003376	Ye W et al., 2008
99	hsa-miR-15a	NM_015948	Calin GA et al., 2008
100	hsa-miR-15a	NM_002687	Calin GA et al., 2008
101	hsa-miR-15a	NM_003359	Calin GA et al., 2008
102	hsa-miR-15a	NM_145243	Calin GA et al., 2008
103	hsa-miR-15a	NM_018263	Calin GA et al., 2008
104	hsa-miR-15a	NM_145341	Calin GA et al., 2008
105	hsa-miR-15a	NM_173473	Calin GA et al., 2008
106	hsa-miR-15a	NM_182763	Calin GA et al., 2008
107	hsa-miR-15a	NM_014999	Calin GA et al., 2008
108	hsa-miR-15a	NM_000657	Calin GA et al., 2008
109	hsa-miR-15b	NM_000633	Xia L et al., 2005
110	hsa-miR-16	NM_003376	Kiriakidou et al., 2004
111	hsa-miR-16	NM_016140	Kiriakidou et al., 2004
112	hsa-miR-16	NM_000633	Xia L et al., 2008
113	hsa-miR-16	NM_003387	Calin GA et al., 2008
114	hsa-miR-16	NM_014333	Calin GA et al., 2008
115	hsa-miR-16	NM_005736	Calin GA et al., 2008
116	hsa-miR-16	NM_005324	Calin GA et al., 2008
117	hsa-miR-16	NM_032303	Calin GA et al., 2008
118	hsa-miR-16	NM_021925	Calin GA et al., 2008

119	hsa-miR-16	NM_001006605	Calin GA et al., 2008
120	hsa-miR-16	NM_000365	Calin GA et al., 2008
121	hsa-miR-16	NM_152729	Calin GA et al., 2008
122	hsa-miR-16	NM_005316	Calin GA et al., 2008
123	hsa-miR-16	NM_019083	Calin GA et al., 2008
124	hsa-miR-16	NM_024759	Calin GA et al., 2008
125	hsa-miR-16	NM_022173	Calin GA et al., 2008
126	hsa-miR-16	NM_018263	Calin GA et al., 2008
127	hsa-miR-16	NM_002228	Calin GA et al., 2008
128	hsa-miR-16	NM_003930	Calin GA et al., 2008
129	hsa-miR-16	NM_015948	Calin GA et al., 2008
130	hsa-miR-16	NM_032124	Calin GA et al., 2008
131	hsa-miR-16	NM_018307	Calin GA et al., 2008
132	hsa-miR-16	NM_002687	Calin GA et al., 2008
133	hsa-miR-16	NM_022353	Calin GA et al., 2008
134	hsa-miR-16	NM_145243	C,Zanesi N et al., 2008
135	hsa-miR-16	NM_003359	C,Zanesi N et al., 2008
136	hsa-miR-16	NM_145341	Calin GA et al., 2008
137	hsa-miR-16	NM_182763	Calin GA et al., 2008
138	hsa-miR-16	NM_173473	Calin GA et al., 2008
139	hsa-miR-16	NM_000657	Calin GA et al., 2008
140	hsa-miR-16	NM_014999	Calin GA et al., 2008
141	hsa-miR-17	NM_001754	Fontana et al., 2007
142	hsa-miR-17	NM_181659	Hossain A et al., 2006
143	hsa-miR-17	NM_003376	Ye W et al., 2008
144	hsa-miR-181a	NM_005523	Naguibneva I et al., 2006
145	hsa-miR-181b	NM_003385	Beveridge NJ et al., 2008
146	hsa-miR-181b	NM_021966	Pekarsky Y et al., 2006
147	hsa-miR-182	NM_015270	Xu S et al., 2007
148	hsa-miR-182	NM_198159	Xu S et al., 2007
149	hsa-miR-193a-3p	NM_198256	Kozaki K et al., 2008
150	hsa-miR-193a-3p	NM_182763	Kozaki K et al., 2008
151	hsa-miR-193a-3p	NM_005607	Kozaki K et al., 2008
152	hsa-miR-196a	NM_019558	Yekta S et al., 2004
153	hsa-miR-196a	NM_022658	Yekta S et al., 2004
154	hsa-miR-199b-5p	NM_005562	Kiriakidou M et al., 2004
155	hsa-miR-19a	NM_000314	Lewis et al., 2003
156	hsa-miR-200a	NM_014795	Gregory PA et al., 2008
157	hsa-miR-200b	NM_014795	Gregory PA et al., 2008

158	hsa-miR-200b	NM_030751	Gregory PA et al., 2008
159	hsa-miR-200c	NM_030751	Burk U et al., 2008
160	hsa-miR-203	NM_003722	Lena AM et al., 2008
161	hsa-miR-203	NM_003955	Sonkoly E et al., 2007
162	hsa-miR-205	NM_003376	Ye W et al., 2008
163	hsa-miR-205	NM_014795	Gregory PA et al., 2008
164	hsa-miR-206	NM_003182	Greco SJ et al., 2007
165	hsa-miR-206	NM_000165	Kedde M et al., 2007
166	hsa-miR-20a	NM_005225	O'Donnell KA et al., 2005
167	hsa-miR-21	NM_014456	Lu Z et al., 2008
168	hsa-miR-21	NM_001018005	Zhu et al., 2007
169	hsa-miR-21	NM_144949	Frankel LB et al., 2008
170	hsa-miR-21	NM_005596	Fujita S et al., 2008
171	hsa-miR-21	NM_181869	Frankel LB et al., 2008
172	hsa-miR-21	NM_181359	Frankel LB et al., 2008
173	hsa-miR-21	NM_170709	Frankel LB et al., 2008
174	hsa-miR-21	NM_018593	Frankel LB et al., 2008
175	hsa-miR-21	NM_001259	Frankel LB et al., 2007
176	hsa-miR-21	NM_001204	Frankel LB et al., 2007
177	hsa-miR-21	NM_002639	Zhu S et al., 2008
178	hsa-miR-21	NM_005734	Frankel LB et al., 2008
179	hsa-miR-21	NM_014454	Frankel LB et al., 2007
180	hsa-miR-210	NM_004952	Fasanaro P et al., 2008
181	hsa-miR-212	NM_175610	Tang Y et al., 2008
182	hsa-miR-214	NM_000314	Yang H et al., 2008
183	hsa-miR-218	NM_001017402	Martinez I et al., 2008
184	hsa-miR-22	NM_000125	McManus MT, 2008
185	hsa-miR-22	NM_001001929	McManus MT., 2008
186	hsa-miR-221	NM_000222	Felli et al., 2005
187	hsa-miR-221	NM_004064	Kedde M et al., 2007/ Felicetti F et al., 2008
188	hsa-miR-222	NM_000222	Felli et al., 2005
189	hsa-miR-222	NM_004064	Galardi et al, 2007
190	hsa-miR-223	NM_005595	Fazi F et al., 2005
191	hsa-miR-23a	NM_024909	Kiriakidou et al., 2004
192	hsa-miR-23a	NM_004575	Lewis BP et al., 2003
193	hsa-miR-23a	NM_005524	Kawasaki H et al., 2004
194	hsa-miR-24	NM_000791	Mishra et al., 2007
195	hsa-miR-24	NM_004302	Wang Q et al., 2008
196	hsa-miR-26a	NM_005900	Luzi E et al., 2008
197	hsa-miR-26a	NM_002655	Volinia et al., 2006
198	hsa-miR-26a	NM_003242	Volinia S et al., 2006
199	hsa-miR-27b	NM_000104	Tsuchiya et al., 2006

200	hsa-miR-29a	NM_175848	Fabbri M et al., 2007
201	hsa-miR-29a	NM_022552	Fabbri M et al., 2007
202	hsa-miR-29a	NM_003118	Sengupta S et al., 2008
203	hsa-miR-29b	NM_175848	Fabbri M et al., 2007
204	hsa-miR-29b	NM_022552	Fabbri M et al., 2007
205	hsa-miR-29b	NM_021960	Mott jl et al., 2007
206	hsa-miR-29b	NM_021966	Pekarsky Y et al., 2006
207	hsa-miR-29c	NM_175848	Fabbri M et al., 2007
208	hsa-miR-29c	NM_022552	Fabbri M et al., 2007
209	hsa-miR-29c	NM_003211	Sengupta S et al., 2008
210	hsa-miR-29c	NM_001855	Sengupta S et al., 2008
211	hsa-miR-29c	NM_000090	Sengupta S et al., 2008
212	hsa-miR-29c	NM_002293	Wang X and Wang X 2006
213	hsa-miR-29c	NM_001845	Sengupta S et al., 2008
214	hsa-miR-29c	NM_000089	Sengupta S et al., 2008
215	hsa-miR-29c	NM_000138	Sengupta S et al., 2008
216	hsa-miR-29c	NM_001846	Sengupta S et al., 2008
217	hsa-miR-29c	NM_000088	Sengupta S et al., 2008
218	hsa-miR-30a*	NM_003983	Nakamoto M et al., 2005
219	hsa-miR-30a*	NM_025222	Nakamoto M et al., 2005
220	hsa-miR-30a*	NM_003246	Nakamoto M et al., 2005
221	hsa-miR-30a*	NM_017599	Nakamoto M, et al., 2005
222	hsa-miR-30a*	NM_001259	Nakamoto M et al., 2005
223	hsa-miR-30a*	NM_006009	Nakamoto M et al., 2005
224	hsa-miR-34a	NM_001949	Welch et al., 2007
225	hsa-miR-34a	NM_000633	Bommer GT et al., 2007
226	hsa-miR-34a	NM_003376	Ye W et al., 2008
227	hsa-miR-34a	NM_005618	Lewis BP et al., 2003
228	hsa-miR-34a	NM_017617	Lewis BP et al., 2003
229	hsa-miR-34a	NM_005378	Wei JS et al., 2008
230	hsa-miR-34b*	NM_003376	Ye W et al., 2008
231	hsa-miR-370	NM_005204	Meng F et al., 2008
232	hsa-miR-372	NM_014572	Voorhoeve et al., 2006
233	hsa-miR-372	NM_003376	Ye W et al., 2008
234	hsa-miR-373	NM_015455	Lim et al., 2005
235	hsa-miR-373	NM_152835	Lim et al., 2005
236	hsa-miR-373	NM_015076	Lim et al., 2005
237	hsa-miR-373	NM_016603	Lim et al., 2005
238	hsa-miR-373	NM_021914	Lim et al., 2005

239	hsa-miR-373	NM_004896	Lim et al., 2005
240	hsa-miR-373	NM_153042	Lim et al., 2005
241	hsa-miR-373	NM_152261	Lim et al., 2005
242	hsa-miR-373	NM_016343	Lim et al., 2005
243	hsa-miR-373	NM_006282	Lim et al., 2005
244	hsa-miR-373	NM_004427	Lim et al., 2005
245	hsa-miR-373	NM_152345	Lim et al., 2005
246	hsa-miR-373	NM_153369	Lim et al., 2005
247	hsa-miR-373	NM_013446	Lim et al., 2005
248	hsa-miR-373	NM_178818	Lim et al., 2005
249	hsa-miR-373	NM_016019	Lim et al., 2005
250	hsa-miR-373	NM_004233	Lim et al., 2005
251	hsa-miR-373	NM_003764	Lim et al., 2005
252	hsa-miR-373	NM_003981	Lim et al., 2005
253	hsa-miR-373	NM_004404	Lim et al., 2005
254	hsa-miR-373	NM_003223	Lim et al., 2005
255	hsa-miR-373	NM_014051	Lim et al., 2005
256	hsa-miR-373	NM_144596	Lim et al., 2005
257	hsa-miR-373	NM_019555	Lim et al., 2005
258	hsa-miR-373	NM_145048	Lim et al., 2005
259	hsa-miR-373	NM_144563	Lim et al., 2005
260	hsa-miR-373	NM_013448	Lim et al., 2005
261	hsa-miR-373	NM_016133	Lim et al., 2005
262	hsa-miR-373	NM_016433	Lim et al., 2005
263	hsa-miR-373	NM_003816	Lim et al., 2005
264	hsa-miR-373	NM_005573	Lim et al., 2005
265	hsa-miR-373	NM_015853	Lim et al., 2005
266	hsa-miR-373	NM_018421	Lim et al., 2005
267	hsa-miR-373	NM_173647	Lim et al., 2005
268	hsa-miR-373	NM_025205	Lim et al., 2005
269	hsa-miR-373	NM_021633	Lim et al., 2005
270	hsa-miR-373	NM_018492	Lim et al., 2005
271	hsa-miR-373	NM_014572	Voorhoeve et al., 2006
272	hsa-miR-373	NM_001001392	Huang Q et al., 2008
273	hsa-miR-376a*	NM_004768	Kawahara Y et al., 2007
274	hsa-miR-376a*	NM_003051	Kawahara Y et al., 2007
275	hsa-miR-376a*	NM_003318	Kawahara Y et al., 2007
276	hsa-miR-378*	NM_016169	Lee DY et al., 2007
277	hsa-miR-424	NM_005595	Rosa A et al., 2007
278	hsa-miR-433	NM_019851	Wang G et al., 2008
279	hsa-miR-504	NM_003376	Ye W et al., 2008

280	hsa-miR-520g	NM_003376	Ye W et al., 2008
281	hsa-miR-520h	NM_004827	Liao R et al., 2008
282	hsa-miR-520h	NM_003376	Ye W et al., 2008
283	hsa-miR-7	NM_003749	Kefas B et al., 2008
284	hsa-miR-7	NM_005228	Kefas B et al., 2008
285	hsa-miR-7	NM_005544	Kefas B et al., 2008
286	hsa-miR-9	NM_001007156	Laneve P et al., 2007
287	hsa-miR-96	NM_015270	Xu S et al., 2007
288	hsa-miR-96	NM_198159	Xu S et al., 2007
289	hsa-miR-98	NM_003483	Hebert et al., 2007

Table T2. Predictions by TargetMiner on the set of 187 positive test examples. The result consists of different seed-site interaction information. References denote from which experiments the examples are chosen.

	miRNA	mRNA	6mer (count)	6mer (position)	7mer-A1 (count)	7mer-A1 (position)	7mer-m8 (count)	7mer-m8 (position)	8mer (count)	8mer (posi- tion)	TargetMiner Prediction	References
1	hsa-miR-1	NM_020347	9	2291, 2259, 1903, 1758, 1499, 826, 788, 591, 372,	1	1552	1	1773	-	-	Target	Lim et al., 2005
2	hsa-miR-1	NM_005715	7	2546, 2494, 2348, 2292, 2158, 2113, 1743	-	-	1	120	2	2628, 841	Target	Lim et al., 2005
3	hsa-miR-1	NM_145257	6	4061, 2715, 2658, 1456, 251, 212	2	2843, 422	-	-	3	3583, 909, 703	Target	Lim et al., 2005
4	hsa-miR-1	NM_002822	4	1819, 1194, 703, 365	1	76	1	1769	2	1620, 1174	Target	Lim et al., 2005
5	hsa-miR-1	NM_004520	2	587, 567	1	679	1	534	1	138	Target	Lim et al., 2005
6	hsa-miR-1	NM_000165	1	643	-	-	-	-	2	1616, 485	Target	Lim et al., 2005
7	hsa-miR-1	NM_018362	8	4001, 3768, 2963, 2856, 1295, 883, 691, 626	3	3848, 2455, 1477	4	2631, 1405, 978, 325	-	-	Target	Lim et al., 2005
8	hsa-miR-1	NM_016271	7	1921, 1873, 1825, 1493, 540, 358, 328	-	-	-	-	-	-	Target	Lim et al., 2005
9	hsa-miR-1	NM_000362	7	2741, 2487, 1158, 1011, 272, 221, 127	2	3015, 466	1	3571	1	1147	Target	Lim et al., 2005
10	hsa-miR-1	NM_001111	7	2487, 1770, 867, 549, 333, 298, 68	-	-	1	2709	-	-	Target	Lim et al., 2005
11	hsa-miR-1	NM_014445	6	1864, 1817, 913, 784, 57, 29	3	1679, 166 , 143	-	-	1	2316	Target	Lim et al., 2005

12	hsa-miR-1	NM_000891	6	3247, 3195, 3163, 2992, 2468, 1138	1	1095	-	-	1	1083	Target	Lim et al., 2005
13	hsa-miR-1	NM_017542	4	1741, 1449, 275, 70	2	1435, 233	1	554	-	-	Target	Lim et al., 2005
14	hsa-miR-1	NM_005324	4	1976, 1393, 571, 549	3	1535, 701, 118	1	812	-	-	Target	Lim et al., 2005
15	hsa-miR-1	NM_006148	4	2927, 2061, 621, 74	-	-	1	414	3	2774, 360, 36	Target	Lim et al., 2005
16	hsa-miR-1	NM_015271	7	4110, 3780, 2919, 2819, 1612, 1463, 486	-	-	2	1678, 1263	2	4032, 2706	Target	Lim et al., 2005
17	hsa-miR-1	NM_019004	2	2421, 342	3	937, 414, 280	2	2330, 1724	1	727	Target	Lim et al., 2005
18	hsa-miR-1	NM_019063	6	2276, 1955, 1572, 1566, 1557, 1468	2	2112, 1445	1	795	-	-	Target	Lim et al., 2005
19	hsa-miR-1	NM_015455	8	3411, 3150, 1526, 1286, 1105, 1032, 801, 384	1	2687	1	837	-	-	Target	Lim et al., 2005
20	hsa-miR-1	NM_014904	6	3944, 3154, 853, 549, 487, 112	1	3705	1	1446	-	-	Target	Lim et al., 2005
21	hsa-miR-1	NM_000161	6	1681, 1586, 1467, 704, 511, 115	1	1294	3	1735, 1706, 608	1	83	Target	Lim et al., 2005
22	hsa-miR-1	NM_003203	6	2486, 2304, 1826, 1632, 144, 92	-	-	-	-	-	-	Target	Lim et al., 2005
23	hsa-miR-1	NM_019027	6	1974, 1914, 1057, 724, 274, 199	2	2392, 242	3	2586, 1901, 208	-	-	Target	Lim et al., 2005
24	hsa-miR-1	NM_152282	4	1112, 1024, 1011, 380	1	1355	-	-	-	-	Target	Lim et al., 2005
25	hsa-miR-1	NM_024738	4	1646, 565, 542, 522	2	685, 451	3	1943, 1497, 1348	1	418	Target	Lim et al., 2005
26	hsa-miR-1	NM_145341	5	676, 239, 142, 127, 119	1	287	-	-	-	-	Target	Lim et al., 2005
27	hsa-miR-1	NM_175866	4	1189, 167, 110, 43	1	56	1	550	-	-	Target	Lim et al., 2005
28	hsa-miR-1	NM_000219	5	2487, 2305, 1671, 273, 171	-	-	3	2051, 658, 63	1	2142	Target	Lim et al., 2005
29	hsa-miR-1	NM_170735	6	1769, 1073, 790, 664, 643, 406	1	2013	3	854, 396, 226	-	-	Target	Lim et al., 2005
30	hsa-miR-1	NM_014918	5	1637, 1608, 1190, 1108, 526	1	444	2	1319, 318	1	386	Target	Lim et al., 2005
31	hsa-miR-1	NM_018448	2	940, 245	2	1234, 508	1	959	-	-	Target	Lim et al., 2005

32	hsa-miR-1	NM_003417	19	8489, 7569, 7026, 6776, 6692, 6519, 6450, 6279, 5955, 3723, 3051, 2892, 2744, 2445, 1974, 895, 702, 533, 357	2	7579, 430	2	2778, 2005	2	2582, 721	Target	Lim et al., 2005
33	hsa-miR-1	NM_004815	15	4771, 4425, 4249, 3898, 3559, 3334, 3257, 3174, 1942, 1877, 884, 854, 727, 687, 190	-	-	1	1108	-	-	Target	Lim et al., 2005
34	hsa-miR-1	NM_000274	2	216, 71	-	-	1	547	1	89	Target	Lim et al., 2005
35	hsa-miR-1	NM_014937	2	429, 392	2	1280, 191	-	-	1	1184	Target	Lim et al., 2005
36	hsa-miR-1	NM_014408	5	532, 217, 190, 133, 113	-	-	1	616	-	-	Target	Lim et al., 2005
37	hsa-miR-1	NM_006454	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
38	hsa-miR-1	NM_003769	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
39	hsa-miR-1	NM_013412	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
40	hsa-miR-1	NM_005034	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
41	hsa-miR-1	NM_002639	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
42	hsa-miR-1	NM_018319	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
43	hsa-miR-1	NM_000270	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
44	hsa-miR-1	NM_007081	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
45	hsa-miR-1	NM_018413	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
46	hsa-miR-1	NM_006367	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
47	hsa-miR-1	NM_003564	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
48	hsa-miR-1	NM_022075	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
49	hsa-miR-1	NM_001829	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
50	hsa-miR-1	NM_001042 351	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005

51	hsa-miR-1	NM_003290	-	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
52	hsa-miR-1	NM_024792	-	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
53	hsa-miR-1	NM_172020	-	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
54	hsa-miR-1	NM_152450	-	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
55	hsa-miR-1	NM_173505	-	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
56	hsa-miR-1	NM_018290	3	1229, 1220, 432	-	-	2	199, 132	-	-	-	Target	Lim et al., 2005
57	hsa-miR-1	NM_005345	-	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
58	hsa-miR-1	NM_021913	-	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
59	hsa-miR-1	NM_022071	-	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
60	hsa-miR-1	NM_001194	-	-	-	-	-	-	-	-	-	Non-Target	Luo X et al., 2008
61	hsa-miR-1	NM_005477	-	-	-	-	-	-	-	-	-	Non-Target	Luo X et al., 2008
62	hsa-miR-1	NM_022098	-	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
63	hsa-miR-1	NM_019114	-	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
64	hsa-miR-1	NM_003271	-	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
65	hsa-miR-1	NM_018330	-	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
66	hsa-miR-1	NM_015318	-	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
67	hsa-miR-1	NM_002999	-	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
68	hsa-miR-1	NM_016291	-	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
69	hsa-miR-1	NM_016004	-	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
70	hsa-miR-124	NM_152237	1	250	1	1706	-	-	-	-	-	Target	Wang et al., 2006
71	hsa-miR-124	NM_021814	3	1658, 1602, 1572	3	1434, 418, 271	-	-	-	-	-	Target	Wang et al., 2006
72	hsa-miR-124	NM_000696	-	-	1	746	1	187	-	-	-	Target	Lim et al., 2005
73	hsa-miR-124	NM_001980	2	2230, 1807	1	346	-	-	-	-	-	Target	Lim et al., 2005
74	hsa-miR-124	NM_002293	3	2406, 1731, 212	1	2687	4	2667, 1687, 576, 66	-	-	-	Target	Wang et al., 2006
75	hsa-miR-124	NM_002958	7	948, 892, 658, 359, 110, 73, 38	1	139	-	-	1	128	-	Target	Lim et al., 2005

76	hsa-miR-124	NM_003909	4	2789, 2060, 688, 383	-	-	4	2895, 2284, 1230, 488	1	2686	Target	Lim et al., 2005
77	hsa-miR-124	NM_003945	3	340, 186, 57	2	155, 127	-	-	-	-	Target	Wang et al., 2006
78	hsa-miR-124	NM_004339	4	1875, 1421, 1337, 1315	-	-	-	-	1	1945	Target	Lim et al., 2005
79	hsa-miR-124	NM_004670	9	1548, 1515, 1499, 1160, 1147, 360, 319, 132, 71	-	-	-	-	1	1604	Target	Lim et al., 2005
80	hsa-miR-124	NM_004817	1	602	-	-	-	-	-	-	Target	Lim et al., 2005
81	hsa-miR-124	NM_004945	2	805, 164	-	-	1	577	-	-	Target	Lim et al., 2005
82	hsa-miR-124	NM_005327	1	66	-	-	3	657, 527, 257	-	-	Target	Lim et al., 2005
83	hsa-miR-124	NM_005498	1	92	1	299	1	280	-	-	Target	Lim et al., 2005
84	hsa-miR-124	NM_005730	17	3602, 3279, 3025, 2917, 2740, 2719, 2306, 2229, 1297, 1289, 1235, 1147, 967, 680, 629, 468, 94	2	1444, 1324	2	1081, 58	-	-	Target	Lim et al., 2005
85	hsa-miR-124	NM_005754	3	979, 922, 337	1	947	1	802	-	-	Target	Lim et al., 2005
86	hsa-miR-124	NM_014447	3	1646, 1507, 1467	-	-	-	-	-	-	Target	Lim et al., 2005
87	hsa-miR-124	NM_014481	1	288	-	-	-	-	-	-	Target	Lim et al., 2005
88	hsa-miR-124	NM_014918	2	497, 174	-	-	-	-	1	1442	Target	Lim et al., 2005
89	hsa-miR-124	NM_015516	3	1475, 1401, 1185	-	-	1	294	-	-	Target	Lim et al., 2005
90	hsa-miR-124	NM_015627	7	1812, 1801, 1567, 1459, 1362, 740, 205	-	-	1	1175	1	1836	Target	Lim et al., 2005
91	hsa-miR-124	NM_018214	2	1273, 881	1	281	1	33	1	158	Target	Lim et al., 2005
92	hsa-miR-124	NM_019054	5	582, 571, 195, 89, 57	-	-	1	494	1	599	Target	Lim et al., 2005
93	hsa-miR-124	NM_020179	2	467, 127	-	-	-	-	-	-	Target	Lim et al., 2005
94	hsa-miR-124	NM_022075	4	968, 351, 268, 154	-	-	-	-	1	387	Target	Lim et al., 2005
95	hsa-miR-124	NM_024792	1	333	-	-	2	1226, 962	-	-	Target	Lim et al., 2005

96	hsa-miR-124	NM_024944	1	845	1	1214	-	-	-	-	Target	Lim et al., 2005
97	hsa-miR-124	NM_031942	3	1252, 1200, 26	-	-	1	951	-	-	Target	Lim et al., 2005
98	hsa-miR-124	NM_152261	5	2062, 1995, 986, 848, 415	3	998, 601, 434	1	1989	-	-	Target	Lim et al., 2005
99	hsa-miR-124	NM_153367	9	3813, 3807, 3260, 3199, 2940, 1601, 1195, 830, 152	1	729	-	-	2	3940, 1132	Target	Lim et al., 2005
100	hsa-miR-124	NM_172037	3	1427, 1410, 956	-	-	1	1299	-	-	Target	Lim et al., 2005
101	hsa-miR-124	NM_172105	2	2117, 1654	1	99	-	-	2	2662, 657	Target	Lim et al., 2005
102	hsa-miR-124	NM_000966	2	352, 155	-	-	1	753	-	-	Target	Lim et al., 2005
103	hsa-miR-124	NM_001951	-	-	1	189	1	499	-	-	Target	Lim et al., 2005
104	hsa-miR-124	NM_002211	1	940	-	-	3	1101, 838, 242	-	-	Target	Lim et al., 2005
105	hsa-miR-124	NM_002473	2	1040, 881	-	-	-	-	1	1303	Target	Lim et al., 2005
106	hsa-miR-124	NM_002508	3	1939, 1701, 597	-	-	-	-	1	803	Target	Lim et al., 2005
107	hsa-miR-124	NM_002633	1	508	-	-	1	451	-	-	Target	Lim et al., 2005
108	hsa-miR-124	NM_002742	2	554, 73	1	624	1	288	-	-	Target	Lim et al., 2005
109	hsa-miR-124	NM_002819	3	1104, 349, 265	2	1344, 957	-	-	1	336	Target	Lim et al., 2005
110	hsa-miR-124	NM_002835	-	-	2	214, 151	1	652	-	-	Target	Lim et al., 2005
111	hsa-miR-124	NM_003051	2	1236, 697	-	-	1	1586	1	285	Target	Wang et al., 2006
112	hsa-miR-124	NM_003068	1	380	1	701	1	849	1	446	Target	Lim et al., 2005
113	hsa-miR-124	NM_003870	1	2096	1	1435	-	-	-	-	Target	Lim et al., 2005
114	hsa-miR-124	NM_004099	3	1977, 1317, 366	-	-	1	1921	1	421	Target	Lim et al., 2005
115	hsa-miR-124	NM_004125	3	707, 60, 32	-	-	1	868	-	-	Target	Lim et al., 2005
116	hsa-miR-124	NM_004364	2	854, 123	1	938	3	988, 347, 290	-	-	Target	Lim et al., 2005
117	hsa-miR-124	NM_004685	2	808, 436,	2	1868, 958	-	-	-	-	Target	Lim et al., 2005
118	hsa-miR-124	NM_004781	3	1546, 1202, 387	-	-	2	208, 146	1	444	Target	Wang et al., 2006
119	hsa-miR-124	NM_004862	4	1608, 1081, 444, 127	2	496, 394	-	-	-	-	Target	Lim et al., 2005
120	hsa-miR-124	NM_005720	3	200, 77, 22	-	-	1	185	-	-	Target	Lim et al., 2005

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121	hsa-miR-124	NM_005903	6	5079, 2059, 1449, 998, 796, 276	1	3849	4	5176, 4681, 1901, 1070	-	-	Target	Lim et al., 2005
122	hsa-miR-124	NM_006016	4	1514, 1413, 499, 316	1	229	-	-	2	1659, 658	Target	Wang et al., 2006
123	hsa-miR-124	NM_006111	-	-	2	337, 297	-	-	-	-	Target	Wang et al., 2006
124	hsa-miR-124	NM_006320	2	1089, 955	-	-	-	-	1	724	Target	Lim et al., 2005
125	hsa-miR-124	NM_006467	2	1479, 272	1	2053	1	2171	-	-	Target	Lim et al., 2005
126	hsa-miR-124	NM_006496	2	1254, 1237	-	-	2	1685, 1566	1	1270	Target	Lim et al., 2005
127	hsa-miR-124	NM_014320	1	86	-	-	2	140, 94	-	-	Target	Lim et al., 2005
128	hsa-miR-124	NM_014445	4	1954, 1663, 1546, 494	-	-	2	1601, 194	2	1907, 1652	Target	Wang et al., 2006
129	hsa-miR-124	NM_014762	5	2532, 1893, 1643, 896, 74	-	-	-	-	1	1729	Target	Lim et al., 2005
130	hsa-miR-124	NM_016839	5	703, 675, 556, 535, 492	1	612	-	-	2	583, 86	Target	Lim et al., 2005
131	hsa-miR-124	NM_018226	2	282, 172	-	-	1	50	-	-	Target	Lim et al., 2005
132	hsa-miR-124	NM_020360	2	546, 534	-	-	-	-	1	566	Target	Lim et al., 2005
133	hsa-miR-124	NM_021961	16	7424, 7398, 6974, 6714, 6442, 5870, 5096, 4942, 4762, 2678, 2536, 2439, 2407, 1781, 1770, 1313	1	2580	4	7259, 6871, 6128, 5006	1	4661	Target	Lim et al., 2005
134	hsa-miR-124	NM_022365	-	-	-	-	-	-	1	107	Target	Lim et al., 2005
135	hsa-miR-124	NM_032139	1	92	-	-	1	1089	-	-	Target	Lim et al., 2005
136	hsa-miR-124	NM_032236	1	697	1	157	-	-	-	-	Target	Lim et al., 2005
137	hsa-miR-124	NM_145648	2	740, 188	-	-	-	-	1	175	Target	Lim et al., 2005
138	hsa-miR-124	NM_152237	1	250	1	1706	-	-	-	-	Target	Lim et al., 2005
139	hsa-miR-124	NM_172390	1	351	-	-	-	-	-	-	Target	Lim et al., 2005
140	hsa-miR-124	NM_000104	5	2947, 2665, 2392, 972, 599	1	2508	-	-	-	-	Target	Lim et al., 2005
141	hsa-miR-124	NM_000183	1	402	-	-	-	-	-	-	Target	Lim et al., 2005

142	hsa-miR-124	NM_000611	11	6584, 5849, 5560, 4684, 2433, 1965, 1918, 1282, 797, 703, 618	2	6802, 2779	3	6689, 6128, 1492	-	-	Target	Lim et al., 2005
143	hsa-miR-124	NM_001099678	6	6434, 6117, 6082, 2350, 1924, 1378	-	-	-	-	2	5116, 693	Target	Lim et al., 2005
144	hsa-miR-124	NM_001259	13	6356, 6326, 5974, 5738, 5472, 2484, 2461, 2200, 1525, 1457, 1213, 1096, 123	2	1654, 793	3	1735, 1539, 1439	-	-	Target	Lim et al., 2005
145	hsa-miR-124	NM_001921	3	1027, 257, 64	1	198	-	-	-	-	Target	Lim et al., 2005
146	hsa-miR-124	NM_003060	4	1198, 809, 125, 44	-	-	2	1296, 941	-	-	Target	Lim et al., 2005
147	hsa-miR-124	NM_004239	2	153, 120	-	-	-	-	-	-	Target	Lim et al., 2005
148	hsa-miR-124	NM_004422	4	461, 151, 84, 69	-	-	-	-	-	-	Target	Lim et al., 2005
149	hsa-miR-124	NM_004815	9	4239, 4055, 3851, 3462, 429, 394, 196, 125, 58	3	4207, 3941, 3635	1	501	-	-	Target	Lim et al., 2005
150	hsa-miR-124	NM_005397	3	3177, 2450, 212	3	3903, 3090, 3010	2	1082, 429	-	-	Target	Lim et al., 2005
151	hsa-miR-124	NM_006410	-	-	-	-	1	484	-	-	Target	Lim et al., 2005
152	hsa-miR-124	NM_014170	3	402, 330, 170	-	-	1	148	-	-	Target	Lim et al., 2005
153	hsa-miR-124	NM_014300	2	338, 109	-	-	-	-	-	-	Target	Lim et al., 2005
154	hsa-miR-124	NM_014397	1	461	1	46	-	-	-	-	Target	Lim et al., 2005
155	hsa-miR-124	NM_014452	4	1193, 932, 308, 165	1	921	-	-	-	-	Target	Lim et al., 2005
156	hsa-miR-124	NM_018370	4	2196, 1714, 1468, 571	1	2319	-	-	1	2158	Target	Lim et al., 2005
157	hsa-miR-124	NM_018719	1	70	-	-	-	-	1	398	Target	Lim et al., 2005
158	hsa-miR-124	NM_018845	-	-	2	547, 524	-	-	-	-	Target	Lim et al., 2005
159	hsa-miR-124	NM_019027	4	1871, 1789, 947, 475	1	2538	1	235	1	736	Target	Lim et al., 2005
160	hsa-miR-124	NM_019895	2	1144, 1007	-	-	2	958, 765	-	-	Target	Lim et al., 2005
161	hsa-miR-124	NM_022152	1	1090	1	1034	2	1111, 249	-	-	Target	Lim et al., 2005
162	hsa-miR-124	NM_032156	2	329, 320	-	-	-	-	-	-	Target	Lim et al., 2005

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163	hsa-miR-124	NM_144578	9	5430, 4867, 4385, 3794, 3577, 3444, 1173, 774, 34	2	5438, 4795	-	-	-	-	Target	Lim et al., 2005
164	hsa-miR-124	NM_152792	1	498	1	385	-	-	1	516	Target	Lim et al., 2005
165	hsa-miR-124	NM_153186	2	320, 94	-	-	-	-	1	827	Target	Lim et al., 2005
166	hsa-miR-124	NM_173607	3	1919, 1751, 320	-	-	1	225	1	2104	Target	Lim et al., 2005
167	hsa-miR-124	NM_175866	3	1484, 1458, 336	-	-	-	-	-	-	Target	Lim et al., 2005
168	hsa-miR-124	NM_181722	1	709	-	-	1	818	-	-	Target	Lim et al., 2005
169	hsa-miR-124	NM_206894	1	737	1	951	-	-	-	-	Target	Lim et al., 2005
170	hsa-miR-124	NM_213636	3	223, 176, 77	-	-	-	-	-	-	Target	Lim et al., 2005
171	hsa-miR-124	NM_000075	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
172	hsa-miR-124	NM_002632	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
173	hsa-miR-124	NM_004402	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
174	hsa-miR-124	NM_030935	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
175	hsa-miR-124	NM_178507	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
176	hsa-miR-124	NM_001084	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
177	hsa-miR-124	NM_004706	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
178	hsa-miR-124	NM_006289	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
179	hsa-miR-124	NM_004710	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
180	hsa-miR-124	NM_145204	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
181	hsa-miR-124	NM_178439	-	-	-	-	-	-	-	-	Non-Target	Lim et al., 2005
182	hsa-miR-140-3p	NM_006037	6	4897, 3097, 783, 706, 514, 317	2	4586, 1045	1	4289	-	-	Target	Tuddenham et al., 2006; Nielsen et al., 2007
183	hsa-miR-17-5p	NM_006534	6	3421, 2859, 2711, 2629, 1043, 317	-	-	1	1302	2	1265, 721	Target	Hossain et al., 2006, Nielsen et al., 2007

184	hsa-miR-206	NM_007124	7	1425, 1313, 1276, 763, 733, 397, 276	-	-	1	406	-	-	Target	Rosenberg et al., 2006; Nielsen et al., 2007
185	hsa-miR-206	NM_007085	2	1036, 199	1	1843	2	2400, 2119	-	-	Target	Rosenberg et al., 2006; Nielsen et al., 2007
186	hsa-miR-208a	NM_005121	4	3002, 967, 795, 476	3	3502, 3381, 1047	-	-	2	3644, 572	Target	Nielsen et al., 2007
187	hsa-miR-21	NM_000366	-	-	-	-	-	-	-	-	Non-Target	Nielsen et al., 2007

Table T3. Predictions by TargetMiner on the set of 59 negative test examples. The result consists of different seed-site interaction information. References denote from which experiments the examples are chosen.

	miRNA	mRNA	6mer (count)	6mer (position)	7mer-A1 (count)	7mer-A1 (position)	7mer-m8 (count)	7mer-m8 (position)	8mer (count)	8mer (position)	TargetMiner Prediction	References
1	dme-miR-278	NM_057426	-	-	-	-	-	-	-	-	Non-Target	Robins et al, 2005
2	dme-miR-286	NM_080709	-	-	-	-	-	-	-	-	Non-Target	Robins et al, 2005
3	dme-miR-287	NM_080265	-	-	-	-	-	-	-	-	Non-Target	Robins et al, 2005
4	dme-miR-317	NM_078846	-	-	-	-	-	-	-	-	Non-Target	Robins et al, 2005
5	dme-miR-318	NM_001038 941	-	-	-	-	-	-	-	-	Non-Target	Robins et al, 2005
6	hsa-let-7b	NM_001614	-	-	-	-	-	-	-	-	Non-Target	Kiriakidou et al, 2004
7	hsa-let-7b	NM_144563	3	809, 92, 64	-	-	-	-	-	-	Target	Kiriakidou et al, 2004
8	hsa-let-7b	NM_001237	1	1192	-	-	-	-	-	-	Target	Schultz et al, 2008
9	hsa-let-7e	NM_003758	3	1121, 371, 262	1	510	-	-	1	385	Target	Kiriakidou et al, 2004
10	hsa-miR-1	NM_021109	-	-	-	-	-	-	-	-	Non-Target	Zhao et al,

											2005	
11	hsa-miR-1	NM_001111285	-	-	-	-	-	-	-	-	Non-Target	Zhao et al, 2005
12	hsa-miR-103	NM_005276	4	1131, 674, 667, 292	-	-	-	-	-	-	Target	Kiriakidou et al, 2004
13	hsa-miR-124	NM_004781	3	1546, 1202, 387	-	-	2	208, 146	1	444	Target	Krek et al, 2005
14	hsa-miR-124	NM_001621	7	2954, 2816, 1079, 835, 549, 460, 157	-	-	2	521, 495	1	805	Target	Krek et al, 2005
15	hsa-miR-124	NM_024551	3	2229, 1876, 669	1	2318	1	651	-	-	Target	Krek et al, 2005
16	hsa-miR-124a	NM_138973	5	3478, 1333, 1218, 996, 138	3	3532, 2521, 481	-	-	1	1312	Target	Hebert et al, 2008
17	hsa-miR-126	NM_033102	-	-	-	-	-	-	-	-	Non-Target	Musiyenko et al, 2008
18	hsa-miR-128	NM_003176	-	-	-	-	-	-	-	-	Non-Target	Visvanathan et al, 2007
19	hsa-miR-138	NM_033102	-	-	-	-	-	-	-	-	Non-Target	Musiyenko et al, 2008
20	hsa-miR-141	NM_006281	-	-	-	-	-	-	-	-	Non-Target	Kiriakidou et al, 2004
21	hsa-miR-141	NM_001730	-	-	-	-	-	-	-	-	Non-Target	Kiriakidou et al, 2004
22	hsa-miR-145	NM_014547	-	-	-	-	-	-	-	-	Non-Target	Kiriakidou et al, 2004
23	hsa-miR-155	NM_032049	-	-	-	-	-	-	-	-	Non-Target	Sethupathy P et al, 2007
24	hsa-miR-155	NM_024900	-	-	-	-	-	-	-	-	Non-Target	Skalsky et al, 2007
25	hsa-miR-15a	NM_138973	1	2587	-	-	1	273	-	-	Target	Hebert et al, 2008

26	hsa-miR-16	NM_001241	5	1674, 956, 860, 634, 381	1	979	5	1907, 450, 230, 200, 197	-	-	Target	Kiriakidou et al, 2004
27	hsa-miR-16	NM_003376	1	489	-	-	-	-	1	283	Target	Kiriakidou et al, 2004
28	hsa-miR-19a	NM_019102	-	-	-	-	-	-	-	-	Non-Target	Lewis et al, 2003
29	hsa-miR-19a	NM_001110792	-	-	-	-	-	-	-	-	Non-Target	Lewis et al, 2003
30	hsa-miR-19b	NM_138973	2	2548, 1046	-	-	-	-	1	3455	Target	Hebert SS et al, 2008
31	hsa-miR-200a	NM_030751	-	-	-	-	-	-	-	-	Non-Target	Korpál et al, 2008
32	hsa-miR-24	NM_014730	6	5197, 4972, 4616, 3874, 1125, 607	1	1854	1	4897	3	3662, 2060, 942,	Target	Kiriakidou et al, 2004
33	hsa-miR-29	NM_000883	-	-	-	-	-	-	-	-	Non-Target	Arora et al, 2007
34	hsa-miR-29c	NM_054016	-	-	-	-	-	-	-	-	Non-Target	Sengupta et al, 2008
35	hsa-miR-302a	NM_003182	-	-	-	-	-	-	-	-	Non-Target	Greco et al, 2007
36	hsa-miR-375	NM_130439	-	-	-	-	-	-	-	-	Non-Target	Krek et al, 2005
37	hsa-miR-375	NM_002196	-	-	-	-	-	-	-	-	Non-Target	Krek et al, 2005
38	hsa-miR-429	NM_030751	2	1461, 1413	-	-	2	1779, 469	4	1540, 1320, 1250, 376	Target	Korpál et al, 2008
39	mmu-let-7b	NM_009075	-	-	-	-	-	-	-	-	Non-Target	Kiriakidou et al, 2004
40	mmu-let-7b	NM_009609	-	-	-	-	-	-	-	-	Non-Target	Kiriakidou et al, 2004
41	mmu-miR-1	NM_021278	-	-	-	-	-	-	-	-	Non-Target	Zhao et al, 2005
42	mmu-miR-1	NM_184052	-	-	-	-	-	-	-	-	Non-Target	Zhao et al, 2005
43	mmu-miR-103	NM_010271	2	297, 201	-	-	-	-	-	-	Target	Kiriakidou et al, 2004

44	mmu-miR-124	NM_009498	2	1545, 140	1	1048	2	219, 154	1	468	Target	Krek et al, 2005
45	mmu-miR-124	NM_197985	3	2612, 2323, 717	1	2358	2	868, 735	-	-	Target	Krek et al, 2005
46	mmu-miR-124	NM_013464	4	1953, 1035, 571, 544	-	-	1	519	1	854	Target	Krek et al, 2005
47	mmu-miR-141	NM_009769	-	-	-	-	-	-	-	-	Non-Target	Kiriakidou et al, 2004
48	mmu-miR-141	NM_019635	-	-	-	-	-	-	-	-	Non-Target	Kiriakidou et al, 2004
49	mmu-miR-141	NM_025656	-	-	-	-	-	-	-	-	Non-Target	Korpál et al, 2008
50	mmu-miR-141	NM_014795	-	-	-	-	-	-	-	-	Non-Target	Korpál et al, 2008
51	mmu-miR-145	NM_016963	-	-	-	-	-	-	-	-	Non-Target	Kiriakidou et al, 2004
52	mmu-miR-16	NM_028399	7	826, 818, 491, 413, 295, 255, 236	-	-	2	308, 112	1	240	Target	Kiriakidou et al, 2004
53	mmu-miR-200a	NM_030751	-	-	-	-	-	-	-	-	Non-Target	Korpál et al, 2008
54	mmu-miR-215	NM_025656	-	-	-	-	-	-	-	-	Non-Target	Kato et al, 2007
55	mmu-miR-215	NM_014795	-	-	-	-	-	-	-	-	Non-Target	Kato M et al, 2007
56	mmu-miR-375	NM_016889	-	-	-	-	-	-	-	-	Non-Target	Krek et al, 2005
57	mmu-miR-375	NM_001008 542	-	-	-	-	-	-	-	-	Non-Target	Krek et al, 2005
58	mmu-miR-375	NM_013464	-	-	-	-	-	-	-	-	Non-Target	Krek et al, 2005
59	mmu-miR-429	NM_030751	2	1461, 1413	-	-	2	1779, 469	4	1540, 1320, 1250, 376	Target	Korpál et al, 2008

Table T4. A List of Tissue specific human miRNAs.

	miRNA	Tissue type
1	hsa-let-7g	Thymus
2	hsa-let-7i	Thymus
3	hsa-miR-1	Heart, Prostate
4	hsa-miR-103	Brain
5	hsa-miR-124	Brain
6	hsa-miR-132	Brain
7	hsa-miR-137	Brain, Lung
8	hsa-miR-138	Brain
9	hsa-miR-143	Prostate, Uterus
10	hsa-miR-145	Prostate, Uterus
11	hsa-miR-153	Brain, Pancreas
12	hsa-miR-155	Kidney
13	hsa-miR-15a	Bone marrow, Heart
14	hsa-miR-190	Brain, Kidney
15	hsa-miR-191	Bone marrow, Brain
16	hsa-miR-196b	Bone marrow
17	hsa-miR-200a	Kidney, Pancreas
18	hsa-miR-203	Lung, Thymus
19	hsa-miR-204	Kidney, Testis
20	hsa-miR-205	Prostate, Thymus
21	hsa-miR-22	Brain, Lung
22	hsa-miR-221	Brain
23	hsa-miR-222	Brain, Lung
24	hsa-miR-23a	Lung, Thymus
25	hsa-miR-23b	Heart
26	hsa-miR-24	Placenta
27	hsa-miR-26a	Uterus
28	hsa-miR-26b	Uterus
29	hsa-miR-27a	Uterus
30	hsa-miR-29a	Uterus
31	hsa-miR-29b	Brain
32	hsa-miR-30c	Heart, Kidney
33	hsa-miR-345	Bone marrow
34	hsa-miR-7	Brain, Adrenal
35	hsa-miR-9	Brain
36	hsa-mir-99a	Uterus
37	hsa-miR-99b	Heart

Table T5. The table represents a list of tissue specific negative training examples with their corresponding tissue types. It denotes for which tissue type the examples are specific.

	miRNA	Refseq ID	Tissue Type		miRNA	Refseq ID	Tissue Type
1	hsa-let-7g	NM_005546	Thymus	146	hsa-miR-204	NM_178424	Testis
2	hsa-let-7g	NM_014716	Thymus	147	hsa-miR-204	NM_014384	Kidney
3	hsa-let-7i	NM_001152	Thymus	148	hsa-miR-204	NM_000159	Kidney
4	hsa-let-7i	NM_014716	Thymus	149	hsa-miR-204	NM_013976	Kidney
5	hsa-let-7i	NM_004456	Thymus	150	hsa-miR-204	NM_002361	Kidney
6	hsa-let-7i	NM_152998	Thymus	151	hsa-miR-204	NM_000294	Testis
7	hsa-miR-1	NM_002812	Heart	152	hsa-miR-205	NM_005978	Prostate
8	hsa-miR-1	NM_002078	Prostate	153	hsa-miR-205	NM_003890	Prostate, Thymus
9	hsa-miR-1	NM_000461	Heart	154	hsa-miR-205	NM_001886	Prostate
10	hsa-miR-1	NM_000481	Heart	155	hsa-miR-205	NM_030960	Prostate
11	hsa-miR-1	NM_003613	Heart	156	hsa-miR-205	NM_004103	Thymus
12	hsa-miR-103	NM_003165	Brain	157	hsa-miR-205	NM_173174	Thymus
13	hsa-miR-103	NM_016453	Brain	158	hsa-miR-205	NM_173176	Thymus
14	hsa-miR-103	NM_184231	Brain	159	hsa-miR-205	NM_030770	Prostate
15	hsa-miR-103	NM_000067	Brain	160	hsa-miR-205	NM_030775	Prostate
16	hsa-miR-103	NM_014575	Brain	161	hsa-miR-22	NM_005855	Liver
17	hsa-miR-103	NM_001094	Brain	162	hsa-miR-22	NM_022449	Liver
18	hsa-miR-124	NM_019555	Brain	163	hsa-miR-22	NM_001013436	Liver
19	hsa-miR-124	NM_006527	Brain	164	hsa-miR-22	NM_001013440	Liver
20	hsa-miR-124	NM_015320	Brain	165	hsa-miR-22	NM_001003954	Liver
21	hsa-miR-124	NM_002436	Brain	166	hsa-miR-22	NM_004306	Liver
22	hsa-miR-124	NM_003458	Brain	167	hsa-miR-22	NM_005700	Liver
23	hsa-miR-132	NM_016310	Brain	168	hsa-miR-22	NM_005029	Liver
24	hsa-miR-132	NM_000320	Brain	169	hsa-miR-22	NM_000017	Liver
25	hsa-miR-132	NM_001819	Brain	170	hsa-miR-22	NM_001144	Liver
26	hsa-miR-132	NM_004505	Brain	171	hsa-miR-22	NM_005258	Liver
27	hsa-miR-132	NM_182470	Brain	172	hsa-miR-221	NM_024663	Brain
28	hsa-miR-137	NM_005574	Brain, Lung	173	hsa-miR-221	NM_014303	Brain
29	hsa-miR-137	NM_005539	Brain	174	hsa-miR-221	NM_000251	Brain
30	hsa-miR-137	NM_002436	Brain	175	hsa-miR-222	NM_000251	Brain
31	hsa-miR-137	NM_003763	Brain	176	hsa-miR-222	NM_004541	Brain
32	hsa-miR-137	NM_001001433	Brain	177	hsa-miR-222	NM_014820	Brain
33	hsa-miR-137	NM_024663	Brain	178	hsa-miR-23a	NM_003890	Lung, Thymus
34	hsa-miR-138	NM_014110	Brain	179	hsa-miR-23a	NM_005720	Lung
35	hsa-miR-138	NM_003592	Brain	180	hsa-miR-23a	NM_003255	Lung
36	hsa-miR-138	NM_003325	Brain	181	hsa-miR-23a	NM_018961	Thymus
37	hsa-miR-138	NM_002109	Brain	182	hsa-miR-23b	NM_000191	Heart
38	hsa-miR-138	NM_002738	Brain	183	hsa-miR-23b	NM_002488	Heart
39	hsa-miR-138	NM_002695	Brain	184	hsa-miR-23b	NM_000435	Heart
40	hsa-miR-138	NM_004564	Brain	185	hsa-miR-23b	NM_001163	Heart

41	hsa-miR-143	NM_001185	Prostate	186	hsa-miR-23b	NM_017533	Heart
42	hsa-miR-143	NM_004126	Uterus	187	hsa-miR-23b	NM_005001	Heart
43	hsa-miR-143	NM_021910	Prostate	188	hsa-miR-24	NM_004750	Placenta
44	hsa-miR-143	NM_000867	Prostate, Uterus	189	hsa-miR-24	NM_002019	Placenta
45	hsa-miR-145	NM_005978	Prostate	190	hsa-miR-24	NM_017459	Placenta
46	hsa-miR-145	NM_015392	Prostate, Uterus	191	hsa-miR-24	NM_002403	Placenta
47	hsa-miR-145	NM_000299	Prostate	192	hsa-miR-24	NM_002084	Placenta
48	hsa-miR-145	NM_003008	Prostate	193	hsa-miR-24	NM_001124	Placenta
49	hsa-miR-145	NM_005795	Uterus	194	hsa-miR-24	NM_004995	Placenta
50	hsa-miR-145	NM_004755	Uterus	195	hsa-miR-24	NM_002964	Placenta
51	hsa-miR-145	NM_004672	Prostate, Uterus	196	hsa-miR-24	NM_004429	Placenta
52	hsa-miR-145	NM_000350	Prostate	197	hsa-miR-26a	NM_000719	Uterus
53	hsa-miR-145	NM_004532	Prostate	198	hsa-miR-26a	NM_005257	Uterus
54	hsa-miR-145	NM_004785	Prostate	199	hsa-miR-26a	NM_018222	Uterus
55	hsa-miR-145	NM_021910	Prostate	200	hsa-miR-26a	NM_004684	Uterus
56	hsa-miR-145	NM_001039550	Prostate	201	hsa-miR-26b	NM_004684	Uterus
57	hsa-miR-153	NM_005165	Brain	202	hsa-miR-26b	NM_017426	Uterus
58	hsa-miR-153	NM_001092	Brain	203	hsa-miR-26b	NM_018222	Uterus
59	hsa-miR-153	NM_015185	Brain	204	hsa-miR-26b	NM_000210	Uterus
60	hsa-miR-153	NM_004644	Brain	205	hsa-miR-27a	NM_005545	Uterus
61	hsa-miR-153	NM_005648	Brain	206	hsa-miR-27a	NM_201526	Uterus
62	hsa-miR-153	NM_006158	Brain	207	hsa-miR-27a	NM_001001392	Uterus
63	hsa-miR-153	NM_001201	Brain, Pancreas	208	hsa-miR-27a	NM_001001390	Uterus
64	hsa-miR-153	NM_000320	Brain	209	hsa-miR-27a	NM_001001391	Uterus
65	hsa-miR-153	NM_005271	Brain	210	hsa-miR-27a	NM_001001389	Uterus
66	hsa-miR-153	NM_005010	Brain	211	hsa-miR-27a	NM_000610	Uterus
67	hsa-miR-153	NM_001037132	Brain	212	hsa-miR-27a	NM_198177	Uterus
68	hsa-miR-153	NM_001037133	Brain	213	hsa-miR-27a	NM_198159	Uterus
69	hsa-miR-153	NM_176795	Brain	214	hsa-miR-27a	NM_198158	Uterus
70	hsa-miR-153	NM_005343	Brain	215	hsa-miR-27a	NM_000248	Uterus
71	hsa-miR-153	NM_006176	Brain	216	hsa-miR-27a	NM_198178	Uterus
72	hsa-miR-153	NM_016237	Brain	217	hsa-miR-27a	NM_198256	Uterus
73	hsa-miR-153	NM_003367	Brain	218	hsa-miR-29a	NM_001849	Uterus
74	hsa-miR-153	NM_207291	Brain	219	hsa-miR-29a	NM_005157	Uterus
75	hsa-miR-153	NM_004128	Pancreas	220	hsa-miR-29a	NM_001856	Uterus
76	hsa-miR-155	NM_000850	Kidney	221	hsa-miR-29a	NM_002403	Uterus
77	hsa-miR-155	NM_001122	Kidney	222	hsa-miR-29a	NM_017459	Uterus
78	hsa-miR-155	NM_152869	Kidney	223	hsa-miR-29a	NM_021738	Uterus
79	hsa-miR-155	NM_004683	Kidney	224	hsa-miR-29a	NM_003174	Uterus
80	hsa-miR-15a	NM_001003941	Heart	225	hsa-miR-29a	NM_014296	Uterus
81	hsa-miR-15a	NM_002541	Heart	226	hsa-miR-29a	NM_014211	Uterus
82	hsa-miR-15a	NM_006254	Bone marrow	227	hsa-miR-29a	NM_016831	Uterus
83	hsa-miR-15a	NM_212539	Bone marrow	228	hsa-miR-29b	NM_201539	Brain
84	hsa-miR-15a	NM_000803	Heart	229	hsa-miR-29b	NM_201540	Brain
85	hsa-miR-15a	NM_000552	Heart	230	hsa-miR-29b	NM_201535	Brain
86	hsa-miR-15a	NM_006412	Heart	231	hsa-miR-29b	NM_201537	Brain
87	hsa-miR-15a	NM_000286	Bone marrow	232	hsa-miR-29b	NM_182764	Brain
88	hsa-miR-15a	NM_001024382	Bone marrow	233	hsa-miR-29b	NM_002811	Brain

89	hsa-miR-15a	NM_000190	Bone marrow	234	hsa-miR-29b	NM_000067	Brain
90	hsa-miR-15a	NM_001040031	Bone marrow, Heart	235	hsa-miR-29b	NM_005175	Brain
91	hsa-miR-15a	NM_001002027	Heart	236	hsa-miR-29b	NM_001002027	Brain
92	hsa-miR-15a	NM_005175	Heart	237	hsa-miR-29b	NM_002079	Brain
93	hsa-miR-15a	NM_002134	Heart	238	hsa-miR-30c	NM_003891	Heart, Kidney
94	hsa-miR-15a	NM_005675	Heart	239	hsa-miR-30c	NM_002084	Heart, Kidney
95	hsa-miR-15a	NM_002250	Bone marrow, Heart	240	hsa-miR-30c	NM_000124	Heart
96	hsa-miR-15a	NM_018696	Heart	241	hsa-miR-30c	NM_003569	Kidney
97	hsa-miR-15a	NM_005529	Heart	242	hsa-miR-30c	NM_005956	Kidney
98	hsa-miR-190	NM_013445	Brain	243	hsa-miR-30c	NM_000192	Heart
99	hsa-miR-190	NM_003350	Brain	244	hsa-miR-30c	NM_181486	Heart
100	hsa-miR-190	NM_003430	Brain	245	hsa-miR-30c	NM_005550	Kidney
101	hsa-miR-190	NM_006409	Brain	246	hsa-miR-30c	NM_002633	Heart
102	hsa-miR-191	NM_003846	Brain	247	hsa-miR-30c	NM_000727	Heart
103	hsa-miR-191	NM_001014444	Brain	248	hsa-miR-30c	NM_000696	Kidney
104	hsa-miR-191	NM_001888	Brain	249	hsa-miR-30c	NM_002631	Kidney
105	hsa-miR-191	NM_002126	Brain	250	hsa-miR-30c	NM_002560	Kidney
106	hsa-miR-191	NM_002109	Brain	251	hsa-miR-345	NM_018962	Bone marrow
107	hsa-miR-191	NM_022003	Brain	252	hsa-miR-7	NM_006343	Brain, Adrenal
108	hsa-miR-191	NM_004420	Brain	253	hsa-miR-7	NM_139343	Brain, Adrenal
109	hsa-miR-196b	NM_014164	Bone marrow	254	hsa-miR-7	NM_139348	Brain, Adrenal
110	hsa-miR-196b	NM_144779	Bone marrow	255	hsa-miR-7	NM_139346	Brain, Adrenal
111	hsa-miR-196b	NM_001870	Bone marrow	256	hsa-miR-7	NM_002695	Brain
112	hsa-miR-196b	NM_003120	Bone marrow	257	hsa-miR-7	NM_021727	Brain, Adrenal
113	hsa-miR-200a	NM_004988	Pancreas, Kidney	258	hsa-miR-7	NM_002390	Brain, Adrenal
114	hsa-miR-200a	NM_002674	Kidney	259	hsa-miR-7	NM_005872	Brain
115	hsa-miR-200a	NM_021804	Kidney	260	hsa-miR-7	NM_000835	Brain
116	hsa-miR-200a	NM_030765	Kidney	261	hsa-miR-7	NM_002436	Brain
117	hsa-miR-200a	NM_002020	Kidney	262	hsa-miR-7	NM_022169	Brain, Adrenal
118	hsa-miR-200a	NM_182925	Kidney	263	hsa-miR-7	NM_000218	Adrenal
119	hsa-miR-200a	NM_014384	Kidney	264	hsa-miR-7	NM_004322	Brain
120	hsa-miR-200a	NM_004170	Kidney	265	hsa-miR-7	NM_004378	Brain
121	hsa-miR-203	NM_002087	Lung	266	hsa-miR-9	NM_003458	Brain
122	hsa-miR-204	NM_006066	Kidney	267	hsa-miR-9	NM_003165	Brain
123	hsa-miR-204	NM_004505	Testis	268	hsa-miR-9	NM_001032221	Brain
124	hsa-miR-204	NM_153285	Kidney	269	hsa-miR-9	NM_005736	Brain
125	hsa-miR-204	NM_153283	Kidney	270	hsa -miR-9	NM_004569	Brain
126	hsa-miR-204	NM_153281	Kidney	271	hsa -miR-9	NM_199295	Brain
127	hsa-miR-204	NM_014236	Kidney, Testis	272	hsa -miR-9	NM_004505	Brain
128	hsa-miR-204	NM_003041	Kidney, Testis	273	hsa -miR-9	NM_000255	Brain
129	hsa-miR-204	NM_182710	Testis	274	hsa -miR-9	NM_153500	Brain
130	hsa-miR-204	NM_015971	Kidney, Testis	275	hsa -miR-9	NM_006549	Brain
131	hsa-miR-204	NM_000035	Kidney	276	hsa -miR-9	NM_172226	Brain
132	hsa-miR-204	NM_004790	Kidney	277	hsa -miR-9	NM_153499	Brain
133	hsa-miR-204	NM_005605	Testis	278	hsa -miR-9	NM_172216	Brain
134	hsa-miR-204	NM_153766	Kidney	279	hsa -miR-9	NM_172214	Brain

135	hsa-miR-204	NM_000220	Kidney	280	hsa -miR-9	NM_172215	Brain
136	hsa-miR-204	NM_153765	Kidney	281	hsa -miR-9	NM_020184	Brain
137	hsa-miR-204	NM_153767	Kidney	282	hsa -miR-9	NM_014292	Brain
138	hsa-miR-204	NM_153764	Kidney	283	hsa -miR-9	NM_002300	Brain
139	hsa-miR-204	NM_004110	Testis	284	hsa -miR-9	NM_005891	brain
140	hsa-miR-204	NM_000520	Kidney	285	hsa -mir-99a	NM_004341	Uterus
141	hsa-miR-204	NM_002428	Kidney, Testis	286	hsa -miR-99b	NM_000432	Heart
142	hsa-miR-204	NM_002147	Kidney	287	hsa -miR-99b	NM_005498	Heart
143	hsa-miR-204	NM_002153	Kidney	288	hsa -miR-99b	NM_014228	Heart
144	hsa-miR-204	NM_002980	Kidney, Testis	289	hsa -miR-99b	NM_002165	Heart
145	hsa-miR-204	NM_005074	Kidney				

Table T6. Site context specific relevant features (all the 90 features) used in TargetMiner*

Feat. No.	Feature Name	F-Score
<u>Features from Seed matching site (Category 1)</u>		
1	Number of effective six mer seed matching sites	0.07544
2	Number of local AU rich regions immediately flanking the effective six mer seed site	0.081817
3	Number of additional Watson-Crick pairing associated with effective six mer	0.000053
4	Number of effective seven mer m8 seed matching sites	0.001452
5	Number of local AU rich regions immediately flanking the effective seven mer m8 seed site	0.043433
6	Number of additional Watson-Crick pairing associated with effective seven mer m8	0.001771
7	Number of effective seven mer A1 seed matching sites	0.007319
8	Number of local AU rich regions immediately flanking the effective seven mer A1 seed site	0.014051
9	Number of additional Watson-Crick pairing associated with effective seven mer A1	0.008803
10	Number of eight mer effective seed matching sites	0.057679
11	Number of local AU rich regions immediately flanking the eight mer effective seed site	0.058735
12	Number of additional Watson-Crick pairing associated with effective eight mer	0.003999
<u>Frequency of Single nucleotide in seed matching site (Category 2)</u>		
13	A's frequency in effective seed matching site	0.010402
14	U's frequency in effective seed matching site	0.086076
15	G's frequency in effective seed matching site	0.020882
16	C's frequency in effective seed matching site	0.085491
<u>Frequency of Single nucleotide in seed matching out site (Category 3)</u>		
17	A's frequency in effective seed matching out site	0.115102
18	U's frequency in effective seed matching out site	0.112987
19	G's frequency in effective seed matching out site	0.03214
20	C's frequency in effective seed matching out site	0.023518
<u>Frequency of Di - nucleotides frequency in seed matching site (Category 4)</u>		
21	AA's frequency in effective seed matching site	0.000168
22	AU's frequency in effective seed matching site	0.02786
23	AG's frequency in effective seed matching site	0.003965
24	AC's frequency in effective seed matching site	0.041515
25	UA's frequency in effective seed matching site	0.011442
26	UU's frequency in effective seed matching site	0.034555
27	UG's frequency in effective seed matching site	0.019652
28	UC's frequency in effective seed matching site	0.085647

29	GA's frequency in effective seed matching site	0.01909
30	GU's frequency in effective seed matching site	0.018226
31	GG's frequency in effective seed matching site	0.001382
32	GC's frequency in effective seed matching site	0.001361
33	CA's frequency in effective seed matching site	0.063549
34	CU's frequency in effective seed matching site	0.010221
35	CG's frequency in effective seed matching site	0.11424
36	CC's frequency in effective seed matching site	0.002075
<u>Frequency of Di - nucleotides in seed matching out site (Category 5)</u>		
37	AA's frequency in effective seed matching out site	0.123524
38	AU's frequency in effective seed matching out site	0.127219
39	AG's frequency in effective seed matching out site	0.069544
40	AC's frequency in effective seed matching out site	0.053223
41	UA's frequency in effective seed matching out site	0.123514
42	UU's frequency in effective seed matching out site	0.137193
43	UG's frequency in effective seed matching out site	0.059724
44	UC's frequency in effective seed matching out site	0.044806
45	GA's frequency in effective seed matching out site	0.039236
46	GU's frequency in effective seed matching out site	0.065157
47	GG's frequency in effective seed matching out site	0.000995
48	GC's frequency in effective seed matching out site	0.000077
49	CA's frequency in effective seed matching out site	0.073765
50	CU's frequency effective in seed matching out site	0.057403
51	CG's frequency in effective seed matching out site	0.002951
52	CC's frequency in effective seed matching out site	0.000043
<u>miRNA-mRNA base interaction features in seed region (Category 6)</u>		
53	Frequency of AU base pair	0.003159
54	Frequency of UA base pair	0.006227
55	Frequency of UG base pair	0.060351
56	Frequency of GC base pair	0.000002
57	Frequency of GU base pair	0.065468
58	Frequency of CG base pair	0.045705
<u>Two consecutive miRNA-mRNA base interaction features in seed region (Bi-Di-nucleotide base pairing) (Category 7)</u>		
59	Frequency of AU-AU	0.013483
60	Frequency of AU-UA	0.000295
61	Frequency of AU-GC	0.026325
62	Frequency of AU-CG	0.027302
63	Frequency of AU-GU	0.013911
64	Frequency of AU-UG	0.012492
65	Frequency of UA-AU	0.005633
66	Frequency of UA-UA	0.007103
67	Frequency of UA-GC	0.021299
68	Frequency of UA-CG	0.052894
69	Frequency of UA-GU	0.010646
70	Frequency of UA-UG	0.078505
71	Frequency of GC-AU	0.005327
72	Frequency of GC-UA	0.001197
73	Frequency of GC-GC	0.01087

74	Frequency of GC-CG	0.005117
75	Frequency of GC-GU	0.010511
76	Frequency of GC-UG	0.011587
77	Frequency of CG-AU	0.03376
78	Frequency of CG-UA	0.002151
79	Frequency of CG-GC	0.054229
80	Frequency of CG-CG	0.00266
81	Frequency of CG-GU	0.006811
82	Frequency of CG-UG	0.007656
83	Frequency of GU-AU	0.015209
84	Frequency of GU-UA	0.015023
85	Frequency of GU-GC	0.015878
86	Frequency of GU-CG	0.000009
87	Frequency of UG-AU	0.004629
88	Frequency of UG-UA	0.000091
89	Frequency of UG-GC	0.048425
90	Frequency of UG-CG	0.003615

Table T7. Site context specific relevant features (top 30) used in TargetMiner

Sl. No.	Selected Feat. No.	Feature Name	F-Score
<u>Features from Seed matching site (Category 1)</u>			
1	1	Number of effective six mer seed matching sites	0.07544
2	2	Number of local AU rich regions immediately flanking the effective six mer seed site	0.081817
3	5	Number of local AU rich regions immediately flanking the effective seven mer m8 seed site	0.043433
4	10	Number of eight mer effective seed matching sites	0.057679
5	11	Number of local AU rich regions immediately flanking the eight mer effective seed site	0.058735
<u>Frequency of Single nucleotide in seed matching site (Category 2)</u>			
6	14	U's frequency in effective seed matching site	0.086076
7	16	C's frequency in effective seed matching site	0.085491
<u>Frequency of Single nucleotide in seed matching out site (Category 3)</u>			
8	17	A's frequency in effective seed matching out site	0.115102
9	18	U's frequency in effective seed matching out site	0.112987
<u>Frequency of Di - nucleotides in seed matching site (Category 4)</u>			
10	28	UC's frequency in effective seed matching site	0.085647
11	33	CA's frequency in effective seed matching site	0.063549
12	35	CG's frequency in effective seed matching site	0.11424
<u>Frequency of Di - nucleotides in seed matching out site (Category 5)</u>			
13	37	AA's frequency in effective seed matching out site	0.123524
14	38	AU's frequency in effective seed matching out site	0.127219
15	39	AG's frequency in effective seed matching out site	0.069544
16	40	AC's frequency in effective seed matching out site	0.053223
17	41	UA's frequency in effective seed matching out site	0.123514

18	42	UU's frequency in effective seed matching out site	0.137193
19	43	UG's frequency in effective seed matching out site	0.059724
20	44	UC's frequency in effective seed matching out site	0.044806
21	46	GU's frequency in effective seed matching out site	0.065157
22	49	CA's frequency in effective seed matching out site	0.073765
23	50	CU's frequency effective in seed matching out site	0.057403
<u>miRNA-mRNA base interaction features in seed region (Category 6)</u>			
24	55	Frequency of UG base pair	0.060351
25	57	Frequency of GU base pair	0.065468
26	58	Frequency of CG base pair	0.045705
<u>Two consecutive miRNA-mRNA base interaction features in seed region (Bi-Di-nucleotide base pairing) (Category 7)</u>			
27	68	Frequency of UA-CG	0.052894
28	70	Frequency of UA-UG	0.078505
29	79	Frequency of CG-GC	0.054229
30	89	Frequency of UG-GC	0.048425

Table T8. List of Unique identification of biologically validated targets: A set of 19 biologically validated positive examples (serial no. 1 to 19) that are not predicted by any of the four target prediction algorithms viz., miRanda, PicTar (4 way) and PicTar (5 way), TargetScan and MirTarget2 but only predicted by TargetMiner. Serial no. 20 is not predicted by TargetMiner however it is predicted by all the four algorithms.

SI	miRNA	Refseq ID
1	hsa-miR-1	NM_015455
2	hsa-miR-1	NM_014904
3	hsa-miR-1	NM_003203
4	hsa-miR-1	NM_152282
5	hsa-miR-1	NM_014937
6	hsa-miR-124	NM_000104
7	hsa-miR-124	NM_000183
8	hsa-miR-124	NM_001921
9	hsa-miR-124	NM_004239
10	hsa-miR-124	NM_004422
11	hsa-miR-124	NM_014300
12	hsa-miR-124	NM_014397
13	hsa-miR-124	NM_014452
14	hsa-miR-124	NM_018845
15	hsa-miR-124	NM_032156
16	hsa-miR-124	NM_144578
17	hsa-miR-124	NM_175866
18	hsa-miR-124	NM_206894
19	hsa-miR-206	NM_007124
20	hsa-miR-1	NM_001829

Table T9. Comparative result on SEPT7 oncogene targeted by twenty miRNAs. The last row denotes average number of genome-wide predictions per miRNA. Bold face indicates non-target confirmed by Western blot analysis.

miRNA	Biological validation	HumiTar	miRanda	PicTar	TargetScan	NBmiRTar	TargetMiner	PITA	RNAhybrid	MirTarget2	RNA22
hsa-miR-19a	1	1	1	1	0	0	1	1	1	1	0
hsa-miR-183	1	1	0	1	1	0	0	1	1	0	0
hsa-miR-141	1	1	1	1	1	0	0	1	1	1	0
hsa-miR-182	1	1	1	1	1	0	1	1	1	1	0
hsa-miR-127-3p	0	1	1	1	0	0	0	1	1	1	1
hsa-miR-448	1	1	1	0	0	0	0	1	1	0	0
hsa-miR-450b-5p	1	1	1	0	0	0	1	1	1	0	0
hsa-miR-202	1	1	0	0	0	0	0	0	1	0	1
hsa-miR-412	0	1	0	0	0	0	0	1	1	0	0
hsa-miR-148a	1	1	0	0	0	0	1	1	1	0	0
hsa-miR-106b	1	1	0	0	0	0	1	1	1	0	0
hsa-miR-134	1	1	0	0	0	1	0	1	1	0	0
hsa-miR-106a	1	1	0	0	0	0	1	1	1	0	0
hsa-miR-144	1	1	0	0	0	0	1	1	1	0	0
hsa-miR-151-3p	1	1	1	0	1	0	1	1	1	0	0
hsa-miR-384	1	1	0	0	0	0	0	1	1	0	0
hsa-miR-101	1	1	0	0	0	0	1	1	1	0	0
hsa-miR-142-5p	1	1	1	0	1	0	1	1	1	0	0
hsa-miR-129-5p	1	1	0	0	0	0	1	1	1	0	0
hsa-miR-126	1	1	0	0	0	0	0	1	1	0	0
Sensitivity=	1	0.389	0.222	0.278	0.056	0.611	0.944	1	0.167	0.056	
Specificity=	0	0.5	0.5	1	1	1	0	0	0.5	0.5	
*Average number of genome-wide predictions per miRNA=		9748	3005.5	200	685.9	3234.3	1084.5	3956	10958	255.3	1884.3

*Average number of predictions per miRNA is reported in mirecords database (<http://mirecords.umn.edu/miRecords/doc.php>). For HumiTar, information of the average number of predictions per miRNA is obtained from (Ruan *et al.*, 2008)

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