

Supplementary Materials

MicroRNA-30a attenuates mutant KRAS-driven colorectal tumorigenesis via direct suppression of ME1

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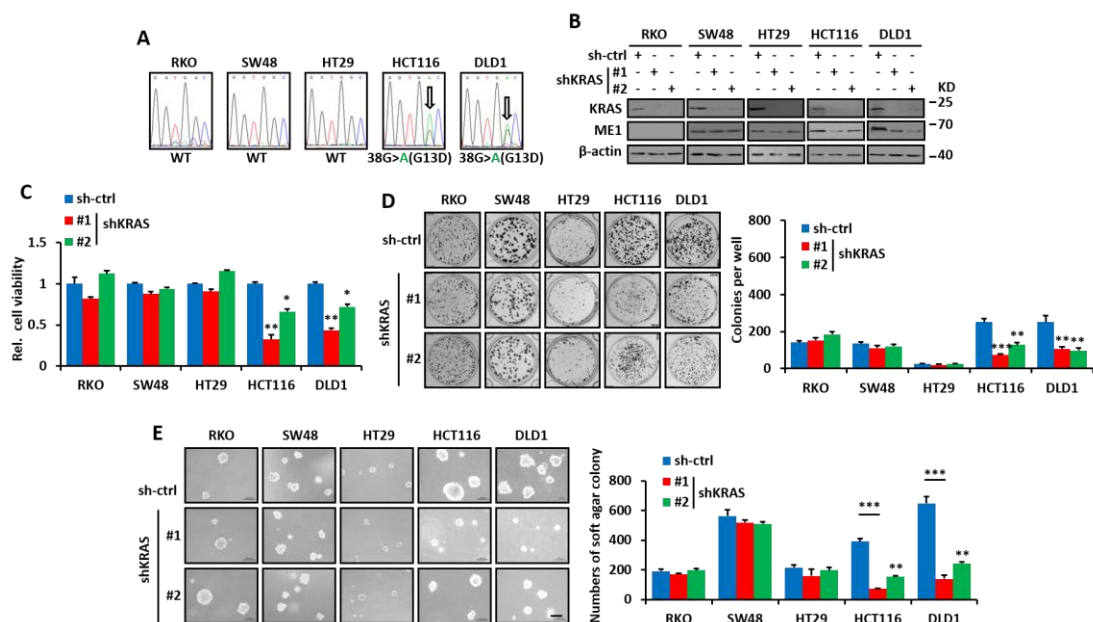
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Supplementary Materials includes:

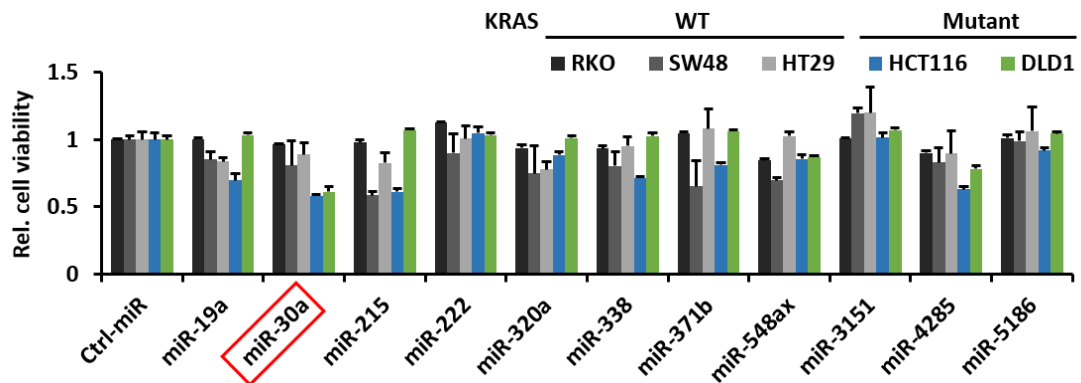
11 Supplementary Figures and 3 Supplementary Tables.

Supplementary Figures

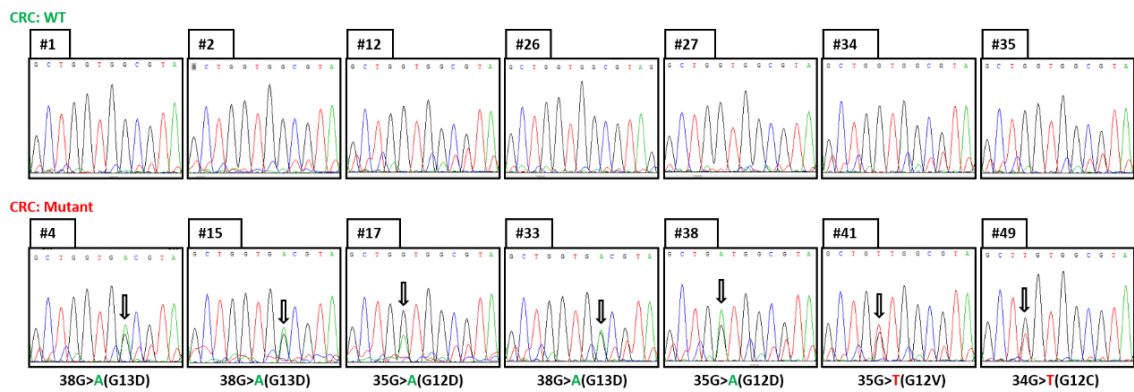


Supplementary Figure S1 (Related to Figure 1) KRAS dependency in CRC cells.

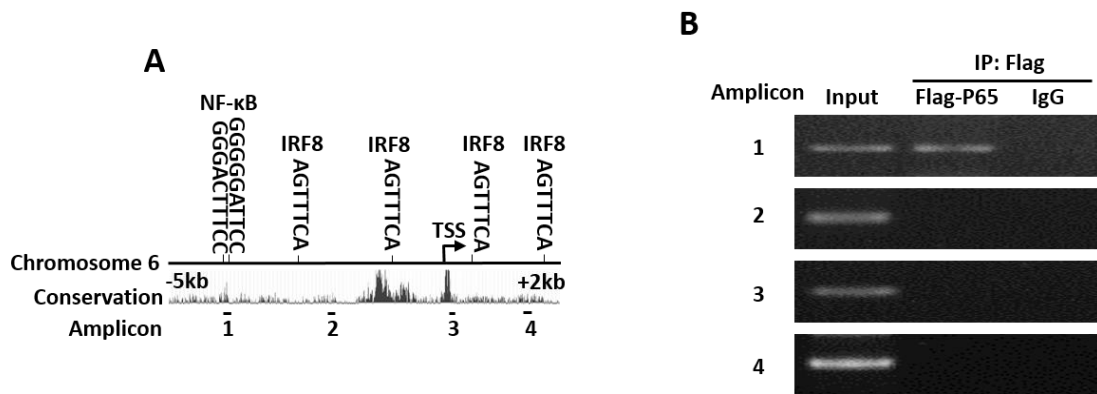
A, Validation of KRAS-mutant status in CRC (RKO, SW48, HT29, HCT116 and DLD1) cells by genomic DNA sequencing. **B**, KRAS suppression was detected by Immunoblot. β-actin was used as the loading control. **C-E**, KRAS suppression attenuated cell viability (**C**), focus formation (**D**) and anchorage-independent soft agar growth (**E**) in HCT116 and DLD1 cells. Scale bar, 200 μm. Colonies of focus formation and anchorage-independent soft agar were counted and showed in bar graphs. Data are shown as the means ± SD. *P < 0.05, **P < 0.01, ***P < 0.001.



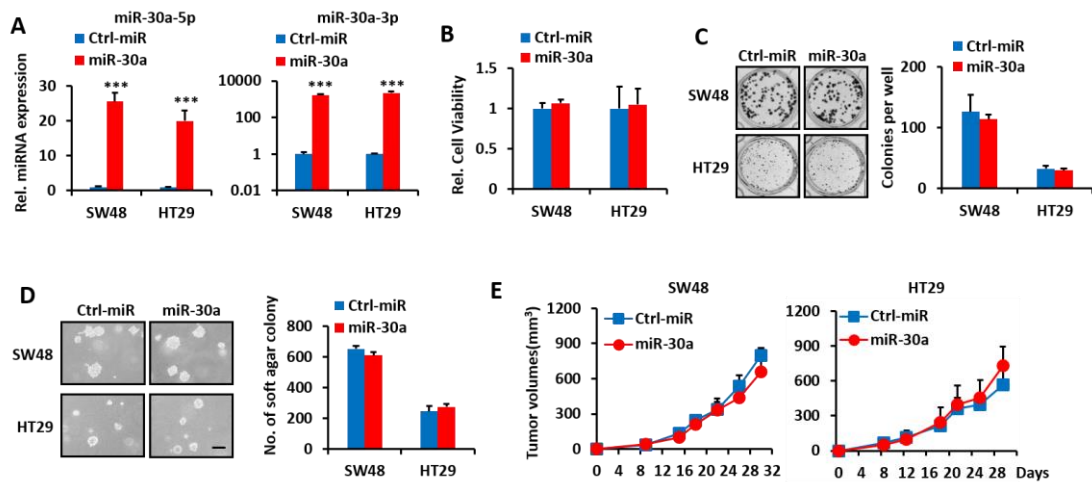
Supplementary Figure S2 (Related to Figure 1) The effects of 11 miRNA candidates on growth in KRAS WT CRC cells (RKO, SW48 and HT29) and KRAS-mutant CRC cells (HCT116 and DLD1). miR-30a overexpression significantly inhibited cell growth in KRAS-mutant CRC cells.



Supplementary Figure S3 (Related to Figure 1) Genomic DNA sequencing of 14 CRC tissues. The first exon of KRAS, which contains the most prevalent mutation, was amplified by PCR and sequenced. The upper 7 CRC tissues were identified as KRAS WT and the lower 7 CRC tissues were identified as KRAS-mutant.



Supplementary Figure S4 (Related to Figure 1) P65 binds to the miR-30a promoter region. A, Schematic representation of predicted transcription factors modulating miR-30a expression. Four amplicons for ChIP assay were showed. **B,** ChIP assay showed direct binding of P65 at the first amplicon of the miR-30a promoter in HEK-293 cells overexpressing P65.



Supplementary Figure S5 (Related to Figure 2) Effects of miR-30a

overexpression on KRAS WT SW48 and HT29 cells. A, Expression levels of miR-30a-5p/3p were measured in SW48 and HT29 cells with miR-30a overexpression.

B, Cell growth of miR-30a-overexpressing SW48 and HT29 cells was measured by

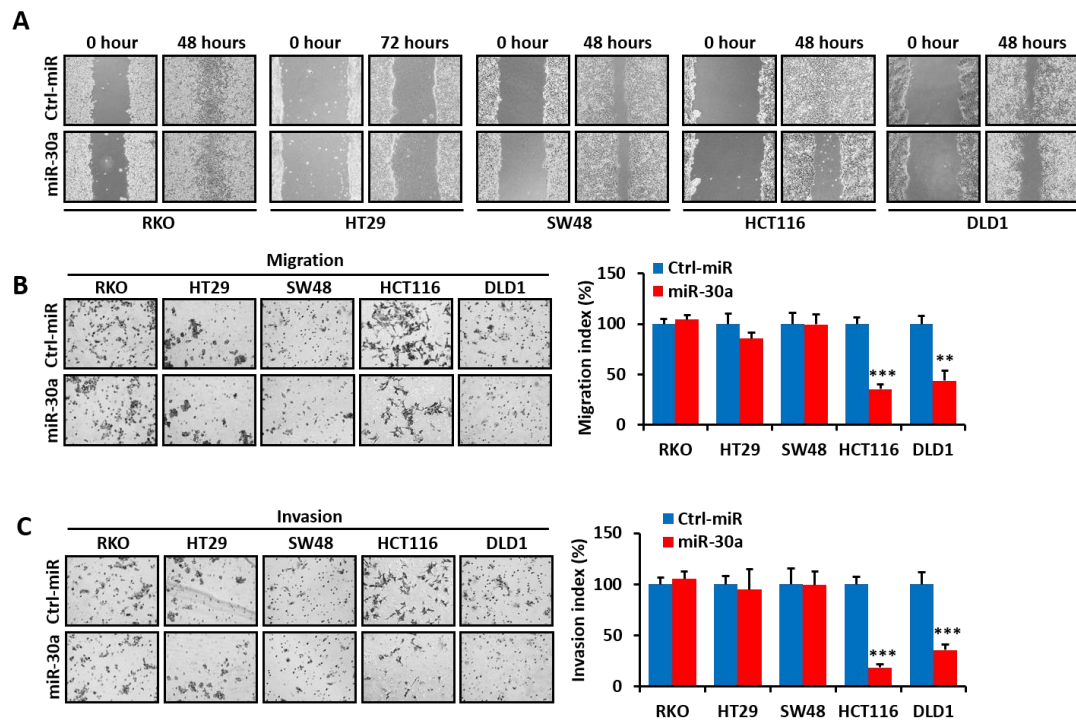
MTT assays. C, Focus formation assay of cells from A. Colonies were counted and

showed in bar graph. D, Anchorage-independent soft agar growth assays of cells from

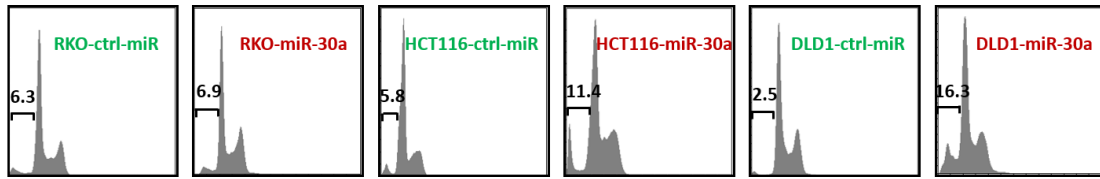
A. Scale bar, 200 μ m. Colonies were counted and photographed after incubation at

37 ° for 14 days. E, Tumor growth in SW48 and HT29 xenografts. Data are shown as

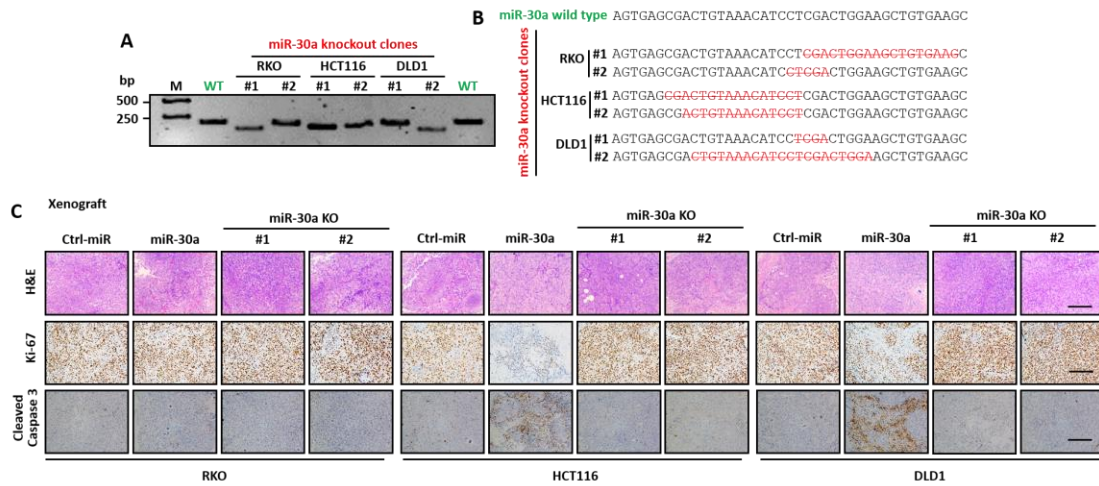
the means \pm SD. *P < 0.001.**



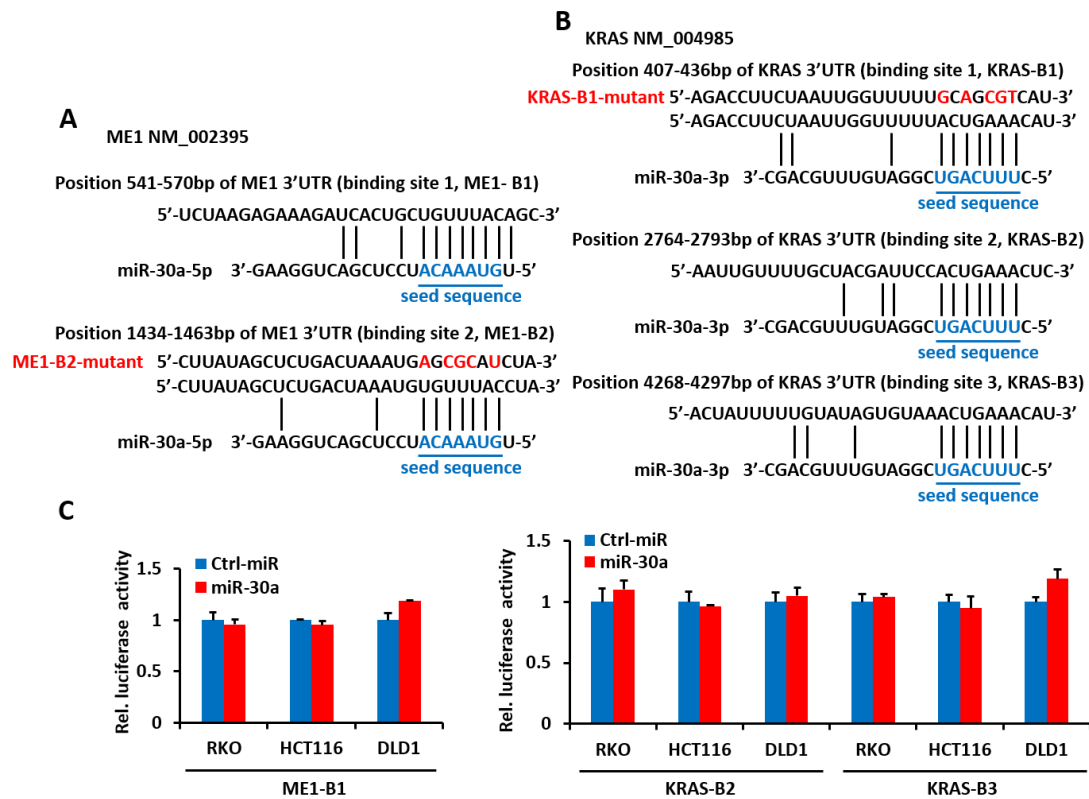
Supplementary Figure S6 (Related to Figure 2) miR-30a overexpression significantly inhibits wound-healing closure, cell migration and invasion of KRAS-mutant CRC cells. **A**, Migration rates of miR-30a overexpressing CRC cells were detected by wound-healing assays. Closure of the wound was photographed over 48 or 72 hours after the wound was made. Representative images are shown (100 \times). **B**, 2×10^5 indicated Cells were seeded in transwell chambers with PET track-etched membranes and incubated for 24 hours. Migrated cells were stained and photographed (200 \times). Migration index was determined by counting migrated cells in 8 randomly selected microscopic fields per well and compared with control, which was set as 100%. **C**, As for invasion assay, indicated cells were seeded in the matrigel-coated invasion chambers. Invasive index was measured as the same as migration index. Data are shown as the means \pm SD. **P < 0.01, ***P < 0.001.



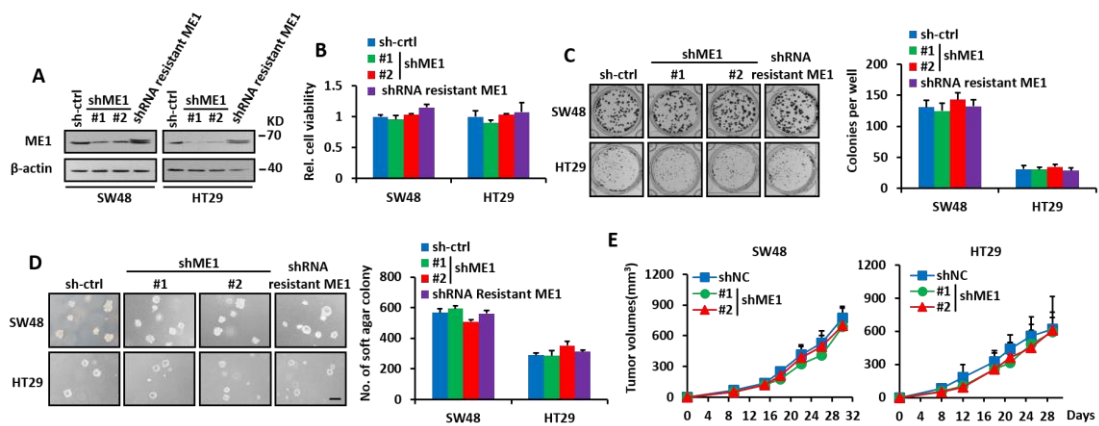
Supplementary Figure S7 (Related to Figure 2) Apoptosis was quantified after propidium iodide staining by measuring the Sub-G1 DNA content by flow cytometry analysis in miR-30a-overexpressing CRC cells.



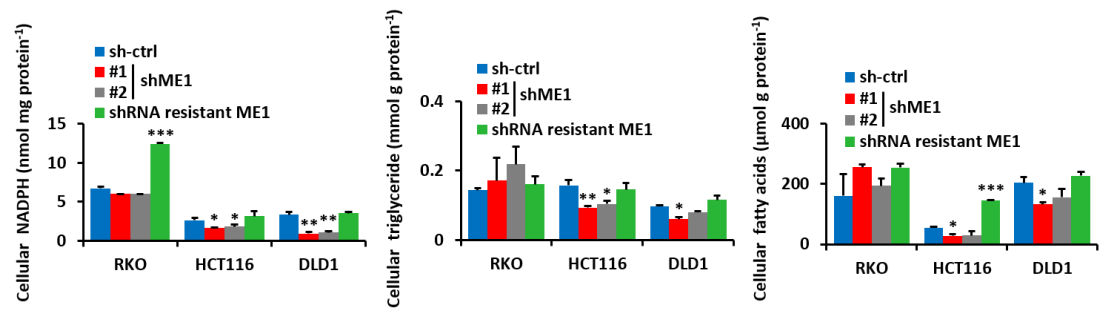
Supplementary Figure S8 (Related to Figure 2) Identification of miR-30a knockout clones. **A**, miR-30a knockout clones carry distinct PCR products of different lengths compared with parent cells. **B**, DNA sequences for each PCR product. Deleted sequences are shown in red strikethrough. **C**, Xenografts in nude mice from Figure 2f were analyzed by IHC. Representative images of H&E, Ki-67 and cleaved Caspase-3 staining were showed. Scale bar, 200 μ m.



Supplementary Figure S9 (Related to Figure 3) miR-30a inhibits ME1 and KRAS. A-B, Predicted binding sites of miR-30a in KRAS and ME1 3'UTR were shown in detailed base pairing. Mutations in the KRAS and ME1 3'UTR were shown in red. C, miR-30a-overexpressing CRC cells were transfected with reporter vector containing predicted miR-30a binding site (ME1-B1, KRAS-B2 and KRAS-B3) and luciferase reporter assay was performed.



Supplementary Figure S10 (Related to Figure 5) Effects of ME1 suppression on KRAS WT CRC (SW48 and HT29) cell growth and tumorigenicity. A, Inhibition of ME1 was confirmed by immunoblot. ME1 protein levels was rescued by overexpressing shME1-resistant ME1. β -actin was used as the loading control. B, Cell growth of indicated cells were measured by MTT assays. Bar graph shows the relative cell viability against control. C, Focus formation assay of cells from A. Colonies were counted and showed in bar graph. D, Anchorage-independent soft agar growth assays of cells from A. Scale bar, 200 μ m. Colonies were counted and photographed after incubation at 37 ° for 14 days. E, Tumor growth in SW48 and HT29 xenograft. Data are shown as the means \pm SD.



Supplementary Figure S11 (Related to Figure 5) Cellular NADPH, triglyceride and fatty acids were detected in CRC cells stably expressing control shRNA, ME1 shRNA-#1, ME1 shRNA-#2 or ME1 shRNA-#1+shME1-resistant ME1. Data are shown as the means \pm SD. *P < 0.05, **P < 0.01.

Supplementary Tables

Supplementary Table 1. High-content screening results in HCT116 cells using miRNA library.

No.	miRNA	Log ₂ (OD570 _{miRNA} /OD570 _{Ctrl-miR})	
		HCT116 (G13D)	RKO (WT)
1	hsa-let-7a-1	-0.2607	-0.0462
2	hsa-let-7a-2	-0.2544	-0.6079
3	hsa-let-7a-3	-0.1184	-0.0302
4	hsa-let-7b	-0.213	0.1791
5	hsa-let-7c	-0.6892	-0.6307
6	hsa-let-7d	-0.2108	0.0502
7	hsa-let-7e	-0.331	-0.1384
8	hsa-let-7f-1	-0.1954	-0.0761
9	hsa-let-7f-2	-0.6341	-0.7175
10	hsa-let-7g	0.1492	-0.1087
11	hsa-let-7i	-0.0847	-0.5708
12	hsa-mir-1-1	0.0288	-0.0443
13	hsa-mir-1-2	-0.1153	-0.1345
14	hsa-mir-7-1	0.1936	-0.054
15	hsa-mir-7-2	-0.0351	0.0314
16	hsa-mir-7-3	-0.2895	0.1327
17	hsa-mir-9-1	-0.1377	-0.0973
18	hsa-mir-9-2	0.1714	-0.0213
19	hsa-mir-9-3	0.0981	0.1619
20	hsa-mir-10a	0.0326	-0.0062
21	hsa-mir-10b	-0.2442	0.0339
22	hsa-mir-15a	0.1324	0.0759
23	hsa-mir-15b	-0.0405	-0.0475
24	hsa-mir-16-1	-0.2976	0.0472
25	hsa-mir-16-2	0.1608	-0.0213
26	hsa-mir-17	0.0932	0.2876
27	hsa-mir-18a	-0.2982	-0.0226
28	hsa-mir-18b	0.1748	0.1287
29	hsa-mir-19a	-0.711	-0.054
30	hsa-mir-19b-1	-0.2533	0.1608
31	hsa-mir-19b-2	0.1586	0.0454
32	hsa-mir-20a	-0.0162	0.4064
33	hsa-mir-20b	-0.3458	-0.1087

34	hsa-mir-21	-0.0104	-0.0469
35	hsa-mir-22	-0.5827	0.0526
36	hsa-mir-23a	0.2683	0.1005
37	hsa-mir-23b	-0.1992	-0.0469
38	hsa-mir-23c	-0.0797	0.0363
39	hsa-mir-24-1	0.1857	0.0729
40	hsa-mir-24-2	-0.4428	-0.0598
41	hsa-mir-25	0.0409	-0.0482
42	hsa-mir-26a-1	0.1488	0.0056
43	hsa-mir-26a-2	0.2286	0.0717
44	hsa-mir-26b	-0.1684	0.1132
45	hsa-mir-27a	-0.1992	0.0037
46	hsa-mir-27b	-0.4893	0.1017
47	hsa-mir-28	0.001	0.0929
48	hsa-mir-29a	-0.4956	-0.0169
49	hsa-mir-29b-1	0.0381	-0.0762
50	hsa-mir-29b-2	0.0025	-0.2289
51	hsa-mir-29c	-0.3863	-0.4674
52	hsa-mir-30a	-0.7788	-0.0599
53	hsa-mir-30b	0.1411	0.0313
54	hsa-mir-30c-1	0.1561	-0.0045
55	hsa-mir-30c-2	0.2122	0.0077
56	hsa-mir-30d	0.0892	-0.0359
57	hsa-mir-30e	0.0086	-0.1437
58	hsa-mir-31	-0.0622	-0.1016
59	hsa-mir-32	-0.0028	-0.0293
60	hsa-mir-33a	0.0067	-0.2711
61	hsa-mir-33b	-0.5806	-0.0974
62	hsa-mir-34a	-0.598	-0.5654
63	hsa-mir-34b	-0.3249	-0.4652
64	hsa-mir-34c	-0.617	-0.6405
65	hsa-mir-92a-1	0.0919	-0.0701
66	hsa-mir-92a-2	0.1101	-0.0647
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68	hsa-mir-95	0.2887	-0.3211
69	hsa-mir-96	0.2914	-0.0995
70	hsa-mir-98	0.0666	0.0103
71	hsa-mir-99a	0.1836	0.073
72	hsa-mir-99b	0.091	0.0243
73	hsa-mir-100	-0.0186	-0.105
74	hsa-mir-101-1	0.2411	-0.1057
75	hsa-mir-101-2	0.0488	-0.1043
76	hsa-mir-103a-1	0.3347	-0.2372
77	hsa-mir-103a-2	0.0566	-0.0293

78	hsa-mir-103b-1	-0.0244	-0.0864
79	hsa-mir-103b-2	0.298	-0.0104
80	hsa-mir-105-1	0.2403	-0.0065
81	hsa-mir-105-2	0.1127	-0.0823
82	hsa-mir-106a	0.0914	-0.1113
83	hsa-mir-106b	0.1501	-0.0526
84	hsa-mir-107	0.1911	-0.0687
85	hsa-mir-122	0.2163	0.0064
86	hsa-mir-124-1	0.337	-0.3173
87	hsa-mir-124-2	0.103	-0.0326
88	hsa-mir-125a	-0.1657	0.0791
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92	hsa-mir-127	0.2298	-0.0313
93	hsa-mir-128-1	0.2261	-0.0599
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95	hsa-mir-129-1	0.1765	-0.1481
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251	hsa-mir-380	0.159	-0.0922
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253	hsa-mir-382	0.122	-0.0972

254	hsa-mir-383	0.0221	-0.0967
255	hsa-mir-384	-0.2953	-0.1217
256	hsa-mir-409	0.0513	-0.1686
257	hsa-mir-410	-0.0728	-0.1144
258	hsa-mir-411	0.1386	-0.0994
259	hsa-mir-412	0.3654	-0.0851
260	hsa-mir-421	-0.0991	-0.1524
261	hsa-mir-422a	-0.5617	-0.1622
262	hsa-mir-423	-0.0759	-0.1738
263	hsa-mir-425	0.3671	-0.2128
264	hsa-mir-429	-0.2908	-0.2633
265	hsa-mir-431	0.0527	-0.1319
266	hsa-mir-432	0.379	-0.2086
267	hsa-mir-433	0.3705	0.1505
268	hsa-mir-448	0.2852	-0.0972
269	hsa-mir-449a	0.2786	-0.1697
270	hsa-mir-449b	-0.0216	-0.2062
271	hsa-mir-449c	-0.3659	-0.1541
272	hsa-mir-450a-2	-0.5801	-0.2375
273	hsa-mir-451a	0.2531	-0.1161
274	hsa-mir-451b	0.1386	-0.0596
275	hsa-mir-452	0.0513	-0.0666
276	hsa-mir-454	-0.0216	-0.0731
277	hsa-mir-466	0.0874	-0.1381
278	hsa-mir-484	0.0279	-0.1902
279	hsa-mir-485	-0.2882	-0.1849
280	hsa-mir-486	-0.0843	-0.11
281	hsa-mir-487a	0.1446	-0.0661
282	hsa-mir-487b	0.3089	-0.1223
283	hsa-mir-488	0.5874	-0.0056
284	hsa-mir-489	0.0004	0.0978
285	hsa-mir-490	0.1505	-0.0123
286	hsa-mir-491	-0.1156	0.0346
287	hsa-mir-492	-0.3352	0.2673
288	hsa-mir-493	-0.5162	-0.0045
289	hsa-mir-494	-0.0416	-0.1152
290	hsa-mir-495	-0.1215	0.0599
291	hsa-mir-496	-0.1351	0.0481
292	hsa-mir-497	-0.0122	-0.1811
293	hsa-mir-498	0.0531	-0.1635
294	hsa-mir-499a	-0.0796	-0.0978
295	hsa-mir-499b	-0.1061	-0.2403
296	hsa-mir-500a	-0.0914	-0.066
297	hsa-mir-500b	-0.0063	-0.1456

298	hsa-mir-501	-0.0637	0.0083
299	hsa-mir-502	0.0723	-0.0567
300	hsa-mir-503	-0.1028	-0.0637
301	hsa-mir-504	-0.0876	-0.093
302	hsa-mir-505	-0.0439	-0.0492
303	hsa-mir-506	-0.2917	0.1982
304	hsa-mir-507	-0.1828	0.0508
305	hsa-mir-508	-0.0023	-0.0498
306	hsa-mir-509-1	0.0228	0.0444
307	hsa-mir-510	0.0355	0.2327
308	hsa-mir-511-1	-0.018	0.0324
309	hsa-mir-512-1	-0.09	-0.0326
310	hsa-mir-513a-1	0.0017	-0.0498
311	hsa-mir-513b	-0.0956	0.0111
312	hsa-mir-513c	-0.1434	0.0994
313	hsa-mir-514a-1	0.0048	-0.0463
314	hsa-mir-514b	0.0659	0.1205
315	hsa-mir-518c	-0.0782	0
316	hsa-mir-521-2	0.0604	0.0199
317	hsa-mir-526a-2	-0.0175	-0.0241
318	hsa-mir-532	0.1282	-0.0378
319	hsa-mir-539	0.0924	0
320	hsa-mir-541	-0.2351	0.2327
321	hsa-mir-542	-0.0466	0.1082
322	hsa-mir-543	0.0372	0.103
323	hsa-mir-544b	0.0241	0.2289
324	hsa-mir-548a-1	-0.5645	0.1312
325	hsa-mir-548a-2	0.087	0.1251
326	hsa-mir-548a-3	0.1069	0.0848
327	hsa-mir-548aa-1	0.1011	0.0952
328	hsa-mir-548aa-2	-0.2378	0.1777
329	hsa-mir-548ac	0.0411	0.1564
330	hsa-mir-548ad	-0.0388	-0.2553
331	hsa-mir-548ae-1	0.0441	-0.0778
332	hsa-mir-548ag-1	-0.1356	-0.1579
333	hsa-mir-548ag-2	0.1424	-0.1364
334	hsa-mir-548ai	0.1392	-0.1797
335	hsa-mir-548aj-1	0.1233	-0.1275
336	hsa-mir-548ak	-0.0623	-0.0884
337	hsa-mir-548al	0.0424	-0.1586
338	hsa-mir-548am	0.0039	-0.1726
339	hsa-mir-548an	0.0591	-0.1017
340	hsa-mir-548ao	-0.0243	-0.2434
341	hsa-mir-548aq	0.0065	-0.1419

342	hsa-mir-548ar	0.1604	-0.2471
343	hsa-mir-548as	-0.0407	-0.0387
344	hsa-mir-548at	-0.1361	-0.1166
345	hsa-mir-548av	0.0415	-0.0666
346	hsa-mir-548aw	-0.0735	-0.2353
347	hsa-mir-548ax	-0.6113	-0.11307
348	hsa-mir-548b	0.0307	-0.1846
349	hsa-mir-548c	0.0857	-0.1789
350	hsa-mir-548d-1	0.1094	-0.1405
351	hsa-mir-548d-2	0.0727	-0.0904
352	hsa-mir-548e	-0.1215	-0.0857
353	hsa-mir-548f-1	0.0065	-0.1357
354	hsa-mir-548f-2	0.1254	-0.2367
355	hsa-mir-548g	0.0363	-0.1384
356	hsa-mir-548h-3	-0.0148	-0.2221
357	hsa-mir-548h-4	0.1327	-0.2177
358	hsa-mir-548h-5	0.1119	-0.2257
359	hsa-mir-548i-4	0.0621	-0.0503
360	hsa-mir-548j	-0.1662	-0.0189
361	hsa-mir-548k	0.0294	-0.1213
362	hsa-mir-548l	0.1444	-0.1761
363	hsa-mir-548m	0.0999	-0.1818
364	hsa-mir-548o	-0.0279	-0.2434
365	hsa-mir-548p	0.1217	-0.1882
366	hsa-mir-548q	0.1388	-0.1684
367	hsa-mir-548s	0.1032	-0.1474
368	hsa-mir-548t	-0.0288	-0.0672
369	hsa-mir-548v	0.0363	-0.1551
370	hsa-mir-548w	-0.231	-0.1071
371	hsa-mir-548x	0.0803	-0.0464
372	hsa-mir-548x-2	0.1384	-0.1064
373	hsa-mir-548y	0.1307	-0.0594
374	hsa-mir-548z	0.1209	-0.0419
375	hsa-mir-549	0.0727	-0.1206
376	hsa-mir-550a-1	-0.0171	-0.1241
377	hsa-mir-551a	-0.2154	-0.0421
378	hsa-mir-551b	0.0501	0.0221
379	hsa-mir-552	0.0638	-0.1642
380	hsa-mir-553	0.0672	-0.1906
381	hsa-mir-554	0.0651	-0.3013
382	hsa-mir-555	0.0398	-0.0585
383	hsa-mir-556	0.0359	-0.0861
384	hsa-mir-557	-0.0361	0.0288
385	hsa-mir-558	-0.1322	-0.0181

386	hsa-mir-559	-0.056	0.023
387	hsa-mir-561	-0.129	0.0224
388	hsa-mir-563	-0.0575	-0.0943
389	hsa-mir-564	-0.0537	-0.2515
390	hsa-mir-567	-0.0726	0.0071
391	hsa-mir-568	-0.0787	-0.0861
392	hsa-mir-569	-0.2185	0.0341
393	hsa-mir-570	0.0874	-0.0193
394	hsa-mir-571	-0.1025	0.0612
395	hsa-mir-573	-0.0001	0.0474
396	hsa-mir-574	-0.094	-0.0905
397	hsa-mir-575	0.1915	-0.0848
398	hsa-mir-576	0.1896	-0.4943
399	hsa-mir-577	-0.0932	-0.0351
400	hsa-mir-578	-0.2499	0.0468
401	hsa-mir-579	-0.4472	-0.0229
402	hsa-mir-582	-0.0665	-0.0247
403	hsa-mir-583	0.071	0.0306
404	hsa-mir-584	0.1407	-0.0835
405	hsa-mir-585	0.2755	-0.0943
406	hsa-mir-587	-0.03	0.0094
407	hsa-mir-588	-0.056	-0.009
408	hsa-mir-589	-0.1723	0.0463
409	hsa-mir-590	-0.0695	0.0515
410	hsa-mir-591	-0.2516	-0.0133
411	hsa-mir-592	-0.084	0.0142
412	hsa-mir-593	0.0411	-0.0437
413	hsa-mir-595	0.2725	-0.0412
414	hsa-mir-596	0.3003	-0.0127
415	hsa-mir-597	0.2003	-0.0572
416	hsa-mir-598	-0.3121	0.0956
417	hsa-mir-599	-0.0978	0.0714
418	hsa-mir-600	0.1595	0.099
419	hsa-mir-601	0.1289	0.215
420	hsa-mir-602	-0.0153	0.0434
421	hsa-mir-603	0.0334	-0.088
422	hsa-mir-604	0.2448	0.0549
423	hsa-mir-605	-0.0894	-0.0007
424	hsa-mir-606	-0.3302	0.0587
425	hsa-mir-607	-0.0337	0.0396
426	hsa-mir-609	0.0812	0.0353
427	hsa-mir-610	-0.1409	-0.0263
428	hsa-mir-611	0.0724	-0.1423
429	hsa-mir-612	0.0982	-0.0057

430	hsa-mir-613	0.0586	-0.0302
431	hsa-mir-614	0.1029	0.1209
432	hsa-mir-616	0.0341	-0.0511
433	hsa-mir-617	0.0049	-0.0465
434	hsa-mir-618	0.0432	-0.0019
435	hsa-mir-619	0.2761	-0.0237
436	hsa-mir-620	0.1762	-0.1117
437	hsa-mir-621	0.2369	-0.0413
438	hsa-mir-623	0.2725	-0.1269
439	hsa-mir-624	0.0221	0.0593
440	hsa-mir-625	-0.2152	0.0007
441	hsa-mir-626	-0.0001	0.1179
442	hsa-mir-627	0.2962	0.0334
443	hsa-mir-628	0.2387	-0.1332
444	hsa-mir-629	0.2381	0.3287
445	hsa-mir-630	0.1341	-0.0946
446	hsa-mir-631	0.1196	-0.0038
447	hsa-mir-632	-0.0463	0.0823
448	hsa-mir-633	-0.4413	-0.025
449	hsa-mir-634	0.0013	-0.0063
450	hsa-mir-635	0.14	-0.098
451	hsa-mir-636	0.1518	-0.0697
452	hsa-mir-638	0.1769	-0.0764
453	hsa-mir-639	-0.0978	-0.0544
454	hsa-mir-640	0.1984	0.0996
455	hsa-mir-641	0.1413	-0.1001
456	hsa-mir-642a	-0.38	0.0445
457	hsa-mir-642b	-0.1032	-0.0341
458	hsa-mir-643	0.235	-0.0899
459	hsa-mir-644a	-0.0292	-0.1297
460	hsa-mir-644b	0.0256	-0.0791
461	hsa-mir-645	-0.0088	-0.3892
462	hsa-mir-646	-0.3023	0.1238
463	hsa-mir-647	-0.2516	0.039
464	hsa-mir-648	-0.4335	0.1062
465	hsa-mir-650	-0.238	0.0799
466	hsa-mir-651	0.0833	-0.0012
467	hsa-mir-652	-0.0008	-0.0159
468	hsa-mir-653	0.1737	-0.0393
469	hsa-mir-654	0.1123	-0.069
470	hsa-mir-655	0.1781	-0.0488
471	hsa-mir-656	-0.0628	-0.0588
472	hsa-mir-657	-0.3139	0.0427
473	hsa-mir-658	-0.47	0.0366

474	hsa-mir-660	-0.1204	0.0504
475	hsa-mir-661	-0.313	0.0536
476	hsa-mir-663a	0.0235	0.1209
477	hsa-mir-663b	0.0572	-0.0038
478	hsa-mir-664	-0.0695	-0.0868
479	hsa-mir-665	-0.0478	0.0149
480	hsa-mir-668	-0.1804	-0.0677
481	hsa-mir-670	0.1046	-0.0916
482	hsa-mir-671	-0.0916	-0.1502
483	hsa-mir-675	-0.0901	0.0678
484	hsa-mir-676	0.0757	0.0672
485	hsa-mir-708	-0.0812	0.0002
486	hsa-mir-711	-0.1432	-0.3814
487	hsa-mir-720	-0.0289	-0.0564
488	hsa-mir-744	-0.239	-0.1508
489	hsa-mir-758	0.3722	-0.2826
490	hsa-mir-759	0.0008	0.113
491	hsa-mir-760	-0.0361	0.003
492	hsa-mir-761	0.025	0.0487
493	hsa-mir-764	-0.0563	-0.0152
494	hsa-mir-765	0.1713	-0.0319
495	hsa-mir-766	-0.0519	-0.0832
496	hsa-mir-767	-0.0672	-0.0389
497	hsa-mir-769	0.2645	-0.0482
498	hsa-mir-770	0.0777	-0.0784
499	hsa-mir-802	-0.5037	-0.4078
500	hsa-mir-874	0.1201	0.0796
501	hsa-mir-875	-0.0432	0.0366
502	hsa-mir-876	-0.1225	-0.0862
503	hsa-mir-877	-0.1681	-0.1068
504	hsa-mir-885	-0.1058	-0.0301
505	hsa-mir-887	0.1169	0.0438
506	hsa-mir-888	0.0935	0.0266
507	hsa-mir-889	0.0961	0.1354
508	hsa-mir-890	0.0523	0.1375
509	hsa-mir-891a	0.0737	0.041
510	hsa-mir-891b	0.3199	-0.1054
511	hsa-mir-892a	0.061	-0.1623
512	hsa-mir-892b	-0.0325	-0.0548
513	hsa-mir-920	-0.0864	-0.1706
514	hsa-mir-921	-0.0432	0.1166
515	hsa-mir-922	0.0895	0.0755
516	hsa-mir-924	-0.0048	-0.0154
517	hsa-mir-933	0.0243	-0.1061

518	hsa-mir-934	0.0928	-0.0438
519	hsa-mir-935	0.0181	-0.2571
520	hsa-mir-936	-0.1058	-0.1122
521	hsa-mir-937	-0.0968	-0.1377
522	hsa-mir-938	-0.0154	-0.0005
523	hsa-mir-939	0.1405	0.0375
524	hsa-mir-940	0.0523	0.0042
525	hsa-mir-942	0.0022	-0.1383
526	hsa-mir-943	0.0008	-0.1823
527	hsa-mir-944	0.1272	-0.1331
528	hsa-mir-1178	-0.0805	-0.0653
529	hsa-mir-1179	-0.0361	-0.1275
530	hsa-mir-1180	0.0063	0.1206
531	hsa-mir-1181	0.1418	-0.0653
532	hsa-mir-1182	-0.0555	-0.0697
533	hsa-mir-1183	0.0236	-0.1712
534	hsa-mir-1184-1	0.0862	-0.0284
535	hsa-mir-1185-1	0.145	-0.0521
536	hsa-mir-1193	-0.2522	-0.3093
537	hsa-mir-1197	0.007	-0.0925
538	hsa-mir-1200	0.0737	0.0503
539	hsa-mir-1202	0.1386	0.2828
540	hsa-mir-1203	0.1111	-0.0371
541	hsa-mir-1204	0.0974	-0.1828
542	hsa-mir-1205	-0.0055	-0.1162
543	hsa-mir-1206	0.0001	-0.0414
544	hsa-mir-1207	-0.0768	-0.0516
545	hsa-mir-1208	-0.0197	-0.091
546	hsa-mir-1224	0.0697	0.1445
547	hsa-mir-1225	0.0462	0.0398
548	hsa-mir-1226	0.0482	-0.0132
549	hsa-mir-1227	-0.5146	-0.1408
550	hsa-mir-1228	-0.1975	-0.0915
551	hsa-mir-1231	-0.0077	-0.0038
552	hsa-mir-1233-1	-0.1943	-0.0265
553	hsa-mir-1236	-0.1187	-0.0845
554	hsa-mir-1237	-0.0519	0.0638
555	hsa-mir-1238	-0.3702	0.0412
556	hsa-mir-1243	0.0236	-0.0208
557	hsa-mir-1244-1	-0.0105	0.0674
558	hsa-mir-1245a	-0.1225	0.1702
559	hsa-mir-1245b	0.0119	0.0103
560	hsa-mir-1246	-0.2415	-0.0633
561	hsa-mir-1247	-0.0211	-0.2052

562	hsa-mir-1248	0.1494	0.1622
563	hsa-mir-1249	0.025	-0.1091
564	hsa-mir-1250	0.0195	-0.1631
565	hsa-mir-1251	-0.0592	-0.137
566	hsa-mir-1252	-0.0731	0.0005
567	hsa-mir-1253	0.0001	-0.1081
568	hsa-mir-1254-2	-0.1021	-0.2384
569	hsa-mir-1255a	0.0394	-0.1043
570	hsa-mir-1255b-2	0.0236	-0.1194
571	hsa-mir-1256	0.079	-0.0655
572	hsa-mir-1257	0.1456	-0.153
573	hsa-mir-1258	0.0091	-0.1119
574	hsa-mir-1260a	0.1046	-0.1619
575	hsa-mir-1260b	-0.0382	-0.1704
576	hsa-mir-1262	0.0663	-0.2
577	hsa-mir-1263	0.2309	-0.1603
578	hsa-mir-1265	-0.0388	-0.0877
579	hsa-mir-1266	-0.0083	0.0115
580	hsa-mir-1267	-0.1552	-0.0962
581	hsa-mir-1269a	-0.0433	-0.0655
582	hsa-mir-1269b	-0.2836	-0.1575
583	hsa-mir-1270-1	0.0542	-0.2664
584	hsa-mir-1270-2	0.057	-0.3098
585	hsa-mir-1271	0.0294	-0.1647
586	hsa-mir-1272	-0.0516	-0.126
587	hsa-mir-1273g	-0.0448	-0.0577
588	hsa-mir-1275	-0.0306	-0.1458
589	hsa-mir-1276	0.1885	-0.1353
590	hsa-mir-1277	0.0979	-0.1726
591	hsa-mir-1278	-0.0638	-0.1777
592	hsa-mir-1279	-0.0328	-0.2993
593	hsa-mir-1280	-0.0061	-0.0798
594	hsa-mir-1281	0.0272	0.0637
595	hsa-mir-1282	-0.0684	-0.006
596	hsa-mir-1283-2	-0.0668	-0.2497
597	hsa-mir-1284	0.0549	-0.2046
598	hsa-mir-1288	0.127	-0.1524
599	hsa-mir-1289-1	0.1189	-0.204
600	hsa-mir-1289-2	0.0429	-0.3208
601	hsa-mir-1291	-0.0623	-0.0856
602	hsa-mir-1292	-0.0239	-0.1552
603	hsa-mir-1294	-0.0239	-0.4675
604	hsa-mir-1295a	0.1176	-0.1721
605	hsa-mir-1295b	0.0924	-0.0546

606	hsa-mir-1296	0.1489	-0.0925
607	hsa-mir-1297	0.1149	-0.1552
608	hsa-mir-1298	-0.038	-0.1194
609	hsa-mir-1302-1	-0.1151	-0.0824
610	hsa-mir-1302-10	-0.0638	-0.2556
611	hsa-mir-1302-4	0.0004	0.197
612	hsa-mir-1302-6	0.0855	0.2863
613	hsa-mir-1302-7	0.0415	0.2626
614	hsa-mir-1302-8	0.0773	0.1508
615	hsa-mir-1302-9	-0.0707	0.2283
616	hsa-mir-1303	-0.0954	0.5237
617	hsa-mir-1305	-0.1965	0.2946
618	hsa-mir-1306	-0.0923	0.1054
619	hsa-mir-1307	0.0294	-0.0452
620	hsa-mir-1321	0.0401	0.0258
621	hsa-mir-1322	0.1462	0.1825
622	hsa-mir-1323	-0.0321	0.0965
623	hsa-mir-1324	-0.1318	0.1219
624	hsa-mir-1343	-0.0784	0.253
625	hsa-mir-1468	-0.2269	0.1937
626	hsa-mir-1469	-0.09	0.1667
627	hsa-mir-1470	-0.0577	0.0586
628	hsa-mir-1471	0.0626	0.1468
629	hsa-mir-1537	0.0041	0.1084
630	hsa-mir-1539	-0.0684	0.078
631	hsa-mir-1587	-0.0939	0.1496
632	hsa-mir-1825	-0.3622	0.2493
633	hsa-mir-1827	-0.035	0.34
634	hsa-mir-1908	-0.127	0.137
635	hsa-mir-1909	0.0535	-0.0511
636	hsa-mir-1910	-0.0562	0.0488
637	hsa-mir-1911	0.0535	0.0604
638	hsa-mir-1912	0.224	0.2821
639	hsa-mir-1913	0.0472	0.1277
640	hsa-mir-1914	-0.3601	0.3131
641	hsa-mir-1915	-0.0441	0.2795
642	hsa-mir-1976	-0.265	0.0804
643	hsa-mir-2052	-0.135	0.0076
644	hsa-mir-2053	-0.0388	0.1393
645	hsa-mir-2054	0.127	0.1491
646	hsa-mir-2110	0.0828	0.1236
647	hsa-mir-2113	0.0486	0.1769
648	hsa-mir-2114	-0.4048	0.2951
649	hsa-mir-2116	-0.1765	0.3177

650	hsa-mir-2276	-0.1585	0.0971
651	hsa-mir-2277	0.0365	0.0622
652	hsa-mir-2278	0.0703	0.1724
653	hsa-mir-2355	-0.0142	0.2042
654	hsa-mir-2392	0.131	0.292
655	hsa-mir-2467	0.1685	0.3947
656	hsa-mir-2681	0.0048	0.3208
657	hsa-mir-2682	0.0724	0.3899
658	hsa-mir-2909	0.0924	0.0012
659	hsa-mir-2964a	0.0759	-0.0588
660	hsa-mir-3064	-0.0157	0
661	hsa-mir-3074	0.0429	0.0291
662	hsa-mir-3115	0.0584	0.1478
663	hsa-mir-3116-1	-0.2801	-0.0012
664	hsa-mir-3116-2	-0.0061	0.0263
665	hsa-mir-3117	-0.1948	-0.0386
666	hsa-mir-3118-1	0.2032	-0.0029
667	hsa-mir-3118-2	0.0465	-0.1641
668	hsa-mir-3118-3	0.0647	-0.0867
669	hsa-mir-3118-4	0.1436	-0.1171
670	hsa-mir-3118-5	0.1363	-0.181
671	hsa-mir-3118-6	0.1249	0.0515
672	hsa-mir-3119-1	0.186	0.1608
673	hsa-mir-3119-2	0.0061	-0.0655
674	hsa-mir-3120	0.1025	-0.0874
675	hsa-mir-3121	0.0433	-0.1994
676	hsa-mir-3122	-0.1222	-0.1015
677	hsa-mir-3123	-0.0513	-0.0947
678	hsa-mir-3125	-0.0466	-0.054
679	hsa-mir-3126	-0.0354	-0.0613
680	hsa-mir-3127	-0.0945	0.0223
681	hsa-mir-3128	0.0508	0.0017
682	hsa-mir-3130-1	0.1513	-0.1378
683	hsa-mir-3130-2	-0.0952	-0.0764
684	hsa-mir-3132	-0.0433	-0.0151
685	hsa-mir-3133	0.0551	-0.0215
686	hsa-mir-3135b	-0.0139	-0.0631
687	hsa-mir-3136	0.0508	-0.0904
688	hsa-mir-3137	0.0131	0.0687
689	hsa-mir-3138	0.0352	-0.0116
690	hsa-mir-3139	0.1303	-0.1875
691	hsa-mir-3140	-0.0707	-0.1628
692	hsa-mir-3141	0.0086	-0.1077
693	hsa-mir-3142	0.0851	-0.1146

694	hsa-mir-3143	0.0446	-0.0262
695	hsa-mir-3144	-0.0158	-0.0023
696	hsa-mir-3145	0.0289	-0.0017
697	hsa-mir-3146	-0.0295	0.0621
698	hsa-mir-3147	-0.008	0.0905
699	hsa-mir-3148	0.0213	0.0448
700	hsa-mir-3149	-0.0809	0.0257
701	hsa-mir-3150a	0.0258	0.0319
702	hsa-mir-3150b	0.0433	0.1263
703	hsa-mir-3151	-0.6214	0.2209
704	hsa-mir-3152	-0.0707	0.1061
705	hsa-mir-3153	-0.001	0.2054
706	hsa-mir-3154	0.0582	0.1937
707	hsa-mir-3155a	0.0729	0.1277
708	hsa-mir-3156-1	0.0607	0.1232
709	hsa-mir-3156-2	0.0302	0.1515
710	hsa-mir-3156-3	0.0656	0.198
711	hsa-mir-3157	-0.0802	0.1641
712	hsa-mir-3158-2	-0.0204	0.0898
713	hsa-mir-3160-1	-0.1511	0.3119
714	hsa-mir-3160-2	0.0106	0.0789
715	hsa-mir-3161	0.0016	0.1422
716	hsa-mir-3162	-0.0473	0.0995
717	hsa-mir-3163	0.0699	0.0109
718	hsa-mir-3164	0.0213	0.1532
719	hsa-mir-3165	-0.0223	0.1388
720	hsa-mir-3166	-0.0506	0.1154
721	hsa-mir-3167	0.1138	0.23
722	hsa-mir-3169	0.0283	0.1176
723	hsa-mir-3170	-0.1076	-0.0732
724	hsa-mir-3171	-0.0367	0.0818
725	hsa-mir-3173	0.1013	0.2665
726	hsa-mir-3174	-0.1076	0.1809
727	hsa-mir-3175	0.0302	0.2259
728	hsa-mir-3176	-0.0029	0.1575
729	hsa-mir-3178	-0.0486	0.1641
730	hsa-mir-3180-1	0.0226	0.0218
731	hsa-mir-3180-2	0.0352	0.1204
732	hsa-mir-3182	0.0477	0.1221
733	hsa-mir-3183	0.0383	0.0621
734	hsa-mir-3184	-0.1027	0.2133
735	hsa-mir-3185	0.168	0.2326
736	hsa-mir-3186	-0.087	0.266
737	hsa-mir-3187	0.0458	0.1193

738	hsa-mir-3188	0.0959	0.1316
739	hsa-mir-3189	-0.0493	0.0343
740	hsa-mir-3190	-0.0029	0.1221
741	hsa-mir-3191	-0.0633	0.0158
742	hsa-mir-3192	-0.1734	0.1012
743	hsa-mir-3193	0.052	-0.4475
744	hsa-mir-3194	0.0851	0.2476
745	hsa-mir-3196	-0.0262	0.1684
746	hsa-mir-3197	0.052	0.2796
747	hsa-mir-3198-1	-0.0904	0.2233
748	hsa-mir-3198-2	-0.0061	0.2538
749	hsa-mir-3199-1	-0.0308	0.2471
750	hsa-mir-3199-2	-0.1271	0.3089
751	hsa-mir-3200	0.0283	-0.0308
752	hsa-mir-3201	0.0352	-0.2591
753	hsa-mir-3202-1	0.1109	-0.0168
754	hsa-mir-3529	-0.0633	-0.0093
755	hsa-mir-3591	-0.4397	-0.1345
756	hsa-mir-3605	0.0302	-0.1365
757	hsa-mir-3606	0.0289	0.0462
758	hsa-mir-3607	-0.062	0.0752
759	hsa-mir-3609	0.1091	0.039
760	hsa-mir-3611	0.0314	-0.0451
761	hsa-mir-3612	-0.0191	-0.0637
762	hsa-mir-3613	0.0483	-0.1639
763	hsa-mir-3614	0.0163	-0.0819
764	hsa-mir-3615	0.1203	-0.0957
765	hsa-mir-3616	-0.0158	-0.0541
766	hsa-mir-3617	0.0594	-0.0401
767	hsa-mir-3618	0.0959	0.0281
768	hsa-mir-3619	0.1737	-0.3522
769	hsa-mir-3620	-0.1778	-0.0224
770	hsa-mir-3622a	-0.2273	0.0019
771	hsa-mir-3622b	0.0743	0.0257
772	hsa-mir-3646	-0.327	-0.0573
773	hsa-mir-3648	-0.0393	-0.008
774	hsa-mir-3649	0.0101	-0.0839
775	hsa-mir-3650	-0.3149	0.0049
776	hsa-mir-3651	-0.0322	-0.0199
777	hsa-mir-3652	-0.4828	0.064
778	hsa-mir-3653	0.0794	-0.0898
779	hsa-mir-3655	0.016	0.0563
780	hsa-mir-3656	-0.1561	-0.1632
781	hsa-mir-3657	-0.0006	0.0551

782	hsa-mir-3658	0.0548	-0.127
783	hsa-mir-3659	-0.2444	0.0926
784	hsa-mir-3660	-0.0922	0.0147
785	hsa-mir-3661	-0.5783	-0.0205
786	hsa-mir-3662	-0.0228	-0.1508
787	hsa-mir-3663	0.1046	0
788	hsa-mir-3664	0.0491	-0.0754
789	hsa-mir-3665	0.0207	0.1505
790	hsa-mir-3666	-0.0141	0.0699
791	hsa-mir-3667	0.0589	0.1093
792	hsa-mir-3668	-0.1797	0.1139
793	hsa-mir-3670-1	-0.1687	0.0705
794	hsa-mir-3670-2	0.147	0.0263
795	hsa-mir-3671	-0.0305	0.0634
796	hsa-mir-3672	0.0133	-0.0006
797	hsa-mir-3674	0.0599	0.0664
798	hsa-mir-3676	-0.1341	0.048
799	hsa-mir-3677	-0.0802	-0.0833
800	hsa-mir-3678	-0.137	0.0777
801	hsa-mir-3680-2	-0.1675	0.0405
802	hsa-mir-3681	-0.0039	-0.0969
803	hsa-mir-3682	0.0355	0.0264
804	hsa-mir-3684	0.0276	0.0332
805	hsa-mir-3685	0.0615	0.0837
806	hsa-mir-3686	-0.1882	-0.0464
807	hsa-mir-3687	0.0207	-0.0932
808	hsa-mir-3688-2	0.0042	-0.1441
809	hsa-mir-3691	-0.0012	0.0695
810	hsa-mir-3692	0.0255	-0.0736
811	hsa-mir-3713	-0.0256	0.1124
812	hsa-mir-3714	0.0672	0.1577
813	hsa-mir-3907	-0.1229	0.2171
814	hsa-mir-3909	-0.0017	-0.0446
815	hsa-mir-3910-1	0.0042	0.2265
816	hsa-mir-3910-2	0.1289	-0.0602
817	hsa-mir-3911	-0.0655	-0.0192
818	hsa-mir-3912	0.0723	-0.0858
819	hsa-mir-3913-1	0.1387	0.0303
820	hsa-mir-3913-2	-0.2566	0.0628
821	hsa-mir-3914-1	0.0537	0.0957
822	hsa-mir-3914-2	-0.0071	-0.1288
823	hsa-mir-3915	0.0439	0.1701
824	hsa-mir-3916	-0.0928	-0.056
825	hsa-mir-3917	-0.0311	0.0349

826	hsa-mir-3918	0.0936	-0.1647
827	hsa-mir-3919	0.1126	0.168
828	hsa-mir-3920	0.1801	-0.0198
829	hsa-mir-3921	-0.0289	0.1214
830	hsa-mir-3922	-0.1925	-0.1402
831	hsa-mir-3923	0.1186	0.0201
832	hsa-mir-3924	0.0522	0.045
833	hsa-mir-3925	0.0656	0.0584
834	hsa-mir-3926-1	0.1962	-0.1244
835	hsa-mir-3926-2	0.1136	0.0178
836	hsa-mir-3927	0.2032	-0.0233
837	hsa-mir-3928	0.0661	0.0601
838	hsa-mir-3934	0.0444	0.1188
839	hsa-mir-3935	-0.0554	0.1357
840	hsa-mir-3936	0.061	0.1166
841	hsa-mir-3937	0.1625	0.0761
842	hsa-mir-3938	0.1111	0.0881
843	hsa-mir-3939	0.1021	0.2305
844	hsa-mir-3940	0.0512	-0.0452
845	hsa-mir-3941	-0.0234	0.0244
846	hsa-mir-3942	-0.0757	-0.0997
847	hsa-mir-3943	-0.0098	-0.0459
848	hsa-mir-3944	0.1265	-0.0275
849	hsa-mir-3945	-0.127	-0.0562
850	hsa-mir-3972	-0.006	0.1362
851	hsa-mir-3973	0.0656	0.0637
852	hsa-mir-3974	0.0875	0.0637
853	hsa-mir-3975	0.1041	-0.012
854	hsa-mir-3976	0.0428	-0.0241
855	hsa-mir-3977	-0.0006	-0.1871
856	hsa-mir-3978	0.1844	-0.0687
857	hsa-mir-4251	-0.3243	-0.2115
858	hsa-mir-4252	-0.0223	-0.0167
859	hsa-mir-4253	0.1816	0.0757
860	hsa-mir-4254	0.1744	0.102
861	hsa-mir-4255	0.1905	0.0257
862	hsa-mir-4256	0.1051	0.1483
863	hsa-mir-4257	0.0718	-0.1069
864	hsa-mir-4258	0.1825	0.049
865	hsa-mir-4259	-0.0503	-0.1256
866	hsa-mir-4260	0.0275	0.0152
867	hsa-mir-4261	0.0761	0.135
868	hsa-mir-4262	-0.5242	0.0995
869	hsa-mir-4263	-0.382	0.1106

870	hsa-mir-4264	0.0275	0.1435
871	hsa-mir-4265	0.0689	-0.0813
872	hsa-mir-4266	0.1407	0.1259
873	hsa-mir-4267	-0.1162	0.049
874	hsa-mir-4268	0.1112	0.1891
875	hsa-mir-4269	0.0259	0.1809
876	hsa-mir-4270	-0.3619	0.1885
877	hsa-mir-4271	-0.1313	0.025
878	hsa-mir-4272	0.0275	0.1192
879	hsa-mir-4274	-0.1508	0.0205
880	hsa-mir-4275	0.0761	0.038
881	hsa-mir-4276	-0.3502	-0.0926
882	hsa-mir-4277	0.0816	0.1014
883	hsa-mir-4278	-0.1622	0.165
884	hsa-mir-4279	-0.1851	0.2679
885	hsa-mir-4280	-0.1296	0.2236
886	hsa-mir-4281	-0.1307	0.2156
887	hsa-mir-4282	0.0306	0.0902
888	hsa-mir-4283-1	0.1416	0.2007
889	hsa-mir-4283-2	-0.4303	0.0445
890	hsa-mir-4284	-0.1467	0.2287
891	hsa-mir-4285	-0.6633	-0.1345
892	hsa-mir-4286	-0.0823	0.0395
893	hsa-mir-4287	-0.0114	0.0038
894	hsa-mir-4288	0.0576	-0.1586
895	hsa-mir-4289	-0.0272	-0.1323
896	hsa-mir-4290	0.1319	0.0297
897	hsa-mir-4291	0.0684	-0.0119
898	hsa-mir-4292	0.2334	-0.1227
899	hsa-mir-4293	-0.2544	-0.0419
900	hsa-mir-4294	-0.0715	-0.1132
901	hsa-mir-4295	0.0452	-0.0451
902	hsa-mir-4296	-0.0531	-0.1706
903	hsa-mir-4297	-0.0266	-0.0355
904	hsa-mir-4298	0.0968	-0.2156
905	hsa-mir-4299	-0.1467	-0.1112
906	hsa-mir-4302	-0.0459	-0.0627
907	hsa-mir-4303	0.0499	-0.0627
908	hsa-mir-4304	-0.0817	-0.1193
909	hsa-mir-4305	0.0143	-0.0088
910	hsa-mir-4307	0.0338	-0.1876
911	hsa-mir-4308	0.053	0.0407
912	hsa-mir-4309	-0.0071	-0.2156
913	hsa-mir-4311	0.1037	0.0211

914	hsa-mir-4312	-0.5883	0.0193
915	hsa-mir-4313	0.1142	-0.1876
916	hsa-mir-4314	0.0638	-0.2149
917	hsa-mir-4315-1	-0.0631	-0.1323
918	hsa-mir-4315-2	0.0233	-0.0844
919	hsa-mir-4316	0.0592	-0.2963
920	hsa-mir-4317	-0.0442	-0.1918
921	hsa-mir-4318	0.0411	-0.0272
922	hsa-mir-4319	0.0041	-0.4562
923	hsa-mir-4320	0.1162	0.0168
924	hsa-mir-4321	0.071	-0.1426
925	hsa-mir-4323	0.0551	-0.1997
926	hsa-mir-4324	-0.0437	-0.1078
927	hsa-mir-4325	0.0998	-0.2048
928	hsa-mir-4326	0.0674	-0.1933
929	hsa-mir-4327	0.1537	-0.0785
930	hsa-mir-4328	0.1662	-0.0023
931	hsa-mir-4329	0.1518	-0.1221
932	hsa-mir-4330	-0.1029	-0.0221
933	hsa-mir-4417	0.0832	-0.2142
934	hsa-mir-4418	-0.0409	-0.0725
935	hsa-mir-4419a	0.1648	-0.0745
936	hsa-mir-4419b	0.146	-0.0246
937	hsa-mir-4420	0.1137	-0.1323
938	hsa-mir-4422	0.2747	-0.0523
939	hsa-mir-4423	0.2247	-0.1207
940	hsa-mir-4425	-0.0168	-0.1829
941	hsa-mir-4427	-0.0077	-0.2506
942	hsa-mir-4429	0.0009	-0.2758
943	hsa-mir-4431	0.128	-0.1432
944	hsa-mir-4432	0.1368	-0.1489
945	hsa-mir-4433	-0.2495	-0.3885
946	hsa-mir-4434	0.1082	-0.1994
947	hsa-mir-4435-1	0.0317	-0.0892
948	hsa-mir-4435-2	-0.1231	-0.0733
949	hsa-mir-4437	0.1107	-0.1559
950	hsa-mir-4439	0.0478	-0.2831
951	hsa-mir-4442	0.1941	-0.2751
952	hsa-mir-4444-2	0.1695	-0.2831
953	hsa-mir-4446	-0.2297	-0.1911
954	hsa-mir-4447	0.146	-0.2463
955	hsa-mir-4451	-0.0564	-0.0018
956	hsa-mir-4455	-0.057	-0.1653
957	hsa-mir-4457	0.1304	0.0036

958	hsa-mir-4458	0.0684	-0.2456
959	hsa-mir-4460	0.125	-0.257
960	hsa-mir-4462	0.1082	-0.5763
961	hsa-mir-4463	-0.0299	-0.2286
962	hsa-mir-4465	0.131	-0.1646
963	hsa-mir-4467	0.0834	-0.2132
964	hsa-mir-4468	0.0717	-0.1525
965	hsa-mir-4469	0.0694	-0.2042
966	hsa-mir-4470	0.0255	-0.2614
967	hsa-mir-4472-1	-0.0273	-0.4003
968	hsa-mir-4478	0.0298	-0.2477
969	hsa-mir-4482-1	0.1279	-0.2449
970	hsa-mir-4484	0.148	-0.1754
971	hsa-mir-4486	0.1591	-0.1519
972	hsa-mir-4487	0.1079	-0.1274
973	hsa-mir-4488	-0.0743	-0.286
974	hsa-mir-4489	0.0274	-0.2167
975	hsa-mir-4490	-0.1457	-0.2941
976	hsa-mir-4491	-0.0079	-0.3995
977	hsa-mir-4493	-0.2439	-0.3209
978	hsa-mir-4494	0.1644	-0.1432
979	hsa-mir-4495	0.1292	-0.0695
980	hsa-mir-4496	0.075	-0.0752
981	hsa-mir-4497	-0.0108	-0.1612
982	hsa-mir-4498	-0.0049	-0.0714
983	hsa-mir-4499	0.023	-0.1653
984	hsa-mir-4501	-0.0501	-0.1163
985	hsa-mir-4504	0.0908	-0.2527
986	hsa-mir-4505	0.1715	0.0309
987	hsa-mir-4506	0.0533	-0.1829
988	hsa-mir-4508	0.0876	0.0951
989	hsa-mir-4509-1	0.0196	0.0399
990	hsa-mir-4509-2	-0.0517	0.0302
991	hsa-mir-4509-3	-0.0024	-0.0106
992	hsa-mir-4510	-0.0304	0.0192
993	hsa-mir-4511	0.0745	0.0704
994	hsa-mir-4513	0.1387	0.091
995	hsa-mir-4514	0.0211	-0.0806
996	hsa-mir-4515	0.0571	-0.0617
997	hsa-mir-4517	0.0089	-0.0138
998	hsa-mir-4518	-0.0198	-0.0839
999	hsa-mir-4519	-0.0837	-0.0998
1000	hsa-mir-4520a	-0.211	0.0429
1001	hsa-mir-4520b	0.1165	0.1067

1002	hsa-mir-4521	0.1644	0.1245
1003	hsa-mir-4522	-0.0079	0.0338
1004	hsa-mir-4523	-0.0512	0.0142
1005	hsa-mir-4524a	0.0703	0.2833
1006	hsa-mir-4524b	-0.0435	-0.0094
1007	hsa-mir-4525	0.0148	0.0675
1008	hsa-mir-4526	-0.1968	-0.0468
1009	hsa-mir-4527	0.0538	0.0375
1010	hsa-mir-4528	0.1324	0.1387
1011	hsa-mir-4529	-0.0123	-0.0892
1012	hsa-mir-4530	-0.1058	-0.0919
1013	hsa-mir-4531	-0.0916	-0.0019
1014	hsa-mir-4532	-0.1058	-0.0087
1015	hsa-mir-4533	-0.0754	-0.0056
1016	hsa-mir-4534	-0.2334	-0.1591
1017	hsa-mir-4535	-0.0208	0.0025
1018	hsa-mir-4536-1	0.1315	0.2077
1019	hsa-mir-4536-2	-0.0369	0.0441
1020	hsa-mir-4540	0.0279	-0.1186
1021	hsa-mir-4633	-0.1128	-0.0169
1022	hsa-mir-4634	-0.1621	0.021
1023	hsa-mir-4635	-0.0816	0.1062
1024	hsa-mir-4636	-0.1906	0.013
1025	hsa-mir-4637	-0.041	0.3142
1026	hsa-mir-4638	0.0969	0.1645
1027	hsa-mir-4639	0.0656	0.0381
1028	hsa-mir-4640	0.0524	0.0621
1029	hsa-mir-4641	0.0148	0.0787
1030	hsa-mir-4642	-0.2363	0.052
1031	hsa-mir-4643	0.1863	0.1165
1032	hsa-mir-4644	0.0885	0.128
1033	hsa-mir-4645	0.0881	0.1387
1034	hsa-mir-4646	0.1083	0.0805
1035	hsa-mir-4647	0.05	0.0572
1036	hsa-mir-4648	-0.065	-0.016
1037	hsa-mir-4649	0.0404	-0.0263
1038	hsa-mir-4650-1	-0.1594	-0.0584
1039	hsa-mir-4650-2	-0.2334	0.0512
1040	hsa-mir-4651	-0.1506	0.1075
1041	hsa-mir-4652	0.1115	0.1703
1042	hsa-mir-4653	0.0862	0.0756
1043	hsa-mir-4654	0.1115	-0.049
1044	hsa-mir-4655	-0.0123	0.018
1045	hsa-mir-4656	-0.0188	-0.0673

1046	hsa-mir-4657	-0.0583	-0.0131
1047	hsa-mir-4658	-0.078	-0.1905
1048	hsa-mir-4659a	-0.1106	0.0858
1049	hsa-mir-4660	-0.295	0.1808
1050	hsa-mir-4661	0.0764	0.0842
1051	hsa-mir-4662a	0.0079	-0.1131
1052	hsa-mir-4662b	-0.0578	-0.0292
1053	hsa-mir-4663	0.0346	0.0243
1054	hsa-mir-4664	-0.2398	-0.011
1055	hsa-mir-4665	-0.1353	-0.1045
1056	hsa-mir-4666a	-0.0094	0.0464
1057	hsa-mir-4667	0.0112	0.0086
1058	hsa-mir-4669	0.3321	0.1444
1059	hsa-mir-4670	0.4916	-0.019
1060	hsa-mir-4671	0.1624	0.2048
1061	hsa-mir-4672	0.2769	-0.0881
1062	hsa-mir-4673	0.345	-0.1074
1063	hsa-mir-4675	0.1204	-0.0057
1064	hsa-mir-4676	-0.1562	0.0217
1065	hsa-mir-4677	-0.3948	-0.0938
1066	hsa-mir-4678	-0.0369	0.0217
1067	hsa-mir-4679-2	-0.0622	-0.1275
1068	hsa-mir-4680	-0.0851	-0.0255
1069	hsa-mir-4681	-0.2421	-0.0647
1070	hsa-mir-4682	-0.3046	0.0561
1071	hsa-mir-4683	-0.4721	0.3122
1072	hsa-mir-4684	-0.3612	0.1041
1073	hsa-mir-4685	-0.0397	0.0248
1074	hsa-mir-4686	0.2451	0.0708
1075	hsa-mir-4687	0.038	0.1266
1076	hsa-mir-4688	0.0233	0.0464
1077	hsa-mir-4689	-0.2071	0.0367
1078	hsa-mir-4690	-0.1977	0.161
1079	hsa-mir-4691	-0.2071	0.1391
1080	hsa-mir-4692	-0.5798	0.0042
1081	hsa-mir-4693	0.0577	0.0107
1082	hsa-mir-4694	0.2937	-0.2485
1083	hsa-mir-4695	0.2736	0.0623
1084	hsa-mir-4696	0.1721	-0.0416
1085	hsa-mir-4697	0.0926	-0.0069
1086	hsa-mir-4698	-0.0313	0.1065
1087	hsa-mir-4699	-0.1441	-0.2439
1088	hsa-mir-4700	-0.5397	-0.0853
1089	hsa-mir-4701	0.3212	-0.0535

1090	hsa-mir-4703	0.2915	-0.3011
1091	hsa-mir-4705	-0.2301	-0.2901
1092	hsa-mir-4706	0.1053	-0.0141
1093	hsa-mir-4707	0.042	-0.053
1094	hsa-mir-4708	-0.0823	0.0308
1095	hsa-mir-4709	-0.0174	-0.1053
1096	hsa-mir-4710	-0.2071	-0.0807
1097	hsa-mir-4711	0.381	-0.0052
1098	hsa-mir-4712	0.1709	-0.0393
1099	hsa-mir-4713	0.2781	-0.1148
1100	hsa-mir-4714	0.0837	-0.0766
1101	hsa-mir-4715	0.03	-0.0146
1102	hsa-mir-4716	-0.0313	0.0655
1103	hsa-mir-4717	0.0247	0.1798
1104	hsa-mir-4718	-0.349	-0.1065
1105	hsa-mir-4719	0.3266	0.0351
1106	hsa-mir-4720	0.3004	0.0287
1107	hsa-mir-4721	0.2185	0.0314
1108	hsa-mir-4722	0.0538	-0.0719
1109	hsa-mir-4723	-0.1114	-0.0146
1110	hsa-mir-4724	-0.1276	0.026
1111	hsa-mir-4725	-0.0851	-0.057
1112	hsa-mir-4726	-0.0808	0.2684
1113	hsa-mir-4727	0.1428	-0.0252
1114	hsa-mir-4728	0.2566	-0.008
1115	hsa-mir-4729	0.149	0.0276
1116	hsa-mir-4730	0.034	-0.0783
1117	hsa-mir-4731	-0.001	0.0351
1118	hsa-mir-4732	-0.273	0.0718
1119	hsa-mir-4733	-0.1187	0.0405
1120	hsa-mir-4735	-0.0665	0.0655
1121	hsa-mir-4736	0.297	0.0702
1122	hsa-mir-4738	0.2915	0.2675
1123	hsa-mir-4739	0.0273	0.0676
1124	hsa-mir-4740	0.1636	-0.0575
1125	hsa-mir-4741	-0.2229	0.1258
1126	hsa-mir-4742	-0.1396	-0.018
1127	hsa-mir-4743	-0.1946	-0.0162
1128	hsa-mir-4744	-0.1128	-0.0279
1129	hsa-mir-4745	0.4273	-0.0649
1130	hsa-mir-4746	0.3396	0.0029
1131	hsa-mir-4747	-0.1143	-0.2503
1132	hsa-mir-4749	0.1709	0.0289
1133	hsa-mir-4750	-0.0467	-0.0045

1134	hsa-mir-4751	-0.0594	0.0974
1135	hsa-mir-4752	-0.2009	-0.1337
1136	hsa-mir-4753	-0.3404	-0.0804
1137	hsa-mir-4755	-0.0736	-0.1806
1138	hsa-mir-4756	-0.0665	-0.055
1139	hsa-mir-4757	0.1477	-0.3368
1140	hsa-mir-4758	-0.2182	-0.0474
1141	hsa-mir-4759	-0.173	0.0484
1142	hsa-mir-4760	-0.3421	-0.0204
1143	hsa-mir-4761	-0.2551	-0.1523
1144	hsa-mir-4762	-0.3335	-0.189
1145	hsa-mir-4763	-0.1684	-0.1546
1146	hsa-mir-4764	-0.0147	-0.0949
1147	hsa-mir-4765	0.2067	-0.3354
1148	hsa-mir-4766	-0.2024	-0.1617
1149	hsa-mir-4768	-0.4129	-0.0804
1150	hsa-mir-4769	-0.4911	-0.0398
1151	hsa-mir-4770	-0.0119	-0.1378
1152	hsa-mir-4771-1	-0.2913	-0.0511
1153	hsa-mir-4771-2	0.1051	-0.1974
1154	hsa-mir-4772	-0.0391	-0.1453
1155	hsa-mir-4773-1	0.0145	0.3182
1156	hsa-mir-4773-2	-0.0094	-0.0337
1157	hsa-mir-4774	0.192	0.0073
1158	hsa-mir-4776-1	-0.0535	-0.0233
1159	hsa-mir-4776-2	0.0309	-0.1341
1160	hsa-mir-4777	0.0289	-0.0499
1161	hsa-mir-4778	0.0367	-0.0735
1162	hsa-mir-4780	0.087	0.0428
1163	hsa-mir-4781	0.1453	0.0241
1164	hsa-mir-4782	0.1032	0.0062
1165	hsa-mir-4783	-0.0391	-0.0222
1166	hsa-mir-4784	0.1051	-0.0006
1167	hsa-mir-4785	0.0833	-0.0986
1168	hsa-mir-4786	-0.2178	0.0624
1169	hsa-mir-4788	0.0599	-0.0735
1170	hsa-mir-4789	-0.2475	-0.036
1171	hsa-mir-4790	0.0165	-0.0074
1172	hsa-mir-4791	0.1032	-0.0383
1173	hsa-mir-4792	-0.2681	0.0373
1174	hsa-mir-4793	0.0707	-0.0314
1175	hsa-mir-4794	-0.261	-0.0233
1176	hsa-mir-4795	-0.3137	-0.1108
1177	hsa-mir-4796	-0.0501	-0.0902

1178	hsa-mir-4797	-0.502	-0.1441
1179	hsa-mir-4798	0.1259	-0.0256
1180	hsa-mir-4799	0.1411	0.0051
1181	hsa-mir-4800	-0.0181	0.0645
1182	hsa-mir-4801	0.0477	-0.0233
1183	hsa-mir-4802	-0.0535	0.0439
1184	hsa-mir-4803	-0.141	-0.064
1185	hsa-mir-4804	0.0789	0.0494
1186	hsa-mir-4999	-0.046	-0.1267
1187	hsa-mir-5000	0.0983	0.0934
1188	hsa-mir-5001	-0.0371	0.0635
1189	hsa-mir-5002	0.1686	0.0849
1190	hsa-mir-5003	0.2691	-0.0476
1191	hsa-mir-5004	-0.0709	0.0472
1192	hsa-mir-5006	0.0541	-0.0711
1193	hsa-mir-5007	0.0914	-0.0558
1194	hsa-mir-5008	0.1326	0.0667
1195	hsa-mir-5009	0.1375	-0.0165
1196	hsa-mir-5010	-0.5857	0.105
1197	hsa-mir-5011	-0.0501	0.071
1198	hsa-mir-5047	-0.4332	-0.1255
1199	hsa-mir-5087	-0.5636	-0.2169
1200	hsa-mir-5088	0.025	-0.0476
1201	hsa-mir-5089	0.0335	-0.0165
1202	hsa-mir-5090	0.248	-0.1181
1203	hsa-mir-5091	-0.3543	0.071
1204	hsa-mir-5092	0.185	0.0689
1205	hsa-mir-5093	0.1453	0.0774
1206	hsa-mir-5094	0.199	0.0185
1207	hsa-mir-5100	-0.1134	-0.0348
1208	hsa-mir-5186	-0.7107	-0.0337
1209	hsa-mir-5187	-0.0134	0.0817
1210	hsa-mir-5188	0.239	-0.0245
1211	hsa-mir-5189	0.0801	0.0196
1212	hsa-mir-5190	0.1265	0.2334
1213	hsa-mir-5192	0.1332	-0.0142
1214	hsa-mir-5195	0.0354	0.0461
1215	hsa-mir-5196	-0.0591	0.133
1216	hsa-mir-5197	-0.1359	0.0373
1217	hsa-mir-5571	0.0914	0.1484
1218	hsa-mir-5572	0.1162	0.045
1219	hsa-mir-5579	0.0092	0.2334
1220	hsa-mir-5581	0.102	0.0667
1221	hsa-mir-5582	0.0152	-0.2094

1222	hsa-mir-5584	-0.1271	-0.2113
1223	hsa-mir-5587	-0.0688	-0.2011
1224	hsa-mir-5588	-0.0625	-0.1457
1225	hsa-mir-5589	0.1786	-0.1841
1226	hsa-mir-5680	0.1856	-0.1071
1227	hsa-mir-5681a	-0.0074	-0.073
1228	hsa-mir-5681b	-0.0941	-0.153
1229	hsa-mir-5682	-0.1706	-0.1518
1230	hsa-mir-5683	0.0535	-0.2561
1231	hsa-mir-5684	-0.0391	-0.2854
1232	hsa-mir-5685	-0.0688	-0.1475
1233	hsa-mir-5686	0.1259	-0.3181
1234	hsa-mir-5687	-0.194	-0.1598
1235	hsa-mir-5688	0.0662	-0.1439
1236	hsa-mir-5689	-0.0094	-0.0603
1237	hsa-mir-5690	0.0361	-0.1354
1238	hsa-mir-5691	0.21	-0.1137
1239	hsa-mir-5692a-1	0.0605	-0.1488
1240	hsa-mir-5692b	0.038	-0.087
1241	hsa-mir-5693	-0.0255	-0.2962
1242	hsa-mir-5694	0.0515	-0.2049
1243	hsa-mir-5695	-0.0751	-0.2319
1244	hsa-mir-5696	0.0637	-0.3354
1245	hsa-mir-5697	0.1044	-0.2216
1246	hsa-mir-5698	0.1057	-0.3445
1247	hsa-mir-5700	-0.7031	-0.6241
1248	hsa-mir-5701-1	0.0092	-0.1457
1249	hsa-mir-5701-2	-0.1361	-0.3501
1250	hsa-mir-5702	-0.2859	-0.1293
1251	hsa-mir-5703	0.0249	-0.2469
1252	hsa-mir-5704	-0.5792	-0.3023
1253	hsa-mir-5705	-0.9301	-0.2901
1254	hsa-mir-5706	-0.266	0.0331
1255	hsa-mir-5707	-0.5704	-0.6635

Supplementary Table 2. Clinical characteristics of 14 CRC patients used in this study.

Characteristic	Number	Percent of Total (%)
Age		
≤60	6	42.86
>60	8	57.14
Gender		
Male	10	71.43
Female	4	28.57
Tumor differentiation		
Poor	5	35.71
Median	8	57.14
Well	1	7.14
TNM stage		
I - II	7	50
III-IV	7	50
KRAS mutations		
wild type	7	50
G12 mutations	4	28.57
G13 mutations	3	21.43

Supplementary Table 3. Primers and shRNAs used in this study.

Primers

	Forward primer(5'-3')	Reverse primer(5'-3')
MiR-30a ChIP primers		
Amplicon 1	CAGTGACTTGCTGAAGGAAGGG	TCCTCCTTCCTACTTTGGCTGGC
Amplicon 2	CTCTGCCCTGAAGGTGTAGC	ACCCACATACCTGATTGCC
Amplicon 3	TGCTGTTGACAGTGAGCGAC	TCCGACTGAAAGCCCATCTG
Amplicon 4	GGCCATGAGAGGTTTCATCA	ACCCAGAAAAACAGCCGAG
MiR-30a Cas9-knockout oligo		
miR-30a-sgRNA-1#	CACCGCGACTGTAAACATCCTCGAC	AAACGTCGAGGATGTTTACAGTCGC
miR-30a-sgRNA-2#	CACCGGGCTTCACAGCTTCCAGTCG	AAACCGACTGGAAGCTGTGAAGCCC
Genomic DNA sequencing primer		
miR-30a-knockout	ATCGTTGCCTGCACATCTTG	AAGTAGCCCCCTTGAAGTCCG
KRAS mutation (Exon1)	TCTTAAGCGTCGATGGAGGAG	TTGAAACCAAGGTACATTTTCAG
RT-qPCR primer		
miR-30a-3p	AGCCGCTTTCAGTCGGATGTTT	GTGCAGGGTCCGAGGTAT
miR-30a-5p	GCGCGTGTAACATCCTCGACTGG	GTGCAGGGTCCGAGGTAT
KRAS	CCATTTCCGACTGGGAGCGAG	TATTCAGTCATTTTCAGCAGGC
ME1	ACAGATAATATTTTCCCTCACT	CTACTGGTCAACTTTGGT
β -actin	ATCATGAAGTGTGACGTGGACAT	AGGAGCAATGATCTTGATCTTCA
GAPDH	CAAGGTCATCCATGACAACCTTTG	GTCCACCACCCTGTGTCTGTAG
Primer for constructs		
pHAGE-PURO -IRF8	ATAAGAATGCGGCCGCATGTGTGACCGAATGGTGG	CCGCTCGAGGACGGTGATCTGTGGTTTTC
pHAGE-GFP-miR-30a	CGCGGATCCTAATGACATCCATGAGCCTTCT	CGCCTCGAGATACACAGAGCACCTCCTCA
pHAGE-puro-ME1	CGCGCGGCCGCATGGAGCCGAAGCCCCCGT	CTACTGGTCAACTTTGGTCT
shRNA-#1-resistant ME1	ACATATCGCCTCCGCTCTCAATGCATGGCCAGAA	GACGGAGGCATATGCTCCTCGATCGTGGATAGTA
pHAGE-puro-KRAS	CGCGGATCCATGACTGAATATAAACTTGTGG	CGCGTCGACCTACATTATAATGCATTTTTTAATT
pGL3-miR-30a-P1	CCGCTCGAGAGGGCGTTTCTTGGTTAGGG	CCCAAGCTTAGTACTGGAGGGTGTGGGTTTCA
pGL3-miR-30a-P1-Mut1	TGGGGTACAGAGTTACTTATTAGCCTGGAGGCTGGG	TAATAAGTAACTCTGTACCCCACTCCCATCCTGCTC
pGL3-miR-30a-P1-Mut2	CCCTCTACTCCAACCTCCCTGTAAAGAATGCCAGC	AAGGGAGTTGGAGTATAGAGGGTCAGGGCATCCAG
pGL3-miR-30a-P2	CCGCTCGAGTTGAAACCCACACCTTCCAG	GGAAGATCTGGTTTGAAGCAGCCCGAGA
pGL3-miR-30a-P3	CCGCTCGAGGCTACCCTGGACACTAAGCC	CCCAAGCTTGTGACAGGTCCCCTACTTGC
pGL3-miR-30a-P4	CCGCTCGAGCAAGGCAAGTAGGGGACCTG	CCCAAGCTTAAGTAGCCCTTGAAGTCCG
pGL3-KRAS-UTR-B1	CGCTCTAGAGGCTTTTGGTGCATGCAGTT	CGCGTCGACCAGGAAAAGCTATTAGGAGTCT
pGL3-KRAS-UTR-B1-mut	GGTTTTTGCAGCGTCATTGAGGGAACACAAATTT	CTCAATGACGCTGCAAAAACCAATTAGAAGGTCT
pGL3-KRAS-UTR-B2	CGCTCTAGAAGGCCTTTGGTATACGACCC	CGCGTCGACCTGCAGTTCCTGAAGTATGG
pGL3-KRAS-UTR-B3	CGCTCTAGAACAGAGCTAACTGGGTTACA	CGCGTCGACATTCATATCCATTTCCGGGG
pGL3-ME1-UTR-B1	CGCTCTAGACTACGGAGAACTCATCATT	CGCGTCGACCTTTAAGAGGTCAGTTCCCTC
pGL3-ME1-UTR-B2	CGCTCTAGAGAGTAGTTATATGCCAGACTG	CGCGTCGACCAATTCACCTTTTCTATGC
pGL3-ME1-UTR-B2-mut	CGCTCTAGAGAGTAGTTATATGCCAGACTG	CGCGTCGACCAATTCACCTTTTCTATGCTTTAATA AATCTTTTGCATAGATGCGCTCAITTA

shRNA sequences

Gene	siRNA sequences (5'-3')
shKRAS-#1	CCTATGGTCCTAGTAGGAAAT
shKRAS-#2	GAGGGCTTTCTTTGTGTAATT
shME1-#1	GGGCATATTGCTTCAGTTC
shME1-#2	GCCTTCAATGAACGGCCTATT