Micro-RNA response to imatinib mesylate in patients with chronic myeloid leukemia

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Online Supplementary Table S1. Primer sequences used in this study for qRT-PCR validation experiments.

miRNA name	miRNA mature sequence (5'-3')	q-PCR primer sequence (5'-3')
hsa-miR-18[1]	UAAGGUGCAUCUAGUGCAGAUAG	GGTTGGTTAAGGTGCATCTAGTG
hsa-miR-23[1]	AUCACAUUGCCAGGGAUUUCC	TAATTATCACATTGCCAGGGAT
hsa-miR-27[1]	UUCACAGUGGCUAAGUUCCGC	GGATTACGTTCACAGTGGCTAAG
hsa-miR-32	UAUUGCACAUUACUAAGUUGCA	GGTTCAGCTTATTGCACATTACTAAGT
hsa-miR-98	UGAGGUAGUAAGUUGUAUUGUU	GGGTGGTGAGGTAGTAAGTTGTA
hsa-miR-132	UAACAGUCUACAGCCAUGGUCG	GGGTGTTAACAGTCTACAGCCAT
hsa-miR-142-3p	UGUAGUGUUUCCUACUUUAUGGA	GGGTGGTTGTAGTGTTTCCTACT
hsa-miR-143	UGAGAUGAAGCACUGUAGCUC	CCGGAATTCTGAGATGAAGCACTG
hsa-miR-145	GUCCAGUUUUCCCAGGAAUCCCU	AAGGTTGTCCAGTTTTCCCAGGAA
hsa-miR-146a	UGAGAACUGAAUUCCAUGGGUU	AACTGATGAGAACTGAATTCCATG
hsa-miR-148a	UCAGUGCACUACAGAACUUUGU	GGTTGTCAGTGCACTACAGAACTT
hsa-miR-150	UCUCCCAACCCUUGUACCAGUG	AACCTGATCTCCCAACCCTTGTA
hsa-miR-155[2]	UUAAUGCUAAUCGUGAUAGGGGU	-
hsa-miR-181a	AACAUUCAACGCUGUCGGUGAGU	GGTTGGTAACATTCAACGCTGTC
hsa-miR-199b-5p	CCCAGUGUUUAGACUAUCUGUUC	GTCAGGCCCAGTGTTTAGACTAT
hsa-miR-222	AGCUACAUCUGGCUACUGGGU	GGAACAAGCTACATCTGGCTACT
hsa-miR-223	UGUCAGUUUGUCAAAUACCCCA	CCACGTCTGTCAGTTTGTCAAA
hsa-miR-301a	CAGUGCAAUAGUAUUGUCAAAGC	GTCAGGCAGTGCAATAGTATTGTCA
hsa-miR-374a	UUAUAAUACAACCUGAUAAGUG	CCCTAGTTATAATACAACCTGATAAGTG
hsa-miR-422b	ACUGGACUUGGAGUCAGAAGG	ACTGCTCTGGACTTGGAGTCA

The overlap between the primer sequence and the mature miRNA is underlined. MiRNAs reproducibly amplified are displayed on a gray background.
[1]Primers for these assays detect isoforms a and b of the mature miRNA.
[2]This miRNA was tested using the corresponding ABI TaqMan assay.

Online Supplementary Table S2. Fold change of miRNAs from TLDA analysis at days 1, 7, and 14 compared to day 0. Complete list of the 141 miRNAs reproducibly detected in CML samples by TLDA analysis. Upper and lower parts represent miRNAs with $\log_2$ variations of > 0.6, i.e. mean fold change > 1.5 by day 14 (52 miRNAs, 44 down, 8 up). Intermediate parts represent miRNAs with mean fold change of 1.3-1.5 (36 miRNAs, 25 down, 11 up). Central part contains miRNAs with mean fold change < 1.3 (53 miRNAs).

Variation at day 14 *vs.* day 0	miRNA assay	Day 1		Day 7		Day 14	
	(ABI 'detector' code)	Fold change	SD	Fold change	SD	Fold change	SD
Reduced by more than 1.5-fold	hsa-miR-199b-4373100	-0.539	0.871	-0.669	0.597	-3.800	0.745
	hsa-miR-422a-4373200	-0.680	0.829	-2.529	1.560	-2.380	1.522
	hsa-miR-17-3p-4373120	-0.974	0.955	0.582	0.724	-2.050	1.298
	hsa-miR-517a-4373243	-2.643	1.544	-1.390	1.328	-1.955	1.133
	hsa-miR-143-4373134	-1.287	0.911	-0.477	0.610	-1.789	1.368
	hsa-miR-32-4373056	-0.360	0.832	-1.436	1.781	-1.674	1.456
	hsa-miR-378-4373024	-0.508	0.438	-0.898	0.440	-1.535	0.489
	hsa-miR-379-4373023	-0.940	0.522	-1.277	0.269	-1.510	0.616
	hsa-miR-145-4373133	0.137	0.520	-0.023	0.515	-1.483	1.028
	hsa-miR-302a-4373275	-0.890	0.703	-2.165	0.784	-1.395	0.748
	hsa-miR-518e-4373265	0.401	0.812	-0.768	1.442	-1.330	1.474
	hsa-miR-301-4373064	-0.430	0.556	-0.931	1.194	-1.120	0.596
	hsa-miR-19a-4373099	-0.342	0.787	-0.457	0.936	-1.046	0.798
	hsa-miR-98-4373009	-0.691	1.748	-1.054	1.517	-1.042	1.108
	hsa-miR-148a-4373130	-0.332	0.416	-0.551	0.447	-1.020	0.408
	hsa-miR-550-4380954	0.133	0.462	0.083	0.402	-1.002	0.544
	hsa-miR-422b-4373016	-0.994	0.418	-1.323	0.839	-0.984	0.465
	hsa-miR-514-4373240	-0.548	1.141	-0.669	1.129	-0.899	0.894
	hsa-miR-130b-4373144	-0.381	0.974	0.266	0.853	-0.887	0.907
	hsa-miR-142-3p-4373136	-0.060	0.408	-0.469	0.560	-0.882	0.805
	hsa-miR-223-4373075	-0.240	0.485	-0.187	0.513	-0.878	0.803
	hsa-miR-20a-4373286	-0.094	0.668	-0.119	0.780	-0.863	0.622
	hsa-miR-518c-4373247	0.337	1.243	-1.523	1.468	-0.859	1.211
	hsa-miR-518b-4373246	-0.988	0.995	-0.325	0.678	-0.847	0.960
	hsa-miR-302c-4373277	-0.220	0.733	-1.618	1.475	-0.846	0.665
	hsa-miR-106b-4373155	-0.197	0.366	0.071	0.540	-0.841	0.445
	hsa-miR-19b-4373098	-0.369	0.700	-0.154	0.824	-0.810	0.638
	hsa-miR-27b-4373068	-0.675	1.039	-0.883	1.375	-0.792	1.015
	hsa-miR-449-4373207	0.317	0.818	-0.097	1.089	-0.752	1.115
	hsa-miR-367-4373034	-1.408	0.899	-1.760	1.344	-0.743	1.035
	hsa-miR-221-4373077	-0.612	1.399	-1.774	1.929	-0.743	1.291
	hsa-miR-374-4373028	-0.583	0.959	-0.462	0.955	-0.739	0.784
	hsa-miR-18a-4373118	-0.180	0.558	0.277	0.698	-0.726	0.658
	hsa-miR-25-4373071	-0.073	0.406	0.309	0.577	-0.721	0.541
	hsa-miR-449b-4381011	-0.344	0.888	-0.138	0.449	-0.717	0.427
	hsa-miR-659-4380924	0.733	0.312	0.338	0.510	-0.705	0.861
	hsa-miR-23a-4373074	-0.563	0.351	-0.361	0.441	-0.700	0.600
	hsa-miR-372-4373029	-0.064	0.960	-0.135	1.055	-0.699	0.903
	hsa-miR-515-3p-4373241	0.827	0.672	1.119	0.563	-0.664	0.888
	hsa-miR-660-4380925	-0.110	0.929	-0.156	0.974	-0.657	0.867
	hsa-miR-99a-4373008	0.125	1.031	-0.010	0.822	-0.635	0.933
	hsa-miR-629-4380969	-1.005	0.610	-0.526	0.917	-0.633	0.753

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	hsa-miR-335-4373045	-0.232	1.591	-0.209	1.440	-0.623	1.188
	hsa-miR-142-5p-4373135	-0.101	0.496	-0.095	0.618	-0.601	0.690
Reduced by more than 1.3-fold	hsa-let-7c-4373167	-0.627	1.533	-0.141	1.231	-0.567	0.864
	hsa-miR-365-4373194	0.255	0.426	-0.464	0.331	-0.528	0.398
	hsa-miR-20b-4373263	-0.252	1.212	-0.563	1.529	-0.525	0.827
	hsa-miR-324-3p-4373053	-0.265	0.663	0.416	0.618	-0.525	0.590
	hsa-miR-518d-4373248	0.314	0.358	-1.063	1.101	-0.503	0.562
	hsa-miR-425-5p-4380926	-0.154	0.518	0.140	0.580	-0.498	0.535
	hsa-miR-30b-4373290	-0.224	0.657	0.020	0.736	-0.486	0.591
	hsa-miR-425-4373202	-0.134	0.313	-0.171	0.782	-0.485	0.528
	hsa-miR-17-5p-4373119	-0.247	0.752	0.288	0.853	-0.476	0.663
	hsa-miR-650-4381006	-1.213	0.452	-0.541	0.964	-0.475	0.571
	hsa-miR-140-4373138	-0.217	0.506	-0.036	0.628	-0.461	0.623
	hsa-miR-15b-4373122	-0.103	0.197	0.522	0.505	-0.453	0.304
	hsa-miR-585-4381027	-0.146	0.280	-0.190	0.215	-0.449	0.192
	hsa-miR-222-4373076	0.134	0.641	-0.275	0.802	-0.444	0.597
	hsa-miR-509-4373234	-1.165	0.765	-0.132	0.795	-0.438	0.891
	hsa-miR-320-4373055	-0.836	0.785	0.028	0.537	-0.436	0.539
	hsa-miR-376a-4373026	-2.178	2.038	-0.139	1.536	-0.413	1.148
	hsa-miR-93-4373012	-0.144	0.223	0.313	0.415	-0.407	0.317
	hsa-miR-125b-4373148	-0.581	0.882	0.135	0.610	-0.404	0.658
	hsa-miR-340-4373041	0.066	0.641	-0.452	0.795	-0.394	0.590
	hsa-miR-484-4381032	-0.146	0.525	0.417	0.579	-0.388	0.518
	hsa-miR-15a-4373123	-0.156	0.526	0.131	0.675	-0.386	0.624
	hsa-let-7b-4373168	-0.095	0.297	0.445	0.592	-0.384	0.303
	hsa-miR-328-4373049	-0.438	0.653	-0.072	0.722	-0.382	0.592
	hsa-miR-191-4373109	-0.212	0.491	0.226	0.501	-0.382	0.561
Modified by less than 1.3-fold	hsa-miR-490-4373215	0.192	0.299	-0.164	0.324	-0.372	0.338
	hsa-miR-345-4373039	-0.047	0.236	0.271	0.213	-0.364	0.249
	hsa-miR-510-4373235	0.478	0.448	-0.303	0.558	-0.364	1.006
	hsa-miR-155-4373124	-0.293	0.810	-0.610	0.804	-0.351	0.550
	hsa-miR-195-4373105	-0.162	0.511	-0.016	0.870	-0.344	0.473
	hsa-miR-27a-4373287	-0.126	0.485	-0.016	0.645	-0.327	0.494
	hsa-miR-103-4373158	-0.363	0.540	-0.020	0.613	-0.306	0.413
	hsa-miR-199a-4378068	-0.474	1.150	-0.772	1.252	-0.305	0.904
	hsa-miR-16-4373121	-0.250	0.570	0.346	0.823	-0.288	0.558
	hsa-miR-21-4373090	-0.584	0.913	-0.931	0.892	-0.267	0.800
	hsa-miR-194-4373106	-0.501	0.520	-0.848	1.146	-0.234	0.433
	hsa-miR-197-4373102	-0.221	0.465	0.140	0.456	-0.232	0.577
	hsa-miR-196a-4373104	0.244	0.836	-0.488	1.136	-0.230	0.824
	hsa-miR-30a-5p-4373061	-0.246	0.526	0.255	0.575	-0.229	0.439
	hsa-miR-451-4373209	-0.746	1.683	0.902	1.832	-0.226	1.348
	hsa-miR-331-4373046	-0.133	0.568	0.473	0.581	-0.225	0.468
	hsa-miR-126-4373269	-1.340	2.244	-0.080	1.752	-0.225	1.512
	hsa-miR-30d-4373059	-0.158	0.591	0.388	0.640	-0.222	0.449

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	hsa-miR-520e-4373255	-0.049	0.606	0.184	0.594	-0.205	0.478
	hsa-miR-302a-4378070	-0.714	0.787	0.026	0.799	-0.193	0.837
	hsa-miR-324-5p-4373052	-0.097	0.634	0.175	0.604	-0.188	0.602
	hsa-miR-186-4373112	-0.031	0.844	0.193	0.969	-0.186	0.785
	hsa-miR-196b-4373103	-0.026	0.998	0.293	0.957	-0.166	0.942
	hsa-miR-517c-4373264	1.309	1.587	0.023	1.317	-0.161	1.438
	hsa-miR-30c-4373060	-0.304	0.502	0.297	0.584	-0.151	0.486
	hsa-miR-362-4378092	-0.718	0.686	-0.465	0.882	-0.131	0.619
	hsa-miR-24-4373072	-0.256	0.636	-0.103	0.724	-0.114	0.608
	hsa-let-7a-4373169	-0.173	0.432	0.115	0.489	-0.093	0.394
	hsa-miR-26b-4373069	-0.232	0.744	0.044	0.769	-0.066	0.671
	hsa-miR-383-4373018	0.656	1.216	0.984	1.284	-0.060	1.283
	hsa-miR-423-4373015	0.102	0.448	0.382	0.422	-0.053	0.452
	hsa-miR-92-4373013	0.002	0.472	0.853	0.698	-0.048	0.369
	hsa-miR-330-4373047	0.814	0.897	0.537	0.876	-0.042	1.015
	hsa-miR-565-4380942	0.185	0.515	0.761	0.514	0.008	0.784
	hsa-miR-181d-4373180	0.622	0.684	-0.635	1.011	0.035	0.702
	hsa-miR-338-4373043	-0.349	0.708	-2.215	0.898	0.062	0.646
	hsa-miR-100-4373160	0.829	1.143	0.578	1.137	0.065	1.092
	hsa-miR-210-4373089	-0.198	1.082	0.315	1.335	0.091	1.087
	hsa-let-7f-4373164	-0.818	1.139	-0.826	0.870	0.117	0.581
	hsa-miR-501-4373226	-0.736	0.815	-0.192	1.115	0.117	0.807
	hsa-miR-192-4373108	0.330	1.035	0.508	1.090	0.120	1.059
	hsa-let-7g-4373163	-0.005	0.661	0.109	0.673	0.125	0.557
	hsa-miR-130a-4373145	-0.617	1.312	0.307	0.984	0.133	0.892
	hsa-miR-126-4378064	-0.586	1.851	0.061	1.673	0.138	1.442
	hsa-miR-409-5p-4373197	-0.333	1.646	0.584	1.452	0.167	1.435
	hsa-miR-28-4373067	-0.375	1.040	-0.062	1.015	0.223	0.794
	hsa-miR-152-4373126	-0.839	1.496	0.490	1.369	0.233	1.183
	hsa-miR-181b-4373116	0.227	0.311	0.851	0.567	0.243	0.296
	hsa-miR-29c-4373289	0.063	0.898	-0.180	0.886	0.255	0.664
	hsa-miR-26a-4373070	-0.178	0.774	0.185	0.740	0.256	0.652
	hsa-miR-361-4373035	-0.473	0.835	-0.583	0.758	0.260	0.638
	hsa-miR-630-4380970	-0.011	0.692	-0.041	0.994	0.277	0.624
	hsa-miR-148b-4373129	-0.139	0.979	0.004	0.973	0.289	0.824
Increased by more than 1.3-fold	hsa-let-7d-4373166	0.431	0.579	0.891	0.821	0.394	0.575
	hsa-miR-532-4380928	0.461	0.356	0.688	0.701	0.404	0.337
	hsa-miR-596-4380959	0.678	0.273	0.774	0.531	0.406	0.284
	hsa-miR-146b-4373178	0.027	0.990	-0.230	0.980	0.421	0.741
	hsa-miR-296-4373066	-0.165	1.147	0.981	1.041	0.439	0.967
	hsa-miR-99b-4373007	0.104	0.779	0.016	0.972	0.464	0.878
	hsa-miR-200c-4373096	0.240	0.846	0.574	0.917	0.493	0.729
	hsa-miR-642-4380995	-0.821	0.963	-2.074	1.502	0.494	0.686
	hsa-miR-29a-4373065	0.022	0.737	0.023	0.682	0.560	0.642
	hsa-miR-515-5p-4373242	-0.232	1.023	0.666	0.999	0.572	1.115

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	hsa-miR-125a-4373149	-0.001	0.606	0.480	0.528	0.575	0.561
Increased by more than 1.5-fold	hsa-miR-146a-4373132	-0.393	1.259	-0.249	1.337	0.657	0.987
	hsa-miR-339-4373042	-0.060	0.780	0.163	0.850	0.685	0.603
	hsa-miR-342-4373040	0.037	0.862	0.138	0.874	0.685	0.744
	hsa-miR-151-4373179	-0.835	1.796	-0.079	1.888	0.768	1.476
	hsa-miR-10a-4373153	0.825	1.329	0.988	1.346	0.791	1.374
	hsa-miR-485-3p-4378095	1.877	1.210	0.032	1.673	0.885	1.227
	hsa-miR-132-4373143	0.220	0.914	1.458	0.909	1.048	0.923
	hsa-miR-215-4373084	2.013	1.715	1.277	1.502	2.568	1.165

SD indicates standard deviation. Fold change (log_2) was calculated from the averaged ΔCt of the 4 samples for each time point, compared to day 0.

Online Supplementary Table S3. miRNA median fold change from qRT-PCR analysis. Expression fold change in IM-treated patients between day 14 and day 0 (n=11). P values were calculated using 2-tailed Wilcoxon's test on paired ΔCt values.

miRNA	Fold change	Range	*P*
miR-18	0.616	[0.281 - 3.580]	0.0558
miR-27	0.841	[0.665 - 2.789]	0.2291
miR-142-3p	0.321	[0.134 - 1.444]	0.0137
miR-143	0.344	[0.048 - 3.918]	0.0674
miR-145	0.297	[0.070 - 1.705]	0.0186
miR-146	3.249	[0.150 - 22.94]	0.0322
miR-148a	0.521	[0.295 - 1.395]	0.0537
miR-150	3.458	[0.247 - 79.34]	0.0137
miR-155[1]	0.920	[0.611 - 2.621]	0.8125
miR-181a	1.395	[0.595 - 4.857]	0.0674
miR-199b-5p	0.275	[0.071 - 1.283]	0.0068
miR-222	0.901	[0.387 - 2.694]	0.7646
miR-223	0.702	[0.253 - 2.549]	0.1748

Expression fold change between day 0 and day 14.
P-values were calculated using 2-tailed Wilcoxon's test on paired ΔCt values.
[1]This miRNA was tested using the corresponding ABI TaqMan assay on 7 samples only.

Online Supplementary Table S4. miRNA expression correlation analysis in CML samples. (A and B) Spearman's correlation analysis of miRNA expression levels at (A) day 0 and (B) day 14. (C) Spearman's correlation analysis of miRNA expression fold change between day 0 and day 14 of IM treatment.

A - Before IM therapy (day 0)

	miR-199b-5p	miR-181a	miR-150	miR-148a	miR-146	miR-145	miR-143	miR-142-3p	miR-18
miR-18		0.7939**		-0.8545**					
miR-142-3p	0.7818**	0.6485*		-0.6485*					
miR-143			-0.8024**		-0.8085**				
miR-145	0.6606*								
miR-146			0.8909***						
miR-148a		-0.6727*							
miR-150	-0.6606*								
miR-181a									
miR-199b-5p									

B - After 14 days IM therapy

	miR-199b-5p	miR-181a	miR-150	miR-148a	miR-146	miR-145	miR-143	miR-142-3p	miR-18
miR-18	0.6848*							0.8909***	
miR-142-3p	0.8667**		-0.6727*			0.6970*			
miR-143						0.9030***			
miR-145									
miR-146			0.7842**						
miR-148a		0.8303**							
miR-150	-0.7576*								
miR-181a									
miR-199b-5p									

C - Correlation analysis of miRNA expression fold change in CML samples

	miR-199b-5p	miR-181a	miR-150	miR-148a	miR-146	miR-145	miR-143	miR-142-3p	miR-18
miR-18		0.7212*			0.7333*				
miR-142-3p	0.8303**						0.7576*		
miR-143	0.7818**					0.9273***			
miR-145	0.7212*			0.7333*					
miR-146		0.7576*							
miR-148a									
miR-150									
miR-181a									
miR-199b-5p									

Correlation coefficients *r* from Spearman's correlation analysis using **(A)** day 0 ΔCt values, **(B)** day 14 ΔCt values, and **(C)** miRNA expression fold changes from day 0 to day 14. **P*<0.05; ***P*<0.01; ****P*<0.001; empty: not significant.

Online Supplementary Table S5. Absence of correlation between miRNA expression fold changes and blood cell composition changes. (A) Patients' blood cell composition, showing the percentages of lymphocytes and neutrophils at day 0 and day 14 of IM treatment. (B) Data represent Spearman's correlation coefficient *r* between miRNA fold changes and the cell composition ratio shown in (A) between day 0 and day 14.

A - Patients' blood cell composition at day 0 and day 14.

Patient Id	blood cell composition at day 0			blood cell composition at day 14			cell composition ratio[2]
	neutrophils %	lymphocytes %	neutro/ lympho[1]	neutrophils %	lymphocytes %	neutro/ lympho	
P07	69.0	7.0	9.86	80.0	12.0	6.67	0.68
P11	69.0	17.0	4.06	50.7	33.0	1.54	0.38
P12	70.0	6.0	11.67	78.0	19.0	4.11	0.35
P14	41.0	4.0	10.25	82.0	9.2	8.91	0.87
P20	63.0	3.0	21.00	63.0	1.0	63.00	3.00
P24	56.0	17.0	3.29	71.0	16.8	4.23	1.28
P26	68.0	6.0	11.33	73.5	16.3	4.51	0.40
P30	71.0	16.0	4.44	74.0	14.1	5.25	1.18
P43	68.0	9.0	7.56	77.6	13.3	5.83	0.77

Data for patient P17 at day 0 were not available.
[1]Neutro/lympho represents the ratio of the percentages of neutrophils and lymphocytes, indicative of the relative proportion of each cell population. [2]Ratio of neutro/lympho value at day 14 *vs.* day 0.

B - Spearman's correlation analysis

	miR-18	miR-142-3p	miR-143	miR-145	miR-146	miR-148a	miR-150	miR-181a	miR-199b-5p
r	-0.317	-0.300	0.167	0.200	0.033	0.050	0.300	-0.150	-0.200
P value	0.410	0.437	0.678	0.613	0.948	0.912	0.437	0.708	0.613

Data represent Spearman correlation coefficient *r* between miRNA fold changes and the cell composition ratio shown in **A** between day 0 and day 14

Online Supplementary Table S6. Target gene predictions using various miRNA combinations. This table contains the full list of conserved target genes from TargetScan v5.0 predicted to be targeted by the following miRNA combinations: (A) miR-142-3p AND miR-199b-5p but NOT miR-146 NOT miR-150 (B) miR-142-3p OR miR-199b-5p but NOT miR-146 NOT miR-150 (C) miR-146 AND miR-150 but NOT miR-142-3p NOT miR-199b-5p (D) miR-146 OR miR-150 but NOT miR-142-3p NOT miR-199b-5p. For comparison, the predictions from combinations (A) and (C), presented in Table 3 in the main text, were reproduced in this table.

A. miR-142-3p AND miR-199b-5p but NOT miR-146 NOT miR-150	**B**. miR-142-3p OR miR-199b-5p but NOT miR-146 NOT miR-150					**C**. miR-146 AND miR-150 but NOT miR-142-3p NOT miR-199b-5p	**D**. miR-146 OR miR-150 but NOT miR-142-3p NOT miR-199b-5p	
ACVR2A	AADACL1	CYLC2	KDELR2	PMAIP1	STAM	C12orf36	ACBD3	MMP14
ANK3	ABCA1	D4S234E	KIAA0355	PMP22	STAU1	MMP16	ADAM19	MMP16
ARHGEF12	ABCC1	DCUN1D4	KIAA0753	PNPLA6	STK4	NFASC	ADIPOR2	MTCH2
C18orf25	ABCC5	DDR1	KIAA0831	PODXL	STRN3		AKAP9	MYADM
CCNJ	ACBD5	DDX3X	KIAA1553	POGK	STX12		ALAD	MYB
MAP3K11	ACVR2A	DDX3Y	KIAA2018	POLS	SULF1		ANKRD52	MYBL1
MYH9	ACVR2B	DDX6	KIT	POMGNT1	SYPL1		AP3M2	MYO6
MYO5A	ADAMTS3	DEPDC1B	KL	PPARGC1A	TAGAP		APPL1	MYT1
RBM47	ADAMTSL3	DIRC2	KLF12	PPFIA1	TAOK1		ARL8A	NEGR1
RHEB	ADCY9	DKFZp667G2110	KLF13	PPFIBP1	TARDBP		ATG12	NF2
RNF38	ADD3	DLC1	KLHL6	PPP1R10	TBC1D2B		ATP8A2	NFASC
ZNF618	ADRBK2	DMTF1	KPNA4	PPP1R12A	TBC1D8		BAG1	NFIC
	AFF1	DRAM	KPNB1	PPP1R2	TBL1X		BASP1	NOVA1
	AFF2	DYNC1LI2	LAMC1	PPP1R9A	TBL1XR1		BCL11A	NPAS4
	AFTPH	DYNC2LI1	LARGE	PPP3CA	TESK2		BCORL1	NRAS
	AKAP1	E2F3	LARP4	PPP3R1	TET2		BIVM	NSUN4
	AKT1S1	ECE1	LCOR	PRDM16	TEX2		BNC1	NUMB
	ALS2	EDEM3	LEPREL1	PRLR	TFG		BSN	PAPD5
	ALS2CR2	EHD4	LIFR	PROM1	TGFBR1		BTG2	PAPPA
	AMOTL1	EHF	LIMD2	PRPF40A	TIMM10		BTRC	PBX2
	ANK3	EIF2C1	LIN7C	PRRG1	TIPARP		C12orf36	PCBP4
	ANKRD11	EIF5B	LLGL2	PTPN23	TIRAP		C14orf43	PDCD4
	ANKRD13C	EML4	LMAN2	PTPRE	TM9SF3		C17orf39	PDIA6
	ANKRD42	EPB41L1	LMO3	PUM1	TMEM110		C1orf25	PFN2
	ANKS1A	EPHA7	LRP1B	PURB	TMEM115		C1orf71	PHOX2B
	AP1G1	EPN1	LRP4	PVRL1	TMEM123		C5orf46	PIK3AP1
	APPBP2	ERC1	LRRC1	PXN	TMEM135		C6orf134	PIK3R1
	ARHGAP12	ERG	LRRC32	R3HDM2	TMEM200B		CALU	PKHD1
	ARHGAP19	ERLIN1	LRRC59	RAB1A	TMEM32		CARD10	PLP2
	ARHGAP21	ETS1	LYSMD3	RAB21	TMEM55B		CASK	PM20D2
	ARHGAP29	ETS2	M6PR	RAB2A	TMEM59		CC2D1B	POLD3
	ARHGEF12	ETV6	MAB21L1	RAB3A	TMEM63B		CCBP2	POM121
	ARHGEF2	EXOC8	MAP2K4	RAB40C	TMEM66		CCDC4	POM121C
	ARID2	EXTL3	MAP3K11	RAC1	TNKS		CD80	PPM1M
	ARID5B	FADS6	MAP3K7IP2	RAD23B	TNRC18		CDAN1	PPP1R11
	ARL1	FAM100B	MAP3K7IP3	RANBP10	TOX3		CDC42BPA	PRICKLE2
	ARL15	FAM107B	MAP4	RANBP2	TP53INP2		CDON	PRKAR1A
	ARL6IP6	FAM108C1	MAP4K3	RANBP3	TRPM4		CHD2	PRPS1
	ARNTL	FAM114A1	MARCH1	RARG	TSEN34		CMTM6	PRRT2
	ARRB2	FAM116A	MARCH7	RASSF2	TSPAN5		CNTFR	PSCD3
	ASH1L	FAM130A1	MARCKS	RBBP4	TSPAN6		COL4A4	PSMD3
	ASRGL1	FAM178A	MARK3	RBM23	TST		CPD	PTGFRN
	ATF7IP	FAM44B	MARK4	RBM24	TTBK1		CSF1R	PTP4A1
	ATG16L1	FBXO21	MCFD2	RBM27	TTC9		DGKG	PTPRB
	ATG4D	FBXO33	MEF2D	RBM47	TWF1		DLGAP1	PVRL2
	ATP13A2	FBXO45	MFHAS1	RBPMS	TXNL1		DLGAP2	RABGAP1
	ATXN7	FBXO9	MGAT3	REEP2	UBAP1		DNAJB7	RASGEF1A
	ATXN7L1	FKBP1A	MGAT4A	RERE	UBE2G1		DNAL1	RC3H1
	AUTS2	FLJ20160	MGAT4B	RFWD3	UBE2Q1		DNPEP	RCSD1
	B3GNT1	FLJ20309	MICAL3	RGL2	UBL3		DSEL	REPS2
	BAAT	FLRT3	MIER3	RGMA	UNC84A		DYRK1A	RFTN2
	BACH1	FMNL2	MINK1	RGMB	UNKL		EBF3	RIMBP2
	BACH2	FNDC3A	MKL2	RGS10	USP31		EDA	RIMS2
	BAT1	FNTB	MN1	RHEB	USP37		EDNRB	RNASEL
	BAZ1A	FOXO1	MOBKL3	RHOBTB3	USP46		EIF4B	RNF165
	BCLAF1	FOXO4	MORF4L2	RICTOR	USP6NL		EIF4E	ROBO1
	BLCAP	FSD1	MPP5	RIMS1	UTRN		EIF4G2	RUNX1T1
	BNC2	FSTL4	MRPL22	RLF	UTX		EIF5A2	SCN3B
	BRWD3	FUT9	MRPS25	RND1	UTY		ELK1	SEC23IP

to be continued on the next page

A. miR-142-3p AND miR-199b-5p but NOT miR-146 NOT miR-150	**B**. miR-142-3p OR miR-199b-5p but NOT miR-146 NOT miR-150					**C**. miR-146 AND miR-150 but NOT miR-142-3p NOT miR-199b-5p	**D**. miR-146 OR miR-150 but NOT miR-142-3p NOT miR-199b-5p	
	BTBD3	FXR1	MTCH1	RNF11	VAMP3		ENTPD1	SEMA3G
	BTBD7	FZD6	MTMR3	RNF38	VEGFA		EP300	SGMS1
	BTBD9	GAB1	MTMR9	ROCK1	VPS24		EPHB2	SH3BP5L
	C10orf18	GANAB	MYH10	ROCK2	VPS26A		FAM134C	SH3TC2
	C10orf46	GARNL1	MYH9	ROD1	WAPAL		FAM26E	SHISA4
	C10orf97	GARNL4	MYLK	RRP15	WASL		FAM65B	SIAH2
	C11orf9	GCNT2	MYO5A	RUNX3	WDR44		FBXL10	SLC10A3
	C13orf1	GFI1	MYST2	S1PR3	WDTC1		FBXW11	SLC2A3
	C16orf70	GHR	NAALADL2	SACS	WIPF2		FBXW2	SLFN13
	C17orf63	GIT1	NAB2	SAMD12	WIPI2		FLOT2	SLITRK3
	C18orf25	GJA5	NARG1	SAR1A	WIZ		FOXD3	SMAD4
	C19orf63	GLIPR1	NAT11	SAT1	WNK3		FOXP1	SNIP
	C1GALT1	GNAQ	NCOA2	SDC4	WNT2		FREQ	SNX21
	C1orf9	GNB2	NCSTN	SEC24C	XPO1		FRYL	SORT1
	C20orf194	GOLGA1	NLK	SEMA3F	YAF2		FTO	SP8
	C20orf3	GPATCH8	NOTUM	SEMA6A	YPEL1		GABRA4	SRrp35
	C21orf66	GPD2	NPAS2	SERPINE1	ZBTB10		GABRG2	ST7L
	C9orf5	GPR124	NR1D2	SFRS1	ZBTB41		GALNT10	ST8SIA4
	C9orf72	GPR180	NR2F6	SGCD	ZBTB46		GDI1	STRA13
	CACNB2	GPR85	NR3C1	SH2B1	ZBTB5		GIGYF2	STRBP
	CAPRIN1	GPR89A	NTNG1	SH3GLB1	ZBTB8		GLE1	STX3
	CAV1	GPRC5A	NUDT11	SH3PXD2A	ZCCHC14		GLIS3	STX5
	CCDC120	GRB10	NUFIP2	SIRT1	ZCCHC24		GRID1	SYN2
	CCDC43	GRIK3	NUP210	SLAMF8	ZCCHC4		GRSF1	SYT1
	CCDC88A	GSK3B	NUPL1	SLC17A5	ZEB2		GTF3C2	TADA1L
	CCDC88C	GTF2A1	ODZ4	SLC1A3	ZFP2		HIG2	TAPT1
	CCNJ	HDLBP	ONECUT2	SLC24A3	ZFYVE20		HNRNPD	TBC1D20
	CCNL1	HECTD1	OSGIN2	SLC25A22	ZFYVE27		HNRNPH3	TCF21
	CCNT2	HEXIM1	OSR1	SLC25A44	ZMYND8		HNRNPU	TDRKH
	CD84	HGS	OTX1	SLC30A7	ZNF215		IER5L	TEX261
	CDCA7L	HIF1A	P15RS	SLC35E1	ZNF217		IGF2BP1	TMCC1
	CDK7	HIPK2	PAN3	SLC35E4	ZNF238		IGSF1	TOM1
	CDKN1C	HLF	PAQR9	SLC35F5	ZNF329		IPO9	TP53
	CELSR1	HMCN1	PARD6B	SLC37A3	ZNF395		IRF2BP2	TRAF6
	CEP192	HMGB1	PARP12	SLC39A10	ZNF439		ITGB3	TRPS1
	CFL2	HOXB6	PATZ1	SLC4A8	ZNF468		ITSN1	TSPYL5
	CHRNE	HSPA12A	PAX3	SLC9A8	ZNF516		JAZF1	TTPAL
	CIITA	HSPA5	PBRM1	SLCO4C1	ZNF547		JMJD3	TXNDC4
	CLCN5	IER3	PCGF3	SMARCA4	ZNF563		KBTBD3	UBE2R2
	CLIC4	IKBKB	PCYOX1	SMARCAD1	ZNF579		KCMF1	UBXD8
	CLIP1	INPP5F	PDE4B	SMG1	ZNF594		KCNIP3	UHRF1
	CLTA	IPO8	PDE4D	SNAI1	ZNF614		KCTD15	UPF1
	CLTC	ITCH	PDE8A	SNF1LK	ZNF618		KIAA1310	USP3
	CNN1	ITFG3	PDIK1L	SNF1LK2	ZNF629		KIF24	USP47
	CNOT6L	ITGA3	PDPN	SNN	ZNF652		KLF7	UST
	COG4	ITGA4	PGM1	SNX18	ZNF654		KPNA6	WASF2
	COL24A1	ITGAV	PGRMC2	SNX6	ZNF700		LFNG	WDR40A
	COL5A3	ITGB8	PHACTR4	SOCS6	ZNF701		LIN28	WWC2
	COPG	ITPKB	PI4KA	SOS2	ZNF706		LMO4	ZBTB2
	COPS7A	ITPR3	PICALM	SOX11	ZNF710		LRP11	ZBTB4
	CPEB2	JAG1	PIK3CD	SOX4	ZNF740		LRP2	ZCCHC17
	CRK	JMJD1C	PIK3R6	SPNS1	ZNF763		LRRC15	ZFYVE1
	CRTAM	JPH3	PKN2	SRL	ZNF776		LRRTM2	ZMAT2
	CSDC2	JUNB	PLEKHH1	SRRM1	ZNF827		MAPK13	ZNF189
	CSGALNACT1	KAT2B	PLXNA2	SS18	ZNF831		MBTD1	ZNF229
	CTNND1	KCNU1	PLXND1	ST6GAL1	ZSWIM4		MED1	ZNF532
	CTTN	KCTD16					MIB1	ZNF826
							MLL2	ZNRF3