

Supplementary Tables and Figures

Table S1. Summary of 159 deregulated miRNAs for all, male, or female samples analyzed by ABIqPCR, RNU44, or global normalization (xls file).

Table S2. Target-genes of upstream regulators. 47 genes are targets of upstream regulators with activation/suppression prediction Z-scores > 2.0. 23 of these genes (marked in bold) also contribute to IPA Biofunctions with Z-scores > 2.0.

Gene Symbol	Gene Title	FC
TDGF1	teratocarcinoma-derived growth factor 1	1.43
STC2	stanniocalcin 2	1.34
TMPRSS6	transmembrane protease, serine 6	1.31
LGALS1	lectin, galactoside-binding, soluble, 1	1.28
PAX6	paired box 6	1.27
ESRRA	estrogen-related receptor alpha	1.25
RARA	retinoic acid receptor, alpha	1.23
SMAD6	SMAD family member 6	1.23
WNT5B	wingless-type MMTV integration site family, member 5B	1.22
DERL1	derlin 1	-1.22
AKAP12	A kinase (PRKA) anchor protein 12	-1.22
BCL2L1	BCL2-like 1	-1.23
DPP6	dipeptidyl-peptidase 6	-1.25
GOLGA3	golgin A3	-1.26
IRS2	insulin receptor substrate 2	-1.32
QKI	KH domain containing, RNA binding	-1.32
ALDOC	aldolase C, fructose-bisphosphate	-1.34
CTSB	cathepsin B	-1.36
NRCAM	neuronal cell adhesion molecule	-1.36
FXYD6	FXYD domain containing ion transport regulator 6	-1.39
ABCC5	ATP-binding cassette, sub-family C (CFTR/MRP), member 5	-1.41
UQCR10	ubiquinol-cytochrome c reductase, complex III subunit X	-1.41
GORASP2	golgi reassembly stacking protein 2, 55kDa	-1.42
PRUNE2	prune homolog 2 (Drosophila)	-1.45
SERP1	stress-associated endoplasmic reticulum protein 1	-1.56
TACC1	transforming, acidic coiled-coil containing protein 1	-1.56
ENO2	enolase 2 (gamma, neuronal)	-1.57
VAV3	vav 3 guanine nucleotide exchange factor	-1.61
RTN1	reticulon 1	-1.63
SV2A	synaptic vesicle glycoprotein 2A	-1.64
L1CAM	L1 cell adhesion molecule	-1.64
GAPDH	glyceraldehyde-3-phosphate dehydrogenase	-1.66
ALDOA	aldolase A, fructose-bisphosphate	-1.79
DDX17	DEAD (Asp-Glu-Ala-Asp) box helicase 17	-1.82
DDIT4	DNA-damage-inducible transcript 4	-1.86
CEBPB	CCAAT/enhancer binding protein (C/EBP), beta	-1.87
TFRC	transferrin receptor	-1.89
FHL1	four and a half LIM domains 1	-1.91
LDHA	lactate dehydrogenase A	-1.96
HUWE1	HECT, UBA and WWE domain containing 1, E3 ubiquitin protein ligase	-1.98
ARF4	ADP-ribosylation factor 4	-2.03
VSNL1	visinin-like 1	-2.42
TNS1	tensin 1	-2.46
LMO3	LIM domain only 3 (rhombotin-like 2)	-2.51
NEFL	neurofilament, light polypeptide	-2.60
STXBP1	syntaxin binding protein 1	-2.96
CARS	cysteinyI-tRNA synthetase	-4.05

Table S3. Down-regulated target-genes associated with up-regulated miRNAs and up-regulated targets associated with down-regulated miRNAs. Log2 FC are based on global normalization (see Table S1). FC with *p* values < 0.05 are marked in bold/italic and gray and those with *p* values > 0.05 but < 0.1 in bold/italic. For some miRNAs alternative miRNA IDs are used by the IPA software, which are indicated in brackets.

upregulated miRNAs	all		male		female		ABCC5	AKAP12	BCL2L1	CARS	CEBPB	CTSB	DDX17	FHL1	HUWE1	IRS2	L1CAM	LDHA	LMO3	NEFL	STXBP1	TFRC	VAV3	# Genes/miRNA	
	Log2 FC	<i>p</i> values	Log2 FC	<i>p</i> values	Log2 FC	<i>p</i> values																			
<i>hsa-let-7b (let-7a-5p)</i>	1.17	0.028	0.42	0.14	2.37	0.04	1		1							1							1	4	
hsa-miR-101	0.57	0.291					1												1					2	
hsa-miR-105	0.85	0.255											1	1										2	
<i>hsa-miR-106a (miR-17-5p)</i>	0.91	0.005	0.87	0.04	1.31	0.02													1					1	
hsa-miR-124	0.78	0.193	1.48	0.08															1			1		2	
hsa-miR-125b	0.24	0.253					1																1	2	
<i>hsa-miR-126</i>	1.59	0.087	1.05	0.11							1													1	
hsa-miR-128	0.23	0.326	0.62	0.13																			1	1	
<i>hsa-miR-132</i>	0.74	0.054																			1			1	
hsa-miR-133a	0.38	0.381							1												1			2	
<i>hsa-miR-135a (miR-135a-5p)</i>	1.95	0.001	1.76	0.00												1								1	
<i>hsa-miR-140-5p</i>	0.44	0.095	0.42	0.17				1			1												1	3	
<i>hsa-miR-142-3p</i>	1.00	0.085	1.99	0.00				1											1					2	
<i>hsa-miR-143</i>	1.00	0.089	1.70	0.04															1		1			1	
<i>hsa-miR-145 (miR-145-5p)</i>	0.75	0.046	0.89	0.09			1						1		1							1		4	
<i>hsa-miR-148a (miR-148a-3p)</i>	2.05	0.014	2.68	0.00																1	1			2	
hsa-miR-150	1.80	0.142																							1
<i>hsa-miR-16</i>	1.97	0.084	1.31	0.09			1								1						1			3	
<i>hsa-miR-181a</i>	0.60	0.079	0.66	0.12											1	1	1		1			1		4	
<i>hsa-miR-184</i>	3.05	0.086	0.90	0.19				1							1							1		2	
hsa-miR-186	1.45	0.136					1												1					2	
hsa-miR-191	0.69	0.291								1														1	
hsa-miR-193b	0.26	0.289																					1	2	
hsa-miR-21	0.43	0.322	0.98	0.08			1																1	1	
<i>hsa-miR-218</i>	0.52	0.085									1										1			4	
hsa-miR-219-5p	0.49	0.200	0.95	0.07			1												1				1	2	
<i>hsa-miR-223 (miR-223-3p)</i>	1.05	0.025	0.98	0.02									1										1	2	
<i>hsa-miR-24</i>	0.81	0.096	0.55	0.06							1												1	1	
<i>hsa-miR-26a (miR-26a-5p)</i>	0.93	0.001	0.98	0.01									1		1									2	
<i>hsa-miR-27a</i>	1.59	0.054	1.92	0.06																			1	1	
<i>hsa-miR-28-5p (miR-708-5p)</i>	1.90	0.029	1.98	0.01																			1	1	
<i>hsa-miR-30b</i>	0.30	0.073							1							1				1	1		1	5	
hsa-miR-320	1.48	0.115	0.32	0.24							1								1					2	
hsa-miR-324-3p	0.88	0.138	0.21	0.40														1						1	
hsa-miR-330-3p	0.47	0.150																		1				1	
hsa-miR-331-3p	0.07	0.416																			1			3	
<i>hsa-miR-335 (miR-335-3p)</i>	1.07	0.044	1.04	0.10									1											1	
hsa-miR-338-3p	0.08	0.468					1									1		1				1	1	6	
hsa-miR-342-3p	0.60	0.292						1																1	
hsa-miR-34a	0.09	0.437																1						2	
<i>hsa-miR-374a (miR-374b-5p)</i>	0.72	0.019	0.58	0.08							1							1						2	
hsa-miR-411	0.78	0.163										1												1	
hsa-miR-455-5p	1.55	0.109	1.90	0.13																				2	
hsa-miR-494	0.05	0.463					1																	1	
hsa-miR-495	0.13	0.346							1															1	
<i>hsa-miR-520d-5p</i>	1.56	0.062	0.67	0.28	1.91	0.07																	1	2	
hsa-miR-574-3p	2.08	0.126												1										1	
hsa-miR-655	0.07	0.435								1														2	
hsa-miR-885-5p	0.00	0.499																						1	
<i>hsa-miR-9</i>	0.26	0.098											1							1	1	1	1	5	
<i>hsa-miR-92a (miR-92a-3p)</i>	0.86	0.024	1.09	0.03												1				1				2	
<i>hsa-miR-95</i>	0.81	0.036			1.31	0.04																		1	
# miRNAs/Gene							4	8	8	1	4	7	6	3	2	9	4	2	10	5	9	9	12		

downregulated miRNAs	all		male		female		ESRRA	RARA	SMAD6	TDGF1	# Genes/miRNA
	Log2 FC	<i>p</i> values	Log2 FC	<i>p</i> values	Log2 FC	<i>p</i> values					
hsa-miR-134	-0.72	0.264							1		1
hsa-miR-138	-0.21	0.321						1			1
hsa-miR-328	-0.13	0.365					1				1
hsa-miR-410	-0.43	0.246	-0.67	0.05					1		1
<i>hsa-miR-532-5p</i>	-1.36	0.046			-1.33	0.21				1	1
hsa-miR-660	-0.04	0.486								1	1
<i>hsa-miR-744</i>	-0.73	0.017							1		1
hsa-miR-889	-0.21	0.420	-1.73	0.03						1	1
# miRNAs/Gene							1	2	3	2	