

Biological characteristics of SP cells in human HCC

Supplementary Table 1. Relative miRNA over and under expression levels in SP cells compared to NSP cells

Overexpression miRNA	Fold chang	Underexpression miRNA	Fold chang
hsa-miR-193b-3p	13.57466084	hsa-miR-200a-3p	0.07719342
hsa-miR-16-2-3p	11.47780862	hsa-miR-4300	0.145005846
hsa-miR-4534	9.08514122	hsa-miR-192-5p	0.159719808
hsa-miR-100-5p	7.143027698	hsa-miR-194-5p	0.160584747
hsa-miR-10b-5p	6.310873043	hsa-miR-4278	0.163524047
hsa-miR-505-3p	6.192544174	hsa-miR-130b-3p	0.18297662
hsa-miR-378g	5.233099862	hsa-miR-625-5p	0.199282377
hsa-miR-452-5p	5.212948414	hsa-miR-519d-3p	0.227617082
hsa-miR-30c-1-3p	4.630349752	hsa-miR-125a-3p	0.227880183
hsa-miR-711	4.164632636	hsa-miR-548an	0.24151949
hsa-miR-4484	3.854213293	hsa-miR-320e	0.256139137
hsa-miR-3660	3.821604119	hsa-miR-671-5p	0.266510167
hsa-miR-4691-3p	3.577487707	hsa-miR-410-5p	0.268751841
hsa-miR-4441	3.47725102	hsa-miR-29a-5p	0.270733183
hsa-miR-29c-3p	3.472237777	hsa-miR-935	0.281542426
hsa-miR-3687	3.297569776	hsa-miR-377-5p	0.284469442
hsa-miR-3678-3p	3.24535561	hsa-miR-3168	0.287489676
hsa-miR-614	3.103428902	hsa-miR-193a-5p	0.295295852
hsa-miR-190a-5p	3.10118546	hsa-miR-320d	0.29643431
hsa-miR-188-3p	3.042233819	hsa-miR-29a-3p	0.29825148
hsa-miR-505-5p	3.034803271	hsa-miR-323a-3p	0.30054815
hsa-miR-1205	2.946057806	hsa-miR-3650	0.301641052
hsa-miR-3193	2.850559773	hsa-miR-548j-5p	0.304154728
hsa-miR-4451	2.784405236	hsa-miR-514a-5p	0.312182272
hsa-miR-3924	2.666901022	hsa-miR-4429	0.315398292
hsa-miR-365a-3p/hsa-miR-365b-3p	2.622838246	hsa-miR-3132	0.316941685
hsa-miR-17-3p	2.585948569	hsa-let-7c-5p	0.3281603
hsa-miR-638	2.545096379	hsa-miR-135a-5p	0.329441873
hsa-miR-5187-3p	2.491511846	hsa-miR-320c	0.33470381
hsa-miR-708-5p	2.437994886	hsa-miR-1293	0.345997869
hsa-miR-874-3p	2.424988459	hsa-miR-222-3p	0.351750135
hsa-miR-196a-5p	2.406334701	hsa-miR-4689	0.352831005
hsa-miR-23a-5p	2.348092054	hsa-miR-4436b-5p	0.353509808
hsa-miR-30a-5p	2.322331995	hsa-miR-25-5p	0.359129106
hsa-miR-365b-5p	2.313209138	hsa-miR-130b-5p	0.363086452
hsa-miR-378f	2.311149827	hsa-miR-7-5p	0.365069496
hsa-miR-3607-3p	2.287527279	hsa-miR-4443	0.369798051
hsa-miR-186-5p	2.231394649	hsa-miR-323b-5p	0.371031978
hsa-miR-663b	2.158673905	hsa-miR-29b-3p	0.378771673
hsa-miR-30e-5p	2.130916411	hsa-miR-361-5p	0.379681757
hsa-miR-33a-5p	2.077003916	hsa-miR-4677-3p	0.39316462
hsa-miR-2355-3p	2.051687143	hsa-miR-320b	0.395999646
hsa-miR-618	2.027698185	hsa-miR-4657	0.407521803
hsa-miR-101-3p	2.020048392	hsa-miR-125b-1-3p	0.408866005
hsa-miR-16-1-3p	2.011918433	hsa-miR-216a-3p	0.435433998

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hsa-miR-4717-3p	0.436585734
hsa-miR-605-5p	0.44621064
hsa-miR-335-3p	0.446730373
hsa-miR-664b-3p	0.44887334
hsa-miR-612	0.456962456
hsa-miR-4711-3p	0.457274724
hsa-miR-431-3p	0.461691279
hsa-miR-3175	0.46633083
hsa-miR-9-5p	0.470308882
hsa-miR-4714-5p	0.471558215
hsa-miR-4483	0.478016318
hsa-miR-5681b	0.482739428
hsa-miR-221-3p	0.490147788
hsa-miR-942-5p	0.498031133
hsa-miR-642b-5p	0.498041789
hsa-miR-126-3p	0.498757753
hsa-miR-4709-3p	0.498840837

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Supplementary Table 2. GO analysis for hsa-miR-193b-3p and hsa-miR-505-3p

miRNAs	GO terms
hsa-mir-193b-3p	Response to external stimulus
	Regulation of biological process
	Regulation of cellular process
	Biological regulation
hsa-mir-505-3p	Mitotic cell cycle
	Transcription, DNA-dependent
	Regulation of transcription, DNA-dependent
	Regulation of transcription from RNA polymerase II promoter
	Transcription from RNA polymerase II promoter
	Cell cycle
	Biosynthetic process
	Macromolecule biosynthetic process
	Regulation of biosynthetic process
	Positive regulation of biosynthetic process
	Positive regulation of metabolic process
	Regulation of gene expression
	Regulation of macromolecule biosynthetic process
	Positive regulation of macromolecule biosynthetic process
	Positive regulation of macromolecule metabolic process
	Positive regulation of gene expression
	Regulation of metabolic process
	Cell cycle process
	Cell cycle phase
	Positive regulation of cellular metabolic process
	Regulation of cellular biosynthetic process
	Positive regulation of cellular biosynthetic process
	RNA biosynthetic process
	Cellular macromolecule biosynthetic process
	Cellular biosynthetic process
	Cellular macromolecule metabolic process
	Positive regulation of transcription, DNA-dependent
	Positive regulation of nucleobase-containing compound metabolic process
	Positive regulation of biological process
	Negative regulation of biological process
	Positive regulation of cellular process
	Regulation of biological process
	Regulation of cellular process
	Positive regulation of nitrogen compound metabolic process
	Regulation of RNA metabolic process
	Positive regulation of RNA metabolic process
	Regulation of cell cycle
	Regulation of macromolecule metabolic process
	Biological regulation
	Regulation of primary metabolic process
	Regulation of cellular macromolecule biosynthetic process
	Regulation of RNA biosynthetic process

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Supplementary Table 3. Go analysis for hsa-miR-200a-3p, hsa-miR-194-5p and hsa-miR-130b-3p

miRNAs	GO terms
hsa-mir-130b-3p	Angiogenesis
	Blood vessel development
	Vasculature development
	Metabolic process
	Cellular process
	Cellular metabolic process
	Primary metabolic process
	Regulation of biological process
	Regulation of cellular process
	Biological regulation
hsa-mir-194-5p	Metabolic process
	Cellular process
	Cellular metabolic process
	Primary metabolic process
	Regulation of biological process
	Regulation of cellular process
hsa-mir-200a-3p	Negative regulation of transcription from RNA polymerase II promoter
	Cell morphogenesis
	Cell morphogenesis involved in differentiation
	Eye development
	In utero embryonic development
	Morphogenesis of an epithelium
	Regionalization
	Nucleobase-containing compound metabolic process
	Chromatin organization
	Transcription, DNA-dependent
	Regulation of transcription, DNA-dependent
	Regulation of transcription from RNA polymerase II promoter
	Transcription from RNA polymerase II promoter
	Nitrogen compound metabolic process
	Cell cycle
	Pattern specification process
	Brain development
	Sensory organ development
	Heart development
	Muscle organ development
	Metabolic process
	Cell proliferation
	Biosynthetic process
	Macromolecule biosynthetic process
	Embryo development ending in birth or egg hatching
	Organ morphogenesis
	Tissue development
Regulation of biosynthetic process	
Positive regulation of biosynthetic process	
Negative regulation of metabolic process	

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Positive regulation of metabolic process
Anterior/posterior pattern specification
Regulation of signal transduction
Positive regulation of signal transduction
Cellular process
Gene expression
Regulation of gene expression
Regulation of macromolecule biosynthetic process
Positive regulation of macromolecule biosynthetic process
Negative regulation of macromolecule biosynthetic process
Positive regulation of macromolecule metabolic process
Negative regulation of macromolecule metabolic process
Positive regulation of gene expression
Negative regulation of gene expression
Regulation of cell communication
Positive regulation of cell communication
Striated muscle tissue development
RNA metabolic process
Chromatin modification
Regulation of nucleobase-containing compound metabolic process
Positive regulation of signaling
Regulation of cellular metabolic process
Positive regulation of cellular metabolic process
Regulation of cellular biosynthetic process
Positive regulation of cellular biosynthetic process
Multicellular organism reproduction
RNA biosynthetic process
Cellular component morphogenesis
Cellular nitrogen compound metabolic process
Cellular macromolecule biosynthetic process
Cardiac cell differentiation
Regulation of growth
Locomotion
Muscle cell differentiation
Chordate embryonic development
Camera-type eye development
Macromolecule metabolic process
Cellular metabolic process
Primary metabolic process
Cellular biosynthetic process
Cellular macromolecule metabolic process
Regulation of cell differentiation
Negative regulation of transcription, DNA-dependent
Positive regulation of transcription, DNA-dependent
Negative regulation of nucleobase-containing compound metabolic process
Positive regulation of nucleobase-containing compound metabolic process
Positive regulation of transcription from RNA polymerase II promoter
Positive regulation of biological process
Negative regulation of biological process

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Positive regulation of cellular process
Negative regulation of cellular process
Multicellular organismal reproductive process
Gland development
Cardiac muscle tissue development
Regulation of biological process
Regulation of developmental process
Regulation of cellular process
Regulation of cellular component organization
Striated muscle cell differentiation
Regulation of nitrogen compound metabolic process
Negative regulation of nitrogen compound metabolic process
Positive regulation of nitrogen compound metabolic process
Regulation of RNA metabolic process
Negative regulation of RNA metabolic process
Positive regulation of RNA metabolic process
Regulation of cell cycle
Regulation of macromolecule metabolic process
Epithelium development
Muscle tissue development
Epithelial tube morphogenesis
Muscle structure development
Biological regulation
Cardiovascular system development
Circulatory system development
Regulation of primary metabolic process
Nucleic acid metabolic process
Regulation of cellular macromolecule biosynthetic process
Negative regulation of cellular macromolecule biosynthetic process
Regulation of RNA biosynthetic process
