

Platform/method	Conditions tested	Ref.
Taqman array	MAPC vs. BM-MSC vs. AT-MSC vs. ESC	[1]
Agilent microarray	dermal fibroblast vs BM-MSC	[2]
miRCURY LNA™	BM-MSC vs. MSC-derived osteoblast (3 donors)	[3]
miCHIP microarray LNA	BM-MSC from 4 donors in adipo and osteo differentiation	[4]
LC Sciences microarray	ES-derived MSC vs. ES-MSC culture medium	[5]
Agilent microarray	UC-MSC vs. UC-MSC hepatic cells	[6]
miRXplore microarray	Ewing's sarcoma family tumors cell lines vs. BM-MSC	[7]
miFinder miRNA PCR array	BM-MSC vs. MSC-derived osteoblast (3 donors)	[8]
Agilent microarray	Giant cell tumor derived-stromal cells vs. MSC in 4 patients	[9]
CapitalBio Corporation	BM-MSC vs. MSC-derived osteoblast (3 donors)	[10]
Taqman array	ES vs ES-MSC (3 cell lines: VUB01, H9, and SA001)	[11]
NCode multispecies miRNA	BM-MSC differentiated into adipo-, osteo- and chondro.	[12]
mirVana miRNA Bioarrays	BM-MSC vs MSC-derived neuronal cells (3 donors)	[13]
Affymetrix microarrays	BM-MSC vs MSC-derived chondrocytes	[14]
CapitalBio Corporation	BM-MSC vs MSC-derived chondrocytes (2 donors)	[15]
Hokkaido System Science array	BM-MSC vs articular chondrocytes	[16]
Sure Print G3 miRNA Array	PO-MSC vs. nicotine treated PD-MSC	[17]
RT2 miRNA PCR ArraySystem	AT-MSC vs. BM-MSC vs. CB-MSC.	[18]
miRNA microarray chips	BM-MSC vs MSC-derived chondrocytes	[19]
Agilent microarray	BM-MSC vs. differentiated MSC vs. dermal fibroblast	[20]
LNA miCHIP	BM-MSC of early passage vs. senescent BM-MSC	[21]
LC Sciences microarray platform	Healthy vs osteoporotic BM-MSC	[22]
AB SOLiD small RNAseq	AT-MSC vs. AT-MSC adipocytes	[23]
Solexa small RNAseq	BM-MSC vs. UC-MSC vs. adipocyte vs osteocyte	[24]
Solexa small RNAseq	ES-MSC: extracellular vs. intracellular small RNAs	[25]

Supplementary Table 1. Screening assays determining miRNAs expressed in human MSC. Abbreviations: BM bone marrow-derived; AT adipose tissue-derived; UC umbilical cord; PO periodontal ligament.

#### References:

- Aranda, P., et al., *Epigenetic signatures associated with different levels of differentiation potential in human stem cells*. PLoS One, 2009. **4**(11): p. e7809.
- Bae, S., et al., *Gene and microRNA expression signatures of human mesenchymal stromal cells in comparison to fibroblasts*. Cell Tissue Res, 2009. **335**(3): p. 565-73.
- Baglio, S.R., et al., *MicroRNA expression profiling of human bone marrow mesenchymal stem cells during osteogenic differentiation reveals Osterix regulation by miR-31*. Gene, 2013.
- Bork, S., et al., *Adipogenic differentiation of human mesenchymal stromal cells is down-regulated by microRNA-369-5p and up-regulated by microRNA-371*. J Cell Physiol, 2011. **226**(9): p. 2226-34.
- Chen, T.S., et al., *Mesenchymal stem cell secretes microparticles enriched in pre-microRNAs*. Nucleic Acids Res, 2010. **38**(1): p. 215-24.
- Cui, L., et al., *Dynamic microRNA profiles of hepatic differentiated human umbilical cord lining-derived mesenchymal stem cells*. PLoS One, 2012. **7**(9): p. e44737.
- De Vito, C., et al., *Let-7a is a direct EWS-FLI-1 target implicated in Ewing's sarcoma development*. PLoS One, 2011. **6**(8): p. e23592.
- Eguchi, T., et al., *OstemiR: a novel panel of microRNA biomarkers in osteoblastic and osteocytic differentiation from mesenchymal stem cells*. PLoS One, 2013. **8**(3): p. e58796.
- Fellenberg, J., et al., *A microRNA signature differentiates between giant cell tumor derived neoplastic stromal cells and mesenchymal stem cells*. Cancer Lett, 2012. **321**(2): p. 162-8.
- Gao, J., et al., *MicroRNA expression during osteogenic differentiation of human multipotent mesenchymal stromal cells from bone marrow*. J Cell Biochem, 2011. **112**(7): p. 1844-56.
- Giraud-Triboulet, K., et al., *Combined mRNA and microRNA profiling reveals that miR-148a and miR-20b control human mesenchymal stem cell phenotype via EPAS1*. Physiol Genomics, 2011. **43**(2): p. 77-86.
- Goff, L.A., et al., *Differentiating human multipotent mesenchymal stromal cells regulate microRNAs: prediction of microRNA regulation by PDGF during osteogenesis*. Exp Hematol, 2008. **36**(10): p. 1354-1369.
- Greco, S.J. and P. Rameshwar, *MicroRNAs regulate synthesis of the neurotransmitter substance P in human mesenchymal stem cell-derived neuronal cells*. Proc Natl Acad Sci U S A, 2007. **104**(39): p. 15484-9.
- Guerit, D., et al., *Sox9-Regulated miRNA-574-3p Inhibits Chondrogenic Differentiation of Mesenchymal Stem Cells*. PLoS One, 2013. **8**(4): p. e62582.
- Han, J., et al., *Specific microRNA expression during chondrogenesis of human mesenchymal stem cells*. Int J Mol Med, 2010. **25**(3): p. 377-84.
- Miyaki, S., et al., *MicroRNA-140 is expressed in differentiated human articular chondrocytes and modulates interleukin-1 responses*. Arthritis Rheum, 2009. **60**(9): p. 2723-30.
- Ng, T.K., et al., *Nicotine alters MicroRNA expression and hinders human adult stem cell regenerative potential*. Stem Cells Dev, 2013. **22**(5): p. 781-90.
- Ragni, E., et al., *Differential microRNA signature of human mesenchymal stem cells from different sources reveals an "environmental-niche memory" for bone marrow stem cells*. Exp Cell Res, 2013. **319**(10): p. 1562-74.
- Sorrentino, A., et al., *Isolation and characterization of CD146+ multipotent mesenchymal stromal cells*. Exp Hematol, 2008. **36**(8): p. 1035-46.
- Tome, M., et al., *miR-335 orchestrates cell proliferation, migration and differentiation in human mesenchymal stem cells*. Cell Death Differ, 2011. **18**(6): p. 985-95.
- Wagner, W., et al., *Replicative senescence of mesenchymal stem cells: a continuous and organized process*. PLoS One, 2008. **3**(5): p. e2213.
- Yang, N., et al., *TNF-alpha suppresses the mesenchymal stem cell osteogenesis promoter miR-21 in estrogen deficiency-induced osteoporosis*. J Bone Miner Res, 2012.
- Zaragosi, L.E., et al., *Small RNA sequencing reveals miR-642a-3p as a novel adipocyte-specific microRNA and miR-30 as a key regulator of human adipogenesis*. Genome Biol, 2011. **12**(7): p. R64.
- Hsieh, J.Y., et al., *miR-146a-5p circuitry uncouples cell proliferation and migration, but not differentiation, in human mesenchymal stem cells*. Nucleic Acids Res, 2013.
- Koh, W., et al., *Analysis of deep sequencing microRNA expression profile from human embryonic stem cells derived mesenchymal stem cells reveals possible role of let-7 microRNA family in downstream targeting of hepatic nuclear factor 4 alpha*. BMC Genomics, 2010. **11 Suppl 1**: p. S6.