miRCURY LNA™ microRNA Inhibitors

Selected publications – in vivo inhibition

For publications on in vitro inhibition see page 4

Jovasevic et al. GABAergic mechanisms regulated by miR-33 encode state-dependent fear. Nat Neurosci. 2015 Sep;18(9):1265-71. PMID: 26280760
Organism: Mouse
Target: miR-33

Organism: Mouse
Targets: miR-483-5p, miR-551a

Organism: Mouse
Target: miR-21

Organism/Org: Mouse/heart
Target: miR-34a

Organism/organ: Mouse/heart
Target: miR-25

Organism/organ: Rat/heart
Target: miR-29a

Organism/organ: Human/liver
Target: miR-122

Organism/organ: Mouse/liver
Target: miR-802
Organism: Mouse
Target: miR-214

Organism/Organ: Mouse/heart
Target: miR-208a

Organism: mice and pigs
Targets: miR-15 family

Organism: Mouse
Targets: miR-134

Organism/Organ: Mouse/heart
Target: miR-29b

Ng et al. A microRNA-21 surge facilitates rapid cyclinD1 translation and cell cycle progression in mouse liver regeneration. JCI 2012, 1;122(3):1097-108. PMID: 22326957
Organism/Organ: Mouse/liver
Target: miR-21

Organism/Organ: Mouse/human melanoma metastatic xenografts
Targets: has-miR-199a-5p, has-miR-199-3p, has-miR-1908

Organism: Mouse kidney
Targets: miR-192

Organism: Bone marrow transplanted mice
Targets: miR-155

Cells/Organisms: Submandular gland & Epithelia cultures
Targets: miR-34a, miR-135a, miR-200c, miR-204
Organism/organ: Mouse/heart
Target: miR-15b

Organism: Mouse
Targets: miR-34a

Organism: C57BL/6 mice
Targets: miR-29

Organism: Mouse
Target: Let-7 family

Frezzetti et al. Upregulation of miR-21 by Ras in vivo and its role in tumor growth. Oncogene 2010. PMID: 20956945
Organism: FRTL-5 cells were injected into mice
Targets: miR-21

Organism: rat (cannulae, dorsal striatum)
Targets: miR-212

Organism: mouse lung
Targets: miR-21

Organism: mouse
Targets: miR-33

Organism: mouse
Targets: miR-21

Organism: Zebrafish embryos
Targets: miR-144

Gebeshuber et al. miR-29a suppresses tristetraprolin, which is a regulator of epithelial polarity and metastasis. EMBO Rep. 2009, 10: 400-5. PMID: 19247375
Cells: RasXT (mouse breast) cells were injected into mice
Targets: miR-29a

Organism: mouse (subcutaneously injected, accumulation in the kidney)
Targets: miR-192

Lanford et al. Therapeutic silencing of microRNA-122 in primates with chronic hepatitis C virus infection. Science 2009, 327: 198-201. PMID: 19965718
Organism: Chimpanzee (intravenous injection)
Targets: miR-122

Worm et al. Silencing of microRNA-155 in mice during acute inflammatory response leads to derepression of c/ebp Beta and down-regulation of G-CSF. Nucleic Acids Res. 2009. PMID: 19596816
Cells/Organism: THP1 (Human acute monocyctic leukemia cell line)/ mouse (tail vein injection, accumulation in the spleen)
Targets: miR-155

Cells/Organisms: FAO (Rat hepatoma), FI (rat biliary epithelial), nude mice
Targets: ERK2

Cells/Organisms: Huh-7 (human hepatoma) / African green monkey; mouse,
Targets: miR-122

Cells/Organisms: Huh-7 (human hepatoma) / mouse
Targets: miR-122

Cells: U87 (human glioma cells); U87-Fluc-DsRed2 glioma cells implanted in the brains of nude mice
Targets: miR-21

Selected publications - in vitro inhibition

Cells: Keratinocytes
Targets: miR-483-3p

Garg et al. microRNA-17-92 cluster is a direct Nanog target and controls neural stem cell through Trp53inp1. EMBO J. 2013; 32(21): 2819-2832. PMID: 24076654
Cells: Neural Stem Cells (mouse)
Targets: miR-17 and miR-20a

Hagman Z et al. miR-205 negatively regulates the androgen receptor and is associated with adverse outcome of prostate cancer patients. Br J Cancer. 2013. [Ahead of print]. PMID: 23571738
Cells: PCa
Target: miR-205

Cells: CTCL cell lines MyLa2000 and SeAx
Target: miR-125-5p

Cells: HepG2 cells
Target: miR-21

Cells: Cancer Stem Cells (CSC)
Targets: miR-7

Cells: LHCN-M2
Targets: Library of 870 miRs

Cells: macrophages from mouse spleen
Targets: miR-33

Cells: Keratinocytes N/TERT-1
Targets: miR-198

Cells: Mouse NSCs
Targets: miR-200b and miR-466d-3p

Teng Y et al. WASF3 regulates miR-200 inactivation by ZEB1 through suppression of KISS1 leading to increased invasiveness in breast cancer cells. Oncogene. 2013 [Ahead of print] PMID: 23318438
Cells: Breast Cancer Cell Lines
Targets: miR-200

Cells: mouse ESCs  
Targets: Let-7e

Cells: SKOV-3, IGROV-1 and OVCAR-8  
Targets: miR-146a

Cells: GAC cell lines MKN28 + MKN1  
Targets: miR-18a

Bryant *et al.* miR-10a is aberrantly overexpressed in Nucleophosmin1 mutated acute myeloid leukaemia and its suppression induces cell death. Mol Cancer. 2012, 11: 8. PMID: [22348345](#)
Cells: OCI-AML3 cell line  
Targets: miR-10a

Chen *et al.* MiR-351 Transiently Increases during Muscle Regeneration and Promotes Progenitor Cell Proliferation and Survival Upon Differentiation. Physiol Genomics. 2012, [Ahead of print]. PMID: [22968638](#)
Cells: Myogenic progenitor cells  
Targets: miR-351

Cells: Differentiated mouse brain neurons  
Targets: miR-9

Cells: DU145 (prostate cancer) cells  
Targets: miR-106b

Cells: Mesenchymal stem cells  
Targets: miR-96, miR-124, miR-199a

Cells/Organisms: Submandular gland & Epithelia cultures  
Targets: miR-34a, miR-135a, miR-200c, miR-204

Riley *et al.* EBV and human microRNAs co-target oncogenic and apoptotic viral andhuman genes during latency. EMBO J. 2012, [Ahead of print]. PMID: [22473208](#)
Cells: HEK293T, Jilloye cell lines  
Targets: miR-17, miR-17-5p, miR-142-3p, miR-BART10-3p

Zhou *et al.* Inhibition of miR-29 by TGF-beta-Smad3 Signaling through Dual Mechanisms Promotes Transdifferentiation of Mouse Myoblasts into Myofibroblasts. PLoS One. 2012, 7(3):e33766. PMID: [22438993](#)
Cells: C2C12 muscle cells
Targets: miR-29

Cells: CD4+ T cells
Targets: miR-155, miR-221

**Larsen et al.** Expression and Localization of microRNAs in Perinatal Rat Pancreas: Role of miR-21 in Regulation of Cholesterol Metabolism. PLoS One. 2011, 6(10):e25997. PMID: 22022489
Cells: INS-1E (Beta cell line)
Targets: miR-21

**Png et al.** A microRNA regulon that mediates endothelial recruitment and metastasis by cancer cells. Nature. 2011, 48: 190-4. PMID: 22170610
Cells: Endothelial cells (HUVECs)
Targets: miR-126

**Zaragosi 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: R64. PMID: 21767385
Cells: Human multipotent adipose-derived stem cells (hMADS)
Targets: miR-30

**Hansen et al.** KSHV-encoded microRNAs target MAF to induce endothelial cell reprogramming. Genes Dev. 2010, 24: 195-205. PMID: 20089955
Cells: lymphatic endothelial cells (LEC)
Targets: Kaposi sarcoma herpes virus (KSHV) microRNAs

Cells: primary human monocyte-derived dendritic cells
Targets: miR-155

Cells: Human urinary bladder transitional cell carcinoma (T24, SW780, HT1376, RT4, and J82), immortalized human bladder epithelium (HU609 and HCV29)
Targets: miR-129

Cells: P493 (human lymphoma) cells
Targets: miR-23a, miR-23b

**Gebeshuber et al.** miR-29a suppresses tristetraprolin, which is a regulator of epithelial polarity and metastasis. EMBO Rep. 2009, 10: 400-5. PMID: 19247375
Cells: RasXt (mouse breast) cells were injected into mice
Targets: miR-29a
Cells: Jeko-1 (Human lymphoma) cells
Targets: miR-17, miR-19a, miR-20a

Karaa et al. The VEGF IRESes are differentially susceptible to translation inhibition by miR-16. RNA. 2009, 15: 249-54. PMID: 19164909
Cells: HeLa (Human cervical) cells
Targets: miR-16

Cells: P19 (mouse embryonic carcinoma cells)
Targets: miR-219

Cells: rat vascular smooth muscle cells (VSMC)
Targets: miR-21

Cells: HEK293 (human embryonic kidney) cells
Targets: miR-93

Cells: Human embryonic stem (RUES2) cells
Target: miR-302

Cells: Human colon cancer (HCT-116) cells
Targets: miR-145

Cells: rat hippocampal neurons
Targets: miR-138

Talotta et al. An autoregulatory loop mediated by miR-21 and PDCD4 controls the AP-1 activity in RAS transformation. Oncogene. 2009, 28: 73-84. PMID: 18850008
Cells: FRRL-5-ER/RAS cells
Targets: miR-21

Worm et al. Silencing of microRNA-155 in mice during acute inflammatory response leads to derepression of c/ebp Beta and down-regulation of G-CSF. Nucleic Acids Res. 2009. PMID: 19596816
Cells/Organism: THP1 (Human acute monochytic leukemia cell line)/ mouse (tail vein injection, accumulation in the spleen)
Targets: miR-155
Xia et al. microRNA-146b inhibits glioma cell migration and invasion by targeting MMPs. Brain Res. 2009, 1269: 158-65. PMID: 19245686
Cells: U373 cells
Targets: miR-146b

Cells: Human embryonic stem (hESC) cells
Targets: miR-145

Cells/Organisms: FAO (Rat hepatoma), F1 (rat biliary epithelial), nude mice
Targets: ERK2

Cells: HeLa
Targets: let-7

Cells: A549 (carcinomic human alveolar basal epithelial)
Targets: miR-192

Cells: human reticulocytes
Targets: miR-20a, miR-320

Cells/Organisms: Huh-7 (human hepatoma) / African green monkey; mouse,
Targets: miR-122

Cells/Organisms: Huh-7 (human hepatoma) / mouse
Targets: miR-122

Fabani & Gait. miR-122 targeting with LNA/2'-O-methyl oligonucleotide mixmers, peptides nucleic acids (PNA), and PNA-peptide conjugates. RNA 2008, 14: 336-46. PMID: 18073364
Cells: Huh-7 (human hepatoma), primary rat hepatocytes
Targets: miR-122

Cells: HUVEC (Human Umbilical Vein Endothelial)
Targets: miR-210

Cells: MEFs (mouse embryo primary fibroblasts), MB (human medulloblastoma), GCP (Primary cerebellar granule cell precursor)
Targets: miR-125b, miR-324-5p, miR-326

Cells: HEK293 (human embryonic kidney), MCF7 (human breast cancer)
Targets: miR-21

Cells: Neuro-2a (mouse neuroblastoma)
Targets: miR-34a, miR-34b-5b

Cells/Organisms: 15PC3, PC3, DU145 (human prostate), U373 (glioblastoma)/ mouse
Targets: HIF-1alpha mRNA

Cells: 15PC3 (human prostate cancer), PC3 (mouse prostate)
Targets: survivin

Mayer et al. The structure of NoRC associated RNA is crucial for targeting the chromatin remodelling complex NoRC to the nucleolus. EMBO Rep. 2008, 9: 774-80. PMID: 18600236
Cells: NIH3T3 (mouse fibroblast)
Targets: pRNA (NoRC-associatedRNA)

Nicolas et al. Experimental identification of microRNA-140 targets by silencing and overexpressing miR-140. RNA. 2008, 14: 2513-20. PMID: 18945805
Cells: 3T3 (mouse fibroblasts), C3H10T1/2 (mouse), DF1 (chicken fibroblasts)
Targets: miR-140, miR-449

Cells: U251 and U87 (human glioblastoma)
Targets: miR-21

Park et al. The miR-200 family determines the epithelial phenotype of cancer cells by targeting the E-cadherin repressors ZEB1 and ZEB2. Genes Dev. 2008, 22: 894-907. PMID: 18381893
Cells: HCT116 (human colon cancer)
Targets: miR-200 family members

Cells: Snu-16 (gastric cancer), AGS, MKN-74 cells
Targets: miR-106b, miR-93

Cells: LS174T, DLD1, HCT116 (human colon carcinoma)
Targets: miR-20a, miR-92, miR-145
Cells: HeLa
Targets: let-7b

Cells: ACC-LC-172, Calu6 (human lung cancer)
Targets: miR-20

Cells: MDA-MB-231 (human breast cancer)
Targets: miR-159, miR-199a*, miR-335

Cells: HeLa
Targets: miR-17-5p, miR-19, miR-92

Cells: Primary mouse keratinocytes
Targets: miR-203

Boutz et al. MicroRNAs regulate the expression of the alternative splicing factor nPTB during muscle development. Genes Dev. 2007, 21: 71-84. PMID: 17210790
Cells: C2C12 (Mouse myoblast)
Targets: miR-133

Cells: HEK293 (Human Embryonic Kidney 293)
Targets: miR-200b

Cells: U87 (human glioma cells); U87-Fluc-DsRed2 glioma cells implanted in the brains of nude mice
Targets: miR-21

Cells: PC3 (human prostate cancer)
Targets: miR-221, miR-222

Cells: HCT116 Dicer ex5, DLD-1 Dicer ex5 (colon cancer)
Targets: miR-16, miR-106b
Mott et al. mir-29 regulates Mcl-1 protein expression and apoptosis. Oncogene 2007, 26: 6133-40. PMID: 17604574
Cells: KMCH (human cholangiocarcinoma), H69 (non-malignant cholangiocyte)
Targets: miR-29b

Cells: Drosophila melanogaster embryo extract
Targets: miR-2

Cells: Jurkat
Targets: miR-17-5p, miR-20a

Cells: MEL (murine erythroleukemia)
Targets: miR-451

Cells: HeLa
Targets: miR-21

Cells: C2C12 (mouse myoblasts)
Targets: miR-181

Cells: C2C12 (mouse myoblasts), H1299 (human lung cancer)
Targets: miR-125b

Cells: U87, A172, LN229, LN308 (Human glioblastoma)
Targets: miR-21

Cells: NB4 (human acute promyelocytic leukemia (APL))
Targets: miR-126, miR-223