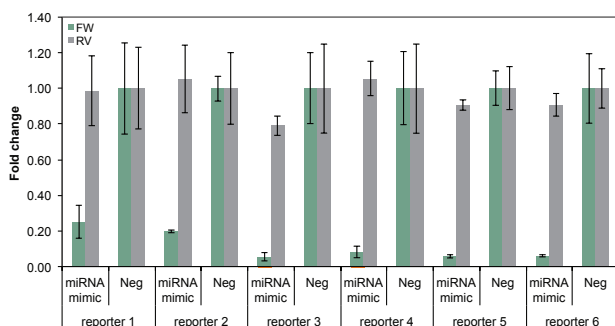


# Ambion® miRNA mimics and inhibitors

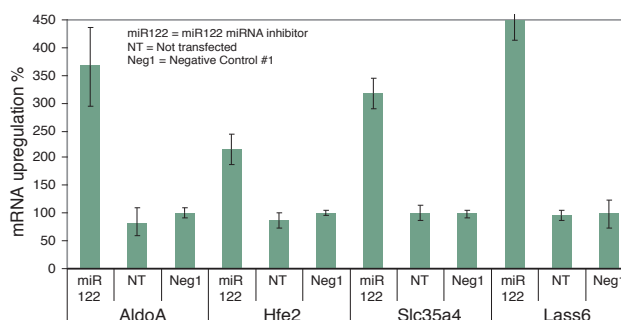
## For artificial up- and down-regulation of target mRNA translation

*mirVana™* Mimics and Inhibitors are chemically modified, synthetic nucleic acids designed to either mimic mature miRNAs, or to bind to and inhibit endogenous miRNAs. These *mirVana™* products provide a means to functionally study the role of specific miRNAs within cellular systems, or to validate the role of miRNAs in regulating target genes. *mirVana™* miRNA Mimics and Inhibitors can be used *in vitro* and *in vivo* and have been validated with Lipofectamine® RNAiMAX Transfection Reagent for use in cell-based systems, and with InvivoFectamine® 2.0 Transfection Reagent for *in vivo* delivery. *In vivo* ready *mirVana™* miRNA Mimics and Inhibitors have been purified by HPLC and dialysis, making them ready for immediate *in vivo* use.

- **Versatile**—functionally study specific miRNAs in *in vitro* or *in vivo* systems
- **Potent**—validate miRNA regulation of gene expression
- **High-throughput**—libraries for effective screening of multiple miRNAs simultaneously
- **Current**—content regularly updated with Sanger miRBase sequence database



*mirVana™* miRNA mimic mature strand is highly potent while star strand is inactivated. The key advantage of *mirVana™* miRNA mimics is inactivation of the star strand. miRNA mimics, like natural microRNAs have 2 strands—the mature strand [guide strand] that is functional and used by Ago protein to target mRNAs; and the star or passenger strand, which is nonfunctional and is normally cleaved and expelled from the complex. Most scientists want to analyze one strand of miRNA at a time, and want the other strand to be totally nonactive: *mirVana™* miRNA mimics achieve this. For this assay we measured activity from both strands of miRNA mimics. One reporter has a target in forward orientation, to measure activity of the mature miRNA strand; another reporter has the target cloned in reverse/complement orientation to test activity of the star strand of the miRNA mimic. As the figure shows for all 6 sequences, activity of the mature strand is high (5-10-fold lower than neg control), and activity of the star strand is low or nothing (similar to neg control).



*mirVana™* miRNA Inhibitors effectively suppress miRNA *in vivo*. miR122 or Negative Control #1 *mirVana™* miRNA inhibitors were complexed with InvivoFectamine® 2.0 Reagent and delivered to Balb-C mouse liver via tail vein injection on three consecutive days at a dose of 7 mg/kg body weight. Expression of four mRNA targets (AldoA, Hfe2, Slc35a4 and Lass6), natural targets of miR122, were measured in transfected livers of mice injected with (miR122 miRNA inhibitor or Negative Control #1 (Neg 1)) and livers of mice that were not transfected (NT) using TaqMan® MicroRNA Assays. This indicates that *mirVana™* miRNA inhibitors are efficiently delivered to the liver with InvivoFectamine® 2.0 Reagent and inactive miR122, leading to up-regulation of genes naturally suppressed by miR122.

## Ordering information

Product	Quantity	Cat. No.
<b>mirVana miRNA Mimics and Inhibitors*—next-generation miRNA chemistries for lowest-off target effects and highest potency</b>		
<i>mirVana</i> <sup>TM</sup> Pre-designed miRNA mimic	5 nmol	4464066
<i>mirVana</i> <sup>TM</sup> Pre-designed miRNA mimic, <i>in vivo</i> use	250 nmol	4464070
<i>mirVana</i> <sup>TM</sup> Pre-designed miRNA inhibitor	5 nmol	4464084
<i>mirVana</i> <sup>TM</sup> Pre-designed miRNA inhibitor, <i>in vivo</i> use	250 nmol	4464088
<i>mirVana</i> <sup>TM</sup> miRNA mimic, Negative Control # 1	5 nmol	4464058
<i>mirVana</i> <sup>TM</sup> miRNA inhibitor, Negative Control # 1	5 nmol	4464076
<i>mirVana</i> <sup>TM</sup> miRNA mimic, mir-1 Positive Control	5 nmol	4464062
<i>mirVana</i> <sup>TM</sup> miRNA inhibitor, Let-7 Positive Control	5 nmol	4464080
<i>mirVana</i> <sup>TM</sup> Custom miRNA mimic	5 nmol	4464068
<i>mirVana</i> <sup>TM</sup> Custom miRNA mimic <i>in vivo</i> use	250 nmol	4464071
<i>mirVana</i> <sup>TM</sup> Custom miRNA inhibitor	5 nmol	4464086
<i>mirVana</i> <sup>TM</sup> Custom miRNA inhibitor <i>in vivo</i> use	250 nmol	4464089
<i>mirVana</i> <sup>TM</sup> Custom miRNA Custom Mimic	Custom	4464073
<i>mirVana</i> <sup>TM</sup> Custom miRNA Custom Inhibitor	Custom	4464091
<b>Ambion Pre-miR Precursors and Anti-miR Inhibitors**—trusted, affordable miRNA</b>		
<b>Pre-designed</b>		
Anti-miR <sup>TM</sup> Inhibitor	5 nmol	AM17000
Pre-miR <sup>TM</sup> miRNA Precursor	5 nmol	AM17100
<b>Controls</b>		
Pre-miR <sup>TM</sup> HAS-miR-1 Precursor	5 nmol	AM17150
Pre-miR <sup>TM</sup> Negative Control #1	5 nmol	AM17110
Cy <sup>®</sup> 3 Pre-miR <sup>TM</sup> Negative Control #1	5 nmol	AM17120
Anti-miR <sup>TM</sup> HSA-LET-7C miRNA Inhibitor	5 nmol	4392431
Anti-miR <sup>TM</sup> Negative Control #1	5 nmol	AM17010
Cy <sup>®</sup> 3 Anti-miR <sup>TM</sup> Negative Control	5 nmol	AM17011
<b>Custom</b>		
Anti-miR <sup>TM</sup> Inhibitor	Custom	AM17004
Pre-miR <sup>TM</sup> miRNA Precursor	Custom	AM17104

\*Covers human, mouse, rat and other species.

\*\*Covers human.

Complete *mirVana*<sup>TM</sup> libraries—containing miRNA mimics and inhibitors for every human, mouse, and rat miRNA—are available. For information on all our predefined and custom miRNAs libraries contact us at

[RNAiLibraries@lifetech.com](mailto:RNAiLibraries@lifetech.com)

To learn more or place an order, go to [lifetechnologies.com/mirna](http://lifetechnologies.com/mirna)

