

Product Information

MISSION® microRNA Mimics

Storage Temperature –20 °C

TECHNICAL BULLETIN

Product Description

The ready-to-use MISSION® microRNA Mimics are small, double-stranded RNA molecules designed to mimic endogenous mature microRNA (miRNA) molecules. When introduced into cells using transfection or electroporation, microRNA Mimics can regulate gene expression in a variety of manners, including translational repression, mRNA cleavage, and deadenylation, imitating the native miRNA.

The MISSION microRNA Mimic Human Library includes a synthetic version of all human miRNA in the latest version of the Sanger miRNA database (miRBase), making the MISSION microRNA Mimic Human Library the most up to date human miRNA mimic library available.

- Human miRNA mimic library, based on the most recent version of miRBase
- Unique design minimizes off-target activity
- Optimized and ready for transfection into mammalian cells
- Available as a whole human library and as individual miRNA targets

| Product | Quantity | Catalog Number |
|---|-----------------|-----------------|
| MISSION microRNA Mimic Library, Human (96-Well Plate) | 985 × 0.25 nmol | MI00100 |
| MISSION microRNA Mimics, Individual | 5 nmol | HMI0001–HMI0985 |
| MISSION miRNA, Negative Control 1 | 5 nmol | HM0002 |
| MISSION miRNA, Negative Control 2 | 5 nmol | HM0003 |

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

To resuspend the dried microRNA Mimic pellet, briefly spin the tube in a microcentrifuge before opening, then add RNase free water to generate a stock solution of 20 µM according to the Table 1. For the Mimic Library, pipette the solution up and down to mix properly. For individual Mimics, mix by pipetting or vortexing.

Once rehydrated, a 20 µM stock solution will have the following concentration: 100 mM potassium acetate, 30 mM HEPES-KOH, and 2 mM magnesium acetate. Store the microRNA Mimic solutions in small aliquots at –20 °C and limit the number of freeze thaw cycles (<5).

Table 1.

Preparation of miRNA Mimics

| Quantity of microRNA Mimic | Volume of Water for 20 µM Stock Solution |
|----------------------------|--|
| 5 nmol | 250 µl |
| 10 nmol | 500 µl |
| 20 nmol | 1,000 µl |

Storage/Stability

MISSION microRNA Mimics are shipped dry at room temperature. Upon receipt, the microRNA Mimics should be stored at –20 °C. Stored under these conditions, MISSION microRNA Mimics are guaranteed for 2 years dry and 1 year rehydrated.

Procedure

Transfection of MISSION microRNA Mimics

For optimal transfection efficiency, screening a range of microRNA Mimic concentrations and cell densities is recommended. microRNA Mimic concentrations of 10–100 nM have been used successfully on a variety of cell lines but lower or higher concentrations may be necessary for specific applications.

Volumes needed to obtain a final microRNA Mimic concentration of 10 nM in three different plate formats are shown in Table 2, using a 2 μ M solution (prepared by diluting the 20 μ M stock solution 10-fold with water). Refer to the instructions provided with the transfection reagent or electroporation method for the recommended volumes. If needed, molar concentrations can be calculated by the information supplied in the certificate of analysis.

Table 2.

Mimic Volume Guidelines

| Plate Format | 96-well | 24-well | 12-well |
|---|------------------------|--------------------------|--------------------------|
| MISSION microRNA Mimic Solution (2 μ M) | 0.5 μ l (1 pmol) | 2.5 μ l (5 pmol) | 5 μ l (10 pmol) |
| Cell Density (varied) | 4,000–8,000 cells/well | 30,000–45,000 cells/well | 70,000–90,000 cells/well |
| Final volume per well | 100 μ l | 500 μ l | 1 ml |

MISSION is a registered trademark of Sigma-Aldrich®
Biotechnology LP and Sigma-Aldrich Co.

CC,MAM,PHC 11/10-1

Sigma brand products are sold through Sigma-Aldrich, Inc.

Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see reverse side of the invoice or packing slip.