

miRNA Inhibitor

(Cat# M1265-2 to M1265-10; 2 OD-10 OD; PAGE Purified; Store at -20°C)

I. Introduction:

BioVision offers **miRNA inhibitors** are chemically-modified and optimized nucleic acids designed to specifically target the microRNA (miRNA) molecules in cells. Endogenous microRNAs are small, regulatory RNAs that are expressed in animals and plants that affect the translation of target mRNAs. The mature 17-24 nucleotide, single-stranded miRNAs specifically target a protein complex to regulate translation at the level of mRNA.

The miRNA inhibitors are sequence-specific and chemically-modified to specifically target and knockdown individual miRNA molecules. miRNA Inhibitor is designed for use in miRNA experiments and cell cultures to intervene miRNA-mediated gene silencing. For this application, a miRNA Inhibitor is introduced into cells that express the corresponding miRNA, and the expression of the endogenous target of the corresponding miRNA, or of a reporter construct containing the predicted target miRNA binding site, is measured. As with other small nucleic acids, such as siRNAs and antisense oligonucleotides, the efficiency with which mammalian cells are transfected with miRNA inhibitors will vary according to cell type and the transfection reagent used. The optimal concentration used for transfections should be determined empirically.

II. Specifications of miRNA Inhibitor:

- **Quality Control:** All our miRNA inhibitors undergo vigorous process monitoring and strict quality control. Length and labeling are systematically controlled by PAGE or Mass Spectrometry. Quantity is systematically validated by UV absorbance at 260 nm
- **Purification:** Fully deprotected and desalted
- **Purified by PAGE**
- **Length:** 19 to 23 mers
- **Bases:** RNA (A, C, G or U)
- **Format:** Delivered in dried form
- **Oligonucleotide Technical Data Sheet:** Oligonucleotides are delivered with an Oligonucleotide Technical Data Sheet, which includes oligonucleotide name, sequence, concentration, size, purification method

III. Applications:

Expression of Endogenous miRNA Targets: To analyze the effects that miRNAs have on an endogenous target, the miRNA Inhibitor can be transfected into cells to evaluate whether the endogenous mRNA target expression is reversed in protein level.

Expression of miRNA Target Reporter Plasmid: Reporter plasmids, with a or several miRNA binding sites in the 3' UTR of the reporter gene, are commonly used to evaluate the direct interaction between miRNA-potential miRNA targets. When co-transfected with a reporter plasmid containing corresponding miRNA binding site, a miRNA Inhibitor can relieve the inhibition of gene expression caused by an endogenous miRNA. This type of experiment typically also includes a second reporter plasmid to normalize for transfection variation.

We recommend transfection with non-targeting miRNA inhibitor negative control as a baseline reference. Non-targeting miRNA inhibitor negative control should be used at the same concentration as experimental target miRNA inhibitor, because nucleic acid concentrations within cells can affect the activity and specificity of miRNAs.

IV. Storage and Stability: Store at or below -20°C. Do not store in a frost-free freezer. Dried oligonucleotides are shipped at ambient temperature. For long-term storage, miRNA oligos should be dried.

V. Shipment: Shipped by express delivery, dry in individual, transparent tubes at ambient temperature

VI. Caution: Oligonucleotides are susceptible to degradation by exogenous ribonucleases introduced during handling. Wear gloves when handling this product. Use RNase-free reagents, tubes, and barrier pipette tips. For long-term storage, miRNA oligos should be dried.

VII. Package Contents (miRNA Inhibitor):

Components	Quantity	Part Number
miRNA Inhibitor	Varies	M1265-XX-1
Universal Buffer	Varies	M1265-XX-2

VIII. Related Products:

Product Name	Cat. No.	Quantity
ss miRNA mimics	M1259-2 to M1259-10	2 OD- 10 OD
ss miRNA mimics Neg Control	M1260-1	1 OD
Labeled ss miRNA mimics Neg Control	M1261-1	1 OD
ds miRNA mimics	M1262-2 to M1262-10	2 OD- 10 OD
ds miRNA mimics Neg Control	M1263-1	1 OD
Labeled ds miRNA mimics Neg Control	M1264-1	1 OD
miRNA Inhibitor	M1265-2 to M1265-10	2 OD- 10 OD
miRNA Inhibitor Neg Control	M1266-1	1 OD
Labeled miRNA Inhibitor Neg Control	M1267-1	1 OD

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