

# MIS siRNA (h): sc-39793

## BACKGROUND

The transforming growth factor  $\beta$  (TGF $\beta$ ) superfamily is composed of numerous growth and differentiation factors, including TGF $\beta$ 1-3, Mullerian inhibiting substance (MIS), growth/differentiation factor (GDF) 1-9, bone morphogenic protein (BMP) 2-8, glial cell line-derived neurotrophic factor (GDNF), Inhibin  $\alpha$ ,  $\beta$ -A,  $\beta$ -B and  $\beta$ -C, Lefty and Nodal. Members of the TGF $\beta$  superfamily are involved in embryonic development and adult tissue homeostasis. The MIS glycoprotein is produced by the sertoli cells of the testis. Fetal testis produce both MIS and testosterone, the presence of which result in male offspring. Absence of MIS and testosterone in a developing fetus results in the induction of Mullerian duct differentiation, and Wolffian duct development is not induced. Testosterone induces the differentiation of the Wolffian ducts whereas MIS causes regression of the Mullerian duct. MIS inhibits the growth of tumors derived from tissues of Mullerian duct origin. MIS can also inhibit the autophosphorylation of the EGF receptor *in vitro*. Defects in anti-muellerian hormone are the cause of persistent Mullerian duct syndrome type I (PMDS-1). PMDS-1 is a form of male pseudohermaphroditism characterized by a failure of Mullerian duct regression in otherwise normal males.

## REFERENCES

1. Cate, R.L., et al. 1986. Isolation of the bovine and human genes for Mullerian inhibiting substance and expression of the human gene in animal cells. *Cell* 45: 685-698.
2. Massague, J., et al. 1987. Multiple type  $\beta$  transforming growth factors and their receptors. *J. Cell. Physiol. Suppl.* 5: 43-47.
3. Massague, J. 1990. The transforming growth factor  $\beta$  family. *Annu. Rev. Cell Biol.* 6: 597-641.

## CHROMOSOMAL LOCATION

Genetic locus: AMH (human) mapping to 19p13.3.

## PRODUCT

MIS siRNA (h) is a target-specific 19-25 nt siRNA designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see MIS shRNA Plasmid (h): sc-39793-SH and MIS shRNA (h) Lentiviral Particles: sc-39793-V as alternate gene silencing products.

## STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

MIS siRNA (h) is recommended for the inhibition of MIS expression in human cells.

## SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10  $\mu$ M in 66  $\mu$ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

## GENE EXPRESSION MONITORING

MIS (B-11): sc-166752 is recommended as a control antibody for monitoring of MIS gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor MIS gene expression knockdown using RT-PCR Primer: MIS (h)-PR: sc-39793-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.