

# TIMP-4 siRNA (m): sc-36680

## BACKGROUND

TIMP-1, TIMP-2, TIMP-3 and TIMP-4 (for tissue inhibitor of metalloproteinases-1, -2, -3 and -4) complex with metalloproteinases such as collagenases, gelatinases and stromelysins, resulting in irreversible inactivation of the metalloproteinase. TIMP-1 was found to be identical to EPA (erythroid-potentiating activity). Parathyroid hormone has been shown to be a regulator of TIMP-2 in osteoblastic cells. TIMP-3 may be involved in regulating trophoblastic invasion of the uterus as well as in regulating remodeling of the extracellular matrix during the folding of epithelia, and in the formation, branching and expansion of epithelial tubes. TIMP-4 is most highly expressed in heart and low levels of TIMP-4 are expressed in liver, brain, lung, thymus and spleen.

## REFERENCES

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2. Carmichael, D.F., et al. 1986. Primary structure and cDNA cloning of human fibroblast collagenase inhibitor. *Proc. Natl. Acad. Sci. USA* 83: 2407-2411.
3. Cook, T.F., et al. 1994. Cloning and regulation of rat tissue inhibitor of metalloproteinase-2 in osteoblastic cells. *Arch. Biochem. Biophys.* 311: 313-320.
4. Silbiger, S.M., et al. 1994. Cloning of cDNAs encoding human TIMP-3, a novel member of the tissue inhibitor of metalloproteinase family. *Gene* 141: 293-297.
5. Apte, S.S., et al. 1994. Gene encoding a novel murine tissue inhibitor of metalloproteinases (TIMP), TIMP-3, is expressed in developing mouse epithelia, cartilage, and muscle, and is located on mouse chromosome 10. *Dev. Dyn.* 200: 177-197.
6. Apte, S.S., et al. 1995. The gene structure of tissue inhibitor of metalloproteinases (TIMP)-3 and its inhibitory activities define the distinct TIMP gene family. *J. Biol. Chem.* 270: 14313-14318.
7. Greene, J., et al. 1996. Molecular cloning and characterization of human tissue inhibitor of metalloproteinase 4. *J. Biol. Chem.* 271: 30375-30380.
8. Gomez, D.E., et al. 1997. Tissue inhibitors of metalloproteinases: structure, regulation and biological functions. *Eur. J. Cell Biol.* 74: 111-122.

## CHROMOSOMAL LOCATION

Genetic locus: Timp4 (mouse) mapping to 6 E3.

## PRODUCT

TIMP-4 siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs 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 TIMP-4 shRNA Plasmid (m): sc-36680-SH and TIMP-4 shRNA (m) Lentiviral Particles: sc-36680-V as alternate gene silencing products.

For independent verification of TIMP-4 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-36680A, sc-36680B and sc-36680C.

## 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

TIMP-4 siRNA (m) is recommended for the inhibition of TIMP-4 expression in mouse 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor TIMP-4 gene expression knockdown using RT-PCR Primer: TIMP-4 (m)-PR: sc-36680-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.