SANTA CRUZ BIOTECHNOLOGY, INC.

TIMAP siRNA (h): sc-76669

BACKGROUND

TIMAP (protein phosphatase 1 regulatory inhibitor subunit), protein phosphatase 1 regulatory inhibitor subunit 16B, TGF-β-inhibited membrane-associated protein, CAAX box protein TIMAP, ankyrin repeat domain-containing protein 4, ANKRD4, PPP1R16B or KIAA0823, is a novel 567 amino acid CAAX box protein that is a positive regulator of pulmonary endothelial barrier function and likely acts as a downstream target in endothelial cells for the TGFβ1 signaling cascade. TIMAP localizes to the cell membrane and is highly expressed in CNS, lung, vascular endothelium, spleen, kidney and testis. TIMAP contains five ANK repeats, a protein phosphatase-1-interacting domain, and a carboxy-terminal CAAX box domain. TIMAP is inhibited by TGFβ1, and potentially serves a signaling function through interaction with protein phosphatase-1. The gene encoding TIMAP maps to human chromosome 20q11.23.

REFERENCES

1. Cao, W., et al. 2002. TIMAP, a novel CAAX box protein regulated by TGF-β1 and expressed in endothelial cells. Am. J. Physiol., Cell Physiol. 283: C327-C337.
2. Yong, J., et al. 2006. Phosphorylation of Myosin phosphatase targeting subunit 3 (MYPT3) and regulation of protein phosphatase 1 by protein kinase A. J. Biol. Chem. 281: 31202-31211.
3. Adyshev, D.M., et al. 2006. Potential protein partners for the human TIMAP revealed by bacterial two-hybrid screening. Mol. Biol. Rep. 33: 83-89.
4. Browne, G.J., et al. 2007. SARP, a new alternatively spliced protein phosphatase 1 and DNA interacting protein. Biochem. J. 402: 187-196.
5. Csortos, C., et al. 2008. TIMAP is a positive regulator of pulmonary endothelial barrier function. Am. J. Physiol. Lung Cell. Mol. Physiol. 295: L440-L450.

CHROMOSOMAL LOCATION

Genetic locus: PPP1R16B (human) mapping to 20q11.23.

PRODUCT

TIMAP siRNA (h) 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see TIMAP shRNA Plasmid (h): sc-76669-SH and TIMAP shRNA (h) Lentiviral Particles: sc-76669-V as alternate gene silencing products.

For independent verification of TIMAP (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-76669A, sc-76669B and sc-76669C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support 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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

TIMAP siRNA (h) is recommended for the inhibition of TIMAP 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 µM in 66 µl. 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 TIMAP gene expression knockdown using RT-PCR Primer: TIMAP (h)-PR: sc-76669-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Wang, X., et al. 2019. TIMAP inhibits endothelial Myosin light chain phosphatase by competing with MYPT1 for the catalytic protein phosphatase 1 subunit PP1cβ. J. Biol. Chem. E-published.

RESEARCH USE

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