SANTA CRUZ BIOTECHNOLOGY, INC.

TMEFF1 siRNA (m): sc-45763

BACKGROUND

TMEFF1 and TMEFF2 are putative transmembrane proteins comprised of one epidermal growth factor (EGF)-like domain and two follistatin-like domains. Both TMEFF1 and TMEFF2 are members of the EGF-like protein family and are predominantly expressed in the brain. The structure of TMEFF1 is that of a transmembrane protein with a highly conserved cytoplasmic tail, two follistatin domains and one modified EGF domain in its extracellular region. TMEFF1 is expressed on the cell membrane, and may behave as a tumor suppressor gene in brain cancers. It inhibits Nodal but not Activin signaling by binding to Cripto, the nodal co-receptor, and is also involved in the regulation of BMPs.

REFERENCES

1. Kanemoto, N., et al. 2001. Expression of TMEFF1 mRNA in the mouse central nervous system: precise examination and comparative studies of TMEFF1 and TMEFF2. Brain Res. Mol. Brain Res. 86: 48-55.
2. Morais da Silva, S., et al. 2001. The expression pattern of tomoregulin-1 in urodele limb regeneration and mouse limb development. Mech. Dev. 104: 125-128.
3. Harms, P.W. and Chang, C. 2003. Tomoregulin-1 (TMEFF1) inhibits Nodal signaling through direct binding to the Nodal co-receptor Cripto. Genes Dev. 17: 2624-2629.
4. Gery, S., et al. 2003. TMEFF1 and brain tumors. Oncogene 22: 2723-2727.
5. Chang, C., et al. 2003. Regulation of Nodal and BMP signaling by tomoregulin-1 (X7365) through novel mechanisms. Dev. Biol. 255: 1-11.

CHROMOSOMAL LOCATION

Genetic locus: Tmeff1 (mouse) mapping to 4 B1.

PRODUCT

TMEFF1 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see TMEFF1 shRNA Plasmid (m): sc-45763-SH and TMEFF1 shRNA (m) Lentiviral Particles: sc-45763-V as alternate gene silencing products.

For independent verification of TMEFF1 (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-45763A, sc-45763B and sc-45763C.

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

TMEFF1 siRNA (m) is recommended for the inhibition of TMEFF1 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 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.

GENE EXPRESSION MONITORING

TMEFF1 (B-4): sc-393457 is recommended as a control antibody for monitoring of TMEFF1 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 TMEFF1 gene expression knockdown using RT-PCR Primer: TMEFF1 (m)-PR: sc-45763-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. Chen, P., et al. 2020. Nanoscale microenvironment engineering based on layer-by-layer self-assembly to regulate hair follicle stem cell fate for regenerative medicine. Theranostics 10: 11673-11689.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.