SANTA CRUZ BIOTECHNOLOGY, INC.

IFITM1 siRNA (m): sc-44550

BACKGROUND

Interferons (IFNs) are potential antitumor agents, as they exhibit antiproliferative and differentiating properties, in addition to functioning in the defense against microbial infections. IFN exposure induces the regulation of expression levels of cellular proteins that mediate the pleiotropic effects of interferons. These effects may be mediated by soluble factors or by cell-cell interactions involving specific membrane proteins. The IFITM family of proteins are transmembrane proteins so named because their expression is IFN-inducible. IFITM proteins have been found upregulated in human colorectal carcinomas. Both mouse IFITM1 (also known as CD225) and IFITM3 demonstrate expression on the cell surfaces of primordial germ cells in a developmentally-regulated manner. They presumably modulate cell adhesion and influence cell differentiation. IFITM1 activity is required for primordial germ cell transit, and IFITM1 acts as a repulsive molecule by repelling non-IFITM1-expressing primordial germ cells from the mesoderm into the endoderm.

REFERENCES

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3. Perry, D.J., et al. 1999. Cloning of interferon-stimulated gene 17: the promoter and nuclear proteins that regulate transcription. Mol. Endocrinol. 13: 1197-1206.
4. Saitou, M., et al. 2002. A molecular programme for the specification of germ cell fate in mice. Nature 418: 293-300.
5. Akyerli, C.B., et al. 2005. Expression of IFITM1 in chronic myeloid leukemia patients. Leuk. Res. 29: 283-286.
6. Wylie, C. 2005. IFITM1-mediated cell repulsion controls the initial steps of germ cell migration in the mouse. Dev. Cell 9: 723-724.
7. Tanaka, S.S., et al. 2005. IFITM/Mil/Fragilis family proteins IFITM1 and IFITM3 play distinct roles in mouse primordial germ cell homing and repulsion. Dev. Cell 9: 745-756.
8. Andreu, P., et al. 2006. Identification of the IFITM family as a new molecular marker in human colorectal tumors. Cancer Res. 66: 1949-1955.

CHROMOSOMAL LOCATION

Genetic locus: Ifitm1 (mouse) mapping to 7 F5.

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.

PRODUCT

IFITM1 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 IFITM1 shRNA Plasmid (m): sc-44550-SH and IFITM1 shRNA (m) Lentiviral Particles: sc-44550-V as alternate gene silencing products.

For independent verification of IFITM1 (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-44550A, sc-44550B and sc-44550C.

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

IFITM1 siRNA (m) is recommended for the inhibition of IFITM1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor IFITM1 gene expression knockdown using RT-PCR Primer: IFITM1 (m)-PR: sc-44550-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.