SANTA CRUZ BIOTECHNOLOGY, INC.

FNDC1 siRNA (h): sc-95058

BACKGROUND

FNDC1 (Fibronectin type III domain-containing protein 1), also known as MEL4B3, Ags8, expressed in synovial lining protein and activation-associated cDNA protein, is a 1,888 amino acid secreted protein that contains five Fibronectin type-III domains. FNDC1 is moderately expressed in skeletal muscle, pancreas, heart, kidney, spinal cord, ovary and lung. Expression of FNDC1 is induced in response to hypoxia in ventricular cardiomyocytes. Since FNDC1 interacts with G_{β} and G_{γ}, it is likely that FNDC1 is an activator for G-protein signaling. Though normally absent in healthy skin, FNDC1 expression is induced by TGF-β signaling in skin tumors and psoriasis. There are two isoforms of FNDC1 that are produced as a result of alternative splicing events.

REFERENCES

1. Anderegg, U., et al. 2005. MEL4B3, a novel mRNA is induced in skin tumors and regulated by TGF-β and pro-inflammatory cytokines. Exp. Dermatol. 14: 709-718.
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3. Sato, M., et al. 2006. Identification of a receptor-independent activator of G protein signaling (AGS8) in ischemic heart and its interaction with $G_{\beta\gamma}$. Proc. Natl. Acad. Sci. USA 103: 797-802.
4. Online Mendelian Inheritance in Man, OMIM™. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 609991. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Yuan, C., et al. 2007. Signaling by a non-dissociated complex of G protein βγ and α subunits stimulated by a receptor-independent activator of G protein signaling, AGS8. J. Biol. Chem. 282: 19938-19947.
6. Carrouel, F., et al. 2008. HUGO (FNDC3A): a new gene overexpressed in human odontoblasts. J. Dent. Res. 87: 131-136.
7. Sato, M., et al. 2009. Activator of G protein signaling 8 (AGS8) is required for hypoxia-induced apoptosis of cardiomyocytes: role of $G_{\beta\gamma}$ and connexin43 (CX43). J. Biol. Chem. 284: 31431-3140.

CHROMOSOMAL LOCATION

Genetic locus: FNDC1 (human) mapping to 6q25.3.

PRODUCT

FNDC1 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 FNDC1 shRNA Plasmid (h): sc-95058-SH and FNDC1 shRNA (h) Lentiviral Particles: sc-95058-V as alternate gene silencing products.

For independent verification of FNDC1 (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-95058A, sc-95058B and sc-95058C.

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

FNDC1 siRNA (h) is recommended for the inhibition of FNDC1 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 FNDC1 gene expression knockdown using RT-PCR Primer: FNDC1 (h)-PR: sc-95058-PR (20 µl). 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 for detailed protocols and support products.