

SUN2 siRNA (h): sc-76612

BACKGROUND

SUN2 (Sad-1/UNC84 protein-like 2), also known as UNC84B (UNC84 homolog B), FRIGG, KIAA0668 or RAB5IP, is a 717 amino acid single-pass membrane protein that contains one SUN domain and localizes to the membrane of both the nucleus and the endosome. Widely expressed in a variety of tissues, including lung, muscle and heart, SUN2 interacts with Rab 5A and may play a role in homotypic endosome fusion. The gene encoding SUN2 maps to human chromosome 22, which houses over 500 genes and is the second smallest human chromosome. Mutations in several of the genes that map to chromosome 22 are involved in the development of Phelan-McDermid syndrome, neurofibromatosis type 2, autism and schizophrenia. Additionally, translocations between chromosomes 9 and 22 may lead to the formation of the Philadelphia chromosome and the subsequent production of the novel fusion protein Bcr-Abl, a potent cell proliferation activator found in several types of leukemias.

REFERENCES

1. Raff, J.W. 1999. The missing (L) UNC? *Curr. Biol.* 9: R708-R710.
2. Hoffenberg, S., et al. 2000. A novel membrane-anchored Rab 5 interacting protein required for homotypic endosome fusion. *J. Biol. Chem.* 275: 24661-24669.
3. Sun, G., et al. 2002. Isolation of differentially expressed genes in human heart tissues. *Biochim. Biophys. Acta* 1588: 241-246.
4. Gronborg, M., et al. 2002. A mass spectrometry-based proteomic approach for identification of serine/threonine-phosphorylated proteins by enrichment with phospho-specific antibodies: identification of a novel protein, Frigg, as a protein kinase A substrate. *Mol. Cell. Proteomics* 1: 517-527.
5. Schirmer, E.C., et al. 2003. Nuclear membrane proteins with potential disease links found by subtractive proteomics. *Science* 301: 1380-1382.

CHROMOSOMAL LOCATION

Genetic locus: UNC84B (human) mapping to 22q13.1.

PRODUCT

SUN2 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SUN2 shRNA Plasmid (h): sc-76612-SH and SUN2 shRNA (h) Lentiviral Particles: sc-76612-V as alternate gene silencing products.

For independent verification of SUN2 (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-76612A, sc-76612B and sc-76612C.

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.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

SUN2 siRNA (h) is recommended for the inhibition of SUN2 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 μ M in 66 μ 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.

GENE EXPRESSION MONITORING

SUN2 (G-5): sc-377459 is recommended as a control antibody for monitoring of SUN2 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 SUN2 gene expression knockdown using RT-PCR Primer: SUN2 (h)-PR: sc-76612-PR (20 μ l, 584 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.