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STK33 siRNA (m): sc-153899

BACKGROUND

The phosphorylation and dephosphorylation of proteins on serine and threonine residues is an essential means of regulating a broad range of cellular functions in eukaryotes, including cell division, homeostasis and apoptosis. A group of proteins that are intimately involved in this process are the serine/threonine (Ser/Thr) protein kinases. STK33 (serine/threonine kinase 33) is a 514 amino acid protein that belongs to the CaMK (calcium/calmodulin dependent kinase) subfamily of structurally related serine/threonine kinases. Widely expressed at low levels with predominant expression in testis, lung, retina and fetal organs such as brain, heart and spinal cord, STK33 contains one protein kinase domain and functions as a Ser/Thr protein kinase with a possible role in spermatogenesis. The gene encoding STK33 lies within a region on chromosome 11 that has been associated with a variety of defects, including Long QT syndrome, T-cell leukemia, Beckwith-Wiedemann syndrome, Usher syndrome 1C and various other malignancies.

REFERENCES

1. Amid, C., et al. 2001. Comparative genomic sequencing reveals a strikingly similar architecture of a conserved syntenic region on human chromosome 11p15.3 (including gene ST5) and mouse chromosome 7. *Cytogenet. Cell Genet.* 93: 284-290.
2. Mujica, A.O., et al. 2001. A novel serine/threonine kinase gene, STK33, on human chromosome 11p15.3. *Gene* 280: 175-181.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607670. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Guo, L., et al. 2003. Molecular cloning and characterization of a novel human kinase gene, PDIK1L. *J. Genet.* 82: 27-32.
5. Mujica, A.O., et al. 2005. Differential expression pattern of the novel serine/threonine kinase, STK33, in mice and men. *FEBS J.* 272: 4884-4898.
6. Woods, I.G. and Talbot, W.S. 2005. The you gene encodes an EGF-CUB protein essential for hedgehog signaling in zebrafish. *PLoS Biol.* 3: E66.

CHROMOSOMAL LOCATION

Genetic locus: Stk33 (mouse) mapping to 7 E3.

PRODUCT

STK33 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see STK33 shRNA Plasmid (m): sc-153899-SH and STK33 shRNA (m) Lentiviral Particles: sc-153899-V as alternate gene silencing products.

For independent verification of STK33 (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-153899A, sc-153899B and sc-153899C.

RESEARCH USE

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

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

STK33 siRNA (m) is recommended for the inhibition of STK33 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 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor STK33 gene expression knockdown using RT-PCR Primer: STK33 (m)-PR: sc-153899-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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