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TC10 siRNA (h): sc-41893

BACKGROUND

TC10 is a small GTP-binding protein that is induced during nerve injury, where it cooperates with other Rho family members to facilitate nerve regeneration and, in particular, neurite elongation. TC10 is located predominantly in the plasma membrane, a property that depends both on its posttranslational prenylation and on its ability to bind and hydrolyze GTP. TC10 colocalizes to Actin filaments and interacts with the Actin-binding and filament-forming protein Profilin. It functions to regulate cellular signaling to the Actin cytoskeleton and processes associated with cell growth. TC10 also interacts with a similar subset of effectors for Cdc42 and is regulated differentially by p50Rho GTPase-activating protein. Activated TC10 interacts with a variety of putative Rho family effectors, stimulates JNK and induces filopodial formation.

REFERENCES

1. Drivas, G.T., et al. 1990. Characterization of four novel Ras-like genes expressed in a human teratocarcinoma cell line. *Mol. Cell. Biol.* 10: 1793-1798.
2. Hall, A. 1998. Rho GTPases and the Actin cytoskeleton. *Science* 279: 509-514.
3. Neudauer, C.L., et al. 1998. Distinct cellular effects and interactions of the Rho-family GTPase TC10. *Curr. Biol.* 8: 1151-1160.
4. Murphy, G.A., et al. 1999. Cellular functions of TC10, a Rho family GTPase: regulation of morphology, signal transduction and cell growth. *Oncogene* 18: 3831-3845.
5. Tanabe, K., et al. 2000. The small GTP-binding protein TC10 promotes nerve elongation in neuronal cells, and its expression is induced during nerve regeneration in rats. *J. Neurosci.* 20: 4138-4144.

CHROMOSOMAL LOCATION

Genetic locus: RHOQ (human) mapping to 2p21.

PRODUCT

Rho G 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 Rho G shRNA Plasmid (m): sc-41890-SH and Rho G shRNA (m) Lentiviral Particles: sc-41890-V as alternate gene silencing products.

For independent verification of Rho G (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-41890A, sc-41890B and sc-41890C.

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

TC10 siRNA (h) is recommended for the inhibition of TC10 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor TC10 gene expression knockdown using RT-PCR Primer: TC10 (h)-PR: sc-41893-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.