

▶ RB3 siRNA (h): sc-40784

BACKGROUND

Op18 (for oncoprotein 18, also designated Stathmin, prosolin or metablastin) is a conserved, Tubulin-associated, intracellular protein. It serves as a transducing protein, via phosphorylation, for a variety of cell signaling pathways and is involved in both mitosis and differentiation. Op18 is present in many cancers, including breast carcinoma and different leukemias. The neuronal growth-associated protein (nGAP) Stathmin-2, which shares sequence homology with the phosphoprotein Op18/Stathmin-1, is expressed in a variety of neural, immune and reproductive system cell types. Stathmin-2 gene expression is altered in age-related neurodegenerative diseases such as Alzheimer's disease. Stathmin-4 (also designated Stathmin-like protein B3 or RB3) is a Stathmin-like protein involved in the destabilization of microtubules, specifically in brain tissue. RB3 has a unique N-terminal membrane-associated domain and a Stathmin-like domain at the C-terminus. This C-terminal domain promotes microtubule destabilization and Tubulin sequestering.

REFERENCES

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3. Shumyatsky, G.P., Malleret, G., Shin, R.M., Takizawa, S., Tully, K., Tsvetkov, E., Zakharenko, S.S., Joseph, J., Vronskaya, S., Yin, D., Schubart, U.K., Kandel, E.R. and Bolshakov, V.Y. 2005. Stathmin, a gene enriched in the amygdala, controls both learned and innate fear. *Cell* 123: 697-709.
4. Giampietro, C., Luzzati, F., Gambarotta, G., Giacobini, P., Boda, E., Fasolo, A. and Perroteau, I. 2005. Stathmin expression modulates migratory properties of GN-11 neurons *in vitro*. *Endocrinology* 146: 1825-1834.

CHROMOSOMAL LOCATION

Genetic locus: STMN4 (human) mapping to 8p21.2.

PRODUCT

RB3 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 RB3 shRNA Plasmid (h): sc-40784-SH and RB3 shRNA (h) Lentiviral Particles: sc-40784-V as alternate gene silencing products.

For independent verification of RB3 (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-40784A, sc-40784B and sc-40784C.

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

RB3 siRNA (h) is recommended for the inhibition of RB3 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

RB3 (B-11): sc-376829 is recommended as a control antibody for monitoring of RB3 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 RB3 gene expression knockdown using RT-PCR Primer: RB3 (h)-PR: sc-40784-PR (20 μ l). 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.