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# Drebrin siRNA (h): sc-43731

## BACKGROUND

Drebrins (developmentally regulated brain proteins) are cytoplasmic proteins that bind F-Actin in the brain and are involved in cell migration, extension of neuronal processes and plasticity of dendrites. There are three isoforms: two embryonic types (E1 and E2); and an adult type (A), generated by alternative RNA splicing from a single Drebrin gene. Drebrins are expressed mainly in brain neurons but are also found in skeletal muscle, heart, placenta, pancreas and kidney. Drebrin has been designated as a marker of the dendritic spine. Decreases in Drebrin levels in the brain have been associated with Alzheimer's disease and Down syndrome. The gene encoding the human Drebrin protein is located on human chromosome 5.

## REFERENCES

1. Shirao, T. 1995. The roles of microfilament-associated proteins, drebrins, in brain morphogenesis: a review. *J. Biochem.* 117: 231-236.
2. Hayashi, K., et al. 1996. Modulatory role of Drebrin on the cytoskeleton within dendritic spines in the rat cerebral cortex. *J. Neurosci.* 16: 7161-7170.
3. Hayashi, K., et al. 1999. Change in the shape of dendritic spines caused by overexpression of Drebrin in cultured cortical neurons. *J. Neurosci.* 19: 3918-3925.
4. Peitsch, W.K., et al. 1999. Drebrin is a widespread Actin-associating protein enriched at junctional plaques, defining a specific microfilament anchorage system in polar epithelial cells. *Eur. J. Cell Biol.* 78: 767-778.
5. Shim, K.S., et al. 2002. Drebrin, a dendritic spine protein, is manifold decreased in brains of patients with Alzheimer's disease and Down syndrome. *Neurosci. Lett.* 324: 209-212.
6. SWISS-PROT/TrEMBL (Q16643). World Wide Web URL: <http://www.expasy.ch/sprot/sprot-top.html>

## CHROMOSOMAL LOCATION

Genetic locus: DBN1 (human) mapping to 5q35.3.

## PRODUCT

Drebrin siRNA (h) is a target-specific 19-25 nt siRNA designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Drebrin shRNA Plasmid (h): sc-43731-SH and Drebrin shRNA (h) Lentiviral Particles: sc-43731-V as alternate gene silencing products.

## STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at  $-20^{\circ}$  C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at  $-20^{\circ}$  C, avoid contact with RNAses and repeated freeze thaw cycles.

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

## APPLICATIONS

Drebrin siRNA (h) is recommended for the inhibition of Drebrin 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  $\mu$ M in 66  $\mu$ 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

Drebrin (C-8): sc-374269 is recommended as a control antibody for monitoring of Drebrin 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 $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Drebrin gene expression knockdown using RT-PCR Primer: Drebrin (h)-PR: sc-43731-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60 $^{\circ}$  C and the extension temperature should be 68-72 $^{\circ}$  C.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.