SANTA CRUZ BIOTECHNOLOGY, INC.

calsyntenin-3 siRNA (m): sc-141987

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The Power to Question

BACKGROUND

Members of the calsyntenin protein family localize to the post-synaptic membrane of exicitatory central nervous system (CNS) synapses. Calsyntenin-3, also known as CSTN3, alcβ or CLSTN3, is a 956 amino acid single-pass type I membrane protein that localizes to the membrane of the endoplasmic reticulum and the Golgi apparatus. Expressed predominantly in brain and kidney, calsyntenin-3 contains two cadherin-like repeats in its N-terminal extracellular region and binds synaptic calcium with its cytoplasmic domain, which suggests that calsyntenin-3 plays a role in the modulation of calcium-mediated postsynaptic signals. Under normal physiological conditions, calsyntenin-3 is protoeolytically processed in an event in which primary ζ-cleavage generates a short C-terminal transmembrane fragment and a long extracellular N-terminal domain. The tripartite complex, which consist of calsyntenin-3, X11β and Amyloid A4, inhibits intracellular Amyloid A4 maturation by stabilizing Amyloid A4 metabolism and enhancing X11β-mediated suppression of β-Amyl.

REFERENCES

1. Vogt, L., et al. 2001. Calsyntenin-1, a proteolytically processed postsynaptic membrane protein with a cytoplasmic calcium-binding domain. Mol. Cell. Neurosci. 17: 151-166.
2. Hintsch, G., et al. 2002. The calsyntenins—a family of postsynaptic membrane proteins with distinct neuronal expression patterns. Mol. Cell. Neurosci. 21: 393-409.
3. Araki, Y., et al. 2003. Novel cadherin-related membrane proteins, Alcadeins, enhance the X11-like protein-mediated stabilization of amyloid β-protein precursor metabolism. J. Biol. Chem. 278: 49448-49458.
4. Araki, Y., et al. 2004. Coordinated metabolism of Alcadein and amyloid β-protein precursor regulates FE65-dependent gene transactivation. J. Biol. Chem. 279: 24343-24354.
5. Suzuki, T., et al. 2006. Trafficking of Alzheimer's disease-related membrane proteins and its participation in disease pathogenesis. J. Biochem. 139: 949-955.
6. Cheng, X.R., et al. 2006. The family of calsyntenins: learning and memory related genes. Sheng Li Ke Xue Jin Zhan 37: 205-210.

CHROMOSOMAL LOCATION

Genetic locus: Clstn3 (mouse) mapping to 6 F2.

PRODUCT

calsyntenin-3 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see calsyntenin-3 shRNA Plasmid (m): sc-141987-SH and calsyntenin-3 shRNA (m) Lentiviral Particles: sc-141987-V as alternate gene silencing products.

For independent verification of calsyntenin-3 (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-141987A, sc-141987B and sc-141987C.

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

calsyntenin-3 siRNA (m) is recommended for the inhibition of calsyntenin-3 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 µM in 66 µl. 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

calsyntenin-3 (D-16): sc-133316 is recommended as a control antibody for monitoring of calsyntenin-3 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 (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor calsyntenin-3 gene expression knockdown using RT-PCR Primer: calsyntenin-3 (m)-PR: sc-141987-PR (20 µl). 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.