SANTA CRUZ BIOTECHNOLOGY, INC.

calsyntenin-3 siRNA (h): sc-95768

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.
7. Rindler, M.J., et al. 2008. Calsyntenins are secretory granule proteins in anterior pituitary gland and pancreatic islet alpha cells. J. Histochem. Cytochem. 56: 381-388.

CHROMOSOMAL LOCATION

Genetic locus: CLSTN3 (human) mapping to 12p13.31.

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.

PRODUCT

calsyntenin-3 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see calsyntenin-3 shRNA Plasmid (h): sc-95768-SH and calsyntenin-3 shRNA (h) Lentiviral Particles: sc-95768-V as alternate gene silencing products.

For independent verification of calsyntenin-3 (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-95768A, sc-95768B and sc-95768C.

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 (h) is recommended for the inhibition of calsyntenin-3 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 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor calsyntenin-3 gene expression knockdown using RT-PCR Primer: calsyntenin-3 (h)-PR: sc-95768-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.