SANTA CRUZ BIOTECHNOLOGY, INC.

calsyntenin-1 siRNA (h): sc-88549

BACKGROUND

Members of the calsyntenin protein family are localized to the postsynaptic membrane of exicitatory central nervous system (CNS) synapses. Calsyntenin-1, also known as CSTN1, PIK3CD, Alzheimer-related cadherin-like protein, non-classical cadherin XB31α, KIAA0911, ALC-ALPHA, alcα1, alcα2 or FLJ32258, is a 981 amino acid single-pass type I membrane protein that localizes to the membrane of endoplasmic reticulum, Golgi apparatus, cell projections and postsynaptic cells. Expressed in brain, calsyntenin-1 is also found at lower levels in placenta, skeletal muscle, heart and kidney. Calsyntenin-1 binds synaptic Ca^{2+} with its cytoplasmic domain and plays a role in extracellular proteolysis. Calsyntenin-1 is also known to form a complex with X11β and APP to suppress the metabolic cleavage of APP, and docks vesicular cargo to KLC1. Calsyntenin-1 may be related to the development or progression of Alzheimer's disease, and two calsyntenin-1 isoforms are produced as a result of alternative splicing events.

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. Konecna, A., et al. 2006. Calsyntenin-1 docks vesicular cargo to kinesin-1. Mol. Biol. Cell 17: 3651-3663.
6. Araki, Y., et al. 2007. The novel cargo Alcadein induces vesicle association of kinesin-1 motor components and activates axonal transport. EMBO J. 26: 1475-1486.
7. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 611321. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: CLSTN1 (human) mapping to 1p36.22.

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-1 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-1 shRNA Plasmid (h): sc-88549-SH and calsyntenin-1 shRNA (h) Lentiviral Particles: sc-88549-V as alternate gene silencing products.

For independent verification of calsyntenin-1 (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-88549A, sc-88549B and sc-88549C.

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-1 siRNA (h) is recommended for the inhibition of calsyntenin-1 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-1 gene expression knockdown using RT-PCR Primer: calsyntenin-1 (h)-PR: sc-88549-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.