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# calsyntenin-1 siRNA (m): sc-141985

## BACKGROUND

Members of the calsyntenin protein family are localized to the post-synaptic membrane of excitatory central nervous system (CNS) synapses. Calsyntenin-1, also known as CSTN1, PIK3CD, Alzheimer-related cadherin-like protein, non-classical cadherin XB31 $\alpha$ , KIAA0911, ALC-ALPHA, alc $\alpha$ 1, alc $\alpha$ 2 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<sup>2+</sup> with its cytoplasmic domain and plays a role in extracellular proteolysis. Calsyntenin-1 is also known to form a complex with X11 $\beta$  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  $\beta$ -protein precursor metabolism. *J. Biol. Chem.* 278: 49448-49458.
4. Araki, Y., et al. 2004. Coordinated metabolism of Alcadein and amyloid  $\beta$ -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.

## CHROMOSOMAL LOCATION

Genetic locus: Clstn1 (mouse) mapping to 4 E2.

## PRODUCT

calsyntenin-1 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see calsyntenin-1 shRNA Plasmid (m): sc-141985-SH and calsyntenin-1 shRNA (m) Lentiviral Particles: sc-141985-V as alternate gene silencing products.

For independent verification of calsyntenin-1 (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-141985A, sc-141985B and sc-141985C.

## 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  $\mu$ 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

calsyntenin-1 siRNA (m) is recommended for the inhibition of calsyntenin-1 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  $\mu$ 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor calsyntenin-1 gene expression knockdown using RT-PCR Primer: calsyntenin-1 (m)-PR: sc-141985-PR (20  $\mu$ 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.

## PROTOCOLS

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