SANTA CRUZ BIOTECHNOLOGY, INC.

CALHM1 siRNA (m): sc-143737

BACKGROUND

CALHM1 (calcium homeostasis modulator 1), also known as FAM26C, is a 346 amino acid multi-pass endoplasmic reticulum membrane protein that belongs to the FAM26 family. CALHM1 co-localizes with GRP 78 to the endoplasmic reticulum. Predominantly expressed in adult brain, CALHM1 may be a pore-forming ion channel that controls cytosolic Ca^{2+} permeability and cytosolic Ca^{2+} concentration in the cell. It is suggested that CALHM1 regulates amyloid precursor protein proteolysis and aggregated amyloid-β peptides levels in a Ca^{2+} dependent manner. CALHM1 homomultimerizes and shares strong sequence similarities with the selectivity filter of the NMDA receptor, which generates a large Ca^{2+} conductance across the plasma membrane. CALHM1 may be a potential factor involved in the pathogenesis of Alzheimer's disease.

REFERENCES

1. Dreses-Werringloer, U., et al. 2008. A polymorphism in CALHM1 influences Ca^{2+} homeostasis, Aβ levels, and Alzheimer's disease risk. Cell 133: 1149-1161.
2. Bertram, L., et al. 2008. No association between CALHM1 and Alzheimer's disease risk. Cell 135: 993-4; author reply 994.
3. Green, K.N. and LaFerla, F.M. 2008. Linking calcium to Aβ and Alzheimer's disease. Neuron 59: 190-194.
4. Minster, R.L., et al. 2009. No association between CALHM1 variation and risk of Alzheimer disease. Hum. Mutat. 30: E566-E569.
5. Beecham, G.W., et al. 2009. CALHM1 polymorphism is not associated with late-onset Alzheimer disease. Ann. Hum. Genet. 73: 379-381.
6. Inoue, K., et al. 2010. The P86L common allele of CALHM1 does not influence risk for Alzheimer disease in Japanese cohorts. Am. J. Med. Genet. B Neuropsychiatr. Genet. 153B: 532-535.

CHROMOSOMAL LOCATION

Genetic locus: Calhm1 (mouse) mapping to 19 C3.

PRODUCT

CALHM1 siRNA (m) is a pool of 2 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 CALHM1 shRNA Plasmid (m): sc-143737-SH and CALHM1 shRNA (m) Lentiviral Particles: sc-143737-V as alternate gene silencing products.

For independent verification of CALHM1 (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-143737A and sc-143737B.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

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

CALHM1 siRNA (m) is recommended for the inhibition of CALHM1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor CALHM1 gene expression knockdown using RT-PCR Primer: CALHM1 (m)-PR: sc-143737-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.