SANTA CRUZ BIOTECHNOLOGY, INC.

hippocalcin siRNA (m): sc-72250

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Hippocalcin is a neuron-specific calcium-binding protein found primarily in the plasma membrane of brain and retinal tissue, with increased expression observed in hippocampal pyramidal cells. Through its calcium-dependent signal regulation, hippocalcin can both inhibit rhodopsin kinase and increase phospholipase D2 expression. In order to regulate kinase and phospholipase activity, hippocalcin must bind to the plasma membrane where it can then bind two calcium ions for use in signal regulation. The hippocalcin protein is highly conserved in mouse, rat and human tissue and has a suggested role in neural plasticity and associative memory by contributing to the survival of neurons during aging. The loss of hippocalcin expression is thought to contribute to age-related impairment of post-synaptic functions related to neuronal degradation.

REFERENCES

1. Masaki, T., et al. 1999. Genomic structure and chromosomal mapping of the human and mouse hippocalcin genes. Gene 225: 117-124.
2. Furuta, Y., et al. 1999. Age-related changes in expression of hippocalcin and NVP2 in rat brain. Neurochem. Res. 24: 651-658.
3. Hyun, J.K., et al. 2001. Role of hippocalcin in Ca^{2+} -induced activation of phospholipase D. Mol. Cells 10: 669-677.
4. Mammen, A., et al. 2004. Hippocalcin in the olfactory epithelium: a mediator of second messenger signaling. Biochem. Biophys. Res. Commun. 322: 1131-1139.
5. Korhonen, L., et al. 2004. Hippocalcin protects against caspase-12-induced and age-dependent neuronal degeneration. Mol. Cell. Neurosci. 28: 85-95.
6. Kobayashi, M., et al. 2005. Hippocalcin-deficient mice display a defect in cAMP response element-binding protein activation associated with impaired spatial and associative memory. Neuroscience 133: 471-484.
7. Palmer, C.L., et al. 2005. Hippocalcin functions as a calcium sensor in hippocampal LTD. Neuron 47: 487-494.

CHROMOSOMAL LOCATION

Genetic locus: Hpca (mouse) mapping to 4 D2.2.

PRODUCT

hippocalcin 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 hippocalcin shRNA Plasmid (m): sc-72250-SH and hippocalcin shRNA (m) Lentiviral Particles: sc-72250-V as alternate gene silencing products.

For independent verification of hippocalcin (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-72250A, sc-72250B and sc-72250C.

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

hippocalcin siRNA (m) is recommended for the inhibition of hippocalcin 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

hippocalcin (G-8): sc-393125 is recommended as a control antibody for monitoring of hippocalcin 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 reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor hippocalcin gene expression knockdown using RT-PCR Primer: hippocalcin (m)-PR: sc-72250-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.