SANTA CRUZ BIOTECHNOLOGY, INC.

L-type Ca^{++} CP γ4 siRNA (h): sc-94093

BACKGROUND

L-type (long lasting current) voltage-dependent calcium channels are composed of four subunits, designated α1, β, γ and α2δ, all of which work together to mediate neurotransmitter release. L-type Ca^{++} CP γ4, also known as CACNG4, is a 327 amino acid multi-pass membrane protein that exists as a component of the γ subunit and is thought to specifically stabilize calcium channels in a closed (inactive) state. The gene encoding L-type Ca^{++} CP γ4 maps to a cluster of γ subunit-encoding genes on human chromosome 17. Chromosome 17 comprises over 2.5% of the human genome and encodes over 1,200 genes, some of which are involved in tumor suppression and in the pathogenesis of Li-Fraumeni syndrome, early onset breast cancer and a predisposition to cancers of the ovary, colon, prostate gland and fallopian tubes.

REFERENCES

1. Powers, P.A., et al. 1993. Molecular characterization of the gene encoding the γ subunit of the human skeletal muscle 1,4-dihydropyridine-sensitive Ca^{2+} channel (CACNLG), cDNA sequence, gene structure, and chromosomal location. J. Biol. Chem. 268: 9275-9279.
2. Diriong, S., et al. 1995. Chromosomal localization of the human genes for α 1A, α 1B, and α 1E voltage-dependent Ca^{2+} channel subunits. Genomics 30: 605-609.
3. Burgess, D.L., et al. 1999. Identification of three novel Ca^{2+} channel γ subunit genes reveals molecular diversification by tandem and chromosome duplication. Genome Res. 9: 1204-1213.
4. Burgess, D.L., et al. 2001. A cluster of three novel Ca^{2+} channel γ subunit genes on chromosome 19q13.4: evolution and expression profile of the γ subunit gene family. Genomics 71: 339-350.
5. Chu, P.J., et al. 2001. Calcium channel γ subunits provide insights into the evolution of this gene family. Gene 280: 37-48.

CHROMOSOMAL LOCATION

Genetic locus: CACNG4 (human) mapping to 17q24.2.

PRODUCT

L-type Ca^{++} CP γ4 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 L-type Ca^{++} CP γ4 shRNA Plasmid (h): sc-94093-SH and L-type Ca^{++} CP γ4 shRNA (h) Lentiviral Particles: sc-94093-V as alternate gene silencing products.

For independent verification of L-type Ca^{++} CP γ4 (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-94093A, sc-94093B and sc-94093C.

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

L-type Ca^{++} CP γ4 siRNA (h) is recommended for the inhibition of L-type Ca^{++} CP γ4 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 L-type Ca^{++} CP γ4 gene expression knockdown using RT-PCR Primer: L-type Ca^{++} CP γ4 (h)-PR: sc-94093-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.