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T-type Ca⁺⁺ CP α 1G siRNA (h): sc-42704

BACKGROUND

Voltage-dependent Ca⁺⁺ channels mediate Ca⁺⁺ entry into excitable cells in response to membrane depolarization, and they are involved in a variety of Ca⁺⁺-dependent processes, including muscle contraction, hormone or neurotransmitter release and gene expression. Calcium channels are highly diverse, multimeric complexes composed of an α -1 subunit, an intracellular β subunit, a disulfide linked α -2/ δ subunit and a transmembrane γ subunit. Ca⁺⁺ currents are characterized on the basis of their biophysical and pharmacologic properties and include L, N, T, P, Q and R-types. T-type Ca⁺⁺ currents are activated and inactivated more rapidly and at more negative membrane potentials than other Ca⁺⁺ current types. T-type Ca⁺⁺ channels enhance odor sensitivity by lowering the threshold of spike generation in olfactory receptor cells (ORCs).

REFERENCES

1. Perez-Reyes, E., et al 1995. Molecular biology of calcium channels. *Kidney Int.* 48: 1111-1124.
2. Randall, A.D. 1998. The molecular basis of voltage-gated Ca²⁺ channel diversity: is it time for T. *J. Membr. Biol.* 161: 207-213.
3. Catterall, W.A. 2000. Structure and regulation of voltage-gated Ca²⁺ channels. *Annu. Rev. Cell. Dev. Biol.* 16: 521-525.
4. Kawai, F., et al. 2001. Enhancement by T-type Ca²⁺ currents of odor sensitivity in olfactory receptor cells. *J. Neurosci.* 21: 44.
5. Online Mendelian Inheritance in Man, OMIM[™]. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 601011. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: CACNA1G (human) mapping to 17q21.33.

PRODUCT

T-type Ca⁺⁺ CP α 1G 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see T-type Ca⁺⁺ CP α 1G shRNA Plasmid (h): sc-42704-SH and T-type Ca⁺⁺ CP α 1G shRNA (h) Lentiviral Particles: sc-42704-V as alternate gene silencing products.

For independent verification of T-type Ca⁺⁺ CP α 1G (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-42704A, sc-42704B and sc-42704C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

T-type Ca⁺⁺ CP α 1G siRNA (h) is recommended for the inhibition of T-type Ca⁺⁺ CP α 1G 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 μ M in 66 μ 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 T-type Ca⁺⁺ CP α 1G gene expression knockdown using RT-PCR Primer: T-type Ca⁺⁺ CP α 1G (h)-PR: sc-42704-PR (20 μ l, 557 bp). 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 for detailed protocols and support products.