



T-type Ca^{++} CP $\alpha 1\text{G}$ siRNA (m): sc-42705

BACKGROUND

Voltage-dependent Ca^{2+} channels mediate Ca^{2+} entry into excitable cells in response to membrane depolarization, and they are involved in a variety of Ca^{2+} -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^{2+} 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^{2+} currents are activated and inactivated more rapidly and at more negative membrane potentials than other Ca^{2+} current types. T-type Ca^{2+} 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 Ca^{2+} channel diversity: is it time for T. *J. Membr. Biol.* 161: 207-213.
3. Catterall, W.A. 2000. Structure and regulation of voltage-gated Ca^{2+} channels. *Annu. Rev. Cell Dev. Biol.* 16: 521-525.
4. Kawai, F., et al. 2001. Enhancement by T-type Ca^{2+} 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* (mouse) mapping to 11 D.

PRODUCT

T-type Ca^{++} CP $\alpha 1\text{G}$ 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 T-type Ca^{++} CP $\alpha 1\text{G}$ shRNA Plasmid (m): sc-42705-SH and T-type Ca^{++} CP $\alpha 1\text{G}$ shRNA (m) Lentiviral Particles: sc-42705-V as alternate gene silencing products.

For independent verification of T-type Ca^{++} CP $\alpha 1\text{G}$ (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-42705A, sc-42705B and sc-42705C.

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.

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

T-type Ca^{++} CP $\alpha 1\text{G}$ siRNA (m) is recommended for the inhibition of T-type Ca^{++} CP $\alpha 1\text{G}$ 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 T-type Ca^{++} CP $\alpha 1\text{G}$ gene expression knockdown using RT-PCR Primer: T-type Ca^{++} CP $\alpha 1\text{G}$ (m)-PR: sc-42705-PR (20 μl). Annealing temperature for the primers should be $55-60^{\circ}\text{C}$ and the extension temperature should be $68-72^{\circ}\text{C}$.