

# L-type $\text{Ca}^{++}$ CP $\beta 1$ siRNA (h): sc-42694

## BACKGROUND

Voltage-dependent  $\text{Ca}^{2+}$  channels mediate  $\text{Ca}^{2+}$  entry into excitable cells in response to membrane depolarization, and they are involved in a variety of  $\text{Ca}^{2+}$ -dependent processes, including muscle contraction, hormone or neurotransmitter release and gene expression. Calcium channels are highly diverse, multimeric complexes composed of an  $\alpha$ -1 subunit, an intracellular  $\beta$ -subunit, a disulfide linked  $\alpha$ -2/ $\delta$  subunit and a transmembrane  $\gamma$ -subunit.  $\text{Ca}^{2+}$  currents are characterized on the basis of their biophysical and pharmacologic properties and include L-, N-, T-, P-, Q-, and R- types. L-type  $\text{Ca}^{2+}$  currents initiate muscle contraction, endocrine secretion, and gene transcription, and can be regulated through second-messenger activated protein phosphorylation pathways. L-type calcium channels may form macromolecular signaling complexes with G protein-coupled receptors, thereby enhancing the selectivity of regulating specific targets.

## REFERENCES

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3. Catterall, W.A. 2000. Structure and regulation of voltage-gated  $\text{Ca}^{2+}$  channels. *Annu. Rev. Cell Dev. Biol.* 16: 521-555.
4. Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 601011. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Davare, M.A., Avdonin, V., Hall, D.D., Peden, E.M., Burette, A., Weinberg, R.J., Home, M.C., Hoshi, T. and Hell, J.W. 2001. A  $\beta_2$  adrenergic receptor signaling complex assembled with the  $\text{Ca}^{2+}$  channel  $\text{Ca}_v1.2$ . *Science* 293: 98-101.

## CHROMOSOMAL LOCATION

Genetic locus: CACNB1 (human) mapping to 17q12.

## PRODUCT

L-type  $\text{Ca}^{++}$  CP  $\beta 1$  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  $\mu\text{M}$  solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see L-type  $\text{Ca}^{++}$  CP  $\beta 1$  shRNA Plasmid (h): sc-42694-SH and L-type  $\text{Ca}^{++}$  CP  $\beta 1$  shRNA (h) Lentiviral Particles: sc-42694-V as alternate gene silencing products.

For independent verification of L-type  $\text{Ca}^{++}$  CP  $\beta 1$  (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-42694A, sc-42694B and sc-42694C.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

## STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at  $-20^\circ\text{C}$  with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at  $-20^\circ\text{C}$ , avoid contact with RNases and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330  $\mu\text{l}$  of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu\text{l}$  of RNase-free water makes a 10  $\mu\text{M}$  solution in a 10  $\mu\text{M}$  Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

L-type  $\text{Ca}^{++}$  CP  $\beta 1$  siRNA (h) is recommended for the inhibition of L-type  $\text{Ca}^{++}$  CP  $\beta 1$  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  $\mu\text{M}$  in 66  $\mu\text{l}$ . 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.

## GENE EXPRESSION MONITORING

L-type  $\text{Ca}^{++}$  CP  $\beta 1$  (Y-2D68): sc-134377 is recommended as a control antibody for monitoring of L-type  $\text{Ca}^{++}$  CP  $\beta 1$  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-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor L-type  $\text{Ca}^{++}$  CP  $\beta 1$  gene expression knockdown using RT-PCR Primer: L-type  $\text{Ca}^{++}$  CP  $\beta 1$  (h)-PR: sc-42694-PR (20  $\mu\text{l}$ ). Annealing temperature for the primers should be  $55-60^\circ\text{C}$  and the extension temperature should be  $68-72^\circ\text{C}$ .

## RESEARCH USE

For research use only, not for use in diagnostic procedures.