

L-type Ca⁺⁺ CP α1S (IIF71VH3): sc-21782

BACKGROUND

Voltage-dependent Ca²⁺ channels mediate Ca²⁺ entry into excitable cells in response to membrane depolarization, and they are involved in a variety of Ca²⁺-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. Ca²⁺ currents are characterized on the basis of their biophysical and pharmacologic properties and include L-, N-, T-, P-, Q-, and R- types. L-type Ca²⁺ 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. Calcium channels containing the α-1S subunit play an important role in excitation-contraction coupling in skeletal muscle.

REFERENCES

- Gregg, R.G., et al. 1993. Assignment of the human gene for the α 1 subunit of the skeletal muscle DHP-sensitive Ca²⁺ channel (CACNL1A3) to chromosome 1q31-q32. *Genomics* 15: 107-112.
- Perez-Reyes, E. and Schneider, T. 1995. Molecular biology of calcium channels. *Kidney Int.* 48: 1111-1124.
- Randall, A.D. 1998. The molecular basis of voltage-gated Ca²⁺ channel diversity: is it time for T? *J. Membr. Biol.* 161: 207-213.
- Catterall, W.A. 2000. Structure and regulation of voltage-gated Ca²⁺ channels. *Annu. Rev. Cell Dev. Biol.* 16: 521-555.
- Davare, M.A., et al. 2001. A β₂ adrenergic receptor signaling complex assembled with the Ca²⁺ channel Ca_v1.2. *Science* 293: 98-101.
- 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/>
- SWISS-PROT/TrEMBL (Q13698). World Wide Web URL: <http://www.expasy.ch/sprot/sprot-top.html>

CHROMOSOMAL LOCATION

Genetic locus: CACNA1S (human) mapping to 1q32.1; Cacna1s (mouse) mapping to 1 E4.

SOURCE

L-type Ca⁺⁺ CP α1S (IIF71VH3) is a mouse monoclonal antibody raised against rabbit skeletal muscle triads, recognizes skeletal DHPR α1S subunit.

PRODUCT

Each vial contains 200 µg IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

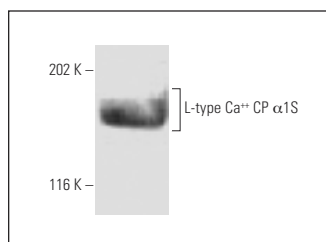
L-type Ca⁺⁺ CP α1S (IIF71VH3) is recommended for detection of 170 kDa, L-type calcium channel α1S of mouse, rat, human and rabbit origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for L-type Ca⁺⁺ CP α1S siRNA (h): sc-35772, L-type Ca⁺⁺ CP α1S siRNA (m): sc-35773, L-type Ca⁺⁺ CP α1S shRNA Plasmid (h): sc-35772-SH, L-type Ca⁺⁺ CP α1S shRNA Plasmid (m): sc-35773-SH, L-type Ca⁺⁺ CP α1S shRNA (h) Lentiviral Particles: sc-35772-V and L-type Ca⁺⁺ CP α1S shRNA (m) Lentiviral Particles: sc-35773-V.

Molecular Weight of L-type Ca⁺⁺ CP α1S: 170 kDa.

Positive Controls: HEL 92.1.7 cell lysate: sc-2270, K-562 whole cell lysate: sc-2203 or mouse kidney extract: sc-2255.

DATA



L-type Ca⁺⁺ CP α1S (IIF71VH3): sc-21782. Western blot analysis of L-type Ca⁺⁺ CP α1S expression in rabbit KCl treated microsomes. Kindly provided by L. McDonough at University of Iowa.

SELECT PRODUCT CITATIONS

- Grajales, L., et al. 2015. Temporal expression of calcium channel subunits in satellite cells and bone marrow mesenchymal cells. *Stem Cell Rev.* 11: 408-422.
- Qin, L., et al. 2019. Ginsenoside Rb1 improved diabetic cardiomyopathy through regulating calcium signaling by alleviating protein O-GlcNAcylation. *J. Agric. Food Chem.* 67: 14074-14085.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.