SANTA CRUZ BIOTECHNOLOGY, INC.

L-type Ca^{++} CP α1S (G-1): sc-514685

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. L-type Ca^{2+} currents initiate muscle contraction, endocrine secretion, and gene transcription, and can be regulated through second-messenger activated protein phosphorylation pathways. L-type Ca^{2+} 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

1. Gregg, R.G., et al. 1993. Assignment of the human gene for the α 1 subunit of the skeletal muscle DHP-sensitive Ca^{2+} channel (CACNL1A3) to chromosome 1q31-q32. Genomics 15: 107-112.
2. Perez-Reyes, E. and Schneider, T. 1995. Molecular biology of calcium channels. Kidney Int. 48: 1111-1124.
3. 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.
4. Catterall, W.A. 2000. Structure and regulation of voltage-gated Ca^{2+} channels. Annu. Rev. Cell Dev. Biol. 16: 521-555.
5. Davare, M.A., et al. 2001. A β_2 adrenergic receptor signaling complex assembled with the Ca^{2+} channel $Ca_v1.2$. Science 293: 98-101.

CHROMOSOMAL LOCATION

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

SOURCE

L-type Ca^{++} CP α1S (G-1) is a mouse monoclonal antibody raised against amino acids 1611-1873 of L-type Ca^{++} CP α1S of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

L-type Ca^{++} CP α1S (G-1) is available conjugated to agarose (sc-514685 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-514685 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514685 PE), fluorescein (sc-514685 FITC), Alexa Fluor® 488 (sc-514685 AF488), Alexa Fluor® 546 (sc-514685 AF546), Alexa Fluor® 594 (sc-514685 AF594) or Alexa Fluor® 647 (sc-514685 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514685 AF680) or Alexa Fluor® 790 (sc-514685 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

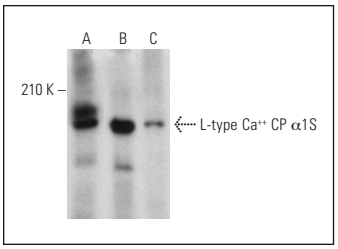
L-type Ca^{++} CP α1S (G-1) is recommended for detection of L-type Ca^{++} CP α1S of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

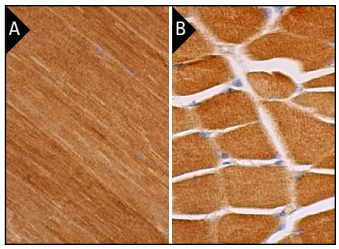
Molecular Weight of L-type Ca^{++} CP α1S: 170 kDa.

Positive Controls: Sol8 cell lysate: sc-2249, SK-N-MC cell lysate: sc-2237 or L8 cell lysate: sc-3807.

DATA



L-type Ca^{++} CP α1S (G-1): sc-514685. Western blot analysis of L-type Ca^{++} CP α1S expression in SK-N-MC (**A**), Sol8 (**B**) and L8 (**C**) whole cell lysates.



L-type Ca^{++} CP α1S (G-1): sc-514685. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse skeletal muscle (**A**) and human skeletal muscle (**B**) tissue showing cytoplasmic staining of myocytes.

SELECT PRODUCT CITATIONS

1. Pathe-Neuschäfer-Rube, A., et al. 2021. Cell-based reporter release assay to determine the activity of calcium-dependent neurotoxins and neuroactive pharmaceuticals. Toxins 13: 247.
2. Silva-Rojas, R., et al. 2021. Pathophysiological effects of overactive STIM1 on murine muscle function and structure. Cells 10: 1730.

STORAGE

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

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.