

# L-type Ca<sup>++</sup> CP α1S (IIC12D4): sc-21781

## BACKGROUND

Voltage-dependent Ca<sup>2+</sup> channels mediate Ca<sup>2+</sup> entry into excitable cells in response to membrane depolarization, and they are involved in a variety of Ca<sup>2+</sup>-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<sup>2+</sup> 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<sup>2+</sup> 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

1. Gregg, R.G., et al. 1993. Assignment of the human gene for the α 1 subunit of the skeletal muscle DHP-sensitive Ca<sup>2+</sup> 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

L-type Ca<sup>++</sup> CP α1S (IIC12D4) is a mouse monoclonal antibody raised against skeletal muscle triads of rabbit origin, recognizes skeletal DHPR α1S subunit.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

L-type Ca<sup>++</sup> CP α1S (IIC12D4) 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<sup>++</sup> CP α1S siRNA (h): sc-35772, L-type Ca<sup>++</sup> CP α1S siRNA (m): sc-35773, L-type Ca<sup>++</sup> CP α1S shRNA Plasmid (h): sc-35772-SH, L-type Ca<sup>++</sup> CP α1S shRNA Plasmid (m): sc-35773-SH, L-type Ca<sup>++</sup> CP α1S shRNA (h) Lentiviral Particles: sc-35772-V and L-type Ca<sup>++</sup> CP α1S shRNA (m) Lentiviral Particles: sc-35773-V.

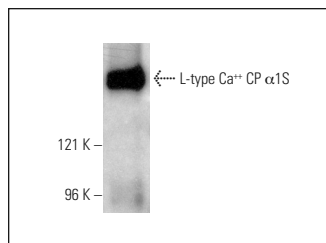
Molecular Weight of L-type Ca<sup>++</sup> CP α1S: 170 kDa.

Positive Controls: rat skeletal muscle extract: sc-364810, mouse skeletal muscle extract: sc-364250 or Sol8 cell lysate: sc-2249.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



L-type Ca<sup>++</sup> CP α1S (IIC12D4): sc-21781. Western blot analysis of L-type Ca<sup>++</sup> CP α1S expression in rat skeletal muscle tissue extract.

## SELECT PRODUCT CITATIONS

1. Ren, X., et al. 2009. Cellular effect evaluation of micropollutants using transporter functions of renal proximal tubule cells. *Chemosphere* 77: 968-974.
2. Wang, Z., et al. 2020. A temporal examination of cytoplasmic Ca<sup>2+</sup> levels, sarcoplasmic reticulum Ca<sup>2+</sup> levels, and Ca<sup>2+</sup>-handling-related proteins in different skeletal muscles of hibernating daurian ground squirrels. *Front. Physiol.* 11: 562080.

## 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](http://www.scbt.com) for detailed protocols and support products.