SANTA CRUZ BIOTECHNOLOGY, INC.

L-type Ca^{++} CP α1S (N-19): sc-8160

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 calcium channels may form macromolecular signaling complexes with G protein-coupled receptors, thereby enhancing the selectivity of regulating specific targets. Calcium channels containing the α1S subunit play an important role in excitation-contraction coupling in skeletal muscle.

CHROMOSOMAL LOCATION

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

SOURCE

L-type Ca^{++} CP α1S (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of L-type Ca^{++} CP α1S of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-8160 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

L-type Ca^{++} CP α1S (N-19) is recommended for detection of L-type Ca^{++} CP α1S of mouse, rat and human 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

L-type Ca^{++} CP α1S (N-19) is also recommended for detection of L-type Ca^{++} CP α1S in additional species, including canine.

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.

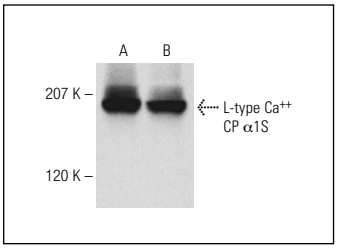
Molecular Weight of L-type Ca^{++} CP α1S: 170 kDa.

Positive Controls: rat skeletal muscle extract: sc-364810, mouse skeletal muscle extract: sc-364250 or human skeletal muscle extract: sc-363776.

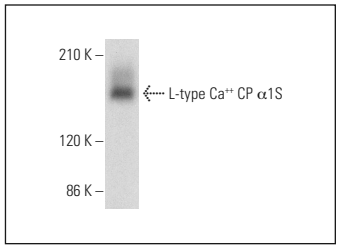
STORAGE

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

DATA



L-type Ca^{++} CP α1S (N-19): sc-8160. Western blot analysis of L-type Ca^{++} CP α1S expression in mouse (**A**) and rat (**B**) skeletal muscle tissue extracts.



L-type Ca^{++} CP α1S (N-19): sc-8160. Western blot analysis of L-type Ca^{++} CP α1S expression in human skeletal muscle tissue extract.

SELECT PRODUCT CITATIONS

1. Galbiati, F., et al. 2001. Caveolin-3 null mice show a loss of caveolae, changes in the microdomain distribution of the dystrophin-glycoprotein complex, and T-tubule abnormalities. J. Biol. Chem. 276: 21425-21433.
2. Ward, C.A., et al. 2001. Altered cellular calcium regulatory systems in a rat model of cirrhotic cardiomyopathy. Gastroenterology 121: 1209-1218.
3. Zheng, Z., et al. 2002. Insulin-like growth factor-1 increases skeletal muscle dihydropyridine receptor α 1S transcriptional activity by acting on the cAMP-response element-binding protein element of the promoter region. J. Biol. Chem. 277: 50535-50542.
4. Rose, A.J., et al. 2004. Effect of exercise on protein kinase C activity and localization in human skeletal muscle. J. Physiol. 561: 861-870.
5. Ueda, H., et al. 2004. Caveolin-3 at the T-tubule colocalizes with α-actinin in the adult murine cardiac muscle. Acta Histochem. Cytochem. 37: 373-378.
6. Schubert, W., et al. 2007. Caveolin-1$^{-/-}$- and caveolin-2$^{-/-}$-deficient mice both display numerous skeletal muscle abnormalities, with tubular aggregate formation. Am. J. Pathol. 170: 316-333.
7. Ullrich, N.D., et al. 2011. Alterations of excitation-contraction coupling and excitation coupled Ca^{2+} entry in human myotubes carrying CAV3 mutations linked to rippling muscle. Hum. Mutat. 32: 309-317.

RESEARCH USE

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