SANTA CRUZ BIOTECHNOLOGY, INC.

L-type Ca^{++} CP α1D (E-3): sc-515679

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.

REFERENCES

1. Perez-Reyes, E., et al. 1995. Molecular biology of calcium channels. Kidney Int. 48: 1111-1124.
2. 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.
3. Catterall, W.A. 2000. Structure and regulation of voltage-gated Ca^{2+} channels. Annu. Rev. Cell Dev. Biol. 16: 521-555.
4. 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: CACNA1D (human) mapping to 3p21.1; Cacna1d (mouse) mapping to 14 B.

SOURCE

L-type Ca^{++} CP α1D (E-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2018-2042 within a cytoplasmic domain of L-type Ca^{++} CP α1D of human origin.

PRODUCT

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

L-type Ca^{++} CP α1D (E-3) is available conjugated to agarose (sc-515679 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515679 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515679 PE), fluorescein (sc-515679 FITC), Alexa Fluor® 488 (sc-515679 AF488), Alexa Fluor® 546 (sc-515679 AF546), Alexa Fluor® 594 (sc-515679 AF594) or Alexa Fluor® 647 (sc-515679 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515679 AF680) or Alexa Fluor® 790 (sc-515679 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

L-type Ca^{++} CP α1D (E-3) is recommended for detection of L-type Ca^{++} CP α1D 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) 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 α1D siRNA (h): sc-42690, L-type Ca^{++} CP α1D siRNA (m): sc-42691, L-type Ca^{++} CP α1D shRNA Plasmid (h): sc-42690-SH, L-type Ca^{++} CP α1D shRNA Plasmid (m): sc-42691-SH, L-type Ca^{++} CP α1D shRNA (h) Lentiviral Particles: sc-42690-V and L-type Ca^{++} CP α1D shRNA (m) Lentiviral Particles: sc-42691-V.

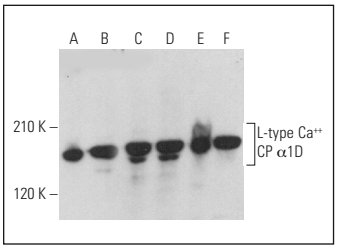
Molecular Weight of L-type Ca^{++} CP α1D: 199 kDa.

Positive Controls: L-type Ca^{++} CP α1D (m): 293T Lysate: sc-121266, MIA PaCa-2 cell lysate: sc-2285 or RAT2 whole cell lysate: sc-364198.

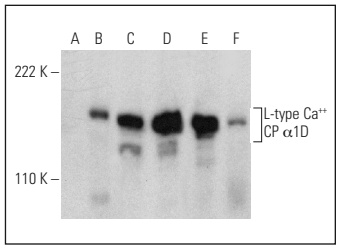
RECOMMENDED SUPPORT REAGENTS

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^{++} CP α1D (E-3): sc-515679. Western blot analysis of L-type Ca^{++} CP α1D expression in Neuro-2A (**A**), EOC 20 (**B**), PC-12 (**C**), C6 (**D**), SH-SY5Y (**E**) and IMR-32 (**F**) whole cell lysates.



L-type Ca^{++} CP α1D (E-3): sc-515679. Western blot analysis of L-type Ca^{++} CP α1D expression in non-transfected 293T: sc-117752 (**A**), mouse L-type Ca^{++} CP α1D transfected 293T: sc-121266 (**B**), SHP-77 (**C**), MIA PaCa-2 (**D**) and RAT2 (**E**) whole cell lysates and mouse brain tissue extract (**F**).

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.

STORAGE

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