

# L-type $\text{Ca}^{++}$ CP $\beta 3$ (E-10): sc-398995

## BACKGROUND

Voltage-dependent calcium channels are essential for the release of neurotransmitters. L-type (long lasting current) voltage-dependent calcium channels are composed of four subunits: an  $\alpha 1$  subunit, a  $\beta$  subunit, a  $\gamma$  subunit and an  $\alpha 2\delta$  subunit. The  $\beta$  subunit is encoded by four genes, designated  $\beta 1$ - $\beta 4$ , all of which contribute to the diversity of calcium currents and are involved in membrane trafficking of the  $\alpha 1$  subunit. L-type  $\text{Ca}^{++}$  CP  $\beta 3$ , also known as CACNB3 (calcium channel voltage-dependent subunit  $\beta 3$ ), CACNLB3 or CAB3, is a 484 amino acid protein that contains one SH3 domain and is expressed in ovary, brain and smooth muscle. Functioning as one of the four components of the  $\beta$  subunit, L-type  $\text{Ca}^{++}$  CP  $\beta 3$  increases the peak calcium current in voltage-dependent calcium channels, thereby shifting the voltage dependencies of activation and inactivation and controlling G protein inhibition and  $\alpha 1$  membrane targeting. Two isoforms of L-type  $\text{Ca}^{++}$  CP  $\beta 3$  exist due to alternative splicing events.

## REFERENCES

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- Murakami, M., et al. 1996. Gene structure of the murine calcium channel  $\beta 3$  subunit, cDNA and characterization of alternative splicing and transcription products. *Eur. J. Biochem.* 236: 138-143.
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- Qin, N., et al. 2002. Molecular cloning and characterization of the human voltage-gated calcium channel  $\alpha 2\delta$ -4 subunit. *Mol. Pharmacol.* 62: 485-496.
- Berggren, P.O., et al. 2004. Removal of  $\text{Ca}^{2+}$  channel  $\beta 3$  subunit enhances  $\text{Ca}^{2+}$  oscillation frequency and Insulin exocytosis. *Cell* 119: 273-284.
- Chen, Y.H., et al. 2004. Structural basis of the  $\alpha 1$ - $\beta$  subunit interaction of voltage-gated  $\text{Ca}^{2+}$  channels. *Nature* 429: 675-680.

## CHROMOSOMAL LOCATION

Genetic locus: CACNB3 (human) mapping to 12q13.12; Cacnb3 (mouse) mapping to 15 F1.

## SOURCE

L-type  $\text{Ca}^{++}$  CP  $\beta 3$  (E-10) is a mouse monoclonal antibody raised against amino acids 359-427 mapping within an internal region of L-type  $\text{Ca}^{++}$  CP  $\beta 3$  of human origin.

## RESEARCH USE

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

## PRODUCT

Each vial contains 200  $\mu\text{g}$  IgG $_1$  kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

L-type  $\text{Ca}^{++}$  CP  $\beta 3$  (7D1) is recommended for detection of L-type  $\text{Ca}^{++}$  CP  $\beta 3$  of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu\text{g}$  per 100-500  $\mu\text{g}$  of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), flow cytometry (1  $\mu\text{g}$  per  $1 \times 10^6$  cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for L-type  $\text{Ca}^{++}$  CP  $\beta 3$  siRNA (h): sc-95841, L-type  $\text{Ca}^{++}$  CP  $\beta 3$  siRNA (m): sc-108006, L-type  $\text{Ca}^{++}$  CP  $\beta 3$  shRNA Plasmid (h): sc-95841-SH, L-type  $\text{Ca}^{++}$  CP  $\beta 3$  shRNA Plasmid (m): sc-108006-SH, L-type  $\text{Ca}^{++}$  CP  $\beta 3$  shRNA (h) Lentiviral Particles: sc-95841-V and L-type  $\text{Ca}^{++}$  CP  $\beta 3$  shRNA (m) Lentiviral Particles: sc-108006-V.

Molecular Weight of L-type  $\text{Ca}^{++}$  CP  $\beta 3$ : 55 kDa.

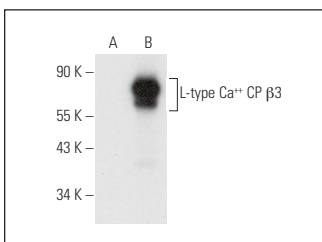
Positive Controls: L-type  $\text{Ca}^{++}$  CP  $\beta 3$  (m): 293T Lysate: sc-178862.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:

- Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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.
- Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).
- Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  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  $\text{Ca}^{++}$  CP  $\beta 3$  (E-10): sc-398995. Western blot analysis of L-type  $\text{Ca}^{++}$  CP  $\beta 3$  expression in non-transfected: sc-117752 (A) and mouse L-type  $\text{Ca}^{++}$  CP  $\beta 3$  transfected: sc-178862 (B) 293T whole cell lysates.

## STORAGE

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