

L-type Ca⁺⁺ CP β4 (H-7): sc-376432

BACKGROUND

Voltage-dependent calcium channels are important for the release of neurotransmitters in neurons. L-type (long lasting current) voltage-dependent calcium channels are composed of four subunits: an α1 subunit, a β subunit, a γ subunit, and an α2δ subunit. The β subunit is encoded by four genes, β1-β4, differing by about 20%. The various β subunits contribute to the diversity of calcium currents and are also involved in membrane trafficking of the α1 subunit. L-type Ca⁺⁺ CP β4 (calcium channel voltage-dependent subunit β4), also known as CACNB4, belongs to the calcium channel β subunit family. It is the most highly expressed subunit in the cerebellum. L-type Ca⁺⁺ CP β4 localizes to the cytoplasm and functions by regulating G protein inhibition, current amplitude and voltage dependence of activation and inactivation. A splice variant exists for L-type Ca⁺⁺ CP β4 which enhances cellular excitability. Mutations in the gene encoding L-type Ca⁺⁺ CP β4 are associated with idiopathic generalized epilepsy (IGE) and juvenile myoclonic epilepsy (JME).

CHROMOSOMAL LOCATION

Genetic locus: CACNB4 (human) mapping to 2q23.3; Cacnb4 (mouse) mapping to 2 C1.1.

SOURCE

L-type Ca⁺⁺ CP β4 (H-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 425-463 near the C-terminus of L-type Ca⁺⁺ CP β4 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 β4 (H-7) is available conjugated to agarose (sc-376432 AC), 500 μg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376432 HRP), 200 μg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376432 PE), fluorescein (sc-376432 FITC), Alexa Fluor[®] 488 (sc-376432 AF488), Alexa Fluor[®] 546 (sc-376432 AF546), Alexa Fluor[®] 594 (sc-376432 AF594) or Alexa Fluor[®] 647 (sc-376432 AF647), 200 μg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-376432 AF680) or Alexa Fluor[®] 790 (sc-376432 AF790), 200 μg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-376432 P, (100 μg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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STORAGE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

APPLICATIONS

L-type Ca⁺⁺ CP β4 (H-7) is recommended for detection of L-type Ca⁺⁺ CP β4 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 β4 siRNA (h): sc-62048, L-type Ca⁺⁺ CP β4 siRNA (m): sc-62049, L-type Ca⁺⁺ CP β4 shRNA Plasmid (h): sc-62048-SH, L-type Ca⁺⁺ CP β4 shRNA Plasmid (m): sc-62049-SH, L-type Ca⁺⁺ CP β4 shRNA (h) Lentiviral Particles: sc-62048-V and L-type Ca⁺⁺ CP β4 shRNA (m) Lentiviral Particles: sc-62049-V.

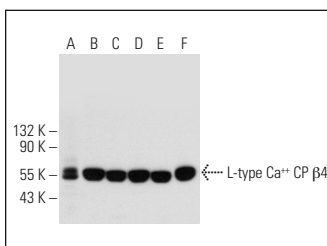
Molecular Weight of L-type Ca⁺⁺ CP β4: 58 kDa.

Positive Controls: L-type Ca⁺⁺ CP β4 (m): 293T Lysate: sc-127077, Daoy whole cell lysate: sc-364381 or Hep G2 cell lysate: sc-2227.

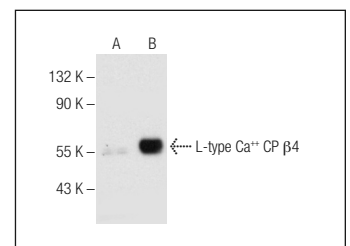
RECOMMENDED SUPPORT REAGENTS

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 β4 (H-7): sc-376432. Western blot analysis of L-type Ca⁺⁺ CP β4 expression in mouse cerebellum tissue extract (A) and Daoy (B), U-251-MG (C), Hep G2 (D), Jurkat (E) and P815 (F) whole cell lysates.



L-type Ca⁺⁺ CP β4 (H-7): sc-376432. Western blot analysis of L-type Ca⁺⁺ CP β4 expression in non-transfected: sc-117752 (A) and mouse L-type Ca⁺⁺ CP β4 transfected: sc-127077 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

- Liu, X., et al. 2020. Multiple protein and mRNA expression correlations in the rat cerebral cortex after ischemic injury and repair due to buchang naoxintong jiaonang (BNJ) intervention. Biomed. Pharmacother. 125: 109917.

RESEARCH USE

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