

N-type Ca⁺⁺ CP α1B (A-2): sc-377489

BACKGROUND

N-type calcium channels are localized in high density presynaptic nerve terminals and are crucial elements in neuronal excitation-secretion coupling. Peripherally distributed N-type Ca²⁺ channel plays a key role in cardiovascular regulation through autonomic nervous system. The high-voltage activated Ca²⁺ channels that have been characterized biochemically are complexes of a pore-forming α-1 subunit; a transmembrane, disulfide-linked complex of α-2 and δ subunits; an intracellular β subunit; and in some cases, a transmembrane γ subunit. The α-1 subunit conducts N-type Ca²⁺ currents, which initiate rapid synaptic transmission. In addition to mediating Ca²⁺ entry to initiate transmitter release, N-type Ca²⁺ channels are thought to interact directly with proteins of the synaptic vesicle docking and fusion machinery. The synaptic protein interaction sites in the intracellular loop II-III of subunit α-1B of N-type Ca²⁺ channels bind to Syntaxin, SNAP-25 and Synaptotagmin.

REFERENCES

1. Catterall, W.A. 1999. Interactions of presynaptic Ca²⁺ channels and snare proteins in neurotransmitter release. *Ann. N.Y. Acad. Sci.* 868: 144-159.
2. Uneyama, H., et al. 1999. Pharmacology of N-type Ca²⁺ channels distributed in cardiovascular system. *Int. J. Mol. Med.* 3: 455-466.
3. Fossier, P., et al. 1999. Calcium transients and neurotransmitter release at an identified synapse. *Trends Neurosci.* 22: 161-166.
4. Catterall, W.A. 2000. Structure and regulation of voltage-gated Ca²⁺ channels. *Annu. Rev. Cell Dev. Biol.* 16: 521-555.

CHROMOSOMAL LOCATION

Genetic locus: CACNA1B (human) mapping to 9q34.3; Cacna1b (mouse) mapping to 2 A3.

SOURCE

N-type Ca⁺⁺ CP α1B (A-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1929-1961 within a cytoplasmic domain of N-type Ca⁺⁺ CP α1B of human origin.

PRODUCT

Each vial contains 200 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-377489 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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

N-type Ca⁺⁺ CP α1B (A-2) is recommended for detection of N-type Ca⁺⁺ CP α1B 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 N-type Ca⁺⁺ CP α1B siRNA (h): sc-42698, N-type Ca⁺⁺ CP α1B siRNA (m): sc-42699, N-type Ca⁺⁺ CP α1B shRNA Plasmid (h): sc-42698-SH, N-type Ca⁺⁺ CP α1B shRNA Plasmid (m): sc-42699-SH, N-type Ca⁺⁺ CP α1B shRNA (h) Lentiviral Particles: sc-42698-V and N-type Ca⁺⁺ CP α1B shRNA (m) Lentiviral Particles: sc-42699-V.

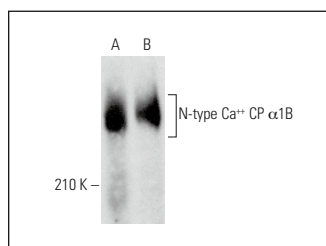
Molecular Weight of N-type Ca⁺⁺ CP α1B: 250 kDa.

Positive Controls: SK-N-SH cell lysate: sc-2410, U-87 MG cell lysate: sc-2411 or A549 cell lysate: sc-2413.

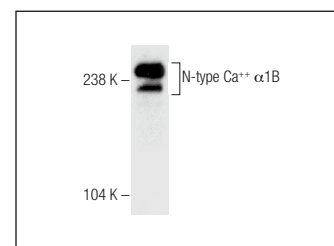
RECOMMENDED SUPPORT REAGENTS

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 L-Agarose: sc-2336 (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



N-type Ca⁺⁺ CP α1B (A-2): sc-377489. Western blot analysis of N-type Ca⁺⁺ CP α1B expression in A549 (A) and SK-N-SH (B) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.



N-type Ca⁺⁺ CP α1B (A-2): sc-377489. Western blot analysis of N-type Ca⁺⁺ CP α1B expression in U-87 MG whole cell lysate.

RESEARCH USE

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