SANTA CRUZ BIOTECHNOLOGY, INC.

N-type Ca^{++} CP α1B (N-14): sc-15954

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 Ca^{++} channel plays a key role in cardiovascular regulation through autonomic nervous system. The high-voltage activated Ca^{++} 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 Ca^{++} currents, which initiate rapid synaptic transmission. In addi-tion to mediating Ca^{++} entry to initiate transmitter release, N-type Ca^{++} 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 Ca^{++} channels bind to syntaxin, SNAP-25 and synaptotagmin.

REFERENCES

1. Catterall, W.A. 1999. Interactions of presynaptic Ca^{2+} channels and snare proteins in neurotransmitter release. Ann. N.Y. Acad. Sci. 868: 144-159.
2. Fossier, P., et al. 1999. Calcium transients and neurotransmitter release at an identified synapse. Trends Neurosci. 4: 161-166.
3. Uneyama, H., et al. 1999. Pharmacology of N-type Ca^{2+} channels distributed in cardiovascular system. Int. J. Mol. Med. 5: 455-466.
4. Catterall, W.A. 2000. Structure and regulation of voltage-gated Ca^{2+} 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 (N-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of N-type Ca^{++} CP α1B 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-15954 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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 or our catalog for detailed protocols and support products.

APPLICATIONS

N-type Ca^{++} CP α1B (N-14) is recommended for detection of N-type calcium channel α1B of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

N-type Ca^{++} CP α1B (N-14) is also recommended for detection of N-type calcium channel α1B in additional species, including equine and bovine.

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: SH-SY5Y cell lysate: sc-3812, U-87 MG cell lysate: sc-2411 or PC-12 cell lysate: sc-2250.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Jeremic, A., et al. 2007. Cholesterol is critical to the integrity of neuronal porosome/fusion pore. Ultramicroscopy 106: 674-677.
2. Cho, W.J., et al. 2007. Neuronal fusion pore assembly requires membrane cholesterol. Cell Biol. Int. 31: 1301-1308.

RESEARCH USE

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