

Na⁺ CP type II β (E-15): sc-161903

BACKGROUND

Voltage-gated sodium channels are selective ion channels that regulate the permeability of sodium ions in excitable cells. During the propagation of an action potential, sodium channels allow an influx of sodium ions, which rapidly depolarizes the cell. Na⁺ CP type II β (sodium channel, voltage-gated, type II, β), also known as SCN2B, is a 215 amino acid single-pass type I membrane protein that plays a critical role in the expression and assembly of the heterotrimeric complex of the sodium channel and interacts with Tenascin-R to influence the clustering and regulation of sodium channels at nodes of Ranvier. Expressed specifically in brain, Na⁺ CP type II β contains one Ig-like C2-type (immunoglobulin-like) domain and is encoded by a gene that maps to human chromosome 11q23.3 and mouse chromosome 9 A5.2.

REFERENCES

1. Isom, L.L., et al. 1995. Structure and function of the β 2 subunit of brain sodium channels, a transmembrane glycoprotein with a CAM motif. *Cell* 83: 433-442.
2. Jones, J.M., et al. 1996. Scn2b, a voltage-gated sodium channel β 2 gene on mouse chromosome 9. *Genomics* 34: 258-259.
3. Eubanks, J., et al. 1997. Structure and chromosomal localization of the β 2 subunit of the human brain sodium channel. *Neuroreport* 8: 2775-2779.
4. Bolino, A., et al. 1998. Exclusion of the SCN2B gene as candidate for CMT4B. *Eur. J. Hum. Genet.* 6: 629-634.
5. Chen, C., et al. 2002. Reduced sodium channel density, altered voltage dependence of inactivation, and increased susceptibility to seizures in mice lacking sodium channel β 2-subunits. *Proc. Natl. Acad. Sci. USA* 99: 17072-17077.
6. Kim, D.Y., et al. 2007. BACE1 regulates voltage-gated sodium channels and neuronal activity. *Nat. Cell Biol.* 9: 755-764.
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CHROMOSOMAL LOCATION

Genetic locus: SCN2B (human) mapping to 11q23.3; Scn2b (mouse) mapping to 9 A5.2.

SOURCE

Na⁺ CP type II β (E-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an extracellular domain of Na⁺ CP type II β of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-161903 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Na⁺ CP type II β (E-15) is recommended for detection of Na⁺ CP type II β of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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); non cross-reactive with Na⁺ CP type II α .

Na⁺ CP type II β (E-15) is also recommended for detection of Na⁺ CP type II β in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Na⁺ CP type II β siRNA (h): sc-96252, Na⁺ CP type II β siRNA (m): sc-149783, Na⁺ CP type II β shRNA Plasmid (h): sc-96252-SH, Na⁺ CP type II β shRNA Plasmid (m): sc-149783-SH, Na⁺ CP type II β shRNA (h) Lentiviral Particles: sc-96252-V and Na⁺ CP type II β shRNA (m) Lentiviral Particles: sc-149783-V.

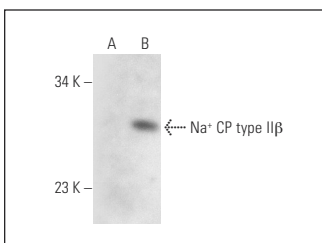
Molecular Weight of Na⁺ CP type II β : 24 kDa.

Positive Controls: Na⁺ CP type II β (h3): 293T Lysate: sc-170332.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



Na⁺ CP type II β (E-15): sc-161903. Western blot analysis of Na⁺ CP type II β expression in non-transfected: sc-117752 (A) and human Na⁺ CP type II β transfected: sc-170332 (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.

RESEARCH USE

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