

# Na<sup>+</sup> CP type Iβ (Y-18): sc-161902

## 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<sup>+</sup> CP type Iβ (sodium channel, voltage-gated, type I, β), also known as SCN1B or GEFSP1, is a 218 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 associates with Neurofascin to target sodium channels to the nodes of Ranvier of developing axons. Abundantly expressed in heart, skeletal muscle and brain, Na<sup>+</sup> CP type Iβ contains one Ig-like C2-type (immunoglobulin-like) domain and is linked to the development of a rare autosomal dominant familial condition known as GEFS+1 (generalized epilepsy with febrile seizures plus type 1).

## REFERENCES

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2. Makita, N., et al. 1994. Genomic organization and chromosomal assignment of the human voltage-gated Na<sup>+</sup> channel β 1 subunit gene (SCN1B). *Genomics* 23: 628-634.
3. Tammaro, P., et al. 2002. Modulation of sodium current in mammalian cells by an epilepsy-correlated β 1-subunit mutation. *Biochem. Biophys. Res. Commun.* 291: 1095-1101.
4. Wallace, R.H., et al. 2002. Generalized epilepsy with febrile seizures plus: mutation of the sodium channel subunit SCN1B. *Neurology* 58: 1426-1429.
5. Qin, N., et al. 2003. Molecular cloning and functional expression of the human sodium channel β 1B subunit, a novel splicing variant of the β1 subunit. *Eur. J. Biochem.* 270: 4762-4770.
6. Audenaert, D., et al. 2003. A deletion in SCN1B is associated with febrile seizures and early-onset absence epilepsy. *Neurology* 61: 854-856.
7. Chen, C., et al. 2004. Mice lacking sodium channel β1 subunits display defects in neuronal excitability, sodium channel expression, and nodal architecture. *J. Neurosci.* 24: 4030-4042.
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## CHROMOSOMAL LOCATION

Genetic locus: SCN1B (human) mapping to 19q13.12; Scn1b (mouse) mapping to 7 B1.

## SOURCE

Na<sup>+</sup> CP type Iβ (Y-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an extracellular domain of Na<sup>+</sup> CP type Iβ 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-161902 P, (100 μg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Na<sup>+</sup> CP type Iβ (Y-18) is recommended for detection of Na<sup>+</sup> CP type Iβ 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); non cross-reactive with Na<sup>+</sup> CP type Iα.

Na<sup>+</sup> CP type Iβ (Y-18) is also recommended for detection of Na<sup>+</sup> CP type Iβ in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Na<sup>+</sup> CP type Iβ siRNA (h): sc-97849, Na<sup>+</sup> CP type Iβ siRNA (m): sc-149782, Na<sup>+</sup> CP type Iβ shRNA Plasmid (h): sc-97849-SH, Na<sup>+</sup> CP type Iβ shRNA Plasmid (m): sc-149782-SH, Na<sup>+</sup> CP type Iβ shRNA (h) Lentiviral Particles: sc-97849-V and Na<sup>+</sup> CP type Iβ shRNA (m) Lentiviral Particles: sc-149782-V.

Molecular Weight of Na<sup>+</sup> CP type Iβ: 25 kDa.

## 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.

## 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.