SANTA CRUZ BIOTECHNOLOGY, INC.

# $Na^+$ CP type IIIβ (C-11): sc-515123

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*The Power to Question*

## BACKGROUND

Voltage-gated $Na^+$ channels regulate the permeability of excitable cells to sodium ions. During the propagation of an action potential, $Na^+$ channels allow an influx of sodium ions, which rapidly depolarize the cell. The sodium channel protein is comprised of one α subunit and two β subunits. The $Na^+$ CP type I and $Na^+$ CP type IIα subunits are expressed in adult brain. $Na^+$ CP type IIIα is expressed in embryonic brain, but not in adult brain. $Na^+$ CP type IIIβ is a 215 amino acid, single-pass type I membrane protein that modulates sodium channel gating kinetics and inactivates the channel opening more slowly than the Iβ subunit. It has an extracellular N-terminal domain, an N-terminal signal sequence, a single membrane-spanning region and a C-terminal cytoplasmic region. Expression of $Na^+$ CP type IIIβ is upregulated in response to DNA damage. In association with Neurofascin, $Na^+$ CP type IIIβ may target the sodium channels to nodes of Ranvier of developing axons and retain these channels at the nodes in mature myelinated axons.

## REFERENCES


1. Crabbe, J.C., et al. 1997. Use of recombinant inbred strains for studying studying genetic determinants of responses to alcohol. Alcohol Alcohol. Suppl. 2: 67-71.
2. Morgan, K., et al. 2000. β 3: an additional auxiliary subunit of the voltage-sensitive sodium channel that modulates channel gating with distinct kinetics. Proc. Natl. Acad. Sci. USA 97: 2308-2313.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608214. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/


## CHROMOSOMAL LOCATION

Genetic locus: SCN3B (human) mapping to 11q24.1; Scn3b (mouse) mapping to 9 A5.1.

## SOURCE

$Na^+$ CP type IIIβ (C-11) is a mouse monoclonal antibody raised against amino acids 1-215 representing full length $Na^+$ CP type IIIβ of human origin.

## PRODUCT

Each vial contains 200 µg $IgG_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

$Na^+$ CP type IIIβ (C-11) is available conjugated to agarose (sc-515123 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515123 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515123 PE), fluorescein (sc-515123 FITC), Alexa Fluor® 488 (sc-515123 AF488), Alexa Fluor® 546 (sc-515123 AF546), Alexa Fluor® 594 (sc-515123 AF594) or Alexa Fluor® 647 (sc-515123 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515123 AF680) or Alexa Fluor® 790 (sc-515123 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.



## APPLICATIONS

$Na^+$ CP type IIIβ (C-11) is recommended for detection of $Na^+$ CP type IIIβ 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 $Na^+$ CP type IIIβ siRNA (h): sc-61136, $Na^+$ CP type IIIβ siRNA (m): sc-61137, $Na^+$ CP type IIIβ shRNA Plasmid (h): sc-61136-SH, $Na^+$ CP type IIIβ shRNA Plasmid (m): sc-61137-SH, $Na^+$ CP type IIIβ shRNA (h) Lentiviral Particles: sc-61136-V and $Na^+$ CP type IIIβ shRNA (m) Lentiviral Particles: sc-61137-V.

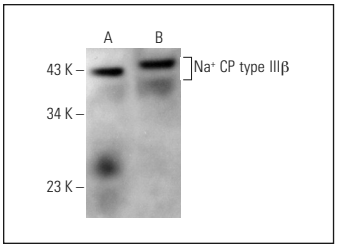
Molecular Weight of $Na^+$ CP type IIIβ: 47 kDa.

Positive Controls: mouse brain extract: sc-2253 or rat brain extract: sc-2392.

## 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




$Na^+$ CP type IIIβ (C-11): sc-515123. Western blot analysis of $Na^+$ CP type IIIβ expression in mouse brain (**A**) and rat brain (**B**) tissue extracts.

## 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 for detailed protocols and support products.