SANTA CRUZ BIOTECHNOLOGY, INC.

Na^+ CP type IIIα (3F3): sc-517010

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 depolarize the cell. The three glycoproteins that comprise the voltage-gated sodium channel proteins include a pore-forming α subunit, a non-covalently associated β1 subunit and a disulfide-linked β2 subunit. The two β subunits regulate the level of channel expression, modulate gating and function as cell adhesion molecules for cellular aggregation and cytoskeleton interaction. The α subunits of sodium channels type I and III are predominantly ex-pressed in neuronal cell bodies and proximal processes, while type IIα subunits are more abundant along axons. The β1 subunit of sodium channel type I is expressed in brain, skeletal and cardiac muscle. In the brain, β1 and β2 are highly expressed in Purkinje cells, and β1 is also expressed in the pyramidal cells of the deep cerebellar nuclei. Impaired voltage-gated sodium channels lead to a number of diseases including myotonia.

REFERENCES

1. Rosenfeld, J., et al. 1997. A novel muscle sodium channel mutation causes painful congenital myotonia. Ann. Neurol. 42: 811-814.
2. Catterall, W.A. 1999. Molecular properties of brain sodium channels: an important target for anticonvulsant drugs. Adv. Neurol. 79: 441-456.
3. Whitaker, W.R., et al. 2000. Distribution of voltage-gated sodium channel α-subunit and β-subunit mRNAs in human hippocampal formation, cortex, and cerebellum. J. Comp. Neurol. 422: 123-139.
4. Isom, L.L. 2001. Sodium channel β subunits: anything but auxiliary. Neuroscientist 7: 42-54.
5. Whitaker, W.R., et al. 2001. Comparative distribution of voltage-gated sodium channel proteins in human brain. Mol. Brain Res. 88: 37-53.

CHROMOSOMAL LOCATION

Genetic locus: SCN3A (human) mapping to 2q24.3.

SOURCE

Na^+ CP type IIIα (3F3) is a mouse monoclonal antibody raised against amino acids 1861-1960 representing partial length Na^+ CP type IIIα of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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

Na^+ CP type IIIα (3F3) is recommended for detection of Na^+ CP type IIIα of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

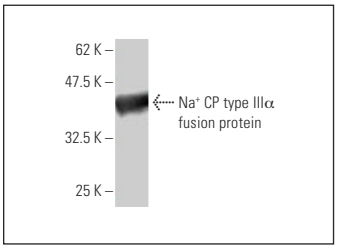
Suitable for use as control antibody for Na^+ CP type IIIα siRNA (h): sc-43955, Na^+ CP type IIIα shRNA Plasmid (h): sc-43955-SH and Na^+ CP type IIIα shRNA (h) Lentiviral Particles: sc-43955-V.

Molecular Weight of Na^+ CP type IIIα: 227 kDa.

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, 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).

DATA



Na^+ CP type IIIα (3F3): sc-517010. Western blot analysis of human recombinant Na^+ CP type IIIα fusion protein.

RESEARCH USE

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