



## Na<sup>+</sup> CP type XI $\alpha$ (D-13): sc-103058

### 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 XI $\alpha$ , also known as SCN11A (sodium channel, voltage-gated, type XI,  $\alpha$  subunit), hNaN, peripheral nerve sodium channel 5 or sensory neuron sodium channel 2, is a 1,791 amino acid multi-pass membrane protein that belongs to the voltage-gated sodium channel family. Expressed in spinal cord, cerebellar cortex, spleen, small intestine, olfactory bulb, hippocampus and dorsal and trigeminal root ganglia, Na<sup>+</sup> CP type XI $\alpha$  functions to mediate the voltage-dependent sodium ion permeability of excitable membranes, specifically assuming an opened or closed conformation in response to voltage changes across the membrane. Na<sup>+</sup> CP type XI $\alpha$  is expressed as three isoforms produced by alternative splicing.

### REFERENCES

1. Dib-Hajj, S.D., Tyrrell, L., Cummins, T.R., Black, J.A., Wood, P.M. and Waxman, S.G. 1999. Two tetrodotoxin-resistant sodium channels in human dorsal root ganglion neurons. *FEBS Lett.* 462: 117-120.
2. Jeong, S.Y., Goto, J., Hashida, H., Suzuki, T., Ogata, K., Masuda, N., Hirai, M., Isahara, K., Uchiyama, Y. and Kanazawa, I. 2000. Identification of a novel human voltage-gated sodium channel  $\alpha$  subunit gene, SCN12A. *Biochem. Biophys. Res. Commun.* 267: 262-270.
3. Goldin, A.L., Barchi, R.L., Caldwell, J.H., Hofmann, F., Howe, J.R., Hunter, J.C., Kallen, R.G., Mandel, G., Meisler, M.H., Netter, Y.B., Noda, M., Tamkun, M.M., Waxman, S.G., Wood, J.N. and Catterall, W.A. 2000. Nomenclature of voltage-gated sodium channels. *Neuron* 28: 365-368.
4. Blum, R., Kafitz, K.W. and Konnerth, A. 2002. Neurotrophin-evoked depolarization requires the sodium channel Na(V)1.9. *Nature* 419: 687-693.
5. Delmas, P. and Coste, B. 2003. Na<sup>+</sup> channel Nav1.9: in search of a gating mechanism. *Trends Neurosci.* 26: 55-57.
6. Raymond, C.K., Castle, J., Garrett-Engele, P., Armour, C.D., Kan, Z., Tsinoremas, N. and Johnson, J.M. 2004. Expression of alternatively spliced sodium channel alpha-subunit genes. Unique splicing patterns are observed in dorsal root ganglia. *J. Biol. Chem.* 279: 46234-46241.
7. Catterall, W.A., Goldin, A.L. and Waxman, S.G. 2005. International Union of Pharmacology. XLVII. Nomenclature and structure-function relationships of voltage-gated sodium channels. *Pharmacol. Rev.* 57: 397-409.

### CHROMOSOMAL LOCATION

Genetic locus: SCN11A (human) mapping to 3p24.

### 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](http://www.scbt.com) or our catalog for detailed protocols and support products.

### SOURCE

Na<sup>+</sup> CP type XI $\alpha$  (D-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Na<sup>+</sup> CP type XI $\alpha$  of human origin.

### PRODUCT

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

Blocking peptide available for competition studies, sc-103058 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### APPLICATIONS

Na<sup>+</sup> CP type XI $\alpha$  (D-13) is recommended for detection of Na<sup>+</sup> CP type XI $\alpha$  of 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 other Na<sup>+</sup> CP type family members.

Suitable for use as control antibody for Na<sup>+</sup> CP type XI $\alpha$  siRNA (h): sc-78209, Na<sup>+</sup> CP type XI $\alpha$  shRNA Plasmid (h): sc-78209-SH and Na<sup>+</sup> CP type XI $\alpha$  shRNA (h) Lentiviral Particles: sc-78209-V.

### 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.

### RESEARCH USE

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