

Na⁺ CP type VIII α (W-78): sc-81884

BACKGROUND

The sodium channel protein type 8 subunit alpha (Na⁺ CP type VIII α) is a multi-pass, transmembrane protein that mediates the sodium ion permeability of excitable membranes. The three glycoproteins that comprise the voltage-gated sodium channel proteins include a pore-forming α subunit, a noncovalently associated β 1 subunit and a disulfide-linked β 2 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 expressed in neuronal cell bodies and proximal processes, while type II α subunits are more abundant along axons. Sodium channels are important for rapid signal transduction but also play a significant role in neuronal development. Defects of the SCN8A gene have exhibited detrimental effects on the growth of secondary motoneurons. Loss of SCN8A expression will result in progressive paralysis and early death.

REFERENCES

1. Meisler, M.H., et al. 2006. Gene symbol: SCN8A. Disease: Ataxia. Accession #Hd0520. Hum. Genet. 118: 776.
2. Mercer, J.N., et al. 2007. Nav1.6 sodium channels are critical to pacemaking and fast spiking in globus pallidus neurons. J. Neurosci. 27: 13552-13566.
3. Sun, Y., et al. 2007. Comparison of γ -aminobutyrate receptors in the medial vestibular nucleus of control and SCN8A mutant mice. Brain Res. 1186: 188-193.
4. Martin, M.S., et al. 2007. The voltage-gated sodium channel SCN8A is a genetic modifier of severe myoclonic epilepsy of infancy. Hum. Mol. Genet. 16: 2892-2899.
5. Drews, V.L., et al. 2007. Identification of evolutionarily conserved, functional noncoding elements in the promoter region of the sodium channel gene SCN8A. Mamm. Genome 18: 723-731.
6. Black, J.A., et al. 2007. Sodium channel expression within chronic multiple sclerosis plaques. J. Neuropathol. Exp. Neurol. 66: 828-837.
7. Zhu, H.L., et al. 2008. Molecular and biophysical properties of voltage-gated Na⁺ channels in murine vas deferens. Biophys. J. 94: 3340-3351.

CHROMOSOMAL LOCATION

Genetic locus: SCN8A (human) mapping to 12q13.13; Scn8a (mouse) mapping to 15 F1.

SOURCE

Na⁺ CP type VIII α (W-78) is a mouse monoclonal antibody raised against amino acids 1854-1951 of Na⁺ CP type VIII α of human origin.

PRODUCT

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

APPLICATIONS

Na⁺ CP type VIII α (W-78) is recommended for detection of Na⁺ CP type VIII α 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).

Suitable for use as control antibody for Na⁺ CP type VIII α siRNA (h): sc-96200, Na⁺ CP type VIII α siRNA (m): sc-149786, Na⁺ CP type VIII α shRNA Plasmid (h): sc-96200-SH, Na⁺ CP type VIII α shRNA Plasmid (m): sc-149786-SH, Na⁺ CP type VIII α shRNA (h) Lentiviral Particles: sc-96200-V and Na⁺ CP type VIII α shRNA (m) Lentiviral Particles: sc-149786-V.

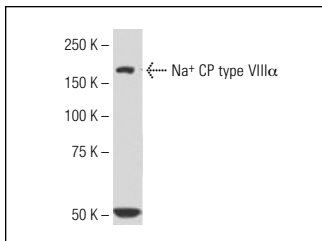
Molecular Weight of Na⁺ CP type VIII α : 260 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210.

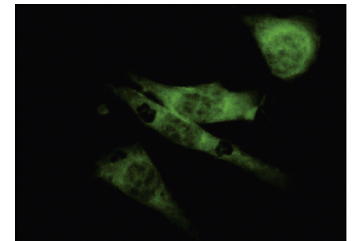
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 VIII α (W-78): sc-81884. Western blot analysis of Na⁺ CP type VIII α expression in NIH/3T3 whole cell lysate.



Na⁺ CP type VIII α (W-78): sc-81884. Immunofluorescence staining of paraformaldehyde-fixed NIH/3T3 cells showing membrane and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Liu, C., et al. 2015. Amyloid precursor protein enhances Nav1.6 sodium channel cell surface expression. J. Biol. Chem. 290: 12048-12057.

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.