



# Na<sup>+</sup> CP type V $\alpha$ (G-22): sc-133802

## BACKGROUND

Voltage-gated sodium channels drive the initial depolarization phase of the cardiac action potential and, therefore, critically determine conduction of excitation through the heart. The sodium channel gene SCN5A, which encodes the Na<sup>+</sup> CP type V $\alpha$  protein, possesses two fundamental properties, ion conduction and gating. The human SCN5A gene maps to chromosome 3q21-24. Deletions or loss-of-function mutations in SCN5A result in a wide range of arrhythmias, including bradycardia, atrioventricular conduction delay and ventricular fibrillation. Specifically, patients with Brugada syndrome have mutations in the SCN5A gene, which reduces the sodium current. Additionally, gain-of-function mutations are associated with long QT syndrome type III (LQT3), a cardiac disorder that causes sudden death from ventricular tachyarrhythmias, specifically torsade de pointes. The SCN5A gene is expressed in human atrial and ventricular cardiac muscle, but not in adult skeletal muscle, brain, myometrium, liver or spleen.

## REFERENCES

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2. Wang, Q., Chen, Q. and Towbin, J.A. 1998. Genetics, molecular mechanisms and management of long QT syndrome. *Ann. Med.* 30: 58-65.
3. Cerrone, M., Crotti, L., Faggiano, G., De Michelis, V., Napolitano, C., Schwartz, P.J. and Priori, S.G. 2001. Long QT syndrome and Brugada syndrome: two aspects of the same disease? *Ital. Heart J.* 2: 253-257.
4. Grant, A.O. 2001. Molecular biology of sodium channels and their role in cardiac arrhythmias. *Am. J. Med.* 110: 296-305.
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## CHROMOSOMAL LOCATION

Genetic locus: SCN5A (human) mapping to 3p22.2; Scn5a (mouse) mapping to 9 F3.

## SOURCE

Na<sup>+</sup> CP type V $\alpha$  (G-22) is an affinity purified rabbit polyclonal antibody raised against synthetic Na<sup>+</sup> CP type V $\alpha$  peptide of human origin.

## PRODUCT

Each vial contains 50  $\mu$ g IgG in 500  $\mu$ l PBS with < 0.1% sodium azide, 0.1% gelatin and <0.02% sucrose.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

Na<sup>+</sup> CP type V $\alpha$  (G-22) is recommended for detection of Na<sup>+</sup> CP type V $\alpha$  of mouse, rat, human and zebrafish origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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<sup>+</sup> CP type V $\alpha$  siRNA (h): sc-42640, Na<sup>+</sup> CP type V $\alpha$  siRNA (m): sc-42641, Na<sup>+</sup> CP type V $\alpha$  shRNA Plasmid (h): sc-42640-SH, Na<sup>+</sup> CP type V $\alpha$  shRNA Plasmid (m): sc-42641-SH, Na<sup>+</sup> CP type V $\alpha$  shRNA (h) Lentiviral Particles: sc-42640-V and Na<sup>+</sup> CP type V $\alpha$  shRNA (m) Lentiviral Particles: sc-42641-V.

Molecular Weight of Na<sup>+</sup> CP type V $\alpha$ : 260 kDa.

Positive Controls: SW620 whole cell lysate.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

## 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.