SANTA CRUZ BIOTECHNOLOGY, INC.

Na^+ CP type Vα (C-20): sc-23174

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^+ CP type Vα protein, possesses two fundamental properties, ion conduction and gating. The human SCN5A gene maps to chromosome 3q22.2. 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.

CHROMOSOMAL LOCATION

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

SOURCE

Na^+ CP type Vα (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Na^+ CP type Vα of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-23174 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

Na^+ CP type Vα (C-20) is recommended for detection of Na^+ CP type Vα of mouse, rat and 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).

Na^+ CP type Vα (C-20) is also recommended for detection of Na^+ CP type Vα in additional species, including porcine.

Suitable for use as control antibody for Na^+ CP type Vα siRNA (h): sc-42640, Na^+ CP type Vα siRNA (m): sc-42641, Na^+ CP type Vα shRNA Plasmid (h): sc-42640-SH, Na^+ CP type Vα shRNA Plasmid (m): sc-42641-SH, Na^+ CP type Vα shRNA (h) Lentiviral Particles: sc-42640-V and Na^+ CP type Vα shRNA (m) Lentiviral Particles: sc-42641-V.

Molecular Weight of Na^+ CP type Vα: 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 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.

SELECT PRODUCT CITATIONS

1. Wu, G., Ai, T., Kim, J.J., Mohapatra, B., Xi, Y., Li, Z., Abbasi, S., Purevjav, E., Samani, K., Ackerman, M.J., Qi, M., Moss, A.J., Shimizu, W., Towbin, J.A., Cheng, J. and Vatta, M. 2008. α1-syntrophin mutation and the long-QT syndrome. Circ. Arrhythm. Electrophysiol. 1: 193-201.
2. Turillazzi, E., La Rocca, G., Anzalone, R., Corrao, S., Neri, M., Pomara, C., Riezzo, I., Karch, S.B. and Fineschi, V. 2008. Heterozygous nonsense SCN5A mutation W822X explains a simultaneous sudden infant death syndrome. Virchows Arch. 453: 209-216.
3. Turillazzi, E., Pomara, C., La Rocca, G., Neri, M., Riezzo, I., Karch, S.B., Anzalone, R., Lo Iacono, M. and Fineschi, V. 2009. Immunohistochemical marker for Na^+ CP type Vα (C-20) and heterozygous nonsense SCN5A mutation W822X in a sudden cardiac death induced by mild anaphylactic reaction. Appl. Immunohistochem. Mol. Morphol. 17: 357-362.

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 or our catalog for detailed protocols and support products.