SANTA CRUZ BIOTECHNOLOGY, INC.

HCN1 (V-17): sc-19706

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Hyperpolarization-activated, cyclic nucleotide-binding channels (HCN) are voltage gated cation channels that are activated by direct binding of intracellular cyclic nucleotides. The HCN family consists of 4 members (HCN1-4), each with a core transmembrane segment domain and a carboxy-terminal 120 amino acid cyclic nucleotide-binding domain motif. HCN channels are expressed in the brain, heart, thalamus and testis. The pacemaker properties of HCN channels contribute to spontaneous rhythmic activity in the brain and heart. The genes encoding human HCN1, HCN2, HCN3 and HCN4 map to 5p12, 19p13.3, 1q22 and 15q24.1, respectively.

CHROMOSOMAL LOCATION

Genetic locus: HCN1 (human) mapping to 5p12; Hcn1 (mouse) mapping to 13 D2.3.

SOURCE

HCN1 (V-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of HCN1 of mouse 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-19706 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

HCN1 (V-17) is recommended for detection of HCN1 of mouse, rat and 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)], 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).

HCN1 (V-17) is also recommended for detection of HCN1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for HCN1 siRNA (h): sc-44341, HCN1 siRNA (m): sc-145907, HCN1 shRNA Plasmid (h): sc-44341-SH, HCN1 shRNA Plasmid (m): sc-145907-SH, HCN1 shRNA (h) Lentiviral Particles: sc-44341-V and HCN1 shRNA (m) Lentiviral Particles: sc-145907-V.

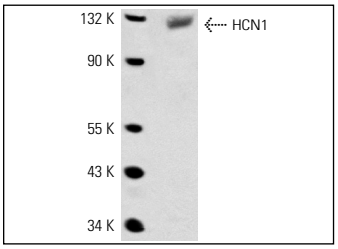
Molecular Weight of HCN1: 130 kDa.

Positive Controls: mouse brain extract: sc-2253.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



HCN1 (V-17): sc-19706. Western blot analysis of HCN1 expression in mouse brain tissue extract.

SELECT PRODUCT CITATIONS

1. Horwitz, G.C., et al. 2010. HCN channels are not required for mechanotransduction in sensory hair cells of the mouse inner ear. PLoS ONE 5: e8627.
2. Barbuti, A., et al. 2012. A caveolin-binding domain in the HCN4 channels mediates functional interaction with caveolin proteins. J. Mol. Cell. Cardiol. 53: 187-195.
3. Ramakrishnan, N.A., et al. 2012. HCN1 and HCN2 proteins are expressed in cochlear hair cells: HCN1 can form a ternary complex with protocadherin 15 CD3 and F-actin-binding filamin A or can interact with HCN2. J. Biol. Chem. 287: 37628-37646.
4. Rusznák, Z., et al. 2013. The hyperpolarization-activated non-specific cation current (In) adjusts the membrane properties, excitability, and activity pattern of the giant cells in the rat dorsal cochlear nucleus. Eur. J. Neurosci. 37: 876-890.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.