SANTA CRUZ BIOTECHNOLOGY, INC.

HVCN1 (S-12): sc-136714

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The Power to Question

BACKGROUND

HVCN1 (hydrogen voltage-gated channel 1), also known as HV1 or voltage sensor domain-only protein, is a 273 amino acid protein belonging to the hydrogen channel family. HVCN1 moderates the voltage-dependent proton permeability of excitable membranes by allowing the flow of protons in accordance to their electrochemical gradient. This proton conductance allows for the oxidative burst that is used for microbial killing by phagocytic leukocytes. HVCN1 is sensitive to zinc ions, and can be inhibited by them. HVCN1 is enriched in immune tissues and is expressed as three isoforms produced by alternative splicing.

REFERENCES

1. Kimura, K., et al. 2006. Diver-sification of transcriptional modulation: large-scale identification and characterization of putative alternative promoters of human genes. Genome Res. 16: 55-65.
2. Ramsey, I.S., et al. 2006. A voltage-gated proton-selective channel lacking the pore domain. Nature 440: 1213-1216.
3. Sasaki, M., et al. 2006. A voltage sensor-domain protein is a voltage-gated proton channel. Science 312: 589-592.
4. Suenaga, T., et al. 2007. Cloning of B cell-specific membrane tetraspanning molecule BTS possessing B cell proliferation-inhibitory function. Eur. J. Immunol. 37: 3197-3207.
5. Musset, B., et al. 2008. Detailed comparison of expressed and native voltage-gated proton channel currents. J. Physiol. 586: 2477-2486.
6. Lee, S.Y., et al. 2008. Dimeric subunit stoichiometry of the human voltage-dependent proton channel Hv1. Proc. Natl. Acad. Sci. USA 105: 7692-7695.
7. Li, S.J., et al. 2009. Expression, purification, crystallization and preliminary crystallographic study of the carboxyl-terminal domain of the human voltage-gated proton channel Hv1. Acta Crystallogr. Sect. F Struct. Biol. Cryst. Commun. 65: 279-281.
8. Lee, S.Y., et al. 2009. Functional reconstitution of purified human Hv1 H^+ channels. J. Mol. Biol. 387: 1055-1060.

CHROMOSOMAL LOCATION

Genetic locus: HVCN1 (human) mapping to 12q24.11; Hvcn1 (mouse) mapping to 5 F.

SOURCE

HVCN1 (S-12) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within a cytoplasmic domain of HVCN1 of human origin.

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.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-136714 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

HVCN1 (S-12) is recommended for detection of HVCN1 isoforms 1-3 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:50-1:500), immunofluorescence (starting dilution 1:25, dilution range 1:25-1:250) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

HVCN1 (S-12) is also recommended for detection of HVCN1 isoforms 1-3 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for HVCN1 siRNA (h): sc-96062, HVCN1 siRNA (m): sc-146115, HVCN1 shRNA Plasmid (h): sc-96062-SH, HVCN1 shRNA Plasmid (m): sc-146115-SH, HVCN1 shRNA (h) Lentiviral Particles: sc-96062-V and HVCN1 shRNA (m) Lentiviral Particles: sc-146115-V.

Molecular Weight of HVCN1: 32 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204.

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) 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.

RESEARCH USE

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