SANTA CRUZ BIOTECHNOLOGY, INC.

HVCN1 siRNA (m): sc-146115

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. Diversification 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.

CHROMOSOMAL LOCATION

Genetic locus: Hvcn1 (mouse) mapping to 5 F.

PRODUCT

HVCN1 siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see HVCN1 shRNA Plasmid (m): sc-146115-SH and HVCN1 shRNA (m) Lentiviral Particles: sc-146115-V as alternate gene silencing products.

For independent verification of HVCN1 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-146115A, sc-146115B and sc-146115C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

HVCN1 siRNA (m) is recommended for the inhibition of HVCN1 expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor HVCN1 gene expression knockdown using RT-PCR Primer: HVCN1 (m)-PR: sc-146115-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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

PROTOCOLS

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