SANTA CRUZ BIOTECHNOLOGY, INC.

ATP6V0E2 siRNA (m): sc-154964

BACKGROUND

Vacuolar-type H^+-ATPase (V-ATPase) is a multisubunit enzyme responsible for the acidification of eukaryotic intracellular organelles. V-ATPases pump protons against an electrochemical gradient, while F-ATPases reverse the process, thereby synthesizing ATP. A peripheral V_1 domain, which is responsible for ATP hydrolysis, and an integral V_0 domain, which is responsible for proton translocation, comprise the V-ATPase complex. Nine subunits (A-H) make up the V_1 domain and five subunits (A, D, C, C' and C'') make up the V_0 domain. ATP6V0E2 (ATPase, H^+ transporting V_0 subunit E2), also known as V-ATPase E2, ATP6V0E2L or C7orf32, is an 81 amino acid multi-pass membrane protein that belongs to the V-ATPase family and functions as an essential proton pump component in intracellular compartments in eukaryotic cells. Multiple isoforms of ATP6V0E2 exist and are expressed in a variety of tissues throughout the body, including brain, kidney, heart, placenta, pancreas and bladder.

REFERENCES

1. Stevens, T.H. and Forgac, M. 1997. Structure, function and regulation of the vacuolar (H^+)-ATPase. Annu. Rev. Cell Dev. Biol. 13: 779-808.
2. Wieczorek, H., Brown, D., Grinstein, S., Ehrenfeld, J. and Harvey, W.R. 1999. Animal plasma membrane energization by proton-motive V-ATPases. Bioessays 21: 637-648.
3. Nishi, T. and Forgac, M. 2002. The vacuolar (H^+)-ATPases—nature's most versatile proton pumps. Nat. Rev. Mol. Cell Biol. 3: 94-103.
4. Anderson, C.L. and Williams, G.T. 2003. Apoptosis gene hunting using retroviral expression cloning: identification of vacuolar ATPase subunit E. ScientificWorldJournal 3: 51-58.
5. Blake-Palmer, K.G., Su, Y., Smith, A.N. and Karet, F.E. 2007. Molecular cloning and characterization of a novel form of the human vacuolar H^+-ATPase ε-subunit: an essential proton pump component. Gene 393: 94-100.
6. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 611019. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: Atp6v0e2 (mouse) mapping to 6 B2.3.

PRODUCT

ATP6V0E2 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 ATP6V0E2 shRNA Plasmid (m): sc-154964-SH and ATP6V0E2 shRNA (m) Lentiviral Particles: sc-154964-V as alternate gene silencing products.

For independent verification of ATP6V0E2 (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-154964A, sc-154964B and sc-154964C.

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

ATP6V0E2 siRNA (m) is recommended for the inhibition of ATP6V0E2 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 ATP6V0E2 gene expression knockdown using RT-PCR Primer: ATP6V0E2 (m)-PR: sc-154964-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.