SANTA CRUZ BIOTECHNOLOGY, INC.

ATP6L siRNA (m): sc-141361

BACKGROUND

ATP6L, also known as ATP6V0C, Vma3, ATPL, VATL or ATP6C, is a vacuolar-type H^+-ATPase (V-ATPase). V-ATPases are multi-subunit enzymes responsible for acidification of eukaryotic intracellular organelles. V-ATPases pump protons against an electrochemical gradient, while F-ATPases reverse the process, thereby synthesizing ATP. A peripheral V1 domain, which is responsible for ATP hydrolysis, and an integral V_0 domain, which is responsible for proton translocation, compose V-ATPase. 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. Consisting or 155 amino acids, ATP6L is a multi-pass membrane protein that makes up part of the V_0 domain. The gene encoding ATP6L maps to human chromosome 16p13.3 and mouse chromosome 17 A3.3.

REFERENCES

1. Gillespie, G.A., et al. 1991. CpG island in the region of an autosomal dominant polycystic kidney disease locus defines the 5' end of a gene encoding a putative proton channel. Proc. Natl. Acad. Sci. USA 88: 4289-4293.
2. Stevens, T.H. and Forgac, M. 1997. Structure, function and regulation of the vacuolar (H^+)-ATPase. Annu. Rev. Cell Dev. Biol. 13: 779-808.
3. Simckes, A.M., et al. 2002. Chromosomal localization of three vacuolar-H^+-ATPase 16 kDa subunit (ATP6V0C) genes in the murine genome. Cytogenet. Genome Res. 97: 111-115.
4. Morel, N. 2003. Neurotransmitter release: the dark side of the vacuolar-H^+ATPase. Biol. Cell 95: 453-457.
5. Online Mendelian Inheritance in Man, OMIM™. 2003. Johns Hopkins University, Baltimore, MD. MIM Number: 108745. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Lee, I., et al. 2004. Expression of the vacuolar H^+-ATPase 16-kDa subunit results in the Triton X-100-insoluble aggregation of β1 integrin and reduction of its cell surface expression. J. Biol. Chem. 279: 53007-53014.
7. You, H., et al. 2009. Small interfering RNA targeting the subunit ATP6L of proton pump V-ATPase overcomes chemoresistance of breast cancer cells. Cancer Lett. 280: 110-119.

CHROMOSOMAL LOCATION

Genetic locus: Atp6v0c (mouse) mapping to 17 A3.3.

PRODUCT

ATP6L siRNA (m) is a pool of 2 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 ATP6L shRNA Plasmid (m): sc-141361-SH and ATP6L shRNA (m) Lentiviral Particles: sc-141361-V as alternate gene silencing products.

For independent verification of ATP6L (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-141361A and sc-141361B.

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

ATP6L siRNA (m) is recommended for the inhibition of ATP6L 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 ATP6L gene expression knockdown using RT-PCR Primer: ATP6L (m)-PR: sc-141361-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.