SANTA CRUZ BIOTECHNOLOGY, INC.

# ATP6E1 siRNA (m): sc-141358

## BACKGROUND

Vacuolar-type $H^+$-ATPase (V-ATPase) is a multisubunit enzyme responsible for acidification of eukaryotic intracellular organelles. V-ATPases pump protons against an electrochemical gradient, while F-ATPases reverse the process, thereby synthesizing ATP. ATP6E1, also known as V-type proton ATPase subunit E 2, is a 226 amino acid phosphoprotein that belongs to the V-ATPase E subunit family. ATP6E1 is a subunit of the peripheral $V_1$ complex of vacuolar ATPase and is essential for assembly or catalytic function. ATP6E1 is specifically transcribed in testis and spermatozoa, whereas ATP6E2 is expressed ubiquitously. The ATP6E1 gene is conserved in chimpanzee, dog, cow, mouse, rat, *E. gossypii, A. thaliana* and rice, and maps to human chromosome 2p21.

## REFERENCES


1. Ludwig, J., et al. 1998. Identification and characterization of a novel 9.2-kDa membrane sector-associated protein of vacuolar proton-ATPase from chromaffin granules. J. Biol. Chem. 273: 10939-10947.
2. Imai-Senga, Y., et al. 2002. A human gene, ATP6E1, encoding a testis-specific isoform of $H^+$-ATPase subunit E. Gene 289: 7-12.
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. Morel, N. 2003. Neurotransmitter release: the dark side of the vacuolar-$H^+$ATPase. Biol. Cell 95: 453-457.
5. Kawasaki-Nishi, S., et al. 2003. Proton translocation driven by ATP hydrolysis in V-ATPases. FEBS Lett. 545: 76-85.
6. Smith, A.N., et al. 2003. Revised nomenclature for mammalian vacuolar-type $H^+$-ATPase subunit genes. Mol. Cell 12: 801-803.
7. Da Silva, N., et al. 2010. Proteomic analysis of V-ATPase-rich cells harvested from the kidney and epididymis by fluorescence-activated cell sorting. Am. J. Physiol., Cell Physiol. 298: C1326-C1342.


## CHROMOSOMAL LOCATION

Genetic locus: Atp6v1e2 (mouse) mapping to 17 E4.

## PRODUCT

ATP6E1 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 ATP6E1 shRNA Plasmid (m): sc-141358-SH and ATP6E1 shRNA (m) Lentiviral Particles: sc-141358-V as alternate gene silencing products.

For independent verification of ATP6E1 (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-141358A, sc-141358B and sc-141358C.

## PROTOCOLS

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

## 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

ATP6E1 siRNA (m) is recommended for the inhibition of ATP6E1 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 ATP6E1 gene expression knockdown using RT-PCR Primer: ATP6E1 (m)-PR: sc-141358-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.