SANTA CRUZ BIOTECHNOLOGY, INC.

V-ATPase F siRNA (m): sc-36796

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. A peripheral V_1 domain, which is responsible for ATP hydrolysis, and a 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. Like F-ATPase, V-ATPase most likely operates through a rotary mechanism. V-ATPase E controls acidification of the vacuolar system and provides the main protonmotive force. The gene encoding human V-ATPase E maps to chromosome 22q11.2. The human gene encoding the ubiquitous V-ATPase F subunit maps to chromosome 1p32.3. The human gene encoding the human V-ATPase H subunit maps to chromosome 5q35.3.

REFERENCES

1. Baud, V., et al. 1994. The E subunit of vacuolar H+-ATPase localizes close to the centromere on human chromosome 22. Hum. Mol. Genet. 3: 335-339.
2. Oka, T., et al. 1997. Three vha genes encode proteolipids of *Caenorhabditis elegans* vacuolar-type ATPase. Gene structures and preferential expression in an H-shaped excretory cell and rectal cells. J. Biol. Chem. 272: 24387-24392.
3. 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.
4. Nishi, T., et al. 2002. The vacuolar H+-ATPases—nature's most versatile proton pumps. Nat. Rev. Mol. Cell Biol. 3: 94-103.
5. LocusLink Report (LocusID: 8992). http://www.ncbi.nlm.nih.gov/LocusLink/

CHROMOSOMAL LOCATION

Genetic locus: Atp6v1f (mouse) mapping to 6 A3.3.

PRODUCT

V-ATPase F 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 V-ATPase F shRNA Plasmid (m): sc-36796-SH and V-ATPase F shRNA (m) Lentiviral Particles: sc-36796-V as alternate gene silencing products.

For independent verification of V-ATPase F (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-36796A, sc-36796B and sc-36796C.

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.

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

V-ATPase F siRNA (m) is recommended for the inhibition of V-ATPase F 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 V-ATPase F gene expression knockdown using RT-PCR Primer: V-ATPase F (m)-PR: sc-36796-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.