SANTA CRUZ BIOTECHNOLOGY, INC.

ATP9A siRNA (m): sc-141368

BACKGROUND

The family of P-type adenosine triphosphates (ATPases), which are phosphorylated in their intermediate state, are involved in the active transport of charged substrates across biological membranes. Members of this family are ubiquitous integral membrane proteins and can be divided into five major groups consisting of several subfamilies each. The P-type ATPase Type IV family members are characterized as phospholipid pumps and are then divided into six classes determined by sequence similarity. ATP9A (ATPase class II type 9A) is a 1,047 multi-pass transmembrane protein that uses ATP to maintain ion gradients across the cell membrane and may possess some aminophospholipid translocase activity. ATP9A is strongly expressed in all tissues, with lower expression found in spleen. There are two named isoforms of ATP9A characterized as long and short forms which are a result of alternative splicing events.

REFERENCES

1. Ishikawa, K., et al. 1998. Prediction of the coding sequences of unidentified human genes. X. The complete sequences of 100 new cDNA clones from brain which can code for large proteins *in vitro*. DNA Res. 5: 169-176.
2. Halleck, M.S., et al. 1999. Differential expression of putative transbilayer amphipath transporters. Physiol. Genomics 1: 139-150.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 609126. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Flamant, S., et al. 2003. Characterization of a putative type IV aminophospholipid transporter P-type ATPase. Mamm. Genome 14: 21-30.
5. Dhar, M.S., et al. 2006. A type IV P-type ATPase affects Insulin-mediated glucose uptake in adipose tissue and skeletal muscle in mice. J. Nutr. Biochem. 17: 811-820.
6. Kubala, M. 2006. ATP-binding to P-type ATPases as revealed by biochemical, spectroscopic, and crystallographic experiments. Proteins 64: 1-12.
7. Møller, A.B., et al. 2008. Phylogenetic analysis of P5 P-type ATPases, a eukaryotic lineage of secretory pathway pumps. Mol. Phylogenet. Evol. 46: 619-634.

CHROMOSOMAL LOCATION

Genetic locus: Atp9a (mouse) mapping to 2 H3.

PRODUCT

ATP9A 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 ATP9A shRNA Plasmid (m): sc-141368-SH and ATP9A shRNA (m) Lentiviral Particles: sc-141368-V as alternate gene silencing products.

For independent verification of ATP9A (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-141368A and sc-141368B.

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

ATP9A siRNA (m) is recommended for the inhibition of ATP9A 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 ATP9A gene expression knockdown using RT-PCR Primer: ATP9A (m)-PR: sc-141368-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.