SANTA CRUZ BIOTECHNOLOGY, INC.

ATP1AL1 siRNA (m): sc-141343

BACKGROUND

ATP1AL1, also known as ATP12A, is a 1,039 amino acid multi-pass membrane protein that belongs to the P-type subfamily of cation transport ATPases. Expressed in skin and kidney tissue, ATP1AL1 consists of two subunits, designated α and β, that work to catalyze the hydrolysis of ATP, a reaction that is coupled with the exchange of hydrogen and potassium across the plasma membrane. Via its catalytic and proton pump activity, ATP1AL1 is responsible for the active transport of potassium into the cell, an event that is crucial for cell survival and proper cell function. ATP1AL1 is expressed as two alternatively spliced isoforms that are encoded by a gene which maps to human chromosome 13q12.12.

REFERENCES

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2. Sverdlov, V.E., et al. 1996. Genomic organization of the human ATP1AL1 gene encoding a ouabain-sensitive H,K-ATPase. Genomics 32: 317-327.
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4. Reinhardt, J., et al. 2002. Stimulation of protein kinase C pathway mediates endocytosis of human nongastric H^+-K^+-ATPase, ATP1AL1. Am. J. Physiol. Renal Physiol. 283: F335-F343.
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6. Crambert, G., et al. 2002. Human nongastric H^+-K^+-ATPase: transport properties of ATP1al1 assembled with different beta-subunits. Am. J. Physiol., Cell Physiol. 283: C305-C314.
7. Takahashi, Y., et al. 2002. Expression of ATP1AL1, a non-gastric proton pump, in human colorectum. Jpn. J. Physiol. 52: 317-321.
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CHROMOSOMAL LOCATION

Genetic locus: Atp12a (mouse) mapping to 14 C3.

PRODUCT

ATP1AL1 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 ATP1AL1 shRNA Plasmid (m): sc-141343-SH and ATP1AL1 shRNA (m) Lentiviral Particles: sc-141343-V as alternate gene silencing products.

For independent verification of ATP1AL1 (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-141343A, sc-141343B and sc-141343C.

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

ATP1AL1 siRNA (m) is recommended for the inhibition of ATP1AL1 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 ATP1AL1 gene expression knockdown using RT-PCR Primer: ATP1AL1 (m)-PR: sc-141343-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.