SANTA CRUZ BIOTECHNOLOGY, INC.

ATP5J siRNA (h): sc-91439

BACKGROUND

Mitochondrial ATP synthase is composed of two multi-subunit complexes that utilize an inner membrane electrochemical gradient to catalyze the synthesis of ATP during oxidative phosphorylation. The two multi-subunit complexes are designated F_1 and F_0, the former of which comprises the soluble catalytic core and the latter of which comprises the membrane-spanning proton channel of ATP synthase. F1 consists of five distinct subunits, designated ATP5A, F_1-ATPase, ATP5C1, ATP5D and ATP5E, while F0 consists of ten subunits, designated ATP5H, ATP5G1, ATP5I, ATP5G2, ATP5J2, ATP5J, ATP5G3, ATP5S, ATP5F1 and ATP5L. ATP5J, also known as ATP5A, ATPM, CF6 or F6, is a 108 amino acid protein that localizes to the mitochondrial membrane and exists as a subunit of the F_0 complex. ATP5J is expressed as multiple alternatively spliced isoforms and is required for proper F_1 and F_0 interaction. Human ATP5J shares 73% sequence similarity with its rat counterpart, suggesting a conserved role between species.

REFERENCES

1. Higuti, T., Tsurumi, C., Kawamura, Y., Tsujita, H., Osaka, F., Yoshihara, Y., Tani, I., Tanaka, K. and Ichihara, A. 1991. Molecular cloning of cDNA for the import precursor of human coupling factor 6 of H^+-ATP synthase in mitochondria. Biochem. Biophys. Res. Commun. 178: 793-799.
2. Javed, A.A., Ogata, K. and Sanadi, D.R. 1991. Human mitochondrial ATP synthase: cloning cDNA for the nuclear-encoded precursor of coupling factor 6. Gene 97: 307-310.
3. Yan, W.L., Lerner, T.J., Haines, J.L. and Gusella, J.F. 1994. Sequence analysis and mapping of a novel human mitochondrial ATP synthase subunit 9 cDNA (ATP5G3). Genomics 24: 375-377.
4. Elston, T., Wang, H. and Oster, G. 1998. Energy transduction in ATP synthase. Nature 391: 510-513.

CHROMOSOMAL LOCATION

Genetic locus: ATP5J (human) mapping to 21q21.3.

PRODUCT

ATP5J siRNA (h) 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 ATP5J shRNA Plasmid (h): sc-91439-SH and ATP5J shRNA (h) Lentiviral Particles: sc-91439-V as alternate gene silencing products.

For independent verification of ATP5J (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-91439A and sc-91439B.

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

ATP5J siRNA (h) is recommended for the inhibition of ATP5J expression in human 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 ATP5J gene expression knockdown using RT-PCR Primer: ATP5J (h)-PR: sc-91439-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.