SANTA CRUZ BIOTECHNOLOGY, INC.

ATP5D siRNA (h): sc-97227

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. F_1 consists of five distinct subunits, designated ATP5A, ATP5B, ATP5C1, ATP5D and ATP5E, while F_0 consists of ten subunits, designated ATP5H, ATP5G1, ATP5I, ATP5G2, ATP5J2, ATP5J, ATP5G3, ATP5S, ATP5F1 and ATP5L. ATP5D (ATP synthase, H^+ transporting, mitochondrial F_1 complex, δ subunit) is a 168 amino acid protein that localizes to the mitochondrial inner membrane and is encoded by a gene that maps to human chromosome 19p13.3.

REFERENCES

1. Jordan, E.M., et al. 1992. Molecular cloning of an import precursor of the δ-subunit of the human mitochondrial ATP synthase complex. Biochim. Biophys. Acta 1130: 123-126.
2. Aggeler, R., et al. 2002. A functionally active human F_1F_0 ATPase can be purified by immunocapture from heart tissue and fibroblast cell lines. Subunit structure and activity studies. J. Biol. Chem. 277: 33906-33912.
3. Hong, S., et al. 2003. ATP synthases: insights into their motor functions from sequence and structural analyses. J. Bioenerg. Biomembr. 35: 95-120.
4. Cross, R.L. 2004. Molecular motors: turning the ATP motor. Nature 427: 407-408.
5. Itoh, H., et al. 2004. Mechanically driven ATP synthesis by F1-ATPase. Nature 427: 465-468.
6. Online Mendelian Inheritance in Man, OMIM™. 2004. Johns Hopkins University, Baltimore, MD. MIM Number: 603150. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: ATP5D (human) mapping to 19p13.3.

PRODUCT

ATP5D siRNA (h) is a target-specific 19-25 nt siRNA 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 ATP5D shRNA Plasmid (h): sc-97227-SH and ATP5D shRNA (h) Lentiviral Particles: sc-97227-V as alternate gene silencing products.

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

ATP5D siRNA (h) is recommended for the inhibition of ATP5D 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 ATP5D gene expression knockdown using RT-PCR Primer: ATP5D (h)-PR: sc-97227-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.