SANTA CRUZ BIOTECHNOLOGY, INC.

COQ6 siRNA (m): sc-142514

BACKGROUND

Coenzyme Q (CoQ), also referred to as ubiquinone, is a fat-soluble component of the electron transport chain that participates in aerobic cellular respiration within mitochondria and is essential for ATP-dependent energy production. CoQ consists of a hydrophobic isoprenoid tail, which anchors it to the membrane, and a quinone head group, which is responsible for the activity of CoQ in the respiratory chain. CoQ biosynthesis requires the formation of a multisubunit enzyme complex, composed of COQ1 through COQ10, which is highly characterized in yeast. Specifically, COQ6 encodes a flavin-dependent monooxygenase essential for coenzyme Q biosynthesis in yeast. In humans, COQ6 is a 468 amino acid protein whose function is not fully elucidated.

REFERENCES

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3. Hsieh, E.J., Gin, P., Gulmezian, M., Tran, U.C., Saiki, R., Marbois, B.N. and Clarke, C.F. 2007. *Saccharomyces cerevisiae* Coq9 polypeptide is a subunit of the mitochondrial coenzyme Q biosynthetic complex. Arch. Biochem. Biophys. 463: 19-26.
4. Zeviani, M. and Carelli, V. 2007. Mitochondrial disorders. Curr. Opin. Neurol. 20: 564-571.
5. Lekli, I., Das, S., Das, S., Mukherjee, S., Bak, I., Juhasz, B., Bagchi, D., Trimurtulu, G., Krishnaraju, A.V., Sengupta, K., Tosaki, A. and Das, D.K. 2008. Coenzyme Q_9 provides cardioprotection after converting into coenzyme Q_{10}. J. Agric. Food Chem. 56: 5331-5337.
6. Kawamukai, M. 2009. Biosynthesis and bioproduction of coenzyme Q_{10} by yeasts and other organisms. Biotechnol. Appl. Biochem. 53: 217-226.

CHROMOSOMAL LOCATION

Genetic locus: Coq6 (mouse) mapping to 12 D1.

PRODUCT

COQ6 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 COQ6 shRNA Plasmid (m): sc-142514-SH and COQ6 shRNA (m) Lentiviral Particles: sc-142514-V as alternate gene silencing products.

For independent verification of COQ6 (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-142514A, sc-142514B and sc-142514C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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

COQ6 siRNA (m) is recommended for the inhibition of COQ6 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.

GENE EXPRESSION MONITORING

COQ6 (H-1): sc-393932 is recommended as a control antibody for monitoring of COQ6 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor COQ6 gene expression knockdown using RT-PCR Primer: COQ6 (m)-PR: sc-142514-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.