SANTA CRUZ BIOTECHNOLOGY, INC.

COQ10B siRNA (h): sc-62142

BACKGROUND

COQ10B, Coenzyme Q10, is a 247 amino acid protein encoded by the human gene COQ10B. COQ10B is a mitochondrial protein that belongs to the COQ10 family. COQ10B is an essential biological cofactor which increases brain mitochondrial concentration and exerts neuroprotective effects. Plasma COQ10B levels decrease in patients with advanced chronic heart failure (CHF) while COQ10B levels in hyperthyroid patients are found among the lowest detected in human diseases. Likewise, COQ10B is elevated in hypothyroid subjects, also in subclinical conditions, suggesting the usefulness of this index in assessing metabolic status in thyroid disorders. It is believed that secretion of adrenal hormones is in some way related to COQ10B levels, both in augmented and reduced conditions. However, since thyroid hormones have an important role in modulating COQ10B levels and metabolism, when coexistent, thyroid deficiency seems to play a prevalent role in comparison with adrenal deficiency.

REFERENCES

1. Niklowitz, P., et al. 2006. Coenzyme Q10 in maternal plasma and milk throughout early lactation. Biofactors 25: 67-72.
2. Li, G., et al. 2006. Coenzyme Q10 protects SHSY5Y neuronal cells from β amyloid toxicity and oxygen-glucose deprivation by inhibiting the opening of the mitochondrial permeability transition pore. Biofactors 25: 97-107.
3. Mancini, A., et al. 2006. Coenzyme Q10 evaluation in pituitary-adrenal axis disease: preliminary data. Biofactors 25: 197-199.
4. Mancini, A., et al. 2006. Relationships between plasma CoQ10 levels and thyroid hormones in chronic obstructive pulmonary disease. Biofactors 25: 201-204.
5. Sekine, K., et al. 2006. Estimation of plasma and saliva levels of coenzyme Q10 and influence of oral supplementation. Biofactors 25: 205-211.
6. Belardinelli, R., et al. 2006. Coenzyme Q10 and exercise training in chronic heart failure. Eur. Heart J. 27: 2675-2681.
7. Sander, S., et al. 2006. The impact of coenzyme Q10 on systolic function in patients with chronic heart failure. J. Card. Fail. 12: 464-472.

CHROMOSOMAL LOCATION

Genetic locus: COQ10B (human) mapping to 2q33.1.

PRODUCT

COQ10B siRNA (h) 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 COQ10B shRNA Plasmid (h): sc-62142-SH and COQ10B shRNA (h) Lentiviral Particles: sc-62142-V as alternate gene silencing products.

For independent verification of COQ10B (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-62142A, sc-62142B and sc-62142C.

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

COQ10B siRNA (h) is recommended for the inhibition of COQ10B 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 COQ10B gene expression knockdown using RT-PCR Primer: COQ10B (h)-PR: sc-62142-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.