SANTA CRUZ BIOTECHNOLOGY, INC.

COX7b siRNA (m): sc-105238

BACKGROUND

The cytochrome c oxidase (COX) family of proteins function as the final electron donor in the respiratory chain to drive a proton gradient across the inner mitochondrial membrane, ultimately resulting in the production of water. The mammalian COX apoenzyme is a dimer, with each monomer consisting of 13 subunits, some of which are mitochondrial and some of which are nuclear. COX7b (cytochrome c oxidase subunit VIIb polypeptide) and COX7b2 (cytochrome c oxidase subunit VIIb polypeptide 2) are 80 and 81 amino acid proteins, respectively, which exists as components of the COX complex, playing an important role in electron transport. A rare polymorphism in the COX7b2 gene at codon 26 may be linked to nasopharyngeal carcinoma (NPC), the most common head and neck cancer in southern China.

REFERENCES

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2. Sadlock, J.E., et al. 1993. Isolation of a cDNA specifying subunit VIIb of human cytochrome c oxidase. Biochim. Biophys. Acta 1172: 223-225.
3. Taanman, J.W., et al. 1993. Tissue distribution of cytochrome c oxidase isoforms in mammals. Characterization with monoclonal and polyclonal antibodies. Biochim. Biophys. Acta 1225: 95-100.
4. Grossman, L.I., et al. 1997. Nuclear genes for cytochrome c oxidase. Biochim. Biophys. Acta 1352: 174-192.
5. Lenka, N., et al. 1998. Structural organization and transcription regulation of nuclear genes encoding the mammalian cytochrome c oxidase complex. Prog. Nucleic Acid Res. Mol. Biol. 61: 309-344.
6. Liang, H., et al. 2004. A rare polymorphism of the COX7b2 gene in a Cantonese family with nasopharyngeal carcinoma. Sci. China, C, Life Sci. 47: 449-453.
7. Diaz, F., et al. 2006. Cytochrome c oxidase is required for the assembly/stability of respiratory complex I in mouse fibroblasts. Mol. Cell. Biol. 26: 4872-4881.

CHROMOSOMAL LOCATION

Genetic locus: Cox7b (mouse) mapping to X D.

PRODUCT

COX7b 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 COX7b shRNA Plasmid (m): sc-105238-SH and COX7b shRNA (m) Lentiviral Particles: sc-105238-V as alternate gene silencing products.

For independent verification of COX7b (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-105238A, sc-105238B and sc-105238C.

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

COX7b siRNA (m) is recommended for the inhibition of COX7b 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 COX7b gene expression knockdown using RT-PCR Primer: COX7b (m)-PR: sc-105238-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.