SANTA CRUZ BIOTECHNOLOGY, INC.

COX18 siRNA (m): sc-105235

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. COX18 (cytochrome c oxidase-assembly protein 18), also known as Cytochrome c oxidase assembly protein 18 is a 333 amino acid mitochondrial inner membrane protein that plays a role in the assembly of complex IV of the mitochondrial respiratory chain by catalyzing the insertion of the C-terminal tail of COX2 into the inner membrane. Deficiency of complex IV is a rare metabolic disorder that results in clinically heterogenous symptoms ranging from isolated myopathy to severe multisystem disease. There are four isoforms of COX18 that are expressed as a result of alternative splicing events.

REFERENCES

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2. Gaisne, M., et al. 2006. The COX18 gene, involved in mitochondrial biogenesis, is functionally conserved and tightly regulated in humans and fission yeast. FEMS Yeast Res. 6: 869-882.
3. Online Mendelian Inheritance in Man, OMIM™. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 610428. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. van Bloois, E., et al. 2007. *Saccharomyces cerevisiae* Cox18 complements the essential Sec-independent function of *Escherichia coli* YidC. FEBS J. 274: 5704-5713.
5. Jia, L., et al. 2007. Oxa1 directly interacts with Atp9 and mediates its assembly into the mitochondrial F_1F_0-ATP synthase complex. Mol. Biol. Cell 18: 1897-1908.
6. Fiumera, H.L., et al. 2007. Translocation of mitochondrially synthesized COX2 domains from the matrix to the intermembrane space. Mol. Cell. Biol. 27: 4664-4673.
7. Bonnefoy, N., et al. 2009. Roles of Oxa1-related inner-membrane translocases in assembly of respiratory chain complexes. Biochim. Biophys. Acta 1793: 60-70.

CHROMOSOMAL LOCATION

Genetic locus: Cox18 (mouse) mapping to 5 E1.

PRODUCT

COX18 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 COX18 shRNA Plasmid (m): sc-105235-SH and COX18 shRNA (m) Lentiviral Particles: sc-105235-V as alternate gene silencing products.

For independent verification of COX18 (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-105235A, sc-105235B and sc-105235C.

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

COX18 siRNA (m) is recommended for the inhibition of COX18 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 COX18 gene expression knockdown using RT-PCR Primer: COX18 (m)-PR: sc-105235-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.