

COX11 siRNA (h): sc-60438

BACKGROUND

Cytochrome c oxidase (COX) is the terminal enzyme in the electron transfer chain, functioning as a transmembrane proton pump that builds an electrochemical gradient with chemical energy from the reduction of O₂. Cytochrome c oxidase assembly protein COX11 is an intracellular mitochondrial membrane protein necessary for the construction of an active COX complex. COX11 contains a single transmembrane helix downstream of the N-terminal, mitochondrial targeting sequence and a C-terminal Cu(II)-binding domain. The assembly of COX requires the delivery of metal cofactors. Along with COX12 and SCO1/2, COX11 acts as a metal ion chaperone necessary for copper insertion into CuA and CuB redox-active copper centers of COX in eukaryotes.

REFERENCES

1. Petruzzella, V., et al. 1998. Identification and characterization of human cDNAs specific to BCS1, PET112, SCO1, COX15 and COX11, five genes involved in the formation and function of the mitochondrial respiratory chain. *Genomics* 54: 494-504.
2. Horng, Y.C., et al. 2004. Specific copper transfer from the COX17 metallochaperone to both SCO1 and COX11 in the assembly of yeast cytochrome c oxidase. *J. Biol. Chem.* 279: 35334-35340.
3. Carr, H.S., et al. 2005. Functional analysis of the domains in COX11. *J. Biol. Chem.* 280: 22664-22669.
4. Horvath, R., et al. 2005. Congenital cataract, muscular hypotonia, developmental delay and sensori-neural hearing loss associated with a defect in copper metabolism. *J. Inher. Metab. Dis.* 28: 479-492.
5. Guo, D., et al. 2005. Physical interaction and functional coupling between ACDP4 and the intracellular ion chaperone COX11, an implication of the role of ACDP4 in essential metal ion transport and homeostasis. *Mol. Pain* 1: 15.
6. Arnesano, F., et al. 2005. Ortholog search of proteins involved in copper delivery to cytochrome c oxidase and functional analysis of paralogs and gene neighbors by genomic context. *J. Proteome Res.* 4: 63-70.

CHROMOSOMAL LOCATION

Genetic locus: COX11 (human) mapping to 17q22.

PRODUCT

COX11 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see COX11 shRNA Plasmid (h): sc-60438-SH and COX11 shRNA (h) Lentiviral Particles: sc-60438-V as alternate gene silencing products.

For independent verification of COX11 (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-60438A, sc-60438B and sc-60438C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

COX11 siRNA (h) is recommended for the inhibition of COX11 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 μ M in 66 μ l. 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 COX11 gene expression knockdown using RT-PCR Primer: COX11 (h)-PR: sc-60438-PR (20 μ l). 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.