SANTA CRUZ BIOTECHNOLOGY, INC.

COX6c siRNA (m): sc-142529

BACKGROUND

Cytochrome c oxidase subunit VIc (COX6c), also designated oxidative phosphorylation (OxPhos) complex IV, subunit VIc, is one of the structural subunits of the mitochondrial respiratory chain encoded by nuclear genes. Cytochrome c oxidase is a hetero-oligomeric enzyme composed of 13 subunits localized to the mitochondrial inner membrane and is the terminal enzyme complex of the electron transport chain. Complex IV catalyzes the reduction of molecular oxygen to water. The energy released is used to transport protons across the mitochondrial inner membrane. The resulting electrochemical gradient is necessary for the synthesis of ATP. Complex IV contains 13 polypeptides; COX1, COX2 and COX3 (MTCO1-3) make up the catalytic core and are encoded by mtDNA while subunits IV, Va, Vb, VIa, VIb, VIc, VIIa, VIIb, VIIc and VIII are nuclear-encoded. The nuclear-encoded subunits function in the regulation and assembly of the complex. The human COX6c protein shares 77% sequence identity with mouse COX6c. Studies indicate that the COX6c gene is upregulated in prostate cancer cells. The human COX6c gene maps to chromosome 8q22.2; a pseudogene, COX6CP1 has been found on chromosome 16p12.

REFERENCES

1. Kadenbach, B., et al. 1983. Separation of mammalian cytochrome c oxidase into 13 polypeptides by a sodium dodecyl sulfate-gel electrophoretic procedure. Anal. Biochem. 129: 517-521.
2. Capaldi, R.A., et al. 1983. Structure of cytochrome c oxidase. Biochim. Biophys. Acta 726: 135-148.
3. Shoffner, J.M. and Wallace, D.C. 1995. Oxidative Phosphorylation Diseases. In Scriver, C.R., Beaudet, A.L., Sly, W.S., Valle, D., eds., The Metabolic and Molecular Basis of Inherited Disease. New York: McGraw-Hill, 1535-609.
4. Hofmann,S., et al. 1999. Assignment of the human genes coding for cytochrome c oxidase subunits Va (COX5A), VIc (COX6C) and VIIc (COX7C) to chromosome bands 15q25, 8q22→q.and 5q14 and of three pseudogenes (COX5AP1, COX6CP1, COX7CP1) to 14q22, 16p12 and 13q14→q21 by FISH and radiation hybrid mapping. Cytogenet. Cell Genet. 83: 226-227.
5. Kurose, K., et al. 2000. Novel gene fusion of COX6C at 8q22-23 to HMGIC at 12q15 in a uterine leiomyoma. Genes Chromosomes Cancer 27: 303-307.
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CHROMOSOMAL LOCATION

Genetic locus: Cox6c (mouse) mapping to 15 B3.1.

PRODUCT

COX6c siRNA (m) is a target-specific 19-25 nt siRNA 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 COX6c shRNA Plasmid (m): sc-142529-SH and COX6c shRNA (m) Lentiviral Particles: sc-142529-V as alternate gene silencing 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 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

COX6c siRNA (m) is recommended for the inhibition of COX6c 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

COX6c (H-9): sc-390414 is recommended as a control antibody for monitoring of COX6c 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 COX6c gene expression knockdown using RT-PCR Primer: COX6c (m)-PR: sc-142529-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.