SANTA CRUZ BIOTECHNOLOGY, INC.

COX17 siRNA (h): sc-105234

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. Cytochrome c oxidase 17 (COX17) is a nuclear gene encoding a mitochondrial copper chaperone protein necessary for proper COX apoenzyme-dependent mitochondrial respiration. COX17 is a highly conserved protein and influences the recruitment of copper ions to the mitochondria for delivery and incorporation into the COX apoenzyme.

REFERENCES

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2. Horvath, R., et al. 2000. Characterization of human SCO1 and COX17 genes in mitochondrial cytochrome c oxidase deficiency. Biochem. Biophys. Res. Commun. 276: 530-533.
3. Punter, F.A., et al. 2000. Characterization and localization of human COX17, a gene involved in mitochondrial copper transport. Hum. Genet. 107: 69-74.
4. Suzuki, C., et al. 2003. Identification of COX17 as a therapeutic target for non-small cell lung cancer. Cancer Res. 63: 7038-7041.
5. Palumaa, P., et al. 2004. Metal-binding mechanism of COX17, a copper chaperone for cytochrome c oxidase. Biochem. J. 382: 307-314.
6. Maxfield, A.B., et al. 2004. COX17 is functional when tethered to the mitochondrial inner membrane. J. Biol. Chem. 279: 5072-5080.
7. Voronova, A., et al. 2007. Oxidative switches in functioning of mammalian copper chaperone COX17. Biochem. J. 408: 139-148.
8. Voronova, A., et al. 2007. Cox17, a copper chaperone for cytochrome c oxidase: expression, purification, and formation of mixed disulphide adducts with thiol reagents. Protein Expr. Purif. 53: 138-144.
9. Banci, L., et al. 2007. A structural-dynamical characterization of human Cox17. J. Biol. Chem. 283: 7912-7920.

CHROMOSOMAL LOCATION

Genetic locus: COX17 (human) mapping to 3q13.33.

PRODUCT

COX17 siRNA (h) 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 COX17 shRNA Plasmid (h): sc-105234-SH and COX17 shRNA (h) Lentiviral Particles: sc-105234-V as alternate gene silencing products.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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

COX17 siRNA (h) is recommended for the inhibition of COX17 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.

GENE EXPRESSION MONITORING

COX17 (A-8): sc-393617 is recommended as a control antibody for monitoring of COX17 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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.