SANTA CRUZ BIOTECHNOLOGY, INC.

COX8a siRNA (h): sc-97058

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 and ATP. 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. The COX8 (cytochrome c oxidase subunit VIII) subunits are nuclear and have muscle and non-muscle-specific isoforms. COX8 exists as three isoforms: COX8a, a liver and heart isoform, Cox8b, a heart-specific isoform, and Cox8c, whose expression pattern has yet to be elucidated. All three Cox8 isoforms exists as components of the COX complex and play an important role in electron transport.

REFERENCES

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2. Rizzuto, R., et al. 1989. A gene specifying subunit VIII of human cytochrome c oxidase is localized to chromosome 11 and is expressed in both muscle and non-muscle tissues. J. Biol. Chem. 264: 10595-10600.
3. Bonne, G., et al. 1995. The COX8 gene is not the disease gene of the CMH4 locus in familial hypertrophic cardiomyopathy. J. Med. Genet. 32: 670-671.
4. Lomax, M.I., et al. 1995. Structure and chromosomal location of the bovine gene for the heart muscle isoform of cytochrome c oxidase subunit VIII. Mamm. Genome 6: 118-122.
5. Hüttemann, M., et al. 2003. A third isoform of cytochrome c oxidase subunit VIII is present in mammals. Gene 312: 95-102.
6. Khalimonchuk, O., et al. 2005. Biogenesis of cytochrome c oxidase. Mitochondrion. 5: 363-388.
7. Fontanesi, F., et al. 2008. Cytochrome c oxidase biogenesis: new levels of regulation. IUBMB Life 60: 557-568.
8. Barrientos, A., et al. 2009. Suppression mechanisms of COX assembly defects in yeast and human: insights into the COX assembly process. Biochim. Biophys. Acta 1793: 97-107.

CHROMOSOMAL LOCATION

Genetic locus: COX8A (human) mapping to 11q13.1.

PRODUCT

COX8a 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 COX8a shRNA Plasmid (h): sc-97058-SH and COX8a shRNA (h) Lentiviral Particles: sc-97058-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

COX8a siRNA (h) is recommended for the inhibition of COX8a 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor COX8a gene expression knockdown using RT-PCR Primer: COX8a (h)-PR: sc-97058-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.