SANTA CRUZ BIOTECHNOLOGY, INC.

QP-C siRNA (h): sc-76305

BACKGROUND

Cytochrome c is a well characterized, mobile electron transport protein that is essential to energy conversion in all aerobic organisms. Cytochrome b associates with cytochrome c subunit 1 and the Rieske protein to form complex III, also designated cytochrome bc1 complex, which is involved in cellular respiration. QP-C, also known as QCR8, QPC, UQCRQ (ubiquinol-cytochrome c reductase, complex III subunit VII, 9.5kDa) or cytochrome bc1 complex subunit 8, is a 82 amino acid mitochondrion inner membrane protein that belongs to the UQCRQ/QCR8 family. QP-C is a component of the UQCRC (ubiquinol-cytochrome-c reductase complex core) complex, which is part of the mitochondrial respiratory chain. Mutations in QP-C are due to mitochondrial complex III deficiency and are characterized by severe psychomotor retardation and extrapyramidal signs.

REFERENCES

1. Duncan, A.M., et al. 1993. Assignment of the gene for the core protein II (UQCRC2) subunit of the mitochondrial cytochrome bc1 complex to human chromosome 16p12. Genomics 18: 455-456.
2. Hoffman, G.G., et al. 1993. Complete coding sequence, intron/exon organization, and chromosomal location of the gene for the core I protein of human ubiquinol-cytochrome c reductase. J. Biol. Chem. 268: 21113-21119.
3. Valnot, I., et al. 1999. A mitochondrial cytochrome b mutation but no mutations of nuclearly encoded subunits in ubiquinol cytochrome c reductase (complex III) deficiency. Hum. Genet. 104: 460-466.
4. Borisov, V.B. 2002. Defects in mitochondrial respiratory complexes III and IV, and human pathologies. Mol. Aspects Med. 23: 385-412.
5. Wen, J.J. and Garg, N. 2004. Oxidative modification of mitochondrial respiratory complexes in response to the stress of *Trypanosoma cruzi* infection. Free Radic. Biol. Med. 37: 2072-2081.
6. Borisov, V.B. 2004. Mutations in respiratory chain complexes and human diseases. Ital. J. Biochem. 53: 34-40.
7. Sadakata, T. and Furuichi, T. 2006. Identification and mRNA expression of Ogdh, QP-C, and two predicted genes in the postnatal mouse brain. Neurosci. Lett. 405: 217-222.

HROMOSOMAL LOCATION

Genetic locus: UQCRQ (human) mapping to 5q31.1.

PRODUCT

QP-C 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see QP-C shRNA Plasmid (h): sc-76305-SH and QP-C shRNA (h) Lentiviral Particles: sc-76305-V as alternate gene silencing products.

For independent verification of QP-C (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-76305A, sc-76305B and sc-76305C.

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

QP-C siRNA (h) is recommended for the inhibition of QP-C 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 QP-C gene expression knockdown using RT-PCR Primer: QP-C (h)-PR: sc-76305-PR (20 µl, 439 bp). 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.