SANTA CRUZ BIOTECHNOLOGY, INC.

QCR10 siRNA (h): sc-97460

BACKGROUND

QCR10 (cytochrome b-c1 complex subunit 10) is a 56 amino acid protein that localizes to the mitochondrion inner membrane. Both the human and bovine cDNAs encode putative proteins of 56 amino acids that share 88% sequence homology. The QCR10 gene encodes the smallest known component of the ubiquinol-cytochrome c reductase complex, which forms part of the mitochondrial respiratory chain. QCR10 of the yeast cytochrome bc1 complex is easily lost during purification without affecting activity or stability of the remaining complex. However, if the complex is assembled in the absence of QCR10, it is less active and the 'Rieske' iron-sulfur protein is much more loosely bound than in the wild-type enzyme. QCR10 may function as a binding factor for the iron-sulfur protein for the bc1 complex. The gene encoding QCR10 is conserved in chimpanzee, canine, bovine, mouse and rat, and maps to human chromosome 19p13.3.

REFERENCES

1. Brandt, U., et al. 1994. Isolation and characterization of QCR10, the nuclear gene encoding the 8.5-kDa subunit 10 of the Saccharomyces cerevisiae cytochrome bc1 complex. J. Biol. Chem. 269: 12947-12953.
2. Braun, H.P. 1996. Identification of novel homologues of three low molecular weight subunits of the mitochondrial bc1 complex. Mol. Biol. Rep. 23: 71-77.
3. Islam, M.M., et al. 1997. Primary structure of the smallest (6.4-kDa) subunit of human and bovine ubiquinol-cytochrome c reductase deduced from cDNA sequences. Biochem. Mol. Biol. Int. 41: 1109-1116.
4. 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.
5. Grimwood, J., et al. 2004. The DNA sequence and biology of human chromosome 19. Nature 428: 529-535.
6. Online Mendelian Inheritance in Man, OMIM™. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 609711. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: UQCR11 (human) mapping to 19p13.3.

PRODUCT

QCR10 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 QCR10 shRNA Plasmid (h): sc-97460-SH and QCR10 shRNA (h) Lentiviral Particles: sc-97460-V as alternate gene silencing products.

For independent verification of QCR10 (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-97460A, sc-97460B and sc-97460C.

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

QCR10 siRNA (h) is recommended for the inhibition of QCR10 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 QCR10 gene expression knockdown using RT-PCR Primer: QCR10 (h)-PR: sc-97460-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.