SANTA CRUZ BIOTECHNOLOGY, INC.

UQCRC2 siRNA (h): sc-72021

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. Ubiquinol cytochrome c reductase (UQCRFS1), also referred to as Rieske iron-sulfur protein, represents an important subunit of complex III of the mitochondrial respiratory chain that transfers electrons from ubiquinol to cytochrome c. The UQCRFS1 complex is made up of 3 respiratory subunits (cytochrome b, cytochrome c1, Rieske protein), 2 core proteins, and 6 low-molecular weight proteins. Ubiquinol cytochrome-c reductase complex core protein 2 (UQCRC2) represents one of the core proteins of UQCRFS1, and it is required for the assembly of the complex.

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. Jarvela, I.E., et al. 1995. Physical map of the region containing the gene for Batten disease (CLN3). Am. J. Med. Genet. 57: 316-319.
3. Hu, W.H., et al. 2002. Identification and characterization of a novel Nogo-interacting mitochondrial protein (NIMP). J. Neurochem. 81: 36-45.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 191327. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Wen, J.J., et al. 2004. Oxidative modification of mitochondrial respiratory complexes in response to the stress of *Trypanosoma cruzi* infection. Free Radic. Biol. Med. 37: 2072-2081.
6. Sjoblom, T., et al. 2006. The consensus coding sequences of human breast and colorectal cancers. Science 314: 268-274.
7. Cheng, X.R., et al. 2007. The effects of Liuwei Dihuang decoction on the gene expression in the hippocampus of senescence-accelerated mouse. Fitoterapia 78: 175-181.

CHROMOSOMAL LOCATION

Genetic locus: UQCRC2 (human) mapping to 16p12.2.

PRODUCT

UQCRC2 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 UQCRC2 shRNA Plasmid (h): sc-72021-SH and UQCRC2 shRNA (h) Lentiviral Particles: sc-72021-V as alternate gene silencing products.

For independent verification of UQCRC2 (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-72021A, sc-72021B and sc-72021C.

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

UQCRC2 siRNA (h) is recommended for the inhibition of UQCRC2 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

UQCRC2 (G-10): sc-390378 is recommended as a control antibody for monitoring of UQCRC2 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 UQCRC2 gene expression knockdown using RT-PCR Primer: UQCRC2 (h)-PR: sc-72021-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.