SANTA CRUZ BIOTECHNOLOGY, INC.

Rieske FeS siRNA (m): sc-72149

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 (Rieske FeS), represents an important subunit of complex III of the mitochondrial respiratory chain. This complex transfers electrons from ubiquinol to cytochrome c. The gene encoding for Rieske FeS may be involved in the development of a more aggressive phenotype of breast cancer.

REFERENCES

1. Duncan, A.M., et al. 1994. Assignment of the gene (UQCRFS1) for the Rieske iron-sulfur protein subunit of the mitochondrial cytochrome bc1 complex to the 22q13 and 19q12-q13.1 regions of the human genome. Genomics 21: 281-283.
2. Pennacchio, L.A., et al. 1995. Structure, sequence and location of the UQCRFS1 gene for the human Rieske FeS protein. Gene 155: 207-211.
3. Sait, S.N., et al. 2002. Double minute chromosomes in acute myeloid leukemia and myelodysplastic syndrome: identification of new amplification regions by fluorescence *in situ* hybridization and spectral karyotyping. Genes Chromosomes Cancer 34: 42-47.
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. Kaneko, S.J., et al. 2003. CA125 and UQCRFS1 FISH studies of ovarian carcinoma. Gynecol. Oncol. 90: 29-36.
6. Ohashi, Y., et al. 2004. Ubiquinol cytochrome c reductase (UQCRFS1) gene amplification in primary breast cancer core biopsy samples. Gynecol. Oncol. 93: 54-58.

CHROMOSOMAL LOCATION

Genetic locus: Uqcrfs1 (mouse) mapping to 13 A3.2.

PRODUCT

Rieske FeS siRNA (m) 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 Rieske FeS shRNA Plasmid (m): sc-72149-SH and Rieske FeS shRNA (m) Lentiviral Particles: sc-72149-V as alternate gene silencing products.

For independent verification of Rieske FeS (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-72149A, sc-72149B and sc-72149C.

PROTOCOLS

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

Rieske FeS siRNA (m) is recommended for the inhibition of Rieske FeS expression in mouse 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

Rieske FeS (A-5): sc-271609 is recommended as a control antibody for monitoring of Rieske FeS 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 Rieske FeS gene expression knockdown using RT-PCR Primer: Rieske FeS (m)-PR: sc-72149-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.