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SANTA CRUZ BIOTECHNOLOGY, INC.

MOSC2 siRNA (m): sc-149511

BACKGROUND

MOSC2 (MOCO sulphurase C-terminal domain containing 2) is a 335 amino acid peripheral membrane protein that localizes to the mitochondria. Containing a MOSC domain, MOSC2 utilizes molybdenum as a cofactor and is a component of the benzamidoxime prodrug-converting complex that is comprised of cytochrome b5, NADH-cytochrome b5 reductase (CYB5R3). CYB5R3 belongs to the flavoprotein pyridine nucleotide cytochrome reductase family and is involved in the desaturation and elongation of fatty acids, cholesterol biosynthesis, drug metabolism and, in erythrocytes, methemoglobin reduction. Benzamidoxime prodrug-converting complex is required to reduce N-hydroxylated structures, such as benzamidoxime prodrug. MOSC2 exists as two alternatively spliced isoforms and is encoded by a gene mapping to human chromosome 1q41.

REFERENCES

1. Clement, B. 2002. Reduction of N-hydroxylated compounds: amidoximes (N-hydroxyamidines) as pro-drugs of amidines. Drug Metab. Rev. 34: 565-579.
2. Porter, T.D. 2002. The roles of cytochrome b5 in cytochrome P450 reactions. J. Biochem. Mol. Toxicol. 16: 311-316.
3. Schenkman, J.B. and Jansson, I. 2003. The many roles of cytochrome b5. Pharmacol. Ther. 97: 139-152.
4. Percy, M.J., et al. 2005. Recessive congenital methaemoglobinaemia: functional characterization of the novel D239G mutation in the NADH-binding lobe of cytochrome b5 reductase. Br. J. Haematol. 129: 847-853.
5. Havemeyer, A., et al. 2006. Identification of the missing component in the mitochondrial benzamidoxime prodrug-converting system as a novel molybdenum enzyme. J. Biol. Chem. 281: 34796-34802.

CHROMOSOMAL LOCATION

Genetic locus: Mosc2 (mouse) mapping to 1 H5.

PRODUCT

MOSC2 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 MOSC2 shRNA Plasmid (m): sc-149511-SH and MOSC2 shRNA (m) Lentiviral Particles: sc-149511-V as alternate gene silencing products.

For independent verification of MOSC2 (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-149511A, sc-149511B and sc-149511C.

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.

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

MOSC2 siRNA (m) is recommended for the inhibition of MOSC2 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

MOSC2 (H-7): sc-514202 is recommended as a control antibody for monitoring of MOSC2 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 MOSC2 gene expression knockdown using RT-PCR Primer: MOSC2 (m)-PR: sc-149511-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.