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- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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SANTA CRUZ BIOTECHNOLOGY, INC.

MDH2 siRNA (m): sc-149339

BACKGROUND

MDH2 (malate dehydrogenase, NAD mitochondrial), also known as MDH, MOR1 or M-MDH, is a 338 amino acid that belongs to the LDH/MDH superfamily. MDH2 localizes to the mitochondria and may play a critical role in the malate-aspartate shuttle that operates in the metabolic coordination between cytosol and mitochondria. MDH2 utilizes the NAD/NADH cofactor system in the citric acid cycle to catalyze the reversible oxidation of malate to oxaloacetate. Oxaloacetate is involved in many important metabolic pathways including amino acid synthesis, gluconeogenesis and facilitation of the exchange of metabolites between cytoplasm and subcellular organelles.

REFERENCES

1. Brenicka, E.A., et al. 1983. Tissue origin of MDH isozymes in blood serum of rats exposed to alkylmercurials. J. Appl. Toxicol. 3: 180-184.
2. Winiewska, W. and Lukasiuk, M. 1985. Malate dehydrogenase and its isoenzymes in the peripheral blood leukocytes in progressive muscular dystrophy of the Duchenne type. Neurol. Neurochir. Pol. 19: 318-322.
3. Minard, K.I. and McAlister-Henn, L. 1994. Glucose-induced phosphorylation of the MDH2 isozyme of malate dehydrogenase in *Saccharomyces cerevisiae*. Arch. Biochem. Biophys. 315: 302-309.
4. Goward, C.R. and Nicholls, D.J. 1994. Malate dehydrogenase: a model for structure, evolution, and catalysis. Protein Sci. 3: 1883-1888.
5. McAlister-Henn, L., et al. 1995. Expression and function of a mislocalized form of peroxisomal malate dehydrogenase (MDH3) in yeast. J. Biol. Chem. 270: 21220-21225.
6. Sugiuchi, H., et al. 1996. A novel automated assay for malate dehydrogenase isoenzymes. J. Clin. Lab. Anal. 10: 78-84.
7. Pines, O., et al. 1997. Overexpression of cytosolic malate dehydrogenase (MDH2) causes overproduction of specific organic acids in *Saccharomyces cerevisiae*. Appl. Microbiol. Biotechnol. 48: 248-255.

CHROMOSOMAL LOCATION

Genetic locus: Mdh2 (mouse) mapping to 5 G2.

PRODUCT

MDH2 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 MDH2 shRNA Plasmid (m): sc-149339-SH and MDH2 shRNA (m) Lentiviral Particles: sc-149339-V as alternate gene silencing products.

For independent verification of MDH2 (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-149339A, sc-149339B and sc-149339C.

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

MDH2 siRNA (m) is recommended for the inhibition of MDH2 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

MDH2 (1G12): sc-293474 is recommended as a control antibody for monitoring of MDH2 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 MDH2 gene expression knockdown using RT-PCR Primer: MDH2 (m)-PR: sc-149339-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.