

LDH-B siRNA (m): sc-45902

BACKGROUND

The lactate dehydrogenase family (LDH) catalyzes the final step of anaerobic glycolysis, the conversion of L-lactate and NAD to pyruvate and NADH. The LDH family consists of three members, LDH-A, LDH-B and LDH-C, all of which form tetramers consisting of four subunits. However, each family member displays a specific tissue distribution pattern, with LDH-A and LDH-B predominant in several tissues, specifically LDH-A in muscle and LDH-B in heart, while LDH-C expression is confined to testis and sperm. LDHs function as powerful markers for germ cell tumors. The genes encoding human LDH-A and LDH-C map to chromosome 11, while the human LDH-B gene maps to chromosome 12. Deficiency in the LDH-A gene is linked to exertional myoglobinuria.

REFERENCES

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2. Edwards, Y.H., et al. 1987. Locus determining the human sperm-specific lactate dehydrogenase, LDH-C, is syntenic with LDH-A. *Dev. Genet.* 8: 219-232.
3. Takano, T. and Li, S.S. 1989. Human testicular lactate dehydrogenase-C gene is interrupted by six introns at positions homologous to those of LDH-A (muscle) and LDH-B (heart) genes. *Biochem. Biophys. Res. Commun.* 159: 579-583.
4. LeVan, K.M. and Goldberg, E. 1991. Properties of human testis-specific lactate dehydrogenase expressed from *Escherichia coli*. *Biochem. J.* 273: 587-592.
5. Sudo, K., et al. 1992. Molecular characterization of genetic mutations in human lactate dehydrogenase (LDH) B (H) variant. *Hum. Genet.* 89: 158-162.
6. Kanno, T. and Maekawa M. 1995. Lactate dehydrogenase M-subunit deficiencies: clinical features, metabolic background, and genetic heterogeneities. *Muscle Nerve Suppl.* 3: 54-60.
7. Kopperschlager, G. and Kirchberger J. 1996. Methods for the separation of lactate dehydrogenases and clinical significance of the enzyme. *J. Chromatogr. B, Biomed. Appl.* 684: 25-49.

CHROMOSOMAL LOCATION

Genetic locus: Ldh2 (mouse) mapping to 6 G2.

PRODUCT

LDH-B 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see LDH-B shRNA Plasmid (m): sc-45902-SH and LDH-B shRNA (m) Lentiviral Particles: sc-45902-V as alternate gene silencing products.

For independent verification of LDH-B (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-45902A, sc-45902B and sc-45902C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

LDH-B shRNA (m) Lentiviral Particles is recommended for the inhibition of LDH-B 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 μ M in 66 μ l. 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

LDH-B (431.1): sc-100775 is recommended as a control antibody for monitoring of LDH-B 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-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz MarkerTM Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 LDH-B gene expression knockdown using RT-PCR Primer: LDH-B (m)-PR: sc-45902-PR (20 μ l). 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.