

LDH-D siRNA (m): sc-146691

BACKGROUND

The lactate dehydrogenase family (LDH) consists of three members, designated LDH-A, LDH-B and LDH-C, all of which work in concert to catalyze the final step of anaerobic glycolysis, namely the conversion of L-lactate and NAD⁺ to pyruvate and NADH. Each family member displays a specific tissue distribution pattern, with LDH-A present in muscle and LDH-B present in heart, while LDH-C expression is confined to testis and sperm. A fourth possible member, termed LDH-D (lactate dehydrogenase D), probable D-lactate dehydrogenaseor DLD, is a 507 amino acid mitochondrial protein belonging to the D-isomer specific 2-hydroxyacid dehydrogenase family. Existing as two alternatively spliced isoforms, LDH-D is moderately expressed in liver and heart with lower levels found in kidney and skeletal muscle.

REFERENCES

1. Edwards, Y.H., et al. 1987. Locus determining the human sperm-specific lactate dehydrogenase, LDHC, is syntenic with LDHA. *Dev. Genet.* 8: 219-232.
2. LeVan, K.M. and Goldberg, E. 1991. Properties of human testis-specific lactate dehydrogenase expressed from *Escherichia coli*. *Biochem. J.* 273: 587-592.
3. Kanno, T. and Maekawa, M. 1995. Lactate dehydrogenase M-subunit deficiencies: clinical features, metabolic background, and genetic heterogeneities. *Muscle Nerve* 3: S54-S60.
4. 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.
5. Niwakawa, M. and Tobisu, K. 2001. The role of tumor markers in the treatment of germ cell tumor. *Gan To Kagaku Ryoho* 28: 1159-1165.
6. Flick, M.J. and Konieczny, S.F. 2002. Identification of putative mammalian D-lactate dehydrogenase enzymes. *Biochem. Biophys. Res. Commun.* 295: 910-916.
7. Online Mendelian Inheritance in Man, OMIM[™]. 2009. Johns Hopkins University, Baltimore, MD. MIM Number: 607490. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: Ldhd (mouse) mapping to 8 E1.

PRODUCT

LDH-D siRNA (m) is a target-specific 19-25 nt siRNA 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-D shRNA Plasmid (m): sc-146691-SH and LDH-D shRNA (m) Lentiviral Particles: sc-146691-V as alternate gene silencing products.

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 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-D siRNA (m) is recommended for the inhibition of LDH-D 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-D (H-10): sc-374128 is recommended as a control antibody for monitoring of LDH-D 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 Marker[™] 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-D gene expression knockdown using RT-PCR Primer: LDH-D (m)-PR: sc-146691-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.