SANTA CRUZ BIOTECHNOLOGY, INC.

LDH-D siRNA (h): sc-93282

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 testes 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., Povey, S., LeVan, K.M., Driscoll, C.E., Millan, J.L. and Goldberg, E. 1987. Locus determining the human sperm-specific lactate dehydrogenase, LDH-C, is syntenic with LDH-A. 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 Suppl. 3: S54-S60.
4. Kopperschläger, 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.

CHROMOSOMAL LOCATION

Genetic locus: LDHD (human) mapping to 16q23.1.

PRODUCT

LDH-D siRNA (h) 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 LDH-D shRNA Plasmid (h): sc-93282-SH and LDH-D shRNA (h) Lentiviral Particles: sc-93282-V as alternate gene silencing products.

For independent verification of LDH-D (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-93282A, sc-93282B and sc-93282C.

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

LDH-D siRNA (h) is recommended for the inhibition of LDH-D expression in human 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

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-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 LDH-D gene expression knockdown using RT-PCR Primer: LDH-D (h)-PR: sc-93282-PR (20 µl, 595 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.