

ADH6 siRNA (h): sc-72449

BACKGROUND

ADH6 (alcohol dehydrogenase 6), also known as ADH-5, is a 368 amino acid member of the class V zinc-containing alcohol dehydrogenase family. This family of enzymes functions to metabolize a wide variety of substrates such as retinol, hydroxysteroids, ethanol, aliphatic alcohols and lipid peroxidation products. Localized to the cytoplasm and expressed in the stomach and liver, ADH6 catalyzes the reversible oxidation of alcohols to their corresponding aldehydes or ketones and is able to bind two zinc ions as cofactors. ADH6 contains a glucocorticoid response element upstream of its 5' UTR which is thought to be a steroid binding site, suggesting that expression of ADH6 may be under hormonal control. Multiple isoforms of ADH6 exist due to alternative splicing events.

REFERENCES

1. Chen, C.S. and Yoshida, A. 1991. Enzymatic properties of the protein encoded by newly cloned human alcohol dehydrogenase ADH6 gene. *Biochem. Biophys. Res. Commun.* 181: 743-747.
2. Yasunami, M., et al. 1991. A human alcohol dehydrogenase gene (ADH6) encoding an additional class of isozyme. *Proc. Natl. Acad. Sci. USA* 88: 7610-7614.
3. Höög, J., et al. 2001. Mammalian alcohol dehydrogenase of higher classes: analyses of human ADH5 and rat ADH6. *Chem. Biol. Interact.* 130-132: 395-404.
4. Osier, M.V., et al. 2002. A global perspective on genetic variation at the ADH genes reveals unusual patterns of linkage disequilibrium and diversity. *Am. J. Hum. Genet.* 71: 84-99.
5. Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 103735. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
6. Höög, J.O., et al. 2003. The mammalian alcohol dehydrogenases interact in several metabolic pathways. *Chem. Biol. Interact.* 143-144: 175-181.

CHROMOSOMAL LOCATION

Genetic locus: ADH6 (human) mapping to 4q23.

PRODUCT

ADH6 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ADH6 shRNA Plasmid (h): sc-72449-SH and ADH6 shRNA (h) Lentiviral Particles: sc-72449-V as alternate gene silencing products.

For independent verification of ADH6 (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-72449A, sc-72449B and sc-72449C.

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

ADH6 siRNA (h) is recommended for the inhibition of ADH6 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 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

ADH6 (WW32): sc-100495 is recommended as a control antibody for monitoring of ADH6 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 ADH6 gene expression knockdown using RT-PCR Primer: ADH6 (h)-PR: sc-72449-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.