

# ADH7 siRNA (m): sc-140881

## BACKGROUND

ADH7 (alcohol dehydrogenase 7 (class IV), mu or sigma polypeptide), also known as ADH4, retinol dehydrogenase or gastric alcohol dehydrogenase, is a 386 amino acid protein belonging to the zinc-containing alcohol dehydrogenase family and the class-IV subfamily. Eight different human ADH isozymes exist: three belong to class-I:  $\alpha$ ,  $\beta$  and  $\gamma$ ; one to class-II:  $\pi$ ; one to class-III:  $\chi$ ; one to class-IV; one to class-V; and one to class-VI. Encoded by a gene that maps to human chromosome 4q23, ADH7 localizes to the cytoplasm and is preferentially expressed in stomach, but, unlike other family members, is absent from liver. ADH7 is a homodimer that binds two zinc ions per subunit and contains nine exons. ADH7 participates in the synthesis of retinoic acid, a hormone important for cellular differentiation. Variations in ADH7 may be associated with alcohol dependence. ADH7 may also play a role in protection against aerodigestive tract cancer.

## REFERENCES

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4. Yokoyama, H., et al. 1996. Molecular cloning and chromosomal localization of the ADH7 gene encoding human class IV (sigma) ADH. *Genomics* 31: 243-245.
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7. Lee, J., et al. 2007. A small-molecule antagonist of the hedgehog signaling pathway. *Chembiochem* 8: 1916-1919.
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## CHROMOSOMAL LOCATION

Genetic locus: Adh7 (mouse) mapping to 3 G3.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PRODUCT

ADH7 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ADH7 shRNA Plasmid (m): sc-140881-SH and ADH7 shRNA (m) Lentiviral Particles: sc-140881-V as alternate gene silencing 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

ADH7 siRNA (m) is recommended for the inhibition of ADH7 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  $\mu$ M in 66  $\mu$ 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ADH7 gene expression knockdown using RT-PCR Primer: ADH7 (m)-PR: sc-140881-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.