

ADH (H-300): sc-22750

BACKGROUND

The alcohol dehydrogenase family of proteins metabolize a wide variety of substrates, including ethanol, retinol, other aliphatic alcohols, hydroxysteroids and lipid peroxidation products. Class I alcohol dehydrogenase, consisting of several homo and heterodimers of α , β and γ subunits, exhibits high activity for ethanol oxidation and plays a major role in ethanol catabolism. Three genes encoding α (ADH1A), β (ADH1B) and γ (ADH1C) subunits are tandemly organized on chromosome 4q23 as a gene cluster. The α form of ADH is monomeric and predominant in fetal and infant livers, becoming less active in gestation and only weakly active during adulthood. The genes encoding β and γ subunits, however, are polymorphic and strongly expressed in adult livers. With the coenzyme NAD, ADH catalyzes the reversible conversion of organic alcohols to ketones or aldehydes. The physiologic function for ADH in the liver is the removal of ethanol formed by microorganisms in the intestinal tract.

REFERENCES

1. Smith, M., et al. 1973. Studies on the subunit structure and molecular size of the human dehydrogenase isozymes determined by the different loci, ADH1, ADH2, and ADH3. *Ann. Hum. Genet.* 36: 401-414.
2. Smith, M., et al. 1984. Derivation of probes for molecular genetic analysis of human class I alcohol dehydrogenase (ADH), a polymorphic gene family on chromosome 4. *Am. J. Hum. Genet.* 36: 153.

CHROMOSOMAL LOCATION

Genetic locus: ADH1A/ADH1B/ADH1C (human) mapping to 4q23; Adh1 (mouse) mapping to 3 G3.

SOURCE

ADH (H-300) is a rabbit polyclonal antibody raised against amino acids 1-300 mapping at the N-terminus of ADH of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

ADH (H-300) is recommended for detection of ADH α , ADH β and ADH γ of human origin and ADH1 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

ADH (H-300) is also recommended for detection of ADH α , ADH β and ADH γ in additional species, including equine and canine.

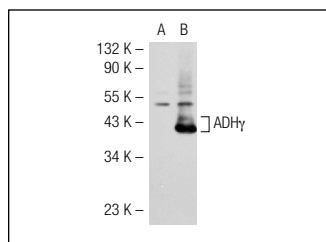
Molecular Weight of ADH: 46 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, C4 whole cell lysate: sc-364186 or ADH γ (h): 293T Lysate: sc-111481.

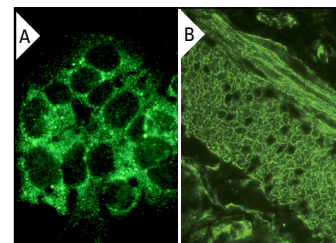
RESEARCH USE

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

DATA



ADH (H-300): sc-22750. Western blot analysis of ADH γ expression in non-transfected: sc-117752 (A) and human ADH γ transfected: sc-111481 (B) 293T whole cell lysates.



ADH (H-300): sc-22750. Immunofluorescence staining of methanol-fixed Hep G2 cells showing cytoplasmic localization (A) and of normal mouse intestine frozen section showing cytoplasmic staining (B).

SELECT PRODUCT CITATIONS

1. Hara, T., et al. 2007. Mass spectrometry analysis of the native protein complex containing actinin-4 in prostate cancer cells. *Mol. Cell. Proteomics* 6: 479-491.
2. Shitashige, M., et al. 2007. Involvement of splicing factor-1 in β -catenin/T-cell factor-4-mediated gene transactivation and pre-mRNA splicing. *Gastroenterology* 132: 1039-1054.
3. Nakayama, S., et al. 2009. Syndrome of inappropriate antidiuretic hormone secretion associated with acute myeloid leukemia with multilineage dysplasia. *Endocrine* 35: 290-292.
4. Rivera-Meza, M., et al. 2010. Mechanism of protection against alcoholism by an alcohol dehydrogenase polymorphism: development of an animal model. *FASEB J.* 24: 266-274.
5. Gunness, P., et al. 2011. Acyclovir-induced nephrotoxicity: the role of the acyclovir aldehyde metabolite. *Transl. Res.* 158: 290-301.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.



Try **ADH (G-7): sc-133207** or **ADH (B-12): sc-137078**, our highly recommended monoclonal alternatives to ADH (H-300).