

ADH (B-12): sc-137078



The Power to Question

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 monomorphic 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.

CHROMOSOMAL LOCATION

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

SOURCE

ADH (B-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 21-39 near the N-terminus of ADH of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-137078 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

ADH (B-12) 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 1:100, 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 (B-12) is also recommended for detection of ADH α , ADH β and ADH γ in additional species, including equine, canine and bovine.

Suitable for use as control antibody for Adh1 siRNA (m): sc-41437, Adh1 shRNA Plasmid (m): sc-41437-SH and Adh1 shRNA (m) Lentiviral Particles: sc-41437-V.

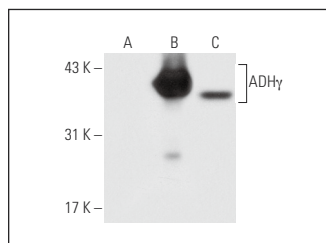
Molecular Weight of ADH: 46 kDa.

Positive Controls: ADH γ (h): 293T Lysate: sc-111481, Hep G2 cell lysate: sc-2227 or c4 whole cell lysate: sc-364186.

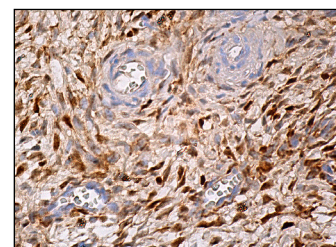
RECOMMENDED SUPPORT REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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. 4) Immunohistochemistry: use m-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



ADH (B-12): sc-137078. Western blot analysis of ADH γ expression in non-transfected 293T: sc-117752 (A), human ADH γ transfected 293T: sc-111481 (B) and Hep G2 (C) whole cell lysates.



ADH (B-12): sc-137078. Immunoperoxidase staining of formalin fixed, paraffin-embedded human ovary tissue showing cytoplasmic and nuclear staining of ovarian stroma cells.

SELECT PRODUCT CITATIONS

1. Krone, K.G., et al. 2016. Interaction of vitamin A supplementation level with ADH1C genotype on intramuscular fat in beef steers. *Animal* 10: 403-409.
2. Choi, S., et al. 2018. Pregnane X receptor promotes ethanol-induced hepatosteatosis in mice. *J. Biol. Chem.* 293: 1-17.
3. Choi, S., et al. 2018. Role of the pregnane X receptor in binge ethanol-induced steatosis and hepatotoxicity. *J. Pharmacol. Exp. Ther.* 365: 165-178.
4. Wang, X., et al. 2022. MEK1/2 inhibitors induce class I alcohol dehydrogenase (ADH1) expression by regulating farnesoid X receptor in hepatic cell lines and C57BL/6J mouse. *Mol. Biol. Rep.* 49: 5843-5852.
5. Choi, S., et al. 2024. Molecular targets of PXR-dependent ethanol-induced hepatotoxicity in female mice. *Biochem. Pharmacol.* 228: 116416.

STORAGE

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

RESEARCH USE

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