

ADH4 (NB-B2): sc-134249

BACKGROUND

ADH4 (alcohol dehydrogenase 4) is a 380 amino acid protein that belongs to the zinc-containing alcohol dehydrogenase family of enzymes that function to metabolize a wide variety of substrates, including retinol, hydroxysteroids, ethanol, aliphatic alcohols and lipid peroxidation products. Localized to the cytoplasm and existing as a homodimer, ADH4 uses zinc as a cofactor to catalyze the NAD⁺-dependent conversion of an alcohol to an aldehyde or a ketone, thereby participating in the metabolic degradation of alcohols within the body. Multiple isoforms of ADH4 exist due to alternative splicing events. The gene encoding ADH4 maps to a cluster of alcohol dehydrogenase genes on human chromosome 4, a chromosome that encodes nearly 6% of the human genome and has the largest gene deserts (regions of the genome with no protein encoding genes) of all of the human chromosomes.

REFERENCES

- Li, T.K., et al. 1977. Isolation of π -alcohol dehydrogenase of human liver: is it a determinant of alcoholism? Proc. Natl. Acad. Sci. USA 74: 4378-4381.
- Mardh, G., et al. 1986. Human class II (π) alcohol dehydrogenase has a redox-specific function in norepinephrine metabolism. Proc. Natl. Acad. Sci. USA 83: 8908-8912.
- von Bahr-Lindström, H., et al. 1991. Cloning and characterization of the human ADH4 gene. Gene 103: 269-274.
- Edman, K. and Maret, W. 1992. Alcohol dehydrogenase genes: restriction fragment length polymorphisms for ADH4 (π -ADH) and ADH5 (χ -ADH) and construction of haplotypes among different ADH classes. Hum. Genet. 90: 395-401.
- Kuo, P.H., et al. 2008. Association of ADH and ALDH genes with alcohol dependence in the Irish Affected Sib Pair Study of alcohol dependence (IASPSAD) sample. Alcohol Clin. Exp. Res. 32: 785-795.

CHROMOSOMAL LOCATION

Genetic locus: ADH4 (human) mapping to 4q23.

SOURCE

ADH4 (NB-B2) is a mouse monoclonal antibody raised against recombinant ADH4 protein of human origin.

PRODUCT

Each vial contains 100 μ g IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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 for detailed protocols and support products.

APPLICATIONS

ADH4 (NB-B2) is recommended for detection of ADH4 of human 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).

Suitable for use as control antibody for ADH4 siRNA (h): sc-105043, ADH4 shRNA Plasmid (h): sc-105043-SH and ADH4 shRNA (h) Lentiviral Particles: sc-105043-V.

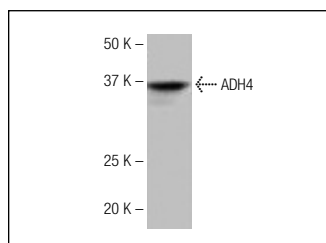
Molecular Weight of ADH4: 40 kDa.

Positive Controls: HeLa nuclear extract: sc-2120.

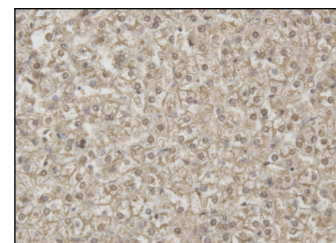
RECOMMENDED SUPPORT REAGENTS

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, TBS Blotto A Blocking Reagent: sc-2333 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.

DATA



ADH4 (NB-B2): sc-134249. Western blot analysis of ADH4 expression in HeLa nuclear extract.



ADH4 (NB-B2): sc-134249. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human liver tissue showing cytoplasmic and membrane localization.

SELECT PRODUCT CITATIONS

- Baker, S.S., et al. 2010. Role of alcohol metabolism in non-alcoholic steatohepatitis. PLoS ONE 5: e9570.

RESEARCH USE

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