

ADH5 (B-1): sc-518202



The Power to Question

BACKGROUND

The alcohol dehydrogenase family of proteins metabolize a wide variety of substrates, including retinol, hydroxysteroids, ethanol, aliphatic alcohols and lipid peroxidation products. ADH5 (alcohol dehydrogenase 5 (class III)), also known as FDH (formaldehyde dehydrogenase), ADHX, ADH-3 or GSNOR, is a 374 amino acid cytoplasmic protein that belongs to the class III subfamily of alcohol dehydrogenases. Expressed ubiquitously, ADH5 uses iron as a cofactor to catalytically oxidize both long-chain primary alcohols and S-hydroxymethyl-glutathione, a product formed spontaneously between formaldehyde and glutathione. ADH5 exists as a homodimer and, via its ability to oxidize S-hydroxymethyl-glutathione and, thus, eliminate formaldehyde, functions as an important component of cellular metabolism. Genetic variations in the gene encoding ADH5 may affect drug and alcohol dependence in humans.

REFERENCES

1. Kaiser, R., et al. 1988. Class III human liver alcohol dehydrogenase: a novel structural type equidistantly related to the class I and class II enzymes. *Biochemistry* 27: 1132-1140.
2. Giri, P.R., et al. 1989. Cloning and comparative mapping of a human class III (chi) alcohol dehydrogenase cDNA. *Biochem. Biophys. Res. Commun.* 164: 453-460.
3. Hur, M.W. and Edenberg, H.J. 1992. Cloning and characterization of the ADH5 gene encoding human alcohol dehydrogenase 5, formaldehyde dehydrogenase. *Gene* 121: 305-311.
4. Holmquist, B., et al. 1993. Role of arginine 115 in fatty acid activation and formaldehyde dehydrogenase activity of human class III alcohol dehydrogenase. *Biochemistry* 32: 5139-5144.
5. Engeland, K., et al. 1993. Mutation of Arg-115 of human class III alcohol dehydrogenase: a binding site required for formaldehyde dehydrogenase activity and fatty acid activation. *Proc. Natl. Acad. Sci. USA* 90: 2491-2494.

CHROMOSOMAL LOCATION

Genetic locus: ADH5 (human) mapping to 4q23.

SOURCE

ADH5 (B-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 322-347 of ADH5 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ADH5 (B-1) is available conjugated to agarose (sc-518202 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-518202 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-518202 PE), fluorescein (sc-518202 FITC), Alexa Fluor® 488 (sc-518202 AF488), Alexa Fluor® 546 (sc-518202 AF546), Alexa Fluor® 594 (sc-518202 AF594) or Alexa Fluor® 647 (sc-518202 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-518202 AF680) or Alexa Fluor® 790 (sc-518202 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

ADH5 (B-1) is recommended for detection of ADH5 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (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 ADH5 siRNA (h): sc-105044, ADH5 shRNA Plasmid (h): sc-105044-SH and ADH5 shRNA (h) Lentiviral Particles: sc-105044-V.

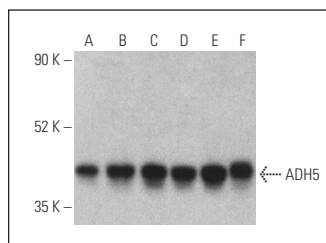
Molecular Weight of ADH5: 40 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, SH-SY5Y cell lysate: sc-3812 or Hep G2 cell lysate: sc-2227.

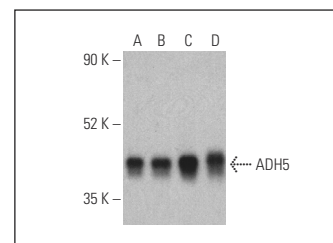
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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



ADH5 (B-1): sc-518202. Western blot analysis of ADH5 expression in IMR-32 (A), U-937 (B), K-562 (C), SH-SY5Y (D), Hep G2 (E) and Caki-1 (F) whole cell lysates. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.



ADH5 (B-1): sc-518202. Western blot analysis of ADH5 expression in K-562 (A), SH-SY5Y (B), Hep G2 (C) and Caki-1 (D) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.

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.

PROTOCOLS

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

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA