SANTA CRUZ BIOTECHNOLOGY, INC.

ADH8 (B-10): sc-390552

SANTA CRUZ BIOTECHNOLOGY

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. ADH8, also known as ADHFE1 (alcohol dehydrogenase, iron containing, 1) or HOT, is a 467 amino acid protein that belongs to the iron-containing alcohol dehydrogenase family and localizes to the mitochondrion. Expressed specifically in adult liver, ADH8 functions to catalyze the cofactor-independent oxidation of γ-hydroxybutyrate to succinic semialdehyde, a reaction that is coupled to the reduction of 2-ketoglutarate to D-2-hydroxyglutarate and occurs at an optimal pH of 7.5. Succinic semialdehyde can then be converted to succinic acid which is used for energy production in the Krebs cycle. Four isoforms of ADH8 exist due to alternative splicing events.

REFERENCES

1. Deng, Y., et al. 2002. Cloning and characterization of a novel human alcohol dehydrogenase gene (ADHFe1). DNA Seq. 13: 301-306.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 611083. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Rosell, A., et al. 2003. Crystal structure of the vertebrate NADP(H)-dependent alcohol dehydrogenase (ADH8). J. Mol. Biol. 330: 75-85.
4. Reimers, M.J., et al. 2004. Two zebrafish alcohol dehydrogenases share common ancestry with mammalian class I, II, IV, and V alcohol dehydrogenase genes but have distinct functional characteristics. J. Biol. Chem. 279: 38303-38312.
5. Struys, E.A., et al. 2005. Kinetic characterization of human hydroxyacid-oxoacid transhydrogenase: relevance to D-2-hydroxyglutaric and γ-hydroxybutyric acidurias. J. Inherit. Metab. Dis. 28: 921-930.
6. Kardon, T., et al. 2006. Identification of the gene encoding hydroxyacid-oxoacid transhydrogenase, an enzyme that metabolizes 4-hydroxybutyrate. FEBS Lett. 580: 2347-2350.
7. Kim, J.Y., et al. 2007. Differentiation-dependent expression of Adhfe1 in adipogenesis. Arch. Biochem. Biophys. 464: 100-111.

CHROMOSOMAL LOCATION

Genetic locus: ADHFE1 (human) mapping to 8q13.1.

SOURCE

ADH8 (B-10) is a mouse monoclonal antibody raised against amino acids 20-259 mapping near the N-terminus of ADH8 of human origin.

PRODUCT

Each vial contains 200 µg 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.

APPLICATIONS

ADH8 (B-10) is recommended for detection of ADH8 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), 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 ADH8 siRNA (h): sc-77632, ADH8 shRNA Plasmid (h): sc-77632-SH and ADH8 shRNA (h) Lentiviral Particles: sc-77632-V.

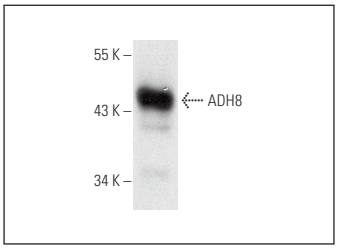
Molecular Weight of ADH8: 50 kDa.

Positive Controls: human liver extract: sc-363766.

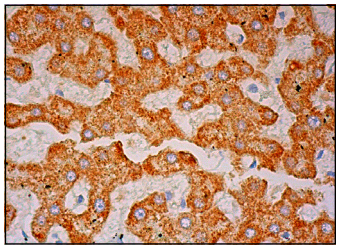
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



ADH8 (B-10): sc-390552. Western blot analysis of ADH8 expression in human liver tissue extract.



ADH8 (B-10): sc-390552. Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing cytoplasmic staining of hepatocytes.

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.