

ALDH1B1 (C-7): sc-374090

BACKGROUND

Aldehyde dehydrogenases (ALDHs) mediate NADP⁺-dependent oxidation of aldehydes into acids during detoxification of alcohol-derived acetaldehyde, lipid peroxidation and metabolism of corticosteroids, biogenic amines and neurotransmitters. Alcohol drinking habits and cardiovascular disease risk factors may be associated with ALDH gene variants. ALDH1B1 (Aldehyde dehydrogenase family 1 member B1), also known as ALDH5 or ALDHX (Aldehyde dehydrogenase X, mitochondrial), is a 517 amino acid mitochondrial protein that is expressed in the liver, testis and to a lesser extent in brain. ALDH1B1 belongs to the aldehyde dehydrogenase family and may play a major role in ethanol detoxification.

REFERENCES

1. Sherman, D., et al. 1993. Diverse polymorphism within a short coding region of the human Aldehyde dehydrogenase-5 (ALDH5) gene. *Hum. Genet.* 92: 477-480.
2. Stewart, M.J., et al. 1995. The novel Aldehyde dehydrogenase gene, ALDH5, encodes an active aldehyde dehydrogenase enzyme. *Biochem. Biophys. Res. Commun.* 211: 144-151.
3. Vasilou, V., et al. 1999. Eukaryotic aldehyde dehydrogenase (ALDH) genes: human polymorphisms, and recommended nomenclature based on divergent evolution and chromosomal mapping. *Pharmacogenetics* 9: 421-434.
4. Vasilou, V., et al. 2000. Polymorphisms of human aldehyde dehydrogenases. Consequences for drug metabolism and disease. *Pharmacology* 61: 192-198.
5. Horwitz, J., et al. 2006. Scallop lens ω -crystallin (ALDH1A9): a novel tetrameric aldehyde dehydrogenase. *Biochem. Biophys. Res. Commun.* 348: 1302-1309.
6. Yokoyama, A., et al. 2007. Contribution of the alcohol dehydrogenase-1B genotype and oral microorganisms to high salivary acetaldehyde concentrations in Japanese alcoholic men. *Int. J. Cancer* 121: 1047-1054.
7. Luo, P., et al. 2007. Intrinsic retinoic acid receptor α -cyclin-dependent kinase-activating kinase signaling involves coordination of the restricted proliferation and granulocytic differentiation of human hematopoietic stem cells. *Stem Cells* 25: 2628-2637.

CHROMOSOMAL LOCATION

Genetic locus: ALDH1B1 (human) mapping to 9p13.2; Aldh1b1 (mouse) mapping to 4 B1.

SOURCE

ALDH1B1 (C-7) is a mouse monoclonal antibody raised against amino acids 1-43 mapping at the N-terminus of ALDH1B1 of human origin.

PRODUCT

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

RESEARCH USE

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

APPLICATIONS

ALDH1B1 (C-7) is recommended for detection of ALDH1B1 of mouse, rat and human 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for ALDH1B1 siRNA (h): sc-92848, ALDH1B1 siRNA (m): sc-140999, ALDH1B1 shRNA Plasmid (h): sc-92848-SH, ALDH1B1 shRNA Plasmid (m): sc-140999-SH, ALDH1B1 shRNA (h) Lentiviral Particles: sc-92848-V and ALDH1B1 shRNA (m) Lentiviral Particles: sc-140999-V.

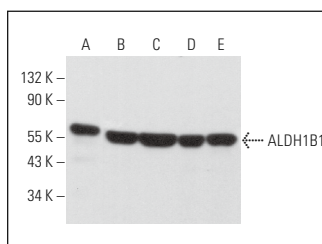
Molecular Weight of ALDH1B1: 57 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, MDA-MB-231 cell lysate: sc-2232 or HEK293 whole cell lysate: sc-45136.

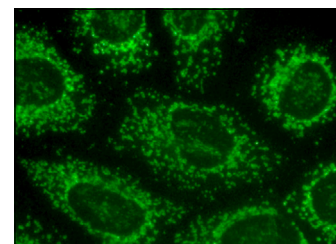
RECOMMENDED SUPPORT REAGENTS

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.

DATA



ALDH1B1 (C-7): sc-374090. Western blot analysis of ALDH1B1 expression in HEK293 (A), K-562 (B), MDA-MB-231 (C), A549 (D) and Caco-2 (E) whole cell lysates.



ALDH1B1 (C-7): sc-374090. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Lachén-Montes, M., et al. 2020. Proteomic characterization of the olfactory molecular imbalance in dementia with Lewy bodies. *Int. J. Mol. Sci.* 21: 6371.

STORAGE

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