

ALDH4A1 (E-11): sc-398776

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. ALDH4A1 (aldehyde dehydrogenase 4 family member A1), also known as P5CD (Δ^1 -pyrroline-5-carboxylate dehydrogenase), P5CDh, P5CDhL, P5CDhS or ALDH4, is a major enzyme involved in the proline degradation pathway. Localizing to the mitochondrial matrix, ALDH4A1 catalyzes the conversion of Δ^1 -pyrroline-5-carboxylate (P5C) to glutamate. A mutation in the gene encoding ALDH4A1 results in HPII (hyperprolinemia type II), a disease characterized by an excess of P5C and proline that is associated with mental retardation and seizures.

REFERENCES

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- Yoshida, Y., et al. 1997. Regulation of levels of proline as an osmolyte in plants under water stress. *Plant Cell Physiol.* 38: 1095-1102.
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CHROMOSOMAL LOCATION

Genetic locus: ALDH4A1 (human) mapping to 1p36.13; Aldh4a1 (mouse) mapping to 4 D3.

SOURCE

ALDH4A1 (E-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 262-287 within an internal region of ALDH4A1 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.

Blocking peptide available for competition studies, sc-398776 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

ALDH4A1 (E-11) is recommended for detection of ALDH4A1 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 ALDH4A1 siRNA (h): sc-72478, ALDH4A1 siRNA (m): sc-72479, ALDH4A1 shRNA Plasmid (h): sc-72478-SH, ALDH4A1 shRNA Plasmid (m): sc-72479-SH, ALDH4A1 shRNA (h) Lentiviral Particles: sc-72478-V and ALDH4A1 shRNA (m) Lentiviral Particles: sc-72479-V.

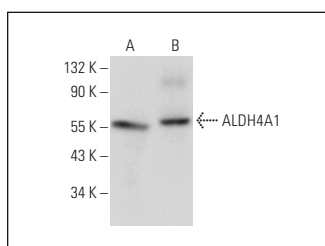
Molecular Weight of ALDH4A1: 62 kDa.

Positive Controls: human liver extract: sc-363766 or mouse liver extract: sc-2256.

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



ALDH4A1 (E-11): sc-398776. Western blot analysis of ALDH4A1 expression in human liver (A) and mouse liver (B) tissue extracts.

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.