SANTA CRUZ BIOTECHNOLOGY, INC.

ALDH6A1 (G-10): sc-393914

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Aldehyde dehydrogenases (ALDHs) mediate the $NADP^+$-dependent oxidation of aldehydes into acids and play an important role in the detoxification of alcohol-derived acetaldehyde, as well as in lipid peroxidation and in the metabolism of corticosteroids, biogenic amines and neurotransmitters. ALDH6A1 (aldehyde dehydrogenase family six member A1), also known as MMSDH or MMSADHA, is a 535 amino acid mitochondrial protein that belongs to the aldehyde dehydrogenase family. Considered a mitochondrial methylmalonate semialdehyde dehydrogenase, ALDH6A1 catalyzes the irreversible oxidative decarboxylation of malonate and methylmalonate semialdehydes to acetyl- and propionyl-CoA. It is suggested that ALDH6A1 plays a role in the valine and pyrimidine catabolic pathways.

REFERENCES

1. Goodwin, G.W., et al. 1989. Purification and characterization of methylmalonate-semialdehyde dehydrogenase from rat liver. Identity to malonate-semialdehyde dehydrogenase. J. Biol. Chem. 264: 14965-14971.
2. Deichaite, I., et al. 1993. Novel use of an iodo-myristyl-CoA analog identifies a semialdehyde dehydrogenase in bovine liver. J. Biol. Chem. 268: 13738-13747.
3. Berthiaume, L., et al. 1994. Regulation of enzymatic activity by active site fatty acylation. A new role for long chain fatty acid acylation of proteins. J. Biol. Chem. 269: 6498-6505.
4. Kedishvili, N.Y., et al. 2000. Mammalian methylmalonate-semialdehyde dehydrogenase. Methods Enzymol. 324: 207-218.
5. Vasiliou, V. and Pappa, A. 2000. Polymorphisms of human aldehyde dehydrogenases. Consequences for drug metabolism and disease. Pharmacology 61: 192-198.
6. Tanaka, N., et al. 2005. Proteome approach to characterize the methylmalonate-semialdehyde dehydrogenase that is regulated by gibberellin. J. Proteome Res. 4: 1575-1582.

CHROMOSOMAL LOCATION

Genetic locus: ALDH6A1 (human) mapping to 14q24.3; Aldh6a1 (mouse) mapping to 12 D1.

SOURCE

ALDH6A1 (G-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 475-498 near the C-terminus of ALDH6A1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 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-393914 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

ALDH6A1 (G-10) is recommended for detection of ALDH6A1 of mouse, rat and 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).

ALDH6A1 (G-10) is also recommended for detection of ALDH6A1 in additional species, including canine and porcine.

Suitable for use as control antibody for ALDH6A1 siRNA (h): sc-92361, ALDH6A1 siRNA (m): sc-141004, ALDH6A1 shRNA Plasmid (h): sc-92361-SH, ALDH6A1 shRNA Plasmid (m): sc-141004-SH, ALDH6A1 shRNA (h) Lentiviral Particles: sc-92361-V and ALDH6A1 shRNA (m) Lentiviral Particles: sc-141004-V.

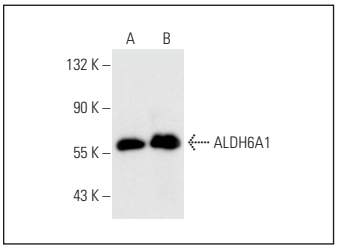
Molecular Weight of ALDH6A1: 58 kDa.

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-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



ALDH6A1 (G-10): sc-393914. Western blot analysis of ALDH6A1 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.