SANTA CRUZ BIOTECHNOLOGY, INC.

ALDH6A1 (A-6): sc-514509

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 6 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 (A-6) is a mouse monoclonal antibody raised against amino acids 181-358 mapping within an internal region 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.

STORAGE

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

APPLICATIONS

ALDH6A1 (A-6) 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).

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.

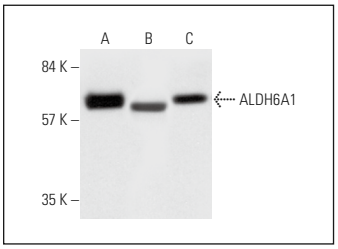
Molecular Weight of ALDH6A1: 58 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, human liver extract: sc-363766 or T-47D cell lysate: sc-2293.

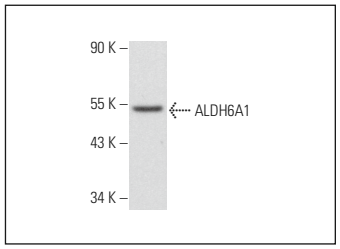
RECOMMENDED SUPPORT REAGENTS

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 (A-6): sc-514509. Western blot analysis of ALDH6A1 expression in human liver tissue extract (**A**) and Hep G2 (**B**) and T-47D (**C**) whole cell lysates.



ALDH6A1 (A-6): sc-514509. Western blot analysis of ALDH6A1 expression in SK-BR-3 whole cell lysate.

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.