

ALDH6A1 (h): 293T Lysate: sc-114910

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., Rougraff, P.M., Davis, E.J. and Harris, R.A. 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., Berthiaume, L., Peseckis, S.M., Patton, W.F. and Resh, M.D. 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., Deichaite, I., Peseckis, S. and Resh, M.D. 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., Goodwin, G.W., Popov, K.M. and Harris, R.A. 2000. Mammalian methylmalonate-semialdehyde dehydrogenase. *Meth. 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., Takahashi, H., Kitano, H., Matsuoka, M., Akao, S., Uchimiya, H. and Komatsu, S. 2005. Proteome approach to characterize the methylmalonate-semialdehyde dehydrogenase that is regulated by gibberellin. *J. Proteome Res.* 4: 1575-1582.
7. Stines-Chaumeil, C., Talfournier, F. and Branlant, G. 2006. Mechanistic characterization of the MSDH (methylmalonate semialdehyde dehydrogenase) from *Bacillus subtilis*. *Biochem. J.* 395: 107-115.
8. Liu, Y., Zhu, X., Zhu, J., Liao, S., Tang, Q., Liu, K., Guan, X., Zhang, J. and Feng, Z. 2007. Identification of differential expression of genes in hepatocellular carcinoma by suppression subtractive hybridization combined cDNA microarray. *Oncol. Rep.* 18: 943-951.
9. Grigo, K., Wirsing, A., Lucas, B., Klein-Hitpass, L. and Ryffel, G.U. 2008. HNF4 α orchestrates a set of 14 genes to down-regulate cell proliferation in kidney cells. *Biol. Chem.* 389: 179-187.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

CHROMOSOMAL LOCATION

Genetic locus: ALDH6A1 (human) mapping to 14q24.3.

PRODUCT

ALDH6A1 (h): 293T Lysate represents a lysate of human ALDH6A1 transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

APPLICATIONS

ALDH6A1 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive ALDH6A1 antibodies. Recommended use: 10-20 μ l per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

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.