SANTA CRUZ BIOTECHNOLOGY, INC.

ALDH1L1 (YY8): sc-100497

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. ALDH1L1 (aldehyde dehydrogenase 1 family member L1), also known as FTHFD or 10-FTHFD (10-formyltetrahydrofolate dehydrogenase), is a cytosolic protein that is developmentally regulated in the cerebellum. ALDH1L1 binds to folate and catalyzes the conversion of 10-formyltetrahydrofolate (10-FTHF) to tetrahydrofolate (THF). This suggests a possible role for ALDH1L1 in the regulation of cellular THF levels as well as in the inhibition of cell proliferation (as 10-FTHF is essential for the synthesis of purine). In addition, the overexpression of ALDH1L1 can restrict cell proliferation *in vitro*.

REFERENCES

1. Champion, K.M., et al. 1994. Identification of a heritable deficiency of the folate-dependent enzyme 10-formyltetrahydrofolate dehydrogenase in mice. Proc. Natl. Acad. Sci. USA 91: 11338-11342.
2. Vasiliou, V., et al. 2000. Role of aldehyde dehydrogenases in endogenous and xenobiotic metabolism. Chem. Biol. Interact. 129: 1-19.

CHROMOSOMAL LOCATION

Genetic locus: ALDH1L1 (human) mapping to 3q21.3; Aldh1l1 (mouse) mapping to 6 D1.

SOURCE

ALDH1L1 (YY8) is a mouse monoclonal antibody raised against recombinant ALDH1L1 of human origin.

PRODUCT

Each vial contains 50 µg IgG_3 kappa light chain in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

ALDH1L1 (YY8) is recommended for detection of ALDH1L1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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), immunohistochemistry (including paraffin-embedded sections) (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 ALDH1L1 siRNA (h): sc-78373, ALDH1L1 siRNA (m): sc-141000, ALDH1L1 shRNA Plasmid (h): sc-78373-SH, ALDH1L1 shRNA Plasmid (m): sc-141000-SH, ALDH1L1 shRNA (h) Lentiviral Particles: sc-78373-V and ALDH1L1 shRNA (m) Lentiviral Particles: sc-141000-V.

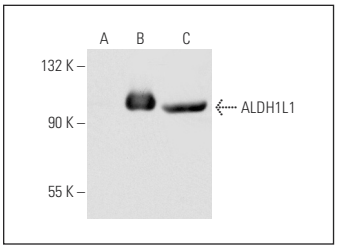
Molecular Weight of ALDH1L1: 99 kDa.

Positive Controls: ALDH1L1 (m4): 293T Lysate: sc-118337 or NIH/3T3 whole cell lysate: sc-2210.

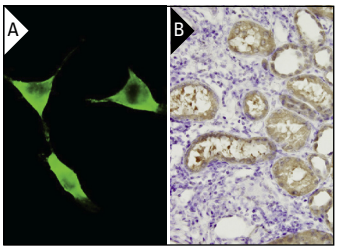
STORAGE

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

DATA



ALDH1L1 (YY8): sc-100497. Western blot analysis of ALDH1L1 expression in non-transfected 293T: sc-117752 (**A**), mouse ALDH1L1 transfected 293T: sc-118337 (**B**) and NIH/3T3 (**C**) whole cell lysates.



ALDH1L1 (YY8): sc-100497. Immunofluorescence staining of paraformaldehyde-fixed NIH/3T3 cells showing membrane and cytoplasmic localization (**A**). Immunoperoxidase staining of formalin-fixed, paraffin-embedded human kidney tissue showing cytoplasmic localization (**B**).

SELECT PRODUCT CITATIONS

1. Sterz, C.M., et al. 2010. A basal-cell-like compartment in head and neck squamous cell carcinomas represents the invasive front of the tumor and is expressing MMP-9. Oral Oncol. 46: 116-122.
2. Mancone, C., et al. 2010. Proteomic analysis reveals a major role for contact inhibition in the terminal differentiation of hepatocytes. J. Hepatol. 52: 234-243.
3. Perdomo, A.B., et al. 2012. Liver protein profiling in chronic hepatitis C: identification of potential predictive markers for interferon therapy outcome. J. Proteome Res. 11: 717-727.
4. Kapucuoglu, N., et al. 2015. The clinicopathological and prognostic significance of CD24, CD44, CD133, ALDH1 expressions in invasive ductal carcinoma of the breast: CD44/CD24 expression in breast cancer. Pathol. Res. Pract. 211: 740-747.
5. Saba, J., et al. 2020. Astrocytes from cortex and striatum show differential responses to mitochondrial toxin and BDNF: implications for protection of striatal neurons expressing mutant huntingtin. J. Neuroinflammation 17: 290.
6. Choi, S., et al. 2021. Suppression of Foxo3-Gatm by miR-132-3p accelerates cyst formation by up-regulating ROS in autosomal dominant polycystic kidney disease. Biomol. Ther. 29: 311-320.

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.