SANTA CRUZ BIOTECHNOLOGY, INC.

ALDH3A2 (F-17): sc-74317

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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. ALDH3A2 (aldehyde dehydrogenase 3 family, member A2), also known as SLS, FALDH or ALDH10, is a 485 amino acid single-pass membrane protein that localizes to the cytoplasmic side of the endoplasmic reticulum and belongs to the aldehyde dehydrogenase family. Expressed in a variety of tissues, including liver, heart, lung, brain, kidney and placenta, ALDH3A2 catalyzes the NAD^+-dependent oxidation of long-chain aliphatic aldehydes to fatty acids, a process that is necessary for detoxification and lipid metabolism. Defects in the gene encoding ALDH3A2 are the cause of Sjoegren-Larsson syndrome (SLS), an autosomal recessive neurocutaneous disorder characterized by severe mental retardation, seizures and speech defects. Multiple isoforms of ALDH3A2 exist due to alternative splicing events.

REFERENCES

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2. Rogers, G.R., et al. 1997. Genomic organization and expression of the human fatty aldehyde dehydrogenase gene (FALDH). Genomics 39: 127-135.
3. Chang, C. and Yoshida, A. 1997. Human fatty aldehyde dehydrogenase gene (ALDH10): organization and tissue-dependent expression. Genomics 40: 80-85.
4. Jean-François, E., et al. 2007. Sjögren-Larsson syndrome and crystalline maculopathy associated with a novel mutation. Arch. Ophthalmol. 125: 1582-1583.
5. Lloyd, M.D., et al. 2007. Characterisation of recombinant human fatty aldehyde dehydrogenase: implications for Sjögren-Larsson syndrome. J. Enzyme Inhib. Med. Chem. 22: 584-590.
6. Ashibe, B., et al. 2007. Dual subcellular localization in the endoplasmic reticulum and peroxisomes and a vital role in protecting against oxidative stress of fatty aldehyde dehydrogenase are achieved by alternative splicing. J. Biol. Chem. 282: 20763-20773.
7. Didona, B., et al. 2007. Novel and recurrent ALDH3A2 mutations in Italian patients with Sjögren-Larsson syndrome. J. Hum. Genet. 52: 865-870.
8. Rizzo, W.B. 2007. Sjögren-Larsson syndrome: molecular genetics and biochemical pathogenesis of fatty aldehyde dehydrogenase deficiency. Mol. Genet. Metab. 90: 1-9.
9. Rizzo, W.B., et al. 2008. Abnormal fatty alcohol metabolism in cultured keratinocytes from patients with Sjögren-Larsson syndrome. J. Lipid Res. 49: 410-419.

STORAGE

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

CHROMOSOMAL LOCATION

Genetic locus: Aldh3a2 (mouse) mapping to 11 B2.

SOURCE

ALDH3A2 (F-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a cytoplasmic domain of ALDH3A2 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-74317 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ALDH3A2 (F-17) is recommended for detection of ALDH3A2 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 ALDH3A2 siRNA (m): sc-72477, ALDH3A2 shRNA Plasmid (m): sc-72477-SH and ALDH3A2 shRNA (m) Lentiviral Particles: sc-72477-V.

Molecular Weight of ALDH3A2: 55 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.