SANTA CRUZ BIOTECHNOLOGY, INC.

ALDH3A2 (C-16): sc-74315

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. 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

1. De Laurenzi, V., et al. 1996. Sjögren-Larsson syndrome is caused by mutations in the fatty aldehyde dehydrogenase gene. Nat. Genet. 12: 52-57.
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., et al. 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.

CHROMOSOMAL LOCATION

Genetic locus: ALDH3A2 (human) mapping to 17p11.2.

SOURCE

ALDH3A2 (C-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a C-terminal cytoplasmic domain of ALDH3A2 of human 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-74315 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ALDH3A2 (C-16) is recommended for detection of ALDH3A2 of human 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).

ALDH3A2 (C-16) is also recommended for detection of ALDH3A2 in additional species, including canine and porcine.

Suitable for use as control antibody for ALDH3A2 siRNA (h): sc-72476, ALDH3A2 shRNA Plasmid (h): sc-72476-SH and ALDH3A2 shRNA (h) Lentiviral Particles: sc-72476-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.

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.

PROTOCOLS

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