

ALDH3A2 (h): 293T Lysate: sc-174820

BACKGROUND

Aldehyde dehydrogenases (ALDHs) mediate the NAD⁺-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 Sjögren-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.

STORAGE

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

PROTOCOLS

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

CHROMOSOMAL LOCATION

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

PRODUCT

ALDH3A2 (h): 293T Lysate represents a lysate of human ALDH3A2 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

ALDH3A2 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive ALDH3A2 antibodies. Recommended use: 10-20 µl per lane.

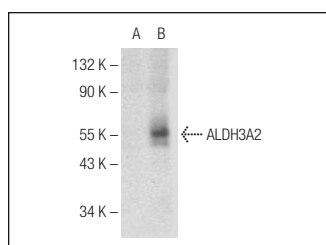
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

ALDH3A2 (G-9): sc-373921 is recommended as a positive control antibody for Western Blot analysis of enhanced human ALDH3A2 expression in ALDH3A2 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

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.

DATA



ALDH3A2 (G-9): sc-373921. Western blot analysis of ALDH3A2 expression in non-transfected: sc-117752 (A) and human ALDH3A2 transfected: sc-174820 (B) 293T whole cell lysates.

RESEARCH USE

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