

ALDH1A1 (L-15): sc-22589

BACKGROUND

Aldehyde dehydrogenases (ALDHs) mediate NADP⁺-dependent oxidation of aldehydes into acids during the detoxification of alcohol-derived acetaldehyde; metabolism of corticosteroids, biogenic amines and neurotransmitters; and lipid peroxidation. ALDH1A1, also designated retinal dehydrogenase 1 (RALDH1 or RALDH1), aldehyde dehydrogenase family 1 member A1, aldehyde dehydrogenase cytosolic, ALDHII, ALDH-E1 or ALDH E1, is a retinal dehydrogenase that participates in the biosynthesis of retinoic acid (RA). There are two major liver isoforms of ALDH1 that can localize to cytosolic or mitochondrial space. The ALDH1A2 (RALDH2, RALDH2-T) gene produces three different transcripts and also catalyzes the synthesis of RA from retinaldehyde. ALDH1A3 (ALDH6, RALDH3, ALDH1A6) is a 37 kb gene that consists of 13 exons and produces a major transcript of approximately 3.5 kb most abundant in salivary gland, stomach and kidney. ALDH3A1 (stomach type, ALDH3, ALDHIII) forms a cytoplasmic homodimer that preferentially oxidizes aromatic aldehyde substrates. ALDH genes upregulate as a part of the oxidative stress response, and appear to be abundant in certain tumors that have an accelerated metabolism toward chemotherapy agents.

CHROMOSOMAL LOCATION

Genetic locus: ALDH1A1 (human) mapping to 9q21.13.

SOURCE

ALDH1A1 (L-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of ALDH1A1 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-22589 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ALDH1A1 (L-15) is recommended for detection of ALDH1A1 of 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 ALDH1A1 siRNA (h): sc-41442, ALDH1A1 shRNA Plasmid (h): sc-41442-SH and ALDH1A1 shRNA (h) Lentiviral Particles: sc-41442-V.

Molecular Weight of ALDH1A1: 56.2 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203 or Hep G2 cell lysate: sc-2227.

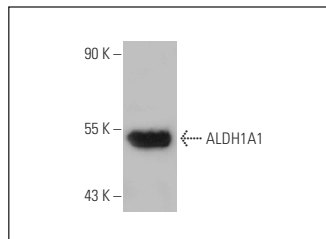
RESEARCH USE

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

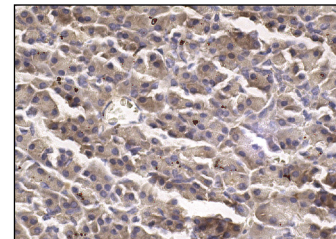
STORAGE

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

DATA



ALDH1A1 (L-15): sc-22589. Western blot analysis of ALDH1A1 expression in K-562 whole cell lysate.



ALDH1A1 (L-15): sc-22589. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Visus, C., et al. 2007. Identification of human aldehyde dehydrogenase 1 family member A1 as a novel CD8⁺ T-cell-defined tumor antigen in squamous cell carcinoma of the head and neck. *Cancer Res.* 67: 10538-10545.
2. Li, T., et al. 2010. ALDH1A1 is a marker for malignant prostate stem cells and predictor of prostate cancer patients' outcome. *Lab. Invest.* 90: 234-244.
3. Lingala, S., et al. 2010. Immunohistochemical staining of cancer stem cell markers in hepatocellular carcinoma. *Exp. Mol. Pathol.* 89: 27-35.
4. Su, Y., et al. 2010. Aldehyde dehydrogenase 1 A1-positive cell population is enriched in tumor-initiating cells and associated with progression of bladder cancer. *Cancer Epidemiol. Biomarkers Prev.* 19: 327-337.
5. Yip-Schneider, M.T., et al. 2011. Alcohol induces liver neoplasia in a novel alcohol-preferring rat model. *Alcohol. Clin. Exp. Res.* 35: 2216-2225.
6. Rappa, F., et al. 2013. Aldehyde dehydrogenase and HSP90 co-localize in human glioblastoma biopsy cells. *Biochem* 95: 782-786.

PROTOCOLS

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



Try **ALDH1A1 (B-5): sc-374149** or **ALDH1A1 (A-6): sc-398578**, our highly recommended monoclonal alternatives to ALDH1A1 (L-15).