

# ALDH3A1 (E-18): sc-54053

## BACKGROUND

Aldehyde dehydrogenases (ALDHs) mediate NADP<sup>+</sup>-dependent oxidation of aldehydes into acids, the 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, ALDH1, 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.

## REFERENCES

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3. Hsu, L.C., et al. 1999. Molecular analysis of two closely related mouse aldehyde dehydrogenase genes: identification of a role for Aldh1, but not Aldh-pb, in the biosynthesis of retinoic acid. *Biochem. J.* 339: 387-395.
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6. Westerlund, M., et al. 2005. Tissue- and species-specific expression patterns of class I, III and IV Adh and Aldh 1 mRNAs in rodent embryos. *Cell Tissue Res.* 322: 227-236.
7. Vasilou, V., et al. 2005. Analysis and update of the human aldehyde dehydrogenase (ALDH) gene family. *Hum. Genomics* 2: 138-143.
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## 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: Aldh3a1 (mouse) mapping to 11 B2.

## SOURCE

ALDH3A1 (E-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of ALDH3A1 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-54053 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

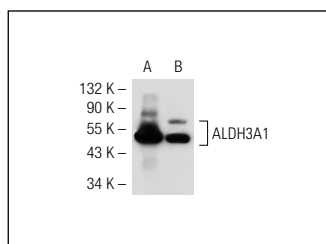
ALDH3A1 (E-18) is recommended for detection of ALDH3A1 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for ALDH3A1 siRNA (m): sc-72033, ALDH3A1 shRNA Plasmid (m): sc-72033-SH and ALDH3A1 shRNA (m) Lentiviral Particles: sc-72033-V.

Molecular Weight of ALDH3A1: 50 kDa.

Positive Controls: mouse eye tissue extract or rat eye tissue extract.

## DATA



ALDH3A1 (E-18): sc-54053. Western blot analysis of ALDH3A1 expression in rat eye (A) and mouse eye (B) tissue extracts.

## RESEARCH USE

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

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Try **ALDH3A1 (G-2): sc-376089** or **ALDH3A1 (E-11): sc-514043**, our highly recommended monoclonal alternatives to ALDH3A1 (E-18).