

Aldh3A1 Antibody

Aldh3A1: Aldehyde dehydrogenase family3 member A1, AldhIII

CATALOG NO.: 4787

BACKGROUND:

Aldh3A1 is a member of the aldehyde dehydrogenase superfamily, a group of NAD(P)(+)-dependent enzymes that catalyze the oxidation of a wide spectrum of aliphatic and aromatic aldehydes (reviewed in 1). Aldh3A1 is highly expressed in stomach and even more strongly in cornea, representing between 5 to 50% of the water soluble protein fraction in mammalian corneas (2,3). It is thought that Aldh3A1 acts to protect the cornea from UV-induced oxidative stress by not only detoxification of reactive aldehydes by also through the direct absorption of UV energy (4). However, corneas from Aldh3A1-null mice are indistinguishable from those from wild-type mice; mice lacking both Aldh3A1 and Aldh1A1 showed increased cataract formation following UVB exposure (5,6), suggesting that Aldh1A1 may be able to compensate for the loss of Aldh3A1. At least two isoforms of Aldh3A1 are known to exist. This antibody is predicted to have no cross-reactivity to Aldh3A2.

SOURCE:

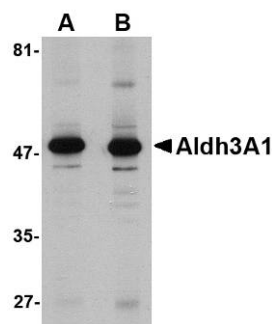
Rabbit polyclonal Aldh3A1 antibody was raised against a 13 amino acid peptide near the carboxy terminus of the human Aldh3A1 (GenBank accession no. NP_000682).

APPLICATION:

Aldh3A1 antibody can be used for detection of Aldh3A1 by Western blot at 1 – 2 µg/ml. (Optimal dilution should be determined by user.) Human stomach tissue lysate can be used as positive control. Aldh3A1 antibody is human, mouse and rat reactive. **This product is for research use only.**

STORAGE:

Aldh3A1 antibody is supplied as immunoaffinity purified IgG in PBS containing 0.02% sodium azide. Store at 4°C, stable for one year.



Western blot analysis of Aldh3A1 in human stomach lysate with Aldh3A1 antibody at (A) 1 and (B) 2 µg/ml.

RELATED PRODUCTS:

Blocking peptide, Catalog No. **4787P**.
Human Stomach Tissue Lysate, Catalog No. **1319**.
Aldh3A2 Antibody, Catalog No. **4789**.

REFERENCES:

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2. Hsu LC, Chang WC, Shibuya A, et al. Human stomach aldehyde dehydrogenase cDNA and genomic cloning, primary structure, and expression in Escheria coli. *J. Biol. Chem.* 1992; 267:3030-7.
3. Pappa A, Sophos NA and Vasiliou V. Corneal and Stomach expression of aldehyde dehydrogenases: from fish to mammals. *Chem. Biol. Interact.* 2001; 130:181-91.
4. Estey T, Cantore M, Weston PA, et al. Mechanisms involved in the protection of UV-induced protein inactivation by the corneal crystallin ALDH3A1. *J. Biol. Chem.* 2007; 282:4382-92.
5. Nees DW, Wawrousek EF, Robinson Jr. WG, et al. Structurally normal corneas in aldehyde dehydrogenase 3a1-deficient mice. *Mol. Cell. Biol.* 2002; 22:849-55.
6. Lassen N, Bateman JB, Estey T, et al. Multiple and additive functions of ALDH3A1 and ALDH1A1: Cataract phenotype and ocular oxidative damage in Aldh3a1(-)/Aldh1a1(-) knock-out mice. *J. Biol. Chem.* 2007; 282:25668-76. (08-01D)