10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Aldh3A1 Antibody

Catalog # ASC10759

Product Information

Application	WB, E
Primary Accession	P30838
Other Accession	NP_000682, 22907049
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	50395
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	Aldh3A1 antibody can be used for detection of Aldh3A1 by Western blot at 1 - 2 □g/mL.

Additional Information

Gene ID	218
Other Names	Aldehyde dehydrogenase, dimeric NADP-preferring, 1.2.1.5, ALDHIII, Aldehyde dehydrogenase 3, Aldehyde dehydrogenase family 3 member A1, ALDH3A1, ALDH3
Target/Specificity	ALDH3A1; At least two isoforms of Aldh3A1 are known to exist. This antibody is predicted to have no cross-reactivity to Aldh3A2.
Reconstitution & Storage	Aldh3A1 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	Aldh3A1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	ALDH3A1
Synonyms	ALDH3
Function	ALDHs play a major role in the detoxification of alcohol- derived acetaldehyde (Probable). They are involved in the metabolism of corticosteroids, biogenic amines, neurotransmitters, and lipid peroxidation (Probable). Oxidizes medium and long chain aldehydes into non-toxic fatty acids (PubMed:1737758). Preferentially oxidizes aromatic aldehyde substrates (PubMed:1737758). Comprises about 50 percent of corneal epithelial soluble

	proteins (By similarity). May play a role in preventing corneal damage caused by ultraviolet light (By similarity).
Cellular Location	Cytoplasm {ECO:0000250|UniProtKB:P47739}.
Tissue Location	High levels in stomach, esophagus and lung; low level in the liver and kidney

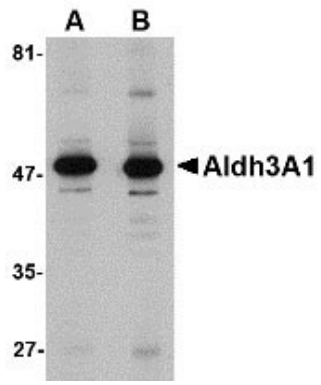
Background

Aldh3A1 Antibody: 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. 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. 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 absorbtion of UV energy. 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, suggesting that Aldh1A1 may be able to compensate for the loss of Aldh3A1.

References

Vasiliou V and Pappa A. Polymorphisms of human aldehyde dehydrogenases. Consequences for drug metabolism and disease. Pharmacology2000; 61:192-8.
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.
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.
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.

Images



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