Data Sheet (Cat.No.TMAY-02376)

Anti-ALDH3A1 Antibody (2Z529)

Product Details

Ig Type:	Rabbit IgG
Reactivity:	Human
Conjugation:	Unconjugated
Clone:	2Z529
Purification:	Protein A

Applications

Verified Activity:	Anti-ALDH3A1 rabbit monoclonal antibody at 1:500 dilution. -Lane A: A549 Whole Cell lysate. -Lysates/proteins at 30 µg per lane. -Secondary -Goat Anti-Rabbit IgG (H+L)/HRP at 1/10000 dilution. -Developed using the ECL technique. -Performed under reducing conditions. -Predicted band size:50 kDa. -Observed band size:50 kDa
Application:	ELISA,WB
Recommended	WB: 1:500-1:2000; ELISA: 1:5000-1:10000

Properties

Stability & Storage:	Store at 2°C-8°C for 1 month. Store at -20°C or -80°C for 12 months. Avoid repeated freeze-thaw cycles. Preservative-Free.
Shipping:	Shipping with blue ice.

Antigen Details

Immunogen:	Recombinant Protein: Human ALDH3A1 Protein (TMPY-02299)
Antigen Species:	Human
Synonyms:	aldehyde dehydrogenase 3 family, member A1;ALDHIII;ALDH3

Research Background

Aldehyde dehydrogenase 3A1 (ALDH3A1) is a metabolic enzyme that catalyzes the oxidation of various aldehydes. Certain types of epithelial tissues in mammals, especially those continually exposed to environmental stress (e.g., corneal epithelium), express ALDH3A1 at high levels and its abundance in such tissues is perceived to help to maintain cellular homeostasis under conditions of oxidative stress. Metabolic as well as non-metabolic roles for ALDH3A1 have been associated with its mediated resistance to cellular oxidative stress. Aldehyde dehydrogenase 1A1 (ALDH1A1) and ALDH3A1 are corneal crystallins. They protect inner ocular tissues from ultraviolet radiation (UVR)-induced oxidative damage through catalytic and non-catalytic mechanisms. Additionally, ALDH3A1 has been postulated to play a regulatory role in the corneal epithelium based on several studies that report an inverse association between ALDH3A1 expression and corneal cell proliferation. Aldehyde dehydrogenase 3A1 (ALDH3A1) plays an important role in many cellular oxidative processes, including cancer chemoresistance, by metabolizing

activated forms of oxazaphosphorine drugs such as cyclophosphamide (CP) and its analogues, such as mafosfamide (MF), ifosfamide (IFM), and 4-hydroperoxycyclophosphamide (4-HPCP). Compounds that can selectively target ALDH3A1 could permit delineation of its roles in these processes and could restore chemosensitivity in cancer cells that express this isoenzyme. ALDH3A1 may act to protect corneal cells against cellular oxidative damage by metabolizing toxic lipid peroxidation products (e.g., 4-HNE), maintaining cellular GSH levels and redox balance, and operating as an antioxidant.

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