

# Recombinant Human ALDH3A1 Protein (Baculovirus, His Tag)



Catalog Number:PKSH030821

**Note:** Centrifuge before opening to ensure complete recovery of vial contents.

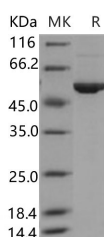
## Description

<b>Synonyms</b>	Aldehyde dehydrogenase;dimeric NADP-preferring;;ALDH3;ALDH3A1;Aldehyde dehydrogenase family 3 member A1;Aldehyde dehydrogenase 3;ALDHIII;ALDH3A1
<b>Species</b>	Human
<b>Expression Host</b>	Baculovirus-Insect Cells
<b>Sequence</b>	Met 1-His 453
<b>Accession</b>	AAH04370.1
<b>Calculated Molecular Weight</b>	52.6 kDa
<b>Observed molecular weight</b>	50 kDa
<b>Tag</b>	N-His

## Properties

<b>Purity</b>	> 90 % as determined by reducing SDS-PAGE.
<b>Endotoxin</b>	< 1.0 EU per µg of the protein as determined by the LAL method.
<b>Storage</b>	Generally, lyophilized proteins are stable for up to 12 months when stored at -20 to -80°C. Reconstituted protein solution can be stored at 4-8°C for 2-7 days. Aliquots of reconstituted samples are stable at < -20°C for 3 months.
<b>Shipping</b>	This product is provided as lyophilized powder which is shipped with ice packs.
<b>Formulation</b>	Lyophilized from sterile 20mM Tris, 500mM NaCl, pH 7.4, 10% glycerol Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Please refer to the specific buffer information in the printed manual.
<b>Reconstitution</b>	Please refer to the printed manual for detailed information.

## Data



> 90 % as determined by reducing SDS-PAGE.

## 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

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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. 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. 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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