

Human ALDH4A1 Protein

Catalog Number: 12856-HNCB



Sino Biological Inc.

Biological Solution Specialist

General Information

Gene Name Synonym:

RP11-128M10.1, ALDH4, P5CD, P5CDh

Protein Construction:

A DNA sequence encoding the human ALDH4A1 (AAH07581.1) (Lys 25-Gln 563) was expressed and purified with two additional amino acids (Gly & Pro) at the N-terminus.

Source: Human

Expression Host: Baculovirus-Insect Cells

QC Testing

Purity: > 95 % as determined by SDS-PAGE

Endotoxin:

< 1.0 EU per µg of the protein as determined by the LAL method

Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

Predicted N terminal: Gly

Molecular Mass:

The secreted recombinant human ALDH4A1 consists of 541 amino acids and predicts a molecular mass of 59.2 kDa. The apparent molecular mass of the protein is approximately 54 kDa in SDS-PAGE under reducing conditions due to glycosylation.

Formulation:

Lyophilized from sterile 20mM Tris, 500mM NaCl, 10% glycerol, pH 8.5.

Normally 5 % - 8 % trehalose and mannitol are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

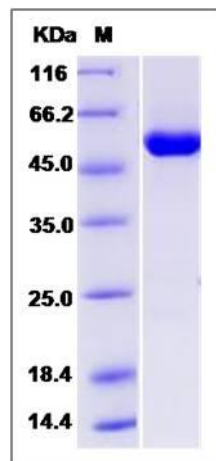
Usage Guide

Storage:

Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

SDS-PAGE:



Reconstitution:

Detailed reconstitution instructions are sent along with the products.

Protein Description

ALDH4A1 belongs to the aldehyde dehydrogenase family. It is a mitochondrial matrix homodimer (~61.7 kDa subunits) and catalyzes the second step in the proline degradation pathway - the irreversible conversion of Δ^1 -pyrroline-5-carboxylate (P5C) derived either from proline or ornithine to glutamate. This reaction is a necessary step connecting the urea and tricarboxylic acid cycles. The preferred substrate is glutamic gamma-semialdehyde, other substrates include succinic, glutaric and adipic. Recent studies have shown that ALDH4A1 is transcriptionally induced by p53 and potentially may have a protective role during cellular stress. Deficiency of ALDH4A1 is associated with type II hyperprolinemia, an autosomal recessive disorder characterized by accumulation of delta-1-pyrroline-5-carboxylate (P5C) and proline.

References

1. Goodman SI. et al., 1974, Biochemical medicine. 10 (4): 329-36.
2. Maruyama K. et al., 1994, Gene. 138 (1-2): 171-4.
3. Vasilou V. et al., 2005, Hum Genomics. 2 (2): 138-43.

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