

Human ALDH1 / ALDH1A1 / ALDC Protein (His Tag)

Catalog Number: 11388-H07E



Sino Biological
Biological Solution Specialist

General Information

Gene Name Synonym:

ALDC; ALDH-E1; ALDH1; ALDH11; HEL-9; HEL-S-53e; HEL12; PUMB1; RALDH1

Protein Construction:

A DNA sequence encoding the human ALDH1A1 (NP_000680.2) (Ser 2-Ser 501) was expressed, with a polyhistidine tag at the N-terminus.

Source: Human

Expression Host: E. coli

QC Testing

Purity: > 98 % as determined by SDS-PAGE

Endotoxin:

Please contact us for more information.

Stability:

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

Predicted N terminal: Met

Molecular Mass:

The recombinant human ALDH1A1 comprises 507 amino acids and has a predicted molecular mass of 41.5 kDa. It migrates as an approximately 45-50 kDa band in SDS-PAGE under reducing conditions.

Formulation:

Lyophilized from sterile 20mM Tris, 500mM NaCl, 20% glycerol, 1mM DTT, pH 8.0

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 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:

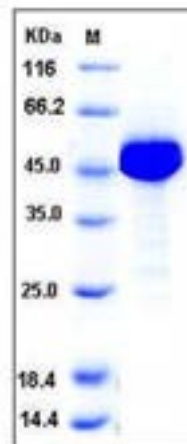
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

Aldehyde dehydrogenase 1 family, member A1 (ALDH1A1), also known as Aldehyde dehydrogenase 1 (ALDH1), or Retinaldehyde Dehydrogenase 1 (RALDH1), is an enzyme that is expressed at high levels in stem cells and that has been suggested to regulate stem cell function. The retinaldehyde dehydrogenase (RALDH) subfamily of ALDHs, composed of ALDH1A1, ALDH1A2, ALDH1A3, and ALDH8A1, regulate development by catalyzing retinoic acid biosynthesis. The ALDH1A1 protein belongs to the aldehyde dehydrogenases family of proteins. Aldehyde dehydrogenase is the second enzyme of the major oxidative pathway of alcohol metabolism. ALDH1A1 also belongs to the group of corneal crystallins that help maintain the transparency of the cornea. Increased ALDH1A1 activity has been found in the stem cell populations of leukemia and some solid tumors. In tumor specimens, increased ALDH1A1 immunopositivity was found not only in secretory type cancer epithelial cells but also in neuroendocrine tumor populations. ALDH1 has been identified as a reliable marker of breast cancer stem cells. ALDH1 expression in primary cancer is an independent prognostic factor in node-positive breast cancer patients. ALDH1A1 plays a key role in normal hematopoiesis, and as a TLX1 transcriptional target, ALDH1A1 may contribute to the ability of this homeoprotein to alter cell fate and induce tumor growth.

References

- 1.Li T, *et al.* (2010). ALDH1A1 is a marker for malignant prostate stem cells and predictor of prostate cancer patients' outcome. *Lab Invest.* 90(2): 234-44.
- 2.Levi BP, *et al.* (2009) Aldehyde dehydrogenase 1a1 is dispensable for stem cell function in the mouse hematopoietic and nervous systems. *Blood.* 113(8): 1670-80.
- 3.Rahman FB, *et al.* (2006) Uncompetitive inhibition of *Xenopus laevis* aldehyde dehydrogenase 1A1 by divalent cations. *Zoolog Sci.* 23(3): 239-44.

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