

ALDH1A3 Protein, Mouse, Recombinant (His)

General Information

Synonyms:	RALDH3;ALDH6;aldehyde dehydrogenase 1 family, member A3;V1
Protein Construction:	A DNA sequence encoding the mouse ALDH1A3 (Q9JHW9) (Ala2-Pro512) was expressed with a polyhistidine tag at the N-terminus. Predicted N terminal: Met
Species:	Mouse
Expression Host:	E. coli
Accession:	Q9JHW9
Molecular Weight:	56.94 kDa (predicted)

QC Testing

Biological Activity:	Active
Purity:	> 95 % as determined by SDS-PAGE.
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing 50 mm TRIS, 50 Mm NaCl pH8.0. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:
A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Aldehyde dehydrogenase 1 family, member A3 (ALDH1A3), also known as Retinaldehyde dehydrogenase 3 (RALDH3), which belongs to the aldehyde dehydrogenase family. ALDH1A3 is a novel Cancer stem cell (CSC) marker with potential clinical prognostic applicability, and demonstrates a clear correlation between CSC prevalence and the development of metastatic breast cancer. The retinoic acid (RA) biosynthesis enzyme aldehyde dehydrogenase 1A3 (ALDH1A3) is a putative androgen-responsive gene in human prostate cancer epithelial

(LNCaP) cells. The RA biosynthesis enzyme ALDH1A3 is androgen responsive and (ii) DHT up-regulation of ALDH1A3 can increase the oxidation of retinal to RA and indirectly affect RA bioactivity and metabolism.

Reference

Marcato P, et al. (2011) Aldehyde dehydrogenase activity of breast cancer stem cells is primarily due to isoform ALDH1A3 and its expression is predictive of metastasis. *Stem Cells*. 29(1)32-45.

Trasino SE, et al. (2007) Androgen regulation of aldehyde dehydrogenase 1A3 (ALDH1A3) in the androgen-responsive human prostate cancer cell line LNCaP. *Exp Biol Med (Maywood)*. 232(6): 762-71.

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