

AR09371PU-N**Human ALDH3 (1-453, His-tag) - Purified****Alternate names:**

ALDH3A1, ALDHIII, Aldehyde dehydrogenase, Aldehyde dehydrogenase 3, Aldehyde dehydrogenase family 3 member A1, dimeric NADP-preferring

Quantity:

50 µg

Concentration:

0.5 mg/ml (determined by Bradford assay)

Background:

ALDH3A1, also known as Aldehyde dehydrogenase 3 family memberA1, is involved in the detoxification of alcohol-derived acetaldehyde and in the metabolism of corticosteroids, biogenic amines, neurotransmitters, and lipid peroxidation. This protein forms a cytoplasmic homodimer that preferentially oxidizes aromatic and medium-chain (6 carbons or more) saturated and unsaturated aldehyde substrates. It is thought to promote resistance to UV and 4-hydroxy-2-nonenal-induced oxidative damage in the cornea.

Uniprot ID:

[P30838](#)

NCBI:

[AAH04370](#)

GeneID:

[218](#)

Species:

Human

Source:

E. coli

Format:

State: Liquid purified protein

Purity: >95% by SDS - PAGE

Buffer System: 20 mM Tris-HCl buffer (pH 8.0) containing 10% glycerol, 0.1 M NaCl

Description:

Recombinant ALDH3A1 protein, fused to His-tag, was expressed in E.coli and purified by using conventional chromatography techniques.

AA Sequence:

MGSSHHHHHH SSGLVPRGSH MSKISEAVKR ARAAFSSGRT RPLQFRIQQL EALQRLIQEQ
EQELVGALAA DLHKNEWNAY YEEVVYVLEE IEYMIQKLPE WAADEPVEKT PQTQQDELYI
HSEPLGVVLV IGTWNYPFNL TIQPMVGAIA AGNAVVLKPS ELSENMASLL ATIIPOYLDK
DLYPVINGGV PETTELLKER FDHILYTGST GVGKIIMTAA AKHLTPVTL E LGGKSPCYVD
KNCDDLVDVACR RIAWGFMSNS GQTCVAPDYI LCDPSIQNQI VEKLLKSLKE FYGEDAKKSR
DYGRIISARH FQVMGLIEG QKVAYGGTGD AATRYIAPTI LTDVDPQSPV MQEEIFGPVL
PIVCVRSLEE AIQFINQREK PLALYMFSSN DKVIKKMIAE TSSGGVAAND VIVHITLHSL
PFGGVGNSGM GSYHGKKSFE TFSHRRSCLV RPLMNDEGLK VRYPPSPAKM TQH

Biological Activity: Specific activity is < 1 unit/ml and was obtained by measuring the increase of NADP in absorbance at 340 nm resulting from the reduction of NAD.

One unit will oxidize 1.0 umole of acetaldehyde to acetic acid per minute at pH 8.0 at 25°C in the presence of beta-NAD, potassium and thiols.

Activity Assay

1. Prepare a 3 ml reaction mixture into a suitable container: The final concentrations are 103 mM Tris, 0.67 mM beta-NAD, 100 mM potassium chloride, 10 mM 2-mercaptoethanol, 2 mM acetaldehyde, 0.0007 % (w/v) BSA.
2. Equilibrate to 25°C and monitor the A340nm until the value is constant using a

spectrophotometer.

3. Add 2.5 ug of recombinant ALDH3A1 into reaction mixture and mix immediately.

4. Record the increase in A340nm for 5 minutes.

Molecular weight: 52.5 kDa (473 aa)

Storage:

Store undiluted at 2-8°C for up to two weeks or (in aliquots) at -20°C or -70°C for longer.

Avoid repeated freezing and thawing.

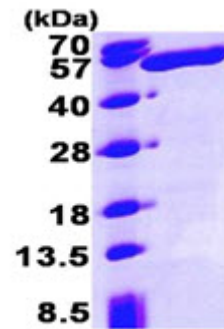
Shelf life: one year from despatch.

General Readings:

Estey T., et al. (2007) *Exp Eye Res.* 84(1):3-12

Bogucka M., et al. (2009) *Acta Pol Pharm.* 66(5):477-82.

Pictures:



15% SDS-PAGE (3ug)

Recombinant human ALDH3A1, 1-453 aa,
His-tagged: 15% SDS-PAGE (3 µg)

