# Recombinant human Aldehyde Dehydrogenase 3-A1/ALDH3A1 protein

Catalog Number: ATGP0472

## PRODUCT INFORMATION

**Expression system**
E.coli

**Domain**
1-453aa

**UniProt No.**
P30838

**NCBI Accession No.**
AAH04370.1

**Alternative Names**
Aldehyde dehydrogenase 3 family memberA1, ALDHIII, ALDH3, Aldehyde dehydrogenase 3 family, memberA1 AHD 4.AHD C, AHD4, AHDC, ALDH III, Aldehyde dehydrogenase 3, Aldehyde dehydrogenase 3 family member A1, Aldehyde dehydrogenase 3A1, Aldehyde dehydrogenase class 3, Aldehyde dehydrogenase dimeric NADP preferring, Aldehyde dehydrogenase family 3 member A1, Aldehyde dehydrogenase family 3 subfamily A1, Aldehyde dehydrogenase isozyme 3, Aldehyde dehydrogenase type III, ALDH 3, ALDH 3A1, ALDH3 A1, ALDH3A 1, MGC10406, Stomach aldehyde dehydrogenase, Tumor associated aldehyde dehydrogenase tumor ALDH.

## PRODUCT SPECIFICATION

**Molecular Weight**
52.5 kDa (473aa)

**Concentration**
0.5mg/ml (determined by Bradford assay)

**Formulation**
Liquid in. 20mM Tris-HCl buffer (pH 8.0) containing 10% glycerol 0.1M NaCl

**Purity**
> 95% by SDS-PAGE

**Biological Activity**
Specific activity is > 5,000pmol/min/ug, and is defined as the amount of enzyme that catalyze the oxidation of 1.0 pmole 4-nitrobenzaldehyde by NADP per minute at pH 9.0 at 37℃.

**Tag**
His-Tag

**Application**
SDS-PAGE, Enzyme Activity

**Storage Condition**
Can be stored at +2C to +8C for 1 week. For long term storage, aliquot and store at -20C to -80C. Avoid repeated freezing and thawing cycles.

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## BACKGROUND

### Description

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. Recombinant ALDH3A1 protein was expressed in E. coli and purified by using conventional chromatography techniques.

### Amino acid Sequence

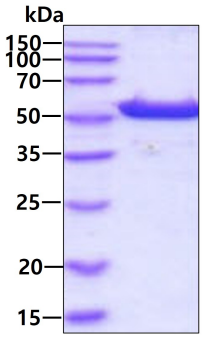
<MGSSHHHHHH SSGLVPRGSH> MSKISEAVKR ARAAFSSGRT RPLQFRIQQL EALQRLIQEQ EQELVGALAA DLHKNEWNAY YEEVVYVLEE IEYMIQKLPE WAADEPVEKT PQTQQDELYI HSEPLGVVLV IGTWNYPFNL TIQPMVGAIA AGNAVVLKPS ELSENMASLL ATIIPQYLDK DLYPVINGGV PETTELLKER FDHILYTGST GVGKIIMTAA AKHLTPVTLE LGGKSPCYVD KNCDLDVACR RIAWGKFMNS GQTCVAPDYI LCDPSIQNQI VEKLKKSLKE FYGEDAKKSR DYGRIISARH FQRVMGLIEG QKVAYGGTGD AATRYIAPTI LTDVDPQSPV MQEEIFGPVL PIVCVRSLEE AIQFINQREK PLALYMFSSN DKVIKKMIAE TSSGGVAAND VIVHITLHSL PFGGVGNSGM GSYHGKKSFE TFSHRRSCLV RPLMNDEGLK VRYPPSPAKM TQH

### General References

Estey T., et al. (2007) Exp Eye Res. 84(1):3-12
Bogucka M, et al. (2009) Acta Pol Pharm. 66(5):477-82.

## DATA

### SDS-PAGE




3ug by SDS-PAGE under reducing condition and visualized by coomassie blue stain.