

# Recombinant human Aldo-keto reductase 7A2/AKR7A2 protein

Catalog Number: ATGP0478

## PRODUCT INFORMATION

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### Expression system

E.coli

### Domain

1-359aa

### UniProt No.

O43488

### NCBI Accession No.

NP\_003680

### Alternative Names

Aldo-keto reductase family 7 member A2, Aflatoxin B1 aldehyde reductase member 2, AFB1 aldehyde reductase 1 (AFB1-AR 1), Aldoketoreductase 7, Succinic semialdehyde reductase (SSA reductase), AFAR, AFAR1, AKR7

## PRODUCT SPECIFICATION

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### Molecular Weight

44 kDa (398aa) confirmed by MALDI-TOF

### Concentration

0.5mg/ml (determined by Bradford assay)

### Formulation

Liquid in. 20mM Tris-HCl buffer (pH 8.0) containing 1mM DTT, 20% glycerol

### Purity

> 90% by SDS-PAGE

### Biological Activity

Specific activity is > 1000pmol/min/ug, and is defined as the amount of enzyme that catalyze the reduction 1.0pmole of 1,2-Naphthoquinone presence of NADPH per minute at pH 7.0 at 25C.

### 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.

## BACKGROUND

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### Description

Aldo-keto reductases, such as AKR7A2, are involved in the detoxification of aldehydes and ketones. This protein can reduce the dialdehyde protein-binding form of aflatoxin B1 (AFB1) to the nonbinding AFB1 dialcohol. It may

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be involved in protection of liver against the toxic and carcinogenic effects of AFB1, a potent hepatocarcinogen. Also, it has been proposed previously to catalyze the NADPH-dependent reduction of succinic semialdehyde (SSA) to gamma-Hydroxybutyrate in human brain. Recombinant AKR7A2 protein was expressed in *E. coli* and purified by using conventional chromatography techniques.

## Amino acid Sequence

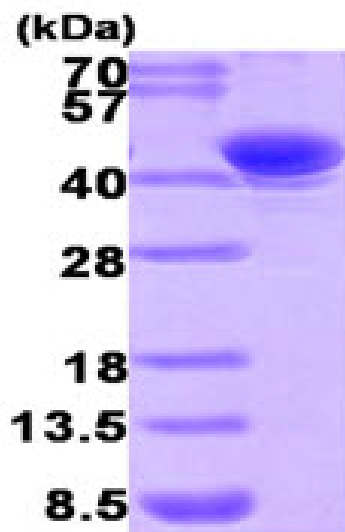
MRGSHHHHHH GMASMTGGGQ MGRDLYDDDD KDRWGSELEM LSAASRVVSR AAVHCALRSP PPEARALAMS  
 RPPPPRVASV LGTMEMGRRM DAPASAAAVR AFLERGHTEL DTAFMYS DGQ SETILGGLGL GLGGGDCRVK IATKANPWDG  
 KSLKPDSVRS QLETSLKRLQ CPQVDLFYLH APDHGTPVEE TLHACQRLHQ EGKFVELGLS NYASWEVAEI CTLCKSNGWI  
 LPTVYQGMYN ATTRQVETEL FPCLRHFLGR FYAYNPLAGG LLTGKYKYED KDGKQPVGRF FGNSWAETYS NRFWKEHHFE  
 AIALVEKALQ AAYGASAPSV TSAALRWMYH HSQIQGAHGD AVILGMSSLE QLEQNLAATE EGPLEPAVVD AFNQAWHLVA  
 HECPNYFR

## General References

Bodreddigari S., et al. (2008) *Chem Res Toxicol.* 21(5):1134-42.  
 Malaspina P., et al. (2009) *Hum Genomics.* 3(2):106-20.

## DATA

### SDS-PAGE



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

15% SDS-PAGE (3ug)