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# Recombinant human Aldo-keto reductase 7A3/AKR7A3 protein

Catalog Number: ATGP0476

#### PRODUCT INFORMATION

# **Expression system**

E.coli

#### **Domain**

1-331aa

#### **UniProt No.**

095154

#### **NCBI Accession No.**

AAH25709.1

### **Alternative Names**

Aldo-keto reductase family 7 member A 3, Aflatoxin B1 aldehyde reductase member 3, AFB1 aldehyde reductase 2(AFAR2), AFB1 AR 2, Aflatoxin aldehyde reductase, Aflatoxin B1 aldehyde reductase 2

# PRODUCT SPECIFICATION

# **Molecular Weight**

41.6 kDa (370aa) confirmed by MALDI-TOF

# Concentration

0.5mg/ml (determined by Bradford assay)

# **Formulation**

Liquid. In Phosphate-Buffered Saline (pH 7.4) containing 10% glycerol

#### **Purity**

> 95% by SDS-PAGE

# **Biological Activity**

Specific activity is > 700pmol/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**

### **Description**

Aldo-keto reductase family 7, member A 3, also known as AKR7A3, is a member of the aldo/keto reductase superfamily, which consists of more than 40 known enzymes and proteins. This member includes a number of



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related monomeric NADPH-dependent oxidoreductases, such as aldehyde reductase, aldose reductase, prostaglandin F synthase, xylose reductase, rho crystallin, and many others. AKR7A3 is involved in the detoxification of aldehydes and ketones. The activity of AKR7A3 may detoxify the aflatoxin B1 (AFB1) dialdehyde, which reacts with proteins, and thereby inhibits AFB 1 induced toxicity. Recombinant human AKR7A3, fused to His-tag at N-terminus, was expressed in E. coli and purified by using conventional chromatography techniques.

# **Amino acid Sequence**

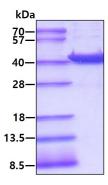
<MRGSHHHHHH GMASMTGGQQ MGRDLYDDDD KDRWGSELE>M SRQLSRARPA TVLGAMEMGR RMDAPTSAAV TRAFLERGHT EIDTAFVYSE GQSETILGGL GLRLGGSDCR VKIDTKAIPL FGNSLKPDSL RFQLETSLKR LQCPRVDLFY LHMPDHSTPV EETLRACHQL HQEGKFVELG LSNYAAWEVA EICTLCKSNG WILPTVYQGM YNAITRQVET ELFPCLRHFG LRFYAFNPLA GGLLTGKYKY EDKDGKQPVG RFFGNTWAEM YRNRYWKEHH FEGIALVEKA LQAAYGASAP SMTSATLRWM YHHSQLQGAH GDAVILGMSS LEQLEQNLAA AEEGPLEPAV VDAFNQAWHL VAHECPNYFR

#### **General References**

Knight LP., et al. (1999) Carcinogenesis. 20(7):1215-23. Bodreddigari S., et al. (2008) Chem Res Toxicol. 21(5):1134-42.

### **DATA**

#### **SDS-PAGE**



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

