

Recombinant Human AKR7A2, His-tagged

Cat. No. AKR7A2-1934H Lot. No. (See product label)

SPECIFICATION

Product Overview	Recombinant AKR7A2 protein fused to his-tag was expressed in <i>E. coli</i> and purified by using conventional chromatography techniques. 44.0kDa (398aa).
Species	Human
Source	<i>E. coli</i>
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 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.
Purity	> 90% by SDS – PAGE.
Physical Appearance	Liquid.
Formulation	In 20mM Tris-HCl buffer (pH8.0) containing 1mM DTT, 20% glycerol.
Concentration	0.5 mg/ml (determined by Bradford assay).
Sequences Of Amino Acids	MRGSHHHHHH GMASMTGGQQ MGRDLYDDDD KDRWGSELEM LSAASR VVSR AAVHCALRSP PPEARALAMS RPPPPRVASV LGT MEMG RRMD APASAAAVR

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AFLERGHTEL DTAFMYSDGQ SETILGGLGL GLGG GDC RVK IATKANPWDG
KSLKPDsvRS QLETSLKRLQ CPQVDLF YLHAPD HGTPVEE TLHACQRLHQ
EGKFVELGLS NYASWEVAEI CTLCKSNGWI LPTVYQGMYN ATTRQVETEL
FPCLRHFGLR FYAYNPLAGLLTGKYKYED KDGKQPvGRF FGNSWAETyR
NRFWKEHHFE AIALVEKALQ AAYGASAPSV TSAALRWMyH HSQLQGAHGd
AVILGMSSLEQLEQNLAATE EGPLEPAVVD AFNQAWHLVA HECPNYFR.

Biological activity

Specific activity: approximately 0.25-0.3 units/mg. Enzymatic activity was confirmed by measuring the amount of enzyme catalyzing the oxidation of 1 micromole NADPH per minute at 25°C. Specific activity was expressed as units/mg protein.

Activity Assay

1.Prepare a 1.mll reaction mix into a suitable container: the final concentrations are 0.1M sodium phosphate (pH7.0), 10mM DL-glyceraldehyde, 0.3mM NADPH.2.Add 50ul of recombinant AKR7A2 solution with various concentrations (2.5ug, 5ug, 10ug) in 750ul reaction buffer. 3.Mix by inversion and Incubate at 25°C for 2.5 minutes.4.Add 200ul of 50 mM DL-glyceraldehyde as a substrate and immediately mix by inversion.5.Record the increase in A340nm for 3 minutes.

Storage

Can be stored at +4°C short term (1-2 weeks). For long term storage, aliquot and store at -20°C or -70°C. Avoid repeated freezing and thawing cycles.

GENE INFORMATION**Gene Name**

AKR7A2 aldo-keto reductase family 7, member A2 (aflatoxin aldehyde reductase) [Homo sapiens]

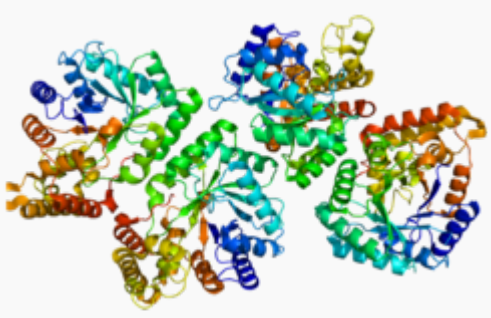
Synonyms

AKR7A2; aldo-keto reductase family 7, member A2 (aflatoxin aldehyde reductase); aldo-keto reductase family 7, member A2; AFAR; AKR7; AFAR1; AFB1-AR1; aflatoxin B1 aldehyde reductase member 2; AFB1-AR 1; SSA reductase; aldoketoreductase 7; AFB1 aldehyde reductase 1; succinic semialdehyde reductase; aflatoxin beta1 aldehyde reductase.

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Gene ID	8574
mRNA Refseq	NM_003689
Protein Refseq	NP_003680
MIM	603418
UniProt ID	O43488
Chromosome Location	1p36.13
Function	aldehyde reductase activity; electron carrier activity; oxidoreductase activity; oxidoreductase activity, acting on the CH-OH group of donors, NAD or NADP as acceptor
PDB rendering based on 2bp1.	

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