Product Data Sheet

Product Name:	AKR7A2 Human
Cat. No.:	GP21382
Batch No.:	1

Product Data

Purity	>98%	Source	Escherichia Coli.
Phycical Appearance	solid	Shipping Condition	Shipped with Ice Packs.
Synonyms	Aflatoxin B1 aldehyde reductase member 2; AFAR; AFAR1; AFB1-AR1; AKR7; Succinic semialdehyde reductase; SSA reductase; AFB1 aldehyde reductase 1; Aldoketoreductase 7; AKR7A2.		
Amino Acid Sequence	MRGSHHHHHH GMASMTGGQQ MGRDLYDDDD KDRWGSELEM LSAASRVVSR AAVHCALRSP PPEARALAMS RPPPPRVASV LGTMEMGRRM DAPASAAAVR AFLERGHTEL DTAFMYSDGQ SETILGGLGL GLGGGDCRVK IATKANPWDG KSLKPDSVRS QLETSLKRLQ CPQVDLFYLH APDHGTPVEE TLHACQRLHQ EGKFVELGLS NYASWEVAEI CTLCKSNGWI LPTVYQGMYN ATTRQVETEL FPCLRHFGLR FYAYNPLAGG LLTGKYKYED KDGKQPVGRF FGNSWAETYR NRFWKEHHFE AIALVEKALQ AAYGASAPSV TSAALRWMYH HSQLQGAHGD AVILGMSSLE QLEQNLAATE EGPLEPAVVD AFNQAWHLVA HECPNYFR.		
Formulation	The AKR7A2 solution contains 20mM Tris-HCl pH-8, 1mM DTT and 20% glycerol.		

Introduction

AKR7A2 participates in the detoxification of aldehydes and ketones.AKR7A2 catalyzes the NADPH-dependent reduction of succinic semialdehyde to gamma-hydroxybutyrate. AKR7A2 is involved in producing the neuromodulator gamma-hydroxybutyrate (GHB). AKR7A2 has extensive substrate specificity. AKR7A2 shows NADPH-dependent aldehyde reductase activity towards 2-carboxybenzaldehyde, 2-nitrobenzaldehyde and pyridine-2-aldehyde (in vitro). AKR7A2 reduces 1,2-naphthoquinone and 9,10-phenanthrenequinone (in vitro). AKR7A2 reduces the dialdehyde protein-binding form of aflatoxin B1 (AFB1) to the non-binding AFB1 dialcohol. AKR7A2 takes part in protection of liver against the toxic and carcinogenic effects of AFB1, a potent hepatocarcinogen.

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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 25C. Specific activity was expressed as units/mg protein.

Stability

Store at 4°C if entire vial will be used within 2-4 weeks. Store, frozen at -20°C for longer periods of time. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA).Avoid multiple freeze-thaw cycles.

Background

AKR7A2 Human Recombinant fused to a 39 amino acid His Tag at N-terminal produced in E.Coli is a single, non-glycosylated, polypeptide chain containing 398 amino acids (1-359 a.a) and having a molecular mass of 44 kDa. The AKR7A2 is purified by proprietary chromatographic techniques.

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