
Product Data Sheet

Product Name: AKR1B1 Human
 Cat. No.: GP21374
 Batch No.: 1

Product Data

Purity	>98%	Source	Escherichia Coli.
Physical Appearance	solid	Shipping Condition	Shipped with Ice Packs.
Synonyms	Aldehyde Reductase; EC 1.1.1.21; ALR2; ALDR1; MGC1804; Aldo-keto reductase family1 member B1; Aldose Reductase; AKR1B1; AR; ADR.		
Amino Acid Sequence	MASRLLLNNG AKMPILGLGT WKSPPGQVTE AVKVAIDVGY RHIDCAHVYQ NENEVGVAIQ EKLREQVVKR EELFIVSKLW CTYHEKGLVK GACQKTLSDL KLDYLDLYLI HWPTGFKPGK EFFPLDESGN VVPSDTNILD TWAAMEELVD EGLVKAIGIS NFNHLQVEMI LNKPGLKYKP AVNQIECHPY LTQEKLIQYC QSKGIVVTAY SPLGSPDRPW AKPEDPSLLE DPRIKAI AAK HNKTTAQVLI RFPMQRNLVV IPKSVTPERI AENFKVDFE LSSQDMTLL SYNRNWRVCA LLSCTSHKDY PFHEEF.		
Formulation	The 1mg/ml protein solution contains 20mM Tris-HCl buffer pH 8, 10% glycerol, and 1mM DTT.		

Introduction

AKR1B1 is part of the aldo/keto reductase superfamily, which consists of more than 40 known enzymes and proteins. AKR1B1 catalyzes the reduction several aldehydes, including the aldehyde form of glucose, and thus involved in the development of diabetic complications by catalyzing the reduction of glucose to sorbitol. AKR1B1 catalyzes the NADPH-dependent reduction of a wide variety of carbonyl-containing compounds to their corresponding alcohols. Transgenic mice over expressing human aldose reductase show that AKR1B1 is a key player in ischemic injury and impairment of functional and metabolic recovery after ischemia. Aldose Reductase is an obligatory mediator of TNF-alpha signaling leading to an increase in the expression of adhesion molecules and increased binding of monocytes to the endothelium. AKR1B1 is a critical regulator of TNF-alpha-induced apoptotic signaling in endothelial cells.

Biological Activity

Caution: Product has not been fully validated for medical applications. For research use only.

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Specific activity is > 800pmol/min/ug, and is defined as the amount of enzyme that catalyze the reduction of 1.0 pmole DL-glyceraldehyde in the presence of NADPH per minute at pH7.0 at 37°C .

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

AKR1B1 Human Recombinant amino produced in E.Coli is a single, non-glycosylated polypeptide chain containing 316 amino acids having a molecular mass of 35.8 kDa. The AKR1B1 is purified by proprietary chromatographic techniques.

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