

AKR1B1 Protein, Human, Recombinant (His)

General Information

Synonyms:	ALDR1;AR;ADR;aldo-keto reductase family 1, member B1 (aldose reductase);MGC1804;ALR2
Protein Construction:	A DNA sequence encoding the human AKR1B1 (P15121) (Met 1-Phe 316) was expressed, with a polyhistidine tag at the N-terminus. Predicted N terminal: Met
Species:	Human
Expression Host:	E. coli
Accession:	P15121
Molecular Weight:	37.9 kDa (predicted); 36 kDa (reducing conditions)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 90 % as determined by SDS-PAGE
Endotoxin:	Please contact us for more information.
Formulation:	Supplied as sterile PBS, 20% glycerol, pH 7.5.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store the product under sterile conditions at -20°C to -80°C. Samples are stable for up to 12 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

Proteins are shipped with blue ice.

Protein Background

Aldose reductase (AKR1B1) belongs to the aldo/keto reductase superfamily. AKR1B1 is a NADPH-dependent aldo-keto reductase best known as the rate-limiting enzyme of the polyol pathway. Expression of AKR1B1 was the highest in lens and retina. It is the first enzyme in the polyol pathway through which glucose is converted to sorbitol which is important for the function of various organs in the body, and has been implicated in the etiology of diabetic complications. AKR1B1 is quite abundant in the collecting tubule cells and thought to provide protection against hypertonic environment. Some human tissues contain AKR1B1 as well as AKR1B10, a closely related member of the aldo-keto reductase superfamily.

Reference

- Huang SP, et al. (2010) Aldo-Keto Reductases in the Eye. *Journal of Ophthalmology*. 326 (3): 625-36.
- Aida K, et al. (2000) Disruption of Aldose Reductase Gene (Akr1b1) Causes Defect in Urinary Concentrating Ability and Divalent Cation Homeostasis. *Biochemical and Biophysical Research Communications*. 277 (2): 281-6.
- Baba SP, et al. (2009) Posttranslational glutathiolation of aldose reductase (AKR1B1): A possible mechanism of protein recovery from S-nitrosylation. *Chemico-Biological Interactions*. 178 (1-3): 250-8.
- Liao CS, et al. (2009) Regulation of AKR1B1 by thyroid hormone and its receptors. *Molecular and Cellular Endocrinology*. 307 (1-2): 109-17.

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