

**AR09195PU-L****Recombinant Human AKR1B10 (aa 1-316) - Purified****Alternate names:**

AKR1B11, ARL-1, Aldo-keto reductase family 1 member B10, Aldose reductase-like, Aldose reductase-related protein, Small intestine reductase

**Quantity:**

0.5 mg

**Concentration:**

1 mg/ml (determined by Bradford assay)

**Background:**

AKR1B10, also known as Aldo-keto reductase family 1, member B10, AKR1B10 is a monomeric protein that efficiently catalyzes the reduction of aromatic and aliphatic aldehydes and ketones. AKR1B10 is ubiquitously expressed in many human tissues but is highly expressed in small intestine, colon and adrenal gland. This protein is pathogenically involved in diabetic complications and has been reported that AKR1B10 is overexpressed in human tumors, such as liver, breast, and lung cancer, and may play a critical role in the development and progression of cancer.

**Uniprot ID:**[O60218](#)**NCBI:**[NP\\_064695](#)**GeneID:**[57016](#)**Species:**

Human

**Source:**

E. coli

**Format:****State:** Liquid purified protein**Purity:** >95% pure by SDS-PAGE**Buffer System:** 20mM Tris-HCl buffer (pH 8.0) containing 10% Glycerol**Description:**

Recombinant Human AKR1B10 protein was expressed in *E.coli* and purified by using conventional chromatography.

**AA Sequence:**

MATFVELSTK AKMPIVGLGT WKSPLGKVK E AVKVAIDAGY RHIDCAYVYQ NEHEVGEAIQ  
EKIQEKAVKR EDLFIVSKLW PTFFERPLVR KAFEKTLKDL KLSYLDVYLI HWPQGFKSGD  
DLFPKDDKGN AIGGKATFLD AWEAMEELVD EGLVKALGVS NFSHFQIEKL LNKPGPKYKYP  
VTNQVECHPY LTQEKLIQYC HSKGITVTAY SPLGSPDRPW AKPEDPSLLE DPKIKEIAAK  
HKKTAAQVLI RFHIQRNVIV IPKSVTPARI VENIQVDFDK LSDEEMATIL SFNRNWRACN  
VLQSSHLEDY PFDAEY

**Biological Activity:** Approximately 0.32-0.4 units/mg protein.

Enzymatic activity was confirmed by measuring the amount of enzyme catalyzing the oxidation of 1 micromole NADPH per minute at 25°C.

**Activity Assay**

1. Prepare a 1.0 ml reaction mix into a suitable container: The final concentrations are 0.1M sodium phosphate (pH 7.0), 10mM DL-glyceraldehyde, 0.3mM NADPH.
2. Add 50 ul of recombinant AKR1B10 solution with various concentrations (2.5ug, 5ug, 10ug) in 750 ul reaction buffer.
3. Mix by inversion and incubate at 25°C for 2.5 minutes.
4. Add 200 ul of 50 mM DL-glyceraldehyde as a substrate and immediately mix by inversion.
5. Record the increase in A340nm for 3 minutes.

**Molecular weight:** kDa (316 aa), confirmed by MALDI-TOF.

- Storage:** Store undiluted at 2-8°C for up to two weeks or (in aliquots) at -20°C or -70°C for longer.  
Avoid repeated freezing and thawing.  
Shelf life: one year from despatch.
- Product Citations:** **Purchased from Acris:**  
1. Stefek M, Soltesova Prnova M, Majekova M, Rechlin C, Heine A, Klebe G. Identification of Novel Aldose Reductase Inhibitors Based on Carboxymethylated Mercaptotriazinoindole Scaffold. *J Med Chem.* 2015 Mar 4. PubMed PMID: 25695864.
- General Readings:**  
1. Yabe D, Nakamura T, Kanazawa N, Tashiro K, Honjo T. Calumenin, a Ca<sup>2+</sup>-binding protein retained in the endoplasmic reticulum with a novel carboxyl-terminal sequence, HDEF. *J Biol Chem.* 1997 Jul 18;272(29):18232-9. PubMed PMID: 9218460.  
2. Vorum H, Liu X, Madsen P, Rasmussen HH, Honoré B. Molecular cloning of a cDNA encoding human calumenin, expression in *Escherichia coli* and analysis of its Ca<sup>2+</sup>-binding activity. *Biochim Biophys Acta.* 1998 Jul 28;1386(1):121-31. PubMed PMID: 9675259.
- Pictures:** AKR1B10, 1-316 aa human, recombinant:  
15% SDS-PAGE (3 µg)

