10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

# AKR1B1 Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP2735b

## Product Information

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|---|---|
| **Application** | IHC-P, IF, WB, E |
| **Primary Accession** | P15121 |
| **Reactivity** | Human |
| **Predicted** | Bovine, Canine, Rabbit |
| **Host** | Rabbit |
| **Clonality** | Polyclonal |
| **Isotype** | Rabbit IgG |
| **Calculated MW** | 35853 |
| **Antigen Region** | 290-316 |

## Additional Information

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| **Gene ID** | 231 |
| **Other Names** | Aldose reductase, AR, Aldehyde reductase, Aldo-keto reductase family 1 member B1, AKR1B1, ALDR1 |
| **Target/Specificity** | This AKR1B1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 290-316 amino acids from the C-terminal region of human AKR1B1. |
| **Dilution** | IHC-P~~1:100~500 IF~~1:10~50 WB~~1:1000 E~~Use at an assay dependent concentration. |
| **Format** | Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS. |
| **Storage** | Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles. |
| **Precautions** | AKR1B1 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures. |

## Protein Information

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| **Name** | AKR1B1 |
| **Synonyms** | ALDR1, ALR2 {ECO:0000303\|PubMed:17368668 |
| **Function** | Catalyzes the NADPH-dependent reduction of a wide variety of |

carbonyl-containing compounds to their corresponding alcohols. Displays enzymatic activity towards endogenous metabolites such as aromatic and aliphatic aldehydes, ketones, monosaccharides, bile acids and xenobiotics substrates (PubMed:10510318, PubMed:12732097, PubMed:1332968, PubMed:21329684, PubMed:8245005, PubMed:4402695, PubMed:1936586). It catalyzes the reduction of glucose to sorbitol, the first step of the polyol pathway, an alternative route of glucose metabolism that converts glucose to fructose (PubMed:4402695, PubMed:1936586). This pathway becomes highly active under elevated glucose levels, such as during hyperglycemia (PubMed:1936586). Reduces steroids and their derivatives and prostaglandins. Displays low enzymatic activity toward all-trans-retinal, 9-cis-retinal, and 13-cis- retinal (PubMed:12732097, PubMed:19010934, PubMed:8343525). Catalyzes the reduction of diverse phospholipid aldehydes such as 1-palmitoyl-2- (5-oxovaleroyl)-sn -glycero-3-phosphoethanolamin (POVPC) and related phospholipid aldehydes that are generated from the oxydation of phosphotidylcholine and phosphatdyleethanolamides (PubMed:17381426). Plays a role in detoxifying dietary and lipid-derived unsaturated carbonyls, such as crotonaldehyde, 4-hydroxynonenal, trans-2-hexenal, trans-2,4-hexadienal and their glutathione-conjugates carbonyls (GS- carbonyls) (PubMed:21329684).

**Cellular Location** Cytoplasm.

**Tissue Location** Highly expressed in embryonic epithelial cells (EUE) in response to osmotic stress.

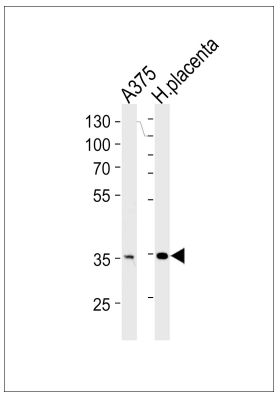
## Background

AKR1B1 is a member of the aldo/keto reductase superfamily, which consists of more than 40 known enzymes and proteins. This protein catalyzes the reduction of a number of aldehydes, including the aldehyde form of glucose, and is thereby implicated in the development of diabetic complications by catalyzing the reduction of glucose to sorbitol.

## References

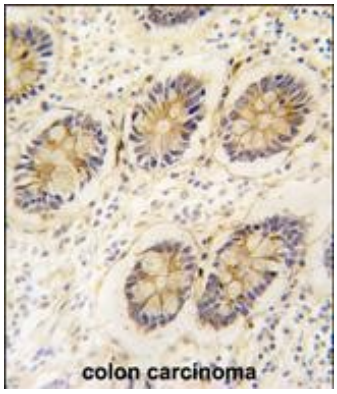
Steuber,H.,J. Mol. Biol. 379 (5), 991-1016 (2008)
Gleissner,C.A.,Arterioscler. Thromb. Vasc. Biol. 28 (6), 1137-1143 (2008)
Grundmann,U.,DNA Cell Biol. 9 (3), 149-157 (1990)

## Images

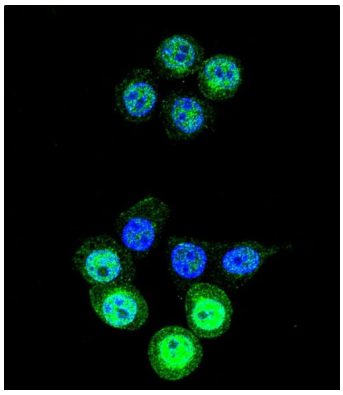



AKR1B1 Antibody (C-term) (Cat. #AP2735b) western blot analysis in A375 cell line and human placenta tissue lysates (35ug/lane).This demonstrates the AKR1B1 antibody detected the AKR1B1 protein (arrow).

Formalin-fixed and paraffin-embedded human colon carcinoma tissue reacted with AKR1B1 antibody (C-term)




(Cat.#AP2735b), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.



Confocal immunofluorescent analysis of AKR1B1 Antibody (C-term)(Cat#AP2735b) with 293 cell followed by Alexa Fluor 488-conjugated goat anti-rabbit IgG (green).DAPI was used to stain the cell nuclear (blue).

## Citations

- Induction of PGF2α synthesis by cortisol through GR dependent induction of CBR1 in human amnion fibroblasts.
- Investigation of synergistic mechanism and identification of interaction site of aldose reductase with the combination of gigantol and syringic acid for prevention of diabetic cataract.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.