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AKR1B1 Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AW5144

Product Information

Application	IF, IHC-P, WB
Primary Accession	P15121
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Calculated MW	35853
Isotype	Rabbit IgG
Antigen Source	HUMAN

Additional Information

Gene ID	231
Antigen Region	290-316
Other Names	AKR1B1; ALDR1; Aldose reductase; Aldehyde reductase; Aldo-keto reductase family 1 member B1
Dilution	IF~~1:10~50 IHC-P~~1:100~500 WB~~1:1000
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.
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

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.

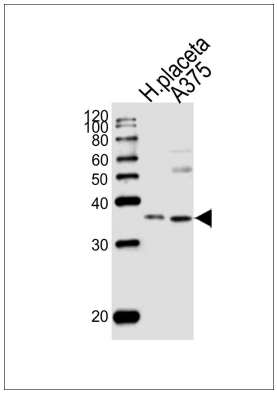
Background

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

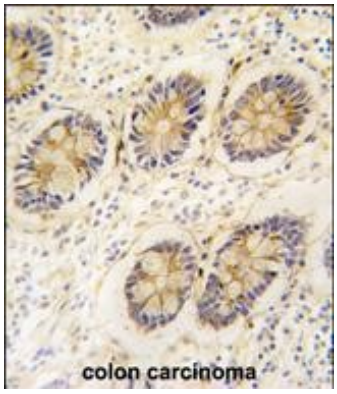
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Gleissner,C.A.,Arterioscler. Thromb. Vasc. Biol. 28 (6), 1137-1143 (2008)
Grundmann,U.,DNA Cell Biol. 9 (3), 149-157 (1990)

Images

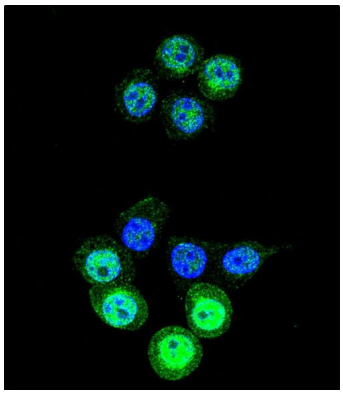


Western blot analysis of lysates from human placeta tissue and A375 cell line (from left to right), using AKR1B1 Antibody (C-term)(Cat. #AW5144). AW5144 was diluted at 1:1000 at each lane. A goat anti-rabbit IgG H&L(HRP) at 1:10000 dilution was used as the secondary antibody.Lysates at 20ug per lane.

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



(Cat.#AW5144), 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#AW5144) with 293 cell followed by Alexa Fluor 488-conjugated goat anti-rabbit lgG (green).DAPI was used to stain the cell nuclear (blue).

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