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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, monosacharides, bile acids and xenobiotics substrates. Key enzyme in the polyol pathway, catalyzes reduction of glucose to sorbitol 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.

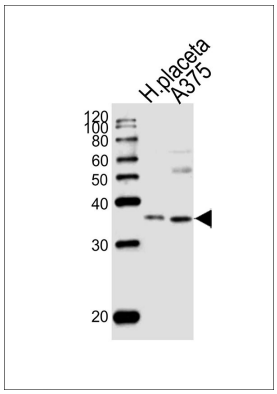
Background

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

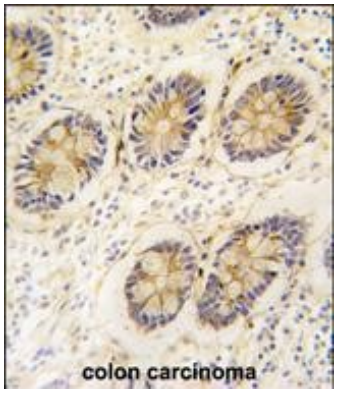
Steuber,H.,J. Mol. Biol. 379 (5), 991-1016 (2008)
Gleissner,C.A.,Arterioscler. Thromb. Vasc. Biol. 28 (6), 1137-1143 (2008)
Grundmann,U.,DNA Cell Biol. 9 (3), 149-157 (1990)

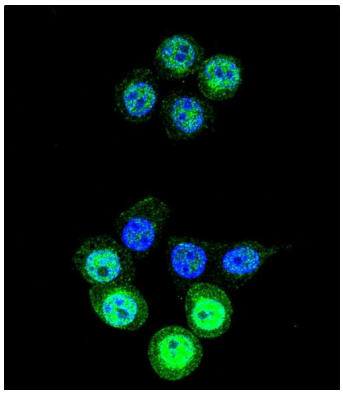
Images



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).