10320 Camino Santa Fe, Suite G
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Tel: 858.875.1900 Fax: 858.875.1999

AKR1B1 Antibody (CT)

Rabbit Polyclonal Antibody
Catalog # ABV11289

Specification

AKR1B1 Antibody (CT) - Product Information

Application	**IF, IHC, WB**
Primary Accession	P15121
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit IgG**
Calculated MW	**35853**

AKR1B1 Antibody (CT) - Additional Information

Gene ID 231

Positive Control	**Western blot: A375 cell line lysates, IHC: human colon carcinoma, IF: 293 cells.**
Application & Usage	**Western blot: ~1:1000, IHC: ~1:10 – 1:50, IF: ~1:10 – 1:50.**

Other Names
AKR1B1; ALDR1; Aldose reductase; Aldehyde reductase; Aldo-keto reductase family 1 member B1.

Target/Specificity
AKR1B1

Antibody Form
Liquid

Appearance
Colorless liquid

Formulation
100 µl of antibody in PBS with 0.09% (W/V) sodium azide

Handling
The antibody solution should be gently mixed before use.

Reconstitution & Storage
-20 °C

Background Descriptions

Precautions
AKR1B1 Antibody (CT) is for research use only and not for use in diagnostic or therapeutic procedures.

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AKR1B1 Antibody (CT) - 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.

AKR1B1 Antibody (CT) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

AKR1B1 Antibody (CT) - Images

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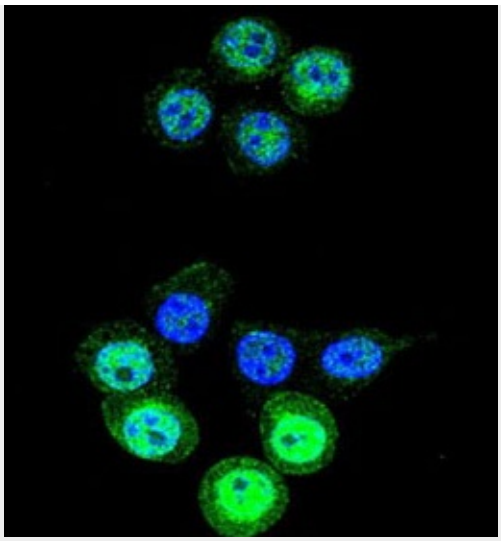
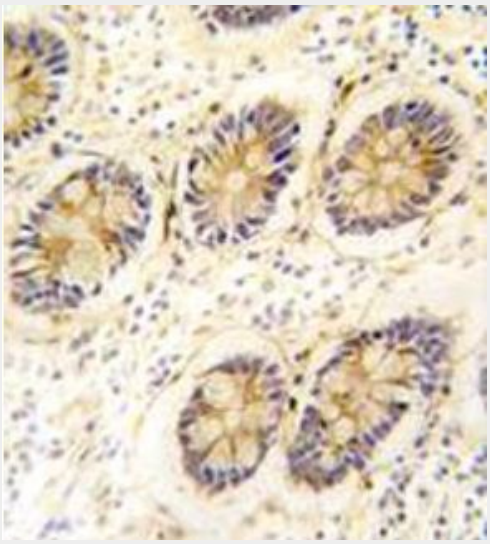
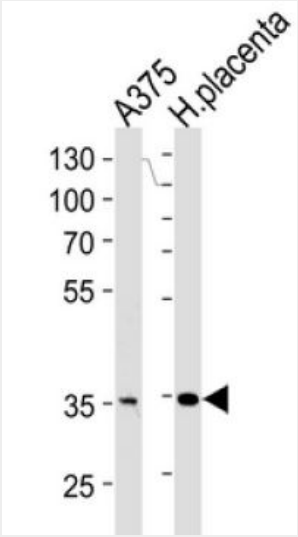


Confocal immunofluorescent analysis of AKR1B1 Antibody with 293 cell followed by Alexa Fluor 488-conjugated goat anti-rabbit lgG (green).DAPI was used to stain the cell nuclear (blue).



Formalin-fixed and paraffin-embedded human colon carcinoma tissue reacted with AKR1B1 antibody, which was peroxidase-conjugated to the secondary antibody, followed by DAB staining.



AKR1B1 Antibody western blot analysis in A375 cell line and human placenta tissue lysates (35 µg/lane).

AKR1B1 Antibody (CT) - Background

Aldose reductase (also designated AKR1B1, ALDR1, ALR2 or AR) is member of the monomeric NADPH-dependent aldoketoreductase family. Aldose reductase, which has a molecular mass of 36 kDa, catalyzes the reduction of various aldehydes and has been implicated in the development of diabetic complications by catalyzing the reduction of the aldehyde form of glucose, to the corresponding sugar alcohol, sorbitol. This pathway plays a minor role in glucose metabolism in most tissues, however in diabetic hyperglycemia, cells undergoing insulin-independent uptake of glucose accumulate significant quantities of sorbitol. The resulting hyperosmotic stress to cells may be a cause of diabetic complications such as neuropathy, retinopathy, and cataracts. Aldose reductase is very similar to human aldehyde reductase, bovine prostaglandin F synthase and to the European common frog protein, rho-crystallin.