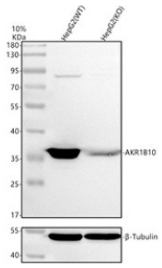
AKR1B10 Antibody / Aldo-Keto Reductase Family 1 Member B10 Polyclonal Antibody (R32646)

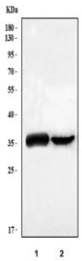
Catalog No.	Formulation	Size
R32646	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

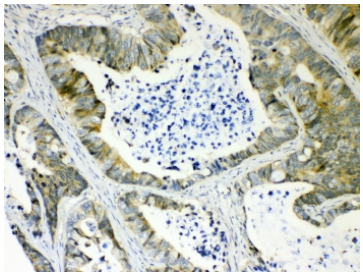
Species Reactivity	Human
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
Buffer	Lyophilized from 1X PBS with 2% Trehalose and 0.025% sodium azide
UniProt	O60218
Localization	Cytoplasmic, secreted
Applications	Western blot: 0.5-1ug/ml Immunohistochemistry (FFPE): 1-2ug/ml Immunofluorescence: 5ug/ml
Limitations	This AKR1B10 Antibody / Aldo-Keto Reductase Family 1 Member B10 Polyclonal Antibody is available for research use only.



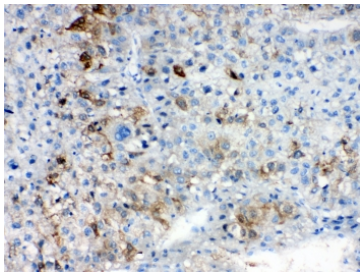
AKR1B10 Antibody WB Analysis of Wild-Type and AKR1B10 Knockout Human HepG2 Cells. Western blot analysis of human HepG2 wild-type (WT, lane 1) and AKR1B10 knockout (KO, lane 2) whole-cell lysates using Aldo-Keto Reductase Family 1 Member B10 Polyclonal Antibody at 0.5 ug/ml. Each lane contained 30 ug of total protein separated by 10% SDS-PAGE under reducing conditions. A prominent immunoreactive band near 36 kDa in WT lysate is substantially reduced in the KO sample, supporting target-dependent recognition of AKR1B10. A faint residual band remains detectable in the KO lane at the displayed exposure. Beta-Tubulin serves as the loading control.



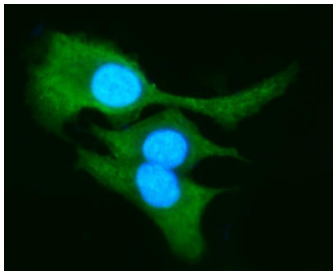
AKR1B10 Antibody WB Analysis of Human A549 and HepG2 Cell Lysates. Western blot analysis of human A549 (lane 1) and HepG2 (lane 2) cell lysates using Aldo-Keto Reductase Family 1 Member B10 Polyclonal Antibody. A prominent immunoreactive band is detected near 36 kDa in both samples, consistent with the predicted molecular weight of AKR1B10.



AKR1B10 Antibody IHC Staining of Human Intestinal Cancer Tissue. Immunohistochemical analysis of formalin-fixed, paraffin-embedded human intestinal cancer tissue using Aldo-Keto Reductase Family 1 Member B10 Polyclonal Antibody. Brown immunoreactivity is observed predominantly in the cytoplasm of gland-forming epithelial tumor cells, with variation in staining intensity among cells and glandular structures. Nuclei are counterstained blue with hematoxylin. Heat-induced epitope retrieval was performed using citrate buffer at pH 6 for 20 minutes.



AKR1B10 Antibody IHC Staining of Human Liver Cancer Tissue. Immunohistochemical analysis of formalin-fixed, paraffin-embedded human liver cancer tissue using Aldo-Keto Reductase Family 1 Member B10 Polyclonal Antibody. Heterogeneous brown cytoplasmic staining is observed in tumor cells, including scattered cells exhibiting more prominent immunoreactivity. Nuclei are counterstained blue with hematoxylin. Heat-induced epitope retrieval was performed using citrate buffer at pH 6 for 20 minutes.



AKR1B10 Antibody IF Staining of Human A549 Cells. Immunofluorescence analysis of fixed human A549 cells using Aldo-Keto Reductase Family 1 Member B10 Polyclonal Antibody. Green AKR1B10 immunoreactivity is distributed throughout the cytoplasm, with little apparent nuclear staining. Cell nuclei are counterstained blue with DAPI. Heat-induced epitope retrieval was performed using citrate buffer at pH 6 for 20 minutes.

Description

AKR1B10 Antibody / Aldo-Keto Reductase Family 1 Member B10 Polyclonal Antibody targets AKR1B10, an NADPH-dependent oxidoreductase belonging to the aldo-keto reductase superfamily. Also known as aldose reductase-like protein 1 and small intestine reductase, AKR1B10 catalyzes the reduction of selected aldehydes and carbonyl-containing compounds. Its substrate preferences distinguish it from closely related enzymes, including AKR1B1, and connect its activity to cellular defense against reactive metabolites and the regulation of lipid-derived signaling molecules.

AKR1B10 can reduce reactive aldehydes generated during lipid peroxidation, including certain electrophilic carbonyl compounds capable of modifying proteins and other cellular constituents. By converting susceptible aldehydes into corresponding alcohols, the enzyme may help limit carbonyl-associated damage under conditions of oxidative or metabolic stress. Its catalytic efficiency varies considerably among substrates, so its physiological contribution depends on the metabolites present in a particular cellular environment.

Retinoid metabolism represents another important aspect of AKR1B10 biology. The enzyme can reduce retinaldehyde to retinol, potentially influencing the availability of retinaldehyde for oxidation to retinoic acid. Because retinoic acid regulates transcriptional programs involved in differentiation, proliferation, and tissue homeostasis, changes in AKR1B10 activity may affect signaling indirectly through altered retinoid balance. These relationships are context-dependent and do not

establish that AKR1B10 controls retinoic acid signaling in every tissue.

AKR1B10 expression has attracted attention in cancer biology. Increased expression has been reported in subsets of hepatocellular carcinoma and other malignancies, although expression patterns differ among tumor types and stages. Investigations have linked AKR1B10 to altered carbonyl metabolism, cell survival, and metabolic adaptation. Its expression may also reflect changes in cellular differentiation or stress-response programs rather than a uniform oncogenic function.

Understanding AKR1B10 requires consideration of its enzymatic activity, substrate availability, and relationships with other aldo-keto reductases. AKR1B10 Antibody is relevant to studies examining aldehyde detoxification, retinoid homeostasis, and metabolic alterations associated with cellular stress and tumor development.

Explore additional antibodies targeting oxidoreductases, metabolic enzymes, and proteins involved in aldehyde detoxification and cellular metabolism in our Metabolism Antibodies collection.

Application Notes

Optimal dilution of the AKR1B10 Antibody / Aldo-Keto Reductase Family 1 Member B10 Polyclonal Antibody should be determined by the researcher.

Immunogen

Amino acids 285-316 (EMATILSFNRNWRACNVLQSSHLEDYPFNAEY) from the human protein were used as the immunogen for the AKR1B10 antibody.

Storage

After reconstitution, the AKR1B10 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

Aldose Reductase-Like Protein 1 antibody, Aldose Reductase-Like 1 antibody, Small Intestine Reductase antibody, Aldo-Keto Reductase B10 antibody, Aldo-Keto Reductase Family 1 B10 antibody, AKR1B10 Protein antibody, ARL-1 antibody, ARL1 Aldose Reductase-Like antibody, AKR1B10 Oxidoreductase antibody, AKR1B10 Enzyme antibody

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