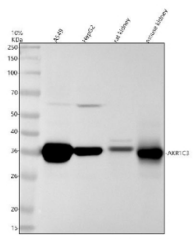
AKR1C3 Antibody / Aldo-keto reductase family 1 member C3 [clone 21A20] (FY13421)

Catalog No.	Formulation	Size
FY13421	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA	100 ul

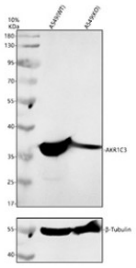
Recombinant RABBIT MONOCLONAL

Bulk quote request

Species Reactivity	Human, Mouse, Rat
Format	Liquid
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	21A20
Purity	Affinity chromatography
Buffer	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA.
UniProt	P42330
Applications	Western Blot: 1:500-1:2000
Limitations	This AKR1C3 antibody is available for research use only.



AKR1C3 Antibody WB Analysis. Western blot testing of 1) human A549, 2) human HepG2, 3) rat kidney and 4) mouse kidney tissue lysate with AKR1C3 antibody. Predicted molecular weight ~37 kDa.



AKR1C3 Antibody WB Analysis of A549 WT and AKR1C3 KO Cells. Western blot analysis of human A549 wild-type (WT) and AKR1C3-knockout (KO) whole-cell lysates using Aldo-Keto Reductase Family 1 Member C3 Antibody at a 1:500 dilution. A prominent immunoreactive band is detected at approximately 37 kDa in WT lysate, consistent with the expected molecular weight of AKR1C3. The corresponding band is reduced in intensity but remains detectable in the KO sample. Beta-tubulin serves as a loading control, with bands present in both lanes.

Description

AKR1C3 antibody targets Aldo-keto reductase family 1 member C3 (AKR1C3), a cytosolic oxidoreductase enzyme that plays a key role in steroid hormone metabolism, prostaglandin signaling, and cellular redox balance. AKR1C3 belongs to the aldo-keto reductase superfamily and catalyzes the NADPH-dependent reduction of aldehydes and ketones to their corresponding alcohols. The protein is primarily localized in the cytoplasm, where it functions as a metabolic regulator linking enzymatic redox activity to hormone signaling pathways.

Functionally, AKR1C3 is best known for its involvement in androgen and estrogen metabolism. It catalyzes the conversion of weak steroid precursors into more active hormones, thereby modulating local hormone availability within tissues. Through this activity, AKR1C3 can influence cell proliferation, differentiation, and survival, particularly in hormone-responsive tissues. AKR1C3 also participates in prostaglandin metabolism, contributing to inflammatory signaling and cellular responses to stress. An AKR1C3 antibody supports research examining how steroid and lipid metabolism intersect with signaling pathways that regulate cell fate.

AKR1C3 expression is observed in a variety of tissues, including liver, prostate, mammary tissue, and hematopoietic cells. Its expression is often elevated in rapidly proliferating or metabolically active cells, reflecting its role in maintaining redox homeostasis and hormone balance. AKR1C3 levels can be dynamically regulated by hormonal cues, inflammatory stimuli, and metabolic stress, making it a useful marker for studying adaptive metabolic responses. Analysis of AKR1C3 expression provides insight into tissue-specific steroid metabolism and its impact on cellular physiology.

From a disease relevance perspective, AKR1C3 has been extensively studied in cancer biology, particularly in prostate and breast cancer, where altered steroid metabolism can drive tumor growth and therapy resistance. Elevated AKR1C3 expression has also been reported in certain leukemias and solid tumors, linking the enzyme to dysregulated redox and inflammatory signaling. Beyond oncology, AKR1C3 is implicated in metabolic and inflammatory disorders due to its role in prostaglandin and lipid metabolism. Investigating AKR1C3 expression with a AKR1C3 antibody is therefore relevant to studies of hormone-driven disease, inflammation, and metabolic regulation.

At the molecular level, the AKR1C3 gene encodes a protein of approximately 37 kDa that contains conserved catalytic residues characteristic of aldo-keto reductases. The enzymatic activity of AKR1C3 depends on NADPH binding and proper folding of its catalytic domain. Subtle changes in AKR1C3 expression or activity can significantly alter local steroid and prostaglandin levels, leading to downstream effects on signaling pathways. An AKR1C3 antibody enables detection and analysis of AKR1C3 expression in research applications focused on metabolism, hormone signaling, and disease-associated redox biology, with NSJ Bioreagents providing reagents intended for research use.

Explore our Metabolism Antibodies for additional targets involved in steroid biosynthesis, lipid metabolism, and cellular redox regulation.

Application Notes

Optimal dilution of the AKR1C3 antibody should be determined by the researcher.

Immunogen

A synthesized peptide derived from human Aldo-keto reductase family 1 member C3 protein was used as the immunogen

for the AKR1C3 antibody.

Storage

Store the AKR1C3 antibody at -20oC.

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