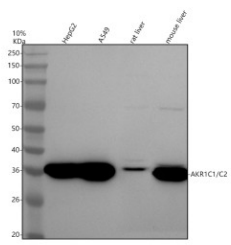
AKR1C1/2 Antibody 24A23 / AKR1C1/2 Rabbit Monoclonal Antibody [clone 24A23] (FY13708)

Catalog No.	Formulation	Size
FY13708	Rabbit IgG in stabilizing components, phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol	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	24A23
Purity	Affinity purified
UniProt	Q04828, P52895
Applications	Western blot: 1:500
Limitations	This AKR1C1/2 Antibody 24A23 / AKR1C1/2 Rabbit Monoclonal Antibody is available for research use only.



AKR1C1/2 Antibody 24A23 WB Analysis of Human HepG2 and A549 Cells and Rat and Mouse Liver. Western blot analysis of human HepG2 (lane 1), human A549 (lane 2), rat liver (lane 3), and mouse liver (lane 4) lysates using AKR1C1/2 Rabbit Monoclonal Antibody clone 24A23 at a 1:500 dilution. Each lane contained 30 ug of protein separated under reducing conditions on a 10% SDS-PAGE gel. A prominent immunoreactive band is detected at approximately 37 kDa in all four samples, consistent with the expected molecular weights of AKR1C1 and AKR1C2. Signal intensity is strongest in the human cell lysates and mouse liver, with weaker staining in rat liver.

Description

AKR1C1/2 Antibody 24A23 / AKR1C1/2 Rabbit Monoclonal Antibody recognizes AKR1C1 and AKR1C2, two closely related cytoplasmic enzymes belonging to the aldo-keto reductase superfamily. These NADPH-dependent oxidoreductases catalyze the reduction of carbonyl-containing compounds and participate in steroid hormone metabolism, prostaglandin metabolism, and cellular responses to reactive metabolites. Their extensive amino acid sequence similarity contributes to overlapping substrate preferences, although differences in catalytic activity and substrate specificity

distinguish their physiological functions.

AKR1C1 is commonly associated with 20-alpha hydroxysteroid dehydrogenase activity. One of its important reactions involves the reduction of progesterone to 20-alpha hydroxyprogesterone, which has substantially reduced progestational activity. Through this process, AKR1C1 contributes to the regulation of local progesterone availability and may influence progesterone receptor signaling. The enzyme also acts on additional steroid substrates and participates in metabolic processes that extend beyond progesterone inactivation.

AKR1C2 exhibits prominent 3-alpha hydroxysteroid dehydrogenase activity and is involved in androgen metabolism. It catalyzes the reduction of dihydrotestosterone to 3-alpha androstanediol, thereby contributing to the regulation of androgen receptor activation. Because dihydrotestosterone is a potent androgen, its intracellular metabolism can influence hormone signaling independently of circulating hormone concentrations. AKR1C2 also participates in reactions involving other steroid intermediates, reflecting its broader role in maintaining steroid homeostasis.

Both enzymes contribute to cellular metabolic adaptation through their ability to reduce selected aldehydes and ketones. Their activities connect steroid metabolism with pathways involved in carbonyl detoxification and cellular redox balance. Altered AKR1C expression has been investigated in hormone-responsive malignancies, including prostate and breast cancers, as well as other conditions associated with changes in steroid signaling. The consequences of altered expression depend on enzyme abundance, substrate availability, and the metabolic characteristics of the affected tissue.

AKR1C1 and AKR1C2 share similar molecular weights of approximately 37 kDa, making their individual contributions difficult to distinguish using molecular weight alone. AKR1C1/2 Antibody 24A23 provides an alternative monoclonal reagent for investigating these related enzymes collectively in studies of steroid metabolism, cellular oxidoreductase activity, and the regulation of local hormone availability.

For an additional antibody recognizing these closely related steroid-metabolizing enzymes, see our AKR1C1/2 Polyclonal Antibody, which includes western blot, immunofluorescence, and flow cytometry validation data.

Application Notes

Optimal dilution of the AKR1C1/2 Antibody 24A23 / AKR1C1/2 Rabbit Monoclonal Antibody should be determined by the researcher.

Immunogen

A synthesized peptide derived from human Aldo-keto reductase family 1 member C1/2 protein was used as the immunogen for the AKR1C1/2 Antibody 24A23.

Storage

The AKR1C1/2 Antibody 24A23 can be stored at -20oC.

Alternate Names

AKR1C1 antibody, AKR1C2 antibody, aldo-keto reductase family 1 member C1 antibody, aldo-keto reductase family 1 member C2 antibody, 20-alpha hydroxysteroid dehydrogenase antibody, 3-alpha hydroxysteroid dehydrogenase antibody, dihydrodiol dehydrogenase antibody

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