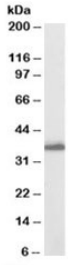
AKR1C3 Antibody / Aldo-keto reductase family 1 member C3 (R33228)

Catalog No.	Formulation	Size
R33228-100UG	0.5 mg/ml in 1X TBS, pH7.3, with 0.5% BSA (US sourced) and 0.02% sodium azide	100 ug

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Format	Antigen affinity purified
Host	Goat
Clonality	Polyclonal (goat origin)
Isotype	Goat Ig
Purity	Antigen affinity
Gene ID	8644
Applications	Western Blot : 0.01-0.1ug/ml ELISA (peptide) LOD : 1:32000
Limitations	This AKR1C3 antibody is available for research use only.



Western blot testing of human breast lysate with AKR1C3 antibody at 0.03ug/ml. Predicted molecular weight: ~37 kDa.

Description

AKR1C3 antibody recognizes Aldo-keto reductase family 1 member C3 (AKR1C3), an NADPH-dependent oxidoreductase that contributes to intracellular metabolism of steroids, lipids, and reactive carbonyl compounds. AKR1C3 is a soluble cytoplasmic enzyme belonging to the aldo-keto reductase superfamily, which is characterized by a conserved catalytic fold and the ability to regulate redox-sensitive biochemical pathways. Through its enzymatic activity, AKR1C3 influences local concentrations of bioactive molecules that shape cellular signaling and metabolic balance.

At the functional level, AKR1C3 participates in the interconversion of steroid hormones, including reactions that generate biologically active androgens and estrogens from weaker precursors. This localized steroid metabolism allows tissues to fine-tune hormone signaling independently of circulating hormone levels. In addition to steroid substrates, AKR1C3 acts on prostaglandins and other lipid mediators, linking it to inflammatory responses and cell survival pathways. Use of an AKR1C3 antibody supports studies aimed at understanding how enzymatic redox activity intersects with hormone and lipid signaling networks.

AKR1C3 expression varies across tissues and cell types, with notable presence in endocrine-related tissues, liver, and hematopoietic cells. Its expression can be induced under conditions of oxidative stress, inflammation, or altered hormonal signaling, highlighting its role in adaptive metabolic responses. Because AKR1C3 activity directly affects intracellular metabolite pools, changes in its expression can have broad downstream effects on transcriptional programs and cellular behavior. Monitoring AKR1C3 expression provides insight into how cells adjust metabolic pathways in response to physiological or pathological cues.

From a disease-focused research perspective, AKR1C3 has attracted attention due to its involvement in hormone-dependent cancers and therapy resistance. Increased AKR1C3 expression has been associated with enhanced intratumoral steroid production, which can sustain growth signaling even under systemic hormone suppression. AKR1C3 is also studied in the context of inflammatory and metabolic disorders, where dysregulated prostaglandin metabolism and redox imbalance contribute to disease progression. An AKR1C3 antibody is therefore useful for investigations spanning oncology, inflammation, and metabolic biology.

At the molecular level, the AKR1C3 gene encodes a protein of approximately 37 kDa with a single catalytic domain responsible for substrate reduction. The enzyme requires NADPH as a cofactor and operates within the cytoplasm, where it interacts with diverse small-molecule substrates. Subtle alterations in AKR1C3 abundance or activity can shift intracellular hormone and lipid profiles, influencing downstream signaling pathways. An AKR1C3 antibody enables detection of AKR1C3 expression in research applications focused on metabolic regulation and disease-associated signaling, with NSJ Bioreagents providing reagents intended for research use.

Application Notes

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

Immunogen

Amino acids CFASHPNYPYSDEY were used as the immunogen for this AKR1C3 antibody.

Storage

Aliquot and store the AKR1C3 antibody at -20oC.