10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

AKR1C1 Antibody

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP50969

Product Information

Application	WB, IHC-P
Primary Accession	Q04828
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Calculated MW	36788

Additional Information

Gene ID	1645
Other Names	Aldo-keto reductase family 1 member C1, 111-, 20-alpha-hydroxysteroid dehydrogenase, 20-alpha-HSD, Chlordecone reductase homolog HAKRC, Dihydrodiol dehydrogenase 1/2, DD1/DD2, High-affinity hepatic bile acid-binding protein, HBAB, Indanol dehydrogenase, Trans-1, 2-dihydrobenzene-1, 2-diol dehydrogenase, AKR1C1, DDH, DDH1
Dilution	WB~~1:1000 IHC-P~~N/A
Format	0.01M PBS, pH 7.2, 0.09% (W/V) Sodium azide, Glycerol 50%
Storage	Store at -20 °C.Stable for 12 months from date of receipt

Protein Information

Name	AKR1C1
Synonyms	DDH, DDH1
Function	Cytosolic aldo-keto reductase that catalyzes NADPH-dependent reduction of ketosteroids to hydroxysteroids. Displays broad substrate specificity with distinct positional and stereochemistry, primarily generating 20alpha-hydroxysteroids, but also 3alpha/beta- and 17beta- hydroxysteroids (PubMed:10998348, PubMed:11013348, PubMed:14672942, PubMed:19218247, PubMed:11995921, PubMed:12604236). Involved in neurosteroid metabolism. Reduces 5alpha-dihydrodeoxycorticosterone (5-alpha-DHDOC) to neuroactive steroid 3alpha,5alpha-tetrahydrodeoxycorticosterone (3alpha,5alpha-THDOC) known to alter neural excitability via allosteric activation of gamma-aminobutyric acid type A (GABAAR) receptors. Inactivates 3alpha-hydroxy-5alpha- pregnan-20-one (3alpha,5alpha-THP) into less potent neurosteroid 3alpha,20alpha-dihydroxy-5alpha-pregnane (PubMed:11995921,

	PubMed:12604236). Catalyzes the reduction of progesterone to less potent progestogen (20S)-hydroxypregn-4-en-3-one likely regulating ligand availability for progesterone receptors (PubMed:10998348, PubMed:11013348, PubMed:12604236). In androgen catabolism, may predominantly act as a phase I enzyme by introducing a hydroxyl group prior to conjugation. It can nevertheless participate in the alternative phase II pathway by directly reducing sulfate- or glucuronide-conjugated androgens (PubMed:19218247). In vitro can efficiently catalyze bidirectional conversion between ketosteroids and hydroxysteroids using NADPH/NADP(+) or NADH/NAD(+) as cofactors. In vivo however, the reductase activity prevails since the major reducing cofactor NADPH inhibits NAD(+)-dependent oxidase activity (PubMed:14672942).
Cellular Location	Cytoplasm, cytosol.
Tissue Location	Expressed in all tissues tested including liver, prostate, testis, adrenal gland, brain, uterus, mammary gland and keratinocytes. Highest levels found in liver, mammary gland and brain

Background

Converts progesterone to its inactive form, 20-alpha- dihydroxyprogesterone (20-alpha-OHP). In the liver and intestine, may have a role in the transport of bile. May have a role in monitoring the intrahepatic bile acid concentration. Has a low bile-binding ability. May play a role in myelin formation.

References

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