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Anti-AKR1C1/C2 Picoband Antibody

Catalog # ABO11654

Product Information

Application	WB
Primary Accession	P52895
Host	Rabbit
Reactivity	Human, Rat
Clonality	Polyclonal
Format	Lyophilized
Description	Rabbit IgG polyclonal antibody for Aldo-keto reductase family 1 member C1/C2(AKR1C1/C2) detection. Tested with WB in Human;Rat.
Reconstitution	Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Additional Information

Gene ID	1646
Other Names	Aldo-keto reductase family 1 member C2, 1.-.-.-, 3-alpha-HSD3, Chlordecone reductase homolog HAKRD, Dihydrodiol dehydrogenase 2, DD-2, DD2, Dihydrodiol dehydrogenase/bile acid-binding protein, DD/BABP, Trans-1, 2-dihydrobenzene-1, 2-diol dehydrogenase, 1.3.1.20, Type III 3-alpha-hydroxysteroid dehydrogenase, 1.1.1.357, AKR1C2, DDH2
Calculated MW	36735
Application Details	Western blot, 0.1-0.5 □g/ml, Human, Rat
Subcellular Localization	Cytoplasm .
Tissue Specificity	Expressed in fetal testes. Expressed in fetal and adult adrenal glands. .
Source	Eukaryota
Protein Name	Aldo-keto reductase family 1 member C1/C2
Contents	Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3.
Immunogen	E. coli-derived human AKR1C1/C2 recombinant protein (Position: M1-K123).
Purification	Immunogen affinity purified.
Cross Reactivity	No cross reactivity with other proteins.
Storage	At -20˚C for one year. After r˚Constitution, at 4˚C for one month. It˚Can also be aliquotted and stored frozen at -20˚C for a longer time.Avoid repeated

freezing and thawing.

Protein Information

Name AKR1C2 {ECO:0000303|PubMed:9716498}

Synonyms DDH2

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 3alpha-hydroxysteroids, but also 3beta-, 17beta- and 20alpha-hydroxysteroids (PubMed:8920937, PubMed:9716498, PubMed:10998348, PubMed:12416991, PubMed:11995921, PubMed:12604236, PubMed:14672942, PubMed:19218247, PubMed:21802064, PubMed:11514561, PubMed:15929998, PubMed:17034817, PubMed:17442338, PubMed:24434280). Required for male sex determination as a component of the 'backdoor' androgen biosynthesis pathway that generates 5alpha-dihydrotestosterone (5alpha-DHT) via pregnanes. Acts together with AKR1C4 to convert 5alpha-dihydroprogesterone (5alpha-DHP) to 3alpha-hydroxy-5alpha- pregnan-20-one (3alpha,5alpha-THP/allopregnanolone), leading to 5alpha- DHT secretion necessary for embryonic gonad differentiation into testis (PubMed:12416991, PubMed:21802064). 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:10998348, PubMed:11514561, PubMed:14672942, PubMed:15929998, PubMed:19218247, PubMed:24434280). In neurosteroid biosynthesis, may preferentially reduce 5alpha- dihydroprogesterone (5-alpha-DHP) and 5alpha-dihydrodeoxycorticosterone (5-alpha-DHDOC) precursors to 3alpha-hydroxy-5alpha-pregnan-20-one (3alpha,5alpha-THP/allopregnanolone) and 3alpha,21-dihydroxy-5alpha-pregnane-20-one (3alpha,5alpha-THDOC) neuroactive steroids known to alter neural excitability via allosteric activation of gamma- aminobutyric acid type A receptors (GABAAR) (PubMed:11995921, PubMed:12416991, PubMed:12604236). Regulates ligand availability for steroid hormone receptors. Catalyzes the inactivation of 5alpha-DHT and progesterone converting them into 3alpha/beta-androstanediols and (20S)-hydroxypregn-4-en-3-one, respectively (PubMed:10998348, PubMed:24434280). Can form 17beta-hydroxysteroids such as testosterone and estradiol albeit with lower efficiency when compared to AKR1C3 (PubMed:10998348). May contribute to the metabolism of adrenal-derived androgens via reduction of 11-keto-5alpha-androstane-3,17-dione (11K-Adione) into 11-ketoandrosterone (11KAST) and of 11-ketodihydrotestosterone (11KDHT) into 11-keto-5alpha-androstane-3alpha/beta,17beta-diol (11K-A3alphadiol) (PubMed:31926269). May also play a role in prostaglandin (PG) metabolism by reducing PGD2 to 11beta-PGF2 (PubMed:9716498). Also able to metabolize xenobiotics (S)- indan-1-ol and trans-1,2-dihydrobenzene-1,2-diols (PubMed:8573067, PubMed:9716498). 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, PubMed:21802064).

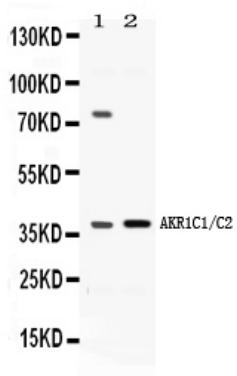
Cellular Location Cytoplasm, cytosol.

Tissue Location Expressed in fetal testes. Expressed in fetal and adult adrenal glands.

Background

This gene encodes a member of the aldo/keto reductase superfamily, which consists of more than 40 known enzymes and proteins. These enzymes catalyze the conversion of aldehydes and ketones to their corresponding alcohols using NADH and/or NADPH as cofactors. The enzymes display overlapping but distinct substrate specificity. This enzyme binds bile acid with high affinity, and shows minimal 3-alpha-hydroxysteroid dehydrogenase activity. And this gene shares high sequence identity with three other gene members and is clustered with those three genes at chromosome 10p15-p14. Three transcript variants encoding two different isoforms have been found for this gene.

Images



Western blot analysis of AKR1C1/C2 expression in rat liver extract (lane 1) and HELA whole cell lysates (lane 2). AKR1C1/C2 at 37KD was detected using rabbit anti-AKR1C1/C2 Antigen Affinity purified polyclonal antibody (Catalog # ABO11654) at 0.5 ??g/mL. The blot was developed using chemiluminescence (ECL) method .

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