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

# AKR1C2 Antibody

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP50743

## Product Information

| | |
|---|---|
| **Application** | WB |
| **Primary Accession** | P52895 |
| **Reactivity** | Human |
| **Host** | Rabbit |
| **Clonality** | polyclonal |
| **Calculated MW** | 36735 |

## 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, Type III 3-alpha-hydroxysteroid dehydrogenase, AKR1C2, DDH2 |
| **Dilution** | WB~~1:1000 |
| **Format** | Rabbit IgG in phosphate buffered saline (without Mg2+ and Ca2+), pH 7.4, 150mM NaCl, 0.09% (W/V) sodium azide and 50% glycerol. |
| **Storage Conditions** | -20℃ |

## 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. |

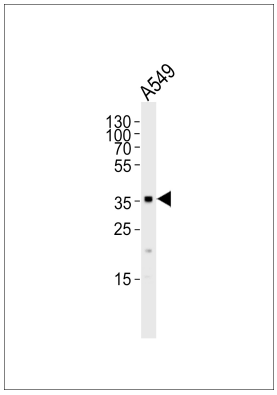
## Background

Works in concert with the 5-alpha/5-beta-steroid reductases to convert steroid hormones into the 3-alpha/5-alpha and 3-alpha/5-beta-tetrahydrosteroids. Catalyzes the inactivation of the most potent androgen 5-alpha-dihydrotestosterone (5-alpha- DHT) to 5-alpha-androstane-3-alpha,17-beta-diol (3-alpha-diol). Has a high bile-binding ability.

## References


Qin K.-N.,et al.J. Steroid Biochem. Mol. Biol. 46:673-679(1993).
Ciaccio P.J.,et al.Biochim. Biophys. Acta 1186:129-132(1994).
Qin K.-N.,et al.Gene 149:357-361(1994).
Dufort I.,et al.Biochem. Biophys. Res. Commun. 228:474-479(1996).
Shiraishi H.,et al.Biochem. J. 334:399-405(1998).


## Images




Western blot analysis of lysate from A549 cell line,using AKR1C2 Antibody(AP50743). AP50743 was diluted at 1:1000. A goat anti-rabbit IgG H&L(HRP) at 1:5000 dilution was used as the secondary antibody.Lysate at 35ug.