

# AKR1C3 Polyclonal Antibody

Rabbit Polyclonal Antibody

Catalog # ABV11765

## Product Information

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|-------------------|------------------------|
| Application       | WB, DB                 |
| Primary Accession | <a href="#">P42330</a> |
| Reactivity        | Human, Mouse, Rat      |
| Host              | Rabbit                 |
| Clonality         | Polyclonal             |
| Isotype           | Rabbit IgG             |
| Calculated MW     | 36853                  |

## Additional Information

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|--------------------------|--------------------------------------------------------------------------------------------------------------|
| Gene ID                  | 8644                                                                                                         |
| Positive Control         | Western blot                                                                                                 |
| Application & Usage      | Western blot: 1-4 $\mu$ g/ml, Dot blot: 1-4 $\mu$ g/ml                                                       |
| Alias Symbol             | AKR1C3                                                                                                       |
| Other Names              | Aldo-keto reductase family 1, member C3, DD3, DDX, HA1753, HAKRB, HAKRe, hluPGFS, HSD17B5                    |
| Appearance               | Colourless liquid                                                                                            |
| Formulation              | 100 $\mu$ g (0.5 mg/ml) of antibody in PBS pH 7.2, 0.01 % BSA, 0.03 % ProClin® and 50 % glycerol.            |
| Reconstitution & Storage | -20 °C                                                                                                       |
| Background Descriptions  |                                                                                                              |
| Precautions              | AKR1C3 Polyclonal Antibody is for research use only and not for use in diagnostic or therapeutic procedures. |

## Protein Information

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| Name     | AKR1C3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 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 17 $\beta$ -hydroxysteroids, but also 3 $\alpha$ - and 20 $\alpha$ -hydroxysteroids (PubMed: <a href="#">10998348</a> , PubMed: <a href="#">11165022</a> , PubMed: <a href="#">20036328</a> , PubMed: <a href="#">9415401</a> , PubMed: <a href="#">9927279</a> , PubMed: <a href="#">10998348</a> , PubMed: <a href="#">9927279</a> ). Produces potent androgens via classical and 'backdoor'/alternative pathways. In the classical androgen metabolic pathway (biosynthesis of |

5alpha-dihydrotestosterone (5alpha-DHT) via testosterone), catalyzes the reduction of delta4-androstenedione to form testosterone (PubMed:[10998348](#), PubMed:[11165022](#), PubMed:[20036328](#), PubMed:[9415401](#), PubMed:[9927279](#)). In the 'backdoor' androgen metabolic pathway (biosynthesis of 5alpha-dihydrotestosterone (5alpha-DHT) via pregnanes), reduces androsterone to 5alpha-androstane-3alpha,17beta-diol preceding 5alpha-DHT secretion (PubMed:[10557352](#), PubMed:[10998348](#), PubMed:[9415401](#)). Reduces 5alpha-DHT to less potent androgen 5alpha-androstane-3alpha,17beta-diol, likely regulating ligand availability for androgen receptors (PubMed:[10557352](#), PubMed:[10998348](#), PubMed:[11165022](#), PubMed:[14672942](#), PubMed:[7650035](#), PubMed:[9415401](#)). May contribute to the metabolism of adrenal-derived androgen precursors. Reduces 11-keto-4-androstene-3,17-dione (11KA4) and 11-keto-5alpha-androstane-3,17-dione (11K-Adione) into potent androgens 11-ketotestosterone (11KT) and 11-ketodihydrotestosterone (11KDHT), respectively (PubMed:[31926269](#)). In estrogen metabolism, catalyzes the conversion of estrone to potent estrogen 17beta-estradiol (PubMed:[10998348](#), PubMed:[11165022](#), PubMed:[20036328](#)). Acts as a prostaglandin (PG) F2alpha synthase. Displays 11-ketoreductase and 9,11-endoperoxide reductase activities and reduces PGD2 to 11beta-PGF2alpha and PGH2 to PGF2alpha (PubMed:[10622721](#), PubMed:[11165022](#), PubMed:[15047184](#), PubMed:[19010934](#), PubMed:[20036328](#), PubMed:[7650035](#), PubMed:[9415401](#), PubMed:[9927279](#)). Also displays retinaldehyde reductase activity toward 9-cis-retinal (PubMed:[21851338](#)). 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:[11165022](#), PubMed:[14672942](#)). In addition, it is able to reduce in vitro various carbonyl compounds like menadione, phenanthrenequinone and nitrobenzaldehyde (By similarity).

#### Cellular Location

Cytoplasm.

#### Tissue Location

Expressed in many tissues including adrenal gland, brain, kidney, liver, lung, mammary gland, placenta, small intestine, colon, spleen, prostate and testis. High expression in prostate and mammary gland. In the prostate, higher levels in epithelial cells than in stromal cells. In the brain, expressed in medulla, spinal cord, frontotemporal lobes, thalamus, subthalamic nuclei and amygdala. Weaker expression in the hippocampus, substantia nigra and caudate

## Background

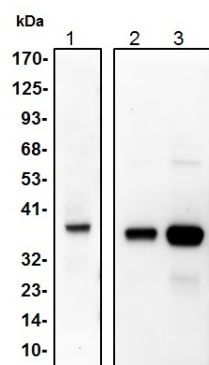
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Aldo-keto reductase family 1 member C3 in humans is encoded by the AKR1C3 gene. This enzyme catalyzes the reduction of prostaglandin (PG) D2, PGH2 and phenanthrenequinone (PQ), and the oxidation of 9alpha, 11beta-PGF2 to PGD2. It may play an important role in the pathogenesis of allergic diseases such as asthma, and may also have a role in controlling cell growth and/or differentiation.

## Images

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Western blot analysis of h AKR1C3 using anti-h AKR1C3 antibody: Lane1(Hela cell lysate); Lane2(h AKR1C3,10ng); Lane3(h AKR1C3,50ng)



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