

AKR1C4 Antibody (N-term) Blocking Peptide
Synthetic peptide
Catalog # BP16366a**Specification****AKR1C4 Antibody (N-term) Blocking Peptide - Product Information**Primary Accession [P17516](#)**AKR1C4 Antibody (N-term) Blocking Peptide - Additional Information****Gene ID 1109****Other Names**

Aldo-keto reductase family 1 member C4, 111-, 3-alpha-HSD1, 3-alpha-hydroxysteroid dehydrogenase type I, Chlordecone reductase, CDR, Dihydrodiol dehydrogenase 4, DD-4, DD4, HAKRA, AKR1C4, CHDR

Format

Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions

This product is for research use only. Not for use in diagnostic or therapeutic procedures.

AKR1C4 Antibody (N-term) Blocking Peptide - Protein Information**Name AKR1C4****Synonyms CHDR****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/beta-, 17beta- and 20alpha-hydroxysteroids (PubMed:10634139, PubMed:10998348, PubMed:11158055, PubMed:14672942, PubMed:1530633, PubMed:12604236, PubMed:19218247, PubMed:21802064, PubMed:7650035). 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 AKR1C2 to

convert 5alpha-dihydroprogesterone (5alpha-DHP) to 3alpha- hydroxy-5alpha-pregnan-20-one (3alpha,5alpha-THP/allo pregnanolone), leading to 5alpha-DHT secretion necessary for embryonic gonad differentiation into testis (PubMed:21802064). May regulate the concentrations of circulating neurosteroids. Reduces 5alpha- dihydroprogesterone (5-alpha-DHP) and 5alpha-dihydrodeoxycorticosterone (5-alpha-DHDOC) precursors to 3alpha-hydroxy-5alpha-pregnan-20-one (3alpha,5alpha-THP/allo pregnanolone) 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: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:11158055, PubMed:14672942). May contribute to the metabolism of adrenal-derived androgens via reduction of 11-keto-5alpha-androstan-3,17-dione (11K-Adione) into 11- ketoandrosterone (11KAST) and of 11-ketodihydrotestosterone (11KDHT) into 11-keto-5alpha-androstan-3alpha/beta,17beta-diol (11K-A3diol) (PubMed:31926269). Catalyzes the reduction of estrone into 17beta- estradiol but with low efficiency (PubMed:14672942). 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). Catalyzes the biotransformation of the pesticide chlordcone (kepone) to its corresponding alcohol, leading to increased biliary excretion of the pesticide and concomitant reduction of its neurotoxicity since bile is the major excretory route (PubMed:2427522). 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 {ECO:0000250|UniProtKB:Q04828}

Tissue Location

Expressed in liver (PubMed:10998348, PubMed:11158055, PubMed:7650035). Expressed in fetal and adult testes and adrenal glands (PubMed:21802064).

AKR1C4 Antibody (N-term) Blocking Peptide - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Blocking Peptides](#)

AKR1C4 Antibody (N-term) Blocking Peptide - Images

AKR1C4 Antibody (N-term) Blocking Peptide - Background

AKR1C4 is a member of the aldo/keto reductasesuperfamily, which consists of more than 40 known enzymes andproteins. These enzymes catalyze the conversion of aldehydes andketones to their corresponding alcohols by utilizing NADH and/orNADPH as cofactors. The enzymes display overlapping but distinctsubstrate specificity. This enzyme catalyzes the bioreduction ofchlordecone, a toxic organochlorine pesticide, to chlordconealcohol in liver. This gene shares high sequence

identity with three other gene members and is clustered with those three genes on chromosome 10p15-p14.

AKR1C4 Antibody (N-term) Blocking Peptide - References

Joslyn, G., et al. Alcohol. Clin. Exp. Res. 34(5):800-812(2010) Guey, L.T., et al. Eur. Urol. 57(2):283-292(2010) Li, J., et al. Breast Cancer Res. 12 (2), R19 (2010) :Hosgood, H.D. III, et al. Respir Med 103(12):1866-1870(2009) Shen, M., et al. Environ. Mol. Mutagen. 50(4):285-290(2009)