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

HSD3a Polyclonal Antibody

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP58271

Product Information

Application	IHC-P, IHC-F, IF, E
Primary Accession	P17516
Reactivity	Rat
Host	Rabbit
Clonality	Polyclonal
Calculated MW	37067

Additional Information

Gene ID	1109
Other Names	Aldo-keto reductase family 1 member C4, 1.1.1.-, 1.1.1.209, 1.1.1.210, 1.1.1.51, 1.1.1.53, 1.1.1.62, 3-alpha-hydroxysteroid dehydrogenase type I, 3-alpha-HSD1, 1.1.1.357, 3alpha-hydroxysteroid 3-dehydrogenase, Chlordecone reductase, CDR, 1.1.1.225, Dihydrodiol dehydrogenase 4, DD-4, DD4, HAKRA, AKR1C4, CHDR
Dilution	IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500,ELISA=1:5000-10000
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

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/allopregnanolone), 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/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: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-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-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 chlordecone (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).

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.