

## Recombinant Human AKR1C1, His-tagged

**Cat. No.** AKR1C1-2028H    **Lot. No.** (See product label)

### SPECIFICATION

<b>Product Overview</b>	Recombinant Human AKR1C1 protein with his tag was expressed in <i>E.coli</i> and purified by using conventional chromatography techniques, 38.9 kDa (343aa).
<b>Species</b>	Human
<b>Source</b>	E.coli
<b>Description</b>	AKR1C1 is 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 by utilizing NADH and/or NADPH as cofactors. The enzymes display overlapping but distinct substrate specificity. This enzyme catalyzes the reduction of progesterone to the inactive form 20-alpha-hydroxy-progesterone.
<b>Form</b>	Liquid. In 20mM Tris-HCl buffer (pH 8.0) containing 1mM DTT 20% glycerol.
<b>Purity</b>	> 90% by SDS - PAGE.
<b>Concentration</b>	0.5 mg/ml (determined by Bradford assay).
<b>Sequences Of Amino Acids</b>	MGSSHHHHHH SSGLVPRGSH MDSKYQCVKL NDGHFMPVLG FGTYAPAEVP KSKALEATKL AIEAGFRHID SAHLYNNEEQ VGLAIRSKIA DGSVKREDIF YTSKLCWNSH RPELVRPALE RSLKNLQLDY VDLYLIHFPV SVKPGEEVIP KDENGKILFD TVDLCATWEA VEKCKDAGLA KSIGVSNFNR RQLEMILNKP GLKYKPCVNCQ VECHPYFNQR KLLDFCKSKD IVLVAYSALG SHREEPWVDP

 Tel: 1-631-559-9269    1-516-512-3133

 Email: [info@creative-biomart.com](mailto:info@creative-biomart.com)     Fax: 1-631-938-8127

 45-1 Ramsey Road, Shirley, NY 11967, USA

NSPVLLEDPV LCALAKKHKR TPALIALRYQ LQRGVVVLAK SYNEQRIRQN  
VQVFEFQLTS EEMKAIDGLN RNVRYLTLDI FAGPPNYPPFS DEY.

**Biological activity**

Specific activity: approximately 0.15 - 0.2 units/mg. Enzymatic activity was confirmed by measuring the amount of enzyme catalyzing the oxidation of 1 micromole NADPH per minute at 25°C. Specific activity was expressed as units/mg protein.

**Activity Assay**

1. Prepare a 1.mll reaction mix into a suitable container: the final concentrations are 0.1M sodium phosphate (pH7.0), 10mM DL-glyceraldehyde, 0.3mM NADPH. 2. Add 50ul of recombinant AKR1C1 solution with various concentrations (2.5ug, 5ug, 10ug) in 750ul reaction buffer. 3. Mix by inversion and Incubate at 25°C for 2.5 minutes. 4. Add 200ul of 50 mM DL-glyceraldehyde as a substrate and immediately mix by inversion. 5. Record the increase in A340nm for 3 minutes.

**Storage**

can be stored at +4°C short term (1-2 weeks). For long term storage, aliquot and store at -20°C or -70°C. Avoid repeated freezing and thawing cycles.

**Pathways**

Metabolism of xenobiotics by cytochrome P450; Steroid hormone biosynthesis

## GENE INFORMATION

**Gene Name**

[AKR1C1](#) [aldo-keto reductase family 1, member C1 \(dihydrodiol dehydrogenase 1; 20-alpha \(3-alpha\)-hydroxysteroid dehydrogenase\)](#) [ [Homo sapiens](#) ]

**Synonyms**

aldo-keto reductase family 1, member C1 (dihydrodiol dehydrogenase 1; 20-alpha (3-alpha)-hydroxysteroid dehydrogenase); C9; DD1; DDH; DDH1; H-37; MBAB; HAKRC; MGC8954; 2-ALPHA-HSD; 20-ALPHA-HSD; AKR1C1; aldo-keto reductase family 1 member C1; HBAB; DD1/DD2; aldo-keto reductase C; indanol dehydrogenase; dihydrodiol dehydrogenase 1; dihydrodiol dehydrogenase 1/2; hepatic dihydrodiol dehydrogenase; chlordecone reductase homolog HAKRC; 20 alpha-hydroxysteroid

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dehydrogenase; 20-alpha-hydroxysteroid dehydrogenase; dihydrodiol dehydrogenase isoform DD1; type II 3-alpha-hydroxysteroid dehydrogenase; high-affinity hepatic bile acid-binding protein; trans-1,2-dihydrobenzene-1,2-diol dehydrogenase; Trans-1,2-dihydrobenzene-1,2-diol dehydrogenase; Dihydrodiol dehydrogenase 1/2; High-affinity hepatic bile acid-binding protein; Chlordecone reductase homolog HAKRC; EC 1.1.1.-,EC 1.1.1.149,EC 1.3.1.20,EC 1.1.1.112

**Gene ID** [1645](#)

**mRNA Refseq** [NM\\_001353](#)

**Protein Refseq** [NP\\_001344](#)

**MIM** [600449](#)

**UniProt ID** [Q04828](#)

**Chromosome Location** 10p15-p14

**Function** trans-1,2-dihydrobenzene-1,2-diol dehydrogenase activity; 20-alpha-hydroxysteroid dehydrogenase activity; 3-alpha-hydroxysteroid dehydrogenase (B-specific) activity; aldo-keto reductase activity; bile acid binding; carboxylic acid binding; indanol dehydrogenase activity; oxidoreductase activity

**PDB rendering based on 1ihi.**

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