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AR09395PU-N Human AKR1C1 / DHH1 (1-323, His-tag) - Purified

Alternate names: 2-dihydrobenzene-1, 2-diol dehydrogenase, 20-alpha-hydroxysteroid dehydrogenase, Aldo-keto reductase family 1 member C1, Chlordecone reductase homolog HAKRC, Dihydrodiol dehydrogenase 1/2, High-affinity hepatic bile acid-binding protein, Trans-1

Quantity: 0.1 mg

Concentration: 0.5 mg/ml (determined by Bradford assay)

Background: 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.

Uniprot ID: Q04828

NCBI: NP_001344

GeneID: 1645

Species: Human

Source: E. coli

Format: **State:** Liquid purified protein
Purity: >90% by SDS - PAGE
Buffer System: 20 mM Tris-HCl buffer (pH 8.0) containing 1 mM DTT, 20% glycerol

Description: Recombinant AKR1C1 protein, fusd to His-tag, was expressed in E.coli and purified by using conventional chromatography techniques.

AA Sequence:

MGSSHHHHHH SSGLVPRGSH MDSKYQCVKL NDGHFMPVLG FGTYAPAEVP KSKALEATKL AIEAGFRHID SAHLYNNEEQ VGLAIRSKIA DGSVKREDIF YTSKLWCNSH RPELVRPALE RSLKNLQLDY VDLYLIHFPV SVKPGEEVIP KDENGKILFD TVDLCATWEA VEKCKDAGLA KSIGVSNFNR RQLEMILNKP GLKYKPVCNQ VECHPYFNQR KLLDFCKSKD IVLVAYSALG SHREEPWVDP NSPVLLEDPV LCALAKKHKR TPALIALRYQ LQRGVVVLAK SYNEQRIRQN VQVFEFQLTS EEMKAIDGLN RNVRYLTLDI FAGPPNYPFS DEY

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

Activity Assay

1. Prepare a 1.0 ml reaction mix into a suitable container : The final concentrations are 0.1M sodium phosphate (pH 7.0), 10mM DL-glyceraldehyde, 0.3mM NADPH.

2. Add 50 ul of recombinant AKR1C1 solution with various concentrations (2.5ug, 5ug, 10ug) in 750 ul reaction buffer.
3. Mix by inversion and incubate at 25°C for 2.5 minutes.
4. Add 200 ul of 50 mM DL-glyceraldehyde as a substrate and immediately mix by inversion.
5. Record the increase in A340nm for 3 minutes.
Molecular weight: 38.9 kDa (343 aa), confirmed by MALDI-TOF

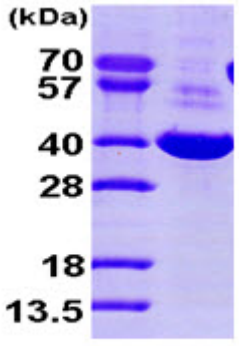
Storage:

Store undiluted at 2-8°C for up to two weeks or (in aliquots) at -20°C or -70°C for longer.
Avoid repeated freezing and thawing.
Shelf life: one year from despatch.

General Readings:

Zhang Y., et al. (2000) J. Mol. Endocrinol. 25:221-228.
Zhang Y., et al. (2009) Mol Cell Endicrinol. 298(1-2):76-83.

Pictures:



15% SDS-PAGE (3ug)

Recombinant human AKR1C1, 1-323 aa, His-tagged: 15% SDS-PAGE (3 µg)