

AR39046PU-L

Human AKR1C4 (1-323, His-tag) - Purified

Alternate names:

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

Quantity:

0.5 mg

Concentration:

1.0 mg/ml (determined by Bradford assay)

Background:

AKR1C4 belongs to aldo/keto reductase superfamily, which consists of more than 40 known enzymes and proteins. It catalyzes the conversion of aldehydes and ketones to their corresponding alcohols by utilizing NADH and/or NADPH as cofactors. This enzyme catalyzes the bioreduction of chlordecone, a toxic organochlorine pesticide, to chlordecone alcohol in liver.

Uniprot ID:

[P17516](#)

NCBI:

[NP_001809](#)

GeneID:

[1109](#)

Species:

Human

Source:

E. coli

Format:

State: Liquid purified protein

Purity: >90%

Buffer System: 20mM Tris-HCl buffer (pH 8.0) containing 20% glycerol, 0.1M NaCl, 1mM DTT

Description:

Recombinant human AKR1C4 protein, fused to His-tag at N-terminus, was expressed in E.coli and purified by using conventional chromatography.

AA Sequence:

MGSSHHHHHH SSGLVPRGSH MDPKYQRVEL NDGHFMPVLG FGTYAPPEVP RNRAVEVTKL
AIEAGFRHID SAYLYNNEEQ VGLAIRSKIA DGSVKREDIF YTSKLWCTFF QPQMVQPALE
SSLKKLQLDY VDLYLLHFPK ALKPGETPLP KDENGKVIDF TVDLSATWEV MEKCKDAGLA
KSGVSNFNC RQLEMILNKP GLKYKPVNQS VECHPYLNQS KLLDFCKSKD IVLVAHSALG
TQRHKLWVDP NSPVLLDPV LCALAKKHKR TPALIALRYQ LQRGVVVLAK SYNEQRIREN
IQVFEFQLTS EDMKVLGDLN RNYRYVMDF LMDHPDYPFS DEY

Specific Activity: Approximately > 0.6 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.

Molecular weight: 39.2 kDa (343aa), 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:

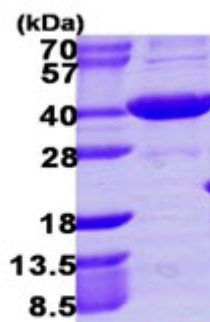
Stayrook KR. et al. (2008) Mol Pharmacol. 73:607-612.

Protocols:

Activity Assay

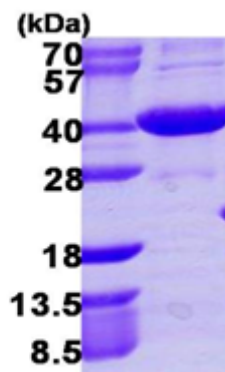
1. Prepare a 1 ml reaction mix into a suitable container: The final concentrations are 0.1M sodium phosphate (pH 7.0), 10mM DL-glyceraldehyde, 0.3mM NADPH.
2. Add 50ul of recombinant AKR1C4 solution with various concentrations (1ug, 2ug) in 750ul reaction buffer.
3. Mix by inversion and incubate at 25°C for 2.5 minutes.
4. Add 200ul of 50 mM DL-glyceraldehyde as a substrate and immediately mix by inversion.
5. Record the increase at A340nm for 3 minutes.

Pictures:



15% SDS-PAGE (3ug)

Recombinant human AKR1C4, 1-323aa,
His-tagged



15% SDS-PAGE (3ug)