OriGene Technologies, Inc.
9620 Medical Center Drive, Ste 200
Rockville, MD 20850
UNITED STATES
Phone: +1-888-267-4436
Fax: +1-301-340-8606
techsupport@origene.com

OriGene Technologies GmbH
Schillerstr. 5
32052 Herford
GERMANY
Phone: +49-5221-34606-0
Fax: +49-5221-34606-11
info-de@origene.com

# AR39046PU-N 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:** 0.1 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% glycero, 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 VDLYLLHFPM ALKPGETPLP KDENGKVIFD TVDLSATWEV MEKCKDAGLA
KSIGVSNFNC RQLEMILNKP GLKYKPVCNQ VECHPYLNQS KLLDFCKSKD IVLVAHSALG
TQRHKLWVDP NSPVLLEDPV LCALAKKHKR TPALIALRYQ LQRGVVVLAK SYNEQRIREN
IQVFEFQLTS EDMKVLDGLN RNYRYVVMDF 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.

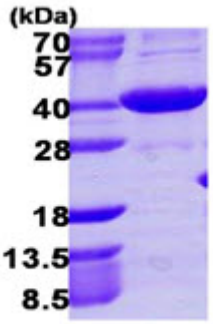
**General Readings:** Stayrook KR. et al. (2008) Mol Pharmacol. 73:607-612.

**Protocols:**

**Activity Assay**

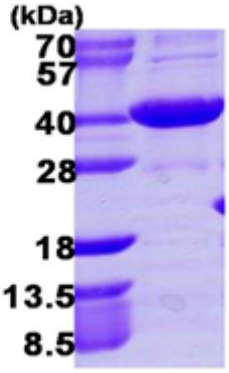
1. Prepare a 1 ml reaction mix into a suitable container: The final concentrations are 0.1M sodium phosphate (pH 7.0), 10mM DL-glyceraldehyde, 0.3mM NADPH.
2. Add 50ul of recombinant AKR1C4 solution with various concentrations (1ug, 2ug) in 750ul reaction buffer.
3. Mix by inversion and incubate at 25°C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