

# AKR1A1 (H-115): sc-135112

## BACKGROUND

AKR1A1 (aldo-keto reductase family 1 member A1), also known as ALR (aldehyde reductase), DD3 (dihydrodiol dehydrogenase 3) or ALDR1 (alcohol dehydrogenase), is a widely and abundantly expressed member of the aldo-keto reductase (AKR) family of proteins. Members of the AKR family are soluble NADPH-dependent oxidoreductases. They play important roles in the metabolism of drugs, carcinogens and reactive aldehydes. AKR1A1 exists as a monomer and catalyzes the reduction of xenobiotic and biogenic aldehydes and ketones to their corresponding alcohols. In particular, AKR1A1 efficiently catalyzes medium-chain and aromatic aldehydes. AKR1A1 participates in the biosynthetic pathways of cholesterol and triglyceride and plays a role in the activation of polycyclic aromatic hydrocarbons (PAHs).

## REFERENCES

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- O'Connor, T., et al. 1999. Major differences exist in the function and tissue-specific expression of human aflatoxin B1 aldehyde reductase and the principal human aldo-keto reductase AKR1 family members. *Biochem. J.* 343: 487-504.
- Barski, O.A., et al. 1999. Characterization of the human aldehyde reductase gene and promoter. *Genomics* 60: 188-198.
- Palackal, N.T., et al. 2001. The ubiquitous aldehyde reductase (AKR1A1) oxidizes proximate carcinogen *trans*-dihydrodiols to o-quinones: potential role in polycyclic aromatic hydrocarbon activation. *Biochemistry* 40: 10901-10910.
- Palackal, N.T., et al. 2001. Metabolic activation of polycyclic aromatic hydrocarbon *trans*-dihydrodiols by ubiquitously expressed aldehyde reductase (AKR1A1). *Chem. Biol. Interact.* 130-132: 815-824.
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## CHROMOSOMAL LOCATION

Genetic locus: AKR1A1 (human) mapping to 1p34.1; *Akr1a4* (mouse) mapping to 4 D1.

## SOURCE

AKR1A1 (H-115) is a rabbit polyclonal antibody raised against amino acids 211-325 mapping at the C-terminus of AKR1A1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

AKR1A1 (H-115) is recommended for detection of AKR1A1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

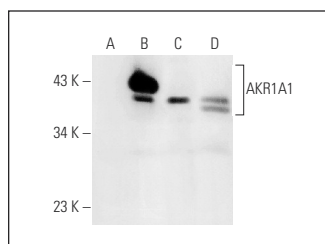
AKR1A1 (H-115) is also recommended for detection of AKR1A1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for AKR1A1 siRNA (h): sc-78566, AKR1A1 siRNA (m): sc-140983, AKR1A1 shRNA Plasmid (h): sc-78566-SH, AKR1A1 shRNA Plasmid (m): sc-140983-SH, AKR1A1 shRNA (h) Lentiviral Particles: sc-78566-V and AKR1A1 shRNA (m) Lentiviral Particles: sc-140983-V.

Molecular Weight of AKR1A1: 37 kDa.

Positive Controls: AKR1A1 (h): 293T Lysate: sc-174231, human liver extract: sc-363766 or human kidney extract: sc-363764.

## DATA



AKR1A1 (H-115): sc-135112. Western blot analysis of AKR1A1 expression in non-transfected: sc-117752 (A) and human AKR1A1 transfected: sc-174231 (B) 293T whole cell lysates and human kidney (C) and human liver (D) tissue extracts.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.



Try **AKR1A1 (E-9): sc-271723** or **AKR1A1 (B-9): sc-365078**, our highly recommended monoclonal alternatives to AKR1A1 (H-115).