

**AKR1A1 Antibody**  
**Purified Rabbit Polyclonal Antibody (Pab)**  
**Catalog # AP51718****Specification**

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**AKR1A1 Antibody - Product Information**

Application	<b>WB</b>
Primary Accession	<a href="#">P14550</a>
Reactivity	<b>Human, Mouse, Rat</b>
Host	<b>Rabbit</b>
Clonality	<b>Polyclonal</b>
Calculated MW	<b>37 KDa</b>
Antigen Region	<b>261 - 320</b>

**AKR1A1 Antibody - Additional Information****Gene ID** 10327**Other Names**

Alcohol dehydrogenase [NADP(+)], Aldehyde reductase, Aldo-keto reductase family 1 member A1, AKR1A1, ALDR1, ALR

**Target/Specificity**

KLH conjugated synthetic peptide derived from human AKR1A1

**Dilution**

WB~~ 1:1000

**Format**

0.01M PBS, pH 7.2, 0.09% (W/V) Sodium azide, Glycerol 50%

**Storage**

Store at -20 °C. Stable for 12 months from date of receipt

**AKR1A1 Antibody - Protein Information****Name** AKR1A1**Synonyms** ALDR1, ALR**Function**Catalyzes the NADPH-dependent reduction of a wide variety of carbonyl-containing compounds to their corresponding alcohols (PubMed: [10510318](http://www.uniprot.org/citations/10510318), PubMed: [30538128](http://www.uniprot.org/citations/30538128)). Displays enzymatic activity towards endogenous metabolites such as aromatic and aliphatic aldehydes, ketones, monosaccharides and bile acids, with a preference for negatively charged substrates, such as glucuronate and succinic semialdehyde (PubMed: [10510318](http://www.uniprot.org/citations/10510318)),

PubMed: [30538128](http://www.uniprot.org/citations/30538128)). Functions as a detoxifying enzyme by reducing a range of toxic aldehydes (By similarity). Reduces methylglyoxal and 3-deoxyglucosone, which are present at elevated levels under hyperglycemic conditions and are cytotoxic (By similarity). Involved also in the detoxification of lipid-derived aldehydes like acrolein (By similarity). Plays a role in the activation of procarcinogens, such as polycyclic aromatic hydrocarbon trans-dihydrodiols, and in the metabolism of various xenobiotics and drugs, including the anthracyclines doxorubicin (DOX) and daunorubicin (DAUN) (PubMed: [11306097](http://www.uniprot.org/citations/11306097), PubMed: [18276838](http://www.uniprot.org/citations/18276838)). Also acts as an inhibitor of protein S-nitrosylation by mediating degradation of S-nitroso-coenzyme A (S-nitroso-CoA), a cofactor required to S-nitrosylate proteins (PubMed: [30538128](http://www.uniprot.org/citations/30538128)). S-nitroso-CoA reductase activity is involved in reprogramming intermediary metabolism in renal proximal tubules, notably by inhibiting protein S-nitrosylation of isoform 2 of PKM (PKM2) (By similarity). Also acts as a S-nitroso-glutathione reductase by catalyzing the NADPH-dependent reduction of S-nitrosoglutathione (PubMed: [31649033](http://www.uniprot.org/citations/31649033)). Displays no reductase activity towards retinoids (By similarity).

#### Cellular Location

Cytoplasm, cytosol {ECO:0000250|UniProtKB:Q9JII6}. Apical cell membrane {ECO:0000250|UniProtKB:Q9JII6}

#### Tissue Location

Widely expressed. Highly expressed in kidney, salivary gland and liver. Detected in trachea, stomach, brain, lung, prostate, placenta, mammary gland, small intestine and lung

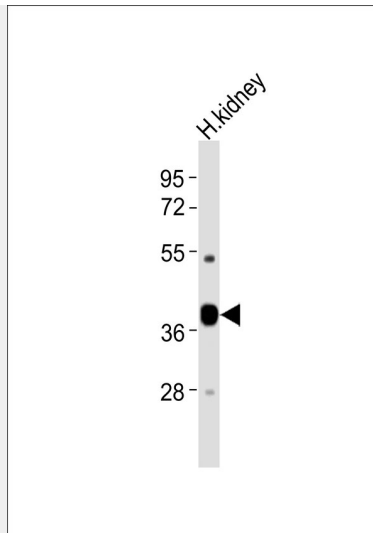
### AKR1A1 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

### AKR1A1 Antibody - Images





Anti-AKR1A1 Antibody at 1:1000 dilution + human kidney lysates Lysates/proteins at 20  $\mu$ g per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution Predicted band size : 37 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

#### **AKR1A1 Antibody - Background**

Catalyzes the NADPH-dependent reduction of a variety of aromatic and aliphatic aldehydes to their corresponding alcohols. Catalyzes the reduction of mevaldate to mevalonic acid and of glyceraldehyde to glycerol. Has broad substrate specificity. In vitro substrates include succinic semialdehyde, 4- nitrobenzaldehyde, 1,2-naphthoquinone, methylglyoxal, and D- glucuronic acid. Plays a role in the activation of procarcinogens, such as polycyclic aromatic hydrocarbon trans-dihydrodiols, and in the metabolism of various xenobiotics and drugs, including the anthracyclines doxorubicin (DOX) and daunorubicin (DAUN).

#### **AKR1A1 Antibody - References**

Bohren K.M., et al. *Biol. Chem.* 264:9547-9551(1989).  
Fujii J., et al. *Cytogenet. Cell Genet.* 84:230-232(1999).  
Barski O.A., et al. *Genomics* 60:188-198(1999).  
Ota T., et al. *Nat. Genet.* 36:40-45(2004).  
Ebert L., et al. Submitted (JUN-2004) to the EMBL/GenBank/DDBJ databases.