

**AKR1A1 Polyclonal Antibody**  
Catalog # AP68352**Specification****AKR1A1 Polyclonal Antibody - Product Information**

Application	WB
Primary Accession	<a href="#">P14550</a>
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal

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

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

**Dilution**

WB~~Western Blot: 1/500 - 1/2000. ELISA: 1/40000. Not yet tested in other applications.

**Format**

Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.

**Storage Conditions**

-20°C

**AKR1A1 Polyclonal 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:<a href="http://www.uniprot.org/citations/11306097" target="\_blank">11306097</a>, PubMed:<a href="http://www.uniprot.org/citations/18276838" target="\_blank">18276838</a>). 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:<a href="http://www.uniprot.org/citations/30538128" target="\_blank">30538128</a>). 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:<a href="http://www.uniprot.org/citations/31649033" target="\_blank">31649033</a>). 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

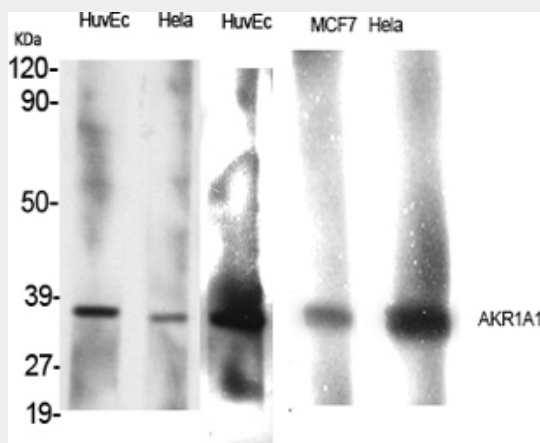
Widely expressed. Highly expressed in kidney, salivary gland and liver. Detected in trachea, stomach, brain, lung, prostate, placenta, mammary gland, small intestine and lung

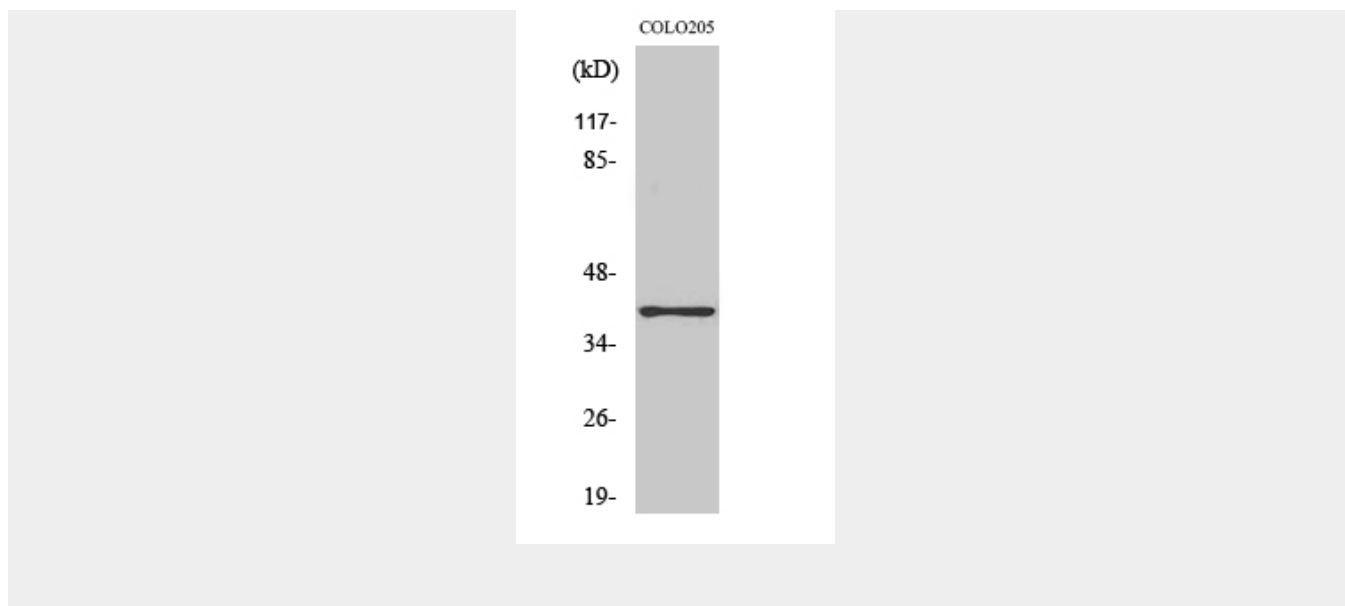
#### AKR1A1 Polyclonal Antibody - Protocols

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 Polyclonal Antibody - Images





### AKR1A1 Polyclonal Antibody - Background

Catalyzes the NADPH-dependent reduction of a wide variety of carbonyl-containing compounds to their corresponding alcohols. 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). Functions as a detoxifying enzyme by reducing a range of toxic aldehydes. Reduces methylglyoxal and 3- deoxyglucosone, which are present at elevated levels under hyperglycemic conditions and are cytotoxic. 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:18276838, PubMed:11306097). Displays no reductase activity towards retinoids (By similarity).