

**Goat Anti-Aldehyde Reductase Antibody**  
Peptide-affinity purified goat antibody  
Catalog # AF1050a

### Specification

#### Goat Anti-Aldehyde Reductase Antibody - Product Information

Application	WB, IHC, E
Primary Accession	<a href="#">P14550</a>
Other Accession	<a href="#">NP_697021</a> , <a href="#">10327</a> , <a href="#">58810 (mouse)</a> , <a href="#">78959 (rat)</a>
Reactivity	Human
Predicted	Mouse, Rat, Pig, Dog
Host	Goat
Clonality	Polyclonal
Concentration	0.5 mg/ml
Isotype	IgG
Calculated MW	36573

#### Goat Anti-Aldehyde Reductase Antibody - Additional Information

##### Gene ID 10327

##### Other Names

Alcohol dehydrogenase [NADP(+)], 1.1.1.2, Aldehyde reductase, Aldo-keto reductase family 1 member A1, AKR1A1, ALDR1, ALR

##### Dilution

WB~~1:1000  
IHC~~1:100~500  
E~~N/A

##### Format

0.5 mg IgG/ml in Tris saline (20mM Tris pH7.3, 150mM NaCl), 0.02% sodium azide, with 0.5% bovine serum albumin

##### Storage

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

##### Precautions

Goat Anti-Aldehyde Reductase Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

#### Goat Anti-Aldehyde Reductase 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:<a href="http://www.uniprot.org/citations/10510318" target="\_blank">10510318</a>, PubMed:<a href="http://www.uniprot.org/citations/30538128" target="\_blank">30538128</a>). 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:<a href="http://www.uniprot.org/citations/10510318" target="\_blank">10510318</a>, PubMed:<a href="http://www.uniprot.org/citations/30538128" target="\_blank">30538128</a>). 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

## Goat Anti-Aldehyde Reductase Antibody - Protocols

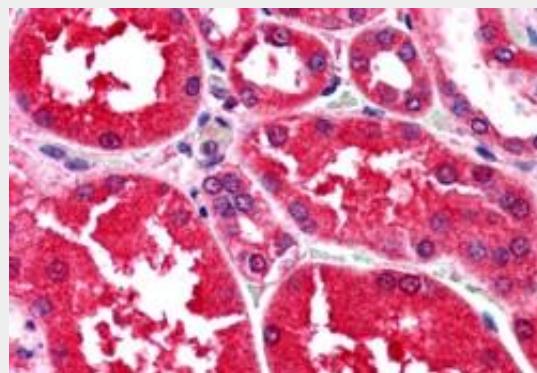
Provided below are standard protocols that you may find useful for product applications.

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

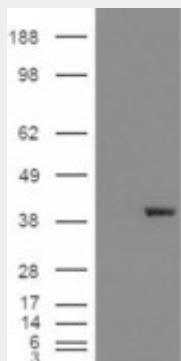
## Goat Anti-Aldehyde Reductase Antibody - Images



AF1050a (0.1 µg/ml) staining of Human Liver lysate (35 µg protein in RIPA buffer). Primary incubation was 1 hour. Detected by chemiluminescence.chemiluminescence.



AF1050a (2.5g/ml) staining of paraffin embedded Human Kidney. Steamed antigen retrieval with citrate buffer pH 6, AP-staining.



HEK293 overexpressing AKR1A1 (RC200302) and probed with AF1050a (mock transfection in first lane), tested by Origene.

#### Goat Anti-Aldehyde Reductase Antibody - Background

This gene encodes a member of the aldo/keto reductase superfamily, which consists of more than 40 known enzymes and proteins. This member, also known as aldehyde reductase, is involved in the reduction of biogenic and xenobiotic aldehydes and is present in virtually every tissue. Alternative splicing of this gene results in two transcript variants encoding the same protein.

#### Goat Anti-Aldehyde Reductase Antibody - References

A Large-scale genetic association study of esophageal adenocarcinoma risk. Liu CY, et al. *Carcinogenesis*, 2010 Jul. PMID 20453000. Genetic susceptibility to distinct bladder cancer subphenotypes. Guey LT, et al. *Eur Urol*, 2010 Feb. PMID 19692168. PTEN identified as important risk factor of chronic obstructive pulmonary disease. Hosgood HD 3rd, et al. *Respir Med*, 2009 Dec. PMID 19625176. Genetic polymorphisms in nitric oxide synthase genes modify the relationship between vegetable and fruit intake and risk of non-Hodgkin lymphoma. Han X, et al. *Cancer Epidemiol Biomarkers Prev*, 2009 May. PMID 19423521. Polymorphisms in innate immunity genes and lung cancer risk in Xuanwei, China. Shen M, et al. *Environ Mol Mutagen*, 2009 May. PMID 19170196.

**Goat Anti-Aldehyde Reductase Antibody - Citations**

- [Myoinositol Oxygenase Over-Expression Accentuates Generation of Reactive Oxygen Species and Exacerbates Cellular Injury Following High Glucose Ambience: A New Mechanism Relevant to the Pathogenesis of Diabetic Nephropathy.](#)