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

Specification

AKR1A1 Antibody - Product Information

Application	**WB**
Primary Accession	P14550
Reactivity	**Human, Mouse, Rat**
Host	**Rabbit**
Clonality	**Polyclonal**
Calculated MW	**37 KDa**
Antigen Region	**261 - 320**

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, PubMed: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,

PubMed:30538128). Functions as a detoxifiying 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, PubMed: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). 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). 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 Cytomety
- Cell Culture

AKR1A1 Antibody - Images

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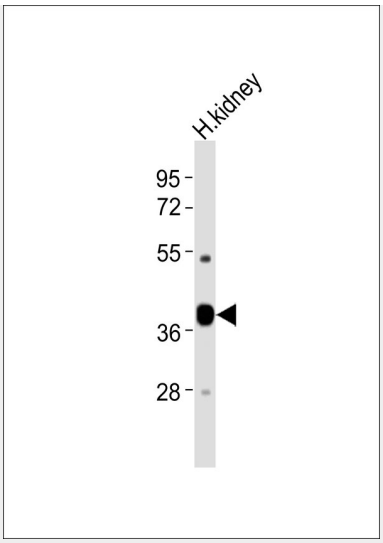

Anti-AKR1A1 Antibodyat 1:1000 dilution + human kidney lysates Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L),Peroxidase conjugated at 1/10000 dilution Predicted band size : 37 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

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.J. 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.