10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

KD-Validated Anti-AKR1A1 Mouse Monoclonal Antibody

Mouse monoclonal antibody
Catalog # AGI1927

Specification

KD-Validated Anti-AKR1A1 Mouse Monoclonal Antibody - Product Information

Application	**WB, FC, ICC**
Primary Accession	P14550
Reactivity	**Human, Mouse**
Clonality	**Monoclonal**
Isotype	**Mouse IgG2b**
Calculated MW	**Predicted, 37 kDa, observed, 37 kDa KDa**
Gene Name	**AKR1A1**
Aliases	**AKR1A1; Aldo-Keto Reductase Family 1 Member A1; ALR; Aldehyde Reductase; DD3; Dihydrodiol Dehydrogenase 3; Glucuronolactone Reductase; Glucuronate Reductase; EC 1.1.1.2; ALDR1; Aldo-Keto Reductase Family 1, Member A1 (Aldehyde Reductase); Epididymis Secretory Sperm Binding Protein Li 165mP; Epididymis Secretory Protein Li 6; Alcohol Dehydrogenase [NADP(+)]; Alcohol Dehydrogenase; EC 1.1.1.372; HEL-S-165mP; EC 1.1.1.54; EC 1.1.1.19; EC 1.1.1.20; EC 1.1.1; HEL-S-6; ARM**
Immunogen	**Recombinant protein of human AKR1A1**

KD-Validated Anti-AKR1A1 Mouse Monoclonal Antibody - Additional Information

Gene ID	**10327**

Other Names
Aldo-keto reductase family 1 member A1, 1.1.1.2, 1.1.1.372, 1.1.1.54, Alcohol dehydrogenase [NADP(+)], Aldehyde reductase, Glucuronate reductase, 1.1.1.19, S-nitroso-CoA reductase, ScorR, 1.6.-.-, AKR1A1, ALDR1, ALR

KD-Validated Anti-AKR1A1 Mouse Monoclonal 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

KD-Validated Anti-AKR1A1 Mouse Monoclonal 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

KD-Validated Anti-AKR1A1 Mouse Monoclonal Antibody - Images

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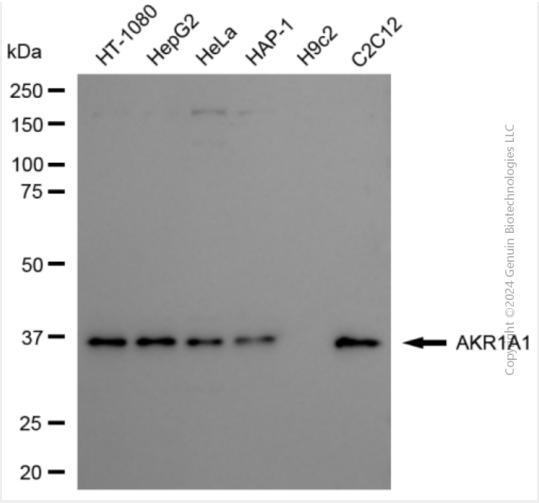
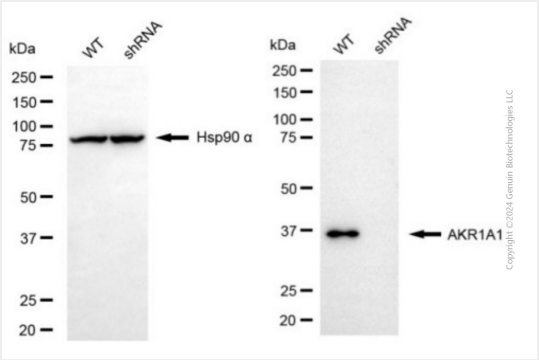
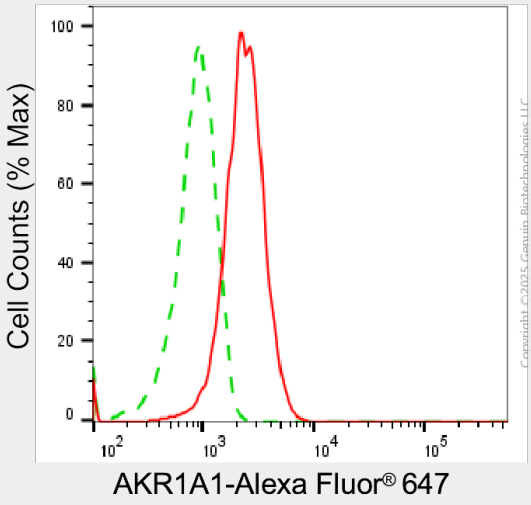


Western blotting analysis using anti-AKR1A1 antibody (Cat#AGI1927). Total cell lysates (30 µg) from various cell lines were loaded and separated by SDS-PAGE. The blot was incubated with anti-AKR1A1 antibody (Cat#AGI1927, 1:5,000) and HRP-conjugated goat anti-mouse secondary antibody respectively.



Western blotting analysis using anti-AKR1A1 antibody (Cat#AGI1927). AKR1A1 expression in wild type (WT) and AKR1A1 shRNA knockdown (KD) HeLa cells with 20 µg of total cell lysates. Hsp90 α serves as a loading control. The blot was incubated with anti-AKR1A1 antibody (Cat#AGI1927, 1:5,000) and HRP-conjugated goat anti-mouse secondary antibody respectively.



Flow cytometric analysis of AKR1A1 expression in HepG2 cells using anti-AKR1A1 antibody (Cat#AGI1927, 1:2,000). Green, isotype control; red, AKR1A1.

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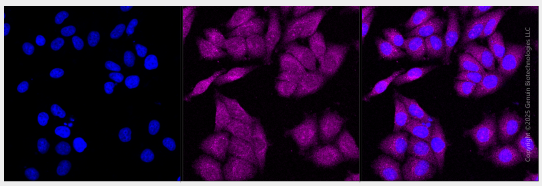

Immunocytochemical staining of HepG2 cells with anti-AKR1A1 antibody (Cat#AGI1927, 1:1,000). Nuclei were stained blue with DAPI; AKR1A1 was stained magenta with Alexa Fluor® 647. Images were taken using Leica stellaris 5. Protein abundance based on laser Intensity and Smart Gain Medium. Scale bar, 20 µm.