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KD-Validated Anti-AKR1A1 Mouse Monoclonal Antibody

Mouse monoclonal antibody
Catalog # AGI1927

Product Information

Application	WB, FC, ICC
Primary Accession	P14550
Reactivity	Human, Mouse
Clonality	Monoclonal
Isotype	Mouse IgG2b
Clone Names	24GB6220
Calculated MW	36573
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

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

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