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Sorbitol Dehydrogenase Polyclonal Antibody

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP58096

Product Information

Application	WB, IHC-P, IHC-F, IF, E
Primary Accession	Q00796
Reactivity	Rat, Pig, Dog, Bovine
Host	Rabbit
Clonality	Polyclonal
Calculated MW	38325
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human Sorbitol Dehydrogenase
Epitope Specificity	251-357/357
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SUBCELLULAR LOCATION	Mitochondrion membrane; Peripheral membrane protein. Cell projection, cilium, flagellum. Note=Associated with mitochondria of the midpiece and near the plasma membrane in the principal piece of the flagellum. Also found in the epididymosome, secreted by the epididymal epithelium and that transfers proteins from the epididymal fluid to the sperm surface (By similarity).
SIMILARITY	Belongs to the zinc-containing alcohol dehydrogenase family.
SUBUNIT	Homotetramer.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	Sorbitol dehydrogenase (SDH), a member of the medium-chain dehydrogenase/reductase protein family and the second enzyme of the polyol pathway of glucose metabolism, converts sorbitol to fructose strictly using NAD(+) as coenzyme. SDH is expressed almost ubiquitously in all mammalian tissues. The enzyme has attracted considerable interest due to its implication in the development of diabetic complications as the polyol pathway is particularly active in hyperglycemic states. Although SORD is closely related to the class I long-chain alcohol dehydrogenases, it differs in substrate specificity, catalyzing polyols such as sorbitol and xylitol but having no activity towards primary alcohols.

Additional Information

Gene ID	6652
Other Names	Sorbitol dehydrogenase, SDH, 1.1.1.-, (R, R)-butanediol dehydrogenase, 1.1.1.4, L-iditol 2-dehydrogenase, 1.1.1.14, Polyol dehydrogenase, Ribitol dehydrogenase, RDH, 1.1.1.56, Xylitol dehydrogenase, XDH, 1.1.1.9, SORD

Target/Specificity	Expressed in kidney and epithelial cells of both benign and malignant prostate tissue. Expressed in epididymis (at protein level).
Dilution	WB=1:500-2000,IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500,ELISA=1:5000-10000
Format	0.01M TBS(pH7.4) with 1% BSA, 0.09% (W/V) sodium azide and 50% Glyce
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	SORD
Function	Polyol dehydrogenase that catalyzes the reversible NAD(+)- dependent oxidation of various sugar alcohols. Is mostly active with D- sorbitol (D-glucitol), L-threitol, xylitol and ribitol as substrates, leading to the C2-oxidized products D-fructose, L-erythrulose, D- xylulose, and D-ribulose, respectively (PubMed:3365415). Is a key enzyme in the polyol pathway that interconverts glucose and fructose via sorbitol, which constitutes an important alternate route for glucose metabolism. The polyol pathway is believed to be involved in the etiology of diabetic complications, such as diabetic neuropathy and retinopathy, induced by hyperglycemia (PubMed:12962626, PubMed:25105142, PubMed:29966615). May play a role in sperm motility by using sorbitol as an alternative energy source for sperm motility (PubMed:16278369). May have a more general function in the metabolism of secondary alcohols since it also catalyzes the stereospecific oxidation of (2R,3R)-2,3-butanediol. To a lesser extent, can also oxidize L-arabinitol, galactitol and D-mannitol and glycerol in vitro. Oxidizes neither ethanol nor other primary alcohols. Cannot use NADP(+) as the electron acceptor (PubMed:3365415).
Cellular Location	Mitochondrion membrane {ECO:0000250|UniProtKB:Q64442}; Peripheral membrane protein {ECO:0000250|UniProtKB:Q64442}. Cell projection, cilium, flagellum {ECO:0000250|UniProtKB:Q64442}. Note=Associated with mitochondria of the midpiece and near the plasma membrane in the principal piece of the flagellum. Also found in the epididymosome, secreted by the epididymal epithelium and that transfers proteins from the epididymal fluid to the sperm surface. {ECO:0000250|UniProtKB:Q64442}
Tissue Location	Expressed in liver (PubMed:3365415). Expressed in kidney and epithelial cells of both benign and malignant prostate tissue. Expressed in epididymis (at protein level)