

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 LOCATIONMitochondrion 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

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)

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.