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Goat Anti-Sorbitol Dehydrogenase Antibody
Peptide-affinity purified goat antibody
Catalog # AF2024a

Specification

Goat Anti-Sorbitol Dehydrogenase Antibody - Product Information

Application	**WB**
Primary Accession	Q00796
Other Accession	NP_003095, 6652
Reactivity	**Mouse**
Predicted	**Human, Rat, Dog**
Host	**Goat**
Clonality	**Polyclonal**
Concentration	**100ug/200ul**
Isotype	**IgG**
Calculated MW	**38325**

Goat Anti-Sorbitol Dehydrogenase Antibody - Additional Information

Gene ID 6652

Other Names
Sorbitol dehydrogenase, 1.1.1.14, L-iditol 2-dehydrogenase, SORD

Format
0.5 mg IgG/ml in Tris saline (20mM Tris pH7.3, 150mM NaCl), 0.02% sodium azide, with 0.5% bovine serum albumin

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
Goat Anti-Sorbitol Dehydrogenase Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Goat Anti-Sorbitol Dehydrogenase Antibody - 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}

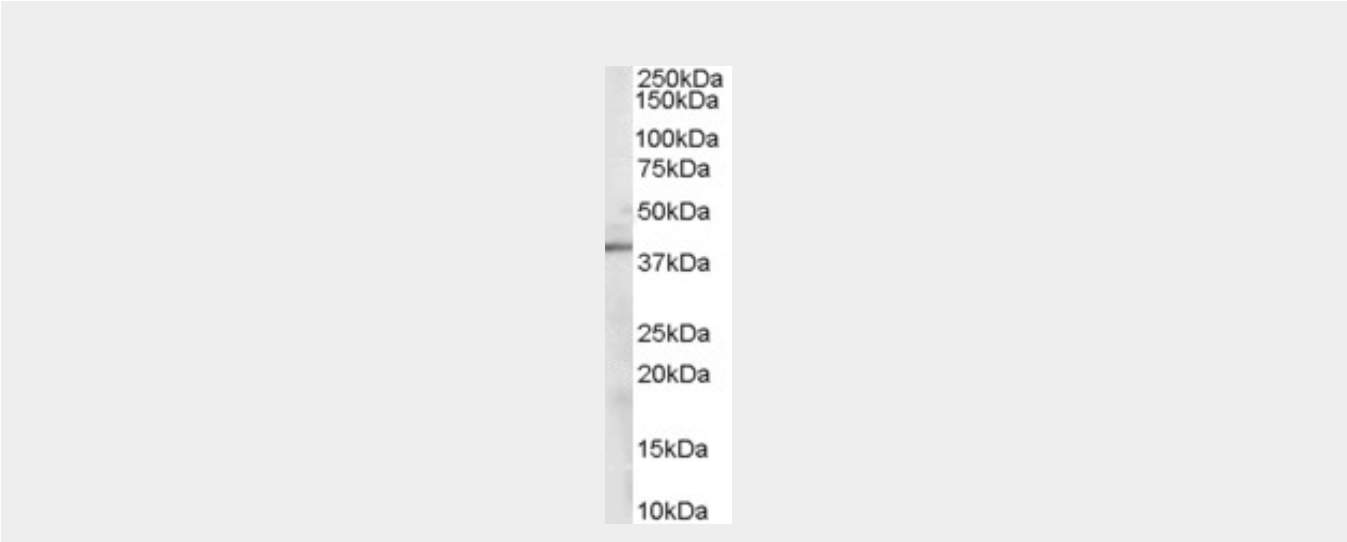
Tissue Location
Expressed in liver (PubMed:3365415). Expressed in kidney and epithelial cells of both benign and malignant prostate tissue. Expressed in epididymis (at protein level)

Goat Anti-Sorbitol Dehydrogenase 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

Goat Anti-Sorbitol Dehydrogenase Antibody - Images



AF2024a (0.1 µg/ml) staining of Mouse Kidney lysate (35 µg protein in RIPA buffer). Primary incubation was 1 hour. Detected by chemiluminescence.

Goat Anti-Sorbitol Dehydrogenase Antibody - Background

Sorbitol dehydrogenase (SORD; EC 1.1.1.14) catalyzes the interconversion of polyols and their corresponding ketoses, and together with aldose reductase (ALDR1; MIM 103880), makes up the sorbitol pathway that is believed to play an important role in the development of diabetic complications (summarized by Carr and Markham, 1995 [PubMed 8535074]). The first reaction of the pathway (also called the polyol pathway) is the reduction of glucose to sorbitol by ALDR1 with NADPH as the cofactor. SORD then oxidizes the sorbitol to fructose using NAD(+) cofactor.

Goat Anti-Sorbitol Dehydrogenase Antibody - References

Evaluation of candidate stromal epithelial cross-talk genes identifies association between risk of serous ovarian cancer and TERT, a cancer susceptibility hot-spot. Johnatty SE, et al. PLoS Genet, 2010 Jul 8. PMID 20628624.
Sorbitol dehydrogenase expression is regulated by androgens in the human prostate. Szab Z, et al. Oncol Rep, 2010 May. PMID 20372835.
ZAC1 is up-regulated by hypertonicity and decreases sorbitol dehydrogenase expression, allowing accumulation of sorbitol in kidney cells. Lanaspa MA, et al. J Biol Chem, 2009 Jul 24. PMID 19423711.
Catalytic mechanism of Zn2+-dependent polyol dehydrogenases: kinetic comparison of sheep liver sorbitol dehydrogenase with wild-type and Glu154-->Cys forms of yeast xylitol dehydrogenase. Klimacek M, et al. Biochem J, 2007 Jun 15. PMID 17343568.
Diversification of transcriptional modulation: large-scale identification and characterization of putative alternative promoters of human genes. Kimura K, et al. Genome Res, 2006 Jan. PMID 16344560.