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Goat Anti-ALDH1A1 (Internal) Antibody

Peptide-affinity purified goat antibody
Catalog # AF1051b

Specification

Goat Anti-ALDH1A1 (Internal) Antibody - Product Information

Application	**WB**
Primary Accession	P00352
Other Accession	NP_000680, 216
Reactivity	**Human**
Predicted	**Mouse, Rat**
Host	**Goat**
Clonality	**Polyclonal**
Concentration	**100ug/200ul**
Isotype	**IgG**
Calculated MW	**54862**

Goat Anti-ALDH1A1 (Internal) Antibody - Additional Information

Gene ID 216

Other Names
Retinal dehydrogenase 1, RALDH 1, RalDH1, 1.2.1.36, ALDH-E1, ALHDII, Aldehyde dehydrogenase family 1 member A1, Aldehyde dehydrogenase, cytosolic, ALDH1A1, ALDC, ALDH1, PUMB1

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-ALDH1A1 (Internal) Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Goat Anti-ALDH1A1 (Internal) Antibody - Protein Information

Name ALDH1A1 (HGNC:402)

Function
Cytosolic dehydrogenase that catalyzes the irreversible oxidation of a wide range of aldehydes to their corresponding carboxylic acid (PubMed:12941160, PubMed:15623782, PubMed:17175089, PubMed:<a href="http://www.uniprot.org/citations/19296407"

target="_blank">19296407, PubMed:25450233, PubMed:26373694). Functions downstream of retinol dehydrogenases and catalyzes the oxidation of retinaldehyde into retinoic acid, the second step in the oxidation of retinol/vitamin A into retinoic acid (By similarity). This pathway is crucial to control the levels of retinol and retinoic acid, two important molecules which excess can be teratogenic and cytotoxic (By similarity). Also oxidizes aldehydes resulting from lipid peroxidation like (E)-4-hydroxynon-2-enal/HNE, malonaldehyde and hexanal that form protein adducts and are highly cytotoxic. By participating for instance to the clearance of (E)-4-hydroxynon-2-enal/HNE in the lens epithelium prevents the formation of HNE-protein adducts and lens opacification (PubMed:12941160, PubMed:15623782, PubMed:19296407). Functions also downstream of fructosamine-3-kinase in the fructosamine degradation pathway by catalyzing the oxidation of 3-deoxyglucosone, the carbohydrate product of fructosamine 3-phosphate decomposition, which is itself a potent glycating agent that may react with lysine and arginine side-chains of proteins (PubMed:17175089). Has also an aminobutyraldehyde dehydrogenase activity and is probably part of an alternative pathway for the biosynthesis of GABA/4-aminobutanoate in midbrain, thereby playing a role in GABAergic synaptic transmission (By similarity).

Cellular Location
Cytoplasm, cytosol. Cell projection, axon {ECO:0000250|UniProtKB:P24549}

Tissue Location
Expressed by erythrocytes (at protein level).

Goat Anti-ALDH1A1 (Internal) 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-ALDH1A1 (Internal) Antibody - Images

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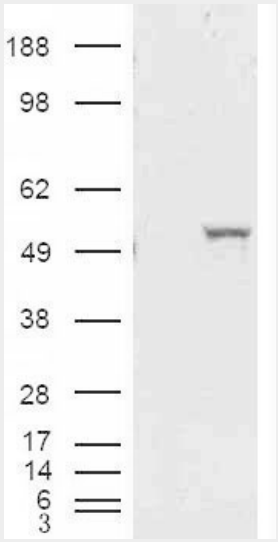
AF1051b (1 µg/ml) staining of Human Liver Lysate (35 µg protein in RIPA buffer). Primary incubation was 1 hour. Detected by chemiluminescence.



HEK293 overexpressing ALDH1A1 and probed with AF1051b (mock transfection in first lane).

Goat Anti-ALDH1A1 (Internal) Antibody - Background

This protein belongs to the aldehyde dehydrogenases family of proteins. Aldehyde dehydrogenase is the second enzyme of the major oxidative pathway of alcohol metabolism. Two major liver isoforms of this enzyme, cytosolic and mitochondrial, can be distinguished by their electrophoretic mobilities, kinetic properties, and subcellular localizations. Most Caucasians have two major isozymes, while approximately 50% of Orientals have only the cytosolic isozyme, missing the mitochondrial isozyme. A remarkably higher frequency of acute alcohol intoxication among Orientals than among Caucasians could be related to the absence of the mitochondrial isozyme. This gene encodes a cytosolic isoform, which has a high affinity for aldehydes.

Goat Anti-ALDH1A1 (Internal) Antibody - References

Maternal genes and facial clefts in offspring: a comprehensive search for genetic associations in two population-based cleft studies from Scandinavia. Jugessur A, et al. PLoS One, 2010 Jul 9. PMID 20634891.
Prognostic impact of the expression of putative cancer stem cell markers CD133, CD166, CD44s, EpCAM, and ALDH1 in colorectal cancer. Lugli A, et al. Br J Cancer, 2010 Jul 27. PMID 20606680.
High aldehyde dehydrogenase activity identifies tumor-initiating and metastasis-initiating cells in

human prostate cancer. van den Hoogen C, et al. Cancer Res, 2010 Jun 15. PMID 20516116.
Personalized smoking cessation: interactions between nicotine dose, dependence and quit-success genotype score. Rose JE, et al. Mol Med, 2010 Jul-Aug. PMID 20379614.
Aldehyde dehydrogenase 1 A1-positive cell population is enriched in tumor-initiating cells and associated with progression of bladder cancer. Su Y, et al. Cancer Epidemiol Biomarkers Prev, 2010 Feb. PMID 20142235.