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Anti-ALDH1A1 (Aldehyde Dehydrogenase 1A1) Antibody
Mouse Monoclonal Antibody
Catalog # AH13214

Specification

Anti-ALDH1A1 (Aldehyde Dehydrogenase 1A1) Antibody - Product Information

Application	**,1,14,3,4,**
Primary Accession	P00352
Other Accession	76392
Reactivity	**Human**
Host	**Mouse**
Clonality	**Monoclonal**
Isotype	**Mouse / IgG1**
Calculated MW	**54862**

Anti-ALDH1A1 (Aldehyde Dehydrogenase 1A1) Antibody - Additional Information

Gene ID 216

Other Names
Acetaldehyde dehydrogenase 1; AHD2; ALDC; Aldehyde dehydrogenase 1 soluble; Aldehyde dehydrogenase 1A1; Aldehyde dehydrogenase family 1 member A1; ALDH-E1; ALDH1; ALDH1A1; epididymis luminal protein 12; epididymis luminal protein 9; epididymis secretory sperm binding protein Li 53e; HEL-S-53e; PUMB1; RALDH1; Retinal dehydrogenase 1

Format
200ug/ml of Ab purified from Bioreactor Concentrate by Protein A/G. Prepared in 10mM PBS with 0.05% BSA & 0.05% azide. Also available WITHOUT BSA & azide at 1.0mg/ml.

Storage
Store at 2 to 8°C.Antibody is stable for 24 months.

Precautions
Anti-ALDH1A1 (Aldehyde Dehydrogenase 1A1) Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Anti-ALDH1A1 (Aldehyde Dehydrogenase 1A1) 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:19296407, PubMed:25450233, PubMed:<a href="http://www.uniprot.org/citations/26373694"

target="_blank">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}

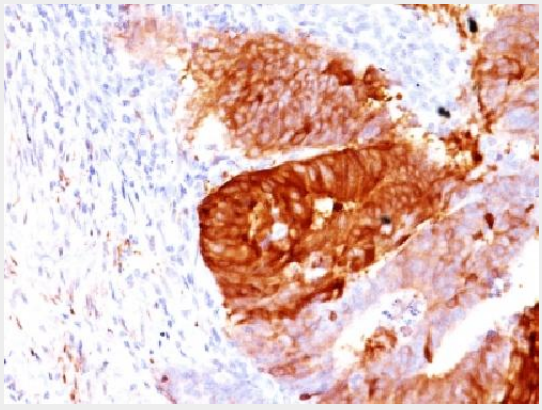
Tissue Location
Expressed by erythrocytes (at protein level).

Anti-ALDH1A1 (Aldehyde Dehydrogenase 1A1) 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

Anti-ALDH1A1 (Aldehyde Dehydrogenase 1A1) Antibody - Images



Formalin-fixed, paraffin-embedded Human Colon Carcinoma stained with ALDH1A1 Monoclonal

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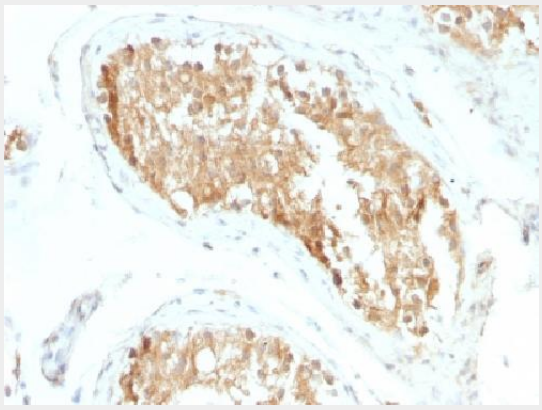
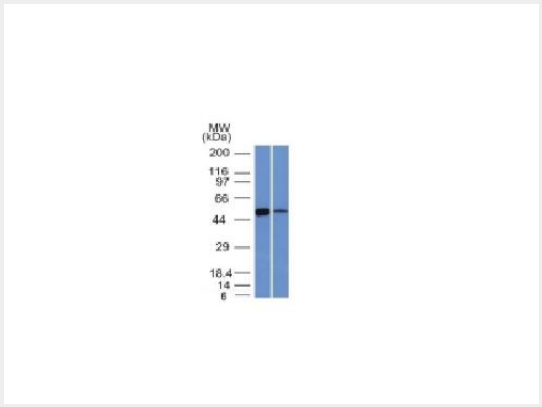
Antibody (ALDH1A1/1381).



Formalin-fixed, paraffin-embedded Human Testicular Carcinoma stained with ALDH1A1 Monoclonal Antibody (ALDH1A1/1381).



Western Blot of K562 and Lung Lysate using ALDH1A1 Monoclonal Antibody (ALDH1A1/1381).

Anti-ALDH1A1 (Aldehyde Dehydrogenase 1A1) Antibody - Background

ALDH1A1 belongs to the ALDH enzymes, a family of evolutionarily conserved enzymes comprised of 19 isoforms that are localized in the cytoplasm, mitochondria or nucleus. ALDH1A1 is predominantly expressed in the epithelium of testis, brain, eye, liver, kidney, as well as neural and hematopoietic stem cells. Reportedly, high ALDH1A1 expression is found in solitary fibrous tumor (SFT) and hemangiopericytoma (HPC), compared to meningiomas and synovial sarcomas. In combination with CD34, ALDH1A1 may be useful for the differentiation among SFT, HPC, meningioma, and synovial sarcoma.