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ALDH1A3 Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7847a

Product Information

Application	WB, IHC-P, E
Primary Accession	P47895
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	56108
Antigen Region	24-52

Additional Information

Gene ID	220
Other Names	Aldehyde dehydrogenase family 1 member A3, Aldehyde dehydrogenase 6, Retinaldehyde dehydrogenase 3, RALDH-3, RalDH3, ALDH1A3, ALDH6
Target/Specificity	This ALDH1A3 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 24-51 amino acids from the N-terminal region of human ALDH1A3.
Dilution	WB~~1:1000 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.05% (V/V) Proclin 300. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	ALDH1A3 Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	ALDH1A3
Synonyms	ALDH6 {ECO:0000303|PubMed:7698756}
Function	Catalyzes the NAD-dependent oxidation of aldehyde substrates, such as all-trans-retinal and all-trans-13,14-dihydroretinal, to their corresponding carboxylic acids, all-trans-retinoate and all-trans- 13,14-dihydroretinoate,

	respectively (By similarity) (PubMed:27759097). High specificity for all-trans-retinal as substrate, can also accept acetaldehyde as substrate in vitro but with lower affinity (PubMed:27759097). Required for the biosynthesis of normal levels of retinoate in the embryonic ocular and nasal regions; a critical lipid in the embryonic development of the eye and the nasal region (By similarity).
Cellular Location	Cytoplasm {ECO:0000250|UniProtKB:Q9JHW9}.
Tissue Location	Expressed at low levels in many tissues and at higher levels in salivary gland, stomach, and kidney

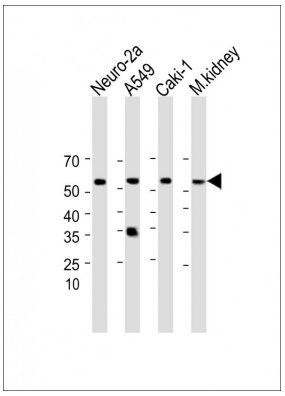
Background

Aldehyde dehydrogenase isozymes are thought to play a major role in the detoxification of aldehydes generated by alcohol metabolism and lipid peroxidation. The enzyme ALDH1A3 uses retinal as a substrate, either in a free or cellular retinol-binding protein form.

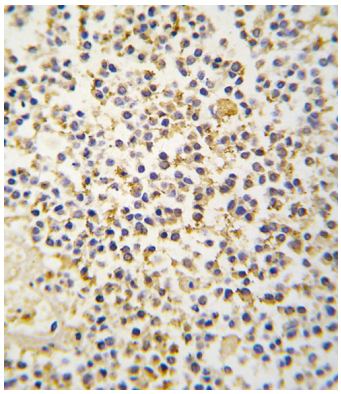
References

Rexer,B.N., Cancer Res. 61 (19), 7065-7070 (2001)
Yoshida,A., Eur. J. Biochem. 251 (3), 549-557 (1998)

Images



All lanes: Anti-ALDH1A3 Antibody (N-term) at 1:2000 dilution Lane 1: Neuro-2a whole cell lysate Lane 2: A549 whole cell lysate Lane 3: Caki-1 whole cell lysate Lane 4: Mouse kidney lysate Lysates/proteins at 20 µg per lane. Secondary: Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ASP1615) at 1/15000 dilution. Observed band size: 55 KDa Blocking/Dilution buffer: 5% NFDM/TBST.



Formalin-fixed and paraffin-embedded human kideny tissue reacted with ALDH1A3 antibody (N-term), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.

Citations

- ALDH1A3 Coordinates Metabolism With Gene Regulation in Pulmonary Arterial Hypertension
- The RNA-binding protein MEX3A is a prognostic factor and regulator of resistance to gemcitabine in pancreatic ductal adenocarcinoma

- Androgen Receptor signaling promotes the neural progenitor cell pool in the developing cortex
- Aldehyde dehydrogenases contribute to skeletal muscle homeostasis in healthy, aging, and Duchenne muscular dystrophy patients
- Cancer Stem Cell Biomarkers in EGFR-Mutation-Positive Non-Small-Cell Lung Cancer.
- A Sox2-Sox9 signalling axis maintains human breast luminal progenitor and breast cancer stem cells.
- ALDH1A3 is epigenetically regulated during melanocyte transformation and is a target for melanoma treatment.
- Therapeutic potential of the metabolic modulator phenformin in targeting the stem cell compartment in melanoma.
- Induced Expression of Cancer Stem Cell Markers ALDH1A3 and Sox-2 in Hierarchical Reconstitution of Apoptosis-resistant Human Breast Cancer Cells.
- Aldh1 Expression and Activity Increase During Tumor Evolution in Sarcoma Cancer Stem Cell Populations.
- ALDH Enzyme Expression Is Independent of the Spermatogenic Cycle and Their Inhibition Causes Misregulation of Murine Spermatogenic Processes.
- Down-regulation of ALDH1A3, CD44 or MDR1 sensitizes resistant cancer cells to FAK autophosphorylation inhibitor Y15.
- Importance of ALDH1A enzymes in determining human testicular retinoic acid concentrations.
- Essential role of aldehyde dehydrogenase 1A3 for the maintenance of non-small cell lung cancer stem cells is associated with the STAT3 pathway.
- Cellular level classification of breast cancer through proteomic markers using nanochannel array sensors.