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ALDH1A1

Purified Mouse Monoclonal Antibody
Catalog # AO2560a

Product Information

Application	WB, IHC, ICC, E
Primary Accession	P00352
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Clone Names	2G1G4
Isotype	Mouse IgG1
Calculated MW	54862
Immunogen	Purified recombinant fragment of human ALDH1A1 (AA: 1-110) expressed in E. Coli.
Formulation	Purified antibody in PBS with 0.05% sodium azide

Additional Information

Gene ID	216
Other Names	ALDC; ALDH1; HEL-9; HEL12; PUMB1; ALDH11; RALDH1; ALDH-E1; HEL-S-53e
Dilution	WB~~ 1/500 - 1/2000 IHC~~ 1/200 - 1/1000 ICC~~N/A E~~ 1/10000
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	ALDH1A1 is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	ALDH1A1 (HGNC:402)
Function	Cytosolic dehydrogenase that catalyzes the NAD(+)-dependent irreversible oxidation of a wide range of aldehydes to their corresponding carboxylic acid (PubMed:25450233, PubMed:26373694, PubMed:22339434, PubMed:23444097). 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 (PubMed:25413692). This pathway is crucial to control the levels of retinol and retinoic acid, two important molecules which excess can be teratogenic and cytotoxic (PubMed:25413692). 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). Also functions 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). Also has 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).

References

1.Oncotarget. 2015 Dec 1;6(38):41360-9.2.Biomark Med. 2015;9(8):777-90.

Images

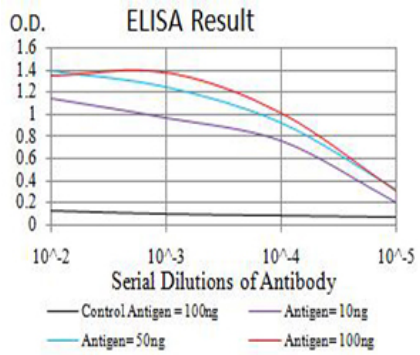


Figure 1:Black line: Control Antigen (100 ng);Purple line: Antigen (10ng); Blue line: Antigen (50 ng); Red line:Antigen (100 ng)

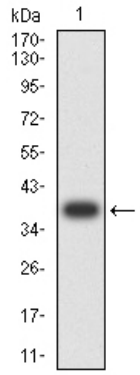
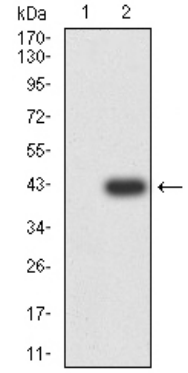


Figure 2:Western blot analysis using ALDH1A1 mAb against human ALDH1A1 (AA: 1-110) recombinant protein. (Expected MW is 38.4 kDa)

Figure 3:Western blot analysis using ALDH1A1 mAb against HEK293 (1) and ALDH1A1 (AA: 1-110)-hIgGFc transfected HEK293 (2) cell lysate.



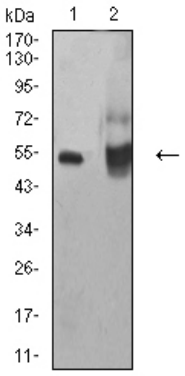


Figure 4:Western blot analysis using ALDH1A1 mouse mAb against HepG2 (1) and A549 (2) cell lysate.

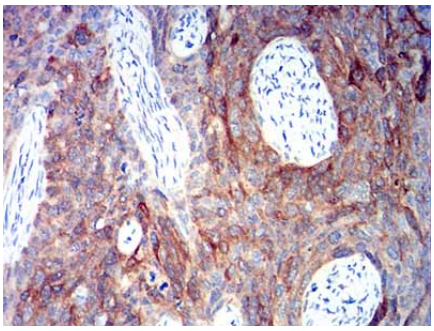
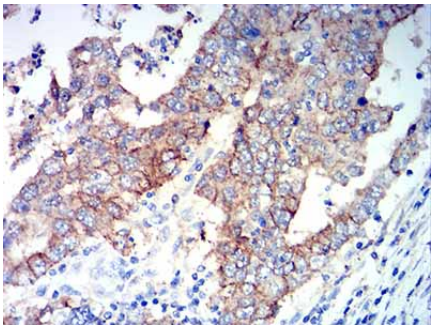


Figure 5:Immunohistochemical analysis of paraffin-embedded cervical cancer tissues using ALDH1A1 mouse mAb with DAB staining.



1/200 - 1/1000

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