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ALDH1A1 / ALDH1 Antibody (clone 1G6)

Mouse Monoclonal Antibody
Catalog # ALS14307

Specification

ALDH1A1 / ALDH1 Antibody (clone 1G6) - Product Information

Application	**WB, IHC-P, E, IP**
Primary Accession	P00352
Reactivity	**Human**
Host	**Mouse**
Clonality	**Monoclonal**
Calculated MW	**55kDa KDa**
Dilution	**WB~~1:1000** **IHC-P~~N/A** **E~~N/A** **IP~~N/A**

ALDH1A1 / ALDH1 Antibody (clone 1G6) - 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

Target/Specificity
Human ALDH1A1

Reconstitution & Storage
Store at -20°C or lower. Aliquot to avoid repeated freezing and thawing.

Precautions
ALDH1A1 / ALDH1 Antibody (clone 1G6) is for research use only and not for use in diagnostic or therapeutic procedures.

ALDH1A1 / ALDH1 Antibody (clone 1G6) - 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: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). 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}

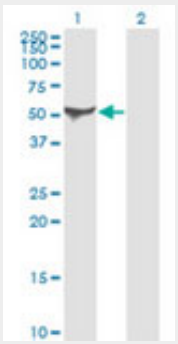
Tissue Location
Expressed by erythrocytes (at protein level).

ALDH1A1 / ALDH1 Antibody (clone 1G6) - 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

ALDH1A1 / ALDH1 Antibody (clone 1G6) - Images



Western blot of ALDH1A1 expression in transfected 293T cell line.

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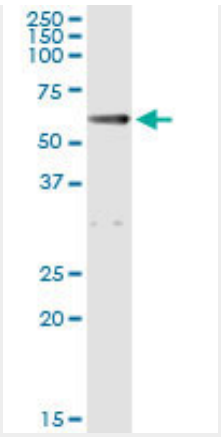

Immunoprecipitation of ALDH1A1 transfected lysate using anti-ALDH1A1 monoclonal antibody and...

ALDH1A1 / ALDH1 Antibody (clone 1G6) - Background

Binds free retinal and cellular retinol-binding protein- bound retinal. Can convert/oxidize retinaldehyde to retinoic acid (By similarity).

ALDH1A1 / ALDH1 Antibody (clone 1G6) - References

Hsu L.C.,et al.Genomics 5:857-865(1989).
Zheng C.F.,et al.Alcohol. Clin. Exp. Res. 17:828-831(1993).
Ramana K.V.,et al.Submitted (SEP-2003) to the EMBL/GenBank/DDBJ databases.
Kalnine N.,et al.Submitted (MAY-2003) to the EMBL/GenBank/DDBJ databases.
Humphray S.J.,et al.Nature 429:369-374(2004).