EPITOMICS
an abcam company

Order: 877-772-2622
Support: support@epitomics.com
Web: pathology.epitomics.com

RUO DATA SHEET

ALDH1A1

Concentrated Rabbit Monoclonal Antibody

Intended Use:
For Research Use Only (RUO)

Epitomics' Rabbit Monoclonal Anti-Human ALDH1A1, Clone EP168, is intended for use to qualitatively identify ALDH1A1 by light microscopy in sections of formalin-fixed, paraffin-embedded tissue using immunohistochemical detection methodology.

Catalog number	Description	Dilution
AC-0136RUO	0.1 ml, concentrated	1:100-1:200
AC-0136RUOB	0.5 ml, concentrated	1:100-1:200
AC-0136RUOC	1 ml, concentrated	1:100-1:200
AC-0136RUOBULK	2 ml or more, concentrated	1:100-1:200

Immunogen: A synthetic peptide corresponding to residues of human ALDH1A1 protein
Source: Rabbit Monoclonal Antibody
Clone ID: EP168
Isotype: Rabbit IgG
Application: Immunohistochemistry for formalin-fixed paraffin-embedded tissue

Summary and Explanation:
ALDH1A1 belongs to the aldehyde dehydrogenase family. Aldehyde dehydrogenase is the next enzyme after alcohol dehydrogenase in the major pathway of alcohol metabolism. There are two major aldehyde dehydrogenase isozymes in the liver, cytosolic and mitochondrial, which are encoded by distinct genes, and can be distinguished by their electrophoretic mobility, kinetic properties, and subcellular localization. The ALDH1A1 gene encodes the cytosolic isozyme. ALDH1A1 is known to catalyze the oxidation of retinaldehyde to retinoic acid. It may also be involved in the regulation of the metabolic responses to high-fat diet.

ALDH1A1 has been a well established marker of hematopoietic stem cells and progenitor cells. Recent studies also show that ALDH1A1 is an important cancer stem marker associated with tumor progression in cancers of the breast, prostate and lung.

This antibody labels epithelial cells of the stomach, liver, kidney and thyroid, neural cells and stromal cells including endothelial cells. In tumors, it stains stromal cells as well as tumor cells in many types of cancers.

Reagent Provided:
Antibody to ALDH1A1 is affinity purified and diluted in 10 mM phosphate buffered saline (PBS), pH 7.2 containing 1% bovine serum albumin (BSA) and 0.09% sodium azide (NaN_3).

Storage and Stability:
Store at 2-8 °C. Do not use after expiration date provided on the vial. End user must validate any storage conditions other than those specified.

Procedures Recommended:
1. Pretreatment: Epitope retrieval using TRIS/ EDTA buffer (catalog #: SP-0004) with a pressure cooker
2. Endogenous peroxidase block: Block for 10 minutes at room temperature using peroxidase solution (catalog #: SP-0002).
3. Protein block: Block for 10 minutes at room temperature using blocking solution (catalog #: SP-0003).
4. Primary antibody: Incubate for 30 minutes.
5. Detection: Follow instructions from the selected detection system (EpiPrecision™, a Biotin Streptavitin-HRP Detection, catalog #: DK-0001, 0003, or EpiVision™, a Rabbit Polymer Detection, catalog # DK-0002, 0004).

The antibody dilution and protocol may vary depending on the specimen preparation and specific application. Optimal conditions should be determined by individual laboratory.

Performance Characteristics:
This antibody gives cytoplasmic staining in positive cells. The recommended positive controls are Embryonal liver for normal tissue and Breast cancer for abnormal tissue.

Limitations:
Immunohistochemistry is a complex process. Variation in tissue selection, tissue processing, antigen retrieval, peroxidase activity, detection systems and improper counterstaining may cause variation in results.

References:
1. Maglott D, et al.: Nucleic Acids Res2005, 33:D54-58
2. Yoshida A, et al.: Alcohol1985, 2:103-106
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4. Moreb JS: Curr Stem Cell Res Ther2008, 3:237-246
5. Khoury T, et al.: Mod Pathol2011,
6. Li T, et al.: Lab Invest2010, 90:234-244
7. Patel M, et al.: Lung Cancer2008, 59:340-349
8. Sullivan JP, et al.: Cancer Res2010, 70:9937-9948

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Epitomics, Inc.
863 Mitten Rd., Suite 103
Burlingame, CA 94010
USA