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Monoclonal Antibody to Vimentin - FITC

Alternate names: VIM

Catalog No.: BM5501F

Quantity: 0.25 ml

Background: Vimentin is an intermediate filament protein which is present in all cells of mesenchymal origin. Vimentin is the major subunit protein of the intermediate filaments of mesenchymal cells. It is believed to be involved with the intracellular transport of proteins between the nucleus and plasma membrane. Vimentin has been implicated to be involved in the rate of steroid synthesis via its role as a storage network for steroidogenic cholesterol containing lipid droplets. Vimentin phosphorylation by a protein kinase causes the breakdown of intermediate filaments and activation of an ATP and myosin light chain dependent contractile event. This results in cytoskeletal changes that facilitate the interaction of the lipid droplets within mitochondria, and subsequent transport of cholesterol to the organelles leading to an increase in steroid synthesis. Immunohistochemical staining for Vimentin is characteristic of sarcomas (of neural, muscle and fibroblast origin) compared to carcinomas which are generally negative. Melanomas, lymphomas and vascular tumors may all stain for Vimentin. Vimentin antibodies are thus of value in the differential diagnosis of undifferentiated neoplasms and malignant tumors. They are generally used with a panel of other antibodies including those recognizing cytokeratins, lymphoid markers, S100, desmin and neurofilaments.

Uniprot ID: P08670

NCBI: NP_003371.2

GeneID: 7431

Host / Isotype: Mouse / IgG2a

Clone: VIM 3B4

Immunogen: Vimentin (purified from Bovine lens)

Format:
State: Liquid purified Ig fraction.
Purification: Affinity Chromatography on Protein A.
Label: FITC

Applications:
ELISA.
Immunoblotting.
Flow Cytometry.
Immunofluorescence Microscopy (5-10 µg/ml recommended)
Immunohistochemistry (dilute at least 1/10 with PBS, pH 7.4).
Suitable for Frozen and Paraffin-Embedded tissue and Cytological Material. With paraffin-embedded sections, protease pretreatment is required prior to antibody application.

For research and in vitro use only. Not for diagnostic or therapeutic work.
Material Safety Datasheets are available at www.acris-antibodies.com or on request.

Antibody Hotline - Technical Questions - Antibody Location Service
Free Call: 0800-2274746 (Germany only) - www.acris-antibodies.com

Incubation Time: 1 h at RT; extended with paraffin.
Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.

Specificity:

This antibody is highly specific for the intermediate filament protein vimentin.
Polypeptide reacting: Mr 57 000 intermediate filament protein (vimentin) of mesenchymal cells.
The binding region of monoclonal antibody VIM3B4 has been characterized by Bohn et al. (1992). According to these authors, the epitope has been localized on the alpha-helical part of vimentin (rod domain coil 2). Due to an aa substitution at position of aa 353 in murine vimentin (that could explain for the weak cross-reaction of the antibody with murine vimentin) they were able to narrow down the binding region around position 353. These findings were confirmed by truncation mutagenesis experiments using human vimentin (Rogers et al., 1995).
Clone VIM 3B4 has turned out to be the most avid mab to vimentin.
Tumors Specifically Detected: sarcoma (including myosarcoma), lymphoma, melanoma.
Reactivities on Cultured Cell Lines (tested so far): RD cells, glioma cells, fibroblasts (SV-80), MDCK.
Species: Human, Monkey, Bovine, Dog, Chicken, Amphibian (e.g. Xenopus leavis). Weaker Murine cross-reaction.
Other species not tested.

Storage:

Store the antibody undiluted at 2-8°C for one month or (in aliquots) at -20°C for longer.
This product is photosensitive and should be protected from light.
Avoid repeated freezing and thawing.
Shelf life: one year from despatch.

General References:

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3. Kasper, M., Stosiek, P., van Muijen, G.N.P. and Moll, R.: Cell type heterogeneity of intermediate filament expression in epithelia of the human pituitary gland. Histochemistry 93, 93-103 (1989)
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9. Rogers K.R., Eckelt A., Nimmrich V., Janssen K.-P., Schliwa M., Hermann H., Franke W.W.: Truncation mutagenesis of the non-α-helical carboxyterminal tail domain of vimentin reveals contributions to cellular localization but not to filament assembly. Eur. J. Cell Biol. 66: 136-150 (1995).
10. Bohn W., Wiegers W., Beuttenmueller M., and Traub P.: Species-specific recognition

patterns of monoclonal antibodies directed against vimentin. Exp. Cell Res. 201: 1-7 (1992).
11. Hermann H., Hofmann I., Franke W.W.: Identification of a Nonapeptide Motif in the Filament Head Domain Involved in Intermediate Filament Assembly. J. Mol. Biol. 223: 637-650 (1992).
12. Koeser J, Troyanovsky SM, Greund C, Franke WW: De novo formation of desmosomes in cultured cells upon transfection of genes encoding specific desmosomal components. Exp Cell Res 285, 114-130 (2003).