# Vimentin monoclonal antibody

Catalog: MB65984 Host: Mouse Reactivity: Human, Mouse, Rat

## BackGround:

The cytoskeleton consists of three types of cytosolic fibers: microfilaments (actin filaments), intermediate filaments, and microtubules. Major types of intermediate filaments are distinguished by their cell-specific expression: cytokeratins (epithelial cells), glial fibrillary acidic protein (GFAP) (glial cells), desmin (skeletal, visceral, and certain vascular smooth muscle cells), vimentin (mesenchyme origin), and neurofilaments (neurons). GFAP and vimentin form intermediate filaments in astroglial cells and modulate their motility and shape. In particular, vimentin filaments are present at early developmental stages, while GFAP filaments are characteristic of differentiated and mature brain astrocytes. Thus, GFAP is commonly used as a marker for intracranial and intraspinal tumors arising from astrocytes. Research studies have shown that vimentin is present in sarcomas, but not carcinomas, and its expression is examined in conjunction with that of other markers to distinguish between the two. Vimentin's dynamic structural changes and spatial re-organization in response to extracellular stimuli help to coordinate various signaling pathways. Phosphorylation of vimentin at Ser56 in smooth muscle cells regulates the structural arrangement of vimentin filaments in response to serotonin. Remodeling of vimentin and other intermediate filaments is important during lymphocyte adhesion and migration through the endothelium.

During mitosis, CDK1 phosphorylates vimentin at Ser56. This phosphorylation provides a PLK binding site for vimentin-PLK interaction. PLK further phosphorylates vimentin at Ser83, which might serve as a memory phosphorylation site and play a regulatory role in vimentin filament disassembly. Additionally, studies using various soft-tissue sarcoma cells have shown that phosphorylation of vimentin at Ser39 by Akt1 enhances cell migration and survival, suggesting that vimentin could be a potential target for soft-tissue sarcoma targeted therapy .

## Product:

Liquid in 0.42% Potassium phosphate, 0.87% Sodium chloride, pH 7.3, 30% glycerol, and 0.01% sodium azide.

## Molecular Weight:

~ 53 kDa

## Swiss-Prot:

P08670

## Purification&Purity:

The antibody was affinity-purified from mouse antiserum by affinity-chromatography using epitope-specific immunogen and the purity is > 95% (by SDS-PAGE).

## Applications:

WB (1/1000 - 1/3000), IHC (1/200 - 1/500), IF/ICC (1/100 - 1/200)

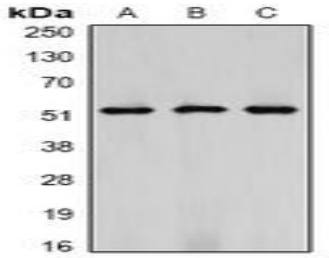
## Storage&Stability:

Store at 4℃ short term. Aliquot and store at -20℃ long term. Avoid freeze-thaw cycles.

## Specificity:

Recognizes endogenous levels of Vimentin protein.

## DATA:




Western blot analysis of Vimentin expression in Hela (A), mouse brain (B), rat brain (C) whole cell lysates.

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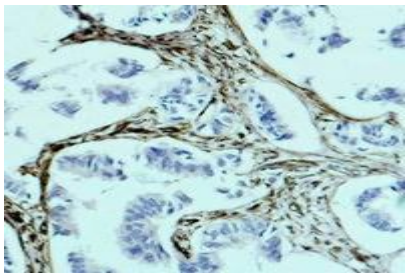
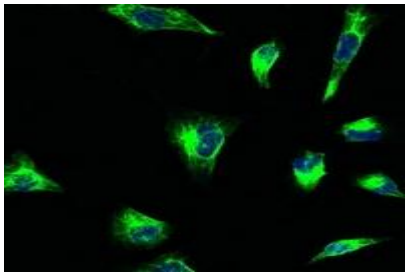
For research use only, not for use in diagnostic procedure.



Immunohistochemical analysis of Vimentin staining in human breast cancer formalin fixed paraffin embedded tissue section. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0). The section was then incubated with the antibody at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.



Immunofluorescent analysis of Vimentin staining in Hela cells. Formalin-fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 5-10 minutes and blocked with 3% BSA-PBS for 30 minutes at room temperature. Cells were probed with the primary antibody in 3% BSA-PBS and incubated overnight at 4 ℃ in a hidified chamber. Cells were washed with PBST and incubated with a FITC-conjugated secondary antibody (green) in PBS at room temperature in the dark. DAPI was used to stain the cell nuclei (blue).

**Note:**

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