

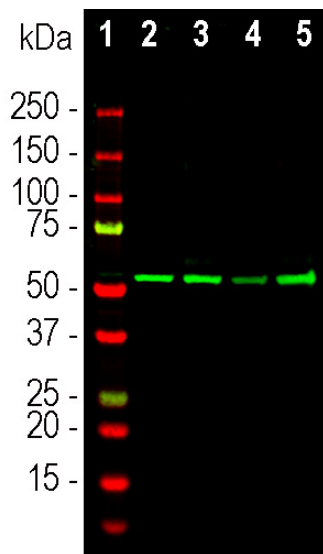
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HGNC Name: VIM
UniProt: P08670
RRID: AB_2737582
Immunogen: Recombinant human vimentin expressed in and purified from *E. coli*
Format: Affinity purified antibody at 1mg/mL in 50% PBS, 50% glycerol plus 5mM NaN₃
Storage: Store at 4°C for short term, for longer term at -20°C
Recommended dilutions:
 WB: 1:5,000. IF/ICC: 1:500-1,000. IHC: not recommended

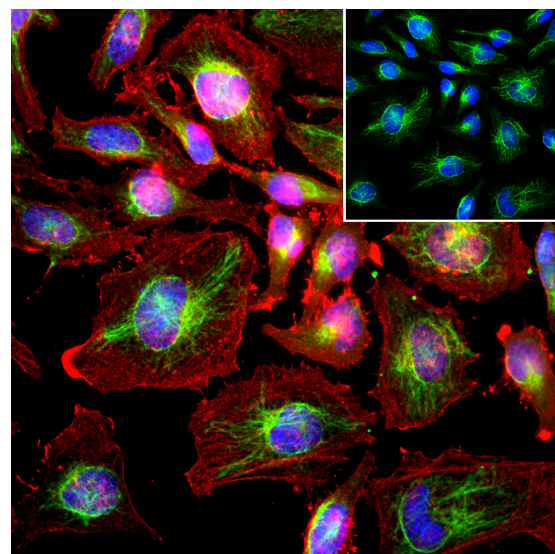
References:

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Applications	Host	Isotype	Molecular Wt.	Species Cross-Reactivity
WB, ICC/IF, IHC	Goat		~50kDa	Hu, Mo, Rt, Ms, Co, Pi, Ho



Western blot analysis of different cell lysates using goat pAb to vimentin, GPCA-Vim, dilution 1:5,000 in green. [1] protein standard, [2] HeLa, [3] HEK293, [4] NIH-3T3 and [5] C6 cell lysates. The GPCA-Vim antibody binds to the vimentin protein showing a single band at ~50kDa.



Immunofluorescent analysis of HeLa cell culture stained with goat pAb to vimentin, GPCA-Vim, dilution 1:500 in green, and costained with mouse mAb to actin, MCA-5J11, dilution 1:500 in red. Blue is Hoechst staining of nuclear DNA. GPCA-Vim antibody produces strong staining of intermediate filament network of the cytoskeleton, while actin antibody stains the submembranous actin-rich cytoskeleton, stress fibers and bundles of actin associated with cell adhesion sites.

Background:

Vimentin is a protein subunit of the intermediate or 10nm filaments found in the cytoplasm of many cell types (1). Intermediate filaments are relatively stable fibrous components of cells which appear to have primarily a mechanical function. Many cell lines such as HEK293, HeLa, 3T3 and Cos cells contain prominent vimentin networks (1). Vimentin containing filaments accumulate around aggresomes, cytoplasmic clumps of misfolded and often ubiquitinated proteins, and so vimentin antibodies provide one means to identify these structures (2). Vimentin is a major protein of eye lens and cornea, and found in mesenchymal tissues in adult mammals. In the CNS it is found in endothelia and developing neurons, developing and some mature astrocytes, microglia, mature Bergmann glia in the cerebellum, Müller glia in the retina and ependymal cells (e.g. 3,4). Mutations in the vimentin gene may cause cataracts (5,6), and elevated levels of vimentin in blood samples are associated with onset of cancer (7,8). Vimentin levels increase in a variety of cell types as they become cancerous, suggesting that increase in expression of this protein is a useful diagnostic marker of the epithelial-mesenchymal transition, an important step in the metastasis of carcinoma cells (9).

The GPCA-Vim antibody can be used to study stem cells and generally to reveal the intermediate filament cytoskeleton. The immunogen used to generate this antibody was full length recombinant human vimentin, PROT-r-Vim, expressed in and purified from *E. coli*. Vimentin is a major protein of eye lens and cornea, and this mutation renders the molecule unable assemble into normal 10nm filaments. Antibodies to vimentin are useful in studies of stem cells and generally to reveal the filamentous cytoskeleton. The antibody works well on all mammals tested to date for western blotting, IF and ICC, but is not recommended for IHC. It was generated in goat by standard procedures. The same vimentin immunogen was used to produce two high quality epitope mapped monoclonal antibodies to vimentin MCA-2A52 and MCA-2D1, and also widely used rabbit and chicken polyclonal antibodies RPCA-VIM and CPCA-VIM.

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Abbreviation Key:

mAb—Monoclonal Antibody pAb—Polyclonal Antibody WB—Western Blot IF—Immunofluorescence ICC—Immunocytochemistry
 IHC—Immunohistochemistry E—ELISA Hu—Human Mo—Monkey Do—Dog Rt—Rat Ms—Mouse Co—Cow Pi—Pig Ho—Horse Ch—Chicken
 Dr—D. rerio Dm—D. melanogaster Sm—S. mutans Ce—C. elegans Sc—S. cerevisiae Sa—S. aureus Ec—E. coli.