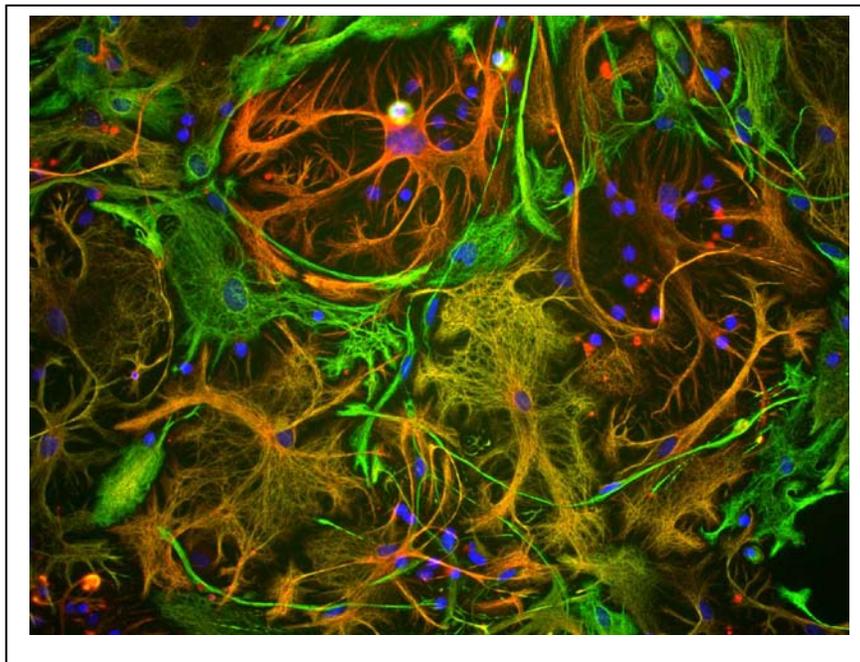
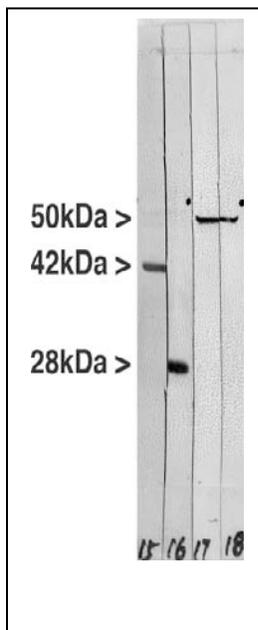


Catalogue MCA-2A52: Mouse Monoclonal Antibody to Vimentin-VIM

The Immunogen: Vimentin is a protein subunit of 10nm or [intermediate filaments](#), which are major components of the [cytoskeleton](#) in most cell types. Vimentin is the major intermediate filament subunit found in mesenchymal cells, and was first named and characterized in a collaborative study from the labs of German scientists [Werner Franke](#) and [Klaus Weber](#) (1). The name derives from the Latin "*Vimentum*", meaning arrays of flexible rods such as in lattices, filigrees and wicker-work, which describes the intermediate filament network quite well. Vimentin is also found in many cell types in tissue culture, most notably [fibroblasts](#), and in developing neuronal and astrocytic precursor cells in the central nervous system.

Many cell lines such as [HEK293](#), [HeLa](#), [3T3](#) and [Cos](#) cells contain prominent vimentin networks. Vimentin frequently forms copolymers with other intermediate filament proteins, such as GFAP (in astrocytes, ependymal cells and neural stem cells), with desmin (in muscle and endothelial cells) and neurofilament proteins (in developing neurons). A E151K point mutation in the vimentin gene was shown to be causative of an autosomal dominant pulverulent cataract disease, but so far only in a single patient (2).

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 immunogen used to generate our antibody was recombinant human vimentin expressed in and purified from *E. coli*. The same immunogen was used to produce our other monoclonal antibody to vimentin [MCA-2D1](#). We also market a very popular chicken polyclonal antibody to vimentin, [CPCA-Vim](#). The [HGNC](#) name for this protein is [VIM](#).



Left: Western blot of crude extract of the human carcinoma [HeLa](#) cell line. Lane 18 was probed with MCA-2D1 antibody. Note the strong clean band at the expected molecular weight of 50 kDa. Lane 17 was probed with another monoclonal antibody to vimentin, our [MCA-2A52](#) clone. Lane 15 was probed with our antibody to actin, giving an SDS-PAGE molecular weight of 42 kDa, and lane 16 with [MCA-3G12](#), our antibody to 14-3-3 η (14-3-3 eta), which has an SDS-PAGE molecular weight of 28 kDa. **Right:** View of mixed neuron/glia cultures stained with CPCA-Vim (green) and EnCor's rabbit antibody to GFAP antibody ([RPCA-GFAP](#), red). Vimentin is expressed alone in fibroblastic and endothelial cells, which are the flattened cells in the middle of the image which appear green. Astrocytes may express primarily GFAP, or GFAP and vimentin, and so appear red (GFAP only) or golden yellow (GFAP and Vimentin). In cells which express both GFAP and vimentin, the two protein assemble to produce heteropolymer filaments.

Antibody Characteristics: MCA-2A52 is a mouse IgG1 class antibody with a k light chain. MCA-2A52 is known to react with vimentin from human, cow, pig, mouse, rat and other mammals. Since vimentin is highly conserved, it is likely that the antibody is effective on other species also.

Suggestions for use: The antibody solution is affinity purified from tissue culture supernatant and is at concentration of 1 mg/mL in phosphate buffered saline preparation containing 10 mM sodium azide preservative (Link to <http://www.encorbio.com/MSDS/azide.htm> for Material Safety Data Sheet). The antibody solution can be used at dilutions of at least 1:1,000 in immunofluorescence experiments. In western blotting using chemiluminescence it can be used at dilutions of 1:10,000 or lower. Avoid repeated freezing and thawing, store at 4°C or -20°C.

Omim link: <http://omim.org/entry/193060>

References:

1. Franke, W. W., Schmid, E., Osborn, M. and Weber, K. Different intermediate-sized filaments distinguished by immunofluorescence microscopy. [Proc. Natl. Acad. Sci. USA 75:5034–5038 \(1978\)](#).
2. Muller, M., Bhattacharya, S. S., Moore, T., Prescott, Q., Wedig, T., Herrmann, H., Magin, T. M. Dominant cataract formation in association with a vimentin assembly disrupting mutation. [Hum. Molec. Genet. 18:1052-1057 \(2009\)](#).

Limitations: This product is for research use only and is not approved for use in humans or in clinical diagnosis.

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