

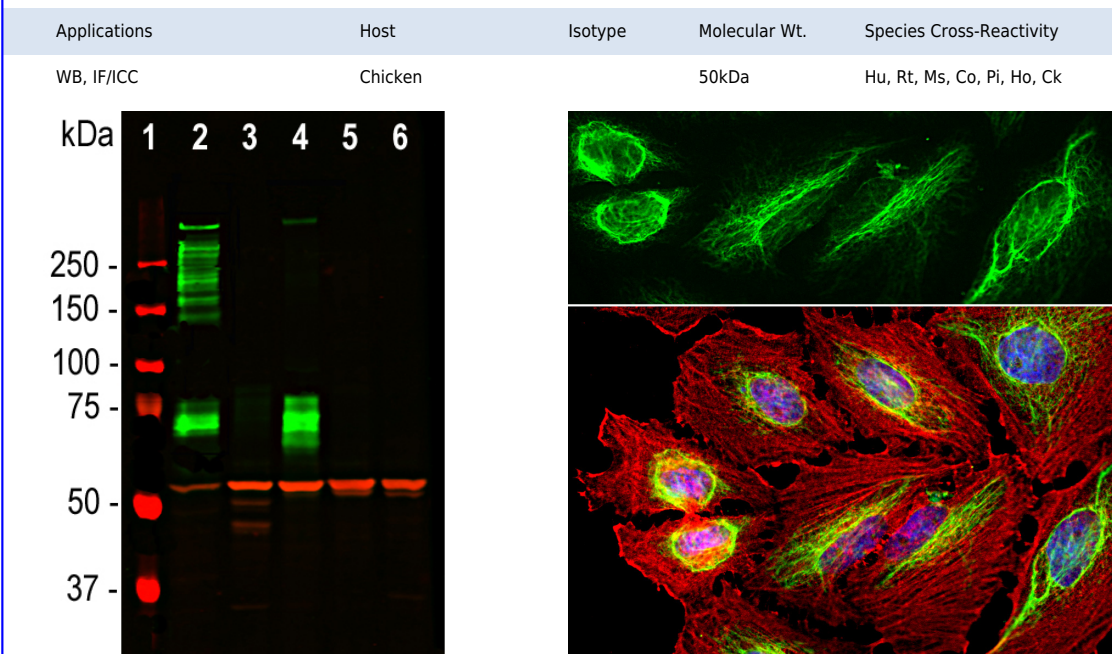
Vimentin Chicken Polyclonal Antibody

CPCA-Vim

Ordering Information
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Phone 352-372-7022
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HGNC Name: VIM
UniProt: P08670
RRID: AB_2216401
Immunogen: Full length recombinant human vimentin protein, *PROT-r-Vim*, expressed in and purified from *E. coli*. expressed in and purified from *E. coli*.
Format: Concentrated IgY preparation in PBS plus 0.02% NaN₃
Storage: Stable at 4°C for at least one year
Recommended dilutions:
WB: 1:5,000. IF/ICC: 1:10,000. IHC not recommended

References:
1. Franke WW, et al. Different intermediate-sized filaments distinguished by immunofluorescence microscopy. *PNAS* 75:5034-8 (1978). 2. Dahl D, et al. Vimentin, the 57 000 molecular weight protein of fibroblast filaments, is the major cytoskeletal component in immature glia. *Eur. J. Cell Biol.* 24:191-6 (1981). 3. Shaw, G. et al. An immunofluorescence microscopical study of the neurofilament triplet proteins, vimentin and glial fibrillary acidic protein within the adult rat brain. *Eur. J. Cell Biol.* 26:68-72 (1981). 4. Muller M, et al. Dominant cataract formation in association with a vimentin assembly disrupting mutation. *Hum. Molec. Genet.* 18:1052-7 (2009). 5. Zhai Y, et al. Targeted exome sequencing of congenital cataracts related genes: broadening the mutation spectrum and genotype-phenotype correlations in 27 Chinese Han families. *Sci. Rep.* 7:1219 (2017). 6. Satelli A, Li S. Vimentin in cancer and its potential as a molecular target for cancer therapy. *Cell Mol. Life Sci.* 68:3033-46 (2011). 7. Wong KF, Luk JM. Discovery of lamin B1 and vimentin as circulating biomarkers for early hepatocellular carcinoma. *Meth. Mol. Biol.* 2909:295-310 (2012). 8. Jia X, et al. Vimentin-a potential biomarker for therapeutic efficiency of HAART. *Acta Biochim. Biophys. Sin. (Shanghai)* 6:1001-6 (2014).



Western blot analysis of tissue and cell lysates using chicken pAb to Vimentin, CPCA-Vim, dilution 1:5,000 in red. [1] protein standard (red), [2] rat whole brain lysate, [3] HeLa, [4] SH-SY5Y, [5] HEK293, and [6] NIH-3T3 cell lysates. CPCA-Vim binds to the vimentin protein showing a single band at ~50 kDa. The blot was simultaneously probed with mouse mAb to MAP2C/D, *MCA-2C4*, dilution 1:5,000 in green, revealing multiple bands around 280kDa that correspond to full length MAP2A/2B isotypes while the ~70kDa bands are MAP2C/D isotypes. MAP2 isotypes are seen only in extracts containing neuronal lineage cells.

Immunofluorescent analysis of HeLa cell culture stained with chicken pAb to vimentin, CPCA-Vim, dilution 1:10,000 in green, and costained with EnCor mouse mAb to actin, *MCA-5J11*, dilution 1:500 in red. The blue is DAPI staining of nuclear DNA. The vimentin antibody stains the intermediate filament network while the actin antibody labels the submembranous 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 is a major protein of eye lens and cornea, and found generally 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 and ependyma (2,3). Mutations in the vimentin gene may cause cataracts (4,5), and elevated levels of vimentin in blood samples are associated with onset of cancer (6,7). 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 (8). The CPCA-Vim antibody can be used to study stem cells and generally to reveal the intermediate filament cytoskeleton. The antibody works well for IF and ICC, but is not recommended for IHC. The immunogen used to generate this antibody was full length recombinant human vimentin, *PROT-r-Vim*, expressed in and purified from *E. coli*. The antibody works well on all mammals tested to date, and it was generated in chicken by standard procedures and immunoglobulin was extracted from egg yolk. The resulting polyclonal antibody belongs to the IgY subclass, the chicken homolog of mammalian IgG and can be used in the same way, with the caveat that this type of antibody does not bind either Protein A or Protein G. Suitable second antibody reagents can be obtained from many vendors including ThermoFisher and Sigma-Aldrich. The same vimentin immunogen was used to produce two high quality epitope mapped monoclonal antibodies to vimentin *MCA-2A52* and *MCA-2D1*, and also a rabbit polyclonal antibody *RPCA-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.