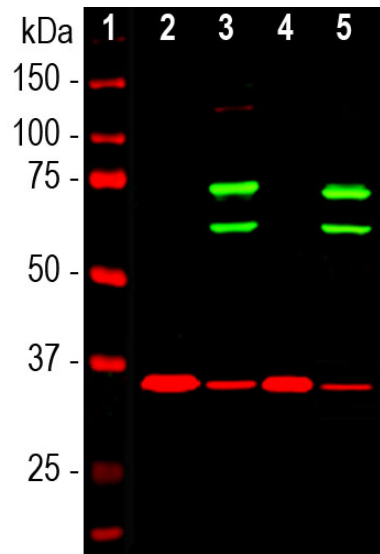


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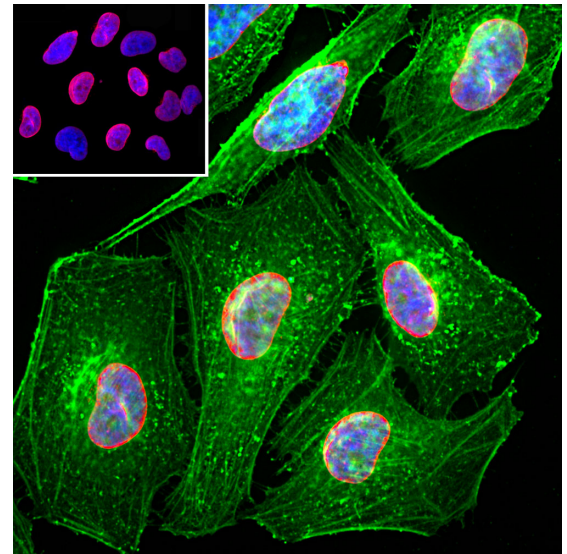
HGNC Name: LMNA
UniProt: P02545
RRID: AB_2572338
Immunogen: Full length recombinant human lamin A protein expressed in and purified from *E. coli*.
Format: Concentrated IgY preparation in PBS plus 0.02% NaH₃
Storage: Stable at 4°C for one year.
Recommended dilutions:
 WB: 1:2,000. IF/ICC 1:1,000. IHC: 1:2,000

References:
 1. Fisher DZ, Chaudhary N, Blobel G. cDNA sequencing of nuclear lamins A and C reveals primary and secondary structural homology to intermediate filament proteins. *PNAS* 83:6450-54 (1986). 2. McKeon FD, Kirschner MW, Caput D. Homologies in both primary and secondary structure between nuclear envelope and intermediate filament proteins. *Nature* 319:463-8 (1986). 3. Bonne G, et al. Mutations in the gene encoding lamin A/C cause autosomal dominant Emery-Dreifuss muscular dystrophy. *Nat. Genet.* 21:285-8 (1999). 4. Novelli G, et al. Mandibuloacral dysplasia is caused by a mutation in LMNA-encoding lamin A/C. *Am. J. Hum. Genet.* 71:426-31 (2002). 5. De Sandre-Giovannoli A, et al. Homozygous Defects In Lmna, Encoding Lamin A/C Nuclear-Envelope Proteins, Cause Autosomal Recessive Axonal Neuropathy In Human (Charcot-Marie-Tooth Disorder Type 2) And Mouse *Am. J. Hum. Genet.* 70:726-36 (2002). 6. Liu B and Zhou Z. Lamin A/C, laminopathies and premature ageing. *Histol. Histopathol.* 23:747-63 (2006).

Applications	Host	Isotype	Molecular Wt.	Species Cross-Reactivity
WB, IF/ICC	Chicken		65kDa and 74kDa	Hu, Rt, Ms



Western blot analysis of cytosolic or nuclear enriched fractions of cell lines probed with chicken pAb to lamin A/C, CPCA-LaminAC, dilution 1:1,000 in green: [1] protein standard (red), [2] HeLa cytosol, [3] HeLa nuclear, [4] NIH-3T3 cytosol, and [5] NIH-3T3 nuclear fractions. Two strong bands at 65kDa and 74kDa correspond to lamin A and lamin C proteins respectively, detected exclusively in the nuclear fractions. The same blot was simultaneously probed with mouse mAb to GAPDH, MCA-1D4, in red. The single band at 37kDa represents GAPDH protein which is expressed predominantly in the cytosolic fractions.



Immunofluorescent analysis of HeLa cells stained with chicken pAb to lamin A/C, CPCA-LaminAC, dilution 1:2,000 in red, and costained with mouse mAb to actin, MCA-5J11, dilution 1:500, in green. The blue is Hoechst staining of nuclear DNA. The CPCA-LaminAC antibody specifically labels the nuclear lamina, while the actin antibody stains the submembranous actin-rich cytoskeleton, stress fibers and bundles of actin associated with cell adhesion sites.

Background:

Lamin A and lamin C are members of the intermediate filament protein family and are located in the nucleus where they function as skeletal components of the inner nuclear membrane (1). The two proteins are generated by alternate transcription from the single LMNA gene. Lamin A has a molecular weight of about 74kDa while lamin C is 65kDa. The lamin A protein includes a C-terminal segment of 98 amino acids missing from lamin C, while lamin C has a unique C-terminal 6 amino acid peptide not present in lamin A. As a result antibodies raised against lamin A are almost certain bind to lamin C. During cell division the nuclear lamina breaks down and lamin A/C containing filaments depolymerize, this being regulated by phosphorylation by cyclin dependent protein kinase 1. Mutations in the lamin A/C gene are associated with several serious human diseases, including Emery-Dreifuss muscular dystrophy, familial partial lipodystrophy, limb girdle muscular dystrophy, dilated cardiomyopathy, Charcot-Marie-Tooth disease type 2B1, Hutchinson-Gilford progeria syndrome and Hutchinson-Gilford progeria syndrome (3-6). The CPCA-LaminAC was raised against full length recombinant human lamin A, binds human lamin C, and works on western blots with the rodent protein also. It can be used to visualize the nuclear lamina by IF and ICC and also works in IHC, for later data select "Additional Info" tab. We also market a mouse monoclonal antibody to lamin A/C MCA-4C4.

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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.