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LAP2α (3A3) Mouse mAb

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Entrez-Gene ID #7112
UniProt ID #P42166

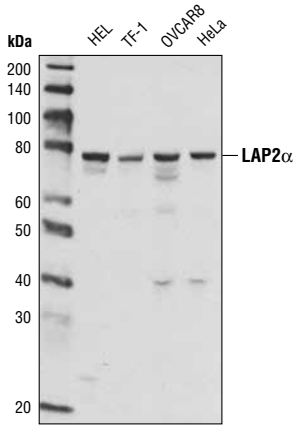
Applications	Species Cross-Reactivity*	Molecular Wt.	Isotype
W, IF-IC Endogenous	H, Mk	76 kDa	Mouse IgG1 κ**

Background: Lamins and lamin associated proteins are the major components of nuclear lamina found between the inner nuclear membrane and the peripheral chromatin. These proteins play important roles in maintaining nuclear structure, chromatin organization, DNA replication, cell cycle regulation, and apoptosis (1-3). Lamins are type V intermediate filaments that are further classified into type A and type B lamin proteins. Type A lamins (including lamin A and the smaller lamin C splice variant) are predominately expressed in terminally differentiated cells, whereas type B lamins (lamin B1, lamin B2) are encoded by distinct genes and are expressed constitutively. Cleavage of lamins by caspases occurs during apoptosis as part of the disassembly of the cell (4-6).

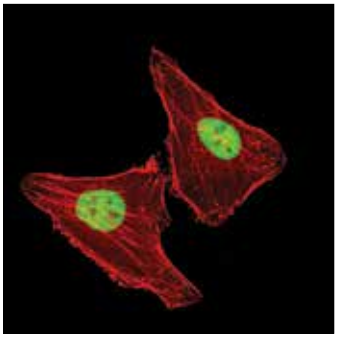
A number of lamina-associated proteins contribute to the nuclear lamina and include the lamin B receptor, LAP1, LAP2, emerin, MAN1, otefin, and YA. Several isoforms of lamina-associated polypeptide 2 (LAP2, also known as thymopoietin or TMPO) have been described, with the α, β, and γ isoforms most abundant in humans (7-10). Structurally similar LAP2β and LAP2γ are type II integral membrane proteins. LAP2α has a unique carboxy-terminus that lacks a transmembrane region and results in localization of LAP2α throughout the nucleus where it can associate with lamin A/C (10). LAP2α is also thought to contribute to the nuclear anchorage of retinoblastoma protein (Rb) and control cell cycle progression (11). LAP2α is also targeted for cleavage by caspases, which may contribute to changes in chromatin structure during apoptosis (12).

Specificity/Sensitivity: LAP2α (3A3) Mouse mAb detects endogenous levels of total LAP2α protein.

Source/Purification: Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of human LAP2α protein.



Western blot analysis of extracts from various cell lines using LAP2α (3A3) Mouse mAb.



Confocal immunofluorescent analysis of HeLa cells using LAP2α (3A3) Mouse mAb (green). Actin filaments have been labeled with DyLight™ 554 Phalloidin #13054 (red).

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. *Do not aliquot the antibody.*

***Species cross-reactivity is determined by western blot.**

****Anti-mouse secondary antibodies must be used to detect this antibody.**

Recommended Antibody Dilutions:

Western blotting	1:1000
Immunofluorescence (IF-IC)	1:800
IF Protocol:	Gelatin Block Required

For application specific protocols please see the web page for this product at www.cellsignal.com.

Please visit www.cellsignal.com for a complete listing of recommended companion products.

Background References:

(1) Gruenbaum, Y. et al. (2000) *J Struct Biol* 129, 313-23.
(2) Goldberg, M. et al. (1999) *Crit Rev Eukaryot Gene Expr* 9, 285-93.
(3) Holmer, L. and Worman, H.J. (2001) *Cell Mol Life Sci* 58, 1741-7.
(4) Lazebnik, Y.A. et al. (1995) *Proc Natl Acad Sci USA* 92, 9042-6.
(5) Oberhammer, F.A. et al. (1994) *J Cell Biol* 126, 827-37.
(6) Rao, L. et al. (1996) *J Cell Biol* 135, 1441-55.
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(8) Foisner, R. and Gerace, L. (1993) *Cell* 73, 1267-79.
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(10) Dechat, T. et al. (2000) *J Cell Sci* 113 Pt 19, 3473-84.
(11) Markiewicz, E. et al. (2002) *Mol Biol Cell* 13, 4401-13.
(12) Gotzmann, J. et al. (2000) *J Cell Sci* 113 Pt 21, 3769-80.

IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween®20 at 4°C with gentle shaking, overnight.

Applications Key: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide

Species Cross-Reactivity Key: **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebrafish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **Ce**—C. elegans **Hr**—horse **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.