SANTA CRUZ BIOTECHNOLOGY, INC.

# Lamin B2 (LN43): sc-56146

## BACKGROUND

A unique family of cysteine proteases has been described that differs in sequence, structure and substrate specificity from any previously described protease family. This family, termed CED-3/ICE, functions as key components of the apoptotic machinery and act to destroy specific target proteins which are critical to cellular longevity. Nuclear lamins are critical to maintaining the integrity of the nuclear envelope and cellular morphology as components of the nuclear lamina, a fibrous layer on the nucleoplasmic side of the inner nuclear membrane, which is thought to provide a framework for the nuclear envelope and may also interact with chromatin. B-type lamins undergo a series of modifications, such as farnesylation and phosphorylation. Increased phosphorylation of the lamins occurs before envelope disintegration and probably plays a role in regulating Lamin associations. Nuclear Lamin B is fragmented as a consequence of apoptosis by an unidentified member of the ICE family.

## REFERENCES


1. Moir, R.D., et al. 1995. The dynamic properties and possible functions of nuclear lamins. Int. Rev. Cytol. 162B: 141-182.
2. Duan, H., et al. 1996. ICE-LAP3, a novel mammalian homologue of the *Caenorhabditis elegans* cell death protein CED-3 is activated during FAS- and tumor necrosis factor-induced apoptosis. J. Biol. Chem. 271: 1621-1625.
3. Fernandes-Alnemri, T.F., et al. 1996. *In vitro* activation of CPP32 and Mch3 by Mch4, a novel human apoptotic cysteine protease containing two FADD-like domains. Proc. Natl. Acad. Sci. USA 93: 7464-7469.
4. Duan, H., et al. 1996. ICE-LAP6, a novel member of the ICE/CED-3 gene family, is activated by the cytotoxic T cell protease granzyme B. J. Biol. Chem. 271: 16720-16724.
5. Takahashi, A., et al. 1996. Cleavage of Lamin A by Mch2 $\alpha$ but not CPP32: multiple interleukin-1$\beta$-converting enzyme-related proteases with distinct substrate recognition properties are active in apoptosis. Proc. Natl. Acad. Sci. USA 93: 8395-8400.
6. Rao, L., et al. 1996. Lamin proteolysis facilitates nuclear events during apoptosis. J. Cell Biol. 135: 1441-1455.
7. SWISS-PROT/TrEMBL (125953). World Wide Web URL: http://www.expasy.ch/sprot/sprot-top.html


## CHROMOSOMAL LOCATION

Genetic locus: LMNB2 (human) mapping to 19p13.3; Lmnb2 (mouse) mapping to 10 C1.

## SOURCE

Lamin B2 (LN43) is a mouse monoclonal antibody raised against the detergent insoluble fraction of PtK1 kidney cell line of kangaroo rat origin.

## PRODUCT

Each vial contains 50 µg $IgG_1$ in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

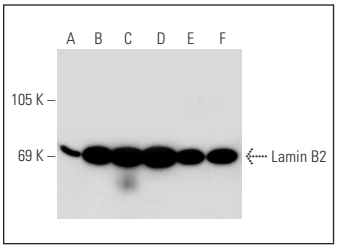
Lamin B2 (LN43) is recommended for detection of an epitope located in the C-terminal part of Lamin B2 of mouse, rat, human and *Xenopus laevis* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x $10^6$ cells).

Suitable for use as control antibody for Lamin B2 siRNA (h): sc-61885, Lamin B2 siRNA (m): sc-61886, Lamin B2 shRNA Plasmid (h): sc-61885-SH, Lamin B2 shRNA Plasmid (m): sc-61886-SH, Lamin B2 shRNA (h) Lentiviral Particles: sc-61885-V and Lamin B2 shRNA (m) Lentiviral Particles: sc-61886-V.

Molecular Weight of Lamin B2: 67 kDa.

Positive Controls: U-2 OS cell lysate: sc-2295, HL-60 whole cell lysate: sc-2209 or Y79 cell lysate: sc-2240.

## DATA




Lamin B2 (LN43): sc-56146. Western blot analysis of Lamin B2 expression in NTERA-2 cl.D1 (**A**), U-2 OS (**B**), HL-60 (**C**), Y79 (**D**), PC-3 (**E**) and LNCaP (**F**) whole cell lysates.

## SELECT PRODUCT CITATIONS


1. Lenain, C., et al. 2015. Autophagy-mediated degradation of nuclear envelope proteins during oncogene-induced senescence. Carcinogenesis 36: 1263-1274.
2. Vakilzadeh, G., et al. 2016. The effect of melatonin on behavioral, molecular, and histopathological changes in cuprizone model of demyelination. Mol. Neurobiol. 53: 4675-4684.
3. Qu, X., et al. 2017. Stabilization of dynamic microtubules by mDia1 drives Tau-dependent $A\beta_{1-42}$ synaptotoxicity. J. Cell Biol. 216: 3161-3178.


## STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.