SANTA CRUZ BIOTECHNOLOGY, INC.

Lamin B1 (G-1): sc-373918

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

CHROMOSOMAL LOCATION

Genetic locus: LMNB1 (human) mapping to 5q23.2; Lmnb1 (mouse) mapping to 18 D3.

SOURCE

Lamin B1 (G-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 559-586 at the C-terminus of Lamin B1 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_3 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-373918 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Lamin B1 (G-1) is recommended for detection of Lamin B1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Lamin B1 siRNA (h): sc-29386, Lamin B1 siRNA (m): sc-35779, Lamin B1 shRNA Plasmid (h): sc-29386-SH, Lamin B1 shRNA Plasmid (m): sc-35779-SH, Lamin B1 shRNA (h) Lentiviral Particles: sc-29386-V and Lamin B1 shRNA (m) Lentiviral Particles: sc-35779-V.

Molecular Weight of Lamin B1: 67 kDa.

Positive Controls: PC-12 cell lysate: sc-2250, Y79 cell lysate: sc-2240 or Hep G2 cell lysate: sc-2227.

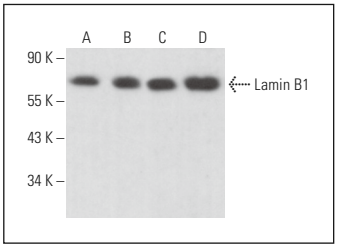
RESEARCH USE

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

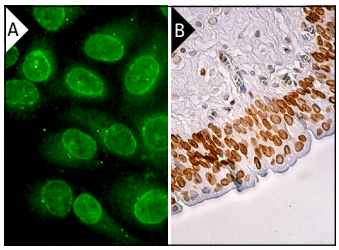
STORAGE

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

DATA



Lamin B1 (G-1): sc-373918. Western blot analysis of Lamin B1 expression in Y79 (**A**), PC-12 (**B**), Hep G2 (**C**) and MOLT-4 (**D**) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.



Lamin B1 (G-1): sc-373918. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear envelope localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human urinary bladder tissue showing nuclear envelope staining of urothelial cells (**B**).

SELECT PRODUCT CITATIONS

1. Li, W., et al. 2012. Caveolin-1 inhibits expression of antioxidant enzymes through direct interaction with nuclear erythroid 2 p45-related factor-2 (Nrf2). J. Biol. Chem. 287: 20922-20930.
2. Iyer, S., et al. 2014. Sirtuin1 (Sirt1) promotes cortical bone formation by preventing β-catenin sequestration by FoxO transcription factors in osteoblast progenitors. J. Biol. Chem. 289: 24069-24078.
3. Bryant, J.M., et al. 2015. Characterization of BRD4 during mammalian postmeiotic sperm development. Mol. Cell. Biol. 35: 1433-1448.
4. Das, A., et al. 2016. RIP1 and RIP3 complex regulates radiation-induced programmed necrosis in glioblastoma. Tumour Biol. 37: 7525-7534.
5. Smith, E.R., et al. 2017. Nuclear envelope structural proteins facilitate nuclear shape changes accompanying embryonic differentiation and fidelity of gene expression. BMC Cell Biol. 18: 8.
6. Chen, X., et al. 2018. Perfluorooctane sulfonate induces neuroinflammation through the secretion of TNF-α mediated by the JAK2/Stat3 pathway. Neurotoxicology 66: 32-42.
7. Kim, H.N., et al. 2020. Estrogens decrease osteoclast number by attenuating mitochondria oxidative phosphorylation and ATP production in early osteoclast precursors. Sci. Rep. 10: 11933.
8. Napoletano, F., et al. 2021. The prolyl-isomerase PIN1 is essential for nuclear Lamin-B structure and function and protects heterochromatin under mechanical stress. Cell Rep. 36: 109694.

CONJUGATES

See **Lamin B1 (A-11): sc-377000** for Lamin B1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.