SANTA CRUZ BIOTECHNOLOGY, INC.

Lamin B1 (C-12): sc-365214

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. Rao, L., et al. 1996. Lamin proteolysis facilitates nuclear events during apoptosis. J. Cell Biol. 135: 1441-1455.

CHROMOSOMAL LOCATION

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

SOURCE

Lamin B1 (C-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 559-584 at the C-terminus of Lamin B1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Lamin B1 (C-12) is available conjugated to agarose (sc-365214 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-365214 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365214 PE), fluorescein (sc-365214 FITC), Alexa Fluor® 488 (sc-365214 AF488), Alexa Fluor® 546 (sc-365214 AF546), Alexa Fluor® 594 (sc-365214 AF594) or Alexa Fluor® 647 (sc-365214 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365214 AF680) or Alexa Fluor® 790 (sc-365214 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-365214 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

Lamin B1 (C-12) is recommended for detection of Lamin B1 of mouse, rat and human 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), 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).

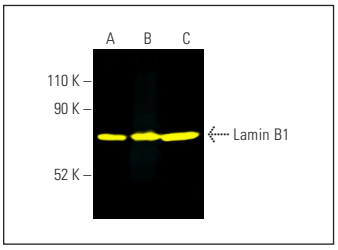
Lamin B1 (C-12) is also recommended for detection of Lamin B1 in additional species, including canine.

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.

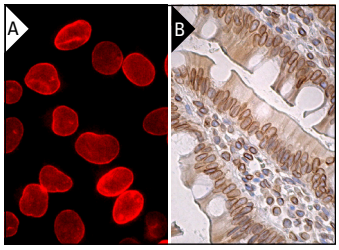
Molecular Weight of Lamin B1: 67 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209, Y79 cell lysate: sc-2240 or Jurkat whole cell lysate: sc-2204.

DATA



Lamin B1 (C-12) Alexa Fluor® 488: sc-365214 AF488. Direct fluorescent western blot analysis of Lamin B1 expression in Y79 (**A**), HL-60 (**B**) and Jurkat (**C**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214.



Lamin B1 (C-12): sc-365214. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear envelope localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing nuclear envelope staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Jeong, M.W., et al. 2013. Mitogen-activated protein kinase phosphatase 2 regulates Histone H3 phosphorylation via interaction with vaccinia-related kinase 1. Mol. Biol. Cell 24: 373-384.
2. Caruso, G.I., et al. 2021. SIRT1-dependent upregulation of BDNF in human microglia challenged with Aβ: an early but transient response rescued by melatonin. Biomedicines 9: 466.
3. Merlo, S., et al. 2022. Microglial polarization differentially affects neuronal vulnerability to the β-amyloid protein: modulation by melatonin. Biochem. Pharmacol. 202: 115151.
4. Hartinger, R., et al. 2023. Impact of combined baricitinib and FTI treatment on adipogenesis in Hutchinson-Gilford progeria syndrome and other lipodystrophic laminopathies. Cells 12: 1350.

RESEARCH USE

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