SANTA CRUZ BIOTECHNOLOGY, INC.

Lamin B1 (E-12): sc-377001

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, function 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, such as Lamin B1, undergo a series of modifications, such as farnesylation and phosphorylation. Lamin B1 is a 586 amino acid protein that is encoded by a gene which, when mutated, is involved in the pathogenesis of autosomal dominant adult-onset leukodystrophy (ADLD), a disease characterized by cerebellar dysfunction and symmetric demyelination of the central nervous system.

CHROMOSOMAL LOCATION

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

SOURCE

Lamin B1 (E-12) is a mouse monoclonal antibody raised against amino acids 401-490 mapping near 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.

APPLICATIONS

Lamin B1 (E-12) 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).

Lamin B1 (E-12) is also recommended for detection of Lamin B1 in additional species, including equine, canine, bovine and porcine.

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: MOLT-4 cell lysate: sc-2233, MCF7 whole cell lysate: sc-2206 or HeLa whole cell lysate: sc-2200.

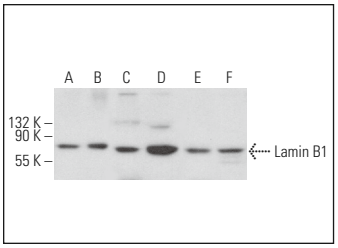
STORAGE

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

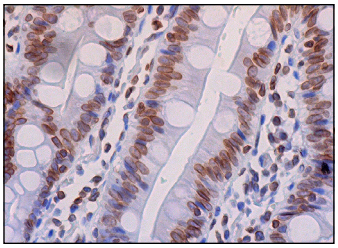
RESEARCH USE

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

DATA



Lamin B1 (E-12): sc-377001. Western blot analysis of Lamin B1 expression in HeLa (**A**), MOLT-4 (**B**), MCF7 (**C**), CCRF-CEM (**D**), WR19L (**E**) and PC-12 (**F**) whole cell lysates.



Lamin B1 (E-12): sc-377001. Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing nuclear envelope staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Zeng, T., et al. 2013. The activation of HO-1/Nrf-2 contributes to the protective effects of diallyl disulfide (DADS) against ethanol-induced oxidative stress. Biochim. Biophys. Acta 1830: 4848-4859.
2. Wu, Q., et al. 2015. The SWI/SNF ATPases are required for triple negative breast cancer cell proliferation. J. Cell. Physiol. 230: 2683-2694.
3. Kron, P., et al. 2016. Hypoxia-driven Hif2a coordinates mouse liver regeneration by coupling parenchymal growth to vascular expansion. Hepatology 64: 2198-2209.
4. Vahid, S., et al. 2016. Molecular chaperone HSP27 regulates the Hippo tumor suppressor pathway in cancer. Sci. Rep. 6: 31842.
5. Pyle, C.J., et al. 2017. Zinc modulates endotoxin-induced human macrophage inflammation through ZIP8 induction and C/EBPβ inhibition. PLoS ONE 12: e0169531.
6. Nappi, L., et al. 2020. Ivermectin inhibits HSP27 and potentiates efficacy of oncogene targeting in tumor models. J. Clin. Invest. 130: 699-714.
7. Hwang, B., et al. 2023. Hepatic PTP4A1 ameliorates high-fat diet-induced hepatosteatosis and hyperglycemia by the activation of the CREBH/FGF21 axis. Theranostics 13: 1076-1090.

PROTOCOLS

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

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.