

Lamin A/C (4C11): sc-517579

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, is comprised of ICE, CPP32, ICH-1/Nedd-2, Tx, Mch2, Mch3 (ICE-LAP3 or CMH-1), Mch4 and ICE-LAP6. Ced-3/ICE family members 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. The nuclear Lamin A is cleaved by Mch2, but not CPP32. Nuclear Lamin B is fragmented as a consequence of apoptosis by an unidentified member of the ICE family. Lamin C is a splice variant of Lamin A, differing only at the carboxy-terminus. Lamins A and C are identical for the first 566 amino acids, with Lamin C differing only in 6 unique carboxy-terminal amino acids.

REFERENCES

- McKeon, F.D., et al. 1986. Homologies in both primary and secondary structure between nuclear envelope and intermediate filament proteins. *Nature* 319: 463-468.
- Fisher, D.Z., et al. 1986. cDNA sequencing of nuclear Lamins A and C reveals primary and secondary structure homology to intermediate filament proteins. *Proc. Natl. Acad. Sci. USA* 83: 6450-6454.
- Moir, R.D., et al. 1995. The dynamic properties and possible functions of nuclear lamins. *Int. Rev. Cytol.* 162B: 141-182.
- Duan, H., et al. 1996. ICE-LAP3, a novel mammalian homolog 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.
- 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.
- 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.

CHROMOSOMAL LOCATION

Genetic locus: LMNA (human) mapping to 1q22; Lmna (mouse) mapping to 3 F1.

SOURCE

Lamin A/C (4C11) is a mouse monoclonal antibody raised against the Ig-fold region of Lamin A of human origin.

PRODUCT

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

RESEARCH USE

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

APPLICATIONS

Lamin A/C (4C11) is recommended for detection of Lamin A and Lamin C 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

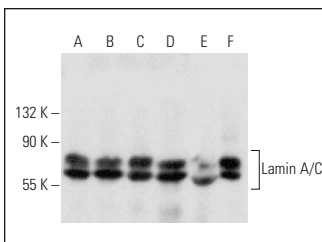
Lamin A/C (4C11) is also recommended for detection of Lamin A and Lamin C in additional species, including hamster and monkey.

Suitable for use as control antibody for Lamin A/C siRNA (h): sc-35776, Lamin A/C siRNA (m): sc-29385, Lamin A/C shRNA Plasmid (h): sc-35776-SH, Lamin A/C shRNA Plasmid (m): sc-29385-SH, Lamin A/C shRNA (h) Lentiviral Particles: sc-35776-V and Lamin A/C shRNA (m) Lentiviral Particles: sc-29385-V.

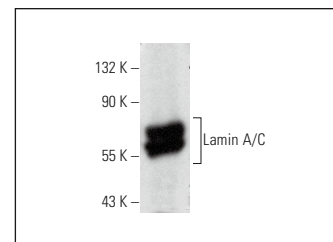
Molecular Weight of Lamin A/C: 69/62 kDa.

Positive Controls: A2058 whole cell lysate: sc-364178, U-251-MG whole cell lysate: sc-364176 or NIH/3T3 nuclear extract: sc-2138.

DATA



Lamin A/C (4C11): sc-517579. Western blot analysis of Lamin A/C expression in A2058 (A) and U-251-MG (B) whole cell lysates, HeLa (C) and NIH/3T3 (D) nuclear extracts and human skin (E) and mouse skin (F) tissue extracts.



Lamin A/C (4C11): sc-517579. Western blot analysis of Lamin A/C expression in C6 whole cell lysate.

SELECT PRODUCT CITATIONS

- Huang, H., et al. 2018. Exosomes derived from breast cancer lung metastasis subpopulations promote tumor self-seeding. *Biochem. Biophys. Res. Commun.* 503: 242-248.
- Wang, X., et al. 2020. Exosomes influence the behavior of human mesenchymal stem cells on titanium surfaces. *Biomaterials* 230: 119571.

STORAGE

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

PROTOCOLS

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