

Lamin A/C (JoL5): sc-56141

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

CHROMOSOMAL LOCATION

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

SOURCE

Lamin A/C (JoL5) is a mouse monoclonal antibody raised against full length Lamin A/C of human origin.

PRODUCT

Each vial contains 500 μ l culture supernatant containing IgG_{2a} with < 0.1% sodium azide.

APPLICATIONS

Lamin A/C (JoL5) is recommended for detection of Lamin A and Lamin C on myoblasts of mouse, rat and human origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:10-1:200), immunoprecipitation [10-20 μ l per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution to be determined by researcher, dilution range 1:10-1:200) and solid phase ELISA (starting dilution to be determined by researcher, dilution range 1:10-1:200).

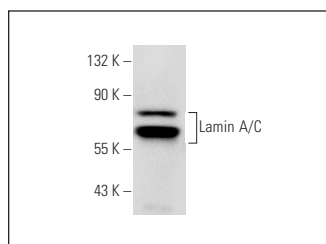
Suitable for use as control antibody for Lamin A/C siRNA (h): sc-35776, Lamin A/C siRNA (m): sc-29385, Lamin A/C shRNA Plasmid (h): sc-35776-SH, Lamin A/C shRNA Plasmid (m): sc-29385-SH, Lamin A/C shRNA (h) Lentiviral Particles: sc-35776-V and Lamin A/C shRNA (m) Lentiviral Particles: sc-29385-V.

Molecular Weight of Lamin A: 69 kDa.

Molecular Weight of Lamin C: 62 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Hs68 cell lysate: sc-2230 or FHs 173We cell lysate: sc-2417.

DATA



Lamin A/C (JoL5): sc-56141. Western blot analysis of Lamin A/C expression in HeLa whole cell lysate.

SELECT PRODUCT CITATIONS

- Ikonomou, G., et al. 2012. Interplay between oncogenic K-Ras and wild-type H-Ras in Caco2 cell transformation. *J. Proteomics* 75: 5356-5369.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

RESEARCH USE

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

CONJUGATES

See **Lamin A/C (E-1): sc-376248** for Lamin A/C antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor[®] 488, 546, 594, 647, 680 and 790.