Mouse monoclonal to Lamin A/C

Catalogue No.:	M-1689-100
Description:	The Lamin proteins are members of the intermediate filament protein family but are located inside the nucleus rather than in the cytoplasm (1). The lamins function as skeletal components tightly associated with the inner nuclear membrane. Originally the proteins of the nuclear cytoskeleton were named Lamin A, B and C, from top to bottom as visualized on SDS-PAGE gels. Subsequently it was found that Lamins A and C were coded for by a single gene (2), while the Lamin B band may contain two proteins encoded by two genes now called Lamin B1 and Lamin B2. Lamin A has a mass of about 74kDa while Lamin C is 65kDa. The Lamin A protein includes 98 amino acids missing from Lamin C, while Lamin C has a C-terminal 6 amino acid peptide not present in Lamin A. Apart from these regions Lamin A and C are identical so that antibodies raised against either protein are likely to cross react with the other, as is the case with this monoclonal. Lamin polymerization and depolymerization is regulated by phosphorylation by cyclin dependent protein kinase 1 (CDK1), the key component of "maturation promoting factor", the central regulator of cell division. Activity of this kinase increases during cell division and is responsible for the breakdown of the nuclear lamina. Mutations in the LMNA gene are associated with several serious human diseases, including Emery-Dreifuss muscular dystrophy, familial partial lipodystrophy, limb girdle muscular dystrophy, dilated cardiomyopathy, Charcot-Marie-Tooth disease type 2B1, and Hutchinson-Gilford progeria syndrome. This family of diseases belong to a larger group which are often referred to as Laminopathies, though some laminopathies are associated in defects in Lamin B1, B2 or one or other of the numerous nuclear lamina binding proteins. A truncated version of lamin A, commonly known as progerin, causes Hutchinson-Gilford progeria syndrome, a form of premature aging (3).
Batch No.:	See vial label
Unit size:	100 uL
Antigen:	Full length recombinant human Lamin C
Antibody Type:	Monoclonal
Isotype:	IgG1
Produced in:	Mouse
Applications:	Immunocytochemistry (ICC), Western Blotting (WB) and Flow Cytometry (~2 ug per 10^6 cells). A dilution of 1:5,000-1:10,000 is recommended for WB. A dilution of 1:500-1:1000 is recommended for ICC. The optimal dilution should be determined by the end user.
Specificity:	Lamin A and Lamin C
Species Against:	Human, bovine, porcine, mouse and rat. It is expected that it will work on other mammal tissues.
Form:	Lyophilized from PBS. Contains 5% trehalose.
Appearance:	White powder
Reconstitution:	Reconstitute in sterile distilled water. Centrifuge to remove any insoluble material.
Storage:	After reconstitution of lyophilized antibody, aliquot and store at -20C for a higher stability. Avoid

51 West Thebarton Road • Thebarton • South Australia 5031
Telephone + 61(0)8 8352 7711 • Email sales@biosensis.com • www.biosensis.com

Mouse monoclonal to Lamin A/C

freeze-thaw cycles.

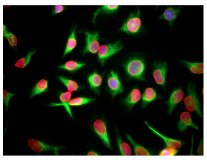
Expiry Date: 12 months after purchase

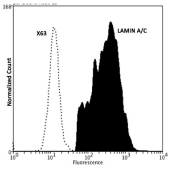
General References:

1. Fisher, D. Z., Chaudhary, N., Blobel, G. cDNA sequencing of nuclear lamins A and C reveals primary and secondary structural homology to intermediate filament proteins. Proc. Nat. Acad. Sci. 83: 6450-6454 (1986).

2. McKeon, F. D., Kirschner, M. W., Caput, D. Homologies in both primary and secondary structure between nuclear envelope and intermediate filament proteins. Nature 319: 463-468 (1986).

3. Liu, B. and Zhou, Z. Lamin A/C, laminopathies and premature ageing. Histol. Histopathol. 23: 747-763 (2006).





color:black;mso-ansi-language:EN-US">Left: HeLa cells stained with M-1689-100 (red), and counterstained with chicken polyclonal antibody to Vimentin (green, C-1409-50). The The Lamin A/C antibody reveals strong nuclear lamina staining, while the Vimentin antibody reveals cytoplasmic intermediate filaments. The blue stain reveals DNA in the nuclei of these cells. Right:
color:black;mso-ansi-language:EN-US">
color:black;mso-ansi-language:EN-US">Analysis of Lamin A/C expression in human prostate cancer DU145 cell line by FLow Cytometry. Fixing and Permeabilization of cells: Absolute methanol (10 minutes in ice) and 0.1% Tween-20 in PBS, Blocking: 200 ug/mL Normal Sheep IgG (20 minutes), Primary antibody: Mouse Monoclonal antibody to Lamin A/C (cat # M-1689-100, 2 μg per ~10^6 cells) for 30 minutes at room temperature, Secondary antibody: Goat anti-mouse PE labeled secondary antibody (1:100 fold dilution) with incubation for 20 minutes in dark at room temperature. Non-specific Control IgG, clone X63 (cat # M-1249-100) was used as negative control under same conditions (black dashed). Flow cytometry data and results were generated using Orflo MoxiflowTM instrument and protocols.