10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

LMNA / Lamin A/C Antibody (clone 133A2)

Mouse Monoclonal Antibody
Catalog # ALS16517

Specification

LMNA / Lamin A/C Antibody (clone 133A2) - Product Information

Application	**IHC, ICC, E**
Primary Accession	P02545
Other Accession	4000
Reactivity	**Human, Mouse, Rat, Bovine, Dog**
Host	**Mouse**
Clonality	**Monoclonal**
Isotype	**IgG3**
Calculated MW	**74139**

LMNA / Lamin A/C Antibody (clone 133A2) - Additional Information

Gene ID 4000

Other Names
LMNA, 70 kDa lamin, CDCD1, CMD1A, EMD2, FPLD, IDC, FPL, FPLD2, Lamin A/C, Lamin, LFP, LMNC, LMN1, LMNL1, HGPS, Prelamin-A/C, PRO1, Lamin A, Lamin A/C-like 1, LGMD1B, CDDC, CMT2B1, LDP1

Target/Specificity
Recognizes an epitope located between residues 598-611 of lamin A and therefore reacts exclusively with lamin A.

Reconstitution & Storage
PBS containing 0.09% sodium azide. Short term 4°C, long term aliquot and store at -20°C, avoid freeze thaw cycles. Store undiluted.

Precautions
LMNA / Lamin A/C Antibody (clone 133A2) is for research use only and not for use in diagnostic or therapeutic procedures.

LMNA / Lamin A/C Antibody (clone 133A2) - Protein Information

Name LMNA

Synonyms LMN1

Function
Lamins are 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 (PubMed:10080180, PubMed:10580070, PubMed:<a href="http://www.uniprot.org/citations/10587585"

target="_blank">10587585, PubMed:10814726, PubMed:11799477, PubMed:12075506, PubMed:12927431, PubMed:15317753, PubMed:18551513, PubMed:18611980, PubMed:22431096, PubMed:23666920, PubMed:31548606). Lamin A and C are present in equal amounts in the lamina of mammals (PubMed:10080180, PubMed:10580070, PubMed:10587585, PubMed:10814726, PubMed:11799477, PubMed:12075506, PubMed:12927431, PubMed:15317753, PubMed:18551513, PubMed:18611980, PubMed:22431096, PubMed:23666920, PubMed:31548606). Recruited by DNA repair proteins XRCC4 and IFFO1 to the DNA double- strand breaks (DSBs) to prevent chromosome translocation by immobilizing broken DNA ends (PubMed:31548606). Plays an important role in nuclear assembly, chromatin organization, nuclear membrane and telomere dynamics. Required for normal development of peripheral nervous system and skeletal muscle and for muscle satellite cell proliferation (PubMed:10080180, PubMed:10814726, PubMed:11799477, PubMed:18551513, PubMed:22431096). Required for osteoblastogenesis and bone formation (PubMed:12075506, PubMed:15317753, PubMed:18611980). Also prevents fat infiltration of muscle and bone marrow, helping to maintain the volume and strength of skeletal muscle and bone (PubMed:10587585). Required for cardiac homeostasis (PubMed:10580070, PubMed:12927431, PubMed:23666920, PubMed:18611980).

Cellular Location
Nucleus. Nucleus envelope. Nucleus lamina. Nucleus, nucleoplasm. Nucleus matrix. Note=Farnesylation of prelamin-A/C facilitates nuclear envelope targeting and subsequent cleavage by ZMPSTE24/FACE1 to remove the farnesyl group produces mature lamin-A/C, which can then be inserted into the nuclear lamina (PubMed:15317753) EMD is required for proper localization of non-farnesylated prelamin- A/C (PubMed:19323649).

Tissue Location
In the arteries, prelamin-A/C accumulation is not observed in young healthy vessels but is prevalent in medial vascular smooth muscle cells (VSMCs) from aged individuals and in

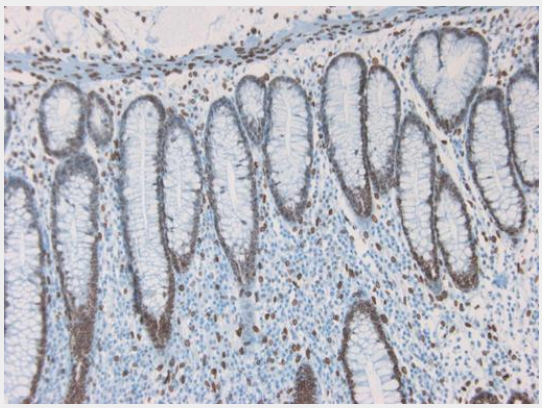
atherosclerotic lesions, where it often colocalizes with senescent and degenerate VSMCs. Prelamin-A/C expression increases with age and disease. In normal aging, the accumulation of prelamin-A/C is caused in part by the down-regulation of ZMPSTE24/FACE1 in response to oxidative stress.

LMNA / Lamin A/C Antibody (clone 133A2) - Protocols

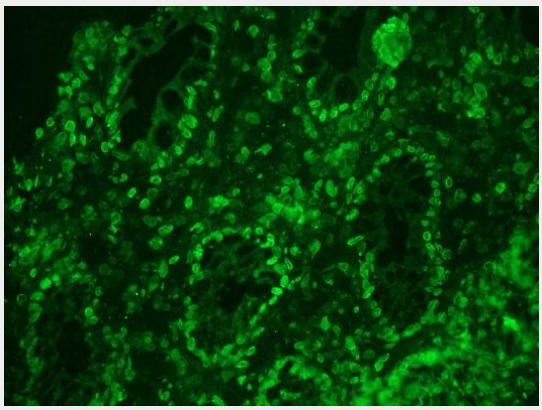
Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

LMNA / Lamin A/C Antibody (clone 133A2) - Images

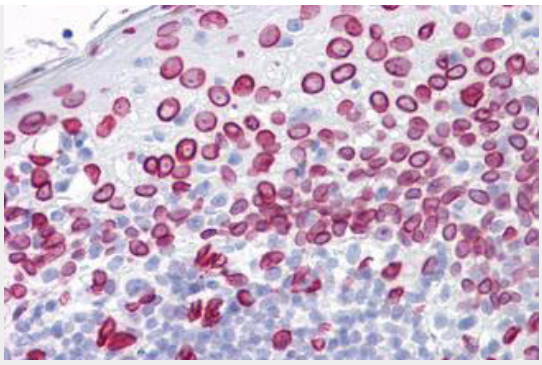


Immunohistochemistry on paraffin section of human colon

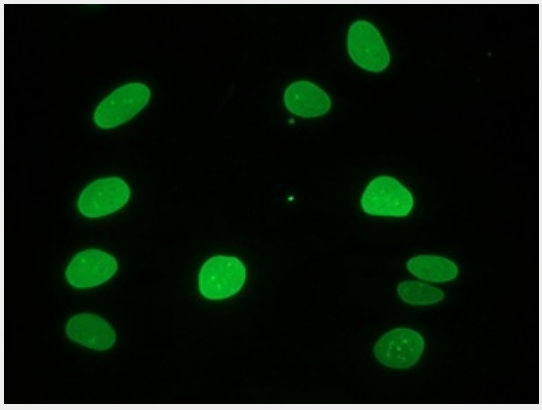


Immunohistochemistry on frozen sections of human colon showing nuclear lamina staining in...

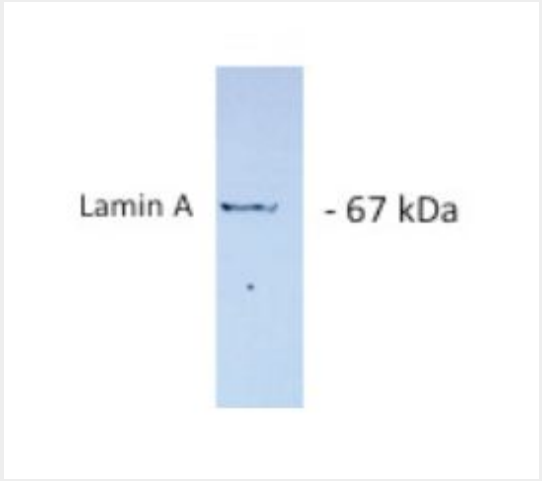
10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999



Anti-Lamin A/C antibody IHC of human tonsil.



Immunocytochemical staining of fibroblasts showing nuclear lamina



Western blot of Lamin A antibody on mouse 3T3 fibroblast cells.

LMNA / Lamin A/C Antibody (clone 133A2) - Background

Lamins are 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. Lamin A and C are present in equal amounts in the lamina of mammals. Plays an important role in nuclear assembly, chromatin organization, nuclear membrane and telomere dynamics. Required for normal development of peripheral nervous system and skeletal muscle and for muscle satellite cell proliferation. Required for osteoblastogenesis and bone formation. Also prevents fat infiltration of muscle and bone marrow, helping to maintain the volume and strength of skeletal muscle and bone.

10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

LMNA / Lamin A/C Antibody (clone 133A2) - References

McKeon F.D.,et al.Nature 319:463-468(1986).
Fisher D.Z.,et al.Proc. Natl. Acad. Sci. U.S.A. 83:6450-6454(1986).
Sylvius N.,et al.J. Med. Genet. 42:639-647(2005).
Csoka A.B.,et al.Submitted (JUL-2003) to the EMBL/GenBank/DDBJ databases.
Ota T.,et al.Nat. Genet. 36:40-45(2004).