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

LMNA / Lamin A/C Antibody (aa464-572, clone JOL2)

Mouse Monoclonal Antibody
Catalog # ALS12586

Specification

LMNA / Lamin A/C Antibody (aa464-572, clone JOL2) - Product Information

Application	**IHC**
Primary Accession	P02545
Reactivity	**Human**
Host	**Mouse**
Clonality	**Monoclonal**
Calculated MW	**74kDa KDa**

LMNA / Lamin A/C Antibody (aa464-572, clone JOL2) - Additional Information

Gene ID 4000

Other Names
Prelamin-A/C, Lamin-A/C, 70 kDa lamin, Renal carcinoma antigen NY-REN-32, LMNA, LMN1

Target/Specificity
The antibody reacts with both recombinant and native Lamin A and C in humans. It has been shown to bind to an epitope between amino acids 464-572

Reconstitution & Storage
Long term: -20°C; Short term: +4°C. Avoid repeat freeze-thaw cycles.

Precautions
LMNA / Lamin A/C Antibody (aa464-572, clone JOL2) is for research use only and not for use in diagnostic or therapeutic procedures.

LMNA / Lamin A/C Antibody (aa464-572, clone JOL2) - Protein Information

Name LMNA

Synonyms LMN1

Function
[Lamin-A/C]: Lamins are intermediate filament proteins that assemble into a filamentous meshwork, and which constitute the major components of the nuclear lamina, a fibrous layer on the nucleoplasmic side of the inner nuclear membrane (PubMed:2344612, PubMed:2188730, PubMed:24741066, PubMed:10080180, PubMed:10580070, PubMed:10587585, PubMed:10814726, PubMed:<a

href="http://www.uniprot.org/citations/11799477" target="_blank">11799477, PubMed:12075506, PubMed:12927431, PubMed:15317753, PubMed:18551513, PubMed:18611980, PubMed:22431096, PubMed:23666920, PubMed:31434876, PubMed:31548606, PubMed:37788673, PubMed:37832547). Lamins provide a framework for the nuclear envelope, bridging the nuclear envelope and chromatin, thereby playing an important role in nuclear assembly, chromatin organization, nuclear membrane and telomere dynamics (PubMed:24741066, 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, PubMed:37788673, PubMed:37832547). Lamin A and C also regulate matrix stiffness by conferring nuclear mechanical properties (PubMed:25127216, PubMed:23990565). The structural integrity of the lamina is strictly controlled by the cell cycle, as seen by the disintegration and formation of the nuclear envelope in prophase and telophase, respectively (PubMed:2344612, PubMed:2188730). 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). Also invoved in DNA repair: 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). Required for normal development of peripheral nervous system and skeletal muscle and for muscle satellite cell proliferation (PubMed:10080180, PubMed:<a

href="http://www.uniprot.org/citations/10814726" target="_blank">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 lamina. Nucleus envelope. 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). Also localizes to the micronuclear envelope in response to response to genome instability (PubMed:37788673)

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.

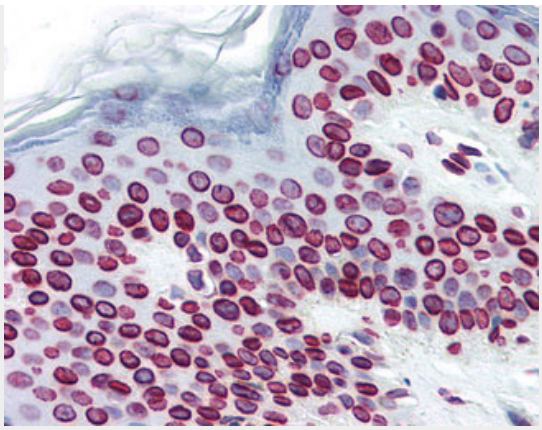
LMNA / Lamin A/C Antibody (aa464-572, clone JOL2) - Protocols

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

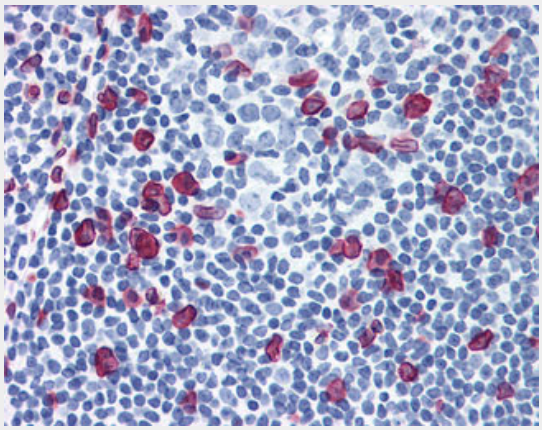
- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

LMNA / Lamin A/C Antibody (aa464-572, clone JOL2) - Images

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 skin.



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

LMNA / Lamin A/C Antibody (aa464-572, clone JOL2) - 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.

LMNA / Lamin A/C Antibody (aa464-572, clone JOL2) - 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).