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Anti-Lamin A/C Picoband Antibody

Catalog # ABO11971

Product Information

Application	WB, IHC-P, ICC
Primary Accession	P02545
Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized
Description	Rabbit IgG polyclonal antibody for Prelamin-A/C(LMNA) detection. Tested with WB, IHC-P, ICC in Human;Mouse;Rat.
Reconstitution	Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Additional Information

Gene ID	4000
Other Names	Prelamin-A/C, Lamin-A/C, 70 kDa lamin, Renal carcinoma antigen NY-REN-32, LMNA, LMN1
Calculated MW	74139
Application Details	Immunocytochemistry , 0.5-1 □g/ml, Human, - Immunohistochemistry(Paraffin-embedded Section), 0.5-1 □g/ml, Human, Mouse, Rat, By Heat Western blot, 0.1-0.5 □g/ml, Human
Subcellular Localization	Nucleus. Nucleus envelope. Nucleus lamina. Nucleus, nucleoplasm. Farnesylation of prelamin-A/C facilitates nuclear envelope targeting and subsequent cleaveage by ZMPSTE24/FACE1 to remove the farnesyl group produces mature lamin- A/C, which can then be inserted into the nuclear lamina. EMD is required for proper localization of non-farnesylated prelamin-A/C.
Tissue Specificity	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. .
Source	Eukaryota
Protein Name	Prelamin-A/C

Contents	Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3.
Immunogen	E.coli-derived human Lamin A/C recombinant protein (Position: Y481-Y646). Human Lamin A/C shares 90% and 92% amino acid (aa) sequence identity with mouse and rat Lamin A/C, respectively.
Purification	Immunogen affinity purified.
Cross Reactivity	No cross reactivity with other proteins
Storage	At -20˚C for one year. After r˚Constitution, at 4˚C for one month. It˚Can also be aliquotted and stored frozen at -20˚C for a longer time.Avoid repeated freezing and thawing.
Sequence Similarities	Belongs to the intermediate filament family.

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:10080180, PubMed:10580070, PubMed:10587585, PubMed:10814726, PubMed:11799477, PubMed:12075506, PubMed:12927431, PubMed:15317753, PubMed:18551513, PubMed:18611980, PubMed:2188730, PubMed:22431096, PubMed:2344612, PubMed:23666920, PubMed:24741066, 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:10080180, PubMed:10580070, PubMed:10587585, PubMed:10814726, PubMed:11799477, PubMed:12075506, PubMed:12927431, PubMed:15317753, PubMed:18551513, PubMed:18611980, PubMed:22431096, PubMed:23666920, PubMed:24741066, PubMed:31548606, PubMed:37788673, PubMed:37832547). Lamin A and C also regulate matrix stiffness by conferring nuclear mechanical properties (PubMed:23990565, PubMed:25127216). 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:2188730, PubMed:2344612). 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 involved 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: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:18611980, PubMed:23666920).

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)

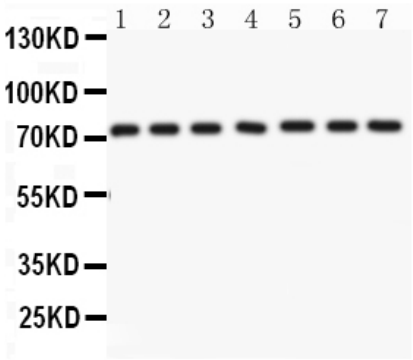
Tissue Location

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.

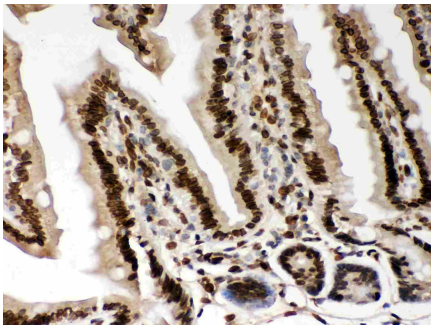
Background

Lamins are structural protein components of the nuclear lamina, a protein network underlying the inner nuclear membrane that determines nuclear shape and size. There are three types of lamins, A,B and C. The lamin A/C (LMNA) gene contains 12 exons. Alternative splicing within exon 10 gives rise to two different mRNAs that code for pre-lamin A and lamin C. Lamin A/C is mapped to 1q21.2-q21.3 and mutations in this gene cause a variety of human diseases including Emery-Dreifuss muscular dystrophy, dilated cardiomyopathy, and Hutchinson-Gilford progeria syndrome. Lamin A/C deficiency is thus associated with both defective nuclear mechanics and impaired mechanically activated gene transcription.

Images

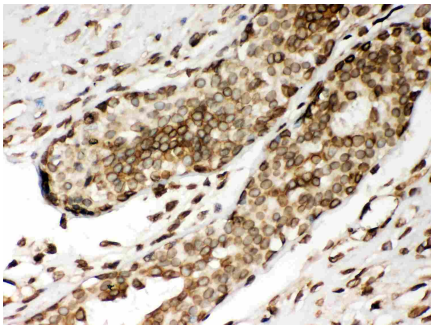


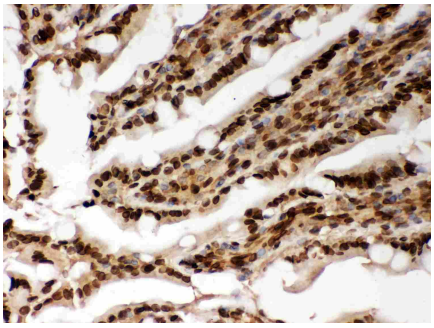
Anti- Lamin A Picoband antibody, ABO11971, Western blottingAll lanes: Anti Lamin A (ABO11971) at 0.5ug/mlLane 1: Human Placenta Tissue Lysate at 50ugLane 2: SKOV Whole Cell Lysate at 40ugLane 3: SW620 Whole Cell Lysate at 40ugLane 4: COLO320 Whole Cell Lysate at 40ugLane 5: HELA Whole Cell Lysate at 40ugLane 6: 293T Whole Cell Lysate at 40ugLane 7: A549 Whole Cell Lysate at 40ugPredicted bind size: 74KDObserved bind size: 74KD



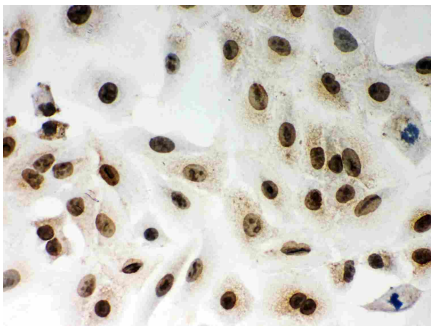
Anti- Lamin A Picoband antibody, ABO11971, IHC(P)IHC(P): Mouse Intestine Tissue

Anti- Lamin A Picoband antibody, ABO11971, IHC(P)IHC(P): Human Mammary Cancer Tissue





Anti- Lamin A Picoband antibody, ABO11971, IHC(P)IHC(P): Rat Intestine Tissue



Anti- Lamin A Picoband antibody, ABO11971, ICCICC: A549 Cell

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.