abcam

ab8980

Anti-Lamin A antibody [133A2] - Nuclear Envelope Marker

Anti-Lamin A antibody [133A2] (ab8980) is a mouse monoclonal antibody detecting Lamin A in **Western Blot, Flow Cytometry, IHC-P, IHC-Fr, ICC/IF**. Suitable for **Human, Mouse**.

- KO validated for confirmed specificity
- Over 90 publications
- Trusted since 2002

KO Validated

Key facts

Isotype	IgG3
Host species	Mouse
Storage buffer	Preservative: 0.09% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Fragment Protein within Human LMNA. The exact immunogen used to generate this antibody is proprietary information. Database link P02545
Clone number	133A2
Purification technique	Ion exchange chromatography
Specificity	Reacts against lamin A exclusively (the antibody was raised against the carboxy-terminus of 98 amino acids present in lamin A and absent from lamin C. As a result, this antibody recognizes lamin A but not lamin C; See Machiels et al 1997). Lamins do not appear to be universally distributed among different cell and tissue types. ab8980 has been tested in testis parenchyma and testicular germ cell tumours (See Machiels et al 1997). Other cell/tissue types have not been tested.
Epitope	Recognizes an epitope located between residues 598-611 of lamin A.
Light chain type	kappa

Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	1/100 - 1/200
Notes	ab18392 - Mouse monoclonal IgG3, is suitable for use as an isotype control with this antibody.

Expected

Species	Mouse
Dilution info	1/100 - 1/200
Notes	ab18392 - Mouse monoclonal IgG3, is suitable for use as an isotype control with this antibody.

WB

Tested

Species	Human
Dilution info	1/100 - 1/1000
Notes	PMID: 9274531

Expected

Species	Mouse
Dilution info	1/100 - 1/1000
Notes	PMID: 9274531

IHC-Fr

Tested

Species	Human
Dilution info	1/100 - 1/200
Notes	-

Expected

Species	Mouse
Dilution info	1/100 - 1/200
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1 µg/mL
Notes	-

Expected

Species	Mouse
Dilution info	1 µg/mL
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/100 - 1/200
Notes	-

Expected

Species	Mouse

Dilution info	1/100 - 1/200
Notes	-

Target data

See full target information LMNA

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). Prelamin-A/C. Prelamin-A/C can accelerate smooth muscle cell senescence (PubMed:20458013). It acts to disrupt mitosis and induce DNA damage in vascular smooth muscle cells (VSMCs), leading to mitotic failure, genomic instability, and premature senescence (PubMed:20458013).

Storage

Shipped at conditions	Blue Ice

Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

What is this antibody validated in?
Anti-Lamin A antibody [133A2] (ab8980) is a mouse monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Flow Cyt), Immunohistochemistry (IHC-P), Immunohistochemistry (IHC-Fr), Immunocytochemistry/immunofluorescence (ICC/IF) in Human, Mouse samples.

What is the molecular weight of Lamin A?
Anti-Lamin A [133A2] (ab8980) specifically detects a band for Lamin A (UniProt: P02545) at a molecular weight of 74kDa.

Trusted by the scientific community
Anti-Lamin A [133A2] (ab8980) was first used in a scientific publication in 2002 and has been cited over 90 times in peer-reviewed journals.

Reviewed by scientists
Anti-Lamin A [133A2] (ab8980) has over 15 independent reviews from customers.

Specificity confirmed
The specificity of Anti-Lamin A antibody [133A2] (ab8980) has been confirmed by Western blot testing in LMNA Knockout HAP1 cells.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Lamin A also known as LMNA is a type of lamin protein integral to the nuclear architecture. It has a molecular weight of approximately 70 kDa. This protein localizes mainly to the nuclear lamina a dense fibrillar network inside the inner nuclear membrane found across various cell types. Lamin A serves as a structural scaffold mediating nuclear stability and rigidity. It also plays a role in chromatin organization supporting overall nuclear functions.

Biological function summary	The lamin molecule interacts with several nuclear components forming part of the nuclear lamina complex. It anchors chromatin material and regulates DNA replication and repair. Lamin A protein also modulates gene expression through interactions with transcription factors. Beyond structural support it influences cell cycle progression and differentiation impacting cellular mechanotransduction and signaling processes.
Pathways	Lamin A performs critical functions within the cell cycle and apoptotic pathways. Its interactions with the retinoblastoma protein (pRB) and other cyclin-dependent kinases control cell cycle checkpoints and progression. Moreover lamin A connects with proteins involved in signaling pathways like MAPK which relate to stress responses and cellular growth. These interactions highlight its dynamic involvement in maintaining cell health and proliferation.
Associated diseases and disorders	Mutations in the lamin A gene associate closely with Hutchinson-Gilford Progeria Syndrome and Emery-Dreifuss Muscular Dystrophy. In these conditions altered lamin A protein affects nuclear shape and chromatin layout disrupting transcriptional regulation. The mutated lamin A protein interacts differently with binding partners like emerin contributing to muscle adipose tissue and multi-system abnormalities. This highlights the critical role lamin A plays in maintaining normal cellular function across life stages.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

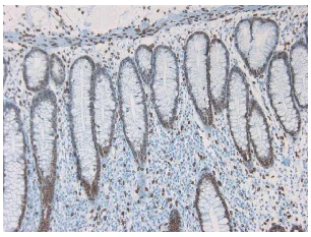
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

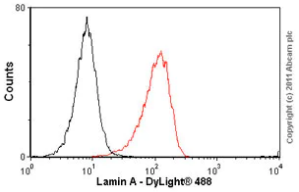
7 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Lamin A antibody [133A2] - Nuclear Envelope Marker (ab8980)

Lamin A Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-Lamin A antibody

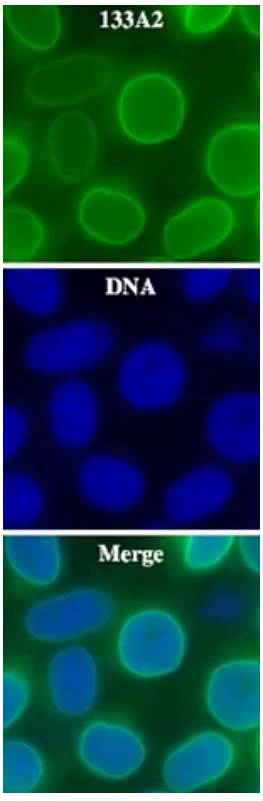
Immunohistochemistry on paraffin section of human colon.



Flow Cytometry - Anti-Lamin A antibody [133A2] - Nuclear Envelope Marker (ab8980)

Lamin A Flow Cytometry staining using mouse Anti-Lamin A antibody

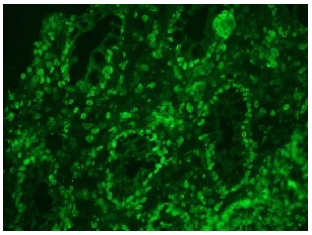
Overlay histogram showing HeLa cells stained with ab8980 (red line). The cells were fixed with methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab8980, 1/100 dilution) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG3 [MG3-35] (2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a decreased signal in HeLa cells fixed with 4% paraformaldehyde (10 min)/permeabilized with 0.1% PBS-Tween used under the same conditions.



Immunocytochemistry/ Immunofluorescence - Anti-Lamin A antibody [133A2] - Nuclear Envelope Marker (ab8980)

Lamin A Immunocytochemistry/ Immunofluorescence staining using mouse Anti-Lamin A antibody

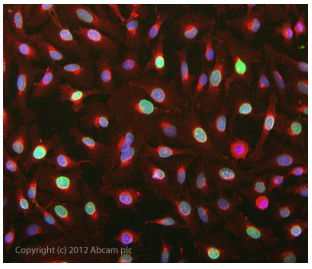
These images show HeLa cells stained with Laminin A antibody - ab8980 (green) and with DAPI (blue). The pictures were kindly supplied as part of the review submitted by Dr Josef Gotzmann at Medical University of Vienna, Austria.



Immunohistochemistry (Frozen sections) - Anti-Lamin A antibody [133A2] - Nuclear Envelope Marker (ab8980)

Lamin A Immunohistochemistry (Frozen sections) staining using mouse Anti-Lamin A antibody

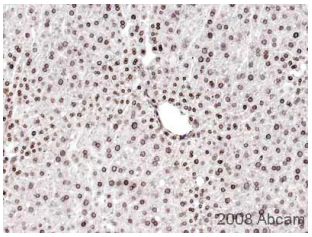
Immunohistochemistry on frozen sections of human colon showing nuclear lamina staining in epithelial and connective tissue cells.



Immunocytochemistry/ Immunofluorescence - Anti-Lamin A antibody [133A2] - Nuclear Envelope Marker (ab8980)

Lamin A Immunocytochemistry/ Immunofluorescence staining using mouse Anti-Lamin A antibody

ICC/IF image of ab8980 stained HeLa cells. The cells were 100% methanol fixed (5 min) and then incubated in 1%BSA / 10% normal goat serum (ab7481) / 0.3M glycine in 0.1% PBS-Tween for 1h to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody ab8980 at 1µg/ml overnight at +4°C. The secondary antibody (green) was DyLight® 488 goat anti- mouse (ab96879) IgG (H+L) used at a 1/1000 dilution for 1h. Alexa Fluor® 594 WGA was used to label plasma membranes (red) at a 1/200 dilution for 1h. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43µM.

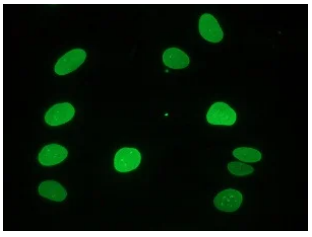


This image is courtesy of a customer review submitted by Mr Carl Hobbs

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Lamin A antibody [133A2] - Nuclear Envelope Marker (ab8980)

Lamin A Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-Lamin A antibody

ab8980 staining of Lamin A in adult mouse liver sections. Formaldehyde-fixed paraffin-embedded sections of mouse liver tissue were incubated with ab8980 (1/2500) fo 2 hours. Antigen retrieval was performed by heat induction in citrate buffer pH 6.0 (ab64214). Please see accompanying abreview for additional information.



Immunocytochemistry/ Immunofluorescence - Anti-Lamin A antibody [133A2] - Nuclear Envelope Marker (ab8980)

Lamin A Immunocytochemistry/ Immunofluorescence staining using mouse Anti-Lamin A antibody

Immunocytochemical staining of fibroblasts showing nuclear lamina.

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