abcam

ab16048

Anti-Lamin B1 antibody - Nuclear Envelope Marker

Rabbit anti-Lamin B1 antibody ab16048 is a rabbit polyclonal antibody that is used in Lamin B1 western blotting, IHC and immunofluorescence. Suitable for human, mouse and rat samples.

Tried and trusted by researchers since 2005
Specificity confirmed with LMNB1 knockout cell line validation
Anti-Lamin B1 antibody ab16048 is cited in over 1270 publications
Same trusted quality, New lower price!

KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.4 Preservative: 0.02% Sodium azide Constituents: 98.98% PBS, 1% BSA
Form	Liquid
Clonality	Polyclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Purification technique	Affinity purification Immunogen
Specificity	From July 2024, QC testing of replenishment batches of this polyclonal changed. All tested and expected application and reactive species combinations are still covered by our Abcam product promise. However, we no longer test all applications. For more information on a specific batch, please contact our Scientific Support who will be happy to help.
Concentration	0.1 - 1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	0.1 µg/mL
Notes	-

Expected

Species	Rat
Dilution info	-
Notes	-

Species	Mouse
Dilution info	0.1 µg/mL
Notes	-

Predicted

Species	Chicken, Pig, Xenopus laevis, Indian muntjac, Zebrafish
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	0.1 µg/mL
Notes	We recommend Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773).

Species	Mouse
Dilution info	0.1 µg/mL
Notes	We recommend Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773).

Species	Rat

Dilution info	0.1 µg/mL
Notes	We recommend Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773).

Predicted

Species	Chicken, Pig, Xenopus laevis, Indian muntjac, Zebrafish
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	0.1-1 µg/mL
Notes	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Chicken, Pig, Xenopus laevis, Indian muntjac, Zebrafish
Dilution info	-
Notes	-

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

Lamin B1 and Lamin B antibodies are extremely useful as nuclear loading controls for use with nuclear extracts. When using Lamin B1 antibodies as nuclear loading controls, be aware that in apoptotic cells Lamin B1 is cleaved (Kottke TJ et al.). Lamin B1 will also be removed from a nuclear prep if the nuclear membranes are spun out. This antibody was designed to be a nuclear loading control however it has not yet been tested in appropriate lysates.

Abcam is leading the way to address reproducibility in scientific research with our highly validated recombinant monoclonal and recombinant multiclonal antibodies. Search & select one of Abcam's thousands of recombinant alternatives to eliminate batch-variability and unnecessary animal use.

If you do not find a host species to meet your needs, our catalogue and custom Chimeric range provides scientists the specificity of Abcam's RabMAbs in the species backbone of your choice. Remember to also review our range of edited cell lines, proteins and biochemicals relevant to your target that may help you further your research goals.

Abcam antibodies are extensively validated in a wide range of species and applications, so please check the reagent specifications meet your scientific needs before purchasing. If you have any questions or bespoke requirements, simply visit the Contact Us page to send us an inquiry or contact our Support Team ahead of purchase.

Supplementary info

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

Activity summary	Lamin B1 also known as LMNB1 is a protein component of the nuclear lamina a dense fibrillar network inside the nuclear envelope. It plays a critical structural role in maintaining nuclear integrity. Lamin B1 typically has a molecular weight of approximately 67 kDa. This protein is expressed in the cells of almost all tissues contributing to the maintenance and organization of the nuclear envelope. Researchers often use Western blot techniques to detect and analyze Lamin B1 size and expression levels in various biological samples.
Biological function summary	The Lamin B1 protein supports nuclear stability and regulates chromatin organization. It is a component of the nuclear lamina complex interacting with other lamin proteins such as lamin A and lamin C to form a structured network. This network is essential for chromatin tethering and gene expression regulation influencing cellular processes at the transcriptional level. Its interactions with chromatin and other nuclear components highlight its significance in the overall functional architecture of the cell nucleus.

Pathways	Lamin B1 interacts with molecules involved in the mitotic spindle assembly and DNA replication pathways. It plays an essential role in mitosis where it helps in the disassembly and reassembly of the nuclear envelope. Lamin B1's interactions with proteins like lamin A/C and emerin highlight its participation in nuclear membrane dynamics and chromatin organization during the cell cycle.
Associated diseases and disorders	Abnormalities in Lamin B1 levels or function associate with conditions like autosomal dominant leukodystrophy and certain types of cancer. Misregulation or mutation of LMNB1 can alter nuclear stability and gene expression contributing to disease pathology. Lamin B1 also connects with proteins like emerin where the disrupted interaction may lead to nuclear envelope-related muscular dystrophies. Understanding these connections is vital for elucidating the molecular basis of these diseases.

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

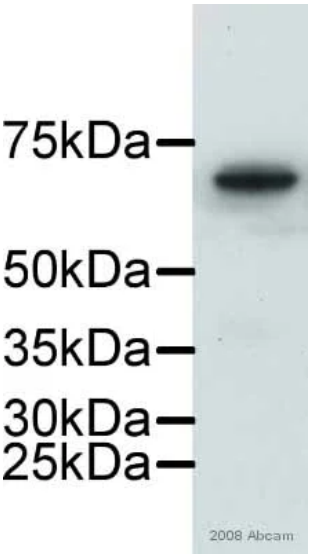
We do not recommend this combination. It is not covered by our product promise.

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.

12 product images



This image is courtesy of an anonymous customer review

Western blot - Anti-Lamin B1 antibody - Nuclear Envelope Marker (ab16048)

All lanes:
Western blot - Anti-Lamin B1 antibody - Nuclear Envelope Marker (ab16048) at 1/1000 dilution

All lanes:
Human Pancreatic cell line - whole cell lysate at 20 µg

Secondary

All lanes:
HRP conjugated goat anti-rabbit antibody at 1/2000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 66 kDa

Observed band size: 68 kDa

Exposure time: 30s

Western blot - Anti-Lamin B1 antibody - Nuclear Envelope Marker (ab16048)

Blocking buffer: 3% Milk

Gel type: MOPS

Exposure Time: 2 minutes

Observed band size: 73 kDa

Additional bands: 46 kDa

All lanes:
Western blot - Anti-Lamin B1 antibody - Nuclear Envelope Marker (ab16048) at 1 µg/mL

Lane 1:
HeLa whole cell lysate at 10 µg

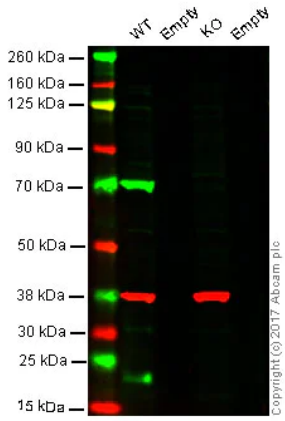
Lane 2:
PC12 whole cell lysate at 10 µg

Lane 3:
NIH 3T3 whole cell lysate at 10 µg

Secondary

All lanes:
Goat polyclonal to Rabbit IgG - H&L - Pre-Adsorbed (HRP) at 1/50000 dilution

Predicted band size: 66 kDa



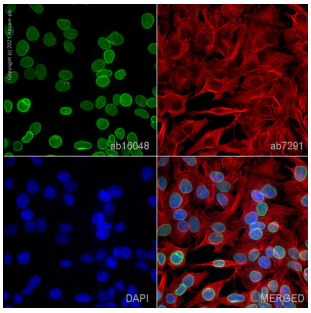
Western blot - Anti-Lamin B1 antibody - Nuclear Envelope Marker (ab16048)

Lane 1: Wild type HAP1 whole cell lysate (20 µg)
Lane 2: empty lane
Lane 3: KO HAP1 LMNB1 whole cell lysate (20 µg)
Lane 4: empty lane
Lanes 1 - 4: Merged signal (red and green). Green - ab16048 observed at 70 kDa. Red - loading control, ab8245, observed at 37 kDa.

ab16048 was shown to specifically react with LMNB1 (Lamin B1) in wild type HAP1 cells. No band was observed when LMNB1 (Lamin B1) knockout samples were used. ab16048 LMNB1 (Lamin B1) and ab8245 (Mouse anti GAPDH loading control) were incubated overnight at 4°C at 0.1 µg per mL and 1/10000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1/10000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-Lamin B1 antibody - Nuclear Envelope Marker (ab16048)

Predicted band size: 66 kDa



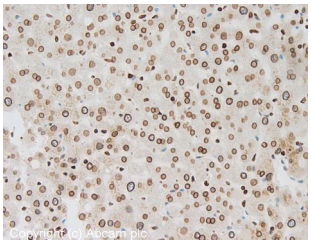
Immunocytochemistry/ Immunofluorescence - Anti-Lamin B1 antibody - Nuclear Envelope Marker (ab16048)

Lamin B1 immunofluorescence staining of HepG2 cells using rabbit anti-Lamin B1 antibody

ab16048 staining Lamin B1 in HepG2 cells. The cells were fixed with 4% paraformaldehyde (10 min) permeabilized with 0.1% PBS-Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1%PBS-Tween for 1h. The cells were then incubated overnight at 4°C with ab16048 at 0.1µg/ml and ab7291 Mouse monoclonal [DM1A] to alpha Tubulin - Loading Control. Cells were then incubated with ab150081 Goat polyclonal Secondary Antibody to Rabbit IgG - H&L (Alexa Fluor® 488) pre-adsorbed at 1/1000 dilution (shown in green) and ab150120 Goat polyclonal Secondary Antibody to Mouse IgG - H&L (Alexa Fluor® 594) pre-adsorbed at 1/1000 dilution (shown in pseudocolour red). Nuclear DNA was labelled with DAPI (shown in blue).

Also suitable in cells fixed with 100% methanol (5 min).

Image was acquired with a high-content analyser (Operetta CLS Perkin Elmer) and a maximum intensity projection of confocal sections is shown.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Lamin B1 antibody - Nuclear Envelope Marker (ab16048)

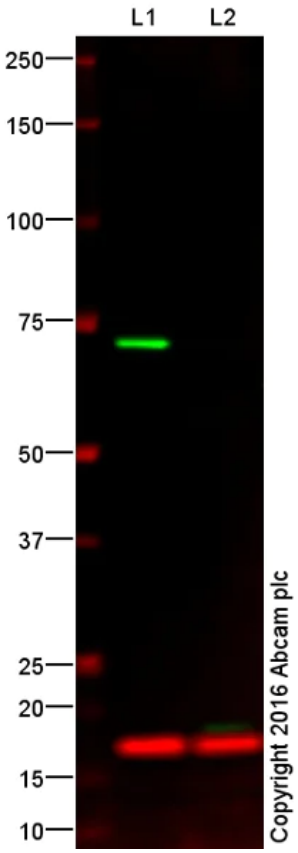
Lamin B1 immunohistochemistry staining of human liver using rabbit anti-Lamin B1 antibody

IHC image of Lamin B1 staining in Human normal Liver formalin fixed paraffin embedded tissue section* performed on a Leica Bond™ system using the standard protocol F. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6 epitope retrieval solution 1) for 20 mins. The section was then incubated with ab16048 1µg/ml for 15 mins at room temperature and detected using an HRP conjugated compact polymer system.

DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions primary antibody concentration and antibody incubation times.

*Tissue obtained from the Human Research Tissue Bank supported by the NIHR Cambridge Biomedical Research Centre



Western blot - Anti-Lamin B1 antibody - Nuclear Envelope Marker (ab16048)

Lane 1: Wild-type HAP1 nuclear lysate (10 µg)
Lane 2: Lamin B1 knockout HAP1 nuclear lysate (10 µg)

Lanes 1 and 2: Green signal from target - ab16048 observed at 68 kDa. Red signal from loading control - ab10799 observed at 18 kDa.

ab16048 was shown to specifically react with lamin B1 in wild-type HAP1 cells. No band was observed knockout samples were used. Wild-type and lamin B1 knockout samples were subjected to SDS-PAGE. ab16048 and ab10799 (loading control to histone H3 at 0.1µg/mL) were both incubated overnight at 4°C. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1/10,000 dilution for 1 h at room temperature before imaging.

All lanes:
Western blot - Anti-Lamin B1 antibody - Nuclear Envelope Marker (ab16048) at 1 µg/mL

Lane 1:
Wild-type HAP1 nuclear lysate at 10 µg

Lane 2:
Lamin B1 knockout HAP1 nuclear lysate at 10 µg

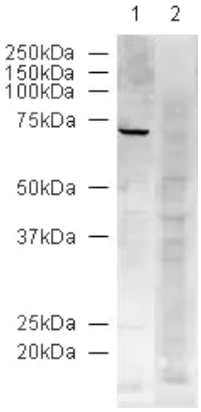
Secondary

All lanes:
Western blot - Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) at 1/10000 dilution

Performed under reducing conditions.

Predicted band size: 36 kDa, 66 kDa

Observed band size: 68 kDa



Western blot - Anti-Lamin B1 antibody - Nuclear Envelope Marker (ab16048)

All lanes:
Western blot - Anti-Lamin B1 antibody - Nuclear Envelope Marker (ab16048) at 1/1000 dilution

All lanes:
HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysate at 20 µg

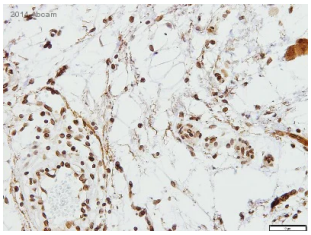
Secondary

All lanes:
Alexa fluor goat polyclonal to Rabbit IgG at 1/10000 dilution

Performed under reducing conditions.

Predicted band size: 66 kDa

Observed band size: 68-70 kDa



This image is courtesy of an anonymous customer review

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Lamin B1 antibody - Nuclear Envelope Marker (ab16048)

ab16048 staining Lamin B1 in human infantile fibromatosis tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with formaldehyde and blocked with 1% FBS/BSA for 3 hours at room temperature; antigen retrieval was by heat mediation in Tris pH9. Samples were incubated with primary antibody (1/100 in TBS + 1% BSA + 1% FBS) for 16 hours. An undiluted HRP-conjugated goat anti-rabbit IgG polyclonal was used as the secondary antibody.

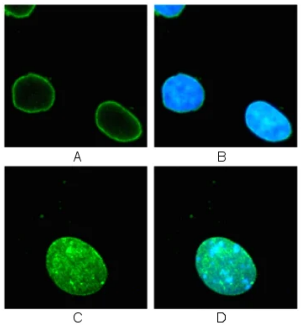


Image courtesy of Marilena Ciciarello and Patrizia Lavia, University 'La Sapienza' CNR, Italy

Immunocytochemistry/ Immunofluorescence - Anti-Lamin B1 antibody - Nuclear Envelope Marker (ab16048)

Lamin B1 immunofluorescence staining of HeLa and 3T3 cells using rabbit anti-Lamin B1 antibody

Human and mouse cells stained with ab16048 (1/500 dilution). The cells were fixed and permeabilized in 4% formaldehyde 0.2% Tritonm X100 for 10 minutes at room temperature then washed 3x in PBS.

A: HeLa cells + ab16048 (green)
B: HeLa cells counterstained with DAPI (blue)
C: 3T3 cells + ab16048 (green)
D: 3T3 cells counterstained with DAPI (blue)

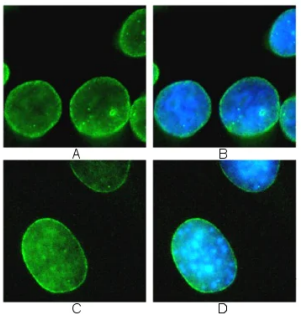


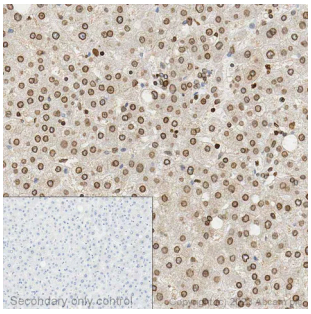
Image courtesy of Marilena Ciciarello and Patrizia Lavia, University 'La Sapienza' CNR, Italy

Immunocytochemistry/ Immunofluorescence - Anti-Lamin B1 antibody - Nuclear Envelope Marker (ab16048)

Lamin B1 immunofluorescence staining of HeLa and 3T3 cells using rabbit anti-Lamin B1 antibody

Human and mouse cells stained with ab16048 (1/500 dilution). The cells were fixed in 100% methanol for 6 minutes at -20°C then washed once in PBS.

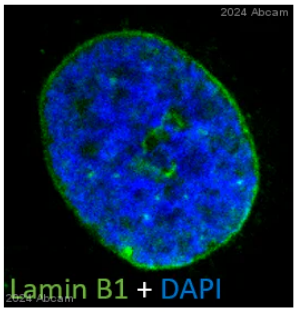
A: HeLa cells + ab16048 (green)
B: HeLa cells counterstained with DAPI (blue)
C: 3T3 cells + ab16048 (green)
D: 3T3 cells counterstained with DAPI (blue)



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Lamin B1 antibody - Nuclear Envelope Marker (ab16048)

Lamin B1 immunohistochemistry staining of human liver using rabbit anti-Lamin B1 antibody

Immunohistochemical analysis of formalin-fixed paraffin-embedded human liver labelling lamin B1 with ab16048 at a concentration of 0.2µg/ml. The immunostaining was performed on a Ventana DISCOVERY ULTRA (Roche Tissue Diagnostics) instrument with an OptiView DAB IHC Detection Kit. Heat mediated antigen retrieval was conducted for 32min with ULTRA cell conditioning solution (CC1 pH8.5). ab16048 anti lamin B1 antibody was incubated at 37°C for 16min. Sections were counterstained with Hematoxylin II. Image inset shows absence of staining in secondary antibody only control.



This image is courtesy of an anonymous customer review

Immunocytochemistry/ Immunofluorescence - Anti-Lamin B1 antibody - Nuclear Envelope Marker (ab16048)

Lamin B1 immunofluorescence staining of rat cortical neurons using rabbit anti-Lamin B1 antibody

Immunocytochemistry analysis of formaldehyde-fixed NP40-permeabilized Mouse vascular smooth muscle cells staining with ab16048 at 1/100 dilution. Secondary antibody was Alexa Fluor® 488 donkey Anti-rabbit at 1/500 dilution. Samples were incubated with the primary antibody with 3% BSA in PBS for 12 hours at 4°C. Blocking was done using 3% BSA for 1 hour at 21°C.
