

Product datasheet

Anti-Lamin B Receptor/LBR antibody [BBmLBR 12.F8] ab232731

KO VALIDATED

★★★★★ [2 Abreviews](#) [4 References](#) [4 Images](#)

Overview

Product name	Anti-Lamin B Receptor/LBR antibody [BBmLBR 12.F8]
Description	Mouse monoclonal [BBmLBR 12.F8] to Lamin B Receptor/LBR
Host species	Mouse
Tested applications	Suitable for: ICC/IF, WB, IHC-P
Species reactivity	Reacts with: Mouse, Human
Immunogen	Recombinant fragment. This information is proprietary to Abcam and/or its suppliers.
Positive control	ICC/IF: HEK-293 cells. WB: MEF-1 whole cell lysate IHC-P: Human Duodenum
General notes	<p>This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact orders@abcam.com.</p> <p>The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing.</p> <p>If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As</p>

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term. Avoid freeze / thaw cycle.
Storage buffer	Preservative: 0.02% Sodium azide Constituents: PBS, 6.97% L-Arginine
Purity	Protein G purified
Clonality	Monoclonal
Clone number	BBmLBR 12.F8

Isotype	IgG2b
Light chain type	kappa

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab232731 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
ICC/IF		Use a concentration of 10 µg/ml.
WB	★★★★★ (1)	Use a concentration of 1 µg/ml. Detects a band of approximately 65 kDa (predicted molecular weight: 71 kDa).
IHC-P		Use a concentration of 0.05 µg/ml. Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Target

Function

Anchors the lamina and the heterochromatin to the inner nuclear membrane.

Involvement in disease

Defects in LBR are a cause of Pelger-Huet anomaly (PHA) [MIM:169400]. PHA is an autosomal dominant inherited abnormality of neutrophils, characterized by reduced nuclear segmentation and an apparently looser chromatin structure. Heterozygotes show hypolobulated neutrophil nuclei with coarse chromatin. Presumed homozygous individuals have ovoid neutrophil nuclei, as well as varying degrees of developmental delay, epilepsy, and skeletal abnormalities.

Defects in LBR are the cause of hydrops-ectopic calcification-moth-eaten skeletal dysplasia (HEM) [MIM:215140]; also known as Greenberg skeletal dysplasia. HEM is a rare autosomal recessive chondrodystrophy characterized by early in utero lethality and, therefore, considered to be nonviable. Affected fetuses typically present with fetal hydrops, short-limbed dwarfism, and a marked disorganization of chondro-osseous calcification and may present with polydactyly and additional nonskeletal malformations.

Defects in LBR may be a cause of Reynolds syndrome (REYNS) [MIM:613471]. It is a syndrome specifically associating limited cutaneous systemic sclerosis and primary biliary cirrhosis. It is characterized by liver disease, telangiectasia, abrupt onset of digital paleness or cyanosis in response to cold exposure or stress (Raynaud phenomenon), and variable features of scleroderma. The liver disease is characterized by pruritis, jaundice, hepatomegaly, increased serum alkaline phosphatase and positive serum mitochondrial autoantibodies, all consistent with primary biliary cirrhosis.

Sequence similarities

Belongs to the ERG4/ERG24 family.

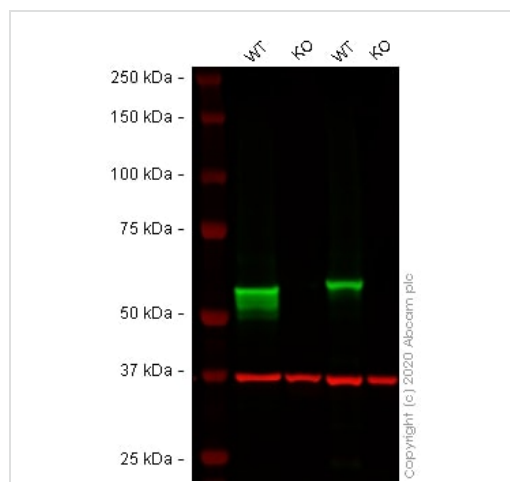
Post-translational modifications

Phosphorylated by CDK1 protein kinase in mitosis when the inner nuclear membrane breaks down into vesicles that dissociate from the lamina and the chromatin. It is phosphorylated by different protein kinases in interphase when the membrane is associated with these structures. Phosphorylation of LBR and HP1 proteins may be responsible for some of the alterations in chromatin organization and nuclear structure which occur at various times during the cell cycle.

Cellular localization

Nucleus inner membrane.

Images



Western blot - Anti-Lamin B Receptor/LBR antibody [BBmLBR 12.F8] (ab232731)

All lanes : Anti-Lamin B Receptor/LBR antibody [BBmLBR 12.F8] (ab232731) at 1 µg/ml

Lane 1 : Wild-type HEK-293 whole cell lysate

Lane 2 : Human LBR (Lamin B Receptor) knockout HEK-293T cell lysate (**ab257503**)

Lane 3 : Wild-type MEF-1 whole cell lysate

Lane 4 : LBR knockout MEF-1 whole cell lysate

Lysates/proteins at 20 µg per lane.

Secondary

All lanes : Goat anti-Mouse IgG H&L (IRDye® 800CW) preadsorbed (**ab216772**) at 1/20000 dilution

Performed under reducing conditions.

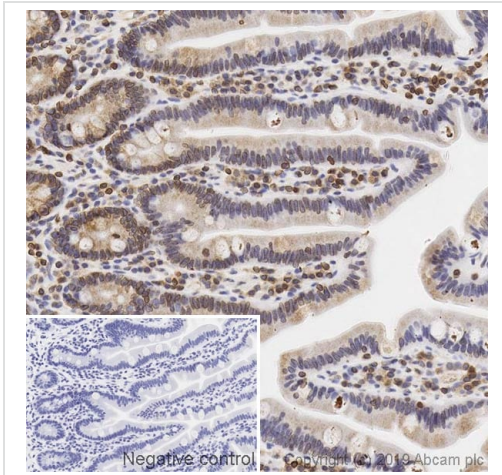
Predicted band size: 71 kDa

Observed band size: 58 kDa

Lanes 1 - 4: Merged signal (red and green). Green - ab232731 observed at 58 kDa. Red - loading control, **ab181602** (Rabbit Anti-GAPDH antibody [EPR16891]) observed at 37kDa.

ab232731 was shown to react with Lamin B Receptor (LBR) in wild-type HEK-293 and MEF-1 cells in western blot. Loss of signal was observed when LBR knockout samples were used. Wild-type and LBR knockout (**ab257503**) HEK-293 cell lysates and wild-type and LBR knockout MEF-1 cell lysates were subjected to SDS-PAGE. Membranes were blocked in 3% milk before incubation with ab232731 and **ab181602** (Rabbit Anti-GAPDH antibody [EPR16891]) overnight at 4°C at 1 µg/ml and a 1 in 20000 dilution respectively. Blots were incubated with Goat anti-Mouse IgG H&L (IRDye® 800CW) preabsorbed (**ab216772**) and Goat anti-Rabbit IgG H&L (IRDye® 680RD) preabsorbed (**ab216777**) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

LBR knockout MEF-1 samples were kindly provided by the Brian Burke laboratory, A-Star Institute, Singapore.

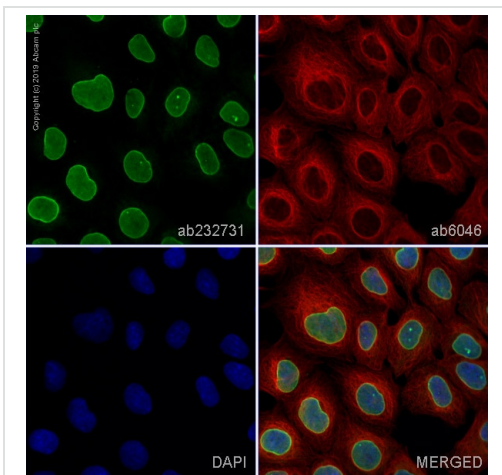


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Lamin B Receptor/LBR antibody [BBmLBR 12.F8] (ab232731)

IHC image of Lamin B receptor staining in a section of formalin-fixed paraffin-embedded normal human duodenum* 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 20mins. The section was then incubated with ab232731, 0.05µg/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. The inset secondary-only control image is taken from an identical assay without primary antibody.

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.

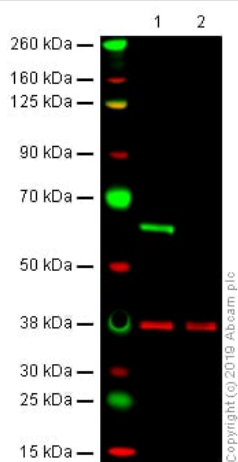
*Tissue obtained from the Human Research Tissue Bank, supported by the NIHR Cambridge Biomedical Research Centre.



Immunocytochemistry/ Immunofluorescence - Anti-Lamin B Receptor/LBR antibody [BBmLBR 12.F8] (ab232731)

ab232731 staining Lamin B Receptor in HEK-293 cells. The cells were fixed with 4% paraformaldehyde (10min), 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 ab232731 at 10µg/ml and **ab6046**, Rabbit polyclonal to beta Tubulin - Loading Control, at 1/1000 dilution. Cells were then incubated with **ab150117**, Goat Anti-Mouse IgG H&L (Alexa Fluor® 488) at 1/1000 dilution (shown in green) and **ab150080**, Goat polyclonal Secondary Antibody to Rabbit IgG - H&L (Alexa Fluor® 594) at 1/1000 dilution (shown in pseudocolor red). Nuclear DNA was labeled with DAPI (shown in blue).

Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).



Western blot - Anti-Lamin B Receptor/LBR antibody [BBmLBR 12.F8] (ab232731)

All lanes : Anti-Histone H4 antibody [EPR16599] - BSA and Azide free ([ab232371](#)) at 1 µg/ml

Lane 1 : MEF-1 wild-type whole cell lysate

Lane 2 : MEF-1 LBR knockout whole cell lysate

Lysates/proteins at 10 µg per lane.

Performed under reducing conditions.

Predicted band size: 71 kDa

Observed band size: 65 kDa

This blot was produced using a 4-12% Bis-tris under the MOPS buffer system. The gel was run at 200V for 55 minutes before being transferred onto a Nitrocellulose membrane at 30V for 70 minutes. The membrane was blocked for an hour using 3% milk before [ab232731](#) and [ab181602](#) (Rabbit anti-GAPDH loading control) were incubated overnight at 4°C at a 1µg/ml concentration and 1/20000 dilution respectively. Antibody binding was detected using Goat anti-Mouse IgG H&L (IRDye® 800CW) preadsorbed ([ab216772](#)) and Goat anti-Rabbit IgG H&L (IRDye® 680RD) preadsorbed ([ab216777](#)) secondary antibodies at 1/20000 dilution for 1 hour at room temperature before imaging.

Cell samples kindly provided by the Brian Burke laboratory, A-Star Institute, Singapore.

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