abcam

ab270455

Anti-L1CAM antibody [EPR23241-224]

Anti-L1CAM antibody [EPR23241-224] (ab270455) is a rabbit monoclonal antibody detecting L1CAM in **Western Blot, Flow Cytometry, IP, IHC-P, ICC/IF**. Suitable for **Human**.

- KO validated for confirmed specificity
- Biophysical QC for unrivalled batch-batch consistency

Recombinant | RabMAb | KO Validated | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR23241-224
Purification technique	Affinity purification Protein A
Concentration	0.545 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human

Dilution info	1/30
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	1/50 - 1/500
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/100 - 1/500
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/100
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Not recommended

Species	Mouse
Dilution info	-
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Rat
Dilution info	-
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Target data

See full target information L1CAM

Function	Neural cell adhesion molecule involved in the dynamics of cell adhesion and in the generation of transmembrane signals at tyrosine kinase receptors. During brain development, critical in multiple processes, including neuronal migration, axonal growth and fasciculation, and synaptogenesis. In the mature brain, plays a role in the dynamics of neuronal structure and function, including synaptic plasticity.

Storage

Shipped at conditions	Conditional Ambient
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-L1CAM antibody [EPR23241-224] (ab270455) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Flow Cyt), Immunoprecipitation (IP), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF) in Human samples.

What is the molecular weight of L1CAM?
Anti-L1CAM [EPR23241-224] (ab270455) specifically detects a band for L1CAM (UniProt: P32004) at a molecular weight of 140kDa.

Specificity confirmed
The specificity of Anti-L1CAM antibody [EPR23241-224] (ab270455) has been confirmed by Western blot testing in L1CAM Knockout HeLa cell line, ab273836.

Other related products
We have a range of other formats of antibody clone [EPR23241-224] also available for your convenience: ab270455, Carrier free - ab272321, Alexa Fluor® 488 - ab275189, Alexa Fluor® 647 - ab275190, Alexa Fluor® 555 - ab307859, PE - ab315143, Alexa Fluor® 594 - ab315360, Alexa Fluor® 568 - ab315361

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Trial sizes available!
Test your antibody or perform pre-screening before committing to a larger quantity. Sold in 20µl. Discover our selection of trial-size antibodies.

Supplementary info

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

Activity summary	L1CAM also known as neural cell adhesion molecule L1 is a transmembrane protein with a molecular weight of approximately 200-220 kDa. The L1CAM protein belongs to the immunoglobulin superfamily and is heavily glycosylated. It plays a significant role in cell adhesion processes within the nervous system. L1CAM is expressed in a variety of tissues including the brain kidney and peripheral nerves and is notably present in neuronal cells where it engages in cell-cell interactions. Researchers frequently use L1CAM IHC ELISA methods and specific fluorescent markers like Alexa Fluor 568 to study its expression patterns and localization.
Biological function summary	L1CAM facilitates neuronal migration axonal growth and synaptic plasticity. This protein participates in the formation and maintenance of neural networks. It interacts with other cell adhesion molecules and components of the extracellular matrix. L1CAM acts as an important modulator within neuronal signaling complexes which impacts the development and regeneration of the nervous system. Insights into its structural and cell interaction properties have made it a focus for understanding nervous system functions.
Pathways	L1CAM participates extensively in the MAPK and PI3K/AKT pathways. These pathways contribute to cellular growth survival and programmed cell death. The protein interacts with other molecules such as integrins and FGFRs to propagate signaling cascades important for cellular response mechanisms. These connections help modulate cytoskeletal dynamics influencing cellular adhesion and motility needed during brain development and response to injury.
Associated diseases and disorders	L1CAM has been associated with hydrocephalus and some cancers. Mutations in the L1CAM gene can lead to L1 syndrome which includes a spectrum of neurological disorders particularly hydrocephalus. In cancer overexpression or altered regulation of L1CAM may correlate with tumor aggressiveness and metastatic potential. L1CAM's association with integrin and cadherin proteins underlines its relevance in pathological states and highlights a potential target for therapeutic interventions.

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.

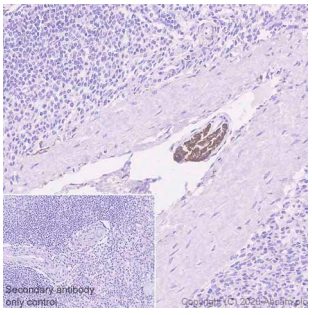
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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12 product images

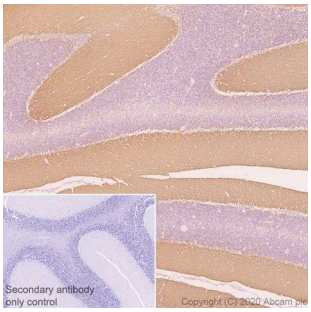


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-L1CAM antibody [EPR23241-224] (ab270455)

L1CAM Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-L1CAM antibody

Immunohistochemical analysis of paraffin-embedded Human spleen tissue labeling L1CAM with ab270455 at 1/100 dilution followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on the nerve in human spleen (PMID: 26743472). The section was incubated with ab270455 for 30 mins at room temperature.The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

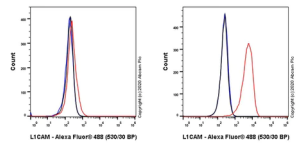
Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-L1CAM antibody [EPR23241-224] (ab270455)

Immunohistochemical analysis of paraffin-embedded Human cerebellum tissue labeling L1CAM with ab270455 at 1/100 dilution followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on the molecular layer of the human cerebellum (PMID: 12514225). The section was incubated with ab270455 for 30 mins at room temperature.The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.
Secondary antibody only control: Secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.

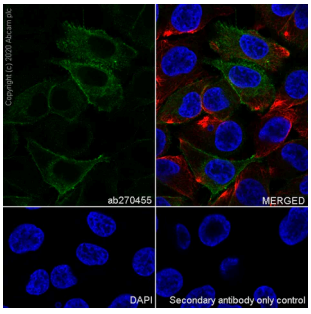


Flow Cytometry - Anti-L1CAM antibody [EPR23241-224] (ab270455)

L1CAM Flow Cytometry staining using rabbit Anti-L1CAM antibody

Flow cytometric analysis of A549 (Human lung carcinoma epithelial cell, Left) / A375 (Human malignant melanoma epithelial cell, Right) cells labelling L1CAM with ab270455 at 1/500 dilution (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody.
A549 is negative or very low expression cell line for L1CAM (PMID: 23511563).

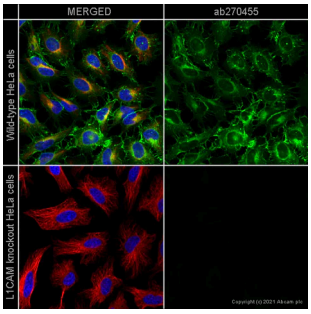
Gated on viable cells.



Immunocytochemistry/ Immunofluorescence - Anti-L1CAM antibody [EPR23241-224] (ab270455)

L1CAM Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-L1CAM antibody

Immunocytochemistry/Immunofluorescence analysis of A375 (human malignant melanoma cell line) cells labelling L1CAM with ab270455 at 1/100. Cells were fixed with 4% paraformaldehyde. An Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/1000) (ab150077) was used as the secondary antibody. The cells were counterstained with an Alexa Fluor® 594-conjugated mouse anti-alpha tubulin antibody (1/200) (ab195889). Nuclei counterstained with DAPI (blue).
Confocal image showing strong membranous and weak cytoplasmic staining in A375 cells.

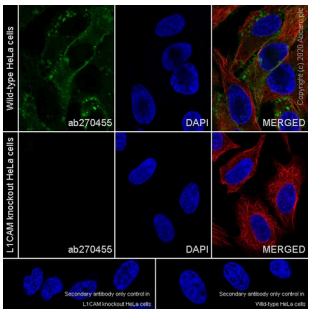


Immunocytochemistry/ Immunofluorescence - Anti-L1CAM antibody [EPR23241-224] (ab270455)

L1CAM Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-L1CAM antibody

Immunocytochemistry analysis of wild-type and L1CAM knockout HeLa (human epithelial cell line from cervix adenocarcinoma) cells labelling L1CAM with ab270455 at 1 µg/ml. Cells were fixed with 100% methanol (5mins). An Alexa Fluor® 488-conjugated goat anti-rabbit IgG (2 µg/ml) (ab150081) was used as the secondary antibody (shown in green). The cells were counterstained with a mouse monoclonal [DM1A] to alpha tubulin antibody (ab195889) at 1 µg/ml and a Alexa Fluor® 647-

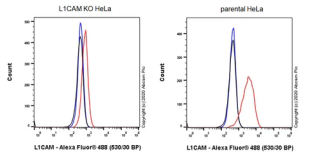
conjugated goat secondary antibody to mouse IgG (ab150119) was used at 2 µg/ml to detect the signal (shown in red). Nuclei counterstained with DAPI (blue).
Confocal image showing strong membranous and weak cytoplasmic staining in wild-type HeLa cells, while no staining in L1CAM knockout HeLa cells (ab255401).



Immunocytochemistry/ Immunofluorescence - Anti-L1CAM antibody [EPR23241-224] (ab270455)

L1CAM Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-L1CAM antibody

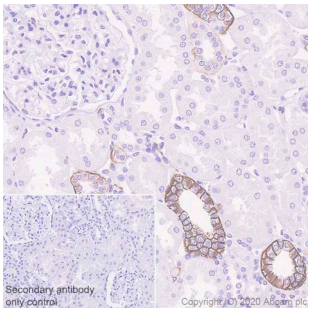
Immunocytochemistry/Immunofluorescence analysis of wild-type and L1CAM knockout HeLa (human epithelial cell line from cervix adenocarcinoma) cells labelling L1CAM with ab270455 at 1/500. Cells were fixed with 4% paraformaldehyde. An Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/1000) (ab150077) was used as the secondary antibody. The cells were counterstained with an Alexa Fluor® 594-conjugated mouse anti-alpha tubulin antibody (1/200) (ab195889). Nuclei counterstained with DAPI (blue).
Confocal image showing strong membranous and weak cytoplasmic staining in wild-type HeLa cells, while no staining in L1CAM knockout HeLa cells (ab255401).



Flow Cytometry - Anti-L1CAM antibody [EPR23241-224] (ab270455)

L1CAM Flow Cytometry staining using rabbit Anti-L1CAM antibody

Flow cytometric analysis of L1CAM KO HeLa (Human cervix adenocarcinoma epithelial cell, Left) / Parental HeLa (Right) cells labeling L1CAM with ab270455 at 1/50 dilution (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (Blue). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody.
Human L1CAM knockout HeLa cell line (ab255401).
Gated on viable cells.

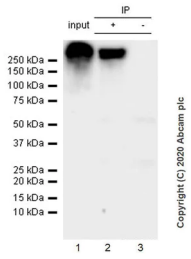


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-L1CAM antibody [EPR23241-224] (ab270455)

L1CAM Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-L1CAM antibody

Immunohistochemical analysis of paraffin-embedded Human kidney tissue labeling L1CAM with ab270455 at 1/100 dilution followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Membranous staining on distal renal tubules in human kidney. The section was incubated with ab270455 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.
Secondary antibody only control: Secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.



Immunoprecipitation - Anti-L1CAM antibody [EPR23241-224] (ab270455)

L1CAM was immunoprecipitated from 0.35 mg A375 (human malignant melanoma epithelial cell), whole cell lysate using ab270455 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab270455 at 1/500 dilution. VeriBlot for IP Detection Reagent (HRP)(ab131366) was used at 1/5000 dilution.
Lane 1: A375 (human malignant melanoma epithelial cell), whole cell lysate 10ug

Lane 2: ab270455 IP in A375 whole cell lysate

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab270455 in A375 whole cell lysate

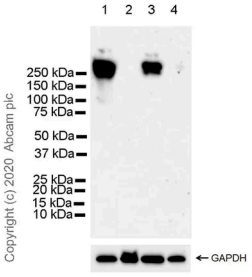
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 5.5 seconds.

All lanes:
Immunoprecipitation - Anti-L1CAM antibody [EPR23241-224] (ab270455)

Predicted band size: 140 kDa

Observed band size: 250 kDa



Western blot - Anti-L1CAM antibody [EPR23241-224] (ab270455)

Blocking/Diluting buffer and concentration: 5% NFDM/TBST.
ab270455 was shown to specifically react with L1CAM in wild-type HeLa cells. Loss of signal was observed when knockout sample from Human L1CAM knockout HeLa cell line (ab255401) was used. Wild-type and L1CAM knockout samples were subjected to SDS-PAGE. ab270455 and ab181602 (Rabbit anti-GAPDH loading control) were incubated 1 hour at room temperature at 1/1000 dilution and 1/200,000 dilution respectively. Blots were developed with Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) secondary antibody at 1/100,000 dilution for 1 hour at room temperature before imaging. The blot was developed on a BIO-RAD® ChemiDoc™ MP instrument using the ECL technique.

A549 is negative or very low expression cell line for L1CAM (PMID: 23511563).

All lanes:
Western blot - Anti-L1CAM antibody [EPR23241-224] (ab270455) at 1/1000 dilution

Lane 1:
Wild-type HeLa (human cervix adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
Western blot - Human L1CAM knockout HeLa cell line (ab255401) at 20 µg

Lane 3:
A375 (human malignant melanoma epithelial cell), whole cell lysate at 20 µg

Lane 4:
A549 (human lung carcinoma epithelial cell), whole cell lysate at 20 µg

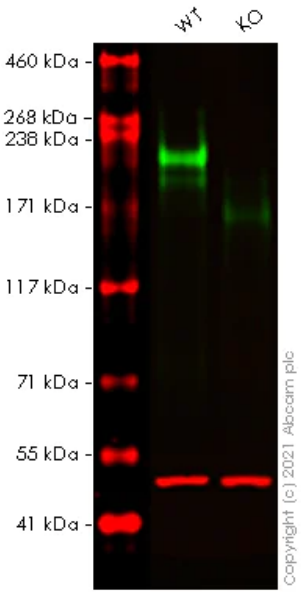
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 140 kDa

Observed band size: 250 kDa

Exposure time: 3min



Western blot - Anti-L1CAM antibody [EPR23241-224] (ab270455)

L1CAM Western blot staining using rabbit Anti-L1CAM antibody

False colour image of Western blot: Anti-L1CAM antibody [EPR23241-224] staining at 1/1000 dilution, shown in green; Mouse anti-Alpha Tubulin [DM1A] (ab7291) loading control staining at 1/20000 dilution, shown in red. In Western blot, ab270455 was shown to bind specifically to L1CAM. A band was observed at 220 kDa in wild-type HeLa cell lysates with no signal observed at this size in L1CAM knockout cell line ab273836 (knockout cell lysate ab273790). The band observed in the knockout lysate lane below 220 kDa is likely to represent a truncated form of L1CAM. This has not been investigated further and the functional properties of the gene product have not been determined. To generate this image, wild-type and L1CAM knockout HeLa cell lysates were analysed.First, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 3 % milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed (ab216776) at 1/20000 dilution.
All lanes:
Western blot - Anti-L1CAM antibody [EPR23241-224] (ab270455) at 1/1000 dilution

Lanes 1 and 3:
Wild-type HeLa cell lysate at 20 µg

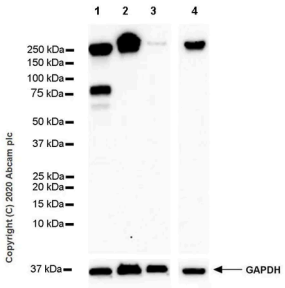
Lanes 2 and 4:
L1CAM knockout HeLa cell lysate at 20 µg

Lane 5:
A375 cell lysate at 20 µg

Lane 6:
MOLT-4 cell lysate at 20 µg

Predicted band size: 140 kDa

Observed band size: 220 kDa



Western blot - Anti-L1CAM antibody [EPR23241-224] (ab270455)

L1CAM Western blot staining using rabbit Anti-L1CAM antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST.
L1CAM is a glycoprotein. Full length 250-kDa L1CAM and cleaved 80-kDa are observed. The molecular weight observed is consistent with what have been described in literature (PMID 29127326).

A549 is negative or very low expression cell line for L1CAM (PMID: 23511563).

Exposure time: 3 minutes.

All lanes:
Western blot - Anti-L1CAM antibody [EPR23241-224] (ab270455) at 1/1000 dilution

Lane 1:
Human brain tissue lysate at 20 µg

Lane 2:
A375 (human malignant melanoma epithelial cell), whole cell lysate at 20 µg

Lane 3:
A549 (human lung carcinoma epithelial cell), whole cell lysate at 20 µg

Lane 4:
MCF7 (human breast adenocarcinoma epithelial cell), whole cell lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) at 1/100000 dilution

Predicted band size: 140 kDa

Observed band size: 250 kDa, 80 kDa

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