abcam

ab216324

Anti-LINE-1 ORF1p antibody [EPR21844-108]

Anti-LINE-1 ORF1p antibody [EPR21844-108] (ab216324) is a rabbit monoclonal antibody detecting LINE-1 ORF1p in **Western Blot, Flow Cytometry (Intra), IP, IHC-P, IHC-Fr, ICC/IF**. Suitable for **Mouse**.

- Biophysical QC for unrivalled batch-batch consistency
- Over 10 publications

Recombinant | RabMAb | 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	EPR21844-108
Purification technique	Affinity purification Protein A
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Mouse
Dilution info	1/30
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	1/100
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/1980
Notes	-

IHC-P

Tested

Species	Mouse
Dilution info	1/500
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

IHC-Fr

Tested

Species	Mouse
Dilution info	-
Notes	-

Target data

See full target information Lire1

Function	Nucleic acid-binding protein which is essential for retrotransposition of LINE-1 elements in the genome. Functions as a nucleic acid chaperone binding its own transcript and therefore preferentially mobilizing the transcript from which they are encoded.

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

Product Specifications

Anti-LINE-1 ORF1p antibody [EPR21844-108] (ab216324) was developed by Abcam using patented rabbit monoclonal antibody technology and is validated for use in Flow Cyt (Intra), ICC/IF, IHC-Fr, IHC-P, IP, WB in mouse samples. Anti-LINE-1 ORF1p antibody [EPR21844-108] (ab216324) specifically detects LINE-1 ORF1p (UniProt ID: P11260; Molecular weight: 41kDa) and is sold in 100 µL and 1 mL selling sizes.

Quality and Validation

Abcam's high quality manufacturing and validation processes ensure Anti-LINE-1 ORF1p antibody [EPR21844-108] (ab216324) has high sensitivity and specificity alongside high lot-to-lot consistency and reproducibility.
Anti-LINE-1 ORF1p antibody [EPR21844-108] (ab216324) has been cited over 12 times in peer reviewed journals and is trusted by the scientific community.

Related Products
Conjugation-ready, carrier free format available for antibody clone EPR21844-108 - ab245122.
Antibody clone EPR21844-108 is also available pre-conjugated to a variety of labels for your convenience - Alexa Fluor® 647 (ab303593).
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.

Supplementary info

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

Activity summary	The LINE-1 ORF1p also called L1 ORF1p is a protein encoded by the open reading frame 1 (ORF1) of the long interspersed nuclear element-1 (LINE-1 or L1) family. These proteins typically have a mass of around 40 kDa. They are predominantly expressed in the germ line and embryonic tissues but can also be found in various somatic tissues under abnormal conditions. L1 ORF1p plays a critical role in the retrotransposition process by forming ribonucleoprotein complexes that assist LINE-1 RNA in entering the nucleus and integrating into the genome.
Biological function summary	L1 ORF1p facilitates the mobilization of LINE-1 elements within the genome impacting genome stability and variability. This protein forms a trimeric complex that binds LINE-1 RNA protecting it from degradation. By promoting the retrotransposition of LINE-1 elements L1 ORF1p influences genomic dynamics potentially contributing to genetic diversity but also potentially causing insertions that may lead to genomic instability and associated pathologies.
Pathways	The activity of L1 ORF1p intersects with genome defense mechanisms and cellular stress response pathways. Important pathways include the single-stranded DNA break repair system and retrotransposon silencing mechanisms where proteins like TREX1 and MOV10 play related roles. These pathways help control the activity of transposable elements and maintain genomic integrity providing a first line of defense against potential disruptions caused by retrotransposition events.

Associated diseases and disorders	Aberrant expression or dysregulation of L1 ORF1p has been linked to cancer and neurodegenerative disorders. Elevated levels of L1 ORF1p have been observed in some cancers such as lung and breast cancer where it may contribute to genomic instability. Furthermore Alzheimer's disease has shown L1 activity potentially involving interaction with amyloid precursor protein (APP) and contributing to disease pathology. Understanding these associations highlights the relevance of L1 ORF1p as a potential target for therapeutic intervention in 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

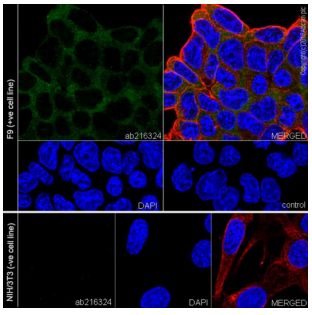
We do not recommend this combination. It is not covered by our product promise.

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.

9 product images



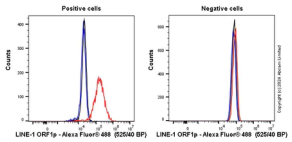
Immunocytochemistry/ Immunofluorescence - Anti-LINE-1 ORF1p antibody [EPR21844-108] (ab216324)

LINE-1 ORF1p Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-LINE-1 ORF1p antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized F9 (mouse embryonal carcinoma epithelial cell) cells labeling LINE-1 ORF1p with ab216324 at 1/100 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green).
Confocal image showing cytoplasmic staining in F9 cell line.

Negative control: NIH/3T3 (PMID: 24324740).

The nuclear counter stain is DAPI (blue). Tubulin is detected with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) at a 1/200 dilution (red).



Flow Cytometry (Intracellular) - Anti-LINE-1 ORF1p antibody [EPR21844-108] (ab216324)

LINE-1 ORF1p Flow Cytometry (Intracellular) staining using rabbit Anti-LINE-1 ORF1p antibody

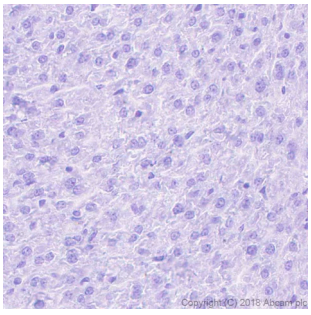
Flow cytometry overlay histogram showing left F9 positive cells and right negative NIH3T3 stained with ab216324 (red line). The cells were fixed with 4% formaldehyde (10 min) and then permeabilised with 0.1% PBS-Triton X-100 for 15 mins. The cells were then incubated in 1x PBS containing 10% normal goat serum to block non-specific protein-protein interaction followed by the antibody (ab216324) (1x 10^6 in 100µl at 1.0µg/ml (1/1980 dilution)) for 30 mins at 22°C.

The secondary antibody Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed was incubated at 1/4000 dilution for 30 mins at 22°C

Isotype control antibody (black line) was Recombinant Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) used at the same concentration and conditions as the primary antibody. Unlabelled sample (blue line) was also used as a control.

Acquisition of >5000 events were collected using a 50 mW Blue laser (488nm) and 525/40 bandpass filter.

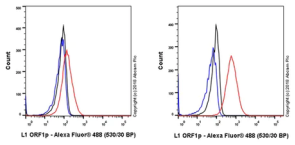
This antibody gave a positive signal in F9 Fixed with 80% methanol (5 mins) / permeabilised with 0.1% PBS-Triton X-100 for 15 minss under the same conditions.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-LINE-1 ORF1p antibody [EPR21844-108] (ab216324)

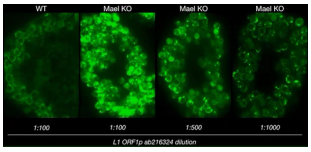
LINE-1 ORF1p Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-LINE-1 ORF1p antibody

Immunohistochemical analysis of paraffin-embedded mouse liver tissue labeling LINE-1 ORF1p with ab216324 at 1/500 dilution, followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP).
Negative control: No staining on mouse liver (PMID: 24607009) is observed. Counterstained with hematoxylin.
Perform heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).



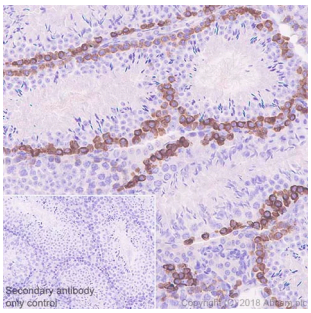
Flow Cytometry (Intracellular) - Anti-LINE-1 ORF1p antibody [EPR21844-108] (ab216324)

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol permeabilized NIH/3T3 (mouse embryonic fibroblast, Left) / F9 (mouse embryonal carcinoma epithelial cell, Right) cell lines labeling LINE-1 ORF1p with ab216324 at 1/500 (red) compared with a Rabbit monoclonal IgG (ab172730) (black) 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.
Negative control: NIH/3T3 (Reference for the negative control is PMID: 24324740).



Immunohistochemistry (Frozen sections) - Anti-LINE-1 ORF1p antibody [EPR21844-108] (ab216324)

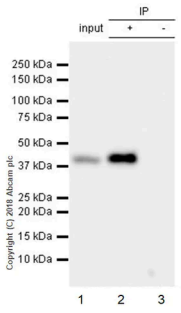
ab216324 staining LINE-1 ORF1p in Wt and Maelstrom (Mael) null mutant mouse testis by Immunohistochemistry (Frozen sections). Mael is a repressor of LINE-1 transposable elements, so the expression of LINE-1 ORF1p increases in this KO. Tissue was fixed with paraformaldehyde and blocked with 10% serum for 30 minutes at 25°C; Samples were incubated with primary antibody (1/100, 1/500 and 1/1000) for 12 hours at 4°C in 3% Donkey Serum in PBS + 0.05% Triton X. Donkey Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150073) (1/1000) was used as the secondary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-LINE-1 ORF1p antibody [EPR21844-108] (ab216324)

LINE-1 ORF1p Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-LINE-1 ORF1p antibody

Immunohistochemical analysis of paraffin-embedded mouse testis tissue labeling LINE-1 ORF1p with ab216324 at 1/500 dilution, followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP). Cytoplasmic staining on spermatogonia of mouse testis (PMID: 24607009) is observed. Counterstained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Goat Anti-Rabbit IgG H&L (HRP).
Perform heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).



Immunoprecipitation - Anti-LINE-1 ORF1p antibody [EPR21844-108] (ab216324)

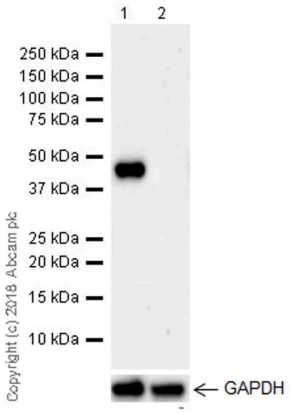
LINE-1 ORF1p was immunoprecipitated from 0.35 mg F9 (mouse embryonal carcinoma epithelial cell) whole cell lysate with ab216324 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab216324 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/5,000 dilution
Lane 1: F9 whole cell lysate 10 µg (Input).
Lane 2: ab216324 IP in F9 whole cell lysate.
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab216324 in F9 whole cell lysate.

Blocking/Dilution buffer: 5% NFDM/TBST.
Exposure time: 30 seconds.

All lanes:
Immunoprecipitation - Anti-LINE-1 ORF1p antibody [EPR21844-108] (ab216324)

Predicted band size: 44 kDa

Observed band size: 41 kDa, 43 kDa



Western blot - Anti-LINE-1 ORF1p antibody [EPR21844-108] (ab216324)

LINE-1 ORF1p Western blot staining using rabbit Anti-LINE-1 ORF1p antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
Negative control: NIH/3T3 (PMID:24324740).

All lanes:
Western blot - Anti-LINE-1 ORF1p antibody [EPR21844-108] (ab216324) at 1/1000 dilution

Lane 1:
F9 (mouse embryonal carcinoma epithelial cell), whole cell lysate at 20 µg

Lane 2:
NIH/3T3 (mouse embryonic fibroblast), whole cell lysate at 20 µg

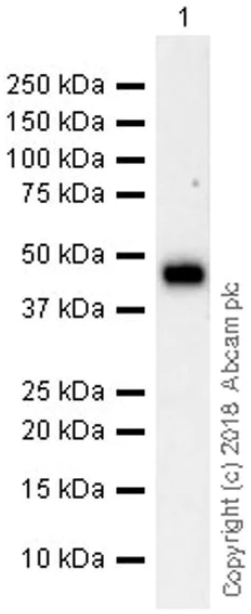
Secondary

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

Predicted band size: 41 kDa

Observed band size: 41 kDa

Exposure time: 3min



Western blot - Anti-LINE-1 ORF1p antibody [EPR21844-108] (ab216324)

Blocking/Dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-LINE-1 ORF1p antibody [EPR21844-108] (ab216324) at 1/1000 dilution

All lanes:
mouse testis lysate at 20 µg

Secondary

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

Predicted band size: 41 kDa

Observed band size: 41 kDa

Exposure time: 3min

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