abcam

ab283346

Anti-Iba1 antibody [EPR16589] - Microglia marker - Rat IgG2a (Chimeric)

Anti-Iba1 antibody [EPR16589] - Rat IgG2a (Chimeric) (ab283346) is a rat monoclonal antibody detecting Iba1 in **Western Blot, Flow Cytometry (Intra), IP, IHC-P, ICC/IF**. Suitable for **Human, Mouse, Rat**.

This antibody is the chimeric Rat version of clone EPR16589, available in rabbit as ab178847 with over 250 publications. Same clone, same staining pattern, different species antibody backbone.
Learn more about chimeric antibodies

Lab Essentials | Recombinant | 20ul selling size

Key facts

Isotype	IgG2a
Host species	Rat
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	EPR16589
Purification technique	Ion exchange chromatography
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Mouse
Dilution info	1/5000
Notes	Not recommended for use with fluorescent secondary antibodies in mouse and rat IHC-P applications.

Species	Rat
Dilution info	1/5000
Notes	Not recommended for use with fluorescent secondary antibodies in mouse and rat IHC-P applications.

Species	Human
Dilution info	1/5000
Notes	Not recommended for use with fluorescent secondary antibodies in mouse and rat IHC-P applications.

ICC/IF

Tested

Species	Human
Dilution info	1/100
Notes	-

Expected

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

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

Expected

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

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/10000
Notes	-

Expected

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

Target data

See full target information AIF1

Function	Actin-binding protein that enhances membrane ruffling and RAC activation. Enhances the actin-bundling activity of LCP1. Binds calcium. Plays a role in RAC signaling and in phagocytosis. May play a role in macrophage activation and function. Promotes the proliferation of vascular smooth muscle cells and of T-lymphocytes. Enhances lymphocyte migration. Plays a role in vascular inflammation.

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

Find all reagents to label astrocytes in our "Microglia markers guide".

Product Specifications
Anti-Iba1 antibody [EPR16589] - Rat IgG2a (Chimeric) (ab283346) is a rat monoclonal recombinant antibody validated for use in IHC-P, IP, WB, ICC/IF and Flow Cyt (Intra) in mouse, rat and human samples.
Clone EPR16589 was initially developed by Abcam using patented rabbit monoclonal antibody technology and has been engineered to generate this rat chimeric antibody which retains the binding properties of the RabMAb parent, but has a rat Fc region. By necessity, some rabbit sequence is retained as part of the variable domain. When multiplexing with other rabbit-derived antibodies, using cross absorbed Fc-reactive secondary antibodies are recommended.
Anti-Iba1 antibody [EPR16589] - Rat IgG2a (Chimeric) (ab283346) specifically detects Iba1 (AIF-1) (UniProt ID: P55008; Molecular weight: 17kDa) and is sold in a convenient trial size to enable initial testing (20 µL) and larger sizes for subsequent scaling up experiments (100 µL and 1 mL).

Quality and Validation
Abcams high quality manufacturing and validation processes ensure Anti-Iba1 antibody [EPR16589] - Rat IgG2a (Chimeric) (ab283346) has high sensitivity and specificity alongside high lot-to-lot consistency and reproducibility.

Target Information
Iba1 (Ionized calcium-binding adapter molecule 1; allograft inflammatory factor 1, AIF1) is a prominent microglial marker extensively used in neuroscience research. Its expression increases in various neurodegenerative conditions,

including Alzheimer's disease (AD), indicating microglial activation and neuroinflammation. Researchers utilize Iba1 in stainings to assess microglial response and activity in different models, making it essential for understanding inflammatory processes in the brain. Changes in Iba1 expression provide valuable insights into neuroinflammation, highlighting its importance in studying diseases like AD.

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	Iba1 also known as Allograft Inflammatory Factor 1 (AIF-1) is a 17 kDa protein notable for its involvement in immune responses. It is expressed mainly in microglia and macrophages key components of the central nervous system's immune system. Researchers often use Iba1 in Western blots and immunohistochemistry (IHC) to study microglial activation. The protein's expression is a strong marker of microglial activation making it a focal point in neuroinflammation studies. Anti-Iba1 antibodies have gained popularity for their effectiveness in identifying microglia in brain tissue sections through Iba1 staining techniques.
Biological function summary	Iba1 modulates actin bundling facilitating changes in microglial morphology and motility. It does not form part of a multiprotein complex but is significantly involved in cytoskeletal dynamics. This protein's expression increases during brain injury indicating its role in response to neural trauma. Iba1 has calcium-binding properties which suggest that it might interact with proteins involved in calcium signaling pathways.
Pathways	Calcium signaling and actin cytoskeletal rearrangement are significant biological processes that involve Iba1. Within these pathways Iba1 interacts closely with other actin-binding proteins that affect microglial movement and morphology. Such interactions illustrate how Iba1 helps microglia navigate and respond to changes within the brain environment.
Associated diseases and disorders	Iba1 is often associated with neurodegenerative diseases like Alzheimer's disease and amyotrophic lateral sclerosis (ALS). In these conditions elevated Iba1 levels mark increased microglial activity which correlates with disease progression. Connections with proteins such as amyloid-beta in Alzheimer's disease suggest its role in mediating inflammatory responses and linking inflammation to disease pathology.

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

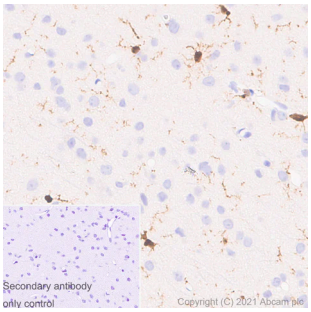
We do not recommend this combination. It is not covered by our product promise.

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.

8 product images

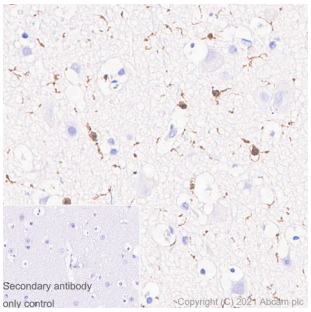


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Iba1 antibody [EPR16589] - Microglia marker - Rat IgG2a (Chimeric) (ab283346)

Iba1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rat Anti-Iba1 antibody

Immunohistochemical analysis of paraffin-embedded rat cerebrum tissue labeling Iba1 with ab283346 at 1/5000 (0.173 µg/ml) dilution followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on the microglia in rat cerebrum. The section was incubated with ab283346 for 10 mins at room temperature and followed by rat IgG antibody (ab102248) for 8 mins. 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 LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval with Citrate buffer (pH 6.0, epitope retrieval solution 1) for 20 mins.

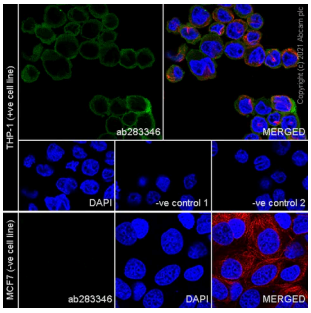


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Iba1 antibody [EPR16589] - Microglia marker - Rat IgG2a (Chimeric) (ab283346)

Iba1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rat Anti-Iba1 antibody

Immunohistochemical analysis of paraffin-embedded human cerebrum tissue labeling Iba1 with ab283346 at 1/5000 (0.173 µg/ml) dilution followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on the microglia in human cerebrum. The section was incubated with ab283346 for 10 mins at room temperature and followed by rat IgG antibody (ab102248) for 8 mins. 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 LeicaDS9800 (Bond™ Polymer Refine Detection).

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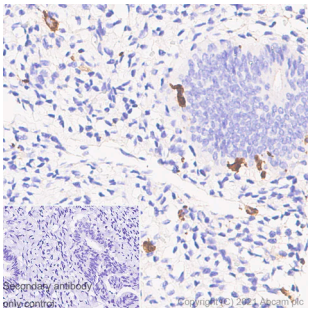
Immunocytochemistry/ Immunofluorescence - Anti-Iba1 antibody [EPR16589] - Microglia marker - Rat IgG2a (Chimeric) (ab283346)

Iba1 Immunocytochemistry/ Immunofluorescence staining using rat Anti-Iba1 antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized THP-1 cells labelling Iba1 with ab283346 at 1/100 (8.63 µg/ml) dilution, followed by ab150157 Goat Anti-Rat IgG H&L (Alexa Fluor® 488) antibody at 1/1000 dilution (Green). Confocal image showing cytoplasmic staining in THP-1 cells. ab179513 Anti-beta Tubulin rabbit monoclonal antibody was used to counterstain tubulin at 1/200 dilution, followed by ab150080 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 594) at a 1/1000 dilution (Red). The nuclear counterstain was DAPI (Blue).
Negative control cell line: MCF7.

-ve control 1: ab283346 at 1/100 dilution followed by ab150080 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 594) at a 1/1000 dilution.

-ve control 2: ab179513 Anti-beta Tubulin rabbit monoclonal antibody at a 1/200 dilution followed by ab150157 Goat Anti-Rat IgG H&L (Alexa Fluor® 488) antibody at 1/1000 dilution.

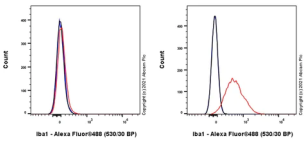


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Iba1 antibody [EPR16589] - Microglia marker - Rat IgG2a (Chimeric) (ab283346)

Iba1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rat Anti-Iba1 antibody

Immunohistochemical analysis of paraffin-embedded human endometrium tissue labeling Iba1 with ab283346 at 1/5000 (0.173 µg/ml) dilution followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on the immune cells in human endometrium. The section was incubated with ab283346 for 10 mins at room temperature and followed by rat IgG antibody (ab102248) for 8 mins. 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 LeicaDS9800 (Bond™ Polymer Refine Detection).

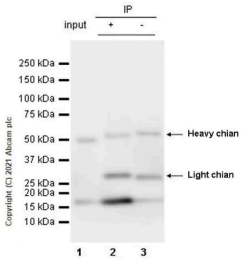
Heat mediated antigen retrieval with Citrate buffer (pH 6.0, epitope retrieval solution 1) for 20 mins.



Flow Cytometry (Intracellular) - Anti-Iba1 antibody [EPR16589] - Microglia marker - Rat IgG2a (Chimeric) (ab283346)

Iba1 Flow Cytometry (Intracellular) staining using rat Anti-Iba1 antibody

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized MCF7 (Human breast adenocarcinoma epithelial cell, Left) / THP-1 (Human monocytic leukemia monocyte, Right) cells labelling Iba1 with ab283346 at 1/10000 dilution (0.01 µg) (Red) compared with a Rat monoclonal IgG (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat F(ab)2 Anti-Rat IgG Fc (Alexa Fluor® 488, ab150161) at 1/2000 dilution was used as the secondary antibody.
Negative control: MCF7.



Immunoprecipitation - Anti-Iba1 antibody [EPR16589] - Microglia marker - Rat IgG2a (Chimeric) (ab283346)

Iba1 was immunoprecipitated from 0.35 mg THP-1 (human monocytic leukemia monocyte), whole cell lysate 10 µg with ab283346 at 1/30 dilution (2 µg in 0.35 mg lysates). Western blot was performed on the immunoprecipitate using ab283346 at 1/1000 dilution. Goat Anti-Rat IgG (H+L), HRP) (ab205720) was used at 1/10000 dilution.
Lane 1: THP-1 whole cell lysate 10 µg

Lane 2: ab283346 IP in THP-1 whole cell lysate

Lane 3: Rat monoclonal IgG (ab18450) instead of ab283346 in THP-1 whole cell lysate

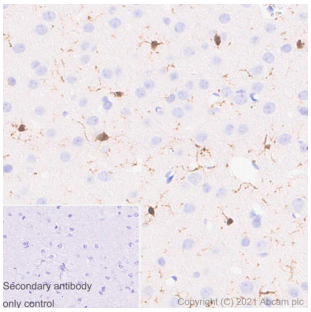
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 1 second.

All lanes:
Immunoprecipitation - Anti-Iba1 antibody [EPR16589] - Microglia marker - Rat IgG2a (Chimeric) (ab283346)

Predicted band size: 16 kDa

Observed band size: 16 kDa



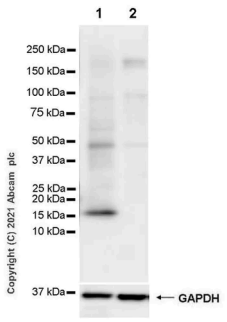
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Iba1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rat Anti-Iba1 antibody

Immunohistochemical analysis of paraffin-embedded mouse cerebrum tissue labeling Iba1 with ab283346 at 1/5000 (0.173 µg/ml) dilution followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on the microglia in mouse cerebrum. The section was incubated with ab283346 for 10 mins at room temperature and followed by rat IgG antibody (ab102248) for 8 mins. 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 LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval with Citrate buffer (pH 6.0, epitope retrieval solution 1) for 20 mins.



Western blot - Anti-Iba1 antibody [EPR16589] - Microglia marker - Rat IgG2a (Chimeric) (ab283346)

Iba1 Western blot staining using rat Anti-Iba1 antibody

Blocking and diluting buffer: 5% NFDM/TBST
Negative control: MCF7 (HPA database)

Exposure time: 37 seconds

All lanes:
Western blot - Anti-Iba1 antibody [EPR16589] - Microglia marker - Rat IgG2a (Chimeric) (ab283346) at 1/1000 dilution

Lane 1:
THP-1 (human monocytic leukemia monocyte), whole cell lysate at 20 µg

Lane 2:
MCF7 (human breast adenocarcinoma epithelial cell), whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rat IgG H&L (HRP) (ab205720) at 1/5000 dilution

Predicted band size: 16 kDa

Observed band size: 16 kDa

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