abcam

ab188190

Anti-CD147 antibody [EPR18008-8]

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	EPR18008-8
Purification technique	Affinity purification Protein A
Concentration	0.981 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Mouse
Dilution info	1/50
Notes	-

Not recommended

Species	Recombinant fragment - Mouse
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Mouse
Dilution info	1/200
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use an isotype control with this antibody.

Not recommended

Species	Recombinant fragment - Mouse
Dilution info	-
Notes	-

WB

Tested

Species	Recombinant fragment - Mouse
Dilution info	1/5000
Notes	-

Species	Mouse
Dilution info	1/5000
Notes	-

sELISA

Tested

Species	Recombinant fragment - Mouse

Dilution info	-
Notes	-

Expected

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

ICC/IF

Tested

Species	Mouse
Dilution info	1/250
Notes	-

Not recommended

Species	Recombinant fragment - Mouse
Dilution info	-
Notes	-

IHC-P

Tested

Species	Mouse
Dilution info	1/8000
Notes	-

Not recommended

Species	Recombinant fragment - Mouse
Dilution info	-
Notes	-

Target data

See full target information Bsg

Function	Isoform 1. Essential for normal retinal maturation and development (PubMed:10967074, PubMed:11273674, PubMed:11853760). Acts as a retinal cell surface receptor for NXNL1 and plays an important role in NXNL1-mediated survival of retinal cone photoreceptors (PubMed:25957687). In association with glucose transporter SLC16A1/GLUT1 and NXNL1, promotes retinal cone survival by enhancing aerobic glycolysis and accelerating the entry of glucose into photoreceptors (PubMed:25957687). Isoform 2. Signaling receptor for cyclophilins, essential for PPIA/CYPA and PPIB/CYPB-dependent signaling related to chemotaxis and adhesion of immune cells (By similarity). Plays an important role in targeting the monocarboxylate transporters SLC16A1, SLC16A3 and SLC16A8 to the plasma membrane (PubMed:12601063). Acts as a coreceptor for vascular endothelial growth factor receptor 2 (KDR/VEGFR2) in endothelial cells enhancing its VEGFA-mediated activation and downstream signaling (By similarity). Promotes angiogenesis through EPAS1/HIF2A-mediated up-regulation of VEGFA and KDR/VEGFR2 in endothelial cells (By similarity). Plays an important role in spermatogenesis; mediates interactions between germ cells and Sertoli cell and is essential for the development/differentiation of germ cells to round spermatids (PubMed:11882021, PubMed:23727514). Plays a role in neurite outgrowth.

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

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	CD147 also referred to as EMMPRIN or basigin is a transmembrane glycoprotein with a molecular weight of roughly 50–60 kDa. This protein is found on the surface of many cell types including leukocytes platelets and endothelial cells and it plays a critical role in cell function related to immune responses and cellular interactions. CD147 interacts with several cellular components serving mechanical functions such as facilitating cell-to-cell communication and contributing to the stability of cell structures. The protein is ubiquitously expressed but exhibits higher levels in tissues like the brain skin and liver.
Biological function summary	CD147 engages in multiple roles beyond its mechanical functions. It functions as a part of protein complexes and is involved in processes such as regulation of matrix metalloproteinases (MMPs) which are pivotal in tissue remodeling and repair. It can modulate inflammatory responses and is essential for cellular signaling pathways that affect cellular metabolism and growth. The involvement of CD147 in immune responses indicates its importance in various physiological processes.
Pathways	CD147 plays a significant role in the MAPK and NF-kB signaling pathways which are fundamental for controlling inflammatory responses and cell survival. It interacts with proteins such as integrins and cyclophilins which are important for mediating these pathways. These interactions highlight CD147's impact on cellular dynamics and its potential role in modulating the cellular environment in response to external stimuli.
Associated diseases and disorders	CD147 has been implicated in cancer promotion and progression as well as inflammatory diseases like rheumatoid arthritis. Its overexpression is often observed in tumors where it interacts with MMPs to facilitate tumor invasion and metastasis. In inflammatory conditions CD147 can influence the behavior of proteins like cytokines exacerbating symptoms and contributing to disease severity. These associations make CD147 a potential target for therapeutic intervention in cancer and inflammatory 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.

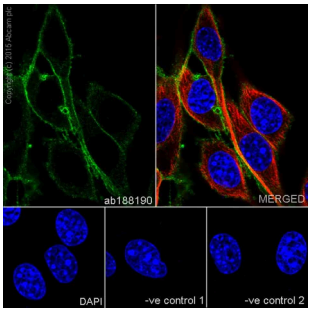
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

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10 product images

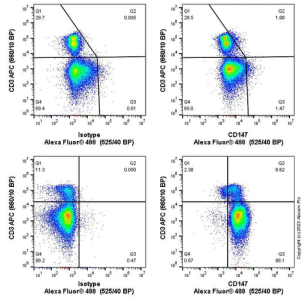


Immunocytochemistry/ Immunofluorescence - Anti-CD147 antibody [EPR18008-8] (ab188190)

CD147 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-CD147 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized bEND.3 (Mouse brain capillary endothelial cell line) cells labeling CD147 with ab188190 at 1/250 dilution, followed by by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing cell membrane staining on bEND.3 cell line. The nuclear counter stain is DAPI (blue).
Tubulin is detected with Anti-alpha Tubulin mouse MAb (ab7291) at 1/1000 dilution and Goat Anti-Mouse IgG H&L (Alexa Fluor® 594) (ab150120) secondary antibody at 1/1000 dilution (red).

The negative controls are as follows:
-ve control 1: ab188190 at 1/250 dilution followed by Goat Anti-Mouse IgG H&L (Alexa Fluor® 594) (ab150120) secondary antibody at 1/1000 dilution.
-ve control 2: Anti-alpha Tubulin mouse MAb (ab7291) at 1/1000 dilution followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution.



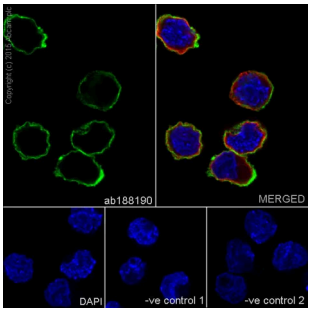
Flow Cytometry - Anti-CD147 antibody [EPR18008-8] (ab188190)

CD147 Flow Cytometry staining using rabbit Anti-CD147 antibody

Flow cytometry staining of C57 BL/6 mouse splenocytes (top) or C57 BL/6 mouse thymocytes (bottom), with ab188190 (right) or Recombinant Rabbit IgG, monoclonal [EPR25A] - Isotype Control (left). Splenocytes or thymocytes were incubated for 30 min at 4°C in 1x PBS containing 10µg/ml anti CD16/CD32 and 10% normal goat serum to block FC receptors and non-specific protein-protein interaction followed by ab188190 or Recombinant Rabbit IgG, monoclonal [EPR25A] - Isotype Control (1x 106 in 100 µl at 0.1 µg/ml (1/21900)) for 30 min at 4°C. The cells were simultaneously stained with CD3.

The secondary antibody Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed was incubated at 1/4000 for 30min at 4°C

Acquisition of >30000 events were collected using a 50 mW Blue laser (488nm) and 525/40 bandpass filter. Events were gated on viable cells.

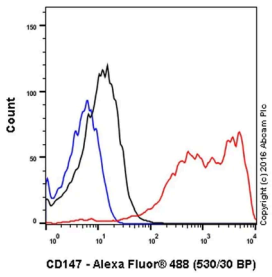


Immunocytochemistry/ Immunofluorescence - Anti-CD147 antibody [EPR18008-8] (ab188190)

CD147 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-CD147 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized WEHI-231 (Mouse B Cell Lymphoma cell line) cells labeling CD147 with ab188190 at 1/250 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing cell membrane staining on WEHI-231 cell line. The nuclear counter stain is DAPI (blue).
Tubulin is detected with Anti-alpha Tubulin mouse MAb (ab7291) at 1/1000 dilution and Goat Anti-Mouse IgG H&L (Alexa Fluor® 594) (ab150120) secondary antibody at 1/1000 dilution (red).

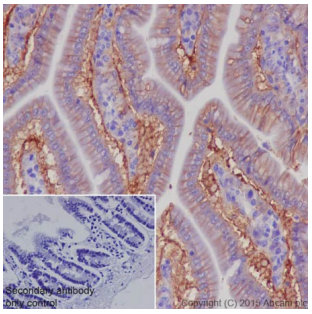
The negative controls are as follows:
-ve control 1: ab188190 at 1/250 dilution followed by Goat Anti-Mouse IgG H&L (Alexa Fluor® 594) (ab150120) secondary antibody at 1/1000 dilution.
-ve control 2: Anti-alpha Tubulin mouse MAb (ab7291) at 1/1000 dilution followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution.



Flow Cytometry - Anti-CD147 antibody [EPR18008-8] (ab188190)

CD147 Flow Cytometry staining using rabbit Anti-CD147 antibody

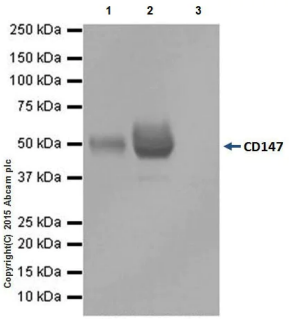
Flow cytometric analysis of fresh mouse thymocytes labeling CD147 with ab188190 at 1/200 dilution (red) compared with Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730; black) and an unlabeled control (cells without incubation with primary antibody and secondary antibody; blue). Goat Anti-Rabbit IgG (Alexa Fluor® 488) at 1/500 dilution was used as the secondary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD147 antibody [EPR18008-8] (ab188190)

Immunohistochemical analysis of paraffin-embedded mouse intestine tissue labeling CD147 with ab188190 at 1/8000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Membrane staining on mouse intestine is observed. Counter stained with Hematoxylin. Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunoprecipitation - Anti-CD147 antibody [EPR18008-8] (ab188190)

CD147 was immunoprecipitated from 1 mg of RAW 264.7 (Mouse macrophage cell line transformed with Abelson murine leukemia virus) whole cell lysate with ab188190 at 1/50 dilution. Western blot was performed from the immunoprecipitate using ab188190 at 1/5000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/10000 dilution.
Lane 1: RAW 264.7 whole cell lysate 10µg (Input).

Lane 2: ab188190 IP in RAW 264.7 whole cell lysate.

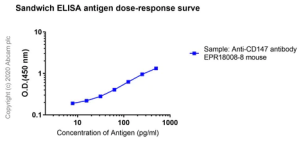
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab188190 in RAW 264.7 whole cell lysate.

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

Exposure time: 1 second.

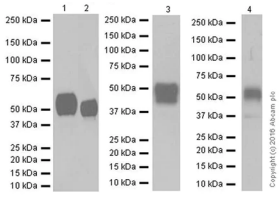
All lanes:
Immunoprecipitation - Anti-CD147 antibody [EPR18008-8] (ab188190)

Predicted band size: 42 kDa



Sandwich ELISA - Anti-CD147 antibody [EPR18008-8] (ab188190)

Standard Curve for CD147 (Analyte: Recombinant mouse CD147 protein) dilution range 0-500 pg/mL using Capture antibody at 0.2 ug/mL and Detector Antibody at 0.5 ug/mL. Secondary antibody: Peroxidase Streptavidin SA-HRP at 1/20000 dilution. Concentration of ab188190 may vary from lot to lot; please use this curve as guideline.
Washing buffer: 1X PBST
Blocking/Diluting buffer and concentration: 1% BSA/PBS



Western blot - Anti-CD147 antibody [EPR18008-8] (ab188190)

Blocking/Dilution buffer: 5% NFDM/TBST.
Exposure times: Lane 1/2: 3 minutes; Lane 3: 10 seconds; Lane 4: 1 second.

The expression profile observed is consistent with what has been described in the literature (PMID: 16721788; 23966157).

All lanes:
Western blot - Anti-CD147 antibody [EPR18008-8] (ab188190) at 1/5000 dilution

Lane 1:
RAW 264.7 (Mouse macrophage cell line transformed with Abelson murine leukemia virus) whole cell lysate at 10 µg

Lane 2:
Mouse liver lysate at 10 µg

Lane 3:
WEHI-3 (Mouse leukemia cell line) whole cell lysate at 10 µg

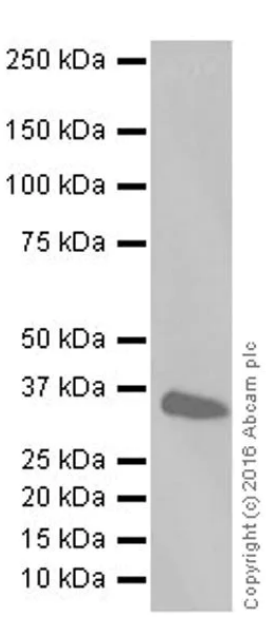
Lane 4:
bEnd.3 (Mouse brain endothelioma cell line) whole cell lysate at 10 µg

Secondary

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

Predicted band size: 32 kDa, 42 kDa

Observed band size: 45-55 kDa



Western blot - Anti-CD147 antibody [EPR18008-8] (ab188190)

CD147 Western blot staining of Mouse CD147 recombinant protein fragment using rabbit Anti-CD147 antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
Recombinant protein fragment Mouse CD147 contains aa140-325 with a His-Tag®. It was made in house

All lanes:
Western blot - Anti-CD147 antibody [EPR18008-8] (ab188190) at 1/5000 dilution

All lanes:
Mouse CD147 recombinant protein fragment at 0.002 µg

Secondary

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

Predicted band size: 42 kDa, 72 kDa

Observed band size: 28 kDa

Exposure time: 3min

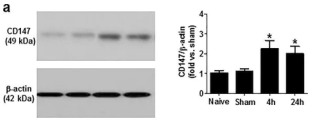


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Western blot - Anti-CD147 antibody [EPR18008-8] (ab188190)

CD147 Western blot staining using rabbit Anti-CD147 antibody

CD147 western blot using anti-CD147 antibody [EPR18008-8] ab188190. Publication image and figure legend from Jin, R., Zhong, W., et al., 2019, J Neuroinflammation, PubMed 31666088.

ab188190 was used in this publication in western blot. This may not be the same as the application(s) guaranteed by Abcam. For a full list of applications guaranteed by Abcam for ab188190 please see the product overview.

Focal cerebral ischemia and reperfusion induces CD147 expression and early inflammatory response in the spleen. a Representative western blot images (left) and semi-quantitation (right) showing CD147 protein levels detected in isolated splenocytes from the following groups (n = 5 mice/group): naïve (no surgery), sham surgery, and tMCAO at 4 or 24 h tMCAO. b The number of isolated splenocytes from each of the above indicated groups was counted using a hemocytometer. c RT-qPCR analysis of CD147 mRNA levels detected in isolated whole splenocytes at 4 or 24 h after tMCAO, and in the different subpopulations of splenocytes (T or B cells neutrophils, monocytes) sorted by FACS at 4 h after tMCAO. *p < 0.05 vs. naïve or sham controls. d RT-qPCR analysis of mRNA levels of proinflammatory genes (TNF-α, IL1β, IL6, MCP-1) detected in isolated splenocytes from the following groups (n = 5 me/group): sham surgery, tMCAO + isotype, and tMCAO + αCD147. *p < 0.05 vs. sham; #p < 0.05 vs. tMCAO + isotype

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