abcam

ab247626

# Anti-CD147 antibody [EPR4053] - BSA and Azide free

Recombinant | RabMAb | KO Validated

## Key facts

| | |
|---|---|
| **Isotype** | IgG |
| **Host species** | Rabbit |
| **Storage buffer** | pH: 7.2 - 7.4 Constituents: PBS |
| **Form** | Liquid |
| **Clonality** | Monoclonal |
| **Immunogen** | The exact immunogen used to generate this antibody is proprietary information. |
| **Carrier free** | Yes |
| **Clone number** | EPR4053 |
| **Purification technique** | Affinity purification Protein A |
| **Concentration** | 0.986 mg/mL The concentration of this product may be batch-dependent<br>Batch concentration finder → |

## Reactivity data

## Flow Cyt

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | - |

| | |
|---|---|
| **Notes** | - |

## WB

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | - |
| **Notes** | - |

## IHC-P

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | - |
| **Notes** | - |

## ICC/IF

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | - |
| **Notes** | - |

# Target data

See full target information BSG

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| **Function** | Isoform 1. Essential for normal retinal maturation and development (By similarity). 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). May act as a potent stimulator of IL6 secretion in multiple cell lines that include monocytes (PubMed:21620857). Isoform 1. (Microbial infection) Erythrocyte receptor for P.falciparum RH5 which is essential for erythrocyte invasion by the merozoite stage of P.falciparum isolates 3D7 and Dd2. Isoform 2. Signaling receptor for cyclophilins, essential for PPIA/CYPA and PPIB/CYPB-dependent signaling related to chemotaxis and |

adhesion of immune cells (PubMed:11688976, PubMed:11943775). Plays an important role in targeting monocarboxylate transporters SLC16A1/GLUT1, SLC16A11 and SLC16A12 to the plasma membrane (PubMed:17127621, PubMed:21778275, PubMed:28666119). Acts as a coreceptor for vascular endothelial growth factor receptor 2 (KDR/VEGFR2) in endothelial cells enhancing its VEGFA-mediated activation and downstream signaling (PubMed:25825981). Promotes angiogenesis through EPAS1/HIF2A-mediated up-regulation of VEGFA (isoform VEGF-165 and VEGF-121) and KDR/VEGFR2 in endothelial cells (PubMed:19837976). Plays a key role in regulating tumor growth, invasion, metastasis and neoangiogenesis by stimulating the production and release of extracellular matrix metalloproteinases and KDR/VEGFR2 by both tumor cells and stromal cells (fibroblasts and endothelial cells) (PubMed:11992541, PubMed:12553375, PubMed:15833850). Isoform 2. (Microbial infection) Erythrocyte receptor for P.falciparum RH5 which is essential for erythrocyte invasion by the merozoite stage of P.falciparum isolates 3D7, Dd2, 7G8 and HB3 (PubMed:22080952, PubMed:26195724). Binding of P.falciparum RH5 results in BSG dimerization which triggers an increase in intracellular Ca(2+) in the erythrocyte (PubMed:28409866). This essential step leads to a rearrangement of the erythrocyte cytoskeleton required for the merozoite invasion (PubMed:28409866). Isoform 2. (Microbial infection) Can facilitate human SARS coronavirus (SARS-CoV-1) infection via its interaction with virus-associated PPIA/CYPA. Isoform 2. (Microbial infection) Can facilitate HIV-1 infection via its interaction with virus-associated PPIA/CYPA. Isoform 2. (Microbial infection) First described as a receptor for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), it is not required for SARS-CoV-2 infection. Isoform 2. (Microbial infection) Acts as a receptor for measles virus. Isoform 2. (Microbial infection) Promotes entry of pentamer-expressing human cytomegalovirus (HCMV) into epithelial and endothelial cells. Plays a role in neurite outgrowth.

## Storage

| | |
|---|---|
| **Shipped at conditions** | Blue Ice |
| **Appropriate short-term storage conditions** | +4°C |
| **Appropriate long-term storage conditions** | +4°C |
| **Storage information** | Do Not Freeze |

## Notes

ab247626 is the carrier-free version of ab108308.

**Species reactivity**

Mouse, Rat: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information.

**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.

**Conjugation ready**
Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

**Compatibility**
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

## Supplementary info

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

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| **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**

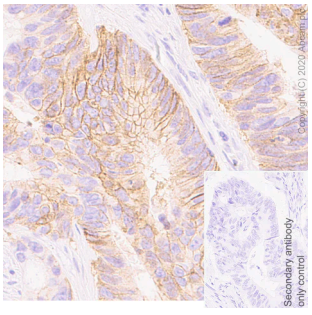
We do not recommend this combination. It is not covered by our product promise.

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.

Full details and terms and conditions can be found here:
Terms & Conditions.

## 6 product images



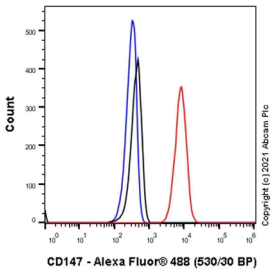

### Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD147 antibody [EPR4053] - BSA and Azide free (ab247626)

CD147 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-CD147 antibody

This data was developed using ab108308, the same antibody clone in a different buffer formulation.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human colon cancer tissue sections labeling CD147 with purified ab108308 at 1/3000 dilution (0.1 µg/mL). Heat

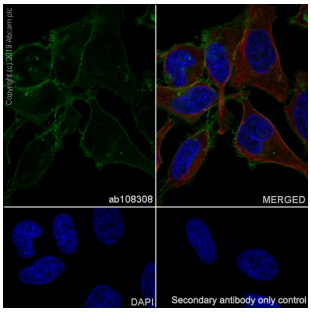
mediated antigen retrieval was performed using Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 2 (pH 9.0). Tissue was counterstained with Hematoxylin. Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) secondary antibody was used. PBS instead of the primary antibody was used as the negative control.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument.




## Flow Cytometry - Anti-CD147 antibody [EPR4053] - BSA and Azide free (ab247626)

CD147 Flow Cytometry staining using rabbit Anti-CD147 antibody

This data was developed using ab108308, the same antibody clone in a different buffer formulation.
Flow Cytometry analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labelling CD147 with purified ab108308 at 1/30 dilution (10 µg/mL) (Red). Cells were fixed with 4% Paraformaldehyde and permeabilised with 90% Methanol. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) secondary antibody was used at 1/2000. Isotype control - Rabbit monoclonal IgG (Black). Unlabelled control - Cell without incubation with primary antibody and secondary antibody (Blue).

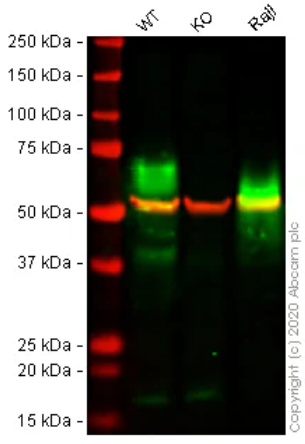



## Immunocytochemistry/ Immunofluorescence - Anti-CD147 antibody [EPR4053] - BSA and Azide free (ab247626)

CD147 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-CD147 antibody

This data was developed using ab108308, the same antibody clone in a different buffer formulation.

Immunocytochemistry analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling CD147 with purified ab108308 at 1/50 dilution (6.3 µg/mL). Cells were fixed in 4% Paraformaldehyde and permeabilized with 0.1% tritonX-100. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) 1/200 (2.5 µg/mL). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1/1000 (2 µg/mL) dilution. DAPI (blue) was used as nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.




## Western blot - Anti-CD147 antibody [EPR4053] - BSA and Azide free (ab247626)

CD147 Western blot staining using rabbit Anti-CD147 antibody

This data was developed using the same antibody clone in a different buffer formulation (ab108308).
**Lanes 1 - 3:** Merged signal (red and green). Green - ab108308 observed at 42-70 kDa. Red - loading control ab7291 (Mouse anti-Alpha Tubulin [DM1A] observed at 55kDa.

ab108308 was shown to react with CD147 in wild-type A549 cells in western blot with loss of signal observed in BSG knockout cell line ab273748 (knockout cell lysate ab275500). Wild-type and BSG knockout A549 cell lysates were subjected to SDS-PAGE. Membranes were blocked in fluorescent western blot (TBS-based) blocking solution before incubation with ab108308 and ab7291 (Mouse anti-Alpha Tubulin [DM1A] overnight at 4°C at a 1 in 1000 Dilution and a 1 in 20000 dilution respectively. Blots were incubated with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-CD147 antibody [EPR4053] (ab108308) at 1/1000 dilution

Lane 1:
Wild-type A549 cell lysate at 30 µg

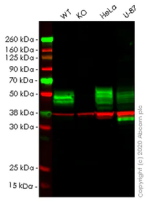
Lane 2:
Western blot - Human BSG (CD147) knockout A549 cell lysate (ab275500) at 30 µg

Lane 3:
Raji cell lysate at 30 µg

Performed under reducing conditions.

Predicted band size: 42 kDa

Observed band size: 42-70 kDa




## Western blot - Anti-CD147 antibody [EPR4053] - BSA and Azide free (ab247626)

CD147 Western blot staining using rabbit Anti-CD147 antibody

**Lanes 1-4:** Merged signal (red and green). Green - ab108308 observed at 50 kDa. Red - loading control ab8245 observed at 36 kDa.

ab108308 Anti-CD147 antibody [EPR4053] was shown to specifically react with CD147 in wild-type HEK293T cells. Loss of signal was observed when knockout cell line ab266331 (knockout cell lysate ab256853) was used. Wild-type and CD147 knockout samples were subjected to SDS-PAGE. ab108308 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) were incubated overnight at 4°C at 1 in 1000 dilution and 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-CD147 antibody [EPR4053] (ab108308) at 1/1000 dilution

Lane 1:
Wild-type HEK293T cell lysate at 20 µg

Lane 2:
BSG knockout HEK293T cell lysate at 20 µg

Lane 2:
Western blot - Human BSG (CD147) knockout HEK-293T cell line (ab266331)

Lane 3:
HeLa cell lysate at 20 µg

Lane 4:
U-87 MG cell lysate at 20 µg

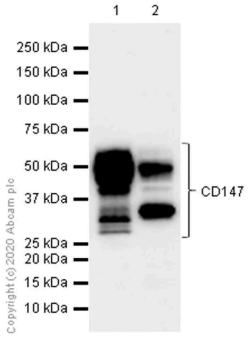
Secondary

All lanes:
Western blot - Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) at 1/10000 dilution

Performed under reducing conditions.

Predicted band size: 42 kDa, 65 kDa

Observed band size: 50 kDa, 65 kDa




## Western blot - Anti-CD147 antibody [EPR4053] - BSA and Azide free (ab247626)

All lanes:
Western blot - Anti-CD147 antibody [EPR4053] (ab108308) at 1/1000 dilution

Lane 1:
HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
U-87 MG (Human glioblastoma-astrocytoma epithelial cell) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 42 kDa

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