abcam

ab230921

Anti-CD147 antibody [10E10]

KO Validated

Key facts

Isotype	IgG2b
Host species	Mouse
Storage buffer	Preservative: 0.02% Sodium azide Constituents: PBS, 50% Glycerol (glycerin, glycerine), 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Full Length Protein corresponding to Human BSG. Database link P35613
Clone number	10E10
Purification technique	Affinity purification Protein A/G
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	1/500 - 1/2000
Notes	-

Species	Transfected cell lysate
Dilution info	1/500 - 1/2000
Notes	-

Predicted

Species	Monkey
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	10 µg/mL
Notes	-

Predicted

Species	Monkey
Dilution info	-
Notes	-

Not recommended

Species	Transfected cell lysate
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/100

Notes	-

Predicted

Species	Monkey
Dilution info	-
Notes	-

Not recommended

Species	Transfected cell lysate
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/100
Notes	-

Predicted

Species	Monkey
Dilution info	-
Notes	-

Not recommended

Species	Transfected cell lysate
Dilution info	-
Notes	-

Target data

See full target information BSG

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 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

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

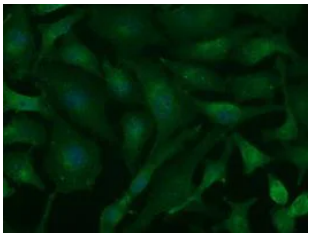
We do not recommend this combination. It is not covered by our product promise.

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.

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

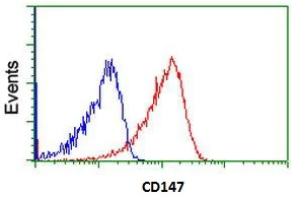
8 product images



Immunocytochemistry/ Immunofluorescence - Anti-CD147 antibody [10E10] (ab230921)

CD147 Immunocytochemistry/ Immunofluorescence staining using mouse Anti-CD147 antibody

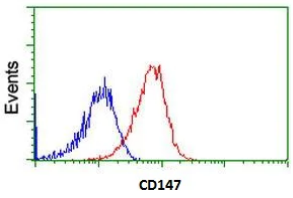
HeLa (human epithelial cell line from cervix adenocarcinoma) cells stained for CD147 (green) using ab230921 at 1/100 dilution in ICC/IF.



Flow Cytometry (Intracellular) - Anti-CD147 antibody [10E10] (ab230921)

CD147 Flow Cytometry (Intracellular) staining using mouse Anti-CD147 antibody

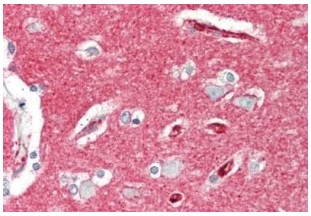
Intracellular flow cytometric analysis of Jurkat (human T cell leukemia cell line from peripheral blood) cell line labeling CD147with ab230921 at 1/100 dilution (red) compared to a nonspecific negative control antibody (blue).



Flow Cytometry (Intracellular) - Anti-CD147 antibody [10E10] (ab230921)

CD147 Flow Cytometry (Intracellular) staining using mouse Anti-CD147 antibody

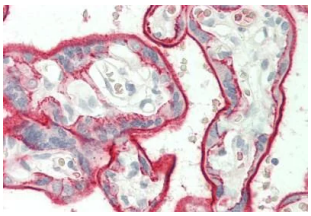
Intracellular flow cytometric analysis ofHeLa (human T cell leukemia cell line from peripheral blood) cell line labeling CD147 with ab230921 at 1/100 dilution (red) compared to a nonspecific negative control antibody (blue).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD147 antibody [10E10] (ab230921)

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

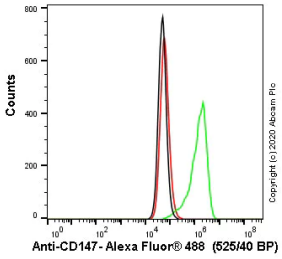
Formalin-fixed, paraffin-embedded human brain tissue stained for CD147 using ab230921 at 10 µg/ml in immunohistochemical analysis.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD147 antibody [10E10] (ab230921)

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

Formalin-fixed, paraffin-embedded human placenta tissue stained for CD147 using ab230921 at 10 µg/ml in immunohistochemical analysis.

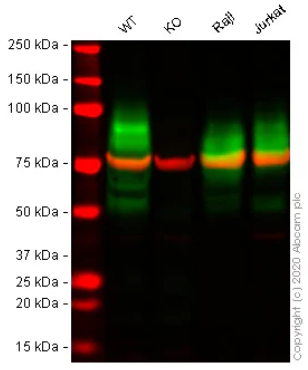


Flow Cytometry (Intracellular) - Anti-CD147 antibody [10E10] (ab230921)

CD147 Flow Cytometry (Intracellular) staining using mouse Anti-CD147 antibody

Intracellular Flow Cytometry overlay histogram showing wild-type A549 (green line) and BSG knockout A549 cells (ab273748) stained with ab230921 (red line). The cells were incubated in 1x PBS containing 10% normal goat serum to block non-specific protein-protein interaction followed by the antibody (ab230921) ($1x10^6$ in 100µl at 5 µg/ml) for 30 min at 4°C.
The secondary antibody Goat anti-mouse IgG H&L (Alexa Fluor® 488 pre-adsorbed) (ab150117) was used at 1/2000 for 30 min at 4°C. Isotype control antibody was mouse IgG1K (ab170190) used at the same concentration and conditions as the primary antibody (wild-type A549 - black line; BSG knockout A549 - grey line). Unlabelled sample was also used as a control (this line is not shown for the purpose of simplicity).

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



Western blot - Anti-CD147 antibody [10E10] (ab230921)

CD147 Western blot staining using mouse Anti-CD147 antibody

Lanes 1 - 4: Merged signal (red and green). Green - ab230921 observed at 42-70 kDa. Red - loading control ab52866 (Rabbit anti-alpha Tubulin antibody [EP1332Y]) observed at 55kDa.
ab230921 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 ab230921 and ab52866 (Rabbit anti-alpha Tubulin antibody [EP1332Y]) overnight at 4°C at a 1 in 500 Dilution and a 1 in 20000 dilution respectively. Blots were incubated with Goat anti-Mouse IgG H&L (IRDye® 800CW) preabsorbed (ab216772) and Goat anti-Rabbit IgG H&L (IRDye® 680RD) preabsorbed (ab216777) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-CD147 antibody [10E10] (ab230921) at 1/500 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

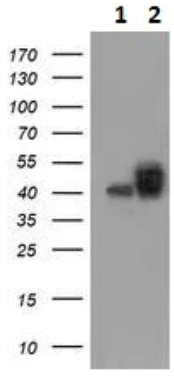
Lane 3:
Raji cell lysate at 30 µg

Lane 4:
Jurkat 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 [10E10] (ab230921)

All lanes:
Western blot - Anti-CD147 antibody [10E10] (ab230921) at 1/500 dilution

Lane 1:
pCMV6-ENTRY control-transfected HEK-293T (human epithelial cell line from embryonic kidney transformed with large T antigen) whole cell lysate at 5 µg

Lane 2:
pCMV6-ENTRY CD147-transfected HEK-293T whole cell lysate at 5 µg

Developed using the ECL technique.

Predicted band size: 42 kDa

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