abcam

ab300124

Anti-CD47 antibody [EPR24922-21]

Recombinant | RabMAb | KO Validated | 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	EPR24922-21
Purification technique	Affinity purification Protein A
Concentration	0.481 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

IP

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/400
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	1/500
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information CD47

Function

Adhesive protein that mediates cell-to-cell interactions (PubMed:11509594, PubMed:15383453). Acts as a receptor for thrombospondin THBS1 and as modulator of integrin signaling through the activation of heterotrimeric G proteins (PubMed:19004835, PubMed:7691831, PubMed:8550562). Involved in signal transduction, cardiovascular homeostasis, inflammation, apoptosis, angiogenesis, cellular self-renewal, and immunoregulation (PubMed:11509594, PubMed:15383453, PubMed:19004835, PubMed:27742621, PubMed:32679764, PubMed:7691831, PubMed:8550562). Plays a role in modulating pulmonary endothelin EDN1 signaling (PubMed:27742621). Modulates nitrous oxide (NO) signaling, in response to THBS1, hence playing a role as a pressor agent, supporting blood pressure (By similarity). Plays an important role in memory formation and synaptic plasticity in the hippocampus (By similarity). Receptor for SIRPA, binding to which prevents maturation of immature dendritic cells and inhibits cytokine production by mature dendritic cells (PubMed:11509594). Interaction with SIRPG mediates cell-cell adhesion, enhances superantigen-dependent T-cell-mediated proliferation and costimulates T-cell activation (PubMed:15383453). Positively modulates FAS-dependent apoptosis in T-cells, perhaps by enhancing FAS clustering (By similarity). Plays a role in suppressing angiogenesis and may be involved in metabolic dysregulation during normal aging (PubMed:32679764). In response to THBS1, negatively modulates wound healing (By similarity). Inhibits stem cell self-renewal, in response to THBS1, probably by regulation of the stem cell transcription factors POU5F1/OCT4, SOX2, MYC/c-Myc and KLF4 (By similarity). May play a role in membrane transport and/or integrin dependent signal transduction (PubMed:7691831). May prevent premature elimination of red blood cells (By similarity).

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	CD47 also referred to as integrin-associated protein carries a molecular weight of approximately 50 kDa. This protein is broadly expressed across various cell types notably on erythrocytes leukocytes and endothelial cells. Its transmembrane glycoprotein structure allows it to perform various cellular functions. CD47 interacts with specific ligands prominently SIRPα which are present on immune cells such as macrophages and dendritic cells. The engagement of CD47 with these ligands plays a major role in cellular signaling processes.
Biological function summary	CD47 functions as a "don't eat me" signal inhibiting phagocytosis by binding to SIRPα on macrophages. This protein is also important for cell adhesion and migration and can modulate interactions with integrins. While not a part of a large complex CD47 associates with various cytoskeletal and membrane proteins to maintain cellular architecture and transmission of mechanical forces. Additionally its interaction with thrombospondins influences angiogenesis and nitric oxide signaling.

Pathways	CD47 is extensively involved in the regulation of the immune response and angiogenesis. The interaction between CD47 and SIRPα plays a part in the regulation of macrophage activity impacting the immune signaling pathway. CD47 also interacts with integrins allowing it to contribute to the angiogenesis pathway which is critical in the formation of new blood vessels. These interactions help coordinate complex cellular responses and maintain tissue homeostasis.
Associated diseases and disorders	CD47 levels have associations with cancer and chronic inflammatory diseases. In cancer CD47 overexpression can allow tumor cells to evade the immune response by downregulating phagocytosis through SIRPα interaction. Therapeutically targeting CD47 using agents like anti-CD47 antibodies shows potential for enhancing anti-tumor immunity. Additionally CD47 is involved in atherosclerosis where its interaction with thrombospondin-1 contributes to disease pathogenesis by affecting nitric oxide signaling and vascular remodeling.

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

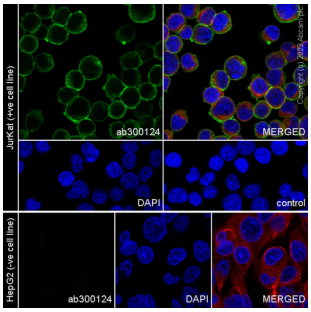
We do not recommend this combination. It is not covered by our product promise.

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.

5 product images



Immunocytochemistry/ Immunofluorescence - Anti-CD47 antibody [EPR24922-21] (ab300124)

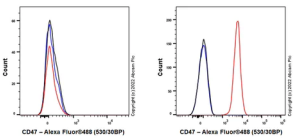
CD47 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-CD47 antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized Jurkat (Human T cell leukemia T lymphocyte) cells labelling CD47 with ab300124 at 1/100 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed (ab150081) antibody at 1/1000 dilution.
Confocal image showing membranous staining in Jurkat cell line.

Negative control: HepG2 (PMID: 28378740).

Alexa Fluor® 594 Anti-alpha Tubulin antibody - Microtubule Marker (ab195889) was used to counterstain tubulin at 1/200 dilution. The Nuclear counterstain was DAPI (Blue).

Secondary antibody only control: Secondary antibody is Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed (ab150081) at 1/1000 dilution.

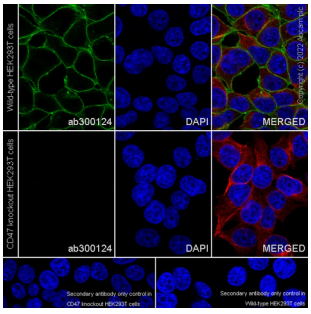


Flow Cytometry - Anti-CD47 antibody [EPR24922-21] (ab300124)

CD47 Flow Cytometry staining of HEK-293T cells using rabbit Anti-CD47 antibody

Flow cytometric analysis of Wild-type HEK-293T (human embryonic kidney epithelial cell, Right) / CD47 knockout HEK-293T (Left) cells labelling CD47 with ab300124 at 1/500 compared with a Rabbit monoclonal IgG (ab172730) / Black isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody).
Gated on viable cells.

Positive staining on HEK-293T cells (ab255449), while no staining on CD47 knockout HEK-293T cells (ab266324).



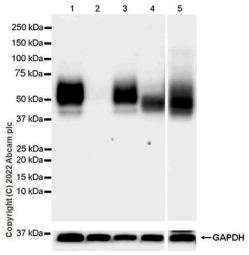
Immunocytochemistry/ Immunofluorescence - Anti-CD47 antibody [EPR24922-21] (ab300124)

CD47 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-CD47 antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized CD47 KO HEK293T (CD47 knockout human embryonic kidney epithelial cell) cells labelling CD47 with ab300124 at 1/100 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed (ab150081) antibody at 1/1000 dilution.
Confocal image showing membranous staining in Parental HEK293T cell line and no staining in CD47 KO HEK293T cell line.

Alexa Fluor® 594 Anti-alpha Tubulin antibody - Microtubule Marker (ab195889) was used to counterstain tubulin at 1/200 dilution. The Nuclear counterstain was DAPI (Blue).

Secondary antibody only control: Secondary antibody is Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed (ab150081) at 1/1000 dilution.



Western blot - Anti-CD47 antibody [EPR24922-21] (ab300124)

CD47 Western blot staining using rabbit Anti-CD47 antibody

Exposure time: Lane 1: 10 seconds; Lane 2: 180 seconds

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining.

Negative control: HepG2 (PMID: 28378740).

Samples are non-boiled as boiling may cause protein aggregates.

All lanes:
Western blot - Anti-CD47 antibody [EPR24922-21] (ab300124) at 1/1000 dilution

Lane 1:
Jurkat (human T cell leukemia T lymphocyte) whole cell lysate at 20 µg

Lane 2:
HepG2 (human hepatocellular carcinoma epithelial cell) whole cell lysate at 20 µg

Lane 3:
U937 (human histiocytic lymphoma monocyte) whole cell lysate at 20 µg

Lane 4:
A549 (human lung carcinoma epithelial cell) whole cell lysate at 20 µg

Lane 5:
NIH:OVCAR-3 (human ovary adenocarcinoma epithelial cell) whole cell lysate at 20 µg

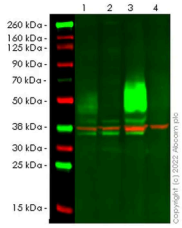
Secondary

Lanes 1 - 5:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Lanes 1 - 5:
Western blot - Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) at 1/100000 dilution

Performed under non-reducing conditions.

Observed band size: 47-52 kDa



Western blot - Anti-CD47 antibody [EPR24922-21] (ab300124)

CD47 Western blot staining using rabbit Anti-CD47 antibody

Performed under reducing conditions.

Samples are non-boiled as boiling may cause protein aggregates.

False colour image of Western blot: Anti-CD47 antibody [EPR24922-21] (ab300124) staining at 1/1000 dilution, shown in green; Mouse anti-GAPDH antibody [6C5] (ab8245) loading control staining at 1/20000 dilution, shown in red.

In Western blot, ab300124 was shown to bind specifically to CD47. A diffuse band was observed at 47-52 kDa in wild-type HEK-293T cell lysates with no signal observed at this size in CD47 knockout cell line ab266324 (knockout cell lysate ab257220).

To generate this image, wild-type and CD47 knockout HEK-293T cell lysates were analyzed. First, samples were run on an SDS-PAGE gel then transferred onto an immobilon-FL PVDF membrane. Membranes were blocked in Intercept® (TBS) Blocking Buffer diluted with an equal volume of 0.1%

TBS before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged.

Secondary antibodies used were Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed (ab216776) at 1/20000 dilution.

Negative control: HepG2 (PMID: 28378740).
All lanes:
Western blot - Anti-CD47 antibody [EPR24922-21] (ab300124) at 1/1000 dilution

Lane 1:
Wild-type HEK-293T (human embryonic kidney epithelial cell) whole cell lysate at 20 µg

Lane 2:
CD47 knockout HEK-293T whole cell lysate at 20 µg

Lane 3:
Jurkat (human T cell leukemia T lymphocyte) whole cell lysate at 20 µg

Lane 4:
HepG2 (human hepatocellular carcinoma epithelial cell) whole cell lysate at 20 µg

Performed under non-reducing conditions.

Observed band size: 47-52 kDa

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