abcam

ab213079

# Anti-CD47 antibody [IAP/964] - BSA and Azide free

KO Validated

## Key facts

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|---|---|
| **Isotype** | IgG1 |
| **Host species** | Mouse |
| **Storage buffer** | pH: 7.2 - 7.4 Constituents: PBS |
| **Form** | Liquid |
| **Clonality** | Monoclonal |
| **Immunogen** | Recombinant Full Length Protein corresponding to Human CD47. Database link Q08722 |
| **Carrier free** | Yes |
| **Clone number** | IAP/964 |
| **Purification technique** | Affinity purification Protein A/G |
| **Light chain type** | kappa |
| **Concentration** | 0.2 - 1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder → |
| **Purification notes** | ab213079 is purified from Bioreactor Concentrate by Protein A/G. |

## Reactivity data

## ICC

**Tested**

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|---|---|
| **Species** | Human |
| **Dilution info** | 1-2 µg/mL |
| **Notes** | - |

## Flow Cyt

### Tested

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|---|---|
| **Species** | Human |
| **Dilution info** | 1-2 µg for $10^6$ Cells |
| **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

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| **Shipped at conditions** | Blue Ice |

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| **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.

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|---|---|
| **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.

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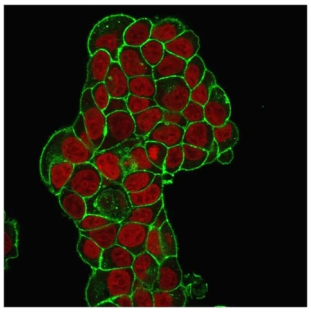
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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## 5 product images

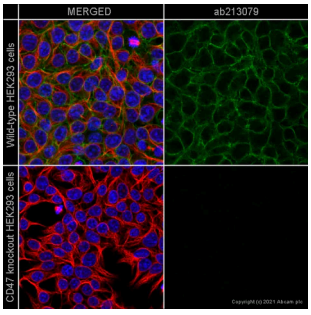


### Immunocytochemistry - Anti-CD47 antibody [IAP/964] - BSA and Azide free (ab213079)

CD47 Immunocytochemistry staining using mouse Anti-CD47 antibody

Immunocytochemistry analysis of PFA-fixed MCF-7 (human breast adenocarcinoma cell line) cells labeling CD47 with ab213079 at 2 µg/mL. Goat Anti-Mouse IgG (CF 488) was used as the secondary antibody (green). Nuclei counterstained red.

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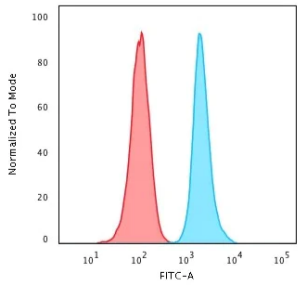



### Immunocytochemistry - Anti-CD47 antibody [IAP/964] - BSA and Azide free (ab213079)

CD47 Immunocytochemistry staining using mouse Anti-CD47 antibody

ab213079 staining CD47 in wild-type HEK293 cells (top panel) and CD47 knockout HEK293 cells (bottom panel) (ab266324). The cells were fixed with 100% methanol (5 min) then permeabilized with 0.1% Tween for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated with ab213079 at 0.4 µg/ml concentration and ab6046 (Rabbit polyclonal to beta Tubulin) at 1/1000 dilution overnight at 4°C followed by a further incubation at room temperature for 1h with a goat secondary antibody to mouse IgG (Alexa Fluor® 488) (ab150117) at 2 µg/ml (shown in green) and a goat secondary

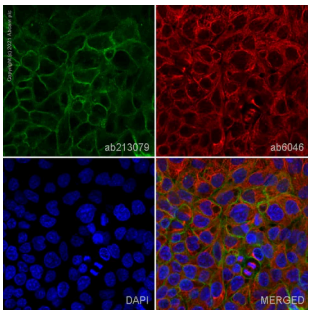
antibody to rabbit IgG (Alexa Fluor® 594) (ab150080) at 2 µg/ml (shown in red). Nuclear DNA was labelled in blue with DAPI.
Image was taken with a confocal microscope (Leica-Microsystems TCS SP8).




## Flow Cytometry - Anti-CD47 antibody [IAP/964] - BSA and Azide free (ab213079)

CD47 Flow Cytometry staining using mouse Anti-CD47 antibody

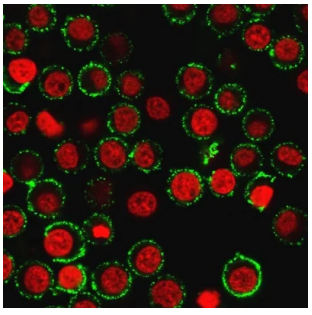
Flow Cytometry analysis of live Jurkat (human T cell leukemia cell line from peripheral blood) cells labeling CD47 with ab213079 at 2 µg/$10^6$ cells. Goat Anti-Mouse IgG (CF 488) was used as the secondary antibody (blue). Isotype control (red).




## Immunocytochemistry - Anti-CD47 antibody [IAP/964] - BSA and Azide free (ab213079)

CD47 Immunocytochemistry staining using mouse Anti-CD47 antibody

ab213079 staining CD47 in A431 cells. The cells were fixed with 100% methanol (5 min) then permeabilized with 0.1% Tween for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated with ab213079 at 0.4 µg/ml concentration and ab6046 (Rabbit polyclonal to beta Tubulin) at 1/1000 dilution overnight at 4°C followed by a further incubation at room temperature for 1h with a goat secondary antibody to mouse IgG (Alexa Fluor® 488) (ab150117) at 2 µg/ml (shown in green) and a goat secondary antibody to rabbit IgG (Alexa Fluor® 594) (ab150080) at 2 µg/ml (shown in red). Nuclear DNA was labelled in blue with DAPI.
Image was taken with a confocal microscope (Leica-Microsystems TCS SP8).



## Immunocytochemistry - Anti-CD47 antibody [IAP/964] - BSA and Azide free (ab213079)

CD47 Immunocytochemistry staining using mouse Anti-CD47 antibody

Immunocytochemistry analysis of live Jurkat (human T cell leukemia cell line from peripheral blood) cells labeling CD47 with ab213079 at 2 µg/mL. Goat Anti-Mouse IgG (CF 488) was used as the secondary antibody (green). Nuclei counterstained red.

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