abcam

ab242020

Anti-CD86 antibody [EPR21962] - 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	EPR21962
Purification technique	Affinity purification Protein A
Concentration	1.007 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	-

Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Target data

See full target information CD86

Function	Costimulatory molecule that belongs to the immunoglobulin superfamily that plays an important role in T-lymphocyte activation (PubMed:12196291, PubMed:7694363). Acts as the primary auxiliary signal augmenting the MHC/TCR signal in naive T-cells by acting as a ligand for the CD28 receptor which is constitutively expressed on the cell surface of T-cells (PubMed:12196291, PubMed:7694363). May play a critical role in the early events of T-cell activation and costimulation of naive T-cells, such as deciding between immunity and anergy that is made by T-cells within 24 hours after activation (PubMed:7527824). Also involved in the regulation of B cells function, plays a role in regulating the level of IgG(1) produced. Upon CD40 engagement, activates NF-kappa-B signaling pathway via phospholipase C and protein kinase C activation (By similarity). Also acts as an inhibitor of T-cell activation by acting as a ligand for CTLA4, a decoy receptor, thereby blocking CD28-mediated T-cell priming (PubMed:11279501). Isoform 2. Interferes with the formation of CD86 clusters, and thus acts as a negative regulator of T-cell activation. (Microbial infection) Acts as a receptor for adenovirus subgroup B.

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

ab242020 is the carrier-free version of ab239075.

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.

Activity summary	CD86 also known as B7-2 is a protein involved in the regulation of the immune response. It has an approximate mass of 70 kDa and is expressed on antigen-presenting cells like dendritic cells monocytes and macrophages. Notably CD86 is present on macrophages including those in tissues such as skin and lymphoid organs. Expressed on these cells CD86 serves as a vital mediator in the co-stimulatory signals necessary for T cell activation and survival.
Biological function summary	CD86 plays a significant role in the immune system by providing secondary signals for T cell activation and differentiation. It is a part of the B7 protein family and forms a complex with CD28 and CTLA-4 on T cells. When CD86 binds to CD28 it sends positive co-stimulatory signals which promote T cell proliferation and cytokine production. On the other hand interaction with CTLA-4 transmits an inhibitory signal which reduces immune response. This dual interaction helps to balance immune activation and tolerance.
Pathways	CD86 takes part in important immune-related signaling pathways particularly the T cell receptor signaling pathway and the PI3K-Akt signaling pathway. Both pathways are fundamental for initiating immune responses. CD86's interaction with CD28 activates downstream signaling cascades including PI3K-Akt which is important for cell survival and growth. Additionally CD86 collaborates with other proteins such as CD80 another co-stimulatory molecule to amplify T cell activation within these pathways.
Associated diseases and disorders	CD86 is associated with autoimmune diseases and transplant rejection. In autoimmune diseases like rheumatoid arthritis the overexpression or dysregulation of CD86 can lead to excessive T cell activation causing immune system attacks on the body's own tissues. Similarly in transplant rejection CD86 may contribute by enhancing immune response against transplanted organs. The engagement between CD86 and CD28 is a critical factor in these conditions and therapies targeting this interaction are under exploration to mitigate the immune response.

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.

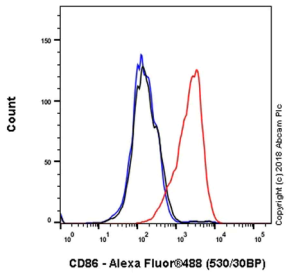
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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



Flow Cytometry - Anti-CD86 antibody [EPR21962] - BSA and Azide free (ab242020)

CD86 Flow Cytometry staining using rabbit Anti-CD86 antibody

CD86 was immunoprecipitated from 0.35 mg of Raji whole (human Burkitt's lymphoma cell line) cell lysate with ab239075 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab239075 at 1/1000 dilution. VeriBlot for IP secondary antibody (HRP) (ab131366), was used as secondary antibody at 1/5000 dilution.
Lane 1: Raji whole cell lysate 10 µg (Input).

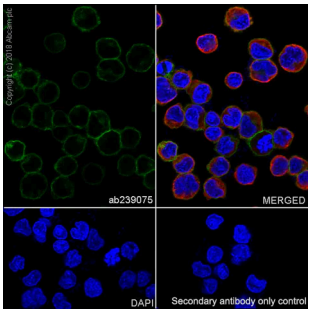
Lane 2: ab239075 IP in Raji whole lysate.

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab239075 in Raji whole cell lysate.

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

Exposure time: 3 minutes.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab239075).



Immunocytochemistry/ Immunofluorescence - Anti-CD86 antibody [EPR21962] - BSA and Azide free (ab242020)

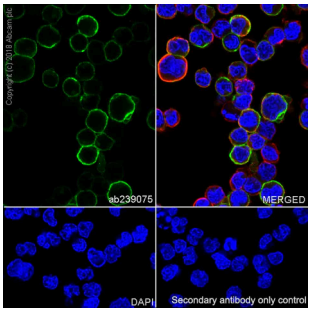
CD86 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-CD86 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized Daudi (human Burkitt's lymphoma cell line) cells labeling CD86 with ab239075 at 1/100 dilution

followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing membranous staining in Daudi cell line.
The nuclear counter stain is DAPI (blue). Tubulin is detected with Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) (ab195889) (red) at 1/200 dilution.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab239075).



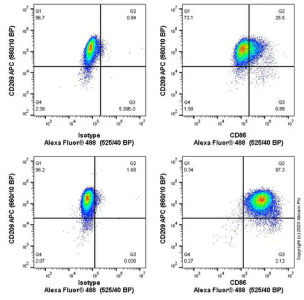
Immunocytochemistry/ Immunofluorescence - Anti-CD86 antibody [EPR21962] - BSA and Azide free (ab242020)

CD86 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-CD86 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized Raji (human Burkitt's lymphoma cell line) cells labeling CD86 with ab239075 at 1/100 dilution followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing membranous staining in Raji cell line.
The nuclear counter stain is DAPI (blue). Tubulin is detected with Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) (ab195889) (red) at 1/200 dilution.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab239075).



Flow Cytometry - Anti-CD86 antibody [EPR21962] - BSA and Azide free (ab242020)

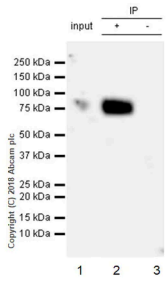
CD86 Flow Cytometry staining using rabbit Anti-CD86 antibody

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab239075).

Flow cytometry staining of human monocyte-derived dendritic cells (top) or human monocyte-derived dendritic cells treated with 1µg/mL lipopolysaccharide (LPS) for 24h (bottom), with ab239075 (right) or Recombinant Rabbit IgG, monoclonal [EPR25A] - Isotype Control (left). Monocyte-derived dendritic cells were incubated for 30 min at 4°C in 1x PBS containing 10 µg/ml human IgG and 10 % normal goat serum to block FC receptors and non-specific protein-protein interaction followed by the antibody ab239075 or Recombinant Rabbit IgG, monoclonal [EPR25A] - Isotype Control (1x 106 in 100µl at 0.04 µg/ml (1/56500)) for 30min on ice. The cells were simultaneously stained with CD209.

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.



Immunoprecipitation - Anti-CD86 antibody [EPR21962] - BSA and Azide free (ab242020)

CD86 was immunoprecipitated from 0.35 mg of Raji whole (human Burkitt's lymphoma cell line) cell lysate with ab239075 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab239075 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/5000 dilution.
Lane 1: Raji whole cell lysate 10 µg (Input).

Lane 2: ab239075 IP in Raji whole lysate.

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab239075 in Raji whole cell lysate.

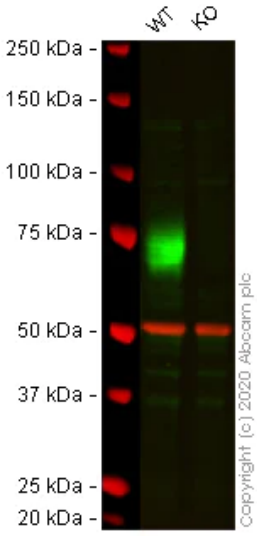
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 3 minutes.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab239075).

All lanes:
Immunoprecipitation - Anti-CD86 antibody [EPR21962] (ab239075)

Predicted band size: 38 kDa



Western blot - Anti-CD86 antibody [EPR21962] - BSA and Azide free (ab242020)

CD86 Western blot staining using rabbit Anti-CD86 antibody

This data was developed using the same antibody clone in a different buffer formulation (ab239075).
Lanes 1 - 2: Merged signal (red and green). Green - ab239075 observed at 70 kDa. Red - loading control ab7291 (Mouse anti-Alpha Tubulin [DM1A]) observed at 55kDa.

ab239075 was shown to react with CD86 in wild-type Raji cells in western blot with loss of signal observed in CD86 knockout sample. Wild-type and CD86 knockout Raji cell lysates were subjected to SDS-PAGE. Membranes were blocked in 3% milk in TBS-T (0.1% Tween®) before incubation with ab239075 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-CD86 antibody [EPR21962] (ab239075) at 1/1000 dilution

Lane 1:
Wild-type Raji (Human Burkitt's lymphoma cell line) whole cell lysate at 20 µg

Lane 2:
CD86 knockout Raji (Human Burkitt's lymphoma cell line) whole cell lysate at 20 µg

Lane 2:
Western blot - Human CD86 knockout Raji cell line (ab273858)

Performed under reducing conditions.

Predicted band size: 38 kDa

Observed band size: 70 kDa

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