abcam

ab225674

Anti-CD80 antibody [EPR22183]

Recombinant | RabMAb | 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	EPR22183
Purification technique	Affinity purification Protein A
Concentration	0.4 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	1/400
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/1000
Notes	-

IHC-P

Not recommended

Species	Human
Dilution info	-
Notes	-

Target data

See full target information CD80

Function

Costimulatory molecule that belongs to the immunoglobulin superfamily that plays an important role in T-lymphocyte activation (PubMed:38467718). 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). In turn, activates different signaling pathways such as NF-kappa-B or MAPK leading to the production of different cytokines (PubMed:10438913). 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:10583602, PubMed:11279502). In addition, CD28/CD80 costimulatory signal stimulates glucose metabolism and ATP synthesis of T-cells by activating the PI3K/Akt signaling pathway (PubMed:12121659). Also acts as a regulator of PDL1/PDCD1 interactions to limit excess engagement of PDL1 and its inhibitory role in immune responses (PubMed:36727298). Expressed on B-cells, plays a critical role in regulating interactions between B-cells and T-cells in both early and late germinal center responses, which are crucial for the generation of

effective humoral immune responses (By similarity). (Microbial infection) Acts as a receptor for adenovirus subgroup B.

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	CD80 also known as B7-1 is a cell surface protein with a molecular weight of approximately 60 kDa. It is expressed on antigen-presenting cells such as dendritic cells macrophages and B cells. The CD80 protein plays a mechanical role in immune response modulation by providing necessary signals for T cell activation and survival. CD80 interacts with receptors CD28 and CTLA-4 on T cells serving as a costimulatory molecule important for productive immune responses.

Biological function summary	CD80 plays a significant role in the immune system's ability to distinguish between self and non-self. It belongs to the B7 family and participates in the formation of immunological synapses between T cells and antigen-presenting cells. This interaction is essential for triggering T cell proliferation and cytokine production forming a part of the adaptive immune response. CD80's expression increases in response to pathogen recognition enhancing the immune system's efficiency.
Pathways	CD80 is integral to the regulation of T cell-mediated immune responses. It is involved in the CD28 co-stimulatory pathway which is vital for T cell activation and function. In this pathway CD80 interacts with proteins like CD28 and CTLA-4 to modulate immune activation and regulate immune tolerance. The proper function of CD80 within this pathway ensures a balanced immune reaction preventing autoimmunity while allowing effective defense against pathogens.
Associated diseases and disorders	CD80 plays a role in autoimmune conditions and transplantation rejection. Its overexpression or dysregulation can contribute to diseases such as rheumatoid arthritis where it modifies T cell response and inflammation. Additionally CD80 is implicated in organ transplantation influencing graft rejection outcomes due to its role in modulating immune activation. Understanding CD80 interactions with CTLA-4 and CD28 offers insight into these conditions providing potential targets for therapeutic intervention.

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

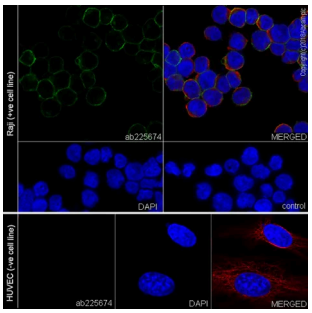
We do not recommend this combination. It is not covered by our product promise.

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.

4 product images

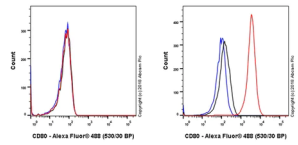


Immunocytochemistry/ Immunofluorescence - Anti-CD80 antibody [EPR22183] (ab225674)

CD80 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-CD80 antibody

Immunofluorescent analysis of 100% methanol-fixed Raji (human Burkitt's lymphoma cell line) and HUVEC (human umbilical vein endothelial cell line) cells labeling CD80 with ab225674 at 1/1000 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 is observed. The nuclear counter stain is DAPI (blue). Tubulin is detected with Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) (ab195889) at 1/200 dilution (red).

PBS only control: Used PBS instead of primary antibody, Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution dilution.
Negative control: HUVEC (PMID: 15064090).

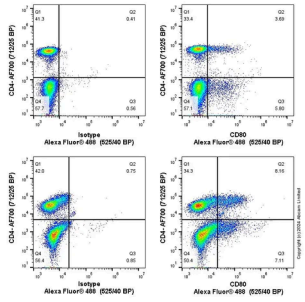


Flow Cytometry - Anti-CD80 antibody [EPR22183] (ab225674)

CD80 Flow Cytometry staining using rabbit Anti-CD80 antibody

Flow cytometric analysis of HUVEC (human umbilical vein endothelial cell line) (left panel) cells and Raji (human Burkitt's lymphoma cell line)(right panel) cells labeling CD80 with ab225674 at 1/400 (red) compared with a Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) (black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077), at 1/2000 dilution was used as the secondary antibody.
Gated on viable cells.

Negative control: HUVEC (PMID: 15064090).



Flow Cytometry - Anti-CD80 antibody [EPR22183] (ab225674)

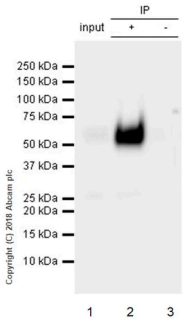
CD80 Flow Cytometry staining using rabbit Anti-CD80 antibody

Flow cytometry staining of human peripheral blood mononuclear cells (PBMCs) (top) or PBMCs treated with CD3/CD28 activation (bottom), with ab225674 (right) or Recombinant Rabbit IgG, monoclonal [EPR25A] - Isotype Control (left).

PBMCs were incubated for 30 min on ice in 1x PBS containing 10 µg/ml human IgG and 10 % normal goat serum to block FC receptors and non-specific protein-protein interactions, followed by the antibody ab225674 or Recombinant Rabbit IgG, monoclonal [EPR25A] - Isotype Control (1x 10^6 in 100 µl at 5.0 µg/ml (1/400)) for 30 min at 22°C . Cells were simultaneously stained with CD4

The secondary antibody Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed was incubated at 1/2000 for 30min at 22°C.

Acquisition of >30000 events were collected using a 50 mW Blue laser (488nm) and 525/40 bandpass filter. Events were gated on live cells.



Immunoprecipitation - Anti-CD80 antibody [EPR22183] (ab225674)

CD80 was immunoprecipitated from 0.35 mg of Raji (human Burkitt's lymphoma cell line) whole cell lysate with ab225674 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab225674 at 1/500 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/1000 dilution.
Lane 1: Raji whole cell lysate 10 µg (Input).
Lane 2: ab225674 IP in Raji whole cell lysate.
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab225674 in Raji whole cell lysate.

Blocking and dilution buffer and concentration: 5% NFDM/TBST.
Exposure time: 1 second.

This blot was developed using a higher sensitivity ECL substrate.

All lanes:
Immunoprecipitation - Anti-CD80 antibody [EPR22183] (ab225674)

Predicted band size: 33 kDa

Observed band size: 60 kDa

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