abcam

ab243648

Anti-4-1BB/CD137 antibody [EPR23218-111]

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	EPR23218-111
Purification technique	Affinity purification Protein A
Concentration	0.533 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Mouse
Dilution info	1/30
Notes	-

Not recommended

Species	Recombinant full length protein - Human, Rat, Human, Transfected cell line - Mouse
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Mouse
Dilution info	1/500
Notes	-

Not recommended

Species	Recombinant full length protein - Human, Rat, Human, Transfected cell line - Mouse
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Not recommended

Species	Recombinant full length protein - Human, Rat, Human, Transfected cell line - Mouse
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Mouse, Human, Rat, Recombinant full length protein - Human, Transfected cell line - Mouse
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	1/100
Notes	-

Species	Transfected cell line - Mouse
Dilution info	1/100
Notes	-

Not recommended

Species	Recombinant full length protein - Human, Rat, Human
Dilution info	-
Notes	-

Target data

See full target information 4-1BB/CD137

Function	Receptor for TNFSF9/4-1BBL. Conveys a signal that enhances CD8(+) T-cell survival, cytotoxicity, and mitochondrial activity, thereby promoting immunity against viruses and tumors (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	CD137 also known as 4-1BB or TNFRSF9 is a protein that functions as a costimulatory receptor in the immune system. It belongs to the tumor necrosis factor receptor (TNFR) superfamily. CD137 has a mass of approximately 30 kDa. Expression of CD137 occurs mainly on activated T lymphocytes including both CD8+ and CD4+ T cells as well as natural killer (NK) cells dendritic cells and monocytes. The CD137 ligand (CD137L) is the counterpart that engages this receptor transmitting signals important for immune response regulation.
Biological function summary	CD137 plays an important role in T cell activation and survival. It is a member of a receptor-ligand system that enhances immune cell functions. CD137 is part of a receptor complex that when bound by its ligand CD137L promotes cell proliferation and cytokine production. It also supports the development of memory T cells contributing to the body's ability to mount long-term immune responses.
Pathways	CD137 takes part in the NF-kB signaling and MAPK pathways. These pathways are vital for regulating immune responses and inflammation. CD137 signaling through these pathways involves interaction with proteins such as TRAF1 and TRAF2 which

help mediate downstream effects critical for cell survival and proliferation. These interactions enhance the body's defense against pathogens and tumors.

Associated diseases and disorders

CD137 is associated with cancer immunotherapy and autoimmune diseases. In cancer CD137 enhances the anti-tumor activity of immune cells making it a target for immunotherapy strategies. For autoimmune diseases abnormal CD137 expression can lead to excessive immune responses contributing to disease pathogenesis. The protein is also connected to TNF-alpha through its involvement in inflammation suggesting potential intervention points for modulating immune response in related 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

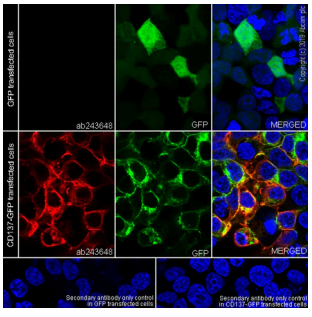
We do not recommend this combination. It is not covered by our product promise.

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.

6 product images

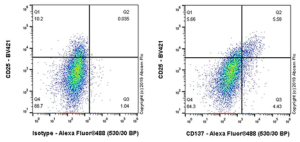


Immunocytochemistry/ Immunofluorescence - Recombinant Human PD-L1/CD274 (mutated D26A) protein (Biotin) (Fc tag C-term + Avi tag C-term) (ab243648)

Immunocytochemistry/ Immunofluorescence staining using rabbit Anti- antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized HEK-293T cells labelling CD137 with ab243648 at 1/100 dilution, followed by ab150080 Goat Anti-Rabbit

IgG H&L (Alexa Fluor® 594) antibody at 1/1000 dilution (Red). Confocal image showing cytoplasmic and membranous staining in HEK-293T cells transfected with a GFP-tagged CD137 expression vector - the GPF tag is shown in Green. The Nuclear counterstain was DAPI (Blue).
Secondary antibody only control: Secondary antibody is ab150080 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 594) at 1/1000 dilution.



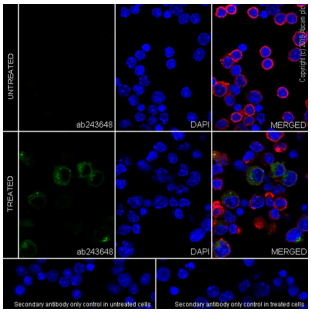
Flow Cytometry - Recombinant Human PD-L1/CD274 (mutated D26A) protein (Biotin) (Fc tag C-term + Avi tag C-term) (ab243648)

Flow Cytometry staining using rabbit Anti- antibody

Flow cytometric analysis of Mouse splenocytes (treated with 2.5ug/ml concanavalin A for 72h) cells labelling CD137 with ab243648 at 1/500 (Right) compared with a Rabbit monoclonal IgG (ab172730) isotype control (Left).
Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody.

Cells were stained with rabbit IgG (Left) or ab243648 (Right), then stained with anti-CD25 conjugated to BV421.

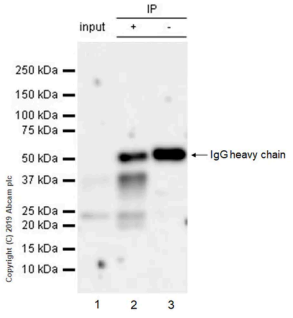
Gated on viable cells.



Immunocytochemistry/ Immunofluorescence - Recombinant Human PD-L1/CD274 (mutated D26A) protein (Biotin) (Fc tag C-term + Avi tag C-term) (ab243648)

Immunocytochemistry/ Immunofluorescence staining using rabbit Anti- antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized Mouse splenocytes cells labelling CD137 with ab243648 at 1/100 dilution, followed by ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) antibody at 1/1000 dilution (Green). Confocal image showing cytoplasmic and membranous staining in mouse splenocytes treated with Concanavalin A (2.5 ug/ml) for 72 h. ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 dilution (Red). The Nuclear counterstain was DAPI (Blue).
Secondary antibody only control: Secondary antibody is ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) at 1/1000 dilution.



Immunoprecipitation - Recombinant Human PD-L1/CD274 (mutated D26A) protein (Biotin) (Fc tag C-term + Avi tag C-term) (ab243648)

CD137 was immunoprecipitated from 0.35 mg mouse splenocyte (treated with 2.5 µg/ml Concanavalin A for 72 hours) whole cell lysate with ab243648 at 1/30 dilution. Western blot was performed on the immunoprecipitate using ab243648 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP)(ab131366) was used at 1/5000 dilution.
Lane 1: Mouse splenocyte (treated with 2.5 µg/ml Concanavalin A for 72 hours) whole cell lysate 10 µg

Lane 2: ab243648 IP in Mouse splenocyte (treated as above) whole cell lysate

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab243648 in Mouse splenocyte (treated as above) whole cell lysate

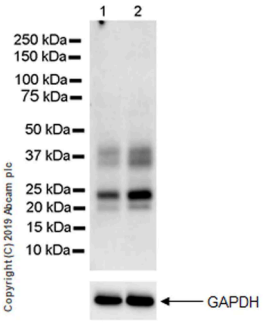
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 76 seconds.

CD137 is a type I transmembrane glycoprotein and has both monomeric and dimeric forms on the surface of activated T cells (PMID: 30355497).
All lanes:
Immunoprecipitation - Recombinant Human PD-L1/CD274 (mutated D26A) protein (Biotin) (Fc tag C-term + Avi tag C-term) (ab243648)

Predicted band size: 28 kDa, 63 kDa

Observed band size: 21-24 kDa, 36-40 kDa



Western blot - Recombinant Human PD-L1/CD274 (mutated D26A) protein (Biotin) (Fc tag C-term + Avi tag C-term) (ab243648)

Western blot staining using rabbit Anti- antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST.
CD137 is a type I transmembrane glycoprotein and has both monomeric and dimeric forms on the surface of activated T cells (PMID: 30355497).

Exposure time: 3 minutes.

All lanes:
Western blot - Recombinant Human PD-L1/CD274 (mutated D26A) protein (Biotin) (Fc tag C-term + Avi tag C-term) (ab243648) at 1/1000 dilution

Lane 1:
Untreated mouse splenocytes, whole cell lysate at 20 µg

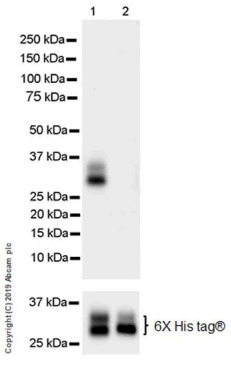
Lane 2:
Mouse splenocytes (treated with 2.5 µg/ml Concanavalin A for 72 hours), whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/50000 dilution

Predicted band size: 28 kDa

Observed band size: 21-24 kDa, 36-40 kDa



Western blot - Recombinant Human PD-L1/CD274 (mutated D26A) protein (Biotin) (Fc tag C-term + Avi tag C-term) (ab243648)

Western blot staining using rabbit Anti- antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST.
Exposure time: 15 seconds.

All lanes:
Western blot - Recombinant Human PD-L1/CD274 (mutated D26A) protein (Biotin) (Fc tag C-term + Avi tag C-term) (ab243648) at 1/1000 dilution

Lane 1:
His-tagged mouse CD137 recombinant protein(aa24-187), 10 ng

Lane 2:
His-tagged human CD137 recombinant protein(aa24-186), 10 ng

Secondary

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

Predicted band size: 28 kDa

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