abcam

ab80590

Anti-PDCD4 antibody [EPR3431]

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	EPR3431
Purification technique	Affinity purification Protein A
Dissociation constant	3.1×10^{-11} M
Concentration	0.145 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	1/50
Notes	For unpurified use: 1/100 - 1/250.

IP

Tested

Species	Human
Dilution info	1/20
Notes	For unpurified use: 1/30.

WB

Tested

Species	Human
Dilution info	1/1000
Notes	For unpurified use: 1/20000 - 1/100000.

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/1000
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

IHC-P

Tested

Species	Human
Dilution info	1/3000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Target data

See full target information PDCD4

Function	Inhibits translation initiation and cap-dependent translation. May excert its function by hindering the interaction between EIF4A1 and EIF4G. Inhibits the helicase activity of EIF4A. Modulates the activation of JUN kinase. Down-regulates the expression of MAP4K1, thus inhibiting events important in driving invasion, namely, MAPK85 activation and consequent JUN-dependent transcription. May play a role in apoptosis. Tumor suppressor. Inhibits tumor promoter-induced neoplastic transformation. Binds RNA (By similarity).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Storage information	Stable for 12 months at -20°C

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	The PDCD4 protein also known as Programmed Cell Death 4 is a multifunctional tumor suppressor. With a molecular mass of approximately 64 kDa it plays an important role in regulating gene expression and inhibiting cellular transformation. PDCD4 is expressed in various tissues including the lung kidney and heart where it modulates different cellular pathways. Its ability to bind RNA and interact with eukaryotic initiation factor 4A (eIF4A) highlights its important role in translation regulation.

Biological function summary	PDCD4 inhibits translation by binding to the eIF4A RNA helicase blocking the translation initiation complex. This action stabilizes mRNA and reduces protein synthesis impacting processes such as cell growth and proliferation. Although PDCD4 functions mainly as a monomer it can also interact with other proteins to form complexes that enhance its regulatory activity. More specifically its role in controlling AP-1 transcription factor activity steps into the spotlight in influencing cellular responses.
Pathways	PDCD4 primarily interacts with signaling mechanisms related to apoptosis and inflammation. The protein is integral in the mTOR signaling pathway which governs cell growth in response to nutrient availability. PDCD4 also impacts the PI3K/AKT pathway linking its activity to cellular survival and metabolism. Through these pathways PDCD4 associates with proteins such as p53 and NF-kB connecting it to broader cellular and molecular networks involved in maintaining cellular integrity.
Associated diseases and disorders	PDCD4 is significantly implicated in cancer progression and inflammation-related conditions. Its downregulation or loss frequently occurs in several cancers including breast and lung cancer leading to unchecked cell proliferation and tumor growth. PDCD4's interaction with proteins like c-Myc further demonstrates its importance in oncogenic pathways. Additionally its role in inflammation positions it as a critical factor in disorders such as Crohn’s disease where abnormal inflammatory responses are prominent.

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

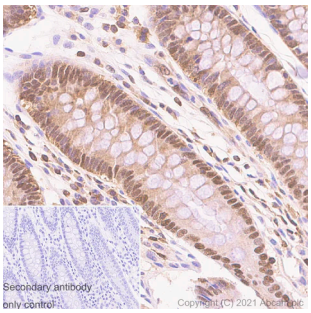
We do not recommend this combination. It is not covered by our product promise.

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.

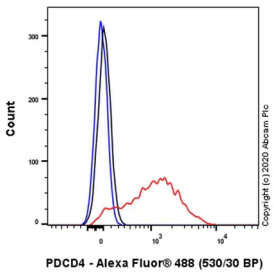
8 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PDCD4 antibody [EPR3431] (ab80590)

PDCD4 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-PDCD4 antibody

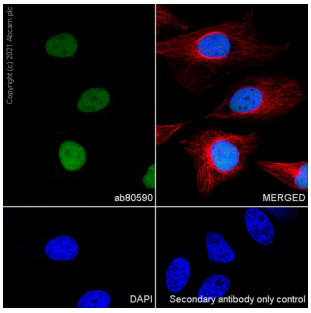
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human colon tissue sections labeling PDCD4 with Purified ab80590 at 1:3000 dilution (0.05 µg/mL). Heat mediated antigen retrieval was performed using Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 2 (pH 9.0) . Tissue was counterstained with Hematoxylin. Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) secondary antibody was used. PBS instead of the primary antibody was used as the negative control.



Flow Cytometry (Intracellular) - Anti-PDCD4 antibody [EPR3431] (ab80590)

PDCD4 Flow Cytometry (Intracellular) staining using rabbit Anti-PDCD4 antibody

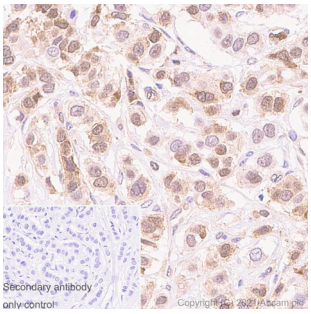
Flow Cytometry analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling PDCD4 with purified ab80590 at 1/1000 dilution (1 µg/mL) (Red). Cells were fixed with 4% Paraformaldehyde and permeabilised with 90% Methanol. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) secondary antibody was used at 1/2000. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cell without incubation with primary antibody and secondary antibody (Blue).



Immunocytochemistry/ Immunofluorescence - Anti-PDCD4 antibody [EPR3431] (ab80590)

PDCD4 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-PDCD4 antibody

Immunocytochemistry analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling PDCD4 with Purified ab80590 at 1:50 dilution (2.9 µg/ml). Cells were fixed in 4% Paraformaldehyde and permeabilized with 0.1% tritonX-100. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) 1:200 (2.5 µg/ml). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1:1000 (2 µg/ml) dilution. DAPI (blue) was used as nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.

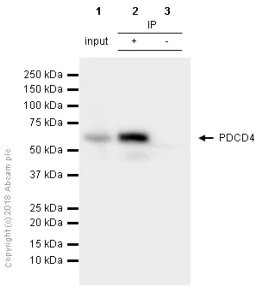


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PDCD4 antibody [EPR3431] (ab80590)

PDCD4 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-PDCD4 antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human breast cancer tissue sections labeling PDCD4 with Purified ab80590 at 1:3000 dilution (0.05 µg/mL). Heat mediated antigen retrieval was performed using Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 2 (pH 9.0) . Tissue was counterstained with Hematoxylin.

Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) secondary antibody was used. PBS instead of the primary antibody was used as the negative control.

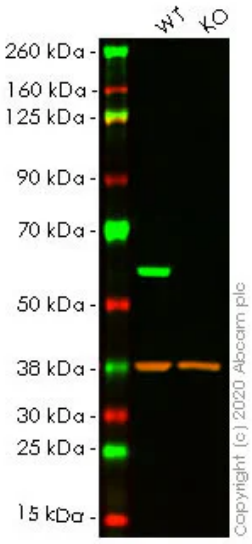


Immunoprecipitation - Anti-PDCD4 antibody [EPR3431] (ab80590)

Lane 1 (input): HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysate, 10µg
Lane 2 (+): ab80590 & HeLa whole cell lysate
Lane 3 (-): Rabbit monoclonal IgG (ab172730) instead of ab80590 in HeLa whole cell lysate

ab80590 (Purified) at 1/30 dilution (20 µg/ml) immunoprecipitating PDCD4 in HeLa whole cell lysate. For western blotting, ab80590 at 1/500 and VeriBlot for IP Detection Reagent (HRP) (ab131366) was used for detection at 1/1000 dilution.
Blocking and diluting buffer: 5% NFDM /TBST .
All lanes:
Immunoprecipitation - Anti-PDCD4 antibody [EPR3431] (ab80590)

Predicted band size: 51 kDa



Western blot - Anti-PDCD4 antibody [EPR3431] (ab80590)

PDCD4 Western blot staining using rabbit Anti-PDCD4 antibody

Lanes 1- 2: Merged signal (red and green). Green - ab80590 observed at 51 kDa. Red - Anti-GAPDH antibody [6C5] - Loading Control (ab8245) observed at 37 kDa.
ab80590 was shown to react with PDCD4 in wild-type HeLa cells in western blot. Loss of signal was observed when knockout cell line ab261833 (knockout cell lysate ab257278) was used. Wild-type HeLa and PDCD4 knockout HeLa cell lysates were subjected to SDS-PAGE. Membrane was blocked for 1 hour at room temperature in 0.1% TBST with 3% non-fat dried milk. ab80590 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) overnight at 4°C at a 1 in 20000 dilution and a 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye®800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye®680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-PDCD4 antibody [EPR3431] (ab80590) at 1/20000 dilution

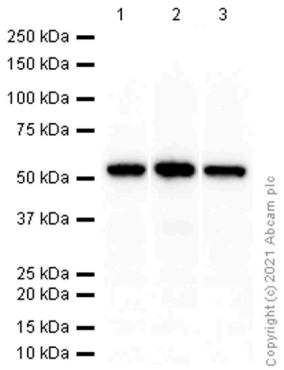
Lane 1:
Wild-type HeLa cell lysate at 20 µg

Lane 2:
Western blot - Human PDCD4 knockout HeLa cell lysate (ab257278) at 20 µg

Performed under reducing conditions.

Predicted band size: 51 kDa

Observed band size: 51 kDa



Western blot - Anti-PDCD4 antibody [EPR3431] (ab80590)

PDCD4 Western blot staining using rabbit Anti-PDCD4 antibody

All lanes:
Western blot - Anti-PDCD4 antibody [EPR3431] (ab80590) at 1/1000 dilution

Lane 1:
HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
HEK-293 (Human embryonic kidney epithelial cell) whole cell lysate at 20 µg

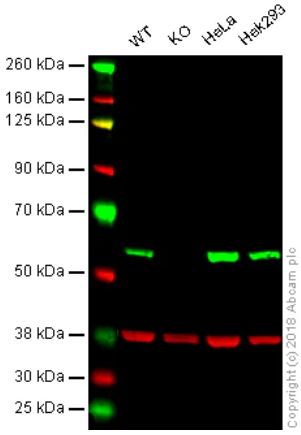
Lane 3:
Jurkat (Human T cell leukemia T lymphocyte) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 51 kDa

Observed band size: 52 kDa



Western blot - Anti-PDCD4 antibody [EPR3431] (ab80590)

PDCD4 Western blot staining using rabbit Anti-PDCD4 antibody

Lanes 1 - 4: Merged signal (red and green). Green - ab80590 observed at 52 kDa. Red - loading control, ab9484, observed at 37 kDa.
ab80590 was shown to specifically react with PDCD4 in wild-type HAP1 cells as signal was lost in PDCD4 knockout cells. Wild-type and PDCD4 knockout samples were subjected to SDS-PAGE. ab80590 and ab9484 (Mouse anti-GAPDH loading control) were incubated overnight at 4°C both at 1/20000 dilution. Blots were developed 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 1/10000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-PDCD4 antibody [EPR3431] (ab80590) at 1/20000 dilution

Lane 1:
Wild-type HAP1 whole cell lysate at 20 µg

Lane 2:
PDCD4 knockout HAP1 whole cell lysate at 20 µg

Lane 3:
HeLa whole cell lysate at 20 µg

Lane 4:
HEK293 whole cell lysate at 20 µg

Predicted band size: 51 kDa

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