abcam

ab300425

Anti-PD-1/CD279 antibody [EPR26302-8]

Anti-PD-1/CD279 antibody [EPR26302-8] is a Rabbit Monoclonal antibody that is used in PD-1/CD279 Flow Cytometry, ICC/IF, IP, Western Blot. Suitable for Mouse samples.

PD-1/CD279, or programmed cell death protein 1 or CD279 is a 50-55 kD glycoprotein belonging to the CD28 family of the Ig superfamily. PD-1 is expressed on activated splenic T and B cells and thymocytes. It is induced on activated myeloid cells as well. PD-1 is involved in lymphocyte clonal selection and peripheral tolerance through binding PD-L1 and PD-L2. It is an immune checkpoint receptor that plays a critical role in down-regulating the immune system and promoting self-tolerance by inhibiting T cell inflammatory activity. In cancer, PD-1/CD279 is often exploited by tumor cells to evade immune detection and destruction, leading to tumor growth and progression. Blocking PD-1/CD279 with specific inhibitors can restore T cell activity and enhance anti-tumor immunity, making it a significant target in cancer immunotherapy.

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	EPR26302-8
Purification technique	Affinity purification Protein A
Concentration	0.512 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	Human, Rat
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Mouse
Dilution info	1/500
Notes	-

Not recommended

Species	Human, Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	1/100
Notes	-

Not recommended

Species	Human, Rat
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Rat, Mouse, Human
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Not recommended

Species	Rat, Human
Dilution info	-
Notes	-

Target data

See full target information PD-1/CD279

Function	Inhibitory receptor on antigen activated T-cells that plays a critical role in induction and maintenance of immune tolerance to self (PubMed:10485649, PubMed:11209085, PubMed:11698646, PubMed:21300912). Delivers inhibitory signals upon binding to ligands, such as CD274/PDCD1L1 and CD273/PDCD1LG2 (PubMed:11015443, PubMed:11224527, PubMed:18287011, PubMed:18641123, PubMed:22641383). Following T-cell receptor (TCR) engagement, PDCD1 associates with TCR-CD3 in the immunological synapse and directly inhibits T-cell activation (PubMed:22641383). Suppresses T-cell activation through the recruitment of PTPN11/SHP-2: following ligand-binding, PDCD1 is phosphorylated within the ITSM motif, leading to the recruitment of the protein tyrosine phosphatase

PTPN11/SHP-2 that mediates dephosphorylation of key TCR proximal signaling molecules, such as ZAP70, PRKCQ/PKCtheta and CD247/CD3zeta (PubMed:11698646, PubMed:22641383). The PDCD1-mediated inhibitory pathway is exploited by tumors to attenuate anti-tumor immunity and facilitate tumor survival (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	PD1 also known as Programmed Cell Death Protein 1 or PDCD1 is a transmembrane protein that plays a critical role in regulating immune responses. It has a mass of approximately 55 kDa. PD1 is expressed on the surface of T cells B cells and some myeloid cells. PD1's expression increases upon activation of these immune cells assisting in maintaining peripheral tolerance. Researchers often use

	PD1 mouse models and chimeric antibodies to explore the function of PD1 for experimental purposes. Antibodies such as anti-PD1 such as EH12.2H7 help in blocking PD1 interaction to study its role further.
Biological function summary	PD1 serves as an inhibitory receptor acting as a checkpoint in the immune system. It becomes part of an immune-suppressive complex when it binds with its ligands PD-L1 or PD-L2 which are expressed on various cell types including some tumor cells. This interaction suppresses the proliferation of T cells and cytokine production contributing to immune homeostasis. By controlling T cell activity PD1 limits autoimmunity but can also reduce the immune system's capability to attack cancer cells.
Pathways	PD1 functions in the immune checkpoint pathway a critical regulatory circuit in immune regulation. The engagement of PD1 with its ligands initiates a cascade that inhibits the function and proliferation of T cells through downstream SHP-2 phosphatase activity. This pathway frequently involves other regulatory proteins like CTLA-4 and is an important mechanism by which the body modulates immune responses. Related pathways often intersect with those involving T cell receptor signaling and contribute to the overall modulation of immune activity.
Associated diseases and disorders	PD1 has a significant role in cancer and autoimmune disorders. PD1 expression can allow tumors to evade immune surveillance making PD1 a target for cancer therapies such as anti-PD1 antibodies which aim to block PD1 and restore T cell activity. The interaction of PD1 with cancer-related proteins like PD-L1 facilitates tumor immune evasion. In autoimmune disorders PD1's regulation of immune balance can become dysregulated leading to persistent immune activation and tissue damage. Understanding PD1 and its interaction with proteins such as PD-L1 helps in developing therapeutic strategies for both cancer and autoimmune conditions.

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

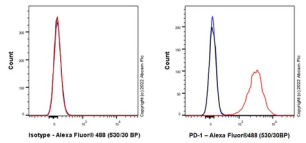
We do not recommend this combination. It is not covered by our product promise.

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.

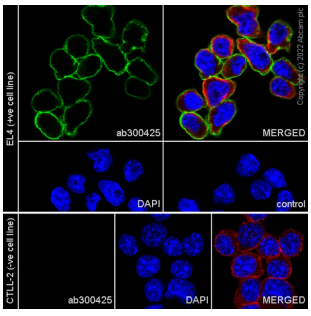
3 product images



Flow Cytometry - Anti-PD-1/CD279 antibody [EPR26302-8] (ab300425)

PD-1/CD279 Flow Cytometry staining using rabbit Anti-PD-1/CD279 antibody

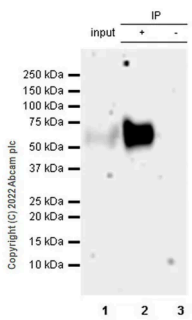
Flow cytometric analysis of CTLL-2 (mouse T lymphocyte, Left) / EL4 (mouse lymphoma T lymphocyte, Right) cells labelling PD-1 with ab300425 at 1/500 dilution (0.1ug) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/2000 dilution was used as the secondary antibody. Gated on viable cells. Negative control: CTLL-2 (PMID: 1396582).



Immunocytochemistry/ Immunofluorescence - Anti-PD-1/CD279 antibody [EPR26302-8] (ab300425)

PD-1/CD279 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-PD-1/CD279 antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized EL4 (mouse lymphoma T lymphocyte) cells labelling PD-1 with ab300425 at 1/100 (4.47 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 2 ug/ml dilution (Green). Confocal image showing membranous staining in EL4 cell line. Negative control: CTLL-2 (PMID: 34580467). ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 2.5ug/ml dilution (Red). The Nuclear counterstain was DAPI (Blue). Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2 ug/ml dilution.



Immunoprecipitation - Anti-PD-1/CD279 antibody [EPR26302-8] (ab300425)

PD-1 was immunoprecipitated from 0.35 mg EL4 (mouse lymphoma T lymphocyte), whole cell lysate 10 ug with ab300425 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab300425 at 1/1000 dilution. VeriBlot for IP secondary antibody (HRP)(ab131366) was used at 1/5000 dilution. Lane 1: EL4 (mouse lymphoma T lymphocyte), whole cell lysate 10 ug Lane 2: ab300425 IP in EL4 whole cell lysate Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab300425 in EL4 whole cell lysate. Blocking and dilution buffer and concentration: 5% NFDM/TBST. Exposure time: 3 minutes
Lane 1:
Immunoprecipitation - Anti-PD-1/CD279 antibody [EPR26302-8] (ab300425) at 1/30 dilution

Lane 2:
Immunoprecipitation - Anti-PD-1/CD279 antibody [EPR26302-8] (ab300425) at 1/1000 dilution

All lanes:
EL4 whole cell lysate at 10 µg

Secondary

All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

Exposure time: 3min

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