abcam

ab216352

Anti-PD-1/CD279 antibody [NAT105] - Rabbit IgG (Chimeric)

Recombinant | 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	NAT105
Purification technique	Affinity purification Protein A
Concentration	1.03 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/50
Notes	-

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/600
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:21276005, PubMed:31754127, PubMed:32184441, PubMed:37208329). Delivers inhibitory signals upon binding to ligands CD274/PDCD1L1 and CD273/PDCD1LG2 (PubMed:21276005, PubMed:26602187). Following T-cell receptor (TCR) engagement, PDCD1 associates with TCR-CD3 in the immunological synapse and directly inhibits T-cell activation (PubMed:32184441). 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:32184441). The PDCD1-mediated inhibitory pathway is exploited by tumors to attenuate anti-tumor immunity and escape destruction by the immune system, thereby facilitating tumor survival (PubMed:28951311). The interaction

with CD274/PDCD1L1 inhibits cytotoxic T lymphocytes (CTLs) effector function (PubMed:28951311). The blockage of the PDCD1-mediated pathway results in the reversal of the exhausted T-cell phenotype and the normalization of the anti-tumor response, providing a rationale for cancer immunotherapy (PubMed:22658127, PubMed:25034862, PubMed:25399552).

Storage

Shipped at conditions	Blue Ice
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

This rabbit monoclonal chimeric antibody has been engineered from the mouse monoclonal parent antibody Anti-PD1 antibody [NAT105] (ab52587). By necessity, some mouse sequence is retained as part of the variable domain.
We recommend using an Fc-directed, preadsorbed secondary antibody if multiplexing with mouse monoclonals. For example, ab150097 (AF488), ab150100 (AF594), ab150099 (AF647) or ab98467 (HRP).

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

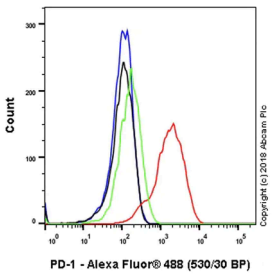
We do not recommend this combination. It is not covered by our product promise.

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.

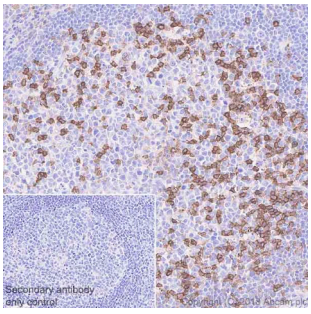
6 product images



Flow Cytometry (Intracellular) - Anti-PD-1/CD279 antibody [NAT105] - Rabbit IgG (Chimeric) (ab216352)

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

Intracellular flow cytometric analysis of MOLT-4 (humanlymphoblastic leukemia cell line) cell line treated with 500 ng/ml Ionomycin and 10 ng/ml Phorbol-12-myristate-13-acetate (PMA) for 24 hours (Red) or Untreated control (Green) labeling PD1 with ab216352 at 1/600 dilution compared with a Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) (black) and an unlabeled 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.

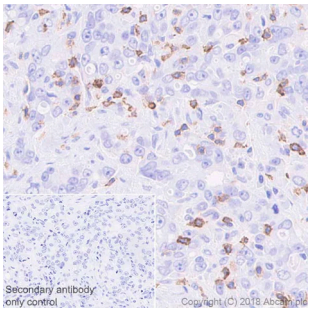


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PD-1/CD279 antibody [NAT105] - Rabbit IgG (Chimeric) (ab216352)

PD-1/CD279 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-PD-1/CD279 antibody

Immunohistochemical analysis of paraffin-embedded human tonsil tissue labeling PD1 with ab216352 at 1/50 dilution, followed by Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) ready to use. Positive staining on T cells of human tonsil germinal center (PMID: 20087161; PMID: 17640856) is observed. Counter stained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) ready to use.

Perform antigen retrieval using Universal HIER antigen retrieval reagents (10X) (ab208572).

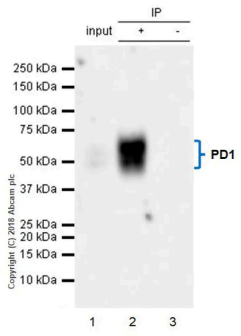


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PD-1/CD279 antibody [NAT105] - Rabbit IgG (Chimeric) (ab216352)

PD-1/CD279 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-PD-1/CD279 antibody

Immunohistochemical analysis of paraffin-embedded human bladder carcinoma tissue labeling PD1 with ab216352 at 1/50 dilution, followed by Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) ready to use. Positive staining on lymphocytes in human bladder carcinoma (PMID: 20087161, PMID: 17640856) is observed. Counter stained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) Ready to use.

Perform antigen retrieval using Universal HIER antigen retrieval reagents (10X) (ab208572).



Immunoprecipitation - Anti-PD-1/CD279 antibody [NAT105] - Rabbit IgG (Chimeric) (ab216352)

PD1 was immunoprecipitated from 0.35 mg of MOLT-4 (human lymphoblastic leukemia cell line) treated with 500 ng/ml Ionomycin and 10 ng/ml Phorbol-12-myristate-13-acetate (PMA) for 24 hours whole cell lysate with ab216352 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab216352 at 1/500 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/1,000 dilution
Lane 1: MOLT-4 treated with 500 ng/ml Ionomycin and 10 ng/ml Phorbol-12-myristate-13-acetate (PMA) for 24 hours whole cell lysate 10 µg (Input).

Lane 2: ab216352 IP in MOLT-4 treated with 500 ng/ml Ionomycin and 10 ng/ml Phorbol-12-myristate-13-acetate (PMA) for 24 hours whole cell lysate.

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab216352 in MOLT-4 treated with 500 ng/ml Ionomycin and 10 ng/ml Phorbol-12-myristate-13-acetate (PMA) for 24 hours whole cell lysate.

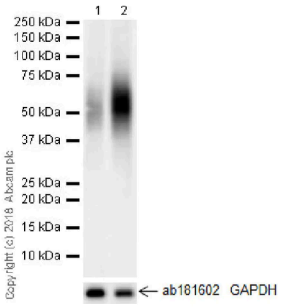
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 40 seconds.

The expression profile observed is consistent with what has been described in the literature (PMID: 26318293).

All lanes:
Immunoprecipitation - Anti-PD-1/CD279 antibody [NAT105] - Rabbit IgG (Chimeric) (ab216352)

Predicted band size: 32 kDa



Western blot - Anti-PD-1/CD279 antibody [NAT105] - Rabbit IgG (Chimeric) (ab216352)

PD-1/CD279 Western blot staining using rabbit Anti-PD-1/CD279 antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
The expression profile observed is consistent with what has been described in the literature (PMID: 26318293).

All lanes:
Western blot - Anti-PD-1/CD279 antibody [NAT105] - Rabbit IgG (Chimeric) (ab216352) at 1/1000 dilution

Lane 1:
Untreated MOLT-4 (human lymphoblastic leukemia cell line) whole cell lysate at 10 µg

Lane 2:
MOLT-4 treated with 500 ng/ml Ionomycin and 10 ng/ml Phorbol-12-myristate-13-acetate (PMA) for 24 hours, whole cell lysate at 10 µg

Secondary

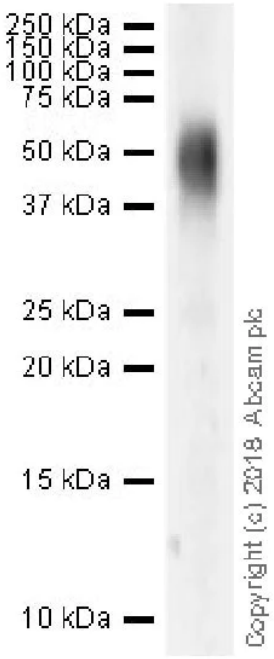
All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Developed using the ECL technique.

Predicted band size: 32 kDa

Observed band size: 50-55 kDa

Exposure time: 81s



Western blot - Anti-PD-1/CD279 antibody [NAT105] - Rabbit IgG (Chimeric) (ab216352)

PD-1/CD279 Western blot staining of Human tonsil lysate using rabbit Anti-PD-1/CD279 antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
The expression profile observed is consistent with what has been described in the literature (PMID: 26318293).

All lanes:
Western blot - Anti-PD-1/CD279 antibody [NAT105] - Rabbit IgG (Chimeric) (ab216352) at 1/1000 dilution

All lanes:
Human tonsil lysate at 10 µg

Secondary

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

Developed using the ECL technique.

Predicted band size: 32 kDa

Observed band size: 50-55 kDa

Exposure time: 3min

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