abcam

ab95789

Anti-PD-1/CD279 antibody [J43]

Key facts

Isotype	IgG
Host species	Armenian hamster
Storage buffer	pH: 7.2 Preservative: 0.09% Sodium azide Constituents: PBS, 0.87% Sodium chloride
Form	Liquid
Clonality	Monoclonal
Immunogen	Cell preparation containing Pdcd1 protein. The exact immunogen used to generate this antibody is proprietary information. Database link Q02242
Clone number	J43
Purification technique	Affinity purification Protein G
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Mouse
Dilution info	0.5 µg for 10^5-10^8 Cells
Notes	ab18479 - Armenian Hamster monoclonal IgG, is suitable for use as an isotype control with this antibody.

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	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Storage information	Avoid freeze / thaw cycle

Notes

It is reported that monoclonal antibody J43 inhibits the binding of mouse PD-L1-Ig and mouse PD-L2-Ig to PD-1/BHK transfected cells. When administrated *in vivo*, both intact and Fab of J43 are reported to enhance contact hypersensitivity and exacerbate acute GVHD similar to transfer of PD-1-deficient cells. Injection of J43 also exacerbates EAE and NOD diabetes as do specific antibodies to mouse PD-L1 and PD-L2.

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

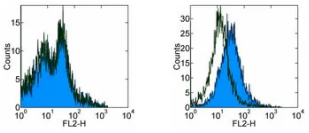
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Flow Cytometry - Anti-PD-1/CD279 antibody [J43] (ab95789)

PD-1/CD279 Flow Cytometry staining using armenian hamster Anti-PD-1/CD279 antibody

Flow cytometry staining of 3-day unstimulated (left) and 3-day ConA activated (right) BALB/c Mouse splenocytes with 0.25 µg of Armenian Hamster IgG Isotype Control (open histogram) or 0.25 µg of ab95789 (filled histogram) followed by Anti-Armenian Hamster IgG Biotin and Streptavidin PE. Total viable cells were used for analysis.

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