CD279 (PD-1) Monoclonal Antibody (eBioJ105 (J105)), PE, eBioscience™

Catalog Number 12-2799-42

Details

- **Size**: 100 Tests
- **Host/Isotype**: Mouse / IgG1, kappa
- **Class**: Monoclonal
- **Type**: Antibody
- **Clone**: eBioJ105 (J105)
- **Conjugate**: PE
- **Form**: Liquid
- **Concentration**: 5 µL/Test
- **Purification**: Affinity chromatography
- **Storage buffer**: PBS, pH 7.2, with 0.2% BSA
- **Contains**: 0.09% sodium azide
- **Storage Conditions**: 4°C, store in dark, DO NOT FREEZE!

Species Reactivity

- **Species Reactivity**: Human, Rhesus monkey
- **Published Species**: Non-human primate, Human, Mouse, Rhesus monkey

Tested Applications

- **Flow Cytometry (Flow)**: Dilution * 5 µL (0.5 µg)/test

Published Applications

- **Flow Cytometry (Flow)**: See 25 publications below

Product specific information

Description: The J105 monoclonal antibody reacts with the human PD-1 (programmed death-1), a 55 kDa member of the CD28 immunoglobulin superfamily. PD-1 contains the immunoreceptor tyrosine-based inhibitory motif (ITIM) and plays a key role in peripheral tolerance and autoimmune disease. PD-1 is expressed predominantly on activated T and B lymphocytes. Two novel members of the B7 family have been identified as the PD-1 ligands, PD-L1 (B7-H1) and PD-L2 (B7-DC). Evidence reported to date suggests overlapping functions for these two PD-1 ligands and their constitutive expression on some normal tissues and upregulation on activated antigen-presenting cells. Containing experiments suggest that eBioJ105 recognizes a different epitope than MIH4 (cat. 11-9969). Applications Reported: This eBioJ105 (J105) antibody has been reported for use in flow cytometric analysis. Applications Tested: This eBioJ105 (J105) antibody has been pre-titrated and tested by flow cytometric analysis of PHA stimulated human peripheral blood cells. This can be used at 5 µL (0.5 µg) per test. A test is defined as the amount (µg) of antibody that will stain a cell sample in a final volume of 100 µL. Cell number should be determined empirically but can range from 10^5 to 10^8 cells/test. Excitation: 488-561 nm; Emission: 578 nm; Laser: Blue Laser, Green Laser, Yellow-Green Laser. Filtration: 0.2 µm post-manufacturing filtered.

Background/Target Information

Cell-mediated immune responses are initiated by T lymphocytes that are themselves stimulated by cognate peptides bound to MHC molecules on antigen-presenting cells (APC). T-cell activation is generally self-limited as activated T cells express receptors such as PD-1 (also known as PDCCD-1) that mediate inhibitory signals from the APC. PD-1 can bind two different but related ligands, PDL-1 and PDL-2. Upon binding to either of these ligands, signals generated by PD-1 inhibit the activation of the immune response in the absence of “danger signals” such as LPS or other molecules associated with bacteria or other pathogens. Evidence for this is seen in PD1-null mice who exhibit hyperactivated immune systems and autoimmune diseases. Despite its predicted molecular weight, PD-1 often migrates at higher molecular weight in SDS-PAGE.

CD279 (PD-1) Antibody (12-2799-42)

Antibody clone (eBioJ105 (J105)) specificity was demonstrated by CRISPR-Cas9 mediated knockout of target protein. Loss of signal was observed for target protein in eBioJ105 (J105) KO cells (left) compared to the control Cas9 cells (right) using CD279 antibody (eBioJ105 (J105)). (KO)

CD279 (PD-1) Antibody (12-2799-42) in Flow

Knockout of CD279 (PD-1) was achieved by CRISPR-Cas9 genome editing using LentiArray™ Lentiviral sgRNA (Product # A32042, Assay ID CRISPRB16583_LV) and LentiArray Cas9 Lentivirus (Product # A32064). For Flow cytometry analysis, Jurkat CD279 Knockout cells and Jurkat Cas9 control cells were treated with 1 µg/mL PHA and 50 ng/mL PMA for 48 hrs, stained with 0.3 µg CD3 Monoclonal Antibody (UCHT1), eFluor™ 450, eBioscience™ (Product # 48-0038-42) and 0.5 µg CD279 (PD-1) Monoclonal Antibody (MIH4), PE, eBioscience™ (Product # 12-2799-42). Loss of signal was observed in the CD279 KO cells (right) but not in the control Cas9 cells (left). Viable cells were used for analysis, as determined by Fixable Viability Dye eFluor™780 (Product # 65-0865-18).

CD279 (PD-1) Antibody (12-2799-42) in Flow

Staining of unstimulated (blue histogram) or 3-day PHA-stimulated normal human peripheral blood cells (purple histogram) with Anti-Human CD279 (PD-1) PE. Viable cells, as determined by Fixable Viability Dye eFluor® 660, in the lymphocyte gate were used for analysis.


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Species / Dilution | Summary
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Human / 1:500 | 12-2799 was used in Flow cytometry/Cell sorting to show that, through a Th9-culture condition, polarized and expanded human CAR-T cells have an enhanced antitumor activity.

Human / Not Cited | Nature communications (Nov 2020; 11:) "Enhanced CAR-T activity against established tumors by polarizing human T cells to secrete interleukin-9."
Author(s): Liu, L.B, E.Ma,Xiong W,Qian J,Ye L,Su P,Wang Q,Xiao L,Yang M,Lu Y,Yi Q
PubMed Article URL: http://dx.doi.org/10.1038/s41467-020-19672-2

Human / Not Cited | Journal of immunology (Baltimore, Md.: ; 1950) (Oct 2015; 195: 3748) "Inhibitory Receptor Expression on CD8+ T Cells Is Linked to Functional Responses against Trypanosoma cruzi Antigens in Chronic Chagasic Patients."
Author(s): Lasso P,Mateus J,Pavia P,Rosas F,Roa N,Thomas MC,López MC,González JM, Puerta CJ,Cuéllar A
PubMed Article URL: http://dx.doi.org/10.4049/jimmunol.1500459

Mouse / Not Cited | 12-2799 was used in Flow cytometry/Cell sorting to suggest that during Chagas disease, CD8(+) T cells undergo gradual loss of function, impaired cytokine production and increased inhibitory receptor coexpression.

Human / Not Cited | Cancers (Jul 2020; 12:) "Circulating Exosomes Inhibit B Cell Proliferation and Activity."
PubMed Article URL: http://dx.doi.org/10.3390/cancers12082110

Mouse / Not Cited | 12-2799-42 was used in Flow Cytometry to test strategies for enhancing efficacy of CAR-T cells targeting the tumor-associated antigen receptor tyrosine kinase-like orphan receptor 1 (ROR1) infiltrating tumors.

Human / Not Cited | Frontiers in immunology (Oct 2019; 9:) "Overcoming Target Driven Fratricide for T Cell Therapy."
PubMed Article URL: http://dx.doi.org/10.1016/j.cell.2020.11.005

Human / Not Cited | Frontiers in immunology (Oct 2019; 9:) "Harnessing Natural Killer Immunity in Metastatic SCLC."
PubMed Article URL: http://dx.doi.org/10.3389/fimmu.2018.02940

Human / Not Cited | Journal of thoracic oncology : official publication of the International Association for the Study of Lung Cancer (Sep 2020; 15: 1507) "Enhancing CAR-T Activity in Metastatic SCLC.
PubMed Article URL: http://dx.doi.org/10.1016/j.jtho.2020.05.008

Human / Not Cited | Nature communications (Nov 2020; 11:) "Cytomegalovirus infection in HIV-infected and uninfected individuals is characterized by circulating regulatory T cells of unstrained antigenic specificity."
Author(s): Tovar-Salazar A,Weinberg A
PubMed Article URL: http://dx.doi.org/10.1038/s41467-020-19672-2

12-2799 was used in Flow cytometry/Cell sorting to investigate whether globlastoma extracellular vesicles are important mediators of immunosuppression and whether programmed death ligand-1 could play a role.

**Human / 1:100**

Science advances (Mar 2018; 4: )

"Immune evasion mediated by PD-L1 on globlastoma-derived extracellular vesicles."


PubMed Article URL:http://dx.doi.org/10.1126/sciadv.aar2766

12-2799 was used in Flow cytometry/Cell sorting to study the regulation of immune function-related genes in human T cell subsets through tumor-derived exosomes.

**Human / Not Cited**

12-2799 was used in Flow cytometry/Cell sorting to investigate the role of Tregs in persistent HIV infection, showing that an increased frequency of Tregs accompanies increased immune activation in HIV-positive noncontrollers.

12-2799-42 was used in Flow cytometry/Cell sorting to explore the potential involvement of peripheral T and B cell immunity against this mycotic infection.

**Human / Not Cited**

12-2799 was used in Flow cytometry/Cell sorting to identify RNA-seq data can be exploited to help identify tumor-associated exons that can be targeted by CAR T cell therapies.

**Human / Not Cited**

12-2799 was used in Flow cytometry/Cell sorting to study the influence of chemotherapy on the function of regulatory B cells.

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**Non-human primate / Not Cited**

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**Human / Not Cited**

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**Human / Not Cited**

12-2799 was used in Flow cytometry/Cell sorting to study the influence of chemotherapy on the function of regulatory B cells.

**Human / Not Cited**

12-2799 was used in Flow cytometry/Cell sorting to elucidate a Yin Yang-1-centred mechanism for diverse cellular components correlated with exhaustion.

12-2799 was used in Flow cytometry/Cell sorting to show exosomes from the plasma of glioma patients from a vaccination trial reflect antitumor immune activity which may predict survival.

**Human / Not Cited**

Oncoimmunology (Jun 2015; 4: )

"Exosomes isolated from plasma of glioma patients enrolled in a vaccination trial reflect antitumor immune activity and might predict survival."

Author(s): Muller L, Muller-Haengele S, Mitsuhashi M, Goodying W, Okada H, Whiteside TL

PubMed Article URL: http://dx.doi.org/10.1080/2162402X.2015.1008347

12-2799 was used in Flow cytometry/Cell sorting to suggest a possible exhaustion process of CD8+ T cells associated with the evolution of Leishmania infection.

**Human / Not Cited**

Frontiers in cellular and infection microbiology (Sep 2019; 8: )

"Phenotypic and Functional Profiles of Antigen-Specific CD4<sup>+</sup>/CD8<sup>+</sup> T Cells Associated With Infection Control in Patients With Cutaneous Leishmaniasis."

Author(s): Equi A, Ledesma D, Pérez-Antón E, Montoya A, Gómez I, Robledo SM, Infante JJ, Vélez ID, López MC, Thomas MC

PubMed Article URL: http://dx.doi.org/10.3389/fcimb.2018.00393

12-2799 was used in Flow cytometry/Cell sorting to identify a potential mechanism by which IFN-α–producing CD8(+) T cells are tolerised after type 1 immune responses to chronic virus or tumour.

**Human / Not Cited**

Journal of immunology (Baltimore, Md. : 1950) (Sep 2011; 187: 2291)

"Phagocytosis, a potential mechanism for myeloid-derived suppressor cell regulation of CD8+ T cell function mediated through programmed cell death-1 and programmed cell death-1 ligand interaction."

Author(s): Kim YJ, Park SJ, Broxmeyer HE

PubMed Article URL: http://dx.doi.org/10.4049/jimmunol.1002650

12-2799 was used in Flow cytometry/Cell sorting to investigate the mechanisms behind lipopolysaccharide disruption of immune responses in Chinese rhesus macaques.

**Rhesus monkey / Not Cited**

Journal of immunology research (Sep 2016; 2015: )

"Lipopolysaccharide Increases Immune Activation and Alters T Cell Homeostasis in SHIVB’WHU Chronically Infected Chinese Rhesus Macaque."


PubMed Article URL: http://dx.doi.org/10.1155/2015/202738

12-2799 was used in Flow cytometry/Cell sorting to compare the phenotype and in vitro functional response of various immune cells in response to CpG and a cytokine cocktail.

**Human / Not Cited**

PloS one (Jun 2016; 10: )

"Rapid Proliferation and Differentiation of a Subset of Circulating IgM Memory B Cells to a CpG/Cytokine Stimulus In Vitro."

Author(s): Vásquez C, Franco MA, Angel J

PubMed Article URL: http://dx.doi.org/10.1371/journal.pone.0139718

12-2799 was used in Flow cytometry/Cell sorting to characterise changes in lymphocyte populations in tamarins with an acute GBV-B infection.

**Non-human primate / Not Cited**

Virus research (Jan 2014; 179: 93)

"Changes in immune cell populations in the periphery and liver of GBV-B-infected and convalescent tamarins (Saguinus labiatus)."

Author(s): Hood SP, Mee ET, Perkins H, Bowen Q, Dale JM, Almond NM, Karayiannis P, Bright H, Berry NJ, Rose NJ

PubMed Article URL: http://dx.doi.org/10.1016/j.virusres.2013.11.006

12-2799 was used in Flow cytometry/Cell sorting to understand the underlying molecular mechanisms of T-cell activation in response to TGN1412-like CD28 superagonist, showing that failure to upregulate the inhibitory PD-1 cell surface receptor is part of this mechanism.

**Human / Not Cited**

mAbs (Aug 2015; 6: 1290)

"Failure to upregulate cell surface PD-1 is associated with dysregulated stimulation of T cells by TGN1412-like CD28 superagonist."


PubMed Article URL: http://dx.doi.org/10.4161/mabs.29758
12-2799 was used in Flow cytometry/Cell sorting to investigate whether tumour- or T cell-derived exosomes in head and neck squamous cell carcinoma patients' plasma are immunosuppressive and impact upon disease activity.

Clinical and experimental immunology (Jun 2018; 192: 271)
"Separation of plasma-derived exosomes into CD3<sup>+</sup>/<sup>+</sup> and CD3<sup>-</sup>/<sup>-</sup> fractions allows for association of immune cell and tumour cell markers with disease activity in HNSCC patients."
Author(s): Theodoraki MN, Hoffmann TK, Whiteside TL
PubMed Article URL: http://dx.doi.org/10.1111/cei.13113

12-2799 was used in Flow cytometry/Cell sorting to identify different subsets of CXCR5<sup>+</sup>CD4<sup>+</sup> Tfh-like cells in response to highly immunogenic and efficacious vaccines for HPV.

PloS one (May 2016; 10:)
"Circulating CXCR5CD4<sup>+</sup> T Follicular-Like Helper Cell and Memory B Cell Responses to Human Papillomavirus Vaccines."
Author(s): Matsui K, Adelsberger JW, Kemp TJ, Baseler MW, Ledgerwood JE, Pinto LA
PubMed Article URL: http://dx.doi.org/10.1371/journal.pone.0137195

12-2799 was used in Flow cytometry/Cell sorting to determine the VH:VL or TCR:beta repertoire with high accuracy and throughput.

Science advances (Apr 2020; 6:)
"A facile technology for the high-throughput sequencing of the paired VH:VL and TCR:TCR repertoires."
PubMed Article URL: http://dx.doi.org/10.1126/sciadv.aay9093