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CD3 Monoclonal Antibody (17A2), PerCP-eFluor™ 710, eBioscience™

Catalog Number 46-0032-82

Product data sheet

Details	
Size	100 µg
Host/Isotope	Rat / IgG2b, kappa
Class	Monoclonal
Type	Antibody
Clone	17A2
Conjugate	PerCP-eFluor™ 710
Form	Liquid
Concentration	0.2 mg/mL
Purification	Affinity chromatography
Storage buffer	PBS, pH 7.2
Contains	0.09% sodium azide
Storage Conditions	4° C, store in dark, DO NOT FREEZE!

Species Reactivity	
Species reactivity	Mouse
Published species	Mouse, Human, Not Applicable

Tested Applications	Dilution *
Flow Cytometry (Flow)	0.25 µg/test

Published Applications	
Flow Cytometry (Flow)	See 15 publications below

* Suggested working dilutions are given as a guide only. It is recommended that the user titrate the product for use in their own experiment using appropriate negative and positive controls.

Product specific information

Description: The 17A2 monoclonal antibody reacts with the mouse CD3 complex. CD3 subunits gamma, delta and epsilon are required for proper assembly, trafficking and surface expression of the TCR complex. CD3 is expressed by thymocytes in a developmentally regulated manner and by all mature T cells. Binding of 17A2 to CD3 initiates the intracellular biochemical pathway resulting in cellular activation and proliferation. Applications Reported: This 17A2 antibody has been reported for use in flow cytometric analysis. Applications Tested: This 17A2 antibody has been tested by flow cytometric analysis of mouse spleen cells. This can be used at less than or equal to 0.25 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. It is recommended that the antibody be carefully titrated for optimal performance in the assay of interest. PerCP-eFluor® 710 emits at 710 nm and is excited with the blue laser (488 nm); it can be used in place of PerCP-Cyanine5.5. We recommend using a 710/50 bandpass filter, however, the 695/40 bandpass filter is an acceptable alternative. Please make sure that your instrument is capable of detecting this fluorochrome. Fixation: Samples can be stored in IC Fixation Buffer (cat. 00-8222) (100 µL cell sample + 100 µL IC Fixation Buffer) or 1-step Fix/Lyse Solution (cat. 00-5333) for up to 3 days in the dark at 4°C with minimal impact on brightness and FRET efficiency/compensation. Some generalizations regarding fluorophore performance after fixation can be made, but clone specific performance should be determined empirically. Excitation: 488 nm; Emission: 710 nm; Laser: Blue Laser. Filtration: 0.2 µm post-manufacturing filtered.

Background/Target Information

The CD3 subunit complex which is crucial in transducing antigen-recognition signals into the cytoplasm of T cells and in regulating the cell surface expression of the TCR complex. T cell activation through the antigen receptor (TCR) involves the cytoplasmic tails of the CD3 subunits CD3 gamma, CD3 delta, CD3 epsilon and CD3 zeta. These CD3 subunits are structurally related members of the immunoglobulins super family encoded by closely linked genes on human chromosome 11. The CD3 components have long cytoplasmic tails that associate with cytoplasmic signal transduction molecules and this association is mediated at least in part by a double tyrosine-based motif present in a single copy in the CD3 subunits. CD3 may play a role in TCR-induced growth arrest, cell survival and proliferation. The CD3 antigen is present on 68-82% of normal peripheral blood lymphocytes, 65-85% of thymocytes and Purkinje cells in the cerebellum. It is never expressed on B or NK cells. Decreased percentages of T lymphocytes may be observed in some autoimmune diseases. The genes encoding the CD3 epsilon, gamma and delta polypeptides are located on chromosome 11. Defects in the CD3 gene are associated with CD3 immunodeficiency.

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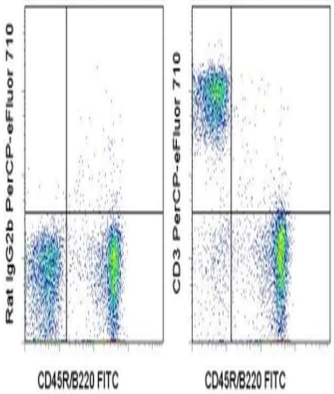
Product Images For CD3 Monoclonal Antibody (17A2), PerCP-eFluor™ 710, eBioscience™



CD3 Antibody (46-0032-82) in Flow

Staining of BALB/c splenocytes with Anti-Human/Mouse CD45R (B220) FITC (Product # 11-0452-82) and 0.125 µg of Rat IgG2b K Isotype Control PerCP-eFluor® 710 (Product # 46-4031-82) (left) or 0.125 µg of Anti-Mouse CD3 PerCP-eFluor® 710 (right). Cells in the lymphocyte gate were used for analysis.

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PubMed References For CD3 Monoclonal Antibody (17A2), PerCP-eFluor™ 710, eBioscience™

15 Flow Cytometry References

Species / Dilution	Summary
Mouse / Not Cited	46-0032 was used in Flow cytometry/Cell sorting to demonstrate key role of arginase 1 (Arg1), characteristically expressed among myeloid cells in tumors, as a mediator of immune suppression; and explore the therapeutic potential of CB-1158 as a potent inhibitor of Arg1. Journal for immunotherapy of cancer (2017; 5:) **"Inhibition of arginase by CB-1158 blocks myeloid cell-mediated immune suppression in the tumor microenvironment."** Author(s):Steggerda SM,Bennett MK,Chen J,Emberley E,Huang T,Janes JR,Li W,MacKinnon AL,Makkouk A,Marguier G,Murray PJ,Neou S,Pan A,Parlati F,Rodriguez MLM,Van de Velde LA,Wang T,Works M,Zhang J,Zhang W,Gross MI PubMed Article URL:http://dx.doi.org/10.1186/s40425-017-0308-4
Mouse / Not Cited	46-0032 was used in Flow cytometry/Cell sorting to study the use of 4PD nanoparticles for the in vivo gene silencing of tumour-educated myeloid cells. Journal of immunology (Baltimore, Md. : 1950) (2017; 198: 4166) **"4PD Functionalized Dendrimers: A Flexible Tool for In Vivo Gene Silencing of Tumor-Educated Myeloid Cells."** Author(s):Zilio S,Vella JL,De la Fuente AC,Daftarian PM,Weed DT,Kaifer A,Marigo I,Leone K,Bronte V,Serafini P PubMed Article URL:http://dx.doi.org/10.4049/jimmunol.1600833
Mouse / Not Cited	46-0032 was used in Flow cytometry/Cell sorting to study a novel multi-drug metronomic chemotherapy that significantly enhances the efficacy of intrinsic or vaccine-elicited tumor-specific cellular immunity. Journal of translational medicine (2016; 14:) **"A novel multi-drug metronomic chemotherapy significantly delays tumor growth in mice."** Author(s):Tagliamonte M,Petrizzo A,Napolitano M,Luciano A,Rea D,Barbieri A,Arra C,Maiolino P,Tornesello M,Ciliberto G,Buonaguro FM,Buonaguro L PubMed Article URL:http://dx.doi.org/10.1186/s12967-016-0812-1
Mouse / Not Cited	46-0032-82 was used in Flow Cytometry to show that IL-22, a cytokine produced by RORt+ lymphocytes inhibits IL-13-induced tuft cell differentiation in vitro, and suppresses the tuft cell-type 2 immune circuit and small intestine lengthening in vivo, highlighting its key role in gut tissue remodeling. Nature communications (2021; 12:) **"Mitochondrial transcription factor A in RORt⁺ lymphocytes regulate small intestine homeostasis and metabolism."** Author(s):Fu Z,Dean JW,Xiong L,Dougherty MW,Oliff KN,Chen ZE,Jobin C,Garrett TJ,Zhou L PubMed Article URL:http://dx.doi.org/10.1038/s41467-021-24755-9
Mouse / Not Cited	46-0032 was used in Flow cytometry/Cell sorting to investigate the role of Distal-less 3 (Dlx3) in cutaneous biology and pathophysiology, showing that ablation is linked to IL-17-associated skin inflammation. Proceedings of the National Academy of Sciences of the United States of America (2011; 108: 11566) **"Epidermal ablation of Dlx3 is linked to IL-17-associated skin inflammation."** Author(s):Hwang J,Kita R,Kwon HS,Choi EH,Lee SH,Udey MC,Morasso MI PubMed Article URL:http://dx.doi.org/10.1073/pnas.1019658108
Mouse / Not Cited	46-0032 was used in Flow cytometry/Cell sorting to investigate whether DKK3 contributes to the immune suppression of anti-tumour responses by mesenchymal stem cells. Frontiers in immunology (2016; 6:) **"Dickkopf-3 Contributes to the Regulation of Anti-Tumor Immune Responses by Mesenchymal Stem Cells."** Author(s):Lu KH,Tounsi A,Shridhar N,Küblbeck G,Klevenz A,Prokosch S,Bald T,Tüting T,Arnold B PubMed Article URL:http://dx.doi.org/10.3389/fimmu.2015.00645
Mouse / Not Cited	46-0032 was used in Flow cytometry/Cell sorting to show that BCG was also protective in a mouse model of neonatal polymicrobial sepsis, where it induced granulocyte colony-stimulating factor (G-CSF) within hours of administration. Science translational medicine (2020; 12:) **"BCG vaccination-induced emergency granulopoiesis provides rapid protection from neonatal sepsis."** Author(s):Brook B,Harbeson DJ,Shannon CP,Cai B,He D,Ben-Othman R,Francis F,Huang J,Varankovich N,Liu A,Bao W,Bjerregaard-Andersen M,Schaltz-Buchholzer F,Sanca L,Golding CN,Larsen KL,Levy O,Kampmann B,Tan R,Charles A,Wynn JL,Shann F,Aaby P,Benn CS,Tebbutt SJ,Kollmann TR,Amenyogbe N PubMed Article URL:http://dx.doi.org/10.1126/scitranslmed.aax4517
Mouse / Not Cited	46-0032 was used in Flow cytometry/Cell sorting to demonstrate parasite-specific CD8(+) T cells in PD-1KO mice confer enhanced long-term malarial immunity. Scientific reports (2016; 6:) **"Mice lacking Programmed cell death-1 show a role for CD8(+) T cells in long-term immunity against blood-stage malaria."** Author(s):Horne-Debets JM,Karunarathne DS,Faleiro RJ,Poh CM,Renia L,Wykes MN PubMed Article URL:http://dx.doi.org/10.1038/srep26210

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	46-0032 was used in Flow cytometry/Cell sorting to investigate how a mutation in an L-Type calcium channel gene influences T lymphocyte dysfunction.
Mouse / Not Cited	Frontiers in immunology (2020; 10:) **"Mutation of an L-Type Calcium Channel Gene Leads to T Lymphocyte Dysfunction."** Author(s):Fenninger F,Han J,Stanwood SR,Nohara LL,Arora H,Choi KB,Munro L,Pfeifer CG,Shanina I,Horwitz MS, Jefferies WA PubMed Article URL:http://dx.doi.org/10.3389/fimmu.2019.02473
	46-0032 was used in Flow cytometry/Cell sorting to investigate the mechanisms underlying itching associated with cutaneous wound healing, focusing on the contribution of soluble factors released during healing.
Mouse / Not Cited	Immunity (2020; 53: 371) **"The Cytokine TGF- Induces Interleukin-31 Expression from Dermal Dendritic Cells to Activate Sensory Neurons and Stimulate Wound Itching."** Author(s):Xu J,Zanvit P,Hu L,Tseng PY,Liu N,Wang F,Liu O,Zhang D,Jin W,Guo N,Han Y,Yin J,Cain A,Hoon MA,Wang S, Chen W PubMed Article URL:http://dx.doi.org/10.1016/j.immuni.2020.06.023
	46-0032-82 was used in Flow Cytometry to show that modulation of eATP in the small intestine can affect high-affinity IgA response against gut colonizing bacteria.
Mouse / 1:200	Nature communications (2019; 10:) **"ATP released by intestinal bacteria limits the generation of protective IgA against enteropathogens."** Author(s):Proietti M,Perruzza L,Scribano D,Pellegrini G,D'Antuono R,Strati F,Raffaelli M,Gonzalez SF,Thelen M,Hardt WD,Slack E,Nicoletti M,Grassi F PubMed Article URL:http://dx.doi.org/10.1038/s41467-018-08156-z
	46-0032 was used in Flow cytometry/Cell sorting to reveal a significant effect of the IL-23/PI3K/mTORC1 axis on regulating IL-22 production and also identify a novel role of IL-22 in controlling antiviral T cell responses in the non-lymphoid and lymphoid organs during acute and persistent viral infections.
Mouse / Not Cited	Scientific reports (2017; 7:) **"A tightly regulated IL-22 response maintains immune functions and homeostasis in systemic viral infection."** Author(s):Yi P,Liang Y,Yuan DMK,Jie Z,Kwota Z,Chen Y,Cong Y,Fan X,Sun J PubMed Article URL:http://dx.doi.org/10.1038/s41598-017-04260-0
	46-0032-82 was used in Flow cytometry/Cell sorting to highlight a distinct effect of MCT1 deficiency in CD8+ T cells in the crosstalk with adipocytes and reinforce the concept that targeting immunometabolic reprogramming in lymphocyte could impact the immune-adipose tissue axis in obesity.
Mouse / Not Cited	iScience (2022; 25:) **"Monocarboxylate transporter 1 deficiency impacts CD8⁺ T lymphocytes proliferation and recruitment to adipose tissue during obesity."** Author(s):Macchi C,Moregola A,Greco MF,Svecla M,Bonacina F,Dhup S,Dadhich RK,Audano M,Sonveaux P,Mauro C, Mitro N,Ruscica M,Norata GD PubMed Article URL:http://dx.doi.org/10.1016/j.isci.2022.104435
	46-0032-82 was used in Flow Cytometry to define gut microbiota modifications that correlate with deregulated SIgA secretion and metabolic alterations in P2rx7-/- mice.
Mouse / Not Cited	Scientific reports (2019; 9:) **"Enrichment of intestinal Lactobacillus by enhanced secretory IgA coating alters glucose homeostasis in P2rx7^{-/-} mice."** Author(s):Perruzza L,Strati F,Gargari G,D'Erchia AM,Fosso B,Pesole G,Guglielmetti S,Grassi F PubMed Article URL:http://dx.doi.org/10.1038/s41598-019-45724-9
	46-0032 was used in Flow cytometry/Cell sorting to demonstrate the therapeutic advantage of using an immunomodulatory mAb to regulate lymphoid cells, which then recruit and activate myeloid cells for enhanced killing of mAb-opsonized tumors.
Mouse / Not Cited	Cancer cell (2017; 32: 777) **"Antibody Tumor Targeting Is Enhanced by CD27 Agonists through Myeloid Recruitment."** Author(s):Turaj AH,Hussain K,Cox KL,Rose-Zerilli MJJ,Testa J,Dahal LN,Chan HTC,James S,Field VL,Carter MJ,Kim HJ, West JJ,Thomas LJ,He LZ,Keler T,Johnson PWM,Al-Shamkhani A,Thirdborough SM,Beers SA,Cragg MS,Glennie MJ, Lim SH PubMed Article URL:http://dx.doi.org/10.1016/j.ccell.2017.11.001

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