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CD3 Monoclonal Antibody (OKT3), APC, eBioscience™

Catalog Number 17-0037-41

Product data sheet

Details	
Size	25 Tests
Host/Isotope	Mouse / IgG2a, kappa
Class	Monoclonal
Type	Antibody
Clone	OKT3
Conjugate	APC
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
Published species	Nematode, Human, Not Applicable

Tested Applications	Dilution *
Flow Cytometry (Flow)	5 µL (0.06 µg)/test

Published Applications	
Flow Cytometry (Flow)	See 14 publications below
Functional Assay (FN)	See 1 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 OKT3 monoclonal antibody reacts with an epitope on the epsilon-subunit within the human CD3 complex. The OKT3 antibody has been reported to have potent immunosuppressive properties in vivo and has been proven effective in the treatment of renal, heart and liver allograft rejection. The CD3 subunits, gamma, delta, and epsilon chains, 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. Crosslinking of TCR initiates an intracellular biochemical pathway resulting in cellular activation and proliferation. Applications Reported: This OKT3 antibody has been reported for use in flow cytometric analysis. Applications Tested: This OKT3 antibody has been pre-titrated and tested by flow cytometric analysis of normal human peripheral blood cells. This can be used at 5 µL (0.06 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: 633-647 nm; Emission: 660 nm; Laser: Red 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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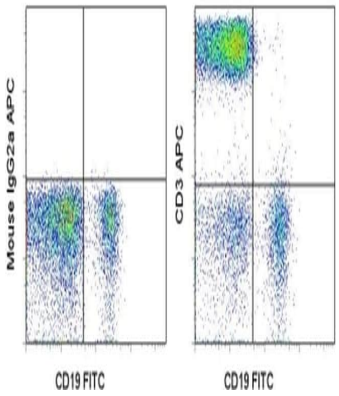
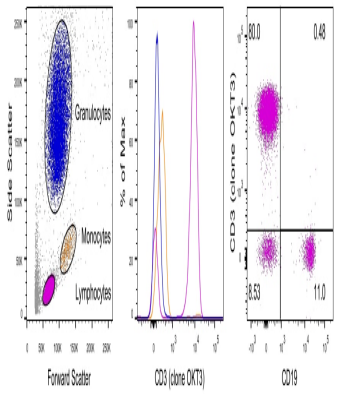
Product Images For CD3 Monoclonal Antibody (OKT3), APC, eBioscience™



CD3 Antibody (17-0037-41) in Flow

Staining of normal human peripheral blood cells with Anti-Human CD19 FITC (Product # 11-0199-42) and Mouse IgG2a K Isotype Control APC (Product # 17-4724-81) (left) or Anti-Human CD3 APC (right). Cells in the lymphocyte gate were used for analysis.



CD3 Antibody (17-0037-41)

Staining of human peripheral blood cells. As expected based on known relative expression patterns, CD3 clone OKT3 stains a subset of lymphocytes (T cells) and does not stain monocytes and granulocytes (middle plot). Additional analysis of lymphocytes shows that CD3 clone OKT3 does not stain any CD19+ B cells (right plot). Details: Normal human whole blood was surface stained with CD3 (clone OKT3) and CD19 (clone HIB19). After staining, red blood cells were lysed using 1-step Fix/Lyse Buffer. Cells in the lymphocyte (purple histogram), monocyte (orange histogram), or granulocyte (blue histogram) gates were used to compare CD3 staining (middle plot). Cells in the lymphocyte gate were used to compare CD3 and CD19 staining (right plot). {RE}

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PubMed References For CD3 Monoclonal Antibody (OKT3), APC, eBioscience™

14 Flow Cytometry References

Species / Dilution	Summary
Human / Not Cited	17-0037 was used in Flow cytometry/Cell sorting to characterise the role of tumour infiltrating natural killer cells, and their correlation with disease outcomes. Oncotarget (2015; 6: 13835) **"Characterization of tumor infiltrating natural killer cell subset."** Author(s):Levi I,Amsalem H,Nissan A,Darash-Yahana M,Peretz T,Mandelboim O,Rachmilewitz J PubMed Article URL:http://dx.doi.org/10.18632/oncotarget.3453
Human / Not Cited	17-0037 was used in Flow cytometry/Cell sorting to investigate the contribution of induced antibody clones to clinical tolerance in peanut oral immunotherapy (PNOIT), showing that PNOIT transiently expands circulating Ara h 2-specific B cells. The Journal of allergy and clinical immunology (2015; 136: 125) **"Peanut oral immunotherapy transiently expands circulating Ara h 2-specific B cells with a homologous repertoire in unrelated subjects."** Author(s):Patil SU,Ogunniyi AO,Calatroni A,Tadigotla VR,Ruiter B,Ma A,Moon J,Love JC,Shreffler WG PubMed Article URL:http://dx.doi.org/10.1016/j.jaci.2015.03.026
Human / Not Cited	17-0037 was used in Flow cytometry/Cell sorting to determine the relationship between interleukin-1 type 1 and type 2 receptor gene polymorphisms and the expression level of membrane-bound IL1-Rs. Cellular & molecular immunology (2015; 12: 222) **"Relationship between interleukin-1 type 1 and 2 receptor gene polymorphisms and the expression level of membrane-bound receptors."** Author(s):Vasilyev FF,Silkov AN,Sennikov SV PubMed Article URL:http://dx.doi.org/10.1038/cmi.2014.43
Human / Not Cited	17-0037 was used in Flow cytometry/Cell sorting to support the conclusion that HIV-infected HSPCs form a distinct and functionally significant reservoir of persistent HIV in infected people. Cell reports (2018; 25: 3759) **"Hematopoietic Stem and Progenitor Cells Are a Distinct HIV Reservoir that Contributes to Persistent Viremia in Suppressed Patients."** Author(s):Zaikos TD,Terry VH,Sebastian Kettinger NT,Lubow J,Painter MM,Virgilio MC,Neevel A,Taschuk F,Onafuwa-Nuga A,McNamara LA,Riddell J,Bixby D,Markowitz N,Collins KL PubMed Article URL:http://dx.doi.org/10.1016/j.celrep.2018.11.104
Human / Not Cited	17-0037 was used in Flow cytometry/Cell sorting to investigate the mechanisms by which cytokines in the blood affect HSC homeostasis, showing that LECT2 drives HSC expansion and mobilisation. Nature communications (2016; 7:) **"LECT2 drives haematopoietic stem cell expansion and mobilization via regulating the macrophages and osteolineage cells."** Author(s):Lu XJ,Chen Q,Rong YJ,Yang GJ,Li CH,Xu NY,Yu CH,Wang HY,Zhang S,Shi YH,Chen J PubMed Article URL:http://dx.doi.org/10.1038/ncomms12719
Human / Not Cited	17-0037-42 was used in Flow Cytometry to investigate the impact of apoptotic colorectal cancer cells on neutrophils and its consequence on other immune cells of the tumour microenvironment. Cell death & disease (2022; 13:) **"Tumour cell apoptosis modulates the colorectal cancer immune microenvironment via interleukin-8-dependent neutrophil recruitment."** Author(s):Schimek V,Strasser K,Beer A,Göber S,Walterskirchen N,Brostjan C,Müller C,Bachleitner-Hofmann T,Bergmann M,Dolznig H,Oehler R PubMed Article URL:http://dx.doi.org/10.1038/s41419-022-04585-3
Human / Not Cited	17-0037 was used in Flow cytometry/Cell sorting to investigate a strategy for an HCMV vaccine that aims at the simultaneous activation of innate and adaptive immune responses. PLoS pathogens (2016; 12:) **"Activation of Innate and Adaptive Immunity by a Recombinant Human Cytomegalovirus Strain Expressing an NKG2D Ligand."** Author(s):Tomi A,Varanasi PR,Golemac M,Mali S,Riese P,Borst EM,Mischak-Weissinger E,Guzmán CA,Krmpoti A,Jonji S,Messerle M PubMed Article URL:http://dx.doi.org/10.1371/journal.ppat.1006015

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	17-0037 was used in Flow cytometry/Cell sorting to study immune cell types and their differential expression of receptors to immunomodulatory cytokines in healthy and arthritic individuals.
Human / Not Cited	Mediators of inflammation (2016; 2015:) **"Differences of IL-1 Receptors Expression by Immunocompetent Cells Subsets in Rheumatoid Arthritis."** Author(s):Alshevskaya AA,Lopatnikova JA,Shkaruba NS,Chumasova OA,Sizikov AE,Karaulov AV,Kozlov VA,Sennikov SV PubMed Article URL:http://dx.doi.org/10.1155/2015/948393
	17-0037 was used in Flow cytometry/Cell sorting to show that defined lymphocytes can be rapidly purified by immunoaffinity chromatography starting directly from whole blood.
Human / Not Cited	Scientific reports (2018; 8:) **"Efficient immunoaffinity chromatography of lymphocytes directly from whole blood."** Author(s):Mohr F,Przibilla S,Leonhardt F,Stemberger C,Dreher S,Müller TR,Fräßle SP,Schmidt GP,Kiene ML,Stadler H,Busch DH PubMed Article URL:http://dx.doi.org/10.1038/s41598-018-34589-z
	17-0037 was used in Flow cytometry/Cell sorting to investigate the level of TNF receptors on various cells of the immune system and its association with gene polymorphism.
Human / Not Cited	Mediators of inflammation (2014; 2014:) **"Polymorphisms in the tumor necrosis factor receptor genes affect the expression levels of membrane-bound type I and type II receptors."** Author(s):Sennikov SV,Vasilyev FF,Lopatnikova JA,Shkaruba NS,Silkov AN PubMed Article URL:http://dx.doi.org/10.1155/2014/745909
	17-0037-42 was used in Flow cytometry/Cell sorting to suggest that 5-ALA/UV-A may have the potential for improving the efficacy of ECP.
Human / Not Cited	Lasers in surgery and medicine (2018; 50: 469) **"Comparison between 8-methoxypsoralen and 5-aminolevulinic acid in killing T cells of photopheresis patients ex vivo."** Author(s):Holien T,Gederaas OA,Darvekar SR,Christensen E,Peng Q PubMed Article URL:http://dx.doi.org/10.1002/lsm.22806
	17-0037 was used in Flow cytometry/Cell sorting to analyse different cell subpopulations for the number of membrane-bound IL-1R molecules.
Human / Not Cited	Cytotechnology (2013; 65: 795) **"Optimized flow cytometry protocol for analysis of surface expression of interleukin-1 receptor types I and II."** Author(s):Vasilyev FF,Lopatnikova JA,Sennikov SV PubMed Article URL:http://dx.doi.org/10.1007/s10616-013-9546-6
	17-0037 was used in Flow cytometry/Cell sorting to provide novel findings on influenza-specific TCR repertoires within human tissues, raises the question of how we can prevent the loss of optimal TCR signatures with aging, and provides important insights into the rational design of T cell-mediated vaccines and immunotherapies.
Human / Not Cited	Frontiers in immunology (2019; 9:) **"Single-Cell Approach to Influenza-Specific CD8⁺ T Cell Receptor Repertoires Across Different Age Groups, Tissues, and Following Influenza Virus Infection."** Author(s):Sant S,Grzelak L,Wang Z,Pizzolla A,Koutsakos M,Crowe J,Loudovaris T,Mannering SI,Westall GP,Wakim LM,Rossjohn J,Gras S,Richards M,Xu J,Thomas PG,Loh L,Nguyen THO,Kedzierska K PubMed Article URL:http://dx.doi.org/10.3389/fimmu.2018.01453
	17-0037-42 was used in Flow Cytometry to identify the first human T cell epitope against Ascaris spp. and represents an easily adaptable platform for characterization of complex antigens.
Nematode / 1:50	NPJ vaccines (2021; 5:) **"CD4⁺ T_h immunogenicity of the Ascaris spp. secreted products."** Author(s):Ebner F,Morrison E,Bertazzon M,Midha A,Hartmann S,Freund C,Álvaro-Benito M PubMed Article URL:http://dx.doi.org/10.1038/s41541-020-0171-z

1 Functional Assay References

Species / Dilution	Summary
	17-0037 was used in Functional assays to investigate the role of Tregs in leprosy in individuals under 15 years old.
Human / Not Cited	PloS one (2014; 8:) **"Increased frequency of CD4 and CD8 regulatory T cells in individuals under 15 years with multibacillary leprosy."** Author(s):Fernandes C,Gonçalves HS,Cabral PB,Pinto HC,Pinto MI,Câmara LM PubMed Article URL:http://dx.doi.org/10.1371/journal.pone.0079072

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