

# CD3 Monoclonal Antibody (eBioG4.18 (G4.18)), eBioscience™

Catalog Number 14-0030-85

Product data sheet

Details		Species Reactivity	
Size	500 µg	Species reactivity	Rat
Host/Isotope	Mouse / IgG3, kappa	Published species	Rat, Non-human primate, Not Applicable
Class	Monoclonal	Tested Applications	
Type	Antibody	Dilution *	
Clone	eBioG4.18 (G4.18)	Flow Cytometry (Flow)	0.5 µg/test
Conjugate	Unconjugated	Immunohistochemistry (IHC)	Assay-Dependent
Form	Liquid	Immunoprecipitation (IP)	Assay-Dependent
Concentration	0.5 mg/mL	Western Blot (WB)	Assay-Dependent
Purification	Affinity chromatography	Immunocytochemistry (ICC/IF)	1:100
Storage buffer	PBS, pH 7.2	Published Applications	
Contains	0.09% sodium azide	Immunohistochemistry (IHC)	See 1 publications below
Storage Conditions	4° C	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 eBioG4.18 monoclonal antibody recognizes the rat CD3 protein. CD3 is a critical component of the T-cell receptor (TCR) and is a marker of the T-cell lineage. CD3 is a complex of several subunits and, upon binding of a TCR ligand, participates in transduction of signals from the TCR to the nucleus which results in a variety of cellular responses including transcription of IL-2 and clonal expansion. *in vitro*, immobilized G4.18 monoclonal antibody has been demonstrated to activate T cells, while soluble G4.18 inhibited allogeneic mixed-lymphocyte proliferative responses and cell-mediated cytotoxicity to allogeneic target cells. *in vivo*, G4.18 was demonstrated to induce long-term specific tolerance to an organ allograft. Applications Reported: This eBioG4.18 (G4.18) antibody has been reported for use in flow cytometric analysis, immunoprecipitation, immunoblotting (WB), and immunohistochemical staining. Applications Tested: This eBioG4.18 (G4.18) antibody has been tested by flow cytometric analysis of rat splenocytes. This can be used at less than or equal to 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<sup>5</sup> to 10<sup>8</sup> cells/test. It is recommended that the antibody be carefully titrated for optimal performance in the assay of interest. Purity: Greater than 90%, as determined by SDS-PAGE. Aggregation: Less than 10%, as determined by HPLC. 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.

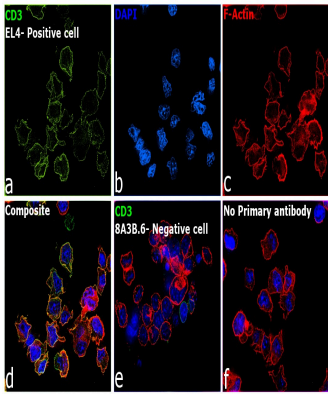
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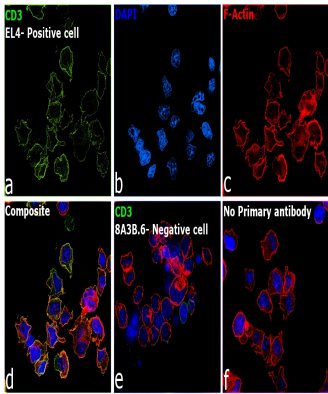
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Product Images For CD3 Monoclonal Antibody (eBioG4.18 (G4.18)), eBioscience™



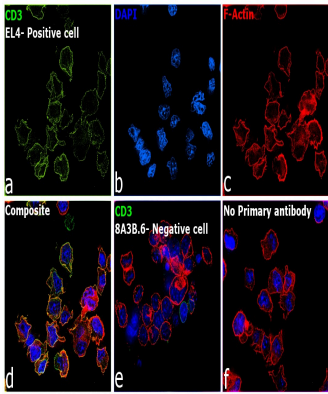
CD3 Antibody (14-0030-85) in ICC/IF

Immunofluorescence analysis of CD3 was performed using 70% confluent log phase EL4 cells. The cells were fixed with 4% paraformaldehyde for 10 minutes, permeabilized with 0.1% Triton™ X-100 for 15 minutes, and blocked with 2% BSA for 45 minutes at room temperature. The cells were labeled with CD3 Monoclonal Antibody (eBioG4.18 (G4.18)), eBioscience™ (Product # 14-0030-82, 14-0030-81) at 1:100 dilution in 0.1% BSA, incubated at 4 degree celsius overnight and then labeled with Goat anti-Rat IgG (H+L) Cross-Adsorbed Secondary Antibody, Alexa Fluor 488 (Product # A11006), (1:2000 dilution), for 45 minutes at room temperature (Panel a: Green). Nuclei (Panel b: Blue) were stained with ProLong™ Diamond Antifade Mountant with DAPI (Product # P36962). F-actin (Panel c: Red) was stained with Rhodamine Phalloidin (Product # R415, 1:300). Panel d represents the merged image showing membrane localization. Panel e represents 8A3B.6 showing no expression of CD3. Panel f represents control cells with no primary antibody to assess background. The images were captured at 60X magnification.



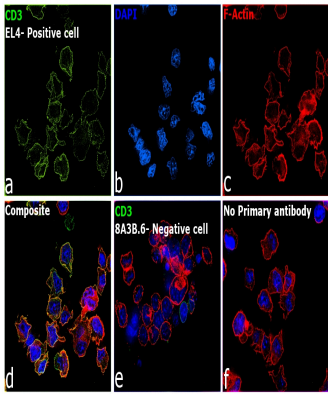
CD3 Antibody (14-0030-85)

Antibody specificity was demonstrated by detection of differential basal expression of the target across cell models owing to their inherent genetic constitution. Immunofluorescence analysis using Anti-CD3 Monoclonal Antibody (eBioG4.18 (G4.18)), eBioscience™ (Product # 14-0030-81), shows expression of CD3 in EL4 cells as compared to 8A3B.6 cells. {RE}



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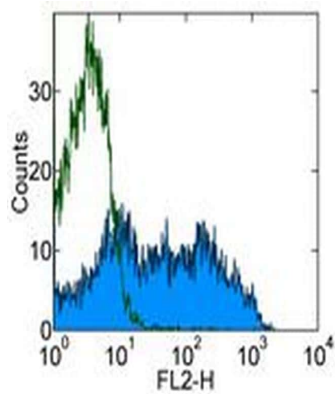
CD3 Antibody (14-0030-85) in ICC/IF

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**CD3 Antibody (14-0030-85) in Flow**

Staining of rat splenocytes with 0.25 µg of Mouse IgG3 Isotype Control Purified (Product # 14-4742-82) (open histogram) or 0.25 µg of Anti-Rat CD3 Purified (filled histogram) followed by Anti-Mouse IgG Biotin (Product # 13-4013-85) and Streptavidin PE (Product # 12-4317-87). Cells in the lymphocyte gate were used for analysis.

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PubMed References For CD3 Monoclonal Antibody (eBioG4.18 (G4.18)), eBioscience™

1 Immunohistochemistry References

Species / Dilution	Summary
Non-human primate / Not Cited	14-0030 was used in Immunohistochemistry to study the use of human induced pluripotent stem cell-derived oligodendrocyte precursor cells in a nonhuman primate model of progressive multiple sclerosis.
	Stem cells translational medicine ( 2016; 5: 1550) <b>"Survival and Functionality of Human Induced Pluripotent Stem Cell-Derived Oligodendrocytes in a Nonhuman Primate Model for Multiple Sclerosis."</b> Author(s):Thiruvalluvan A,Czepiel M,Kap YA,Mantingh-Otter I,Vainchtein I,Kuipers J,Bijlard M,Baron W,Giepmans B,Brück W,t Hart BA,Boddeke E,Copray S PubMed Article URL: <a href="http://dx.doi.org/10.5966/sctm.2016-0024">http://dx.doi.org/10.5966/sctm.2016-0024</a>

1 Functional Assay References

Species / Dilution	Summary
Rat / Not Cited	14-0030 was used in Functional assays to investigate the relevance of naïve Tregs in juvenile corneal transplantation.
	Molecular vision ( 2015; 20: 1749) <b>"Subconjunctivally applied naïve Tregs support corneal graft survival in baby rats."</b> Author(s):Hildebrand A,Jarsch C,Kern Y,Böhringer D,Reinhard T,Schwartzkopff J PubMed Article URL: <a href="http://www.ncbi.nlm.nih.gov/pubmed/25558177">http://www.ncbi.nlm.nih.gov/pubmed/25558177</a>

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