

CD3 Antibody

Mouse Monoclonal Antibody (Mab)
Catalog # AM2153b

Product Information

Primary Accession	P07766
Other Accession	P09693 , P20963
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Isotype	IgG2a
Clone Names	OKT3
Calculated MW	23147

Additional Information

Gene ID	916
Other Names	T-cell surface glycoprotein CD3 epsilon chain, T-cell surface antigen T3/Leu-4 epsilon chain, CD3e, CD3E, T3E
Target/Specificity	This CD3 antibody is generated from mouse immunized with human CD3.
Dilution	FC~1:50 E~Use at an assay dependent concentration.
Format	Purified monoclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein G column, followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	CD3 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	CD3E
Synonyms	T3E
Function	Part of the TCR-CD3 complex present on T-lymphocyte cell surface that plays an essential role in adaptive immune response (PubMed: 15294938 , PubMed: 15546002 , PubMed: 2470098 , PubMed: 40592325 , PubMed: 8490660). When antigen presenting cells (APCs) activate T-cell receptor (TCR), TCR-mediated signals are transmitted across the cell membrane by the CD3

chains CD3D, CD3E, CD3G and CD247/CD3Z (PubMed:[2470098](#), PubMed:[40592325](#)). All CD3 chains contain immunoreceptor tyrosine-based activation motifs (ITAMs) in their cytoplasmic domain (PubMed:[2470098](#), PubMed:[40592325](#)). Upon TCR engagement, these motifs become phosphorylated by Src family protein tyrosine kinases LCK and FYN, resulting in the activation of downstream signaling pathways (PubMed:[2470098](#), PubMed:[40592325](#)). CD3E ITAM phosphorylation creates docking sites for the protein kinase ZAP70 leading to ZAP70 phosphorylation and its conversion into a catalytically active enzyme (By similarity). In addition of this role of signal transduction in T-cell activation, CD3E plays an essential role in correct T-cell development (By similarity). Also participates in internalization and cell surface down-regulation of TCR-CD3 complexes via endocytosis sequences present in CD3E cytosolic region (PubMed:[10384095](#), PubMed:[26507128](#)). In addition to its role as a TCR coreceptor, it serves as a receptor for ITPRIPL1 (PubMed:[38614099](#)). Ligand recognition inhibits T-cell activation by promoting interaction with NCK1, which prevents CD3E-ZAP70 interaction and blocks the ERK- NFkB signaling cascade and calcium influx (PubMed:[12110186](#), PubMed:[38614099](#)).

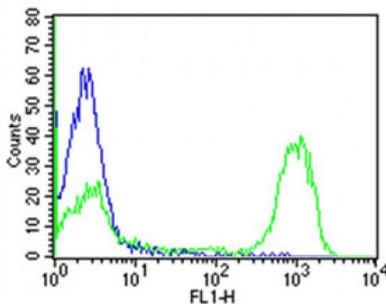
Cellular Location

Cell membrane; Single-pass type I membrane protein

Background

The CD3 complex mediates signal transduction.

Images



Overlay histogram showing human peripheral blood lymphocytes stained with CD3 antibody (green line). The cells were incubated in 2% bovine serum albumin to block non-specific protein-protein interactions followed by the antibody (1:50 dilution) for 60min at 37°C. The secondary antibody used was Goat Anti-Mouse IgG, DyLight® 488 Conjugated Highly Cross-Adsorbed (OJ192088) at 1/200 dilution for 40min at 37°C. Isotype control antibody (blue line) was mouse IgG2a (1 µg/1x10⁶ cells) used under the same conditions. Acquisition of >10,000 events was performed.

Citations

- [Human CIK Cells Loaded with Au Nanorods as a Theranostic Platform for Targeted Photoacoustic Imaging and Enhanced Immunotherapy and Photothermal Therapy.](#)

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