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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

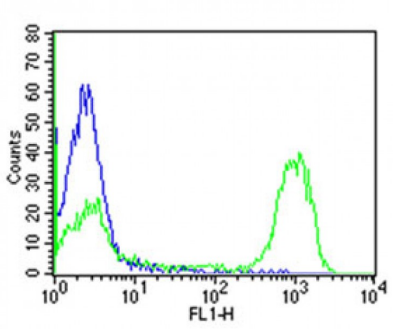
chains CD3D, CD3E, CD3G and CD247/CD3Z (PubMed:2470098, PubMed:40592325). All CD3 chains contain immunoreceptor tyrosine-based activation motifs (ITAMs) in their cytoplasmic domain (PubMed:2470098, PubMed:40592325). Upon TCR engagement, these motifs become phosphorylated by Src family protein tyrosine 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 huuman peripheral blood lymphocytes stained with CD3 antibody(green line). The cells were icubated in 2% bovine serum albumin to block non-specific protein-protein interactions followed by the antibody (1:50 dilution) for 60min at 37ºC. The secondary antibody used was Goat Anti-Mouse IgG, DyLight® 488 Conjugated Highly Cross-Adsorbed(OJ192088) at 1/200 dilution for 40min at 37ºC. Isotype control antibody (blue line) was mouse IgG2a (1 µg/1x10^6 cells) used under the same conditions. Acquisition of >10, 000 events was performed.