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CD3 (T-Cell Marker) Antibody - With BSA and Azide

Mouse Monoclonal Antibody [Clone RIV9]
Catalog # AH12599

Product Information

Application	IF, FC
Primary Accession	P07766
Other Accession	916, 3003
Reactivity	Human, Mouse, Rat
Host	Mouse
Clonality	Monoclonal
Isotype	Mouse / IgG3, kappa
Clone Names	RIV9
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
Application Note	IF~~1:50~200 FC~~1:10~50
Storage	Store at 2 to 8°C.Antibody is stable for 24 months.
Precautions	CD3 (T-Cell Marker) Antibody - With BSA and Azide 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

Reacts with five invariable CD3 chains (designated as and) with molecular weight ranging from 16-28kDa. It is found on all mature T-lymphocytes, NK, T-cells, and some thymocytes. CD3, also known as T3, is a member of the immunoglobulin superfamily that plays a role in antigen recognition, signal transduction, and T cell activation. It is expressed, typically at high levels, on peripheral T cells and majority of T cell neoplasms. Thymocytes express CD3 at different level on the cell surface in the course of differentiation and, in cortical thymus, CD3 is predominantly Intracytoplasmic. This MAb is particularly useful for induction of T cell activation in vitro and in vivo due to its unusual IgG3 isotype.

References

Leerling MF et al. Quality control of anti human CD3 and CD4 monoclonal antibodies. Dev Biol Stand 1990, 71:191-200 | Vaessen LM et al. RIV-9: a mouse IgG3 anti-human CD3 monoclonal antibody with strong antigen modulating and T cell eliminating properties. Transplant Proc 1989, 21:1026-7 | Jiskoot W et al. Purification and stabilisation of a poorly soluble mouse IgG3 monoclonal antibody. J Immunol Methods 1991, 138(2):181-189 | Ceuppens JL and Van Vaeck F. Human T cell activation induced by a monoclonal mouse IgG3 anti-CD3 antibody (RIV9) requires binding of the Fc part of the antibody to the monocytic 72-kDa high-affinity Fc receptor (FcRI). Cell Immunol 1989, 118(1):136-46 | Knapp W et al. (eds) Leukocyte Typing IV, p245 and 1059, Oxford University Press, Oxford, 1989 | Schlossman S et al. (eds) Leukocyte Typing V. Oxford University Press, Oxford, 1995. | Alberola-Ila J et al. Stimulation through the TCR/CD3 complex up-regulates the CD2 surface expression on human T lymphocytes. J Immunol 1991, 146(4):108

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