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

Mouse Monoclonal Antibody [Clone B-B12]
Catalog # AH12597

Product Information

Application	IF, FC
Primary Accession	P07766
Other Accession	916, 3003
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Isotype	Mouse / IgG1, kappa
Clone Names	B-B12
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. CD3 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. The CD3 complex is closely associated at the lymphocyte cell surface with T cell antigen receptor (TCR) and is involved in transducing antigen-recognition signals into cytoplasm of T cells and in regulating the cell surface expression of the TCR complex.

References

Kishimoto T. et al., eds. Leukocyte Typing VI, p44-48 and p1111, Garland Publishing, Inc, New York and London, 1997.Meuer SC et al. Evidence for the T3-associated 90K heterodimer as the T-cell antigen receptor. Nature 1983, 303(5920):808-810 | Reinherz et al., Cell 30, 715, (1982) | Borst et al., J. Biol. Chem. 258, 5135, (1983) | Van den Elsen et al., Nature 312, (1984) | Furley et al., Cell 46, 75, (1986) | Gold et al., Nature 321, 4, (1986) | Oettgen and Terhorst, Hum. Immunol. 18, 187, (1987) | Clevers et al., Ann. Rev. Immunol. 6, 629, (1988

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.