



Product Data Sheet

Mouse CD3 Antibodies and Conjugates

– **Cat#** AB-17510

Monoclonal Rat Anti-Mouse CD3 IgG

Size: 100 ug

The CD3 (cluster of differentiation 3) T-cell co-receptor is a protein complex and is composed of four distinct chains. In mammals, the complex contains a CD3 chain, a CD3 chain, and two CD3 chains. These chains associate with a molecule known as the T-cell receptor (TCR) and the -chain to generate an activation signal in T lymphocytes. The TCR, -chain, and CD3 molecules together comprise the TCR complex. The CD3, CD3, and CD3 chains are highly related cell-surface proteins of the immunoglobulin superfamily containing a single extracellular immunoglobulin domain. Containing aspartate residues, the transmembrane region of the CD3 chains is negatively charged, a characteristic that allows these chains to associate with the positively charged TCR chains.

The intracellular tails of the CD3 molecules contain a single conserved motif known as an immuno receptor tyrosine-based activation motif or ITAM for short, which is essential for the signaling capacity of the TCR. CD3 is initially expressed in the cytoplasm of pro-thymocytes, the stem cells from which T-cells arise in the thymus. The pro-thymocytes differentiate into common thymocytes, and then into medullary thymocytes, and it is at this latter stage that CD3 antigen begins to migrate to the cell membrane. The antigen is found bound to the membranes of all mature T-cells, and in virtually no other cell type, although it does appear to be present in small amounts in Purkinje cells.

This high specificity, combined with the presence of CD3 at all stages of T-cell development, makes it a useful immunohistochemical marker for T-cells in tissue sections. The antigen remains present in almost all T-cell lymphomas and leukaemias, and can therefore be used to distinguish them from superficially similar B-cell and myeloid neoplasms. Because CD3 is required for T-cell activation, drugs (often monoclonal antibodies) that target it are being investigated as immunosuppressant therapies (e.g., orelizumab) for type 1 diabetes and other autoimmune diseases.

ELISA: 0.1-2 ug/ml for ELISA.

Western: 1-2 ug/ml

For other applications use as needed.

IF: AB-17510 is used for cytotoxic and staining antibody (use 10 ug/10⁶ cells).

Optimal concn of antibody should be tested in actual application and adjusted if necessary.

References: Beaten D (2000) Ann. Rheum. Dis. 59, 945-953; Beverly PCL (1981) Eur. J. Immunol. 11, 329; Viglietta V (2004) J. Exp. Med. 199, 971-979

| Catalog# | ProdDescription |
|-------------|---|
| CD03-D1-100 | Anti-Human CD3 FITC/CD(16+56) PE |
| CD03-D2-100 | Anti-Human CD3 FITC/CD16 PE |
| CD03-D3-100 | Anti-Human CD3 FITC/CD19 PE |
| CD03-D4-100 | Anti-Human CD3 FITC/CD4 PE |
| CD03-D5-100 | Anti-Human CD3 FITC/CD8 PE |
| CD03F-100 | Anti-Human CD3-FITC conjugate |
| CD03P-100 | Anti-Human CD3-PE conjugate |
| CD03PC-100 | Anti-Human CD3-PE-Cy5-conjugate |
| CD03-T1-100 | Anti-Human CD3 FITC/CD19 PE/CD45 PE-Cy5 |
| CD03-T2-100 | Anti-Human CD3 FITC/CD4 PE/ CD45 PE-Cy5 |
| CD03-T3-100 | Anti-Human CD3 FITC/CD8 PE/CD45 PE-Cy5 |
| CD03UL-100 | Anti-Human CD3 IgG, unlabeled |

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| AB-13710 | Mouse Anti-Human CD3-FITC IgG |
| AB-13810 | Mouse Anti-Human CD3-biotinylated IgG |
| AB-14410 | Mouse Anti-Human CD03 IgG, Unlabeled |

Source of Antigen and Antibodies

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| Antigen | Purified Mouse LN T cells |
| Antibody host/type | Rat, monoclonal IgG (Cat # AB-17510) supplied in PBS, pH 7.2 and 0.1% azide |
| 2-ab | Goat Anti-mouse IgG-HRP conjugate Cat # 40320 (AP, biotin, FITC conjugates also available) |
| -ve control | Cat # 20005-1, Rat (non-immune) Serum IgG, purified, suitable for ELISA, Western, IHC as -ve control |

AB-17510-Rat-Anti-Mouse-CD3-IgG 150721