

Monoclonal Antibody to CD3 (activation epitope) - PE

Alternate names:	T-cell surface antigen T3/Leu-4, T-cell surface glycoprotein CD3, T3/Leu-4
Catalog No.:	AM12005PE-N
Quantity:	0.1 mg
Concentration:	0.1 mg/ml
Background:	CD3 complex is crucial in transducing antigen-recognition signals into the cytoplasm of T cells and in regulating the cell surface expression of the TCR complex. T cell activation through the antigen receptor (TCR) involves the cytoplasmic tails of the CD3 subunits CD3 gamma, CD3 delta, CD3 epsilon and CD3 zeta. These CD3 subunits are structurally related members of the immunoglobulins super family encoded by closely linked genes on human chromosome 11. The CD3 components have long cytoplasmic tails that associate with cytoplasmic signal transduction molecules. This association is mediated at least in part by a double tyrosine-based motif present in a single copy in the CD3 subunits. CD3 may play a role in TCR-induced growth arrest, cell survival and proliferation.
Uniprot ID:	P07766
NCBI:	NP_000724
GeneID:	916
Host / Isotype:	Mouse / IgG1
Recommended Isotype Controls:	SM10R (for use in human samples)
Clone:	APA1/1
Immunogen:	Purified human CD3 proteins isolated from thymus
Format:	State: Liquid purified Ig fraction Buffer System: Phosphate buffered saline (PBS) containing 15 mM sodium azide and 0.2% (w/v) high-grade protease free Bovine Serum Albumin (BSA) as a stabilizing agent Label: PE – Conjugated with R-Phycoerythrin under optimum conditions. The conjugate is purified by size-exclusion chromatography
Applications:	Flow Cytometry: 5 µg/ml (starting point). Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.
Specificity:	The antibody recognizes an activation-dependent intracellular epitope of CD3 epsilon. Exposure of the epitope precedes CD3 phosphorylation and recruitment and activation of ZAP70, which initiates the signaling cascade produced by T-cell activation. APA1/1 provides the earliest known marker for TCR-mediated T cell activation.
Species Reactivity:	Tested: Human, Mouse

For research and in vitro use only. Not for diagnostic or therapeutic work.
Material Safety Datasheets are available at www.acris-antibodies.com or on request.

Antibody Hotline - Technical Questions - Antibody Location Service
Free Call: 0800-2274746 (Germany only) - www.acris-antibodies.com

Storage: Store the antibody at 2 - 8 °C. DO NOT FREEZE! This product is photosensitive and should be protected from light.
Shelf life: one year from despatch.

General Readings:

1. Alarcón B, Ley SC, Sánchez-Madrid F, Blumberg RS, Ju ST, Fresno M, et al. The CD3-gamma and CD3-delta subunits of the T cell antigen receptor can be expressed within distinct functional TCR/CD3 complexes. *EMBO J.* 1991 Apr;10(4):903-12. PubMed PMID: 1826255.
2. Wong AP, Dutly AE, Sacher A, Lee H, Hwang DM, Liu M, et al. Targeted cell replacement with bone marrow cells for airway epithelial regeneration. *Am J Physiol Lung Cell Mol Physiol.* 2007 Sep;293(3):L740-52. Epub 2007 Jul 6. PubMed PMID: 17616650.
3. Torres PS, Alcover A, Zapata DA, Arnaud J, Pacheco A, Martín-Fernández JM, et al. TCR dynamics in human mature T lymphocytes lacking CD3 gamma. *J Immunol.* 2003 Jun 15;170(12):5947-55. PubMed PMID: 12794121.
4. Rieux-Laucat F, Hivroz C, Lim A, Mateo V, Pellier I, Selz F, et al. Inherited and somatic CD3zeta mutations in a patient with T-cell deficiency. *N Engl J Med.* 2006 May 4;354(18):1913-21. PubMed PMID: 16672702.
5. Taylor P, Tsai S, Shameli A, Serra P, Wang J, Robbins S, et al. The proline-rich sequence of CD3epsilon as an amplifier of low-avidity TCR signaling. *J Immunol.* 2008 Jul 1;181(1):243-55. PubMed PMID: 18566390.
6. Delgado P, Fernández E, Dave V, Kappes D, Alarcón B. CD3delta couples T-cell receptor signalling to ERK activation and thymocyte positive selection. *Nature.* 2000 Jul 27;406(6794):426-30. PubMed PMID: 10935641.
7. Risueño RM, Gil D, Fernández E, Sánchez-Madrid F, Alarcón B. Ligand-induced conformational change in the T-cell receptor associated with productive immune synapses. *Blood.* 2005 Jul 15;106(2):601-8. Epub 2005 Mar 24. PubMed PMID: 15790785.
8. Gil D, Schrum AG, Alarcón B, Palmer E. T cell receptor engagement by peptide-MHC ligands induces a conformational change in the CD3 complex of thymocytes. *J Exp Med.* 2005 Feb 21;201(4):517-22. PubMed PMID: 15728235.
9. Risueño RM, van Santen HM, Alarcón B. A conformational change senses the strength of T cell receptor-ligand interaction during thymic selection. *Proc Natl Acad Sci U S A.* 2006 Jun 20;103(25):9625-30. Epub 2006 Jun 9. PubMed PMID: 16766661.

For research and in vitro use only. Not for diagnostic or therapeutic work.

Material Safety Datasheets are available at www.acris-antibodies.com or on request.

Antibody Hotline - Technical Questions - Antibody Location Service
Free Call: 0800-2274746 (Germany only) - www.acris-antibodies.com