

TECHNICAL DATA SHEET

FITC Anti-Human CD3 (OKT3)

Catalog Number: 35-0037

PRODUCT INFORMATION

Contents: FITC Anti-Human CD3 (OKT3)

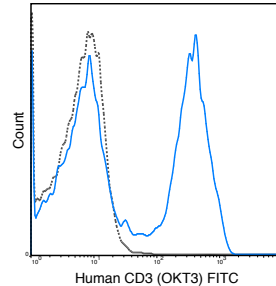
Isotype: Mouse IgG2a, kappa

Concentration: 5 uL (1 ug)/test

Clone: OKT3

Reactivity: Human

Formulation: 10 mM NaH₂PO₄, 150 mM NaCl, 0.09% NaN₃,
0.1% gelatin, pH7.2



Human peripheral blood lymphocytes were stained with 5 uL (1 ug) FITC Anti-Human CD3 (35-0037) (solid line) or 1 ug FITC Mouse IgG2a isotype control (dashed line).

DESCRIPTION

The OKT3 antibody is specific for human CD3ε, also known as CD3 epsilon, a 20 kDa subunit of the T cell receptor complex along with CD3 gamma and CD3 delta. These integral membrane protein chains assemble with additional chains of the T cell receptor (TCR), as well as CD3 zeta chain, to form the T cell receptor – CD3 complex. Together with co-receptors CD4 or CD8, the complex serves to recognize antigens bound to MHC molecules on antigen-presenting cells. These interactions promote T cell receptor signaling (T cell activation), inducing a number of cellular responses including proliferation, differentiation, production of cytokines or activation-induced cell death. CD3 is differentially expressed during thymocyte-to-T cell development and on all mature T cells. The OKT3 antibody is a widely used phenotypic marker for human T cells. In addition, as the CD3ε subunit of the TCR complex contains intracellular signaling domains, binding of OKT3 antibody to CD3ε can induce cell activation. A recent publication of the crystal structure of a CD3ε-mitogenic antibody complex provides further insight as to the action of commonly used agonist antibodies, as well as specific epitope-binding data for the widely used human CD3 antibodies OKT3 and UCHT1 (Fernandes, R.A. et al. 2012. *J. Biol. Chem.* 287: 13324-13335). OKT3 has also been shown to be cross-reactive with Chimpanzee CD3 and has been used for in vitro activation of T cells in this species.

PREPARATION & STORAGE

This monoclonal antibody was purified from tissue culture supernatant via affinity chromatography. The purified antibody was conjugated under optimal conditions, with unreacted dye removed from the preparation. It is recommended to store the product undiluted at 4°C, and protected from prolonged exposure to light. Do not freeze.

APPLICATION NOTES

This antibody preparation has been quality-tested for flow cytometry using mouse spleen cells, or an appropriate cell type (where indicated). The amount of antibody required for optimal staining of a cell sample should be determined empirically in your system.

REFERENCES

Haga-Friedman A, Horovitz-Fried M, and Cohen CJ. Jun 2012. *J. Immunol.* 188:5538-5546. (in vitro activation). Bikker A, Moret FM, Kruijze AA, Bijlsma JWJ, Lafeber FPJG, and van Roon JAG. Jun 2012. *Rheumatology* 51:996-1005 (in vitro activation) Bagnara D, Kaufman MS, Calissano C, et al. 2011. *Blood.* 117: 5463-5472. (in vivo depletion). Nguyen V, Cao L, Lin JT, Hung N, Ritz A, Yu K, Jianu R, Ulin SP, Raphael BJ, Laidlaw DH, Brossay L, and Salomon AR. 2009. *Mol. Cell. Proteomics.* 8: 2418-2431. (in vitro activation). Bibollet-Ruche F, McKinney BA, Duverger A, Wagner FH, Ansari AA, and Kutsch O. 2008. *J. Virol.* 82(20): 10271-10278. (in vitro activation – Chimpanzee). Roura-Mir C, Catalfamo M, Cheng TY, Marqusee E, Besra GS, Jaraquemada D, and Moody DB. 2005. *J. Immunol.* 174:3773-3780 (Immunohistochemistry – Acetone fixed frozen sections). Sato Y, Mukai K, Watanabe S, Goto M, and Shimamoto Y. 1986. *Am. J. Pathol.* 125(3):431-435. (Immunohistochemistry – Paraffin embedded sections).

NOTE: Please choose the appropriate format for each application. Citations are provided as a convenience to you; please consult Materials and Methods sections for additional details about the use of any product in these publications.

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