

Store at  
4°C

# CD3 (UCHT1) Mouse mAb (redFluor™ 710 Conjugate)

Cell Signaling  
TECHNOLOGY®

#44330

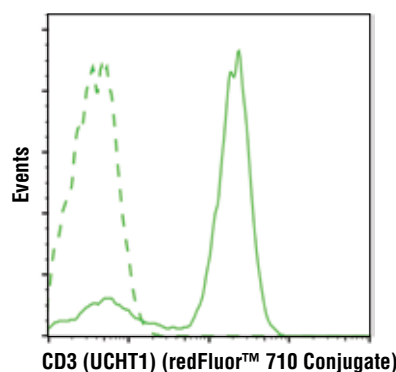
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orders@cellsignal.comEntrez-Gene ID #916  
UniProt ID #P07766

New 11/17

**For Research Use Only. Not For Use In Diagnostic Procedures.****Applications**  
F  
Endogenous**Species Cross-Reactivity**  
H**Isotype**  
Mouse IgG1

**Description:** This Cell Signaling Technology antibody is conjugated to redFluor™ 710 and tested in-house for direct flow cytometric analysis in human cells.

**Background:** When T cells encounter antigens via the T cell receptor (TCR), information about the quantity and quality of antigens is relayed to the intracellular signal transduction machinery (1). This activation process depends mainly on CD3 (Cluster of Differentiation 3), a multiunit protein complex that directly associates with the TCR. CD3 is composed of four polypeptides:  $\zeta$ ,  $\gamma$ ,  $\epsilon$  and  $\delta$ . Each of these polypeptides contains at least one immunoreceptor tyrosine-based activation motif (ITAM) (2). Engagement of TCR complex with foreign antigens induces tyrosine phosphorylation in the ITAM motifs and phosphorylated ITAMs function as docking sites for signaling molecules such as ZAP-70 and p85 subunit of PI-3 kinase (3,4). TCR ligation also induces a conformational change in CD3 $\epsilon$ , such that a proline region is exposed and then associates with the adaptor protein Nck (5). The UCHT1 antibody is widely used as a marker for phenotyping human T cells (6-8).



Flow cytometric analysis of live human peripheral blood mononuclear cells using CD3 (UCHT1) Mouse mAb (redFluor™ 710 Conjugate) (solid line) compared to concentration-matched Mouse (MOPC-21) mAb IgG1 Isotype Control (redFluor™ 710 Conjugate) #35935 (dashed line).

**Background References:**

- (1) Kuhns, M.S. et al. (2006) *Immunity* 24, 133-139.
- (2) Pitcher, L.A. and van Oers, N.S. (2003) *Trends Immunol.* 24, 554-560.
- (3) Osman, N. et al. (1996) *Eur. J. Immunol.* 26, 1063-1068.
- (4) Hatada, M.H. et al. (1995) *Nature* 377, 32-38.
- (5) Gil, D. et al. (2002) *Cell* 109, 901-912.
- (6) Londei, M. et al. (1989) *Proc Natl Acad Sci USA* 86, 8502-6.
- (7) Sallusto, F. et al. (1999) *Nature* 401, 708-12.
- (8) Walker, M.R. et al. (2003) *J Clin Invest* 112, 1437-43.

**Specificity/Sensitivity:** CD3 (UCHT1) Mouse mAb (redFluor™ 710 Conjugate) recognizes endogenous levels of total CD3 $\epsilon$ , CD3 $\gamma$ , and CD3 $\delta$  proteins. This antibody detects epitopes within both the extracellular and intracellular domains of CD3 $\epsilon$ .

**Source/Purification:** 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.

**Storage:** Supplied in 10 mM NaH<sub>2</sub>PO<sub>4</sub>, 150 mM NaCl, 0.09% Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>, 0.1% gelatin, pH7.2. This product is stable for 6 months when stored at 4°C. Do not aliquot the antibody. Protect from light. Do not freeze.

**Recommended Antibody Dilutions:**

Flow Cytometry

1:20

For product specific protocols and a complete listing of recommended companion products please see the product web page at [www.cellsignal.com](http://www.cellsignal.com)

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Applications: W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide Species Cross-Reactivity: H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—Horse All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.