

**Biotin anti-mouse CD28**

**Catalog # / Size:** 1110515 / 50 µg  
1110520 / 500 µg

**Clone:** 37.51

**Isotype:** Hamster IgG

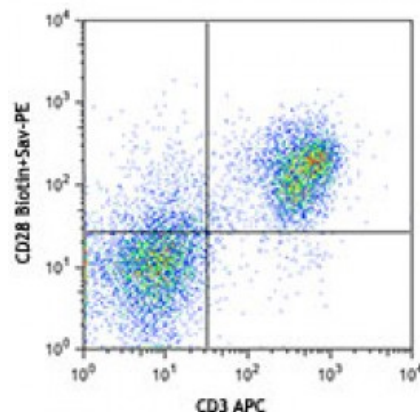
**Immunogen:** C57BL/6 mouse T-cell lymphoma EL-4

**Reactivity:** Mouse

**Preparation:** The antibody was purified by affinity chromatography, and conjugated with biotin under optimal conditions. The solution is free of unconjugated biotin.

**Formulation:** Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide.

**Concentration:** 0.5



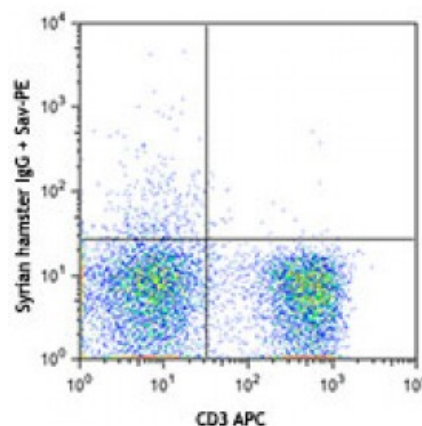
C57BL/6 mouse splenocytes were stained with CD3 APC and Biotinylated CD28 (clone 37.51) (top) or Syrian Hamster IgG isotype control (bottom), followed by Sav-PE (bottom).

**Applications:**

**Applications:** Flow Cytometry

**Recommended Usage:** Each lot of this antibody is quality control tested by immunofluorescent staining with flow cytometric analysis. For flow cytometric staining, the suggested use of this reagent is ≤1.0 microg per million cells in 100 microL volume. It is recommended that the reagent be titrated for optimal performance for each application.

**Application Notes:** Additional reported applications (for the relevant formats) include: immunoprecipitation<sup>1</sup>, *in vitro* costimulation of T and NK cells<sup>1</sup>, *in vitro* blocking of allogeneic mixed leukocyte response and inhibition of MHC-unrestricted CTL cytotoxicity<sup>3,4</sup>, *in vitro* induction of thymocyte differentiation<sup>2,5-9,11</sup>, and immunohistochemical staining of acetone-fixed frozen sections. The LEAF™ purified antibody (Endotoxin <0.1 EU/µg, Azide-Free, 0.2 µm filtered) is recommended for functional assays (Cat. No. 102112). For *in vivo* studies or highly sensitive assays, we recommend Ultra-LEAF™ purified antibody (Cat. No. 102116) with a lower endotoxin limit than standard LEAF™ purified antibodies (Endotoxin <0.01 EU/microg).



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- Application**  
**References:**
1. Gross JA, *et al.* 1992. *J. Immunol.* 149:380. (IP, Costim)
  2. Cibotti R, *et al.* 1997. *Immunity* 6:245. (Costim)
  3. Masten BJ, *et al.* 1997. *Am. J. Respir. Cell Mol. Biol.* 16:335. (Block)
  4. Nishio M, *et al.* 1996. *J. Immunol.* 157:4347. (Block)
  5. Zhang N and He Y-W, 2005. *J. Exp. Med.* 202:395. (Costim)
  6. Terrazas LI, *et al.* 2005. *Intl. J. Parasitology.* 35:1349. (Costim)
  7. Perchonock CE, *et al.* 2006. *Mol Cell Biol.* 26(16):6005. (Costim)
  8. Wang W, *et al.* 2007. *J. Immunol.* 178:4885. (Costim)
  9. Pua HH, *et al.* 2007. *J. Exp. Med.* 204:25. (Costim)
  10. Perchonock CE, *et al.* 2007. *J. Immunol.* 179:1768.
  11. Barbi J, *et al.* 2007. *Blood* 110:2215.
  12. Milpied P, *et al.* 2011. *Blood* 118:2993. [PubMed](#)
  13. Cunningham NR, *et al.* 2011. *Int Immunol.* 23:693. [PubMed](#)
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**Description:** CD28 is a 44 kD glycoprotein, also known as Tp44 or T44. It is a member of the Ig superfamily, expressed on thymocytes, most peripheral T cells, and NK cells. In association with CD80 (B7-1) and CD86 (B7-2), CD28 acts as the second signal for T and NK cell activation and proliferation. The 37.51 antibody has been reported to augment *in vitro* T cell proliferation and cytokine production, and promote CTL development.

- Antigen**  
**References:**
1. Barclay AN, *et al.* 1997. The Leukocyte Antigen FactsBook Academic Press.
  2. Lenschow DJ, *et al.* 1996. *Annu. Rev. Immunol.* 14:233.
  3. Gross JA, *et al.* 1992. *J. Immunol.* 149:380.