

# Product Data Sheet

## Pacific Blue™ anti-human CD28

**Catalog # / Size:** 302927 / 25 tests  
302928 / 100 tests

**Clone:** CD28.2

**Isotype:** Mouse IgG1,  $\kappa$

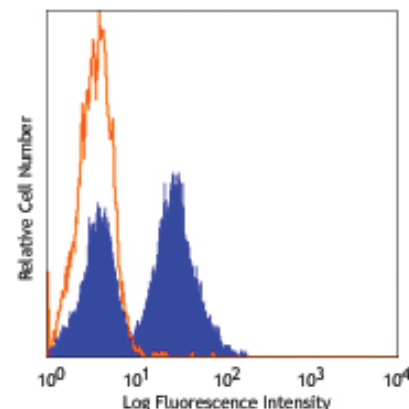
**Workshop Number:** V-CD28.05

**Reactivity:** Human, **Cross-Reactivity:** Chimpanzee, Baboon, Cynomolgus, Rhesus, Pigtailed Macaque, Squirrel Monkey, Capuchin Monkey, Sooty Mangabey

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

**Formulation:** Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide and 0.2% (w/v) BSA (origin USA).

**Storage:** The antibody solution should be stored undiluted at 4°C and protected from prolonged exposure to light. **Do not freeze.**



Human peripheral blood lymphocytes stained with CD28.2 Pacific Blue™

## Applications:

**Applications:** FC - Quality tested

**Recommended Usage:** Each lot of this antibody is quality control tested by immunofluorescent staining with flow cytometric analysis. For immunofluorescent staining, the suggested use of this reagent is 5  $\mu$ l per million cells or 5  $\mu$ l per 100  $\mu$ l of whole blood. It is recommended that the reagent be titrated for optimal performance for each application.

\* Pacific Blue™ has a maximum emission of 455 nm when it is excited at 405 nm. Prior to using Pacific Blue™ conjugate for flow cytometric analysis, please verify your flow cytometer's capability of exciting and detecting the fluorochrome.

\*\* Pacific Blue™ is a registered trademark of Molecular Probes, Inc. Pacific Blue™ dye antibody conjugates are sold under license from Molecular Probes, Inc. for research use only, except for use in combination with microarrays and high content screening, and are covered by pending and issued patents.

**Application Notes:** Additional reported applications (for the relevant formats) include: immunoprecipitation, immunohistochemical staining of acetone-fixed frozen tissue sections<sup>4</sup>, and *in vitro* T cell costimulation<sup>5-8</sup>. The CD28.2 antibody co-stimulates T cell proliferation and cytokine production in the presence of suboptimal amounts of anti-CD3 antibody. The LEAF™ purified antibody (Endotoxin <0.1 EU/ $\mu$ g, Azide-Free, 0.2  $\mu$ m filtered) is recommended for functional assays (Cat. No. 302914). For highly sensitive assays, we recommend Ultra-LEAF™ purified antibody (Cat. No. 302934) with a lower endotoxin limit than standard LEAF™ purified antibodies (Endotoxin <0.01 EU/ $\mu$ g).

**Application References:** 1. Schlossman S, *et al.* Eds. 1995. Leucocyte Typing V. Oxford University Press. New York.

2. Nunes J, *et al.* 1993. *Biochem. J.* 293:835.
3. Calea-Lauri J, *et al.* 1999. *J. Immunol.* 163:62.
4. Tazi A, *et al.* 1999. *J. Immunol.* 163:3511. (IHC)
5. Marti F, *et al.* 2001. *J. Immunol.* 166:197. (Costim)
6. Jeong SH, *et al.* 2004. *J. Virol.* 78:6995. (Costim)
7. Rivollier A, *et al.* 2004. *Blood* 104:4029. (Costim)
8. Scharschmidt E, *et al.* 2004. *Mol. Cell Biol.* 24:3860. (Costim)
9. Sheng W, *et al.* 2007. *Elsevier* 580:6819. PubMed
10. Mitsuhashi M. 2007. *Clin Chem.* 53:148. PubMed
11. Ye Z, *et al.* 2008. *Infect. Immun.* 76:2541. PubMed
12. Magatti M, *et al.* 2008. *Stem Cells* 26:182. (FA) PubMed
13. Yoshino N, *et al.* 2000. *Exp. Anim. (Tokyo)* 49:97. (FC)
14. Rout N, *et al.* 2010. *PLoS One* 5:e9787. (FC)
15. Leonard JA, *et al.* 2011. *J. Virol.* 85:6867. PubMed

**Description:** CD28 is a 44 kD disulfide-linked homodimeric type I glycoprotein. It is a member of the immunoglobulin superfamily and is also known as T44 or Tp44. CD28 is expressed on most T lineage cells, NK cell subsets, and plasma cells. CD28 binds both CD80 and CD86 using a highly conserved motif MYPPY in the CDR3-like loop. CD28 is considered a major co-stimulatory molecule, inducing T lymphocyte activation and IL-2 synthesis, and preventing cell death. *In vitro* studies indicate that ligation of CD28 on T cells by CD80 and CD86 on antigen presenting cells provides a costimulatory signal required for T cell activation and proliferation.

**Antigen References:** 1. Schlossman S, *et al.* Eds. 1995. Leucocyte Typing V. Oxford University Press. New York.  
2. June CH, *et al.* 1994. *Immunol. Today* 15:321.  
3. Linskey PS, *et al.* 1993. *Annu. Rev. Immunol.* 11:191.



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**Related Products:Product**

Pacific Blue™ Mouse IgG1, κ Isotype Ctrl  
Cell Staining Buffer  
RBC Lysis Buffer (10X)  
Human TruStain FcX™ (Fc Receptor Blocking Solution)

**Clone**

MOPC-21

**Application**

FC, ICFC  
FC, ICC, ICFC  
FC, ICFC  
FC, ICC, ICFC



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