

## Brilliant Violet 510™ anti-human CD28

**Catalog # / Size:** 2114675 / 25 tests  
2114680 / 100 tests

**Clone:** CD28.2

**Isotype:** Mouse IgG1, κ

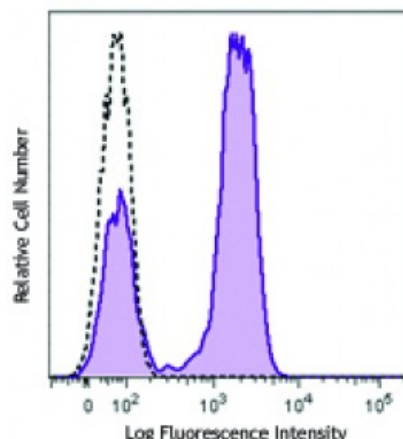
**Reactivity:** Human

**Preparation:** The antibody was purified by affinity chromatography and conjugated with Brilliant Violet 510™ under optimal conditions. The solution is free of unconjugated Brilliant Violet 510™ and unconjugated antibody.

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

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

**Concentration:** Lot-specific



Human peripheral blood lymphocytes were stained with CD28 (clone CD28.2) Brilliant Violet 510™ (filled histogram) and mouse IgG1, κ Brilliant Violet 510™ isotype control (open histogram).

## 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 ≤5 microL per million cells or 5 microL per 100 microL of whole blood. It is recommended that the reagent be titrated for optimal performance for each application.

Brilliant Violet 510™ excites at 405 nm and emits at 510 nm. The bandpass filter 510/50 nm is recommended for detection, although filter optimization may be required depending on other fluorophores used. **Be sure to verify that your cytometer configuration and software setup are appropriate for detecting this channel.** Refer to your instrument manual or manufacturer for support. Brilliant Violet 510™ is a trademark of Sirigen Group Ltd.

This product is subject to proprietary rights of Sirigen Inc. and is made and sold under license from Sirigen Inc. The purchase of this product conveys to the buyer a non-transferable right to use the purchased product for research purposes only. This product may not be resold or incorporated in any manner into another product for resale. Any use for therapeutics or diagnostics is strictly prohibited. This product is covered by U.S. Patent(s), pending patent applications and foreign equivalents.

**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>. This clone was tested in-house and does not work on formalin fixed paraffin-embedded (FFPE) tissue. 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/μg, Azide-Free, 0.2 μm 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/microg).

- Application** 1. Schlossman S, *et al.* Eds. 1995. Leucocyte Typing V. Oxford University Press.  
**References:** 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.* 2008. *Exp. Anim. (Tokyo)* 49:97. (FC)
  14. Berg M, *et al.* 2008. *J Leukoc Biol.* 83:853. (IP) [PubMed](#)
  15. Rout N, *et al.* 2010. *PLoS One* 5:e9787. (FC)
  16. Leonard JA, *et al.* 2011. *J. Virol.* 85:6867. [PubMed](#)
  17. Nomura T, *et al.* 2012. *J. Virol.* 86:6481. [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** 1. Schlossman S, *et al.* Eds. 1995. Leucocyte Typing V. Oxford University Press.  
**References:** New York.
2. June CH, *et al.* 1994. *Immunol. Today* 15:321.
  3. Linskey PS, *et al.* 1993. *Annu. Rev. Immunol.* 11:191.