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Product Data Sheet

Brilliant Violet 510™ anti-human CD28

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

Clone: CD28.2

Isotype: Mouse IgG1, κ

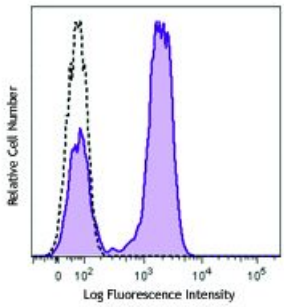
Reactivity: Human, Non-human primate, Other

Preparation: The antibody was purified by affinity chromatography and conjugated with Brilliant Violet 510™ under optimal conditions.

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

Workshop Number: V-CD28.05

Concentration: Lot-specific



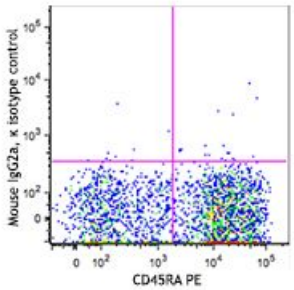
Human peripheral blood lymphocytes were stained with CD28 (clone CD28.2) Brilliant Violet 510™ (filled histogram) and mouse IgG1, κBrilliant Violet 510™ isotype control (open histogram).

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 µl per million cells or 5 µl per 100 µl 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.



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Application Notes: Additional reported applications (for the relevant formats) include: immunoprecipitation, immunohistochemical staining of acetone-fixed frozen tissue sections4, and *in vitro* T cell costimulation[5-8]. 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 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
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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)
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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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