

**Brilliant Violet 421™ anti-human CD137 (4-1BB)**

**Catalog # / Size:** 2149095 / 25 tests  
2149100 / 100 tests

**Clone:** 4B4-1

**Isotype:** Mouse IgG1, κ

**Immunogen:** Ectodomain of recombinant human 4-1BB fusion protein

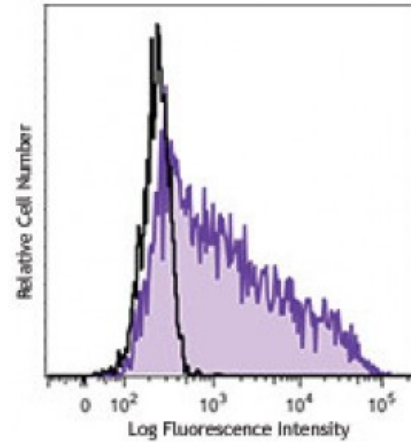
**Reactivity:** Human

**Preparation:** The antibody was purified by affinity chromatography and conjugated with Brilliant Violet 421™ under optimal conditions. The solution is free of unconjugated Brilliant Violet 421™ and unconjugated antibody.

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

**Workshop Number:** VI C-7

**Concentration:** Lot-specific



3-day PHA-stimulated human peripheral blood lymphocytes were stained with CD137 (clone 4B4-1) Brilliant Violet 421™ (filled histogram) or mouse IgG1, κ Brilliant Violet 421™ 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 421™ excites at 405 nm and emits at 421 nm. The standard bandpass filter 450/50 nm is recommended for detection. Brilliant Violet 421™ is a trademark of Sirigen Group Ltd.

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**Application Notes:** Additional reported applications (for the relevant formats) include: immunoprecipitation<sup>1,4</sup>, inhibition of cytokine production<sup>2,3</sup>, and ELISA. For most successful immunofluorescent staining results, it may be important to maximize signal over background by using a relatively bright fluorochrome-antibody conjugate (Cat. No. 309804) or by using a high sensitivity, three-layer staining technique (e.g., including a biotinylated anti-mouse IgG second step (Cat. No. 405303), followed by Streptavidin-PE (Cat. No. 405204)).

**Application References:**

1. Garni-Wagner B, *et al.* 1996. *Cell. Immunol.* 169:91. (IP)
2. Salih HR, *et al.* 2000. *J. Immunol.* 165:2903. (FA)
3. Kienzle G, *et al.* 2000. *Int. Immunol.* 12:73. (FA)

**Description:** CDw137 is a 39 kD transmembrane protein also known as 4-1BB. It is expressed on activated T cells. CDw137 is a type I membrane protein and a member of the tumor necrosis factor receptor superfamily. CDw137 appears to be important for T cell proliferation and survival, and induces monocyte activation through its interaction with 4-1BB ligand.

**Antigen**  
**References:**

1. Gruss H, *et al.* 1995. *Blood* 85:3378.
2. Sica G, *et al.* 2000. *Adv. Exp. Med. Biol.* 465:355.
3. Alderson M, *et al.* 1994. *Eur. J. Immunol.* 24:2219.
4. Schwarz H, *et al.* 199