

## PE anti-human 4-1BB Ligand (CD137L)

**Catalog # / Size:** 311503 / 25 tests  
311504 / 100 tests

**Clone:** 5F4

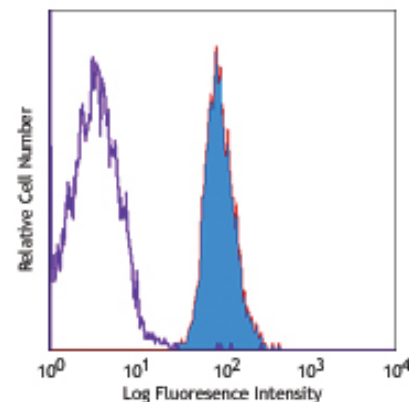
**Isotype:** Mouse IgG1,  $\kappa$

**Reactivity:** Human

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

**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 T lymphoma cell line HUT-78  
stained with 5F4 PE

## Applications:

**Applications:** FC - Quality tested

**Recommended Usage:** Each lot of this antibody is quality control tested by immunofluorescent staining with flow cytometric analysis. **Test size products are transitioning from 20  $\mu$ l to 5  $\mu$ l per test.** Please check your vial or your CoA to find the suggested use of this reagent per million cells in 100  $\mu$ l staining volume or per 100  $\mu$ l of whole blood. It is recommended that the reagent be titrated for optimal performance for each application. Read more at [www.biolegend.com/testsize](http://www.biolegend.com/testsize) regarding the test size change.

**Application Notes:** 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. 311504) 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 SAV-PE (Cat. No. 405204)).

**Description:** 4-1BB ligand, also known as CDw137L, is a 97 kD member of the TNF superfamily mainly expressed on APCs, activated B and T cells. It has been reported to be important in T cell proliferation and cytokine production through interaction with 4-1BB receptor. 4-1BB ligand appears to be able to act as a costimulatory molecule without the engagement of other costimulatory molecules such as CD28.

**Antigen References:**

1. Akiba H, *et al.* 2000. *J. Exp. Med.* 191:375.
2. Pollak KE, *et al.* 1995. *Eur. J. Immunol.* 25:488.
3. DeBenedette MA, *et al.* 1997. *J. Immunol.* 158:551.
4. Goodwin RG, *et al.* 1993. *Eur. J. Immunol.* 23:2631.

### Related Products:

Product	Clone	Application
PE Mouse IgG1, $\kappa$ Isotype Ctrl	MOPC-21	FC, ICFC
Cell Staining Buffer		FC, ICC, ICFC
RBC Lysis Buffer (10X)		FC, ICFC
PE anti-human CD137 (4-1BB)	4B4-1	FC
Human TruStain FcX™ (Fc Receptor Blocking Solution)		FC, ICC, ICFC



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