CD127 antibodies, human

For research use only

One test corresponds to labeling of up to 10^7 cells in a total volume of 100 µL.

Product	Content	Order no.
CD127-FITC	for 30 tests	130-098-093
CD127-FITC	for 100 tests	130-094-888
CD127-PE	for 30 tests	130-098-094
CD127-PE	for 100 tests	130-094-889
CD127-APC	for 30 tests	130-098-097
CD127-APC	for 100 tests	130-094-890
CD127-PE-Vio615	for 30 tests	130-107-513
CD127-PE-Vio615	for 100 tests	130-107-460
CD127-PE-Vio770	for 30 tests	130-099-761
CD127-PE-Vio770	for 100 tests	130-099-719
CD127-Biotin	for 30 tests	130-098-091
CD127-Biotin	for 100 tests	130-094-891
CD127 pure	100 µg in 1 mL	130-094-942

Warnings

Reagents contain sodium azide. Under acidic conditions sodium azide yields hydrazoic acid, which is extremely toxic. Azide compounds should be diluted with running water before discarding. These precautions are recommended to avoid deposits in plumbing where explosive conditions may develop.

Technical data and background information

Antigen	CD127
Clone	MB15-18C9
Isotype	mouse IgG2aκ
Isotype control	Mouse IgG2a – isotype control antibodies
Alternative names of antigen	IL-7R, IL-7Rα, CDW127, ILRA
Molecular mass of antigen [kDa]	49
Cross-reactivity	rhesus monkey (*Macaca mulatta*), cynomolgus monkey (*Macaca fascicularis*)
Distribution of antigen	B cells, bone marrow, liver, lymphocytes, monocytes, T cells, thymocytes
Product format	Antibodies are supplied in buffer containing stabilizer and 0.05% sodium azide.
Fixation	Cells should be stained prior to fixation, if formaldehyde is used as a fixative.
Storage	Store protected from light at 2–8 °C. Do not freeze.

Clone MB15-18C9 recognizes the CD127 antigen, which is the α-chain of the IL-7 receptor, a type I membrane glycoprotein. Signaling of IL-7 through the IL-7R requires both IL-7Rα and the common cytokine gamma chain (γc).[1] CD127 can be identified on immature B cells through the early pre-B stage, on thymocytes, and on most mature T cells with transient down-regulation upon activation.[2,3] On regulatory T cells CD127 is absent[4] and its expression is inversely correlated with FoxP3 expression and suppressive function.[5,6] CD127 is also used by thymic stromal derived lymphopoietin (TSLP) as part of a complex.[1]

Reagent requirements

- Buffer: Prepare a solution containing phosphate-buffered saline (PBS), pH 7.2, 0.5% bovine serum albumin (BSA), and 2 mM EDTA by diluting MACS® BSA Stock Solution (# 130-091-376) 1:20 with autoMACS® Rinsing Solution (# 130-091-222). Keep buffer cold (2−8 °C).
  Note: EDTA can be replaced by other supplements such as anticoagulant citrate dextrose formula-A (ACD-A) or citrate phosphate dextrose (CPD). Buffers or media containing Ca^{2+} or Mg^{2+} are not recommended for use.
- (Optional) FcR Blocking Reagent, human (# 130-059-901) to avoid Fc receptor–mediated antibody labeling.
- (Optional) Fluorochrome-conjugated anti-biotin antibodies, e.g., Anti-Biotin-PE (# 130-090-756) as secondary antibody reagent in combination with biotinylated antibodies.
- (Optional) Propidium Iodide Solution (# 130-093-233) for flow cytometric exclusion of dead cells without fixation.
- (Optional) Fixation and Dead Cell Discrimination Kit (# 130-091-163) for cell fixation and flow cytometric exclusion of dead cells.

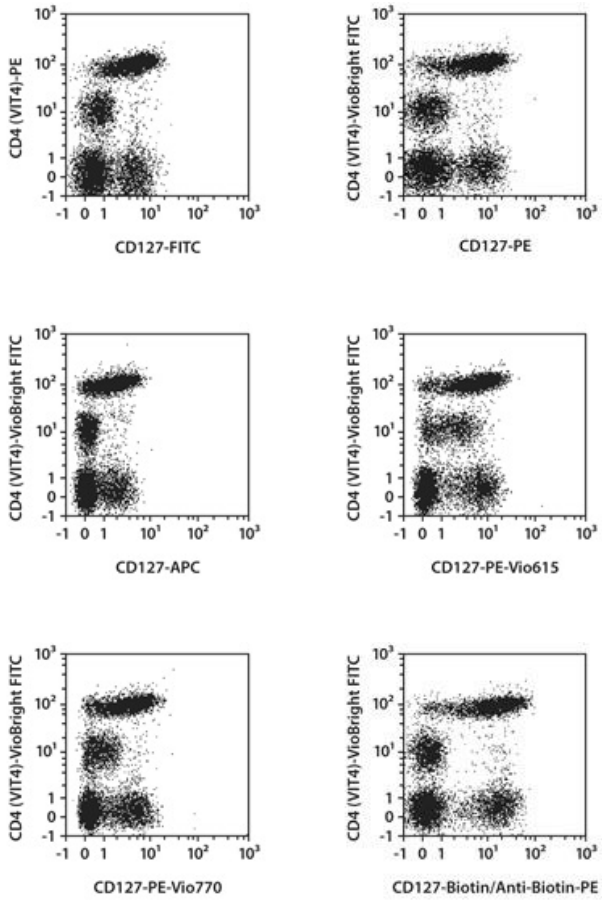
Protocol for cell surface staining

- The recommended antibody dilution for labeling of cells and subsequent analysis by flow cytometry is 1:11 for up to 10^7 cells/100 µL of buffer.
- Volumes given below are for up to 10^7 nucleated cells. When working with fewer than 10^7 cells, use the same volumes as indicated. When working with higher cell numbers, scale up all reagent volumes and total volumes accordingly (e.g. for 2×10^7 nucleated cells, use twice the volume of all indicated reagent volumes and total volumes).

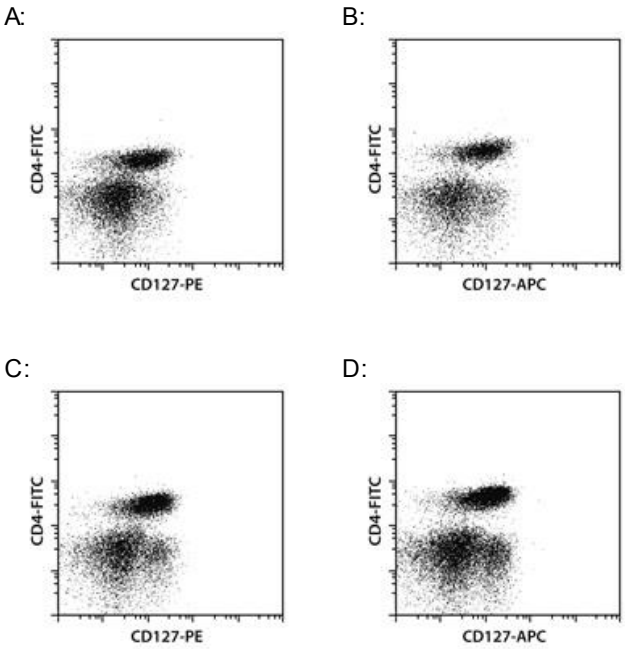
1. Determine cell number.
2. Centrifuge cell suspension at 300×g for 10 minutes. Aspirate supernatant completely.
3. Resuspend up to 10^7 nucleated cells per 100 µL of buffer.
4. Add 10 µL of the antibody.
5. Mix well and incubate for 10 minutes in the dark in the refrigerator (2−8 °C).
   Note: Higher temperatures and/or longer incubation times may lead to non-specific cell labeling. Working on ice requires increased incubation times.
6. Wash cells by adding 1−2 mL of buffer and centrifuge at 300×g for 10 minutes. Aspirate supernatant completely.
7. (Optional) If biotinylated antibody was used, resuspend the cell pellet in 100 µL of buffer, add 10 µL of fluorochrome-conjugated anti-biotin antibody, and continue as described in steps 5 and 6.
8. Resuspend cell pellet in a suitable amount of buffer for analysis by flow cytometry or fluorescence microscopy.

Examples of immunofluorescent staining

Human peripheral blood mononuclear cells (PBMCs) were stained with CD127 antibodies as well as with CD4 antibodies and analyzed by flow cytometry. The Tandem Signal Enhancer has been used to increase binding specificity of tandem-dye–conjugated antibodies. For all other conjugates the FcR Blocking Reagent has been used to avoid Fc receptor–mediated antibody labeling. Cell debris and dead cells were excluded from the analysis based on scatter signals and propidium iodide fluorescence or 4',6-diamidino-2-phenylindole (DAPI) fluorescence, as in the case of tandems.



Non-human primate peripheral blood mononuclear cells (PBMCs) from Rhesus monkey (A, B: chinese origin; C, D: indian origin) were stained with CD127 antibodies as well as with CD4 antibodies and analyzed by flow cytometry using the MACSQuant® Analyzer. Cell debris and dead cells were excluded from the analysis based on scatter signals and propidium iodide fluorescence.



References

1. **Fry, T. J. and Mackall, C. L.** (2002) Interleukin-7: from bench to clinic. Blood 99: 3892–3904.
2. **Sudo, T. *et al.*** (1993) Expression and function of the interleukin 7 receptor in murine lymphocytes. Proc. Natl. Acad. Sci. U.S.A. 90: 9125–9129.
3. **Armitage, R. J. *et al.*** (1991) Expression of receptors for interleukin 4 and interleukin 7 on human T cells. Adv. Exp. Med. Biol. 292: 121–130.
4. **Cupedo, T. *et al.*** (2005) Development and activation of regulatory T cells in the human fetus. Eur. J. Immunol. 35: 383–390.
5. **Seddiki, N. *et al.*** (2006) Expression of interleukin (IL)-2 and IL-7 receptors discriminates between human regulatory and activated T cells. J. Exp. Med. 203: 1693–1700.
6. **Liu, W. *et al.*** (2006) CD127 expression inversely correlates with FoxP3 and suppressive function of human $CD4^+$ T reg cells. J. Exp. Med. 203: 1701–1711.

Warranty

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