CD105 antibodies, mouse

For research use only

9 µg equal 60 tests, 30 µg equal 200 tests. One test corresponds to labeling of 10^6 cells.

Product	Content	Order no.
CD105-FITC	9 µg in 300 µL	130-102-915
CD105-FITC	30 µg in 1 mL	130-102-485
CD105-PE	9 µg in 300 µL	130-102-819
CD105-PE	30 µg in 1 mL	130-102-548
CD105-APC	9 µg in 300 µL	130-102-820
CD105-APC	30 µg in 1 mL	130-102-495
CD105-PE-Vio770	9 µg in 300 µL	130-108-383
CD105-PE-Vio770	30 µg in 1 mL	130-108-354
CD105-Biotin	9 µg in 300 µL	130-101-992
CD105-Biotin	30 µg in 1 mL	130-101-909
CD105 pure	100 µg in 1 mL	130-092-926

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	CD105
Clone	MJ7/18
Isotype	rat IgG2aκ
Isotype control	Rat IgG2a – isotype control antibodies
Alternative names of antigen	ENG, Endo, S-endoglin
Molecular mass of antigen [kDa]	67
Distribution of antigen	bone marrow, endothelial cells, leukemia cells, mesenchymal stem cells, monocytes
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.

The CD105 antibody (clone MJ7/18) recognizes the CD105 antigen, also known as endoglin. CD105 is a proliferation-associated and hypoxia-inducible protein, abundantly expressed in angiogenic

endothelial cells. In mouse bone marrow, CD105 is also expressed on a population of Sca-1$^+$ hematopoietic stem cells (HSCs). This population has a long-term repopulating (LTR) capacity and is therefore termed LTR-HSCs[1,2]. Furthermore, on liver sinusoidal endothelial cells (LSEC), CD105 is co-expressed with CD146 (LSEC).

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, mouse (# 130-092-575) 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.

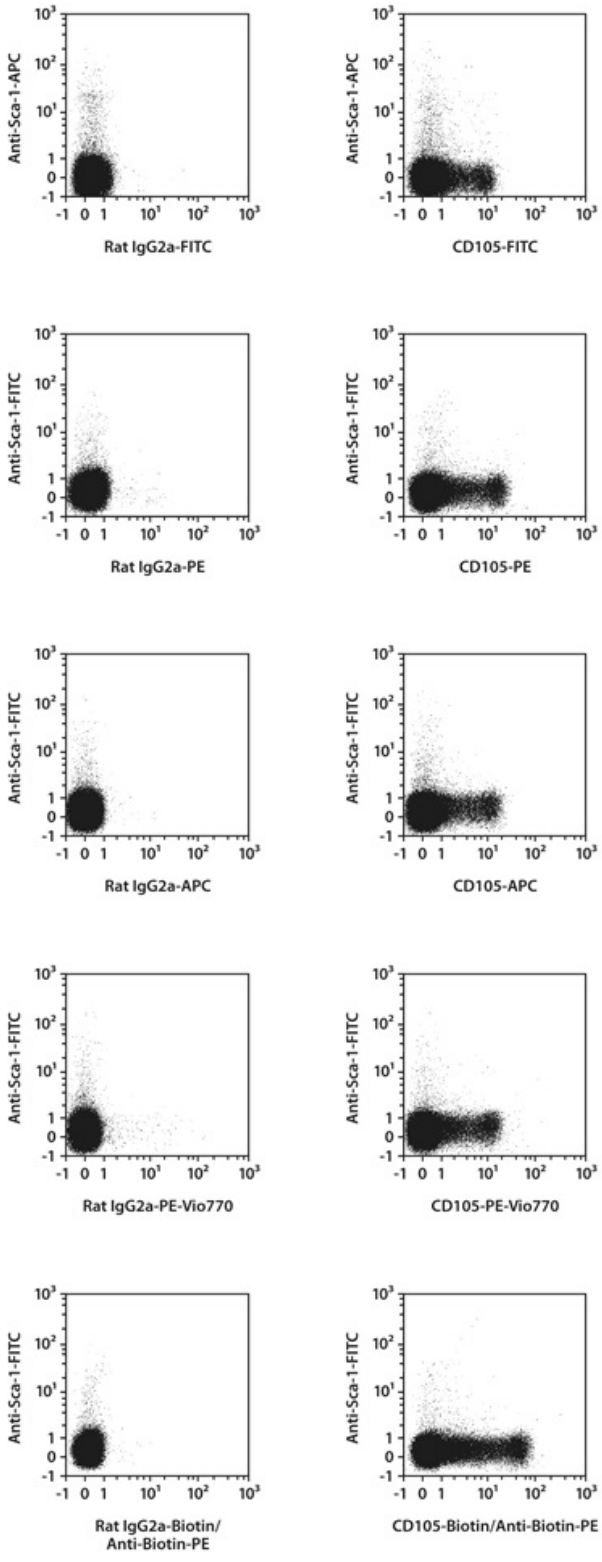
Protocol for cell surface staining

- The recommended antibody dilution for labeling of cells and subsequent analysis by flow cytometry is 1:10 for up to 10^6 cells/50 µL of buffer.
- Volumes given below are for up to 10^6 nucleated cells. When working with fewer than 10^6 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 2×10^6 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 10^6 nucleated cells per 45 µL of buffer.
4. Add 5 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

Bone marrow cells from BALB/c mice were stained with CD105 antibodies or with the corresponding isotype control (left image), as well as with Anti- Sca-1 antibodies. Flow cytometry was performed with the MACSQuant® Analyzer. Cell debris and dead cells were excluded from the analysis based on scatter signals and propidium iodide fluorescence.



References

1. **Chen, C. Z. *et al.*** (2002) Identification of endoglin as a functional marker that defines long-term repopulating hematopoietic stem cells. Proc. Natl. Acad. Sci. U.S.A. 99: 15468–15473.
2. **Chen, C. Z. *et al.*** (2003) The endoglin(positive) sca-1(positive) rhodamine(low) phenotype defines a near-homogeneous population of long-term repopulating hematopoietic stem cells. Immunity 19: 525–533.

Warranty

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