CD90.1 antibodies, mouse and rat

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.
CD90.1-FITC	30 µg in 1 mL	130-102-635
CD90.1-PE	30 µg in 1 mL	130-102-636
CD90.1-APC	30 µg in 1 mL	130-102-634
CD90.1-VioBlue	30 µg in 1 mL	130-102-637
CD90.1-VioGreen	9 µg in 300 µL	130-108-391
CD90.1-VioGreen	30 µg in 1 mL	130-108-362
CD90.1-PerCP-Vio700	9 µg in 300 µL	130-103-997
CD90.1-PerCP-Vio700	30 µg in 1 mL	130-103-964
CD90.1-Biotin	30 µg in 1 mL	130-101-967
CD90.1 pure	100 µg in 1 mL	130-094-524

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	CD90.1
Clone	His51
Isotype	mouse IgG2aκ
Isotype control	Mouse IgG2a – isotype control antibodies
Alternative names of antigen	THY1, T25, Thy-1, Thy-1.2, Thy-1.1
Molecular mass of antigen [kDa]	13
Distribution of antigen	brain, cancer stem cells, endothelial cells, fibroblasts, hematopoietic stem cells, leukemia cells, leukocytes, lymphocytes, mesenchymal stem cells, neurons, ES and iPS cells, T cells, thymocytes
Product format	Reagents are supplied in buffer containing stabilizer and 0.05% sodium azide.
Fixation	The antibody is suited for staining of formaldehyde-fixed cells.
Storage	Store protected from light at 2–8 °C. Do not freeze.

The mouse monoclonal antibody His51 reacts with the rat CD90 (Thy-1) and mouse CD90.1 (Thy1.1) antigens, which belong to a GPI-anchored conserved membrane glycoprotein. In the mouse strains AKR/J, PL, and FVB/N, CD90.1 is a pan T cell marker and can be found on thymocytes, hematopoietic

stem cells in the bone marrow, intra-epithelial cells (dendritic epidermal cells) in skin, and on neurons, such as retinal ganglion cells.
In the rat, the CD90 antigen is expressed on thymocytes, recent thymic emigrants, hematopoietic stem cells, on neurons such as retinal ganglion cells, and on other cell types. The antibody does not cross-react with CD90.2 (Thy1.2).

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.

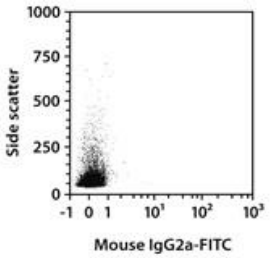
Protocol for cell surface staining

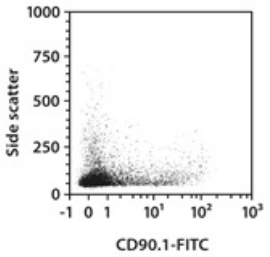
- The recommended antibody dilution for labeling of cells and subsequent analysis by flow cytometry is 1:10 for up to 10^6 cells/50 µL of buffer.
- Volumes given below are for up to 10^6 nucleated cells. When working with fewer than 10^6 cells, use the same volumes as indicated. When working with higher 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

Splenocytes from Wistar rats were stained with CD90.1 antibodies or with the corresponding isotype control (left image) 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.


Side scatter
Mouse IgG2a-FITC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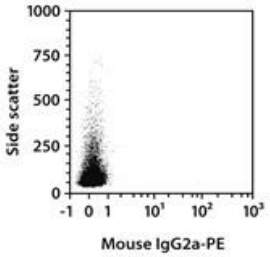
CD90.1-FITC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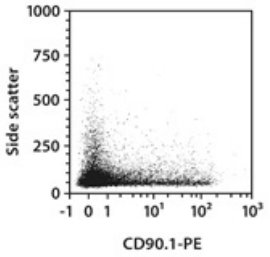
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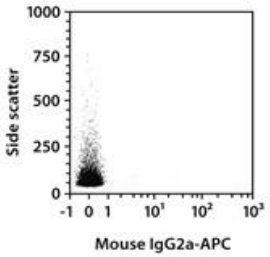
CD90.1-PE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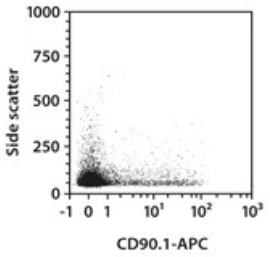
Mouse IgG2a-APC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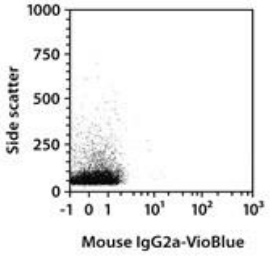
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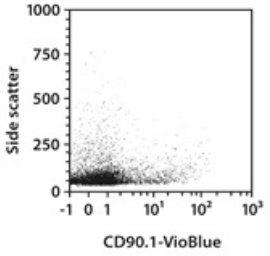
Mouse IgG2a-VioBlue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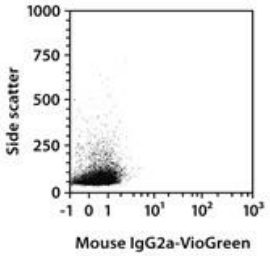
CD90.1-VioBlue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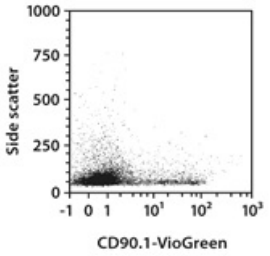
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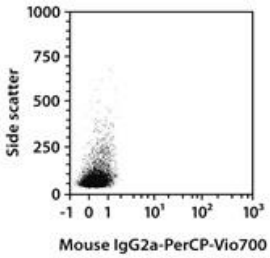
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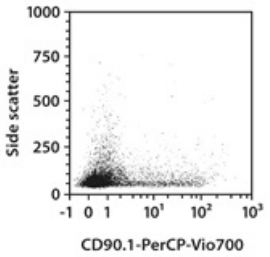
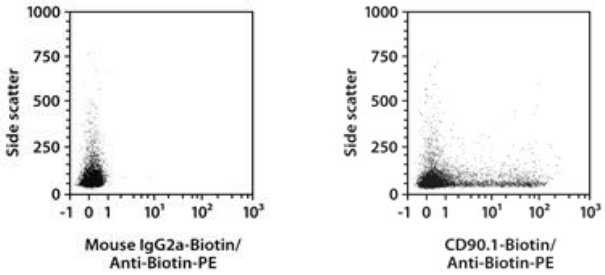
Mouse IgG2a-PerCP-Vio700


Side scatter
CD90.1-PerCP-Vio700



References

1. **Nikoozad, Z. *et al.*** (2014) Comparison of the liver function and hepatic specific genes expression in cultured mesenchymal stem cells and hepatocytes. Iran J Basic Med Sci 17(1): 27–33.

Warranty

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