3050 Spruce Street, St. Louis, MO 63103 USA
Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757
email: techservice@sial.com sigma-aldrich.com

Product Information

Monoclonal Anti-CD14-PE, clone UCHM-1
produced in mouse, purified immunoglobulin

Catalog Number **P5435**

Product Description

Monoclonal Anti-CD14 (mouse IgG2a isotype) is derived from the hybridoma produced by the fusion of mouse myeloma cell line NS-1 and splenocytes from Balb/c mice immunized with human thymocytes followed by peripheral blood T cells. The isotype is determined by a double diffusion assay using Mouse Monoclonal Antibody Isotyping Reagents, Catalog Number ISO2. The product is prepared by conjugation of R-Phycoerythrin (PE) with purified CD14 monoclonal antibody. The conjugate is then purified by gel filtration to remove unbound PE and antibody; no free PE or free antibody is detectable.

Monoclonal Anti-CD14 recognizes the CD14 monocyte surface glycoprotein, a phosphoinositol 55 kDa molecule. This antigen is expressed on most peripheral blood monocytes and tissue macrophages, it is also present in cell cytoplasm and may be found cell free in urine and serum. The epitope recognized by this clone is sensitive to routine formalin fixation and paraffin embedding. Cryostat sections post fixed in formalin can also be stained.

Monoclonal Anti-CD14-PE may be used for:
1. Enumeration of total monocytes in bone marrow, blood and other body fluids.
2. Depletion of accessory cells from T cell populations by sorting.

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 1% BSA with 15 mM sodium azide as a preservative.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Performance

When assayed by flow cytometric analysis, using 10 µL of the antibody to stain 1 x 10^6 cells a fluorescence intensity is observed similar to that obtained with saturating monoclonal antibody levels. The percent population positive is also at the maximum percentage positive using saturating monoclonal antibody levels.

A_{567}/A_{280}: 1-4

Storage/Stability

Store at 2-8 °C. Protect from prolonged exposure to light. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use.

Note: In order to obtain best results in different preparations, it is recommended that each individual user determine their optimum working dilutions by titration assay.

Procedure for Direct Immunofluorescent Staining

Reagents and Materials Needed but Not Supplied

1. a. Whole human blood collected by standard clinical blood evacuation tubes with EDTA, ACD-A or heparin anticoagulant **or**
   b. Human cell suspension, e.g., peripheral blood mononuclear cells isolated on Histopaque®, Catalog No. 10771.
2. Diluent: 0.01 M Phosphate buffered saline (PBS), pH 7.4, containing 1% BSA and 0.1% NaN_3.
3. PE conjugated, isotype-matched, non-specific mouse immunoglobulin (negative control, Catalog No. P4810).
4. 12 x 75 mm test tubes.
5. Adjustable micropipette.
6. Centrifuge.
7. Counting chamber.
8. Trypan blue, Catalog No. 302643, 0.2% in 0.01 M PBS, pH 7.4.
9. 2% paraformaldehyde in PBS.
10. Whole blood lysing solution.
11. Flow cytometer

Procedure

1. a. Use 100 µL of whole blood **or**
   b. Adjust cell suspension to 1 x 10^7 cells/ml in diluent. Cells should be >90% viable as determined by dye exclusion (trypan blue). For each sample, add 100 µL or 1 x 10^6 cells per tube.
2. Add 10 µL of conjugate to tube(s) containing cells to be stained. Vortex tube gently. Incubate the cells at room temperature (18-22 °C) for 30 minutes. Proper controls to be included for each sample are:
   a. An autofluorescence control: 10 µL diluent in place of monoclonal antibody, followed by steps 3 - 7.
   b. A negative staining control: 10 µL of PE conjugated, isotype-matched non-specific mouse immunoglobulin (Catalog No. P4810) at the same concentration as test antibody followed by steps 3-7.
3. a. If whole blood is used, use lysing solution after incubation according to manufacturer's instructions.
   b. If a mononuclear cell suspension is used, proceed to Step. 4.
4. Add 2 ml of diluent to all tubes.
5. Pellet cells by centrifugation at 500 x *g* for 10 minutes.
6. Remove supernatant by careful aspiration.
7. Resuspend cells in 0.5 ml of 2% paraformaldehyde. Analyze in a flow cytometer according to manufacturer's instructions.

Quality Control

It is advisable to run the appropriate negative controls. Negative controls establish background fluorescence and non-specific binding of the primary and secondary antibodies. The ideal negative control reagent is a mouse monoclonal or myeloma protein which has no reactivity with human cells. It should be isotype-matched to the antibody and of the same concentration and F/P molar ratio as the antibody. The degree of autofluorescence or negative control reagent fluorescence will vary with the type of cells under study and the sensitivity of the instrument used.

References

1. Leucocyte Typing IV, Knapp, W., et al., (Eds.), Oxford Press, New York, 1078 (1989).
2. Griffin, J. D., et al., *J. Clin. Invest.*, **68**, 932 (1981).
3. Todd, R. F., et al., *J. Immunol.*, **126**, 1435 (1981).
4. Goyert, S. M., et al*., J. Immunol.*, **137**, 3909 (1986).
5. Goyert, S. M., et al., *Science*, **239**, 497 (1988).
6. Haziot, A., et al., *J. Immunol.*, **141**, 547 (1988).
7. Hogg, N. H., et al., *Immunology*, **53,** 753 (1984).
8. Linch, D. C., et al., *Blood*, **63**, 566 (1984).
9. Khin, Y., et al., *Int. J. Cancer*, **36**, 433 (1985).

DS,KAA,PHC 12/12-1