

Mo-CD4/CD8/CD3

3 Color FCM Reagent: sc-3970



BACKGROUND

Mouse CD4/CD8/CD3: sc-3970 is a direct immunofluorescence reagent formatted to identify and determine the percentage of mature T cells, suppressor/cytotoxic T cells and helper/inducer T cells in erythrocyte-lysed whole blood, based on cell-surface antigen expression. CD4 identifies helper/inducer T cells and binds class II MHC molecules (1). CD3 identifies T lymphocytes and non-covalently associates with either α/β or γ/δ TCR, which recognizes antigens associated with the MHC (2). CD8 identifies suppressor/cytotoxic T cells and binds class I MHC molecules, which enhances the activation of resting T cells (1). The pre-TCR complex regulates the transition from CD4-CD8- double-negative to CD4+CD8+ double-positive thymocytes during T cell development (3). CD3+CD8+ and CD3+CD4+ percentages are used to characterize and monitor some forms of immunodeficiency and autoimmune disease (4,5).

REFERENCES

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- Pingel, S., Baker, M., Turner, M., Holmes, N., and Alexander, D.R. 1999. The CD45 tyrosine phosphatase regulates CD3-induced signal transduction and T cell development in recombinase-deficient mice: restoration of pre-TCR function by active p56(lck). *Eur. J. Immunol.* 29: 2376-2384.
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Antigen Expression	Cell Type Identified
CD3+	Mature T Cells
CD3+ CD8+	Suppressor/Cytotoxic T Cells
CD3+ CD4+	Helper/Inducer T Cells

STORAGE

Store at 4° C. Do not freeze. Stable for one year from the date of shipment. Protect reagents from prolonged exposure to light.

Antigen	Clone	Isotype	Label*	Detection Range (nm)
CD4	H129.19	rat IgG _{2a}	FITC	515-545
CD8	53-6.7	rat IgG _{2a}	PE	562-607
CD3	145-2C11	Armenian Hamster IgG	PE-Cy5	>650

*Fluorescent labels include FITC: Fluorescein isothiocyanate; PE: phycoerythrin; PE-Cy5: phycoerythrin-cyanin 5.

PRODUCT

Supplied in 1.0 ml of PBS containing 0.1% azide and 0.1% gelatin. Sufficient for 50 tests. This product has been titrated for optimal performance. Recommended use is 20 μ L per test (1×10^6 cells). **For research use only. Not for use in diagnostic procedures.**

INSTRUMENT

Mouse CD4/CD8/CD3: sc-3970 is recommended for use with either a single or dual laser Flow Cytometer fitted with appropriate acquisition and analysis software, such as the FACSCalibur™ Flow Cytometer fitted with CellQuest™ Software by Becton Dickinson.

The flow cytometer must be equipped with a 488 nm laser and must be capable of detecting light scatter (forward and side) and three-color fluorescence with emission detectable in three ranges: 515-545 nm, 562-607 nm and >650 nm, and it must be able to threshold and discriminate using the >650 channel.

ISOTYPE CONTROL

sc-3970 CON (rat IgG_{2a} FITC/rat IgG_{2a} PE/Armenian Hamster IgG PE-Cy5) is the isotype matched negative control for this system and is suitable for 50 tests.

SELECT PRODUCT CITATIONS

- Ganta, R., Cheng, C., Wilkerson, M.J., and Chapes, S.K. 2004. Delayed clearance of *Ehrlichia chaffeensis* infection in CD4+ T-cell knockout mice. *Infect. Immun.* 72: 159-167.