

Mo-CD3/CD4/CD45

3 Color FCM Reagent: sc-3968



BACKGROUND

Mouse CD3/CD4/CD45: sc-3968 is a direct immunofluorescence reagent formatted to identify and determine the percentage of mature T lymphocytes and helper/inducer T lymphocytes in erythrocyte-lysed whole blood, based on cell-surface antigen expression. CD3 identifies T lymphocytes and non-covalently associates with either α/β or γ/δ TCR (1). CD45 is a major leukocyte cell surface molecule and a member of the leukocyte common antigen (LCA) family (2). CD4 identifies the helper/inducer T lymphocyte subset that is present on normal peripheral blood lymphocytes (3,4). CD4 binds class II MHC molecules (4) and is the primary receptor for HIV (5). CD3+CD8+ and CD3+CD4+ percentages are used to characterize and monitor some forms of immunodeficiency and autoimmune disease (6,7).

Antigen Expression	Cell Type Identified
CD3+	Mature 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.

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 CD3/CD4/CD45: sc-3968 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.

Antigen	Clone	Isotype	Label*	Detection Range (nm)
CD3	145-2C11	Armenian Hamster IgG	FITC	515-545
CD4	H129.19	rat IgG _{2a}	PE	562-607
CD45	MB4B4	rat IgG	PE-Cy5	>650

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

ISOTYPE CONTROL

sc-3968 CON (Armenian Hamster IgG FITC/rat IgG_{2a} PE/rat IgG PE-Cy5) is the isotype matched negative control for this system and is suitable for 50 tests.

REFERENCES

- Exley, M., Terhorst, C., and Wileman, T. 1991. Structure, assembly and intracellular transport of the T cell receptor for antigen. *Semin. Immunol.* **3**: 283-297.
- Charbonneau, H., Tonks, N.K., Walsh, K.A., and Fischer, E.H. 1988. The leukocyte common antigen (CD45): a putative receptor-linked protein tyrosine phosphatase. *Proc. Natl. Acad. Sci. USA* **85**: 7182-7186.
- Reichert, T., DeBruyere, M., Deneys, V., Totterman, T., Lydyard, P., Yuksel, F., Chapel, H., Jewell, D., Van Hove, L., Linden, J., *et al.* 1991. Lymphocyte subset reference ranges in adult Caucasians. *Clin. Immunol. Immunopathol.* **60**: 190-208.
- Gallagher, P.F., Fazekas de St. Groth, B., and Miller, J.F. 1989. CD4 and CD8 molecules can physically associate with the same T-cell receptor. *Proc. Natl. Acad. Sci. USA* **86**: 10044-10048.
- Dagleish, A.G., Beverley, P.C.L., Clapham, P.R., Crawford, D.H., Greaves, M.F., and Weiss, R.A. 1984. The CD4 (T4) antigen is an essential component of the receptor for the AIDS retrovirus. *Nature* **312**: 763-767.
- Foucar, K. and Goeken, J.A. 1982. Clinical Applications of immunologic techniques to the diagnosis of lymphoproliferative and immunodeficiency disorders. *Lab. Med.* **13**: 403-413.
- Smolen, J.S., Chused, T.M., Leiserson, W.M., Reeves, J.P., Alling, D., and Steinberg, A.D. 1982. Heterogeneity of immunoregulatory T-cell subsets in systemic lupus erythematosus. Correlation with clinical features. *Am. J. Med.* **2**: 783-790.