

# Hu-CD2/CD7/CD3

## 3 Color FCM Reagent: sc-2938



### BACKGROUND

Human CD2/CD7/CD3 sc-2938 is a direct immunofluorescence reagent formatted to identify and determine the percentage of human T lymphocytes in erythrocyte-lysed whole blood, based on cell-surface antigen expression. CD3 identifies T lymphocytes and non-covalently associates with either  $\alpha/\beta$  or  $\gamma/\delta$  TCR (1). CD2 is a surface antigen that is expressed on all peripheral blood T lymphocytes and can activate T cells (2). CD2 is one of the earliest T-cell markers, being present on more than 95% of thymocytes, and is also found on some natural killer cells (3), but not on B lymphocytes (2). CD7 is expressed throughout T lymphocyte differentiation and identifies approximately 85% of peripheral T lymphocytes, all thymocytes and leukemias of T cell precursors (4,5). The combined expression of CD2, CD3 and CD7 is indicative of a population of human T lymphocytes (6).

| Antigen Expression | Cell Type Identified |
|--------------------|----------------------|
| CD3+               | Mature Human T Cells |
| CD3+ CD2+ CD7+     | Human 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  $\mu$ l per test ( $1 \times 10^6$  cells). **For research use only. Not for use in diagnostic procedures.**

### INSTRUMENT

Human CD2/CD7/CD3 sc-2938 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) |
|---------|--------|------------------|--------|----------------------|
| CD2     | MT910  | IgG <sub>1</sub> | FITC   | 515-545              |
| CD7     | M-T701 | IgG <sub>1</sub> | PE     | 562-607              |
| CD3     | UCH-T1 | IgG <sub>1</sub> | PE-Cy5 | >650                 |

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

### ISOTYPE CONTROL

sc-2938 CON (IgG<sub>1</sub> FITC/IgG<sub>1</sub> PE/IgG<sub>1</sub> 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.
- LocusLink Report. (Locus ID: 186990). <http://www.ncbi.nlm.nih.gov/locuslink/>
- Lanier, L.L. and Phillips, J.H. A map of the cell surface antigen expressed on resting and activated human natural killer cells. In: Reinherz, E.L., Haynes, B.F., Nadler, L.M., Bernstein, I.D. eds. *Leukocyte Typing II: Human Myeloid and Hematopoietic Cells*. New York, NY: Springer-Verlag: 1986: 157-170.
- Palker, T.J., Scarce, R.M., Hensley, L.L., Ho, W., and Haynes, B.F. Comparison of the CD7 (3A1) group of T cell workshop antibodies. In: Reinherz, E.L., Haynes, B.F., Nadler, L.M., Bernstein, I.D. eds. *Leukocyte Typing II: Human T Lymphocytes*. New York, NY: Springer-Verlag: 1986: 303-313.
- Weiss, L.M., Crabtree, G.S., Rouse, R.V., and Warnke, R.A. 1985. Morphologic and immunologic characterization of 50 peripheral T-cell lymphomas. *Am. J. Pathol.* 118: 316-324.
- Vitucci, A., Lucivero, G., Locatelli, F., Capocasale, M., Tannoia, N., and Pietrapertosa, A. 2000. Lymphocyte subset reconstitution after HLA-identical placental blood transplantation (PBT) or PBT plus bone marrow transplantation (BMT) in three children with beta-thalassemia major. *Bone Marrow Transplant.* 26: 743-747.