Hu-CD8/CD38/CD3/HLA-DR 4 Color FCM Reagent: *sc-2910*

BACKGROUND

Human CD8/CD38/CD3/HLA-DR: sc-2910 is a direct immunofluorescence reagent formatted to identify the percentage of activated T-suppressor/cytotoxic lymphocytes (1) in erythrocyte-lysed whole blood, based on cell-surface antigen expression. CD8 identifies suppressor/cytotoxic T lymphocytes and binds class I MHC molecules, which enhances the activation of resting T lymphocytes (2). CD38 is expressed during the early and final stages of T and B cell differentiation, but not during the intermediate stage (3). CD3 identifies T lymphocytes and non-covalently associates with either α/β or γ/δ TCR (4). HLA-DR is expressed on B lymphocytes, monocytes, macrophages, activated T lymphocytes and human progenitor cells (5). Reductions in the percentage and absolute number of CD4+ cells, as well as abnormally high levels of activated peripheral T cells and an increased proportion of CD8+ cells coexpressing CD57 (involved in NK activity) have been reported in HIV infection and associated with disease progression (1).

Antigen Expression	Cell Type Identified
CD3+	Mature T Cells
CD3+ CD8+	Suppressor/Cytotoxic T Cells
CD3+ HLA-DR+	Activated peripheral T Cells
CD3+ CD8+ CD38+	Activated suppressor/cytotoxic T Cells
CD3+ CD8+ HLA-DR+	Activated suppressor/cytotoxic 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 uL per test ($1x10^6$ cells). **For research use only. Not for use in diagnostic procedures.**

INSTRUMENT

Human CD8/CD38/CD3/HLA-DR: sc-2910 is recommended for use with a 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 635 nm and 488 nm lasers and must be capable of detecting light scatter (forward and side) and four-color fluorescence with emission detectable in four ranges: 515-545 nm, 562-607 nm, >650 nm and 652-668 nm, and it must be able to threshold and discriminate using the >650 channel.

Antigen	Clone	Isotype	Label*	Detection Range (nm)
CD8	HIT8a	IgG_1	FITC	515-545
CD38	HB-7	IgG_1	PE	562-607
CD3	UCH-T1	IgG_1	PE-Cy5	>650
HLA-DR	L243	IgG_{2a}	APC	652-668

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

ISOTYPE CONTROL

sc-2910 CON (IgG_1 FITC/IgG_1 PE/IgG_1 PE-Cy5/IgG_{2a} APC) is the isotype matched negative control for this system and is suitable for 50 tests.

REFERENCES

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3. Dörken, B., Möller, P., Pezzutto, A., Schwartz-Albiez, R., and Moldenhauer, G. B-cell antigens: CD19. In: Knapp, W., Dörken, B., Gilks, W.R. et al. eds. Leucocyte Typing IV: White Cell Differentiation Antigens. New York, NY: Oxford University Press; 1989: 34-36.

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5. Alonso, M.C., Navarrete, C., Solana, R., Torres, A., Pena, J., and Festenstein, H. 1985. Differential expression of HLA-DR and HLA-DQ antigens on normal cells of the myelomonocytic lineage. Tissue Antigens 26: 310-317.