FLOW CONTRACT SITE LABORATORY

The Marker

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Upcoming Events:

- Immunology 2017, Washington, D.C May 12-16, 2017
- 13th Annual Biomarkers & Immuno-Oncology Congress, PA May 2-4, 2017

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Flow cytometric quantification of a rare cell population: regulatory T cells in mouse tumor specimens

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Regulatory T cells (Tregs) are a quantified subpopulation of T lymphocytes which modulate the immune system and prevent autoimmune diseases. In order to understand the role of FoxP3 or Tregs in tumors, robust methods are required for the identification and characterization of these cells. However, Treg functionality has been difficult to evaluate due to low cell abundance (5-10% of peripheral CD4 T cells) and lack of generic markers across species. Flow Cytometry is a powerful platform for studying FoxP3 prevalence in Tregs because it has the ability to rapidly and accurately measure individual targets/receptors using fluorescent tags in specific rare cell populations.

We investigated whether expression of FoxP3, a transcription factor that is expressed in Tregs in humans, could be used to identify Tregs in mouse tumor specimens.

In this study, cells were dissociated from 4T1, CT26 or PAN02 murine tumors and stained with surface markers; anti-mouse CD45-APC and anti-mouse CD3-FITC, followed by intracellular staining with anti-mouse FoxP3-PE. Expression of FoxP3 in Tregs was evaluated by flow cytometry analysis on a BD FACSCanto™ II equipped with BD FACSDiva™ software.

We observed that PAN02 and CT26 tumor cells have higher MFI for FoxP3-PE than their isotype control and 4T1 tumor cells. The percentage of regulatory T cells, determined by FoxP3+ staining, was also higher in PAN02 and CT26 cells than 4T1. Overall, this study has shown that FoxP3 intracellular staining can be successfully used to identify regulatory T cell population in mouse tumor models.

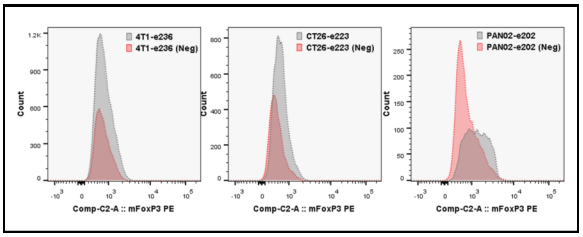

Figure: Representative histogram overlay of FoxP3-PE or Isotype control stained cells. Both CT26 and PAN02 show higher fluorescence intensity for FoxP3-PE than their respective isotype controls. No significant difference was observed in 4T1 tumors.

References: Triulzi T et al., 2013. J Cell Physiol, 228(1): 30-35.
Ahmadzadeh M.et al., 2008.Blood, 112(13): 4953-4960

FCS Laboratory April 2017 Updates

For your convenience, our flow cytometry services are available to be ordered online.

Please check us out on Science Exchange, The Scientist and BioCompare.

Fun in Washington State

Fall Fairs

EarthDay Spokane www.earthday.site	Apr. 22nd 2017
Washington State Fair www.thefair.com	Apr. 20-23rd 2017
Sasquatch, Quincy www.sasquatchfestival.com	May 26-28th 2017