FLOW CONTRACT SITE LABORATORY

The Marker

FCS Laboratory Monthly Newsletter

March 2017 Issue 20

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Upcoming Events:

- Society of Surgical Oncology (SSO) 2017 Cancer Symposium & Exhibition | March 15 - 18, 2017 | Seattle, WA
- Clinical Immunology Society (CIS) 2017 Annual Meeting | March 23 - 26, 2017 | Seattle, WA
- SoCal Flow SUMMIT 2017 | April 24 - 25, 2017 | Irvine, CA
- Life Science Innovation Northwest | May 23 - 24, 2017 | Seattle, WA

The Activation Profiling of STAT in Human Whole Blood Samples by Flow Cytometry With an Application For Human Clinical Trials

By: Sonal Suhane, Lynette Brown, and Jennifer J. Stewart

The JAK-STAT signaling pathway is responsible for transmitting information from the cellular cytoplasm to the nucleus. This modulates DNA transcription and expression of genes involved in immunity, proliferation, and oncogenesis. In the development and progression of certain types of cancers, involvement of a combination of different STAT proteins (STAT1, STAT3, and STAT5) are usually involved. Flow cytometry has become more and more useful in studying certain pathways due to the development of antibodies and kits that measure the reactions.

Experiments for this study were conducted with a cell line and human whole blood samples that were activated for STAT expression. Cells were processed using the Millipore FlowCellect STAT Activation kit with pSTAT1, pSTAT3, and pSTAT5 A/B. Cells were acquired on the BD FACSCanto™ II flow cytometer.

The results of the study showed an increase in the STAT signals upon activation. This concludes that profiling of STAT activation can be evaluated using Flow Cytometry over a course of time. This can be very advantageous for researchers in clinical trials. There can be great understanding of the processes that happen when the cells replicate and transform nonstop.

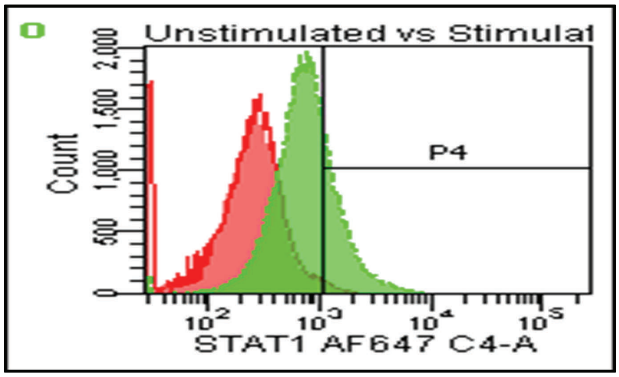

Figure. Represents an overlay of unstimulated (left) and stimulated (Right) cells. Cells were stimulated with 125 ng of IFN-γ, 25 ng of GM-CSF and 50 ng of IL-6 for 9-11 min at 37°C. Cells were fixed, permeabilized, and stained with pSTAT3 PE, pSTAT5 PECy7, pSTAT1 AF647

REFERENCES

a. FlowCellect Multi-STAT Activation Profiling kit. 2016. TechnicalData Sheets. http://www.millipore.com

b. Ralf Buettner,, Linda B. Mora, and Richard Jove.

March Fun in Washington

* The Snohomish Wine Festival is on March 4, 2017 at the Snohomish Event Center.
* Come join the St. Patrick's Day Dash on March 12, 2017 from Seattle Center to downtown.
* State Parks Free Days is on March 19, 2017. You can picnic and play at any of these 140 Washington State Parks for free.

FCSL March 2017 Updates

* We are now on the Biocompare website! Please check our services out!

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