FLOW CONTRACT SITE LABORATORY

The Marker

FCS Laboratory Quarterly Newsletter

January 2017 Issue 18

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Upcoming Events:

- Life Science Washington Bio on the Vine | Feb 9, 2017 | Seattle, WA
- SoCal Flow SUMMIT 2017 | April 24 - 25, 2017 | Irvine, CA
- Life Science Innovation Northwest | May 23 - 24, 2017 | Seattle, WA
- 2017 BIO International Convention | June 19 - 22, 2017 | San Diego, CA

The Measurement of Basophil Activation using a Flow Cytometry Kit for Application in Clinical Trials

By: Sarah E. Johnson, Lynette Brown, and Jennifer J. Stewart

Background: Allergens or antigens can cause an allergic reaction in the body due to the IgE class of antibodies. These antibodies develop when the foreign invader triggers their formation. Basophil cells can become activated when the IgE antibody (bound to an allergen) recognizes and binds to the Fc receptor on the basophil surface. Basophils contain many granules inside the cell, which are filled with a variety of active substances that trigger an allergic response upon degranulation. Basophil activation also causes certain markers to be detected on the surface of the cell that can be measured by flow cytometry to determine basophil activity in support of clinical trials.

Methods: Experiments were conducted with human whole blood samples using a commercially available basophil activation kit. Whole blood specimens from human donors were collected in EDTA blood collection tubes. Blood was stimulated with FCε-R1 and fMLP and staining reagent for 25 – 30 minutes at 37°C. Cells were lysed, washed and acquired on the flow cytometer.

Results: CCR3 was used to identify the basophil population in human whole blood. CD63 and CD203c were then used to identify the unstimulated and stimulated state of the samples. Upon stimulation there was an increase in CD63 and CD203c expression on the surface of the cells.

Conclusion: These results showed that Basophil activation can be measured using flow cytometry with the increased expression of CD63 and CD203c on stimulated basophils. This method could be used to help scientists in clinical trials to study the effects of allergens or antigens that cause allergic reactions in the body.

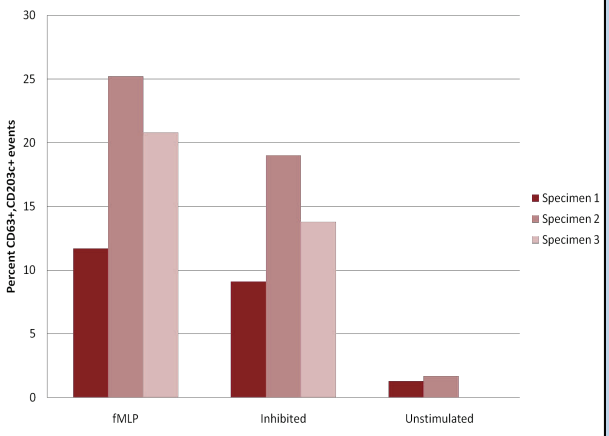

Figure. Percent of CD63+, CD203c+ events.
Samples were stimulated with fMLP, Inhibited with CAL101, or left unstimulated and uninhibited.

REFERENCES

- Emily C. McGowan, Sarbjit Saini, 2014. Update on the performance and application of basophil activation tests. Curr Allergy Asthma Rep. PMC 2014 Jul 2.
- ALPCO Inhibiscreen Basophil Activation Test, www.alpco.com

FCS Laboratory First Quarter 2017 Updates

* We are pleased to announce that we recently celebrated our 7 year anniversary in business and we have been at our new location for 1 year.
* Our facility is located in Canyon Creek Business Park, with ~4000 square feet of designed space. Please come visit!
* We have added a fourth flow cytometer, a BD FACSCanto II, to our instrument repertoire and continue to hire more staff.

Winter Fun in Washington

* Crystal Mountain is the state's largest ski and snowboarding resort. Open thru April 23, 2017.
* Visit Palouse Falls State Park in southeastern Washington. See what our state's official waterfall looks like completely frozen.
* Take a journey to Leavenworth, also known as Seattle's backyard Bavaria. Activities include: sleigh rides, tubing, sledding, ice climbing, snowshoe/wine tours, and dog sledding.

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