

FACS-based assay for detecting basophils and/or eosinophils in blood

A team of Stanford researchers has developed an in vitro system for the detection and quantification of basophils. The technology can be used to identify and monitor patients with immune system disorders - such as anaphylaxis, myeloproliferative disorders, or infections. This FACS-based analysis uses rapidly stained whole blood samples to subset the basophils without purification or enrichment procedures. The assay can be performed on one or two drops of blood, making it suitable for both pediatric and adult patients. The technology has applications in clinical diagnostics or basic research of basophils and other granulocytes.

Related Technology

The inventors have developed a related assay designed for ex vivo allergy testing. This is described in [Stanford Docket S09-004](#).

Ongoing Research

The inventors are continuing their research on basophils and eosinophils, to characterize their priming and their activation during allergy and stimulation with antigens.

Applications

- **Diagnostic** - clinical assay to monitor allergies and other immune disorders that affect basophils and eosinophils
- **Research** - subcellular studies and studies of intracellular signaling
- **Prognostic** - clinical assay to determine the persistence of allergy and other immune disorders that affect basophils and eosinophils
- **Therapeutic** - targets found in the pathways involved in the maintenance and/or activation of eosinophils and/or basophils can be used for therapeutic interventions in allergy and other immune disorders.

Advantages

- **Small sample volume (1 - 2 drops of blood)** - suitable for studies with infants, children and healthy and infirm adults
- **Minimal manipulation of samples** - does not require purification or enrichment procedures (which often cause activation and degranulation)
- **Intracellular signaling detection from whole blood**
- **High throughput** technology can be accomplished with known and already available equipment and expertise in clinical laboratories

Publications

- ["METHODS AND ASSAYS FOR DETECTING AND QUANTIFYING PURE SUBPOPULATIONS OF WHITE BLOOD CELLS IN IMMUNE SYSTEM DISORDERS"](#)
(U.S. Patent Application, Publication No. 2010-0112628)

Patents

- Published Application: [20100112628](#)
- Issued: [10,114,012 \(USA\)](#)

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