Docket #: S09-004

Allergy testing with small whole blood samples

Stanford researchers have patented a FACS-based method to quickly and safely determine allergic reactions using white blood cell analysis. This technique involves combining a small (1-2 drops) sample of a patient's blood with a test allergen and then determining the profile of relevant granulocyte (basophil and eosinophil) markers. This granulocyte signature can be used to to establish the patient's allergic status and monitor responsiveness to ongoing allergy treatment. This ex vivo approach is much safer than skin tests because it does not expose the patient directly to the allergen.

Related Technology
A related FACS-based invention for determining granulocyte populations in whole blood is described in Stanford Docket S08-347.

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

- **In vitro allergy testing** to identify "offending" allergens in allergic individuals and monitor allergy treatments

Advantages

- **Rapid**
- **Safe** - the patient is not directly exposed to the potential allergen
- **Reliable**

- **Small blood sample (1-2 drops)** - suitable for identifying allergies in pediatric and adult populations
- **Minimal discomfort** compared to current skin-based testing

Publications

- Gernez Y, Tirouvanziam R, Yu G, Ghosn EE, Reshamwala N, Nguyen T, Tsai M, Galli SJ, Herzenberg LA, Herzenberg LA, Nadeau KC. "Basophil CD203c levels are increased at baseline and can be used to monitor omalizumab treatment in subjects with nut allergy." *Int Arch Allergy Immunol.* 2011;154(4):318-27. Epub 2010 Oct 25.

Patents

- Published Application: 20100209950
- Issued: 9,891,213 (USA)

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