Docket #: S09-339

System to improve ease and accuracy of flow cytometry

Researchers in Dr. Leonore Herzenberg's lab at Stanford have developed this technology and another (see Stanford Docket S15-009) to improve the ease and accuracy of flow cytometry experiments. This technology describes a patented system to automate the design and interpretation of flow cytometry experiments that use multi-parametric fluorescent markers. Flow cytometry relies on the measurement of signals from combinations of fluorescence-labeled reagents to indicate the amount of target molecules present in the cell. Often the fluorescence spectra of the individual dyes overlap and thus it is necessary to use computational methods to resolve the amount of fluorescence detected for each reagent. Compensation is the mathematical process for correcting multi-parameter flow cytometry data for spectral overlap. There are data analysis packages that assist with compensation, but there are problems associated with these methods. To overcome these problems and make the process easier and less error prone, the inventors developed this system. It can select appropriate reagents, design protocols and provide automated fluorescence compensation. As such it can be used by researchers with minimal experience in flow cytometry. This technology removes the obstacles to make multi-parameter, high-dimensional flow cytometry experiments easier.

Related technology
Stanford Docket S15-009: This technology provides a method to quantify antigens on cells during flow cytometry without the use of calibrators.

Applications

- Flow cytometry
- Multi-parameter fluorescence assays

Advantages

- Fully automated
- Provides robust, optimized results
- Does not rely on gating- uses all measurement taken from a sample
- Can be used with full fluorescence spectra measurements
- Includes automatic quality controls to ensure accurate data
- Can eliminate need for time-consuming and expensive “fluorescence minus one” controls by synthetic approximation
- Assists with reagent selection and protocol design
- Can manage reagents and supplies
- Enables non-experts to conduct flow cytometry experiments

Patents

- Published Application: 20110282870

Innovators

- Wayne Moore
- Leonore Herzenberg
- David Parks

Licensing Contact

Imelda Oropeza

Senior Licensing Manager, Physical Sciences

Email