

Cell Sample Testing 30 Times Faster With Flow Cytometer System

University of New Mexico



Flow cytometers can examine cells by using a laser to measure molecular biomarkers in each cell. Standard flow cytometers rely on a manual sample feed, where technicians place individual samples into the flow cytometers one at a time. This process is too slow for drug discovery and other large-scale biological research, which require rapid analysis of tens of thousands to millions of samples.

“Researchers at the University of New Mexico (UNM) in Albuquerque have increased sample handling rates by creating the “HyperCyt™ HighThroughput Flow Cytometry System.” Developed from 2001 to 2006 by Larry Sklar, Ph.D., and Bruce Edwards, Ph.D., of UNM’s Cancer Research and Treatment Center, this computer-driven sampling system is 30 times faster than standard flow cytometers.

To develop this technology, initial funding of \$12.5 million was provided by the National Institutes of Health and the

first patent was issued in 2005.

HyperCyt™ technology consists of an autosampler and data analysis software platform that are connected to a flow cytometer. A straw-like metal probe sucks samples from a microplate and rapidly delivers them into the flow cytometer. The software platform analyzes and stores the data.

This technology is ideal for drug discovery research because it analyzes many samples rapidly. The automated feed system replaces single test tubes and allows hundreds of samples to be analyzed in seconds. HyperCyt™ also lowers the overall cost of testing because it requires smaller samples, which means fewer cells and associated reagents are needed for each sample. Also, most standard flow cytometers can be easily retrofitted with HyperCyt™ technology.

IntelliCyt, a startup company, licensed this technology in 2006. It is currently manufacturing the HyperCyt™ platform and selling it to pharmaceutical and biotechnology companies for drug discovery screening and life science research. There are currently 20,000 flow cytometers in use worldwide that could benefit from the HyperCyt™ technology.

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