
Cell Microsystems and UNC Cure Center Receive NIH Contract for Single Cell HIV Diagnostic Assay

Accurate measurement of latent reservoir needed to cure HIV

Chapel Hill, NC – September 6, 2018 – Cell Microsystems, a provider of innovative tools and scalable solutions for the sorting and isolation of single cells, and the UNC HIV Cure Center announced today they have received an approximately \$283K 12-month Phase I Small Business Innovation and Research (SBIR) contract from the National Institutes of Health to develop an automated platform to quantify the latent HIV reservoir.

“We need to automate and streamline the measurement of the HIV reservoir because it is critical to showing if our therapies for eradicating the virus are working,” said Edward P. Browne, Ph.D., an assistant professor of medicine in the [UNC Division of Infectious Diseases](#) and the UNC HIV Cure Center.

The ability of HIV to hide in the body in a dormant state is a major challenge to curing the 37 million people living with the virus worldwide. The so-called “shock and kill” approach to curing HIV would require new therapeutics that reverse HIV latency, so that cells harboring the virus can be identified as infected and ultimately destroyed. As researchers develop therapies to reverse latency as a step toward subsequently clearing the virus, an accompanying diagnostic test is also required to accurately measure the viral reservoir to judge the efficacy of new latency reversal agents.

Browne applied for the NIH Phase I SBIR contract in collaboration with Cell Microsystems’ Nick Trotta, Ph.D., the director of product applications and market development, and Steve Gebhart, Ph.D., director of engineering and the program’s principal investigator.

Cell Microsystems’ proprietary products, the CytoSort™ Array and CellRaft AIR™ System, will use automated image analysis to screen and isolate thousands of patient-derived cells in order to detect emergence of HIV after exposure to potential therapeutics. The platform is likely to offer a rapid means of testing new drugs for latency reversal *in vitro*, as well as evaluating the efficacy of latency reversal therapeutics in patients during clinical trials or sustained therapy.

“We are very excited the CellRaft™ Technology will be utilized by a world-class team of investigators toward a historically intractable problem,” said Trotta. “As we talk to more HIV investigators, it’s clear that the platform has a lot of advantages that uniquely address the latency reversal drug screening process. We are also eager to contribute our genomics capabilities to better understand the precursors of HIV latency reversal.”

If the device can accurately quantify the viral reservoir, Browne said the team will apply for Phase II funding to explore the project’s commercial and scientific viability.

This project is funded in whole or in part with federal funds from the National Institute of Allergy and Infectious Diseases, National Institutes of Health, Department of Health and Human Services, under Contract No. HHSN272201800032C

About UNC Institute for Global Health & Infectious Disease

The mission of UNC's Institute for Global Health & Infectious Diseases is to harness the full resources of the University and its partners to solve global health problems, reduce the burden of disease, and cultivate the next generation of global health leaders. Learn more at www.globalhealth.unc.edu.

The UNC HIV Cure Center is focused on finding a cure for HIV/AIDS by working closely with academic and industry partners. HIV eradication is a complex health challenge due to the long-lived persistence of the virus in the body, which hides in latently infected cells that are able to escape the body's immune system. The HIV Cure Center research portfolio is focused on reactivation of the latent virus combined with clearance strategies to effectively purge the HIV reservoir to effect a cure for HIV. Learn more at <http://unchivcurecenter.org/>.

About Cell Microsystems

Cell Microsystems is an early growth stage company that develops, manufactures, and markets innovative products for single cell biology. The Company's proprietary CellRaft™ Technology enables high-efficiency sorting and isolation of single cells under standard culture conditions resulting in unperturbed phenotypes and high viability. Coupled with the Company's automated imaging platform, a user can select a cell in real-time and 'track and trace' that cell through imaging, collection and downstream analysis. By sorting during real-time imaging, no cells are wasted enabling single cell isolation from even small, precious samples. The CellRaft Technology offers scalable solutions making cell separation technology available for every lab. For more information, visit: <https://cellmicrosystems.com/>.

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