NIH Supports New HIV Cure Research Strategies

July 11, 2011

Three teams focusing on HIV cure research are primed to receive $70 million during the next five years in the form of annual grants from the National Institute of Allergy and Infectious Diseases (NIAID), a division of the National Institutes of Health (NIH), according to a July 11 announcement from the agency. First-year funding is guaranteed and will exceed $14 million.

The grants are part of the Martin Delaney Collaboratory, a funding program intended to foster public-private partnerships to accelerate progress toward an HIV cure.

Current antiretroviral (ARV) therapy is quite potent. When it works well, it completely shuts down HIV reproduction. Unfortunately, a small reservoir of long-lived HIV-infected cells remains in the body, and when people stop taking their HIV medication, the virus quickly reseeds newly produced CD4 cells and resumes replication.

Traditional ARVs can't target HIV genetic material (HIV DNA) inside this reservoir of infected cells, notably long-lived "memory" CD4 cells. This is because the cells are inactive; most ARVs only work in cells that are actively reproducing.

The three research teams included in the most recent NIAID grant cycle will pursue a unique and complementary approach aimed at eradicating these remaining HIV reservoirs. To fulfill their role as members of a collaboratory, the teams will also meet periodically as their research progresses to find ways to work together.

Receiving first-year funding of $4.1 million is the Fred Hutchinson Cancer Research Center (FHCRC) in Seattle, collaborating with Sangamo Biosciences in Richmond, California. Under the direction of Keith R. Jerome, MD, PhD, and Hans-Peter Kiem, MD, both of FHCRC, the researchers will attempt to develop proteins that directly attack HIV reservoirs and will further explore efforts to render people's immune cells resistant to the virus, notably transplants with genetically modified stem cells.

David Margolis, MD, of the University of North Carolina at Chapel Hill has gathered his own team of 19 researchers at nine universities, who will work alongside Merck Research Laboratories, with first-year funding of $6.3 million. Margolis's group has plans to conduct 15 scientific projects, aimed to better understand how HIV persists in people on ARV treatment and to develop drugs

and other therapies that can target the recalcitrant reservoirs.

Researchers at the University of California at San Francisco (UCSF) and the Vaccine & Gene Therapy Institute (VGTI) of Florida, also in collaboration with Merck Research Laboratories, will receive $4.2 million to conduct seven scientific projects. Steven Deeks, MD, and Mike McCune, MD, PhD, both of UCSF, and Rafick-Pierre Sekaly, of VGTI in Port St. Lucie, will spearhead efforts to define HIV's reservoir—the regions within organs such as the gut, lymph tissue and the brain where HIV remains dormant at low levels even when current combination ARV therapy prevents the virus from further replicating in the body. They also aim to explore potential treatments as well as to determine how the reservoir is created and maintained.

Sangamo Biosciences and Merck Research Laboratories will not receive federal funds for their contribution to this research.

An important caveat is noted in the NIAID press release: Funding beyond the first year is subject to the availability of Congressional appropriations.

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