



NewsRelease

For more information:

Eileen Korey
Director of News Services
University Hospitals of Cleveland
216-844-3825

George Stamatis
Director of Public Affairs
Case Western Reserve University
216-368-3635

Cystic Fibrosis Gene Therapy Trial Results Encouraging

Cleveland, Ohio, April 29, 2003—Scientists and physicians in Cleveland have announced encouraging results from the first-of-its-kind gene therapy trial involving cystic fibrosis (CF) patients and a new compacted DNA technology. The Phase I trial involving 12 patients was launched one year ago by University Hospitals of Cleveland (UHC), Case Western Reserve University (CWRU) School of Medicine, Children’s Hospital of Denver, and Cystic Fibrosis Foundation Therapeutics, Inc., the nonprofit drug discovery and development affiliate of the Cystic Fibrosis Foundation.

Cleveland-based biotechnology firm Copernicus Therapeutics Inc. produced the non-viral gene transfer system used in the clinical trial. Working together with UHC and CWRU researchers, Copernicus formulated a way to “compact” or tightly bind strands of DNA so that it is tiny enough to pass through a cell membrane and into the nucleus. The ultimate goal is for the DNA to produce a protein needed by people with CF to correct the basic defect in CF cells.

“The primary goal of this Phase I study was to determine if this gene therapy method is safe and tolerable as administered in this trial. *All participants in this study completed the trial without significant side effects and the treatment itself was well-tolerated,*” stated Michael W. Konstan, M.D., Associate Professor of Pediatrics at CWRU and Director of the LeRoy Matthews Cystic Fibrosis Center, Rainbow Babies & Children’s Hospital of UHC. “The secondary goals of the trial were to evaluate if the CF gene was successfully transferred to airway cells and if it functioned normally, results which would suggest that this therapy may be of benefit to people with CF. *Our data were very encouraging with indications that this gene transfer may have occurred.*”

“This gene therapy research has exciting potential as a new approach to addressing the genetic root cause of CF,” said Robert J. Beall, Ph.D., president and chief executive officer of the Cystic Fibrosis Foundation. “We are pleased that this novel method of gene delivery has cleared the first hurdles of clinical research by proving both safety and tolerability. We

eagerly anticipate results of future clinical studies utilizing this novel approach.” CFFT helped fund this initial trial, along with Copernicus and the National Institutes of Health through a Core Center Grant to the CF Center at UHC/CWRU and through the General Clinical Research Center.

Copernicus Therapeutics recently received more than one million dollars in state funding through the Technology Action Fund of the Ohio Department of Development to continue development of compacted DNA. The company is currently working on an aerosol version that would enable people with CF to have the healthy gene delivered directly into their lungs. During the recently completed study, patients received the compacted DNA in a saline solution dripped into the nasal passages. Future clinical trials will study the safety and efficacy of the aerosol approach.

“Gene transfer technology is expected to revolutionize treatment of genetic disease by using DNA as a novel therapeutic,” said Jeff Wagener, M.D., Professor of Pediatrics at the Children’s Hospital of Denver, which enrolled three patients in the study. “Striking at the root cause of CF should ultimately provide an even more effective treatment for CF than those available today which are aimed at managing the side effects of the disease.”

The underlying cause of CF, which affects approximately 30,000 Americans, is a defective gene that upsets a delicate salt/water balance in the lungs. At the crux of the process is a protein, produced by the CF gene, which controls the flow of salt and water in and out of cells. In CF patients, this protein does not operate normally in the cells that line the airways. In turn, the airways accumulate thick and sticky mucus. Bacteria proliferate in the mucus and cause chronic infections that permanently damage lungs.

Under the direction of Dr. Konstan, the research teams for this recently completed Phase I study delivered the healthy gene into twelve adult CF patients in a saline solution dripped slowly into their nasal passages. Investigators monitored salt transport in the nose, called the “nasal potential difference,” as a barometer of the procedure’s success. “CF patients have a markedly abnormal nasal potential difference,” Dr. Konstan said. Through biopsies of nasal tissue, researchers determined whether the healthy gene was “taken up” by the cells and produced enough protein to affect the transport of salt and water in and out of the cells. They found that two-thirds of patients treated had a meaningful increase in the transport of chloride ion in the nose.

The researchers and physicians involved in this study will present their findings at the American Society of Gene Therapy meeting in Washington, D.C. in early June, and at the Cystic Fibrosis Foundation Williamsburg meeting at the end of May.

* * *

University Hospitals Health System (UHHS) is the region's premier healthcare delivery system, serving patients at more than 150 locations throughout northern Ohio. The System's 947-bed, tertiary medical center, University Hospitals of Cleveland (UHC), is the primary affiliate of Case Western Reserve University (CWRU). Together, they form the largest center for biomedical research in the State of Ohio. The System provides the major clinical base for translational researchers at the Case Research Institute, a partnership between UHC and CWRU School of Medicine, as well as a broad and well-characterized patient population for clinical trials involving the most advanced treatments. Included in UHC are Rainbow Babies & Children's Hospital, among the nation's best children's hospitals; Ireland Cancer Center, northern Ohio's only National Cancer Institute-designated Comprehensive Cancer Center (the nation's highest designation); and MacDonald Women's Hospital, Ohio's only hospital for women.

Founded in 1843, the Case Western Reserve University School of Medicine is the largest medical research institution in Ohio and the 14th largest among the nation's medical schools for research funding from the National Institutes of Health. Seven Nobel Laureates have been affiliated with the school. The School of Medicine is recognized throughout the international medical community for outstanding achievements in research, teaching and service. Annually, the School of Medicine trains more than 600 M.D. and M.D./Ph.D. students.

Founded in 1908, The Children's Hospital of Denver is a private, not-for-profit pediatric health care network. It is consistently ranked one of the best children's hospitals in America by U.S. News & World Report and other publications. With more than 1,116 pediatric specialists and 2,000 full-time employees, Children's is home to a number of nationally and internationally recognized medical programs. Children's provides care at its main campus and through a network that includes four community-based urgent care sites, seven specialty-care centers and more than 400 outreach clinics in three states each year.

The Cystic Fibrosis Foundation was created in 1955 to assure the development of the means to cure and control CF and to improve the quality of life for people with the disease. CFFT is the nonprofit drug development affiliate of the CF Foundation that operates drug discovery, development and evaluation efforts. Total support of CFFT is provided by the CF Foundation.

Additional contacts: Allison Tobin

Director of Media Relations
Cystic Fibrosis Foundation
(301) 841-2665

Robert C. Moen, M.D.
President and CEO
Copernicus Therapeutics, Inc.
(216) 231-0227

Rachel Robinson
Media Relations
The Children's Hospital of Denver
(303) 861-6388