



Frank Reidy Research Center for Bioelectrics Seminar Series

Gene Electrotransfer: An Effective Nonviral Approach for Therapeutic Applications

Speaker: Richard Heller, Ph.D.

Professor and Eminent Scholar
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Bioelectrics
School of Medical Diagnostics and
Translational Sciences
Old Dominion University



When: 9:00 AM, Tuesday, April 19, 2016

Where: 1st floor conference room, IRP II

Abstract:

Gene therapy has held great promise for effective treatment of a variety of disorders. One of the critical aspects of gene transfer is effective delivery. Electrotransfer of plasmid DNA (GET) can be utilized to control expression of the transgene by manipulating parameters such as pulse width, applied voltage, pulse number and electrode configuration. We have utilized GET for delivering DNA vaccines, accelerating wound healing, inducing reperfusion of ischemic tissue and developing an immune gene transfer approach for the treatment of cancer. The immune gene therapy approach has been translated to the clinic and represents the first-in-human study utilizing in vivo GET. This approach has now been successfully tested in multiple Phase II clinical trials. GET is an effective approach for delivering plasmid DNA and the number of applications has been steadily growing.

Biosketch:

Richard Heller is currently Professor and Eminent Scholar at the Center for Bioelectrics and the School of Medical Diagnostics and Translational Sciences in the College of Health Sciences at Old Dominion University (ODU). Dr. Heller received his B.S. degree in Microbiology from Oregon State University, and a Ph.D. in Medical Sciences from the University of South Florida, College of Medicine. He is recognized as a pioneer on the use of electrotransfer for drug and gene delivery. A major focus of his current research is to develop in vivo delivery procedures for non-viral gene therapy. He has worked on the development of new protocols and devices that are being tested for potential therapies for cancer, wound healing, DNA vaccines and vascular diseases.