



Medical Education and Research Grant Outcome Report

Name: Molecular Analysis of the Putative Mammalian siRNase ERI-1

Principal Investigator: Scott Kennedy, PhD., Assistant Professor

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Department: Pharmacology - Genetics

Program: New Investigator Program

Grant Duration: 08-01-05 to 07-31-07 (24 months)

Expenditures: \$99,913 (99%)

Use of Funds (Taxonomy): Basic Science

Research Keywords: None Identified

► **Description:** RNA interference takes advantage of a naturally occurring process to degrade RNA, the intermediary translator between the DNA of genes and the protein molecules they encode. By degrading RNA, genes can be “turned off.” Initial successes utilizing RNA interference to target cancer genes have generated excitement that this technology may eventually be used to treat human disease. The project will increase knowledge of RNA interference and how the process is regulated. It may identify drug targets that eventually will allow physicians to use RNA interference as a therapy in a wide spectrum of diseases.

► **Contributions/Results:** The purpose of the study was to elucidate how RNAi functions in the nucleus to trigger pre-mRNA degradation and chromatin modification. Through this study, the investigator discovered a novel branch of the RNAi pathway. His work in the nematode *C. elegans* identified three genes essential for the regulation of gene expression in the nucleus by RNAi. It may become practical to ask if similarly modified siRNAs may be more effective therapeutics in mammals. These studies may help to identify a more effective means of utilizing siRNAs as therapeutics to treat human disease with important implications for human health

► **Met Objectives:** Project Completed

► **Timeline for Application of Results:** Unknown

► **New partnerships or collaborations:** Yates lab at UCSD and Lieb lab at UNC-Chapel Hill

► **Contributions to the Transformation:** None noted

► **Matched Dollars (cash or in-kind):** \$ 14,700

► **Dissemination:** None noted

► **Additional Funding:** Mr. Kennedy received a \$240,000 Pew Scholars award in 2006. He also received a \$200,000 Shaw Scholar Award (Greater Milwaukee Foundation) in 2007 to continue studies on this topic. Investigator submitted NIH RO1 on this topic in October 2008.