

## Bankhead-Coley Cancer Research Program

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*Molecular Genetics and Microbiology  
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*2011 Program  
Technology Transfer Feasibility  
(1-year project)*

**Project Title:** A Novel in vivo Assay System for Screening Epigenetic Modulators that De-repress Tumor Suppressor Genes

**Project Summary:** This project aims at developing the technology transfer feasibility of a novel assay system. This proprietary system can be used for the identification of chemical compounds with cancer therapeutic values, specifically those compounds that modulate the epigenetic status or change in function of tumor-suppressor genes through targeted histone modifications. Epigenetics is control of changes in gene function that do not involve changes in DNA sequences. Epigenetic regulation plays an essential role in controlling important cellular properties such as cell survival, proliferation, and differentiation. Dysregulation of epigenetic status, such as silencing of tumor-suppressor genes, is a major underlying cause of cancer and has a direct relationship to cancer prognosis. The proposed assay system, successfully developed, will provide a novel way of screening for compounds that can modify the epigenetic status for tumor-suppressor genes. It is envisioned that this grant will help to improve the feasibility of the novel assay system for large-scale commercial applications.