

James & Esther King Biomedical Research Program

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Pharmaceutics
Florida A&M University

2010 Program
Technology Transfer Feasibility
(1-year project)

Project Title: Dual channel spray-dried, self-emulsified oral formulation for treatment of lung cancer

Project Summary: Lung cancer accounts for 185,000 deaths per year in North America, which is more than any other type of cancer. Tobacco smoking is by far the most important risk factor for lung cancer and contributes to 85 percent of the total lung cancer cases. Successful treatment of lung cancer is not possible due to an insufficient amount of the therapeutic drug reaching the actual tumor site and associated unacceptable toxicity. Scientists are attempting to improve the lung cancer treatment by novel drugs with lesser toxicity issues. Our laboratory has been working with a novel PPAR-gamma agonist, which has shown potent anti-cancer activity either alone or in combination with other anticancer agents with no toxicity. However, our initial animal studies demonstrated poor oral absorption, which may limit its development as a single agent. To overcome this limitation, we have developed a self-emulsified, spray-dried formulation that has shown to have an enhanced bioavailability by about 30 percent in animals. It is expected that this will translate to significantly higher pharmacodynamic activity. The ultimate objective of this project is to prepare and commercialize a capsule formulation by generating the preclinical data in orthotopic and metastatic lung tumor models. The results from these studies are likely to generate significant interest from various pharmaceutical companies and lead to further drug development.