

## James & Esther King Biomedical Research Program

***Paris, Daniel***

*Angiogenesis Research  
Roskamp Institute*

*2008 Program  
Small Business Technology Transfer  
(1-year project)*

**Project Title:** Treatment of Lung Adenocarcinoma and Metastasis by Anti-angiogenic Fragments of Abeta

**Project Summary:** Lung cancer incidence has been increasing in the last few decades, particularly in females due to rising ratio of female to male smokers. Research indicates that the factor with the greatest impact on risk of lung cancer is long-term exposure to inhaled carcinogens due to exposure to tobacco smoke. In the U.S., smoking is estimated to be responsible for 87 percent of lung cancer cases and accounts for one-third of all cancer deaths annually. Since tumor growth, transformation, and spread are dependent on angiogenesis (growth of new blood vessels from preexisting blood vessels), blocking angiogenesis is considered an attractive therapeutic strategy for treatment.

We previously identified that a naturally occurring peptide called beta-amyloid (Abeta) can block the growth of human lung tumor transplanted into mice by stopping angiogenesis. We then determined that a shorter fragment has the same efficacy as the full-length peptide at blocking angiogenesis. We now wish to determine the mechanisms underlying this action and to investigate the molecular mechanisms responsible for the anti-angiogenic activity of Abeta-derived peptides. In this grant, we will examine if the smaller fragments of Abeta can stop the growth of lung tumors in mice models. We will also investigate different methods of delivery of these peptides to fully elucidate their therapeutic potential as a novel therapeutic for the treatment of lung cancer.