

James & Esther King Biomedical Research Program

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*Molecular Oncology
H. Lee Moffitt Cancer Center & Research Institute*

*2010 Program
Postdoctoral Research Fellowship
(2-year project)*

Project Title: IKBKE Oncogene in Lung Cancer

Project Summary: A previous study verified that IKBKE is a breast cancer oncogene (a gene when mutated or expressed at high levels contributes to converting a normal cell into a cancer cell). We have recently shown high IKBKE expression in lung cancer. Further, overexpression (excessive expression of) IKBKE induces lung epithelial cell transformation and tumor formation. Decreased expression of IKBKE sensitizes lung cancer cells to apoptosis (programmed cell death) -by chemotherapeutic agents. Based on these findings, we hypothesize that IKBKE plays an important role in lung carcinogenesis and could be a critical target for therapeutic intervention of lung cancer. We have identified a small molecule inhibitor of IKBKE. Therefore, the objectives of this project are to: 1) Examine the clinical pathological significance of IKBKE overexpression in lung cancer. We will evaluate if IKBKE is a valuable tumor marker for prognosis, diagnosis, and treatment response of lung cancer by examining a large series of tumor specimens. 2) Determine the role of IKBKE in lung tumorigenesis in vivo using mice with specific genetic characteristics. 3) Examine the role of IKBKE in chemoresistance and as a target for lung cancer intervention by evaluating the effect of our IKBKE inhibitor on lung cancer growth in cell culture and a mouse animal model.