



Award ID:  
RP110430

Project Title:  
Biochemical Mechanisms of NF-kappaB Regulation in Cancer Cells

Award Mechanism:  
Individual Investigator

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Entity:  
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Lay Summary:

A normal cell must overcome many hurdles to become a cancer cell. Most cells cannot deal with the stress of this transformation and they just die; however, a few rare cells manage to overcome the stress and they survive and thrive to become cancer cells. A major mechanism for human cells to cope with stress is to activate a master regulator called NF-kappaB. This protein controls the expression of many genes that combat stressful insults, such as pathogen infection, tissue damage and stress caused by cancer genes. Without the activation of NF-kappaB, most cancer cells simply cannot survive. Thus, cancer cells are addicted to NF-kappaB for their survival. An emerging cancer therapy is to inhibit NF-kappaB activation in cancer cells, thereby causing these cells to die. However, it is still not well understood how NF-kappaB is activated in cancer cells. The goal of this research is to unravel the mechanism of NF-kappaB activation in cancer cells. This research has the potential of uncovering new targets to selectively inhibit NF-kappaB in cancer cells, thereby providing new therapeutics to treat cancer.