



CANCER PREVENTION & RESEARCH  
INSTITUTE OF TEXAS

Award ID:  
RP100473

Project Title:  
Identification of selective modifiers of crypt stem cells the cells of origin of  
intestinal cancer

Award Mechanism:  
High Impact/High Risk

Principal Investigator:  
Chapkin, Robert S

Entity:  
Texas Agrilife Research

Lay Summary:

Adult stem cells play an important role in intestinal tissue renewal and regeneration following injury. Evidence also suggests that intestinal crypt stem cells are the cells-of-origin of intestinal cancer. Recently, Lgr5 has been identified as a small intestine and colon stem cell marker. Therefore, it is now possible to visualize stem cells and examine their behavior in the context of cancer prevention. We will use novel stem cell-specific mouse models to examine the effects of colon cancer disease progression on gene expression in colon crypt stem cells following diet, carcinogen and chronic inflammation exposure. In principle, the application of stem cell screening experiments will facilitate the identification of dietary agents that can modulate intestinal stem cells, their niche and overall crypt physiology.