



## CANCER PREVENTION & RESEARCH INSTITUTE OF TEXAS

Award ID:  
RP120280

Project Title:  
Chemoprevention of Colon Cancer by Targeting APC-deficient Cells for Apoptosis

Award Mechanism:  
Individual Investigator

Principal Investigator:  
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Entity:  
The University of Texas M.D. Anderson Cancer Center

### Lay Summary:

Cancer chemoprevention holds promise for overcoming difficulties associated with the treatment of late-stage cancers. However, a broad translation of chemoprevention to the clinic has yet to materialize. Current prevention approaches have predominantly tended toward modulating tumorigenic pathways rather than eliminating large number of premalignant cells. This tendency reflects the effort to minimize toxicity. However, the effectiveness of such modulative agents is generally low to moderate, and long-term and continuous treatment is often required to produce any significant preventive benefit. In turn, long-term continuous therapy frequently produces unanticipated adverse effects even with agents generally thought to have low toxicity. As a consequence, low efficacy results in the requirement for long-term treatment, and long-term treatment frequently leads to toxicity. A break in this cycle of futility is needed to overcome the current major limitations of clinical cancer chemoprevention. We hypothesize that if we can find a way to specifically target early genetic changes in tumorigenesis and kill tumor cells at early stage, we will be able to prevent or significantly inhibit tumor development and reduce cancer related deaths. By targeting genetic changes in early tumorigenesis, we would gain specificity to diminish potential side effects. Furthermore, by eliminating premalignant tumor cells, we will have the potential to make the approach work like therapy to reduce the duration of treatment and diminish cost as well as side effects often associated with long-term therapy. In this application, we propose to develop a novel approach for colon cancer chemoprevention by targeting premalignant colon cells for apoptosis.