CANCER PREVENTION & RESEARCH INSTITUTE OF TEXAS

Award ID:
RP150574

Project Title:
Turning on a Novel Tumor-Inhibiting Switch for Colorectal Cancer

Award Mechanism:
High Impact/High Risk

Principal Investigator:
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Entity:
The University of Texas Health Science Center at San Antonio

Lay Summary:

It is known that estrogen is associated with reduced incidence of colorectal cancer (CRC). Estrogen effects in general are mediated by two estrogen receptors called ER-alpha and ER-beta, which play different and even opposite roles in cancer. The CRC-reducing effect of estrogen has been largely attributed to the action of ER-beta. Because estrogen itself is unlikely to be clinically useful due to its known ER-alpha-mediated side effects, rallying the antitumor activity of ER-beta through ER-beta-specific pathways represents a promising approach for CRC treatment and prevention. In the current proposal, researchers with highly complementary expertise will determine whether a clinically safe ER-beta activator, together with other ER-beta-targeting agents, has the potential to serve as a new therapeutic agent for CRC. In addition, using a novel marker that specifically recognizes the active form of ER-beta, we will seek to develop a potential prognostic tool for predicting disease outcome.

There are at least three aspects of innovation in the current proposal. First, the concept of rallying the antitumor activity of ER-beta through an ER-beta-specific molecular switch is highly innovative. Second, exploration of a clinically safe ER-beta-specific activator promises to lead to accelerated development of new strategies for CRC treatment and prevention. Third, our proposed work takes advantage of a repertoire of cutting-edge techniques and unique tools. Built upon compelling innovative groundwork, this collaborative team is poised to maximize the translational potential of mobilizing the antitumor activity of ER-beta. We are confident that findings from this innovative exploratory proposal will open up new horizons for more extensive mechanistic and translational research on a clinically important, yet vastly under-explored therapeutic target.