CANCER PREVENTION & RESEARCH INSTITUTE OF TEXAS

Award ID:
RP130409

Project Title:
COMMD1 and the Control of Tumor Invasion

Award Mechanism:
Individual Investigator

Principal Investigator:
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Entity:
The University of Texas Southwestern Medical Center

Lay Summary:

One of the most lethal characteristics of cancer is its ability to grow and invade neighboring organs, and to spread to distant parts of the body in a process called metastasis. While we have good ways to take out many tumors surgically, this becomes a less effective or sometimes impossible option when the tumor invades adjacent vital structures or disseminates throughout the body. Therefore, understanding the process of tumor invasion and devising strategies that may be able to alter this property of cancer cells is a significant priority. In this context, we have identified that a gene called COMMD1 can dampen specific processes that lead to tumor invasion. Decreased COMMD1 levels are frequently observed in cancer cells, and we believe that this contributes to the increased invasive capacity of a variety of tumor types. In this project, we would like to use animal models of colon cancer to ascertain to what degree COMMD1 contributes to tumor invasion. Moreover, we intend to study how cancer cells are able to decrease their levels of COMMD1, a dangerous step that increases the ability of these cells to invade and disseminate. The successful completion of this work will establish the importance of this gene in the process of tumor invasion and will provide us with a blueprint of how COMMD1 levels may be restored in cancer cells. We believe that if this can be done successfully and safely, it may have a positive effect in restraining the ability of tumors to invade and spread. Finally, this work is expected to be applicable to a variety of human cancers.