CANCER PREVENTION & RESEARCH INSTITUTE OF TEXAS

Award ID:
RP100094

Project Title:
Novel angiogenic factor in ovarian cancer microenvironment

Award Mechanism:
Individual Investigator

Principal Investigator:
Mok, Samuel C

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

Lay Summary:

Advanced stage ovarian cancer is the most lethal gynecologic malignancy. However, molecular markers that can be used to predict clinical outcomes in ovarian cancer patients are lacking. We have previously identified a gene encodes a microfibril-associated glycoprotein called MFAP5, which secreted by ovarian cancer cells and can be used to predict poor survival and chemoresistance in patients with advanced stage high-grade serous ovarian cancer. Since our preliminary studies demonstrated that MFAP5 expression in ovarian cancer significantly correlated with microvessel densities in the tumor tissue, and it induced ?V?3 mediated cell growth and motility in ovarian cancer cells and human umbilical vein endothelial cells, we therefore hypothesize that ovarian cancer cells expressing high levels of MFAP5 can modulate ovarian cancer cell growth and angiogenesis through its interaction with a molecule called ?V?3 integrin located on the surface of both cancer cells and endothelial cells, which subsequently leads to poorer overall ovarian cancer patient survival. Proposed studies aim at (1) further delineating the role of MFAP5 in angiogenesis using tissue culture models that mimic ovarian cancer tissue and mouse models that can develop ovarian cancer similar to those in human; (2) delineating signaling pathways used by MFAP5 to promote angiogenesis in ovarian cancer; and (3) identification of novel MFAP5 targeting molecules, which can be used may be used to treat ovarian cancer patients that are stratified based on MFAP5 expression in their tumors.