CANCER PREVENTION & RESEARCH INSTITUTE OF TEXAS

Award ID:
DP150091

Project Title:
Selective Tumor Delivery of Anti-Cancer Agents in Ovarian Cancer Therapy

Award Mechanism:
Bridging the Gap: Early Translational Research Awards

Principal Investigator:
Lacko, Andras

Entity:
University of North Texas Health Science Center at Fort Worth

Lay Summary:

IMPACT: Approximately 22,000 women in the United States are diagnosed with ovarian cancer (OC) every year of whom over 15,000 will eventually die from this disease making ovarian cancer the most deadly gynecologic malignancy. In addition, despite an initial response to chemotherapy, relapse is a frequent problem in the majority of patients, in addition to developing resistance even to multi-agent chemotherapy. Such developments often necessitate the change to palliative care from a therapeutic approach. Clearly, more effective therapeutic strategies are needed using targeted drug delivery systems to improve the prognosis for OC patients. TARGETED DRUG DELIVERY: The proposed drug delivery strategy involves the encapsulation of small interference RNA (siRNA) into biocompatible nanoparticles a novel therapeutic approach to target ovarian cancer cells and tumors. Consequently, it is anticipated that the anti-cancer agent (siRNA), encapsulated into our targeted nanoparticles, will rapidly reach and destroy the ovarian tumors while leaving normal cells and tissues largely unaffected. If successful, the impact of this novel chemotherapy will thus substantially improve the prognosis for ovarian cancer patients. TIME LINE: We estimate the translational phase of this proposed project to take about 3 years to complete. Phase I clinical trials could thus begin in three years and progress rapidly from there. It is, therefore, conceivable that a marketable formulation could reach patients in 5 years. In addition to the benefit to OC patients, this proposed project is expected to produce a novel, robust drug delivery with broad application in cancer therapy. As such this technology is anticipated to be highly marketable and thus to produce jobs and income for Texas owned business firms.