CANCER PREVENTION & RESEARCH INSTITUTE OF TEXAS

Award ID:
RP110363

Project Title:
PROSTATE CANCER MODEL IN ZEBRAFISH

Award Mechanism:
High Impact/High Risk

Principal Investigator:
Jagadeeswaran, Pudur

Entity:
University of North Texas

Lay Summary:

Prostate cancer is the third most common cause of cancer deaths in men. At present, older men above 50 years are screened for prostate specific antigen known as PSA. If the PSA levels in blood are high it is suggestive of prostate cancer. Even though this test detects prostate cancer, by that time, cancer has already progressed and becomes difficult to treat without removing the prostate. Therefore, if there is a test to detect prostate cancer when it is in early stages this cancer can be treated by chemotherapy. Unfortunately such a test is not available. It has always been known that the prostate glands exist in humans and other mammals. Therefore, scientists have created prostate cancer in two different mammals like dogs and mice to discover early detection of cancer, but with no success. Thus, creating prostate cancer in animals other than dogs and mice to discover the early detection test may succeed. We have introduced zebrafish to study human disease because their genes are very similar to those of humans. We believe zebrafish can serve as a prostate cancer model to discover early detection test because we found prostate glands in zebrafish. We plan to generate prostate cancer in zebrafish by introducing tumor causing agents in zebrafish prostate by gene insertion methods. Using zebrafish with prostate cancer we will identify factors present in the early stages of prostate cancer. We can then identify similar factors in humans and invent the test for early detection of prostate cancer. Also, we will use the zebrafish with prostate cancer and test a variety of chemicals which can cure the cancer. Since large numbers of fish with prostate cancer can be grown in the laboratory it will be easy to test large number of chemicals on these animals.