



## CANCER PREVENTION & RESEARCH INSTITUTE OF TEXAS

Award ID:  
RP100735

Project Title:  
Bioengineering Cancer Immunotherapy: A Synthetic Injectable  
Microenvironment for DC Migration, Activation and Antigen priming

Award Mechanism:  
Individual Investigator

Principal Investigator:  
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Entity:  
The University of Texas at Austin

### Lay Summary:

Cancer vaccines, as a strategy to trigger anti-tumor immunity has been explored for several decades. However, effective translation into human therapy has proven elusive. Although the recent success of cervical cancer vaccines has been much hailed, that vaccine is primarily against a viral infection that causes cervical cancer, and hence does not represent the tremendous challenge in generating immunity against other cancers, most of which have evolved to avoid the immune system. New paradigms and technologies, that can precisely modulate anti-cancer immune response following vaccination, and enhance the efficacy of cancer vaccines many folds over current strategies, are urgently needed. This CPRIT project aims to develop a highly efficacious injectable vaccine against B cell lymphoma. The strategy is to use novel engineering concepts to create an artificial immune center at the site of vaccination and "train" the patient's own immune system to recognize the lymphoma cells as "diseased", just like it does for viral or bacterial infections. This should lead to a vigorous anti-lymphoma immune response and help "kill" the cancer cells. The goal is to slow down cancer progression and eventually generate protective immunity.