



## CANCER PREVENTION & RESEARCH INSTITUTE OF TEXAS

Award ID:  
RP150611

Project Title:  
CPRIT Core for RNA Therapeutics and Research

Award Mechanism:  
Core Facility Support Awards

Principal Investigator:  
Cooke, John

Entity:  
The Methodist Hospital Research Institute

### Lay Summary:

The CPRIT RNA Core at the Houston Methodist Research Institute (HMRI) will help Texas scientists to make breakthrough discoveries, and will help Texas physician investigators turn these discoveries into transformational therapies for cancer patients. Our RNA Core generates RNA (RNA is a copy of DNA, ie., a copy of a portion of a human chromosome; when the synthetic RNA is placed into a cell, it can provide a blueprint for new proteins that can enhance cell functions). Our RNACore currently is a small unit, which is partially funded by the federal government, to help stem cell biologists perform their basic research. We have created a valuable resource for stem cell scientists. For example, we have made RNA constructs for these investigators that enabled them to generate induced pluripotent stem cells from adult humans (these cells are like embryonic stem cells, but do not have the ethical concerns). We have also made RNA constructs that have allowed scientists to transform stem cells into blood-forming cells that might help people with anemia. Our little RNA core supports 50 laboratories around the world. We now hope to gain CPRIT funding so that we can provide the same great service for cancer biologists, eg. make useful tools for them to change cell behavior. Moreover, we also plan to generate RNA that can be given to humans to treat cancer. Increasing evidence suggests that cancer immunotherapies, which look extremely promising for the treatment of many different cancers, might get to the clinic faster, and more safely, if RNA is used (rather than viral vectors and DNA). Indeed, we have received requests from multiple cancer researchers at HMRI, at M.D. Anderson Cancer Center and Baylor College of Medicine if we could make pharmaceutical grade RNA for them for clinical trials of treatments for blood and solid tissue cancers (such as acute myelogenous leukemia (AML), Acute lymphocytic leukemia (ALL) and prostate cancer). Thanks for your consideration.