

**Louis A. Soddic MD, PhD**

University of California, Los Angeles

*The mechanistic exploration of estrogen driven attenuation of thoracic aortic aneurysms using proteomics*

**Abstract**

Thoracic aortic aneurysms (TAAs) occur when the main artery that exits the heart stretches to an abnormally large size. They are among the most dangerous types of cardiovascular disease because they can tear or dissect. TAAs are more common in males compared to females, animal models of abdominal aneurysms have shown protection with estrogen, and animal models of thoracic aneurysms have demonstrated augmentation of growth with male hormones. No studies have been performed to validate the effects of estrogen on TAA growth. Our approach is to study the therapeutic effects of estrogen on the formation of TAAs in a genetically modified mouse model that has a predilection to grow aneurysms. We will also study the effects of estrogen on cells extracted from human TAAs. We will then use advanced molecular techniques to survey all proteins that change in the presence of estrogen in both models in order to uncover novel targets that could slow the growth of aneurysms. This study is of great importance because there are no drugs approved to slow the growth of aneurysms or prevent dissection. The only treatment is cardiac surgery which has a high risk of death and complications due to the complexity of the anesthetic care and procedure.