

Applications

- Objective test to identify patient's having an ischemic event
- Determine appropriate patient treatment plan
- Near real-time detection of acute cardiac ischemia
- Could be a laboratory or point of care test
- Companion diagnostic

Advantages

- Accurate diagnosis ensures appropriate treatment
- Rapid, sensitive and low cost luminescence assay available
- Point-of-care using standard laboratory equipment
- Reduces unnecessary hospitalizations and costs

Inventors

Don Farthing, Ph.D.
Lei Xi, Ph.D.
[Thomas Karnes, Ph.D.](#)
[Domenic Sica, Ph.D.](#)
[Todd Gehr, Ph.D.](#)
Martin Unverdorben, Ph.D.
Lynne Gehr, Ph.D.

Contact

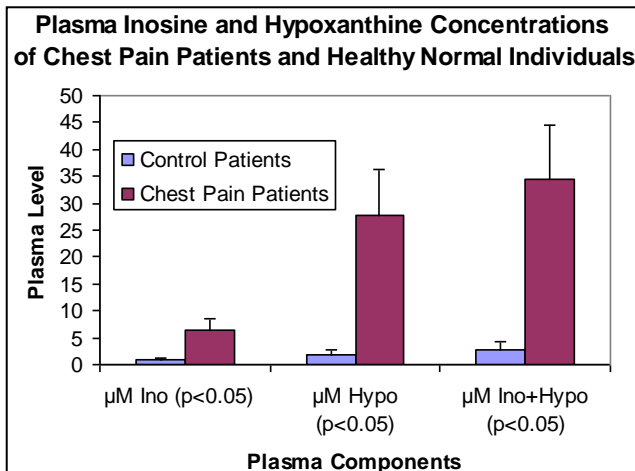
Licensing Associate
VCU Innovation Gateway
ott@vcu.edu
804-282-5188

Market Need

A significant percentage of patients experiencing acute cardiac ischemia are incorrectly diagnosed and/or discharged without appropriate treatment, leading to poor patient outcomes. The current diagnostic biomarker cardiac troponin has been the only test available to clinicians. However, this test has **severe limitations**, it is not detectable for at least several hours after symptom onset, delaying diagnosis and more importantly time-sensitive treatment that can make the difference between life and death.

Technology Summary

VCU researchers have developed a **rapid**, sensitive and low cost luminescence assay for detecting acute cardiac ischemia. In just a few minutes clinicians can make a critical decision and initiate life-saving care or discharge the patient. With rapid decision making available, no precious time is lost if care is needed and unnecessary healthcare costs are avoided if care is not. Hypoxanthine and inosine have been demonstrated to be significantly elevated in ischemic animal heart experiments and in plasma samples from patients with cardiac disease. We have demonstrated in cardiac ischemia animal models the effectiveness of our rapid test using novel assays to detect hypoxanthine and inosine in these models. In addition, VCU researchers are currently conducting a clinical trial to determine the effectiveness of these assays in detecting ischemic stroke.



Technology Status

Patent pending, US and European rights available (see WO/2009/020860).

Demonstrated in a mouse myocardial ischemia model and in patients experiencing non-traumatic chest pain and cardiac patients with confirmed acute myocardial infarction.

Clinical studies ongoing in patients reporting acute cardiac ischemia and in patients with stroke symptoms expected to be completed early June 2014.

This technology is available for licensing to industry for further development and commercialization.