Washington University in St. Louis
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NOVEL ACUTE MYOCARDIAL INJURY BIOMARKER PROFILE

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Background: Cardiovascular disease, including acute myocardial injury (AMI), is responsible for over 610,000 deaths per year in the US making it the number one cause of death. The gold standard for AMI diagnosis relies on determination of the cardiac troponin I (cTnI) plasma level. The rise in the level of this biomarker, however, cannot be detected for over an hour after an AMI. This delays treatment (such as cardiac catheterization) that may be beneficial early on in an acute myocardial event. Researchers at Washington University in St. Louis developed a new technology that enables early diagnosis of AMI.

Technology Description: The research team led by Dr. Walter A. Boyle has identified two other biomarkers of AMI in addition to the currently used cardiac troponin I (cTnI). The novel three biomarker profile can be tested in plasma and possibly urine and enables early identification of myocardial injury, myocardial injury size, as well as the time that has elapsed since the onset of the injury. This can be used in the early diagnosis and decision making for the treatment of AMI which is not possible with current single biomarker (cTnI) assays. Moreover, the invention enables early identification of high risk groups with large evolving AMIs at a time when they benefit most from intervention. Incorporation of this technology in a diagnostic kit would be very valuable in a clinical trial to diagnose AMI, definitively rule out AMI, or for risk stratification of patients with evolving AMIs.

Key Advantages:

- Earlier AMI diagnosis than existing standard
- Clarification of time-elapsed since AMI onset
- Prediction of AMI size at the onset (normally only evident after 24 hours)
- Potential to identify high-risk patients with large evolving AMIs