



## Single Assay Determination of Genotype and Protein Phenotype in the Assessment of Disease

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### Inventors

#### Chad Borges

Assistant Research Professor

Biodesign Institute

Arizona State University

#### Randall Nelson

Research Professor

Biodesign Institute

Arizona State University

### Invention Description

Diabetes is estimated to affect 24 million Americans to date. The disease has increased in prevalence by approximately 50% over the last decade and is expected to double in the next 40 years. Not only is diabetes the sixth leading cause of death among Americans, complications related to the disease include the leading cause of kidney failure, 60% of non traumatic limb amputation and 24,000 new cases of blindness annually. Furthermore, the 2007 expenditures for Diabetes diagnostics and management were estimated to be \$174 billion, the majority of which was applied to managing complications of the disease. The occurrence of complications is primarily attributed to the untimely detection and modification of elevated insulin levels.

Researchers at Arizona State University's Biodesign Institute have developed a single assay that can identify multiple, novel genotypic and phenotypic biomarkers alluding to the predisposition for diabetes, as well as, successful monitoring of the disease and its response to treatment. The assay can identify genetically modified, post translational modified and metabolically altered biomarkers. The assay allows for the detection of biomarkers found in human plasma and urine. In practice, the assay can be conducted in approximately 15 minutes at a point of care facility, using a finger prick of blood plasma (50  $\mu$ L). Thus, allowing for optimal turn around time for results, immediate modification of patient's treatment regimen and enabling an overall quality of life improvement.

### Intellectual Property Status:

Patent Pending

### Potential Applications

- **Healthcare Industry**
- **Medical Diagnostics**
- **Disease Management**

### Contact

*Jack Geltosky, PhD*

Senior Vice President  
of Business Development, Life Sciences

Arizona Technology Enterprises, LLC (AzTE)

P: 480.884.1989

F: 480.884.1984

[JGELTOSKY@AZTE.COM](mailto:JGELTOSKY@AZTE.COM)

### Benefits and Advantages

- Consolidated assay capable of detecting multiple modified biomarkers for various diseases
- Indicative of diabetic predisposition and disease management
- Minimal blood plasma necessary to conduct fast assay
- Optimal for use in point of care facility allowing for timely adjustment to treatment regimen minimizing diabetes associated complications