

# CORPORATE FACT SHEET

## Company Overview

Biomatrica, Inc. is a biotechnology company developing innovations for preservation of biological materials and enhancing assay capabilities. The platform provides a sustainable room temperature-based stabilization of biological samples including DNA, RNA, proteins, cells and assays. Biomatrica's product portfolio for pre-analysis samples range from collection to transport for short and long-term storage of biological samples at ambient conditions. Its biostabilization products increase assay capabilities. Overall, Biomatrica's products offer significant savings in energy, hardware, and reagent costs for storage and preservation of these materials over current cold storage solutions. Biomatrica's technology protects biological material from degradation and provides superior sample quality.

## Opportunity

The genomic age and development of high-throughput and molecular testing technologies have resulted in a vast pool of biological samples that require innovative approaches to collection, shipping, storage and analysis. Biological samples are primarily handled and stored cold (4°C, -20°C, -80°C and liquid nitrogen) which is costly and eco-unfriendly. Additionally, problems during transport, storage and experimental design arise, including repeated freeze/thaw cycles that can lead to sample quality degradation and loss of activity.

Biomatrica's technology delivers enabling solutions to many market segments at various stages in the process workflow (see Figure 1 below). This allows the transition from cold storage and handling of biological samples to room temperature sample preservation. The technology ensures greater sample consistency and dependability for storage and transport providing an ecologically sustainable process with optimal cost-effectiveness, while maintaining the highest sample quality for reliable results.

## Pre-Analytics Products

Biomatrica's "Gard" product line is designed to rapidly stabilize nucleic acids in cells, tissue, biopsy material, saliva, and blood samples. These products protect samples from degradation at room temperature. The Gard products fit directly into the point of care workflow and offer the ability to transport biological materials with increased quality enabling forensics, biobanking, research and molecular diagnostics pre-analytics market without the need for refrigeration.

## Enhancers for Diagnostics and Assays

Assay and diagnostic enhancers have been developed to allow improved performance of difficult PCR and STR reactions in molecular diagnostics, research and forensics markets. These products enable molecular discovery of extremely low concentrated samples such as touch or biopsy material. Room temperature stabilized reagents increase the ability to ship and store materials sufficient to complete assays.

## Stability Products

The stability product line enables long-term preservation of purified DNA, purified RNA and unpurified bacterial DNA for shipping and storage. Blood and Buffy coat can now be securely stored and banked at room temperature for molecular diagnostic applications without degradation.

## Milestones:

### 2004

- Biomatrica Incorporates
- Provisional patent application

### 2005

- Initial round of funding obtained
- Begin DNASTable technology validation at SD Sheriff's Crime Lab.

### 2006

- Lab and office opened, first employee hired
- 1 year stability study completed at SD Sheriff's Crime Lab
- Commercialization of DNASTable (DNA stabilization)
- Winner of Connect's "Most Innovative Product of the Year"

### 2007

- Commercialization of RNASTable (RNA stabilization)
- Strategic partnership formed with Qiagen GmbH
- Commercialization of DNA Archive™ with DNA Direct

### 2008

- Commercialization of PCRboost (amplification enhancer)
- Qiagen licensed second Biomatrica product.
- Commercialization of CloneStab (live bacterial transport)

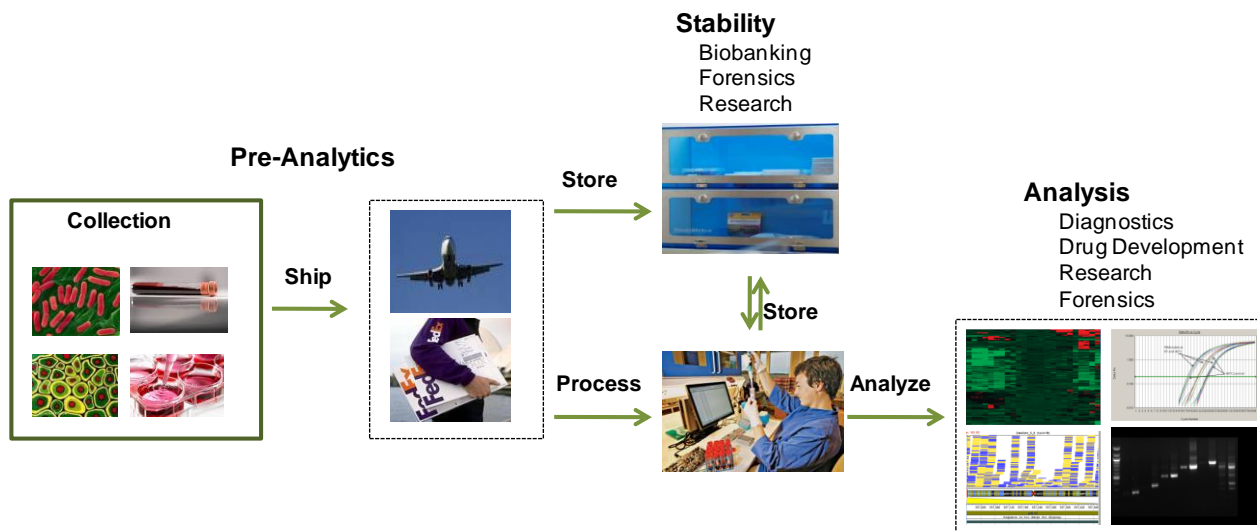
### 2009

- Commercialization of STRboost
- Commercialization of DNAGard Tissue & Cells
- Qiagen/Biomatrica launch blood stabilization product

### 2010

- Kaiser Permanente adopts DNASTable for Biobank
- Palm Beach Sheriff's Office and Washington State Patrol adopt DNASTable for forensic sample storage and shipment
- US Army Medical Research on Infectious Disease Institute identifies application for viral diagnostics
- Pre-analytic product line developed

## Process Workflow at ambient Temperature



## Laboratory Management Software

Sample handling typically involves data and sample tracking. Biomatrixa has developed SampleWare<sup>®</sup>, an easy-to-use, customizable database to store and organize laboratory samples and associated data.

## Biostability Platform – based on principle of “anhydrobiosis”

Some eukaryotic extremophiles such as tardigrades, have developed a natural biological mechanism called "anhydrobiosis" (life without water) that enables their survival while dry for up to 120 years. During these extended time periods, DNA, RNA, proteins, membranes and cellular systems are protected and can be revived by simple rehydration. Biomatrixa's biostability platform mimics this natural phenomenon with a synthetic chemistry-based stabilization technology. The technology developed works by forming a thermo-stable barrier securely around nucleic acids to provide protection against degradation and loss of biological activity, effectively "shrink-wrapping" the sample until stabilized biological sample is needed for use.

## Some representative publications on Biomatrixa's technology

- Optimizing storage and handling of DNA extracts, Lee, S.B., Crouse, C.A., Kline, M.C. [Forensic Sci. Rev., 22: 131, 2010.](#)
- Assessing a novel room temperature RNA storage medium for compatibility in microarray gene expression analysis, G.E. Hernandez, T.S. Mondala, S.R. Head, [Biotechniques, 44: 667-669, 2009.](#)
- Green technologies for room temperature nucleic acid storage, E. Wan, M. Akana, J. Pons, J. Chen, S. Musone, P.-Y. Kwok, W. Liao, [Curr. Issues Mol. Biol. 12: 135-142, 2009.](#)
- Additional scientific evaluations can be found at [http://www.biomatrixa.com/images/Biomatrixa\\_Technology\\_Evaluations.pdf](http://www.biomatrixa.com/images/Biomatrixa_Technology_Evaluations.pdf)

## Examples of organizations recommending the use of Biomatrixa's technology

- [The Scripps Research Institute Core Lab Facility](#)
- [Phalanx Biotech](#)
- [Empire Genomics](#)

## Technology Partners



## Distribution Channels

Global network: North & South America, Europe, Asia, Australia, Africa and Middle East.