

BioExpress® Cardiovascular Suite

Sharpen the focus on cardiac and vascular diseases.

One key to understanding the mechanisms that underlie a particular disease is the identification of dysregulated genes and pathways involved in the various stages of that disease.

Gene Logic has developed the BioExpress® Cardiovascular Suite to elucidate the mechanisms of cardiac and vascular disease. This interactive informational database is a subset of data and information from the BioExpress® System and includes gene expression data from cardiac and vascular tissue samples analyzed with Affymetrix GeneChip® microarrays. This Cardiovascular Suite also contains comprehensive patient clinical and physiological information, enabling scientists to perform research queries and design *in silico* experiments. The Genesis Enterprise System® Software in the BioExpress® Cardiovascular Suite enables integrated analysis and visualization of gene expression data and clinical information for applications throughout the drug discovery and development pipeline.

Fast, Accurate, and Comprehensive

The BioExpress® Cardiovascular Suite helps researchers:

- Rapidly and accurately compare global gene expression profiles in normal versus diseased cardiac and vascular tissues.
- Save time, effort, and expense involved in identifying potential drug targets and surrogate markers for diagnosis, progression, and prognosis, and in prioritizing candidate compounds.
- Identify overlapping expression patterns to find shared pathways across multiple cardiac and vascular diseases that may suggest alternate indications for existing drugs.
- Conduct *in silico* analysis of relevant *in vitro* and *in vivo* disease animal model systems, such as Cardiac Myocardial Stunning, Hypertension, and Heart Transplant Models, providing a further basis for comparison of the correlation between human and non-human disease models.
- Correlate gene expression and clinical parameters to identify biomarkers for earlier diagnosis and prediction of treatment response.

Highly Diversified Quality Tissue Samples

The BioExpress® Cardiovascular Suite is derived from a broad cross-section of clinically-defined and pathologist-reviewed diseased and normal cardiac and vascular tissue samples. Researchers can conduct virtual experiments using gene expression profiles with associated clinical information from over 1,300 samples, including:

Human Normal and Diseased Cardiac and Vascular Tissues

Congestive Heart Failure	Idiopathic Cardiomyopathy
Congenital Heart Disease	Hypertrophic Cardiomyopathy
Valvular Heart Disease	Transplant Rejection
Myocarditis	Ischemic Heart Disease
Myocardial Infarction	Peripheral Arteriopathies
Aortic Aneurysm	Left Ventricular Assist
Artherosclerotic Coronaries and Aortas	Nonfailing Heart
	Venous Thrombophlebitis

Animal Models

Hypertension
Hypertrophic Cardiomyopathy
Heart Transplant

In Vitro Studies

Extensive Clinical Data

Only gene expression data from those tissues with extensive clinical donor information are included in the Cardiovascular Suite. This clinical information can include demographics, specific diagnosis, clinical chemistry and complete blood count results, disease stages, and medication history. The type of anesthesia drug used during specimen collection, time from surgery to specimen freezing, gross and microscopic pathological descriptions, SNOMED® coding, and photomicrographs are also collected and recorded.

All tissues are subject to stringent quality control standards, applied at each stage of tissue acquisition and handling. Only those tissues that have their clinicopathological association and diagnosis confirmed by one of Gene Logic's board-certified pathologists are represented in the Cardiovascular Suite.

Robust, Reliable, and Reproducible Analysis

Gene Logic generates gene expression data using one or more types of Affymetrix GeneChip® microarrays. The use of standard Affymetrix processing protocols ensures that the final gene expression data are comparable with those generated in the customer's environment. Gene Logic adds additional proprietary processes and numerous quality control standards to further ensure that only the highest quality data are contained in the Cardiovascular Suite. The result is a robust, reliable, and reproducible analysis, capable of comparative measurements.

Powerful Tools for Precise Customized Results

The BioExpress® Cardiovascular Suite is enhanced by the Genesis Enterprise System® Software, which features powerful tools for:

- Quick identification of differentially regulated genes that may play crucial roles in disease development, progression, and therapeutic response.
- Dynamic analysis through visualization, data analysis, and seamless integration of donor information including tissue photomicrographs. (Figure 1)
- Visualization of expression levels of genes and ESTs across normal and diseased tissues. (Figure 2)

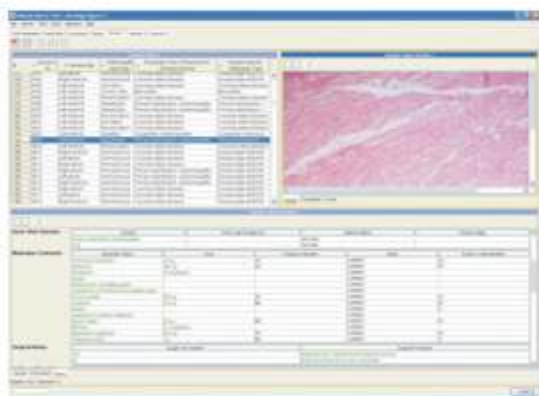


Figure 1: Donor information and histopathology slide image for primary Hypertrophic Cardiomyopathy.

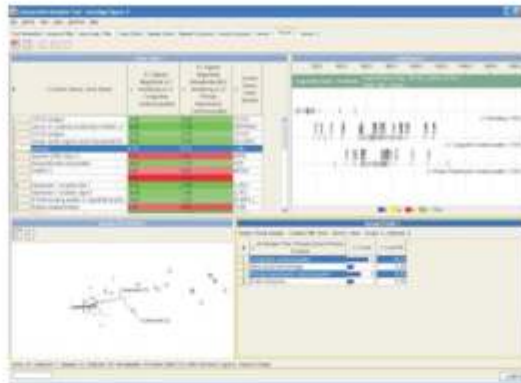


Figure 2: Comparative analysis multi-panel screen showing gene expression between normal and diseased left ventricle (LV) and PCA analysis showing differentiation between nonfailing LV (victim of trauma and intracranial hemorrhage) and diseased LV (Congestive Cardiomyopathy and Primary Hypertrophic Cardiomyopathy).

- Pathway research using enhanced signal transduction and metabolic pathway maps from KEGG and BioCarta™ databases with linkage to more detailed information about specific genes of interest.
- Chromosome mapping.

Flexible Solutions

Gene Logic offers a wide selection of gene expression information solutions in a variety of configurations to meet your scientific and budgetary needs. Customers may gain access to data from individual samples, to the entire BioExpress® System, or to a subset of the BioExpress® System, via one of our therapeutic area-specific database suites:

- Atlas Reference (Normal Healthy Tissues)
- Cardiovascular
- Central Nervous System
- Inflammation
- Metabolic
- Oncology

Our information products may be licensed on an annual subscription basis or may be licensed on a perpetual basis, depending on your needs.

For more information about Gene Logic's flexible BioExpress® System solutions, including a product demonstration, call 1-800-GENELOGIC or 301.987.1709

GENE LOGIC
An Ocimum Biosolutions Company

www.genelogic.com

134 Vintage Park Blvd, Houston, TX 77070, United States of America. Telephone: (281) 606 4633. Fax: (281) 606 4634

Email: info@ocimumbio.com

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