

SELDI TECHNOLOGY

Bio-Rad Biomarker Research Centers

- Biomarker discovery by experts
- Customized study design and statistical analysis
- Detection of low-abundance proteins
- Expertise in SELDI technology and protocols

Accelerating Biomarker Discovery

Scientific Expertise

Bio-Rad's Biomarker Research Center facilities offer state-of-the-art proteomics research services, enabling rapid biomarker discovery and assay development in a variety of research areas. These facilities enable collaborators to leverage Bio-Rad's internal scientific expertise and emerging technology solutions to answer clinical research questions efficiently and effectively. The Biomarker Research Centers use ProteinChip® surface-enhanced laser desorption/ionization (SELDI) technology to provide rapid biomarker discovery and assay development; typically, biomarkers are delivered from biological samples in a matter of weeks.

Proven Performance

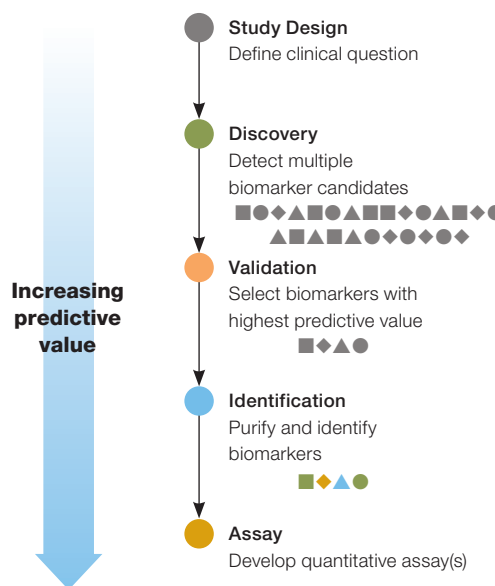
Biomarker Research Centers offer customized study designs and data analysis, robotics to increase throughput, and access to novel methodologies for enriching low-abundance proteins. Biomarker Research Center scientists have proven experience with discovery and characterization of biomarkers in many disease areas, including oncology, neurology, and cardiovascular and infectious diseases. They use optimized protocols for analysis of a diverse range of samples, including serum, plasma, urine, cerebrospinal fluid (CSF), cell lysates, lavage, and laser-capture microdissected cells.

Their experience enables them to provide collaborative support in a wide range of projects, including:

- Disease monitoring (progression, recurrence, drug efficacy)
- Toxicology and drug safety analysis
- Patient stratification
- Assay development

Most importantly, in addition to providing research services, Biomarker Research Centers can provide technology transfer and training support to help collaborators implement the optimized processes in their laboratories.

Bio-Rad's Biomarker Discovery Process



Collaborative Research Options

Pilot studies, collaboration programs, and affinity bead low-abundance protein enrichment services are all available through the Biomarker Research Centers.

Pilot studies provide a wide range of options for technology evaluation and preliminary biomarker discovery. Pilot studies include:

- Fractionation of complex samples using anion exchange or affinity bead low-abundance protein enrichment methods
- Profiling under multiple unique conditions, including varying combinations of fractionation methods, array chemistries, and mass optimization ranges to increase the total number of proteins detected
- Customization of study designs to accommodate various budget and project requirements
- Analysis of 40 or more samples for heterogeneous human population studies, with smaller sample set requirements for samples from preclinical animal models, cell cultures, and tissue samples

Collaboration programs are designed to provide in-depth biomarker discovery and characterization. Collaboration programs offer:

- Accommodation of large numbers of samples and complex study designs
- Optimized protocols and customized statistical analysis to assess disease state, drug toxicity, efficacy, and drug response profiles
- Protein purification and identification, as well as assay development capabilities
- Technology transfer at any stage of the biomarker discovery and characterization process

Affinity bead low-abundance protein enrichment services allow samples to be fractionated to enrich low-abundance proteins and dilute high-abundance proteins; fractions are returned to clients for downstream analysis.

Global Capabilities and Flexible Fee Structure

With Bio-Rad's Collaborative Research Program, each project is the result of a work plan developed through consultation with Bio-Rad scientists to define project goals, samples available, and optimal study design to meet experimental needs. Research fees are based on

the final project design. Milestones can be established for regular transfer of research results, technology, and experimental designs.

To learn more about how to establish a collaborative research project with one of Bio-Rad's Biomarker Research Center facilities, which are located in Copenhagen, Yokohama, and the Philadelphia area, please contact your local Bio-Rad representative, e-mail us at BRC@bio-rad.com, or visit us on the Web at www.bio-rad.com/proteinchip/

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Biomarker Research Centers deliver:

- Expertise in study design to yield optimum results with the samples available
- Experience with customized biostatistical analysis tools to accommodate complex study designs
- Standardized control of instrumentation and data to ensure high-quality results
- Optimum sensitivity with implementation of the latest developments in surface-enhanced laser desorption/ionization (SELDI) technology
- Capability to transition markers from discovery to assay, including validation, purification, identification, and assay development
- Rapid results using liquid-handling robotics to increase throughput and reproducibility

The SELDI process is covered by U.S. patents 5,719,060, 6,225,047, 6,579,719, 6,818,411 and other issued patents and pending applications in the U.S. and other jurisdictions.

BIO-RAD

**Bio-Rad
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