

# Spanning the Biomedical Testing Continuum

At Beckman Coulter, we span the Biomedical Testing Continuum from basic research through point-of-care diagnostics. Our automated solutions provide an essential bridge between the science of discovery and the art of medicine. By simplifying customer processes and accelerating results, these solutions improve patient well-being, enhance the economics of health care worldwide and save lives. All while offering a hope for a future where even the most debilitating illnesses can be prevented.

## Discovery Research

Universities  
Government Agencies  
Medical Centers

## Drug Research

Biotechnology Firms  
Pharmaceutical Firms

## Clinical Research

Contract Research Organizations  
Medical Centers

## Early Stage Diagnostics

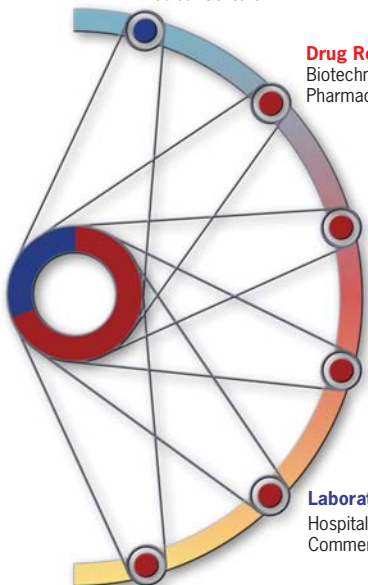
Commercial Laboratories  
University Medical Centers

## Laboratory Diagnostics

Hospitals  
Commercial Laboratories

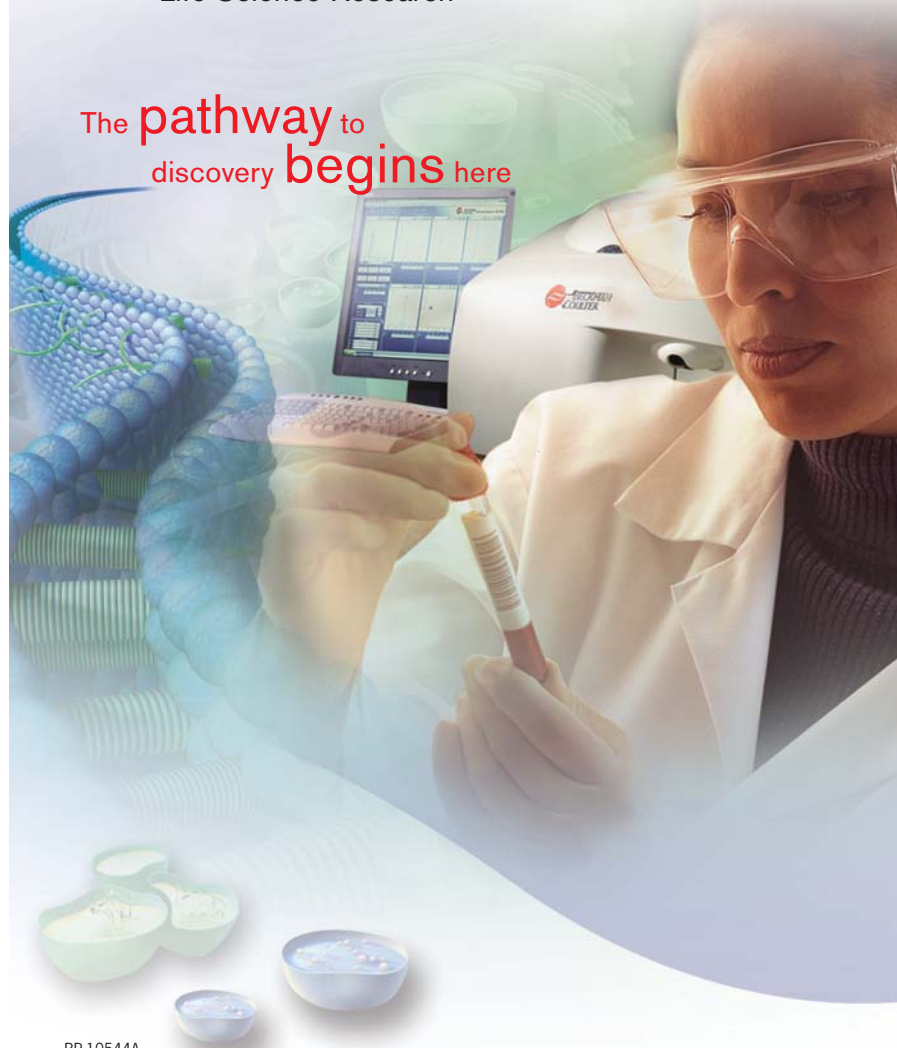
## Point-of-Care Diagnostics

Physicians' Offices  
Point of Care



## Product Solutions Guide Life Science Research

The pathway to  
discovery begins here



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Simplify • Automate • Innovate

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## SYSTEMS BIOLOGY

*Provide standardized solutions for Systems Biology to enhance biomarker discovery and commercialize diagnostic markers.*

## GENOMICS

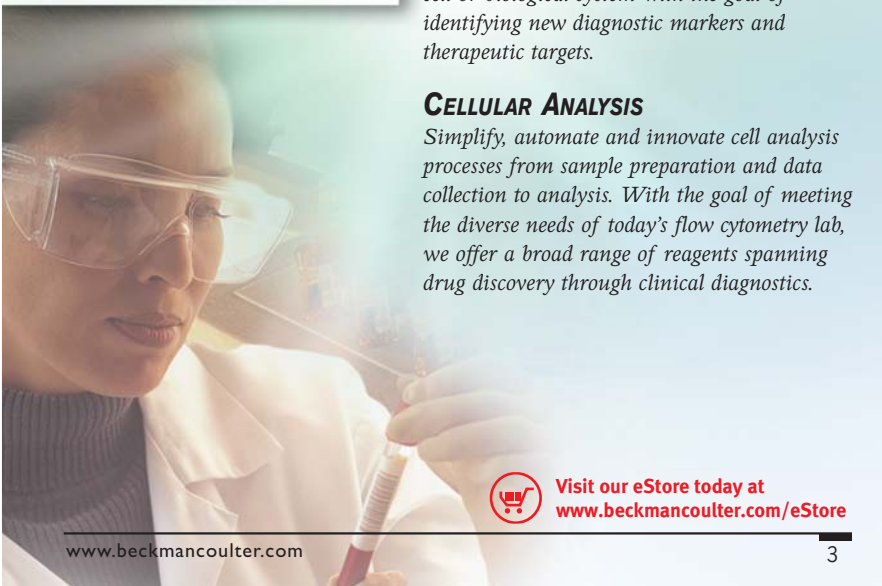
*Simplify, automate and innovate genomics processes, enabling scientists to access genomic information more readily with the goal of identifying new markers of biological, diagnostic and therapeutic interest.*

## PROTEOMICS

*Simplify, automate and innovate proteomics processes to enable scientists to characterize and profile proteins expressed in a given tissue, cell or biological system with the goal of identifying new diagnostic markers and therapeutic targets.*

## CELLULAR ANALYSIS

*Simplify, automate and innovate cell analysis processes from sample preparation and data collection to analysis. With the goal of meeting the diverse needs of today's flow cytometry lab, we offer a broad range of reagents spanning drug discovery through clinical diagnostics.*

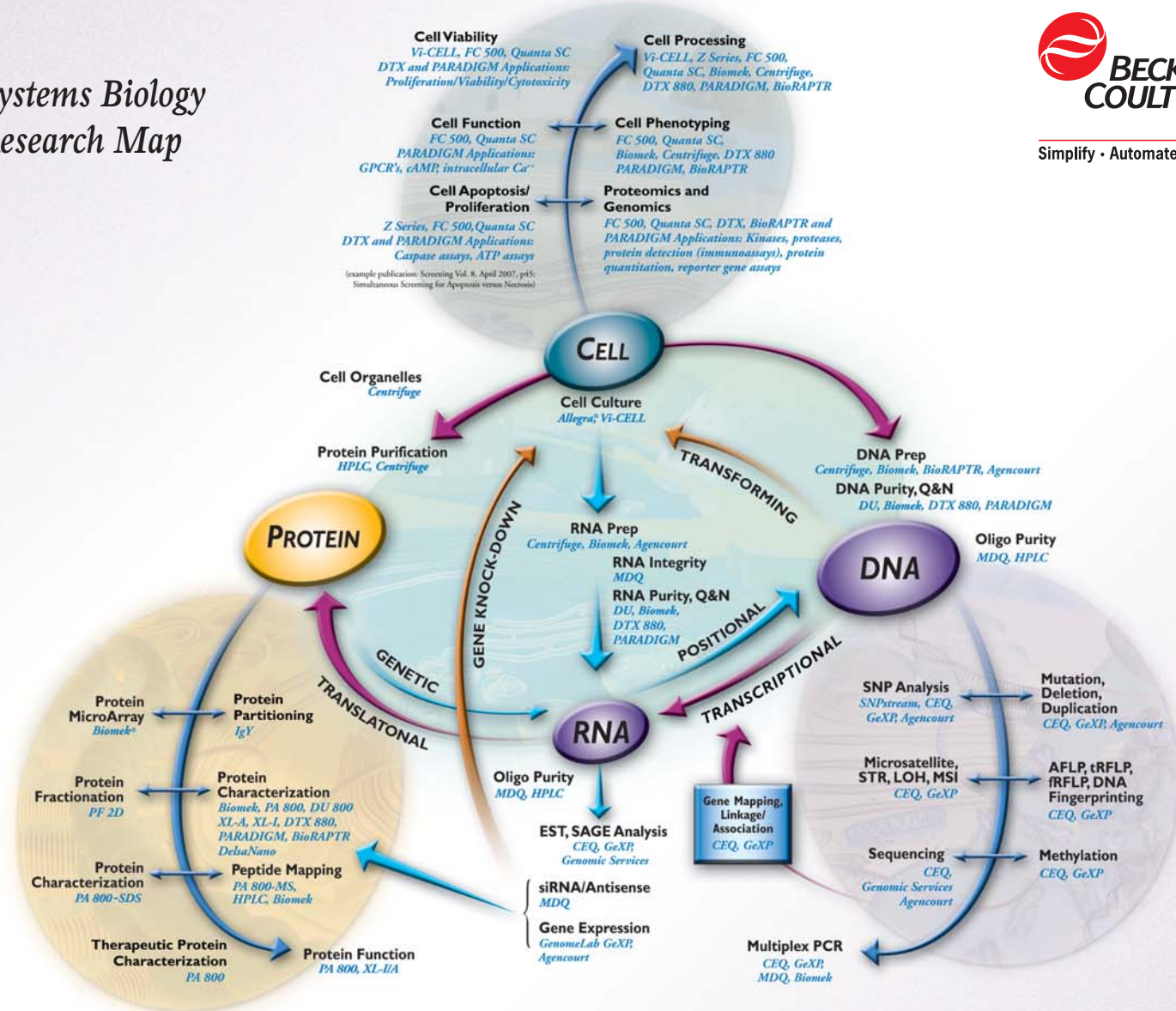


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# Systems Biology Research Map



Simplify • Automate • Innovate





## GENOMICS

### GenomeLab™: From Samples to Signatures

GenomeLab provides researchers with enhanced access to genomic information through our new integrated family of genetic analysis solutions. Designed to innovate, simplify and automate genomics processes, GenomeLab enables the identification of new markers of biological, diagnostic and therapeutic interest. GenomeLab solutions help researchers identify the differences between normal and diseased states, isolate and purify samples, prepare nucleic acids and analyze and evaluate genetic material. GenomeLab tools are used in the validation of biomarkers and their association with human identification, specific disease states, as well as in the evaluation of drug efficacy, and may lead to a new generation of standardized diagnostic tests with the promise of delivering personalized medicine.

### Gene Expression Profiling

The GenomeLab™ GeXP system provides high-throughput, quantitative gene expression analysis via scalable, multiplexed PCR\*. It delivers more genes per reaction and more samples per run than RT-PCR, thus removing bottlenecks in gene expression studies for drug research and for validating microarray studies. The GeXP cost effectively looks at the expression of up to 30 genes in a single reaction and up to 5,760 genes per run. It is ideal for applications working with candidate and signature gene sets that can provide key information relating to biological state or response.



### Automated Genomic Sample and Target Preparation

The GenomeLab suite of methods for the Biomek® 3000 automates preparation of multiplexed amplification products, suitable for GenomeLab GeXP analysis. The ArrayPLEX automated application provides target RNA preparation using the Affymetrix GeneChip\*\*. These fully supported methods use superior Agencourt® SPRI® (Solid Phase Reversible Immobilization) paramagnetic bead-based technology to process 1 to 96 samples in a single run.



\* The PCR process is covered by patents owned by Roche Molecular Systems, Inc. and F. Hoffmann La Roche, Ltd.  
 \*\* Trademarks are the property of their respective owners

### SNP Genotyping

In an automated, scalable package, the GenomeLab SNPstream® Genotyping System combines multiplexing abilities with single-base primer extension technology to provide accurate, cost-effective, medium to high-throughput analysis. This system provides a scalable solution for processing from 4,600 to over 3 million SNP genotypes per day. Forty-eight or twelve-plex power in each well of an arrayed 384-well plate delivers cost-effective, high-throughput analysis. This system delivers accuracy rates of greater than 99%, with only 0.04 ng of DNA per genotype. Plus, SNPstream users can access Beckman Coulter's Autoprimer.com, a unique web-based tool that automatically provides multiplex primer sets and tag assignments in a matter of seconds, using proprietary algorithms. SNPstream is used to accelerate genetic discoveries by validating and testing candidate SNPs and signature panels.



### DNA Sequencing and Fragment Analysis

The CEQ™ 8000 Series automates and integrates the majority of genetic analysis functions into one flexible, easy-to-use system that adapts to changes in sample type and complexity. With one gel, one array and one software platform, users can perform DNA sequencing, heterozygote detection, confirmatory sequencing, mutation analysis, allele identification, SNP discovery & scoring, LOH (loss of heterozygosity), microsatellite instability, AFLP® (amplified fragment length polymorphism) fingerprinting, gene expression and more. The dual plate systems ensure accurate sample tracking and reporting. Sample setup can be created at the initial sample preparation stage on the Biomek Series liquid handlers.



### Automated Nucleic Acid Isolation and Purification

Agencourt sample preparation reagents, coupled with our Biomek® Series automated workstations, provide a top-notch solution for a variety of applications, thus enhancing the productivity, results and economics of your research. Our patented SPRI technology allows for easy automation of nucleic acid purification without sacrificing superior performance. Agencourt SPRI systems include AMPure® for PCR\* product purification, CleanSEQ® for dye-terminator removal, Genfind™ for gDNA extraction from whole blood and serum, Orapure™ for buccal cell gDNA isolation, RNAClean® for cDNA purification, CosMCPrep® for simple plasmid purification, RNAadvance™ Tissue for total RNA extraction from tissue and FormaPure™ for total nucleic acid extraction from formalin-fixed, paraffin-embedded tissue samples.



## Agencourt Genomic Services

Agencourt offers highly flexible DNA sequencing packages tailored to meet your needs. Our industrialized genomic pipeline and powerful data management systems allow us to quickly complete DNA sequencing projects of any scope with industry-leading quality. With genomic services ranging from SNP resequencing and pre-validated kinase assays to library construction and high-throughput DNA sequencing, outsource your DNA sequencing needs to the experts at Agencourt.



### DNA Centrifuge System

The Allegra® 25R High-Performance DNA Centrifuge System performs quick and easy cell harvesting, DNA isolation and post-reaction cleanup with higher performance for standard and deep-well plates.

## Nucleic Acid Analysis

The P/ACE™ MDQ DNA System provides an automated and quantitative replacement of gel electrophoresis for oligonucleotide quality control, RNA purity analysis, plasmid heterogeneity analysis, SSCP, gene expression studies and the analysis of DNA/protein interactions.



## Nucleic Acid Quantification

The DTX Multimode Plate Readers and PARADIGM Detection Platform offer fluorescence, visible absorbance and luminescence detection. They address the needs of most genetic analysis applications and easily integrate with Biomek liquid handlers. The detectors' intuitive software platforms provide instrument control and easy protocol development.



## PROTEOMICS

To provide proteomics researchers with the most specialized and efficient research tools possible, we are integrating our leading-edge systems and world-class service with a targeted focus on advancing proteome discovery. Beckman Coulter's solutions make it easier to discover and analyze rare protein biomarkers using innovative products to partition, fractionate and simplify the proteome. Additionally, we provide instrumentation and kits for therapeutic protein characterization.

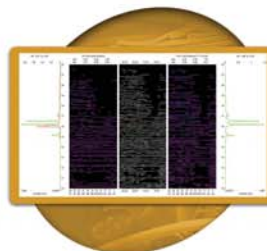
### ProteomeLab™ IgY Proteome Partitioning Solutions

Of particular importance for low abundance, proteome-based biomarker discovery in serum, plasma, CSF or other biofluids, we offer 12-plexed IgY-based immunoaffinity solutions for primates and 7-plexed solutions for rodents. Single component IgY columns are also available. Our solutions include hardware, software and consumables consisting of spin columns, medium capacity LC columns and high-capacity LC columns, able to handle up to 250  $\mu$ L human or 200  $\mu$ L rat serum or plasma per cycle. It is an important first step in the advanced proteomic sample preparation of biofluids.



### ProteomeLab™ PF 2D Protein Fractionation System

The ProteomeLab PF 2D Protein Fractionation System meets the challenge of separating and detecting proteins with an automated, two-dimensional fractionation process (in liquid phase), that resolves proteins by isoelectric point in the first dimension and by hydrophobicity in the second dimension. This system offers reproducible fractionation and top-down proteomics profiling from 1-5 mg of protein. Samples are divided into 700-1,200 liquid phase fractions in 96-well plates consisting of intact proteins ready for mass spectrometry, immunoassays or other analytical methods.



## ProteomeLab™ PA 800 Protein Characterization System

The ProteomeLab PA 800 Protein Characterization System is designed to facilitate accurate analysis of protein purity, heterogeneity and identity. By utilizing optimized chemistry and characterization methods in addition to integrated automation, the PA 800 allows for the simplified characterization of protein MW and charge heterogeneity as well as the analysis of carbohydrates. Controls built into the software enable compliance with 21 CFR Part 11.



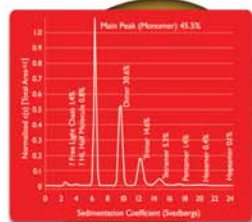
## Liquid Chromatography

System Gold® HPLC offers versatility for the analysis of peptides and proteins for the wide range of separation modes and associated mobile phases you require. In addition, automated column cleanup, system shutdown and step elution chromatography are standard on every system. Flow rates from microbore to 30 mL/min are available, in addition to stainless steel and complete PEEK flow paths.



## ProteomeLab™ XL-A/XL-I Native Condition Protein Characterization

An important component of lead optimization is the ability to evaluate a drug candidate under concentrated "shelf-life" conditions before it moves into expensive preclinical or clinical trials. The ProteomeLab XL-A/XL-I characterizes a protein's behavior in free solution under physiological concentrations, temperatures and buffer conditions, delivering more thorough characterization than other methods, to measure protein heterogeneity, stoichiometry and self-associating systems.



Source: J. S. Philo Ph. D.,  
Alliance Protein Laboratories

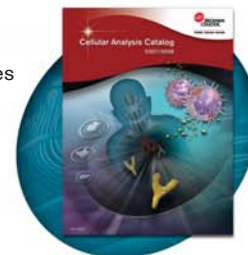


## CELLULAR ANALYSIS/CELL LAB

Beckman Coulter provides a wide range of specialized reagents, platforms and software designed expressly to help cellular analysis researchers automate, standardize and simplify key processes.

## Flow Cytometry Reagents

A variety of cellular analysis reagents meet the diverse needs of today's flow cytometry laboratories including several complete systems that combine reagents, calibrators, controls, software and hardware. Offering reagents for human and non-human antigens and six reagent lines that comprise hundreds of products including new lines for signal transduction, bead-based multiplexing and immunotoxicology.



Our Custom Design Service (CDS) provides customized solutions to meet your needs, and through peer-to-peer partnerships with our scientists, you have access to unique solutions. The CDS unparalleled design process, combined with technological advances from Beckman Coulter, ensure the consistent performance required for long-term studies.

## Cell Lab Quanta™ SC and Quanta SC MPL

The Quanta SC is an advanced, yet cost-effective flow cytometer with 3-color fluorescence, side scatter, cell size and absolute count measurements. Electronic volume measurement for accurate cell sizing is achieved by employing the gold standard "Coulter Principle". Together with multiple excitation wavelengths, including UV, advanced digital signaling processing (DSP), automated color compensation and easy to use software, the Quanta SC is an excellent tool for a wide variety of multicolor applications. The Multi-Platform Loader (MPL) upgrade option provides the convenience and flexibility of handling samples in both plates and tubes, allowing unsurpassed throughput in flow cytometry analysis. To support the 21 CFR Part 11 rule, an optional comprehensive software package is available containing such user benefits as administrator-defined user access and data file audit trails.



## Z™ Series Coulter Counter®

The Z1 Single Threshold model is ideal for rapid total cell counts or concentration, in those laboratories analyzing one or two different cell types. The Z1 Dual Threshold model is the choice when more information on the cell population is desired. Both Z1 models provide rapid cell enumeration in the range of 1-120 microns. The model Z2 offers cell counting plus the capability of size distribution measurements. Windows-based software enables convenient data acquisition and storage of Z2 results. The Z Series instruments are compact, mercury free and conform to ASTM Standard F2149 for automated analyses of cells.



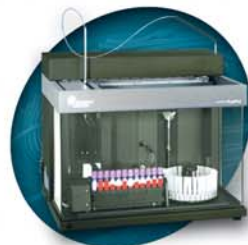
## Multisizer™ 3 COULTER COUNTER®

The high resolution, accuracy and overall range (0.4  $\mu\text{m}$  – 1200  $\mu\text{m}$ ) of the Multisizer 3 makes this instrument the choice for sizing and counting all types of cells -- from bacteria to adipose. The use of a unique pulse edit algorithm provides an accurate size distribution of a cell population. In addition to static size measurements, the digital pulse processor in the Multisizer 3 allows dynamic size measurements in real time. The computer-controlled instrument features software that fully supports 21 CFR Part 11. An IQ/OQ/PQ validation package (V-Check) is available. The Multisizer 3 is the ideal research instrument for cell biology in any study involving cell size.



## Vi-CELL® Series

The Vi-CELL automates the manual trypan blue cell viability assay. Objective percentage viability measurements are obtained in minutes. The instrument also provides real time cellular imaging. In addition to cell viability, the Vi-CELL reports cell concentration, size distribution, cell circularity and supports 21 CFR Part 11.



## PrepPlus™ 2 Workstation

The PrepPlus 2 provides precision pipetting of reagents, samples and controls, after which tubes can be transferred to the TQ-Prep for lysis. The tube carousel used on the PrepPlus 2 is compatible with the TQ-Prep, XL™/XL-MCL™ and the FC 500, allowing rapid exchange between the systems.

## Cytomics FC 500 and FC 500 MPL

The FC 500 flow cytometer provides 5-color analysis from either single or dual laser excitation. Rapid, multicolor cellular subset analysis offers more results in less time. Automated application setup standardizes the system daily, simplifying analysis for single- and multi-user facilities. Digital signal processing (DSP) and advanced digital compensation (ADC) provide the most accurate method of signal processing and color compensation. The MPL upgrade option provides the additional capability to automate sample loading using 24- and 96-well microtiter plates, as well as a 40-tube rack for standard test tubes. Advanced data analysis tools provide rapid hit detection.



## TQ-Prep™ Workstations

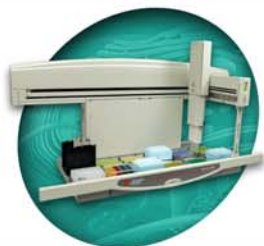
The TQ-Prep Workstation with ImmunoPrep™ lysing system offers rapid, no-wash, standardized whole blood preparation from sample to sample, lab to lab. The TQ-Prep provides automated single-tube lysis and fixation on a multi-tube (32/carousel) basis, thus increasing lab efficiency, productivity and reproducibility.





## AUTOMATED SOLUTIONS

Because rapid adaptation is critical to discovery, we enable you to automate your process, your way, by offering a full range of flexible and scalable systems. In addition to enabling cellular analysis and proteomics research, the Biomek® family provides a complete portfolio of nucleic acid sample preparation solutions with the patented Solid Phase Reversible Immobilization (SPRI®) paramagnetic bead-based technology. At Beckman Coulter, we are looking into the future to provide solutions that suit your needs for today and tomorrow.



### Biomek® 3000

The Biomek 3000 Laboratory Automation Workstation offers a flexible platform within a compact footprint. Our dedicated applications experts create automated solutions for a wide variety of commercially available kits. With Biomek software, it's easy to configure any application to meet your specific needs.

### Biomek® NX<sup>P</sup>

By incorporating a wide range of next-generation features into a small-footprint design, Biomek NX<sup>P</sup> sets a new standard for flexible laboratory solutions. It puts every aspect of liquid handling – including pipetting, dilution, dispensing and integrations – into a single, automated system that's as powerful and flexible as it is efficient and economical.



### Biomek® FX<sup>P</sup>

In today's environment, speed and performance are critical. The Biomek FX<sup>P</sup> is ready for the challenge and is our most flexible liquid handling system. By combining whole plate processing and individual well pipetting on one platform, the Biomek FX<sup>P</sup> accelerates your laboratory processing. The Biomek FX<sup>P</sup> meets your needs today and is ready for expansion or upgrade as your throughput needs change.

### Biomek® ADMETox Workstation

Early drug discovery ADME toxicity assays, such as fast Caco-2 screens, can help in rejecting test compounds that lack good pharmaceutical profiles. The Biomek ADMETox Workstation utilizes PAMPA (Parallel Artificial Membrane Permeability Analysis) technology, which uses a phospholipid artificial membrane that models passive transport of epithelial cells.



### Biomek® Assay Workstation

The progressive Biomek Assay Workstation combines productivity with innovation by offering the flexibility and capacity needed to process your assays without user intervention. The Biomek Assay Workstation (available for FX<sup>P</sup> and NX<sup>P</sup> platforms) uses the power of SAMI® Workstation EX scheduling software to optimize plate processing and ensure assay reproducibility.



### Industrial Robotics Solutions

Process automation made simple! Beckman Coulter can provide an optimized solution by integrating the right components, such as liquid handlers, plate readers, detectors and incubators, with the Motoman robotic arm, in either a waist-based or fixed-rail system – all driven by one robust software package – SAMI® Workstation EX.



### SAMI® Workstation EX

SAMI workstation EX software is a complete solution for developing, scheduling, monitoring and running your assays on Beckman Coulter Integrated Systems. It provides a graphical interface that lets scientists and technicians describe complex assays in a straightforward, easy to understand manner. Apply the power of SAMI to:

- 1) Develop your method
- 2) Optimize your schedule
- 3) Run your assay



## Biomek Tips, Labware and High Well-Density ChemLib Microplates

Beckman Coulter offers a broad portfolio of consumables for your life science automation needs. For the best system performance, use only Beckman Coulter-manufactured Biomek tips on your Biomek liquid handlers. Our tips are manufactured to stringent Beckman Coulter quality standards to ensure that we provide the highest-quality product for your Biomek automation. Made of 100 percent premium grade virgin polypropylene, all tips are certified to be free of RNase, DNase, DNA, Pyrogen/endotoxin and trace metals. The consumables portfolio also includes universal labware, from 96-well assay and storage plates to modular reservoir systems, suitable for a variety of applications. For assay miniaturization applications, Beckman Coulter offers 1536 and 3456 high-well-density plates ideal for use with the new BioRAPTR FRD™ and PicoRAPTR™ Microfluidic Workstations, as well as acoustic liquid handling systems. Combining the innovative properties of cyclo-olefin co-polymer material and intelligent microplate design, ChemLib\* Microplates provide a superior combination of optimal clarity, low auto-fluorescence, extremely flat well bottoms and an effective evaporation control design to advance your low-volume research.



## Automated Assay Optimization Software

Cut your assay optimization in half – the Automated Assay Optimization Software breaks the bottleneck when developing new assays and converting them to effective high-throughput screens. The unique software package for the Biomek Series Laboratory Automation Workstations uses a wizard to help scientists study assay constraints and variables rapidly and effectively through statistical design of experiment (DOE).



## BioRAPTR FRD™ / PicoRAPTR™ Microfluidic Workstations

Ideal for assay miniaturization applications in drug discovery, genomics and proteomics, the BioRAPTR and PicoRAPTR workstations deliver increased capacity and speed along with reduced reagent and consumable costs. The BioRAPTR workstation is an automated, non-contact dispenser for low-volume 384-, 1536- and 3456-well plate formats. It delivers precise and accurate dispensing across a low-volume range of 100 nL to 60 µL, without cross contamination. The PicoRAPTR features an eight-tip piezo head and dual-plate carrier stage for high-speed aspiration and dispensing of ultra-low volumes: 1 nL to 100 µL.



## PARADIGM™ Detection Platform

The PARADIGM Detection Platform features a selection of read-mode optimized detection cartridges that can be interchanged in less than five minutes to meet different assay needs. A detection cartridge includes all optical components and the light source required for a read mode. It is the first user-upgradable and configurable multimode reader, ideal for labs with multiple users and applications. The sensitive, high-throughput detector reads on the fly, in formats from 6 to 1536 wells.



## DTX Series Multimode Plate Readers

The DTX Multimode Plate Readers provide the flexibility and sensitivity necessary for today's laboratory and at an affordable price. DTX 800 offers fluorescence, visible absorbance and luminescence, ideal for ELISA or fluorescence intensity assays common in drug discovery. The DTX 880 Series provides UV-Vis absorbance, glow luminescence, fluorescence intensity, time-resolved fluorescence and fluorescence polarization modes. This addresses the needs of most genomics, proteomics or cellular analysis applications.



\*ChemLib is a trademark of Aurora Biotechnologies



## CENTRIFUGATION

Celebrating our 60 years of global leadership in centrifugation, Beckman Coulter designs, manufactures, sells and services a complete line of centrifuge systems.

By offering unique rotors, innovative bottles, tubes and accessories, coupled with advanced centrifugation software, Beckman Coulter delivers powerful centrifugation solutions to laboratory science. Our two highest performance families are the Optima™ Series Ultracentrifuges, offered in both floor and benchtop models, and the Avanti® Series High-Performance and High-Capacity Centrifuges. The exciting new centrifuge products are the new Optima MAX-XP benchtop ultracentrifuge and the Microfuge(R) 16 microcentrifuge.



### Benchtop

The Allegra and Microfuge® Series benchtop centrifuges provide high-performance and versatility. Designed specifically with key applications in mind, we offer the Allegra X-15R with unique cell culture flask adapters and exclusive ARIES™ rotor technology, which detects and corrects opposing load imbalances up to 50 g; Allegra X-22 Series Multipurpose Centrifuge (extremely compact, only 18"/45.72 cm wide); Allegra 25R High-Performance DNA Benchtop Centrifuge; and the Allegra 64R High-Speed Benchtop Centrifuge.



The Microfuge 16 spins quietly at 16,163 x g for fast pelleting or isolation of DNA, RNA, proteins and viruses. The Microfuge 18 offers powerful g-forces for fast pelleting and the Microfuge 22R offers high g-forces with a wide variety of rotors and maintains samples at 4°C.



### Ultracentrifugation

The Optima L-XP Series Ultracentrifuges feature a sophisticated on-board computer with powerful eXpert™ software and easy to use touch screen control. The eXpert software provides optimized run methods, run simulation software, calculation tools, rotor and tube catalogs, automatic run records and more. These models include the Optima L-100 XP and the Optima L-80 XP.

The new Optima MAX-XP benchtop ultracentrifuge delivers fast run times with up to 150,000 RPM (2,500 revolutions per second) and is exceptionally quiet – producing only half the sound output of other models. The user interface is intuitive and customizable with control via a full-color touch screen. Optional remote monitoring and control of the system is also available. Not only does the Optima MAX-XP fit inside a standard biosafety hood, but it can be ordered with HEPA filtration for enhanced safety.

### High-Performance and High-Capacity

The Avanti J Series High-Performance and High-Capacity Centrifuges deliver high-throughput and versatility to laboratory research. From high g-force micro-plate applications to 6-liter runs, the Avanti J-26XP is a very versatile floor centrifuge. The Avanti J-30I performs sub-cellular separations in either swinging-bucket or fixed-angle rotors with g-forces over 100,000 x g and the small footprint of the Avanti JE makes it suitable to fit into any lab. Finally, the Avanti J-HC is a high-capacity, high-throughput bioprocessing centrifuge capable of rapidly processing three to nine liters per run.



### Providing Multilevels of Biocontainment for Laboratory Safety

The Beckman Coulter Biosafe® Centrifuge Systems' unique multilevel approach to containment provides the most comprehensive solution to biosafety. When working with infectious agents, you can feel confident using one of our biosafe centrifuge systems as your first line of defense. From innovative labware like our Aerosolve Cannisters and HarvestLine™ System Liners to third-party tested\*\* biocontainment rotors to our centrifuges with HEPA filtration – Beckman Coulter offers the enhanced protection you need.



\* BioSafe is a term intended to describe the enhanced biosafety features of Beckman Coulter products.

\*\* Validation was done at CAMR, Porton Down, UK. or USAMRIID, Ft. Detrick, MD, USA.

## Rotors and Labware

Beckman Coulter offers the widest range of rotors and centrifugation accessories that are designed, manufactured and tested as complete systems for highest separation quality in the shortest time, safely and reliably.

### Extraordinary Rotor Library

Our innovative rotors are designed, manufactured and tested with our centrifuges, as a system, from the inside out to make sure you receive separations that continually exceed your expectations. The increased efficiency of our rotors can reduce run times. Many rotors offer biocertification\* for added safety, when you need it. Whatever your application, we have the system to meet your need.



### Innovative Labware

Since they're specially designed for innovative application solutions, our patented ultracentrifuge tubes deliver improved efficiencies, including Quick-Seal® for versatility, *g*-Max™ for small volume at greatest efficiency, *k*onical™ for the most concentrated pellet and OptiSeal™ for the easiest sealing with no tools.

HarvestLine™ System Liners are disposable centrifuge bottle liners that provide a significant improvement in the centrifugation of biological material. They simplify sample pellet retention and storage after decanting by eliminating time-consuming manual scraping of harvested solids from labware and hence enhance operator biosafety. These liners are used with a selection of Avanti Series High-Performance Centrifuge rotors.

Our innovative Cell Culture Flask Adapters save laboratories both time and money. The cell culture can be centrifuged directly in the flask without the need for the operator to transfer the sample to conical tubes.



\*Validation was done at CAMR, Porton Down, UK. or USAMRIID, Ft. Detrick, MD, USA.



## CAPILLARY ELECTROPHORESIS

Beckman Coulter is the industry leader in CE technologies and tools. Capillary electrophoresis can be an effective replacement for slab gel electrophoresis and a complement or alternative to HPLC. Our developments encompass hardware, software and chemistries, with a long list of advancements that include laser-induced fluorescence, diode array detection, advanced CE data reduction and many CE chemistries. Our CE systems are used for therapeutic protein characterization, ion analysis, chiral analysis, basic drugs, nucleic acid purity and more.

### ProteomeLab™ PA 800 Protein Characterization System

The ProteomeLab PA 800 Protein Characterization System is designed to facilitate accurate analysis of protein purity, heterogeneity and identity. By utilizing optimized chemistry and characterization methods in addition to integrated automation, the PA 800 allows for the simplified characterization of protein MW and charge heterogeneity as well as the analysis of carbohydrates. Controls built into the software enable compliance with 21 CFR Part 11.



### P/ACE™ MDQ

The P/ACE MDQ Series are automated, programmable capillary electrophoresis systems designed to perform fast separations from complex samples. Separations occur in a capillary, which is housed in an interchangeable cartridge with circulating liquid coolant, for efficient temperature control. This finely regulated temperature control allows the use of high-ionic-strength buffers and large-bore capillaries necessary for analyzing difficult samples. With CE, methods are faster to develop, easier to validate and less expensive to run. However, specialized system designs are recommended to optimize performance for different applications.



## Gene Expression Profiling

The GenomeLab™ GeXP system provides high-throughput, quantitative gene expression analysis via scalable, multiplexed PCR. It delivers more genes per reaction and more samples per run than RT-PCR, thus removing bottlenecks in gene expression studies for drug research and for validating microarray studies. The GeXP cost-effectively looks at the expression of up to 30 genes in a single reaction and up to 5,760 genes per run. Ideal for applications working with candidate and signature gene sets that can provide key information relating to biological state or response.



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## PARTICLE CHARACTERIZATION

Particle Characterization uses the Coulter Principle (electrical sensing zone method), enhanced laser diffraction (ELD), polarization intensity differential scattering (PIDS), photon correlation spectroscopy (PCS), electrophoretic light scattering (ELS) and BET surface area analysis, providing answers and solutions for those involved in the testing and measurement of the physical properties of particles.

Besides offering a blend of innovative instruments, Beckman Coulter is dedicated to providing researchers, scientists and engineers in numerous industries with valuable information. The new web site [www.CoulterCounter.com](http://www.CoulterCounter.com), dedicated to particle characterization applications and support, is only one example.

### Delsa™ Nano Series

The DelsaNano Series is a new generation of zeta potential and submicron particle size instrumentation. Using photon correlation spectroscopy (PCS) for size analysis measurements and/or electrophoretic light scattering (ELS) for zeta potential determination for particles from 0.6 nm to 7,000 nm in a concentration range of 0.001% to 10%, the DelsaNano Series has one of the widest sizing ranges and highest sensitivities available. It is the first in the industry that can measure particle zeta potential distribution in concentrated suspension utilizing the patent-pending FST technology and zeta potential of solid surfaces and films.



### Multisizer™ 3 COULTER COUNTER®

The Multisizer 3 COULTER COUNTER is the most versatile and accurate particle sizing and counting analyzer available, with an overall sizing range of 0.4 μm to 1,200 μm. Using the Coulter principle (electrical sensing zone method), the Multisizer 3 provides number, volume, mass and surface area size distributions in one measurement. A digital pulse processor even allows real-time dynamic size measurements over the length of the analysis. Its high resolution and accuracy make the Multisizer 3 an ideal tool in R&D for both industrial and biological applications.



## LS™ 13 320 Series

The LS 13 320 Series is the most versatile and sophisticated laser diffraction particle size analyzer available. Designed from conception to be fully compliant to ISO 13320-1 (the ISO standard covering particle sizing by the laser diffraction method), the LS 13 320 Series combines three patented technologies, polarization intensity differential scattering (PIDS), tornado and optic fiber spatial filter, to offer the highest resolution, reproducibility and unsurpassed accuracy in a size range from 40 nm to 2000 nm. Its FDA 21 CFR Part 11 compliance software and other features make the system easy to use and highly secure.



## SA™ 3100 Surface Area and Pore Size Analyzer

The SA 3100 is a benchtop BET surface area and pore size analyzer which uses the static dosing method. This reference method uses helium to measure the sample tube free space for highly accurate data. The unit has three vacuum out-gassing stations and one analysis port. It provides single and multi-point surface area analysis, multigas capability for surface area and full adsorption capability. User control is by an innovative touch screen. The system is PC network compatible. An optional SA-PREP™ Surface Area Outgas Station is designed for customers who need extra capacity.



## Coultercounter.com

Coultercounter.com is the new online source dedicated to particle characterization applications information and support. Besides offering the latest news, innovations and events, the site features a large solutions selection for various applications. Particle size distribution analysis, particle counting, zeta potential, submicron particle size distribution analysis and BET surface area are among the topics listed. The site also features Beckman Coulter's Particle Characterization Applications Laboratory that can help you with applications, methods development and lab analyses.



## GENERAL RESEARCH TOOLS

Beckman Coulter's General Purpose Research Tools consist of products that are used in a wide variety of your everyday applications such as determining sample concentrations, DNA purity, detecting and quantitating proteins, running ELISA's, running gene expression assays and measuring acidity and alkalinity. These products help you find solutions to address all aspects of systems biology.

### Spectrophotometry

The DU® Series Spectrophotometers feature the DU 700 and DU 800 systems. The easy to use DU 700 system is designed to address routine applications at an affordable price. The DU 800 system offers exclusive micro-focused beam technology, which delivers the full energy of the beam to microsamples – using a 50 µL microcell, for highly accurate measurement of microvolume samples. Plus, the DU 800 Series software enables compliance with 21 CFR Part 11. Also available for the DU 800 and DU 730 spectrophotometers is the nanoVette microliter measurement cell. Ideal for DNA and protein applications, the cuvette-sized nanoVette accepts sample sizes as small as 0.7 µL and is offered with interchangeable 0.2 mm and 1 mm path lengths.



### Liquid Scintillation

The LS 6500 Scintillation Counter provides the highest spectral resolution and achieves accurate results with H Number Plus, our patented external quench monitor. The system can be easily customized to meet your specific requirements. Plus, it is ideal for Luciferase, Swipe and Receptor Binding Assays.



## Electrochemistry

Dr. Arnold Beckman's invention of the pH meter in 1935 allows Beckman Coulter to bring over 70 years of experience and innovation to the field of pH measurements. Our pH meters provide quick, complete and precise pH, temperature mV, relative mV, ORP and concentration (ISE) measurements. The product line meets virtually all requirements in research, pharmaceutical, chemical and environmental applications.



## P/ACE™ MDQ

Because of its unique, modular design, the P/ACE MDQ is ideal for research, methods development and quality control applications. Since it can be rapidly reconfigured from a flexible research platform to a tightly regulated routine use platform, the system is utilized in many different industries, including basic biological research, both pharmaceutical and biotechnology development and quality control, as well as forensic and environmental science.



## CUSTOMER TECHNICAL SUPPORT

To help you get the most out of your Beckman Coulter investment, our vast array of services span pre-sale consultation, installation, training and support. In everything we do, we're committed to helping your laboratory be the most efficient and cost-effective operation possible. Beckman Coulter can bring your lab the most streamlined, intelligent and customer-focused service in the industry. From applications support to technical assistance, our focus is on providing expert service where and when it is needed. We provide only the finest quality support and are certified under ISO 9001:2000 and ISO 13485:2003 quality standards.



Beckman Coulter offers a variety of system support options: customer call centers for telephone technical assistance, on-line for 24-hour-a-day access to a wide array of helpful information and on-site hands-on support provided by a qualified field engineer. Our world-class field service specialists have earned an industry-wide reputation for excellence. Wherever you are, a global network of technical experts is available to help with all your system support needs.

To meet the various needs of the scientific laboratory, Beckman Coulter offers a wide range of support agreements designed to meet your specific coverage and financial requirements. These agreements are structured to provide you with various levels of support for hardware, software, training, regulatory compliance, product upgrade pathways and privileged call center phone entitlements.

By combining the latest breakthroughs in life science, engineering and information technology with unprecedented resources, our biomedical research solutions are advancing the state of automation and testing worldwide. With more accurate and relevant information delivered faster than ever before, our products streamline laboratory processes, increase efficiency and accelerate the journey to discovery.



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[www.beckmancoulter.com/eStore](http://www.beckmancoulter.com/eStore)