

Advertisement feature

Into the Pits

Performance enhancing tools to provide an edge



Image supplied by Thermo Fisher Scientific

In the race to discover new drugs, researchers in the pharmaceutical industry are faced with the task of developing new and innovative treatments for human ailments in an efficient and steadfast manner that produce real results. When researchers need to make a pit stop, these high performance tools are available to help them get to the finish line.

Beckman Coulter introduces the **GenomeLab GeXP Rat MultitoxPlex Kit** for preclinical drug research screening. The new kit for the **GenomeLab GeXP Genetic Analysis System** contains 25 genes involved in key toxicological pathways including toxicity, stress, DNA damage and apoptosis. It also includes three reference genes and one internal standard. The GenomeLab GeXP Genetic Analysis System combined with the kit delivers multiplexed quantitative analysis of genes from hundreds of samples at a time. **GeXP Rat MultitoxPlex assays** run in a 96-well plate format. Researchers may also add their own genes of interest to the new **Rat MultitoxPlex panel**. The GeXP system analyzes up to 30 genes in one reaction. The kit also contains a control RNA that verifies the accuracy of the assay. It is used in conjunction with the **GenomeLab GeXP Start Kit**, which contains all the necessary buffers and reagents to carry out the assay. "Many pharmaceutical companies are currently conducting preclinical toxicity studies looking at one gene at a time, using real-time PCR," explained Zhiming Jiang, Ph.D., for Beckman Coulter. "We can measure 25 genes in one reaction."

Transcreener KINASE TR-FRET Assay, from **BellBrook Labs**, is a time-resolved fluorescence resonance energy transfer (TR-FRET) immunoassay for the detection of ADP. It relies on a proprietary monoclonal antibody that differentiates ADP from ATP with high selectivity. The Transcreener KINASE TR-FRET Assay can be used for any enzyme class that produces ADP, including protein, lipid or carbohydrate kinases, ATPases, DNA helicases, and carboxyltransferases.

Designed as a "mix and read" assay, it provides a signal at low ATP conversion resulting in overall $Z' > 0.6$. The assay can accommodate from 1 μM to 100 μM ATP.

SpectraMax L, from **Molecular Devices Corporation**, is a microplate luminometer for flash and glow luminescence assays featuring a new optical system to provide increased sensitivity and greater dynamic range than its predecessor, the SpectraMax. The system features an injector module for dual injection in both 96- and 384-well microplates. For multi-user laboratories, the SpectraMax L contains **AutoWash**, an automated injector maintenance routine. For operations in a GxP and FDA 21 CFR Part 11-compliant environment, SpectraMax L features **SoftMax Pro GxP** software.

Millipore introduces the **ReNcell** product line, the only human immortalized neural somatic stem cell lines on the market today. The ReNcell products are a convenient solution for scientists needing reproducible results with neurons derived from human cells. These progenitor cells are useful in drug discovery applications, where the development of these pathways can be monitored during screening. The ReNcell product line consists of two cell lines of immortalized human neural progenitor cells and media for the maintenance, expansion and freezing of the cells. Cell lines and media are available either individually or as a kit. These immortalized human neural progenitor cells have the ability to differentiate into neural cell types and will replicate indefinitely. ReNcell immortalized cells display the same marker patterns as normal cells and are able to grow and remain stable after culturing.

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The SpectraMax L from Molecular Devices Corporation



The Acumen eX3 from TTP LabTech

ActiPix D100, from **Paraytec**, is a miniature multiplexed capillary UV area detector that uses a capillary as a combined sample vessel and optical element to provide inherent spatial separation of sample and reference beams. ActiPix D100 is suitable for capillary LC and CE systems because it allows minute (picolitre to nanolitre) volumes to be measured. Using an active pixel area sensor to capture measurements, imaging of single or multiple capillaries is achieved on a single sensor. Simultaneous measurement of multiple capillaries allows high throughput of samples on the ActiPix D100. Highly sensitive and linear over five orders of magnitude dynamic range, applications for the ActiPix D100 include monitoring nanoscale biocatalytic reactions, measuring molecular size of both small molecules and biomolecules, coupling with LC or CE-MS.

The **Varioskan Flash**, from **Thermo Fisher Scientific**, is a spectral scanning multimode reader with fluorescence intensity, time-resolved fluorescence (TRF), photometric, and luminometric detection technologies. It provides unlimited wavelength selection, up to three onboard dispensers, specially designed optics, and the **SkaniIt Software**. Varioskan Flash has been designed for automated systems, offering integration and the capability to read up to 1536-well plates. The instrument has two optical detection systems: Luminometric for measurement of any assay, including multi-label assays requiring wavelength selection; and, monochromator optics for assay optimization with the capacity to study luminometric spectra. For rapid assays, such as flash luminometry and Ca^{2+} flux, the instrument supports simultaneous dispensing and reading, enabling monitoring of fast kinetic measurements.

The ability to add reagents in any order or in any phase of a kinetic assay enables sequential multi-step assays. For temperature sensitive assays, the on-board incubator maintains temperature while preventing build up of condensation on microplate lids to ensure optical clarity. Varioskan Flash is controlled by SkaniIt Software allowing simple setup, data reduction and comprehensive report formatting, as well as FDA 21 CFR Part 11 compliance.

Acumen eX3 microplate cytometer, from **TTP LabTech**, may be equipped with up to three lasers at 405, 488 and 633 nm, offering a wavelength range for excitation that is similar to that of white light source instrumentation and to increase the variety of fluorescent reagents compatible with the system. Acumen eX3 provides the object recognition capabilities of a CCD imager combined with a bulk fluorescence reader. Capable of scanning up to 64 whole wells at a time, Acumen laser-scanning fluorescence microplate cytometers can perform cytometric analyses at throughputs of up to 200 plates - or 300,000 data points. Available with software to enable exporting of TIFF images, transfer from assay development on microscope-based CCD Imagers to assay screening is facilitated.

Rockland Immunochemicals offers the generation of specific reagents, the development of specific *in vitro* assay systems and generation of data to support PD/PK studies to assist biotechnology and pharmaceutical companies in drug development. Rockland develops primary and secondary antibodies for research, assays and performs pre-clinical studies in a 24,000 sq. ft. facility compliant with current Good Manufacturing Practices, and located nearby Philadelphia, PA.

FlexiPlate siRNA multi-well plates, from

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Zhiming Jiang, Ph.D.
Product Manager,
Beckman Coulter

QIAGEN, enable the customization of siRNA sets that deal with high-throughput RNAi screening of human, mouse, and rat genes in pathway analysis or drug discovery research. siRNA sets are available for whole genomes, druggable genomes, and many gene families including phosphatases, kinases, and GPCRs. FlexiPlates can be ordered at 0.1 nmol, 0.25 nmol, and 1 nmol scales in 96-well plates for any human or mouse target genes. siRNAs and controls can be selected and plate layout specified with a web interface. siRNAs are designed using HP OnGuard siRNA Design which has features that ensure minimum off-target effects and maximum potency. Design features include neural-network technology, proprietary homology analysis, 3' UTR/seed region analysis, SNP avoidance, and interferon motif avoidance. For efficient transfection, HiPerFect Transfection Reagent enables transfection of low siRNA amounts with minimal cytotoxicity.

Companies mentioned in this Product Focus:

Beckman Coulter - www.beckmancoulter.com
Bellbrook Labs - www.bellbrooklabs.com
Molecular Devices Corporation - www.moleculardevices.com
Millipore - www.millipore.com
Paraytec - www.paraytec.com
QIAGEN - www.qiagen.com
Rockland Immunochemicals - www.rockland-inc.com
Thermo Fisher Scientific - www.thermofisher.com
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