

# NEWSLETTER XXVII

Innovative Tools for Molecular and Cell Biology

## Universal Detection of Nucleotide-Dependent Enzymes



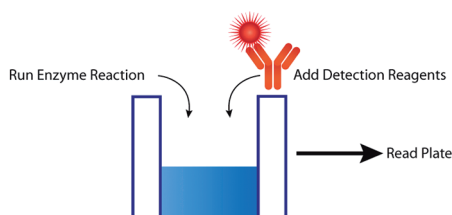
### Transcreener® HTS Assays

#### Four Assays, Thousands of Targets

##### Features

- Transcreener assays rely on direct immunodetection of nucleotides, which is less susceptible to interference than complicated enzyme-coupled assay schemes
- Four types of Transcreener nucleotide detection assays enable you to screen thousands of target enzymes faster and more efficiently
- Your choice of FP, FI, and TR-FRET readouts; all with far-red fluors and certified performance on major multimode readers
- Homogenous mix-and-read format can be used for endpoint assays or for continuous monitoring of enzyme activity
- Overnight reagent and signal stability means reliable, robust screening data in large automated screens

Transcreener is a universal assay method that can be used across entire families of nucleotide-dependent enzymes. Rather than using separate assays for a multitude of specific reaction products, such as phosphorylated proteins or lipids, a single nucleotide detection assay can be used for all of the enzymes that generate a common nucleotide product. For example, ADP detection can be used as a universal kinase assay method for any protein, lipid, or carbohydrate kinase.



**The Simplest and Most Flexible Protocol Available!**

### Emerging Targets • Success Stories



#### Finding New Antimicrobials

The Transcreener ADP<sup>2</sup> FP ATPase Assay assists to discover inhibitors of the ABC transporter MsbA, which is critical for virulence of Gram-negative pathogens.



#### Enhancing Checkpoint Blockade Immunotherapy

Sensitizing tumors with HSP90 inhibitors seems to be a promising strategy to increase the effectiveness of immunotherapy. This approach requires novel HSP90 inhibitors as well as precise evaluation of known inhibitors. The Transcreener ADP assay kit substantially accelerates the pace of investigation.

#### Transcreener Assay Helps Find New Approach to *Clostridium difficile*

More details and further success stories can be found in the BellBrook Labs Blog!

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## Food Grade Expression Systems

### Overexpression of Proteins in *Lactococcus lactis*

- Stable expression without addition of any antibiotics
- Simple fermentation, scale-up & downstream processing
- Safe platform for production of biotherapeutics and diet components
- Metabolite engineering
- Intracellular expression or secretion
- Inducible and constitutive expression systems
- Endotoxin-free
- Suitable also for other lactic acid bacteria



in cooperation with



### New Frontiers in Disease Prevention & Improving Wellbeing

- Live Biotherapeutic Production: genetically modulated *Lactococcus lactis* bacteria that are able to *in situ* express a variety of therapeutic proteins
- Modulation of microbiota related to diseases
- Production of functional food ingredients, such as collagen, targeted probiotics, and extra proteins
- Creating new prebiotics acting as fuel for probiotics



Also available:

***Bacillus subtilis* Food Grade Expression System**

## Fluorescent Probes & Assays

### Montana Molecular

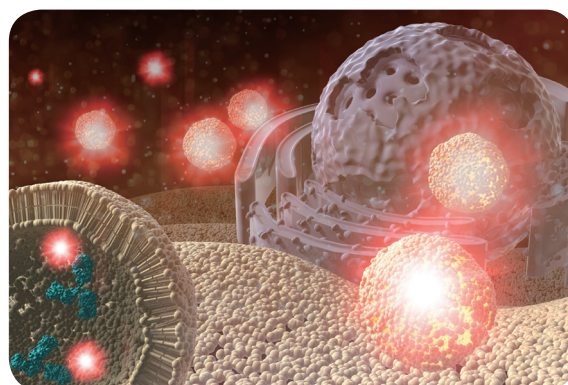
#### Fluorescent Biosensors Powering Basic Research on Cell Signaling in Health and Disease

- Live-cell assays
- Measure multiple second-messenger components of cell signaling pathways in real time and in relevant tissues & cell types
- Characterize signaling pathways activated by drugs, e.g., in pancreatic islets, neurons, cardiomyocytes, osteoblasts as well as in standard cell lines
- Conveniently assess intracellular parameters like cAMP, DAG, PIP<sub>2</sub>, Ca<sup>2+</sup>, and voltage
- Robust cell-based assays
  - Easy assay steps – No cell lysis
  - BacMam delivery to most cell types
  - Fluorescence imaging or plate reader detection
  - Multiplex GPCR Assays: G<sub>s</sub>, G<sub>q</sub>, G<sub>i</sub>, Voltage

### ABP Biosciences

#### Fluorescence Labeling and Detection Strategies

- Cell imaging probes - From organelles & membranes to whole cells
- Probes for cell proliferation and viability
- Andy Fluor™ Dyes - A selection of dyes across the spectrum for multiplexing & multicolor detection
- Extremely low-priced



### GORYO Chemical

#### Monitoring Cellular Redox Control via Live-Cell Imaging

- **SSip-1** – Sulfane sulfur-detecting fluorescence probe
  - Abundant sulfane sulfur species play an important role in maintaining the intracellular reducing environment; this new product is suitable to monitor the intracellular concentration change of these species
- **QuicGSH3.0** – Fluorescent probe to quantify intracellular glutathione based on FRET
  - Slow photobleaching and low cytotoxicity enable stable measurement of intracellular GSH concentrations
- **ROSFluor™ Series** – Selective cellular ROS detection
  - Fluorescent probes for a variety of Reactive Oxygen Species (ROS)
- **NOFluor™ Series** – Detection of nitric oxide



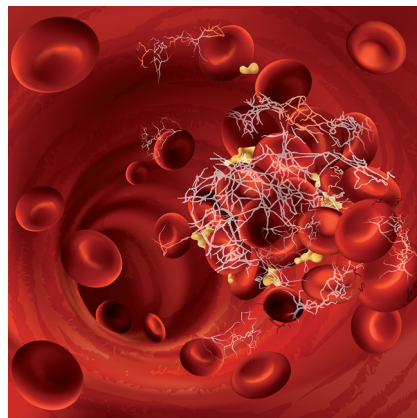
## Highly Sensitive Detection of Enzyme Activities

### NEW! Kallikrein Assay Kit

- Detection of human plasma kallikrein
- Compound screening for plasma kallikrein inhibitors
- Sensitivity 1 ng/mL
- Fluorimetric detection
- Compatible with high-throughput screening (HTS) for use in drug discovery

Human plasma kallikrein, a serine protease, is first synthesized as an inactive prekallikrein in liver and circulates in the plasma. Once activated by activated coagulation factor XII (FXIIa), plasma kallikrein releases bradykinin (an inflammatory mediator) from high molecular weight kininogen (HMWK).

Plasma kallikrein is involved in several physiological and pathological processes such as blood coagulation, the classic complement cascade pathway, and the activation of the alternative complement pathway.



### Large Selection of SensoLyte Assay Kits Available!

For activity detection of specific proteases & other enzymes. For neuroscience research, cardiovascular and bone-related diseases, cancer and apoptosis, oxidative stress, epigenetics, cell adhesion, and viral and bacterial proteases.

distributed for **ANASPEC**

## Spheroid Culturing

LAB  
SUPPLIES  
MoBiTec

### PrimeSurface® 3D Culture Spheroid Plates Ultra-Low Attachment Plates

PrimeSurface cultureware are ultra-low attachment (ULA) dishes and plates that promote scaffold-free self-assembly of spheroid formation. The plates are pre-coated with a unique ultra-hydrophilic polymer that enables spontaneous spheroid formation of uniform size and shape. The ULA plates have high optical clarity making them highly suitable for bright field imaging and confocal microscopy.

#### Features

- A variety of well shapes to enable spheroid culturing of your specific cell type
- Uniform single spheroid formation in each well
- Stable, non-cytotoxic, and non-cell adhesion surface
- Easy handling, compatible with liquid robotic system
- Sterilized individual packaging

**Sample Plates  
Available!**

distributed for **sbio®**

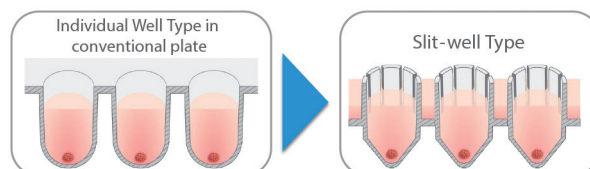


### NEW! PrimeSurface® 96 Slit-Well Plate

#### Features

- Generate and maintain uniform spheroids
- Exchange media without disturbing spheroid formation
- Minimize media exchange time by simultaneous delivery of cell culture media to all 96 wells

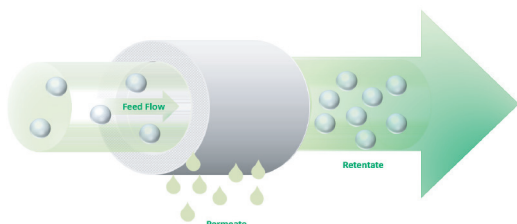
With the introduction of PrimeSurface 96 Slit-Well Plate, media exchange for 96-well plates can be efficiently handled with one-step dispensing or aspiration for all 96 wells. This enables a decrease of the pipetting time by over 80% while minimizing the risk of spheroid damage.



## TFF-Easy: Tangential Flow Filter for EV Concentration

### Features

- A unique concentrator suitable for all EV containing samples, e.g., cell media or urine
- Easy removal of small molecules and ions from the EV preparation
- Reusable multiple times
- Facilitates EV dialysis to change buffer composition



Hollow fiber cartridge; the small dimension of the device allows to concentrate samples from 5 ml up to bigger volumes.



Save time  
and save EVs!

## Purified Exosomes and Microvesicles

### NEW! Lyophilized EVs from Mesenchymal Stem Cells

- Mesenchymal Stem Cells (MSCs) derived EVs are emerging as a new therapeutic strategy for cell-free regenerative medicine
- Exosomes & microvesicles are isolated from adipose tissue derived MSCs
- Standardized positive controls



distributed for

**HansaBioMed**  
Life Sciences

Part of **Lonza**

## Lipidomics

### Lipid-Protein Interaction

#### Lipid Coated Beads

Echelon is introducing a new class of lipid microparticles small enough to be used in phagocytosis experiments! Phosphatidylserine (PS), Phosphatidylcholine (PC), and PC/PS microparticles have phospholipids attached in a unique way allowing headgroups to be exposed and available for the study of biological interactions. Their size, approximately 3  $\mu\text{m}$ , is ideal for phagocytosis and accommodates analysis with standard flow cytometry and microscopy methods.

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www.echelon-inc.com

### LysoLipid Research

#### LPA Antibody

Lysophosphatidic Acid (LPA) is a serum-derived phospholipid involved in diverse cellular processes. Recent research indicates LPA may play a significant role in the pathophysiology of cancer and may be used as a biomarker for ovarian cancer. The LPA antibody is validated for use in IHC, ICC, and ELISA.



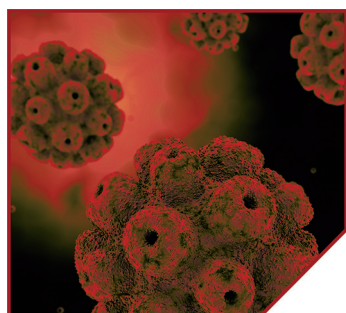
# Polyomavirus JC Assay Kit

IN VITRO DIAGNOSTICS  
AND ASSAYS  
MoBiTec

## Detection of Specific IgG Antibodies

### Features

- Samples: serum, plasma
- Quantification using 5 standards
- Incubation at laboratory temperature
- CE/IVD-certified ELISA
- Recombinant antigens do not cross-react with other polyomaviruses
- High sensitivity (95%) and specificity (96%)
- Ready-to-use HRP conjugate and controls



### Application

- Diagnostics of diseases associated with polyomavirus JC
- Monitoring of progressive multifocal leukoencephalopathy risk in patients with immunomodulatory therapy (natalizumab)

distributed for



Also available:

**Polyomavirus BK Assay Kit**

# Label IT® Nucleic Acid Labeling Reagents

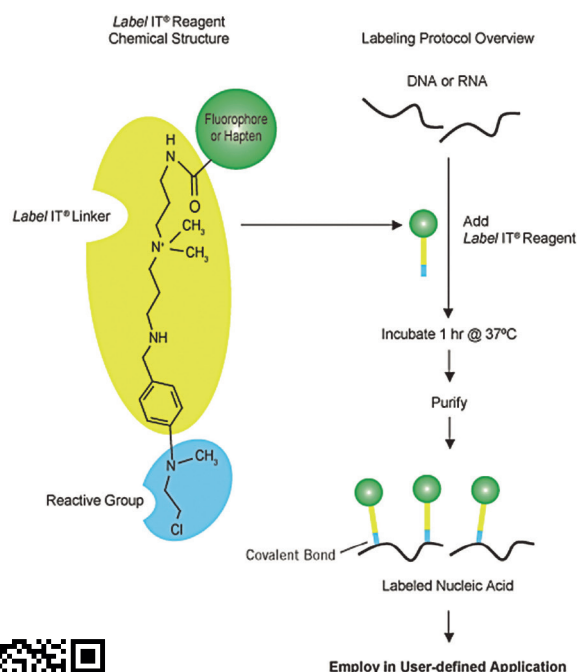
FLUORESCENCE  
TECHNOLOGY  
MoBiTec

## Efficient, Direct, Non-Enzymatic Labeling of DNA and RNA

- Label any DNA or RNA template
  - Suitable for a wide range of applications
- One-step chemical method
  - Easily and consistently control the labeling reactions
- Adjustable labeling density
  - Achieve high sensitivity with optimally labeled DNA & RNA
- Covalent mechanism
  - Permanent, non-destructive modification of nucleic acid residues is ideal for many diverse applications; labels do not impact hybridization performance
- Label: different fluorophores & haptens available

### NEW! MFP488 Nucleic Acid Labeling Reagent

- High photostability
  - Facilitates longer time for observation & image capture
- Widespread instrument compatibility
  - Spectrally similar to fluorescein
- Stable at low pH
- Special introductory price!



Product Brochure

distributed for







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Clare Chemical Research



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