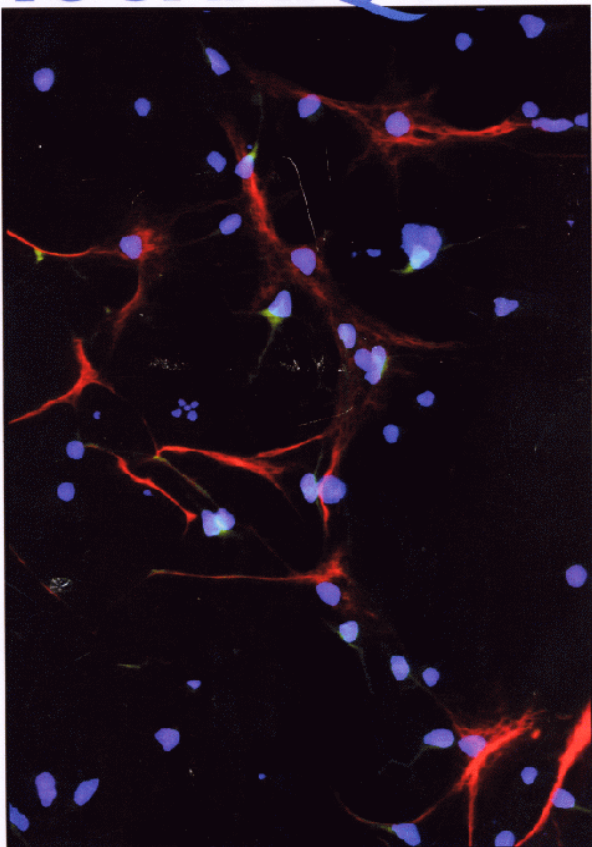


BioTechniques®

The Journal of
Laboratory
Technology for
Bioresearch



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May
2002

New Products for Bioresearch

Considerable Benefits in Drug Discovery

Eprogen has made a significant advance in the field of proteomics research through its introduction of ProteoSep™ products and services. It is a powerful protein separation technology designed to characterize more easily and "map" complex protein mixtures. ProteoSep is an all-liquid phase alternative to 1-D and 2-D gels that produces high-resolution maps of such complex protein mixtures as whole cell lysates, tissue, and sera. This HPLC-based technique provides for easy collection of liquid fractions, making it an excellent complement to mass spectrometry and automation. In addition, these fractions will contain intact proteins, allowing scientists the ability to more easily study post-translational modifications. Direct analysis of intact proteins allows for the retention of important biological information that is lost using existing peptide analysis techniques. Users of the ProteoSep technique achieve significant "workflow" benefits in a high-throughput analysis environment. The increased speed and reliability of the ProteoSep technology provides considerable benefits to those involved in screening potential new drug candidates and evaluating new approaches to disease therapy.

Eprogen's ProteoVue™ software is used to produce both 1-D and 2-D maps of expressed proteins. The software displays the proteins present in an easy-to-read format familiar to biological researchers. This integral feature of the software gives scientists the power to study proteins present in multiple samples more effectively and, along with the benefit of liquid fractions, judiciously choose proteins of particular interest for further analysis.

Eprogen

Circle No. 273

Microarray Hybridization with Active Vibration

Thermo Hybrid launches its microarray hybridization system, the HyPro™. Based on the OmniSlide in situ PCR system, Thermo Hybrid has developed a superior slide hybridization system for batch hybridization, the HyPro™, for up to 20 slides and the HyPro™₁₀₀ for up to 100 microarray slides. This new hybridization system incorporates a novel active vibration system. Vibration encourages increased molecular movement of the solution and contact with the immobilized probe. This movement eliminates local depletion of hybridizing target at the microarray platform surface, which results in reduced backgrounds and improved signal-to-noise ratios. The system also incorporates a flat heating block, providing excellent uniformity across the microarray slide. This minimizes inter- and intra-slide variability, ensuring that each arrayed feature undergoes equivalent hybridization, resulting in exceptional consistency. The HyPro can be used with coverslips or adhesive hybridization chambers, permitting a flexible approach to array hybridization. In addition, the HyPro is compatible with all microscope slide-sized microarray consumables (approximately 25 x 75 mm).

Thermo Hybrid

Circle No. 274

High-Specificity RNA Polymerase Mixtures

RNA Polymerase-Plus™ is a high-specificity RNA polymerase enzyme mixture containing SUPERase™ In™ RNase Inhibitor at no added cost. SUPERase In RNase Inhibitor is an added value offering broad-spectrum protection against enzymatic degradation of the synthesized RNA. These cloned, high-purity RNA polymerases have a high specificity for their respective promoters and transcribe large amounts of RNA with no cross talk between promoters. The RNA Polymerase-Plus enzyme mixtures are ideal for the synthesis of RNA for blot and in situ hybridization probes, RPA analysis, in vitro translation, and antisense RNA synthesis.

Ambion

Circle No. 275

1194 BioTechniques

Colony PCR Screening Kit

Z-BIOMED has developed the Direct-Load® Colony PCR Screening Kit for rapid screening of colonies using PCR. The kit contains everything needed for colony PCR screening and one of six primer sets compatible with the most commonly used vectors. The kit can be used with bacterial colony, bacterial culture, and plasmid DNAs. The colony PCR products can be directly loaded on agarose gels to check inserts. It takes about 3 h using this kit to screen colonies for inserts compared to 1-2 days using the traditional method of DNA minipreps and restriction enzyme digestions. 1 cost for screening 100 colonies is less than the cost of the Plasmid MiniKit for 25 preparations.

Z-BIOMED

Circle No. 2

Efficient Transfection of siRNA

The Targetect™-siRNA transfection kit efficiently delivers siRNA into a variety of cell types. Recently, it has been shown that when short RNA duplexes are introduced into mammalian cells in culture, sequence-specific inhibition of target mRNA can be achieved. Highly efficient delivery of fluorescently labeled siRNA using the Targetect-siRNA transfection kit has been demonstrated into a variety of cell types such as HEK 293 cells, OVCAR-3 cells, HUVECs, and Cos-7 cells without any detectable cell damage.

Experiments involving transfection of luciferase-directed siRNA into HEK 293 cells expressing the luciferase gene have resulted in 90% reduction in luciferase activity within 24 h after transfection of the siRNA. Besides HEK 293 cells, silencing of target genes transfection of the appropriate siRNA has also been demonstrated in HUVECs. The main advantages of the Targetect-siRNA reagent is its ability to deliver siRNA efficiently, even into difficult-to-transfect cell types such as HUVECs and OVCAR-3, and the low amount of siRNA (pmol amounts) required for knocking out expression of target gene.

Targeting Systems

Circle No. 2

Site-Directed Mutagenesis Kit Creates Diverse, Semi-Random Mutant Libraries

The QuikChange® Multi Site-Directed Mutagenesis Kit from Stratagene simplifies the creation of diverse, semi-random mutant libraries. This kit offers rapid and reliable site-directed mutagenesis DNA at up to five different sites simultaneously in virtually any c-bi-stranded plasmid. This technology allows the incorporation of degenerate oligonucleotides in a mutagenesis reaction, which is not possible using traditional mutagenesis techniques. This is a rapid method to introduce different amino acid side chains at locations on a protein of interest.

In an easy, one-day, three-step procedure, a single mutagenic oligonucleotide containing a degenerate codon is used to mutate each site of a dsDNA template. Introducing many different amino acid side chains at key locations on a protein provides an opportunity to refine protein structure relationships. As a result, this technology significantly reduces the time needed to create libraries and mutant protein structure-function studies easier and less time consuming.

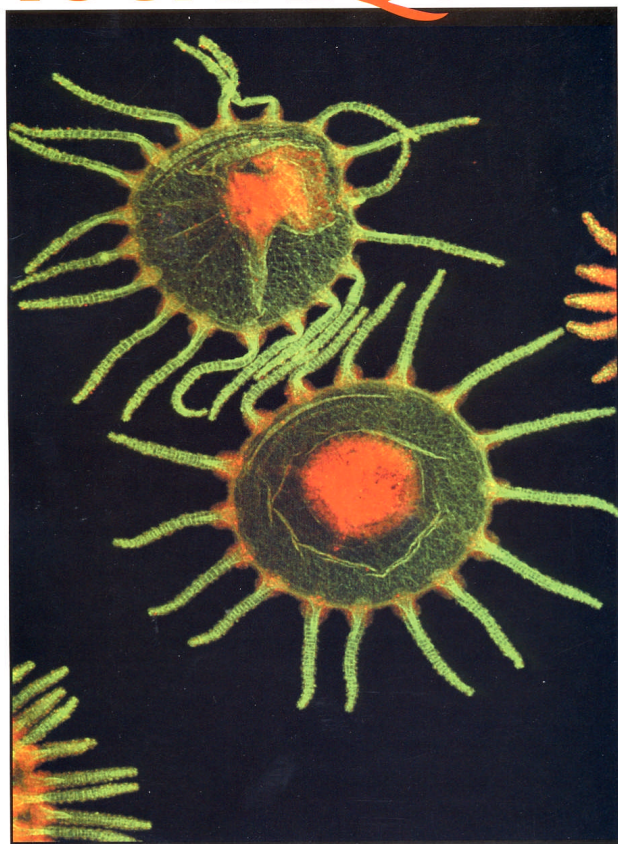
Stratagene

Circle No. 2

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BioTechniques®

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Vol. 35, No. 1
July
2003

Run PCR on Diluted Samples

Z-BIOMED introduces the newly formulated 5x-Direct-Load® PCR Master Mix that improves the stability of enzyme and other components and allows diluted samples to be used in PCR. The 5x-Direct-Load PCR Master Mix is an optimized ready-to-use 5x mixture containing everything (except DNA template and primer set) needed for efficient amplification of template DNA in PCR. The product is designed to save time for setting up reactions, improve stability, and reduce the risk of contamination. It can be used to amplify genomic, animal, phage, and viral templates. Also, PCR products can be digested with enzymes or used for ligation without prior removal of the loading dye. The 5x-Direct-Load PCR Master Mix contains loading dye (bromophenol blue), which allows PCR products to load directly onto agarose or polyacrylamide gels without having to add loading dye. The company claims this master mix has stability advantages over other 2x and 1.1x PCR master mixes on the market. www.zbiomed.com

Z-BIOMED

Circle No. 247

High-Throughput NMR with Microflow Probes

Protasis MRM offers MicroFlow NMR probes (CapNMR™ flowprobe) for high-throughput NMR applications. Unique advantages accrue from the capillary-based NMR flowprobe design technology that makes high-throughput NMR possible. These include a significant increase in mass sensitivity, lower solvent and sample consumption, and a dramatic increase in speed of analysis. These features are made possible by a unique flowprobe design.

Using proprietary miniaturized flowcell design combining capillary transport tubing and NMR microcoils, the 1-mm Microflow NMR probe is 100 times faster than a conventional 5-mm probe on a per-unit mass basis. Hence, using only a few microliters of sample, an NMR proton spectrum can be acquired in less than 2 min, enabling the completion of a 96-well plate in an overnight run.

An available brochure details key applications such as metabolite identification, impurity analysis, and natural product characterization and provides insight into the emerging field of Microflow NMR, a technique in which conclusive NMR data can be obtained with only a few microliters of sample. www.protasis.com

Protasis

Circle No. 248

Nanoliter Liquid Handling System

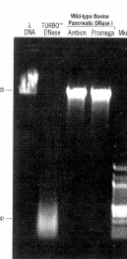
The Nanomek™ Liquid Transfer Module has the ability to pipet volumes from 50 nL to 20 µL and extends Beckman Coulter's liquid handling solutions to enable miniaturization. The module is integrated directly on the Biomek® FX workstation, for automated nanoliter dispensing in 96-, 384-, and 1536-well plate formats. The new module interfaces with and takes advantage of the Biomek FX software, with an intuitive graphical interface for easy method development.

The Nanomek Liquid Transfer Module incorporates Allegro Technologies' spot-on liquid handling technology, recognized for its dispensation control, precision, accuracy, and reliability. www.beckmancoulter.com

Beckman Coulter

Circle No. 249

DNase I for Complete Removal of DNA Contaminant



Ambion

Circle No.

TURBO™ DNase I engineered version wild-type DNase I has markedly increased affinity for DNA. T important for complete removal of DNA from sample, since the cotreatment of the clean substrate is reduced the DNase digester progresses. Thus, TU DNase has a fun advantage over wild DNase in RT-PCR reactions, where even copies of DNA can to a false-positive come by PCR. www.ambion.com

www.cellsciences.com

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888 769-1246

Cell Sciences, Inc.
Norwood, MA 02062
Tel: 781-769-0610 Fax: 781-769-0542
email: info@cellsciences.com