

Advertisement feature



Thermo Scientific Pierce Fast SemiDry Blotter

## Up, Up and Array!

New advances in protein microarray technology

Over the past few years protein microarray technology has revolutionized the study of complex mixtures of proteins enabling the measurement of binding affinities, specificities and protein expression levels of the proteins in a mixture. The latest advances in microarray technology enable researchers to analyze multiple protein interactions simultaneously, making the seemingly impossible challenge of identifying an organism's entire collection of proteins within reach.

R&D Systems now offers a **Proteome Profiler Human Angiogenesis Antibody Array**. This kit provides a rapid, sensitive and economical tool to simultaneously detect the relative levels of 55 angiogenesis-related proteins in a single sample. Analytes include soluble growth and differentiation factors, extracellular matrix components, proteases, membrane-bound receptors and intracellular signaling molecules. The use of R&D Systems' antibody arrays requires no specialized equipment and eliminates the need to perform multiple immunoprecipitation/Western blot experiments.

Thermo Fisher Scientific introduces two new cost-effective products for accelerating Western blotting procedures. The **Thermo Scientific Pierce Fast Semi-Dry Blotter** enables the rapid transfer of proteins or nucleic acids from gel to PVDF or nitrocellulose membranes. When used with the new Thermo Scientific Fast Semi-Dry Transfer Buffer, efficient protein transfer occurs within 10 minutes, a major time reduction over the 45 minutes for traditional Western transfer methods. The Pierce® Fast Semi-Dry Blotter can transfer up to four mini-gels

at once with high transfer efficiency and requires less buffer than traditional methods. The system can also be used for conventional semi-dry transfer using other buffer and protocols. The Pierce Fast Semi-Dry Transfer Blotter is supplied as a 10X concentrate that is diluted with deionized water before use. It does not require methanol. In addition to its compatibility with the Pierce Fast Semi-Dry Blotter, the new buffer can be used with other commercially available semi-dry transfer units.

Amsbio announces a comprehensive range of **high quality frozen tissue arrays** for validating the clinical relevance of potential biological targets in diagnostics, therapeutics and the study of new protein markers and genes. Manufactured using fresh frozen tissues, identified by a board-licensed pathologist, Amsbio arrays are prepared on positively charged glass slides. As the frozen tissue sections do not go through any fixation procedures, the DNA, RNA and protein in the frozen tissue array retain their native characteristics. Each frozen tissue array can contain up to 40 different normal adult human tissue types with three donors per tissue type. With human antibody validation across 40 tissues simultaneously there is less labor and cost and more information can be gained on expression pattern, intensity and distribution of target proteins.

The **Quantibody® Human Cytokine Array 3000** from RayBiotech can quantitatively detect expression of 160 different proteins in a single experiment. The kit consists of four different quantitative multiplex ELISA-based arrays. The Quantibody® Human Inflammation

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RayBiotech Quantibody Human Cytokine Array 3000 Kit

Array 3 detects 40 inflammatory markers, the Quantibody® Human Chemokine Array 1 detects 40 chemokines, the Quantibody® Human Growth Factor Array 1 detects 40 growth factors and the Quantibody® Human Receptor Array 1 detects 40 soluble cytokine receptors. Quantibody® arrays are a glass-slide antibody array platform that uses multiplex ELISA technology with standard concentration curves run alongside unknown samples to give quantitative results with pictogram-per-milliliter (pg/ml) sensitivity. With the Quantibody® Arrays, 50 microliters of sample can yield quantitative detection of protein expression of up to 40 different proteins simultaneously in a single aliquot.

Antibody content remains a bottleneck for many protein microarray applications either because no antibody is available or the antibodies fail to work. Many antibodies are generated from short peptides that are often unable to bind folded proteins in a microarray assay. The **Genomic Antibody Technology™** from **Strategic Diagnostics** allows large numbers of affinity purified rabbit polyclonal antibodies to be generated within 90 days. The high success rate of Genomic Antibodies™ in protein microarray assays derives from the use of large folded antigen. “Large panels of antibodies in a microarray format will be particularly useful in biomarker discovery programs” said Mark Muldoon, Ph.D., Senior Scientist at Strategic Diagnostics.

**Applied Biosystems** has developed a new line of **TaqMan®** real-time PCR assays that enable researchers to rapidly detect and quantify proteins in human cell samples. The TaqMan Protein Expression Assays allow researchers to correlate



Integrated DNA Technologies Transductin

relative levels of specific proteins with cell functions and behaviors, such as different disease conditions, or states of pluripotency or differentiation in stem cells. The initial release of these molecular tools includes assays that enable relative quantification of protein markers for pluripotency, from limited quantities of cultured human embryonic stem cells. These new molecular tools offer researchers a more quantitative, simple and standardized approach to protein analysis of various cell types, especially stem cells, compared to other more complex methods that require large amounts of cell sample. The new assays detect and quantify proteins by an innovative technology that combines an antibody-oligonucleotide-tagged immunoassay with a TaqMan assay, to generate real-time PCR data for specific proteins present in as few as 10 to 250 cells.

The **Magna RIP™ RNA-binding protein immunoprecipitation (RIP) kit** from **Millipore Corporation** is the first to provide a complete solution for the entire RIP workflow. With this kit, any researcher, even those inexperienced in RNA purification, can investigate the dynamics of ribonucleoprotein assembly as it occurs inside the cell. Cells respond to stimuli by altering gene expression and RNA-protein complexes drive almost all processes regulating gene expression at the post-transcriptional level, including splicing, nuclear export, mRNA stability and translation. Therefore, understanding gene regulation depends on characterizing the changes in RNA binding in these various processes. Traditionally, RNA-protein interactions have been identified by screening libraries in yeast, bacteria or by *in vitro* selection, all confounded by system limitations, biases or

artifacts. In contrast, data obtained from RIP show increased biological relevance, enabling researchers to achieve their goals more quickly.

**Integrated DNA Technologies (IDT)** has launched the novel peptide-based double-stranded RNA (dsRNA) transduction delivery system **Transductin™**. Transductin, licensed from Traversa Therapeutics for research applications, is intended for *in vitro* testing and high-throughput screening projects. Transductin complexes with dsRNAs, such as IDT’s Dicer-substrate siRNAs, and delivers them across all cell membranes via macropinocytosis. This mechanism minimizes the risk of having the dsRNA trigger an innate immune response and has virtually no toxicity, both common drawbacks when causing cationic lipid transfection. “As a result”, Dr. Mark Behlke, IDT’s Chief Scientific Officer, commented, “Transductin enables delivery of dsRNAs (such as siRNAs) to almost all cell types, including those that are traditionally difficult to transfect such as JAWSII and PC12”.

#### Companies mentioned in this Product Focus:

Ambio – [www.ambio.com](http://www.ambio.com)  
 Applied Biosystems – [www.appliedbiosystems.com](http://www.appliedbiosystems.com)  
 Integrated DNA Technologies – [www.idtdna.com](http://www.idtdna.com)  
 Millipore Corporation – [www.millipore.com](http://www.millipore.com)  
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