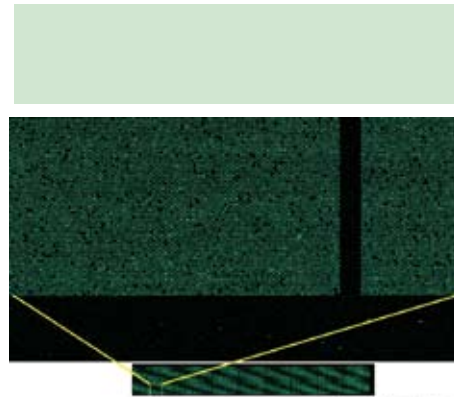


« High throughput genotyping from Taconic

» BeadScan from Illumina



Oh SNP!

More updates in genotyping technology

SNP genotyping focuses on finding genetic variations in single nucleotide polymorphisms, or SNPs, the most common form of genetic variation. Some of the most prominent applications involve studies on gene-related disease, e.g. cancer. It is no surprise then, that there is a desire to develop faster and more reliable tools for genotyping applications. Please take a look below at some of the advances in this technology.

Marligen announces **Genisphere's biotinylated labeling kits** for detection of microRNAs on the xMAP multiplex platform. Marligen is the exclusive provider of Genisphere's biotinylated labeling kits. The microRNA labeling kits using Genisphere Inc.'s 3DNA dendrimer signal amplification technology will be an integral product to Marligen's new offering supporting researchers studying microRNAs. The Vantage product line includes reagent kits for purifying, labeling and detecting microRNA species. 3DNA dendrimer technology is based on highly branched DNA structures serving as scaffolds for multiple biotins. The use of Genisphere's signal amplification technology in combination with the Vantage microRNA detection panels offers researchers a fast and cost-effective system to directly profile multiple microRNAs in a single sample. The complete system offers exceptional sensitivity and throughput capabilities of greater than 100 samples in a single day and is compatible with total RNA or enriched RNA including degraded RNA from archived tissues. The initial Vantage microRNA Detection Panels are designed for profiling the relative abundance of different microRNA species known to be relevant in oncology. "Because microRNA play

such an important role in tumor development and progression, it is vital we offer researchers innovative tools that allow them to profile these biological markers in archived samples. Our collaboration with Genisphere allows us to provide one of the most rapid and sensitive methods to screen directly from such samples", said James Lazar, Chief Scientific Officer of Marligen Biosciences. "This will not only advance basic research but should expedite the application of microRNA detection in the diagnosis of cancer", adds Lazar. **More information: www.marligen.com**

Integrated DNA Technologies (IDT) offers single and dual-labeled fluorescent DNA probes. IDT's **Express DLP** service delivers dual-labeled probes in just two working days. IDT incorporates locked nucleic acid (LNA) into dual-labeled LNA probes. Since they are shorter than standard DNA dual-labeled probes (DLP), LNA DLPs have better quenching and a higher signal-to-noise ratio. These probes improve the ability to distinguish mutations or single nucleotide polymorphisms (SNPs). "The SNP Genotyping field is driven by the need for high throughput and low cost while maintaining the highest possible accuracy. Oligonucleotides are a critical component of all genotyping

methods; over the past 10 years, oligonucleotide manufacturing capacity has increased >10-fold, price per base has decreased >10-fold, and overall quality has improved." **More information: www.idtdna.com**

Taconic announces **high throughput genotyping** for laboratory mice and rats designed to reduce costs and turnaround time. Sample submission and results reporting are accomplished efficiently via a secure online system that provides guaranteed delivery of results in 24 hours. The new genotyping service employs an advanced, real-time PCR platform from ABI, and is almost entirely automated from extraction to results. Limited to lab animals like mice and rats, viable specimens include tail tissue, ear punches, embryos and toe nail clippings. The sample collection kit that Taconic provides contains a 96-well plate with cover, shipping label, a card to record details for customer use and a return shipping box. Upon receipt, tissue samples are lysed within the 96-well sample submission plate in order to avoid contamination, and the DNA is extracted and normalized. Normalized DNA is fed into real time PCR machine using Tecan's state-of-the-art liquid handling robots, and tested in duplicate. A house keeping gene is tested



« QIAGEN's REPLI-g kits and service provide uniform amplification

along with each sample as a control. Results are also checked twice before they reported to ensure accuracy. **More information:** www.taconic.com

Illumina announces **Illimuna•Connect**, a bioinformatics software partnership program established to advance data integration and analysis. This program offers Illumina customers seamless access to third-party bioinformatics providers of advanced data analysis applications for processing Illumina array data. Customers who have upgraded to Illumina's new BeadStudio 3.0 Data Analysis Software for genotyping, gene expression, and copy number variation (CNV) analysis can now take full advantage of additional statistical and advanced algorithms afforded by this new program. **More information:** www.illumina.com

The **REPLI-g UltraFast Mini Kit**, from **QIAGEN**, provides highly uniform whole genome amplification from a variety of sample types in just 60-90 minutes. The new REPLI-g UltraFast DNA Polymerase allows fast, accurate amplification of genomes, even from limited samples, and generates DNA suitable for direct use in a range of genetic analyses. The method is based on Multiple Displacement Amplification (MDA) technology — isothermal genome amplification utilizing a new, uniquely processive DNA polymerase that provides DNA products of up to 100kb in length in a much shorter time while still avoiding the high sequence bias of PCR-based amplification methods. The DNA polymerase has a 3'→5' exonuclease proofreading activity to maintain high fidelity during replication. In addition, a unique alkaline denaturation buffer guarantees gentle denaturation of genomic DNA

and avoids fragmentation of template DNA caused by heat denaturation methods. This ensures more sensitive and more reliable results in downstream assays. **The REPLI-g Service** provides amplification of unlimited amounts of DNA from limited samples. A stringent quality control assay provides information on the quality of the amplified DNA, enabling reliable predictions for the success of any particular downstream assay to be made. **More information:** www.qiagen.com

The **EG Human Comprehensive BAC Array Version 2.0**, from **Empire Genomics**, provides a high resolution platform for CGH-based analysis of the entire human genome. Some of the most attractive features include 19,000 RPCI-11 BAC (Bacterial Artificial Chromosome) clones in duplicate; near-tiling resolution through the entire genome; ability to identify over 100 specific congenital syndromes; over 3,000 BACs associated with cancer, telomeres and common breakpoints; results available within 24 hours; utilization of standard hybridization procedures, scanners and analysis; and greater signal than oligonucleotide array. This human BAC array is great for quick determination of amplifications, deletions and abnormalities in the genome. The 0.5mb resolution allows for copy number determinations observed most frequently in cancer as well as syndromes associated with aneuploidy (Down Syndrome, Turners syndrome, Trisomy 13, Trisomy 18, etc.). **More information:** www.empiregenomics.com

The **READIT SNP Genotyping System**, from **Promega**, is an accurate, versatile and flexible method for detection of sequence variation/genotype in moderate and high-throughput formats. Validation studies

“[Our collaboration with Genisphere] will not only advance basic research but should expedite the application of microRNA detection in the diagnosis of cancer.”

—James Lazar,
Chief Scientific Officer,
Marligen Biosciences

have shown that the READIT System has a genotyping accuracy of 99.9%. The READIT System allows interrogation of PCR products to determine the presence of a known sequence. The system can be used to detect SNPs, estimate allelic frequency, detect chromosomal translocations and perform allele correlation studies. Interrogation probes can be custom designed using web-based probe design software. Customers can synthesize the unmodified PCR-grade probes or purchase them from the oligo supplier of their choice. The assay can be performed in a manual 96-well plate format or an automated 96- or 384-well plate format. **More information:** www.promega.com ■

Companies Mentioned in this Product Spotlight:

Empire Genomics - www.empiregenomics.com

IDT - www.idtdna.com

Illumina - www.illumina.com

Marligen - www.marligen.com

Promega - www.promega.com

QIAGEN - www.qiagen.com

Taconic - www.taconic.com

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