

« BioBright Slide from Microcosm

» The ArrayIt H25K Human Genome Microarray



Big Impact, Small Features

What's new in Microarrays

Microarrays are frequently used when researching disease on a genetic level. With many microarrays holding millions SNPs in spots called features, this high throughput tool can help track an amazing amount of information. Check out the products below to see what's new in the world of microarrays.

Illumina introduces the **Infinium HD Human1M-Duo** (two samples/chip) and the **Human610-Quad** (four samples/chip) for DNA analysis, featuring up to 2.3 million single nucleotide polymorphisms (SNPs) per BeadChip. The new Infinium HD product line doubles sample throughput and reduces DNA input requirements by as much as 70 percent. Additionally, the Infinium HD products offer enhanced signal discrimination and a new SNP calling algorithm. First customer shipments of the Human610-Quad and Human1M-Duo BeadChips are expected in Q1 2008 and Q2 2008, respectively. Both arrays on the Human1M-Duo BeadChip contain markers for more than one million diverse genetic variants, all of which can be used for both whole-genome genotyping and copy number variation (CNV) analysis. In addition to content currently found on Illumina's Human1M single-sample BeadChip, the new Human1M-Duo features recently identified disease-associated SNPs and intelligently selected high-density SNPs in coding regions of the genome. The Human1M-Duo also contains the best genomic coverage in the industry, providing the highest available power to detect SNPs associated with diseases and the least number of large gaps for the identification of CNVs. The four-sample format of the Human610-Quad BeadChip provides customers with a significant

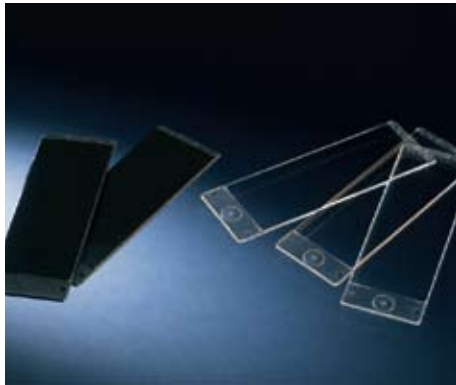
increase in sample throughput and reduced handling in the lab. Built upon the content of Illumina's broadly adopted Human-Hap550 BeadChip, the Human610-Quad BeadChip has 550,000 SNPs plus an additional 60,000 genetic markers per sample. Both the Infinium HD Human1M-Duo and Human610-Quad BeadChips include high-value, proprietary CNV content developed in conjunction with deCODE genetics, only found on Illumina arrays. **More information:** www.illumina.com

BioBright slides, from **Microcosm**, have repeatedly been proven to increase the detection sensitivity of protein and DNA microarrays from 10 to 30 times in comparison with standard microarray slides currently available on the market. Microcosm created the new BioBright slide as a plug-and-play alternative to available microarray substrates for use with the whole range of microarray applications (oligo, miRNA, protein). BioBright substrates significantly increase the fluorescence output of dyes fixed to the surface of the microarray. This allows the user to reliably identify hits that have previously been below the limits of detection. This improved microarray technology is compatible with most conventional microarray readers and protocols. The new product will speed the acquisition and transfer of knowledge from laboratories to life

saving products, and will reduce microarray costs at the same time. **More information:** www.microcosm.com

H25K, from **ArrayIt**, is a multi-purpose long oligonucleotide microarray that allows karyotyping, gene expression profiling, chromatin structure analysis, and protein-DNA interaction studies on a genomic scale. It is the world's first whole human genome microarray based on the completely sequenced human genome and derived from a fully annotated set of 25,509 human genes and 795 controls. This "next generation" microarray represents a significant advance over competing products derived from collections of expressed sequence tags and partially annotated sequence databases. The H25K includes kits for amplification and fluorescent labeling and is fully supported by ArrayIt SpotLight Scanners. **More information:** www.arrayit.com

Designed to minimize background during microarray analysis, compared to traditional glass slides, **Nunc MicroArray Black Polymer** and **NucleoLink Slides**, from **Thermo Fisher Scientific**, are the first polymer slides optimized for covalent coupling of oligonucleotides and immobilization of PCR products. Researchers can also use Black Polymer, NucleoLink slides for applications including SNP Analysis, stripping and rehybridization. For protein microarrays, the



« Nunc MicroArray Slide NucleoLink, from Thermo Fisher Scientific

» The Infinium HD Human1M-Duo from Illumina.



MicroArray Black Polymer, MaxiSorp Slide, the first polymer slide specifically designed for protein binding, is recommended. All Nunc Black Polymer slides have dimensions identical to a typical glass slide, and can be used with the same settings for the printing and scanning process. Slides are encased in sleeves in packs of 5, which are conveniently packaged in a polypropylene box of 25 slides each. Researchers can also select from a wide range of MicroArray Glass Slides. Choices include surface coatings of aminosilane, poly-L-lysine, apoxy, aldehyde, gold thin film, and uncoated slides. The slides are encased in sleeves in packs of 5, and conveniently packaged in the Nunc mBox of 20 slides each. The mBox is sealed in foil, minimizing contamination and light exposure until use. Nunc also provides glass slides enhanced with a 3D surface in an etched format or polymer coating, and all slides can be serialized and barcoded upon request. **More information: www.nuncbrand.com**

The **Agilent DNA microarray scanner** is a 48-slide scanning system that can read any mix of 1" x 3" glass slide microarrays. Low level detection resulting from optimized precision optics, broad dynamic range, minimal spectral cross talk allows users to detect weak features and achieve rapid, accurate and dependable results. Enhanced sensitivity with dynamic autofocus keeps features in focus while scanning to minimize the effects of gradients and aberrations associated with glass slides. Extended dynamic range, with an industry-leading wide dynamic range of 105, allows for high sensitivity scanning without saturation. Scanning is done quickly by simultaneous two-color scanning at 5 and 10 micron resolution, in about 8 minutes per slide. Its integrated platform is

complete with PC, barcode reader and image analysis software with feature information easily collected and seamlessly linked to statistical analysis and data interpretation. **More information: www.agilent.com**

The **QArraymini** is a fully-featured compact microarrayer from **Genetix**, proven for DNA and protein arraying onto glass slides, ceramic slides, membranes slides or into microplate wells. High-resolution linear drives combined with the High Precision 48-pin printing head ensure exceptional array regularity and high speed printing of slides. The simple-to-use software allows maximum user control over array design and tracking of data. Applications include: DNA arrays, protein arrays, oligosaccharide arrays, glycoprotein arrays, CGH arrays, reverse transfection, RNAi analysis, and synthetic molecule arrays (SAR libraries). Spotter output files integrate smoothly with all major microarray analysis packages. **More information: www.genetix.com**

Affymetrix introduces the **Genome-Wide Human SNP Array 6.0**, a single microarray that measures more than 1.8 million markers for genetic variation. The array enables researchers to genotype more markers from more individuals at a lower cost per sample. These higher-powered studies increase the probability of discovering genes associated with adverse drug response or complex diseases, such as Alzheimer's, diabetes, heart disease and Parkinson's. The Affymetrix SNP Array 6.0 contains more than 900,000 single nucleotide polymorphisms (SNPs) and more than 946,000 non-polymorphic probes for the detection of copy number variation. Because it includes many of the common genetic variations that extend beyond the International HapMap Project,

the SNP Array 6.0 enables researchers to better detect the genes associated with many different complex diseases affecting multiple ethnicities. Researchers can use the same array to test multiple study or disease hypotheses simultaneously, and the same meta analysis can be used across multiple cohorts. Developed in collaboration with the Broad Institute of Harvard University and the Massachusetts Institute of Technology, the Affymetrix SNP Array 6.0 features a state-of-the-art array probe design and improved data analysis algorithms. The performance has been evaluated and validated by five different sites, including the Broad Institute.

More information: www.affymetrix.com ■

Companies Mentioned in this Product Spotlight:

Affymetrix - www.affymetrix.com

Agilent - www.agilent.com

ArrayIt - www.arrayit.com

Genetix - www.genetix.com

Illumina - www.illumina.com

Microcosm - www.microcosm.com

Thermo Fisher - www.nuncbrand.com

KENYON
HOAG
ASSOCIATES

Your Expert in Marketing to the World of Science.
www.kenyonhoag.com

These pages were compiled and written by Kenyon Hoag Associates. The contents have not been reviewed by the editorial staff of The Scientist. Submit press releases for consideration to: spotlight@the-scientist.com