**Whole Transcriptome Assays**

Whole Transcriptome Single Cell Precise Assays enable absolute and direct molecular counting of the entire transcriptome from single cells without any specialized equipment or training. Whole Transcriptome Single Cell Precise Assays are unique because they are the first commercial RNA sequencing (RNA-seq) assay to enable thousands of cells to be sequenced per run at a cost far lower than existing alternatives. In addition, no expensive dedicated laboratory equipment is needed to run the assays, and the sequencing library is compatible with any Illumina sequencer. Based on the patented Molecular Indexing technology, Precision assays offer absolute quantization and bias-free expression information. The assays allow the examination of large numbers of standard or low-input messenger RNA (mRNA) samples from precious samples, or whenever absolute quantitation is required. The Precise assays combine molecular and sample indexing in 96- and 384-sample formats, enabling customers to sequence up to 4,608 samples on one sequencing run without investment in new equipment or extensive training.

**Cell Sorter**

The easy-to-use S3e Cell Sorter (488/640 nm) is the latest addition to the series of S3e Cell Sorters and incorporates the fluorescence wavelengths commonly used by immunologists. Immunologists customarily use the 640 nm wavelength to excite and detect red fluorophores, such as allophycocyanin (APC) and APC-Cy7. The new S3e Cell Sorter possesses the 488/640 nm laser combination, thus extending the convenience of benchtop cell sorting to immunologists. Like all instruments in the S3e series, the S3e Cell Sorter (488/640 nm) offers a hands-free startup sequence that automatically aligns the stream to optics and optimizes the droplet/side stream. This capability, along with the instrument’s other features, allows scientists to begin sorting more quickly and accurately with the instrument’s other features, allowing the user to switch between excitation wavelengths and other laser combinaisons without having to manually align the stream to optics. The S3e Cell Sorter also incorporates the new 640 nm laser (Cy7. The new S3e Cell Sorter possesses the 488/640 nm laser combination, thus extending the convenience of benchtop cell sorting to immunologists. Like all instruments in the S3e series, the S3e Cell Sorter (488/640 nm) offers a hands-free startup sequence that automatically aligns the stream to optics and optimizes the droplet/side stream. This capability, along with the instrument’s other features, allows scientists to begin sorting more quickly and accurately with the instrument’s other features, allowing the user to switch between excitation wavelengths and other laser combinations without having to manually align the stream to optics.

**Automated Single-Cell Analysis**

The ICELL8 Single-Cell System creates a new standard for single-cell analysis. The system includes an imaging station for rapid image capture and CellSelect software for automatic selection of cells of interest for further processing for RNA sequencing. The system also allows researchers to run multiple samples on a single chip, enabling applications that require investigation under uniform conditions. The ICELL8 Single-Cell System delivers greater cell isolation capabilities, control over the selection of isolated cells, and the ability to run multisample experiments. The system provides power with a Poisson distribution for unbiased isolation of up to 1,800 single cells on a single chip, control with CellSelect software, and insight by enabling the analysis of up to eight samples on a single chip, so that complex experimental designs can now be accomplished in single-cell research.

**High-Throughput Oligonucleotide Microarray**

The GenetiSure Pre-Screen Kit is a high-throughput oligonucleotide microarray for screening aneuploidy and other genomic aberrations in the 5- to 10-mega-base (Mb) range from single cells in three- and five-day embryos. The kit allows for a turnaround time of less than eight hours from DNA extraction to data analysis—an industry first. The kit consists of a microarray that can run up to 14 samples and two reference samples simultaneously, so more embryos can be screened without significantly increasing costs. The GenetiSure Pre-Screen array is based on Agilent’s market-leading technology for high-resolution oligonucleotide comparative genomic hybridization. The kit contains all the necessary reagents to enable whole-genome amplification and labeling of single cells. The microarray is compatible with Agilent’s CytoGenomics software (version 3.0 or higher) for easy data analysis.

**RNA Assay**

The PrimeFlow RNA Assay is the first and only flow cytometry assay capable of simultaneous detection of RNA and protein within millions of cells at single-cell resolution. With the novel PrimeFlow assay, researchers can now incorporate the simultaneous analysis of RNA transcripts and proteins to elevate their understanding of single-cell dynamics. The assay enables high-throughput detection of RNA and protein expression; thus it can be used to mechanistically and phenotypically characterize coexpression of RNAs with functional proteins at the single-cell level. This assay, with a user-friendly protocol that has many similarities to standard antibody-staining procedures and data acquisition of flow cytometry, is an invaluable tool for any immunology lab performing translational research. Its major advantage is the ability to detect, with high sensitivity, messenger RNAs (mRNAs) for which flow cytometry antibodies against the corresponding proteins perform poorly or are not available.

**WaferGen Biosystems**

For info: 877-923-3746
www.wafergen.com

**Affymetrix**

For info: 888-362-2447
www.affymetrix.com

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