LC Sciences Pairs Deep Sequencing with Customized Microarrays to Offer New Seq-ArraySM Service for Discovery & Profiling Applications

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HOUSTON - Mar 19, 2010 - LC Sciences today announced the launch of its new Seq-ArraySM services designed to take full advantage of both the latest deep sequencing capabilities and the proven genomics tool – microarray. This combination of technologies advances microRNA research to the next level of depth and understanding that was not possible before with either of the technologies alone. LC Sciences has been a leading provider of microRNA discovery and profiling services since 2005.

microRNA is a young, dynamic field of study and though significant discoveries are being made every day, the very complex regulatory mechanisms of these small RNAs are still not fully understood. Continued advancement requires adaptable, even customizable research tools that can keep pace with the rapidly advancing research in this field. While deep sequencing yields results that broadly cover genome-wide miRNAs from samples of various origins, the relatively high cost and low throughput nature of sample handling, makes the systematic follow through of the sequencing discoveries for validation and/or profiling in a reproducible manner time consuming and expensive. Microarrays have achieved wide acceptance as the preferred tool to systematically profile and compare the gene expression of large numbers of samples rapidly, reproducibly, and cost effectively; however they are dependent on previously known sequence information. Seq-ArraySM is a combination of these technologies that maximizes the effectiveness of each method while overcoming the limitations of the other.

Seq-ArraySM for microRNA starts with exploratory small RNA deep sequencing of a single or mix of RNA samples to perform a broad search and generate a comprehensive atlas of all microRNAs within a given research study. Next, bioinformatics are employed to map the raw sequencing reads to a custom generated sequence database, classify and align all sequences and sequence variants, as well as to predict novel microRNAs. A custom SeqArray™ microarray is designed based on the mapped novel microRNAs,

the predicted novel microRNAs, and any previously described publicly available microRNA sequences. Finally, expression profiling of large numbers of samples on the custom array design together with additional bioinformatics work completes an efficient pathway to focused biological insights including: revealing regulatory target genes, defining gene expression pathways, and discovering biomarkers.

"We feel like this is a productive match of the two technologies," says Dr. Christoph Eicken, Head of Technical Services at LC Sciences. "It's something we have really already been doing for a while and thought it made sense to package together as a single service. Often times researchers come to us who are studying a non-typical species with very limited or no prior knowledge of microRNA sequences or function in their model system. By the end of the complete Seq-ArraySM project they have become the world authority on microRNA in their area of research. It's been very exciting to be part of this."

About microRNA – microRNAs are small non-protein-coding RNA molecules that function as negative regulators of gene expression by targeting specific mRNAs. This either inhibits translation or promotes mRNA degradation.

About LC Sciences - LC Sciences is a leader in microRNA discovery and profiling offering flexible services and delivering high quality results based on our innovative µParaflo® custom microarray platform and the latest deep sequencing technologies. We have developed complementary bioinformatics tools necessary for extracting microRNA and miRNAome information from large sequencing data sets and for designing custom arrays. LC Sciences custom microarrays make use of a microfluidics on-chip synthesis platform to produce made-to-order microarrays and deliver the most up-to-date research tools.

More information about LC Sciences is available at http://www.lcsciences.com.

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