

## **2066 New Cotton Microarray Platforms: Tools for Functional Genomics Studies**

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Microarray technology provides the most efficient means for analyzing the fiber transcriptome by genome-wide expression profiling, which has broad applications in basic and applied biological studies. Developing a suitable microarray platform is a major challenge and varies from species to species depending on the availability of sequence information. In cotton, we recently developed two new microarray chips in a flexible platform that will enable cotton researchers to study more genes and complex genetic interactions on a global scale. The newly designed chips offer unique and high-quality arrays that contain all cotton genes deposited in public databases from programs around the world. Two kinds of arrays were developed for different research purposes: a cotton array and fiber-specific array. The cotton gene chip (4X44K) carries four arrays and each array contains 37,000 genes from leaf, stem, root, and fiber. The fiber gene chip (4X44K) carries four arrays, and each array contains 22,000 genes. The new chips have been thoroughly tested for quality of probes, reproducibility of results, and reliability using both *in silico* and *in vitro* Strategies.