

# LC Sciences First miRNA Microarray Service Provider to Offer Sanger's miRBase 10.0 Probe Content



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Press Release Summary = **Taking advantage of its flexible  $\mu$ Paraflo™ Chip Technology, Houston based LC Sciences today announced immediate availability of probe content miRBase 10.0 for their microRNA (miRNA) microarray customers. This announcement comes less than a week after Sanger Institute's update of their sequence database for known miRNAs (miRBase)1 to version 10.0**

Press Release Body = Taking advantage of its flexible  $\mu$ Paraflo™ Chip Technology, Houston based LC Sciences today announced immediate availability of probe content **miRBase 10.0 for their microRNA (miRNA) microarray customers**. This announcement comes less than a week after Sanger Institute's update of their sequence database for known **miRNAs (miRBase)1 to version 10.0** (<http://microrna.sanger.ac.uk/sequences/>). As the jump in version numbers from 9.2 to 10.0 suggests, this update marks a major milestone and features significant changes: 489 new hairpin sequences and 971 novel mature miR and miR\* experimentally verified products have been added.

These numbers represent an increase of unique **miRNA** sequences by 42%. *"This exciting increase in data means that researchers using pre-spotted glass arrays with probe content based on versions as recent as 9.1 are missing 49% of mouse, and more than 50% of human sequences, just to give two examples. The other important point is that these sequences are experimentally verified and publicly available data. Unlike with proprietary probe content the researcher has full access and control over the results."* said **Chris Hebel, Director of Business Development at LC Sciences.**

The importance of this update is emphasized by another aspect of the release: many human, mouse and rat mature **miRNAs** were renamed and the sequence boundaries changed to reflect the predominant forms identified in recent large-scale cloning studies. The public **miRBase** sequence database serves as the primary probe content for many commercially available **miRNA** profiling microarrays. Detection of **miRNAs** using a microarray offers the opportunity for genome-wide miRNA expression profiling by examining all known **miRNA** transcripts in a single experiment. However, the continued updating of the database can be problematic for researchers using pre-spotted glass slide arrays as the probe content of the arrays immediately goes out of date whenever a new miRBase version is released. Especially, in a rapidly evolving field as **miRNA** research it is important to scientists to have the most complete picture of **miRNAs** expressed in their experimental samples.

**LC Sciences miRNA microarrays** make use of a microfluidics on-chip synthesis platform, termed **µParaFlo™**, versus a traditional spotted array based on pre-synthesized oligonucleotides. This on-chip synthesis platform solves the issue of out of date microarrays because made-to-order microarrays can be produced, delivering the most up-to-date research tools to researchers.

In addition to providing much more uniform and reproducible features than a spotted array, on-chip synthesis permits the total customization of content on each individual microarray opening up additional applications such as the discovery of new **miRNAs** and other small non-coding RNAs.

**About microRNA (miRNA)**  
**miRNAs** are small non-protein-coding RNA molecules that function as negative regulators of gene expression by base pairing with specific mRNAs. This either inhibits translation or promotes **mRNA**

degradation. About **miRBase** - The **miRBase** sequence database is a comprehensive database of **miRNA** sequence data, annotation, and predicted gene targets and is the primary public repository for these data. Release 10.0 of the database contains 5071 entries representing hairpin precursor **miRNAs**, expressing 4922 mature **miRNA** products, in primates, rodents, birds, fish, worms, flies, plants and viruses (miRBase release summary). **miRBase** also provides a gene-naming service for assigning official **miRNA** names to novel **miRNAs** before they are published. It is freely available to all at <http://microrna.sanger.ac.uk/>.

**About LC Sciences** offers specialty microarray services for nucleic acid/protein profiling and functional analysis, biomarker-discovery, and novel drug screening. Our array service products are based on **Atactic Technologies' µParaflo™** platform technologies that encompass advanced digital chemical synthesis, pico-liter scale biochemical assays, and microfluidic reaction devices containing high density individual 3D chambers.

More information about **LC Sciences** is available at <http://www.LCsciences.com>. 1. Griffiths-Jones S, Grocock R, van Dongen S, Bateman A, Enright A. miRBase: microRNA sequences, targets and gene nomenclature. Nucleic Acids Res 34(Database issue), D140-D144.

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