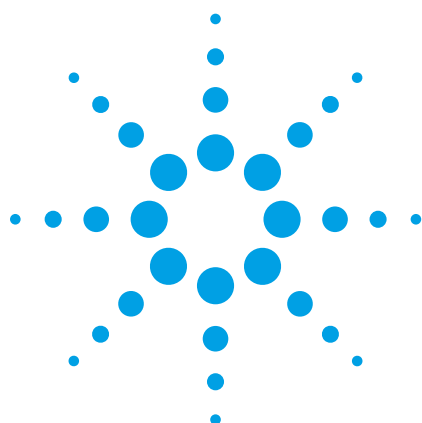


**GENOMICS** INFORMATICS PROTEOMICS METABOLOMICS  
 A T C T G A T C C T T T C T G A A C G G A A C T A A T T T C A A  
 G A A T C T G A T C C T T G A A C T A C C T T C C A A G G T G



## Multi-Pack Gene Expression Microarrays

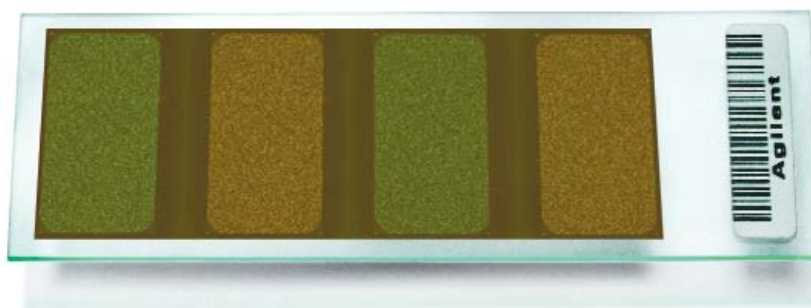
**Multiplexed microarrays deliver higher performance at a lower cost**

By reducing the size of a single microarray to less than 25% the size of our previous format, Agilent now provides four individual gene expression microarrays on a single glass slide. This new, high-density microarray printing capability not only allows researchers to generate more genomics data per experiment, but also enables significant reduction in cost per experiment—multiple microarrays on a single slide reduces the cost per microarray, and reduces the volume of reagents required for processing. The 4-Pack microarrays seamlessly integrate into the comprehensive and robust Dual-Mode Gene Expression Microarray platform.

### Accurate detection of low-abundance transcripts

Emerging gene expression applications place a premium on the detection of transcripts expressed at very low levels. This capability is especially valuable when analyzing complex tissue types such as heterogeneous cell populations in tumor samples. To address the need for optimal sensitivity, Agilent has developed a new, high-density microarray printing capability that

provides our exceptional 60-mer oligonucleotide microarray probes as four individual microarrays on a single glass slide. The 4-Pack Gene Expression Microarray promotes the utmost in sensitivity by effectively concentrating sample hybridization and allowing the detection of very low-abundance transcripts, even with low sample input amounts (down to 50 ng total RNA) and only one round of amplification (avoiding the risk of amplification bias).



**Multiplexed microarray:** Agilent's new, high-density microarray printing technology allows the production of 4-Pack Gene Expression Microarrays—four individual whole-genome microarrays printed on a single glass slide. This image shows alternating one-color and two-color hybridizations on a single slide.

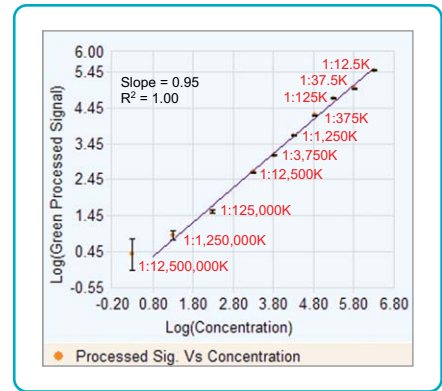


**Thorough quality control assessment**

Agilent's new microarray QC Reports provide integrated quality control information to validate the results of every experiment. These reports take advantage of Agilent Spike-In Kit transcript controls to measure sensitivity, linear dynamic range, and reproducibility. Achieve an unprecedented level of confidence in your data and take the guesswork out of your microarray quality assessments.

**Exceptional linear dynamic range**

The combination of Agilent's Dual-Mode Gene Expression solution with the 4-Pack microarrays delivers accurate relative quantitation across a wider range of expression levels. The linear dynamic range is routinely between 5.0–5.5 orders of magnitude, with a total dynamic range of nearly 6.0 orders of magnitude. Agilent provides Spike-In controls at concentrations spanning seven orders of magnitude to measure the linear and total dynamic range of every microarray.

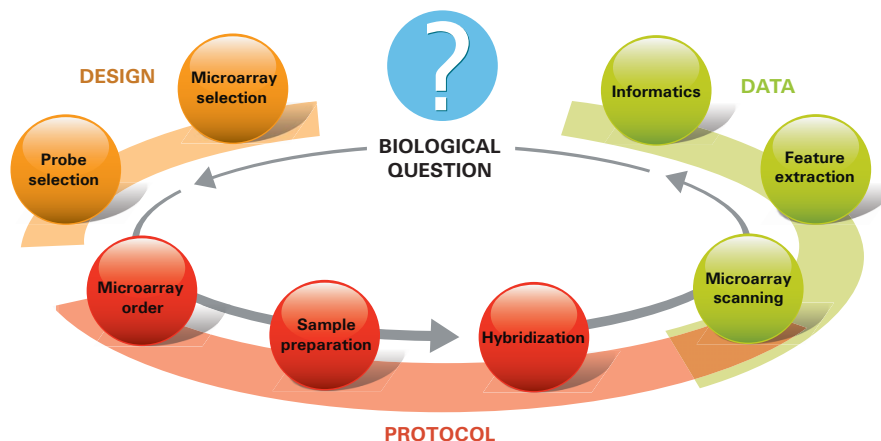


**Wider dynamic range:** For determination of linear and total dynamic range of every microarray run, Agilent offers Spike-In transcript controls across a wide concentration range. Red numbers indicate mass unit ratio of Spike-In transcript to total RNA. Blue line represents the linear range (of approximately 5.5 orders of magnitude) based on a parametric curve fit through the data. Overall system sensitivity is 1:6.9M transcripts (based on molar ratio), as extrapolated from the lowest intensity Spike-In probe within the linear range.

**Thorough microarray QC:** Agilent's new microarray QC Reports provide integrated quality control information to validate the results of every experiment.

### Comprehensive workflow

The 4-Pack microarray products are a part of Agilent's easy-to-use platform of microarrays, reagents, hardware, and software. Components have been developed to work seamlessly together to extract larger amounts of useful data from your experiments. Experience a unified system with end-to-end solution support that addresses all of your gene expression, CGH, CHIP-on-chip, and splice variant applications, and grows with your needs.



**The Agilent comprehensive microarray workflow:** Experience a unified system with end-to-end solution support.

### Catalog 4-pack microarrays

For your immediate research objectives, Agilent provides predesigned catalog 4-pack microarray products. Our design methods combine powerful probe design algorithms with Agilent's probe selection and empirical validation for optimal probe performance and genome coverage. Each catalog microarray is easily customizable so you can conveniently update and evolve genomic content to meet your experimental needs. All of Agilent's catalog microarrays are fully enabled for both one-color and two-color experiments.

### Custom 4-pack microarrays

We offer custom 4-pack microarrays for unique customer designs and formats not addressed by current catalog microarray offerings. By using Agilent's eArray, a web-based tool that allows easy microarray design and format selection in a secure online environment, you have the power of Agilent's SurePrint microarray manufacturing technology at your fingertips (see sidebar, this page). Agilent's manufacturing process features a flexible, industrial scale inkjet printing process that synthesizes oligonucleotide probes *in situ* onto

#### eArray is a Secure, Web-Based Application Tool That Enables You to:



- Create custom designs in a secure, online environment
- Search and access catalog microarray probe sequences and up-to-date annotations
- Submit array designs directly to Agilent manufacturing
- Download annotation files for use in image and data analysis applications
- Work collaboratively and share designs with colleagues

For more information, go to <http://earray.chem.agilent.com/earray>

1" x 3" slides. This maskless process allows quick iteration of microarray designs required in today's continuously evolving genomic research environment. Our custom microarray capabilities deliver the flexibility you need, when you need it.

**Specifications**

Oligonucleotide probe length	60-mer
Starting sample input	Total RNA
Type of labeling	Cy3- or Cy3/Cy5-labelled linear amplification
RNA required for labeling	50 ng (single round)
Agilent internal quality controls	eQC grid controls with RNA Spike-In controls
Slide format	1" x 3"
Available formats	1 X 244K 2 X 105K 4 X 44K 8 X 15K (coming soon)

**About Agilent's  
Integrated Biology Solutions**

Agilent Technologies is a leading supplier of life science research systems that enable scientists to understand complex biological processes, determine disease mechanisms, and speed drug discovery. Engineered for sensitivity, reproducibility, and workflow productivity, Agilent's integrated biology solutions include instrumentation, microfluidics, software, microarrays, consumables, and services for genomics, proteomics, and metabolomics applications.

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