

SmartChip User-Defined Panels

Product Note

High-Throughput, High-Density, Real-Time PCR

The SmartChip System combines the high-throughput nature of microarrays with the power of real-time PCR to provide the unique flexibility to perform gene expression profiling, validation and screening on a single platform (Figure 1). The SmartChip Cycler can process a SmartChip Panel to perform >1200 assays in quadruplicate on one sample in just over 2 hours, or the system can profile tens to hundreds of genes and from hundreds to several samples, respectively.

The Most Flexible Format

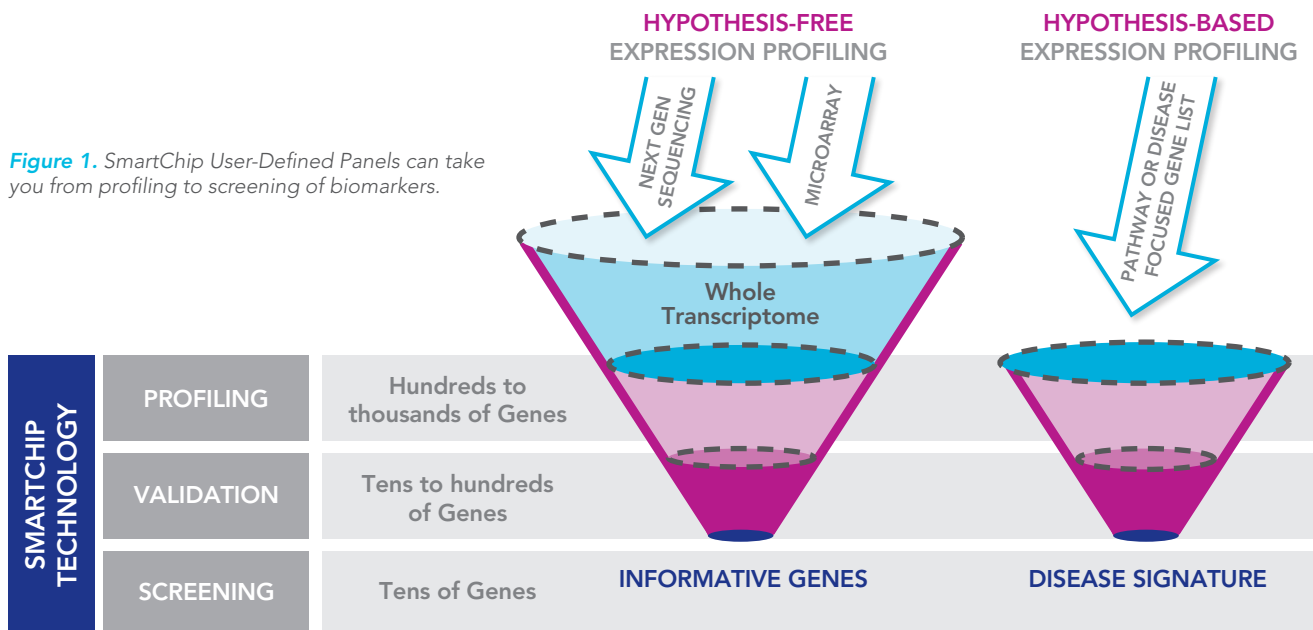
The open format of a SmartChip nanowell chip with 5,184 individual addressable wells provides for an unparalleled breadth of experiment designs in a single real-time PCR system. WaferGen has selected a wide variety of different gene and sample combinations to meet your needs from

Number of Samples	Number of Genes	Number of Replicates
384	3	4
192	6	4
96	12	4
48	24	4
24	48	4
12	96	4
6	192	4
3	384	4

Figure 2. SmartChip User-Defined Panels can be printed in a variety of formats, depending on the number of genes and samples needed for your study.

discovery to screening (Figure 2). All assays (one sample, one gene) are run in quadruplicate to assure high-precision real-time PCR data.

Figure 1. SmartChip User-Defined Panels can take you from profiling to screening of biomarkers.



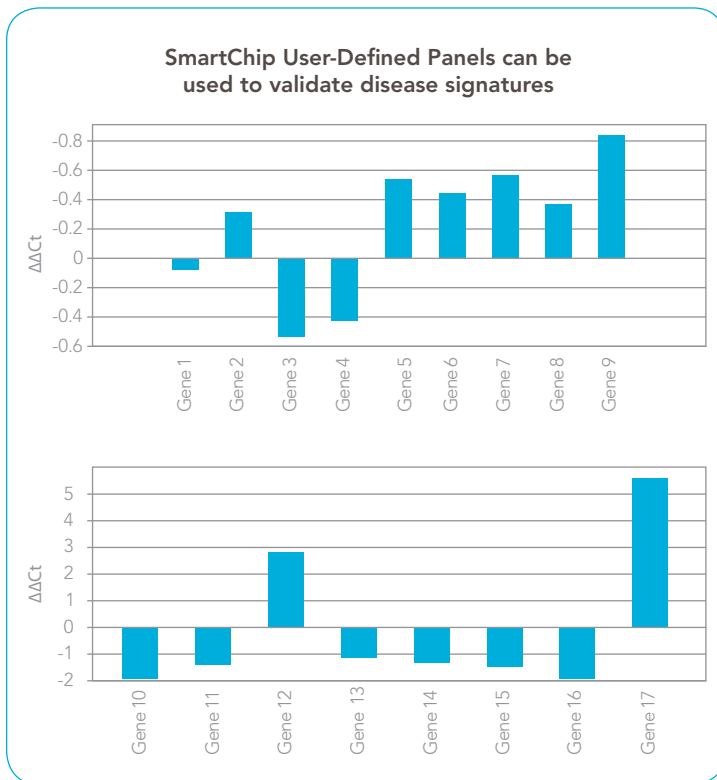


Figure 3. Actual results from a customer's study of 12 genes (with additional 5 controls), over 300 patients (100 controls and 200 disease). While several genes (identities cannot be shown) did not exhibit significant differences in expression (upper panel), several other genes exhibited validated up or down-regulation values equal to or greater than a normalized delta Ct ($\Delta\Delta\text{Ct}$) of ± 1 (lower panel).

Quick Turnaround with Thousands of Pre-validated Assays

WaferGen has developed 1000's of human gene assays that meet our high performance specifications. We can also design assays to address 3' or 5' bias, or unique splice junctions. SmartChip User-Defined Panels are typically shipped within 3 weeks from the receipt of the order, and you can easily reorder the same SmartChip Panel or combine several previous orders.

SmartChip User-Defined Panels Deliver Statistically Significant Gene Expression Results

Reliable gene expression results are critical to understanding the processes that mediate disease, and users rely on SmartChip User-Defined Panels to help them elucidate those processes. Proper expression controls including the ability to run technical and biological replicates on the same chip, and high precision real-time PCR data enable the generation of validated disease signatures that can be relied on, as shown in an actual customer's application in Figure 3.

Ordering Information

Part Number	Description	Part Number	Description
440-000001	SmartChip User-Defined Panel, 12 genes/panel	440-000004	SmartChip User-Defined Panel, 96 genes/panel
440-000002	SmartChip User-Defined Panel, 24 genes/panel	440-000005	SmartChip User-Defined Panel, 192 genes/panel
440-000003	SmartChip User-Defined Panel, 48 genes/panel	440-000006	SmartChip User-Defined Panel, 384 genes/panel

Contact WaferGen for the most extensive, quantitative and cost-effective solution for evaluating your specific, biological gene-expression signature.

Contact your local sales representative: sales@wafergen.com

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