

Advancing the science of tomorrow today.

SmartChip SNP Genotyping Panels

High-Throughput. Cost-Effective. Rapid.

SmartChip System is extended to SNP Genotyping

Next-generation sequencing (NGS) and genome-wide association study (GWAS) validation for single nucleotide polymorphisms (SNPs) can be readily accomplished with the SNP genotyping capabilities of the SmartChip qPCR System. Based on the use of TaqMan® SNP Genotyping Assays, WaferGen Biosystems utilizes its 5184-nanowell chip to drastically decrease the cost per genotype and time to result without sacrificing data quality. With the ability to address individual wells of the SmartChip nanowell chip, SmartChip SNP Genotyping Panels are available in the widest variety of SNP/sample configurations for a nanowell qPCR platform as shown in Table 1.

SmartChip SNP Genotyping is a Complete Solution

Using SmartChip SNP Genotyping Panels is an easy and integrated solution to cost-effectively determine SNP genotypes as shown in Figure 1. After determining the scope of the study, simply provide a small aliquot of TaqMan assay to WaferGen Biosystems. Within 2 weeks, WaferGen Biosystems will return pre-dispensed SmartChip SNP Genotyping Panels. A mixture of DNA and qPCR master mix is loaded onto the SmartChip Panels using the

SNP Assays	Samples
12	384
24	216
48	108
72	72
96	54
120	42
192	24
384	12

Table 1. The wide range of SNP assay and sample configurations available for the SmartChip SNP Genotyping Panels. The range of different SNP Assays and samples allows researchers perform both profiling and validation studies with the SmartChip qPCR System.

SmartChip Multisample Nanodispenser and subsequently thermal cycled on the SmartChip qPCR Cycler. Data analysis is easily achieved for up to thousands of samples across multiple SmartChip SNP Genotyping Panels with the SmartChip qPCR Software. Genotyping clusters from a single or multiple runs are easily visualized as shown in Figure 2. In addition, the entire process from sample loading to data analysis only requires < 1 hour of hands-on time per panel.

SmartChip SNP Genotyping Panels dispensed at WaferGen Biosystems



Simple workflow for the customer's lab



Figure 1. Simple and Efficient SmartChip SNP Genotyping Workflow. A small aliquot of SNP assay is delivered to WaferGen Biosystems and dispensed. SmartChip SNP Genotyping Panels are returned within 2 weeks. DNA is added to a qPCR master mix in a 384-well plate and dispensed into the SmartChip SNP Genotyping Panel in < 0.5 hours. After thermal cycling on the SmartChip qPCR Cycler, data analysis, including manual calling of genotypes, and multi-chip analysis is easily achieved in < 0.5 hours.

THE SMARTCHIP SNP GENOTYPING PANELS OFFER:

Savings compared to 5µL 384-well microtiter plates

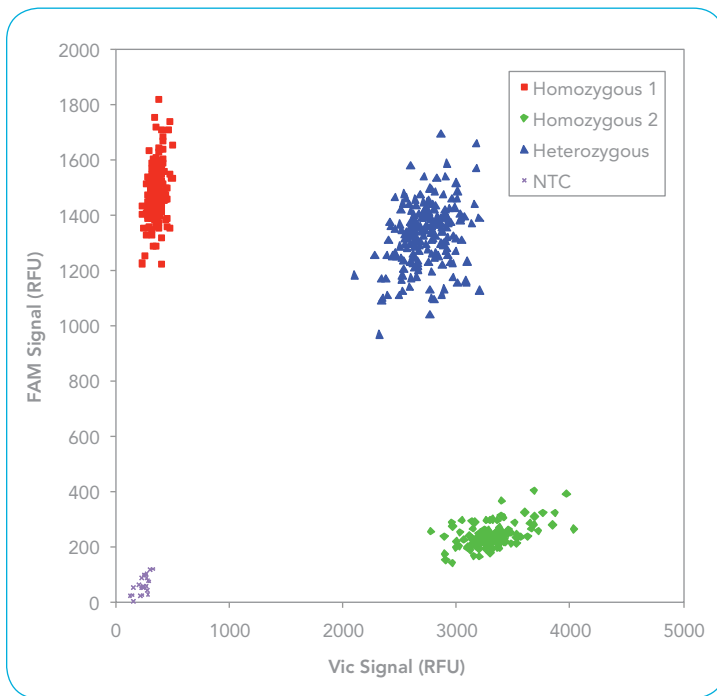
- SNP Genotyping Assays: 12-fold
- Master Mix: 100-fold
- Time to result: 4-fold

Key attributes

- 8 different configurations: 12 to 384 SNPs
- >5000 genotypes in a few hours
- Simple, automated workflow

Performance parameters

- 98% assay transfer rate
- >98% call rate
- 99.8% call accuracy / concordance



High Data Quality, Small Reaction Volumes

Reducing the reaction sizes from microliters to nanoliters does not mean a compromise in data quality. If a SNP genotyping assay works in a 96- or 384-well microtiter plate, researchers can have confidence (>98%) it will transfer to a SmartChip SNP Genotyping Panel. Key metrics such as call rate (>98%) and call accuracy or concordance (>99.8%) can be achieved even when performing >5000 nanoliter-volume reactions in a single run.

Figure 2. Typical SNP Genotyping Cluster Plot from SmartChip qPCR Software. Genotyping clusters are presented to researchers with a simple user-interface. Individual genotypes can be flagged and manually called. Samples across multiple SmartChip SNP Genotyping Panels can be compared for large SNP genotyping studies.

Ordering Information

Part #	Description	Part #	Description
440-000023	SmartChip SNP Genotyping Panel, 12 SNP/ 384 samples /panel	440-000027	SmartChip SNP Genotyping Panel, 96 SNP/ 54 samples /panel
440-000024	SmartChip SNP Genotyping Panel, 24 SNP/ 192 samples /panel	440-000028	SmartChip SNP Genotyping Panel, 120 SNP/ 42 samples /panel
440-000025	SmartChip SNP Genotyping Panel, 48 SNP/ 108 samples /panel	440-000029	SmartChip SNP Genotyping Panel, 192 SNP/ 24 samples /panel
440-000026	SmartChip SNP Genotyping Panel, 72 SNP/ 72 samples /panel	440-000030	SmartChip SNP Genotyping Panel, 384 SNP/ 12 samples /panel

Contact WaferGen Biosystems for the most extensive, quantitative and cost-effective solution for evaluating your specific SNP genotyping study.

Contact your local sales representative: sales@wafergen.com

For support: support@wafergen.com

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