

TaqMan® OpenArray® Pharmacogenomics (PGx) Panel

Genotyping analysis of drug metabolism enzymes and associated transport proteins

The TaqMan® OpenArray® Pharmacogenomics (PGx) Panel is a powerful tool to help researchers study human genetic variation in relation to drug action and its potential application to medical treatment.

The TaqMan® OpenArray® PGx Panel was developed for quick and easy screening of known high-value target genes associated with drug metabolism enzymes and associated transport proteins. The panel consists of 158 drug metabolism enzyme (DME) assays derived from the PharmaADME Core Marker Set (Table 1). The OpenArray® plate format allows for high-throughput genotyping with a workflow that is cost-effective and easy to use. As a result, the TaqMan® OpenArray® PGx Panel is a highly effective solution for pharmacogenomics applications.

Trusted TaqMan® performance

Each TaqMan® DME Genotyping Assay contains two allele-specific probes and a primer pair to detect the specific SNP target. Both the probes and primers uniquely align within the genome, enabling the TaqMan® genotyping technology to provide superior specificity. It is this specificity that allows these assays to detect targets residing in highly homologous gene families that may include pseudogenes. TaqMan® Drug Metabolism Enzyme Genotyping Assays were developed using a high level of bioinformatics and wet-lab stringency. All assays have passed performance tests involving 180 unique DNA samples from four different populations.

Coverage of key genes for pharmacogenomics research studies

The TaqMan® OpenArray® PGx Panel is preformatted, cost-effective, and easy to use. Results are reproducible and consistent across

samples, studies, and labs. Assays were selected for optimal relevance to current pharmacogenomics studies and organized for a simplified workflow.

The TaqMan® OpenArray® PGx Panel provides valuable data for the study of drug interactions in several research areas. Targeted genes relate to areas of study such as cardiovascular (*CYP2D6*, *CYP2C19*, *NAT1*, *NAT2*), analgesics (*CYP2C9*, *CYP2D6*), rheumatology (*CYP2C9*, *TPMT*), neurology (*CYP2C19*, *CYP2D6*), and musculoskeletal (*CYP2C19*). A total of 29 genes are covered across 158 unique assays.

To review a gene list for the PGx panel run on the QuantStudio™ 12K Flex system, go to www.lifetech.com/quantstudiopgxpanel.

To review a gene list for the PGx panel on the OpenArray Real-Time PCR System, go to www.lifetech.com/pgxpanel.

Table 1. List of gene targets in the TaqMan® OpenArray® Pharmacogenomics (PGx) Panel.

PharmaADME Class*	Number of genes	Human gene symbols
Phase I	12	<i>CYP1A1</i> , <i>CYP1A2</i> , <i>CYP2A6</i> , <i>CYP2B6</i> , <i>CYP2C8</i> , <i>CYP2C9</i> , <i>CYP2C19</i> , <i>CYP2D6</i> , <i>CYP2E1</i> , <i>CYP3A4</i> , <i>CYP3A5</i> , <i>DPYD</i>
Phase II	6	<i>GSTP1</i> , <i>NAT1</i> , <i>NAT2</i> , <i>UGT1A1</i> , <i>UGT2B7</i> , <i>UGT2B15</i>
Transporter	11	<i>ABCB1</i> , <i>ABCC2</i> , <i>ABCG2</i> , <i>SLC15A2</i> , <i>SLC22A1</i> , <i>SLC22A2</i> , <i>SLC22A6</i> , <i>SLC01B1</i> , <i>SLC01B3</i> , <i>SLC02B1</i> , <i>TPMT</i>

*Source: www.pharmaadme.org

Over 10,000 data points in a single run

These panels combine the efficiency of the OpenArray® high-throughput platform with the robust genotyping performance of TaqMan® Assays. Each TaqMan® OpenArray® PGx Panel is configured to run 16 samples per OpenArray® plate. Samples are organized into each array as seen in Figure 1. The QuantStudio™ 12K Flex Real-Time PCR System can run four plates at once, allowing for 64 samples and generating over 10,000 data points in a single run. This allows high-throughput profiling while saving precious sample and lowering reagent costs.

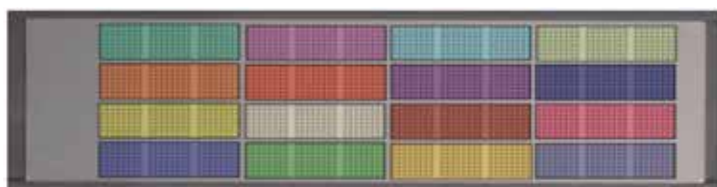


Figure 1. TaqMan® OpenArray® PGx Panel sample arrangement.
A total of 16 samples can be run on each TaqMan® Open Array® PGx Panel. For each sample, 158 wells are used.

The TaqMan® OpenArray® PGx Panel is available for both the QuantStudio™ 12K Flex Real-Time PCR System and the OpenArray® Real-Time PCR System. Users can be confident of high-quality results on any OpenArray® platform. Figures 2 and 3 depict the breadth of data that can be generated using the TaqMan® OpenArray® PGx Panel with the QuantStudio™ 12K Flex system.

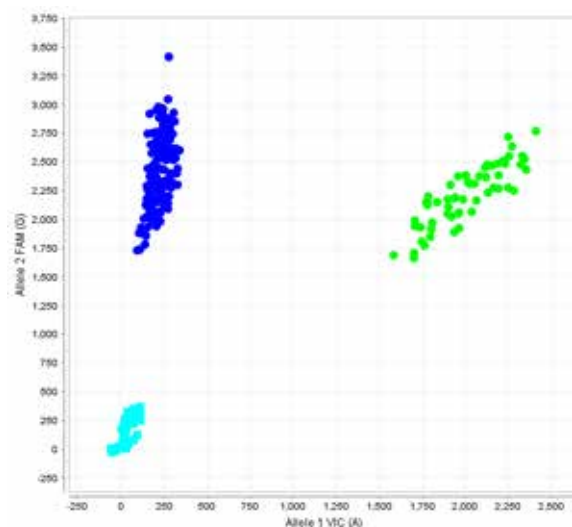


Figure 2. SNP genotyping plot for CYP2C19*2 obtained using the QuantStudio™ 12K Flex System with OpenArray® Block.

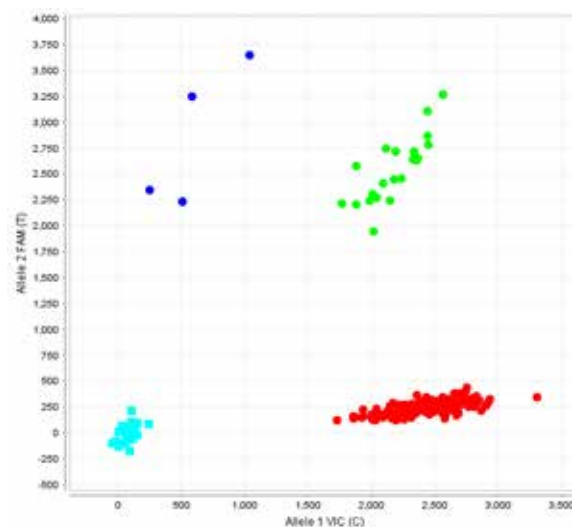


Figure 3. SNP genotyping plot obtained for CYP2D6*4 using the QuantStudio™ 12K Flex System with OpenArray® Block.

Ordering information

Product	Quantity	Cat. No.
TaqMan® OpenArray® PGx Panel (for use with the OpenArray® Real-Time PCR System)	1 plate	4475375
TaqMan® OpenArray® PGx Panel (for use with the QuantStudio™ 12K Flex system)	1 plate	4475395

Related products required for use with OpenArray® panels

Product	Quantity	Cat. No.
TaqMan® OpenArray® Genotyping Accessories Kit (for use with the OpenArray® Real-Time PCR System)	Enough for 10 plates	4404572
QuantStudio™ 12K Flex OpenArray® Accessories Kit	Enough for 10 plates	4469576

Contact your local Life Technologies support representative for more information on the panel as well as sample preparation details.

Learn more at lifetechnologies.com

