Pharmacogenetic Solutions

Versatile Tools for Detecting Pharmacogenetic Markers

- **Cost-Effective**
  Maximize resources with up to 36 variants per well

- **Efficient**
  Detect SNPs, INDELs, and CNVs in a single panel

- **Robust**
  Obtain accurate, targeted data in simple reports

For Research Use Only. Not for use in diagnostic procedures.
Pharmacogenetic Solutions Overview

Research has linked a number of genes, including CYP2D6, CYP2C9, and VKORC1, with an individual’s drug response. In combination with environmental factors and disease heterogeneity, genetic analysis may guide appropriate therapeutic treatment of a disease.

As pharmacogenetic (PGx) markers become increasingly relevant in clinical research and drug development, laboratories will rely on genetic analysis tools that can deliver robust screening results without time-intensive bioinformatics. With high multiplexing and highly sensitive detection capabilities, the MassARRAY System – including iPLEX® chemistry and Assay Design Suite software – provides a cost-effective testing method with the flexibility to evolve with new discoveries.

MAXIMIZE YOUR RESOURCES

With the power of iPLEX chemistry, screen up to 36 variants per well to reduce per sample cost, maximize reagents and minimize chip space used. SpectroCHIP® Arrays offered in 24-, 96-, or 384-format ensure a configuration to fit any sample throughput.

The MassARRAY System’s efficient workflow produces results in a single day, with minimal hands-on time.

DNA TO DATA

Screen hundreds to thousands of samples annually with as little as 5 ng genomic DNA per reaction from any biological source, including blood and buccal swabs. Premixed primers and reagents enable targeted PCR amplification and single base primer extension with the iPLEX chemistry. Extension products are dispensed onto a SpectroCHIP Array and detected via mass spectrometry using the MassARRAY System.

Automated reports are ready for review immediately. MassARRAY analysis software generates a comprehensive diplotype table for all samples, showing SNP and CNV reports in a single report. The diplotype results are presented in standard star allele nomenclature. For most genes, results include relative quantification of copy numbers between 0, 1, 2, or >2 copies. Straightforward and comprehensive report tables allow quick troubleshooting on a per-sample or per-well basis, simplifying data analysis.

MassARRAY® System Workflow

<table>
<thead>
<tr>
<th>PCR set up</th>
<th>Amplification</th>
<th>Add reagents</th>
<th>SAP and primer extension</th>
<th>Transfer analyte &amp; acquire data</th>
<th>View results</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 min.</td>
<td>135 min.</td>
<td>25 min.</td>
<td>275 min.</td>
<td>60 min.</td>
<td>Instrument processing</td>
</tr>
<tr>
<td></td>
<td>2 min.</td>
<td>3 min.</td>
<td>5 min.</td>
<td></td>
<td>Manual processing</td>
</tr>
</tbody>
</table>
From Discovery to Action

TECHNICAL EXPERTISE IN ASSAY DEVELOPMENT

Pre-designed and pre-validated panels (shown below) provide off-the-shelf convenience for rapid start up times with a variety of solutions targeting key pharmacogenetic genes. The PGx Pro Panel contains assays to interrogate SNP, INDEL, and CNV targets in 36 key genes, including \textit{ABCB1}, \textit{CYP2A6}, and \textit{UGT1A1}.

<table>
<thead>
<tr>
<th>Panel</th>
<th>Number of Genes</th>
<th>Number of SNPs</th>
</tr>
</thead>
<tbody>
<tr>
<td>PGx Pro</td>
<td>36</td>
<td>192</td>
</tr>
<tr>
<td>PGx68</td>
<td>16</td>
<td>62</td>
</tr>
<tr>
<td>CYP2C19</td>
<td>1</td>
<td>31</td>
</tr>
<tr>
<td>CYP2C9/ VKORC1 (+2)</td>
<td>4</td>
<td>51</td>
</tr>
<tr>
<td>CYP2D6</td>
<td>1</td>
<td>35</td>
</tr>
</tbody>
</table>

YOUR ASSAY, YOUR WAY

New variations affecting drug response are uncovered at a rapid rate. Agena Bioscience’s online Assay Design Suite tool enables laboratories to stay ahead of the curve, offering straightforward assay customization for complete content flexibility. Design and optimize assays in as little as thirty minutes, then simply order oligos and add the new assay into existing workflows.

Not interested in designing your own? Work with the experts from Assays by Agena to leverage more than a decade of experience in genetic analysis solutions. Choose from over 350 assays covering more than 60 pharmacogenetic genes to easily select your variants of interest.

Whether designing a unique panel or ordering a pre-validated design, Agena Bioscience’s team of experts can guide implementation of the MassARRAY System and corresponding assays into your lab’s process.
Proven Capabilities in Genetic Detection

Over 65 scientific publications confirm the utility of the MassARRAY System in pharmacogenetic applications. The flexible assay design capabilities of the platform have enabled research in the following PGx focus areas:

- √ Chronic heart failure treatment response
- √ Anti-epileptic drug resistance
- √ Chemotherapy toxicity
- √ Antidepressant response
- √ Immunosuppressant pharmacokinetics
- √ Antifungal plasma clearance
- √ Metabolic adiposity signatures
- √ Antidepressant bioavailability

INTERESTED IN LEARNING MORE?

If you have questions about Agena Bioscience’s products or services, or would like to place an order, please contact your local sales representative.