The liver enzyme CYP2D6 is responsible for the metabolism of about 25% of all currently prescribed drugs. Differences in enzymatic activity due to polymorphisms in the CYP2D6 gene contribute to the inter-individual variability in drug response. Around 7% of Caucasians carry defective alleles that result in partially or completely inactive enzymes. Knowing the metabolizer status of a patient allows a better prediction of adverse side effects and suboptimal treatment efficacy. CYP2D6 genotyping helps to determine the optimum type and dosage of drugs for specific disorders.

Individualize drug therapy according to CYP2D6 genotypes

ViennaLab PGX-CYP2D6 StripAssay<sup>®</sup> detects the most common variants with impaired enzyme activity:

- Simple protocol for complex diagnostic questions
- Manual or automated
- No expensive lab equipment required
- Ready-to-use reagents
- Complete CE-certified kit – includes DNA extraction

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Cytochrome P450 2D6

CYP2D6, a member of the cytochrome P450 superfamily, is one of the most important liver enzymes involved in the metabolism of xenobiotics in the body. Numerous drugs prescribed for the treatment of breast cancer (tamoxifen), cardiac diseases (antiarrhythmics, beta-receptor blockers), psychiatric disorders (antipsychotics, antidepressants) or pain (opiates) are substrates for CYP2D6. Patients with defective enzyme variants are at risk of developing severe adverse reactions due to drug accumulation and toxicity. Conversely, when formation of an active metabolite is essential for the action of a drug, these patients can exhibit diminished response to therapy compared to extensive metabolizers.

The PGX-CYP2D6 StripAssay® detects the allelic variants CYP2D6*3 (2637delA), CYP2D6*4 (1934G>A) and CYP2D6*6 (1795delT)

<table>
<thead>
<tr>
<th>Gene</th>
<th>Cellular function</th>
<th>*3, *4 or *6 allele</th>
<th>Phenotype</th>
</tr>
</thead>
<tbody>
<tr>
<td>CYP2D6</td>
<td>Phase I drug metabolizing enzyme</td>
<td>Absent</td>
<td>Extensive metabolizer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>One allele present</td>
<td>Intermediate metabolizer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Two alleles present</td>
<td>Poor metabolizer</td>
</tr>
</tbody>
</table>

The three steps of the ViennaLab PGX-CYP2D6 StripAssay®

<table>
<thead>
<tr>
<th>Step</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Amplification: Multiplex PCR-amplification. Simultaneous biotin-labeling</td>
<td>Thermocycler</td>
</tr>
<tr>
<td>2. Hybridization: Directly on the StripAssay® teststrips</td>
<td>Incubator</td>
</tr>
<tr>
<td>3. Identification: Labeled products detected by streptavidin-alkaline phosphatase</td>
<td>Naked eye or scanner &amp; software</td>
</tr>
</tbody>
</table>

Cat.no.: PGX-CYP2D6 StripAssay® 4-760 (20 tests/kit)

ViennaLab offers StripAssays® for a wide range of diagnostic applications. Visit www.viennalab.com

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