HIV - Pharmacogenomics

ViennaLab Diagnostics GmbH

PGX-HIV StripAssay

Highly active antiretroviral therapy (HAART), the combined use of different types of antiretroviral drugs, has brought substantial clinical, virological and immunological improvements to HIV-infected patients and has led to a large reduction in AIDS-related mortality in countries where it became available. However, HAART still fails in a considerable number of cases, and host factors have been shown to contribute to the observed differences in the response to treatment.

Among the known factors associated with the success of HIV antiretroviral treatment are allelic variants of the multidrug transporter P-glycoprotein 1 (MDR1), the cytochrome P450 isozyme 2D6 (CYP2D6) and the C-C chemokine receptor 5 (CCR5).

PGX-HIV StripAssay:

ViennaLab offers a reliable and convenient reverse-hybridization assay for the identification of genotypes associated with response to HIV highly active anti-retroviral therapy (HAART). The PGX-HIV StripAssay identifies five polymorphic loci: MDR1 3435 C>T, CYP2D6 1795delT (*6), 1934 G>A (*4), 2637delA (*3), and CCR5 32bp deletion.

The PGX-HIV StripAssay provides ready-to-use reagents for 20 tests. The entire assay can be accomplished in less than 6 hours, and may be carried out manually or largely automated.

Principle of the assay:

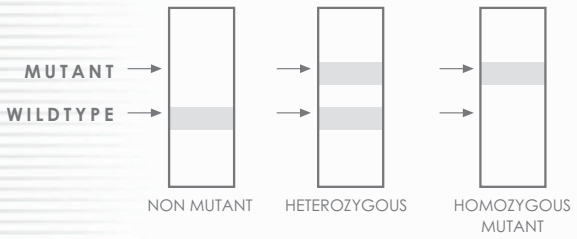
The PGX-HIV StripAssay is based on reverse-hybridization of biotinylated PCR products to a parallel array of allele-specific oligonucleotides immobilized on membrane teststrips. The StripAssay provides ready-to-use reagents for completion in four easy steps:

- Rapid and convenient isolation of genomic DNA from anticoagulated blood.
- Single multiplex PCR for the amplification of relevant MDR1, CYP2D6 and CCR5 gene sequences.
- Hybridization of biotinylated amplification products to oligonucleotide probes on the teststrip.
- Detection of specifically bound mutant and wild-type alleles by visible enzymatic color reaction.

Interpretation of results:

For each polymorphic position, one of three possible staining patterns may be obtained:

1. wild-type probe positive: normal genotype
2. wild-type and mutant probe positive: heterozygous genotype
3. mutant probe positive: homozygous mutant genotype



Polymorphisms covered by the ViennaLab PGX-HIV StripAssay:

Gene	Mutation	Effect
MDR1	3435 C>T	improved immunorecovery and more pronounced decrease in viral load upon treatment
CYP2D6	1795delT (*6) 1934 G>A (*4) 2637delA (*3)	*3, *4 and *6 encode CYP variants with decreased enzymatic activity, leading to a slower turnover of drugs (poor metabolizer phenotype)
CCR5	32 bp deletion	decreased susceptibility to and delayed progression of infection; improved response to treatment

PGX-HIV StripAssay Cat.no.: 4-710

Further StripAssays are available or under development for:
Thalassemia (α-Globin, β-Globin), Cardiovascular Disease (CVD), Familial Mediterranean Fever (FMF), Gaucher Disease, Haemochromatosis, Sugar Intolerance (lactose, fructose), Pharmacogenetics, Cancer.

VIENNA LAB
ViennaLab Diagnostics GmbH

Gaudenzdorfer Gürtel 43-45, A-1120 Vienna, Austria
Phone (+43-1) 8120156-0, Fax (+43-1) 8120156-19
info@viennalab.co.at, www.viennalab.com

Local contact:

HIV - Pharmacogenomics