A Step Ahead of Resistance; Virco introduces an Improved Rapid Methodology to Establish New HIV-1 Resistance Profiles

New HIV-1 Resistance Profiles for Recently Approved Protease Inhibitors PREZISTA (darunavir) and Aptivus (tipranavir)

The virco(R)TYPE HIV-1 analysis, now enhanced with linear modeling (LM), assists clinicians in optimizing the selection of antiretroviral regimens for treatment-experienced patients

MECHELEN, Belgium – Oct. 16 (SEND2PRESS NEWSWIRE) — Responding to the need to make timely evaluations and decisions when treating treatment experienced HIV patients, Virco, a leader in drug resistance testing recently introduced an improved virco(R)TYPE HIV-1 test that rapidly determines the complex phenotypic resistance profiles for darunavir, tipranavir and other antiretroviral (ARV) drugs.

Utilizing clinical trial data that was used to support the approval of darunavir and tipranavir, virco(R)TYPE HIV-1 reports now include Clinical Cut-Offs (CCOs) for these recently introduced agents (Note 1*). Virco(R)TYPE HIV-1 analyzes patient HIV-1 resistant genotypes using Virco’s large database to quickly and accurately predict phenotypic resistance. This timely determination of phenotypic resistance assists physicians in choosing a drug treatment plan that has the least amount of drug resistance.

The improvements in virco(R)TYPE HIV-1 “helps clinicians evaluate resistance to darunavir, tipranavir, and other ARV drugs, and assists them in constructing potent, effective treatment regimens for their patients.” said virologist Lee Bacheler, PhD, of Virco. Dr. Bacheler and other Virco scientists recently presented key information on virco(R)TYPE HIV-1 darunavir Clinical Cut-Offs at the 46’th Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC(TM)) in San Francisco, CA.

The virco(R)TYPE HIV-1 is a refined analytical HIV-1 resistance test that provides a combination of genotypic and phenotypic information, supplemented with additional clinical information. The advantage over other tests that provide phenotypic information is that virco(R)TYPE HIV-1 does not rely on a time consuming and labor-intensive assay to produce results. Instead, it uses a sophisticated bio-informatics technology, Virtual Phenotype(TM) – LM to
rapidly predict phenotypic resistance from the patient’s HIV-1 genotype. Linear Modeling (LM) is commonly used as a statistical technique to study the relationship between observations or variables.

Virtual Phenotype(TM) – LM technology is capable of predicting a virus’s phenotype from the contribution of individual mutations and pairs of mutations in its genotype. LM technology fully utilizes the power of Virco’s correlative database, a database which continues to grow with patient HIV samples for which both genotype and phenotype test results have been determined. It is this combination of technology with the robust database of HIV clinical isolates that continue to underscore Virco’s leadership in HIV resistance testing.

The introduction of powerful medicines for antiretroviral therapy has enabled people with HIV/AIDS to live longer. It is estimated that 25 to 50% of the nearly half a million Americans being treated by highly active antiretroviral therapy (HAART) develop drug resistance to one or more ARV drugs. In addition, “cross-resistance” within a class of ARV drugs is common and may further reduce treatment options. Transmitted resistance, when a newly infected patient who has never taken HIV medications carries a virus that already demonstrates resistance, is also a growing concern. Determining effective drug combinations for patients who have multiple-drug resistance is often performed by genotypic or phenotypic testing. Genotypic testing indirectly assesses drug resistance by identifying particular resistance-causing mutations in a virus’s genome, while phenotypic testing is a direct measure of resistance but is expensive and time consuming.

CCOs are established by correlating patient response with the degree to which an ARV drug is affected by resistance. Virco’s approach looks at drugs used in combination regimens and determines the degree to which an individual drug is compromised by resistance. This ability to determine different degrees of resistance is the first step in selecting better drug options and extending the lives of persons with HIV/AIDS.

Virco BVBA is a world leader in the field of HIV resistance testing services for clinical practice and clinical studies, advancing research that correlates laboratory testing with clinical management, while offering a wide range of HIV resistance diagnostics. The company applies the latest technologies in molecular biology, medical virology and bio-informatics to develop advanced diagnostic tools that are based on pharmacogenomic principles of individualized patient care. A pioneer in HIV resistance testing, Virco has one of the world’s largest repositories of HIV clinical isolates, a clinical response database with records of more than 17,000 patients, a database of more than 75,000 phenotypes and 250,000 genotypes, and cutting-edge bio-informatics capabilities.


(*NOTE: 1) Development of vircoTYPE resistance analysis including clinical Cut-Offs for TMC114, XV International HIV Drug Resistance Workshop, Sitges Spain, June 13-17, 2006, poster 160 by Virco; Bart Winters, et.al.; Clinically Relevant Phenotypic Resistance and
Cross Resistance to Tipranavir Among Recent Routine Clinical Isolates, 4th European Resistance Workshop, Monte Carlo, March 30th, 2006, Poster 40, Virco; Lee Bacheler et al.

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