

High throughput diagnosis of infectious animal diseases with the Freedom EVOLyzer®

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The Swedish National Veterinary Institute (SVA) in Uppsala, Sweden, depends on a Tecan Freedom EVOLyzer® for automating ELISAs during routine diagnostic screening of animal diseases such as Porcine Reproductive and Respiratory Syndrome (PRRS).

PRRS, a viral disease in pigs that causes a range of reproductive and respiratory disorders, has spread throughout Europe, resulting in major production losses. The disease first occurred in Sweden in the summer 2007, at which time Sweden was free of PRRS and was not vaccinating pigs for the disease. The SVA in Uppsala screens animal samples in a control program for PRRS and other serious infectious diseases, and requires quick, reliable and automation-friendly assays in order to respond immediately to sudden disease outbreaks.

The Institute chose the Freedom EVOLyzer workstation for its fully integrated and automated ELISA processor. This open platform is able to combine kits from different manufacturers and adjust to the sample load and kits to be run each day. The Freedom EVOLyzer can automate a wide range of ELISAs with small sample numbers, as well as providing automated processing of large sample numbers using several standard assays. The Freedom EVOLyzer 150 at the SVA in Uppsala is configured with four fixed pipetting tips, one ambient temperature incubator and one heated incubator, storage for 24 microplates, an eight-channel washer and an absorbance reader. It is able to process hundreds of samples every day.

PRRS is detected using the IDEXX HerdChek® PPRs 2XR Antibody Test Kit (IDEXX B.V., Netherlands), which detects antibodies to both European and North American strains of PPRs virus in swine serum by ELISA. The kit can be used to monitor a suspicious herd or to check whether animals are vaccinated. Samples and controls are tested in 96-well plates



Jane Borg explains to her colleague, Gunnel Svedlund, the schedule for running ELISAs on the Freedom EVOLyzer platform

with alternating rows of antigen-coated and normal wells, and results are obtained by measuring optical density at 650 nm.

ELISA automation has greatly speeded up large-scale screening for animal disease, and hundreds of samples can be tested on the instrument every day. In the framework of control programs, 3,000-5,000 samples are currently being analyzed yearly using three different

ELISA tests for, respectively, PRRS, classical swine fever and Aujeszky's disease. Tests for poultry diseases, including Newcastle disease and avian influenza, are currently being validated for automation on the Freedom EVOLyzer platform.

*HerdChek is a trademark or a registered trademark of IDEXX Laboratories Inc.

The Freedom EVOLyzer is certified according to the IVD directive 98/79/EC and is an Annex III-compliant open system for ELISA processing.

The Freedom EVOLyzer

